

SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	CODE	SIZE (INCHES)	630	630	630	630	630	630	644							
			GROUND MOUNTED SUPPORT, NO. 3 POST	SIGN POST REFLECTOR				SIGN SUPPORT ASSEMBLY, POLE MOUNTED	SIGN, FLAT SHEET	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	REMOVAL OF GROUND MOUNTED POST SUPPORT AND STORAGE	CROSSWALK LINE	FT	EACH	EACH	SF	EACH	EACH	FT		
			FROM	TO																	
7	RM-1	S.R. 13	596+57		RT	-	-						1	1							
7	SN-1	S.R. 13	597+75		RT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
7	RM-2	S.R. 13	597+95		RT	-	-					1	1								
7	RM-3	S.R. 13	600+97		RT	-	-					2	1								
7	SN-2	S.R. 13	601+00		RT	W11-2-30 W16-9P-24	30x30 24x12			2		6.25 2									
7	RM-4	S.R. 13	601+11		LT	-	-					2	1								
7	SN-3	S.R. 13	601+11		LT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
7	RM-5	S.R. 13	603+57		RT	-	-					1	1								
7	SN-4	S.R. 13	603+61		LT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
7	RM-6	S.R. 13	604+92		LT	-	-					1	1								
7	X-1	S.R. 13	600+99	601+09	BOTH	DOES NOT APPLY											23				
8	SN-5	S.R. 13	605+90		RT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
8	SN-8	S.R. 13	611+09		LT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
8	RM-7	S.R. 13	610+71		LT	-	-					1	1								
8	X-2	S.R. 13	608+39	608+49	BOTH	DOES NOT APPLY											23				
9	SN-9	S.R. 13	611+75		RT	W11-2-30 W16-9P-24	30x30 24x12			2		6.25 2									
9	SN-10	S.R. 13	614+25		RT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
9	SN-11	S.R. 13	614+41		LT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
9	SN-12	S.R. 13	616+91		LT	W11-2-30 W16-9P-24	30x30 24x12	15	2			6.25 2									
9	X-3	S.R. 13	614+25	614+41	BOTH	DOES NOT APPLY											23				
TOTALS CARRIED TO GENERAL SUMMARY								120	16	4	83	9	7	69							

TRAFFIC CONTROL SUBSUMMARY

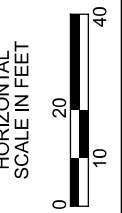
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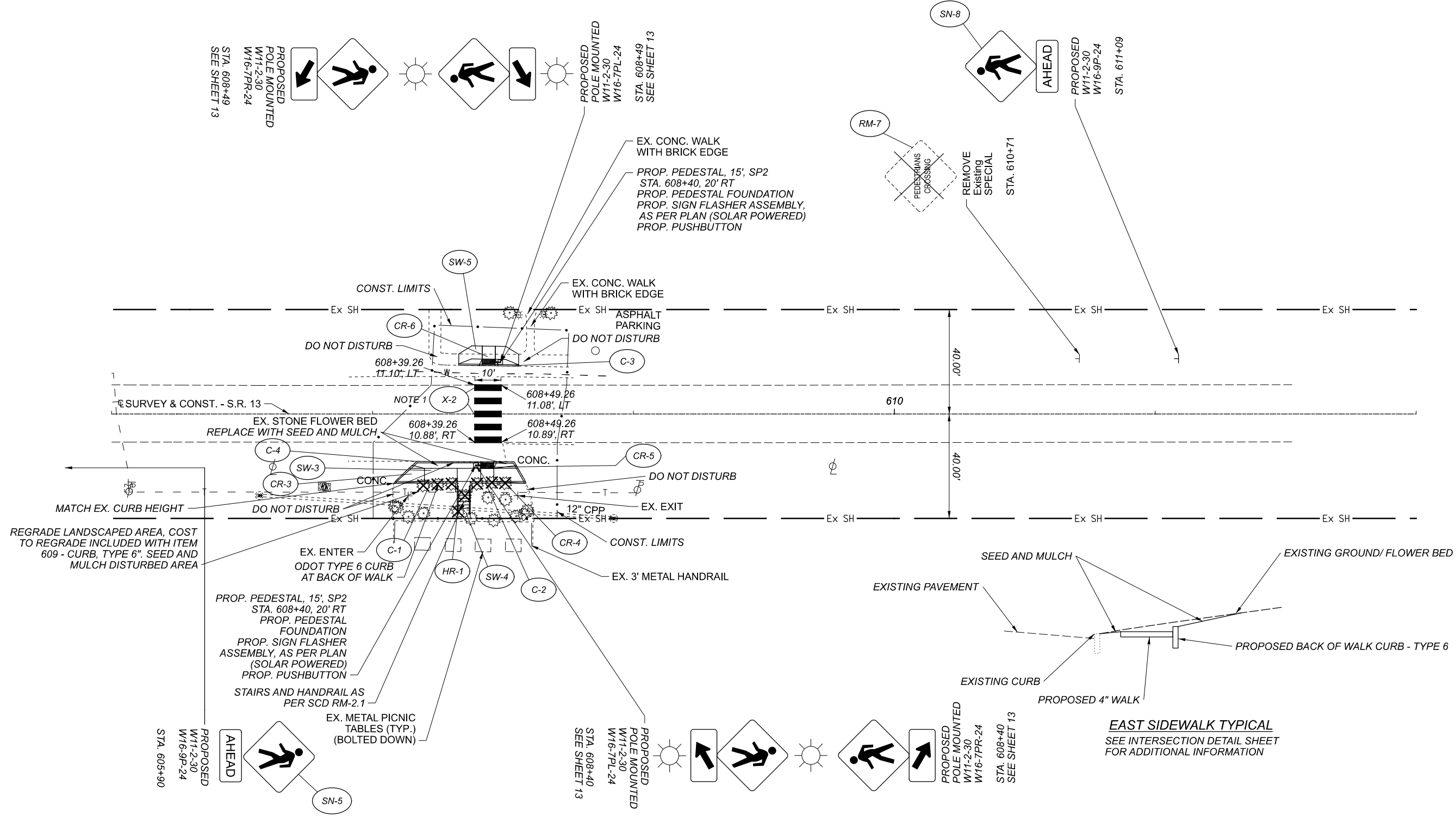
REVIEWER
 SAK 01/18/21

PROJECT ID
 113934

SHEET TOTAL
 6 13



PLAN SHEET
 STA. 608+43



PROPOSED
 POLE MOUNTED
 W11-2-30
 W16-7PR-24
 STA. 608+49
 SEE SHEET 13

PROPOSED
 POLE MOUNTED
 W11-2-30
 W16-7PL-24
 STA. 608+49
 SEE SHEET 13

PROPOSED
 POLE MOUNTED
 W11-2-30
 W16-9P-24
 STA. 611+09

SN-8

RM-7

SW-5

CR-6

X-2

C-4

SW-3

CR-3

CR-5

CONC.

CONC.

C-1

HR-1

SW-4

C-2

CR-4

STA. 605+90

PROPOSED
 POLE MOUNTED
 W11-2-30
 W16-9P-24
 STA. 605+90

PROPOSED
 POLE MOUNTED
 W11-2-30
 W16-7PL-24
 STA. 608+40
 SEE SHEET 13

PROPOSED
 POLE MOUNTED
 W11-2-30
 W16-7PR-24
 STA. 608+40
 SEE SHEET 13

NOTE 1:
 PROPOSED CONTINENTAL-STYLE CROSSWALK
 MARKINGS CONSIST OF FIVE 24-INCH WHITE
 TRANSVERSE LINES LOCATED ON THE CENTER OF
 EACH LANE (2), CENTER OF PAVEMENT (1), AND THE
 EDGE OF EACH LANE (2) TO AVOID WHEEL PATH.

X ITEM 644, CROSSWALK MARKING

DESIGN AGENCY

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DESIGNER
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REVIEWER
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PROJECT ID
 113934

SHEET	TOTAL
8	13

GENERAL REQUIREMENTS

THE PURPOSE OF THIS SPECIFICATION AND THE ASSOCIATED PLANS IS TO CONSTRUCT PEDESTRIAN CROSSINGS ON THE STATE ROUTE 13 CORRIDOR IN ATHENS COUNTY, OHIO. THESE PLANS AND SPECIFICATIONS ARE TO RESULT IN THE COMPLETE INSTALLATION OF A FULLY FUNCTIONAL SYSTEMS AND SHALL OPERATE ACCORDING TO THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).

THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATION DATED JANUARY 1, 2019, SHALL GOVERN THIS PROJECT EXCEPT WHEN OTHERWISE NOTED. ITEMS LISTED SHALL CONFORM TO THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATION MANUAL, TO THE ODOT OFFICE OF ROADWAY ENGINEERING STANDARD CONSTRUCTION DRAWINGS, AND TO ANY SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIFIC REQUIREMENTS NOTED.

BIDDERS SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE OHIO REVISED CODE AND ADMINISTRATIVE CODE.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE ROADWAY SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

ITEM 631 SIGN FLASHER ASSEMBLY, AS PER PLAN (SOLAR POWERED)

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING A SOLAR POWERED SIGN FLASHER ASSEMBLY. THE FLASHING UNIT SHALL BE SOLAR POWERED, PEDESTRIAN ACTIVATED, AND 2-SIDED WITH TWO LED BEACONS (YELLOW INDICATIONS) IN EACH DIRECTION. MULTIPLE UNITS SHALL BE WIRELESSLY CONTROLLED AND SYNCHRONIZED. THE UNIT SHALL BE COMPLIANT WITH THE MOST CURRENT OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).

GENERAL REQUIREMENTS

EACH SIGNAL ASSEMBLY SHALL CONSIST OF FOUR LED SIGNAL BEACONS (2 EACH DIRECTION) HAVING YELLOW INDICATIONS. EACH SIGN FLASHER ASSEMBLY SHALL CONTAIN A PEDESTRIAN INDICATION LIGHT VISIBLE BY THE PEDESTRIAN IN THE DIRECTION OF TRAVEL.

FUNCTIONAL REQUIREMENTS

EACH SIGN FLASHER ASSEMBLY SHALL UTILIZE SOLAR POWER. EACH SIGN FLASHER ASSEMBLY SHALL BE ACTIVATED BY ADA COMPLIANT PUSHBUTTONS.

THE SIGN FLASHER ASSEMBLY SHALL BE NORMALLY DARK, SHALL INITIATE OPERATION ONLY UPON PEDESTRIAN ACTUATION, AND SHALL CEASE OPERATION AFTER A PREDETERMINED TIME LIMIT (BASED ON OMUTCD PROCEDURES).

EACH REMOTE SIGN FLASHER ASSEMBLY SHALL BE WIRELESSLY ACTIVATED. WIRELESS COMMUNICATION OF REMOTE SIGN FLASHER ASSEMBLY ASSEMBLIES SHALL BE LIMITED TO ASSEMBLIES AT EACH CROSSWALK. THE UNIT SHALL BE CAPABLE OF RUNNING 14 DAYS WITHOUT SUNLIGHT.

MATERIALS

FURNISH A COMPLETE ASSEMBLY, CONSISTING OF BUT NOT LIMITED TO, SIGNAGE, SIGN MOUNTING HARDWARE, INDICATIONS, AND ELECTRICAL COMPONENTS (WIRING, SOLID-STATE CIRCUIT BOARDS, ETC.). THE SIGN FLASHER ASSEMBLY INCLUDES THE FOLLOWING ITEMS:

1. LED SIGNAL BEACONS

A. A PAIR OF LED SIGNAL BEACONS (YELLOW), ONE ABOVE AND ONE BELOW THE SIGN, MEETING THE CURRENT ITE VEHICLE TRAFFIC CONTROL SIGNAL HEADS (VTCSH) STANDARD WILL BE USED UNLESS OTHERWISE SPECIFIED. THE MANUFACTURER OF THE SIGNAL BEACON SHALL BE LISTED ON THE DEPARTMENT'S QUALIFIED PRODUCT LIST FOR LED SIGNAL LAMPS.

B. EACH SIGN FLASHER ASSEMBLY SHALL BE SUPPLIED WITH ALL REQUIRED HARDWARE TO INSTALL ASSEMBLY. ALL EXPOSED HARDWARE SHALL BE ANTI-VANDAL.

C. EACH SIGNAL BEACON SHALL BE LOCATED ABOVE THE TOP OF THE PEDESTRIAN WARNING SIGN AND BELOW THE SUPPLEMENTAL DOWNWARD DIAGONAL ARROW PLAQUE.

D. TO MINIMIZE EXCESSIVE GLARE DURING NIGHTTIME CONDITIONS, AN AUTOMATIC SIGNAL DIMMING DEVICE SHALL BE USED TO REDUCE THE BRILLIANCE OF THE LED SIGNAL INDICATIONS.

G. A SMALL LED CONFIRMATION LIGHT DIRECTED AT AND VISIBLE TO PEDESTRIANS IN THE CROSSWALK SHALL BE INSTALLED INTEGRAL TO THE SIGNAL BEACONS OR PUSHBUTTON TO GIVE CONFIRMATION THAT THE SIGN FLASHER ASSEMBLY IS IN OPERATION.

H. THE PEDESTRIAN CONFIRMATION LIGHT SHALL BE NO SMALLER THAN 2" IN DIAMETER AND CONTAIN A MINIMUM ILLUMINANCE OF 100 LUX MEASURED AT 30 CM.

2. SIGNS

A. ALL SIGN ASSEMBLIES SHALL USE ANTI-VANDAL FASTENERS TO MOUNT COMPONENTS TO SIGN AND SIGN TO FIXTURE.

B. PEDESTRIAN PUSHBUTTONS SIGNS SHALL BE PROVIDED AND INCLUDE THE LEGEND "PUSH BUTTON TO TURN ON WARNING LIGHTS". SIGNS SHOULD BE MOUNTED ADJACENT TO OR INTEGRAL WITH EACH PEDESTRIAN PUSHBUTTON.

C. TWO SIGNS SHALL BE REQUIRED PER UNIT FOR VIEW FROM EACH APPROACH.

D. ASSURE SIGN MEETS THE REQUIREMENTS OF C&MS 630.

E. THE SIGN ASSEMBLY AND FLASHER SHALL MEET THE REQUIREMENTS SET FORTH IN THE OMUTCD. THE SIGN CODES SHALL BE W11-2-30 AND W16-7P-24. THE SIGN SIZES SHALL BE 30" X 30" AND 24" X 12" RESPECTIVELY.

3. CONTROL CIRCUIT

A. THE CONTROL CIRCUIT SHALL HAVE THE CAPABILITY OF INDEPENDENTLY FLASHING UP TO TWO INDEPENDENT OUTPUTS. THE LED LIGHT OUTPUTS AND FLASH PATTERN SHALL BE COMPLETELY PROGRAMMABLE.

B. THE CONTROL CIRCUIT SHALL BE SEALED WATERTIGHT TO ELIMINATE DIRT CONTAMINATION AND ALLOW FOR SAFE HANDLING IN ALL WEATHER CONDITIONS.

C. THE LEDS SHALL BE SEALED AGAINST DUST AND MOISTURE INTRUSION AS PER THE REQUIREMENTS OF NEMA STANDARD 250-1991 FOR TYPE 4 ENCLOSURE AND TO PROTECT ALL INTERNAL LED AND ELECTRICAL COMPONENTS.

D. IF VOLTAGES OVER 50V AC OR DC ARE PRESENT, GROUNDING AND BONDING REQUIREMENTS SPECIFIED IN THE ODOT CMS WILL BE FOLLOWED.

E. THE BEACONS SHALL FLASH IN A WIG-WAG PATTERN.

4. BATTERY AND SOLAR PANELS

A. BATTERY UNIT SHALL BE A 12VDC, 35 AHR MINIMUM, SEALED GEL OR AGM LEAD ACID BATTERY. BATTERIES SHALL HAVE A WRITTEN TWO-YEAR FULL REPLACEMENT WARRANTY.

B. THE SOLAR PANEL SHALL PROVIDE A MINIMUM OF 40 WATTS PEAK TOTAL OUTPUT.

C. THE SOLAR PANEL SHALL BE MOUNTED TO AN ALUMINUM PLATE AND BRACKET AT AN ANGLE OF 45 DEGREES- 60 DEGREES TO PROVIDE MAXIMUM OUTPUT.

D. ALL FASTENERS USED SHALL BE ANTI-VANDAL.

5. WIRELESS RADIO

A. RADIO CONTROL SHALL OPERATE ON A 900 MHZ FREQUENCY HOPPING SPREAD SPECTRUM NETWORK, WI-FI OR APPROVED EQUAL.

B. RADIO SHALL INTEGRATE COMMUNICATION OF THE LED BEACON CONTROL CIRCUIT TO ACTIVATE SIGN FROM PUSHBUTTON INPUT.

C. THE RADIO SHALL BE SYNCHRONIZED SO ALL OF THE REMOTE RRFB LIGHT INDICATIONS WILL TURN ON WITHIN 120 MSEC OF EACH OTHER AND REMAIN SYNCHRONIZED THROUGH-OUT THE DURATION OF THE FLASHING CYCLE.

6. PUSHBUTTON

A. THE PUSHBUTTON SHALL BE CAPABLE OF CONTINUOUS OPERATION OVER A TEMPERATURE RANGE OF -30 DEGREES F TO +165 DEGREES F.

B. PUSHBUTTON SHALL BE ADA COMPLIANT.

7. PEDESTAL SHAFT AND BASE

MOUNT ON A STANDARD 4.5-INCH OD ALUMINUM PEDESTAL POLE WITH BREAKAWAY BASE. A 15 FOOT POLE SHALL BE PROVIDED AND FIELD ADJUSTED AND CAPPED TO MAINTAIN THE PROPER SIGN MOUNTING HEIGHTS, UNLESS SPECIFIED OTHERWISE IN THE PLANS. POLE AND BASE MANUFACTURER SHALL BE LISTED ON ODOT'S QUALIFIED PRODUCTS LIST.

CONSTRUCTION

THE SIGN FLASHER ASSEMBLY SHALL BE ASSEMBLED AND CONSTRUCTED BY THE CONTRACTOR AS SHOWN AND SPECIFIED ON THE PLANS.

WARRANTY

WARRANTY SHALL BE TWO YEARS FROM THE DATE OF FINAL ACCEPTANCE.

MEASUREMENT

THE DEPARTMENT WILL MEASURE THE ITEM COMPLETE IN PLACE, INCLUDING ALL MATERIALS, TESTING, LABOR AND SOFTWARE FOR A FULLY FUNCTIONAL UNIT.

PAYMENT

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 631 SIGN FLASHER ASSEMBLY, AS PER PLAN (SOLAR POWERED). THE PEDESTRIAN PUSHBUTTON, PEDESTAL, AND FOUNDATION ARE PAID AS SEPARATE ITEMS.

PEDESTAL FOUNDATION ELEVATIONS

ELEVATION SHOWN IN THE PLANS FOR STRAIN POLE AND PEDESTAL FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TC-21.21 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN SCD TC-21.21 SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE UNLESS OTHERWISE A DIFFERENT HEIGHT IS SPECIFIED. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

PRIOR TO ORDERING THE PEDESTAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD, THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATION TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. THE CONTRACTOR SHALL THEN POTHOLE THE LOCATIONS OF THE FOUNDATIONS TO VERIFY THERE ARE NO CONFLICTS PRIOR TO ORDERING THE POLES. IF THERE ARE ISSUES, PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES. THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE FOUNDATIONS.

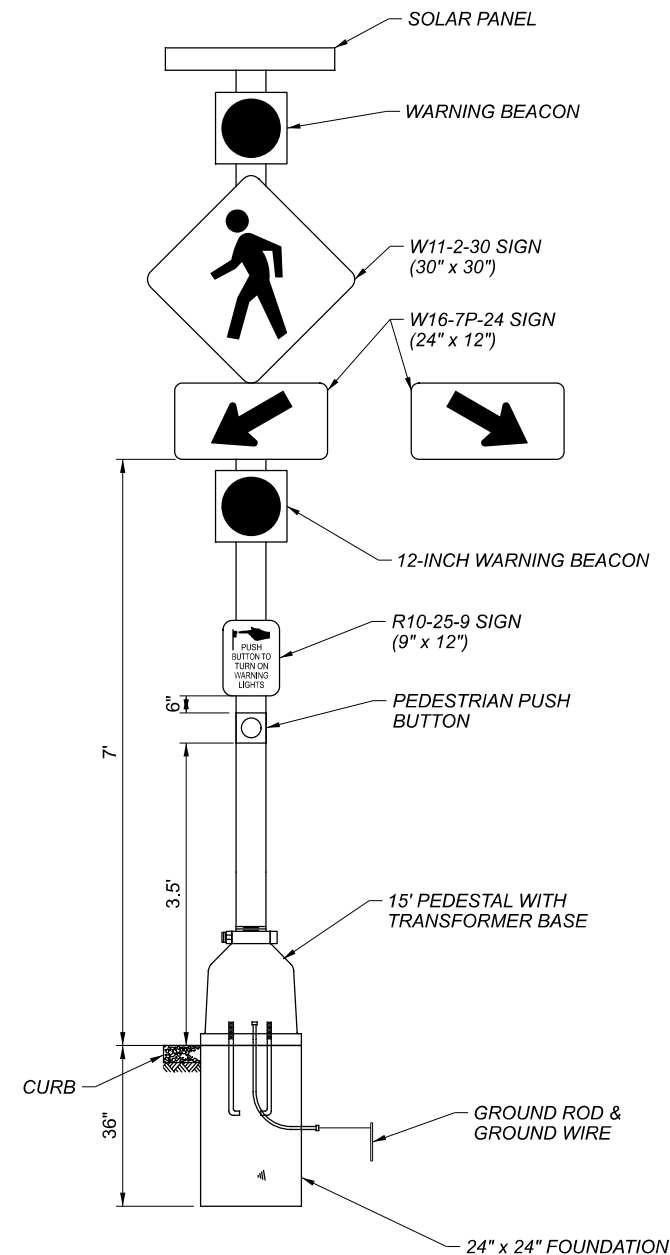
GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: FLASHER CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS, AND SIGN BEACON ASSEMBLY ITEMS.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.



SIGNAL SUBSUMMARY			
ITEM	QUAN.	UNIT	DESCRIPTION
625	2	EACH	GROUND ROD
630	17	SF	COVERING OF SIGN
631	2	EACH	SIGN FLASHER ASSEMBLY, AS PER PLAN (SOLAR POWERED)
632	2	EACH	PEDESTRIAN PUSHBUTTON
632	2	EACH	PEDESTAL FOUNDATION
632	2	EACH	PEDESTAL, 15', TRANSFORMER BASE

DESIGN AGENCY

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DESIGNER

GSH

REVIEWER

SAK 01/18/21

PROJECT ID

113934

SHEET

TOTAL

13 | 13