

ITEM 630- SIGNING MISC.: SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) (CONT.)

EACH RRFB SHALL BE A COMPLETE ASSEMBLY, CONSISTING OF BUT NOT LIMITED TO, SIGNAGE, SIGN MOUNTING HARDWARE, INDICATIONS AND ELECTRICAL COMPONENTS (WIRING, SOLID-STATE CIRCUIT BOARDS, ETC.).

EACH RRFB SHALL CONTAIN A PEDESTRIAN INDICATION LIGHT VISIBLE BY THE PEDESTRIAN IN THE DIRECTION OF TRAVEL.

FUNCTIONAL REQUIREMENTS  
EACH RRFB UNIT SHALL UTILIZE SOLAR POWER.

RRFBs SHALL BE ACTIVATED BY ADA COMPLIANT PUSHBUTTONS.

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

EACH REMOTE RRFB UNIT SHALL BE WIRELESSLY ACTIVATED.

ALL RRFB LIGHT INDICATIONS SHALL BE WIRELESSLY SYNCHRONIZED (ALL LIGHTS WILL TURN ON WITHIN 120 MSEC AND REMAIN SYNCHRONIZED THROUGHOUT THE DURATION OF THE FLASHING CYCLE).

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 BOARD, ETC.) FOR EACH PEDESTRIAN CROSSING INDICATED IN THE PLANS. THE SYSTEM INCLUDES THE FOLLOWING ITEMS:

1. RRFB INDICATIONS
  - A. EACH RRFB INDICATION LENS SHALL BE A MINIMUM SIZE OF APPROXIMATELY 5" WIDE X 2" HIGH.
  - B. THE RRFB INDICATIONS SHALL BE ALIGNED HORIZONTALLY, WITH THE LONGER DIMENSION OF THE INDICATION HORIZONTAL. THERE SHALL BE TWO INDICATIONS ON THE FRONT AND TWO INDICATIONS ON THE BACK.
  - C. EACH RRFB SHALL BE SUPPLIED WITH ALL REQUIRED HARDWARE TO INSTALL ASSEMBLY. ALL EXPOSED HARDWARE SHALL BE ANTI-VANDAL.
  - D. EACH RRFB SHALL BE LOCATED BETWEEN THE BOTTOM OF THE CROSSING WARNING SIGN AND THE TOP OF THE SUPPLEMENTAL DOWNWARD DIAGONAL ARROW PLAQUE.
  - E. THE LIGHT INTENSITY OF THE YELLOW INDICATIONS SHALL MEET THE MINIMUM CLASS 1 SPECIFICATIONS OF SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) STANDARD J595 (DIRECTIONAL FLASHING OPTICAL WARNING DEVICES FOR AUTHORIZED EMERGENCY, MAINTENANCE, AND SERVICE VEHICLES) DATED JANUARY, 2005.

ITEM 630- SIGNING MISC.: SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) (CONT.)

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

G. A SMALL LED CONFIRMATION LIGHT DIRECTED AT AND VISIBLE TO PEDESTRIANS IN THE CROSSWALK SHALL BE INSTALLED INTEGRAL TO THE RRFB OR PUSHBUTTON TO GIVE CONFIRMATION THAT THE RRFB 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 SETS OF SIGNS SHALL BE REQUIRED PER UNIT FOR VIEW FROM EACH APPROACH.
  - D. ASSURE SIGN MEETS THE REQUIREMENTS OF C&MS 630.

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.

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.

ITEM 630- SIGNING MISC.: SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) (CONT.)

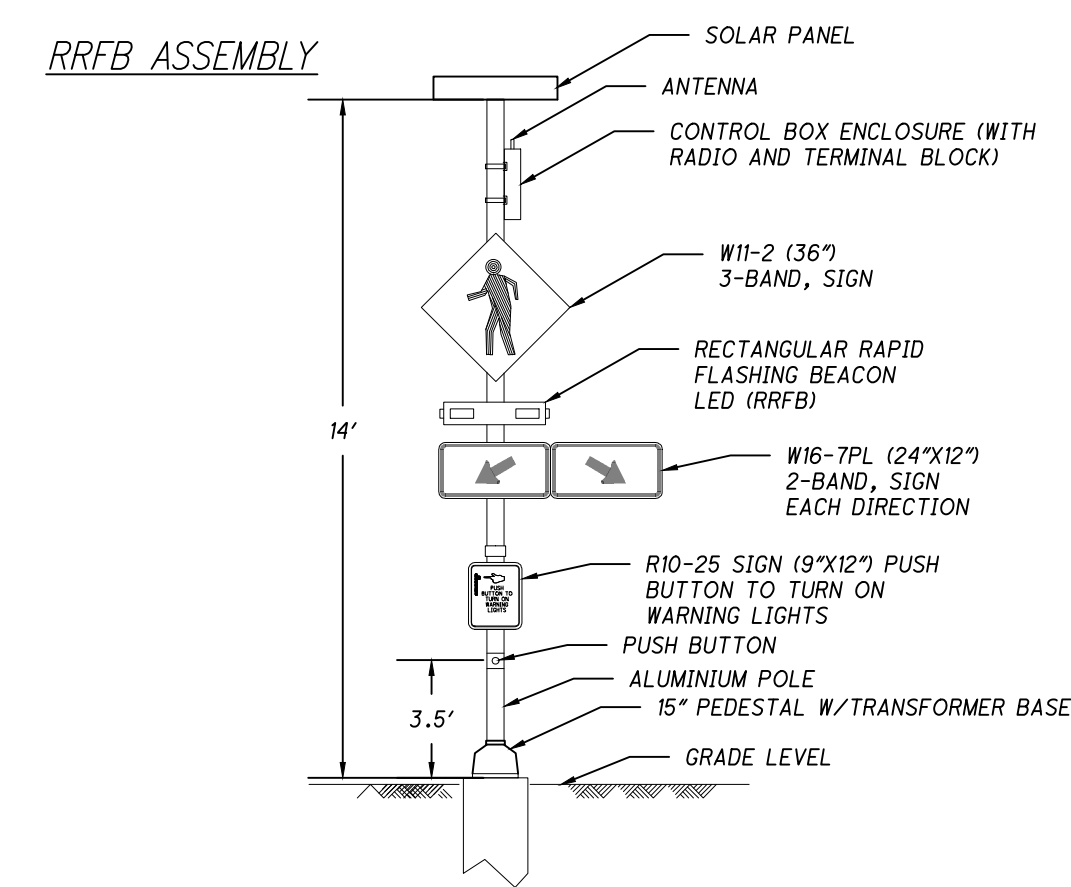
5. WIRELESS RADIO
  - A. RADIO CONTROL SHALL OPERATE ON A 900 MHZ FREQUENCY HOPPING SPREAD SPECTRUM NETWORK, WI-FI OR APPROVED EQUAL.
  - B. RADIO SHALL INTEGRATE COMMUNICATION OF RRFB CONTROL CIRCUIT TO ACTIVATE SIGN FROM PUSHBUTTON INPUT.
  - C. THE RADIO SHALL BE SYNCHRONIZED SO ALL OF THE REMOTE 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 OF -30 DEGREES F TO +165 DEGREES F.
  - B. THE 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 14 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 RRFB 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 630 "SIGNING MISC.: SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) SIGN ASSEMBLY".

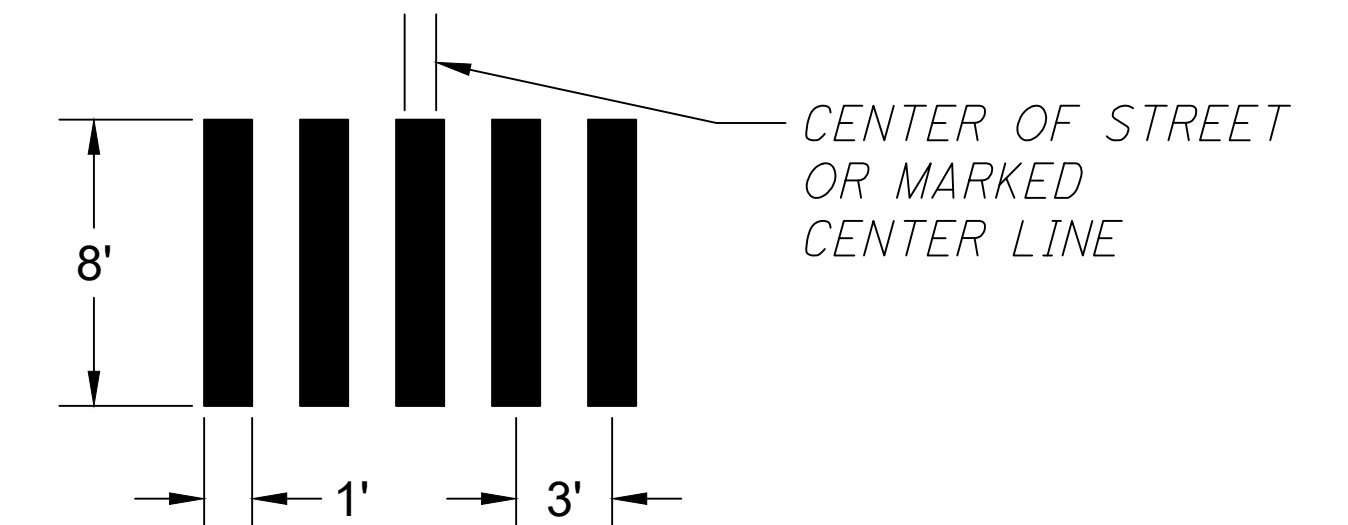


ITEM 632- SIGNALIZATION, MISC.: VACUUM EXCAVATION OF PEDESTAL FOUNDATION

VACUUM EXCAVATION OF THE PEDESTAL FOUNDATIONS BY A QUALIFIED CONTRACTOR WILL BE REQUIRED WHERE PROPOSED FOUNDATIONS ARE WITHIN PROXIMITY TO UTILITIES AND WHERE IDENTIFIED ON THE PLAN SHEETS.

ITEM 644- CROSSWALK LINE, AS PER PLAN

THE CROSSWALK LINES WITHIN THE PROJECT AREA SHALL FOLLOW THE DETAIL BELOW.



CROSSWALK LINES SHALL BE PAINTED OVER EXISTING MARKINGS WHERE REMOVAL OF PAVEMENT MARKINGS IS NOT SPECIFIED.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 644 - CROSSWALK LINE, AS PER PLAN AND SHALL INCLUDE ALL LABOR AND EQUIPMENT NECESSARY TO INSTALL THE MARKINGS.

ITEM 632- SIGNALIZATION, MISC.: REPROGRAM INTERSECTION TO BE LEADING PEDESTRIAN INTERVAL

AT THE TWO (2) INDICATED INTERSECTIONS, PUTNAM & FRONT STREET AND SECOND & PUTNAM STREET, THE CONTROLLERS SHALL BE REPROGRAMMED TO UTILIZE LEADING PEDESTRIAN INTERVALS MOVEMENTS FOR ALL MOVEMENTS. THE TIME FOR THE LPI SHALL BE FIVE(5) SECONDS.

ITEM 632- PEDESTAL, MISC.: 15" TRANSFORMER BASE

IN ADDITION TO THE REQUIREMENTS OF ODOT C&MS 632, THIS ITEM SHALL INCLUDE FURNISHING A TRANSFORMER BASE FOR PROPOSED RECTANGULAR RAPID FLASHING BEACONS.

ITEM 630- REMOVAL OF GROUND MOUNTED SIGN AND REERECTION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT C&MS 630, THIS ITEM SHALL INCLUDE FURNISHING A NEW SIGN ANCHOR ASSEMBLY AND ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO CORRECTLY REERECT A FUNCTIONING R1-6 ROADWAY MOUNTED SIGN.

SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE
5	6	7	8	9	10	11	12	13	14	15	16			EXT	TOTAL			NO.	
<b>ROADWAY</b>																			
0.7	1.6	0.7	2											202	23000	5	SY	PAVEMENT REMOVED	
130	52	236	268											202	30000	686	SF	WALK REMOVED	
6	9	20	9											202	32000	44	FT	CURB REMOVED	
		193	58											608	10000	251	SF	4" CONCRETE WALK	
130	52	118	230											608	52000	530	SF	CURB RAMP	
<b>PAVEMENT</b>																			
0.6	0.5	0.8	1											301	46000	2.9	CY	ASPHALT CONCRETE BASE, PG64-22	
0.3	0.4	0.2	0.3											407	10000	1.2	GAL	TACK COAT	
0.1	0.1	0.1	0.1											441	10000	0.4	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22	
	9	7	8											609	26000	24	FT	CURB, TYPE 6	
	7													609	28000	7	FT	CURB, TYPE 7	
<b>TRAFFIC CONTROL</b>																			
			2											625	32000	2	EACH	GROUND ROD	
12	48	48	24											630	03100	132	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
3	4	4	2											630	08600	13	EACH	SIGN POST REFLECTOR	
				4				4						630	75000	8	EACH	SIGN ATTACHMENT ASSEMBLY	
49	40	49	18	25				25						630	80100	206	SF	SIGN, FLAT SHEET	
2		2	2											630	84900	6	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
1	1	1	1											630	85101	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION, AS PER PLAN	3
		1	2											630	86002	3	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			2											630	97700	2	EACH	SIGNING, MISC.:SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON	2
			2											632	64020	2	EACH	PEDESTAL FOUNDATION	
				1	1									632	90400	2	EACH	SIGNALIZATION, MISC.:REPROGRAM INTERSECTION TO BE LEADING PEDESTRIAN INTERVAL	3
			2											632	90400	2	EACH	SIGNALIZATION, MISC.:VACUUM EXCAVATION OF PEDESTAL FOUNDATION	3
		90	88											642	30000	178	FT	REMOVAL OF PAVEMENT MARKING	
		0.1									0.2			644	00300	0.3	MILE	CENTER LINE	
											38			644	00500	86	FT	STOP LINE	
88	88	112	176	680	672	564	464	536	432	448	288			644	00601	4,548	FT	CROSSWALK LINE, AS PER PLAN	3
											262			644	00700	262	FT	TRANSVERSE/DIAGONAL LINE	
											120			644	00900	120	SF	ISLAND MARKING	
28	28	41	64											644	20800	161	FT	YIELD LINE	
											1			644	01000	1	EACH	RAILROAD SYMBOL MARKING	
<b>SEEDING AND MULCHING</b>																			
		9												659	10000	9	SY	EROSION CONTROL	
<b>MOBILIZATION</b>																			
														624	10000	LS		INCIDENTALS	
														623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
														614	11000	LS		MAINTAINING TRAFFIC	2

CALCULATED  
E.W.  
CHECKED  
A.F.S.

HORIZONTAL  
SCALE IN FEET

**MARIETTA PEDESTRIAN IMPROVEMENTS  
GENERAL NOTES**

**MARIETTA  
PED IMPROVEMENTS**

NOTE:  
D.N.D. = DO NOT DISTURB

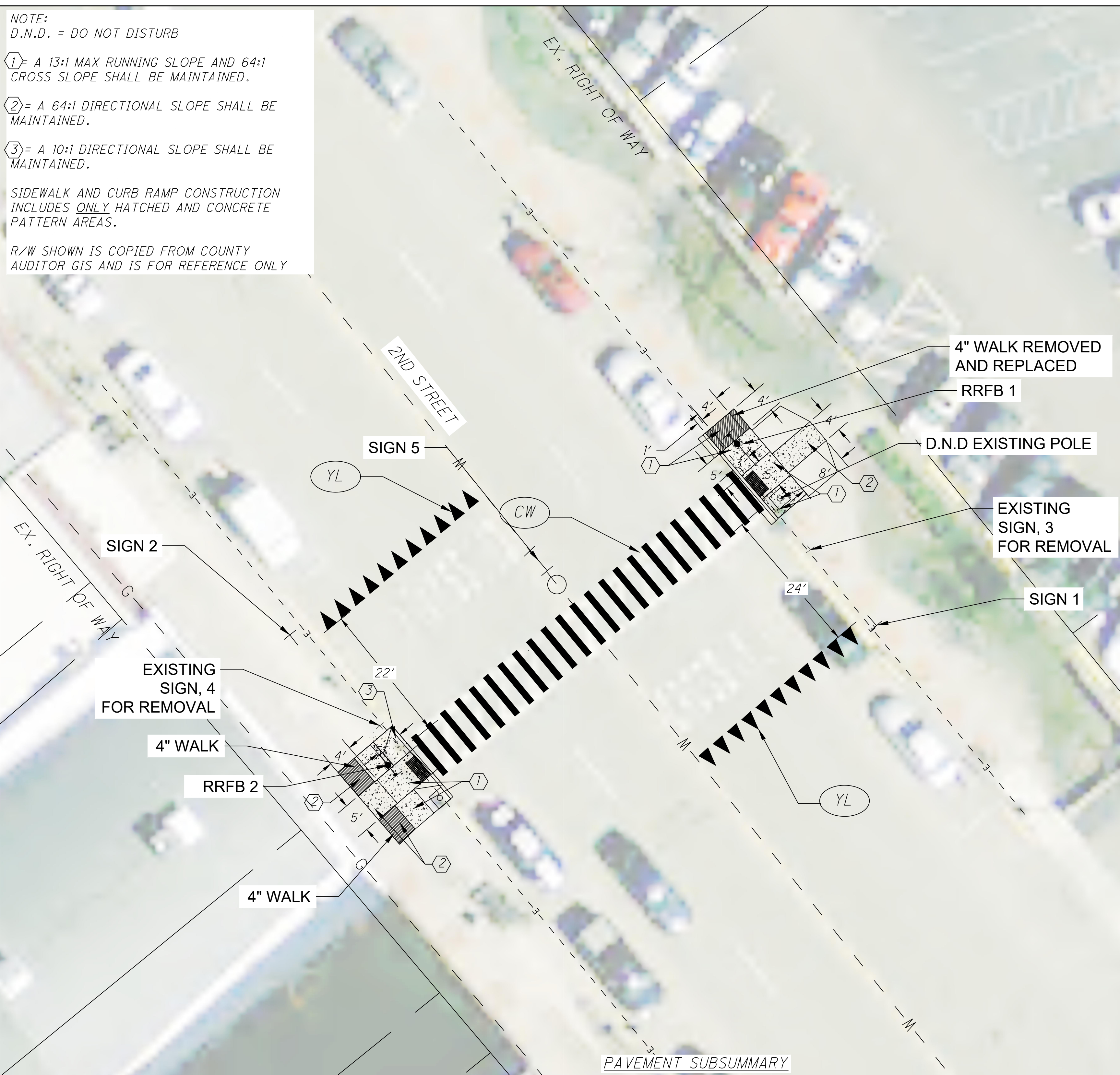
① - A 13:1 MAX RUNNING SLOPE AND 64:1 CROSS SLOPE SHALL BE MAINTAINED.

② - A 64:1 DIRECTIONAL SLOPE SHALL BE MAINTAINED.

③ - A 10:1 DIRECTIONAL SLOPE SHALL BE MAINTAINED.

SIDEWALK AND CURB RAMP CONSTRUCTION INCLUDES ONLY HATCHED AND CONCRETE PATTERN AREAS.

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ITEM	DESCRIPTION	UNIT	CR-1	CR-2	TOTAL
202	PAVEMENT REMOVED	SY	1	1	2
202	WALK REMOVED	SF	149	119	268
202	CURB REMOVED	FT	5	4	9
301	ASPHALT CONCRETE BASE, PG64-22	CY	0.6	0.4	1
407	TACK COAT	GAL	0.2	0.1	0.3
441	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, (448) PG64-22	CY	0.06	0.04	0.1
608	CURB RAMP	SF	112	118	230
608	4" CONCRETE WALK	SF	34	24	58
609	CURB, TYPE 6	FT	-	8	8

LIST OF PROPOSED WORK:  
-REBUILD HATCHED AND CONCRETE PATTERN AREAS OF CURB RAMPS AND SIDEWALK  
-INSTALL RRFBs.  
-REMOVE EXISTING PAVEMENT MARKINGS.

-INSTALL ADVANCED SIGNS  
-REMOVE AND REINSTALL R1-6 SIGN.  
-APPLY PAVEMENT MARKINGS.

**PROPOSED SIGNS**

R1-5-36  
SIGN 1, SIGN 2

**EXISTING SIGNS (TO BE REMOVED)**

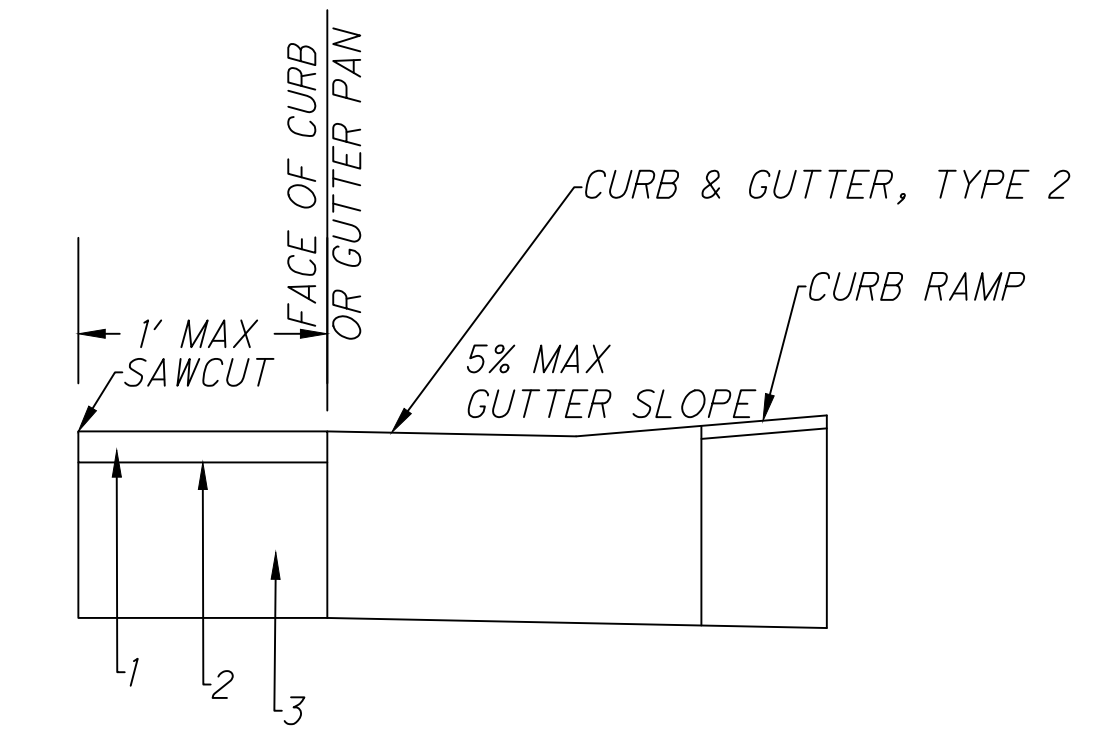
W11-2-36  
SIGN 3, SIGN 4

**EXISTING SIGNS (TO BE REMOVED AND REUSED AS DIRECTED BY THE ENGINEER)**

R1-6  
SIGN 5

SIGNAGE & MARKING SUBSUMMARY

ITEM	DESCRIPTION	UNIT	QUANT
625	GROUND ROD	EACH	2
630	SIGN, FLAT SHEET	SF	18
630	SIGNING, MISC.: SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON	EACH	2
630	GROUND MOUNTED SUPPORT, NO. 3 POST	FT	24
630	SIGN POST REFLECTOR	EACH	2
630	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	EACH	2
630	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION, AS PER PLAN	EACH	1
630	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	EACH	2
632	SIGNALIZATION, MISC.: VACUUM EXCAVATION OF PEDESTAL FOUNDATION	EACH	2
632	PEDESTAL FOUNDATION	EACH	2
641	REMOVAL OF PAVEMENT MARKINGS	FT	88
644	CROSSWALK LINE, AS PER PLAN	FT	176
644	YIELD LINE	FT	64



- 1) ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22
- 2) ITEM 407 - TACK COAT (@ 0.075 GAL/SY)
- 3) ITEM 301 - ASPHALT BASE, PG64-22

PAVEMENT REPAIR DETAIL

**LEGEND**

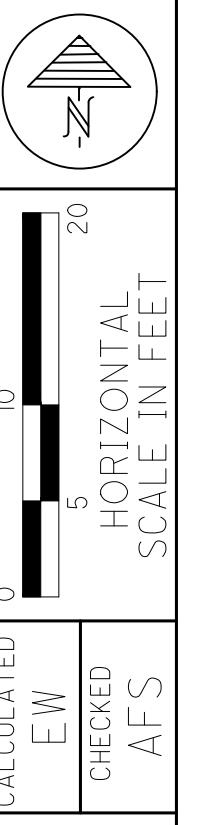
PROP    EXIST

PEDESTRIAN PUSH BUTTON    →    →

PEDESTAL SUPPORT    ■    □

CROSSWALK LINE    (CW)

YIELD LINE    (YL)



CROSSING DETAILS  
2ND STREET AT PARKING PARTNER'S PARKING LOT

MARIETTA  
PED IMPROVEMENTS