LEGEND:

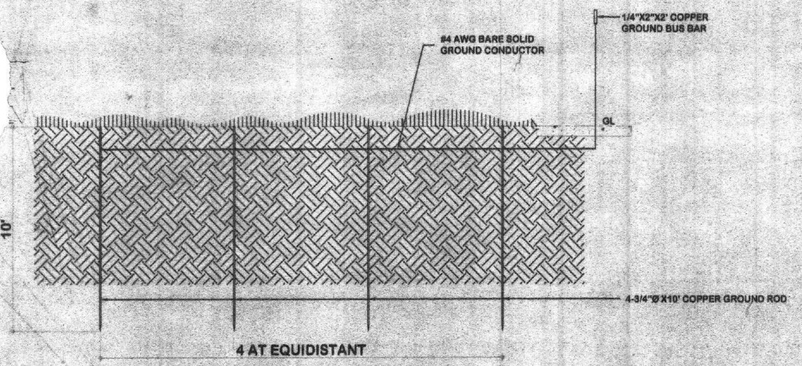
- DATA PORT
- VOICE/TEL. PORT
- CATV
- BOND & GROUND
- C — CCTV (BULLET TYPE)
- C — CCTV (DOME TYPE)
- PTZ — PAN TILT ZOOM CAMERA
- MDF — 19"X2'X7' DATA CABINET
- 19"X2'X2' DATA CABINET
- SPEAKER
- MC — SHELF TYPE MEDIA CONNECTOR

FOR DATA & VOICE

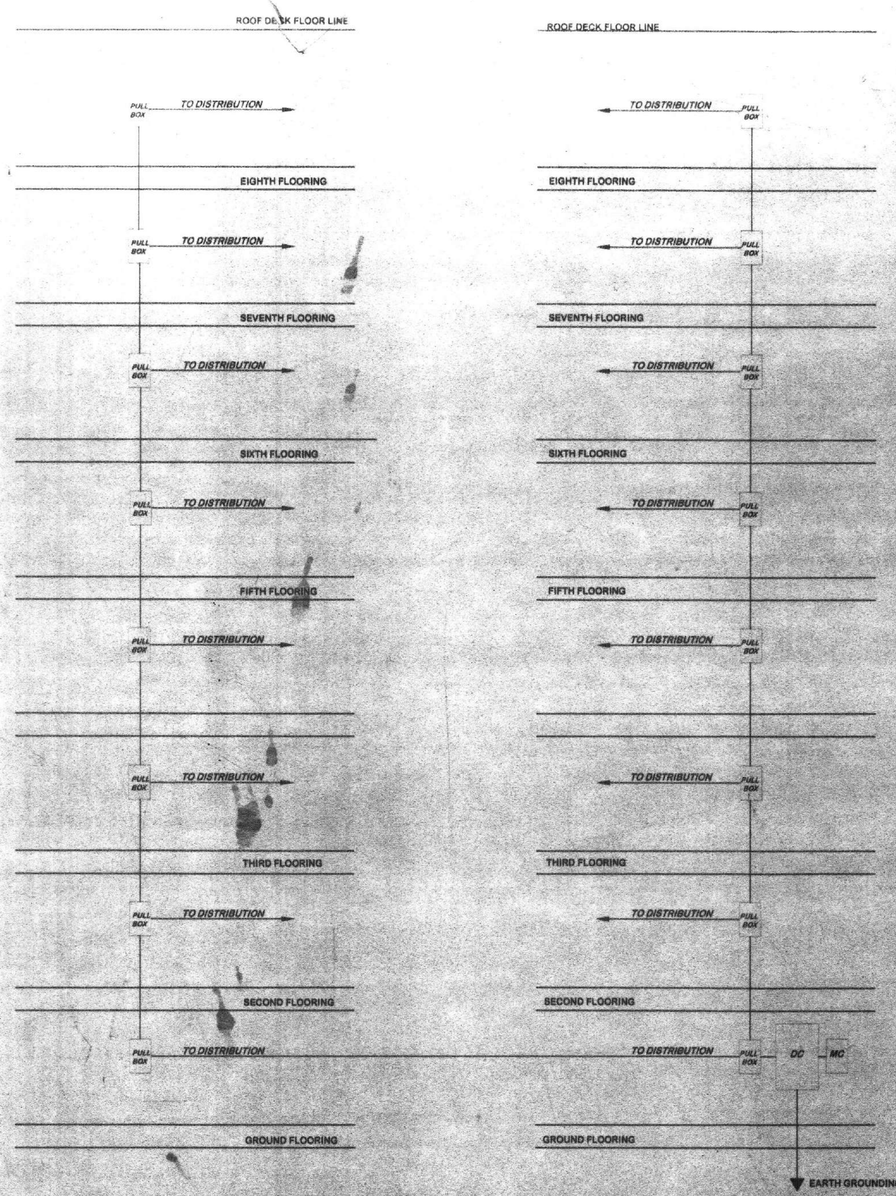
1. USE CAT 6 LEVITON CERTIFIED UTP STRUCTURED CABLING
2. USE EXTREME G-1 CAT 6 QUICKPORT CONNECTOR FOR INFORMATION OUTLET
3. USE 1RU/2RU LEVITON FLAT 110-STYLE PATCH PANEL
4. USE 19"X7' OPEN BAY RACK FOR PATCH PANELS MAIN DISTRIBUTION SYSTEM
5. USE POWDER PAINTED PULLBOXES

ELECTRONICS SYSTEM SPECIFICATION:

1. ALL WIRING INSTALLATION FOR VIDEO AND DATA SHALL CONFORM WITH TELECOMMUNICATION INDUSTRY ASSOCIATION (TIA) AND ELECTRONIC INDUSTRY ASSOCIATION(EIA) STRUCTURED CABLING STANDARD, SPECIFICALLY TIA/EIA - 568 CAT 6 LEVITON CERTIFIED.
2. GROUNDING AND BONDING REQUIREMENTS MUST CONFORM WITH TIA/EIA - 568 STANDARD.
3. ALL INSTALLATION MUST BE DONE BY A CERTIFIED DATA CABLING INSTALLER, EQUIVALENT OR HIGHER THAN BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) CERTIFICATION.
4. UPON COMPLETION OF WORK AS DESCRIBED HEREIN SIX(6) COPIES IF THE "AS BUILT" PLANS FOR FUTURE REFERENCES AND MAINTENANCE PURPOSES, SHALL BE SUBMITTED.
5. ALL MATERIALS TO BE INSTALLED SHALL BE UNUSED, BRAND NEW AND SHALL COMFORM TO THE STANDARDS OF THE U.S. UNDERWRITERS LABORATORIES, INC. IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISH FOR THE PARTICULAR TYPR OF MATERIAL TO BE USED.



GROUNDING HARNESS DETAIL



RISER DIAGRAM

REPUBLIC OF THE PHILIPPINES
MINDANAO UNIVERSITY OF SCIENCE & TECHNOLOGY

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TIN : 929 711 887 DATE ISSUED: 01-06-15

PROJECT : **PROPOSED STUDENT CENTER & EDUCATION COMPLEX**

LOCATION: C.M. RECTO AVENUE LAPASAN, CAGAYAN DE ORO CITY
OWNER : MINDANAO UNIVERSITY OF SCIENCE AND TECHNOLOGY

RECOMMENDING APPROVAL :

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MUST PRESIDENT

SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
RISER DIAGRAM
LEGEND
DETAIL
SPECIFICATIONS

SHEET NO.
EE21
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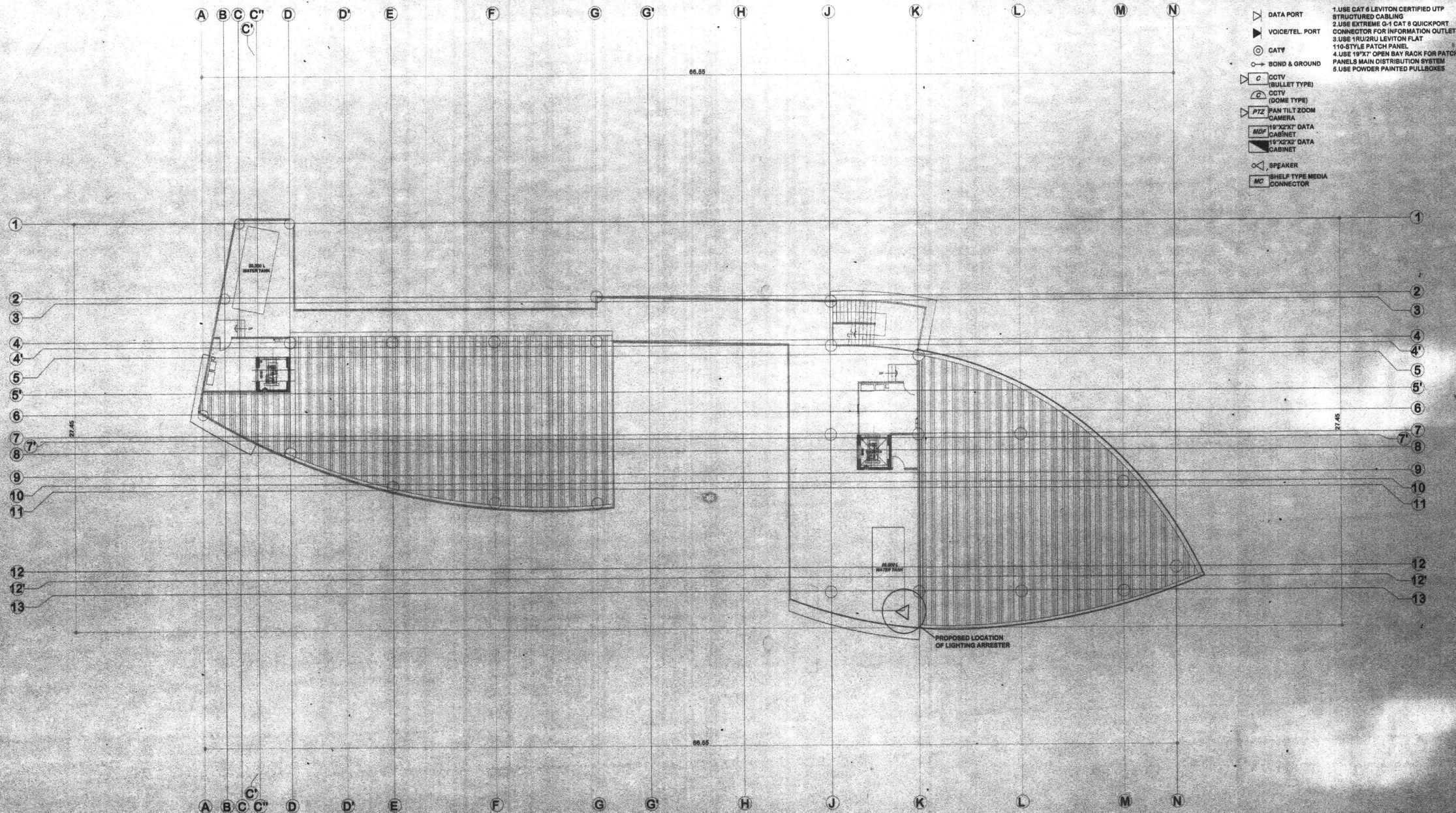

ROOF DECK

SCALE 1:150M

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SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
ROOF DECK STRUCTURED CABLING LAYOUT

SHEET NO.
EE20
EE21
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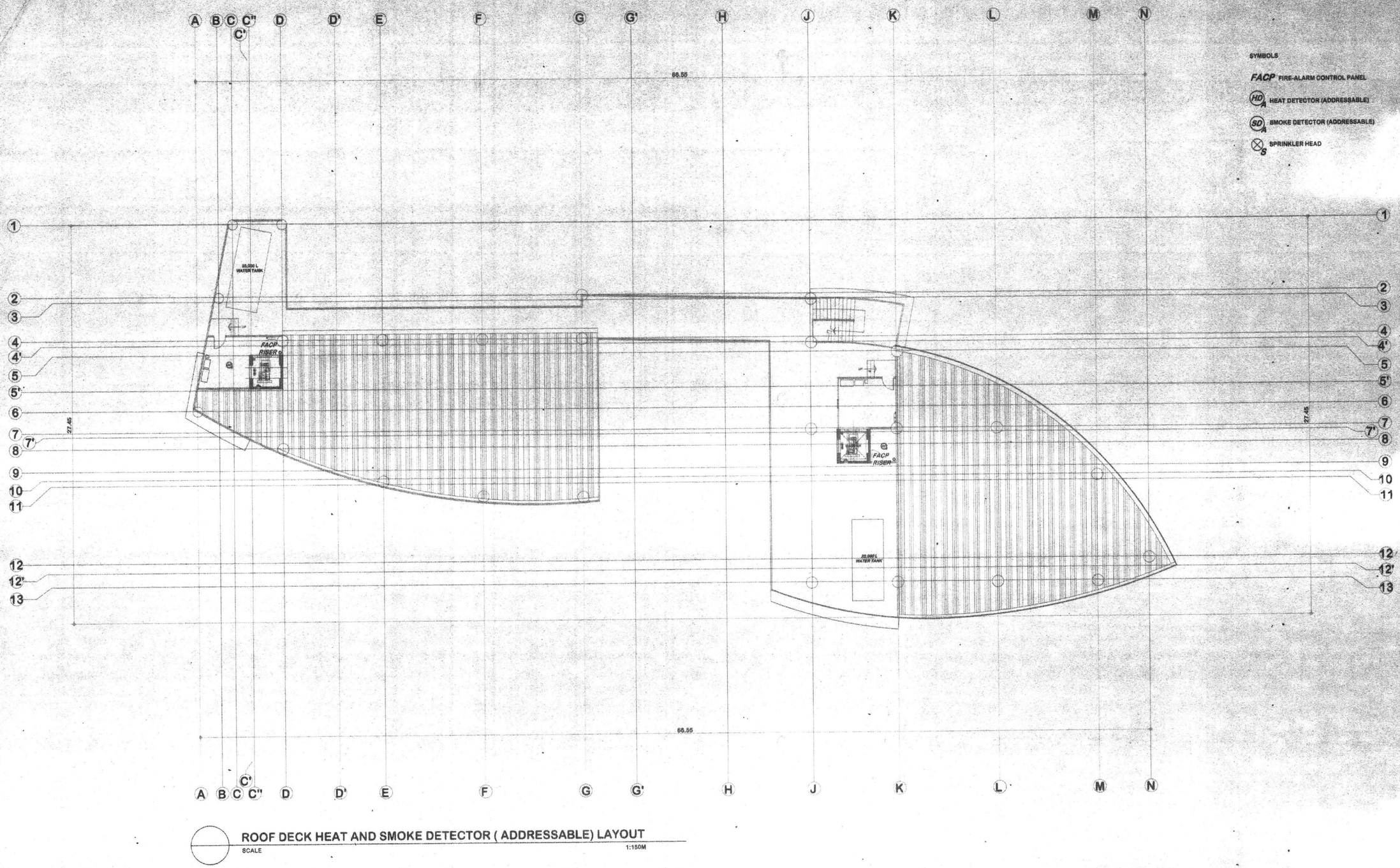

ROOF DECK HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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ROOF DECK HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
~~EE19~~
~~EE21~~
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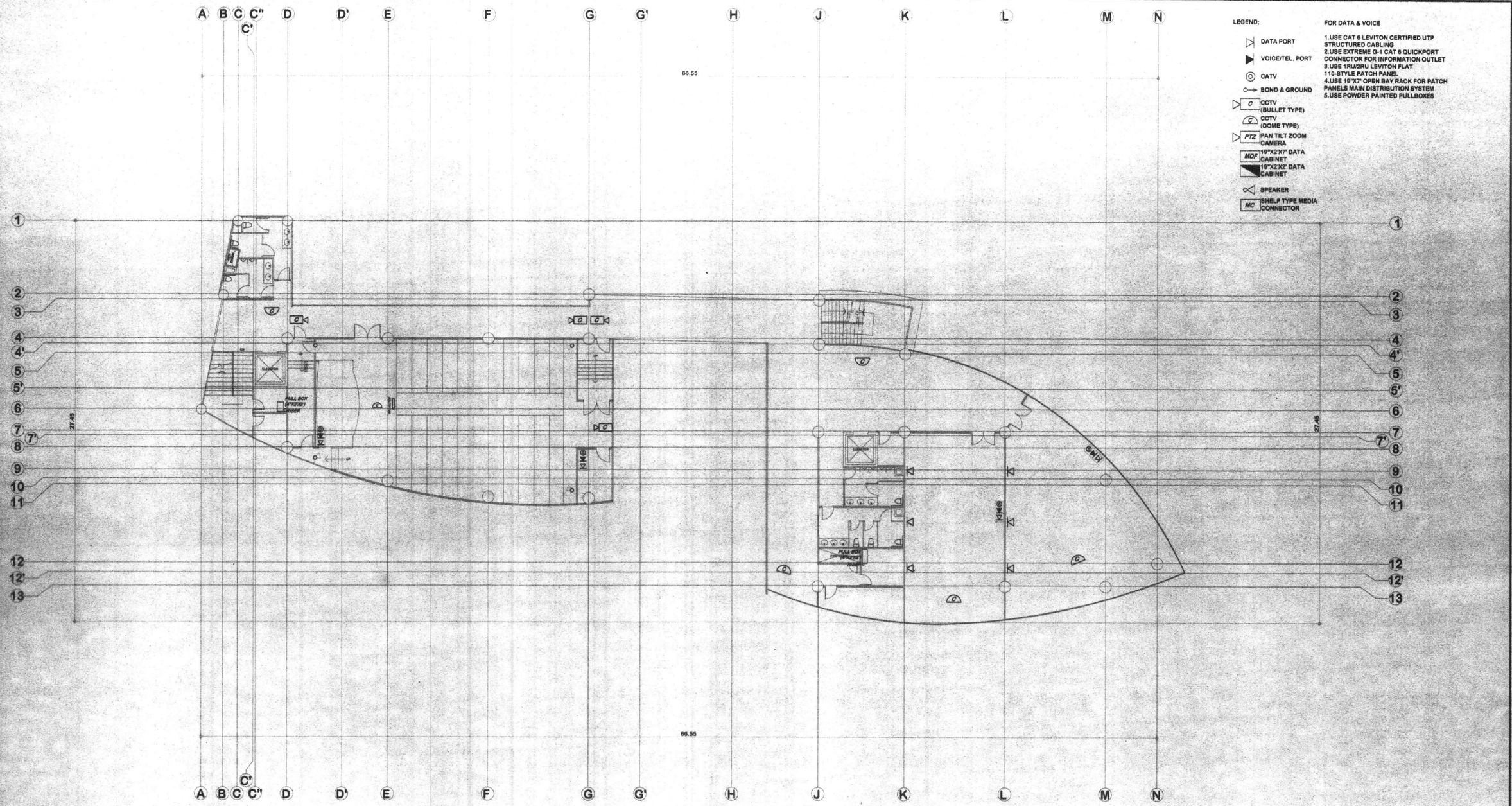

EIGHTH FLOOR STRUCTURED CABLING LAYOUT

SCALE 1:150M

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SHEET CONTENTS :
EIGHTH FLOOR STRUCTURED CABLING LAYOUT

SHEET NO.
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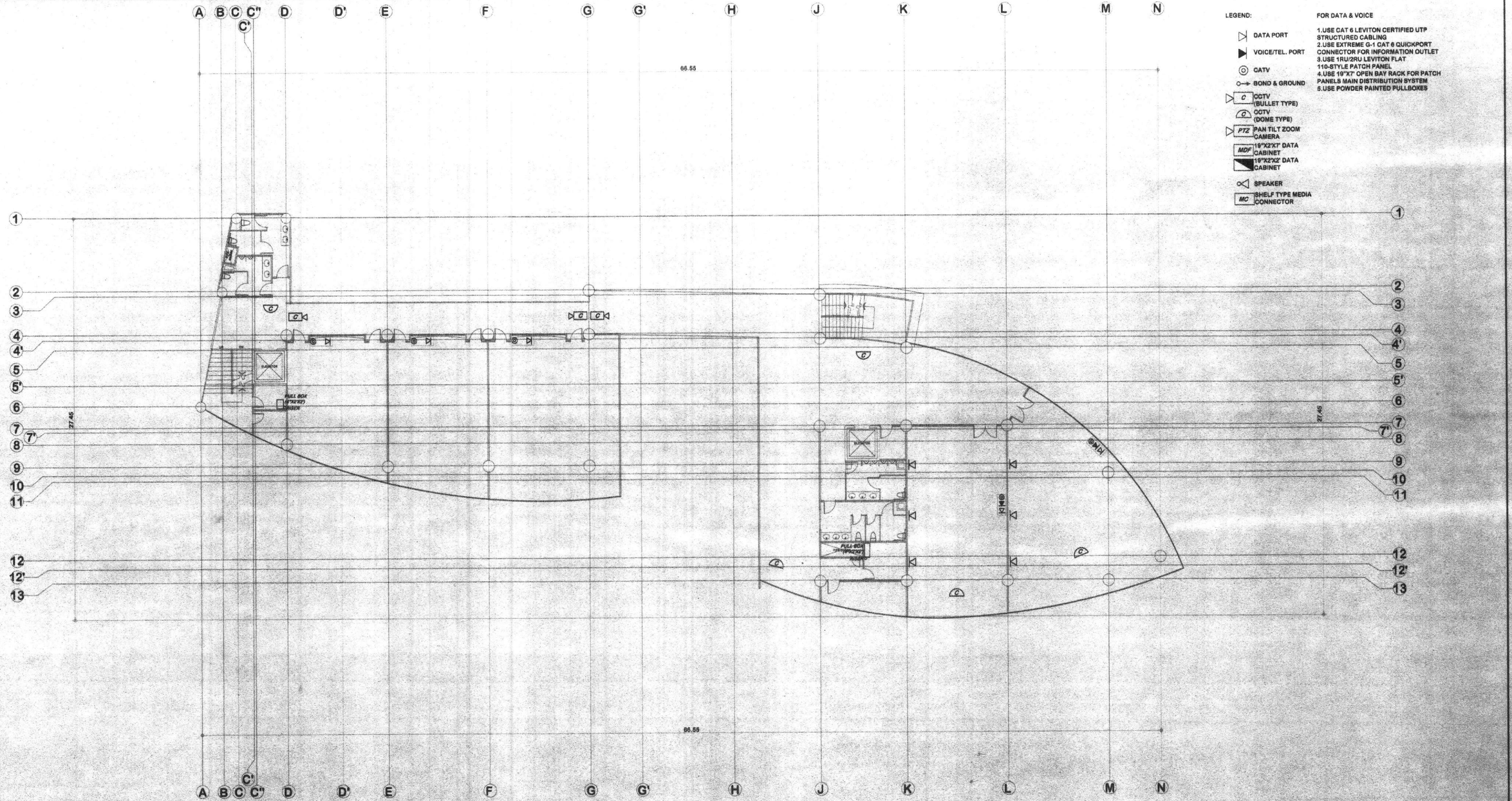

SEVENTH FLOOR STRUCTURED CABLING LAYOUT

SCALE 1:150M

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SHEET CONTENTS :
SEVENTH FLOOR STRUCTURED CABLING LAYOUT

SHEET NO.
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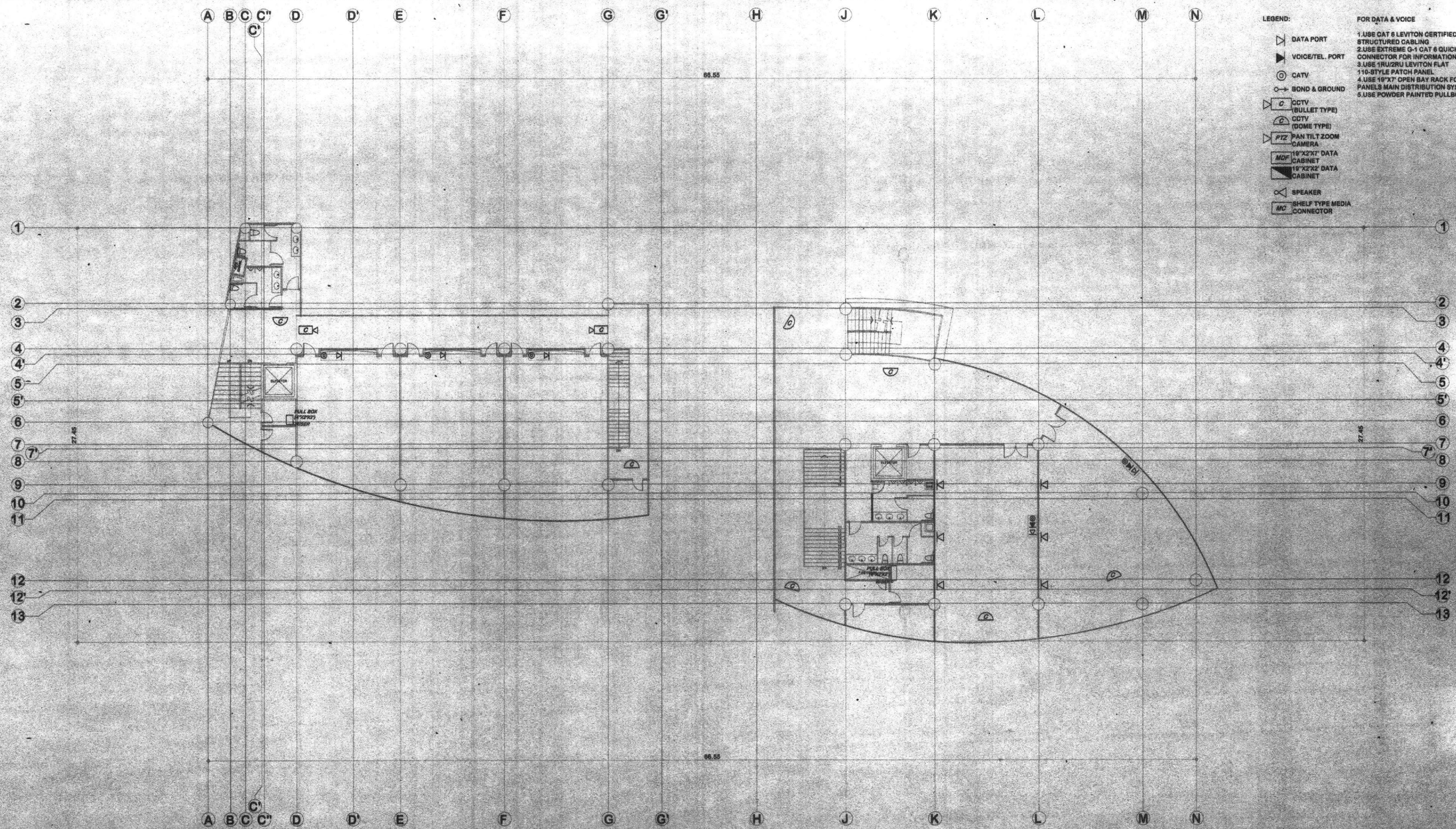

SIXTH FLOOR STRUCTURED CABLING LAYOUT
SCALE 1:150M

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SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
SIXTH FLOOR STRUCTURED CABLING LAYOUT

SHEET NO.
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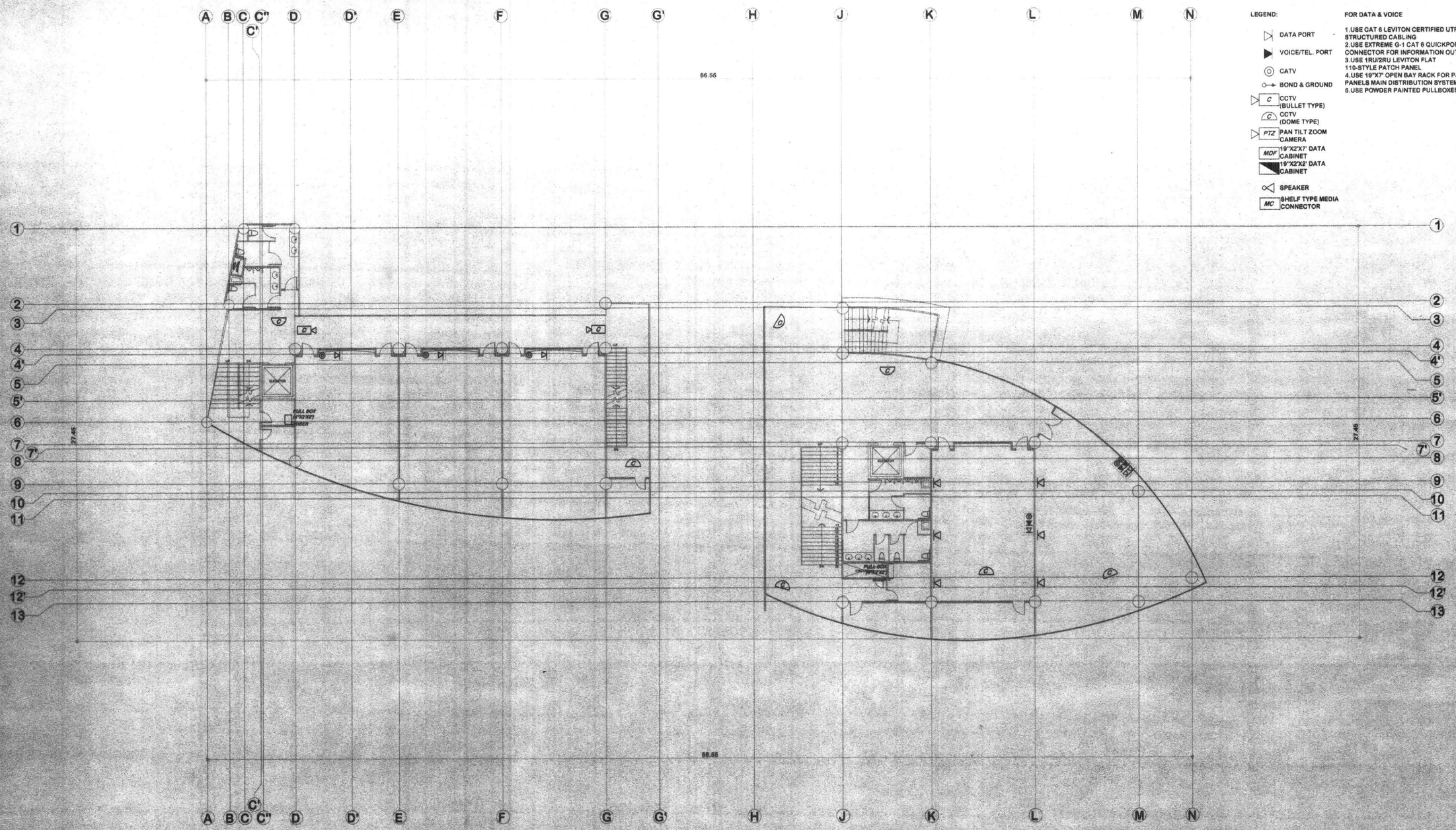

FIFTH FLOOR STRUCTURED CABLING LAYOUT

SCALE 1:150M

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SHEET CONTENTS :
FIFTH FLOOR STRUCTURED CABLING LAYOUT

SHEET NO.
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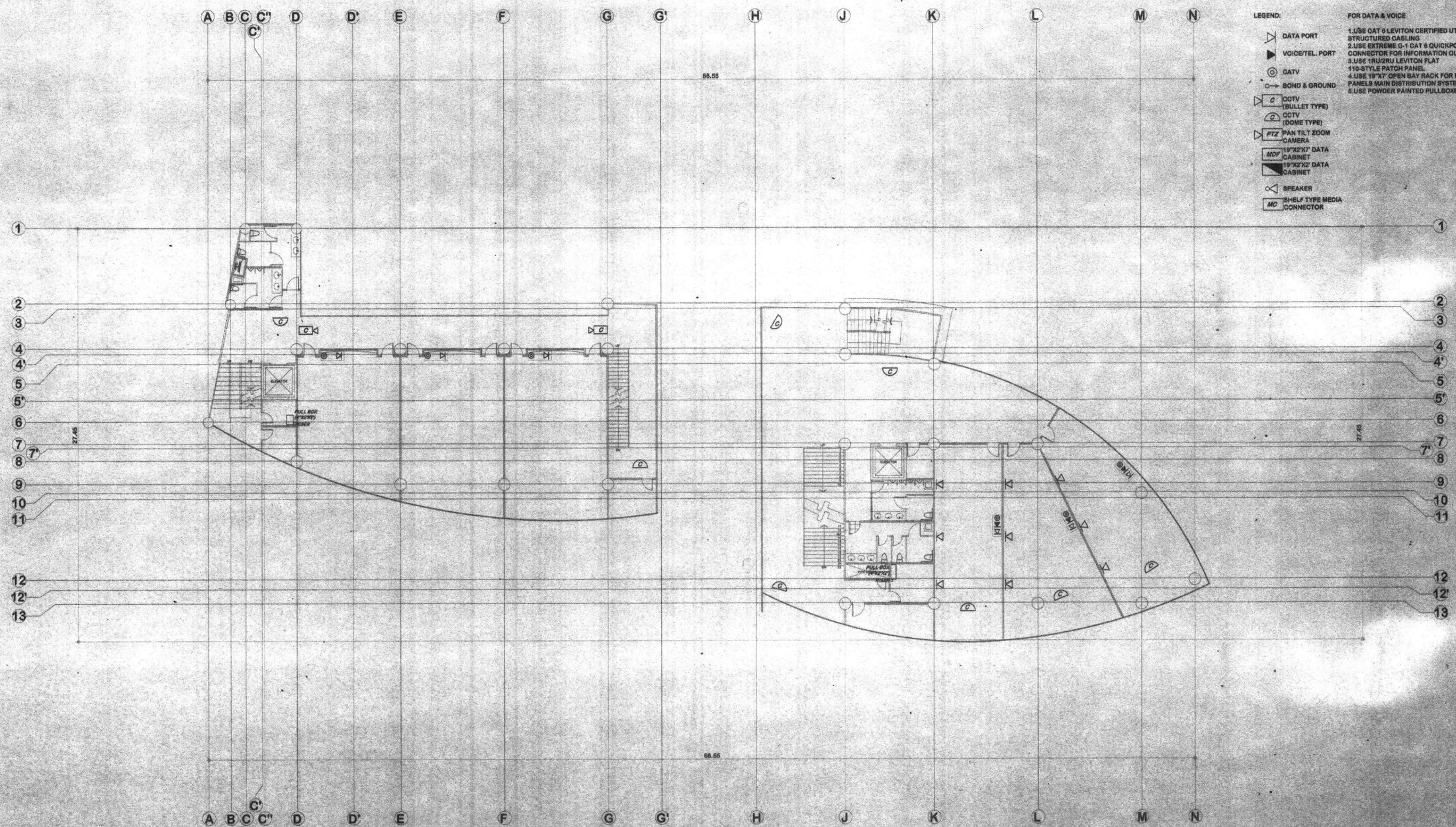

FOURTH FLOOR STRUCTURED CABLING LAYOUT

SCALE 1:150M

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SHEET CONTENTS :
FOURTH FLOOR STRUCTURED CABLING LAYOUT

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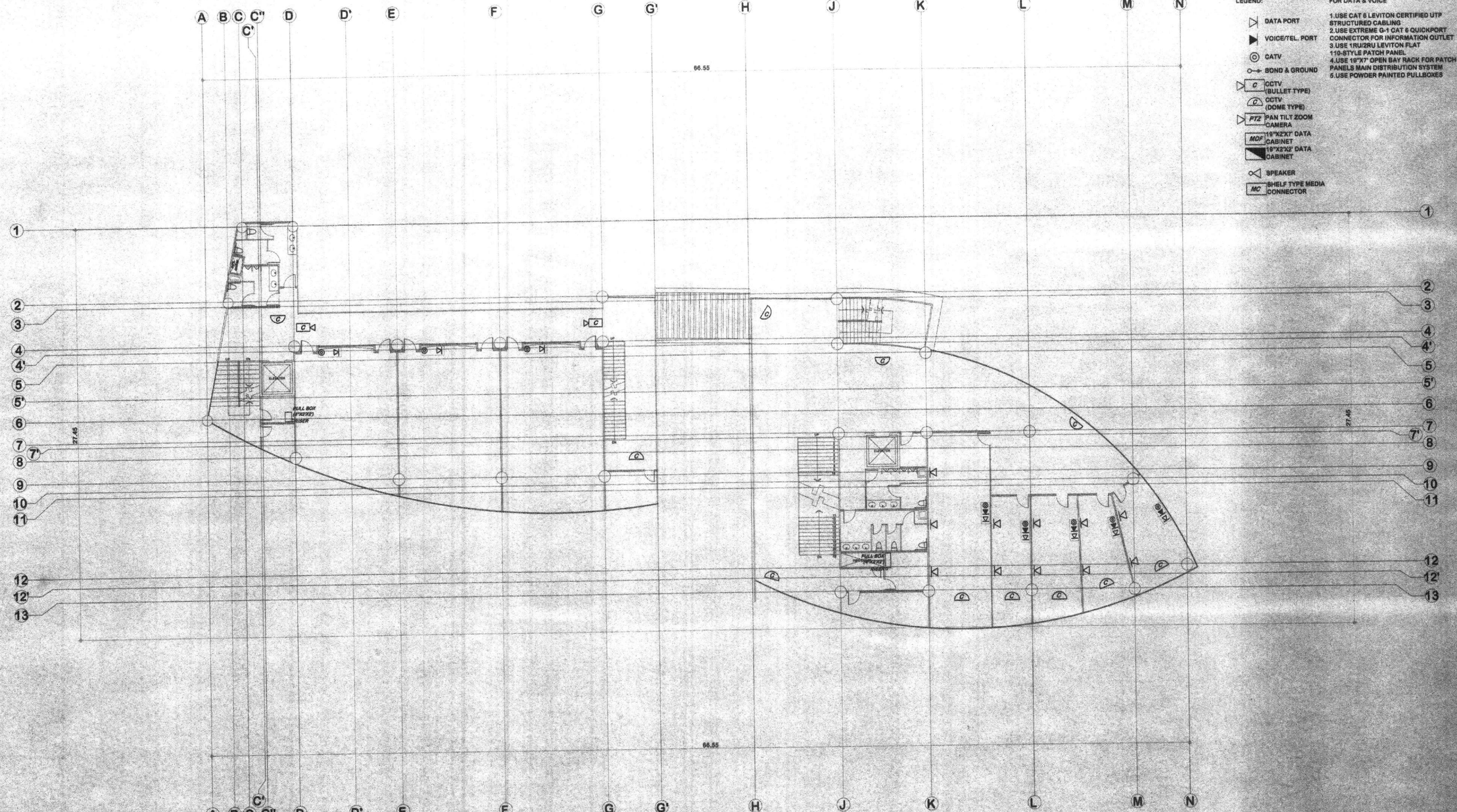

THIRD FLOOR STRUCTURED CABLING LAYOUT

SCALE 1:150M

REPUBLIC OF THE PHILIPPINES
MINDANAO UNIVERSITY OF SCIENCE & TECHNOLOGY

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SHEET CONTENTS :
THIRD FLOOR STRUCTURED CABLING LAYOUT

SHEET NO.
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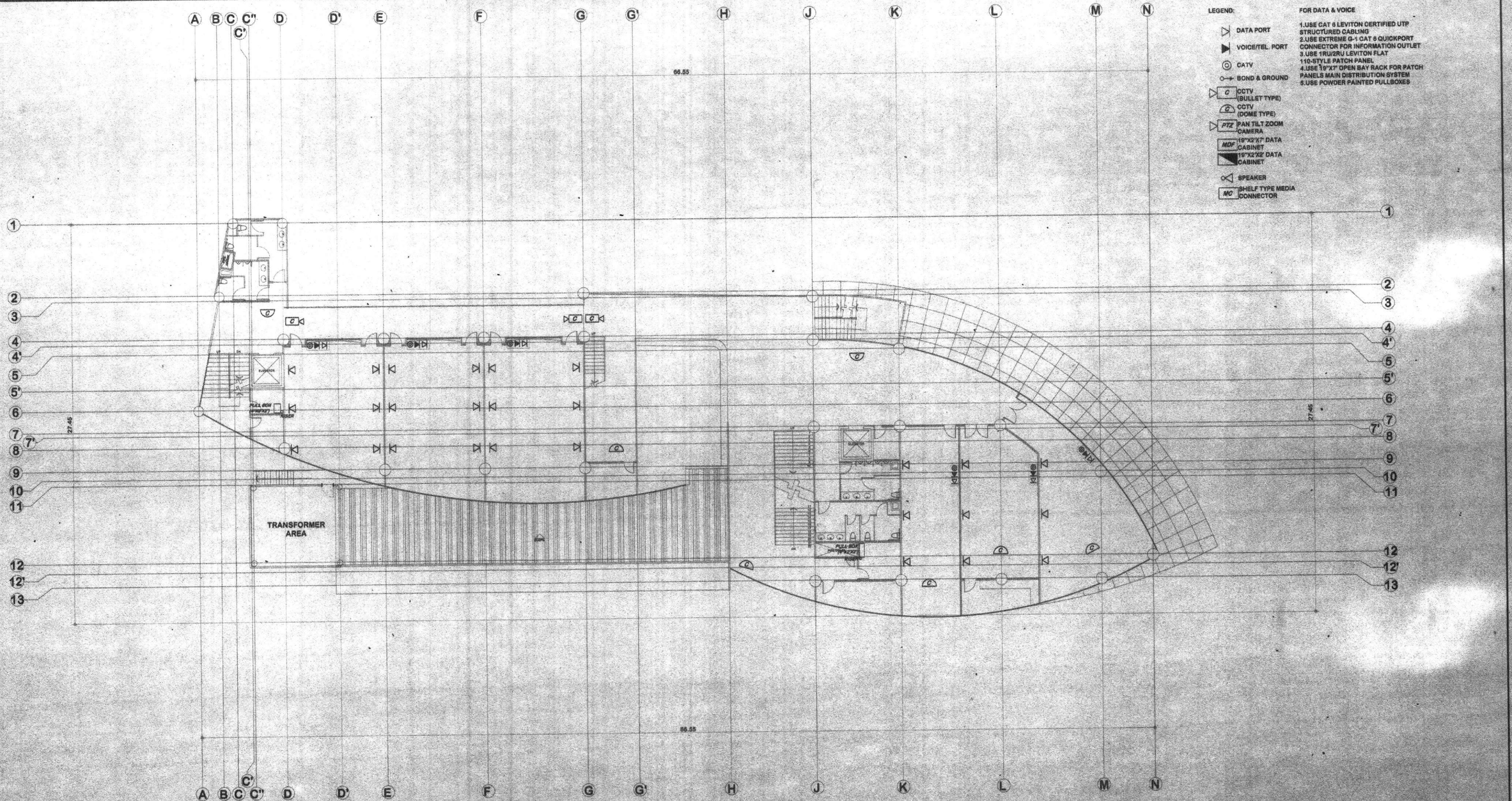

SECOND FLOOR STRUCTURED CABLING LAYOUT

SCALE 1:150M

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SHEET TITLE: ELECTRONICS
SHEET CONTENTS:
SECOND FLOOR STRUCTURED CABLING LAYOUT

SHEET NO.
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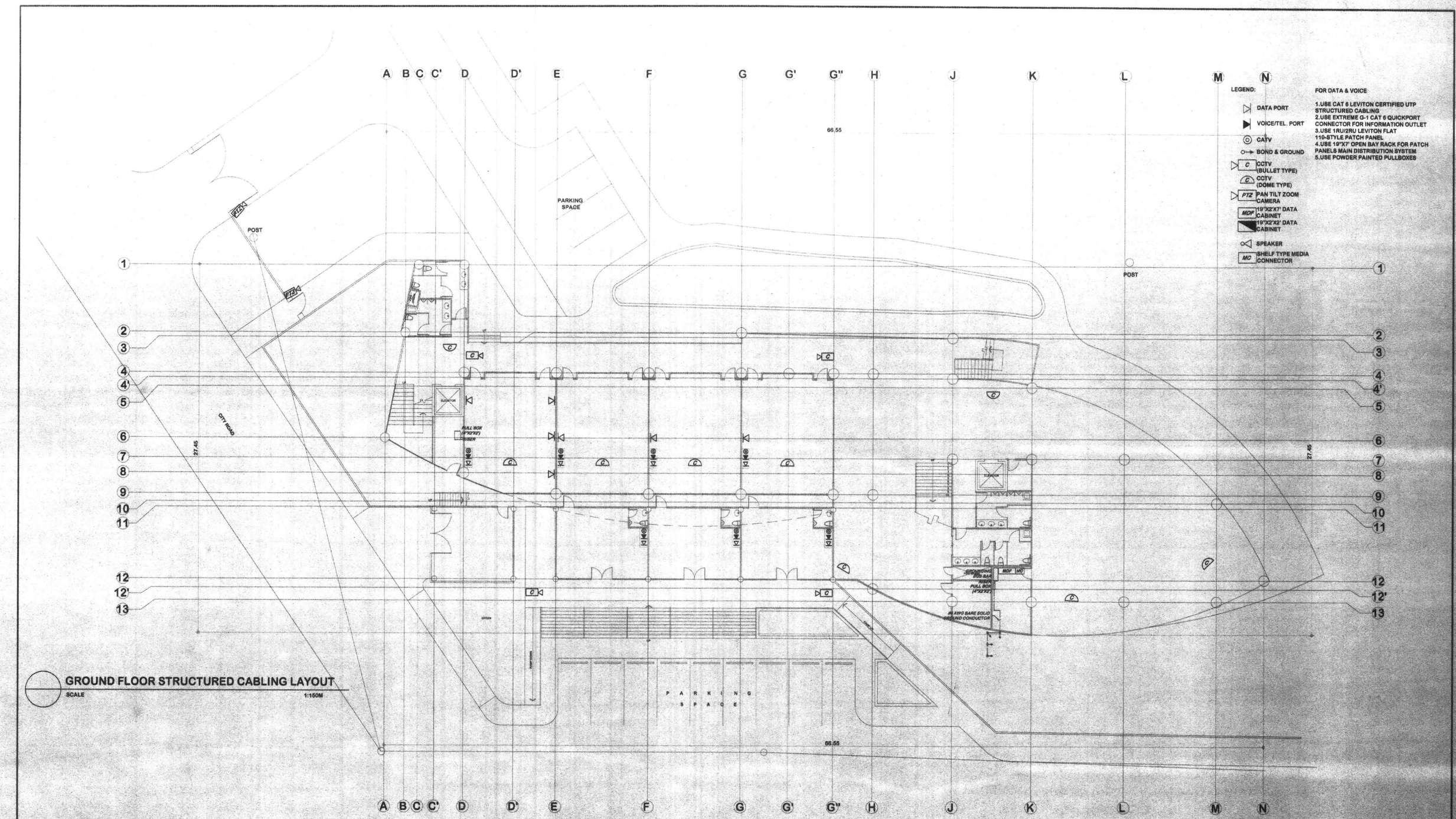

GROUND FLOOR STRUCTURED CABLING LAYOUT

SCALE 1:150M

REPUBLIC OF THE PHILIPPINES
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GROUND FLOOR STRUCTURED CABLING LAYOUT

SHEET NO.
EE11
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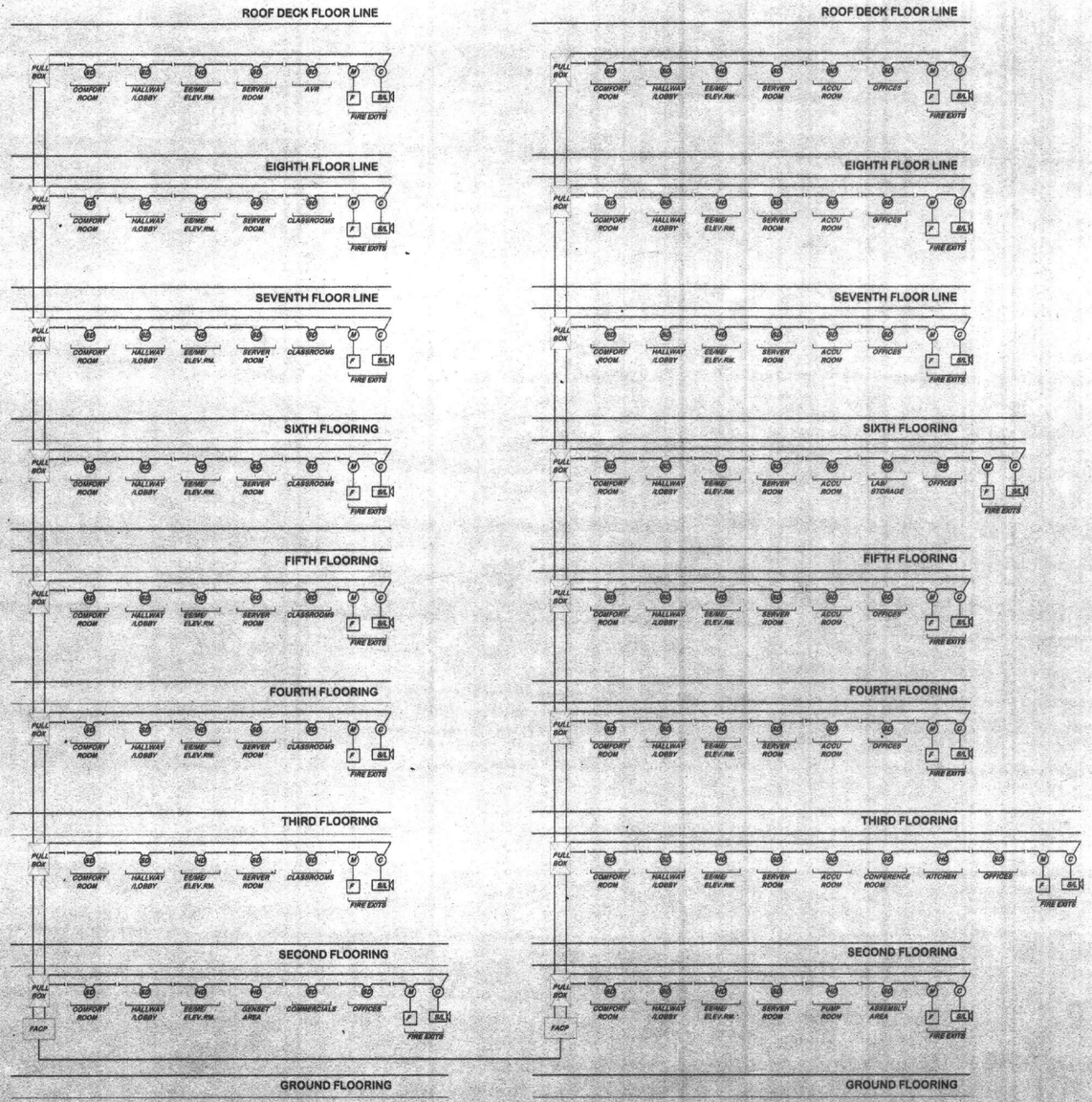

FIRE DETECTION & ALARM SYSTEM (FDAS)
RISER DIAGRAM 1

FIRE DETECTION & ALARM SYSTEM (FDAS)
RISER DIAGRAM 2

FIRE DETECTION AND ALARM SYSTEM (FDAS)

1.0 GENERAL NOTES AND SPECIFICATIONS:

1. THE SYSTEM SHALL BE FULLY ADDRESSABLE. ALL SMOKE DETECTORS SHALL BE ANALOG ADDRESSABLE TYPE.
2. THE FIRE ALARM SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST VERSION OF NFPA STANDARD 72 FOR PROTECTED PREMISES SIGNALING SYSTEMS EXCEPT AS MODIFIED AND SUPPLEMENTED BY THIS SPECIFICATION.
3. THE FIRE ALARM SYSTEM SHALL BE MANUFACTURED BY AN ISO 9001 CERTIFIED COMPANY AND MEET THE REQUIREMENTS OF BS EN9001: ANSI/ASQC Q9001-1994.
4. THE SYSTEM AND ITS COMPONENTS SHALL BE UNDERWRITERS LABORATORIES INC., LISTED UNDER THE APPROPRIATE UL TESTING STANDARD AS LISTED HEREIN FOR THE FIRE ALARM APPLICATIONS AND SHALL BE IN FULL COMPLIANCE WITH UL LISTING.
5. THE SYSTEM SHALL BE EXPANDABLE VIA HIGH LEVEL NETWORKING OF MULTIPLE PANELS.
6. EACH DESIGNATED AREA SHALL TRANSMIT SEPARATE AND DIFFERENT ALARM, SUPERVISORY AND TROUBLE SIGNALS TO THE FIRE ALARM CONTROL PANEL (FACP) AT THE SITE VIA A MULTIPLEX DATA COMMUNICATION.
7. THE SYSTEM SHALL BE ARRANGED SUCH THAT NOT LESS THAN 15 PERCENT ADDITIONAL ADDRESSABLE DEVICES MAYBE INSERTED INTO ANY LOOP.
8. ACCEPTABLE SYSTEMS SHALL HAVE LOOP CAPACITY OF NOT LESS THAN 159 DETECTORS AND 159 MODULES.
9. THE SYSTEM SHALL USE THE LATEST HIGH SPEED SLASSSCAN POLLING TECHNOLOGY TO ACTIVATE 159 OUTPUTS IN LESS THAN SECONDS.
10. THE SYSTEM SHALL BE UL LISTED TO BE CAPABLE OF MONITORING SECURITY ALARM POINTS.
11. THE FACP SHALL EMPLOY 160-CHRACTERS LCD DISPLAY WITH BACKLIGHTING.
12. THE INSTALLING COMPANY SHALL EMPLOY FACTORY-TRAINED ENGINEER(S) AND/OR TECHNICIAN(S) ON SITE TO GUIDE THE FINAL CHECKOUT AND TO ENSURE THE SYSTEMS INTEGRITY. PROPER DOCUMENTS SHALL BE SUBMITTED SHOWING TRAINING WAS TAKEN LESS THAN 12 MONTHS PRIOR TO AWARD OF CONTRACT.
13. THE SUPERVISING ENGINEER(S) OF THE SUPPLIER AND/OR INSTALLING COMPANY SHALL BE REGISTERED ELECTRONICS ENGINEERS (ECE) LICENSED BY THE PROFESSIONAL REGULATION COMMISSION (PRC).
14. PROPER DOCUMENTATION SHALL BE SUBMITTED, SIGNED AND SEALED BY AN PROFESSIONAL ELECTRONICS ENGINEER (PECE) LICENSED BY THE PROFESSIONAL REGULATION COMMISSION (PRC).

2.0 EQUIPMENT AND INSTALLATION MATERIALS:

1. ALL EQUIPMENT AND COMPONENTS SHALL BE NEW, AND THE MANUFACTURERS CURRENT MODEL.
2. ALL EQUIPMENT AND COMPONENTS SHALL BE INSTALLED I STRICT COMPLIANCE WITH ITS MANUFACTURER'S RECOMMENDATIONS.
3. ALL EQUIPMENT SHALL BE ATTACHED TO WALLS AND CEILING/FLOOR ASSEMBLIES AND SHALL BE HELD FIRMLY IN PLACE. FASTENERS AND SUPPORT SHALL BE ADEQUATE TO SUPPORT THE REQUIRED LOAD.
4. WHERE POSSIBLE, ALL WIRING SHALL BE INSTALLED IN CONDUIT OR RACEWAY. CONDUIT FILL SHALL NOT EXCEED 40 PERCENT OF INTERIOR CROSS SECTIONAL AREA WHERE THREE OR MORE CABLES ARE CONTINED WITHIN A SINGLE CONDUIT.
5. CABLE MUST BE SEPARATED FROM ANY OPEN CONDUCTORS OF POWER, OR CLASS 1 CIRCUITS, AND SHALL NOT BE PLACED IN ANY CONDUIT, JUNCTION BOX OR RACEWAY CONTAINING THESE CONDUCTORS.
6. UNDERGROUND CONDUIT LAYOUTS SHALL BE ENCASED IN CONCRETE OF NOT LESS THAN 25 MM.
7. UNDERGROUND CONDUIT LAYOUTS SHALL BE AT LEAST 150 MM DEEP.
8. CONDUIT PIPES SHALL BE ANSI STANDARD, INTERMEDIATE CONDUIT (IMC) OR ELECTRICAL METALLIC TUBING TYPES.
9. FLEXIBLE METALLIC CONDUITS SHALL BE USED AS REQUIRED.
10. CONDUITS SHALL BE ½ INCH (19 MM) MINIMUM AND SHALL BE UL LISTED.
11. ALL FIRE ALARM SYSTEM WIRING MUST BE NEW, UNLESS SPECIFIED HEREIN.
12. WIRING SHALL BE IN ACCORDANCE WITH LOCAL AND NATIONAL CODES AND AS RECOMMENDED BY THE MANUFACTURER OF THE FIRE ALARM SYSTEM.
13. NUMBER AND SIZE OF CONDUCTORS SHALL BE RATED FOR FIRE ALARM USE AND AS RECOMMENDED BY THE FIRE ALARM SYSTEM MANUFACTURER, BUT NOT LESS THAN:
    a. 18 AWG (0.9 MM) UNSIELDED TWISTED PAIR FOR INITIATING DEVICE CIRCUITS, AND SIGNALING LINE CIRCUITS;
    b. 18 AWG (0.9 MM) SHIELDED TWISTED PAIR FOR VOICE CIRCUITS.
    c. 16 AWG (1.25 MM) TF OR THHN WIRE FOR NOTIFICATION APPLIANCE CIRCUITS AND 24VDC POWER SUPPLY.
    d. 14 AWG (2.0 MM) THHN WIRE FOR 220VAC POWER SUPPLY.
15. ALL WIRE AND CABLE SHALL BE LISTED AND/OR APPROVED BY RECOGNIZED TESTING AGENCY FOR USE WITH PROTECTIVE SIGNALING OF FIRE ALARM SYSTEM.
16. WIRE AND CABLE NOT INSTALLED IN CONDUIT SHALL HAVE A FIRE RESISTANCE RATING SUITABLE FOR THE INSTALLATION AS INDICATED IN NFPA 70.

3.0 INSTALLATION AND TESTING:

1. INSTALLATION SHALL BE IN ACCORDANCE WITH THE NFPA 72, LOCAL AND NATIONAL CODES.
1. INSTALLATION SHALL BE IN ACCORDANCE WITH THE NFPA 72, LOCAL AND NATIONAL CODES.
2. ALL CONDUIT, JUNCTION BOXES, CONDUIT SUPPORTS AND HANGERS SHALL BE CONCEALED IN FINISHED AREAS AND MAYBE EXPOSED IN UNFINISHED AREAS.
3. IF CONSTRUCTION IS ONGOING, MEASURES SHALL BE TAKEN TO PROTECT SMOKE DETECTORS FROM CONTAMINATION AND PHYSICAL DAMAGE.
4. ALL FIRE AND ALARM SYSTEM DEVICES, CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE FLUSH MOUNTED WHEN LOCATED IN FINISHED AREAS AND MAYBE SURFACE MOUNTED WHEN LOCATED IN UNFINISHED AREAS.
5. THE SERVICE OF A COMPETENT, FACTORY-TRAINED ENGINEER OR TECHNICIAN AUTHORIZED BY THE MANUFACTURER AND/OR DISTRIBUTOR OF THE SYSTEM SHALL BE PROVIDED TO TECHNICALLY SUPERVISE AND PARTICIPATE DURING ALL OF THE ADJUSTMENTS AND TESTS FOR THE SYSTEM.
6. TO ENSURE DEVICE AND SYSTEM INTEGRITY; ALL SMOKE AND HEAT DETECTORS SHALL BE TESTED WITH A SMOKE AND HEAT SOURCE OR GENERATOR RESPECTIVELY. TESTING BY MAGNET, BURNING OF PAPER, CIGARETTE SMOKE OR SIMILAR WAY SHALL NOT BE ACCEPTABLE.

SYMBOLS

- FACP FIRE-ALARM CONTROL PANEL
- HD/A HEAT DETECTOR (ADDRESSABLE)
- SD/A SMOKE DETECTOR (ADDRESSABLE)
- S SPRINKLER HEAD

LEGEND:

- FDAS FIRE DETECTION & ALARM SYSTEM
- HD/A HEAT DETECTOR - ADDRESSABLE
- SD/A SMOKE DETECTOR - ADDRESSABLE
- M ADDRESSABLE MONITOR MODULE
- C ADDRESSABLE CONTROL MODULE
- F MANUAL PULL STATION
- S/L SOUNDER WITH STROBE LIGHT
- FS FLOW SWITCH
- SS SUPERVISORY SWITCH
- PULL BOX

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PROJECT : PROPOSED STUDENT CENTER & EDUCATION COMPLEX
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SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
RISER DIAGRAM
LEGEND
SPECIFICATIONS

SHEET NO.
EE10
EE21
187
198

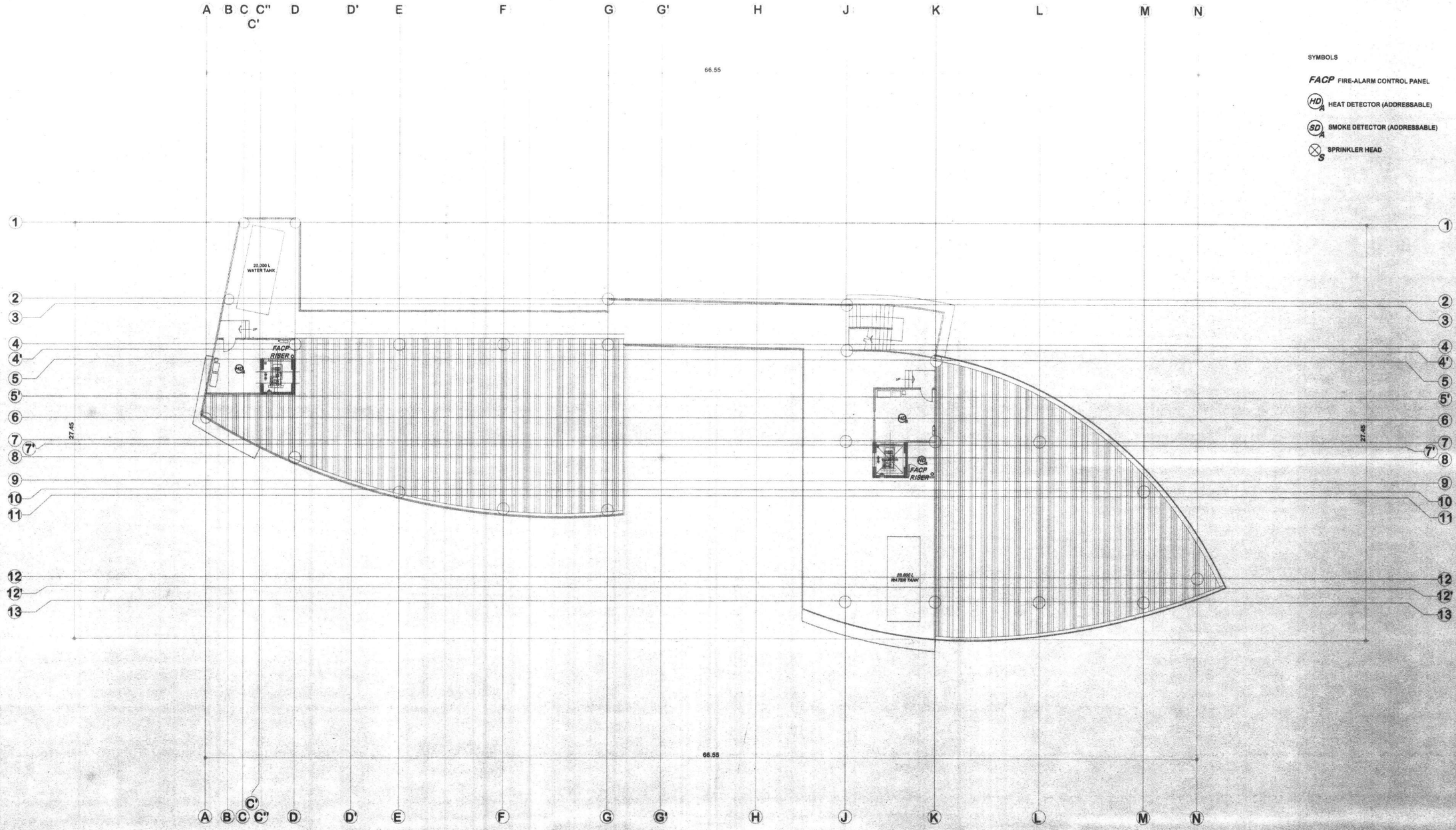
SYMBOLS

FACP FIRE-ALARM CONTROL PANEL

HD HEAT DETECTOR (ADDRESSABLE)

SD SMOKE DETECTOR (ADDRESSABLE)

S SPRINKLER HEAD



ROOF DECK HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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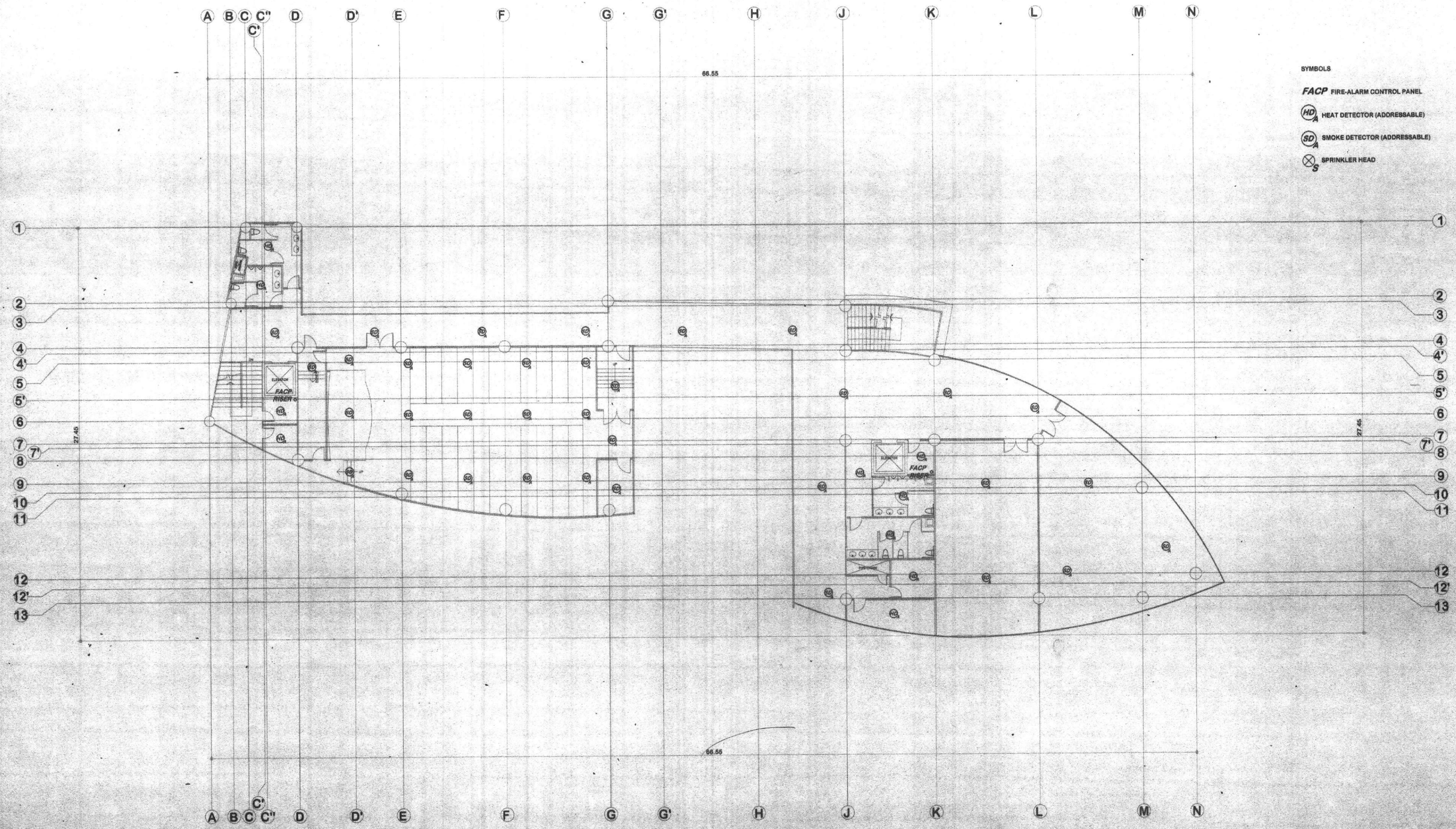
SHEET TITLE: ELECTRONICS | SHEET NO. EE9 / EE21

SHEET CONTENTS :

ROOF DECK HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

186
148



EIGHTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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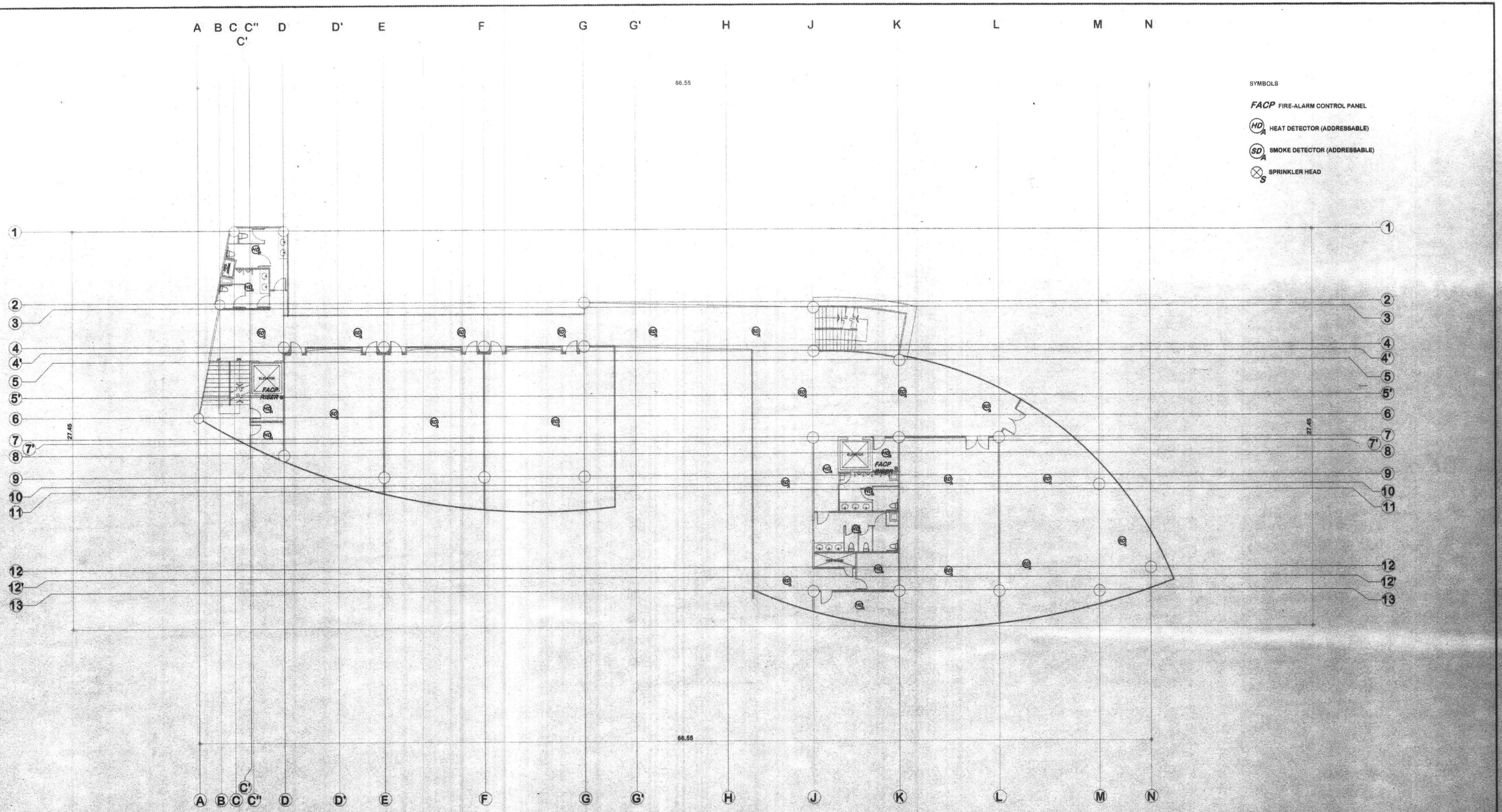
SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
EIGHTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
EE8
EE21
185
198



SEVENTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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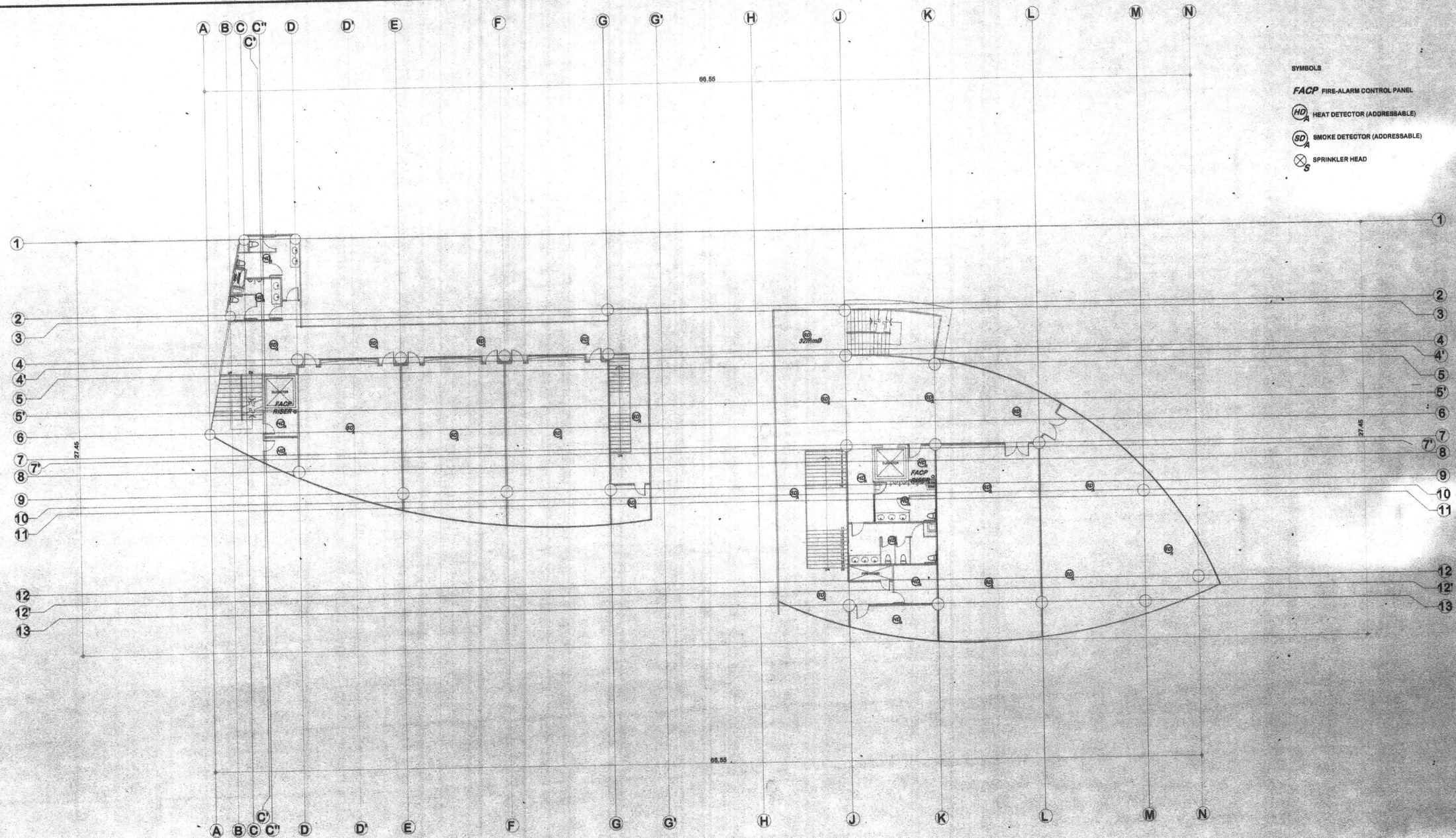
SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
SEVENTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
~~EE7~~
EE21
184
198



SIXTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
SIXTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
EE6
EE21
183
198

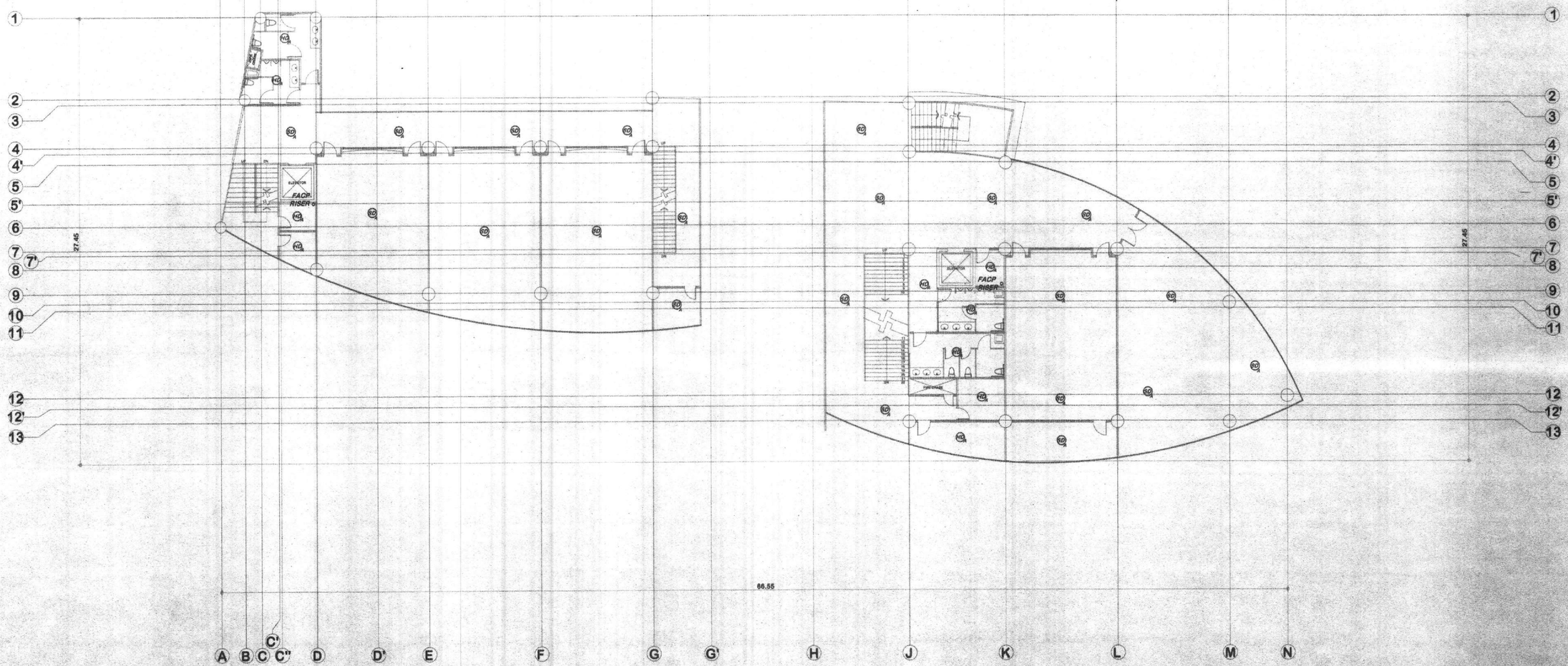
SYMBOLS

FACP FIRE-ALARM CONTROL PANEL

HD/A HEAT DETECTOR (ADDRESSABLE)

SD/A SMOKE DETECTOR (ADDRESSABLE)

S SPRINKLER HEAD



FIFTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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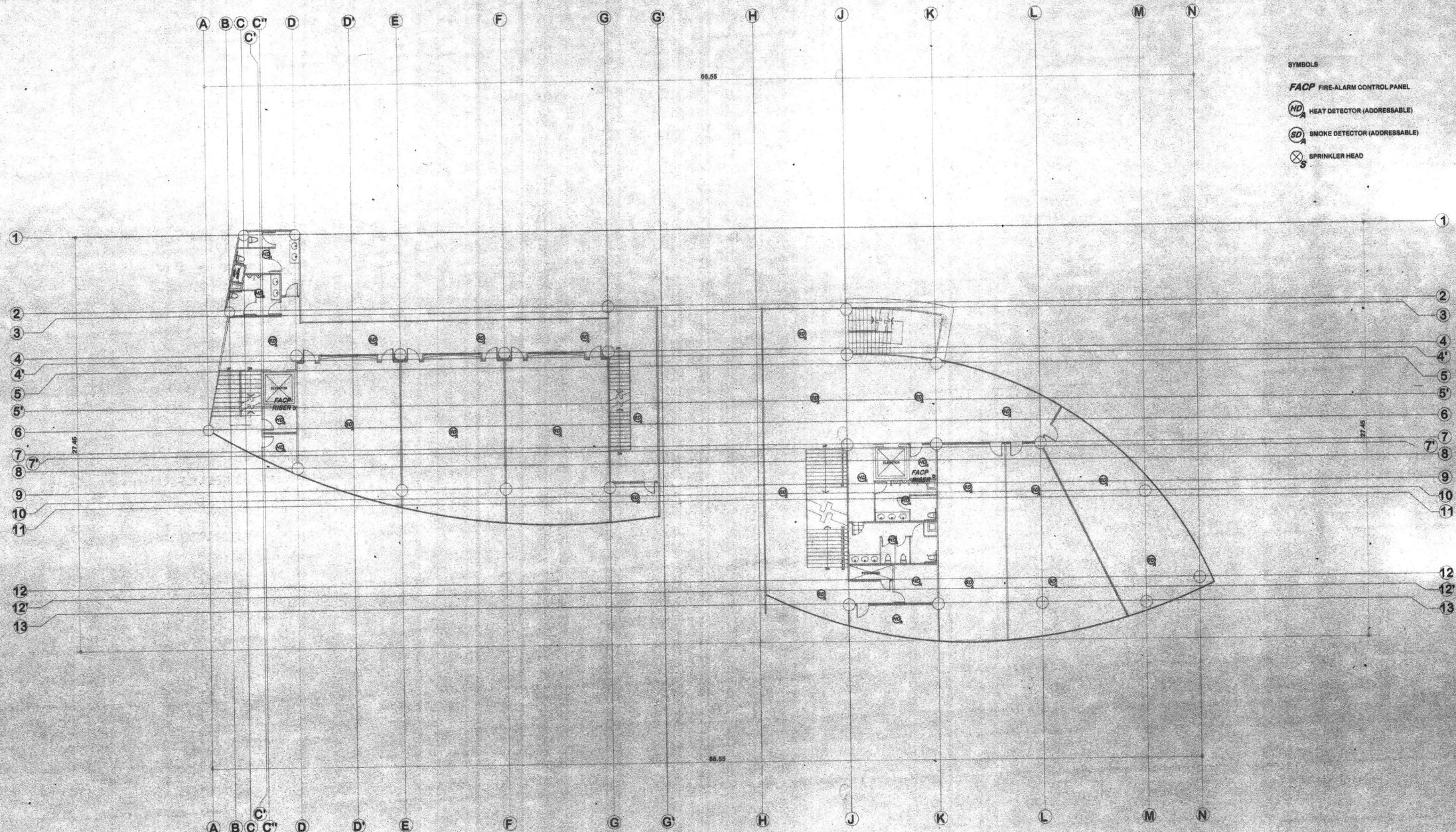
SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
FIFTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
EE-5
EE21
182
198



FOURTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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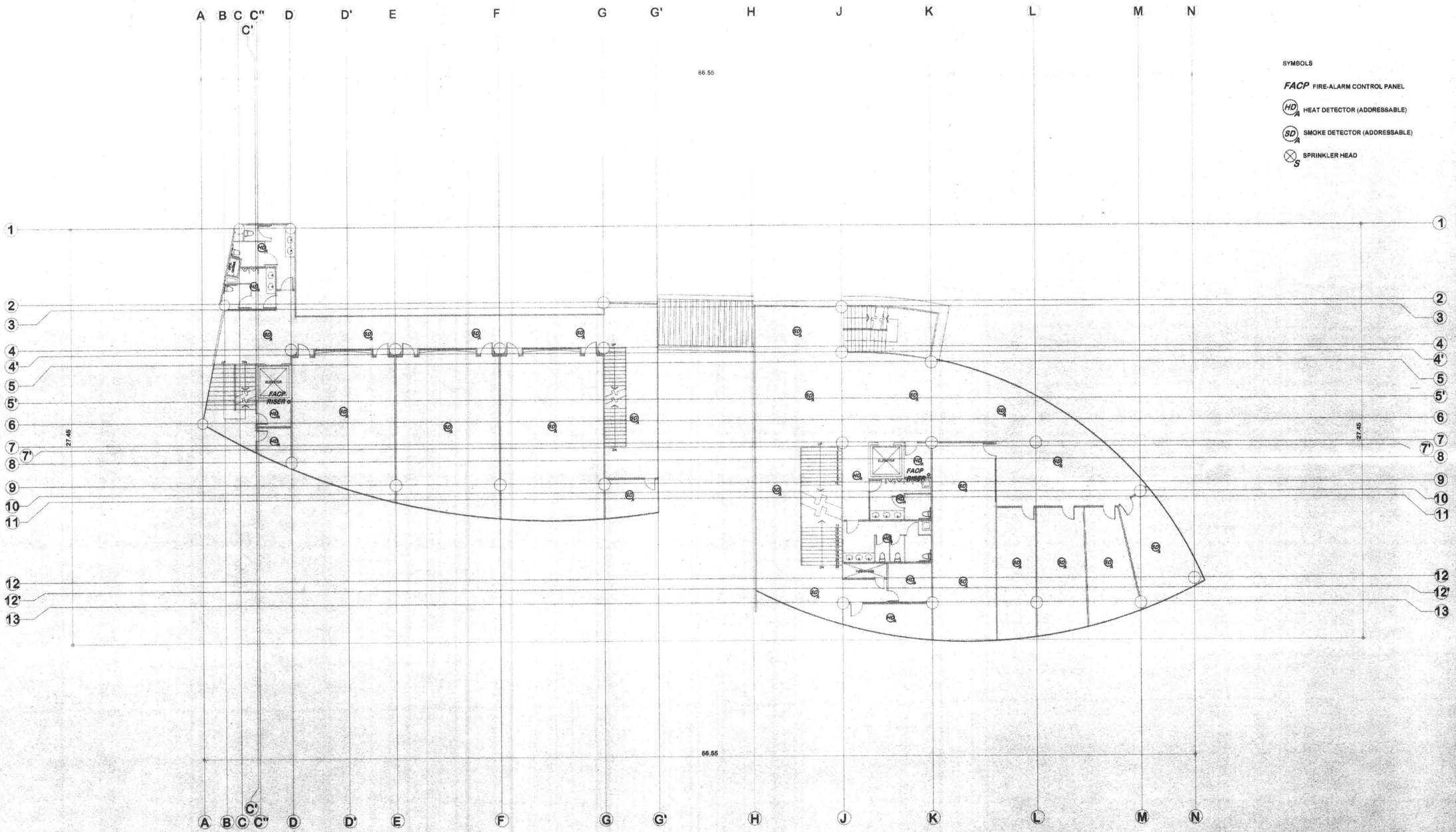
SHEET TITLE: ELECTRONICS
SHEET CONTENTS :
FOURTH FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
EE 9
EE21
18
19



THIRD FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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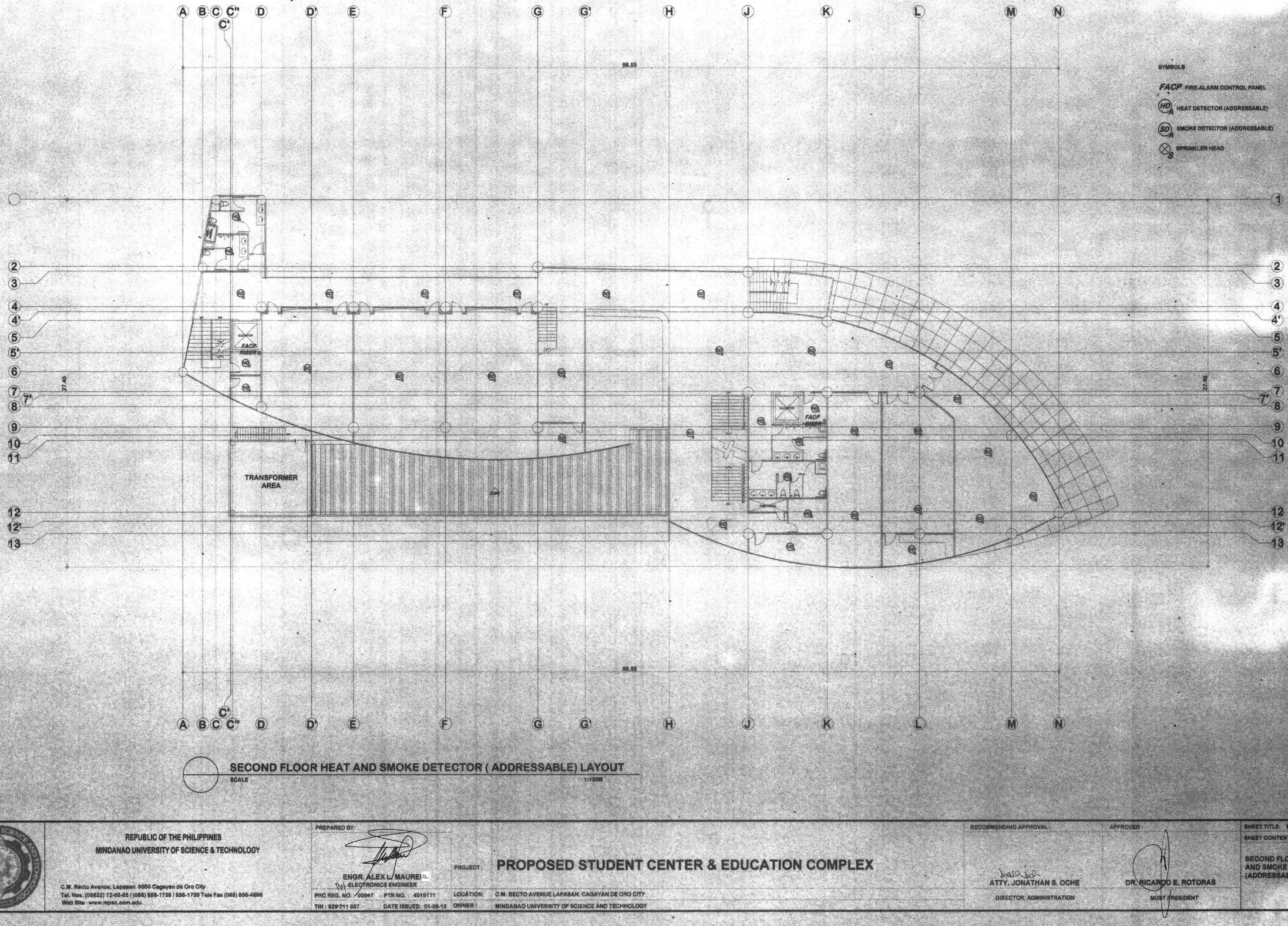
SHEET TITLE: ELECTRONICS

SHEET CONTENTS :

THIRD FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
EE3
EE21
180
198



SECOND FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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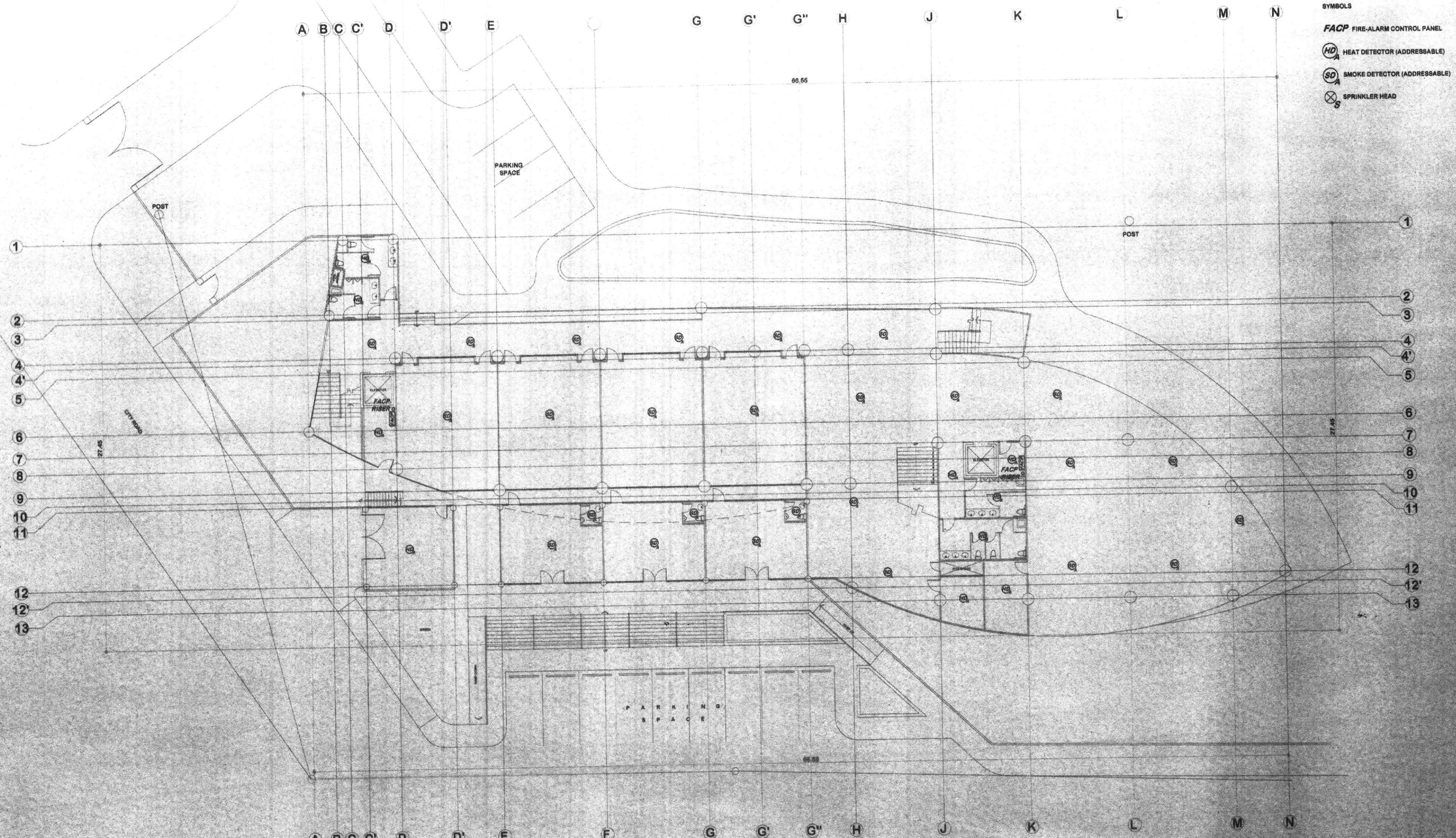
SHEET TITLE: ELECTRONICS
SHEET CONTENTS:
SECOND FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SHEET NO.
EE2
EE21
179
183



SYMBOLS

- FACP FIRE-ALARM CONTROL PANEL
- HD/A HEAT DETECTOR (ADDRESSABLE)
- SD/A SMOKE DETECTOR (ADDRESSABLE)
- S SPRINKLER HEAD

GROUND FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT

SCALE 1:150M

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SHEET TITLE: ELECTRONICS SHEET NO.
SHEET CONTENTS: E6!
GROUND FLOOR HEAT AND SMOKE DETECTOR (ADDRESSABLE) LAYOUT E6.1
178
147