

GENERAL NOTES OF FIRE PROTECTION SYSTEM

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL FIRE PROTECTION SYSTEM DRAWINGS THROUGHOUT THE PROJECT.
2. DO NOT SCALE FROM THESE DRAWINGS. DIMENSIONS SHALL BE TAKEN FROM ARCHITECTURAL DRAWINGS.
3. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED ONLY TO DEFINE THE BASIC FUNCTIONS REQUIRED. ACCESSORIES REQUIRED FOR PROPER OPERATION OF THE SYSTEMS, EVEN THOUGH NOT SPECIFICALLY INDICATED, SHALL BE INCLUDED AND INSTALLED. SUCH ACCESSORIES MAY INCLUDE, BUT ARE NOT LIMITED TO, PIPING ACCESSORIES, MOTOR STARTERS, WIRING ACCESSORIES, ETC.
4. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS & CONDITIONS, SPECIFICATIONS AND SCHEDULES OF ITEMS OF WORK.
5. ANY DISCREPANCY OR INADEQUACY WITHIN THESE BID DOCUMENTS OR BETWEEN THE BID DOCUMENTS AND RELATED HVAC, ELECTRICAL, ARCHITECTURAL, INTERIOR DECOR AND FIELD CONDITIONS SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER-IN-CHARGE PRIOR TO BID SUBMISSION.
6. THE FIRE PROTECTION CONTRACTOR SHALL REVIEW THESE DRAWINGS & SPECIFICATIONS, AS WELL AS THE RELATED HVAC, ELECTRICAL, ARCHITECTURAL, INTERIOR DECOR AND SITE ENGINEERING DRAWINGS TO BECOME FAMILIAR WITH THE FULL PROJECT SCOPE. DURING THE COURSE OF CONSTRUCTION COORDINATION AND ACTUAL CONSTRUCTION, THE FIRE PROTECTION CONTRACTOR SHALL COOPERATE WITH ALL OTHER CONTRACTORS AND TRADES OF THIS PROJECT TO ENSURE A SMOOTH RUNNING AND CAREFULLY COORDINATED INSTALLATION.
7. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMISSION OF HIS BID FOR THE PROPOSED WORK. HE SHALL ALSO BE RESPONSIBLE TO VERIFY FIELD CONDITIONS. ANY DISCREPANCY SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER-IN-CHARGE PRIOR TO SUBMISSION OF THE BID IN WRITING.
8. THE SCOPE OF WORK CONSISTS OF FURNISHING LABOUR, MATERIALS AND EQUIPMENT FOR A COMPLETE FIRE PROTECTION SYSTEM AS ON DRAWINGS AND REQUIRED BY IS 2189: 2008, IS 15908: 2021, IS 15301: 2003, IS 3844: 1989, IS 13039: 2014, AND OTHER RELEVANT BIS STANDARDS OR NFPA 1, NFPA 3, NFPA 10, NFPA 13, NFPA 14, NFPA 20, NFPA 72 AND LOCAL AUTHORITIES.
9. ALL WORKS SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE AND ADOPTED REGULATIONS INCLUDING, BUT NOT LIMITED TO, NFPA REQUIREMENTS, NATIONAL, CITY, STATE, LOCAL CODES AND ORDINANCES WHICH MAY BE IN EFFECT. ALL FIRE PROTECTION MATERIALS, INSTALLATION PROCEDURES AND SYSTEM LAYOUTS SHALL BE APPROVED BY ALL APPLICABLE AUTHORITIES HAVING JURISDICTION.
10. ALL CONTRACT WORK SHALL BE PERFORMED IN ACCORDANCE TO ALL REQUIREMENTS OF WRITTEN SPECIFICATIONS FOR THIS PROJECT WHICH ARE CONSIDERED TO BE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS. ALL CONTRACTORS AND SUBCONTRACTORS SHALL MAINTAIN (AT THE JOB SITE) AND REFER TO COPIES OF THE WRITTEN SPECIFICATIONS AS A PART OF THESE DRAWINGS. REFER TO THE WRITTEN SPECIFICATIONS IN CONJUNCTION WITH THE DRAWINGS FOR FULL PROJECT SCOPE. IN ALL CASES OF DISCREPANCY BETWEEN DRAWINGS AND SPECIFICATIONS, MORE STRINGENT REQUIREMENTS SHALL GOVERN AND WHERE IT IS UNCLEAR, SUCH CASES SHALL BE REFERRED TO THE ENGINEER-IN-CHARGE FOR ADJUDICATION.
11. ALL EXPOSED HORIZONTAL AND VERTICAL PIPING SHALL BE INSTALLED IN A NEAT ARRANGEMENT IN LOCATIONS WHICH ARE THE MOST INCONSPICUOUS. VERTICAL DROPS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AND THEIR FINAL LOCATIONS SHALL BE COORDINATED AND RUN WITHIN CHASES, WALLS, SOFFITS WITH OTHER MECHANICAL / ELECTRICAL FEEDS. ALL SUCH LOCATIONS ARE TO BE REVIEWED BY ENGINEER-IN-CHARGE PRIOR TO INSTALLATION.
12. ALL PIPING SYSTEM PENETRATIONS OF FIRE-RATED WALLS AND FLOORS SHALL BE SEALED WITH UL APPROVED FIRE RESISTANT JOINT SEALER, SPECIFIED TECHNOLOGIES "PENSIL 200" OR EQUAL, TWO-PART FOAMED-IN-PLACE SILICONE SEALANT. FIRE RESISTANT SEALER SHALL BE TESTED IN ACCORDANCE TO ASTM 814. THE CONTRACTOR TO INSTALL SEALANT, INCLUDING FORMING, PACKING AND OTHER ACCESSORY MATERIALS TO FILL OPENINGS WHERE FIRE-RATED WALL PENETRATIONS OCCUR AND COMPLY WITH INSTALLATION REQUIREMENTS ESTABLISHED BY AUTHORITIES HAVING JURISDICTION.
13. THE CONTRACTOR SHALL PATCH ALL SURFACES DISTURBED OR LEFT UNFINISHED BY THIS WORK TO MATCH ADJACENT SURFACES UPON REMOVING ANY EQUIPMENT, PIPE, DUCT, CONDUIT, ETC.
14. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF "AS-BUILT" DRAWINGS INDICATING THE PRECISE LOCATION OF ALL SYSTEMS, EQUIPMENT, CONCEALED OR EMBEDDED PIPES, PIPE CONNECTIONS AND ACCESS DOORS. THESE DRAWINGS SHALL ALSO INCLUDE ALL CHANGES AND DEVIATIONS FROM THE BID DOCUMENTS.

MANUAL FIRE ALARM SYSTEM AND MASS NOTIFICATION SYSTEM

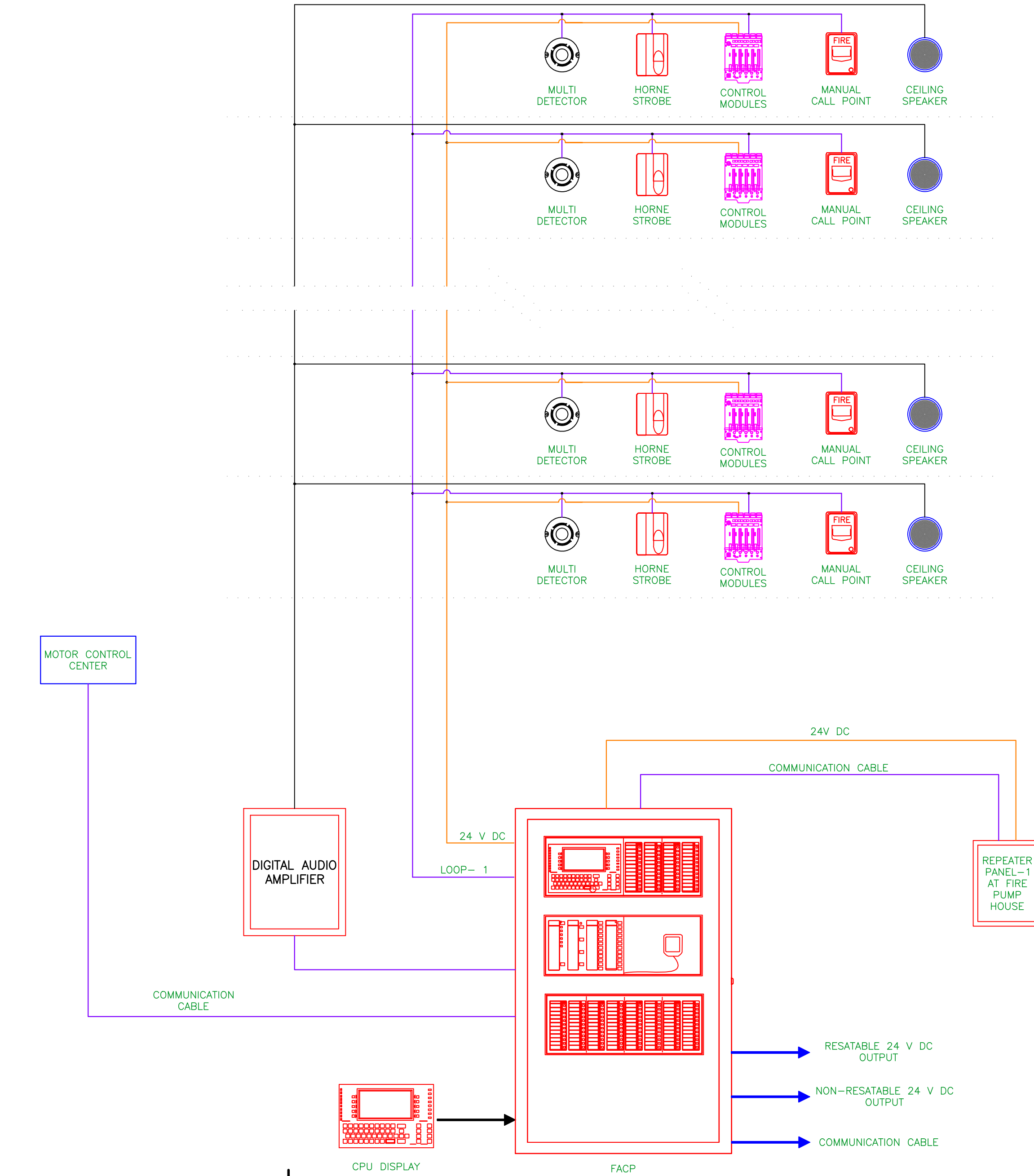
1. THE FIRE ALARM SYSTEM (FAS) AND DEVICES SHALL BE INSTALLED IN ACCORDANCE TO THE LATEST EDITION OF IS 2189: 2008, IS 15908: 2021, SP 70: 2011 OR NFPA 72, NFPA 70 AND LOCAL REQUIREMENTS.
2. THESE DESIGN DOCUMENTS PROVIDE GENERAL SPACING, LOCATION, AND COORDINATION CRITERIA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CIRCUIT CONFIGURATION, SYSTEM PERFORMANCE, SOFTWARE CONFIGURATION, DEVICE PROGRAMMING, SYSTEM COMMISSIONING, AND SYSTEM WARRANTY.
3. THE CONTRACTOR SHALL PROVIDE, AS A PART OF THE INSTALLED COST OF THIS FAS, A WARRANTY AND SERVICE AGREEMENT TO COVER INSTALLATION OF THE COMPLETE SYSTEM FOR A PERIOD OF AT LEAST ONE YEAR FOLLOWING FINAL SYSTEM ACCEPTANCE OR AS MENTIONED IN THE BID DOCUMENTS, WHICHEVER IS HIGHER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF SYSTEM REQUIREMENTS WITH ALL CONDITIONS OF THE BUILDING AND SITE INCLUDING, BUT NOT LIMITED TO, BLIND SPACES, SHELVING, LIGHTS, GRILLES & DIFFUSERS, PIPING, DUCT WORK, DOORS, WINDOWS, EQUIPMENT PLATFORMS, WALLS (FIRE-RATED & NON-FIRE-RATED), BEAMS, JOISTS, COLUMNS, HVAC EQUIPMENT, ELECTRICAL PANELS & EQUIPMENT, CEILINGS, AREAS WITHOUT CEILINGS, WALL CONSTRUCTION, FLOORS AND ALL CONSTRUCTION, EQUIPMENT & BUILDING APPURTENANCES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND PAYING FOR, ANY AND ALL PERMITS REQUIRED PRIOR TO BEGINNING THE WORK.
6. THE CONTRACTOR SHALL SUBMIT FIRE ALARM DRAWINGS, DATA CUT-SHEETS AND VOLTAGE DROP CALCULATIONS TO THE CONSULTANT OR ENGINEER-IN-CHARGE FOR REVIEW AND APPROVAL PRIOR TO BEGINNING ANY WORK ON THE FIRE ALARM SYSTEM (FAS) / MASS NOTIFICATION SYSTEM (MNS).
7. NO FAS / MNS DOCUMENT / DRAWING SHALL BE USED FOR INSTALLATION OF THE SYSTEM UNLESS THEY CONTAIN A REVIEW AND APPROVAL STAMP FROM THE CONSULTANT OR ENGINEER-IN-CHARGE. THE CONSULTANT AND ENGINEER-IN-CHARGE SHALL HAVE THE AUTHORITY TO STOP ANY WORK UNTIL SUCH PLANS ARE ON THE SITE AND IN USE.
8. SEPARATE FAS & MNS SPECIFICATIONS WHICH CONTAIN VERY DETAILED INFORMATION ABOUT THE SYSTEM SHALL BE FOLLOWED ON-SITE AND MADE AVAILABLE TO THE CONTRACTOR BEFORE COMMENCEMENT OF THE WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING, DOCUMENTING, AND CERTIFYING REQUISITE INSPECTION AND TESTS IN ACCORDANCE TO APPLICABLE CODES AND STANDARDS FOR ALL EQUIPMENT FURNISHED UNDER THE PROJECT. AFTER COMPLETING HIS TESTING, THE CONTRACTOR SHALL DEMONSTRATE FULL OPERATIONAL CAPABILITY OF THE FAS, AS WELL AS FULL COMPLIANCE WITH ALL DESIGN DOCUMENTS, CODES AND STANDARDS, TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.
10. ALL EQUIPMENT SHALL BE INSTALLED IN AN AESTHETIC AND SKILLED MANNER IN ACCORDANCE WITH RELEVANT BIS / NFPA CODES AND STANDARDS AND OTHER APPLICABLE STANDARDS REFERENCED IN THE PROJECT SPECIFICATIONS. FINAL APPEARANCE OF ALL SYSTEMS AND EQUIPMENT SHALL BE NEAT AND CLEAN.
11. ALL FAS INSTALLATIONS, INCLUDING PULLING OF WIRE AND MOUNTING OF DEVICES, SHALL HAVE THE OVERSIGHT OF AT LEAST A NICET LEVEL II FIRE ALARM TECHNICIAN OR EQUIVALENT.
12. ALL PANELS AND PERIPHERAL DEVICES SHALL BE STANDARD PRODUCTS OF A SINGLE OEM AND SHALL DISPLAY THE MANUFACTURER'S NAME ON EACH COMPONENT. ALL EQUIPMENT AND COMPONENTS SHALL BEAR THE UL / FM LABEL OR MARKING, AND ALL MATERIALS SHALL BE NEW AND IN GOOD CONDITION, FREE OF DEFECTS, SCRATCHES, CORROSION AND CONTAMINATION. USED EQUIPMENT SHALL NOT BE ALLOWED.
13. THE FIRE ALARM CONTROL PANEL (FACP) SHALL BE MOUNTED WITH TOP OF ENCLOSURE AT APPROXIMATELY 72" ABOVE THE FINISHED FLOOR LEVEL (FFL) FOR ACCESSIBILITY. THE OPERABLE PART OF THE FIRE ALARM PULL STATIONS SHALL BE MOUNTED BETWEEN 42" AND 54" ABOVE THE FFL. WALL MOUNTED HORN / STROBES AND STROBES SHALL BE INSTALLED SO THAT THE ENTIRE LENS IS BETWEEN 80" AND 96" ABOVE FFL AND SYNCHRONIZED.
14. THE FACP SHALL BE DESIGNED FOR FUTURE EXPANSION AND MODIFICATION. IN NO CASE SHALL THE CIRCUIT AND / OR MODULE LOADING EXCEED EIGHTY (80) PERCENT OF THE DESIGN CAPACITY AS SPECIFIED BY THE OEM.
15. THE FACP PRIMARY POWER SUPPLY SHALL BE PROTECTED BY A SEPARATE UL-LISTED FAST ACTING ELECTRICAL TRANSIENT SURGE SUPPRESSOR THAT INCORPORATES LOW Z EARTH GROUNDING. THE DEVICE SHALL MEET THE REQUIREMENTS OF U.L. 1449.
16. SECONDARY POWER PERFORMANCE SHALL MEET NFPA 72 AND UFC 4-021-01 REQUIREMENT, I.E., 72 HOURS OF STANDBY POWER, FOLLOWED BY 15 MINUTES OF ALARM FOR ALL CONNECTED DEVICES AT MAXIMUM LOAD. THE BATTERIES FOR TEXTUAL / VISUAL NOTIFICATION SHALL HAVE THE CAPACITY TO OPERATE FOR TWO HOURS CONTINUOUSLY. SECONDARY POWER FOR THE SYSTEM SHALL ALSO BE DESIGNED TO OPERATE ON MAXIMUM CONNECTED ALARM LOAD FOR 60 MINUTES, IMMEDIATELY FOLLOWING DISCONNECTION OF PRIMARY POWER.
17. SELECTION OF CABLE TYPES AND WIRE WITH RESPECT TO CONDUCTOR SIZE, SHIELDING REQUIREMENTS, AND SEPARATION BETWEEN CIRCUITS SHALL BE IN FULL COMPLIANCE WITH THE REQUIREMENTS OF THE OEM OF THE FACP, WITHOUT EXCEPTION. ALL CIRCUIT WIRES / CABLES SHALL BE SPECIFICALLY LISTED FOR USE WITH FIRE ALARM SYSTEMS.
18. THE FOLLOWING GUIDELINES APPLY TO THE SIGNALING LINE CIRCUIT (SLC) BETWEEN FACP AND INTELLIGENT DEVICES. THESE GUIDELINES SHALL BE FOLLOWED IN ORDER TO PREVENT THE SYSTEM COMMUNICATION PROBLEMS AND / OR FAILURES:
- 18.1. POWER LIMITED (PL) OR NON-POWER LIMITED (NPL) CABLE MAY BE UTILIZED FOR THE ADDRESSABLE COMMUNICATION WIRING BETWEEN PANELS AND INTELLIGENT DEVICES (E.G. SMOKE DETECTORS, PULL STATIONS, ETC.).
- 18.2. TWISTED, UNSHIELDED CABLE TO BE USED AS PER RECOMMENDATIONS OF THE FACP OEM.
- 18.3. UTILIZE A CABLE WHICH IS APPROVED FOR USE IN THE ENVIRONMENT (I.E. DUCT BANK, CONDUIT, CABLE TRAY) IN WHICH IT WILL BE RUN.
19. UNLESS NOTED OTHERWISE, THE MINIMUM SURVIVABILITY CRITERIA WHICH SHALL BE MET IS: SIGNALING LINE CIRCUITS CLASS "A" & NOTIFICATION CIRCUITS CLASS "A".
20. FIRE ALARM AUDIBLE ALERT SIGNALS SHALL BE SET TO TEMPORAL CODE AS PER NFPA 72. MASS NOTIFICATION AUDIBLE CUES SHALL TAKE PRECEDENCE AND OVERRIDE FIRE ALARM AND PUBLIC ANNOUNCEMENT / MUSIC TONES.
21. INTELLIGIBILITY OF MASS NOTIFICATION MESSAGES SHALL BE AS PER UFC 4-021-01 AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MEET OR EXCEED. COMMISSION TESTING SHALL BE DONE PRIOR TO FINAL SYSTEM ACCEPTANCE.
22. ALL NEW SYSTEMS AND DEVICES MUST INTERFACE WITH APPLICABLE EXISTING SYSTEMS, IF ANY.
23. A COMPLETED AND SIGNED RECORD (CERTIFICATE) OF COMPLETION FORM SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER-IN-CHARGE, AND CONSULTANT PRIOR TO COMMISSION TESTING. THIS CERTIFICATE SHALL CERTIFY THAT THE CONTRACTOR HAS PRE-TESTED EVERY DEVICE AND FUNCTION OF THE SYSTEM AND REPAIRED ANY DEFICIENCIES PRIOR TO THE COMMISSIONING TEST.
24. EACH AND EVERY DEVICE SHALL BE TESTED DURING COMMISSIONING AND PRIOR TO BEING TURNED OVER TO THE OWNER.
25. EACH NOTIFICATION CIRCUIT SHALL BE TESTED UNDER STAND-BY / BATTERY POWER. END-OF-LINE VOLTAGE READINGS SHALL BE TAKEN. ANY CIRCUIT, WHICH MEASURES LESS THAN 20 V DC OR THE NAME-PLATE VOLTAGE, WHICHEVER IS HIGHER, SHALL BE CONSIDERED AS FAILING THE DESIGN. EACH CIRCUIT'S END-OF-LINE VOLTAGE SHALL BE DOCUMENTED TO COMPARE THE SAME TO END-OF-LINE DESIGN CALCULATIONS.



FIRE SUPPRESSION SYSTEM

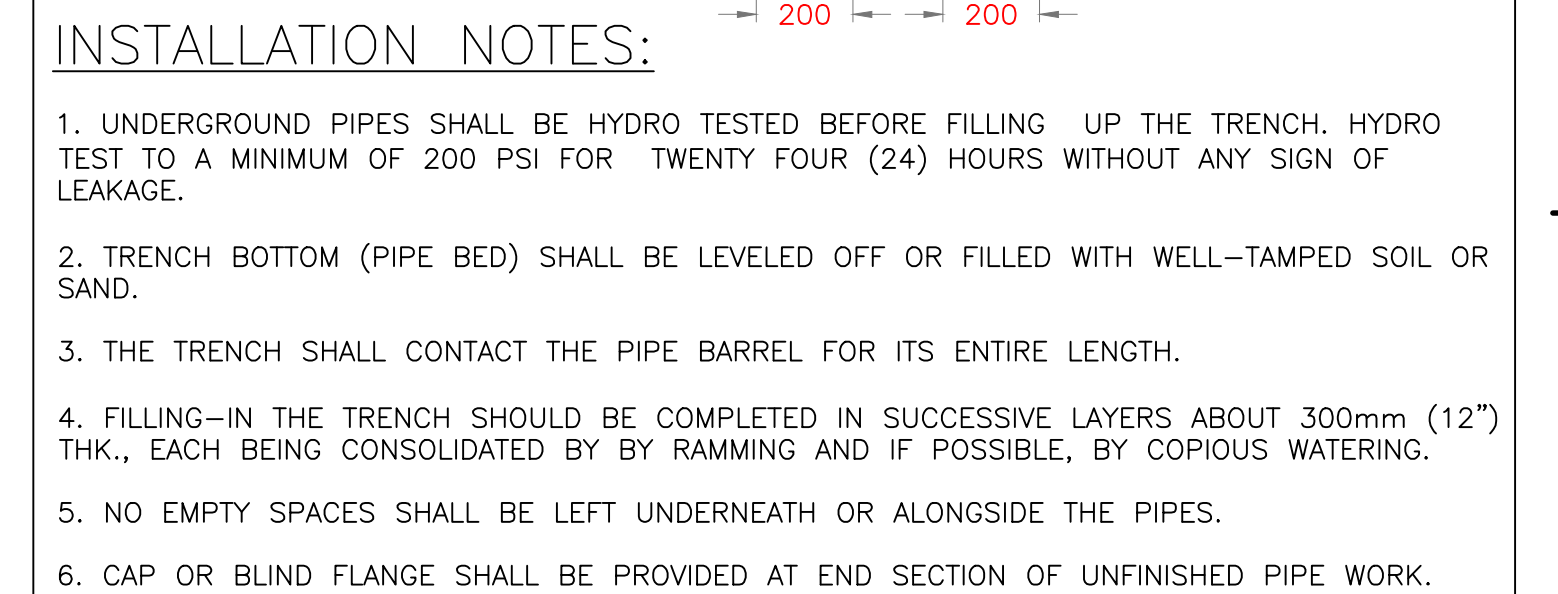
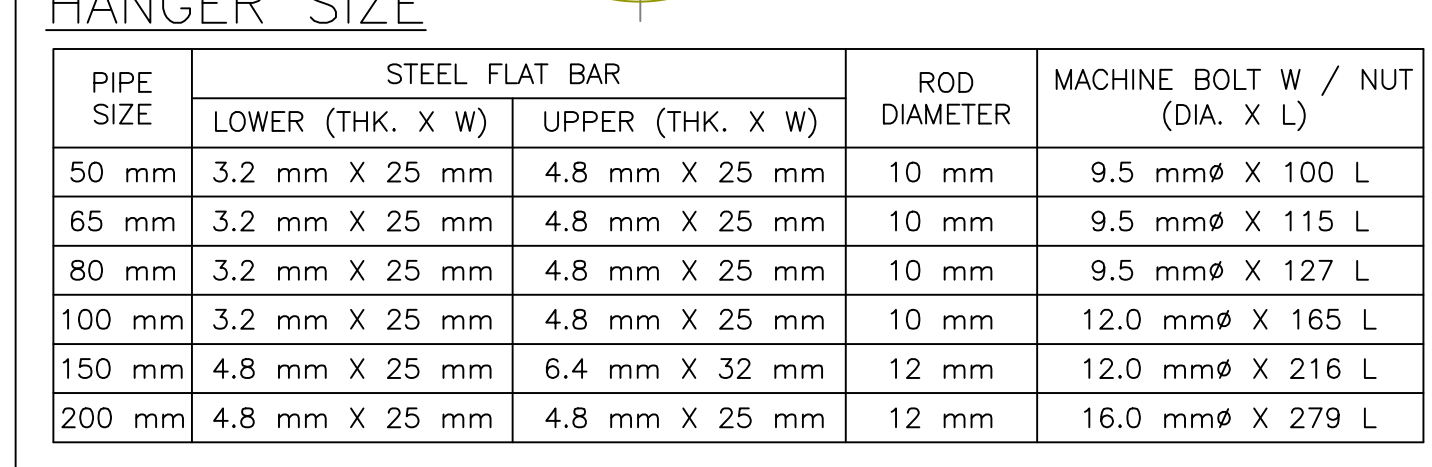
1. ALL EQUIPMENT SHALL BE UL LISTED & FM APPROVED, IN ACCORDANCE TO IS 15301: 2003, IS 3844: 1989, IS 13039: 2014, IS 15105: 2002 & OTHER RELEVANT BIS STANDARDS OR NFPA 13, NFPA 14, NFPA 20 AND LOCAL REQUIREMENTS.
2. WHERE A TANK IS USED AS THE SUCTION SOURCE OF FOR A FIRE PUMP, THE DISCHARGE OUTLET OF THE TANK SHALL BE EQUIPPED WITH AN ASSEMBLY THAT CONTROL THE VORTEX FLOW IN ACCORDANCE TO NFPA 22.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING, DOCUMENTING, AND CERTIFYING REQUISITE INSPECTION AND TESTS IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS FOR ALL EQUIPMENT FURNISHED UNDER THE PROJECT. AFTER COMPLETING HIS TESTING, THE CONTRACTOR SHALL DEMONSTRATE FULL OPERATIONAL CAPABILITY OF THE FAS, AS WELL AS FULL COMPLIANCE WITH ALL DESIGN DOCUMENTS, CODES AND STANDARDS, TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.
4. PIPE SIZES SHOWN ARE SUBJECT TO CHANGE BASED ON HYDRAULIC CALCULATIONS PERFORMED BY THE CONTRACTOR. FINAL PIPING LAYOUT & SIZES SHALL BE DETERMINED BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ANY PIPING THAT MAY CONFLICT WITH ROUTING OF FIRE PROTECTION PIPING PRIOR TO COMMENCEMENT OF THE WORK AND SHALL SUBMIT A REPORT OF CONFLICT, IF ANY, DIRECTLY TO THE ENGINEER-IN-CHARGE.
6. THE CONTRACTOR SHALL SUBMIT SETS OF FIRE SUPPRESSION PLANS, DATA CUT-SHEETS, AND HYDRAULIC CALCULATIONS TO THE CONSULTANT OR

- ENGINEER-IN-CHARGE FOR REVIEW AND APPROVAL PRIOR TO BEGINNING ANY WORK ON THE FIRE PROTECTION SYSTEM.
7. FIRE PROTECTION DEVICES ON PLANS ARE NOT FOR CONSTRUCTION, THEY ARE FOR COST ESTIMATING ONLY. THE EQUIPMENT SHOWN ARE SUGGESTED LOCATIONS; HOWEVER THE FINAL LAYOUTS SHALL BE IN ACCORDANCE TO APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS, AND EQUIPMENT LISTINGS. THE CONTRACTOR SHALL COORDINATE BRANCH LINE AND SPRINKLER HEAD LOCATIONS WITH CEILING PANELS, LIGHTING FIXTURES, HVAC DUCTS & AIR DEVICES, PLUMBING AND OTHER TRADES NOT SPECIFICALLY NAMED.
8. THE CONTRACTOR TO PROVIDE EARTHQUAKE PROTECTION (SWAY BRACING), END OF BRANCH LINE AND SEISMIC BRACING CALCULATION IN ACCORDANCE TO NFPA 13 REQUIREMENTS.
9. FLEXIBLE COUPLINGS SHALL BE INSTALLED IN ACCORDANCE TO NFPA 13 AND BUILDING REQUIREMENTS, E.G. EXPANSION JOINT, IF ANY.
10. INDIVIDUAL TEST LINES SHALL BE PROVIDED FOR EACH FIRE PUMP AND THE AUTOMATIC SPRINKLER SYSTEM PIPING SHALL HAVE A TEST / DRAIN CONNECTION, FACILITATING THE PERIODIC TESTING / DRAINING OF THE SYSTEM.
11. INSPECTOR'S TEST CONNECTION SHALL NOT BE LARGER THAN 1/2" ORIFICE AND IT SHALL BE LOCATED ON THE REMOTE BRANCH LINE.
12. ALL SYSTEM PIPING SHALL BE HYDROSTATICALLY TESTED @ 200 PSI OR AT 50 PSI ABOVE THE OPERATIONAL STATIC PRESSURE OF THE SYSTEM, WHICHEVER IS GREATER, FOR TWO HOURS. THE EQUIPMENT FOR TESTING SHALL BE CALIBRATED AND CALIBRATION CERTIFICATES THEREOF SHALL BE FURNISHED BY THE CONTRACTOR.
13. EACH VALVE SHALL HAVE A PERMANENTLY AFFIXED SIGN INDICATING ITS FUNCTION. ALL VALVE HANDLES MUST BE ACCESSIBLE. THE CONTRACTOR SHALL PROVIDE CHAIN & LOCK ARRANGEMENT FOR ALL FIRE PUMPS DISCHARGE VALVES, ALARM CONTROL VALVES, PRESSURE REDUCING VALVES, ETC.
14. BRANCH LINE CONNECTIONS TO THE MAIN PIPING SHALL BE PRE-DRILLED, SHOP WELDED OUTLETS OR OTHER CONNECTIONS AS APPROVED. MECHANICAL TEES SHALL NOT BE USED ON NEW SYSTEMS. MAIN PIPING FOR THE SYSTEM SHALL BE SCHEDULE 40. BRANCH LINE PIPING FOR THE PROJECT SHALL BE SCHEDULE 40 PIPES WITH SCREWED AND / OR WELDED FITTINGS. IF A HISTORY OF CORROSION IS NOT KNOWN TO EXIST, SCHEDULE 10 PIPING AND GROOVED FITTINGS MAY BE USED.
15. THREADABLE THIN WALL, ENGINEERED PIPE SIZING, I.E. DYNATHREAD / DYNAFLOW, AND CPVC MAY NOT BE USED.
16. ALL MATERIALS USED IN THE INSTALLATION OF THE SYSTEM(S) SHALL BE NEW AND OF CURRENT ISSUE. ALL MATERIALS SHALL BE FM APPROVED & UL LISTED AND IN CONFORMANCE WITH NFPA 13, AS WELL AS THE AUTHORITY HAVING JURISDICTION. ALL MATERIALS SHALL BE INSPECTED BY A REPRESENTATIVE OF THE ENGINEER-IN-CHARGE PRIOR TO THE INSTALLATION.
17. SYSTEM PIPING SHALL BE SUPPORTED AND BRACED WITH HANGERS AND LISTED EARTHQUAKE BRACE ASSEMBLIES IN ACCORDANCE TO NFPA 13.
18. PAINTING OF THE SYSTEM PIPING AND COMPONENTS SHALL BE DONE PER SPECIFICATIONS.
19. IT IS A RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN INTEGRITY OF THE SYSTEM DURING CONSTRUCTION.
20. WATER VELOCITIES SHALL NOT EXCEED 20 FPS.
21. THE CONTRACTOR SHALL PROVIDE THE INSPECTOR WITH A COPY OF THE FOLLOWING. THESE DOCUMENTS SHALL BE PRESENTED UPON SUCCESSFUL COMPLETION OF THE SYSTEM TEST AND PRIOR TO ACCEPTANCE OF THE SYSTEM.
- 21.1. THE "TEST CERTIFICATE FOR UNDERGROUND PIPING" IN ACCORDANCE TO NFPA 24
- 21.2. THE "CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING" IN ACCORDANCE TO NFPA 13
- 21.3. THE "RECORD OF COMPLETION" FOR FAS IN ACCORDANCE TO NFPA 72
22. THE CONTRACTOR SHALL PROVIDE THE INSPECTOR WITH A COPY OF THE FOLLOWING. THESE DOCUMENTS SHALL BE PRESENTED UPON SUCCESSFUL COMPLETION OF THE SYSTEM TEST AND PRIOR TO ACCEPTANCE OF THE SYSTEM.
23. HEIGHT OF THE LANDING VALVE SHALL BE 900mm FROM FINISHING FLOOR LEVEL

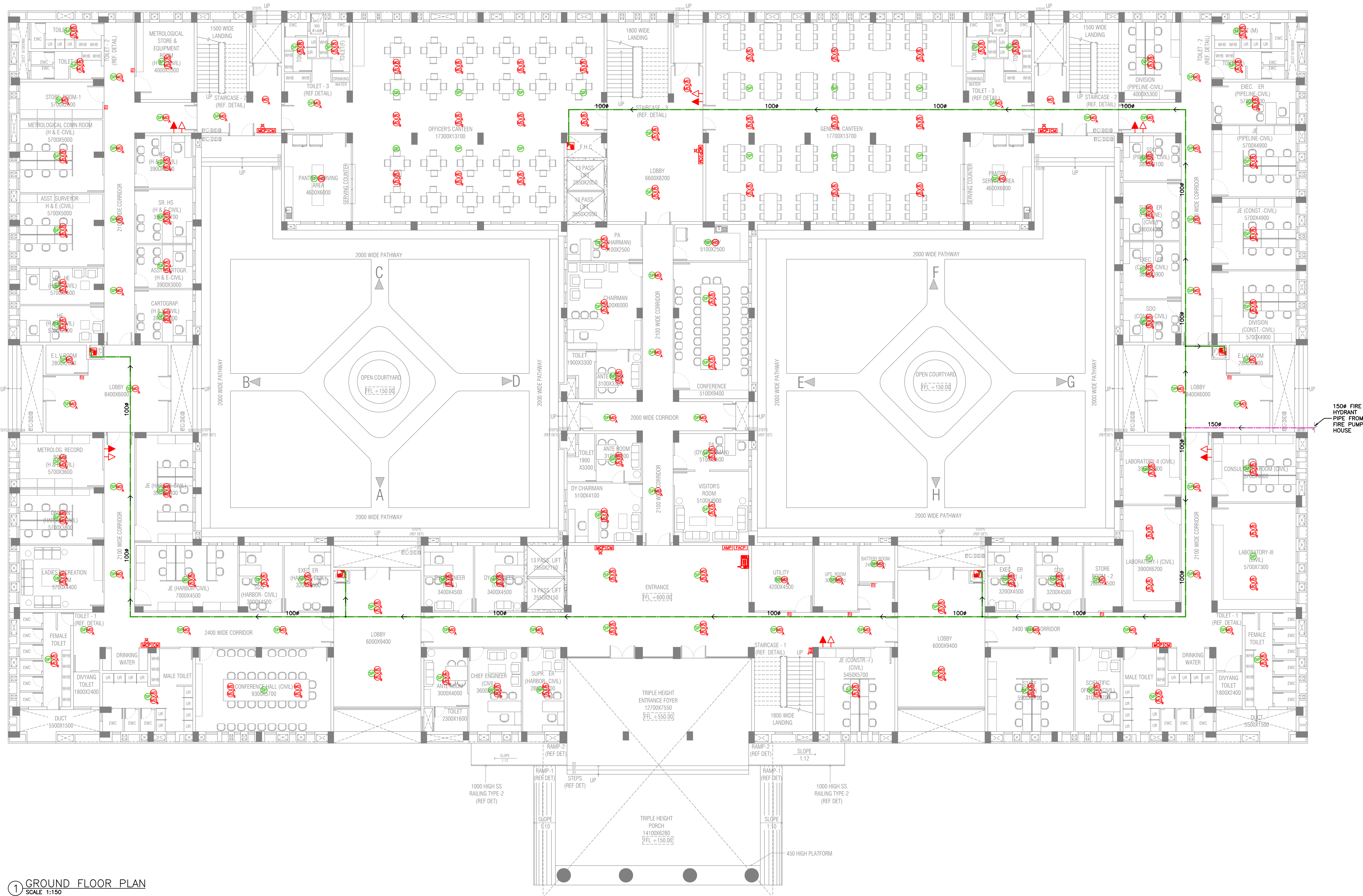
TYPICAL ARRANGEMENT OF FIRE ALARM SYSTEM





















R0	25-06-2024	ISSUED FOR TENDER	BHAVIK P.
REV. NO.	DATE	DESCRIPTION	SIGNATURE
REVISION			
PROJECT			
CONSTRUCTION OF ADMINISTRATIVE OFFICE BUILDING IN PLACE OF P& C BUILDING OUTSIDE CARGO JETTY AREA AT KANDLA, DEENDAYAL PORT AUTHORITY			
TITLE			
GENERAL NOTES OF FIRE FIGHTING SYSTEM			
		 GEO DESIGNS & RESEARCH (P) LTD.	
APPROVED BY PARIN SHAH, P.Eng. (India)		REGD. OFFICE B-10, Krishna Industrial Estate, Opp. BIDD Gonwa, Vadodara- 390016 (Guj.) India. Ph: +91 265 2290222. Email: mep@geogroup.in	
DEPARTMENT	MEP (DESIGN)	DOC. STATUS	FOR TENDER
DGN.	BHAVIK P.	PROJECT NO.	GDBU23005
DRN.	URVISH T.		
CHD.	BHAVIK P.	DRAWING NO.	SHEET NO.
SCALE	AS SHOWN	GDBU23005-MEP-03	01 OF 08
ISSUE DATE	25-06-2024		R0
REF. DRG. NO.		SHT. NO.	
		DEENDAYAL PORT AUTHORITY	
DATE		PROJECT DIVISION	
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R/O	25-06-2024	ISSUED FOR TENDER	BHAVIK P.
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PROJECT			
CONSTRUCTION OF ADMINISTRATIVE OFFICE BUILDING IN PLACE OF P & C BUILDING OUTSIDE CARGO JETTY AREA AT KANDLA, DEENDAYAL PORT AUTHORITY			
TITLE			
TYPICAL INSTALLATION DETAIL FOR FIRE PROTECTION SYSTEM			
		 GEO DESIGNS & RESEARCH (P) LTD.	
APPROVED BY PARIN SHAH, P.Eng. (India)		REGD. OFFICE B-10, Krishna Industrial Estate, Opp. BIDD Corwa, Vadodara- 390016 (Guj.) India. Ph: +91 265 2290222. Email: mep@geogroup.in	
DEPARTMENT	MEP (DESIGN)	DOC. STATUS	FOR TENDER
DGN.	BHAVIK P.	PROJECT NO.	GDBU23005
DRN.	URVISH T.		
CHD.	BHAVIK P.	DRAWING NO.	SHEET NO.
SCALE	AS SHOWN	GDBU23005-MEP-03	02 OF 08
ISSUE DATE	25-06-2024		
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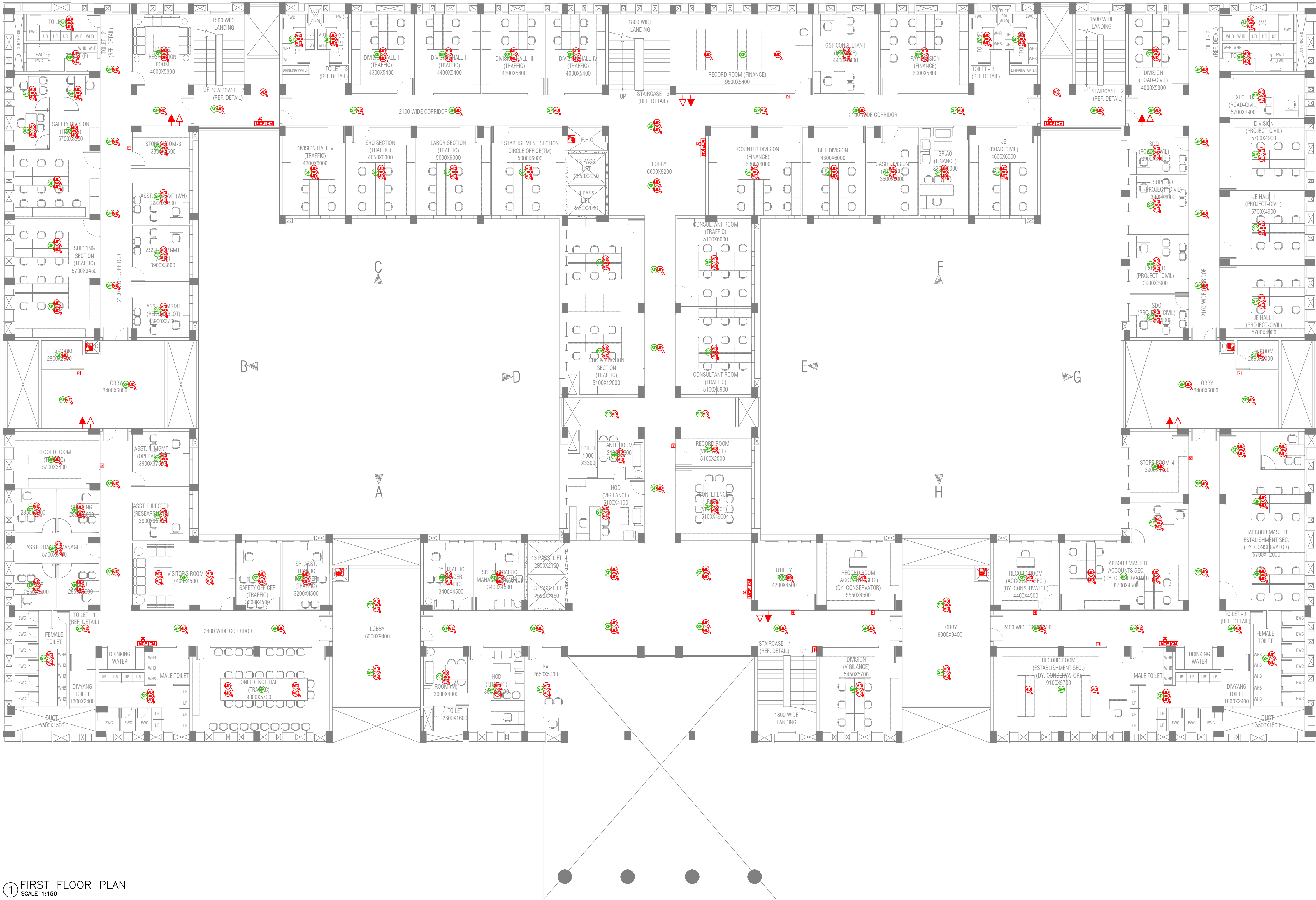
① GROUND FLOOR PLAN
SCALE 1:150

SL. NO.	DESCRIPTION	SYMBOL	QTY.
1	MULTI DETECTOR ABOVE CEILING		141
2	MULTI DETECTOR BELOW CEILING		95
3	CEILING SPEAKER		131
4	HEAT DETECTOR		03
5	SAFE AREA MANUAL CALL POINT		06
6	CONTROL MODULE		06
7	SAFE AREA HOOTER CUM STROBE		06
8	RESPONSE INDICATOR		08
9	FIRST-AID HOSE REEL & CABINET		05
10	100ø FIRE HYDRANT PIPE		—
11	LANDING VALVE		05
12	6Kg ABC TYPE FIRE EXTINGUISHER		06
13	4.5Kg CO2 FIRE EXTINGUISHER		06
14	FIRE ALARM PANEL		01
15	AMPLIFIER		01
16	MICRO PHONE SET FOR PA SYSTEM		01
17	ADDRESSABLE FIRE FIGHTER'S TELEPHONE JACK		01
18	100 mm NB MS ERW PIPE		197M

NOTES

1. THIS IS A TENDER DRAWING. THE CONTRACTOR SHALL PREPARE SHOP DRAWING, COORDINATED WITH ARCH., STR. AS WELL AS MEP DISCIPLINES, AND SUBMIT IT TO THE ENGINEER-IN-CHARGE FOR THE APPROVAL OF THE MEP CONSULTANT AND AFTER THAT THE A.O. / REPRESENTATIVE BEFORE COMMENCEMENT OF THE WORK.
2. POSITIONING OF DETECTORS / DEVICES IS TENTATIVE AND MAY VARY UPON COORDINATION OF MEP SYSTEMS & SERVICES. THE CONTRACTOR SHALL FULFILL THE REQUIREMENT OF MINIMUM DETECTOR / DEVICES QUANTITIES AS PER IS 2189: 2008.

R0	25-06-2024	ISSUED FOR TENDER	BHAVIK P.
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REVISION			
PROJECT			
CONSTRUCTION OF ADMINISTRATIVE OFFICE BUILDING IN PLACE OF P& C BUILDING OUTSIDE CARGO JETTY AREA AT KANDLA, DEENDAYAL PORT AUTHORITY			
NAME OF WORK			
ADMINISTRATIVE BUILDING			
TITLE			
AUTOMATIC FIRE ALARM & DETECTION LAYOUT- GROUND FLOOR PLAN			
			
APPROVED BY PARIN SHAH, P.Eng. (India)		GEO DESIGNS & RESEARCH (P) LTD.	
REGD. OFFICE B-10, Krishna Industrial Estate, Opp. BIDD Gorwa, Vadodara- 390016 (Guj.) India. Ph: +91 265 2290222. Email: mep@geogroup.in			
DEPARTMENT	MEP (DESIGN)	DOC. STATUS	FOR TENDER
DGN.	BHAVIK P.	PROJECT NO.	GBDU23005
DRN.	URVISH T.	DRAWING NO.	SHEET NO.
CHD.	BHAVIK P.		REV.
SCALE	AS SHOWN	GBDU23005-MEP-03	03 OF 08
ISSUE DATE	25-06-2024		R0
REF. DRG. NO.		SHT. NO.	
DEENDAYAL PORT AUTHORITY PROJECT DIVISION			
DATE			
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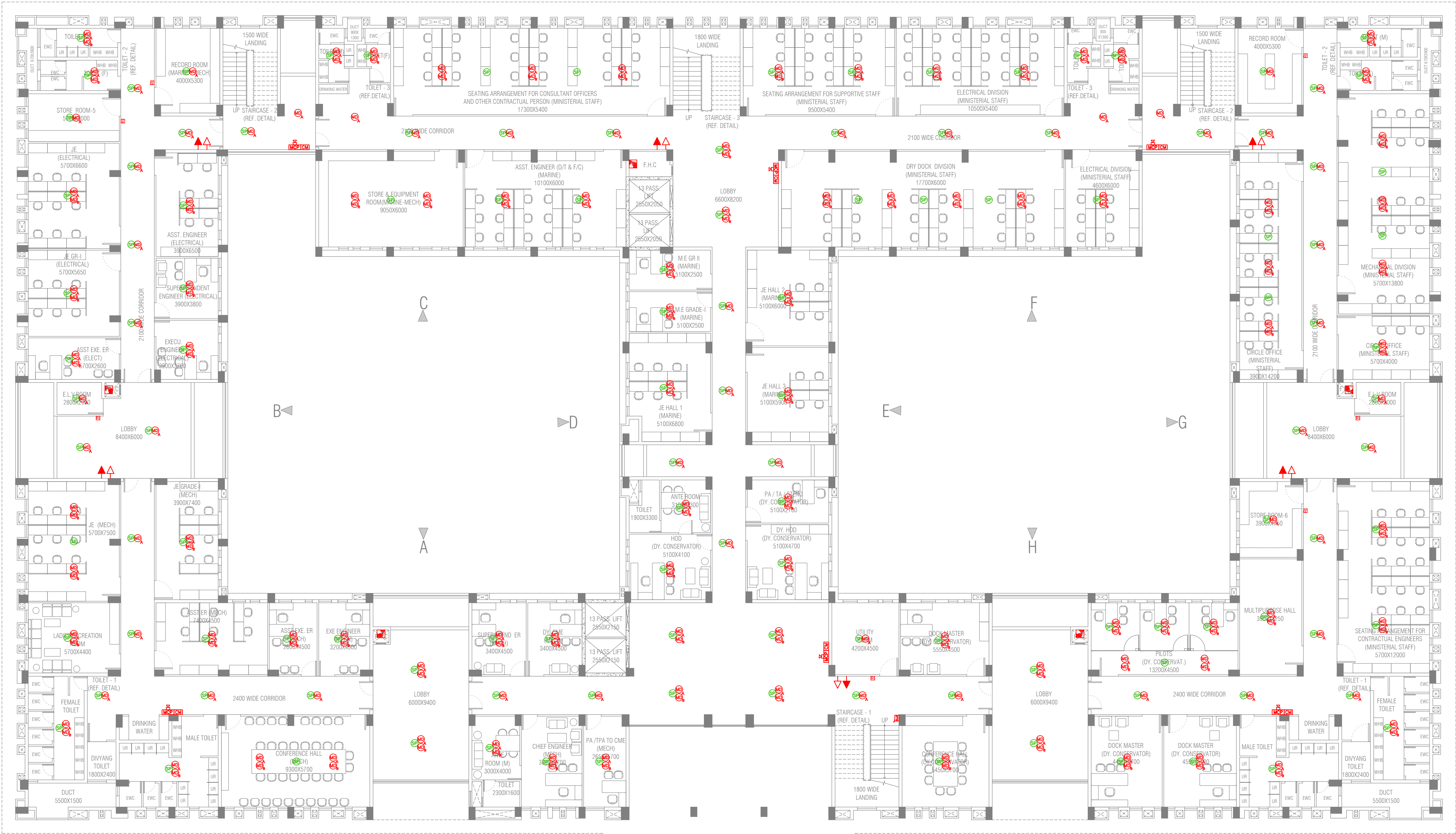
LEGEND

SL. NO.	DESCRIPTION	SYMBOL	QTY.
1	MULTI DETECTOR ABOVE CEILING		146
2	MULTI DETECTOR BELOW CEILING		91
3	CEILING SPEAKER		139
4	SAFE AREA MANUAL CALL POINT		06
5	CONTROL MODULE		06
6	SAFE AREA HOOTER CUM STROBE		06
7	RESPONSE INDICATOR		11
8	FIRST-AID HOSE REEL & CABINET		05
9	100mm FIRE HYDRANT PIPE		-
10	LANDING VALVE		05
11	6Kg ABC TYPE FIRE EXTINGUISHER		06
12	4.5Kg CO2 FIRE EXTINGUISHER		06
13	ADDRESSABLE FIRE FIGHTER'S TELEPHONE JACK		01

NOTES

- THIS IS A TENDER DRAWING. THE CONTRACTOR SHALL PREPARE SHOP DRAWING, COORDINATED WITH ARCH., STR. AS WELL AS MEP DISCIPLINES, AND SUBMIT IT TO THE ENGINEER-IN-CHARGE FOR THE APPROVAL OF THE MEP CONSULTANT AND AFTER THAT THE A.O. / REPRESENTATIVE BEFORE COMMENCEMENT OF THE WORK.
- POSITIONING OF DETECTORS / DEVICES IS TENTATIVE AND MAY VARY UPON COORDINATION OF MEP SYSTEMS & SERVICES. THE CONTRACTOR SHALL FULFILL THE REQUIREMENT OF MINIMUM DETECTOR / DEVICES QUANTITIES AS PER IS 2189: 2008.

R0	25-06-2024	ISSUED FOR TENDER	BHAVIK P.
REV. NO.	DATE	DESCRIPTION	SIGNATURE
REVISION			
PROJECT			
CONSTRUCTION OF ADMINISTRATIVE OFFICE BUILDING IN PLACE OF P & C BUILDING OUTSIDE CARGO JETTY AREA AT KANDLA, DEENDAYAL PORT AUTHORITY			
NAME OF WORK			
ADMINISTRATIVE BUILDING			
TITLE			
AUTOMATIC FIRE ALARM & DETECTION LAYOUT- FIRST FLOOR PLAN			
APPROVED BY PARIN SHAH, P.Eng. (India)		REGD. OFFICE B-10, Krishna Industrial Estate, Opp. BIDD Gorwa, Vadodara- 390016 (Guj.) India. Ph: +91 265 2290222. Email: mep@geogroup.in	
DEPARTMENT	MEP (DESIGN)	DOC. STATUS	FOR TENDER
DGN.	BHAVIK P.	PROJECT NO.	GDBU23005
DRN.	URVISH T.	DRAWING NO.	SHEET NO.
CHD.	BHAVIK P.	GDBU23005-MEP-03	04 OF 08
SCALE	AS SHOWN	REV.	R0
ISSUE DATE	25-06-2024	SHT. NO.	
REF. DRG. NO.	DEENDAYAL PORT AUTHORITY PROJECT DIVISION		
DATE			
JE (E)		AXEN (E)	XEN(EN)



① SECOND FLOOR PLAN
SCALE 1:150

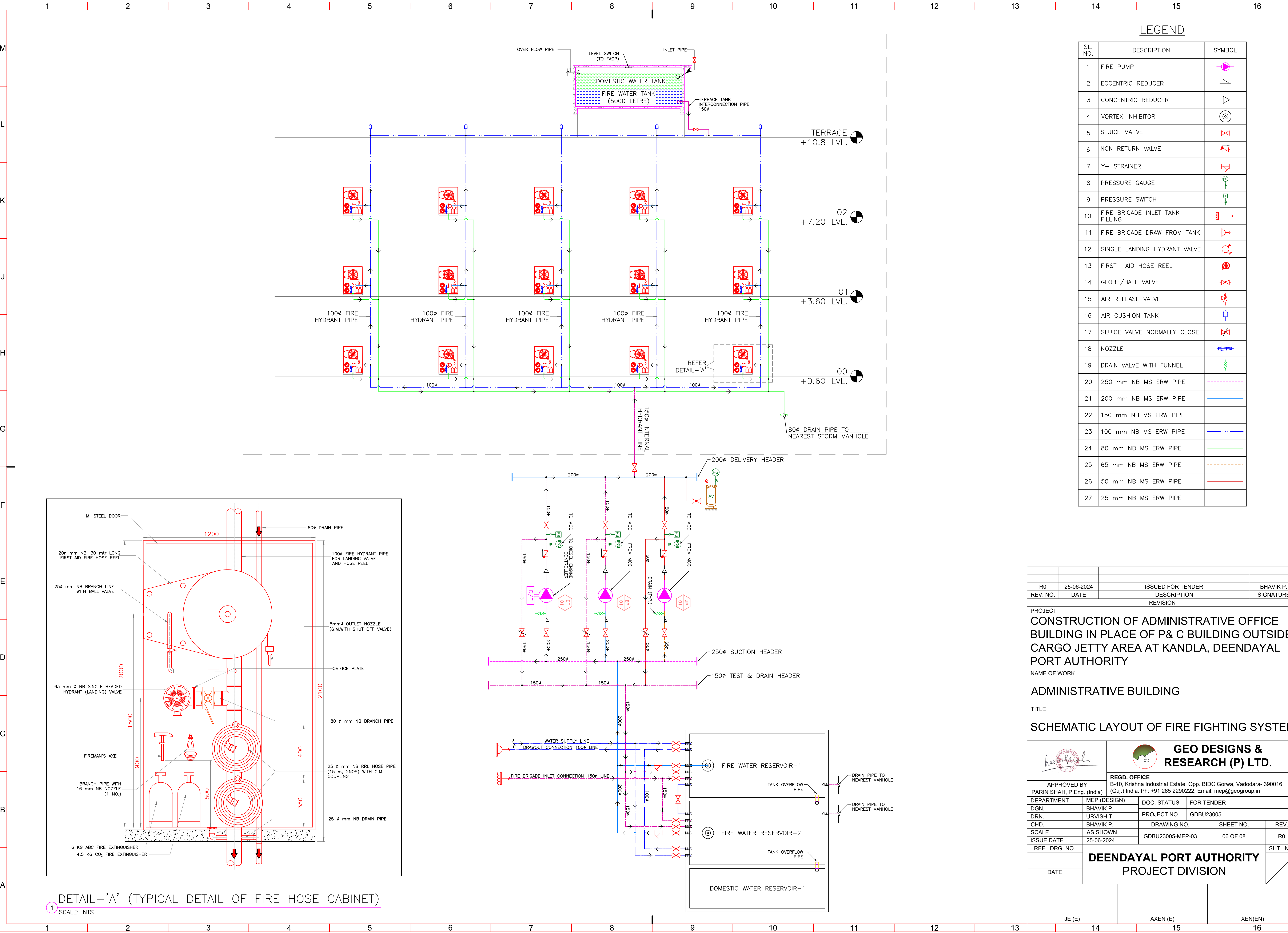
LEGEND

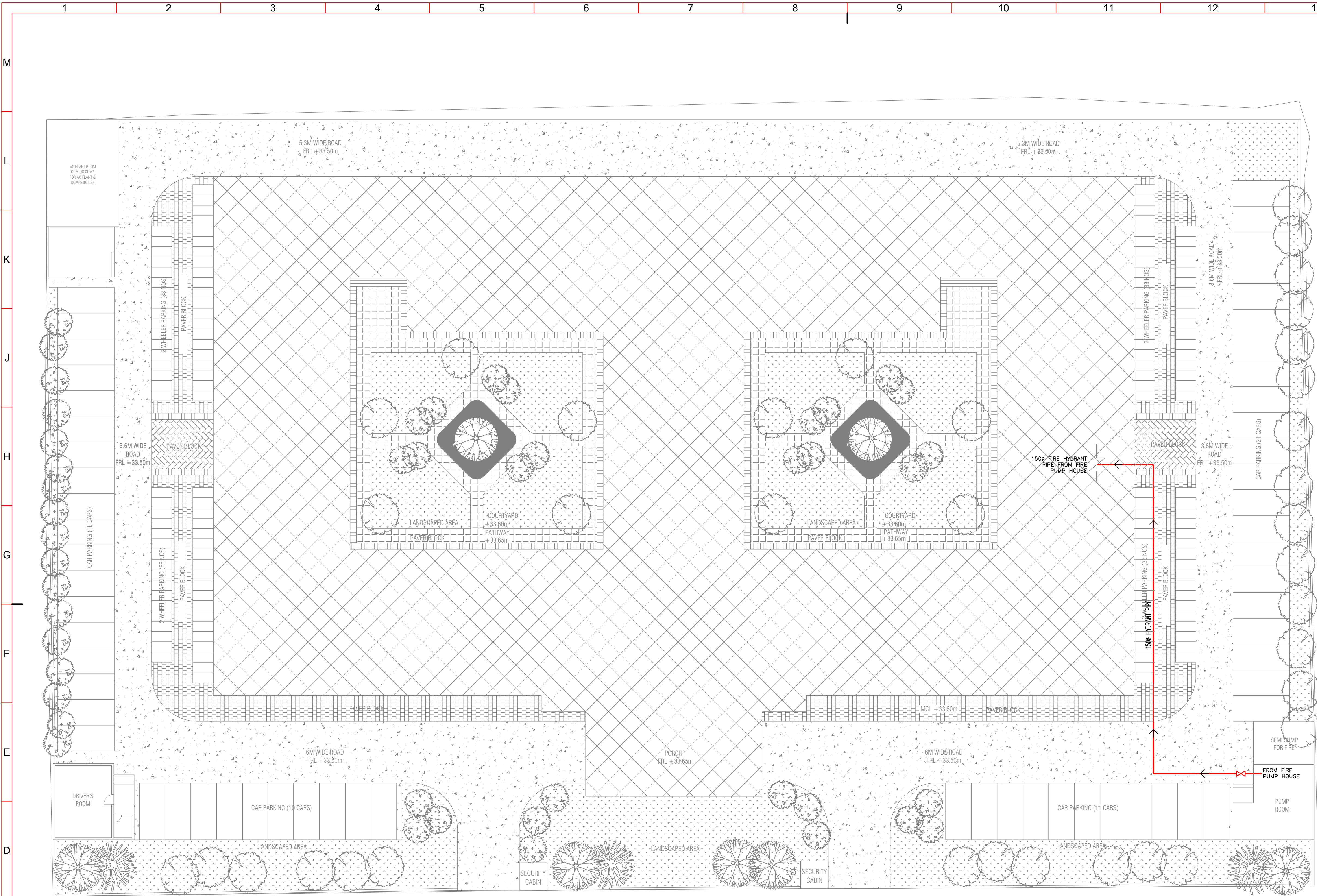
SL. NO.	DESCRIPTION	SYMBOL	QTY.
1	MULTI DETECTOR ABOVE CEILING		138
2	MULTI DETECTOR BELOW CEILING		86
3	CEILING SPEAKER		124
4	SAFE AREA MANUAL CALL POINT		06
5	CONTROL MODULE		06
6	SAFE AREA HOOTER CUM STROBE		06
7	RESPONSE INDICATOR		07
8	FIRST-AID HOSE REEL & CABINET		05
9	100Ø FIRE HYDRANT PIPE		-
10	LANDING VALVE		05
11	6Kg ABC TYPE FIRE EXTINGUISHER		06
12	4.5Kg CO2 FIRE EXTINGUISHER		06
13	ADDRESSABLE FIRE FIGHTER'S TELEPHONE JACK		01

NOTES

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R0	25-06-2024	ISSUED FOR TENDER	BHAVIK P.
REV. NO.	DATE	DESCRIPTION	SIGNATURE
REVISION			
PROJECT			
CONSTRUCTION OF ADMINISTRATIVE OFFICE BUILDING IN PLACE OF P& C BUILDING OUTSIDE CARGO JETTY AREA AT KANDLA, DEENDAYAL PORT AUTHORITY			
NAME OF WORK			
ADMINISTRATIVE BUILDING			
TITLE			
AUTOMATIC FIRE ALARM & DETECTION LAYOUT- SECOND FLOOR PLAN			
APPROVED BY PARIN SHAH, P.Eng. (India)		REGD. OFFICE B-10, Krishna Industrial Estate, Opp. BIDD Gorwa, Vadodara- 390016 (Guj.) India. Ph: +91 265 2290222. Email: mep@geogroup.in	
DEPARTMENT	MEP (DESIGN)	DOC. STATUS	FOR TENDER
DGN.	BHAVIK P.	PROJECT NO.	GDBU23005
DRN.	URVISH T.	DRAWING NO.	SHEET NO.
CHD.	BHAVIK P.	GDBU23005-MEP-03	05 OF 08
SCALE	AS SHOWN		R0
ISSUE DATE	25-06-2024		
REF. DRG. NO.			SHT. NO.
DATE		DEENDAYAL PORT AUTHORITY PROJECT DIVISION	
JE (E)		AXEN (E)	XEN(EN)





1 SITE PLAN
SCALE 1:200

LEGENDS

SR NO.	SYMBOL	NAME	QTY.
1.		1500 HYDRANT LINE	45MTR
2.		ISOLATION VALVE	01 NOS

R0	25-06-2024	ISSUED FOR TENDER	BHAVIK P.
REV. NO.	DATE	DESCRIPTION	SIGNATURE
REVISION			

PROJECT
CONSTRUCTION OF ADMINISTRATIVE OFFICE BUILDING IN PLACE OF P& C BUILDING OUTSIDE CARGO JETTY AREA AT KANDLA, DEENDAYAL PORT AUTHORITY

NAME OF WORK
ADMINISTRATIVE BUILDING

TITLE
SITE PLAN OF EXTERNAL HYDRANT LAYOUT

APPROVED BY PARIN SHAH, P.Eng. (India)		REGD. OFFICE B-10, Krishna Industrial Estate, Opp. BIDD Gorwa, Vadodara- 390016 (Guj.) India. Ph: +91 265 2290222. Email: mep@geogroup.in	
DEPARTMENT DGN.	MEP (DESIGN) BHAVIK P.	DOC. STATUS FOR TENDER	
DRN.	URVISH T.	PROJECT NO. GDBU23005	
CHD.	BHAVIK P.	DRAWING NO.	SHEET NO.
SCALE AS SHOWN		GDBU23005-MEP-03	08 OF 08
ISSUE DATE 25-06-2024			R0
REF. DRG. NO.			SHT. NO.

**DEENDAYAL PORT AUTHORITY
PROJECT DIVISION**