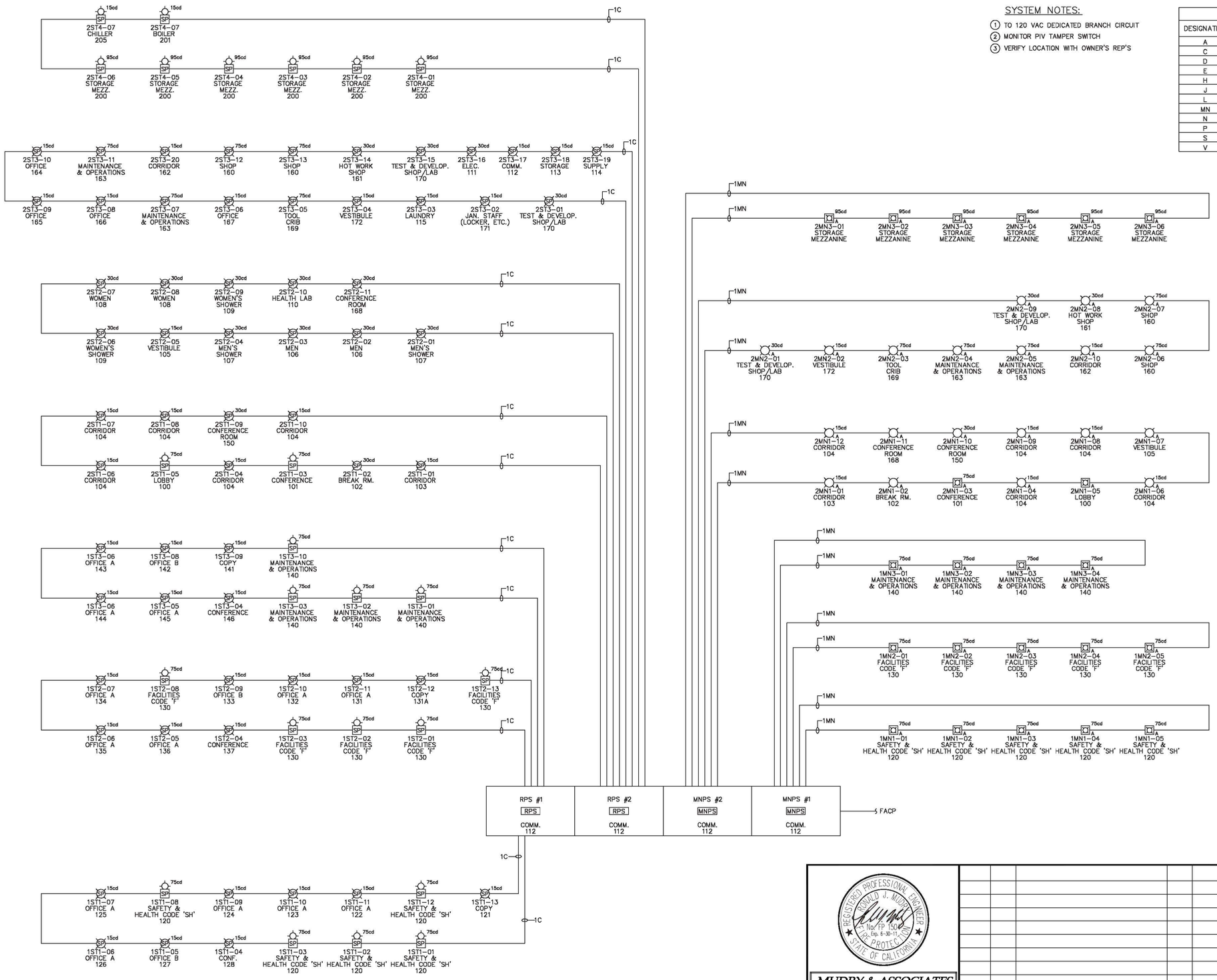
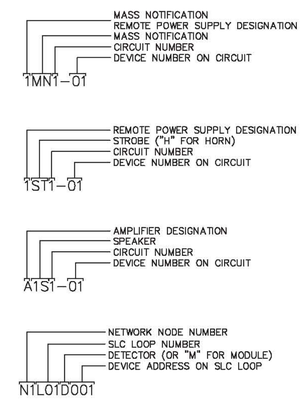


SYSTEM NOTES:

1. TO 120 VAC DEDICATED BRANCH CIRCUIT
2. MONITOR PIV TAMPER SWITCH
3. VERIFY LOCATION WITH OWNER'S REP'S

WIRE LEGEND			
DESIGNATION	CIRCUIT TYPE	WIRE TYPE	CIRCUIT STYLE/CLASS
A	SIGNALING LINE CIRCUIT (SLC LOOP)	2#16 TWISTED/UNSHIELDED	STYLE 7, CLASS A
C	STROBE CIRCUIT	2#12 AWG	CLASS A
D	24 VDC POWER	2#16 AWG	
E	INITIATING DEVICE CIRCUIT	2#16 AWG	CLASS A
H	ANNUNCIATOR DATA CIRCUIT	2#16 TWISTED/SHIELDED	
J	24 VDC ANNUNCIATOR POWER	2#16 AWG	
L	LOW LEVEL (12V PTP) AUDIO RISER	2#16 TWISTED/SHIELDED	
MN	MASS NOTIFICATION STROBE CIRCUIT	2#14 AWG	CLASS A
N	NETWORK CIRCUIT	2#18 TWISTED/UNSHIELDED	STYLE 7, CLASS A
P	DIGITAL AUDIO LOOP (DAL)	BELDEN 5320UJ (18 AWG)	STYLE 7, CLASS A
S	SYNCHRONIZATION CIRCUIT	2#16 AWG	CLASS A
V	SPEAKER CIRCUIT	2#16 TWISTED/SHIELDED	CLASS A

DEVICE LEGEND		
SYMBOL	DEVICE	PART NUMBER
C	CONTROL MODULE	
	END OF LINE RESISTOR	
ANN	FIRE ALARM ANNUNCIATOR	
FACP	FIRE ALARM CONTROL PANEL	
FS	FLOW SWITCH	BY OTHERS
I	ISOLATOR MODULE	
J	JUNCTION BOX	
F	MANUAL PULL STATION	
MNPS	MASS NOTIFICATION REMOTE POWER SUPPLY	(FUTURE)
M	MONITOR MODULE	
P	PHOTOELECTRIC DETECTOR/BASE	
PIV	POST INDICATING VALVE	BY OTHERS
PRN	PRINTER	
R	RELAY MODULE	
RM	REMOTE MICROPHONE	
	SPEAKER/STROBE–CEILING MOUNTED	
	SPEAKER/STROBE–WALL MOUNTED	
A	STROBE LIGHT–CEILING MOUNTED, MASS NOTIFICATION	(FUTURE)
A	STROBE LIGHT–WALL MOUNTED, AMBER	(FUTURE)
SS HV	SURGE SUPPRESSOR – HIGH VOLTAGE	
SS LV	SURGE SUPPRESSOR – LOW VOLTAGE	
TS	TAMPER SWITCH	BY OTHERS
D	FIRE OR SMOKE DAMPER	BY OTHERS
DD	DUCT SMOKE DETECTOR	BY OTHERS



ADDRESS LABEL CLARIFICATION

REGISTERED PROFESSIONAL ENGINEER
RONALD J. MUDRY
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Exp. 6-30-11
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DATE	SYM	REVISION	BY	A'PD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
FIRE ALARM RISER DIAGRAM

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS		DATE
Chief, Facilities Engineering & Asset Mgmt. Office	DAN CROWLEY	8-18-11
Project Requestor/Customer	DAN CROWLEY	8-18-11
Facilities Project Manager	GEMMA FLORES	8-18-11
Chief, Office of Protective Services	JOHN ZELLMER	8-18-11
Chief – Safety, Health and Environmental Office	DAN MULLEN	8-18-11
DFRC Chief Information Officer	KEN NORLIN	8-18-11

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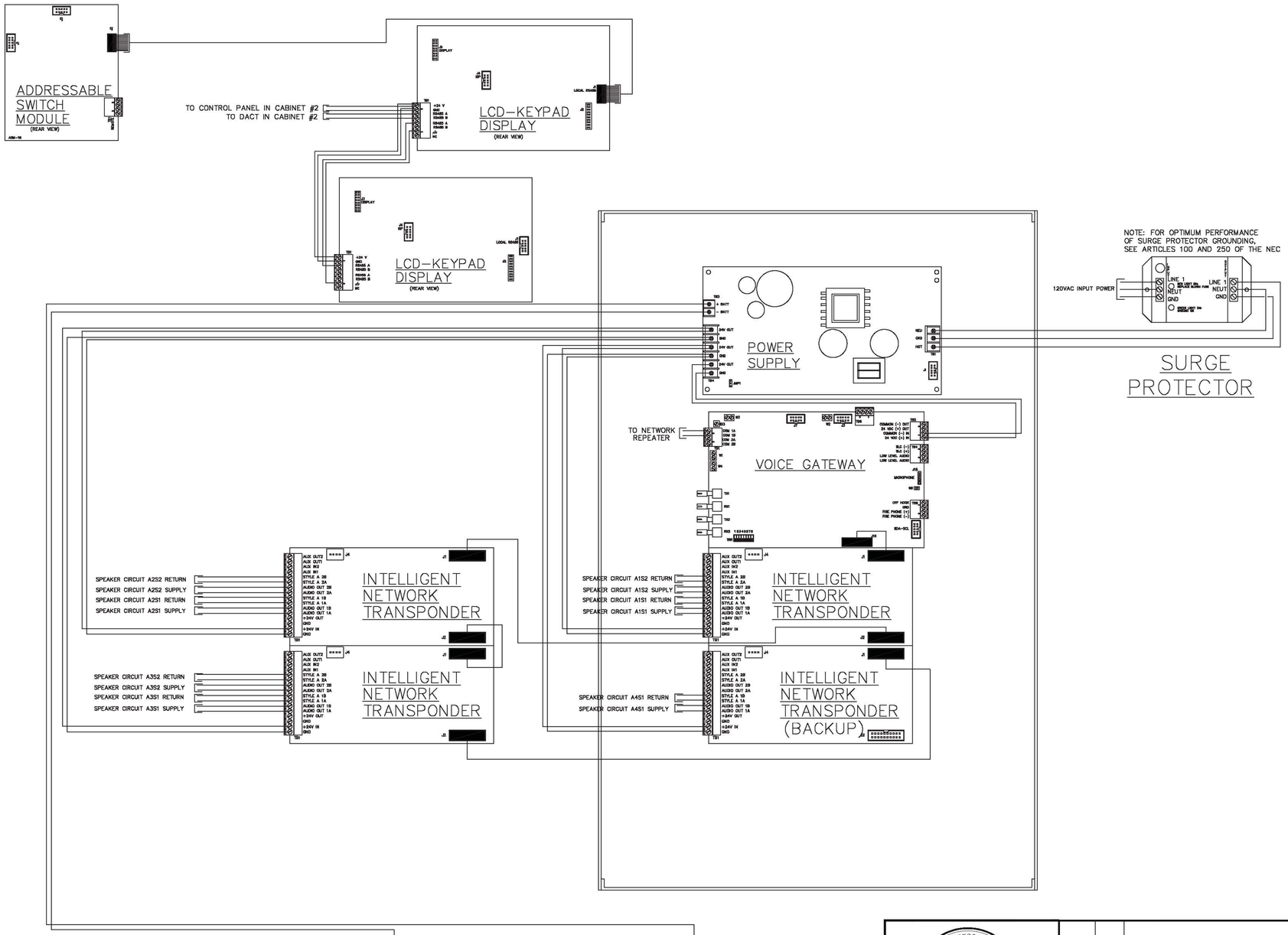
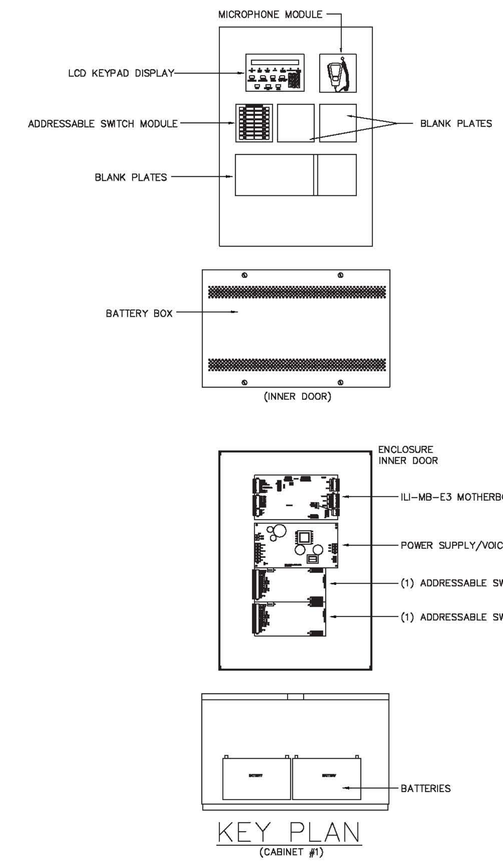
DRAWN BY	HMO	EDM–1703	
SCALE	AS INDICATED	TRADE SH. No.	
FILE NAME		FA2.2	SHEET No. 181 of 195





KEY PLAN
(CABINET #1)

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DATE	SYM	REVISION	BY	A'PD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
FACP WIRING DIAGRAM
CABINET #1

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS	DATE
Chief, Facilities Engineering & Asset Mgmt. Office DAN CROWLEY	8-18-11
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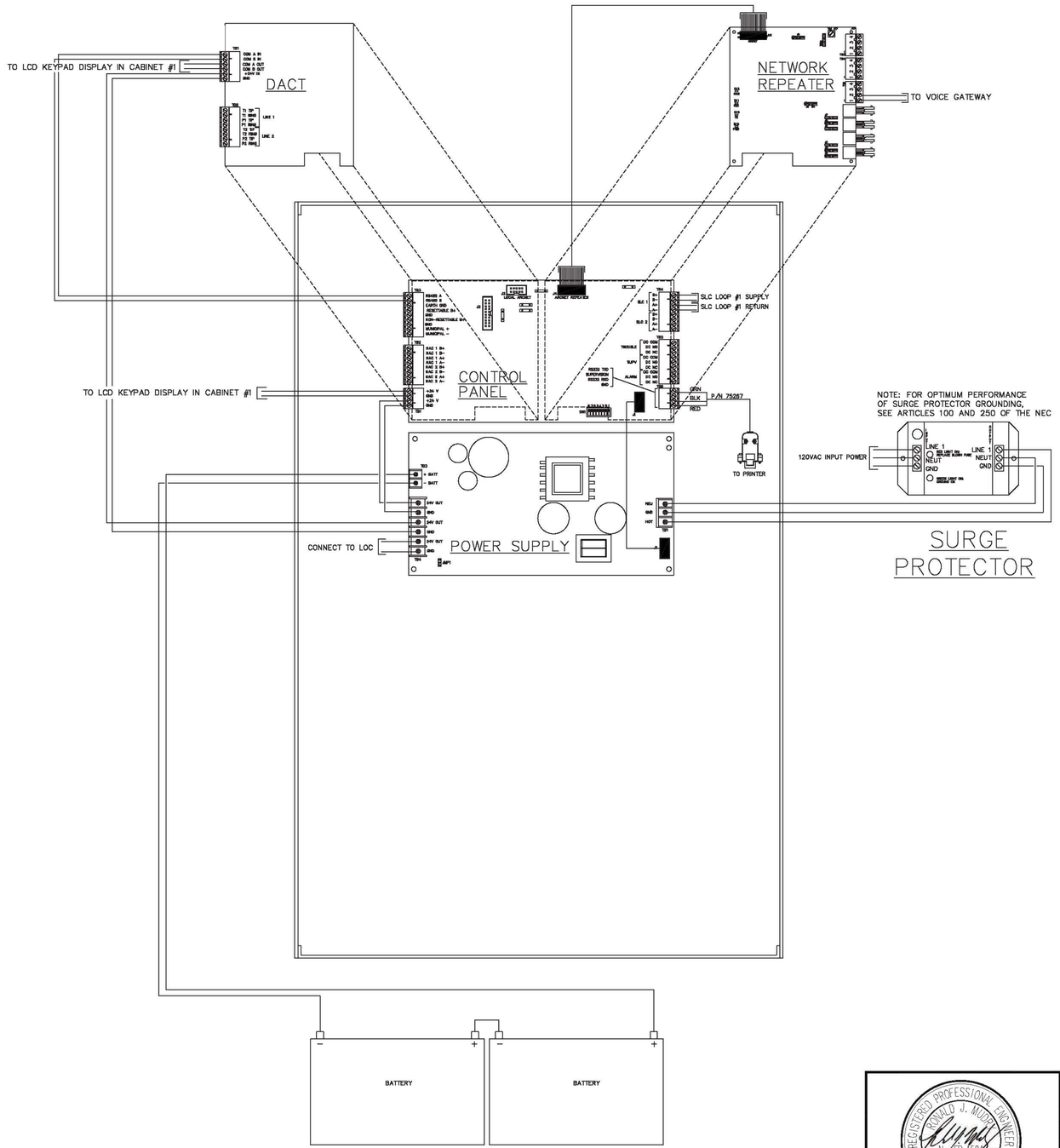
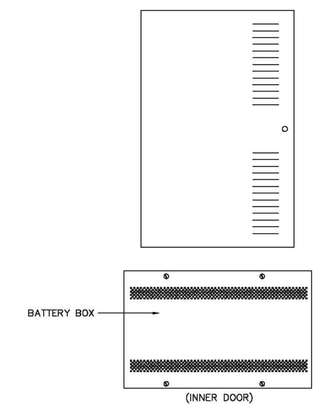
SCALE	AS INDICATED	TRADE Sht. No.	
FILE NAME		FA3.1	SHEET No. 182 of 195





KEY PLAN
(CABINET #2)

REGISTERED PROFESSIONAL ENGINEER
RONALD J. MUDRY
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Exp. 6-30-11
FIRE PROTECTION
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
FACP WIRING DIAGRAM
CABINET #2

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS	DATE
Chief, Facilities Engineering & Asset Mgmt. Office DAN CROWLEY	8-18-11
Project Requester/Customer DAN CROWLEY	8-18-11
Facilities Project Manager GEMMA FLORES	8-18-11
Chief, Office of Protective Services JOHN ZELLMER	8-18-11
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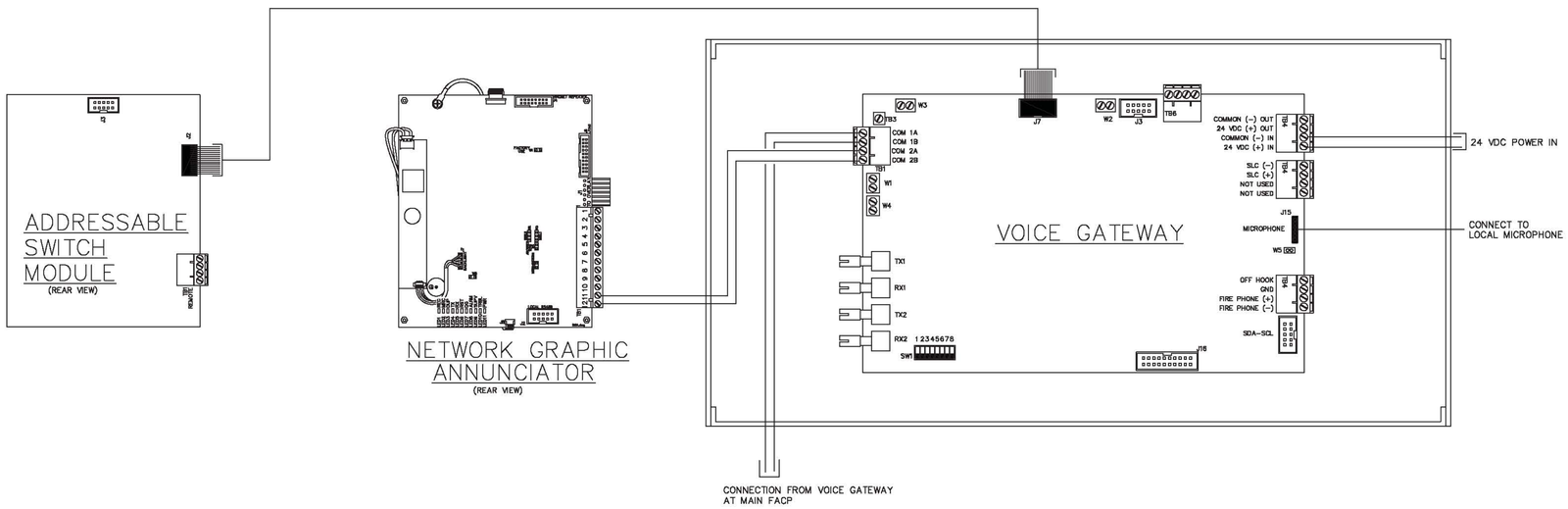
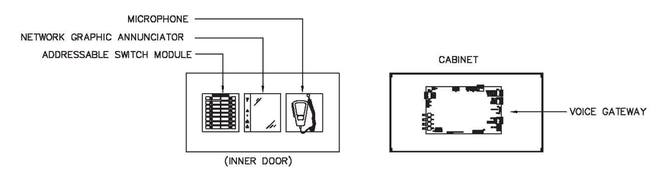
FILE NAME		FA3.2	SHEET No. 183 of 195





KEY PLAN

REGISTERED PROFESSIONAL ENGINEER
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
LOC PANEL WIRING DIAGRAM

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS	DATE
Chief, Facilities Engineering & Asset Mgmt. Office DAN CROWLEY	8-18-11
Project Requestor/Customer DAN CROWLEY	8-18-11
Facilities Project Manager GEMMA FLORES	8-18-11
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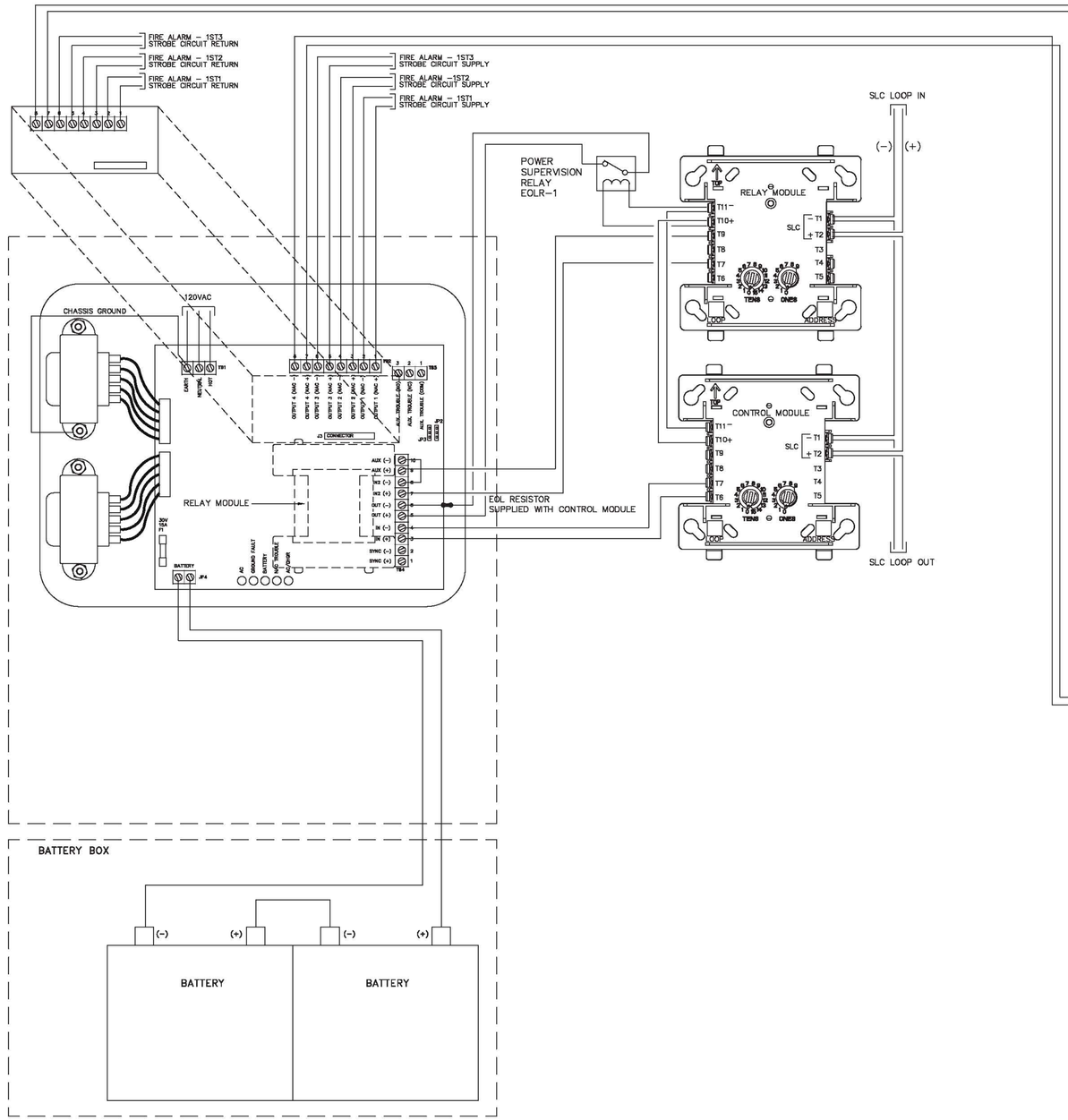
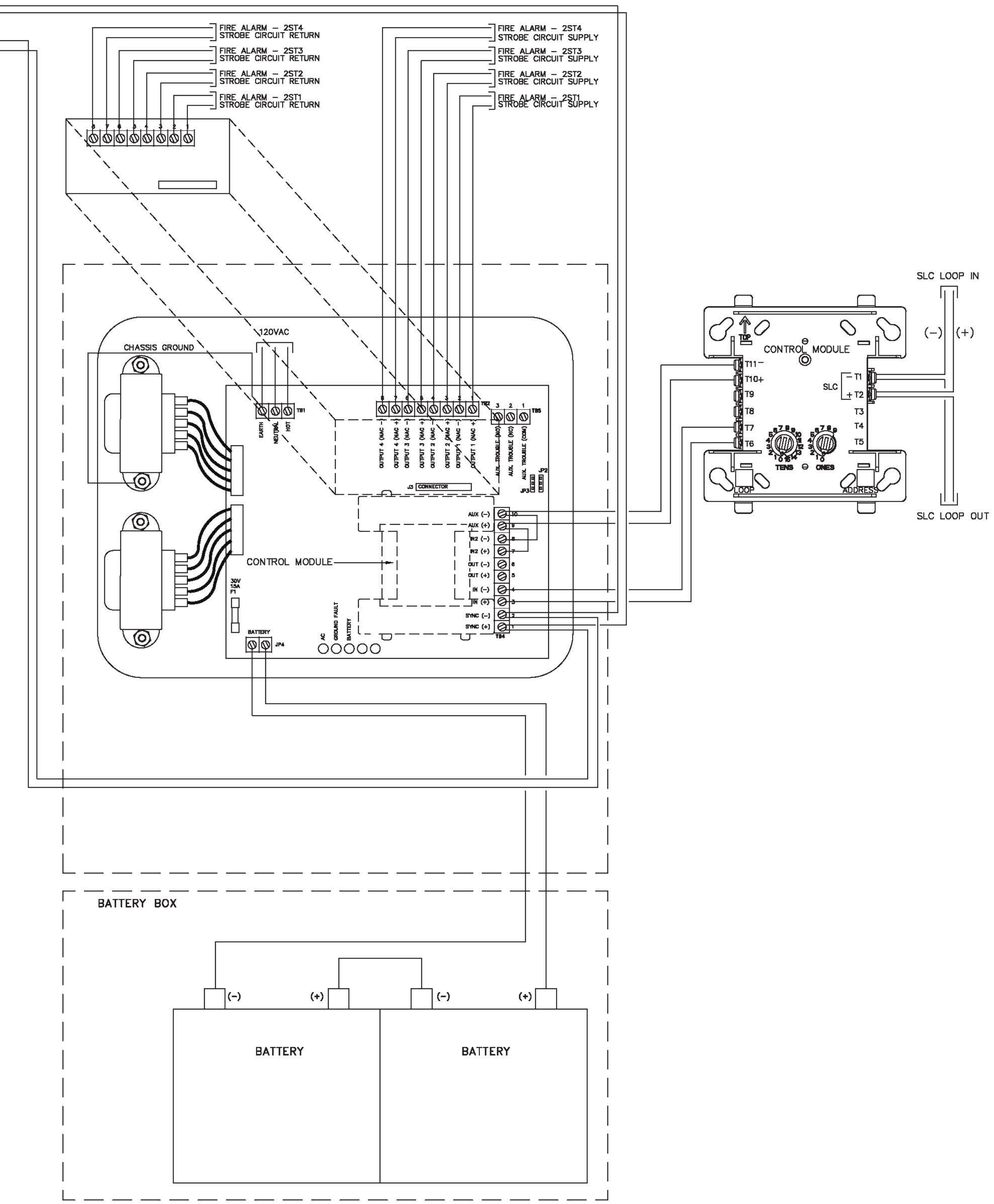
FILE NAME		FA3.3	SHEET No. 184 of 195



WIRING DIAGRAM (RPS #1)



WIRING DIAGRAM (RPS #2)

REGISTERED PROFESSIONAL ENGINEER
DONALD J. MUDRY
No. FP 1516
Exp. 6-30-11
FIRE PROTECTION
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DATE	SYM	REVISION	BY	A'PD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
FIRE ALARM POWER SUPPLY
WIRING DIAGRAMS

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS	DATE
Chief, Facilities Engineering & Asset Mgmt. Office DAN CROWLEY	8-18-11
Project Requestor/Customer DAN CROWLEY	8-18-11
Facilities Project Manager GEMMA FLORES	8-18-11
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DATE STRTD	11/04/10	DATE PRNTD	5/23/11
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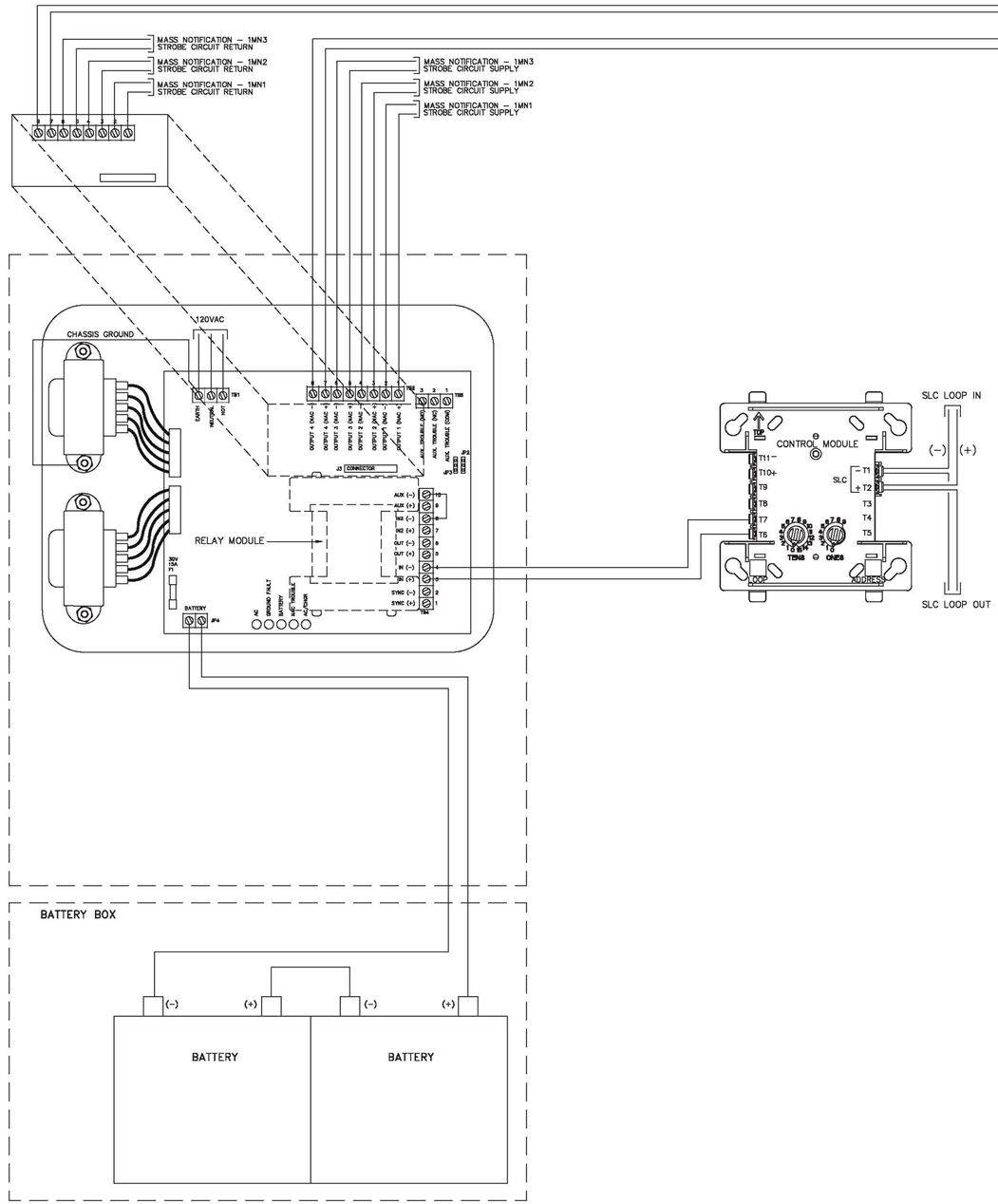
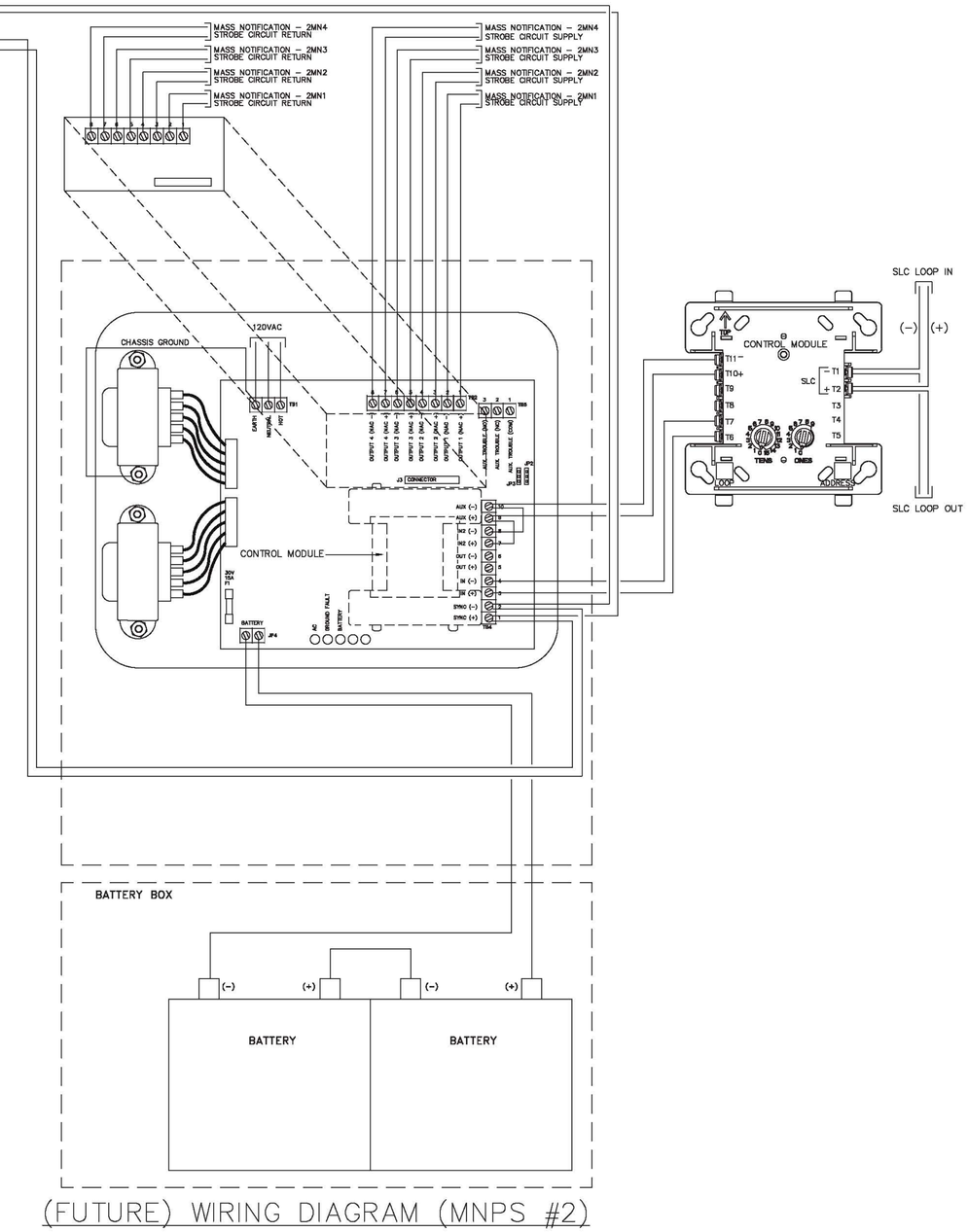


(FUTURE) WIRING DIAGRAM (MNPS #1)



(FUTURE) WIRING DIAGRAM (MNPS #2)

REGISTERED PROFESSIONAL ENGINEER
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No. FP 1504
Exp. 6-30-11
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DATE	SYM	REVISION	BY	A'PD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
MASS NOTIFICATION POWER SUPPLY WIRING DIAGRAMS

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS		DATE
Chief, Facilities Engineering & Asset Mgmt. Office	DAN CROWLEY	8-18-11
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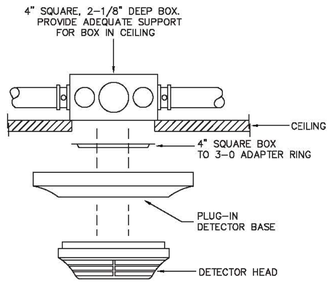
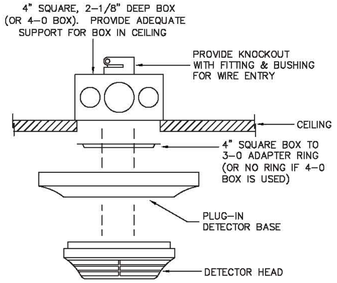
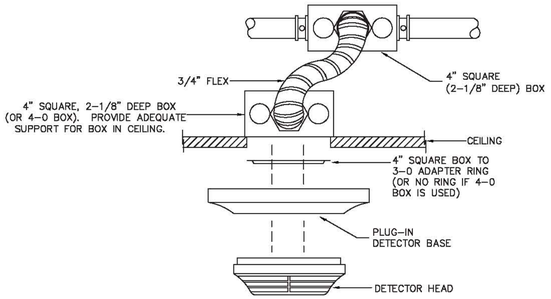
DRAWN BY	HMO		EDM–1703
SCALE	AS INDICATED	TRADE SH. No.	
FILE NAME		FA3.5	SHEET No. 186 of 195



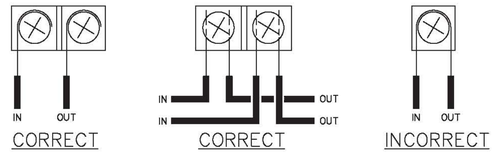
BOX MOUNTING IN SHEETROCK OR PLASTER TYPE CEILINGS (MUST BE INSTALLED WITH CONDUIT)



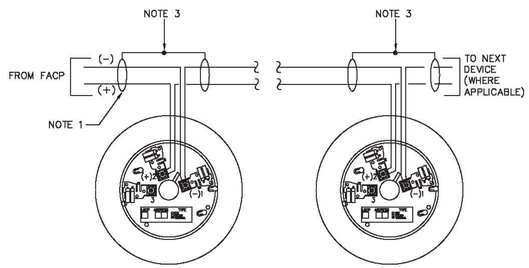
BOX MOUNTING IN LIFT OUT OR INTERLOCKING TYPE CEILINGS FOR SYSTEMS WITH CABLE INSTALLED IN PLENUM



BOX MOUNTING IN LIFT OUT OR INTERLOCKING TYPE CEILINGS WITH SYSTEMS INSTALLED IN CONDUIT



WIRING METHODS



NOTE 1: DETECTOR WIRING (SLC LOOP) TO BE INSTALLED USING TWISTED CABLE.

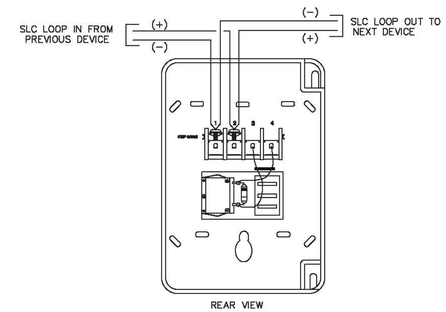
NOTE 2: DO NOT LOOP WIRE UNDER TERMINALS 1 & 2. BREAK WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS.

NOTE 3: OBSERVE POLARITY. DO NOT GROUND CONTROL WIRES.

NOTE 4: SET THE ROTARY DIALS ON THE REAR OF THE DETECTOR HEAD TO CORRESPOND TO THE LAST TWO DIGITS OF THE DEVICE LOOP ADDRESS. REFER TO THE FLOOR PLANS FOR THE DETECTOR DEVICE LOOP ADDRESS.

NOTE 5: RECORD THE LOOP ADDRESS & DEVICE TYPE IN THE SPACES PROVIDED ON THE DETECTOR BASE.

BASE WIRING DETAILS

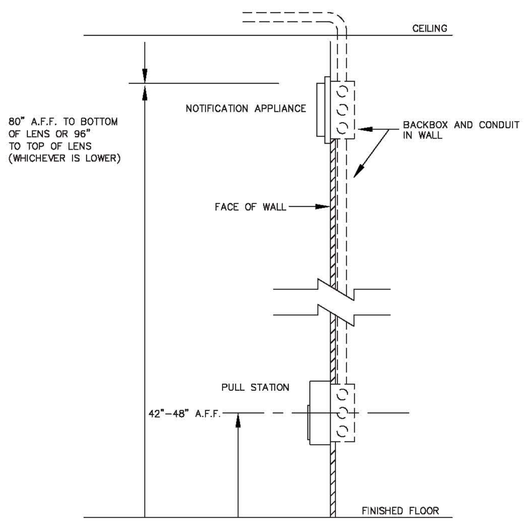


NOTE:
CAN BE FLUSH MOUNTED ON A SINGLE GANG DEEP BOX OR CAN BE SURFACE MOUNTED ON A SB-10 BOX.

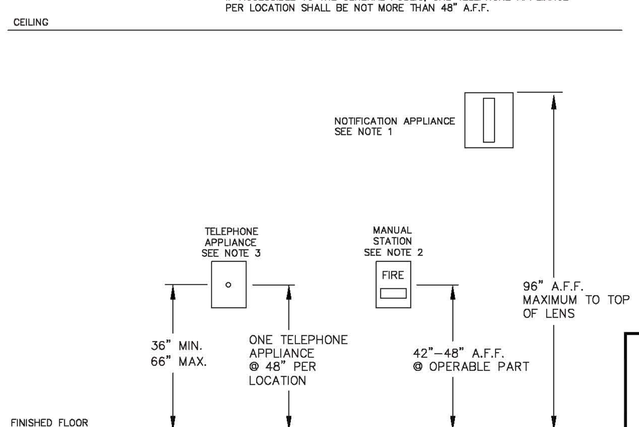
MANUAL PULL STATION

NOTES:

1. VISUAL APPLIANCES SHALL BE MOUNTED SO THAT THE ENTIRE LENS IS NOT LESS THAN 80"A.F.F. OR GREATER THAN 96" A.F.F. WHERE LOW CEILING HEIGHTS PREVENT ABOVE, MOUNT AT 6" BELOW CEILING TO TOP OF LENS. FOR CORRIDORS 20' OR LESS WIDE, MOUNT VISUAL APPLIANCES NO MORE THAN 15' FROM END OF CORRIDOR WITH NO MORE THAN 100' SEPARATION BETWEEN VISUAL APPLIANCES. MAXIMUM CORRIDOR LENGTH COVERED BY A SINGLE 15cd STROBE SHALL NOT EXCEED 30'.
2. MOUNT MANUAL STATIONS WITHIN 5' OF EXIT DOORWAY OPENING.
3. WALL MOUNTED TELEPHONE APPLIANCES OR RELATED JACKS SHALL BE NOT LESS THAN 36" AND NOT MORE THAN 66" ABOVE FLOOR LEVEL WITH CLEAR ACCESS TO THE APPLIANCE THAT IS AT LEAST 30" WIDE. IF ACCESSIBLE TO THE GENERAL PUBLIC, ONE TELEPHONE APPLIANCE PER LOCATION SHALL BE NOT MORE THAN 48" A.F.F.

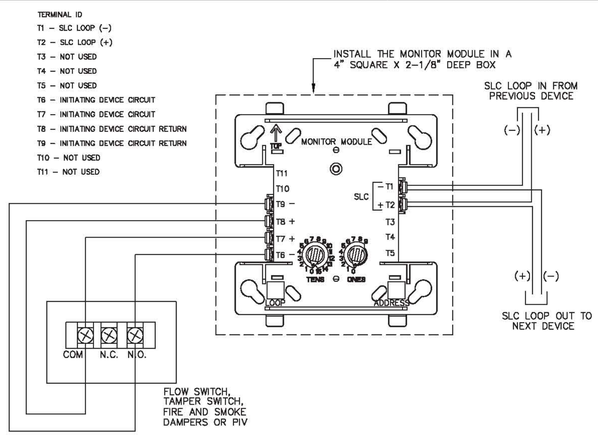


SECTION VIEW

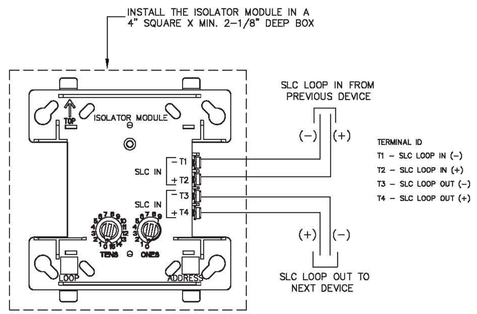


ELEVATION

INSTALLATION HEIGHTS FOR WALL MOUNTED DEVICES



MONITOR MODULE
FLOW/TAMPER SWITCH



ISOLATOR MODULE

REGISTERED PROFESSIONAL ENGINEER RONALD J. MUDRY No. FP 1504 Exp. 6-30-11 FIRE PROTECTION STATE OF CALIFORNIA

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DATE	SYM	REVISION	BY	A'PD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
DEVICE WIRING DETAILS

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS		DATE
Chief, Facilities Engineering & Asset Mgmt. Office	DAN CROWLEY	8-18-11
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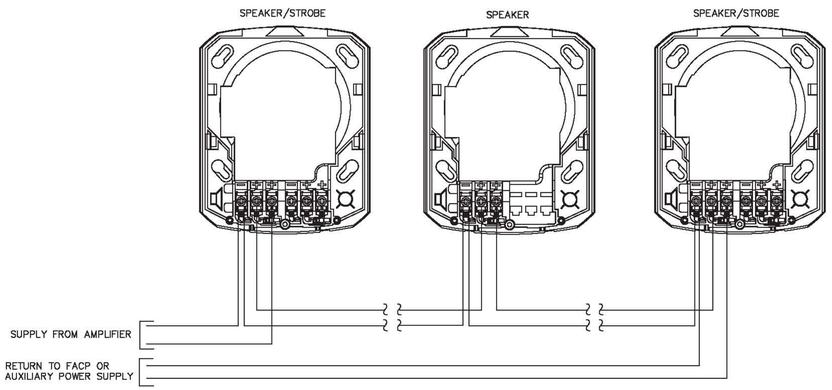
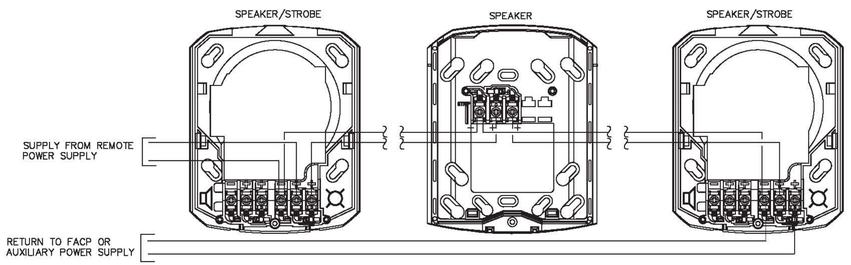
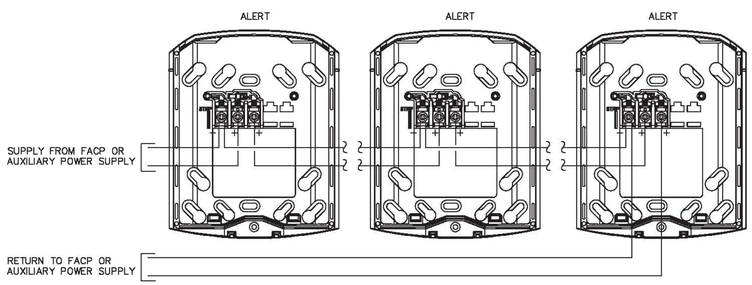
SCALE	AS INDICATED	TRADE SH. No.	FA4.1
FILE NAME		SHEET No. 187 of 195	



TYPICAL SYSTEM CIRCUIT WIRING CONNECTIONS



TYPICAL SYSTEM CIRCUIT WIRING CONNECTIONS



(FUTURE) MASS NOTIFICATION SIGNAL
STROBE CIRCUIT WIRING CONNECTIONS

REGISTERED PROFESSIONAL ENGINEER
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
DEVICE WIRING DETAILS

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS		DATE
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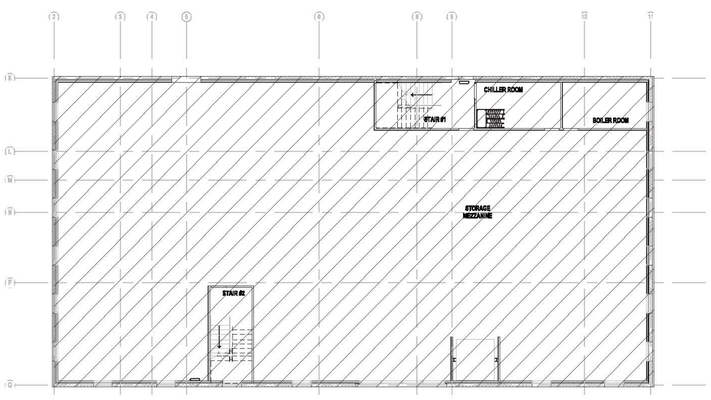
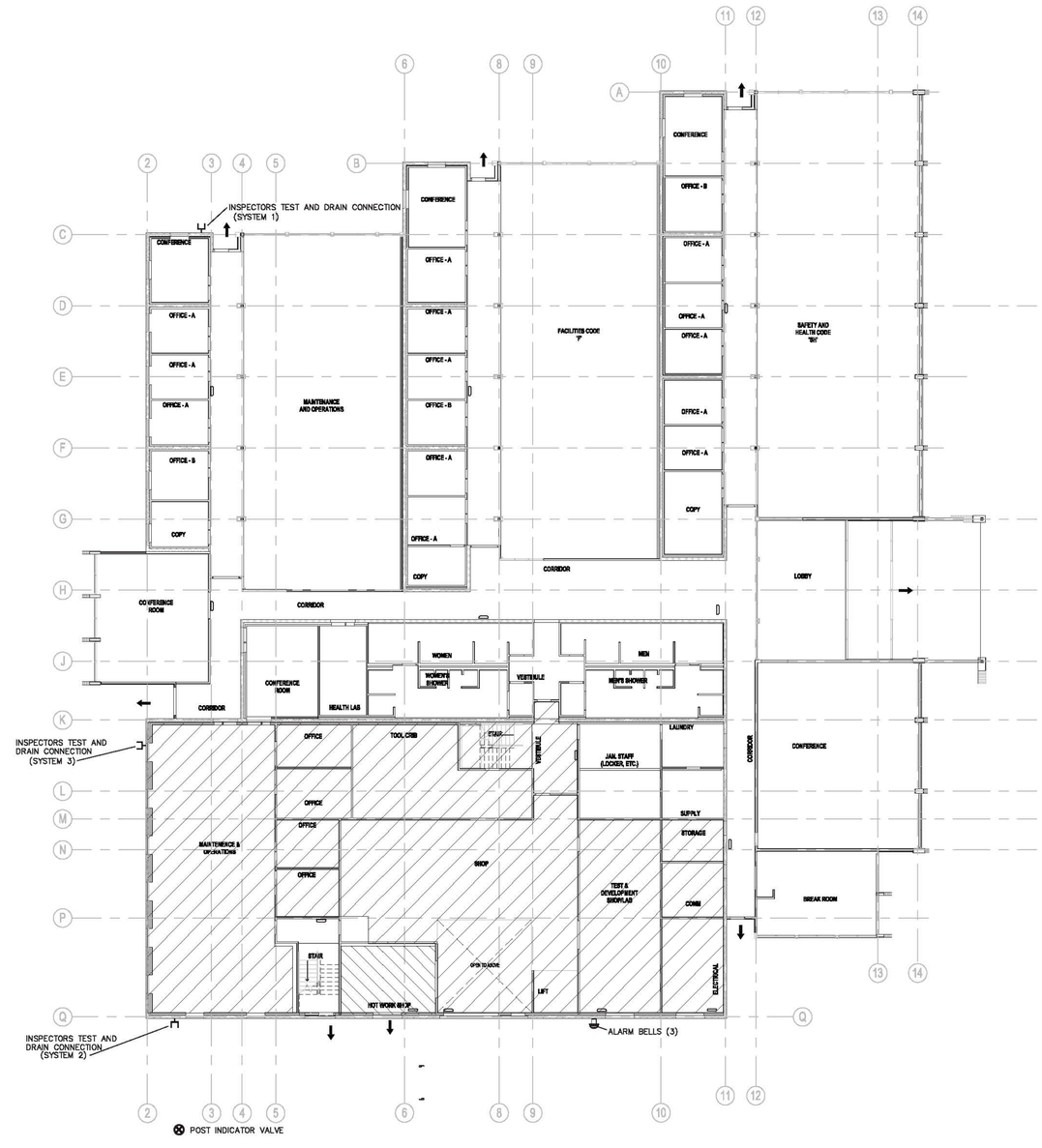


MEZZANINE PLAN



FIRE SPRINKLER SYSTEM NOTES:

1. THE SPRINKLER SYSTEM DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH NASA STD 8719.11 REV. A, NFPA 13 2007, NFPA 101 2009, AND UFGS DIMSION 21, SECTION 13 00.00 40.
2. ALL DEVICES AND EQUIPMENT SHALL BE UL LISTED OR FM APPROVED.
3. AUTOMATIC SPRINKLER PROTECTION SHALL BE PROVIDED THROUGHOUT THE BUILDING.
4. DESIGN WATER SUPPLY INFORMATION:

STATIC PRESSURE:	100 PSI
RESIDUAL PRESSURE:	95 PSI
FLOW AT RESIDUAL PRESSURE:	3,500 GPM

5. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED USING THE FOLLOWING CRITERIA.

OCCUPANCY CLASSIFICATION:	ORDINARY HAZARD GROUP I
SYSTEM TYPE:	WET PIPE
DESIGN METHOD:	AREA DENSITY
SPRINKLER:	QUICK RESPONSE
TEMPERATURE RATING:	INTERMEDIATE
DESIGN DENSITY:	0.15 GPM/SQ.FT. (6.1 LPM/M2)
DESIGN AREA:	1500 SQ.FT. (139 M2)
OUTSIDE HOSE STREAM:	250 GPM (946 LPM)

OCCUPANCY CLASSIFICATION:	ORDINARY HAZARD GROUP II
SYSTEM TYPE:	WET PIPE
DESIGN METHOD:	AREA DENSITY
SPRINKLER:	QUICK RESPONSE
TEMPERATURE RATING:	INTERMEDIATE
DESIGN DENSITY:	0.20 GPM/SQ.FT. (8.2 LPM/M2)
DESIGN AREA:	1500 SQ.FT. (139 M2)
OUTSIDE HOSE STREAM:	250 GPM (946 LPM)

OCCUPANCY CLASSIFICATION:	EXTRA HAZARD GROUP II
SYSTEM TYPE:	WET PIPE
DESIGN METHOD:	AREA DENSITY
SPRINKLER:	STANDARD RESPONSE
TEMPERATURE RATING:	INTERMEDIATE
DESIGN DENSITY:	0.40 GPM/SQ.FT. (16.3 LPM/M2)
DESIGN AREA:	2500 SQ.FT. (232 M2)
OUTSIDE HOSE STREAM:	500 GPM (1893 LPM)

6. PIPING SHALL BE PROVIDED WITH SEISMIC PROTECTION (SWAY BRACING) IN ACCORDANCE WITH NFPA 13.
7. SPRINKLER PIPING SHALL COMPLY WITH NFPA 13, EXCEPT THAT PLASTIC AND COPPER PIPING SHALL NOT BE PERMITTED. ALL PIPING SHALL BE SCHEDULE 40 STEEL PIPING. PIPING AND FITTINGS LOCATED OUTSIDE THE BUILDING, SHALL BE HOT DIPPED GALVANIZED (ZINC) COATED.
8. ALL SPRINKLER PIPING IN FINISHED AREAS SHALL BE CONCEALED FROM VIEW.
9. WHERE APPLICABLE, LOCATE SPRINKLERS IN APPROXIMATE CENTER OF CEILING TILE.
10. THE SPRINKLER DESIGN IS CONCEPTUAL. THE CONTRACTOR SHALL DESIGN AND INSTALL THE SYSTEM IN ACCORDANCE WITH THE APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS AND EQUIPMENT LISTINGS.
11. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE SHALL BE FIRE STOPPED ACCORDINGLY.

SPRINKLER DESIGN CRITERIA LEGEND

- ORDINARY HAZARD GROUP I WET PIPE
- ORDINARY HAZARD GROUP II WET PIPE
- EXTRA HAZARD GROUP II WET PIPE

SYMBOL LEGEND

- ALARM BELL
- INSPECTORS TEST AND DRAIN CONNECTION
- FIRE EXTINGUSHER
- EXITING ROUTE OF TRAVEL
- FIRE DEPARTMENT CONNECTION
- AUTOMATIC FIRE SPRINKLER SYSTEM RISER
- AUTOMATIC FIRE SPRINKLER (PENDENT)
- AUTOMATIC FIRE SPRINKLER (UPRIGHT)
- POST INDICATOR VALVE

N

SCALE: 1/16" = 1'-0"

0 8' 16' 24' 32'

SCALE: 1/16" = 1'-0" | 1

REGISTERED PROFESSIONAL ENGINEER — DONALD J. MUDRY — No. FP 1502 — Exp. 6-30-11 — FIRE PROTECTION — STATE OF CALIFORNIA

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DATE	SYM	REVISION	BY	A'PD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
FIRE PROTECTION PLAN

PROJECT TITLE
8-18-11
FACILITIES SUPPORT CENTER
100% FINAL DESIGN SUBMITTAL

APPROVALS	DATE
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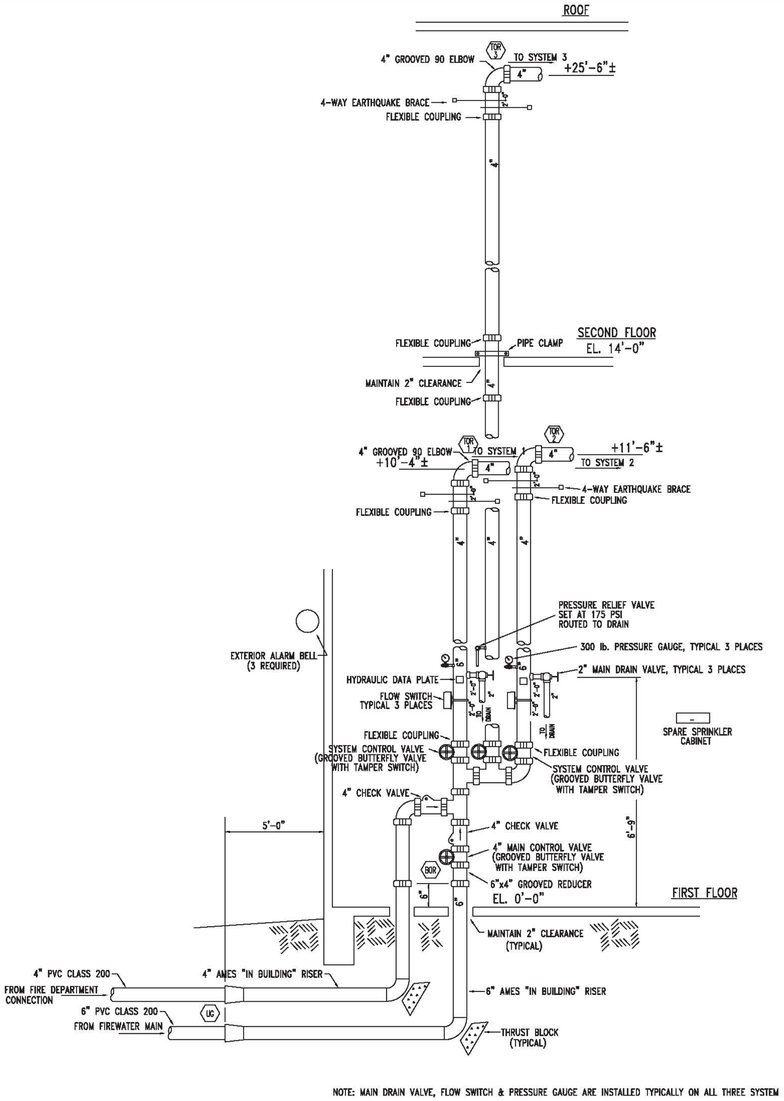


NOTE: MAIN DRAIN VALVE, FLOW SWITCH & PRESSURE GAUGE ARE INSTALLED TYPICALLY ON ALL THREE SYSTEM RISERS.

FIRE SPRINKLER RISER DETAIL | SCALE: NONE | 3

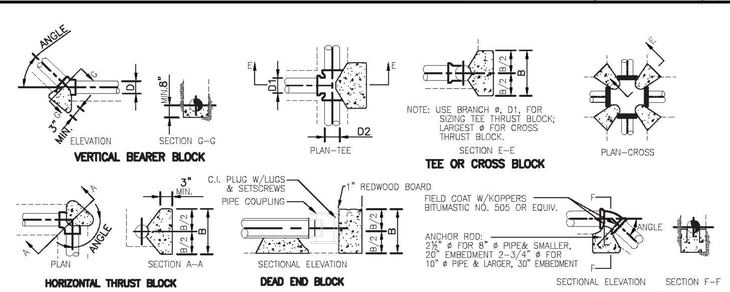
THRUST BLOCK SCHEDULE

225 PSI MAXIMUM HYDROSTATIC PRESSURE

MAIN SIZE (IN)	MINIMUM BEARING AREA IN SQUARE FEET						VERT. ANCHOR BLOCK MINIMUM CUBIC FEET		
	HORIZ./VERT. BEARER				TEE OR DEAD END	CROSS EACH WAY			
	11¼°	22½°	45°	90°			11¼°	22½°	45°
4	1	1	3	4	3	2	4	8	15
6	2	3	5	9	7	4	9	17	35
8	3	5	9	15	12	6	13	30	58
10	4	7	14	25	18	9	23	46	91
12	5	10	20	35	26	13	34	66	130

NOTES:

1. PROVIDE CONCRETE THRUST BLOCK AT ALL PRESSURE PIPE FITTINGS THAT ARE 4" DIAMETER AND LARGER.
2. USE 2000 PSI CONCRETE.
3. VERTICAL BEARER BLOCK SIZE MAY BE 1/2 THE AREA SHOWN FOR HORIZONTAL BEARER BLOCKS.
4. BLOCK SIZES BASED UPON 1000 psf AND 2000 psf ALLOWABLE HORIZONTAL AND VERTICAL BEARING RESPECTIVELY.
5. FULLY RESTRAINED JOINTS PER PIPE MANUFACTURER'S RECOMMENDATIONS MAY BE USED IN LIEU OF THRUST BLOCKS ON DUCTILE IRON PIPE ONLY.



TYPICAL THRUST BLOCKS FOR PRESSURE WATER PIPELINES | SCALE: NONE | 2

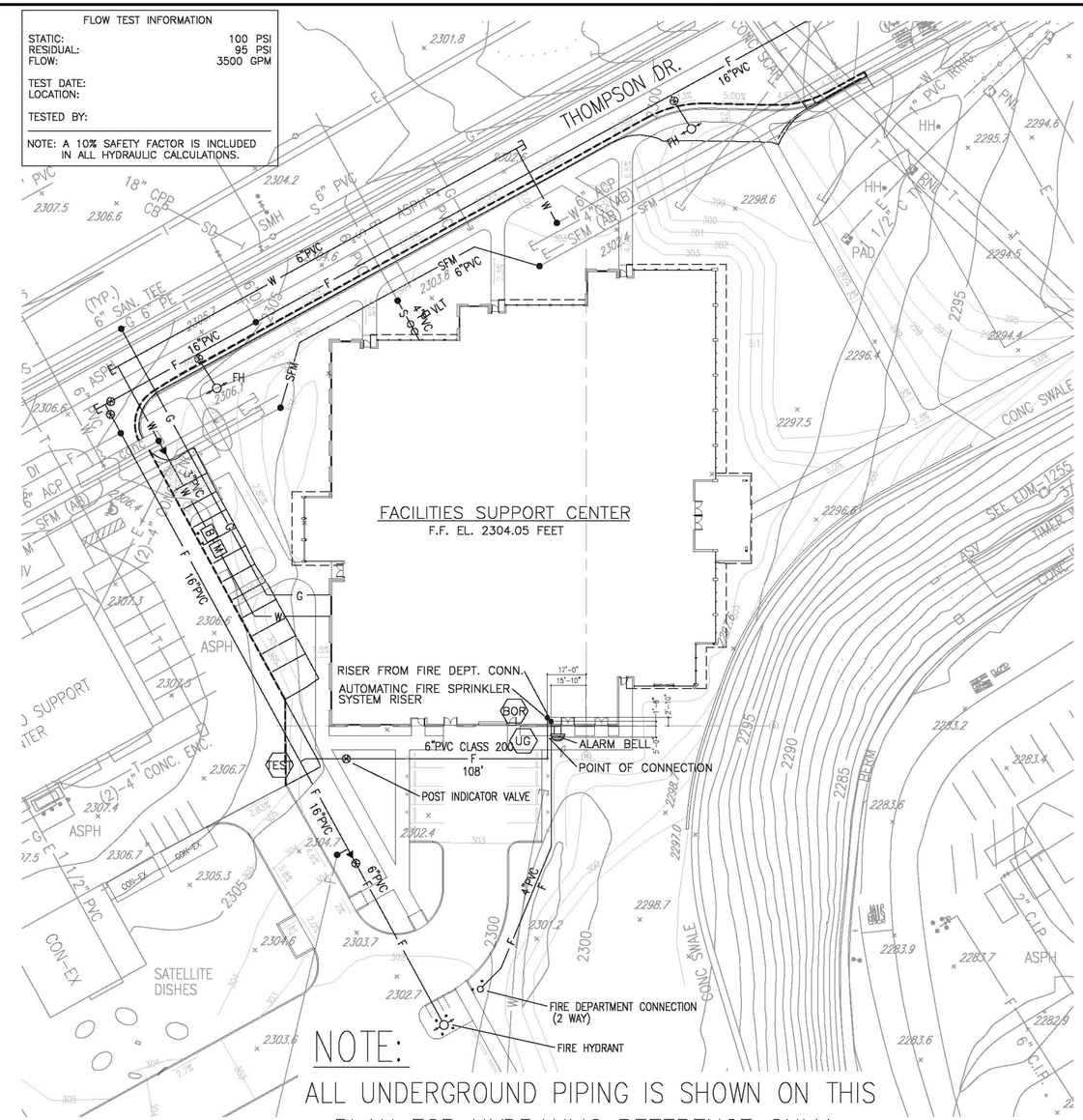
FLOW TEST INFORMATION

STATIC: 100 PSI
RESIDUAL: 95 PSI
FLOW: 3500 GPM

TEST DATE:
LOCATION:

TESTED BY:

NOTE: A 10% SAFETY FACTOR IS INCLUDED IN ALL HYDRAULIC CALCULATIONS.



NOTE:

ALL UNDERGROUND PIPING IS SHOWN ON THIS PLAN FOR HYDRAULIC REFERENCE ONLY.
FOR INSTALLATION DETAILS SEE CIVIL DRAWINGS.

N

SCALE: 1/32" = 1'-0"

0 16' 32' 48' 64'

SCALE: 1/32" = 1'-0" | 1

REGISTERED PROFESSIONAL ENGINEER
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DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

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