

Madison, Wisconsin

CITY OF MADISON

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

PLAN OF PROPOSED IMPROVEMENT

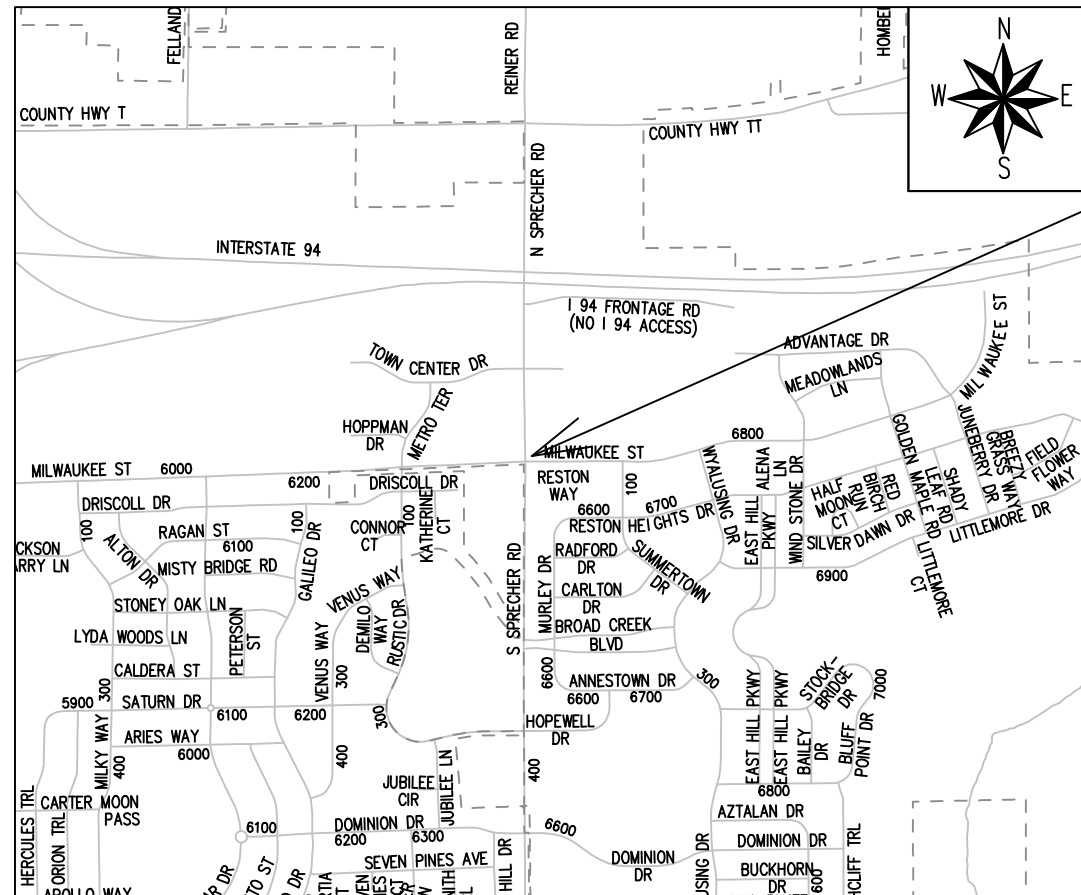
INDEX OF SHEETS

SHEET NO. E1-E7 ELECTRICAL PLANS
NO MAINTENANCE PLAN REQUIRED

MILWAUKEE STREET & SPRECHER ROAD

TRAFFIC SIGNAL ASSESSMENT DISTRICT

CITY PROJECT NO. 16158
CONTRACT NO. 9758



PROJECT
LOCATION

CONVENTIONAL SIGNS

FIELD VERIFY ALL UTILITY LOCATIONS

GAS	— G —
STORM SEWER	— ST —
SANITARY SEWER	— SN —
WATER	— W —
BURIED ELECTRIC	— E —
OVERHEAD ELECTRIC	— OH —
POWER POLE	
ADA COMPLIANT RAMP W/ DETECTABLE WARNING FIELD	
COMBUSTIBLE FLUIDS	

NOTES:

- ALL GUTTERS SHALL DRAIN WITH A MINIMUM GRADE OF 0.50% TOWARD STORM SEWER INLETS.
- SIDEWALK RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1" PER 12". SIDEWALK AND CURB RAMPS SHALL BE CONSTRUCTED WITH A SIDE SLOPE OF 2.00%. SIDEWALK SHALL HAVE A MINIMUM LONGITUDINAL SLOPE OF 0.50% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.00% EXCEPT WHERE STREET GRADES EXCEED 5.00%.

PUBLIC IMPROVEMENT PROJECT
APPROVED

APRIL 21, 2026

BY THE COMMON COUNCIL
OF MADISON, WISCONSIN

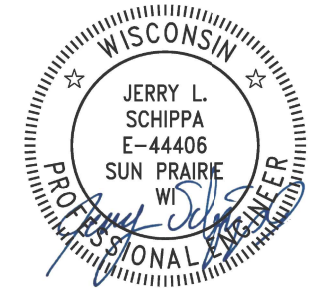
PUBLIC IMPROVEMENT DESIGN
APPROVED BY:

05/28/2026

City Engineer

Date

ELECTRICAL
DESIGNED BY:

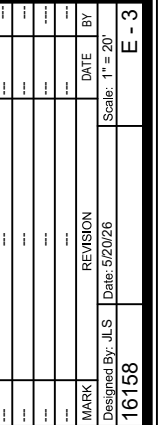


05/28/2026

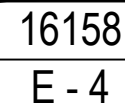
ELECTRICAL NOTES:

1. ALL LOCATIONS OF TRAFFIC SIGNAL BASES, PULL BOXES, AND CONDUITS ARE APPROXIMATE. THE TRAFFIC ENGINEER SHALL APPROVE FINAL LOCATIONS, INCLUDING SETBACK IN THE FIELD AFTER CONTRACTOR LOCATES UTILITIES AT EACH STRUCTURE LOCATION. NOTIFY JERRY SCHIPPA, CITY TRAFFIC ENGINEERING (608-267-1969) 48-HRS PRIOR TO NEEDING LOCATIONS MARKED IN THE FIELD.
2. THE CONTRACTOR SHALL DO ALL WORK IN ACCORDANCE WITH "CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 2026 EDITION" AND ALL ADDENDUMS THERETO.
3. ALL CONDUIT SHALL BE PVC, SCHEDULE 80 BENEATH PAVEMENT OR SCHEDULE 40 OTHERWISE. PULL WIRE REQUIRED AS PER STANDARD SPECIFICATIONS.
4. THE CONTRACTOR SHALL NOTIFY CHAD VEINOT (608-395-1975) AT THE TRAFFIC ENGINEERING SHOP AT LEAST 48-HRS IN ADVANCE OF PLACING CONCRETE, INSTALLING BASES, INSTALLING PULLBOXES, OR BURYING CONDUIT FOR INSPECTION.
5. ANY WORK COMPLETED WITHOUT INSPECTION IS SUBJECT TO REJECTION.
6. PER STANDARD SPECIFICATIONS, RESTORING TERRACES DUE TO CONDUIT INSTALLATION IS INCIDENTAL TO CONSTRUCTION.
7. EXISTING STREET LIGHTS ARE TO REMAIN IN OPERATION THROUGHOUT THE DURATION OF THE PROJECT UNLESS OTHERWISE APPROVED BY TRAFFIC ENGINEERING.
8. THE CONTRACTOR SHALL ARRANGE FOR PICKUP OF THE FOLLOWING CITY FURNISHED MATERIALS, WHICH SHOULD BE ARRANGED FOR PICKUP BY CALLING ED SMITH, TRAFFIC ENGINEERING SHOP (608-266-9034) AT 1120 SAYLE STREET.
 - 8.1. (8) ANCHOR BOLTS FOR TYPE GR BASES, 2 TOTAL
 - 8.2. (16) ANCHOR BOLTS FOR LB-8R BASES, 4 TOTAL

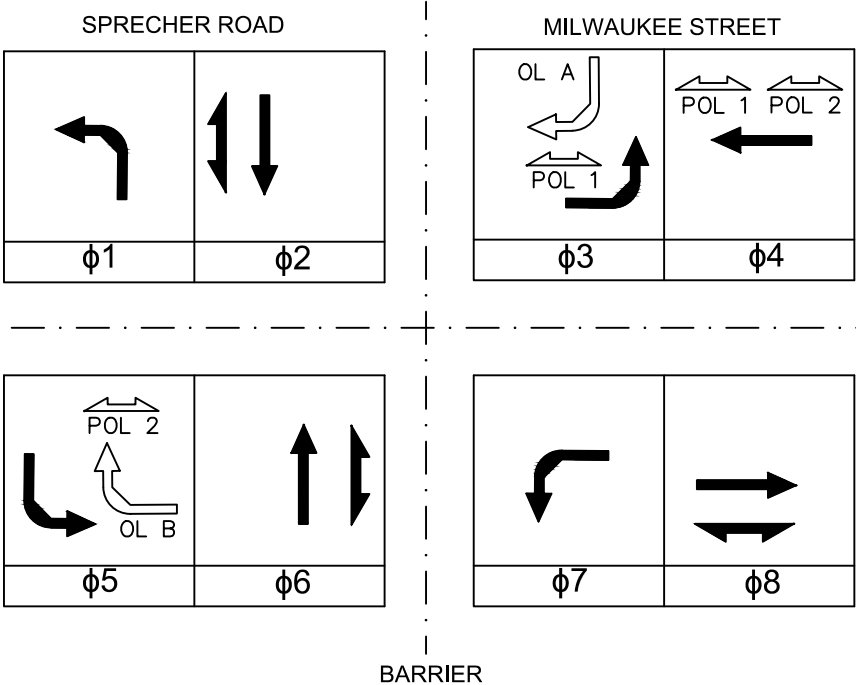
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E - 3



CH.	USE	HEAD NUMBERS	FLASH	O.L. ASSIGNMENTS
1	φ1	NBLT	R	
2	φ2	SB	R	
3	φ3	EBLT	R	
4	φ4	WB	R	
5	φ5	SBLT	R	
6	φ6	NB	R	
7	φ7	WBLT	R	
8	φ8	EB	R	
9	φ2 PED	W XWALK	--	
10	PED OL 1	NW XWALK	--	φ3 + φ4
11	φ6 PED	E XWALK	--	
12	φ8 PED	S XWALK	--	
13	PED OL 2	NE XWALK	--	φ4 + φ5
14	OL A	SBRT	--	φ3, PED OMIT φ3
15	OL B	WBRT	--	φ5, PED OMIT φ5
16	--	--	--	



DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13	19	17	23	21	27	25	31	29
DETECTOR #(S)																
PHASE CALLED																
PHASE EXTENDED																
DISCONNECT TIME																
CALLING DELAY																
DIST. FROM STOP BAR																
LOOP FUNCTION																

DETECTOR INPUT	4	2	8	6	12	10	16	14	20	18	24	22	28	26	32	30
DETECTOR #(S)																
PHASE CALLED																
PHASE EXTENDED																
DISCONNECT TIME																
CALLING DELAY																
DIST. FROM STOP BAR																
LOOP FUNCTION																



PREEMPTION ASSIGNMENTS			
PREEMPTION DESIGNATION	PREEMPTION TYPE	EVP CHANNEL	PHASE(S) CALLED
1	RESERVED		
2	RESERVED		
3	NB EVP	A	1, 6
4	SB EVP	B	2, 5
5	EB EVP	C	3, 8
6	WB EVP	D	4, 7
7	NOT USED		
8	NOT USED		
9	NOT USED		
10	NOT USED		

- PED BUTTON INPUTS
- 901 NW CORNER
 - 902 NW MEDIAN
 - 903 NE MEDIAN
 - 904 NE CORNER
 - 905 EAST CROSSWALK (X3)
 - 906 SOUTH CROSSWALK (X3)
 - 907 WEST CROSSWALK TERRACE (X2)
 - 908 WEST CROSSWALK MEDIAN
- 901 CALLS PHASE 3 THEN 4
- 902 CALLS PHASE 3 OR 4
- 903 CALLS PHASE 4 OR 5
- 904 CALLS PHASE 4 THEN 5

- GENERAL OPERATION NOTES
- SIGNAL TO REST IN RED 24/7.
 - ALL LEFT TURNS AND THRU MOVEMENTS ABLE TO BE RE-SERVICED.
 - THRU MOVEMENTS SHALL NOT BE DUAL ENTRY.
 - WBRT DETECTION ZONES TO CALL SBLT VEHICLE PHASE.
 - SBRT DETECTION ZONES TO CALL SB THRU MOVEMENTS.
 - DETECTION ZONES TO BE SETUP IN THE FIELD BY CITY OF MADISON STAFF.

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / φ	PHASE RECALL	PHASE ACTIVE
1	X		NONE	X
2	X		NONE	X
3	X		NONE	X
4	X		NONE	X
5	X		NONE	X
6	X		NONE	X
7	X		NONE	X
8	X		NONE	X
9				
10				
11				
12				

TYPE OF INTERCONNECT	
NONE	
TBC	
CLOSED LOOP TWISTED PAIR	
CLOSED LOOP FIBER OPTIC	X
RADIO	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	
TSP (CENTRALIZED)	
TSP (LOCAL)	

TYPE OF REMOTE COMMUNICATION	
NONE	
FIBER	X
CELL MODEM	
PHONE	

ELECTRICAL PLANS

16158

TRAFFIC SIGNAL AT MILWAUKEE STREET & SPRECHER ROAD

MADISON, WI

16158

CONTRACT NO: 9758

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SIGNAL CABLE, IMSA-20-1, UNDERGROUND CONDUCTORS MILWAUKEE STREET & SPRECHER ROAD																
FROM	TO		JUMPER		CABLE (CONDUCTORS)	SPARE CONDUCTORS	HEAD NUMBER	NEUTRAL	PHASE	GREEN	YELLOW	RED	WALK	DON'T WALK	PED BUTTON	PED INPUT
EXTC1		TS13			A (12-14)	2	1	WHITE	5	GREEN/BLACK	AMBER/BLACK	RED/BLACK	-	-	-	-
			26	6			GREEN		AMBER	RED	-	-	-	-		
			8D	PED6			-		-	-	BLUE	BLACK	WHITE/BLACK	906		
EXTC1		EXTS1			B (12-14)	5	2	WHITE	2	GREEN	AMBER	RED	-	-	-	-
			6A	PED6			-		-	-	BLUE	BLACK	WHITE/BLACK	905		
EXTC1		EXSL8571			C (12-14)	3	3	WHITE	8	GREEN	AMBER	RED	-	-	-	-
			4	3			GREEN/BLACK		AMBER/BLACK	RED/BLACK	-	-	-	-		
			6B	PED6			-		-	-	BLUE	BLACK	-	-		
					D (12-14)	5	5	WHITE	7	GREEN	AMBER	RED	-	-	-	-
							6C		PED6	-	-	-	BLUE	BLACK	WHITE/BLACK	905
EXTC1		EXTS2			E (12-14)	5	6	WHITE	3	GREEN/BLACK	AMBER/BLACK	RED/BLACK	-	-	-	-
			7	4			GREEN		AMBER	RED	-	-	-	-		
					F (12-14)	6	7	WHITE	OLB	GREEN	AMBER	-	-	-	-	
							6D		PED6	-	-	-	BLUE	BLACK	WHITE/BLACK	905
EXTC1		EXTS3			G (12-14)	5	8	WHITE	6	GREEN	AMBER	RED	-	-	-	-
			4A	POL2			-		-	-	BLUE	BLACK	WHITE/BLACK	904		
EXTC1		TS4			H (12-14)	5	9	WHITE	6	GREEN	AMBER	RED	-	-	-	-
			4B	POL2			-		-	-	BLUE	BLACK	WHITE/BLACK	903		
EXTC1		TS5			F (12-14)	2	10	WHITE	1	GREEN	AMBER	RED	-	-	-	-
			11	5			GREEN/BLACK		AMBER/BLACK	RED/BLACK	-	-	-	-		
				4C			POL1		-	-	-	BLUE	BLACK	WHITE/BLACK	902	
EXTC1		EXTS6			G (12-14)	5	12	WHITE	1	GREEN/BLACK	AMBER/BLACK	RED/BLACK	-	-	-	-
			4D	POL1			-		-	-	BLUE	BLACK	WHITE/BLACK	901		
					H (12-14)	6	13	WHITE	2	GREEN	AMBER	RED	-	-	-	-
							13		OLA	GREEN/BLACK	AMBER/BLACK	-	-	-	-	
EXTC1		EXTS7			I (12-14)	0	14	WHITE	4	GREEN	AMBER	RED	-	-	-	-
			14	OLB			BLUE/BLACK		BLACK/WHITE	-	-	-	-	-	-	
			15	4			GREEN/BLACK		AMBER/BLACK	RED/BLACK	-	-	-	-		
			2A	PED2			-		-	-	BLUE	BLACK	WHITE/BLACK	907		
EXTC1		TS8			J (12-14)	2	16	WHITE	4	GREEN	AMBER	RED	-	-	-	-
			17	7			GREEN/BLACK		AMBER/BLACK	RED/BLACK	-	-	-	-		
					K (12-14)	5	2B	WHITE	PED2	-	-	-	BLUE	BLACK	WHITE/BLACK	908
							18		3	GREEN/BLACK	AMBER/BLACK	RED/BLACK	-	-	-	-
EXTC1		EXTS9			L (12-14)	1	19	WHITE	7	GREEN/BLACK	AMBER/BLACK	RED/BLACK	-	-	-	-
			20	8			GREEN		AMBER	RED	-	-	-	-		
				2D			PED2		-	-	-	BLUE	BLACK	WHITE/BLACK	907	
EXTC1		EXTS10			M (12-14)	6	21	WHITE	2	GREEN	AMBER	RED	-	-	-	-
			21	OLA			GREEN/BLACK		AMBER/BLACK	-	-	-	-	-	-	
					N (12-14)	5	22	WHITE	2	GREEN	AMBER	RED	-	-	-	-
							8A		PED6	-	-	-	BLUE	BLACK	WHITE/BLACK	906
EXTC1		TS11			O (12-14)	2	23	WHITE	2	GREEN	AMBER	RED	-	-	-	-
			24	5			GREEN/BLACK		AMBER/BLACK	RED/BLACK	-	-	-	-		
			8B	PED6			-		-	-	BLUE	BLACK	WHITE/BLACK	906		
					P (12-14)	5	25	WHITE	1	GREEN/BLACK	AMBER/BLACK	RED/BLACK	-	-	-	-
							8C		PED6	-	-	-	BLUE	BLACK	WHITE/BLACK	906

NOTES:
ALL SIGNAL CONDUCTORSON THISPROJECT ARE 12-14 AWG. INSTALLER SHALL LABEL EACH CABLE IN THE CABINET AND IN THE POLE PER THIS PLAN SHEET (A-P).
EVP AND/OR VIDEO DETECTION CABLES TO BE PULLED FROM EXTC1 TO: SL8571, TS4, TS8, TS11. EVP RECIEVERS TO BE MOUNTED ON TROMBONE ARMS AIMED AT THEIR RESPECTIVE APPROACH.

16158

MADISON, WI

TRAFFIC SIGNAL AT MILWAUKEE STREET & SPRECHER ROAD

ELECTRICAL PLANS



16158

E - 6

16158

9758

CONTRACT NO:

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Scale: N/A

Designd By: JLS

16158

REVISION

DATE

BY

E - 6

