CONSTRUCTION PLANS - AS

HAINES AND SKAGWAY AIRPORTS

CONSTRUCTION OF AIRPORT LIGHTING SYSTEMS

S.C. NO. 81-706-07 D70821

1982

AS-BUILT PLAN

Consolidated Enterprises

1982-83

Project Engineer - Larry Geise

Modifications to Wiring and Electrical Enclosure made in 1987 under Haines Airport Improvement project.

SPONSORED BY THE STATE OF ALASKA

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES
DIVISION OF AVIATION - DESIGN & CONSTRUCTION

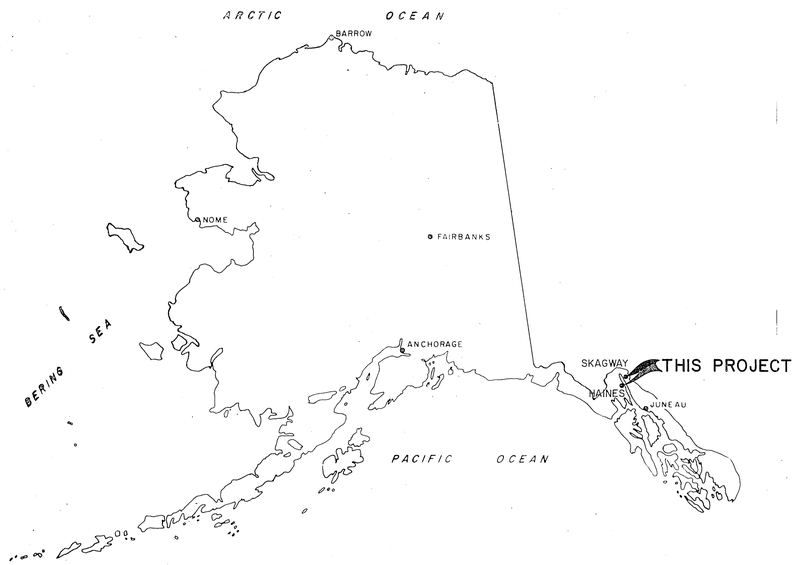
APPROVED _____ DATE 3-3-82
CHIEF ENGINEER

APPROVED _____ DATE 3-3-82
DIRECTOR

WINCE - CORTHELL - BRYSON
CONSULTING ENGINEERS

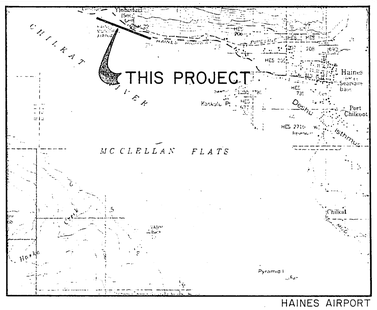
ARCTIC CONSULTING ENGINEERS

COVER DESIGN BY BILL ELLIS

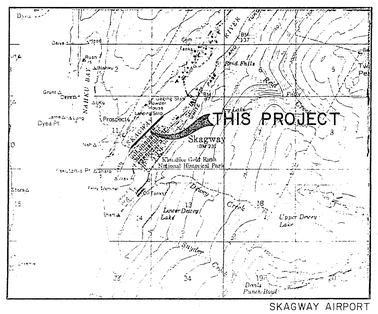


LOCATION MAP

NOT TO SCALE



HAINES AIRPORT



SKAGWAY AIRPORT

VICINITY MAPS

SCALE 1" = 1 MILE

ESTIMATED QUANTITIES

NO.	ITEM	QUANTITY (HAINES)	QUANTITY (SKAGWAY)	UNIT
100	MOBILIZATION & DEMOBILIZATION	1	1	JOB
125	ENGINEER'S VEHICLE	1	1	JOB
200b	CLEARING	1	1	JOB
200f	CLEARING & GRUBBING	1	0	JOB
1000g	MEDIUM INTENSITY RUNWAY LIGHT L861	60	0	EACH
1000h	MEDIUM INTENSITY TAXIWAY LIGHT L861T	6	0	EACH
1000i	NEW HANDHOLE L857	20	12	EACH
1000l	2" PVC CONDUIT	10,840	0	LIN. FT.
1000q	2" F.E.C. CONDUIT	1125	3155	LIN. FT.
1000m	UNDERGROUND NO. 8 I/C CABLE, 5KV, IN CONDUIT	10,600	0	LIN. FT.
1000n	No. 8 BARE COPPER GROUND CONDUCTOR	12,260	3400	LIN. FT.
1010a	8 FOOT LIGHTED WINDCONE	1	0	JOB
1040Aa	STRUCTURE, ELECTRICAL WORK	1	1	JOB
1060Aa	2 UNIT VASI W/O POWER/CONTROL UNIT	2	0	EACH
1060Ab	2 UNIT VASI WITH POWER/CONTROL UNIT	0	2	EACH
1060Ac	2 LIGHT REILS SYSTEM L849	0	2	EACH
1060Ad	2 LIGHT REILS SYSTEM L859	1	0	EACH
1060Ae	VASI AIMING INSTRUMENT SET	1	1	EACH
S-1	TRAFFIC CONES WITH REFLECTOR BANDS	42	47	EACH
S-2	REPLACE PAVEMENT	1	1	JOB
S-3	SPECIAL TRENCH BACKFILL MATERIAL	300	200	LIN. FT.

INDEX

SHEET TITLE	SHEET NO.
COVER	1
MAPS, QUANTITIES, INDEX	2
LEGEND, LIGHTING DETAILS	3
DETAILS - VASI	4
RUNWAY LIGHTING PLAN - HAINES	5
RUNWAY LIGHTING DETAILS - HAINES	6
ELECTRICAL DETAILS - HAINES	7
ENCLOSURE DETAILS - HAINES & RETROREFL. MARKER DETAIL	8
WIRING DETAILS - HAINES	9
RUNWAY LIGHTING PLAN - SKAGWAY	10
ELECTRICAL DETAILS - SKAGWAY	11
WIRING DETAILS - SKAGWAY	12

BY	DATE	REVISIONS
PB	4/7/82	ON QUANTITIES ADDED ITEM NO.125,
		MINOR CORRECTIONS TO 100, 1000G,
		H,L,Q,M,N,& S-1. ADDED NEW
		MARKER DETAIL ON SHEET 8.

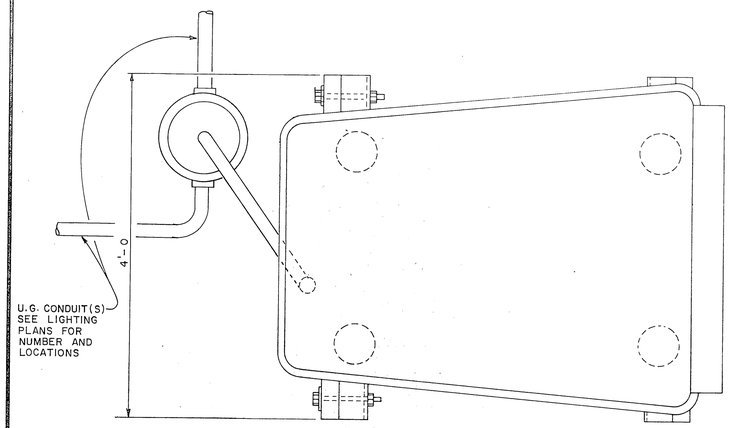
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

HAINES - SKAGWAY
RUNWAY LIGHTING SYSTEMS
MAPS - QUANTITIES - INDEX

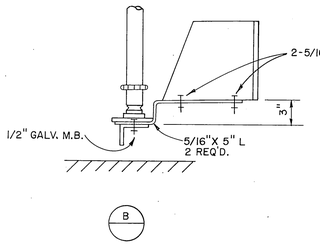
APPROVED
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

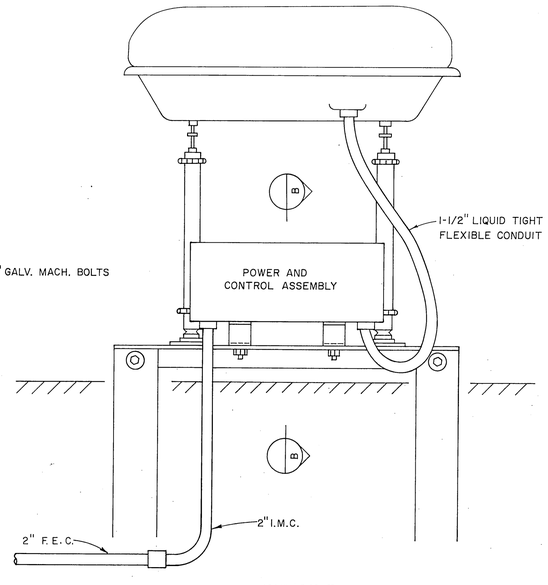
APPROVED
CLYDE M. DAHLE, P.E. ELECTRICAL ENGINEER

SCALE | DESIGNED | DRAWN | CHECKED | DATE 3-3-82 | SHEET 2 OF 12

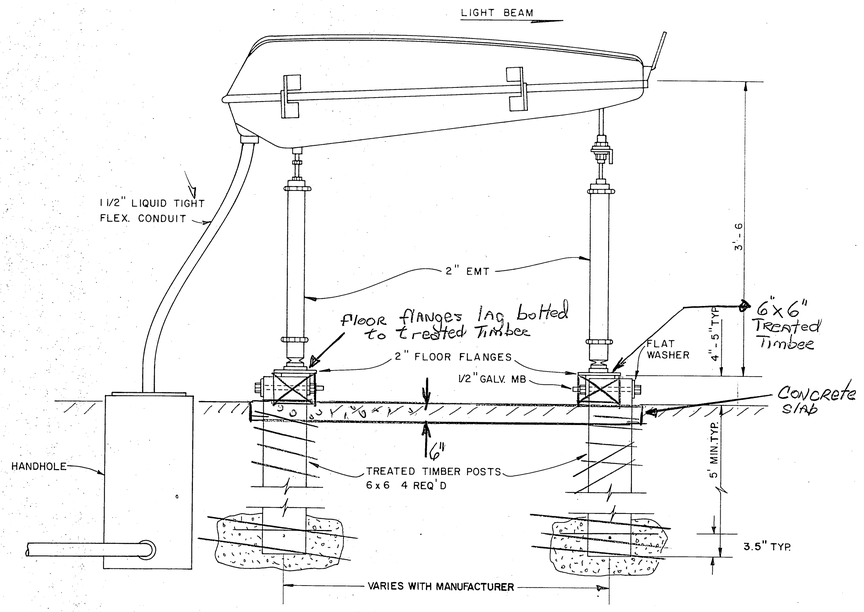


PLAN

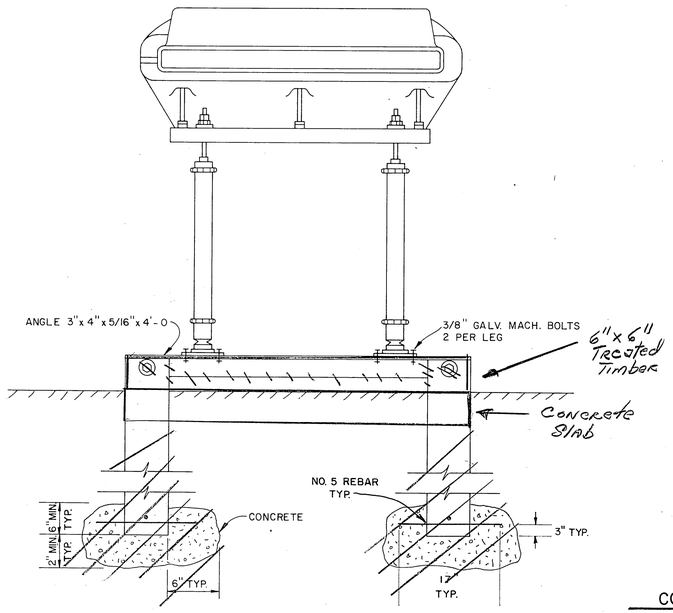




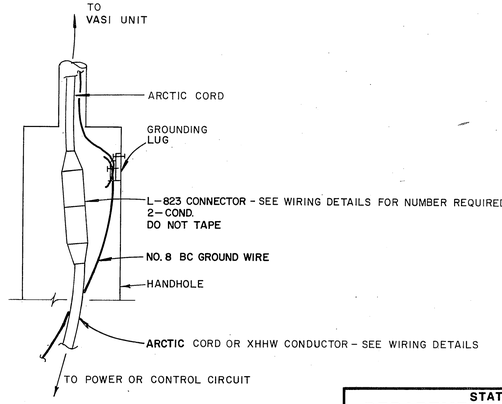
DETAILS
INSTALLATION OF VASI POWER
AND CONTROL ASSEMBLY
SKAGWAY, UNIT I-A ONLY



SIDE ELEVATION



FRONT ELEVATION



DETAIL
CONNECTIONS IN HANDHOLE AT VASI

BY	DATE	CHANGE
PB	4/7/82	ADDED REBAR TO VASI POSTS

REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

HAINES, SKAGWAY AIRPORTS

HAINES, ALASKA SKAGWAY, ALASKA

SC 81-706-07
DETAIL — VASI

APPROVED Tommy Gene Heinrich
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

APPROVED Clyde M Dahle
CLYDE M. DAHLE, P.E. ELECTRIACAL ENGINEER

SCALE	DESIGNED	DRAWN	
NO SCALE	CHECKED	DATE 3-3-82	SHEET 4 OF 12

STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER

1) Wiring modified in 1987 (near terminal building) is as shown

2) Mainline power location is approximate. Depth of burial appears shallow & no yellow marking tape is apparent

3) Mainline Power is not in PVC or fiberglass conduit

Approximate Mainline Power Location - Installed by others

Power Pole

332' cable of access rd

NEW BUILDING

HAND HOLES

INSTALL EXTRA 2" CONDUIT 80 L.F. WITH 12 GA. GALV. STEEL PULL WIRE PLUG ENDS

APRON

135°

TAXIWAY

CONCRETE RUNUP PAD

MITL BLUE GLOBE

Lights Removed From Bases

VASI GLIDE SLOPE 4°

8A

8B

REMOVE AND REPLACE PAVEMENT

℄ RUNWAY

S 69° 52' E

MIRL

Power Run To R.E.I.L.'s 2-2

Lights removed from bases by M&O

INSTALL EXTRA 2" CONDUIT 100 L.F. WITH 12 GA. GALV. STEEL PULL WIRE PLUG ENDS

MITL BLUE GLOBE

REMOVE AND REPLACE PAVEMENT

EDGES OF PAVEMENT

8" PVC

13 LIGHTS 12 SPACES AT 200'

Lighted windsock

Lights Removed from bases

MATCH LINE SEE BELOW

MATCH LINE SEE ABOVE

Brush Line

7 LIGHTS 6 SPACES AT 200'

Mainline Power

8" PVC

EDGES OF PAVEMENT

℄ RUNWAY

26B

26A

VASI GLIDE SLOPE 4°

BRUSH & TREES TO 18'

VASI GLIDE SLOPE 4°

Power head to R.E.I.L. Lights

UNDERGROUND CONDUITS TO ELECTRICAL ENCLOSURE (2)

SHALLOW STREAM

~~MINIMUM EXCAVATION 2' BELOW STREAMBED. WORK SHALL BE ACCOMPLISHED IN STREAM BETWEEN MAY 1 THROUGH AUGUST 31~~

CLEARING LIMITS

BRUSH & TREES

OLD WINDSOCK RELOCATED HERE (UNlighted)

SCALE 1"=30'

HAINES AIRPORT IMPROVEMENTS

Modifications based on 1987 Haines Airport Improvements Project

3/4" waterline & electric Cable

NEW WELL

ACCESS ROAD

EXISTING POWER & TELEPHONE

NEW BUILDING

1-2" Conduit

PEDASTALL

2-2" Conduit

2-16"x24" HANDHOLES

2-1½" Conduit

EDGE OF TAXIWAY

LEGEND

- RUNWAY THRESHOLD LIGHT
- RUNWAY EDGE LIGHT
- TAXIWAY EDGE LIGHT
- U. G. JUNCTION BOX (HANDHOLE)
- VASI UNIT
- WIND CONE, EXISTING
- WIND CONE, TO BE INSTALLED
- 2" FIBERGLASS CONDUIT
- 2" P.V.C. CONDUIT
- ELECTRICAL ENCLOSURE, THIS PROJECT
- GROUND ROD
- RUNWAY END IDENTIFIER LIGHT (REIL)
- RETROREFLECTIVE MARKER
- AIRPORT SURVEY CONTROL POINT
- SHOULDER OF EXISTING GRADED AREA

STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER

BY	DATE	CHANGE
PB	4/7/82	ADDED NOTE TO SHALLOW STREAM,
		ADDED A BAR SCALE.

REVISIONS

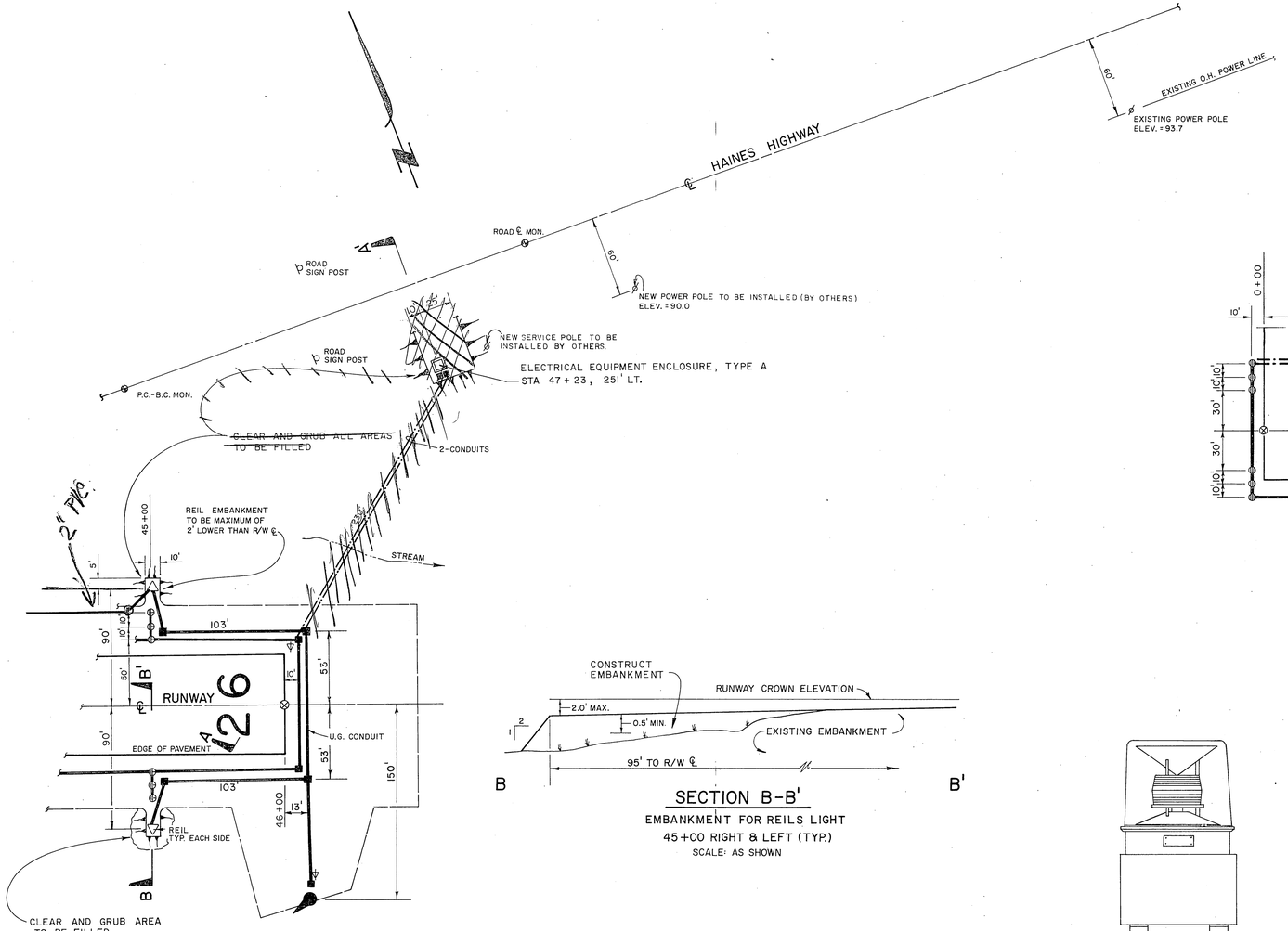
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

HAINES AIRPORT
HAINES, ALASKA
SC 81-706-07
RUNWAY LIGHTING PLAN

APPROVED Tommy Gene Heinrich
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

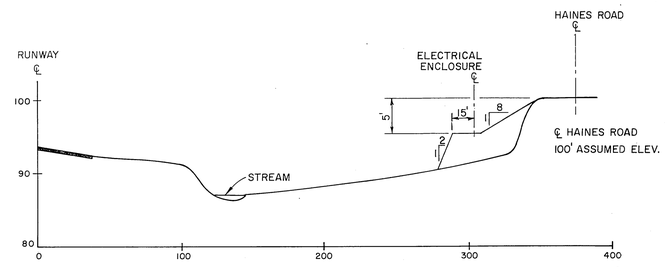
APPROVED Clyde M. Dahle
CLYDE M. DAHLE, P.E. ELECTRICAL ENGINEER

SCALE	DESIGNED	DRAWN	
AS SHOWN	CHECKED	DATE 3-3-82	SHEET 5 OF 12

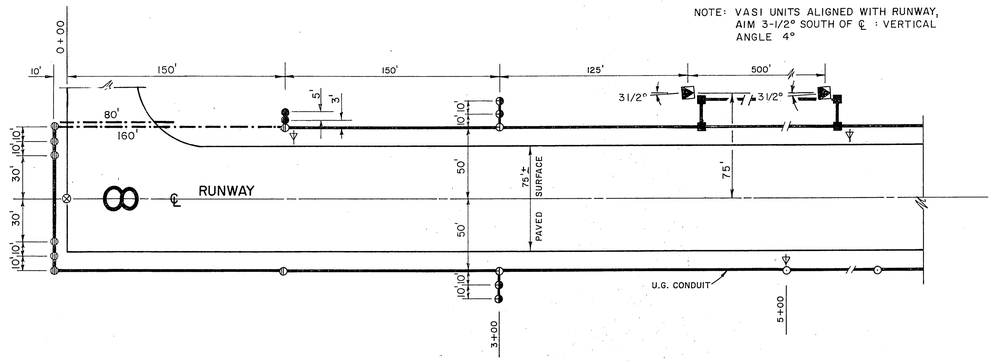


PLAN VIEW
EAST END OF RUNWAY

SECTION B-B'
EMBANKMENT FOR REILS LIGHT
45+00 RIGHT & LEFT (TYP.)
SCALE: AS SHOWN

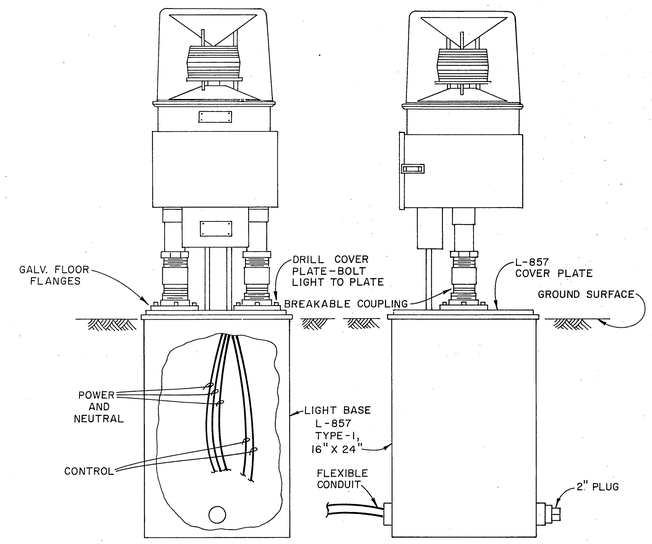


PROFILE A-A'
SCALE
HORZ. 1"=50'
VERT. 1"=10'



NOTE: VASI UNITS ALIGNED WITH RUNWAY, AIM 3-1/2° SOUTH OF ℄ : VERTICAL ANGLE 4°

PLAN VIEW
WEST END OF RUNWAY



DETAIL L859
INSTALLATION OF OMNIDIRECTIONAL
RUNWAY END IDENTIFIER LIGHT
N.T.S.

LIGHTING LEGEND

RED	RED
RED	GREEN
RED	CLEAR
GREEN	OPAQUE
GREEN	CLEAR
CLEAR	CLEAR
BLUE	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

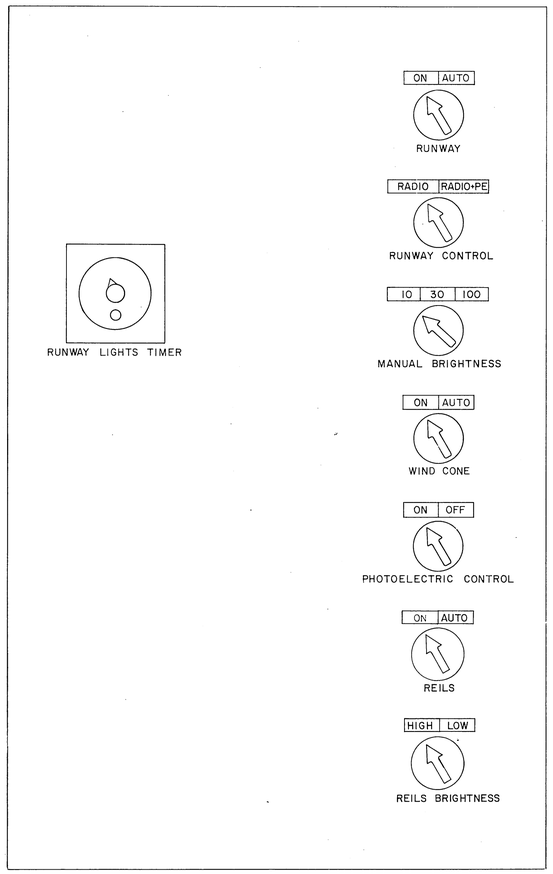
HAINES AIRPORT
HAINES, ALASKA
SC 81-706-07
RUNWAY LIGHTING DETAILS

BY	DATE	CHANGE
LB	4/7/82	ADDED NOTE TO POWER POLES,
		CHANGED TITLE TO L-859, ADDED
		BAR SCALE.

REVISIONS

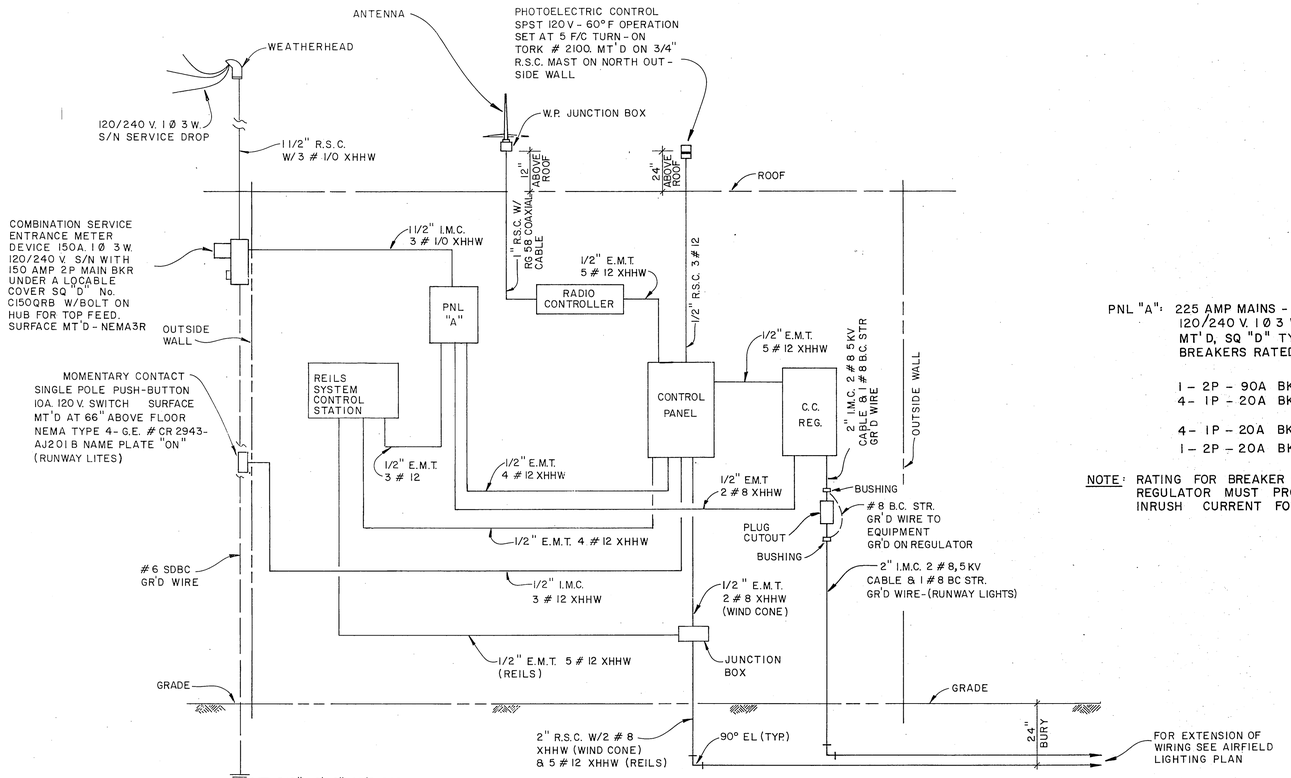
APPROVED: TOMMY GENE HEINRICH, P.E. — CHIEF DESIGN ENGINEER
APPROVED: CLYDE M. DAHLE, P.E. — ELECTRICAL ENGINEER

SCALE: AS SHOWN | DESIGNED | DRAWN | CHECKED | DATE 3-3-82 | SHEET 6 OF 12



CONTROL PANEL

NO SCALE



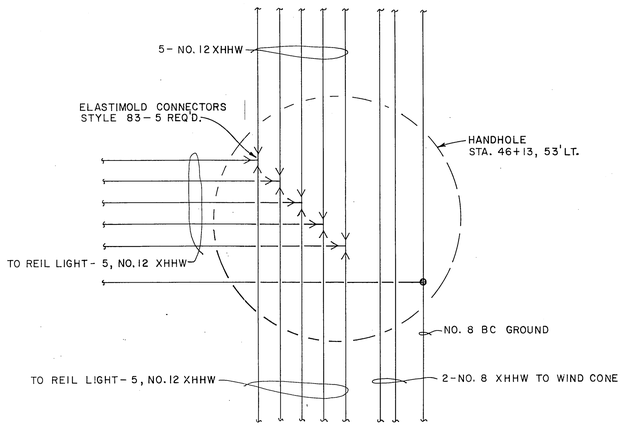
PNL "A": 225 AMP MAINS - LUGS ONLY
120/240 V. 1 Ø 3 WIRE SURFACE MT'D, SQ "D" TYPE "NQOB". ALL BREAKERS RATED 10,000 A.I.C.

1 - 2P - 90A BKR (7 1/2 KW C.C. REGULATOR)
4 - 1P - 20A BKR'S (CONTROL, WIND CONE, LITES, RECEPT'S)
4 - 1P - 20A BKR'S (SPARES)
1 - 2P - 20A BKR (REILS)

NOTE: RATING FOR BREAKER CONNECTED TO C.C. REGULATOR MUST PROVIDE 1250 PEAK AMP'S INRUSH CURRENT FOR 1/2 CYCLE.

POWER ONE LINE WIRING DIAGRAM
FOR REGULATOR & CONTROL

NO SCALE



DETAILS — REILS LIGHT CONNECTIONS IN HANDHOLE

All Controls Relocated to Terminal Building Storage Room - 1987

STATE OF ALASKA
49TH
Edward F. Bass
No. 597-E
EE
REGISTERED PROFESSIONAL ENGINEER

BY	DATE	CHANGE

REVISIONS

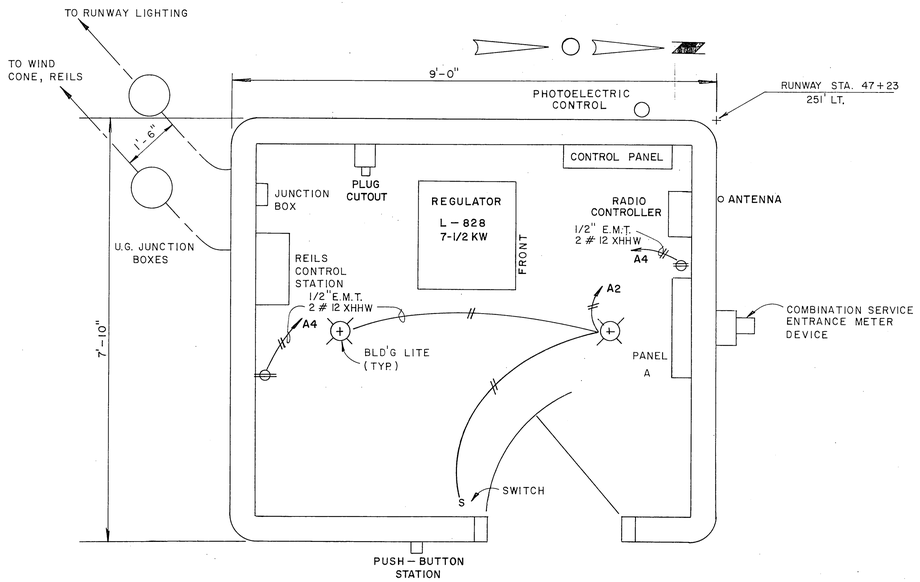
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

HAINES AIRPORT
HAINES, ALASKA
SC 81-706-07
ELECTRICAL DETAILS

APPROVED Tommy Gene Heinrich
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

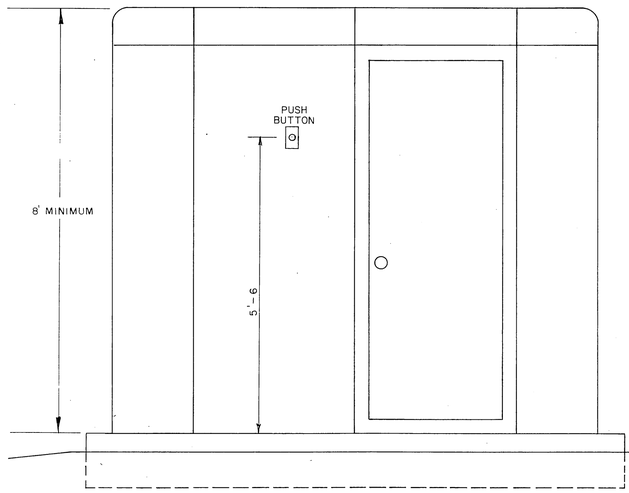
APPROVED Clyde M Dahle
CLYDE M. DAHLE, P.E. ELECTRICAL ENGINEER

SCALE	DESIGNED	DRAWN	SHEET
NO SCALE	CHECKED A.J.	DATE 3-3-82	7 OF 12

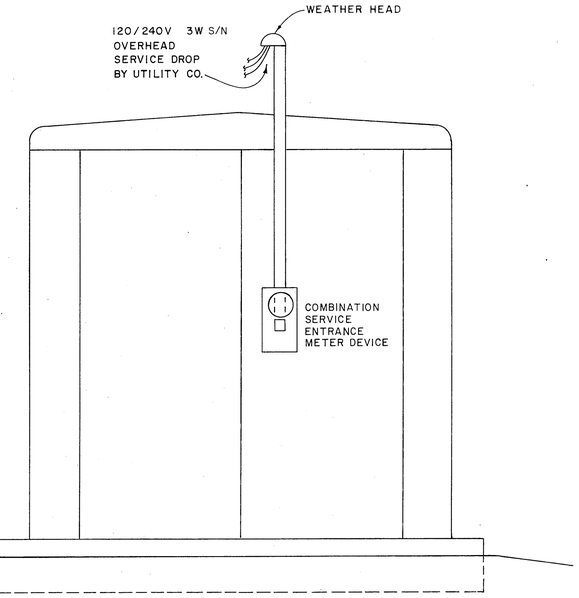


FLOOR - PLAN
ELECTRICAL ENCLOSURE
TYPE A *

* PROFESSIONAL SYSTEMS, INC.
"MINI HUT" MODEL M 809,
OR APPROVED EQUAL.

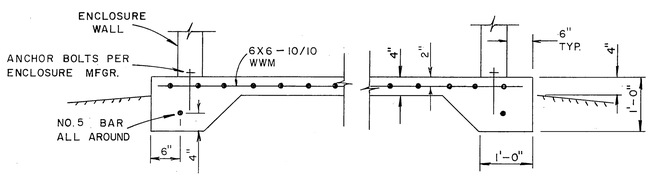


FRONT ELEVATION

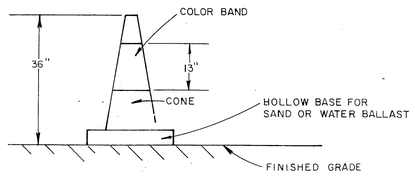


SIDE ELEVATION

Enclosure Building Removed - 1987
Electrical Controls Relocated to Terminal Building
Storage Room - 1987



ENCLOSURE FOUNDATION DETAILS
NTS



TYPICAL RETROREFLECTIVE MARKER DETAIL

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

HAINES AIRPORT
HAINES, ALASKA
SC 81-706-07
RETROREFLECTIVE MARKER & ENCLOSURE DETAILS

BY	DATE	REVISIONS
PB	4/7/82	ADDED NOTE * TO FLOOR PLAN & TYPICAL MARKER DETAIL

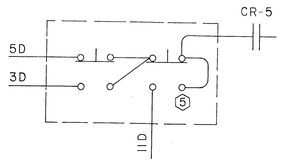
APPROVED Tommy Gene Heinrich
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

APPROVED Clyde M. Dahle
CLYDE M. DAHLE, P.E. ELECTRICAL ENGINEER

SCALE NO SCALE | DESIGNED APM | DRAWN | CHECKED | DATE 3-3-82

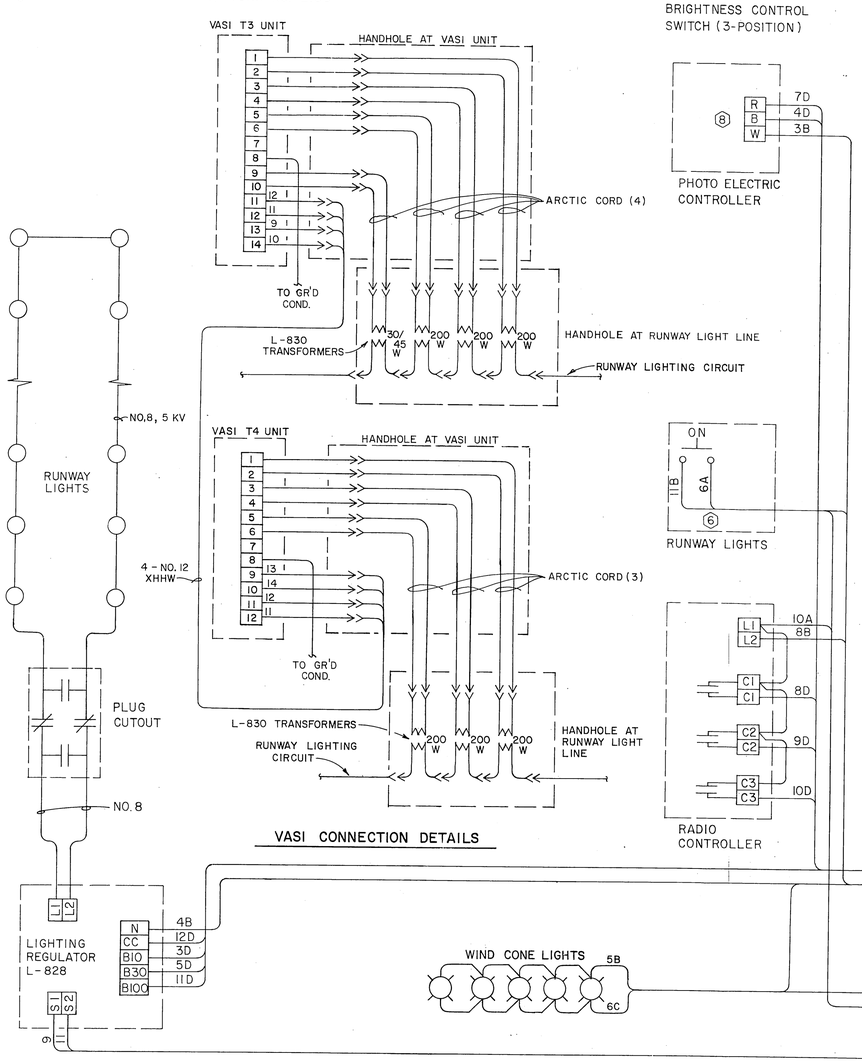
SHEET 8 OF 12

1. CONTROL RELAY, 3PDT, GE NO. CR120HC47W02
2. CONTACTOR, GE NO. CR205K002
3. TIMING RELAY, GE NO. CR122E1046C02 OR CR122E1086C02
4. SWITCH, SPDT, GE NO. CR2940UB202A
5. SWITCH, 3-POSITION, GE NO. CR2940UB203C
6. PUSH-BUTTON STATION, "ON", MOMENTARY CONTACT, WATER-DUST TIGHT, NEMA TYPE 4 , GE NO. CR2943AJ201B
7. TERMINAL STRIP, 20A., 12-POINT, GE NO. CR151D20112
8. PHOTOELECTRIC CONTROL, TORK NO. 2100

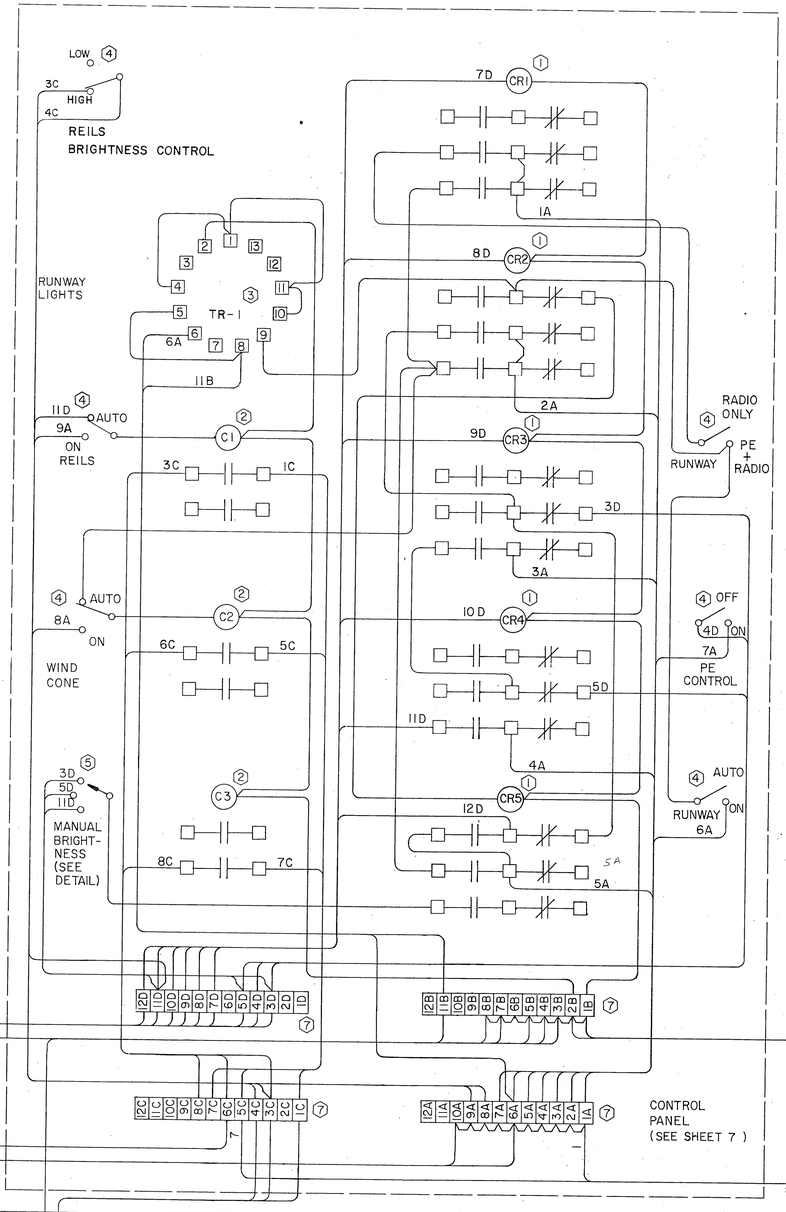


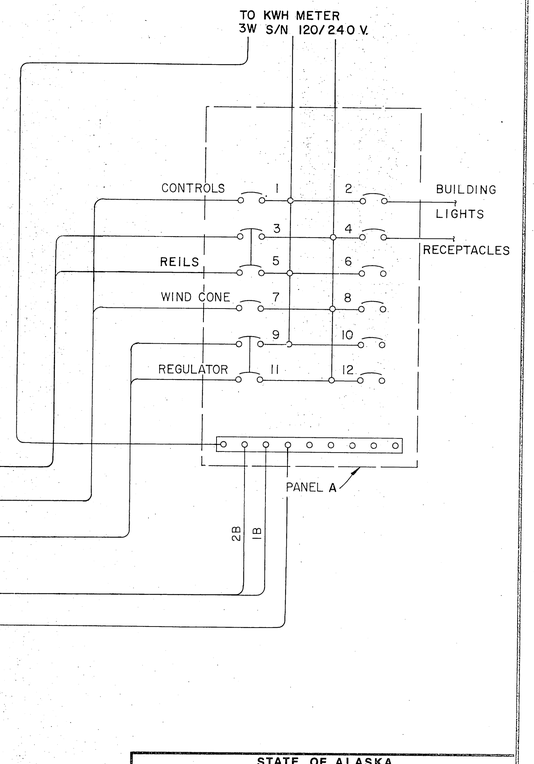
DETAIL-MANUAL BRIGHTNESS CONTROL SWITCH (3-POSITION)

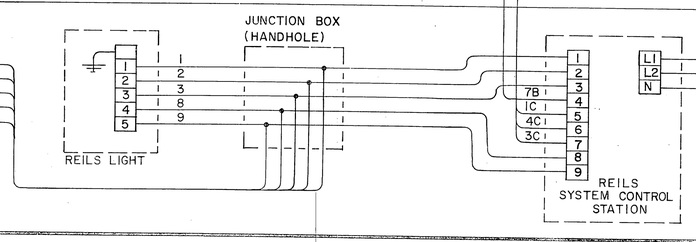
PHOTO ELECTRIC CONTROLLER



VASI CONNECTION DETAILS







BY	DATE	CHANGE

REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

HAINES AIRPORT

HAINES, ALASKA

SC 81-706-07

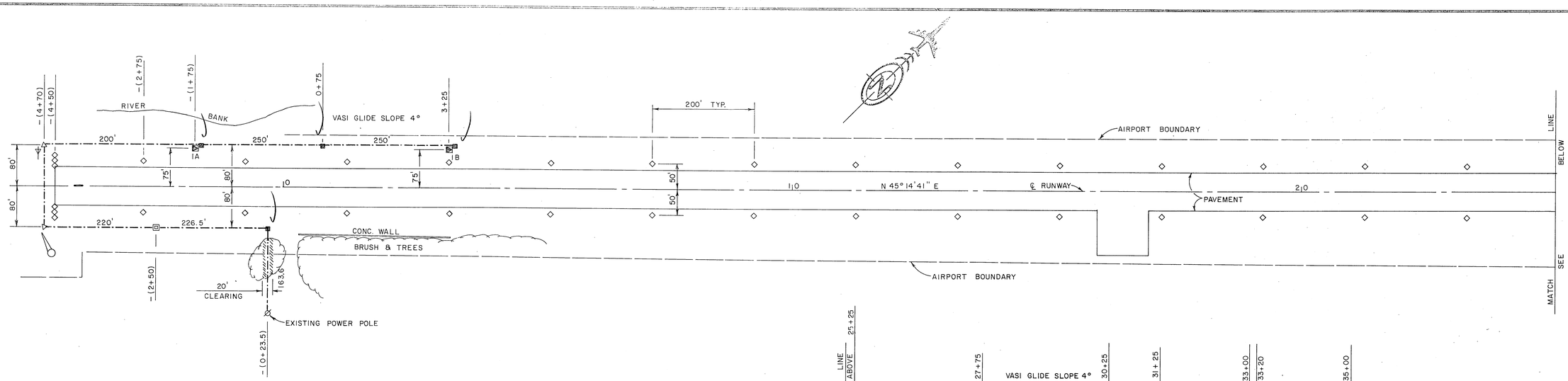
WIRING DETAILS

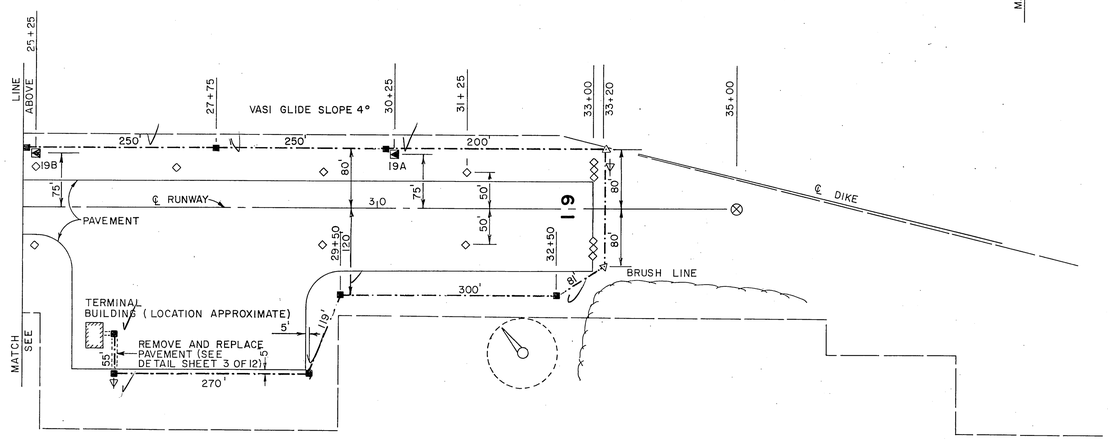
APPROVED tommy Gene Heinrich
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

APPROVED Clyde M. Dahle
CLYDE M. DAHLE, P.E. ELECTRICAL ENGINEER

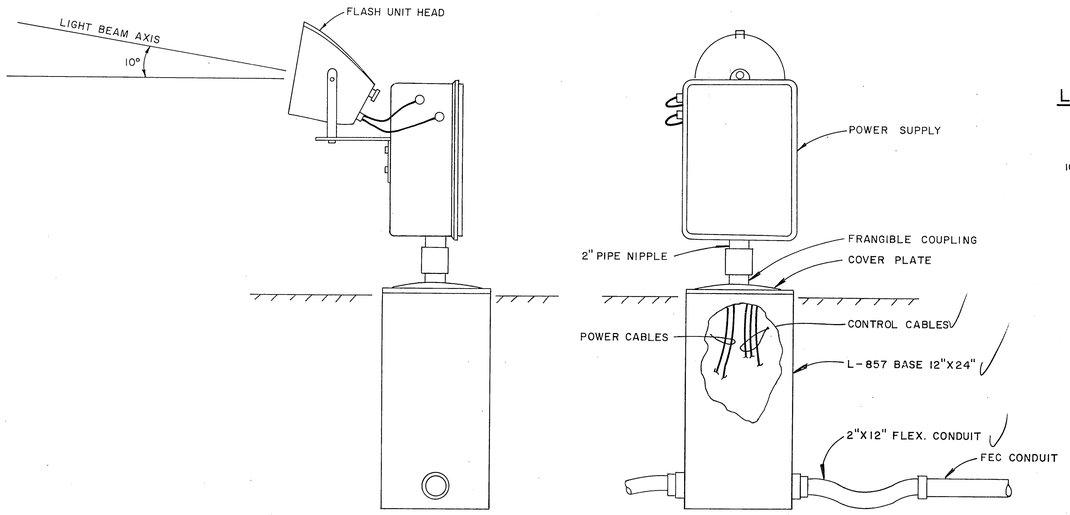
SCALE NO SCALE | DESIGNED | DRAWN | CHECKED | DATE 3-3-82

SHEET 9 OF 12



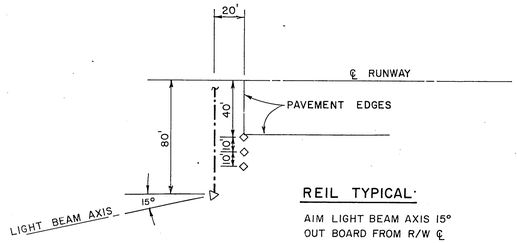


LIGHTING, MARKING PLAN



DETAILS – L-849 REILS LIGHTS-DIRECTIONAL

NTS



REIL TYPICAL

AIM LIGHT BEAM AXIS 15°
OUT BOARD FROM R/W ℄

LEGEND

- VASI UNIT
- RUNWAY END IDENTIFIER LIGHT (REIL)
- EXISTING WIND CONE
- HANDHOLE
- RETROREFLECTIVE MARKER
- 2" FIBERGLASS CONDUIT
- ELECTRICAL ENCLOSURE
- GROUND ROD

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

SKAGWAY AIRPORT

SKAGWAY, ALASKA

SC 81-706-07

RUNWAY LIGHTING PLAN

BY	DATE	CHANGE
PB	4/7/82	ADDED BAR SCALE.

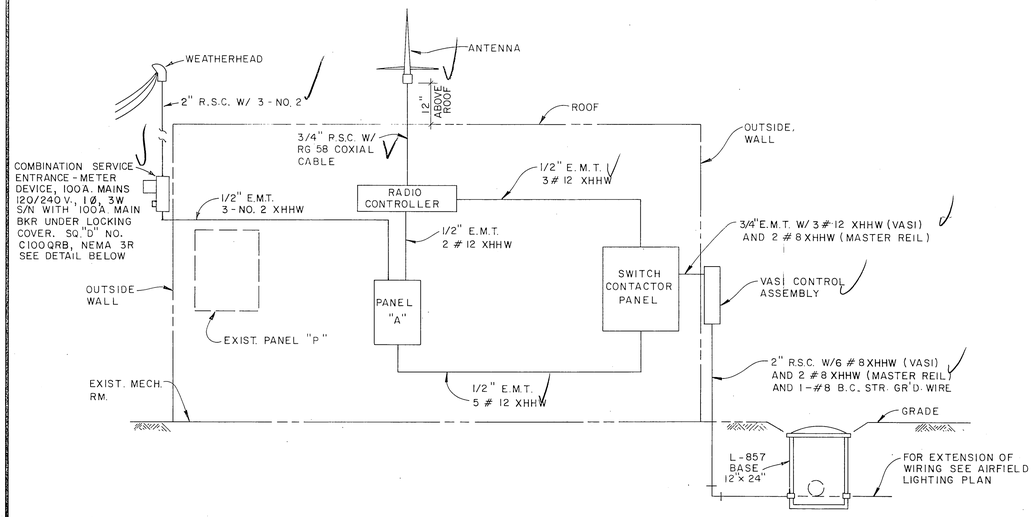
REVISIONS

APPROVED Tommy Gene Heinrich
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

APPROVED Clyde M Dahle
CLYDE M. DAHLE, P.E. ELECTRICAL ENGINEER

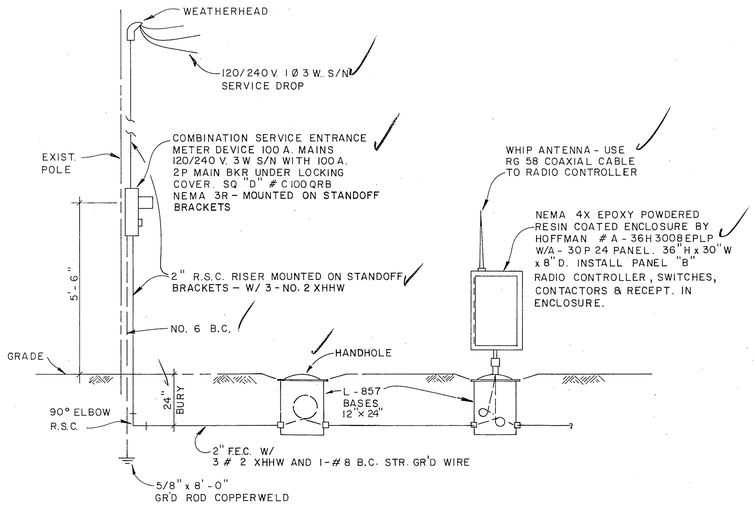
SCALE AS SHOWN | DESIGNED | DRAWN | CHECKED | DATE 3-3-82

SHEET 10 OF 12



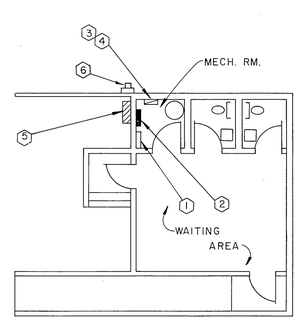
POWER ONE LINE WIRING DIAGRAM AT EXIST. TERMINAL BLD'G - NORTH END OF R/W SKAGWAY AIRPORT

NO SCALE



POWER ONE LINE WIRING DIAGRAM AT ENCLOSURE - SOUTH END OF R/W

NO SCALE



1. EXISTING PANEL "P"
2. PANEL "A"
3. RADIO CONTROLLER
4. SWITCH & CONTACTORS
5. VASI CONTROL ASSEMBLY
6. METER BASE AND WEATHERHEAD (NEW)

EXISTING TERMINAL BLD'G

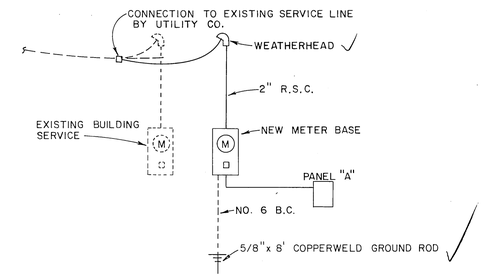
SCALE: 1/8" = 1'-0"

PANEL "A":

100 AMP MAINS - LUGS ONLY 120/240 V.
1Ø 3 WIRE SURFACE MOUNTED SQ. "D" TYPE NQOB. ALL BKR'S RATED AT 10,000 A.I.C.
2 - 20 A - 2P BKR'S (REIL LIGHTS & VASI)
1 - 20 A - 1P BKR (RADIO CONTROLLER)
2 - 20 A - 1P BKR'S (SPARES)
3 - 20 A - 1P BKR'S (SPACES)

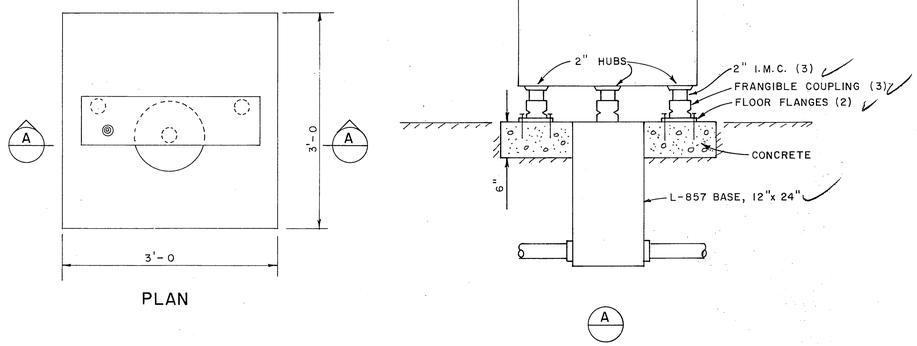
PANEL "B":

100 AMP MAINS - LUGS ONLY 120/240 V.
1Ø 3 WIRE SURFACE MOUNTED WITHOUT PANEL ENCLOSURE, SQ. "D" TYPE "NQOB". ALL BKR'S RATED AT 10,000 A.I.C.
INSTALL MAINS IN HOFFMAN ENCLOSURE.
2 - 20 A - 2P BKR'S (REIL LIGHTS & VASI)
1 - 20 A - 1P BKR (RECEPT)
1 - 20 A - 1P BKR (RADIO CONTROLLER)
2 - 20 A - 1P BKR'S (SPARES)
2 - 20 A - 1P BKR'S (SPACES)



SERVICE CONNECTION AT TERMINAL

NO SCALE



DETAILS - ELECTRICAL EQUIPMENT ENCLOSURE TYPE B

NO SCALE

STATE OF ALASKA
49TH
Edward E. Boss
No. 597-E
EE
REGISTERED PROFESSIONAL ENGINEER

BY	DATE	CHANGE
PB	4/7/82	DIMENSIONED HANDHOLES

REVISIONS

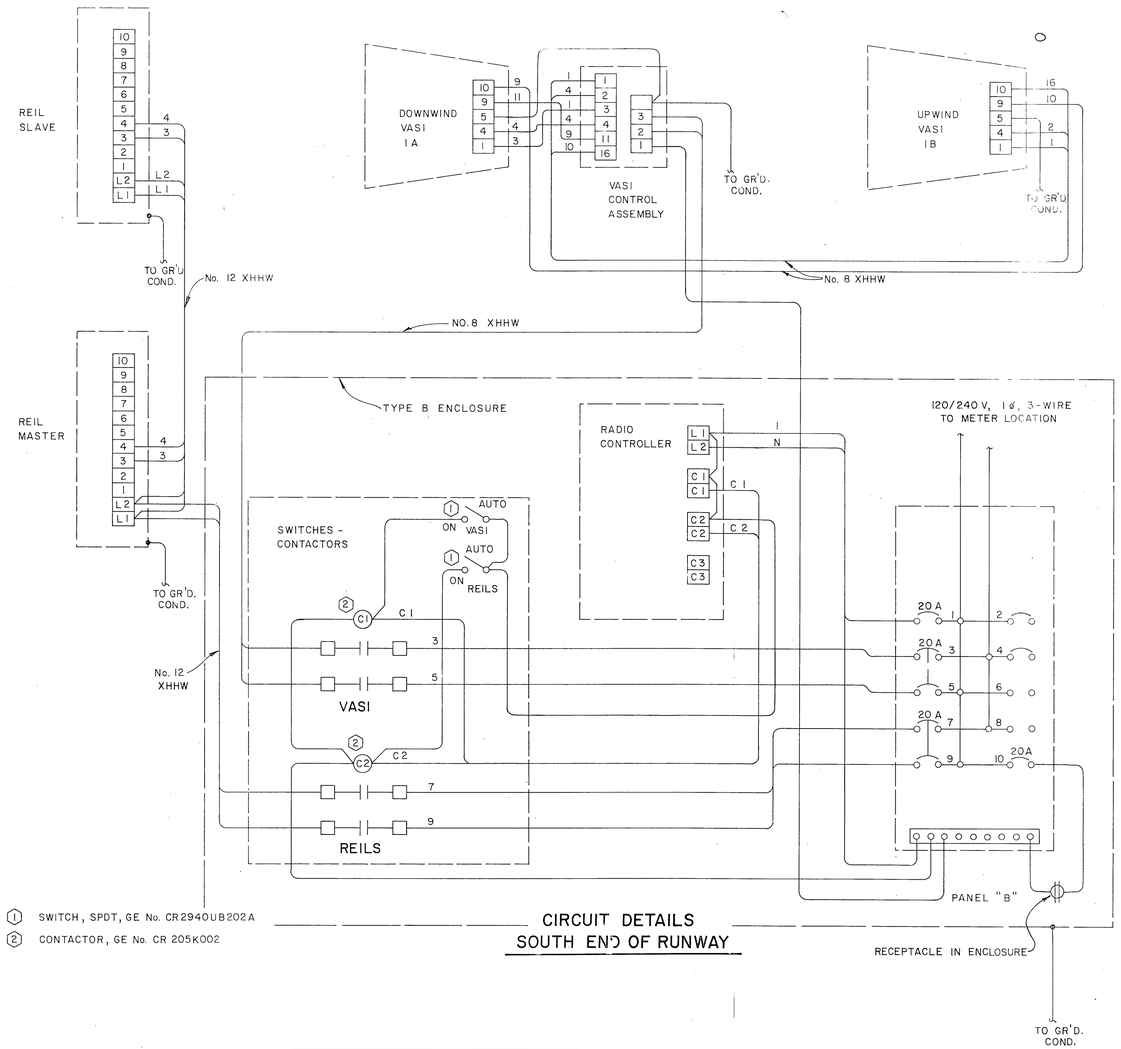
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

SKAGWAY AIRPORT
SKAGWAY, ALASKA
SC 81-706-07
ELECTRICAL DETAILS

APPROVED
TOMMY GENE HENRICH, P.E. — CHIEF DESIGN ENGINEER

APPROVED
CLYDE M. DAHLE, P.E. — ELECTRICAL ENGINEER

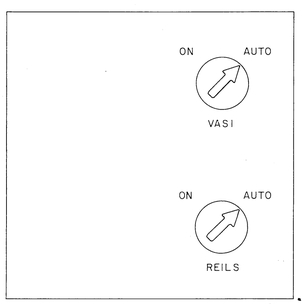
SCALE	DESIGNED	DRAWN	SHEET 11 OF 12
AS SHOWN	CHECKED	DATE 3-3-82	



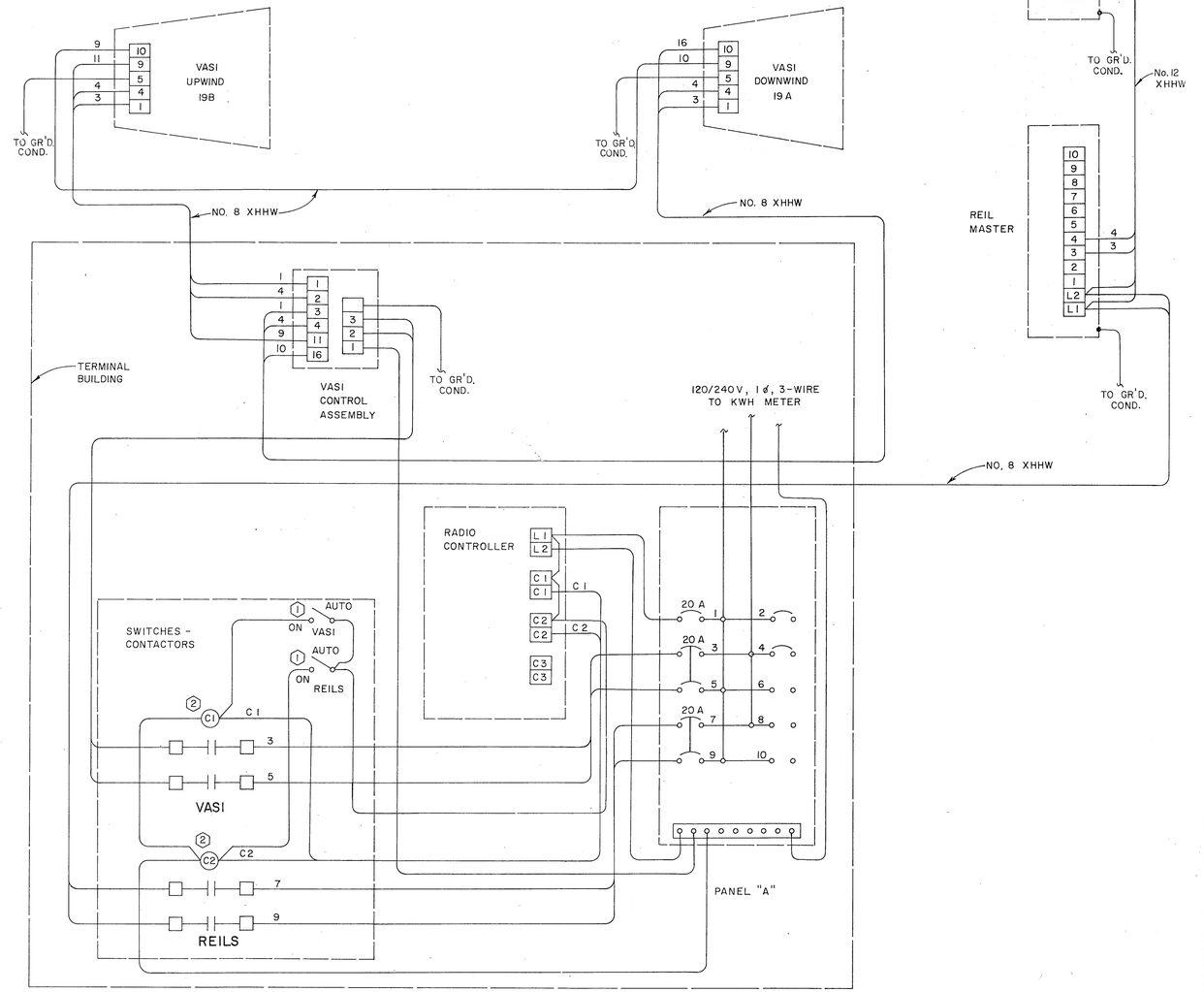
1 SWITCH, SPDT, GE No. CR2940UB202A

2 CONTACTOR, GE No. CR 205K002

CIRCUIT DETAILS SOUTH END OF RUNWAY



DETAIL
SWITCH - CONTACTOR PANEL



CIRCUIT DETAILS NORTH END OF RUNWAY

STATE OF ALASKA
49TH
REGISTERED PROFESSIONAL ENGINEER

BY	DATE	CHANGE

REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DIVISION OF AVIATION—DESIGN AND CONSTRUCTION

SKAGWAY AIRPORT
SKAGWAY, ALASKA
SC 81-706-07
WIRING DETAIL

APPROVED tommy Gene Heinrich
TOMMY GENE HEINRICH, P.E. CHIEF DESIGN ENGINEER

APPROVED Clyde M Dahle
CLYDE M DAHLE, P.E. ELECTRICAL ENGINEER

SCALE	DESIGNED	DRAWN	
NO SCALE	CHECKED	DATE 3-3-82	SHEET 12 OF 12