

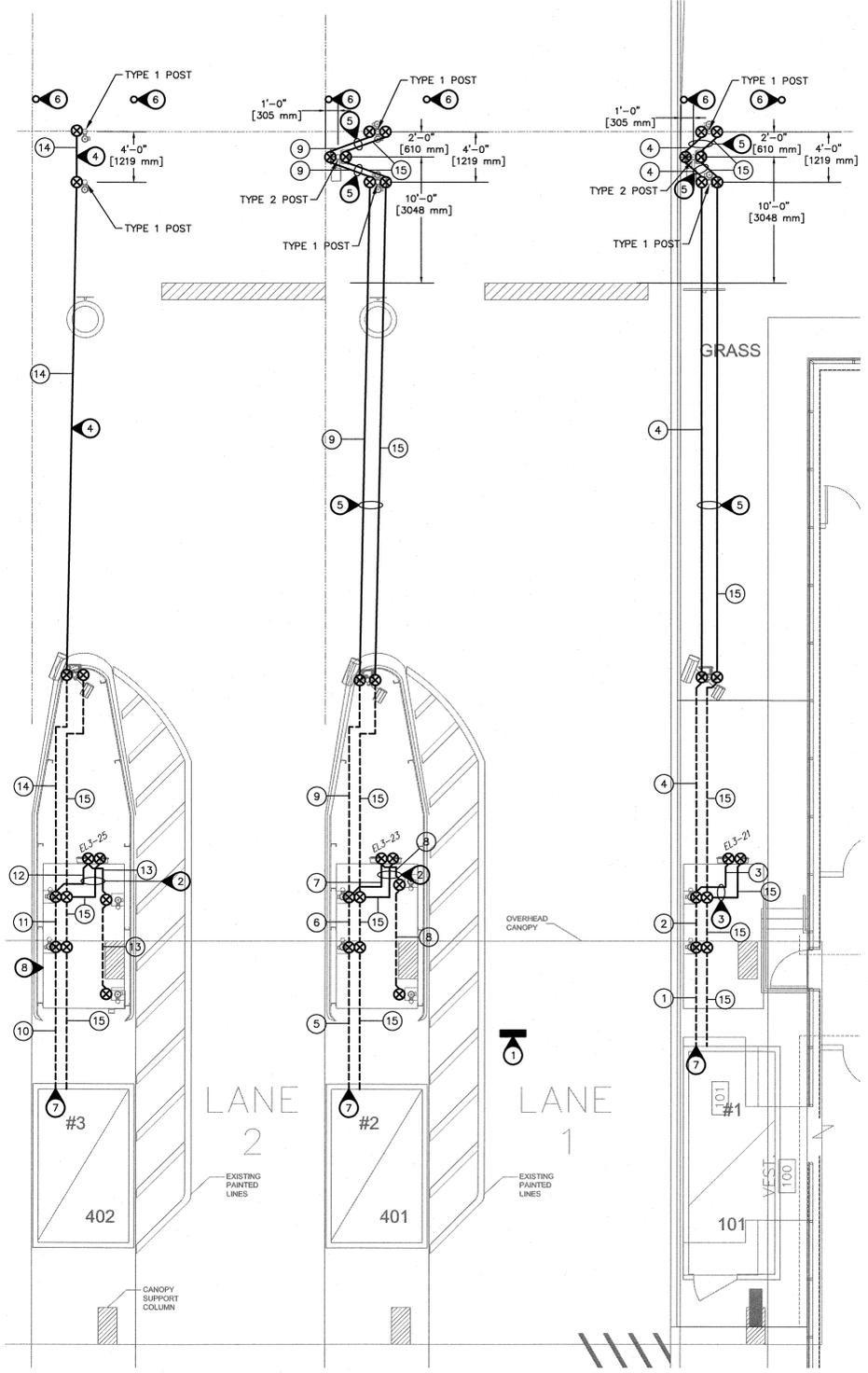
PANEL MOUNTING LOCATION	EL3 RECESSED WALK-WAY	VOLTAGE MAIN BUS	120/208V-3PH-4W 100A	REMARKS EXISTING
DESCRIPTION	BKR	CIRCUIT	BKR	DESCRIPTION
RECEPT. RM 302-1.2*	15	1	2	15 LIGHTS RM 300, 301*
RECEPT.*	15	3	4	15 LIGHTS RM 302*
HEARING/MEETING*	15	5	6	15 LIGHTS RM 305*
HEARING/MEETING*	15	7	8	15 LIGHTS LOCKER*
RECEPT. RM 309*	15	9	10	15 SPOT LIGHTS AND PIL LIGHTS*
EXITS*	15	11	12	15 SPOT LIGHTS AND PIL LIGHTS*
EAST STAIR LIGHTS*	15	13	14	15 TRAFFIC LIGHTS*
RECEPT. RM D304 EAST WALL*	15	15	16	15 DUCT HEATER PIL 403 PIL #4*
NEXUS SIGN*	15	17	18	
RECEPT. RM 304, 0.6*	15	19	20	15 TL DOUBLE-EMG. BATT UNIT RM 310*
LPR-LANE1	20	21	22	15 EMCS RM 310*
LPR-LANE2	20	23	24	30 HEAT/COOL UNIT PIL 403 PIL #4*
LPR-LANE3	20	25	26	
SPACE	-	27	28	-
SPACE	-	29	30	-
SPACE	-	31	32	-
SPACE	-	33	34	-
SPACE	-	35	36	-
SPACE	-	37	38	-
SPACE	-	39	40	-
SPACE	-	41	42	-

* INDICATES EXISTING CIRCUIT TO REMAIN.

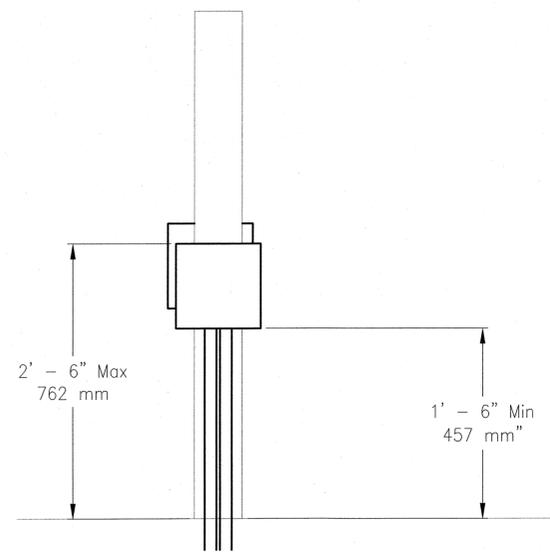
POST SCHEDULE				
TYPE	DIAMETER	HEIGHT ABOVE ROAD	FILL	DESCRIPTION
1	4"[102mm]	48"[1219mm]	CAPPED	FOR MOUNTING VEHICLE DETECTION SENSORS
2	4"[102mm]	78"[1981mm]	CAPPED	FOR MOUNTING RFID EQUIPMENT

CONDUIT FEEDER SCHEDULE	
TYPE	DESCRIPTION
1	3#12 LANE 1 BRANCH POWER
2	3#12 LANE 1 BRANCH POWER AND 3#12 LANE 1 SYSTEM POWER
3	3#12 LANE 1 BRANCH POWER AND 3#12 LANE 1 SYSTEM POWER
4	3#12 LANE 1 SYSTEM POWER
5	3#12 LANE 2 BRANCH POWER
6	3#12 LANE 2 BRANCH POWER AND 3#12 LANE 2 SYSTEM POWER
7	3#12 LANE 2 BRANCH POWER, 3#12 LANE 2 SYSTEM POWER AND 3#12 LANE 1 EMITTER POWER
8	3#12 LANE 1 EMITTER POWER
9	3#12 LANE 2 SYSTEM POWER AND 3#12 LANE 1 EMITTER POWER
10	3#12 LANE 3 BRANCH POWER
11	3#12 LANE 3 BRANCH POWER AND 3#12 LANE 3 SYSTEM POWER
12	3#12 LANE 3 BRANCH POWER, 3#12 LANE 3 SYSTEM POWER AND 3#12 LANE 2 EMITTER POWER
13	3#12 LANE 2 EMITTER POWER
14	3#12 LANE 2 EMITTER POWER
15	PULL STRING FOR COMMUNICATION CABLING

NOTES:
1. LEAVE 6FT AT TERMINATION POINT.
2. POWER CONDUCTORS #12 AWG COPPER STRANDED TTHN, 600 VAC IN RIGID METAL CONDUITS.
3. POWER CONDUCTORS #12 AWG COPPER STRANDED CSA TECK 90, 600 VAC IN RIGID PVC CONDUITS.
4. BRANCH POWER CONDUCTORS TO BE COLORED AS FOLLOWS: NEUTRAL WHITE, LINE BLACK, GROUND GREEN.
5. SYSTEM POWER CONDUCTORS TO BE COLORED AS FOLLOWS: NEUTRAL WHITE, LINE RED, GROUND GREEN.
6. EMITTER POWER CONDUCTORS TO BE COLORED AS FOLLOWS: NEUTRAL BLUE, LINE BROWN, GROUND GREEN.



1 EI LANE 1 AND 2 CONFIGURATION - POWER AND SYSTEMS
SCALE: 1/75



JUNCTION BOX MOUNTING DETAIL TYPICAL
N.T.S.

1. FACE OF JUNCTION BOX SHALL BE PARALLEL TO EDGE OF LANE.

SYMBOL SCHEDULE	
⊗	6"[152mm]x6"[152mm]x4"[102mm] weatherproof junction box.

SPECIFIC ELECTRICAL NOTES

- APPROXIMATE LOCATION OF EXISTING 100A-120/208V-3PH-4W PANEL 'EL3' IN WALK-WAY TO REMAIN. PROVIDE 20A-1P NON-GFI CIRCUIT BREAKERS AS INDICATED REFER TO PANEL SCHEDULE EL3.
- 3x27mm CONDUIT TO BE SURFACE MOUNTED ACROSS TOP OF CONCRETE BLOCK
- 2x27mm CONDUIT TO BE SURFACE MOUNTED ACROSS TOP OF CONCRETE BLOCK
- DIRECTIONAL DRILL 27mm CONDUIT BETWEEN POST MOUNTED JUNCTION BOX. PATCH CONCRETE WORK AS REQUIRED. (TYPICAL)
- DIRECTIONAL DRILL 2x27mm CONDUIT BETWEEN POST MOUNTED JUNCTION BOX. PATCH CONCRETE WORK AS REQUIRED. (TYPICAL)
- USE BULLNOSE OR PROTECTIVE MEANS AS REQUIRED TO PREVENT VEHICLE IMPACT
- RUN BRANCH CIRCUIT WIRING TO PANEL 'EL3'.
- WIRE AND CONNECT EXISTING LANE 3 CAMERAS, RECEIVERS, EMITTERS ETC. TO CIRCUIT EL3-25.

GENERAL ELECTRICAL NOTES

- CONTRACTOR TO INSTALL UNDERGROUND CONDUIT AT A DEPTH OF 24 INCHES MINIMUM FROM THE TOP OF THE CONDUIT TO FINISH GRADE OR FINISH SURFACE. PROVIDE A MINIMUM OF 3 INCHES SEPARATION BETWEEN POWER AND COMMUNICATION CONDUITS. WHERE CONDUITS TRAVEL UNDER A SURFACE SUBJECT TO VEHICLE TRAFFIC, CONCRETE ENCASE THE CONDUITS WITH A MINIMUM OF 3 INCHES OF CONCRETE COVER ON ALL SIDES. PROVIDE MAGNETIC WARNING TAPE ABOVE CONDUITS AT 12 INCHES BELOW THE FINISHED SURFACE.
- FOR NEW CONDUITS THE CONTRACTOR IS TO PROVIDE 2 (ONE FOR POWER, ONE FOR DATA) 1 INCH UNDERGROUND CONDUITS BETWEEN DEVICE POSTS AS SHOWN. STUB UP CONDUIT INTO J-BOXES ON POSTS OR AS OTHERWISE INDICATED.
- ALL J-BOXES SHOULD BE AT LEAST 6"[152mm]x6"[152mm]x4"[102mm]. REPLACE ANY BOXES THAT DON'T MEET THIS REQUIREMENT. THE FACE OF THE J-BOXES SHALL BE PARALLEL TO EDGE OF LANE.
- ALL CABLE SHALL BE ROUTED IN CONDUIT. DASHED LINES INDICATE EXISTING CONDUITS TO BE REUSED AND MODIFIED AS REQUIRED.

GENERAL NOTES

- ALL HEIGHT DIMENSIONS ARE FROM ROAD SURFACE, UNLESS OTHERWISE NOTED.
- DIMENSIONS ARE TO POST AND FOOTING CENTER.
- PROTECTION BOLLARDS OR GUARDRAILS ARE RECOMMENDED FOR PROTECTING EQUIPMENT FROM VEHICULAR IMPACT AND SIDE MIRRORS. GUARD RAILS MAY BE USED IN PLACE OF BOLLARDS. ENSURE THAT FIELDS OF VIEW FOR IMAGERS, SENSORS AND STROBES ARE NOT OBSTRUCTED BY THE BOLLARDS OR RAILS.

CONSTRUCTION CONTRACTOR RESPONSIBILITY

- CONTRACTOR IS RESPONSIBLE FOR MEETING FEDERAL, PROVINCE AND LOCAL REQUIREMENTS. FOR IDENTIFYING EXISTING UNDERGROUND UTILITIES AND OBTAINING PROPER PERMITS BEFORE TRENCHING UNDERGROUND.
- CONTRACTOR IS RESPONSIBLE FOR SITE PREPARATION FOR INSTALLATION OF EACH SYSTEM TO INCLUDE THE FOLLOWING:

GENERAL

- INSTALL MOUNTING POSTS, CONDUITS, J-BOXES, AC CIRCUITS THROUGH CONDUIT AND EMPTY CONDUIT FOR NETWORK CABLES.
- DIRECTIONAL DRILL FOR CONDUIT, PULL AC WIRE THROUGH CONDUIT AND INTO ENCLOSURE OR JUNCTION BOX. SIGNAL AND NETWORK CABLES BY OTHERS.
- PROVIDE AND INSTALL JUNCTION OR PULL BOXES AT DESIGNATED LOCATIONS AND HEIGHTS AS SPECIFIED IN DRAWING. SIZE JUNCTION BOXES AS NEEDED FOR NUMBER / SIZE OF CONDUIT AND WIRING. REPLACE ANY EXISTING BOXES THAT DO NOT MEET MINIMUM REQUIREMENTS.
- PROVIDE AND INSTALL ALL CONDUIT (EXCEPT FLEX TUBING FROM EQUIPMENT ON POSTS).
- PROVIDE AND INSTALL ALL POSTS AND BOLLARDS.
- A. PAINTING TO HAVE A FLAT, SMOOTH FINISH. TOUCH UP ANY DAMAGE TO PAINTED ITEMS THAT OCCUR DURING INSTALLATION.
B. RECOMMENDED POSTS ARE ROUND STEEL, BUT ALUMINUM CAN BE USED. GALVANIZED POSTS ARE NOT RECOMMENDED.
C. SURFACE FINISH (PAVEMENT, ETC.) AT BASE OF ALL POSTS AND FOOTINGS TO BE SMOOTH, LEVEL, AND MATCH EXISTING GRADE.
- WHERE A NEW-TO-EXISTING CONDUIT CONNECTION IS INDICATED, THE CONTRACTOR IS TO PROVIDE MATERIALS AND LABOR REQUIRED TO MAKE THE CONNECTIONS.
- PAINT STOP LINES, LANES MARKINGS AND HATCHING AS SPECIFIED, USING MATERIALS THAT MEET CBSA'S STANDARDS FOR ROADWAYS.
- REPAIR AND PAINT DAMAGED POSTS DURING INSTALLATION
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF PRIOR SOLUTION INFRASTRUCTURE NOT REUSED BY AND OBSTRUCTING INSTALLATION OF THE NEW SOLUTION. CBSA SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF ANY PRIOR SOLUTION PARTS INSTALLED BY CBSA'S SUBCONTRACTOR USING EXTRAORDINARY FASTENING METHODS (E.G. WELDING, PERMANENT EPOXY, ETC.) AND RELATED REPAIRS TO OR CONDITIONING OF STRUCTURES AND SURFACES.

CABLES

- PROVIDE HOME RUN AND BETWEEN POST WIRING FOR POWER.
- CONTRACTOR IS TO PULL ALL CABLE RUNS IN UNDERGROUND CONDUIT, TO INCLUDE AC WIRES, NETWORK CABLE, AND MULTI-PAIR CABLES BY OTHERS. RUN CABLES INTO J-BOXES AND ENCLOSURES AS INDICATED.
- ALL NETWORK, AND MULTI-PAIR CABLES ARE TO BE INSTALLED IN CONTINUOUS RUNS WITH NO SPLICES BY OTHERS.
- CONNECTIONS TO NETWORK AND MULTI-PAIR CABLES IN LANE ELECTRONICS ENCLOSURE, AND POST MOUNTED DEVICE BOXES WILL BE MADE BY PERCEPTICS CERTIFIED INSTALLERS.
- LEAVE 6 FT. OF MULTI-PAIR, AND NETWORK CABLE FREE INSIDE OF ENCLOSURES AND J-BOXES UNLESS SPECIFIED. LEAVE 3 FT. CABLE LOOPS IN JUNCTION BOXES WHEN CABLES ARE PASSED THROUGH TO OTHER JUNCTION BOXES (IF APPLICABLE).

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Revision	Description	Date
5		
4		
3		
2		
1		
0	ISSUED FOR TENDER	2016-12-08

CANADA BORDER SERVICES AGENCY
EMERSON PORT OF ENTRY
HIGHWAY 75
EMERSON, MANITOBA

Project title _____ Projct _____

EMERSON RFID INFRASTRUCTURE

Designed by AJT Conçu par
Drawn by AJT Dessiné par
Approved by VJT Approuvé par

PWSC Project Manager / Administrateur de Projets TPSC
JAMES HUTCHINGS

Drawing title _____ Titre du dessin _____

**ELECTRICAL
PIL BOUTH LANES 1 AND 2
- POWER AND SYSTEMS**

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.086180.001	E1 OF XX	0