CONTACT INFORMATION

WATER	SEWER
MISSOURI AMERICAN WATER	**METROPOLITAN SEWER DISTRICT**
REPRESENTATIVE: DAVE PRUITT	**REPRESENTATIVE:** JOHN C. GRIMM, P.E.
ADDRESS: 727 CRAIG ROAD ST. LOUIS, MISSOURI 63141	**ADDRESS:** 2350 MARKET STREET ST. LOUIS, MO 63103-2555
PHONE: (314) 996-2396	**PHONE:** (314) 768-2743

ELECTRIC	GAS
AMEREN	**SPIRE**
REPRESENTATIVE: LES NOLAN	**REPRESENTATIVE:** BRIAN LANGENBACHER
ADDRESS: 9823 MACKENZIE ROAD ST. LOUIS, MISSOURI 63123	**ADDRESS:** 4118 SHREWSBURY AVENUE SHREWSBURY, MISSOURI 63119
PHONE: (314) 393-7635	**PHONE:** (314) 713-6572

TELEPHONE	CABLE
AT&T	**CHARTER COMMUNICATIONS**
REPRESENTATIVE: DANIEL GRAY	**REPRESENTATIVE:** RONALD DUMKE
ADDRESS:	**ADDRESS:** 101 NW PLAZA DR. ST. ANN, MISSOURI 63074
PHONE: (314) 415-0832	**PHONE:** (314) 267-9581

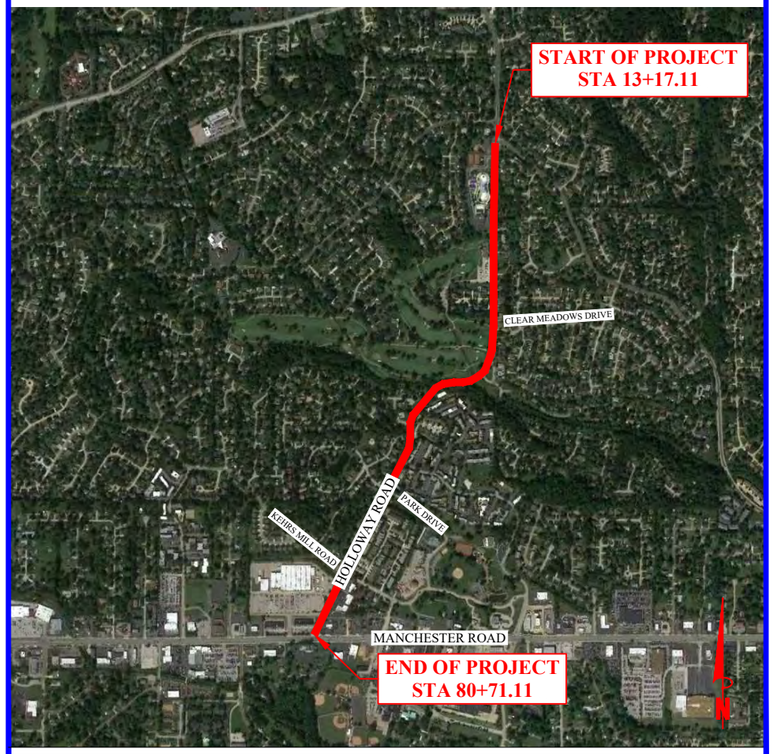
OWNER	
CITY OF BALLWIN	**MoDOT**
REPRESENTATIVE: JIM LINK	**REPRESENTATIVE:** JILL STEIGER
ADDRESS: 14811 MANCHESTER ROAD BALLWIN, MO 63011	**ADDRESS:** 1590 WOODLAKE DRIVE CHESTERFIELD, MISSOURI 63017-5712
PHONE: (636) 227-8580	**PHONE:** (314) 453-5061

LOCATION INFORMATION

QUADRANGLE/YEAR: MANCHESTER/2017
TOWNSHIP: 45N
RANGE: 4E
US SURVEY 1979

LENGTH OF PROJECT

START OF PROJECT: STA. 13+17.04
END OF PROJECT: STA. 80+71.11
PROJECT LENGTH: 6754.07 FEET
FUNCTIONAL CLASSIFICATION: COLLECTOR
ADT: 7625 (2015), 7820 (2020)
DESIGN SPEED: 30 MPH



VICINITY MAP
NOT TO SCALE

HOLLOWAY ROAD IMPROVEMENTS

IN THE

CITY OF BALLWIN
ST. LOUIS COUNTY, MISSOURI
FEDERAL PROJECT NO. STP-4939(608)

CITY OF Ballwin MISSOURI

14811 MANCHESTER ROAD
BALLWIN, MO 63011
TELEPHONE (636) 227-8580
FAX (636) 207-2320
www.ballwin.mo.us

COCHRAN

- Civil Engineering
- Land Surveying
- Architecture
- Site Development
- Master Planning
- General Consulting

737 RUDDER RD.
FENTON, MISSOURI 63026
TELEPHONE (314) 842-4033
FAX (314) 842-5957
www.cochraneng.com

COCHRAN PROJECT NO. SC19-981
JANUARY 2021

21MSD-00086

SHEET INDEX

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TYPICAL SECTIONS	TXS-1
SITE PLAN	S-1 TO S-11
GRADING PLAN	C-1 TO C-5
PAVEMENT MARKING AND SIGNAGE	PM-1 TO PM-11
PAVEMENT PHASING PLAN	PH-1
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EROSION CONTROL PLAN/DETAILS	EC-1 TO EC-12
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MISCELLANEOUS DETAILS	DE-14 TO DE-18
CROSS SECTIONS	XS-1 TO XS-14
MODOT STANDARD DETAILS	7 SHEETS

DESIGN DESIGNATION

FUNCTIONAL CLASSIFICATION: COLLECTOR
CURRENT POSTED SPEED: 30 MPH
DESIGN SPEED: 30 MPH
CURRENT ADT: 7,625
DESIGN ADT: 7,820 (2020)

ALL OSHA RULES & REGULATIONS ESTABLISHED FOR THE TYPE OF CONSTRUCTION REQUIRED BY THESE PLANS SHALL BE STRICTLY FOLLOWED (IE. TRENCHING, BLASTING, ETC.)

TWO WORKING DAYS PRIOR TO THE START OF ANY EXCAVATION ON THIS SITE, CONTRACTOR SHALL CALL 1-800-DIG-RITE FOR UTILITY LOCATION INFORMATION.

WHERE THE TERM "STANDARD SPECIFICATIONS" IS USED, SUCH REFERENCE SHALL MEAN THE CURRENT EDITION OF THE MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS OTHERWISE PROVIDED IN THE PROJECT MANUAL. IN CASE OF CONFLICT IN THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS STATED IN THE PROJECT MANUAL, THE REQUIREMENTS IN THE PROJECT MANUAL SHALL PREVAIL.

Stormwater Management Future Disturbance Note:

Project Disturbance = 5.09 ACRES
Disturbed Area Considered Maintenance Area = 5.09 ACRES
Project Runoff Differential = 0.00 CFS

Any future land disturbance and/or increase in impervious area on this site may require additional stormwater management per MSD regulations in place at the time (including total land disturbance and/or imperviousness added on this plan.)

STATE OF MISSOURI
KEVIN J. WOLFE P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER
1/7/21

KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

CITY OF BALLWIN

ACCEPTED BY:

JIM LINK
DIRECTOR OF PUBLIC WORKS

QUANTITY SHEET

Bid No.	Spec. No.	Description	From STA	To STA	Unit	Quantity
		ROADWAY ITEMS				
1	2022010	Removal of Improvements	13+17	80+71	LS	1
2	2038000	Earthwork	13+17	80+71	STA	67.6
3	3040506	Type 5 Aggregate Base, 6" (For Concrete Pavement, 10 and 8" Only)	77+32	80+71	SY	2,154
4	4011209	Bituminous Pavement Mixture PG64-22, (BP-1), 3" Thick	10+49	77+32	TON	3,720
5	5021100	Concrete Pavement, 10" (High Early)	13+17	35+23	SY	2,004
6	5021100	Concrete Pavement, 8" (High Early)	13+17	35+23	SY	150
7	6061010	Replace Guard Rail	48+68	49+75	LF	107
8	6083006	Dowelled On Concrete Island, 6"	80+01	80+49	SF	365
9	6085000	Concrete Approach, 6" (Remove and Replace)	21+45	65+20	SF	1,465
10	6091012	Concrete Vertical Curb, 6" (Remove and Replace)	35+08	60+65	LF	210
11	6091053	Concrete Curb and Gutter (Remove and Replace)	13+17	80+71	LF	1,890
12	6091054	Concrete Rolled Curb and Gutter (Remove and Replace)	28+40	30+95	LF	180
13	6131000	Full Depth Pavement (Repair)	13+17	80+71	SY	100
14	6161025	Channelizers (Trimline)	13+17	80+71	EA	150
15	6181000	Mobilization	13+17	80+71	LS	1
16	6221001	Coldmilling Bituminous Pavement	13+17	77+32	SY	21,860
17	8061007A	Inlet Checks	13+40	80+50	EA	26
18	8061019	Silt Fence	13+17	80+65	LF	1,785
19	9031243	18" Surface-Mount Delineator Post	80+01	80+49	EA	6
20	MSD	Curb or Area Inlet Top Replacement	38+85	77+35	EA	14
21	MSD	Double Curb Inlet Top Replacement	29+60	52+55	EA	8
22	JSP	Subgrade Repair	13+17	80+71	CY	10

Bid No.	Spec. No.	Description	From STA	To STA	Unit	Quantity
		SIGNING/STRIPING/SIGNALS ITEMS				
23	6161006	"Road Work Ahead" Sign (W20-1)	13+17	80+71	EA	10
24	6161006	"Shoulder Work Ahead" Sign (W21-5)	13+17	80+71	EA	4
25	6161006	"End Road Work" Sign (G20-2)	13+17	80+71	EA	2
26	6161006	"One Lane Road Ahead" Sign (W20-4)	13+17	80+71	EA	4
27	6161006	"Flagger" Sign (W20-7a)	13+17	80+71	EA	4
28	6161006	"Road Closed" Sign (R11-2R)	13+17	80+71	EA	4
29	6161006	"Sidewalk Closed" Sign (R9-9)	13+17	80+71	EA	8
30	6161006	"No Left Turn" Sign (R3-2)	13+17	80+71	EA	3
31	6161006	"Detour Left Arrow - Holloway Road" Custom Sign	13+17	80+71	EA	3
32	6161006	"Detour Straight Arrow - Holloway Road" Custom Sign	13+17	80+71	EA	3
33	6161006	"Detour Right Arrow - Holloway Road" Custom Sign	13+17	80+71	EA	2
34	6161006	"End Detour - Holloway Road" Custom Sign	13+17	80+71	EA	2
35	6161031	"Type I" Movable Barricade with light	13+17	80+71	EA	16
36	6161031	Type III Moveable Barricade with Type C Warning Lights	13+17	80+71	EA	37
37	6161099	Changeable Message Sign with Communication Interface, Contractor Furnished, Contractor Retained	13+17	80+71	EA	2
38	6201002 6201005	Pavement Marking 4" - Yellow and White (Epoxy, No Grinding)	13+17	80+55	LF	16,100
39	6201011	Pavement Marking 12" - White (Epoxy, No Grinding)	60+55	80+45	LF	995
40	6201014	Pavement Marking 24" - White (Epoxy, No Grinding)	60+51	80+11	LF	176
41	6201020	Pavement Marking Turn Lane Arrow (Epoxy, No Grinding)	13+38	79+80	EA	16
42	6201023	Pavement Marking Through Lane Arrow (Epoxy, No Grinding)	70+08	74+68	EA	5
43	6201026	Pavement Marking Combination Turn & Through Lane Arrow (Epoxy, No Grinding)	70+08	70+75	EA	2
44	6209902	Pavement Marking Shared Lane Symbol (Epoxy, No Grinding)	21+00	69+40	EA	10
45	9035000	"Share the Road" Sign (W16-1)	21+00	69+40	EA	10
46	9035000	"Bike" Sign (W11-1)	21+00	69+40	EA	10
		BICYCLE/PEDESTRIAN FACILITY ITEMS				
47	6081010	Concrete Curb Ramp, 6"	34+55	80+47	SF	2,026
48	6081012	Detectable Warning Device	34+65	80+47	SF	272
49	6086004	Concrete Sidewalk, 4"	34+50	80+69	SF	996
		LANDSCAPING/STREETSCAPING ITEMS				
50	7034009	Concrete Retaining Wall	56+46	56+68	CY	600
51	8031000	Sodding	13+17	80+71	SY	10

21MSD-00086

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REGISTERED PROFESSIONAL ENGINEER
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DBA COCHRAN

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

QUANTITY SHEET

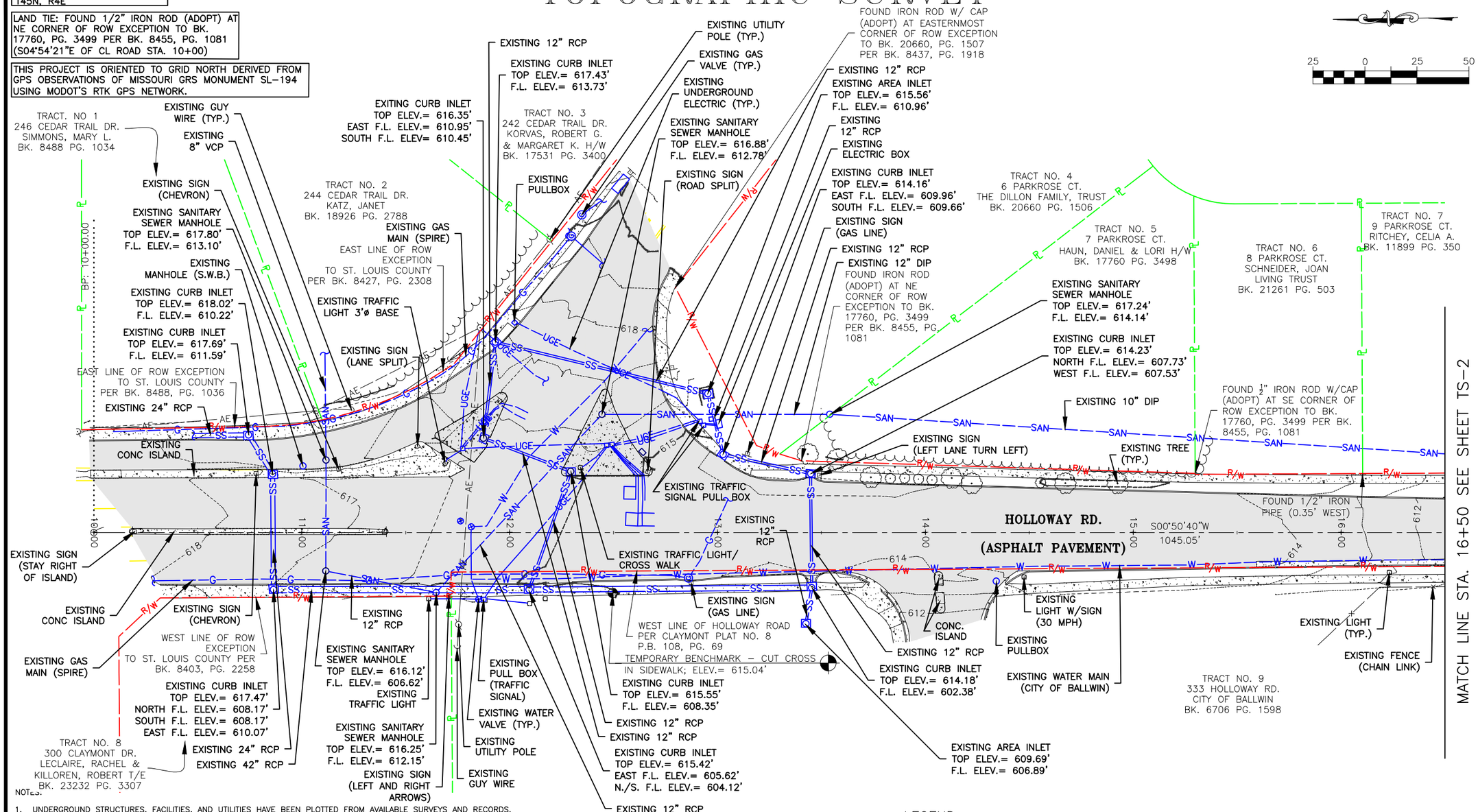
REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE:	JANUARY 2021
SCALE:	NO SCALE
PROJ. NO:	SC19-981
DWG. NO:	Q-1

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.



NOTES:

1. UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS A CROSS CUT IN THE CONCRETE ON THE WEST SIDE OF HOLLOWAY RD. AT APPROXIMATELY STA. 12+50 AS SHOWN ABOVE, ELEV.= 615.04.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
4. TOPOGRAPHIC INFORMATION AS SHOWN HEREON PER FIELD WORK PERFORMED BY J.W.B., Z.B.H., AND A.M.T.B. OF COCHRAN, DATED SEPTEMBER 2019.
5. THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS READINGS USING MODOT'S GPS RTK VRS NETWORK.
6. THIS SITE LIES ENTIRELY WITHIN "ZONE X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29189C0281K, EFFECTIVE DATE FEBRUARY 4, 2015.
7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE	—P—	EXISTING UTILITY POLE	-o-	EXISTING GAS VALVE	G
RIGHT-OF-WAY	R/W	EXISTING SANITARY SEWER	SAN	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD		EXISTING WATER MAIN	W	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	G	EXISTING SIGN	
EXISTING MAJOR CONTOUR	970	EXISTING STORM SEWER	SS	EXISTING FENCE	X
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	UGT	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	UGE	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER		EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	AE	EXISTING FIBER OPTIC	FO	EXISTING EDGE OF WOODS	

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
TIMOTHY J. VAN LEER
NUMBER PLS-2007000087
PROFESSIONAL LAND SURVEYOR
1/28/21
TIMOTHY J. VAN LEER
NO. PLS-2007000087
STATE OF MISSOURI
PROFESSIONAL LAND SURVEYOR
FOR SC ENGINEERING LLC,
DBA COCHRAN

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. | APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *TS-1*

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\TOPOGRAPHIC SURVEY.dwg Tab: TS-1 Plotted on: Feb 09, 2021 - 10:27am Plotted by: kwolff

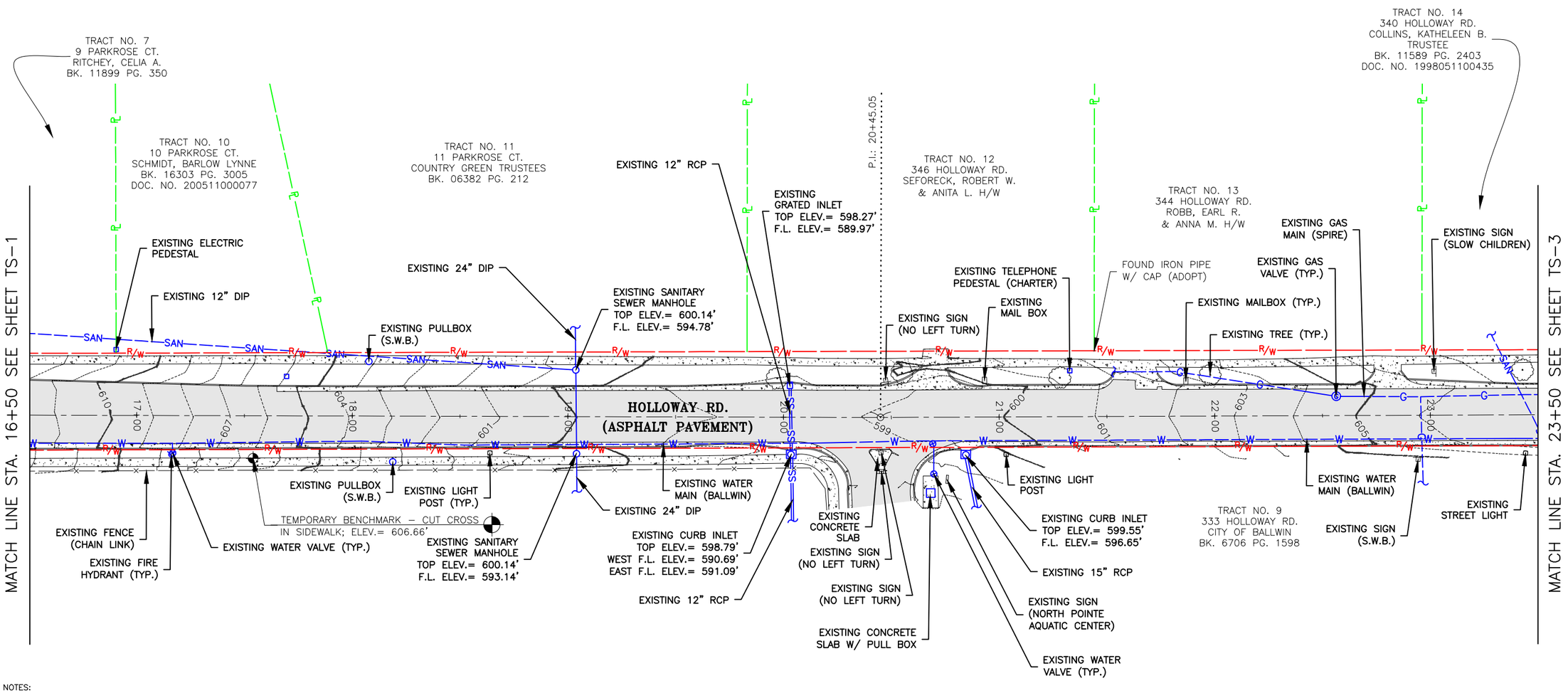
TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.

25 0 25 50



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2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS A CROSS CUT IN THE CONCRETE ON THE WEST SIDE OF HOLLOWAY RD. AT APPROXIMATELY STA. 17+50 AS SHOWN ABOVE, ELEV.= 606.66.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
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LEGEND

PROPERTY LINE	—P—	EXISTING UTILITY POLE	-o-	EXISTING GAS VALVE	G
RIGHT-OF-WAY	R/W	EXISTING SANITARY SEWER	SAN	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD	- - -	EXISTING WATER MAIN	W	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	G	EXISTING SIGN	
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EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	UGE	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER		EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	AE	EXISTING FIBER OPTIC	FO	EXISTING EDGE OF WOODS	

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. | APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: TS-2

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\TOPOGRAPHIC SURVEY.dwg Tab: TS-2 Plotted on: Feb 09, 2021 - 10:27am Plotted by: kwolff

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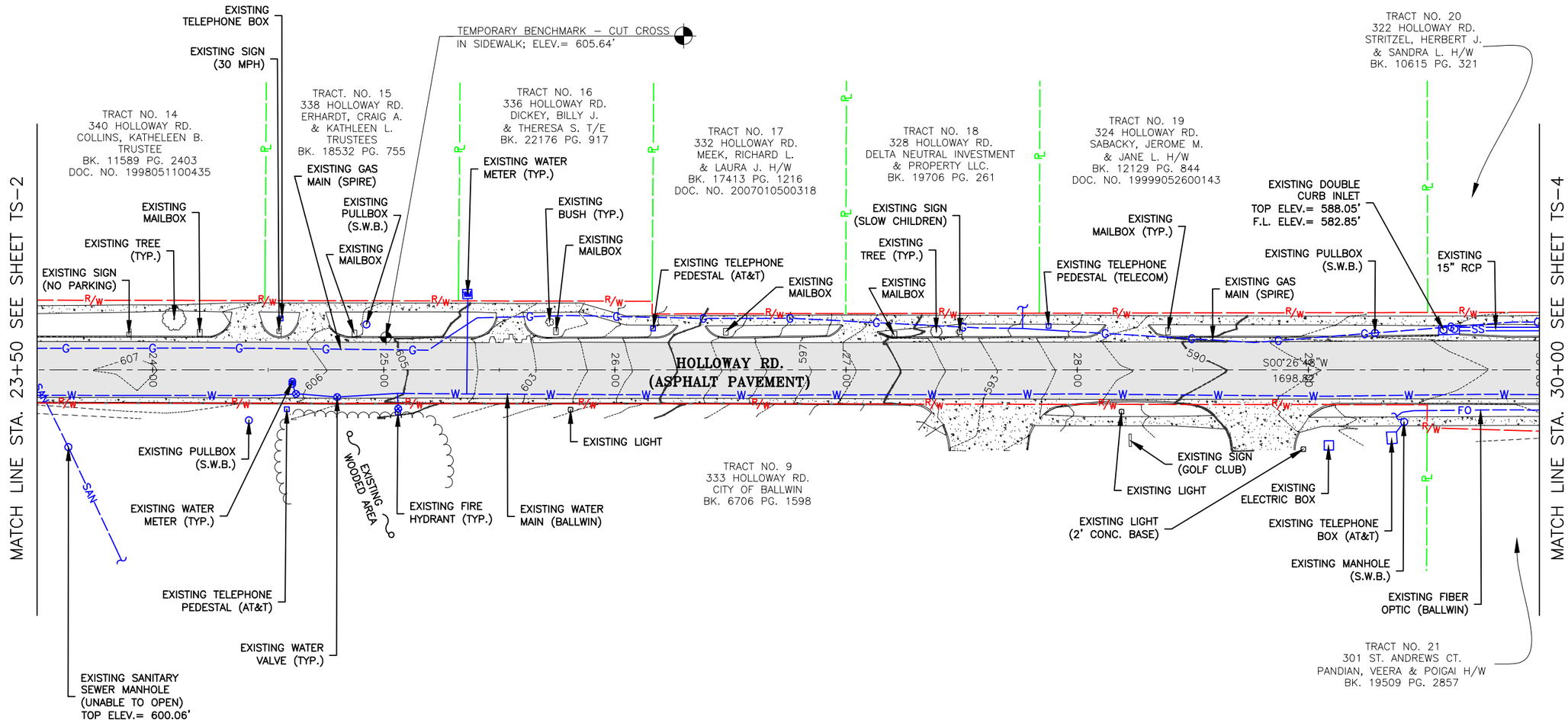

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3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
4. TOPOGRAPHIC INFORMATION AS SHOWN HEREON PER FIELD WORK PERFORMED BY J.W.B., Z.B.H., AND A.M.T.B. OF COCHRAN, DATED SEPTEMBER 2019.
5. THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.
6. THIS SITE LIES ENTIRELY WITHIN "ZONE X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29189C0281K, EFFECTIVE DATE FEBRUARY 4, 2015.
7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE	—P—	EXISTING UTILITY POLE	-o-	EXISTING GAS VALVE	G
RIGHT-OF-WAY	R/W	EXISTING SANITARY SEWER	SAN	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD	- - -	EXISTING WATER MAIN	W	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	G	EXISTING SIGN	
EXISTING MAJOR CONTOUR	970	EXISTING STORM SEWER	SS	EXISTING FENCE	X
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	UGT	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	UGE	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER	W	EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	AE	EXISTING FIBER OPTIC	FO	EXISTING EDGE OF WOODS	

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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI
TIMOTHY J. VAN LEER
NUMBER PLS-2007000867
PROFESSIONAL LAND SURVEYOR
1/28/21
TIMOTHY J. VAN LEER
NO. PLS-2007000867
STATE OF MISSOURI
PROFESSIONAL LAND SURVEYOR
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

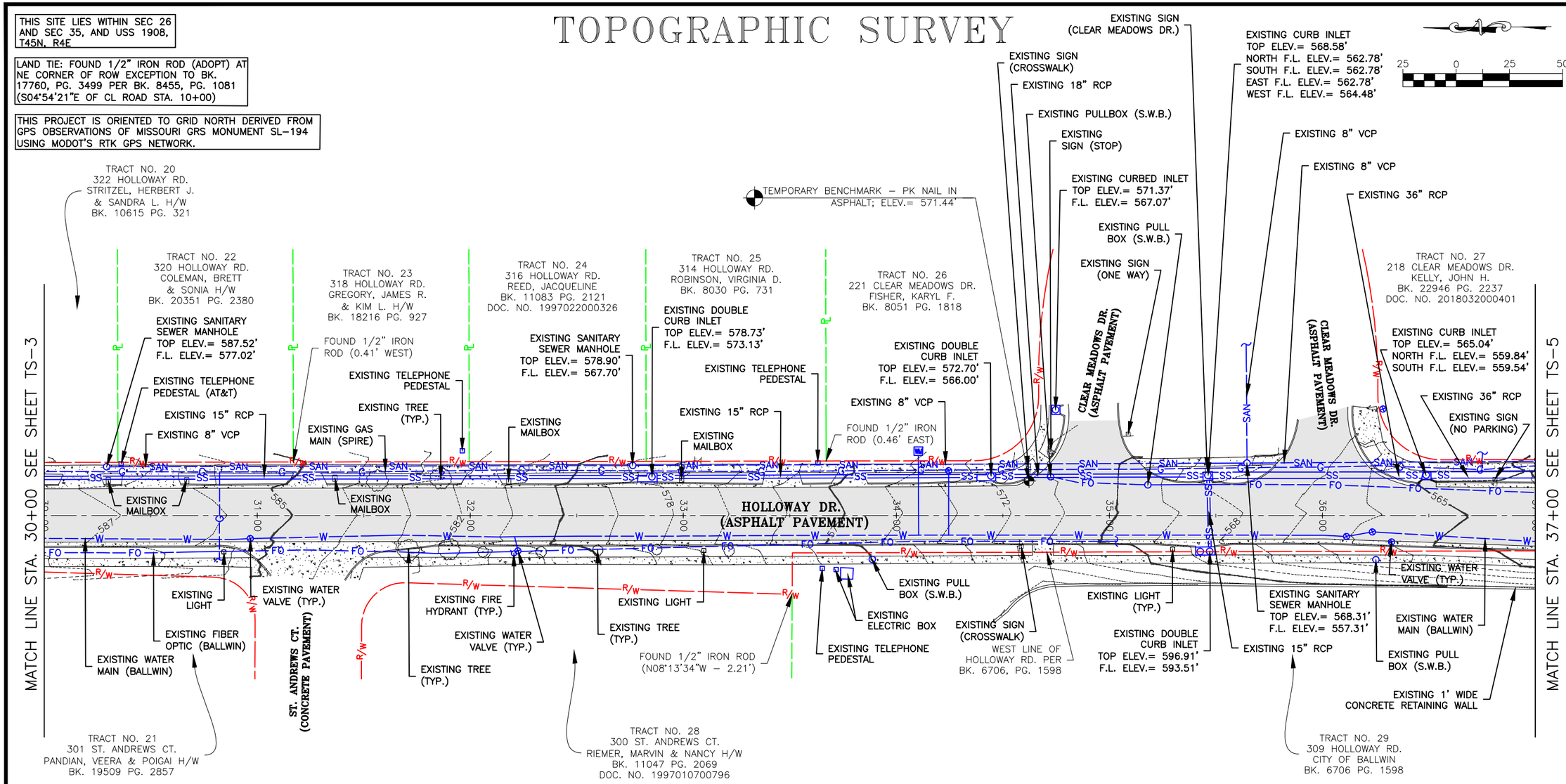
REVISION:	
DATE:	
DWN. BY: Z.B.H.	APPD. BY: T.J.V.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: *TS-3*	

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.



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2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS A PK NAIL IN THE ASPHALT ON THE EAST SIDE OF HOLLOWAY RD. AT APPROXIMATELY STA. 34+60 AS SHOWN ABOVE, ELEV.= 517.44.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
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7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE	—P—	EXISTING UTILITY POLE	-O-	EXISTING GAS VALVE	G
RIGHT-OF-WAY	R/W	EXISTING SANITARY SEWER	SAN	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD		EXISTING WATER MAIN	W	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	G	EXISTING SIGN	
EXISTING MAJOR CONTOUR	970	EXISTING STORM SEWER	SS	EXISTING FENCE	X
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	UGT	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	UGE	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER		EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	AE	EXISTING FIBER OPTIC	FO	EXISTING EDGE OF WOODS	

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *TS-4*

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\TOPOGRAPHIC SURVEY.dwg Tab: TS-4 Plotted on: Feb 09, 2021 - 10:28am Plotted by: kwolff

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

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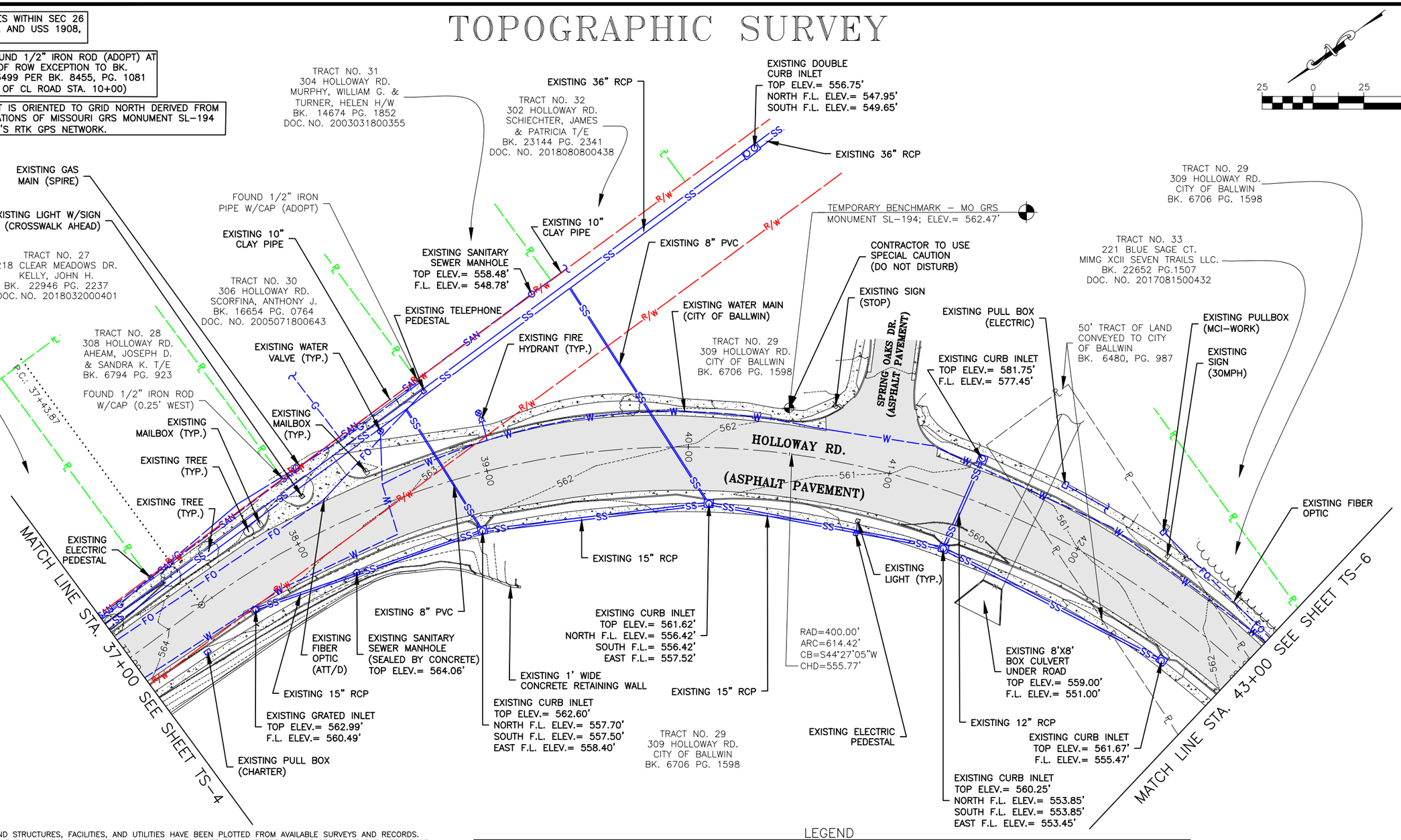

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7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE	— —R— —	EXISTING UTILITY POLE	-o-	EXISTING GAS VALVE	G
RIGHT-OF-WAY	—R/W—	EXISTING SANITARY SEWER	—SAN—	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD	—— - ——	EXISTING WATER MAIN	—W—	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	—G—	EXISTING SIGN	
EXISTING MAJOR CONTOUR	— —970— —	EXISTING STORM SEWER	—SS—	EXISTING FENCE	—X—
EXISTING MINOR CONTOUR	— —— —	EXISTING UNDERGROUND TELEPHONE	—UGT—	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	—UGE—	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER		EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	—AE—	EXISTING FIBER OPTIC	—FO—	EXISTING EDGE OF WOODS	

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STATE OF MISSOURI
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NUMBER PLS-2007000087
PROFESSIONAL LAND SURVEYOR

1/28/21
TIMOTHY J. VAN LEER
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STATE OF MISSOURI
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FOR SC ENGINEERING LLC,
DBA COCHRAN

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

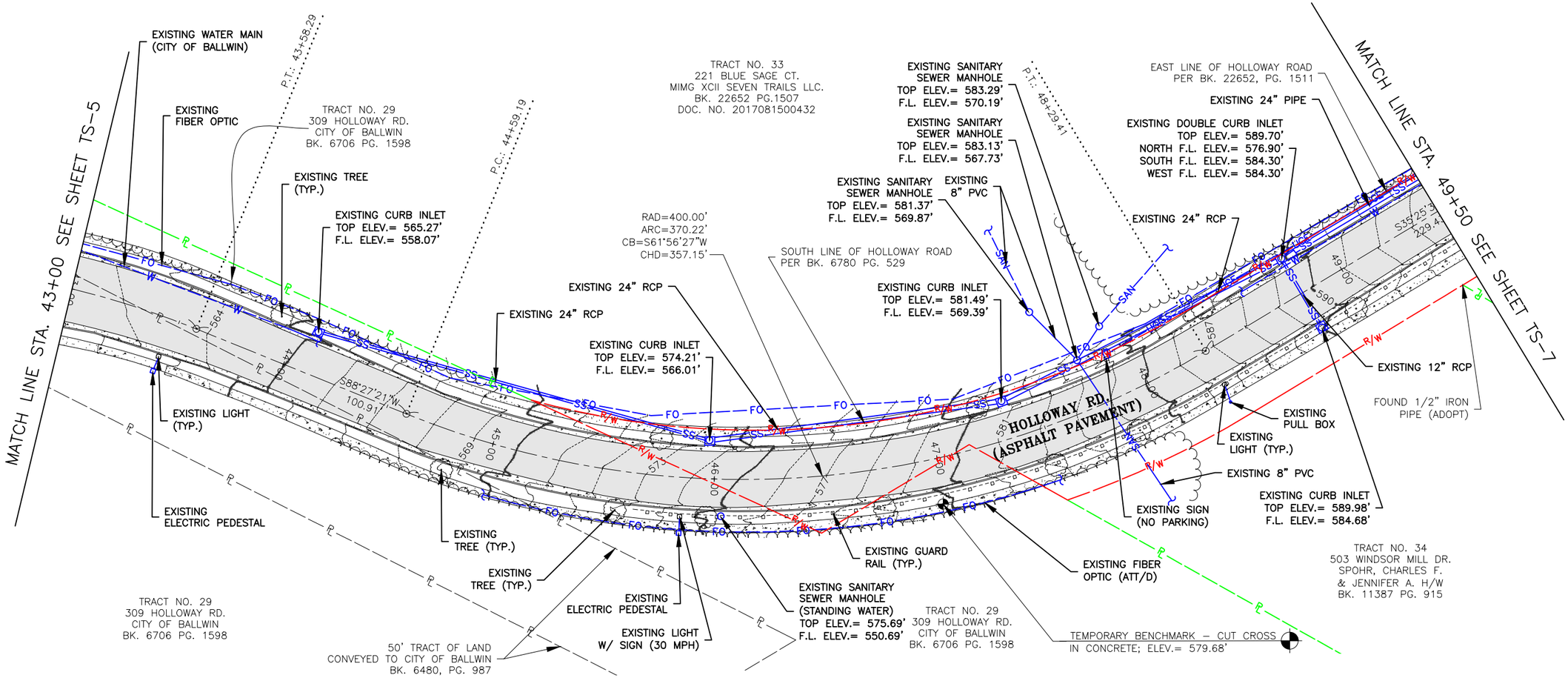
DWN. BY: Z.B.H. | APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *TS-5*

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.



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2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS A CROSS CUT IN THE CONCRETE ON THE WEST SIDE OF HOLLOWAY RD. AT APPROXIMATELY STA. 45+50 AS SHOWN ABOVE, ELEV.= 579.68.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
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LEGEND

PROPERTY LINE	-R-	EXISTING UTILITY POLE		EXISTING GAS VALVE	G
RIGHT-OF-WAY	R/W	EXISTING SANITARY SEWER	SAN	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD		EXISTING WATER MAIN	W	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	G	EXISTING SIGN	
EXISTING MAJOR CONTOUR	970	EXISTING STORM SEWER	SS	EXISTING FENCE	X
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	UGT	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	UGE	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: TS-6

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\TOPOGRAPHIC SURVEY.dwg Tab: TS-6 Plotted on: Feb 09, 2021 - 10:28am Plotted by: kwolff

TOPOGRAPHIC SURVEY

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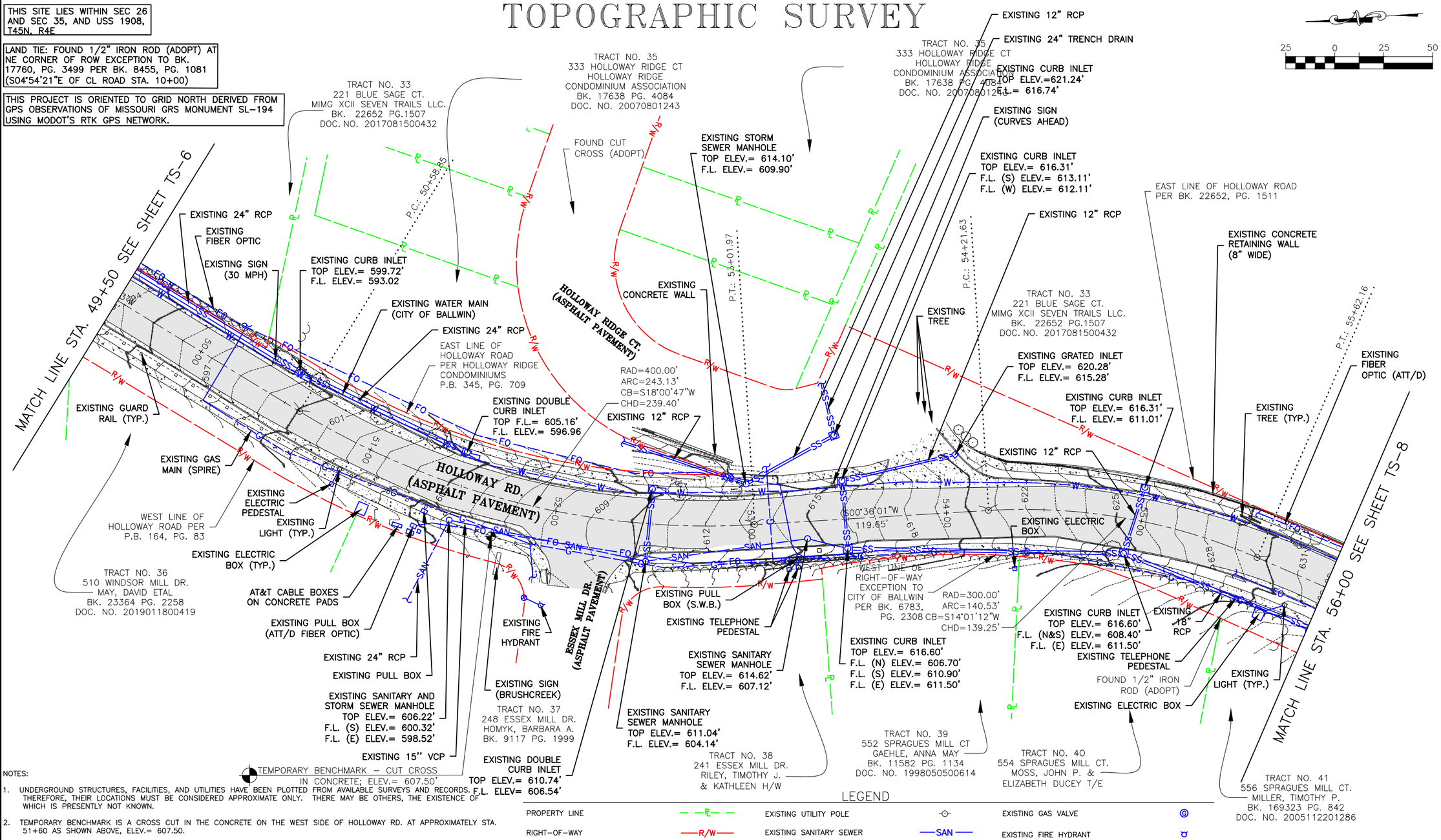

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TEMPORARY BENCHMARK – CUT CROSS IN CONCRETE; ELEV.= 607.50'

LEGEND

PROPERTY LINE	—P—	EXISTING UTILITY POLE		EXISTING GAS VALVE	
RIGHT-OF-WAY	—R/W—	EXISTING SANITARY SEWER	—SAN—	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD	—— - ——	EXISTING WATER MAIN	—W—	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	—G—	EXISTING SIGN	
EXISTING MAJOR CONTOUR	—970—	EXISTING STORM SEWER	—SS—	EXISTING FENCE	—X—
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	—UGT—	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	—UGE—	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
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Architecture
Site Development
Water Resources
General Consulting
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
TIMOTHY J. VAN LEER
NUMBER PLS-2007700087
PROFESSIONAL LAND SURVEYOR
1/28/21
TIMOTHY J. VAN LEER
NO. PLS-2007700087
STATE OF MISSOURI
PROFESSIONAL LAND SURVEYOR
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: TS-7

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\TOPOGRAPHIC SURVEY.dwg Tab: TS-7 Plotted on: Feb 09, 2021 - 10:28am Plotted by: kwolff

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.

25 0 25 50

TEMPORARY BENCHMARK – PK NAIL IN ASPHALT; ELEV.= 645.35'

EXISTING CURB INLET
TOP ELEV.= 640.77'
F.L. ELEV.= 632.97'

EXISTING PULL BOX
(NEENAH FOUNDRY COMPANY)

P.I.: 57+75.78

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC
BK. 22652 PG.1507
DOC. NO. 2017081500432

TRACT NO. 42
126 SEVEN TRAILS DR.
MIMG XCIII SEVEN TRAILS LLC.
BK. 22652 PG. 1507
DOC. NO. 2017081500432

TRACT NO. 43
407 KEHRS MILL RD.
CITY OF BALLWIN
BK. 5765 PG. 217

EAST LINE OF HOLLOWAY ROAD
PER BK. 5765, PG. 217

EXISTING ELECTRIC BOX

EXISTING WATER VALVE (TYP.)

EXISTING LIGHT W/SIGN (STOP)

EXISTING CURB INLET
TOP ELEV.= 646.20'
F.L. ELEV.= 640.38'

EXISTING 12" RCP

EXISTING SIGN (STOP)

EXISTING WATER VALVE (TYP.)

EXISTING SIGN (FIBER OPTIC MCI)

EXISTING PULL BOX (MCI)

EXISTING FIBER OPTIC (AT&T)

EXISTING UTILITY POLE W/UGE (TYP.)

EXISTING UNDERGROUND ELECTRIC

EXISTING GUY WIRE (TYP.)

EAST LINE OF HOLLOWAY ROAD
PER BK. 22652, PG. 1511

EXISTING CONCRETE RETAINING WALL (8"WIDE)

EXISTING WATER MAIN (CITY OF BALLWIN)

EXISTING SIGN (30 MPH)

SEVEN TRAILS DR. (ASPHALT PAVEMENT)

PARK DR. (ASPHALT PAVEMENT)

HOLLOWAY RD. (ASPHALT PAVEMENT)

MATCH LINE STA. 56+00 SEE SHEET TS-7

MATCH LINE STA. 62+00 SEE SHEET TS-9

S27°26'24"W 213.62'

EXISTING GAS MAIN (SPIRE)

EXISTING 18" RCP

EXISTING TREE (TYP.)

FOUND 1/2" IRON PIPE (N59°41'02"W – 1.70')

EXISTING CURB INLET
TOP ELEV.= 640.96'
N/S F.L. ELEV.= 631.36'
EAST F.L. ELEV.= 632.76'

EXISTING LIGHT (TYP.)

EXISTING ELECTRIC BOX

EXISTING TELEPHONE PEDESTAL

FOUND 1/2" IRON PIPE (S53°33'26"E – 0.84)

EXISTING 18" RCP

EXISTING 12" RCP

EXISTING TREE (TYP.)

EXISTING MAILBOX (TYP.)

EXISTING ELECTRIC PEDESTAL

EXISTING TELEPHONE PEDESTAL

EXISTING CURB INLET
TOP ELEV.= 644.88'
F.L. ELEV.= 634.88'

EXISTING PULL BOX (S.W.B.)

EXISTING SIGN (STOP)

FOUND 1/2" IRON PIPE (ADOPT)

EXISTING LIGHT

FOUND 1/2" IRON PIPE

STODDARDS MILL RD (ASPHALT PAVEMENT)

EXISTING SIGN (STOP)

EXISTING FIRE HYDRANT (TYP.)

EXISTING TELEPHONE PEDESTAL

WEST LINE OF ROW TAKING
PER BK. 6777, PG. 353

EXISTING CURB INLET
TOP ELEV.= 641.65'
F.L. ELEV.= 638.90'

FOUND 1/2" IRON ROD W/CAP (ADOPT)

TRACT NO. 41
556 SPRAGUES MILL CT.
MILLER, TIMOTHY P.
BK. 169323 PG. 842
DOC. NO. 2005112201286

TRACT. NO. 43
560 SPRAGUES MILL CT.
SCHAEFFIER, GREGORY J.
& KAREN J. H/W
BK. 8476 PG. 1330

TRACT NO. 44
562 SPRAGUES MILL CT.
ANDERSON, ZACHARY K.
& BRIDGES, ABIGAIL L. T/E
BK. 22572 PG. 1301
DOC. NO. 2017061900279

TRACT NO. 45
211 HOLLOWAY RD.
EASON, RYAN A.
& LISA D. H/W
BK. 10879 PG. 0777
DOC. NO. 1996070800277

TRACT NO. 46
509 STODDARDS MILL DR.
HOUSER, GUY N. &
ALLISON P. T/E
BK. 23410 PG. 2672

TRACT NO. 47
506 STODDARDS MILL DR.
ODONNELL, FAYE & EVA J. H/W
BK. 21624 PG. 1574

TRACT NO. 48
141 HOLLOWAY RD.
FLAMION, SARA TRUSTEE
BK. 23205 PG. 348
DOC. NO. 2018092000527

NOTES:

1. UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS A PK NAIL IN ASPHALT ON THE EAST SIDE OF HOLLOWAY RD. AT APPROXIMATELY STA. 61+00 AS SHOWN ABOVE, ELEV.= 645.35.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
4. TOPOGRAPHIC INFORMATION AS SHOWN HEREON PER FIELD WORK PERFORMED BY J.W.B., Z.B.H., AND A.M.T.B. OF COCHRAN, DATED SEPTEMBER 2019.
5. THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.
6. THIS SITE LIES ENTIRELY WITHIN "ZONE X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29189C0281K, EFFECTIVE DATE FEBRUARY 4, 2015.
7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE	—P—	EXISTING UTILITY POLE		EXISTING GAS VALVE	
RIGHT-OF-WAY	—R/W—	EXISTING SANITARY SEWER	—SAN—	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD	—— - ——	EXISTING WATER MAIN	—W—	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	—G—	EXISTING SIGN	
EXISTING MAJOR CONTOUR	—970—	EXISTING STORM SEWER	—SS—	EXISTING FENCE	—X—
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	—UGT—	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	—UGE—	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER		EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	—AE—	EXISTING FIBER OPTIC	—FO—	EXISTING EDGE OF WOODS	

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

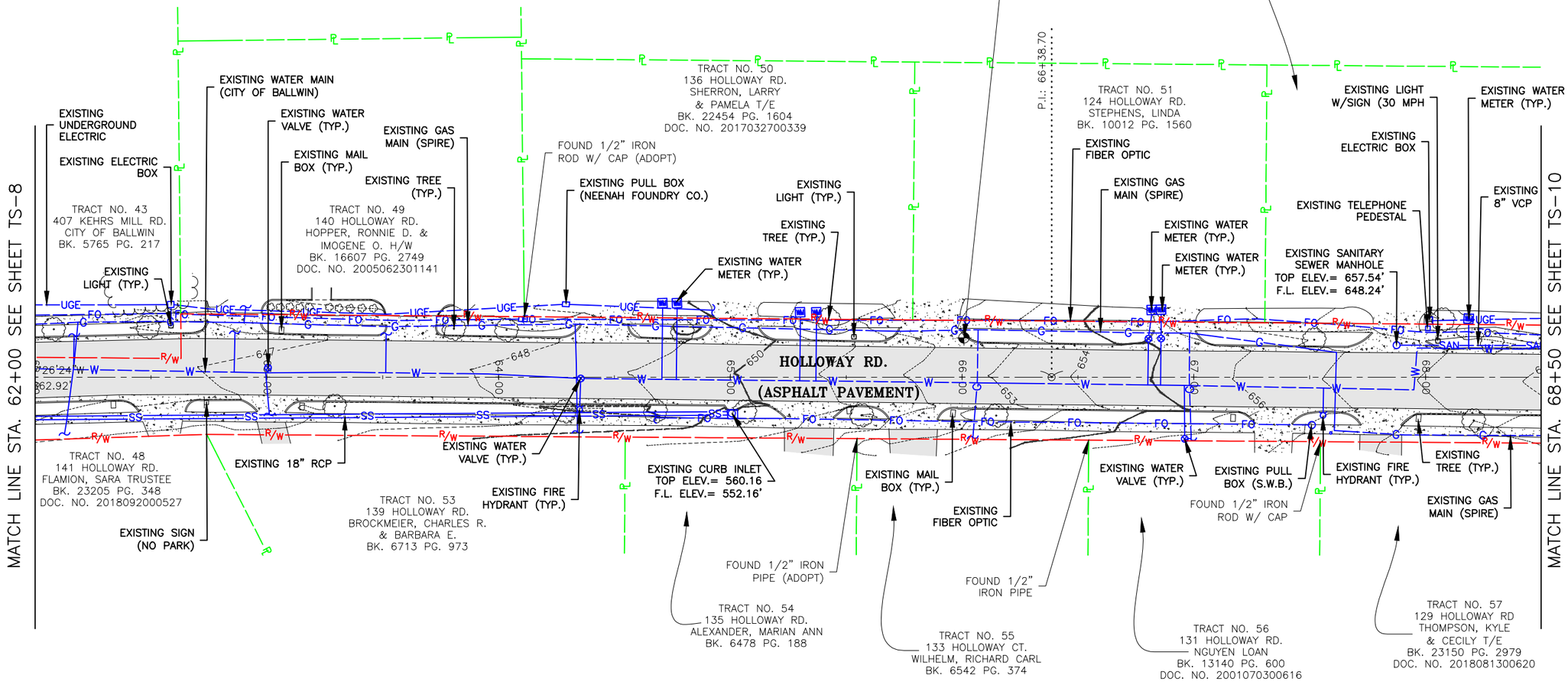
DWN. BY: Z.B.H. APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: TS-8

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.



NOTES:

1. UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS A CROSS CUT IN THE CONCRETE ON THE EAST SIDE OF N. HOLLOWAY RD. AT APPROXIMATELY STA. 66+00 AS SHOWN ABOVE, ELEV.= 652.54.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
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6. THIS SITE LIES WITHIN "ZONE X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29189C0281K, EFFECTIVE DATE FEBRUARY 4, 2015.
7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE	—P—	EXISTING UTILITY POLE	-o-	EXISTING GAS VALVE	G
RIGHT-OF-WAY	—R/W—	EXISTING SANITARY SEWER	—SAN—	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD	—— - ——	EXISTING WATER MAIN	—W—	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	—G—	EXISTING SIGN	
EXISTING MAJOR CONTOUR	—970—	EXISTING STORM SEWER	—SS—	EXISTING FENCE	—X—
EXISTING MINOR CONTOUR	—— —— ——	EXISTING UNDERGROUND TELEPHONE	—UGT—	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	—UGE—	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER		EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	—AE—	EXISTING FIBER OPTIC	—FO—	EXISTING EDGE OF WOODS	

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FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: TS-9

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.

25 0 25 50

MATCH LINE STA. 68+50 SEE SHEET TS-9

MATCH LINE STA. 75+00 SEE SHEET TS-11

HOLLOWAY RD. (ASPHALT PAVEMENT)

KEHRS MILL CROSSING (ASPHALT PAVEMENT)

KEHRS MILL RD. (ASPHALT PAVEMENT)

TRACT NO. 52
118 N. HOLLOWAY RD.
STAFFORD, CAROLE L.
TRUSTEE
BK. 17610 PG. 4835
DOC. NO. 2007071200738

TRACT NO. 58
315 KEHRS MILL BEND CT.
WU, CHIH YANG
BK. 9745 PG. 2277

TRACT NO. 59
308 KEHRS MILL BEND CT.
CARR, JANET S.
BK. 14783 PG. 223
DOC. NO. 2003041801772

TRACT NO. 60
112 HOLLOWAY RD.
HIP PROPERTIES LLC
BK. 21568 PG. 1081

TRACT NO. 61
100 HOLLOWAY RD.
MUDDY RIVER L C
BK. 17756 PG. 4426
DOC. NO. 2007123101062

TRACT NO. 62
127 HOLLOWAY RD.
BARNETT, WILLIAM E.
BK. 7946 PG. 228

TRACT NO. 57
129 HOLLOWAY RD
THOMPSON, KYLE
& CECILY T/E
BK. 23150 PG. 2979
DOC. NO. 2018081300620

TRACT NO. 63
505 KEHRS MILL RD.
JENNINGS, JOHN R. ETAL
BK. 17098 PG. 343
DOC. NO. 200632000819

TRACT NO. 64
15025 MANCHESTER RD.
TARGET STORES CORP.
T 0026 PROPERTY TAX DEPT. TPN
BK. 6448 PG. 228

EXISTING WATER METER (TYP.)
EXISTING WATER VALVE (TYP.)
EXISTING 8" VCP
EXISTING PULL BOX
EXISTING ELECTRIC BOX
EXISTING SANITARY SEWER MANHOLE TOP ELEV.= 660.48' F.L. ELEV.= 649.58'
EXISTING WATER MAIN (CITY OF BALLWIN)
EXISTING GAS MAIN (SPIRE)
EXISTING LIGHT (TYP.)
EXISTING UNDERGROUND ELECTRIC
EXISTING PULL BOX
EXISTING BUSH (TYP.)
EXISTING SIGN (HOLLOWAY CENTER)
EXISTING WATER VALVE BOX TOP ELEV.= 649.54' F.L. ELEV.= 646.04'
EXISTING SIGN (STOP)
EXISTING PULL BOX
EXISTING GRATED INLET TOP ELEV.= 642.48' F.L. ELEV.= 638.18'
EXISTING CURB INLET TOP ELEV.= 632.87' NE F.L. ELEV.=629.97' WEST F.L. ELEV.= 629.47'
EXISTING 15" RCP
NORTH LINE OF 30'W DEDICATION STRIP TO CITY OF BALLWIN PER KEHRS MILL CROSSING CONDOMINIUM PLAT.
EXISTING CURB INLET TOP ELEV.= 656.52' F.L. ELEV.= 651.92'
EXISTING 12" RCP
FOUND 1/2" IRON PIPE (ADOPT)
EXISTING SIGN (FOR LEASE)
EXISTING 12" RCP
EXISTING LIGHT W SIGN (30 MPH)
FOUND 1/2" IRON ROD W/ CAP (ADOPT)
EXISTING TREE (TYP.)
FOUND 1/2" IRON PIPE (ADOPT)
ROW EXCEPTION TO CITY OF BALLWIN BK. 6783, PG. 2303
ROW EXCEPTION TO CITY OF BALLWIN BK. 6659, PG. 114
TEMPORARY BENCHMARK – CUT CROSS IN CONCRETE; ELEV.= 657.87'
EXISTING CURB INLET TOP ELEV.= 656.28' F.L. ELEV.= 648.78'
EXISTING WATER VALVE BOX TOP ELEV.= 648.69' F.L. ELEV.= 646.09'
EXISTING 12" RCP
FOUND 1/2" IRON PIPE (ADOPT)
EXISTING FIRE HYDRANT (TYP.)
EXISTING CURB INLET TOP ELEV.= 652.33' F.L. ELEV.= 644.33'
EXISTING 18" RCP
EXISTING PULLBOX
EXISTING 15" RCP
EXISTING STORM SEWER MANHOLE TOP ELEV.= 674.74' F.L. ELEV.= 640.44'
EXISTING PULL BOX
EXISTING 18" PVC
EXISTING LIGHT W/ SIGN (STOP)
EXISTING CURB INLET TOP ELEV.= 651.85' F.L. ELEV.= 642.25'
EXISTING GAS MAIN (SPIRE)
EXISTING ELECTRIC BOX
EXISTING ELECTRIC BOX
EXISTING PIPE BOLLARD (TYP.)
EXISTING BLK RETAINING WALL
EXISTING ELECTRIC BOX
EXISTING GAS VALVE (TYP.)
EXISTING BLK RETAINING WALL
EXISTING SIGN (AT&T)
EXISTING PULL BOX
EXISTING CURB INLET TOP ELEV.= 632.96' EAST F.L. ELEV.= 629.26' N/S F.L. ELEV.= 626.06'
EXISTING DECORATIVE ROCK (TYP.)
EXISTING 15" RCP
S27°26'24"W 144.72'

NOTES:

1. UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS A CROSS CUT IN THE CONCRETE ON THE WEST SIDE OF HOLLOWAY RD. AT APPROXIMATELY STA. 70+90 AS SHOWN ABOVE, ELEV.= 657.87.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
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6. THIS SITE LIES WITHIN "ZONE X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29189C0281K, EFFECTIVE DATE FEBRUARY 4, 2015.
7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE	—℄—	EXISTING UTILITY POLE	-o-	EXISTING GAS VALVE	
RIGHT-OF-WAY	R/W	EXISTING SANITARY SEWER	SAN	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD	— - —	EXISTING WATER MAIN	W	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	G	EXISTING SIGN	
EXISTING MAJOR CONTOUR	—970—	EXISTING STORM SEWER	SS	EXISTING FENCE	X
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	UGT	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	UGE	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER	WM	EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	AE	EXISTING FIBER OPTIC	FO	EXISTING EDGE OF WOODS	

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

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PROFESSIONAL LAND SURVEYOR
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: TS-10

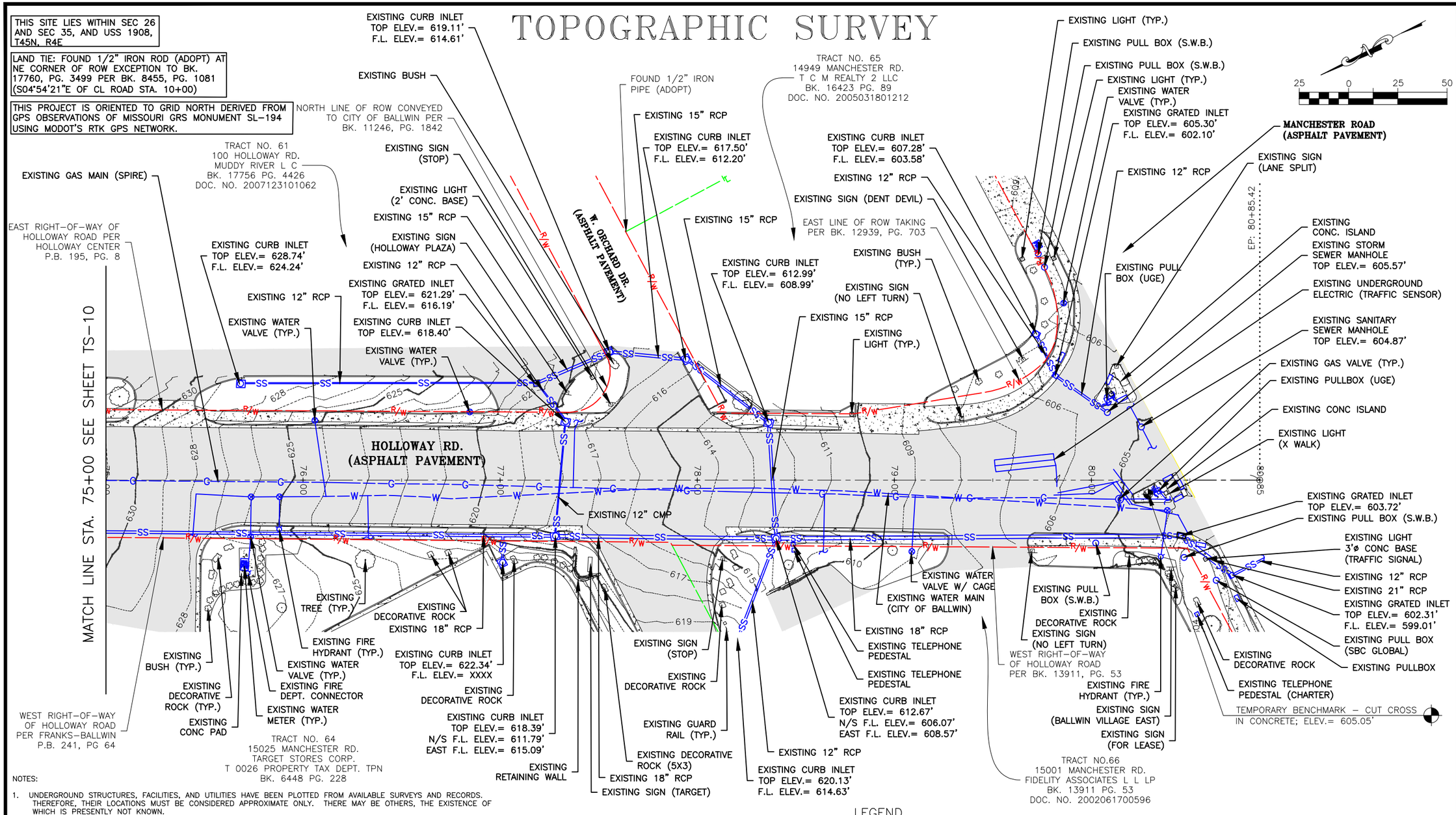
Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\TOPOGRAPHIC SURVEY.dwg Tab: TS-10 Plotted on: Feb 09, 2021 - 10:28am Plotted by: kwolff

TOPOGRAPHIC SURVEY

THIS SITE LIES WITHIN SEC 26 AND SEC 35, AND USS 1908, T45N, R4E

LAND TIE: FOUND 1/2" IRON ROD (ADOPT) AT NE CORNER OF ROW EXCEPTION TO BK. 17760, PG. 3499 PER BK. 8455, PG. 1081 (S04°54'21"E OF CL ROAD STA. 10+00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOT'S RTK GPS NETWORK.



NOTES:

1. UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
2. SITE BENCHMARK IS MISSOURI GRS MONUMENT SL-194, ELEV.= 562.47 FEET (NAVD88). TEMPORARY BENCHMARK IS CROSS CUT IN THE CONCRETE ON THE SOUTH SIDE OF HOLLOWAY RD. AT APPROXIMATELY STA. 80+25 AS SHOWN ABOVE, ELEV.= 605.05.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
4. TOPOGRAPHIC INFORMATION AS SHOWN HEREON PER FIELD WORK PERFORMED BY J.W.B., Z.B.H., AND A.M.T.B. OF COCHRAN, DATED SEPTEMBER 2019.
5. THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS OBSERVATIONS OF MISSOURI GRS MONUMENT SL-194 USING MODOTS RTK GPS NETWORK.
6. THIS SITE LIES WITHIN "ZONE X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29189C0281K, EFFECTIVE DATE FEBRUARY 4, 2015.
7. THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE		EXISTING UTILITY POLE		EXISTING GAS VALVE	
RIGHT-OF-WAY	R/W	EXISTING SANITARY SEWER	SAN	EXISTING FIRE HYDRANT	
CENTERLINE OF ROAD		EXISTING WATER MAIN	W	EXISTING MAILBOX	
EXISTING STRIPING		EXISTING GAS MAIN	G	EXISTING SIGN	
EXISTING MAJOR CONTOUR	970	EXISTING STORM SEWER	SS	EXISTING FENCE	X
EXISTING MINOR CONTOUR		EXISTING UNDERGROUND TELEPHONE	UGT	EXISTING LIGHT	
EXISTING BUILDING		EXISTING UNDERGROUND ELECTRIC	UGE	EXISTING BUSH	
EXISTING CONCRETE PAVEMENT		EXISTING TELEPHONE PEDESTAL		EXISTING TREE	
EXISTING GRAVEL		EXISTING WATER VALVE		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING ASPHALT PAVEMENT		EXISTING WATER METER		EXISTING GUY WIRE	
EXISTING AERIAL ELECTRIC	AE	EXISTING FIBER OPTIC	FO	EXISTING EDGE OF WOODS	

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Architecture
Site Development
Structural Planning
General Consulting
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI
TIMOTHY J. VAN LEER
NUMBER PLS-2007000087
PROFESSIONAL LAND SURVEYOR
1/28/21
TIMOTHY J. VAN LEER NO. PLS-2007000087 STATE OF MISSOURI PROFESSIONAL LAND SURVEYOR FOR SC ENGINEERING LLC, DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

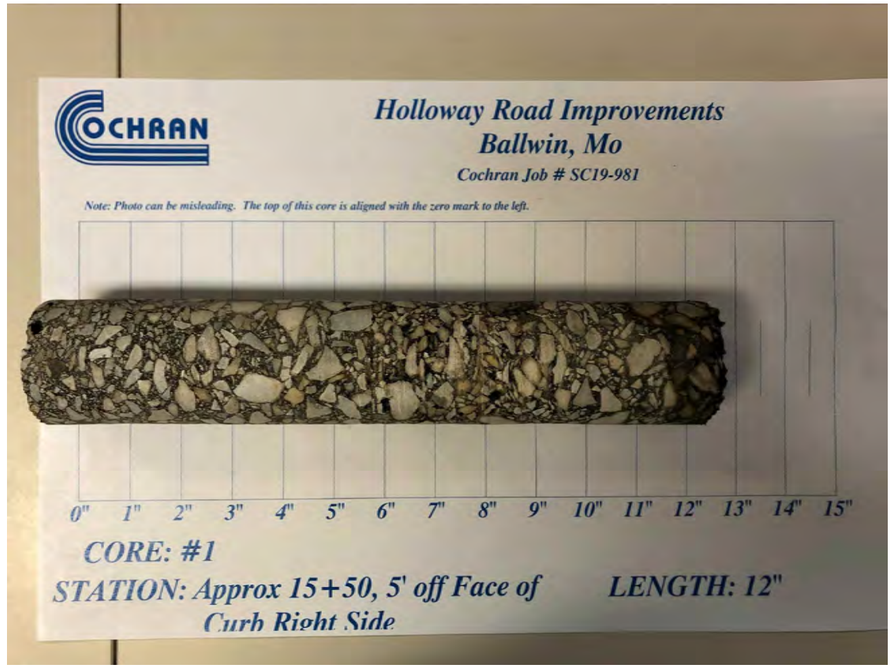
TOPOGRAPHIC SURVEY

DATE:	REVISION:

DWN. BY: Z.B.H. | APPD. BY: T.J.V.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: TS-11

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\TOPOGRAPHIC SURVEY.dwg Tab: TS-11 Plotted on: Feb 09, 2021 - 10:29am Plotted by: kwolff

CORING SAMPLES



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STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER
1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
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FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

CORING SAMPLES

REVISION:	DATE:

DWN. BY: K.J.W.
APPD. BY: M.D.S.
DATE: JANUARY 2021
SCALE: NO SCALE
PROJ. NO: SC19-981
DWG. NO: CS-1

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\CORING SAMPLES.dwg Tab: CS-1 Plotted on: Feb 09, 2021 – 10:29am Plotted by: kwolff

LEGEND AND GENERAL NOTES

LEGEND, GENERAL NOTES AND ABBREVIATIONS SHALL APPLY TO ALL SHEETS UNLESS OTHERWISE NOTED ON INDIVIDUAL SHEET

LEGEND

EXISTING		NEW
500	INDEX CONTOUR	500
	INTERMEDIATE CONTOUR	498
R/W	RIGHT-OF-WAY	R/W
	LOT LINE	
	PERMANENT EASEMENT	PE
AE	AERIAL ELECTRIC	AE
	UTILITY POLE	
	GUY WIRE	
UGE	UNDERGROUND ELECTRIC	UGE
CATV	UNDERGROUND CABLE TV	CATV
UGT	UNDERGROUND TELEPHONE	UGT
FO	UNDERGROUND FIBER OPTIC	FO
SAN	SANITARY SEWER LINE	SAN
FM	SANITARY FORCEMAIN	FM
	SANITARY SEWER MANHOLE	
SS	STORM SEWER LINE	
	STORM SEWER MANHOLE	
	CURB/AREA INLET	
	GRATED INLET	
	GRATED INLET W/ SIDE INTAKE	
	FLARED END SECTION	
	SWALE	
G	GAS LINE	G
G	GAS VALVE	G
GM	GAS METER	GM
W	WATER LINE	W
	FIRE HYDRANT	
	WATER VALVE	
WM	WATER METER	WM
	GUARDRAIL	
X	FENCE	X

EXISTING		NEW
	TREE	
	TREELINE	
	LIGHT	
	COBRAHEAD LIGHT	
	LOAD CENTER	
	HAND HOLE	
	MAILBOX	
	SIGN	
	CORING LOCATION	
	CONCRETE PAVEMENT	
	ASPHALT PAVEMENT	
	CONCRETE APPROACH	
	CONCRETE ISLAND	
	CONCRETE SIDEWALK	
	CURB RAMP	
	ASPHALT DRIVEWAY	
	AGGREGATE DRIVEWAY	
	CONCRETE VERTICAL CURB	
	CONCRETE CURB AND GUTTER	
	CONSTRUCTION LIMITS	
	SILT FENCE	SILT
	INLET CHECK	
	DITCH CHECK	
	PROJECT BASELINE	

ABBREVIATIONS

AI – AREA INLET
ARC – ARC LENGTH
ATG – ADJUST TO GRADE
BF – BOTTOM OF FOOTING
BOP – BEGINNING OF PAVEMENT
BW – BOTTOM OF WALL
CB – CHORD BEARING
CHD – CHORD LENGTH
CI – CURB INLET
CMP – CORRUGATED METAL PIPE
DCI – DOUBLE CURB INLET
DGI – DOUBLE GRATED INLET
ELEV – ELEVATION
EOP – END OF PAVEMENT
FES – FLARED END SECTION
FL – FLOW LINE
GCI – GRATED CURB INLET
GI – GRATED INLET
GIS – GRATED INLET WITH SIDE INTAKE
HDPE – HIGH-DENSITY POLYETHYLENE
JB – JUNCTION BOX
LF – LINEAR FEET
LT – LEFT
MAX – MAXIMUM
MH – MANHOLE
MIN – MINIMUM
NO – NUMBER
O/S – OFFSET
OC – ON CENTER
PC – POINT OF CURVATURE
PCC – POINT OF COMPOUND CURVATURE
PE – PERMANENT EASEMENT
PI – POINT OF INTERSECTION
PRC – POINT OF REVERSE CURVATURE
PT – POINT OF TANGENCY
R/W – RIGHT-OF-WAY
RAD – RADIUS
RCP – RE-INFORCED CONCRETE PIPE
RT – RIGHT
SSD – STOPPING SIGHT DISTANCE
STA – STATION
TBR – TO BE REMOVED
TBR&R – TO BE REMOVED AND REPLACED
TCE – TEMPORARY CONSTRUCTION EASEMENT
TW – TOP OF WALL
TYP – TYPICAL
VPC – VERTICAL POINT OF CURVATURE
VPI – VERTICAL POINT OF INTERSECTION
VPT – VERTICAL POINT OF TANGENCY
ø – DIAMETER
℄ – CENTERLINE
(1) – KEYED NOTE

GENERAL NOTES

TOPOGRAPHIC SURVEY NOTES:

1. UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
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3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
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DESIGN NOTES:

1. CONTRACTOR SHALL RELOCATE ALL EXISTING SIGNS, PLANTERS, MAILBOXES, AND PRIVATE LIGHTS AS NECESSARY FOR THE CONSTRUCTION OF THE IMPROVEMENTS. NEW LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.
2. CONTRACTOR SHALL ADJUST TO GRADE ALL UTILITIES NECESSARY TO BRING THE UTILITY TO THE GRADE OF THE NEW CONSTRUCTION.
3. CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING STORM SEWER PIPE AND STRUCTURES.
4. CONTRACTOR SHALL DISCUSS MILLING DEPTHS WITH THE ENGINEER PRIOR TO STARTING THE MILLING PROCESS. DEPTH SHOWN IS APPROXIMATE AND MAY VARY AS DIRECTED TO OBTAIN THE DESIRED CROSS SLOPE AND PROFILE. UNIT COST FOR THE MILLING WORK SHALL NOT CHANGE REGARDLESS OF THE MILLED THICKNESS, UNLESS THE BID FORM PROVIDES MULTIPLE MILLING DEPTH LINE ITEMS.
5. CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING PRIVATE SIDEWALKS AS NECESSARY FOR THE CONSTRUCTION OF THE IMPROVEMENTS. PRIVATE SIDEWALKS SHALL BE SAW CUT AT THE RIGHT-OF-WAY OR NEAREST JOINT AS DIRECTED BY THE ENGINEER.
6. EXISTING CULVERT PIPES, WHICH ARE UNDER DRIVEWAYS BEING REPLACED BY THE CONSTRUCTION OF IMPROVEMENTS, SHALL BE REMOVED.
7. OBLITERATE ANY EXISTING STRIPING THAT CONFLICTS WITH THE PROPOSED PAVEMENT MARKING PLAN. THE PROCESS FOR REMOVAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO BEGINNING (INCIDENTAL TO CONSTRUCTION).
8. THE LOCATION OF THE NEW UNDERGROUND ELECTRIC FOR STREET LIGHTING AS SHOWN IS APPROXIMATE AND SHALL NOT INTERFERE WITH ANY NEW OR EXISTING UTILITIES, SIGNS, TREES, OR IMPROVEMENTS OF ANY KIND. THEREFORE, THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF UNDERGROUND ELECTRIC WITH EXISTING UTILITIES AND ANY OTHER IMPROVEMENTS ASSOCIATED WITH THIS PROJECT.
9. ALL AREAS OF CLEARING, GRUBBING AND STRIPPING NOT SHOWN IN PLANS, CONTRACTOR SHALL CONDUCT CLEARING, GRUBBING AND STRIPPING AS NECESSARY UNLESS OTHERWISE NOTED IN PLANS.

21MSD-00086

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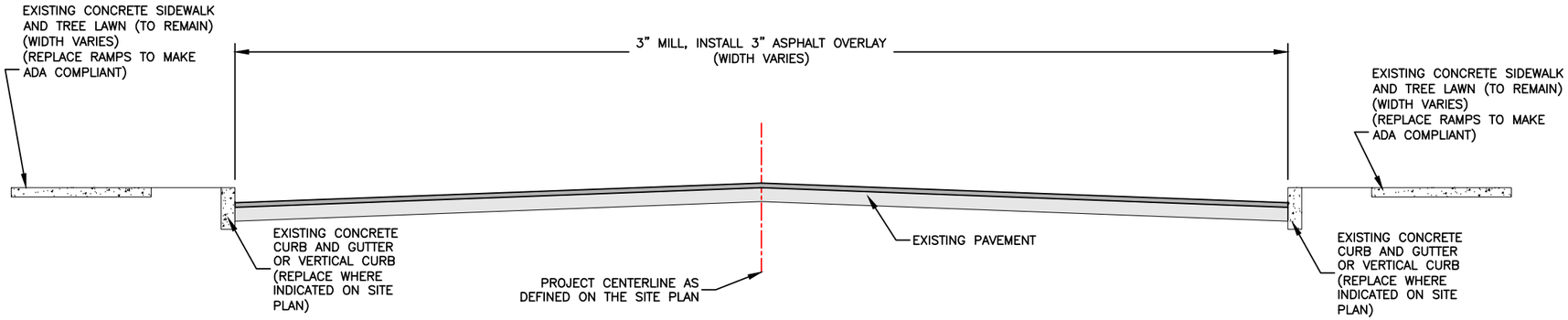
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

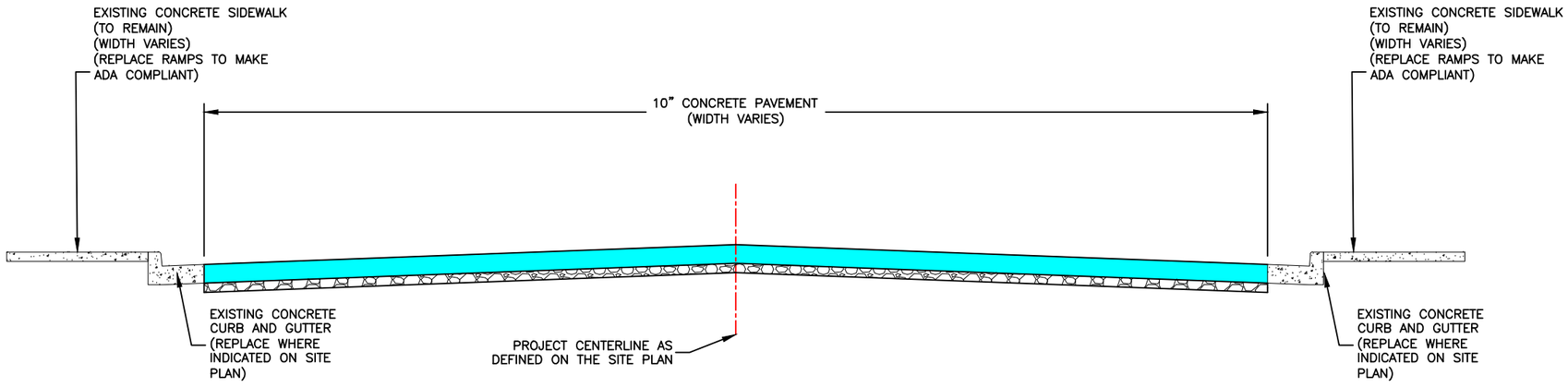
LEGEND AND GENERAL NOTES

REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE:	JANUARY 2021
SCALE:	1" = 20'
PROJ. NO:	SC19-981
DWG. NO:	*LG-1*

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\LEGEND.dwg Tab: LG-1 Plotted on: Feb 09, 2021 - 10:29am Plotted by: kwolff



TYPICAL SECTION
STA. 13+17 TO 77+32



TYPICAL SECTION
STA. 77+32 TO 80+71

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TYPICAL SECTIONS

DATE:	REVISION:

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K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: NO SCALE
PROJ. NO: SC19-981
DWG. NO: *TXS-1*

21MSD-00086

SITE PLAN

25 0 25 50

TRACT. NO 1
246 CEDAR TRAIL DR.
SIMMONS, MARY L.
BK. 8488 PG. 1034

TRACT NO. 2
244 CEDAR TRAIL DR.
KATZ, JANET
BK. 18926 PG. 2788

TRACT NO. 3
242 CEDAR TRAIL DR.
KORVAS, ROBERT G.
& MARGARET K. H/W
BK. 17531 PG. 3400

TRACT NO. 4
6 PARKROSE CT.
THE DILLON FAMILY, TRUST
BK. 20660 PG. 1506

TRACT NO. 5
7 PARKROSE CT.
HAUN, DANIEL & LORI H/W
BK. 17760 PG. 3498

TRACT NO. 6
8 PARKROSE CT.
SCHNEIDER, JOAN
LIVING TRUST
BK. 21261 PG. 503

TRACT NO. 7
9 PARKROSE CT.
RITCHEY, CELIA A.
BK. 11899 PG. 350

BAXTER RD.
(ASPHALT PAVEMENT)

BAXTER RD.
(ASPHALT PAVEMENT)

HOLLOWAY RD.
(ASPHALT PAVEMENT)

BP: 10+00.00

CONCRETE CURB AND GUTTER
(REMOVE AND REPLACE)

START OF PROJECT
STA 13+17.04
SAWCUT CLEAN EDGE ON
DAY OF MILLING

COLDMILLING BITUMINOUS PAVEMENT, 3±"
AND BITUMINOUS PAVEMENT
MIXTURE PG64-22, (BP-1), 3" THICK

TRACT NO. 8
300 CLAYMONT DR.
LECLAIRE, RACHEL &
KILLOREN, ROBERT T/E
BK. 23232 PG. 3307

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

MATCH LINE STA. 16+50 SEE SHEET S-2

21MSD-00086

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CITY OF BALLWIN, MISSOURI

SITE PLAN

DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
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Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\SITE PLAN.dwg Tab: S-1 Plotted on: Feb 09, 2021 - 10:29am Plotted by: kwolff

SITE PLAN

25 0 25 50

TRACT NO. 7
9 PARKROSE CT.
RITCHEY, CELIA A.
BK. 11899 PG. 350

TRACT NO. 10
10 PARKROSE CT.
SCHMIDT, BARLOW LYNNE
BK. 16303 PG. 3005
DOC. NO. 200511000077

TRACT NO. 11
11 PARKROSE CT.
COUNTRY GREEN TRUSTEES
BK. 06382 PG. 212

P.I.: 20+45.05

TRACT NO. 12
346 HOLLOWAY RD.
SEFORECK, ROBERT W.
& ANITA L. H/W

TRACT NO. 13
344 HOLLOWAY RD.
ROBB, EARL R.
& ANNA M. H/W

TRACT NO. 14
340 HOLLOWAY RD.
COLLINS, KATHELEEN B.
TRUSTEE
BK. 11589 PG. 2403
DOC. NO. 1998051100435

CONCRETE CURB AND GUTTER
(REMOVE AND REPLACE)

NEW CONCRETE
APPROACH (TYPE 4), 6"

HOLLOWAY RD.
(ASPHALT PAVEMENT)

NEW CURB INLET TOP

PAVEMENT MARKING
4" DOUBLE YELLOW

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

COLDMILLING BITUMINOUS PAVEMENT, 3±"
AND BITUMINOUS PAVEMENT
MIXTURE PG64-22, (BP-1), 3" THICK

MATCH LINE STA. 16+50 SEE SHEET S-1

MATCH LINE STA. 23+50 SEE SHEET S-3

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REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

REVISIONS:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: S-2	

SITE PLAN

SITE PLAN

25 0 25 50

MATCH LINE STA. 23+50 SEE SHEET S-2

MATCH LINE STA. 30+00 SEE SHEET S-4

TRACT NO. 14
340 HOLLOWAY RD.
COLLINS, KATHELEEN B.
TRUSTEE
BK. 11589 PG. 2403
DOC. NO. 1998051100435

TRACT. NO. 15
338 HOLLOWAY RD.
ERHARDT, CRAIG A.
& KATHLEEN L.
TRUSTEES
BK. 18532 PG. 755

TRACT NO. 16
336 HOLLOWAY RD.
DICKEY, BILLY J.
& THERESA S. T/E
BK. 22176 PG. 917

TRACT NO. 17
332 HOLLOWAY RD.
MEEK, RICHARD L.
& LAURA J. H/W
BK. 17413 PG. 1216
DOC. NO. 2007010500318

TRACT NO. 18
328 HOLLOWAY RD.
DELTA NEUTRAL INVESTMENT
& PROPERTY LLC.
BK. 19706 PG. 261

TRACT NO. 19
324 HOLLOWAY RD.
SABACKY, JEROME M.
& JANE L. H/W
BK. 12129 PG. 844
DOC. NO. 19999052600143

TRACT NO. 20
322 HOLLOWAY RD.
STRITZEL, HERBERT J.
& SANDRA L. H/W
BK. 10615 PG. 321

NEW CONCRETE APPROACH (TYPE 4), 6"

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

NEW CONCRETE APPROACH (TYPE 4), 6"

NEW CONCRETE APPROACH (TYPE 4), 6"

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

NEW CONCRETE APPROACH (TYPE 4), 6"

CONCRETE ROLLED CURB AND GUTTER (REMOVE AND REPLACE)

NEW DOUBLE CURB INLET TOP

HOLLOWAY RD.
(ASPHALT PAVEMENT)

24+00 25+00 26+00 27+00 28+00 29+00

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

COLDMILLING BITUMINOUS PAVEMENT, 3±" AND BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1), 3" THICK

TRACT NO. 21
301 ST. ANDREWS CT.
PANDIAN, VEERA & POIGAI H/W
BK. 19509 PG. 2857

21MSD-00086

737 RUDDER ROAD
FENTON, MISSOURI 63026
314-842-4033 (tel.)
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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: S-3

SITE PLAN

SITE PLAN

25 0 25 50

TRACT NO. 20
322 HOLLOWAY RD.
STRITZEL, HERBERT J.
& SANDRA L. H/W
BK. 10615 PG. 321

TRACT NO. 22
320 HOLLOWAY RD.
COLEMAN, BRETT
& SONIA H/W
BK. 20351 PG. 2380

TRACT NO. 23
318 HOLLOWAY RD.
GREGORY, JAMES R.
& KIM L. H/W
BK. 18216 PG. 927

TRACT NO. 24
316 HOLLOWAY RD.
REED, JACQUELINE
BK. 11083 PG. 2121
DOC. NO. 1997022000326

TRACT NO. 25
314 HOLLOWAY RD.
ROBINSON, VIRGINIA D.
BK. 8030 PG. 731

TRACT NO. 26
221 CLEAR MEADOWS DR.
FISHER, KARYL F.
BK. 8051 PG. 1818

TRACT NO. 27
218 CLEAR MEADOWS DR.
KELLY, JOHN H.
BK. 22946 PG. 2237
DOC. NO. 2018032000401

MATCH LINE STA. 30+00 SEE SHEET S-3

MATCH LINE STA. 37+00 SEE SHEET S-5

HOLLOWAY DR.
(ASPHALT PAVEMENT)

CONCRETE ROLLED CURB AND GUTTER (REMOVE AND REPLACE)

NEW CURB INLET TOP

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

CONCRETE SIDEWALK, 4"

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE J1)

NEW CURB INLET TOP

CONCRETE SIDEWALK, 4"

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE A4)

CONCRETE SIDEWALK, 4"

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE A4)

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE J1)

CONCRETE SIDEWALK, 4"

CONCRETE VERTICAL CURB, 6"

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE J1)

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

CONCRETE VERTICAL CURB, 6"

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

NEW DOUBLE CURB INLET TOP

COLDMILLING BITUMINOUS PAVEMENT, 3±" AND BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1), 3" THICK

TRACT NO. 21
301 ST. ANDREWS CT.
PANDIAN, VEERA & POIGAI H/W
BK. 19509 PG. 2857

TRACT NO. 28
300 ST. ANDREWS CT.
RIEMER, MARVIN & NANCY H/W
BK. 11047 PG. 2069
DOC. NO. 1997010700796

TRACT NO. 29
309 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

21MSD-00086

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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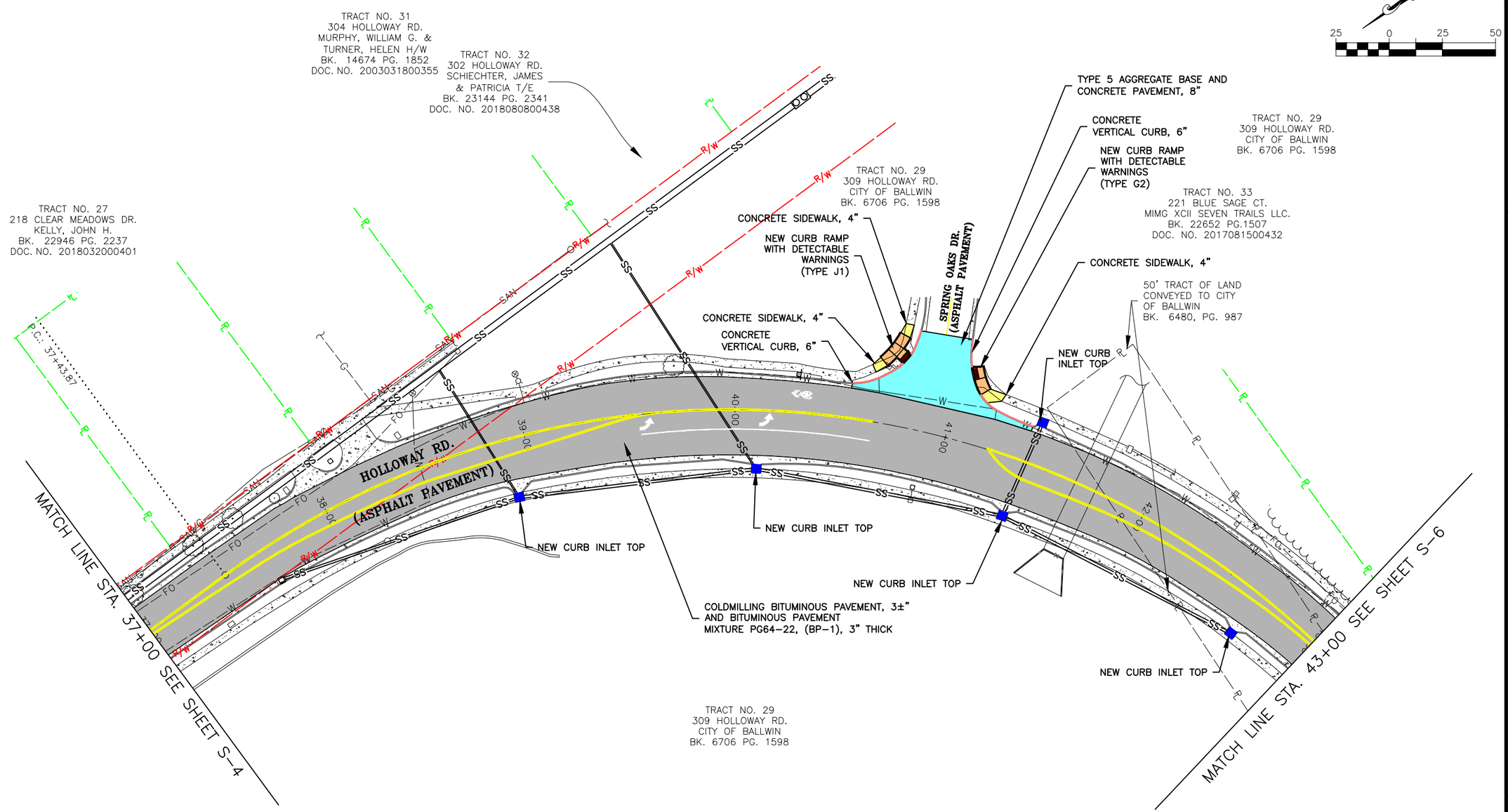
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DATE:	REVISION:
DWN. BY: K.J.W.	APP'D. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: S-4	

SITE PLAN

Drawing name: z:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\SITE PLAN.dwg Tab: S-4 Plotted on: Feb 09, 2021 - 10:29am Plotted by: kwolff

SITE PLAN



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STATE OF MISSOURI
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1/28/21
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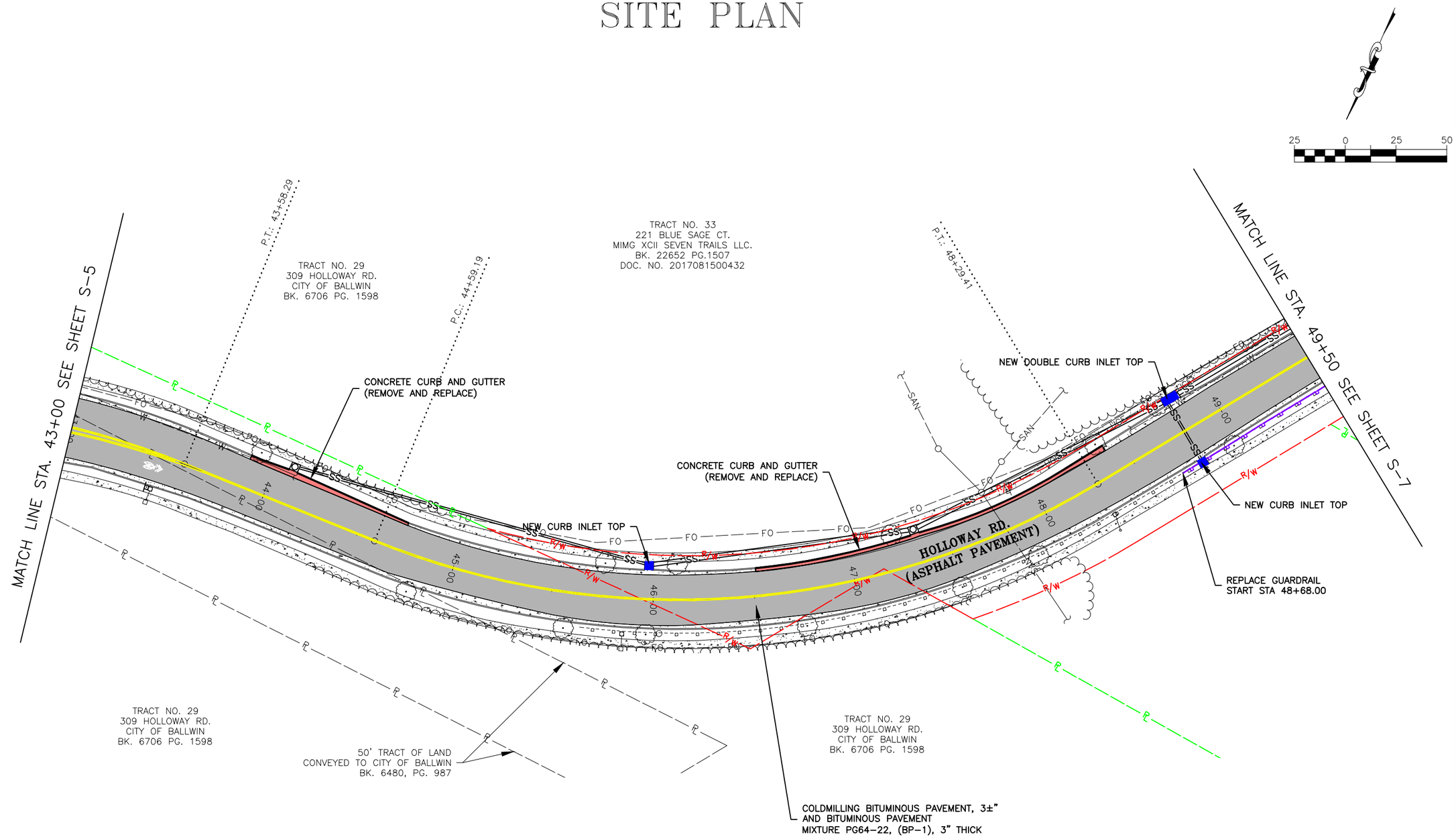
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: S-5	

SITE PLAN

21MSD-00086

SITE PLAN



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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004006859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004006859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

REVISION:	DATE:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: S-6

SITE PLAN

SITE PLAN

25 0 25 50

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC.
BK. 22652 PG.1507
DOC. NO. 2017081500432

TRACT NO. 35
333 HOLLOWAY RIDGE CT
HOLLOWAY RIDGE
CONDOMINIUM ASSOCIATION
BK. 17638 PG. 4084
DOC. NO. 20070801243

TRACT NO. 35
333 HOLLOWAY RIDGE CT
HOLLOWAY RIDGE
CONDOMINIUM ASSOCIATION
BK. 17638 PG. 4084
DOC. NO. 20070801243

MATCH LINE STA. 49+50 SEE SHEET S-6

P.C.: 50+58.85

P.T.: 53+01.97

P.C.: 54+21.63

P.T.: 55+62.16

MATCH LINE STA. 56+00 SEE SHEET S-8

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

NEW DOUBLE CURB INLET TOP

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

NEW DOUBLE CURB INLET TOP

NEW DOUBLE CURB INLET TOP

CONCRETE SIDEWALK, 4"

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE A3)

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE G3)

CONCRETE SIDEWALK, 4"

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

NEW DOUBLE CURB INLET TOP

HOLLOWAY RIDGE CT. (ASPHALT PAVEMENT)

HOLLOWAY RD. (ASPHALT PAVEMENT)

GUARDRAIL REPLACEMENT END STA 49+75.00

TRACT NO. 36
510 WINDSOR MILL DR.
MAY, DAVID ETAL
BK. 23364 PG. 2258
DOC. NO. 2019011800419

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

CONCRETE SIDEWALK, 4"

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE J1)

CONCRETE SIDEWALK, 4"

ESSEX MILL DR. (ASPHALT PAVEMENT)

TRACT NO. 37
248 ESSEX MILL DR.
HOMYK, BARBARA A.
BK. 9117 PG. 1999

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE A3)

CONCRETE SIDEWALK, 4"

CONCRETE CURB AND GUTTER (REMOVE AND REPLACE)

NEW CURB INLET TOP

CONCRETE VERTICAL CURB, 6"

TRACT NO. 38
241 ESSEX MILL DR.
RILEY, TIMOTHY J.
& KATHLEEN H/W

TRACT NO. 39
552 SPRAGUES MILL CT
GAEHLE, ANNA MAY
BK. 11582 PG. 1134
DOC. NO. 1998050500614

CONCRETE VERTICAL CURB, 6"

COLDMILLING BITUMINOUS PAVEMENT, 3±" AND BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1), 3" THICK

TRACT NO. 40
554 SPRAGUES MILL CT.
MOSS, JOHN P. &
ELIZABETH DUCEY T/E

TRACT NO. 41
556 SPRAGUES MILL CT.
MILLER, TIMOTHY P.
BK. 169323 PG. 842
DOC. NO. 2005112201286

21MSD-00086

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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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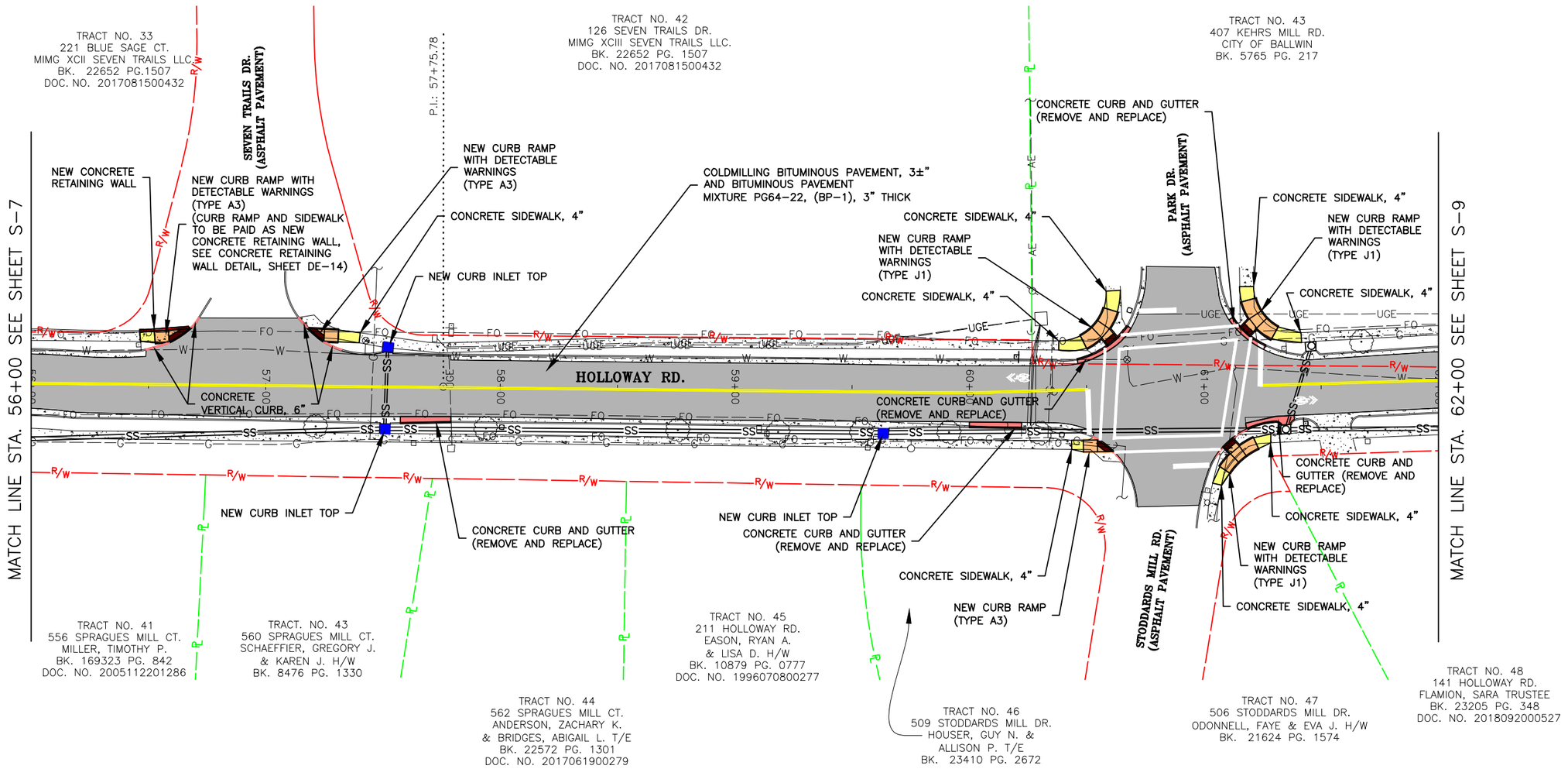
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: S-7	

SITE PLAN

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\SITE PLAN.dwg Tab: S-7 Plotted on: Feb 09, 2021 - 10:29am Plotted by: kwolff

SITE PLAN



25 0 25 50

21MSD-00086

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STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER 2004000859
PROFESSIONAL ENGINEER

1/28/21

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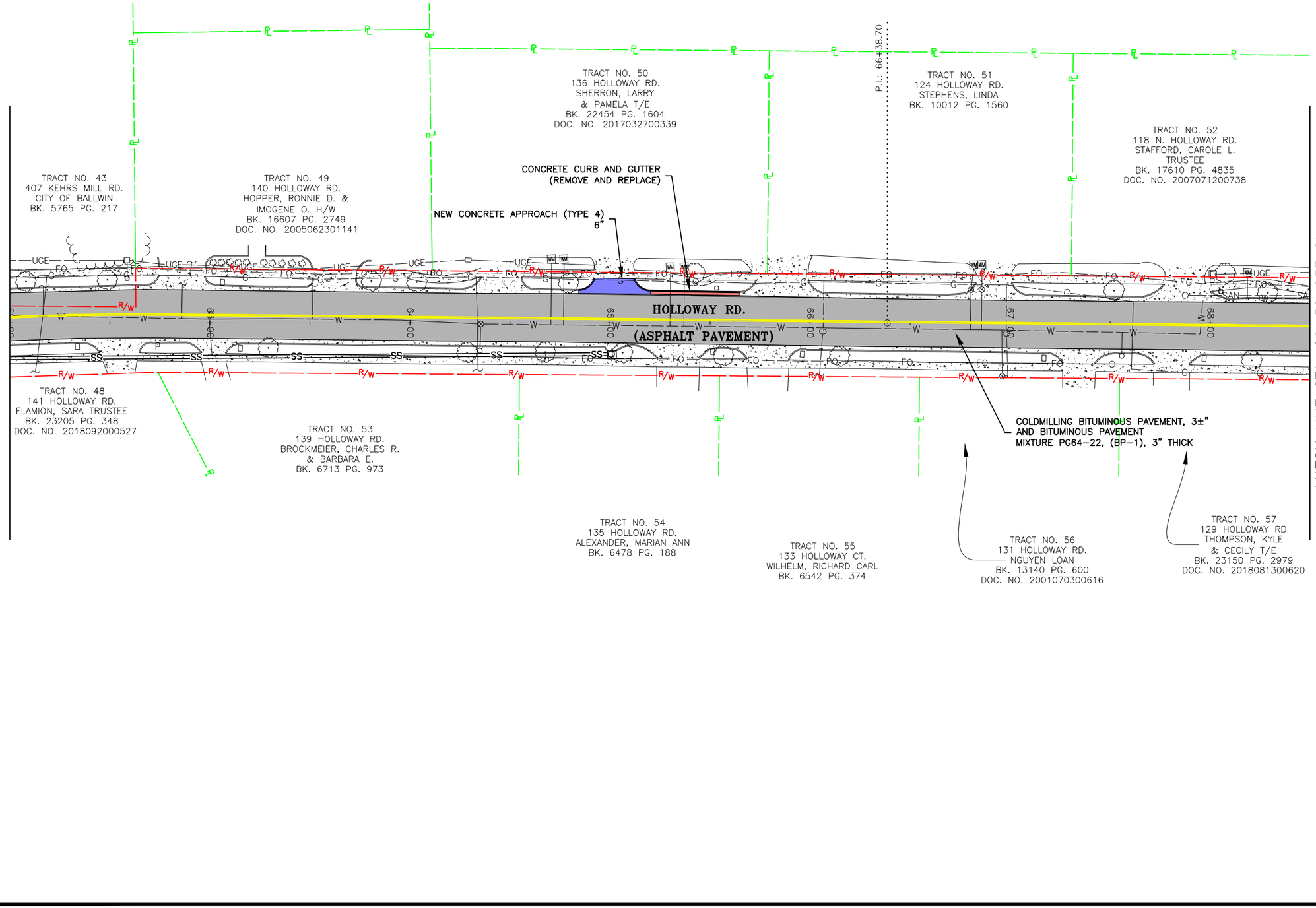
CITY OF BALLWIN, MISSOURI

REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE:	JANUARY 2021
SCALE:	1" = 50'
PROJ. NO:	SC19-981
DWG. NO:	S-8

SITE PLAN

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\SITE PLAN.dwg Tab: S-8 Plotted on: Feb 09, 2021 - 10:29am Plotted by: kwolff

SITE PLAN



21MSD-00086

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KEVIN J. WOLFF
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SITE PLAN

REVISION:	DATE:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *S-9*

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\SITE PLAN.dwg Tab: S-9 Plotted on: Feb 09, 2021 - 10:29am Plotted by: kwolff

SITE PLAN

25 0 25 50

TRACT NO. 52
118 N. HOLLOWAY RD.
STAFFORD, CAROLE L.
TRUSTEE
BK. 17610 PG. 4835
DOC. NO. 2007071200738

TRACT NO. 58
315 KEHRS MILL BEND CT.
WU, CHIH YANG
BK. 9745 PG. 2277

TRACT NO. 59
308 KEHRS MILL BEND CT.
CARR, JANET S.
BK. 14783 PG. 223
DOC. NO. 2003041801772

NORTH LINE OF 30'W DEDICATION STRIP TO CITY OF BALLWIN PER KEHRS MILL CROSSING CONDOMINIUM PLAT.

KEHRS MILL CROSSING (ASPHALT PAVEMENT)

TRACT NO. 60
112 HOLLOWAY RD.
HIP PROPERTIES LLC
BK. 21568 PG. 1081

TRACT NO. 61
100 HOLLOWAY RD.
MUDDY RIVER L C
BK. 17756 PG. 4426
DOC. NO. 2007123101062

MATCH LINE STA. 68+50 SEE SHEET S-9

MATCH LINE STA. 75+00 SEE SHEET S-11

NEW CURB AND GUTTER (REMOVE AND REPLACE)

HOLLOWAY RD. (ASPHALT PAVEMENT)

HOLLOWAY RD. (ASPHALT PAVEMENT)

FOUND 1/2" IRON ROD W/ CAP (ADOPT)

FOUND 1/2" IRON PIPE (ADOPT)

ROW EXCEPTION TO CITY OF BALLWIN BK. 6783, PG. 2303

FOUND 1/2" IRON PIPE (ADOPT)

KEHRS MILL RD. (ASPHALT PAVEMENT)

COLDMILLING BITUMINOUS PAVEMENT, 3±" AND BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1), 3" THICK

NEW CURB AND GUTTER (REMOVE AND REPLACE)

TRACT NO. 62
127 HOLLOWAY RD.
BARNETT, WILLIAM E.
BK. 7946 PG. 228

TRACT NO. 57
129 HOLLOWAY RD
THOMPSON, KYLE
& CECILY T/E
BK. 23150 PG. 2979
DOC. NO. 2018081300620

TRACT NO. 63
505 KEHRS MILL RD.
JENNINGS, JOHN R. ETAL
BK. 17098 PG. 343
DOC. NO. 200632000819

TRACT NO. 64
15025 MANCHESTER RD.
TARGET STORES CORP.
T 0026 PROPERTY TAX DEPT. TPN
BK. 6448 PG. 228

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CITY OF BALLWIN, MISSOURI

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DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: S-10	

SITE PLAN

21MSD-00086

SITE PLAN

25 0 25 50

MATCH LINE STA. 75+00 SEE SHEET S-10

EAST RIGHT-OF-WAY OF HOLLOWAY ROAD PER HOLLOWAY CENTER P.B. 195, PG. 8

TRACT NO. 61
100 HOLLOWAY RD.
MUDDY RIVER L C
BK. 17756 PG. 4426
DOC. NO. 2007123101062

NORTH LINE OF ROW CONVEYED TO CITY OF BALLWIN PER BK. 11246, PG. 1842

TRACT NO. 65
14949 MANCHESTER RD.
T C M REALTY 2 LLC
BK. 16423 PG. 89
DOC. NO. 2005031801212

W. ORCHARD DR. (ASPHALT PAVEMENT)

HOLLOWAY RD. (ASPHALT PAVEMENT)

MANCHESTER ROAD (ASPHALT PAVEMENT)

EP: 80+85.42

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE C2)

NEW CURB AND GUTTER (REMOVE AND REPLACE)

NEW INLET TOP

THREE (3) SURFACE-MOUNT DELINEATORS

CONCRETE SIDEWALK, 4"

DOWELED ON 6" CONCRETE ISLAND PER MODOT STANDARD DETAIL 608.30A

THREE (3) SURFACE-MOUNT DELINEATORS

END OF PROJECT STA 80+71.11

CONCRETE SIDEWALK, 4"

NEW CURB AND GUTTER (REMOVE AND REPLACE)

NEW CURB RAMP WITH DETECTABLE WARNINGS (TYPE G3)

COLDMILLING BITUMINOUS PAVEMENT, 3±" AND BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1), 3" THICK

TYPE 5 AGGREGATE BASE, 6" AND CONCRETE PAVEMENT, 10"

NEW CURB AND GUTTER (REMOVE AND REPLACE)

TRACT NO. 64
15025 MANCHESTER RD.
TARGET STORES CORP.
T 0026 PROPERTY TAX DEPT. TPN
BK. 6448 PG. 228

TRACT NO.66
15001 MANCHESTER RD.
FIDELITY ASSOCIATES L L LP
BK. 13911 PG. 53
DOC. NO. 2002061700596

21MSD-00086

737 RUDDER ROAD
FENTON, MISSOURI 63026
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314-842-5957 (fax)
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Water Resources
General Consulting

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

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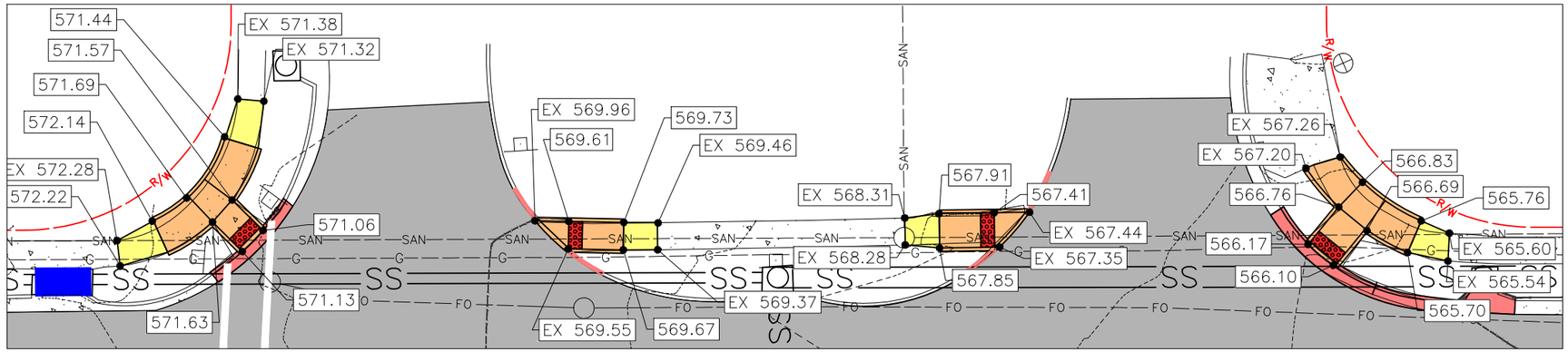
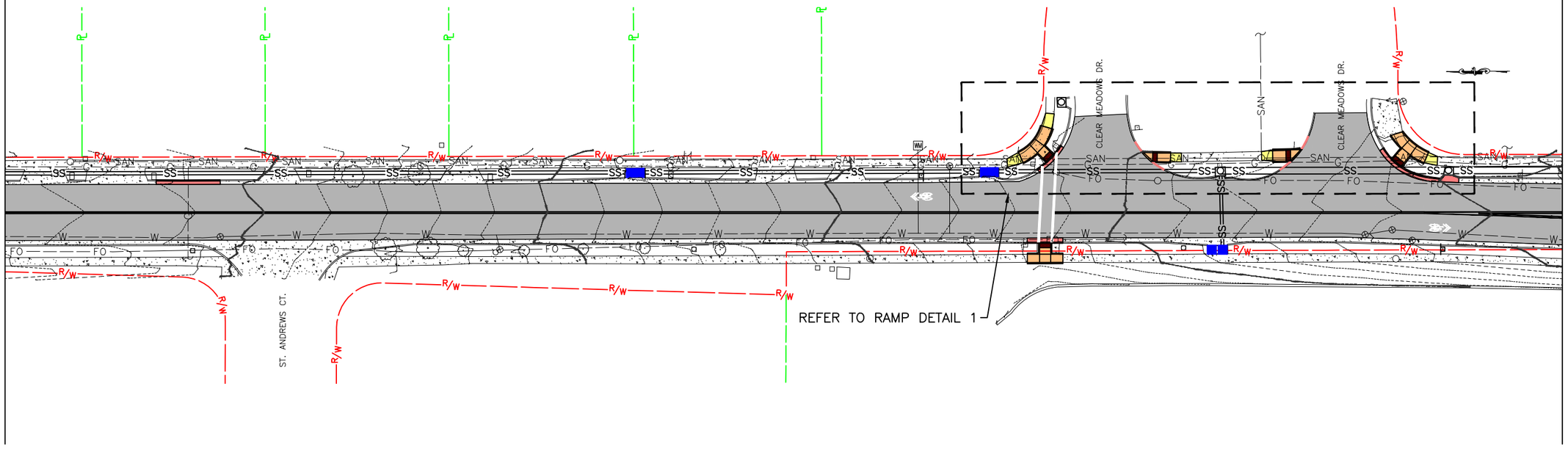
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DATE:	REVISION:
DWN. BY: K.J.W.	APP'D. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: S-11	

SITE PLAN



ENLARGED RAMP DETAIL 1
1"=20'



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CITY OF BALLWIN, MISSOURI

GRADING PLAN

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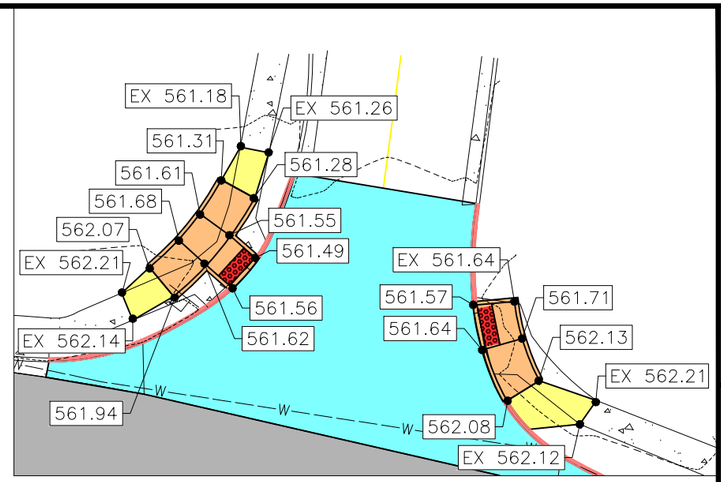
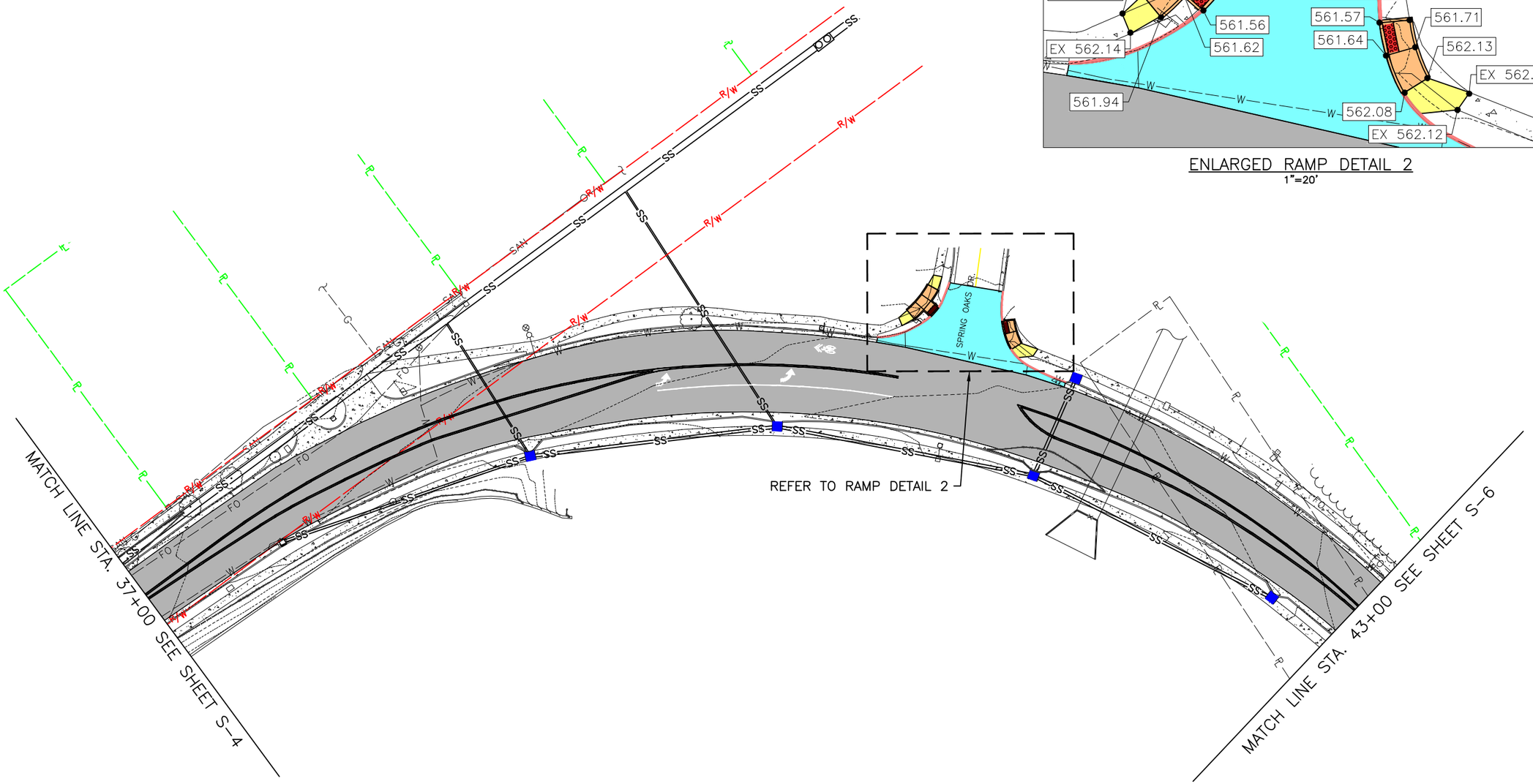
DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 20'
PROJ. NO: SC19-981
DWG. NO: *C-1*

21MSD-00086



ENLARGED RAMP DETAIL 2
1"=20'



21MSD-00086

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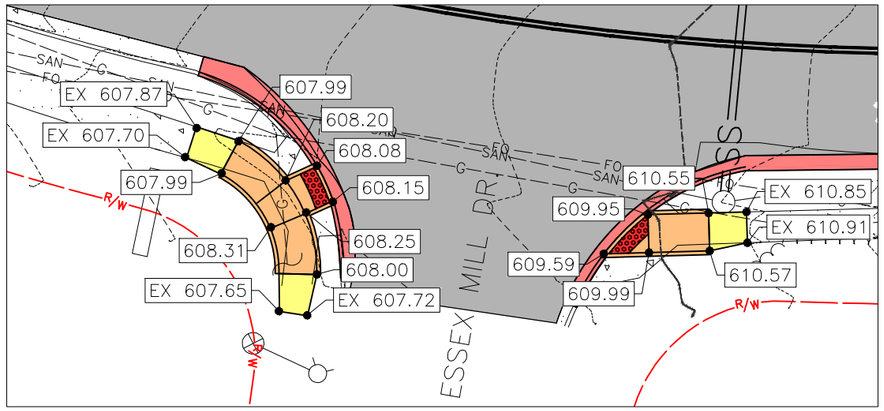
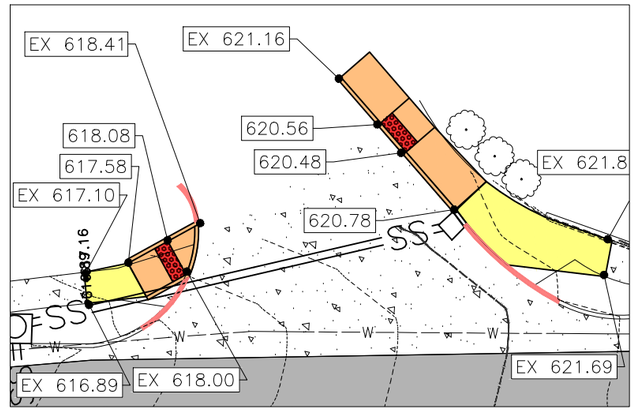
K.J.W.	M.D.S.

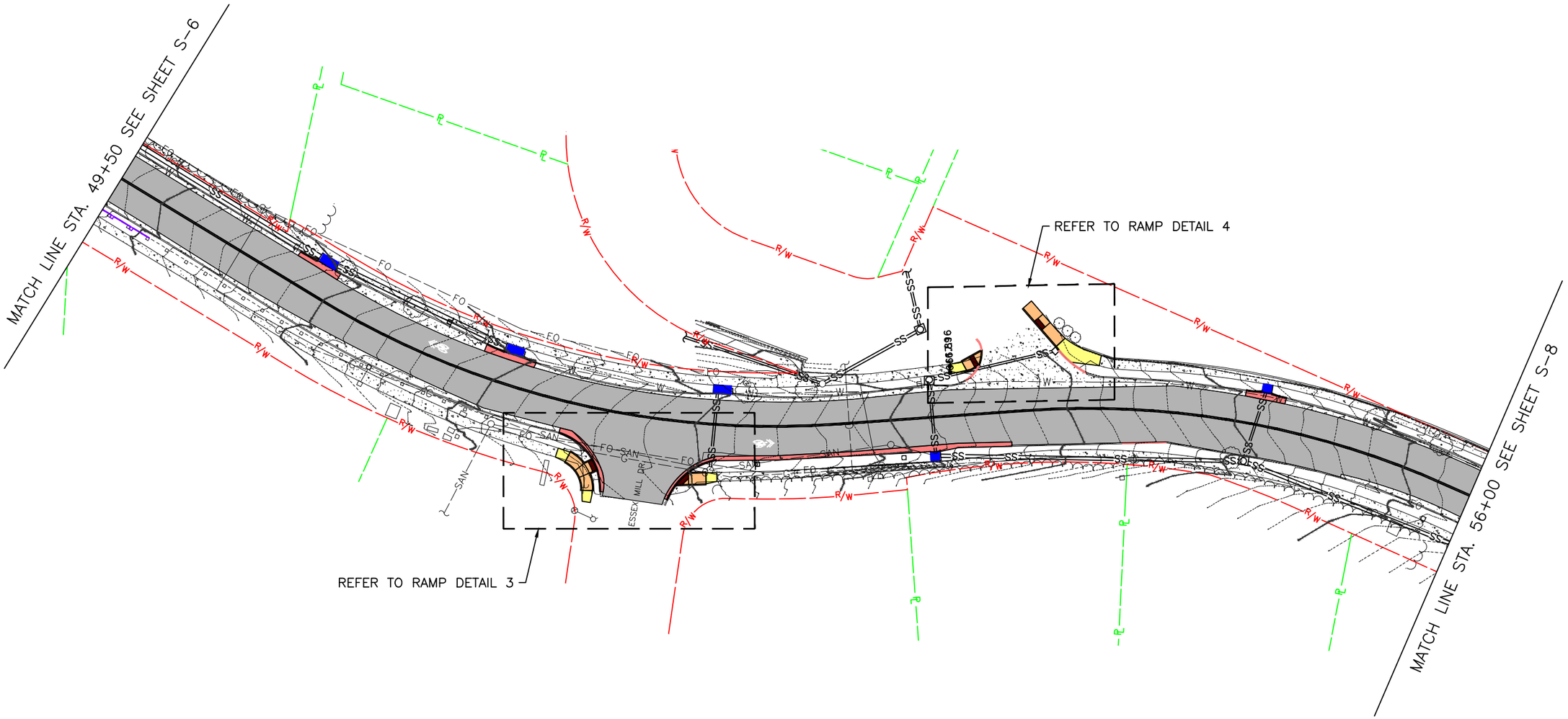
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *C-2*



ENLARGED RAMP DETAIL 3
1"=20'



ENLARGED RAMP DETAIL 4
1"=20'



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CITY OF BALLWIN, MISSOURI

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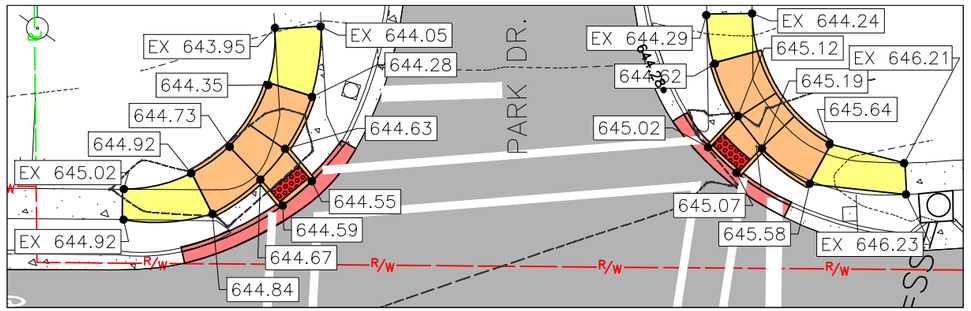
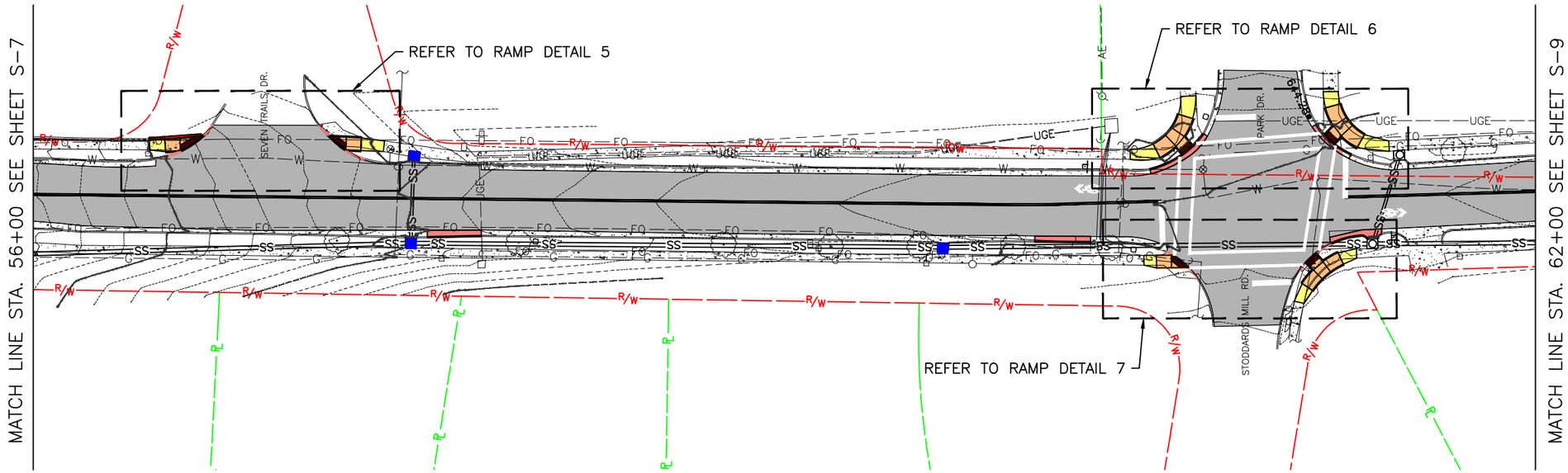
DATE: JANUARY 2021	
SCALE: 1" = 20'	
PROJ. NO: SC19-981	
DWG. NO: C-3	

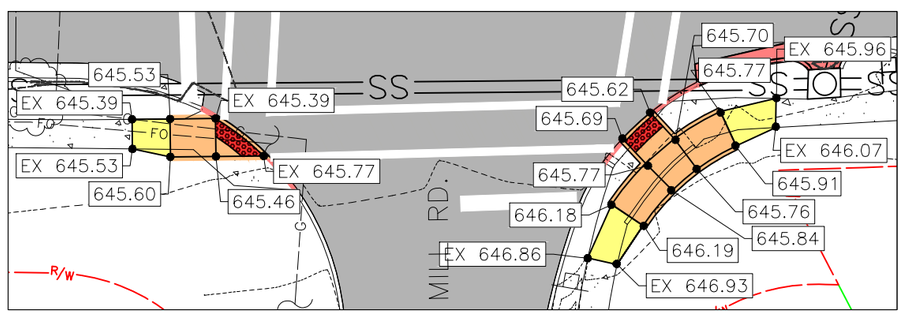
21MSD-00086

ENLARGED RAMP DETAIL 5
1"=20'



ENLARGED RAMP DETAIL 6
1"=20'





ENLARGED RAMP DETAIL 7
1"=20'

21MSD-00086

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CITY OF BALLWIN, MISSOURI

GRADING PLAN

REVISION:	DATE:

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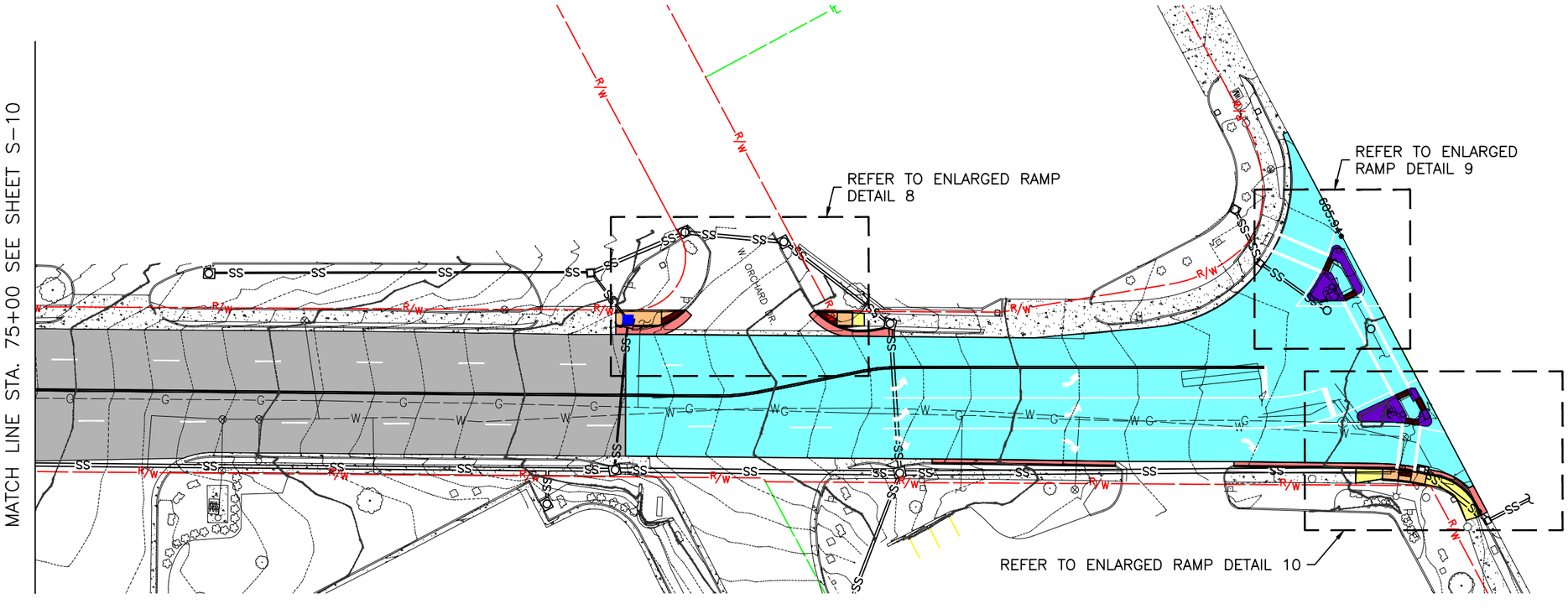
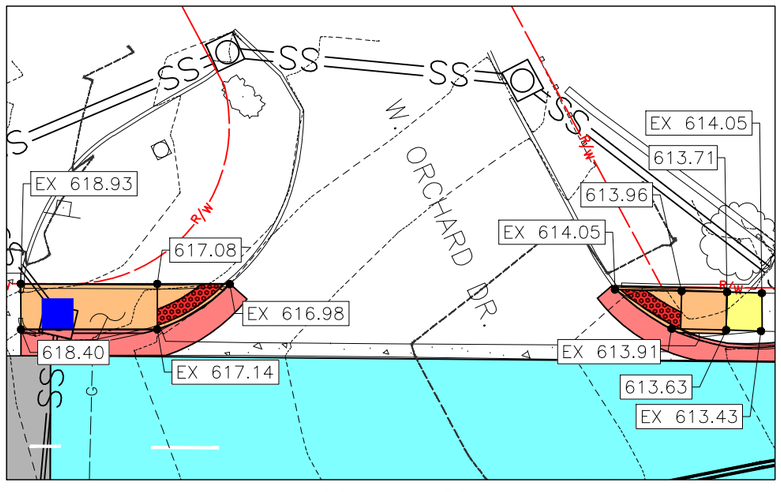
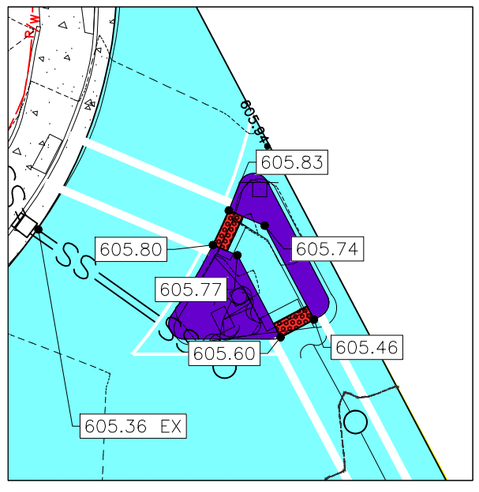
DATE: JANUARY 2021
SCALE: 1" = 20'
PROJ. NO: SC19-981
DWG. NO: C-4

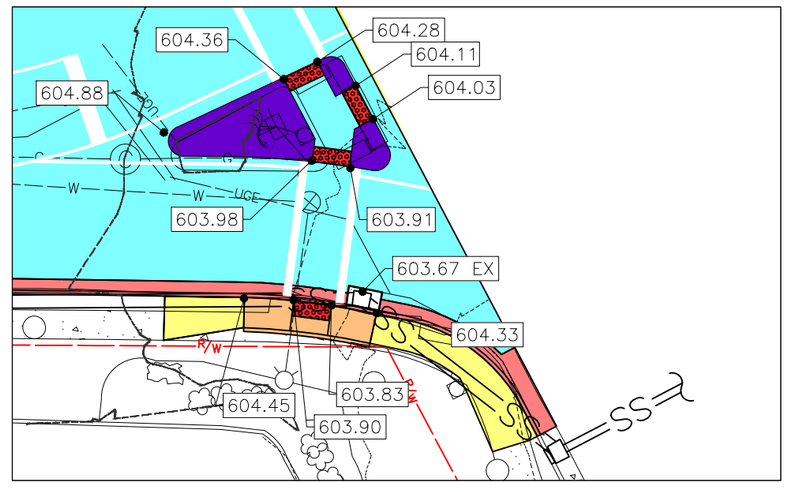




ENLARGED RAMP DETAIL 8
1"=20'



ENLARGED RAMP DETAIL 9
1"=20'



ENLARGED RAMP DETAIL 10
1"=20'

21MSD-00086

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CITY OF BALLWIN, MISSOURI

GRADING PLAN

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DATE: JANUARY 2021	
SCALE: 1" = 20'	
PROJ. NO: SC19-981	
DWG. NO: C-5	

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

TRACT. NO 1
246 CEDAR TRAIL DR.
SIMMONS, MARY L.
BK. 8488 PG. 1034

TRACT NO. 2
244 CEDAR TRAIL DR.
KATZ, JANET
BK. 18926 PG. 2788

TRACT NO. 3
242 CEDAR TRAIL DR.
KORVAS, ROBERT G.
& MARGARET K. H/W
BK. 17531 PG. 3400

TRACT NO. 4
6 PARKROSE CT.
THE DILLON FAMILY, TRUST
BK. 20660 PG. 1506

TRACT NO. 5
7 PARKROSE CT.
HAUN, DANIEL & LORI H/W
BK. 17760 PG. 3498

TRACT NO. 6
8 PARKROSE CT.
SCHNEIDER, JOAN
LIVING TRUST
BK. 21261 PG. 503

TRACT NO. 7
9 PARKROSE CT.
RITCHEY, CELIA A.
BK. 11899 PG. 350

BAXTER RD.
(ASPHALT PAVEMENT)

BAXTER RD.
(ASPHALT PAVEMENT)

HOLLOWAY RD.
(ASPHALT PAVEMENT)

BP: 10+00.00

10+00.00

11+00

12+00

13+00

14+10

15+00

16+00

11 FT

11 FT

12 FT

12 FT

PAVEMENT MARKING
LEFT TURN ARROW, WHITE
STATION 13+90

PAVEMENT MARKING
LEFT TURN ARROW, WHITE
STATION 14+32

PAVEMENT
MARKING, 4"
WHITE

PAVEMENT MARKING
4" DOUBLE YELLOW

BEGIN PAVEMENT MARKING
STATION 13+17.11. MATCH
EXISTING PAVEMENT MARKING
BEYOND PROJECT

STATION 14+35

STATION 15+08

TRACT NO. 8
300 CLAYMONT DR.
LECLAIRE, RACHEL &
KILLOREN, ROBERT T/E
BK. 23232 PG. 3307

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

MATCH LINE STA. 16+50 SEE SHEET PM-2

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

DATE:	REVISION:

DWN. BY: K.J.W. | APPD. BY: M.D.S.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-1*

21MSD-00086

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\PAVEMENT MARKING AND SIGNAGE PLAN.dwg Tab: PM-1 Plotted on: Feb 09, 2021 - 10:31am Plotted by: kwolff

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

TRACT NO. 7
9 PARKROSE CT.
RITCHEY, CELIA A.
BK. 11899 PG. 350

TRACT NO. 10
10 PARKROSE CT.
SCHMIDT, BARLOW LYNNE
BK. 16303 PG. 3005
DOC. NO. 200511000077

TRACT NO. 11
11 PARKROSE CT.
COUNTRY GREEN TRUSTEES
BK. 06382 PG. 212

P.I.: 20+45.05

TRACT NO. 12
346 HOLLOWAY RD.
SEFORECK, ROBERT W.
& ANITA L. H/W

TRACT NO. 13
344 HOLLOWAY RD.
ROBB, EARL R.
& ANNA M. H/W

TRACT NO. 14
340 HOLLOWAY RD.
COLLINS, KATHELEEN B.
TRUSTEE
BK. 11589 PG. 2403
DOC. NO. 1998051100435

MATCH LINE STA. 16+50 SEE SHEET PM-1

MATCH LINE STA. 23+50 SEE SHEET PM-3

HOLLOWAY RD.
(ASPHALT PAVEMENT)

12 FT
12 FT

17+00 18+00 19+00 20+00 21+00 22+00 23+00

SAN SAN SAN SAN SAN SAN SAN

R/W R/W R/W R/W R/W R/W R/W R/W R/W

PAVEMENT MARKING
4" DOUBLE YELLOW

STATION 16+70

PAVEMENT MARKING
SHARED LANE SYMBOL

SHARE THE ROAD
W11-1
W16-1
STA. 21+00

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

21MSD-00086

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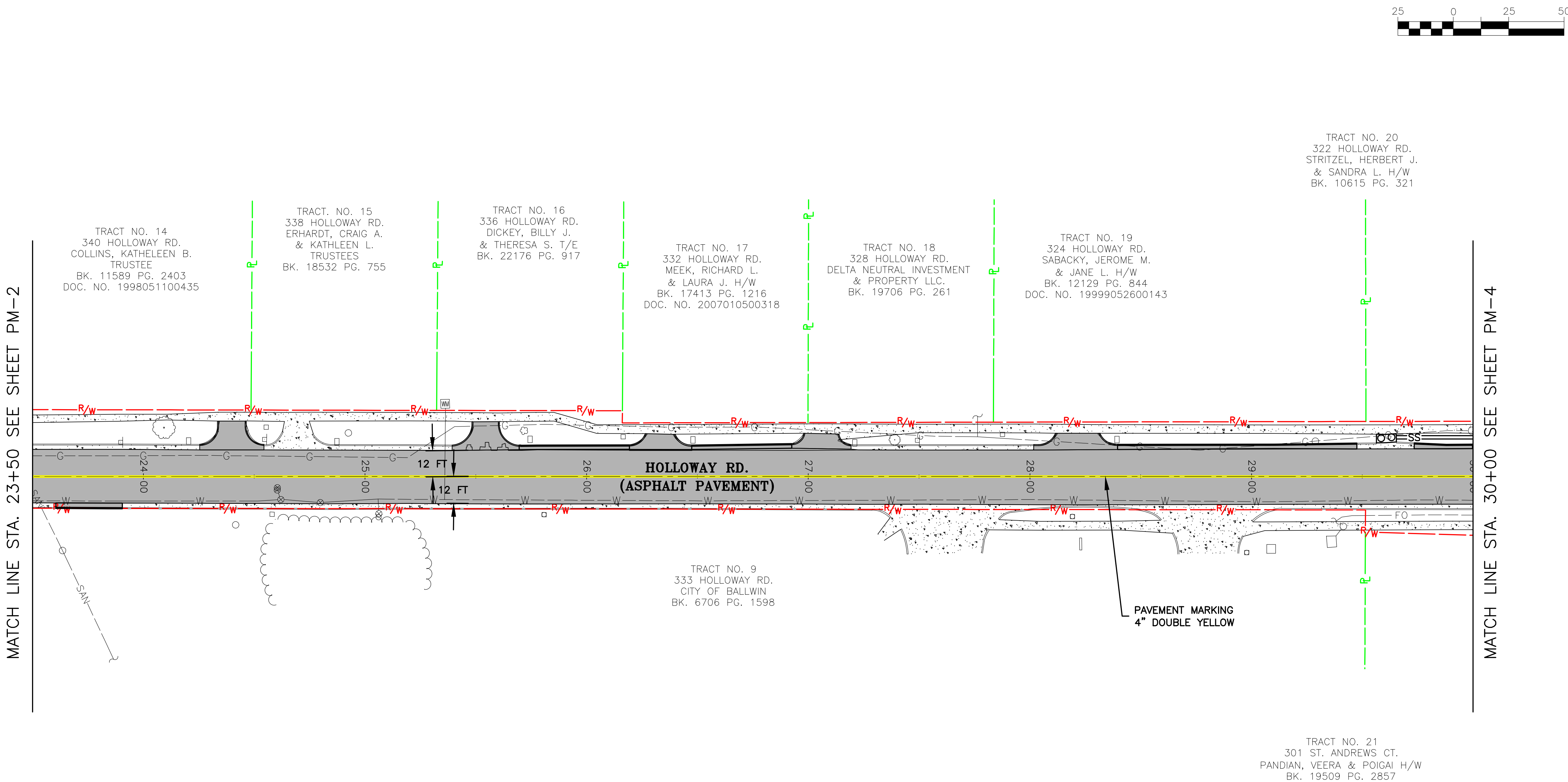
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-2*

PAVEMENT MARKING AND SIGNAGE



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DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19–981	
DWG. NO: PM-3	

21MSD-00086

Drawing name: J:\SC19–981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\PAVEMENT MARKING AND SIGNAGE PLAN.dwg Tab: PM–3 Plotted on: Feb 09, 2021 – 10:31am Plotted by: kwolff

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

MATCH LINE STA. 30+00 SEE SHEET PM-3

MATCH LINE STA. 37+00 SEE SHEET PM-5

TRACT NO. 20
322 HOLLOWAY RD.
STRITZEL, HERBERT J.
& SANDRA L. H/W
BK. 10615 PG. 321

TRACT NO. 22
320 HOLLOWAY RD.
COLEMAN, BRETT
& SONIA H/W
BK. 20351 PG. 2380

TRACT NO. 23
318 HOLLOWAY RD.
GREGORY, JAMES R.
& KIM L. H/W
BK. 18216 PG. 927

TRACT NO. 24
316 HOLLOWAY RD.
REED, JACQUELINE
BK. 11083 PG. 2121
DOC. NO. 1997022000326

TRACT NO. 25
314 HOLLOWAY RD.
ROBINSON, VIRGINIA D.
BK. 8030 PG. 731

TRACT NO. 26
221 CLEAR MEADOWS DR.
FISHER, KARYL F.
BK. 8051 PG. 1818

TRACT NO. 27
218 CLEAR MEADOWS DR.
KELLY, JOHN H.
BK. 22946 PG. 2237
DOC. NO. 2018032000401

SHARE THE ROAD
W11-1
W16-1
STA. 34+10

STATION 36+38

12 FT
12 FT

HOLLOWAY DR.
(ASPHALT PAVEMENT)

PAVEMENT MARKING,
12" WHITE (CROSSWALK
STRIPING)

PAVEMENT MARKING
SHARED LANE SYMBOL

PAVEMENT MARKING
4" DOUBLE YELLOW

SHARE THE ROAD
W11-1
W16-1
STA. 36+45

PAVEMENT MARKING
SHARED LANE SYMBOL

TRACT NO. 21
301 ST. ANDREWS CT.
PANDIAN, VEERA & POIGAI H/W
BK. 19509 PG. 2857

TRACT NO. 28
300 ST. ANDREWS CT.
RIEMER, MARVIN & NANCY H/W
BK. 11047 PG. 2069
DOC. NO. 1997010700796

TRACT NO. 29
309 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

21MSD-00086

737 RUDDER ROAD
FENTON, MISSOURI 63026
314-842-4033 (tel.)
314-842-5957 (fax)
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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

DATE:	REVISION:

DWN. BY: K.J.W. | APP'D. BY: M.D.S.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-4*

Drawing name: z:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\PAVEMENT MARKING AND SIGNAGE PLAN.dwg Tab: PM-4 Plotted on: Feb 09, 2021 - 10:31am Plotted by: kwolff

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

TRACT NO. 31
304 HOLLOWAY RD.
MURPHY, WILLIAM G. &
TURNER, HELEN H/W
BK. 14674 PG. 1852
DOC. NO. 2003031800355

TRACT NO. 32
302 HOLLOWAY RD.
SCHIECHTER, JAMES
& PATRICIA T/E
BK. 23144 PG. 2341
DOC. NO. 2018080800438

TRACT NO. 27
218 CLEAR MEADOWS DR.
KELLY, JOHN H.
BK. 22946 PG. 2237
DOC. NO. 2018032000401

TRACT NO. 29
309 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

TRACT NO. 29
309 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC.
BK. 22652 PG.1507
DOC. NO. 2017081500432

50' TRACT OF LAND
CONVEYED TO CITY
OF BALLWIN
BK. 6480, PG. 987

SHARE THE ROAD
W11-1
W16-1
STA. 40+25

PAVEMENT MARKING
LEFT TURN
ARROW, WHITE
STATION 40+15

PAVEMENT MARKING
SHARED LANE SYMBOL

PAVEMENT
MARKING, 4"
WHITE

SPRING OAKS DR.
(ASPHALT PAVEMENT)

HOLLOWAY RD.
(ASPHALT PAVEMENT)

12 FT
12 FT
12 FT

40'-00

39'-00

41'-00

42'-0

STATION 40+65

PAVEMENT MARKING
LEFT TURN ARROW, WHITE
STATION 39+57

STATION 39+55

STATION 41+20

PAVEMENT MARKING
4" DOUBLE YELLOW

PAVEMENT MARKING
4" DOUBLE YELLOW

P.C. 37+43.87

MATCH LINE STA. 37+00 SEE SHEET PM-4

MATCH LINE STA. 43+00 SEE SHEET PM-6

TRACT NO. 29
309 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

21MSD-00086

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DBA COCHRAN

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

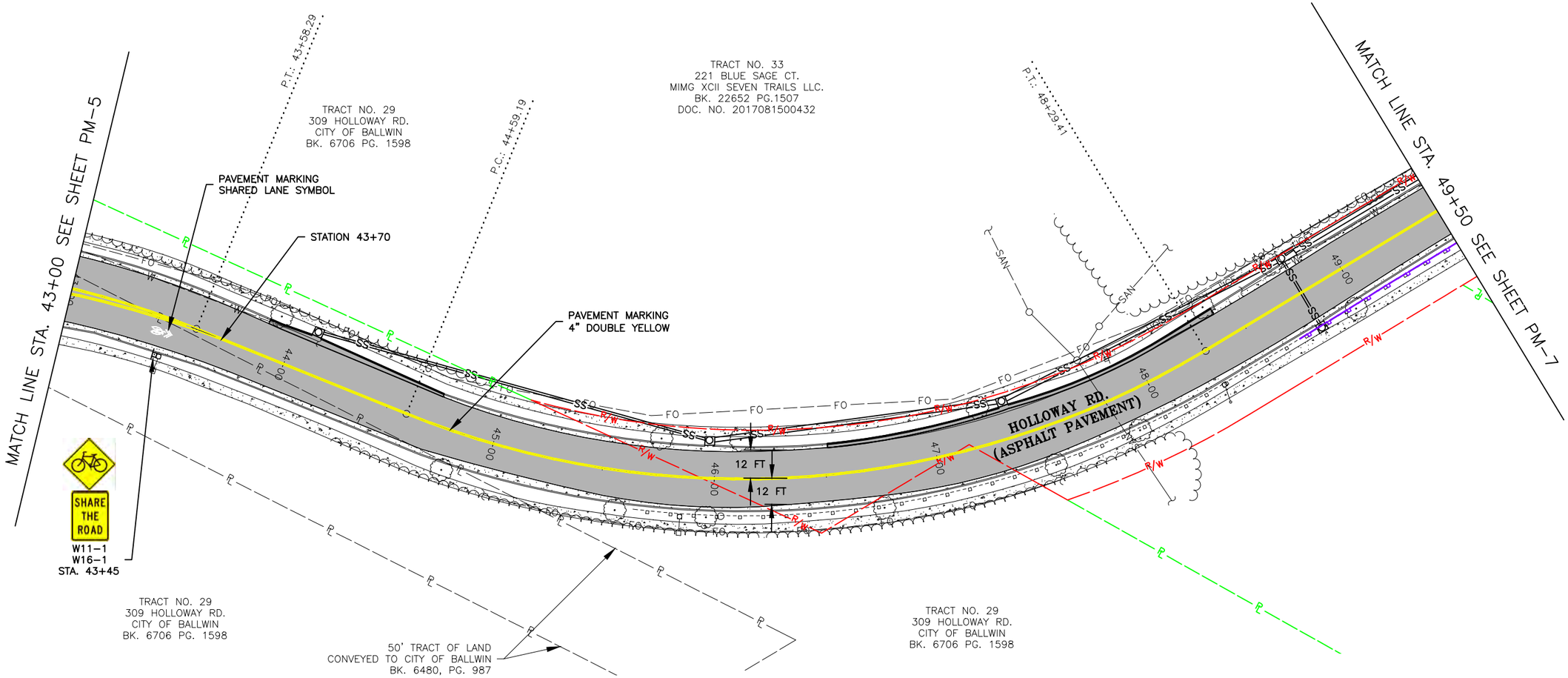
DATE:	REVISION:

DWN. BY:	APP'D. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-5*

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\PAVEMENT MARKING AND SIGNAGE PLAN.dwg Tab: PM-5 Plotted on: Feb 09, 2021 - 10:31am Plotted by: kwolff

PAVEMENT MARKING AND SIGNAGE



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FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-6*

21MSD-00086

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

MATCH LINE STA. 49+50 SEE SHEET PM-6

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC.
BK. 22652 PG.1507
DOC. NO. 2017081500432

TRACT NO. 35
333 HOLLOWAY RIDGE CT
HOLLOWAY RIDGE
CONDOMINIUM ASSOCIATION
BK. 17638 PG. 4084
DOC. NO. 20070801243

TRACT NO. 35
333 HOLLOWAY RIDGE CT
HOLLOWAY RIDGE
CONDOMINIUM ASSOCIATION
BK. 17638 PG. 4084
DOC. NO. 20070801243

P.C.: 50+58.85

P.T.: 53+01.97

P.C.: 54+21.63

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC.
BK. 22652 PG.1507
DOC. NO. 2017081500432

P.T.: 55+62.16

PAVEMENT MARKING
SHARED LANE SYMBOL

SHARE THE ROAD
W11-1
W16-1
STA. 51+10

PAVEMENT MARKING
SHARED LANE SYMBOL

HOLLOWAY RIDGE CT.
(ASPHALT PAVEMENT)

CONCRETE CURB AND GUTTER
(REMOVE AND REPLACE)

NEW DOUBLE CURB INLET TOP

HOLLOWAY RD.
(ASPHALT PAVEMENT)

12 FT

12 FT

PAVEMENT MARKING
4" DOUBLE YELLOW

TRACT NO. 36
510 WINDSOR MILL DR.
MAY, DAVID ETAL
BK. 23364 PG. 2258
DOC. NO. 2019011800419

ESSEX MILL DR.
(ASPHALT PAVEMENT)

TRACT NO. 37
248 ESSEX MILL DR.
HOMYK, BARBARA A.
BK. 9117 PG. 1999

SHARE THE ROAD
W11-1
W16-1
STA. 52+65

TRACT NO. 38
241 ESSEX MILL DR.
RILEY, TIMOTHY J.
& KATHLEEN H/W

TRACT NO. 39
552 SPRAGUES MILL CT
GAEHLE, ANNA MAY
BK. 11582 PG. 1134
DOC. NO. 1998050500614

TRACT NO. 40
554 SPRAGUES MILL CT.
MOSS, JOHN P. &
ELIZABETH DUCEY T/E

TRACT NO. 41
556 SPRAGUES MILL CT.
MILLER, TIMOTHY P.
BK. 169323 PG. 842
DOC. NO. 2005112201286

MATCH LINE STA. 56+00 SEE SHEET PM-8

21MSD-00086

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

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FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-7*

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\PAVEMENT MARKING AND SIGNAGE PLAN.dwg Tab: PM-7 Plotted on: Feb 09, 2021 - 10:31am Plotted by: kwolff

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC
BK. 22652 PG.1507
DOC. NO. 2017081500432

SEVEN TRAILS DR.
(ASPHALT PAVEMENT)

P.I.: 57+75.78

TRACT NO. 42
126 SEVEN TRAILS DR.
MIMG XCIII SEVEN TRAILS LLC.
BK. 22652 PG. 1507
DOC. NO. 2017081500432

SHARE THE ROAD
W11-1
W16-1
STA. 60+15

TRACT NO. 43
407 KEHRS MILL RD.
CITY OF BALLWIN
BK. 5765 PG. 217

PAVEMENT MARKING,
24" WHITE (STOP BAR)

PARK DR.
(ASPHALT PAVEMENT)

PAVEMENT MARKING,
12" WHITE (CROSSWALK
STRIPING)

PAVEMENT MARKING
SHARED LANE SYMBOL

PAVEMENT MARKING
SHARED LANE SYMBOL

MATCH LINE STA. 56+00 SEE SHEET PM-7

12 FT
12 FT
HOLLOWAY RD.

57+00
58+00
59+00
60+00
61+00

MATCH LINE STA. 62+00 SEE SHEET PM-9

PAVEMENT MARKING
4" DOUBLE YELLOW

STODDARDS MILL RD.
(ASPHALT PAVEMENT)

SHARE THE ROAD
W11-1
W16-1
STA. 61+45

PAVEMENT MARKING,
24" WHITE (STOP BAR)

TRACT NO. 41
556 SPRAGUES MILL CT.
MILLER, TIMOTHY P.
BK. 169323 PG. 842
DOC. NO. 2005112201286

TRACT. NO. 43
560 SPRAGUES MILL CT.
SCHAEFFIER, GREGORY J.
& KAREN J. H/W
BK. 8476 PG. 1330

TRACT NO. 44
562 SPRAGUES MILL CT.
ANDERSON, ZACHARY K.
& BRIDGES, ABIGAIL L. T/E
BK. 22572 PG. 1301
DOC. NO. 2017061900279

TRACT NO. 45
211 HOLLOWAY RD.
EASON, RYAN A.
& LISA D. H/W
BK. 10879 PG. 0777
DOC. NO. 1996070800277

TRACT NO. 46
509 STODDARDS MILL DR.
HOUSER, GUY N. &
ALLISON P. T/E
BK. 23410 PG. 2672

TRACT NO. 47
506 STODDARDS MILL DR.
ODONNELL, FAYE & EVA J. H/W
BK. 21624 PG. 1574

TRACT NO. 48
141 HOLLOWAY RD.
FLAMION, SARA TRUSTEE
BK. 23205 PG. 348
DOC. NO. 2018092000527

21MSD-00086

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

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PROFESSIONAL ENGINEER

1/28/21
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STATE OF MISSOURI
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DBA COCHRAN

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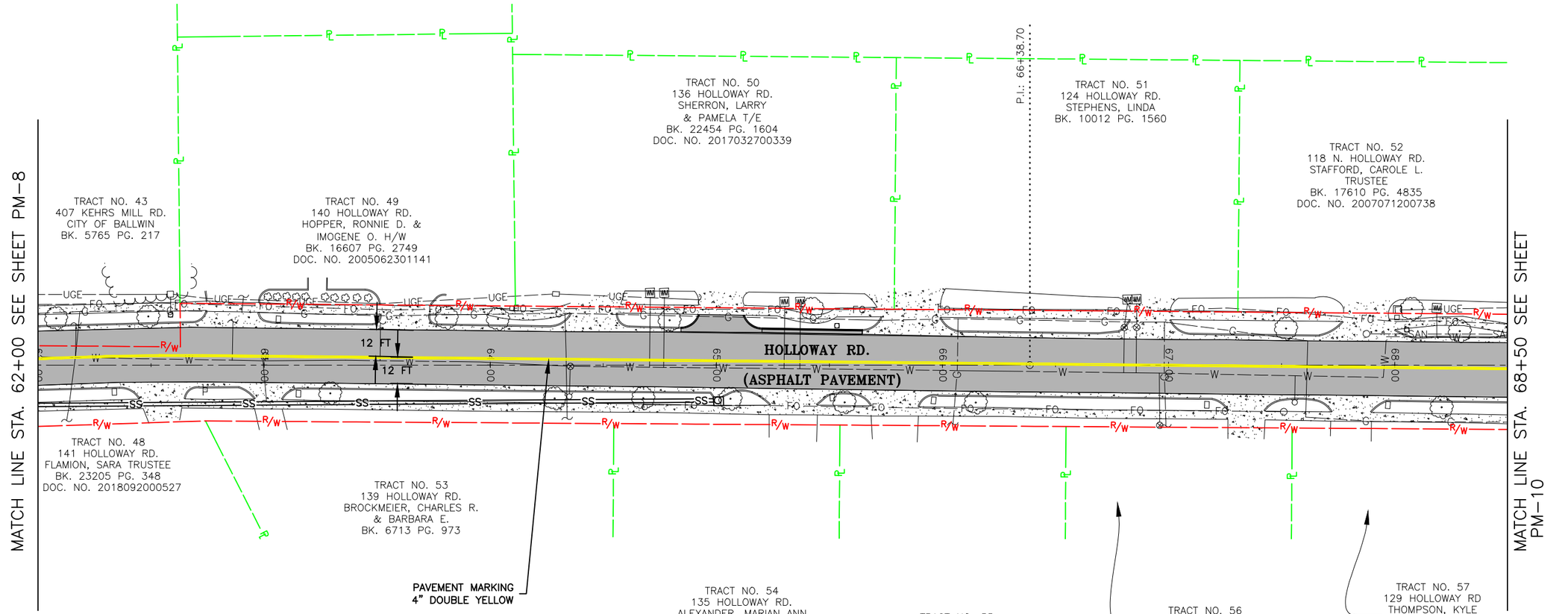
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

DATE:	REVISION:

DWN. BY: K.J.W. | APPD. BY: M.D.S.
DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-8*

PAVEMENT MARKING AND SIGNAGE



25 0 25 50

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

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CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

DATE:	REVISION:

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K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-9*

21MSD-00086

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

MATCH LINE STA. 68+50 SEE SHEET PM-9

MATCH LINE STA. 75+00 SEE SHEET PM-11

TRACT NO. 52
118 N. HOLLOWAY RD.
STAFFORD, CAROLE L.
TRUSTEE
BK. 17610 PG. 4835
DOC. NO. 2007071200738

SHARE THE ROAD
W11-1
W16-1
STA. 69+40

TRACT NO. 58
315 KEHRS MILL BEND CT.
WU, CHIH YANG
BK. 9745 PG. 2277

TRACT NO. 59
308 KEHRS MILL BEND CT.
CARR, JANET S.
BK. 14783 PG. 223
DOC. NO. 2003041801772

NORTH LINE OF 30'W DEDICATION STRIP TO CITY OF BALLWIN PER KEHRS MILL CROSSING CONDOMINIUM PLAT.

KEHRS MILL CROSSING (ASPHALT PAVEMENT)

TRACT NO. 60
112 HOLLOWAY RD.
HIP PROPERTIES LLC
BK. 21568 PG. 1081

TRACT NO. 61
100 HOLLOWAY RD.
MUDDY RIVER L C
BK. 17756 PG. 4426
DOC. NO. 2007123101062

HOLLOWAY RD.
(ASPHALT PAVEMENT)

PAVEMENT MARKING
4" DOUBLE YELLOW

PAVEMENT MARKING
THROUGH ARROW, WHITE

PAVEMENT MARKING
SHARED LANE SYMBOL

STATION 40+65

PAVEMENT MARKING
LEFT TURN ARROW, WHITE
STATION 70+67 AND 70+80

PAVEMENT MARKING
THROUGH ARROW, WHITE

PAVEMENT MARKING,
12" WHITE (CROSSWALK
STRIPING)

PAVEMENT MARKING
LEFT TURN ARROW, WHITE

PAVEMENT MARKING
THROUGH ARROW, WHITE
STATION 73+25

PAVEMENT
MARKING, 4"
WHITE

PAVEMENT MARKING
LEFT TURN ARROW, WHITE
STATION 73+95

PAVEMENT MARKING
THROUGH ARROW, WHITE

PAVEMENT MARKING
LEFT TURN ARROW, WHITE
STATION 74+70

PAVEMENT MARKING
THROUGH ARROW, WHITE

12 FT
11 FT
11 FT
11 FT

FOUND 1/2" IRON ROD
W/ CAP (ADOPT)

STATION 69+38

ROW EXCEPTION TO
CITY OF BALLWIN
BK. 6783, PG. 2303

PAVEMENT
MARKING, 4"
WHITE

PAVEMENT MARKING
TURN AND THROUGH
ARROW, WHITE

FOUND 1/2" IRON
PIPE (ADOPT)

KEHRS MILL RD.
(ASPHALT PAVEMENT)

COLDMILLING BITUMINOUS PAVEMENT, 3±"
AND BITUMINOUS PAVEMENT
MIXTURE PG64-22, (BP-1), 3" THICK

PAVEMENT MARKING, 4"
WHITE, INTERMITTENT
(10' STIPE, 30' GAP)

PAVEMENT MARKING,
24" WHITE (STOP BAR)

TRACT NO. 62
127 HOLLOWAY RD.
BARNETT, WILLIAM E.
BK. 7946 PG. 228

TRACT NO. 57
129 HOLLOWAY RD
THOMPSON, KYLE
& CECILY T/E
BK. 23150 PG. 2979
DOC. NO. 2018081300620

TRACT NO. 63
505 KEHRS MILL RD.
JENNINGS, JOHN R. ETAL
BK. 17098 PG. 343
DOC. NO. 200632000819

TRACT NO. 64
15025 MANCHESTER RD.
TARGET STORES CORP.
T 0026 PROPERTY TAX DEPT. TPN
BK. 6448 PG. 228

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-10*

21MSD-00086

PAVEMENT MARKING AND SIGNAGE

25 0 25 50

EAST RIGHT-OF-WAY OF HOLLOWAY ROAD PER HOLLOWAY CENTER P.B. 195, PG. 8

TRACT NO. 61
100 HOLLOWAY RD.
MUDDY RIVER L C
BK. 17756 PG. 4426
DOC. NO. 2007123101062

NORTH LINE OF ROW CONVEYED TO CITY OF BALLWIN PER BK. 11246, PG. 1842

TRACT NO. 65
14949 MANCHESTER RD.
T C M REALTY 2 LLC
BK. 16423 PG. 89
DOC. NO. 2005031801212

MATCH LINE STA. 75+00 SEE SHEET PM-10

PAVEMENT MARKING
4" DOUBLE YELLOW

HOLLOWAY RD.
(ASPHALT PAVEMENT)

W. ORCHARD DR.
(ASPHALT PAVEMENT)

PAVEMENT MARKING
LEFT TURN ARROW, WHITE
STATION 78+45 AND 79+08

STATION 78+45

PAVEMENT MARKING,
12" WHITE (CROSSWALK
STRIPING)

MANCHESTER ROAD
(ASPHALT PAVEMENT)

PAVEMENT MARKING, 4"
WHITE

EP: 80+85.42

PAVEMENT MARKING, 4"
WHITE, INTERMITTENT
(10' STRIPE, 30' GAP)

TRACT NO. 64
15025 MANCHESTER RD.
TARGET STORES CORP.
T 0026 PROPERTY TAX DEPT. TPN
BK. 6448 PG. 228

STATION 79+65

PAVEMENT MARKING
RIGHT TURN ARROW, WHITE
STATION 78+45

PAVEMENT
MARKING, 4"
WHITE

PAVEMENT MARKING
RIGHT TURN ARROW, WHITE
STATION 79+08

PAVEMENT MARKING,
24" WHITE (STOP BAR)
STATION 79+88 AND 80+07

PAVEMENT MARKING
RIGHT TURN ARROW, WHITE
STATION 79+72

TRACT NO.66
15001 MANCHESTER RD.
FIDELITY ASSOCIATES L L LP
BK. 13911 PG. 53
DOC. NO. 2002061700596

21MSD-00086

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CITY OF BALLWIN, MISSOURI

PAVEMENT MARKING AND SIGNAGE

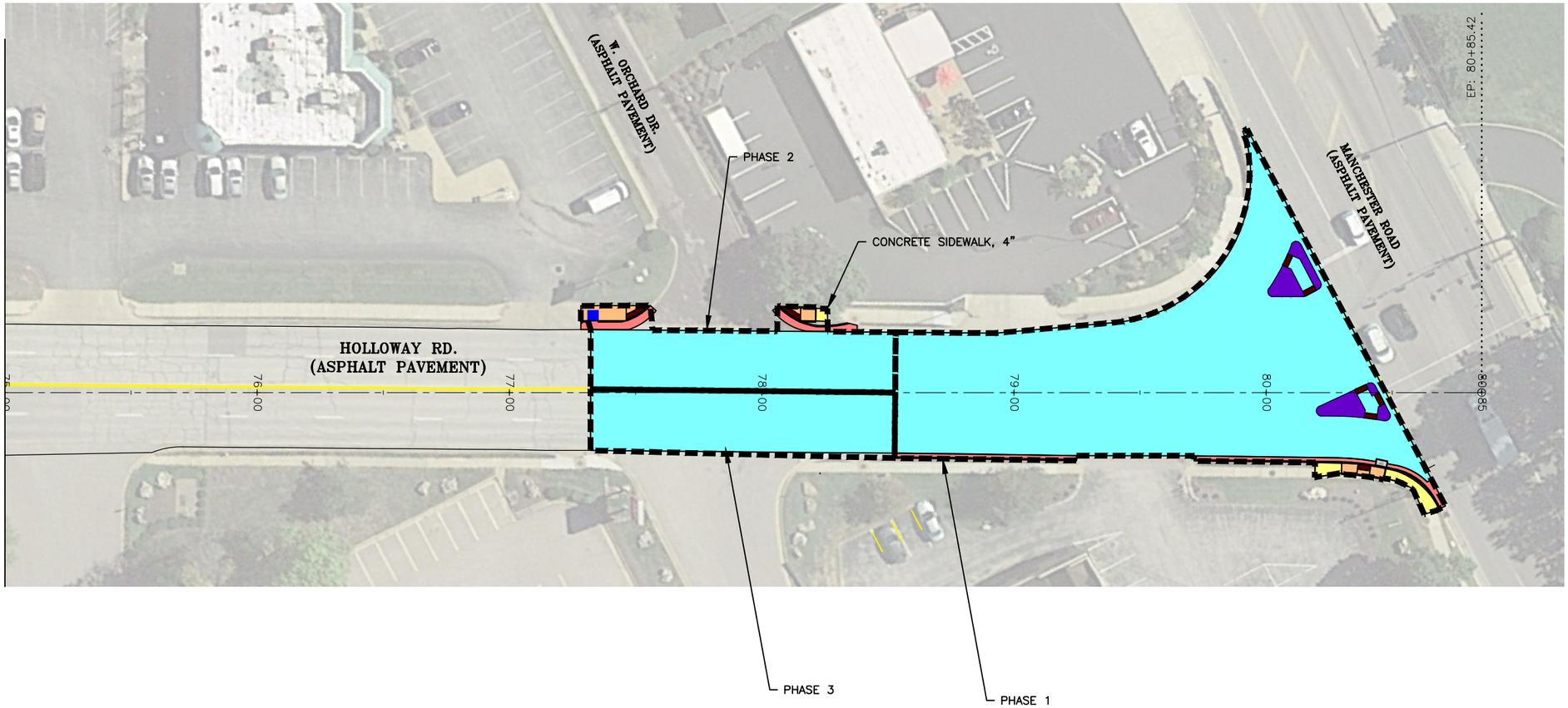
DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *PM-11*

PAVEMENT PHASING PLAN

25 0 25 50



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314-842-5957 (fax)
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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

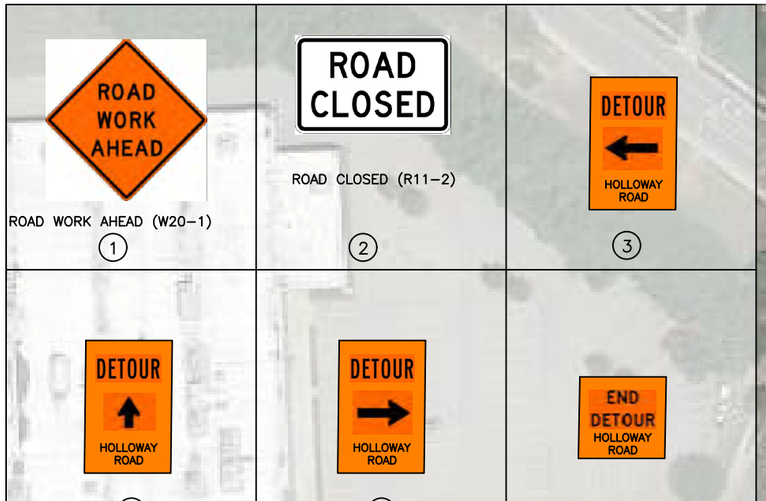
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

PAVEMENT PHASING PLAN

DATE: / REVISION:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE:	JANUARY 2021
SCALE:	1" = 50'
PROJ. NO:	SC19-981
DWG. NO:	*PH-1*

21MSD-00086

TRAFFIC CONTROL – PHASE 1



PHASE 1 NOTES:

1. CONTRACTOR WILL BE PERMITTED TO CLOSE HOLLOWAY ENTIRELY WITHIN THE PHASE 1 LIMITS FOR A MAXIMUM OF 10 DAYS.
2. CONTRACTOR WILL COORDINATE CLOSURE WITH MODOT AND THE CITY OF BALLWIN.
3. CONTRACTOR WILL COVER ANY TURN ARROWS AND PEDESTRIAN SIGNALS DURING CLOSURE.
4. SIGNAGE WILL BE AS SHOWN UNLESS PERMITTED OTHERWISE BY MODOT.
5. CONTRACTOR WILL BE PERMITTED TO CONSTRUCT PHASE 2 AND PHASE 3 AS PART OF PHASE 1 PROVIDED THERE IS NO INCREASE TO THE MAXIMUM NUMBER OF DAYS THE INTERSECTION IS CLOSED (10 DAYS) AND ADDITIONAL TYPE III BARRICADES ARE PLACED TO CLOSE W. ORCHARD AND THE SOUTHERN TARGET ENTRANCE.

21MSD-00086

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

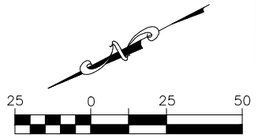
TRAFFIC CONTROL - PHASE 1

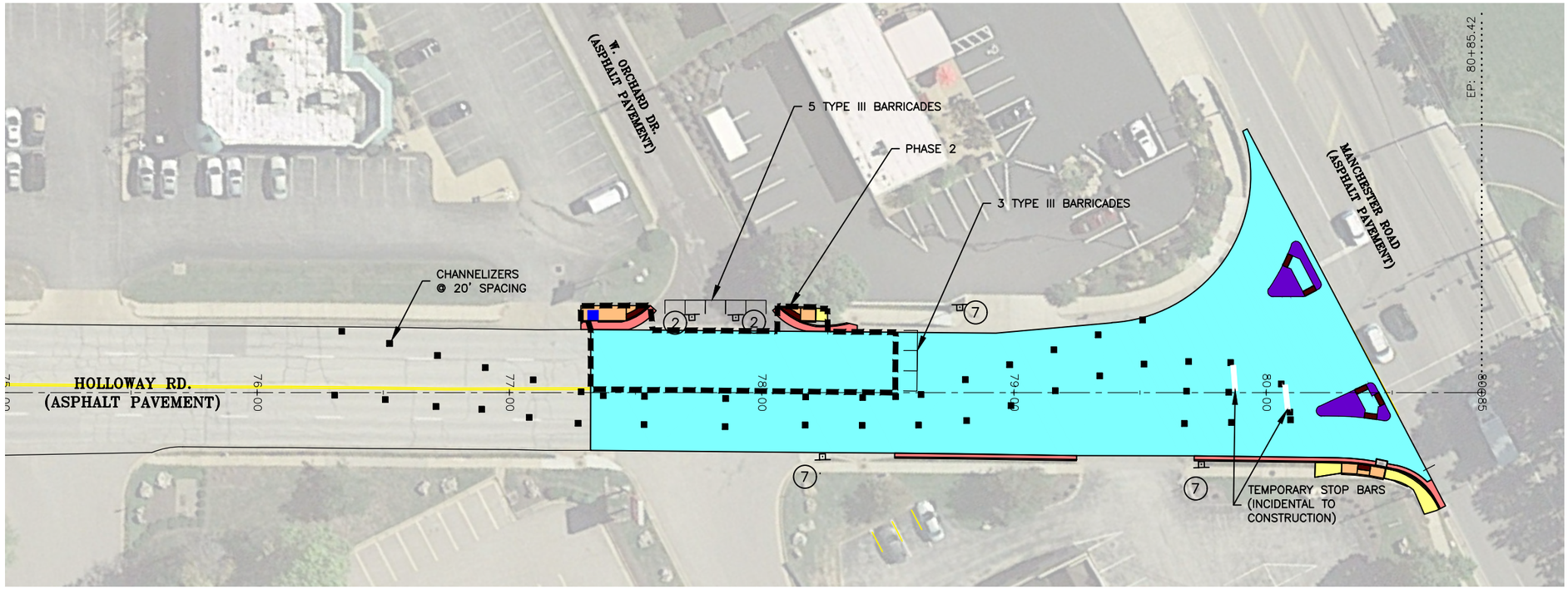
REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE:	JANUARY 2021
SCALE:	1" = 100'
PROJ. NO:	SC19-981
DWG. NO:	TC-1

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\PHASING PLAN.dwg Tab: TC-1 Plotted on: Feb 09, 2021 – 10:31am Plotted by: kwolff

TRAFFIC CONTROL – PHASE 2

 ROAD CLOSED (R11–2) (2)	 NO LEFT TURN (R3–2) (7)





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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

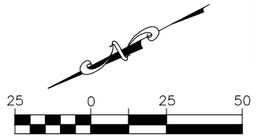
TRAFFIC CONTROL - PHASE 2

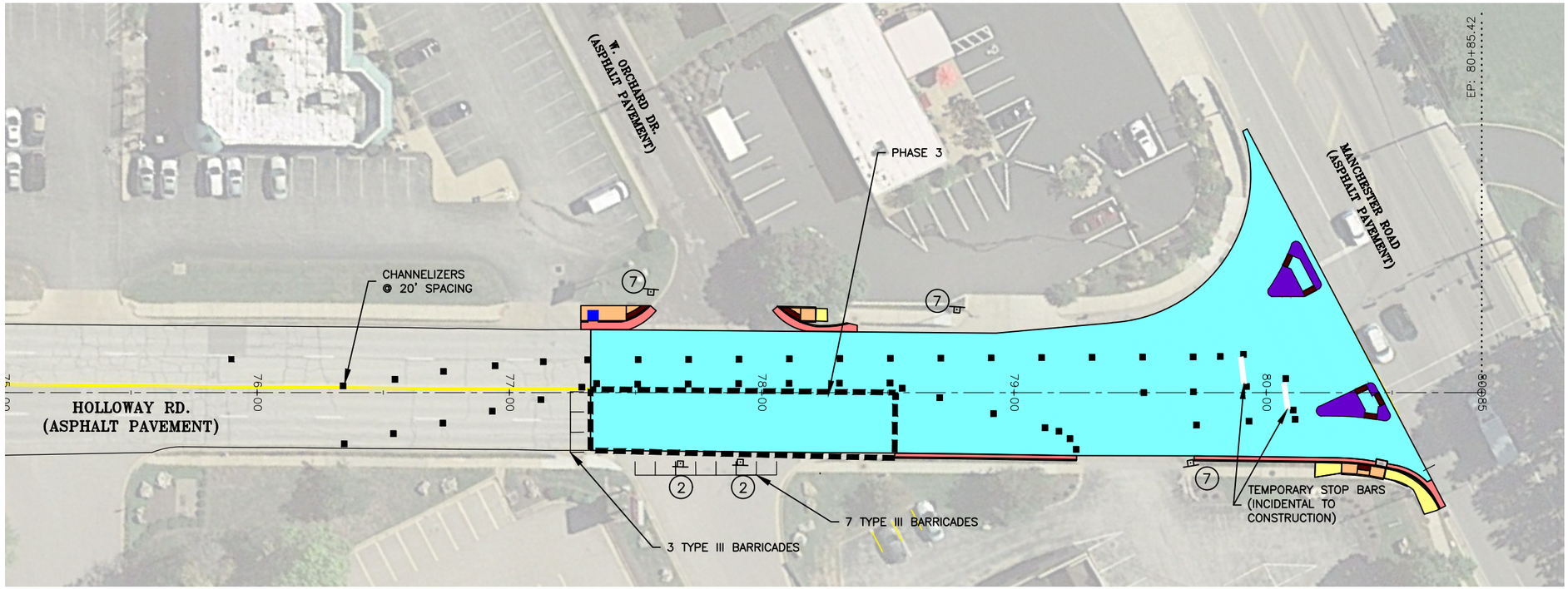
DATE:	
REVISION:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19–981	
DWG. NO: *TC-2*	

21MSD-00086

TRAFFIC CONTROL – PHASE 3

 ROAD CLOSED (R11–2) (2)	 NO LEFT TURN (R3–2) (7)





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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TRAFFIC CONTROL - PHASE 3

DATE:	
REVISION:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19–981	
DWG. NO: *TC-3*	

21MSD-00086

TRAFFIC CONTROL DETAILS

www.invarion.com

616.8.6 (TA-6) SHOULDER WORK WITH MINOR ENCROACHMENT ON DIVIDED AND UNDIVIDED HIGHWAYS - DE/CM

SPEED	SIGN SPACING (ft.)		TAPER LENGTH (ft.)		OPTIONAL	CHANNELIZER SPACING (ft.)	
Normal Posted (mph)	Undivided (S)	Divided (S)	Shoulder (1) (T1)	Lane (2) (T2)	BUFFER LENGTH (ft.) (B)	Tapers	Buffer/ Work Areas
0-35	200	200	70	245	280	35	40
40-45	350	500	150	540	400	40	80
50-55	500	1000	185	660	560	50	80
60-70	1000	SA - 1000 SB - 1500 SC - 2640	235	840	840	60	120

1 Shoulder taper length based on 10 ft. (standard shoulder width) offset. 2. Lane taper length based on 12 ft. (standard lane width) offset.

NOTES:

PROVIDE SIGNS ON LEFT AND RIGHT SIDES OF DIVIDED HIGHWAYS

ROAD WORK AHEAD SIGN NOT NEEDED IF SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITIY AREA WHERE ANOTHER ROAD WORK AHEAD SIGN IS ALREADY USED.

SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.

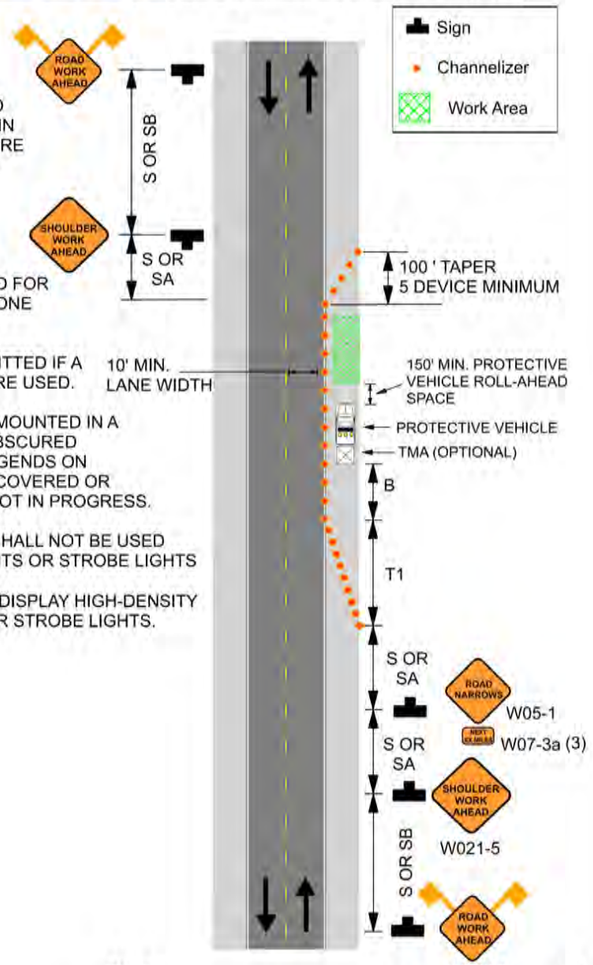
(3) NEXT XX MILES SIGN NOT REQUIRED FOR NARROW LANE SECTIONS LESS THAN ONE MILE.

THE PROTECTIVE VEHICLE MAY BE OMITTED IF A TAPER AND CHANNELIZING DEVICES ARE USED.

VEHICLE - MOUNTED SIGNS SHALL BE MOUNTED IN A MANNER SUCH THAT THEY ARE NOT OBSCURED BY EQUIPMENT OR SUPPLIES. SIGN LEGENDS ON VEHICLE - MOUNTED SIGNS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.

VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF VEHICLE'S ROTATING LIGHTS OR STROBE LIGHTS

SHADOW AND WORK VEHICLES SHALL DISPLAY HIGH-DENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.



TA - 6

1/16

www.invarion.com

616.8.10 (TA-10) LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS - DE/CM

SPEED	SIGN SPACING (ft.)		TAPER LENGTH (ft.)		OPTIONAL	CHANNELIZER SPACING (ft.)	
Permanent Posted (mph)	Undivided (S)	Divided (S)	Shoulder (1) (T1)	Lane (2) (T2)	BUFFER LENGTH (ft.) (B)	Tapers	Buffer/ Work Areas
0-35	200	-	-	-	280	-	40
40-45	350	-	-	-	400	-	80
50-55	500	-	-	-	560	-	80
60-70	1000	-	-	-	840	-	120

1 Shoulder taper length based on 10 ft. (standard shoulder width) offset. 2. Lane taper length based on 12 ft. (standard lane width) offset.

NOTES:

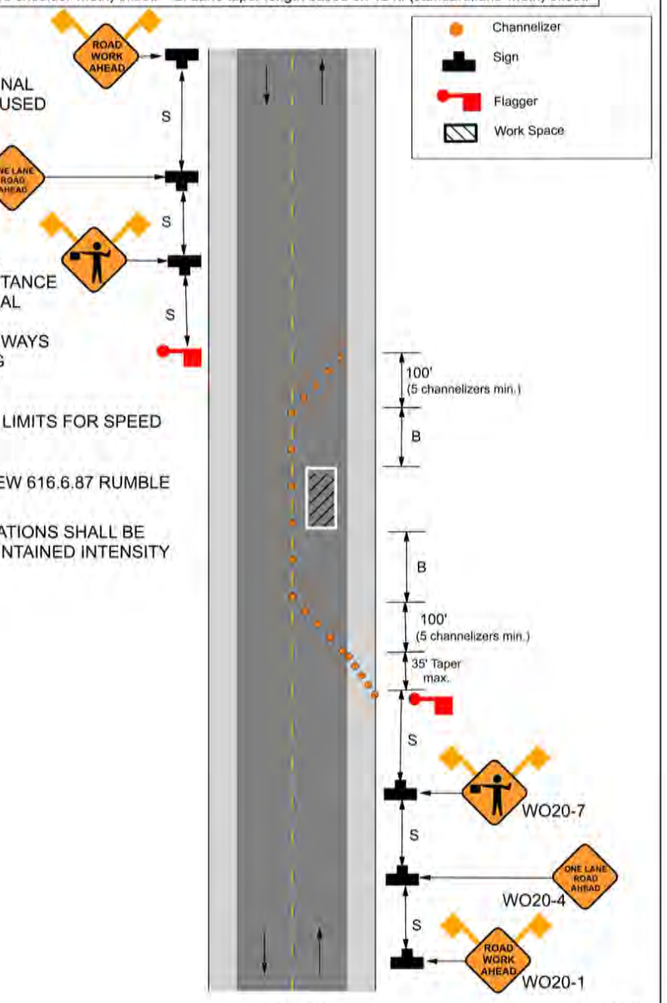
AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD) AND PORTABLE SIGNAL FLAGGING DEVICES (PSFD) MAY BE USED AS AN ALTERNATIVE FLAGGING OPERATION.

AFAD AND PSFD TYPICAL APPLICATIONS AND CRITERIA ARE LOCATED AT THE FOLLOWING:
EPG 616.8.10A (TA-10A) LANE CLOSURE ON TWO-LANE HIGHWAYS USING AUTOMATED FLAGGER ASSISTANCE DEVICE WITH RED AND AMBER SIGNAL SYSTEM & EPG 616.8.10C (TA-10C) LANE CLOSURE ON TWO-LANE HIGHWAYS USING PORTABLE SIGNAL FLAGGING DEVICE.

SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.

IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.

IF USED AT NIGHT, THE FLAGGER STATIONS SHALL BE ILLUMINATED WITH AN AVERAGE MAINTAINED INTENSITY OF 0.6 FOOTCANDLES (6.5 LUX).



TA - 10

1/16

21MSD-00086

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

TRAFFIC CONTROL DETAILS

DATE:	REVISION:

DWN. BY: K.J.W. APPD. BY: M.D.S.
DATE: JANUARY 2021
SCALE: NO SCALE
PROJ. NO: SC19–981
DWG. NO: *TC-4*

EROSION CONTROL PLAN

25 0 25 50

TRACT. NO 1
246 CEDAR TRAIL DR.
SIMMONS, MARY L.
BK. 8488 PG. 1034

TRACT NO. 2
244 CEDAR TRAIL DR.
KATZ, JANET
BK. 18926 PG. 2788

TRACT NO. 3
242 CEDAR TRAIL DR.
KORVAS, ROBERT G.
& MARGARET K. H/W
BK. 17531 PG. 3400

TRACT NO. 4
6 PARKROSE CT.
THE DILLON FAMILY, TRUST
BK. 20660 PG. 1506

TRACT NO. 5
7 PARKROSE CT.
HAUN, DANIEL & LORI H/W
BK. 17760 PG. 3498

TRACT NO. 6
8 PARKROSE CT.
SCHNEIDER, JOAN
LIVING TRUST
BK. 21261 PG. 503

TRACT NO. 7
9 PARKROSE CT.
RITCHEY, CELIA A.
BK. 11899 PG. 350

BAXTER RD.
(ASPHALT PAVEMENT)

HOLLOWAY RD.
(ASPHALT PAVEMENT)

SILT FENCE

INLET CHECK

BP: 10+00.00

MATCH LINE STA. 16+50 SEE SHEET EC-2

TRACT NO. 8
300 CLAYMONT DR.
LECLAIRE, RACHEL &
KILLOREN, ROBERT T/E
BK. 23232 PG. 3307

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

21MSD-00086

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CITY OF BALLWIN, MISSOURI

EROSION CONTROL PLAN

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-1*

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\EROSION CONTROL PLAN.dwg Tab: EC-1 Plotted on: Feb 09, 2021 – 10:32am Plotted by: kwolff

EROSION CONTROL PLAN

25 0 25 50

TRACT NO. 7
9 PARKROSE CT.
RITCHEY, CELIA A.
BK. 11899 PG. 350

TRACT NO. 10
10 PARKROSE CT.
SCHMIDT, BARLOW LYNNE
BK. 16303 PG. 3005
DOC. NO. 200511000077

TRACT NO. 11
11 PARKROSE CT.
COUNTRY GREEN TRUSTEES
BK. 06382 PG. 212

P.I.: 20+45.05

TRACT NO. 12
346 HOLLOWAY RD.
SEFORECK, ROBERT W.
& ANITA L. H/W

TRACT NO. 13
344 HOLLOWAY RD.
ROBB, EARL R.
& ANNA M. H/W

TRACT NO. 14
340 HOLLOWAY RD.
COLLINS, KATHELEEN B.
TRUSTEE
BK. 11589 PG. 2403
DOC. NO. 1998051100435

SILT FENCE

HOLLOWAY RD.
(ASPHALT PAVEMENT)

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

MATCH LINE STA. 16+50 SEE SHEET EC-1

MATCH LINE STA. 23+50 SEE SHEET EC-3

21MSD-00086

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CITY OF BALLWIN, MISSOURI

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: EC-2

EROSION CONTROL PLAN

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\EROSION CONTROL PLAN.dwg Tab: EC-2 Plotted on: Feb 09, 2021 – 10:32am Plotted by: kwolff

EROSION CONTROL PLAN

25 0 25 50

TRACT NO. 14
340 HOLLOWAY RD.
COLLINS, KATHELEEN B.
TRUSTEE
BK. 11589 PG. 2403
DOC. NO. 1998051100435

TRACT. NO. 15
338 HOLLOWAY RD.
ERHARDT, CRAIG A.
& KATHLEEN L.
TRUSTEES
BK. 18532 PG. 755

TRACT NO. 16
336 HOLLOWAY RD.
DICKEY, BILLY J.
& THERESA S. T/E
BK. 22176 PG. 917

TRACT NO. 17
332 HOLLOWAY RD.
MEEK, RICHARD L.
& LAURA J. H/W
BK. 17413 PG. 1216
DOC. NO. 2007010500318

TRACT NO. 18
328 HOLLOWAY RD.
DELTA NEUTRAL INVESTMENT
& PROPERTY LLC.
BK. 19706 PG. 261

TRACT NO. 19
324 HOLLOWAY RD.
SABACKY, JEROME M.
& JANE L. H/W
BK. 12129 PG. 844
DOC. NO. 19999052600143

TRACT NO. 20
322 HOLLOWAY RD.
STRITZEL, HERBERT J.
& SANDRA L. H/W
BK. 10615 PG. 321

SILT FENCE

INLET CHECK

MATCH LINE STA. 23+50 SEE SHEET EC-2

HOLLOWAY RD.
(ASPHALT PAVEMENT)

MATCH LINE STA. 30+00 SEE SHEET EC-4

TRACT NO. 9
333 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

TRACT NO. 21
301 ST. ANDREWS CT.
PANDIAN, VEERA & POIGAI H/W
BK. 19509 PG. 2857

21MSD-00086

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CITY OF BALLWIN, MISSOURI

EROSION CONTROL PLAN

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-3*

EROSION CONTROL PLAN

25 0 25 50

MATCH LINE STA. 30+00 SEE SHEET EC-3

MATCH LINE STA. 37+00 SEE SHEET EC-5

TRACT NO. 20
322 HOLLOWAY RD.
STRITZEL, HERBERT J.
& SANDRA L. H/W
BK. 10615 PG. 321

TRACT NO. 22
320 HOLLOWAY RD.
COLEMAN, BRETT
& SONIA H/W
BK. 20351 PG. 2380

TRACT NO. 23
318 HOLLOWAY RD.
GREGORY, JAMES R.
& KIM L. H/W
BK. 18216 PG. 927

TRACT NO. 24
316 HOLLOWAY RD.
REED, JACQUELINE
BK. 11083 PG. 2121
DOC. NO. 1997022000326

TRACT NO. 25
314 HOLLOWAY RD.
ROBINSON, VIRGINIA D.
BK. 8030 PG. 731

TRACT NO. 26
221 CLEAR MEADOWS DR.
FISHER, KARYL F.
BK. 8051 PG. 1818

TRACT NO. 27
218 CLEAR MEADOWS DR.
KELLY, JOHN H.
BK. 22946 PG. 2237
DOC. NO. 2018032000401

SILT FENCE

INLET CHECK

HOLLOWAY DR.
(ASPHALT PAVEMENT)

TRACT NO. 21
301 ST. ANDREWS CT.
PANDIAN, VEERA & POIGAI H/W
BK. 19509 PG. 2857

TRACT NO. 28
300 ST. ANDREWS CT.
RIEMER, MARVIN & NANCY H/W
BK. 11047 PG. 2069
DOC. NO. 1997010700796

TRACT NO. 29
309 HOLLOWAY RD.
CITY OF BALLWIN
BK. 6706 PG. 1598

21MSD-00086

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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

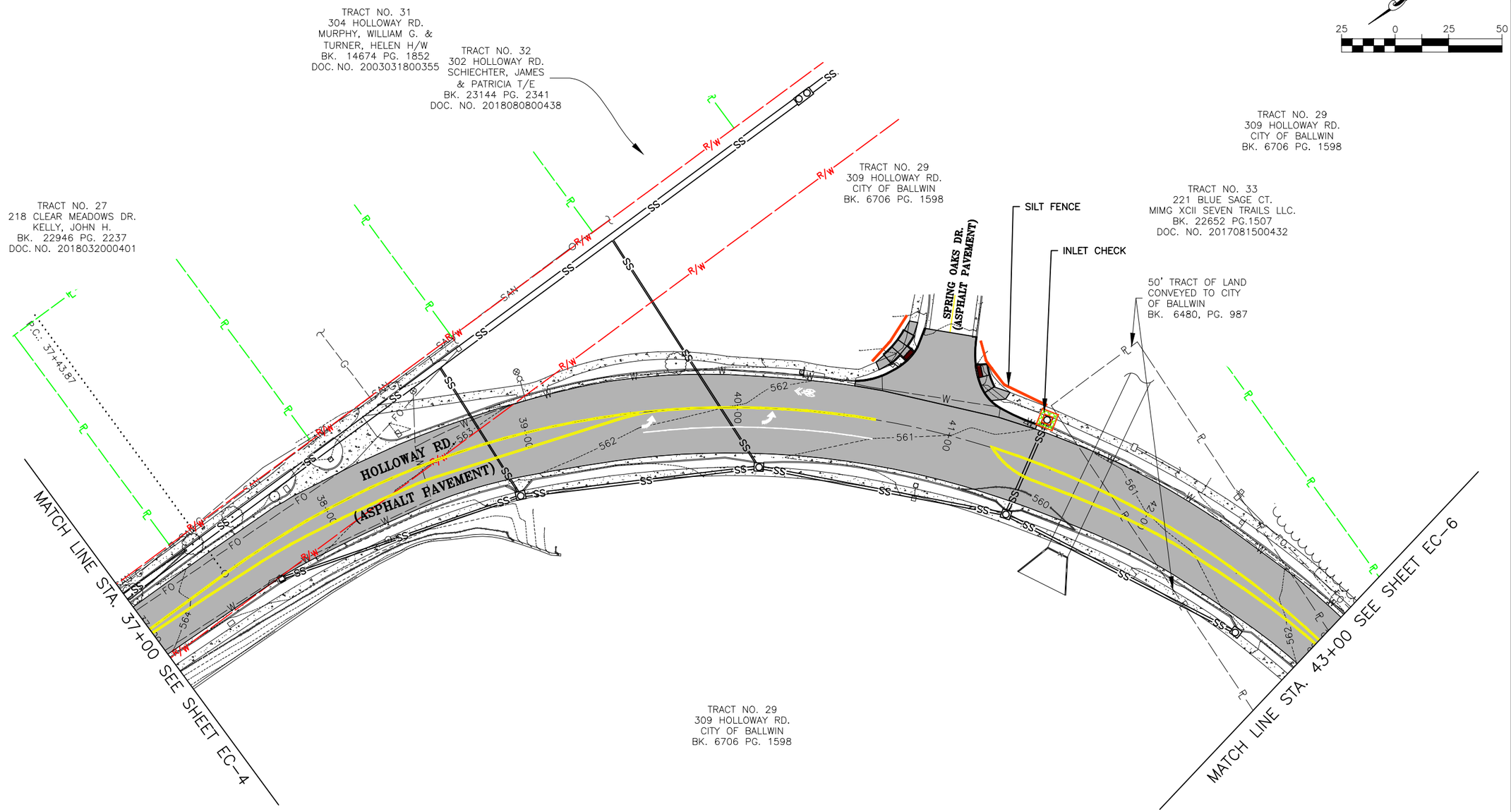
EROSION CONTROL PLAN

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-4*

EROSION CONTROL PLAN



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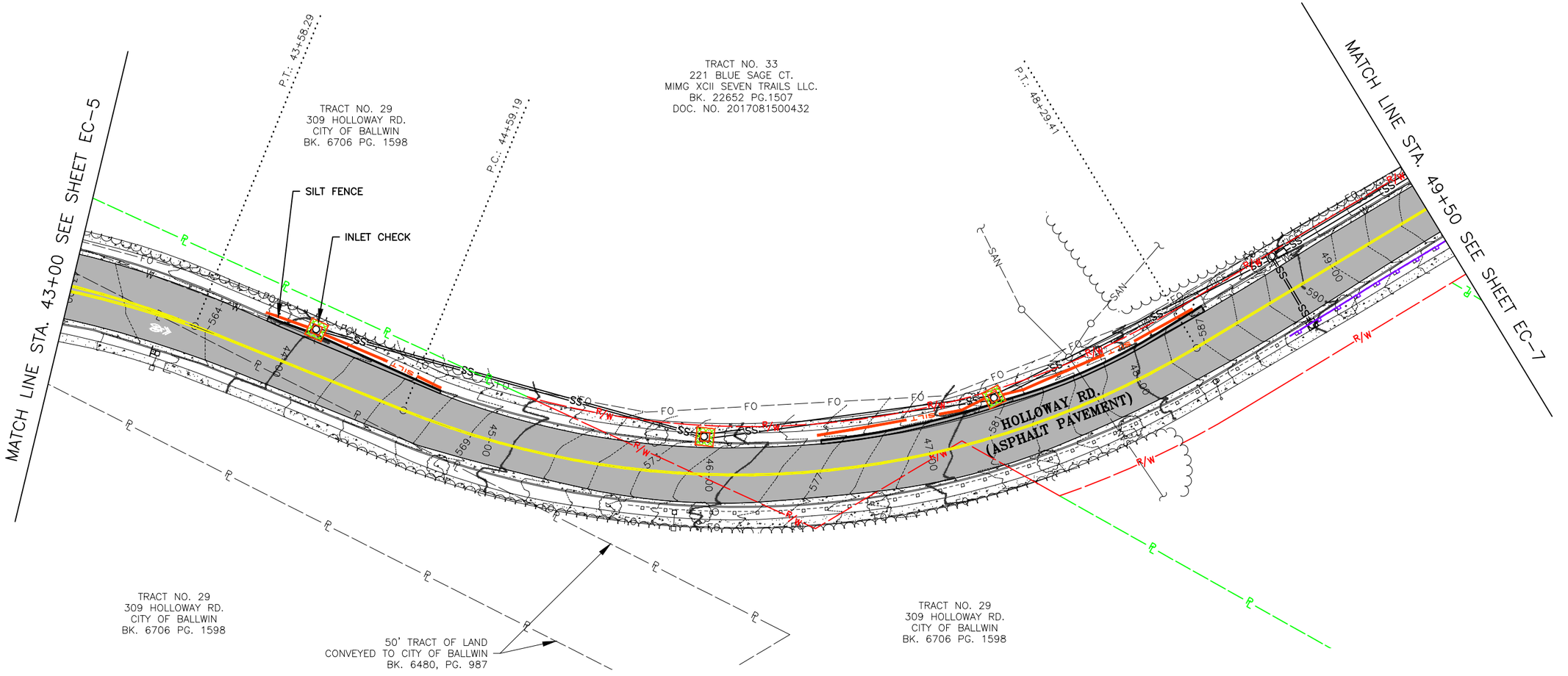
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

EROSION CONTROL PLAN

DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: *EC-5*	

21MSD-00086

EROSION CONTROL PLAN



21MSD-00086

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CITY OF BALLWIN, MISSOURI

EROSION CONTROL PLAN

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-6*

EROSION CONTROL PLAN

25 0 25 50

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC.
BK. 22652 PG.1507
DOC. NO. 2017081500432

TRACT NO. 35
333 HOLLOWAY RIDGE CT
HOLLOWAY RIDGE
CONDOMINIUM ASSOCIATION
BK. 17638 PG. 4084
DOC. NO. 20070801243

TRACT NO. 35
333 HOLLOWAY RIDGE CT
HOLLOWAY RIDGE
CONDOMINIUM ASSOCIATION
BK. 17638 PG. 4084
DOC. NO. 20070801243

MATCH LINE STA. 49+50 SEE SHEET EC-6

P.C.: 50+58.85

P.T.: 53+01.97

P.C.: 54+21.63

P.T.: 55+62.16

INLET CHECK

SILT FENCE

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC.
BK. 22652 PG.1507
DOC. NO. 2017081500432

HOLLOWAY RIDGE CT.
(ASPHALT PAVEMENT)

HOLLOWAY RD.
(ASPHALT PAVEMENT)

MATCH LINE STA. 56+00 SEE SHEET EC-8

TRACT NO. 36
510 WINDSOR MILL DR.
MAY, DAVID ETAL
BK. 23364 PG. 2258
DOC. NO. 2019011800419

ESSEX MILL DR.
(ASPHALT PAVEMENT)

TRACT NO. 37
248 ESSEX MILL DR.
HOMYK, BARBARA A.
BK. 9117 PG. 1999

TRACT NO. 38
241 ESSEX MILL DR.
RILEY, TIMOTHY J.
& KATHLEEN H/W

TRACT NO. 39
552 SPRAGUES MILL CT
GAEHLE, ANNA MAY
BK. 11582 PG. 1134
DOC. NO. 1998050500614

TRACT NO. 40
554 SPRAGUES MILL CT.
MOSS, JOHN P. &
ELIZABETH DUCEY T/E

TRACT NO. 41
556 SPRAGUES MILL CT.
MILLER, TIMOTHY P.
BK. 169323 PG. 842
DOC. NO. 2005112201286

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CITY OF BALLWIN, MISSOURI

EROSION CONTROL PLAN

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-7*

21MSD-00086

EROSION CONTROL PLAN

25 0 25 50

TRACT NO. 33
221 BLUE SAGE CT.
MIMG XCII SEVEN TRAILS LLC
BK. 22652 PG.1507
DOC. NO. 2017081500432

SEVEN TRAILS DR.
(ASPHALT PAVEMENT)

P.I.: 57+75.78

TRACT NO. 42
126 SEVEN TRAILS DR.
MIMG XCIII SEVEN TRAILS LLC.
BK. 22652 PG. 1507
DOC. NO. 2017081500432

TRACT NO. 43
407 KEHRS MILL RD.
CITY OF BALLWIN
BK. 5765 PG. 217

PARK DR.
(ASPHALT PAVEMENT)

SILT FENCE

INLET CHECK

HOLLOWAY RD.

MATCH LINE STA. 56+00 SEE SHEET EC-7

MATCH LINE STA. 62+00 SEE SHEET EC-9

TRACT NO. 41
556 SPRAGUES MILL CT.
MILLER, TIMOTHY P.
BK. 169323 PG. 842
DOC. NO. 2005112201286

TRACT. NO. 43
560 SPRAGUES MILL CT.
SCHAEFFIER, GREGORY J.
& KAREN J. H/W
BK. 8476 PG. 1330

TRACT NO. 44
562 SPRAGUES MILL CT.
ANDERSON, ZACHARY K.
& BRIDGES, ABIGAIL L. T/E
BK. 22572 PG. 1301
DOC. NO. 2017061900279

TRACT NO. 45
211 HOLLOWAY RD.
EASON, RYAN A.
& LISA D. H/W
BK. 10879 PG. 0777
DOC. NO. 1996070800277

TRACT NO. 46
509 STODDARDS MILL DR.
HOUSER, GUY N. &
ALLISON P. T/E
BK. 23410 PG. 2672

STODDARDS MILL RD.
(ASPHALT PAVEMENT)

TRACT NO. 47
506 STODDARDS MILL DR.
ODONNELL, FAYE & EVA J. H/W
BK. 21624 PG. 1574

TRACT NO. 48
141 HOLLOWAY RD.
FLAMION, SARA TRUSTEE
BK. 23205 PG. 348
DOC. NO. 2018092000527

21MSD-00086

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FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

EROSION CONTROL PLAN

DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: 1" = 50'	
PROJ. NO: SC19-981	
DWG. NO: EC-8	

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\EROSION CONTROL PLAN.dwg Tab: EC-8 Plotted on: Feb 09, 2021 - 10:33am Plotted by: kwolff

EROSION CONTROL PLAN

25 0 25 50

MATCH LINE STA. 62+00 SEE SHEET EC-8

MATCH LINE STA. 68+50 SEE SHEET EC-10

P.I.: 66+38.70

TRACT NO. 43
407 KEHRS MILL RD.
CITY OF BALLWIN
BK. 5765 PG. 217

TRACT NO. 49
140 HOLLOWAY RD.
HOPPER, RONNIE D. &
IMOGENE O. H/W
BK. 16607 PG. 2749
DOC. NO. 2005062301141

TRACT NO. 50
136 HOLLOWAY RD.
SHERRON, LARRY
& PAMELA T/E
BK. 22454 PG. 1604
DOC. NO. 2017032700339

TRACT NO. 51
124 HOLLOWAY RD.
STEPHENS, LINDA
BK. 10012 PG. 1560

TRACT NO. 52
118 N. HOLLOWAY RD.
STAFFORD, CAROLE L.
TRUSTEE
BK. 17610 PG. 4835
DOC. NO. 2007071200738

SILT FENCE

HOLLOWAY RD.
(ASPHALT PAVEMENT)

TRACT NO. 48
141 HOLLOWAY RD.
FLAMION, SARA TRUSTEE
BK. 23205 PG. 348
DOC. NO. 2018092000527

TRACT NO. 53
139 HOLLOWAY RD.
BROCKMEIER, CHARLES R.
& BARBARA E.
BK. 6713 PG. 973

TRACT NO. 54
135 HOLLOWAY RD.
ALEXANDER, MARIAN ANN
BK. 6478 PG. 188

TRACT NO. 55
133 HOLLOWAY CT.
WILHELM, RICHARD CARL
BK. 6542 PG. 374

TRACT NO. 56
131 HOLLOWAY RD.
NGUYEN LOAN
BK. 13140 PG. 600
DOC. NO. 2001070300616

TRACT NO. 57
129 HOLLOWAY RD
THOMPSON, KYLE
& CECILY T/E
BK. 23150 PG. 2979
DOC. NO. 2018081300620

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CITY OF BALLWIN, MISSOURI

EROSION CONTROL PLAN

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-9*

21MSD-00086

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\EROSION CONTROL PLAN.dwg Tab: EC-9 Plotted on: Feb 09, 2021 – 10:33am Plotted by: kwolff

EROSION CONTROL PLAN

25 0 25 50

TRACT NO. 52
118 N. HOLLOWAY RD.
STAFFORD, CAROLE L.
TRUSTEE
BK. 17610 PG. 4835
DOC. NO. 2007071200738

TRACT NO. 58
315 KEHRS MILL BEND CT.
WU, CHIH YANG
BK. 9745 PG. 2277

TRACT NO. 59
308 KEHRS MILL BEND CT.
CARR, JANET S.
BK. 14783 PG. 223
DOC. NO. 2003041801772

NORTH LINE OF 30'W DEDICATION STRIP TO CITY OF BALLWIN PER KEHRS MILL CROSSING CONDOMINIUM PLAT.

INLET CHECK

KEHRS MILL CROSSING (ASPHALT PAVEMENT)

TRACT NO. 60
112 HOLLOWAY RD.
HIP PROPERTIES LLC
BK. 21568 PG. 1081

TRACT NO. 61
100 HOLLOWAY RD.
MUDDY RIVER L C
BK. 17756 PG. 4426
DOC. NO. 2007123101062

HOLLOWAY RD.
(ASPHALT PAVEMENT)

MATCH LINE STA. 68+50 SEE SHEET EC-9

MATCH LINE STA. 75+00 SEE SHEET EC-11

FOUND 1/2" IRON ROD W/ CAP (ADOPT)

ROW EXCEPTION TO CITY OF BALLWIN BK. 6783, PG. 2303

TRACT NO. 62
127 HOLLOWAY RD.
BARNETT, WILLIAM E.
BK. 7946 PG. 228

TRACT NO. 57
129 HOLLOWAY RD
THOMPSON, KYLE
& CECILY T/E
BK. 23150 PG. 2979
DOC. NO. 2018081300620

TRACT NO. 63
505 KEHRS MILL RD.
JENNINGS, JOHN R. ETAL
BK. 17098 PG. 343
DOC. NO. 200632000819

FOUND 1/2" IRON PIPE (ADOPT)

KEHRS MILL RD.
(ASPHALT PAVEMENT)

TRACT NO. 64
15025 MANCHESTER RD.
TARGET STORES CORP.
T 0026 PROPERTY TAX DEPT. TPN
BK. 6448 PG. 228

21MSD-00086

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EROSION CONTROL PLAN

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-10*

EROSION CONTROL PLAN

25 0 25 50

EAST RIGHT-OF-WAY OF HOLLOWAY ROAD PER HOLLOWAY CENTER P.B. 195, PG. 8

NORTH LINE OF ROW CONVEYED TO CITY OF BALLWIN PER BK. 11246, PG. 1842

TRACT NO. 61
100 HOLLOWAY RD.
MUDDY RIVER L C
BK. 17756 PG. 4426
DOC. NO. 2007123101062

TRACT NO. 65
14949 MANCHESTER RD.
T C M REALTY 2 LLC
BK. 16423 PG. 89
DOC. NO. 2005031801212

W. ORCHARD DR. (ASPHALT PAVEMENT)

HOLLOWAY RD. (ASPHALT PAVEMENT)

MANCHESTER ROAD (ASPHALT PAVEMENT)

MATCH LINE STA. 75+00 SEE SHEET EC-10

EP: 80+85.42

SILT FENCE

INLET CHECK

TRACT NO. 64
15025 MANCHESTER RD.
TARGET STORES CORP.
T 0026 PROPERTY TAX DEPT. TPN
BK. 6448 PG. 228

TRACT NO.66
15001 MANCHESTER RD.
FIDELITY ASSOCIATES L L LP
BK. 13911 PG. 53
DOC. NO. 2002061700596

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EROSION CONTROL PLAN

DATE:	REVISION:

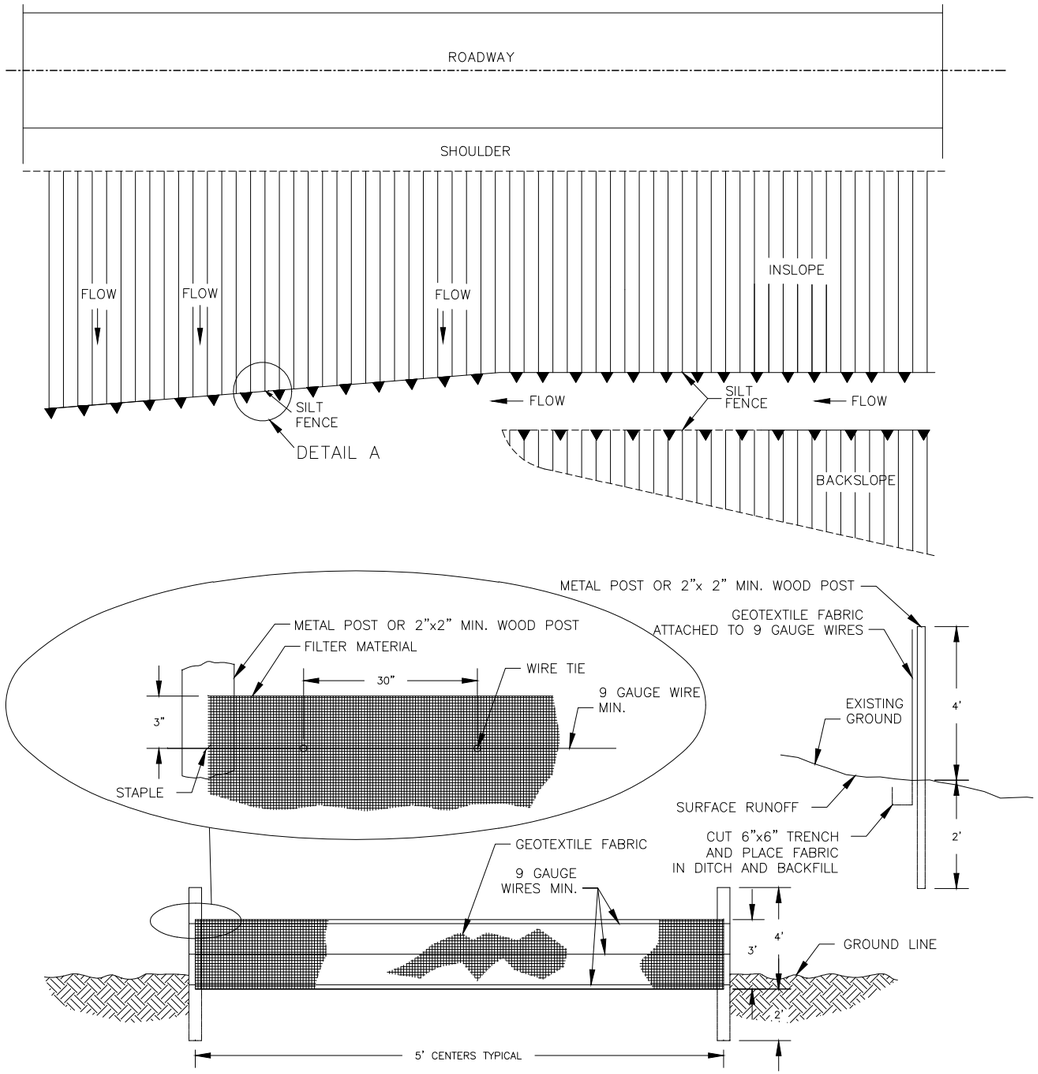
DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: EC-11

21MSD-00086

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\EROSION CONTROL PLAN.dwg Tab: EC-11 Plotted on: Feb 09, 2021 – 10:33am Plotted by: kwolff

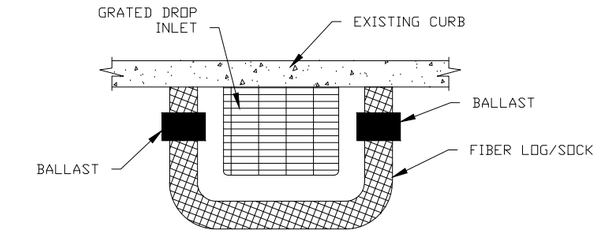
EROSION CONTROL DETAILS



DETAIL A

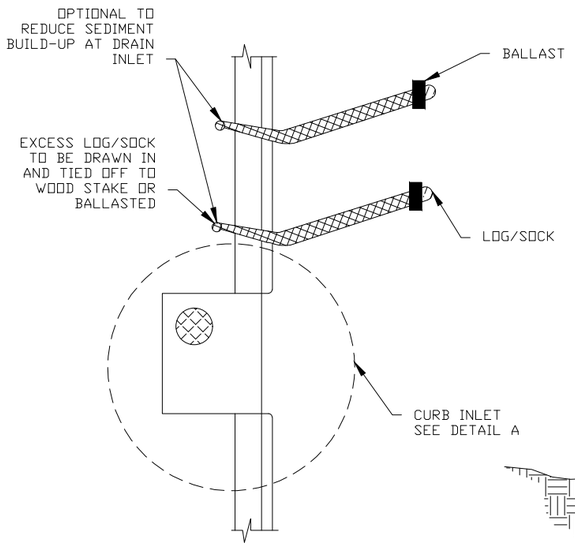
SILTATION CONTROL DETAILS

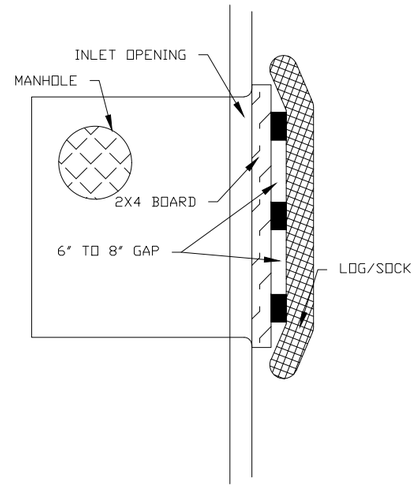
NO SCALE

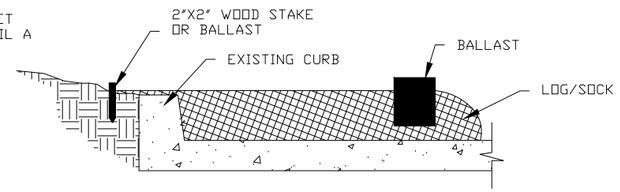


CURB DROP INLET PROTECTION

NO SCALE







CURB INLET PROTECTION

NO SCALE

GENERAL NOTES:

1. SILTATION CONTROL DEVICES TO REMAIN IN PLACE UNTIL ADEQUATE VEGETATIVE GROWTH ENSURES NO FURTHER EROSION OF THE SOIL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE SILT FENCE.
2. SILT FENCES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENTATION WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 OF THE HEIGHT OF THE SILT FENCE.
3. ATTACHMENT OF THE GEOTEXTILE FABRIC TO BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
4. SILTATION CONTROL SHALL BE INSTALLED AS NEEDED OR AS DIRECTED BY THE ENGINEER TO ENSURE THAT NO SILT LEAVES THE CONSTRUCTION AREA.
5. USE SILT FENCE FOR ALL SLOPES OVER 3 FEET IN HEIGHT.
6. FOR FABRIC SILT FENCE:
   MINIMUM LONGITUDINAL SPLICE OVERLAP SHALL BE 2' WITH A POST AT EACH END.
   SECURE FABRIC TO POSTS.
7. SILT FENCE SHALL NOT BE USED ACROSS DRAINAGE DITCHES AND DRAINS. DITCH CHECK SHALL BE USED AS SHOWN ON SHEET EC-2 OR AS DIRECTED BY ENGINEER.
8. CONTRACTOR SHALL USE INLET CHECK EROSION CONTROL DEVICES TO PREVENT ANY SILT OR DEBRIS FROM ENTERING ANY NEW OR EXISTING CURB INLETS DURING CONSTRUCTION.

21MSD-00086

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REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

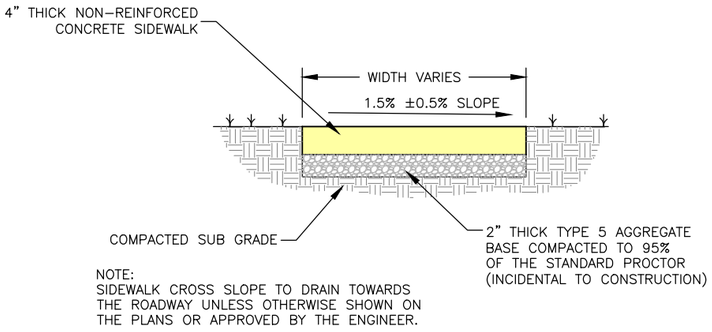
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

EROSION CONTROL DETAILS

DATE:	REVISION:

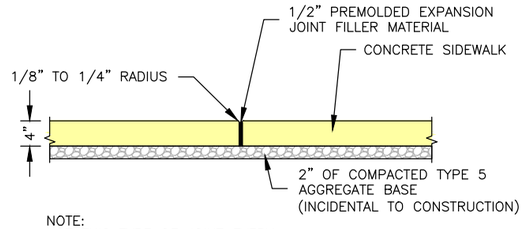
DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: 1" = 50'
PROJ. NO: SC19-981
DWG. NO: *EC-12*



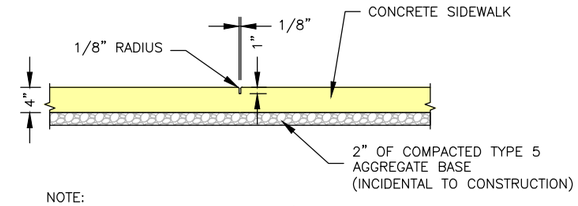
NOTE:
SIDEWALK CROSS SLOPE TO DRAIN TOWARDS THE ROADWAY UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER.

SIDEWALK CROSS-SECTION DETAIL
NO SCALE



NOTE:
USE THIS TYPE OF JOINT EVERY 15' ON CENTER AND AT ALL STREET INTERSECTIONS

TYPICAL SIDEWALK EXPANSION JOINT
NO SCALE



NOTE:
USE THIS TYPE OF JOINT EVERY 5' ON CENTER.

TYPICAL SIDEWALK CONTROL JOINT
NO SCALE

SIDEWALK NOTES:

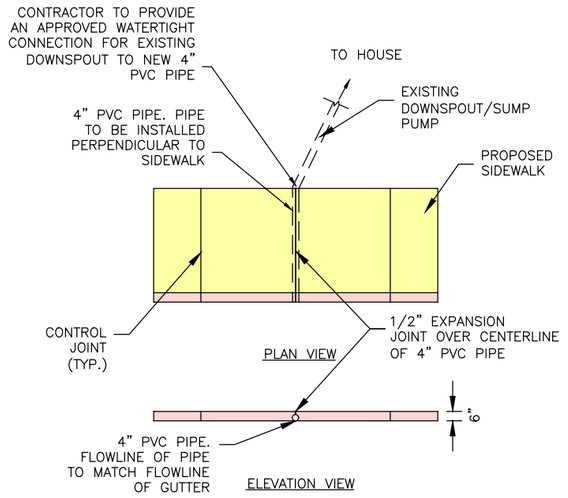
WHEN A JOINT FALLS WITHIN FIVE FEET OF OR CONTACTS AN OBJECT (I.E. SIGN POST, LIGHT BASE, POLE, STRUCTURE, CORNER OF A BUILDING, ETC.), THE JOINT SHALL BE MOVED TO PERMIT THE JOINT TO FALL IN THE CENTER OF THE OBJECT AND THE ADJACENT JOINT SPACING SHALL BE ADJUSTED ACCORDINGLY. THE ENGINEER HAS THE RIGHT TO MAKE ADJUSTMENTS TO THE PLACEMENT OF THE JOINTS IN THE FIELD AS HE DEEMS NECESSARY.

WHEN INSTALLING SIGNS IN NEW SIDEWALKS, PVC SLEEVES SHALL BE INSTALLED PRIOR TO PLACEMENT OF ANY NEW CONCRETE. PVC SLEEVE SHALL BE SCHEDULE 40 PVC. THE LENGTH OF THE SLEEVE SHALL BE THE SAME AS THE THICKNESS OF THE SIDEWALK AND AGGREGATE BASE. THE PVC SLEEVE SHALL BE INSTALLED FLUSH WITH THE FINISH GRADE OF THE SURROUNDING SIDEWALK. BACK FILL THE VOID BETWEEN THE SLEEVE AND SIGN POST WITH SAND TO WITHIN 1" OF THE FINISHED SURFACE. FILL THE FINAL 1" WITH NON-SHRINK GROUT.

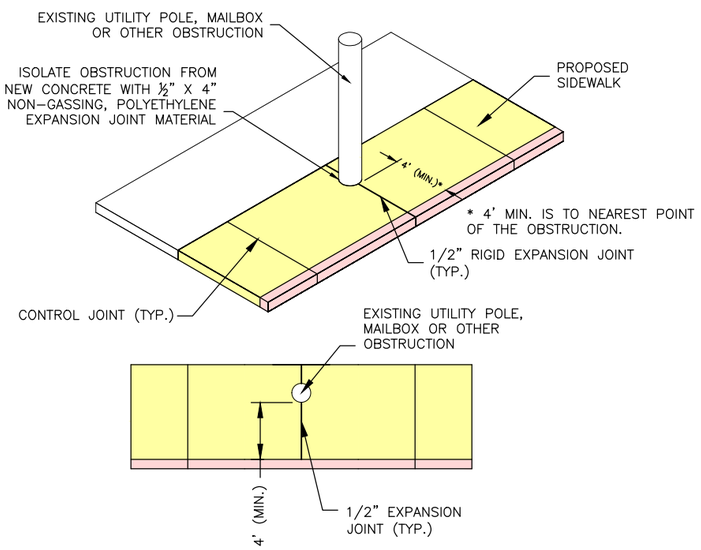
NOTES:

ALL DOWNSPOUT PIPE UNDER SIDEWALK SHALL BE 4" SCHEDULE 40 PVC PIPE.

CONTRACTOR SHALL EXTEND EXISTING DOWNSPOUTS AS NECESSARY TO PROVIDE ADEQUATE DRAINAGE TO FLOWLINE OF GUTTER.



EXTENSION OF PRIVATE DRAIN PIPE THROUGH SIDEWALK
NO SCALE



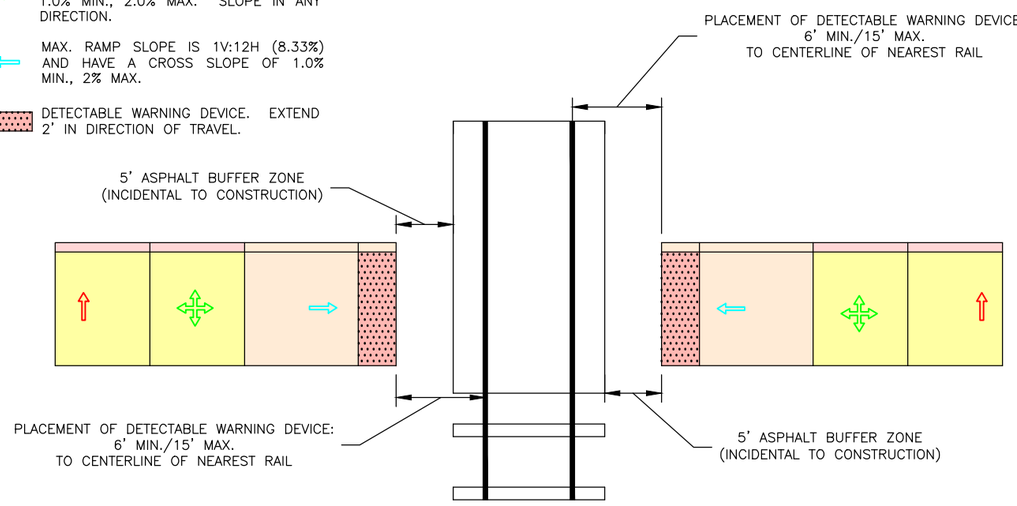
SIDEWALK SECTION AT OBSTRUCTION
NO SCALE

LEGEND

- 1.0% MIN., 2% MAX. CROSS SLOPE.
- LANDING AREA. MIN. 5' X 5' WITH 1.0% MIN., 2.0% MAX. SLOPE IN ANY DIRECTION.
- MAX. RAMP SLOPE IS 1V:12H (8.33%) AND HAVE A CROSS SLOPE OF 1.0% MIN., 2% MAX.
- DETECTABLE WARNING DEVICE. EXTEND 2' IN DIRECTION OF TRAVEL.

NOTE:

THE SURFACE OF THE PEDESTRIAN ACCESS ROUTE SHALL BE LEVEL AND FLUSH WITH THE TOP OF THE RAIL AT THE OUTER EDGES OF THE RAIL. THE SURFACE BETWEEN THE RAILS SHALL BE ALIGNED WITH THE TOP OF THE RAIL.



RAMP AND DETECTABLE WARNING PLACEMENT AT RAIL ROAD CROSSING
NO SCALE

737 RUDDER ROAD
FENTON, MISSOURI 63026
314-842-4033 (tel.)
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www.cochraneng.com

COCHRAN
Civil Engineering
Land Surveying
Architecture
Site Development
Water Resources
General Consulting

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
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NO. PE-2004000859
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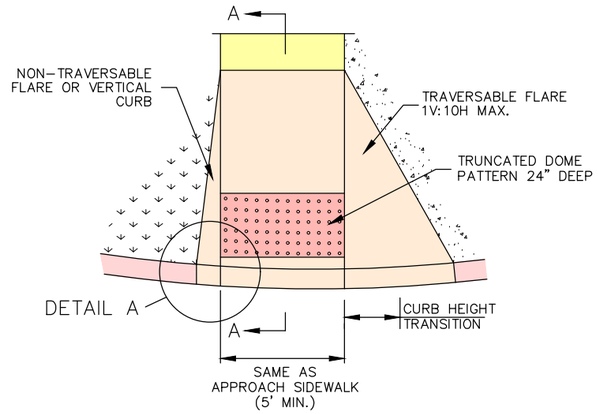
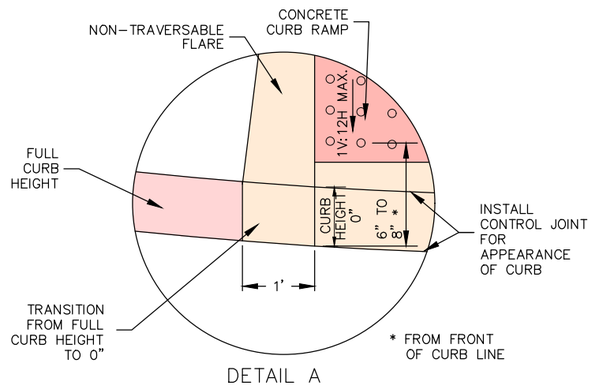
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

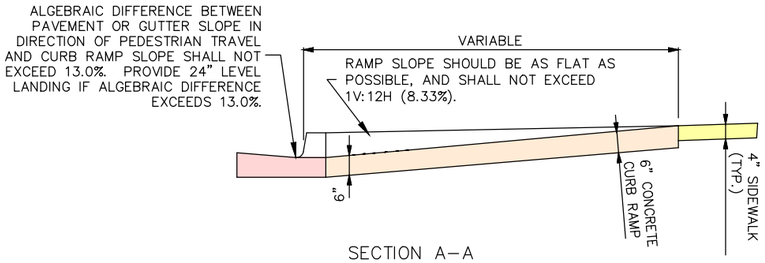
DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19-981	
DWG. NO: DE-1	

21MSD-00086

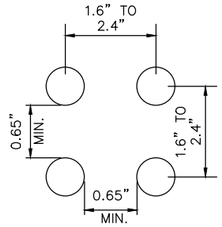




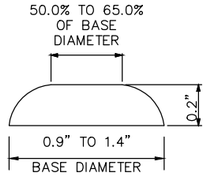
DETAIL A



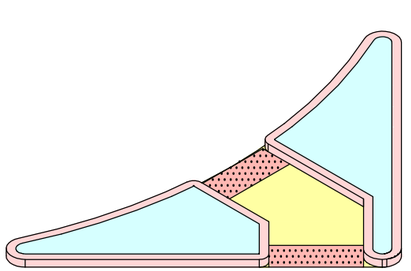
SECTION A–A

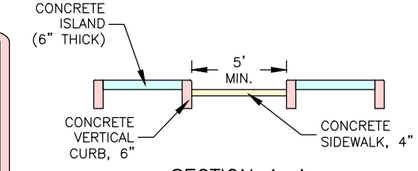


TRUNCATED DOMES SPACING

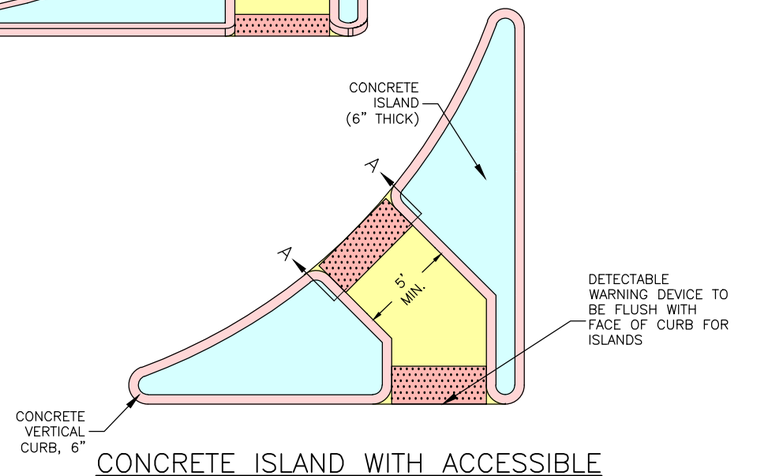


TRUNCATED DOMES CROSS SECTION



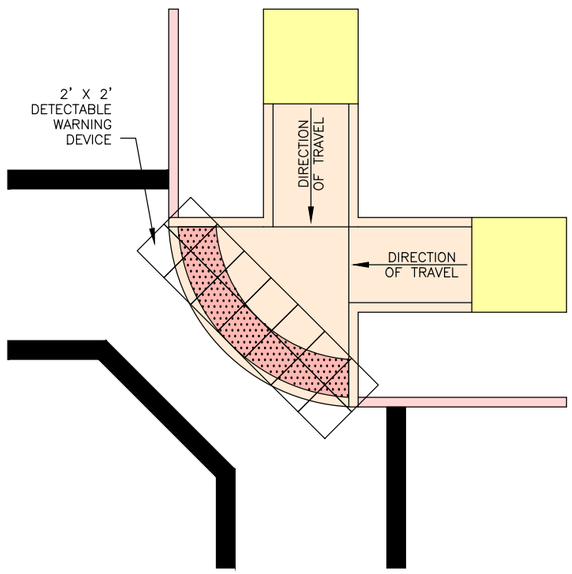


SECTION A–A



CONCRETE ISLAND WITH ACCESSIBLE CUT–THROUGH DETAIL

NO SCALE

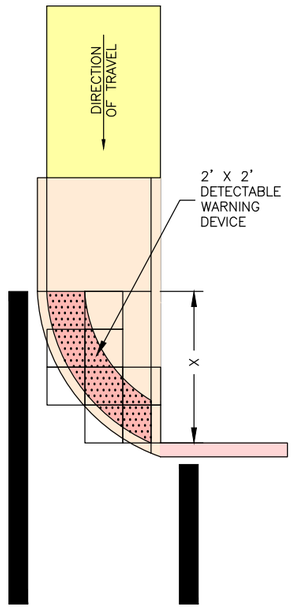


DETECTABLE WARNING DEVICE LAYOUT FOR 2 DIRECTION RAMP

NO SCALE

NOTES:

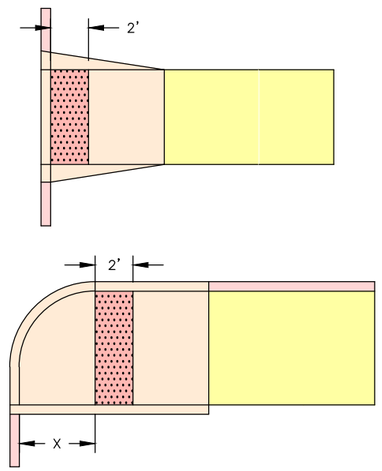
1. CONTRACTOR MUST TRIM THE DETECTABLE WARNING PANELS TO PROVIDE A 2' DEEP STRIP THAT IS THE FULL WIDTH OF THE RAMP AND FOLLOWS THE CURVATURE OF THE CURB.
2. 2' X 2' DETECTABLE WARNING PANEL IS FOR REFERENCE ONLY. CONTRACTOR MAY USE ALTERNATE SIZED PANELS TO MINIMIZE CUTTING.
3. THE DETECTABLE WARNING DEVICE LAYOUT FOR 1 DIRECTIONAL RAMP MUST BE USED WHEN THE "X" DIMENSION IS GREATER THAN 5 FEET. WHEN "X" IS LESS THAN 5 FEET, THE DETECTABLE WARNING DEVICES SHALL BE AT THE BOTTOM OF THE RAMP AND PARALLEL TO THE DIRECTION OF TRAVEL.



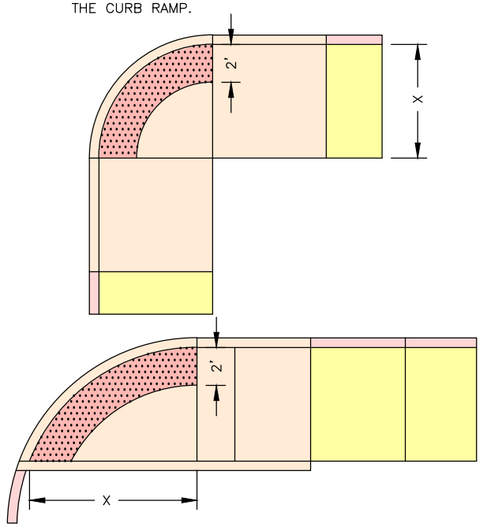
DETECTABLE WARNING DEVICE LAYOUT FOR 1 DIRECTION RAMP

NO SCALE

WHEN DISTANCE "X" IS LESS THAN 5', TRUNCATED DOME DETECTABLE WARNING DEVICE SHALL BE PLACED PERPENDICULAR TO THE PATH OF TRAVEL.



WHEN DISTANCE "X" IS GREATER THAN 5', TRUNCATED DOME DETECTABLE WARNING DEVICE SHALL BE PLACED PARALLEL TO THE BOTTOM OF THE CURB RAMP.



DETECTABLE WARNING DEVICE PLACEMENT ON RAMP

NO SCALE

21MSD-00086

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

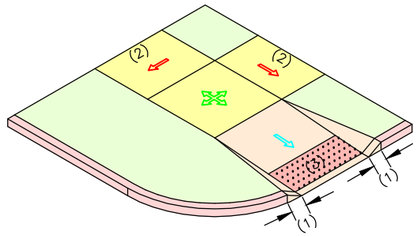
DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19-981
DWG. NO: *DE-2*

LEGEND

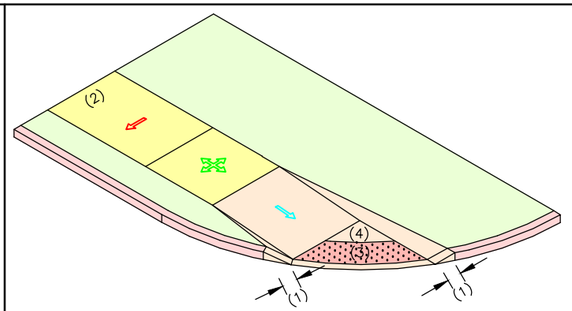
- 1.0% MIN., 2.0% MAX. CROSS SLOPE.
- LANDING AREA. MIN. 5' X 5' WITH 1.0% MIN., 2.0% MAX. SLOPE IN ANY DIRECTION.
- MAX. RAMP SLOPE IS 1V:12H (8.33%) AND HAVE A CROSS SLOPE OF 1.0% MIN., 2.0% MAX.
- DETECTABLE WARNING DEVICE. EXTEND 2' IN DIRECTION OF TRAVEL.

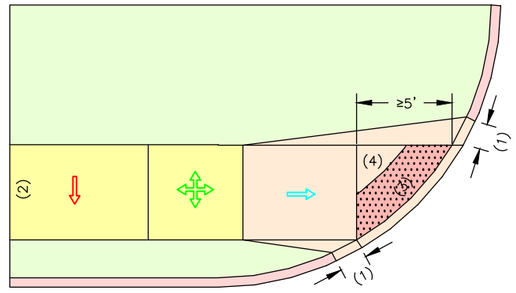
KEYED NOTES

(1) 1' OR VERTICAL CURB AS DIRECTED BY THE ENGINEER. IF TRAVERSABLE, MAX. SLOPE IS 1V:10H WHEN MEASURED PARALLEL TO CURB LINE.
(2) SEE PLAN SHEETS FOR WIDTH. SIDEWALKS AT CURB SHALL BE A MINIMUM OF 6' WIDE AND SIDEWALKS WITH A TREE LAWN SHALL BE A MINIMUM OF 5', WIDE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
(3) DETECTABLE WARNING DEVICES ARE NOT USED ON EVERY CURB RAMP INSTALLED. SEE SITE PLAN FOR LOCATIONS WITH DETECTABLE WARNING DEVICES.
(4) TRANSITION AREA SLOPE TO BE MAXIMUM OF 5.0% OR MATCH STREET GRADE. SLOPES SHALL NOT CREATE AN AREA THAT HOLDS WATER.
(5)



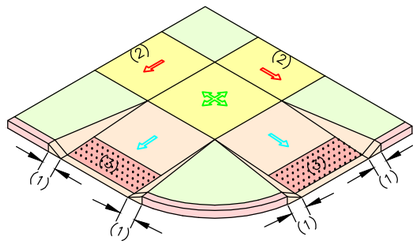
TYPE A1



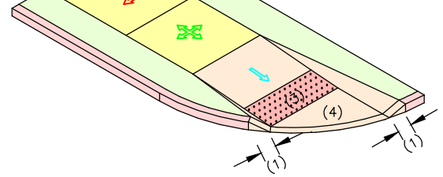


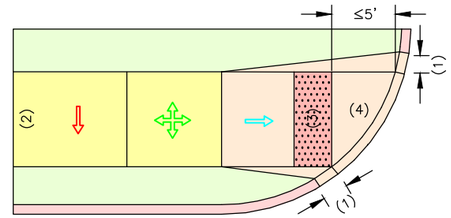
TYPE A3 CURB RAMP PERPENDICULAR WITH TREE LAWN LARGE RADIUS

NO SCALE



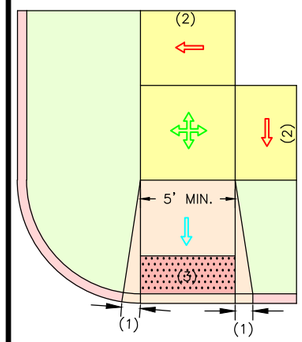
TYPE A2



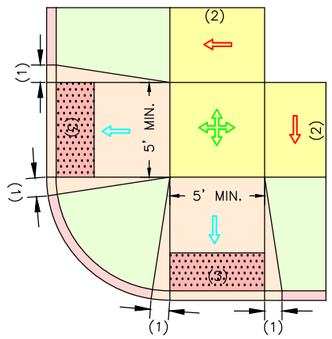


TYPE A4 CURB RAMP PERPENDICULAR WITH TREE LAWN, SMALL RADIUS

NO SCALE



TYPE A1

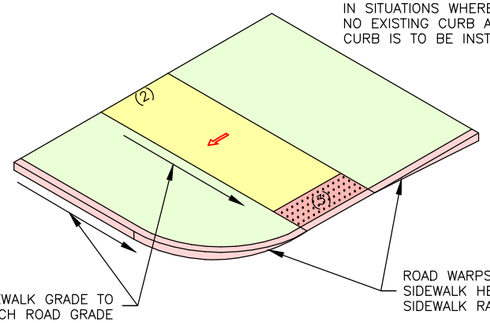


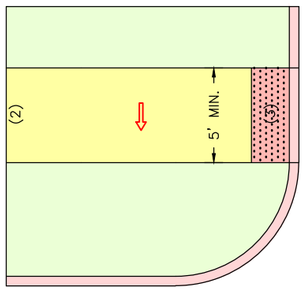
TYPE A2

TYPE A1 AND A2 CURB RAMP PERPENDICULAR WITH TREE LAWN (6' OR GREATER)

NO SCALE

NOTE: TYPE A5 ALSO APPLIES IN SITUATIONS WHERE THERE IS NO EXISTING CURB AND NO CURB IS TO BE INSTALLED.





TYPE A5 CURB RAMP PERPENDICULAR WITH TREE LAWN, NO RAMP

NO SCALE

CURB RAMP GENERAL NOTES:

ALL AREAS OF THE PEDESTRIAN ACCESS ROUTE MUST BE COMPLIANT WITH THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)". EXCEPTIONS MUST BE APPROVED BY THE ENGINEER.

FINISHED SIDEWALK SHALL BE STABLE, SLIP RESISTANT AND SURFACE DOES NOT POND WATER.

SIDEWALK AND RAMP CROSS SLOPES SHALL BE A MINIMUM OF 1.0% TO FACILITATE DRAINAGE AND A MAXIMUM OF 2.0% TO BE USABLE FOR DISABLED INDIVIDUALS.

STORMWATER INLETS, SIGNS, POSTS, MANHOLE COVERS, PULL BOXES AND OTHER ACCESS LIDS SHOULD BE AVOIDED WITHIN THE SIDEWALK. IF SUCH A LOCATION IS NECESSARY, THE FEATURE MUST MEET ADA STANDARDS.

THE RUNNING GRADE OF A SIDEWALK SHALL NOT EXCEED 5.0% UNLESS IT IS MATCHING THE GRADE OF THE ADJACENT ROADWAY.

ALL RAMPS SHALL NOT HAVE RUNNING SLOPES GREATER THAN 8.33% OR 1V:12H. RAMP LENGTH NOT REQUIRED TO EXCEED 15 FEET.

PEDESTRIAN ACCESS ROUTE SHALL CONTINUE ACROSS DRIVEWAYS.

LANDINGS SHALL BE CONSTRUCTED AT THE TOP AND/OR BOTTOM OF A CURB RAMP WHEREVER A TURNING MOVEMENT OR ACCESS TO PEDESTRIAN PUSH BUTTON IS REQUIRED.

LANDINGS LOCATED IN THE ROADWAY MUST BE COMPLETELY CONTAINED WITHIN THE CROSSWALK.

SIDE FLARES OF CURB RAMPS, IN THE PATH OF PEDESTRIAN TRAVEL (TRAVERSABLE), SHALL NOT EXCEED A SLOPE OF 1V:10H. SIDE FLARES OUTSIDE THE PEDESTRIAN PATH (NONTRAVERSABLE) MAY BE 1V:2H OR VERTICAL.

TRANSITION FROM SIDEWALK TO GUTTER TO ROADWAY MUST BE FLUSH.

DETECTABLE WARNING DEVICE (TRUNCATED DOMES) SHALL BE PRE-FORMED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, AT PUBLIC STREET INTERSECTIONS AND ANY SIGNALIZED INTERSECTIONS. STAMPED CONCRETE WILL NOT BE ACCEPTED.

THE DETECTABLE WARNING DEVICE SHALL BE RED. TRUNCATED DOMES SHALL SPAN THE FULL WIDTH (WITHIN 2") OF THE RAMP OR LANDING.

DETECTABLE WARNING DOMES SHALL BE ALIGNED PARALLEL TO THE SLOPE WHEN INSTALLED ON A RAMP. WHEN INSTALLED ON A LANDING OR BLENDED TRANSITION, THEY SHALL BE ALIGNED PERPENDICULAR OR RADIAL TO THE BREAK BETWEEN THE RAMP, LANDING OR BLENDED TRANSITION AND THE STREET.

IF CONSTRUCTION OF 5' X 5' LANDING IS NOT FEASIBLE, 4' X 4' LANDING MAY BE USED WITH APPROVAL FROM THE ENGINEER.

RAMP WIDTH MAY BE REDUCED TO 4' WITH APPROVAL OF THE ENGINEER.

CURB RAMPS AND INTEGRAL CURBS THAT ARE PART OF RAMPS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE SIDEWALK.

THE CONTRACTOR SHALL IDENTIFY THE REMOVAL LIMITS FOR THE SIDEWALK AND CURB. IF THE CONTRACTOR DETERMINES THE REMOVAL LIMITS ARE NOT ADEQUATE TO MEET ADA STANDARDS, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND CONSULT THE ENGINEER TO DETERMINE THE BEST SOLUTION.

21MSD-00086

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

DATE:	REVISION:

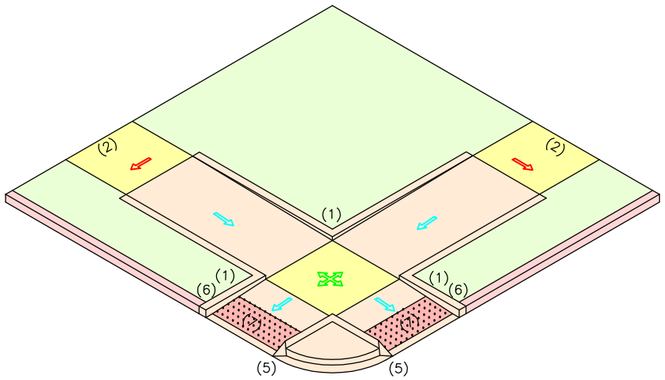
DWN. BY: K.J.W. APPD. BY: M.D.S.
DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19-981
DWG. NO: *DE-3*

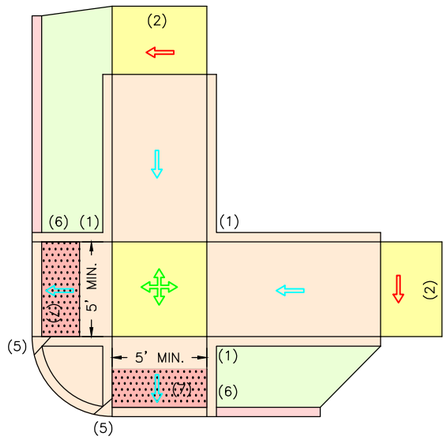
LEGEND

- 1.0% MIN., 2.0% MAX. CROSS SLOPE.
- LANDING AREA. MIN. 5' X 5' WITH 1.0% MIN., 2.0% MAX. SLOPE IN ANY DIRECTION.
- MAX. RAMP SLOPE IS 1V:12H (8.33%) AND HAVE A CROSS SLOPE OF 1.0% MIN., 2.0% MAX.
- DETECTABLE WARNING DEVICE. EXTEND 2' IN DIRECTION OF TRAVEL.

KEYED NOTES

(1) VARIABLE CURB HEIGHT. CURB MAY BE ELIMINATED IF UNNECESSARY AND APPROVED BY THE ENGINEER
(2) SEE PLAN SHEETS FOR WIDTH. SIDEWALKS AT CURB SHALL BE A MINIMUM OF 6' WIDE AND SIDEWALKS WITH A TREE LAWN SHALL BE A MINIMUM OF 5', WIDE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
(3) FLARE MAX. SLOPE IS 1V:10H WHEN MEASURED PARALLEL TO CURB LINE.
(4) CURB HEIGHT BETWEEN THE FLARES MAY RANGE BETWEEN 3" AND 6" AS NECESSARY WITH APPROVAL FROM THE ENGINEER.
(5) CHAMFER CORNERS AT 45 DEGREE ANGLE.
(6) 1' WIDE FLARE MAY BE SUBSTITUTED FOR VERTICAL CURB AT THE DISCRETION OF THE ENGINEER FOR NO ADDITION COST.
(7) DETECTABLE WARNING DEVICES ARE NOT USED ON EVERY CURB RAMP INSTALLED. SEE SITE PLAN FOR LOCATIONS WITH DETECTABLE WARNING DEVICES.



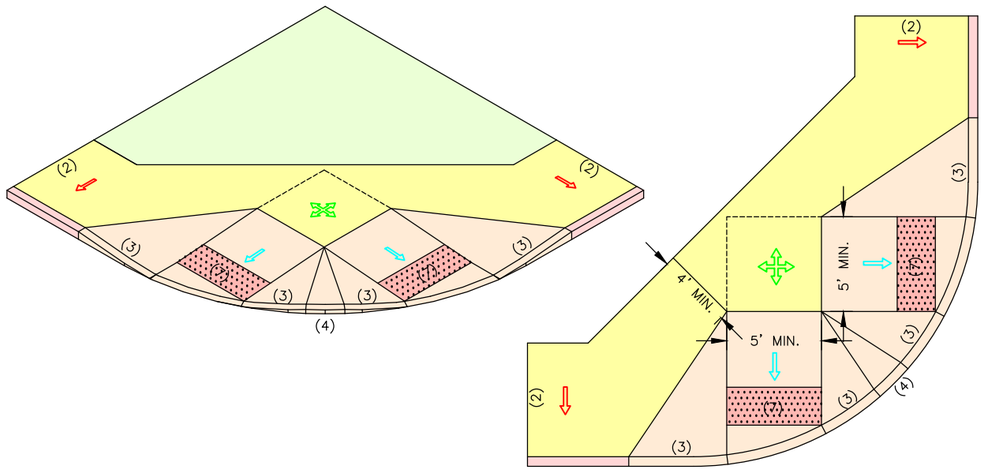


TYPE A6 CURB RAMP PERPENDICULAR WITH SMALL TREE LAWN (LESS THAN 6')

NO SCALE

TYPE B1 CURB RAMP PERPENDICULAR, FOR WIDE SIDEWALK, NO TREE LAWN

NO SCALE



TYPE B2 CURB RAMP PERPENDICULAR, FOR NARROW SIDEWALK, NO TREE LAWN

NO SCALE

CURB RAMP GENERAL NOTES:

ALL AREAS OF THE PEDESTRIAN ACCESS ROUTE MUST BE COMPLIANT WITH THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)". EXCEPTIONS MUST BE APPROVED BY THE ENGINEER.

FINISHED SIDEWALK SHALL BE STABLE, SLIP RESISTANT AND SURFACE DOES NOT POND WATER.

SIDEWALK AND RAMP CROSS SLOPES SHALL BE A MINIMUM OF 1.0% TO FACILITATE DRAINAGE AND A MAXIMUM OF 2.0% TO BE USABLE FOR DISABLED INDIVIDUALS.

STORMWATER INLETS, SIGNS, POSTS, MANHOLE COVERS, PULL BOXES AND OTHER ACCESS LIDS SHOULD BE AVOIDED WITHIN THE SIDEWALK. IF SUCH A LOCATION IS NECESSARY, THE FEATURE MUST MEET ADA STANDARDS.

THE RUNNING GRADE OF A SIDEWALK SHALL NOT EXCEED 5.0% UNLESS IT IS MATCHING THE GRADE OF THE ADJACENT ROADWAY.

ALL RAMPS SHALL NOT HAVE RUNNING SLOPES GREATER THAN 8.33% OR 1V:12H. RAMP LENGTH NOT REQUIRED TO EXCEED 15 FEET.

PEDESTRIAN ACCESS ROUTE SHALL CONTINUE ACROSS DRIVEWAYS.

LANDINGS SHALL BE CONSTRUCTED AT THE TOP AND/OR BOTTOM OF A CURB RAMP WHEREVER A TURNING MOVEMENT OR ACCESS TO PEDESTRIAN PUSH BUTTON IS REQUIRED.

LANDINGS LOCATED IN THE ROADWAY MUST BE COMPLETELY CONTAINED WITHIN THE CROSSWALK.

SIDE FLARES OF CURB RAMPS, IN THE PATH OF PEDESTRIAN TRAVEL (TRAVERSABLE), SHALL NOT EXCEED A SLOPE OF 1V:10H. SIDE FLARES OUTSIDE THE PEDESTRIAN PATH (NONTRAVERSABLE) MAY BE 1V:2H OR VERTICAL.

TRANSITION FROM SIDEWALK TO GUTTER TO ROADWAY MUST BE FLUSH.

DETECTABLE WARNING DEVICE (TRUNCATED DOMES) SHALL BE PRE-FORMED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, AT PUBLIC STREET INTERSECTIONS AND ANY SIGNALIZED INTERSECTIONS. STAMPED CONCRETE WILL NOT BE ACCEPTED.

THE DETECTABLE WARNING DEVICE SHALL BE RED. TRUNCATED DOMES SHALL SPAN THE FULL WIDTH (WITHIN 2") OF THE RAMP OR LANDING.

DETECTABLE WARNING DOMES SHALL BE ALIGNED PARALLEL TO THE SLOPE WHEN INSTALLED ON A RAMP. WHEN INSTALLED ON A LANDING OR BLENDED TRANSITION, THEY SHALL BE ALIGNED PERPENDICULAR OR RADIAL TO THE BREAK BETWEEN THE RAMP, LANDING OR BLENDED TRANSITION AND THE STREET.

IF CONSTRUCTION OF 5' X 5' LANDING IS NOT FEASIBLE, 4' X 4' LANDING MAY BE USED WITH APPROVAL FROM THE ENGINEER.

RAMP WIDTH MAY BE REDUCED TO 4' WITH APPROVAL OF THE ENGINEER.

CURB RAMPS AND INTEGRAL CURBS THAT ARE PART OF RAMPS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE SIDEWALK.

THE CONTRACTOR SHALL IDENTIFY THE REMOVAL LIMITS FOR THE SIDEWALK AND CURB. IF THE CONTRACTOR DETERMINES THE REMOVAL LIMITS ARE NOT ADEQUATE TO MEET ADA STANDARDS, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND CONSULT THE ENGINEER TO DETERMINE THE BEST SOLUTION.

21MSD-00086

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

DATE:	REVISION:

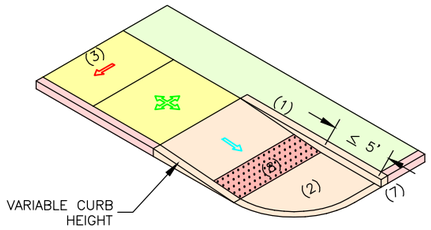
DWN. BY: K.J.W. | APPD. BY: M.D.S.
DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19-981
DWG. NO: *DE-4*

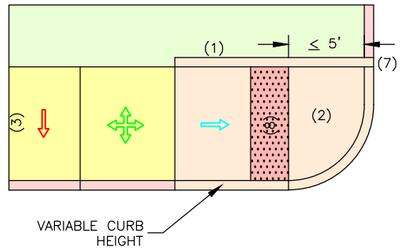
LEGEND

- 1.0% MIN., 2.0% MAX. CROSS SLOPE.
- LANDING AREA. MIN. 5' X 5' WITH 1.0% MIN., 2.0% MAX. SLOPE IN ANY DIRECTION.
- MAX. RAMP SLOPE IS 1V:12H (8.33%) AND HAVE A CROSS SLOPE OF 1.0% MIN., 2.0% MAX.
- DETECTABLE WARNING DEVICE. EXTEND 2' IN DIRECTION OF TRAVEL.

KEYED NOTES

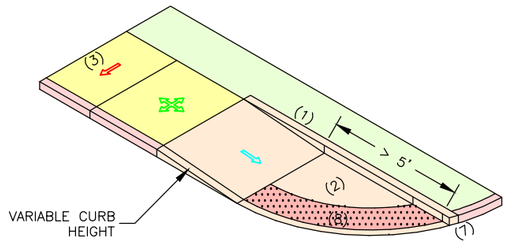
(1) VARIABLE CURB HEIGHT. CURB MAY BE ELIMINATED IF UNNECESSARY AND APPROVED BY THE ENGINEER.
(2) TRANSITION AREA SLOPE TO BE MAXIMUM OF 5.0% OR MATCH STREET GRADE. SLOPES SHALL NOT CREATE AN AREA THAT HOLDS WATER.
(3) SEE PLAN SHEETS FOR WIDTH. SIDEWALKS AT CURB SHALL BE A MINIMUM OF 6' WIDE AND SIDEWALKS WITH A TREE LAWN SHALL BE A MINIMUM OF 5', WIDE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
(4) FLARE MAX. SLOPE IS 1V:10H WHEN MEASURED PARALLEL TO CURB LINE.
(5) ENSURE THAT INSIDE EDGE OF CURVED RAMPS MAINTAIN A 1V:12H (8.33%) MAX. SLOPE.
(6) ENSURE ADEQUATE DRAINAGE OF LANDING AREA. SLOPES SHALL NOT CREATE A LANDING AREA THAT HOLDS WATER.
(7) 1' WIDE FLARE MAY BE SUBSTITUTED FOR VERTICAL CURB AT THE DISCRETION OF THE ENGINEER FOR NO ADDITION COST.
(8) DETECTABLE WARNING DEVICES ARE NOT USED ON EVERY CURB RAMP INSTALLED. SEE SITE PLAN FOR LOCATIONS WITH DETECTABLE WARNING DEVICES.

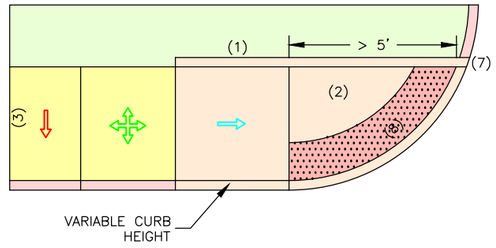




TYPE C1 CURB RAMP PERPENDICULAR SMALL RADIUS

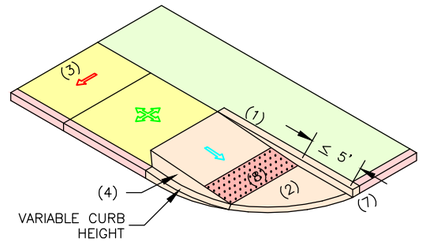
NO SCALE

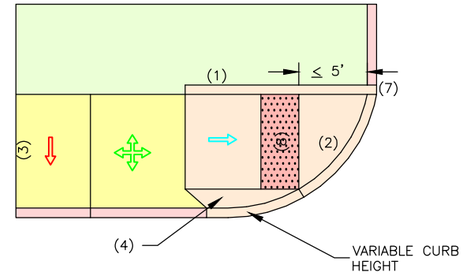




TYPE C2 CURB RAMP PERPENDICULAR LARGE RADIUS

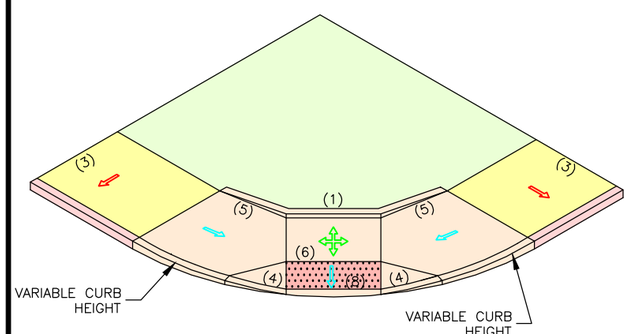
NO SCALE

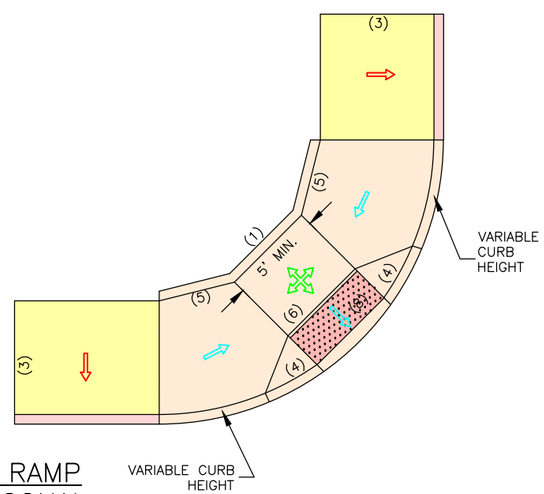




TYPE C3 CURB RAMP PERPENDICULAR WITH TRAVERSABLE FLARE

NO SCALE





TYPE D CURB RAMP COMPOUND DIAGONAL

NO SCALE

CURB RAMP GENERAL NOTES:

ALL AREAS OF THE PEDESTRIAN ACCESS ROUTE MUST BE COMPLIANT WITH THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)". EXCEPTIONS MUST BE APPROVED BY THE ENGINEER.

FINISHED SIDEWALK SHALL BE STABLE, SLIP RESISTANT AND SURFACE DOES NOT POND WATER.

SIDEWALK AND RAMP CROSS SLOPES SHALL BE A MINIMUM OF 1.0% TO FACILITATE DRAINAGE AND A MAXIMUM OF 2.0% TO BE USABLE FOR DISABLED INDIVIDUALS.

STORMWATER INLETS, SIGNS, POSTS, MANHOLE COVERS, PULL BOXES AND OTHER ACCESS LIDS SHOULD BE AVOIDED WITHIN THE SIDEWALK. IF SUCH A LOCATION IS NECESSARY, THE FEATURE MUST MEET ADA STANDARDS.

THE RUNNING GRADE OF A SIDEWALK SHALL NOT EXCEED 5.0% UNLESS IT IS MATCHING THE GRADE OF THE ADJACENT ROADWAY.

ALL RAMPS SHALL NOT HAVE RUNNING SLOPES GREATER THAN 8.33% OR 1V:12H. RAMP LENGTH NOT REQUIRED TO EXCEED 15 FEET.

PEDESTRIAN ACCESS ROUTE SHALL CONTINUE ACROSS DRIVEWAYS.

LANDINGS SHALL BE CONSTRUCTED AT THE TOP AND/OR BOTTOM OF A CURB RAMP WHEREVER A TURNING MOVEMENT OR ACCESS TO PEDESTRIAN PUSH BUTTON IS REQUIRED.

LANDINGS LOCATED IN THE ROADWAY MUST BE COMPLETELY CONTAINED WITHIN THE CROSSWALK.

SIDE FLARES OF CURB RAMPS, IN THE PATH OF PEDESTRIAN TRAVEL (TRAVERSABLE), SHALL NOT EXCEED A SLOPE OF 1V:10H. SIDE FLARES OUTSIDE THE PEDESTRIAN PATH (NONTRAVERSABLE) MAY BE 1V:2H OR VERTICAL.

TRANSITION FROM SIDEWALK TO GUTTER TO ROADWAY MUST BE FLUSH.

DETECTABLE WARNING DEVICE (TRUNCATED DOMES) SHALL BE PRE-FORMED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, AT PUBLIC STREET INTERSECTIONS AND ANY SIGNALIZED INTERSECTIONS. STAMPED CONCRETE WILL NOT BE ACCEPTED.

THE DETECTABLE WARNING DEVICE SHALL BE RED. TRUNCATED DOMES SHALL SPAN THE FULL WIDTH (WITHIN 2") OF THE RAMP OR LANDING.

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IF CONSTRUCTION OF 5' X 5' LANDING IS NOT FEASIBLE, 4' X 4' LANDING MAY BE USED WITH APPROVAL FROM THE ENGINEER.

RAMP WIDTH MAY BE REDUCED TO 4' WITH APPROVAL OF THE ENGINEER.

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

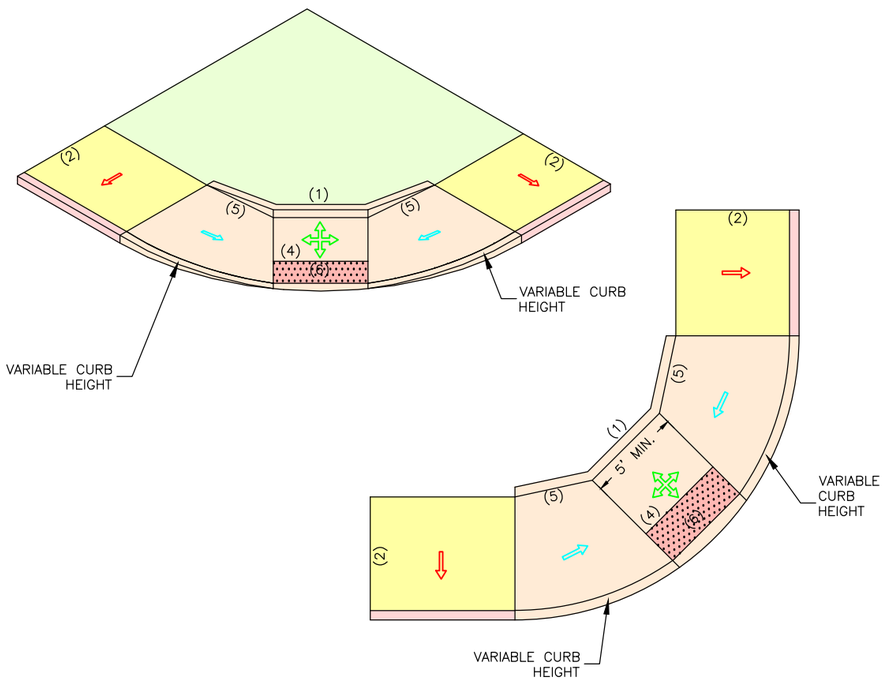
REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE:	JANUARY 2021
SCALE:	AS SHOWN
PROJ. NO:	SC19-981
DWG. NO:	DE-5

LEGEND

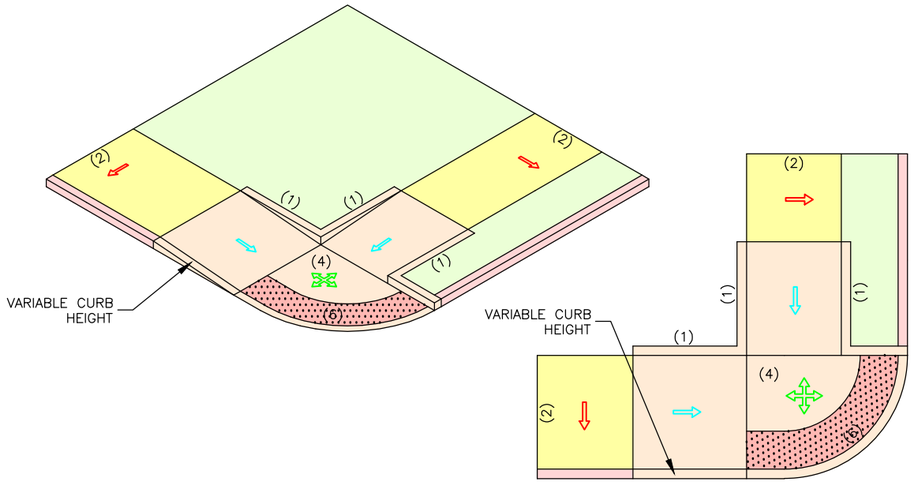
- 1.0% MIN., 2.0% MAX. CROSS SLOPE.
- LANDING AREA. MIN. 5' X 5' WITH 1.0% MIN., 2.0% MAX. SLOPE IN ANY DIRECTION.
- MAX. RAMP SLOPE IS 1V:12H (8.33%) AND HAVE A CROSS SLOPE OF 1.0% MIN., 2.0% MAX.
- DETECTABLE WARNING DEVICE. EXTEND 2' IN DIRECTION OF TRAVEL.

KEYED NOTES

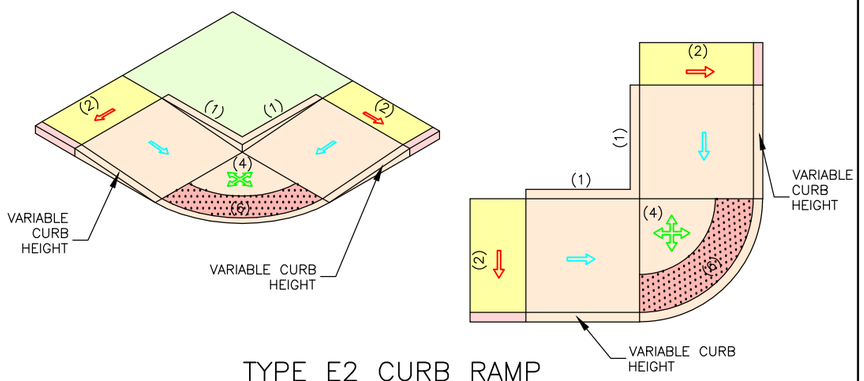
(1) VARIABLE CURB HEIGHT. CURB MAY BE ELIMINATED IF UNNECESSARY AND APPROVED BY THE ENGINEER.
(2) SEE PLAN SHEETS FOR WIDTH. SIDEWALKS AT CURB SHALL BE A MINIMUM OF 6' WIDE AND SIDEWALKS WITH A TREE LAWN SHALL BE A MINIMUM OF 5', WIDE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
(3) FLARE MAX. SLOPE IS 1V:10H WHEN MEASURED PARALLEL TO CURB LINE.
(4) ENSURE ADEQUATE DRAINAGE OF LANDING AREA. SLOPES SHALL NOT CREATE A LANDING AREA THAT HOLDS WATER.
(5) ENSURE THAT INSIDE EDGE OF CURVED RAMPS MAINTAIN A 1V:12H (8.33%) MAX. SLOPE.
(6) DETECTABLE WARNING DEVICES ARE NOT USED ON EVERY CURB RAMP INSTALLED. SEE SITE PLAN FOR LOCATIONS WITH DETECTABLE WARNING DEVICES.



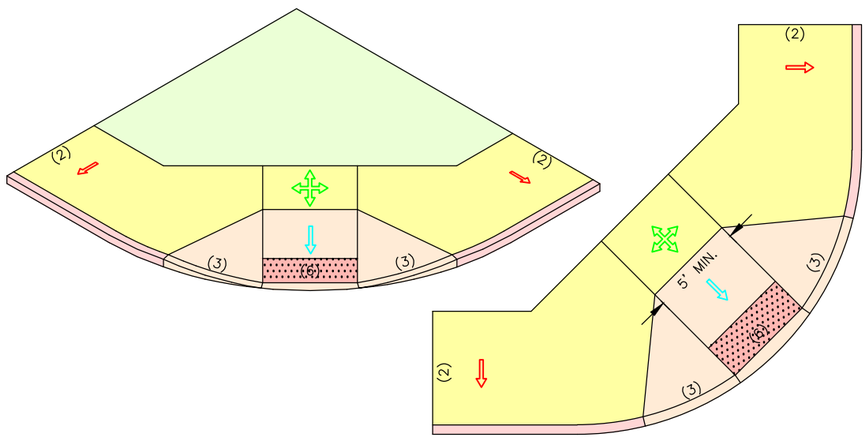
TYPE E1 CURB RAMP
PARALLEL DIAGONAL FOR NARROW SIDEWALKS, LARGE RADIUS
NO SCALE



TYPE E3 CURB RAMP
PARALLEL DIAGONAL FOR NARROW SIDEWALKS, SMALL RADIUS, ONE TREE LAWN
NO SCALE



TYPE E2 CURB RAMP
PARALLEL DIAGONAL FOR NARROW SIDEWALKS, SMALL RADIUS, NO TREE LAWN
NO SCALE



TYPE F1 CURB RAMP
DIAGONAL FOR NARROW SIDEWALKS
NO SCALE

CURB RAMP GENERAL NOTES:

ALL AREAS OF THE PEDESTRIAN ACCESS ROUTE MUST BE COMPLIANT WITH THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)". EXCEPTIONS MUST BE APPROVED BY THE ENGINEER.

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CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19-981
DWG. NO: *DE-6*

LEGEND

- 1.0% MIN., 2.0% MAX. CROSS SLOPE.
- LANDING AREA. MIN. 5' X 5' WITH 1.0% MIN., 2.0% MAX. SLOPE IN ANY DIRECTION.
- MAX. RAMP SLOPE IS 1V:12H (8.33%) AND HAVE A CROSS SLOPE OF 1.0% MIN., 2.0% MAX.
- DETECTABLE WARNING DEVICE. EXTEND 2' IN DIRECTION OF TRAVEL.

KEYED NOTES

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(5) ENSURE ADEQUATE DRAINAGE OF LANDING AREA. SLOPES SHALL NOT CREATE A LANDING AREA THAT HOLDS WATER.
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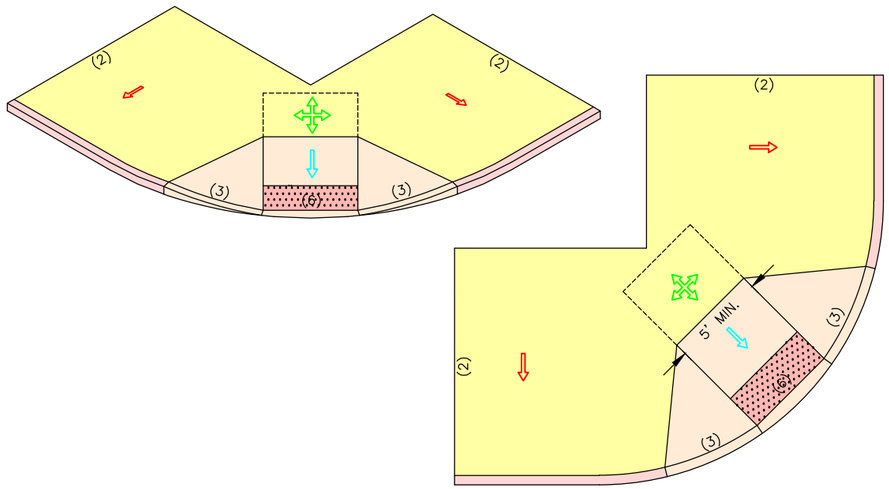
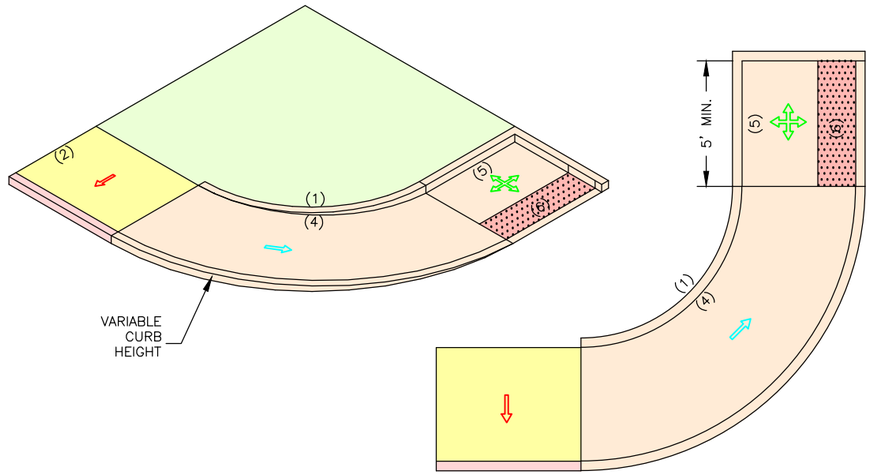
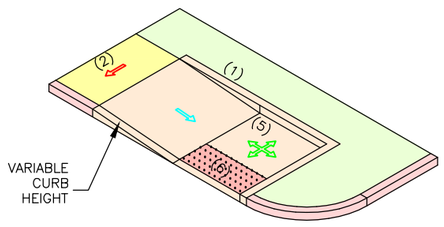
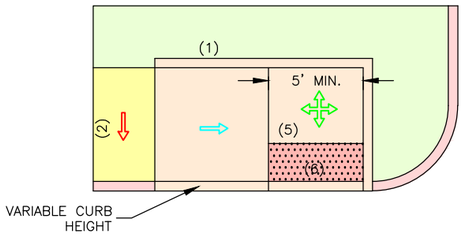


TYPE F2 CURB RAMP
DIAGONAL FOR WIDE SIDEWALKS
NO SCALE

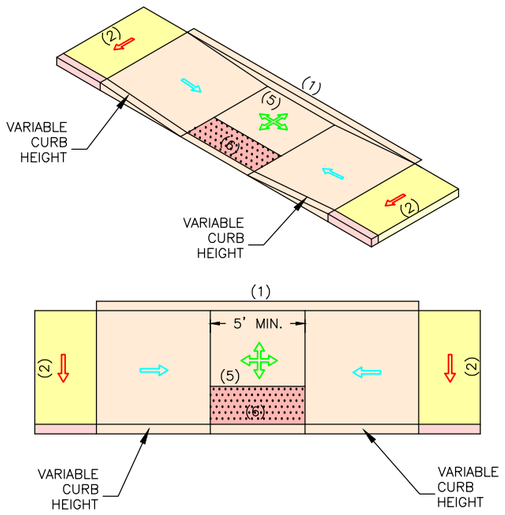


TYPE G1 CURB RAMP
PARALLEL AT INTERSECTION
NO SCALE





TYPE G2 CURB RAMP
PARALLEL, CHANGING DIRECTION
NO SCALE



TYPE G3 CURB RAMP
PARALLEL, MIDBLOCK
NO SCALE

CURB RAMP GENERAL NOTES:

ALL AREAS OF THE PEDESTRIAN ACCESS ROUTE MUST BE COMPLIANT WITH THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)". EXCEPTIONS MUST BE APPROVED BY THE ENGINEER.

FINISHED SIDEWALK SHALL BE STABLE, SLIP RESISTANT AND SURFACE DOES NOT POND WATER.

SIDEWALK AND RAMP CROSS SLOPES SHALL BE A MINIMUM OF 1.0% TO FACILITATE DRAINAGE AND A MAXIMUM OF 2.0% TO BE USABLE FOR DISABLED INDIVIDUALS.

STORMWATER INLETS, SIGNS, POSTS, MANHOLE COVERS, PULL BOXES AND OTHER ACCESS LIDS SHOULD BE AVOIDED WITHIN THE SIDEWALK. IF SUCH A LOCATION IS NECESSARY, THE FEATURE MUST MEET ADA STANDARDS.

THE RUNNING GRADE OF A SIDEWALK SHALL NOT EXCEED 5.0% UNLESS IT IS MATCHING THE GRADE OF THE ADJACENT ROADWAY.

ALL RAMPS SHALL NOT HAVE RUNNING SLOPES GREATER THAN 8.33% OR 1V:12H. RAMP LENGTH NOT REQUIRED TO EXCEED 15 FEET.

PEDESTRIAN ACCESS ROUTE SHALL CONTINUE ACROSS DRIVEWAYS.

LANDINGS SHALL BE CONSTRUCTED AT THE TOP AND/OR BOTTOM OF A CURB RAMP WHEREVER A TURNING MOVEMENT OR ACCESS TO PEDESTRIAN PUSH BUTTON IS REQUIRED.

LANDINGS LOCATED IN THE ROADWAY MUST BE COMPLETELY CONTAINED WITHIN THE CROSSWALK.

SIDE FLARES OF CURB RAMPS, IN THE PATH OF PEDESTRIAN TRAVEL (TRAVERSABLE), SHALL NOT EXCEED A SLOPE OF 1V:10H. SIDE FLARES OUTSIDE THE PEDESTRIAN PATH (NONTRAVERSABLE) MAY BE 1V:2H OR VERTICAL.

TRANSITION FROM SIDEWALK TO GUTTER TO ROADWAY MUST BE FLUSH.

DETECTABLE WARNING DEVICE (TRUNCATED DOMES) SHALL BE PRE-FORMED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, AT PUBLIC STREET INTERSECTIONS AND ANY SIGNALIZED INTERSECTIONS. STAMPED CONCRETE WILL NOT BE ACCEPTED.

THE DETECTABLE WARNING DEVICE SHALL BE RED. TRUNCATED DOMES SHALL SPAN THE FULL WIDTH (WITHIN 2") OF THE RAMP OR LANDING.

DETECTABLE WARNING DOMES SHALL BE ALIGNED PARALLEL TO THE SLOPE WHEN INSTALLED ON A RAMP. WHEN INSTALLED ON A LANDING OR BLENDED TRANSITION, THEY SHALL BE ALIGNED PERPENDICULAR OR RADIAL TO THE BREAK BETWEEN THE RAMP, LANDING OR BLENDED TRANSITION AND THE STREET.

IF CONSTRUCTION OF 5' X 5' LANDING IS NOT FEASIBLE, 4' X 4' LANDING MAY BE USED WITH APPROVAL FROM THE ENGINEER.

RAMP WIDTH MAY BE REDUCED TO 4' WITH APPROVAL OF THE ENGINEER.

CURB RAMPS AND INTEGRAL CURBS THAT ARE PART OF RAMPS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE SIDEWALK.

THE CONTRACTOR SHALL IDENTIFY THE REMOVAL LIMITS FOR THE SIDEWALK AND CURB. IF THE CONTRACTOR DETERMINES THE REMOVAL LIMITS ARE NOT ADEQUATE TO MEET ADA STANDARDS, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND CONSULT THE ENGINEER TO DETERMINE THE BEST SOLUTION.

21MSD-00086

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

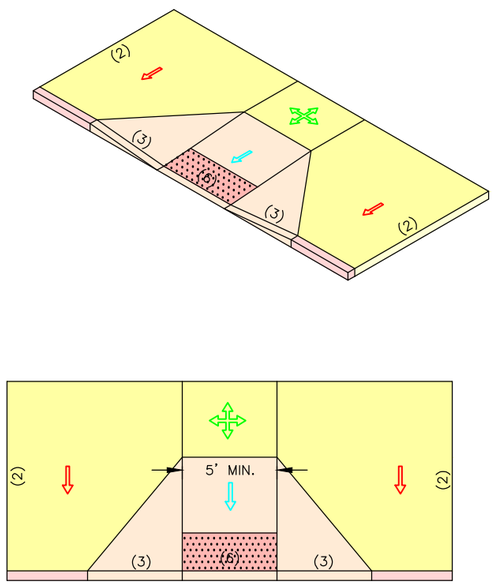
DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19-981	
DWG. NO: DE-7	

LEGEND

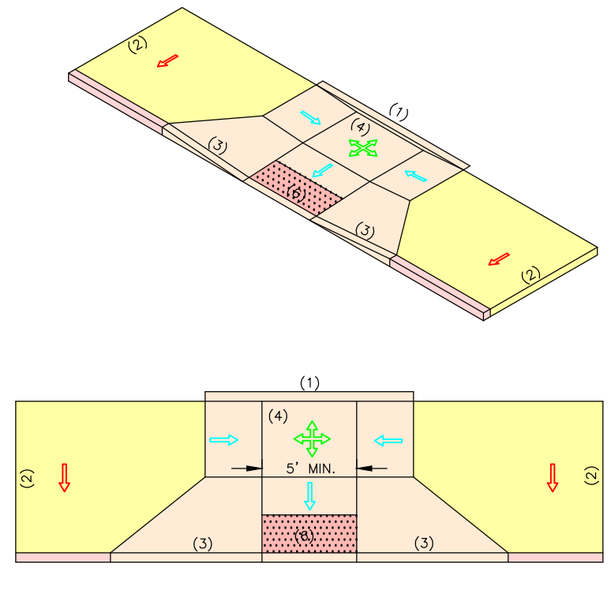
- 1.0% MIN., 2.0% MAX. CROSS SLOPE.
- LANDING AREA. MIN. 5' X 5' WITH 1.0% MIN., 2.0% MAX. SLOPE IN ANY DIRECTION.
- MAX. RAMP SLOPE IS 1V:12H (8.33%) AND HAVE A CROSS SLOPE OF 1.0% MIN., 2.0% MAX.
- DETECTABLE WARNING DEVICE. EXTEND 2' IN DIRECTION OF TRAVEL.

KEYED NOTES

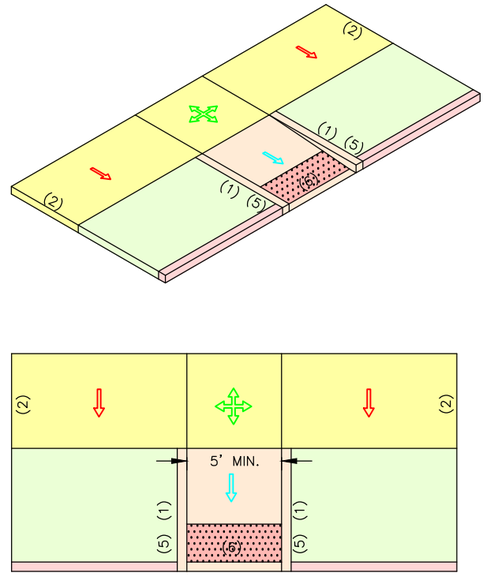
(1) VARIABLE CURB HEIGHT. CURB MAY BE ELIMINATED IF UNNECESSARY AND APPROVED BY THE ENGINEER.
(2) SEE PLAN SHEETS FOR WIDTH. SIDEWALKS AT CURB SHALL BE A MINIMUM OF 6' WIDE AND SIDEWALKS WITH A TREE LAWN SHALL BE A MINIMUM OF 5', WIDE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
(3) FLARE MAX. SLOPE IS 1V:10H WHEN MEASURED PARALLEL TO CURB LINE.
(4) ENSURE ADEQUATE DRAINAGE OF LANDING AREA. SLOPES SHALL NOT CREATE A LANDING AREA THAT HOLDS WATER.
(5) 1" WIDE FLARE MAY BE SUBSTITUTED FOR VERTICAL CURB AT THE DISCRETION OF THE ENGINEER FOR NO ADDITIONAL COST.
(6) DETECTABLE WARNING DEVICES ARE NOT USED ON EVERY CURB RAMP INSTALLED. SEE SITE PLAN FOR LOCATIONS WITH DETECTABLE WARNING DEVICES.



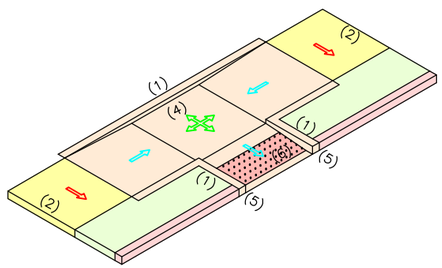
TYPE H CURB RAMP
PERPENDICULAR FOR WIDE SIDEWALK, MIDBLOCK
NO SCALE



TYPE I CURB RAMP
COMBINATION (PARALLEL AND PERPENDICULAR), MIDBLOCK
NO SCALE



TYPE J2 CURB RAMP
PERPENDICULAR WITH TREE LAWN (6' OR GREATER), MIDBLOCK
NO SCALE



TYPE J1 CURB RAMP
PERPENDICULAR WITH TREE LAWN (LESS THAN 6'), MIDBLOCK
NO SCALE

CURB RAMP GENERAL NOTES:

ALL AREAS OF THE PEDESTRIAN ACCESS ROUTE MUST BE COMPLIANT WITH THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG)". EXCEPTIONS MUST BE APPROVED BY THE ENGINEER.

FINISHED SIDEWALK SHALL BE STABLE, SLIP RESISTANT AND SURFACE DOES NOT POND WATER.

SIDEWALK AND RAMP CROSS SLOPES SHALL BE A MINIMUM OF 1.0% TO FACILITATE DRAINAGE AND A MAXIMUM OF 2.0% TO BE USABLE FOR DISABLED INDIVIDUALS.

STORMWATER INLETS, SIGNS, POSTS, MANHOLE COVERS, PULL BOXES AND OTHER ACCESS LIDS SHOULD BE AVOIDED WITHIN THE SIDEWALK. IF SUCH A LOCATION IS NECESSARY, THE FEATURE MUST MEET ADA STANDARDS.

THE RUNNING GRADE OF A SIDEWALK SHALL NOT EXCEED 5.0% UNLESS IT IS MATCHING THE GRADE OF THE ADJACENT ROADWAY.

ALL RAMPS SHALL NOT HAVE RUNNING SLOPES GREATER THAN 8.33% OR 1V:12H. RAMP LENGTH NOT REQUIRED TO EXCEED 15 FEET.

PEDESTRIAN ACCESS ROUTE SHALL CONTINUE ACROSS DRIVEWAYS.

LANDINGS SHALL BE CONSTRUCTED AT THE TOP AND/OR BOTTOM OF A CURB RAMP WHEREVER A TURNING MOVEMENT OR ACCESS TO PEDESTRIAN PUSH BUTTON IS REQUIRED.

LANDINGS LOCATED IN THE ROADWAY MUST BE COMPLETELY CONTAINED WITHIN THE CROSSWALK.

SIDE FLARES OF CURB RAMPS, IN THE PATH OF PEDESTRIAN TRAVEL (TRAVERSABLE), SHALL NOT EXCEED A SLOPE OF 1V:10H. SIDE FLARES OUTSIDE THE PEDESTRIAN PATH (NONTRAVERSABLE) MAY BE 1V:2H OR VERTICAL.

TRANSITION FROM SIDEWALK TO GUTTER TO ROADWAY MUST BE FLUSH.

DETECTABLE WARNING DEVICE (TRUNCATED DOMES) SHALL BE PRE-FORMED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, AT PUBLIC STREET INTERSECTIONS AND ANY SIGNALIZED INTERSECTIONS. STAMPED CONCRETE WILL NOT BE ACCEPTED.

THE DETECTABLE WARNING DEVICE SHALL BE RED. TRUNCATED DOMES SHALL SPAN THE FULL WIDTH (WITHIN 2") OF THE RAMP OR LANDING.

DETECTABLE WARNING DOMES SHALL BE ALIGNED PARALLEL TO THE SLOPE WHEN INSTALLED ON A RAMP. WHEN INSTALLED ON A LANDING OR BLENDED TRANSITION, THEY SHALL BE ALIGNED PERPENDICULAR OR RADIAL TO THE BREAK BETWEEN THE RAMP, LANDING OR BLENDED TRANSITION AND THE STREET.

IF CONSTRUCTION OF 5' X 5' LANDING IS NOT FEASIBLE, 4' X 4' LANDING MAY BE USED WITH APPROVAL FROM THE ENGINEER.

RAMP WIDTH MAY BE REDUCED TO 4' WITH APPROVAL OF THE ENGINEER.

CURB RAMPS AND INTEGRAL CURBS THAT ARE PART OF RAMPS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE SIDEWALK.

THE CONTRACTOR SHALL IDENTIFY THE REMOVAL LIMITS FOR THE SIDEWALK AND CURB. IF THE CONTRACTOR DETERMINES THE REMOVAL LIMITS ARE NOT ADEQUATE TO MEET ADA STANDARDS, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND CONSULT THE ENGINEER TO DETERMINE THE BEST SOLUTION.

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

SIDEWALK AND RAMP DETAILS

DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19-981	
DWG. NO: DE-8	

LEGEND

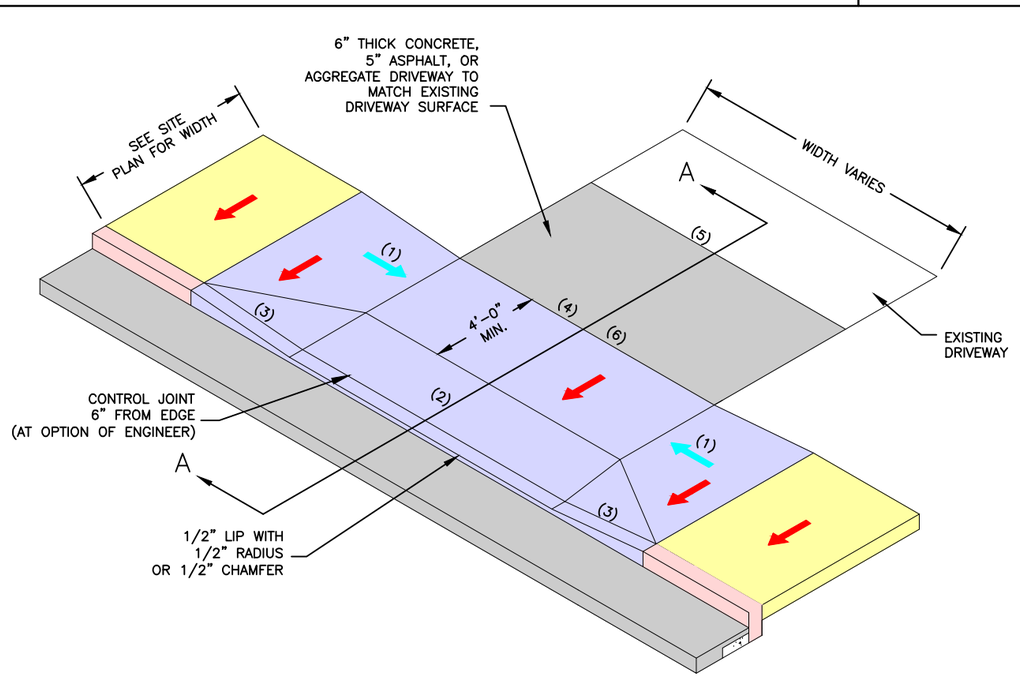
- 1.50% SLOPE ±0.50%
- MAX. SLOPE 1V:12H (8.33%)

KEYED NOTES

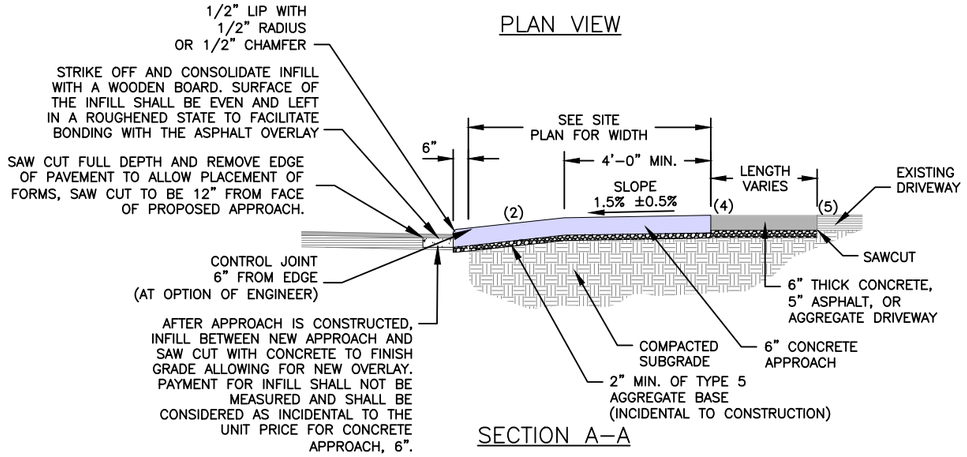
(1) LENGTH OF RAMP TO BE 5' TO 15', DEPENDENT ON SLOPE.
(2) MIN. GRADE 1%, MAX. GRADE OF 12%.
(3) MAX. SLOPE 1:10, MEASURED PARALLEL TO THE CURB LINE.
(4) MAXIMUM PERCENT CHANGE FOR A SAG GRADE BREAK IS 12%. MAXIMUM PERCENT CHANGE FOR A CREST GRADE BREAK IS 8%.
(5) MAINTAIN SLOPE FOR A MINIMUM OF 10' BEFORE ANOTHER GRADE CHANGE.
(6) CONTRACTOR TO MATCH EXISTING ELEVATION OF DRIVEWAY AS CLOSE AS POSSIBLE WHILE PROVIDING AN ADA COMPLIANT SIDEWALK.

NOTES

1. IF TRANSITION OF DRIVEWAY BEYOND APPROACH IS NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE EXISTING DRIVEWAY TO NEAREST JOINT OR AS DIRECTED BY THE ENGINEER, TO BE PAID BY UNIT BID PRICE FOR 6" CONCRETE DRIVEWAY, 5" ASPHALT DRIVEWAY OR AGGREGATE DRIVEWAY AS SHOWN ON THE SITE PLANS.
2. TOOLED JOINTS ARE REQUIRED AT ALL SLOPE BREAK LINES.
3. CURB, GUTTER AND SIDEWALK TYPES VARY. SEE SITE PLANS FOR EXACT TYPES.
4. SAW CUT LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONSULT WITH ENGINEER BEFORE SAW CUT/REMOVALS.
5. CONTRACTOR SHALL COORDINATE CONSTRUCTION OF CURBS, GUTTERS, SIDEWALKS AND DRIVEWAYS REGARDLESS OF SEQUENCING OF CONSTRUCTION. CONTRACTOR IS SPECIFICALLY CAUTIONED NOT TO POUR CURBS, GUTTERS, AND SIDEWALKS PRIOR TO LAYOUT OF DRIVEWAYS AS APPROACH TYPES ARE SUBJECT TO CHANGE.
6. AT ENGINEERS DIRECTION, CROSS SLOPE OF SIDEWALKS AT DRIVEWAY APPROACHES MAY SLOPE AWAY FROM THE STREET.
7. IF EXISTING DRIVEWAY IS ASPHALT, CONTRACTOR SHALL NOT USE ASPHALT EDGE AS FORM FOR CONCRETE APPROACH UNLESS APPROVED BY ENGINEER. ANY ASPHALT PATCH NECESSARY DUE TO FORMING FOR CONCRETE APPROACH IS INCIDENTAL TO THE CONSTRUCTION.



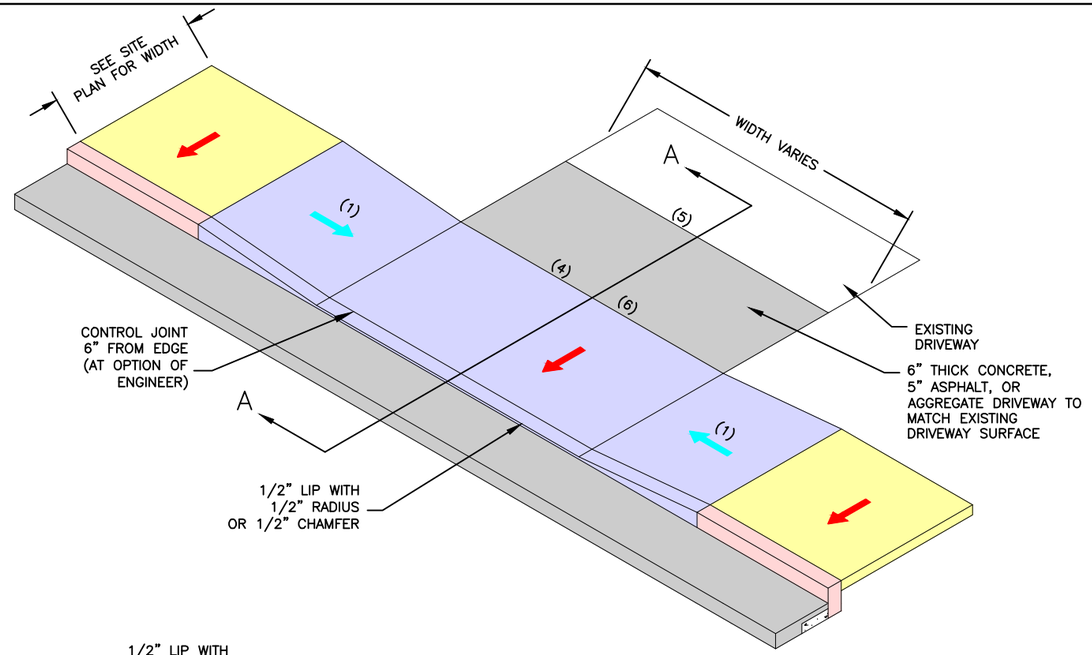
PLAN VIEW



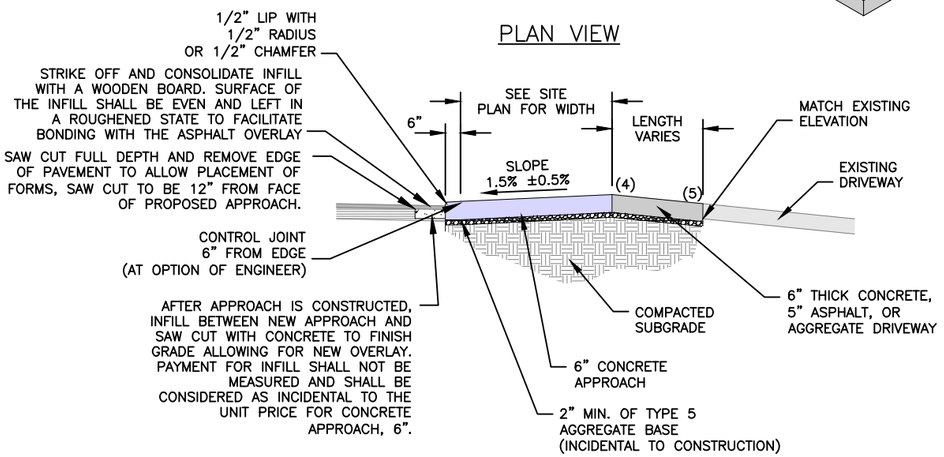
SECTION A–A

CONCRETE APPROACH (TYPE 1)

NO SCALE



PLAN VIEW



SECTION A–A

CONCRETE APPROACH (TYPE 2)

NO SCALE

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DRIVEWAY DETAILS

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19-981
DWG. NO: *DE-9*

21MSD-00086

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\DRIVEWAY DETAILS.dwg Tab: DE-9 Plotted on: Feb 09, 2021 - 10:33am Plotted by: kwolff

LEGEND

1.50% SLOPE ±0.50%

MAX. SLOPE 1V:12H (8.33%)

KEYED NOTES

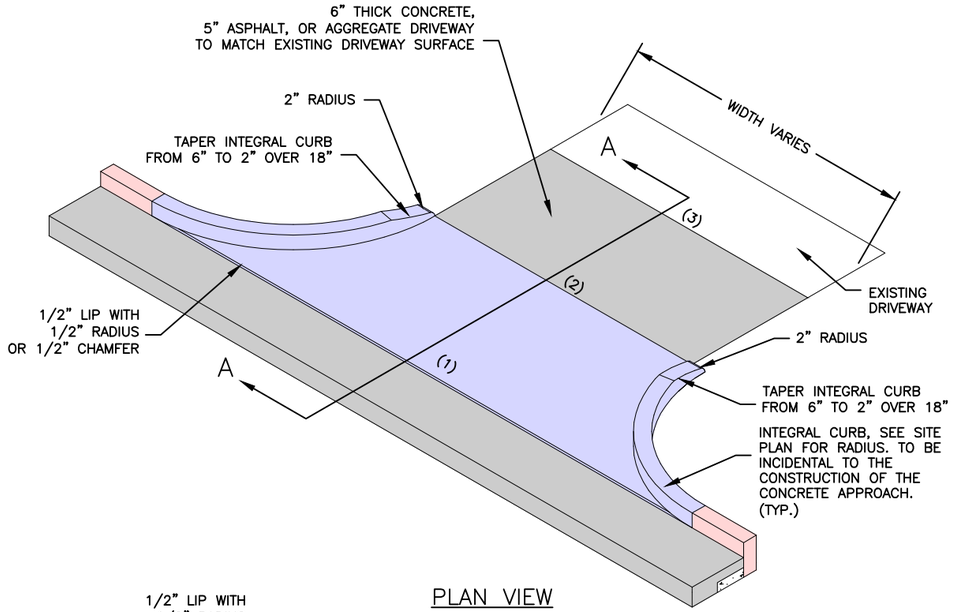
(1) MIN. GRADE 1%, MAX. GRADE OF 12%.

(2) MAXIMUM PERCENT CHANGE FOR A SAG GRADE BREAK IS 12%. MAXIMUM PERCENT CHANGE FOR A CREST GRADE BREAK IS 8%.

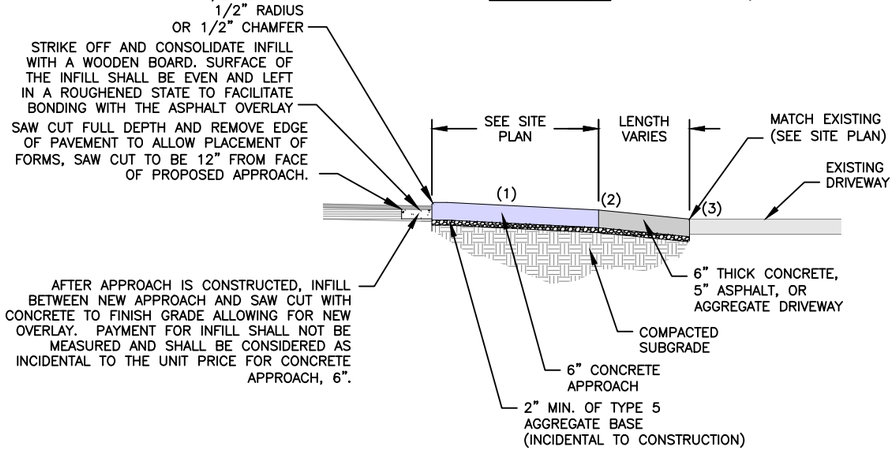
(3) MAINTAIN SLOPE FOR A MINIMUM OF 10' BEFORE ANOTHER GRADE CHANGE.

NOTES

1. IF TRANSITION OF DRIVEWAY BEYOND APPROACH IS NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE EXISTING DRIVEWAY TO NEAREST JOINT OR AS DIRECTED BY THE ENGINEER, TO BE PAID BY UNIT BID PRICE FOR 6" CONCRETE DRIVEWAY, 5" ASPHALT DRIVEWAY OR AGGREGATE DRIVEWAY AS SHOWN ON THE SITE PLANS.
2. TOOLED JOINTS ARE REQUIRED AT ALL SLOPE BREAK LINES.
3. CURB, GUTTER AND SIDEWALK TYPES VARY. SEE SITE PLANS FOR EXACT TYPES.
4. SAW CUT LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONSULT WITH ENGINEER BEFORE SAW CUT/REMOVALS.
5. CONTRACTOR SHALL COORDINATE CONSTRUCTION OF CURBS, GUTTERS, SIDEWALKS AND DRIVEWAYS REGARDLESS OF SEQUENCING OF CONSTRUCTION. CONTRACTOR IS SPECIFICALLY CAUTIONED NOT TO POUR CURBS, GUTTERS, AND SIDEWALKS PRIOR TO LAYOUT OF DRIVEWAYS AS APPROACH TYPES ARE SUBJECT TO CHANGE.
6. AT ENGINEERS DIRECTION, CROSS SLOPE OF SIDEWALKS AT DRIVEWAY APPROACHES MAY SLOPE AWAY FROM THE STREET.
7. IF EXISTING DRIVEWAY IS ASPHALT, CONTRACTOR SHALL NOT USE ASPHALT EDGE AS FORM FOR CONCRETE APPROACH UNLESS APPROVED BY ENGINEER. ANY ASPHALT PATCH NECESSARY DUE TO FORMING FOR CONCRETE APPROACH IS INCIDENTAL TO THE CONSTRUCTION.



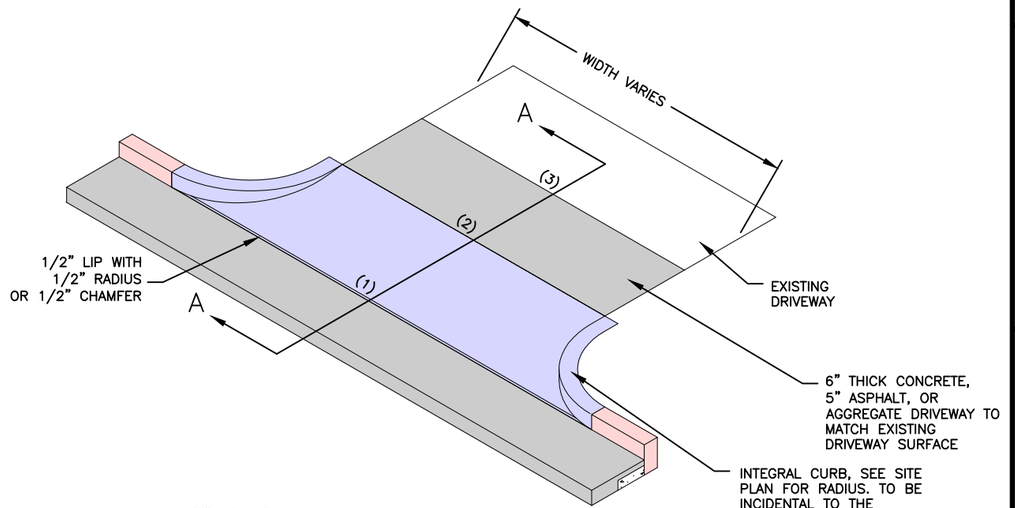
PLAN VIEW



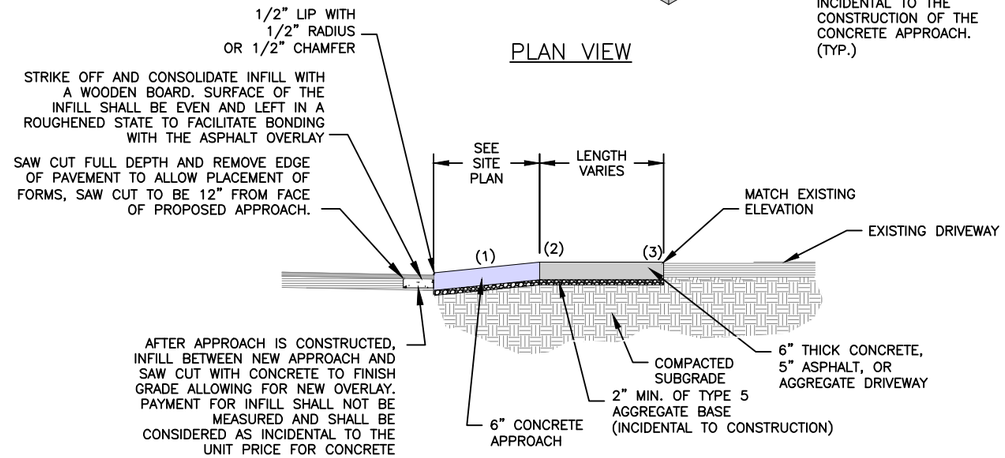
SECTION A–A

CONCRETE APPROACH (TYPE 3)

NO SCALE



PLAN VIEW



SECTION A–A

CONCRETE APPROACH (TYPE 4)

NO SCALE

737 RUDDER ROAD
FENTON, MISSOURI 63026
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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DRIVEWAY DETAILS	DATE:	REVISION:

DWN. BY:	APP'D. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19–981
DWG. NO: DE-10

21MSD-00086

Drawing name: J:\SC19-981 Holloway Road, Ballwin, MO\AUTOCAD DRAWINGS\DRIVEWAY DETAILS.dwg Tab: DE-10 Plotted on: Feb 09, 2021 – 10:33am Plotted by: kwolff

LEGEND

1.50% SLOPE ±0.50%

MAX. SLOPE 1V:12H (8.33%)

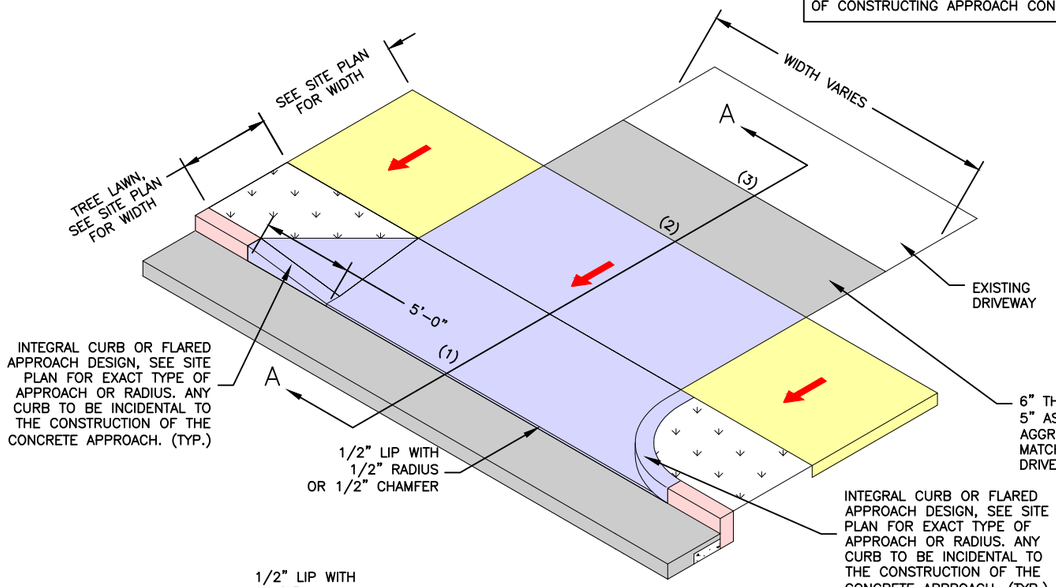
KEYED NOTES

(1) MIN. GRADE 1%, MAX. GRADE OF 12%.
(2) MAXIMUM PERCENT CHANGE FOR A SAG GRADE BREAK IS 12%. MAXIMUM PERCENT CHANGE FOR A CREST GRADE BREAK IS 8%.
(3) MAINTAIN SLOPE FOR A MINIMUM OF 10' BEFORE ANOTHER GRADE CHANGE.
(4) LENGTH OF RAMP TO BE 5' TO 15', DEPENDENT ON SLOPE. SIDEWALK TO DROP TO MATCH EXISTING DRIVEWAY ELEVATION AS CLOSE AS POSSIBLE.
(5) CONTRACTOR TO MATCH EXISTING ELEVATION OF DRIVEWAY AS CLOSE AS POSSIBLE WHILE PROVIDING AN ADA COMPLIANT SIDEWALK.
(6) VARIABLE HEIGHT CURB. CURB MAY BE ELIMINATED IF UNNECESSARY AND APPROVED BY THE ENGINEER. IF ELIMINATED, RADIAL CURB SHALL TAPER FLUSH WITH SIDEWALK.

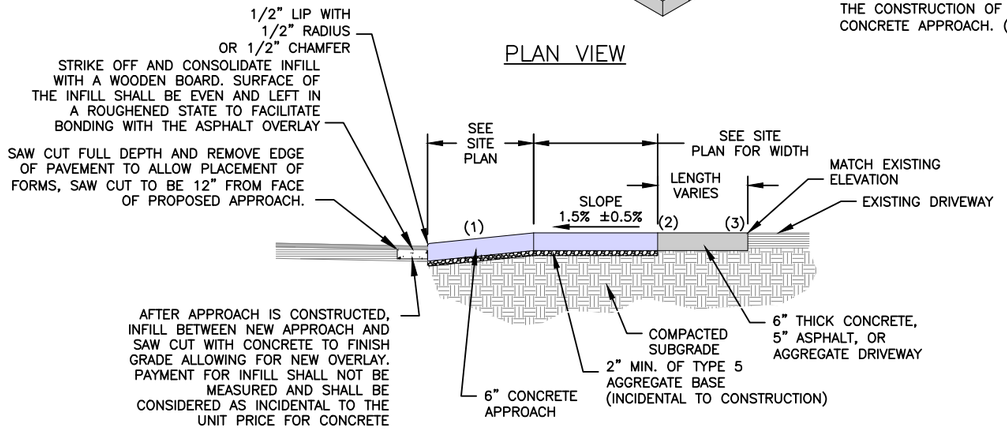
NOTES

1. IF TRANSITION OF DRIVEWAY BEYOND APPROACH IS NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE EXISTING DRIVEWAY TO NEAREST JOINT OR AS DIRECTED BY THE ENGINEER, TO BE PAID BY UNIT BID PRICE FOR 6" CONCRETE DRIVEWAY, 5" ASPHALT DRIVEWAY OR AGGREGATE DRIVEWAY AS SHOWN ON THE SITE PLANS.
2. TOOLED JOINTS ARE REQUIRED AT ALL SLOPE BREAK LINES.
3. CURB, GUTTER AND SIDEWALK TYPES VARY. SEE SITE PLANS FOR EXACT TYPES.
4. SAW CUT LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONSULT WITH ENGINEER BEFORE SAW CUT/REMOVALS.
5. CONTRACTOR SHALL COORDINATE CONSTRUCTION OF CURBS, GUTTERS, SIDEWALKS AND DRIVEWAYS REGARDLESS OF SEQUENCING OF CONSTRUCTION. CONTRACTOR IS SPECIFICALLY CAUTIONED NOT TO POUR CURBS, GUTTERS, AND SIDEWALKS PRIOR TO LAYOUT OF DRIVEWAYS AS APPROACH TYPES ARE SUBJECT TO CHANGE.
6. AT ENGINEERS DIRECTION, CROSS SLOPE OF SIDEWALKS AT DRIVEWAY APPROACHES MAY SLOPE AWAY FROM THE STREET.
7. IF EXISTING DRIVEWAY IS ASPHALT, CONTRACTOR SHALL NOT USE ASPHALT EDGE AS FORM FOR CONCRETE APPROACH UNLESS APPROVED BY ENGINEER. ANY ASPHALT PATCH NECESSARY DUE TO FORMING FOR CONCRETE APPROACH IS INCIDENTAL TO THE CONSTRUCTION.

FLARED APPROACH AND INTEGRAL CURB WITH RADIUS SHOWN IS FOR REFERENCE PURPOSES ONLY. DO NOT CONSTRUCT BOTH TYPES FOR ONE APPROACH UNLESS INSTRUCTED TO DO SO BY THE ENGINEER. SEE SITE PLANS FOR EXACT METHOD OF CONSTRUCTING APPROACH CONCRETE

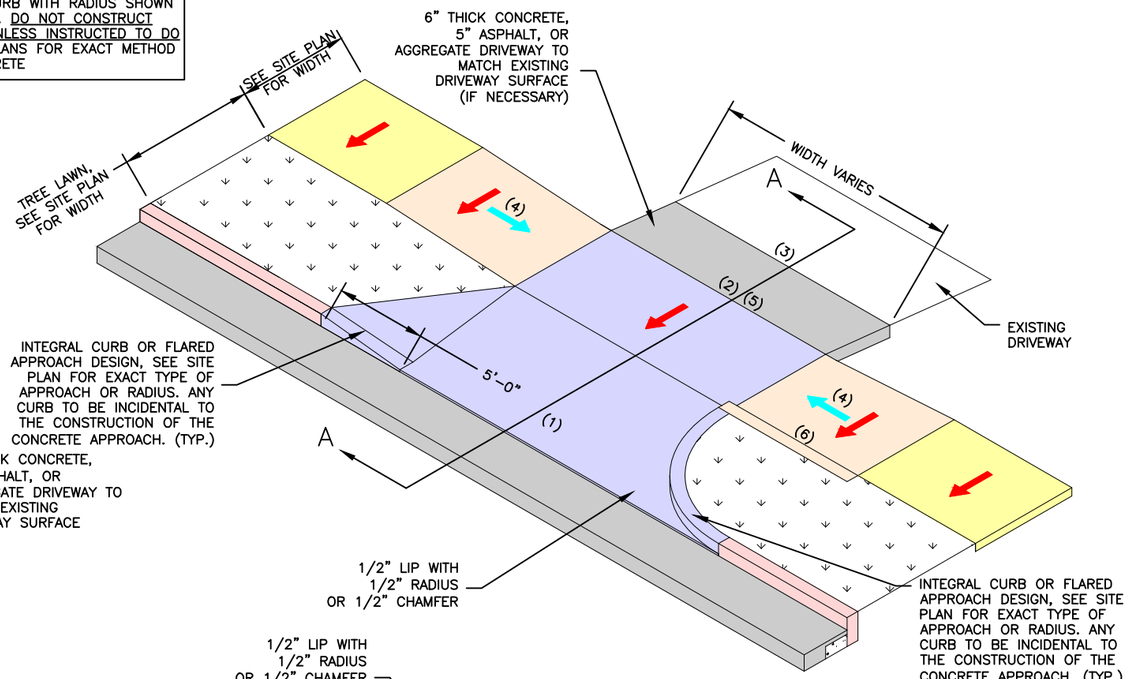


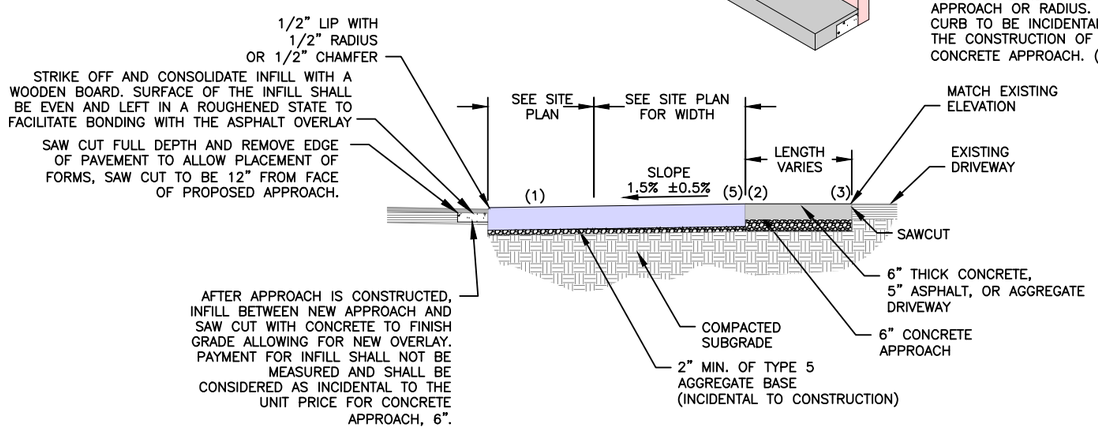
PLAN VIEW



SECTION A–A

CONCRETE APPROACH (TYPE 5)
NO SCALE





SECTION A–A

CONCRETE APPROACH (TYPE 6)
NO SCALE

21MSD-00086

COCHRAN
737 RUDDER ROAD
FENTON, MISSOURI 63026
314-842-4033 (tel.)
314-842-5957 (fax)
www.cochraneng.com
Civil Engineering
Land Surveying
Architecture
Site Development
Municipal Planning
General Consulting
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER
1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DRIVEWAY DETAILS

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19-981
DWG. NO: *DE-11*

LEGEND

1.50% SLOPE ±0.50%

MAX. SLOPE 1V:12H (8.33%)

KEYED NOTES

(1) MIN. GRADE 1%, MAX. GRADE OF 12%.
(2) MAX. SLOPE 1:10, MEASURED PARALLEL TO THE CURB LINE.
(3) MAXIMUM PERCENT CHANGE FOR A SAG GRADE BREAK IS 12%. MAXIMUM PERCENT CHANGE FOR A CREST GRADE BREAK IS 8%.
(4) MAINTAIN SLOPE FOR A MINIMUM OF 10' BEFORE ANOTHER GRADE CHANGE.

NOTES

1. IF TRANSITION OF DRIVEWAY BEYOND APPROACH IS NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE EXISTING DRIVEWAY TO NEAREST JOINT OR AS DIRECTED BY THE ENGINEER, TO BE PAID BY UNIT BID PRICE FOR 6" CONCRETE DRIVEWAY, 5" ASPHALT DRIVEWAY OR AGGREGATE DRIVEWAY AS SHOWN ON THE SITE PLANS.
2. TOOLED JOINTS ARE REQUIRED AT ALL SLOPE BREAK LINES.
3. CURB, GUTTER AND SIDEWALK TYPES VARY. SEE SITE PLANS FOR EXACT TYPES.
4. SAW CUT LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONSULT WITH ENGINEER BEFORE SAW CUT/REMOVALS.
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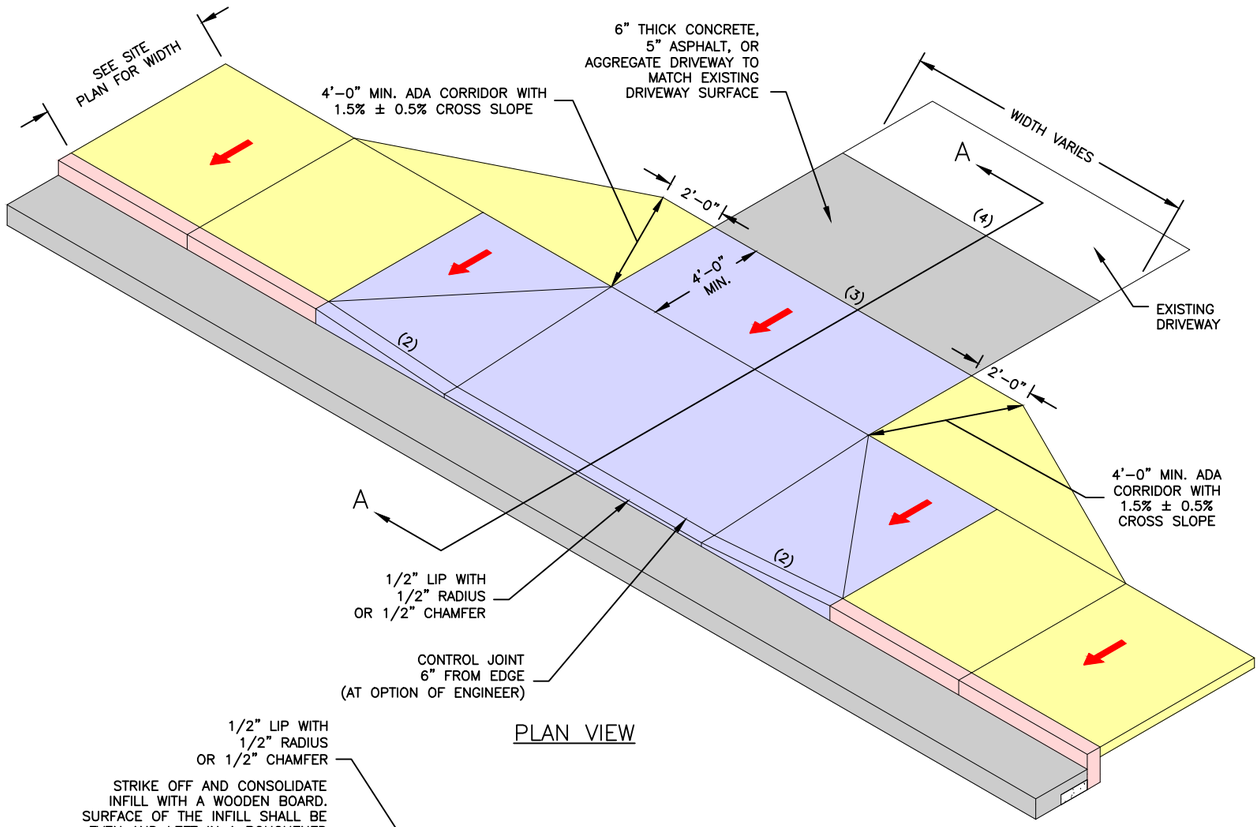
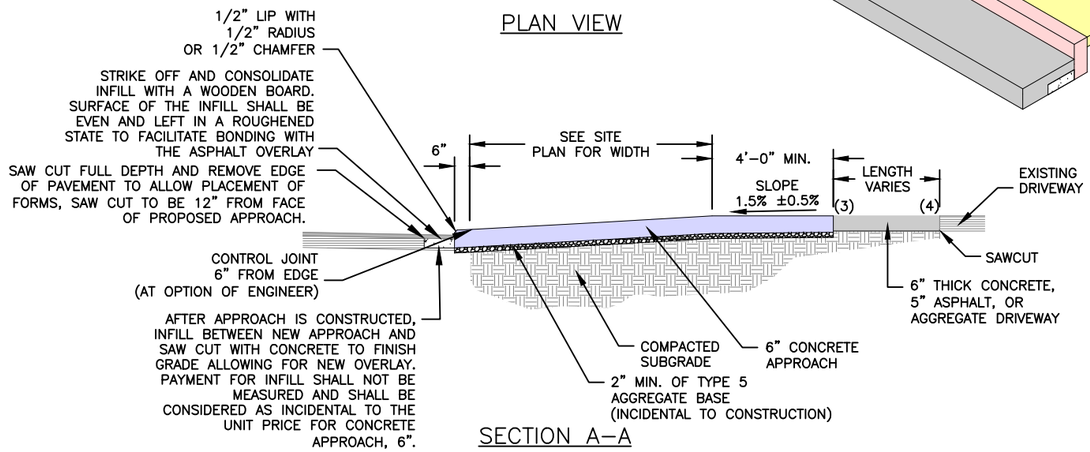
6. AT ENGINEERS DIRECTION, CROSS SLOPE OF SIDEWALKS AT DRIVEWAY APPROACHES MAY SLOPE AWAY FROM THE STREET.
7. IF EXISTING DRIVEWAY IS ASPHALT, CONTRACTOR SHALL NOT USE ASPHALT EDGE AS FORM FOR CONCRETE APPROACH UNLESS APPROVED BY ENGINEER. ANY ASPHALT PATCH NECESSARY DUE TO FORMING FOR CONCRETE APPROACH IS INCIDENTAL TO THE CONSTRUCTION.



PLAN VIEW



SECTION A–A

CONCRETE APPROACH (TYPE 7)

NO SCALE

737 RUDDER ROAD
FENTON, MISSOURI 63026
314-842-4033 (tel.)
314-842-5957 (fax)
www.cochraneng.com

COCHRAN

Civil Engineering
Land Surveying
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Municipal Planning
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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DRIVEWAY DETAILS

DATE:	REVISION:

DWN. BY:	APPD. BY:
K.J.W.	M.D.S.

DATE: JANUARY 2021
SCALE: AS SHOWN
PROJ. NO: SC19-981
DWG. NO: *DE-12*

21MSD-00086

LEGEND

- 1.50% SLOPE ±0.50%
- MAX. SLOPE 1V:12H (8.33%)

KEYED NOTES

(1) MAX. SLOPE 1:10, MEASURED PARALLEL TO THE CURB LINE.
(2) MAXIMUM PERCENT CHANGE FOR A SAG GRADE BREAK IS 12%. MAXIMUM PERCENT CHANGE FOR A CREST GRADE BREAK IS 8%.
(3) MAINTAIN SLOPE FOR A MINIMUM OF 10' BEFORE ANOTHER GRADE CHANGE.
(4) CONTRACTOR TO MATCH EXISTING ELEVATION OF DRIVEWAY AS CLOSE AS POSSIBLE WHILE PROVIDING AN ADA COMPLIANT SIDEWALK.

NOTES

1. IF TRANSITION OF DRIVEWAY BEYOND APPROACH IS NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE EXISTING DRIVEWAY TO NEAREST JOINT OR AS DIRECTED BY THE ENGINEER, TO BE PAID BY UNIT BID PRICE FOR 6" CONCRETE DRIVEWAY, 5" ASPHALT DRIVEWAY OR AGGREGATE DRIVEWAY AS SHOWN ON THE SITE PLANS.
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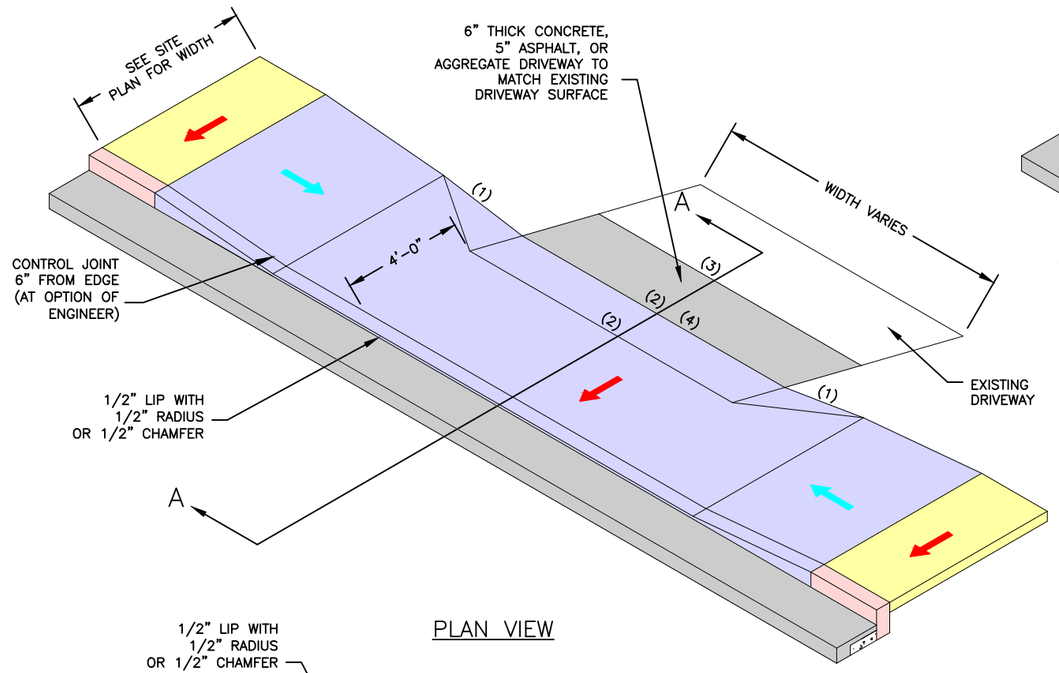
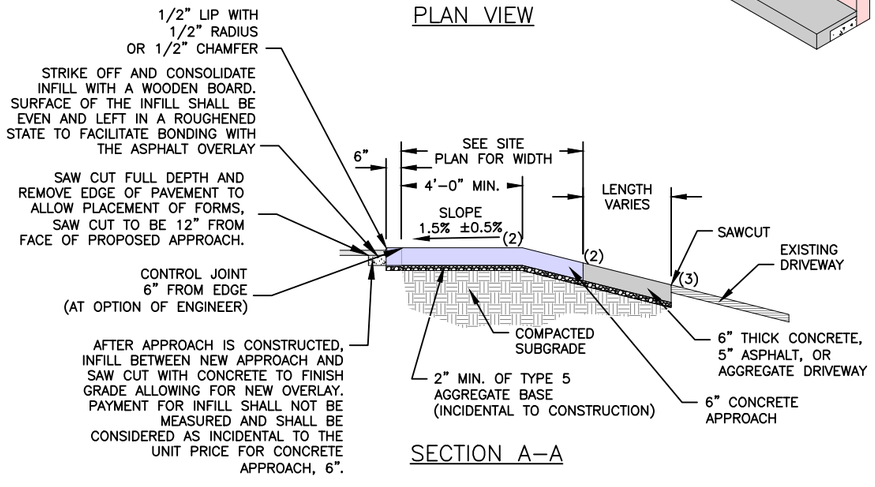


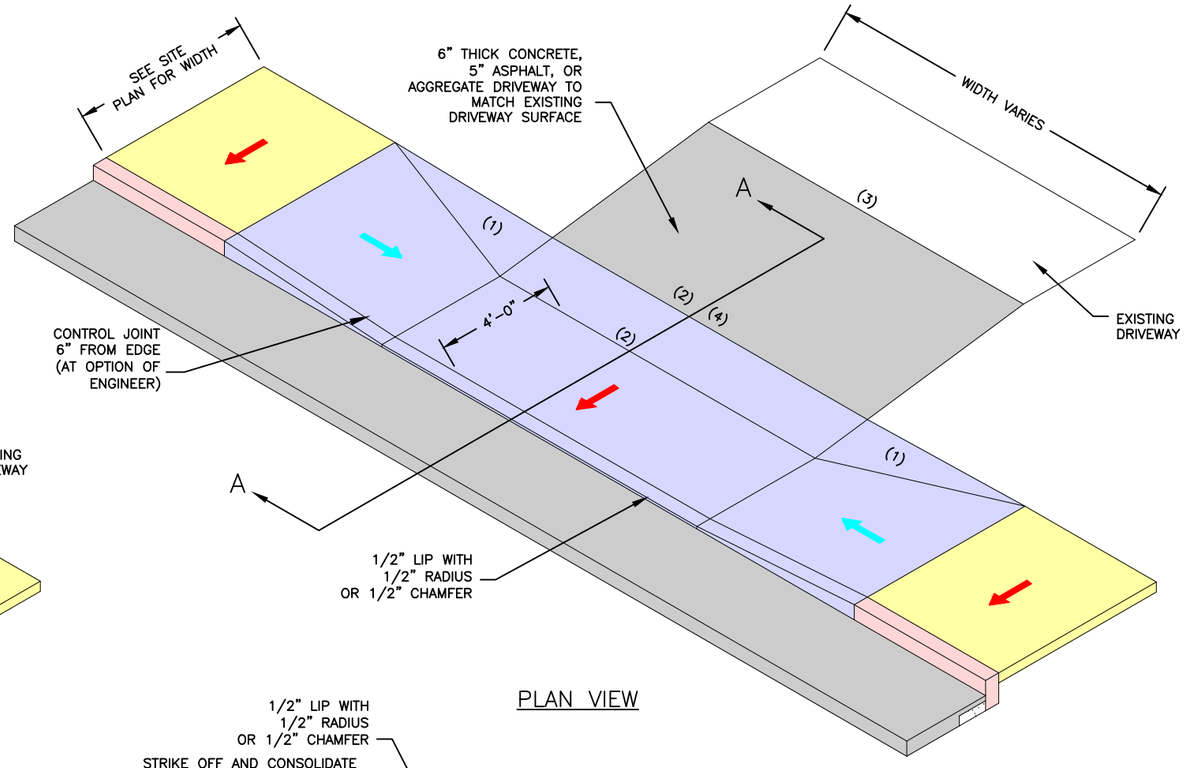
PLAN VIEW



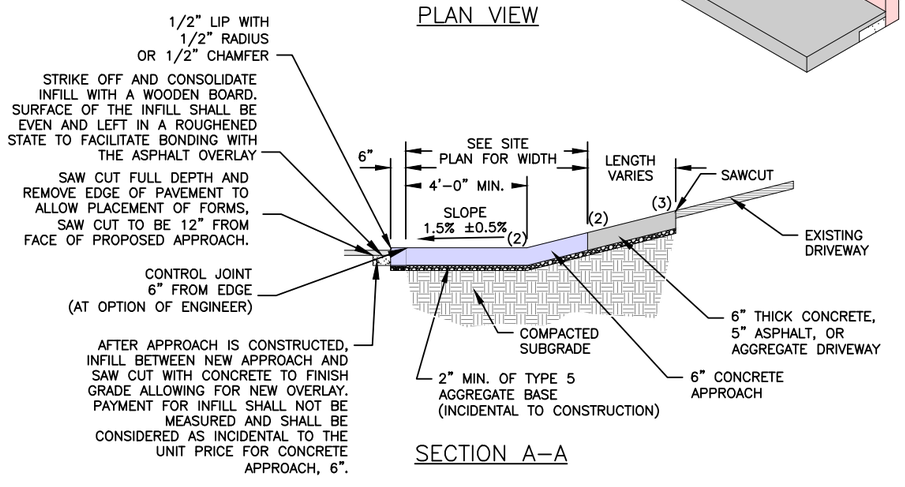
SECTION A–A

CONCRETE APPROACH (TYPE 8)

NO SCALE



PLAN VIEW



SECTION A–A

CONCRETE APPROACH (TYPE 9)

NO SCALE

737 RUDDER ROAD
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COCHRAN

Civil Engineering
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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER PE-2004006859
PROFESSIONAL ENGINEER

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FOR SC ENGINEERING LLC,
DBA COCHRAN

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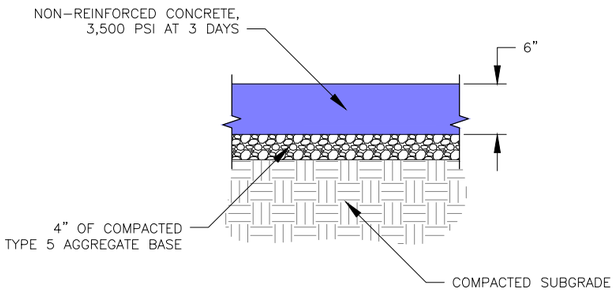
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

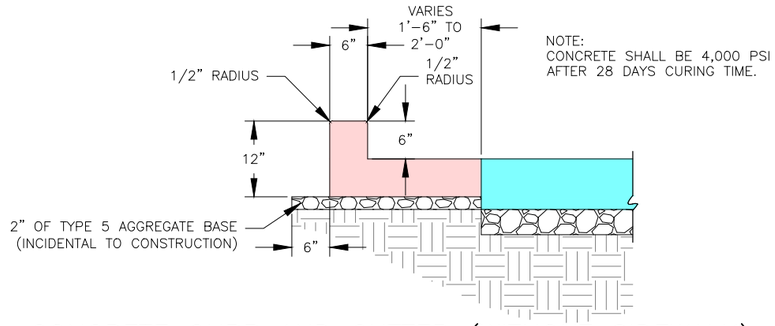
DRIVEWAY DETAILS

DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19–981	
DWG. NO: DE-13	

21MSD-00086

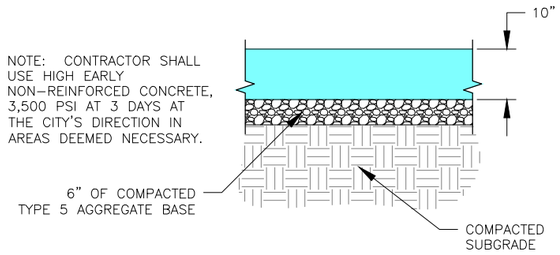


CONCRETE APPROACH (6")
NO SCALE

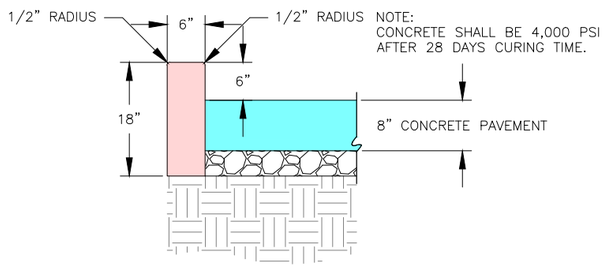


CONCRETE CURB AND GUTTER (WITHOUT SIDEWALK)
NO SCALE

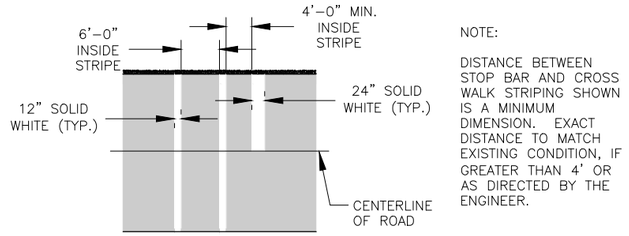
ALL JOINTS SHALL CONFORM TO THE CURRENT MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR HIGHWAY CONSTRUCTION, SECTION 500, INCLUDING ALL JOINT SPACING, DOWELS AND SUPPORTING UNITS, EXPANSION MATERIAL AND SEALING. FINAL JOINT SPACING PATTERN SHALL BE APPROVED BY THE CITY.



CONCRETE PAVEMENT (10")
NO SCALE

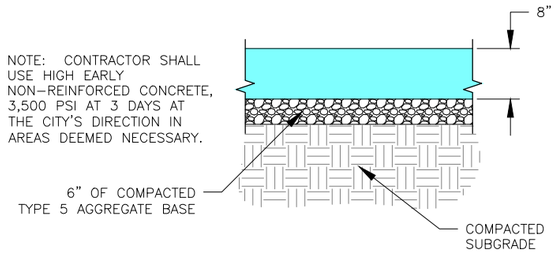


CONCRETE VERTICAL CURB (WITHOUT SIDEWALK)
NO SCALE

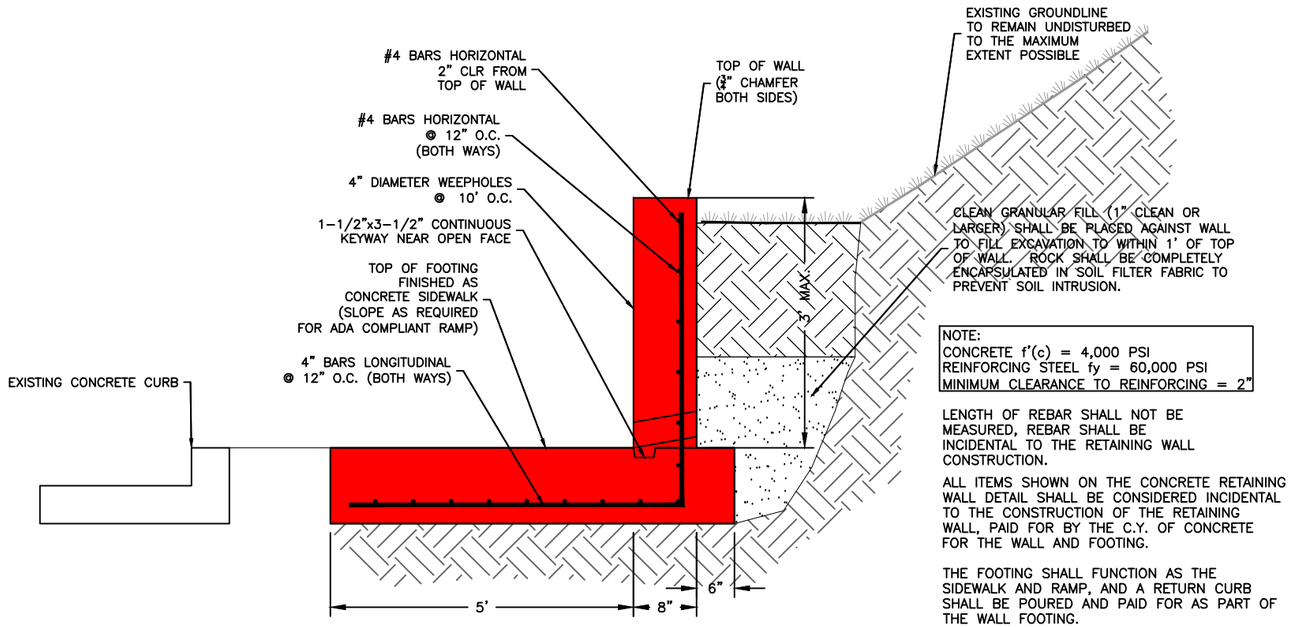


PAVEMENT MARKING (CROSSWALK AND STOP BAR DETAIL)
NO SCALE

ALL JOINTS SHALL CONFORM TO THE CURRENT MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR HIGHWAY CONSTRUCTION, SECTION 500, INCLUDING ALL JOINT SPACING, DOWELS AND SUPPORTING UNITS, EXPANSION MATERIAL AND SEALING. FINAL JOINT SPACING PATTERN SHALL BE APPROVED BY THE CITY.



CONCRETE PAVEMENT (8")
NO SCALE



CONCRETE RETAINING WALL
NO SCALE

NOTE:
CONCRETE f'(c) = 4,000 PSI
REINFORCING STEEL fy = 60,000 PSI
MINIMUM CLEARANCE TO REINFORCING = 2"

LENGTH OF REBAR SHALL NOT BE MEASURED, REBAR SHALL BE INCIDENTAL TO THE RETAINING WALL CONSTRUCTION.

ALL ITEMS SHOWN ON THE CONCRETE RETAINING WALL DETAIL SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE RETAINING WALL, PAID FOR BY THE C.Y. OF CONCRETE FOR THE WALL AND FOOTING.

THE FOOTING SHALL FUNCTION AS THE SIDEWALK AND RAMP, AND A RETURN CURB SHALL BE POURED AND PAID FOR AS PART OF THE WALL FOOTING.

DETECTABLE WARNINGS SHALL BE IMBEDDED INTO THE FOOTING PER ADA RAMP REQUIREMENTS AND PAID FOR AS DETECTABLE WARNING DEVICE.

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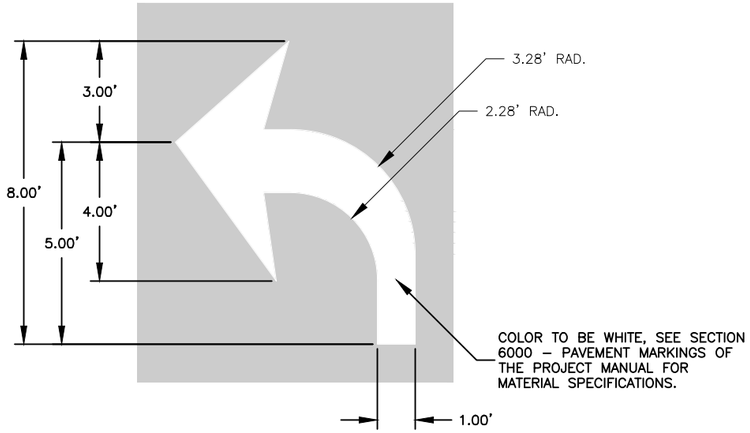
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

REVISION:	
DATE:	
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19–981	
DWG. NO: DE-14	

DETAILS

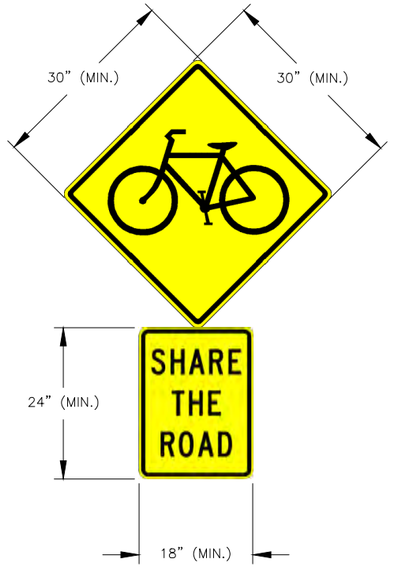
21MSD-00086



NOTE:
1. SEE PAVEMENT MARKING AND SIGNAGE PLANS FOR LOCATIONS
2. TYPICAL SIZES FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED BY ONE–THIRD FOR LOW–SPEED URBAN CONDITIONS; LARGER SIZES MAY BE NEEDED FOR FREEWAYS, ABOVE AVERAGE SPEEDS AND OTHER CRITICAL LOCATIONS. CHANGES IN SIZE UNLESS NOTED IN PAVEMENT MARKING AND SIGNAGE PLANS MUST BE APPROVED BY THE ENGINEER.

TURN ARROW

NO SCALE

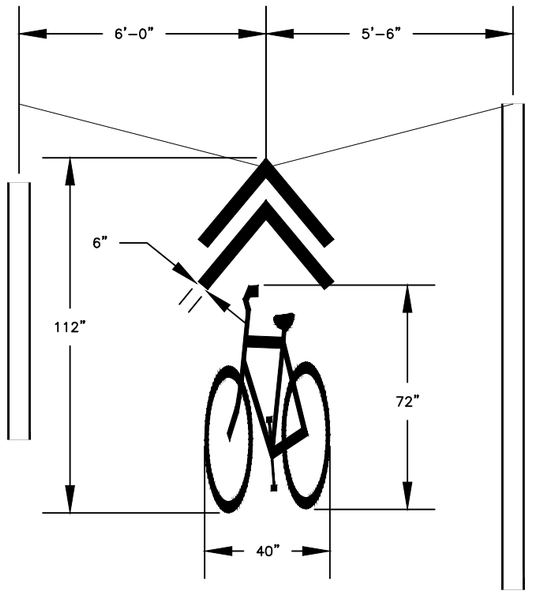


NOTE:
LETTERING SHALL BE SERIES 2000 STANDARD ALPHABETS

COLORS:
LEGEND – BLACK
BACKGROUND – YELLOW (RETROREFLECTIVE)

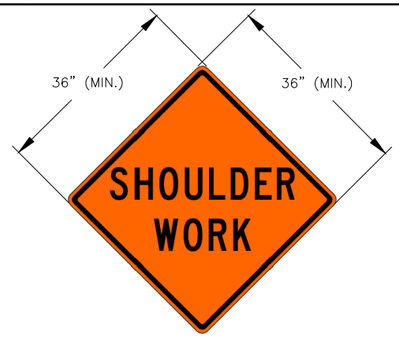
"BIKE" (W11–1) SIGN WITH "SHARE THE ROAD" (W16–1) SIGN

NO SCALE



SHARED LANE SYMBOL DETAIL

NO SCALE

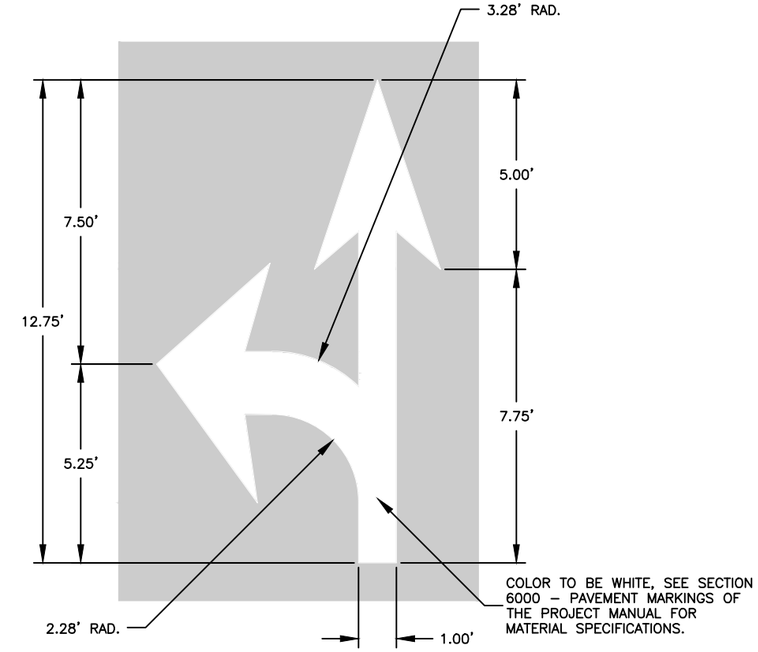


NOTE:
LETTERING SHALL BE SERIES 2000 STANDARD ALPHABETS

COLORS:
LEGEND – BLACK
BACKGROUND – ORANGE (RETROREFLECTIVE)

"SHOULDER WORK" (W21–5) SIGN

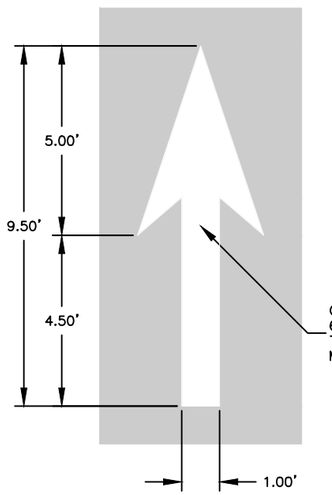
NO SCALE



NOTE:
1. SEE PAVEMENT MARKING AND SIGNAGE PLANS FOR LOCATIONS
2. TYPICAL SIZES FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED BY ONE–THIRD FOR LOW–SPEED URBAN CONDITIONS; LARGER SIZES MAY BE NEEDED FOR FREEWAYS, ABOVE AVERAGE SPEEDS AND OTHER CRITICAL LOCATIONS. CHANGES IN SIZE UNLESS NOTED IN PAVEMENT MARKING AND SIGNAGE PLANS MUST BE APPROVED BY THE ENGINEER.

TURN AND THROUGH ARROW

NO SCALE



NOTE:
1. SEE PAVEMENT MARKING AND SIGNAGE PLANS FOR LOCATIONS
2. TYPICAL SIZES FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED BY ONE–THIRD FOR LOW–SPEED URBAN CONDITIONS; LARGER SIZES MAY BE NEEDED FOR FREEWAYS, ABOVE AVERAGE SPEEDS AND OTHER CRITICAL LOCATIONS. CHANGES IN SIZE UNLESS NOTED IN PAVEMENT MARKING AND SIGNAGE PLANS MUST BE APPROVED BY THE ENGINEER.

THROUGH ARROW

NO SCALE

NOTE:
LETTERING SHALL BE SERIES 2000 STANDARD ALPHABETS

COLORS:
LEGEND – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)

"ROAD CLOSED" (R11–2) SIGN

NO SCALE

21MSD-00086

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DBA COCHRAN

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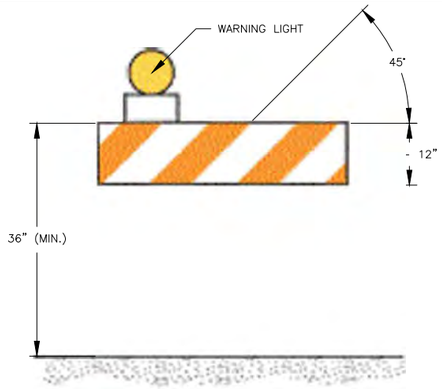
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

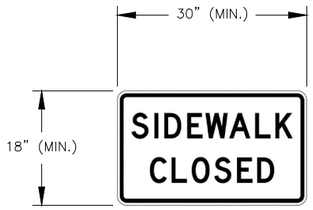
DETAILS

DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19–981	
DWG. NO: DE-15	



NOTE:
1. WARNING LIGHTS
2. WARNING LIGHTS SHALL BE LIGHT WEIGHT (3.3 LBS. OR LESS) OR HAVE BATTERY PACK MOUNTED NO HIGHER THAN 18" AND SHALL NOT COVER ANY PORTION OF THE BARRICADED FACE.
3. RAIL STRIPE WIDTHS SHALL BE 6", EXCEPT THAT 4" WIDE STRIPES MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36". THE SIDES OF BARRICADES FACING TRAFFIC SHALL HAVE RETROREFLECTIVE RAIL FACES.
4. IF BARRICADES ARE USED TO CHANNELIZE PEDESTRIANS, THERE SHALL BE CONTINUOUS DETECTABLE BOTTOM AND TOP RAILS WITH NO GAPS BETWEEN INDIVIDUAL BARRICADES TO BE DETECTABLE TO USERS OF LONG CANES. THE BOTTOM OF THE BOTTOM RAIL SHALL BE NO HIGHER THAN 6" ABOVE THE GROUND SURFACE. THE TOP OF THE TOP RAIL SHALL BE NO LOWER THAN 36" ABOVE THE GROUND SURFACE.
5. THE PANELS SHALL BE SECURELY ATTACHED TO A SUPPORT THAT IS PORTABLE AND CAPABLE OF REMAINING UPRIGHT AND ENTIRELY FREE STANDING.

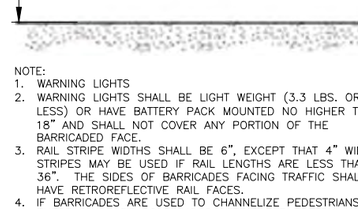
TYPE I BARRICADE
NO SCALE



NOTE:
LETTERING SHALL BE SERIES 2000 STANDARD ALPHABETS

COLORS:
LEGEND – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)

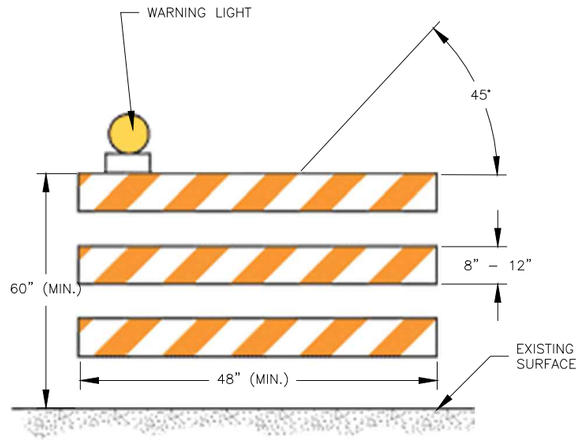
"SIDEWALK CLOSED" (R9–9) SIGN
NO SCALE



NOTE:
LETTERING SHALL BE SERIES 2000 STANDARD ALPHABETS

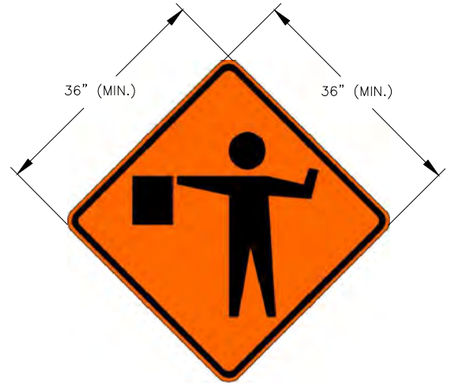
COLORS:
LEGEND – BLACK
BACKGROUND – ORANGE (RETROREFLECTIVE)

"END ROAD WORK" (G20–2) SIGN
NO SCALE



NOTE:
1. PAVED SHOULDERS SHALL BE INCLUDED IN THE AREA TO BE CLOSED.
2. SIGNS MOUNTED ON BARRICADE SHALL OBSCURE NO MORE THAN 50% OF THE TOP 2 RAILS OR 33% OF ALL THREE RAILS.
3. WARNING LIGHTS SHALL BE LIGHT WEIGHT (3.3 LBS. OR LESS) OR HAVE BATTERY PACK MOUNTED NO HIGHER THAN 18" AND SHALL NOT COVER ANY PORTION OF THE BARRICADED FACE.
4. WHERE A BARRICADE ARRAY EXTENDS ACROSS A ROADWAY, THE STRIPES SHALL SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN OR PASS.
5. WHERE BOTH RIGHT AND LEFT VEHICULAR MOVEMENTS ARE PROVIDED, THE STRIPES SHALL SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE ARRAY.
6. WHERE NO VEHICULAR MOVEMENTS ARE PROVIDED, THE STRIPES SHALL SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE ARRAY.
7. RAIL STRIPE WIDTHS SHALL BE 6", EXCEPT THAT 4" WIDE STRIPES MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36".
8. TYPE III BARRICADES SHALL BE ENTIRELY FREE STANDING AND PORTABLE. MARKING SHALL ONLY BE APPLIED TO THE FRONT OF EACH RAIL OR MAY BE APPLIED TO BOTH THE FRONT AND THE BACK OF EACH RAIL PROVIDED THE MARKING ON THE BACK DOES NOT CONFLICT WITH INTENDED OPPOSING TRAFFIC MOVEMENT. WHERE MARKING IS NOT PROVIDED ON THE BACKSIDE, STRIPS OF 3" WIDE ORANGE RETROREFLECTIVE SHEETING MAY BE APPLIED TO THE ENDS OF EACH RAIL TO HELP DELINEATE THE DEVICE.

TYPE III BARRICADE
NO SCALE



NOTE:
LETTERING SHALL BE SERIES 2000 STANDARD ALPHABETS

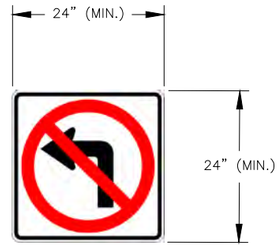
COLORS:
LEGEND – BLACK
BACKGROUND – ORANGE (RETROREFLECTIVE)

"FLAGGER SYMBOL" (W20–7a) SIGN
NO SCALE

NOTE:
LETTERING SHALL BE SERIES 2000 STANDARD ALPHABETS

COLORS:
LEGEND – BLACK
BACKGROUND – ORANGE (RETROREFLECTIVE)

"ONE LANE ROAD AHEAD" (W20–4) SIGN
NO SCALE



NOTE:
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COLORS:
CIRCLE & DIAGONAL – RED (RETROREFLECTIVE)
SYMBOL & BORDER – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)

"NO LEFT TURN" (R3–2) SIGN
NO SCALE

NOTE:
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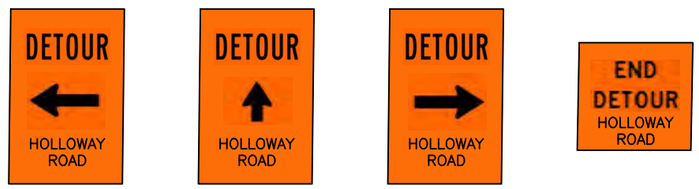
COLORS:
LEGEND – BLACK
BACKGROUND – ORANGE (RETROREFLECTIVE)

"ROAD WORK AHEAD" (W20–1) SIGN
NO SCALE



INFORMATION SHOWN ON DETAILS ABOVE ARE AN EXAMPLE ONLY TO SHOW WHAT MINIMUM INFORMATION IS NEEDED. EXACT TYPE AND NUMBER OF SIGNS USED ARE AT THE OPTION OF THE CONTRACTOR. MULTIPLE SIGNS AT EACH LOCATION MAY BE USED TO DISPLAY ALL DETOUR INFORMATION. SIZES OF SIGNS AND LETTERING MUST MEET MUTCD REQUIREMENTS. SIGN SETUP MUST BE APPROVED BY THE CITY PRIOR TO DETOUR BEGINNING. PAYMENT SHALL BE PER LOCATION REGARDLESS OF THE NUMBER OF SIGNS USED.

LETTERING SHALL MUTCD STANDARDS / COLORS: LEGEND, SYMBOL & BORDER – BLACK / BACKGROUND – ORANGE (RETROREFLECTIVE)

DETOUR SIGNS
NO SCALE

COCHRAN
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Civil Engineering
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Architecture
Site Development
Water Resources
General Consulting
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF, P.E.
NUMBER PE-2004000859
PROFESSIONAL ENGINEER
1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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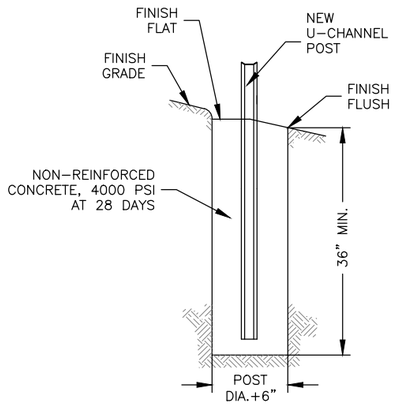
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

DETAILS

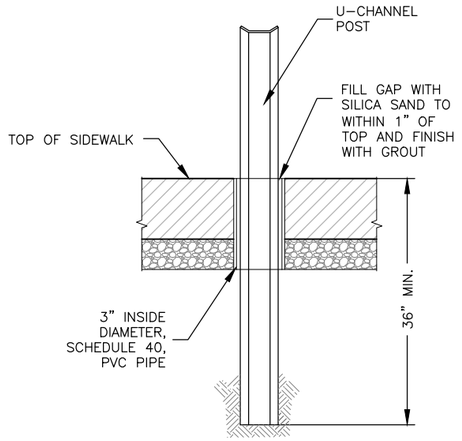
DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19–981	
DWG. NO: DE-16	

21MSD-00086



TYPICAL NEW SIGN INSTALLATION IN SOIL DETAIL

NO SCALE



TYPICAL NEW SIGN INSTALLATION IN SIDEWALK DETAIL

NO SCALE

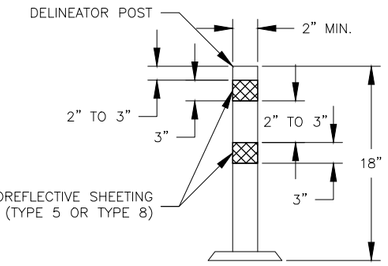
NOTES:

ALL POSTS SHALL BE CENTERED IN CONCRETE FOOTING. CONTRACTOR SHALL EXCAVATE FOR SIGN FOOTING WITH AN AUGER.

LENGTH OF POST SHALL BE AS REQUIRED TO MEET MINIMUM ADA REQUIREMENTS FOR SIGN HEIGHT CLEARANCE. SEE PROJECT MANUAL FOR GUIDANCE.

WHEN INSTALLING SIGNS IN NEW SIDEWALKS, PVC SLEEVES SHALL BE INSTALLED PRIOR TO PLACEMENT OF ANY NEW CONCRETE. PVC SLEEVE SHALL BE SCHEDULE 40 PVC. THE LENGTH OF THE SLEEVE SHALL BE THE SAME AS THE THICKNESS OF THE SIDEWALK AND AGGREGATE BASE. THE PVC SLEEVE SHALL BE INSTALLED FLUSH WITH THE FINISH GRADE OF THE SURROUNDING SIDEWALK. BACK FILL THE VOID BETWEEN THE SLEEVE AND SIGN POST WITH SAND TO WITHIN 1" OF THE FINISHED SURFACE. FILL THE FINAL 1" WITH NON-SHRINK GROUT. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION.

ALL PAYMENT FOR CONCRETE FOOTINGS FOR NEW SIGN INSTALLATIONS SHALL BE INCLUDED IN THE UNIT PRICE LINE ITEM PER EACH NEW SIGN TYPE.

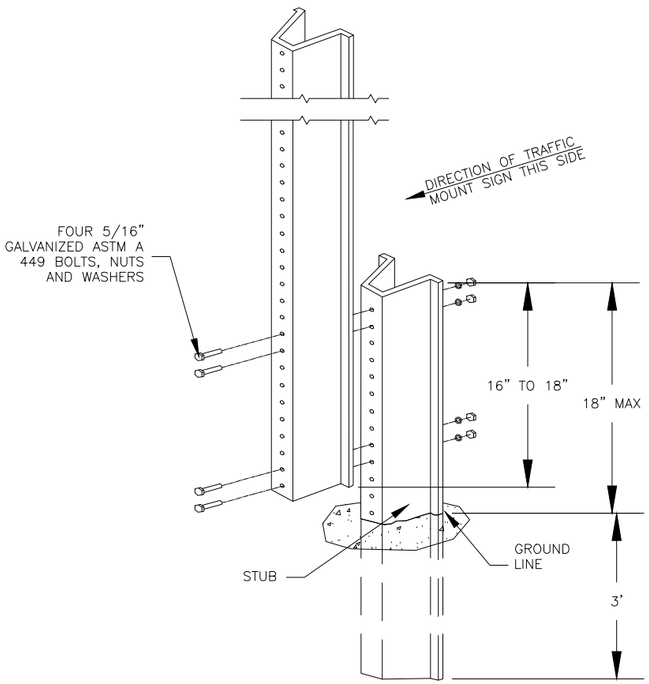


NOTES:

1. DELINEATORS SHALL BE PLACED AT THE RADIUS POINTS OF ALL CONCRETE ISLANDS.
2. MINIMUM SPACING FOR DELINEATORS SHALL BE 20'. LOCATION OF DELINEATORS TO BE APPROVED BY THE ENGINEER.
3. RETROREFLECTIVE YELLOW, WHITE OR RED SHEETING IN ACCORDANCE WITH ASTM D4956 TYPE 5 OR 8 SHALL BE APPLIED TO ONLY ONE SIDE OF THE DELINEATOR REFLECTOR BODY.
4. COLOR OF DELINEATOR POST AND REFLECTIVE SHEETING SHALL MATCH THE COLOR OF THE CLOSEST PAVEMENT MARKING OR CURB MARKING.
5. 3" X 6" DELINEATOR BODY SHALL BE MADE FROM 0.080 INCH ALUMINUM.
6. DELINEATOR POST SHAPE MAY BE ROUND OR T-SHAPED. DELINEATOR POST SHALL BE PERMANENTLY MOUNTED TO THE PAVEMENT SURFACE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

18" SURFACE-MOUNT DELINEATOR POST DETAIL

NO SCALE



U-CHANNEL POST DETAIL

NO SCALE

SIGN AREA (SQ. FT.)	POST TYPE U-CHANNEL
≤ 10	1 – 3.0 LB/FT*
> 10 ≤ 16	2 – 3.0 LB/FT
> 16 ≤ 24	3 – 3.0 LB/FT
> 24 ≤ 30	4 – 3.0 LB/FT
> 30 ≤ 50	N/A

* SIGNS GREATER THAN 4 FT. IN WIDTH, EXCEPT DIAMOND SHAPE SIGNS, REQUIRE 2 POSTS.

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DATE: JANUARY 2021	
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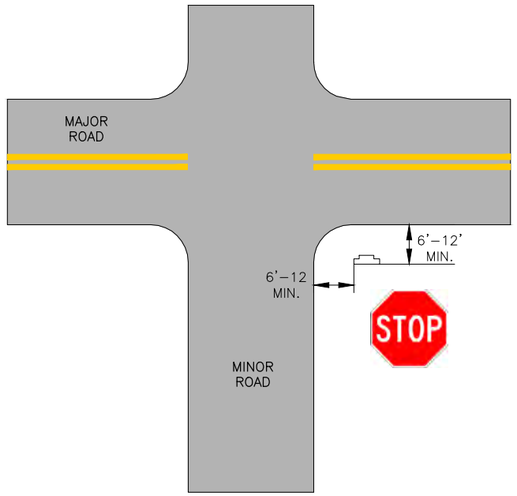
PROJ. NO: SC19-981	
DWG. NO: DE-17	

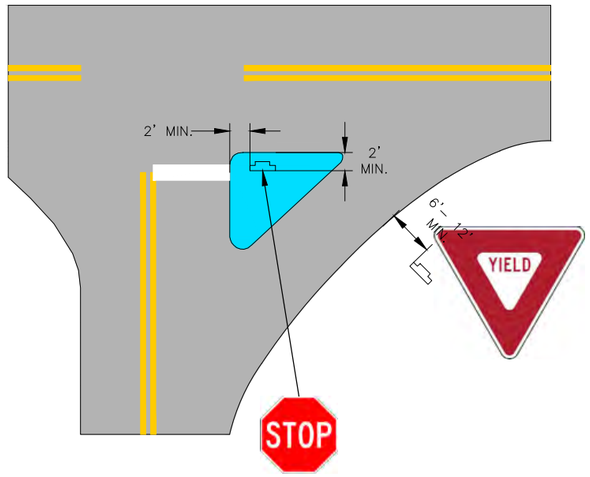
DETAILS

21MSD-00086

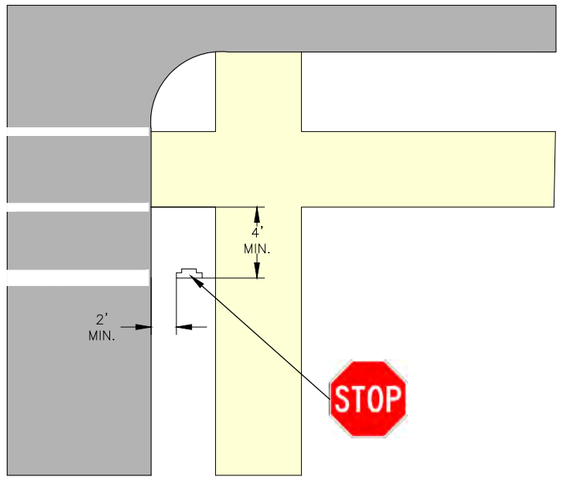
SIGN PLACEMENT DETAILS



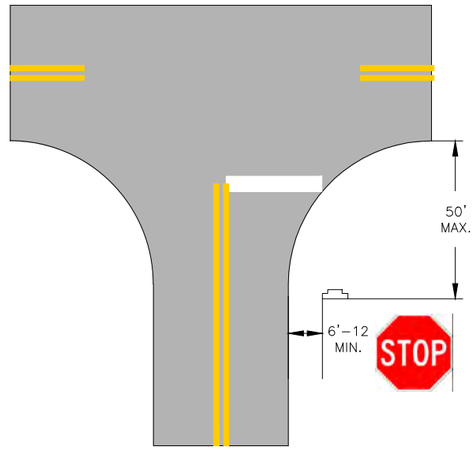
TYPICAL SIGN LOCATION AT MINOR CROSSROAD
NO SCALE



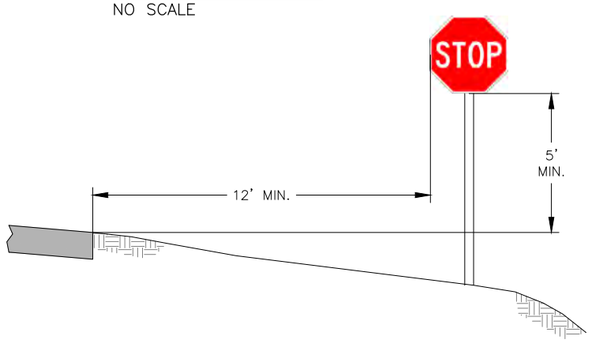
TYPICAL SIGN LOCATION AT INTERSECTION WITH ISLAND
NO SCALE



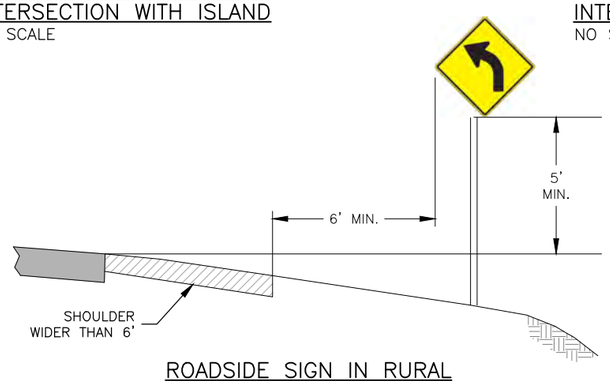
TYPICAL SIGN LOCATION AT INTERSECTION WITH CROSSWALK
NO SCALE



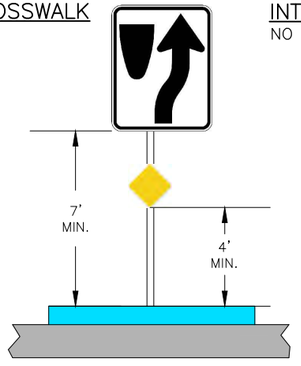
TYPICAL SIGN LOCATION AT INTERSECTION WITH WIDE THROAT
NO SCALE



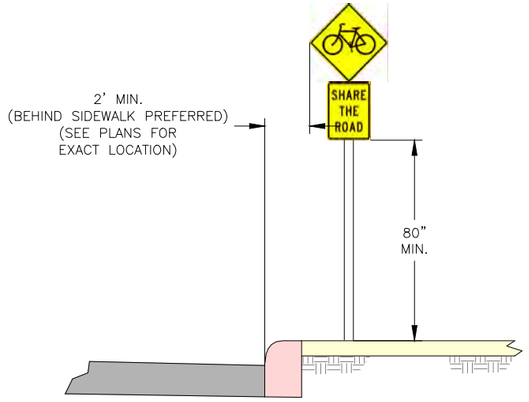
ROADSIDE SIGN IN RURAL AREA
NO SCALE



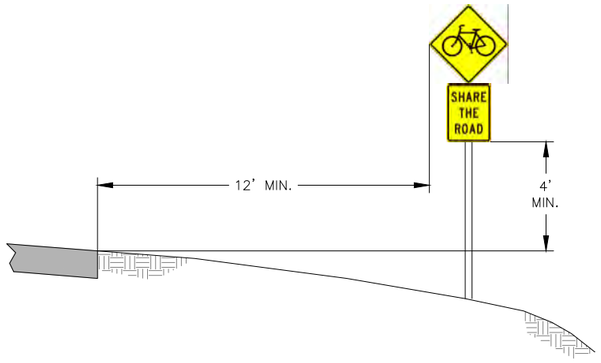
ROADSIDE SIGN IN RURAL AREA WITH SHOULDER
NO SCALE



SIGN IN MEDIAN
NO SCALE



ROADSIDE SIGN IN BUSINESS, COMMERCIAL OR RESIDENTIAL AREA WITH SIDEWALK AT CURB
NO SCALE



ROADSIDE SIGN WITH SECONDARY PLAQUE IN RURAL AREA
NO SCALE

SIGN GENERAL NOTES:

CONTRACTOR SHALL RELOCATE ALL EXISTING SIGNS AS NECESSARY FOR THE CONSTRUCTION OF THE IMPROVEMENTS. NEW LOCATIONS SHALL BE AS SHOWN IN THESE DETAILS OR AS DIRECTED BY THE ENGINEER.

SIGNS SHALL BE REMOVED IN SUCH A MANNER AS TO PROTECT THE EXISTING SIGN AND POST TO THE EXTENT THAT IT CAN BE REUSED IN THE NEW LOCATION. IF THE SIGN OR POST IS DAMAGED DURING THE RELOCATION DUE TO CONTRACTOR NEGLIGENCE, THE CONTRACTOR SHALL REPLACE ALL DAMAGED ITEMS AT NO COST TO THE OWNER.

THE CONTRACTOR SHALL STORE THE SIGNS IN A SAFE LOCATION UNTIL THEY ARE READY TO REINSTALL THE SIGN.

IF NO LINE ITEM IS PROVIDED IN THE BID FORM FOR RELOCATION OF SIGNS, THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION.

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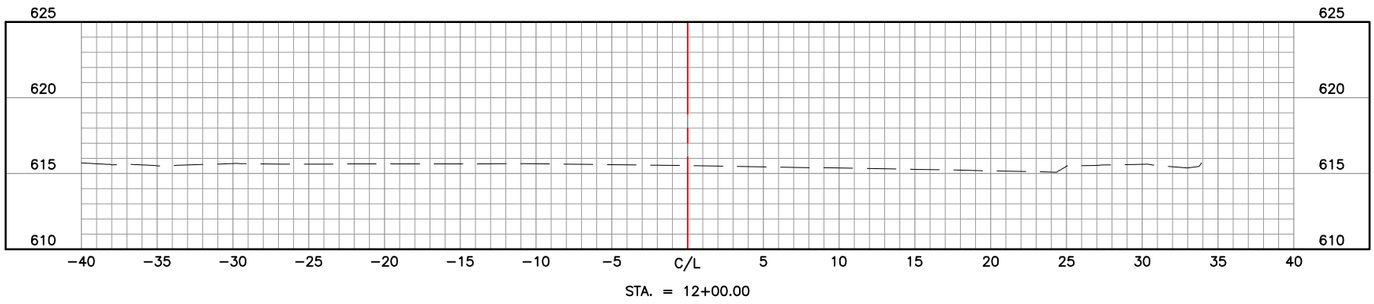
PROJ. NO: SC19–981	
DWG. NO: DE-18	

DETAILS

21MSD-00086



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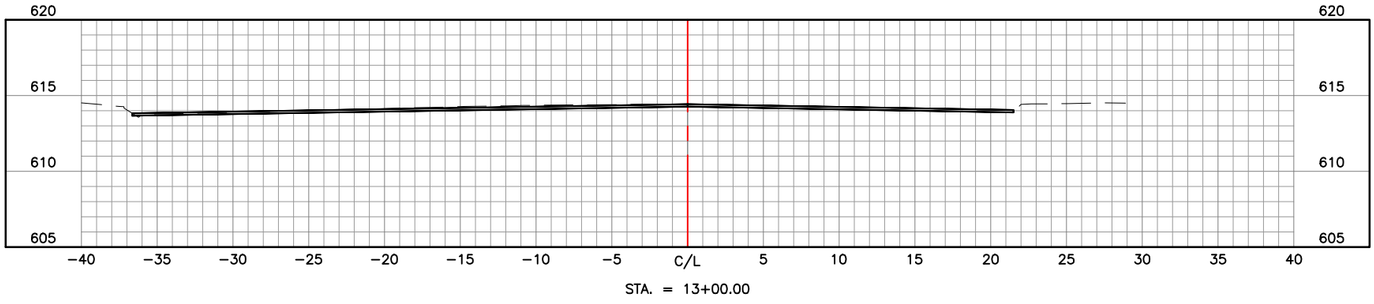

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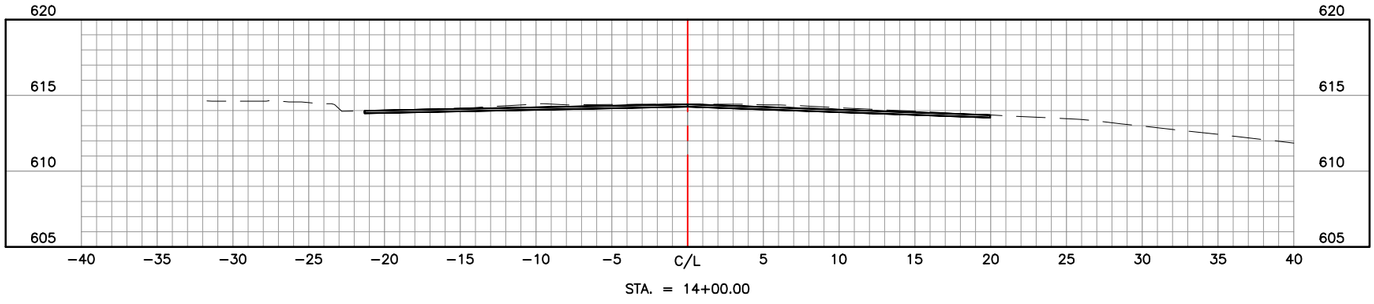

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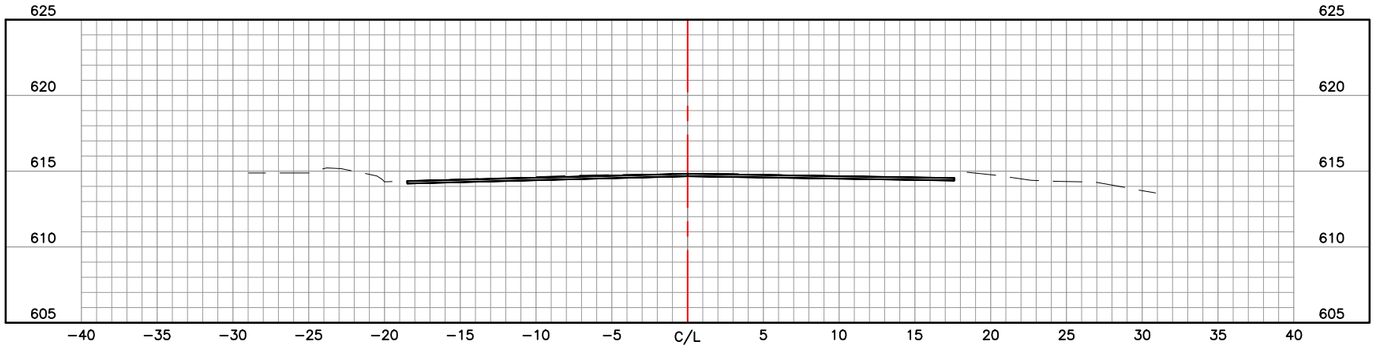

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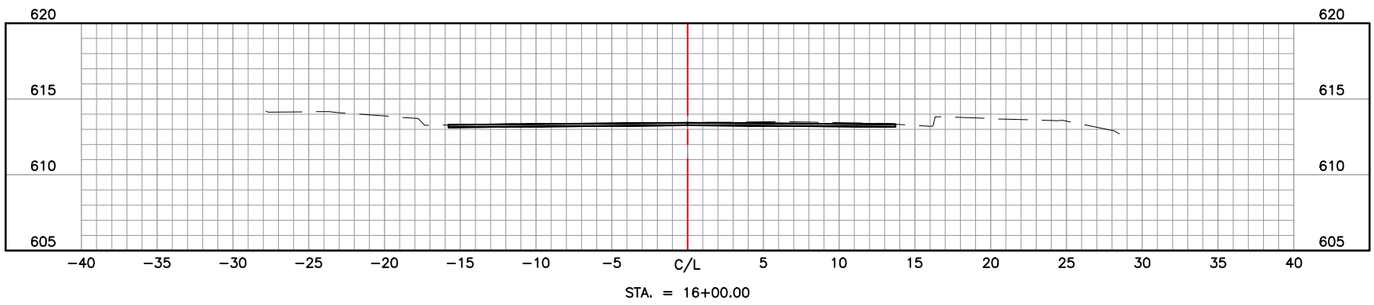

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CROSS SECTIONS

2021SD0086

CROSS SECTIONS

XS-1

DATE:	REVISION:

SCALE: 1" = 10'
PROJ. NO.: SC19-981
DWG. NO.:
DATE: JANUARY 2021
DRWN. BY: K.J.W.
APPVD. BY: M.D.S.

HOLLOWAY ROAD IMPROVEMENTS
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CITY OF BALLWIN, MISSOURI

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1/28/21

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NUMBER 2006020859
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN, LLC.
DBA COCHRAN

STATE OF MISSOURI
KEVIN J. WOLFF
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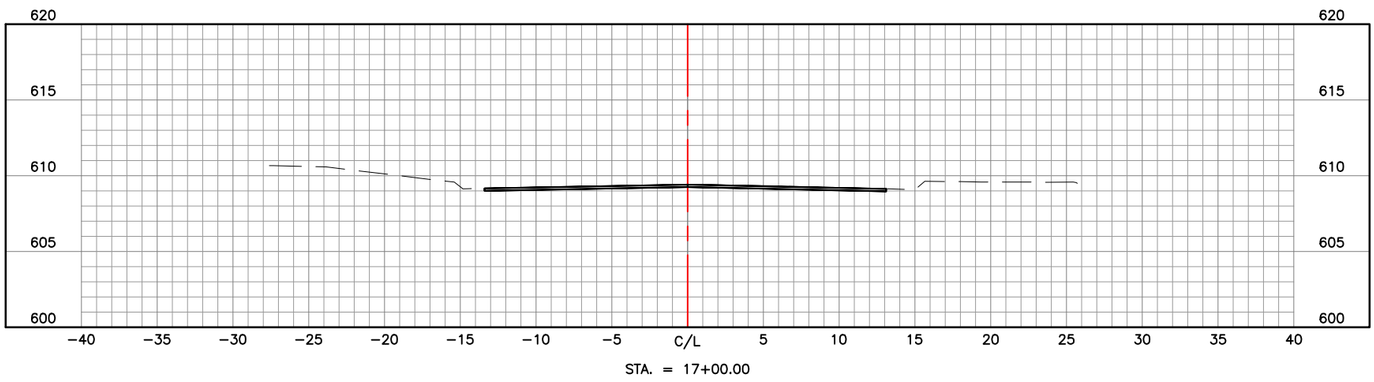

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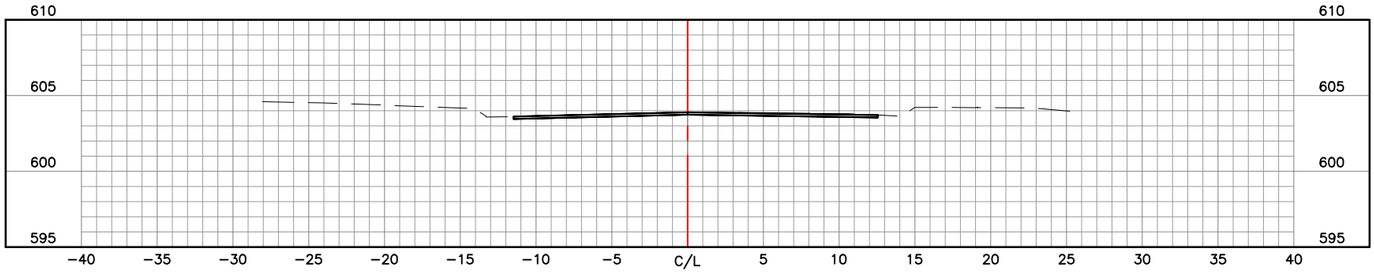

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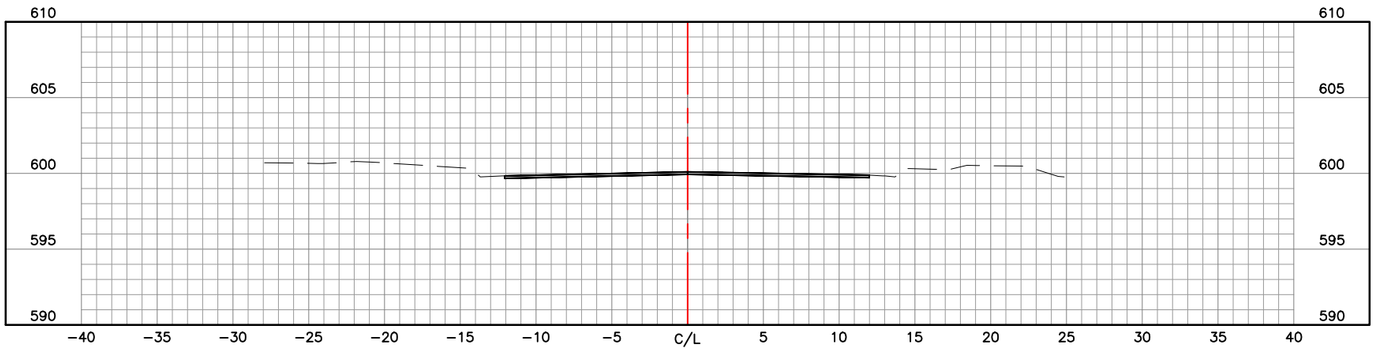

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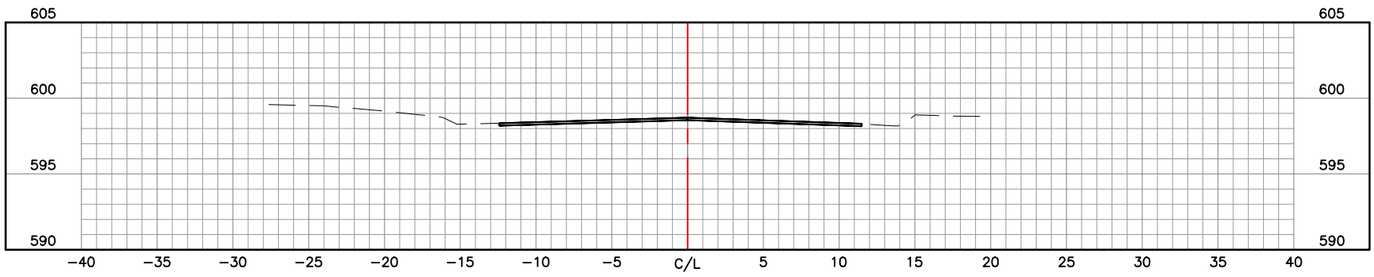

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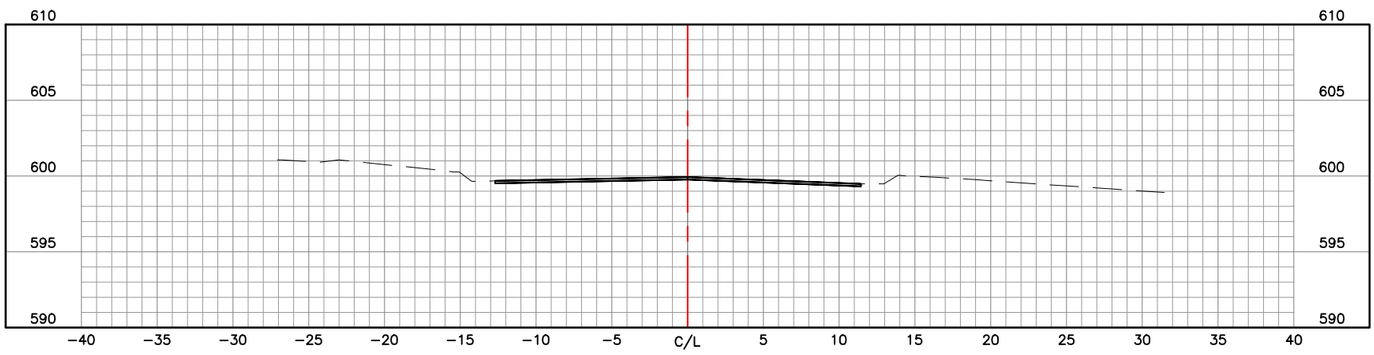

STA. = 21+00.00

CROSS SECTIONS

2021SDP086

CROSS SECTIONS

XS-2

DATE:	REVISION:

SCALE: 1" = 10'
DATE: JANUARY 2021
PROJ. NO.: SC19-981
DWG. NO.:
DRWN. BY: K.J.W.
APPVD. BY: M.D.S.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET IS APPLICABLE ONLY TO THE TECHNICAL PROVISIONS CONTAINED ON THIS SHEET. ALL OTHER SHEETS BEARING THIS SEAL SHALL NOT BE CONSIDERED APPROVED BY THE PROFESSIONAL.

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER PE-2004005969
1/28/21

REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN
DBA COCHRAN, LLC

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www.cochraneng.com

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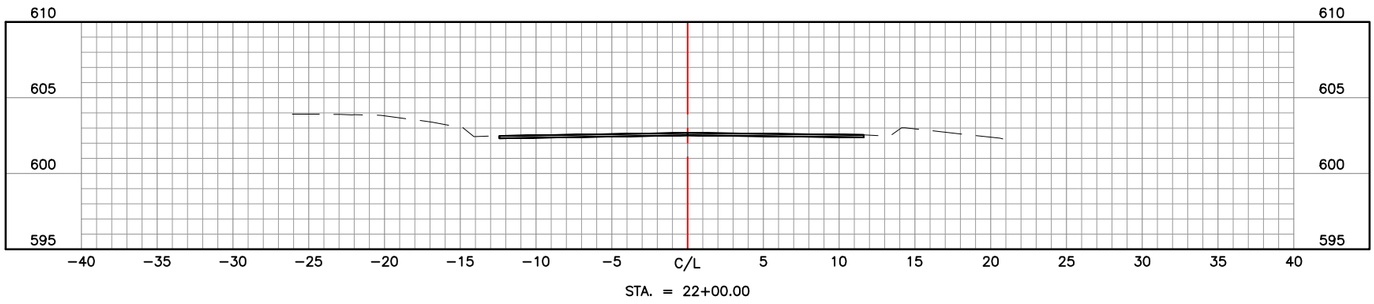
- General Consulting

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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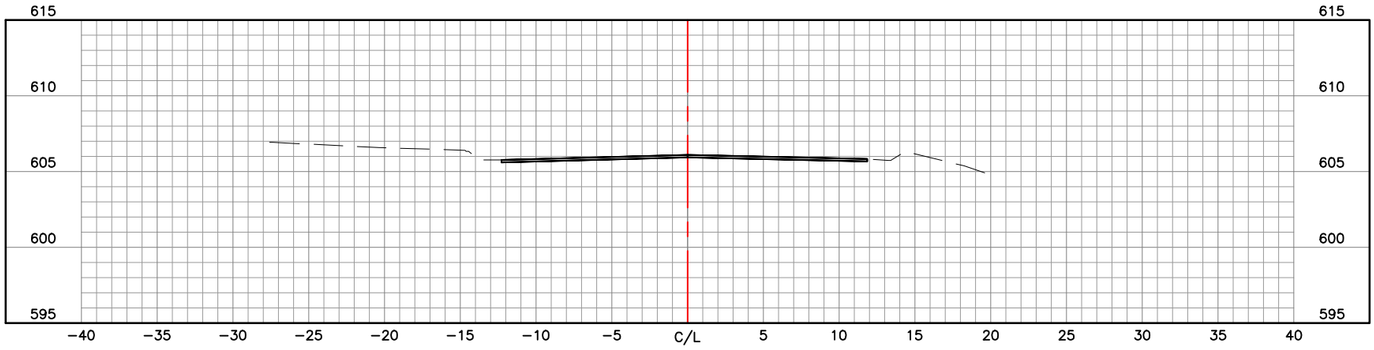

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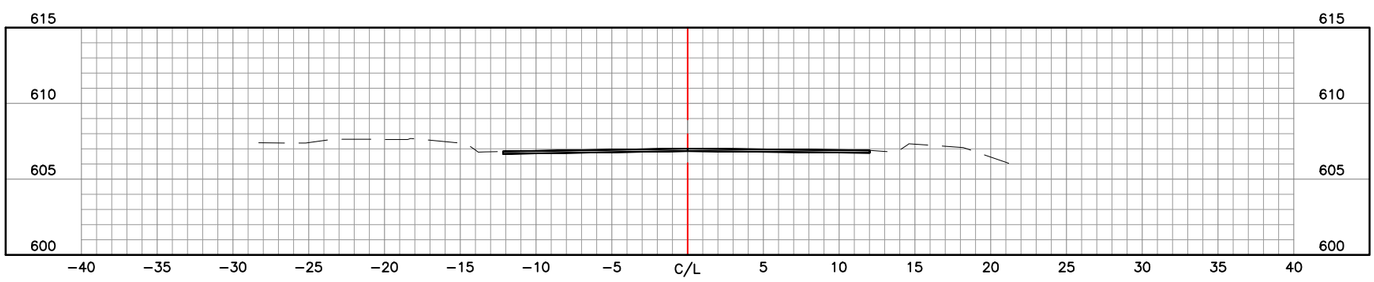

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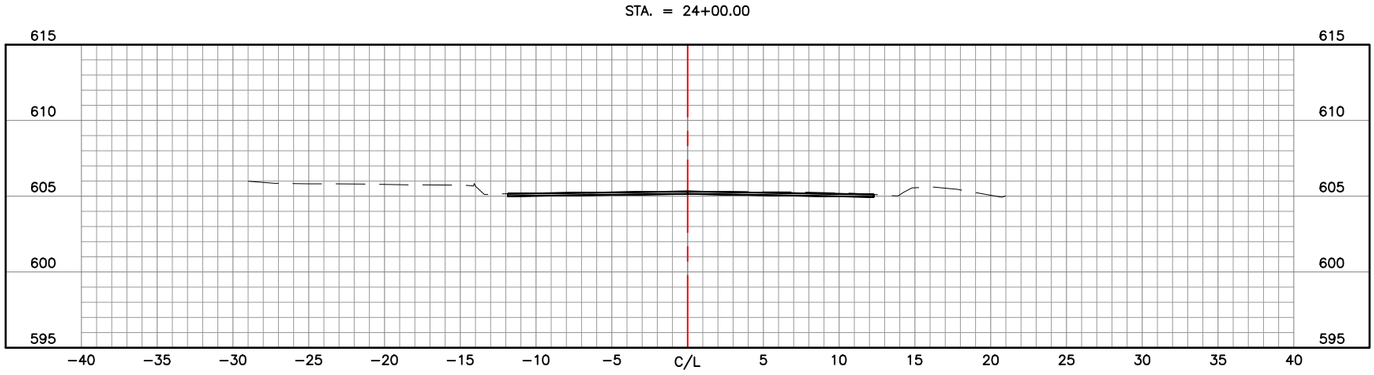

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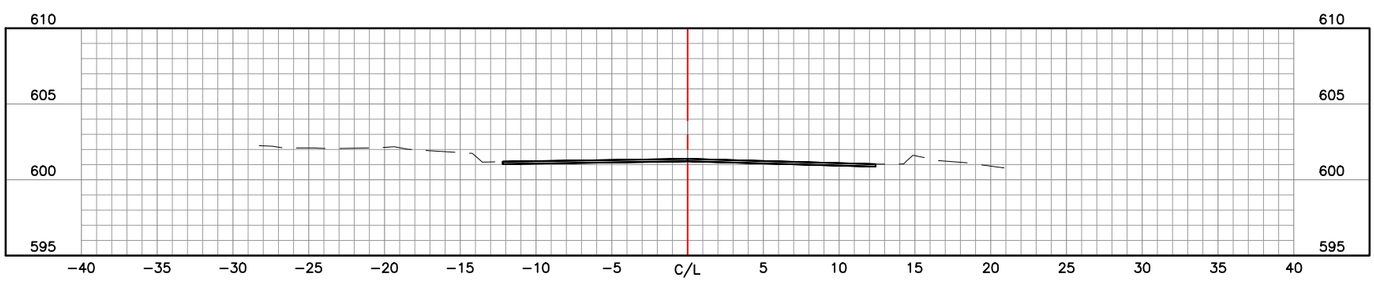

STA. = 26+00.00

CROSS SECTIONS

2x4SSD#086

CROSS SECTIONS

XS-3

DATE:	REVISION:

SCALE: 1" = 10'
DATE: JANUARY 2021
PROJ. NO.: SC19-981
DWG. NO.:
DRWN. BY: K.J.W.
APPVD. BY: M.D.S.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

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THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

1/28/21

KEVIN J. WOLFF
NUMBER 2004020859
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN, LLC
DBA COCHRAN

737 RUDDER ROAD
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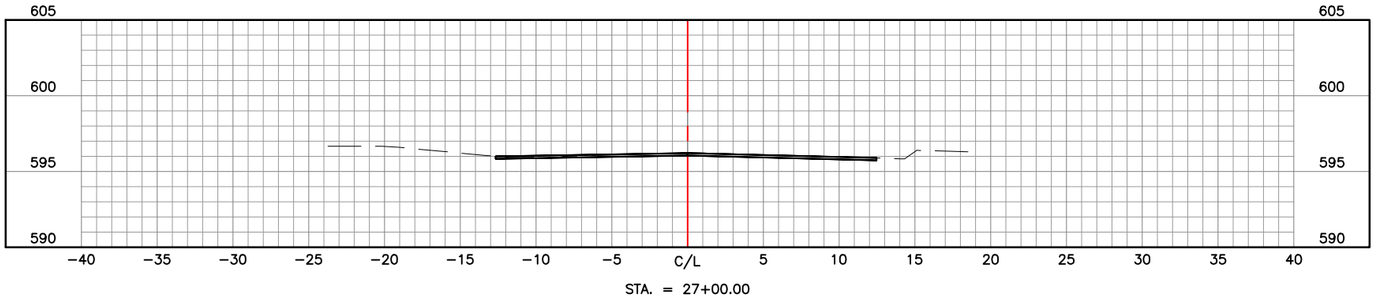
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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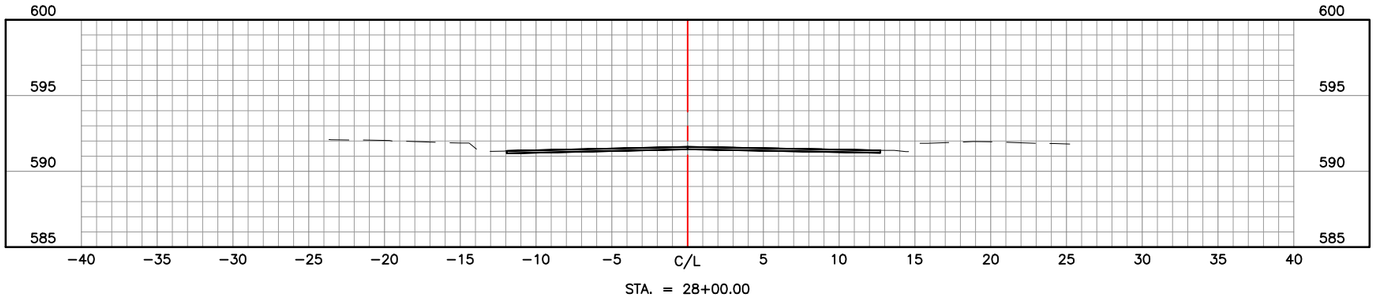

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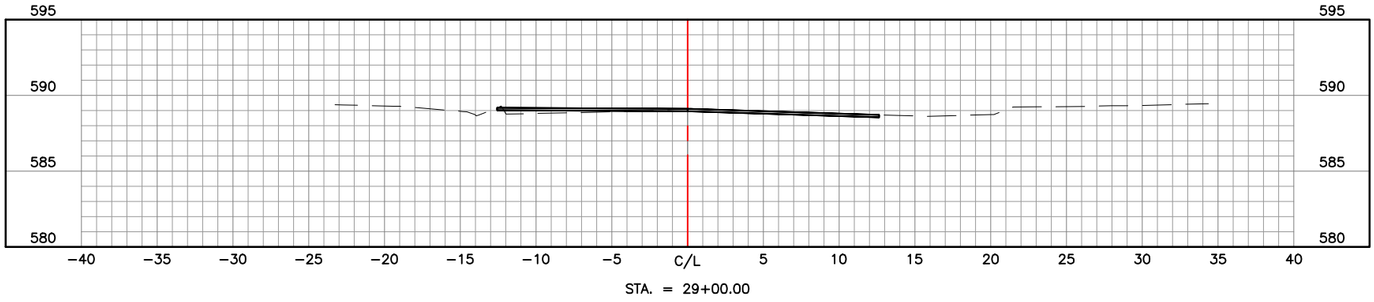

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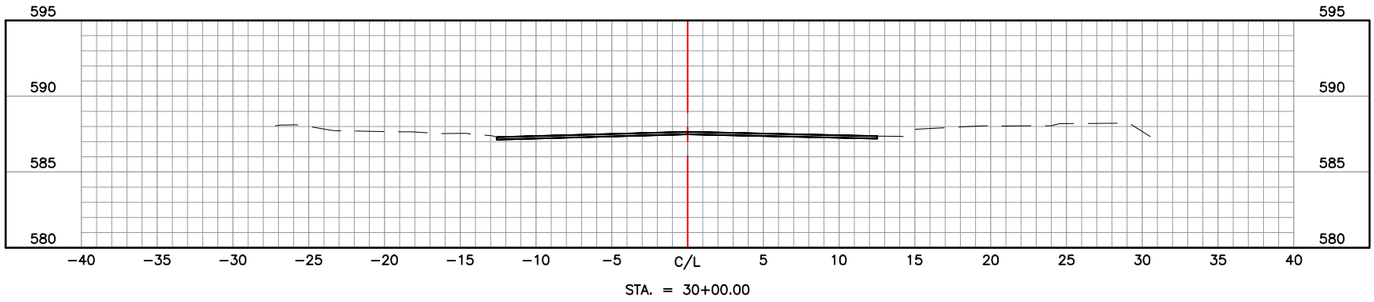

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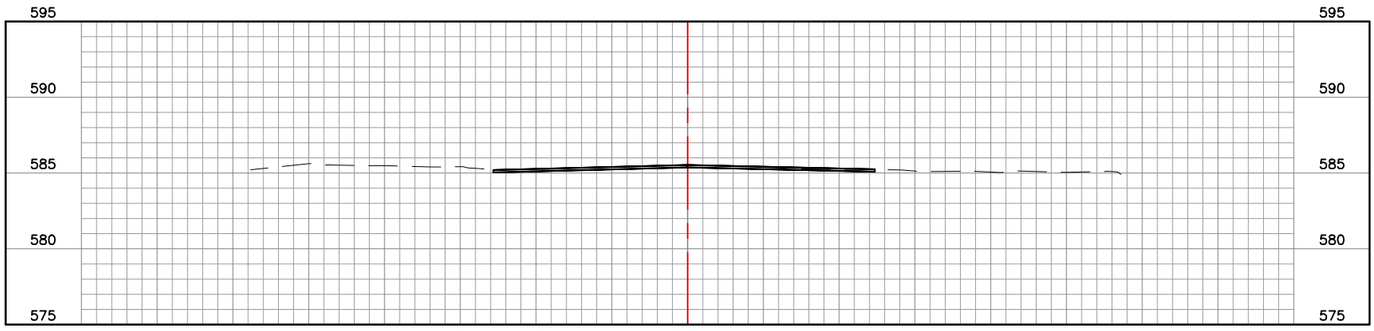

STA. = 31+00.00

CROSS SECTIONS

2x SIDEWALK

CROSS SECTIONS

DATE:	REVISION:

XS-4

PROJ. NO.: SC19-981
DWG. NO.:

SCALE: 1" = 10'
DATE: JANUARY 2021
DRWN. BY: K.J.W.
APPVD. BY: M.D.S.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET IS ONLY APPLICABLE TO THE DRAWING AS PREPARED BY THE PROFESSIONAL. ANY ALTERATIONS TO THIS SHEET, AS DRAWN, SHALL NOT BE CONSIDERED PREPARED BY THE PROFESSIONAL.

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

KEVIN J. WHITE
NUMBER PE-2004020859
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN, LLC.
DBA COCHRAN

1/28/21
DATE

STATE OF MISSOURI
KEVIN J. WHITE
NUMBER PE-2004020859
REGISTERED PROFESSIONAL ENGINEER

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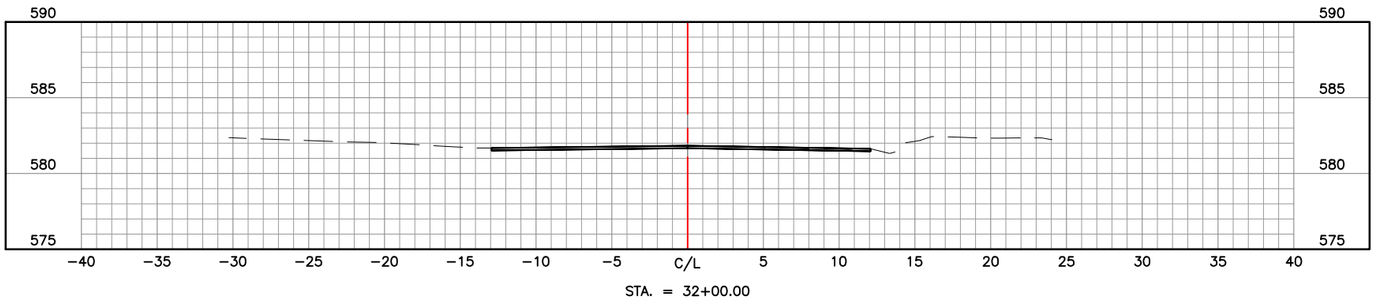
- General Consulting

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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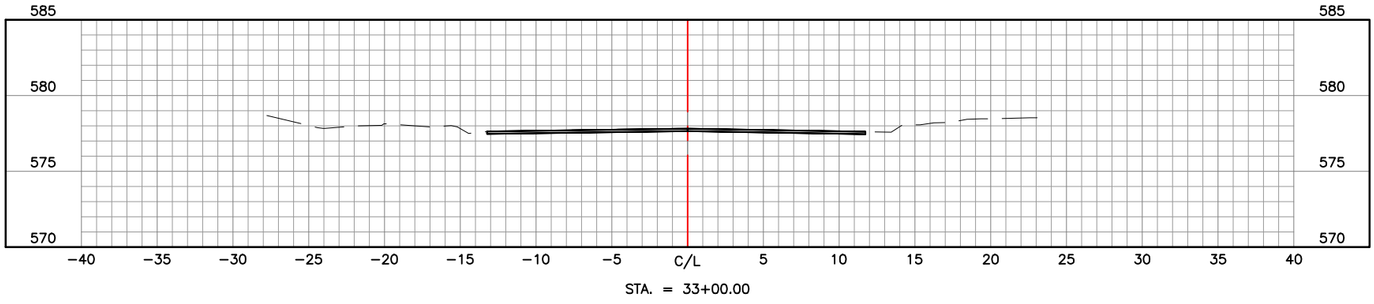

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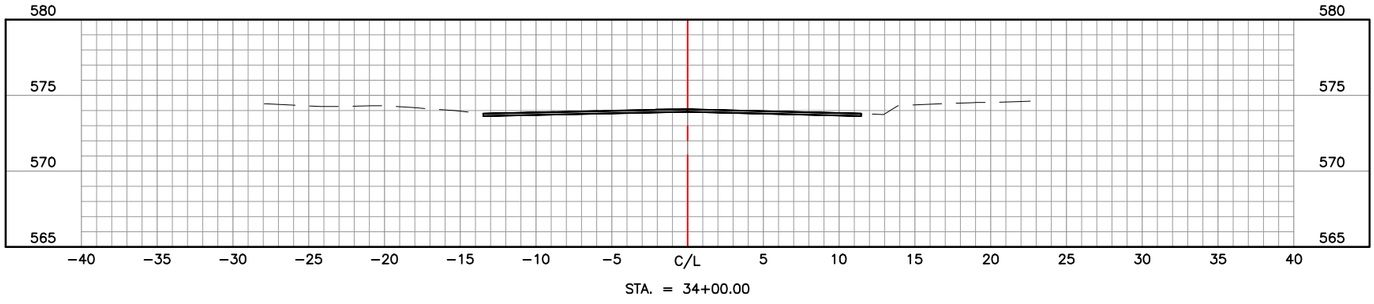

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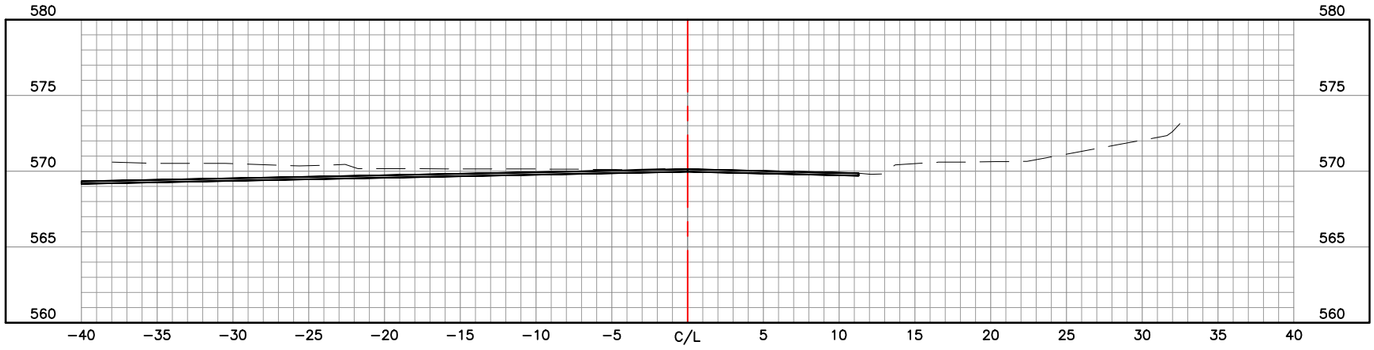

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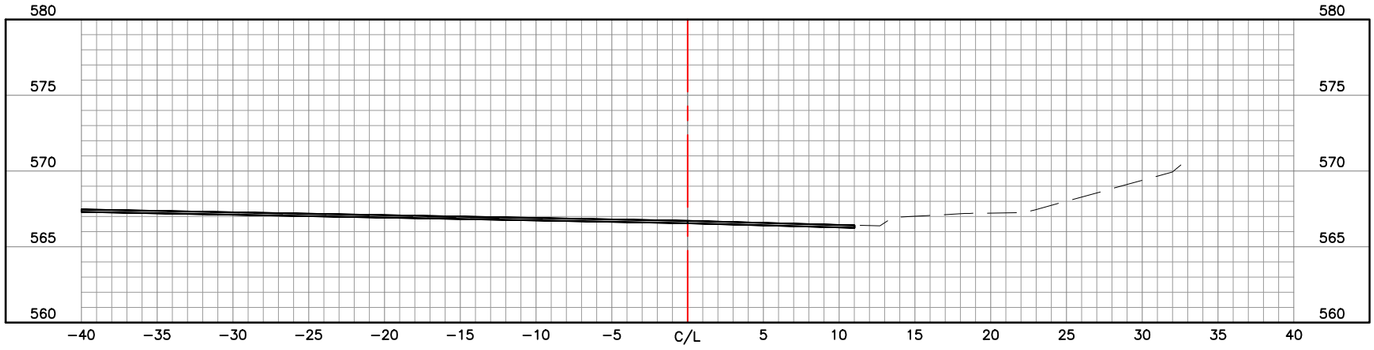

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CROSS SECTIONS

2x4SDP086

CROSS SECTIONS

XS-5

DATE:	REVISION:

SCALE: 1" = 10'
DATE: JANUARY 2021
PROJ. NO.: SC19-981
DWG. NO.:
DRWN. BY: K.J.W.
APPVD. BY: M.D.S.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET IS APPLICABLE ONLY TO THE TEXT APPEARING ON THIS SHEET. ALL OTHER INFORMATION PROVIDED BY THE PROFESSIONAL SHALL NOT BE CONSIDERED SEALED.

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

KEVIN J. WOLFF
NUMBER PE-2004020859
STATE OF MISSOURI
PROFESSIONAL ENGINEER

1/28/21
DATE

REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN
DBA COCHRAN, LLC

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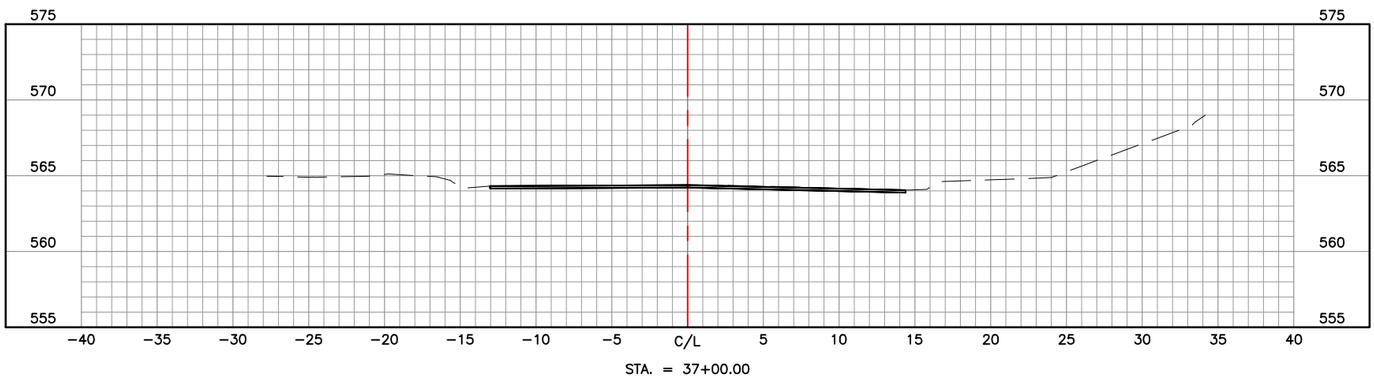
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529



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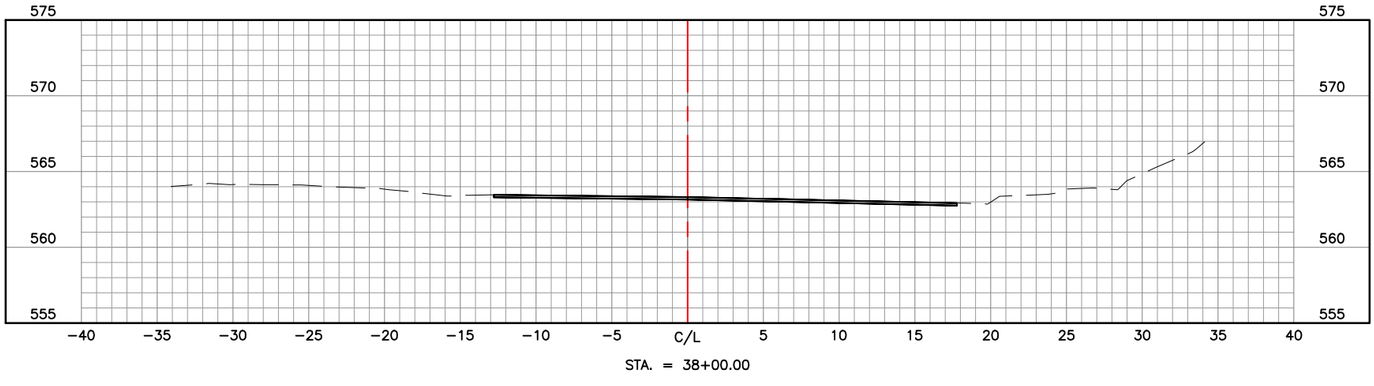

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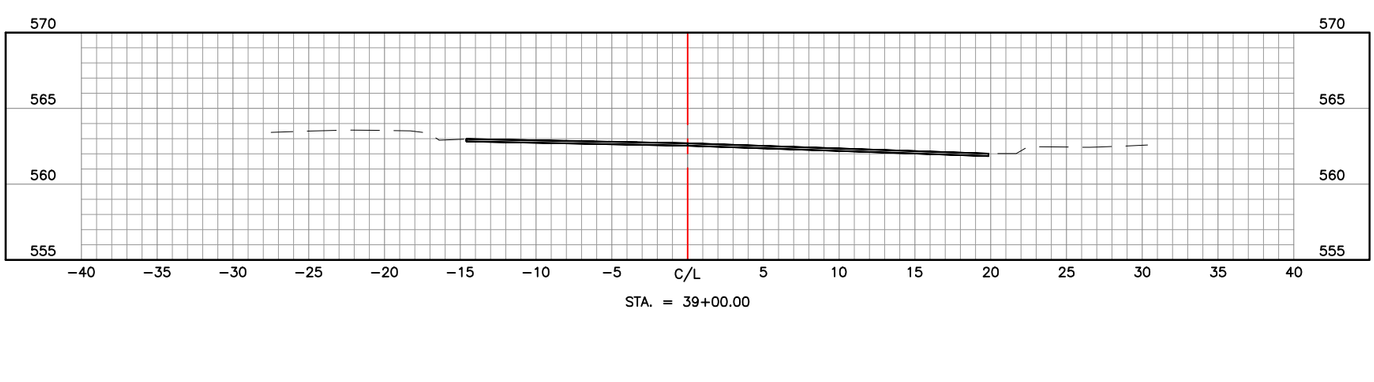

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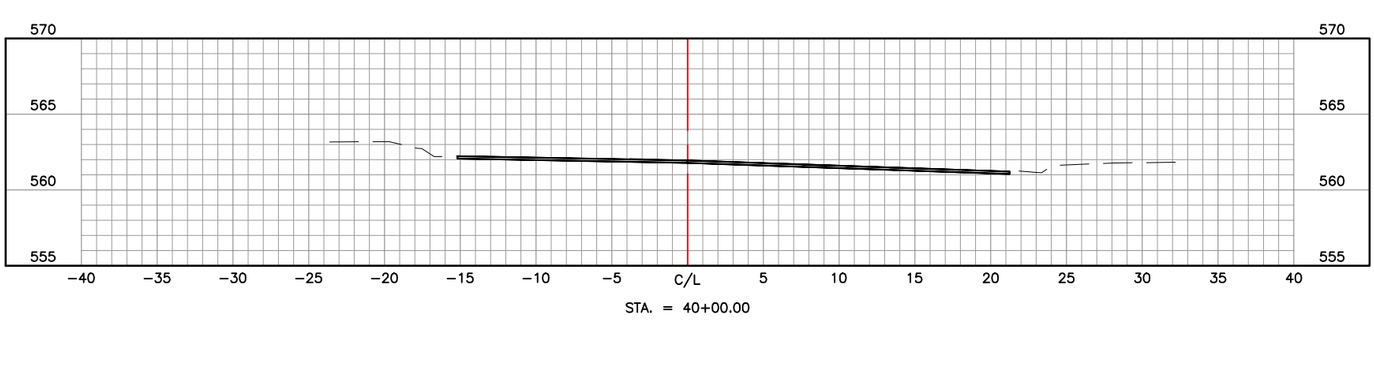

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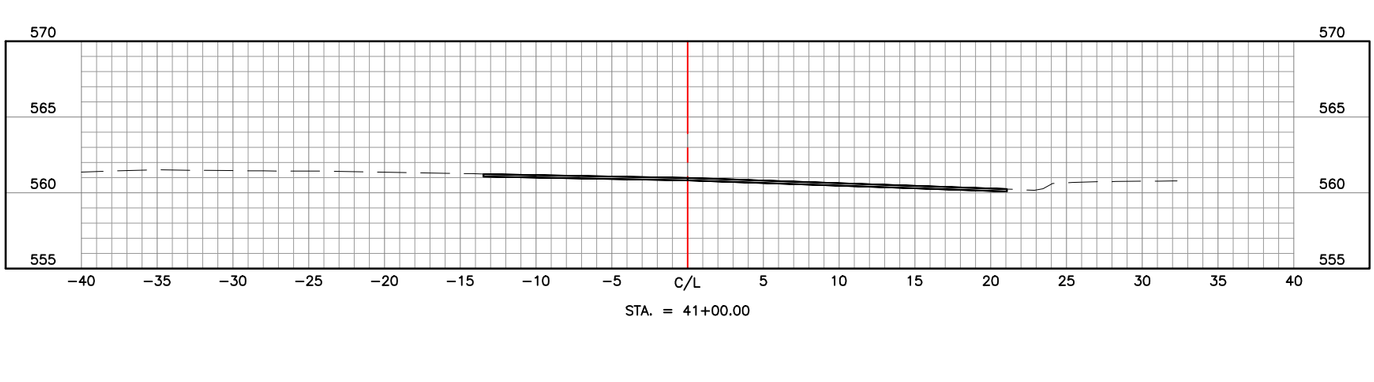

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CROSS SECTIONS

21XSDP086

CROSS SECTIONS

XS-6

DATE:	REVISION:

SCALE: 1" = 10'
DATE: JANUARY 2021
PROJ. NO.: SC19-981
DWG. NO.:
DRWN. BY: K.J.W.
APPVD. BY: M.D.S.

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

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THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER 2006020859
REGISTERED PROFESSIONAL ENGINEER

1/28/21

KEVIN J. WOLFF, PE-2006020859
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN
DBA COCHRAN, LLC

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www.cochraneng.com

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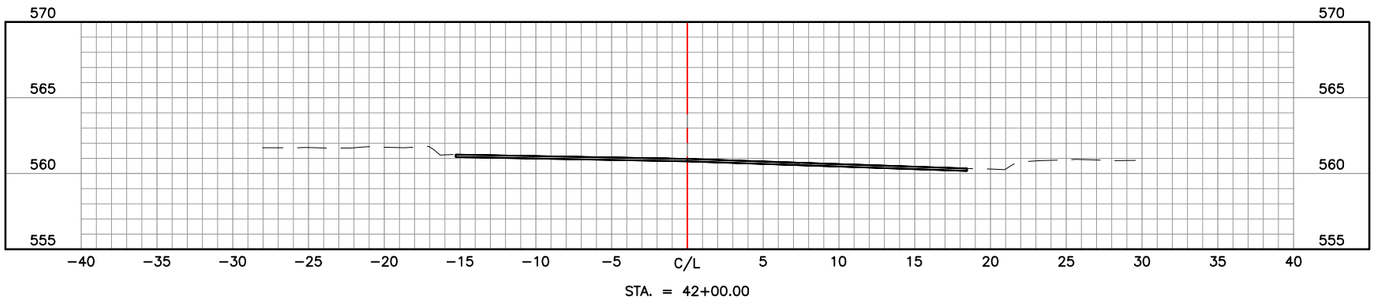
- General Consulting

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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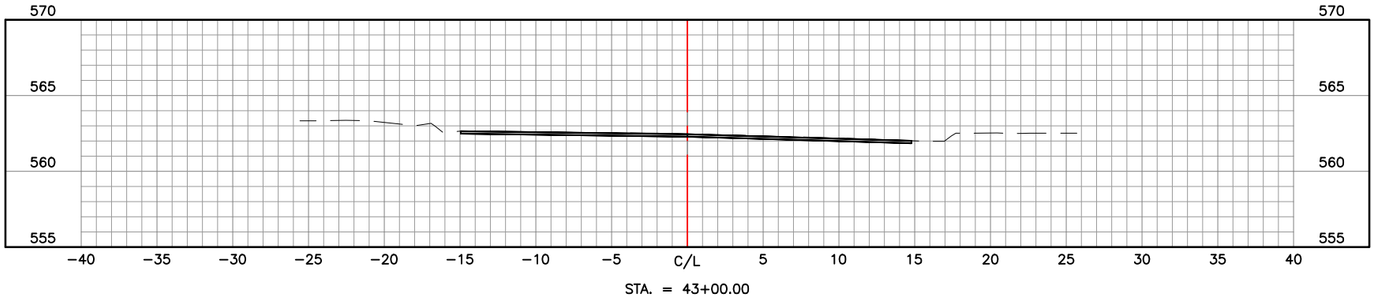

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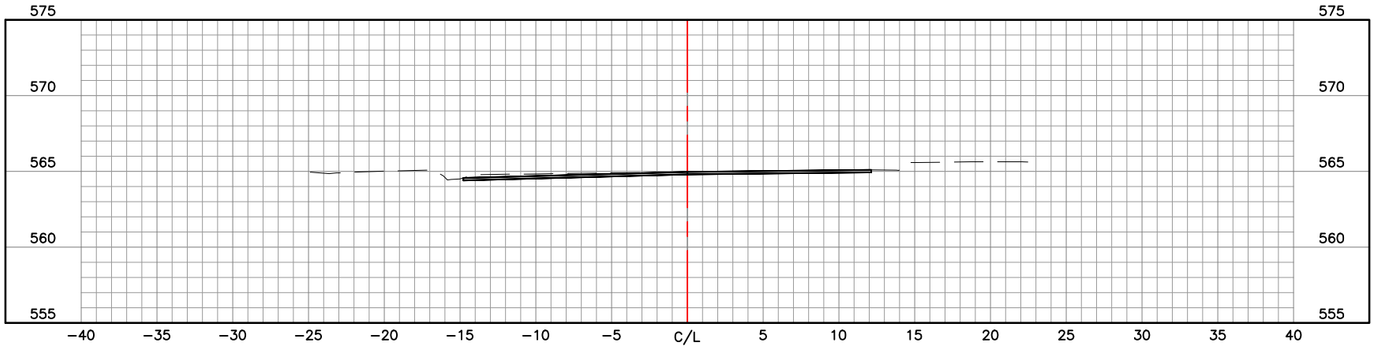

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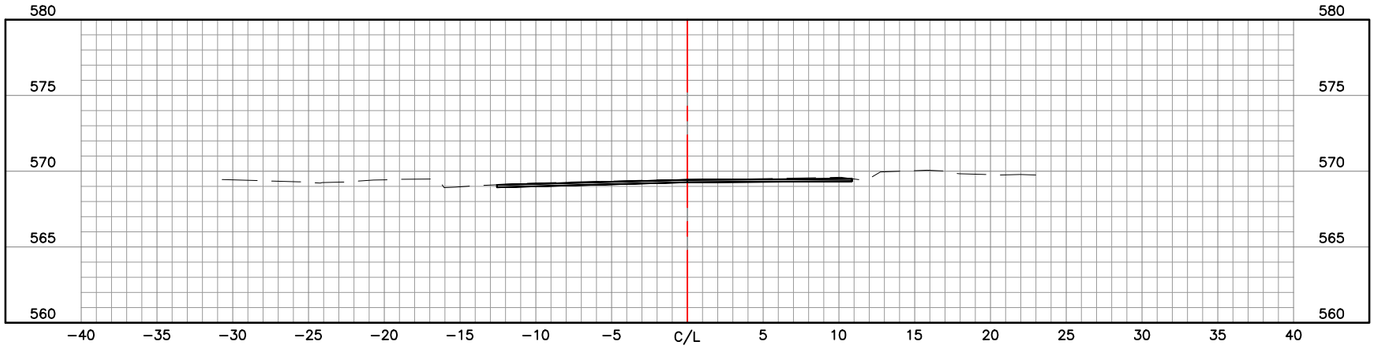

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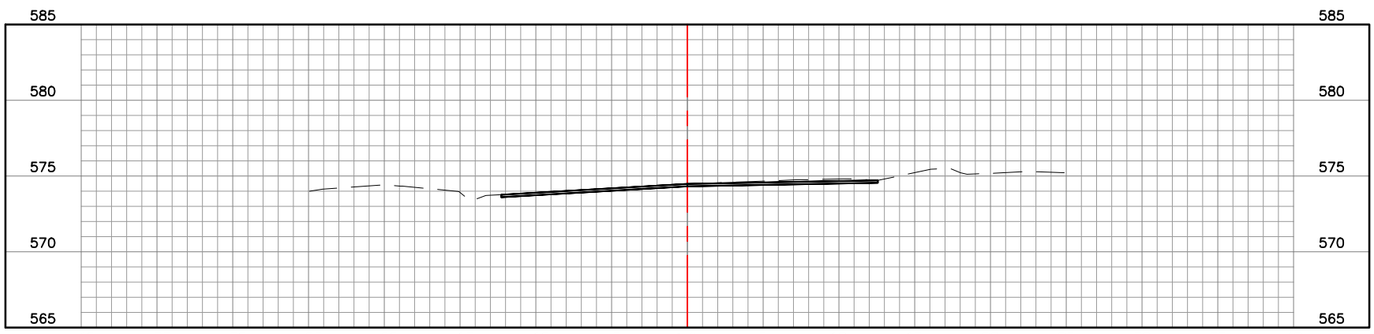

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CROSS SECTIONS

2XSSDW96

CROSS SECTIONS			
XS-7	DATE:	REVISION:	
PROJ. NO. SC19-981	SCALE: 1" = 10'	DRWN. BY: K.J.W.	APPVD. BY: M.D.S.
DWG. NO.	DATE: JANUARY 2021		

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

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THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

KEVIN J. WHITE
NUMBER PE-2004000869
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN, LLC.
DBA COCHRAN
1/28/21

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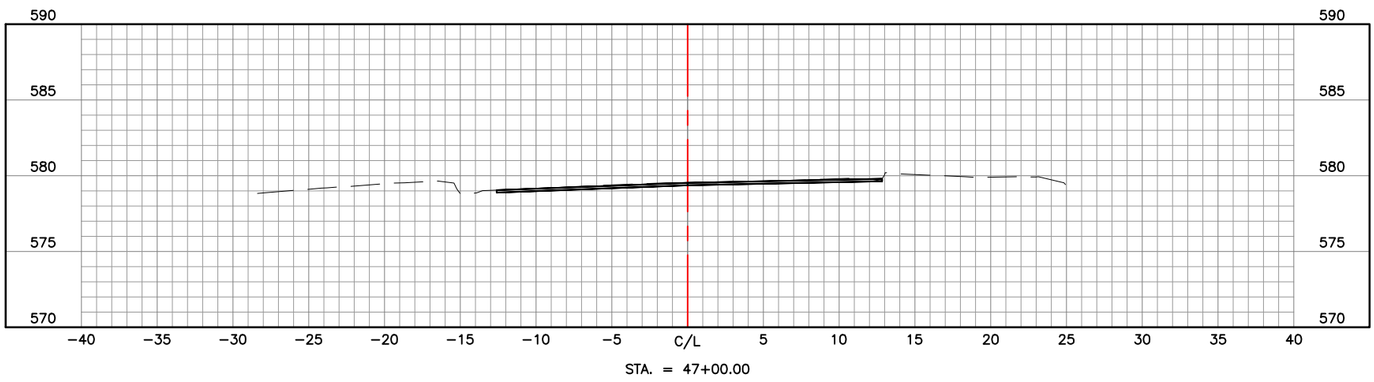
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529



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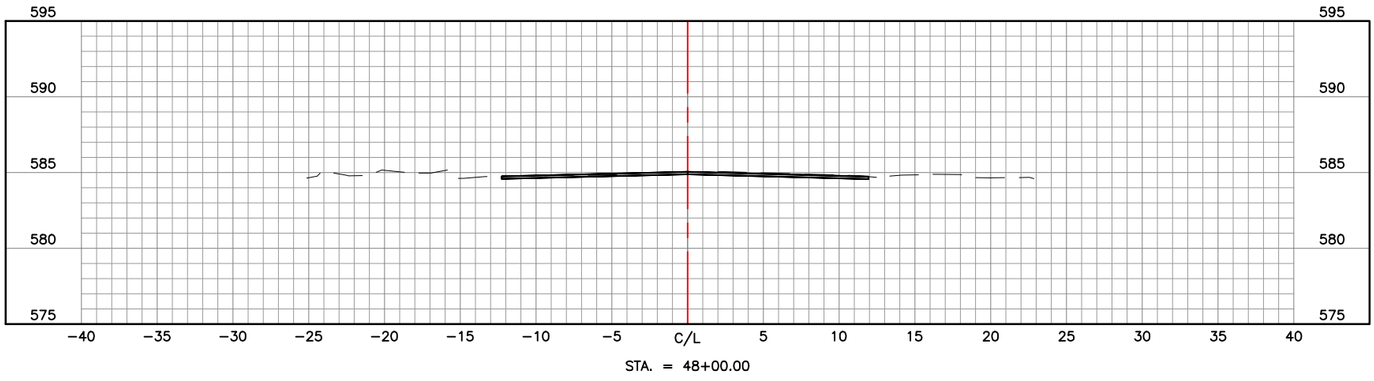

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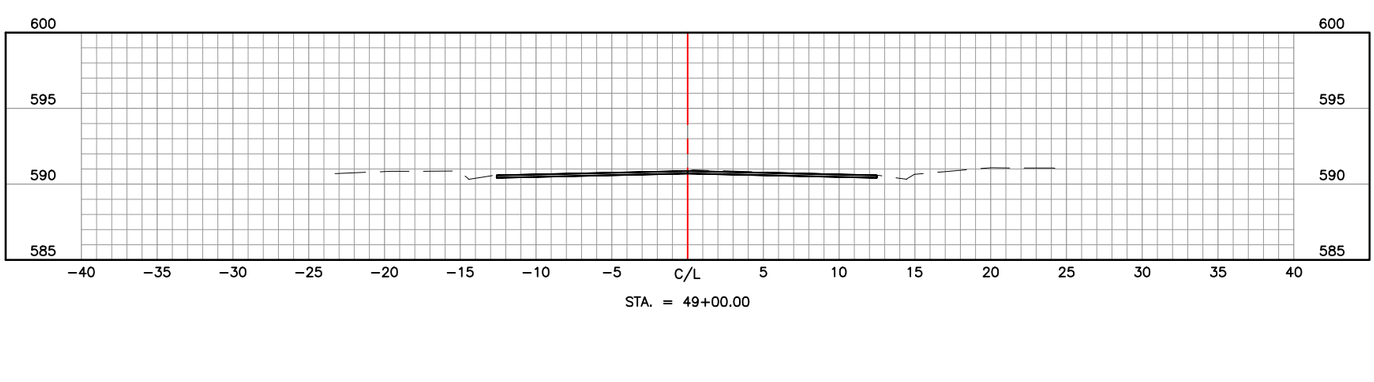

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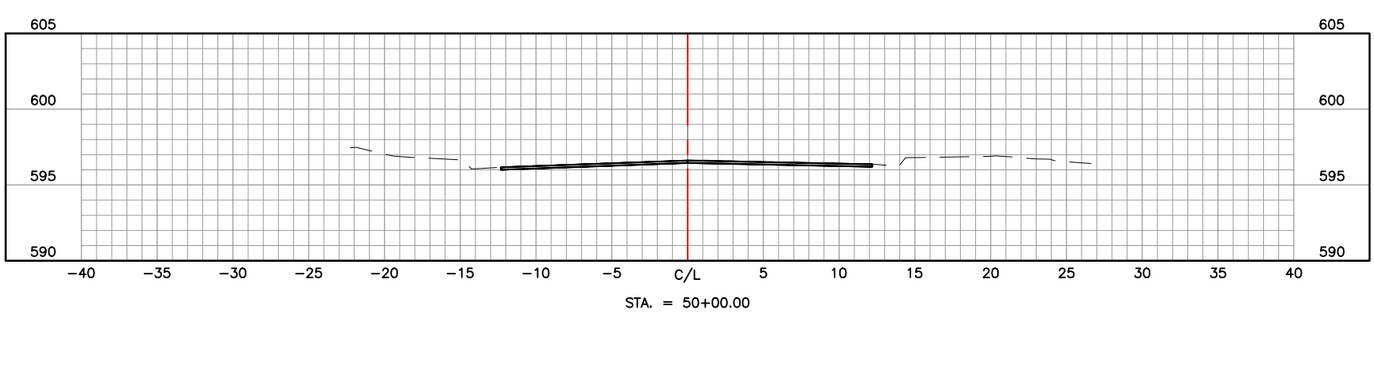
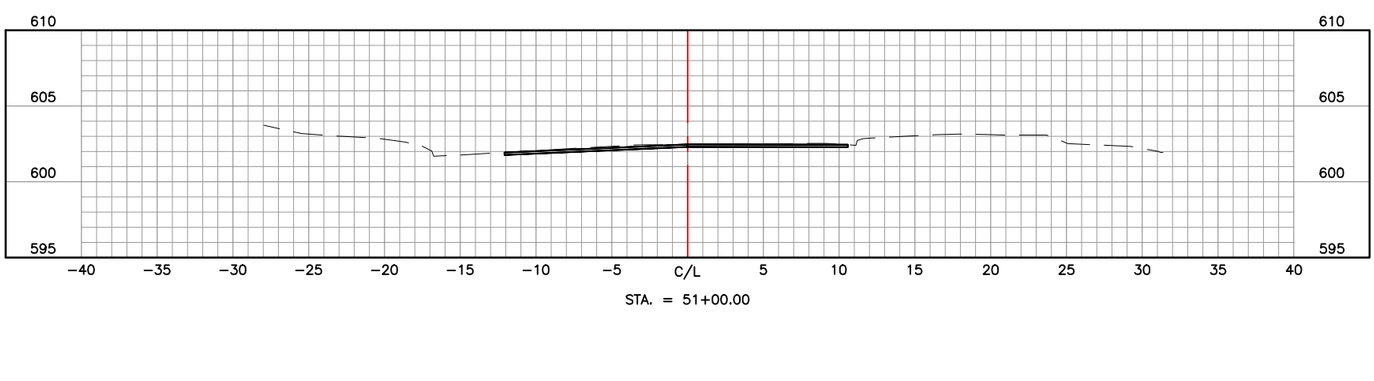


STA. = 50+00.00



STA. = 51+00.00

CROSS SECTIONS

2X15SHEETS

CROSS SECTIONS	DATE:	REVISION:	HOLLOWAY ROAD IMPROVEMENTS FEDERAL PROJECT NO. STP-4939(608) CITY OF BALLWIN, MISSOURI
XS-8			
PROJ. NO.: SC19-981			
DWG. NO.:			
SCALE: 1" = 10'			
DATE: JANUARY 2021			
DRWN. BY: K.J.W. APPVD. BY: M.D.S.			

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET IS ONLY APPLICABLE TO THIS SHEET AND SHALL NOT BE CONSIDERED APPLIED TO ANY OTHER SHEET.

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

1/28/21

KEVIN J. WOLFF
NUMBER 2004020859
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN, LLC.
DBA COCHRAN

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER 2004020859
REGISTERED PROFESSIONAL ENGINEER

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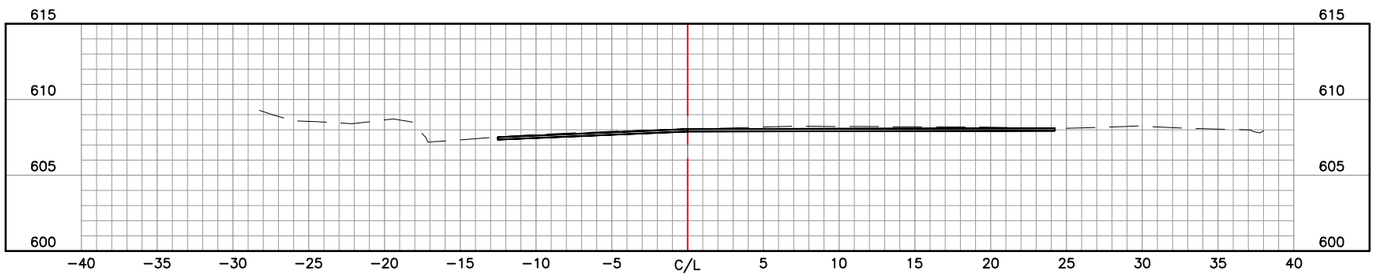
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529



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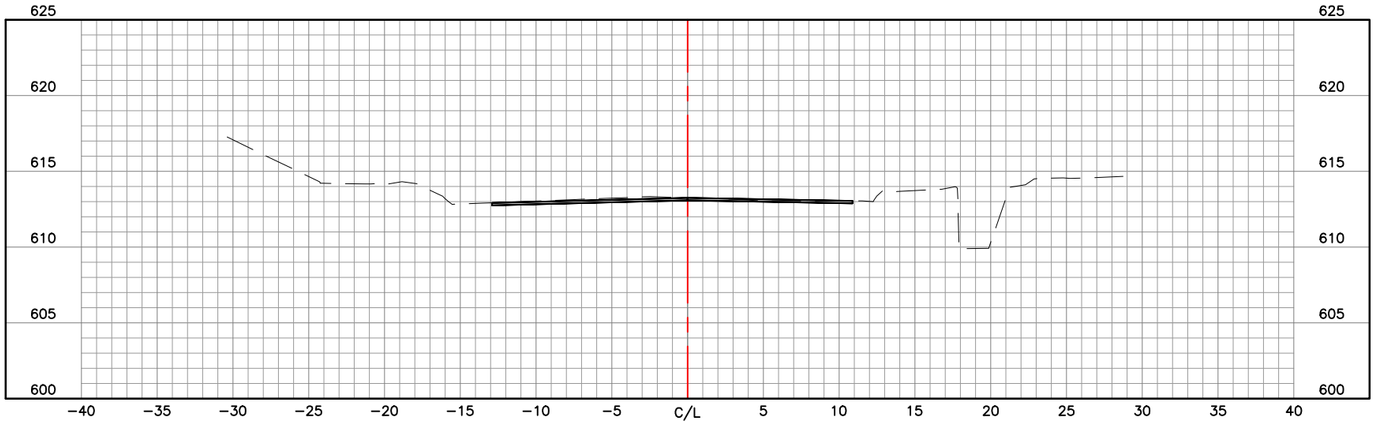

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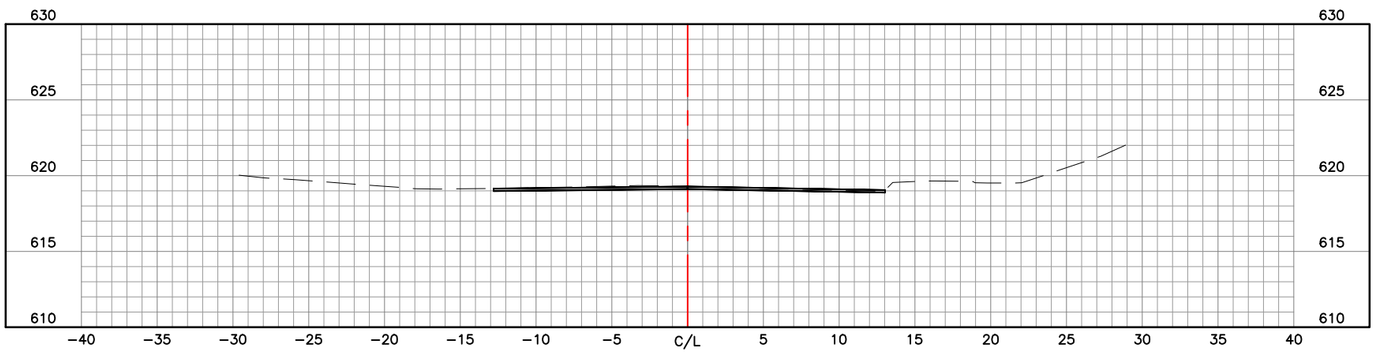

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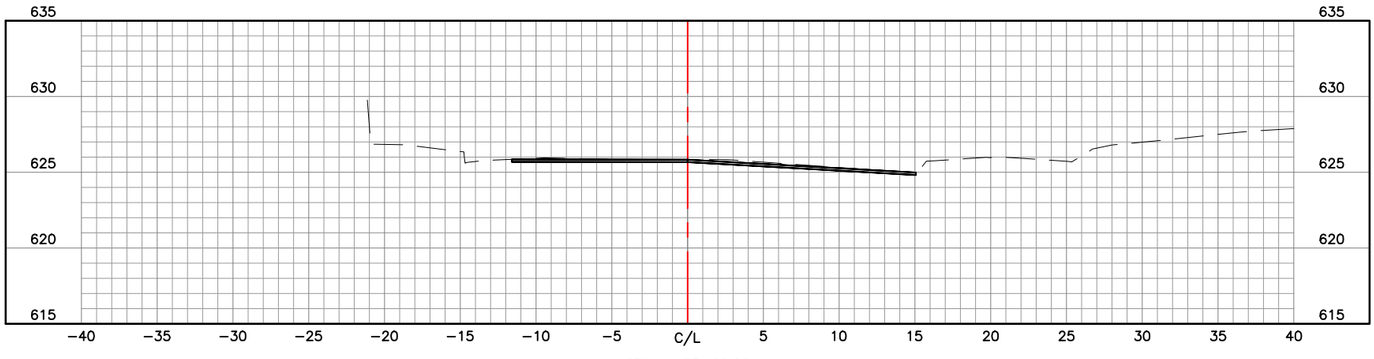

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CROSS SECTIONS

2X SHEET WIDTH

CROSS SECTIONS

XS-9

PROJ. NO.: SC19-981
DWG. NO.:

SCALE: 1" = 10'

DATE: JANUARY 2021

DRWN. BY: K.J.W. APPVD. BY: M.D.S.

DATE:	REVISION:

HOLLOWAY ROAD IMPROVEMENTS

FEDERAL PROJECT NO. STP-4939(608)

CITY OF BALLWIN, MISSOURI

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THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

STATE OF MISSOURI KEVIN J. WOLFF NUMBER 2006019973 PROFESSIONAL ENGINEER

1/28/21

KEVIN J. WOLFF
NO. PE-2006019973
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN
DBA COCHRAN, LLC

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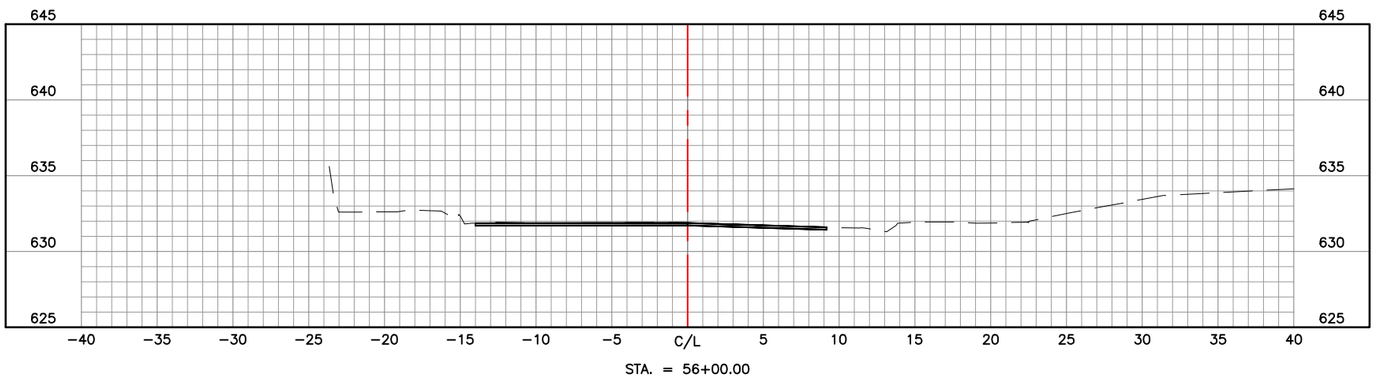
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529



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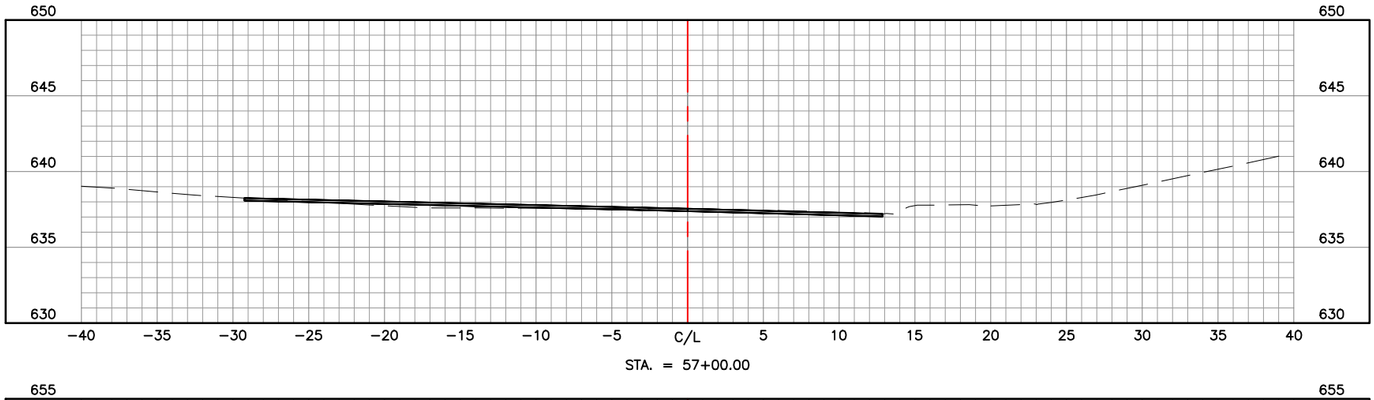

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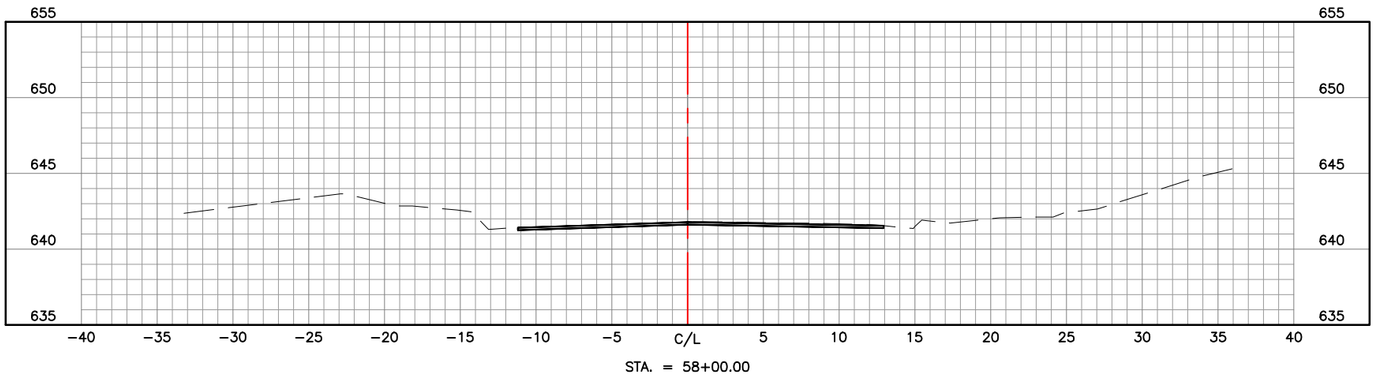

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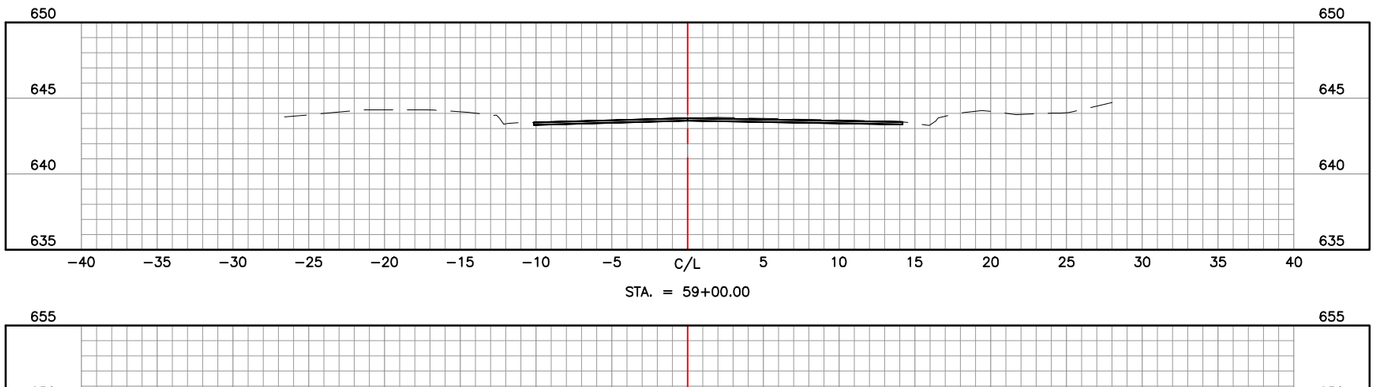

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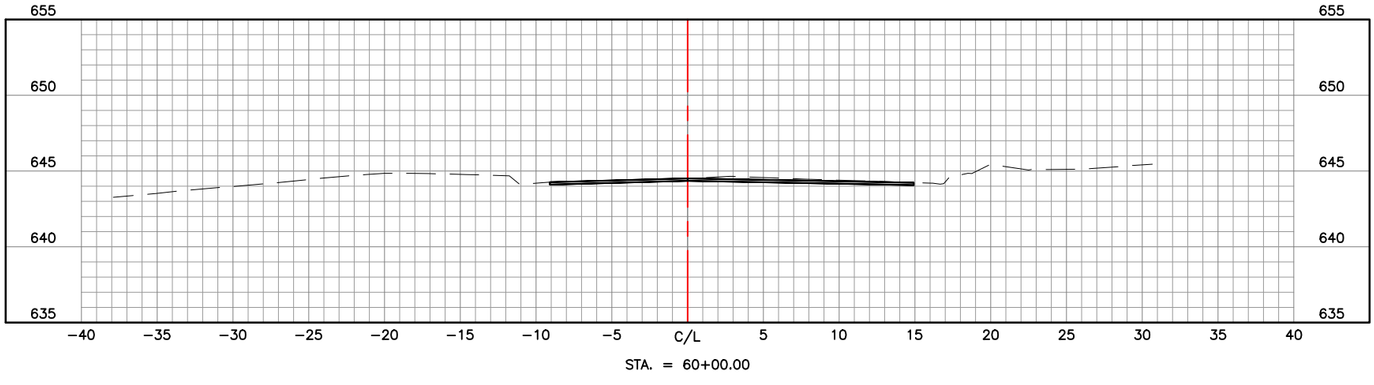

STA. = 60+00.00

CROSS SECTIONS

21XSDW86

CROSS SECTIONS

XS-10

DWG. NO.

PROJ. NO. SC19-981

SCALE: 1" = 10'

DATE: JANUARY 2021

DRWN. BY: K.J.W. APPVD. BY: M.D.S.

DATE:	REVISION:

HOLLOWAY ROAD IMPROVEMENTS

FEDERAL PROJECT NO. STP-4939(608)

CITY OF BALLWIN, MISSOURI

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KEVIN J. WOLFF
NUMBER PE-2004009859
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN
DBA COCHRAN, LLC
1/28/21

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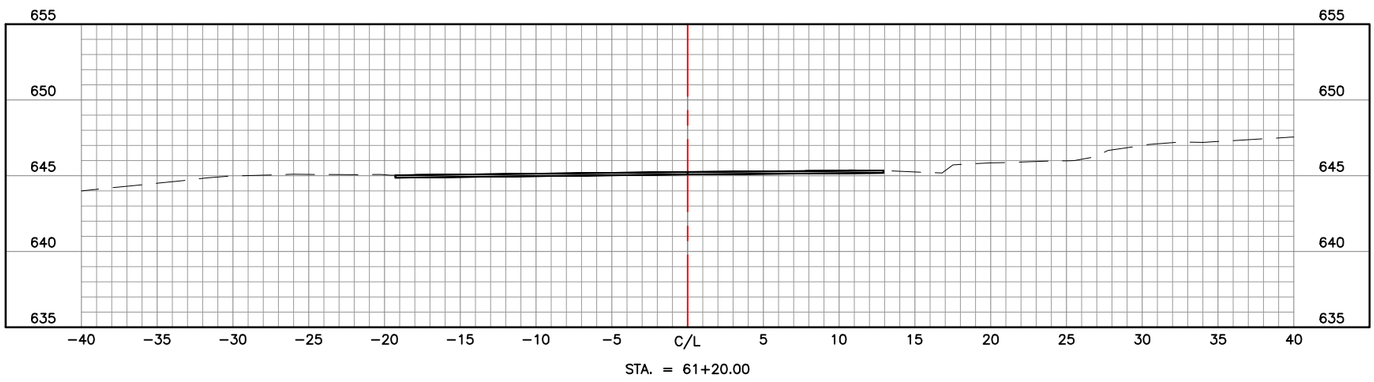
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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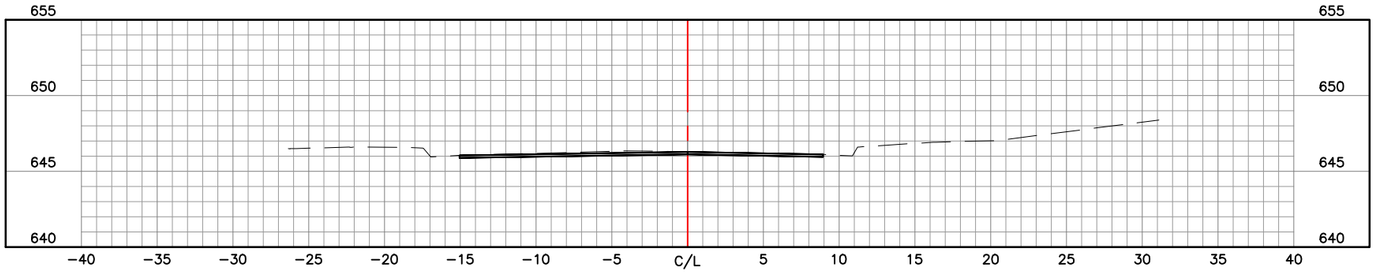

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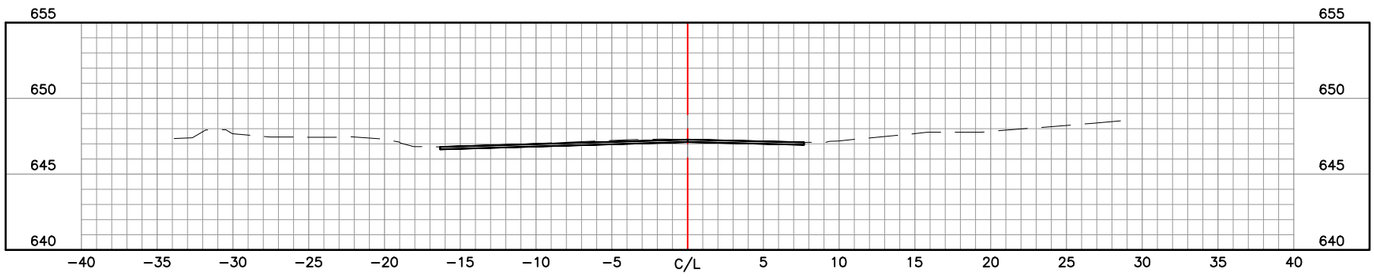

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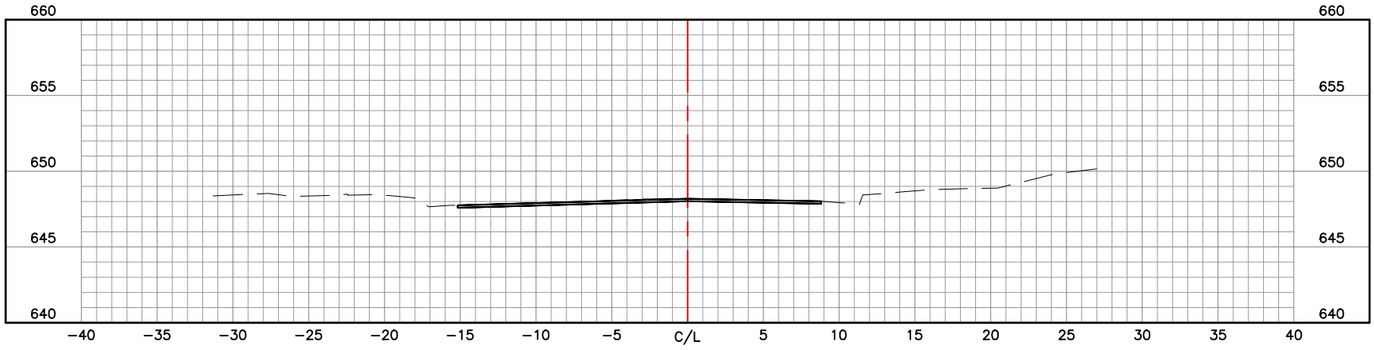

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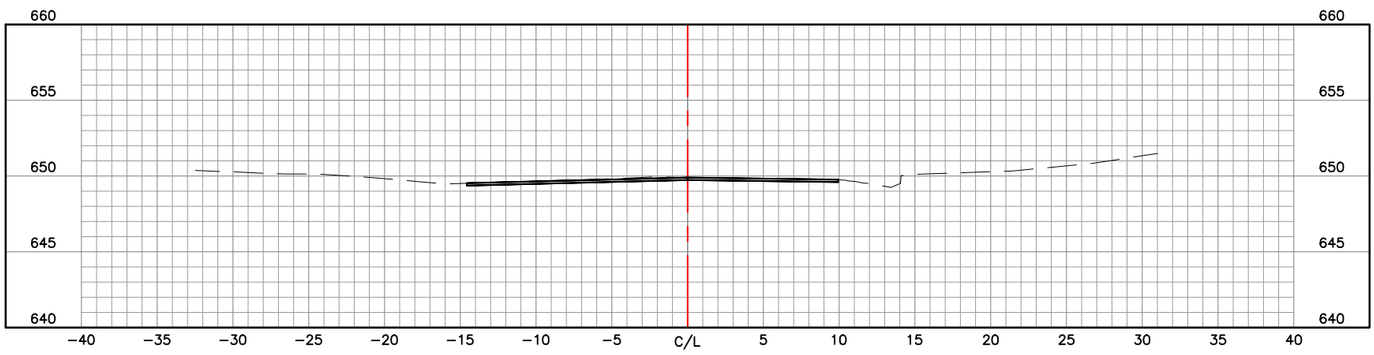

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CROSS SECTIONS

21XSDP096

CROSS SECTIONS

XS-11

DWG. NO.

PROJ. NO. SC19-981

SCALE: 1" = 10'

DATE: JANUARY 2021

DRWN. BY: K.J.W. APPRD. BY: M.D.S.

DATE:	REVISION:

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

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STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER 2006020859
REGISTERED PROFESSIONAL ENGINEER

1/28/21

FOR: COCHRAN
DBA COCHRAN, LLC

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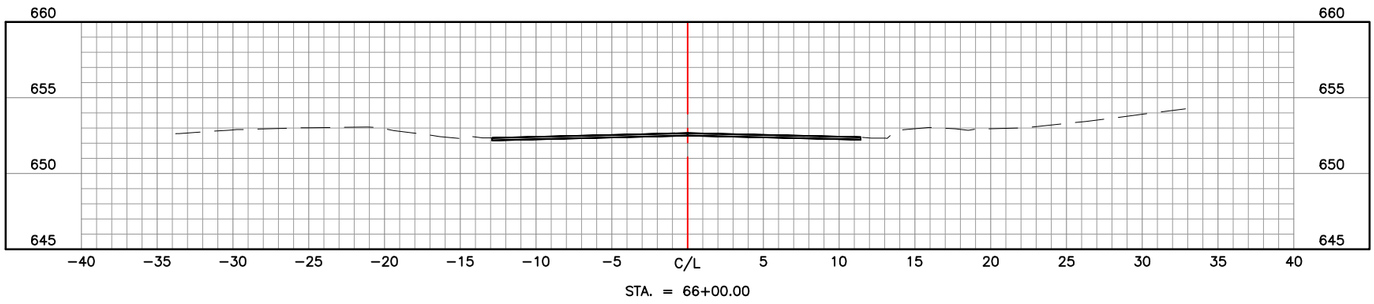
- General Consulting

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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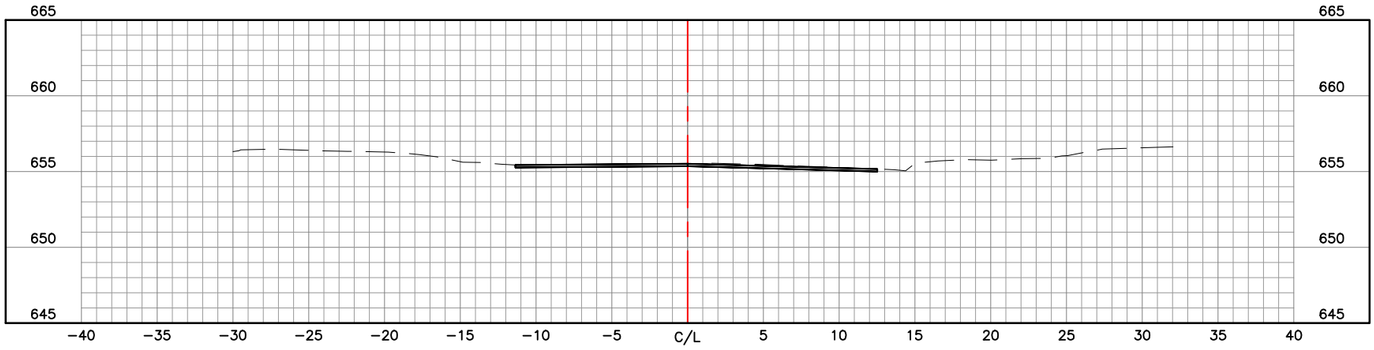

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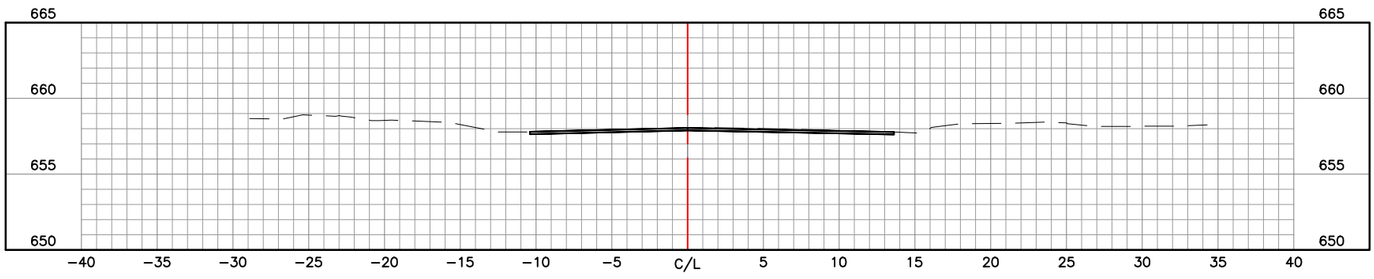

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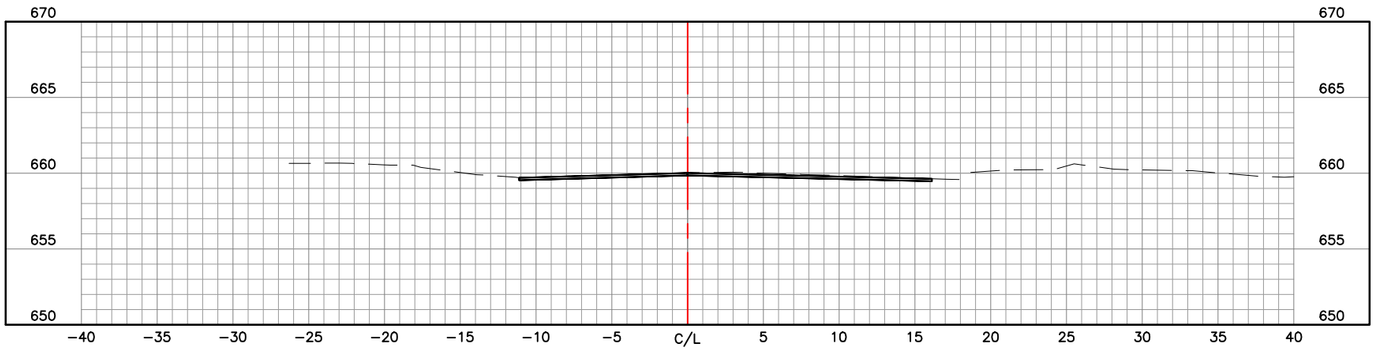

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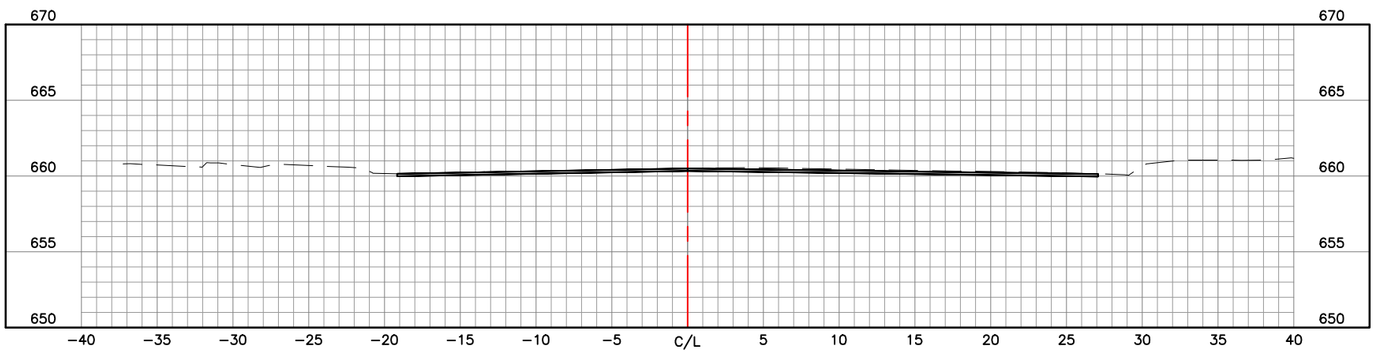

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CROSS SECTIONS

21XSDP096

CROSS SECTIONS

XS-12

DWG. NO.

PROJ. NO. SC19-981

SCALE: 1" = 10'

DATE: JANUARY 2021

DRWN. BY: K.J.W. APPD. BY: M.D.S.

DATE:	REVISION:

HOLLOWAY ROAD IMPROVEMENTS

FEDERAL PROJECT NO. STP-4939(608)

CITY OF BALLWIN, MISSOURI

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THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

KEVIN J. WHITE
NUMBER PE-2004009859
STATE OF MISSOURI
PROFESSIONAL ENGINEER

1/28/21

KEVIN J. WHITE
NO. PE-2004009859
REGISTERED PROFESSIONAL ENGINEER
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DBA COCHRAN

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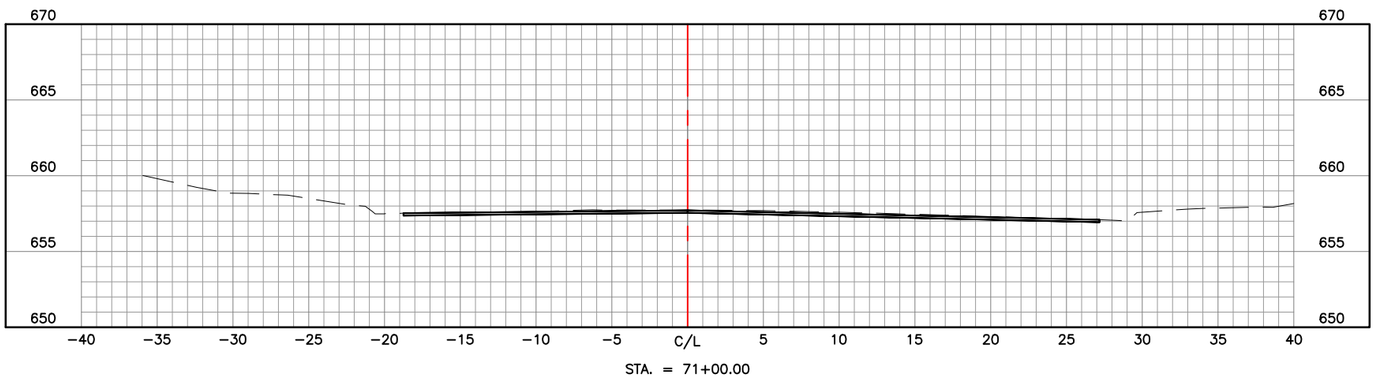
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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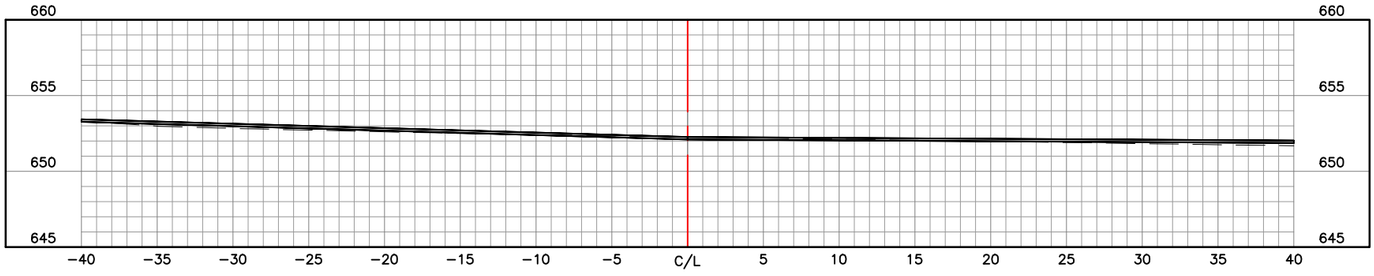

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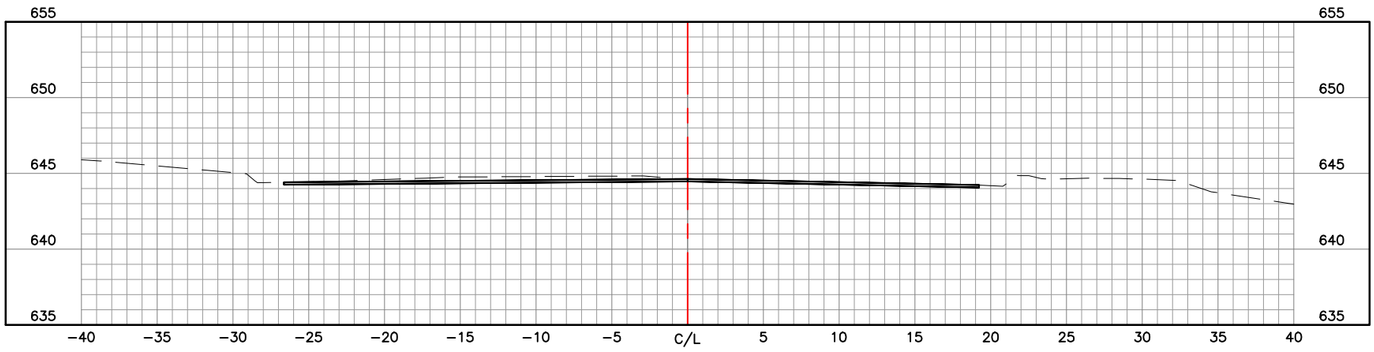

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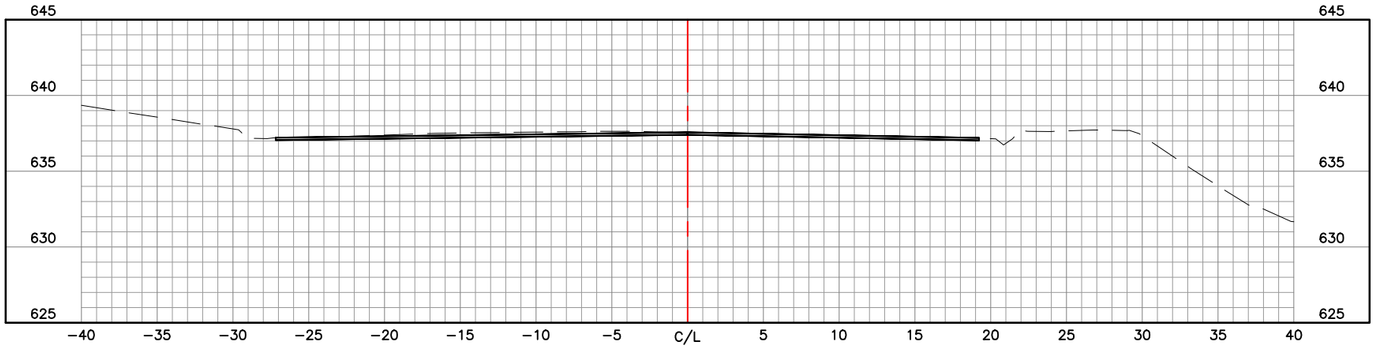

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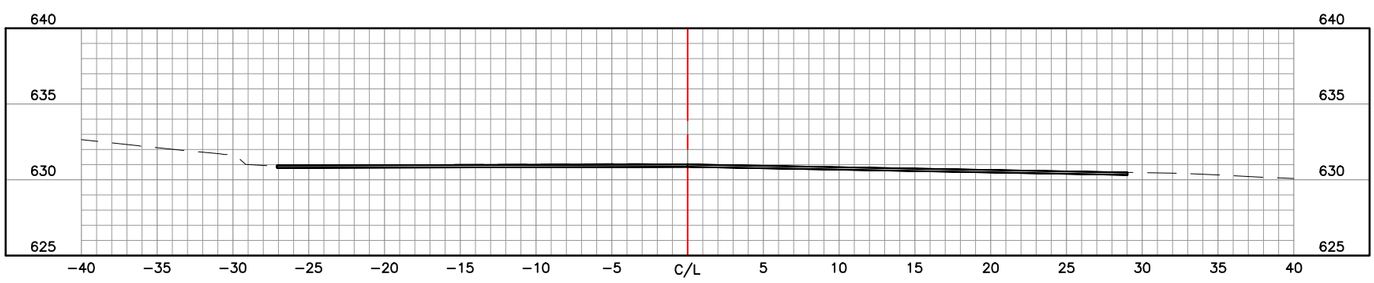

STA. = 75+00.00

CROSS SECTIONS

21XSDP096

CROSS SECTIONS

XS-13

PROJ. NO. SC19-981

DWG. NO.

SCALE: 1" = 10'

DATE: JANUARY 2021

DRWN. BY: K.J.W. APPD. BY: M.D.S.

DATE:	REVISION:

HOLLOWAY ROAD IMPROVEMENTS

FEDERAL PROJECT NO. STP-4939(608)

CITY OF BALLWIN, MISSOURI

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1/28/21

KEVIN J. WOLFF NUMBER PE-2004020859 REGISTERED PROFESSIONAL ENGINEER FOR: COCHRAN, LLC. DBA COCHRAN

STATE OF MISSOURI KEVIN J. WOLFF NUMBER PE-2004020859 PROFESSIONAL ENGINEER

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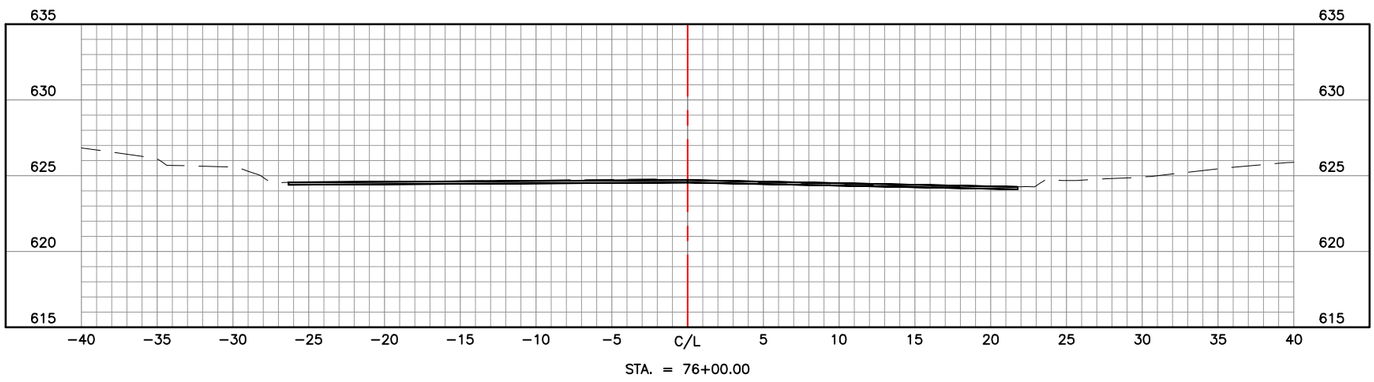
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529



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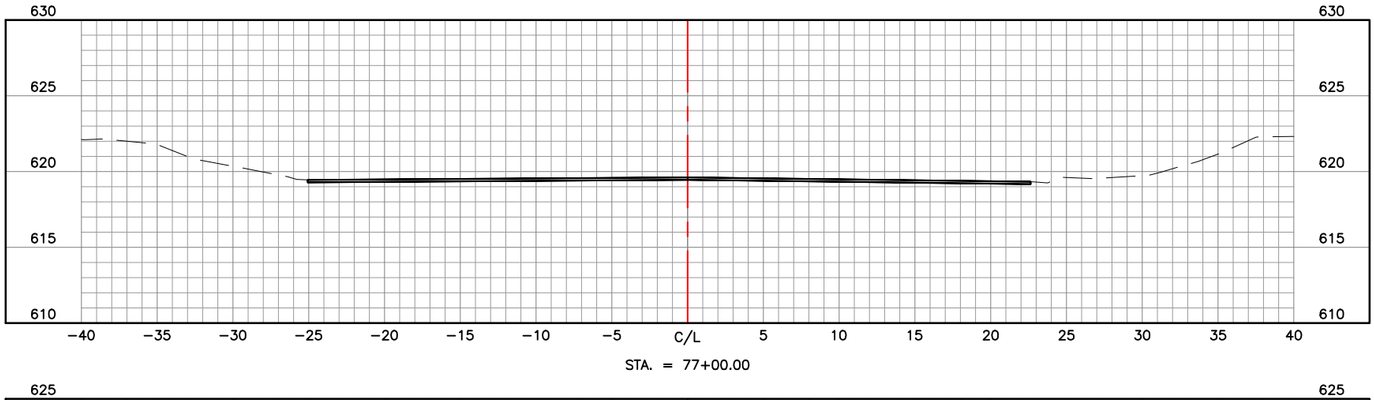

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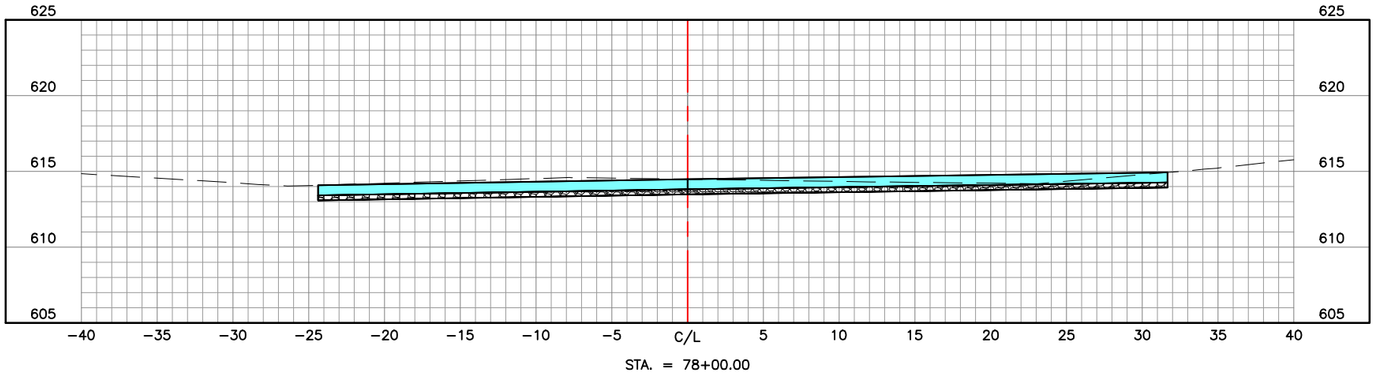

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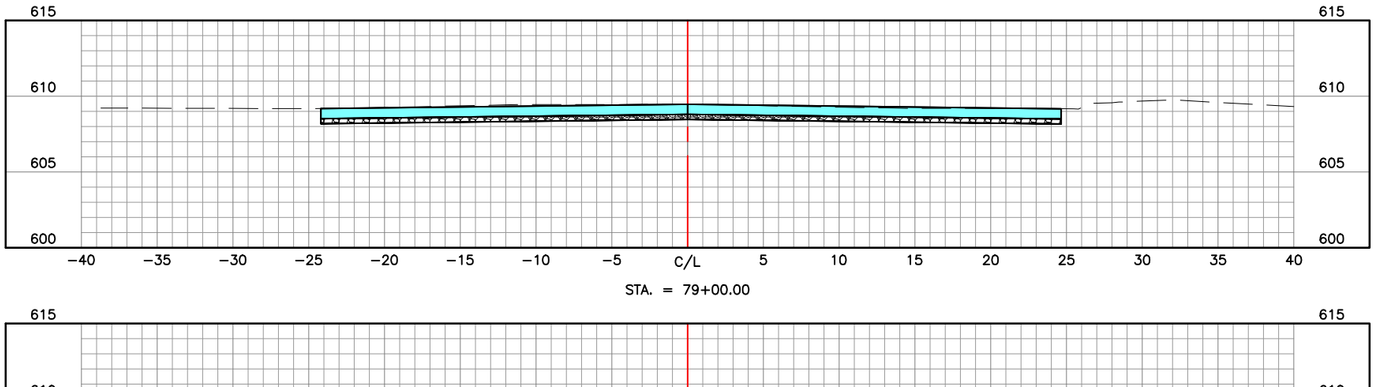

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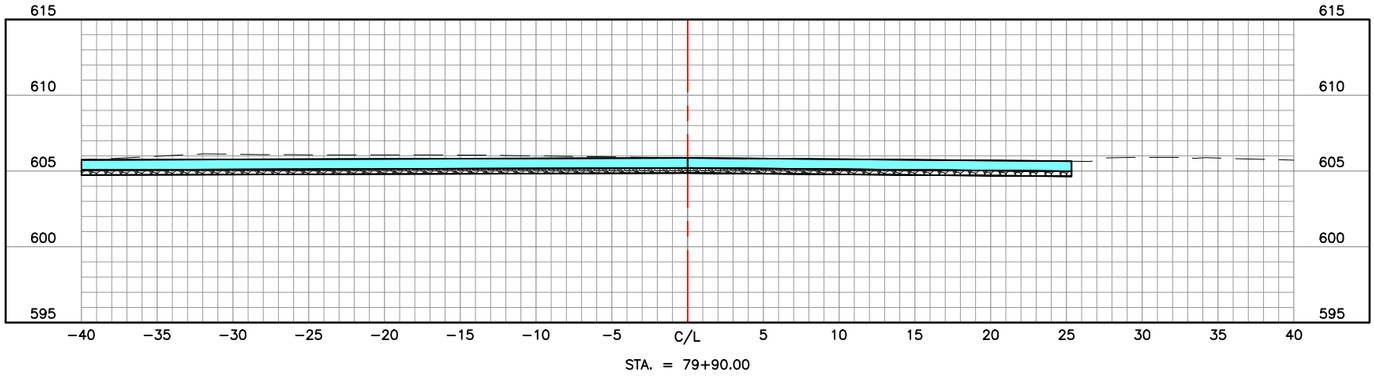

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CROSS SECTIONS

21XSSDW86

CROSS SECTIONS	DATE:	REVISION:	
XS-14	SCALE: 1" = 10'		
PROJ. NO.: SC19-981	DATE: JANUARY 2021		
DWG. NO.	DRWN. BY: K.J.W.	APPD. BY: M.D.S.	

HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

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1/28/21
KEVIN J. WOLFF
NO. PE-2004005969
REGISTERED PROFESSIONAL ENGINEER
FOR: COCHRAN, LLC.
DBA COCHRAN

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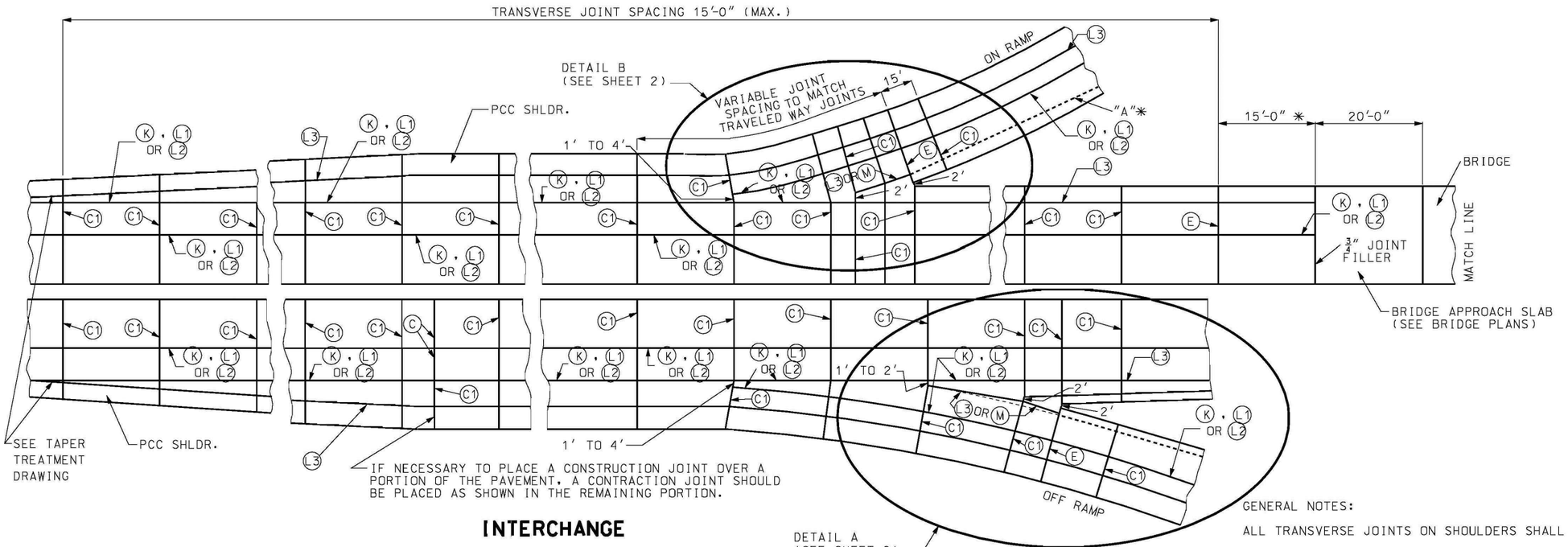
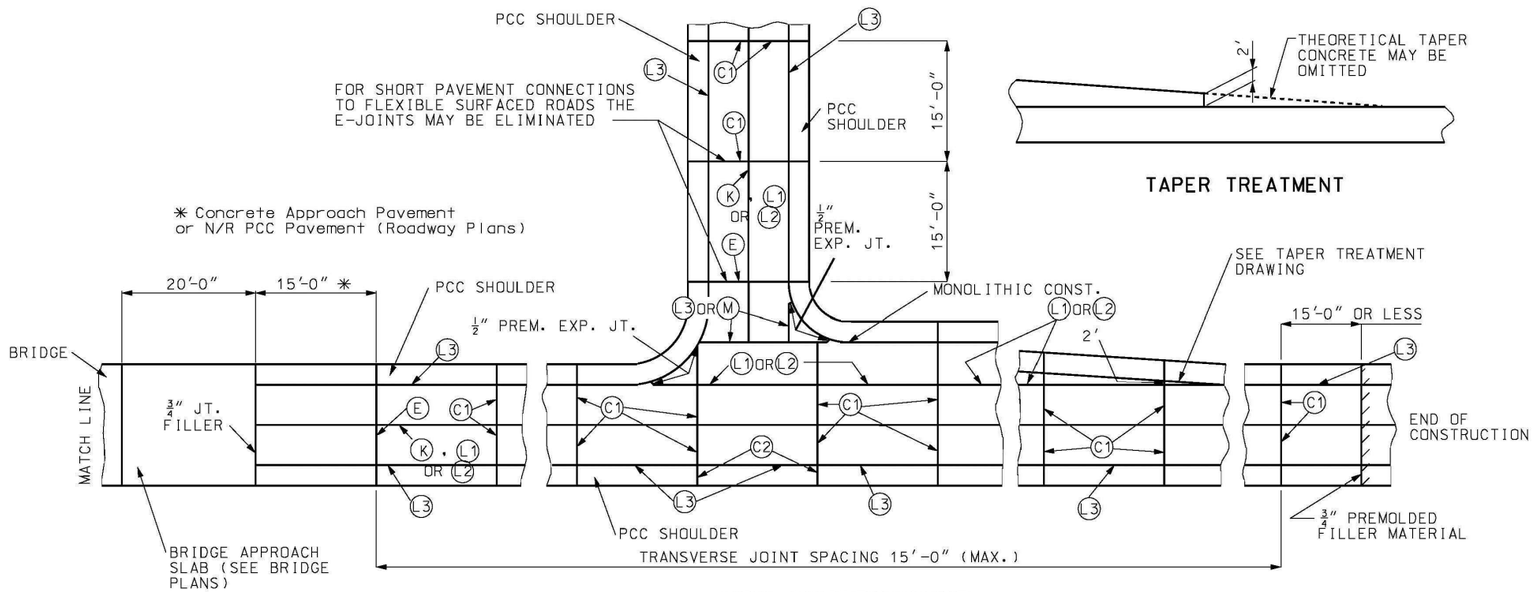
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

MODOT 502.05 JOINT SPACING DETAILS
PAGE 1



INTERCHANGE



NON-INTERCHANGE

TAPER TREATMENT

GENERAL NOTES:

ALL TRANSVERSE JOINTS ON SHOULDERS SHALL BE (C2) .

THE CONTRACTOR SHALL DETERMINE THE PAVING WIDTH.

(L3) SHALL BE USED BETWEEN PAVEMENT AND SHOULDER GREATER THAN 4'. THE INTERCHANGE WILL EXTEND FROM THE BEGINNING OF THE ACCELERATION/DECELERATION LANE TO THE GORE RETURN TAPER ON THE MAINLINE. THE INTERCHANGE WILL ALSO INCLUDE THE RAMPS UP TO THE BEGINNING OF THE RADIUS WITH THE ROAD INTERSECTING THE RAMP.

FOR JOINT DETAILS, SEE SHEETS NO. 3 & 4.

THE JOINT LAYOUT OF RAMPS IS TYPICAL FOR OUTER RAMPS OF CLOVERLEAF AND DIAMOND INTERCHANGES. SEE OTHER DRAWINGS FOR SPECIAL JOINT LAYOUTS.

JOINT SPACING SHOWN IS MAXIMUM AND IS TO BE REDUCED TO AVOID CONFLICT WITH ABUTTING STRUCTURES. JOINTS IN MULTI-LANE PAVEMENT ARE TO BE CONTINUOUS.

ALL SHOULDERS 4' OR LESS IN WIDTH CAST MONOLITHICALLY WITH THE ADJACENT LANE AND SHALL NOT HAVE A LONGITUDINAL JOINT OR TIE BARS.

21MSD-00086

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Water Resources
General Consulting
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER PE-2004000859
PROFESSIONAL ENGINEER
1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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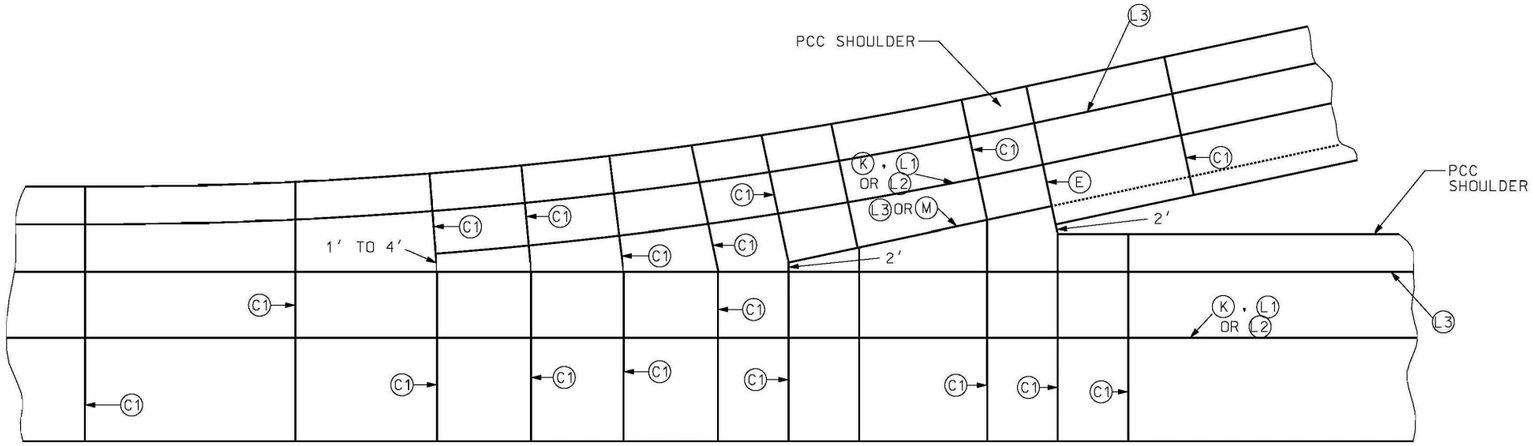
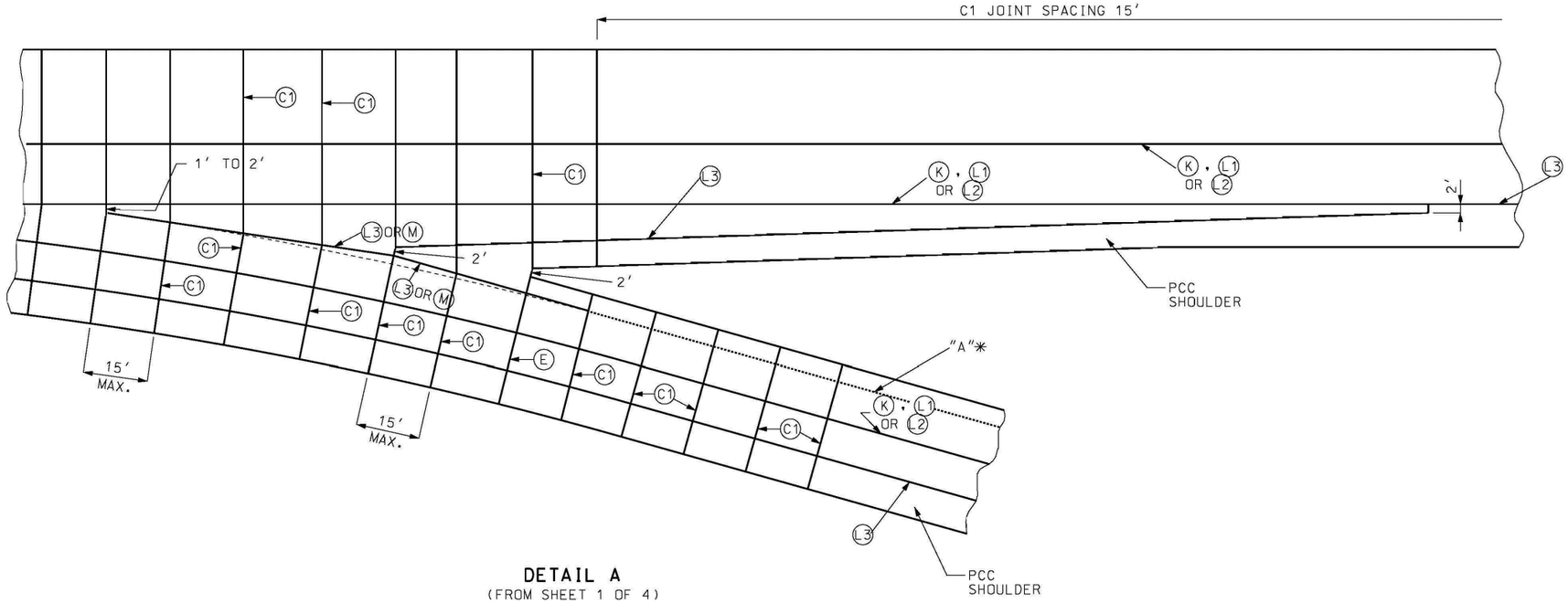
HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

MODOT DETAILS	
DATE:	REVISION:
DWN. BY: K.J.W.	APPD. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19-981	
DWG. NO: 502.05-1	

MODOT 502.05 JOINT SPACING DETAILS
PAGE 2



DETAIL B
(FROM SHEET 1 OF 4)



DETAIL A
(FROM SHEET 1 OF 4)

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Land Surveying
Architecture
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General Consulting

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER – 2007004529

STATE OF MISSOURI
KEVIN J. WOLFF
NUMBER PE-2004000859
PROFESSIONAL ENGINEER

1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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HOLLOWAY ROAD IMPROVEMENTS
FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

MODOT DETAILS

DATE:	REVISION:
DWN. BY: K.J.W.	APP'D. BY: M.D.S.
DATE: JANUARY 2021	
SCALE: AS SHOWN	
PROJ. NO: SC19-981	
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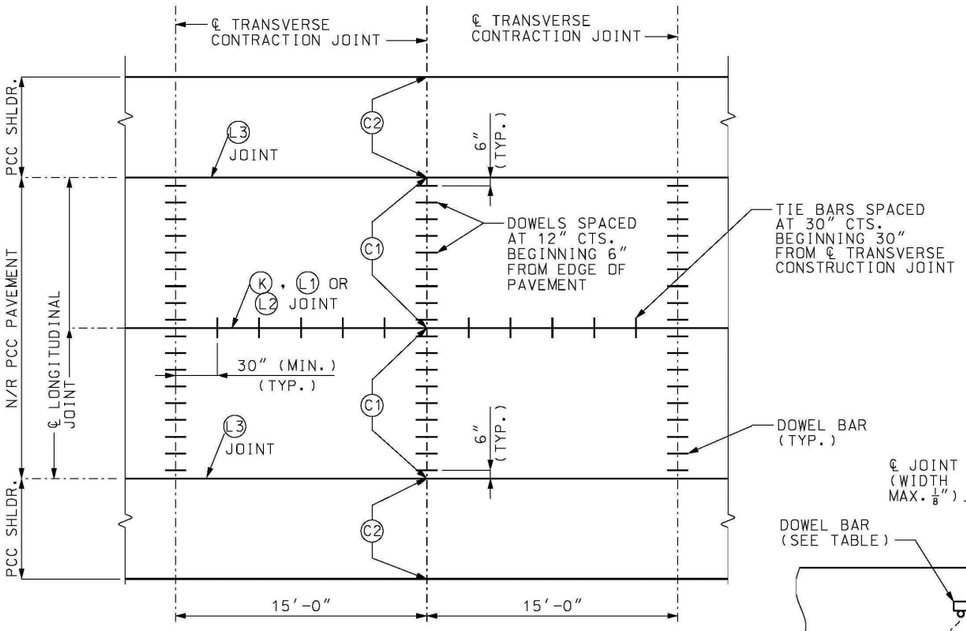
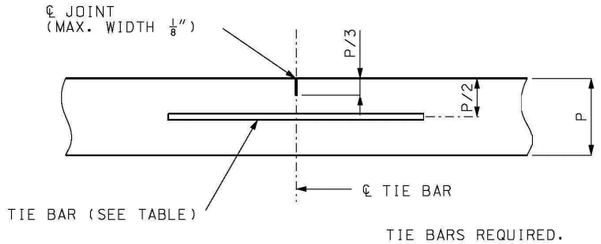
MODOT 502.05 JOINT SPACING DETAILS
PAGE 3



JOINT PLAN AND SPACING FOR CONTRACTION JOINTS (1)

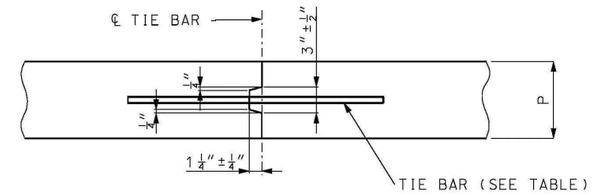
(1) LONGITUDINAL JOINT NOT REQUIRED AT INSIDE SHOULDER ON DIVIDED HIGHWAYS OR AT INSIDE SHOULDER OF RAMPS . FOR 4' OR LESS INSIDE SHOULDERS, DOWELS ARE REQUIRED FOR THE FIRST TWO FEET ADJACENT TO THE TRAVEL LANE.



TIE BARS REQUIRED.

LONGITUDINAL JOINT (L1)

TIE BAR AND DOWEL TABLE				
PCCP THICKNESS (P)	DOWEL SIZE	TIE BAR SIZE	DOWEL SPACING	TIE BAR SPACING
LESS THAN 7"	NONE	#5X30"	NONE	30" CTR.-CTR.
7" TO 10"	1 1/4"X18"	#5X30"	12" CTR.-CTR.	30" CTR.-CTR.
GREATER THAN 10"	1 1/2"X18"	#6X40"	12" CTR.-CTR.	30" CTR.-CTR.



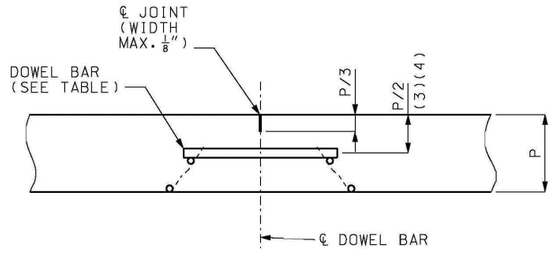
IF METAL IS USED TO FORM KEY DISCONTINUE STRIP FOR DISTANCE OF APPROXIMATELY 3" EACH SIDE OF TRANSVERSE JOINT.

TYPE (K) REQUIRES TIE BAR.

TYPE (M) CONSTRUCTED WITHOUT TIE BARS.

(K) AND (M) JOINTS SHALL NOT BE SAWED.

TONGUE AND GROOVE JOINTS (K) AND (M)

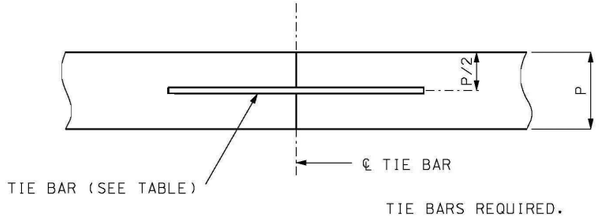


DOWELS REQUIRED. FOR PERMISSIBLE TYPES OF DOWELS SUPPORTING UNITS, SEE OTHER DRAWINGS.

TRANSVERSE CONTRACTION JOINTS FOR CONCRETE PAVEMENT OR BASE WIDENING SHALL MATCH EXISTING JOINTS.

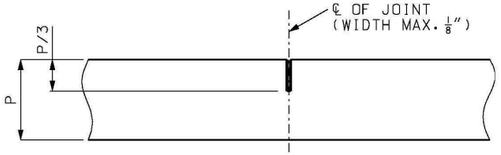
TRANSVERSE CONTRACTION JOINT (C1) (2)

(2) DOWEL BARS ARE REQUIRED FOR ALL PAVEMENTS HAVING THE SAME THICKNESS AS THE TRAVELED WAY.
(3) FOR PAVEMENTS HAVING THICKNESS IN 1/2" INCREMENTS, DOWEL BASKETS SHALL BE P/2- 1/2".
(4) DOWEL BARS MAY BE PLACED BY MECHANICAL MEANS AT THE OPTION OF THE CONTRACTOR.

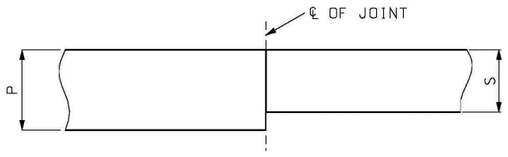


TIE BARS REQUIRED.

LONGITUDINAL CONSTRUCTION JOINT (L2)



TRANSVERSE CONTRACTION JOINT (C2)



LONGITUDINAL CONSTRUCTION JOINT FOR SHOULDER (L3)

S = SHOULDER THICKNESS

GENERAL NOTES:

THE FINAL POSITION OF ALL DOWELS AND TIE BARS SHALL BE PERPENDICULAR TO THE PLANE OF THE JOINT AND PARALLEL TO THE SURFACE OF THE PAVEMENT AND PARALLEL TO EACH OTHER.

(L3) JOINT FOR FULL DEPTH OR PARTIAL DEPTH SHOULDERS.

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1/28/21
KEVIN J. WOLFF
NO. PE-2004000859
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
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FEDERAL PROJECT NO. STP-4939(608)
CITY OF BALLWIN, MISSOURI

MODOT DETAILS

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DWN. BY: K.J.W.	APPD. BY: M.D.S.
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DWG. NO: 502.05-3	

MODOT 502.05 JOINT SPACING DETAILS
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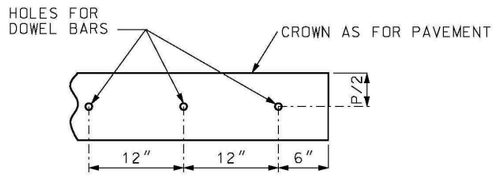
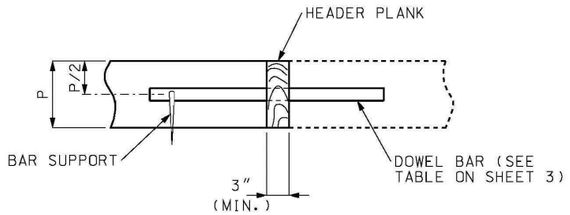
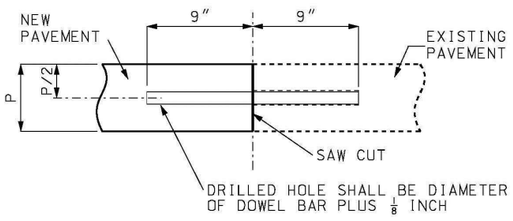


PART ELEVATION OF
HEADER PLANK



HEADER SECTION



SAWED SECTION

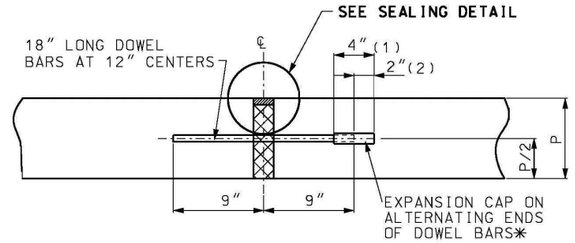
THE HEADER BOARD SHALL BE SUFFICIENTLY RIGID TO PREVENT DISTORTION FROM THE TYPICAL SECTION AND MAINTAIN A STRAIGHT LINE FROM PAVEMENT EDGE TO PAVEMENT EDGE.

THE CONSTRUCTION JOINT MAY BE SAWED FULL DEPTH. HOLES FOR DOWEL BARS SHALL BE DRILLED AFTER THE CONCRETE HAS SUFFICIENT SET TO PREVENT DAMAGE. DOWEL BARS SHALL BE BONDED INTO THE HOLES.

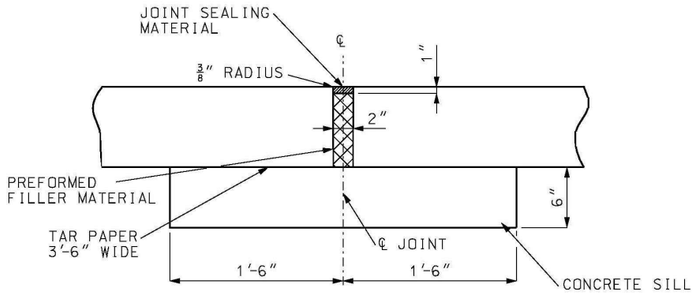
BONDING FOR DOWEL BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS AS SPECIFIED IN SECTION 1039.

THE PORTION OF THE DOWEL OUTSIDE THE HOLE SHALL BE COATED WITH AN APPROVED LUBRICANT.

CONSTRUCTION JOINT (C)



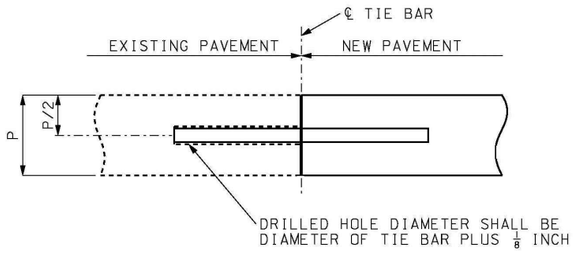
EXPANSION JOINTS (E)



SILL SHALL EXTEND 18″ BEYOND EACH EDGE OF THE PAVEMENT AND SHALL BE CONSTRUCTED OF CONCRETE REGARDLESS OF ADJACENT BASE MATERIAL.

ALTERNATE EXPANSION JOINTS (E)

(CONTRACTOR MAY SELECT EITHER EXPANSION JOINT (E))



TIE BARS SHALL BE EPOXY COATED, DEFORMED REINFORCING BARS MEETING THE REQUIREMENTS OF SECTIONS 710 AND 1057.

BONDING FOR TIE BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS AS SPECIFIED IN SECTION 1039.

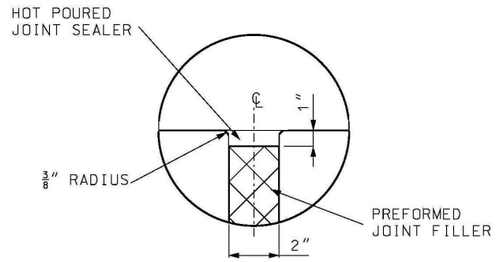
TIE BAR SIZE AND LENGTH SHALL BE BASED ON THE THICKNESS OF THE THINNER PAVEMENT OR SHOULDER TO BE TIED TOGETHER.

LONGITUDINAL CONSTRUCTION JOINT
(EXISTING PAVEMENT) (L)

(1) LENGTH OF CAP

(2) GAP BETWEEN END OF CAP AND DOWEL.

✳ FOR EXPANSION JOINTS FORMED USING A CONSTRUCTION HEADER, THE EXPANSION CAPS SHALL BE INSTALLED ON THE EXPOSED END OF EACH BAR ONCE THE HEADER HAS BEEN REMOVED AND THE JOINT FILLER MATERIAL HAS BEEN INSTALLED.



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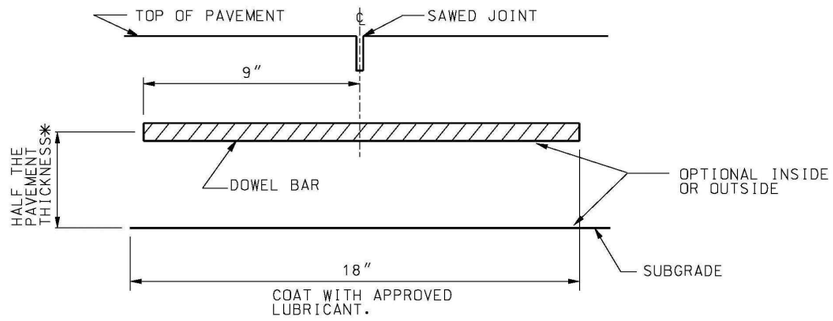
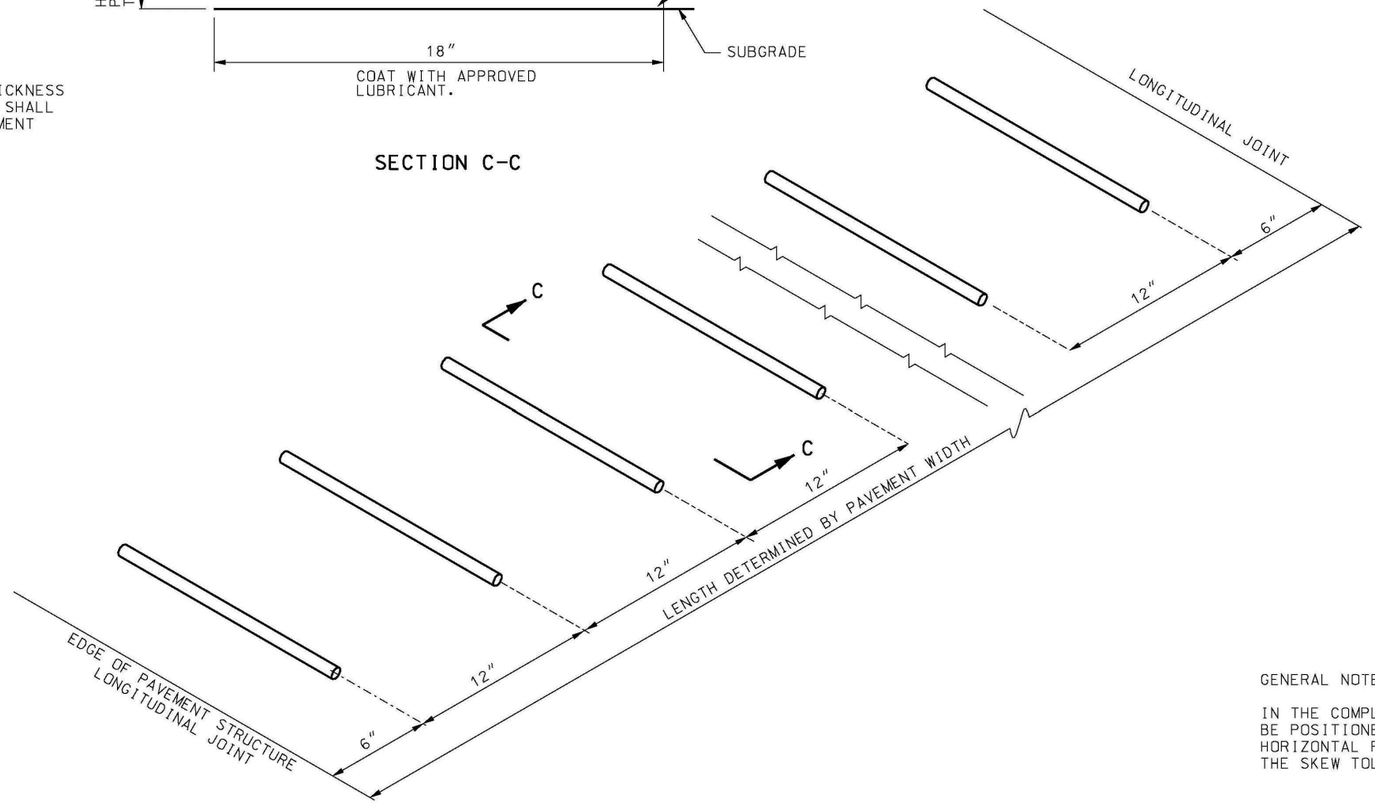
DWG. NO: 502.05-4

MODOT 502.10 DOWELS DETAILS
PAGE 2



SECTION C-C

* FOR PAVEMENTS HAVING THICKNESS IN ½″ INCREMENTS, DOWEL SHALL BE PLACED HALF THE PAVEMENT THICKNESS MINUS ¼″.



GENERAL NOTES:

IN THE COMPLETED JOINT INSTALLATION, DOWELS SHALL BE POSITIONED WITHIN 1/2″ OF THE VERTICAL AND HORIZONTAL PLANE AND IN THE LONGITUDINAL DIRECTION. THE SKEW TOLERANCE SHALL BE 1/4″.

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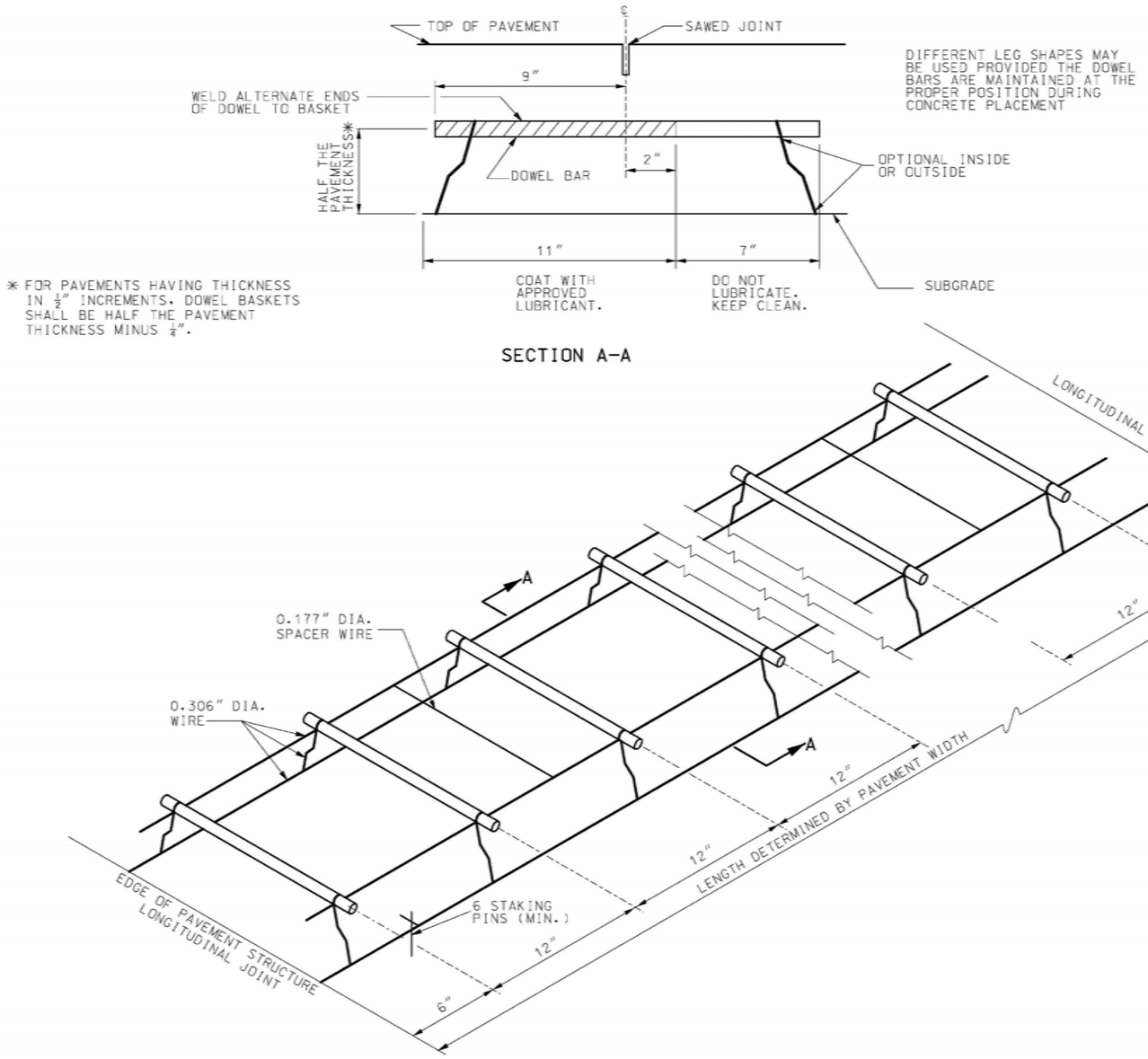
MODOT 502.10 DOWELS DETAILS
PAGE 1



DOWEL BARS		
PAVEMENT THICKNESS	BAR SIZE	
	DIAMETER	LENGTH
10″ AND LESS	1¼″	18″
GREATER THAN 10″	1½″	18″

GENERAL NOTES:

THE DOWEL SUPPORTING UNITS SHALL BE FACTORY ASSEMBLED AND CAPABLE OF HOLDING THE DOWELS IN THEIR REQUIRED POSITIONS. IN THE COMPLETED JOINT INSTALLATION, DOWELS SHALL BE POSITIONED WITHIN 1/2″ OF THE VERTICAL AND HORIZONTAL PLANE AND IN THE LONGITUDINAL DIRECTION. THE SKEW TOLERANCE SHALL BE 1/4″.

THE FREE END OF EACH EPOXY COATED DOWEL SHALL BE MARKED WITH A SPOT OF PAINT AT LEAST ONE INCH IN DIAMETER AND CONTRASTING IN COLOR WITH THE EPOXY COATING.

WIRE SIZES SHOWN ARE MINIMUM REQUIRED.

WIRES, BARS OR CLIPS SHALL BE USED AS NECESSARY TO STRENGTHEN THE ASSEMBLIES.

THE DIAMETER OF THE SPACER WIRE SHALL NOT EXCEED 0.200″.

SPACER WIRE MAY BE CUT OR LEFT INTACT.

STAKING PINS SHALL BE FABRICATED FROM 0.306″ DIAMETER WIRE MINIMUM WITH A SUITABLE HOOK. STAKING PINS SHALL HAVE A MINIMUM LENGTH OF 12″ FOR DOWEL ASSEMBLIES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

MINOR VARIATIONS IN THE CONFIGURATION OF THE SUPPORT UNITS WILL BE ALLOWED.

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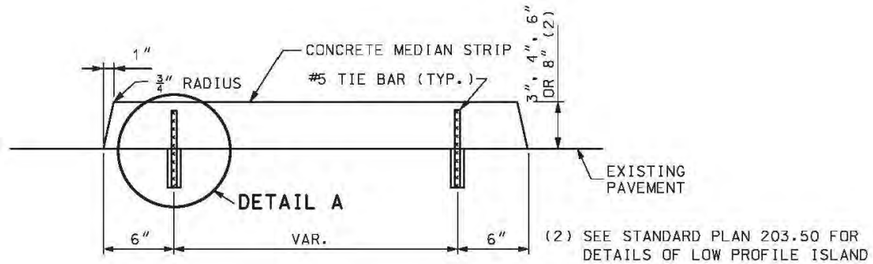
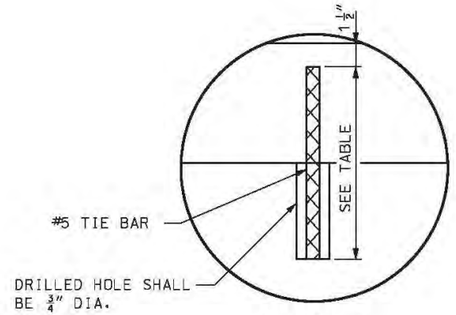
MODOT 608.30A CONCRETE MEDIAN
PAGE 1



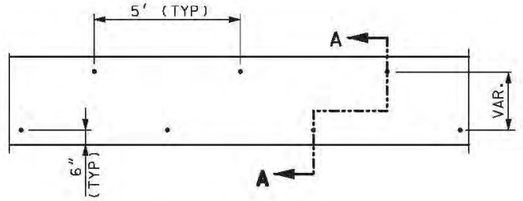
(2) SEE STANDARD PLAN 203.50 FOR DETAILS OF LOW PROFILE ISLAND

SECTION A-A
CONCRETE MEDIAN STRIP

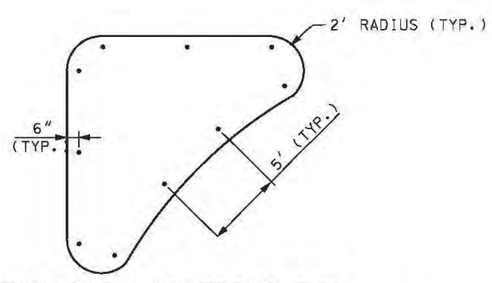


DETAIL A

MEDIAN HEIGTH	BAR LENGTH
3"	8"
4"	9"
6"	11"
8"	13"



TIE BAR LOCATIONS FOR CONCRETE MEDIAN STRIP



TIE BAR LOCATIONS FOR CONCRETE MEDIAN STRIP (ISLAND)

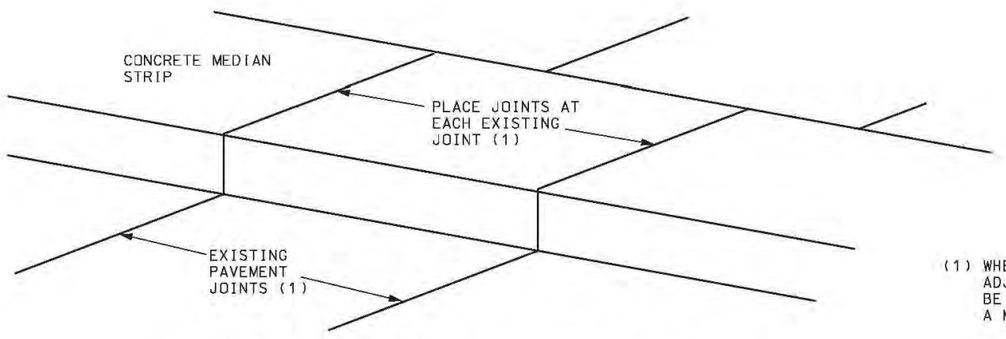
GENERAL NOTES:

TIE BARS SHALL BE EPOXY COATED. DEFORMED REINFORCING BARS MEETING THE REQUIREMENTS OF SECTION 710 AND 1057.

BONDING FOR TIE BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS AS SPECIFIED IN SECTION 1039.

THE FACE OF THE MEDIAN MAY BE CONSTRUCTED WITHOUT BATTER WHEN CONSTRUCTED ON A RADIUS OF 6' OR LESS.

WHEN CONCRETE MEDIANS ARE CONSTRUCTED DIRECTLY BENEATH GUARDRAIL, THE MEDIAN HEIGHT WILL BE 4".



(1) WHEN THERE ARE NO VISIBLE JOINTS IN THE ADJACENT PAVEMENT. THE JOINT SPACING WILL BE EQUAL TO THE MEDIAN STRIP WIDTH, WITH A MINIMUM SPACING OF 10'.

CONCRETE MEDIAN STRIP JOINT LOCATION

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