GROUNDING ELECTRODE IN PERIMETER GROUNDING SYSTEM AROUND MALSR SHELTER

2 AWG COPPER GROUNDING ELECTRODE CONDUCTOR

2 AWG GREEN INSULATED COPPER GROUND

THREE 3/O AWG TYPE U.S.E. CABLES

3-WIRE SERVICE LATERAL TO POWER COMPANY'S TRANSFORMER (25KVA, PRIMARY TO 120/240V, SINGLE PHASE, PAD-MOUNTED)

GND
SZN
M
METER BASE

6 AWG GREEN
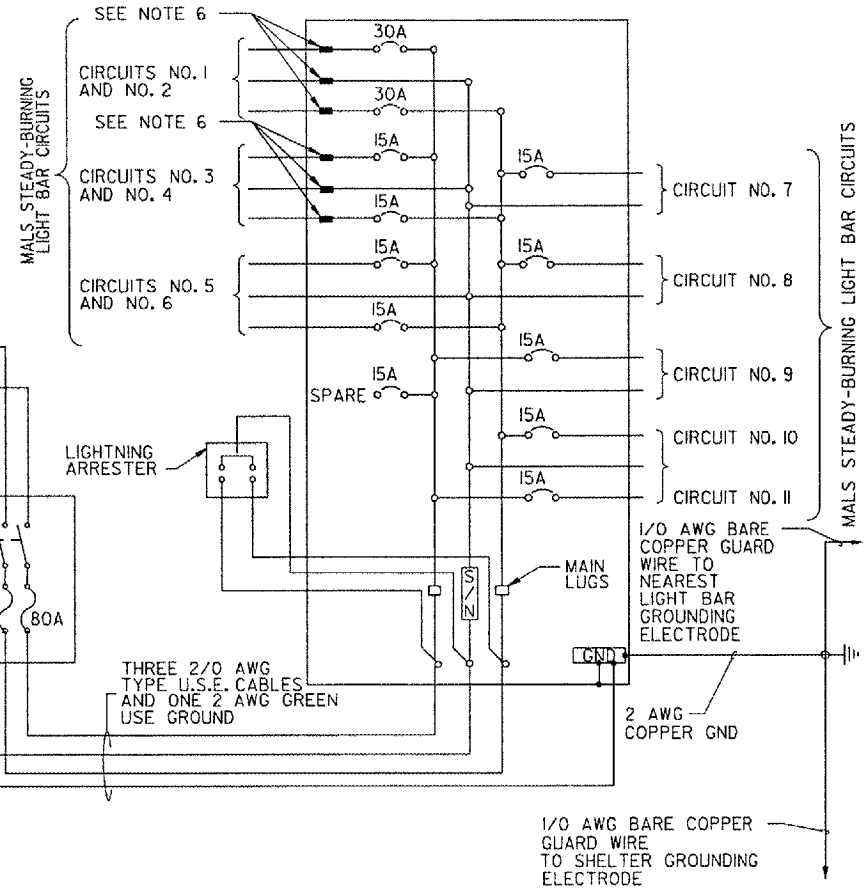
FOUR 4 AWG THWN AND 6 AWG GREEN

MALS POWER DISTRIBUTION PANEL
100A, 120/240V, 3-WIRE, S/N PANELBOARD, MAIN LUGS, SQUARE D CAT. NO. NQOD12L100CU WITH QOB STYLE BREAKERS IN A NEMA 3R PANEL ENCLOSURE, SQUARE D CAT. NO. MH32WP. SEE MALS POWER DISTRIBUTION PANEL SCHEDULE.

SEE NOTE 6

30A

CIRCUITS NO.1 AND NO.2
SEE NOTE 6
30A

CIRCUITS NO.3 AND NO.4
15A   15A   CIRCUIT NO. 7

CIRCUITS NO.5 AND NO.6
15A   15A   CIRCUIT NO. 8
15A

SPARE   15A   CIRCUIT NO. 9
15A

15A   CIRCUIT NO. 10

15A   CIRCUIT NO. 11

MALS STEADY-BURNING LIGHT BAR CIRCUITS

SERVICE ENTRANCE DISCONNECT SWITCH
HEAVY DUTY, 240 VAC, 2-WIRE, 200A, SQUARE D CAT NO. H224AWK FUSED AT 200A WITH DUAL-ELEMENT BUSSMANN FUSETRON FUSES. SEE NOTE 7.

G N
SZN
200A

THREE 3/O AWG THWN AND 2 AWG THWN GREEN GROUND

FOUR 2 AWG THWN ONE 6 AWG GROUND

GND

2 AWG GREEN WITH YELLOW STRIPE, DIRECTLY TO GROUNDING ELECTRODE

GND. GND. LUG

GND RING AT SHELTER

H2 HI H3 3 SH SM SL H M N L2 LI

INPUT POWER
1 LI
2 N
3 L2

REMOTE INPUT
1 120VAC
2 SPARE
3 LOW
4 MED
5 HIGH
6 FL CONT
7 FL ON
8 NEUT.
9 SPARE

MALSR CONTROL CABINET MULTI ELECTRIC TYPE FA-9994

MASTER TIMER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

CONFIRM TERMINAL NUMBERING WITH MANUFACTURER

THREE 4 AWG THWN AND 6 AWG THWN GREEN GROUND

15 KVA MALS TRANSFORMER

GND

EI
HI H2 H3 1 2 3 4 5 6 7 8

X1 X2 X3
SEE NOTE 5.

6 AWG GREEN PER NOTE 4

MALS DISCONNECT SWITCH
SQUARE D CAT NO H223AWK WITH 80A BUSSMANN FUSETRON FUSES. SEE NOTE 7.

GND
SZN
80A

LIGHTNING ARRESTER

MAIN LUGS

SZN

1/O AWG BARE COPPER GUARD WIRE TO NEAREST LIGHT BAR GROUNDING ELECTRODE

GND

2 AWG COPPER GND

THREE 2/O AWG TYPE U.S.E. CABLES AND ONE 2 AWG GREEN USE GROUND

1/O AWG BARE COPPER GUARD WIRE TO SHELTER GROUNDING ELECTRODE

INSTALL 14 AWG THWN JUMPERS

FIVE 14 AWG THWN SOLID

AC POWER ARRESTER PER SPECIFICATIONS

GND

125A, 2 P

20A   2   INT. LTS.
20A   4   REC.
RECEPTACLES   5   20A   15A   6   EX. LTS.
SPARE   7   20A   10A   8   L-854
SPARE   9   20A   15A   10   SPARE
SPARE   13   20A   15A   14   SPARE
20A   30A
HVAC UNIT   15   16
SPACE   27   28
SPACE   29   30

SHELTER POWER PANEL
225A, 120/240V, 3-WIRE, S/N PANELBOARD, MAIN LUGS ONLY SQ D CAT. NO. NQOD30L225CU AND QOB STYLE BREAKERS IN A SURFACE-MOUNTED NEMA 1 ENCLOSURE, 32"H X 20"W X 5 3/4"D, SQ D CAT. NO. MH32.

AIR-GROUND L-854 RECEIVER/CONTROLLER MODEL RC-1T5A

TB1
CONTROL 1
CONTROL 2
CONTROL 3
120 VAC
NEUTRAL
GND LUG

MALSR DISCONNECT SWITCH
SQUARE D CAT. NO. H223AWK WITH 100A BUSSMAN FUSETRON FUSES. SEE NOTE 7.

GND
SZN
100A

THREE 2 AWG THWN AND 6 AWG THWN GREEN GROUND

THREE 2AWG THWN AND 6AWG THWN GREEN GROUND

THREE 2AWG THWN AND 6AWG THWN GREEN GROUND

THREE 2 AWG, TYPE U.S.E. FLASHER POWER CABLES

6 PR 19 AWG SHIELDED FLASHER CONTROL CABLE

THREE 4 AWG, TYPE U.S.E. POWER CABLES TO REMAINING FLASHERS

6 PR 19 AWG SHIELDED FLASHER CONTROL CABLE TO REMAINING FLASHERS

1/O AWG BARE COPPER GUARD WIRE 10" ABOVE POWER AND CONTROL CABLES IN TRENCH BETWEEN STATIONS

H M B 7 6 5 4 3 2 1 TB2
TR5
1 2 3 4 TB1
EI
L1 N L2

JB-2 BOX

10 AWG THWN GREEN GND

10 AWG THWN
14 AWG THWN

+ - H M TR L1 N L2

INDIVIDUAL FLASHER CONTROL CABINET

EI

N TR HV 2 1

14 AWG   3000V WHT
18 AWG   3000V
14 AWG   3000V BLK
16 AWG   3000V

CONFIRM WIRING WITH RAIL MANUFACTURER INCLUDE GRND. WIRE

SPADE LUG CONNECTION (TYPICAL OF 5)
L-5000 JUNCTION BOX AT TOP OF TOWER. SEE NOTE 3.

RAIL FLASHER UNIT

FLASHER NO. 5

NOTES: CONSTRUCTION SHALL BE DONE SUCH THAT:
1. THE FLASHERS FIRE IN SEQUENCE TOWARD THE RUNWAY, STARTING AT THE OUTERMOST UNIT. CONTROL TERMINALS M (MEDIUM INTENSITY STEP) AND H (HIGH INTENSITY STEP) ARE COMMON FOR ALL FLASHERS. EACH FLASHER REQUIRES AN INDIVIDUAL CONDUCTOR FOR THE TRIGGER CIRCUIT.

2. WHERE THIS DRAWING DIFFERS FROM THE MANUFACTURER'S INSTRUCTION BOOK, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION.

3. THE WIRES RUNNING FROM EACH FLASHER INDIVIDUAL CONTROL CABINET (ICC) TO THE FLASHER SPADE LUG CONNECTORS ARE 1/C, 3000V WIRES WHICH COME WITH THE FLASHER EQUIPMENT. IF ADDITIONAL WIRE QUANTITIES ARE NEEDED, THE CONTRACTOR SHALL FURNISH THEM. THE WIRES MUST MEET MILITARY SPECIFICATION MIL-16878/3. THE WIRES SUPPLIED WITH THE EQUIPMENT HAVE FEMALE SPADE LUGS. THE FLASHER LIGHT UNITS COME WIRED WITH FIVE 48"-LONG PIGTAILS HAVE MALE SPADE LUGS. WIRE THE FLASHER PER MANUFACTURER INSTRUCTIONS.

NOTES ARE CONTINUED.

NOTES: CONTINUED:

4. 6 AWG GREEN INSULATED GROUNDING CONDUCTOR IS INSTALLED IN SCHEDULE 40 PVC CONDUIT TO A PERIMETER GROUNDING ROD DIRECTLY FROM MALS TRANSFORMER.

5. CONNECTION IS MADE TO THE TRANSFORMER TAP WHICH GIVES THE VOLTAGE CLOSEST TO 120/240V AT THE MALS DISTRIBUTION PANEL WHEN LAMPS ARE BURNING AT THE HIGH BRIGHTNESS STEP.

6. THE #2/O AWG MALS THRESHOLD BAR CABLE SHALL BE SPLICED TO AN 8 AWG STRANDED CABLE, TO FIT THE LUGS OF THE 30A BREAKER. THE #4 AWG MALS CABLE SHALL BE SPLICED TO AN 8 AWG STRANDED CABLE TO FIT THE LUGS OF THE 15 AMP BREAKER. AN APPROVED SPLICE IS A TAPE-WRAPPED SPLICE, USING COMPACT COMPRESSION CONNECTORS DESIGNED TO TAP SMALL LIGHTING WIRES FROM SECONDARIES. BURNDY CRIMPIT STREET LIGHTING TAP, CAT. NO. YPC26R8U IS APPROVED FOR #2/O AWG TO #8 AWG APPLICATION AND CAT. NO. YPC2A8U IS APPROVED FOR #4 AWG TO #8 AWG APPLICATION.

7. A FIELD-INSTALLED SOLID NEUTRAL KIT IS INSTALLED IN THIS DISCONNECT SWITCH.

MASTER FILE: WIRING DIAGRAM FOR MALSR TYPE FA-9994.DGN

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
GREAT LAKES REGION   CHICAGO, ILLINOIS

MALSR
EQUIPMENT WIRING DIAGRAM FOR TYPE FA-9994
RUNWAY 02

DEKALB   DEKALB TAYLOR MUNICIPAL AIRPORT   IL

REVIEWED BY	SUBMITTED BY		APPROVED BY

PROJ. ENGR.
DATE   TAD
DRAWN TAD
DRAWN EGS

ISSUED BY
CHICAGO NAS IMPLEMENTATION CENTER

PLATFORM MGR.
DATE   JCN

DRAWING NO.   REV
DKB-D-MALSR02-E02

WIRING IS BASED ON MULTI ELECTRIC MFG. MALSR. CONFIRM WIRING WITH THE RESPECTIVE MALSR MANUFACTURER.