

A.D.T. - 2012 = 36,000
A.D.T. - 2029 = 47,000
D.H.V. = 5,000
T = 8%
V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION = URBAN MAJOR ARTERIAL

CONTRACTOR TO PERFORM
ALL OPERATIONS WITHIN
EXISTING R/W AND
TEMPORARY CONSTRUCTION
EASEMENTS OBTAINED
FOR THIS PROJECT
FROM STA. 120+00.00
TO STA. 177+00.00

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS		
OVERHEAD TELEPHONE		
UNDERGROUND TELEPHONE		
OVERHEAD POWER		
UNDERGROUND POWER		
GAS		
WATER		
MANHOLE		
FIRE HYDRANT		
WATER VALVE		
WATER METER		
DROP INLET		
DITCH BLOCK		
GROUND MOUNTED SIGN		
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL		
FENCE		
CHAIN LINK		
WOVEN WIRE		
GATE POST		
BENCHMARK		

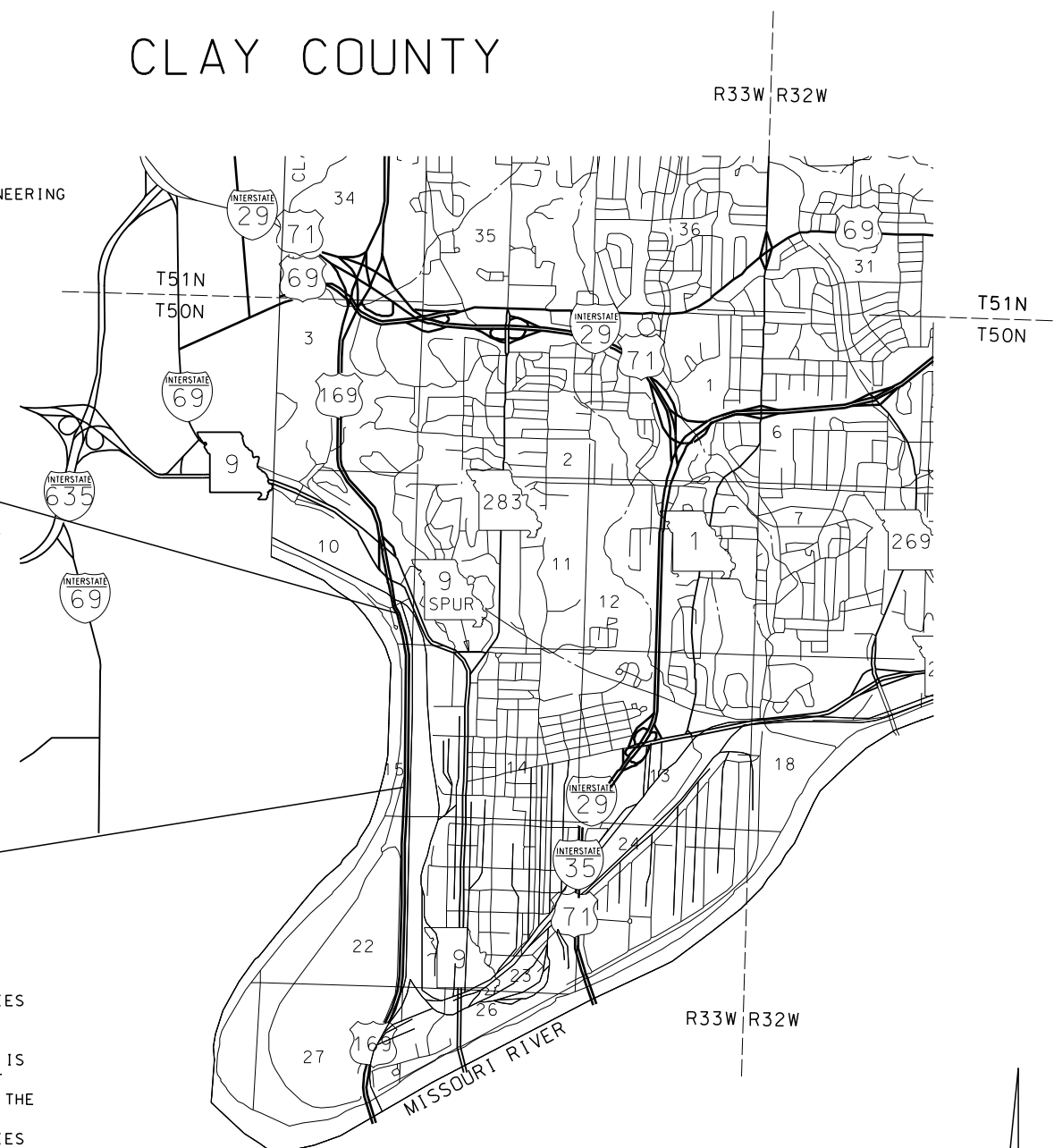
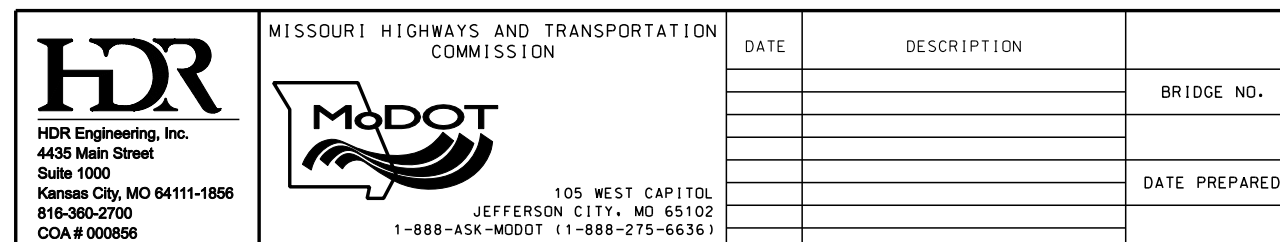
NOTE: DASHED OR OPEN SYMBOLS INDICATE
EXISTING FEATURES

CLAY COUNTY

ENGINEER'S AUTHENTICATION
THE RESPONSIBILITY FOR PROFESSIONAL ENGINEERING
LIABILITY ON THIS PROJECT IS HEREBY LIMITED TO
THIS SET OF PLANS AUTHENTICATED BY THE SEAL,
SIGNATURE, AND DATE HEREUNDER ATTACHED.
RESPONSIBILITY IS DISCLAIMED FOR ALL OTHER ENGINEERING
PLANS INVOLVED IN THIS PROJECT AND SPECIFICALLY
EXCLUDES REVISIONS AFTER THIS DATE UNLESS
REAUTHENTICATED.
HDR ENGINEERING, INC.

PAVING, MEDIAN
DRAINAGE REPAIR, AND
WALL REHABILITATION (A7619)
0.971 MILES

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY AND RECORDS. THE COMMISSION DOES NOT WARRANT THE LOCATIONS OF THESE FACILITIES AS PRECISE. 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 THE EXISTENCE AND PRECISE LOCATION OF ALL FACILITIES AND TO AVOID DAMAGE. SEE THE JOB SPECIAL PROVISIONS FOR A LIST OF UTILITY COMPANIES ON OR WITHIN THE VICINITY OF THE PROJECT LIMITS.



HDR
HDR Engineering

ROUTE 169	STATE MO	DISTRICT KC
JOB NO J4U1314B		
CONTRACT ID		
PROJECT NO		
COUNTY CLAY		

DESCRIPTION	SHEET NUMBER
TITLE SHEET -----	1
TYPICAL SECTIONS (TS) (2 SHEETS)---	2
QUANTITY SHEET (QU) (4 SHEETS)---	3
PLAN-PROFILE (PP) -----	4 - 11
REFERENCE POINTS (RP) -----	12
COORDINATE POINTS (CP) -----	13
TRAFFIC CONTROL SHEETS (TC) -----	14 - 18B
EROSION CONTROL (EC) -----	19
PAVEMENT MARKING (PM) -----	20 - 27
CULVERT SECTIONS (CS) -----	28 - 30
BRIDGE PLANS	
BRIDGE A46421 -----	1 - 29
BRIDGE A7619 -----	1 - 12
BRIDGE A8081 -----	1 - 2
BRIDGE A46442 -----	1
CROSS SECTIONS (XS) -----	1 - 37

BEGINNING OF PROJECT	STA.	123+75.00
END OF PROJECT	STA.	175+04.50
APPARENT LENGTH		5129.5 FEET
EQUATIONS AND EXCEPTIONS		
TOTAL CORRECTIONS		0.00 FEET
NET LENGTH OF PROJECT		5129.5 FEET
STATE LENGTH		0.971 MILES



DATE 3/2/2012



HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



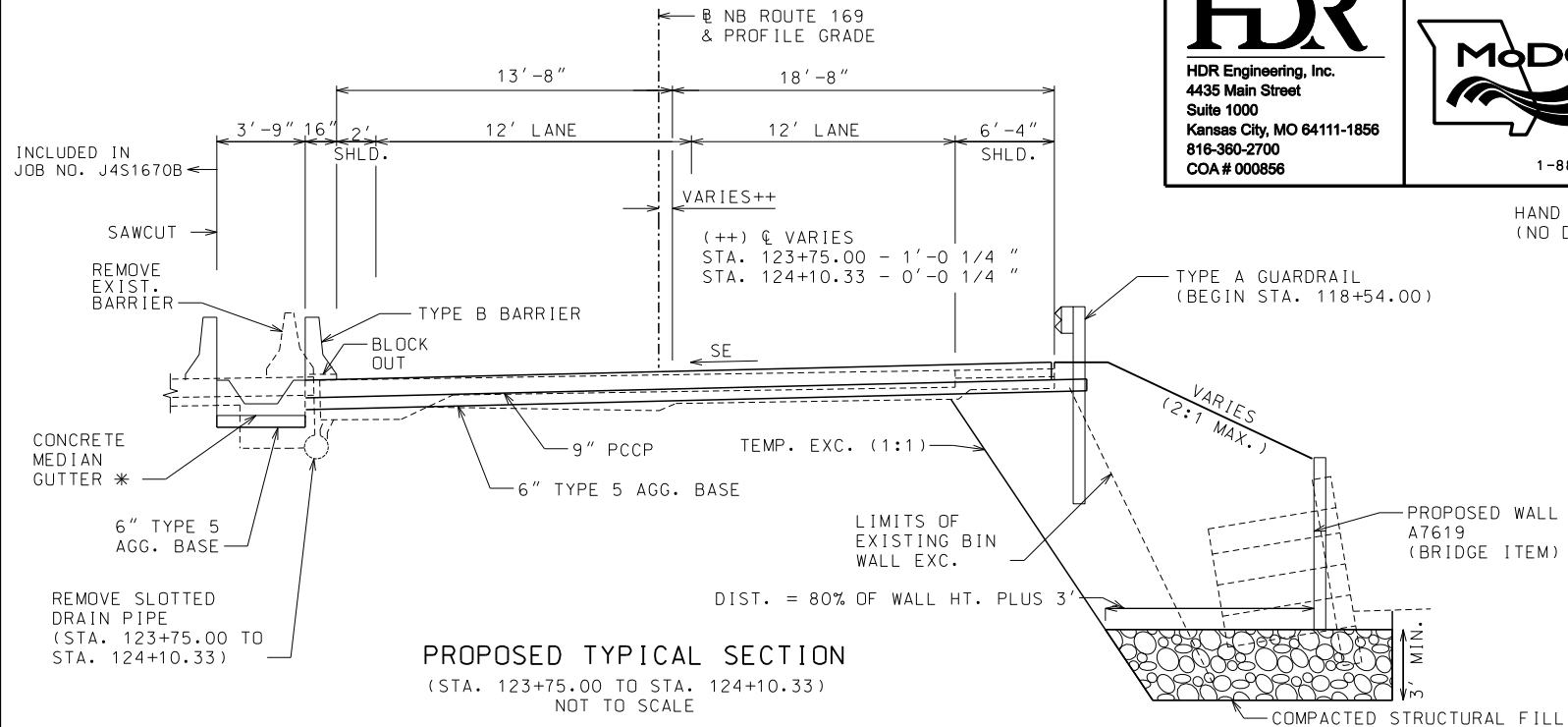
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	ROUTE	STATE	DISTRICT	SHEET NO.
		169	MO	KC	2
		BRIDGE NO.	JOB NO.	J4U1314B	
			CONTRACT ID.		
		DATE PREPARED	PROJECT NO.		
			COUNTY	CLAY	
				DATE 2/13/12	



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

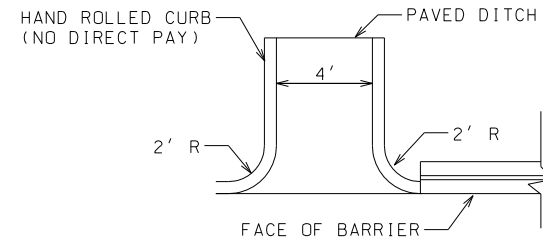
SHEET 1 OF 2



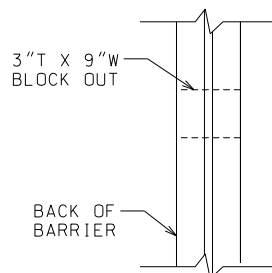
PROPOSED TYPICAL SECTION

(STA. 123+75.00 TO STA. 124+10.33)
NOT TO SCALE

* PRECAST ALTERNATES WILL BE
ALLOWED. CONTRACTOR WILL BE
RESPONSIBLE FOR DESIGN OF
PRECAST ALTERNATE. WATERPROOF
JOINTS WILL BE REQUIRED.

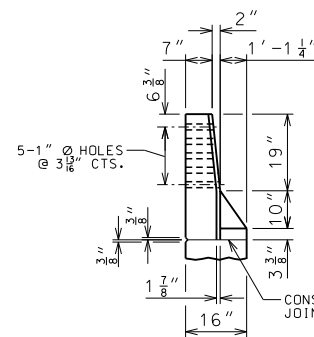


PAVED DITCH STA. 173+98
PLACE DITCH BETWEEN GUARDRAIL POSTS

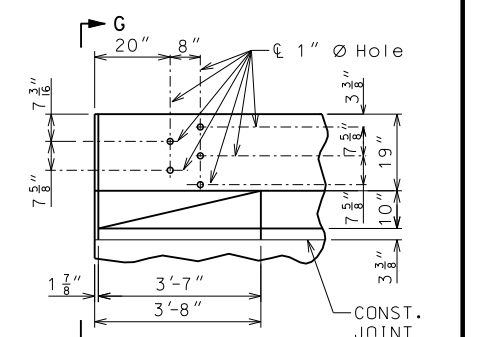


TOP ELEVATION

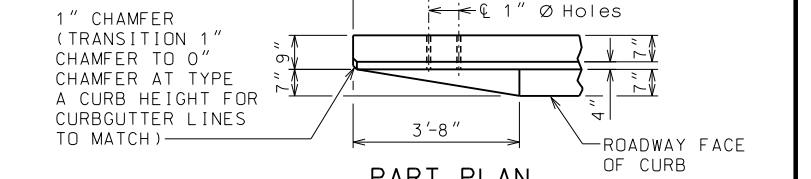
NOTE: SPACE BLOCK OUTS MINIMUM EVERY 5' O.C.
ALONG MEDIAN SIDE OF NB RTE 169.
NO DIRECT PAY.



PART ELEVATION G-G



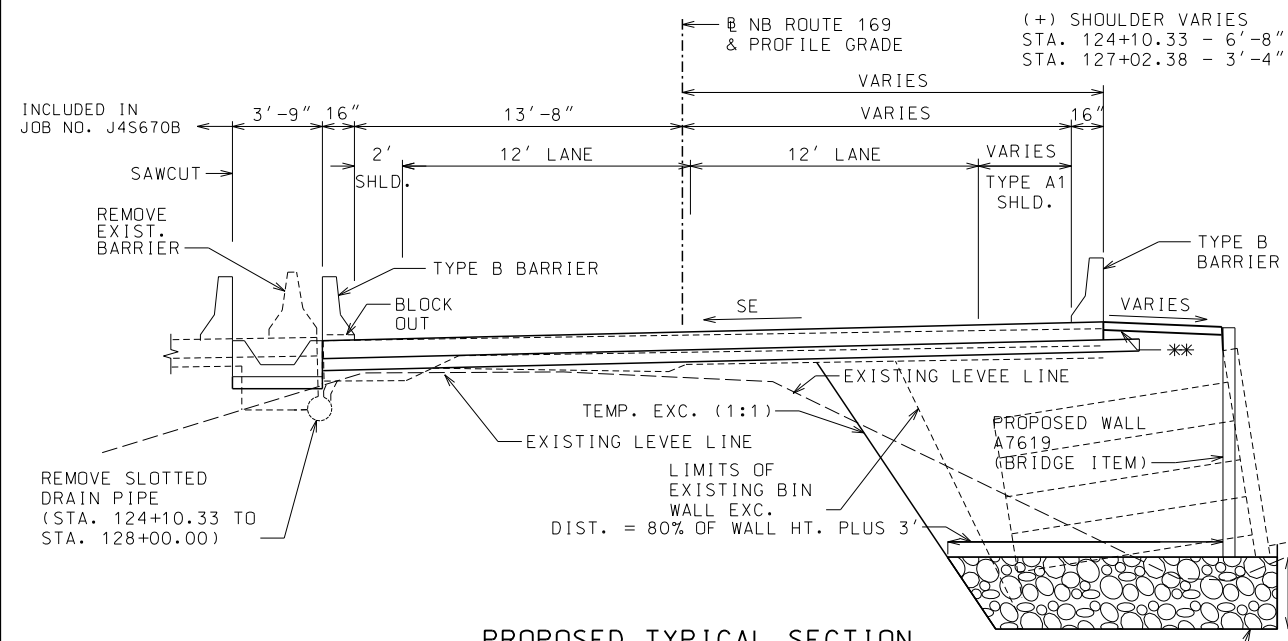
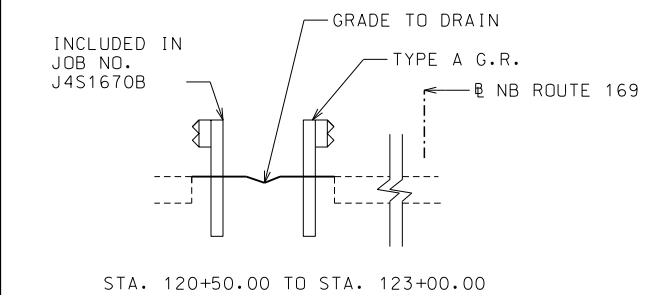
PART ELEVATION



PART PLAN

DETAILS OF GUARDRAIL ATTACHMENT

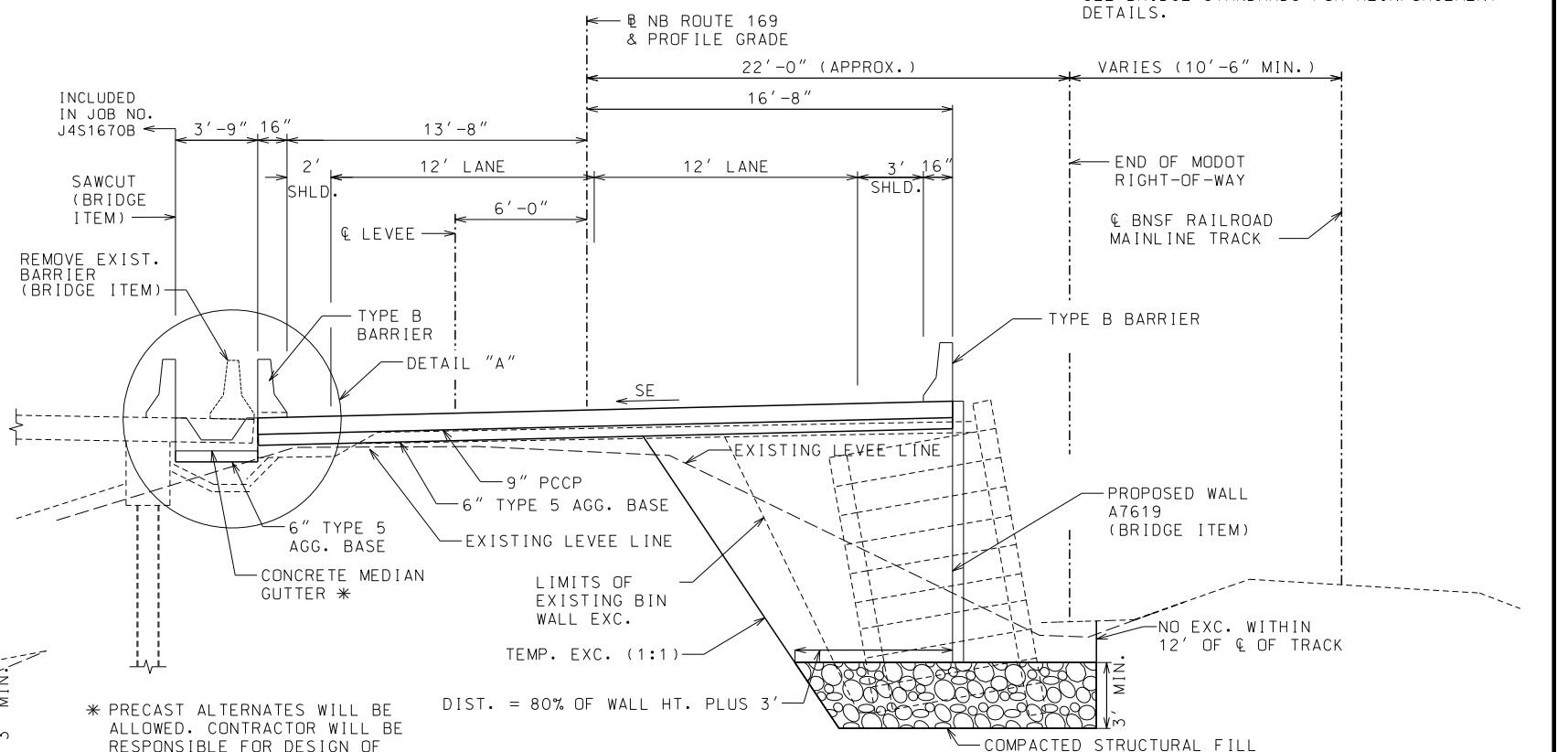
NOTE: NO DIRECT PAY FOR ANY INCIDENTAL
WORK INCLUDING FORMING, LABOR, MATERIALS
OR REINFORCEMENT REQUIRED FOR CONSTRUCTION.
SEE BRIDGE STANDARDS FOR REINFORCEMENT
DETAILS.



PROPOSED TYPICAL SECTION

(STA. 124+10.33 TO STA. 128+00.00) COMPACTED STRUCTURAL FILL
NOT TO SCALE

* CONCRETE SLOPE PROTECTION
STA. 124+10.00 TO STA. 127+03.00



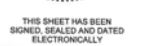
PROPOSED TYPICAL SECTION

(STA. 128+00 TO STA. 165+98.00)
NOT TO SCALE

* PRECAST ALTERNATES WILL BE
ALLOWED. CONTRACTOR WILL BE
RESPONSIBLE FOR DESIGN OF
PRECAST ALTERNATE. WATERPROOF
JOINTS WILL BE REQUIRED.



DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 2
		BRIDGE NO.	JOB NO. J4U1314B			
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY CLAY			

DATE 2/13/12

INLET (SEE ROAD PLANS)

PROPOSED WALL A8081 (BRIDGE ITEM)

TYPE B BARRIER

16" 3' 12' LANE 12' LANE 3'-4" 16"

16'-4" 16'-8"

SE 5% MAX.

9" PCCP

6" TYPE 5 AGG. BASE

LIMITS OF EXISTING BIN WALL EXC.

TEMP. EXC. (1:1)

DIST. = 80% OF WALL HT. PLUS 3'

PROPOSED WALL A7619 (BRIDGE ITEM)

NO EXC. WITHIN 12' OF C OF TRACK

3' MIN.

COMPACTED STRUCTURAL FILL

APPROX. 5'-7'

PROPOSED TYPICAL SECTION
(STA. 174+00.00 TO STA. 175+00.00)
NOT TO SCALE

BETWEEN STA. 171+11.61 AND STA. 175+04.50
A KCMO WATER SERVICES LINE IS BURIED
APPROX. 5'-7' FROM THE BIN WALL. CONTRACTOR
TO VERIFY LOCATION PRIOR TO BEGINNING
CONSTRUCTION.

(+) SHOULDER VARIES
STA. 174+00.00 - 3'-4"

NB ROUTE 169
& PROFILE GRADE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
SUMMARY OF QUANTITIES

ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 3
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			
DATE 3/2/12			



SHEET 1 OF 4

PERMANENT STRIPING					
SHEET NO.	ROADWAY	WET REFLECTIVE EPOXY			
		6" WHITE		6" YELLOW	
		SOLID LF	INTER. LF	SOLID LF	INTER. LF
20	NB 169	75		75	
21	NB 169	800		800	
22	NB 169	800		800	
23	NB 169	800		800	
24	NB 169	800		800	
25	NB 169	800		800	
26	NB 169	804		797	
27	NB 169	252		249	
16	NB 169		3325		
TOTAL LENGTH		5131	3325	51218	
ADJUSTED TOTAL		5131	832*	5128	
PAY TOTAL		5963		5128	

* TOTAL LENGTH REDUCED BY A FACTOR OF 0.25

CONTRAST PAVEMENT STRIPING					
SHEET NO.	ROADWAY	10" GROOVE LF	9" BLACK LF	6" WHITE LF	7" GROOVE LF
		LF	LF	LF	LF
20	NB 169	75	75	75	
21	NB 169	800	800	800	
22	NB 169	800	800	800	
23	NB 169	800	800	800	
24	NB 169	800	800	800	
25	NB 169	800	800	800	
26	NB 169	800	800	800	
27	NB 169	250	250	250	
TOTAL LENGTH		5125	5125	5125	
ADJUSTED TOTAL		1283*	1283*	1283*	
PAY TOTAL		1283	1283	1283	

* TOTAL LENGTH REDUCED BY A FACTOR OF 0.25

EROSION CONTROL										
SHEET NO.	ROADWAY	LOC	SILT FENCE LF	SEDIMENT REMOVAL CY	INLET CHECKS EA	TYPE II DITCH CHECKS EA	FURNISHING TYPE 2 ROCK DITCH LINER CY	PLACING TYPE 2 ROCK DITCH LINER CY	ROCK LINING CY	REMARKS
5	NB 169	LT		2	5					
6	NB 169	LT			5					
7	NB 169	LT			6					
8	NB 169	LT			5					
9	NB 169	LT			5					
10	NB 169	LT			1					
19	NB 169	LT	405	2		2				
10-11	NB 169	LT					89	89		170+00-173+00
11	NB 169	LT							1	174+50.00
11	NB 169	LT							1	173+98.00
TOTAL			405	4	27	2	89	89	2	

CONTRACTOR FURNISHED SURVEYING

LUMP SUM = 1

MOBILIZATION

LUMP SUM = 1

CLEARING AND GRUBBING

ACRE = 1

TEMP SHORING

LUMP SUM = 1

CONCRETE PAVEMENT						
SHEET NO.	STATION	STATION	LOCATION	ROADWAY	9" NON-REINF CONCRETE PVMT. SY	PORTLAND CEMENT CONCRETE SHOULDER RUMBLE STRIP STA
4	123+75.00	124+50.00	LT/RT	ROUTE 169	281.9	1.5
5	124+50.00	132+50.00	LT/RT	ROUTE 169	2850.0	16
6	132+50.00	140+50.00	LT/RT	ROUTE 169	2814.8	16
7	140+50.00	148+50.00	LT/RT	ROUTE 169	2814.8	16
8	148+50.00	156+50.00	LT/RT	ROUTE 169	2814.8	16
9	156+50.00	164+50.00	LT/RT	ROUTE 169	2814.8	16
10	164+50.00	172+50.00	LT/RT	ROUTE 169	2813.5	16
11	172+50.00	174+64.00	LT/RT	ROUTE 169	884.2	5
TOTAL					18088.8	102.5

TEMPORARY PAVEMENT MARKING										
TCP SHEET NO.	STAGE	REMOVE EXIST. 6" S.W. LF	PLACE 4" S.W. PRMT LF	REMOVE 4" S.W. PRMT LF	REMOVE EXIST. 6" I.W. LF	PLACE 4" I.W. PRMT LF	REMOVE 4" I.W. PRMT LF	REMOVE EXIST. 6" S.Y. LF	PLACE 4" S.Y. PRMT LF	REMOVE 4" S.W. PRMT LF
16	DETOUR		3365	3365	3325			60	60	
TOTAL LENGTH			3365	3365	832			60	60	

(x 0.25) (x 0.25) (x 0.25)

SLOPE PROTECTION								
SHEET NO.	STATION	STATION	ROADWAY	LOC	DEPTH/ THICKNESS FT.	AVG. SURFACE WIDTH FT.	LENGTH FT.	CONCRETE SLOPE PROTECTION SQ. YD.
4-5	123+75.00	127+03.00	NB 169	RT	-	1.5	328	54
4	121+98.00	123+75.00	NB 169	LT	-	8.5	177	168
TOTAL								222

GUARDRAIL								
SHEET NO.	FROM STATION	TO STATION	LOCATION	ROADWAY	TYPE A LF	BRIDGE ANCHOR SECTION EA	TRANSITION SECTION EA	TYPE A CRASHWORTHY END TERMINAL EA
4	118+31.25	123+57.00	RT	NB 169	505	1	1	1
4	120+50.00	123+57.00	LT	NB 169	221	1	1	1
10	167+57.71	174+00.00	LT	NB 169	537	2	2	
TOTAL					1263	4	4	2

CONCRETE TRAFFIC BARRIER					
SHEET NO.	FROM STATION	TO STATION	LOCATION	ROADWAY	TYPE B CONCRETE TRAFFIC BARRIER (LF)
4	123+75.00	124+50.00	MEDIAN	NB 169	75
4	123+75.00	124+50.00	RT	NB 169	75
5	124+50.00	132+50.00	MEDIAN	NB 169	800
5	124+50.00	132+50.00	RT	NB 169	800
6	132+50.00	140+50.00	MEDIAN	NB 169	800
6	132+50.00	140+50.00	RT	NB 169	800
7	140+50.00	148+50.00	MEDIAN	NB 169	800
7	140+50.00	148+50.00	RT	NB 169	800
8	148+50.00	156+50.00	MEDIAN	NB 169	800
8	148+50.00	156+50.00	RT	NB 169	800
9	156+50.00	164+50.00	MEDIAN	NB 169	800
9	156+50.00	164+50.00	RT	NB 169	800
10	164+50.00	167+57.71	MEDIAN	NB 169	307
10	164+50.00	172+50.00	RT	NB 169	806
11	174+00.00	175+00.00	MEDIAN	NB 169	100
11	172+50.00	175+00.00	RT	NB 169	252
TOTAL					9616

AGGREGATE						
SHEET NO.	STATION	STATION	LOCATION	ROADWAY	6" TYPE 5 AGGREGATE SYD.	6" TYPE 5 AGGREGATE SYD. *
4	123+75.00	124+50.00	LT/RT	NB 169	281.9	31.2
5	124+50.00	132+50.00	LT/RT	NB 169	2850.0	333.0
6	132+50.00	140+50.00	LT/RT	NB 169	2814.8	333.3
7	140+50.00	148+50.00	LT/RT	NB 169	2814.8	333.3
8	148+50.00	156+50.00	LT/RT	NB 169	2814.8	333.3
9	156+50.00	164+50.00	LT/RT	NB 169	2814.8	333.3
10	164+50.00	172+50.00	LT/RT	NB 169	2813.5	86.6
11	172+50.00	175+00.00	LT/RT	NB 169	884.2	
TOTAL					18089	1784
PAY TOTAL					19873	

* UNDER CONCRETE MEDIAN GUTTER

EARTHWORK								
SHEET NO.	STATION	STATION	ROADWAY	CLASS A EXCAVATION CY	COMPACTED STRUCTURAL FILL CY	COMPACTING EMBANKMENT CY	COMPACTING IN CUT STA	EXCESS* CY
4-11	123+09.00	175+04.50	NB 169	47969	7720	49	51.3	47920
TOTAL				47969	7720	49	51.3	47920

EARTHWORK INCLUDES EXISTING PAVEMENT AND BIN WALL.
EARTHWORK IS UNADJUSTED VOLUMES.

* FOR INFORMATION ONLY



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	
		BRIDGE NO.
		DATE PREPARED

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
SUMMARY OF QUANTITIES

ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 3
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			

MISSOURI STATE OF MISSOURI
CORY MICHAEL
PROFESSIONAL ENGINEER
NUMBER
PE-000016689

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12

SHEET 2 OF 4

DRAINAGE STRUCTURES											731.00T			614.30E				731.10R								614-11B		614-10T							731-99.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
PLAN SHEET	CULVERT SHEET	STATION	ROADWAY	LOC	STRUCT	TYPE	DESIGN 'D'	CLASS 3 EXC. (CY)	PRECAST CONCRETE MANHOLE (PAY DEPTH)			MANHOLE FRAME & COVER (TYPE - EA)					PRECAST CONCRETE DROP INLET (PAY DEPTH)								GRATES AND CURVED VANE		BEARING PLATES (EA) PARALLEL BAR					PIPE OPENINGS	MODIFIED TYPE A INLET RING EA	FES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
									48"	60"	72"	1A	1B	2	3	CURB INLET	2.5X3	2X2	3X2	3X3	4X2	5X2	5X3	2X2	4X2	4X2	3X2	5X3	3.1X2.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

SEEDING						
FROM STA	FROM ROADWAY	FROM LOC	TO STA	TO ROADWAY	LOC	SEEDING COOL / WARM SEASON MIXTURE ACRE
170+00	NB 169	LEFT	175+00	NB ROUTE 169	LEFT	1.0
TOTAL						1.0

PAVED DITCH							
SHEET NO.	STATION	STATION	ROADWAY	LOC	SURFACE WIDTH FT	CONCRETE MEDIAN GUTTER FT	PAVED DITCH SQYD
10	165+98.00	170+00.00	NB 169	LT	3'-8'		220
11	173+98.00		NB 169	LT	4'		87
4-10	123+75.00	165+98.00	NB 169	LT	3'-9"	4282	
TOTAL						4282	307

CONCRETE APPROACH PAVEMENT					
SHEET NO.	STATION	STATION	ROADWAY	LOC	CONCRETE APPROACH PAVEMENT SQ. YD.
11	174+64.50	174+79.50	NB 169	LT/RT	55
TOTAL					55

REMOVAL OF IMPROVEMENTS				
SHEET NO.	FROM STATION	TO STATION	LOCATION	DESCRIPTION
4	118+54.00	124+10.33	19' RT.	EXISTING GUARDRAIL
4	120+50.00	123+00.00	MEDIAN	EXISTING GUARDRAIL
4-11	123+09.71	175+00.00	20' RT.	EXISTING BIN WALL*
4-10	123+73.00	167+57.71	MEDIAN	EXISTING CONCRETE TRAFFIC BARRIER
4-11	123+75.00	175+00.00	LT./RT.	EXISTING PAVEMENT*
4-10	123+75.00	167+57.81	MEDIAN	EXISTING SLOTTED DRAIN PIPE
4-11	124+10.33	175+00.00	17' RT.	EXISTING GUARDRAIL
10	165+98.00	170+00.00	MEDIAN	EXISTING CONCRETE DITCH
10-11	167+57.71	175+00.00	MEDIAN	EXISTING GUARDRAIL
4	123+75.00	124+50.00	LT	77' FULL DEPTH SAW CUT
5	124+50.00	128+00.00	LT	350' FULL DEPTH SAWCUT
9	164+00.00	164+50.00	LT	56' FULL DEPTH SAWCUT
10	164+50.00	165+98.00	LT	122' FULL DEPTH SAWCUT
TOTAL				1 LUMP SUM

* INCLUDED IN EARTHWORK

HDR

HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	
		BRIDGE NO.
		DATE PREPARED

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
SUMMARY OF QUANTITIES

ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 3
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			

STATE OF MISSOURI
CORRY MICHAEL
HATCHOFF
NUMBER
PE-000016689
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12

DRAINAGE PIPES																				
PLAN SHEET	CULVERT SHEET	UPSTREAM STRUCT	STATION	ROADWAY	LOC	DOWN-STREAM STRUCT	STATION	ROADWAY	LOC	HDPE PIPE*								FURNISHING TYPE 2 ROCK BLANKET (CYD) (35' L X 4' W X 2' T)	PLACING TYPE 2 ROCK BLANKET (CYD) (35' L X 4' W X 2' T)	
										12" (LF)	15" (LF)	18" (LF)	21" (LF)	24" (LF)	27" (LF)	30" (LF)	36" (LF)			42" (LF)
5		101	124+98.23	NB 169	LT					2									1.8	1.8
5		102	126+99.87	NB 169	LT					2									1.8	1.8
5		103	128+77.44	NB 169	LT					45									10.3	10.3
5		104	130+27.41	NB 169	LT					45									10.3	10.3
5		105	131+77.36	NB 169	LT					45									10.3	10.3
6		106	133+27.34	NB 169	LT					45									10.3	10.3
6		107	134+77.39	NB 169	LT					45									10.3	10.3
6		108	136+27.43	NB 169	LT					45									10.3	10.3
6		109	137+77.41	NB 169	LT					45									10.3	10.3
6		110	139+27.42	NB 169	LT					45									10.3	10.3
7		111	140+77.38	NB 169	LT					45									10.3	10.3
7		112	142+27.34	NB 169	LT					45									10.3	10.3
7		113	143+77.31	NB 169	LT					45									10.3	10.3
7		114	145+27.44	NB 169	LT					45									10.3	10.3
7		115	146+77.40	NB 169	LT					45									10.3	10.3
7		116	148+27.44	NB 169	LT					45									10.3	10.3
8		117	149+77.31	NB 169	LT					45									10.3	10.3
8		118	151+27.47	NB 169	LT					45									10.3	10.3
8		119	152+77.47	NB 169	LT					45									10.3	10.3
8		120	154+27.44	NB 169	LT					45									10.3	10.3
8		121	155+77.60	NB 169	LT					45									10.3	10.3
9		122	157+27.50	NB 169	LT					45									10.3	10.3
9		123	158+77.50	NB 169	LT					45									10.3	10.3
9		124	160+27.48	NB 169	LT					45									10.3	10.3
9		125	161+77.44	NB 169	LT					45									10.3	10.3
9		126	163+27.29	NB 169	LT					45									10.3	10.3
10		127	164+78.77	NB 169	LT					2									1.8	1.8
11		100	174+50.00	NB 169	LT					6									1.8	1.8
										TOTAL	1092								254	254

* PIPES ON THIS PROJECT WERE DESIGNED USING HDPE PIPE.
WHERE HDPE PIPE IS SPECIFIED, CONTRACTOR
MAY CONSIDER ANY APPROVED GROUP A PIPE.

HDR

HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

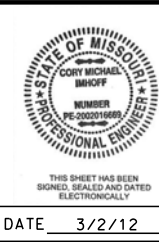
MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	
		BRIDGE NO.
		DATE PREPARED

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
SUMMARY OF QUANTITIES

ROUTE	STATE	DISTRICT	SHEET NO.
169	MO	KC	3
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			
DATE 3/2/12			



EFFECTIVE: 02-01-2012 SHEET 4 OF 4

SIGN	SIZE (IN.)	AREA (SQ. FT.)	QTY	TOTAL AREA	QTY RELOC	TOTAL RELOC AREA	DESCRIPTION	SIGN	SIZE (IN.)	AREA (SQ. FT.)	QTY	TOTAL AREA	QTY RELOC	TOTAL RELOC AREA	DESCRIPTION
WARNING SIGNS								W020-5a	48X48	16.00					RIGHT/CENTER/LEFT TWO LANES CLOSED AHEAD
W01-1L	48X48	16.00					TURN (SYMBOL LEFT ARROW)	W020-6a	48X48	16.00	2.00	32.00			RIGHT/CENTER/LEFT LANE CLOSED
W01-1R	48X48	16.00					TURN (SYMBOL RIGHT ARROW)	W020-7a	48X48	16.00					FLAGGER (SYMBOL) WITH FLAGS
W01-2L	48X48	16.00					CURVE (SYMBOL LEFT ARROW)	W021-2	36X36	9.00					FRESH OIL
W01-2R	48X48	16.00					CURVE (SYMBOL RIGHT ARROW)	W021-5b	48X48	16.00					SHOULDER WORK AHEAD
W01-3L	48X48	16.00					REVERSE TURN (SYMBOL LEFT ARROW)	W022-1	48X48	16.00					BLASTING ZONE AHEAD
W01-3R	48X48	16.00					REVERSE TURN (SYMBOL RIGHT ARROW)	W022-2	42X36	10.50					TURN OFF 2-WAY RADIO AND PHONE
W01-4L	48X48	16.00					REVERSE CURVE (SYMBOL LEFT ARROW)	W022-3	42X36	10.50					END BLASTING ZONE
W01-4R	48X48	16.00					REVERSE CURVE (SYMBOL RIGHT ARROW)	W022-6e	21X15	2.19					WET PAINT (ARROW PIVOTS)
W01-4bL	48X48	16.00					DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS)	GUIDE SIGNS							
W01-4bR	48X48	16.00					DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS)	SPECIAL	36X36	9.00					FRESH OIL/LOOSE GRAVEL
W01-4cL	48X48	16.00					TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS)	E05-1	36X48	12.00					GORE EXIT
W01-4cR	48X48	16.00					TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS)	E05-2	48X36	12.00					EXIT OPEN
W01-6	48X24	8.00					HORIZONTAL ARROW (SYMBOL)	E05-2a	48X36	12.00					EXIT CLOSED
W01-6a	72X36	18.00					HORIZONTAL ARROW (SYMBOL ON PERMANENT BARRICADE)	G020-1	60X24	10.00					ROAD WORK NEXT XX MILES
W01-7	48X24	8.00					DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	G020-2	48X24	8.00					END ROAD WORK
W01-7a	72X36	18.00					DOUBLE HEAD HORIZONTAL ARROW (SYMBOL ON PERMANENT BARRICADE)	G020-4	36X18	4.50					PILOT CAR FOLLOW ME
W01-8	18X24	3.00					CHEVRON (SYMBOL)	SPECIAL	42X30	8.75					PLEASE WAIT FOR PILOT CAR
W01-8a	36X48	12.00					CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	G023-1	36X12	3.00					WORK ZONE (PLAQUE)
W03-1a	48X48	16.00					STOP AHEAD (SYMBOL)	M1-4	24X24	4.00	15.00	60.00			END DETOUR
W03-2a	48X48	16.00					YIELD AHEAD (SYMBOL)	M3-1	24X12	2.00	15.00	30.00			DETOUR (LEFT ARROW)
W03-3	48X48	16.00					SIGNAL AHEAD (SYMBOL)	M04-1	24X12	2.00					DETOUR (RIGHT ARROW)
W03-4	48X48	16.00					BE PREPARED TO STOP	M04-8	24X12	2.00	15.00	30.00			DETOUR (ARROW LEFT)
W03-5	48X48	16.00					SPEED LIMIT XX AHEAD (SYMBOL)	M04-8a	24X18	3.00	1.00	3.00			DETOUR (ARROW RIGHT)
W04-1L	48X48	16.00					MERGE (SYMBOL FROM LEFT)	M6-1	21X15	2.19	4.00	8.76			
W04-1R	48X48	16.00					MERGE (SYMBOL FROM RIGHT)	M6-2L	21X15	2.19	5.00	10.76			
W05-1	48X48	16.00					ROAD/BRIDGE/RAMP NARROWS	M6-2R	21X15	2.19	1.00	2.19			
W05-3	48X48	16.00					ONE LANE BRIDGE	M6-3	21X15	2.19	5.00	10.95			
W05-5	48X48	16.00					NARROW LANES	REGULATORY SIGNS							
W06-1	48X48	16.00					DIVIDED HIGHWAY (SYMBOL)	R1-1	48X48	13.25					STOP
W06-2	48X48	16.00					DIVIDED HIGHWAY END (SYMBOL)	R1-2	48 TRI.	6.93					YIELD
W06-3	48X48	16.00					TWO WAY TRAFFIC (SYMBOL)	R1-2a	36X36	9.00					TO ONCOMING TRAFFIC (PLAQUE)
W07-3a	30X24	5.00					NEXT XX MILES (PLAQUE)	R1-3	20X9	1.25					X-WAY (PLAQUE)
W08-1	48X48	16.00					BUMP	R2-1	36X48	12.00					SPEED LIMIT XX
W08-2	48X48	16.00					DIP	R3-1	48X48	16.00					NO RIGHT TURN (SYMBOL)
W08-3	48X48	16.00					PAVEMENT ENDS	R3-2	48X48	16.00	1.00	16.00			NO LEFT TURN (SYMBOL)
W08-4	48X48	16.00					SOFT SHOULDER	R3-3	36X36	9.00					NO TURNS
W08-5	48X48	16.00					SLIPPERY WHEN WET (SYMBOL)	R3-4	48X48	16.00					NO U-TURN (SYMBOL)
W08-6	48X48	16.00					TRUCK CROSSING WITH FLAGS	R3-7L	30X30	6.25					LEFT LANE MUST TURN LEFT
W08-6c	48X48	16.00					TRUCK ENTRANCE	R3-7R	30X30	6.25	1.00	6.25			RIGHT LANE MUST TURN RIGHT
W08-7	36X36	9.00					LOOSE GRAVEL	R4-1	36X48	12.00					DO NOT PASS
W08-9	48X48	16.00					LOW SHOULDER	R4-2	36X48	12.00					PASS WITH CARE
W08-9a	48X48	16.00					SHOULDER DROP-OFF	R4-7aL	36X48	12.00					KEEP LEFT (HORIZONTAL ARROW)
W08-11	48X48	16.00					UNEVEN LANES	R4-7a	36X48	12.00					KEEP RIGHT (HORIZONTAL ARROW)
W08-12	36X36	9.00					NO CENTER STRIPE	R5-1	30X30	6.25					DO NOT ENTER
W10-1	42 RND.	9.62					RAILROAD CROSSING	R5-1a	36X24	6.00					WRONG WAY
W012-1	24X24	4.00					DOUBLE DOWN ARROW (SYMBOL)	R6-1L	48X18	6.00					ONE WAY ARROW (LEFT)
W012-2	48X48	16.00					LOW CLEARANCE (SYMBOL)	R6-1R	48X18	6.00					ONE WAY ARROW (RIGHT)
W012-2x	24X18	3.00					LOW CLEARANCE (PLAQUE)	R6-2L	24X30	5.00					ONE WAY (LEFT)
W012-3a,b	144X24	24.00					OVERHEAD LOW CLEARANCE (FEET AND INCHES)	R6-2R	24X30	5.00					ONE WAY (RIGHT)
SPECIAL	120X60	50.00					LOW CLEARANCE XX FT XX IN XX MILES AHEAD	R10-6	24X36	6.00					STOP HERE ON RED (45° ARROW)
SPECIAL	120X60	50.00					WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD	R11-2	48X30	10.00	4.00	40.00			ROAD CLOSED
W013-1	30X30	6.25					ADVISORY SPEED (PLAQUE)	R11-3a	60X30	12.50					ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
W016-2	30X24	5.00					XXX FEET (PLAQUE)	R11-4	60X30	12.50					ROAD CLOSED TO THRU TRAFFIC WHEN FLASHING
W016-3	30X24	5.00					X MILE (PLAQUE)	S4-4	36X15	3.75					FINE SIGN
W020-1	48X48	16.00	4.00	64.00			ROAD/BRIDGE/RAMP WORK AHEAD	CONST-3A	60X48	20.00					SPEEDING/PASSING (PLATE)
W020-2	48X48	16.00					DETOUR AHEAD	CONST-3X	56X12	4.67					
W020-3	48X48	16.00					ROAD CLOSED AHEAD	MISCELLANEOUS SIGNS							
W020-4	48X48	16.00					ONE LANE ROAD AHEAD	SPECIAL	36X48	12.50	8.00	100.00			AIRPORT TRAFFIC ONLY
W020-5	48X48	16.00	3.00	48.00			RIGHT/CENTER/LEFT LANE CLOSED AHEAD	SPECIAL	60X30	12.50	7.00	87.50			FOLLOW DETOUR
								SPECIAL	48X48	16.00					DRIVE SMART
								616-10.05 CONSTRUCTION SIGNS TOTAL							
								616-10.10 RELOCATED SIGNS TOTAL							

ITEM NUMBER	TOTAL QTY	DESCRIPTION
612-20.08		IMPACT ATTENUATOR (8 SAND BARRELS)
612-20.09		IMPACT ATTENUATOR (9 SAND BARRELS)
612-20.10		IMPACT ATTENUATOR (10 SAND BARRELS)
612-20.12		IMPACT ATTENUATOR (12 SAND BARRELS)
612-20.14		IMPACT ATTENUATOR (14 SAND BARRELS)
612-20.17		IMPACT ATTENUATOR (17 SAND BARRELS)
612-20.19		IMPACT ATTENUATOR (19 SAND BARRELS)
612-20.20		REPLACEMENT SAND BARREL
612-20.30		IMPACT ATTENUATOR ARRAY (RELOCATION)
612-30.00A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
616-10.07		SPEED LIMIT AND STROBE LIGHT ASSEMBLY
616-10.08	4	ADVANCED WARNING RAIL SYSTEM
616-10.09	18	FLAG ASSEMBLY
616-10.20		CHANNELIZER (DRUM-LIKE)
616-10.22		CHANNELIZER (CONES)
616-10.24		CHANNELIZER (TRIM LINE) WITH LIGHT
616-10.25	78	CHANNELIZER (TRIM LINE)
616-10.26		CHANNELIZER (VERTICAL PANEL)
616-10.27		CHANNELIZER (VERTICAL PANEL) WITH LIGHT
616-10.28		CHANNELIZER
616-10.30	13	TYPE III MOVEABLE BARRICADE
616-10.31		TYPE III MOVEABLE BARRICADE WITH LIGHT
616-10.33	8	DIRECTION INDICATOR BARRICADE
616-10.34		DIRECTION INDICATOR BARRICADE, WITH LIGHT
616-10.40	2	FLASHING ARROW PANEL
616-10.47		TYPE III OBJECT MARKER
616-10.51		WARNING LIGHT, TYPE A
616-10.52		WARNING LIGHT, TYPE B
616-10.53		WARNING LIGHT, TYPE C
616-10.70		TUBULAR MARKER
616-10.95		RADAR SPEED ADVISORY SYSTEM
616-10.96		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
616-10.98	7	CHANGEABLE MESSAGE SIGN, CONTRACTOR FURNISHED/RETAINED
616-11.00		CHANGEABLE MESSAGE SIGN, CONTRACTOR FURNISHED/COMMISSION RETAINED
617-36.00D		CONTRACTOR FURNISHED/RETAINED TEMPORARY TRAFFIC BARRIER
617-36.02B		CONTRACTOR FURNISHED/COMMISSION RETAINED TEMPORARY TRAFFIC BARRIER
617-40.00A		TEMPORARY TRAFFIC BARRIER HEIGHT TRANSITION
617-50.10A		RELOCATING TEMPORARY TRAFFIC BARRIER
617-60.00B		COMMISSION FURNISHED/RETAINED TEMPORARY TRAFFIC BARRIER
617-70.00B		COMMISSION FURNISHED/RETAINED TEMPORARY TRAFFIC BARRIER HEIGHT TRANSITION
901-94.00		TEMPORARY LIGHTING
902-94.00		TEMPORARY TRAFFIC SIGNALS
902-94.01		TEMPORARY TRAFFIC SIGNALS AND LIGHTING
616-99.02	35	SEQUENTIAL FLASHING WARNING LIGHTS

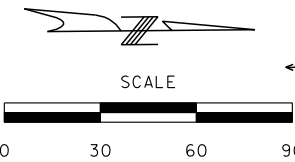
ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

ALL BEARINGS ARE BASED ON STATE PLANE, WESTERN ZONE

RIGHT-OF-WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 120+00.00 TO STA. 177+00.00, A DISTANCE OF 1.08 MILES.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY AND RECORDS. THE COMMISSION DOES NOT WARRANT THE LOCATIONS OF THESE FACILITIES AS PRECISE. 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 THE EXISTENCE AND PRECISE LOCATION OF ALL FACILITIES AND TO AVOID DAMAGE. SEE THE JOB SPECIAL PROVISIONS FOR A LIST OF UTILITY COMPANIES ON OR WITHIN THE VICINITY OF THE PROJECT LIMITS.

CONTRACTOR TO CONNECT MSE WALL DRAINAGE SYSTEM TO DROP INLET NEAR STATION 115+25 USING 6" PIPE; GROUT PIPE INTO THE WALL OF INLET AT AN APPROXIMATE INVERT OF 748.5'. (BRIDGE ITEM. SEE BRIDGE SPECIAL PROVISIONS)



BNSF MURRAY YARD
BURLINGTON NORTHERN SANTA FE RAILWAY
0.86 TEMP. ESM'T.

CURVE EXSB01
PI 123+72.07
PC 120+40.67
PT 127+02.40
Δ 7° 59' 39.0" (LT)
D 1° 12' 29.1"
L 661.73'
T 331.40'
R 4,742.73'

REMOVE 429' EXIST. BARRIER
(BEGIN STA. 123+73.00)

BEGIN PROJECT STA. 123+75.00
STATE IMPROVEMENT BEGINS AT A POINT APPROX. 981.26' NORTH AND 24.90' WEST OF THE SE CORNER OF THE SE 1/4 SEC. 15, T50N, R33W.

ROUTE	STATE	DISTRICT	SHEET NO.
169	MO	KC	4
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			
DATE			2/13/12



SAWCUT STA. 123+75 TO STA. 128+00

STATION 124+50
MATCHLINE

CURVE EXNB01
PI 122+10.78
PC 120+97.30
PT 123+24.14
Δ 4° 32' 13.0" (RT)
D 2° 00' 00.0"
L 226.85'
T 113.48'
R 2,864.79'

UTILITY CONTACTS

KANSAS CITY POWER & LIGHT CO.	816-471-5275
SOUTHWESTERN BELL COMPANY	913-676-1846
MISSOURI GAS ENERGY	816-472-3464
AT&T CORPORATION	816-391-5077
KANSAS CITY MISSOURI WATER DEPT.	816-513-2109
KANSAS CITY MISSOURI PUBLIC WORKS	816-513-2627

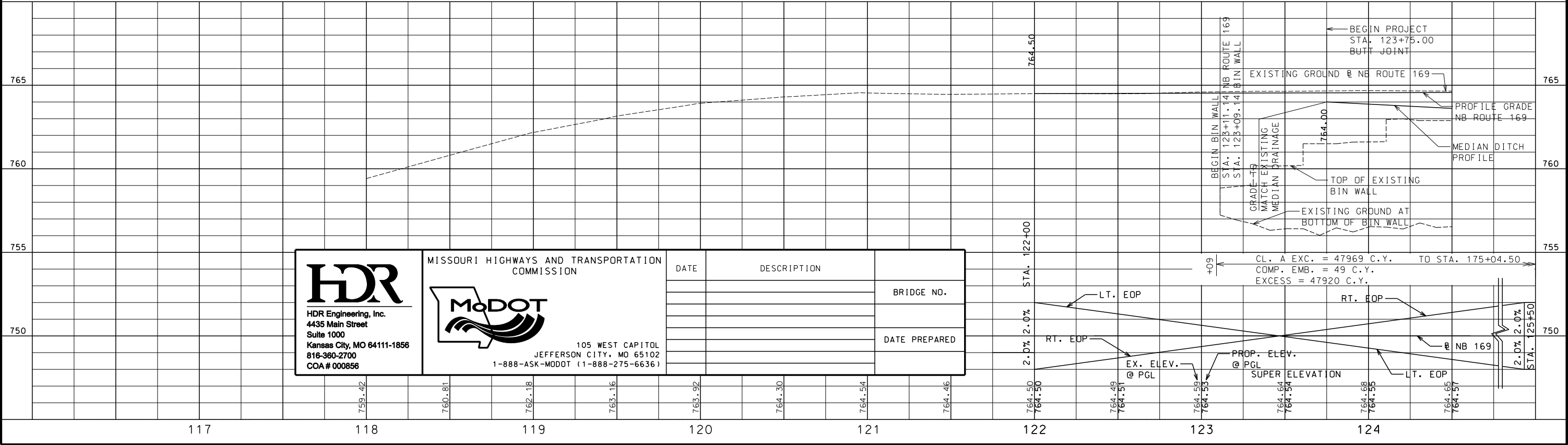
BEGIN BIN WALL
STA. 0+00 = STA. 123+11.25
NB RTE 169 32'-8 1/2" RT.

TYPE B BARRIER
(BEGIN STA. 123+75)
4" CONCRETE SLOPE PROTECTION
STA. 123+75 TO STA. 127+03

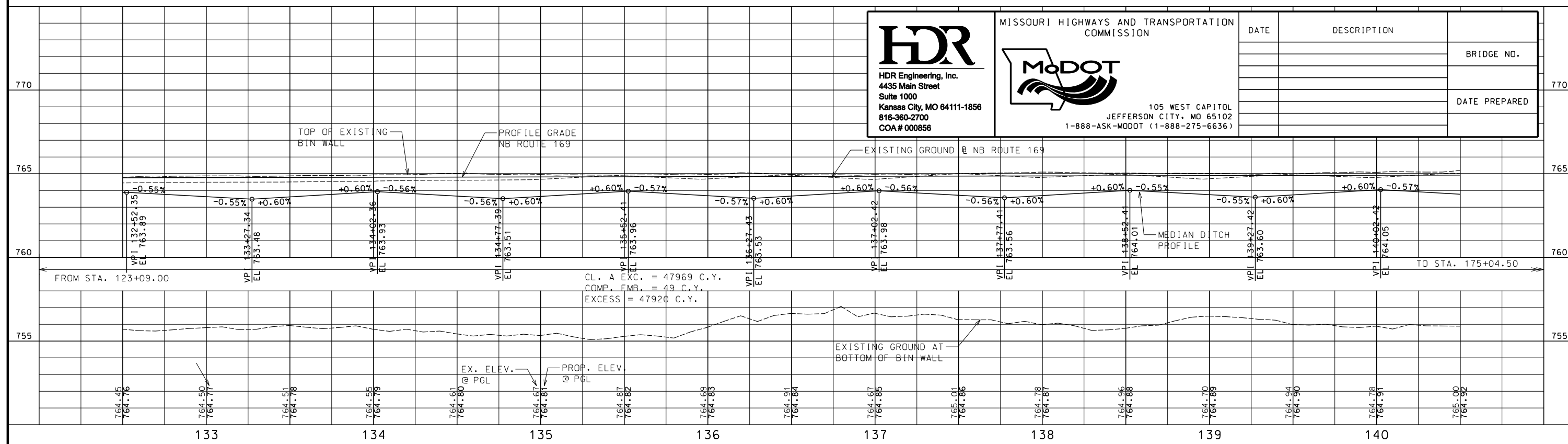
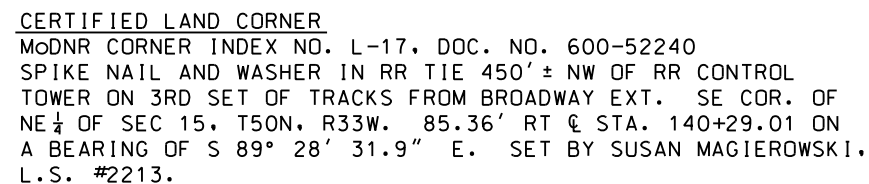
TRANSITION SECTION & BRIDGE ANCHOR SECTION

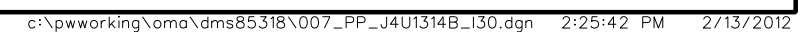
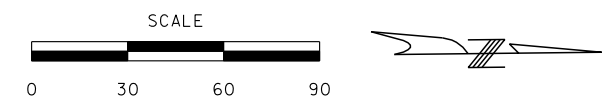
REMOVE EXISTING WALL
REPLACE WITH WALL A7619
(BRIDGE ITEM)

525.75' TYPE A GUARDRAIL (STA. 118+31.25 TO STA. 123+57.00)



 HDR Engineering, Inc. 4435 Main Street Suite 1000 Kansas City, MO 64111-1856 816-360-2700 COA # 000856	 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	DATE	DESCRIPTION	BRIDGE NO.
				DATE PREPARED






STATE OF MISSOURI
CORY MICHAEL
IMHOFF
NUMBER
PE-2002016688
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12



MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

The logo for the Missouri Department of Transportation (MoDOT). It features a stylized outline of the state of Missouri on the left. To the right of the outline, the word "MoDOT" is written in a bold, sans-serif font. Below the text, there are three thick, curved, black lines that sweep from left to right, suggesting a road or a highway.

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Profile view of NB Route 169 showing profile grade, existing ground, and median ditch profile. The chart includes vertical curve data, elevations, and stationing.

Labels and Data:

- TOP OF EXISTING BIN WALL
- PROFILE GRADE NB ROUTE 169
- EXISTING GROUND @ NB ROUTE 169
- MEDIAN DITCH PROFILE
- Exc. = 47969 C.Y.
- EMB. = 49 C.Y.
- S = 47920 C.Y.
- TO STA. 175+04.50

Vertical Curve Data:

Station	Elevation (EL)	Grade (%)
152+77.47	763.87	-0.56%
153+52.47	764.32	+0.60%
154+27.44	763.90	-0.56%
155+02.44	764.35	+0.60%
155+77.60	763.93	-0.56%
156+02.44	764.35	+0.60%

Median Ditch Profile Elevations:

Station	Elevation (EL)
152+77.47	763.87
153+52.47	764.32
154+27.44	763.90
155+02.44	764.35
155+77.60	763.93
156+02.44	764.35

Profile Grade Elevations:

Station	Elevation (EL)
152+77.47	763.87
153+52.47	764.32
154+27.44	763.90
155+02.44	764.35
155+77.60	763.93
156+02.44	764.35

Existing Ground Elevations:

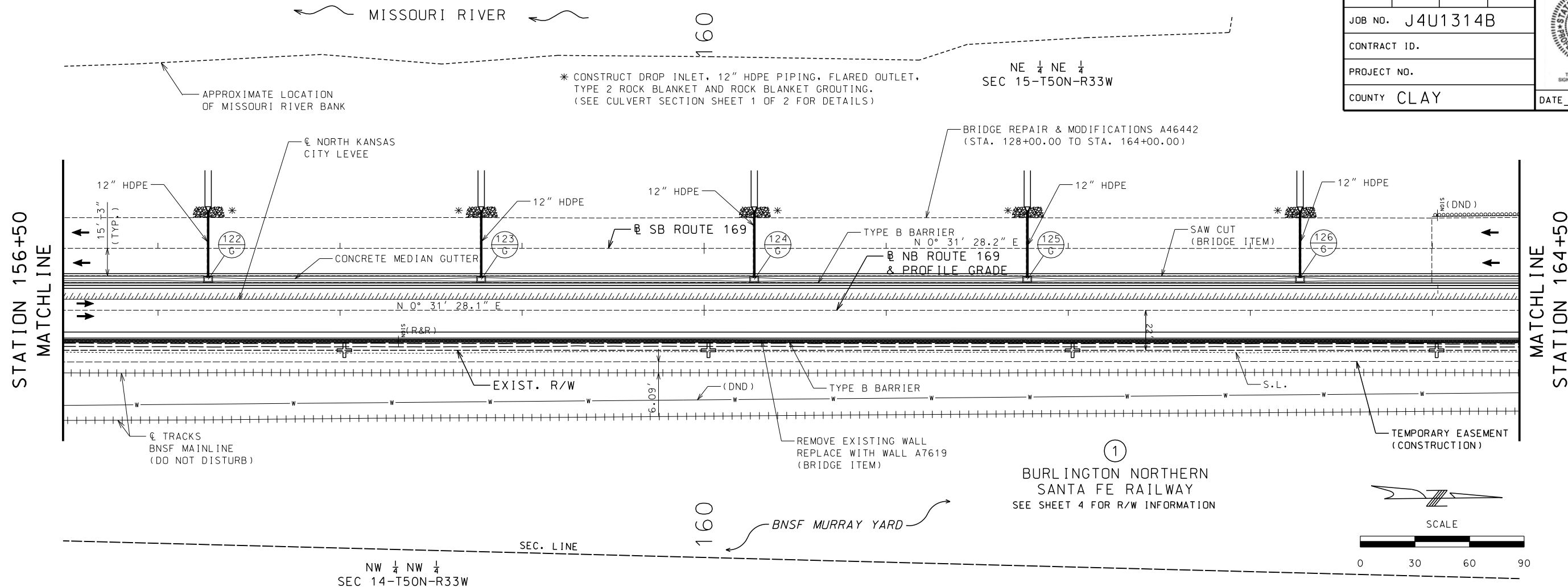
Station	Elevation (EL)
152+77.47	763.87
153+52.47	764.32
154+27.44	763.90
155+02.44	764.35
155+77.60	763.93
156+02.44	764.35

ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 9
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			
DATE 2/13/12			



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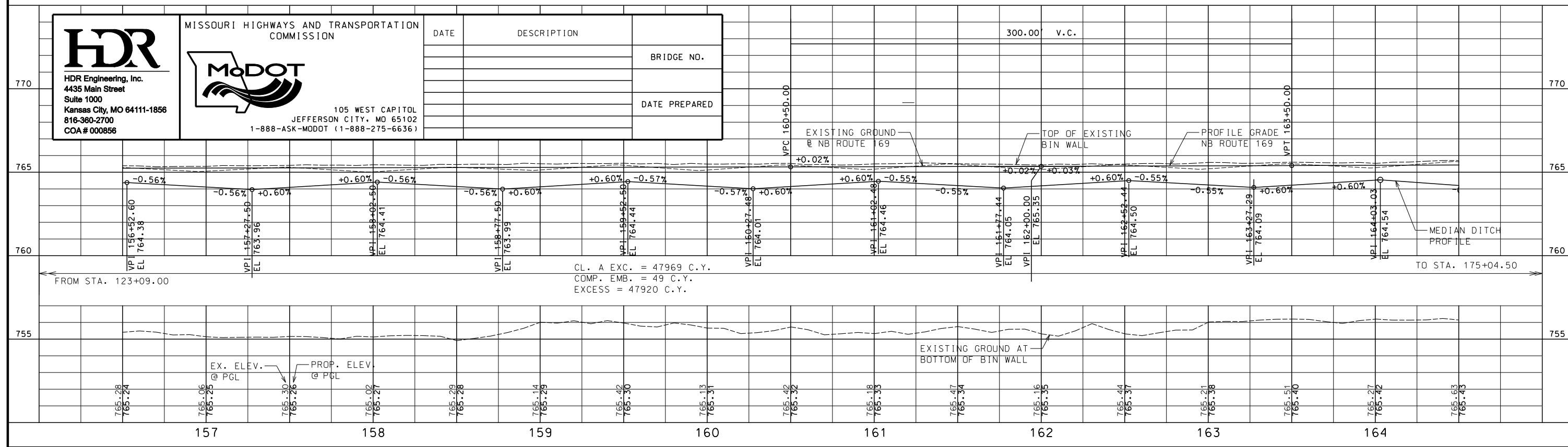
DATE 2/13/12



HDR
HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA# 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION
MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	BRIDGE NO.
DATE PREPARED		



			<div><div><div>HDR</div><div>HDR Engineering, Inc. 4435 Main Street Suite 1000 Kansas City, MO 64111-1856 816-360-2700 COA # 000856</div></div><div><div>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</div><div><div>MoDOT</div><div>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</div></div></div></div>	DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 12	<div><div><div>STATE OF MISSOURI</div><div>CORY MICHAEL HANKOFF</div><div>NUMBER PE-000016689</div><div>PROFESSIONAL ENGINEER</div></div><div>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY</div></div> DATE 2/13/12
						BRIDGE NO.	JOB NO. J4U1314B	CONTRACT ID.			
						DATE PREPARED	PROJECT NO.	COUNTY CLAY			
			<div>CP-1 N=1088191.998 (G) E=2764127.417 (G) W. COR. CONC. PIER FOOTING STA. 176+47.75 @ NB 169 OFF. 32.59' LT.</div>	<div>CP-5 N=1087591.538 (G) E=2764249.042 (G) RAILROAD SPIKE STA. 170+11.76 @ NB 169 OFF. 128.06' LT.</div>	<div>CP-12 N=1081186.278 (G) E=2763852.914 (G) C.L. ASPH. ROAD STA. 105+76.05 @ NB 169 OFF. 473.16' LT.</div>						
			<div>CP-13 N=1082016.891 (G) E=2764172.986 (G) BACK FENCE OF G.R. STA. 114+09.53 @ NB 169 OFF. 160.65' LT.</div>	<div>CP-18 N=1082772.500 (G) E=2764326.890 (G) G.R. E.P. STA. 121+66.16 @ NB 169 OFF. 14.44' LT.</div>	<div>CP-24 N=1086768.680 (G) E=2764353.070 (G) BORING HOLE STA. 161+63.39 @ NB 169 OFF. 47.93' LT.</div>						
			<div>CP-26 N=1085654.700 (G) E=2764342.550 (G) SIGN STA. 150+49.36 @ NB 169 OFF. 48.25' LT.</div>	<div>CP-28 N=1084529.370 (G) E=2764332.170 (G) N.W. COR. DROP INLET STA. 139+23.98 @ NB 169 OFF. 48.33' LT.</div>	<div>CP-30 N=1083554.820 (G) E=2764323.570 (G) S.W. COR. DROP INLET STA. 129+49.39 @ NB 169 OFF. 48.01' LT.</div>						
						REFERENCE POINTS SHEET 1 OF 1					

HDR

HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 13
		BRIDGE NO.	JOB NO. J4U1314B			
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY CLAY			

STATE OF MISSOURI
CORY MICHAEL
MAYNOR
NUMBER
PE-000016689
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12

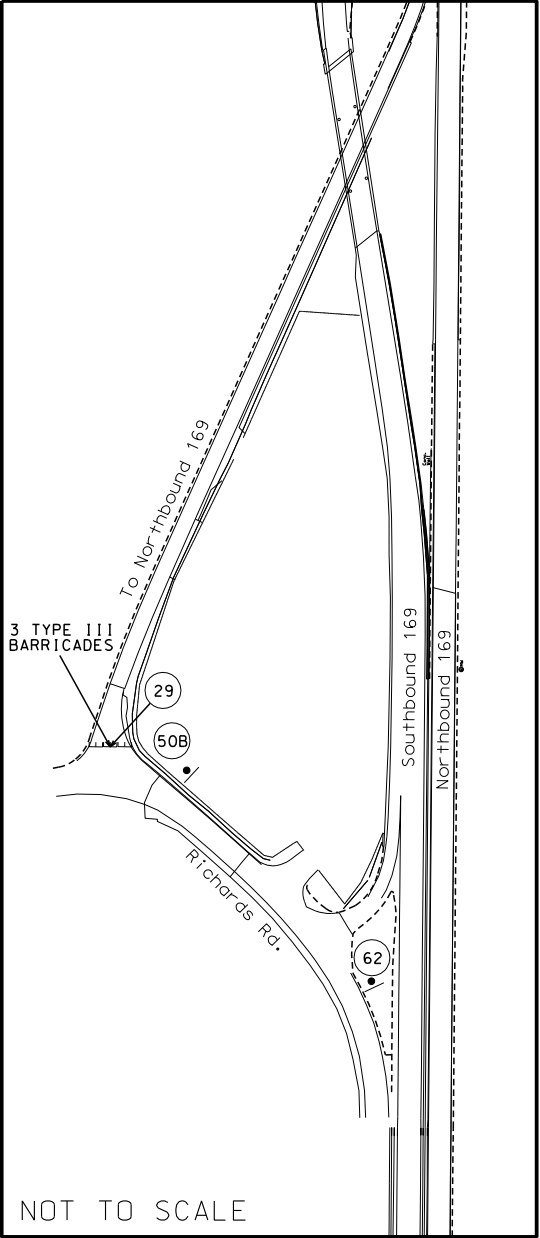
Coordinate Point Listing
Missouri Coordinate System of 1983

Reciprocal Average Grid Factor : 1.000089829227

SHEET NO.	STATION ¹	LOCATION	OFFSET ¹	NORTHING (FEET)	EASTING (FEET)	DESCRIPTION	DESIGN PT. ID
	100+00.00 BL NB 169	CL	0.00'	1,080,508.90	2,764,072.53	POT STA. 100+00.00	EXNB01
6	120+97.30 BL NB 169	CL	0.00'	1,082,605.92	2,764,091.58	PC STA. 120+97.30	
6	122+10.72 BL NB 169	LT.	2.25'	1,082,719.39	2,764,092.61	PI STA. 122+10.78	EXNB02
6	123+24.14 BL NB 169	CL	0.00'	1,082,832.42	2,764,102.61	PT STA. 123+24.14	
6	123+24.16 BL NB 169	CL	0.00'	1,082,832.44	2,764,102.61	PC STA. 123+24.16	
7	125+13.26 BL NB 169	RT.	3.74'	1,083,020.89	2,764,119.29	PI STA. 125+13.37	EXNB03
7	127+02.38 BL NB 169	CL	0.00'	1,083,210.07	2,764,121.02	PT STA. 127+02.38	
10	166+57.71 BL NB 169	CL	0.00'	1,087,164.89	2,764,157.22	PC STA. 166+57.71	
11	172+55.79 BL NB 169	RT.	101.03'	1,087,784.61	2,764,162.90	PI STA. 172+77.52	EXNB04
11	178+53.86 BL NB 169	CL	0.00'	1,088,282.74	2,763,794.17	PT STA. 178+53.86	
11	179+38.87 BL NB 169	CL	0.00'	1,088,351.06	2,763,743.60	PC STA. 179+38.87	
	180+73.85 BL NB 169	LT.	15.51'	1,088,461.41	2,763,661.92	PI STA. 180+76.17	EXNB05
	182+08.82 BL NB 169	CL	0.00'	1,088,596.29	2,763,636.36	PT STA. 182+08.82	
	204+62.05 BL NB 169	CL	0.00'	1,090,809.92	2,763,216.85	POT STA. 204+62.05	EXNB06
4	120+40.67 BL SB 169	CL	0.00'	1,082,551.29	2,764,034.90	PC STA. 120+40.67	
4	123+71.54 BL SB 169	RT.	11.56'	1,082,879.00	2,764,083.99	PI STA. 123+72.07	EXSB02
5	127+02.40 BL SB 169	CL	0.00'	1,083,210.36	2,764,087.02	PT STA. 127+02.40	
10	166+57.81 BL SB 169	CL	0.00'	1,087,165.25	2,764,123.23	PC STA. 166+57.81	
10	170+70.46 BL SB 169	RT.	61.57'	1,087,589.65	2,764,127.11	PI STA. 170+82.27	EXSB03
11	174+83.11 BL SB 169	CL	0.00'	1,087,947.66	2,763,899.15	PT STA. 174+83.11	
11	177+26.26 BL SB 169	CL	0.00'	1,088,152.73	2,763,768.56	PC STA. 177+26.26	
11	179+43.76 BL SB 169	LT.	20.95'	1,088,338.42	2,763,650.33	PI STA. 179+46.41	EXSB04
	181+61.26 BL SB 169	CL	0.00'	1,088,554.69	2,763,609.31	PT STA. 181+61.26	EXSB05
	204+56.94 BL SB 169	CL	0.00'	1,090,809.98	2,763,181.64	POT STA. 204+56.94	EXSB01
4	123+75.00 BL NB 169	CL	0.00'	1,082,883.10	2,764,106.82	NB 169 BEGIN WORK	
11	175+04.50 BL NB 169	CL	0.00'	1,087,984.07	2,763,974.35	NB 169 END WORK	
11	176+47.75 BL NB 169	LT.	32.59'	1,088,094.26	2,763,879.14	REFERENCE POINT CP-1	
10	170+11.76 BL NB 169	LT.	128.06'	1,087,493.85	2,764,000.75	REFERENCE POINT CP-5	
	105+76.05 BL NB 169	LT.	473.16'	1,081,089.16	2,763,604.66	REFERENCE POINT CP-12	
	114+09.53 BL NB 169	LT.	160.65'	1,081,919.70	2,763,924.70	REFERENCE POINT CP-13	
4	121+66.16 BL NB 169	LT.	14.44'	1,082,675.24	2,764,078.59	REFERENCE POINT CP-18	
9	161+63.39 BL NB 169	LT.	47.93'	1,086,671.07	2,764,104.77	REFERENCE POINT CP-24	
8	150+49.36 BL NB 169	LT.	48.25'	1,085,557.19	2,764,094.25	REFERENCE POINT CP-26	
6	139+23.98 BL NB 169	LT.	48.33'	1,084,431.96	2,764,083.87	REFERENCE POINT CP-28	
5	129+49.39 BL NB 169	LT.	48.01'	1,083,457.49	2,764,075.28	REFERENCE POINT CP-30	

1 Ground Distance
NOTE : The reciprocal of the average grid factor is used as a multiplier from state plane distance to ground distance.

DETAIL A



HDR Engineering, Inc.
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816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

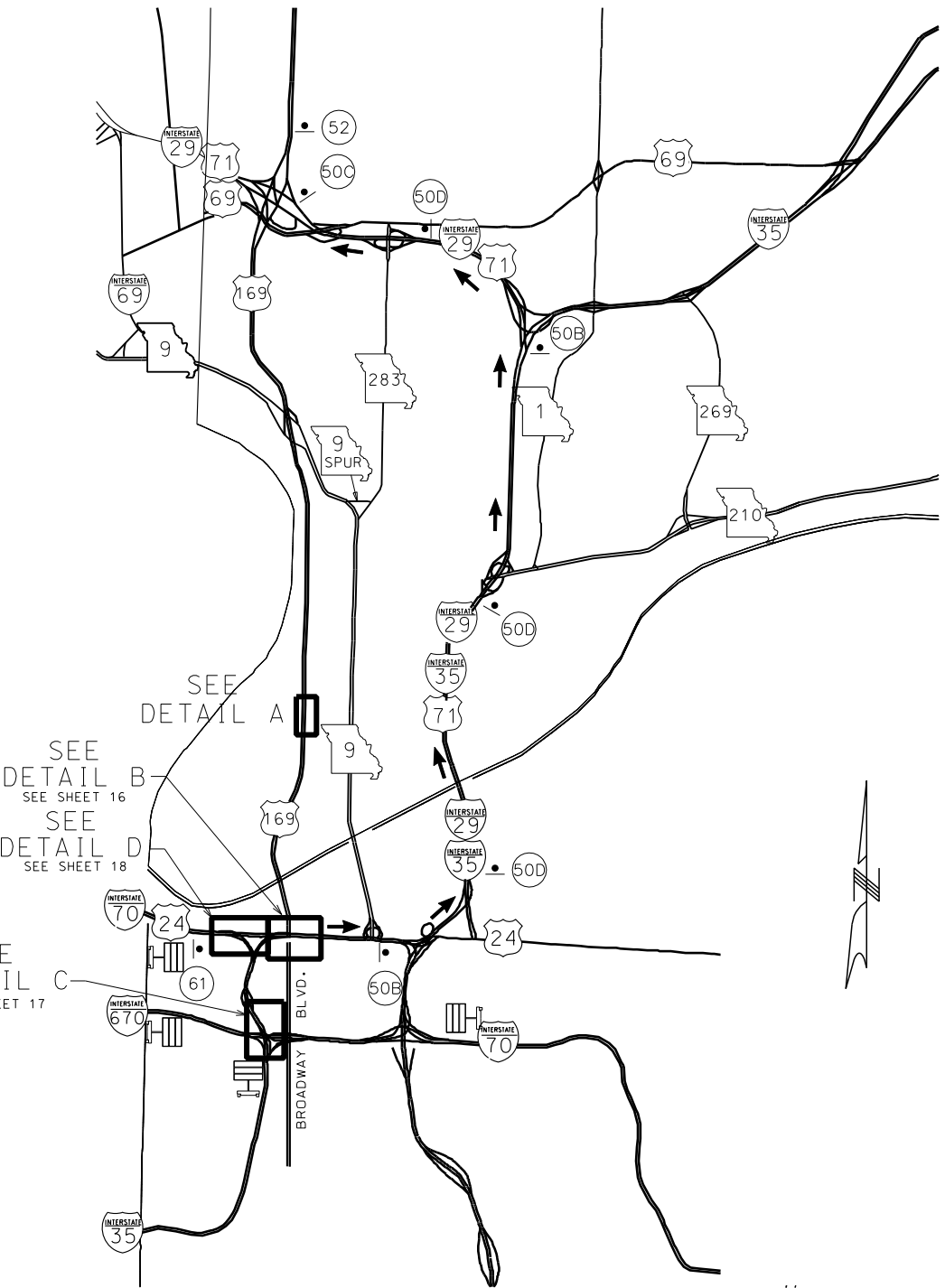
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			JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



DATE 2/13/12

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- E BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL



DETOUR

MO4-8

NORTH

M3-1

169

M1-4

M6-1

50A

DETOUR

MO4-8

NORTH

M3-1

169

M1-4

M6-2L

50B

DETOUR

MO4-8

NORTH

M3-1

169

M1-4

M6-2R

50C

DETOUR

MO4-8

NORTH

M3-1

169

M1-4

M6-3

50D

DETOUR

MO4-8

NORTH

M3-1

169

M1-4

M6-1

50E

END
DETOUR

MO4-8a

52

ROAD
CLOSED

R11-2

29

NB 169
CLOSED
AIRPORT
TRAFFIC
ONLY

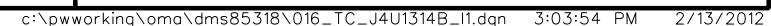
61

NB 169
CLOSED
AHEAD
FOLLOW
DETOUR

62

TRAFFIC CONTROL
DETOUR ROUTE
SHEET 1 OF 4

NOT TO SCALE





HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



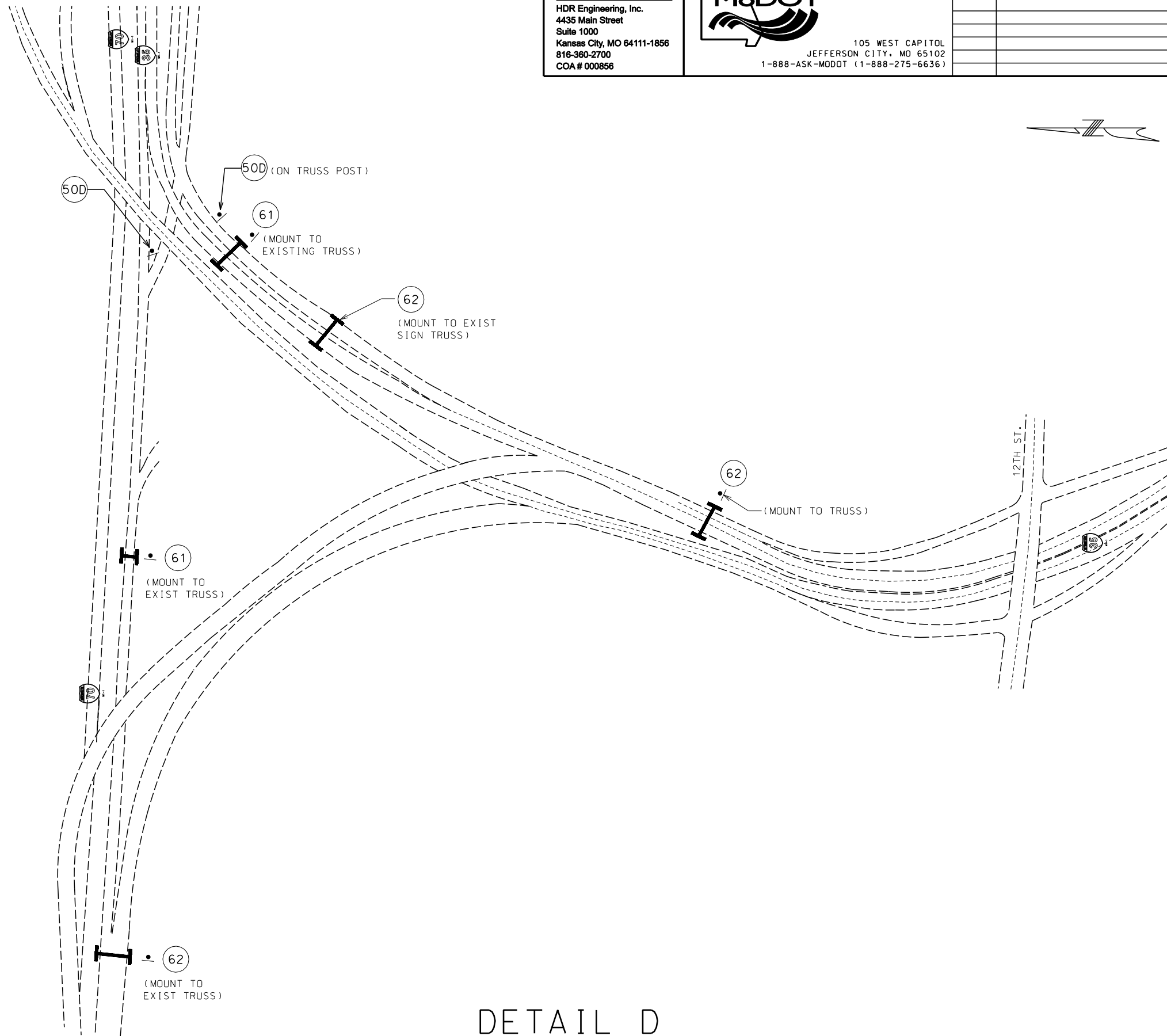
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	BRIDGE NO.	ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 17
			JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		

STATE OF MISSOURI
CORY MICHAEL
NUMBER
PE-000016689
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12



DETOUR

MO4-8

NORTH

M3-1



M1-4



M6-3



NB 169
CLOSED
AIRPORT
TRAFFIC
ONLY

61

NB 169
CLOSED
AHEAD
FOLLOW
DETOUR

62

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ▬ SIGN (DOUBLE SIDED)
- ◁ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- E BARRICADE
- ▬ CHANGEABLE MESSAGE BOARD

TRAFFIC CONTROL
DETOUR ROUTE

SHEET 3 OF 4

DETAIL D

NOT TO SCALE



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COMMISSION



105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	BRIDGE NO.	ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 18
			JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY
DATE 2/13/12

DETOUR

MO4-8

NORTH

M3-1



M1-4



M6-3

(50D)

NB 169
CLOSED
AIRPORT
TRAFFIC
ONLY

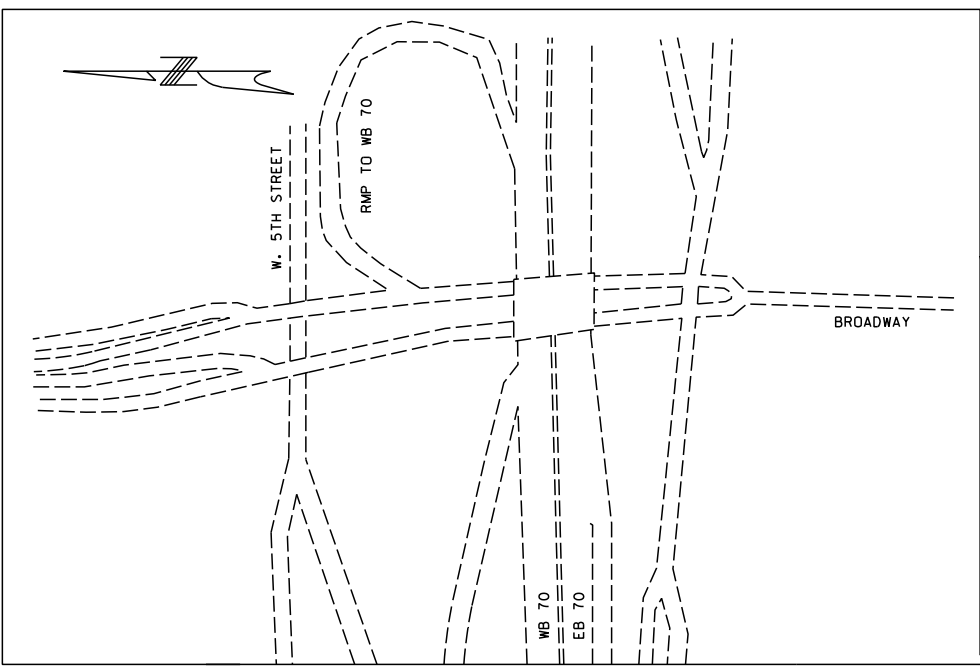
(61)

NB 169
CLOSED
AHEAD
FOLLOW
DETOUR

(62)

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- ◁ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- E BARRICADE
- ▮ CHANGEABLE MESSAGE BOARD



SEE SHEET 16
FOR TRAFFIC CONTROL
DETAILS

DETAIL D

NOT TO SCALE

TRAFFIC CONTROL
DETOUR ROUTE
SHEET 4 OF 4



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Kansas City, MO 64111-1856
816-360-2700
COA # 000856

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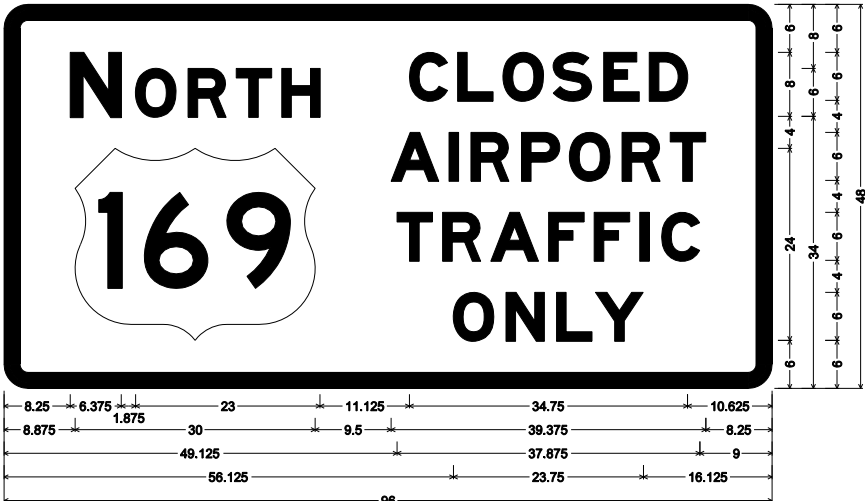
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	BRIDGE NO.	ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 18A
			JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



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ELECTRONICALLY

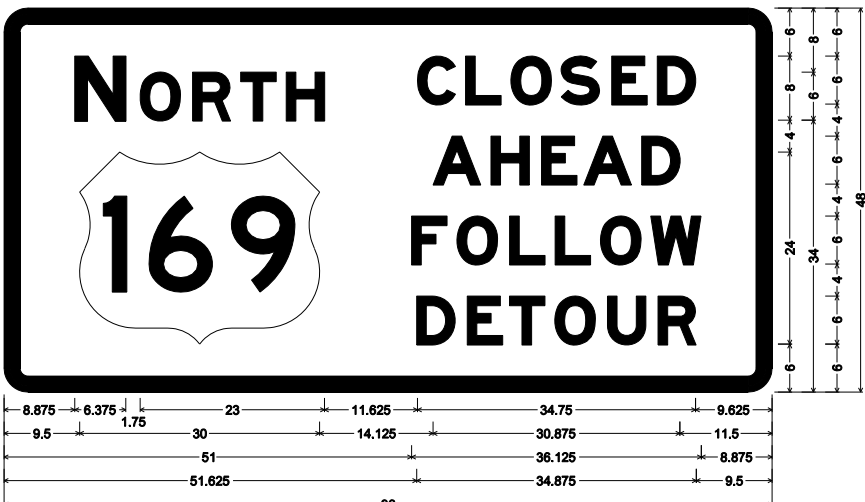
DATE 3/2/12



SPECIAL SHR4L1; 3.000" Radius, 1.250" Border, 0.750" Indent, Black on Orange;
[NORTH] E Mod; [CLOSED] E Mod; [AIRPORT] E Mod; [TRAFFIC] E Mod; [ONLY] E Mod;
Table of letter and object lefts.

N	O	R	T	H	C	L	O	S	E	D
8.250	16.500	23.000	29.000	34.750	50.625	56.750	62.375	68.625	75.000	80.625
A	I	R	P	O	R	T				
8.875	48.375	55.625	58.375	64.625	70.750	77.250	83.250			
T	R	A	F	F	I	C				
49.125	54.875	60.875	68.125	73.750	79.500	82.250				
O	N	L	Y							
56.125	62.750	69.000	73.875							

61
(OVERHEAD TRUSS)



SPECIAL SHR4L1; 3.000" Radius, 1.250" Border, 0.750" Indent, Black on Orange;
[NORTH] E Mod; [CLOSED] E Mod; [AHEAD] E Mod; [FOLLOW] E Mod; [DETOUR] E Mod;
Table of letter and object lefts.

N	O	R	T	H	C	L	O	S	E	D
8.875	17.000	23.625	29.625	35.250	51.625	57.750	63.375	69.625	76.000	81.625
A	H	E	A	D						
9.500	53.625	60.875	67.125	72.500	79.750					
F	O	L	O	W						
51.000	56.625	63.250	68.875	74.625	80.875					
D	E	T	O	U	R					
51.625	57.875	63.125	68.875	75.375	81.750					

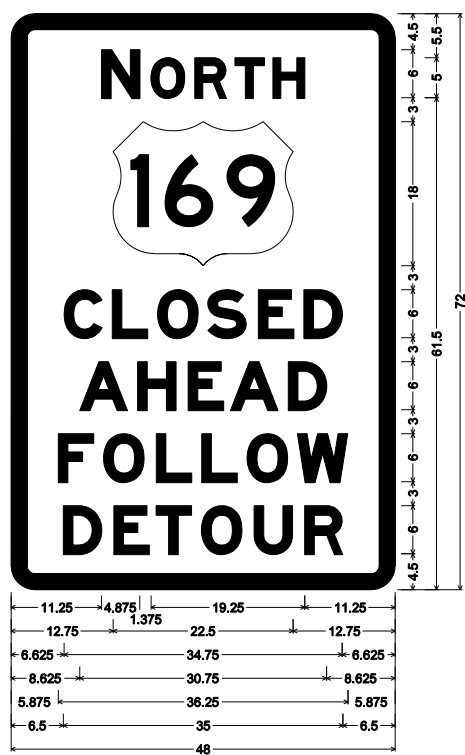
62
(OVERHEAD TRUSS)



SPECIAL SHR4L1;
3.000" Radius, 1.250" Border, 0.750" Indent, Black on Orange;
[NORTH] E Mod; [CLOSED] E Mod; [AIRPORT] E Mod;
[TRAFFIC] E Mod; [ONLY] E Mod;
Table of letter and object lefts.

N	O	R	T	H
11.250	17.500	23.000	28.000	32.750
A	I	R	P	O
4.375	11.625	14.250	20.625	26.625
T	R	A	F	F
5.125	10.750	16.750	24.000	29.750
O	N	L	Y	
12.125	18.625	25.000	29.875	

61



SPECIAL SHR4L1;
3.000" Radius, 1.250" Border, 0.750" Indent, Black on Orange;
[NORTH] E Mod; [CLOSED] E Mod; [AHEAD] E Mod;
[FOLLOW] E Mod; [DETOUR] E Mod;
Table of letter and object lefts.

N	O	R	T	H
11.250	17.500	23.000	28.000	32.750
A	H	E	A	D
8.625	15.750	22.125	27.375	34.625
F	O	L	O	W
5.875	11.625	18.125	23.875	29.500
D	E	T	O	U
6.500	12.875	18.125	23.875	30.375

62

TRAFFIC CONTROL
SPECIAL SIGNS
SHEET 1 OF 2

NOT TO SCALE

HDR
HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

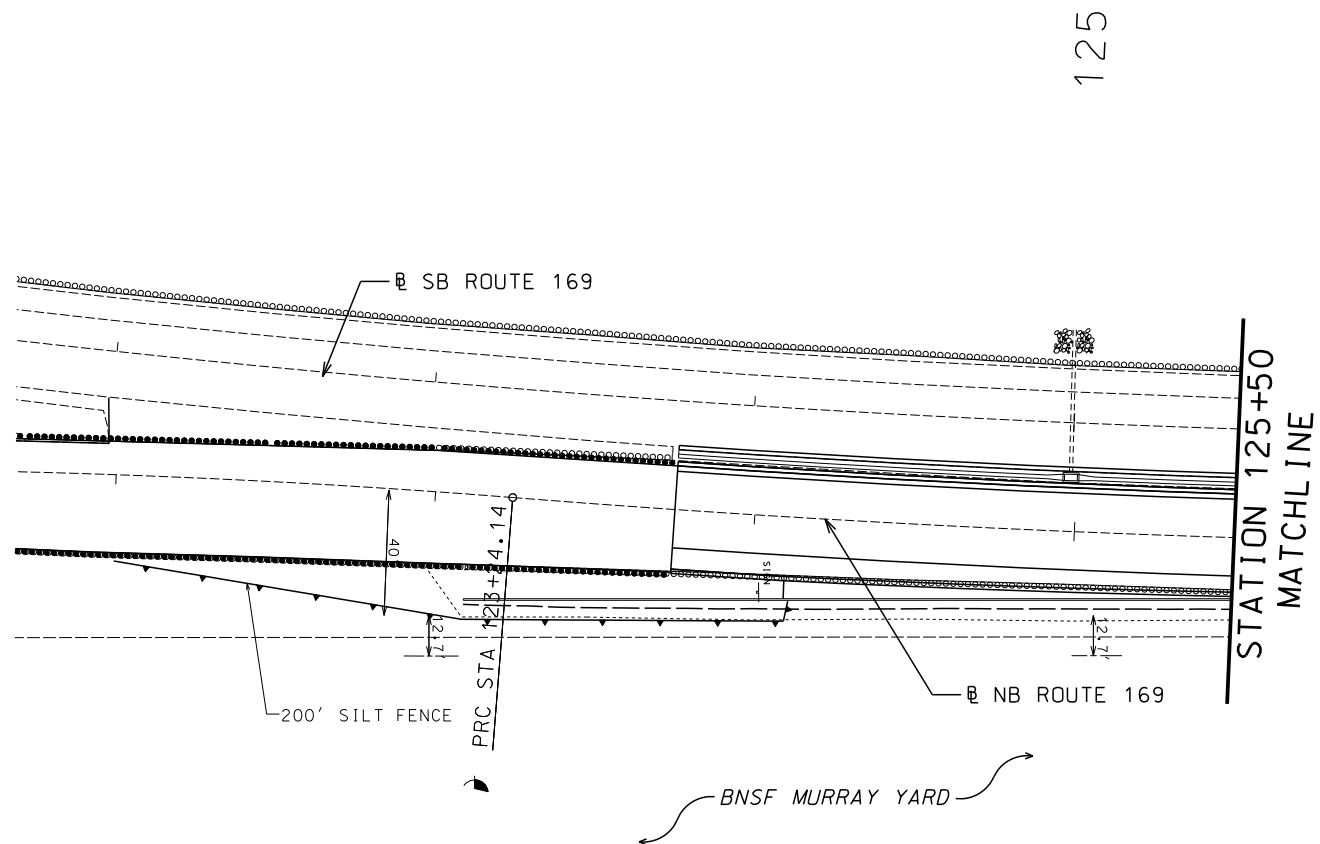
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

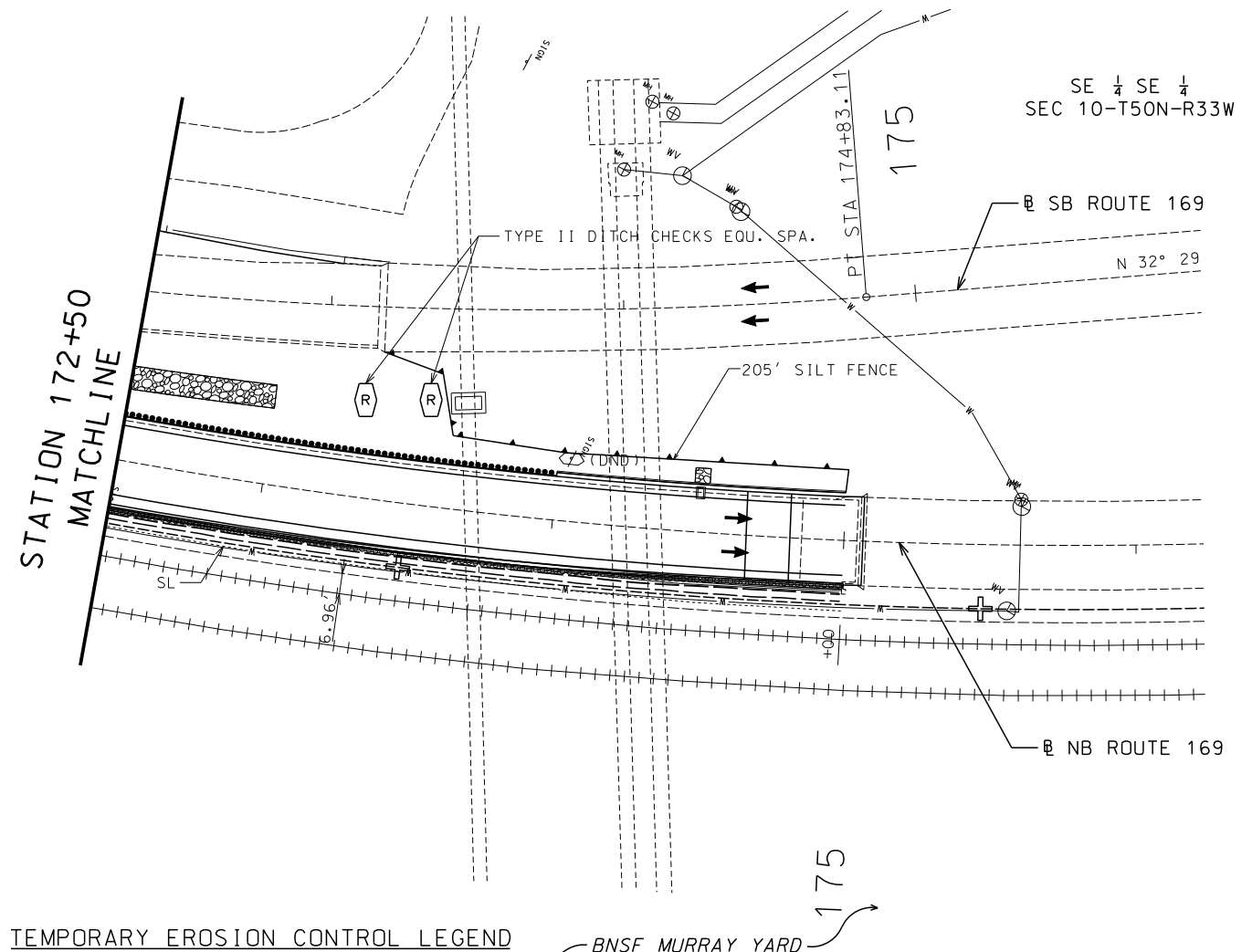
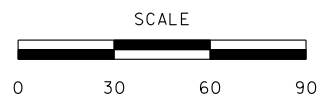
DATE	DESCRIPTION	
		BRIDGE NO.
		DATE PREPARED

ROUTE	STATE	DISTRICT	SHEET NO.
169	MO	KC	19
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			



TEMPORARY EROSION CONTROL LEGEND

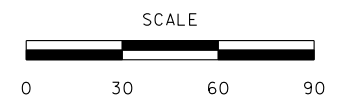
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- STRAW BALE DITCH CHECK
- STRAW BALE FENCE
- TEMPORARY BERM
- SILT FENCE
- SILT FENCE
- STRAW BALE FENCE



TEMPORARY EROSION CONTROL LEGEND

- ROCK DITCH CHECK
- STRAW BALE DITCH CHECK
- STRAW BALE FENCE
- TEMPORARY BERM
- SILT FENCE
- SILT FENCE
- STRAW BALE FENCE

BNSF MURRAY YARD



EROSION CONTROL PLAN
SHEET 1 OF 1



HDR Engineering, Inc.
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Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



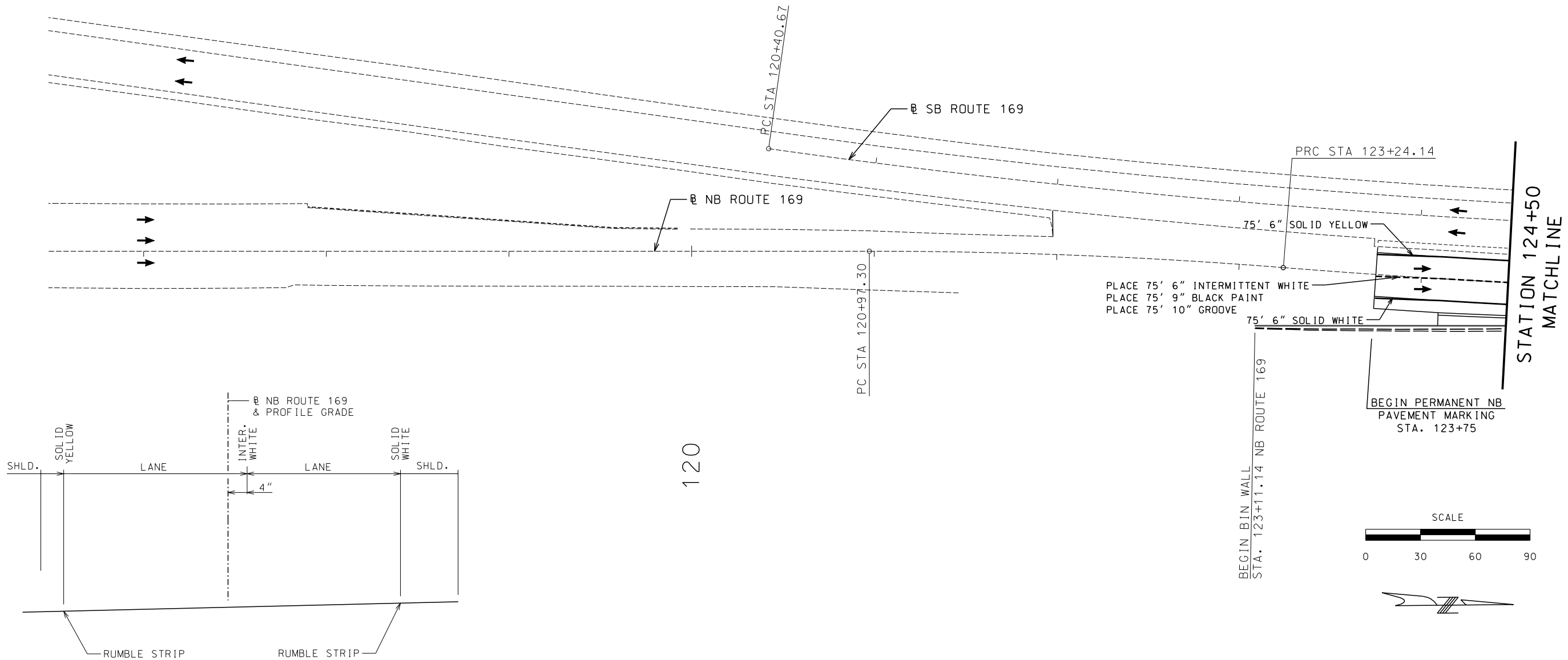
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 20
		BRIDGE NO.	JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12



PROPOSED STRIPING LAYOUT

PAVEMENT MARKING
SHEET 1 OF 8



HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

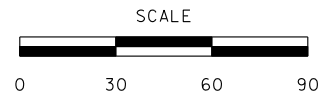
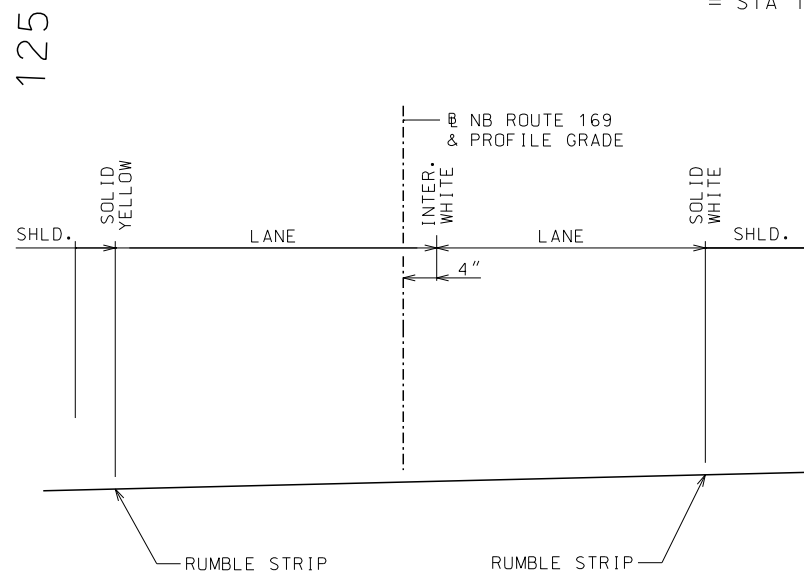
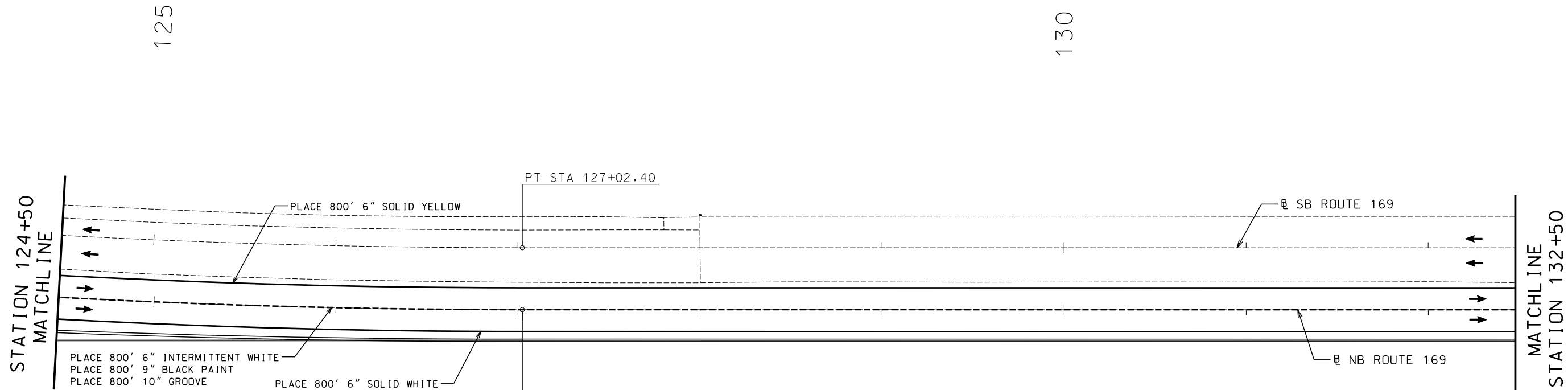


105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 21
		BRIDGE NO.	JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



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SIGNED, SEALED AND DATED
ELECTRONICALLY
DATE 2/13/12



PAVEMENT MARKING
SHEET 2 OF 8



HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



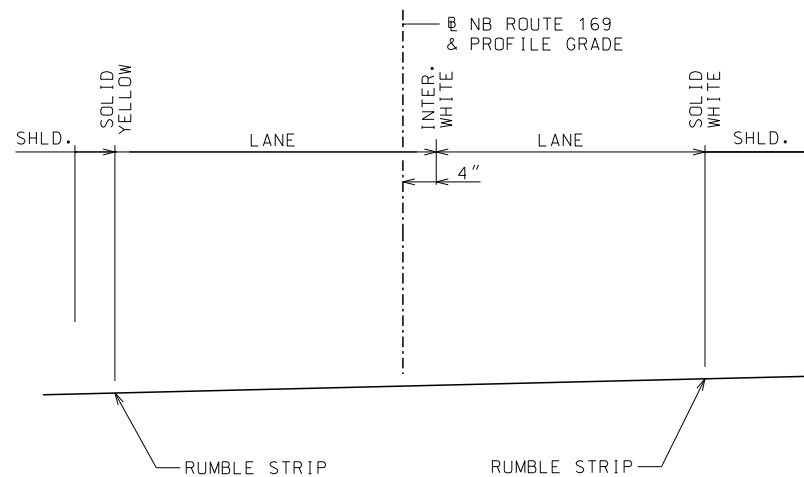
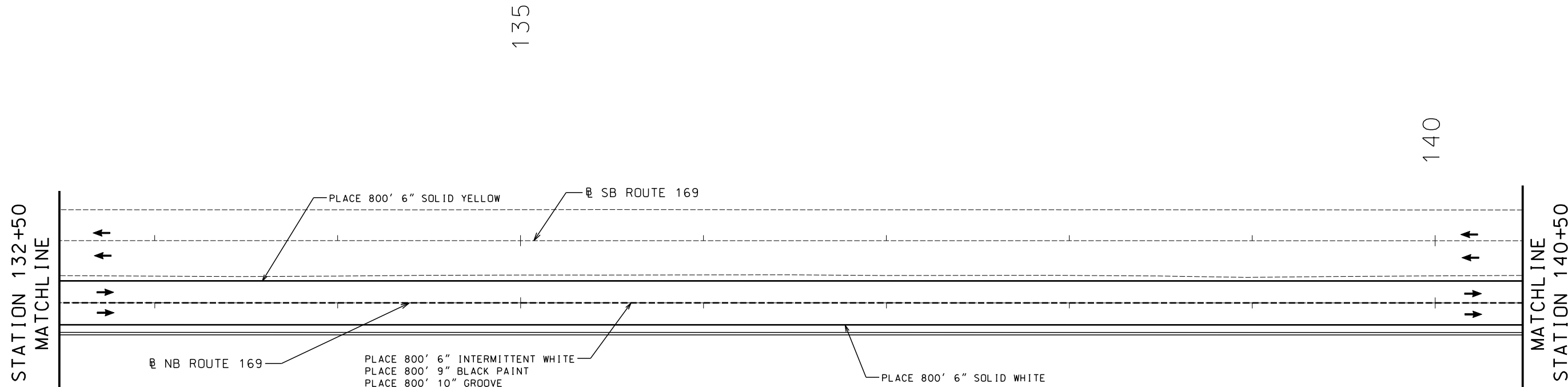
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 22
		BRIDGE NO.	JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		

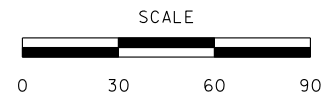


THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12



PROPOSED STRIPING LAYOUT




PAVEMENT MARKING
SHEET 3 OF 8

HDR

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Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



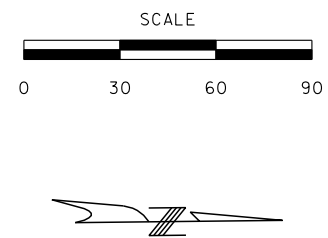
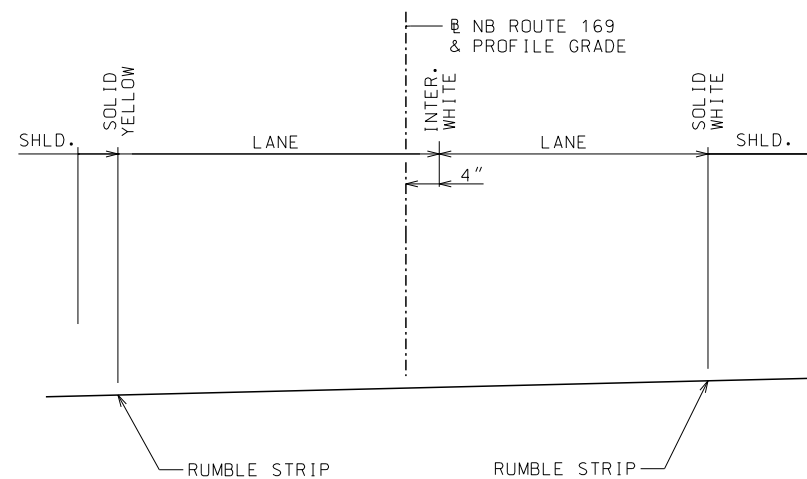
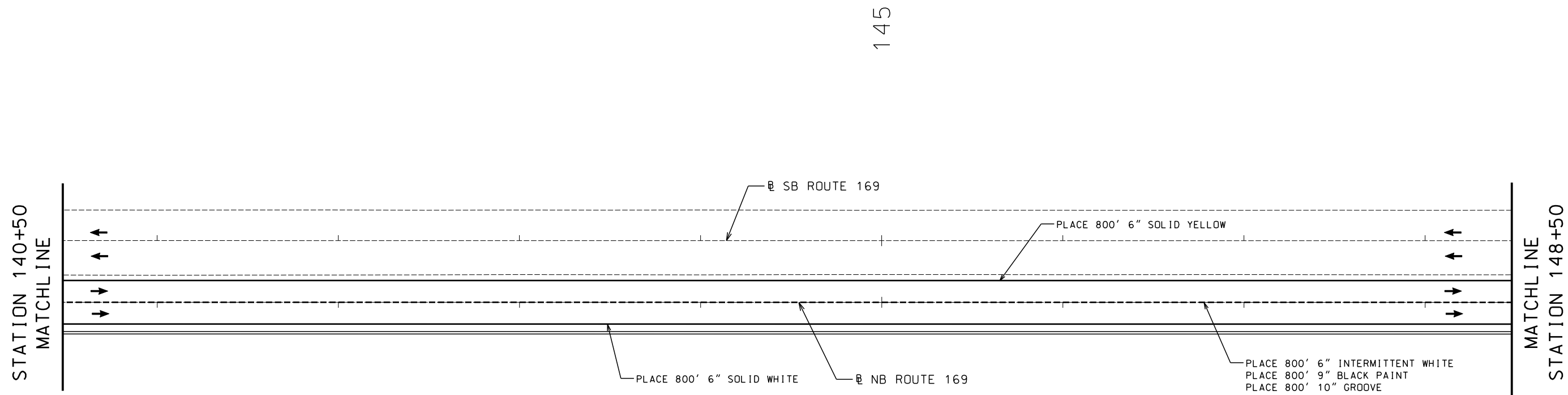
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 23
		BRIDGE NO.	JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



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ELECTRONICALLY

DATE 2/13/12



PAVEMENT MARKING

SHEET 4 OF 8



HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



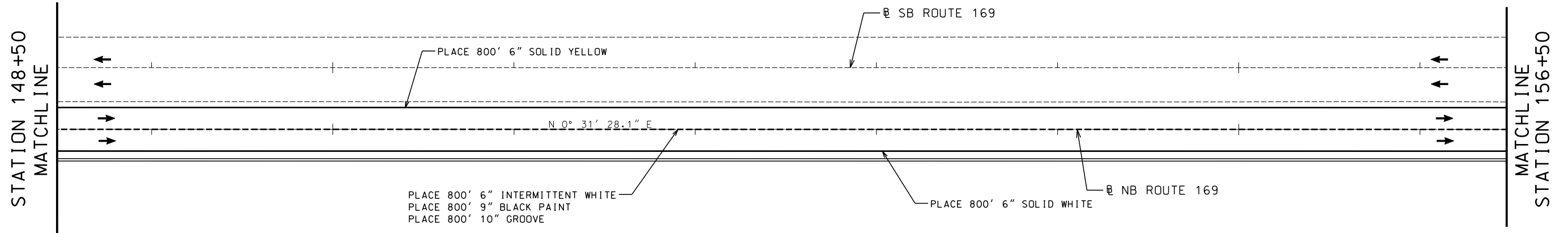
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 24
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			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



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ELECTRONICALLY

DATE 2/13/12

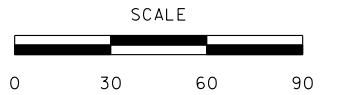
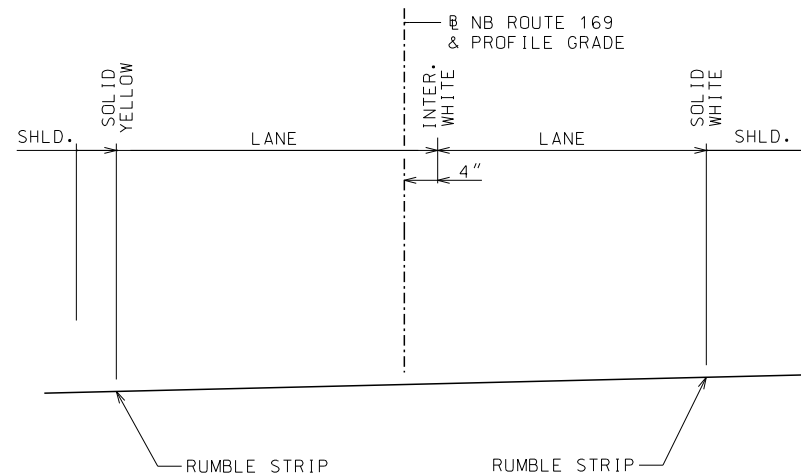


150

155

150

155



PROPOSED STRIPING LAYOUT

PAVEMENT MARKING
SHEET 5 OF 8

HDR
HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

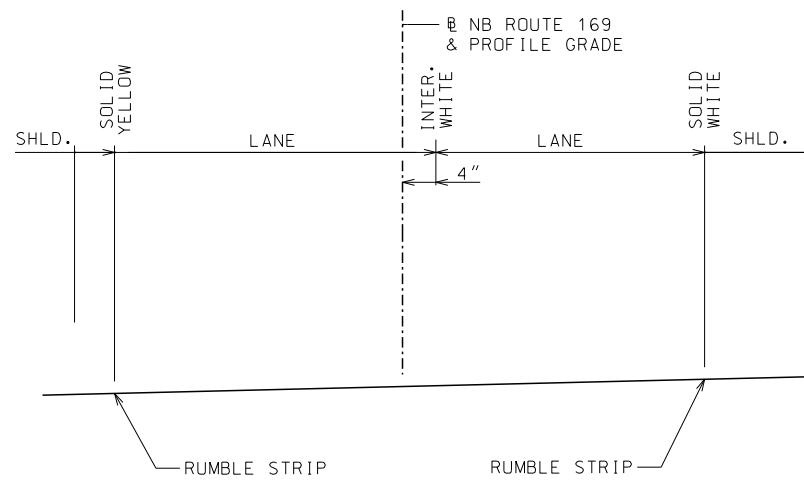
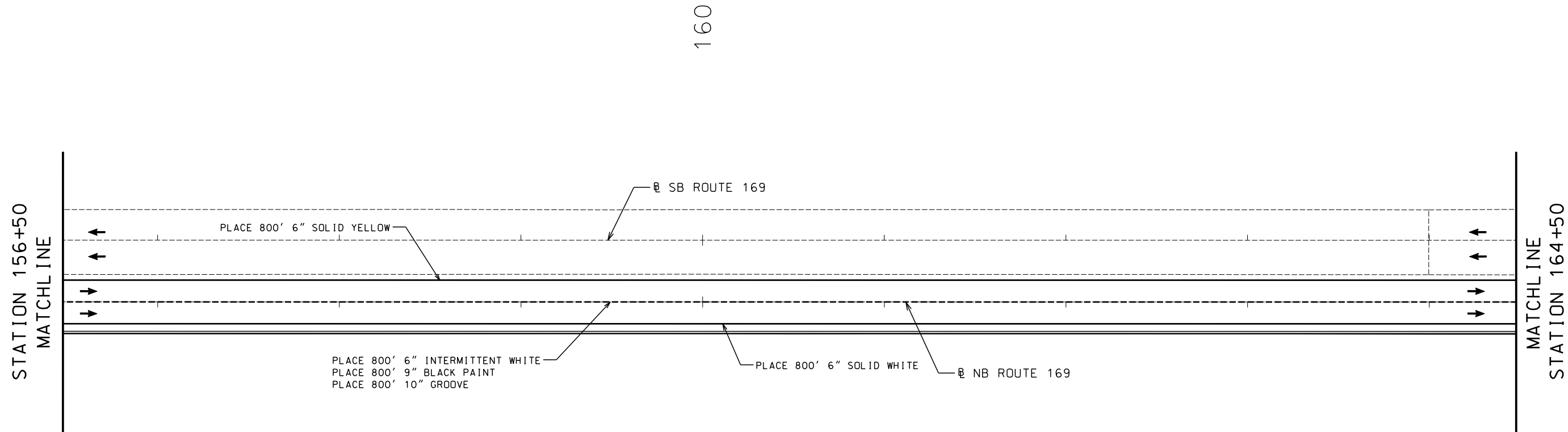
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		

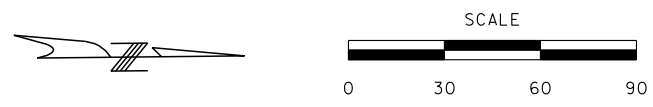
STATE OF MISSOURI
CORY MICHAEL
NUMBER
PE-000016689
PROFESSIONAL ENGINEER

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SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE 2/13/12



PROPOSED STRIPING LAYOUT



PAVEMENT MARKING
SHEET 6 OF 8



HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856



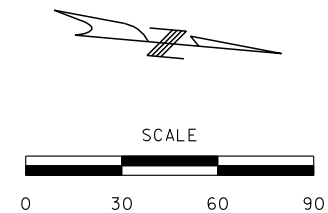
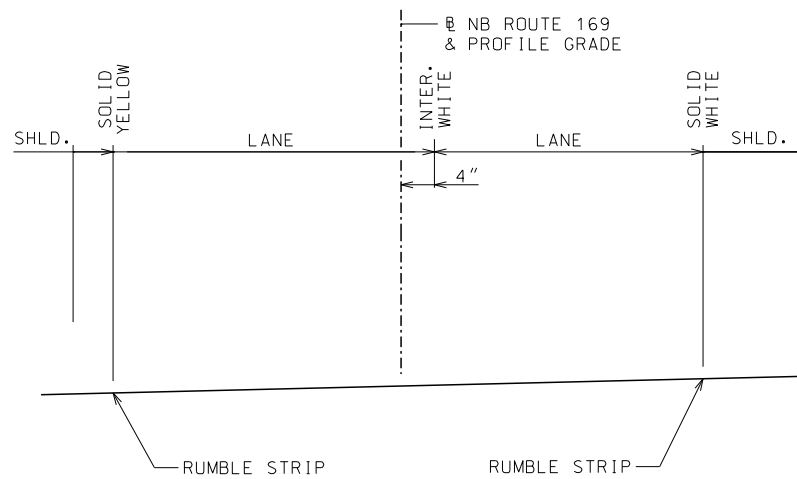
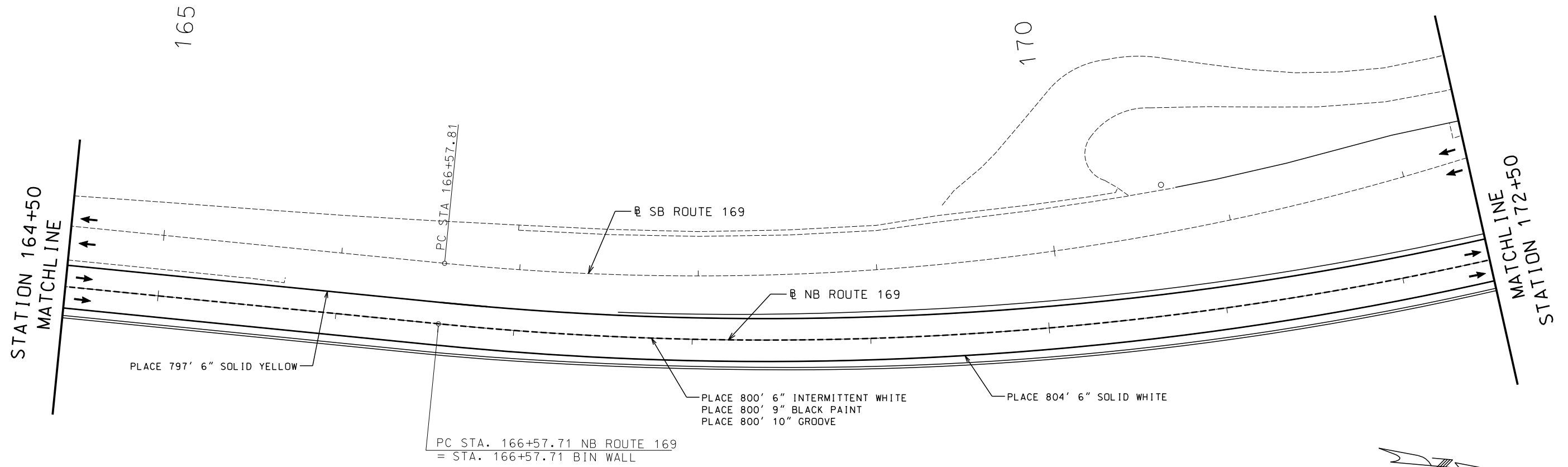
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

DATE	DESCRIPTION	BRIDGE NO.	ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 26
			JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



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DATE 2/13/12



PROPOSED STRIPING LAYOUT

PAVEMENT MARKING

SHEET 7 OF 8



HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



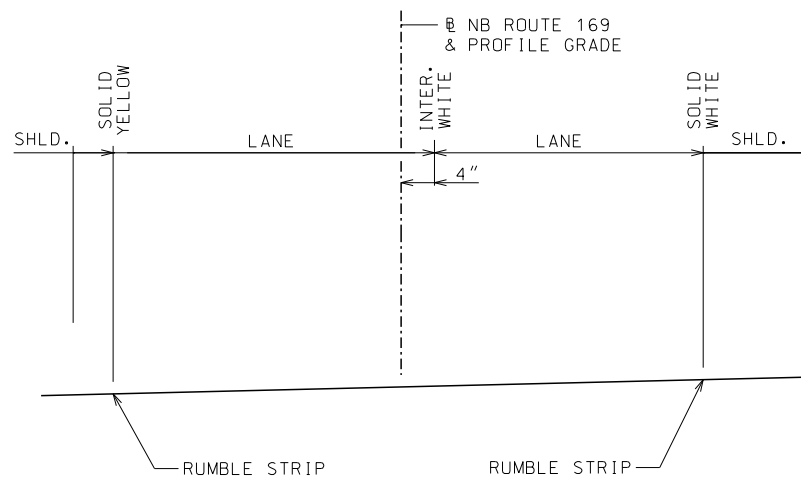
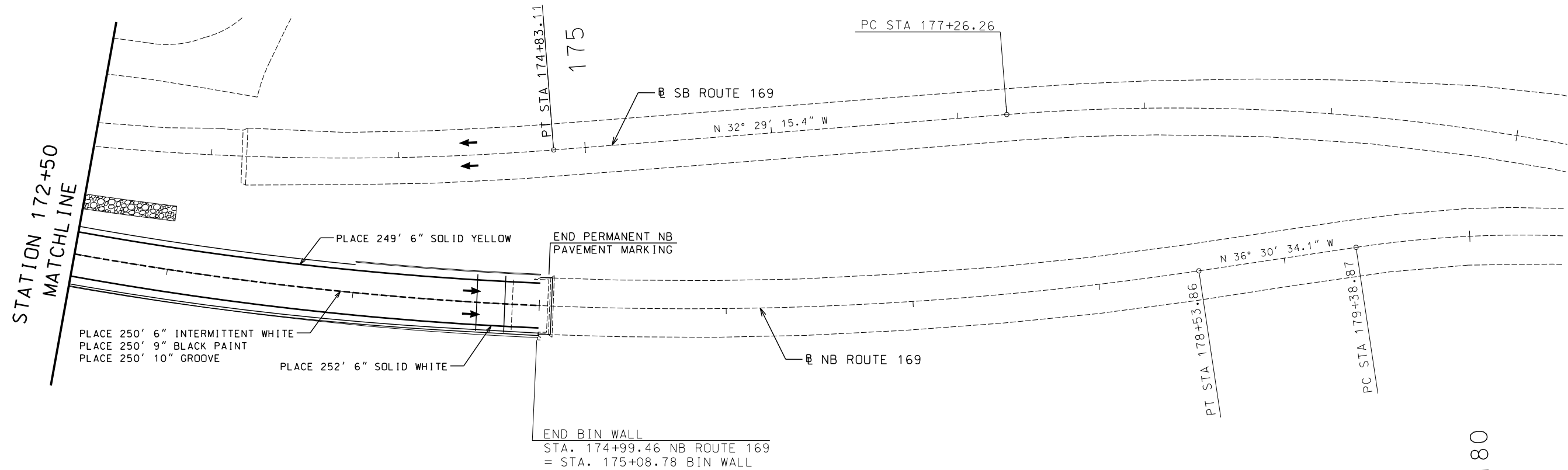
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	BRIDGE NO.	ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 27
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			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		

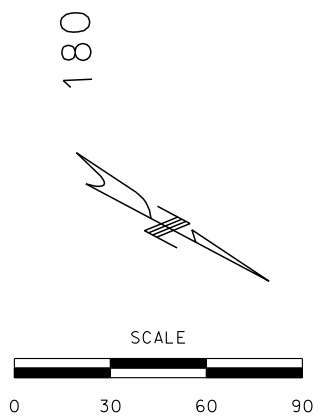


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ELECTRONICALLY

DATE 2/13/12



PROPOSED STRIPING LAYOUT



PAVEMENT MARKING

SHEET 8 OF 8



HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



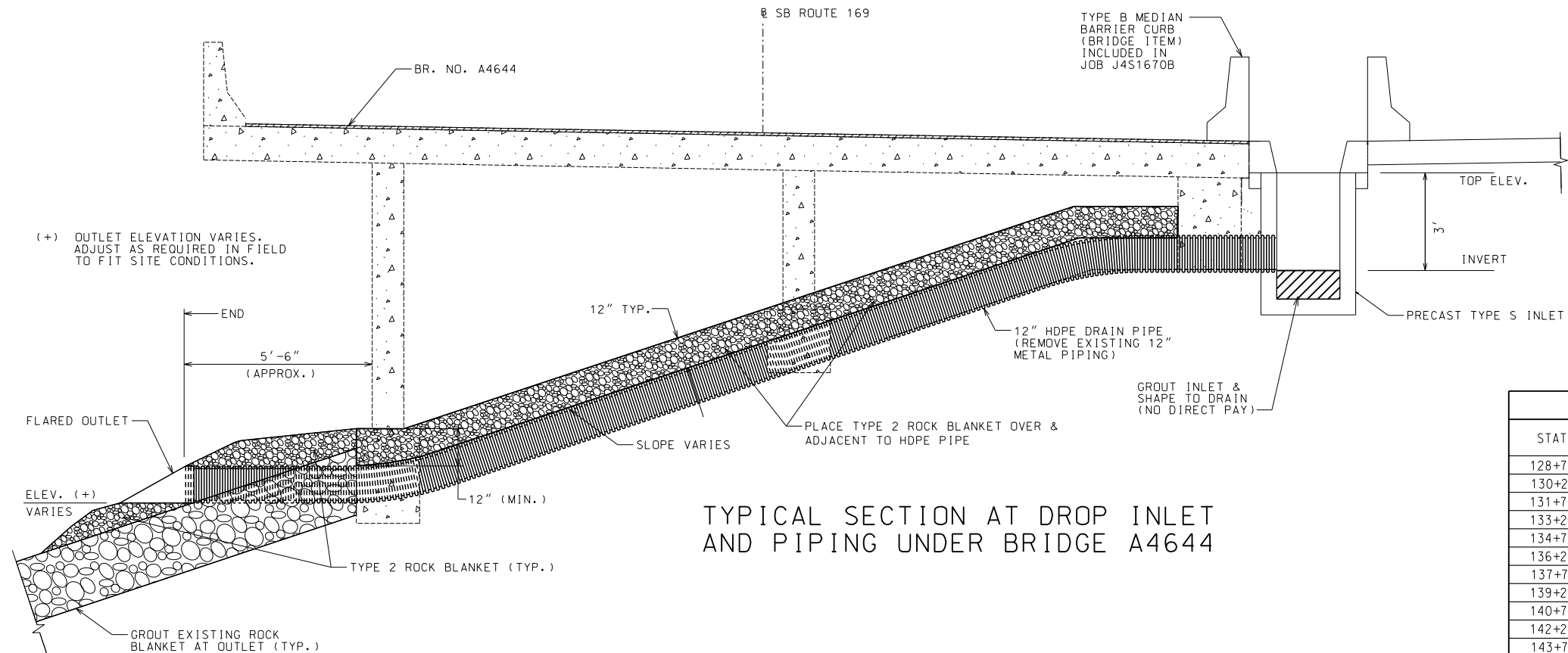
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DATE	DESCRIPTION	BRIDGE NO.	ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 28
			JOB NO.	J4U1314B		
			CONTRACT ID.			
		DATE PREPARED	PROJECT NO.			
			COUNTY	CLAY		



THIS SHEET HAS BEEN
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ELECTRONICALLY

DATE 2/13/12

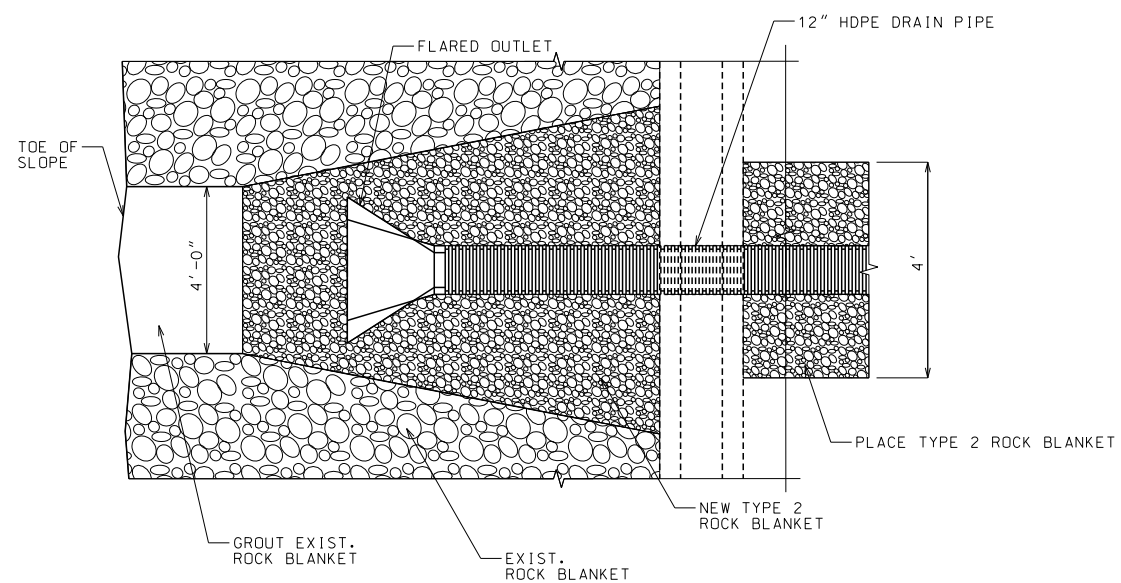


TYPICAL SECTION AT DROP INLET
AND PIPING UNDER BRIDGE A4644

DRAIN DETAILS

STATION	OFFSET	TOP ELEV.	INVERT ELEV.
128+77.44	16.875'LT.	763.29	760.29
130+27.41	16.875'LT.	763.42	760.42
131+77.36	16.875'LT.	763.44	760.44
133+27.34	16.875'LT.	763.48	760.48
134+77.39	16.875'LT.	763.51	760.51
136+27.43	16.875'LT.	763.53	760.53
137+77.41	16.875'LT.	763.56	760.56
139+27.42	16.875'LT.	763.60	763060
140+77.38	16.875'LT.	763.62	760.62
142+27.34	16.875'LT.	763.66	760.66
143+77.31	16.875'LT.	763.69	760.69
145+27.44	16.875'LT.	763.75	760.75
146+77.40	16.875'LT.	763.75	760.75
148+27.44	16.875'LT.	763.78	760.78
149+77.31	16.875'LT.	763.81	760.81
151+27.47	16.875'LT.	763.84	760.84
152+77.47	16.875'LT.	763.87	760.87
154+27.44	16.875'LT.	763.90	760.90
155+77.60	16.875'LT.	763.93	760.93
157+27.50	16.875'LT.	763.96	760.96
158+77.50	16.875'LT.	763.99	760.99
160+27.48	16.875'LT.	764.01	761.01
161+77.44	16.875'LT.	764.05	761.05
163+27.29	16.875'LT.	764.09	761.09

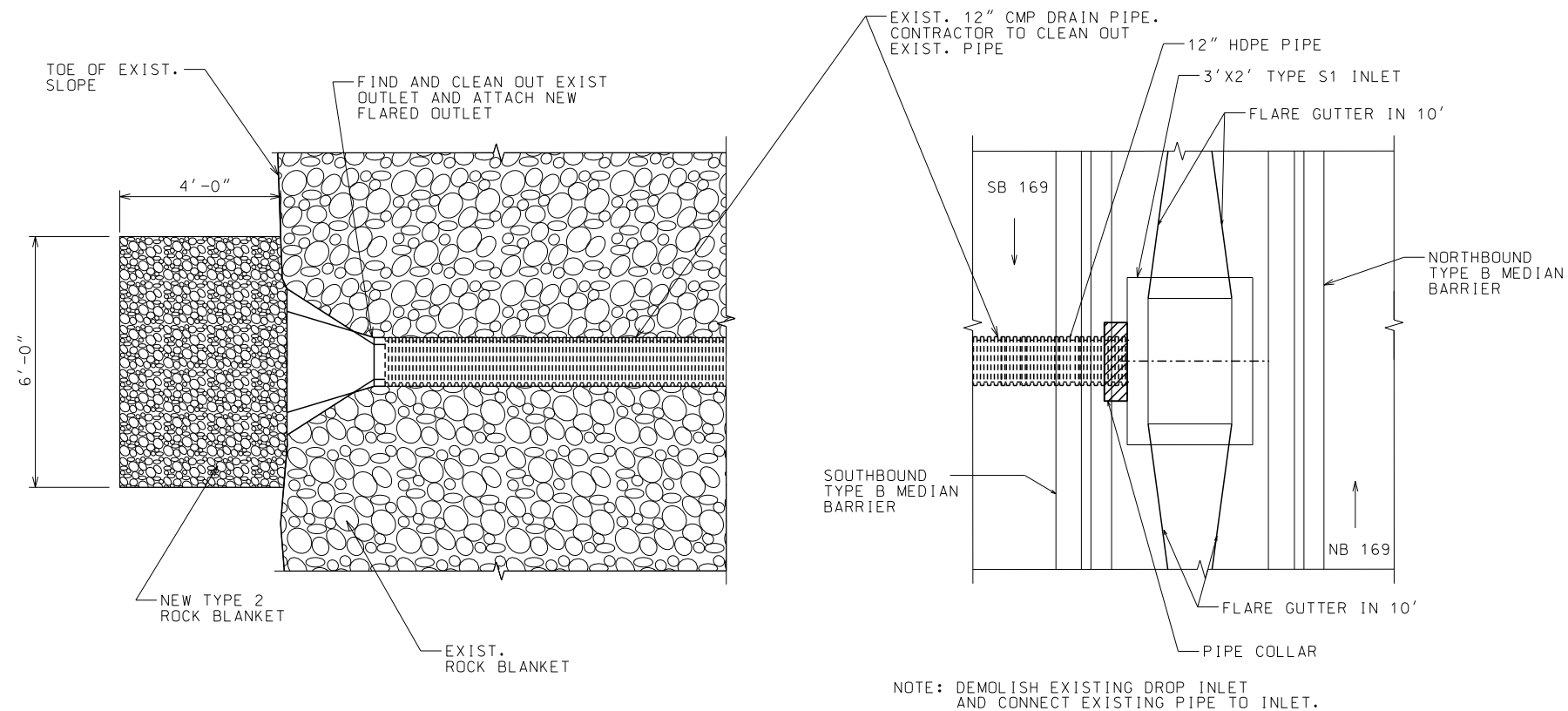
NOTES:
ALL 12" HDPE PIPE, FITTINGS, EXCAVATION & ANY INCIDENTAL WORK
ITEMS NECESSARY TO INSTALL THE PIPING AS SHOWN
INCLUDING ALL MATERIAL, LABOR & EQUIPMENT SHALL
BE INCLUDED IN THE CONTRACT UNIT PRICE "12" HDPE"
PER LINEAR FOOT.
THE HDPE PIPING SHALL BE INSTALLED AT THE SAME
ALIGNMENT AND PROFILE AS THE EXISTING PIPE WITH
THE OUTLET REGRADED & POSITIONED AS SHOWN.



PART PLAN SHOWING OUTLET

CULVERT SECTIONS

SHEET 1 OF 2



PLAN SHOWING PIPE INLET AND OUTLET

NOTES:
ALL 12" HDPE PIPE, FITTINGS, PIPE COLLARS,
CLEAN OUT OF THE EXISTING 12" CMP PIPE, DEMOLITION OF THE
EXISTING DROP INLET & ANY INCIDENTAL WORK ITEMS NECESSARY
TO CONNECT EXISTING PIPE TO NEW INLET& FIND THE EXISTING
PIPE OUTLET INCLUDING ALL MATERIAL, LABOR & EQUIPMENT SHALL
BE INCLUDED IN THE CONTRACT UNIT PRICES FOR GROUP A PIPE.

DRAIN DETAILS			
STATION	OFFSET	TOP ELEV.	INVERT ELEV.
124+98.23	16.58' LT.	763.37	761.27
126+99.87	16.58' LT.	763.33	761.34
164+78.77	16.58' LT.	764.00	762.08

CULVERT SECTIONS

SHEET 2 OF 2

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
U.I.P. AND REHAB. EXISTING VARIABLE LENGTH STEEL GIRDER SPANS

SEC/SUR 10 TWP 50W RGE 33W



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DATE PREPARED
2/13/12

ROUTE 169 STATE MO

DISTRICT BR SHEET NO. 1

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A46421

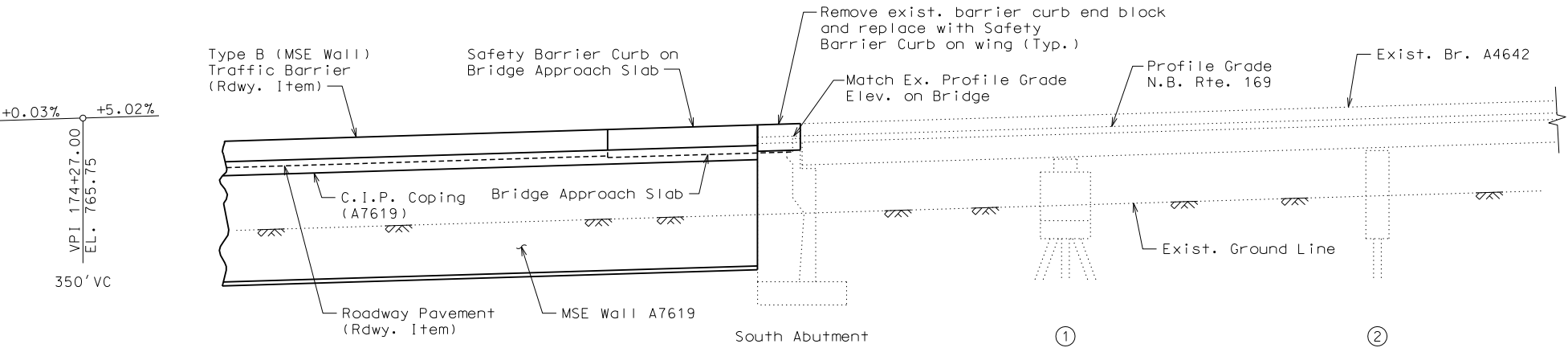
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
Certificate of Authority: 000856

STD. 617.10

STD. 706.35



PARTIAL GENERAL ELEVATION

GENERAL NOTES:

DESIGN SPECIFICATIONS:
2010 AASHTO LRFD Bridge Design Specifications
and 2010 Interims.

DESIGN LOADING:
HL-93

DESIGN UNIT STRESSES:
Class B-1 Concrete (Safety Barrier Curb) $f'c = 4,000$ psi
Reinforcing Steel (Grade 60) $fy = 60,000$ psi

JOINT FILLER:
All joint filler shall be in accordance with
Sec 1057 for preformed sponge rubber expansion
and partition joint filler, except as noted.

REINFORCING STEEL:
Minimum clearance to reinforcing steel shall be
1 1/2", unless otherwise shown.

MISCELLANEOUS:
"Sec" refers to the sections in the standard
and supplemental specifications unless specified
otherwise.

Outline of old work is indicated by light dashed
lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field
before ordering new material.

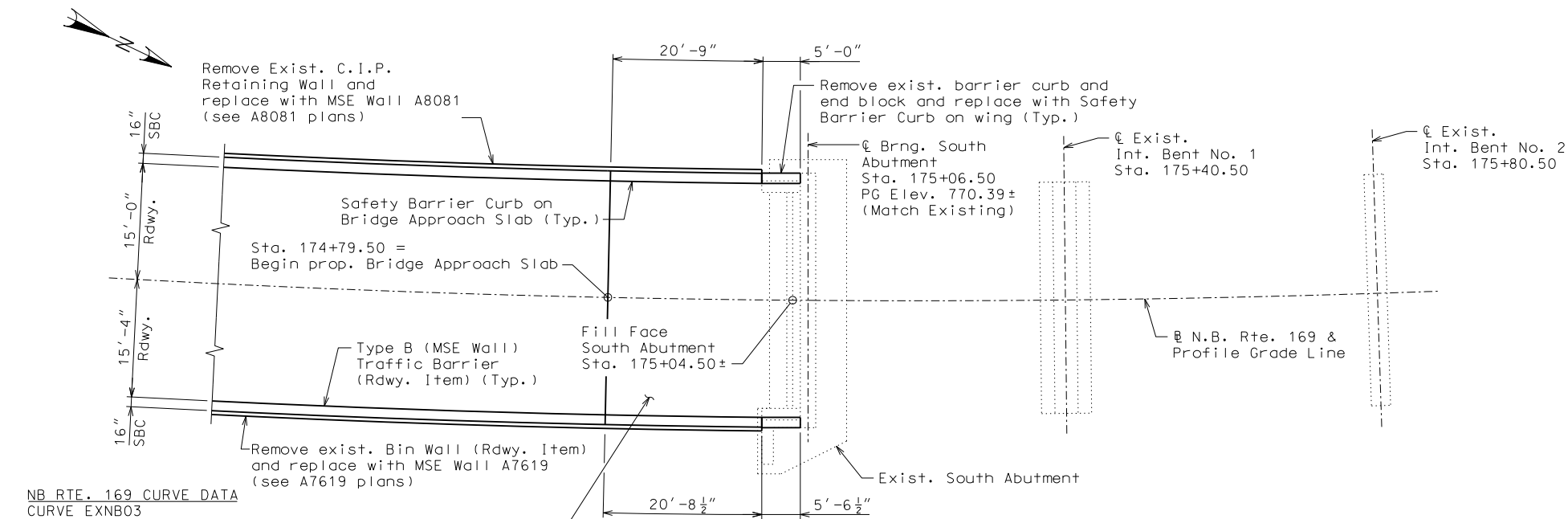
Bars bonded in old concrete not removed shall be
cleanly stripped and embedded into new concrete
where possible. If length is available, old bars
shall extend into new concrete at least
40 diameters for plain bars and 30 diameters for
deformed bars, unless otherwise noted.

The area exposed by the removal of concrete and
not covered with new concrete shall be coated
with an approved qualified special mortar in
accordance with Sec 704.

Contractor to refer to Informational Plans for
C.B. & Q. Railroad overpass for as-built plans of
structure.

REPAIRS TO BRIDGE NEXT TO BNSF MURRAY YARD

STATE ROAD FROM HIGHWAY 9 TO INTERSTATE 35
ABOUT 0.5 MILES SOUTH OF HIGHWAY 9
STA. 175+04.50
RTE. N.B.169



PARTIAL PLAN

(***) Included with roadway item
Removal of Improvements.

B.M. #1 - ELEV. 761.01'
CHISELED "Q" CUT IN NORTH CENTER
CONCRETE STRUCTURE NORTHWEST OF
SOUTH ABUTMENT SB-169 HIGHWAY
118.43' LT., STA. 174+21.00, @ NB U.S. 169

B.M. #2 - ELEV. 765.41'
CHISELED "Q" CUT ON SOUTHEAST CORNER
ABUTMENT OF BRIDGE
28.17' LT., STA. 177+57.91, @ NB U.S. 169

B.M. #3 - ELEV. 765.68'
FOUND "+" CUT ON SW CORNER OF SEVENTH PIER
NORTH OF SOUTH ABUTMENT, NB - 169 HIGHWAY
13.07' LT., STA. 178+25.30, @ NB U.S. 169

GENERAL ELEVATION AND PLAN

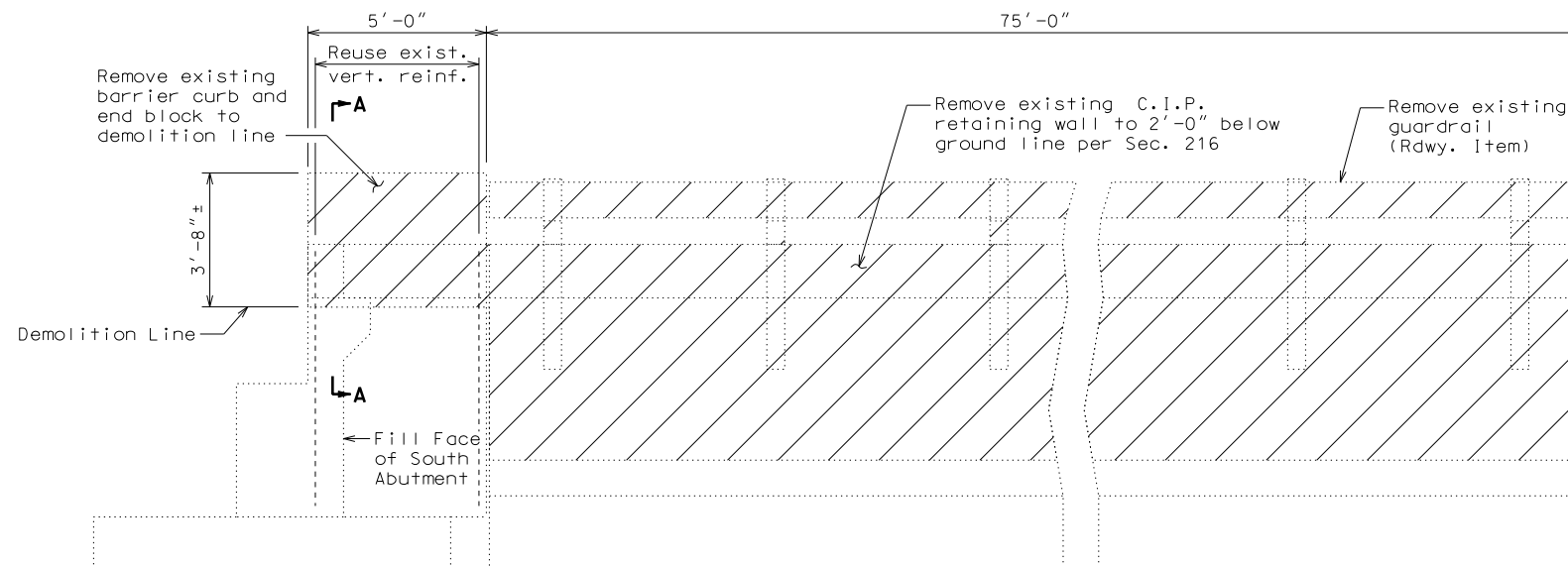
ESTIMATED QUANTITIES				
Item	Unit	Substr.	Superstr.	Total
(*) Partial Removal of Substructure Concrete	Lump Sum	1		1
Curb Removal	Lin. Ft.		11	11
Bridge Approach Slab	Sq. Yd.		90	90
(**) Safety Barrier Curb	Lin. Ft.		52	52

* Includes removal of Cast-in-place Retaining Wall concrete.
** Safety Barrier Curb shall be cast-in-place or slip-form option.

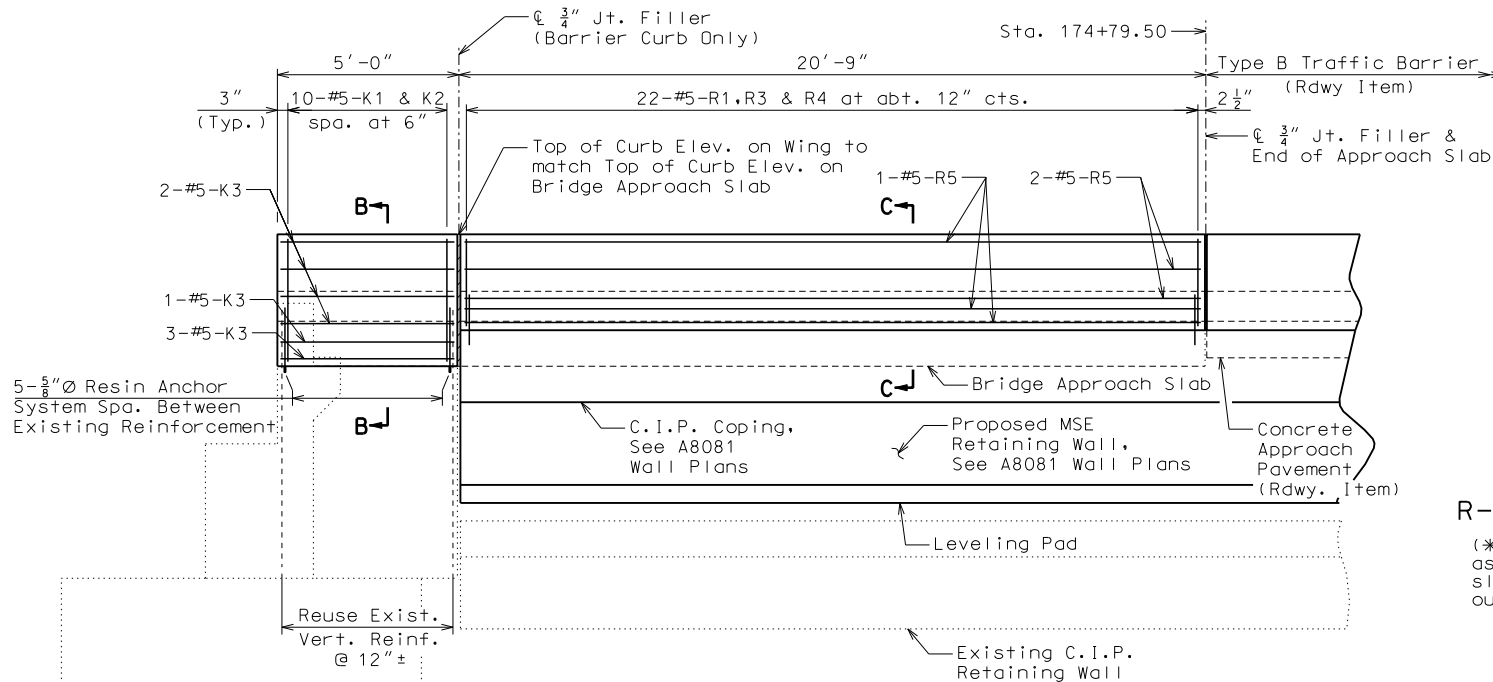
Detailed December 2011
Checked December 2011

Note: This drawing is not to scale. Follow dimensions.

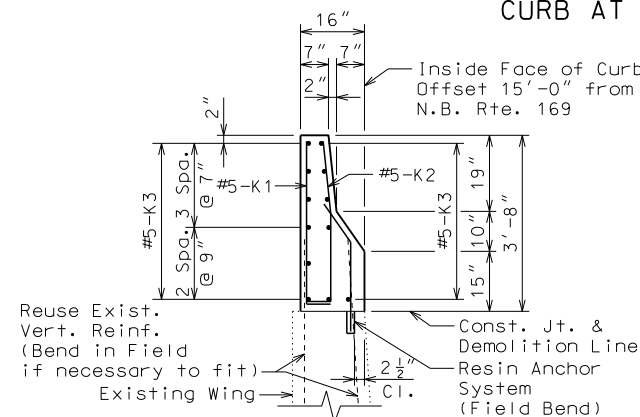
Sheet No. 1 of 6



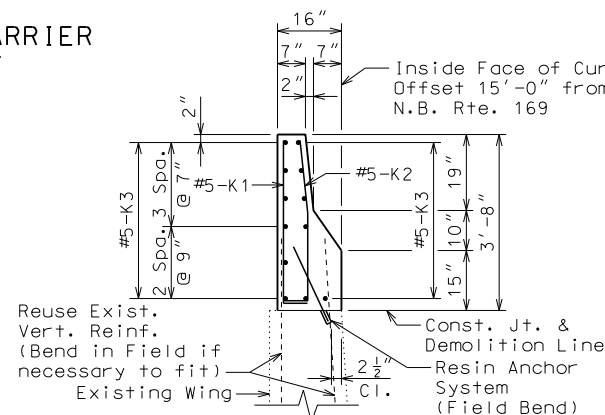
EXISTING ELEVATION OF WEST WING AND RETAINING WALL



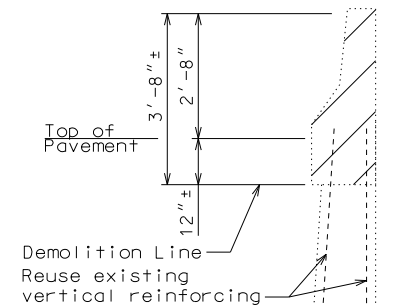
ELEVATION OF WEST SAFETY BARRIER CURB AT SOUTH ABUTMENT



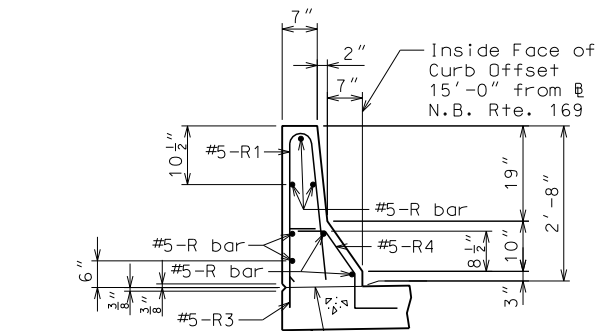
SECTION B-B



OPTIONAL SECTION B-B
WEST SAFETY BARRIER CURB DETAILS



SECTION A-A



Bridge Approach Slab Const. joint
PART SECTION C-C
(wall and coping not shown for clarity)

Note:

Use a min. lap of 2'-11" for #5 horizontal safety barrier curb bars.

The cross sectional area above the appr. slab = 2.28 sq. ft.

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Reinforcing Steel shall be Grade 60.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from front face of backwall to end of Bridge Approach Slab.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing resin anchor system complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

The minimum embedment depth in concrete with f'c = 4,000 psi form the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039, but shall not be less than 5".

An epoxy coated #5 Grade 60 Reinforcing bar 2'-6" long shall be substituted for the 5/8" dia. threaded rod.

Payment for the removal of Existing C.I.P. Retaining Wall to limit shown is completely covered by the Lump Sum Price for Partial Removal of Substructure Concrete.

Payment for the removal of the barrier curb and end block is completely covered by the contract unit price for Curb Removal per Lin. Ft.



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SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE PREPARED
2/13/12

ROUTE
169

DISTRICT
BR

STATE
MO

SHEET NO.
2

COUNTY
CLAY

JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A46421

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

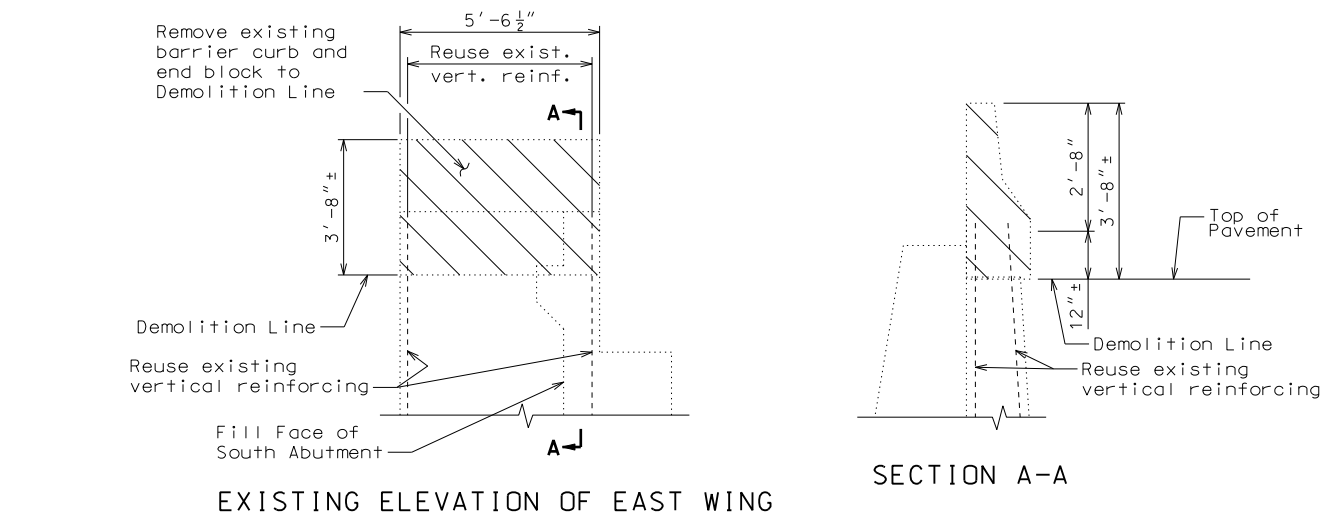
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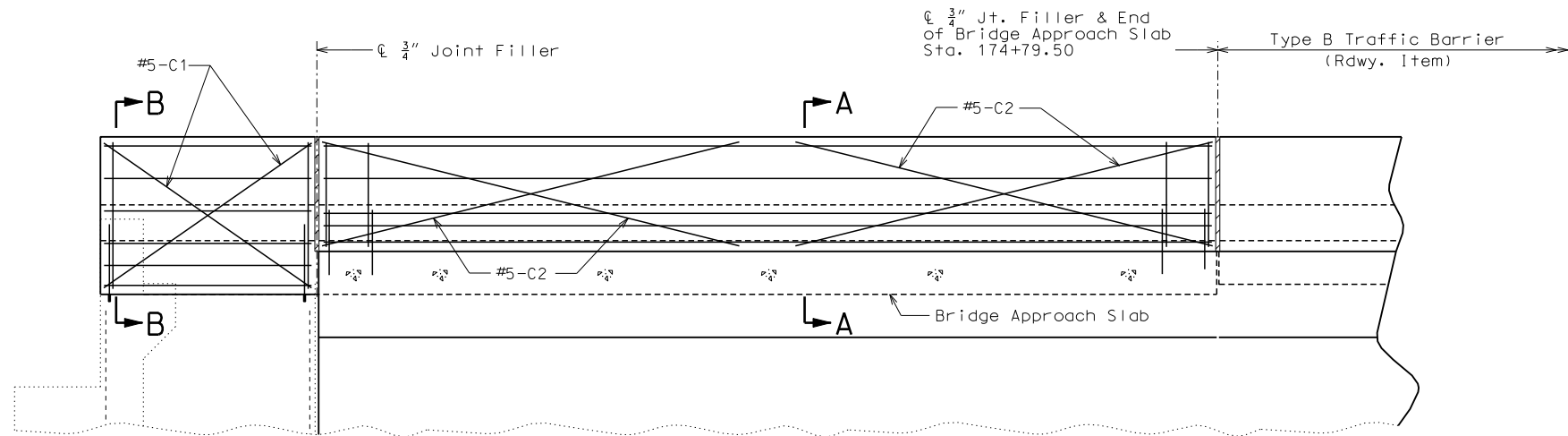
105 WEST CAPITOL
JEFFERSON CITY, MO 65102

MoDOT

HDR Engineering, Inc.

4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
Certificate of Authority: 000856





ELEVATION OF WEST SAFETY BARRIER CURB AT SUPPORT LOCATIONS
(OPTIONAL SLIP FORM BRIDGE SAFETY BARRIER CURB)

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from front of backwall to end of Bridge Approach Slab.

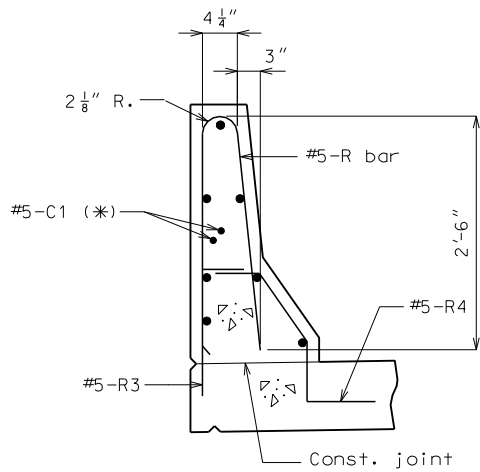
Notes:

Plastic waterstop shall not be used with slip-form option.

C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

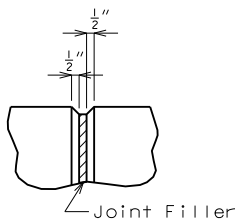
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".



PART SECTION A-A
(Part Section B-B similar)

Notes:

(*) Each side of joint location.



FILLED JOINT
DETAIL

OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB
(West barrier curb shown, East barrier curb similar.)

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED
2/13/12

ROUTE 169	STATE MO
DISTRICT BR	SHEET NO. 4

COUNTY
CLAY

JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO.

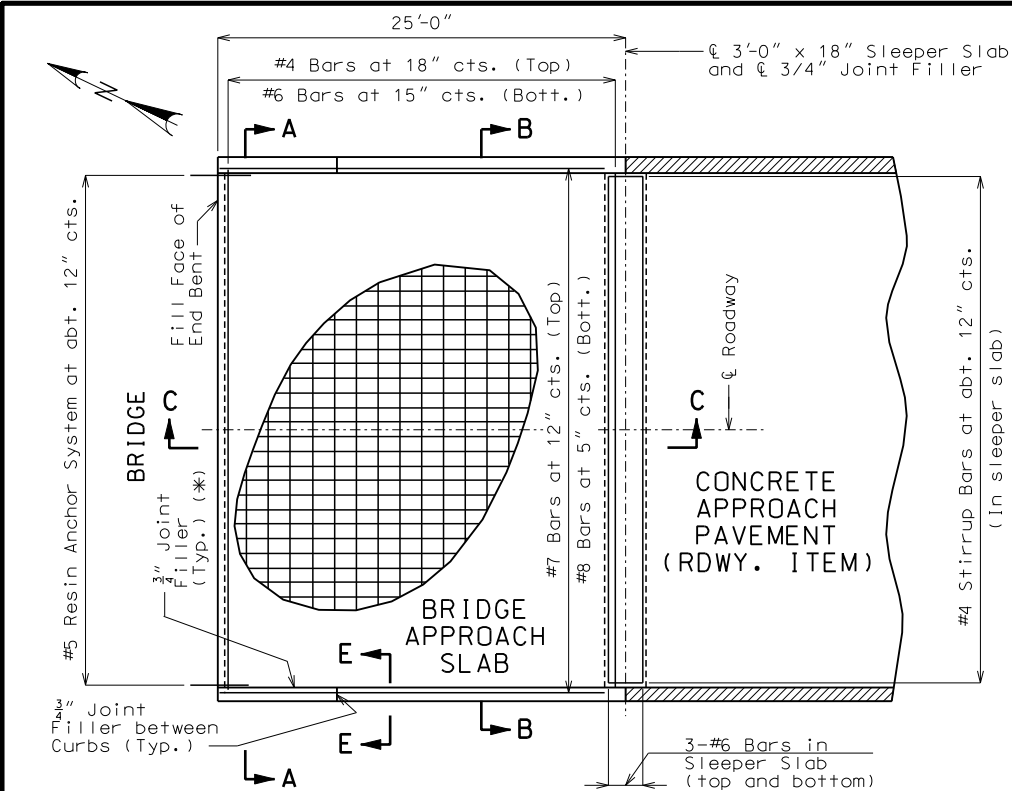
BRIDGE NO.
A46421

DESCRIPTION	DATE

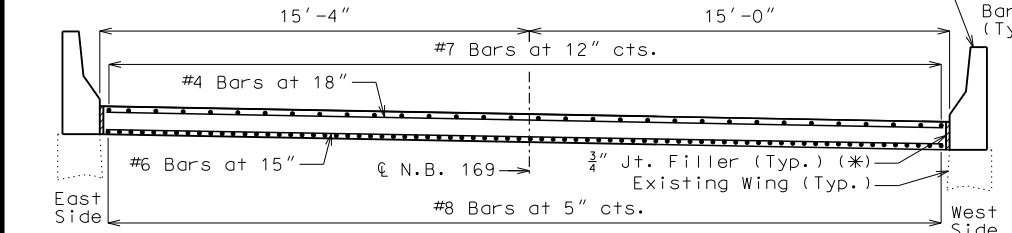
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

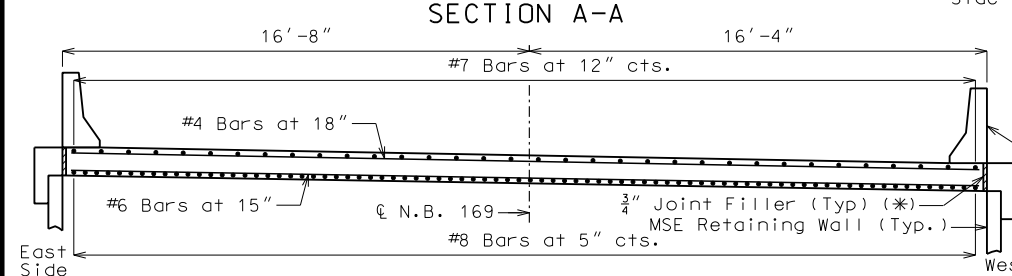
HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
Certificate of Authority: 000856



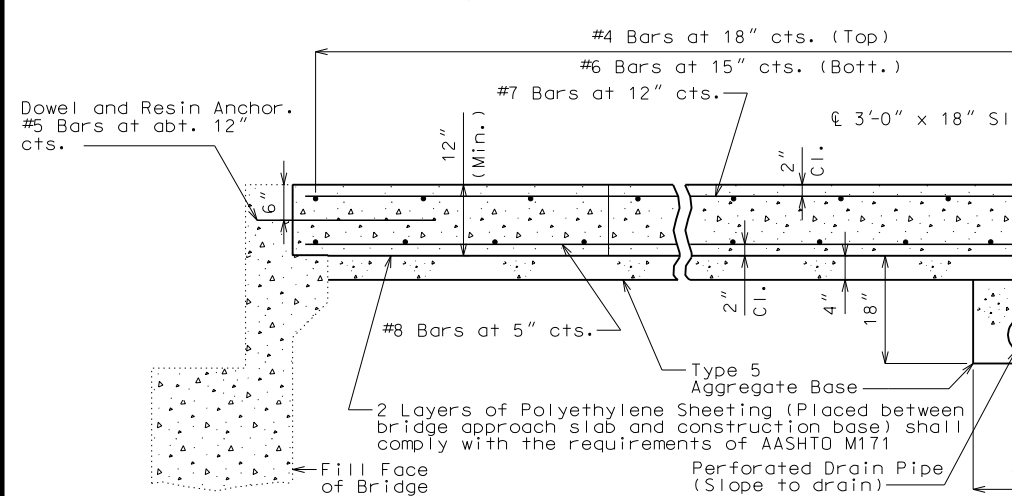
PART PLAN SHOWING REINFORCEMENT



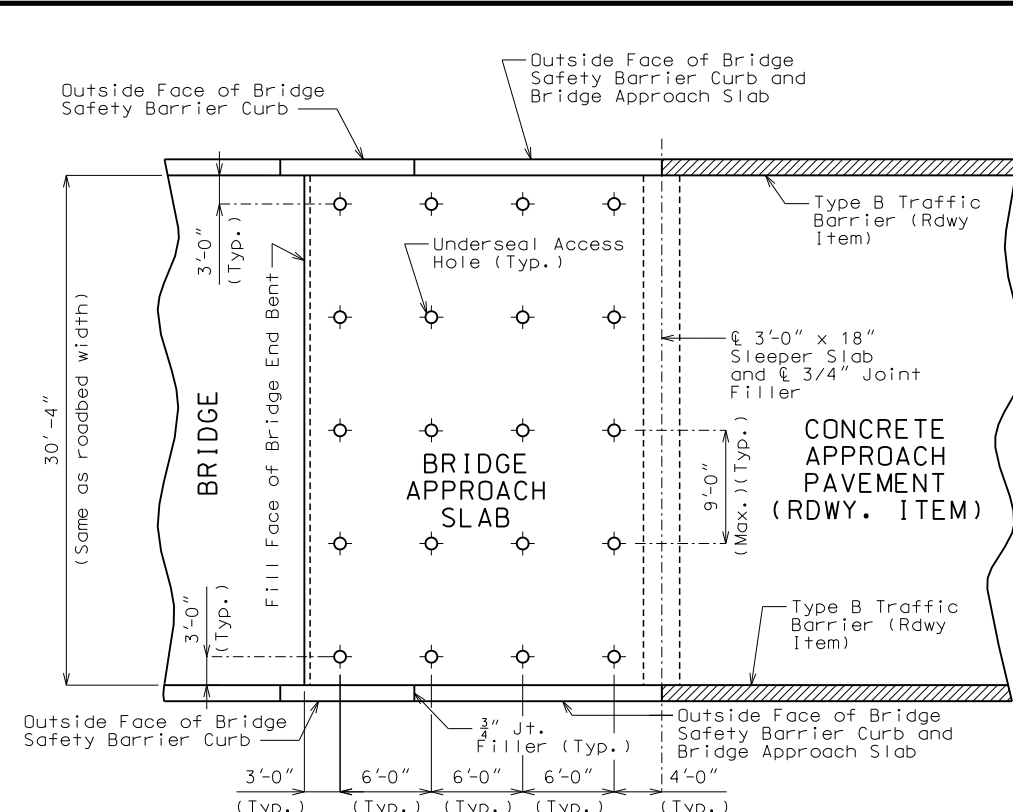
SECTION A-A



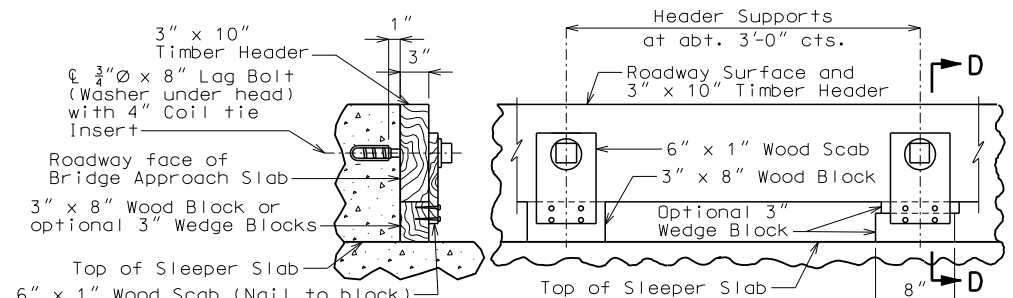
SECTION B-B



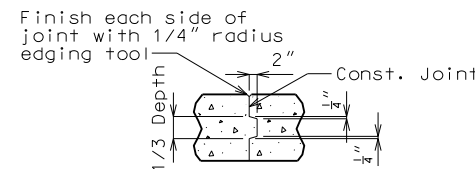
SECTION C-C



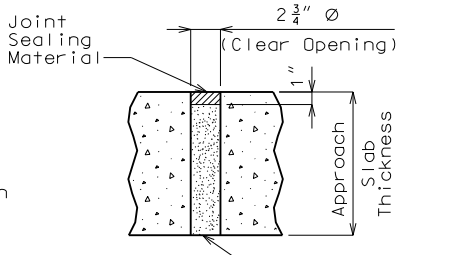
PART PLAN (SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)



SECTION D-D
PART ELEVATION
DETAILS OF TIMBER HEADER



CONST. JOINT DETAIL (IF REQUIRED)



TYPICAL UNDERSEAL ACCESS HOLE DETAIL

GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with Fy = 60,000 psi.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2", respectively.

Mechanical bar splices shall be in accordance with Sec 706.

(*) Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge) per square yard.

For Concrete Approach Pavement details, see roadway plans.

At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired in accordance with Sec 710.

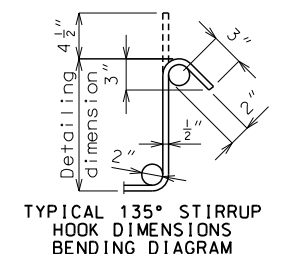
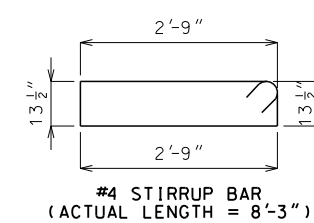
Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing resin anchor system complete-in-place will be considered completely covered by the contract unit price for Bridge Approach Slab.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039, but shall not be less than 5".

An epoxy coated #5 Grade 60 Reinforcing bar 2'-6" long shall be substituted for the 5/8" dia. threaded rod.



Note: Nominal lengths are based on out-to-out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE PREPARED
2/13/12

ROUTE 169 STATE MO
DISTRICT BR SHEET NO. 5

COUNTY CLAY
JOB NO. J4U1314B
CONTRACT ID.

PROJECT NO.

BRIDGE NO. A46421

DESCRIPTION	DATE

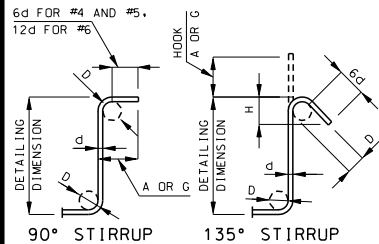
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HDR Engineering, Inc.

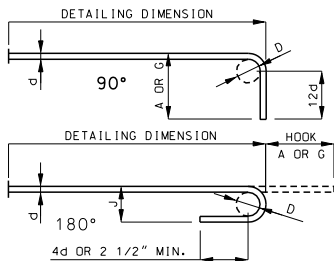
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
Certificate of Authority: 000856

BILL OF REINFORCING STEEL																								
NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT				
										B	C	D	E	F	H	K								
																	FT.				IN.	FT.	IN.	FT.
SAFETY BARRIER CURB																								
4	5	C1	Slip Form	E	20					5	10.000						5	10	24					
8	5	C2	Slip Form	E	20					10	0.000						10	0	83					
21	5	K1	Barrier	E	19	S				3	4.000	5.125					3	9	80					
21	5	K2	Barrier	E	14	S					5.125	22.125	18.000			2.000	17.875	3	9	78				
12	5	K3	Barrier	E	20					4	9.000						4	9	59					
12	5	K4	Barrier	E	20					5	3.000						5	3	66					
44	5	R1	Barrier	E	26	S				2	6.000	4.250				2	6.000	3.000	5	3	5	3	241	
44	5	R3	Barrier	E	19	S					17.000	6.000					1	11	1	10			84	
44	5	R4	Barrier	E	27	S						6.000	11.250	7.000	12.000	9.250	6.375	3	0	2	10			130
7	5	R5	Barrier	E	20					20	6.000							20	6	20	6			150
9	5	R6	Barrier	E	20					20	5.000							20	5	20	5			192
SAFETY BARRIER CURB																								



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

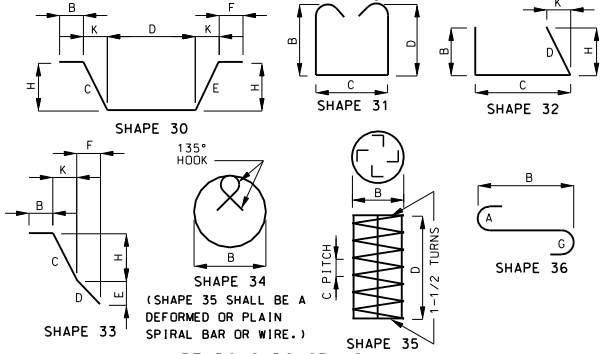
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS					
ALL GRADES					
BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	
#3	2 1/4"	5"	3"	6"	
#4	3"	6"	4"	8"	
#5	3 3/4"	7"	5"	10"	
#6	4 1/2"	8"	6"	12"	
#7	5 1/4"	10"	7"	14"	
#8	6"	11"	8"	16"	
#9	9 1/2"	15"	11 3/4"	19"	
#10	10 3/4"	17"	13 1/4"	22"	
#11	12"	19"	14 3/4"	2'-0"	
#14	18 1/4"	2'-3"	21 3/4"	2'-7"	

TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) F_y = 60,000 PSI.



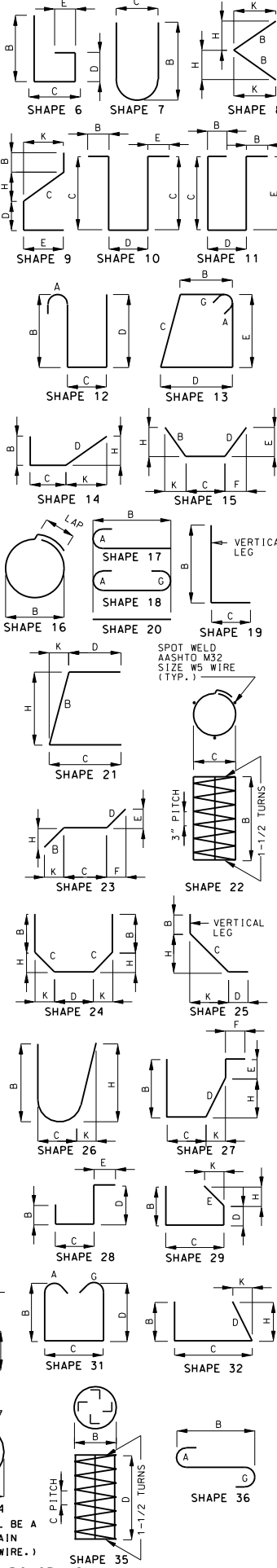
BENDING DIAGRAMS

Detailed December 2011
Checked December 2011

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 6

BILL OF REINFORCING STEEL																			
NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS									
										B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE PREPARED

2/13/12

ROUTE

169

STATE

MO

DISTRICT

BR

SHEET NO.

6

COUNTY

CLAY

JOB NO.

J4U1314B

CONTRACT ID.

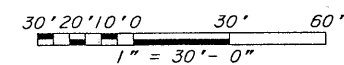
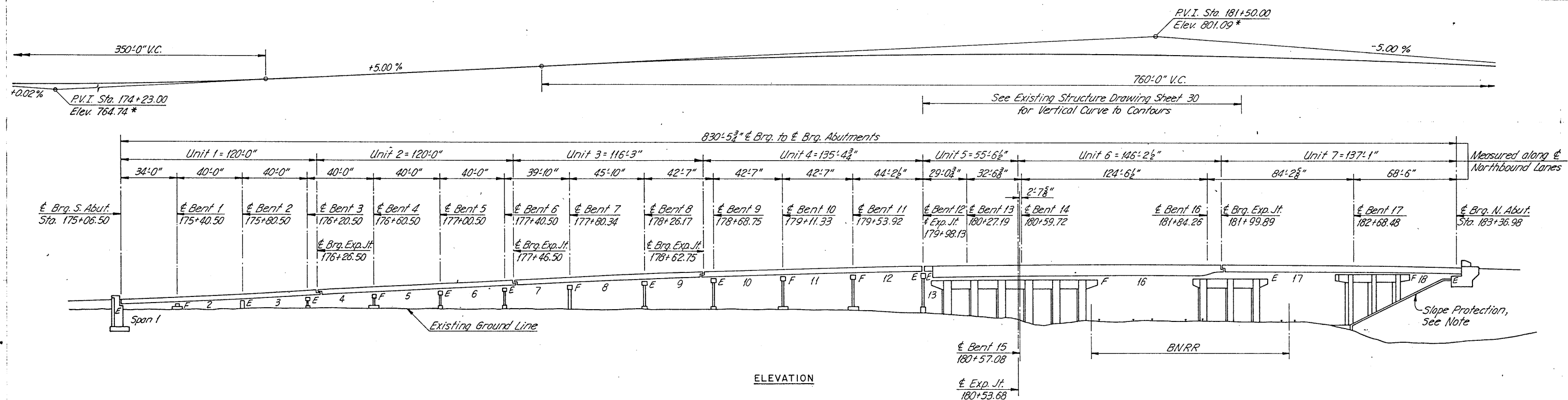
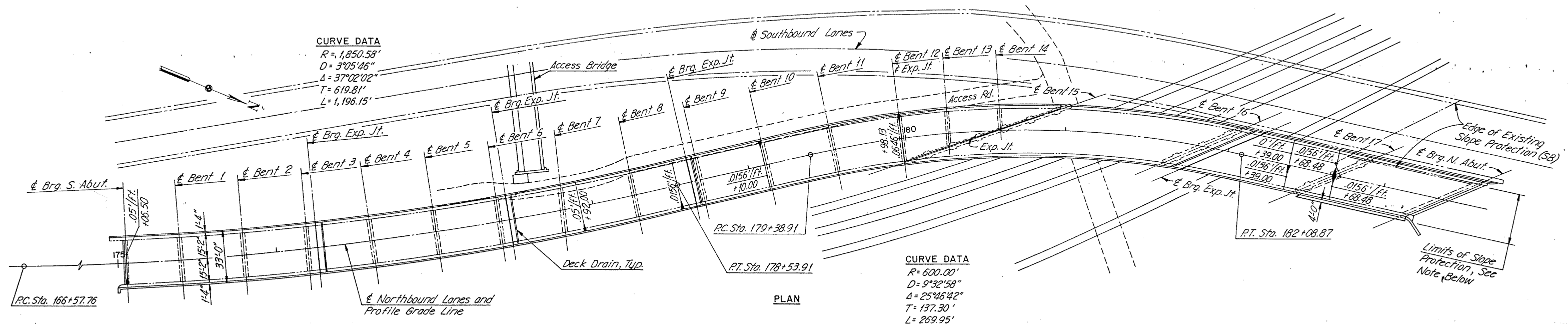
PROJECT NO.

BRIDGE NO.

A46421

DESCRIPTION

DATE



KANSAS CITY, MISSOURI
 DEPARTMENT OF PUBLIC WORKS

MISSOURI RIVER BRIDGE AT BROADWAY
 NORTHBOUND BROADWAY OVER
 BURLINGTON NORTHERN RAILROAD
 GENERAL PLAN AND ELEVATION

HNTB
 HOWARD NEEDLES TAMMEN & BERGENDOFF
 ARCHITECTS ENGINEERS PLANNERS

SHEET 25

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Highway Bridges, Thirteenth Edition (1983) as amended by 1984 thru 1988 Interim Specifications.

CONSTRUCTION: The construction covered by these plans shall conform to the current Standard Specifications and Design Criteria Engineering Division, Department of Public Works, Kansas City, Missouri, except that the Missouri Standard Specifications for Highway Construction, 1986 Edition with Supplement and Special Provisions shall be utilized for auxiliary specifications.

All dimensions of the existing bridge components shown on the plans are approximate and the original information given on reproductions of the original construction plans is presented in these plans as being general and approximate only. All such dimensions and information shall be verified by the Contractor prior to any intended use of such data and the Contractor shall have sole responsibility for the accuracy and reliability of such verifications.

Any damage to the existing bridges, approach roadways, pavements and medians caused by the Contractor's operations shall be repaired to the Engineer's satisfaction and shall be accomplished at the Contractor's expense.

DESIGN LOADS: HS20-44
No future wearing surface.

DESIGN UNIT STRESSES: Concrete Class B2 f'c = 4,000 psi
Reinforcing steel ASTM A615 Grade 60 fy = 60,000 psi

CONCRETE: Concrete in the bridge deck, approach slab repair, abutment repairs and barrier curb shall be Concrete Class B2. All exposed edges shall be chamfered 3/4" unless shown or noted otherwise.

REINFORCING STEEL: All reinforcing steel in the bridge deck and barrier curb shall be epoxy coated. All reinforcing steel shall be 2" clear to face of concrete, except where otherwise noted. Reinforcing steel shall conform to the requirements of ASTM A615, Grade 60.

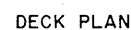
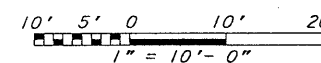
STRUCTURAL STEEL: All miscellaneous structural steel shall conform to the requirements of ASTM A36 steel.

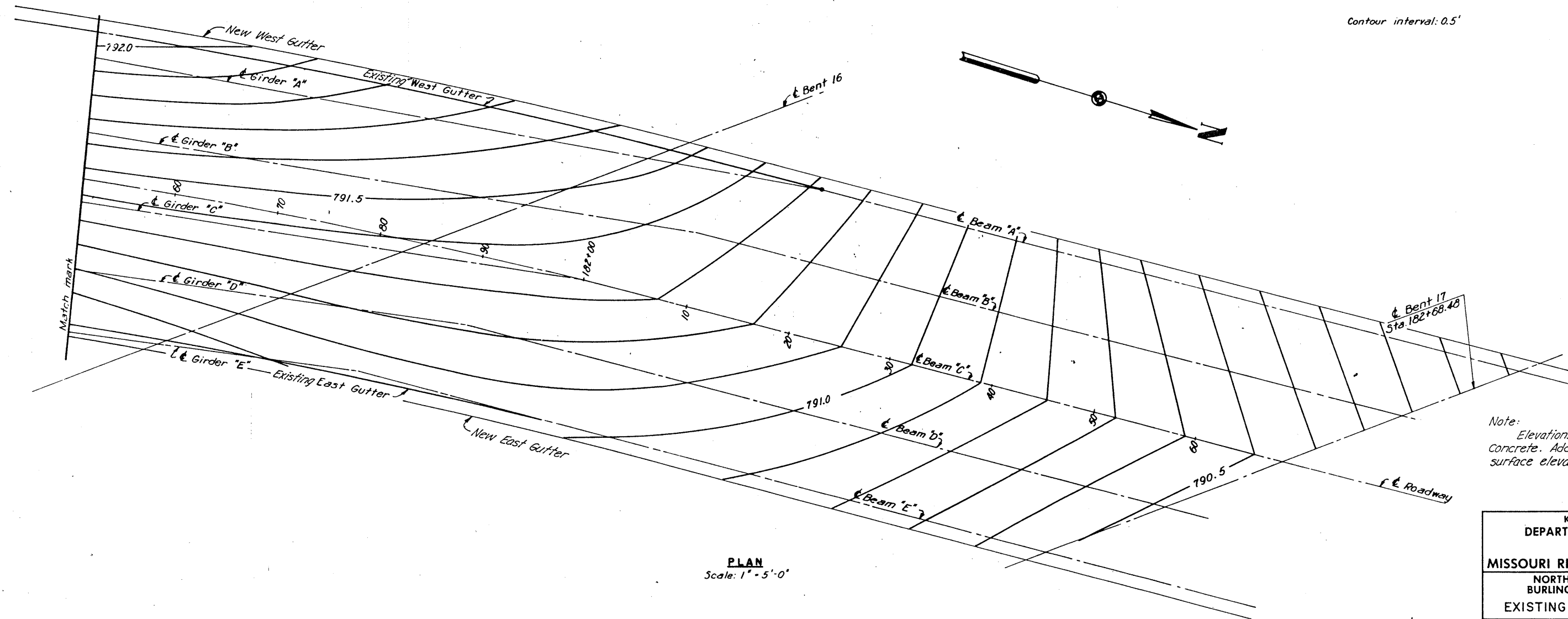
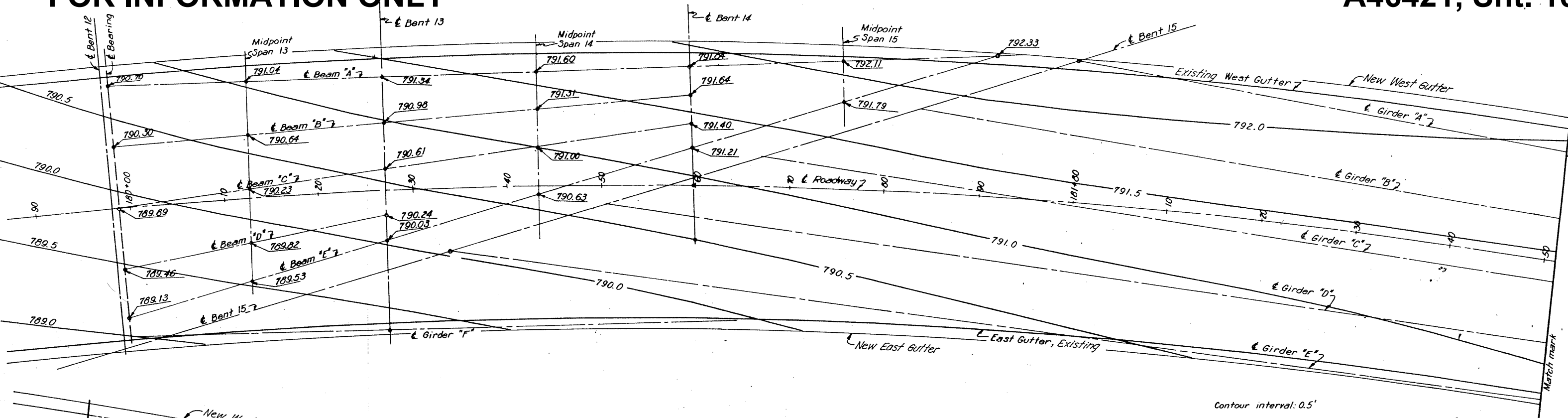
HAUNCH: A variable depth haunch shall be formed by the contractor on Unit 6 girders to provide for anticipated dead load deflection and other deviations.

SCOPE OF WORK: Scope of work to be done shall include the following:
(1) Remove existing bridge deck and replace with a new bridge deck and new barrier curbs. Junction boxes and conduit not required in new bridge deck.
(2) Provide and install new preformed compression seal at abutments.
(3) Extend existing finger expansion joints and sliding plate expansion joints to accommodate new roadway width and barrier curbs.
(4) Extend existing deck drains to accommodate new roadway width.
(5) Reconstruct ends of approach slabs as shown in plans.
(6) Perform miscellaneous superstructure steel repairs as shown in plans.
(7) Make Units 1-5 and Unit 7 composite by installation of shear studs to the top flange of all longitudinal beams.
(8) Repair abutment and pier concrete as shown in plans.
(9) Seal top of concrete piers and abutment seats with a protective coating.
(10) Repair abutment wingwalls to accommodate new barrier curb and thrie beam transition.
(11) Spot paint bridge as described in the Special Provisions.
(12) Place slope protection at North Abutment.

SUMMARY OF QUANTITIES		
ITEM	UNIT	QUANTITY
Removal of Existing Bridge Deck	Lump Sum	1
Class B-2 Concrete (Superstr. on Steel)	Cu. Yds.	758.0
Class B-2 Concrete (Barrier Curbs)	Cu. Yds.	158.1
Reinforcing Steel (Epoxy Coated)	Lbs.	204,645
Fabricated Structural Carbon Steel (Misc.)	Lbs.	445
Substructure Repair Type I	Sq. Ft. *	37
Substructure Repair Type II	Sq. Ft. *	139
Protective Coating - Concrete Bents (Deleterious Agents)	Lump Sum	1
Preformed Compression Expansion Joint Seal (2 1/2")	Lin. Ft.	88
Approach Modifications	Lump Sum	1
Drainage Repairs	Lump Sum	1
Expansion Joint Repairs	Lump Sum	1
Structural Steel Repairs	Lump Sum	1
Shear Studs	Each	8,998
Slope Protection	Sq. Yds.	276.3
Painting	Lump Sum	1

*Quantity shown is estimated. Actual repair quantity shall be determined by the Engineer in the field.

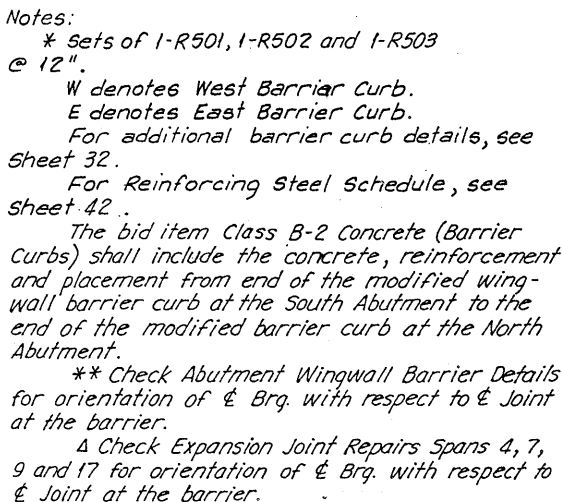




PLAN
Scale: 1" = 5'-0"

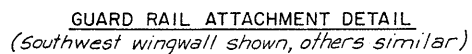
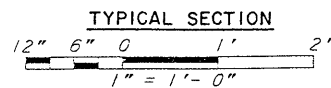
Note:
Elevations are to top of "As Built" concrete. Add 2 1/2" for "As Built" wearing surface elevations.

KANSAS CITY, MISSOURI DEPARTMENT OF PUBLIC WORKS
MISSOURI RIVER BRIDGE AT BROADWAY NORTHBOUND BROADWAY OVER BURLINGTON NORTHERN RAILROAD EXISTING STRUCTURE DRAWING
HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF ARCHITECTS ENGINEERS PLANNERS
SHEET 30

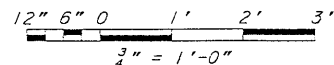


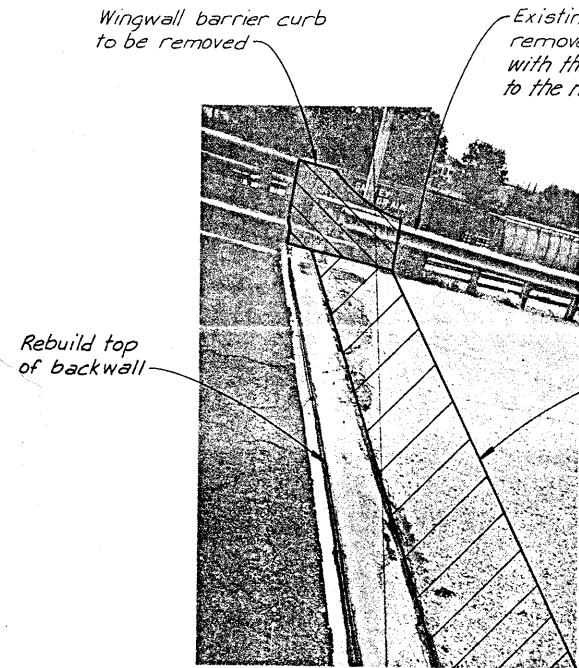
Technical drawing of a deck drain detail. The drawing shows a cross-section of a concrete deck with a drain. Key dimensions and labels include:

- Overall width: 1'-4"
- Horizontal segments: 7", 2", 7"
- Vertical segments: 10 1/2", 1'-7", 2'-8"
- Reinforcement labels: R501, R505, R503, R502 (field bend as required at deck drains)
- Clearance: 1 1/2" Clr. Typ.
- Other dimensions: 11 1/2", 10", 3"



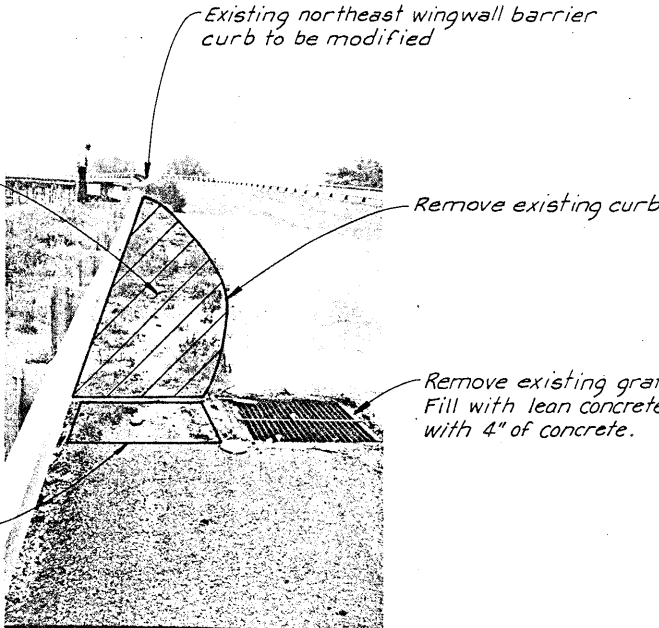
Note:
See Mo. State Highway and Transportation
Department Std. Dwg. No. 606.22 F for details
of Thrie Beam Guardrail.



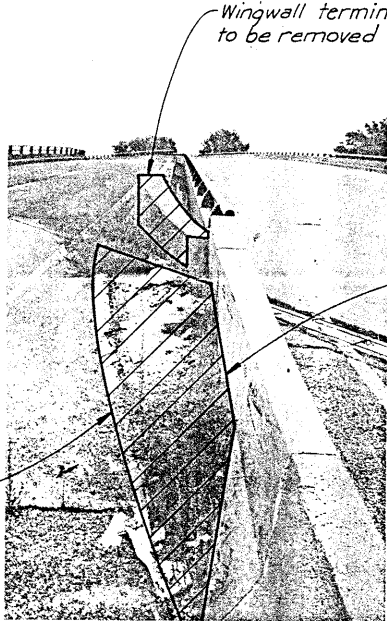


SOUTH ABUTMENT APPROACH SLAB
SOUTHEAST WINGWALL

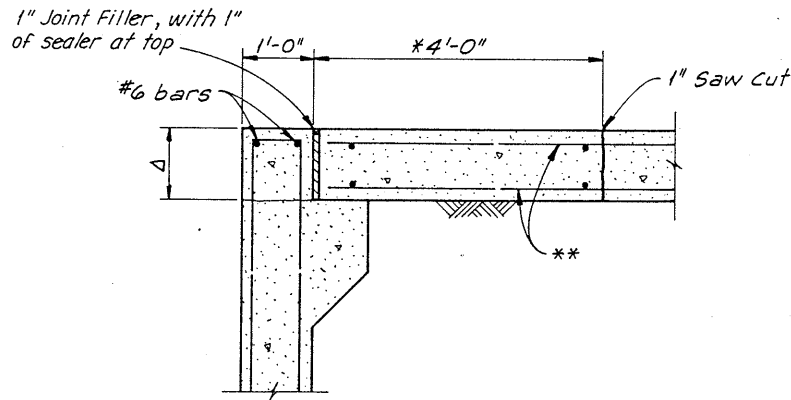
Place curb and gutter (Dept. of Public Works Std. CG-1) and pave the remaining area with 4" of concrete. Curb face shall be aligned with the front of the barrier curb.



NORTHEAST APPROACH



NORTHWEST APPROACH

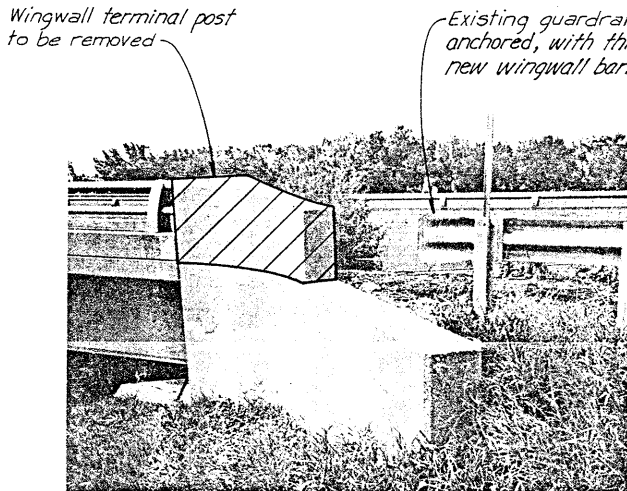


ABUTMENT SECTION

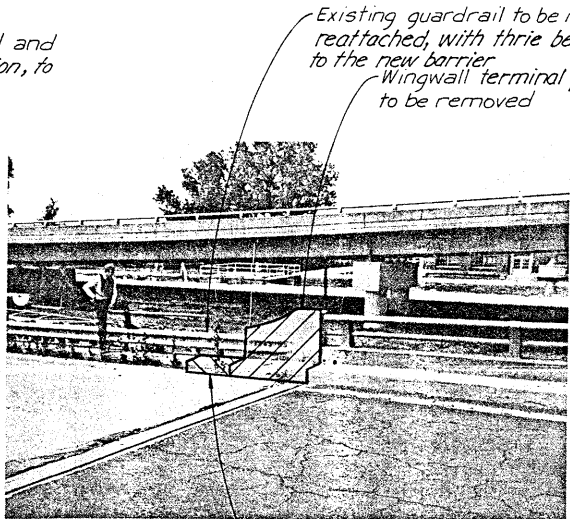
Δ Rebuild top 1'-0" of backwall by removing concrete. Care shall be taken not to damage reinforcement, except transverse #6 bars may be replaced at the Contractor's option.

* Rebuild approach slab by removing concrete. South Abutment only.

** At Contractors option, existing longitudinal bars may be cut 2'-0" from 1" saw cut and new bars lapped with existing, at no additional cost to project.

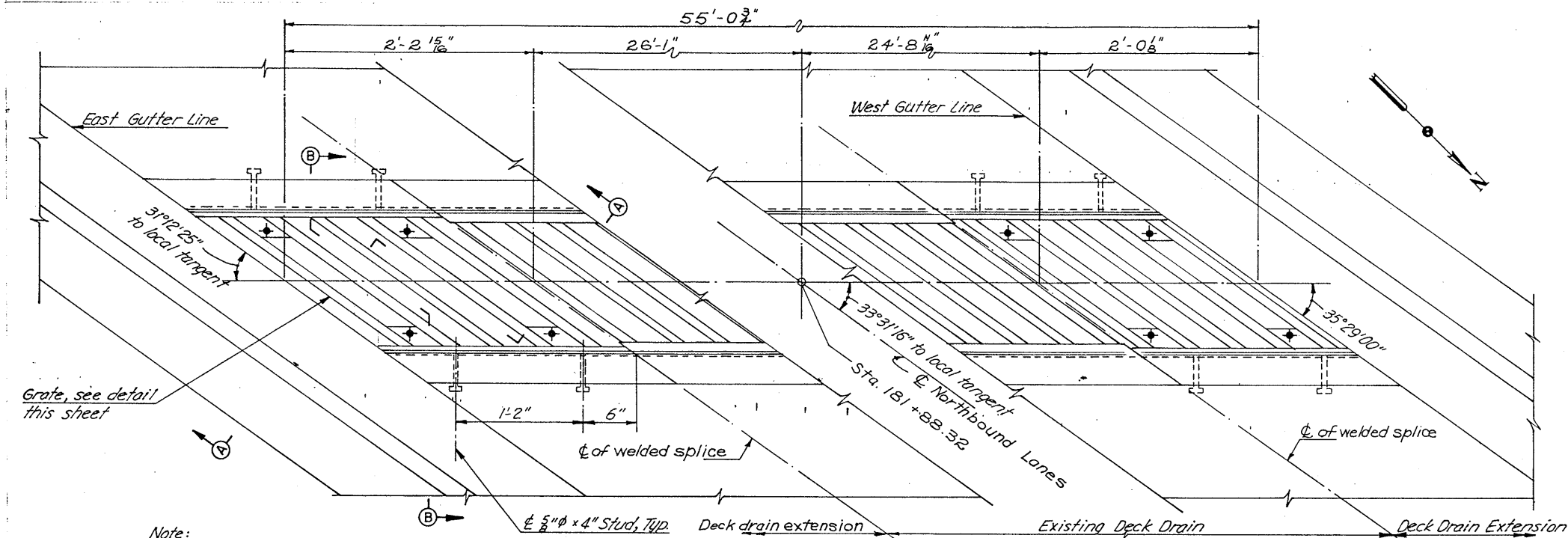


NORTHEAST WINGWALL



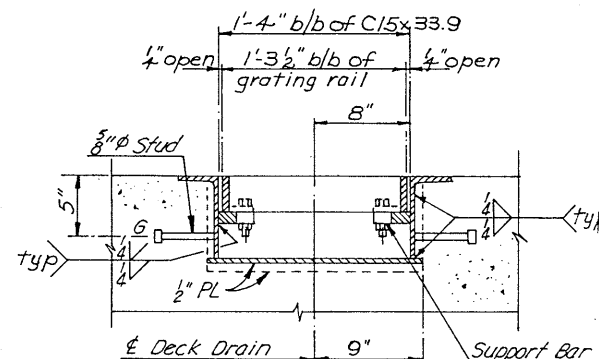
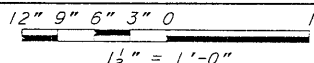
SOUTHWEST WINGWALL

- Notes:
The following items shall be paid for under the bid item "Approach Modifications":
1. Curb and gutter at northeast approach.
 2. Concrete shoulders at northeast and northwest approaches.
 3. Guardrail extensions required to make attachment to modified wingwall barrier curb at the southwest, southeast and northeast wingwalls, with a three beam transition section and terminal connector.
 4. Approach slab repair and backwall repair at abutments.
 5. Existing grate replacement at Northeast Approach.

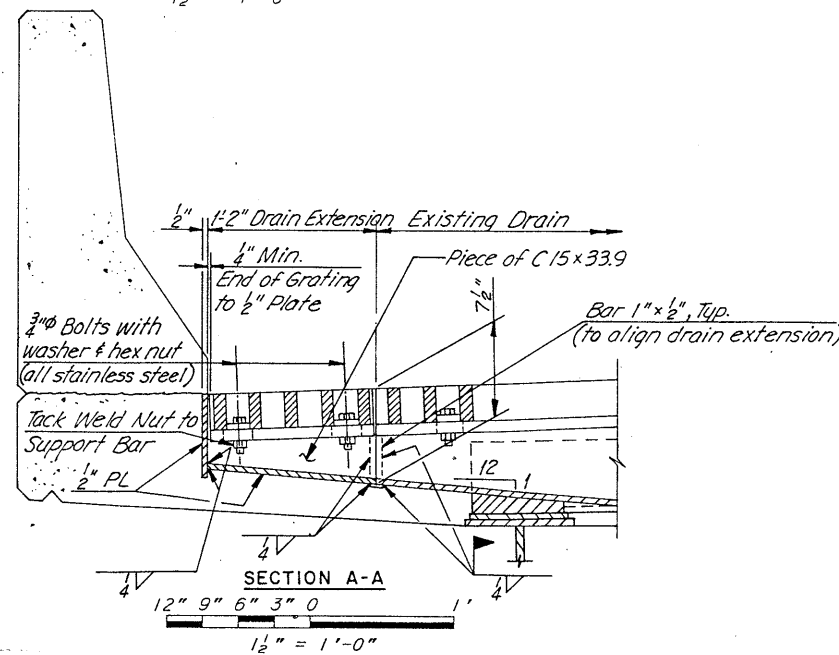
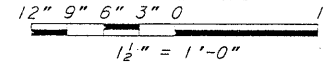


Note:
Deck drain repairs shown shall be paid for under the bid item "Drainage Repairs".
The existing deck drains shall be reused to the extent shown.
All new steel used shall conform to the requirements of ASTM A36.
The deck drains shall be blast cleaned and painted after modifications. See Special Provisions.
Sections A-A and B-B shown for Spans 4, 7 & 9, Deck Drain Span 17 similar.

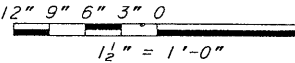
PART PLAN OF DECK DRAIN SPAN 17



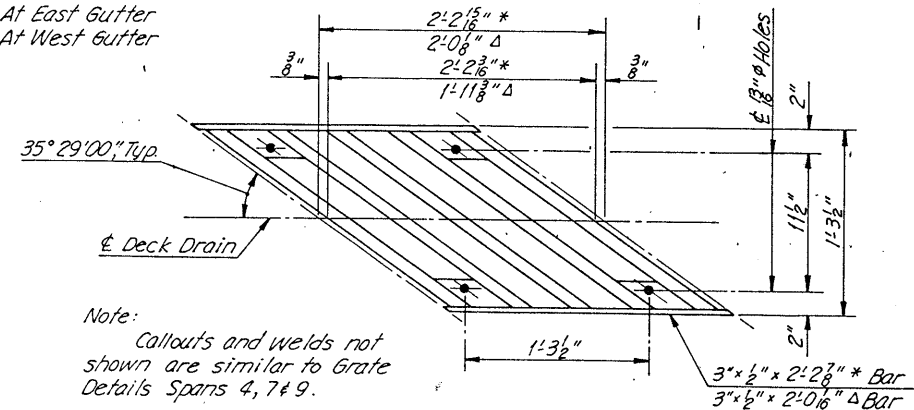
SECTION B-B



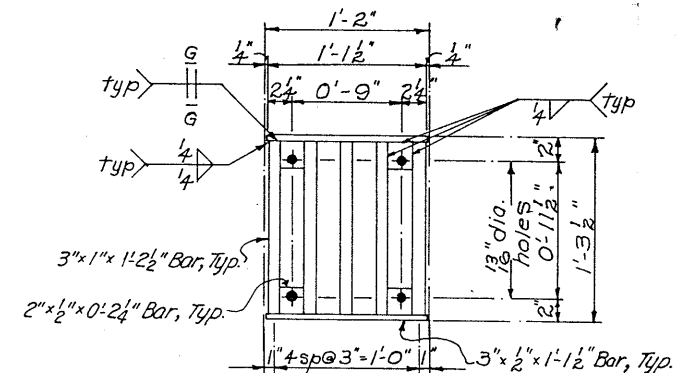
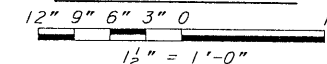
SECTION A-A



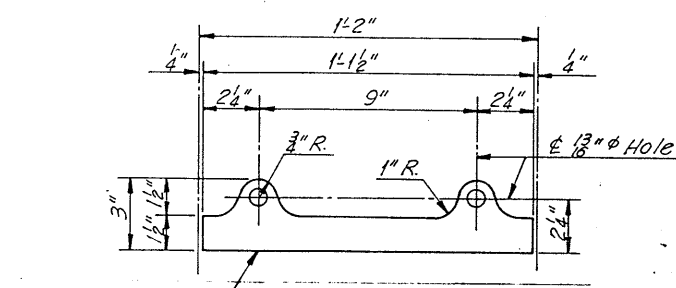
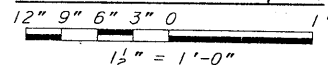
* At East Gutter
Δ At West Gutter



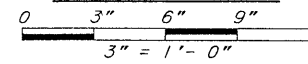
GRATE DETAIL SPAN 17



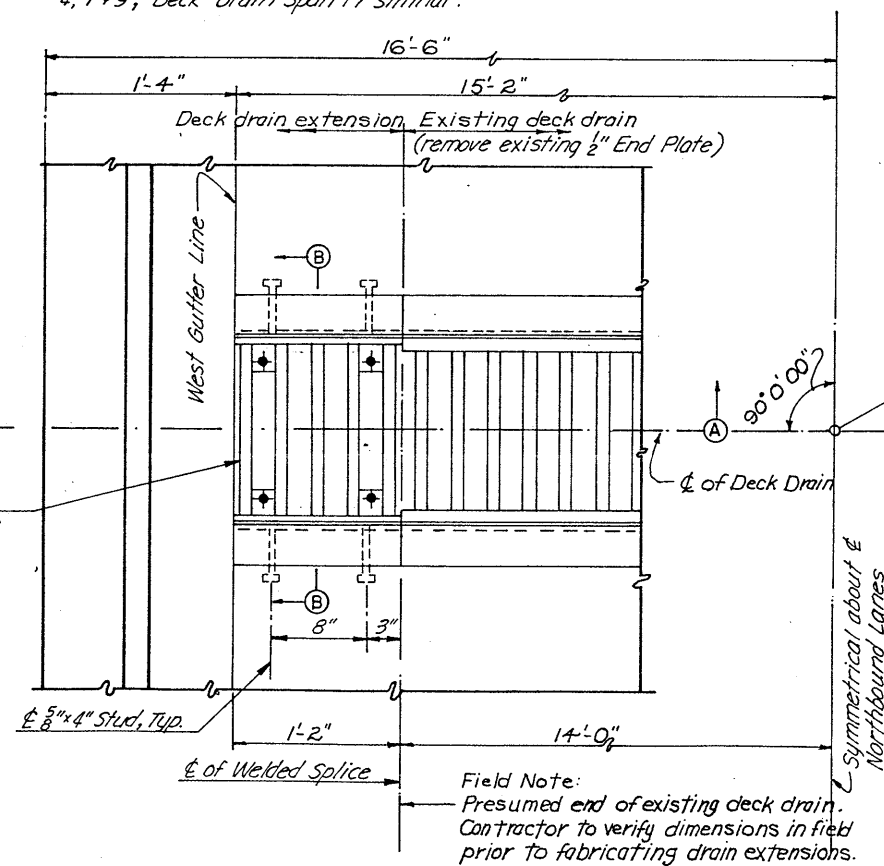
GRATE DETAIL SPANS 4, 7 & 9



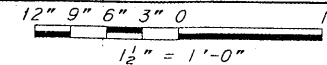
SUPPORT BAR DETAIL



(Shown for Grate at Spans 4, 7 & 9, Span 17 similar)

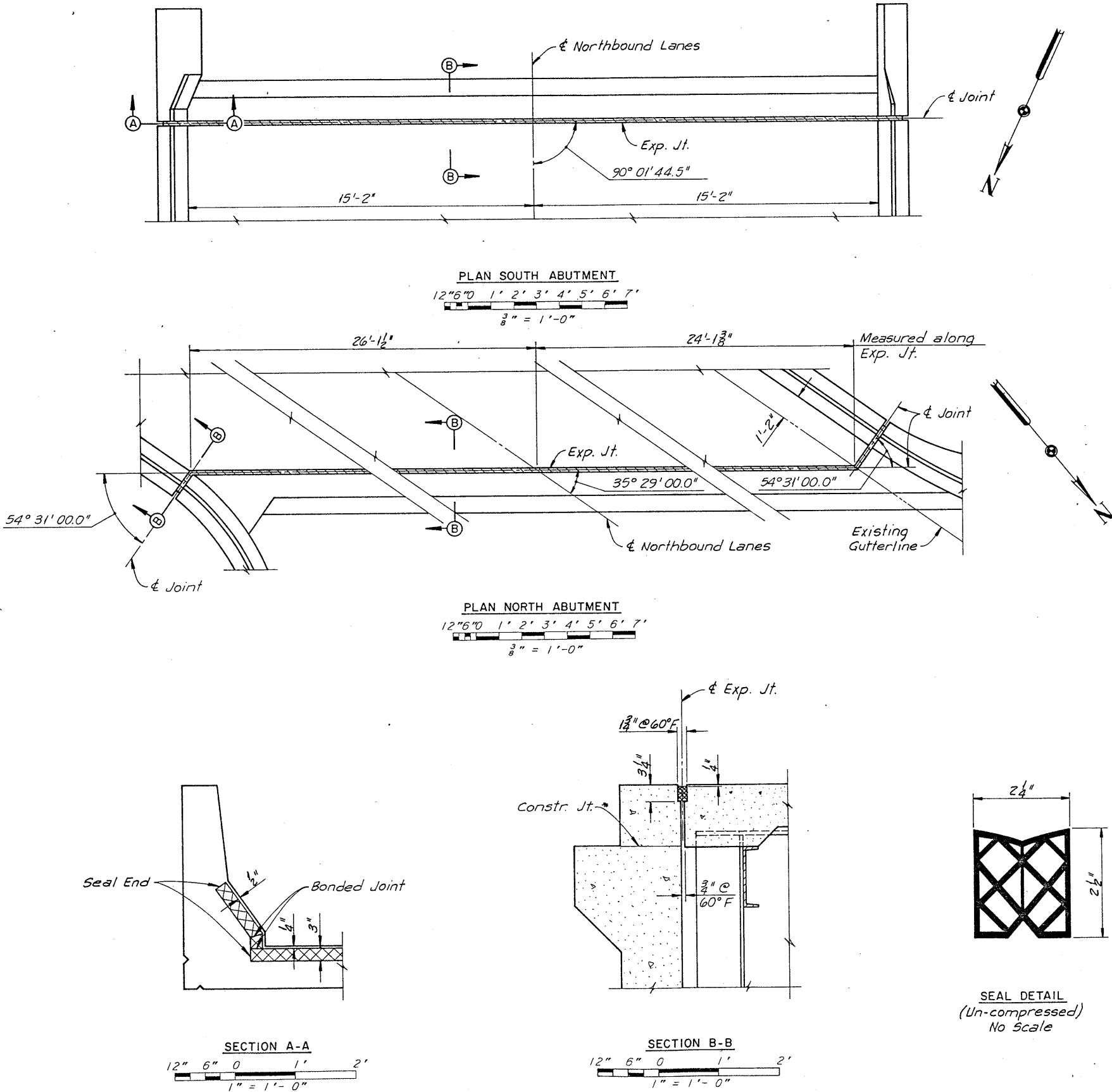


PART PLAN OF DECK DRAIN SPANS 4, 7, & 9

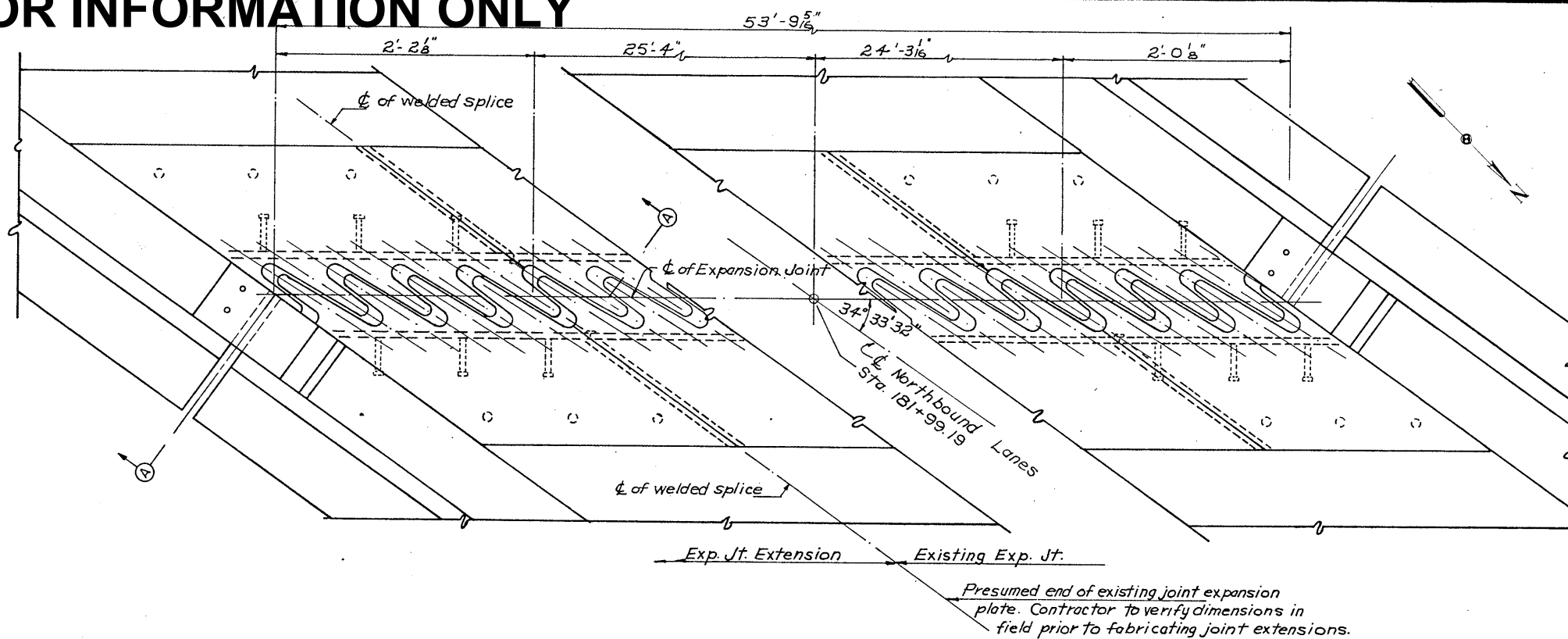


Field Note:
Presumed end of existing deck drain.
Contractor to verify dimensions in field prior to fabricating drain extensions.

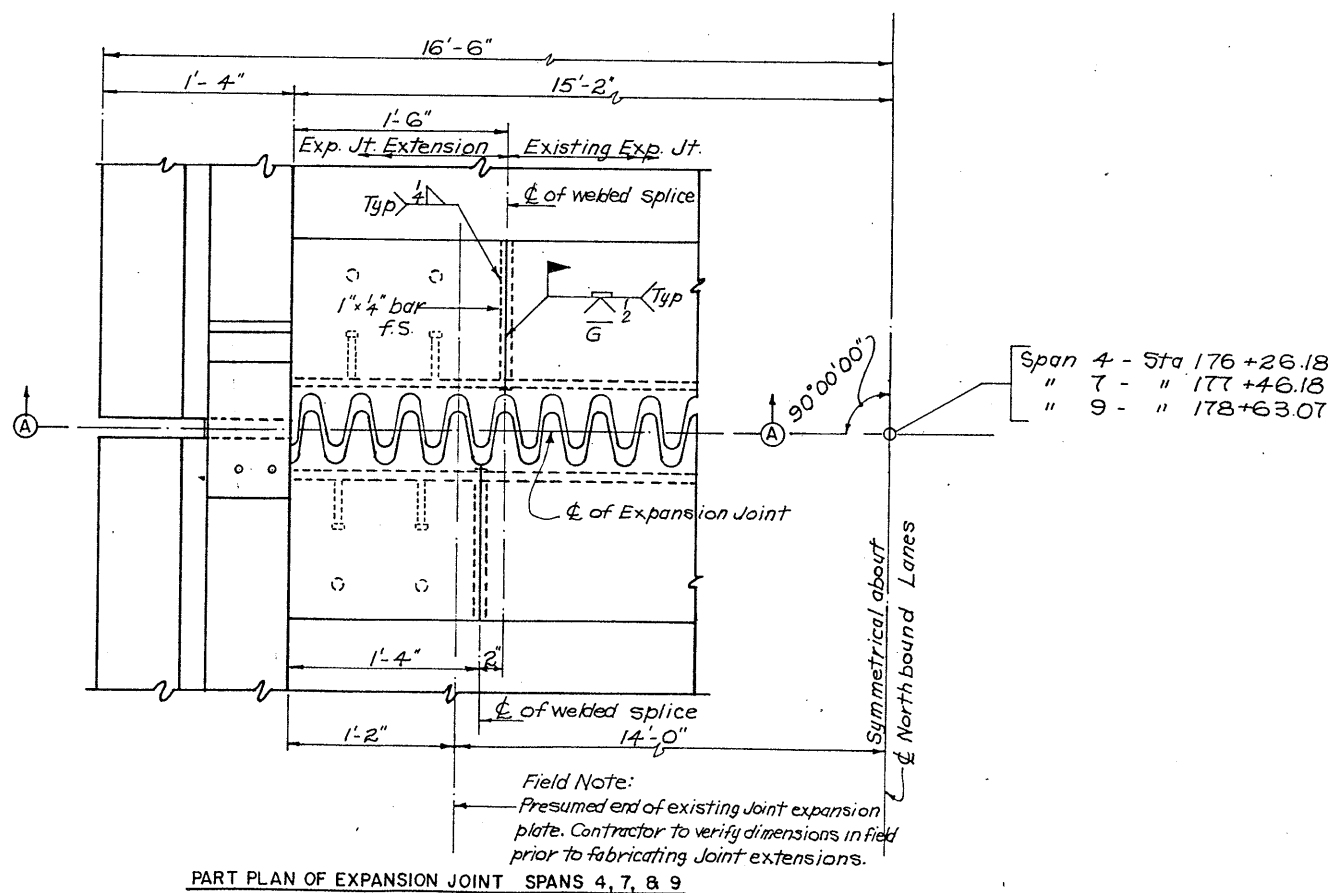
KANSAS CITY, MISSOURI
DEPARTMENT OF PUBLIC WORKS
DEPARTMENT OF TRANSPORTATION
MISSOURI RIVER BRIDGE AT BROADWAY
NORTHBOUND BROADWAY OVER
BURLINGTON NORTHERN RAILROAD
DRAINAGE REPAIRS



Notes:
Existing expansion joints shall be replaced with compression seal expansion joints equal to CV-2250 (D.S. Brown Co.) or WA-250 (Watson Bowman ACME).
Seal detail shown is for CV-2250 (D.S. Brown Co.), dimensions may vary depending on manufacturer.
Seals shall be fabricated and installed in accordance with the manufacturer's recommendations.
All compression seal joints shall be replaced. (2 Total).
For joint locations, see Sheet 25.



PART PLAN OF EXPANSION JOINT SPAN 17
(for welds not shown, see Spans 4, 7, and 9)



PART PLAN OF EXPANSION JOINT SPANS 4, 7, & 9

Notes:

Expansion joint repairs shown at Spans 4, 7, 9, and 17 shall be paid for under the bid item "Expansion Joint Repairs".

The existing expansion joints shall be reused to the extent shown. New steel shims shall be provided as required in resetting the joints on the existing beams.

All new steel used shall conform to the requirements of ASTM A-36.

The expansion joints shall be sandblasted and painted after modifications. See Special Provisions.

F.S. denotes far side.

For Section A-A, see sheet 37.

12" 9" 6" 3" 0
1/2" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS

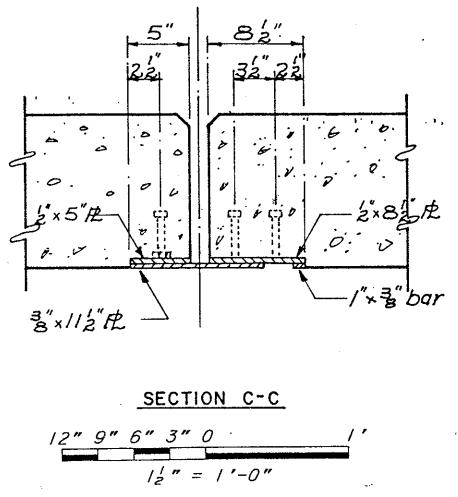
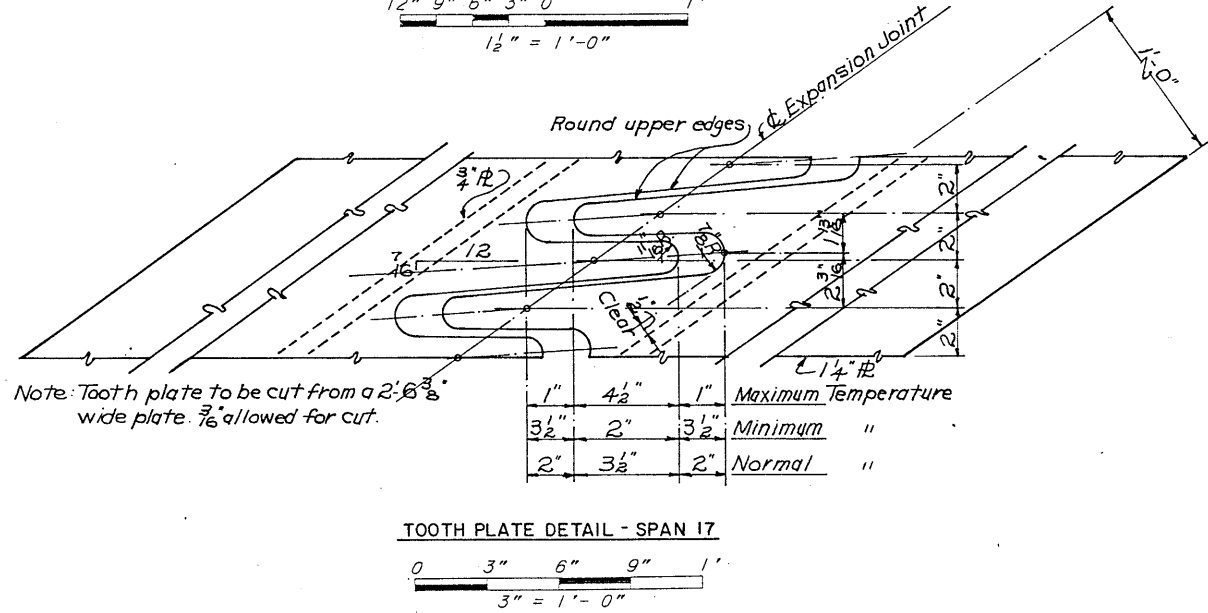
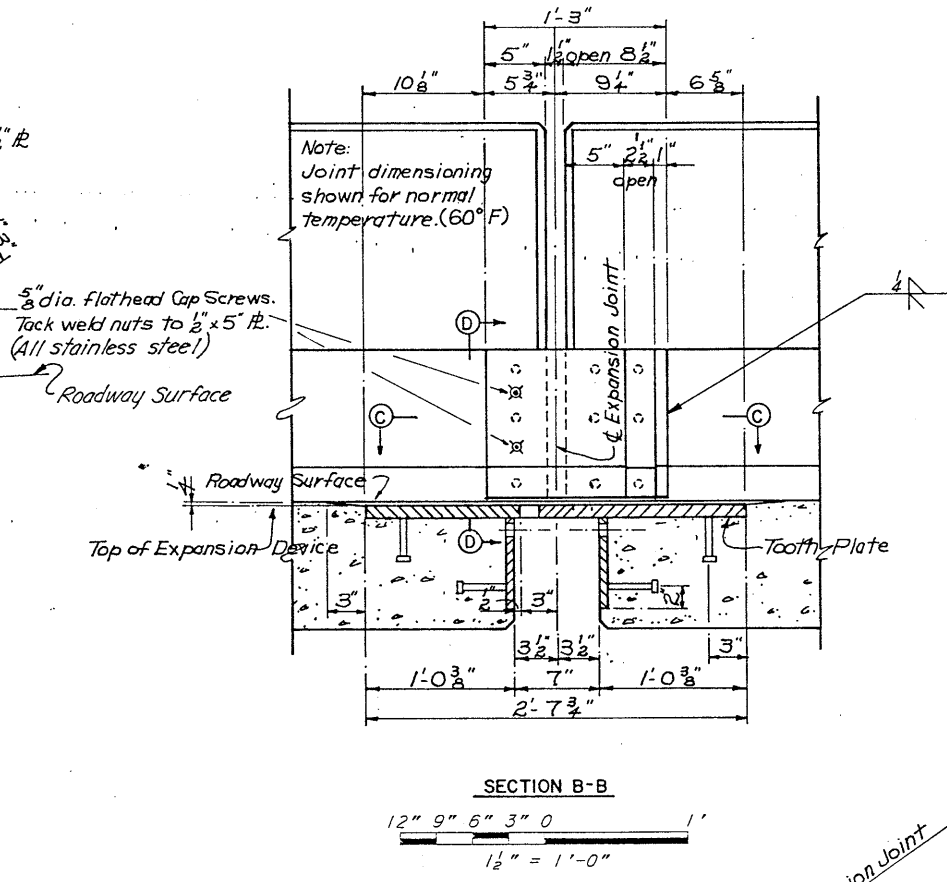
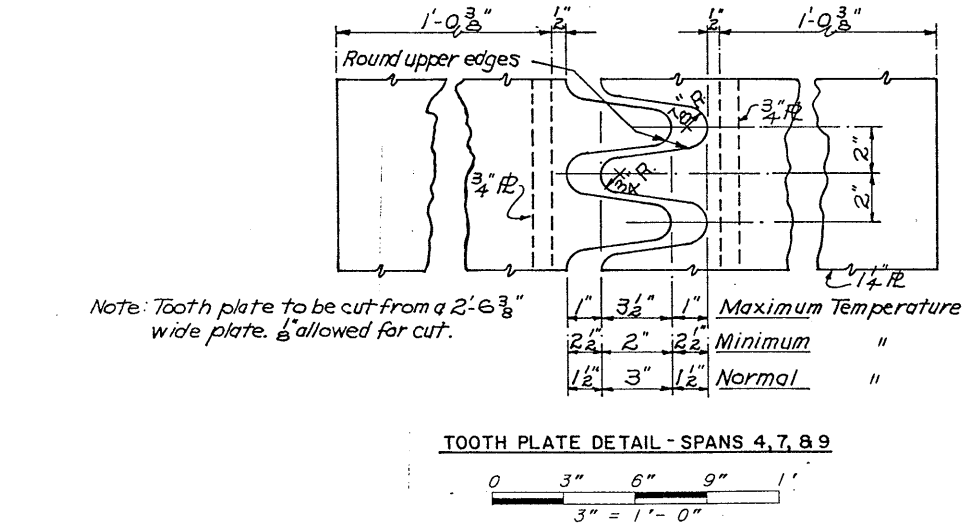
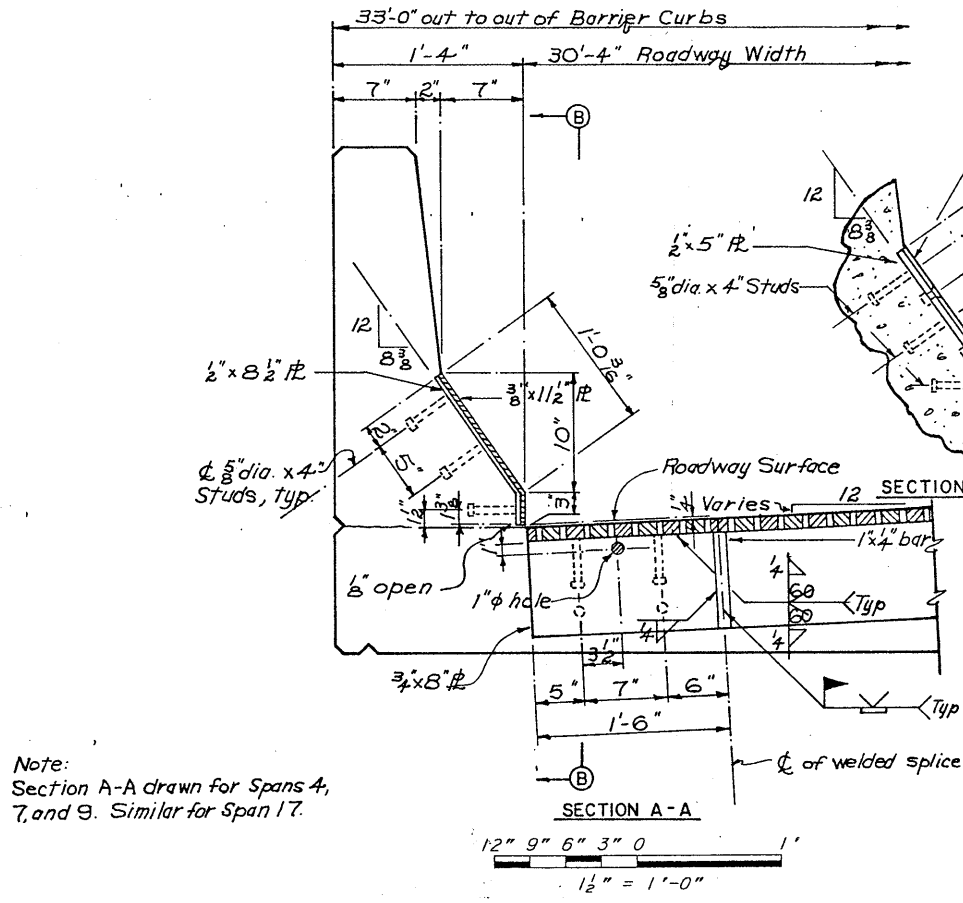
MISSOURI RIVER BRIDGE AT BROADWAY

NORTHBOUND BROADWAY OVER
BURLINGTON NORTHERN RAILROAD
EXPANSION JOINT REPAIRS
SPANS 4, 7, 9, AND 17

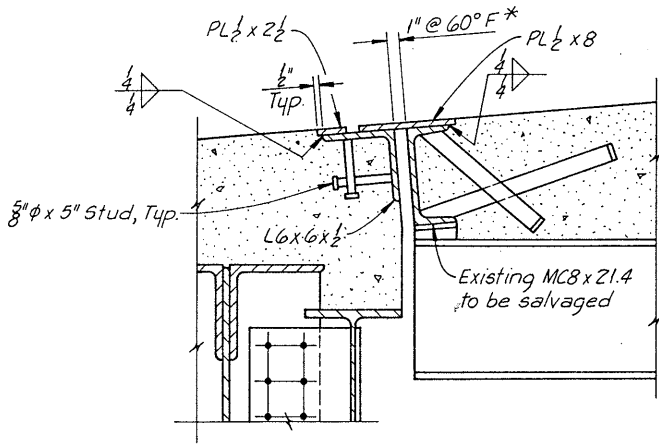
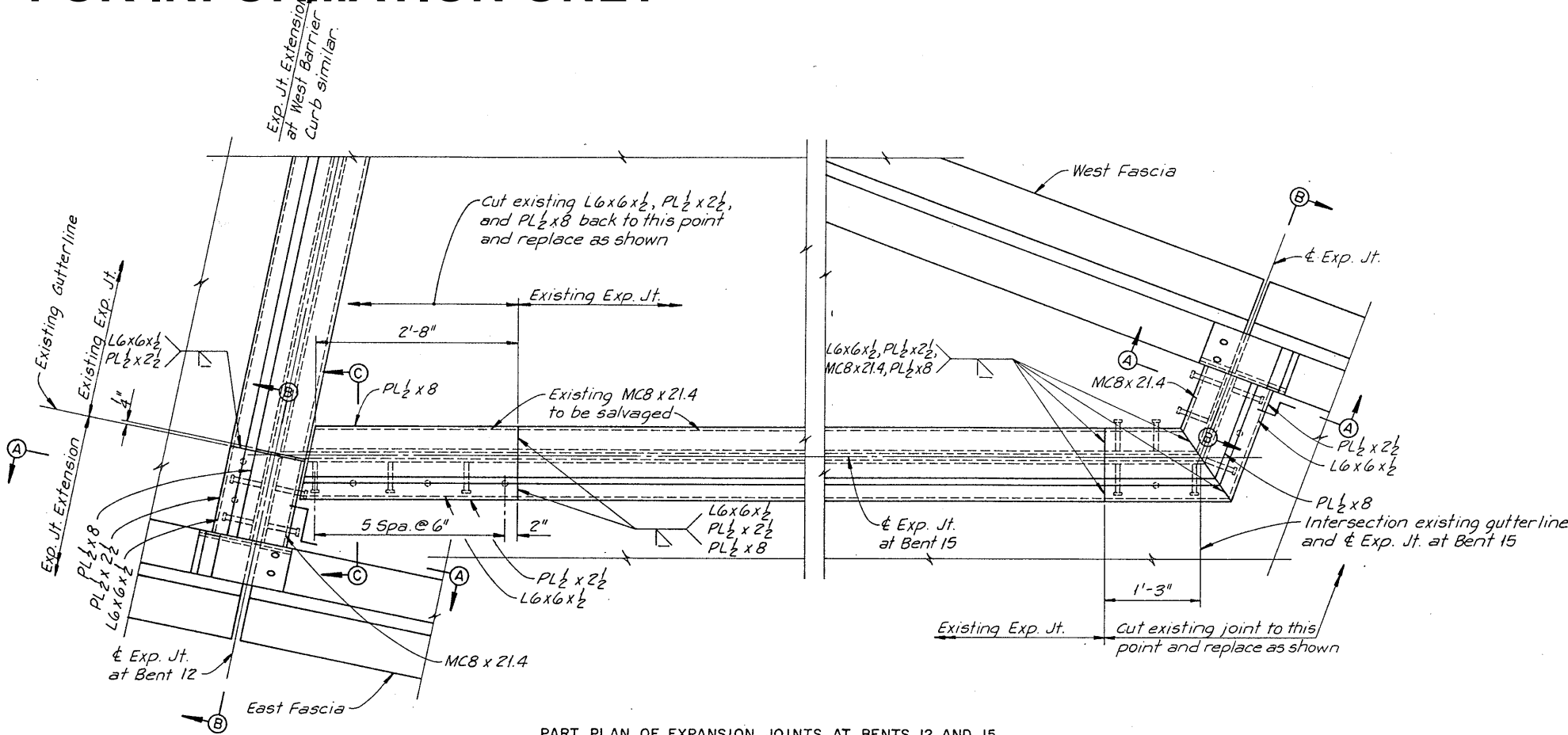
HNTB

HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS PLANNERS

SHEET 36



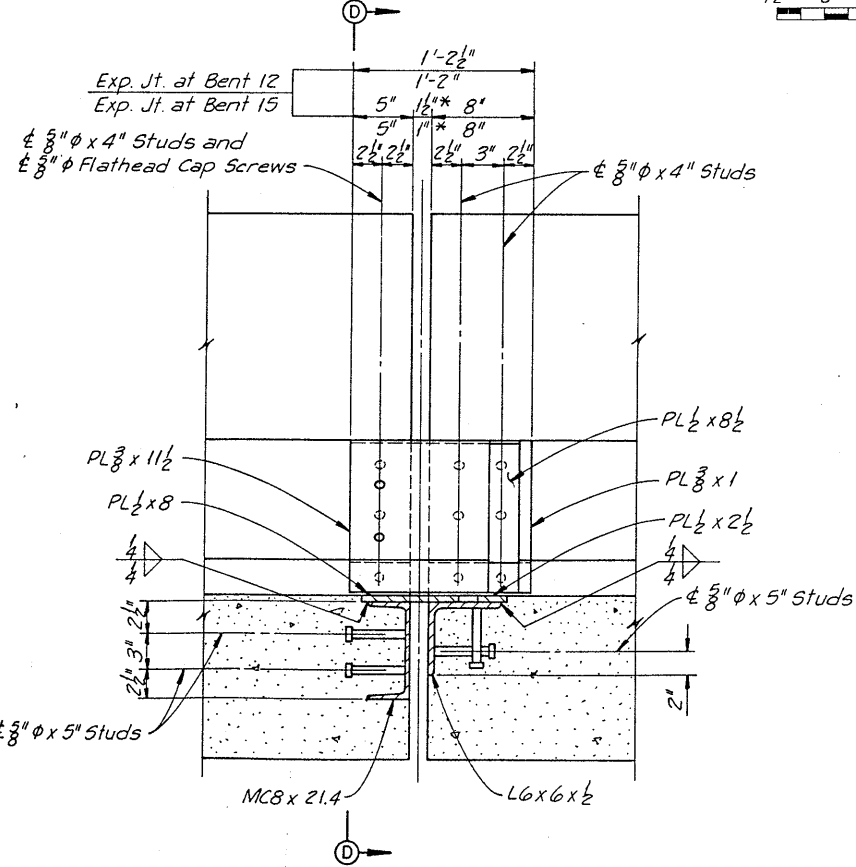
Notes:
For location of Section A-A, see sheet 36.
Curb plates shall be galvanized after fabrication.



SECTION C-C
12" 9" 6" 3" 0 1'
1 1/2" = 1'-0"

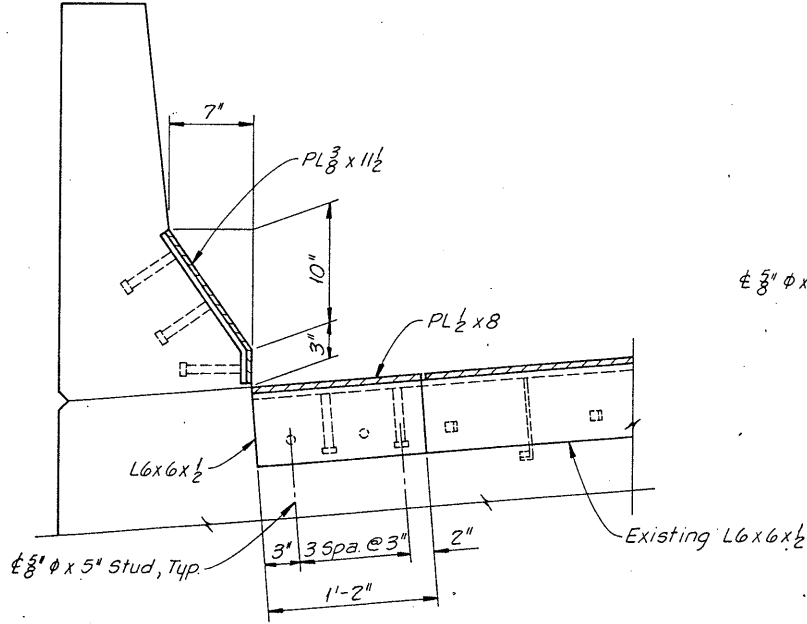
* EXPANSION JOINT OPENING CHART			
BENT 12		BENT 15	
TEMPERATURE	JOINT OPENING	TEMPERATURE	JOINT OPENING ^Δ
30°F	2"	30°F	1 3/8"
40°F	1 7/8"	40°F	1 1/4"
50°F	1 11/16"	50°F	1 1/8"
60°F	1 1/2"	60°F	1"
70°F	1 5/16"	70°F	7/8"
80°F	1 1/8"	80°F	3/4"
90°F	1"	90°F	5/8"

Δ Measured normal to Exp. Joint.



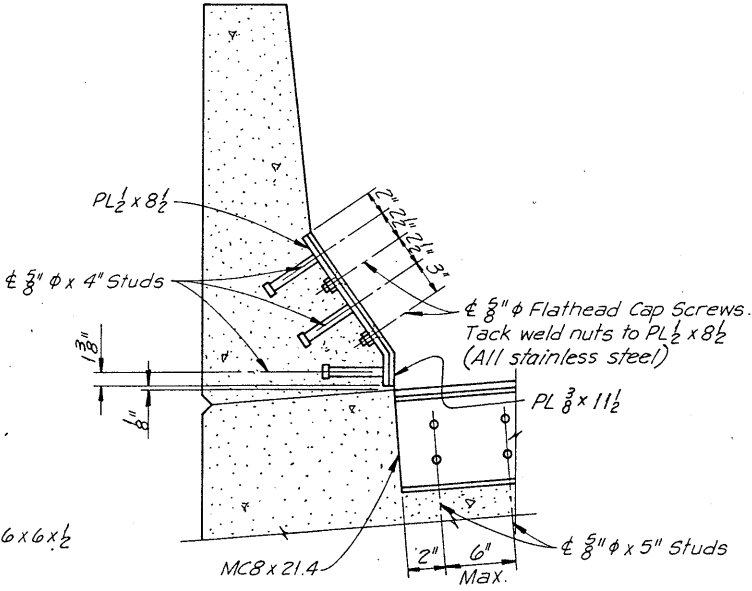
SECTION A-A

12" 9" 6" 3" 0 1'
1 1/2" = 1'-0"



SECTION B-B

(Exp. Jt. at Bent 12 shown, Exp. Jt. at Bent 15 similar.)
12" 9" 6" 3" 0 1'
1 1/2" = 1'-0"



SECTION D-D

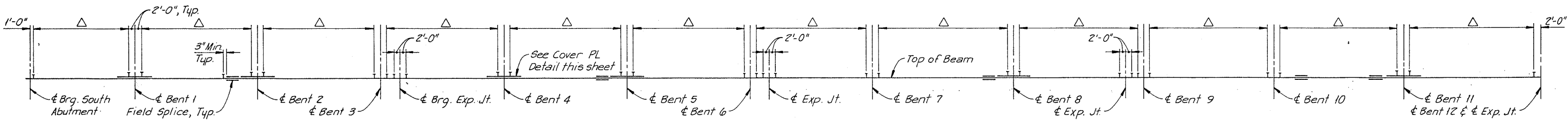
12" 9" 6" 3" 0 1'
1 1/2" = 1'-0"

Notes:
Expansion joint repairs shown at Bents 12 and 15 shall be paid for under the bid item "Expansion Joint Repair".
The existing expansion joints shall be reused to the extent shown. New steel shims shall be provided as required in resetting the joints on the existing beams or girders.
All new steel shall conform to the requirements of ASTM A36.
The expansion joints shall be sandblasted and painted after modifications. See Special Provisions.

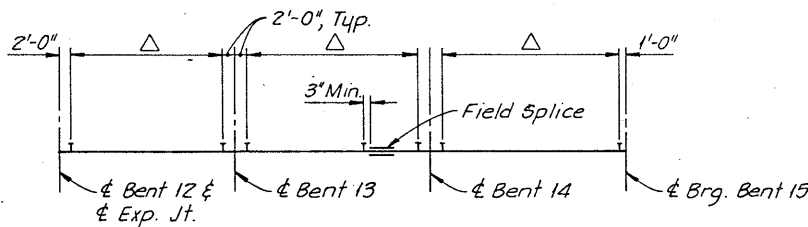
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MISSOURI RIVER BRIDGE AT BROADWAY
NORTHBOUND BROADWAY OVER
BURLINGTON NORTHERN RAILROAD
EXPANSION JOINT REPAIRS
AT BENTS 12 AND 15

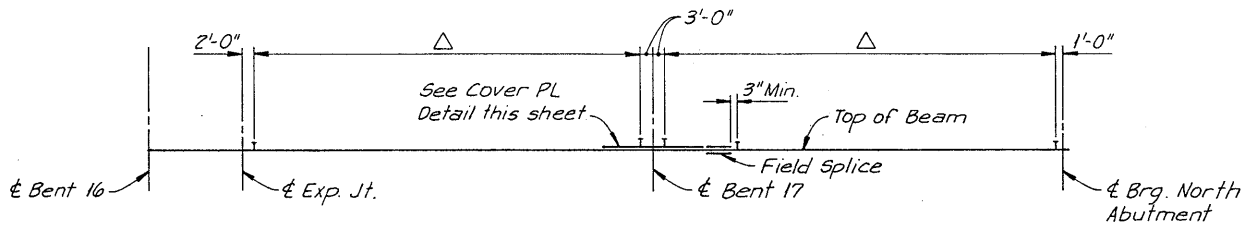
HNTB
HOWARD NEEDLES TAMMEN & BERGENOFF
ARCHITECTS ENGINEERS PLANNERS
SHEET 38



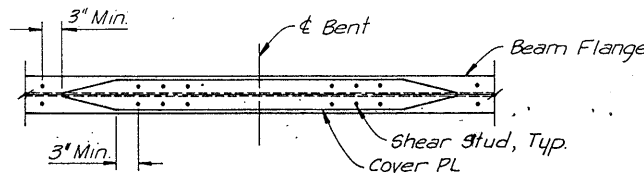
UNITS 1 THRU 4
No Scale



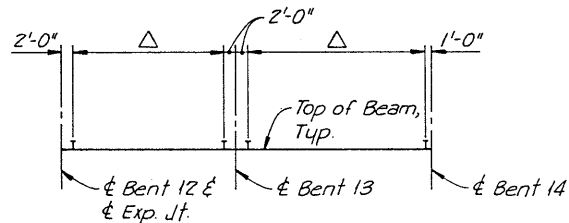
BEAM A



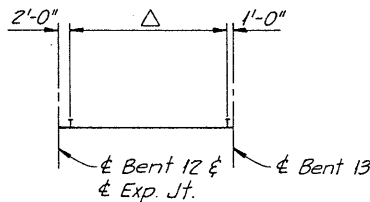
UNIT 7
No Scale



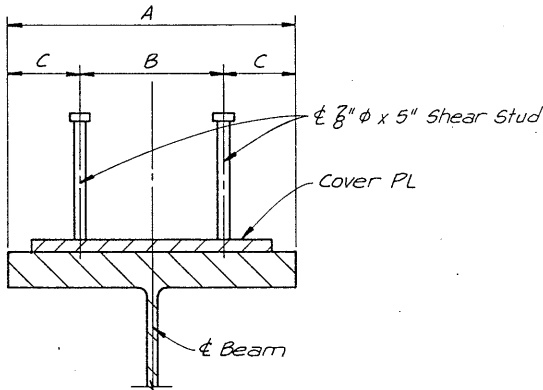
COVER PLATE DETAIL
No Scale



BEAMS B & C



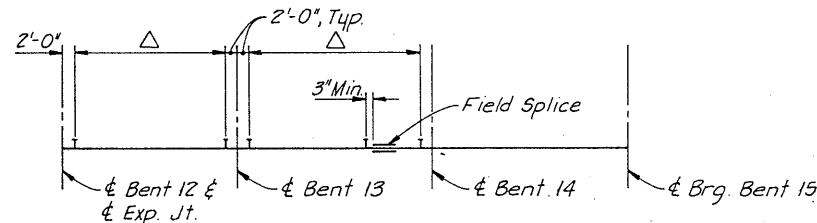
BEAM D



SHEAR STUD DETAIL
No Scale

DIMENSION TABLE			
FLANGE WIDTH	A	B	C
9"	9"	5"	2"
12"	12"	6"	3"

Notes:
△ denotes shear stud spacing @ 8" max.
Shear studs shall not be placed on splice plates.
Shear studs shall be placed in pairs.



BEAM E

UNIT 5
No Scale

DEAD LOAD DEFLECTIONS-BEAM SPANS				
SPAN	.25 SPAN	.50 SPAN	.75 SPAN	% DUE TO STEEL
1 and 4	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	15%
	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{16}$ "	10%
2 and 5	0"	$\frac{1}{8}$ "	0"	15%
	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{8}$ "	10%
3 and 6	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	15%
	$\frac{3}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	10%
7	$\frac{1}{8}$ "	$\frac{1}{8}$ "	0"	15%
	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{1}{8}$ "	8%
8	$\frac{3}{16}$ "	$\frac{1}{2}$ "	$\frac{3}{16}$ "	15%
	$\frac{5}{16}$ "	$\frac{1}{2}$ "	$\frac{5}{16}$ "	8%
9	0"	$\frac{1}{8}$ "	$\frac{1}{8}$ "	15%
	$\frac{1}{8}$ "	$\frac{1}{4}$ "	$\frac{1}{4}$ "	8%
10	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{1}{8}$ "	15%
	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{4}$ "	10%
11	0"	0"	0"	15%
	$\frac{1}{16}$ "	$\frac{1}{8}$ "	0"	10%
12	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{5}{16}$ "	15%
	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "	10%
13				
Beam A	$\frac{1}{8}$ "	$\frac{1}{8}$ "	0"	10%
Beam B	0"	0"	0"	10%
Beam C	0"	0"	0"	10%
Beam D	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	10%
Beam E	0"	0"	0"	15%
14				
Beam A	$\frac{1}{16}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "	10%
Beam B	$\frac{1}{16}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "	10%
Beam C	$\frac{1}{16}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "	10%
Beam E	0"	0"	0"	15%
15				
Beam A	$\frac{1}{4}$ "	$\frac{7}{16}$ "	$\frac{5}{8}$ "	10%
Beam E	$\frac{1}{16}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "	15%
17	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{1}{4}$ "	20%
	$\frac{7}{8}$ "	1"	$\frac{7}{16}$ "	15%
18	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	20%
	$\frac{7}{16}$ "	1"	$\frac{7}{8}$ "	15%

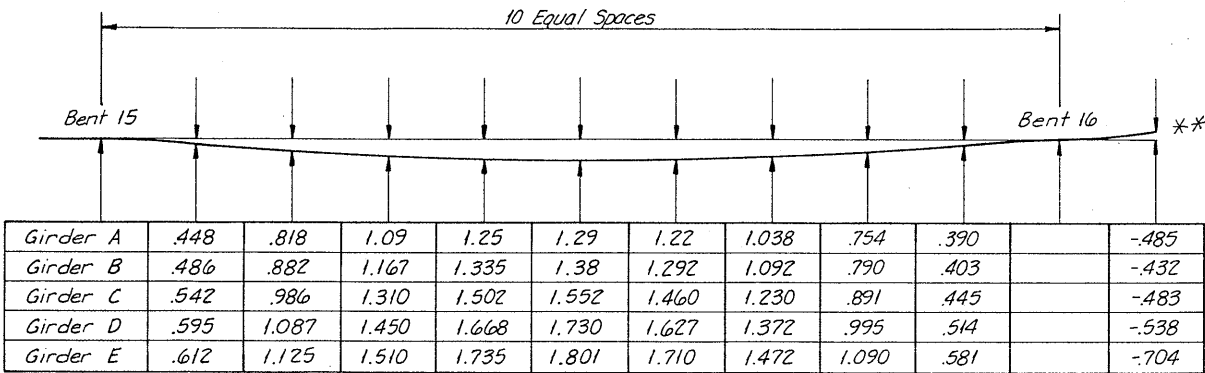
Top figure for Roadway Beams
Bottom figure for Curb Beams

Notes:

Spans 4, 7, 9, and 18 in above table taken from & Bearing at Expansion Joint to farthest adjacent bent.

Deflection at & Bearing Expansion Joint equals zero, except in Span 17 (See Dead Load Deflections-Unit 6). No allowance has been made above for upward deflection at expansion joint in Span 17. **

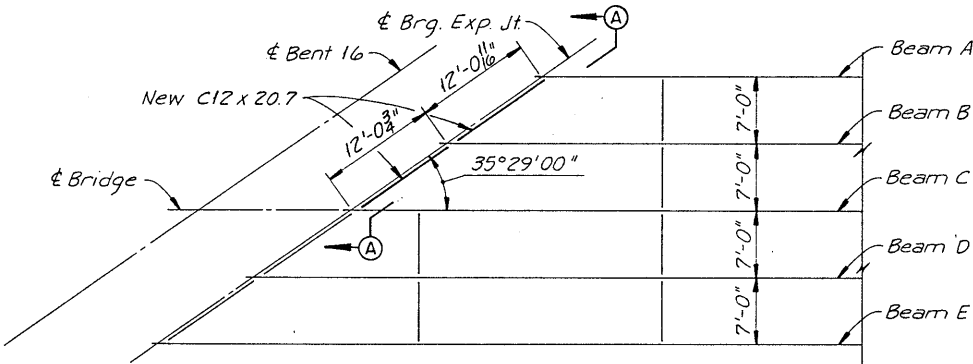
For beam locations, see Sheet 44.



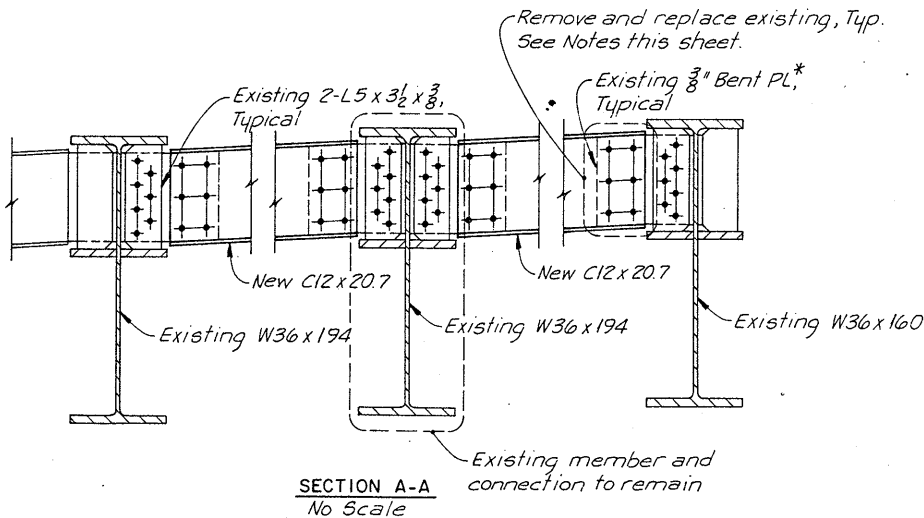
DEAD LOAD DEFLECTIONS-UNIT 6

Notes:

33% Steel deflection.
67% Other deflection.
Total deflections are given in inches for above table.



PART FRAMING PLAN UNIT 7
No Scale



Note:

The bid item "Structural Steel Repairs" shall include removing inactive utility lines attached to the steel beams, and removal of the utility brackets. Welded bracket connections shall be cut $\frac{1}{4}$ " from structure surface, ground flush with structure and spot painted. The spot painting shall be paid for under the bid item "Painting". There are approximately 40 brackets to be removed. This bid item shall be performed as directed by the Engineer.

Notes:

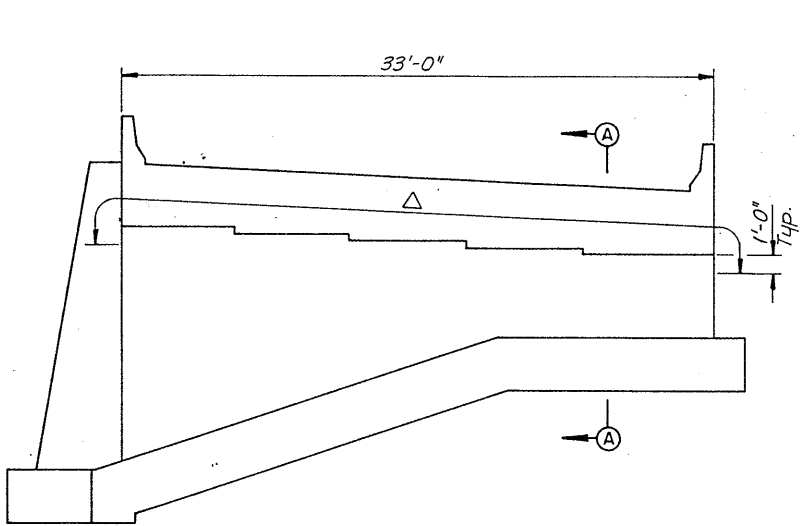
Structural steel shall conform to the requirements of ASTM A36 unless otherwise noted.

Remove existing rivets and replace with new high strength bolts, nuts and washers conforming to ASTM A325. Size of H.S. Bolts to match existing rivets. Rivet removal and installation of A325 bolts to be paid for as incidental to "Expansion Joint Repair." Rivet removal shall not damage holes in plates to be salvaged.

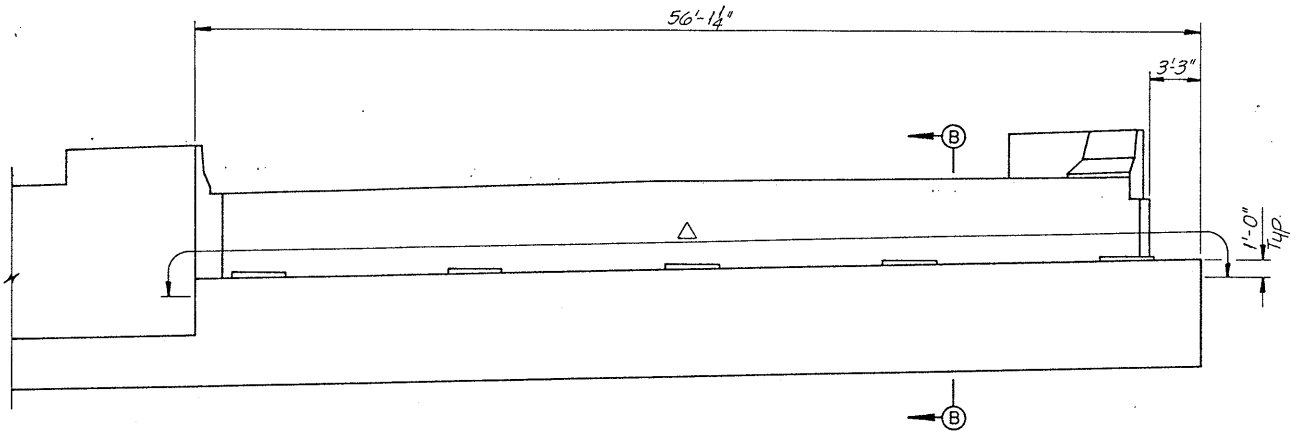
*If desired the Contractor may replace $\frac{3}{8}$ " Bent PL at his own expense.

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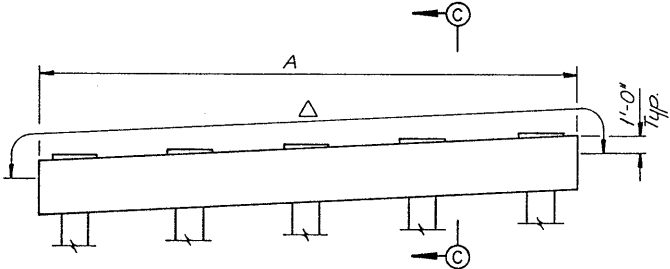
MISSOURI RIVER BRIDGE AT BROADWAY
NORTHBOUND BROADWAY OVER
BURLINGTON NORTHERN RAILROAD
MISCELLANEOUS STEEL DETAILS



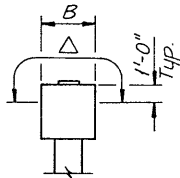
ELEVATION SOUTH ABUTMENT



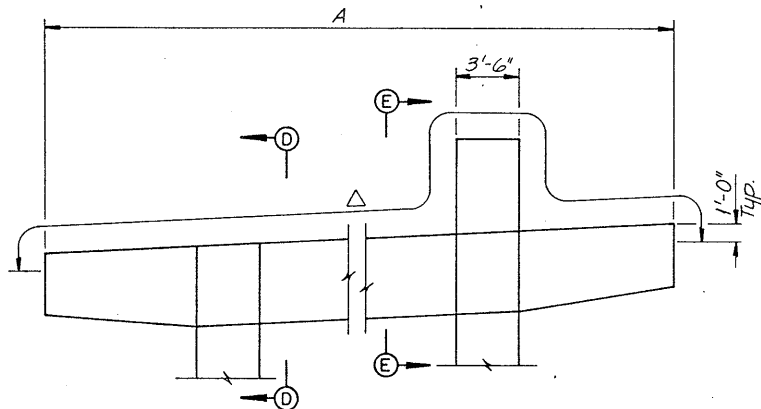
ELEVATION NORTH ABUTMENT



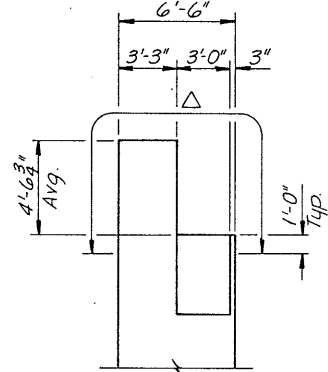
ELEVATION BENTS 1-14
(Bent 10 shown,
other Bents similar)



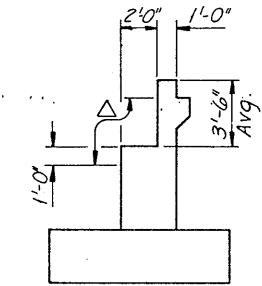
SECTION C-C



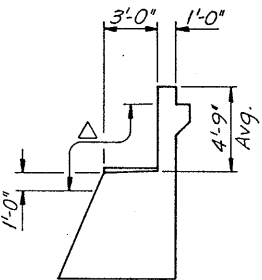
ELEVATION BENTS 15-17
(Part Bent 15 shown,
other Bents similar)



SECTION E-E

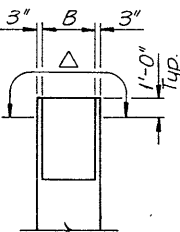


SECTION A-A



SECTION B-B

TABLE OF DIMENSIONS		
LOCATION	A	B
Bents 1,2,4-6,8-11	30'-0"	2'-6"
Bent 3	29'-6"	2'-6"
Bent 7	30'-0"	2'-9"
Bent 12	30'-0"	3'-0"
Bent 13	20'-6"	2'-6"
Bent 14	12'-0"	2'-6"
Bent 15	104'-8"	3'-0"
Bent 16	54'-0"	3'-0"
Bent 17	52'-0"	3'-0"

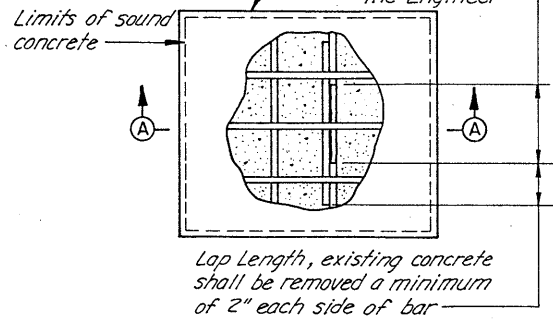


SECTION D-D
(Bent 15)

BAR SIZE	LAP LENGTH
#4	1'-0"
#5	1'-4"
#6	1'-7"
#7	2'-1"
#8	2'-9"

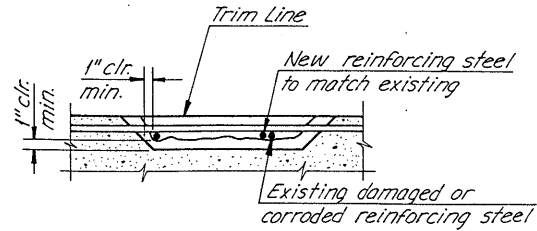
Chip existing concrete to a 1" minimum clear distance around reinforcing steel and replace with shotcrete patch.

Remove existing damaged or corroded reinforcing steel as determined by the Engineer.



SUBSTRUCTURE REPAIR TYPE II
No Scale

ESTIMATED QUANTITY SUBSTRUCTURE REPAIR		
LOCATION	* TYPE I (SQ. FT.)	TYPE II (SQ. FT.)
South Abutment	3	10
Bent 6	3	12
Bent 8	3	10
Bent 9	3	10
Bent 12	10	40
Bent 15	8	30
Bent 16	3	12
Bent 17	4	15
Total	37	139



SECTION A-A
No Scale

Notes:

Δ denotes limits of Protective Coating-Concrete Bents (Deleterious Agents).

Reinforcing that has been reduced by more than 25% in cross-sectional area shall be removed and repairs made as shown.

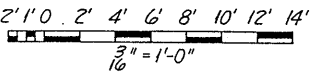
Repair areas shall be separated from adjacent non-repair areas by a saw cut 1" deep.

* Substructure Repair Type I shall be a 1" deep repair.

Substructure Repair Type II shall be as shown in detail.

Limits of Substructure Repair Type I and Type II shall be as directed by the Engineer.

See Special Provisions for other information.



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MISSOURI RIVER BRIDGE AT BROADWAY
NORTHBOUND BROADWAY OVER
BURLINGTON NORTHERN RAILROAD
MISCELLANEOUS
SUBSTRUCTURE REPAIRS

HNTB
HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS PLANNERS
SHEET 41

FOR INFORMATION ONLY

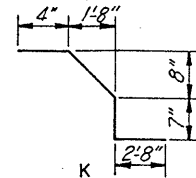
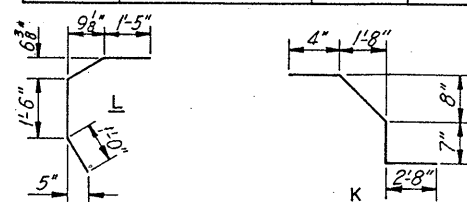
A46421, Sht. 23

REINFORCING STEEL SCHEDULE					
MARK	LOCATION	TYPE	NUMBER	LENGTH	WEIGHT
UNIT 1					
S401	Deck	A	243	32'-8"	5303
S501		A	243	32'-8"	8279
S502		A	244	7'-0"	1781
S503		A	192	41'-2"	8244
S504		A	104	15'-0"	1627
S505	Deck	A	52	12'-0"	651
R501	Barrier Curb	C	242	2'-11½"	747
R502		D	242	4'-8"	1178
R503		B	242	2'-11½"	747
R504		L	7	4'-10"	35
R505		A	18	60'-0"	1126
R506		A	6	60'-5"	378
R507		A	6	3'-10"	24
R528		C	3	2'-9½"	9
R529		B	14	2'-8½"	40
R520		A	14	2'-6"	37
R534		B	4	2'-9½"	12
R535		A	11	4'-8"	54
R536		A	5	2'-8"	14
R537		F	4	1'-8"	7
R538		B	4	4'-10"	20
R544		E	1 Ser.	2'-10" to 3'-6"	10
R545		C	1 Ser.	2'-9½" to 3'-5½"	10
R546		K	2	5'-7"	12
R547	Barrier Curb	G	1	4'-10"	5
Total				Unit 1	30,350
UNIT 2					
S401	Deck	A	238	32'-8"	5193
S501		A	238	32'-8"	8109
S502		A	240	7'-0"	1752
S504		A	104	15'-0"	1627
S506		A	64	3'-0"	200
S507		A	192	39'-3"	7860
S508		A	52	12'-6"	678
S542	Deck	A	6	3'-10"	24
R501	Barrier Curb	C	242	2'-11½"	747
R502		D	242	4'-8"	1178
R503		B	242	2'-11½"	747
R505		A	18	60'-0"	1126
R506		A	6	60'-5"	378
R507	Barrier Curb	A	6	3'-10"	24
Total				Unit 2	29,643
UNIT 3					
S401	Deck	A	232	32'-8"	5063
S501		A	232	32'-8"	7905
S502		A	234	7'-0"	1708
S504	Deck	A	104	15'-0"	1627

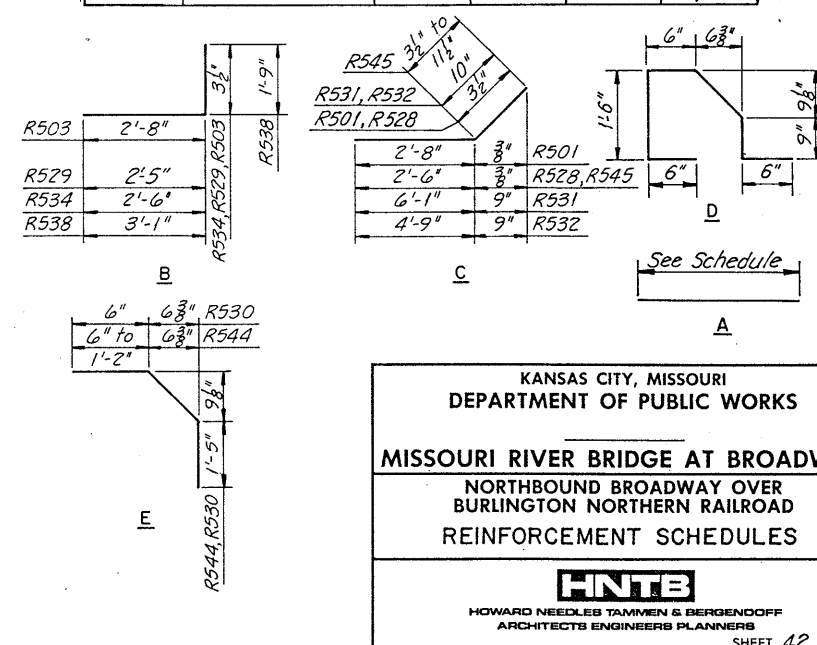
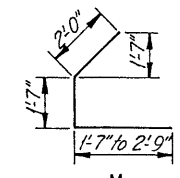
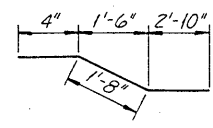
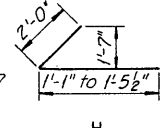
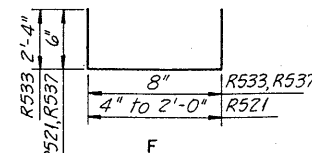
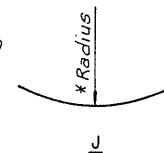
REINFORCING STEEL SCHEDULE					
MARK	LOCATION	TYPE	NUMBER	LENGTH	WEIGHT
UNIT 3 CONT.					
S506	Deck	A	64	3'-0"	200
S509	Deck	A	256	29'-0"	7743
S542	Deck	A	6	3'-10"	24
R501	Barrier Curb	C	234	2'-11½"	722
R502		D	234	4'-8"	1139
R503		B	234	2'-11½"	722
R505		A	12	60'-0"	751
R508		A	6	56'-8"	355
R509	Barrier Curb	A	6	58'-9"	368
Total				Unit 3	28,327
UNIT 4					
S401	Deck	A	271	32'-8"	5914
S501		A	271	32'-8"	9233
S502		A	272	7'-0"	1986
S504		A	104	15'-0"	1627
S506		A	64	3'-0"	200
S510		A	256	33'-9"	9012
S511		A	52	8'-0"	434
S542	Deck	A	6	3'-10"	24
R501	Barrier Curb	C	271	2'-11½"	836
R502		D	271	4'-8"	1319
R503		B	271	2'-11½"	836
R505		A	24	60'-0"	1502
R510		A	6	18'-10"	118
R511	Barrier Curb	A	6	15'-4"	96
Total				Unit 4	33,137
UNIT 5					
S502	Deck	A	168	7'-0"	1227
S504		A	52	15'-0"	814
S512		A	2 Ser.	3'-0" to 30'-0"	6540
S513		A	15	49'-8"	777
S514		A	1 Ser.	6'-0" to 49'-8"	406
S515		A	1 Ser.	11'-0" to 45'-9"	237
S516		A	28	60'-0"	1752
S517		A	15	41'-0"	641
S518	Deck	A	4	50'-8"	211
S543	Deck	A	10	3'-6"	37
R501	Barrier Curb	C	99	2'-11½"	305
R502		D	99	4'-8"	482
R503		B	99	2'-11½"	305
R505		A	6	60'-0"	375
R512	Barrier Curb	A	6	39'-5"	247
Total				Unit 5	14,356

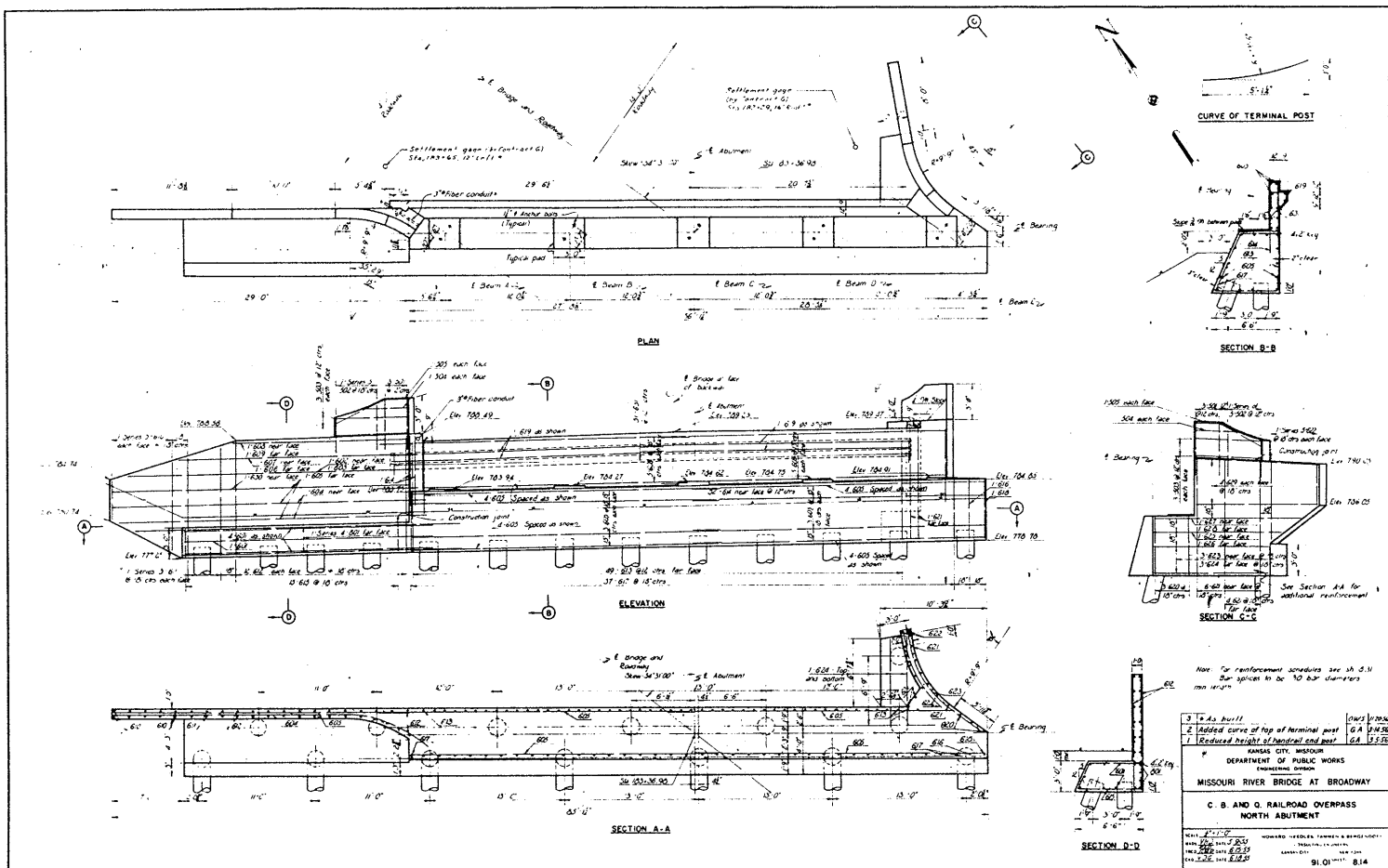
REINFORCING STEEL SCHEDULE					
MARK	LOCATION	TYPE	NUMBER	LENGTH	WEIGHT
UNIT 6					
S401	Deck	A	143	32'-8"	3120
S402		A	1 Ser.	3'-0" to 30'-1"	1967
S403		A	1 Ser.	3'-0" to 31'-4"	963
S406		A	2 Ser.	3'-1" to 7'-0"	81
S407		A	70	6'-0"	281
S408		A	11	3'-6"	26
S501		A	143	32'-8"	4872
S502		A	500	7'-0"	3651
S519		A	4	53'-8"	224
S520		A	1 Ser.	3'-0" to 30'-1"	3071
S521		A	1 Ser.	9'-0" to 47'-6"	265
S522		A	24	54'-3"	1358
S523		A	1 Ser.	5'-3" to 51'-0"	381
S524		A	1 Ser.	9'-0" to 47'-6"	383
S526		A	1 Ser.	5'-3" to 51'-0"	528
S527		A	128	36'-11"	4929
S528		A	1 Ser.	3'-0" to 31'-4"	1504
S529		A	1 Ser.	3'-0" to 47'-0"	678
S530		A	1 Ser.	4'-3" to 47'-0"	935
S531		A	6	55'-6"	347
S538		A	2 Ser.	3'-1" to 7'-0"	126
S539		A	64	9'-3"	617
S540		A	70	6'-0"	438
S541	Deck	A	6	4'-9"	30
S543	Deck	A	11	3'-6"	40
R501	Barrier Curb	C	303	2'-11½"	935
R502		D	303	4'-8"	1475
R503		B	303	2'-11½"	935
R505		A	24	60'-0"	1502
R513		A	6	11'-9"	74
R514	Barrier Curb	A	6	55'-0"	344
Total				Unit 6	36,080
UNIT 7					
S401	Deck	A	195	32'-8"	4255
S404		A	1 Ser.	3'-1" to 31'-4"	897
S405		A	1 Ser.	3'-1" to 31'-4"	874
S408		A	4	3'-6"	9
S501		A	195	32'-8"	6644
S532	Deck	A	2	55'-6"	116

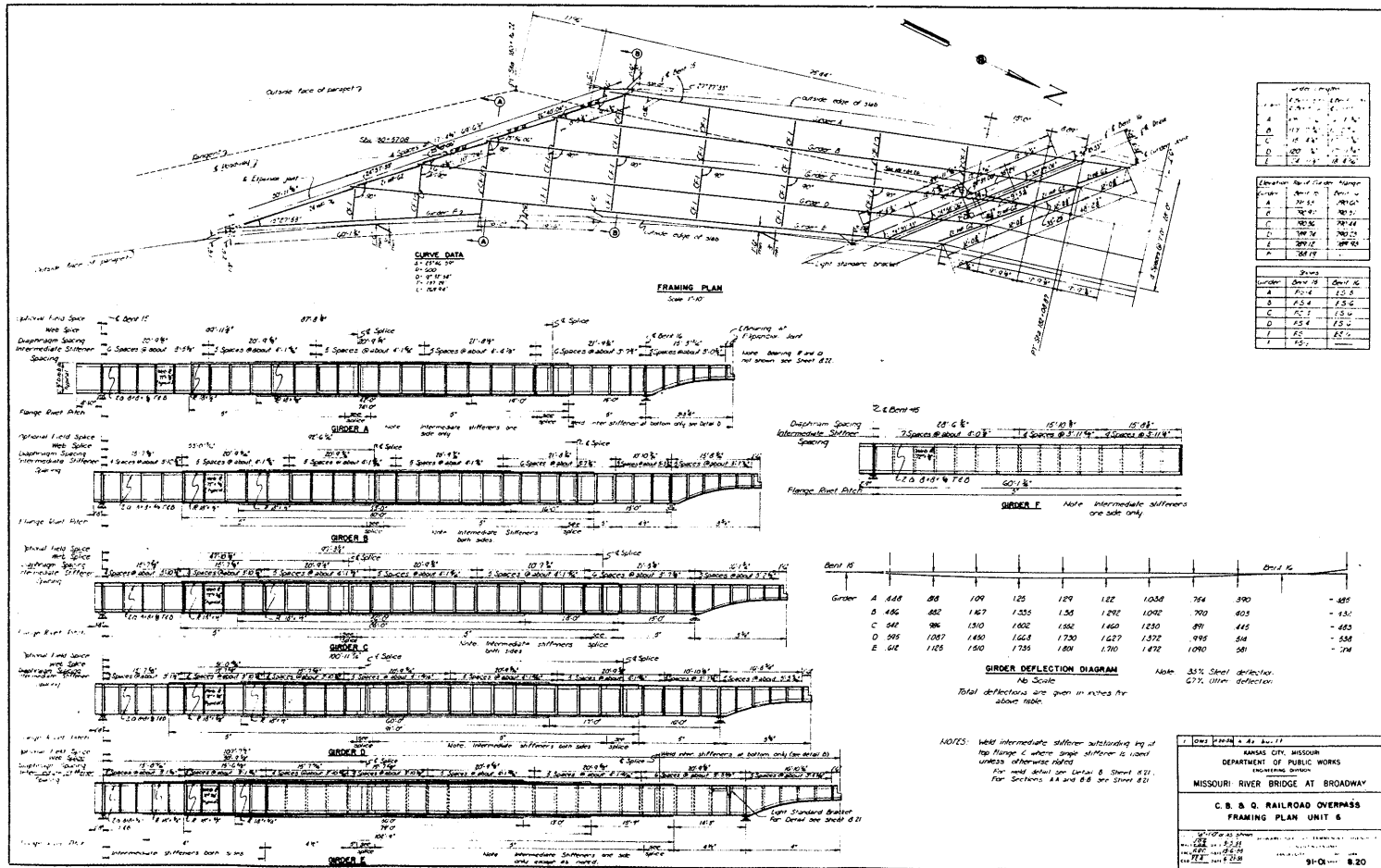
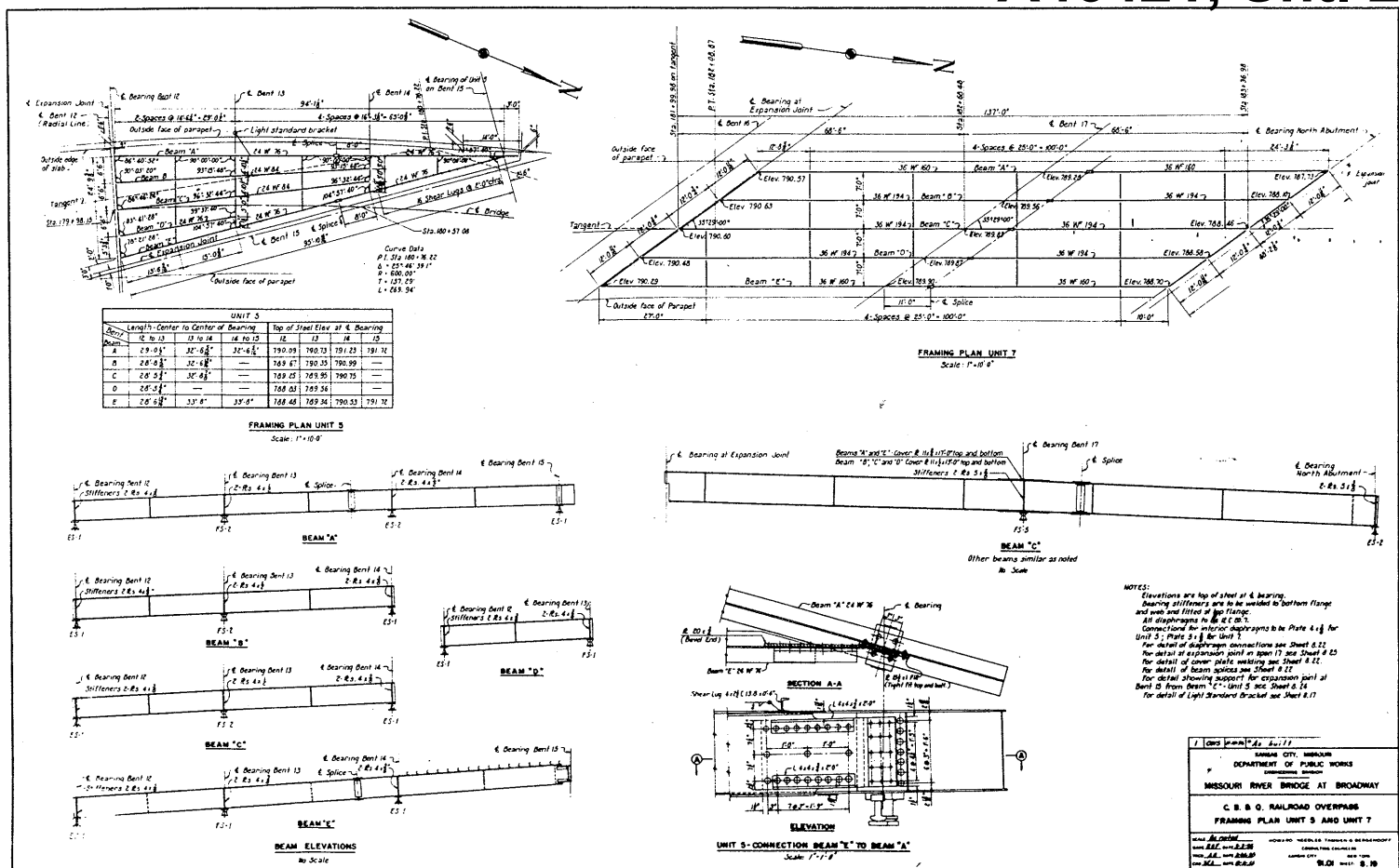
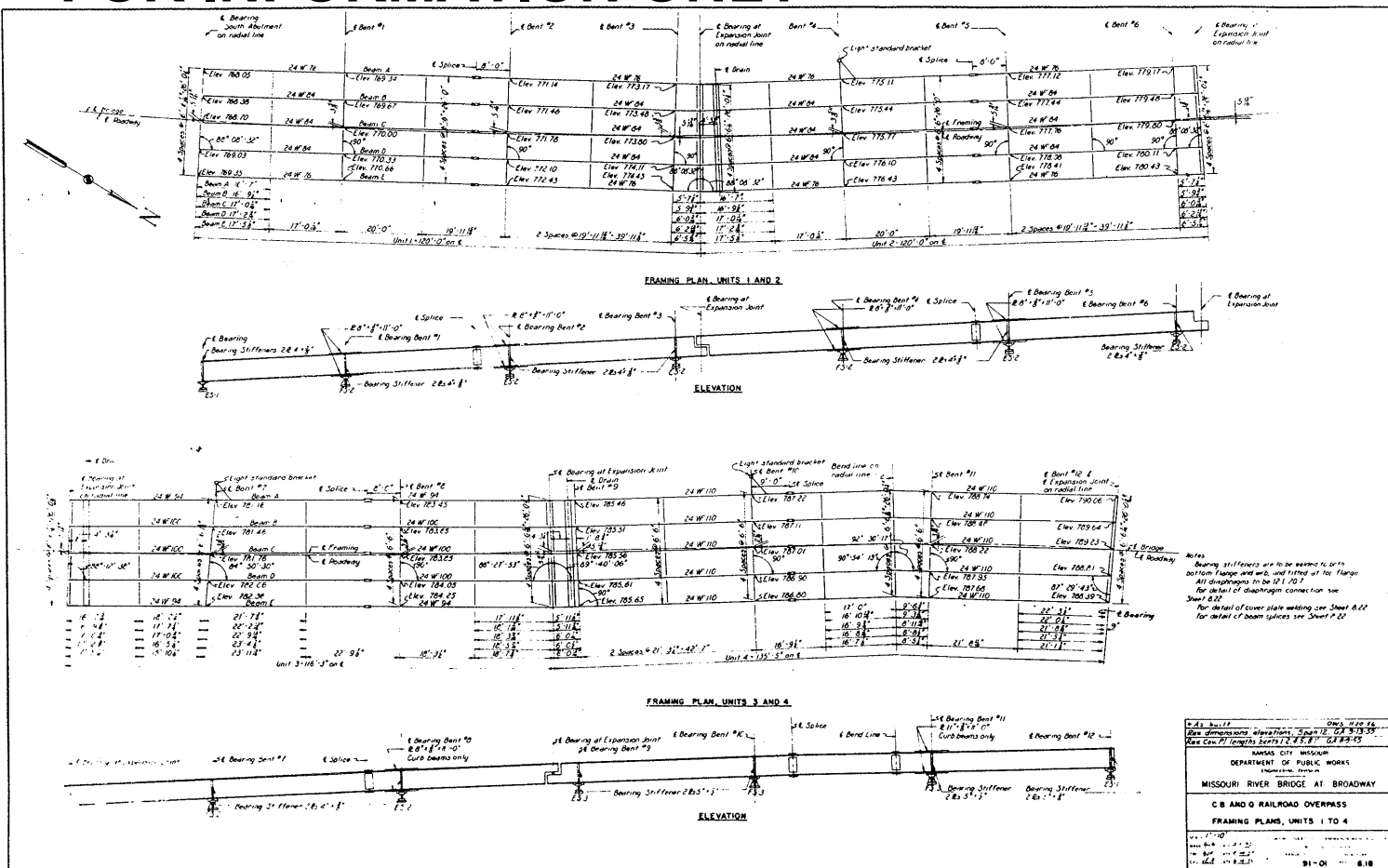
REINFORCING STEEL SCHEDULE					
MARK	LOCATION	TYPE	NUMBER	LENGTH	WEIGHT
UNIT 7 CONT.					
S533	Deck	A	1 Ser.	3'-1" to 31'-4"	1400
S534		A	195	47'-10"	9729
S535		A	52	23'-0"	1247
S536		A	2	52'-0"	108
S537	Deck	A	1 Ser.	3'-1" to 31'-4"	1364
S543	Deck	A	4	3'-6"	15
R501	Barrier Curb	C	281	2'-11½"	867
R502		D	281	4'-8"	1368
R503		B	281	2'-11½"	867
R548		A	2	4'-3"	9
R505		A	24	60'-0"	1502
R515		A	6	20'-8"	129
R516		A	6	23'-7"	148
R517		A	9	2'-6"	23
R518		A	9	2'-5"	23
R519		H	1 Ser.	3'-1" to 3'-5½"	14
R520		A	15	2'-6"	39
R521		F	1 Ser.	1'-4" to 3'-0"	20
R522		J	3	7'-11"	25
R523		J	1	7'-6"	8
R524		J	1	6'-0"	6
R525		J	4	4'-9"	20
R526		J	2	5'-8"	12
R527		J	1	6'-9"	7
R528		C	6	2'-9½"	17
R529		B	6	2'-8½"	17
R530		E	6	2'-10"	18
R531		C	4	6'-11"	29
R532		C	4	5'-7"	23
R533		F	10	5'-4"	56
R540		J	3	7'-3"	23
R541		A	1	3'-1"	3
R542		A	1	4'-0"	4
R543	Barrier Curb	J	1	8'-1"	8
R549	Barrier Curb	M	1 Ser.	5'-2" to 6'-4"	30
Total				Unit 7	31,973



* Radius
9'-11" R524, R525, R540
27'-11" R522
27'-6" R523
10'-4" R526
10'-11" R527
28'-6" R543



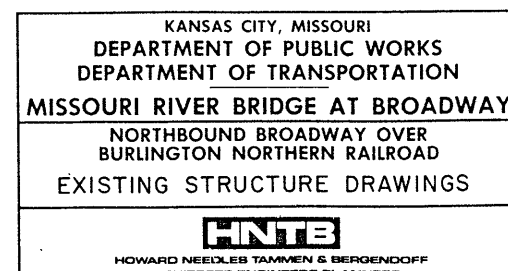
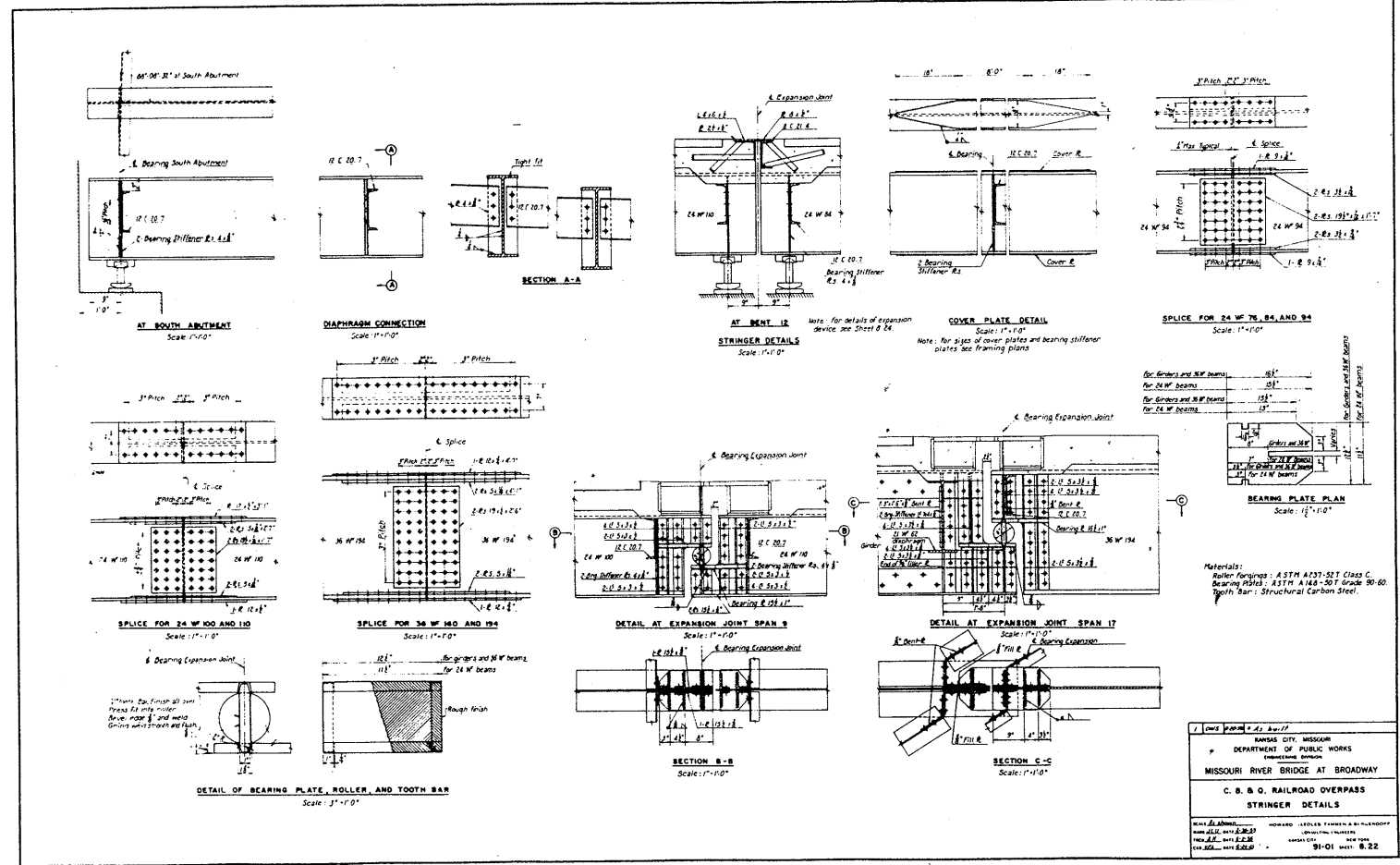


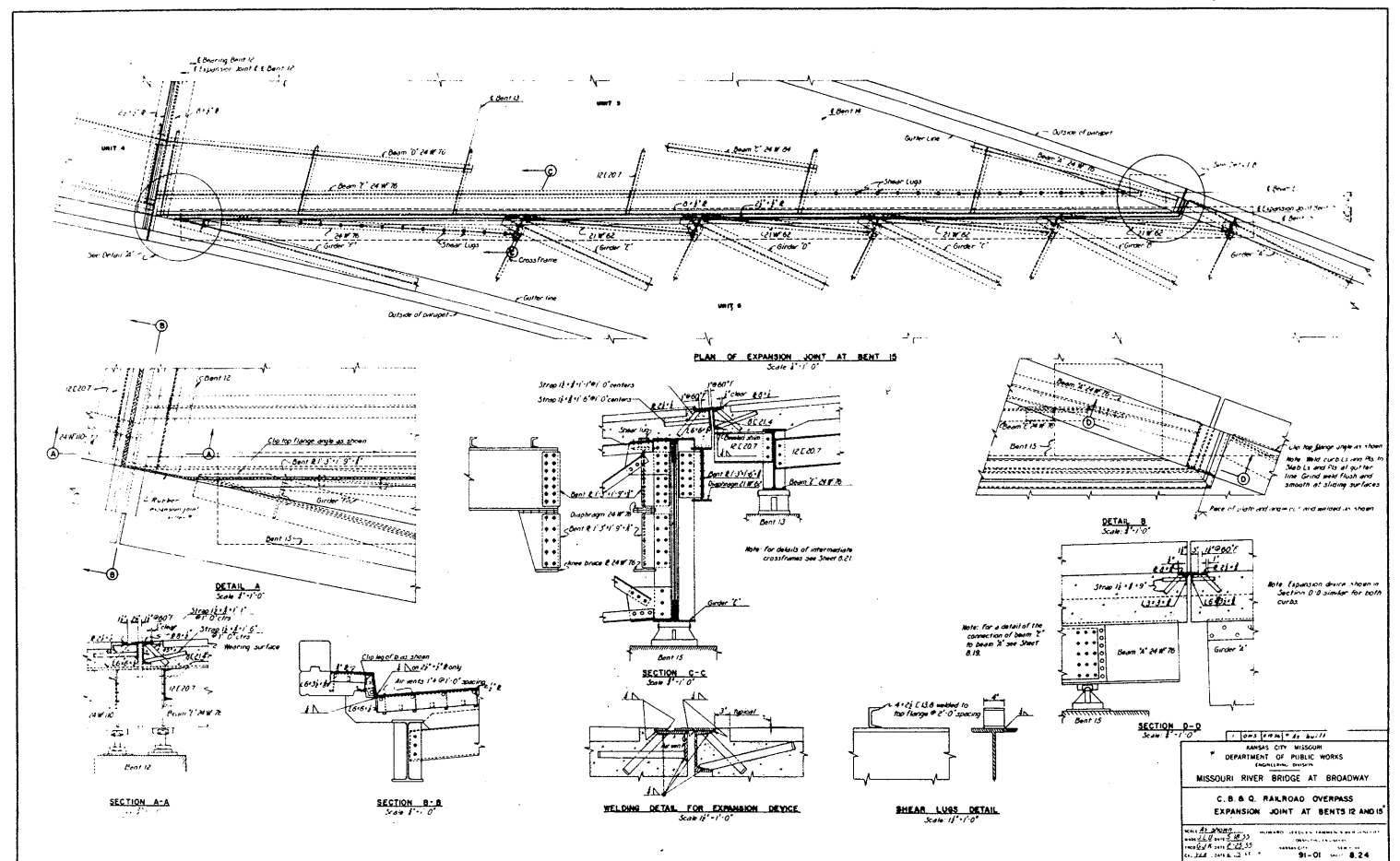


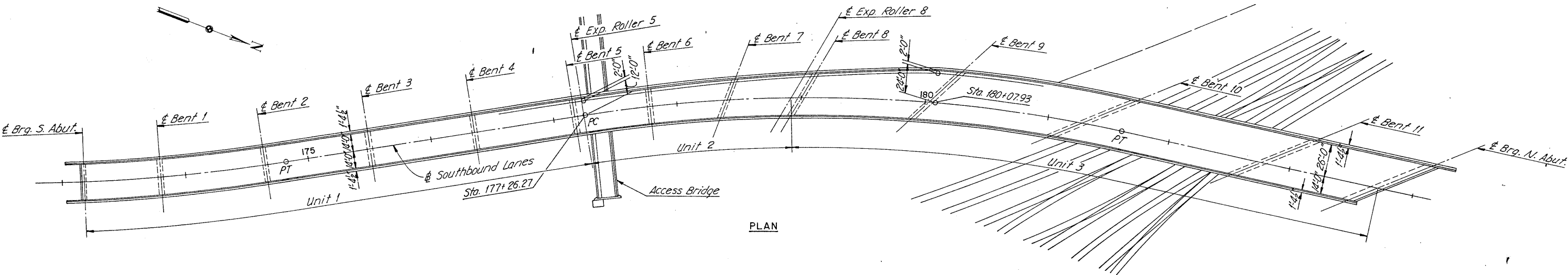
KANSAS CITY, MISSOURI
DEPARTMENT OF PUBLIC WORKS
DEPARTMENT OF TRANSPORTATION
MISSOURI RIVER BRIDGE AT BROADWAY
NORTHBOUND BROADWAY OVER
BURLINGTON NORTHERN RAILROAD
EXISTING STRUCTURE DRAWINGS

HNTB

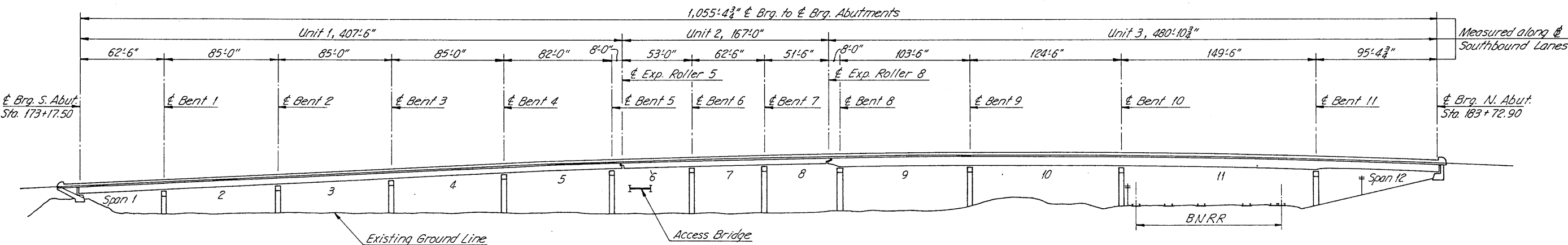
HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS PLANNERS



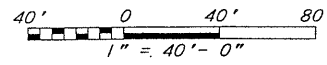




PLAN



ELEVATION



KANSAS CITY, MISSOURI
DEPARTMENT OF PUBLIC WORKS

MISSOURI RIVER BRIDGE AT BROADWAY
SOUTHBOUND BROADWAY OVER
BURLINGTON NORTHERN RAILROAD
GENERAL PLAN AND ELEVATION

HNTB
HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS PLANNERS

SHEET 47

GENERAL NOTES

DESIGN:
AASHTO Standard Specifications for Highway Bridges, Thirteenth Edition (1983) as amended by 1984 thru 1988 Interim Specifications.

CONSTRUCTION:
The construction covered by these plans shall conform to the current Standard Specifications and Design Criteria Engineering Division, Department of Public Works, Kansas City, Missouri, except that the Missouri Standard Specifications for Highway Construction, 1986 Edition with Supplement and Special Provisions shall be utilized for auxiliary specifications.

All dimensions of the existing bridge components shown on the plans are approximate. All such dimensions and information shall be verified by the Contractor prior to any intended use of such data and the Contractor shall have sole responsibility for the accuracy and reliability of such verifications.

Any damage to the existing bridges, approach roadways, pavements and medians caused by the Contractor's operations shall be repaired to the Engineer's satisfaction and shall be accomplished at the Contractor's expense.

DESIGN LOADS:
HS20-44

DESIGN UNIT STRESSES:
Concrete Class B2 f'c = 4,000 psi
Low Slump Concrete Wearing Surface f'c = 4,000 psi
Reinforcing steel ASTM A615 Grade 60 fy = 60,000 psi

BACKGROUND:
An inspection of the bridge deck was performed in 1987 utilizing a delamination detection device. Subjective analysis of the inspection data, supplemented by a visual inspection, was used to determine the probable extent of deterioration of the concrete deck and to predict the types of repair required throughout the bridge.

- SCOPE OF WORK:
Scope of work to be done shall include the following:
- (1) Repair the deck using these three types as detailed in the plans.
 - (a) Scarification of Bridge Deck
 - (b) Repairing Concrete Deck (Half-Soling)
 - (c) Full Depth Repair
 - (2) Overlay deck with a low slump concrete wearing surface.
 - (3) Repair substructure concrete as shown in plans.
 - (4) Seal top of concrete piers and abutment seats with a protective coating.
 - (5) Spot paint bridge as required.

See Special Provisions for other information.

SUMMARY OF QUANTITIES		
ITEM	UNIT	QUANTITY
Scarification of Bridge Deck	Sq. Yds.	3,976
Repairing Concrete Deck (Half-Soling)	Sq. Ft. *	5,364
Full Depth Repair	Sq. Ft. *	348
Low Slump Concrete Wearing Surface	Sq. Yds.	3,976
Substructure Repair Type I	Sq. Ft. *	5
Protective Coating-Concrete Bents (Deleterious Agents)	Lump Sum	1
Substructure Repair Type II	Sq. Ft. *	2
Painting	Lump Sum	1

*Quantity shown is estimated. Actual repair quantity shall be determined by the Engineer in the field.

SEC/SUR 15 TWP 50N RGE 33W



DATE PREPARED 2/13/12	
ROUTE 169	STATE MO
DISTRICT BR	SHEET NO. 1

COUNTY
CLAY
JOB NO.
J4U1314B
CONTRACT ID.

PROJECT NO.
BRIDGE NO. A46442

[illegible]

105 WEST CAPITOL
JEFFERSON CITY, MD 65102
1-888-ASK-MDOT (1-888-275-6636)

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
Certificate of Authority: 000856



B.M. #31 - ELEV. 767.23'
SET "□" ON SOUTH END WEST HUBGUARD AT END
OF CONC. STRUCTURE SB U.S. 169
52.12' LT.. STA. 128+00.05, @ NB U.S. 169

For additional repair work on structure, see Bridge A46441 plans.

ESTIMATED QUANTITIES				
Item	Unit	Substr.	Superstr.	Total
* Partial Removal of Existing Bridge Decks	Sq. Ft.		12900	12900

* Includes existing Type A Barrier and existing 3 1/4" overlay

REPAIRS TO BRIDGE OVER NORTH KANSAS CITY LEVEE

STATE ROAD FROM HIGHWAY 9 TO INTERSTATE 35
ABOUT 1.3 MILES SOUTH OF HIGHWAY 9
STA. 128+00.00
RTE. S.B. 169

SEC/SUR 15	TWP 50N	RGE 33W
------------	---------	---------



CURVE	EXNB01
PI	122+10.78
PC	120+97.30
PT	123+24.14
Δ	4° 32' 13.0" (RT)
D	2° 00' 00.0"
L	226.85'
T	113.48'
R	2,864.79'

CURVE	EXNB02
PI	125+13.37
PC	123+24.16
PT	127+02.38
Δ	4° 31' 58.1" (LT)
D	1° 11' 54.5"
L	378.21'
T	189.21'
R	4,780.73'



MSE Wall Systems Data Table is to be completed by MoDOT construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.

B.M. #31 - ELEV. 767.23'
SET "□" ON SOUTH END WEST HUBGUARD AT END
OF CONC. STRUCTURE SB U.S. 169
52.12' LT., STA. 128+00.05, @ NB U.S. 169

Note:

For General Notes, see Sheet No. 6.

STATE ROAD FROM HIGHWAY 9 TO INTERSTATE 35
ABOUT 1.3 MILES SOUTH OF HIGHWAY 9
STA. 123+11.25
RTE. N.B. 169

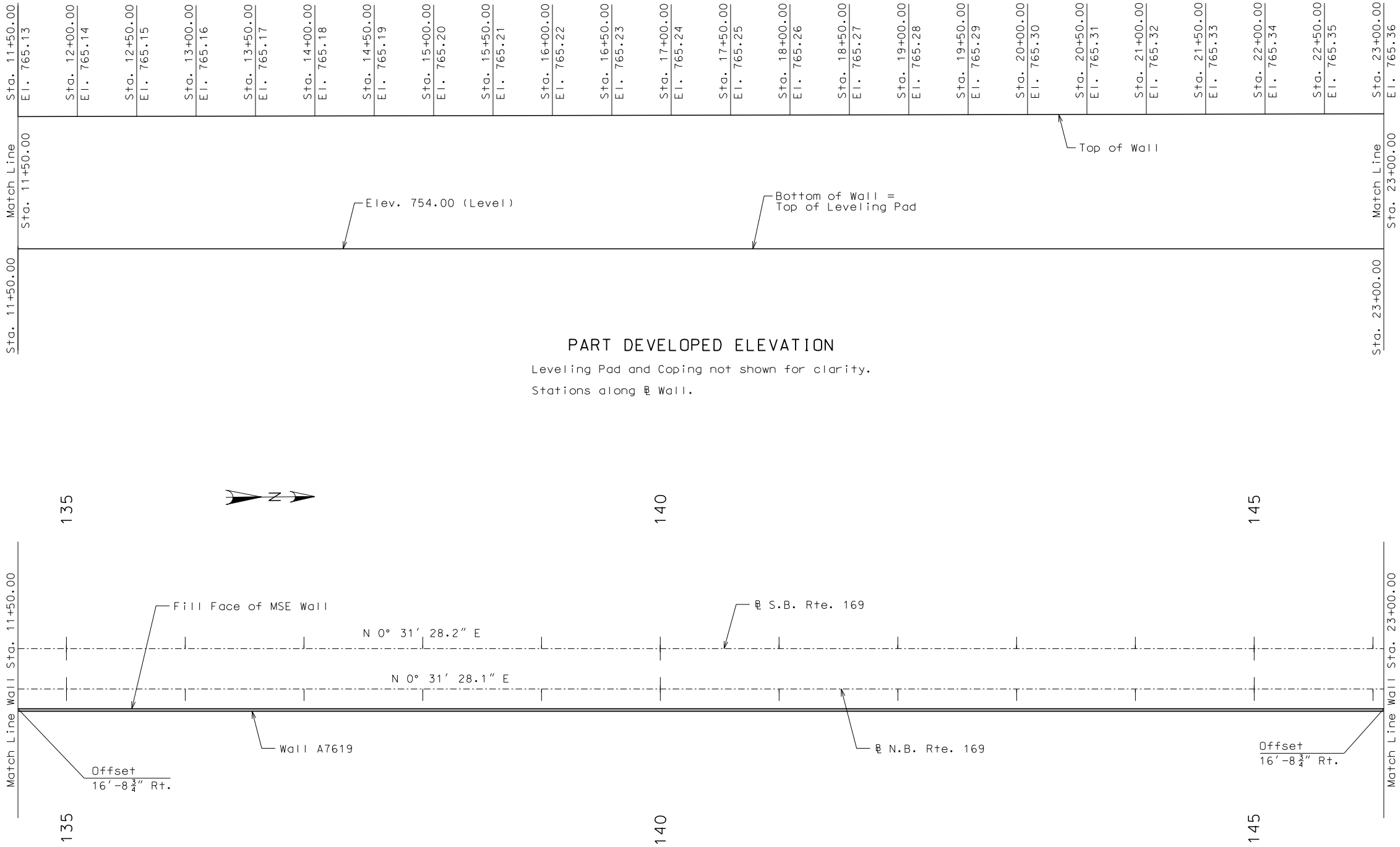
MSE WALL DETAILS

PART PLAN

Leveling Pad and Coping not shown for clarity.
Wall and offset to Fill Face of MSE Wall.

PART DEVELOPED ELEVATION

Leveling Pad and Coping not shown for clarity.
Stations along Wall.



Notes:

For Table of Estimated Quantities,
see Sheet No. 1.

For General Notes, see Sheet No. 6.

HDR HDR Engineering, Inc.

4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
Certificate of Authority: 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DESCRIPTION

DATE



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE PREPARED
2/13/12

ROUTE 169 STATE MO

DISTRICT BR SHEET NO. 2

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A7619

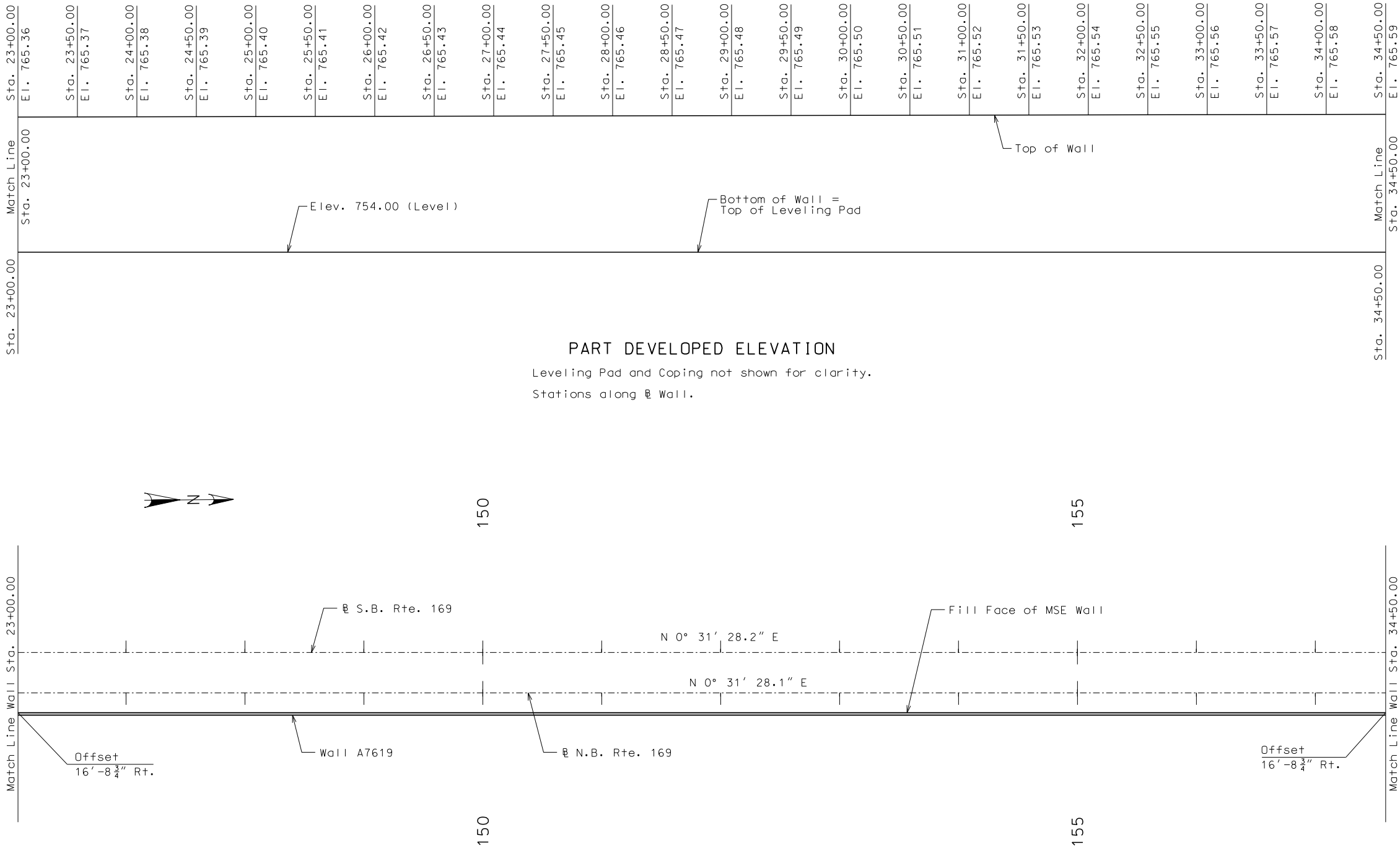
MSE WALL DETAILS

PART PLAN

Leveling Pad and Coping not shown for clarity.
Wall and offset to Fill Face of MSE Wall.

PART DEVELOPED ELEVATION

Leveling Pad and Coping not shown for clarity.
Stations along Wall.



Notes:

For Table of Estimated Quantities,
see Sheet No. 1.

For General Notes, see Sheet No. 6.

HDR HDR Engineering, Inc.

4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
Certificate of Authority: 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

DESCRIPTION

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DATE PREPARED

2/13/12

ROUTE STATE

169 MO

DISTRICT SHEET NO.

BR 3

COUNTY

CLAY

JOB NO.

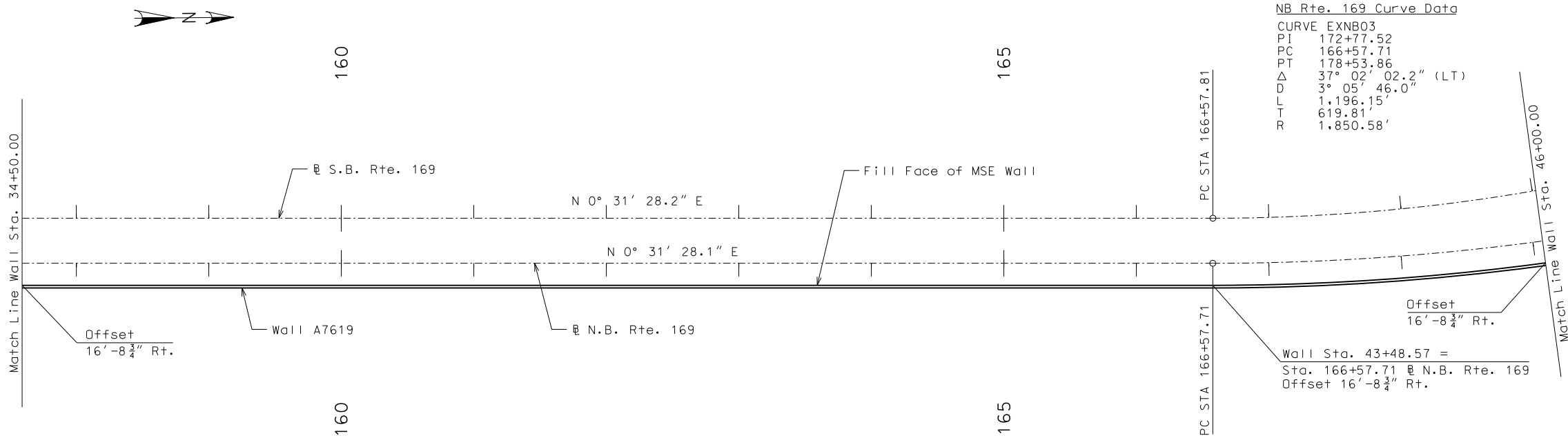
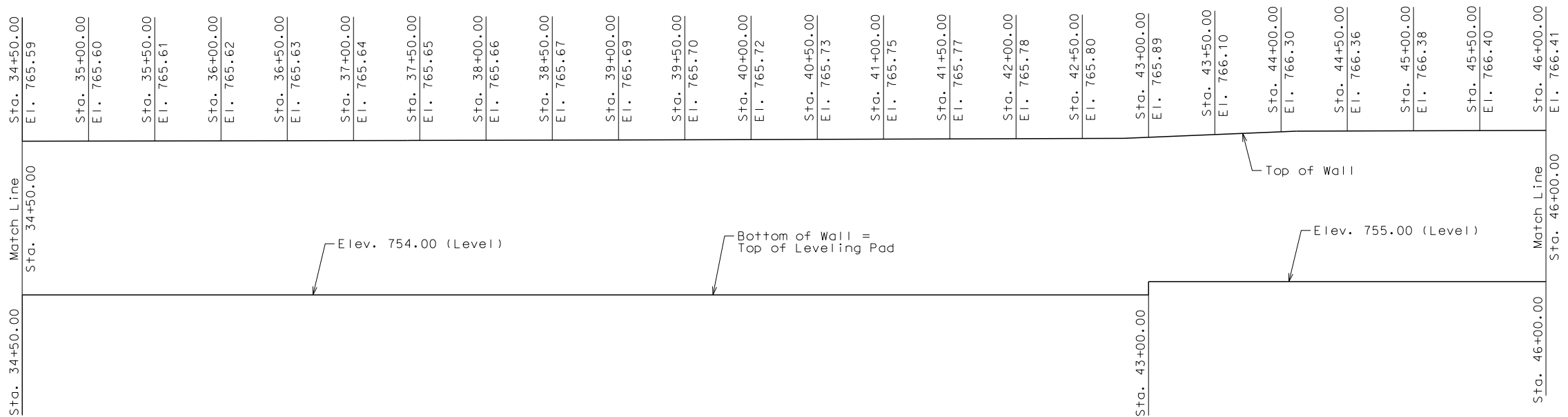
J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A7619



MSE WALL DETAILS

Notes:

For Table of Estimated Quantities, see Sheet No. 1.

For General Notes, see Sheet No. 6.



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DATE PREPARED
2/13/12

ROUTE 169 STATE MO

DISTRICT BR SHEET NO. 4

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A7619

DESCRIPTION	DATE

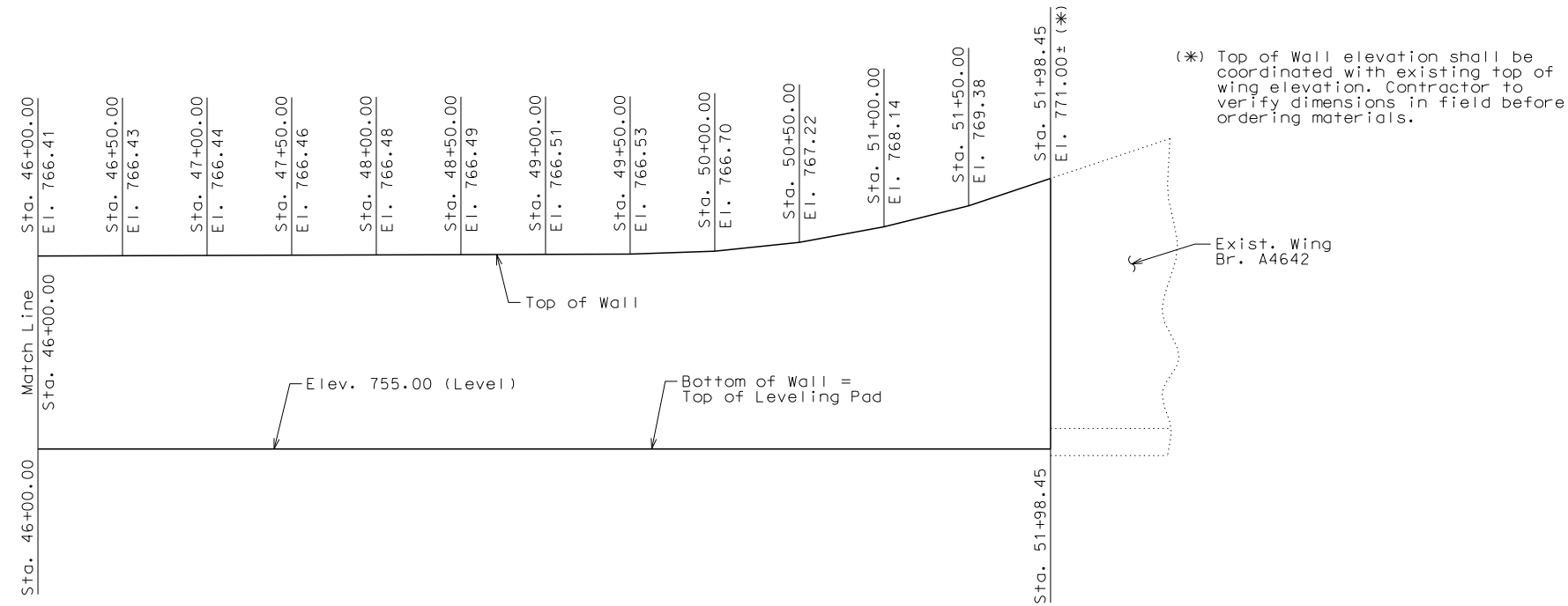
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

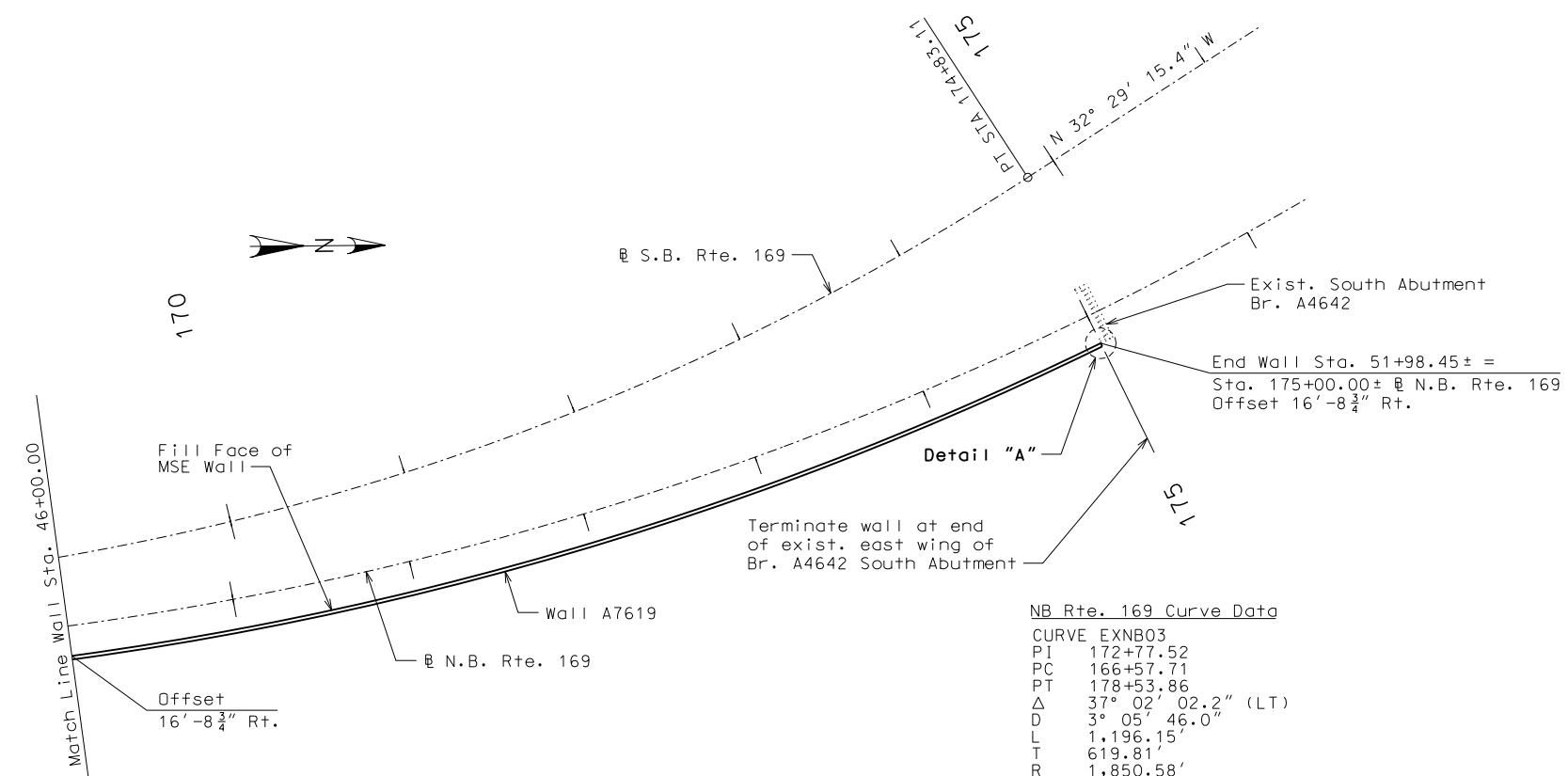
HDR HDR Engineering, Inc.

4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
Certificate of Authority: 000856



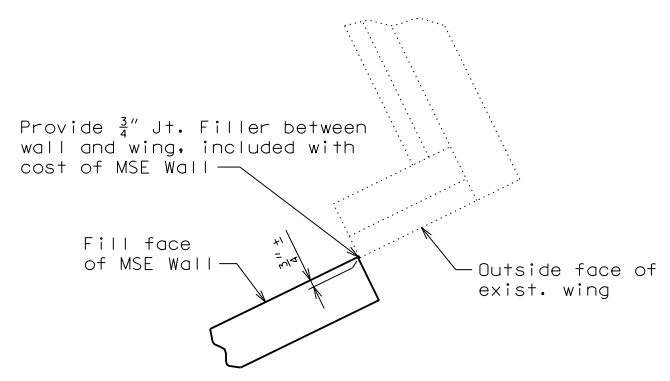
PART DEVELOPED ELEVATION

Leveling Pad and Coping not shown for clarity.
Stations along E Wall.



PART PLAN

Leveling Pad and Coping not shown for clarity.
E Wall and offset to Fill Face of MSE Wall.



DETAIL "A"

Notes:

For Table of Estimated Quantities, see Sheet No. 1.

For General Notes, see Sheet No. 6.

MSE WALL DETAILS



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 2/13/12

ROUTE 169	STATE MO
DISTRICT BR	SHEET NO. 5
COUNTY CLAY	
JOB NO. J4U1314B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A7619	

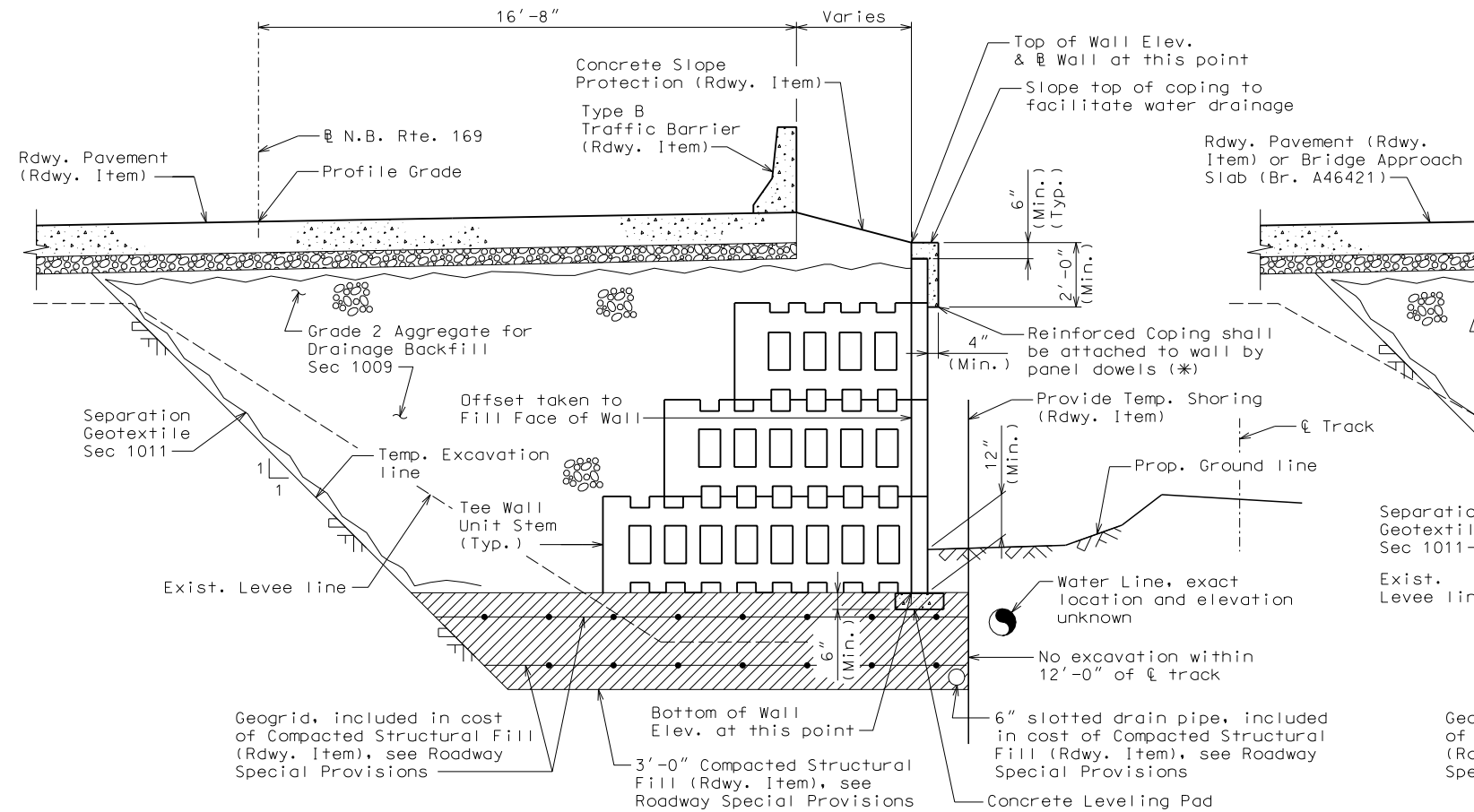
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HDR HDR Engineering, Inc.

4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
Certificate of Authority: 000856



TYPICAL SECTION

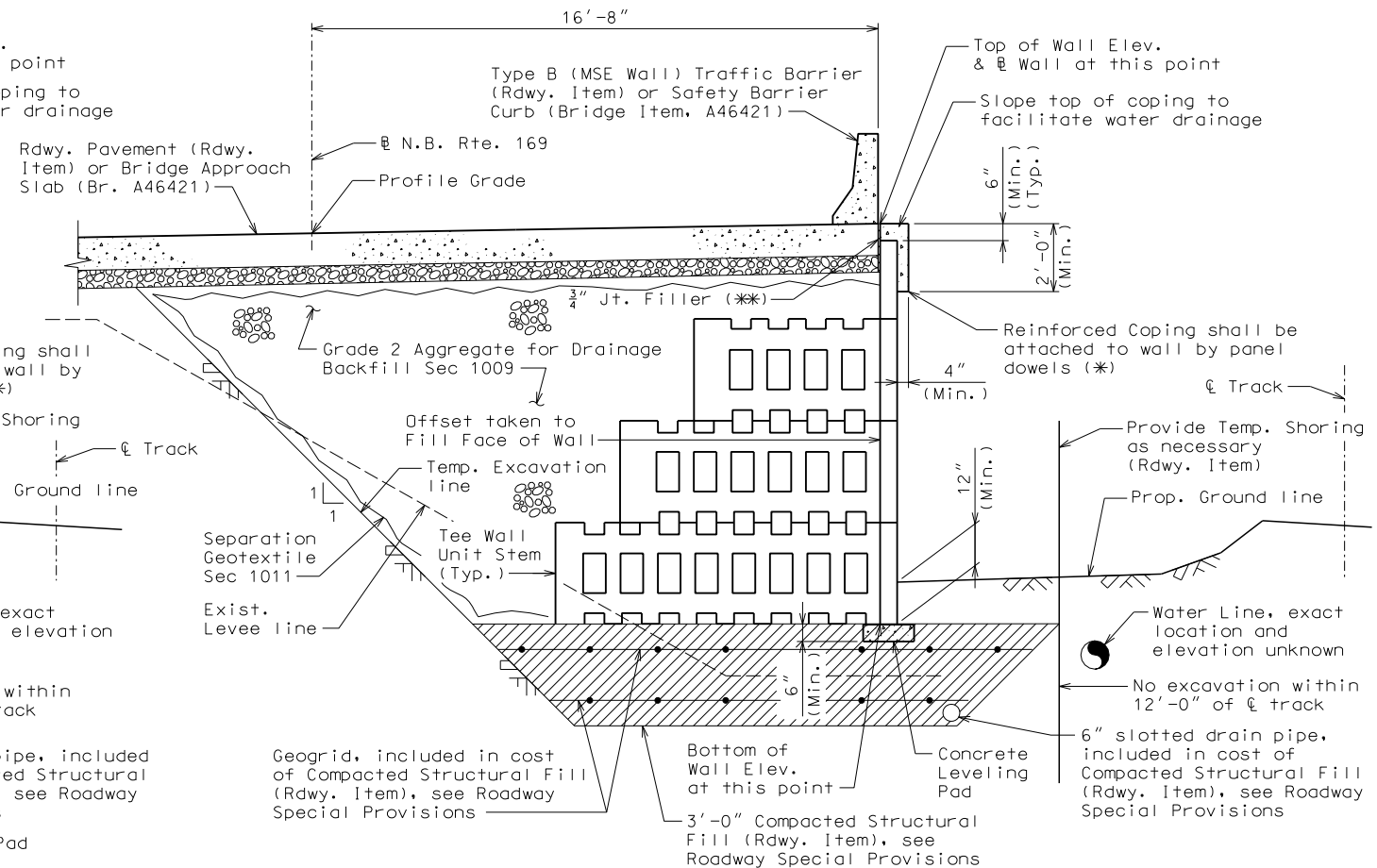
Wall Sta. 0+00.00 to Sta. 3+93.24

(T-Wall Retaining Wall System shown, other acceptable systems similar, see special provisions)

Notes: Existing Bin Wall to be removed included with Roadway excavation.

Acceptable prequalified wall systems include:
The Neel Company T-Wall Retaining Wall System,
Redi-Rock International Redi-Rock System and
Stone Strong System, see Special Provisions.

For requirements specific to each acceptable system, see Special Provisions.



TYPICAL SECTION

Wall Sta. 3+93.24 to Sta. 51+98.45

(T-Wall Retaining Wall System shown, other acceptable systems similar, see special provisions)

Notes: Existing Bin Wall to be removed included with Roadway excavation.

Acceptable prequalified wall systems include:
The Neel Company T-Wall Retaining Wall System,
Redi-Rock International Redi-Rock System and
Stone Strong System, see Special Provisions.

For requirements specific to each acceptable system, see Special Provisions.



THIS SHEET HAS BEEN
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ELECTRONICALLY

DATE PREPARED

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ROUTE	STATE
169	MO

DISTRICT	SHEET NO
----------	----------

BR	7
----	---

CLAY

JOB NO.

J4U1314B

CONTRACT ID.

[illegible]

TRANSPORTATION
105 WEST CAPITOL
ROSSON CITY, MO 65102
DT (1-888-275-6636)

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



HDR Engineering, Inc.

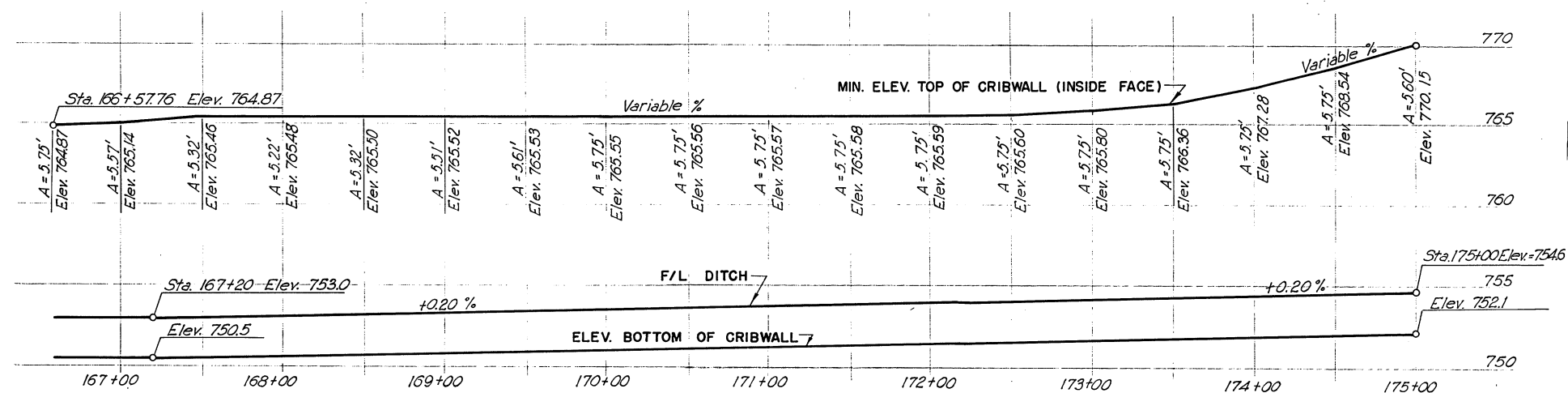
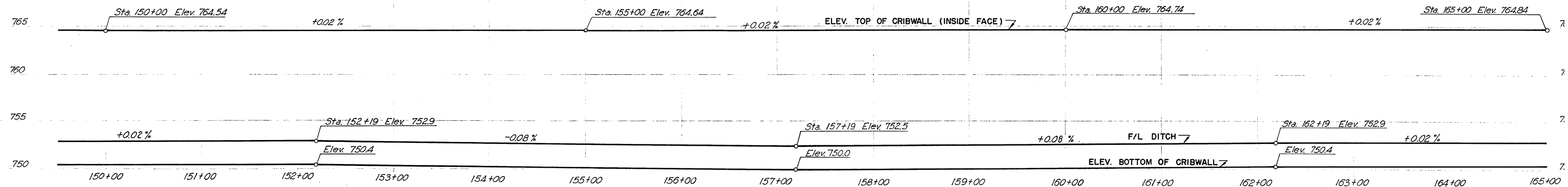
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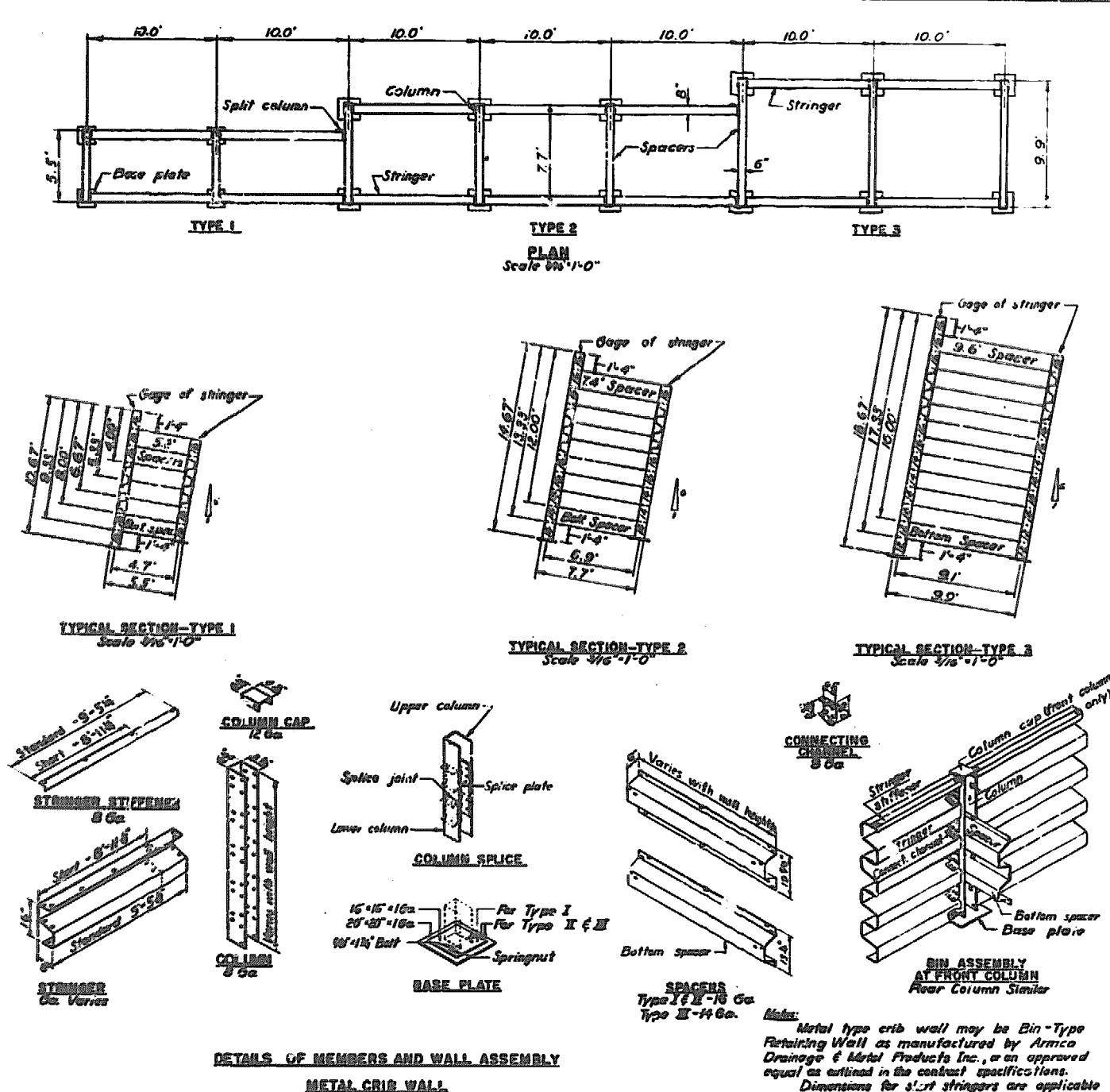
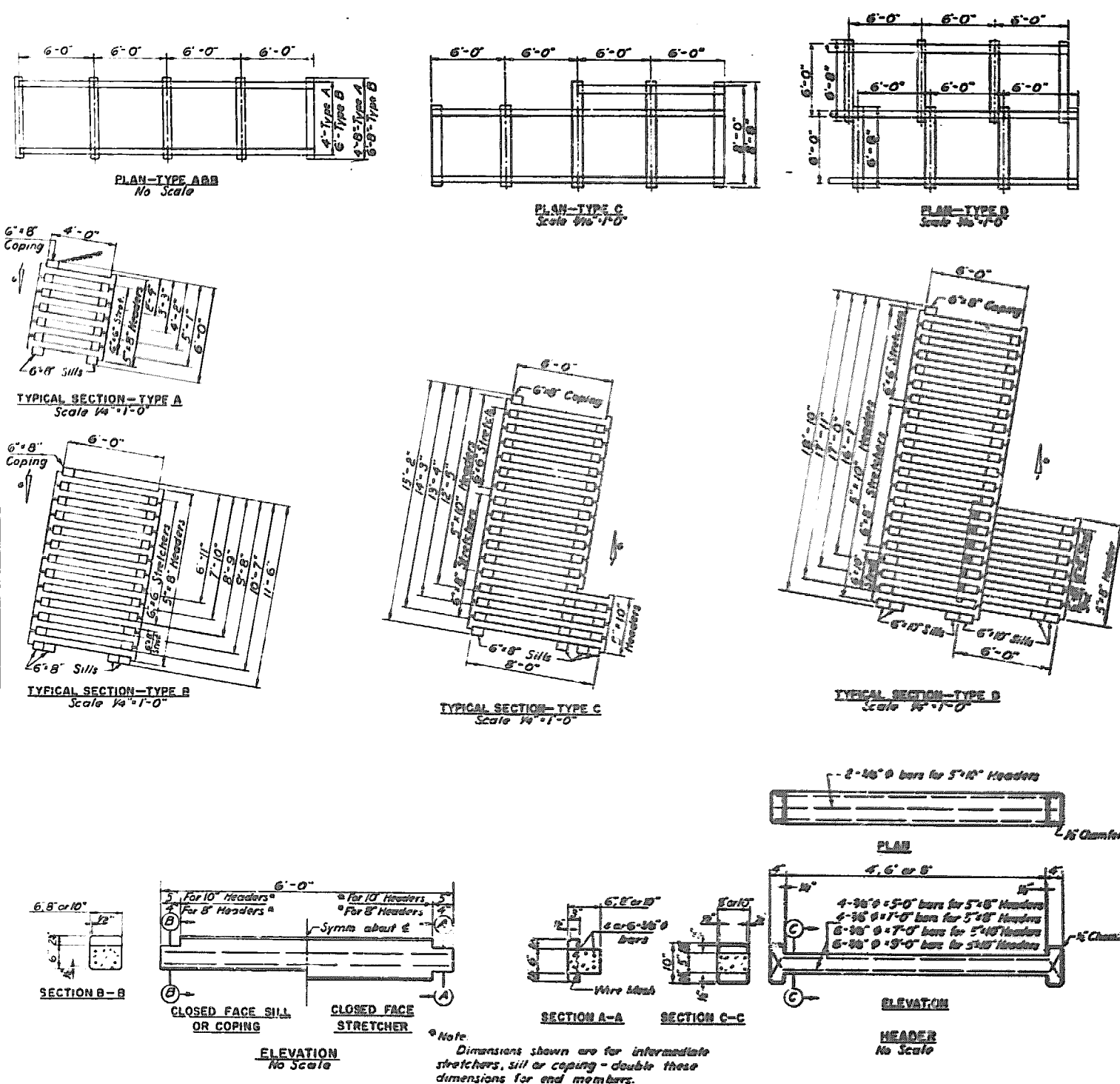
Kansas City,
916 360 370

016-380-2700
Certificate of Authority: 000856

TYPICAL SECTIONS

A7619, Sht. 8



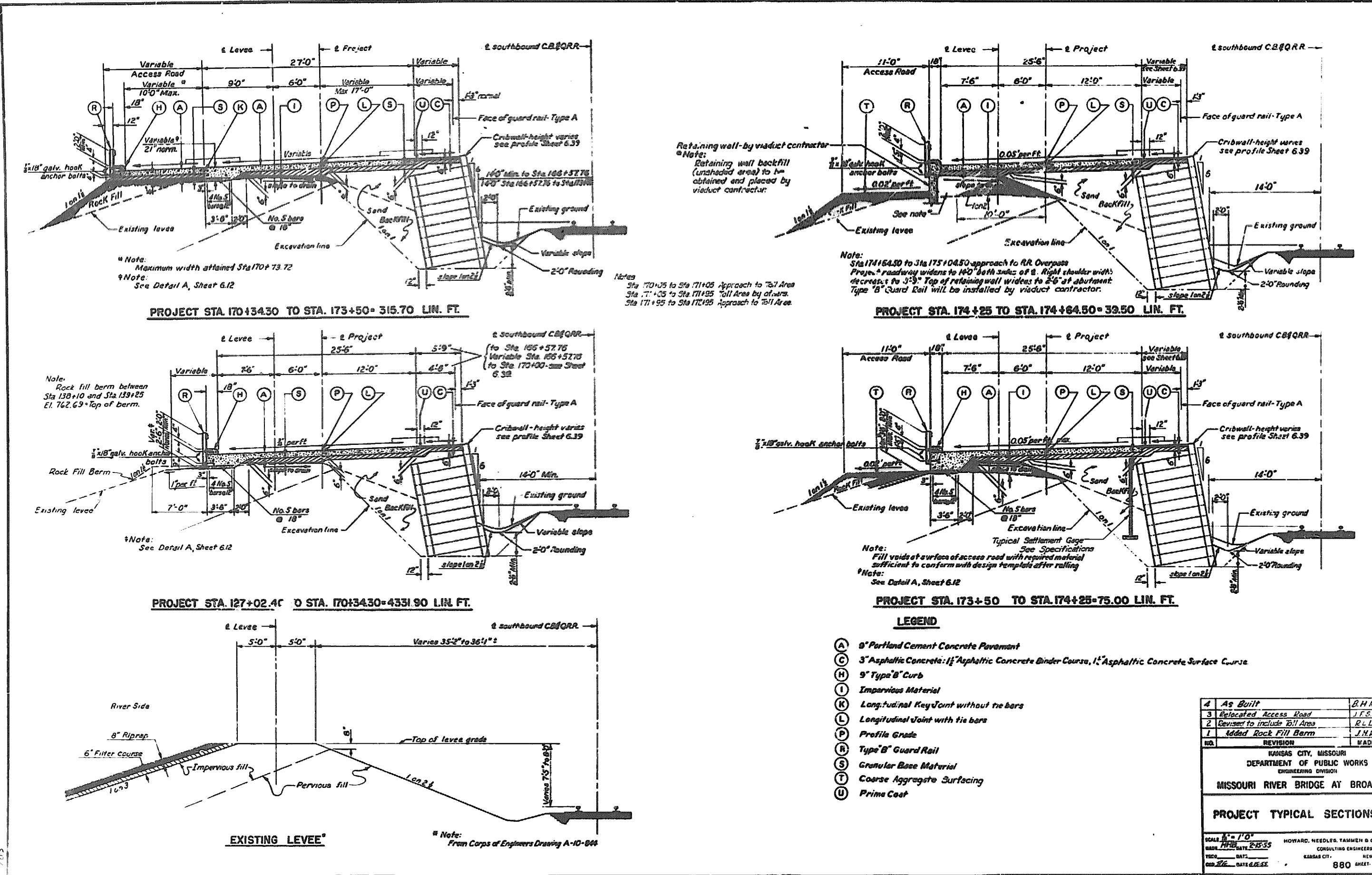


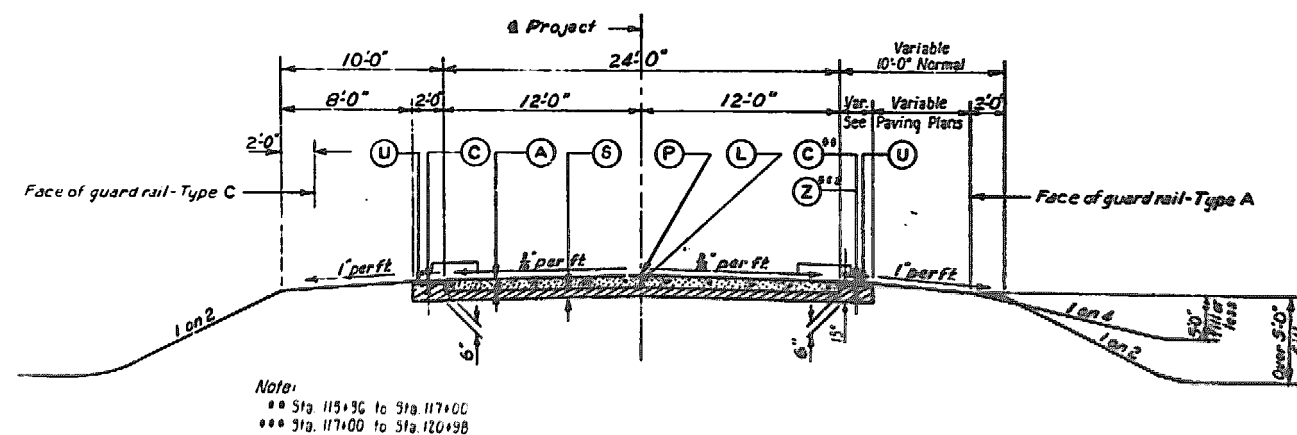
KANSAS CITY, MISSOURI
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
MISSOURI RIVER BRIDGE AT BROADWAY

CRIB WALL DETAILS

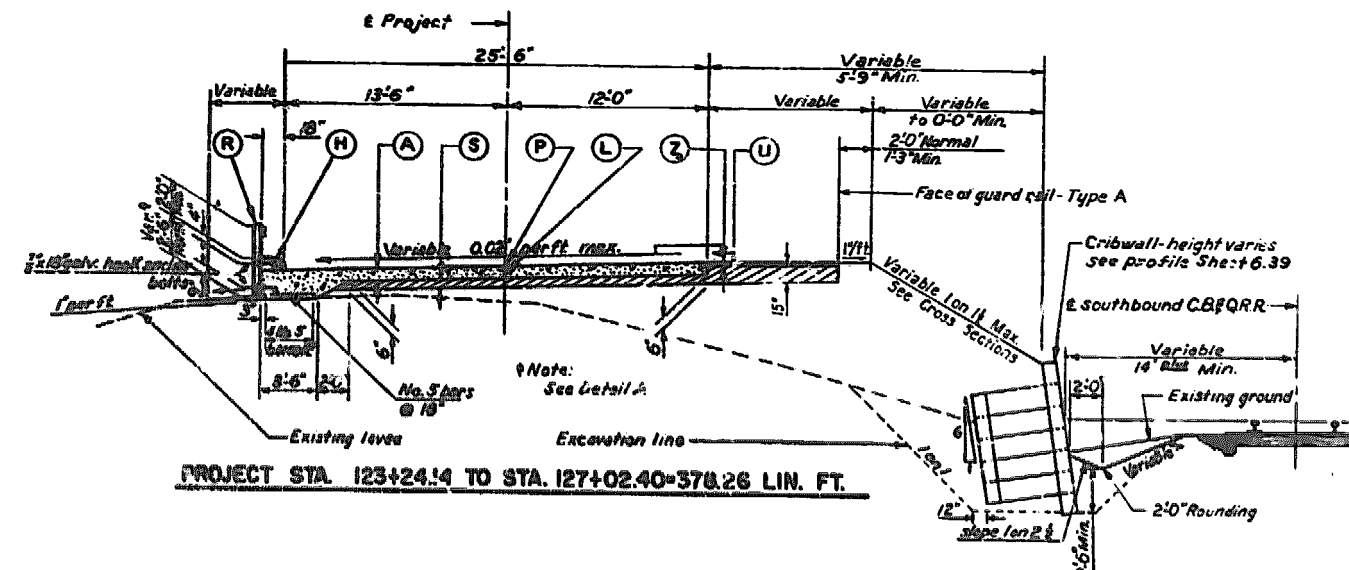
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DRAWN BY J.H.H. DATE 2-1-57
FOR: DMR
CHECKED: J.H.H. DATE 2-12-57
HOWARD, NEEDLES, TAMMEN & BERGENHOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK
SHEET 630

1 As Built B.H.R. 2-12-57

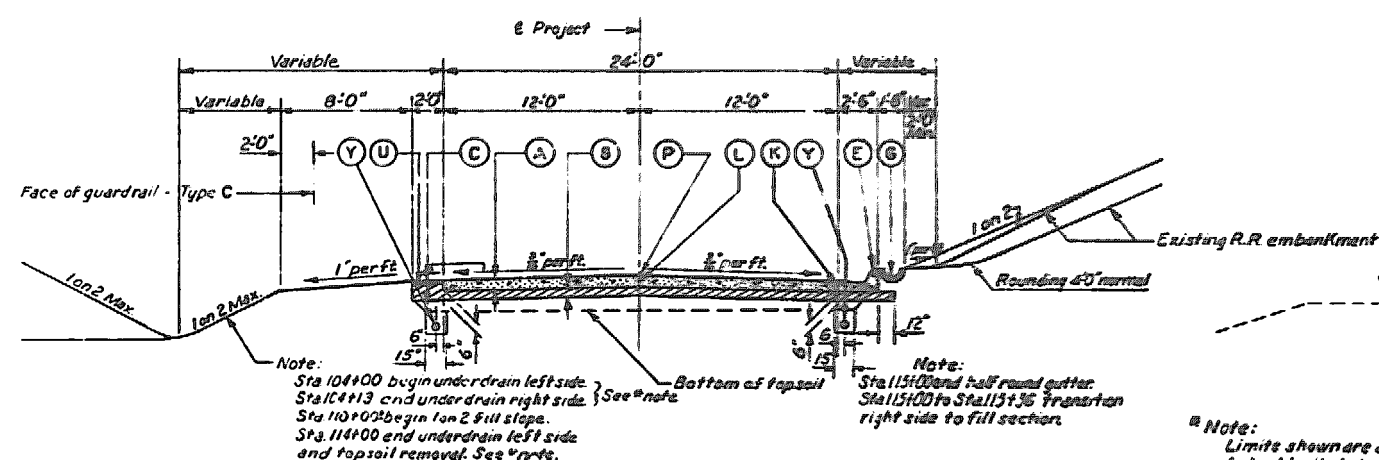




PROJECT STA. 115+36 TO STA. 120+98 = 562 LIN. FT.

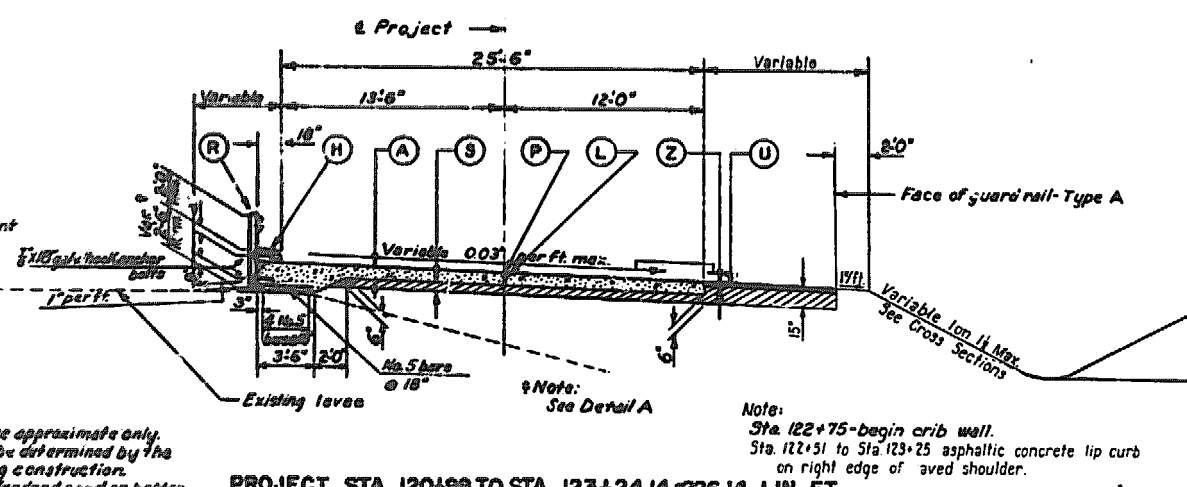


PROJECT STA. 123+24.4 TO STA. 127+02.40 = 378.26 LIN. FT.



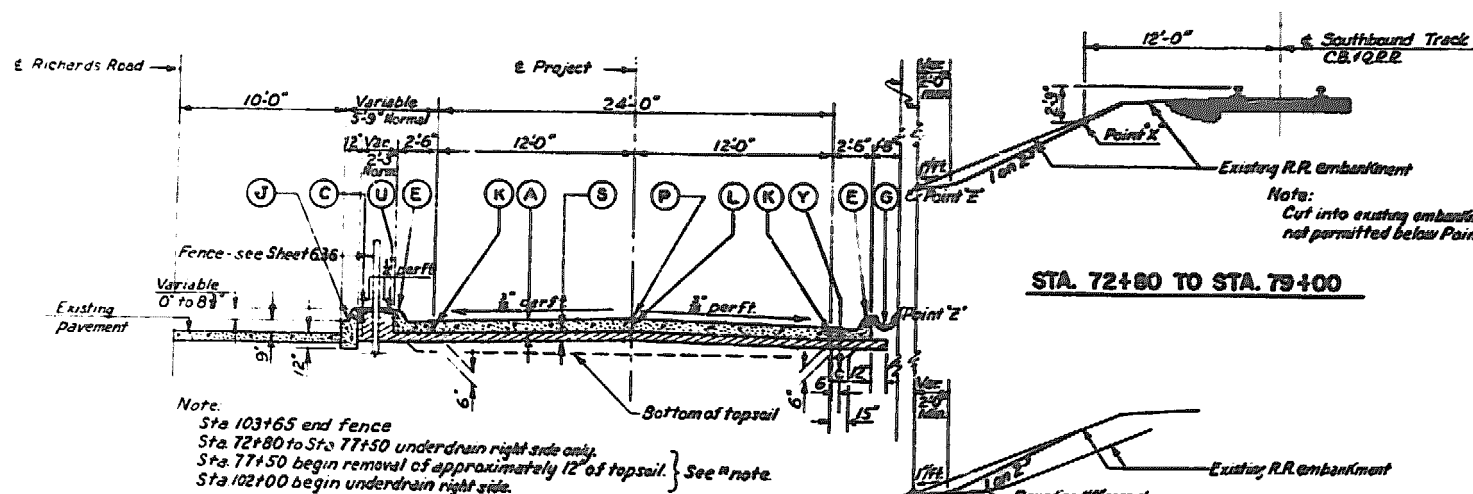
PROJECT STA. 103+68 TO STA. 115+36 = 1168 LIN. FT.

Note:
 Limits shown are approximate only. Actual limits to be determined by the Engineer during construction. Backfill to be dredged sand or better material.



PROJECT STA. 120+98 TO STA. 123+24.14 = 226.14 LIN. FT.

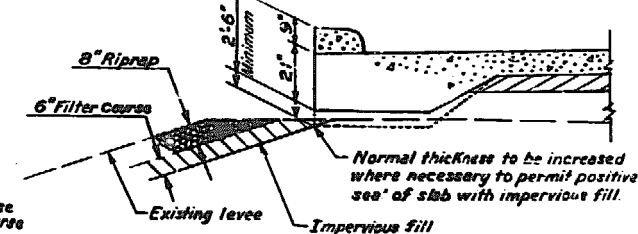
Note:
 Sta. 122+75 begin crib wall.
 Sta. 122+51 to Sta. 123+25 asphaltic concrete lip curb on right edge of aved shoulder.



PROJECT STA. 72+80 TO STA. 103+68 = 3088 LIN. FT.

STA. 79+00 TO STA. 103+68

- LEGEND**
- (A) 8" Portland Cement Concrete Pavement
 - (C) 3" Asphaltic Concrete: 1 1/2" Asphaltic Concrete Binder Course, 1 1/2" Asphaltic Concrete Surface Course
 - (E) 9" Curb and Gutter
 - (G) 12" Half Round Gutter
 - (H) 9" Type "B" Curb
 - (J) Type "C" Curb
 - (K) Longitudinal Key Joint without tie bars
 - (L) Longitudinal Joint with tie bars
 - (P) Profile Grade
 - (R) Type "B" Guard Rail
 - (S) Granular Base Material
 - (U) Prime Coat
 - (Y) 6" Longitudinal Underdrain
 - (Z) 4" Asphaltic Concrete: 2 1/2" Asphaltic Concrete Binder Course, 1 1/2" Asphaltic Concrete Surface Course

DETAIL A
Scale: 1/4" = 1'-0"

2	Added Curb Note	RL	5-13-55
1	Removed Toll Plaza Notes	RL	5-13-55
No.	Revision	Ma.	Date

KANSAS CITY, MISSOURI
 DEPARTMENT OF PUBLIC WORKS
 ENGINEERING DIVISION
 MISSOURI RIVER BRIDGE AT BROADWAY

PROJECT TYPICAL SECTIONS

6	As Built	B.H.R.	4-22-57
4	Added heavy-duty widened shoulder	R.G.	6-26-56
3	Extended Curb & Gutter, Half round & Underdrain	J.H.K.	10-11-55

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS
 KANSAS CITY, MISSOURI
 880 SHEET 6.12

TYPICAL SECTION
MEDIAN DRAINAGE FOR ROADWAY STRUCTURE
Sta. 128+00 to 164+00
Scale: 1"=1'-0"

NORTHBOUND LANES
STA. 118+80 TO STA. 123+75

SOUTHBOUND LANES
STA. 165+70 TO STA. 170+00

NORTHBOUND LANES
STA. 165+70 TO STA. 175+04.5

SOUTHBOUND LANES
STA. 123+75 TO STA.127+80

**NORTHBOUND LANES
STA. 123+75 TO STA. 165+70**

TYPICAL SECTION
MEDIAN DRAINAGE FOR ROADWAY

Sta. 123+75 to 128+00
Sta. 164+00 to 165+50
Grade 15.110"



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DATE PREPARED

2/13/12

ROUTE STATE

169 MO

DISTRICT SHEET NO.

BR 1

COUNTY

CLAY

JOB NO.

J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A8081

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

HDR Engineering, Inc.

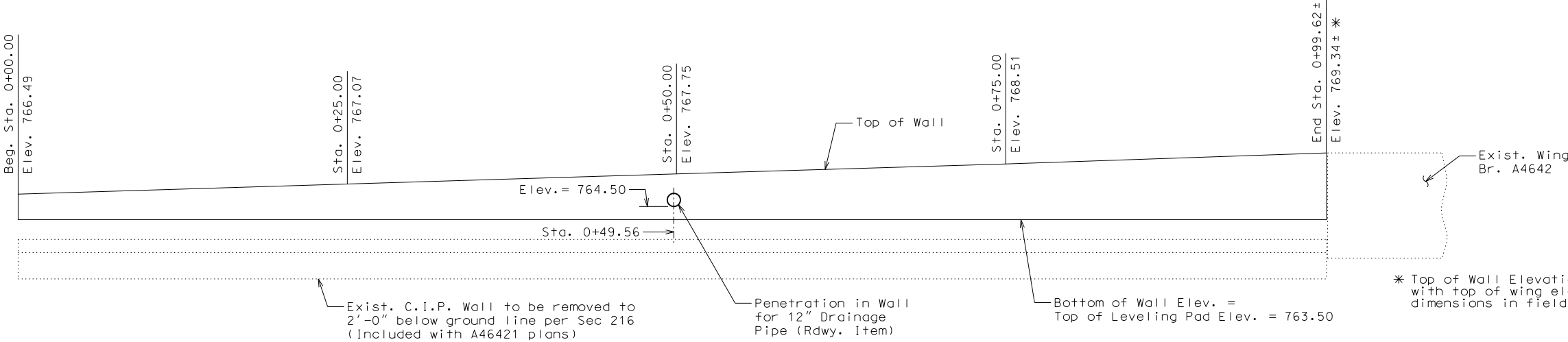
4435 Main Street

Suite 1000

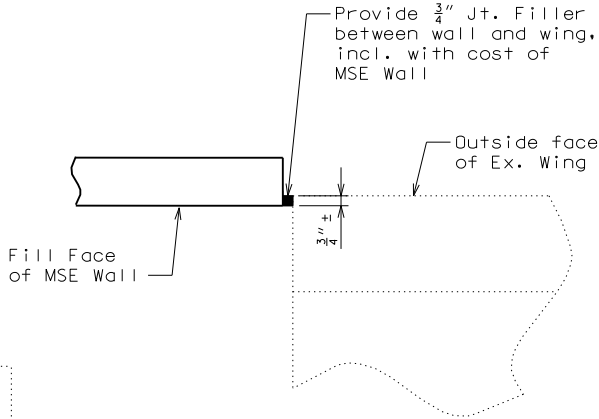
Kansas City, MO 64111-1856

816-360-2700

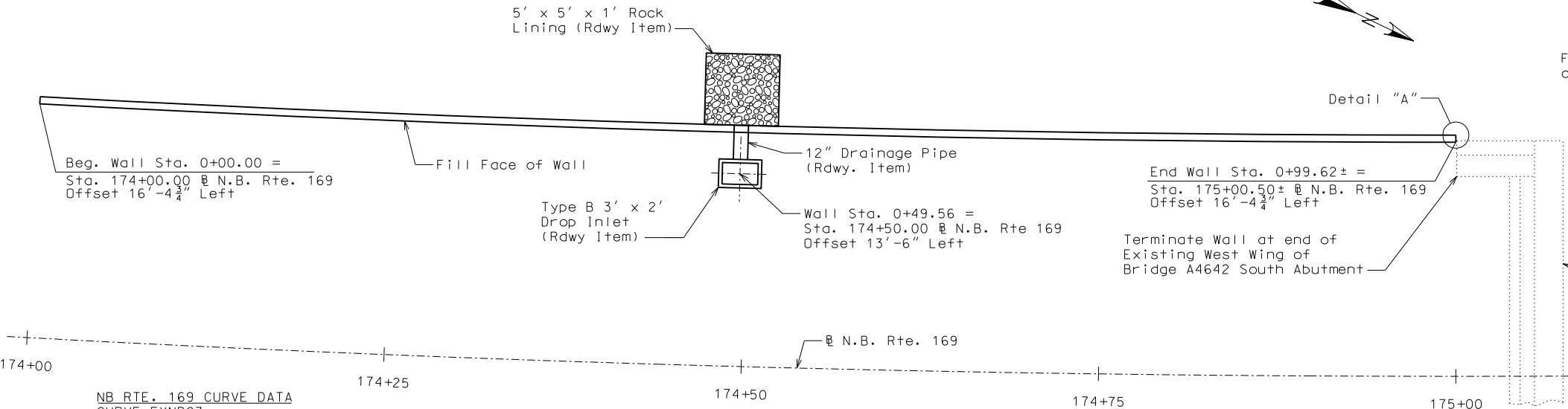
Certificate of Authority: 000856



DEVELOPED ELEVATION
Leveling Pad and Coping not shown for clarity.
Stations along Wall.



DETAIL "A"



PLAN
Leveling Pad and Coping not shown for clarity.
@ Wall and Offset to Fill Face of MSE Wall.

NB RTE. 169 CURVE DATA

CURVE	EXNB03
PI	172+77.52
PC	166+57.71
PT	178+53.86
Δ	37° 02' 02.2" (LT)
D	3° 05' 46.0"
L	1,196.15'
T	619.81'
R	1,850.58'

Estimated Wall Systems Data Table					
Proprietary Wall Systems		Combination Wall Systems			
Manufacturer	System	Facing Unit Manufacturer	Facing Unit	Geogrid Manufacturer	Geogrid

MSE Wall Systems Data Table is to be completed by MoDOT construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.

Detailed December 2011
Checked December 2011

Note: This drawing is not to scale. Follow dimensions.

Estimated Quantities for MSE Wall		
Item		Total
Mechanically Stabilized Earth Wall Systems	Sq. Ft.	430

MSE WALL DETAILS

Sheet No. 1 of 2

Notes:
For Typical Section and General Notes, see Sheet No. 2
For Vertical Curve Information for N.B. Rte. 169, See Roadway Plans.

B.M. #1 - ELEV. 761.01'
CHISELED "□" CUT IN NORTH CENTER CONCRETE STRUCTURE NORTHWEST OF SOUTH ABUTMENT SB-169 HIGHWAY 118.43' LT., STA. 174+21.00, @ NB U.S. 169

B.M. #2 - ELEV. 765.41'
CHISELED "□" CUT ON SOUTHEAST CORNER ABUTMENT OF BRIDGE 28.17' LT., STA. 177+57.91, @ NB U.S. 169

B.M. #3 - ELEV. 765.68'
FOUND "+" CUT ON SW CORNER OF SEVENTH PIER NORTH OF SOUTH ABUTMENT, NB - 169 HIGHWAY 13.07' LT., STA. 178+25.30, @ NB U.S. 169

RETAINING WALL ON WEST SIDE OF NB RTE 169 AT S. ABUT. OF BRIDGE A46421

STATE ROAD FROM HIGHWAY 9 TO INTERSTATE 35 ABOUT 0.5 MILES SOUTH OF HIGHWAY 9

STA. 174+00.00

RTE. N.B. 169

STD. 617.10

GENERAL NOTES:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Seismic Performance Category A

All concrete for leveling pad and coping shall be Class B or B-1 with $f'_c = 4000$ psi.

The MSE Wall System shall be built in accordance with Sec 720 and the Special Provisions.

The MSE Wall System shall be one of the following acceptable prequalified Wall Systems (see Special Provisions):

- The Neel Company T-Wall Retaining Wall System (Big Block System)
- Redi-Rock International Redi-Rock System (Small Block System)
- Stone Strong System (Small Block System)

For specific requirements for each MSE Wall System, see Special Provisions.

Factor of safety shall be 2.0 for overturning, 1.5 for sliding and 2.0 for bearing.

The allowable bearing pressure shall be 3.0 ksf.

The cost of joint filler and joint seal, complete-in-place, will be considered completely covered by the contract unit price for Concrete Traffic Barrier (Type B). See Roadway plans.

For seismic design the factor of safety shall be 1.5 for overturning and 1.1 for sliding.

$\phi = 32^\circ$ for backfill material to be retained by the mechanically stabilized earth wall system.

$\phi = 32^\circ$ for foundation material the wall is to rest on.

$\phi = 32^\circ$ for the Grade 2 Aggregate for Drainage Backfill.

The boring logs or other factual records of subsurface data and investigations performed by the department for the design of this project will be provided in the bridge electronic deliverable file or will be available from the Project Contact upon written request.

Panel reinforcement shall be epoxy coated.

Anchorage reinforcement shall be spaced to avoid roadway drop inlet behind wall.

A filter cloth meeting the requirements for a Separation Geotextile material shall be placed between the Grade 2 Aggregate for Drainage Backfill and the backfill being retained by the mechanically stabilized earth wall system.

Coping shall be required on this structure unless a small block system is used. Bond breaker (roofing felt or other approved alternate) between wall panel and coping required if coping is cast in place.

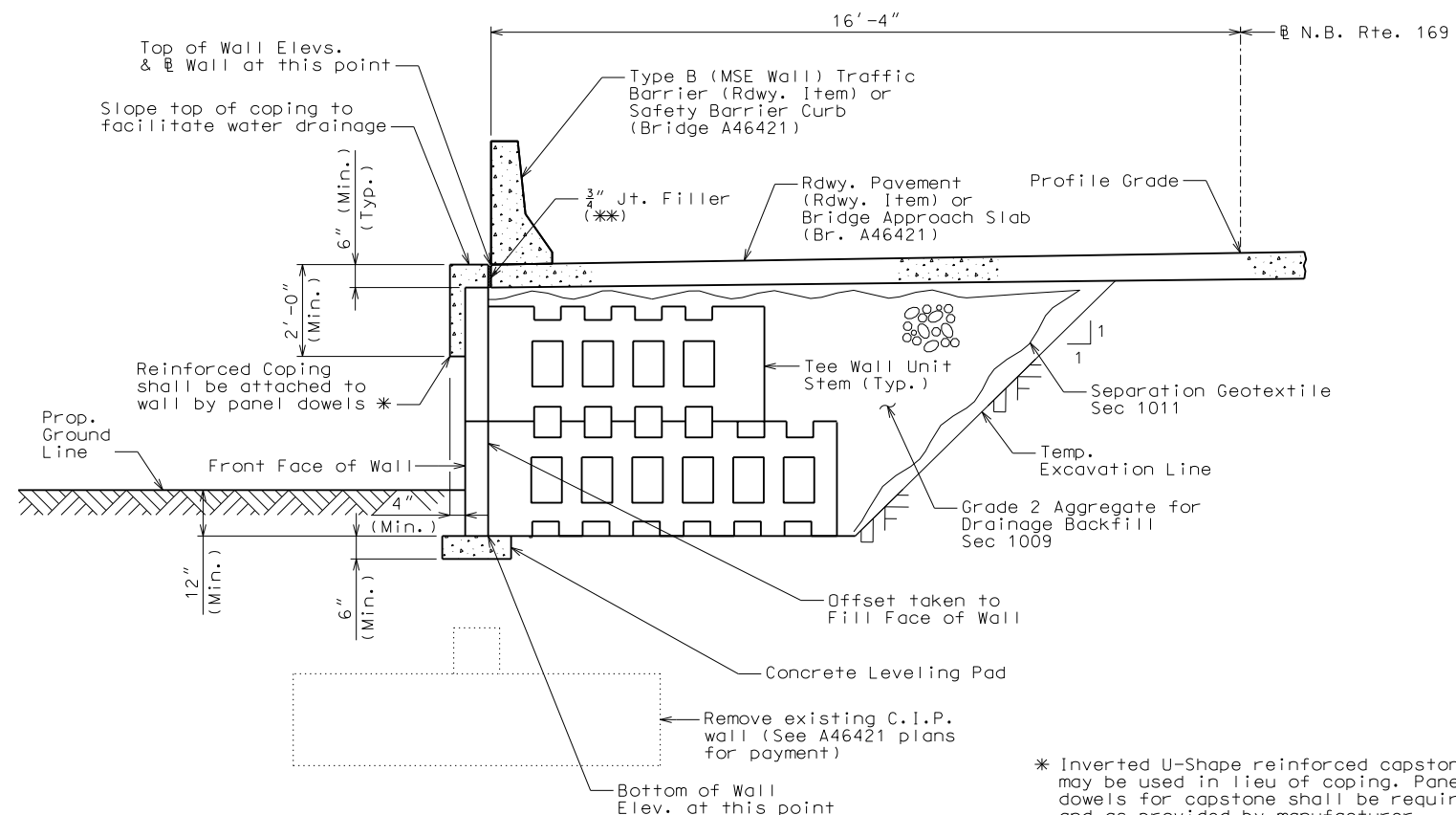
The top and bottom elevations are given for a vertical wall. If a battered small block wall system is used, the height of the wall shall be adjusted as necessary to fit the ground slope and the concrete leveling pad shall be adjusted as necessary to account for the wall batter. If a fence is built on an extended gutter, then the height of the wall shall be adjusted further.

The baseline of the wall shown is for a vertical wall. If a battered wall system is used, this baseline shall correspond to top of wall elevation location as depicted in Typical Section.

The contractor shall be solely responsible to coordinate construction of the wall with bridge and roadway construction and ensure that the bridge and roadway construction, resulting or existing obstructions, shall not impact the construction or performance of the wall. Soil reinforcement shall be designed and placed to avoid damage by pile driving, guardrail post installation, utility and sign foundations. (See Roadway and Bridge plans).

Top most layer of reinforcement shall be fully covered with Grade 2 Aggregate for Drainage Backfill, as approved by the wall manufacturer, before placement of the Separation Geotextile.

Drop Inlet obstruction and wall penetration for drainage pipe shall be accounted for in design and layout of MSE Wall.



TYPICAL SECTION

(T-Wall Retaining Wall System shown, other acceptable systems similar, see Special Provisions)

Acceptable pre-qualified Wall System include:
The Neel Co. T-Wall Retaining Wall System,
Redi-Rock International Redi-Rock System
and Stone Strong System, see Special Provisions.

For requirements specific to each acceptable system, see Special Provisions.

Contractor to remove existing wall to 2'-0" below existing ground line per Sec 216, cost included with A46421. Contractor shall return and compact excavated impervious fill material to existing conditions (no direct pay).

- * Inverted U-Shape reinforced capstone may be used in lieu of coping. Panel dowels for capstone shall be required and as provided by manufacturer.

Seal Joint between MSE Wall and roadway pavement with silicone joint sealant for sawcut and formed joints in accordance with Sec. 717.



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2/13/12

ROUTE 169	STATE MO
--------------	-------------

DISTRICT BR	SHEET NO. 2
----------------	----------------

COUNTY CLAY

JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A8081

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
Certificate of Authority: 000856

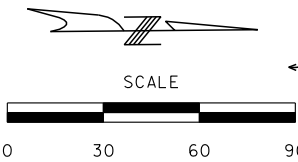
ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

ALL BEARINGS ARE BASED ON STATE PLANE, WESTERN ZONE

RIGHT-OF-WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 120+00.00 TO STA. 177+00.00, A DISTANCE OF 1.08 MILES.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY AND RECORDS. THE COMMISSION DOES NOT WARRANT THE LOCATIONS OF THESE FACILITIES AS PRECISE. 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 THE EXISTENCE AND PRECISE LOCATION OF ALL FACILITIES AND TO AVOID DAMAGE. SEE THE JOB SPECIAL PROVISIONS FOR A LIST OF UTILITY COMPANIES ON OR WITHIN THE VICINITY OF THE PROJECT LIMITS.

CONTRACTOR TO CONNECT MSE WALL DRAINAGE SYSTEM TO DROP INLET NEAR STATION 115+25 USING 6" PIPE; GROUT PIPE INTO THE WALL OF INLET AT AN APPROXIMATE INVERT OF 748.5'. (BRIDGE ITEM. SEE BRIDGE SPECIAL PROVISIONS)



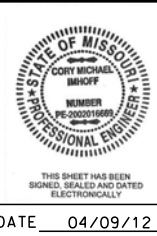
BURLINGTON NORTHERN SANTA FE RAILWAY
0.86 TEMP. ESM'T.

CURVE EXSB01
PI 123+72.07
PC 120+40.67
PT 127+02.40
Δ 7° 59' 39.0" (LT)
D 1° 12' 29.1"
L 661.73'
T 331.40'
R 4,742.73'

REMOVE 429' EXIST. BARRIER
(BEGIN STA. 123+73.00)

BEGIN PROJECT STA. 123+75.00
STATE IMPROVEMENT BEGINS AT A POINT APPROX. 981.26' NORTH AND 24.90' WEST OF THE SE CORNER OF THE SE 1/4 SEC. 15, T50N, R33W.

ROUTE	STATE	DISTRICT	SHEET NO.
169	MO	KC	4
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			



SAWCUT STA. 123+75 TO STA. 128+00
TYPE B BARRIER (BEGIN STA. 123+75)

STATION 124+50
MATCHLINE
LEVEE STA. 72+68.40

CURVE EXNB01
PI 122+10.78
PC 120+97.30
PT 123+24.14
Δ 4° 32' 13.0" (RT)
D 2° 00' 00.0"
L 226.85'
T 113.48'
R 2,864.79'

UTILITY CONTACTS

KANSAS CITY POWER & LIGHT CO.	816-471-5275
SOUTHWESTERN BELL COMPANY	913-676-1846
MISSOURI GAS ENERGY	816-472-3464
AT&T CORPORATION	816-391-5077
KANSAS CITY MISSOURI WATER DEPT.	816-513-2109
KANSAS CITY MISSOURI PUBLIC WORKS	816-513-2627

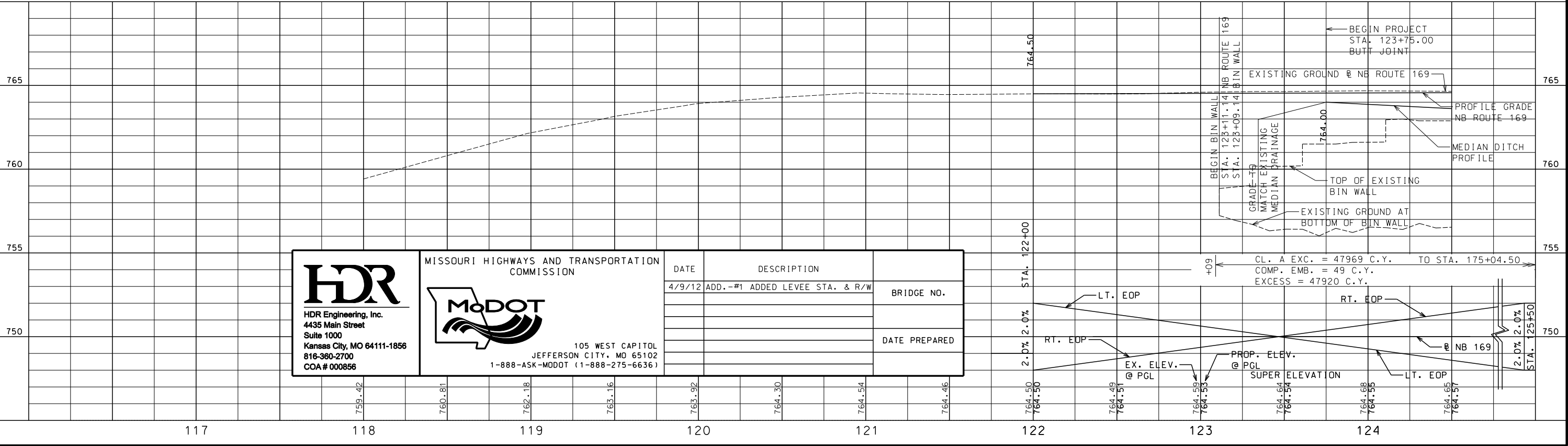
BEGIN BIN WALL
STA. 0+00 = STA. 123+11.25
NB RTE 169 32'-8 1/2" RT.

TYPE B BARRIER (BEGIN STA. 123+75)
4" CONCRETE SLOPE PROTECTION STA. 123+75 TO STA. 127+03

TRANSITION SECTION & BRIDGE ANCHOR SECTION

REMOVE EXISTING WALL
REPLACE WITH WALL A7619 (BRIDGE ITEM)

525.75' TYPE A GUARDRAIL (STA. 118+31.25 TO STA. 123+57.00)



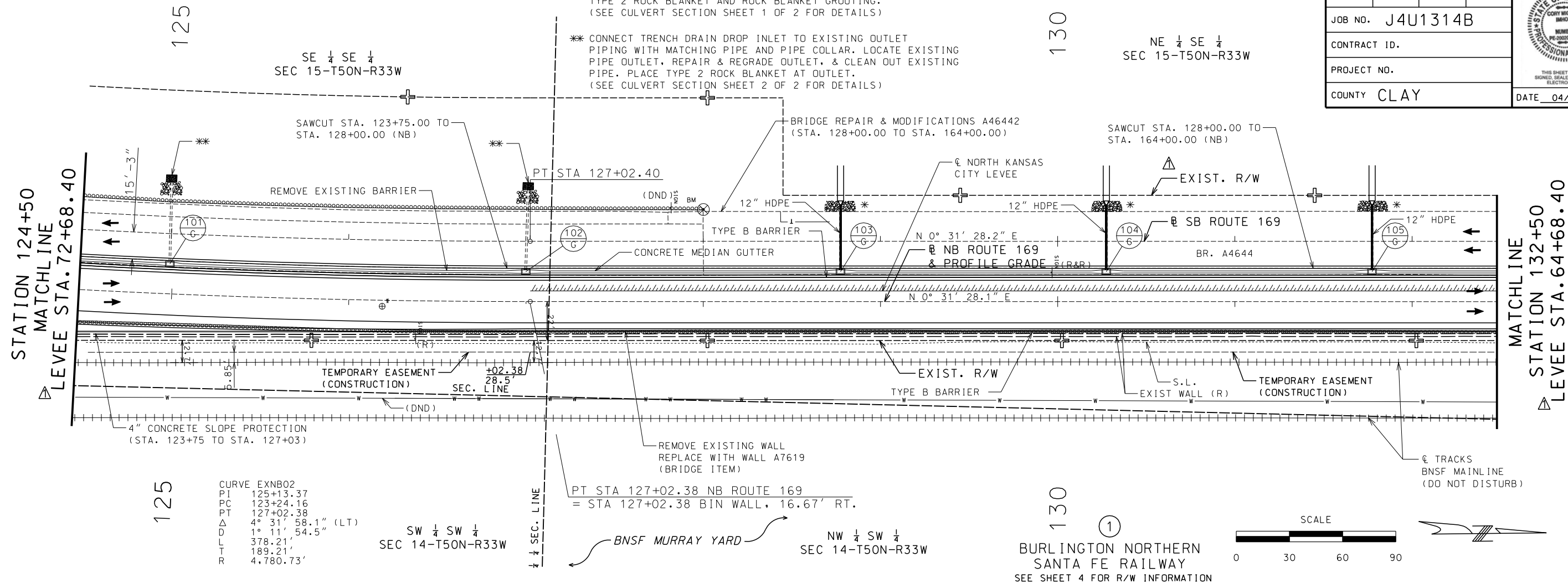
 HDR Engineering, Inc. 4435 Main Street Suite 1000 Kansas City, MO 64111-1856 816-360-2700 COA # 000856	 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	DATE	DESCRIPTION	BRIDGE NO.
		4/9/12	ADD. -#1 ADDED LEVEE STA. & R/W	
				DATE PREPARED

ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 5
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			



* CONSTRUCT DROP INLET, 12" HDPE PIPING, FLARED OUTLET, TYPE 2 ROCK BLANKET AND ROCK BLANKET GROUTING. (SEE CULVERT SECTION SHEET 1 OF 2 FOR DETAILS)

** CONNECT TRENCH DRAIN DROP INLET TO EXISTING OUTLET PIPING WITH MATCHING PIPE AND PIPE COLLAR. LOCATE EXISTING PIPE OUTLET, REPAIR & REGRADE OUTLET, & CLEAN OUT EXISTING PIPE. PLACE TYPE 2 ROCK BLANKET AT OUTLET. (SEE CULVERT SECTION SHEET 2 OF 2 FOR DETAILS)



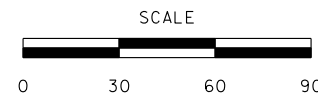
CURVE EXNB02
 PI 125+13.37
 PC 123+24.16
 PT 127+02.38
 4° 31' 58.1" (LT)
 1° 11' 54.5"
 378.21'
 189.21'
 4,780.73'

SW 1/4 SW 1/4
 SEC 14-T50N-R33W

PT STA 127+02.38 NB ROUTE 169
 = STA 127+02.38 BIN WALL, 16.67' RT.

NW 1/4 SW 1/4
 SEC 14-T50N-R33W

BURLINGTON NORTHERN
 SANTA FE RAILWAY
 SEE SHEET 4 FOR R/W INFORMATION

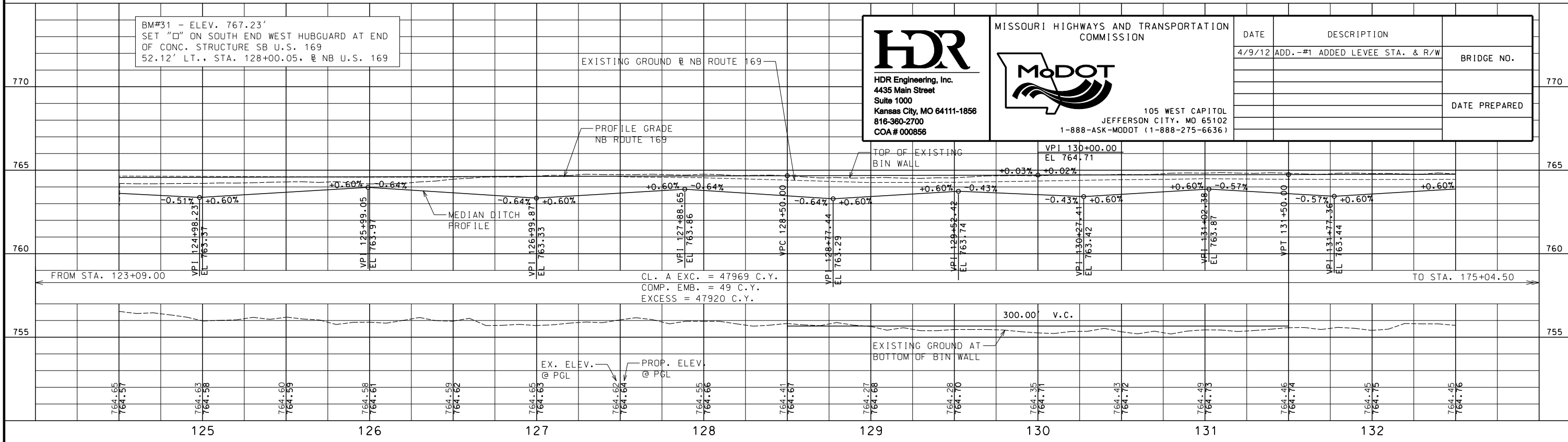


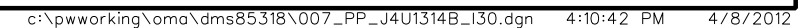
BM#31 - ELEV. 767.23'
 SET "C" ON SOUTH END WEST HUBGUARD AT END
 OF CONC. STRUCTURE SB U.S. 169
 52.12' LT., STA. 128+00.05, NB U.S. 169

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 816-360-2700
 COA # 000856

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DATE	DESCRIPTION	BRIDGE NO.
4/9/12	ADD. - #1 ADDED LEVEE STA. & R/W	

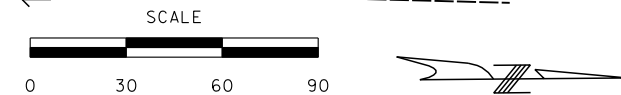
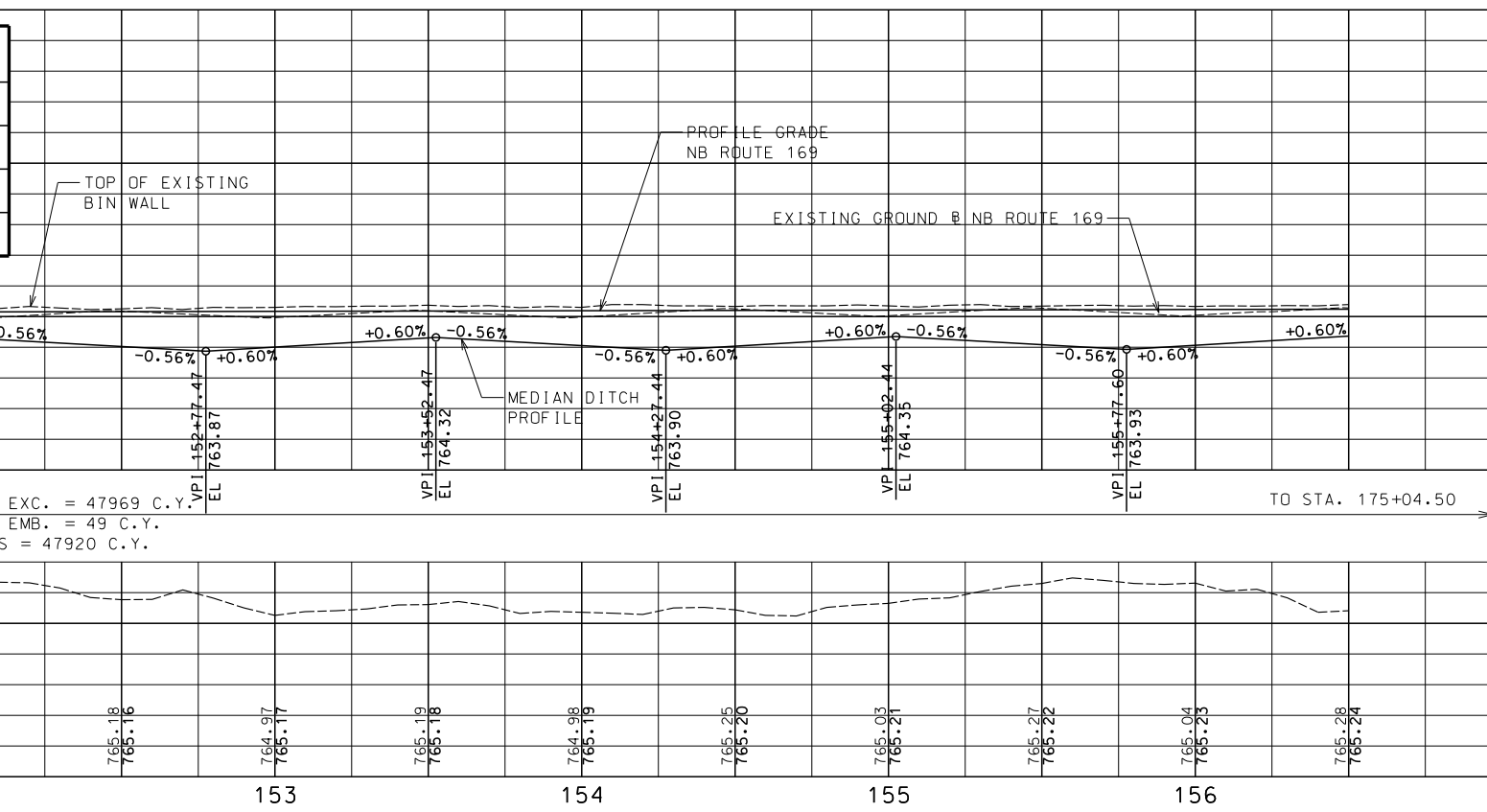




STATE OF MISSOURI
CORY MICHAEL
IMHOFF
NUMBER
PE-2002016688
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY

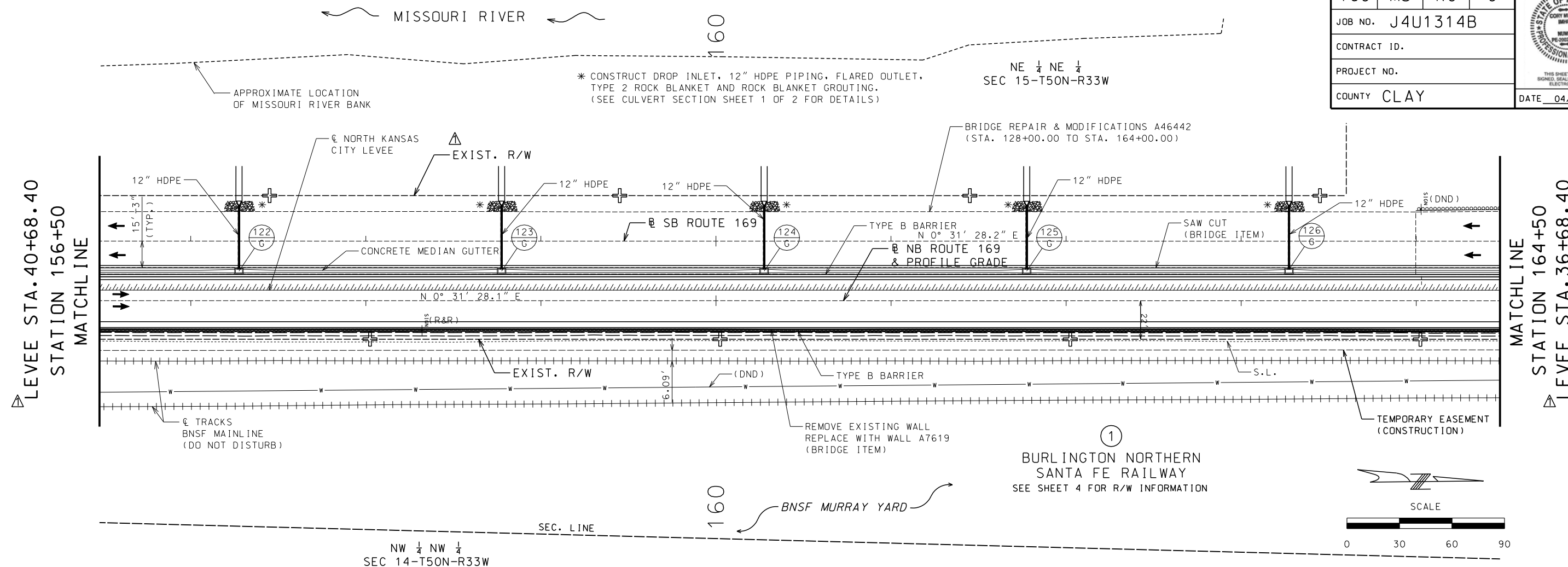
DATE 04/09/12

[illegible]

ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 9
JOB NO. J4U1314B			
CONTRACT ID.			
PROJECT NO.			
COUNTY CLAY			
DATE 04/09/12			



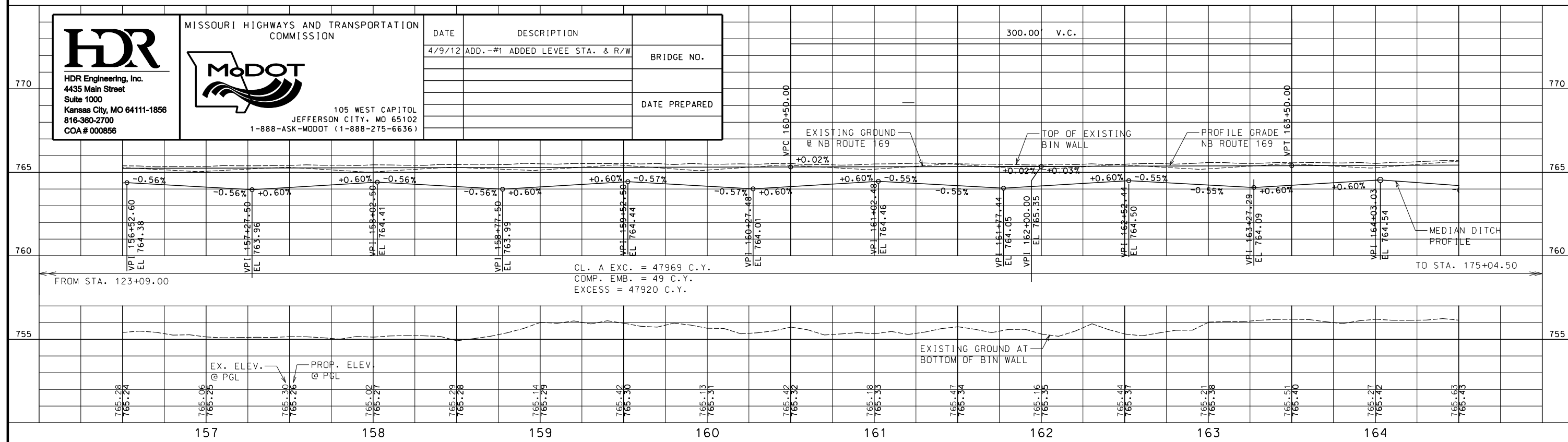
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HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA# 000856

MISSOURI HIGHWAYS AND TRANSPORTATION
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MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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DATE	DESCRIPTION	BRIDGE NO.
4/9/12	ADD.-#1 ADDED LEVEE STA. & R/W	
DATE PREPARED		



PHASE 1 - CONSTRUCT DETOUR

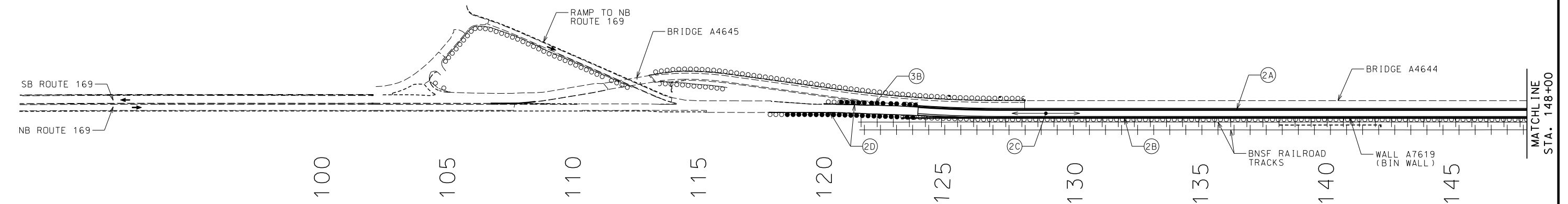
INSTALL DETOUR AND WORK ZONE CONSTRUCTION SIGNING.

TRAFFIC: CLOSE NB ROUTE 169. NB ROUTE 169 TRAFFIC CARRIED ON I-35 DETOUR.

PHASE 2 - NB ROUTE 169 - MEDIAN DRAINAGE/BARRIER & BIN WALL REPAIRS

- (2A) - REMOVE MEDIAN BARRIER, REPAIR MEDIAN DRAINAGE SYSTEM & CONSTRUCT NEW MEDIAN BARRIER.
- (2B) - REMOVE AND REPLACE BIN WALL.
- (2C) - CONSTRUCT PAVEMENT, PAVEMENT OVERLAY & OUTSIDE BARRIER.
- (2D) - REMOVE EXISTING GUARDRAIL & CONSTRUCT NEW GUARDRAIL.

TRAFFIC: NB ROUTE 169 TRAFFIC CARRIED ON I-35 DETOUR.



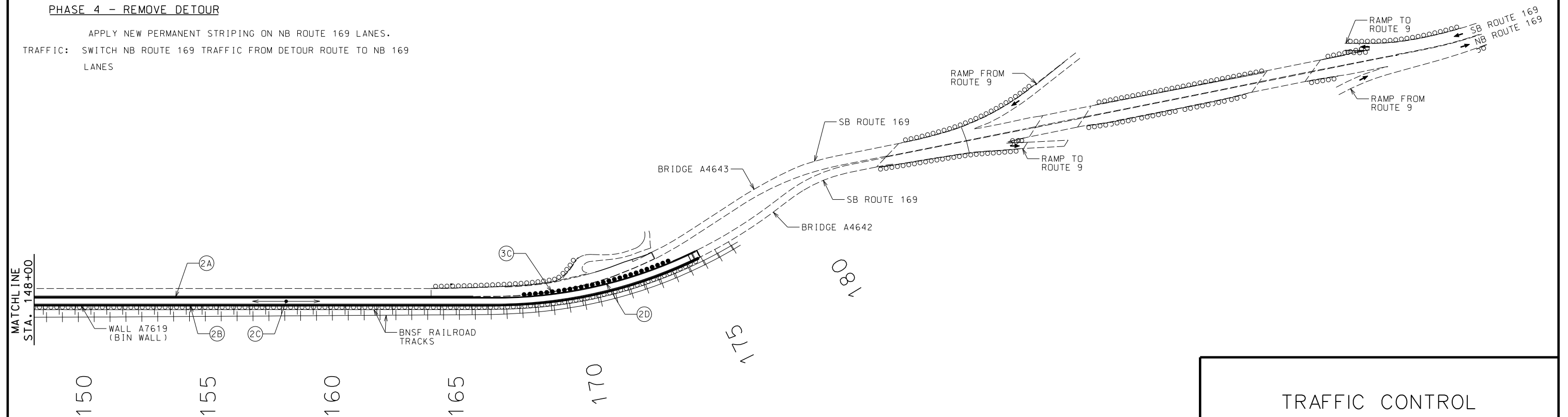
PHASE 3 - SB ROUTE 169 - INSIDE GUARDRAIL & BARRIER IMPROVEMENTS

- (3A) - REMOVE EXISTING BARRIER & CONSTRUCT NEW BARRIER AND GUARDRAIL.
- (3B) - REMOVE EXISTING GUARDRAIL & CONSTRUCT NEW GUARDRAIL.
- (3C) - REMOVE EXISTING BARRIER & CONSTRUCT NEW BARRIER.

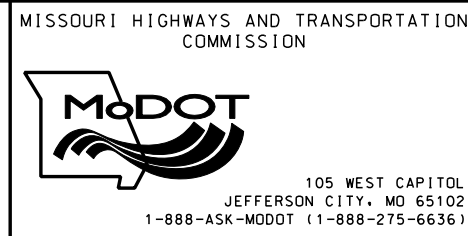
PHASE 4 - REMOVE DETOUR


APPLY NEW PERMANENT STRIPING ON NB ROUTE 169 LANES.

TRAFFIC: SWITCH NB ROUTE 169 TRAFFIC FROM DETOUR ROUTE TO NB 169 LANES

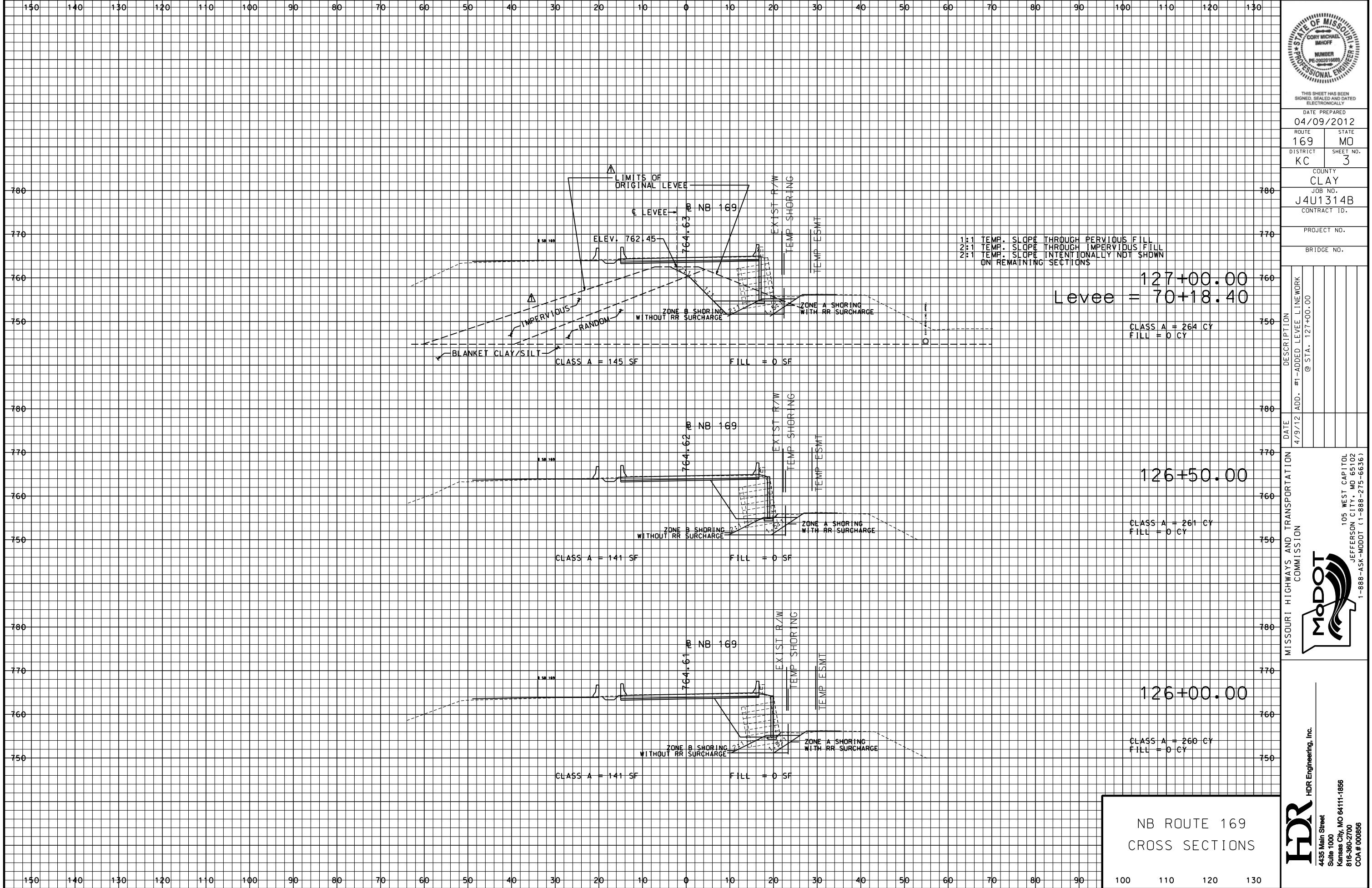


TRAFFIC CONTROL
CONSTRUCTION PHASING
SHEET 1 OF 1



DATE	DESCRIPTION		ROUTE 169	STATE MO	DISTRICT KC	SHEET NO. 14	 <small>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY</small>
		BRIDGE NO.	JOB NO. J4U1314B				
			CONTRACT ID.				
		DATE PREPARED	PROJECT NO.				
			COUNTY CLAY				
							DATE 04/09/12





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DATE PREPARED 04/09/2012

ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 3

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE 4/9/12

DESCRIPTION

ADD. #1-ADDED LEEVE LINEWORK @ STA. 127+00.00

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

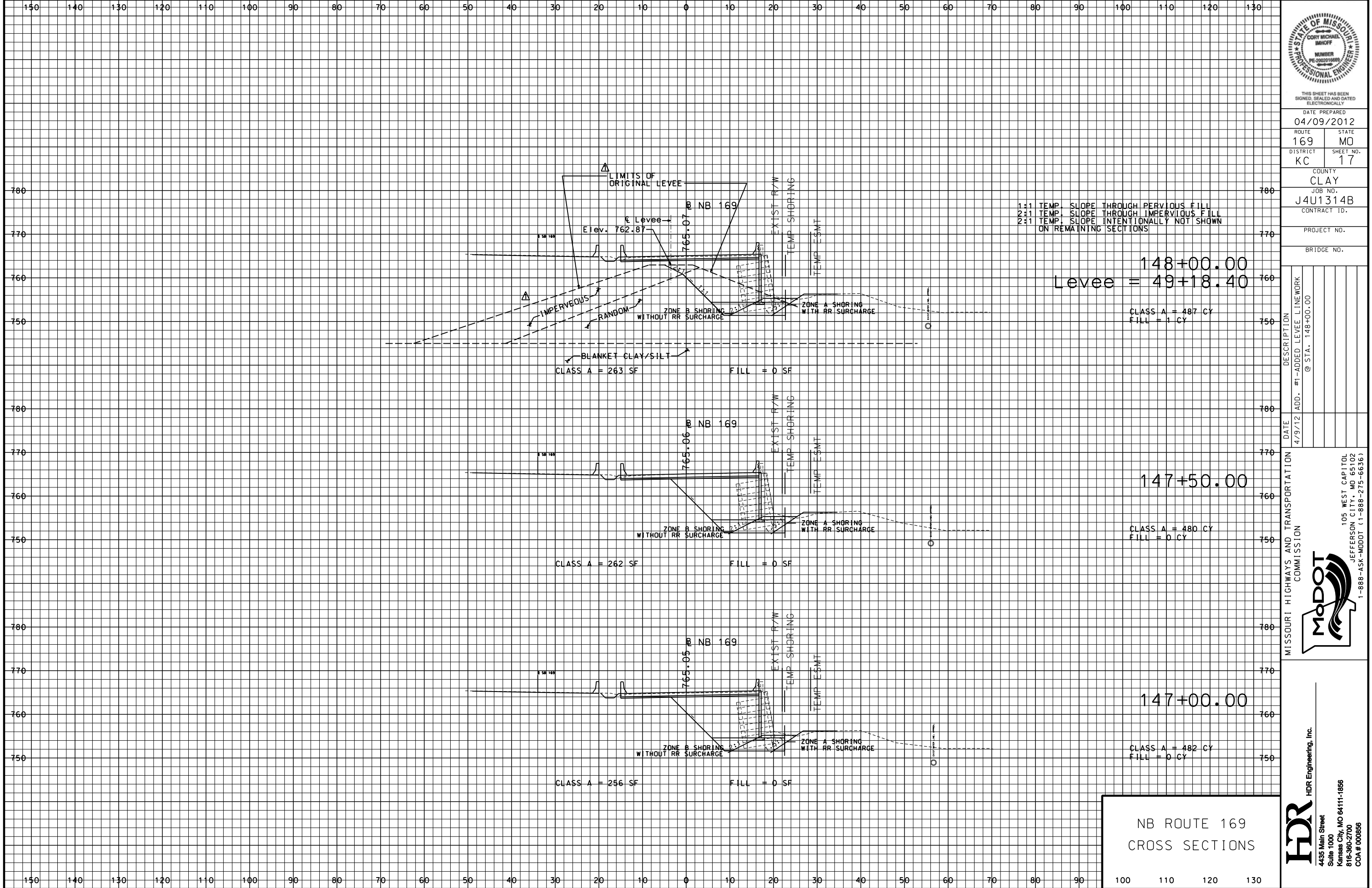
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)

MoDOT

HDR Engineering, Inc.

4435 Main Street Suite 1000 Kansas City, MO 64111-1856 816-360-2700 COA # 000858

NB ROUTE 169
CROSS SECTIONS



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04/09/2012

ROUTE STATE

169 MO

DISTRICT SHEET NO.

KC 17

COUNTY

CLAY

JOB NO.

J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION
4/9/12	ADD. #1-ADDED LEVEE LINEWORK @ STA. 148+00.00



HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

NB ROUTE 169
CROSS SECTIONS

1:1 TEMP. SLOPE THROUGH PERVIOUS FILL
2:1 TEMP. SLOPE THROUGH IMPERVIOUS FILL
2:1 TEMP. SLOPE INTENTIONALLY NOT SHOWN
ON REMAINING SECTIONS

148+00.00
Levee = 49+18.40

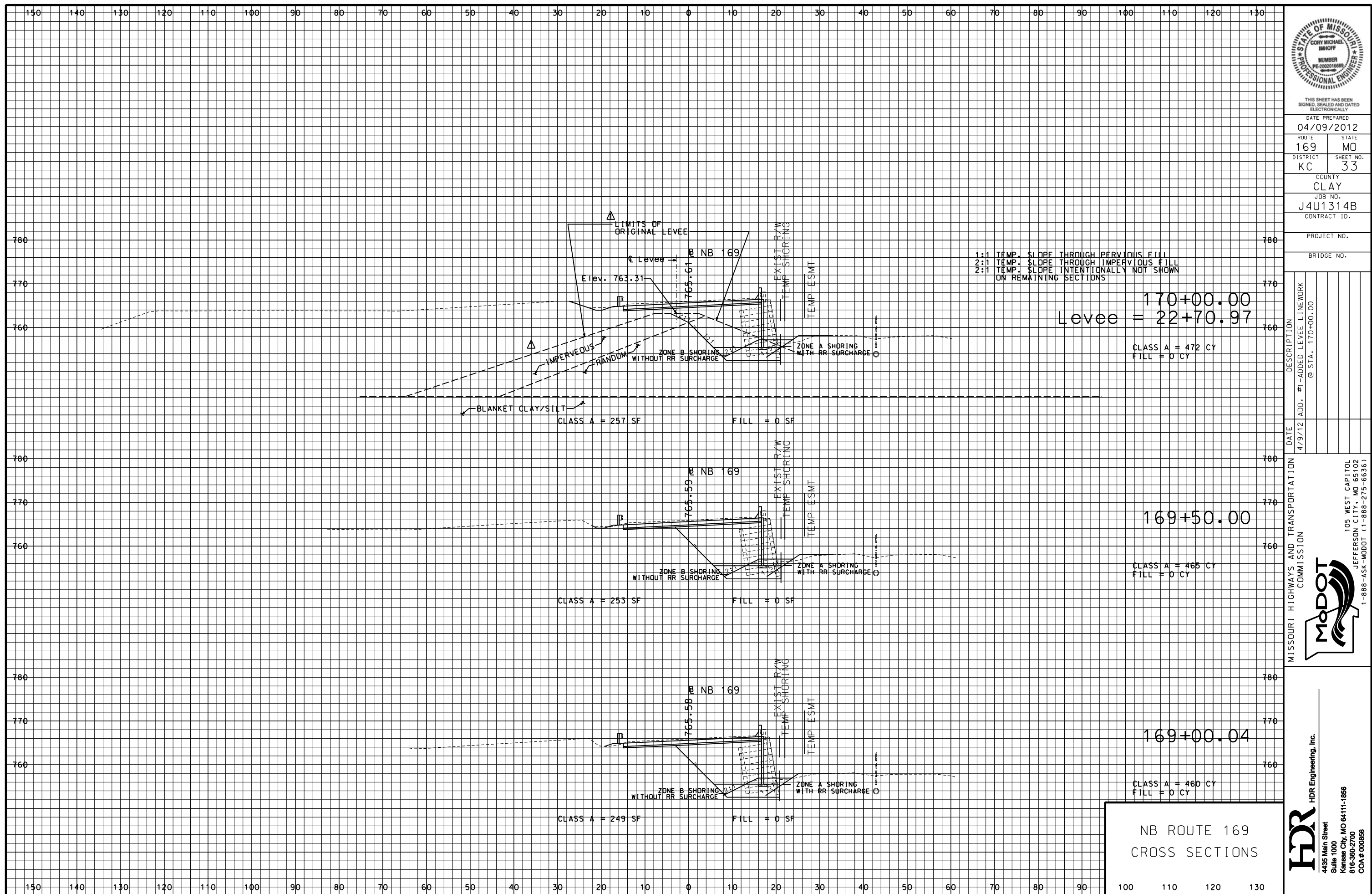
CLASS A = 487 CY
FILL = 1 CY

147+50.00

CLASS A = 480 CY
FILL = 0 CY

147+00.00

CLASS A = 482 CY
FILL = 0 CY



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04/09/2012

ROUTE 169	STATE MO
--------------	-------------

DISTRICT	SHEET NO.
KC	33

COUNTY
CLAY

JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO.

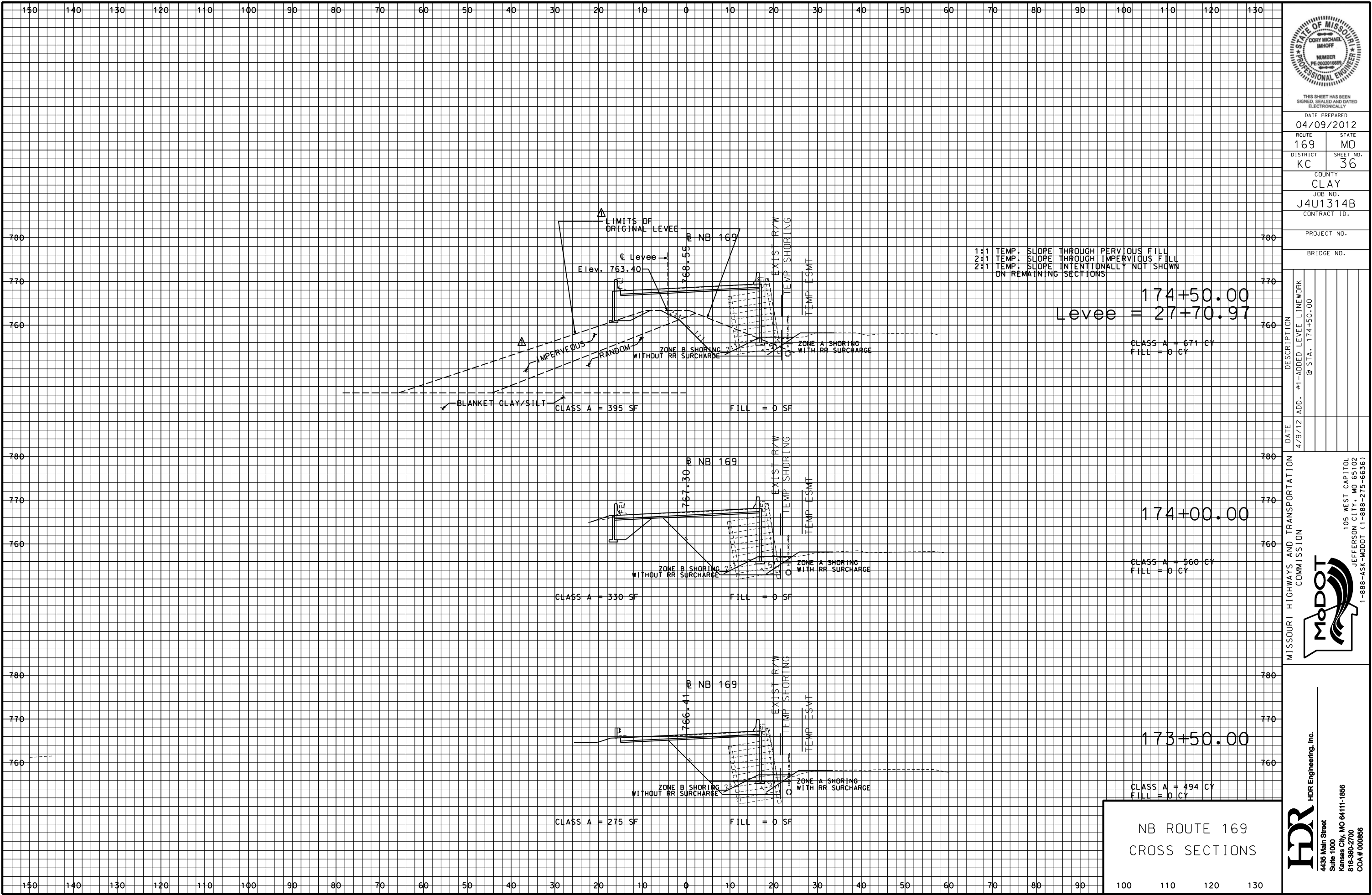
BRIDGE NO.

DATE	DESCRIPTION
4/9/12	ADD. #1-ADDED LEVEE LINEWORK
	@ STA. 170+00.00

MoDOT
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856



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SIGNED, SEALED AND DATED
ELECTRONICALLY

DATE PREPARED
04/09/2012

ROUTE 169 STATE MO
DISTRICT KC SHEET NO. 36

COUNTY CLAY
JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

4/9/12

ADD. #1-ADDED LEVEE LINEWORK

@ STA. 174+50.00

MISSOURI HIGHWAYS AND TRANSPORTATION

COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

HDR Engineering, Inc.

4435 Main Street

Suite 1000

Kansas City, MO 64111-1856

816-360-2700

COA # 000856

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
U.I.P. AND REHAB. EXISTING 48 @ 75'-0" CONCRETE SLAB SPANS

SEC/SUR 15 TWP 50N RGE 33W



THIS SHEET HAS BEEN
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ELECTRONICALLY

DATE PREPARED
04/10/12

ROUTE STATE
169 MO

DISTRICT SHEET NO.
BR 1

COUNTY
CLAY

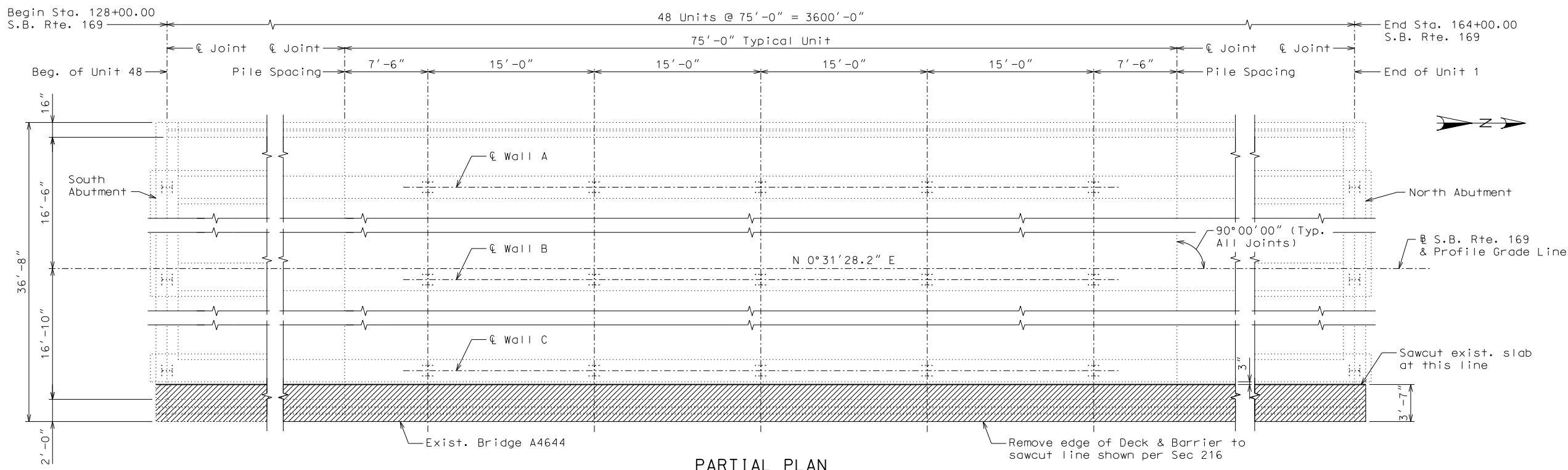
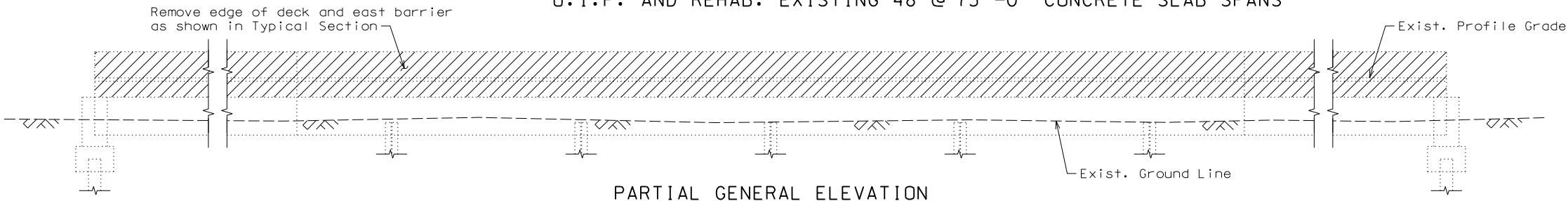
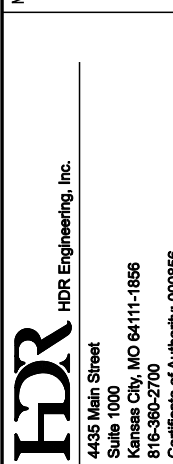
JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A46442

DATE	DESCRIPTION
4/10/12	ADD. #1-Added Clean & Epoxy Seal Quantity & Pay Item



PARTIAL PLAN

Notes:

"Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.

Outline of old work is indicated by light, dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704, included with cost of Partial Removal of Existing Bridge Decks.

For additional repair work on structure, see Bridge A46441 plans.

ESTIMATED QUANTITIES

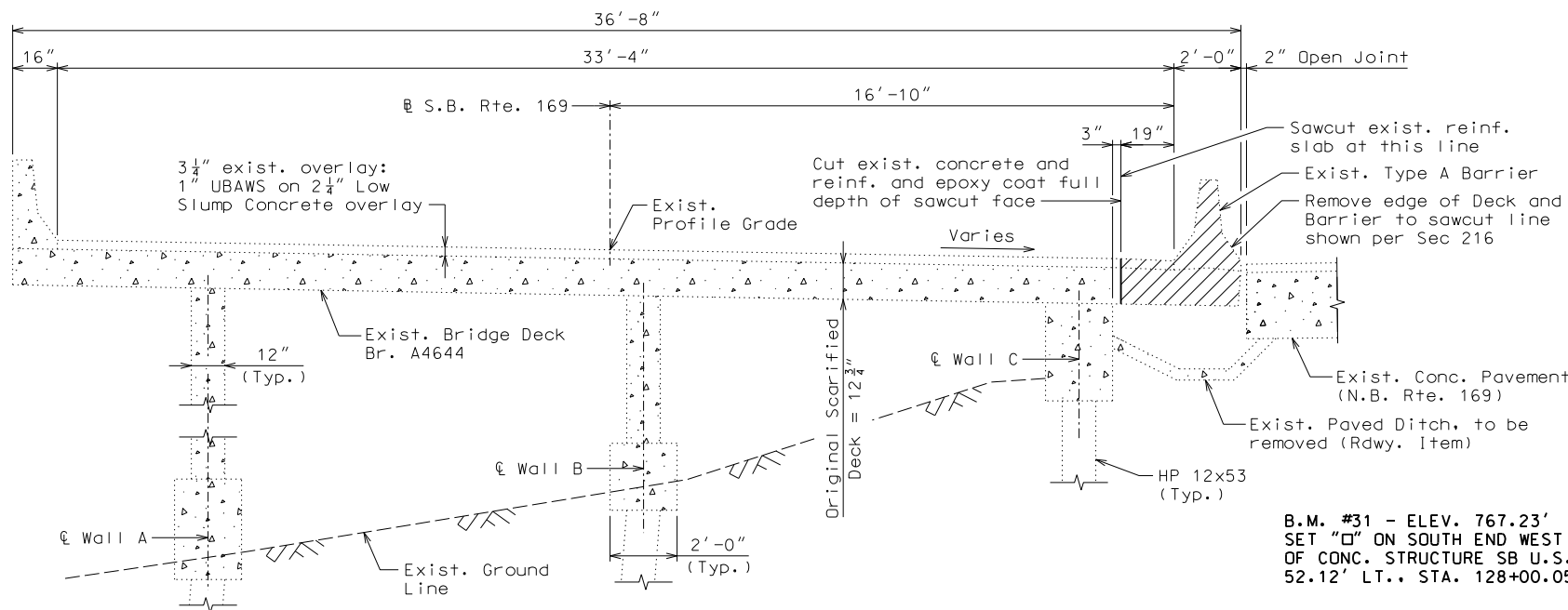
Item	Unit	Substr.	Superstr.	Total
* Partial Removal of Existing Bridge Decks	Sq. Ft.		12900	12900
* Clean and Epoxy Seal	Sq. Ft.		4500	4500

* Includes existing Type A Barrier and existing 3 1/4" overlay

REPAIRS TO BRIDGE OVER NORTH KANSAS CITY LEVEE

STATE ROAD FROM HIGHWAY 9 TO INTERSTATE 35
ABOUT 1.3 MILES SOUTH OF HIGHWAY 9
STA. 128+00.00
RTE. S.B. 169

B.M. #31 - ELEV. 767.23'
SET "O" ON SOUTH END WEST HUBGUARD AT END
OF CONC. STRUCTURE SB U.S. 169
52.12' LT., STA. 128+00.05, @ NB U.S. 169



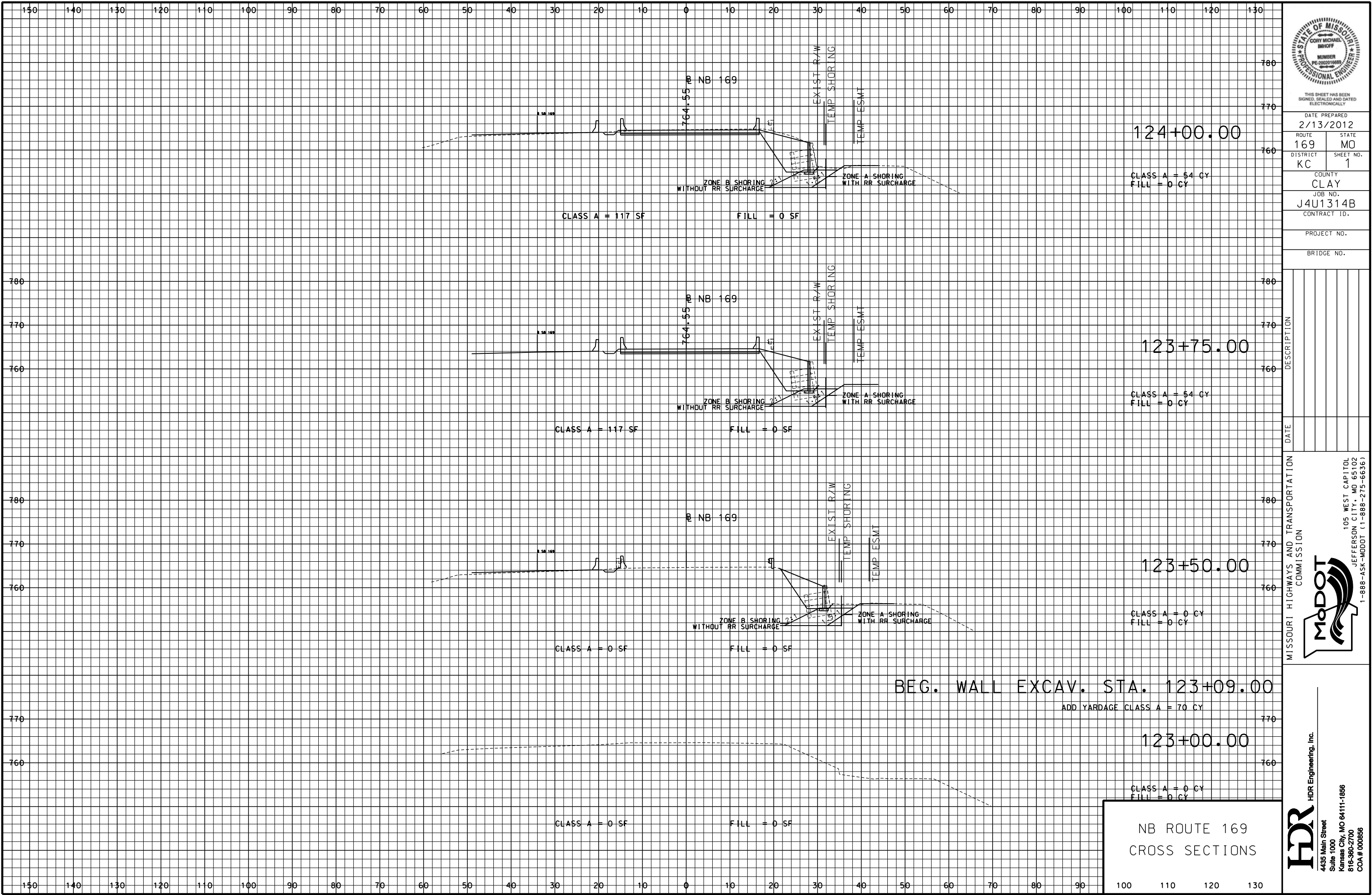
TYPICAL SECTION

GENERAL ELEVATION AND PLAN

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 1 Revised

Detailed December 2011
Checked December 2011



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2/13/2012

ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 1

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

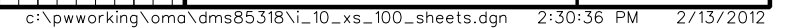
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

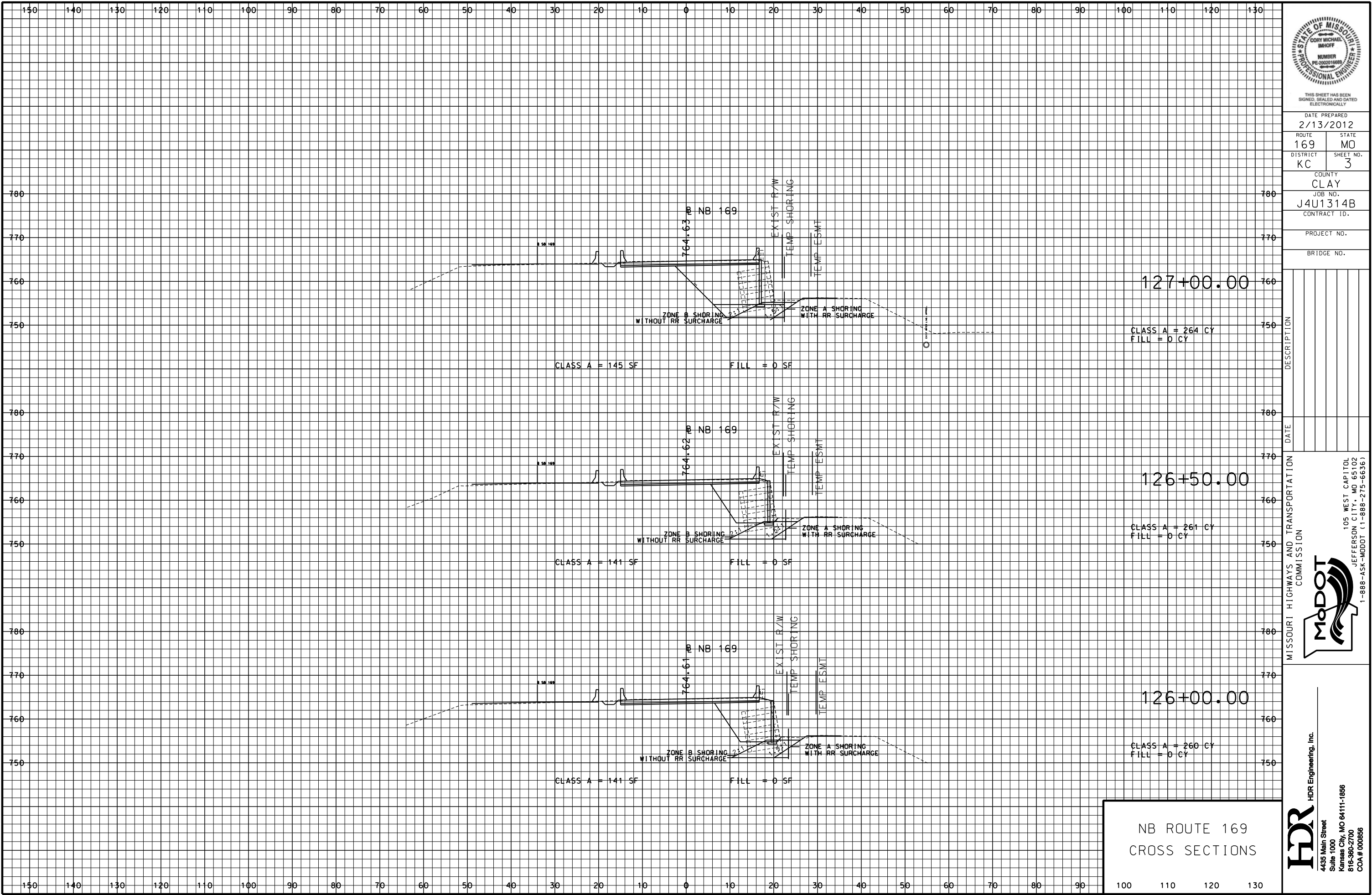
MoDOT

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Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000856

NB ROUTE 169
CROSS SECTIONS





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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 3

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

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BRIDGE NO.

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JEFFERSON CITY, MO 65102
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816-360-2700
COA # 000856

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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 4

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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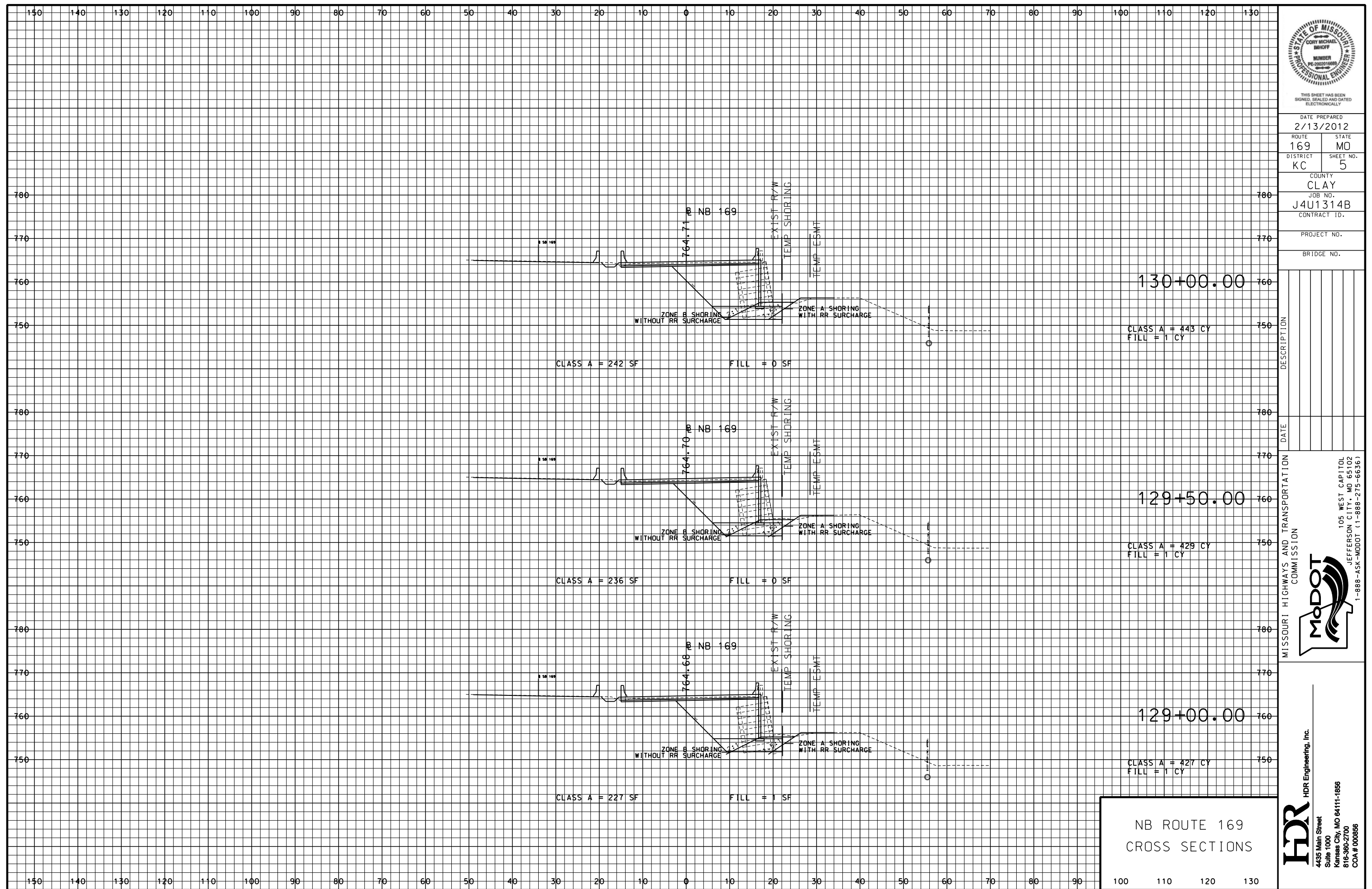
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HDR

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4435 Main Street
Suite 1000
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816-360-2700
COA # 000856

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ROUTE	STATE
169	MO

DISTRICT	SHEET NO.
KC	5

COUNTY
CLAY

JOB NO.
J4U1314B

PROJECT NO.

BRIDGE NO.

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COMMISSION



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 HDR Engineering, Inc.

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DISTRICT	SHEET NO.
KC	6

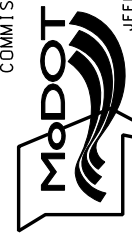
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CLAY

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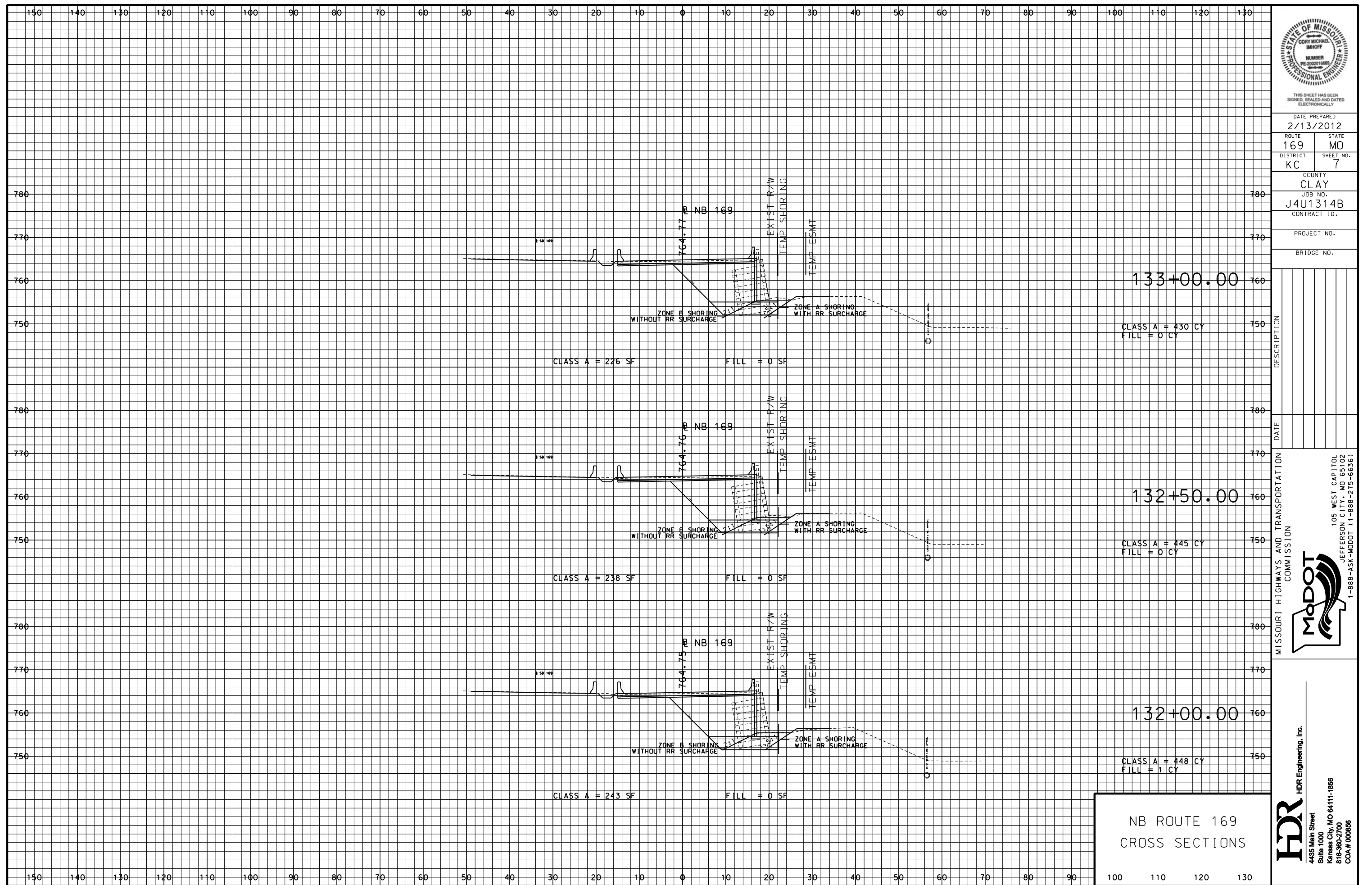
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COMMISSION

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JEFFERSON CITY, MO 65102



HDR Engineering, Inc.

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Suite 1000
Kansas City, MO 64111-1856
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ROUTE	STATE
169	MO

DISTRICT	SHEET NO.
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COUNTY
CLAY

JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

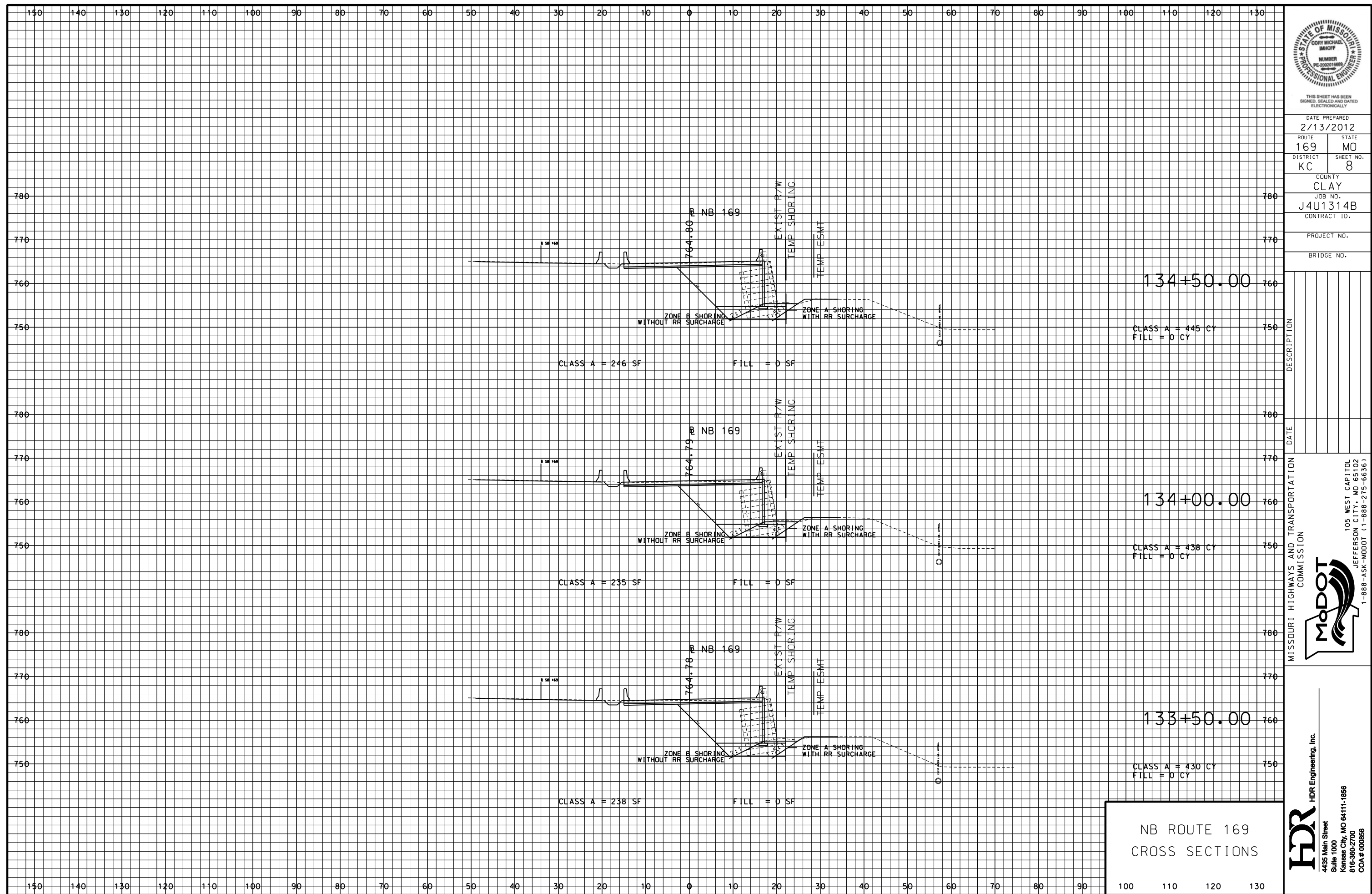
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ROUTE	STATE
169	MO

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DISTRICT	SHEET NO.
KC	8

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JOB NO.
1411314D

J401514B
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

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**MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION**

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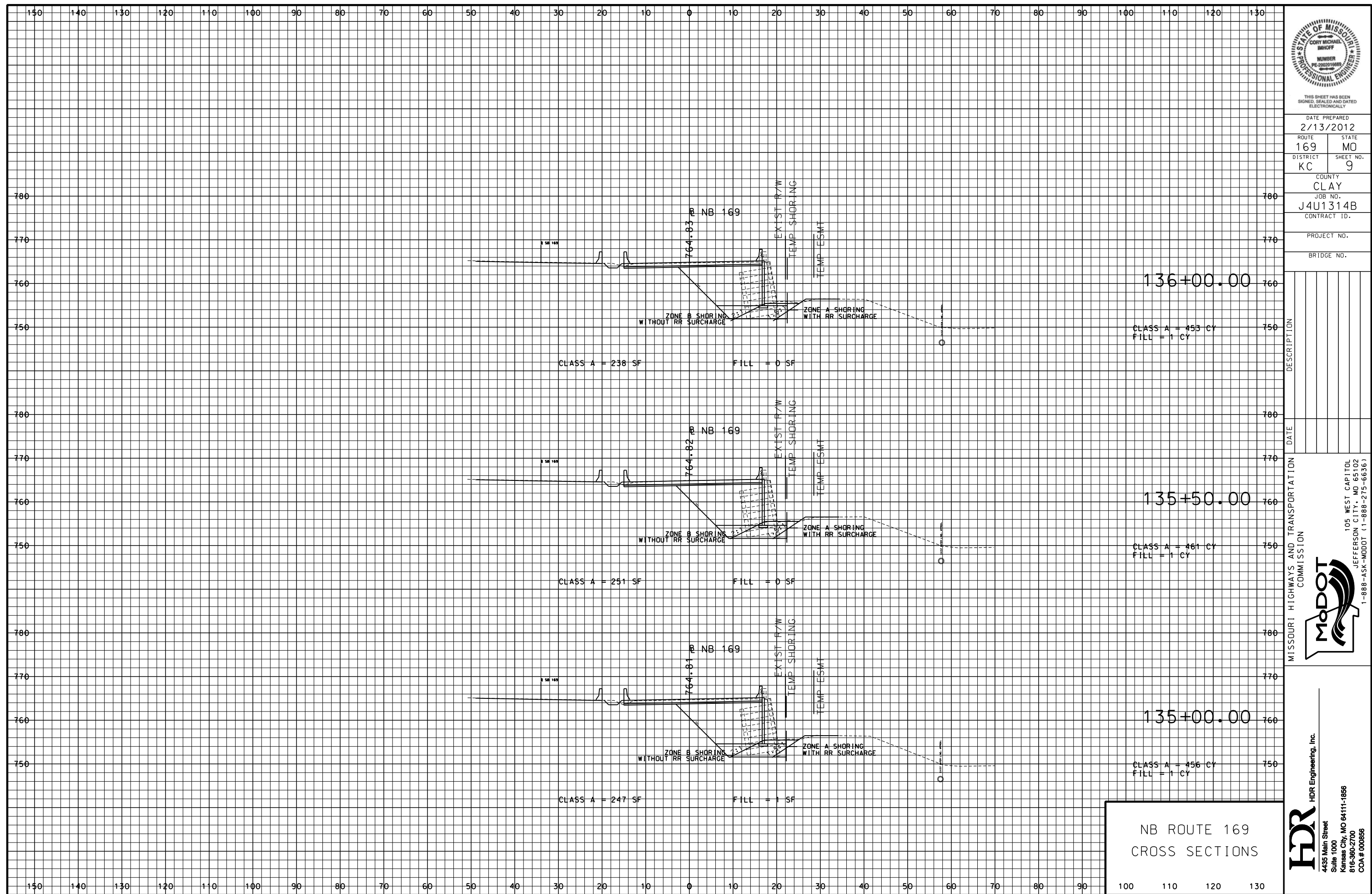
105 WEST CAPITOL
JEFFERSON CITY, MO 65102



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HDR Engineering, Inc.
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Kansas City, MO 64111-1656
816-360-2700

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ROUTE 169	STATE MO

DISTRICT	SHEET NO.
KC	9

COUNTY
CLAY

JOB NO.
J4U1314B

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PROJECT NO.

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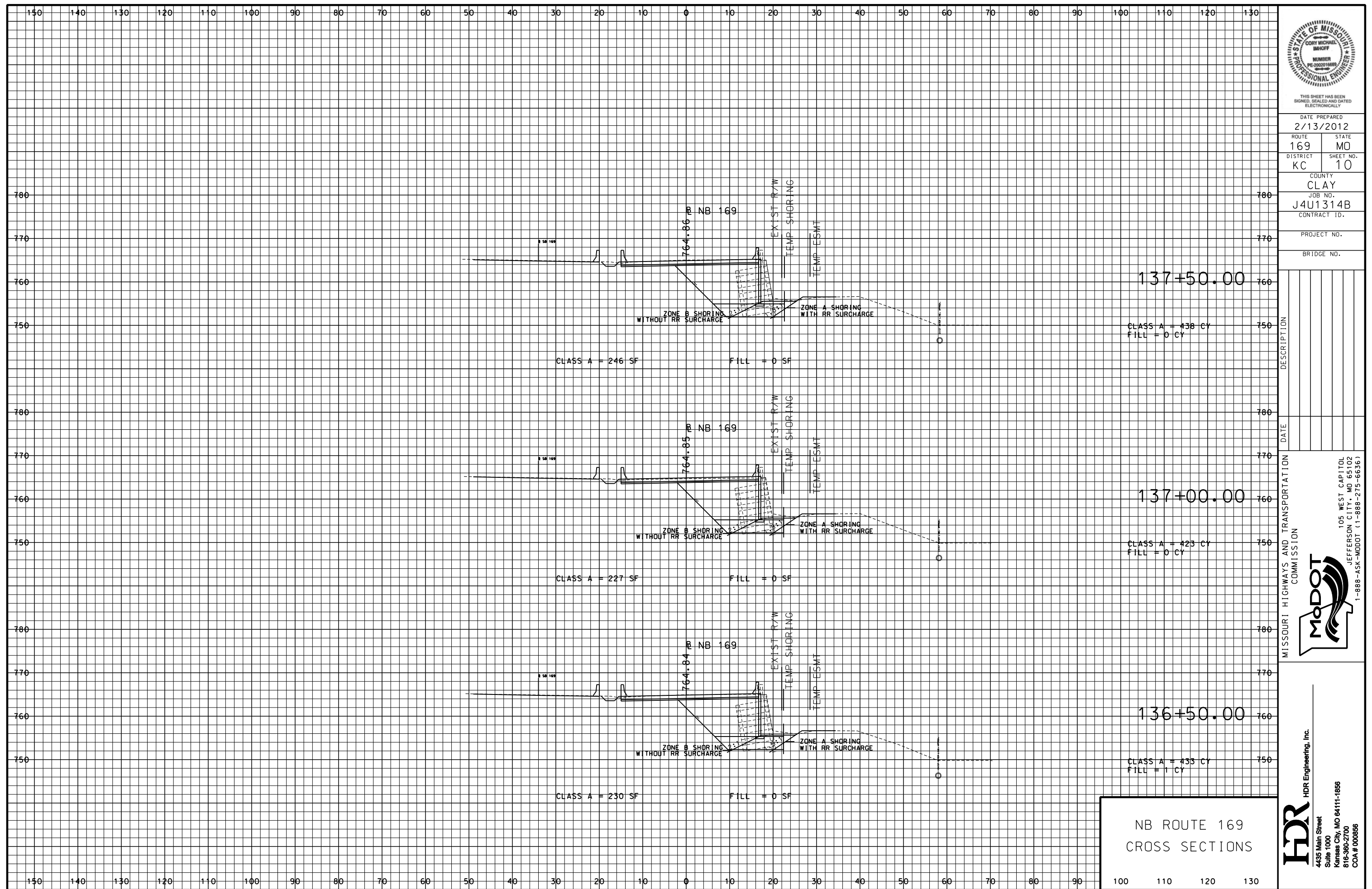
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MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

HDR HDR Engineering, Inc.
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Kansas City, MO 64111-1856
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DISTRICT	SHEET NO.
KC	10

COUNTY
CLAY

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1411314B

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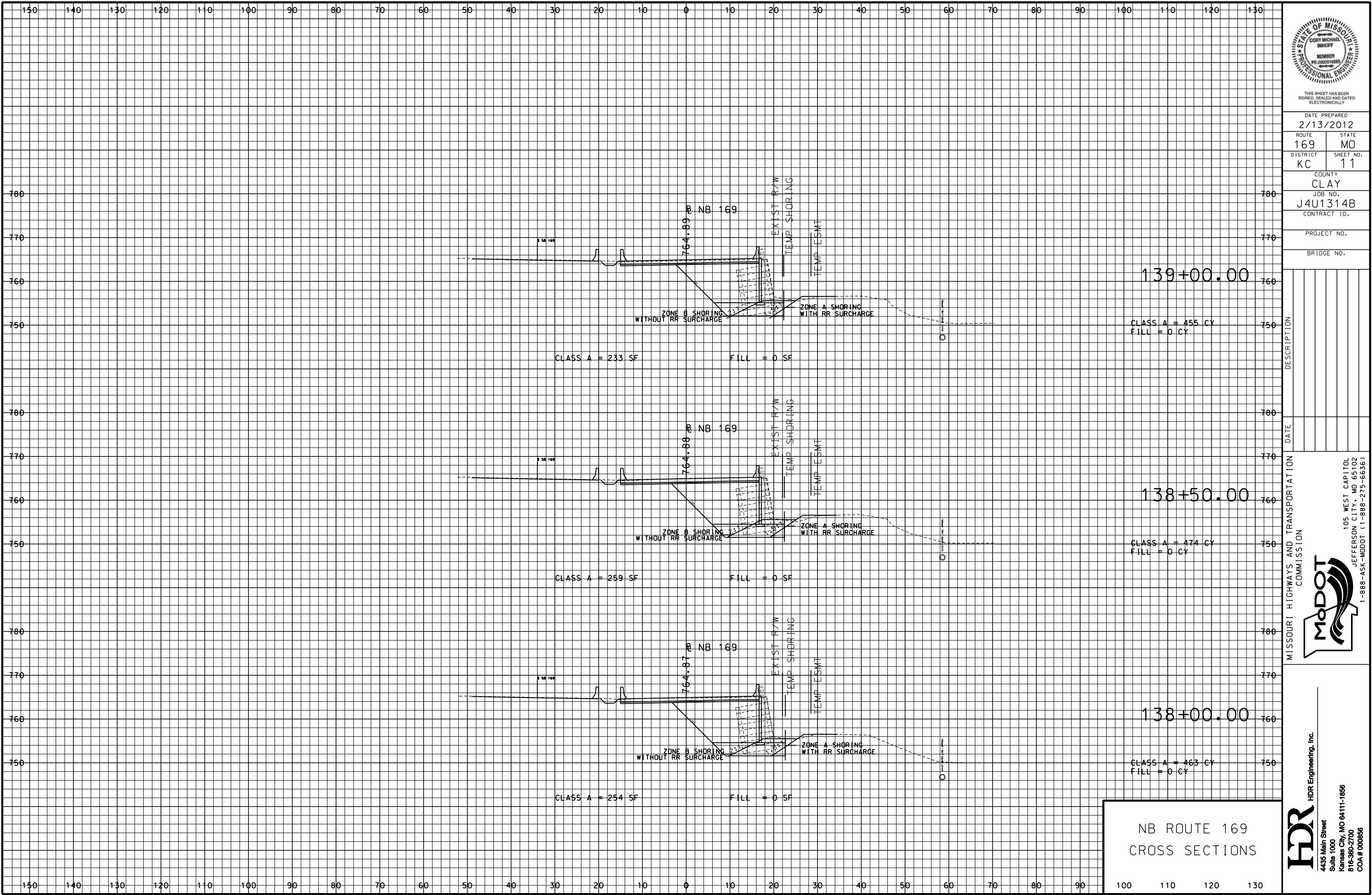
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105 WEST CAPITAL
JEFFERSON CITY, MO 65102

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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 11

COUNTY CLAY

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DESCRIPTION

DATE

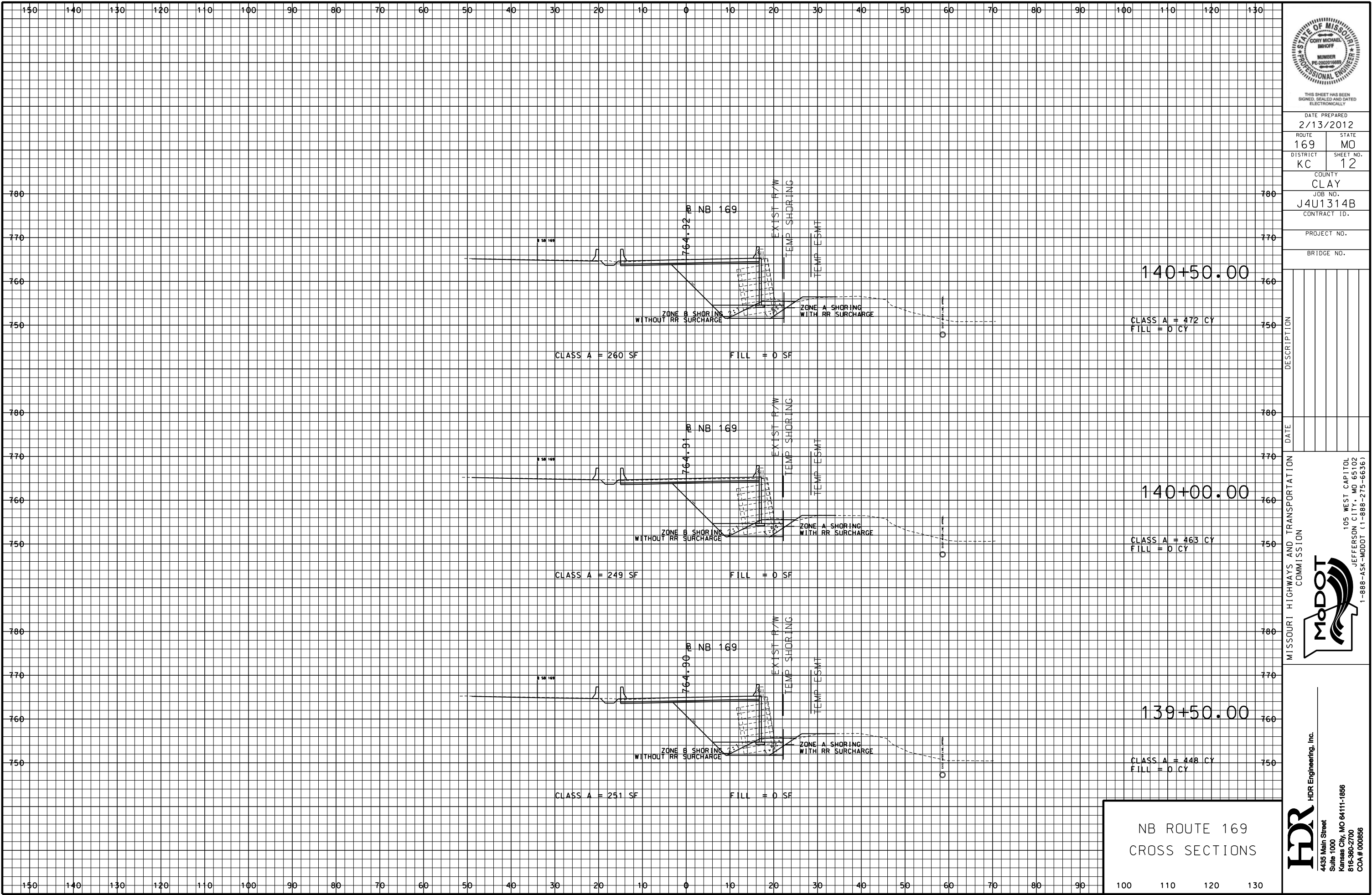
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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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HDR Engineering, Inc.

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Kansas City, MO 64111-1856
816-360-2700
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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 12

COUNTY CLAY

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PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

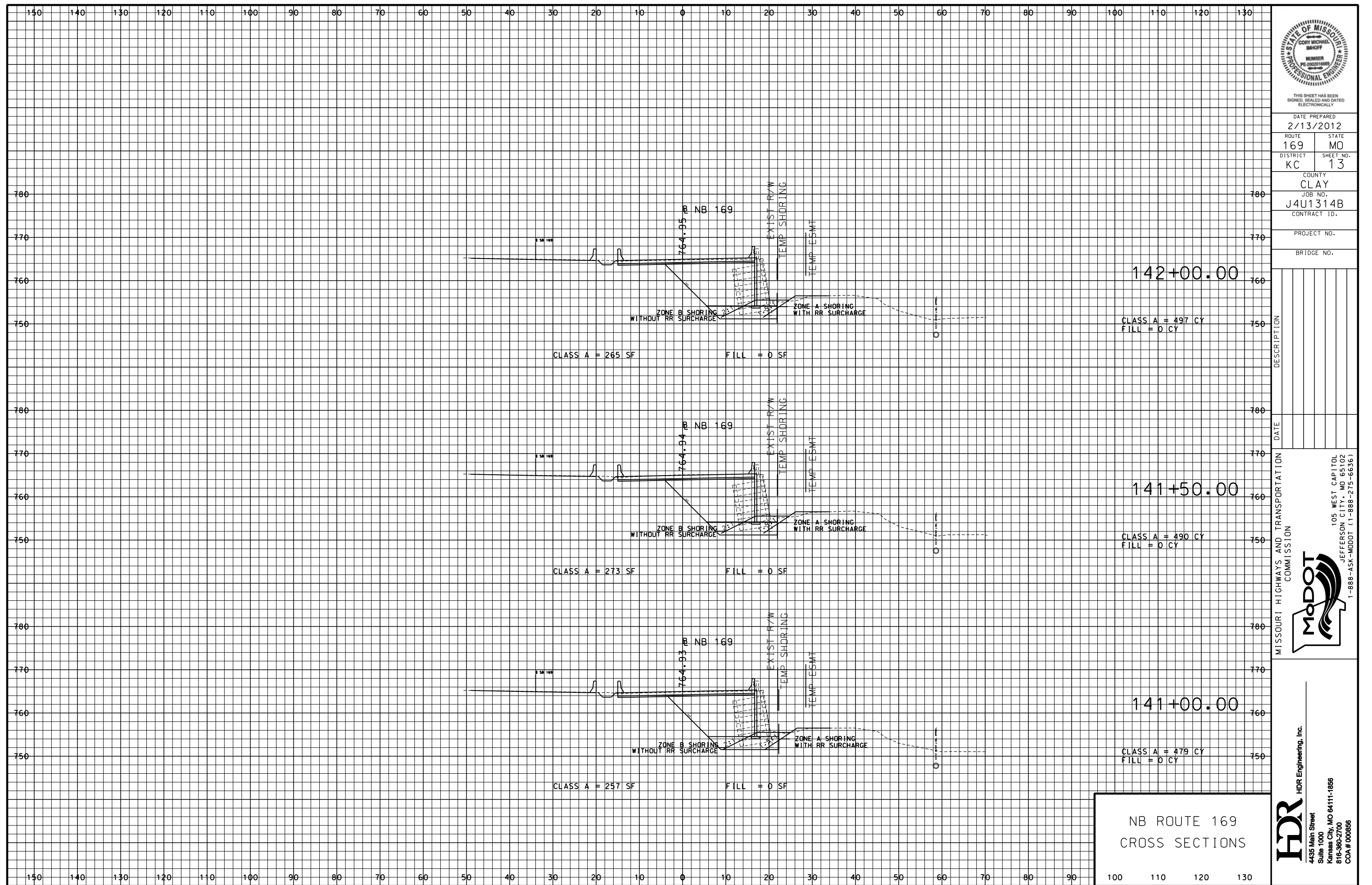
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MoDOT

HDR Engineering, Inc.

4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
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COA # 000856

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ROUTE	STATE
169	MO

DISTRICT	SHEET NO.
KC	13

COUNTY

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COMMISSION



ST. LOUIS, MO 65102

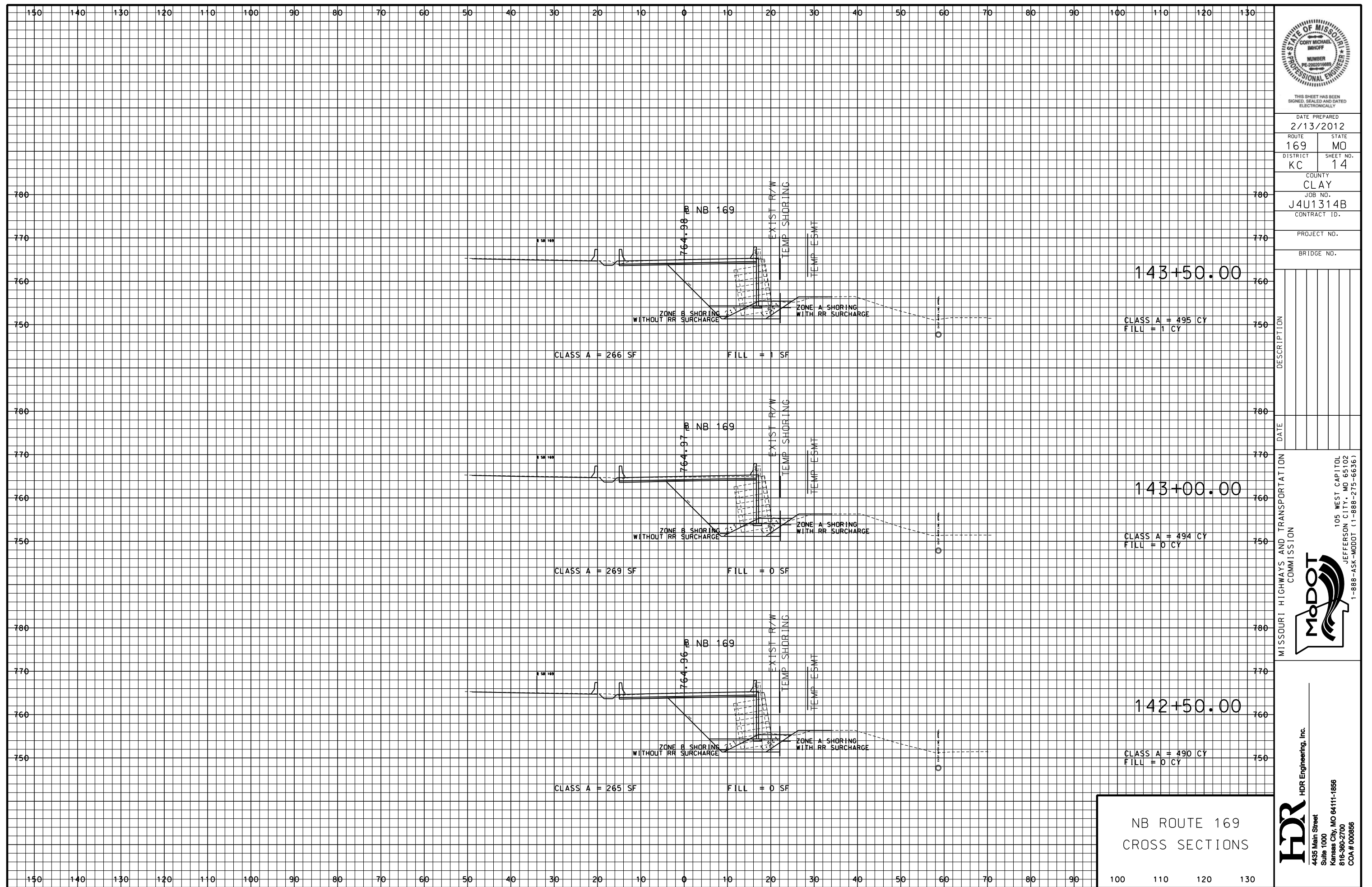
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HDR Engineering, Inc.



4435 Main Street
Suite 1000
Kansas City, MO 64111
816-360-2700

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CROSS SECTIONS



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DATE	STATE
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CONTRACT ID.

PROJECT NO.

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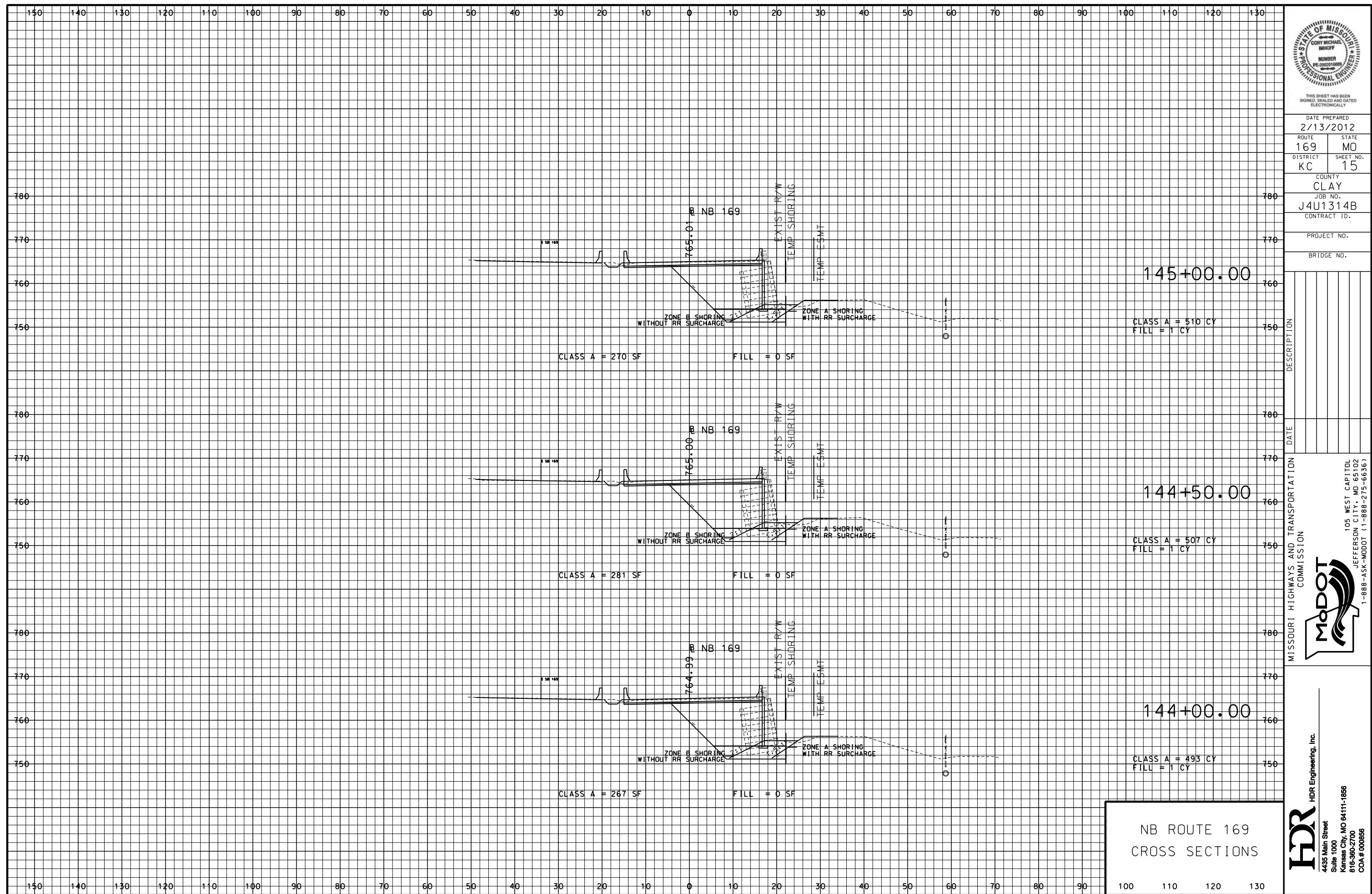
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COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MD 65102
1-888-ASK-MDOT (1-888-275-6636)

HDR HDR Engineering, Inc.
4435 Main Street
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2/13/2012

ROUTE	STATE
169	MO

189	MO
DISTRICT	SHEET NO.
KC	15

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CLAY
JOB NO.
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CONTRACT ID.

PROJECT NO.

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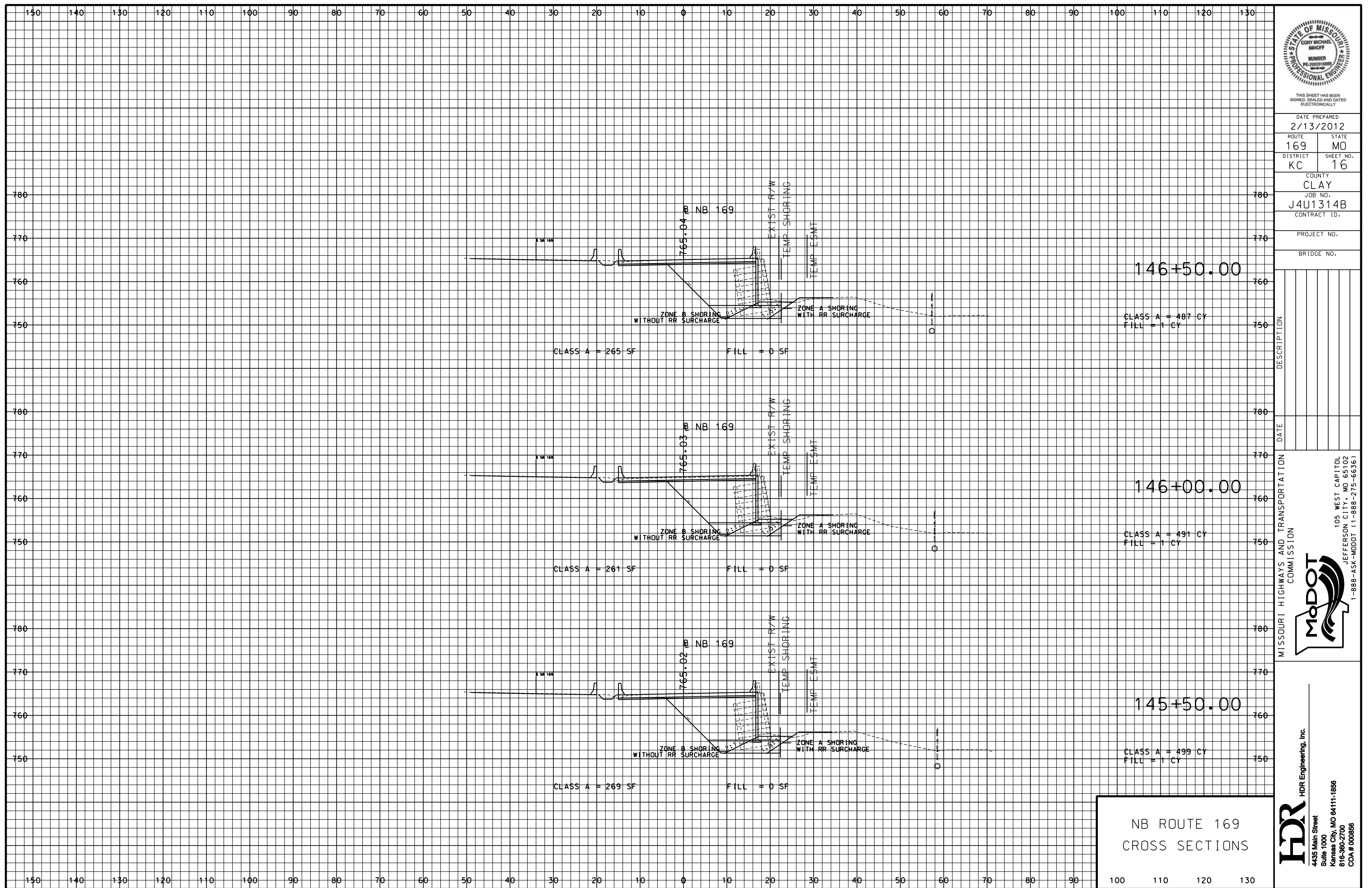
**MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION**

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102

HDR
HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1656
816-360-2700

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ROUTE	STATE
169	MO

DISTRICT	SHEET NO.
KC	16

COUNTY
CLAY

JOB NO.
J4U1314B


CONTRACT ID.

PROJECT NO. _____

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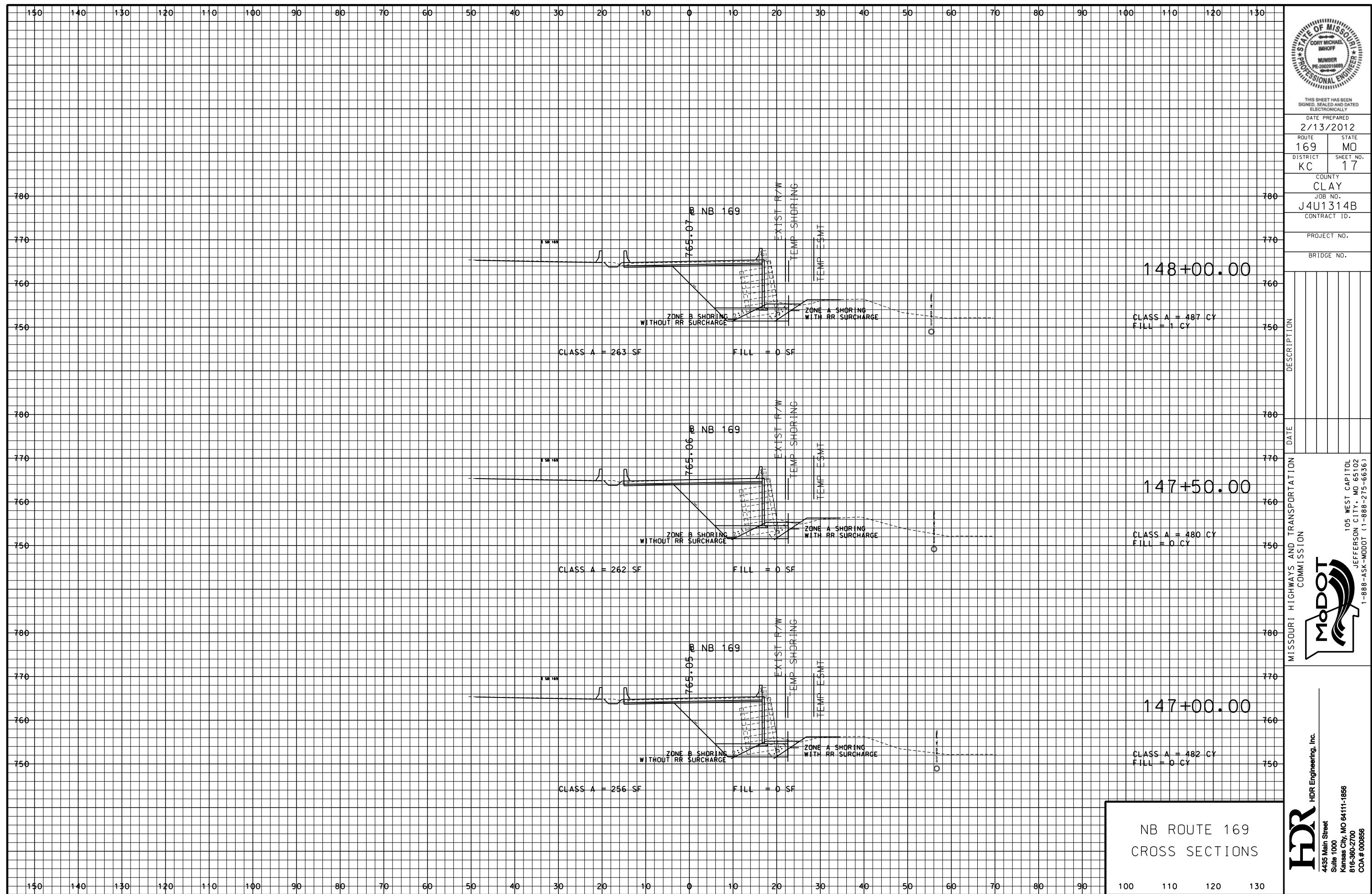


COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700
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ROUTE	STATE
169	MO

DISTRICT	SHEET NO.
KC	17

COUNTY
CLAY

JOB NO.
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CONTRACT ID.

PROJECT NO.

BRIDGE NO.

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COMMISSION

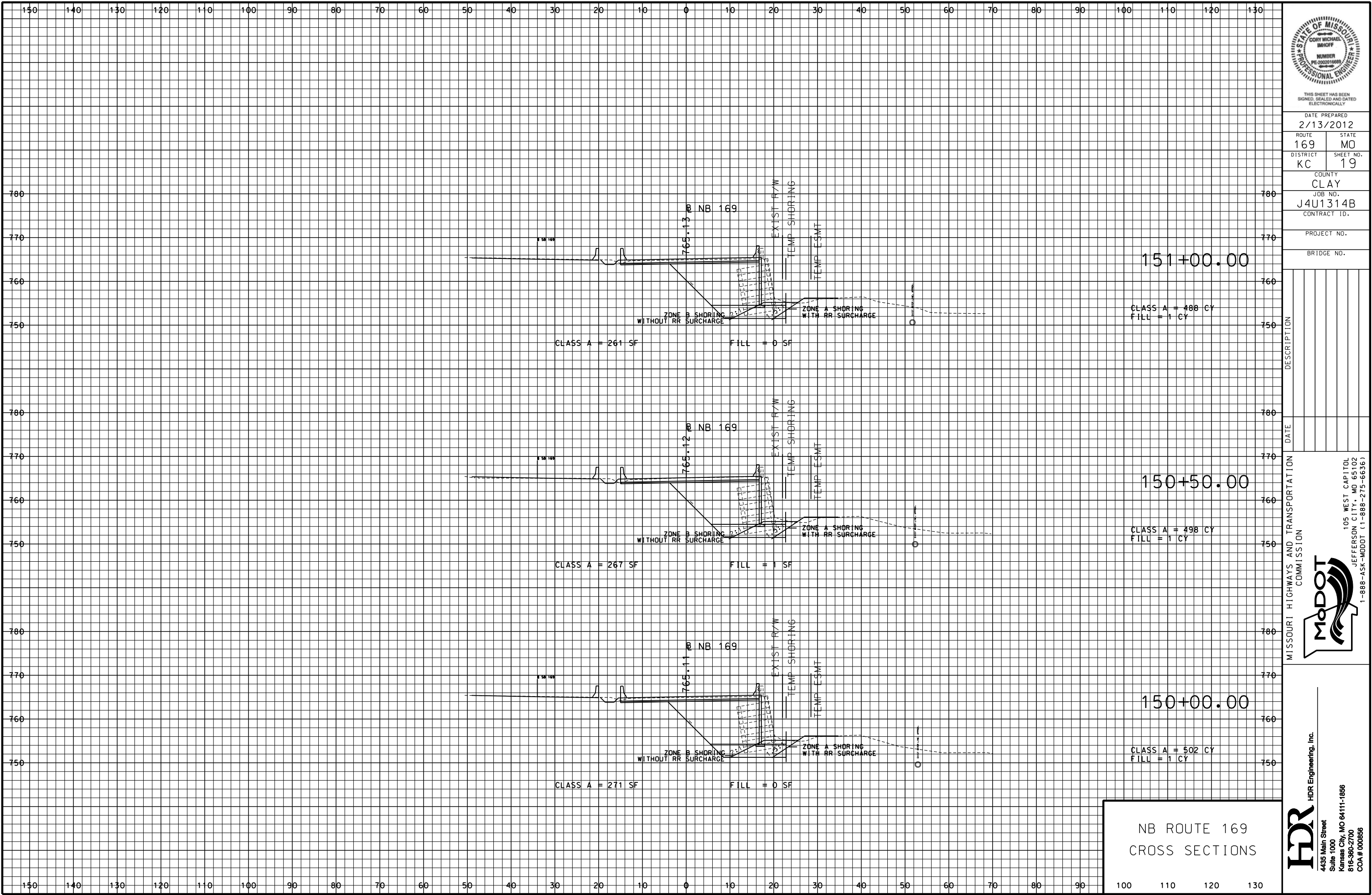
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JEFFERSON CITY, MO 65102
1-888-ASK-MDROT (1-888-275-6636)



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HDR Engineering, Inc.

4435 Main Street
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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 19

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

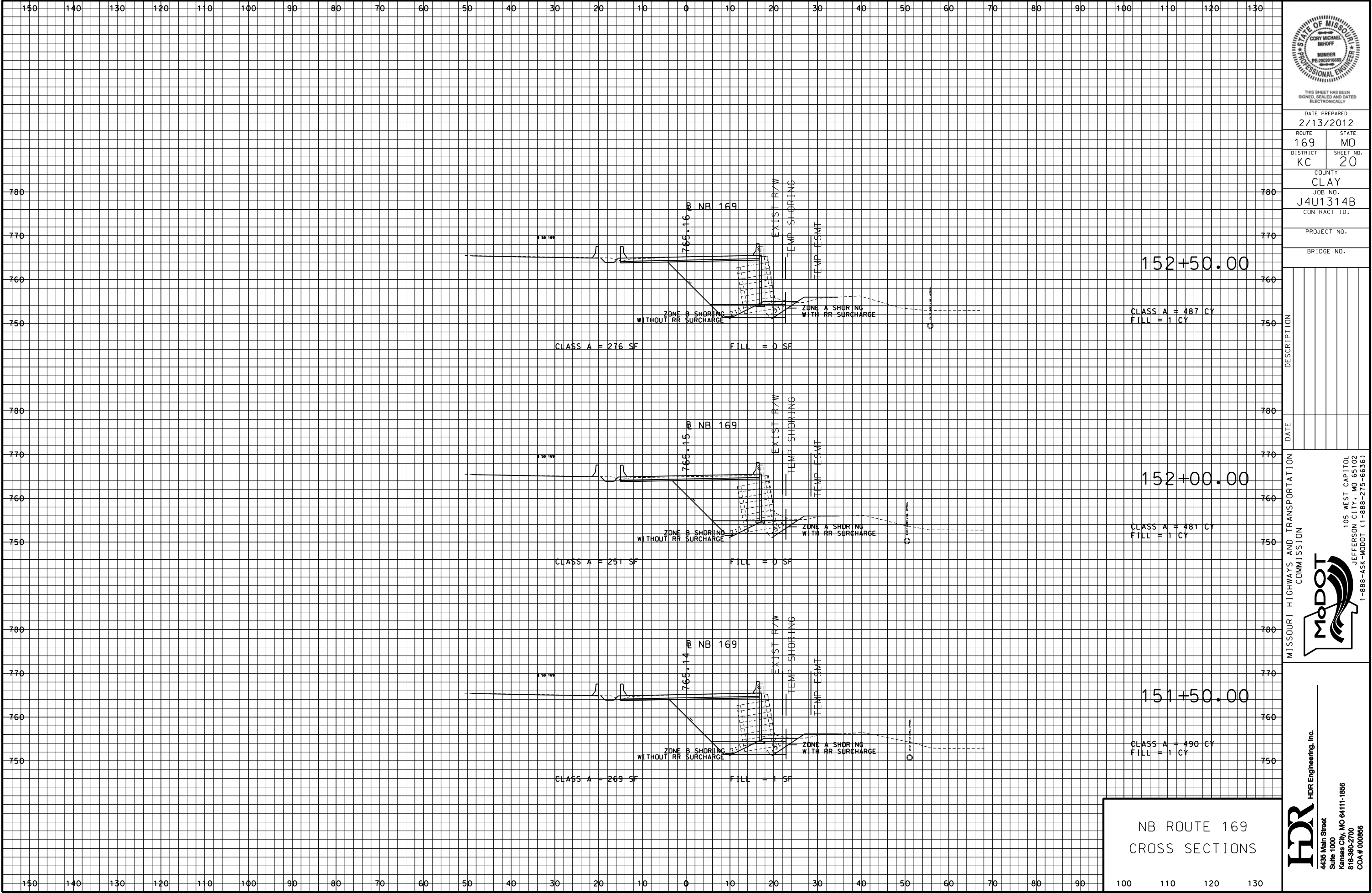
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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2/13/2012

ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 20

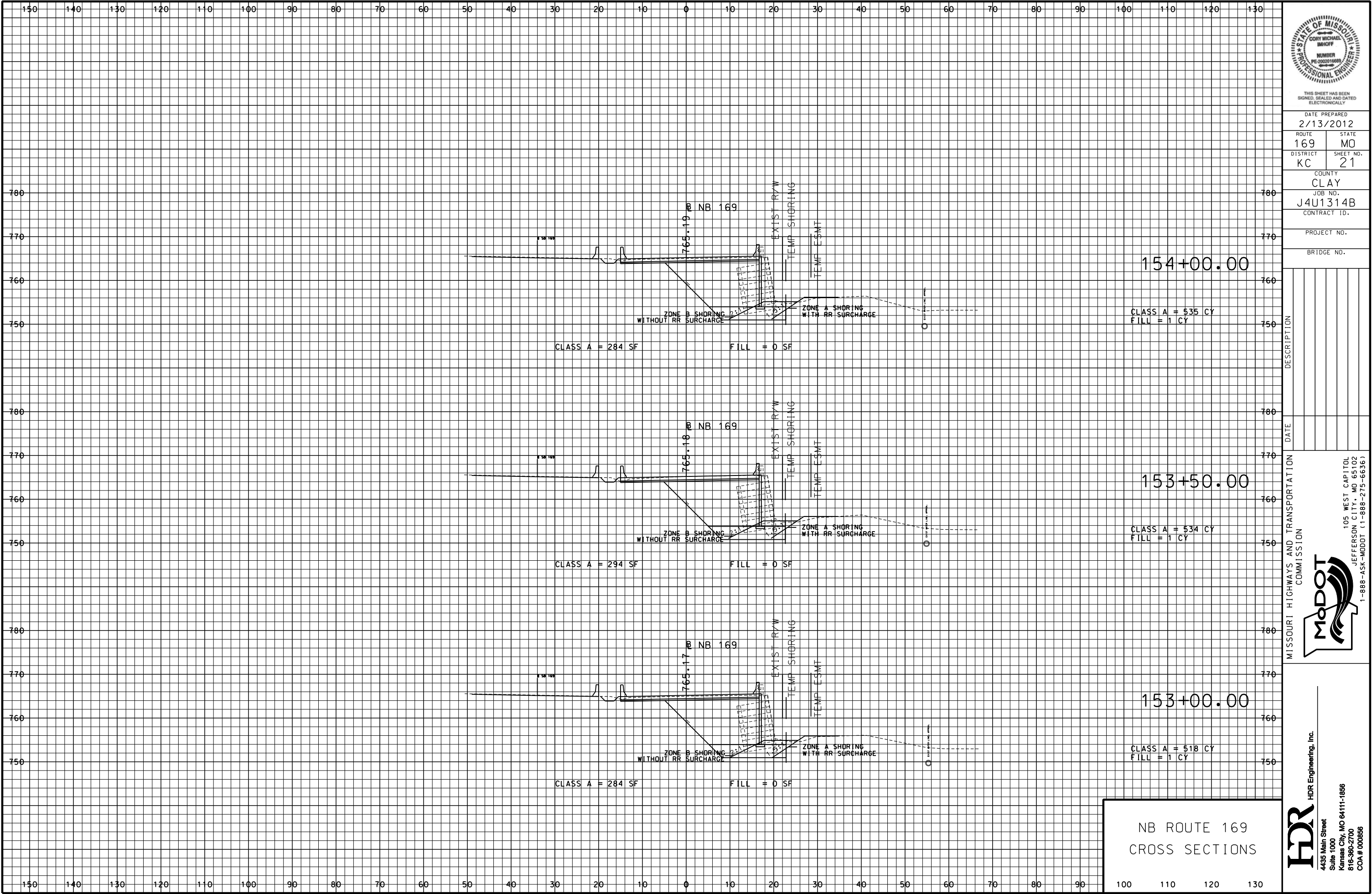
COUNTY CLAY

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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 21

COUNTY CLAY

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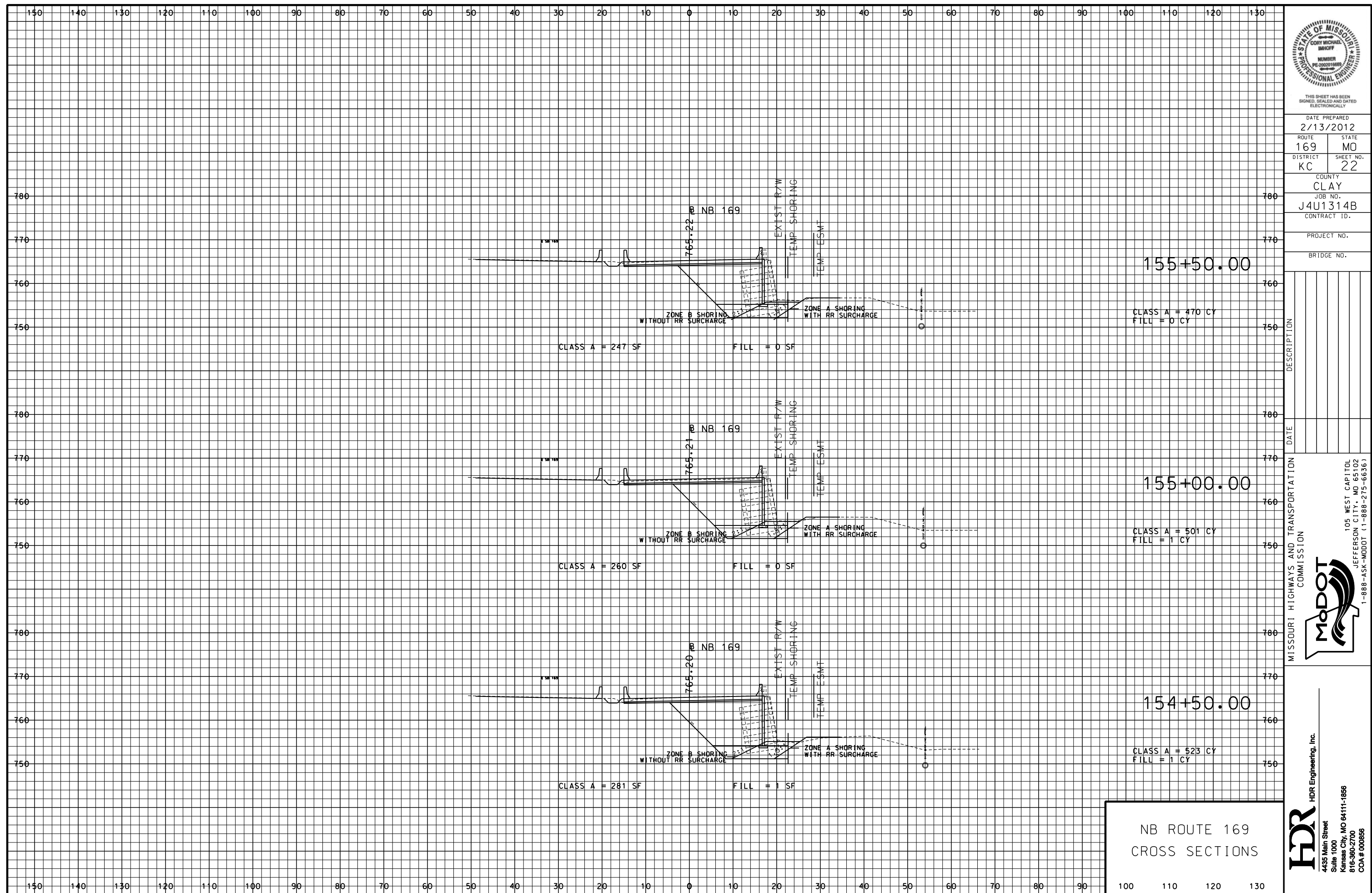
MISSOURI HIGHWAYS AND TRANSPORTATION
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JEFFERSON CITY, MO 65102
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ROUTE	STATE
169	MO

189	MO
DISTRICT	SHEET NO.
KC	22

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CLAY
JOB NO.
1411314D

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CONTRACT ID.

PROJECT NO.

BRIDGE NO.

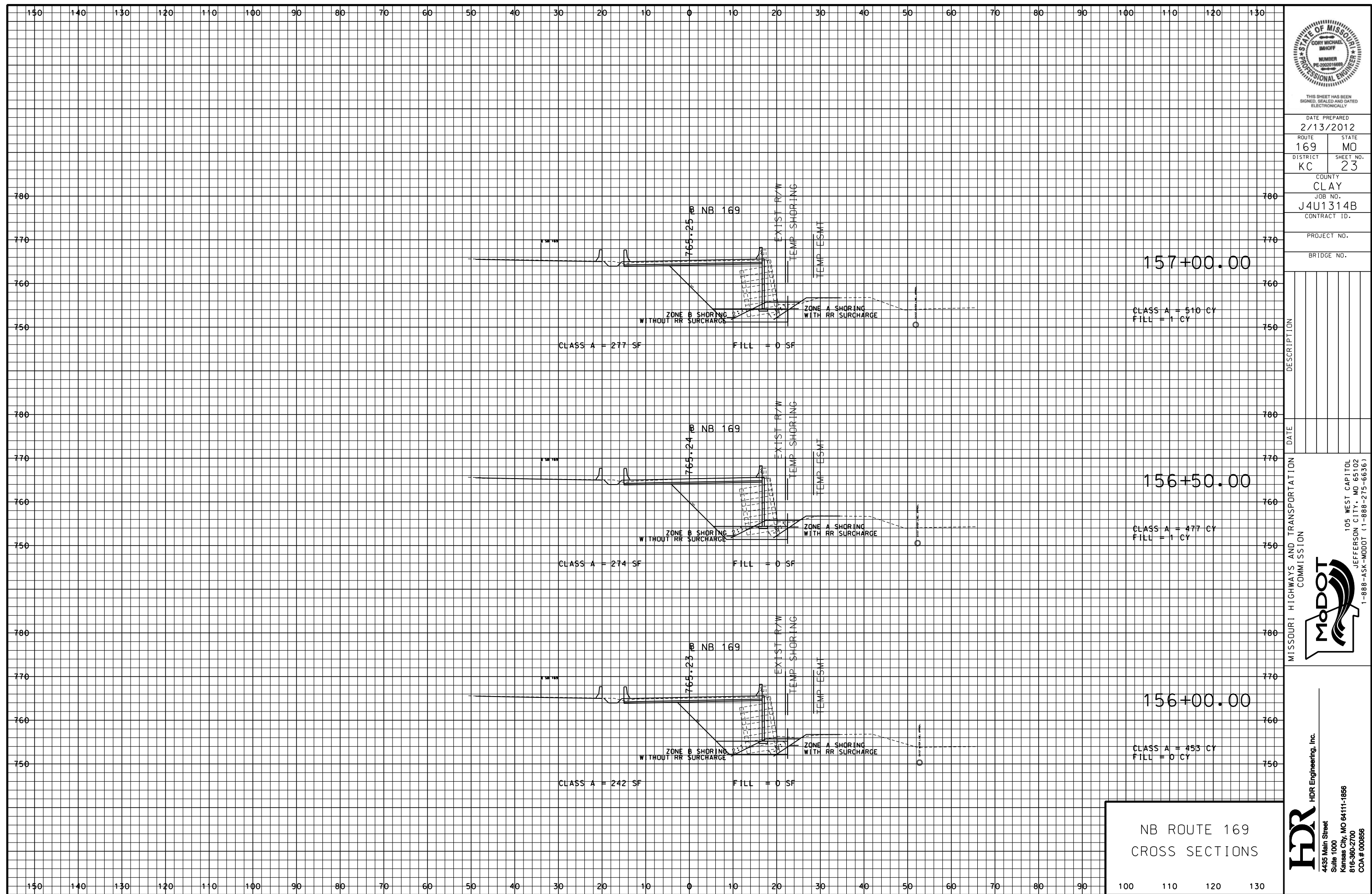
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**MISSOURI HIGHWAYS AND TRANSPORTATION
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ROUTE	STATE
169	MO

189	MU
DISTRICT	SHEET NO.
KC	23

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COUNTY	
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JOB NO.
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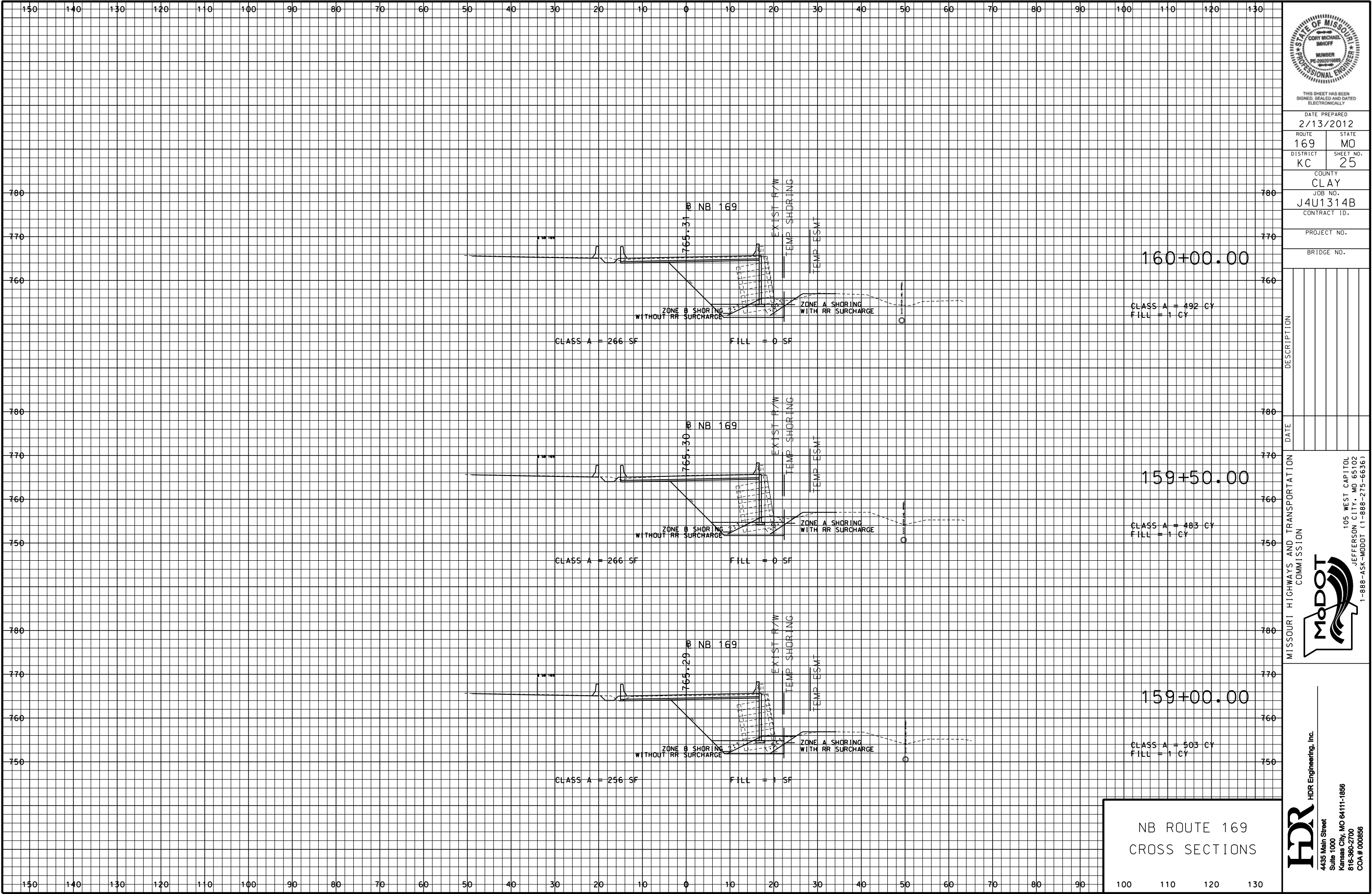
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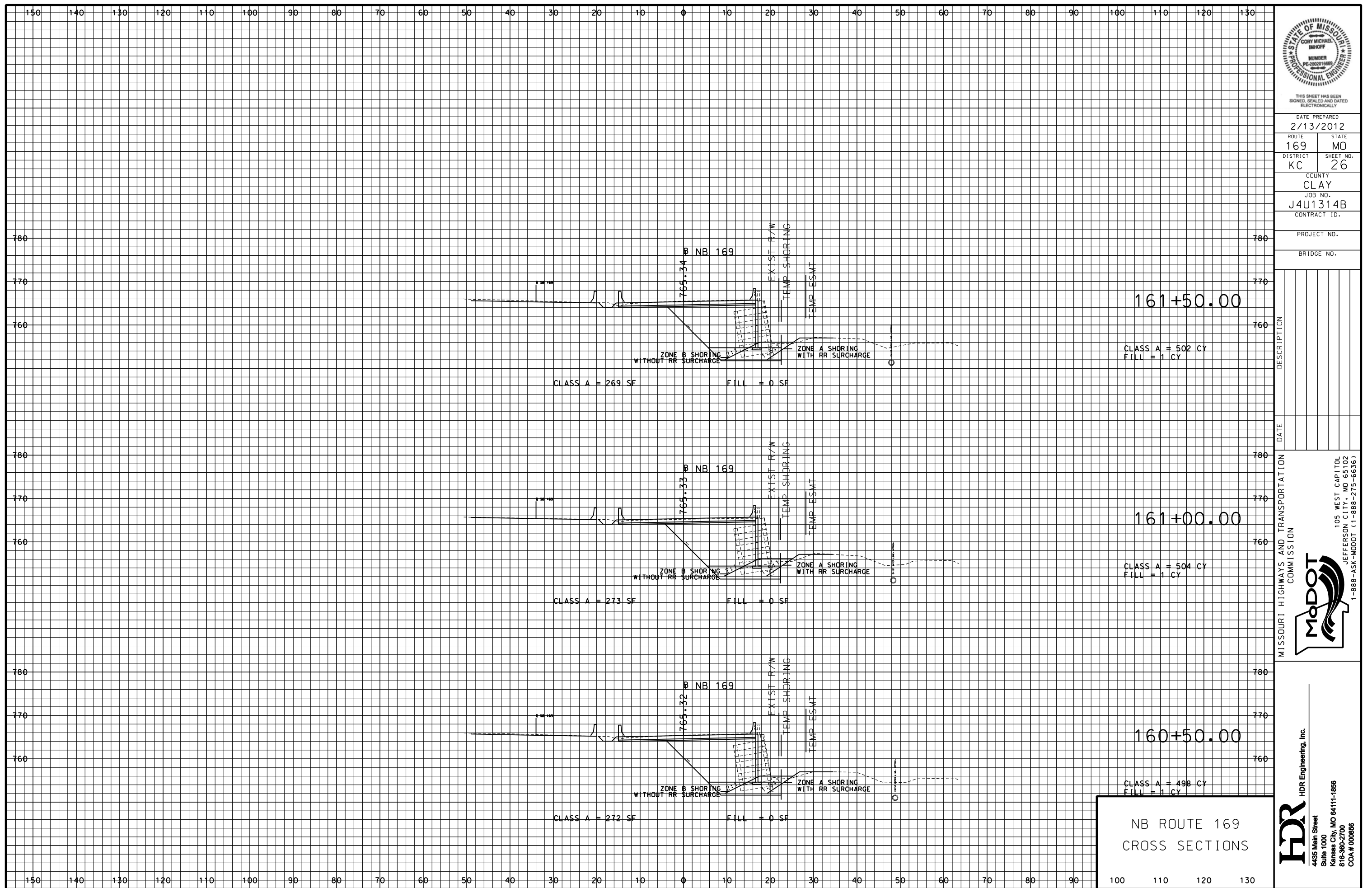
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ROUTE	STATE
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169	MU
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KC 26

COUNTY

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JOB NO.
1414744D

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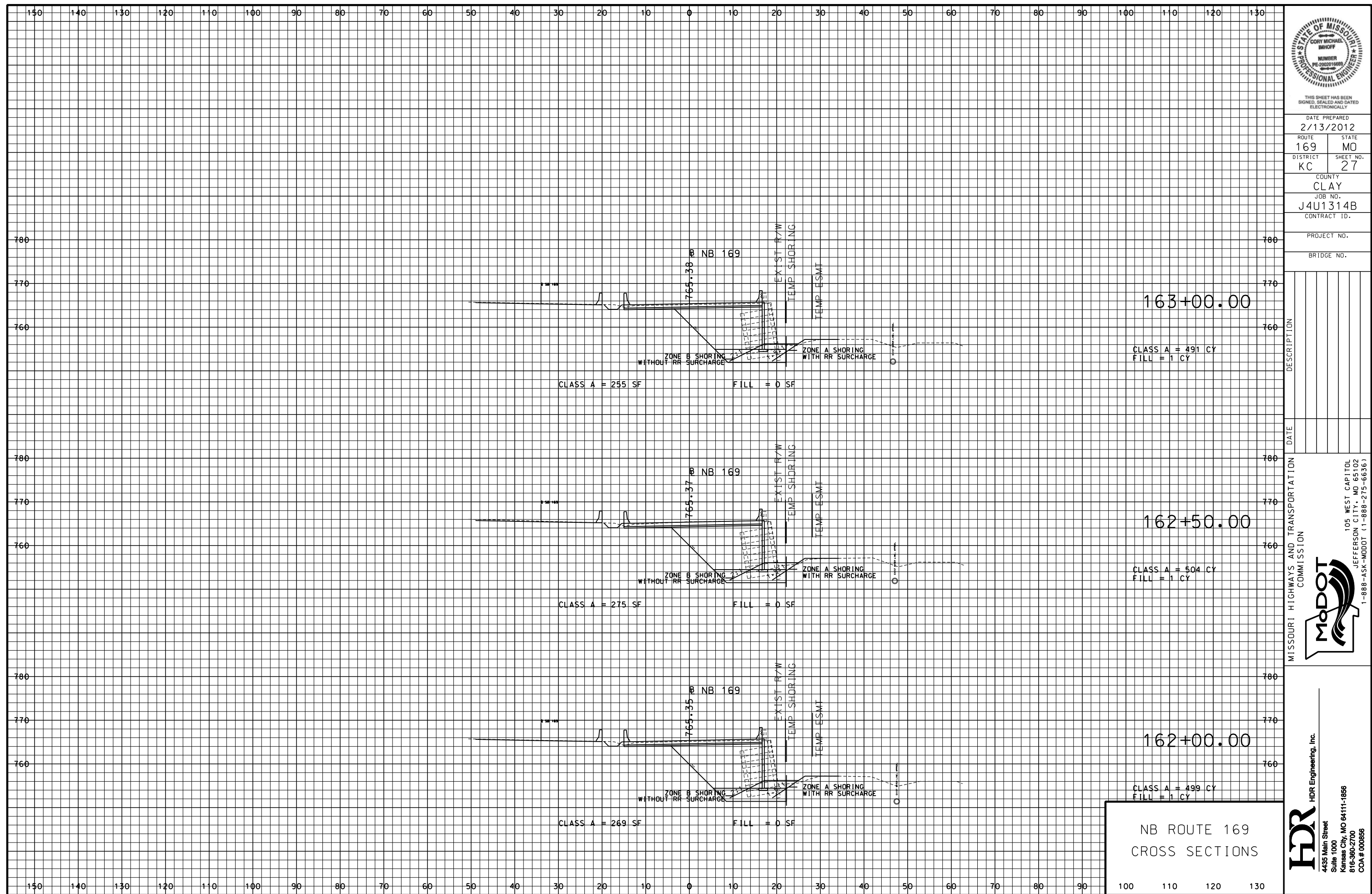
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MoDOT
 105 WEST CAPITAL
 JEFFERSON CITY, MO 65102
 TEL: 656-3300 FAX: 656-3301
 WWW.MODOT.MO.GOV

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-360-2700
COA # 000956



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 11/11/2011

ROUTE	STATE
169	MO

DISTRICT KC	SHEET NO. 27
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COUNTY
CLAY

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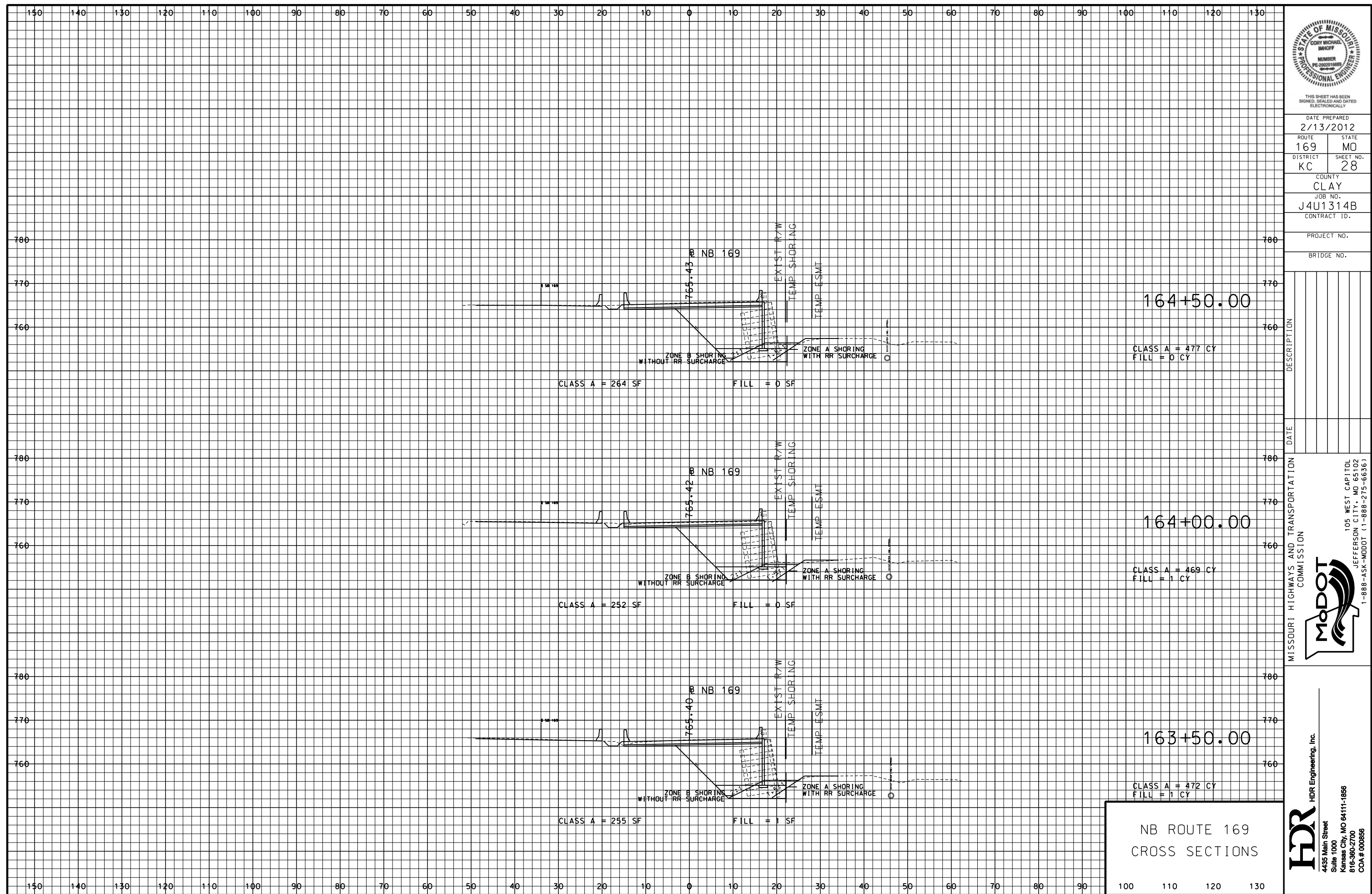
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MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
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4435 Main Street
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ROUTE	STATE
169	MO

189	MU
DISTRICT	SHEET NO.
KC	28

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CLAY
JOB NO.
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CONTRACT ID.

PROJECT NO.

BRIDGE NO.

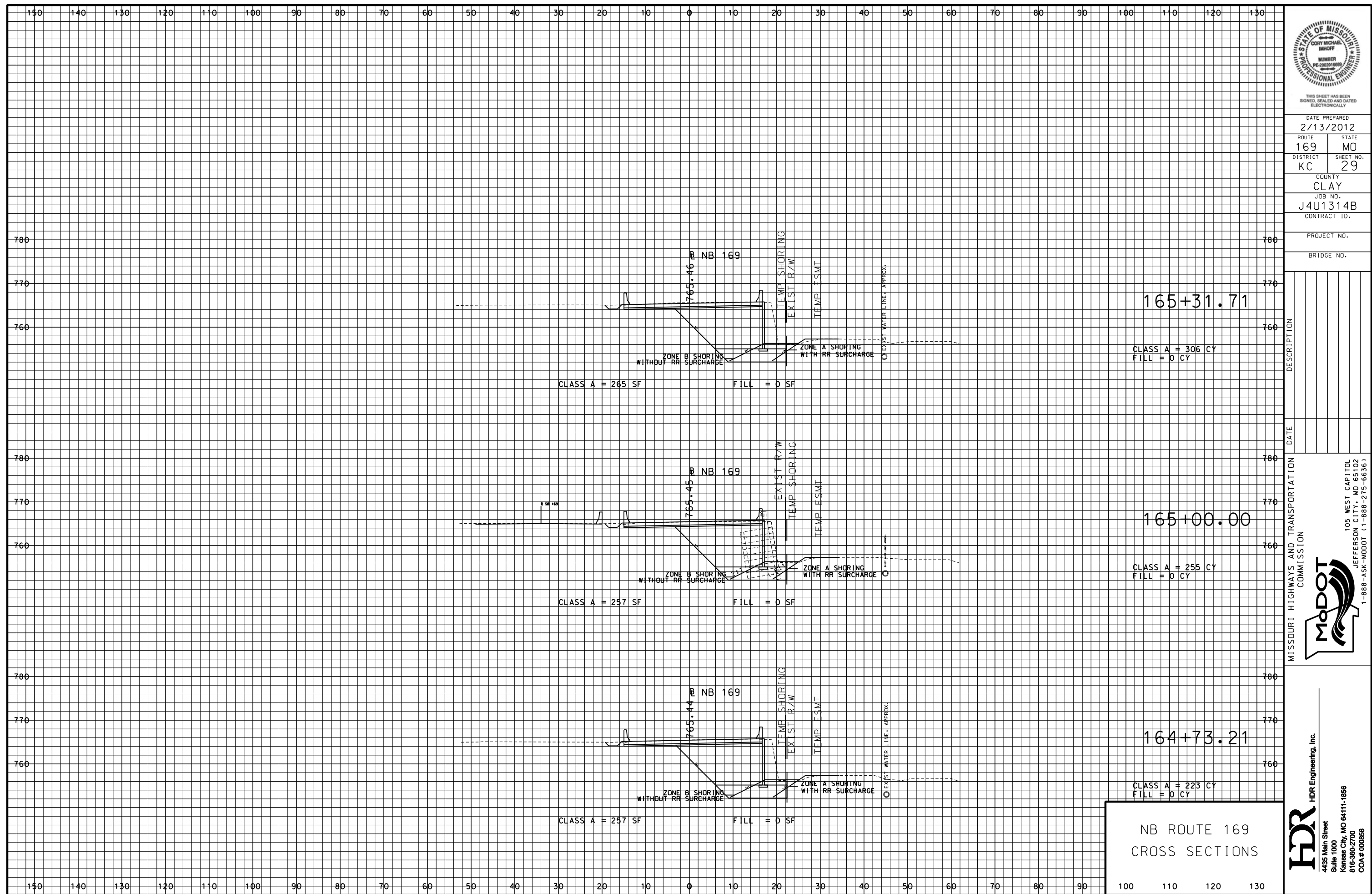
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**MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION**

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1856
816-380-2700



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DATE PREPARED
2/13/2012

ROUTE	STATE
169	MO

189	MO
DISTRICT	SHEET NO.
KC	29

RC	23
COUNTY	
CLAY	

CLAY
JOB NO.
J4U1314B

J4U1514B
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

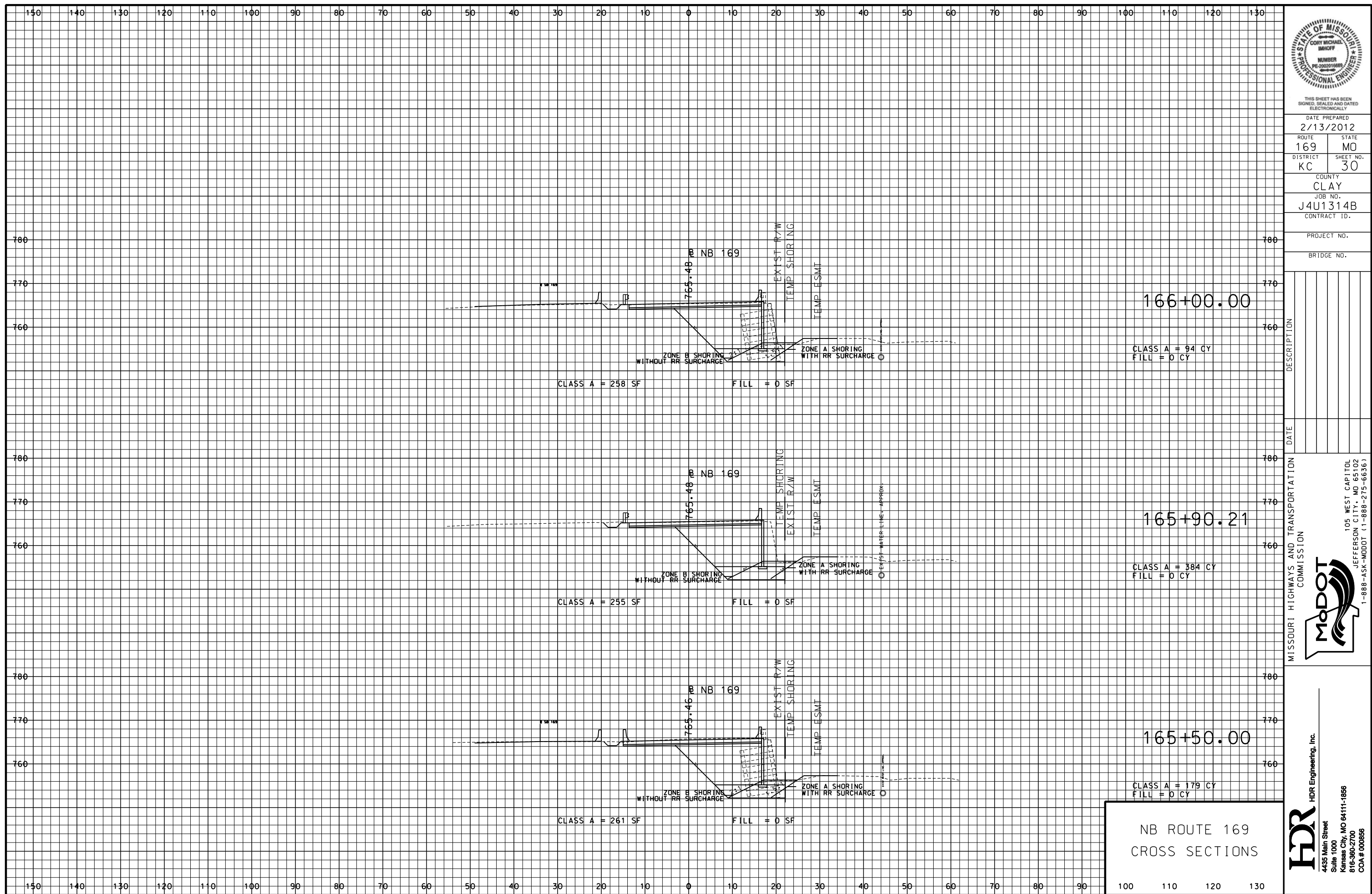
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**MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION**

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102

HDR HDR Engineering, Inc.
4435 Main Street
Suite 1000
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816-360-2700



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2/13/2012	
ROUTE 169	STATE MO

DISTRICT KC	SHEET NO 30
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COUNTY
CLAY

JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

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COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102



HDR Engineering, Inc.

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ROUTE	STATE
169	MO

DISTRICT	SHEET NO.
KC	31

COUNTY
CLAY

JOB NO.
J4U1314B

CONTRACT ID.

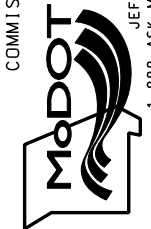
PROJECT NO. _____

BRIDGE NO. _____

[illegible]

COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MD 65102



HDR HDR Engineering, Inc.
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Suite 1000
Kansas City, MO 64111-1856
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COA # 000956

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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 32

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

HDR Engineering, Inc.

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Kansas City, MO 64111-1856

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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 33

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HDR HDR Engineering, Inc.

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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 34

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

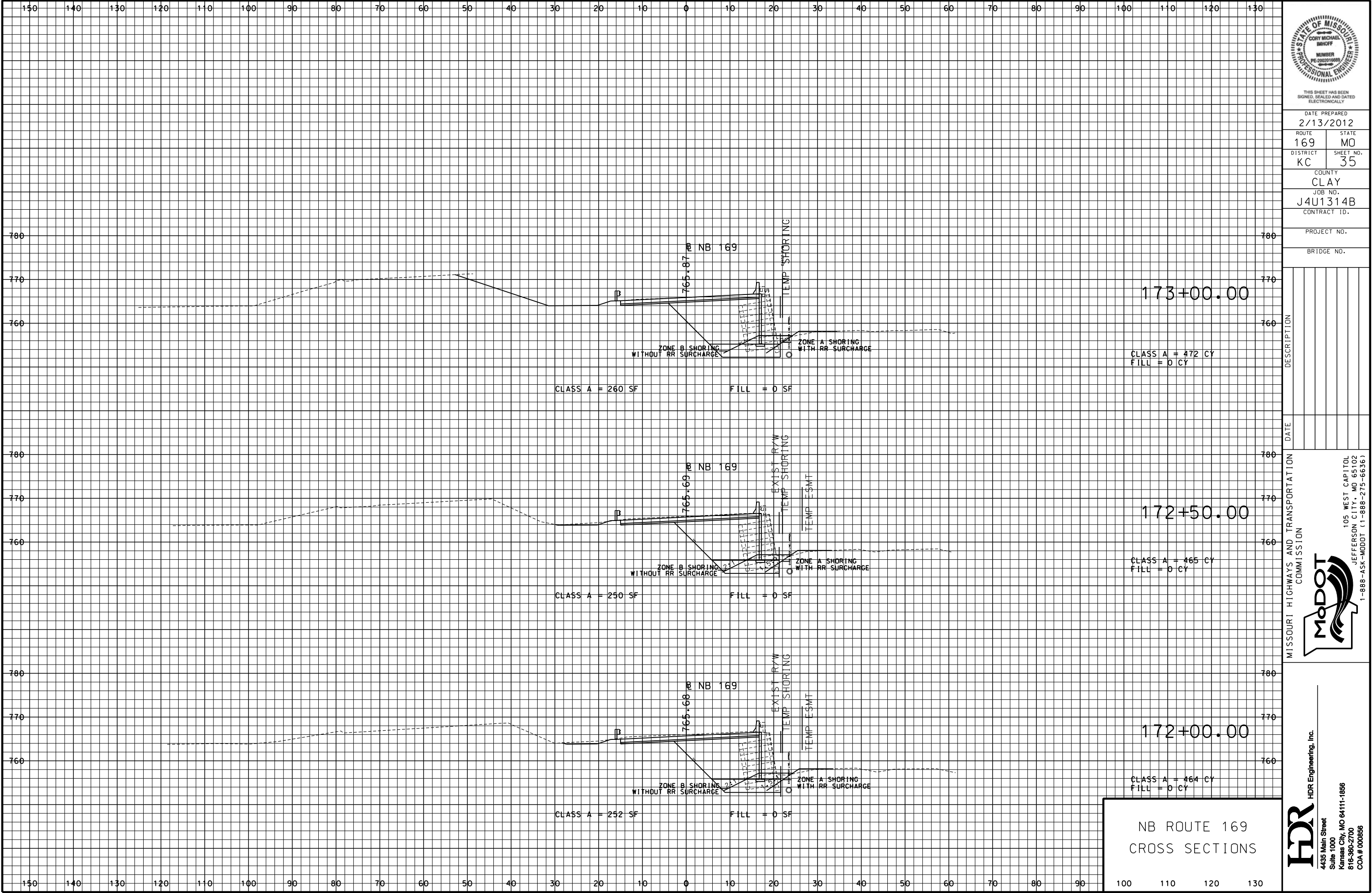
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JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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ROUTE 169 STATE MO

DISTRICT KC SHEET NO. 35

COUNTY CLAY

JOB NO. J4U1314B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

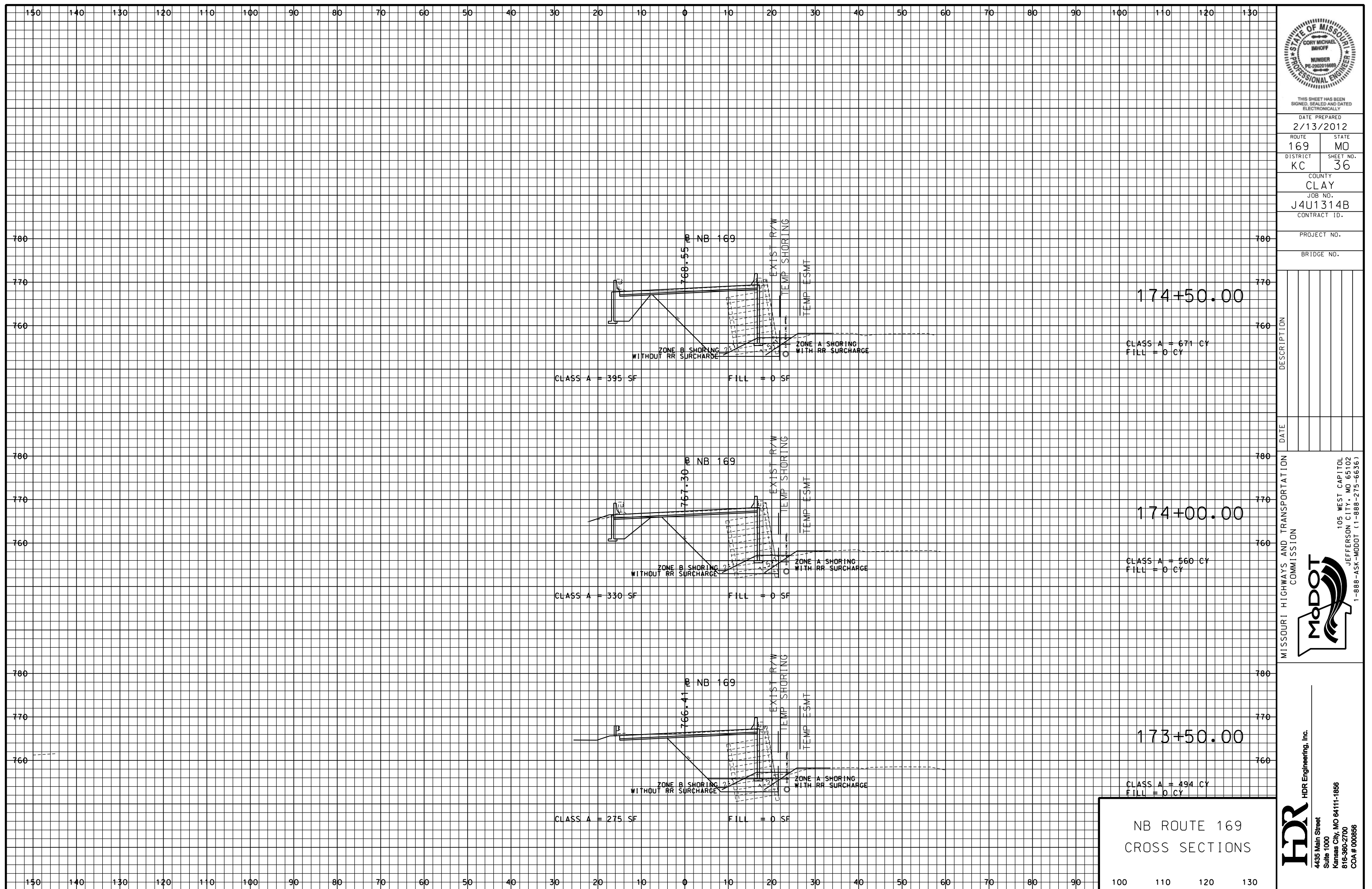
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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ROUTE	STATE
169	MO

DISTRICT	SHEET NO.
KC	36

COUNTY
CLAY

JOB NO.
J4U1314B

CONTRACT ID.

PROJECT NO. _____

BRIDGE NO. _____

[illegible]

COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MD 65102

HDR
HDR Engineering, Inc.
4435 Main Street
Suite 1000
Kansas City, MO 64111-1858
816-360-2700
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