

ELECTRICAL ITEMS

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OVERVIEW

Electrical Items have different documentation requirements for each unit of measure (UOM). All Electrical Items must be counted and measured. Documentation examples for a few selected Electrical Items are illustrated in this chapter. Some minor modifications may be required to show the unusual circumstances that may occur with different items, but the general format should be followed. If there are items which cannot be documented according to the following examples, contact the Construction Admin Services Section for assistance.

INSPECTOR'S RESPONSIBILITIES – ELECTRICAL ITEMS

- Use the Agreement Estimate report as a reference to ensure that items and quantities are paid in the correct category (AEB).
- Use the Schedules found on the Signals and Lighting sheets (Figure 8-1), located in the Contract plans, to help identify items, quantities, descriptions and locations.

CON. RUN	FROM		TO		LEN. LNFT	CONDUIT			COMMENTS
	POLE	CAB-13a	PULL BOX (13a)	CHN-UP SIGN (14a)		3"	CONDUCTOR		
							GRD	POW	
13 01	POLE 13A	CAB-13a	PULL BOX (13a)	CHN-UP SIGN (14a)	30'	1	1	2	SOLAR CABLING INCIDENTAL TO SOLAR BID ITEMS.
13 02	CAB-13a	PULL BOX (13a)	CHN-UP SIGN (14a)		20'	1	1	2	
13 03	PULL BOX (13a)	CHN-UP SIGN (14a)			30'	1	1	2	
13 04	POLE 13B	CAB-13b	PULL BOX (13b)	CHN-UP SIGN (15a)	30'	1	1	2	SOLAR CABLING INCIDENTAL TO SOLAR BID ITEMS.
13 05	CAB-13b	PULL BOX (13b)	CHN-UP SIGN (15a)		20'	1	1	2	
13 06	PULL BOX (13b)	CHN-UP SIGN (15a)			30'	1	1	2	

PULL BOX SCHEDULE						
NO.	STATION	OFFSET/RT/EX.	TYPE	LOCKING LID	BURIED	COMMENTS
13 a	PE 1031+96	79' RT	NO. 5 PULL BOX	X		
13 b	PW 1032+22	63' LT	NO. 5 PULL BOX	X		

POLE SCHEDULE									
NO.	STATION	OFFSET/RT/EX.	TYPE	SAFETY BASE	EX.	EX.	DEVICES		COMMENTS
							SOLAR PANELS		
13 A	PE 1031+90	98' RT	ITS 30'				2		SOLAR CABLING INCIDENTAL TO SOLAR BID ITEMS.
13 B	PW 1032+28	82' LT	ITS 30'				2		SOLAR CABLING INCIDENTAL TO SOLAR BID ITEMS.

CABINET SCHEDULE									
CABINET LABEL/NAME	STATION	OFFSET/RT/EX.	TYPE	CABINET EQUIPMENT				COMMENTS	
				EX.	FHES	CELLULAR TELEPHONE MODEM	FLASHING BEACON CONTROLLER		
CAB-13a	PE 1031+96	98' RT	ITS			1	1	1	FOR EASTBOUND CHAIN-UP SIGN.
CAB-13b	PW 1032+22	82' LT	ITS			1	1	1	FOR WESTBOUND CHAIN-UP SIGN.

STREET LIGHTING LUMINAIRE SCHEDULE									
NO.	STATION	OFFSET/RT/EX.	TYPE	EX.	EX.	# OF LUMR	ARM LENGTH	LUMINAIRE TYPE	COMMENTS
02 02	R1 3+77	5' RT	7	X	1	15'	LUMINAIRE (TYPE B) (SL)	REMOVE EXISTING HPS LUMINAIRE. REPLACE WITH LED. USE EXISTING CONDUCTORS.	
02 03	R1 6+01	5' RT	7	X	1	15'	LUMINAIRE (TYPE B) (SL)	REMOVE EXISTING HPS LUMINAIRE. REPLACE WITH LED. USE EXISTING CONDUCTORS.	
02 04	R4 3+01	10' LT	7	X	1	15'	LUMINAIRE (TYPE B) (SL)	REMOVE EXISTING HPS LUMINAIRE. REPLACE WITH LED. USE EXISTING CONDUCTORS.	

Figure 8-1: Examples of a Schedules Sheets- Electrical Items

- Review the following for accuracy:
 - Special Provisions
 - Supplemental Notices
 - Contract Modifications

Note: When any changes are made to an item, reference the Contract Modification number in the IDR item posting remarks.

- Turn in ALL electrical item calculation sheets to the Office Engineer.

INSPECTOR DAILY REPORT (IDR) – MOBILE INSPECTOR

1. Create an IDR in Mobile Inspector daily to document the activity being monitored. Refer to the [Mobile Inspector User Guide](#) for details on using this application.
 - Report Details – daily activities
 - Item Postings – item(s) and quantity(s)
 - Equipment – type and hours
 - Personnel – title and hours
2. Record the following required information in the Report Details window (Figure 8-2):
 - Date
 - Weather
 - Low and high temperature
 - Attachments (N/A) – Send ALL photos via email
 - Remarks – Verify with the Resident Engineer on what information is required

Figure 8-2: IDR Report Detail Window

3. Record the following required information in the Item Postings window:
 - Item
 - Proj/Catg – Refer to the AEB report.
 - Contractor – ALWAYS the Prime Contractor (Subs are not allowed).
 - Qty – Based on measurements, calculations, counts and plan.
 - Location – Enter the Conduit Run, Pull Box No., Pole No. or Cabinet Label/Name, etc. (from the Schedules).
 - Station From/To – Not applicable for electrical items.
 - Attention Flag – Use to bring attention to Resident Engineer and Office Engineer for overruns and plan errors.
 - Remarks – Must show calculations when appropriate, refer to Calculation Sheet when appropriate (refer to Appendix B, Calculation Formulas, in this Manual for a Calculation Sheet example), other information relevant to item posting, and explanations when Attention Flag is checked.

NOTES for Electrical item postings:

- If there are questions on whether an EACH item can be listed separately or combined, contact the Construction Admin Services Section for assistance.
- Any item having a separate station, even if in the same numbered run, can only have one posting per station.
- If there are changes to the Schedules Sheets, enter the Conduit Run, Pull Box No., Pole No., or Cabinet Label/Name, etc., in the Location box and an explanation of the changes in the Remarks box.
- Refer to Figure 8-3 through Figure 8-9 for examples of electrical item postings with different UOM.

New Item Posting

Item:

Proj/Catg:

Contractor:

Qty: EACH

Location:

Station From: +

Station To: +

Attention Flag:

Remarks:

247 remaining

Figure 8-3: IDR Item Posting – Electrical EACH

NOTES for Electrical EACH (Pull Box) (Figure 8-3):

- Payment for EACH items will be based on field count.
- In Location, enter the Pull Box number.
- Sig. Fig. = 1

New Item Posting

Item:

Proj/Catg:

Contractor:

Qty: EACH

Location:

Station From: +

Station To: +

Attention Flag:

Remarks:

178 remaining

Figure 8-4: IDR Item Posting – Electrical EACH

NOTES for Electrical EACH (Pull Box) (Figure 8-4):

- Payment for EACH items will be based on field count.
- In Location, enter the Pull Box number.
- In Remarks, enter an explanation of the changes if there are changes to the Schedules Sheets.
- Sig. Fig. = 1

New Item Posting	
Item:	CELLULAR TELEPHONE ...
Proj/Catg:	60638C2C, 06, Install ITS "X...
Contractor:	LAS VEGAS PAVING CORP...
Qty:	1 EACH
Location:	CAB-13b
Station From:	<input type="text"/> + <input type="text"/>
Station To:	<input type="text"/> + <input type="text"/>
Attention Flag:	<input type="checkbox"/>
Remarks:	Per plan
247 remaining	

Figure 8-5: IDR Item Posting – Electrical EACH

NOTES for Electrical EACH (Cabinet) (Figure 8-5):

- Payment for EACH items will be based on field count.
- In Location, enter the Cabinet Label/Name.
- Sig. Fig. = 1

New Item Posting	
Item:	STEEL POLE, TYPE 1A
Proj/Catg:	60638C2C, 05, Install New Li...
Contractor:	LAS VEGAS PAVING CORP...
Qty:	.5 EACH
Location:	Pole 13 A
Station From:	<input type="text"/> + <input type="text"/>
Station To:	<input type="text"/> + <input type="text"/>
Attention Flag:	<input type="checkbox"/>
Remarks:	Base only
246 remaining	

Figure 8-6: IDR Item Posting – Electrical EACH (Pole)

NOTES for Electrical EACH (Pole) (Figure 8-6):

- Payment for EACH items will be based on field count.
- In Location, enter the Pole number.
- Pay 50% (.5) for Base and 50% (.5) for Pole.
- In Remarks, state when the item is completed (base & pole is installed).
- Sig. Fig. = 1 (when complete)

New Item Posting

Item:	<input type="text" value="3-INCH CONDUIT"/>
Proj/Catg:	<input type="text" value="60638C2C, 05, Install New..."/>
Contractor:	<input type="text" value="LAS VEGAS PAVING CORP..."/>
Qty:	<input type="text" value="30"/> LFT
Location:	<input type="text" value="Run 13 01"/>
Station From:	<input type="text"/> + <input type="text"/>
Station To:	<input type="text"/> + <input type="text"/>
Attention Flag:	<input type="checkbox"/>
Remarks:	<input style="height: 40px;" type="text" value="Field measured"/>

240 remaining

Figure 8-7: IDR Item Posting – Electrical LFT

NOTES for Electrical LFT (Figure 8-7):

- Payment for LFT items will be based on field measurements.
- In Location, enter the Conduit Run number.
- Sig. Fig. = 1

New Item Posting

Item:	<input type="text" value="3-INCH CONDUIT"/>
Proj/Catg:	<input type="text" value="60638C2C, 06, Install ITS ..."/>
Contractor:	<input type="text" value="LAS VEGAS PAVING CORP..."/>
Qty:	<input type="text" value="40"/> LFT
Location:	<input type="text" value="Run No. 13 04"/>
Station From:	<input type="text"/> + <input type="text"/>
Station To:	<input type="text"/> + <input type="text"/>
Attention Flag:	<input type="checkbox"/>
Remarks:	<input style="height: 40px;" type="text" value="10 Additional footage was need to connect to CAB-13b
30 + 10 = 40 LFT"/>

185 remaining

Figure 8-8: IDR Item Posting – Electrical LFT

NOTES for Electrical LFT (Figure 8-8):

- Payment for LFT items will be based on field measurements.
- In Location, enter the Conduit Run number.
- In Remarks, enter an explanation of the changes if there are changes to the Schedules Sheets.
- Sig. Fig. = 1

New Item Posting	
Item:	NO. 6 CONDUCTOR
Proj/Catg:	60638C2C, 06, Install ITS "X...
Contractor:	LAS VEGAS PAVING CORP...
Qty:	60 LFT
Location:	Run 13 02
Station From:	<input type="text"/> + <input type="text"/>
Station To:	<input type="text"/> + <input type="text"/>
Attention Flag:	<input type="checkbox"/>
Remarks:	3 conductors 20 LFT x 3 = 60 LFT
220 remaining	

NOTES for Electrical LFT (Figure 9-9):

- Payment for LFT items will be based on field measurements.
- In Location, enter the Conduit Run number.
- If there is more than one conduit/conductor per run, show the calculation for total LFT.
- Sig. Fig. = 1

Figure 8-9: IDR Item Posting – Electrical LFT

4. Record the following required information in the New Equipment window (Figure 8-10 and Figure 8-11):
- Contractor – Actual contractor performing the work (include subs).
 - Type – Detailed description of the equipment (e.g., diesel, HP, model, make).
 - Number – How many of each type.
 - Hours – Total hours in use.

Note: An attachment to an equipment's base configuration must have its own record.

New Equipment	
Contractor:	LAS VEGAS PAVI...
Type:	Bobcat 256C Skid ...
Number:	1
Hours:	8
<input checked="" type="checkbox"/> <input type="checkbox"/>	

Figure 8-10: IDR Equipment Entry

Figure 8-11: IDR Equipment List

5. Record the following required information in the New Personnel window (Figure 8-12 and Figure 8-13):
 - Contractor – Actual contractor performing the work (include subs).
 - Type – Details of personnel type (e.g., foreman, laborer, truck driver).
 - Number – How many of each title.
 - Hours – Total hours worked.

Figure 8-12: IDR Personnel Entry

Figure 8-13: IDR Personnel List

6. Complete a final review of the IDR and lock it.

Note: When a Mobile Inspector IDR is completed and locked, the information is uploaded into a FieldManager IDR, where it is reviewed and generated for processing progress payments.

OFFICE ENGINEER'S RESPONSIBILITIES – ELECTRICAL ITEMS

- Collect all Material Certifications. Scan and save them to the appropriate EDOC Contract Files\Material and Testing Files\Division No. 4 – Materials Division Certs and Test Reports\4.# directory. Send original certifications to the Materials Division for approval.
- Save Electrical Item photos in the appropriate EDOC Contract Files\Contract Files\Division No. 3 - Multimedia Records\3.# Photographs with Descriptions directory.
- Review Electrical Item calculation sheets for accuracy and save electronically in the appropriate EDOC Contract Files\Contract Files\Division No. 7 - Construction Pay Estimate and Related Data\7.# IDR Calculation Sheets directory using this naming convention: IDR YYYY-MM-DD Inspectors Initials, (e.g. IDR 2016-03-19 KMM).
- Approve materials in FieldManager when the approved material certifications are received from the Materials Division. Refer to Chapter 6, Working with Materials, in the [FieldManager User Guide](#), for details.
- Distribute executed copies of Contract Modifications to Inspectors.

INSPECTOR DAILY REPORT (IDR) – FIELDMANAGER

When a Mobile Inspector IDR is locked by an Inspector, the information is uploaded into a FieldManager IDR. Refer to Chapter 7, Inspector Daily Report, in the [FieldManager User Guide](#) for details.

1. Verify the following:
 - Information in the Comments and Remarks
 - Information in the Contractor tab (Personnel and Equipment)
 - Items are paid correctly according to the contract documents (e.g., plans, supplemental notices, Contract Modifications)
 - Item quantities
 - Quantities in postings are documented to the correct Significant Figure
 - Stations and Line Designations in the Locations
 - Calculations are correct
 - Remarks reference calculation sheets (if applicable)

Note: Length does not always equal the difference between the beginning and ending station. Sometimes there is a curve or an obstacle that will affect the distance. Always check with the Inspector before assuming the calculations are incorrect.

2. Generate the IDR.