



NEW FERTILIZER FACILITY

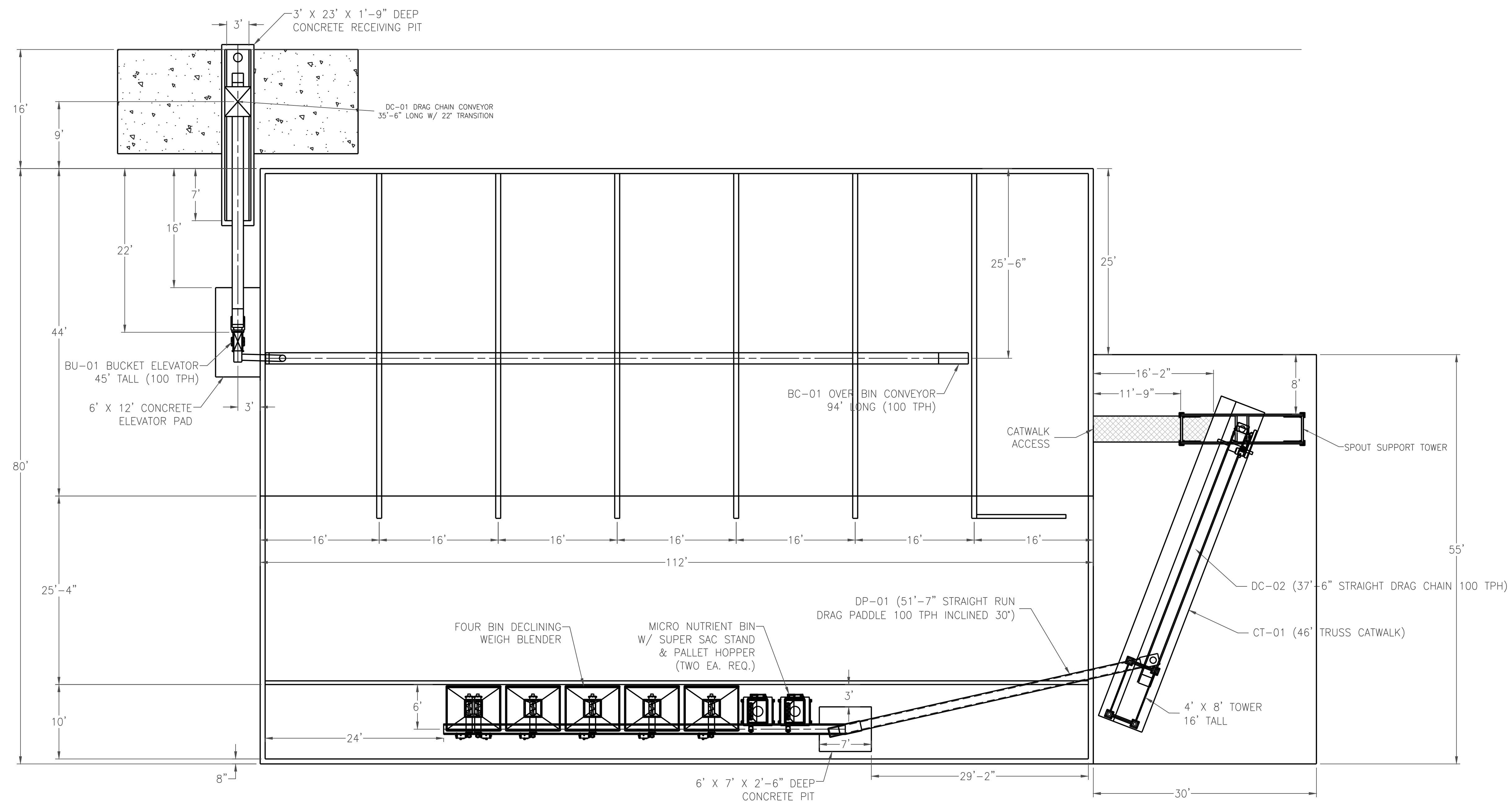
MFA AGRI SERVICES
311 N DRAKE ST
BERNIE , MO 63822
4/3/2012

ADDENDUM # 1

1. Equipment design is based on Ranco volumetric system. Attached are design drawings for use in preparing your proposal.
2. Receiving system:
Electrician will need to provide all electrical components including start/stops, motor starters, breakers, panels, wire and conduit.

Blend system:
Electrician will need to provide 240 volt single phase transformer, wire and conduit, panel protection, motor starters, scale cable, 18-2 shielded cable. These items should be called out on the electrical drawings.
3. For equipment electrical installation questions contact Matt Schuver - matts@rancofertiliservice.com at Ranco Fertilizer Service (office 712-283-2525)

REVISIONS		
DATE	NAME	DESCRIPTION
1/18/12	JAK	LOWERED LEG, ADDED A TRANSFER AUGER
1/19/12	JAK	REPLACED LEG WITH DRAG PADDLE
1/19/12	JAK	CHANGED CATWALK ACCESS ADDED DRAG CHAIN
3/1/12	JAK	CHANGED REC. ELEV., RAISED ELEVATOR



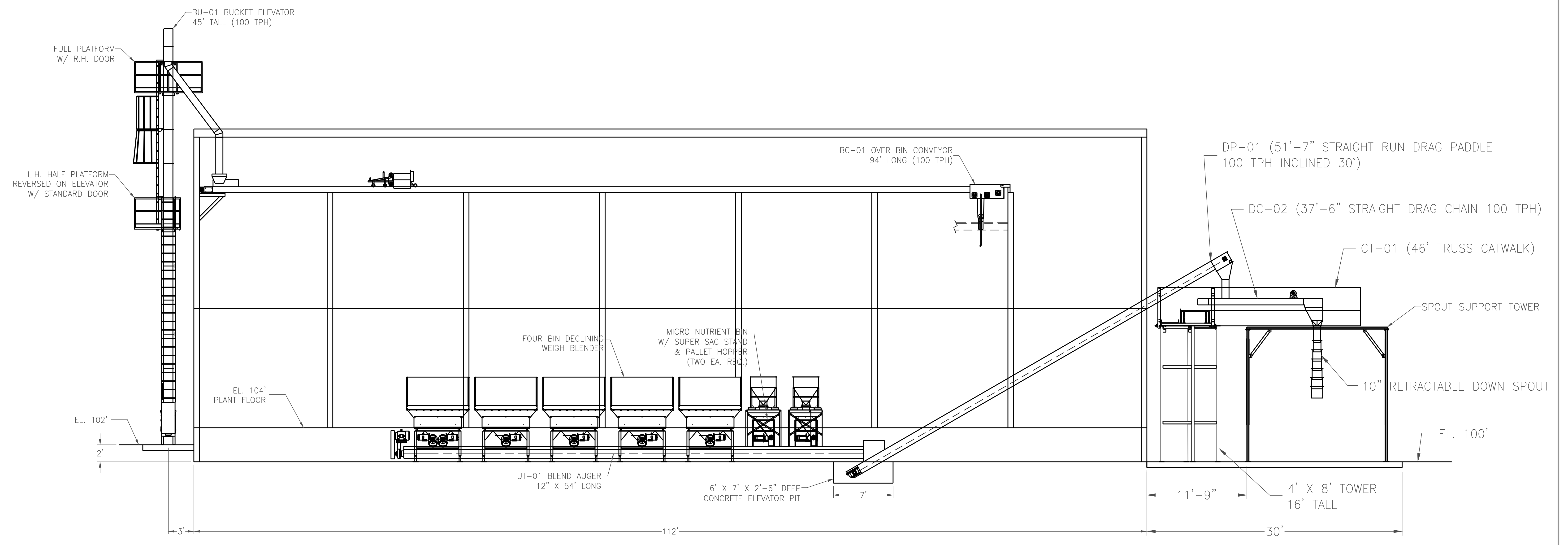
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RANCO
FERTISERVICE INC
 P.O. BOX 329 - 701 HIGHWAY
 SIOUX RAPIDS, IA 50585
 TELE: (712) 283-2525
 FAX: (712) 283-2303

MFA AGRI SERVICES
 BERNIE, MO

DRAWN BY: M.L. SPAULDING	SCALE: 1/8" = 1'-0"	DATE: 1-3-12	SHEET 1
CHECKED BY:	PLANT SIZE:	BERNIE MO	OF 3 SHEETS

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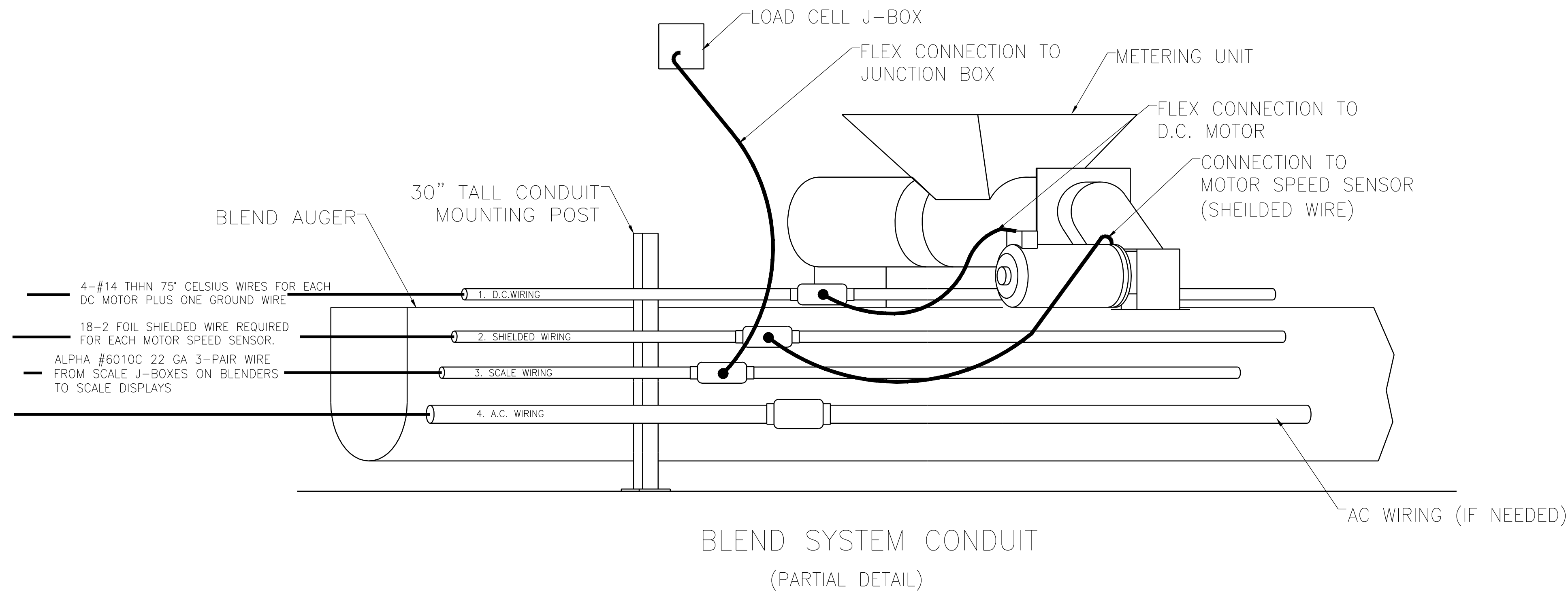
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MFA AGRI SERVICES
BERNIE, MO

DRAWN BY: M.L. SPAULDING	SCALE: 3/16" = 1'-0"	DATE: 1-3-12	SHEET 2
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REVISIONS		
DATE	NAME	DESCRIPTION
1-13-11	JLD	REVISED PRINTS

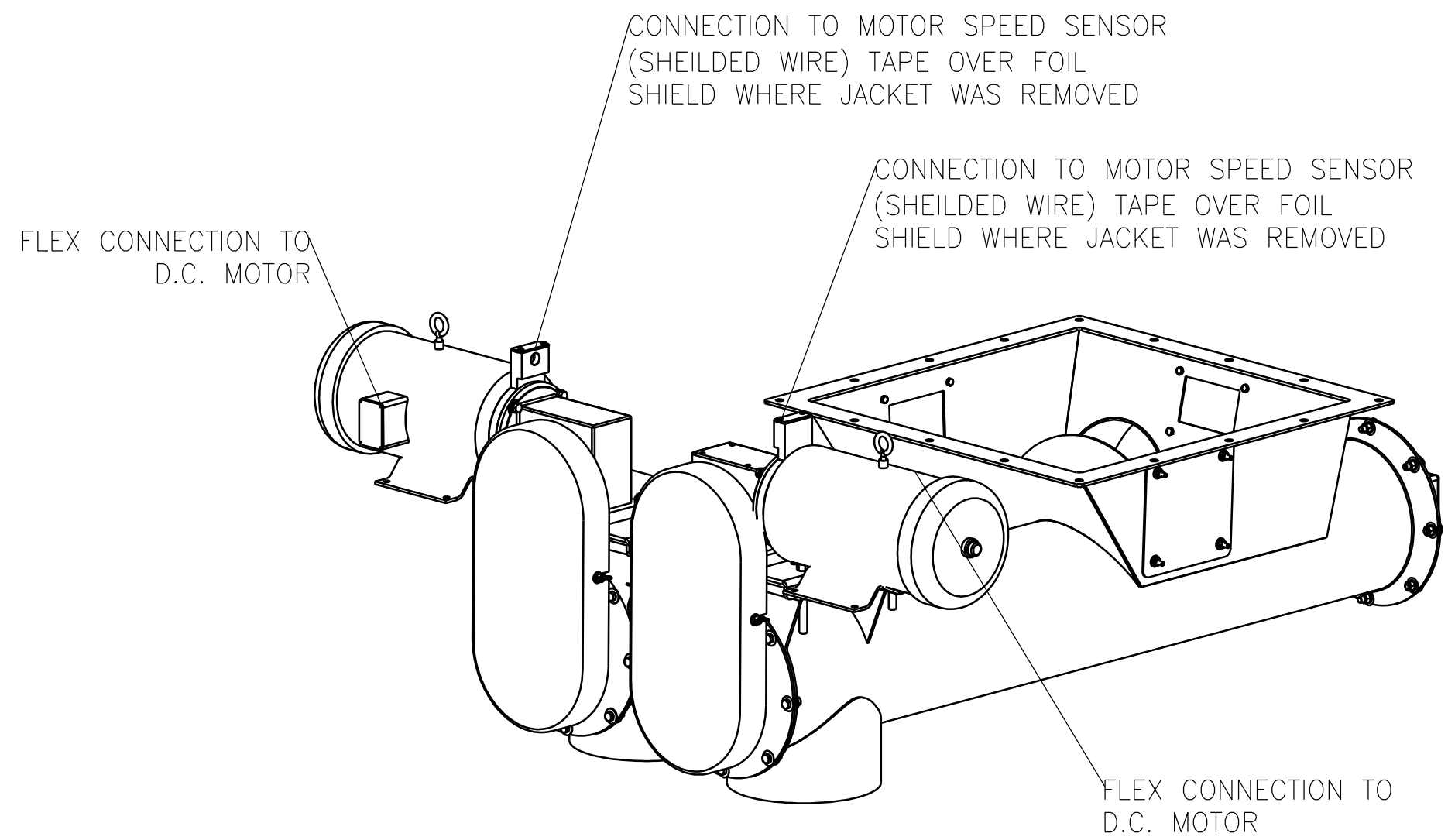


WIRE SPECS

- 18-2 FOIL SHIELDED WIRE
REFERANCE OLYMPIC 2886T
- 3-PAIR SHIELDED WIRE (SCALE WIRE)
REFERANCE ALPHA 6010C

AC SYSTEM REQUIREMENTS:

- RANCO WILL PROVIDE START/STOP OPERATORS FOR THE METER SCREWS, BLEND AUGER, & LOAD OUT EQUIPMENT ONLY. (LOCATED IN THE BLENDER CONTROL PANEL).
ELECTRICIAN SHALL SUPPLY START/STOP OPERATORS & ENCLOSURES NEEDED TO OPERATE ALL OTHER EQUIPMENT, ETC.
- ELECTRICIAN SHALL SUPPLY ALL CONDUIT AND WIRE NEEDED FOR CONTROL WIRING FROM AC START/STOP STATIONS AND FROM BLENDER CONTROL PANEL TO THE MOTOR STARTERS.
- ELECTRICIAN SHALL SUPPLY ALL MOTOR STARTERS, INCLUDING ANY SOFT STARTS OR REVERSING MOTOR STARTERS REQUIRED FOR THE EQUIPMENT. THE COILS FOR THE MOTOR STARTERS MUST BE 230 VAC.
- ELECTRICIAN IS RESPONSIBLE FOR ALL MOTOR PROTECTION. THERE IS NO MOTOR PROTECTION AHEAD OF ANY RANCO PROVIDED STARTERS.
- ELECTRICIAN SHALL SUPPLY ALL THE NECESSARY SAFETY DISCONNECTS.
- ELECTRICIAN SHALL SUPPLY ALL CONDUIT AND WIRING FROM THE MOTOR STARTERS TO THE EQUIPMENT MOTORS.
- [RANCO IS SUPPLYING THE AC MOTORS ONLY.] THE MOTORS WILL BE MOUNTED ON THE EQUIPMENT. THE ELECTRICIAN SHALL SUPPLY, INSTALL, AND CONNECT ALL THE REQUIRED ELECTRICAL ITEMS NEEDED TO OPERATE THE AC EQUIPMENT SAFELY AND PROPERLY.
- PERMITS, INSPECTIONS, AND CONFORMANCE TO ALL APPLICABLE CODES IS THE ELECTRICIANS RESPONSIBILITY.



CONDUITS AND WIRES REQUIRED FOR THE TANK SYSTEM:

- PVC CONDUIT, FLEX, AND CONDUIT HANGERS RECOMMENDED.
 - PVC EXPANSION JOINTS RECOMMENDED. SEE LOCAL CODES FOR SPACING.
 - LOCAL ELECTRICIAN SHALL SUPPLY ALL CONDUITS AND WIRES FROM THE BLENDER CONTROL PANEL TO THE COMPONENTS OF THE BLEND SYSTEM.
- THESE CONDUITS AND THE WIRES NEEDED IN EACH CONDUIT ARE:
- #1- ONE CONDUIT FOR DC WIRES. ELECTRICIAN SHALL SUPPLY ONE GROUND WIRE, AND 4-#14 THHN WIRES FOR EACH DC MOTOR.
 - #2- ONE CONDUIT FOR SHIELDED WIRES. [ELECTRICIAN WILL PROVIDE THE 18-2 FOIL SHIELDED WIRE (REFERENCE OLYMPIC 2886T) REQUIRED FOR EACH D.C. MOTOR SPEED SENSOR. TAPE OVER FOIL SHIELD WHERE JACKET WAS REMOVED]
 - #3- ONE CONDUIT FOR A.C. MOTOR WIRING. ELECTRICIAN SHALL SUPPLY THE WIRES FROM THE MOTOR STARTERS TO EACH MOTOR.
 - #4- ONE CONDUIT FOR LOAD CELL SCALE WIRES

DC SYSTEM REQUIREMENTS:

- A 230 VAC SINGLE PHASE FUSED POWER SUPPLY IS REQUIRED FOR THE BLENDER CONTROL PANEL. ELECTRICIAN IS RESPONSIBLE FOR CONDUIT, WIRE, AND FUSE PROTECTION ON THIS 230VAC SINGLE PHASE POWER SUPPLY.
- [A DOOR DISCONNECT SWITCH IS PROVIDED IN THE BLENDER CONTROL PANEL.] INCOMING 230 VAC POWER CONNECTS TO THE DOOR DISCONNECT LUGS L1 AND L2, GROUND LUG, AND NEUTRAL LUG.
- LOCAL ELECTRICIAN IS RESPONSIBLE FOR PROPER GROUNDING OF BLENDER CONTROL PANEL TO THE SINGLE PHASE BREAKER PANEL THROUGH THE USE OF THE GROUNDING LUG PROVIDED IN THE BLENDER CONTROL PANEL.
- RANCO'S MOTOR CONTROL UNITS RECTIFY POWER FROM AC TO DC. EACH DC MOTOR REQUIRES 10 AMPS OF 230 VAC SINGLE PHASE.
- DO NOT INSTALL SAFETY DISCONNECTS AT THE D.C. MOTORS. MAJOR DAMAGE WILL OCCUR TO THE MOTOR CONTROL UNIT.

EXAMPLE
1 DC MOTOR = 10 AMPS OF 230 VAC SINGLE PHASE.
6 DC MOTORS X 10 AMPS = 60 AMPS OF 230 VAC SINGLE PHASE.

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PROPERTY OF RANCO FERTISERVICE INC P.O. BOX 329 - 701 HIGHWAY SIOUX RAPIDS, IA 50585 TELE: (712) 283-2525 FAX: (712) 283-2303		WEAKLEY FARMERS CO-OP MARTIN, TN.	
DRAWN BY: BARRY C.	SCALE: NTS	DATE: 9/13/10	SHEET 2E
CHECKED BY:	PLANT SIZE:	Martin TN	OF 3 SHEETS

REVISIONS		
DATE	NAME	DESCRIPTION
1-13-11	JLD	REVISED PRINTS

NOTES AC SYSTEM:

1. ELECTRICIAN SHALL PROVIDE ALL MOTOR STARTERS, INCLUDING ANY SOFT STARTS OR REVERSING MOTOR STARTERS REQUIRED BY OTHER EQUIPMENT.

NOTES DC SYSTEM:

1. LOCAL ELECTRICIAN IS RESPONSIBLE FOR CONDUIT, WIRE, AND FUSE PROTECTION ON THE 230VAC SINGLE PHASE AC POWER SUPPLIED TO THE BLENDER CONTROL PANEL.

2. DOOR DISCONNECT SWITCH

- A. - A DOOR DISCONNECT SWITCH IS PROVIDED IN THE BLENDER'S MAIN ELECTRICAL PANEL. INCOMING POWER CONNECTS TO THE DOOR DISCONNECT LUGS L1 AND L2 AND GROUND LUG. (AS WELL AS NEUTRAL LUG IF 110V POWER IS NEEDED)
NOTE: L1, L2 AND L3 WILL BE USED IF 120/208 VAC IS REQUIRED

- B. - LOCAL ELECTRICIAN IS RESPONSIBLE FOR PROPER GROUNDING OF BLENDER CONTROL PANEL TO SINGLE-PHASE BREAKER PANEL THROUGH THE USE OF THE GROUNDING LUG PROVIDED IN THE BLENDER CONTROL PANEL.

- C. - NO FUSE PROTECTION IS INCLUDED IN RANCO PANELS. LOCAL ELECTRICIAN SHALL PROVIDE A FUSED 230 VAC SINGLE PHASE POWER SUPPLY TO RANCO PANEL.

3. RANCO'S MOTOR CONTROL UNIT RECTIFIES POWER FROM AC TO DC. EACH DC MOTOR REQUIRES 10 AMPS OF 230 VAC SINGLE PHASE.

EXAMPLE

- 1 DC MOTOR = 10 AMPS OF 230 VAC SINGLE PHASE.
- 14 DC MOTORS X 10 AMPS = 140 AMPS OF 230 VAC SINGLE PHASE.

4. LOCAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRE FROM BLENDER TO SCALE DISPLAY ENCLOSURE AND FROM SCALE DISPLAY ENCLOSURE TO BLENDER CONTROL PANEL IN OFFICE.

5. DO NOT INSTALL SAFETY DISCONNECTS AT THE D.C. MOTORS. MAJOR DAMAGE WILL OCCUR TO THE MOTOR CONTROL UNIT.

ELECTRICAL SERVICE NOTES:

1. THE TOTAL OF ALL THE AC MOTORS PROVIDED BY RANCO IS 60 HP OR 73 AMPS OF 460 VAC 3-PHASE.

2. THE TOTAL OF ALL THE DC MOTORS PROVIDED BY RANCO IS 140 AMPS OF 230 VAC SINGLE PHASE. (RECTIFIERS SUPPLIED BY RANCO AS PART OF BLENDER CONTROL PANEL)

3. THESE AMPERAGE TOTALS ARE FOR ONLY THE BLENDING (AU-01&BC-01) EQUIPMENT/MOTORS RANCO IS PROVIDING. THESE TOTALS DO NOT INCLUDE ANY ALLOWANCE FOR FACILITY LIGHTING, HEATING, A/C, VENTILATION, OTHER PLANT EQUIPMENT, ETC. THESE ADDITIONAL ELECTRICAL LOADS MUST BE CALCULATED AND ADDED IN BY OTHERS BEFORE TOTAL SERVICE LOAD IS DETERMINED.

4. ELECTRICIAN IS RESPONSIBLE FOR CUTTING THE FOIL & BARE WIRE OFF AND TAPE THE END OF THE 18-2 SHIELDED CABLE USED FOR MAG PICKUPS AT THE MOTOR TERMINATION.

5. RANCO'S DRAWINGS ONLY ILLUSTRATE THE MINIMUM ELECTRICAL REQUIREMENTS AND SUGGESTED LOCATIONS OF THESE ITEMS. THESE ARE RECOMMENDATIONS ONLY AND ARE TO BE CONFIRMED BY ELECTRICIAN AND THE CUSTOMER.

6. PERMITS, INSPECTIONS, AND CONFORMANCE TO ALL APPLICABLE CODES IS THE ELECTRICIANS OR CUSTOMERS RESPONSIBILITY.

NEUTRAL CONNECT - USED ONLY IF 110V IS REQUIRED FOR OTHER EQUIPMENT

MAIN POWER FEED CONDUIT - 230 VAC SINGLE PHASE FUSED POWER SUPPLY FROM MAIN POWER SUPPLY PANEL TO BE SUPPLIED BY LOCAL CONTRACTOR

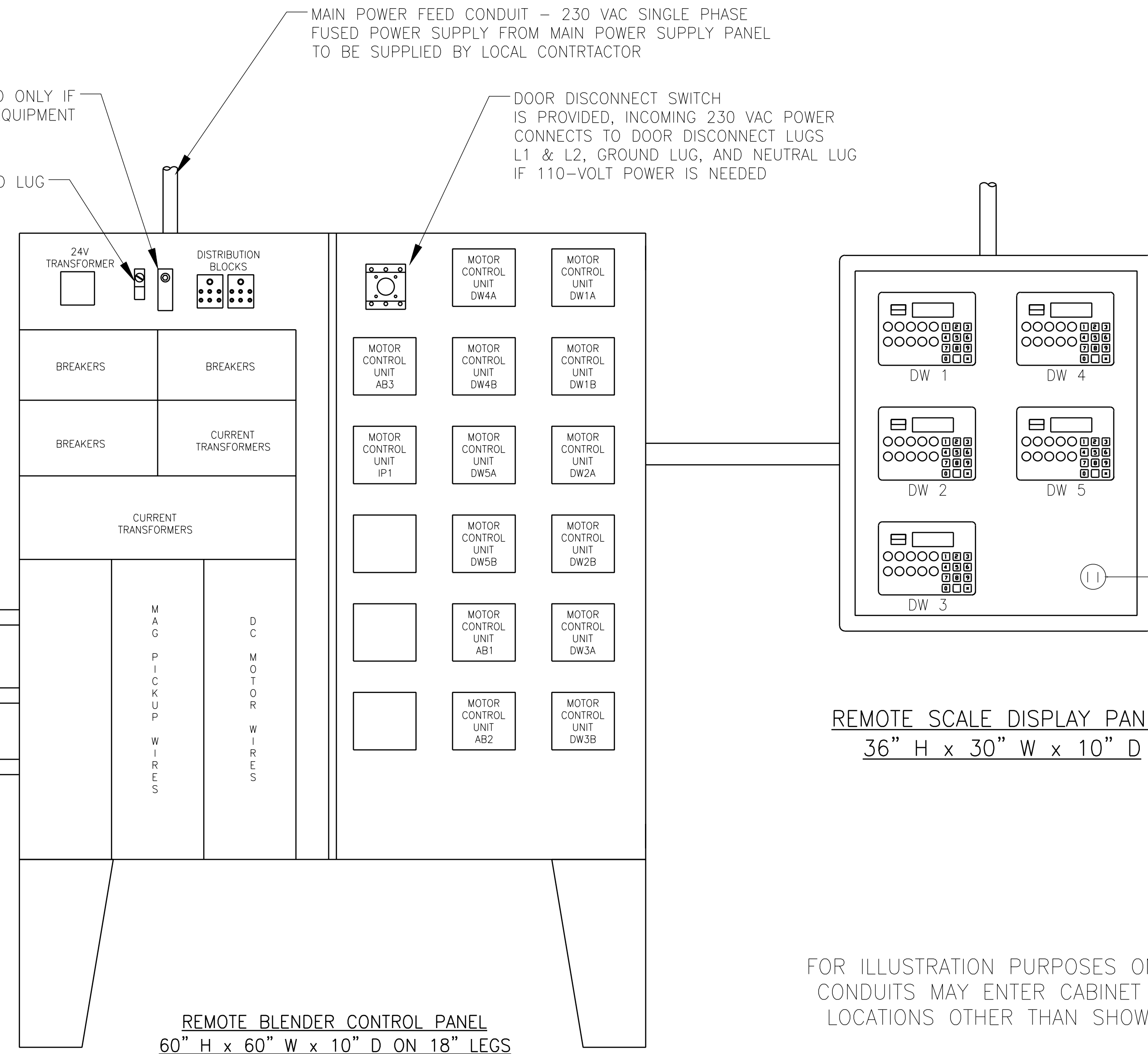
DOOR DISCONNECT SWITCH IS PROVIDED, INCOMING 230 VAC POWER CONNECTS TO DOOR DISCONNECT LUGS L1 & L2, GROUND LUG, AND NEUTRAL LUG IF 110-VOLT POWER IS NEEDED

GROUND LUG

LOCAL ELECTRICIAN SHALL SUPPLY CONDUIT AND WIRE TO MOTOR STARTERS

LOCAL ELECTRICIAN SHALL SUPPLY CONDUIT AND SHIELDED WIRES. 18-2 FOIL SHIELDED WIRE REQUIRED FOR EACH DC MOTOR SPEED SENSOR.

LOCAL ELECTRICIAN SHALL SUPPLY CONDUIT AND WIRES FOR DC MOTORS 4-#14 THHN 75° CELSIUS WIRES FOR EACH DC MOTOR AND ONE GROUND WIRE.



LOCAL ELECTRICIAN TO SUPPLY 20A 110VAC SERVICE TO SCALE DISPLAY PANEL.

REMOTE SCALE DISPLAY PANEL
36" H x 30" W x 10" D

REMOTE BLENDER CONTROL PANEL
60" H x 60" W x 10" D ON 18" LEGS

FOR ILLUSTRATION PURPOSES ONLY
CONDUITS MAY ENTER CABINET IN
LOCATIONS OTHER THAN SHOWN

FOR ILLUSTRATION PURPOSES ONLY
CONDUITS MAY ENTER CABINET IN
LOCATIONS OTHER THAN SHOWN

WIRE SPECS

18-2 FOIL SHIELDED WIRE
REFERENCE OLYMPIC 2886T

3-PAIR SHIELDED WIRE (SCALE WIRE)
REFERENCE ALPHA 6010C

NOTICE:

THESE ELECTRICAL DRAWINGS ARE PROVIDED AS A COURTESY BY RANCO FERTISERVICE, INC. TO ASSIST THE ELECTRICAL CONTRACTOR IN DETERMINING THE ELECTRICAL REQUIREMENTS FOR A SITE. THE INFORMATION CONTAINED IN THIS DRAWING IS THE MINIMUM SUGGESTED FOR THE EQUIPMENT PROVIDED BY RANCO FERTISERVICE, INC. ONLY AND IN NO WAY IS TO BE CONSTRUED OR INFERRED THAT THIS REPRESENTS THE TOTAL ELECTRICAL REQUIREMENTS FOR THIS PARTICULAR SITE. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO CALCULATE ALL ELECTRICAL LOADS FOR THE ENTIRE FACILITY (INCLUDING RANCO FERTISERVICE EQUIPMENT) AND TO SIZE ALL WIRING, CONDUIT AND RELATED COMPONENTS ACCORDINGLY.

NOTE: EQUIPMENT SIZES AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. RANCO FERTISERVICE ASSUMES NO LIABILITY OR RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

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WEAKLEY FARMERS CO-OP
MARTIN, TN.

DRAWN BY: BARRY C.	SCALE: NTS	DATE: 9/13/10	SHEET 3E
CHECKED BY:	PLANT SIZE:	Martin TN	OF 3 SHEETS