

1454 SANTA RITA ROAD, PLEASANTON, CA 94566 PLEASANTON UNIFIED SCHOOL DISTRICT

GENERAL NOTES

PRE-BID SITE VISIT

CONTRACTOR SHALL VISIT THE PROJECT AREA IN ORDER TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND THE REQUIREMENTS OF THE PROJECT. THE CONTRACTOR MAY CONTACT THE ARCHITECT DURING THE BIDDING PHASE REGARDING CLARIFICATIONS AND PROJECT REQUIREMENTS.

<u>SAFETY</u>

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

DAMAGE TO STRUCTURE OR SYSTEMS TO REMAIN CONTRACTOR SHALL REIMBURSE THE OWNER FOR REPAIR AND REPLACEMENT, INCLUDING ARCHITECT'S FEES, FOR ANY DAMAGE CAUSED TO STRUCTURES, LANDSCAPE, SITE WORK, OR EXISTING SYSTEMS TO REMAIN, AS THE RESULT OF CONSTRUCTION OPERATIONS.

EXISTING CONDITIONS

ALL EXISTING CONDITIONS ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND BUILDING DATA AT THE JOB SITE. ANY DISCREPANCIES REQUIRING MODIFICATION TO THE CONSTRUCTION DOCUMENTS SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY. NO MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.

CONTRACTOR'S EQUIPMENT

COORDINATE WITH OWNER'S REPRESENTATIVE FOR APPROVED LOCATION OF JOB SITE ACCESS, PARKING, AND LOCATION OF CONTRACTOR'S EQUIPMENT AND MATERIAL STORAGE AREA. SEE SITE PLAN FOR ADDITIONAL NOTES.

UTILITY SHUT-DOWNS AND CONNECTIONS

ALL REQUIRED UTILITY SHUT DOWNS SHALL HAVE PRIOR APPROVAL FROM THE OWNER'S REPRESENTATIVE. REQUEST SHALL BE SUBMITTED WITH ADEQUATE ADVANCE NOTICE PER PROJECT REQUIREMENTS.

ASBESTOS AND ASBESTOS PRODUCTS

THE OWNER/OPERATOR AND CONTRACTOR SHALL BE AWARE THAT BUILDINGS CONSTRUCTED PRIOR TO 1978 (OR THERE ABOUT) POSSIBILITY CONTAIN ASBESTOS IN SOME EXISTING CONSTRUCTION MATERIALS, AND WILL LIKELY BE ENCOUNTERED DURING ALTERATIONS OR REMODELING.

UNDER CALIFORNIA TITLE 8, THE OWNER AND CONTRACTOR BOTH HAVE RESPONSIBILITIES TO DETERMINE THE EXISTENCE OF ASBESTOS CONTAINING MATERIALS IN AREAS TO BE ALTERED OR REMODELED PRIOR TO COMMENCEMENT OF WORK AND TO TAKE APPROPRIATE MEASURES TO PROTECT PERSONNEL. CAL-OSHA HAS JURISDICTION OVER ASBESTOS RELATED WORK. ASBESTOS RELATED WORK SHALL BE DONE IN ACCORDANCE WITH CALIFORNIA GENERAL INDUSTRIAL SAFETY ORDERS, TITLE 8, SECTION 341.6 THROUGH 341.14. ASBESTOS IN THE WORK ENVIRONMENT IS REGULATED BY TITLE 8, SECTION 5208.

THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT AND DISTRICT REGULATION 11-2-401.3 REQUIRES EVERY RENOVATION INVOLVING THE REMOVAL OF 100 SQ.FT., LN.FT, OR GREATER OF REGULATED ASBESTOS CONTAINING MATERIAL AND FOR EVERY DEMOLITION (EVEN WHEN NO ASBESTOS IS PRESENT), A NOTIFICATION MUST BE SENT TO THE BAAQMD AT LEAST 10 WORKING DAYS PRIOR TO COMMENCEMENT OF DEMOLITION / RENOVATION.

ALL BUILDING MATERIALS MUST BE ASBESTOS FREE.

THESE DOCUMENTS DO NOT ADDRESS CONTAINMENT FOR EXISTING AREAS OF ASBESTOS WHICH MAY BE DISCOVERED DURING CONSTRUCTION. THE OWNER'S ABATEMENT SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR THE DETECTION, REMOVAL, AND THE DISPOSAL OF ANY EXISTING ASBESTOS MATERIAL. ARCHITECTURAL AND ENGINEERING FEES FOR ADDITIONAL DESIGN EFFORT TO OBTAIN STATE APPROVALS, AS WELL AS THE COST OF ANY REPAIRS, FOR DAMAGE CAUSED OR REPLACEMENT OF EXISTING SYSTEMS TO REMAIN DUE TO WORK PERFORMED BY THE ASBESTOS ABATEMENT SUBCONTRACTOR, SHALL BE THE RESPONSIBILITY OF SAID SUBCONTRACTOR.

CONSTRUCTION SCHEDULING

CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION OPERATIONS WITH OWNER'S REPRESENTATIVE PRIOR TO SCHEDULING AND START OF THE WORK. CONTRACTOR SHALL PROVIDE PROTECTION TO ALL EXISTING SPACES AND SYSTEMS WHICH ARE IN USE, ADJOINING THE PROJECT, AND NOT PART OF THE PROJECT.

INTERIOR FINISHES

INTERIOR FINISHES AND ALL WALL COVERING MATERIAL SHALL CONFORM TO CCR TITLE 24, PART 2, CHAPTER 8.

PIPES, DUCTS AND CONDUIT - SUPPORT AND BRACING

PIPES, DUCTS, AND CONDUITS SHALL BE SUPPORTED AND BRACED PER THE SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS", OPM 0052-13 SEISMIC BRACING AND SUPPORT SYSTEMS.

DRILLED-IN EXPANSION ANCHORS

WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.

TITLE 24 COMPLIANCE

THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS (2019 CBC). SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DSA BEFORE PROCEEDING WITH THE WORK.

ADMINISTRATIVE REQUIREMENTS FROM PART 1., TITLE 24, C.C.R.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT, AND APPROVED BY DSA, AS PER SECTION 4-338 - A DSA CERTIFIED PROJECT INSPECTOR EMPLOYED BY THE DISTRICT AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF WORK, PER SECTION 4-342.

- A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT SHALL CONDUCT ALL REQUIRED TEST AND INSPECTIONS FOR THE PROJECT. - SPECIAL INSPECTION PER SECTION 4-333 (C)

- CONTRACTOR SHALL SUBMIT VERIFIED REPORT OR SECTION 4-336 & 4-343 - ADMINISTRATION OR CONSTRUCTION PER PART 1, TITLE 24, C.C.R.

- DUTIES OF ARCHITECT, STRUCTURAL ENGINEER, OR PROFESSIONAL ENGINEER PER SECTION 4-333 (A) AND 4-341 - DUTIES OF CONTRACTOR PER SECTION 4-343 - VERIFIED REPORTS PER SECTION 4-343 AND 4-336

A COPY OF PARTS 1 TO 5 OF TITLE 24 SHALL BE KEPT AND AVAILABLE IN THE FIELD DURING CONSTRUCTION - DSA SHALL BE NOTIFIED AT START OF CONSTRUCTION AND PRIOR TO PLACEMENT OF CONCRETE PER SECTION 4-331 - SUPERVISION BY DSA PER SECTION 4-334

- DSA IS NOT SUBJECT TO ARBITRATION

GENERAL NOTES, cont.

ADMINISTRATIVE REQUIREMENTS

- ADDENDA MUST BE SIGNED BY ARCHITECT AND APPROVED BY DSA NO CHANGES OR REVISIONS SHALL BE MADE FOLLOWING WRITTEN APPROVAL WHICH
- AFFECTS ACCESS COMPLIANCE ITEM UNLESS SUCH CHANGES TO REVISIONS ARE SUBMITTED TO DSA FOR APPROVAL. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE SUBMITTED AS A
- CONSTRUCTION CHANGE DOCUMENT OR ADDENDA, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION CONSTRUCTION CHANGE DOCUMENTS MUST BE SIGNED BY THE FOLLOWING: -- ARCHITECT OR ENGINEER OF RECORD
- -- STRUCTURAL ENGINEER (WHEN APPLICABLE) -- DELEGATED PROFESSIONAL ENGINEER
- -- DSA MATERIALS AND THEIR INSTALLATIONS SHALL COMPLY WITH APPLICABLE CODES. PER CBC 11B-104.1 "ALL DIMENSIONS ARE SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES EXCEPT WHERE THE REQUIREMENT IS STATED AS A RANGE WITH SPECIFIC MINIMUM AND MAXIMUM END POINTS.

COMPLIANCE WITH LOCAL ORDINANCES

GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

A.F.F. A.P.	ABOVE FINISHED FLOOR ACCESS PANEL	LAM. LAV.	LAMINATE LAVATORY
ACT		M.B.	MACHINE BOLT
ADJ. ALUM.	ALUMINUM	M.S.	MACHINE SCREW
A.B.	ANCHOR BOLT	MFG.	MANUFACTURER
APPROX.	APPROXIMATELY	M.B.	MARKER BOARD
AC	ASPHALTIC CONCRETE	MATL. MAX	MATERIAL
@ B M	AT BENCH MARK	MECH.	MECHANICAL
BLKG.	BLOCKING	MTL.	
BD. B.W	BOARD	MISC.	MISCELLANEOUS
BOT.	воттом	MTD.	MOUNTED
BLDG.	BUILDING	(N) NOM	
в.0.к. С.В.	CATCH BASIN	N.I.C.	NOT IN CONTRACT
CLG.	CEILING	N.T.S.	NOT TO SCALE
CEM. C.C or O.C.	CENTER TO CENTER		
	CENTERLINE	0.C.	ON CENTER
CER. TILE	CERAMIC TILE	OPNG.	OPENING
C.O.T.G.	CLEANOUT TO GRADE	OPP. O.H.	OPPOSITE OPPOSITE HAND
		0.F.O.S.	OUTSIDE FACE OF STUD
С.А.П.К.	REDWOOD	O.H.W.S.	OVAL HEAD WOOD SCREW
C.W.	COLD WATER	0.D.	OUTSIDE DIAMETER
COL. COM		0.F.C.I.	OWNER FURNISHED and
CONC.	CONCRETE	PR.	CONTRACTOR INSTALLED PAIR
CONST.		PART.	PARTITION
С.н. С.Ј.	CONSTRUCTION HEART	PL d	PLATE PENNY (NAILS)
CONT.	CONTINUOUS	PLAS.	PLASTER
CONTR.		PLYWD.	PLYWOOD
CTSK.	COUNTER SUNK	P.V.C. P.T.	POLY VINYL CHLORIDE PRESSURE TREATED
DET.	DETAIL	P.L.	PROPERTY LINE
DIA. 01 Ø DIM.	DIMENSION	R. or RAD. R W I	RADIUS RAIN WATER I FADER
D.A.	DISABLED ACCESS	RWD./R.W.	REDWOOD
DR. D.S	DOOR	REINF.	
DWG.	DRAWING	R.A.G.	RETURN AIR GRILLE
D.F.	DRINKING FOUNTAIN	R.E.	
EA.	EACH	R.D. RM.	ROOM
E.W.	EACH WAY	R.O.	ROUGH OPENING
ELEC. EL. or		RND. R.H.M.S.	ROUND ROUND HEAD METAL SCREW
ELEV.		R.H.W.S.	ROUND HEAD WOOD SCREW
ENCL. EQ.	EQUAL	SSD. SISMS	SEE STRUCTURAL DRAWINGS
EQUIP.	EQUIPMENT	0.1.0.11.0.	METAL SCREW
(E) EX.	EXISTING	SHEATH.	SHEATHING
E.J.	EXPANSION JOINT	S.M.S.	SHEET METAL SHEET METAL SCREW
EXP. FXT	EXPOSED EXTERIOR	S.O.V.	SHUT OFF VALVE
F.O.C.	FACE OF CONCRETE	SIM. S.C.	SIMILAR SOLID CORE
F.O.M. FOS	FACE OF MASONRY	SPEC.	SPECIFICATION
F.O.F.	FACE OF FINISH	SQ. S.F.	SQUARE
FIN.		STAG.	STAGGERED
F.F. F.S.	FINISHED FLOOR FINISH SLAB	STD.	STANDARD
F.E.	FIRE EXTINGUISHER	S.S. STL.	STEEL
F.E.C. F.H.	FIRE EXTINGUISHER CABINET	STOR.	STORAGE
F.H.M.S.	FLAT HEAD METAL SCREW	SIRUCI. S.A.G.	SUPPLY AIR GRILLE
F.H.W.S.	FLAT HEAD WOOD SCREW	THRES.	THRESHOLD
F.D.	FLOOR DRAIN	T&G T.J.	TOOLED JOINT
FTG.	FOOTING	Т.О.В.	TOP OF BEAM
FND. GALV	GALVANIZED	T.O.C. T.O.S	TOP OF CURB or CONCRETE
G.I.	GALVANIZED IRON	T.O.W.	TOP OF WALK
GA. Gl	GAUGE	TYP.	TYPICAL
GLU-LAM	GLUE-LAMINATED	U.O.S.	UNLESS OTHERWISE SHOWN
GRD.		V.T.R.	VENT THROUGH ROOF
HDW.	HARDWARE	VLINI. V.G.	VERTICAL GRAIN
HT.		V.I.F. V.C.T	
п.с. Н.М.	HOLLOW METAL	V.W.C.	VINYL WALL COVERING
HORIZ.	HORIZONTAL	V.O.I.P.	VOICE OVER INTERNET PROTOCOL
н.в. I.D	HUSE BIBB INSIDE DIAMETER	W.C.	
INSUL.	INSULATION	w.n. WP.	WATER DEATER
INT.		W.R.	WATER RESISTANT
JT	JOINT	vv.vv.M. W.D.	WELDED WIRE MESH WINDOW DIMENSION
J.H.		W/	WITH
Ν.υ.		WD.	WITHOUT WOOD

ALISAL ELEMENTARY SCHOOL CAMPUS WIDE FIRE ALARM REPLACEMENT

BUILDING CODES AND STANDARDS:

2019 C 2019 C (i	CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R. CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, C.C.R. (2018 INTERNATIONAL BUILDING CODE, VOLUMES 1 AND 2, WITH 2019 CALIFORNIA AMENDMENTS.)								
2019	CALIFORNIA ELECTRIC CODE (CEC), PART 3, TITLE 24, C.C.R. (2018 NATIONAL ELECTRIC CODE WITH 2019 CALIFORNIA AMENDMENTS).								
2019 C	CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24, C.C.R. (2018 UNIFORM MECHANICAL CODE WITH 2019 CALIFORNIA AMENDMENTS).								
2019 C	AMENDMENTS). CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, C.C.R. (2018 UNIFORM PLUMBING CODE WITH 2019 CALIFORNIA AMENDMENTS).								
2019 C 2019 C	CALIFORNIA ENERGY CODE (CENC), PART 6, TITLE 24, CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, C.C.F 2018 INTERNATIONAL FIRE CODE WITH 2019 CALIFOR	C.C.R. R. NIA AMENDMENTS).							
2019 C	CALIFORNIA GREEN BUILDING STANDARDS CODE, PAI C.C.R.	RT 11, TITLE 24,							
2019 C 2016 A	CALIFORNIA REFERENCED STANDARDS, PART 12, TITL ASME A17.1 (W/A17.1a/CSA B44a-08 ADDENDA) SAFETY ELEVATORS AND ESCALATORS	LE 24, C.C.R. (CODE FOR							
2010 A	ADA STANDARDS FOR ACCESSIBLE DESIGN 28 CFR PART 35 FOR TITLE II ENTITIES)								
CCR TITLI	E-19, PUBLIC SAFETY, STATE FIRE MARSHAL REGULA	TIONS.							
NFPA 13	INSTALLATION OF SPRINKLER SYSTEMS	2016 EDITION							
NFPA 14	INSTALLATION OF STANDPIPE & HOSE SYSTEMS (CA AMENDED)	2016 EDITION							
NFPA 17	DRY CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION							
NFPA 17A	WET CHEMICAL EXTINGUISHING SYSTEM	2017 EDITION							
NFPA 20	STATIONARY FIRE PUMPS TO FIRE PROTECTION	2016 EDITION							
NFPA 22	WATER TANKS FOR PRIVATE FIRE PROTECTION	2013 EDITION							
NFPA 24	PRIVATE FIRE SERVICE MAINS (CA AMENDED).	2016 EDITION							
NFPA 25	INSPECTION, TESTING AND MAINTENANCE OF WATER BASED FIRE PROTECTION SYSTEMS	2013 CALIFORNIA EDITION							
NFPA 72	NATIONAL FIRE ALARM CODE (CA AMENDED)	2016 EDITION							
NFPA 80	FIRE DOORS AND OTHER OPENING PROTECTIVES	2016 EDITION							
	STANDARD FOR SMOKE CONTROL SYSTEMS								
NFPA 110	EMERGENCY AND STANDBY POWER SYSTEMS	2016 EDITION							
NFPA 170	STANDARD FOR FIRE SAFETY AND EMERGENCY SYMBOLS	2018 EDITION							
NFPA 253	CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS	2015 EDITION							
NFPA 200	1 CLEAN AGENT FIRE EXTINGUISHING SYSTEMS	2015 EDITION							
ICC 300	STANDARDS FOR BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS	2017 EDITION							
SFM 12-10 SFM 12-10 SFM 12-10	 POWER OPERATED EXIT DOORS SINGLE POINT LATCHING OR LOCKING DEVIC EMERGENCY EXIT & PANIC HARDWARE 	ES							
UL 38 UL 268	MANUAL OPERATING SIGNAL BOXES SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS	1999/2005 EDITION 2009 EDITION							
UL 268A UL 300	SMOKE DETECTORS DUCT APPLICATIONS FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMMERCIAL COOKING FOUNDMENT	1998/2003 EDITION 2005 (R2010)							
UL 305		2012 EDITION							
UL 404									
UL 521	AND SIGNALING SYSTEMS, AND ACCESSORIES HEAT DETECTORS FOR FIRE PROTECTIVE	2003 EDITION 1999 EDITION							
UL 864	SIGNALING SYSTEMS CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS	2003 EDITION							

SYMBOLS LEGEND

DETAIL

SECTION / EXTERIOR ELEVATION - SECTION IDENTIFICATION - SHEET WHERE SECTION IS DRAWN A8 1

— SHEET WHERE DETAIL IS DRAWN ∖ a9.1 /⊷

INTERIOR ELEVATION - INDICATES ELEVATION SHOWN — SHEET WHERE ELEVATION IS DRAWN

ROOM IDENTIFICATION CLASSROOM ROOM NAME 102 — ROOM NUMBER

SPECIFIC NOTE

/ 3

(102A)

 $\langle A \rangle$

(+8'-0")

DOOR DESIGNATION

ADDENDUM REVISION CLOUD AROUND REVISION

WINDOW DESIGNATION

CCD REVISION CLOUD AROUND REVISION

FINISH NUMBER SEE SPECS AND I.E. DWGS.

EQUIPMENT LETTER Α — SEE EQUIPMENT SCHEDULE

CEILING HEIGHT

WALL TYPE

MATCH LINE +8'-0" ELEV. HEIGHT

/ CENTER OF

FACE OF

THERE ARE NO DEFERRED SUBMITTALS FOR THIS PROJECT.

CAMPBELL, CALIFORNIA 95008 (408) 879-0600 (408) 377-6066 FAX

SAN JOSE, CA 95110 (408) 564-7925

COMPLIANCE WITH CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION AND CBC CHAPTER 33, SAFETY DURING CONSTRUCTION WILL BE ENFORCED.

UL 1971 SIGNALING DEVICES FOR THE HEARING IMPAIRED 2002 EDITION

(W/ REVISIONS THROUGH DEC. 2014)

DSA FILE NUMBER 01-32 **DSA APPLICATION NUMBER 01-119911 OPSC TRACKING NUMBER 75101-103**

PROJECT SUMMARY

REPLACING EXISTING FIRE ALARM SYSTEM WITH NEW ADDRESSABLE FIRE ALARM AND EM/VOICE EVACUATION

DRAWING INDEX

SYSTEM ACROSS ENTIRE SITE.

T1 TITLE SHEET T2 SITE PLAN - FIRE LIFE SAFETY

FIRE ALARM

SHEET TOTAL = 12

- FA0.1 FIRE ALARM SYMBOLS, ABBRE., EQUIPMENT LIST, **OPERATIONAL MATRIX, DETAILS & NOTES**
- FA0.2 FIRE ALARM DETAILS FA1.1 FIRE ALARM RISER DIAGRAM
- FA1.2 FIRE ALARM RISER DIAGRAM FA1.3 FIRE ALARM BATTERY & VOLTAGE DROP CALCULATIONS
- FA2.1 FIRE ALARM SITE PLAN
- FA3.1 FIRE ALARM DEMOLITION PLAN FA4.1 FIRE ALARM PLAN - BUILDINGS A, B & CC
- FA4.2 FIRE ALARM PLAN BUILDINGS C, D, E, F, G & H FA4.3 FIRE ALARM PLAN - BUILDINGS J & K

DESIGN TEAM

SUGIMURA FINNEY ARCHITECTS 2155 SOUTH BASCOM AVENUE SUITE 200

ATTN: MARK FINNEY MARK@SUGIMURA.COM

ELECTRICAL AND FIRE ALARM ENGINEER AURUM CONSULTING ENGINEERS 1798 TECHNOLOGY DRIVE, SUITE 242

PROJECT LOCATION

VICINITY MAP

STATEMENT OF GENERAL CONFORMANCE

FOR ARCHITECTS / ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND / OR OTHER CONSULTANTS APPLICATION NO.: 01-119911 THE DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET THIS DRAWING, PAGE OF SPECIFICATIONS / CALCULATIONS HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND / OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:) DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME. AND 2) COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT. THE STATEMENT OF GENERAL CONFORMANCE "SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344" OF TITLE 24, PART 1. (TITLE 24, PART 1, SECTION 4-317(B)) I FIND THAT: ALL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET THIS DRAWING OR PAGE X IS / ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN, AND X HAS / HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS. 12/01/2021 DATE

LICENSE NUMBER

9/30/2023 EXPIRATION DATE





BUILDING CODE ANALYSIS									
BUILDING	CONSTRUCTION TYPE OCCUPANCY TYPE	AREA (SQ.FT.)	*ALLOWABLE (SQ.FT.)	# OF STORIES					
BUILDING A	V-1 HR / A2.1	4,538	9,100	1					
BUILDING B	V-N / B	2,544	9,100	1					
BUILDING C	V-N / E-1	2,450	9,100	1					
BUILDING D	V-N / E-1	4,647	9,100	1					
BUILDING E	V-N / E-1	5,582	9,100	1					
BUILDING F	V-N / E-1	624	9,100	1					
BUILDING G	V-N / E-1	10,553	9,100	1					
BUILDING H	V-N / E-1	1,930	9,100	1					
BUILDING J	V-N / E-1	9,690	9,100	1					
BUILDING K	V-N / E-1	3,380	9,100	1					
CHILD CARE	V-N / E-3	960	9,100	1					

PROJECT SUMMARY

REPLACING EXISTING FIRE ALARM SYSTEM WITH NEW ADDRESSABLE FIRE ALARM AND EM/VOICE EVACUATION SYSTEM ACROSS ENTIRE SITE.

GENERAL NOTES

A. THIS SHEET IS FOR FIRE LIFE SAFETY CODE RELATED ITEMS. FOR SCOPE OF WORK SEE SHEETS A0.1 AND A0.2. B. REFER TO FIRE ALARM AND FIRE PROTECTION DRAWINGS FOR EXTENT OF OTHER RELATED WORK.

GRAPHIC KEY

---- - EXISTING PROPERTY LINE

— — — — — — ROOF OVERHANG

FIRE DEPARTMENT ACCESS. FIRE DEPARTMENT ACCESS IS 20'-0" WIDE AND RATED FOR 96,000 LBS.

(E) FIRE HYDRANT ---- (E) SIGN



EXISTING RESTROOMS

EXISTING BUILDING





1			L			
GEN	IERAL NOTES	FIRE ALARM GEN	LIST	PMENT	FIRE ALARM EQU	
1. CONTRACTOR SH SHALL BE U.L. LIS	QUIRED BY TITLE 24/CEC, ARTICLE	1. WIRING MUST BE LISTED FOR USE AS RE 760.	CSFM LISTING 7165-0028:0224	MFGR'S PART No. NFS2-3030	DESCRIPTION AND MODEL NUMBER ADDRESSABLE FIRE ALARM CONTROL PANEL, NOTIFIER NES2 SERIES, UDACT, FIREP	SYMBOL FACP
2. THE CONTRACTOR THIS CONTRACT V	OF AN APPROVED TYPE IN THHW OR EQUAL).	2. WIRE USED IN WET LOCATIONS SHALL BE ACCORDANCE WITH 3-310-8, T24/CEC (I.E.			MODULES FOR EACH AMPLIFIER CONNECTION. INSTALL SEMI-FLUSH MOUNTING CABINET, CAB-4 SERIES. PROVIDE & INSTALL FIRE ALARM	
3. CONTRACTOR SH/ THE CONTRACTOI CONTRACT DOCU TRADES WORK T	S TO HAVE WATERTIGHT FITTINGS DN. CONDUIT UNLESS SPECIFICALLY	 UNDER GROUND AND EXTERIOR CONDUL AND WIRES APPROVED FOR WET LOCATI ALL CONDUCTORS SHALL BE ROUTED IN 	7165-0028:0224	NOTIFIER DVC-EM	DIGITAL VOICE COMMAND CONTROL SYSTEM WITH DIGITAL AUDIO LOOP TECHNOLOGY,	
4. CONTRACTOR SH	CONDUIT SIZE SHALL BE 3/4." SE PLANS ARE SHOWN SHALL BE DETERMINED IN THE	5. THE CONDUIT AND WIRE SHOWN ON THE DIAGRAMMATICALLY. EXACT LOCATIONS			WITH UP & CHANNELS OF AUDIO AND UP TO 5 CHANNELS OF FIREFIGHTER TELEPHONE COMMUNICATIONS, LOCAL KEYPAD FOR LOCAL ANNUNCIATION AND CONTROLS (DVC-KD).	[DVC]
5. CONTRACTOR SH	ILT" PLANS SHALL BE MAINTAINED PROJECT INSPECTOR OF RECORD. HALL BE PROTECTED IN	FIELD TO SUIT FIELD CONDITIONS. "AS-BL AND BE PROVIDED AS REQUIRED BY THE 6. PENETRATIONS OF FIRE RATED WALLS S	7315-0028:0513	PSE-10	10.0A AUXILIARY POWER SUPPLY WITH 4 NAC OUTPUT CIRCUITS AND BUILT-IN SYNCHRONIZATION. NOTIFIER PSE-10 SERIES.	RPS
ACCURATE "AS-BL 6. ALL MATERIALS P PROVIDE AND INS	G CODE, CHAPTER 7, TITLE 24. ATION FIRE-STOP SYSTEMS FOR ALL FIRE RATED WALLS/FLOORS	ACCORDANCE WITH CALIFORNIA BUILDIN PROVIDE DETAILS OF THROUGH PENETR PIPE/CABLE/CONDUIT PASSING THROUGH REQUIRING PROTECTED OPENINGS.	7165-0028:0224	DAA2-5070	50 WATT, 70.7VRMS DIGITAL AUDIO AMPLIFIER WITH CHARGING POWER SUPPLY AND 2 CLASS B OR 2 CLASS A OUTPUTS. NOTIFIER DAA SERIES	DAA
7. CONTRACTOR SHA CONSTRUCTION §	R EXTERIOR USE BY "CSFM."	 ALL DEVICES SHALL BE "CSFM" LISTED. 8. EXTERIOR DEVICES SHALL BE LISTED FO 	7272-0028:0503	FSP-951	ADDRESSABLE PHOTO ELECTRIC FIRE ALARM SMOKE DETECTOR AND BASE, NOTIFIER FSP-951 SERIES.	2
8. CONTRACTOR SH/ NECESSARY TO R AT START OF WOI	L BE AT LEAST 15DBA ABOVE THE	9. AUDIBLE FIRE ALARM SOUND LEVEL SHA AVERAGE SOUND LEVEL.	7270-0028:0502	FST-951	ADDRESSABLE FIRE ALARM HEAT DETECTOR AND BASE, 135 DEG. FIXED TEMPERATURE AND RATE-OF RISE, NOTIFIER FST-951 SERIES.	J
9. CONTRACTOR SH/ REFER TO ARCHIT	TION IN THE PUBLIC SHALL HAVE A AT 10 FEET OR MORE THAN 110DBA COM THE AUDIBLE APPLIANCE.	10. AUDIBLE SIGNALS INTENDED FOR OPERA SOUND LEVEL OF NOT LESS THAN 75DBA AT THE MINIMUM HEARING DISTANCES FI	7150-0028:0199	NBG-12LX	ADDRESSABLE FIRE ALARM MANUAL PULL STATION, DUAL-ACTION WITH KEY RESET, NOTIFIER NBG-12LX SERIES.	ПР
10. ALL ELECTRICAL E INTO BUILDINGS S ELECTRICAL DEVI	VISUAL DEVICE SHOULD NOT OULD NOT BE SLOWER THAN 1 LL HAVE A PULSING LIGHT SOURCE	11. WHERE VISUAL DEVICES ARE REQUIRED, EXCEED 2 FLASHES PER SECOND AND SH FLASH EVERY SECOND. THE DEVICE SHA	7260-0028:0509	FS-OSI-RI	OPTICAL BEAM SMOKE DETECTOR, NOTIFIER FS-OSI-RI SERIES.	
11. ALL CONDUITS UN (1) #12 GROUND. " SHALL BE RESPO		NOT LESS THAN 15 CANDELA. NO PLACE 50 FEET FROM A DEVICE.	7300-0028:0219	FIVIIVI-1 FCM-1	FMM-1 SERIES. ADDRESSABLE CONTROL MODULE NOTIFIER FCM-1 SERIES.	
12. ALL BRANCH CIR(NOT ALLOWED.	HALL PROVIDE COPIES OF ECTOR OF RECORD PRIOR TO ALL SUBMIT SHOP DRAWING TO	REGULATION SERVICES." CONTRACTOR S APPROVED PLANS TO THE PROJECT INSP BEGINNING WORK. THE CONTRACTOR SH	7125-1653:0504	SRL	WALL MOUNTED MULTI-CANDELA, STROBE WITH FIELD SELECTABLE CANDELA SETTINGS OF 15, 30, 75 AND 110 CANDELA. SYSTEM SENSOR. SRL SFRIFS	¤
 COORDINATE ALL CONFLICTS. CONTRACTOR S 	VIEW. THE FIRE PROTECTION SHOP DRAWINGS HAVE BEEN IGINEER OF RECORD.	ENGINEER PRIOR TO PURCHASE FOR RE SYSTEM SHALL NOT BE INSTALLED UNTIL SUBMITTED TO AND RECEIVED BY THE EN	7125-1653:0504	SCRL	CEILING MOUNTED MULTI-CANDELA STROBE WITH FIELD SELECTABLE CANDELA SETTINGS OF 15, 30, 75 AND 115 CANDELA.	¤c
15. ALL CONDUIT S	BY THE DSA INSPECTOR OF R OF RECORD (IOR) AND THE LOCAL DATE AND TIME OF FINAL FIRE	13. FINAL ALARM TEST SHALL BE WITNESSEE RECORD (IOR). BOTH THE DSA INSPECTO FIRE AUTHORITY SHALL BE NOTIFIED OF			STSTEM SENSOR, SCRL SERIES. WALL MOUNTED MULTI-CANDELA, SPEAKER-STROBE WITH FIELD SELECTABLE CANDELA SETTINGS OF 15–30–75 & 110	
WECESSARY. W WORK OBTAIN F WHERE POSSIB	OF COMPLETION" TO THE COMPLETION OF OPERATIONAL	CONTRACTOR SHALL PROVIDE "RECORD INSPECTOR OF RECORD (IOR)/DSA AFTER ACCEPTANCE TEST.	7320-1653:0505	SPSR	CANDELA WITH VOLTAGE SETTING OF 70.7 VRMS AND POWER SETTINGS OF ½, ½, 1 & 2 WATTS. SYSTEM SENSOR, SPSR SERIES.	Ø
16. WHERE IT IS NO NON-METALLIC APPROVED BY	TED, 120V BRANCH CIRCUIT, WITH A ALARM CIRCUIT CONTROL."	14. POWER SERVICE SHALL BE ON A DEDICA RED MARKING AND IDENTIFIED AS "FIRE	7320-1653:0505	SPSCR	CEILING MOUNTED MULTI-CANDELA, SPEAKER-STROBE WITH FIELD SELECTABLE CANDELA SETTINGS OF 15, 30, 75 & 115 CANDELA WITH VOLTAGE SETTING OF 70.7	× ₩
 17. EXTENSION RIN 18. CONTRACTOR WATER TELES 	TRANSMIT THE ALARM, O AN APPROVED SUPERVISING IENDED BY CFC CHAPTER 80. THE AS EITHER JUEX OR LINES BY	15. AUTOMATIC FIRE ALARM SYSTEM SHALL SUPERVISORY AND TROUBLE SIGNALS TO STATION AS REQUIRED BY NFPA 72 AS AN SUPERVISING STATION SHALL BE LISTED			VRMS AND POWER SETTINGS OF 1/4, 1/2, 1 & 2 WATTS. SYSTEM SENSOR, SPSCR SERIES.	Δ
UNDERGROUNE OWNER.	MEET THE REQUIREMENTS OF STANDARD 3011.	16. EXISTING FIELD DEVICES AND FACE SHALL	7320-1653:0201	SPRK	ALARIW/VOICE EVACUATION SPEAKER WITH VOLTAGE SETTING OF 70.7 VRMS AND POWER SETTINGS OF ½,½, 1 & 2 WATTS. SYSTEM SENSOR, SPRK SERIES.	
19. EXISTING WIRIN CONTRACTOR S CONDITIONS AN	/IRING HAS BEEN HOMERAN TO HE RELOCATION OF THE FACP TO I SYSTEM. CONTRACTOR SHALL	FIELD DEVICES ARE IN PLACE AND NEW V NEW LOCATION OF FACP. COORDINATE T MINIMIZE THE DOWN TIME OF FIRE ALARM	-	-	END OF LINE DEVICE.	EOL
20. WHERE NON-ME FULLEST EXTEN WILL BE PERMIT	TEM IS OPERATIONAL.	FIRE WATCH UNTIL NEW FIRE ALARM SYS				
21. ALL INSTALLATIC ARCHITECT BEF						
CONCEALED E DETERMINED, PLEASING MEA						
DUE TO ROU						
[
	SUPERVISORY MISC.			FIR		
	REMARKS				CAUSE	
					SMOKE DETECTORS HEAT DETECTORS FLOW SWITCH	
					TAMPER SWITCH SYSTEM RESET SIGNAL SILENCE AC POWER FAILURE	
		• • • • • • •	•••		CARBON MONOXIDE FIRE ALARM TROUBLE (OPEN, SHORTS, OR GROUNDS) ON	
					INTIATION OR SIGNALING C	
M/E/P COMPONENT AI						
ALL MECHANICAL, PLI DETAILS ON THE DSA COMPONENTS SHALL						
PRESCRIBED IN THE 1. ALL PERMANE						
2. TEMPORARY C UTILITY SERVI ELECTRICAL C						
3. TEMPORARY, MASS LOCATE THE COMPON						
THE FOLLOWING ME STRUCTURE, BUT NE PROVIDED BETWEEN						
A. COMPONENT ABOVE THE /						
B. COMPONENT POUNDS PEF						



GENERAL CONSTRUCTION NOTES

ACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT BE U.L. LISTED AND LABELED FOR THE APPLICATION. NTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY

ACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING AND ALLOW FOR ALL FIELD CONDITIONS. NTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL ACT DOCUMENTS. THE CONTRACTOR SHALL OBTAIN INFORMATION AND BE FAMILIAR WITH ALL OTHER WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES

ACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE NCE COVERAGE AS NECESSARY FOR LIABILITY AND PERSONAL, PROPERTY DAMAGE, TO FULLY CT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK. ACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS CTRICAL SYSTEMS. THE CONTRACTOR SHALL AT THE CONCLUSION OF THE PROJECT PROVIDE ATE "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.

FERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO E AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.

ACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE RUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES. ACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" CARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING

RT OF WORK. ACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

ECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN JILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS.

NDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12s WITH ONE GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR ROUGH ESTIMATING ONLY. THE CONTRACTOR BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE. NCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS. SHARED NEUTRALS ON MULTIWIRE CIRCUITS IS

OWED. INATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CTS.

ACTOR SHALL PROVIDE IN EVERY NEW EMPTY CONDUIT A DRAW STRING FOR USE IN FUTURE RUCTION.

NDUIT SHALL BE CONCEALED WHERE POSSIBLE. CUT AND PATCH EXISTING WALLS WHERE SARY. WHERE IT IS NECESSARY TO CUT OR BORE EXISTING STRUCTURAL WALLS FOR NEW ELECTRICAL OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO STARTING WORK. REUSE EXISTING CONDUIT POSSIBLE.

E IT IS NOT POSSIBLE TO REUSE EXISTING CONDUIT OR RUN NEW CONCEALED CONDUIT USE ETALLIC SURFACE RACEWAY AND BOXES. ROUTING OF ALL NON-METALLIC RACEWAYS SHALL BE /ED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN. ION RINGS OR RESET BOXES TO BE FLUSH WITH NEW WALL THICKNESS.

ACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UNDERGROUND SYSTEMS (GAS, TELEPHONE, ELECTRICAL, SEWER, ETC.). THE CONTRACTOR SHALL REPAIR & PAY ALL EXPENSES FOR E TO EXISTING UNDERGROUND SYSTEMS AS A RESULT OF NEW WORK. REPAIR TO DAMAGED GROUND SYSTEMS SHALL BE TO THE OWNERS SATISFACTION WITHOUT EXTRA EXPENSE TO THE

G WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL ACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL IONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.

NON-METALLIC SHEATHED CONDUCTORS ARE FOUND, THE CONTRACTOR SHALL REMOVE TO T EXTENT PER THE GENERAL DEMOLITION NOTES AND REPLACE WITH CONDUIT. METAL CLAD CABLE PERMITTED ON A CASE-BY-CASE BASIS ONLY BY WRITTEN APPROVAL FROM THE ARCHITECT.

TALLATION OF EXPOSED SURFACE MOUNTED RACEWAY IN PUBLIC AREAS SHALL BE REVIEWED BY ECT BEFORE ROUGH-IN. CONTRACTOR IS TO DETERMINE THE ACCESSIBILITY OF ATTIC, FURRED HOLLOW MULLIONS. ETC. IN EACH AREA AND REVIEW WITH ARCHITECT. IF SYSTEM CAN BE ROUTED ALED EITHER BY FISHING OR ACCESSIBILITY, CONTRACTOR IS TO DO SO. IF INACCESSIBILITY IS 1INED, CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAY IN THE MOST AESTHETICALLY IG MEANS AS DETERMINED BY THE ARCHITECT. NO ALLOWANCE FOR ADDITIONAL COMPENSATION ROUTING AS DIRECTED BY THE ARCHITECT WILL BE MADE.

SHEET INDEX

FA0.1 FIRE ALARM SYMBOLS, ABBREVIATIONS, EQUIPMENT LIST, OPERATIONAL MATRIX, DETAILS & NOTES.

- FA0.2 FIRE ALARM DETAILS.
- FA1.1 FIRE ALARM RISER DIAGRAM.
- FA1.2 FIRE ALARM RISER DIAGRAM.
- FA1.3 FIRE ALARM BATTERY & VOLTAGE DROP CALCULATIONS.
- FA2.1 FIRE ALARM SITE PLAN.
- FA3.1 FIRE ALARM DEMOLITION PLAN.
- FA4.1 FIRE ALARM PLAN BUILDINGS A, B & CC.
- FA4.2 FIRE ALARM PLAN BUILDINGS C, D, E, F, G & H.
- FA4.3 FIRE ALARM PLAN BUILDINGS J & K

EQUIPMENT ANCHORAGE

ONENT ANCHORAGE NOTES:

IICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING IS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS) IN THE 2019 CBC, SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26 & 30: PERMANENT EQUIPMENT AND COMPONENTS.

PORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED(e.g. HARD WIRE) TO THE BUILDING TY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL TRICAL CONNECTIONS EXCEPT PLUGS FOR 120 / 220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE. PORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF S LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT

COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA. VING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE , BUT NEED NOT BE DETAILED IN THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS TWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FELXIBLE NS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

PONENTS WEIGHTING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS /E THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

PONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 IDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL. DRAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT OF THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6. 13.6.7, 13.6.8 AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON PRE-APPROVED INSTALLATION GUIDE (e.g. OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS. MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP I MD PP E E - OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. MP MD PP E - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM #)

	10020			
ПР	MANUAL PULL STATION			BELL (GONG)
Ø	STROBE ONLY	J L FACP]	FIRE ALARM CONTROL PANEL
۲ ۲	STROBE ONLY	RPS]	REMOTE POWER SUPPLY
×c	(CEILING MOUNTED)	AMP	ı	DIGITAL AUDIO AMPLIFIER
\square	SPEAKER ONLY	EOL	-	END OF LINE
∇ M	MINI HORN	⊙/к	J	JUNCTION BOX - CEILING/WALL
×	SPEAKER/STROBE		•	PULLBOX
	SPEAKER/STROBE (CEILING MOUNTED)			CONDUIT - HOME RUN TO PANE TERMINAL CABINET, ETC. AS IN RUNS MARKED WITH CROSSHA
0 X	CHIME/STROBE	#10		INDICATE NUMBER OF #12 AWG WHEN MORE THAN TWO. SIZE C ACCORDING TO SPECIFICATION
	HEAT DETECTOR			APPLICABLE CODE. CROSS HATCHES WITH NUMBER
€A	HEAT DETECTOR (ABOVE ACCESSIBLE CEILING))		ADJACENT INDICATES WIRE SIZ THAN #12 AWG.
(\mathbf{S})	SMOKE DETECTOR		_	CONDUIT - EXISTING
Ĩ			-	CONDUIT - CONCEALED IN WALLS O
٢	DUCT SMOKE DETECTOR		-	CONDUIT - IN OR BELOW FLOOR: 3/4
Ø	TAMPER SWITCH	۶	-	CONDUIT CONTINUATION.
8	FLOW SWITCH	201]	ROOM NUMBER.
Ň	POST INDICATING VALVE	$\langle 2 \rangle$		SHEET NOTE REFERENCE SYMB SEE ASSOCIATED NOTE ON SAM SHEET.
		E1)	DETAIL OR SECTION DESIGNATION
ABB	REVIATIONS			
ARCH AWG	ARCHITECT AMERICAN WIRE	F	[:] SD DC	FIRE SMOKE DAMPER
BKR	BREAKER	(N)	NEW
C CO	CONDUIT CONDUIT ONI Y	Ν	JAC	NOTIFICATION APPLIANCE
CB	CIRCUIT BREAKER	Ν	١C	NOT IN CONTRACT
СКТ	CIRCUIT	Ν	10	NUMBER
CLG	CEILING	S	SLC	SIGNALING LINE
(E)	EXISTING	-		
EOL	END OF LINE	· · · ·		
FA	FIRE ALARM	, c		NOTED
FACP	FIRE ALARM CONTROL PANEL	٧	٧P	WEATHERPROOF
FBO	FURNISHED BY OTHERS			
<u>TYP</u>	ICAL ZONE NOMEN	ICLAT	<u>URI</u>	E
		SIGNAL (ES CAND	CIRCU ELA I	JIT #2 RATING



REQUIREMENTS. THE INTENT OF THE PROJECT IS TO REPLACE EXISTING FIRE ALARM SYSTEM COMPLETE.

SYSTEM DESCRIPTION: SLC = CLASS B IDC = CLASS B NAC = CLASS B

CODES:

- 1. 2019 CALIFORNIA ADMINISTRATIVE CODE C.C.R., TITLE 24, PART 1.

- 2019 CALIFORNIA ENERGY CODE C.C.R., TITLE 24, PART 6.

STANDARDS:

- 2. ELECTRONICS INDUSTRIES ASSOCIATION (EIA)
- 3. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)

- 6. UNDERWRITER LABORATORIES (UL)











NO SCALE



	GE CAL					
AMPLIFIER	WATTAGE CALCULA	TION FOR AMP-1		QTY	PRODUCT ID	ICE EVAC - FIRE ALARN DESCRIF
Y MODEL No. DAA-1 S1	50 WATT NOTIFIER DIGI WATTAGE OF SPEAKER	E DESCRIPTION TAL AUDIO AMPLIFIER S CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 4.5000	1 1 4	AMPS-24 PRIM. CPU2-3030 PRIM. LCM-320 SIGN. LFM-3030 CONT.	IRY INPUT POWER UNIT
1 S2 1 S3 1 S4 1 S9	WATTAGE OF SPEAKER WATTAGE OF SPEAKER WATTAGE OF SPEAKER WATTAGE OF SPEAKER	S CONNECTED TO THIS CIRCUIT S CONNECTED TO THIS CIRCUIT S CONNECTED TO THIS CIRCUIT S CONNECTED TO THIS CIRCUIT S CONNECTED TO THIS CIRCUIT	9.0000 9.5000 9.5000 2.5000	4 1 4 1	ACPS-610 ADDF SLC SLC I DAA2 DIGIT	ESSABLE POWER SUPPLY EVICE ACTOVATION CURR
S9 1 SPARE 1 SPARE 1 SPARE 1 SPARE	SPARE SPARE SPARE SPARE		2.3000 0.0000 0.0000 0.0000		DVC-EM DIGIT DVC-KD KEYP LCD-80 LIQUI UDACT UNIVE	L VOICE COMMAND D FOR LOCAL ANUNNCIAT CRYTAL DISPLAY MODUL RSAL DACT
	WATTAGE CALCULAT		15.0000		PANE	. STANDBY CURRENT L ALARM CURRENT FIELD DE
ATY MODEL No.	50 WATT NOTIFIER DIGI		WATTS EACH 50.0000	QTY 3 3	PRODUCT ID FMM-1 NEW FCM-1 NEW	DESCRIP ADDRESSABLE MONITOR I ADDRESSABLE CONTROL
S5 1 S8 1 S6 1 S7 1 S7	WATTAGE OF SPEAKER WATTAGE OF SPEAKER WATTAGE OF SPEAKER WATTAGE OF SPEAKER	S CONNECTED TO THIS CIRCUIT S CONNECTED TO THIS CIRCUIT S CONNECTED TO THIS CIRCUIT S CONNECTED TO THIS CIRCUIT	6.0000 3.0000 8.5000 0.0000	1 116 128	NBG-12LX NEW FSP-951 NEW FST-951 NEW	IDDRESSABLE MANUAL P IDDRESSABLE PHOTOELE IDDRESSABLE THERMAL
I SPARE 1 SPARE 1 SPARE 1 SPARE 1 SPARE	SPARE SPARE SPARE SPARE SPARE		0.0000 0.0000 0.0000 0.0000	· · · · ·	DESC CONT FIELD TOTA	RIPTION ROL PANEL DEVICES L STANDBY CURRENT
DTAL WATTAGE AVAILABLE			24.0000		X 24 I TOTA 15 MII TOTA	OUR STANDBY - ALARM CURRENT IUTES OF ALARM (X .25) L BATTERY REQUIREMENT
					SAFE BATT	Y MARGIN (20%) RY SUPPLIED
				QTY	MODEL No.	BATTE
				1 1 1 1	DAA-1 S1 S2 S3	NOTIFIER DIGITA SPEAKER CIRCU SPEAKER CIRCU SPEAKER CIRCU
				1 1 1 1	S4 S9 SPARE SPARE	SPEAKER CIRCU SPEAKER CIRCU SPARE SPARE
					SPARE	SPARE PANEL STANDBY PANEL ALARM C
						DESCRIPTION TOTAL STANDBY
						X 24 HOUR STAN TOTAL ALARM C 15 MINUTES OF TOTAL BATTERY
						SAFETY MARGIN BATTERY SUPPL
					MODEL No.	BATTE
				1 1 1	DAA-1 S5 S8	NOTIFIER DIGITA SPEAKER CIRCU SPEAKER CIRCU
				1 1 1 1	S6 S7 SPARE SPARF	SPEAKER CIRCU SPEAKER CIRCU SPARE SPARE
					SPARE SPARE	SPARE SPARE PANEL STANDBY
						DESCRIPTION
						TOTAL STANDBY X 24 HOUR STAN TOTAL ALARM C 15 MINUTES OF
						TOTAL BATTERY SAFETY MARGIN BATTERY SUPPL
						BATT
				QTY 1 1	MODEL No. PSE-10 V1	NOTIFIER REMO VISUAL CIRCUIT
				1 1 1 1	V2 V3 V4 V9	VISUAL CIRCUIT VISUAL CIRCUIT VISUAL CIRCUIT VISUAL CIRCUIT
						PANEL STANDBY PANEL ALARM C
						DESCRIPTION TOTAL STANDB X 24 HOUR STAI TOTAL ALAPM (
						15 MINUTES OF TOTAL BATTER' SAFETY MARGIN BATTERY SUDD
				QTY 1	MODEL No. PSE-10	
				1 1 0	V5 V8 SPARE	VISUAL CIRCUIT VISUAL CIRCUIT SPARE CIRCUIT SPARE CIRCUIT
					orake	PANEL STANDBY PANEL ALARM C
						DESCRIPTION TOTAL STANDBY X 24 HOUR STAN
						TOTAL ALARM C 15 MINUTES OF J TOTAL BATTERY SAFETY MARGIN
				QTY	MODEL No.	BATT
				1 1 1	PSE-10 V6 V7	NOTIFIER REMO VISUAL CIRCUIT VISUAL CIRCUIT
				0	SPARE SPARE	PANEL ALARM C
						DESCRIPTION TOTAL STANDB
						X 24 HOUR STAI TOTAL ALARM C 15 MINUTES OF TOTAL BATTER
				ı —		SAFETY MARGIN BATTERY SUPPL

	3Y		M	
EACH 0.1300 0.1200		ALAR EACH 0.0520 0.1200	TOT 0.05	AL 520
0.1200	0.1200	0.1200	0.12	200
0.0000 0.0000 0.3000	0.0000 0.0000 0.3000	0.0000 0.2200 0.3000	0.00	200
0.0600 0.0500 0.0400	0.0600 0.0500 0.0400	0.0600 0.1000 0.1000	0.3000	
-	1.6200		1.87	20
STANDE	BY TOTAL	ALAR	М	ΓAL
0.0004	0.0012	0.0004	0.00	12 12 50
0.0002	0.0232	0.0045	0.52	20 760
	STANDB 1.62	Y 200 228	ALA	RM 1.8720 0.0074
	1.62 38.94	228 172		1.8794
				0.4699 39.4171 47.3005
			(2) 1	2V 100AH
N AMP	9–1 STA		AL	ARM
	0.2830 0.0000	0.2830 0.0000	EACH 0.6850 0.1800	0.6850 0.1800
	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	0.3600 0.3800 0.3800	0.3600 0.3800 0.3800
	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	0.1000 0.0000 0.0000	0.1000
	0.0000	0.0000 0.2830	0.0000	2.085
TAL SYSTE	M CURRENT	STANDBY		ALARI
		0.2830		2.0
				0.5 7.3 8.7
				1
N AMP	-2			
	STA EACH 0.2830	NDBY TOTAL 0.2830	AL EACH 0.6850	ARM TOTAI 0.6850
	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	0.3400 0.2400 0.1200	0.3400 0.2400 0.1200
	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	0.3400 0.0000 0.0000	0.3400
	0.0000	0.0000	0.0000	0.0000
TAL OVETER		0.2030		1.7250
TAL SYSTEM		STANDBY 0.2830		ALAR
		6.7920		1.7
				7.2 8.6 1
<u>N RPS</u>	STA EACH	NDBY TOTAL	AL	ARM TOTAI
	0.1560 0.0000 0.0000	0.1560 0.0000 0.0000	0.1850 0.4730 0.6060	0.1850 0.4730 0.6060
	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	0.8630 0.9030 0.1970	0.8630 0.9030 0.1970
		0.1560		3.2270
TAL SYSTEM	M CURRENT	STANDBY		ALARI
		3.7440		3.2
				4.5
		II		
N RPS	-2	NDBY	AL	ARM
	EACH 0.1560 0.0000	TOTAL 0.1560 0.0000	EACH 0.1850 1.1610	TOTA 0.1850 1.1610
	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	0.5700 0.0000 0.0000	0.5700
I		0.1560		1.9160
TAL SYSTE	M CURRENT	STANDBY		ALAR
		3.7440		1.9
				0.4 4.2 5.0
N RPS	-3			
	STA EACH 0.1560	NDBY TOTAL 0.1560	AL EACH 0.1850	ARM TOTAI 0.1850
	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	0.2220	0.2220
	0.0000	0.0000	0.0000	0.0000
TAL SYSTEM		OT 41		1.4060
		0.1560 3.7440		ALÁRI
				1.4
				4.0
				4.0
		0.1200 0.1200 0.1300 0.4000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0004 0.0012 0.0004 0.0014 0.0004 0.0014 0.0004 0.0014 0.0004 0.0014 0.0004 0.0014 0.0004 0.0014 0.0004 0.0014 0.0004 0.0014 0.0004 0.0014 0.0004 0.0004 0.0002 0.0233 0.0002 0.0230 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 <td>0.1200 0.1200 0.1300 0.1300 0.4000 0.1000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2000 0.0000 0.0000 0.2000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0001 0.0001 0.0004 0.0012 0.0004 0.0002 0.0232 0.0045 0.0002 0.0232 0.0045 0.0002 0.0232 0.0045 0.0002 0.0232 0.0045 0.0002 0.0228 0.0453 0.0002 0.0228 0.0453 0.0002 0.0228 0.0453 0.0002 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000</td> <td>0.1200 0.1200 0.1200 0.0200 0.1000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0002 0.0022 0.0045 0.632 0.0002 0.0022 0.0045 0.632 0.0002 0.0022 0.0045 0.632 0.0002 0.0020 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 <t< td=""></t<></td>	0.1200 0.1200 0.1300 0.1300 0.4000 0.1000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2000 0.0000 0.0000 0.2000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0001 0.0001 0.0004 0.0012 0.0004 0.0002 0.0232 0.0045 0.0002 0.0232 0.0045 0.0002 0.0232 0.0045 0.0002 0.0232 0.0045 0.0002 0.0228 0.0453 0.0002 0.0228 0.0453 0.0002 0.0228 0.0453 0.0002 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.1200 0.1200 0.1200 0.0200 0.1000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0004 0.0002 0.0022 0.0045 0.632 0.0002 0.0022 0.0045 0.632 0.0002 0.0022 0.0045 0.632 0.0002 0.0020 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 <t< td=""></t<>

Wire Gauge fo	Power source to 1	st device	4.500	50	Gauge 12	Per 1000 1.98		
	or balance o	of circuit from	Calculated		12 Voltage	1.98		
Device Number	Device Power	previous device	Device Current	At Device	Drop from source	Percent Drop		
Device 1 Device 2	2.000	50 40	0.080	24.96 24.95	0.036	0.14%		
Device 3 Device 4 Device 5	0.500	40 55 70	0.020	24.94 24.92 24.91	0.064	0.26%		
Device 6	0.500	35	0.020	24.91 24.91	0.091	0.36%		
END END			0.000	24.91 24.91	0.091	0.36% 0.36%		
END END			0.000	24.91 24.91	0.091 0.091	0.36%		
			0.000	24.91 24.91	0.091	0.36%		
END END			0.000	24.91 24.91	0.091	0.36%		
END Totals	4.500	290	0.000	24.91 End of Li	0.091 ne Voltage	0.36% 24.91		
Point t	o Point Me	thod	End	of Line M	ethod	Load (Centering M	ethod
Totals		Voltage	Totals		Voltage	Totals		Voltage
Current 0.180	Distance 290	Drop 0.09	Current 0.180	Distance 290	Drop 0.207	Current 0.180	Distance 290	Drop 0.103
End of Line Vo Pe	oltage ercent Drop	24.91 0.36%	End of Line Per	Voltage cent Drop	24.79 0.83%	End of Line P	Voltage ercent Drop	24.90 0.41%
Nominal Spea Minimum Dev	iker Voltage ice Voltage	e (25 or 70)	SPEAKE		25 20			
Total Circuit C Total Circuit P	Current in ar	nps	0.360 9.000		Wire Gauge	Ohm's Per 1000		
Wire Gauge for	or balance of	of circuit	Calculated	50	12 12 Voltage	1.98		
Device Number	Device Power	previous device	Device Current	At Device	Drop from source	Percent Drop		
Device 1 Device 2	0.500	75 45	0.020	24.89 24.83	0.107	0.43%		
Device 3 Device 4	0.500 0.500	60 70	0.020	24.77 24.70	0.229 0.296	0.92% 1.18%		
Device 5 Device 6	0.500	50 30	0.020	24.66 24.64	0.339	1.36% 1.45%		
Device 7 Device 8	0.500	40 70	0.020	24.62 24.59	0.382	1.53%		
END	U.500	35	0.020	24.59 24.59	0.413 0.413	1.65%		
			0.000	24.59 24.59	0.413	1.65% 1.65%		
END END			0.000	24.59 24.59 24.50	0.413 0.413	1.65% 1.65%		
END Totals	9 000	475	0.000	24.59 End of Li	0.413 ne Voltage	1.65% 24.50		
Point +	o Point Mo	thod	Fnd	of Line M	ethod	Load (Centerina M	ethod
CIRCUIT	IS WITHIN	LIMITS	CIRCUIT	IS WITH	N LIMITS	CIRCUI	T IS WITHIN	LIMITS
Totals Current	Distance	Voltage Drop	Totals Current	Distance	Voltage Drop	Totals Current	Distance	Voltage Drop
0.360 End of Line Vo Pe	475 oltage ercent Drop	0.41 24.59 1.65%	0.360 End of Line Per	475 Voltage cent Drop	0.677 24.32 2.71%	0.360 End of Line P	475 Voltage ercent Drop	0.339 24.66 1.35%
Nominal D			SPEAKE	R CIRCUI	T No.S3			
Minimum Dev Total Circuit C	ice Voltage Current in ar	nps	0.380		20 20 Wire	Ohm's		
Distance from	source to 1	st device	0.000	50	12 12	1.98		
Device	Device	from previous	Calculated Device	At	Voltage Drop from	Percent		
Number Device 1	Power 2.000	device 175	Current 0.080	Device 24.74	source 0.263	Drop 1.05%		
Device 2 Device 3	0.500	45 75	0.020	24.68 24.60	0.317	1.27 <mark>%</mark> 1.60%		
Device 4 Device 5	2.000	40 75	0.080	24.56 24.51	0.441	1.76%		
Device 6 Device 7	0.500	40 50	0.020	24.49 24.47	0.510	2.04% 2.11%		
Device 8 Device 9	0.500	50 50	0.020	24.40 24.45 24.45	0.538	2.15% 2.18% 2.20%		
END END	5.000		0.000	24.45 24.45	0.550	2.20% 2.20%		
Totals Point t CIRCUIT Totals	9.500 to Point Me IS WITHIN	650 thod LIMITS Voltage	End CIRCUIT	End of Li of Line Ma IS WITHI	ethod N LIMITS Voltage	24.45 Load C CIRCUIT	Centering M T IS WITHIN	ethod LIMITS Voltage
Ourrent 0.380 End of Line V	650 oltage	0.55	0.380	650 Voltage	0.978	0.380 End of Linc	650 Voltage	0.489
Pe	ercent Drop	2.20%	Per	cent Drop	3.91%	P	ercent Drop	1.96%
Nominal Sac-	ker Voltoor	e (25 or 70 \	SPEAKE	R CIRCUI	T No.S4		1	
Minimum Dev Total Circuit C	ice Voltage	nps	0.380		20 Wire	Ohm's		
Total Circuit F Distance from	Power source to 1	st device	9.500	50	Gauge 12	Per 1000 1.98		
Wire Gauge fo	or balance o	of circuit from	Calculated		12 Voltage	1.98		
Device Number	Device Power	previous device	Device Current	At Device	Drop from source	Percent Drop		
Device 1 Device 2	0.500	105 35	0.020	24.84 24.79	0.158	0.63%		
Device 3 Device 4	0.500	45 50 50	0.020	24.73 24.67 24.61	0.208	1.33% 1.56%		
Device 5 Device 7	0.500	50 50	0.020	24.01 24.55 24.50	0.391 0.447 0.409	1.79% 1.99%		
Device 8 Device 9	2.000	40 60	0.080	24.46 24.43	0.536	2.14% 2.30%		
Device 10 END	2.000	70	0.080	24.40 24.40	0.596	2.39% 2.39%		
END			0.000	24.40 24.40	0.596 0.596	2.39% 2.39%		
END			0.000	24.40 24.40	0.596	2.39% 2.39%		
END END END		555	0.000	24.40 End of Li	0.596 ne Voltage	2.39% 24.40		
END END END END Totals	9.500	thod	End	of Line M	ethod	Load (Centering M	ethod
END END END Totals Point t	9.500	LIMPTO		ואדוש כי		GIRCUI	i is within	Voltage
END END END Totals Point t CIRCUIT	9.500 to Point Me IS WITHIN		-		vollage	lotals	Distance 555	Drop 0.418 24.58 1.67%
END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line Vo Po	9.500 co Point Me IS WITHIN Distance 555 oltage ercent Drop	Voltage Drop 0.60 24.40 2.39%	Totals Current 0.380 End of Line Pero	Distance 555 Voltage cent Drop	Drop 0.835 24.16 3.34%	Current 0.380 End of Line P	Voltage ercent Drop	
END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line Vo Po Nominal Spea	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop	LIMITS Voltage Drop 0.60 24.40 2.39% (25 or 70)	Totals Current 0.380 End of Line Per	Distance 555 Voltage cent Drop	Drop 0.835 24.16 3.34% T No.S5 25 20	Current 0.380 End of Line P	Voltage ercent Drop	
END END END END Totals CIRCUIT Totals Current 0.380 End of Line Ve Pe Nominal Spea Minimum Dev Total Circuit C	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent Drop ercent Drop	LIMITS Voltage Drop 0.60 24.40 2.39% (25 or 70) nps	Totals Current 0.380 End of Line Pero SPEAKE 0.340 8.500	Distance 555 Voltage cent Drop	Drop 0.835 24.16 3.34% T No.S5 25 20 Wire Gauge	Current 0.380 End of Line P Ohm's Per 1000	Voltage ercent Drop	
END END END END Totals Totals Current 0.380 End of Line V0 Potal Circuit P Total Circuit C Total Circuit F Distance from	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent Drop ercent Drop ercent Drop cover source to ' or balance o'	LIMITS Voltage Drop 0.60 24.40 2.39% c (25 or 70) ps c st device of circuit	Totals Current 0.380 End of Line Pero SPEAKE 0.340 8.500	Distance 555 Voltage cent Drop R CIRCUI 50	Drop 0.835 24.16 3.34% T No.S5 25 20 Wire Gauge 12 12	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98	Voltage ercent Drop	
END END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line V0 Point Total Circuit P Total Circuit C Total Circuit F Distance from Wire Gauge from	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent Drop ercent Drop ercent of power source to or balance of Device	LIMITS Voltage Drop 0.60 24.40 2.39% (25 or 70) ps (25 or 70) ps st device of circuit from previous	Totals Current 0.380 End of Line Pero SPEAKE 0.340 8.500 Calculated Device	Distance 555 Voltage cent Drop R CIRCUI 50 At	Drop 0.835 24.16 3.34% T No.S5 25 20 Wire Gauge 12 12 Voltage Drop from	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent	Voltage ercent Drop	
END END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line Vi End of Line Vi Pe Nominal Spea Minimum Dev Total Circuit C Total Circuit C Total Circuit C Total Circuit C Total Circuit F Distance from Wire Gauge for Device Number Device 1	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent Drop ercent Drop ercent of or balance of Device Power 2.000	LIMITS Voltage Drop 0.60 24.40 2.39% e (25 or 70) e (25 or 70) st device of circuit from previous device 65	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.880	Distance 555 Voltage cent Drop R CIRCUI 50 50 At Device 24.91	Drop 0.835 24.16 3.34% T No.S5 25 20 Wire Gauge 12 12 Voltage Drop from source 0.088	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35%	Voltage ercent Drop	
END END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line Vi Pe Minimum Dev Total Circuit C Total Circuit F Distance from Wire Gauge from Wire Gauge from Device 1 Device 2 Device 3	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ker Voltage ice Voltage corrent in ar Power source to 7 or balance of Device Power 2.000 0.500 0.500	LIMITS Voltage Drop 0.60 24.40 2.39% e (25 or 70) nps e (25 or 70) st device of circuit from previous device 65 90 40	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020 0.020	R CIRCUI	Drop 0.835 24.16 3.34% 7 No.S5 25 20 Wire Gauge 12 12 Voltage Drop from source 0.088 0.180 0.218	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35% 0.72% 0.87%	Voltage ercent Drop	
END END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line V Per Nominal Spea Minimum Dev Total Circuit C Total Circuit C Total Circuit F Distance from Wire Gauge fo Device 1 Device 2 Device 3 Device 4 Device 5 Device 5 Device 5	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop aker Voltage cercent Drop aker Voltage current in ar Power source to 7 or balance of Device Power 2.000 0.500 0.500 0.500 0.500	LIMITS Voltage Drop 0.60 24.40 2.39% (25 or 70) st device of circuit from previous device 65 90 40 40 40 	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020 0.020 0.020	Distance 555 Voltage cent Drop R CIRCUI 50 50 At Device 24.91 24.82 24.78 24.75 24.72	Drop 0.835 24.16 3.34% 7 No.S5 25 20 Wire Gauge 12 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.14%	Voltage ercent Drop	
END END END END Totals Totals CIRCUIT Totals Current 0.380 End of Line Va Pa Minimum Dev Total Circuit C Total Circuit C Total Circuit C Total Circuit F Distance from Wire Gauge fo Device 1 Device 1 Device 2 Device 3 Device 4 Device 5 Device 6 Device 6 Device 7 Device 9	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop aker Voltage cercent Drop aker Voltage cercent Drop aker Voltage cover source to 7 or balance of Device Power 2.000 0.500	LIMITS Voltage Drop 0.60 24.40 2.39% 0 (25 or 70) mps of circuit from previous device 65 90 40 40 40 50 80 60	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020 0.020 0.020 0.020 0.020	Distance 555 Voltage cent Drop R CIRCUI 50 50 50 4t Device 24.91 24.82 24.75 24.75 24.72 24.68 24.65	Drop 0.835 24.16 3.34% 25 25 20 Wire Gauge 12 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.371	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.14% 1.28% 1.41% 1.49°/	Voltage ercent Drop	
END END END END Totals Totals CIRCUIT Totals Current 0.380 End of Line Vo Po Device for Device for Device 1 Device 2 Device 3 Device 4 Device 5 Device 6 Device 8 Device 8 Device 9 Device 10 Device 9 Device 10 Device 9 Device 9 Device 9 Device 9 Device 9 Device 10 Device 9 Device 9 Device 9 Device 10 Device 9 Device 9 Device 10 Device 9 Device 10 Device 10 Dev	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent Drop ercent Drop cover source to 7 or balance of Device Power 2.000 0.500	LIMITS Voltage Drop 0.60 24.40 2.39% c (25 or 70) rest device of circuit from previous device 65 90 40 40 40 50 80 60 40 70	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020 0.020 0.020 0.020 0.020 0.020 0.020	Distance 555 Voltage cent Drop R CIRCUI 50 50 50 24.91 24.82 24.78 24.75 24.72 24.68 24.65 24.63 24.63	Drop 0.835 24.16 3.34% 7 No.S5 25 20 Wire Gauge 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.371 0.381 0.302	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.14% 1.28% 1.41% 1.48% 1.52% 1.52%	Voltage ercent Drop	
END END END END Totals Totals CIRCUIT Totals Current 0.380 End of Line V0 Pa Minimum Dev Total Circuit O Total Circuit C Total Circuit C Total Circuit C Dotal Circuit F Distance from Wire Gauge fro Device 1 Device 2 Device 3 Device 2 Device 3 Device 4 Device 5 Device 6 Device 5 Device 6 Device 7 Device 8 Device 9 Device 10 Device 11 Device 11 D	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent Drop ercent Drop ercent Drop ercent Drop over source to or balance of Power 2.000 0.500	LIMITS Voltage Drop 0.60 24.40 2.39% (25 or 70) pps (25 or 70) pps (25 or 70)	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 0.340 8.500 Calculated Device Current 0.080 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020	Distance 555 Voltage cent Drop R CIRCUI 50 50 50 4t Device 24.91 24.82 24.78 24.75 24.72 24.68 24.65 24.63 24.62 24.61 24.62	Drop 0.835 24.16 3.34% 7 No.S5 25 20 Wire Gauge 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.352 0.371 0.381 0.392 0.396 0.306	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 0.87% 1.01% 1.14% 1.28% 1.41% 1.48% 1.52% 1.57% 1.58%	Voltage ercent Drop	
END END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line V/ Pressort Total Circuit C Total Circuit C Total Circuit C Total Circuit F Distance from Wire Gauge fo Device 1 Device 2 Device 3 Device 3 Device 5 Device 5 Device 6 Device 6 Device 7 Device 8 Device 9 Device 10 Device 10 Device 10 Device 10 Device 10 Device 10 Device 11 END END	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop aker Voltage cercent Drop aker Voltage current in ar Power source to Device Power 2.000 0.500	LIMITS Voltage Drop 0.60 24.40 2.39% c (25 or 70) c (25 o	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020	Distance 555 Voltage cent Drop R CIRCUI 50 50 At Device 24.91 24.82 24.78 24.75 24.72 24.63 24.65 24.61 24.60 24.60 24.60 24.60	Drop 0.835 24.16 3.34% 7 No.S5 25 20 Wire Gauge 12 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.371 0.381 0.392 0.396 0.396 0.396	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.44% 1.28% 1.41% 1.48% 1.52% 1.58% 1.58% 1.58%	Voltage ercent Drop	
END END END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line V/ Pressort Total Circuit C Total Circuit C Device 1 Device 1 Device 10 Device 11 END END END	9.500 O Point Me IS WITHIN Distance 555 oltage ercent Drop aker Voltage ice Voltage current in ar Power source to Device Power 2.000 0.500 0.	LIMITS Voltage Drop 0.60 24.40 2.39% c (25 or 70) rps c (25 or 70) c (rcuit from previous device 65 90 40 40 40 40 40 50 80 60 40 70 55	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Distance 555 Voltage cent Drop R CIRCUI 50 50 50 50 50 24.01 24.82 24.78 24.75 24.72 24.63 24.65 24.63 24.60 24.60 24.60 24.60 24.60	Drop 0.835 24.16 3.34% 7 No.S5 25 20 Wire Gauge 12 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.325 0.320 0.352 0.371 0.381 0.392 0.396 0.396 0.396	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.41% 1.42% 1.41% 1.48% 1.52% 1.58% 1.58% 1.58% 1.58% 1.58%	Voltage ercent Drop	
END END END END Totals Point t CIRCUIT Totals Current 0.380 End of Line V Per Nominal Spea Minimum Dev Total Circuit C Total Circuit C Device 1 Device 2 Device 3 Device 3 Device 4 Device 5 Device 5 Device 6 Device 6 Device 7 Device 8 Device 9 Device 10 Device 10 Device 10 Device 10 Device 11 END END END END END END END	9.500 O Point Me IS WITHIN Distance 555 oltage ercent Drop aker Voltage ice Voltage ice Voltage current in ar Power source to Device Power 2.000 0.500 0.	LIMITS Voltage Drop 0.60 24.40 2.39% c (25 or 70) rest device of circuit from previous device 65 90 40 40 40 40 40 50 80 60 40 70 55	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020	Distance 555 Voltage cent Drop R CIRCUI 50 50 50 At Device 24.91 24.82 24.78 24.75 24.72 24.63 24.65 24.63 24.60 25.60 2	Drop 0.835 24.16 3.34% 25 25 20 Wire Gauge 12 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.320 0.352 0.396 0.396 0.396 0.396 0.396 0.396 0.396 0.396	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.44% 1.28% 1.41% 1.48% 1.52% 1.58% 1.58% 1.58% 1.58% 1.58% 1.58%	Voltage ercent Drop	
END END END END Totals Totals CIRCUIT Totals Current 0.380 End of Line Va Pa Mominal Spea Minimum Dev Total Circuit C Total Circuit C Device 1 Device 1 Device 3 Device 3 Device 3 Device 3 Device 3 Device 3 Device 5 Device 5 Device 6 Device 5 Device 6 Device 5 Device 6 Device 7 Device 8 Device 7 Device 8 Device 9 Device 10 Device 10 Device 10 Device 11 END END END END END Totals	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop aker Voltage ice Voltage ice Voltage current in ar ovwer source to Device Power 2.000 0.500 0	LIMITS Voltage Drop 0.60 24.40 2.39% c (25 or 70) c (25 o	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020 0.000 0.000 0.000 0.000 0.000	Distance 555 Voltage cent Drop R CIRCUI 50 50 50 50 4 24.91 24.82 24.75 24.72 24.68 24.63 24.63 24.63 24.60 25.60 2	Drop 0.835 24.16 3.34% 25 20 Wire Gauge 12 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.320 0.352 0.371 0.381 0.392 0.396 0.396 0.396 0.396 0.396 ne Voltage	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.14% 1.28% 1.41% 1.42% 1.52% 1.52% 1.58% 1.5	Voltage ercent Drop	
END END END END Totals Totals CIRCUIT Totals Current 0.380 End of Line Vo Pol Nominal Spea Minimum Dev Total Circuit C Total Circuit C Device 1 Device 1 Device 1 Device 3 Device 3 Device 3 Device 3 Device 3 Device 3 Device 5 Device 5 Device 3 Device 3 Device 5 Device 6 Device 5 Device 6 Device 7 Device 8 Device 9 Device 10 Device 10 Device 11 END END END END END Totals	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop aker Voltage ice Voltage ice Voltage current in ar ower source to Device Power 2.000 0.500 0.	LIMITS Voltage Drop 0.60 24.40 2.39% c (25 or 70) nps c (25 or 70) c (25 or 7	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020	Distance 555 Voltage cent Drop R CIRCUI 50 50 At Device 24.91 24.82 24.75 24.72 24.63 24.63 24.63 24.63 24.60 25.60 26.60	Drop 0.835 24.16 3.34% T No.S5 25 20 Wire Gauge 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.371 0.381 0.392 0.396 0.396 0.396 0.396 0.396 ne Voltage Ethod N LIMITS	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.14% 1.28% 1.51% 1.52% 1.52% 1.58	Voltage ercent Drop	ethod LIMITS
END END END END END Totals Totals CIRCUIT Totals Current 0.380 End of Line Vi Pol Nominal Spea Minimum Dev Total Circuit C Total Circuit C Device 1 Device 1 Device 1 Device 2 Device 3 Device 3 Device 3 Device 3 Device 3 Device 5 Device 5 Device 5 Device 5 Device 6 Device 5 Device 6 Device 7 Device 8 Device 7 Device 8 Device 9 Device 10 Device 10 Device 11 END END END END END END Totals Current Current Current Current Current	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent or o Device Power 2.000 0.500	LIMITS Voltage Drop 0.60 24.40 2.39% (25 or 70) red (2	Totals Current 0.380 End of Line Perr SPEAKE 0.340 8.500 Calculated Device Current 0.080 0.020	Distance 555 Voltage cent Drop R CIRCUI 	Drop 0.835 24.16 3.34% 25 20 Wire Gauge 12 12 Voltage Drop from source 0.088 0.180 0.218 0.253 0.285 0.320 0.352 0.320 0.352 0.320 0.352 0.320 0.352 0.320 0.396 0	Current 0.380 End of Line P Ohm's Per 1000 1.98 1.98 1.98 Percent Drop 0.35% 0.72% 0.87% 1.01% 1.14% 1.28% 1.01% 1.41% 1.28% 1.52% 1.58	Voltage ercent Drop	ethod LIMITS Voltage Drop 0.424
END END END END Totals CIRCUIT Totals Current 0.380 End of Line Ve Pe Nominal Spea Minimum Dev Total Circuit C	9.500 o Point Me IS WITHIN Distance 555 oltage ercent Drop ercent Drop ercent Drop ercent Drop	LIMITS Voltage Drop 0.60 24.40 2.39% (25 or 70) nps	Totals Current 0.380 End of Line Pero SPEAKE 0.340 8.500	Distance 555 Voltage cent Drop	Drop 0.835 24.16 3.34% T No.S5 25 20 Wire Gauge	Current 0.380 End of Line P Ohm's Per 1000	Voltage ercent Drop	

			SPEAKE	R CIRCUI	T No.S6		
Nominal Spea	aker Voltage	(25 or 70)			25		
Minimum Dev	ice Voltage				20		
Total Circuit C	Current in arr	nps	0.120		Wire	Ohm's	
Total Circuit F	Power		3.000		Gauge	Per 1000	
Distance from	source to 1	st device		50	12	1.98	
Wire Gauge f	or balance o	f circuit			12	1.98	
		from	Calculated		Voltage		
Device	Device	previous	Device	At	Drop from	Percent	
Number	Power	device	Current	Device	source	Drop	
Device 1	0.500	120	0.020	24.94	0.057	0.23%	
Device 2	0.500	50	0.020	24.92	0.077	0.31%	
Device 3	2.000	40	0.080	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
END			0.000	24.91	0.089	0.36%	
Totals	3.000	210		End of Li	ne Voltage	24.91	
Point f	o Point Met	thod	End o	of Line Me	ethod	Load C	enterin
CIRCUIT	IS WITHIN	LIMITS	CIRCUIT	IS WITHI	N LIMITS	CIRCUIT	IS WIT
Totals		Voltage	Totals		Voltage	Totals	
Current	Distance	Drop	Current	Distance	Drop	Current	Distan
0.120	210	0.09	0.120	210	0.100	0.120	210
End of Line V	oltage	24.91	End of Line	Voltage	24.90	End of Line	Voltage
P	ercent Drop	0.36%	Perc	cent Drop	0.40%	Pe	ercent D

			SPEAKE	R CIRCUI	T No.S7		
Nominal Sp	eaker Voltage	(25 or 70)			25		
/linimum De	evice Voltage				20		
Fotal Circuit	Current in an	nps	0.340		Wire	Ohm's	
Fotal Circuit	Power		8.500		Gauge	Per 1000	
Distance fro	m source to 1	st device		50	12	1.98	
Nire Gauge	for balance o	f circuit			12	1.98	
		from	Calculated		Voltage		
Device	Device	previous	Device	At	Drop from	Percent	
Number	Power	device	Current	Device	source	Drop	
Device 1	0.500	85	0.020	24.89	0.114	0.46%	
Device 2	0.500	45	0.020	24.83	0.171	0.69%	
Device 3	0.500	45	0.020	24.78	0.225	0.90%	
Device 4	0.500	45	0.020	24.73	0.275	1.10%	
Device 5	2.000	55	0.080	24.67	0.331	1.33%	
Device 6	0.500	45	0.020	24.64	0.364	1.45%	
Device 7	0.500	45	0.020	24.61	0.392	1.57%	
Device 8	0.500	45	0.020	24.58	0.417	1.67%	
Device 9	2.000	55	0.080	24.56	0.443	1.77%	
Device 10	0.500	55	0.020	24.55	0.452	1.81%	
Device 11	0.500	45	0.020	24.54	0.455	1.82%	
END			0.000	24.54	0.455	1.82%	
END			0.000	24.54	0.455	1.82%	
END			0.000	24.54	0.455	1.82%	
END			0.000	24.54	0.455	1.82%	
END			0.000	24.54	0.455	1.82%	
Fotals	8.500	565		End of Li	ne Voltage	24.54	
Poin	t to Point Met	hod	End	of Line M	ethod	Load C	enterin
CIRCUI	T IS WITHIN	LIMITS	CIRCUIT	IS WITHI	N LIMITS	CIRCUIT	' IS WIT
Totals		Voltage	Totals		Voltage	Totals	
Current	Distance	Drop	Current	Distance	Drop	Current	Distan
0.340	565	0.46	0.340	565	0.761	0.340	565
End of Line	Voltage	24.54	End of Line	Voltage	24.24	End of Line	Voltage
	Percent Drop	1.82%	Pero	cent Drop	3.04%	Pe	ercent D

			SPEAKE	R CIRCUI	T No.S8		
Nominal Speal	ker Voltage	(25 or 70)			25		
Minimum Devi	ce Voltage				20		
Total Circuit C	urrent in am	ips	0.240		Wire	Ohm's	
Total Circuit Po	ower		6.000		Gauge	Per 1000	
Distance from	source to 1	st device		50	12	1.98	
Wire Gauge fo	r balance of	f circuit			12	1.98	
		from	Calculated		Voltage		
Device	Device	previous	Device	At	Drop from	Percent	
Number	Power	device	Current	Device	source	Drop	
Device 1	2.000	180	0.080	24.83	0.171	0.68%	
Device 2	0.500	55	0.020	24.79	0.206	0.82%	
Device 3	0.500	45	0.020	24.77	0.231	0.92%	
Device 4	0.500	45	0.020	24.75	0.252	1.01%	
Device 5	0.500	45	0.020	24.73	0.270	1.08%	
Device 6	2.000	40	0.080	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
END			0.000	24.72	0.283	1.13%	
Totals	6.000	410		End of Li	ne Voltage	24.72	
Point to	o Point Met	hod	End	of Line M	ethod	Load C	enterin
CIRCUIT I	S WITHIN I	IMITS	CIRCUIT	IS WITHI	N LIMITS	CIRCUIT	IS WIT
Totals		Voltage	Totals		Voltage	Totals	
Current	Distance	Drop	Current	Distance	Drop	Current	Distan
0.240	410	0.28	0.240	410	0.390	0.240	410
End of Line Vo	ltage	24.72	End of Line	Voltage	24.61	End of Line	Voltage
Pe	rcent Drop	1.13%	Perc	cent Drop	1.56%	Pe	ercent D

Nominal Speaker Voltage (25 or 70 Minimum Device Voltage					
Minimum Device Voltage			25		<u> </u>
	,		20		
Total Circuit Current in amps	0.100		Wire	Ohm's	
Total Circuit Power	2.500		Gauge	Per 1000	
Distance from source to 1st device		50	12	1.98	
Wire Gauge for balance of circuit			12	1.98	
from	Calculated		Voltage		
Device Device previous	B Device	At	Drop from	Percent	
Number Power device	Current	Device	source	Drop	
Device 1 0.500 210	0.020	24.92	0.083	0.33%	
Device 2 2.000 50	0.080	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
END	0.000	24.90	0.099	0.40%	
Totals 2.500 260		End of Li	ne Voltage	24.90	
Deint to Deint Mathed	End	of Line M	- 414 41	Load (ontorir
	End				
	CIRCUIT	15 WITH	N LIVIIIS	CIRCUIT	15 WI
Totals Voltage	Totals		Voltage	Totals	
Current Distance Drop	Current	Distance	Drop	Current	Distar
0.100 260 0.10	0.100	260	0.103	0.100	260
End of Line Voltage 24.90	End of Line	Voltage	24.90	End of Line	Voltage
Percent Drop 0.40	% Per	cent Drop	0.41%	Pe	ercent D

		VOLTA	GE DROP	P (VD) CA	LCULATI	ON - VISI		CUIT No.	V1						VOLT	AGE DRO	P (VD) CA	LCULATI	ON - VISU		UIT No.V	9	
Ohm's	DEVICE # GAUGE WIRE	1st 12	2nd 12	3rd 12	4th 12	5th 12	6th 12	7th 12	8th 12	9th 12	10th 12		GAUGE V		1st 12	2nd 12	3rd 12	4th 12	5th 12	6th 12	7th 12	8th 12	9
er 1000 1.98	AMPS OF DEVICE	40	30 0.043	35 0.043	30 0.043	30 0.043	25 0.063	55 0.043	70 0.111	35 0.041			AMPS O		0.043	0.043	40 0.111						
1.98	VOLT. DROP @ DEV.	0.473	0.43 0.043	0.387 0.045	0.344 0.034	0.301 0.03	0.258 0.021	0.195 0.035	0.152	0.041	0 0		VOLT. D	ROP @ DEV	0.197 · 0.163	0.154	0.111 0.015	0	0	0 0	0 0	0 0	0
Drop 0.23%	TOTAL CIRCUIT AMPS =	0.473			WIRE	RESIS.	CIRC.		FORMU	ILA			TOTAL CI	RCUIT AMPS :	= 0.197			WIRE	RESIS.	CIRC.		FORMUL	A
0.31% 0.36%	TOTAL VOLT DROP =	0.311			SIZE 10	/M FT. 1.29	MILS. 10380		I * FEET	「* 21.6			TOTAL VO	OLT DROP =	0.19			SIZE 10	/M FT. 1.29	MILS. 10380		I * FEET	* 21
0.36%	CKT_VOLTAGE =	20.4			12 14	2.01 3.19	6530 4110		C.M.				CKT VOL	TAGE =	20.4			12 14	2.01 3.19	6530 4110		C.M.	
0.36%		1 5%			16	5.08	2580								0.9%			16	5.08	2580			
0.36%	% VOLTAGE DROF -	1.5%											% VOLTA	GE DROF -	0.9%								
0.36%									10			1											
0.36%	DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	-											
0.36%	GAUGE WIRE DISTANCE (FT)	12 75	12 80	12 70	12 50	12 50	12 85	12	12	12	12												
24.91	AMPS OF DEVICE TOTAL AMPS@DEV.	0.111 0.606	0.111 0.495	0.107 0.384	0.107	0.107	0.063	0	0	0	0	-											
Load Centering Method CIRCUIT IS WITHIN LIMITS	VOLT. DROP @ DEV.	0.15	0.131	0.089	0.046	0.028	0.018	0	0	0	0												
Totals Voltage	TOTAL CIRCUIT AMPS =	0.606			WIRE	RESIS.	CIRC.		FORMU	I ILA													
Current Distance Drop 0.120 210 0.050 d of Lipo Voltage 04.05	TOTAL VOLT DROP =	0.462			10	1.29	10380		I * FEET	1 * 21.6													
Percent Drop 0.20%	CKT VOLTAGE =	20.4			12	3.19	4110		С.М.														
	% VOLTAGE DROP =	2.3%			16	5.08	2580																
Ohm's		VOLTA	GE DROP	v (VD) CA	LCULATI	ON - VISI	UAL CIRC	CUIT No.'	V3]											
1.98 1.98	DEVICE # GAUGE WIRE	1st 12	2nd 12	3rd 12	4th 12	5th 12	6th 12	7th 12	8th 12	9th 12	10th 12												
Percent	DISTANCE (FT)	200	45	30 0.043	45 0 111	110	50 0 111	50 0 111	50 0 111	50 0 111													
0.46%	TOTAL AMPS@DEV.	0.863	0.752	0.709	0.666	0.555	0.444	0.333	0.222	0.111	0												
0.90%		0.571	0.112	0.07	0.099	0.202	0.073	0.055	0.037	0.018	0												
1.33% 1.45%	TOTAL CIRCUIT AMPS =	0.863			SIZE	/M FT.	CIRC. MILS.		FORMU														
1.57% 1.67%	TOTAL VOLT DROP =	1.238			10 12	1.29 2.01	10380 6530		I * FEET C.M.	* 21.6													
1.//% 1.81% 1.82%	CKT VOLTAGE =	20.4			14 16	3.19 5.08	4110 2580					-											
1.82%	% VOLTAGE DROP =	6.1%										-											
1.82%	L		1	I	I	1	1	I		1	I												
1.82%		VOLTA	GE DROP	P (VD) CA		ON - VISI		CUIT No.'	V4	Oth	10 1 b]											
Load Centering Method	GAUGE WIRE	12	12	12	12	12	12	12	12	12	12												
CIRCUIT IS WITHIN LIMITS	AMPS OF DEVICE	0.111	35 0.111	45 0.111	50 0.111	50 0.111	50 0.111	50 0.111	80 0.063	0.063		-											
Totals Voltage Current Distance Drop	VOLT. DROP @ DEV.	0.903	0.792	0.681 0.101	0.57 0.094	0.459 0.076	0.348 0.058	0.237	0.126	0.063	0												
0.340 565 0.380 d of Line Voltage 24.62	TOTAL CIRCUIT AMPS =	0.903			WIRE	RESIS.	CIRC.		FORMU														
Percent Drop 1.52%		0 821			SIZE	/M FT.	MILS.			× 21 6													
		20.4			12	2.01	6530		C.M.														
Ohm's		20.4			14	5.08	2580																
er 1000 1.98	% VOLTAGE DROP =	4.0%																					
1.98									1/5			1											
Drop	DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th												
0.82%	GAUGE WIRE DISTANCE (FT)	12 40	12 45	12 45	12 70	12 40	12 40	12 40	12 110	12 60	12 40												
1.01% 1.08%	AMPS OF DEVICE TOTAL AMPS@DEV.	0.063	0.043	0.063	0.111 0.992	0.111 0.881	0.111 0.77	0.111 0.659	0.111 0.548	0.063 0.437	0.111 0.374	-											
1.13% 1.13%	VOLT. DROP @ DEV.	0.154	0.163	0.157	0.23	0.117	0.102	0.087	0.199	0.087	0.049												
1.13% 1.13%	DEVICE #	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th												
1.13% 1.13%		45	45	55		12	12				12												
1.13%	TOTAL AMPS@DEV.	0.041	0.222	0.111	0	0	0	0	0	0	0												
1.13%		0.039	0.033	0.02	0	0	0	0	0	0	0												
24.72	TOTAL CIRCUIT AMPS =	1.161			WIRE	RESIS.	CIRC.		FORMU	ILA													
Load Centering Method CIRCUIT IS WITHIN LIMITS	TOTAL VOLT DROP =	1.437			SIZE 10	/M FT. 1.29	MILS. 10380		I * FEET	「* 21.6		-											
Totals Voltage	CKT VOLTAGE =	20.4			12 14	2.01	6530 4110		C.M.														
Current Distance Drop 0.240 410 0.195 d of Lino Voltage 0.401		7.0%			16	5.08	2580																
Percent Drop 0.78%	% VOLTAGE DROF -	7.0%																					
1			GE DROP	<u>، (VD) د م</u>		ON - 1/101			V6			1											
	DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	-											
Ohm's	GAUGE WIRE DISTANCE (FT)	12 110	12 50	12	12	12	12	12	12	12	12												
1.98 1.98	AMPS OF DEVICE TOTAL AMPS@DEV.	0.111	0.111 0.111	0	0	0	0	0	0	0	0												
Percent	VOLT. DROP @ DEV.	0.081	0.018	0	0	0	0	0	0	0	0	-											
0.33%	TOTAL CIRCUIT AMPS =	0.222			WIRE	RESIS.	CIRC.		FORMU	ila I													
0.40%	TOTAL VOLT DROP =	0.099			10	1.29	10380		I * FEET	1 * 21.6													
0.40%	CKT VOLTAGE =	20.4			12	3.19	4110		C.IVI.														
0.40%	% VOLTAGE DROP =	0.5%			16	5.08	2580																
0.40%																							
0.40%		VOLTA	GE DROP	VD) CA	LCULATI	ON - VISI	UAL CIRC	CUIT No.'	V7]											
0.40%	DEVICE # GAUGE WIRE	1st 12	2nd 12	3rd 12	4th 12	5th 12	6th 12	7th 12	8th 12	9th 12	10th 12												
0.40%	DISTANCE (FT) AMPS OF DEVICE	80 0.111	45 0.111	45 0.111	45 0.111	75 0.111	45 0.111	45 0.111	90 0.111	45 0.111													
Load Centering Method	TOTAL AMPS@DEV. VOLT. DROP @ DEV.	0.999	0.888	0.777	0.666	0.555	0.444	0.333	0.222	0.111	0												
CIRCUIT IS WITHIN LIMITS		0.204	0.132	0.110	0.099	0.130	0.000	0.05	0.000		0												
Totals Voltage Current Distance Drop	TOTAL CIRCUIT AMPS =	0.999			SIZE	/M FT.	CIRC. MILS.		FORMU														
0.100 260 0.051 d of Line Voltage 24.95	TOTAL VOLT DROP =	0.947			10 12	1.29 2.01	10380 6530		I * FEET C.M.	「* 21.6 													
rercent Drop 0.21%	CKT VOLTAGE =	20.4			14 16	3.19 5.08	4110 2580					-											
	% VOLTAGE DROP =	4.6%										-											
	L		1	1	1	1	1	1	1		ı												
	DEVICF #	VOLTA(GE DROP	P (VD) CA		ON - VISI	UAL CIRO	CUIT No.'	V8 8th	Qth	10 1 b]											
		12	12	12	-+u1 12	12	12	12	12	12	12												
	AMPS OF DEVICE	0.063	20 0.063	35 0.111	40 0.111	45 0.111	40 0.111	0			0												
	VOLT. DROP @ DEV.	0.57	0.507	0.444 0.051	0.333	0.222	0.111	0	0	0	0												
	TOTAL CIRCUIT AMPS =	0.57			WIRE	RESIS.	CIRC.		FORMU														
	TOTAL VOLT DROP =	0.56			SIZE 10	/M FT. 1.29	MILS. 10380		I * FEFT	1 * 21.6		-											
		20 4			12	2.01	6530 4110		C.M.			1											
		20.4			14	5.08	2580			<u> </u>	<u> </u>												
	VULIAGE DROP =	2.7%]											





\supset SHEET NOTES

- 1. PROVIDE & INSTALL 2"C. FOR FIRE ALARM CABLES.
- 2. ROUTE CONDUIT VIA CANOPY.
- 3. PROVIDE & INSTALL 18" SQ. x 6" DEEP, NEMA 3R PULL CAN ON ROOF OF CANOPY.



- HEAT DETECTOR ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) #14 TWISTED-UNSHIELDED PAIR. CROSSHATCHES INDICATE THE NUMBER OF PAIRS.
- TYPE B = DENOTES NOTIFICATION APPLIANCE CIRCUITS (HORN, STROBES, BELL ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) PAIR OF #12 AWG. CRÓSSHATCHES INDICATE THE NUMBER OF PÁIRS.
- TYPE D = 6-STRAND 62.5 MICRON MULTI-MODE FIBER OPTIC CABLE, SUITABLE FOR UNDERGROUND USE.

GENERAL NOTES:

- A. CONTRACTOR SHALL LOCATE ALL (E) UNDERGROUND UTILITIES PRIOR TO TRENCHING AND TAKE CAUTION TO AVOID DAMAGE DURING TRENCHING. HAND TRENCH IF NECESSARY. CONTRACTOR SHALL MAKE ALL REPAIRS TO DAMAGED UTILITIES AT NO CHARGE TO OWNER.
- B. SEAL ALL EXTERIOR/INTERIOR BUILDING PENETRATIONS, CUT AND PATCH WALLS/CEILINGS FOR CONDUIT ROUTING AS NECESSARY. PAINT/FINISH EXPOSED CONDUITS/BOXES TO MATCH BUILDING FINISH. COORDINATE WITH FACILITIES MANAGER & ARCHITECT FOR EXACT REQUIREMENTS.



(DSA STAMP AREA) 93940 1b.com ED TO TH BLICATIC UCTION C A DATE CADD

FA2.1

CHECKED BY: SFA JOB NO:

21079

MB

DATE: 09/01/2021



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○ SHEET NOTES

1. PER GENERAL DEMOLITION NOTES; CONTRACTOR SHALL DEMOLISH ALL FIRE ALARM AT THIS BUILDING COMPLETE. CONTRACTOR SHALL PROVIDE & INSTALL BLANK COVER PLATE AT LOCATIONS WHERE DEVICES WERE REMOVED. PAINT/FINISH DEVICE PLATES TO MATCH EXISTING WALLS/CEILINGS. WHERE SURFACE RACEWAYS ARE EXISTING FOR FIRE ALARM CONNECTIONS, REMOVE COMPLETE & PAINT/FINISH WALLS/CEILINGS.

GENERAL DEMOLITION NOTES

- A. CONTRACTOR SHALL FIELD VERIFY EXTENT OF ELECTRICAL DEMOLITION AND QUANTITIES OF ELECTRICAL TO BE REMOVED AS DICTATED BY THE REQUIREMENTS OF THE PROJECT.
- B. REMOVAL SHALL INCLUDE WIRING, RACEWAY, BOXES, SWITCHES, LIGHT FIXTURES, ETC. AS INDICATED ON THE PLANS AND AS REQUIRED BY THESE DEMOLITION NOTES.
- C. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE CONCEALED IN EXISTING REMAINING WALLS MAY BE ABANDONED IN PLACE. REMOVE WIRING FROM CONDUIT.
 D. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE EXPOSED SHALL
- E. WHERE REMOVAL OF EQUIPMENT OR WIRING IS INDICATED, IT SHALL INCLUDE ALL ASSOCIATED WIRING BACK TO LAST ACTIVE REMAINING OUTLET, DEVICE, FIXTURE OR PANEL.
- F. ELECTRICAL CONTRACTOR SHALL INSURE THAT ALL REMAINING ACTIVE CIRCUITS, DEVICES, OUTLETS, LIGHT FIXTURES, ETC. HAVE NOT BEEN DISCONNECTED OR MADE INOPERATIVE DURING DEMOLITION. ELECTRICAL CONTRACTOR SHALL RESTORE ALL INTERRUPTED OR DISCONNECTED CIRCUITS TO OPERATION.
- G. ELECTRICAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL REMOVED ELECTRICAL EQUIPMENT AND MATERIAL.
- H. NO REMOVED EQUIPMENT OR MATERIAL SHALL BE REUSED AS PART OF NEW WORK, U.O.N.
- EXISTING REMAINING CONCEALED RACEWAYS MAY BE REUSED FOR NEW WORK PROVIDED THEY MEET ALL REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK.
 EXISTING FLUSH OUTLETS MAY BE REUSED FOR NEW WORK PROVIDED THEY MEET ALL
- REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK, MEET THE REQUIREMENTS OF THE CURRENT C.E.C. FOR VOLUME AND COINCIDE WITH LOCATION SHOWN FOR THE NEW WORK.K. FLUSH OUTLET BOXES IN EXISTING WALLS TO REMAIN MAY BE ABANDONED IN PLACE. REMOVE
- L. EXISTING WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE
- CORRECT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL CONDITIONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.
- M. WHERE TELEPHONE, COMPUTER DATA, FIBER OPTICS, FIRE ALARM OR OTHER COMMUNICATIONS OUTLETS OR WIRING IS TO BE DEMOLISHED IT SHALL BE REMOVED BACK TO THE NEXT TERMINAL POINT. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER OR HIS REPRESENTATIVE TO HAVE EQUIPMENT AND WIRING DESIGNATED FOR REMOVAL OR PRESERVATION PRIOR TO REMOVAL OF OUTLET BOXES, CONDUIT OR WIRING BY ELECTRICAL CONTRACTOR.
- N. COORDINATE WITH OWNER PRIOR TO START OF DEMOLITION TO MINIMIZE POWER INTERRUPTIONS, WORK MAY HAVE TO OCCUR DURING NON-REGULAR BUSINESS HOURS. COORDINATE IN WRITING WITH OWNER ONE WEEK PRIOR TO PLANNED POWER INTERRUPTIONS.

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

○ SHEET NOTES

- 1. MOUNT TO STRUCTURE IN SOFFIT ABOVE ACCESSIBLE CEILING SPACE.
- WHERE NECESSARY, PROVIDE & INSTALL ACCESS PANEL FOR HEAT DETECTOR ABOVE
- 3. PROVIDE & INSTALL ENGRAVED LAMICOID NAMEPLATE ON FACE OF DEVICE READING "EOL".
- 4. UNLESS OTHERWISE NOTED, MOUNT TO STRUCTURE ABOVE ACCESSIBLE CEILING SPACE.
- 5. PROVIDE & INSTALL HEAT DETECTOR AT STAGE SKYLIGHT.
- REFLECTOR PLATE; INSTALL WITH DIRECT LINE OF SIGHT TO TRANSMITTER. FIELD VERIFY MOUNTING HEIGHT.
- 8. PROJECTED BEAM DETECTOR REMOTE TEST STATION WITH KEYLOCK. CONNECT TO TRANSMITTER PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. MOUNT AT +44" TO TOP OF BOX. VERIFY EXACT LOCATION WITH ARCHITECT.
- 9. HOMERUN TO RPS-1.

- 12. PROVIDE & INSTALL 2"C. FOR FIRE ALARM CABLES.
- 13. SEE FA2.1 FOR CONTINUATION.
- 14. ROUTE CONDUIT VIA CANOPY.

- NECESSARY.
- ALARM/ECS".

- REQUIREMENTS.

TYPE A =	DENOTES INITIATING DETECTION CIRCUITS (SI DETECTOR, HEAT DETECTOR ETC.) UNLESS O NOTED, PROVIDE (1) #14 TWISTED-UNSHIELDE CROSSHATCHES INDICATE THE NUMBER OF P.
TYPE B =	DENOTES NOTIFICATION APPLIANCE CIRCUITS STROBES, BELL ETC.) UNLESS OTHERWISE NO PROVIDE (1) PAIR OF #12 AWG. CROSSHATCHE THE NUMBER OF PAIRS.
TYPE D =	

0' 2' 4' 6' 8'

FIRE ALARM PLAN - BUILDING J SCALE: 1/8"=1'-0"

4

○ SHEET NOTES

- WHERE NECESSARY PROVIDE & INSTALL ACCESS PANEL FOR HEAT DETECTOR ABOVE CEILING; 24" SQ. OPENING MINIMUM.
- 2. PROVIDE & INSTALL ENGRAVED LAMICOID NAMEPLATE ON FACE OF DEVICE READING "EOL".
- 3. UNLESS OTHERWISE NOTED, MOUNT TO STRUCTURE ABOVE ACCESSIBLE CEILING SPACE.
- 4. PROVIDE & INSTALL 2"C. FOR FIRE ALARM CABLES.
- 5. ROUTE CONDUIT VIA CANOPY.
- 6. SEE FA2.1 FOR CONTINUATION.
- 7. PROVIDE & INSTALL 18" SQ. x 6" DEEP, NEMA 3R PULL CAN.

GE	NERAL NOTE	<u>-S:</u>
A.	CONTRACTO TO TRENCHI TRENCHING. ALL REPAIRS	OR SHALL LOCATE ALL (E) UNDERGROUND UTIL NG AND TAKE CAUTION TO AVOID DAMAGE DU HAND TRENCH IF NECESSARY. CONTRACTOR S TO DAMAGED UTILITIES AT NO CHARGE TO O
В.	SEAL ALL EX PATCH WALL PAINT/FINISH COORDINATI REQUIREME	TERIOR/INTERIOR BUILDING PENETRATIONS, C S/CEILINGS FOR CONDUIT ROUTING AS NECES EXPOSED CONDUITS/BOXES TO MATCH BUILE WITH FACILITIES MANAGER & ARCHITECT FOI NTS.
C.	ALL INDOOR ALL OUTDOC	SPEAKERS/HORNS SHALL BE 0.5 WATTS RATE OR SPEAKERS/HORNS SHALL BE 2 WATTS RATE
	CABLE LEG	GEND
	TYPE A =	DENOTES INITIATING DETECTION CIRCUITS (S DETECTOR, HEAT DETECTOR ETC.) UNLESS O NOTED, PROVIDE (1) #14 TWISTED-UNSHIELD CROSSHATCHES INDICATE THE NUMBER OF F
	TYPE B =	DENOTES NOTIFICATION APPLIANCE CIRCUIT

MOHR ELEMENTARY SCHOOL CAMPUS WIDE FIRE ALARM REPLACEMENT 3300 DENNIS DRIVE, PLEASANTON, CA 94588 DSA FILE NUMBER 01-32 PLEASANTON UNIFIED SCHOOL DISTRICT

GENERAL NOTES

PRE-BID SITE VISIT

CONTRACTOR SHALL VISIT THE PROJECT AREA IN ORDER TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND THE REQUIREMENTS OF THE PROJECT. THE CONTRACTOR MAY CONTACT THE ARCHITECT DURING THE BIDDING PHASE REGARDING CLARIFICATIONS AND PROJECT REQUIREMENTS.

<u>SAFETY</u>

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

DAMAGE TO STRUCTURE OR SYSTEMS TO REMAIN CONTRACTOR SHALL REIMBURSE THE OWNER FOR REPAIR AND REPLACEMENT, INCLUDING ARCHITECT'S FEES, FOR ANY DAMAGE CAUSED TO STRUCTURES, LANDSCAPE, SITE WORK, OR EXISTING SYSTEMS TO REMAIN, AS THE RESULT OF CONSTRUCTION OPERATIONS.

EXISTING CONDITIONS

ALL EXISTING CONDITIONS ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND BUILDING DATA AT THE JOB SITE. ANY DISCREPANCIES REQUIRING MODIFICATION TO THE CONSTRUCTION DOCUMENTS SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY. NO MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.

CONTRACTOR'S EQUIPMEN

COORDINATE WITH OWNER'S REPRESENTATIVE FOR APPROVED LOCATION OF JOB SITE ACCESS, PARKING, AND LOCATION OF CONTRACTOR'S EQUIPMENT AND MATERIAL STORAGE AREA. SEE SITE PLAN FOR ADDITIONAL NOTES.

UTILITY SHUT-DOWNS AND CONNECTIONS

ALL REQUIRED UTILITY SHUT DOWNS SHALL HAVE PRIOR APPROVAL FROM THE OWNER'S REPRESENTATIVE. REQUEST SHALL BE SUBMITTED WITH ADEQUATE ADVANCE NOTICE PER PROJECT REQUIREMENTS.

ASBESTOS AND ASBESTOS PRODUCTS

THE OWNER/OPERATOR AND CONTRACTOR SHALL BE AWARE THAT BUILDINGS CONSTRUCTED PRIOR TO 1978 (OR THERE ABOUT) POSSIBILITY CONTAIN ASBESTOS IN SOME EXISTING CONSTRUCTION MATERIALS, AND WILL LIKELY BE ENCOUNTERED DURING ALTERATIONS OR REMODELING.

UNDER CALIFORNIA TITLE 8, THE OWNER AND CONTRACTOR BOTH HAVE RESPONSIBILITIES TO DETERMINE THE EXISTENCE OF ASBESTOS CONTAINING MATERIALS IN AREAS TO BE ALTERED OR REMODELED PRIOR TO COMMENCEMENT OF WORK AND TO TAKE APPROPRIATE MEASURES TO PROTECT PERSONNEL. CAL-OSHA HAS JURISDICTION OVER ASBESTOS RELATED WORK. ASBESTOS RELATED WORK SHALL BE DONE IN ACCORDANCE WITH CALIFORNIA GENERAL INDUSTRIAL SAFETY ORDERS, TITLE 8, SECTION 341.6 THROUGH 341.14. ASBESTOS IN THE WORK ENVIRONMENT IS REGULATED BY TITLE 8, SECTION 5208.

THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT AND DISTRICT REGULATION 11-2-401.3 REQUIRES EVERY RENOVATION INVOLVING THE REMOVAL OF 100 SQ.FT., LN.FT, OR GREATER OF REGULATED ASBESTOS CONTAINING MATERIAL AND FOR EVERY DEMOLITION (EVEN WHEN NO ASBESTOS IS PRESENT), A NOTIFICATION MUST BE SENT TO THE BAAQMD AT LEAST 10 WORKING DAYS PRIOR TO COMMENCEMENT OF DEMOLITION / RENOVATION.

ALL BUILDING MATERIALS MUST BE ASBESTOS FREE.

THESE DOCUMENTS DO NOT ADDRESS CONTAINMENT FOR EXISTING AREAS OF ASBESTOS WHICH MAY BE DISCOVERED DURING CONSTRUCTION. THE OWNER'S ABATEMENT SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR THE DETECTION, REMOVAL, AND THE DISPOSAL OF ANY EXISTING ASBESTOS MATERIAL. ARCHITECTURAL AND ENGINEERING FEES FOR ADDITIONAL DESIGN EFFORT TO OBTAIN STATE APPROVALS, AS WELL AS THE COST OF ANY REPAIRS, FOR DAMAGE CAUSED OR REPLACEMENT OF EXISTING SYSTEMS TO REMAIN, DUE TO WORK PERFORMED BY THE ASBESTOS ABATEMENT SUBCONTRACTOR, SHALL BE THE RESPONSIBILITY OF SAID SUBCONTRACTOR.

CONSTRUCTION SCHEDULING

CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION OPERATIONS WITH OWNER'S REPRESENTATIVE PRIOR TO SCHEDULING AND START OF THE WORK. CONTRACTOR SHALL PROVIDE PROTECTION TO ALL EXISTING SPACES AND SYSTEMS WHICH ARE IN USE, ADJOINING THE PROJECT, AND NOT PART OF THE PROJECT.

INTERIOR FINISHES

INTERIOR FINISHES AND ALL WALL COVERING MATERIAL SHALL CONFORM TO CCR TITLE 24, PART 2, CHAPTER 8.

PIPES, DUCTS AND CONDUIT - SUPPORT AND BRACING

PIPES, DUCTS, AND CONDUITS SHALL BE SUPPORTED AND BRACED PER THE SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS", OPM 0052-13 SEISMIC BRACING AND SUPPORT SYSTEMS.

DRILLED-IN EXPANSION ANCHORS

WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.

TITLE 24 COMPLIANCE

THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS (2019 CBC). SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DSA BEFORE PROCEEDING WITH THE WORK.

ADMINISTRATIVE REQUIREMENTS FROM PART 1., TITLE 24, C.C.R.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT, AND APPROVED BY DSA, AS PER SECTION 4-338 - A DSA CERTIFIED PROJECT INSPECTOR EMPLOYED BY THE DISTRICT AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF WORK, PER SECTION 4-342.

- A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT SHALL CONDUCT ALL REQUIRED TEST AND INSPECTIONS FOR THE PROJECT. - SPECIAL INSPECTION PER SECTION 4-333 (C)

- CONTRACTOR SHALL SUBMIT VERIFIED REPORT OR SECTION 4-336 & 4-343 - ADMINISTRATION OR CONSTRUCTION PER PART 1, TITLE 24, C.C.R. - DUTIES OF ARCHITECT, STRUCTURAL ENGINEER, OR PROFESSIONAL

ENGINEER PER SECTION 4-333 (A) AND 4-341 - DUTIES OF CONTRACTOR PER SECTION 4-343 - VERIFIED REPORTS PER SECTION 4-343 AND 4-336

A COPY OF PARTS 1 TO 5 OF TITLE 24 SHALL BE KEPT AND AVAILABLE IN THE FIELD DURING CONSTRUCTION - DSA SHALL BE NOTIFIED AT START OF CONSTRUCTION AND PRIOR TO PLACEMENT OF CONCRETE PER SECTION 4-331 - SUPERVISION BY DSA PER SECTION 4-334

- DSA IS NOT SUBJECT TO ARBITRATION

GENERAL NOTES, cont.

ADMINISTRATIVE REQUIREMENTS

- ADDENDA MUST BE SIGNED BY ARCHITECT AND APPROVED BY DSA NO CHANGES OR REVISIONS SHALL BE MADE FOLLOWING WRITTEN APPROVAL WHICH
- AFFECTS ACCESS COMPLIANCE ITEM UNLESS SUCH CHANGES TO REVISIONS ARE SUBMITTED TO DSA FOR APPROVAL. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE SUBMITTED AS A
- CONSTRUCTION CHANGE DOCUMENT OR ADDENDA, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION CONSTRUCTION CHANGE DOCUMENTS MUST BE SIGNED BY THE FOLLOWING: -- ARCHITECT OR ENGINEER OF RECORD
- STRUCTURAL ENGINEER (WHEN APPLICABLE) ---- DELEGATED PROFESSIONAL ENGINEER
- -- DSA
- MATERIALS AND THEIR INSTALLATIONS SHALL COMPLY WITH APPLICABLE CODES. PER CBC 11B-104.1 "ALL DIMENSIONS ARE SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES EXCEPT WHERE THE REQUIREMENT IS STATED AS A RANGE WITH SPECIFIC MINIMUM AND MAXIMUM END POINTS.

COMPLIANCE WITH LOCAL ORDINANCES

GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

ABBREVIATIONS (REFER TO CONSULTANT DRAWINGS FOR ADDITIONAL ABBREVIATIONS)

.F.F. .P.	ABOVE FINISHED FLOOR ACCESS PANEL	LAM. LAV	LAMINATE LAVATORY
CT	ACOUSTIC TILE	M.B.	MACHINE BOLT
DJ. LUM.	ADJUSTABLE	M.S.	MACHINE SCREW
.B.	ANCHOR BOLT	MFG.	MANUFACTURER
PPROX. RCH.	APPROXIMATELY	M.B.	MARKER BOARD
C	ASPHALTIC CONCRETE	MATL. MAX.	MAXIMUM
? .М.	BENCH MARK	MECH.	MECHANICAL
LKG.	BLOCKING	MTL. MIN.	METAL MINIMUM
D. .W.	BOTH WAYS	MISC.	MISCELLANEOUS
OT.	BOTTOM	MID. (N)	
LDG. .U.R.	BUILDING BUILT-UP ROOFING	NOM.	NOMINAL
.B.	CATCH BASIN	N.I.C.	NOT IN CONTRACT
LG. EM.	CEMENT	N.T.S. NO. or #	NUMBER
.C or O.C.	CENTER TO CENTER	OCC.	OCCUPANT(CY)
ER. TILE		O.C.	
.0.	CLEANOUT	OPNG. OPP.	OPPOSITE
.O.T.G. I R	CLEANOUT TO GRADE	0.H.	OPPOSITE HAND
.A.H.R.	CLEAR ALL HEART	0.F.0.S. 0 H W S	OVAL HEAD WOOD SCREW
\\/	REDWOOD	O.D.	OVERFLOW DRAIN and/or
OL.	COLUMN	OFCI	OUTSIDE DIAMETER
OM.	COMMON		CONTRACTOR INSTALLED
ONC. ONST.	CONSTRUCTION	PR. part	PAIR
.H.	CONSTRUCTION HEART	PART. PL	PLATE
.J. ONT	CONSTRUCTION JOINT	d	PENNY (NAILS)
ONTR.	CONTRACTOR	PLAS. PLYWD.	PLASTER PLYWOOD
TR.	COUNTER	P.V.C.	POLY VINYL CHLORIDE
TSK. ET.	DETAIL	P.T. PI	PRESSURE TREATED
IA. or Ø	DIAMETER	R. or RAD.	RADIUS
IM.		R.W.L.	RAIN WATER LEADER
.a. R.	DISABLED ACCESS DOOR	RWD./R.W.	REDWOOD
.S.	DOWNSPOUT	REQ'D	REQUIRED
WG. F	DRAWING DRINKING FOUNTAIN	R.A.G.	
	and/or DOUGLAS FIR	R.D.	ROOF DRAIN
A.	EACH	RM.	ROOM
.vv. LEC.		R.O. RND.	ROUGH OPENING ROUND
L. or		R.H.M.S.	ROUND HEAD METAL SCREW
LEV. NCL	ELEVATION ENCLOSE and/or ENCLOSURE	R.H.W.S.	ROUND HEAD WOOD SCREW
Q.	EQUAL	S.T.S.M.S.	SELF TAPPING SHEET
QUIP.	EQUIPMENT		METAL SCREW
-) X.	EXPANSION	SHEATH. S M	SHEATHING SHEET METAL
.J.	EXPANSION JOINT	S.M.S.	SHEET METAL SCREW
XP. XT.	EXTERIOR	S.O.V.	
.O.C.	FACE OF CONCRETE	SINI. S.C.	SOLID CORE
.O.M. 0 S	FACE OF MASONRY	SPEC.	SPECIFICATION
.0.F.	FACE OF FINISH	SQ. S.F.	SQUARE SQUARE FEET
IN.		STAG.	STAGGERED
.г. .S.	FINISHED FLOOR FINISH SLAB	STD.	STANDARD
.E.	FIRE EXTINGUISHER	S.S. STL.	STEEL
.E.C. H	FIRE EXTINGUISHER CABINET	STOR.	STORAGE
.H.M.S.	FLAT HEAD METAL SCREW	SIRUCI. S.A.G.	SUPPLY AIR GRILLE
.H.W.S.	FLAT HEAD WOOD SCREW	THRES.	THRESHOLD
.D.	FLOOR DRAIN	T&G T.J.	TONGUE & GROOVE
TG.	FOOTING	T.O.B.	TOP OF BEAM
ND.		T.O.C.	TOP OF CURB or CONCRETE
.l.	GALVANIZED IRON	T.O.W.	TOP OF WALK
A.	GAUGE	TYP.	
L. LU-LAM	GLUE-LAMINATED		UNLESS OTHERWISE NOTED
RD.	GRADE	V.T.R.	VENT THROUGH ROOF
YP. BD. DW	GYPSUM BOARD HARDWARE	VERT.	VERTICAL GRAIN
Т.	HEIGHT	V.I.F.	VERIFY IN FIELD
.C.	HOLLOW CORE	V.C.T.	
.ivi. ORIZ.	HORIZONTAL	V.0.LP.	VOICE OVER INTERNET PROTOCOL
.B.	HOSE BIBB	W.C.	WATER CLOSET
D. ISUI	INSIDE DIAMETER	W.H.	WATER HEATER
IT.	INTERIOR	W.R.	WATER RESISTANT
IV.		W.W.M.	WELDED WIRE MESH
Н.	JOINT JOIST HANGER	W.D. W/	WINDOW DIMENSION
D		• • /	
.D.	KILN DRIED	W/O	WITHOUT

BUILDING CODES AND STANDARDS:

2019	CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24	C.C.R.
2019	CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24,	C.C.R.
	2018 INTERNATIONAL BUILDING CODE, VOLUMES 1 AM	ND 2, WITH 2019
	CALIFORNIA AMENDMENTS.)	
2019	CALIFORNIA ELECTRIC CODE (CEC), PART 3, TITLE 24,	C.C.R.
	2018 NATIONAL ELECTRIC CODE WITH 2019 CALIFORM	IIA AMENDMENTS).
2019	CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE	24, C.C.R.
	2018 UNIFORM MECHANICAL CODE WITH 2019 CALIFC	RNIA
0040	AMENDMENTS).	
2019	CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24	, C.C.R.
0040	(2018 UNIFORM PLUMBING CODE WITH 2019 CALIFORM	NA AMENDMENTS).
2019	CALIFORNIA ENERGY CODE (CENC), PART 6, TITLE 24,	C.C.R.
2019	CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, C.C.R	
2010		$\frac{1}{2} = \frac{1}{2} = \frac{1}$
2015	C C R	、 1 11, 111 LL ∠4,
2019	CALIFORNIA REFERENCED STANDARDS PART 12 TITI	F24 CCR
2016	ASME A17.1 (W/A17.1a/CSA B44a-08 ADDENDA) SAFETY	CODE FOR
	ELEVATORS AND ESCALATORS	
2010	ADA STANDARDS FOR ACCESSIBLE DESIGN	
	28 CFR PART 35 FOR TITLE II ENTITIES)	
CCR TITL	E-19, PUBLIC SAFETY, STATE FIRE MARSHAL REGULA	TIONS.
NFPA 13	INSTALLATION OF SPRINKLER SYSTEMS	2016 EDITION
NFPA 14	INSTALLATION OF STANDPIPE & HOSE SYSTEMS	2016 EDITION
NEDA 17	(CA AMENDED)	
NEDA 17/		
NFPA 20	STATIONARY FIRE PLIMPS TO FIRE PROTECTION	2017 EDITION
NFPA 22	WATER TANKS FOR PRIVATE FIRE PROTECTION	2013 EDITION
NFPA 24	PRIVATE FIRE SERVICE MAINS	2016 EDITION
	(CA AMENDED).	
NFPA 25	INSPECTION, TESTING AND MAINTENANCE OF	2013
	WATER BASED FIRE PROTECTION SYSTEMS	CALIFORNIA
		EDITION
NFPA 72	NATIONAL FIRE ALARM CODE	2016 EDITION
NFPA 80	FIRE DOORS AND OTHER OPENING PROTECTIVES	2016 EDITION
NEDA 110		
NEDA 170	STANDARD FOR FIRE SAFETY AND EMERGENCY	
	SYMBOLS	2010 EDITION
NFPA 253	CRITICAL RADIANT FLUX OF FLOOR COVERING	2015 EDITION
	SYSTEMS	
NFPA 200	1 CLEAN AGENT FIRE EXTINGUISHING SYSTEMS	2015 EDITION
ICC 300	STANDARDS FOR BLEACHERS, FOLDING AND	2017 EDITION
	TELESCOPIC SEATING, AND GRANDSTANDS	
SFM 12-1	0-1 POWER OPERATED EXIT DOORS	
SFM 12-1	0-2 SINGLE POINT LATCHING OR LOCKING DEVIC	ES
SFM 12-1	U-3 EMERGENCY EXIT & PANIC HARDWARE	
111 38	MANULAL OPERATING SIGNAL BOYES	
	SMOKE DETECTORS FOR FIRE PROTECTIVE	
02 200	SIGNALING SYSTEMS	2000 EDITION
UL 268A	SMOKE DETECTORS DUCT APPLICATIONS	1998/2003 EDITION
UL 300	FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS	2005 (R2010)
	FOR PROTECTION OF COMMERCIAL COOKING	. ,
	EQUIPMENT	
UL 305	PANIC HARDWARE	2012 EDITION
UL 464	AUDIBLE SIGNALING DEVICES FOR FIRE ALARM	
	AND SIGNALING SYSTEMS, AND ACCESSORIES	2003 EDITION
UL 521		1999 EDITION
	ONITRALING OTOTENIO CANTRAL LINITS EAD EIDE DOATEATIVE	
01 004	SIGNALING SYSTEMS	

SYMBOLS LEGEND

SECTION / EXTERIOR ELEVATION - SECTION IDENTIFICATION - SHEET WHERE SECTION IS DRAWN

DETAIL A9.1 / ← — SHEET WHERE DETAIL IS DRAWN

> INTERIOR ELEVATION - INDICATES ELEVATION SHOWN — SHEET WHERE ELEVATION IS DRAWN

ROOM IDENTIFICATION CLASSROOM ROOM NAME 102 - ROOM NUMBER

SPECIFIC NOTE

/ 3

(102A)

 $\langle A \rangle$

(127)-

(+8'-0")

DOOR DESIGNATION WINDOW DESIGNATION

ADDENDUM REVISION CLOUD AROUND REVISION

CCD REVISION CLOUD AROUND REVISION

FINISH NUMBER SEE SPECS AND I.E. DWGS.

EQUIPMENT LETTER Α — SEE EQUIPMENT SCHEDULE

CEILING HEIGHT

WALL TYPE

MATCH LINE +8'-0" ELEV. HEIGHT

CENTER OF

FACE OF

THERE ARE NO DEFERRED SUBMITTALS FOR THIS PROJECT.

ARCHITECT SUGIMURA FINNEY ARCHITECTS

(408) 879-0600 (408) 377-6066 FAX

SAN JOSE, CA 95110 (408) 564-7925

COMPLIANCE WITH CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION AND CBC CHAPTER 33, SAFETY DURING CONSTRUCTION WILL BE ENFORCED.

UL 1971 SIGNALING DEVICES FOR THE HEARING IMPAIRED 2002 EDITION

(W/ REVISIONS THROUGH DEC. 2014)

DSA APPLICATION NUMBER 01-119909 **OPSC TRACKING NUMBER 75101-108**

PROJECT SUMMARY

REPLACING EXISTING FIRE ALARM SYSTEM WITH NEW ADDRESSABLE FIRE ALARM AND EM/VOICE EVACUATION

DRAWING INDEX

SYSTEM ACROSS ENTIRE SITE.

T1 TITLE SHEET T3 SITE PLAN - FIRE LIFE SAFETY

FIRE ALARM

- FA0.1 FIRE ALARM SYMBOLS, ABBRE., EQUIPMENT LIST, **OPERATIONAL MATRIX, DETAILS & NOTES**
- FA0.2 FIRE ALARM DETAILS FA1.1 FIRE ALARM RISER DIAGRAM
- FA1.2 FIRE ALARM RISER DIAGRAM FA1.3 FIRE ALARM BATTERY & VOLTAGE DROP CALCULATIONS
- FA1.4 FIRE ALARM BATTERY & VOLTAGE DROP CALCULATIONS FA2.1 FIRE ALARM SITE PLAN
- FA3.1 FIRE ALARM DEMOLITION PLAN
- FA4.1 FIRE ALARM PLAN BUILDING A, B, C, D, E, G & H FA4.2 FIRE ALARM PLAN - BUILDING J, R1 & R2 FA4.3 FIRE ALARM PLAN - BUILDING R3, R4, R5, R6, R7 & R8
- FA4.4 FIRE ALARM PLAN BUILDING R9 & R10

SHEET TOTAL = 14

DESIGN TEAM

2155 SOUTH BASCOM AVENUE SUITE 200 CAMPBELL, CALIFORNIA 95008

ATTN: MARK FINNEY MARK@SUGIMURA.COM

ELECTRICAL AND FIRE ALARM ENGINEER AURUM CONSULTING ENGINEERS 1798 TECHNOLOGY DRIVE, SUITE 242

BUILDING CODE ANALYSIS									
BUILDING	CONSTRUCTION TYPE OCCUPANCY TYPE	AREA (SQ.FT.)	* ALLOWABLE (SQ.FT.)	# OF STORIES					
BUILDING A	V-1 / A2.1	5,594	10,500	1					
BUILDING J	V-1 / E1	10,255	15,700	2					
** TOTAL AREA	V-N / E1	22,400	***	1					
BUILDING B	V-N / E1	2,880	9,500	1					
BUILDING C	V-N / E1	2,320	9,500	1					
BUILDING D	V-N / B2	3,072	9,500	1					
BUILDING E	V-N / E1	2,622	9,500	1					
PORTABLE KIDS CLUB	V-N / E3	1,504	9,500	1					

* AREA INCREASE USED FOR ORIGINAL CONSTRUCTION. NEW SCOPE OF WORK DOES NOT ENCROACH OPEN AREA. ** BUILDINGS "R1, 2, 3, 4, 5, 6, 7, 8, 9 & R10", BUILDING "H", & BUILDING "G". *** ALLOWABLE DURING ORIGINAL CONSTRUCTION.

PROJECT SUMMARY

REPLACING EXISTING FIRE ALARM SYSTEM WITH NEW ADDRESSABLE FIRE ALARM AND EM/VOICE EVACUATION SYSTEM ACROSS ENTIRE SITE.

GENERAL NOTES

A. THIS SHEET IS FOR FIRE LIFE SAFETY CODE RELATED ITEMS. FOR SCOPE OF WORK SEE SHEETS A0.1 AND A0.2. B. REFER TO FIRE ALARM AND FIRE PROTECTION DRAWINGS FOR EXTENT OF OTHER RELATED WORK.

GRAPHIC KEY

EXISTING PROPERTY LINE

— — — — — — ROOF OVERHANG

FIRE DEPARTMENT ACCESS. FIRE DEPARTMENT ACCESS IS 20'-0" WIDE AND RATED FOR 96,000 LBS.

---- (E) SIGN

(E) FIRE HYDRANT

EXISTING BUILDING

EXISTING RESTROOMS

F	FIRE ALARM EQUI	PMENT	LIST	FIRE ALARM GENERAL NOTES	GEN
SYMBOL FACPI	DESCRIPTION AND MODEL NUMBER ADDRESSABLE FIRE ALARM CONTROL PANEL, NOTIFIER NESS SERIES LIDAGE FIRED	MFGR'S PART No. NFS2-3030	CSFM LISTING 7165-0028:0224	1. WIRING MUST BE LISTED FOR USE AS REQUIRED BY TITLE 24/CEC, ARTICLE 760.	1. CONTRACTOR SHA SHALL BE U.L. LISTI
	MODULES FOR EACH AMPLIFIER CONNECTION. INSTALL SEMI-FLUSH MOUNTING CABINET, CAB-4 SERIES. PROVIDE & INSTALL FIRE ALARM	52 0000		2. WIRE USED IN WET LOCATIONS SHALL BE OF AN APPROVED TYPE IN ACCORDANCE WITH 3-310-8, T24/CEC (I.E. THHW OR EQUAL).	2. THE CONTRACTOR THIS CONTRACT W
	DOCUMENT CABINET NEXT TO FACP. DIGITAL VOICE COMMAND CONTROL SYSTEM WITH DIGITAL AUDIO LOOP TECHNOLOGY.	NOTIFIER DVC-EM	7165-0028:0224	 UNDER GROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRES APPROVED FOR WET LOCATION. ALL CONDUCTORS SUMMER DE DOUTED IN CONDUCTIVE FOR AFTERTIGHT FITTINGS 	3. CONTRACTOR SHA THE CONTRACTOR CONTRACT DOCUM
<u> </u>	WITH UP 8 CHANNELS OF AUDIO AND UP TO 5 CHANNELS OF FIREFIGHTER TELEPHONE COMMUNICATIONS, LOCAL KEYPAD FOR LOCAL ANNUNCIATION AND CONTROLS (DVC-KD).	5 EW		 4. ALL CONDUCTORS SHALL BE ROUTED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS. MINIMUM CONDUIT SIZE SHALL BE 3/4." 5. THE CONDUIT AND WIRE SHOWN ON THESE PLANS ARE SHOWN DIAGRAMMATICALLY, EXACT LOCATIONS SHALL BE DETERMINED IN THE 	TRADES WORK. THE ON PROJECT.4. CONTRACTOR SHATE OF THE ON TRACTOR SHATE OF THE ONE OF THE ONE
RPS	10.0A AUXILIARY POWER SUPPLY WITH 4 NAC OUTPUT CIRCUITS AND BUILT-IN SYNCHRONIZATION. NOTIFIER PSE-10 SERIES.	PSE-10	7315-0028:0513	6. PENETRATIONS OF FIRE RATED WALLS SHALL BE PROTECTED IN	5. CONTRACTOR SHA
DAA	50 WATT, 70.7VRMS DIGITAL AUDIO AMPLIFIER WITH CHARGING POWER SUPPLY AND 2 CLASS B OR 2 CLASS A OUTPUTS. NOTIFIER DAA SERIES.	DAA2-5070	7165-0028:0224	ACCORDANCE WITH CALIFORNIA BUILDING CODE, CHAPTER 7, TITLE 24. PROVIDE DETAILS OF THROUGH PENETRATION FIRE-STOP SYSTEMS FOR ALL PIPE/CABLE/CONDUIT PASSING THROUGH FIRE RATED WALLS/FLOORS REQUIRING PROTECTED OPENINGS.	6. ALL MATERIALS PR PROVIDE AND INST
2	ADDRESSABLE PHOTO ELECTRIC FIRE ALARM SMOKE DETECTOR AND BASE, NOTIFIER FSP-951 SERIES.	FSP-951	7272-0028:0503	 ALL DEVICES SHALL BE "CSFM" LISTED. EXTERIOR DEVICES SHALL BE LISTED FOR EXTERIOR USE BY "CSFM." 	7. CONTRACTOR SHA CONSTRUCTION SC
Ð	ADDRESSABLE FIRE ALARM HEAT DETECTOR AND BASE, 135 DEG. FIXED TEMPERATURE AND RATE-OF RISE, NOTIFIER FST-951 SERIES.	FST-951	7270-0028:0502	9. AUDIBLE FIRE ALARM SOUND LEVEL SHALL BE AT LEAST 15DBA ABOVE THE AVERAGE SOUND LEVEL.	8. CONTRACTOR SHA NECESSARY TO RE AT START OF WORK
Пр	ADDRESSABLE FIRE ALARM MANUAL PULL STATION, DUAL-ACTION WITH KEY RESET, NOTIFIER NBG-12LX SERIES.	NBG-12LX	7150-0028:0199	10. AUDIBLE SIGNALS INTENDED FOR OPERATION IN THE PUBLIC SHALL HAVE A SOUND LEVEL OF NOT LESS THAN 75DBA AT 10 FEET OR MORE THAN 110DBA AT THE MINIMUM HEARING DISTANCES FROM THE AUDIBLE APPLIANCE.	9. CONTRACTOR SHA REFER TO ARCHITE
	OPTICAL BEAM SMOKE DETECTOR, NOTIFIER FS-OSI-RI SERIES.	FS-OSI-RI	7260-0028:0509	11. WHERE VISUAL DEVICES ARE REQUIRED, VISUAL DEVICE SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE	10. ALL ELECTRICAL EC INTO BUILDINGS SH ELECTRICAL DEVIC
	FMM-1 SERIES. ADDRESSABLE CONTROL MODULE NOTIFIER FCM-1 SERIES.	FCM-1	7300-0028:0219	NOT LESS THAN 15 CANDELA. NO PLACE IN ANY ROOM SHALL BE MORE THAN 50 FEET FROM A DEVICE. 12. APPROVED BY THE "DIVISION OF THE STATE ARCHITECT/OFFICE OF	11. ALL CONDUITS UNL (1) #12 GROUND. "T SHALL BE RESPON
¤	WALL MOUNTED MULTI-CANDELA, STROBE WITH FIELD SELECTABLE CANDELA SETTINGS OF 15, 30, 75 AND 110 CANDELA. SYSTEM SENSOR, SRL SERIES.	SRL	7125-1653:0504	REGULATION SERVICES." CONTRACTOR SHALL PROVIDE COPIES OF APPROVED PLANS TO THE PROJECT INSPECTOR OF RECORD PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING TO	12. ALL BRANCH CIRC NOT ALLOWED.
Xc	CEILING MOUNTED MULTI-CANDELA STROBE WITH FIELD SELECTABLE CANDELA SETTINGS OF 15, 30, 75 AND 115 CANDELA.	SCRL	7125-1653:0504	ENGINEER PRIOR TO PURCHASE FOR REVIEW. THE FIRE PROTECTION SYSTEM SHALL NOT BE INSTALLED UNTIL SHOP DRAWINGS HAVE BEEN SUBMITTED TO AND RECEIVED BY THE ENGINEER OF RECORD.	13. COORDINATE ALL CONFLICTS.
 AMULTICATO HING CONTRACT DOLS DOL MALESSANDER STATUT STATUS DOLS DOLS MALESSANDE STATUS DOLS DOLS DOLS DOLS DOLS DOLS DOLS DOL	13. FINAL ALARM TEST SHALL BE WITNESSED BY THE DSA INSPECTOR OF RECORD (IOR). BOTH THE DSA INSPECTOR OF RECORD (IOR) AND THE LOCAL FIRE AUTHORITY SHALL BE NOTIFIED OF DATE AND TIME OF FINAL FIRE	15. ALL CONDUIT S			
Ø	CANDELA WITH VOLTAGE SETTING OF 70.7 VRMS AND POWER SETTINGS OF 兆, ½, 1 & 2 WATTS. SYSTEM SENSOR, SPSR SERIES.	SPSR	7320-1653:0505	CONTRACTOR SHALL PROVIDE "RECORD OF COMPLETION" TO THE INSPECTOR OF RECORD (IOR)/DSA AFTER COMPLETION OF OPERATIONAL ACCEPTANCE TEST.	NECESSARY. WI WORK OBTAIN F WHERE POSSIB
¥ ₩	CEILING MOUNTED MULTI-CANDELA, SPEAKER-STROBE WITH FIELD SELECTABLE CANDELA SETTINGS OF 15, 30, 75 & 115 CANDELA WITH VOLTAGE SETTING OF 70.7	SPSCR	7320-1653:0505	14. POWER SERVICE SHALL BE ON A DEDICATED, 120V BRANCH CIRCUIT, WITH A RED MARKING AND IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL."	16. WHERE IT IS NO NON-METALLIC { APPROVED BY 1
	VRMS AND POWER SETTINGS OF 1/4, 1/2, 1 & 2 WATTS. SYSTEM SENSOR, SPSCR SERIES.			15. AUTOMATIC FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AS AMENDED BY CFC CHAPTER 80. THE SUPERVISING STATION SHALL BE USEED AS EITHER UNLEY OF UNLES BY	17. EXTENSION RIN 18. CONTRACTOR
	ALARIW/VOICE EVACUATION SPEAKER WITH VOLTAGE SETTING OF 70.7 VRMS AND POWER SETTINGS OF $\frac{1}{4}$, $\frac{1}{2}$, 1 & 2 WATTS. SYSTEM SENSOR, SPRK SERIES.	SPRK	7320-1653:0201	UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011. 16. EXISTING FIELD DEVICES AND FACP SHALL REMAIN IN PLACE LINTIL NEW	UNDERGROUND OWNER.
EOL	END OF LINE DEVICE.	-	-	FIELD DEVICES ARE IN PLACE AND NEW WIRING HAS BEEN HOMERAN TO NEW LOCATION OF FACP. COORDINATE THE RELOCATION OF THE FACP TO MINIMIZE THE DOWN TIME OF FIRE ALARM SYSTEM. CONTRACTOR SHALL	19. EXISTING WIRING CONTRACTOR S CONDITIONS AN
				FIRE WATCH UNTIL NEW FIRE ALARM SYSTEM IS OPERATIONAL.	20. WHERE NON-MET FULLEST EXTENT WILL BE PERMITT
					21. ALL INSTALLATIC ARCHITECT BEF
					CONCEALED EI DETERMINED, (PLEASING MEA
					DUE TO ROUT
					[
		FIRI	= ALARIV	ALARM TROUBLE SUPERVISORY MISC.	
			IN CONTRACTOR		
		ې رېړې			
			25/61/57/57/57/57/57/57/57/57/57/57/57/57/57/		
	CAUSE SMOKE DETECTORS HEAT DETECTORS			<u> </u>	
	TAMPER SWITCH SYSTEM RESET SIGNAL SILENCE				
	AC POWER FAILURE CARBON MONOXIDE FIRE ALARM TROUBLE (OPEN,		• • •		
	SHORTS, OR GROUNDS) ON INITIATION OR SIGNALING CIF	RCUITS			[
					M/E/P COMPONENT AN
					DE FAILS ON THE DSA COMPONENTS SHALL PRESCRIBED IN THE
					 ALL PERMANE TEMPORARY (UTILITY SERVI
					ELECTRICAL C 3. TEMPORARY, M MASS LOCATE
					THE COMPONE THE FOLLOWING ME(STRUCTURE BUT NE
					PROVIDED BETWEEN CONNECTIONS MUST
					A. COMPONENT ABOVE THE / B. COMPONEN ⁻

GENERAL CONSTRUCTION NOTES

ACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT BE U.L. LISTED AND LABELED FOR THE APPLICATION. NTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY

ACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING AND ALLOW FOR ALL FIELD CONDITIONS. NTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL ACT DOCUMENTS. THE CONTRACTOR SHALL OBTAIN INFORMATION AND BE FAMILIAR WITH ALL OTHER WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES JECT.

ACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE NCE COVERAGE AS NECESSARY FOR LIABILITY AND PERSONAL, PROPERTY DAMAGE, TO FULLY CT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK. ACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS CTRICAL SYSTEMS. THE CONTRACTOR SHALL AT THE CONCLUSION OF THE PROJECT PROVIDE ATE "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.

FERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO E AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.

ACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE RUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES. ACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" CARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING

RT OF WORK. ACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

ECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN JILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS.

NDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12s WITH ONE GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR ROUGH ESTIMATING ONLY. THE CONTRACTOR BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE. NCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS. SHARED NEUTRALS ON MULTIWIRE CIRCUITS IS

OWED. INATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID

ACTOR SHALL PROVIDE IN EVERY NEW EMPTY CONDUIT A DRAW STRING FOR USE IN FUTURE RUCTION.

NDUIT SHALL BE CONCEALED WHERE POSSIBLE. CUT AND PATCH EXISTING WALLS WHERE SARY. WHERE IT IS NECESSARY TO CUT OR BORE EXISTING STRUCTURAL WALLS FOR NEW ELECTRICAL OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO STARTING WORK. REUSE EXISTING CONDUIT POSSIBLE.

E IT IS NOT POSSIBLE TO REUSE EXISTING CONDUIT OR RUN NEW CONCEALED CONDUIT USE ETALLIC SURFACE RACEWAY AND BOXES. ROUTING OF ALL NON-METALLIC RACEWAYS SHALL BE /ED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN. ION RINGS OR RESET BOXES TO BE FLUSH WITH NEW WALL THICKNESS.

ACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UNDERGROUND SYSTEMS (GAS, TELEPHONE, ELECTRICAL, SEWER, ETC.). THE CONTRACTOR SHALL REPAIR & PAY ALL EXPENSES FOR E TO EXISTING UNDERGROUND SYSTEMS AS A RESULT OF NEW WORK. REPAIR TO DAMAGED GROUND SYSTEMS SHALL BE TO THE OWNERS SATISFACTION WITHOUT EXTRA EXPENSE TO THE

G WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL ACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL IONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.

NON-METALLIC SHEATHED CONDUCTORS ARE FOUND, THE CONTRACTOR SHALL REMOVE TO T EXTENT PER THE GENERAL DEMOLITION NOTES AND REPLACE WITH CONDUIT. METAL CLAD CABLE PERMITTED ON A CASE-BY-CASE BASIS ONLY BY WRITTEN APPROVAL FROM THE ARCHITECT.

TALLATION OF EXPOSED SURFACE MOUNTED RACEWAY IN PUBLIC AREAS SHALL BE REVIEWED BY ECT BEFORE ROUGH-IN, CONTRACTOR IS TO DETERMINE THE ACCESSIBILITY OF ATTIC. FURRED HOLLOW MULLIONS. ETC. IN EACH AREA AND REVIEW WITH ARCHITECT. IF SYSTEM CAN BE ROUTED ALED EITHER BY FISHING OR ACCESSIBILITY, CONTRACTOR IS TO DO SO. IF INACCESSIBILITY IS 11NED, CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAY IN THE MOST AESTHETICALLY IG MEANS AS DETERMINED BY THE ARCHITECT. NO ALLOWANCE FOR ADDITIONAL COMPENSATION ROUTING AS DIRECTED BY THE ARCHITECT WILL BE MADE.

SHEET INDEX

FA0.1 FIRE ALARM SYMBOLS, ABBREVIATIONS, EQUIPMENT LIST, OPERATIONAL MATRIX, DETAILS & NOTES.

- FA0.2 FIRE ALARM DETAILS.
- FA1.1 FIRE ALARM RISER DIAGRAM.
- FA1.2 FIRE ALARM RISER DIAGRAM.
- FA1.3 FIRE ALARM BATTERY & VOLTAGE DROP CALCULATIONS.
- FA1.4 FIRE ALARM BATTERY & VOLTAGE DROP CALCULATIONS. FA2.1 FIRE ALARM SITE PLAN.
- FA3.1 FIRE ALARM DEMOLITION PLAN.
- FA4.1 FIRE ALARM PLAN BUILDINGS A, B, C, D, E, G & H.
- FA4.2 FIRE ALARM PLAN BUILDINGS J, R1 & R2.
- FA4.3 FIRE ALARM PLAN BUILDINGS R3, R4, R5, R6, R7 & R8.
- FA4.4 FIRE ALARM PLAN BUILDING R9 & R10.

EQUIPMENT ANCHORAGE

ONENT ANCHORAGE NOTES:

IICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING IS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS) IN THE 2019 CBC, SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26 & 30: PERMANENT EQUIPMENT AND COMPONENTS.

PORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED(e.g. HARD WIRE) TO THE BUILDING TY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL TRICAL CONNECTIONS EXCEPT PLUGS FOR 120 / 220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE. PORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF S LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT

COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA. VING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE , BUT NEED NOT BE DETAILED IN THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS TWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FELXIBLE NS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

PONENTS WEIGHTING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS /E THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

PONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 NDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL. DRAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT OF THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6. 13.6.7, 13.6.8 AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON PRE-APPROVED INSTALLATION GUIDE (e.g. OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS. MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP I MD PP E E - OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. MP MD PP E - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM #)

	IDOL3		
ПР	MANUAL PULL STATION	$\widehat{\mathbf{T}}$	BELL (GONG)
X	STROBE ONLY	FACP	FIRE ALARM CONTROL PANEL
Ø.		RPS	REMOTE POWER SUPPLY
∇		AMP	DIGITAL AUDIO AMPLIFIER
Ď	SPEAKER ONLY	EOL	END OF LINE
∇ M ∇	MINI HORN	@/Ю	JUNCTION BOX - CEILING/WALL SIZE PER CODE, TAPE AND TAG
Å	SPEAKER/STROBE		PULLBOX
X X X	SPEAKER/STROBE (CEILING MOUNTED)	(III)	CONDUIT - HOME RUN TO PANE TERMINAL CABINET, ETC. AS IN - RUNS MARKED WITH CROSSHA
0 X	CHIME/STROBE	#10	INDICATE NUMBER OF #12 AWG WHEN MORE THAN TWO. SIZE (ACCORDING TO SPECIFICATION
	HEAT DETECTOR		APPLICABLE CODE. - CROSS HATCHES WITH NUMBE
€A	HEAT DETECTOR (ABOVE ACCESSIBLE CEILING)		ADJACENT INDICATES WIRE SIZ THAN #12 AWG.
(\mathbf{I})	SMOKE DETECTOR		CONDUIT - EXISTING
Ľ			CONDUIT - CONCEALED IN WALLS C
(\mathbf{I})	DUCT SMOKE DETECTOR		CONDUIT - IN OR BELOW FLOOR: 3/4
Q	TAMPER SWITCH	<u>ب</u>	CONDUIT CONTINUATION.
8	FLOW SWITCH	201	ROOM NUMBER.
Ň	POST INDICATING VALVE	$\langle 2 \rangle$	SHEET NOTE REFERENCE SYME SEE ASSOCIATED NOTE ON SAM SHEET.
		$\begin{pmatrix} 2\\ E1 \end{pmatrix}$	DETAIL OR SECTION DESIGNATI
ABB	REVIATIONS		
ARCH AWG	ARCHITECT	FSD IDC	FIRE SMOKE DAMPER INITIATING DEVICE CIRCUITS
BKR	BREAKER	(N)	NEW
C CO	CONDUIT CONDUIT ONLY	NAC	NOTIFICATION APPLIANCE
СВ	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CKT	CIRCUIT	NO	NUMBER
CLG	CEILING	SLC	SIGNALING LINE
(E)	EXISTING		
EOL	END OF LINE		
FA	FIRE ALARM	001	NOTED
FACP	FIRE ALARM CONTROL PANEL	WP	WEATHERPROOF
FBO	FURNISHED BY OTHERS		

FIRE ALARM SYSTEM REPLACEMENT FOR EXISTING CAMPUS TO MEET CURRENT CODE REQUIREMENTS. THE INTENT OF THE PROJECT IS TO REPLACE EXISTING FIRE ALARM SYSTEM COMPLETE.

SYSTEM DESCRIPTION: SLC = CLASS B IDC = CLASS B NAC = CLASS B

CODES:

- 1. 2019 CALIFORNIA ADMINISTRATIVE CODE C.C.R., TITLE 24, PART 1.

- 12. NATIONAL FIRE ALARM CODE (NFPA 72) 2016.

STANDARDS:

- 2. ELECTRONICS INDUSTRIES ASSOCIATION (EIA)
- 3. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)

FIRE ALARM RISER DIAGRAM

NO SCALE

CABLE LEGE	<u>END</u>
TYPE A =	DENOTES INITIATING DETECTION CIRCUITS (SMOKE DETECTOR, HEAT DETECTOR ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) #14 TWISTED-UNSHIELDED PAIR. CROSSHATCHES INDICATE THE NUMBER OF PAIRS.
TYPE B =	DENOTES NOTIFICATION APPLIANCE CIRCUITS (HORN, STROBES, BELL ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) PAIR OF #12 AWG. CROSSHATCHES INDICATE THE NUMBER OF PAIRS.
TYPE D =	6-STRAND 62.5 MICRON MULTI-MODE FIBER OPTIC CABLE.

			VOLTAGE DF	ROP CALCS
SPEAKER CIRCUIT No.S1 Nominal Speaker Voltage (25 or 70)	SPEAKER CIRCUIT No.S6 Nominal Speaker Voltage (25 or 70)] 25	SPEAKER CIRCUIT No.S11 Nominal Speaker Voltage (25 or 70) 125	SPEAKER CIRCUIT No.16 Nominal Speaker Voltage (25 or 70) 25	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V1
Minimum Device Voltage 20 Total Circuit Current in amps 0.300 Wire Ohm's Total Circuit Power 7.500 Gauge Per 1000	Minimum Device Voltage 20 Total Circuit Current in amps 0.080 Wire Ohm's Total Circuit Power 2.000 Gauge Per 1000	Minimum Device Voltage 20 Total Circuit Current in amps 0.120 Wire Ohm's 000 Total Circuit Power 3.000 Gauge	Minimum Device Voltage 20 Total Circuit Current in amps 0.140 Wire Ohm's Total Circuit Power 3.500	DEVICE # 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th GAUGE WIRE 12 <td< td=""></td<>
Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	AMPS OF DEVICE 0.063 0.063 0.063 0.063 0.063 0.041 0.041 0.107 0.041 0.063 TOTAL AMPS@DEV. 0.651 0.588 0.525 0.462 0.399 0.358 0.315 0.274 0.167 0.126 VOLT. DROP @ DEV. 0.108 0.068 0.061 0.061 0.092 0.03 0.036 0.027 0.019 0.015
Device Device perice perice<	Device Device Forker At Drop Number Power device Current Device Drop Device 1 2.000 40 0.080 24.99 0.013 0.05% END 0.000 24.99 0.013 0.05%	Device Device Power device Current Device Drop Device 1 2.000 100 0.080 24.95 0.048 0.19% Device 2 0.500 50 0.020 24.94 0.055 0.22%	Device Device Device Device Device Device Device Device Drop Device 1 2.000 90 0.080 24.95 0.050 0.20% Device 2 0.500 50 0.020 24.94 0.062 0.25%	DEVICE # 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th GAUGE WIRE 12
Device 3 0.500 55 0.020 24.87 0.126 0.50% Device 4 2.000 45 0.080 24.84 0.158 0.63% Device 5 0.500 65 0.020 24.82 0.184 0.73%	END 0.000 24.99 0.013 0.05% END 0.000 24.99 0.013 0.05% END 0.000 24.99 0.013 0.05%	Device 3 0.500 70 0.020 24.94 0.061 0.24% END 0.000 24.94 0.061 0.24% END 0.000 24.94 0.061 0.24%	Device 3 0.500 65 0.020 24.93 0.072 0.29% Device 4 0.500 35 0.020 24.93 0.075 0.30% END 0.000 24.93 0.075 0.30% 0.00%	DISTANCE (FT) 50 60
Device 6 0.500 30 0.020 24.81 0.193 0.77% Device 7 0.500 35 0.020 24.80 0.202 0.81% Device 8 0.500 35 0.020 24.79 0.207 0.83% Device 9 0.500 50 0.020 24.79 0.211 0.84%	END 0.000 24.99 0.013 0.05%	END 0.000 24.94 0.061 0.24%	END 0.000 24.93 0.075 0.30%	VOLT. DROP @ DEV. 0.01 0
Device 9 0.300 50 0.020 24.79 0.211 0.84% END 0.000 24.79 0.211 0.84% END 0.000 24.79 0.211 0.84% END 0.000 24.79 0.211 0.84%	END 0.000 24.99 0.013 0.05%	END 0.000 24.94 0.061 0.24%	END 0.000 24.93 0.075 0.30%	TOTAL CIRCUIT AMPS = 0.651 WIRE RESIS. CIRC. FORMULA SIZE /M FT. MILS.
END 0.000 24.79 0.211 0.84%	END 0.000 24.99 0.013 0.05% END 0.000 24.99 0.013 0.05% END 0.000 24.99 0.013 0.05%	END 0.000 24.94 0.061 0.24%	END 0.000 24.93 0.075 0.30%	TOTAL VOLT DROP = 0.528 10 1.29 10380 12 FEET 21.6 12 2.01 6530 C.M. CKT VOLTAGE = 20.4 14 3.19 4110
END 0.000 24.79 0.211 0.84% Totals 7.500 395 End of Line Voltage 24.79	END 0.000 24.99 0.013 0.05% Totals 2.000 40 End of Line Voltage 24.99	END 0.000 24.94 0.061 0.24% Totals 3.000 220 End of Line Voltage 24.94	END 0.000 24.93 0.075 0.30% Totals 3.500 240 End of Line Voltage 24.93	16 5.08 2580 % VOLTAGE DROP = 2.6%
CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage Totals Voltage Totals Voltage	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage Totals Voltage Totals Voltage	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V2
CurrentDistanceDropCurrentDistanceDropCurrentDistanceDrop0.3003950.210.3003950.4690.3003950.235End of Line Voltage24.79End of Line Voltage24.53End of Line Voltage24.77	CurrentDistanceDropCurrentDistanceDrop0.080400.010.080400.0130.080400.006End of Line Voltage24.99End of Line Voltage24.99End of Line Voltage24.99	Current Distance Drop Current Distance Drop Current Distance Drop 0.120 220 0.06 0.120 220 0.105 0.120 220 0.052 End of Line Voltage 24.94 End of Line Voltage 24.90 End of Line Voltage 24.95	CurrentDistanceDropCurrentDistanceDropCurrentDistanceDrop0.1402400.070.1402400.1330.1402400.067End of Line Voltage24.93End of Line Voltage24.87End of Line Voltage24.93	DEVICE # 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th GAUGE WIRE 12 <td< td=""></td<>
Percent Drop 0.84% Percent Drop 1.88% Percent Drop 0.94%	Percent Drop 0.05% Percent Drop 0.05% Percent Drop 0.03%	Percent Drop 0.24% Percent Drop 0.42% Percent Drop 0.21%	Percent Drop 0.30% Percent Drop 0.53% Percent Drop 0.27%	AMPS OF DEVICE 0.063 0.111 0.063 0 0 0 0 TOTAL AMPS@DEV. 0.348 0.285 0.174 0.063 0
Nominal Speaker Voltage (25 or 70) 25 Minimum Device Voltage 20 Total Circuit Current in amps 0.200 Wire Ohm's	Nominal Speaker Voltage (25 or 70) 25 Minimum Device Voltage 20 Total Circuit Current in amps 0.080 Wire Ohm's	Nominal Speaker Voltage (25 or 70) 25 Minimum Device Voltage 20 Total Circuit Current in amps 0.120 Wire	Nominal Speaker Voltage (25 or 70) 25 Minimum Device Voltage 20 Total Circuit Current in amps 0.120 Wire Ohm's	TOTAL CIRCUIT AMPS = 0.348 WIRE RESIS. CIRC. FORMULA SIZE /M FT. MILS. MILS.
Total Circuit Power 5.000 Gauge Per 1000 Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98	Total Circuit Power 2.000 Gauge Per 1000 Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98	Total Circuit Power 3.000 Gauge Per 1000 Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98	Total Circuit Power 3.000 Gauge Per 1000 Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98	TOTAL VOLT DROP = 0.4 10 1.29 10380 1* FEET * 21.6 Image: CKT_VOLTAGE = 20.4 14 3.19 4110 4110
Image: Transmission of the second s	Image: Termin Calculated Voltage Device previous Device At Drop from Percent Number Power device Current Device source Drop Device 1 2.000 55 0.080 24.98 0.017 0.07%	from Calculated voltage Device Device At Drop from Percent Number Power device Current Device Source Drop Device 1 0.500 115 0.020 24.95 0.055 0.22%	Image: Term Calculated Voltage Device Device Previous Device At Drop from Percent Number Power device Current Device source Drop Device 1 2.000 100 0.080 24.95 0.048 0.19%	Million Million <t< td=""></t<>
Device 2 0.500 100 0.020 24.79 0.214 0.86% Device 3 2.000 60 0.080 24.76 0.238 0.95% Device 4 0.500 50 0.020 24.76 0.242 0.97%	END 0.000 24.98 0.017 0.07%	Device 2 0.500 75 0.020 24.92 0.084 0.34% Device 3 2.000 50 0.080 24.90 0.100 0.40% END 0.000 24.90 0.100 0.40% 0.40%	Device 2 0.500 50 0.020 24.94 0.055 0.22% Device 3 0.500 75 0.020 24.94 0.061 0.25% END 0.000 24.94 0.061 0.25%	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V3
END 0.000 24.76 0.242 0.97%	END 0.000 24.98 0.017 0.07%	END 0.000 24.90 0.100 0.40%	END 0.000 24.94 0.061 0.25%	DEVICE # 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th GAUGE WIRE 12 <td< td=""></td<>
END 0.000 24.76 0.242 0.3776 END 0.000 24.76 0.242 0.97% END 0.000 24.76 0.242 0.97% END 0.000 24.76 0.242 0.97%	END 0.000 24.98 0.017 0.07%	END 0.000 24.90 0.100 0.40%	END 0.000 24.94 0.001 0.25% END 0.000 24.94 0.061 0.25% END 0.000 24.94 0.061 0.25% END 0.000 24.94 0.061 0.25%	AMPS OF DEVICE 0.063 0.063 0.111 Image: Constraint of the state of the
END 0.000 24.76 0.242 0.97%	END 0.000 24.98 0.017 0.07%	END 0.000 24.90 0.100 0.40% END 0.000 24.90 0.100 0.40% END 0.000 24.90 0.100 0.40%	END 0.000 24.94 0.061 0.25%	TOTAL CIRCUIT AMPS = 0.237 WIRE RESIS CIRC. FORMULA
END 0.000 24.76 0.242 0.97% END 0.000 24.76 0.242 0.97% Totals 5.000 420 End of Line Voltage 24.76	END 0.000 24.98 0.017 0.07% END 0.000 24.98 0.017 0.07% Totals 2.000 55 End of Line Voltage 24.98	END 0.000 24.90 0.100 0.40% END 0.000 24.90 0.100 0.40% Totals 3.000 240 End of Line Voltage 24.90	END 0.000 24.94 0.061 0.25% END 0.000 24.94 0.061 0.25% Totals 3.000 225 End of Line Voltage 24.94	SIZE /M FT. MILS. TOTAL VOLT DROP = 0.111 10 1.29 10380 I * FEET * 21.6 12 2.01 6530 C.M. I
Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	CKT VOLTAGE = 20.4 14 3.19 4110 16 5.08 2580 10 % VOLTAGE DROP = 0.5% 10 10
Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop Current Distance Drop 0.200 420 0.24 0.200 420 0.333 0.200 420 0.166	Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop Current Distance Drop 0.080 55 0.02 0.080 55 0.017 0.080 55 0.009	Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop Current Distance Drop 0.120 240 0.10 0.120 240 0.114 0.120 240 0.057	Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop Current Distance Drop 0.120 225 0.06 0.120 225 0.077 0.120 225 0.053	
End of Life Voltage 24.76 End of Life Voltage 24.67 End of Life Voltage 24.83 Percent Drop 0.97% Percent Drop 1.33% Percent Drop 0.67%	End of Line Voltage 24.98 End of Line Voltage 24.98 End of Line Voltage 24.99 Percent Drop 0.07% Percent Drop 0.07% Percent Drop 0.03%	End of Line voltage 24,90 End of Line voltage 24,89 End of Line voltage 24,94 Percent Drop 0.40% Percent Drop 0.46% Percent Drop 0.23%	Percent Drop 0.25% Percent Drop 0.43% Percent Drop 0.21%	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V4 DEVICE # 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th GAUGE WIRE 12 <
SPEAKER CIRCUIT No.S3 Nominal Speaker Voltage (25 or 70) 25 Minimum Device Voltage 20	SPEAKER CIRCUIT No.S8 Nominal Speaker Voltage (25 or 70) 25 Minimum Device Voltage 20	SPEAKER CIRCUIT No.S13 Nominal Speaker Voltage (25 or 70) 25	SPEAKER CIRCUIT No.18 Nominal Speaker Voltage (25 or 70) 25 25 Minimum Device Voltage 20 20	DISTANCE (FT) 150 50 45 45 30 70 AMPS OF DEVICE 0.148 0.148 0.063 0.043 0.107 TOTAL AMPS@DEV. 0.572 0.424 0.276 0.213 0.15 0.107 0 0 0 0
Total Circuit Current in amps 0.140 Wire Ohm's Total Circuit Power 3.500 Gauge Per 1000 Distance from source to 1st device 50 12 1.98	Total Circuit Current in amps 0.200 Wire Ohm's Total Circuit Power 5.000 Gauge Per 1000 Distance from source to 1st device 50 12 1.98	Total Circuit Current in amps 0.200 Wire Ohm's Total Circuit Power 5.000 Gauge Per 1000 Distance from source to 1st device 50 12 1.98	Total Circuit Current in amps 0.200 Wire Ohm's Total Circuit Power 5.000 Gauge Per 1000 Distance from source to 1st device 50 12 1.98	VOLT. DROP @ DEV. 0.284 0.07 0.041 0.032 0.015 0.025 0 0 0 0 TOTAL CIRCUIT AMPS = 0.572 WIRE RESIS CIRC EORMULA
Image: Number Power device Calculated Voltage Number Power device Current Device Drop	Image: statute of circuit 12 1.98 from Calculated Voltage Device Device At Number Power device	Image: Solution of the soluti	Image: Second	NIAL OLOGI ANITO D 0.072 NIAL ILEGIO. DIAO. FORMULA SIZE /M FT. MILS.
Device 1 0.500 75 0.020 24.96 0.042 0.17% Device 2 0.500 30 0.020 24.94 0.056 0.22% Device 3 2.000 60 0.080 24.92 0.080 0.32%	Device 1 0.500 120 0.020 24.90 0.095 0.38% Device 2 0.500 85 0.020 24.84 0.156 0.62% Device 3 0.500 45 0.020 24.82 0.184 0.74%	Device 1 2.000 105 0.080 24.92 0.083 0.33% Device 2 0.500 50 0.020 24.89 0.107 0.43% Device 3 0.500 75 0.020 24.86 0.137 0.55%	Device 1 2.000 100 0.080 24.92 0.079 0.32% Device 2 0.500 50 0.020 24.90 0.103 0.41% Device 3 0.500 75 0.020 24.87 0.133 0.53%	CKT VOLTAGE = 20.4 14 3.19 4110 4110 16 5.08 2580 1
Device 4 0.500 55 0.020 24.92 0.084 0.34% END 0.000 24.92 0.084 0.34% END 0.000 24.92 0.084 0.34% END 0.000 24.92 0.084 0.34%	Device 4 2.000 45 0.080 24.79 0.209 0.84% Device 5 0.500 50 0.020 24.78 0.221 0.88% Device 6 0.500 45 0.020 24.77 0.228 0.91% Device 7 0.500 45 0.020 24.77 0.232 0.93%	Device 4 2.000 50 0.080 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61%	Device 4 2.000 75 0.080 24.84 0.156 0.63% END 0.000 24.84 0.156 0.63% END 0.000 24.84 0.156 0.63% END 0.000 24.84 0.156 0.63%	% VOLTAGE DROP = 2.3%
END 0.000 24.92 0.004 0.34% END 0.000 24.92 0.084 0.34% END 0.000 24.92 0.084 0.34% END 0.000 24.92 0.084 0.34%	END 0.000 24.77 0.232 0.93%	END 0.000 24.85 0.152 0.01% END 0.000 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61%	END 0.000 24.84 0.156 0.63%	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V5 DEVICE # 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th
END 0.000 24.92 0.084 0.34%	END 0.000 24.77 0.232 0.93% END 0.000 24.77 0.232 0.93% END 0.000 24.77 0.232 0.93%	END 0.000 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61%	END 0.000 24.84 0.156 0.63% END 0.000 24.84 0.156 0.63% END 0.000 24.84 0.156 0.63%	GAUGE WIRE 12
END 0.000 24.92 0.084 0.34% Totals 3.500 220 End of Line Voltage 24.92	END 0.000 24.77 0.232 0.93% END 0.000 24.77 0.232 0.93% END 0.000 24.77 0.232 0.93% Totals 5.000 435 End of Line Voltage 24.77	END 0.000 24.85 0.152 0.01% END 0.000 24.85 0.152 0.61% END 0.000 24.85 0.152 0.61% Totals 5.000 28.0 End of Line Voltage 24.85	END 0.000 24.84 0.156 0.03% END 0.000 24.84 0.156 0.63% END 0.000 24.84 0.156 0.63% Totals 5.000 300 End of Line Voltage 24.84	TOTAL AMPS@DEV. 0.394 0.351 0.308 0.197 0.154 0.111 0 0 0 0 VOLT. DROP DEV. 0.143 0.035 0.046 0.02 0.015 0.028 0 0 0 0 0
Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method End of Line Method Load Centering Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	TOTAL CIRCUIT AMPS = 0.394 WIRE RESIS. CIRC. FORMULA Image: Size value Size value M FT. MILS. Image: Size value MILS. TOTAL VOLT DROP = 0.286 10 1.29 10380 I * FEET * 21.6
Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop Current Distance Drop	Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop Current Distance Drop	Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop	Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop Current Distance Drop	12 2.01 6530 C.M. CKT VOLTAGE = 20.4 14 3.19 4110 16 5.08 2580 14 1580
0.140 220 0.08 0.140 220 0.122 0.140 220 0.061 End of Line Voltage 24.92 End of Line Voltage 24.88 End of Line Voltage 24.94 Percent Drop 0.34% Percent Drop 0.49% Percent Drop 0.24%	0.200 435 0.23 0.200 435 0.345 0.200 435 0.172 End of Line Voltage 24.77 End of Line Voltage 24.66 End of Line Voltage 24.83 Percent Drop 0.93% Percent Drop 1.38% Percent Drop 0.69%	0.200 280 0.15 0.200 280 0.222 0.200 280 0.111 End of Line Voltage 24.85 End of Line Voltage 24.78 End of Line Voltage 24.89 Percent Drop 0.61% Percent Drop 0.89% Percent Drop 0.44%	0.200 300 0.16 0.200 300 0.238 0.200 300 0.119 End of Line Voltage 24.84 End of Line Voltage 24.76 End of Line Voltage 24.88 Percent Drop 0.63% Percent Drop 0.95% Percent Drop 0.48%	% VOLTAGE DROP = 1.4%
SPEAKER CIRCUIT No.S4 Nominal Speaker Voltage (25 or 70) 25	SPEAKER CIRCUIT No.S9 Nominal Speaker Voltage (25 or 70) 25	SPEAKER CIRCUIT No.S14 Nominal Speaker Voltage (25 or 70) 25	SPEAKER CIRCUIT No.19 Nominal Speaker Voltage (25 or 70) 25	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V6
Minimum Device Voltage 20 Total Circuit Current in amps 0.160 Wire Ohm's Total Circuit Power 4.000 Gauge Per 1000	Minimum Device Voltage 20 Total Circuit Current in amps 0.200 Wire Ohm's Total Circuit Power 5.000 Gauge Per 1000	Minimum Device Voltage 20 Total Circuit Current in amps 0.120 Wire Ohm's Total Circuit Power 3.000 Gauge Per 1000	Minimum Device Voltage 20 Total Circuit Current in amps 0.200 Wire Ohm's Total Circuit Power 5.000 Gauge Per 1000	DEVICE # 1st 2th 3th 4th 3th 6th 7th 6th 9th 10th GAUGE WIRE 12 <td< td=""></td<>
Distance trom source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage Device Device previous	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage Device Device At Drop from	TOTAL AMPS@DEV. 0.126 0.063 0
Number Power device Current Device source Drop Device 1 2.000 90 0.080 24.94 0.057 0.23% Device 2 0.500 80 0.020 24.92 0.082 0.33%	Number Power device Current Device source Drop Device 1 0.500 135 0.020 24.89 0.107 0.43% Device 2 0.500 85 0.020 24.83 0.168 0.67%	Number Power device Current Device source Drop Device 1 2.000 105 0.080 24.95 0.050 0.20% Device 2 0.500 50 0.020 24.94 0.058 0.23%	Number Power device Current Device source Drop Device 1 2.000 70 0.080 24.94 0.055 0.22% Device 2 0.500 50 0.020 24.92 0.079 0.32%	TOTAL CIRCUIT AMPS = 0.126 WIRE RESIS. CIRC. FORMULA SIZE /M FT. MILS. Image: Comparison of the second s
Device 3 0.500 50 0.020 24.91 0.094 0.38% Device 4 0.500 70 0.020 24.89 0.105 0.42% Device 5 0.500 70 0.020 24.89 0.111 0.44% END 0.000 24.89 0.111 0.44% 0.44%	Device 3 0.500 45 0.020 24.80 0.196 0.78% Device 4 2.000 45 0.080 24.78 0.221 0.88% Device 5 0.500 50 0.020 24.77 0.233 0.93% Device 6 0.500 45 0.020 24.76 0.240 0.96%	Device 3 0.500 70 0.020 24.94 0.063 0.25% END 0.000 24.94 0.063 0.25% END 0.000 24.94 0.063 0.25% END 0.000 24.94 0.063 0.25%	Device 3 0.500 75 0.020 24.89 0.109 0.44% Device 4 2.000 50 0.080 24.88 0.125 0.50% END 0.000 24.88 0.125 0.50% 0.50%	TOTAL VOLT DROP = 0.02 10 1.29 10380 I*FEET*21.6 Image: CKT VOLTAGE = 20.4 12 2.01 6530 C.M.
END 0.000 24.89 0.111 0.44%	Device 7 0.500 45 0.020 24.76 0.244 0.97% END 0.000 24.76 0.244 0.97% END 0.000 24.76 0.244 0.97%	END 0.000 24.94 0.063 0.25%	END 0.000 24.88 0.125 0.50%	16 5.08 2580 % VOLTAGE DROP = 0.1%
END 0.000 24.89 0.111 0.44%	END 0.000 24.76 0.244 0.97%	END 0.000 24.94 0.063 0.25%	END 0.000 24.88 0.125 0.50%	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V7
END 0.000 24.89 0.111 0.44%	END 0.000 24.76 0.244 0.97%	END 0.000 24.94 0.063 0.25%	END 0.000 24.88 0.125 0.50%	DEVICE # 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th GAUGE WIRE 12 <td< td=""></td<>
Totals 4.000 360 End of Line Voltage 24.89 Point to Point Method End of Line Method Load Centering Method	Totals 5.000 450 End of Line Voltage 24.76 Point to Point Method End of Line Method Load Centering Method	Totals 3.000 225 End of Line Voltage 24.94 Point to Point Method End of Line Method Load Centering Method	Totals 5.000 245 End of Line Voltage 24.88 Point to Point Method End of Line Method Load Centering Method	AMPS OF DEVICE 0.063 0.063 0
CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage Current Distance Drop Current	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop	TOTAL CIRCUIT AMPS = 0.126 WIRE RESIS. CIRC. FORMULA SIZE /M FT. MILS. Image: Control of the second secon
0.160 360 0.11 0.160 360 0.228 0.160 360 0.114 End of Line Voltage 24.89 End of Line Voltage 24.77 End of Line Voltage 24.89 Percent Drop 0.44% Percent Drop 0.91% Percent Drop 0.46%	0.200 450 0.24 0.200 450 0.356 0.200 450 0.178 End of Line Voltage 24.76 End of Line Voltage 24.64 End of Line Voltage 24.82 Percent Drop 0.97% Percent Drop 1.43% Percent Drop 0.71%	0.120 225 0.06 0.120 225 0.107 0.120 225 0.053 End of Line Voltage 24.94 End of Line Voltage 24.89 End of Line Voltage 24.95 Percent Drop 0.25% Percent Drop 0.43% Percent Drop 0.21%	0.200 245 0.12 0.200 245 0.194 0.200 245 0.097 End of Line Voltage 24.88 End of Line Voltage 24.81 End of Line Voltage 24.90 Percent Drop 0.50% Percent Drop 0.78% Percent Drop 0.39%	TOTAL VOLT DROP = 0.022 10 1.29 10380 I * FEET * 21.6 Image:
SPEAKER CIRCUIT No.S5	SPEAKER CIRCUIT No.10	SPEAKER CIRCUIT No.S15	SPEAKER CIRCUIT No.20	Million Million Million Million % VOLTAGE DROP = 0.1% 16 5.08 2580
Minimum Device Voltage 20 Total Circuit Current in amps 0.120 Wire Ohm's Total Circuit Power 3.000	Minimum Device Voltage 20 Total Circuit Current in amps 0.100 Wire Ohm's Total Circuit Power 2.500 Gauge Per 1000	Minimum Device Voltage 20 Total Circuit Current in amps 0.120 Wire Ohm's Total Circuit Power 3.000	Minimum Device Voltage 20 Total Circuit Current in amps 0.120 Vire Ohm's Total Circuit Power 3.000	VOLTAGE DROP (VD) CALCULATION - VISUAL CIRCUIT No. V8
Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	Distance from source to 1st device 50 12 1.98 Wire Gauge for balance of circuit 12 1.98 from Calculated Voltage	DEVICE # 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th GAUGE WIRE 12 <td< td=""></td<>
Device Device previous Device At Drop from Percent Number Power device Current Device source Drop Device 1 0.500 140 0.020 24.93 0.067 0.27% Device 2 2.000 60 0.080 24.91 0.090 0.36%	Device Device previous Device At Drop from Percent Number Power device Current Device source Drop Device 1 2.000 240 0.080 24.90 0.095 0.38% Device 2 0.500 115 0.020 24.90 0.104 0.42%	Device Device previous Device At Drop from Percent Number Power device Current Device source Drop Device 1 2.000 85 0.080 24.96 0.040 0.16% Device 2 0.500 50 0.020 24.95 0.048 0.19%	Device Device Previous Device At Drop from Percent Number Power device Current Device source Drop Device 1 0.500 215 0.020 24.90 0.102 0.41% Device 2 0.500 75 0.020 24.87 0.132 0.53%	AMPS OF DEVICE 0.043 0.111 0.043 0.041 0.111 0.043 0.111 0.041 0.111 TOTAL AMPS@DEV. 0.698 0.655 0.544 0.501 0.458 0.417 0.306 0.263 0.152 0.111 VOLT. DROP @ DEV. 0.185 0.108 0.081 0.066 0.068 0.051 0.051 0.020 0.022 0.017
Device 3 0.500 55 0.020 24.91 0.095 0.38% END 0.000 24.91 0.095 0.38%	END 0.000 24.90 0.104 0.42%	Device 3 0.500 70 0.020 24.95 0.054 0.22% END 0.000 24.95 0.054 0.22% END 0.000 24.95 0.054 0.22%	Device 3 2.000 50 0.080 24.85 0.148 0.59% END 0.000 24.85 0.148 0.59% END 0.000 24.85 0.148 0.59%	TOTAL CIRCUIT AMPS = 0.698 WIRE RESIS CIRC FORMULA
END 0.000 24.91 0.095 0.38%	END 0.000 24.90 0.104 0.42%	END 0.000 24.95 0.054 0.22%	END 0.000 24.85 0.148 0.59%	SIZE /M F I. MILS. TOTAL VOLT DROP = 0.699 10 1.29 10380 I * FEET * 21.6 Image: Im
END 0.000 24.91 0.093 0.38% END 0.000 24.91 0.095 0.38%	END 0.000 24.90 0.104 0.42%	END 0.000 24.95 0.034 0.22% END 0.000 24.95 0.054 0.22%	END 0.000 24.03 0.140 0.09% END 0.000 24.85 0.148 0.59%	CK1 VOLTAGE = 20.4 14 3.19 4110 16 5.08 2580 10 % VOLTAGE DROP = 3.4% 10 10
END 0.000 24.91 0.095 0.38%	END 0.000 24.90 0.104 0.42%	END 0.000 24.95 0.054 0.22%	END 0.000 24.85 0.148 0.59%	
END 0.000 24.91 0.095 0.38% Totals 3.000 255 End of Line Voltage 24.91 Point to Point Method End of Line Method Load Centering Method	END 0.000 24.90 0.104 0.42% Totals 2.500 355 End of Line Voltage 24.90 Point to Point Method End of Line Method Load Centering Method	Totals 3.000 205 End of Line Voltage 24.95 Point to Point Method End of Line Method Load Centering Method	Totals 3.000 340 End of Line Voltage 24.85 Point to Point Method End of Line Method Load Centering Method	
CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage	CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS Totals Voltage Totals Voltage	
Current Distance Drop Current Distance Drop Current Distance Drop 0.120 255 0.09 0.120 255 0.121 0.120 255 0.061 End of Line Voltage 24.91 End of Line Voltage 24.88 End of Line Voltage 24.94	Current Distance Drop Current Distance Drop 0.100 355 0.10 0.100 355 0.141 0.100 355 0.070 End of Line Voltage 24.90 End of Line Voltage 24.86 End of Line Voltage 24.93	Current Distance Drop Current Distance Drop 0.120 205 0.05 0.120 205 0.097 0.120 205 0.049 End of Line Voltage 24.95 End of Line Voltage 24.90 End of Line Voltage 24.95	Current Distance Drop Current Distance Drop 0.120 340 0.15 0.120 340 0.162 0.120 340 0.081 End of Line Voltage 24.85 End of Line Voltage 24.84 End of Line Voltage 24.92	
רפוטפווע U.38% Percent Drop 0.48% Percent Drop 0.24%	רפוגפווג טוטט 0.42% Percent Drop 0.56% Percent Drop 0.28%	עסוע אופוטפוו פוטפווע עטע ענע אופטיפין אפונפווע איז	י פונפווג שוטש ע.59%ן Percent Drop 0.65%ן Percent Drop 0.32%	

DEVICE #	VOLTA 1st	GE DROF 2nd	P (VD) CA 3rd	LCULAT 4th	ION - VIS 5th	UAL CIRC 6th	CUIT No. 7th	V9 8th	9th	10
	12 95	12 50	12 45	12 40	12 45	12 45	12 50	12 45	12 45	12
AIVIPS OF DEVICE TOTAL AMPS@DEV. VOLT. DROP @ DFV	0.043	0.111 0.655 0.108	0.043	0.043	0.041	0.111 0.417 0.062	0.043	0.111 0.263 0.030	0.041	0.111 0.111 0.017
TOTAL CIRCUIT AMPS =	0.698	0.100		WIRE	RESIS	CIRC.		FORMU	10.023	0.017
TOTAL VOLT DROP =	0.734			SIZE 10	/M FT. 1.29	MILS. 10380		I* FEET	21.6	
CKT VOLTAGE =	20.4			12 14	2.01 3.19	6530 4110		C.M.		
% VOLTAGE DROP =	3.6%			16	5.08	2580				
DEVICE #	VOLTA 1st	GE DROF 2nd	P (VD) CA 3rd	LCULAT 4th	ION - VIS 5th	UAL CIRO 6th	CUIT No. 7th	V10 8th	9th	10th
3AUGE WIRE DISTANCE (FT)	12 280	12 30	12 50	12	12	12	12	12	12	12
AMPS OF DEVICE FOTAL AMPS@DEV.	0.043	0.043	0.111	0	0	0	0	0	0	0
	0.197	0.015	0.018	WIRF	RESIS	CIRC		FORMU		
TOTAL VOLT DROP =	0.216			SIZE 10	/M FT. 1.29	MILS. 10380		I * FEET	* 21.6	
CKT VOLTAGE =	20.4			12 14	2.01 3.19	6530 4110		C.M.		
% VOLTAGE DROP =	1.1%			16	5.08	2580				
DEVICE #	VOLTA 1st	GE DROF 2nd	P (VD) CA 3rd	LCULAT 4th	ION - VIS 5th	UAL CIRO	CUIT No. 7th	V11 8th	9th	10tl
GAUGE WIRE DISTANCE (FT)	12 130	12 45	12 45	12 45	12	12	12	12	12	12
AMPS OF DEVICE	0.111 0.308	0.043 0.197	0.111 0.154	0.043 0.043	0	0	0	0	0	0
VULI. DROP @ DEV.	0.132	0.029	0.023	0.006	0	0	0	0	0	0
TOTAL CIRCUIT AMPS =	0.308			WIRE SIZE	RESIS. /M FT.	CIRC. MILS.		FORMU		
	0.191			10 12	1.29 2.01	10380 6530		I * FEE1 C.M.	* 21.6	<u> </u>
	20.4			14 16	3.19 5.08	4110 2580				+
	U.9%									
	VOLTA	GE DROF	P (VD) CA		ION - VIS		CUIT No.	V12		
DEVICE # GAUGE WIRE	1st 12	2nd 12	3rd 12	4th 12	5th 12	6th 12	7th 12	8th 12	9th 12	10th
AMPS OF DEVICE	90 0.043	45 0.111	45 0.043	50 0.111 0.111	0	0	0	0	0	0
VOLT. DROP @ DEV.	0.092	0.039	0.023	0.018	0	0	0	0	0	0
TOTAL CIRCUIT AMPS =	0.308			WIRE SIZF	RESIS. /M FT	CIRC.		FORMU		+
TOTAL VOLT DROP =	0.172			10	1.29	10380 6530		I * FEET C.M	* 21.6	<u> </u>
CKT VOLTAGE =	20.4			14 16	3.19 5.08	4110 2580				
% VOLTAGE DROP =	0.8%									
		GF DPO	ר (\/ח) כיי		ION - 1/10			V13		
DEVICE # GAUGE WIRE	1st 12	2nd 12	3rd 12	4th	5th	6th	7th	8th	9th 12	10th
DISTANCE (FT) AMPS_OF_DEVICE	145 0.111	50 0.043	45 0.111	45 0.043						
TOTAL AMPS@DEV. VOLT. DROP @ DEV.	0.308 0.148	0.197	0.154 0.023	0.043	0	0	0	0	0	0
TOTAL CIRCUIT AMPS =	0.308			WIRE	RESIS.	CIRC.		FORMU		
TOTAL VOLT DROP =	0.21			SIZE 10	/M FT. 1.29	MILS. 10380		I * FEET	* 21.6	
CKT VOLTAGE =	20.4			12 14	2.01 3.19	6530 4110		C.M.		+
% VOLTAGE DROP =	1.0%			16	5.08	2580				+
			I	I	-	I	L		I	
DEVICE #	VOLTA 1st	GE DROF	P (VD) CA 3rd	LCULAT	ION - VIS 5th	UAL CIRC	CUIT No. 7th	V14 8th	9th	10tl
	95	12 45	12 45	12 45	12	12	12	12	12	12
NIT DROP @ DEV.	0.308	0.043	0.111	0.043	0	0	0	0	0	0
	0.097	0.029	0.023	0.006			U			
	0.308		<u> </u>	VVIRE SIZE	/M FT.	MILS.			LA	+
	0.155 20 4			10 12 14	2.01	6530 4110		C.M.	∠1.0	+
% VOLTAGE DROP -	20.4 0.8%			14	5.08	2580				+
	0.0 %									
	VOLTA	GE DROF	P (VD) CA		ION - VIS		CUIT No.	V15		1
JEVICE # GAUGE WIRE	1st 12	2nd 12	3rd 12	4th 12	5th 12	6th 12	7th 12	8th 12	9th 12	10th
AMPS OF DEVICE	85 0.111 0.309	50 0.043 0.107	45 0.111 0.154	45 0.043 0.042	0	0	0	0	0	0
VOLT. DROP @ DEV.	0.087	0.033	0.023	0.006	0	0	0	0	0	0
FOTAL CIRCUIT AMPS =	0.308			WIRE SIZE	RESIS. /M FT	CIRC. MILS		FORMU		
FOTAL VOLT DROP =	0.149			10	1.29	10380 6530		I * FEET	* 21.6	
CKT VOLTAGE =	20.4			14 16	3.19 5.08	4110 2580				
% VOLTAGE DROP =	0.7%									\vdash
	VOLTA	GE DROF	P (VD) CA		ION - VIS			V16		
DEVICE # GAUGE WIRF	1st 12	2nd 12	3rd 12	4th 12	5th 12	6th 12	7th	8th 12	9th 12	10th
DISTANCE (FT) AMPS_OF_DEVICE	140 0.111	50 0.043	40 0.111	35 0.111	40 0.043					
TOTAL AMPS@DEV. VOLT. DROP @ DEV.	0.419 0.194	0.308 0.051	0.265 0.035	0.154 0.018	0.043	0	0	0 0	0	0
TOTAL CIRCUIT AMPS =	0.419			WIRE	RESIS.	CIRC.		FORMU		+
TOTAL VOLT DROP =	0.304			SIZE 10	/M FT. 1.29	MILS.		I * FEET	* 21.6	
CKT VOLTAGE =	20.4		<u> </u>	12 14	2.01 3.19	6530 4110		C.M.		+
	1.5%		<u> </u>	16	5.08	2580				
		1	<u> </u>	1			<u> </u>		I	1
					ION - VIS		CUIT No.	V17	1	10#
DEVICE #	VOLTA 1st	GE DROF 2nd	P (VD) CA 3rd	4th	5th	6th	7 th	8th	9th	1 100
DEVICE # GAUGE WIRE DISTANCE (FT)	VOLTA 1st 12 130	GE DROF 2nd 12 50	P (VD) CA 3rd 12 45	4th 12 45	5th 12	6th 12	12	8th 12	9th 12	12
DEVICE # GAUGE WIRE DISTANCE (FT) AMPS OF DEVICE FOTAL AMPS@DEV.	VOLTA 1st 12 130 0.111 0.308	GE DROF 2nd 12 50 0.043 0.197	 VD) CA 3rd 12 45 0.111 0.154 	4th 12 45 0.043 0.043	5th 12 0	6th 12 0	0 7th	8th 12 0	9th 12 0	0
DEVICE # GAUGE WIRE DISTANCE (FT) AMPS OF DEVICE FOTAL AMPS@DEV. VOLT. DROP @ DEV.	VOLTA 1st 12 130 0.111 0.308 0.132	GE DROF 2nd 12 50 0.043 0.197 0.033	 VD) CA 3rd 12 45 0.111 0.154 0.023 	4th 12 45 0.043 0.043 0.006	5th 12 0 0	6th 12 0 0	0 0	8th 12 0 0	9th 12 0 0	0
DEVICE # GAUGE WIRE DISTANCE (FT) AMPS OF DEVICE TOTAL AMPS@DEV. VOLT. DROP @ DEV. FOTAL CIRCUIT AMPS =	VOLTA 1st 12 130 0.111 0.308 0.132 0.308 0.308	GE DROF 2nd 12 50 0.043 0.197 0.033	 VD) CA 3rd 12 45 0.111 0.154 0.023 	4th 12 45 0.043 0.043 0.006 WIRE SIZE	5th 12 0 0 RESIS. /M FT.	6th 12 0 0 CIRC. MILS.	0 0	8th 12 0 0 FORMU	9th 12 0 0	0
DEVICE # GAUGE WIRE DISTANCE (FT) AMPS OF DEVICE TOTAL AMPS@DEV. VOLT. DROP @ DEV. TOTAL CIRCUIT AMPS = TOTAL VOLT DROP =	VOLTA 1st 12 130 0.111 0.308 0.132 0.308 0.194 0.194	GE DROF 2nd 12 50 0.043 0.197 0.033	 VD) CA 3rd 12 45 0.111 0.154 0.023 	4th 12 45 0.043 0.043 0.006 WIRE SIZE 10 12	5th 12 0 0 RESIS. /M FT. 1.29 2.01	6th 12 0 0 CIRC. MILS. 10380 6530	0 0	8th 12 0 0 FORMU I*FEET C.M.	9th 12 0 0 ULA 	
DEVICE # GAUGE WIRE DISTANCE (FT) AMPS OF DEVICE TOTAL AMPS@DEV. VOLT. DROP @ DEV. TOTAL CIRCUIT AMPS = TOTAL VOLT DROP = CKT VOLTAGE =	VOLTA 1st 12 130 0.111 0.308 0.132 0.308 0.194 20.4	GE DROF 2nd 12 50 0.043 0.197 0.033	P (VD) CA 3rd 12 45 0.111 0.154 0.023	4th 12 45 0.043 0.043 0.006 WIRE SIZE 10 12 14 16	5th 12 0 0 RESIS. /M FT. 1.29 2.01 3.19 5.08	6th 12 0 0 CIRC. MILS. 10380 6530 4110 2580	0 0 0	8th 12 0 0 FORML I*FEET C.M.	9th 12 0 0 12 12 12 12 12 12 12 12 12 12	
DEVICE # GAUGE WIRE DISTANCE (FT) AMPS OF DEVICE TOTAL AMPS@DEV. VOLT. DROP @ DEV. TOTAL CIRCUIT AMPS = TOTAL VOLT DROP = CKT VOLTAGE =	VOLTA 1st 12 130 0.111 0.308 0.132 0.308 0.194 20.4 1.0%	GE DROF 2nd 12 50 0.043 0.197 0.033	P (VD) CA 3rd 12 45 0.111 0.154 0.023	4th 12 45 0.043 0.043 0.006 WIRE SIZE 10 12 14 16 	5th 12 0 0 RESIS. /M FT. 1.29 2.01 3.19 5.08	6th 12 0 0 CIRC. MILS. 10380 6530 4110 2580		8th 12 0 0 FORMU 1* FEET C.M.	9th 12 0 0 12 12 12 12 12 12 12 12 12 12	

	VOLTA	GE DROF	VD) CA	LCULATI	ON - VISI	JAL CIRC	CUIT No.	V18		
DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
DISTANCE (FT)	130	50	45	45				<u> </u>		
AMPS OF DEVICE	0 111	0.043	0 111	0.043						
TOTAL AMPS@DEV.	0.308	0 197	0 154	0.043	0 0		0	0	0	0
VOLT. DROP @ DEV.	0.132	0.033	0.023	0.006	0	0	0	0	0	0
	0.102	0.000	0.020	0.000						
	0 308			WIRE	RESIS	CIRC		FORMU		
	0.000			SIZE	/M FT	MILS				
	0 194			10	1 20	10380			* 21.6	
TOTAL VOLT DIGIT -	0.134			10	2.01	6530			21.0	
	20.4			14	3 10	4110		0.111.		
ONT VOLTAGE -	20.4			14	5.19	2590				
	1.0%			10	5.00	2560				
/ VOLTAGE DROF -	1.0 /0									
	VOLTA	GE DROF	(VD) CA	LCULATI	ON - VISI	JAL CIRC	CUIT No.	V19		
DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
DISTANCE (FT)	100	50	45	45						
AMPS OF DEVICE	0.111	0.043	0.111	0.043						
TOTAL AMPS@DEV.	0.308	0.197	0.154	0.043	0	0 0		0	0	0
VOLT. DROP @ DEV.	0.102	0.033	0.023	0.006			0	0	0	0
					-	-	-			-
TOTAL CIRCUIT AMPS =	0.308			WIRE	RESIS.	CIRC.		FORMU	LA	
				SIZE	/M FT.	MILS.		1	T	
TOTAL VOLT DROP =	0.164			10	1 29	10380		I * FFFT	* 21 6	
				12	2.01	6530		C.M.		
CKT VOLTAGE =	20.4			14	3 19	4110				
ORT VOLINOL	20.4			14	5.08	2580				
	0.8%			10	0.00	2000				
	0.070									
	VOLTA	GE DROF	V(VD) CA	LCULATI	ON - VISI	JAL CIRC	CUIT No.	V20		
DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
DISTANCE (FT)	190	45	45	50						
AMPS OF DEVICE	0.043	0.111	0.043	0.111						1
TOTAL AMPS@DEV.	0.308	0.265	0.154	0.111	0	0	0	0	0	0
VOLT. DROP @ DEV.	0.194	0.039	0.023	0.018	0	0	0	0	0	0
-			-	-				1		1
TOTAL CIRCUIT AMPS =	0.308	1		WIRE	RESIS.	CIRC.		FORMU	LA	1
	1			SIZE	/M FT.	MILS.				1
TOTAL VOLT DROP =	0.274			10	1 29	10380			* 21 6	1
				12	2.01	6530		C M		
	20 4			14	3 10	4110				1
ONT VOLTAGE -	20.4	1		16	5.08	2580				1
	1 3%			10	0.00	2000				
	1.5 /0	-								
							L			

WATTAGE CALCS

	AMPLIFIER WA	ATTAGE CALCULATION FOR AMP-1	
ΩTY	MODEL No.	DEVICE DESCRIPTION	WATTS
			EACH
1	DAA-1	50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER	50.000
1	S1	WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	7.5000
1	S3	WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	3.5000
1	S5	WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	3.0000
1	SPARE	SPARE	0.0000
1	SPARE	SPARE	0.0000
1	SPARE	SPARE	0.0000
1	SPARE	SPARE	0.0000
1	SPARE	SPARE	0.0000
TAL W	ATTAGE AVAILABLE		36.000
	AMPLIFIER WA	TTAGE CALCULATION FOR AMP-2	
TΥ	MODEL No.	DEVICE DESCRIPTION	WATTS
_			EACH
1	DAA-1	50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER	50.0000
1	\$2	WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	5.0000
1	S4	WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	4.0000
1	S8	WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	5.0000
1	\$9	WAT FAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	5.0000
1	SPARE	SPARE	0.0000
1	SPARE	SPARE	0.0000
1	SPARE	SPARE	0.0000
1	00105	ISDADE	0 0000
TAL W	SPARE ATTAGE AVAILABLE	JOF AIKE	31.000
TAL W	ATTAGE AVAILABLE	TTAGE CALCULATION FOR AMP-3	31.0000
	ATTAGE AVAILABLE	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION	31.0000 WATTS
TAL W	ATTAGE AVAILABLE	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION	31.0000 WATTS EACH
TAL W	ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER	0.0000 31.0000 WATTS EACH 50.0000
ITY	ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 2011	STTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION	0.0000 31.0000 WATTS EACH 50.0000 2.0000
TAL W/	ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11	STAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION	0.0000 31.0000 WATTS EACH 50.0000 2.0000 3.0000
TAL W/	ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 C12 C12 C12 C12 C12 C12 C12 C12 C12 C	STAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION	WATTS EACF 50.0000 3.0000 3.0000
TAL W/	ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 C14	STARE ATTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 2.0000 3.0000 3.0000 3.0000
TAL W/	ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 C15	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 2.0000 3.0000 3.0000 3.0000 3.0000
TAL W/	SPARE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPAPE	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPEAPE	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPARE SPARE SPARE	STAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION DEVICE DESCRIPTION DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPAPE	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 0.0000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPARE SPARE SPARE ATTAGE AVAILABLE	STAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 3.0000 0.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE ATTAGE AVAILABLE ATTAGE AVAILABLE	STARE Intrage Calculation For AMP-3 Device description 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 0.0000 0.0000 31.0000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE ATTAGE AVAILABLE ADDEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPARE SPARE SPARE ATTAGE AVAILABLE ATTAGE AVAILABLE ADDELFIER WA	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SPARE DELVIOD FOR AMP-4	WATTS EACH 50.0000 2.0000 3.0000 3.0000 3.0000 0.0000 0.0000 31.0000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPARE SPARE SPARE ATTAGE AVAILABLE AMPLIFIER WA MODEL No.	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE DEVICE DESCRIPTION	WATTS EACH 50.0000 3.0000 3.0000 3.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPARE SPARE SPARE ATTAGE AVAILABLE AMPLIFIER WA MODEL No.	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SPARE DEVICE DESCRIPTION DEVICE DESCRIPTION	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 0.0000 0.0000 3.0000 3.0000 0.00000 0.000000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPARE SPARE SPARE ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF OPEN/// DEVICE DESCRIPTION	WATTS EACH 50.0000 2.0000 3.0000 3.0000 3.0000 0.0000 0.0000 0.0000 31.0000 31.0000 0.0000 0.0000 0.0000 0.0000
TAL W/	ATTAGE AVAILABLE	Intrace Calculation For AMP-3 Device description Device description 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SPARE SO WATT NOTIFIER DIGITAL AUDIO AMPLIFIER DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 0.0000 31.0000 31.0000 31.0000 31.0000 31.0000
TAL W/	ATTAGE AVAILABLE ATTAGE	Intrage CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SPARE DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 3.00000 3.00000 3.00000000
TAL W/	ATTAGE AVAILABLE	Intrage CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION DEVICE DESCRIPTION 50 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SPARE SO WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 0.0000 0.0000 31.0000 31.0000 2.0000 2.0000 2.5000 2.5000 2.5000
TAL W/	ATTAGE AVAILABLE	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 0.0000 0.0000 0.0000 3.0000 3.0000 0.00000 0.000000
TAL W/ TAL W/ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ATTAGE AVAILABLE ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S6 S11 S12 S13 S14 S15 SPARE SPARE ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S7 S10 S16 S17 S18	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SPARE SVATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 3.0000 3.0000 3.0000 3.0000 0.0000 0.0000 0.0000 0.0000 3.0000 3.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 3.00000 3.00000 3.00000 3.00000 3.00000 3.00000 3.00000 3.00000000
TAL W/	ATTAGE AVAILABLE ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S12 S13 S14 S15 SPARE SPARE ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S7 S10 S16 S17 S18 S19	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SPARE S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACH 50.0000 2.0000 3.0000 3.0000 3.0000 0.0000 0.0000 0.0000 0.0000 3.0000 0.00000 0.00000 0.00000 0.000000
TY 1 1 1 1 1 1 1 1 1 1 1 1 1	ATTAGE AVAILABLE ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S12 S13 S14 S15 SPARE SPARE SPARE ATTAGE AVAILABLE ATTAGE AVAILABLE AMPLIFIER WA MODEL No. DAA-1 S7 S10 S16 S17 S18 S19 S20	TTAGE CALCULATION FOR AMP-3 DEVICE DESCRIPTION DEVICE DESCRIPTION S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT SPARE SPARE SDARE S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT S0 WATT NOTIFIER DIGITAL AUDIO AMPLIFIER WATTAGE OF SPEAKERS CONNECTED TO THIS CIRCUIT	WATTS EACF 50.0000 2.0000 3.0000 3.0000 3.0000 0.0000 0.0000 31.0000 30.0000 30.0000 31.0000 30.00000 30.00000 30.00000 30.00000000

QTY	PRODUCT	EM VOICE EVAC - FIRE ALARM CONTROL PANEL "FAI DESCRIPTION	CP" St	ANDBY		A					
1	ID AMPS-24	PRIMARY INPUT POWER UNIT	E 0.1	ACH 1300	TOTAL 0.1300	EA 0.05	CH 520	TOTAL 0.0520			
5	LCM-320		0.1	1300	0.1200 0.6500 0.5000	0.12	800	0.6500			
1 5	ACPS-610 SLC	ADDRESSABLE POWER SUPPLY SLC DEVICE ACTOVATION CURRENT (4 CARDS)	0.0	0000	0.0000	0.00	000	0.0000			
1	DAA2 DVC-EM	DIGITAL AUDIO AMPLIFIER DIGITAL VOICE COMMAND	0.0	0000 3000	0.0000	0.22	200	0.2200			
1	DVC-KD LCD-80	KEYPAD FOR LOCAL ANUNNCIATION AND CONTROLS LIQUID CRYTAL DISPLAY MODULE	0.0	0600 0500	0.0600	0.06	600 100	0.0600 0.1000			
1	UDACT	UNIVERSAL DACT	0.0	0400	0.0400 1.8500	0.10	000	0.1000			
			FIELD DEVICES								
YTC	PRODUCT	DESCRIPTION	ST		TOTAL	Α		ΤΟΤΑΙ			
13	اں FMM-1 FCM-1	NEW ADDRESSABLE MONITOR MODULE	0.0	0004	0.0052 0.0016	EA 0.00	04	0.0052 0.0016			
1	NBG-12LX	NEW ADDRESSABLE MANUAL PULL STATION	0.0	0004	0.0016	0.00	950 945	0.0050			
171	FST-951	NEW ADDRESSABLE THERMAL DETECTOR	0.0	0002	0.0492 0.0342	0.00	45	0.7695			
1		DESCRIPTION CONTROL PANEL			STANDBY			ALARM			
		FIELD DEVICES			0.0072			∠.1020 0.0118			
		X 24 HOUR STANDBY TOTAL ALARM CURRENT			44.5728			2 1 1 2 0			
		15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT					_	0.5285			
		SAFETY MARGIN (20%) BATTERY SUPPLIED	LKY REQUIREMENT RGIN (20%) JPPLIED								
TY	MODEL No		AM	P-1	STANDBY			ALARM			
1				EAG	CH TOT	AL	EACH	TOTAL			
1	S1 S3	SPEAKER CIRCUIT No.1		0.20		00	0.3000	0.3000			
1	S5 SPARE	SPEAKER CIRCUIT No.5		0.00		00	0.1200	0.1200			
1	SPARE	SPARE SPARE		0.00		00	0.0000	0.0000			
1	SPARE SPARE	SPARE SPARE		0.00		00	0.0000	0.0000			
	3FARE			0.00	0.28	30	0.0000	1 2450			
								1.2450			
			orðil	JURI	STAN	DBY		ALARM			
		X 24 HOUR STANDBY TOTAL ALARM CURRENT (R)				6.7920		1 2450			
		15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B)						0.3113			
		SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH						8.5239 18AH			
		1			11	1		- i oAfi			
		BATTERY CALCULATION	AM	<u> –2</u>							
TY	MODEL No	DEVICE DESCRIPTION		EAG	STANDBY	AL	EACH	ALARM TOTAL			
1	DAA-1 S2	NOTIFIER DIGITAL AUDIO AMPLIFIER SPEAKER CIRCUIT No.2		0.28	30 0.28 00 0.00	30	0.6850	0.6850			
1	S4 S8	SPEAKER CIRCUIT No.4 SPEAKER CIRCUIT No.8		0.00	0.00	00	0.1600	0.1600			
1	S9 SPARE	SPEAKER CIRCUIT No.9 SPARE		0.00		00	0.2000	0.2000			
1	SPARE SPARE	SPARE SPARE		0.00		00	0.0000	0.0000			
1	SPARE	PANEL STANDBY CURRENT		0.00	0.00	00 30	0.0000	0.0000			
		PANEL ALARM CURRENT	N C.					1.4450			
		TOTA DESCRIPTION	AL SYSTE	-M CURF	KENT STAN	DBY		ALARM			
		X 24 HOUR STANDBY TOTAL ALADM CURPENT (A)				u.2830 6.7920					
		15 MINUTES OF ALARM (X .25)						1.4450 0.3613			
		SAFETY MARGIN (20%)						7.1533 8.5839			
					1			18AH			
		BATTERY CALCULATION	AM	-3							
TY	MODEL No	. DEVICE DESCRIPTION		EAG	STANDBY	AL	EACH	ALARM TOTAL			
1	DAA-1 S6	NOTIFIER DIGITAL AUDIO AMPLIFIER SPEAKER CIRCUIT No.6		0.28	30 0.28 00 0.00	30 00	0.6850 0.0800	0.6850			
1	S11 S12	SPEAKER CIRCUIT No.11 SPEAKER CIRCUIT No.12		0.00	00 0.00	00	0.1200 0.1200	0.1200			
1	S13 S14	SPEAKER CIRCUIT No.13 SPEAKER CIRCUIT No.14	SPEAKER CIRCUIT No.13 0.0000 0.0000 0.2000 SPEAKER CIRCUIT No.14 0.0000 0.0000 0.1200 SPEAKER CIRCUIT No.15 0.0000 0.0000 0.1200 SPEAKER CIRCUIT No.15 0.0000 0.0000 0.1200 SPARE 0.0000 0.0000 0.0000 SPARE 0.0000 0.0000 0.0000 PANEL STANDBY CURRENT 0.2830 0.0000								
1	S15 SPARE	SPEAKER CIRCUIT No.15 SPARE									
1	SPARE	SPARE PANEL STANDBY CURRENT									
		PANEL ALARM CURRENT						1.4450			
		DESCRIPTION	AL SYSTE	EM CURF	RENT STAN	DBY		ALARM			
		TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY				0.2830 6.7920					
		TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25)						1.4450 0.3613			
		SAFETY MARGIN (20%)						7.1533 8.5839			
		DATTERY SUPPLIED (2) 18AH			1			18AH			
		BATTERY CALCULATION	AMF	2-4							
TY	MODEL No	DEVICE DESCRIPTION	, v i ⊀if	F^/	STANDBY	AL I	Each	ALARM			
1	DAA-1	NOTIFIER DIGITAL AUDIO AMPLIFIER SPEAKER CIRCUIT No 7		0.28	30 0.28 00 0.00	30	0.6850	0.6850			
1		SPEAKER CIRCUIT No.10 SPEAKER CIRCUIT No.16		0.00	00 0.00	00	0.1000	0.1000			
		SPEAKER CIRCUIT No.17 SPEAKER CIRCUIT No.18		0.00	0.00	00	0.1200	0.1200			
1		SPEAKER CIRCUIT No.19 SPEAKER CIRCUIT No.20		0.00	00 0.00	00	0.2000	0.2000			
1	SPARE	SPARE PANEL STANDBY CURRENT		0.00	00 0.00	00 30	0.0000	0.0000			
		PANEL ALARM CURRENT						1.6450			
		DESCRIPTION	AL SYSTE	EM CURF	RENT STAN	DBY		ALARM			
		TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY				0.2830 6.7920					
		TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25)						1.6450 0.4113			
		TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%)						7.2033			
		BATTERY SUPPLIED (2) 18AH						18AH			
		RATTERY CALOUR ATIC	יחם	S_1							
TY	MODEL No	DATIENT CALCULATION	<u>.</u> КР	ا - ا		<u>م</u>	F • -	ALARM			
1	PSE-10			0.15	60 0.15	i60	CACH 0.1850	0.1850			
1	V1 V3 V5	VISUAL CIRCUIT No.3 VISUAL CIRCUIT No.5		0.00		00	0.2370	0.2370			
	SPARE	SPARE CIRCUIT PANEL STANDBY CURRENT		0.00	0.00	- 100 160	0.0000	0.0000			
		PANEL ALARM CURRENT			0.10			1.4670			
		DESCRIPTION	AL SYSTE	EM CURF	RENT	_{DBY} T		ALARM			
		TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY				0.1560 3.7440					
		TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25)						1.4670			
		TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%)						4.1108			
		BATTERY SUPPLIED (2) 7AH			_			7AH			
			PDG	5-2							
TY	MODEL No	DEVICE DESCRIPTION			STANDBY	-AI	EACT	ALARM			
1	PSE-10			0.15	60 0.15	i60	EACH 0.1850	0.1850			
<u>1</u>	V2 V4 \/9	VISUAL CIRCUIT No.4		0.00		00	0.5720	0.5480			
1	v8 V9	VISUAL CIRCUIT No.9 PANEL STANDBY CURPENT		0.00	0.00	- 00 60	0.6980	0.6980			
		PANEL ALARM CURRENT			0.15	-		2.5010			
			AL SYSTE	EM CURF	RENT	DRv I					
					STAN	овт 0.1560 3 7440		ALARM			
						J.1 440		2.5010			
		TOTAL BATTERY REQUIREMENT (A+B)						0.6253 4.3693			
		BATTERY SUPPLIED (2) 7AH						5.2431 7AH			
TY			RPS	5–3	STANDRY			ALARM			
1				EAG		AL	EACH	TOTAL			
	V6			0.00	0.15	00	0.1850	0.1850			
	V12 V13	VISUAL CIRCUIT No.12 VISUAL CIRCUIT No.13		0.00		00	0.3080	0.3080			
	V14 V15	VISUAL CIRCUIT No.14 VISUAL CIRCUIT No.15		0.00		00	0.3080	0.3080			
	SPARE	SPARE PANEL STANDRY CURPENT		0.00	0.00	- 100 160	0.0000	0.0000			
		PANEL ALARM CURRENT			0.15	•		1.8510			
			AL SYSTE	EM CURF	RENT	DRv I					
		TOTAL STANDBY CURRENT (A)			SIAN	0.1560 3.7440					
		TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X 25)						1.8510			
		TOTAL BATTERY REQUIREMENT (A+B)						4.2068			
		SAFETY MARGIN (20%)			1			1 21/01-1			
		SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH						18AH			

/	MODEL No	DEVICE DESCRIPTION	ST/		AL	
			EACH	TOTAL	EACH	
	PSE-10	NOTIFIER REMOTE POWER SUPPLY	0.1560	0.1560	0.1850	
	V7	VISUAL CIRCUIT No.7	0.0000	0.0000	0.1260	
	V10	VISUAL CIRCUIT No.10	0.0000	0.0000	0.1970	
	V16	VISUAL CIRCUIT No.16	0.0000	0.0000	0.4190	
	V17	VISUAL CIRCUIT No.17	0.0000	0.0000	0.3080	
	V18	VISUAL CIRCUIT No.18	0.0000	0.0000	0.3080	
	V19	VISUAL CIRCUIT No.19	0.0000	0.0000	0.3080	
	V20	VISUAL CIRCUIT No.20	0.0000	0.0000	0.3080	
		PANEL STANDBY CURRENT		0.1560		
		PANEL ALARM CURRENT				
		TOTAL SY	STEM CURRENT			
		DESCRIPTION		STANDBY		
		TOTAL STANDBY CURRENT (A)		0.1560		
		X 24 HOUR STANDBY		3.7440		
		TOTAL ALARM CURRENT (B)				
		15 MINUTES OF ALARM (X .25)				
		TOTAL BATTERY REQUIREMENT (A+B)				
		SAFETY MARGIN (20%)				
		BATTERY SUPPLIED (2) 18AH				

BATTERY CALCS

○ SHEET NOTES

- 1. PROVIDE & INSTALL 2"C. FOR FIRE ALARM CABLES.
- 2. PROVIDE & INSTALL IN-GRADE CHRISTY #N16 PULL BOX, WITH LID LABELED "FIRE ALARM".
- 3. PROVIDE & INSTALL (2) 2"C. FOR FIRE ALARM CABLES.

CABLE LEG	END
TYPE A =	DENOTES INITIATING DETECTION CIRCUITS (SMOKE DI HEAT DETECTOR ETC.) UNLESS OTHERWISE NOTED, P #14 TWISTED-UNSHIELDED PAIR. CROSSHATCHES IND NUMBER OF PAIRS.
TYPE B =	DENOTES NOTIFICATION APPLIANCE CIRCUITS (HORN, BELL ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) F AWG. CROSSHATCHES INDICATE THE NUMBER OF PAI
TYPE D =	6-STRAND 62.5 MICRON MULTI-MODE FIBER OPTIC CAE SUITABLE FOR UNDERGROUND USE.

GENERAL NOTES:

- A. CONTRACTOR SHALL LOCATE ALL (E) UNDERGROUND UTILITIES PRIOR TO TRENCHING AND TAKE CAUTION TO AVOID DAMAGE DURING TRENCHING. HAND TRENCH IF NECESSARY. CONTRACTOR SHALL MAKE ALL REPAIRS TO DAMAGED UTILITIES AT NO CHARGE TO OWNER.
- B. SEAL ALL EXTERIOR/INTERIOR BUILDING PENETRATIONS, CUT AND PATCH WALLS/CEILINGS FOR CONDUIT ROUTING AS NECESSARY. PAINT/FINISH EXPOSED CONDUITS/BOXES TO MATCH BUILDING FINISH. COORDINATE WITH FACILITIES MANAGER & ARCHITECT FOR EXACT REQUIREMENTS.

\bigcirc SHEET NOTES

1. PER GENERAL DEMOLITION NOTES; CONTRACTOR SHALL DEMOLISH ALL FIRE ALARM AT THIS BUILDING COMPLETE. CONTRACTOR SHALL PROVIDE & INSTALL BLANK COVER PLATE AT LOCATIONS WHERE DEVICES WERE REMOVED. PAINT/FINISH DEVICE PLATES TO MATCH EXISTING WALLS/CEILINGS. WHERE SURFACE RACEWAYS ARE EXISTING FOR FIRE ALARM CONNECTIONS, REMOVE COMPLETE & PAINT/FINISH WALLS/CEILINGS.

GENERAL DEMOLITION NOTES

- A. CONTRACTOR SHALL FIELD VERIFY EXTENT OF ELECTRICAL DEMOLITION AND QUANTITIES OF ELECTRICAL TO BE REMOVED AS DICTATED BY THE REQUIREMENTS OF THE PROJECT.
- B. REMOVAL SHALL INCLUDE WIRING, RACEWAY, BOXES, SWITCHES, LIGHT FIXTURES, ETC. AS INDICATED ON THE PLANS AND AS REQUIRED BY THESE DEMOLITION NOTES.
- C. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE CONCEALED IN EXISTING REMAINING WALLS MAY BE ABANDONED IN PLACE. REMOVE WIRING FROM CONDUIT.D. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE EXPOSED SHALL
- BE REMOVED. E. WHERE REMOVAL OF EQUIPMENT OR WIRING IS INDICATED, IT SHALL INCLUDE ALL ASSOCIATED WIRING BACK TO LAST ACTIVE REMAINING OUTLET, DEVICE, FIXTURE OR PANEL.
- F. ELECTRICAL CONTRACTOR SHALL INSURE THAT ALL REMAINING ACTIVE CIRCUITS, DEVICES, OUTLETS, LIGHT FIXTURES, ETC. HAVE NOT BEEN DISCONNECTED OR MADE INOPERATIVE DURING DEMOLITION. ELECTRICAL CONTRACTOR SHALL RESTORE ALL INTERRUPTED OR DISCONNECTED CIRCUITS TO OPERATION.
- G. ELECTRICAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL REMOVED ELECTRICAL EQUIPMENT AND MATERIAL.
- H. NO REMOVED EQUIPMENT OR MATERIAL SHALL BE REUSED AS PART OF NEW WORK, U.O.N.
- EXISTING REMAINING CONCEALED RACEWAYS MAY BE REUSED FOR NEW WORK PROVIDED THEY MEET ALL REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK.
 EXISTING FLUSH OUTLETS MAY BE REUSED FOR NEW WORK PROVIDED THEY MEET ALL
- REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK, MEET THE REQUIREMENTS OF THE CURRENT C.E.C. FOR VOLUME AND COINCIDE WITH LOCATION SHOWN FOR THE NEW WORK.
- K. FLUSH OUTLET BOXES IN EXISTING WALLS TO REMAIN MAY BE ABANDONED IN PLACE. REMOVE DEVICES AND WIRING, PLUG OPENING AND PROVIDE AND INSTALL A BLANK DEVICE PLATE.
- L. EXISTING WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL CONDITIONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.
- M. WHERE TELEPHONE, COMPUTER DATA, FIBER OPTICS, FIRE ALARM OR OTHER COMMUNICATIONS OUTLETS OR WIRING IS TO BE DEMOLISHED IT SHALL BE REMOVED BACK TO THE NEXT TERMINAL POINT. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER OR HIS REPRESENTATIVE TO HAVE EQUIPMENT AND WIRING DESIGNATED FOR REMOVAL OR PRESERVATION PRIOR TO REMOVAL OF OUTLET BOXES, CONDUIT OR WIRING BY ELECTRICAL CONTRACTOR.
- N. COORDINATE WITH OWNER PRIOR TO START OF DEMOLITION TO MINIMIZE POWER INTERRUPTIONS, WORK MAY HAVE TO OCCUR DURING NON-REGULAR BUSINESS HOURS. COORDINATE IN WRITING WITH OWNER ONE WEEK PRIOR TO PLANNED POWER INTERRUPTIONS.

TYPE A =	DENOTES INITIATING DETECTION CIRCUITS (SI DETECTOR, HEAT DETECTOR ETC.) UNLESS O NOTED, PROVIDE (1) #14 TWISTED-UNSHIELDE CROSSHATCHES INDICATE THE NUMBER OF P.
TYPE B =	DENOTES NOTIFICATION APPLIANCE CIRCUITS STROBES, BELL ETC.) UNLESS OTHERWISE NO PROVIDE (1) PAIR OF #12 AWG. CROSSHATCHE THE NUMBER OF PAIRS.
TYPE D =	6-STRAND 62.5 MICRON MULTI-MODE FIBER OF SUITABLE FOR UNDERGROUND USE.

4

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

NORTH

NORTH

NORTH

NORTH

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

1

GENERAL NOTES: REQUIREMENTS. CABLE LEGEND

THE NUMBER OF PAIRS.

REQUIREMENTS. C. ALL INDOOR SPEAKERS/HORNS SHALL BE 0.5 WATTS RATED MINIMUM. ALL OUTDOOR SPEAKERS/HORNS SHALL BE 2 WATTS RATED MINIMUM. CABLE LEGEND TYPE A = DENOTES INITIATING DETECTION CIRCUITS (SMOKE DETECTOR, HEAT DETECTOR ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) #14 TWISTED-UNSHIELDED PAIR. CROSSHATCHES INDICATE THE NUMBER OF PAIRS. TYPE B = DENOTES NOTIFICATION APPLIANCE CIRCUITS (HORN, STROBES, BELL ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) PAIR OF #12 AWG. CROSSHATCHES INDICATE THE NUMBER OF PAIRS. TYPE D = 6-STRAND 62.5 MICRON MULTI-MODE FIBER OPTIC CABLE, SUITABLE FOR UNDERGROUND USE.

- GENERAL NOTES:
- B. SEAL ALL EXTERIOR/INTERIOR BUILDING PENETRATIONS, CUT AND
- A. CONTRACTOR SHALL LOCATE ALL (E) UNDERGROUND UTILITIES PRIOR TO TRENCHING AND TAKE CAUTION TO AVOID DAMAGE DURING TRENCHING. HAND TRENCH IF NECESSARY. CONTRACTOR SHALL MAKE ALL REPAIRS TO DAMAGED UTILITIES AT NO CHARGE TO OWNER.

5. PROVIDE & INSTALL 2"C. FOR FIRE ALARM CABLES. 6. SEE 1/FA2.1 FOR CONTINUATION.

2. PROVIDE & INSTALL ENGRAVED LAMICOID NAMEPLATE ON FACE OF DEVICE READING "EOL".

○ SHEET NOTES

WHERE NECESSARY, PROVIDE & INSTALL ACCESS PANEL FOR HEAT DETECTOR ABOVE CEILING; 24" SQ. OPENING MINIMUM.

4. PROVIDE & INSTALL 18" SQ. x 6" DEEP, NEMA 3R PULL CAN UP HIGH ON WALL.

VALLEY VIEWS ELEMENTARY SCHOOL CAMPUS WIDE FIRE ALARM REPLACEMENT 480 ADAMS WAY, PLEASANTON, CA 94566 DSA FILE NUMBER 01-32 DSA APPLICATION NUMBER 01-119910 PLEASANTON UNIFIED SCHOOL DISTRICT

GENERAL NOTES

PRE-BID SITE VISIT

CONTRACTOR SHALL VISIT THE PROJECT AREA IN ORDER TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND THE REQUIREMENTS OF THE PROJECT. THE CONTRACTOR MAY CONTACT THE ARCHITECT DURING THE BIDDING PHASE REGARDING CLARIFICATIONS AND PROJECT REQUIREMENTS.

<u>SAFETY</u>

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

DAMAGE TO STRUCTURE OR SYSTEMS TO REMAIN CONTRACTOR SHALL REIMBURSE THE OWNER FOR REPAIR AND REPLACEMENT, INCLUDING ARCHITECT'S FEES, FOR ANY DAMAGE CAUSED TO STRUCTURES, LANDSCAPE, SITE WORK, OR EXISTING SYSTEMS TO REMAIN, AS THE RESULT OF CONSTRUCTION OPERATIONS.

EXISTING CONDITIONS

ALL EXISTING CONDITIONS ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND BUILDING DATA AT THE JOB SITE. ANY DISCREPANCIES REQUIRING MODIFICATION TO THE CONSTRUCTION DOCUMENTS SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY. NO MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.

CONTRACTOR'S EQUIPMENT

COORDINATE WITH OWNER'S REPRESENTATIVE FOR APPROVED LOCATION OF JOB SITE ACCESS, PARKING, AND LOCATION OF CONTRACTOR'S EQUIPMENT AND MATERIAL STORAGE AREA. SEE SITE PLAN FOR ADDITIONAL NOTES.

UTILITY SHUT-DOWNS AND CONNECTIONS

ALL REQUIRED UTILITY SHUT DOWNS SHALL HAVE PRIOR APPROVAL FROM THE OWNER'S REPRESENTATIVE. REQUEST SHALL BE SUBMITTED WITH ADEQUATE ADVANCE NOTICE PER PROJECT REQUIREMENTS.

ASBESTOS AND ASBESTOS PRODUCTS

THE OWNER/OPERATOR AND CONTRACTOR SHALL BE AWARE THAT BUILDINGS CONSTRUCTED PRIOR TO 1978 (OR THERE ABOUT) POSSIBILITY CONTAIN ASBESTOS IN SOME EXISTING CONSTRUCTION MATERIALS, AND WILL LIKELY BE ENCOUNTERED DURING ALTERATIONS OR REMODELING.

UNDER CALIFORNIA TITLE 8, THE OWNER AND CONTRACTOR BOTH HAVE RESPONSIBILITIES TO DETERMINE THE EXISTENCE OF ASBESTOS CONTAINING MATERIALS IN AREAS TO BE ALTERED OR REMODELED PRIOR TO COMMENCEMENT OF WORK AND TO TAKE APPROPRIATE MEASURES TO PROTECT PERSONNEL. CAL-OSHA HAS JURISDICTION OVER ASBESTOS RELATED WORK. ASBESTOS RELATED WORK SHALL BE DONE IN ACCORDANCE WITH CALIFORNIA GENERAL INDUSTRIAL SAFETY ORDERS, TITLE 8, SECTION 341.6 THROUGH 341.14. ASBESTOS IN THE WORK ENVIRONMENT IS REGULATED BY TITLE 8, SECTION 5208.

THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT AND DISTRICT REGULATION 11-2-401.3 REQUIRES EVERY RENOVATION INVOLVING THE REMOVAL OF 100 SQ.FT., LN.FT, OR GREATER OF REGULATED ASBESTOS CONTAINING MATERIAL AND FOR EVERY DEMOLITION (EVEN WHEN NO ASBESTOS IS PRESENT), A NOTIFICATION MUST BE SENT TO THE BAAQMD AT LEAST 10 WORKING DAYS PRIOR TO COMMENCEMENT OF DEMOLITION / RENOVATION.

ALL BUILDING MATERIALS MUST BE ASBESTOS FREE.

THESE DOCUMENTS DO NOT ADDRESS CONTAINMENT FOR EXISTING AREAS OF ASBESTOS WHICH MAY BE DISCOVERED DURING CONSTRUCTION. THE OWNER'S ABATEMENT SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR THE DETECTION, REMOVAL, AND THE DISPOSAL OF ANY EXISTING ASBESTOS MATERIAL. ARCHITECTURAL AND ENGINEERING FEES FOR ADDITIONAL DESIGN EFFORT TO OBTAIN STATE APPROVALS, AS WELL AS THE COST OF ANY REPAIRS, FOR DAMAGE CAUSED OR REPLACEMENT OF EXISTING SYSTEMS TO REMAIN DUE TO WORK PERFORMED BY THE ASBESTOS ABATEMENT SUBCONTRACTOR, SHALL BE THE RESPONSIBILITY OF SAID SUBCONTRACTOR.

CONSTRUCTION SCHEDULING

CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION OPERATIONS WITH OWNER'S REPRESENTATIVE PRIOR TO SCHEDULING AND START OF THE WORK. CONTRACTOR SHALL PROVIDE PROTECTION TO ALL EXISTING SPACES AND SYSTEMS WHICH ARE IN USE, ADJOINING THE PROJECT, AND NOT PART OF THE PROJECT.

INTERIOR FINISHES

INTERIOR FINISHES AND ALL WALL COVERING MATERIAL SHALL CONFORM TO CCR TITLE 24, PART 2, CHAPTER 8.

PIPES, DUCTS AND CONDUIT - SUPPORT AND BRACING

PIPES, DUCTS, AND CONDUITS SHALL BE SUPPORTED AND BRACED PER THE SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS", OPM 0052-13 SEISMIC BRACING AND SUPPORT SYSTEMS.

DRILLED-IN EXPANSION ANCHORS

WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.

TITLE 24 COMPLIANCE

THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS (2019 CBC). SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DSA BEFORE PROCEEDING WITH THE WORK.

ADMINISTRATIVE REQUIREMENTS FROM PART 1., TITLE 24, C.C.R.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT, AND APPROVED BY DSA, AS PER SECTION 4-338 - A DSA CERTIFIED PROJECT INSPECTOR EMPLOYED BY THE DISTRICT AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF WORK, PER SECTION 4-342.

- A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT SHALL CONDUCT ALL REQUIRED TEST AND INSPECTIONS FOR THE PROJECT. - SPECIAL INSPECTION PER SECTION 4-333 (C)

- CONTRACTOR SHALL SUBMIT VERIFIED REPORT OR SECTION 4-336 & 4-343 - ADMINISTRATION OR CONSTRUCTION PER PART 1, TITLE 24, C.C.R.

- DUTIES OF ARCHITECT, STRUCTURAL ENGINEER, OR PROFESSIONAL ENGINEER PER SECTION 4-333 (A) AND 4-341 - DUTIES OF CONTRACTOR PER SECTION 4-343 - VERIFIED REPORTS PER SECTION 4-343 AND 4-336

A COPY OF PARTS 1 TO 5 OF TITLE 24 SHALL BE KEPT AND AVAILABLE IN THE FIELD DURING CONSTRUCTION - DSA SHALL BE NOTIFIED AT START OF CONSTRUCTION AND PRIOR TO PLACEMENT OF CONCRETE PER SECTION 4-331 - SUPERVISION BY DSA PER SECTION 4-334

- DSA IS NOT SUBJECT TO ARBITRATION

GENERAL NOTES, cont.

ADMINISTRATIVE REQUIREMENTS

- ADDENDA MUST BE SIGNED BY ARCHITECT AND APPROVED BY DSA NO CHANGES OR REVISIONS SHALL BE MADE FOLLOWING WRITTEN APPROVAL WHICH
- AFFECTS ACCESS COMPLIANCE ITEM UNLESS SUCH CHANGES TO REVISIONS ARE SUBMITTED TO DSA FOR APPROVAL. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE SUBMITTED AS A
- CONSTRUCTION CHANGE DOCUMENT OR ADDENDA, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION CONSTRUCTION CHANGE DOCUMENTS MUST BE SIGNED BY THE FOLLOWING: -- ARCHITECT OR ENGINEER OF RECORD
- -- STRUCTURAL ENGINEER (WHEN APPLICABLE) -- DELEGATED PROFESSIONAL ENGINEER
- -- DSA MATERIALS AND THEIR INSTALLATIONS SHALL COMPLY WITH APPLICABLE CODES. PER CBC 11B-104.1 "ALL DIMENSIONS ARE SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES EXCEPT WHERE THE REQUIREMENT IS STATED AS A RANGE WITH SPECIFIC MINIMUM AND MAXIMUM END POINTS.

COMPLIANCE WITH LOCAL ORDINANCES

ABBREVIATIONS

GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

(REFER TO	CONSULTANT DRAWINGS FOR	ADDITIONA	L ABBREVIATIONS)
A.F.F.	ABOVE FINISHED FLOOR	LAM.	LAMINATE
A.P.		LAV.	LAVATORY
ADJ.	ADJUSTABLE	M.B. M.S	MACHINE BOLI MACHINE SCREW
ALUM.	ALUMINUM	M.H.	MANHOLE
A.B. APPROX		MFG.	MANUFACTURER
ARCH.	ARCHITECT	M.B. MATL	MARKER BOARD MATERIAI
AC	ASPHALTIC CONCRETE	MAX.	MAXIMUM
ш В.М.	BENCH MARK	MECH.	MECHANICAL
BLKG.	BLOCKING	MIL. MIN	METAL
BD. BW	BOARD BOTH WAYS	MISC.	MISCELLANEOUS
BOT.	воттом	MTD.	MOUNTED
BLDG.	BUILDING	(N) NOM	NEW
B.U.R. C.B.	CATCH BASIN	N.I.C.	NOT IN CONTRACT
CLG.	CEILING	N.T.S.	NOT TO SCALE
CEM.	CEMENT CENTER TO CENTER	NO. or #	NUMBER
0.0010.0.	CENTERLINE		OCCUPANI(CY) ON CENTER
CER. TILE	CERAMIC TILE	OPNG.	OPENING
C.O.		OPP.	OPPOSITE
CLR.	CLEAR	O.H. OFOS	OPPOSITE HAND
C.A.H.R.	CLEAR ALL HEART	0.H.W.S.	OVAL HEAD WOOD SCREW
C.W		O.D.	OVERFLOW DRAIN and/or
COL.	COLUMN	OFCI	OUTSIDE DIAMETER
COM.	COMMON	0.1 .0.1.	CONTRACTOR INSTALLED
CONC.		PR.	PAIR
C.H.	CONSTRUCTION HEART	PART. PL	PARTITION
C.J.	CONSTRUCTION JOINT	d	PENNY (NAILS)
CONT.	CONTINUOUS	PLAS.	PLASTER
CONTR.	COUNTER	PLYWD. PVC	
CTSK.	COUNTER SUNK	P.T.	PRESSURE TREATED
DET.		P.L.	PROPERTY LINE
DIA. OF Ø DIM.		R. or RAD.	RADIUS RAIN WATER I EADER
D.A.	DISABLED ACCESS	RWD./R.W.	REDWOOD
DR.	DOOR	REINF.	REINFORCING
D.S. DWG	DOWNSPOUL	REQ'D	
D.F.	DRINKING FOUNTAIN	R.E.	RIM ELEVATION
	and/or DOUGLAS FIR	R.D.	ROOF DRAIN
EA. EW		RM.	
ELEC.	ELECTRIC or ELECTRICAL	RND.	ROUND
EL. or		R.H.M.S.	ROUND HEAD METAL SCREW
ELEV.	ELEVATION	R.H.W.S.	ROUND HEAD WOOD SCREW
EQ.	EQUAL	SSD. STSMS	SEE STRUCTURAL DRAWINGS
EQUIP.	EQUIPMENT	0.1.0.10.0.	METAL SCREW
(E) EX	EXISTING	SHEATH.	SHEATHING
E.J.	EXPANSION JOINT	S.M.	
EXP.	EXPOSED	S.0.V.	SHEET METAL SCREW
EXT.	EXTERIOR	SIM.	SIMILAR
F.O.M.	FACE OF MASONRY	S.C.	
F.O.S.	FACE OF STUD	SQ.	SQUARE
F.O.F.	FACE OF FINISH	S.F.	SQUARE FEET
F.F.	FINISHED FLOOR	STAG.	STAGGERED
F.S.	FINISH SLAB	STD. S.S.	STANDARD STAINLESS STEEL
F.E.		STL.	STEEL
F.H.	FIRE HYDRANT	STOR.	STORAGE
F.H.M.S.	FLAT HEAD METAL SCREW	S.A.G.	SUPPLY AIR GRILLE
F.H.W.S.	FLAT HEAD WOOD SCREW	THRES.	THRESHOLD
FL. OFFLR. F.D.	FLOOR FLOOR DRAIN	T&G T.I	
FTG.	FOOTING	Т.О.В.	TOP OF BEAM
FND.		T.O.C.	TOP OF CURB or CONCRETE
GALV. G.I.	GALVANIZED GALVANIZED IRON	T.O.S. T.O.W	TOP OF STEEL OF SHEATHING
GA.	GAUGE	TYP.	TYPICAL
GL.	GLASS	U.O.N.	UNLESS OTHERWISE NOTED
GLU-LAM GRD.	GLUE-LAMINATED	U.O.S. V T R	VENT THROUGH ROOF
GYP. BD.	GYPSUM BOARD	VERT.	VERTICAL
HDW.	HARDWARE	V.G.	
нт. H.C.	HOLLOW CORE	V.I.I . V.C.T.	VINYL COMPOSITION TILE
H.M.	HOLLOW METAL	V.W.C.	VINYL WALL COVERING
HORIZ.		V.O.I.P.	VOICE OVER INTERNET PROTOCOL
п.в. I.D.	INSIDE DIAMETER	W.C. W LI	
INSUL.	INSULATION	WP.	WATERPROOF
INT.		W.R.	WATER RESISTANT
INV. JT	JOINT	W.W.M.	
J.H.	JOIST HANGER	W/	WITH
K.D.	KILN DRIED	W/O	WITHOUT
		vvD.	vvOOD

BUILDING CODES AND STANDARDS:

2019	CALIFORNIA ADMINISTRATIVE CODE. F	PART 1. TITLE 24	C.C.R.										
2010	CALIFORNIA BUILDING CODE (CBC) PA	CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, C.C.R.											
2013	(2040 INTERNATIONAL RUIL DING CODE												
	(2018 INTERNATIONAL BUILDING CODE	E, VOLUNES I AI	ND 2, WITH 2019										
	CALIFORNIA AMENDMENTS.)												
2019	CALIFORNIA ELECTRIC CODE (CEC), P.	ART 3, TITLE 24,	C.C.R.										
	(2018 NATIONAL ELECTRIC CODE WITH	1 2019 CALIFOR	NIA AMENDMENTS).										
2010	CALIEORNIA MECHANICAL CODE (CMC		24 C C R										
2013													
	(2010 UNIVI WILCHANICAL CODE WITH 2019 CALIFORNIA AMENIDMENTS)												
	AMENDMENTS).												
2019	CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, C.C.R.												
	2018 UNIFORM PLUMBING CODE WITH 2019 CALIFORNIA AMENDMENTS)												
2010	(2018 UNIFORM PLUMBING CODE WITH 2019 CALIFORNIA AMENDMENTS).												
2019	CALIFORNIA EIRE CODE (CENC), F		0.0.R.										
2019	CALIFORNIA FIRE CODE (CFC), PART 9	, IIILE 24, C.C.F	κ.										
	(2018 INTERNATIONAL FIRE CODE WIT	H 2019 CALIFOR	NIA AMENDMENTS).										
2019	CALIFORNIA GREEN BUILDING STANDA	ARDS CODE. PA	RT 11. TITLE 24.										
	CCR	,	, ,										
2010													
2019			LE 24, U.U.R.										
2016	ASME A17.1 (W/A17.1a/CSA B44a-08 AD	DENDA) SAFET	Y CODE FOR										
	ELEVATORS AND ESCALATORS												
2010	ADA STANDARDS FOR ACCESSIBLE DE	ESIGN											
	(28 CER PART 35 FOR TITLE II ENTITIES	3)											
		-											
			TIONO										
CCR III	LE-19, PUBLIC SAFETY, STATE FIRE MA	RSHAL REGULA	HONS.										
NFPA 13	INSTALLATION OF SPRINKLER SYST	TEMS	2016 EDITION										
	(CA AMENDED)												
INFPA 14		JSE 5151EMS	2010 EDITION										
	(CA AMENDED)												
NFPA 17	DRY CHEMICAL EXTINGUISHING SY	STEMS	2017 EDITION										
NFPA 17	A WET CHEMICAL EXTINGUISHING SY	'STEM	2017 EDITION										
NEPA 20	STATIONARY FIRE PLIMPS TO FIRE	2016 EDITION											
NFPA ZZ	WATER TAINS FOR PRIVATE FIRE	RUIECTION	2013 EDITION										
NEPA 24	PRIVATE FIRE SERVICE MAINS		2016 EDITION										
	(CA AMENDED).												
NFPA 25	INSPECTION, TESTING AND MAINTE	NANCE OF	2013										
	WATER BASED FIRE PROTECTION S	SVSTEMS											
	WATER DAGED TIRE I ROTEOTION C												
			EDITION										
NFPA 72	NATIONAL FIRE ALARM CODE		2016 EDITION										
	(CA AMENDED)												
NFPA 80	FIRE DOORS AND OTHER OPENING	PROTECTIVES	2016 EDITION										
	STANDARD FOR SMOKE CONTROL	SVSTEMS											
NFPA 11		RSISIEMS	2016 EDITION										
NFPA 17	0 STANDARD FOR FIRE SAFETY AND	EMERGENCY	2018 EDITION										
	SYMBOLS												
NFPA 25	3 CRITICAL RADIANT FLUX OF FLOOR	COVERING	2015 EDITION										
	SVSTEMS		Loto Ebition										
NFPA 20	UT CLEAN AGENT FIRE EXTINGUISHING	3 3 Y 3 I EIVIS	2015 EDITION										
ICC 300	STANDARDS FOR BLEACHERS, FOL	DING AND	2017 EDITION										
	TELESCOPIC SEATING AND GRAND)STANDS											
051440													
SFM 12-	10-1 POWER OPERATED EXIT DOO	RS											
SFM 12-	10-2 SINGLE POINT LATCHING OR	LOCKING DEVIC	ES										
SFM 12-	10-3 EMERGENCY EXIT & PANIC HA	ARDWARE											
111 38	MANUAL OPERATING SIGNAL BOXE	S	1999/2005 EDITION										
UL 200	SWORE DETECTORS FOR FIRE PRO	TECTIVE	2009 EDITION										
	SIGNALING SYSTEMS												
UL 268A	SMOKE DETECTORS DUCT APPLICA	ATIONS	1998/2003 EDITION										
UL 300	FIRE TESTING OF FIRE EXTINGUISH	IING SYSTEMS	2005 (R2010)										
		COOKING											
UL 305	PANIC HARDWARE		2012 EDITION										
UL 464	AUDIBLE SIGNALING DEVICES FOR	FIRE ALARM											
	AND SIGNALING SYSTEMS, AND AC	CESSORIES	2003 EDITION										
111 521	HEAT DETECTORS FOR EIDE DEOT												
UL 864	CONTROL UNITS FOR FIRE PROTEC	; IIVE	2003 EDITION										
	SIGNALING SYSTEMS												

(W/ REVISIONS THROUGH DEC. 2014) UL 1971 SIGNALING DEVICES FOR THE HEARING IMPAIRED 2002 EDITION COMPLIANCE WITH CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION

AND DEMOLITION AND CBC CHAPTER 33, SAFETY DURING CONSTRUCTION WILL BE ENFORCED.

SYMBOLS LEGEND

SECTION / EXTERIOR ELEVATION - SECTION IDENTIFICATION - SHEET WHERE SECTION IS DRAWN A8 1

DETAIL — SHEET WHERE DETAIL IS DRAWN ∖ a9.1 /⊷

> INTERIOR ELEVATION - INDICATES ELEVATION SHOWN — SHEET WHERE ELEVATION IS DRAWN

ROOM IDENTIFICATION CLASSROOM ROOM NAME 102 - ROOM NUMBER

SPECIFIC NOTE

/ 3

(102A)

 $\langle a \rangle$

(127)-

(+8'-0")

DOOR DESIGNATION

ADDENDUM REVISION

WINDOW DESIGNATION

CLOUD AROUND REVISION

CCD REVISION CLOUD AROUND REVISION

FINISH NUMBER SEE SPECS AND I.E. DWGS.

EQUIPMENT LETTER A — SEE EQUIPMENT SCHEDULE

CEILING HEIGHT

WALL TYPE

MATCH LINE

CENTER OF

+8'-0" ELEV. HEIGHT

FACE OF

SYSTEM ACROSS ENTIRE SITE.

DESIGN TEAM

CAMPBELL, CALIFORNIA 95008 (408) 879-0600 (408) 377-6066 FAX

1798 TECHNOLOGY DRIVE, SUITE 242 SAN JOSE, CA 95110 (408) 564-7925

OPSC TRACKING NUMBER 75101-107

PROJECT SUMMARY

REPLACING EXISTING FIRE ALARM SYSTEM WITH NEW ADDRESSABLE FIRE ALARM AND EM/VOICE EVACUATION

DRAWING INDEX

THERE ARE NO DEFERRED SUBMITTALS FOR THIS PROJECT.

SUGIMURA FINNEY ARCHITECTS 2155 SOUTH BASCOM AVENUE SUITE 200

ATTN: MARK FINNEY MARK@SUGIMURA.COM ELECTRICAL AND FIRE ALARM ENGINEER AURUM CONSULTING ENGINEERS

T1 TITLE SHEET T3 SITE PLAN - FIRE LIFE SAFETY

FIRE ALARM

- FA0.1 FIRE ALARM SYMBOLS, ABBRE., EQUIPMENT LIST, OPERATIONAL MATRIX, DETAILS & NOTES FA1.1 FIRE ALARM RISER DIAGRAM
- FA1.2 BATTERY & VOLTAGE DROP CALCULATIONS FA2.1 FIRE ALARM DEMOLITION PLAN
- FA3.1 FIRE ALARM SITE PLAN FA4.1 FIRE ALARM PLANS - BUILDINGS A & B
- FA4.2 FIRE ALARM PLANS BUILDINGS C & D FA4.3 FIRE ALARM PLANS - BUILDINGS E, F, F2, G, G2,
- H, J & CC FA5.1 FIRE ALARM DETAILS
- SHEET TOTAL = 11

		BUILDING	G CODE ANAL	YSIS	
	BUILDING	CONSTRUCTION TYPE OCCUPANCY TYPE	AREA (SQ.FT.)	* ALLOWABLE (SQ.FT.)	# OF STORIES
	BUILDING A	V-N / E1	9,979	9,100	1
	BUILDING B	V-N / E1	7,521	9,100	1
	BUILDING C	V-N / E1	9,655	9,100	1
	BUILDING D	V-N / E1	6,802	9,100	1
	PORTABLE KIDS CLUB	V-N / E3	1,440	9,100	1
	BUILDING E	V-N / E1	4,335	9,100	1
	BUILDING F	V-N / E1	3,855	9,100	1
	BUILDING G	V-N / E1	1,920	9,100	1
	BUILDING H	V-1 / A2.1	6,840	10,500	1
BUILDING C BUILDING C BUILDING C BUILDING C BUILDING C BUILDING C BUILDING C C BUILDING C C C C C C C C C C C C C C C C C C C	BULDING E DSA#01-100025		BUILDING F2 BUILDING G BUILDING G DSA#01-100025	DING G2 POI-107877	

1" = 30'-0" ⁰ 7.5' 15' 30' 60'

PROJECT SUMMARY

REPLACING EXISTING FIRE ALARM SYSTEM WITH NEW ADDRESSABLE FIRE ALARM AND EM/VOICE EVACUATION SYSTEM ACROSS ENTIRE SITE.

GENERAL NOTES

A. THIS SHEET IS FOR FIRE LIFE SAFETY CODE RELATED ITEMS. FOR SCOPE OF WORK SEE SHEETS A0.1 AND A0.2. B. REFER TO FIRE ALARM AND FIRE PROTECTION DRAWINGS FOR EXTENT OF OTHER RELATED WORK.

SITE PLAN - FIRE LIFE SAFETY NOTES

1. EXISTING FIRE HYDRANT.

GRAPHIC KEY

EXISTING PROPERTY LINE

— — — — — — ROOF OVERHANG

FIRE DEPARTMENT ACCESS.

(E) FIRE HYDRANT ---- (E) SIGN

EXISTING BUILDING

EXISTING RESTROOMS

FIRE DEPARTMENT ACCESS IS 20'-0" WIDE AND RATED FOR 96,000 LBS.

F	IR
SYMBOL	DESC
FACP	SEMI-F ALARM OPTIOI MODUI NOTIFI FIRE A FACP.
[DVC]	DIGITA WITH L WITH L CHANN COMM ANNUN
RPS	10.0A A OUTPU SYNCH
[AMP]	50 WA WITH B OR 2 SERIE
3	ADDRE SMOKE FSP-95
٩	ADDRE AND BA RATE-0 (DEVIC
⊢∎⊸⊡⊢	ADDRE OPTIC/ FS-OSI
Р	ADDR PULLS MOLD FIRE-L
М	FMM-1
С	ADDRE FCM-1
¤	WALL I STROE SETTIN SYSTE
¤ _c	CEILIN WITH F OF 15, SYSTE
X	WALL I SPEAK CANDE CANDE VRMS WATTS
V M A	CEILIN SPEAK CANDE CANDE VRMS WATTS
₩ P	WALL N ALARN VOLTA SETTIN SENSC
EOL	END OF

E ALARM EQUIF	PMENT L	IST	FIRE	ALARM GE	NERAL NOTE	ES		GENE
RIPTION AND MODEL NUMBER	MFGR'S PART No.	CSFM LISTING	1. WIRING MU	ST BE LISTED FOR USE AS F	REQUIRED BY TITLE 24/CEC, ART	ICLE	1. (CONTRACTOR SHALL C
USH MOUNTED ADDRESSABLE FIRE CONTROL PANEL WITH DVC EM AUDIO AND INTEGRATED UDACT, FIBER	NFS2-3030	7165-0028:0224	760. 2. WIRE USED	IN WET LOCATIONS SHALL	BE OF AN APPROVED TYPE IN		2.	SHALL BE U.L. LISTED A
R NFS2 SERIES; PROVIDE & INSTALL ARM DOCUMENT CABINET NEXT TO			3. UNDER GRO	OUND AND EXTERIOR COND	UITS TO HAVE WATERTIGHT FIT	TINGS	3. (THIS CONTRACT WORK
VOICE COMMAND CONTROL SYSTEM GITAL AUDIO LOOP TECHNOLOGY, 9 8 CHANNELS OF AUDIO AND UP TO 5 ELS OF FIREFIGHTER TELEPHONE NICATIONS, LOCAL KEYPAD FOR LOCAL	NOTIFIER DVC-EM	7165-0028:0224	AND WIRES 4. ALL CONDU NOTED OTH	APPROVED FOR WET LOCA CTORS SHALL BE ROUTED IERWISE ON PLANS. MINIMU	ATION. IN CONDUIT UNLESS SPECIFICA IM CONDUIT SIZE SHALL BE 3/4."	LLY	(THE CONTRACTOR SHA CONTRACT DOCUMENT TRADES WORK. THE CO ON PROJECT.
CIATION AND CONTROLS (DVC-KD). IXILIARY POWER SUPPLY WITH 4 NAC CIRCUITS AND BUILT-IN CONIZATION NOTIFIER PSE-10 SERIES	PSE-10	7315-0028:0513	5. THE CONDU DIAGRAMM/ FIELD TO SU AND BE PRO	JIT AND WIRE SHOWN ON TH ATICALLY. EXACT LOCATION JIT FIELD CONDITIONS. "AS- OVIDED AS REQUIRED BY TH	HESE PLANS ARE SHOWN IS SHALL BE DETERMINED IN THI BUILT" PLANS SHALL BE MAINTA HE PROJECT INSPECTOR OF REC	E INED CORD.	4. (CONTRACTOR SHALL B NSURANCE COVERAGE PROTECT THE OWNER,
T, 70.7VRMS DIGITAL AUDIO AMPLIFIER HARGING POWER SUPPLY AND 2 CLASS CLASS A OUTPUTS. NOTIFIER DAA2	DAA2-5025	7165-0028:0224	6. PENETRATI ACCORDAN PROVIDE DI	ONS OF FIRE RATED WALLS CE WITH CALIFORNIA BUILE ETAILS OF THROUGH PENE	SHALL BE PROTECTED IN DING CODE, CHAPTER 7, TITLE 24 IRATION FIRE-STOP SYSTEMS FO	DR ALL	5. (-	CONTRACTOR SHALL M TO ELECTRICAL SYSTE ACCURATE "AS-BUILT"
SABLE PHOTO ELECTRIC FIRE ALARM DETECTOR AND BASE, NOTIFIER	FSP-951	7272-0028:0503	PIPE/CABLE REQUIRING	CONDUIT PASSING THROU PROTECTED OPENINGS.	GH FIRE RATED WALLS/FLOORS		6. /	ALL MATERIALS PROVI PROVIDE AND INSTALL
SERIES. SABLE FIRE ALARM HEAT DETECTOR	EST-051	7270-0028:0502	7. ALL DEVICE	S SHALL BE "CSFM" LISTED			7. ((CONTRACTOR SHALL P
F RISE, NOTIFIER FST-951 SERIES. S WITH "A" INDICATE ABOVE CEILING).			9. AUDIBLE FI	RE ALARM SOUND LEVEL SH	HALL BE AT LEAST 15DBA ABOVE	THE	8. (1	CONTRACTOR SHALL P NECESSARY TO RESTO
SABLE REFLECTOR-TYPE LINEAR BEAM SMOKE DETECTOR, NOTIFIER SERIES.	FS-OSI-RI	7260-0028:0509	AVERAGE S	OUND LEVEL. GNALS INTENDED FOR OPE	RATION IN THE PUBLIC SHALL HA	VE A	9. (AT START OF WORK. CONTRACTOR SHALL B
SSABLE FIRE ALARM MANUAL ATION, DUAL-ACTION WITH KEY RESET, D POLYCARBONATE HOUSING, TE NG SERIES.	NG-12LX	7150-0028:0199	SOUND LEV AT THE MIN	EL OF NOT LESS THAN 75DI	BA AT 10 FEET OR MORE THAN 1 FROM THE AUDIBLE APPLIANCE	10DBA	۲ ۱0. ،	REFER TO ARCHITECTS
SABLE MONITOR MODULE FIRE-LITE ERIES.	FMM-1	7300-0028:0219	EXCEED 2 F	CAL DEVICES ARE REQUIRE LASHES PER SECOND AND RY SECOND. THE DEVICE SP	SHOULD NOT BE SLOWER THAN HALL HAVE A PULSING LIGHT SO	1 JRCE	E	ELECTRICAL DEVICES S
SABLE CONTROL MODULE FIRE-LITE ERIES.	FCM-1	7300-0028:0219	NOT LESS T 50 FEET FR	HAN 15 CANDELA. NO PLAC OM A DEVICE.	E IN ANY ROOM SHALL BE MORE	THAN	11. / (ALL CONDUITS UNLESS (1) #12 GROUND. "TICK" SHALL BE RESPONSIBL
WITH FIELD SELECTABLE CANDELA SS OF 15, 30, 75 AND 110 CANDELA. SENSOR, SWL SERIES.	SWL	7125-1653:0504	12. APPROVED REGULATIO APPROVED	BY THE "DIVISION OF THE S N SERVICES." CONTRACTOR PLANS TO THE PROJECT IN	STATE ARCHITECT/OFFICE OF R SHALL PROVIDE COPIES OF ISPECTOR OF RECORD PRIOR TO		12. <i>I</i>	ALL BRANCH CIRCUITS
MOUNTED MULTI-CANDELA STROBE ELD SELECTABLE CANDELA SETTINGS 0, 75 AND 115 CANDELA. SENSOR SCWI SERIES	SCWL	7125-1653:0504	EGINNING ENGINEER I SYSTEM SH SUBMITTED	WORK. THE CONTRACTOR PRIOR TO PURCHASE FOR F ALL NOT BE INSTALLED UN TO AND RECEIVED BY THE	SHALL SUBMIT SHOP DRAWING REVIEW. THE FIRE PROTECTION TIL SHOP DRAWINGS HAVE BEEN ENGINEER OF RECORD.		13. ((COORDINATE ALL CON CONFLICTS.
OUNTED MULTI-CANDELA, R-STROBE WITH FIELD SELECTABLE A SETTINGS OF 15, 30, 75 & 110 A WITH VOLTAGE SETTING OF 70.7 ND POWER SETTINGS OF ½, ½, 1 & 2	SPSWL	7320-1653:0505	13. FINAL ALAR RECORD (IC FIRE AUTHO ALARM TES	M TEST SHALL BE WITNESS DR). BOTH THE DSA INSPEC DRITY SHALL BE NOTIFIED C TING BY THE FIRE ALARM C	ED BY THE DSA INSPECTOR OF FOR OF RECORD (IOR) AND THE OF DATE AND TIME OF FINAL FIRI CONTRACTOR. FIRE ALARM		14. ((15. /	CONTRACTOR SHALL F CONSTRUCTION. ALL CONDUIT SHALL BI NECESSARY. WHERE IT
SYSTEM SENSOR, SPSWL SERIES. MOUNTED MULTI-CANDELA,				OR SHALL PROVIDE "RECOF OF RECORD (IOR)/DSA AFT	RD OF COMPLETION" TO THE TER COMPLETION OF OPERATION	IAL	1	NORK OBTAIN PERMIS WHERE POSSIBLE.
R-STROBE WITH FIELD SELECTABLE A SETTINGS OF 15, 30, 75 & 115 A WITH VOLTAGE SETTING OF 70.7 ND POWER SETTINGS OF ¼, ½, 1 & 2	SPSCWL	7320-1653:0505	14. POWER SEF RED MARKI	RVICE SHALL BE ON A DEDIC NG AND IDENTIFIED AS "FIR	CATED, 120V BRANCH CIRCUIT, V E ALARM CIRCUIT CONTROL."	VITH A	16. V	WHERE IT IS NOT POSS NON-METALLIC SURFAC APPROVED BY THE ARC
OUNTED WEATHERPROOF FIRE			15. AUTOMATIC SUPERVISO	FIRE ALARM SYSTEM SHAL RY AND TROUBLE SIGNALS	L TRANSMIT THE ALARM, TO AN APPROVED SUPERVISING	6	17. F	EXTENSION RINGS OR I
VOICE EVACUATION SPEAKER WITH E SETTING OF 70.7 VRMS AND POWER SS OF ¼, ½, 1 & 2 WATTS. SYSTEM C, SPWK SERIES.	SPWK	7320-1653:0201	STATION AS SUPERVISIN UNDERWRI ⁻ FACTORY M	S REQUIRED BY NFPA 72 AS NG STATION SHALL BE LISTE TERS LABORATORY OR SHA IUTUAL RESEARCH APPROV	AMENDED BY CFC CHAPTER 80. ED AS EITHER UUFX OR UUJS BY ILL MEET THE REQUIREMENTS O (AL STANDARD 3011.	THE , F	18. (\ [CONTRACTOR SHALL B WATER, TELEPHONE, E DAMAGE TO EXISTING U UNDERGROUND SYSTE
			16. EXISTING FI FIELD DEVIO NEW LOCAT DISTRICT TO	ELD DEVICES AND FACP SH CES ARE IN PLACE AND NEV FION OF FACP. CONTRACTO O PROVIDE AN APPROVED 2	HALL REMAIN IN PLACE UNTIL NE V WIRING HAS BEEN HOMERAN T R SHALL COORDINATE WITH SCH 24 HOUR FIRE WATCH UNTIL NEW	W O IOOL / FIRE	19. E (EXISTING WIRING SHOU CONTRACTOR SHALL F CONDITIONS AND TO M
			ALARM SYS	TEM IS OPERATIONAL.			20. 	WHERE NON-METALLIC FULLEST EXTENT PER WILL BE PERMITTED ON
							21. / ((ALL INSTALLATION OF E ARCHITECT BEFORE R SPACE, HOLLOW MULL CONCEALED EITHER B' DETERMINED, CONTRA PLEASING MEANS AS D DUE TO ROUTING AS E
		FIRF	ALARM S	SYSTEM OF	PERATIONAL	MATR	IX	

· ·															•						
													A	\LAF	RM			TR	OUE	BLE	SUPERVISORY MISC.
					Q AL	UN CONTRACTOR	11 11 11 11 11 11 11 11 11 11 11 11 11	2 PE			23 X 14			8 W 10 00		10 10 10 10 10 10 10 10 10 10 10 10 10 1					
CAUSE	/	J)	K)	K)	$\langle \rangle$	Ś	k	X	X	E/	/č	\$/2	\$/2	S/	/\$	Ì/s	K	3/s	1/5 }	Š	REMARKS
SMOKE DETECTORS	1.	•	Í	•	•	Í	Í	Í				Í		Í					Í		
HEAT DETECTORS	•	•	•	•	•																
FLOW SWITCH	•	•	•	•	•																
TAMPER SWITCH											٠	•	٠								
SYSTEM RESET																•	٠	•	٠		
SIGNAL SILENCE																•					
AC POWER FAILURE							•	•	٠												
FIRE ALARM TROUBLE (OPEN, SHORTS, OR GROUNDS) ON INITIATION OR SIGNALING CIRCUITS	S						•	•	•												

GENERAL CONSTRUCTION NOTES

CTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT BE U.L. LISTED AND LABELED FOR THE APPLICATION. NTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY

ACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING AND ALLOW FOR ALL FIELD CONDITIONS. NTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL ACT DOCUMENTS. THE CONTRACTOR SHALL OBTAIN INFORMATION AND BE FAMILIAR WITH ALL OTHER WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES JFCT

ACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE NCE COVERAGE AS NECESSARY FOR LIABILITY AND PERSONAL, PROPERTY DAMAGE, TO FULLY THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK. ACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS CTRICAL SYSTEMS. THE CONTRACTOR SHALL AT THE CONCLUSION OF THE PROJECT PROVIDE ATE "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.

FERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO E AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.

ACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE RUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES. ACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" CARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING

RT OF WORK. ACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

CTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN ILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS.

DUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12s WITH ONE GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR ROUGH ESTIMATING ONLY. THE CONTRACTOR E RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE. NCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS. SHARED NEUTRALS ON MULTIWIRE CIRCUITS IS

OWED. NATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID

ACTOR SHALL PROVIDE IN EVERY NEW EMPTY CONDUIT A DRAW STRING FOR USE IN FUTURE RUCTION.

NDUIT SHALL BE CONCEALED WHERE POSSIBLE. CUT AND PATCH EXISTING WALLS WHERE ARY. WHERE IT IS NECESSARY TO CUT OR BORE EXISTING STRUCTURAL WALLS FOR NEW ELECTRICAL DBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO STARTING WORK. REUSE EXISTING CONDUIT POSSIBLE.

T IS NOT POSSIBLE TO REUSE EXISTING CONDUIT OR RUN NEW CONCEALED CONDUIT USE TALLIC SURFACE RACEWAY AND BOXES. ROUTING OF ALL NON-METALLIC RACEWAYS SHALL BE ED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN. ION RINGS OR RESET BOXES TO BE FLUSH WITH NEW WALL THICKNESS.

ACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UNDERGROUND SYSTEMS (GAS, TELEPHONE, ELECTRICAL, SEWER, ETC.). THE CONTRACTOR SHALL REPAIR & PAY ALL EXPENSES FOR TO EXISTING UNDERGROUND SYSTEMS AS A RESULT OF NEW WORK. REPAIR TO DAMAGED GROUND SYSTEMS SHALL BE TO THE OWNERS SATISFACTION WITHOUT EXTRA EXPENSE TO THE

WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL ACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL IONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.

NON-METALLIC SHEATHED CONDUCTORS ARE FOUND, THE CONTRACTOR SHALL REMOVE TO T EXTENT PER THE GENERAL DEMOLITION NOTES AND REPLACE WITH CONDUIT. METAL CLAD CABLE PERMITTED ON A CASE-BY-CASE BASIS ONLY BY WRITTEN APPROVAL FROM THE ARCHITECT.

TALLATION OF EXPOSED SURFACE MOUNTED RACEWAY IN PUBLIC AREAS SHALL BE REVIEWED BY ECT BEFORE ROUGH-IN. CONTRACTOR IS TO DETERMINE THE ACCESSIBILITY OF ATTIC, FURRED HOLLOW MULLIONS. ETC. IN EACH AREA AND REVIEW WITH ARCHITECT. IF SYSTEM CAN BE ROUTED LED EITHER BY FISHING OR ACCESSIBILITY, CONTRACTOR IS TO DO SO. IF INACCESSIBILITY IS 11NED, CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAY IN THE MOST AESTHETICALLY IG MEANS AS DETERMINED BY THE ARCHITECT. NO ALLOWANCE FOR ADDITIONAL COMPENSATION ROUTING AS DIRECTED BY THE ARCHITECT WILL BE MADE.

SHEET INDEX

FA0.1 FIRE ALARM SYMBOLS, ABBREVIATIONS, EQUIPMENT LIST, **OPERATIONAL MATRIX & NOTES.**

- FA1.1 FIRE ALARM RISER DIAGRAM.
- FA1.2 BATTERY & VOLTAGE DROP CALCULATIONS.
- FA2.1 FIRE ALARM DEMOLITION PLAN.
- FA3.1 FIRE ALARM SITE PLAN.
- FA4.1 FIRE ALARM PLANS BUILDINGS A & B.
- FA4.2 FIRE ALARM PLANS BUILDINGS C & D. FA4.3 FIRE ALARM PLANS - BUILDINGS E, F, F2, G, G2, H, J & CC.
- FA5.1 FIRE ALARM DETAILS.

EQUIPMENT ANCHORAGE

M/E/P COMPONENT ANCHORAGE NOTES:

#_____.

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTION 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26 & 30: 1. ALL PERMANENT EQUIPMENT AND COMPONENTS.

2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED(e.g. HARD WIRE) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 120 / 220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE. 3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED IN THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FELXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

A. COMPONENTS WEIGHTING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT. B. COMPONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5

POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL. THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT OF THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8 AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON PRE-APPROVED INSTALLATION GUIDE (e.g. OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS. MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E): MP MD PP E = - OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. MP I MD PP E E - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM #)

SYMBOLS & ABBREVIATIONS

SYN	/IBOLS		
Пр	MANUAL PULL STATION	$\widehat{\mathbf{T}}$	BELL (GONG)
X	STROBE ONLY	FACP	FIRE ALARM CONTROL PANEL
Ø,		RPS	REMOTE POWER SUPPLY
∇	(CEILING MOONTED)	AMP	DIGITAL AUDIO AMPLIFIER
Ď	SPEAKER ONLY	EOL	END OF LINE
∇ M	MINI HORN	0/Ю	JUNCTION BOX - CEILING/WALL SIZE PER CODE, TAPE AND TAG
X	SPEAKER/STROBE		PULLBOX
	SPEAKER/STROBE (CEILING MOUNTED)		CONDUIT - HOME RUN TO PANE TERMINAL CABINET, ETC. AS IN RUNS MARKED WITH CROSSHA
0 X	CHIME/STROBE	#10	WHEN MORE THAN TWO. SIZE ACCORDING TO SPECIFICATION
	HEAT DETECTOR		APPLICABLE CODE. - CROSS HATCHES WITH NUMBE
€A	HEAT DETECTOR (ABOVE ACCESSIBLE CEILING	G)	ADJACENT INDICATES WIRE SI THAN #12 AWG.
(\mathbf{S})	SMOKE DETECTOR		CONDUIT - EXISTING
Ï			CONDUIT - CONCEALED IN WALLS
(2)	DUCT SMOKE DETECTOR		CONDUIT - IN OR BELOW FLOOR: 3/
\Diamond	TAMPER SWITCH	\$	CONDUIT CONTINUATION.
8	FLOW SWITCH	201	ROOM NUMBER.
Ň	POST INDICATING VALVE	$\langle 2 \rangle$	SHEET NOTE REFERENCE SYME SEE ASSOCIATED NOTE ON SAM SHEET.
		$\begin{pmatrix} 2\\ E1 \end{pmatrix}$	DETAIL OR SECTION DESIGNAT
ABE	BREVIATIONS	\bigcirc	
ARCH AWG	I. ARCHITECT AMERICAN WIRE GAUGE	FSD IDC	FIRE SMOKE DAMPER INITIATING DEVICE CIRCUITS
BKR	BREAKER	(N)	NEW
C CO	CONDUIT CONDUIT ONLY	NAC	NOTIFICATION APPLIANCE CIRCUITS
СВ	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CKT	CIRCUIT	NO	NUMBER
CLG	CEILING	SLC	SIGNALING LINE
(E)	EXISTING	TVP	TYPICAL
EOL	END OF LINE		UNI ESS OTHERWISE
FA	FIRE ALARM	001	NOTED

FACP	FIRE ALARM CONTROL PANEL	WP	WEATHERPROOF
FBO	FURNISHED BY OTH	ERS	
TYPI	CAL ZONE NOM	IENCLATURE	
S2		TES SIGNAL CIRCU NOTES CANDELA R	IT #2 ATING
	L "4" DENOT	ES DEVICE #4	
	"M" DENO DEVICE "1" DENOT	TES MODULE DEVIC	CE; "D" DENOTES DETECTOR

M1-5 - "5" DENOTES DEVICE #5

> CROSSHATCH INDICATES NUMBER OF WIRES REQUIRED SUBSCRIPT LETTER INDICATES TYPE OF CIRCUIT. SEE GENERAL NOTES THIS SHEET FOR NUMBER & TYPE OF WIRES AND CIRCUIT TYPE.

PROJECT DESCRIPTION

SCOPE OF WORK: REPLACING EXISTING FIRE ALARM SYSTEM WITH NEW ADDRESSABLE FIRE ALARM AND EM/VOICE EVACUATION SYSTEM ACROSS ENTIRE SITE.

SYSTEM DESCRIPTION: SLC = CLASS B IDC = CLASS B NAC = CLASS B FIRE ALARM SYSTEM DESIGN BY

NAJIB ANWARY

APPLICABLE CODES & STANDARDS

CODES:

- . 2019 CALIFORNIA ADMINISTRATIVE CODE C.C.R., TITLE 24, PART 1.
- 2. 2019 CALIFORNIA BUILDING CODE (CBC) C.C.R., TITLE 24, VOL. 1 & 2 BASED ON THE 2018 INTERNATIONAL BUILDING CODE (IBC) WITH CALIFORNIA AMENDMENTS.
- 2019 CALIFORNIA RESIDENTIAL CODE C.C.R., TITLE 24, PART 2.5 BASED ON THE 2018 INTERNATIONAL RESIDENTIAL CODE WITH CALIFORNIA AMENDMENTS.
- 2019 CALIFORNIA ELECTRICAL CODE (CEC) C.C.R., TITLE 24, PART 3 BASED ON THE 2017 NATIONAL ELECTRICAL CODE (NEC) WITH CALIFORNIA AMENDMENTS.
- 5. 2019 CALIFORNIA MECHANICAL CODE (CMC) C.C.R., TITLE 24, PART 4 BASED ON THE
- 2018 UNIFORM MECHANICAL CODE (UMC) WITH CALIFORNIA AMENDMENTS. 6. 2019 CALIFORNIA PLUMBING CODE (CPC) C.C.R., TITLE 24, PART 5 BASED ON THE 2018
- UNIFORM PLUMBING CODE (UPC) WITH CALIFORNIA AMENDMENTS. 2019 CALIFORNIA ENERGY CODE C.C.R., TITLE 24, PART 6.
- 8. 2019 CALIFORNIA FIRE CODE (CFC) C.C.R., TITLE 24, PART 9 BASED ON THE 2018
- INTERNATIONAL FIRE CODE (IFC) WITH CALIFORNIA AMENDMENTS. 9. 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE C.C.R., TITLE 24, PART 11.
- 10. 2019 CALIFORNIA REFERENCED STANDARDS CODE C.C.R., TITLE 24, PART 12.
- 11. TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS. 12. NATIONAL FIRE ALARM CODE (NFPA 72) 2016.

STANDARDS:

- AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) 2. ELECTRONICS INDUSTRIES ASSOCIATION (EIA)
- 3. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
- 4. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
- 5. NATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)
- 6. UNDERWRITER LABORATORIES (UL)
- 7. CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS (CAL/OSHA)
- 8. NATIONAL FIRE PROTECTION ASSOCIATION; INSTALLATION OF CARBON MONOXIDE (NFPA 720)

					BU	ILDIN	G D									
	2 74		2 76				A 80	2 81	2 82	A 83		2 85	A 86			
	69 69	<u>68</u>	67		65	64	63 A		61 A	60 60	A		A 57	2 56		
- <u></u> 3	2					9			A	13	A A A	15	A 16	17	4 18	19 19
								2 88			91 A			A A 94		
	15cd V S1a-1 V1a-1	15cd V1a-2	15cd V S1a-2 V1a-3	15cd V S1a-3 V1a-4	WP S1a-4	15cd S1a-5 V1a-5	75cd V S1a-6 V1a-6	15cd V1a-7	15cd V1a-8	15cd V S1a-7 V1a-9	WP EOL S1a-8	15cd V1a-10	15cd EOL V1a-11		BUIL	_DIN(
		30cd V () () () () () () () () () ()	WP V		75cd V X	75cd		30cd	30cd V ()		30cd V EOL			BUIL	_DING	С
	S1b-1 V1b-1 15cd	S1b-2 V1b-2	30cd	S1b-4 V1b-3 75cd	S1b-5 V1b-4 WP		S1b-6 V1b-6 30cd	S1b-7 V1b-7	S1b-8 V1b-8 15cd V	75cd	S1b-10 V1b-9 75cd V	75cd		BIII		П
	∑ S1c-1 V1c-1 WP ∇	V1c-2	V1c-3 C 15cd	2 S1c-2 V1c-4	S1c-3	2 S1c-4 V1c-5	V1c-6	V1c-7	S1c-5 V1c-8	∑ S1c-6 V1c-9	S1c-7 V1c-10	S1c-8 V1c-11			DING	U
	S1d-1	С Д S1d-2 V1d-1		V1d-3	V1d-4	V1d-5	_							BUIL	.DING	CC
	^A			A						A		A	BUI		B	A
49	50	51	PORT	TABLE	54 S	55	56	57	58	59	60	61	BUI		64 64	65
2 46	45 ^A		43 ^A	42 A	41	40 ^A	2 39		?			A		A		
3	4 A	2 5					10	A	12 12		A 14	2 15		A A 	- <u>2</u> 18	
A 81	82 82		BUILI		J	75-1	75.1	75	75.1					75.4	76-1	1
	S2a-1	75cd V A S2a-2 V2a-1	75cd V S2a-3 V2a-2	7500 V S2a-4 V2a-3	/ 500 V S2a-5 V2a-4	75cd V S2a-6 V2a-5	75cd V A S2a-7 V2a-6	7500 V Δ S2a-8 V2a-7	75cd ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	S2a-10	15cd V2a-9	30cd V2a-10	S2a-11	/500 V Δ S2a-12 V2a-11	S2a-13 V2a-12	POF
	30cd				75cd	WP V S2b-5		30cd V2b-7	30cd		75cd	75cd EOL EOL	BUIL	DING	В	1
	WP V S2c-1	V2b-2 75cd ↓ EO ▲ EO ▲ EO S2c-2 V2c-1	BUI	LDING	^{V26-5}		V2b-6			V2b-9	V2b-10	V2b-11				
	A		A		A		BL		NG H				A		A	
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	15cd	75cd	WP V	15cd ▽	15cd	15cd	15cd		75cd	75cd	WP	75cd	75cd			
	V3a-1	V3a-2	S3a-1		S3a-3 V3a-4	V3a-5	V3a-6	S3a-4	S3a-5 V3a-7	S3a-6 V3a-8	S3a-7	S3a-8 V3a-9	——[24] EOL S3a-9 V3a-10	S3a-10		
A	A				A		A	A								
50	51 6	2 52	- <u>(2)</u> 53	54	55 ••••		57 A	58 6	59 ••••	(2) 60	61	$\underbrace{}_{62}^{62}$ E	BUILD	INGS (G & G	2 ^^
24	25 	26	27	28	29	30 30	31 A	32	33	34	35 A	36 	37 37	38	39 A	40 40
3	4 75cd	5 WP	6 75cd	7 7 75cd	8 75cd	9 WP	10	11	12	13	14	15	16	17	18	19
	V △ S4a-1 V4a-1	S4a-2	V △ S4a-3 V4a-2	V Δ S4a-4 V4a-3	S4a-5 V4a-4	S4a-6										
	75cd	WP V S4b-2	WP V S4b-3	75cd V () () () () () () () () () ()	75cd V X S4b-5	75cd V X X S4b-6	75cd EOL EOL S4b-7	BUI	LDING	SF&	F2					
	V4b-1 75cd ▼ ▲	75cd	75cd V EO EO	U4b-2	V4b-3	V4b-4	V4b-5	BUI	LDING	68 G 8	k G2					
	<u>لام</u> S4c-1 V4c-1	∠∆ S4c-2 V4c-2	<u>لام</u> S4c-3 V4c-3													

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PORTABLES

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()	DETAIL NOTES:	

1. CONTR FOR FL	ACTOR SHALL PROVIDE AND INSTALL ADDITIONAL SLC CARD JTURE USE.
CABLE LE	<u>GEND</u>
TYPE A =	DENOTES INITIATING DETECTION CIRCUITS (SMOKE DETECTOR, HEAT DETECTOR, ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) #14 TWISTED-UNSHIELDED PAIR. CROSSHATCHES INDICATE THE NUMBER OF PAIRS.
TYPE B =	DENOTES NOTIFICATION APPLIANCE CIRCUITS (SPEAKERS, STROBES, BELL ETC.) UNLESS OTHERWISE NOTED, PROVID (1) PAIR OF #12 AWG. CROSSHATCHES INDICATE THE NUME OF PAIRS.
TYPE C =	6-STRAND 62.5 MICRON MULTI-MODE FIBER OPTIC CABLE, SUITABLE FOR UNDERGROUND USE.

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V	()
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	VOLTAGE DROP CALCULATIONS (VISUAL CIRCUITS)																													
					VISUAL CIE		V4a			νοι τα	GE DROF	P (VD) CA	I CULATI	ON - VISI	IAL CIRC	UIT No V2	² a						P (VD) CA	I CULATI	ON - VIS		UIT No	V1a		
DEVICE #	1st	2 nd $3 i$	d 4th	5th		7th	8th	9th 10t	DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	DEVICE #	1st	2nd	- (VD) CA	4th	5th	6th	7th	8th	9th	10th
GAUGE WIRE	12	12 1	2 12	12	2 12	12	12	12 12	GAUGE WIRE	12	12	12	12	12	12	12	12	12	12	GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
DISTANCE (FT)	30	70 5	5 45						DISTANCE (FT)	45	55	45	55	40	55	50	45	85	20	DISTANCE (FT)	20	45	15	30	35	20	20	30	60	40
TOTAL AMPS@DEV	0.111	0.111 0.11	$ \begin{array}{c cccccccccccccccccccccccccccccccccc$	0	0	0	0		TOTAL AMPS@DEV	0.111	0.111	0.111	0.111	0.111	0.111	0.111 0	.111 (0.043	0.063	TOTAL AMPS@DEV	0.043	0.043	0.043	0.043	0.043	0.107	0.043	0.043 0	120 0	<u>).043</u>
VOLT. DROP @ DEV.	0.044	0.077 0.04	0.017	0	0	0	0	0 0	VOLT. DROP @ DEV	· 0.181	0.201	0.148	0.161	0.102	0.12	0.091 0	.065 (0.092	0.019	VOLT. DROP @ DEV.	0.036	0.074	0.022	0.04	0.042	0.021	0.014	0.017 0	.026 (0.011
TOTAL CIRCUIT AMPS =	0.444		WIR	E RES	SIS. CIRC.		FORMU	LA	DEVICE # GAUGE WIRE	11th 12	12th 12	13th 12	14th 12	15th 12	16th 12	17th 12	18th 12	19th 12	20th 12	DEVICE # GAUGE WIRE	11th 12	12th 12	13th 12	14th 12	15th 12	16th 12	17th 12	18th 12	19th 12	20th 12
TOTAL VOLT DROP =	0.178		10	1.2	9 10380		I * FEET	* 21.6	DISTANCE (FT)	75	35									DISTANCE (FT)	35									
			12	2.0	01 6530		C.M.		AMPS OF DEVICE	0.111	0.111					0 0		0	0	AMPS OF DEVICE	0.043			0			0			
CKT VOLTAGE =	20.4		14	3.1	9 4110 08 2580				VOLT. DROP @ DEV	· 0.222 · 0.055	0.013	0	0	0	0	0 0	(0	0	VOLT. DROP @ DEV.	0.043	0	0	0	0	0	0	0 0		0
% VOLTAGE DROP =	0.9%									= 1.216			WIRE	RESIS	CIRC	F		Δ			0 537			WIRE	RESIS	CIRC		FORMULA	<u> </u>	
	VOLTA	GE DROP (VD)	CALCULA	TION - \	VISUAL CIF	CUIT No.	V4b			- 1.210			SIZE	/M FT.	MILS.	1					0.007			SIZE	/M FT.	MILS.			`	
DEVICE #	1st	2nd 3i	d 4th	5th	h 6th	7th	8th	9th 10t	TOTAL VOLT DROP =	1.248			10	1.29	10380	I`	* FEET *	* 21.6		TOTAL VOLT DROP =	0.309			10	1.29	10380		I*FEET*	21.6	
DISTANCE (FT)	100	12 1.	5 45	75	5	12	12		CKT VOLTAGE =	20.4			12	3.19	4110		0.111.			CKT VOLTAGE =	20.4			14	3.19	4110		C.IVI.		
AMPS OF DEVICE	0.111	0.111 0.11	1 0.111	0.111	1								16	5.08	2580									16	5.08	2580				
TOTAL AMPS@DEV. VOLT. DROP @ DEV.	0.555 0.184	0.444 0.33 0.191 0.05	3 0.222 0.033	0.111	1 0 8 0	0	0	0 0 0 0	% VOLTAGE DROP =	6.1%										% VOLTAGE DROP =	1.5%									
	0 555						EODMU			νοι τα							2b													
TOTAL CIRCUIT AMPS =	0.000		SIZE		T. MILS				DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
TOTAL VOLT DROP =	0.485		10	1.2	9 10380		I * FEET	* 21.6	GAUGE WIRE	12	12	12	12	12	12	12	12	12	12	GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
			12	2.0	01 6530		C.M.		DISTANCE (FT)	30	45	35	40	45	60	35	35	60	45	DISTANCE (FT)	70	45	55	45	40	75	35	35	65	
CKT_VOLTAGE =	20.4		14	3.1	9 4110	_			TOTAL AMPS@DEV	0.063	0.041	0.111	0.111	0.111	0.041	0.063 0	396 (0.111	0.111	TOTAL AMPS@DEV.	0.111	0.063	0.063	0.111	0.111	0.063	0.063	0.063 0	063	0
% VOLTAGE DROP =	2.4%		16	5.0	18 2580				VOLT. DROP @ DEV	· 0.093	0.13	0.096	0.096	0.091	0.099	0.053 0	.046 (0.066	0.033	VOLT. DROP @ DEV.	0.165	0.089	0.098	0.071	0.048	0.063	0.022	0.015 0	0.014	0
	2.170																													
							V4c			11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	TOTAL CIRCUIT AMPS =	0.711			WIRE SIZE	RESIS.	CIRC.		FORMULA	4	
DEVICE #	1st	2nd 3	d 4th	5th		7th	8th	9th 10t	DISTANCE (FT)	40	12	12	12	12	12	12	12	12	12	TOTAL VOLT DROP =	0.583		+	10	1.29	10380		I * FEET *	21.6	
GAUGE WIRE	12	12 1	2 12	12	2 12	12	12	12 12	AMPS OF DEVICE	0.111														12	2.01	6530		C.M.		
DISTANCE (FT)	200	45 4	5						TOTAL AMPS@DEV	0.111	0	0	0	0	0	0 0	(0	0	CKT VOLTAGE =	20.4			14	3.19	4110				
AMPS OF DEVICE	0.111	0.111 0.11	1			0	0	0 0		0.015	0	0	0	0	0	0 0		0	0		0.00/			16	5.08	2580				
VOLT. DROP @ DEV.	0.333	0.033 0.01	7 0	0	0	0	0	0 0												% VOLTAGE DROP =	2.9%									
									TOTAL CIRCUIT AMPS	= 0.937			WIRE	RESIS.	CIRC.	F	ORMUL	A												
TOTAL CIRCUIT AMPS =	0.333		WIR	E RES	SIS. CIRC.		FORMU	LA		0.010			SIZE	/M FT.	MILS.		* EEET *	* 01 6			VOLIA		P (VD) CA		ON - VIS		UII NO.	V1C	Oth	10th
TOTAL VOLT DROP =	0.27		10	= //VIF	9 10380		I * FFFT	* 21.6		0.010			10	2.01	6530	1	C.M.	21.0		GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
	0.2.		12	2.0	01 6530		C.M.		CKT VOLTAGE =	20.4			14	3.19	4110		-			DISTANCE (FT)	110	25	35	40	75	35	35	20	40	40
CKT VOLTAGE =	20.4		14	3.1	9 4110								16	5.08	2580					AMPS OF DEVICE	0.041	0.043	0.063	0.111	0.111	0.063	0.043	0.041	0.111 (J.111
% VOLTAGE DROP =	1.3%		16	5.0	08 2580				% VOLTAGE DROP =	4.0%										VOLT. DROP @ DEV.	0.849	0.808	0.765	0.702	0.591	0.48	0.417	0.025 0	0.044 (0.029
									DEVICE #	VOLTA 1st	GE DROF	3rd	4th	0N - VISU 5th	JAL CIRC	7th	2C 8th	9th	10th	DEVICE #	11th 12	12th 12	13th	14th 12	15th 12	16th	17th 12	18th	19th 12	20th 12
									GAUGE WIRE	12	12	12	12	12	12	12	12	12	12	DISTANCE (FT)	45	12	12	12	12	12	12	12	12	
									DISTANCE (FT)	85										AMPS OF DEVICE	0.111									
									AMPS OF DEVICE	0.111	0	0	0	0	0	0 0		0	0	VOLT_DROP@DEV.	0.111	0	0	0	0	0	0			<u>)</u>
									VOLT. DROP @ DEV	· 0.031	0	0	0	0	0	0 0	(0	0		0.017						0			
									TOTAL CIRCUIT AMPS	= 0.111			WIRE	RESIS.	CIRC.	F		A		TOTAL CIRCUIT AMPS =	0.849			WIRE	RESIS.	CIRC.		FORMULA	4	
									TOTAL VOLT DROP =	0.031			10	1.29	10380	<u> </u>	* FEET *	* 21.6		TOTAL VOLT DROP =	0.922			10	1.29	10380		I * FEET *	21.6	
									CKT VOLTAGE =	20.4			12	3.19	4110		C.IVI.			CKT VOLTAGE =	20.4			12	3.19	4110		C.IVI.		
									% VOLTAGE DROP =	0.2%			10	5.00	2000					% VOLTAGE DROP =	4.5%			10	0.00	2000				
										VOLTA	GE DROF	P (VD) CA	LCULATI	ON - VISI	JAL CIRC	UIT No. V3	За				VOLTA	GE DRO	P (VD) CA	LCULATI	ON - VIS	UAL CIRC	UIT No.	V1d		
									DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
									GAUGE WIRE	12	12	12	12	12	12	12	12	12	12	GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
									AMPS OF DEVICE	0.043	0.111	0.041	35 0.041	0.043	0.043	40 0.107 0	.107 (0.107	0.107	AMPS OF DEVICE	255 0.111	0.043	0.043	0.043	0.041					
									TOTAL AMPS@DEV	0.750	0.707	0.596	0.555	0.514	0.471	0.428 0	.321 (0.214	0.107	TOTAL AMPS@DEV.	0.281	0.17	0.127	0.084	0.041	0	0	o c) (0
									VOLT. DROP @ DEV	. 0.062	0.094	0.108	0.064	0.034	0.023	0.057 0	.053 (0.078	0.018	VOLT. DROP @ DEV.	0.237	0.017	0.006	0.004	0.002	0	0	0 0	(J
									TOTAL CIRCUIT AMPS	= 0.75			WIRE	RESIS.	CIRC.	F		A		TOTAL CIRCUIT AMPS =	0.281			WIRE	RESIS.	CIRC.		FORMULA	4	
									TOTAL VOLT DROP =	0.591			SIZE 10	/M FT. 1.29	MILS. 10380			* 21.6		TOTAL VOLT DROP =	0.266			SIZE 10	/M FT. 1.29	MILS. 10380			21.6	
													12	2.01	6530		C.M.				00.5			12	2.01	6530		C.M.		
									CKT VOLTAGE =	20.4			14 16	3.19 5.08	4110 2580					CKT VOLTAGE =	20.4			14 16	3.19 5.08	4110 2580				
									% VOLTAGE DROP =	2.9%		1								% VOLTAGE DROP =	1.3%									

	VOLTA		CALCULAI	IUNS (SPEARE		5)		
SPEAKER CIRCUIT No.S4b		SPEAKER CIRCU	T No.S2c	SPEAKER CIRCUIT	No.S1d		SPEAKER CIRCUIT No.S1a	
Nominal Speaker Voltage (25 or 70) 25	Nominal Speaker	Voltage (25 or 70)	25	Nominal Speaker Voltage (25 or 70)	25	Nominal Speaker Voltage (25 or 70)	25	
Total Circuit Current in amps 0.260 Wire	Ohm's Total Circuit Curre	nt in amps 0.100	20 Wire Ohm's	Total Circuit Current in amps 0.100	Wire Ohm's	Total Circuit Current in amps	0.280 Wire	Ohm's
Total Circuit Power 6.500 Gauge Distance from source to 1st device 50 12	Per 1000 Total Circuit Powe	r 2.500	Gauge Per 1000	Total Circuit Power 2.500 Distance from source to 1st device 50	Gauge Per 1000	Total Circuit Power	7.000 Gauge	Per 1000
Wire Gauge for balance of circuit 12 Wre Gauge for balance of circuit 12 Voltage	1.98 Wire Gauge for balance	Iance of circuit	12 1.98 Voltage	Wire Gauge for balance of circuit	12 1.98 Voltage	Wire Gauge for balance of circuit	Calculated Voltage	1.98
Device Device previous Device At Drop from	Percent Device D	evice previous Device At	Drop from Percent	Device Device previous Device At	Drop from Percent	Device Device previous	Device At Drop from	Percent
Number Power device Current Device source Device 1 0.500 100 0.020 24.90 0.103	Drop Number P 0.41% Device 1	ower device Current Device 000 65 0.080 24.97	source Drop	NumberPowerdeviceCurrentDeviceDevice 12 0002400 08024 90	source Drop	Number Power device Device 1 0.500 20	Current Device source	Drop 0.09%
Device 2 2.000 40 0.080 24.86 0.141	0.56% Device 2 0	.500 30 0.020 24.97	0.028 0.11%	Device 2 0.500 35 0.020 24.90	0.098 0.39%	Device 2 0.500 50	0.020 24.93 0.074	0.29%
Device 3 2.000 75 0.080 24.81 0.188 Device 4 0.500 40 0.020 24.80 0.201	0.75% END END	0.000 24.97	0.028 0.11%	END 0.000 24.90 END 0.000 24.90	0.098 0.39% 0.098 0.39%	Device 3 0.500 30 Device 4 2.000 25	0.020 24.90 0.102 0.080 24.88 0.124	0.41%
Device 5 0.500 45 0.020 24.79 0.212	0.85% END	0.000 24.97	0.028 0.11%	END 0.000 24.90	0.098 0.39%	Device 5 0.500 20	0.020 24.86 0.135	0.54%
Device 6 0.500 45 0.020 24.78 0.219 Device 7 0.500 75 0.020 24.78 0.225	0.88% END END	0.000 24.97	0.028 0.11%	END 0.000 24.90 END 0.000 24.90	0.098 0.39%	Device 6 0.500 25 Device 7 0.500 85	0.020 24.85 0.147	0.59%
END 0.000 24.78 0.225	0.90% END	0.000 24.97	0.028 0.11%	END 0.000 24.90	0.098 0.39%	Device 8 2.000 25	0.080 24.81 0.188	0.75%
END 0.000 24.78 0.225 END 0.000 24.78 0.225	0.90% END	0.000 24.97	0.028 0.11%	END 0.000 24.90 END 0.000 24.90	0.098 0.39%	END	0.000 24.81 0.188	0.75%
END 0.000 24.78 0.225	0.90% END	0.000 24.97	0.028 0.11%	END 0.000 24.90	0.098 0.39%	END	0.000 24.81 0.188	0.75%
END 0.000 24.78 0.225	0.90% END	0.000 24.97	0.028 0.11%	END 0.000 24.90	0.098 0.39%	END	0.000 24.81 0.188	0.75%
END 0.000 24.78 0.225 END 0.000 24.78 0.225	0.90% END	0.000 24.97	0.028 0.11%	END 0.000 24.90	0.098 0.39%	END END	0.000 24.81 0.188	0.75%
END 0.000 24.78 0.225	0.90% END	0.000 24.97	0.028 0.11%	END 0.000 24.90	0.098 0.39%	END END	0.000 24.81 0.188	0.75%
		.500 95 End of E			e voltage 24.90	10tais 7.000 280	Lind of Line voltage	24.81
Point to Point Method End of Line Method	Load Centering Method Point to Po	Dint Method End of Line N	ethod Load Centering Method	Point to Point Method End of Line Me	thod Load Centering Method	Point to Point Method	End of Line Method	Load Centering Method
Totals Voltage Totals Voltage Current Distance Drop Current Distance Drop	Totals Voltage Totals Current Distance Drop Current Di	Voltage Totals	Voltage Totals Voltage Drop Current Distance Drop	Totals Voltage Totals	Voltage Totals Voltage Drop Current Distance Drop	Totals Voltage	Totals Voltage	Totals Volta
0.260 420 0.22 0.260 420 0.432	0.260 420 0.216 0.100	95 0.03 0.100 95	0.038 0.100 95 0.019	0.100 275 0.10 0.100 275	0.109 0.100 275 0.054	0.280 280 0.19	0.280 280 0.310	0.280 280 0.1
Percent Drop 0.90% Percent Drop 1.73%	Percent Drop 0.86% Perce	t Drop 0.11% Percent Drop	24.96 End of Line Voltage 24.98 0.15% Percent Drop 0.08%	Percent Drop 0.39% Percent Drop	24.89 End of Line Voltage 24.95 0.44% Percent Drop 0.22%	Percent Drop 0.75%	Percent Drop 1.24%	Percent Drop 0
] [
SPEAKER CIRCUIT No.S4c Nominal Speaker Voltage (25 or 70) 25	Nominal Speaker	Voltage (25 or 70)	25	SPEAKER CIRCUIT Nominal Speaker Voltage (25 or 70)	No.52a 25	Nominal Speaker Voltage (25 or 70)	SPEAKER CIRCUIT No.S1b	
Minimum Device Voltage 20 Total Circuit Current in amos 0.000 14/20	Ohmin Device	/oltage	20 Viaz Obmia	Minimum Device Voltage	20	Minimum Device Voltage	20	Ohmin
Total Circuit Power 1.500 Gauge	Per 1000 Total Circuit Powe	r 11.000	Gauge Per 1000	Total Circuit Power 0.440 11.000 11.000	Gauge Per 1000	Total Circuit Power	10.000 Gauge	Per 1000
Distance from source to 1st device 50 12 Wire Gauge for balance of circuit 12	1.98 Distance from sou Wire Gauge for ba	rce to 1st device 50	<u>12</u> <u>1.98</u>	Distance from source to 1st device 50 Wire Gauge for balance of circuit	12 1.98 12 1.98	Distance from source to 1st device Wire Gauge for balance of circuit	50 12	1.98
from Calculated Voltage		from Calculated	Voltage	from Calculated	Voltage	from	Calculated Voltage	1.90
Device Device previous Device At Drop from Number Power device Current Device source	Percent Device D	evice previous Device At	Drop from Percent	Device Device previous Device At	Drop from Percent	Device Device previous	Device At Drop from	Percent Drop
Device 1 0.500 200 0.020 24.95 0.048	0.19% Device 1 2	.000 85 0.080 24.85	0.148 0.59%	Device 1 2.000 50 0.080 24.91	0.087 0.35%	Device 1 0.500 70	0.020 24.89 0.111	0.44%
Device 2 0.500 45 0.020 24.95 0.055 Device 3 0.500 45 0.020 24.94 0.058	0.22% Device 2 0 0.23% Device 3 0	.500 25 0.020 24.82 .500 .35 0.020 .24.77	0.184 0.73%	Device 2 0.500 55 0.020 24.83 Device 3 0.500 55 0.020 24.76	0.166 0.66%	Device 2 0.500 55 Device 3 2.000 35	0.020 24.81 0.194	0.77%
END 0.000 24.94 0.058	0.23%	.000 45 0.080 24.71	0.288 1.15%	Device 4 0.500 45 0.020 24.70	0.297 1.19%	Device 4 0.500 35	0.020 24.72 0.282	1.13%
END 0.000 24.94 0.058 END 0.000 24.94 0.058	0.23% Device 5 0 0.23% Device 6 0	.500 15 0.020 24.70 .500 50 0.020 24.65	0.302 1.21%	Device 5 0.500 55 0.020 24.64 Device 6 0.500 40 0.020 24.59	0.362 1.45% 0.406 1.63%	Device 5 0.500 40 Device 6 0.500 105	0.020 24.68 0.324 0.020 24.58 0.423	1.29%
END 0.000 24.94 0.058	0.23% Device 7 2	.000 55 0.080 24.61	0.389 1.56%	Device 7 0.500 55 0.020 24.54	0.463 1.85%	Device 7 0.500 35	0.020 24.55 0.454	1.82%
END 0.000 24.94 0.058 END 0.000 24.94 0.058	0.23% Device 8 0 0.23% Device 9 0	.500 65 0.020 24.58 .500 50 0.020 24.56	0.420 1.68% 0.440 1.76%	Device 8 0.500 50 0.020 24.49 Device 9 0.500 45 0.020 24.45	0.550 2.20%	Device 8 0.500 35 Device 9 2.000 30	0.020 24.52 0.482 0.080 24.50 0.503	2.01%
END 0.000 24.94 0.058	0.23% Device 10 2	.000 20 0.080 24.55	0.446 1.79%	Device 10 2.000 50 0.080 24.41	0.589 2.36%	Device 10 0.500 45	0.020 24.48 0.521	2.08%
END 0.000 24.94 0.058 END 0.000 24.94 0.058	0.23% END END	0.000 24.55	0.446 1.79%	Device 11 2.000 105 0.080 24.36 Device 12 0.500 40 0.020 24.35	0.645 2.58%	END 50	0.000 24.46 0.537	2.15%
END 0.000 24.94 0.058	0.23% END	0.000 24.55	0.446 1.79%	Device 13 0.500 35 0.020 24.35	0.648 2.59%	END	0.000 24.46 0.537	2.15%
END 0.000 24.94 0.038 END 0.000 24.94 0.058	0.23% END	0.000 24.55	0.446 1.79%	END 0.000 24.35	0.648 2.59%	END	0.000 24.46 0.537	2.15%
END 0.000 24.94 0.058 Totals 1.500 200 End of Line Voltage	0.23% END	0.000 24.55	0.446 1.79%	END 0.000 24.35	0.648 2.59%	END Totals 10,000 535	0.000 24.46 0.537 End of Line Voltage	2.15%
Point to Point Method End of Line Method CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHIN LIMITS	CIRCUIT IS WITHIN LIMITS CIRCUIT IS W	Dint Method End of Line M VITHIN LIMITS CIRCUIT IS WITH	ethod Load Centering Method IN LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method End of Line Me CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHI	thod Load Centering Method I LIMITS CIRCUIT IS WITHIN LIMITS	Point to Point Method CIRCUIT IS WITHIN LIMITS	End of Line Method CIRCUIT IS WITHIN LIMITS	CIRCUIT IS WITHIN LIMIT
Totals Voltage Totals Voltage	Totals Voltage Totals	Voltage Totals	Voltage Totals Voltage	Totals Voltage Totals	Voltage Totals Voltage	Totals Voltage	Totals Voltage	Totals
Current Distance Drop Current Distance Drop	Current Distance Drop Current Di	stance Drop Current Distance	Drop Current Distance Drop	Current Distance Drop Current Distance	Drop Current Distance Drop	Current Distance Drop	Current Distance Drop	Current Distance Dro
0.060 290 0.06 0.060 290 0.069 End of Line Voltage 24 94 End of Line Voltage 24 93 E	0.060 290 0.034 0.440 nd of Line Voltage 24.97 End of Line Voltage	445 0.45 0.440 445 ie 24 55 End of Line Voltage	0.775 0.440 445 0.388 24 22 End of Line Voltage 24 61	0.440 680 0.65 0.440 680 End of Line Voltage 24.35 End of Line Voltage	1.185 0.440 680 0.592 23.82 End of Line Voltage 24.41	0.400 535 0.54 End of Line Voltage 24.46	0.400 535 0.847 End of Line Voltage 24 15	0.400 535 0.4 End of Line Voltage 24
Percent Drop 0.23% Percent Drop 0.28%	Percent Drop 0.14% Perce	nt Drop 1.79% Percent Drop	3.10% Percent Drop 1.55%	Percent Drop 2.59% Percent Drop	4.74% Percent Drop 2.37%	Percent Drop 2.15%	Percent Drop 3.39%	Percent Drop 1
		SPEAKER CIRCU	T No.S4a	SPEAKER CIRCUIT	No.S2b]	SPEAKER CIRCUIT No.S1c	
	Nominal Speaker	Voltage (25 or 70)	25	Nominal Speaker Voltage (25 or 70)	25	Nominal Speaker Voltage (25 or 70) Minimum Device Voltage	25	
	Total Circuit Curre	nt in amps 0.240	Wire Ohm's	Total Circuit Current in amps 0.240	Wire Ohm's	Total Circuit Current in amps	0.220 Wire	Ohm's
	Distance from sou	rce to 1st device 50	Gauge Per 1000 12 1.98	Total Circuit Power 6.000 Distance from source to 1st device 50	Gauge Per 1000 12 1.98	Distance from source to 1st device	5.500 Gauge 50 12	Per 1000 1.98
	Wire Gauge for ba	Iance of circuit	12 1.98	Wire Gauge for balance of circuit	12 1.98	Wire Gauge for balance of circuit	12 Voltage	1.98
	Device D	evice previous Device At	Drop from Percent	Itom Calculated Device Device previous Device At	Drop from Percent	Device Device previous	Device At Drop from	Percent
	Number P	ower device Current Device .500 .30 0.020 .24.07	source Drop 0.029 0.11%	Number Power device Current Device Device 1 0.500 65 0.020 24.04	source Drop 0.062 0.25%	Number Power device Device 1 0.500 110	Current Device source	Drop
	Device 2 2	.000 40 0.080 24.94	0.063 0.25%	Device 1 0.300 03 0.020 24.94 Device 2 0.500 35 0.020 24.91	0.092 0.37%	Device 2 0.500 75	0.020 24.84 0.155	0.62%
	Device 3 C Device 4 C	.500 40 0.020 24.91 .500 55 0.020 24.89	0.086 0.34% 0.112 0.45%	Device 3 0.500 40 0.020 24.88 Device 4 0.500 45 0.020 24.84	0.124 0.50% 0.156 0.62%	Device 3 2.000 40 Device 4 0.500 45	0.080 24.82 0.184 0.020 24.80 0.202	0.73%
	Device 5 C	.500 45 0.020 24.87	0.129 0.52%	Device 5 2.000 30 0.080 24.82	0.175 0.70%	Device 5 0.500 65	0.020 24.78 0.222	0.89%
	END	.000 40 0.080 24.86 0.000 24.86	0.142 0.57%	Device 6 0.500 40 0.020 24.81 Device 7 0.500 110 0.020 24.79	0.188 0.75% 0.214 0.86%	Device 6 0.500 40 Device 7 0.500 40	0.020 24.77 0.232 0.020 24.76 0.238	0.93%
	END	0.000 24.86	0.142 0.57%	Device 8 0.500 45 0.020 24.78	0.221 0.88%	Device 8 0.500 45	0.020 24.76 0.242	0.97%
	END END	0.000 24.86	0.142 0.57%	END 40 0.020 24.78 0.000 24.78 0.000 24.78	0.224 0.90% 0.224 0.90%		0.000 24.76 0.242 0.000 24.76 0.242	0.97%
	END	0.000 24.86	0.142 0.57%	END 0.000 24.78	0.224 0.90%	END	0.000 24.76 0.242	0.97%
	END	0.000 24.86	0.142 0.57%	END 0.000 24.78	0.224 0.90%	END	0.000 24.76 0.242	0.97%
		0.000 24.86	0.142 0.57%	END 0.000 24.78 END 0.000 24.78	0.224 0.90%	END END	0.000 24.76 0.242 0.000 24.76 0.242	0.97%
	END	0.000 24.86	0.142 0.57%	END 0.000 24.78	0.224 0.90%	END Tatala	0.000 24.76 0.242	0.97%
	Point to P	bint Method End of Line N	ethod Load Centering Method	Point to Point Method End of Line Method	thod Load Centering Method	Point to Point Method	End of Line Method	Load Centering Method
				CIRCUIT IS WITHIN LIMITS CIRCUIT IS WITHI	Voltage			
	Totals Current Di	stance Drop Current Distance	Voltage Lotals Voltage Drop Current Distance Drop	I otals Voltage Totals Current Distance Drop Current Distance	Voltage I otals Voltage Drop Current Distance Drop	I otals Voltage Current Distance Drop	I otaisvoitageCurrentDistanceDrop	I otals Volta Current Distance Dr
	0.240 End of Line Voltag	250 0.14 0.240 250 e 24.86 End of Line Voltage	0.238 0.240 250 0.119 24 76 End of Line Voltage 24 99	0.240 450 0.22 0.240 450 End of Line Voltage 24.78 End of Line Voltage	0.428 0.240 450 0.214 24 57 End of Line Voltage 24 70	0.220 460 0.24 End of Line Voltage 24.76	0.220 460 0.401 End of Line Voltage 24.60	0.220 460 0.2 End of Line Voltage 24
	Perce	nt Drop 0.57% Percent Drop	0.95% Percent Drop 0.48%	Percent Drop 0.90% Percent Drop	1.71% Percent Drop 0.86%	Percent Drop 0.97%	Percent Drop 1.60%	Percent Drop 0

VOLTAGE DROD CALCULATIONS (SPEAKER CIRCUITS)

TY	MODEL No.	BATTE	ERY CALCULATION AMP-1	STA	NDBY	ALł	ARM	QTY	PRODUCT	F	RE ALARM CONTROL PANEL "FACP" DESCRIPTION	STAND	IBY	,	ALARM
	DAA2-5025	NOTIFIER DIGITAL A	AUDIO AMPLIFIER	EACH 0.2830	TOTAL 0.2830	EACH 0.6850	TOTAL 0.6850	1	AMPS-24 CPU2-3030	PRIMARY I PRIMARY I	NPUT POWER UNIT	0.1300 0.1200	0.1	AL EA 300 0.0 200 0.1	520 200
	S1a S1b	SPEAKER CIRCUIT N SPEAKER CIRCUIT N	No.1a	0.0000	0.0000	0.2800	0.2800	1 1	LCM-320 LEM-3030	SIGNALING	LINE CIRCUIT	0.1300	0.1	300 0.1 200 0.1	300 000
	S1c S1d S1e	SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPARE	No.1d	0.0000	0.0000	0.2200	0.2200	6	SLC DVC-EM	SLC DEVIC		0.2000	0.3	00 0.20 000 0.3	000
	S1f S1g	SPARE SPARE		0.0000	0.0000	0.0000	0.0000 0.0000	1	UDACT	UNIVERSA PANEL STA	L DACT	0.0500	0.0	400 0.1 700	000
	S1h	SPARE PANEL STANDBY CU	JRRENT	0.0000	0.0000 0.2830	0.0000	0.0000			PANEL AL	ARM CURRENT				
		PANEL ALARM CURI	RENT				1.6850	QTY	PRODUCT		FIELD DEVICES DESCRIPTION	STAND	BY	, ,	ALARM
		DESCRIPTION TOTAL STANDBY CL	URRENT (A)		STANDBY 0.2830		ALARM	150 137	FSP-951 FST-951	ADDRESS/	BLE PHOTOELECTRIC SMOKE DETECTOR	0.0002 0.0002	0.0	AL EA 300 0.04 274 0.0	045 045
		X 24 HOUR STANDB TOTAL ALARM CURI	PRENT (B)		6.7920		1.6850	2	FS-OSI-RI NBG-12LX	ADDRESS/ ADDRESS/	BLE BEAM SMOKE DETECTOR BLE PULL STATION	0.0014	0.0)28 0.00 004 0.0	015
		15 MINUTES OF ALA TOTAL BATTERY RE	RM (X .25) EQUIREMENT (A+B)				0.4213 7.2133	4 4	FMM-1 FCM-1	ADDRESS/ ADDRESS/	BLE MONITOR MODULE BLE CONTROL MODULE	0.0004	0.0	0.00 015 0.00	050 065
		SAFETY MARGIN (20 BATTERY SUPPLIED)%)) (2) 18AH				8.6559 18AH			DESCRIPT	ON		STAN	IDBY	
		AMPLIFIER WA	TTAGE CALCULATION FC)R AMP-'	1					FIELD DEV	PANEL CES NDBY CURRENT		_	2.0700 0.0636 2.1336	
	QTY	MODEL No.	DEVICE DESCRIPTIO	N	WA E	ACH				X 24 HOUR	STANDBY RM CURRENT		5	1.2058	
	1	DAA2-5025	50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED	PLIFIER D TO THIS CII	50.0 RCUIT 7.0	0000				15 MINUTE TOTAL BAT	S OF ALARM (X .25) TERY REQUIREMENT				
	1	S10 S1c S1d	WATTAGE OF SPEAKERS CONNECTED WATTAGE OF SPEAKERS CONNECTED WATTAGE OF SPEAKERS CONNECTED	D TO THIS CIP D TO THIS CIP D TO THIS CIP	RCUIT 5.5 RCUIT 2.5	3000				BATTERY S	ARGIN (20%) SUPPLIED				
	1	S1e S1f	SPARE SPARE		0.0	000					BATTERY CALCULATION	RPS-1			
	1 1	S1g S1h	SPARE SPARE		0.0	000		QTY	MODEL No	D.	DEVICE DESCRIPTION		STA EACH	NDBY TOTAL	EA
	TOTAL WATTAG	GE AVAILABLE			25.0	0000		1	PSE-10 V1a		NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.1a		0.1560	0.1560	0.18
	MODEL No.	BATTE	ERY CALCULATION AMP-2	STA	NDBY	AL4	ARM	1	V1c V1c		VISUAL CIRCUIT No.10 VISUAL CIRCUIT No.1c VISUAL CIRCUIT No.1d		0.0000	0.0000	0.84
	DAA2-5025	NOTIFIER DIGITAL A		EACH 0.2830	TOTAL 0.2830	EACH 0.6850	TOTAL 0.6850				PANEL STANDBY CURRENT PANEL ALARM CURRENT			0.1560	
	S2a S2b	SPEAKER CIRCUIT N SPEAKER CIRCUIT N	Vo.2a	0.0000	0.0000	0.4400	0.4400				TOTAL	. SYSTEM C	URRENT		
	S2c S2d	SPEAKER CIRCUIT N SPARE	V0.2C	0.0000	0.0000	0.1000	0.0000 0.0000				DESCRIPTION TOTAL STANDBY CURRENT (A)			STANDBY 0.1560	
	S2e S2f S2q	SPARE SPARE		0.0000	0.0000	0.0000	0.0000				X 24 HOUR STANDBY TOTAL ALARM CURRENT (B)			3.7440	
	S2h	SPARE PANEL STANDBY CL	JRRENT	0.0000	0.0000	0.0000	0.0000				15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B)				
		PANEL ALARM CURI	RENT				1.4650				BATTERY SUPPLIED (2) 18AH				
		DESCRIPTION	TOTAL SYSTEM	CURRENT	STANDBY		ALARM				BATTERY CALCULATION	RPS-2			
		TOTAL STANDBY CU X 24 HOUR STANDB	JRRENT (A)		0.2830 6.7920	, ,		QTY	MODEL No	D.			STA EACH	VDBY TOTAL	EA
		15 MINUTES OF ALA	RM (X .25)				1.4650 0.3663 7.1583	1	V2a V2b		VISUAL CIRCUIT No.2a		0.1560	0.1560	0.18
		SAFETY MARGIN (20 BATTERY SUPPLIED))) D (2) 18AH				8.5899 18AH	1	V20 V2c V2d		VISUAL CIRCUIT No.2c SPARE		0.0000	0.0000	0.00
						<u> </u>	10/11				PANEL STANDBY CURRENT PANEL ALARM CURRENT			0.1560	
	QTY	MODEL No.	DEVICE DESCRIPTIO	<u>/R AIVIP-2</u> N							TOTAL	SYSTEM C	URRENT		
	1	DAA2-5025 S2a	50 WATT NOTIFIER DIGITAL AUDIO AM	IPLIFIER D TO THIS CI	50.0 50.1 RCUIT 11.0	3000 0000					DESCRIPTION TOTAL STANDBY CURRENT (A)			STANDBY 0.1560	
	1	S2b S2c	WATTAGE OF SPEAKERS CONNECTED WATTAGE OF SPEAKERS CONNECTED	D TO THIS CIF	RCUIT 6.0 RCUIT 2.5	1000					X 24 HOUR STANDBY TOTAL ALARM CURRENT (B)			3.7440	<u> </u>
	1 1	S2d S2e	SPARE SPARE		0.0	.000)000					TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%)				<u> </u>
	1	S2f S2g	SPARE SPARE		0.0	000					BATTERY SUPPLIED (2) 18AH				
	TOTAL WATTAC	GE AVAILABLE	SPARE		30.4	5000		ΟΤΥ		2		RPS-3	STA		
		BATTE	RY CALCULATION AMP-3	;			1.514	1	PSE-10		NOTIFIER REMOTE POWER SUPPLY		EACH 0.1560	TOTAL 0.1560	EA
	MODEL No.			EACH	TOTAL	EACH		1 1	V3a V3b		VISUAL CIRCUIT No.3a SPARE		0.0000 0.0000	0.0000	0.75 0.00
	S3a S3b	SPEAKER CIRCUIT N SPARE	No.3a	0.0000	0.0000	0.4400	0.4400	1	V3c V3d		SPARE SPARE		0.0000	0.0000	0.00
	S3c S3d	SPARE SPARE		0.0000 0.0000	0.0000 0.0000	0.0000	0.0000 0.0000				PANEL STANDBT CORRENT PANEL ALARM CURRENT			0.1560	
	S3e S3f	SPARE SPARE		0.0000	0.0000	0.0000	0.0000				TOTAL	. SYSTEM C	URRENT	STANDBY	
	S3b S3h	SPARE SPARE PANEL STANDBY CL		0.0000	0.0000	0.0000	0.0000				TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY			0.1560 3.7440	
		PANEL ALARM CURI	RENT				1.1250				TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25) TOTAL BATTERY DECURDEMENT (A+P)				
		DESCRIPTION	TOTAL SYSTEM	CURRENT	STANDBY		ALARM				SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH				<u> </u>
		TOTAL STANDBY CU X 24 HOUR STANDB	JRRENT (A)		0.2830 6.7920	, ,									
						┥───┤	0.2813								
		TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RF	RENT (B) .RM (X .25) .QUIREMENT (A+B)			++	7,0733	QTY	MODEL No	0.	BATTERY CALCULATION DEVICE DESCRIPTION	RPS-4	STA EACH	NDBY TOTAI	EV
		TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED	RENT (B) RM (X .25) QUIREMENT (A+B) %) 1 (2) 18AH				7.0733 8.4879 18AH	QTY 1 1	MODEL No PSE-10 V4a	0.	BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a	RPS-4	STA EACH 0.1560 0.0000	NDBY TOTAL 0.1560 0.0000	EA 0.18 0.44
		TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIED 10/0	RENT (B) RM (X.25) EQUIREMENT (A+B) 5%)) (2) 18AH TTAGE САГСИНАТION EC		3		7.0733 8.4879 18AH	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c	D.	BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000	EA 0.18 0.44 0.55 0.33
	QTY	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL No.	RENT (B) RM (X .25) EQUIREMENT (A+B) 5%) 0 (2) 18AH .TTAGE CALCULATION FO DEVICE DESCRIPTIO) <u>R AMP-3</u>	3 WA F	TTS ACH	7.0733 8.4879 18AH	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4c	0.	BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.0000 0.1560	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL No. DAA2-5025 S3a	RENT (B) RM (X .25) EQUIREMENT (A+B) 5%) 2 (2) 18AH TTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED		3 WA E. 50.1 RCUIT 11.0	лтт S АСН 2000 2000	7.0733 8.4879 18AH	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4c V4d	0.	BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.0000 0.1560	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1 1 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL No. DAA2-5025 S3a S3b S3c	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%)) (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE SPARE SPARE	IPLIFIER	3 WA EE 50.1 RCUIT 11.0 0.0 0.0	TTS ACH 2000 2000 000 000 000	7.0733 8.4879 18AH	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4d	0.	BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A)	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 STANDBY 0.1560	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1 1 1 1 1 1 1 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3e S3f	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE SPARE SPARE SPARE SPARE		3 XWA EL 50.0 CUIT 11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	TTS ACH 2000 2000 000 000 000 000 000 000	7.0733 8.4879 18AH	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B)	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 STANDBY 0.1560 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL No. DAA2-5025 S3a S3b S3c S3d S3c S3d S3e S3f S3g S3f	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE	IPLIFIER D TO THIS CIF	3 XWA EE 50.0 CUIT 11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	TTS ACH 2000 2000 000 000 000 000 000 000 000	7.0733 8.4879 18AH	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X.25) TOTAL BATTERY REQUIREMENT (A+B) PANEL MADOW (CONT)	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 STANDBY 0.1560 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3f S3g S3f S3g S3h GE AVAILABLE	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE	DR AMP-:	3	ITTS ACH 0000 0000 0000 0000 0000 0000 0000	7.0733 8.4879 18AH	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 STANDBY 0.1560 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3f S3g S3h GE AVAILABLE BATTE	RENT (B) IRM (X.25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE	DR AMP-(3	ITTS ACH 0000 0000 0000 0000 0000 0000 0000	0.2013 7.0733 8.4879 18AH	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3f S3g S3h GE AVAILABLE BATTEE DE	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE SPAR	DR AMP-:	3	ACH 0000 0000 0000 0000 0000 0000 0000 0	ARM TOTAL 0 6850	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X.25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3c S3d S3g S3h GE AVAILABLE BATTE DE NOTIFIER DIGITAL A SPEAKER CIRCUIT 1	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE SPAR	DR AMP-: DR AMP-: DTO THIS CII D TO THIS CII D TO THIS CII CONTRACTOR D TO THIS CII D TO	3 WA E. 50.1 RCUIT 11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0000 0000 0000 0000 0000 0000 0	ARM TOTAL 0.6850 0.2400 0.2600	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (A) 15 MINUTES OF ALARM (X.25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3c S3d S3d S3g S3h GE AVAILABLE BATTE DE NOTIFIER DIGITAL A SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPEAKER CIRCUIT I	RENT (B) IRM (X .25) COUREMENT (A+B) COUREMENT	DR AMP-: DR AMP-: PLIFIER D TO THIS CII D TO THIS CII EACH 0.2830 0.0000 0.0000 0.0000 0.0000 0.0000	3 WA E 50.1 RCUIT 11.1 0.00 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0000 0000 0000 0000 0000 0000 0	ARM TOTAL 0.6850 0.2400 0.0600 0.0000	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X.25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3c S3d S3d S3c S3d S3d S3d S3d S3d S3d S3d S3d	RENT (B) IRM (X .25) COUREMENT (A+B) COUREMENT	DR AMP-: DR AMP-: DTO THIS CII D TO THIS CII EACH 0.2830 0.00000 0.0000 0.00000 0.00000 0.0000 0.0000 0.00000000	3 WA E. 50.1 RCUIT 11.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0000 0000 0000 0000 0000 0000 0	ARM TOTAL 0.6850 0.2400 0.0600 0.0000 0.0000 0.0000	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3c S3d S3d S3e S3f S3g S3h BATTE BATTE DE DE NOTIFIER DIGITALA SPEAKER CIRCUIT I SPEAKER SPARE SPARE SPARE	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTEI SPARE	DR AMP-5 → IPLIFIER D TO THIS CII D TO THIS CII EACH 0.2830 0.00000 0.00000 0.0000 0.0000 0.0000 0.00000 0.0000 0.00000000	3 WA E 50.1 RCUIT 11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Image: Non-Stress of the stress of	ARM TOTAL 0.6850 0.2400 0.0600 0.0000 0.0000 0.0000 0.0000	QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL STANDBY CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X 25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 0.1560	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3c S3d S3d S3e S3f S3g S3h GE AVAILABLE BATTE BATTE DE NOTIFIER DIGITAL A SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPARE SPA	RENT (B) IRM (X .25) EQUIREMENT (A+B) O%) O (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO S0 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTEI SPARE	>R AMP-: >N IPLIFIER D TO THIS CII	3 WA E 50.1 RCUIT 11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0.2400 0.2400 0.2600 0.2600 0.2600 0.00000 0.0000 0.000000 0.0000 0.0000000 0.00000000	ARM TOTAL 0.6850 0.2400 0.0600 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3e S3f S3g S3f S2g S3f S2g S3f S3g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S3f S2g S4 SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPARE	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTEI SPARE	>R AMP-: >N IPLIFIER D TO THIS CII D TO THIS CII Control Control Control Control Control Control Control Control Control Control Control Control Control Control CURRENT	3 WA E 50.1 RCUIT 11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0.2400 0.2400 0.2600 0.2400 0.2600 0.00000 0.0000 0.000000 0.0000 0.0000000 0.00000000	ARM TOTAL 0.6850 0.2400 0.0600 0.00000 0.00000 0.000000	QTY	MODEL No.		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X 25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 0.1560	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3d S3g S3f S3g S3h GE AVAILABLE BATTE BATTE DE NOTIFIER DIGITAL A SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPARE S	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTEI SPARE	>R AMP-: >N IPLIFIER D TO THIS CII D TO THIS CII CONTREMENT 0.0000	3 WA E 50.1 RCUIT 11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0.2400 0.2600 0.2400 0.2600 0.2600 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2600 0.00000 0.0000 0.000000 0.0000 0.0000000 0.00000000	ARM TOTAL 0.6850 0.2400 0.0600 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	QTY	MODEL No.		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X 25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 STANDBY 0.1560 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3d S3g S3h GE AVAILABLE BATTER BATTER BATTER BATTER SPARE CIRCUIT I SPEAKER CIRCUIT I SPARE	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 1 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTEI SPARE SPAR	DR AMP-: DTO THIS CII D TO THIS CII D TO THIS CII CURRENT CURRENT	3 WA E 50.1 RCUIT 11.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0.00000 0.0000 0.000000 0.0000 0.0000000 0.000	ARM TOTAL 0.6850 0.2400 0.0600 0.00000 0.00000 0.00000 0.000000	QTY	MODEL No.		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 STANDBY 0.1560 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3c S3d S3d S3g S3h GE AVAILABLE BATTE BATTE BATTE BATTE BATTE SPARE	RENT (B) IRM (X .25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTER SPARE SPAR	DR AMP-: DR AMP-: DTO THIS CII TO THIS CII EACH 0.2830 0.00000 0.00000 0.00000 0.0000000 0.0000000 0.00000000	3 WA E 50.1 RCUIT 11.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0.2400 0.2400 0.00000 0.0000 0.000000 0.0000 0.000000 0.0000 0.000000 0.0000	ARM TOTAL 0.8850 0.2400 0.0600 0.00000 0.00000 0.00000 0.000000	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X.25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 0.1560	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3d S3a S3f S3g S3h GE AVAILABLE BATTE BATTE BATTE BATTE SPEAKER CIRCUIT I SPEAKER CIRCUIT I SPEAKE	RENT (B) IRM (X. 25) EQUIREMENT (A+B) 0%) 0 (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO 50 WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTED SPARE SPAR	DR AMP-: DR AMP-: DTO THIS CII TO THIS CII CURRENT CURRENT	3 WA E. 50.1 RCUIT 11.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ACH 0000 0.2400 0.2400 0.00000 0.0000 0.000000 0.0000 0.000000 0.0000	ARM TOTAL 0.6850 0.2400 0.0600 0.00000 0.00000 0.00000 0.000000 0.00000000	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X.25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH		STA EACH 0.1560 0.00000 0.00000 0.00000 0.000000	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 3.7440	EA 0.18 0.44 0.55 0.33 0.00
	QTY 1	TOTAL ALARM CURI 15 MINUTES OF ALA TOTAL BATTERY RE SAFETY MARGIN (20 BATTERY SUPPLIED AMPLIFIER WA MODEL NO. DAA2-5025 S3a S3b S3c S3d S3c S3d S3c S3d S3c S3d S3d S3d S3d S3d S3d S3d S3d	RENT (B) IRM (X.25) EQUIREMENT (A+B) O%) D (2) 18AH ITTAGE CALCULATION FC DEVICE DESCRIPTIO SO WATT NOTIFIER DIGITAL AUDIO AM WATTAGE OF SPEAKERS CONNECTEI SPARE	DR AMP-5 → IPLIFIER D TO THIS CII D TO THIS CII CURRENT CURRENT CURRENT CURRENT D D D D D D D D D D D D D	3 WA E 50.1 RCUIT 11.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ATTS ACH 0000 0000 0000 0000 0000 0000 0000	ARM TOTAL 0.6850 0.2400 0.2600 0.2400 0.2600 0.2400 0.2600 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.0000000 0.00000000	QTY	MODEL No PSE-10 V4a V4b V4c V4d		BATTERY CALCULATION DEVICE DESCRIPTION NOTIFIER REMOTE POWER SUPPLY VISUAL CIRCUIT No.4a VISUAL CIRCUIT No.4b VISUAL CIRCUIT No.4c SPARE PANEL STANDBY CURRENT PANEL ALARM CURRENT PANEL ALARM CURRENT DESCRIPTION TOTAL STANDBY CURRENT (A) X 24 HOUR STANDBY TOTAL ALARM CURRENT (B) 15 MINUTES OF ALARM (X .25) TOTAL BATTERY REQUIREMENT (A+B) SAFETY MARGIN (20%) BATTERY SUPPLIED (2) 18AH	RPS-4	STA EACH 0.1560 0.0000 0.0000 0.0000 CURRENT	NDBY TOTAL 0.1560 0.0000 0.0000 0.0000 0.1560 3.7440 0.1560	EA 0.18 0.44 0.55 0.33 0.00
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○ SHEET NOTES

CONTRACTOR SHALL DEMOLISH ALL FIRE ALARM AT THIS BUILDING COMPLETE PER GENERAL DEMOLITION NOTES ON THIS SHEET; CONTRACTOR SHALL ASSUME QUANTITY OF EXISTING DEVICES TO BE DEMOLISHED EQUAL TO THAT OF NEW DEVICES SHOWN ON NEW PLANS. CONTRACTOR SHALL PROVIDE AND INSTALL BLANK COVER PLATE AT LOCATIONS WHERE DEVICES WERE REMOVED. PAINT/FINISH DEVICE PLATES TO MATCH EXISTING WALLS/CEILINGS. WHERE SURFACE RACEWAYS ARE EXISTING FOR FIRE ALARM CONNECTIONS; REMOVE COMPLETE & PAINT/FINISH WALLS/CEILINGS.

GENERAL DEMOLITION NOTES

- A. CONTRACTOR SHALL FIELD VERIFY EXTENT OF ELECTRICAL DEMOLITION AND QUANTITIES OF ELECTRICAL TO BE REMOVED AS DICTATED BY THE REQUIREMENTS OF THE PROJECT.
- B. REMOVAL SHALL INCLUDE WIRING, RACEWAY, BOXES, SWITCHES, LIGHT FIXTURES, ETC. AS INDICATED ON THE PLANS AND AS REQUIRED BY THESE DEMOLITION NOTES.
- C. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE CONCEALED IN EXISTING REMAINING WALLS MAY BE ABANDONED IN PLACE. REMOVE WIRING FROM CONDUIT.
- D. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE EXPOSED SHALL BE REMOVED.
- E. WHERE REMOVAL OF EQUIPMENT OR WIRING IS INDICATED, IT SHALL INCLUDE ALL ASSOCIATED WIRING BACK TO LAST ACTIVE REMAINING OUTLET, DEVICE, FIXTURE OR PANEL.
- F. ELECTRICAL CONTRACTOR SHALL INSURE THAT ALL REMAINING ACTIVE CIRCUITS, DEVICES, OUTLETS, LIGHT FIXTURES, ETC. HAVE NOT BEEN DISCONNECTED OR MADE INOPERATIVE DURING DEMOLITION. ELECTRICAL CONTRACTOR SHALL RESTORE ALL INTERRUPTED OR DISCONNECTED CIRCUITS TO OPERATION.
- G. ELECTRICAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL REMOVED ELECTRICAL EQUIPMENT AND MATERIAL.
- H. NO REMOVED EQUIPMENT OR MATERIAL SHALL BE REUSED AS PART OF NEW WORK, U.O.N.I. EXISTING REMAINING CONCEALED RACEWAYS MAY BE REUSED FOR NEW WORK PROVIDED
- THEY MEET ALL REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK. J. EXISTING FLUSH OUTLETS MAY BE REUSED FOR NEW WORK PROVIDED THEY MEET ALL REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK, MEET THE REQUIREMENTS OF THE
- CURRENT C.E.C. FOR VOLUME AND COINCIDE WITH LOCATION SHOWN FOR THE NEW WORK. K. FLUSH OUTLET BOXES IN EXISTING WALLS TO REMAIN MAY BE ABANDONED IN PLACE. REMOVE
- DEVICES AND WIRING, PLUG OPENING AND PROVIDE AND INSTALL A BLANK DEVICE PLATE.
 L. EXISTING WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL CONDITIONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.
- M. WHERE TELEPHONE, COMPUTER DATA, FIBER OPTICS, FIRE ALARM OR OTHER COMMUNICATIONS OUTLETS OR WIRING IS TO BE DEMOLISHED IT SHALL BE REMOVED BACK TO THE NEXT TERMINAL POINT. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER OR HIS REPRESENTATIVE TO HAVE EQUIPMENT AND WIRING DESIGNATED FOR REMOVAL OR PRESERVATION PRIOR TO REMOVAL OF OUTLET BOXES, CONDUIT OR WIRING BY ELECTRICAL CONTRACTOR.
- N. COORDINATE WITH OWNER PRIOR TO START OF DEMOLITION TO MINIMIZE POWER INTERRUPTIONS, WORK MAY HAVE TO OCCUR DURING NON-REGULAR BUSINESS HOURS. COORDINATE IN WRITING WITH OWNER ONE WEEK PRIOR TO PLANNED POWER INTERRUPTIONS.

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○ SHEET NOTES

- 1. CONTRACTOR SHALL PROVIDE AND INSTALL 1"C. FOR FIRE ALARM CABLES.
- 2. CONTRACTOR SHALL PROVIDE AND INSTALL 2"C. FOR FIRE ALARM CABLES.
- PROVIDE AND INSTALL CHRISTY #N16 PULLBOX WITH LID LABELED "FIRE ALARM".
 CONTRACTOR SHALL PROVIDE AND INSTALL 1"C. FOR FIRE ALARM CABLES. ROUTE CONDUIT ON ROOF OF BUILDING AND ABOVE EXISTING CANOPY BETWEEN BUILDINGS; PAINT/FINISH EXPOSED CONDUITS TO MATCH CANOPY FINISH.
- 5. PROVIDE AND INSTALL 12" SQ. X 4" DEEP NEMA 3R PULLCAN.

GENERAL NOTES:

- A. CONTRACTOR SHALL LOCATE ALL (E) UNDERGROUND UTILITIES PRIOR TO TRENCHING AND TAKE CAUTION TO AVOID DAMAGE DURING TRENCHING. HAND TRENCH IF NECESSARY. CONTRACTOR SHALL MAKE ALL REPAIRS TO DAMAGED UTILITIES AT NO CHARGE TO OWNER.
- B. SEAL ALL EXTERIOR/INTERIOR BUILDING PENETRATIONS, CUT AND PATCH WALLS/CEILINGS FOR CONDUIT ROUTING AS NECESSARY. PAINT/FINISH EXPOSED CONDUITS/BOXES TO MATCH BUILDING FINISH. COORDINATE WITH DISTRICT & ARCHITECT FOR EXACT REQUIREMENTS.

SHEET NOTES

- CIRCUIT VIA $\frac{1}{2}$ "C., 2 #12 & 1 #12 GND TO NEAREST ELECTRICAL PANEL; AT PANEL PROVIDE AND INSTALL 20 AMP, 1-POLE BREAKER WITH LOCK-ON DEVICE WITH RED MARKINGS LABELED "FIRE ALARM/ECS".
- WHERE NECESSARY PROVIDE & INSTALL ACCESS PANEL FOR HEAT DETECTOR ABOVE CEILING; 24" SQ. OPENING MINIMUM.
- LOCATED IN ELECTRICAL ROOM A8.
- 5. CONTRACTOR SHALL PROVIDE AND INSTALL 1"C. FOR FIRE ALARM CABLES.
- 6. PROVIDE AND INSTALL 12" SQ. X 6" DEEP NEMA 3R PULLCAN.
- 7. PROVIDE AND INSTALL 18" SQ. X 6" DEEP NEMA 3R PULLCAN.
- 8. SEE SHEET E2.1 FOR CONTINUATION.

GENERAL	NOTES:							
A. SEAL ALL EXTERIOR/INTERIOR BUILDING PENETRATIONS, CU PATCH WALLS/CEILINGS FOR CONDUIT ROUTING AS NECESS PAINT/FINISH EXPOSED CONDUITS/BOXES TO MATCH BUILDI COORDINATE WITH DISTRICT & ARCHITECT FOR EXACT REQUIREMENTS.								
B. ALL IND ALL OUT	OOR SPEAKERS/HORNS SHALL BE 0.5 WATTS RATED IDOOR SPEAKERS/HORNS SHALL BE 2 WATTS RATED							
CABLE LEC	<u>GEND</u>							
TYPE A =	DENOTES INITIATING DETECTION CIRCUITS (SMOKE DETECTOR, HEAT DETECTOR, ETC.) UNLESS OTHEI NOTED, PROVIDE (1) #14 TWISTED-UNSHIELDED PA CROSSHATCHES INDICATE THE NUMBER OF PAIRS							
TYPE B =	DENOTES NOTIFICATION APPLIANCE CIRCUITS (SPE STROBES, BELL ETC.) UNLESS OTHERWISE NOTED, (1) PAIR OF #12 AWG. CROSSHATCHES INDICATE TH							

○ SHEET NOTES

- CIRCUIT VIA ½"C., 2 #12 & 1 #12 GND TO NEAREST ELECTRICAL PANEL; AT PANEL PROVIDE AND INSTALL 20 AMP, 1-POLE BREAKER WITH LOCK-ON DEVICE WITH RED MARKINGS LABELED "FIRE ALARM/ECS".
- WHERE NECESSARY PROVIDE & INSTALL ACCESS PANEL FOR HEAT DETECTOR ABOVE CEILING; 24" SQ. OPENING MINIMUM.
- 3. PROVIDE AND INSTALL LAMICOID NAMEPLATE ON DEVICE READING "EOL".
- 4. HOMERUN TO REMOTE POWER SUPPLY "RPS-1" AND DIGITAL AUDIO AMPLIFIER "AMP-1" LOCATED IN ELECTRICAL ROOM C10.
- 5. CONTRACTOR SHALL PROVIDE AND INSTALL 2"C. FOR FIRE ALARM CABLES.
- 6. PROVIDE AND INSTALL 18" SQ. X 6" DEEP NEMA 3R PULLCAN.
- 7. SEE SHEET E2.1 FOR CONTINUATION.
- 8. SEMI-FLUSH FIRE ALARM CONTROL PANEL; CONTRACTOR SHALL CUT AND PATCH WALL AS NECESSARY.

CC

ROOF TOP CONDUIT SUPPORT; 5" x 6" x 9.5" WITH 1" HIGH 14 GA. GALVANIZED CHANNEL

14 GA. RIGID CONDUIT CLAMP WITH RECESS HEX HEAD MACHINE SCREW AND SQUARE NUT

COMBINATION. COOPER B-LINE B2000 SERIES. 3. CLEAN (E) ROOF AREA AS REQUIRED.

