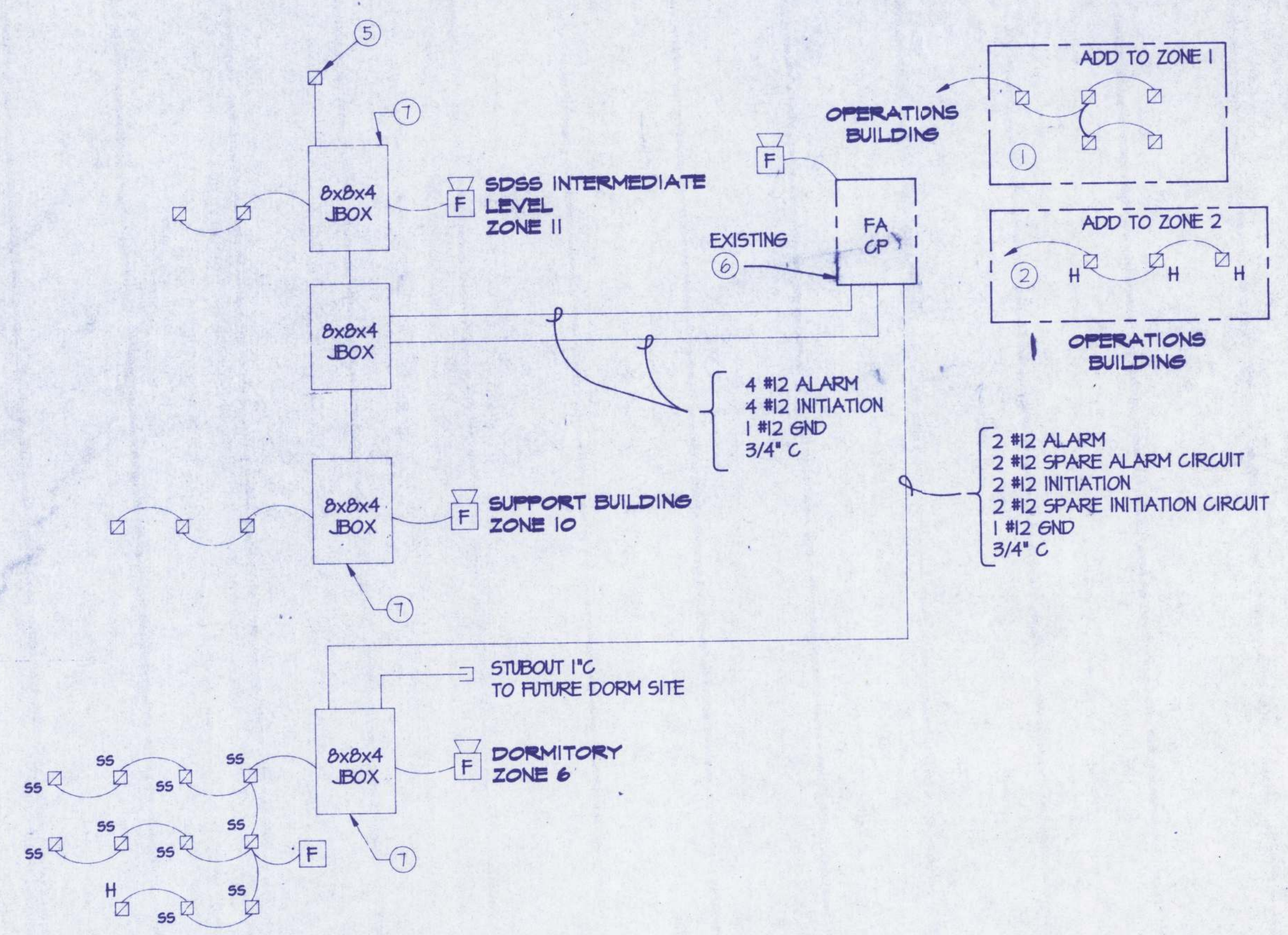
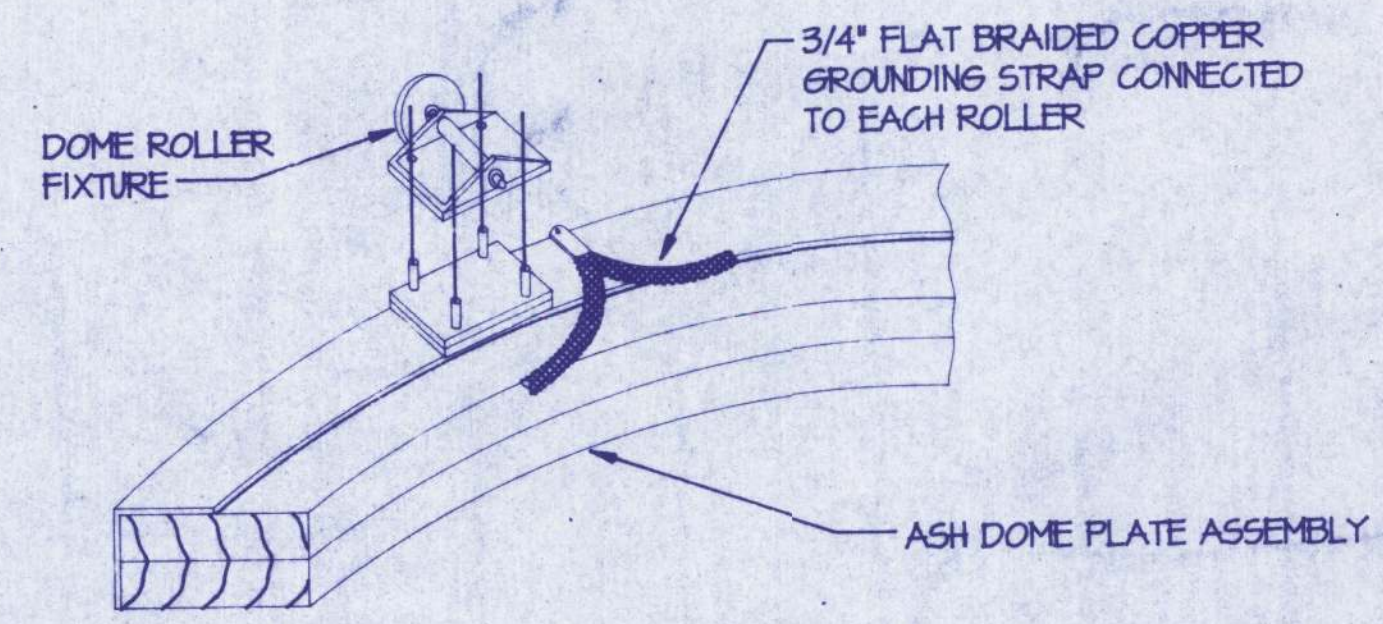


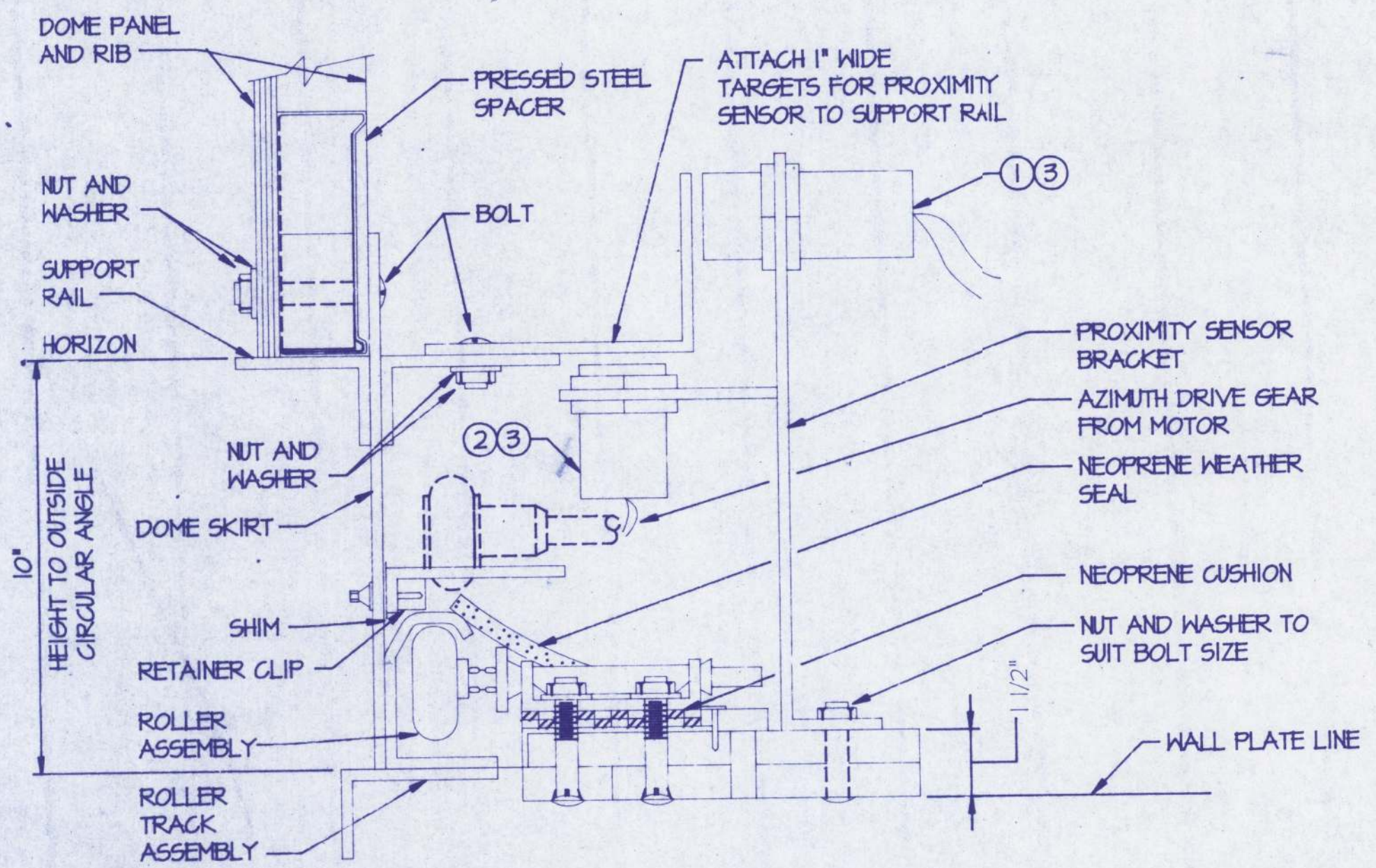
MONITOR DOME GROUNDING DETAIL



FIRE ALARM RISER DIAGRAM



MONITOR DOME ROLLER GROUNDING DETAIL

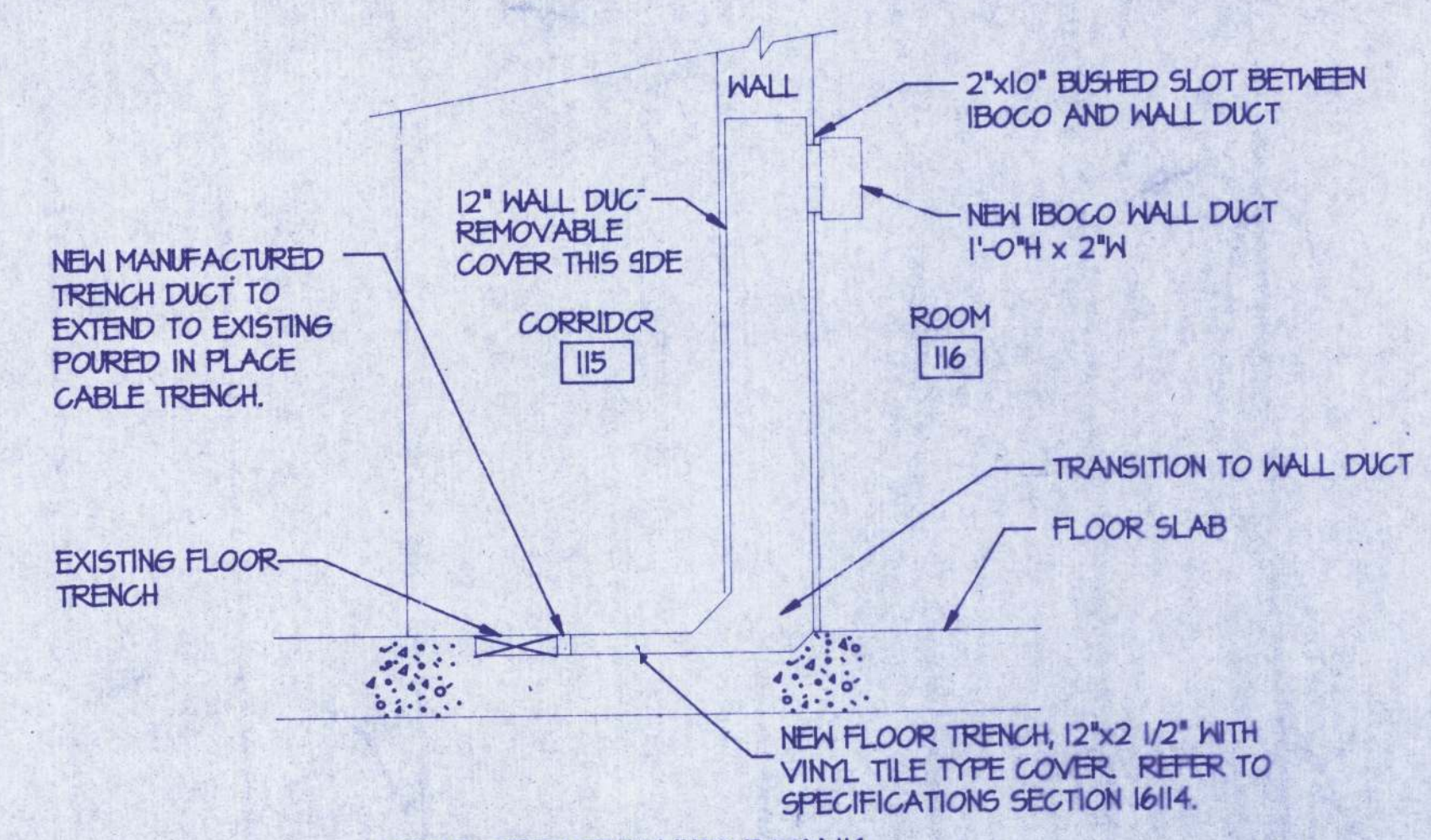


MONITOR DOME PROXIMITY SENSOR MOUNTING DETAIL

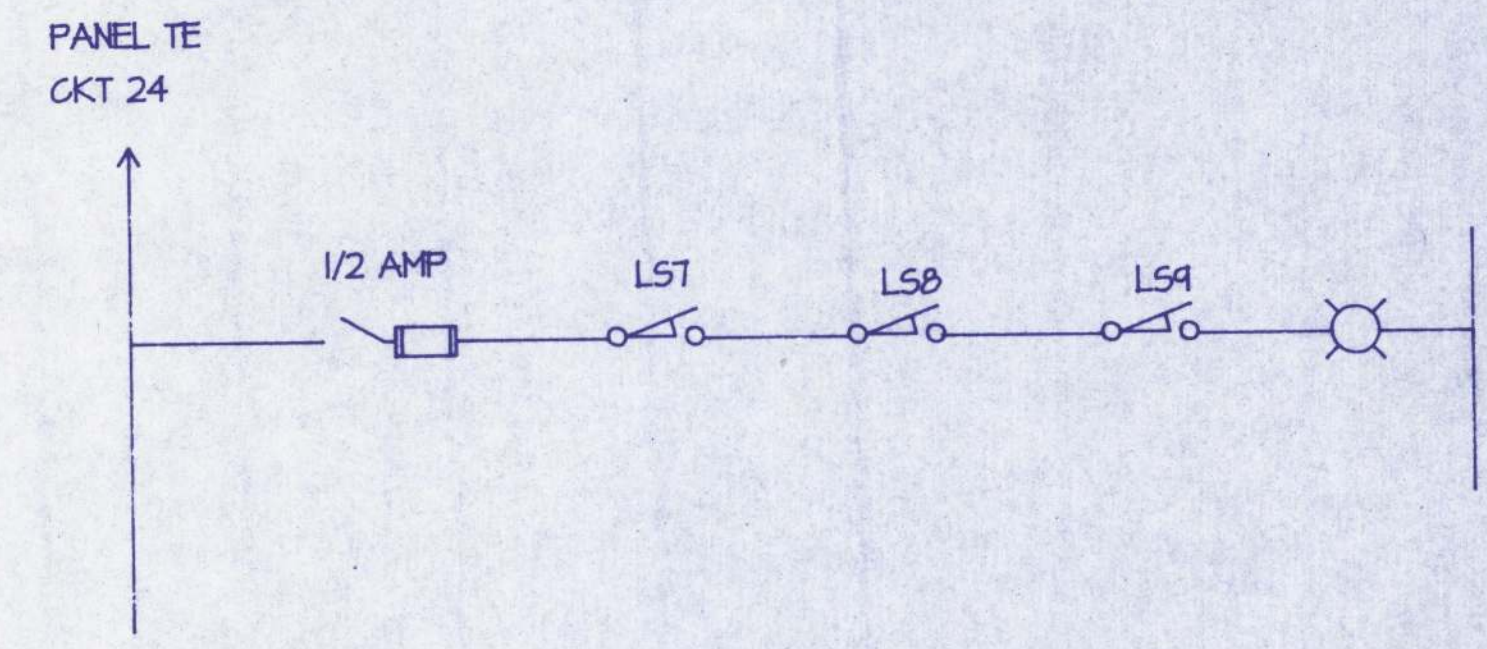
- NOTES**
1. PROVIDE ONE PROXIMITY SENSOR FOR INDICATION THAT SLIT IS FACING SOUTH. PROVIDE ONE VERTICAL TARGET FOR THAT SENSOR.
 2. PROVIDE ONE PROXIMITY SENSOR FOR DETERMINATION OF ANGULAR ROTATION OF DOME. PROVIDE HORIZONTAL TARGETS SPACED 10" APART AROUND THE PERIMETER OF THE DOME.
 3. CONNECT SENSOR LEADS TO OPTO 22 INPUT MODULE. SENSOR TO BE TURCK MODEL #B110-630-ADZ30X2-B1131 WITH RKM20 CONNECTOR OR APPROVED EQUIVALENT.

FIRE ALARM KEY NOTES

1. CONNECT NEW SMOKE DETECTORS IN BUILDING ADDITION TO THE EXISTING SMOKE DETECTOR CIRCUIT FOR THE BUILDING.
2. CONNECT NEW HEAT DETECTORS IN ATTIC SPACE TO THE EXISTING ATTIC HEAT DETECTOR CIRCUIT FOR THE BUILDING.
3. RUN SEPARATE HORR LIGHT CIRCUIT TO EACH BUILDING.
4. RUN SEPARATE INITIATION CIRCUIT TO EACH BUILDING.
5. PROVIDE SMOKE DETECTOR FOR MOUNTING ON TELESCOPE WIND SKIRT. ACTUAL MOUNTING OF SMOKE DETECTOR WILL BE BY OTHERS WHEN TELESCOPE IS ACTUALLY INSTALLED.
6. PROVIDE ZONE MODULES, AS REQUIRED TO EXPAND EXISTING FIRE ALARM PANEL TO MONITOR AND ALARM NEW FACILITIES INDICATED.
7. PROVIDE CLASS B END-OF-LINE DEVICES IN 8x8x4 J-BOX.



SECTION THROUGH WALL
N.T.S.



BILL OF MATERIAL

ITEM	QUANTITY	DESCRIPTION
L57	1	PROXIMITY SWITCH TO SENSE THAT WEST DOOR OF SDSS IS FULL CLOSED. REFER TO NOTE 13 ON SHEET E5.
L58 & L59	1	PROXIMITY SWITCHES TO SENSE PRESENCE OF LOCKING PINS. REFER TO NOTE 12 ON SHEET E5. REFER TO SHEET M-2.
⊙	1	WARNING LIGHT - GROUSE HINDS VXHF156P WITH 25 WATT RED LAMP.

SDSS ROLLING ENCLOSURE WARNING LIGHT WIRING DIAGRAM

SDSSE6.DWG LAST UPDATE 2/1/93

Sloan Digital Sky Survey Telescope Enclosure and Support Facilities for Astrophysical Research Consortium
APACHE POINT OBSERVATORY, NEW MEXICO



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M3 P.N. 92119

Revisions

Description	Date

Drawn: B.J.S.
Checked: LTN
Date: JAN. 22, 1993

Drawing Title

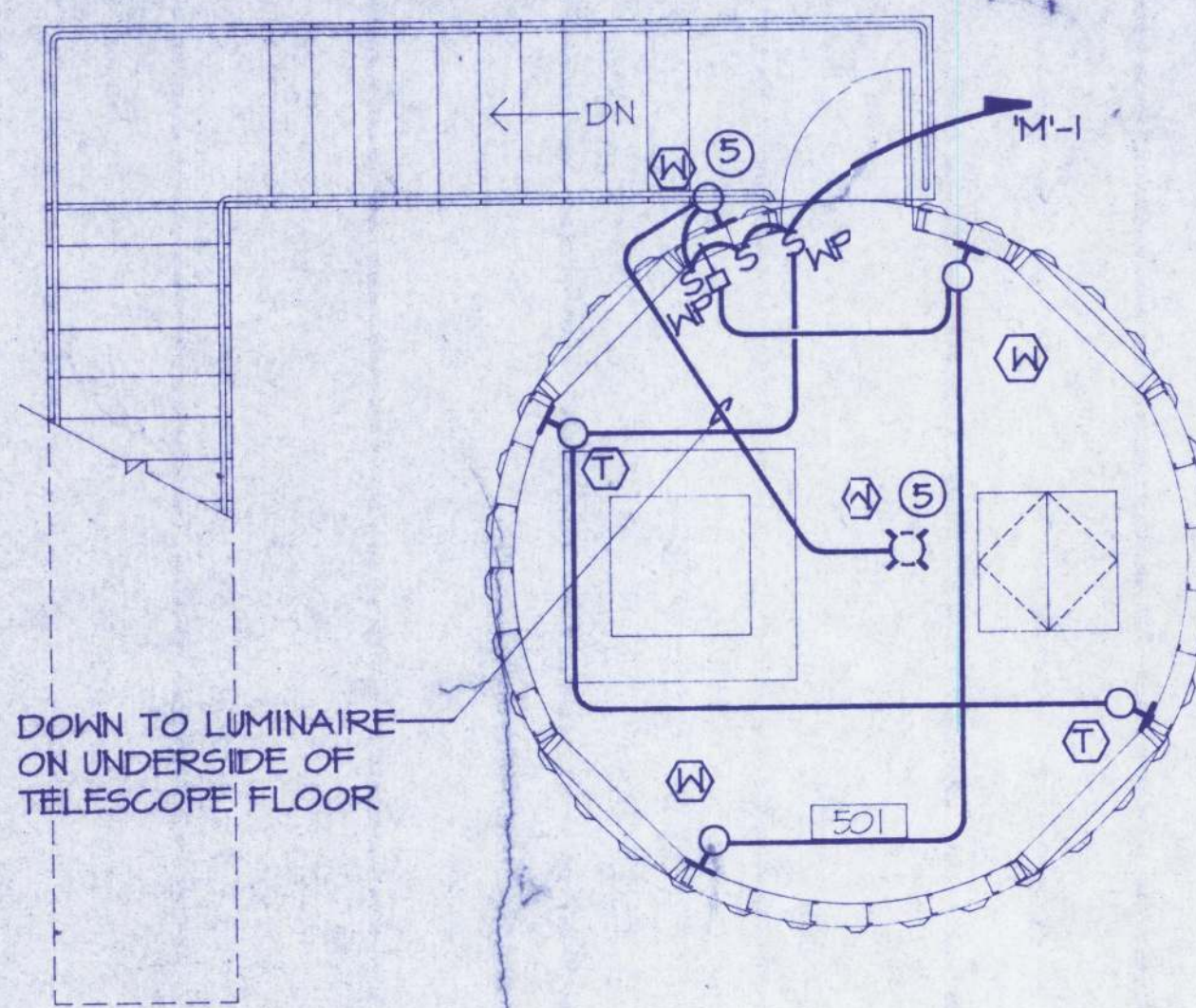
DETAILS

Sheet Number

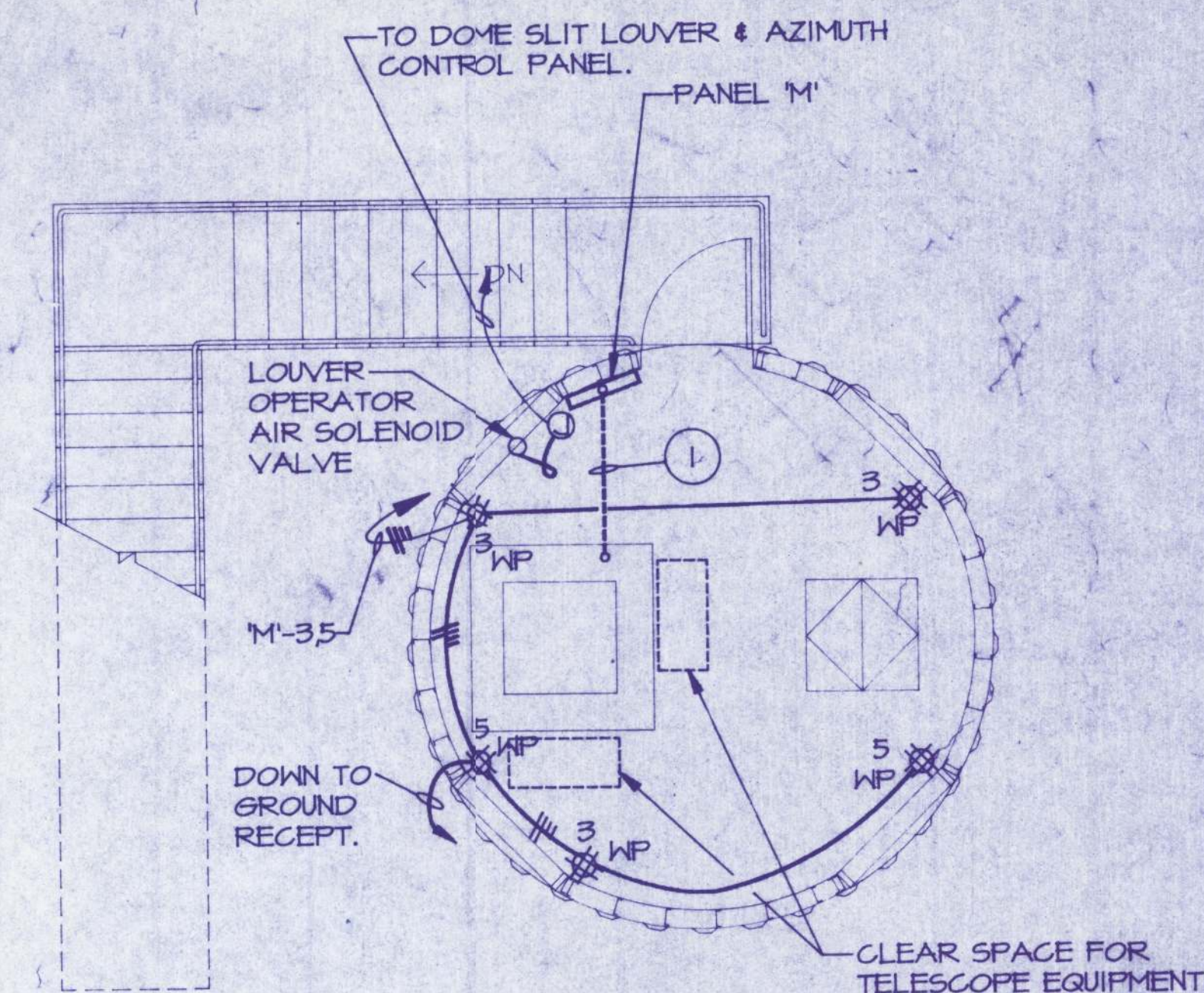
E6
66
of 76 Sheets

KEYNOTES - MONITOR TELESCOPE

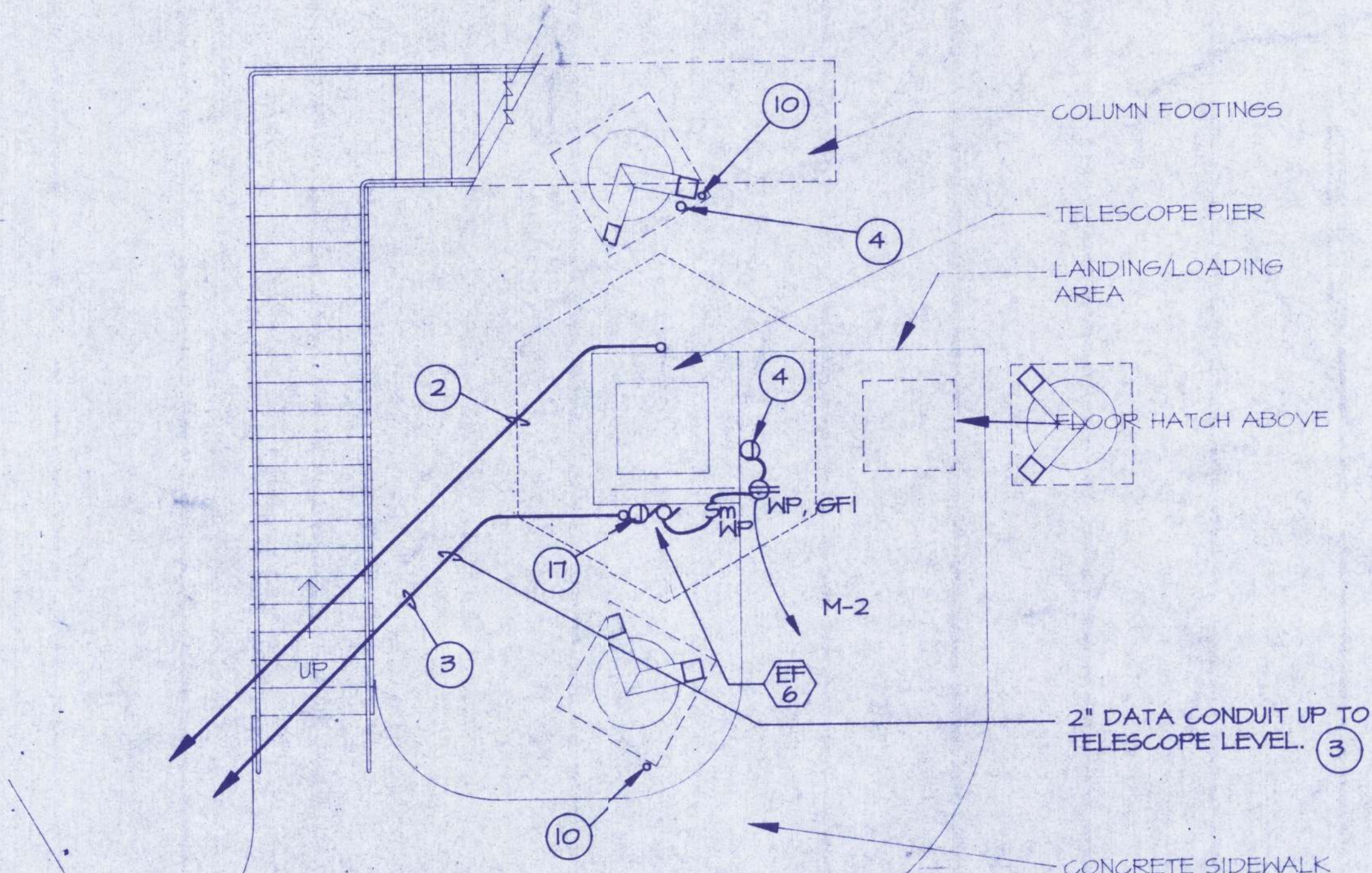
1. 2" CONDUIT FROM PANEL 'M', DOWN UNDER AND ACROSS FLOOR TO TELESCOPE PIER. STUB UP ADJACENT TO PIER AT 6" ABOVE FLOOR LEVEL. DO NOT ATTACH CONDUIT TO PIER STRUCTURE. ATTACH ONLY TO BUILDING STRUCTURE.
2. 2" CONDUIT FROM PANEL 'M' TO PANEL 'SB'. REFER TO ONE-LINE DIAGRAM. PROVIDE 3 FT. OF FLEX CONDUIT TO ISOLATE VIBRATIONS BETWEEN PIER AND BUILDING.
3. 2" CONDUIT FROM 4'X4' FLOOR PULL BOX IN SUPPORT BUILDING TO MONITOR TELESCOPE. EXTEND 2" C. UP TO TELESCOPE LEVEL 26" ABOVE FLOOR. ISOLATE CONDUIT FROM BUILDING STRUCTURE. ATTACH TO TELESCOPE PIER ONLY.
4. PROVIDE 20 FT. OF #2 BARE COPPER IN TELESCOPE STRUCTURE FOOTING (UFER). EXTEND #2 FROM UFER TO PANEL 'M' GROUND BUS. CONNECT TO LIGHTNING PROTECTION SYSTEM COUNTERPOISE WITH #2 BARE COPPER. RUN ALONG WEST SIDE OF BUILDING SUPPORT COLUMN.
5. THREE W LUMINAIRE UNDERFLOOR WITH 100 WATT STANDARD INSIDE FROSTED LAMP IN LIEU OF REP. PROVIDE LABEL ON SWITCH "EXTERIOR LIGHTS".
6. PROVIDE 1/4" CONDUIT FROM ELECTRONICS CONSOLE TO PANEL 'M' ON TELESCOPE LEVEL. PROVIDE 1-#8 GREEN INSULATED COPPER WIRE FROM PANEL 'M' GROUND BUS TO ELECTRONICS CONSOLE.
7. 2" C. STUBBED UP TO FLOOR ONE INCH AT EACH END. RUN HORIZONTALLY UNDER FLOOR.
8. 1" C. UNDER FLOOR TO DOME SLIT & AZIMUTH CONTROL PANEL TO ELECTRONICS CONSOLE FOR REMOTE OPERATION.
9. DOME SLIT, LOUVER & AZIMUTH CONTROL PANEL TO CONTAIN THREE SIZE 0 REVERSING CONTACTORS WITH 24VAC COILS W/ SURGE SUPPRESSION. PROVIDE 12CV TO 24VAC CONTROL POWER TRANSFORMER.
10. #3/0 LIGHTING PROTECTION SYSTEM DOWN LEAD IN 1/2" P.V.C. TIE TO REINFORCING STEEL IN FOOTING, TO COLUMN BASE PLATE, TO COUNTERPOISE RING.
11. 8" X 8" GASKETED WIREWAY (SQUARE D CLASS 5120) BELOW FLOOR.
12. 8" X 8" WIREWAY SLEEVE THROUGH CONCRETE PIER. PROVIDE FLEX CONNECTION TO ISOLATE VIBRATION. WRAP WIREWAY WITH RUBBER OR NEOPRENE SHEET AND ATTACH TO WIREWAY WITH HOSE CLAMPS.
13. 8" X 8" WIREWAY WITH TOP EXTENDING UP THROUGH TELESCOPE PIER TOP. BOTTOM OPEN FOR EXHAUST AIR.
14. DOME DRIVE MOTOR WILL BE FURNISHED BY OWNER.
15. 8" X 8" WIREWAY 90 DEGREE ELBOW WITH TOP EXTENDING THROUGH FLOOR +1".
16. 1' X 2' ACCESS DOOR IN CONCRETE PIER.



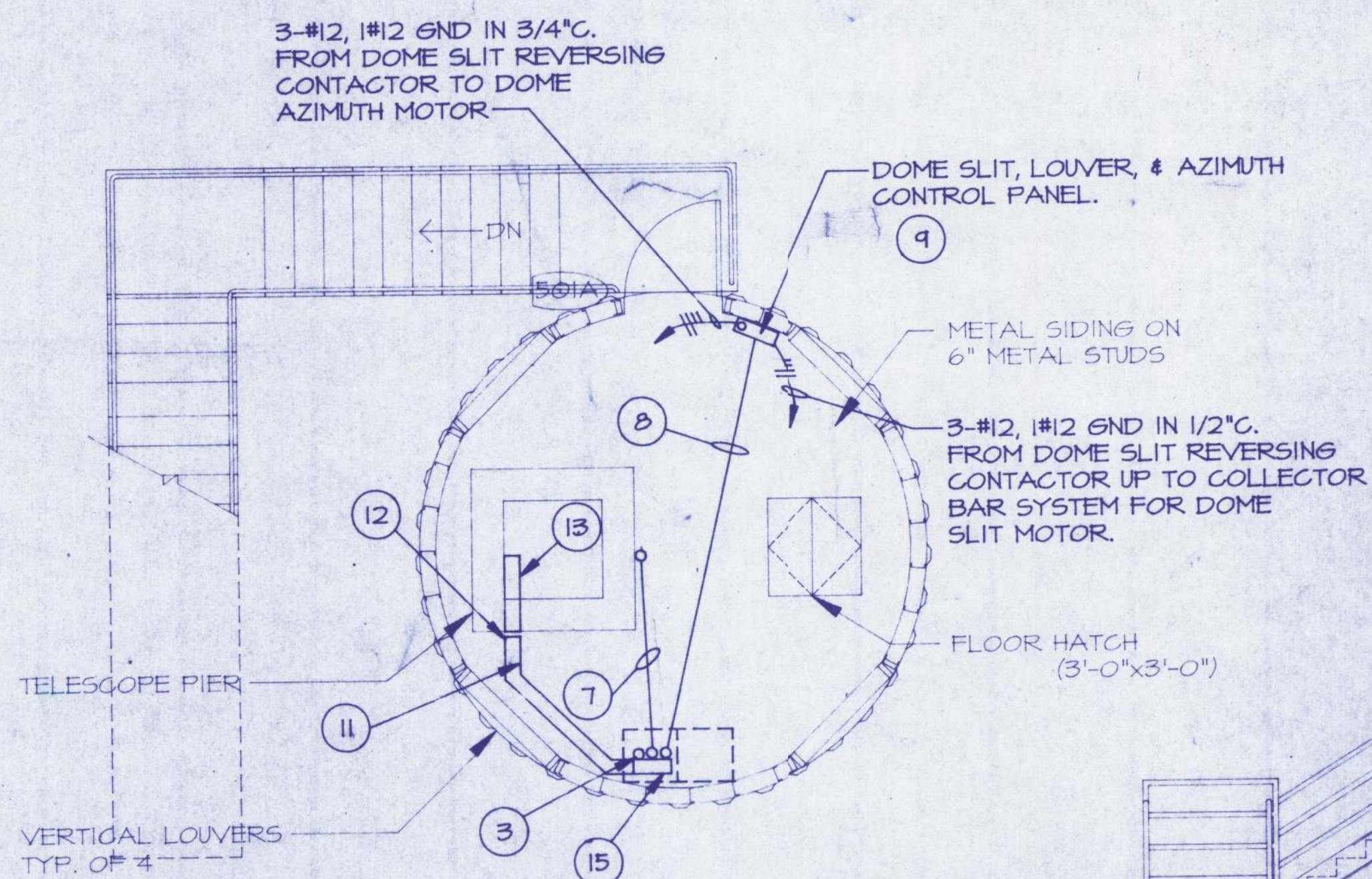
LIGHTING PLAN
SCALE: 1/4" = 1'-0"



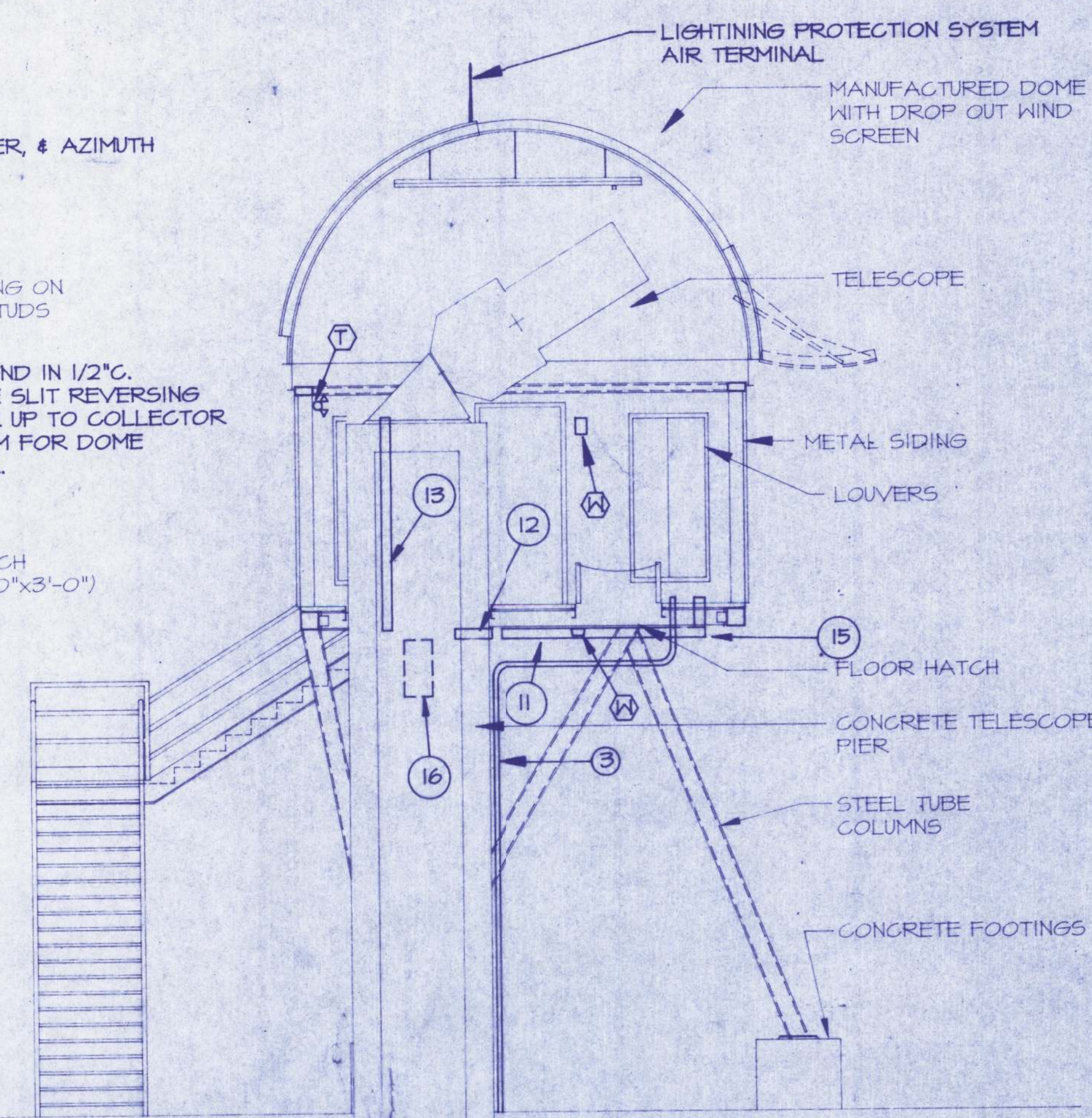
POWER PLAN
SCALE: 1/4" = 1'-0"



GROUND LEVEL POWER PLAN
SCALE: 1/4" = 1'-0"



SPECIAL SYSTEM PLAN
SCALE: 1/4" = 1'-0"



BUILDING SECTION
SCALE: 1/4" = 1'-0"

LAST UPDATE 02/01/93

Sloan Digital Sky Survey Telescope Enclosure
and Support Facilities
for
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Revisions

Description	Date

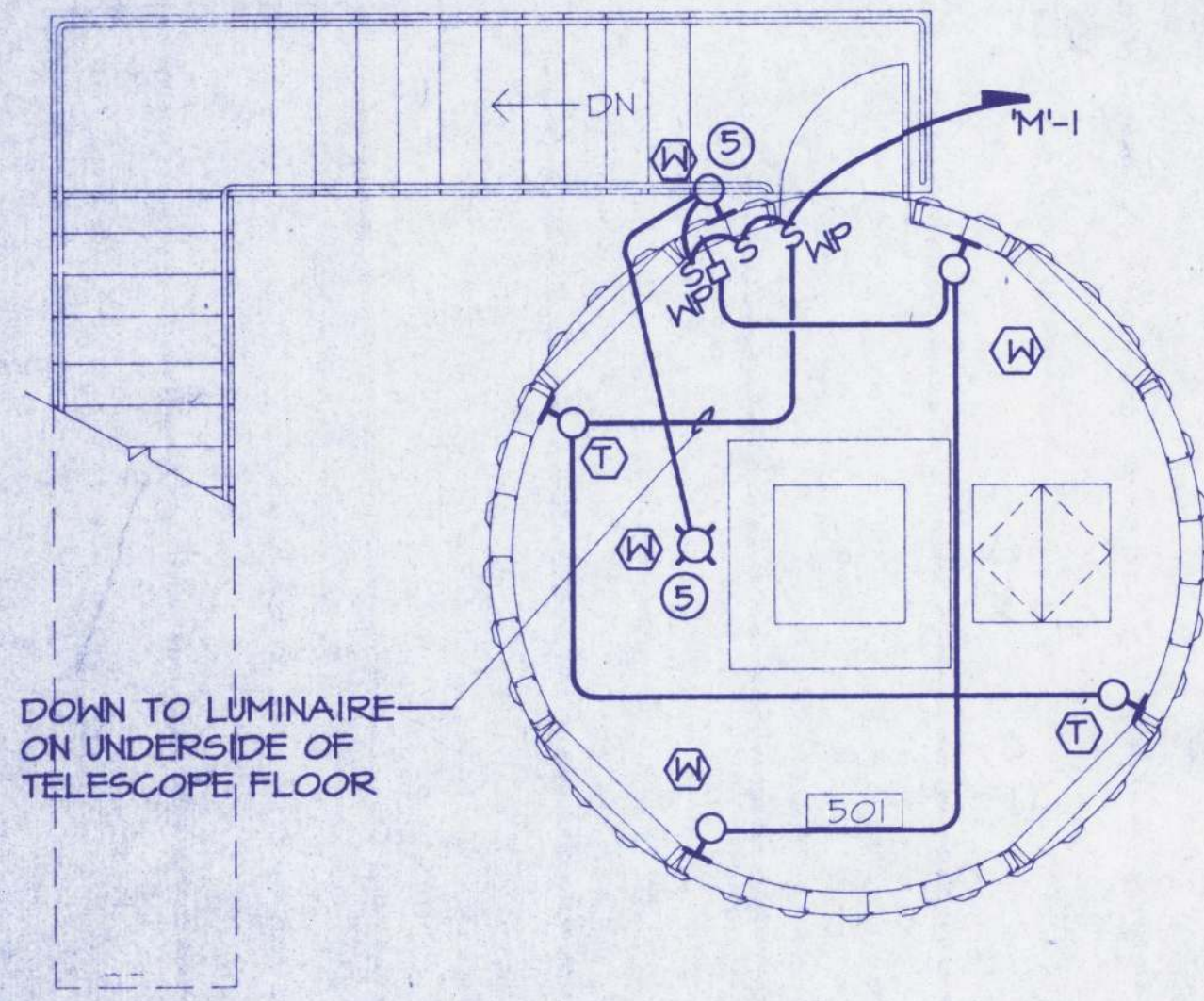
Drawn: J.A.P.
Checked: L.T.H.
Date: JAN. 22, 1992

Drawing Title
MONITOR TELESCOPE LIGHTING AND POWER PLAN

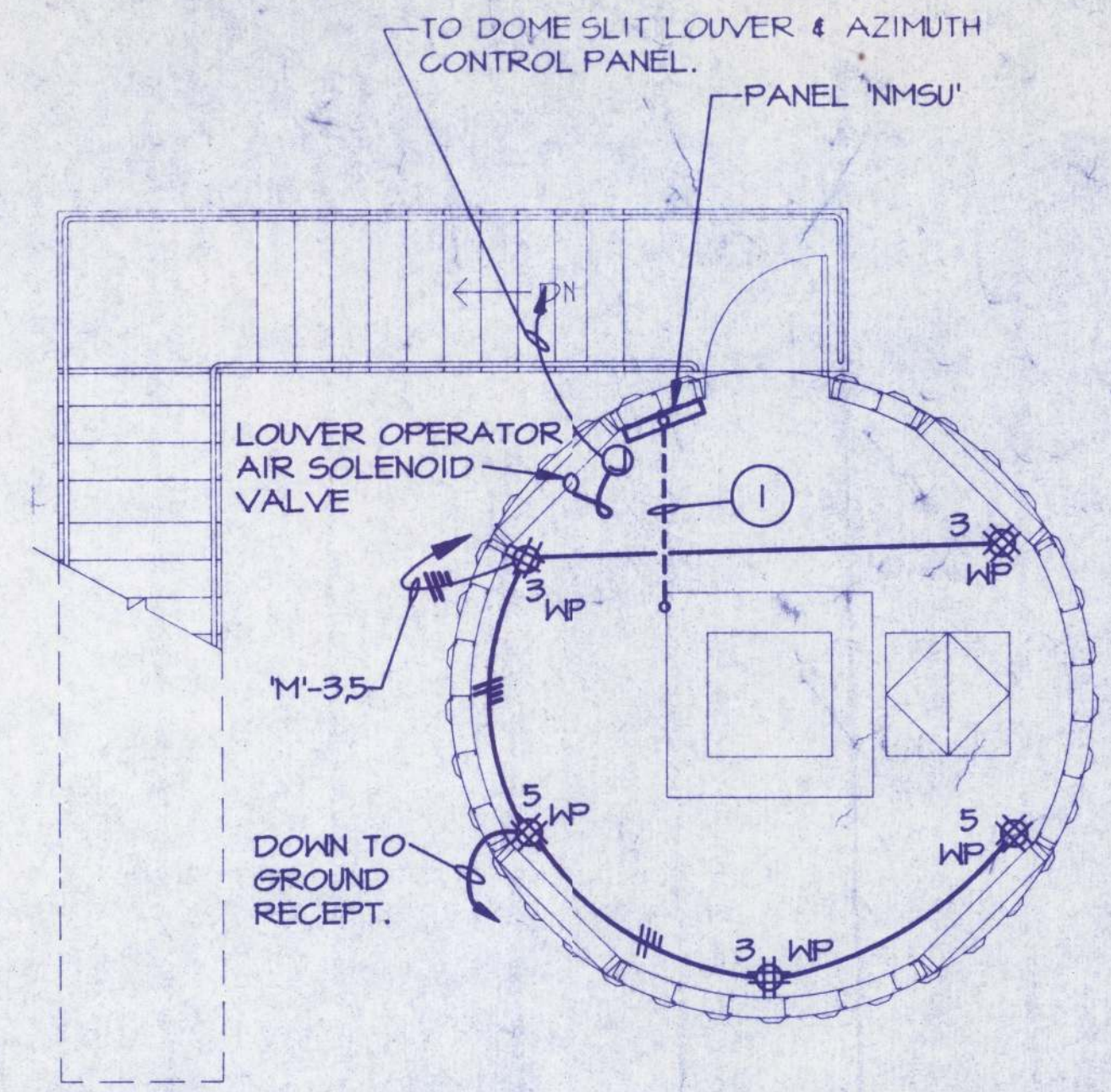
Sheet Number
E-8
68 of 76 Sheets

KEYNOTES - NMSU TELESCOPE

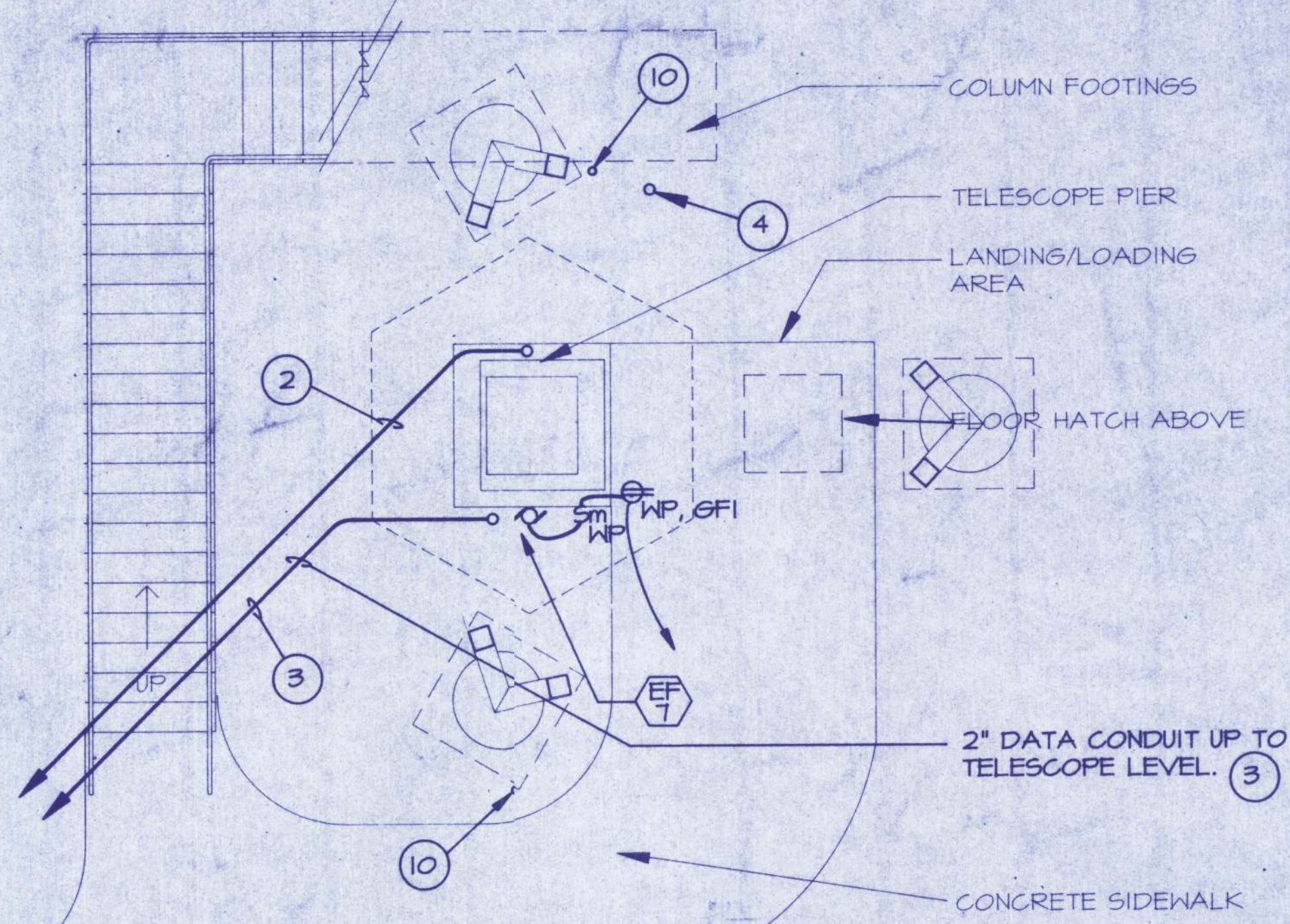
1. 2" CONDUIT FROM PANEL 'M', DOWN UNDER AND ACROSS FLOOR TO TELESCOPE PIER. STUB UP ADJACENT TO PIER AT 6" ABOVE FLOOR LEVEL. DO NOT ATTACH CONDUIT TO PIER STRUCTURE. ATTACH ONLY TO BUILDING STRUCTURE.
2. 2" CONDUIT FROM PANEL 'M' TO PANEL 'SB'. REFER TO ONE-LINE DIAGRAM. PROVIDE 3 FT. OF FLEX CONDUIT TO ISOLATE VIBRATIONS BETWEEN PIER AND BUILDING.
3. 2" CONDUIT FROM 4'x4' FLOOR PULL BOX IN OPERATIONS BUILDING TO NMSU TELESCOPE. EXTEND 2" C. UP TO TELESCOPE LEVEL 26" ABOVE FLOOR. SOLATE CONDUIT FROM BUILDING STRUCTURE. ATACH TO TELESCOPE PIER ONLY.
4. PROVIDE 20 FT. OF #2 BARE COPPER II TELESCOPE STRUCTURE FOOTING (UFER). EXTEND #2 FROM UFER TO PANEL 'M' GROUND BUS. CONNECT TO LIGHTNING PROTECTION SYSTEM COUNTERPOISE WITH #2 BARE COPPER.
5. TYPE W LUMINAIRE UNDER FLOOR WITH 100 WATT STANDARD INSIDE FROSTED LAMP IN LIEU OF RED LAMP. PROVIDE LABEL ON SWITCH "EXTERIOR LIGHTS".
6. PROVIDE 1/4" CONDUIT FROM ELECTRONICS CONSOLE TO PANEL 'M' ON TELESCOPE LEVEL. PROVIDE 1-#8 GREEN INSULATED COPPER WIRE FROM PANEL 'M' GROUND BUS TO ELECTRONICS CONSOLE.
7. 2" C. STUBBED UP TO FLOOR ONE INCH AT EACH END. RUN HORIZONTALLY UNDER FLOOR.
8. 1" C. UNDER FLOOR TO DOME SLIT & AZMUTH CONTROL PANEL TO ELECTRONICS CONSOLE FOR REMOTE OPERATION.
9. DOME SLIT, LOUVER & AZIMUTH CONTROL PANEL TO CONTAIN THREE SIZE 0 REVERSING CONTACTORS WITH 24VAC COILS W/ SURGE SUPPRESSION. PROVIDE 120V TO 24VAC CONTROL POWER TRANSFORMER.
10. #3/0 LIGHTING PROTECTION SYSTEM DOWN LEAD IN 1/2" P.V.C. TIE TO REINFORCING STEEL IN FOOTING, TO COLUMN BASE PLATE, TO COUNTERPOISE RING, & EXTEND UP TO DOME. SEE DETAIL...
11. 8" x 8" GASKETED WIREWAY (SQUARE D CLASS 5120) BELOW FLOOR.
12. 8" x 8" WIREWAY SLEEVE THROUGH CONCRETE PIER. PROVIDE FLEX CONNECTION TO ISOLATE VIBRATION. WRAP WIREWAY WITH NEOPRENE SHEET AND ATTACH TO WIREWAY WITH HOSE CLAMPS.
13. 8" x 8" WIREWAY THROUGH CONCRETE PIER.
14. DOME DRIVE MOTOR WILL BE FURNISHED BY OWNER.
15. 8" x 8" WIREWAY 90° ELBOW WITH TOP EXTENDING THROUGH FLOOR +1".
16. 1' x 2' ACCESS DOOR IN CONCRETE PIER.
17. 6" x 6" GASKETED WIREWAY (SQUARE D CLASS 5120) EXTEND WIREWAY THROUGH WALL AND PROVIDE A 90° ELBOW FACING UP WITH A CLOSING PLATE ON EACH END. WEATHER STATION IS TO MOUNT ON WIREWAY.
18. PANEL NMSU IS IDENTICAL TO PANEL 'M'. REFER TO PANEL SCHEDULE FOR PANEL 'M' FOR REQUIREMENTS FOR PANEL NMSU.
19. REFER TO SHEET E-6 FOR DETAILS.



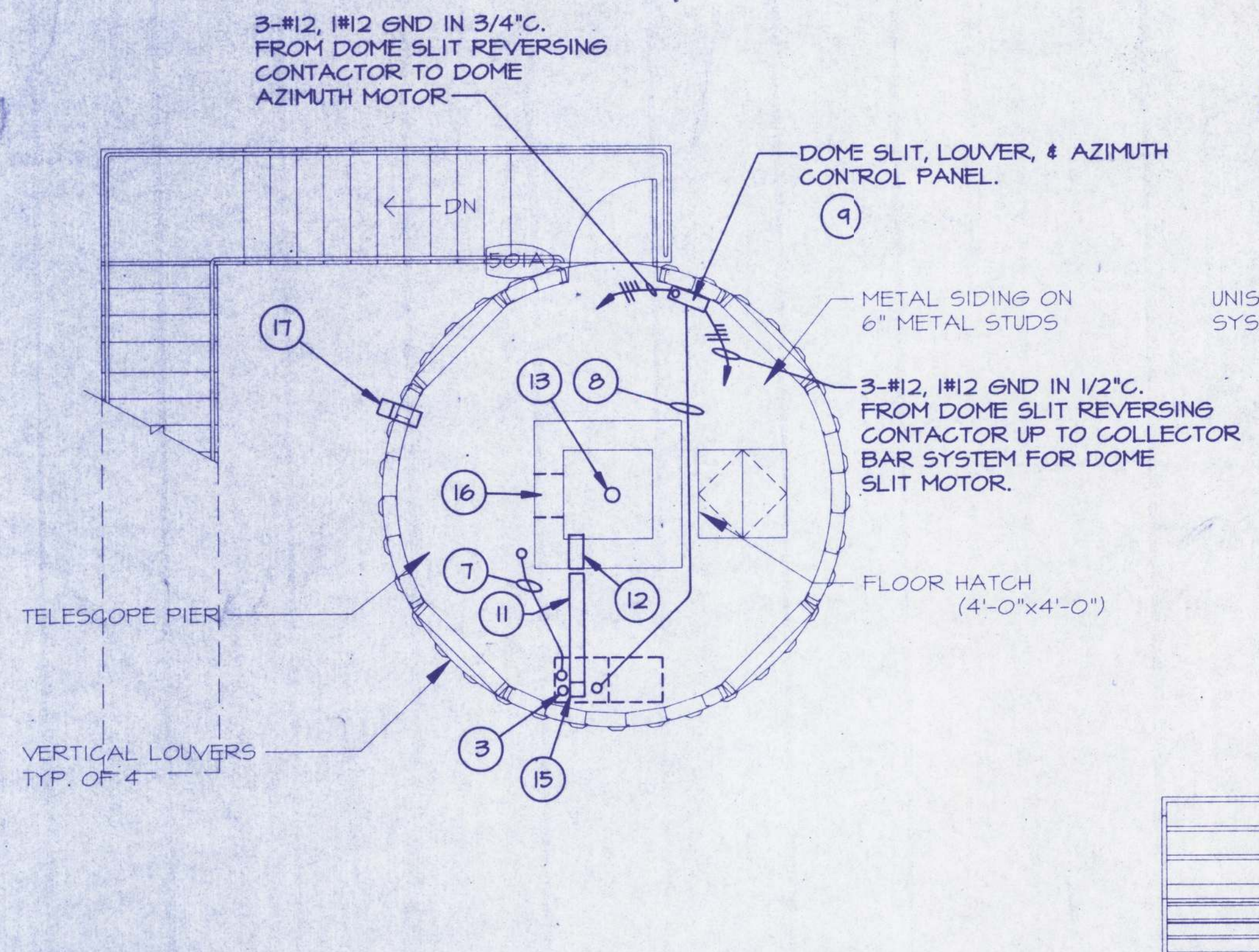
LIGHTING PLAN
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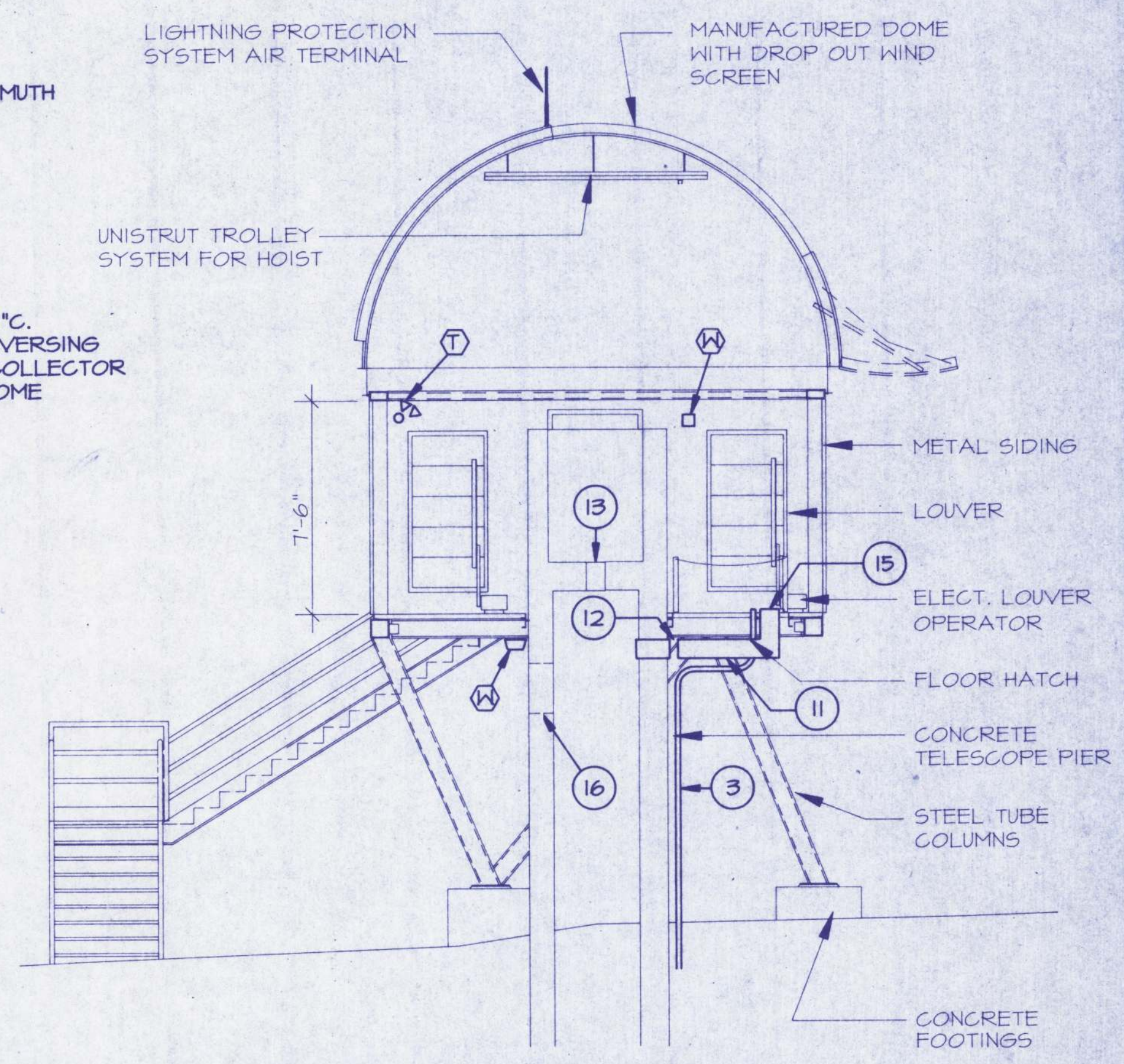
POWER PLAN
SCALE: 1/4" = 1'-0"



GROUND LEVEL POWER PLAN
SCALE: 1/4" = 1'-0"



SPECIAL SYSTEM PLAN
SCALE: 1/4" = 1'-0"



BUILDING SECTION
SCALE: 1/4" = 1'-0"

ALTERNATE NO. 1

LAST UPDATE 02/01/93

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M3 PN 92119

Revisions

Description	Date

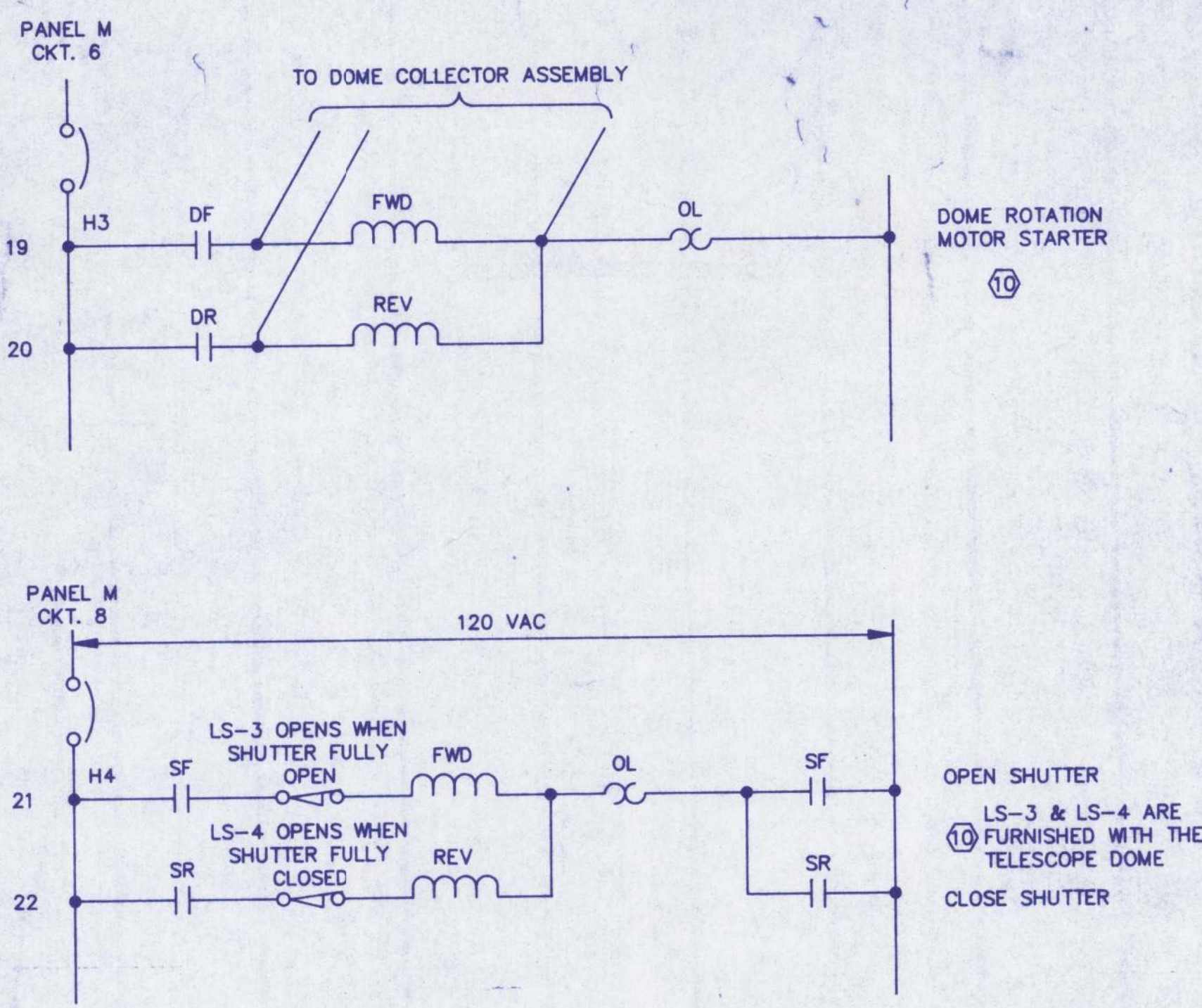
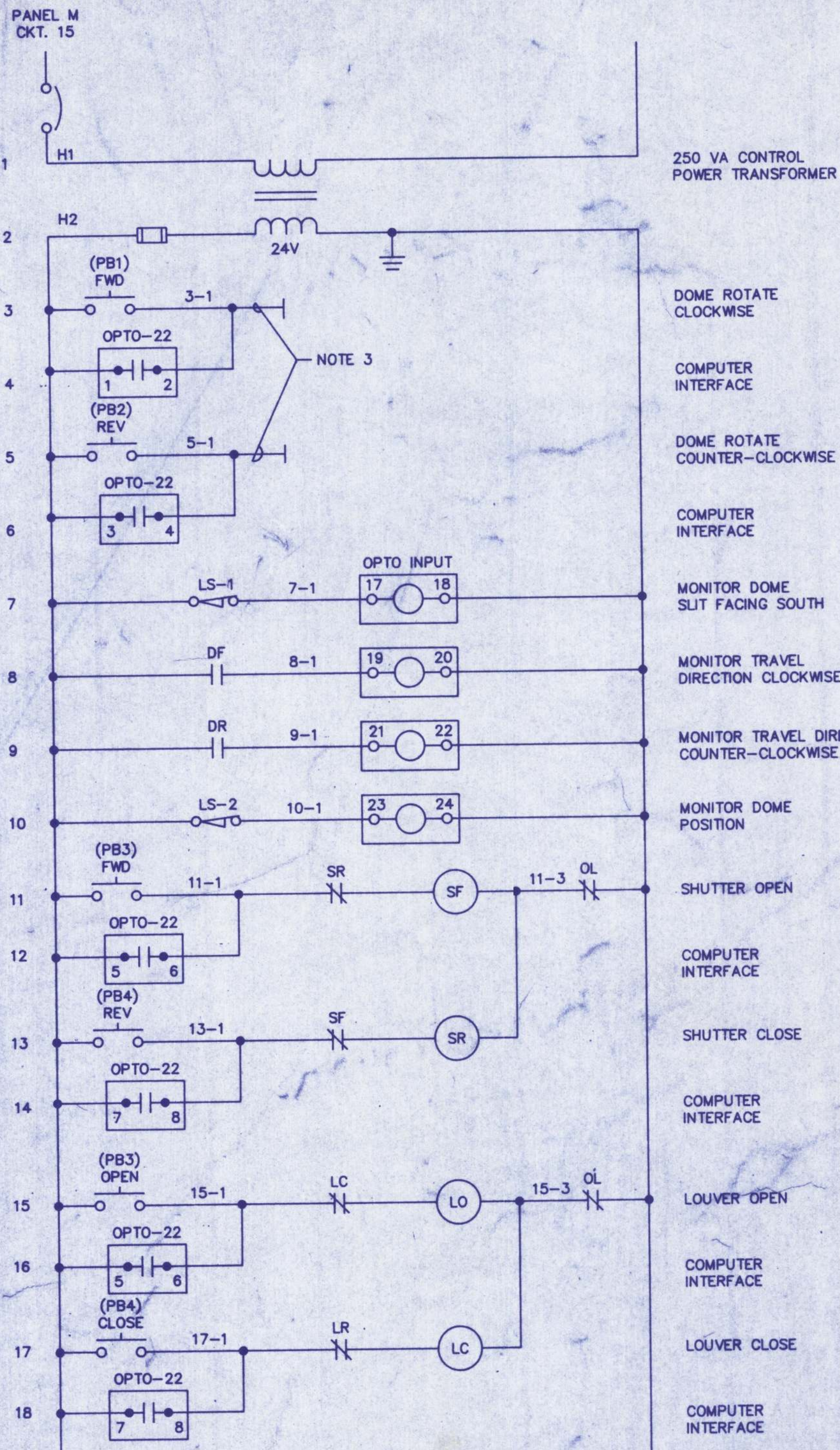
Drawn: JAP/RP
Checked: L.T.W.
Date: JAN. 22, 1993

Drawing Title
N.M.S.U. TELESCOPE LIGHTING AND POWER PLAN

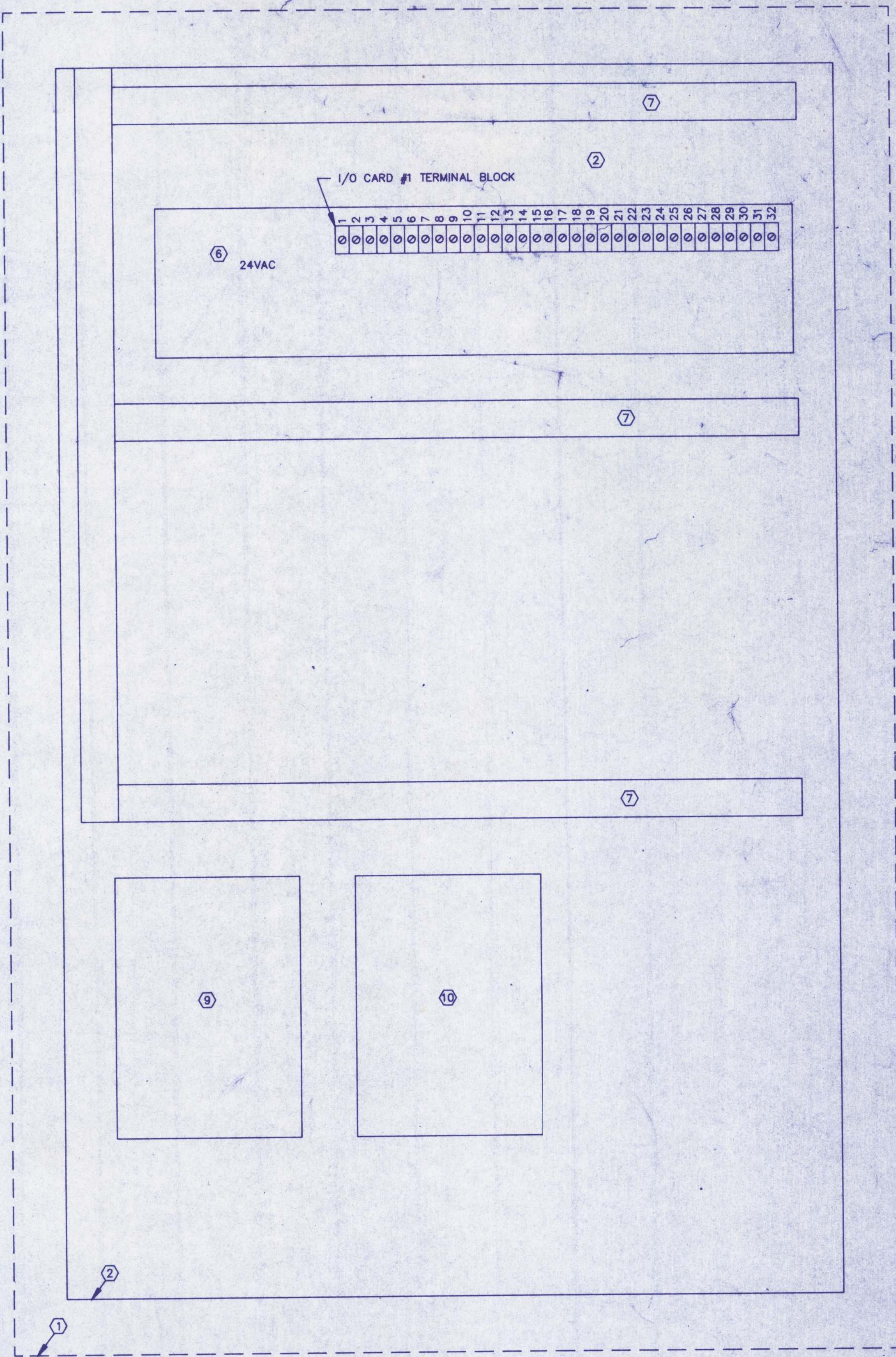
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E-14

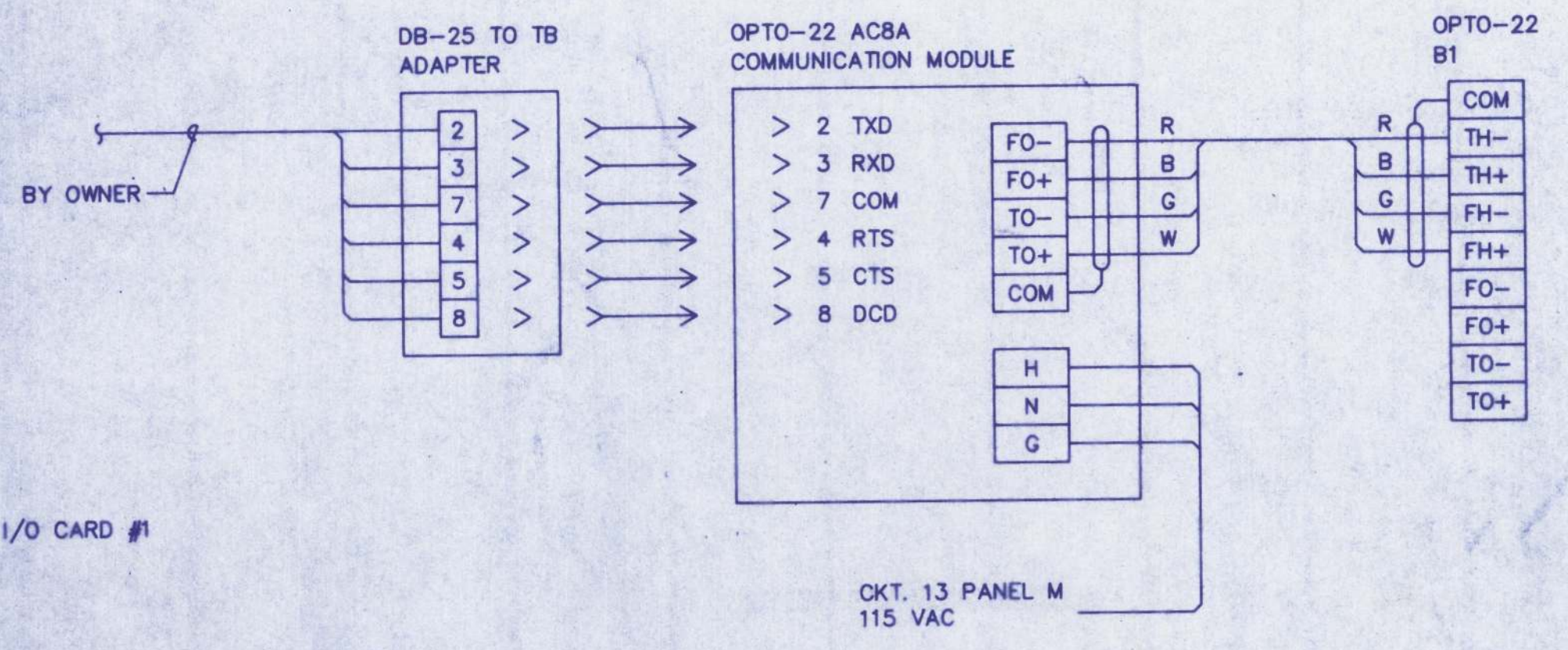
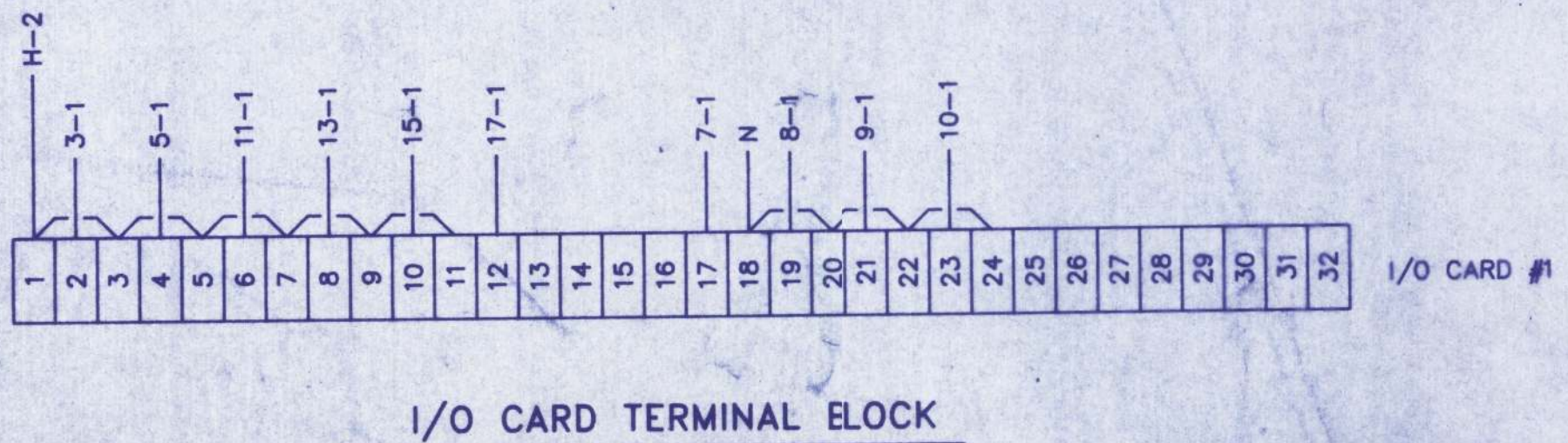
14 of 70 Sheets



BILL OF MATERIALS		
ITEM	QUANTITY	DESCRIPTION
1	1 EA.	NEMA 12 24"x36"x12" ENCLOSURE
2	1 EA.	STEEL SUBPANEL - 21"x33" PAINTED WHITE
3		NOT USED
4		NOT USED
5		NOT USED
6	1 EA.	16 POSITION MOUNT RUCK #PB16A
7	AS REQD.	PANDUIT 1"x4" PLASTIC WIRING DUCT
8		NOT USED
9	1 EA.	MINARIK PCM4 DC MOTOR CONTROLLER
10	1 EA.	NEMA SIZE 0 FULL VOLTAGE REVERSING STARTER, NEMA12 ENCLOSURE 120V TO 24V CONTROL POWER TRANSFORMER. FORWARD AND REVERSE PUSH BUTTONS. ALLEN-BRADLEY #505-AJD.
LO	1	PNEUMATICALLY OPERATED LOUVER 3 WAY SOLENOID VALVE, OPEN COIL.
LC	1	PNEUMATICALLY OPERATED LOUVER 3 WAY SOLENOID VALVE, CLOSE COIL.



NMSU & MONITOR DOME, LOUVER & SHUTTER CONTROLS
TYP. FOR 2



OPTO-22 INTERFACE PANEL (TYP. FOR 2)

- SCALE: 6" = 1'-0"
- NOTES:
1. MOUNT PUSH BUTTONS IN COVER OF INTERFACE PANEL LABEL EACH BUTTON.
 2. NMSU DOME CONTROLS ARE BY TELESCOPE VENDOR.
 3. MONITOR DOME OPTO 22 CONTROLS TO BE CONNECTED BY OWNER. EXTEND CONDUCTORS TO CONTROL ENCLOSURE AND TAG.

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MONITOR DOME CONTROL ONE LINE DIAGRAM

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E-16

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