

McHenry County Government Center  
Purchasing Department  
Catherine Link, CPPB, Director of Purchasing  
2200 N Seminary Avenue  
Administration Building Room 200  
Woodstock, IL 60098  
Phone: 815-334-4818  
Fax: 815-334-4680

January 25, 2012

## **ADDENDUM #1**

**BID #12-12 Installation of Electrical Service to the Klehm Barn  
due February 15, 2012 at 2:00PM (CST)**

### **Additions & Clarifications to BID**

Clarification#1:	The drawings are being added as a PDF
------------------	---------------------------------------

**ALL OTHER TERMS AND CONDITIONS  
OF THE BID  
REMAIN THE SAME.**

# MCHENRY COUNTY GOVERNMENT CENTER KLEHM BARN ELECTRICAL SERVICE 2200 NORTH SEMINARY AVE. WOODSTOCK, IL

REVISION	BY

DRAWINGS:  
SYMBOL LIST, LOCATION  
MAP AND SITE PLAN

McHenry County Government Center  
Klehm Barn Electrical  
2200 N. Seminary Ave.  
Woodstock, IL

Berg Engineering Consultants, Ltd.  
mechanical, electrical, plumbing, fire protection  
Woodstock, Illinois  
phone 847-332-4878 fax 847-332-4879  
www.bergeng.com

JOB:	3997
DATE:	01/17/12
SCALE:	NONE
DRAWN:	SOC
CHECKED:	CAE
SHEET	
E.1	
NORTH	Bid Issue

SYMBOLS	ABBREVIATIONS	PROJECT CODES	SITE PLAN																																																																																																												
<p style="text-align: center;"><b>SYMBOL LIST</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td>DUPLEX CONVENIENCE RECEPTACLE</td></tr> <tr><td></td><td>DOUBLE DUPLEX RECEPTACLE</td></tr> <tr><td></td><td>GFCI RECEPTACLE</td></tr> <tr><td></td><td>SPECIAL OUTLET</td></tr> <tr><td></td><td>JUNCTION BOX</td></tr> <tr><td></td><td>EQUIPMENT CONNECTION</td></tr> <tr><td></td><td>PANELBOARD</td></tr> <tr><td></td><td>X DENOTES GROUND WIRE</td></tr> <tr><td></td><td>CONDUIT STUB UP</td></tr> <tr><td></td><td>CONDUIT STUB DOWN</td></tr> </table> <p style="text-align: center;"><b>SWITCHES AND SENSORS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td>SINGLE POLE SWITCH</td></tr> <tr><td></td><td>SWITCH CONTROL (LOWER CASE LETTER)</td></tr> <tr><td></td><td>TIMER SWITCH</td></tr> <tr><td></td><td>TIME CLOCK</td></tr> <tr><td></td><td>PHOTO CELL</td></tr> <tr><td></td><td>LIGHT FIXTURE MOUNTED MOTION SENSOR.</td></tr> </table> <p style="text-align: center;"><b>SCHEMATIC &amp; ONE-LINE DIAGRAM SYMBOLS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td>3 POLE CIRCUIT BREAKER</td></tr> <tr><td></td><td>GROUNDING CONNECTION - SYSTEM OR EQUIPMENT</td></tr> </table> <p style="text-align: center;"><b>GENERAL WIRING NOTES:</b> 12 AWG WIRE SHALL BE THE MINIMUM SIZE WIRE.</p> <p>20 AMP, 120 VOLT, SINGLE PHASE CIRCUITS SHALL BE SIZED AS FOLLOWS: BRANCH CIRCUITS LESS THAN 75 FEET SHALL BE A MINIMUM OF 12 AWG WIRE. BRANCH CIRCUITS GREATER THAN 75 FEET SHALL BE A MINIMUM OF 10 AWG WIRE. BRANCH CIRCUITS GREATER THAN 125 FEET SHALL BE A MINIMUM OF 8 AWG WIRE. BRANCH CIRCUITS GREATER THAN 175 FEET SHALL BE A MINIMUM OF 6 AWG WIRE.</p> <p>OTHER BRANCH CIRCUITS AND FEEDERS: OTHER BRANCH CIRCUITS, FEEDERS AND VOLTAGE COMBINATIONS, SHALL BE SIZED TO COMPLY WITH THE NATIONAL ELECTRICAL CODE AND AS INDICATED ON THE DRAWINGS.</p>		DUPLEX CONVENIENCE RECEPTACLE		DOUBLE DUPLEX RECEPTACLE		GFCI RECEPTACLE		SPECIAL OUTLET		JUNCTION BOX		EQUIPMENT CONNECTION		PANELBOARD		X DENOTES GROUND WIRE		CONDUIT STUB UP		CONDUIT STUB DOWN		SINGLE POLE SWITCH		SWITCH CONTROL (LOWER CASE LETTER)		TIMER SWITCH		TIME CLOCK		PHOTO CELL		LIGHT FIXTURE MOUNTED MOTION SENSOR.		3 POLE CIRCUIT BREAKER		GROUNDING CONNECTION - SYSTEM OR EQUIPMENT	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>1P</td><td>ONE POLE</td></tr> <tr><td>2P</td><td>TWO POLE</td></tr> <tr><td>3P</td><td>THREE POLE</td></tr> <tr><td>4P</td><td>FOUR POLE</td></tr> <tr><td>1P1W</td><td>ONE POLE ONE WIRE</td></tr> <tr><td>1P2W</td><td>ONE POLE TWO WIRE</td></tr> <tr><td>2P2W</td><td>TWO POLE TWO WIRE</td></tr> <tr><td>2P3W</td><td>TWO POLE THREE WIRE</td></tr> <tr><td>3P3W</td><td>THREE POLE THREE WIRE</td></tr> <tr><td>3P4W</td><td>THREE POLE FOUR WIRE</td></tr> <tr><td>3P5W</td><td>THREE POLE FIVE WIRE</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>A</td><td>AMPERE</td></tr> <tr><td>AC</td><td>ALTERNATING CURRENT</td></tr> <tr><td>AFF</td><td>ABOVE FINISHED FLOOR</td></tr> <tr><td>AIC</td><td>AMPERE INTERRUPTING CAPACITY</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>C</td><td>CONDUIT (GENERIC FOR RACEWAY)</td></tr> <tr><td>CKT</td><td>CIRCUIT</td></tr> <tr><td>CU</td><td>COPPER</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>FLA</td><td>FULL LOAD AMPS</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>G</td><td>GROUND</td></tr> <tr><td>GFCI</td><td>GROUND FAULT CIRCUIT INTERRUPTER</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>HP</td><td>HORSEPOWER</td></tr> <tr><td>HZ</td><td>HERTZ (CYCLE PER SEC)</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>KVA</td><td>KILOVOLT AMPERE</td></tr> <tr><td>KW</td><td>KILOWATT</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>MCA</td><td>MINIMUM CIRCUIT AMPACITY</td></tr> <tr><td>MCB</td><td>MAIN CIRCUIT BREAKER</td></tr> <tr><td>MLO</td><td>MAIN LUGS ONLY</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>N</td><td>NEUTRAL</td></tr> <tr><td>NEC</td><td>NATIONAL ELECTRICAL CODE</td></tr> <tr><td>NTS</td><td>NOT TO SCALE</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>P</td><td>POLE</td></tr> <tr><td>PH</td><td>PHASE</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>V</td><td>VOLT</td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>W</td><td>WIRE</td></tr> <tr><td>W</td><td>WITH</td></tr> </table>	1P	ONE POLE	2P	TWO POLE	3P	THREE POLE	4P	FOUR POLE	1P1W	ONE POLE ONE WIRE	1P2W	ONE POLE TWO WIRE	2P2W	TWO POLE TWO WIRE	2P3W	TWO POLE THREE WIRE	3P3W	THREE POLE THREE WIRE	3P4W	THREE POLE FOUR WIRE	3P5W	THREE POLE FIVE WIRE	A	AMPERE	AC	ALTERNATING CURRENT	AFF	ABOVE FINISHED FLOOR	AIC	AMPERE INTERRUPTING CAPACITY	C	CONDUIT (GENERIC FOR RACEWAY)	CKT	CIRCUIT	CU	COPPER	FLA	FULL LOAD AMPS	G	GROUND	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	HP	HORSEPOWER	HZ	HERTZ (CYCLE PER SEC)	KVA	KILOVOLT AMPERE	KW	KILOWATT	MCA	MINIMUM CIRCUIT AMPACITY	MCB	MAIN CIRCUIT BREAKER	MLO	MAIN LUGS ONLY	N	NEUTRAL	NEC	NATIONAL ELECTRICAL CODE	NTS	NOT TO SCALE	P	POLE	PH	PHASE	V	VOLT	W	WIRE	W	WITH	<p>APPLICABLE BUILDING CODES: 23 ILLINOIS ADMINISTRATIVE CODE 180 2009 INTERNATIONAL BUILDING CODE 2009 INTERNATIONAL ENERGY CONSERVATION CODE 2009 INTERNATIONAL MECHANICAL CODE 2009 INTERNATIONAL PROPERTY MAINTENANCE CODE (EXISTING ONLY) 2008 NATIONAL ELECTRICAL CODE</p> <p style="text-align: center;"><b>LOCATION MAP</b></p>	<p style="text-align: center;"><b>GENERAL SITE PLAN NOTES</b></p> <ol style="list-style-type: none"> <li>① CUTTING AND/OR DAMAGE TO EXISTING UTILITIES CAUSED BY THE INSTALLATION OF THE WORK, SHALL BE REPAIRED BY THIS CONTRACTOR AT NO ADDITIONAL EXPENSE.</li> <li>② INCLUDE WORK TO LOCATE AND MARK EXISTING UNDERGROUND UTILITIES WHERE UNDERGROUND WORK IS INDICATED, PRIOR TO ANY CONSTRUCTION. CALL J.U.L.I.E. AT 1-800-892-0123 FOR LOCATING PUBLIC UTILITIES.</li> <li>③ INCLUDE WORK TO LOCATE AND MARK EXISTING UNDERGROUND ELECTRICAL, BRANCH CIRCUITS, COMMUNICATION SYSTEMS, AND SITE UTILITIES WHERE UNDERGROUND WORK IS INDICATED, PRIOR TO ANY CONSTRUCTION.</li> <li>④ CUTTING AND/OR DAMAGE TO EXISTING BRANCH CIRCUITS, ELECTRICAL, COMMUNICATION SYSTEMS, WATER, SEWER, GAS UTILITIES, AND LOW VOLTAGE SYSTEMS CAUSED BY THE TRENCHING, CUTTING AND INSTALLATION OF THE WORK, SHALL BE REPAIRED BY THIS CONTRACTOR AT NO ADDITIONAL EXPENSE.</li> </ol> <p style="text-align: center;"><b>SITE PLAN NOTES</b></p> <ol style="list-style-type: none"> <li>① APPROXIMATE LOCATION OF DIRECTIONAL BORE FOR PANEL FEEDER. CONTRACTOR WILL NEED TO FIELD MEASURE DISTANCE BETWEEN BUILDINGS PRIOR TO SUBMITTING BID.</li> <li>② FURNISH AND INSTALL A 60AMP-2P CIRCUIT BREAKER IN EXISTING PANEL, AND UPDATE PANEL DIRECTORY.</li> </ol>
	DUPLEX CONVENIENCE RECEPTACLE																																																																																																														
	DOUBLE DUPLEX RECEPTACLE																																																																																																														
	GFCI RECEPTACLE																																																																																																														
	SPECIAL OUTLET																																																																																																														
	JUNCTION BOX																																																																																																														
	EQUIPMENT CONNECTION																																																																																																														
	PANELBOARD																																																																																																														
	X DENOTES GROUND WIRE																																																																																																														
	CONDUIT STUB UP																																																																																																														
	CONDUIT STUB DOWN																																																																																																														
	SINGLE POLE SWITCH																																																																																																														
	SWITCH CONTROL (LOWER CASE LETTER)																																																																																																														
	TIMER SWITCH																																																																																																														
	TIME CLOCK																																																																																																														
	PHOTO CELL																																																																																																														
	LIGHT FIXTURE MOUNTED MOTION SENSOR.																																																																																																														
	3 POLE CIRCUIT BREAKER																																																																																																														
	GROUNDING CONNECTION - SYSTEM OR EQUIPMENT																																																																																																														
1P	ONE POLE																																																																																																														
2P	TWO POLE																																																																																																														
3P	THREE POLE																																																																																																														
4P	FOUR POLE																																																																																																														
1P1W	ONE POLE ONE WIRE																																																																																																														
1P2W	ONE POLE TWO WIRE																																																																																																														
2P2W	TWO POLE TWO WIRE																																																																																																														
2P3W	TWO POLE THREE WIRE																																																																																																														
3P3W	THREE POLE THREE WIRE																																																																																																														
3P4W	THREE POLE FOUR WIRE																																																																																																														
3P5W	THREE POLE FIVE WIRE																																																																																																														
A	AMPERE																																																																																																														
AC	ALTERNATING CURRENT																																																																																																														
AFF	ABOVE FINISHED FLOOR																																																																																																														
AIC	AMPERE INTERRUPTING CAPACITY																																																																																																														
C	CONDUIT (GENERIC FOR RACEWAY)																																																																																																														
CKT	CIRCUIT																																																																																																														
CU	COPPER																																																																																																														
FLA	FULL LOAD AMPS																																																																																																														
G	GROUND																																																																																																														
GFCI	GROUND FAULT CIRCUIT INTERRUPTER																																																																																																														
HP	HORSEPOWER																																																																																																														
HZ	HERTZ (CYCLE PER SEC)																																																																																																														
KVA	KILOVOLT AMPERE																																																																																																														
KW	KILOWATT																																																																																																														
MCA	MINIMUM CIRCUIT AMPACITY																																																																																																														
MCB	MAIN CIRCUIT BREAKER																																																																																																														
MLO	MAIN LUGS ONLY																																																																																																														
N	NEUTRAL																																																																																																														
NEC	NATIONAL ELECTRICAL CODE																																																																																																														
NTS	NOT TO SCALE																																																																																																														
P	POLE																																																																																																														
PH	PHASE																																																																																																														
V	VOLT																																																																																																														
W	WIRE																																																																																																														
W	WITH																																																																																																														
	<p style="text-align: center;"><b>DRAWING INDEX</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>E-1</td><td>ELECTRICAL SYMBOLS, LOCATION MAP AND SITE PLAN</td></tr> <tr><td>E-2</td><td>BARN PLAN, SCHEDULES AND ONE LINE DIAGRAM</td></tr> </table>	E-1	ELECTRICAL SYMBOLS, LOCATION MAP AND SITE PLAN	E-2	BARN PLAN, SCHEDULES AND ONE LINE DIAGRAM	<p style="text-align: center;"><b>GENERAL NOTES</b></p> <p style="text-align: center;"><b>ELECTRICAL GENERAL NOTES</b></p> <ol style="list-style-type: none"> <li>① THE CONTRACTOR SHALL VISIT THE SITE &amp; BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS AND DIFFICULTY OF THE WORK INVOLVED. FAILURE TO DO SO WILL IN NO WAY RELIEVE THE CONTRACTOR FROM FURNISHING ALL NECESSARY MATERIALS &amp; LABOR FOR A COMPLETE INSTALLATION AT NO ADDITIONAL COST TO THE OWNER.</li> <li>② DRAWINGS SHOW EXISTING CONDITIONS IN DIAGRAMMATIC FORM. ALL EXISTING SIZES, LOCATIONS AND CONDITIONS ARE TO BE VERIFIED IN THE FIELD. CONTRACTOR IS TO COORDINATE ACTUAL ROUTING OF CONDUIT TO MISS ALL EXISTING PIPING, CONDUIT, DUCTWORK AND STRUCTURE ETC. IN THE FIELD. PROVIDE ALL NECESSARY ADDITIONAL FITTINGS, CONDUIT, LABOR ETC. AS REQUIRED TO COMPLETE THE PROJECT INCLUDING RELOCATION OF EXISTING CONDUIT IF NECESSARY TO INSTALL WORK.</li> <li>③ COORDINATE WITH THE OWNER TO MINIMIZE INTERFERENCE WITH THE OWNER'S USE OF THE FACILITY.</li> <li>④ CIRCUITING TICK MARKS ARE DIAGRAMMATIC AND ARE TO BE USED AS A GUIDE. THE ELECTRICAL CONTRACTORS SHALL INSTALL THE QUANTITY REQUIRED BY THE DEVICES THE CIRCUITS SERVE AND ALSO BASED ON THE ROUTING OF CONDUIT. PROVIDE ADDITIONAL WIRES AS NEEDED BY DEVICES, SWITCHES, SWITCH LEGS, ETC. REFER TO GENERAL WIRING NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION.</li> </ol>																																																																																																									
E-1	ELECTRICAL SYMBOLS, LOCATION MAP AND SITE PLAN																																																																																																														
E-2	BARN PLAN, SCHEDULES AND ONE LINE DIAGRAM																																																																																																														

REVISION	BY

DRAWINGS:  
ELECTRICAL PLAN, ONE  
LINE AND SCHEDULES

McHenry County Government Center  
Klehm Barn Electrical  
2200 N. Seminary Ave.  
Woodstock, IL



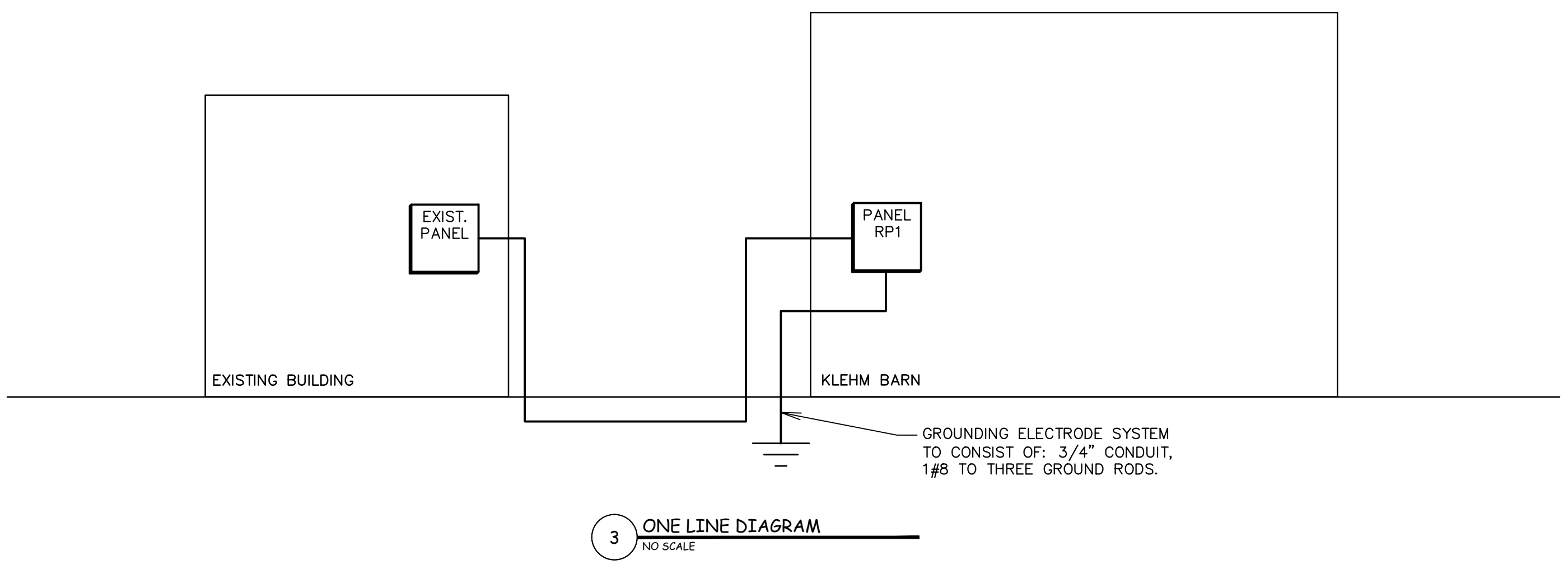
JOB:	3997
DATE:	01/17/12
SCALE:	NONE
DRAWN:	SOC
CHECKED:	CAE

SHEET  
**E.2**  
NORTH  
Bid Issue

DEVICE	FEEDER		BRANCH CIRCUIT		TOTAL VOLTAGE DROP
	VOLTAGE DROP	WIRE SIZE	MAX VOLTAGE DROP	WIRE SIZE	
RP1	0.44%	#6	0.54% (CKT 7)	#12	0.97%

FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
60	3/4" C, 2#6, #6N, #10C	RP1

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE

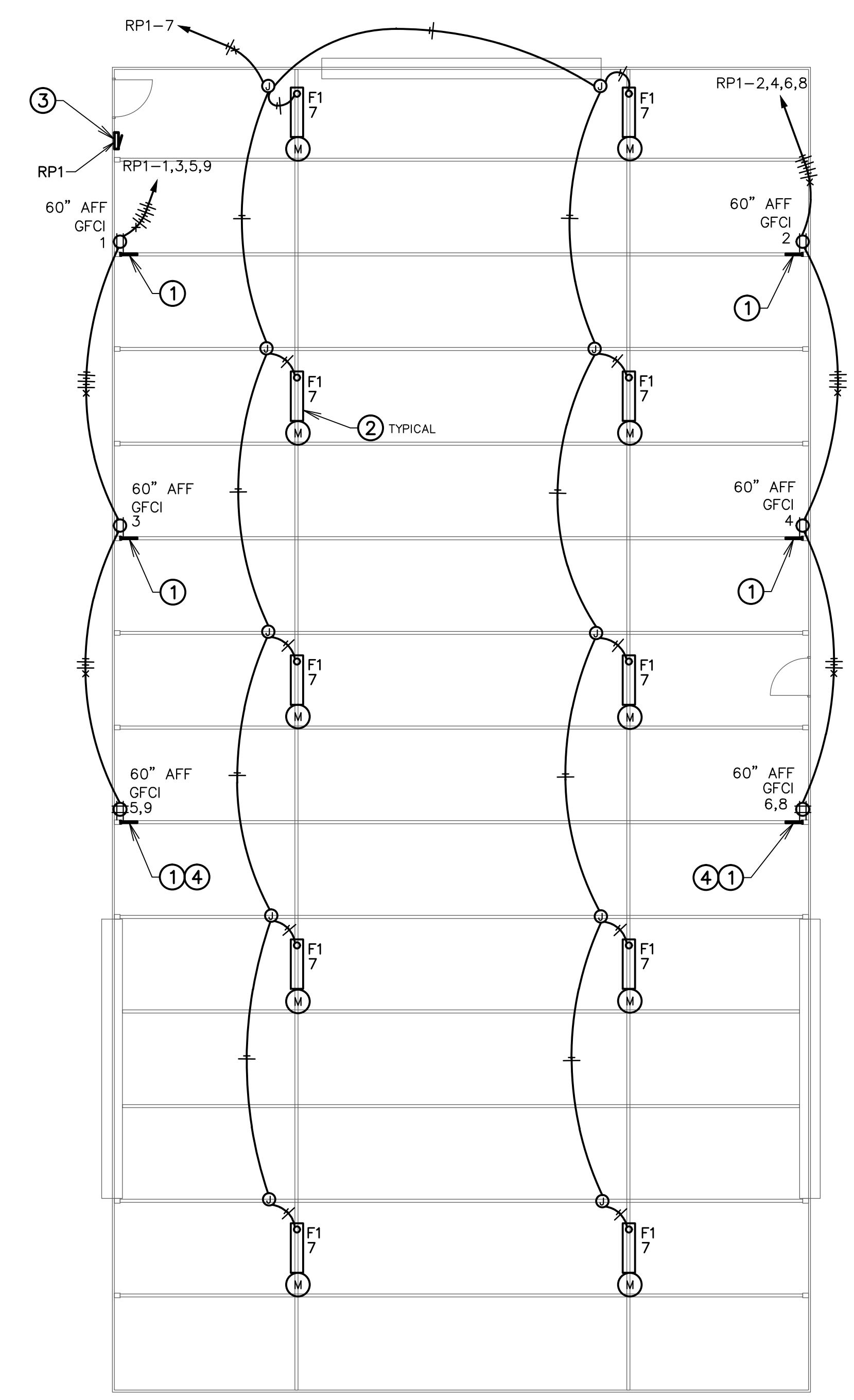


CKT # BKR		CIRCUIT DESCRIPTION	KVA LOAD		CKT # BKR		CIRCUIT DESCRIPTION	KVA LOAD	
A	B		A	B	A	B		A	B
1	20/1	RECEPTACLE	0.18		2	20/1	RECEPTACLE	0.18	
3	20/1	RECEPTACLE		0.18	4	20/1	RECEPTACLE		0.18
5	20/1	RECEPTACLE	0.36		6	20/1	RECEPTACLE	0.36	
7	20/1	JBOX, LIGHTING		0.64	8	20/1	RECEPTACLE		0.36
9	20/1	RECEPTACLE	0.36		10	20/1	SPACE	0	
11	20/1	SPACE	0		12	20/1	SPACE	0	
13	20/1	SPACE	0		14	20/1	SPACE	0	
15	20/1	SPACE	0		16	20/1	SPACE	0	
17	20/1	SPACE	0		18	20/1	SPACE	0	
19	20/1	SPACE	0		20	20/1	SPACE	0	
21	20/1	SPACE	0		22	20/1	SPACE	0	
23	20/1	SPACE	0		24	20/1	SPACE	0	
25	20/1	SPACE	0		26	20/1	SPACE	0	
27	20/1	SPACE	0		28	20/1	SPACE	0	
29	20/1	SPACE	0		30	20/1	SPACE	0	
			TOTAL KVA				1.44		1.36
		CONN. KVA	CALC. KVA				CONN. KVA	CALC. KVA	
LIGHTING		0.64	0.8 (125%)		CONTINUOUS		0	0 (125%)	
LARGEST MOTOR		0	0 (125%)		HEATING		0	0 (100%)	
OTHER MOTORS		0	0 (100%)		NONCONTINUOUS		0	0 (100%)	
RECEPTACLES		2.16	2.16 (50%>10)		KITCHEN EQUIP		0	0 (N/A)	
					NONCOIN/DIVERSE		0	0 (N/A)	
					TOTAL KVA		2.8	2.96	

Final directory shall indicate type of loads and incorporate Owner's final room designations (numbers) for each circuit.  
BALANCED PHASE AMPS 14.2

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	VOLTS	NOTE 1
F1		(2) F32T8 4100K	ENCLOSED 4' FLUORESCENT FIXTURE WITH MOTION SENSOR	FBB-1	CHAIN HUNG	LITHONIA #FEM 4 232 S2 BMPCL MVOLT DAY-BRITE #LWRE 232 UNV	120V 1P 2W	MOUNT SENSOR SWITCH #CMRB PDT10 LT LOW TEMP. MOTION SENSOR ON END OF EACH LIGHT FIXTURE

BALLAST TYPES:  
FBB-1: T8, Programmed Rapid Start, 120/277V, <10% THD, 0.88 - 0.95 Ballast Factor, Manufactured by Advance, Sylvania & GE Lighting.



1 BARN PLAN  
Scale: 1/8"=1'-0"

FLOOR PLAN NOTES

- HEAVY DUTY POWER REEL CORD MOUNTED 72" AFF. BOLT TO WOOD COLUMN WITH 1/4" DIAMETER X 2" LAG BOLTS. PRE-DRILL HOLE FOR LAG BOLT WITH 3/16" BIT. REEL CORD TO BE A REEL CRAFT #L45451237A, WITH TWO 20 AMP RECEPTACLES, #12 AWG CONDUCTORS AND CORD LENGTH SHALL BE 45' LONG.
- LIGHT FIXTURE SUSPENDED SO BOTTOM OF LIGHT FIXTURE LENS IS AT THE SAME HEIGHT AS THE BOTTOM OF THE TRUSS.
- MOUNT PANEL ON STRUT. THE STRUT CHANNELS SHALL BE MOUNTED VERTICALLY AND FASTENED TO HORIZONTAL WOOD FRAMING MEMBERS.
- INSTALL TWO CORD REELS AT THIS LOCATION ONE AT 66" AND ONE AT 90".