

# 5601 WILKINSON BOULEVARD CHARLOTTE, NORTH CAROLINA 28208 (704) 359-4000

# INVITATION TO BID AVIA 25-15 MS Switchgear Replacement ADDENDUM #3 October 29, 2024

This Addendum is hereby made a part of the specifications, as applicable, of the above referenced project. All other requirements of the original plans and specification shall remain in effect in their respective order. Acknowledge receipt of this addendum by inserting its number and date on the addenda acknowledgement of your bid.

The following documents have been uploaded into the e-Builder portal and/or attached to this addendum:

- 1. Revised plans dated 10.28.2024 which further clarify scope and panel replacement as part of alternate.
- 2. Stamped Architectural Specifications.
- 3. Clarification questions with answers.
- 4. Updated pricing sheet to include "add alternate" to be submitted with your documents. The add alternate line has also been added to the bid scope on e-Builder.

# Add alternate 01 summary:

Additional Alternate 01 includes removal of five (5) existing electrical panels, breakers and conductors feeding the panels. Pull new feeder cables back to source panels, install new panels with breakers, confirm existing circuits and label new corresponding panel schedule, and terminate existing circuits to new panels/breakers. Work shall be coordinated to minimize outages to four hours each night or provide temporary power.

# CLT- MS SWITCHGEAR REPLACEMENT

MCKIM & CREED PROJECT # 08293-0003 CITY OF CHARLOTTE CONTRACT # 2021000970



INTERNATIONAL AIRPORT

5501 JOSH BIRMINGHAM PKWY CHARLOTTE, NORTH CAROLINA 28208 **NOVEMBER 15, 2023** 

ARCHITECT



GS-NC P.C. An Affiliate of Gresham Smith

**ENGINEER - MEP** 



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NC License # F-1222 www.mckimcreed.com





# **LIST OF DRAWINGS**

GF	÷Ν	FR	Δ	١.

COVER SHEET

APPENDIX B ARCHITECTURAL GENERAL NOTES

# ARCHITECTURAL: LS100 EXISTING LIFE SAFETY PLAN

RENOVATION LIFE SAFETY PLAN OVERALL DEMO FLOOR PLAN ENLARGED DEMO PLAN LS101

ENLARGED RENOVATION FLOOR PLAN

# ENLARGED FINISH FLOOR PLAN

# ELECTRICAL:

KICAL:
ELECTRICAL GENERAL NOTES, SYMBOLS, AND LEGEND
ELECTRICAL SPECIFICATIONS
ELECTRICAL SPECIFICATIONS
ELECTRICAL SPECIFICATIONS
ELECTRICAL SASEMENT LEVEL POWER PLAN
ELECTRICAL RAMPI LEVEL POWER PLAN
ELECTRICAL RAMPI EVELE POWER PLAN
ELECTRICAL PANEL SCHEDULES
ELECTRICAL DETAILS

# MECHANICAL AND PLUMBING:

GENERAL NOTES, LEGEND, AND SCHEDULE SPECIFICATIONS BASEMENT LEVEL DEMOLITION PLAN BASEMENT LEVEL NEW WORK PLAN RAMP LEVEL NEW WORK PLAN DETAILS

M/P300

CONSTRUCTION DOCUMENTS **COVER SHEET G001** 

# 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES) (Reconduct the following due to the building allows due 1 or 2)

Address: 5501 J	OSH BIRMINGHAM PARKW	AY CHARLOTTE, NO		Zip	Code 28208
Owner/Authori	zed Agent: CITY / CHARL	OTTE Phone # ( 704	336 . 224	1 E-M	ail
Owned By:		City/County	Private		State
Code Enforcem	ent Jurisdiction:	City CHARLOTTE	County N	sox 🕱	State NCDOL-OSEM
CONTACT:					
DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	F-MAII.
Architectural	CRESHMA SMITH	SCHOOGRIT	THE PART IS	(12) means	E-MAIL.
Civil	Organica and it	auticonii	14794	(1)	sear to continuo or committy of
Electrical	MONTH'S CREED	THOMAS OUTTOIN	610102	(70 ) 10 100	Bull and Discolar speed read
Fire Alarm	HOMA CROSS	SAMINGUREN	040045	(20.) 811288	annual Redonated cut
Plumbing		_		( )	
Mechanical		_		( )	
Sprinkler-Stand	pipe				
Structural				( )	
Retaining Walls	s>5' High				
Other					

18 NC BUILDING CODE:	☐ New Building ☐ Addit	ion Renovation
	□ 1 <sup>st</sup> Time Interior Completion	
		l inspection jurisdiction for possible additional
	procedures and requirements	
		Core- Contact the local inspection jurisdiction for
	possible additional procedure	es and requirements

2018 NC EXISTING BUILDING CODE:	EXISTING:	Prescriptiv	e 🔲 Repair	Chapter 14
	Alteration:		Level II	
		Historic Pr	operty	☐ Change of Use
CONSTRUCTED: (date)	CURR	ENT OCCUPA	NCY(S) (Ch. 3):	
RENOVATED: (date)	PROP	OSED OCCUP.	ANCY(S) (Ch. 3):	
RISK CATEGORY (Table 1604.5):				

						-
BASIC BUILDING DAT						
Construction Type:	□ I-A	☐ II-A	☐ III-A	□ IV	□ V-A	
(check all that apply)	□ I-B	X II-B	☐ III-B		□ V-B	
Sprinklers: No	Partial   Y	'es 🔯 ì	NFPA 13	NFPA 13R	☐ NFPA 13D	
		s 🛛 I 🔲 I		Wet Dry		
Fire District: No	Yes	Flood Hazar	d Area: 💆	No Yes		
Special Inspections Req	uired: 🔀 No				on for additional	
		proced	lures and requir	ements.)		

Gross Building Area Table							
FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL				
3 <sup>rd</sup> Floor							
2 <sup>ed</sup> Floor							
Mezzanine							
1st Floor							
Basement	57,101 SF	N/A	57,101 SF				

# ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly A-1 A-2 MA-3 A-4 A-5
Business (ARPORT TERMINAL)
Educational
Factory F-1 Moderate F-2 Low
Hazardous H-1 Detonate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM
Institutional 1-1 Condition 1 2
☐ 1-2 Condition ☐ 1 ☐ 2
□ 1-3 Condition □ 1 □ 2 □ 3 □ 4 □ 5
□ 1-4
Mercantile
Residential R-1 R-2 R-3 R-4
Storage S-1 Moderate S-2 Low High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous  SECONDARY OCCUPANCIES: IB: BUSINESS, IS-23 STORAGE, BASEMENT HAS
Accessory Occupancy Classification(s): ACCESSORY (8-2) USES.
Incidental Uses (Table 509): NA
Special Uses (Chapter 4 - List Code Sections): 402.402.11.4024.2.4024.2.4024.2.4025.4024.2.4025.4024.2.4024

Mixed Occupancy:	□ No	☐ Yes	Separation: No	1 464: REFERENCE TO DATED 2/19/19 FOR	PRIORINANCE DAGED DESIGN ANALYSISP PASSINE SMICKE CONTROL EYETEM
Hou-sep	mated Use t	ozou	ying the height and pancies to the entire truction, so determi	building. The mo	
Separates	l Use (508.	i) - See below		s for each story	area of the occupancy shall area of each use divided by at 1.

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.24 AREA	(C) AREA FOR FRONTAGE INCREASE <sup>LS</sup>	(D) ALLOWABLE AREA PER STORY OR UNLIMITED <sup>2,1</sup>
BASEMENT	A-3, 8, 8-2	53,767	UNLIMITED	N/A	UNLIMITED

- NOT APPLICABLE

# ALLOWABLE HEIGHT

Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or
The maximum height of air traffic control towers must comply with Table 412.3.1.
The maximum height of onen parking parages must comply with Table 486.5.4

### FIRE PROTECTION REQUIREMENTS

BULBING PLEMENT	FIRE SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED (W/ * REDUCTION)	AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0 HR (1 52 HR V SUPPORTE CONSTRUC		N/A	UL X790 UL N/56 UL D916	NA	N/A
Bearing Walls							
Exterior	N/A	OHR	N/A	/			
North					_		/
East		_					
West							
South	/	/	/	/		/	/
Interior	N/A	OHR	N/A	/	/	/	/
Nonbearing Walls and Partitions				N/A			
Exterior walls							
North	> 30 FT.	0 (NC)	0 (NC)	/	-		/
East	> 50 FT.	0 (NC)	0 (NC)				/
West	> 30 FT.	0 (NC)	0 (NC)		$\perp$		/
South	> 30 FT.	D (NC)	0 (NC)				/
Interior walls and partitions		D (NC)	0 (NC)	/	/	/	/
Floor Construction Including supporting beams and joints		D HR D 62 HR V SUPPORT CONSTRUCT		N/A	UL D916	F-A-2025	FF-D 1050 FF-D 1055 FF-D 1056 FF-D 0001
Floor Ceiline Assembly			N/A				
Columna Supporting Floors		9,68	0 HR		ULX000 ULX000		
Roof Construction, including supporting beams and inists		0 HR	0 HR	N/A	UL D916	N/A	NA
Roof Criling Assembly		NA	N/A				
Columns Supporting Roof		0 HR	0 HR	N/A	UCX790 UENCHI		
Shaft Enclosures • Exit		1 HR	1HR	N/A	35, 1995	GAPRE	HN 0 8013 HN 0 8029
Shaft Enclosures • Other		2 HR	2 HR	NA	UL 1408 UL 1408	0.404881	MA-0-008
Corridor Separation		0 (NC)	0 (NC)		11.1780		$\overline{}$
Occupancy Fire Barrier Separa	tion	1 HR	1 HR NA	N/A	UL 0908	1486 43 19	APTEAIN
Party/Fire Wall Separation		NIA NIA	NA NA	-/	-		-/
Smoke Barrier Separation		N/A	NA.	/	-	/	/
Smoke Partition				_	UL 0906		_
Tenant/Dwelling Unit/ Sleeping Unit/Separation		1 HR	1 HR	N/A	01,0419	2008 At 24	APTE ARK
Incidental Use Separation Indicate section number nem		NA	NA.				

Sprinklers:	□No	Partia	I □ Yes	<b>⊠</b> NF	PA 13	☐NFPA 13R	□NFPA 13D
Standpipes:	□ No	Yes	Class XI			Wet D	ry
Fire District:	No No	☐ Yes	Flood	Hazard .	Area:	No DY	es
Special Inspect	tions Req	aired: 🛛	No Yes	Contact ti	he local i	aspection jurisdi	ction for additional

	PERCENTAGE OF WA	LL OPENING CALCUL	ATIONS
FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
> 30 FT.	(UP,5)	NO LIMIT	N/A

	LIFE SAFETY SYSTEM REQUIREMI
Emergency Lighting:	□ No 🛛 Yes
Exit Signs:	□ No 🔽 Yes
Fire Alarm:	□ No 🔀 Yes
Smoke Detection Systems:	☐ No 🔀 Yes 🗌 Partial

# LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: L8201

Fire and/or smoke rated wall locations (Chapter 7)

Assumed and real property line locations (if not on Exterior wall opening area with respect to distance ssumed and real property line locations (if not on the site plan)

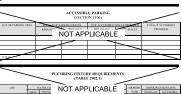
Assumed and real property line Incidents (if not no the site plan). Extentive stud people are with respect to distance to assumed property lines (705.8) Occopiency be for each area as in telastic to acceptant load calculation (Table 1004.1.2) Earl age case travel distances (1017) Entit access travel distances (1017) Entit access travel distances (1017) Date and supplies (1004.4) Core not which for each of other case (1017) Core not which for each of other case (1017) Core not which for each of other case (1017) Core not which for each of other case (1017) Core not which for each of other case (1017) Core not which for each of other case (1017) Core not which for each of other case (1017) Core not which for each of other case (1017) Core not which for each other case (1017) Core case (1017) Core not which for each other case (1017) Core not which for each other case (1017) Core cas

in calculated occurrent load caracity each exit door can accommodate based on errors width (1005.3).

Actual occupant had for each exist door A separate schemic pict includings where fire rated fluoricelling and/or roof structure is provided for purposes of executive separation. (1981-19) Learnine of doors with elegender person below and the amount of delay (1910.1-57) Learnine of doors with elegender person below and the amount of delay (1910.1-57) Learnine of doors with electromagnicist genes below (1910.1-59) Learnine of doors upperson with most person of Learnine of the Company of the Most person of Learnine of the Company of the Most person of Learnine of the Company of Learnine of Le ctual occupant load for each exit door

square footage of each smoke comp ote any code exceptions or table notes that may have been utilized regarding the items above

# ACCESSIBLE DWELLING UNITS BLE ACCESSIBLE TYPEA TYPEA T NOT APPLICABLE



# SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS. etc., describe below HCDT DEPARTMENT OF MECKLENBURG COUNTY CODE ENFORCEMENT

NORTH CAROLINA DEPARTMENT OF INSURANCE

### ENERGY SUMMARY

ENERGY REQUIREMENTS: The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Thougher shall familish the required portions of the project information for the plan data sheet If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: No X Yes (The nemalator of this was ASHRAE EC.) 2019

Exempt Building: X No Yes (Provide code or statutory reference): Climate Zone: ■ 3A ■ 4A ■ 5A Method of Compliance: Energy Code Performance

ASHRAE 90.1 Performance
(If "Other" specify source here)





# 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS STRUCTURAL DESIGN (PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Ground Snow Load: Wind Load: Ultimate Wind Speed \_\_\_\_\_\_ mph (ASCE-7) Exposure Category \_\_\_\_\_ C

LATERAL DESIGN CONTROL: Earthquake Wind Wind SOIL BEARING CAPACITIES:

Field Test (provide copy of test report) EMSTIMS psf Presumptive Bearing capacity EMSTIMS psf Pile size, type, and capacity EMSTIMS

# 2018 APPENDIX R

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

## MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: 21.6\* F
summer dry bulb: 24.674.7 #

Building heating load: EMSTING, NO CHANGE Building cooling load: 71.06 MBH

# Mechanical Spacing Conditioning System

Unitary
description of unit:
heating efficiency:
size category of unit:

SEE EQUIPMENT SCHEDULE
SEE EQUIPMENT SCHEDULE
SEE EQUIPMENT SCHEDULE Boiler
Size category. If oversized, state reason.:

Existing

Chiller
Size category. If oversized, state reason.: EXECTING List equipment efficiencies: SEE EQUIPMENT SCHEDULE

# 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS ELECTRICAL DESIGN (PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code Performance
ASHRAE 90.1 Performance

Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
mumber of ballasts in fixture
number of ballasts in fixture
total swatteper fixture
total situating perfective x, allowed (whole building or space by space)
total extentive number operfective x, allowed
total extentive number operfective x, allowed

# Additional Efficiency Package Options (When using the 2018 NCECC; not required for ASHRAE 90.1)

using the 2018 NCECC; not required for ASHRAE 90.1.

C406.2 More Efficient HVAC Equipment Performance

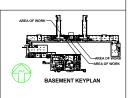
C406.3 Reduced Lighting Power Density

C406.4 Enhanced Digital Lighting Controls

C406.5 Os-Site Renewable Energy

C406.6 Dedicated Outdoor Air System

C406.7 Reduced Energy Use in Service Water Heating



# KEY PLAN











**CLT - MS SWITCHGEAR REPLACEMENT** 

APPENDIX B



# GENERAL NOTES FOR PROJECTS

- . THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE DRAWINGS AND THE PROJECT MANUAL (SPECIFICATIONS, SCHEDULES, ETG.). THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THESE DRAWINGS AND THE PROJECT MANUAL; AND HEISHE SHALL MIMEDIATELY NOTIFY THE AGENTIFETOR OF ANY MOONSISTENCES THAT HEISHE DISCOVERS.
- THE CONTRACTOR SHALL VERRY THAT EST EXPRESS IS MANYAMED FOR ALL OCCUPIED AREAS OF THE BUILDING THROUGHOUT ALL PHASES
  ACCESSIBLE. AND THE INTEGRATY OF THE DESIGNATED RATED ENCLOSURE AROUND THAN SHALL ALSO BE MANTANED THROUGHOUT ALL
  PHASES OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOT SCALE THE DRAWINGS, IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARFICATION FROM THE ARCHITECT PRIOR TO CONTINUING WITH CONSTRUCTION.
- CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, CONTROLS, CONDUIT, ETC AND COORDINATE WITH OTHER TRADES PRIOR TO PROVIDING PRICING.
- ECRAL FREE MARKES SHE WALLA A ARTE SHOWE RESIDES, SERVICE AREA OF HIGH DALL RESISSES METALLE ELECTRIC CHIEF DOUGS SHALL MOT EXCRETE WESTERN BENESS AND METALLE RESISSES METALLE DOUGS SHALL MOT EXCRETE WESTERN BENESS AND METALLE BENESS AND METALLE DOUGS SHALL WESTERN DOUGS SHALL WESTERN DOUGS THAT DESIGN THE METALLE BENESS AND METALLE DOUGS SHALL WESTERN DOUGS THAT DECEDED THIRTH TO SOURCE HOUSE OF THE AGGREGATE AREA METALLE RECEIVED. DOUGS THAT DECEDED THIRTH TO SOURCE HOUSE OF THE AGGREGATE AREA.
- CHAINTAIN SPACE, BE REASSED COMENT THIS REQUIREMENTS OF MYNATIN, SECURIOR 2014, and INVADE, SECTION THAZ.

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  (I) PROPORTION CHTMEN TO ACCOUNT BE THE RESERVANCE SECTION AS SECTION FOR THE SECTION OF THE RESERVANCE OF THE RESERVANCE SECTION OF T

- RECESSED METALLIC BOXES LOCATED ON OPPOSITE SIDES OF RATED FIRE BARRIERS AND/OR RATED SMOKE BARRIERS (RECARDLESS OF THER VERTICAL SEPARATION IN THE WALL) SHALL BE SEPARATED BY A HORROWTH, DISTANCE OF 24 N/CHES MINMAIM. COMPLY WITH ALL REQUIREMENTS OF NPPA 1018 SECTION 8.25.6.2.3 MO218 MBGD/S SCHOON 74.4.3.2.
- RECOMPRESENTS OF FIPM 40 SECTION 4.3.5.4.3 AND 319 MICE. SCH. THAT 1. THE A TH

- PROVIDE CONTINUOUS SEALANT TO PROVIDE "WITER TEATUR" HAS "HAN THE PROVIDED HEAT THE PROMETTES OF ALL DOOR FRAMES. THEREFOR WINDOW PRAMES, EXTENSED WHO HOW THANKS HOWN WOODS, CAMBRIT CLASSEDORS COUNTERFORS, ALUMBING RITHURS, TOLET ACCESSORIES GOTH HECESSED A SURFACE MOUNTED, THE EXTRAORDER CAMBRIT, RIRE DEPARTMENT WAVE CAMBRITS, ETC, (VER) WHICH THE LOWER THE BETTER HOTE HE TO HE OFFI OR FOR TOLEDAY THE BETTER.
- 10. DO NOT EMBED CONDUIT INTO ANY ELEVATED COMPOSITE SLAB. ALSO, DO NOT RECESS OR EMBED CONDUIT, PIPING, BACK BOXES OR ANYTHING ELSE (THAT COULD ADVERSELY AFFECT EITHER THE STRUCTURAL INTEGRITY OR THE FIRE RATED INTEGRITY OF THE ELEVATED SLAB) INTO ANY TYPE OF ELEVATED SLAB.
- THE CONTRACTOR SHIPL, BE RESERVEDED FOR COORDINATION AND OFSETHING DIRECTLY WITH THE CONFIRE REGISARION ANY CONFIRE POSSEDE CHANGES FOR THE NUMBEROW SETEM AND/ON WANDER CONFIRED FOR DIRECTLY MITHER CONFIRED FROM LEVELS, BE LEVATORS, STARIG, ETC, IN THE PROJECT, THESE MIST BE VERBERD PRIOR TO THE LABEL POR OR DISETTIESTAN, OF ANY OF THESE TEMSOPYCES IN COMMINICATIONS PROVIDED BY CONFIRED AND ADMINISTRATION OF THE CONFIRED AND CONFIRED AND ADMINISTRATION OF THE POSSED AND COMMINICATION OF THE CONFIRED AND CONFIRED AND COMMINICATION OF THE CONFIRED AND CONFIRED
- 12. THE GAPS AROUND ALL PENETRATIONS SHALL BE SEALED AIR-TIGHT & SOUND-TIGHT.

### GENERAL NOTES FOR WALLS/PARTITIONS/BARRIERS

- 1. CONTRACTOR TO CONFIRM RATING OF EXISTING WALLS CORRESPONDS TO HOURLY RATING AS SHOWN ON PLANS.
- 2 DEMETRATIONS

FIRE-RESISTANCE RATED ASSEMBLIES: FIRESTOPPING PER SPEC SECTION 07 8400.

ELECTRICAL BOXES: MAXIMUM 1/8" PERIMETER JOINTS, SEE DETAIL 3/4/841 "ELECTRICAL OUTLET BOXES RECESSED IN WALLSPARTITIONS/BARRIERS".

OTHER PENETRATIONS: MAXIMUM 1/4" PERIMETER JOINTS.

THE GAPS AROUND ALL PENETRATIONS SHALL BE SEALED AIR TIGHT & SOUND TIGHT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE OWNER'S EQUIPMENT VENDORS TO INSURE THAT THERE WILL BE NO OWNER FURRISHED ITEMS (WITH A SURFACE AREA GREATER THAN 16 SQUARE INCHES) RECESSED INTO A RATED RIRE BARRIER OR RATED SMOKE BARRIER, ITEMS RECESSED IN ORAPITOD SMOKE PARTITIONS OR ALL DEFENDED.

3. BOTTOMS OF ASSEMBILIES:

MINIMUM 1/4" TO MAXIMUM 1/2" GAP AT FLOOR SLAB.

FIRE-RESISTANCE RATED ASSEMBLIES: COMPLY WITH INDICATED UL OR GA DESIGN, WHERE GAP EXCEEDS 1/2" PROVIDE FIRE-RESISTIVE JOINT SYSTEM PER SPEC SECTION 07 8400.

NON-RATED ASSEMBLIES: SEALS NOT REQUIRED.

- 4. FOR ALL WATER WALL-SEARCHERS PER THE REQUIREMENT OF 250 MORE SETTING YEAR YEAR THE PROOF OFFICE TO THE THE PROPERTY OF YEAR THE PROOF OF THE P
- 5. ACOUSTICAL SEPARATION ASSEMBLIES:

NON-RATED ACOUSTICAL ASSEMBLES: APPLY ACOUSTICAL INSULATION IN EACH STUD SPACE WITHOUT GAPS OR VICIOS TO PROVIDE FULL COVERAGE, APPLY ACOUSTICAL SEALANT TO SOTH SIDES OF TOPS & BOTTOMS OF WALLS A VERTICAL JOINTS WITH OTHER CONSTRUCTION, INSTALL ELECTRICAL BOXES ON OPPOSITE SIDES OF PARTITION IN DEFERRENT STUD SPACES & PROVIDE GARKET SEALS, APPLY ACOUSTICAL SEALANT TO OTHER PERSON.

STC-RATED ACOUSTICAL ASSEMBLIES: COMPLY WITH REFERENCED DESIGN STANDARD TO ACHIEVE INDICATED RATINGS.

THE ENCLOSURE WALLSPARTITIONS MARRIERS SHALL BE EXTENDED UP TO THE DECK ABOVE & BE SEALED "AIR-TIGHT" IN SPACES WHERE SOUND TRANSMISSION UNITATIONS ARE EITHER REQUIRED BY THE CODE OR NECESSARY TO COMPLY WITH GOOD DESIGN PRACTICE. SEE SOUND TRANSMISSION LIMITATIONS CHARTING BEFORE PROFILED (CALTINOS WHERE THIS IS REPORTED.)

BASEMENT KEYPLAN

KEY PLAN

REVISIONS







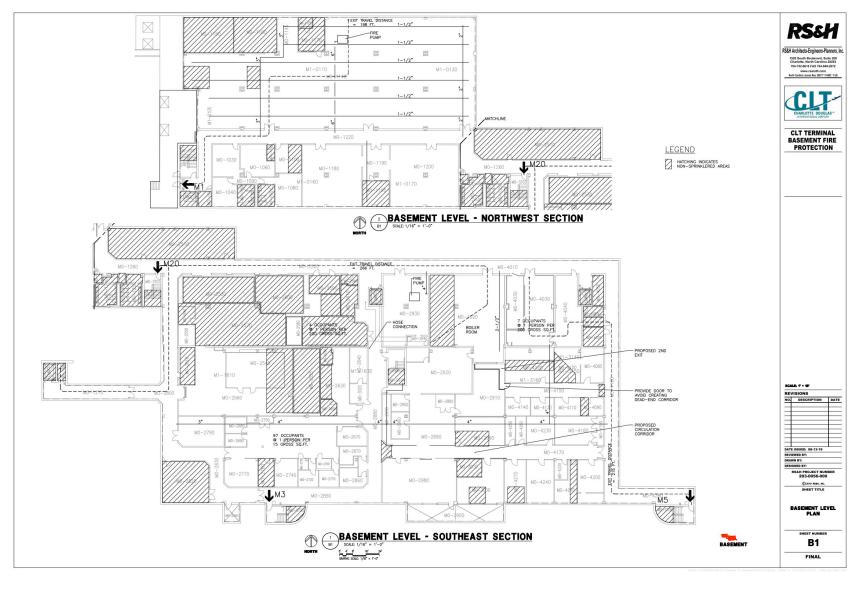


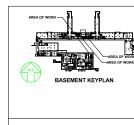
SCALE

G003

ARCHITECTURAL GENERAL NOTES

# ADDED FOR REFERENCE ONLY





KEY PLAN





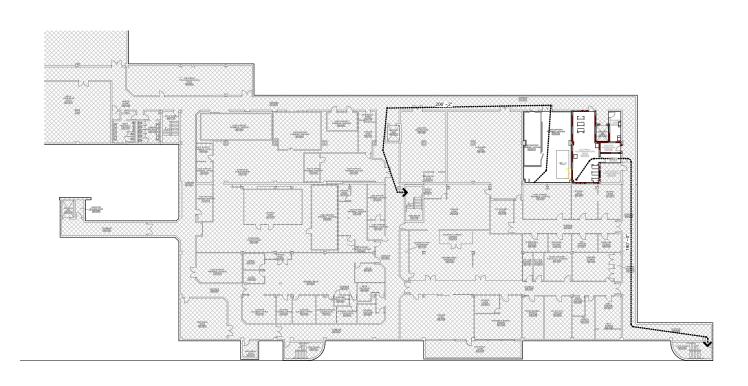




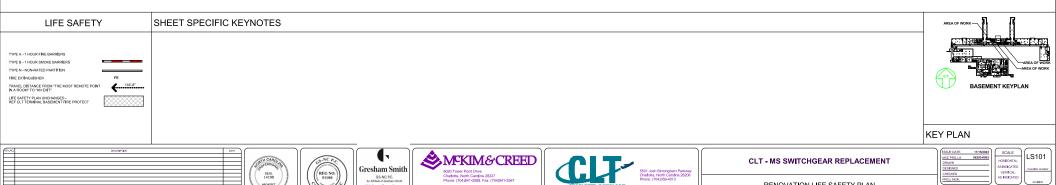
CLT - MS SWITCHGEAR REPLACEMENT

EXISTING LIFESAFETY PLAN

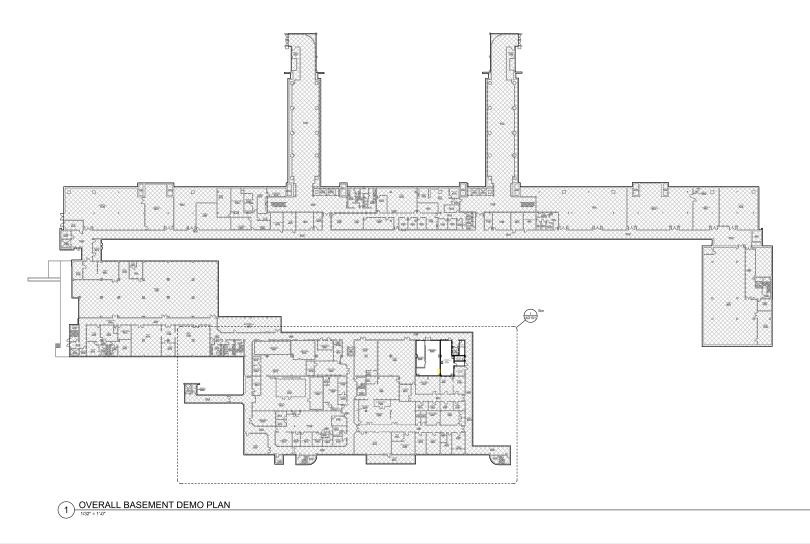
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1 BASEMENT RENOVATION LIFE SAFETY PLAN



RENOVATION LIFE SAFETY PLAN









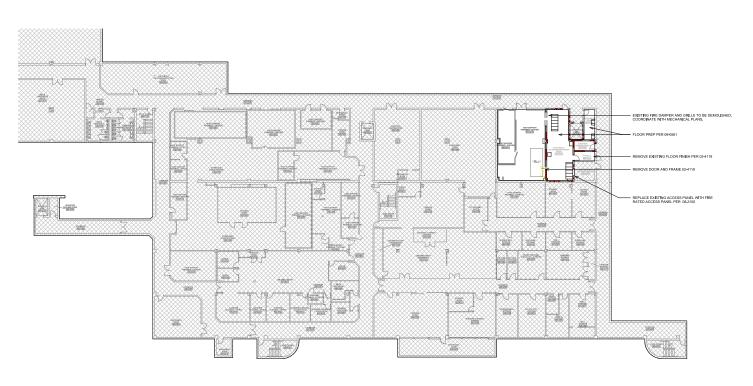






**CLT - MS SWITCHGEAR REPLACEMENT** 

AD100 HORIZONTAL: AS INDICATED VERTICAL: AS INDICATED OVERALL DEMO FLOOR PLAN



1) ENLARGED BASEMENT DEMO PLAN
1/18" = 1-10"







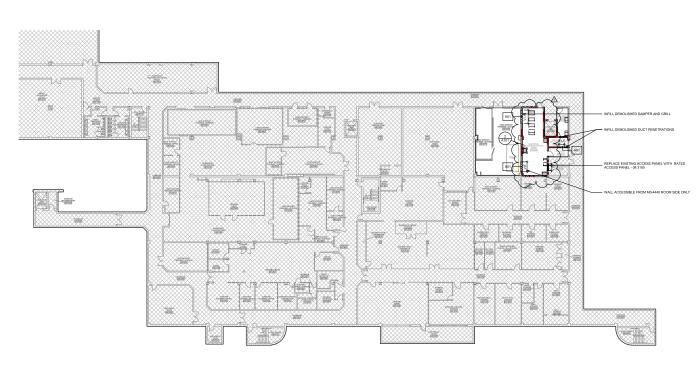






CLT - MS SWITCHGEAR REPLACEMENT

ENLARGED DEMO PLAN

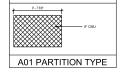


BOUNDARY OF EQUIPMENT PAD

1) BASEMENT RENOVATION FLOOR PLAN

TYPICAL EQUPMENT
PAD DETAIL

1/2" = 1'-0"



TYPE A01 - 1 HR RATED

PARTITION











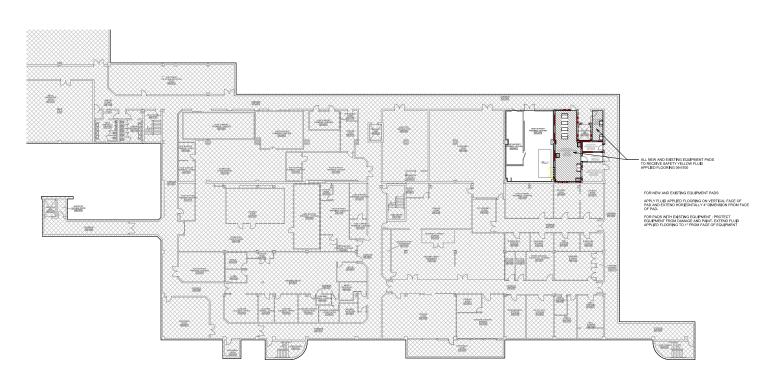




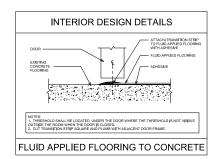
CLT - MS SWITCHGEAR REPLACEMENT

ENLARGED RENOVATION FLOOR PLAN





ENLARGED FINISH FLOOR PLAN



1 BASEMENT RENOVATION FLOOR FINISH PLAN

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GS-NC P.C.
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SEAL 14198



# GENERAL NEW WORK NOTES:

- ALL WORK SHALL BE INACCORDANCE WITH FEDERAL, STATE, AND LOCAL CODES AND THE NATIONAL ELECTRICAL CODE (288) EDITION, AND AMENOMENTS, IF ANY) AS A MINIMUM. ELECTRICAL CONTRACTOR SHALL SECURE AND PRY FOR ALL LICENSES, FEES, FERMITS, AND UTILITY CHARGES.
- ALL WORK SHALL CONFORM TO BEST ELECTRICAL PRACTICE AND SHALL BE GLARANTEED AGAINST DEPECTS IN WORKMANSHIP AND MATERIAL FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
- UNLESS OTHERWISE NOKATED, ALL MATERIAL SHALL BE MEW. MATERIAL SHALL BE LISTED BY THE UNDERWRITERS LABORATORIES, INC. FOR THE USE INTENDED WHERE A STANDARD FOR SUCH MATERIAL AND USE EXISTS. SMITCHES AND OTHER DEVICES SHALL BE SPECIFICATION GRADE.
- 4. IN GENERAL, MOUNTING HEIGHTS OF DEVICES ARE NOTED ON THE PLAN DRAWINGS, SCHEDULES AND NOTES SPECIFY "STANDARD" MOUNTING HEIGHTS FOR THESE ITEMS, STUDY CAREFULLY ELEVATIONS OF ALL WALLS AND EASING WORK, AND LOCATE NEW EQUIPMENT INTO SPACE TO ANOLD CONFLICTS.
- 5. TYPICAL 20A RATED BRANCH CIRCUIT WIRE SIZING SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE:

		REMAINDER	
UNITS DISTANCE	HOME BUILD	OF CIRCUIT	

	1.0000001.0001	0. 0
120(208)/		
0' - 50'	#12	
50' - 100'	#10	
100' - 150'	#8	

- ALL WRING LUGS THROUGHOUT THE PROJECT, INCLIDING BUT NOT LINITED TO BREAKERS, PANELBOARD SWITCHBOARD LUGS, SAFETY SWITCH LUGS, AND TRANSFORMER LUGS, SHALL BE RATED FOR USE WITH 15°C CONDUCTORS SIZED IN ACCORDANCE WITH NEC TABLE 310-15(8)(16).
- ALL MACIONES DE MAI DE ELECTIONAL METAL TIERRO MAISS SESENDALAN POTRE DE APPRICED DESERVES, ANY RECURSO PREVINDE COLORIS SENTIL DE REDIS DESERVES DE ALE MICROTES DELLA DE RECURSOS. COLORIS, AL CIALE DE APPRICEDE NE DESERVES DE ALADRE SCIENCE DEBETIES THE CONSENTE DE COURTS DE TIERRO SENTI AL CIALE DE PROVINCIA DE CONSENSIONAL DUD THE ETTIMOS MAIO MAI DEBE COLORISTICO DE SERVESCOSTES. PLOTESTES DE COSTSTIPET TIERRO SENTI DE LO TRES DE L'ADRES DE L'
- ACCOUNTAGE SHALL THE FLATT FOLKER AND THE STORY FOR THE PROPERTY OF THE PROPER
- ALL CONSISTIONS SHALL BE CONSESS THE MUNICIPAL BETT AND A TRANSPORTED STORE STORE SET TO THE MUNICIPAL BEST TO CONSISTION AND SHAPE THE SET TO CONSISTION AND SHAPE THE SET TO CONSISTION AS TO CONSIST THE SET OF A TRANSPORT OF SET OF THE SET OF T
- A MEATLY TYPEWRITTEN CIRECTORY SHALL BE PROVIDED IN THE PAVELS TO PROPERLY NOICHTE ALL CIRCUITS. SPARES AND SPACES SHALL BE CLEARLY NOICHTED ON THE PAVEL SCHEDULE AND SPARE BREAKERS SHALL BE PLACED IN THE OFF POSITION.
- 11. CONTRACTOR SHALL PROVIDE THE OWNER WITH A SET OF NEAT AND LEGIBLE AS-BUILT DRAWINGS.
- CONTRACTOR SHALL BURST SHAP DOWNING AND REMAY THE SHAPES AND TO THE DISTANCE AND OWNER FOR MFFORTUNE SERVICE SHAPE.
  SHAP HERD PROMISSION WAS ARRESTED AND SHAPE AND CONTRACTORS SHAPE OF SHAPPOW, SHEET HER SHAPE SHAPE OF SHAPPOW. SHEET HE SHAPE SH

PARELIGANCS, BREAKERS, PLSES, SWITCHBONGS, MANAN, TRANSFER SWITCHS, GENERATOR DOCKING STATIONS, CONDUCT, CONDUCTORS, DECOMPLETS, AND CUTLET BOXES,

- 1). COLOR-STANLESS STEEL COVERPLATES, ELECTRICAL CONTRACTOR SHALL VERIFY COLOR FOR DEVICES WITH ENGINEER PRIOR TO GROERING.
- PENETRATIONS OF REQUIRED SMOKE TIGHT PARTITIONS SHALL BE SEALED USING METHODS APPROVED UNDER THE STATE BUILDING CODE. COORDINATION WITH THE OWNER AND ENGINEER SHALL BE MAINTAINED TO ENSURE THAT THIS SMOKE STOPPING IS ACCOMPLISHED.

- 16. HERCOMES THE SACTO DALLS AND PARTICUES, OTOLANS FOR INTELLATION OF BOURS THAT HER DESCRIPTION THAT SEQUENCE PARKED SHALL SHAPE ANALYSIS OF INSCRIPTION OF THE SACTOR OF THE ANALYSIS OF THE SOURCE PARKED TO BROKE SHAPE HERCOMY OF THE LLY, NATIFIED HANGING HER BOXES OF ITS COURSE TAXES OR LESS SHALL BE INSTALLED IN ACCORDANCE WITH U.L. THE REGISTANCE RATINGS ANALYSIS BISKIN FOR WALL AND PARTITION ASSEMBLES.
- 17. EXISTING CONDUT RIAS AND DENCE LOCATIONS HAVE BEEN TAKEN FROM EXISTING DRAWINGS FURNISHED BY THE OWNER AND SHALL BE VERIFIED ON THE LICCIDICAL COMPRISTOR.
- THE EXISTING PORTIONS OF THIS FACILITY WILL REMAIN IN OPERATION DURING THIS CONSTRUCTION. CONTRACTOR SHALL COOPERATE FULLY WITH THE ADMINISTRATION HORGER TO CAUSE AS LITTLE DISRUPTION AS POSSIBLE TO THE PUNCTIONING OF THE PACILITY, AND TO MAINTAIN THE CONFORT AND SYFETY OF ALL PRESONMEL, AND STAFF.
- ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES AND EQUIPMENT SHALL BE LABEL AND LISTED BY A NORTH CAROLINA APPROVED THRO PARTY TESTING AGENCY.
- 2. Defined croul revisities centre on rower plans are least on the time who have the introduction was centred the roose plans are designed, and a person, the person of the centre of the roose plans are designed from the centre of the centre of the roose plans are designed from the centre of the centre of the roose plans are designed from the centre of the roose plans are designed from the centre of the roose plans are designed from the roose
- ALL TESTINA, TROUBLESHOOTHO, AND YERRICATION OF DE-PLEKTZED SYSTEMS IS TO BE DONE IN ACCORDANCE WITHIN PRATIE, INCLUDING BSTRAUSHING, AND BOLATING IT NEEDED, SHOOK PROTECTIVE AND ARC FLASH PROTECTIVE APPROACH SOUNDARES AND DONE PROSPENS. PROTECTIVE BEOUTHERIT APPROPRIATE FOR THE HAZERO.
- SAFETY SAFFCHES SHALL BE HEAVY-OUTYTYE, NEMA FOR NDOOR AND NEMA IR FOR OUTDOOR UNLESS OTHERWISE NOTED, SAFETY SAFFCHES SHALL BEFURED WITH FURS EER SE PROMATED, ALL FURSED DESCONDECT SAFFCHES SHALL BE COLUMPED WITH REJECTION CLIPS AS SPECIFIED BY THE MANUFACTURER, FURSED THE SHALL BE COLUMPED WITH INTERFE CASES TRIKE, TWO OF UT FURSES AS RECEIVED.
- 25. THE ELECTRICAL CONTRACTOR SHALL CONNECT AND/OR PROVIDE FINAL CONNECTIONS TO ALL EQUIPMENT SUPPLIED BY OTHERS APPLICABLE TO THE PROJECT INGLICHIG BUT NOT JUSTIED TO, MECHANICAL, PLUMBING, FIRE PROTECTION AND SUPPRESSION, OWNER PURNISHED, KITCHEN, LABORATORY, ETC. JULISSO OTHERMISE, NOTE.
- 24. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONNECTIONS PRIOR TO ROUGHAN USING APPROVED CATALOG SHEETS AND SHOP DRAWINGS.
- 25. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANUAL MOTOR STAFTER SWITCHES, DISCONNECT SWITCHES, RECEPTACLES, ETC. TO MECHANIZAL MOP PLUMENTS EQUIPMENT. ALL STAFTERS, OTHER THAN MANUAL STAFTER SWITCHES, SHALL BE PROVIDED BY OTHERS, BUT INSTALLED BY THE ELECTRICAL CONTRACTOR.
- ALL DISCONNECT SMITCHES AND FUSE SIZES SHALL BE COORDINATED WITH SHOP DRAWINGS PRIOR TO ORDERING OR INSTALLING, ANY EQUIPMENT INSTALLED INCORRECTLY BECAUSE OF LACK OF COORDINATION WILL BE REMOVED AND INSTALLED CORRECTLY AT THE EXPENSE OF THE ELECTRICAL.
- 27. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT RUNS AND LIGHT FIXTURE LOCATIONS ABOVE THE CELLING WITH OTHER TRACES PRIOR TO INSTALLATION.

# 28. NOT USED.

- 28. TESTING AND DOCUMENTATION SHALL BE PROVIDED AS POLICIANS:

  1) ALL CONDUCTORS SHALL BE MESGERED BEFORE FINAL CONNECTIONS.

  2) GFC EQUIPPED BREAKERS SHALL BE PERFORMANCE TESTED.

# GENERAL DEMOLITION NOTES:

- PARTIAL AND TOTAL DENOLITION OF PORTIONS SHALL BE PERFORMED ALONG WITH ALL NECESSARY, MODIFICATIONS TO THAT PORTION OF THE ENSTING BUILDING WHICH SHALL REMAIN SO THAT IT CONTINUES TO FUNCTION UNAFFECTED BY THE DENOLITION AND ASSOCIATED NEW CONSTRUCTION.
- WHERE INCLUDED AS PART OF THE CONTRACT DOCUMENTS, THE DRIVINGS INDICATE THE GENERAL AREAS OF WORK INVOLVED. HOWEVER, THE ELECTRICAL CONTRACTOR SHALL PERFORM WORK OUTSIDE THOSE AREAS SHOWN AS IS NECESSARY TO COMPLY WITH THE INTENT OF THIS SECTION.
- THE ELECTRICAL CONTRACTOR SHALL FAMILIARDS THEMSELVES WITH THE EXISTING BILLDING AND WITH THE WORK OF ALL OTHER TRADES AND INCLIDE ALL WORK RECESSARY TO COMEY WITH THE INTENT OF THE DEMOLITION.
- 4. If self, as independed by the THLD CONCRETOR WAS AS OFFICIAL PRINCIPLE DESCRIPTION OF THE CONTRACT MICHAEL THAT AS OFFICIAL PRINCIPLE DESCRIPTION OF THE CONTRACT MICHAEL PRINCIPLE DESCRIPTION OF THE THE SELECT OFFICE OF THE THE SELECT OFFIT OF THE THE SELECT OFFIT OF THE THE SELECT OFFIT OF THE SELECT OFFIT OFFIT OF THE SELECT OFFIT OFFI
- 5. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL TOOLS, EQUIPMENT, LABOR, ETC. HORDER TO ACCOMPUSH THE DEMOLITION PORTION OF THE PROJECT.
- 6. THE DEMALTION OF CERTAIN MEAS OF THE ENISTING BUILDING SHALL BE PERFORMED BY THE SCHEMAL CONTINUETOR. IT SHALL BE THE ELECTRICAL CONTINUETOR STREPPORTED THE SCORE OF WORN BETWEEN SEPARATE TRACES.
- 8 TURN OVER TO OWNER UPON REQUEST OR AS NOTED, ITEMS SHOWN AS BEING REMOVED AND NOT REPISTALLED. ITEMS NOT DIRECTED OR REQUESTED TO BE TURNED OVER TO THE OWNER SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR.
- WHERE EXISTING BRANCH CIRCLITS AND SYSTEMS ARE INTERRUPTED BY NEW WORK OR SYSTEMS (BLECTRICAL, MECHANICAL, PLANENG, FRE PROTECTION, ETC.), EXTED AND RECONNECT THOSE CIRCLIFS AND SYSTEMS, WHIRE THOSE COLUTS OR SYSTEMS WAS REAWN IN SERVICE CLAIMS THE DESCRIPTION FOR THE CONTRACT, PROVIDE TEMPORARY CONTROLLED WAS AND SYSTEMS WAS AND SY
- WHERE EXETING WALLS ARE TO REMAIN, REMOVE ALL EXPOSED PACEWAYS, SURFACE AND RECESSED OUTLET BOXES, ETC. WHICH ARE NOT TO BE REUSED, WHERE YEM CONDUITS AND OUTLETS ARE TO BE ACCED TO EXISTING WALLS IN PRIMARID ROOMS, THEY SHALL BE CONCEALED BY OUTLITS ARE PACIFICATION. THE WALLS IN PRIMARID ROOMS, THEY SHALL BE CONCEALED BY OUTLING AND PACIFICATION AND ALL SALES OF THE WALLS IN PRIMARIED.
- REJARRANCE EJISTING CONDUTS AND WIRENS, AND EXTEND AND REPOUTE AS REQUIRED, IN ORDER TO ACCOMMODATE NEW CIRCUIT ASPRANCEMENTS INCICATED AND TO MAINTAIN CONTINUITY OF EXISTING CIRCUITS FEEDING DEVICES THAT ARE TO REMAIN.
- 13. WHERE DEMOLITION OF DEVICE OR EQUIPMENT AND REMOVAL OF CONDUIT OR OTHER ACCESSORY LEAVES CREMINGS IN THE FLOORS, WALLS, OR CELLINGS, SAME SHALL BE PATCHED AND PAINTED TO MATCH EXISTING ADJACENT FINEN, ALL OPENINGS IN FLOORS SHALL BE PRIVED WITH REBAR.
- 14. REFER TO DEMOLITION DRAWINGS & NOTES OF ALL CONTRACTS OR TRADES FOR COORDINATION.
- IN AREAS OF DENOLITION WHERE THE REMOVAL OF ELECTRICAL ECUIPMENT INTERFERES WITH THE HORMAL BUILDING OPERATIONS AND SYSTEMS, CONSULT WITH THE DWINDER PRICE TO PERFORMING ANY DENOLITION.
- 16. WHERE UNFORESEEN CONDITIONS CONFLICT WITH CONTRACT DOCUMENTS, SUBMIT AN RFI AND WAIT FOR A RESPONSE PRIOR TO PROCEEDING WITH JANY
- 17. CISCONSECT AND REJOVE ALL ASMOOMED CHICK'S A RACENOV WITH 4 SCOPE OF THIS PROJECT, JULESS NOTED ON-ENVIRE, LOW VOLTAGE CONTROL WHOSE THE PROJECT SEQUENCE OF THIS PROJECT, JULESS NOTED ON-ENVIRE, LOW VOLTAGE CONTROL WHOSE THE PROJECT SEQUENCE OF THE PROJECT SEQUENCE SEQUEN

# PROJECT SEQUENCE:

### EQUENCE 1 - EQUIPMENT INSTALL:

- ENDER 1 GENERAL TRANSPERS FORMER. SEE ALL STEELS FOR THE STEEL FOR THE STEELS FOR THE STEEL FOR THE STEEL
- A CHARLE METALET FAME A SEAL AND COUNT MET CONCENT SETTING THE OFFICE OFFICE ACCOUNTS COUNTY OF A CHARLE MANUAL THROUGH SHITTER. AND TO COUNT SEALING MODERNING COUNTY OFFICE ACCOUNTS COUNTY OFFICE ACCOUNTS COUNTY OFFI A
- 5. INSTALL AND TERMINATE WIRE BETWEEN NEWLY INSTALLED YOS 2" OUTPUT AND NEWLY INSTALLED WIS 2" EMPERANCE SIDE INPUT.

  6. GC SHALL DOCKDINATE WITH IC AND INSTALL LIL DETERMORY SHILLD FROTEERING REQUIRED FOR NEWLY INSTALLED YES 2".

- A COMMUNICATION IN THE CENTER OF CONTRACT OF CONTRACT
- 2. EC SHALL UTILIZE OWNER PROVIDED MOBILE GENET AND MOBILE GENET CONNECTION CABLES TO WIRE MOBILE GENET TO MENLY INSTALLED GENERATOR EDGENS STATION 1605-17. 3. ENSURE NEWLY INSTALLED MANUAL TRANSFER SWITCH 'MTS-1' IS PLACED IN THE EIVERGENCY OPERATING POSITION.
- 4. ENSURE MANN OVENCLIRRENT PROTECTION FOR PANELBOARD INS-1' IS PLACED IN THE 10FF POSITION AND LOCK-OUT-TAG-OUT.
- 5. ENSURE NAVIN OVERCLIRRENT PROTECTION FOR PAYELEGARD 'N/S-2' IS PLACED IN THE 'DIFF POSITION AND LOCK-OUT-TAG-OUT
- 6. INSTALL WINE AND CONDUIT TO EXTENT POSSIBLE BETWEEN NEWLY INSTALLED PARELBOARD THE-1" TO EXISTING LOADS FED BY DISTING SWITCHEGARD THE ASSESSMENT OF A SHOWN OWNESSE.
- INSHIT WORK CHILT SCILENTIALLY REPLACE FEEDS FROM EDISTING SWITCHBOARD THS TO DOWNSTREAM LOADS WITH NEW FEEDS FROM NEW PAWELBOARD THS 1'TO DOWNSTREAM LOADS AS INDICATED OHRSES DUASHAM.

- LORINOVE LOCK-CUT-TAGE OUT FROM NEW PARELECAND TAGE? WHILE PARELECAND TREET, WE THE TOM POSITION TO EMBRICE NEW PARELECAND TAGE? VEHICL TO THE TAGE SOLITION, AND ALL COMMITTEE AN LOAD FROM TRUM PARELECAND TAGE? A REC OPERATIONAL.
- COMMISSION DIABOS PRESENT ON EDSTING SIMPLEMENTAGE AND RESTRICT BEARING CONTINUED OF STATE PROPERTY OF STATE OF
- 12.INTERCEPT ENSTING COMPLAT AND WIRE WELECTHOLD, ITELECOMANIWICATIONS ROOM NO 4440 FEEDING ENSTING SWITCHGOARD NO. AND INCUITE TO MORANAL INPUT OF MEMO'S INSCRIPTION AND INCUITE TO MORANAL INPUT OF MEMO'S INFORMATION AND INCUITE TO MORANAL INPUT OF MEMO'S INFORMATION AND CONTROL OF SECURITIES AND CONTR
- 14. CPERATE NEW MANUAL TRANSFER SHITCH WITS-T WID PLACE SHITCHIN THE "MORMAL" OPERATION POSITION, VERIFY VOLTAGE, PHASE ROTATION, AND ALL COMMSTRUM LOADS FED FROM NEW PARELEGARD "NS-1" AND NEW PARELEG

- FROM THE MANUFACTURE OF THE AMERICAN CONTROL OF THE AM
- 3. GC, EC, AND INC SHALL COORDINATE TO FLULY CONFLETE ALL FLOOR GRINDING, SEALING, AND COATING WORK AS SPECIFIED ON THE ABOUTECTURAL DRAWINGS. REFER TO
  ASCHITECTURAL SHEETS FOR LIGHTINGS. INCORPAGATION, AND FERTING AND MONEY WISTON FOR FULL PROPERTY SHALL BE PROPERTY PROTECTED THROUGHOUT.

# SCOPE ALTERMATE #1:

- 1. THE CONTRACTOR SHALL REPLACE FIVE (S) EXISTING POWER PANELS IN KIND, INCLUDING NEW PANELS AND CIRCUIT BREAKERS
- DISTING LINE SIDE CHARLICROS SHALL BE REPLACED. DISTING LINE SIDE COMOUNT TO REMAIN AND BE RELISED FOR NEW CONCULTIONS. ENSTING LIAD SIDE COMDUCTIONS AND CONCULTION OF REMAINS AND BE RECONSCILLED TO NEW PAYRE, AND REMAINS.
- 4. REFER TO SHEETS ELDS ELOS AND E200 FOR MORE INFORMATION.

	ELECTRICAL SYMBOL LEGEND
===	SOLD LIES NEXTATE CONDUIT RUN CONCEALED IN WALL OR ABOVE CELLINGS, EXPOSED IN UNITHENED AREAS, DASHED LIES NDICATE CONDUIT RUN BELOW GRADE OR BELOW FINISHED FLOOR, RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
L1-4	HOWERUN TO PANELSOARD, QUAVITTY OF ARROWS INDICATES MUNISER OF CIRCUITS.
<u>`</u> M∂l	WALL MOUNTED EXIT SIGN, SHADED AREA INCLORES FACE WITH CIRECTIONAL ARROWS AS SHOWN. SEE LIGHTING FIXTURE SCHEDULE FOR EXACT REDUREMENTS. CONNECT UNSWITCHED TO PROCATED BRANCH CIRCUIT.
66	490277 VOLT PAVELBOARD, RUSH AND SURFACE MOUNTED RESPECTIVELY, DESIGNATION AS INDICATED, REFER TO PAVELBOARD SCHEDULES FOR EXACT REQUIREMENTS.
66	2097/120 OR 120/240 VOLT PANELBOARD, FLUSH AND SURFACE MOUNTED RESPECTIVELY. DESIGNATION AS NONCATED. REFER TO PANELBOARD SCHEDULES FOR EXACT REQLIREMENTS.
-	125 VOLT, 3 WIRE DURLEX RECEPTACLE IN FLUSHIF HISHED SPACES) OR SURFACE (UNFHISHED SPACES) OUTLET BOX. MOUNT IGNOVED AND FINISHED FLOOR UNLESS OTHERWISE HIDLATED. HUBBELL BOX) SERIES OR EQUITALENT: "VIP" SURSCRETIFICATES WHICH LINES WEATHERPOOR OF RECEPTACLE."
*	125 VOLT, 3 WIRE DUPLEX RECEPTACLE IN FLUSH (FINISHED SPICES) OR SURFACE (UNTINISHED SPICES) OUTLET BOX. MOURT 46" ABOVE FINISHED FLOOR, 4" ABOVE DESIGNOUNTERTOP, OR 2" ABOVE BACKSPLASH UNLESS OTHERMISE MIXICATED.
s	SINGLE-POLE SWITCH IN FLUSH IF HISHED SPACES OR SUBPLICE (UNFINISHED SPACES) OUTLET BOX, NOUNTED FOR LIGHTING MEAR EQUIPMENT, VERTPY EXACT LOCATION ON SITE.
Sir	MOTOR NATED CONTACT SWITCH WITH PULSE AS REQUIRED, IN FLUSH (THISHED SPACES) OR SURFACE (UNPRESHED SPACES) CUTLET BOX, MOUNT AN APONE FINSHED FLOOR OR WITHIN SIGHT OF MOTOR BEING SERVED, UNLESS OTHERWISE INSCARSE.
0	JUNCTION BOX MOUNTED ABOVE CELLING OR FLUSHIN PINISHED CELLING UNLESS INSICATED OTHERWISE. SIZE PER NEC REGULERMENTS.
J	FLUSH WITH COVER JUNCTION BOX IN FINISHED FLOOR, SIZE PER NEC REQUIREMENTS.
OH	WALL MOUNTED JUNCTION BOX, SIZE PER MEC OR AS INDICATED, MOUNTING HEIGHT AS PIDICATED, MOUNT FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES UNLESS OTHERWISE INDICATED.
•	SPECIAL EQUIPMENT CONNECTION: SUBSCRIPT INDICATES DESIGNATION. SEE EQUIPMENT CONNECTION SCHEDULE FOR EXACT REQUIREMENTS.
Б	NON-FUSED SAFETY SWITCH. FRAME RIZE AS INDICATED ON PLANS, SUBSCRIPT WP INDICATES IN NEWL 3R ENCLOSURE.
⊠h	PLISED SAFETY SINTCH. FRAME SIZE AND TRIP PATTING AS INDICATED ON PLANS, PROVIDE FUSES FER HAMEPLATE OF EQUIPMENT SERVED UNLESS OTHERWISE INCICATED. SUBSCRIPT WP INCICATES IN NEWA 3R ENCLOSURE.
	FIRE ALARM
69	FLUSH MOUNTED CEILING FRE ALARM SYSTEM SMOKE DETECTOR.
<b>∞</b> —	FRE ALARM SYSTEM DUCT DETECTOR WITH REMOTE ALARM LAMP. WIRED BY BLECTRICAL CONTRACTOR, FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR DIVLESS OTHERWISE RECEASED.
	FRE ALARM SYSTEM DUCT DETECTOR WITH REMOTE ALARM LIAMP. WIRED BY ELECTRICAL CONTRACTOR, FURMISHED

1.	ELECTRICAL WORK HAS BEEN DESIGNED TO AND SHALL COMPLY WITH: NPPA TO - 2020 INATIONAL ELECTRICAL CODE!
2.	ELECTRICAL WORK SHALL COMPLY WITH ALL LOCAL AND STATE ELECTRICAL CODES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY MAYING JURSOCHOOK



CO	NDUIT COLOR CHART
BLUE	TELEIDATA CABILING
ORANGE	FIBER OPTIC CABLING
RED	FIRE ALARM CABLING
PURPLE	SECURITY CABLING
BLACK	PAGING & INTERCON CABLING
WHITE	NORMAL POWER
GREEN	ARTICLE 700 EPSS EVERGENCY POWER
BROWN	ARTICLE 701 EPSS EMERGENCY POWER
SILVER	ARTICLE 702 EPSS EVERGENCY POWER
YELLOW	MEDIUM VOLTAGE POWER

	ELECTRICAL AB	BREVIATIONS	
VAMP	AMPERE	и	LIGHTNING ARRESTOR
VCI	ARC FAULT INTERRUPTER	LCP	LIGHTING CONTROL PANEL
VFF	ABOVE FINISHED FLOOR	LED	USHT EMITTING DICCE
VFG	ABOVE FINISHED GRADE	LTG	USHTING
V-U	AUTHORITY HAVING JURISDICTION	LTS	UGHTS
V.	ALUMNUN	LV	LOW VOLTAGE
	AMERICAN NATIONAL STANDARDS INSTITUTE	M.C.	METAL CLAD
	AMERICAN STANDARDS INSTITUTE	MC	MECHANICAL CONTRACTOR
	AMERICAN SOCIETY OF TESTING MATERIALS	MCB	MAIN CROUIT BREAKER
	AMPERE TRIP	MCC	MOTOR CONTROL CENTER
ATS	AUTOMATIC TRANSFER SWITCH	MDP	MAIN DISTRIBUTION PANEL
WWG	AMERICAN WIRE GAUGE	MFR	MANUFACTURER
IKR	BREAKER	мн	MANHOLE
	BLANK	MBC	MISCELLANEOUS
	CONDUST		MAIN LUGS ONLY
	CIRCUIT BREAKER		MOUNTED
	CLOSED CIRCUIT TELEVISION		MOTOR
TK.	decut		NOT APPLICABLE
XT BKR	CIRCUIT BREAKER		NORMALLY CLOSED
1.G	CELING		NATIONAL ELECTRIC CODE
00	CONVENIENCE OUTLET		NATIONAL ELECTRICAL MANUF. ASSOC.
ONN	CONNECTION		NON-FUSED SAFETY SWITCH
DU .	COPPER	MFPA	NATIONAL FIRE PROTECTION ASSOC.
98	DIRECT BURIAL	MC	NOT IN THE CONTRACT
	DISCONNECT		NON-HIETALUIC
	DOWN		NORMALLY OPEN
	DRAWING		NOT TO SCALE
	EMERGENCY	oc	ON CENTER
	EACH		ORIGINAL EQUIPMENT MANUFACTURER
	ELECTRICAL CONTRACTOR		OCCUPATIONS SAFETY AND HEALTH ADMIN.
	EXHAUST FAN		POLE
	ELECTRICAL HEAT		PHOTOCELL
	ELECTRONIC INDUSTRIES ASSOC.		PULL BOX PLUVBING CONTRACTOR
	ELECTRIC		
	ELECTRIC METALLIC TUBING		PHASE
	EXISTING TO REMAIN ELECTRIC UNIT HEATER		PANEL POSITION
	ELECTRIC UNIT HEATER ELECTRIC WATER COOLER		POSITION
	ELECTRIC WATER COOLER  HXTURE		POWER
	HXTUNE FIRE ALARM		POWER RECPTRECEPTACLE
	HRE ALARM ANNUNCIATOR PANEL		RIGID GALVANDED STEEL
	HRE ALARM CONTROL PANEL		RISID NETAL CONDUIT
	FAN COL UNIT		RAINTIGHT
	PEEDER		SCHEDULE
	RLOOR		SECONDARY
	RUUGRESCENT		SIGNAL
	PUBED SAFETY SMITCH		SURFACE MOUNTED
	PEET SHITCH		SURFACE MOUNTED RACEWAY
, GND, GROGROUND	T Gaz.		SPARE
	GENERAL CONTRACTOR		SAFETY SMITCH, STAINLESS STEEL
	GROUND ELECTRODE CONDUCTOR		SWITCH
	GENERATOR		SWITCHBOARD
	GROUND FAULT INTERRUPTER		TELEPHONE
	GROUND TERMINAL BOX		TWISTLOCK
	HORSEPOWER		TAMPER PROOF
	HIGH POWER FACTOR		TELEPHONE TERMINAL BOARD
	HOMERUN		TELEVISION
	HEATER		TRANSCIBUER
	HIGH VOLTAGE	TYP	TYPICAL
	HERTZ		UNIT HEATER
	INTERNATIONAL CABLE ENGR. ASSOC.		UNDERWRITERS LABORATORIES
	ILLUMNATING ENGINEERING SOCIETY		UNLESS NOTED OTHERWISE
	INCH	V	VOLTAGE
	INCANDESCENT	VT	VAPOR TIGHT
R.	INFRARED	W	WRE.WATT
IB, JBOX	JUNCTION BOX	w	WITH
	THOUSAND	WO	WITHOUT
CA C	KLOVOLT-AMPERE	WP	WEATHERPROOF
	KLOWATT	WT	WATERTICHT
OWH	KLOWATT HOUR		EXPLOSION PROOF
			EXISTING TO BE DEMOLISHED









**CLT - MS SWITCHGEAR REPLACEMENT** 

ELECTRICAL GENERAL NOTES. SYMBOLS AND LEGEND



SCALE HOMZONTAL: E001 DISANIPIO NUMB VERTICAL STATUS: CONSTRUCTION DOCUMENTS

I:\08293\0003\ENG\80-DRAWINGS\86-DESIGN\86E-ELECTRICAL DESIGN\CONSTRUCTION DOCUMENTS\E001.DWG 10/28/2024 13:38:22 ERIC MOR

### INCREASE DAVILLE COMPRISENTED OF COCK DAVIS DAVINGED BRIEF STEEL, AND BALL BE BEDUELLY PARRIEFTED BRIEF SCHOOL BOTH THE PROPERTY OF THE BRIEF OF THE SECTION 26 00 01 - BASIC ELECTRICAL REQUIREMENTS END OF SECTION 26 05 26 SECTION 25 05 33 - RACEWAY, BOXES, AND SUPPORTS 1.1 REQUIREMENTS 11 BEQUEENESTS A. GENERAL CONDITIONS OF THE CONTRACT, SUPPLEMENTARY GENERAL CONDITIONS, AND INSTRUCTIONS TO BIDDERS SECTIONS CONTAINED IN THE CONTRACT COCCUMENTS ARE A PART OF THESE SPECIFICATIONS. 1.1 REQUIREMENTS PART 2 PRODUCTS DUPLIER US YOUNG PARTS SHALL BE PLATED. NEUTRAL BUS: YOUN SEE, BOCATED, UNES OTHERMSE NOTED, SUITABLE LUGS FOR ALL OUTGOING CHROUTS REQUIRING NEUTRAL CONDU A MU MATERIAL SHALL BE III LISTED AND SHALL BE INSTALLED IN CONFORMANCE WITH THE 2000 NATIONAL ELECTRICAL CODE MAIL LIGIS SHALL SE COPPER, COMPRESSION OF RECHANGES, TYPE, ALL DIS SESSION, CONVANIENT HIT CONCULTURE SESS. PAREL THIS SHALL SER MISSION SHADOON THE MISSION THE MISSION SHADOON THE MISSION THE MISSION THE MISSION THE MISSION THE MISSION SHADOON THE MISSION A. THE CONTRACTOR SHALL FLENDH ALL LABOR, MATERIALS AND ECUPABRIT, AND PERFORM ALL OPERATIONS INCESSARY FOR INSTALLATION OF COMPLETE ELECTRICAL WORKERSHIP THE INTERT OF JANUAR SHALL REMAINED ON THE DEMANDES AND AS HEIGHT SECURE THE REMOVED ON THE DEMAND AS HEIGHT SECURE THE REMOVED ON THE PROPERTY OF THE REMOVED ON THE PROPERTY OF THE PROPERTY ON THE PROPERTY ON THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY ON THE PROPERTY OF T PARTO INSTALLATION POWER AND SIGNAL SERVICES TO ALL OTHER AREAS OF THE PACILITY MUST BE MAINTAINED DURING CONSTRUCTION ACTIVITIES. 1.3 REGULATIONS AND COMPULANCE WHERE MECESSARY WORK MUST DOO IN THAT BURICES OCCUMED AREAS OF THE FACILITY FACE ITY PROCEDURES MUST BE FOUNDED. THE FOUNDAM MUST BE ADHERED ALL SHUTOWING WHIT OF THE THE CONCENTRATION CONCESS WITH AND APPROVED BY CLIT SHAFF WHINAWAY ID RESID NUMBERS FOR MICHOR SHUTOWING WHITEOUN AND APPROVED BY CLIT SHAFF WHINAWAY ID RESID NUMBERS OF THE CONCENTRATION OF TH LICHES SHALL BE FLUSH FOUR PROTRICINGS ALL PROTRICINGS OF DOOR. LICHES SHALL BE FLUSH FOR CYLINDER LOCK, ALL PRINGEDONGS SHALL BE KEYED M.INE. CERCUIT BREAKERS SHALL BE MOLDED CASE, MITH AIC RATINGS AS INDICATED IN THE DRAWINGS OR SHORT CIRCUIT ANALYSIS. A. LATES (APPRINGED BOTTON) OF THE INSTITUTE CENTERS OF COLUMN THE MOST CARROL NO. COLUMN THE MOST CARROL T SHALL ASS DE USED FOR FEEDER OR BRANCH COLDING THE ONLY PEDERS, TREDITS LEWING ALL THE STANDARD SHIFTCHEADARD, AND ALL TANKE, FEEDERS, MICH. SHALL ALS DE USED FOR FEEDER OR BRANCH COLDING THIS FINIS FOR THE ONLY FEEDER OF THE ONLY OF LICHIC METALLI FINING SEPI DINI LE ULE POPO GENDA, RINGO CICCIO IL LESINGLICIO DIMENSIO DI PARA DI GESTIO DI CHEMISTO DI PARA DI COSTIDIO CINCIPIO DI PARA DI COSTIDIO CICCIO DI CONTRO DI CONTRO DI COSTIDIO CICCIO CICIO CICCIO CICCIO OF REACH YALLUSTING PROJECTION OF PANEL INTERIOR ASSEMBLY WITH ALL CONNECTIONS IN PLACE SHALL BE PROVIDED. A METHOD REQUIRING STACKING OF A LABORATION DE LOS COLORIDADAS. A LA REPORTADO DE LOS COLORIDADAS DE LOS COLORIOS DE LABORATION DE LOS ESTERES DE TRO, A LA REPORTADO DE LOS COLORIDADES DE LOS COLORIOS DE PART 2 PRODUCTS Δ THE YEAR ASSESSMENT AT SO THE WORK OF THE WAY AND THAT IT AND THAT IN THE AND SHALL INCORNO DETAY COST PROVIDED CANCELLATIONS. THE COMMENT SHEET IS THE RESET OF THE THAT AND THAT IT AND THAT INCOME THAT COST PROVIDED CANCELLATIONS. THE COMMENT SHEET IS THAT THE THAT IS THAT IT AND THAT IS COST THAT IT AND THAT IS COST THAT IS THAT IN THAT IS THAT IN THAT IS THAT IN THAT IS THAT IS THAT IN THAT IN THAT IN THAT IN THAT IS THAT IN T 1. MICHIGAN A. ALL MATERIA SHALL SE MIN REPORTABLE CONTINUENT ALL MATERIA SHALL SHAL 2.2 BOXES 31 INSTALLATION END OF SECTION 26 00 64 A INTERIOR OUTLET BOXES: APPLETON, NATIONAL, ODIGEDREY, STEEL CITY, OR RACO. \* WEATHERMOOF OUTLET BOXES: APPLETON CROUSE-MINDS HUBBELL OR RUSSELLSTOLL A. FURSHOOTED HEAD COUNTED SHALL IT LEVER THE PROPERTY HAS BEEN AS A TOTAL THE PROPERTY HAS BEEN AS NEATHER/OFF COURT BOXES, PARTICULAR CONSIDERATION FURBELLY OR RESERVED. ALL INTERIOR AND PROCESS BALL SECURIOR STREET CONTROLLED THE CONTROL SECTION 26 05 19:09 - CONDUCTORS, 600 VOLT INSULATION SWALE MORE PRESENTATIONS IN SUBJECT AND THE PROPERTY OF THE STRANGED WHIS OR STRANGED WHIS THAN ONE SOLD CONDUCTOR. ON YOU GO SO THE PROPERTY OF THE STRANGED WHIS OR STRANGED WHIS OR MADE THAN ONE SOLD CONDUCTOR. ONE STRANGED WHITE THE STRANGED WHIS OF THE STRANGED WHIS STRANGED WHIS OF THE STRANGED WHIS OF THE STRANGED WHITE THE STRANGED WHITE STRANGED WHIS OF THE STRANGED WHIS OF THE STRANGED WHITE STRAN 11 MANUFACTURERS REQUEREMENTS RETINENDED CONTRINCATION OF LIFET THAT SO DATE PARTS TO BE DATE, DATE OF SHIPM THE RESIDENCE THE TO ALLOW CONJUNCTURES BY EXPENDING ON THE PARTS THE TO ALLOW CONJUNCTURES BY EXPENDING ON THE PARTS THE CONTRINCATION OF LIFET THE CONTRIVENCE OF LIFET THE CONTRI A. WINNO: BICCOARLES, ESSEX, GENERAL CARLE, SOUTHWINE AND PIRELLE B. CONNECTORS: AMERICAN RESULATED WINE CORPORATION, AND, BURNEY, ISSAI, CORRECTORS, CREDING, POLANIS ELECTRICAL CONNECTORS, OR THOMAS & BETTS A. SHALL BE OF GOOD QUALITY, GALVANIZED STEEL OR OTHER NON-CORRODING WATERIAL H. COLLECT ALL KEYS UPON DELIVERY OF PANELBOARDS. FORWARD ALL KEYS ON ONE FING TO DWINER UPON SUBSTANTIAL COMPLETION. PROVIDED OFFES OF PANELBOARD DIRECTORES IN THE OPERATING & MAINTENANCE MANUALS PROVIDED TO THE DWINER DURING PROJECT OLOSE-OUT. source in discussion of the process 3.1 RACEWAY INSTALLATION A MERICAN CAST OF SEAL ALL WIRING FOR POWER CIRCUITS SHALL BE MIZAWG OR LARGER, TYPE THINK, THEN, MILAWIG WIRING SEE IS PERMITTED FOR CONTROL AND SEAVE, CROUTS OPERATING ABOVE SEVAC, WHERE MANUFACTURERS INSTALLATION REQUIREMENTS ALLOW. SECTION 26 27 26 - WHING DEVICES C. ALL WINNS SHALL BE STRANGED COPPER. C. ALL WINNS TERMINATING MITTHELESS SHALL BE RATED AT LEAST 50 DEGREES C, OR MOHER AS REQUIRED BY THE WANLPACTURER OF THE LIGHT FICTURE. E. ALL WINNS 66 AND SMALLER SHALL BE PURCHASED WITH PROPER INSULATION COLOR. WHES 64 AND LANGER SHALL BE BLACK AND DENTITIED WITH COLORED TAPE. PART 1 GENERAL A WIRING DEVICES: PASS & SEYMOUR HUBBELL COOPER OR ARROW-HAR NSTALLATION 2.1 WRING DEVICES A. RECEPTIACLES: HUBBLE 8. SMITCHES: HUBBLE 20 AMP; 120277Y. C. WALL PLATES, SMITCH PRISED DISK STAILESS STEEL, UNLESS OTHERWISE NOTED. IMPACT RESISTANT WILLOW PLATES WITH MYLON SCREWS FOR SPECIAL APPLICATIONS AS 22 Palytho A. SLIGHE PHIS CONTROL SHEEL BE PROBED USED. THE SECTION OF THE SECTION OF THE SECTION OF ALL THESE OF LOCATION AND AND THE SHEEL CONTROL OF THE SECTION OF THE SECTION OF A CONTROL OF THE SECTION OF TH Southers and their control service, control and under distance and extended control service, control and under distance and extended exten A person constraint of constraint on the developer. He consists and, sever the depth to week apper consists in constraint to extract the constraint of constraints of constraints of constraints. A reflect for might consection days. A reflect for might consect for might consect for might consecute days. A reflect for m S.I. INSTALLATION Lo college participation of the consequence construction of the college participation of the college pa 3.1 GENERAL INSTALLATION A. DEVICES SHALL BE MOUNTED TIGHTLY TO BOXES AND BE ADJUSTED PLUMB AND LEVEL. R. RECEPTIACUES ARE TO BE INSTALLED IN THE VERTICAL POSITION WITH THE GROUND TERMINAL ON TOP. C. TWO OR MORE DEVICES GAMEED SHALL BE TRIMMED WITH GAMP QUALTE. NCTON BOXES, OF 208Y128Y BLACK RED BLUE WHITE GREEN 480Y027TV BROWN END OF SECTION 26 27 26 1. PMAEL CAMBIELT (AT IN CONCRETE BLOCK CONSTRUCTION) FROM FINISHED FLOOR TO TOP OF CAM. 2. FIRE JURION PLUL STATIONS HE FROM FINISHED FLOOR TO COMINES. 3. FIRE JURION FLOWER, KIRONS, STRONGES, ETC, ME ROSCH, EMISSED FLOOR OR ME SELOW FINISHED CELLING, WHICHEVER IS LOWER, TO COMPLY WITH ADA REQUIREMENT. 3. FIRE JURION FLOWER, KIRONS, STRONGES, ETC, ME ROSCH, EMISSED FLOOR OR ME SELOW FINISHED CELLING, WHICHEVER IS LOWER, TO COMPLY WITH ADA REQUIREMENT. NEUTRAL GROUNDING SECTION 26 29 13 - MOTORS, CONTROLLERS, AND EQUIPMENT CONNECTIONS PART 1 GENERAL F, WHERE NOT SHOWN DIFFERENTLY ON THE DRAWINGS, MOUNT BOXES FOR RECEPTAGLES TO RECEIVE DEVICE IN A VERTICAL POSITION AND BE: A. MOTORS, CONTROLLERS, AND OTHER SPECIAL ECOPMENT ARE SOMETIMES PROVIDED AND INSTALLED BY OTHER TRACES, THIS SECTION SPECIFIES TYPICAL CONNECTIONS TO THAT ECOPMENT. END OF SECTION SERVICES CINITERED BY ABOVE IMPORED FLOOR. CINITERED OF ABOVE CONTRIES, SHELVES, OR CARNETS WHERE APPARENTLY INTENDED TO BE SO PLACED. CINITERED OF ABOVE INCIDENCE OF BROKENFABRES. WHERE CENTERS ARE TO BE CAMPED, PROVIDE BYOME TO RECEIVE DEVICES TRUMBED WITH A GANG PLATE. PART 2 PRODUCTS 3.3 FASTEMINGS AND SUPPORTS INSTALLATION PART 1 GENERAL A. INSERTS IN MASONRY SHALL BE LEAD, FIBER, OR PLASTIC TYPES INSTALLED IN ORILLED HOLES, WOODEN PLUSS SHALL NOT BE USED. LEAD ONLY SHALL BE USED ON ALL EXTERIOR MASONRY OR INTERIOR MASONRY SHALL BE USED TO PERMANENT MUSTURE. HUNG RACEWAYS SHALL BE SUPPORTED FROM THE STRUCTURE WITH ROD SUPPORTS AT ORDER COMPART COMPACT THAN ARE GENERAL PERCENTED INVESTMENT OF REVOKAL BETWEEN ALTER BUTFE, THESE ORDER THAN ORDER TO CONTROL THE CONTROL WAS THE CONTROL THAN ORDER TO CONTROL WAS THE CONTROL OF THE CONTROL THAN ORDER TO A minimal production of the control A. NOT APPLICABLE. NEC AND VINITURE EXIDENTLY INTERECT. WHERE DURD-PELLE AND AND THE DESCRIPTION OF THE STATE OF T PART 2 PRODUCTS ALL CURRENT-CHARPING PHASE CONDUCTORS AND NEUTRALS SHALL BE TESTED AS INSTALLED, AND BEFORE CONNECTIONS ARE MADE FOR INSULATION RESISTANCE AND ACCUSENTA, GROUNDS, KICH HITCHER AND TENCY EQUINANT FOR CONNECTION UNDER THE CONTRACT SHALL BE TESTED FOR INSULATION RESISTANCE FROM ITS CONDUCTIONS FOR SEQUENCE SHAPE OF ROWINGTON THESE TESTS HAVE BE DONE METH A BOY OUT INMINIOUS HIPPIN VOTAGE "RECORD AND ADDRESS AND AD OMERICO COME IN DESTRUCTION OF THE TOTAL OF THE SECRET PER MISSION OF TOWARD TO COME THE DESTRUCTION OF THE SECRET PER MISSION OF THE SECRET PER MIS 2.1 MATERIALS Medican Seption and Medican Seption (Medican Seption Medican S A. NOT APPLICABLE 3.1 INSTALLATION A PRIOR PRISESS PAIL HOLLER AN EQUIPMENT GROUNDED GROUNDED GROUNDED GROUNDED AND AN EXPENSIVE SAME PRIOR PRICESS PAIL HOLLER AN EQUIPMENT GROUNDED THE MOTION OF THE SECOND ALT THAT TO THE EMPLEMENT CHIEF THE ARROY HAS BEEN COME AND SHOWNED THE SECURITY OF THE MEGGENE. FOR SECONDAY OF PERSON, THE SHOW SECOND AT LEAST FOUR HIGH ADM SHOWNED THE ARROY HAS EXPENDED. AT THAT WASCHROUGHEN THE SHOREER, THE CONTINUENCE SHALL FURBRISH AND EXCENSION AND DEMONSTRATE THAT THE PRIVATE COME AND SHOWNED THE ADM SHOWNED THE SHOWNED AND COLORS REGISTED AND COLORS REGISTED. SECTION 26:05:53 - IDENT FIGATION FOR ELECTRICAL SYSTEMS SHALL USE RAINT BHT CONDULT HUB HITTINGS WITH BONDING SCREW. G. CONTROL WINNIG SHALL NOT BE INSTALLED IN THE SAME PACEMAYS AS POWER WINNIG. PART 1 GENERAL Is UNITY OF REQUIRED FAMILY AS ABSENCED CONCERN AN ARROT FATE TO THE SPECIAL PROTECTION TO THE SPECIAL CONCERNS AND ARROT FAMILY AS A SECRET FAMIL A. FURNISH AND INSTALL ENGRAVED NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT SUPPLIED FOR THE PROJECTAS DENTIFIED BELOW. 3.1 THIS SECTION NOT USED $\mathbb{Z}^{\sim}$ END OF SECTION 28 06 19:10 2.4 MATERIALS SECTION 26 05 48 - SEISMIC REQUIREMENTS FOR ELECTRICAL EQUIPMENT SECTION 26 06 18 11 - ELECTRICAL WIRING AND CONNECTIONS FOR EQUIPMENT A INMEPLATES SMALL BE MADINE ENGRAVED, LAWRATED MILARGA. B. CALOR CODE FOR INMEPLATES SMALL BE AS FOLLOWS: I. NORMAY POWER: WHITE LITTERES ARE MELOSOGNOD. WARRING: WHITE LETTERS RED BACKGROUND. SEENGLING FORMER: WHITE LETTERS RED BACKGROUND. 4. OTHER: WHITE LETTERS RED BACKGROUND. 3.3 RECORD DRAWINGSMANUALS PART 1 GENERAL A. UPON COMPLETION OF THE INSTALLATION, CONTINUED IN SHALL DURWIT TO THE ENGINEER REPRED PRIVING OF DRAWN HOS INSECTIONAL PROBLEMON HOS ANY OWN WHICH IN SOUTH TO THE PRIVING HOW HOS ANY OWN TO THE PRIVING HOS ANY O MANUFACTI BERG BEOLDSWEVE PART 1 GENERAL A. NOTAPPLICABLE. A content of the cont LIET DE CAMMON. RECORD DOWNINGS SHALL BE SENTITED IN ONE OF TWO FORMATS ETHER ACLEMIL ESTBLE MARKED SET OF COMMON THE CONTROL TO SENDING THE CONTROL T 24 MATERIALS A. NOT APPLICABLE OPERATION AND MANIFERANCE MANUALS SAVEL BE SEMPTED TO THE ENQUEER AT THE END OF THE PROJECT PRICE TO CLOSEDUT OF THE PROJECT, PROFINATION NEWSCORE OF THE PROJECT AND AN ADMINISTRATION OF THE PROJECT, PROFINATION NEWSCORE OF THE PROJECT AND ADMINISTRATION OF THE PROJECT PRICE OF THE MATERIALS. A. A FREE TAYLONG LECTRIAL EQUIPMENT SIGHAS SWITCHGOWED, TRANSFORMERS, GINERATORS, CARE TRAYS, ETC., SHALL SE AND-ORDED TO THE STRUCTURES IN A MANUSCH THAT WILL LATERY THE SEQUENTIANS OF THE SAY, THAT SELECTION OF MANUSCH THAT WILL LATERY THE SEQUENTIANS OF THE SAY, THAT SELECTION OF THE SEQUENTIAL SHALL 3.1 INSTALLATION 3.1 INSTALLATION SECTION 26 00 02 - ALTERATIONS AND ADDITIONS TO EXISTING ELECTRICAL WORK AND BUILDING AREAS A. PROMOS NAMPLATES OS MISMS ON THE FOLLOWING ELECTRICAL EQUIPMENT. 1. SMITCHGURGS 2. MOTTOR CONTROL CENTERS 3. TRANSFORMERS 4. PARESCONDES 5. SMITCHES 6. SMITCH PART 1 GENERAL UNDUSTRIES OF INTERNAL COMPONENTS OF MANUFACTURED EQUIPMENT SHALL BE CERTIFIED BY THE MANUFACTURER THAT THE METHODS USED MEET THE SEBANC REQUIPMENTS, CERTIFICATION COMPLIANCE INFORMATION SHALL BE SUBMITTED WITH SHOP DRAWINGS. A. MANUFACTURERS ARE NOT APPLICABLE. USD MET THE SERVIC MICROSPHORY, CEPTRE-CTION CONSISTENCY FOR MICROSPHORY MICRO END OF SECTION 26 05 19 11 Body Control (1997) B 2.1 NOT APPLICABLE 3.1 ALL RECESSARY ACREDORS AND ALTERATIONS TO EXISTING WORK SHALL BE INCLUDED IN THE CONTRACT AS REQUIRED TO PROVIDE AND MAINTAIN A COMPLETE WAS PROPER ELECTRICAL PRINTALATION. THIS PART 1 GENERAL WORK SHALL NOLUDE: 1.1 REQUIREMENTS N. RECORDING OF FINITIES A PLASMASS, ACCIONANCE EST. O POPERAT THE RESTAURTION OF FINITION CONTINUES. NEUTRALING OF FINITIES A PLASMASS ACCIONANCE EST. O POPERAT THE RESTAURT OF THE RESTRICT AND THE PROCESSOR. DECONENZATION ACCIONATION AND RESTRICT AND THE RESTRICT AND THE RESTRICT AND THE PROCESSOR ACCIONATION ACCIONATIONATION ACCIONATION ACCIONATION ACCIONATION ACCIONATION ACCIONATION ACCIONATION ACCIONATION ACCIONATION ACCIONATIONATION ACCIONATIONATIONA ACCIONATIONI ACCIONATIONI ACCIONATIONI ACCIONATIONI ACCI A. ALL SYSTEMS AND EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH 2020 NEC ARTICLE 250. PART 2 PRODUCTS GENERAL INSTALLATION REVIEW OF THE SERVICE DESIGN AND SHOP DRAWINGS BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLY WITH THE SERVICE OR ANY OTHER RECUREMENTS OF THE INC STATE BUILDING CODE. SECTION 25 24 16 - PANELBOARDS A comme, request antiques as usuarda est on Yallar to ensure conscriber that are investigated and experience of the properties of the prop HELD HERPONDELS FOR CLEUS CHARLOS AT TOME. REAS OF DEED THE COCKING SYSTEM IS A CHARLOS HELD FOR THE CONTRACTOR THESE ALL RESPONDELLTY FOR CETEMANIUS SUTNELLTY FOR RELIGE AND REAS OF DEED THE CHARLOS HER SYSTEM IS ALL ES PROVIDED, OR DETTHE ADMINISTRATION OF CHARLOS AND EAST THE CONTRACT COCKINGT 1.1 BEOLIBENEVES END OF SECTION 26 05 48 ON THE STATE AND WE COMMITTED BY STOCKING THE STATE OF THE COMMITTED AND ALTO BY STATE ACCOMMITTED THE STATE OF THE COMMITTED ALTO BY STATE ACCOMMITTED THE STATE OF THE STATE A. EQUIPMENT SHALL BE BUILT TO NEMA STANDARDS WHERE SUCH STANDARDS EXIST. College of the Table Over Towns Book is Transported to Library or Workshop Condition or Conditions in its communities in the Condition of the Cond 2.1 MATERIALS PARTS EXECUTION A SOUNCE DIVANCEDIANDS ARE SPECIFIED AS A BASIS FOR DESIGN, ECKNALENTS BY EATON, OR CUTLER-HAMMER MAY ALSO BE QUOTED. 8. TYPES, SEES, CARACTIES AND CHARACTERISTICS SHALL BE AS SHOWN ON MISER DIAGRAM OR IN SCHEDULES, SERVICE EQUIPMENT SHALL BE LABELED TAL APPROVED FOR SERVICE PROMOTE MAY. SENICLE PRIFEMACE USE: SENICHE PRIFEMACE USE: SENICHE PRIFEMACE USE: SENICHE PRIFEMACE USE: SENICHE PRIFEMACE SHALL SE BOLLON TYPE, SOUMED PRIOCHED PRIFEMACE OR BOLLONGENT AS MOTED ABOVE. SENICHE DLINET THREE HAY MAY HAY AS MOLED ON THANG, OR BOLLINGENT AS MOTED ABOVE. SENICH PRIFEMACE USE. A INDEXES CONCUCTOR FOR VIOLENCE (VIOLENCE FOR LESS OFFICE AND ADDRESS OF A CONCUCTOR SHALL BE CREEK TO AND NOT LOCKED. BE INDEXES OF WAITH CONCRETENANT WOOD PRIMARE, NOT ONCE LITAL WITH A CONCRETENANT OF A CONCRETE AND A CONCRETE END OF SECTION 26 00 02 SUE DATE: 2023.11.15 SCALE OWNER REVIEW COMMENTS **SM**KIM&CREED E002 CE PROJ. # 08293-0003 **CLT - MS SWITCHGEAR REPLACEMENT** 030422 V 8020 Tower Point Drive Charlotte, North Carolina 28227 Phone: (704)841-2588, Fax: (704)841-2567

**ELECTRICAL SPECIFICATIONS** 

# SECTION 26 36 00 - TRANSFER SWITCHES D. REPORT RESULTS OF TESTS AND INSPECTIONS IN WRITING, RECORD ADJUSTABLE RELAY SETTINGS AND MEASURED INSULATION AND CONTAC RESISTANCES AND TIME DELAYS, ATTACH A LABEL OR TAG TO EACH TESTED COMPONENT INDICATING SATISFACTORY COMPULTION OF TESTS. E. REMOVE AND REPLACE MALFUNCTIONING UNITS AND RETEST AS SPECIFIED ABOVE. E PRIDUCE AND SERVICE MATERIAL LIMINA UNITS AND IS IS AS SECURED AND ASSESS. LE COMMITTATE A TRANSPER SMITHOUS AND REAL PROPERTIES AND ASSESSED AND ASSESSED ASSESS NELATED DOCUMENTS A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS APPLY TO THIS SECTION. 1.2 SUMMARY A. THIS SECTION INCLUDES MANUAL TRANSFER SWITCHES RATED 800 V AND LESS. END OF SECTION ACTION SUBMITTALS PRODUCT DATA FOR EACH TYPE OF PRODUCT. 1. THOUSE THAT FOR EACH TYPE OF PRODUCT. 1. THOUSE THAT FOR EACH TYPE OF PRODUCT. 1. THOUSE THAT OF THE THAT SHARE STORY THAT SHARE S 26 25 10 ELECTRICAL TEMPORARY GENERATOR DOCKING STATIONS PART 1 GENERAL SHAP OF THE PROPERTY OF THE PR A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKET FOR INTERDED LOCATION AND APPLICATION. COORDINATE LAYOUT AND INSTALLATION OF GENERATOR DOCKING STATION, AND COMPONENTS WITH EQUIPMENT SERVED AND ADJACENT SURFACES. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS INFORMATIONAL SUBMITTALS MANAGEMENT REPRESENTATION CONTINUATION SUBMIT CONTINUATION THAT TRANSFER SUBTICIES ACCESSIONES, AND COMPONENTS WILL MANAGEMENT REPRESENTATION OF THE CONTINUATION AND SIGNAL CONTINUATION CONTINUATION AND SIGNAL SIGNAL CONTINUATION AND SIGNAL MANUFACTURER WARRANTY SHALL BE PROVIDED FOR A MINIMUM OF 1 YEAR I. MONITOR INVESTIGATION TO SHALL BE PROVIDED FOR A SHALL BE LEFT IN PROPER WORKING ORDER. S. THE EQUIPMENT INSTALLED LIBERT FINE DOTTRACT SHALL BE LEFT IN PROPER WORKING ORDER. C. NEW MATERIUS. AND EQUIPMENT SHALL BE GUARANTEED AGAINST DEFECTS IN COMPOSITION, DESIGN OR WORKAWISHP, GUARANTEE CERTIFICATES. SHALL BE FIRMSHEP. CALCULATION. I. THE TERN "MITHSTAND" MEARS "THE INIT" MILL REMAN IN PLACE WITHOUT SEPARATION OF ANY PARTS FROM THE DEVICE WHEN SUBJECTED TO THE SESSIND CROCKES SPECIFIED MOT HE WITH WILL BE PLILLY OPERATIONAL AFTER THE SESSIND EVENT. DEMONSTRADE DUTING BRAININGS OF EQUIPMENT WILL TRESHIPT CORNERS OF GRAINITY AND LOCKER AND DESCRIBE MOUNTING AND ANCHORAGE DEMONSTRADE DUTING PROVIDED TO THE PROSTRADE OF SOME PROPERTY OF THE PROSTRADE OF THE PROPERTY OF THE PROSTRADE OF THE PROPERTY OF THE PART 2 PRODUCT SCRIPTION OF EQUIPMENT ANCHORAGE DEVICES ON WHICH THE CERTIFICATION IS BASED AND THEIR INSTALLATION REQUIREMENTS. 1.1.DOCKING STATION A. MANUPACTURERS SUBJECT TO COMPILANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING: TRYSTAR-DOCKING STATION GDS SERIES ASCO SERIES 300 1.5 CLOSEOUT SUBMITTALS A. OPERATION AND MAINTENANCE DOCUMENTS. 3. EATON 4. SQUARED QUAITY ASSUMANCE A MONATURE QUARMOCITUM, INVINTAN ASSUME CAPIES, COPROSITION TRANSIC, AND EMERGENCY MATTERWAYCE REPAIRS A MONATURE QUARMOCITUM INVINTANCE REPAIRS RESULTE OF MONITORITY. B. LECHTROL CORPORATE SCHEES, AND ASSUME STEED HE LECHT AND DEPRETORITY AND THE TOTAL THE STEED ASSUME ASSUME THE AND ASSUME TO THE NUTRICES SHAME ASSUMED AND MANORITY AND THE NUTRICES TO THE AUTHORITIES SHAME A JURISDICTION, AND IMMODIFY OF THE NUTRICED LISE. COMPLY THE RESULT. COMPLY THE RESULT. COMPLY THE RESULT. L. COMPLET A DECOMPTION OF THE PROPERTY O PROJECT CONDITIONS THEREPHONE OF DEATH OF LICETING SERVICE ON NOT INTERRUPT BLICTING SERVICE TO FACE INTO OCCUPIED BY COMING OR OTHERS UNLESS THEREPHONE OF DEATH OF LICETING SERVICE ON NOT INTERRUPT BLICTING SERVICE TO FACE INTO OCCUPIED BY COMING OR OTHERS UNLESS FEEDBLISHED SERVICE ON THE CONTROL OF SERVICE OF SERVICE OR INTERRUPT OF CRECIPIES SERVICE. A DOME OF OWNERS OF SERVICE THAT WAS DOWNERS OF PROTOCORS INTERRUPTION OF CRECIPIES SERVICE. 5. DOWN THAT CONTROL OF SERVICE OF SERVI POWDER COAT PAINT AFTER FABRICATION SHALL BE VENDOR STANDARD COLOR EQUIPMENT GROUND BUS: BONDED TO BOX. WARRANTY WARRANT/SHEETS WARRANTY WARRANTY WARRANT SHE ASPESS TO REPRIKE OR REPLACE COMPONENTS OF TRANSFER SWITCH OR TRANSFER SWITCH COMPONENTS THAT FALL IN MATERIALS OR ACRESSMANDER WITHIN SPECIFED WARRANTY FERDO. 1. WARRANTY FERDO. 12 MOVING FROM ONE OF SUBSTIMILA COMPLETION. 1.9 COORDINATION A. COORDINATE SIZE AND LOCATION OF CONCRETE BASES, CAST ANCHOR-BOLT INSERTS INTO BASES. PART 2 - PRODUCTS SHALL BE MINIMUM 65 KAIC UNLESS OTHERWISE INDICATED ON DRAWINGS. WANDERFORMS A MANAGEMENT SHARET TO COMPLANCE WITH HOUSEMENT, PROVIDE PRODUCTS BY THE FOLLOWING. COMPLICATION OF MANAGEMENTS A ACCOUNTS OF MANAGEMENTS A COUNTY OF MANAGEMENTS COUNTY OF MANAGEMENTS COUNTY OF MANAGEMENTS A COUNTY OF MANAGEMENTS SHALL BE MINNAM BO HAVE UNLESS O INTERTINGE TRANSPORTED FOUTLAGE AN MERCINGE 1, 480 V, 3 PHASE, 4 VIRE. 1, 470 V, 3 PHASE, 4 VIRE. 1, 470 V, 3 PHASE, 4 VIRE. 1, 470 V, 18 PHASE, AND MONTOR DEVICE: 1, 18 PHASE, MONTORING RELAY TO BE SEMENES 3U4512-14720 OR 1, 18 PHASE, AND MONTORING PROJECT DRAWMOS 1, 18 PHASE, AND MONTORING PROJECT PROJ MUST BE UL 489 LISTED BREAKER. BREAKERS SHALL BE REMOVABLE FOR SERVICE AND MAINTENANCE 3 EXECUTION EXAMINE ELEMENTS AND SURFACES TO RECEIVE GENERATOR DOCKING STATION FOR COMPILANCE WITH INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK. B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. 3.2 INSTALLATION A SUPPACE, OR BASE MOUNTED, DETERMINED BY APPLICATION. 1. INSTALL ANCHOR BOLTS TO BLEVATIONS REQUIRED FOR PROPER ATTACHMENT TO GENERATOR DOODING STATION. AND LUCKWISH, DESIGNATION CONTROL SHAPE OF THE TRANSPERS OF PLANTED CREATE STEPRES THE PROPERTY SHAPE OF THE PROPERTY OF THE PLANTED CREATE STEPRES AND THE PROPERTY OF THE PLANTED CREATE STEPRES AND THE PLANTED CREATERS AND TH HISDIAL ANDIMIDATE IN CELEBRATION ENGANGED FOR THE PROPERTY IN JURISHIES IN DESCRIPTION OF THE THAT AND HE IN ALL DIRECTIONS SEYOND THE MAXIMUM INVESTIGATION HANDERS OF A REBAR, WITH CHARMERED EDGES, DETRIND BASE NO MORE THAN 4 INCHES IN ALL DIRECTIONS SEYOND THE MAXIMUM INVESTIGATION HANDERS AND SUPPORTS FOR GUILDETTICAL SYSTEM FOR SEISMIC SUPPORT, CONSTRUCT CONCRETE BASES ACCORDING TO DIVIDIOUS SECTIONS "HANDERS AND SUPPORTS FOR GUILDETTICAL SYSTEM FOR THE PROPERTY OF THE PR ACCORDING TO DIVISION 25 SECTION HANGERS AND SUPPORTS FOR ELECTRICA. SYSTEMS: DENTIFICATION A. COMPLY WITH REQUIREMENTS IN DIVISIONS SECTION DENTIFICATION FOR ELECTRICAL SYSTEMS. B. IDENTIFY FELD-INSTALLED CONDUCTORS. INTERCONNECTION WIRING. AND COMPONENTS: PROVIDE NOICATED. 2. CONTROL MISING: EQUIPPED WITH LUGS SUITABLE FOR CONNECTION TO TERMINAL STRIPS. G. ENCLOGURES: GENERAL-PURPOSE NEMA 250, TYPE 1, COMPLYING WITH NEMA ICS 6 AND UL 508, UNLESS OTHERWISE INDICATED. DENTIFY FELD INSTALLED CONDUCTORS, INTERCONNECTING WIRING, AND COMPONENTS; PROVIDE WARNING SIGNS. LABEL BACH ENCLOSURE WITH ENGRAVED METAL OR LAWINATED PLASTIC NAMEFLATE. 2.3 SOURCE QUALITY CONTROL A. FACTORY TEST AND INSPECT COMPONENTS, ASSEMBLED SWITCHES, AND ASSOCIATED EQUIPMENT, ENSURE PROPER OPERATION, PERFORM DELECTRIC STEPANDE TEST COMPET MISS. WITH SEPARATION. FACTORY COMMISSIONING A. UPON COMPLETION OF THE INSTALLATION, THE DOCKING STATION SHALL BE COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN. B. SCOPE OF WORK SHALL INCLUDE: DIMONOS. 2. THE MANIFACTURES AUTOMODED TECHNISM MILES OF THE LOSS THE SHORT THE RESTAURANCE AND GROUPS OF THE THE MANIFACTURES AUTOMODED TECHNISM MILES OF THE LOSS THE SHORT THE RESTAURANCE AND GROUPS AND FRANCE FOR THE THE SHORT AND GROUPS AND FRANCE FOR THE SHORT AND FRANCE FOR THE SH . REVIEW AND VERIFY THE INSTALLATION OF ALL COMPONENTS AND VERIFY THE CORRECT ELECTRICAL FLOW AS DEPICTED ON THE ONE-LINE DRAWINGS. PART 3 - EXECUTION \$1 INSTITUTION AND PROPRIET TO CARRY LOS PRINCIPATE PER SERVICE REQUIREMENTS AND ACCORDENT TO SESSION-RESTAURN TOTALS, SEE PRINCIPATE AND SECURITY AND ACCORDENT TO SESSION-RESTAURN TOTALS, SEE PRINCIPATE AND SECURITY AND ACCORDENT TO SESSION-RESTAURN TOTALS, SEE PRINCIPATE AND ACCORDENT TO SESSION AND SECURITY AND ACCORDENT TO SESSION ACCORDENT TO SESSION ACCORDENT TO SESSION ACCORDENT TO ACCORDEN A. THIRD PARTY TESTS AND INSPECTIONS TO INCLUDE THE FOLLOWING: 2. CONSECTION PRINT RECORDING TO DISTRICT SECURITY SECURITY AND RECORD FOR ELECTRICAL STREET, INTEREST TO SECURITY AND RECORD FOR ELECTRICAL STREET, INTEREST AND SECTION SECURITY AND SECURITY AND SECTION SECURITY AND SECURITY AND SECTION PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ACCEPTANCE TESTING SPECIFICATION, CERTIFY COMMITTING TO ADDITIONAL TEST DATABASET FOR PREPARE TEST AND INSPECTION REPORTS, INCLUDING A CERTIFED REPORT THAT DENTIFIES GENERATOR DOCKING STATION AND THAT DESCRIBES SCANNING RESULTS. INCLUDE NOTATION. 3 RELIGIATION CONTROL A MANUAL PROPERTY CONTROL BERFORD TESTS AND ADMITT CONTROL BERFORD TESTS AND SECTION 28:31:33 - FIRE ALARM SYSTEM PART 1 PRODUCTS 1.1 MATERIALS A INSTEMBALL BE KNOCKDE, CONTRACAS ZORE RANGE, ELECTRICALLY SUPPORTED, MATERIADE, CAUSE CHOICE, ANNABATED. 8. WHEN DESTROY STREET HE REPOLATED TO PROCKETS SHALL MANCH ENTRIED FOR A MAN STREET AND WINNING, LITTRIC REQUIREMENTS OF THE SYSTEM, A CONCINCT SHOCK CHOICE WHEN ALL STREET AND A MATERIAL SHAPE AND A STREET AND A MATERIAL SHAPE AND A STREET AND A MATERIAL SHAPE AND A STREET AND A STREE C. RESECT ANOTHER SECURITY OF CONTROL AND RECURSED CLEARANCES. 4. VERFY PATE THE UTIL ESTED. 4. VERFY PATE THE UTIL ESTED. 5. VERFY PATE THE UTIL ESTED. 5. VERFY PATE THE UTIL ESTED. 5. VERFY PATE THE UTIL ESTED. 6. VERFY PATE THE UTIL ESTED. A. ALL CASLING SAVAL BE INSTALLED IN ENT CONDUIT, MINIMUM SIZE SAYS, A JUNCTION BOX AND FLEXIBLE CONDUIT GROP (UP TO 72') SAVAL BE PROVIDED AT EACH CELLING SAKKE DETECTOR OR ALCHOMOBIAN, DESIGN PROVIDED RED COLORED LOW VOLTAGE SHAWL, CASLE. MANU-AU UN-MYS SPECIFED INMINUM RESISTANCE. A. CHECK FOR ELECTRICAL CONTINUT OF CIRCUITS AND FOR SHORT CIRCUITS. INSPECT FOR PHYSICAL CHAMACE. PROPER INSTALATION AND CONNECTION, AND INTEGRITY OF BARRIERS, COVERS, AND SAFETY FEATURES. LIGHBEY THAT WHICH TRANSPECT WHICHOUSE OR BEINGRED VIR A FOR SHORT AND INTEGRITY OF BARRIERS, COVERS, AND SAFETY FEATURES. LIGHBEY THAT WHICH INTERNETS ENTROPIED WHICHOUSE OR BEINGRED VIR A FOR SHORT AND INTEGRITY OF BARRIERS, COVERS, AND SAFETY FEATURES. DEPENDENT MANUAL TRANSFER OFFERTOR. OPERFORM MANUAL TRANSFER OFFERTOR. OPERFORM TESTS WITH TESTS OF GENERATOR AND RUN THEM CONCURRENTLY (FOWNER PROVIDED GENERATOR IS AVAILABLE AT TIME OF RESTALATION.) RESTALATION.

95041704 OAT



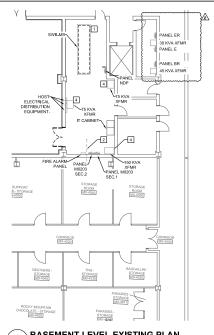




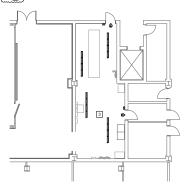
CLT - MS SWITCHGEAR REPLACEMENT

ELECTRICAL SPECIFICATIONS

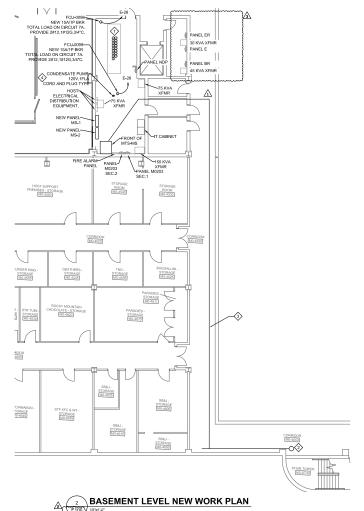








BASEMENT LEVEL EXISTING LIGHTING PLAN



### GENERAL DEMOLITION NOTES:

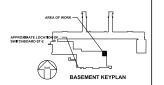
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE HTEGRITY OF ALL EXISTING CIRCUITS ROUTED THROUGH THE AREA OF WORK MOT SHOWN TO BE DEMOLIBRED.
- REFER TO DRAWING DOLD FOR GENERAL PROJECT NOTES, SYMBOLS I ABBRENATIONS, AND PROJECT SECURPLE NOTES.
   REFER TO DRAWING ESIO FOR ELECTRICAL DETAILS AND PAGE, SCHEDULES.
- THE RECTRICAL DRIVINGS AND THE INTERFERENCES BETWEEN THE ELECTRICAL DRIVINGS AND FALLED WITH ALL OTHER TRACES TO REDUCE INTERFERENCES BETWEEN THE ELECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE RECTRICAL DRIVERS AND FALMENA, AND MECHANICAL WYORK AND THE PROPERTY AND TH

# ■ KEYED DEMOLITION NOTES:

- 29 REVENID DEMOLITION NOTES:

  TO DEMOLITION THE RESIDENCY OF RECEIVED AND REPORTED REPORTED AND SO INVESTED BY DEMOLITION TO THE RESIDENCY OF RESIDE













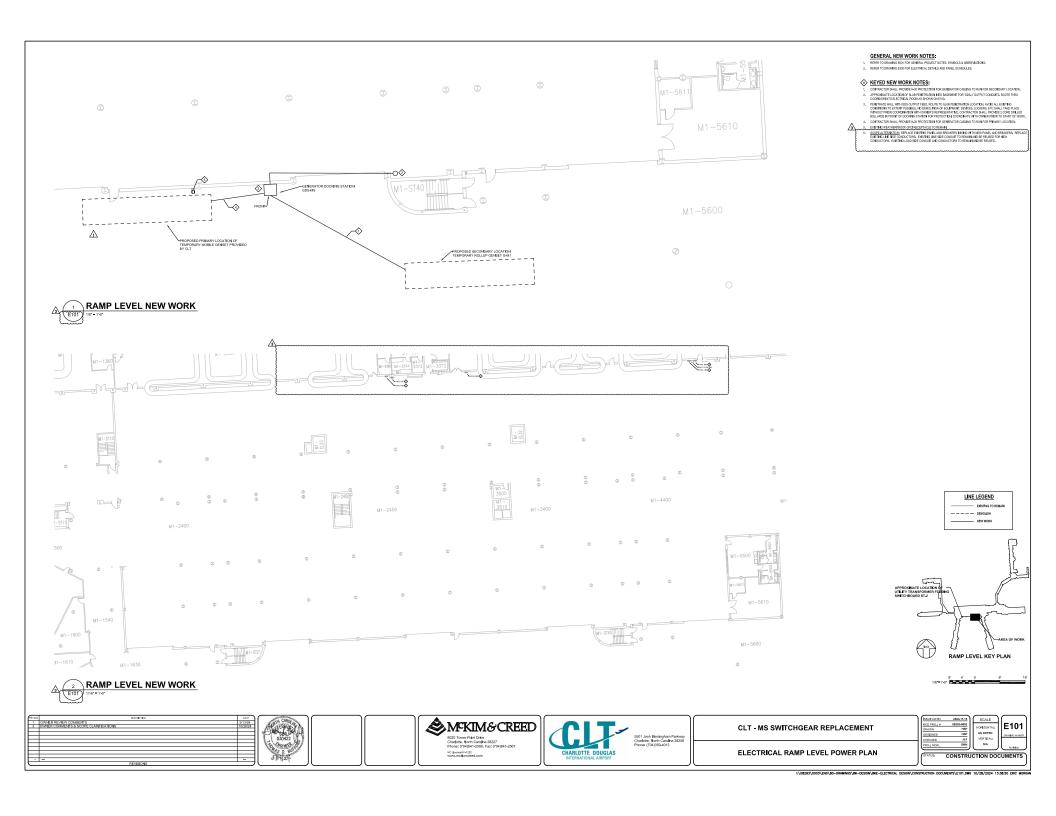


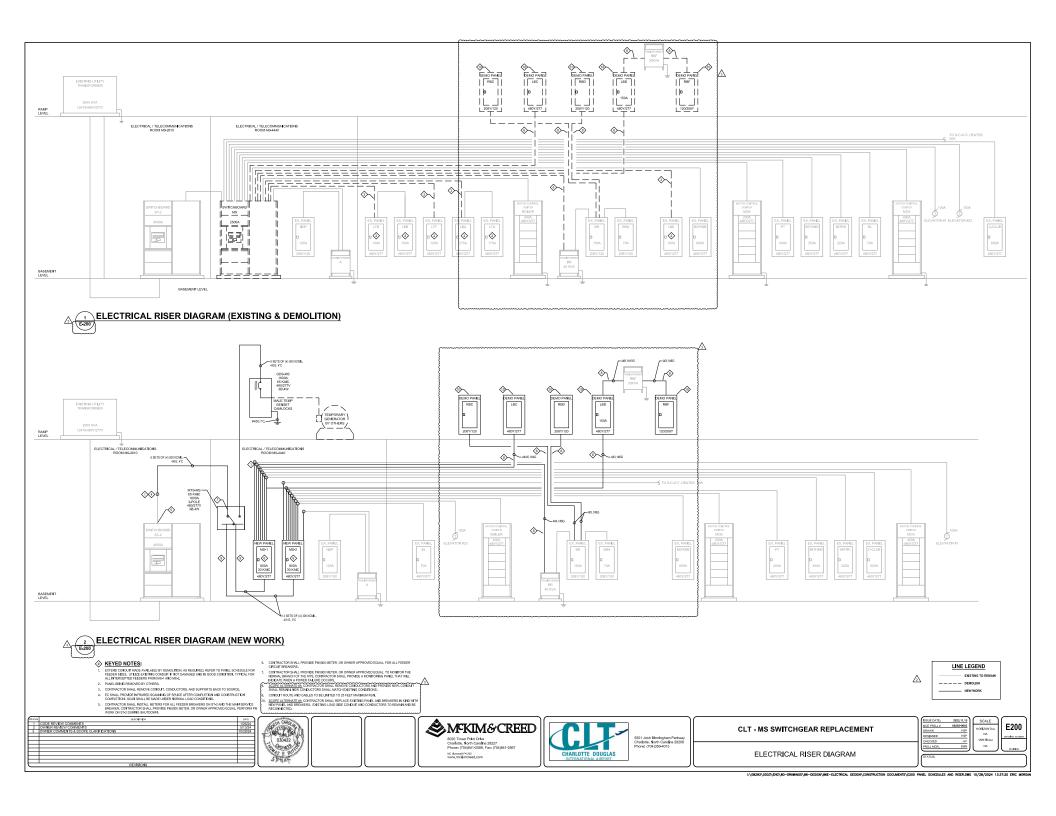


**CLT - MS SWITCHGEAR REPLACEMENT** 

**ELECTRICAL BASEMENT LEVEL POWER PLAN** 









			_					NEW PA		3OAR	D	LB	D						_					_
	SERVED FROM:					ERE RA		100	A						VOLTAGE			Y		HASE:		33K	AIC RATING	
	ENGLOSURE RATING:					UNBR			A						VOLTAGE					WRE:	4			
	MOUNTING:	SURFA	CE.		L	US OF	TIONS:	MLO							roc	ATION:	BASS	ASE						
18,	LOAD			LOAD				PHASE	- 6	CND	8833	1 6	REER	PHASE	6	CND			LOAD				LOAD	- 1
40.	DESCRIPTION	LTG	H/C	MOT	KOT	FEC	MISC	SIZE	925	IN.	RTG		RTG	920	921	IN.	LTG	HVC	MOT	KOT	FEC		DESCRIPTION	- 14
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	LARGEST MOTOR (KVA):		-				TOTAL					5.	82		5.7	12	LARG	EST UI	NBALA	NCE P	ASE I	VMPS:	7.00	_

	SERVED FROM ENCLOSURE RATING					ERE RA IN BIRE	ATING:	100 70	Â						VOLTAGE			Y		HASE!		30K	AIC RATING	
	MOUNTING	: SURFA	Œ		U	JG OP1	nons:	MCB							LOC	ATION:	MO-2	610						
CIR.	LOAD	1		LOAD				PHASE	G	CND	E#931		BRER	PHASE	- G				LOAD				LOAD	To
NO.	DESCRIPTION	LTG	HVC	MOT	NIT	920	MISC	SZE	SUI	IN.	RTG		RTG	920	921	IN.	LTG	H/C	MOT	KIT	REC	MRC	DESCRIPTION	- 1
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21	SPACE ONLY*2			_			3.48				J		20			_							SPARE	
23	SPREADING 1.2						3.48					<	20										SPARE	-13
	PANELBOARD NOTES: 1. DENOTES A BRICTHA' 2. EXISTING LOAD WAS MAXIMUM VALUE OF 3 3. REFER TO GENERAL P	DETERMI	NED 8	YTAK	NGTH	I.	HEATI MIDTO KITCH	EN	NUOUS			Ω	0.00 0.00 0.00 0.00	ED	DEMA 0. 0. 0.	00			PHA: PHA: PHA	DAD B SE A SE B SE C	100 100 100	00% 00% 00%		
	LARGEST MOTOR (KVA)	_					RECEP EXISTI TOTAL	NG				-3	0.00 10.44 10.44		10	44		ARGE!		MALAN	EE PHA	VSE %:	29 1,0000 28,98	_

LOAD SUMMARY	
PANEL E	
VOLTAGE	480/277V
PHASE,WIRE	3PH,4W
OCPD RATING	400A
TOTAL EXISTING LOAD @125%:	110A
ADDED LOAD:	14A
TOTAL LOAD	124A

# GEN NOTES:

- IF THERE ARE ANY DISCREPANCIES IN THE CIRCUIT NAMING CONVENTION, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENSINEER.
- THE OWNER IS FULLY RESPONSIBLE FOR RELABELING ARC FLASH LABELS ON PANELS THAT ARE BEING REPUACED.

DSSCRIPTION	DATE	anna C
		A SE
		0304 5 001N
		14.15 P





NEW PANELBOARD RBD

AMPEREATING: 100 A

MAIN BREAKER: 70 A

LUG OPTIONS: MCB

PANELIBOARD MOTES:

1. DENOTES A REST THAT IS LOCKED AND TAGGED OUT

1. DESTING A ROSE THAT IS LOCKED AND TAGGED OUT

1. DESTING A ROSE THAT IS LOCKED AND TAGGED OUT

1. REFIR TO GENERAL NOTES.

1.

| COMD |

VOLTAGE (L-L): 200 Y PHASE: 3 10K AIC RATING VOLTAGE (L-N): 120 WRE: 4 LOCATION: BAGGAGE

LARGEST UNBALANCE PHASE AMPS: 29.15

LARGEST UNBALANCE PHASE AMPS: \$74



	SERVED FROM: ENCLOSURE RATING: MOUNTING:	NEMA:	1 CE		MA	IN GR	ITING: AKER: HONS:	800	Â						VOLTA	AGE (L-L): AGE (L-N): OCATION:	277		1440	HASE: WIRE:		90K	AIC RATING	
CIR.	LOND			LOAD				PHASE	G	CND	2237	11	BREE		G	CND			LOAD		_		LOVO	c
NO.	DESCRIPTION	LTG	H/C	MOT	KIT	REC		SIZE	SEE	IN.	RTS	н	875	928	928	IN.	LTG	H/C	MOT	ют	REC	45.45	DESCRIPTION	4
1		_	-	_	_	-	5.04	**				A					_	-	-	_	_			T
3	PANEL BRIVIA XEMIR BRITZ	_	-	_	_	-	8.04	.84	18	11/4"	70	8	600	151320	#1	3.	_	-	-	_	_	48.48	PANEL C-CLUB*2	F
5		_	-	_	_	-	8.04		-	_	-	C A		_	-	_	_	-	_	_	_	48.48		_
7			-		_	_	10.53					Δ					_	-		_	_	24.11		T
9	PANEL 88THVID *2	_	-	-	_	_	10.53	1312/0	19	(5) 5.	350	8	400	(2)3/0	113	(2)21/2"	_	-	-	_	_	24.11	M.C.C. MCA' *2	- 13
11							10.53					c								_		24.11		_[3
13		_	-	-	_	_						0 8 8 0			1		_	-	-	_	_	16.63		1
15	SPACE ONLY	_	-	-	_	_						8	252	4,0	104	51/2"	_	-	-	_	_	16.63	PAMEL LBC *2	
17												c			_					_		16.63		_ :
19							22.17					٨								_		4.16		L
21	ELEVATOR #1							.83	18	11/4"	100	8	225	4,0	104	21/2"				_		4.16	PANEL 88TRH *2	- 13
23							22.17								_							4.16		_
25												8 C A B C								_				L
27	SPACE ONLY											8								_			SPACEONLY	Б
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33	SPACE ONLY											8											SPACEONLY	- 15
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33	SPACE ONLY											8											SPACEONLY	- [5
41												c												- 15
	PANELBOARD NOTES: 1. PROVIDE WITH COPPEI 2. EXISTING LOAD WAS DI MAXIMUM VALUE OF 30- 3. IN - DENOTES THE NU	ETERMI DAY ME	NED E	G STU	Y.	ıt	LIGHT		TINUD	us			0.00 0.00 0.00 0.00	310		0.00 0.00 0.00 0.00			PHA	SE A		.00%		
	REQUIRED.							TACLES					0.00			0.00			TOTAL	DEM	AND 6	MIS.	454	
	4. REFER TO GENERAL NO	TES					FRST						02.54			02.34		1005	STUME				1,0000	
	LARGEST MOTOR (KVA):						TOTAL						02.34			02.34		LANGE	SI UNI	SHLAN	ue m	40C %:	1,000	
	DANGEST MICTOR (KEA).	_																					483,94	

_								NEW P		BUARL	_	IV	15-2											
	SERVED FROM:					ERE RA		800	A							46E (L-L):		Y		HASE		30K	AIC RATING	
	ENGLOSURE RATING:					IN BRE		800	A							GE (L-N):				WIRE:	4			
	MOUNTING:	SURFA	DE .		L	JG OPT	ions:								L	CATION:	ROOM	MO-	1440					
C12.	LOAD			LOAD				PHASE	G	CND	DREE		EFFOR	PHASE	G	CND			LOAD				LOAD	T.
NO.	DESCRIPTION	LTG	H/C	MOT	KIT	REC		926	525	IN.	RTG		RIG	SEE	925	IN.	LTG	нус	MOT	ют	FEC		DESCRIPTION	4
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3	PANEL NDF VIA REMITA *2				-		19.40	41	85	2"	125		150	1/0	85	2.	_			_	_	2.94	PANEL LED *2	
S T			_	_	-		19.40		-	_		Ç,	_		-	_	-		-	_	_	1.94		-
9	M C C BOURS 12	_	_	_	_	$\overline{}$	18.01	(2) 1/0		(2) 2 1/2*	400		400	(2) 3/0	terior.	(2) 2 1/2"	_	_		-		41.57	PANEL PT *2	H
11	MCCC BOILDS 72	_	_	_	-		18.01	(2)3/0	52,803	(2) 2 2/2	400	胎	400	(213)0	52,80	(4) 2.1/2	_		_	-		41.57	PMME P1-2	ŀ
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15	E PARCE 423	_	_	_	-		22.17	45	NS.	11/4"	100		200	3/0	85	21/2"	_		-	-	_	4.22	M.C.C.MOI *2	H
17	ELEKARONIACS	_			-		22.17	40	80	11/4	100	胎	200	3/0	80	2.1/2	-		-	-	_	4.93	MULLUMUS -2	H
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21	DAMPI NI *2	_	-	-	_			44	85	11/4"	70	6	50	85	enn.	3,91"	-		-	-		11.09	S.C.W.T. HEATER	- 1
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25					_	-	19.91			-		14	_							_		5.65		$\neg$
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								NG/COOLII					0.00			100			PHA		100			
	2. EXISTING LOAD WAS D MAXIMUM VALUE OF 10-						MOTO		WG				0.00			100				SE B	100			
	1. (4) - DENOTES THE NU						KITCH						0.00			1.00			PILA	or c	100	DUNG		
	BEQUIRED	merk o	rino	aut.				TACLES					0.00			100			TOTAL				510	
	4. REFER TO GENERAL NO	TTT					FRISTI						24.01			4.01			STUNE				1,0000	
	LARGEST MOTOR (KVA):						TOTAL						74.01			M 01		Anüt	ST UNI	SHLAN	UE PHO	OC %:	1,000	
	DANGEST MOTOR (KVA):						TOTAL								-		1100	CCT III	NRATA	MOD N	1100.4	1100	510.00	_

CLT	5501 Josh Birmingham Parkway Charlotte, North Carolina 28208 Phone: (704)359-4013
CHARLOTTE DOUGLAS	

ELECTRICAL PANEL SCHEDULES



SYSTEM NO. W4L-1001 AME 15, 2005

FRUTHOS - 1,2,3 AND 41R ISSE TIBES 2 WID 3,1 TAVENOS -0,1,2,3 AND 41R (SEE TIBE) 3,1 RATEGAT WINDOW - LESS TAVE 1 O'M PER SO,17,1 RATEGAT ASSET - LIGHT DAWN 1 O'M PIRK SO, FT.



VALUABRANIAY THE 1, 2, 3 OH 4 HR F PELANTED GYPRAM WALLOGARDSTED WALL ASSEMBLY SHALL OF CONSTRUCTED OF THE METHOD LOSS OF THE METHOD LAST OF THE METHOD CONSTRUCTED IN THE METHOD CONSTRUCTION OF THE METHOD CONSTRUCTION AND SHALL MOUSE OF THE FOLLOWING CONSTRUCTION FOR DRIVING MALLOCAL OF THE PELANTE CONSTRUCTION FOR THE PELANTE CONSTR

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J. PROCESSA-MORPHISTORY CONSISTENCY CONSISTENCY
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R, PICKEPPE - HORIZON, CHORNOCHAN (OR SHALLER) SERVICE WEIDER (OR HEAVER) CHOT PROVISED, PPE, NOW CHO, CHESNAN, CHANGER HANLER OR CLASS AS OR HEROTHS EXCELS FOR PRESSURE PRO-C. CONDUST: NOW (15, 1922 AND CHANGES SANULES) STEEL CONDUST OR NOW (16, 1702 AND CHANGES SANULES) STEEL ELECTRICAL METHOD. TURNOS. P. DHISLICH PENETRUTUS PRODUCT - PLES BLE HETH, PPINS THE POLICIANS TYPES OF STEEL PLES IN THE LOCAL PARK HETHER ANY DE USED.

S HORE IN AN EMPLOYMENT OF MALLERS STREET, RESPECTABLE SHEET, GREET PLACES.

CONTRACTOR PRINCIPAL SAME OR MAY NOT BE PERSONED ON BOTH SDEED OF RECORD OR WALL

ASSEMBLY. 2 YOU TH, OS MILEOW OR SMALLER, STEEL FLORING METAL GAS PRING, PLASTIC CONTINUES ON PIPES MAY OR MAY NOT BE PRINCIPLE ON BOTH SIDES OF PLOOR OR WALL ASSEMBLY.

3, WORK 19, COS MINI CHAN FOR SHALLISH STITLE FLID BLE METAL GAS PPING, PLASTIC CONCRETE ON FPING MAY OR MAY NOT BE REMOVED ON BOTH SIZES OF ROOM OR WALL ASSESSMENT.

AND A SPECIAL CONTRACTOR CONTRACTOR AND A STATE AND A STATE OF A STATE AND A S

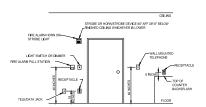
DECEMBE OF CONDUST CHARTE (RM)	FREE PER	PATENO MR
1.051	1012	8+,1092
1 (9%)	3.08.4	1014
4 (192)	1012	-
8 (152)	1084	0
12 (30%)	1012	

REPORTED FROM THE U. CALME CONTRICATIONS OR ECONOMY WITH PERMISSION PROPERTY OF THE PERMISSION OF THE -communicace/HTMS LAGOA/104(S bit).

ALROWN - VEZZA-CHT IN plantases. Limite -comzine and THZ MERICH ST.

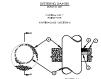
ALROWN - VEZZA-CHT IN plantases. Limite -comzine plant Institute Manifester and The ALROWN - COMPANY - Limited to Co. CEX ON SERVICE CONTROL TO COMPANY - COMPAN

# PENETRATION DETAIL - W-L-1001



TYPICAL MOUNTING HEIGHT OF DEVICES

SCALE: NOT TO SCALE



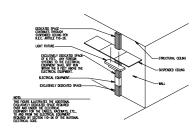
AT, IRON PIPE - NOW 35 IN (TR2 MM) DAME (OR SMALLER), GAST OR DUCTILE IRON PIPE. B. CONDUIT - NOW 6 IN (152 MM) DIAM (OR SIMALLER) RIGID STEEL COMBUIT.

FILL YOR OR CANTY INSTRUJES\* CAULK - APPLIED TO FILL THE AMALIAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

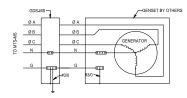
MICHIPAL CHANNEL	MAX RELIGIES SPACE EX.	PICKNESST. TYPE IO	THOSE N
18 (254)	1 (20)	BR, OF, GF or MIV	12(15(8)
18 (654)	1 (20)	CF or MIN	12(13)(0)
36 (792)	21/0/64	SYLOF, OF a MIV	1,000.00



3 PENETRATION DETAIL - C-AJ-101
SCALE: NOT TO SCALE



4 ELECTRICAL EQUIPMENT DEDICATED SPACE
SCALE: NOT TO SCALE

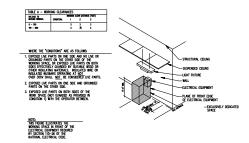


NOTES:

1. GENERATOR SHALL NOT BE A SEPARATELY DERIVED SYSTEM.
2. CONTRACTOR SHALL PROVIDE LABEL ON DOCKING STATION
"REMOVE NEUTRAL AND GROUND BOND IN GENERATOR PRIOR TO
ENERGIZENG UNIT."

TEMPORARY GENERATOR GROUND BONDING

SCALE: NOT TO SCALE



6 ELECTRICAL EQUIPMENT WORKING CLEARANCE









**CLT - MS SWITCHGEAR REPLACEMENT** 

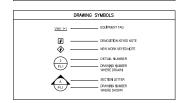
ELECTRICAL DETAILS

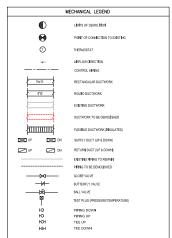


2018 APPE	NDIX B
NC MECHANI	CAL SUMMARY
MECHANICAL SYSTEMS, SEE	NICE SYSTEMS AND EQUIPMENT
CLIMATE ZONE	3A
THERMAL ZONE	
WINTER DRY BULB	21.6° F
SUMMER DRY BULB	94.2/74.7' F
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	70° F
SUMMER DRY BULB	75' F
BUILDING HEATING LOAD	TING NO CHANGE
BUILDING COOLING LOAD	73.4 MBH
MECHANICAL SPACING CONDITIONING SYSTEM	
DESCRIPTION OF UNIT	SEE SCHEDULES
HEATING EFFICIENCY	SEE SCHEDULES
COOLING EFFICIENCY	SEE SCHEDULES
HEAT OUTPUT OF UNIT	SEE SCHEDULES
COOLING OUTPUT OF UNIT	SEE SCHEDULES
BOILER	
TOTAL BOILER OUTPUT	EXISTING UNCHANGED
CHILLER	
TOTAL CHILLER CAPACITY	EXISTING UNCHANGED
LIST EQUIPMENT EFFICIENCIES	SEE EQUIPMENT SCHEDULES
METHOD OF COMPLIANCE:	
Energy Code: MPrescriptive	☐Performance

CODES / STANDAR	
- IBC, IMC, IEC - 2018 EDITION  - MORTH CAROLINA BULDING CODE - 2018 EDITION  - MORTH CAROLINA MECHANICAL CODE - 2018 EDITION  - NORTH CAROLINA ENERGY CONSERVATION CODE - 2018 EDITION	- ASHRAE STANDARDS: •62.1 - 2019

	MECHANIC	CAL ABBREVIATIO	INS
AAV	AUTOMATIC AIR VENT	INC	INCHES WATER COLUMN
AD	ACCESS DOOR	JB	JUNCTION BOX
ADJ	ADJUSTABLE OR ADJUSTMENT	LAT	LEAVING AIR TEMPERATURE
Al	ANALOG IN	LWT	LEAVING WATER TEMPERATURE
AD	ANALOG OUT	MAV	MANUAL AIR VENT
AFF	ABOVE FINISHED FLOOR	MC	MECHANICAL CONTRACTOR
APD	AIRSIDE PRESSURE DROP	N/A	NOT AVAILABLE / NOT APPLICABLE
BLDG	BUILDING	NC NC	NORMALLY CLOSED
CFM	CUBIC FEET PER MINUTE	NIC	NOT IN CONTRACT
CMD	COMMAND	NO	NORMALLY OPEN
COND	CONDENSATE DRAINAGE	NTS	NOT TO SCALE
CHWR	CHILLED WATER RETURN	QA .	OUTSIDE AIR
CHWS	CHILLED WATER SUPPLY	PD	PUMPED CONDENSATE
DI	DIGITAL IN	PC	PLUMBING CONTRACTOR
DO	DIGITAL OUT	PSI	POUNDS PER SQUARE INCH
DN	DOWN	RA	RETURN AIR
EAT	ENTERING AIR TEMPERATURE	SA	SUPPLY AIR
EC	ELECTRICAL CONTRACTOR	SAD-X	SUPPLY AIR DIFFUSER - TYPE
ESP	EXTERNAL STATIC PRESSURE	sc	SAFETY CIRCUIT
ETR	EXISTING TO REMAIN	s/s	START/STOP
EWT	ENTERING WATER TEMPERATURE	TAB	TEST AND BALANCE
EX	EXISTING	TEMP	TEMPERATURE
FCU	FAN COIL UNIT	TSP	TOTAL STATIC PRESSURE
FPM	FEET PER MINUTE	TYP	TYPICAL
GC	GENERAL CONTRACTOR	VP.	VIRTUAL POINT
GPM	GALLONS PER MINUTE	WPD	WATERSIDE PRESSURE DROP
HHWS	HEATING HOT WATER SUPPLY	XFMR	TRANSFORMER
HHWR	HEATING HOT WATER RETURN		
HP	HORSEPOWER		





### HAZARDOUS MATERIALS WARNING

GENERAL NOTES

THE DIAMNING SHALL NOTE SCALE FOR COMMINION INVESTOR THE SALE, WISE INDICATED IN INTEREST ORIGINATE. SEPTEMBLY OF THE MINIOR STATE OF THE MINIOR STATE OF THE SALE WAS RECOGNIZED. AND EPILIAR PRINT TO INSTALLATION OF THE MINIOR STATE OF THE MINIOR STAT

GENERAL NOTES

HAZAROUS MATERIUS, INCLUDIRG ASRESTOS CONTANINO MATERIALS, ARE CITHER NOT PRESENT OR WERE REMOVED FROR TO CONSTRUCTION, TO THE EST OF THIS CONSCILATOR'S MONIBLOBE. THESE IS A MANY THE RESO OF FEMANING, INDESCONEED AND AND THE AREA OF THE MONIBLOS THE CONSTRUCTION STATE OF THE MONIBLOS THE CONSTRUCTION STATE OF THE MONIBLOS FROM THE CONSTRUCTION OF THE MONIBLOS OF THE MONIBLOS FROM THE CONSTRUCTION OF THE MONIBLOS OF THE MONIBL

	AIR DISTRIBUTION SCHEDULE
TAG	DESCRIPTION
(A)	RDEWALL SUPPLY OFFICIENCES 21. ALAMHUM CONSTRUCTION, SHOLE DEFLICITION WITH 27 SLAGES OF CRITICAL TRACES OF
0	SIDEWALL RETURN. PRICE ISO SERIES 45' DEFLECTION (X' BLUDE SPACTNO, FIXED LOUVIER FACE, ALUMINAN CONSTRUCTION, SEE PLANS FOR NECK SIDE.

- NOTES.

  1. MC SHALL COORDINATE LOCATIONS WITH FELD CONSTIONS TO AVOID CONFLICT WITH OTHER TRADES, EXISTING TRADES MAY NEED RELOCATED TO ACCOMMODATE AIR DISTRIBUTION.
- 2. CONTRACTOR TO VERIFY DIFFUSER, REGISTERS, ETC. FRAME TYPES SO THEY ARE COMPATIBLE THE WALL TYPE.
- 3. MECHANICAL CONTRACTOR SHALL PAINT BEHIND ALL SIDEMALL GRILLES WITH FLAT-BLACK PAINT.
- "BASIS OF DESIGN" SHALL BE PRICE OR APPROVED EQUIVALENT BY METAL-AIRE, CARNES, NALOR, TITUS AND TUTTLE & RAILEY

2.	PROVIDE WITH ECH MOTORS WITH THERMAL OVERLOAD PROTECTION, SET UNIT TO THIGH FAN SPEED UPON INSTALLATION.
3.	PROVIDE WITH FACTORY INSTALLED CLASS   TRANSFORMER FOR LOW VOLTAGE CONTROLS
4	PROVIDE ULSES LISTED FLOAT SWITCH IN THE PRIMARY DRAIN LINE, WIRED TO UNIT TO SHUT DOWN AND ALARM UPON FLOAT ACTIVATION, INST
5.	PROVIDE WITH IT, 2 WAY MANUAL PIPMS PACKAGE WITH FLEXIBLE HOSE LENGTH OF HIT. PIPMS PACKAGE SHALL INCLUDE EXTENDED PT PORT
6.	PROVIDE WITH FULLY PROGRAMMABLE THERMOSTAT AND ONE SET OF SPARE FILTERS.
7.	BASIS OF DESIGN SHALL BE JC.
8.	PROVIDE WITH CONDENSATE PLANE, BASIS OF DESIGN SHALL BE LITTLE GRANT VOMA-19ULS OR APPROVED EQUAL, COORDINATE POWER CONN
9.	UNIT SHALL BE SUSPENDED WITH BOTTOM RETURN ISSE DETAIL BINSON. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER RED

		ESP				COOLIN	G COIL			F	ELECTRI	CAL			MANUFACTURER/	
TAG	CFM	(INWG)	тмвн	SMBH	GPM	EWT/LWT (*F)	EAT ('F) DB/WB	LAT (°F) DB/WB	WPD MAX. (FT)	MCA	MOCP	VOLTS/Ø	TYPE	SERVING	MODEL#	NOTES
FCU-0098	1925	0.35	39.1	37.8	6,5	42,0/54,0	72,0/58,5	54,1/50,9	4.36	7.20	15	277/1	HORIZONTAL SUPPLY, FREE RETURN	ELECTRICAL M0-4440	JCI+FN0420	1-7,9
FCU+0099	1925	0.35	34.3	34.3	5.3	42,0/55/0	72/0/58/5	55.852.0	4.36	8-63	15	277/1	DUCTED SUPPLY, DUCTED RETURN	ELEVATOR MACHINE MO-1460	JCI - BCU-20	1-8, 10
Mattes:																
<ol> <li>PROVIDE WI</li> <li>PROVIDE WI</li> <li>PROVIDE UL</li> </ol>	TH ECH MOTORS TH FACTORY INS 588 LISTED FLOA	S WITH THERMAL STALLED CLASS AT SWITCH IN THE	L OVERLOAD PRO TRANSFORMUR IE PRIMARY DRA	OTECTION SET L R FOR LOW VOLT IN LINE, WIRED T	UMIT TO THE PAGE CONT TO UNIT TO	IGHT FAN SPEED UP TROUS SHUT DOWN AND	COORENATE BLECTS FON INSTALLATION. ALAPSI UPON FLOAT. E SHALL INCLUDE EX	астиалон изтац	LATION SHALL BE IN				TROUS CONTRACTOR AND INSTALLED BY MANUFAC	CTURES, BASIS OF DESIGN SHALL BE	HAYS	

FAN COIL UNIT SCHEDULE









**CLT - MS SWITCHGEAR REPLACEMENT** 

MECHANICAL

GENERAL NOTES, LEGENDS AND SCHEDULE



### GENERAL

RELATED DOCUMENTS. THE CONNERS GENERAL DONOTITIONS, THE SUPPLEMENTARY GENERAL CONDITIONS AND OWNERS GENERAL REQUIREMENTS FORM A PART OF THE CONTRACT AND ALL SUBCONTRACTS AND SHALL GOVERN THE WORK PERFORMED LINDER EACH SECTION OF THE SPECIFICATION.

SCOPE OF WORK - PROVIDE ALL MATERIALS, TOOLS AND LABOR REQUIRED TO PERFORM THE WORK SHOWN ON THE DRUNING AND DESCRIBED IN THESE SPECIFICATIONS. THE MECHANICAL CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS REQUIRED FOR HIS WORK.

BEGLATORY REQUIREMENTS: ALL WORK SHALL COMELY WITH ALL APPLICABLE CODES INCLUDING PRESWITCHIS (DELLOWS CODE AND THE INTERNATIONAL MECHANICAL CODE AS ADDRESS HE NEW WITH AND THE CONTROLLED OF REGLATION OF AUTOMOTIVE HEAVY AND ADDRESS HE NEW CONTROLLED OF A CONTROLLED OF A CONTROLLED OF AUTOMOTIVE HEAVY AUTOMOTIVE AND ADDRESS HE NEW CONTROLLED OF THE CONTROLLED OF A CONTROLLED OF A CONTROLLED ON THE THEORY AND ADDRESS HEAVY AND ADDRESS HE

INSTALL ALL EQUIPMENT IN ADDORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WHICH SHALL BE AVALABLE AT THE JOB SITE.

DRAWNOS - WHILE THE DRAWNOS SHOW THE GENERAL LOCATION, ARRANGENERT AND EXTENT OF WORK TO BE DONE, THE EXACT SIZES, LOCATIONS AND ARRANGEMENT ARE SUBJECT TO CONDITIONS EXISTING AT THE BUILDING.

SHOP DRAWING - PROVIDE FOR FAN COIL UNITS, DIFFUSERS, PIPING, PIPING ACCESSORIES, DUCTWORK, FLOOR DRAW, AUTOWATIC TEMPERATURE CONTROLS, FIRE DAMPERS AND SHALL BE SUBMITTED TO THE ENGINEER FOR EXAMINATION AND COMMENT.

GENERAL PHASING REQUIREMENTS. THE CONTINUCTOR SHALL MEET WITH THE BUILDING OMMERSHARESE PROOF TO DEVELOPING THE REPORT DEVELOP HER DEVELOP SHALL BE SHEEDLE TO DISSUSS OWNER OWNERSHAND SHOULD HER DEVELOP HER TO AND AND ASTALLATION OF MEW TAPS ON CHILLED WATER AND HOT WATER MANS SHALL BE SCHEDULED TO MINIMIZE DOWN TIME FOR THE STITEM.

THE CONTRACTOR SHALL SCHEDULE HIS WORK AT THE CONVENIENCE OF THE OWNER TO MINIMIZE INTERFERENCE WITH BUILDING AND PLANT OFERATIONS.

MECHANICAL EQUIPMENT SHALL BE INSTALLED IN A MANNER TO PERMIT EASE OF SERVICE AND THE MECHANICAL CONTRACTOR SHALL INFORM OTHER TRADES OF ACCESS REQUIREMENT TO PREVENT

CITITIES AND REPORTED CONTING WHERE INCRESSARY FOR MICHANICAL KORK SHALL BE DONE BY CONTINUE AND ADDRESS OF THE STATE OF

SALVAGE AND SCRAP - REMOVED MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER UNMANTED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROPERTY AND DESIGNED OF PROPERTY BY THE MECHANICAL CONTRACTOR.

WORK BY OTHERS - CERTWIN LIGHT AND MATERIALS WHICH ARE REQUIRED TO ACCOMMODATE THE MECHANICAL WORK BUT WHICH ARE NOT INCLUDED IN THIS CONTRACT ARE AS FOLLOWS:

THE ELECTRICAL CONTRACTOR SHALL PROVIDE ADEQUATE ELECTRICAL SERVICE FOR NEW MECHANICAL EQUIPMENT AND INSTALL ALL POWER WIRING AND ELECTRICAL DEVICES AS SHOWN ON THE MECHANICAL DEVILWING OR REQUIRED.

WARRANTY - THE CONTRACTOR SHALL WARRANT HIS WORKWARSHIP, MATERIALS AND ALL EQUIPMENT FOR A PERIOD OF ONE YEAR. THE CONTRACTOR SHALL REPAIR, REPLICE OR CORRECT ANY ITEM THAT IS FOUND DETECTIVE IN THE TIME PERIOD OF ONE YEAR AFTER WHEN THE PROJECT IS ACCEPTED BY THE OWNER.

THE ACTION THE PROPERTY OF THE CONTROL OF THE PROPERTY OF THE

WHEN DUCTWORK WHERE INDICATED IS TO BE INSULATED USING INTERNAL ACOUSTICAL LINER, OMIT EXTERNAL, RISULATION.

INDEMNC PPE AND RITINGS. PPING FOR HOT AND CHILED WATER 2" AND SMALLER SHALL BE TIPE.
T THAN COPPER TURNS WITH SWALTED WORTS USING \$1.5 SOLDER. FITTINGS SHALL BE CAST BRASS
OF WROUGHT COPER FROMDE SCREWED WORMS AT FAN. COMPACTIONS TO DEUTY TO TO
ALLOW DECOMMENTANT OF STREAM SERVICING. MECHANICALLY PRESSED FITTING ARE
ANDEFTANES IN COSSESSEE CLOCATIONS.

2 OF AND LISSES SHALL BE SCHEDULE OF BLACK OTEL WITH VIELED LOWES. FITTHOSE FOR STELL INTEREST AND STELL SHALL SHA

WASTEVENT FIRE AND FITTINGS - PIPMO FOR SANITARY SYSTEM SHALL BE SERVICE WEIGHT CAST FROM SIDE, FIRE MOIND HUB FITTINGS WITH HEAVY CUTY COUPLINGS, OR SHALL DTHERMISE MATCH EXISTING PIPMO IT IS CONNECTING TO, SCHEDULE 40 PVC IS ACCEPTABLE FOR BELOW SLAB SHATRAY RIPMO

COOLING COLL CONDENSATE DRAINS - TYPE II, TYPE M OR TYPE DMV COPPER SHALL BE USED FOR CONDININATE DRAINS

WHERE WATER PIPMS OF DISSIMILAR METALS IS JOINED. THE CONNECTION SHALL BE MADE WITH

MECHANICAL/PLUMBING SPECIFICATIONS

YEATER PIPING: SHALL BE TESTED TO 1.5 TIMES SYSTEM DESIGN PRESSURE (MINMUM 100 PSKG) FOR 15 MINUTES FOR LEAKS AND REPAIRED AS NECESSARY SEFORE INSULATION IS APPLIED.

WASTE PIPING BRANCH PIPING SHALL BE TESTED BY FILLING WITH WATER TO THE POINT OF CYERFLOW FOR 15 MINUTES AND CHECKING FOR LEWIS.

ALL LEAYS SHALL BE REPURED BY DISMANTLING AND RESULDING OR AS OTHERWISE DIRECTED. NO TEST MESSAGES SHALL BY APPLIED TO ANY DISMANCE OF SHOCKLY IN OT DISSAGED TO SHADOW THE STRESS AND AS A SHADOW THE THE WITH A US SPANDED FOR WARE THAN TO FEET ON CONTENS. ALL WATER PIPING SHALL BE RUN LEY PIPE SUPPORT SHALL BE ON THE OUTSIDE OF THE INSULATION.

PIPING ACCESSORIES

PLLL PORT BALL VIALVES - UP TO 2": BRONZE TWO FIECE BODY, STAINLESS STEEL BALL, TEFLON SEATH AND BLOW OUT PROOF STUFFING BOX RING, LEVER INVIOLE. AND BALLWONG STOPS, LINON SOLDER BINDS. ACCIEFTABLE MANUFACTURERS: COMBRACO (APOLLO), WATTS, INC., CRANE, INC., OR STOCHMAN, INC.

VENT AND CROM VALUES - ALL NATER PPING SYSTEMS SHALL BE RESTALLED IN SUCH A WANDER THAT THEY CAME COMPATERLY VIDETED AND DRAWING UNLESS OTHERWISE MOTER PROVIDE AT ALL 1960 DROWNS WHERE ARE AND COLLECT HE REMOSS COMPRESSION WITH OCCIS, MAD AT ALL UND POINTS VIDE AND AND COLLECT HE REMOS COMPRESSION WITH OCCIS, MAD AT ALL LOW POINTS OF PINAS STSTEMS, AS REQUESTED, TO COMPATE MY STORY AND END CRAW VALVES AT ALL LOW.

FAN COL PRING TRIN - PROVIDE WITH 11, 2-WAY MANUAL PRING PADKAGE WITH FLEXIBLE HOSE LENGTH OF 151 PRING PADKAGE SHALL INCLUDE EXTENDED PT PORTS AND EXTENDED LEVER HANDLES. AT CO. SHALL BE PROVIDED BY CONTROL OF CONTROL OF MIN DISTALLED BY MANUFACTURER.

### ARDSTRBUTION

SHEETINETAL DUCTWORK: ALL NEW DUCTWORK SHOWN ON THE DRAWING SHALL BE CONSTRUCTED OF GRUVMVZED STEEL (ANLESS OTHERWISE INDICATED). ALL DUCTWORK SHALL BE CONSIDERED NOW PRESSURE! TYPE.

ALL ROUND DUCTYKORK (GALVANZED) SHALL BE SPIRAL SEAM TYPE AND FITTINGS SHALL BE "LOW-LOSS" FACTORY WILLDED SEAM TYPE (MCULDING CONCAL AND 45" BRANCH TAKEOFFS) AS MANUFACTURED BY UNITED SHEET METAL OR EQUIAL DUCT SHALL BE INSULATED WITH TWO INCH PERPERLASS INCLIT WINDOW.

ALL SEAMS AND JOINTS SHALL BE SEALED WRITIGHT (SEAL CLASS A) USING APPROPRIATE DUCT SEALANT AS MANUFACTURED BY UNITED SHEET METAL PROPERLY APPLIED.

ACCESSORIES STATIC PRESSURE TIPS WITH INTEGRAL COMPRESSION FITTINGS, 14 INCH ALUMINUM TURNA'S DIMAY VIZI MES

### BASIS OF DESIGN SHALL BE AS SCHEDULED

FAN SHALL BE FORMARD CURVED DWOLCENTRIPLICAL TYPE, CONSTRUCTION 19 GA ZINC COAT GALVANCED STEEL THE FAN ASSEMBLY SHALL BE EASLY REMOVIBLE FOR SERVICING THE MOTOR AND BLOWER, MOTOR SHALL BE ECH TYPE CAPABLE OF VARIABLE SPEED OPERATION WITH 2-19 UDC SIGNAL FROM BY.

COOLING COLS SHALL BE AHRI 410 CERTIFIED AND RATED FOR 450 PSIG WORKING PRESSURE, COL. SHALL BE PROVIDED WITH MANUAL AIR YENT FITTING.

DRWN PAN SHALL BE SINGLE WALL GALVANIZED STEEL, AND SHALL EXTEND UNDER ENTIRE COOLING COIL. PAN SHALL BE PROVIDED WITH A CONDENSATE OVERFLOW SWITCH WIRED TO SHUT DOWN UNIT.

PROVIDE IT MERY BIDSPOSABLE PLEATED FLITERS WITH ONE SET OF SPACE FLITERS FOR ATTIC STOCK. FLITERS SHALL BE REPLACED AT THE BUYD OF CONSTRUCTION AND THE SPACE SET OF FLITERS SHALL BE TURNED OVER TO THE MERCHT REPRESENTATIVE.

UNITS SHALL BE FURNISHED WITH A SINGLE POINT POWER CONNECTION WITH TERMINAL STRIP FOR MOTOR AND OTHER ELECTRICAL CONNECTIONS, PROVIDE WITH 24V CLASS II TRANSPORMER FOR BAS

PROVIDE WITH SEPARATE CONDENSATE PUMP, CONDENSATE PUMP SHALL BE 27TV AND PROVIDED WITH DISCONNECT.

PIPING TRM SHALL BE PROVIDED SEPARATELY. SEE PIPING ACCESSORIES SECTION.

THERMOSTAT - PROVIDE DIGITAL THERMOSTAT BY SAME MANUFACTURER AS BUILDINGS BAS. THERMOSTAT SHALL BE COMPATIBLE WITH EXISTING BAS.

THERMANETES - PROME WERE INDICATED WESS OR EQUAL 9" SCALE PED-READING LIQUID THERMANETES. CARES SHALL BE CAST ALLIANDAW THE BLOCK THISM AND CLEFF QUASS WINCOM SCALE BLOCKCOMOLO SHALL BE WHITE THIS MALLEY FORESS SHALLOND GENERES PARHADED SHALL BE WITH THE SHALLOND FOR SHALLOND GENERES PARHADED SHALLOND FOR THE SHALLOND SHALLOND FOR CONTRIBUTION OF CONTRIBUTION FROM THE FLOOR.

ERSEABLE CACES. THOUGH HAVE RECATED DOLLER THATE? OF EQUAL RESIS.

MISSPALL TOMA SCROOT REPICES OF DIRECT RESISTENCE OF SCROOT REPICES. OF THE PRICE OF THE PRICE

CONTROL WIRING AND POWER WIRING: ALL CONTROL AND POWER WIRING REQUIRED FOR THE CONTROLS (LINE OR LOW VOLTAGE) REQUIRED SHALL BE PROVIDED BY ATC SUB-CONTRACTOR.

MANUFACTURER: CONTROL SYSTEM SHALL BE JCL NO EXCEPTIONS.

SCOPE OF WORK:

PROVIDE COC CONTROLLER FOR EACH FAN COLL UNIT, COMPATIBLE WITH EXISTING JCI BAS.

INTERCONNECT COMMUNICATIONS LINK WITH EXISTING BAS SYSTEM.

## PROJECT CLOSEOUT

AIR BULANCE - THE SUPPLY DUCT VOLUME DAMPERS AND AIR TERMINAL VOLUME CONTROLS SHALL SE ADJUSTED TO GREAT THE AIR VOLUMES INDICATED ON THE DRAWNER WITHOUT UNDUE NOISE OF GUIDCITCHAURE ARE MOTTON. THE WORDS SHALL BEDOME IT ATEXT AND BALANCE CONTINCTION THAT IS CRETTED IN EITHER AIRSO OR NEBS. PROVIDE WRITTEN AIR BALANCE REPORT BASED ON PELD MRASJERMENTS.

WATER BALANCE: THE BALANCING VALVES AT FAN COLS. ETC. SHALL BE SET FOR THE FLOW RATES.

GREAT IN THE SCHEDULE IN ACCORD WITH THE VALVE MANUFACTURERS RECOMMENDED PROCEDURE.

ALL TESTING ADDRESS MANUFACTURERS PROCEDURED.

FIRE DAMPIES - FIRE DAMPIES SHALL BE ULLUSTED WITH A 11/2 HOUR RATING, DAMPIES SHALL BE AS SPECIFIED ON THE PLANS WITH A STANLESS STEEL SHUTTER AND 165° FRUSBLE LINK (212° FOR THE PLANS WITH A STANLESS STEEL SHUTTER AND 165° FRUSBLE LINK (212° FOR THE PLANS FOR THE PL HOT DUCTS), PROVIDE NON-HINGED DUCT ACCESS DOORS WITH CAMILOCKING DEVICES FOR INSPECTING AND RESETTING FIRE DAMPED AND WINDIUM SIZE 12X12. BASS OF DESIGN BY RUSKIN, FOUND PRODUCTS MANUFACTURED BY GREENHED OR ARROW ARE ACCEPTABLE. AS APPROVED.

REMANDED FORTER AND ALL PROPRIES. ALL PROPRIES DE PLACES SERVE EST CONTRETO DE PROPRISO DE CHILD AND STROTT CHILD ALL POPER DIVINO, ALL PROPRISO DE PROBLES DE DEVENIMOS, AND AL REPORT MECHANIDO REPORTION OF FLOW, WANTER MORE THAN ONE PROBLES ALL BUILDS. THE WANDARDS MET AL DODOLICATI THE PROSEDIOR. MINORIOS SHALL BE PLAN. BLOCK LETTINES TITULES, DITEIDAS, CONTRIGUENDO COLOTTO PROPOR DE LATERNA DE SELECI-TION DE LA PROPRIES DE LA CONTRIGUENDO COLOTTO PROPOR DE LATERNA DE SELECI-TION DE LA PROPRIES DE LA CONTRIGUENDO COLOTTO PROPOR DE LA PROPRIES DE LA CONTRIGUENDO COLOTTO DE ROMANDO COLOTTO

CERTAINS MANUALS: THIS CONTRACTOR SHALL DELIVER TO THE DWINER THREE (S) COPES OF AN CHRATING MANUAL IN A LOCKEL LOF BRODER HISCH SHALL DOMEST OF MANUFACTURINES SHALL DWINES AND CONTRACTOR OF THE CONTRACTOR OF

QUINER INSTRUCTION - AT THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL INSTRUCT THE OWNER'S PERSONNEL IN THE USE OF THE EQUIPMENT AND CONTROLS.

AS BULES - DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A SEPARATE SET OF BLACK LINE REPRODUCES IN MICHARICAL DRAWNINGS ON WHICH HE SHALL RECORD THE EXACT LOCATION OF ALL CONCEALED FRIMG AND DUCTHORK WHICH IS NOT INSTILLED AS SHOWN. THESE "AS BUILT" DRAWNINGS SHALL BE CELEMENT OTHE EXAMPLE AT THE END OF THE LOS.



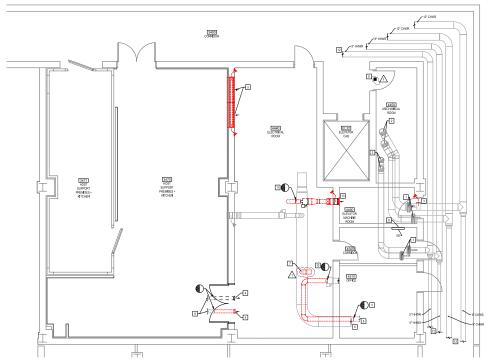




**CLT - MS SWITCHGEAR REPLACEMENT** 

MECHANICAL SPECIFICATIONS





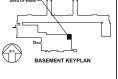
BASEMENT LEVEL DEMOLITION PLAN

## GENERAL NOTES

- MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPINS, CONTROLS, CONDUIT, ETC AND COORDINATE WITH OTHER TRADES PRIO TO PROVIDING PRICHIS.
- MECHANICAL CONTRACTOR SHALL FIELD VERIFY ISOLATION VALVES FOR PIPING DEMOLITION AND NEW WORK SHOWN HEREIN.
- 3. MECHANICAL CONTRACTOR SHALL COORDINATE ALL NEW CONTROLS WITH JCI FOR INTEGRATION INTO EXISTING BAS.

# # DEMOLITION KEYED NOTES

- EXISTING ISOLATION VALVE TO REMAIN.
- 2. EXISTING PIPING CONTINUES UP TO RAMP LEVEL. SEE M201 FOR CONTINUATION.
- EXISTING FIRE DAMPER AND GRILLE TO BE DEMOLISHED COMPLETE. COORDINATE WALL PATO-ING WITH ARCHTECTURAL PLANS AND ARCHTECTS LATEST LIFE BAFETY PLANTO MANTAN WALL RATING. CONTRACTOR ON THE ATY DESITING ASSET TAG AND PROVIDE TO FACILITY MANAGEREMOINEER FOR REMOVAL FROM DAMPER TEST LIST.
- 4. EXISTING AIR DISTRIBUTION DEVICE AND ASSOCIATED DUCTYVORK TO BE DEMOLISHED BACK INTO ROOM MC3-470 INCLUDING AIR TOUT MCCESSORIES AND DAMPERS. CAP DUCTYVORK ABOVE CELLING IN BOOM MC3-470. CORDINATE WALL PATCHINS WITH ARCHITECTURAL PLANS AND ACHIEVED IS THE SITE AS PLANT TO MARTIAN WALL RATING. CONTRACTOR TO TOTE AIR DESIRING ASSET TAK AND PROVIDE TO FACILITY MANNECERRIGHERS FOR REMOVAL FROM MORPHET RST LIST.
- EXISTING DUCTWORK TO BE DEMOLSHED BACK BEYOND WAIL, CAPPED AND INSILATED, COORDINATE WALL PATCHING WITH ARCHITECTURAL PLANS AND ARCHITECTS LATEST LIFE SAFETY PLAN TO MAINTAIN WALL RATING. CONTRACTOR TO NOT ANY EXISTING ASSET TAG AND PROVIDE TO FACILITY MANAGEMEND MEET FOR REMOVAL FROM DAMPER TEST LIST.
- 6. EXISTING DUCTWORK CONTINUES OUT OF SCOPE OF PROJECT.
- EXISTING SUPPLY DUCTWORK TO BE DEMOLISHED BACK TO MAIN, UTILIZE FOR FUTURE CONNECTION TO EXISTING VAV BOX. SEE MP101 FOR FUTURE CONNECTION.
- 8. EXISTING RATED ACCESS DOOR TO REMAIN.
- PLUMBING CONTRACTOR TO DEMOLISH EXISTING FLOOR DRAIN AND EXTEND PIPING TO NEW FLOOR DRAIN LOCATION. SEE MP101 FOR NEW FLOOR DRAIN LOCATION. PATCH AND REPAIR FLOOR AS REQUIRED.
- DEMOLISH EXISTING SUPPLY DUCTWORK SERVING EXISTING VAVIOX. SEE MIP101 FOR FUTURE CONNECTION IN NEW WORK PHASE OF PROJECT.
- 11. EUSTING VAY BOX. THE DAMPER AND ASSOCIATED DICTIVEORY TO BE DEVICED COMPLETE. CAP AND INSULATE SURPEY MAIN. COORDINATE WALL PROTHING WITH ARCHITECTURAL PARKS AND ARCHITECTURAL ARCHITECTURAL PARKS AND ARCHITECTURAL PARK
- 12. EXISTING PIPING CONTINUES OUT OF SCOPE OF PROJECT.
- EXISTING FIRE DAMPER AND ASSOCIATED DUCTWORK TO BE DEMOUSHED COMPLETE. EXISTING WALL PENETRATION TO REMAIN FOR REUSE IN NEW WORK PHASE OF PROJECT.









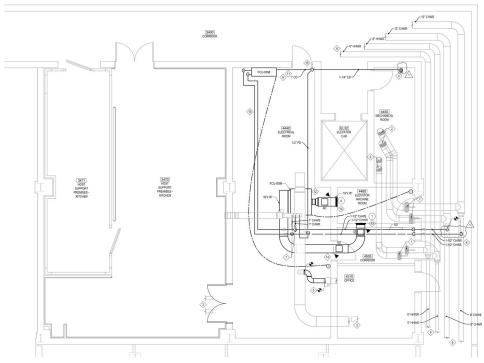




CLT - MS SWITCHGEAR REPLACEMENT

MECHANICAL & PLUMBING BASEMENT LEVEL DEMOLITION PLAN

SCALE MCE PROJ. # 08292-0003 M/P100 HORIZONTAL: AS INDICATED CONSTRUCTION DOCUMENTS



BASEMENT LEVEL NEW WORK PLAN

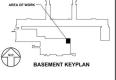
### GENERAL NOTES

- MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, CONTROLS, CONDUIT, ETC AND COORDINATE WITH OTHER TRADES PRIOR OF PROVIDING PRICESS.
- MECHANICAL CONTRACTOR SHALL FIELD VERIFY ISOLATION VALVES FOR PIPING DEMOLITION AND NEW WORK SHOWN HEREIN.
- 4. MECHANICAL CONTRACTOR SHALL CLOSELY COORDINATE DRAIN DOWN OF CHILLED WATER SYSTEM AND HEATING HOT WATER SYSTEM WITH FACILITIES AND MAINTENANCE. PROVIDE MINIMUM OF 2 WEEKS NOTICE TO FACILITY MAINTENANCE TEAM PRIOR TO ANY SCHEDULED SHUTDOWN.
- MECHANICAL CONTRACTOR SHALL CLOSELY COORDINATE PIPE ROUTING TO AVOID ALL ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT.
- 6. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF RATED WALL ASSEMBLIES.

# NEW WORK KEYED NOTES

- 2. EXISTING PIPING CONTINUES UP TO RAMP LEVEL. SEE M201 FOR CONTINUATION.
- 3. EXISTING DUCTWORK CONTINUES OUT OF SCOPE OF PROJECT.
- NEW FLOOR DRAIN, BASIS OF DESKIN SHALL BE ZURN Z415-BZ1 OR APPROVED EQUAL. PLUMBING CONTRACTOR TO EXTEND EXISTING SANITARY PIPING AND VENT PIPING TO NEW LOCATION, PROVIDE SUREEBAL TARS SEE, ACCORDINATE WITH FEELD CONDITIONS AND PROVIDE WITH OWA FLUNKE, ASSEMBLY BASIS OF DESKIN SHALL BE ZURN Z259-9 OR APPROVED EQUAL. ENSURE LOCATION OF NEW FLOOR DRAIN TRINITTO WALL.
- CONNECT NEW 1-1/2" CHWS AND CHWR PIPING TO EXISTING CHILLED WATER MAINS. ROUTE DOWN ALONG WALL IN CORRIDOR 4505, PROVIDE WITH ISCLATION BALL VIALVE AT BRANCH TAKEOFF. DO NOT ROUTE PIPING THROUGH OR M FRONT OF ACCESS DOOR. PATCH ALL WALL PENETRATIONS ACCORDING TO ARCHITECTS LATEST LIFE SAFETY PLAN.
- 8. EXISTING PIPING CONTINUES OUT OF SCOPE OF PROJECT.
- 10. DO NOT ROUTE NEW CHILLED WATER PIPING DIRECTLY ABOVE ELECTRICAL EQUIPMENT.
- 11. COORDINATE MOUNTING HEIGHT OF NEW FAN COIL UNIT IN FIELD. ENSURE CONDENSATE CAN GRAVITY DRAIN TO LOCATION SHOWN ON PLANS.

- 15. CONNECT 1/2" PUMPED CONDENSATE TO 1" CONDENSATE PIPING WITH WYE FITTING ANGLED IN DIRECTION OF FLOW.











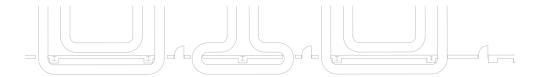


**CLT - MS SWITCHGEAR REPLACEMENT** 

MECHANICAL & PLUMBING

BASEMENT LEVEL NEW WORK PLAN









RAMP LEVEL NEW WORK PLAN

Scale: 1/8" = 1/4"

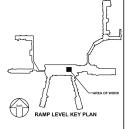
# GENERAL NOTES

- MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPHIG, CONTROLS, CONDUIT, ETC AND COORDINATE WITH OTHER TRADES PRIOF TO PROVIDING PRICINS.

- EXISTING ISOLATION VALVES, DOWN-STREAM OF SCOPE OF WORK, APPROXIMATELY 200° PLAN EAST OF RISERS.
- MECHANICAL CONTRACTOR SHALL INCLUDE THE COST OF FLUSHINS AND CLEANING OF ALL IMPACTED HYDRONIC PIPMS, INCLUDING THE COST OF CHEMICAL TREATMENT, AS PART OF THE INSTALLATION OF THE NEW ISOLATION VALVES SHOWN, THIS SHEET,

# MEW WORK KEYED NOTES

- NEW LUG STYLE BUTTERFLY ISOLATION VALVES TO BE PROVIDED BY MECHANICAL CONTRACTOR. INSTALL IN RISER ALONG WALL, 48"-50" A.F.F.
- 2. EXISTING PIPING CONTINUES OUT OF SCOPE OF PROJECT.







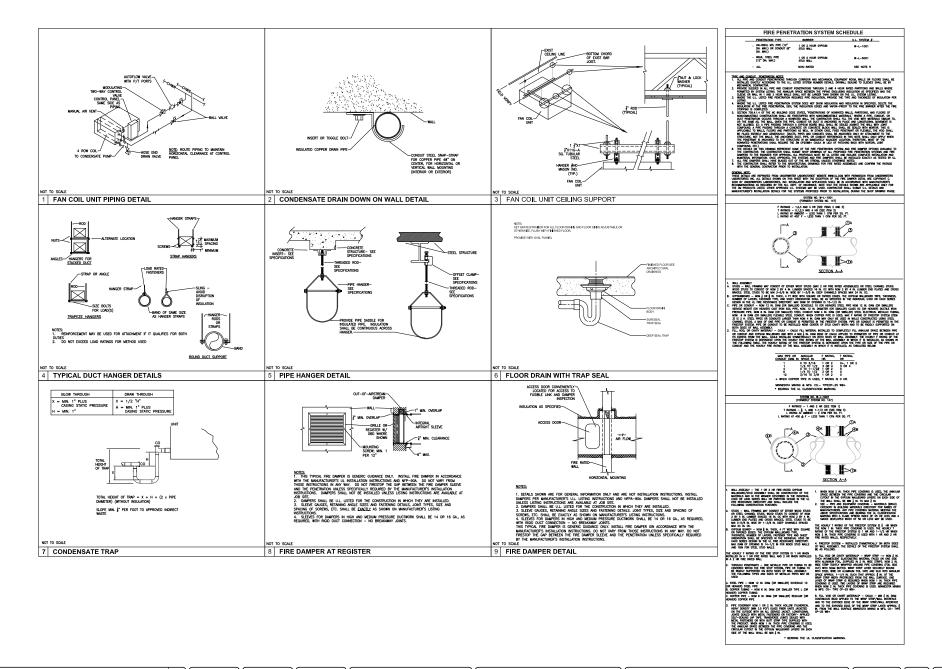


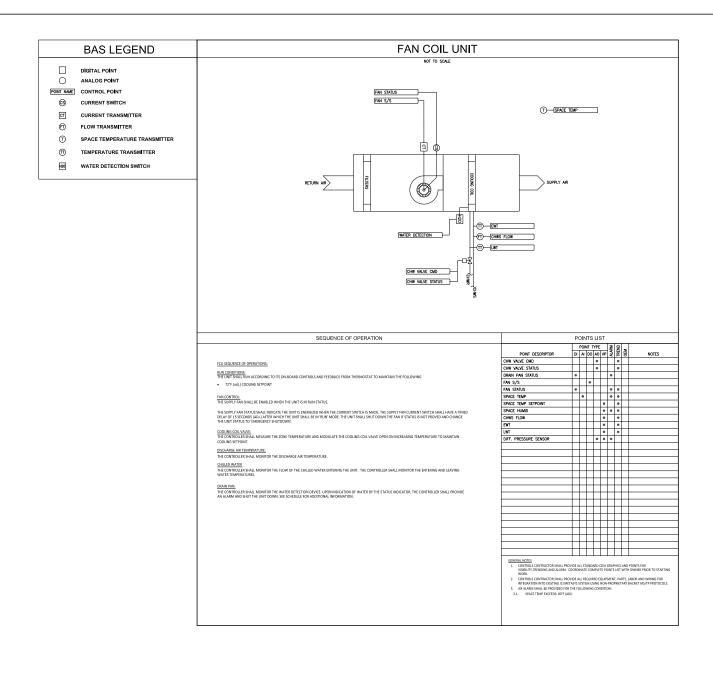


CLT - MS SWITCHGEAR REPLACEMENT

MECHANICAL

RAMP LEVEL - NEW WORK PLAN





SEV NO.	DESCRIPTION	GATE
_		_
_		
-	-	-
-	DEVISIONS	







CLT - MS	SWITCHGEAR	REPLACEMENT

MECHANICAL CONTROLS



M400

**Project Location: Charlotte-Douglas International Airport** 

Charlotte, North Carolina

**GS-NC P.C Project No.: 47129.00** 

# **SEALS PAGE - ARCHITECTURAL**

Section 00 0107 - Page 1 of 1

# 1.1 DESIGN PROFESSIONAL OF RECORD

A. ARCHITECT Sean M. Bogart

NC License No. 14198

Responsible for Divisions as noted on specifi-

cation index.

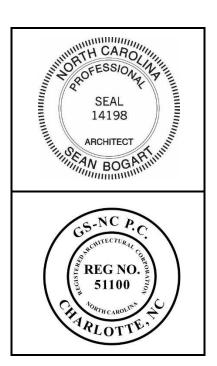
Gresham Smith

620 S Tryon Street Suite 500 Charlotte, North Carolina, 28202

B. PROFESSIONAL CORPORATION

Gresham Smith

620 S Tryon Street Suite 500 Charlotte, North Carolina, 28202



# **END OF DOCUMENT 00 0107**

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ISSUED	DATE
ISSUED FO CONSTRUCTION	09/05/2023

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**Project Location: Charlotte-Douglas International Airport** 

Charlotte, North Carolina

GS-NC P.C. Project No.: 47129.00

# SECTION 02 4119 SELECTIVE DEMOLITION

# **PART 1 GENERAL**

# 1.1 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.

# B. Related Requirements:

- Section 01 1000: Restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
- 2. Section 01 7300: Cutting and patching procedures.
- 3. Section 01 3516: General protection and work procedures for alteration projects.
- 4. Division 26: Disconnection of existing power and communication wiring, temporary provisions for areas to remain occupied. Cutting non-structural concrete floors and masonry walls for underground piping and ducts, and for above-grade piping, ducts, and conduit is included with work of respective mechanical and electrical Divisions 23 and 26 Specifications sections.
- 5. Section 31 1000: Site clearing and removal of above- and below-grade improvements not part of selective demolition.

# 1.2 **DEFINITIONS**

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

# 1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

# 1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site per requirements of Section 01 3100.
  - 1. Inspect and discuss condition of construction to be selectively demolished.
  - 2. Review areas where existing construction is to remain and requires protection.

# 1.5 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's [building manager's] [and] [other tenants'] on-site operations are uninterrupted.
  - 2. Use of elevator and stairs.
  - 3. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

Selective Demolition 02 4119 - 1 of 4

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# 1.6 FIELD CONDITIONS

A. Disclaimer: Drawings are based on information supplied by the Owner that has not been verified by the Architect or its consultants. The Architect therefore disclaims any warranty of correctness or completeness and Contractor is cautioned to carefully examine existing conditions before starting demolition operations.

- Locations and sizes of existing construction elements may vary from those depicted on the Drawings.
- B. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- C. Occupancy: See Section 01 1000. Owner reserves right to require work that affects Owner's normal use to be performed outside normal hours of occupancy or to be rescheduled without changes to Contract Sum or Time. Provide barricades and guards as needed for safety of occupants or as required by governing authorities.
- D. Exits: Maintain existing required means of egress for occupied spaces in lawful condition at all times.
- E. Existing Elevators: Use of existing elevators is subject to authorization by the Owner and provision of suitable protections for elevator finishes.
- F. Contractor is responsible for cleaning and repair of soiling and damage resulting from demolition operations inside or outside the building, and on other properties.
- G. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- H. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- I. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- J. Storage or sale of removed items or materials on-site is not permitted.
- K. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.
- Keep site and other areas clean and free from accumulation of debris and waste from demolition operations.
- M. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to minimize dust and dirt rising and scattering in air. Comply with governing regulations pertaining to environmental protection.
  - Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, excessive runoff, or pollution.

# 1.7 PART 2 PRODUCTS

# A. PERFORMANCE REQUIREMENTS

- 1. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- 2. Standards: Comply with ASSE A10.6 and NFPA 241.

Selective Demolition 02 4119 - 2 of 4

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# 1.8 PART 3 EXECUTION

# A. EXAMINATION

Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

- Comply with requirements specified in Section 01 3233.
- Inventory and record the condition of items to be removed and salvaged. Provide photographs
  or video of conditions that might be misconstrued as damage caused by salvage operations.
- c. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

# B. UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

1. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

# C. PROTECTION

- Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - c. Cover and protect furniture, supplies, and equipment that have not been removed.
  - d. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 5000 "Temporary Facilities and Controls."
- 2. Remove temporary barricades and protections where hazards no longer exist.

# D. SELECTIVE DEMOLITION, GENERAL

- Demolish and remove existing construction only to the extent required by new construction and as indicated.
- Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
- 3. Transport demolished materials through building to exterior in containers with solid sides and bottoms. Transport dusty, liquid, and hazardous demolished materials in fully enclosed containers.
- 4. Remove existing sealants and caulking as needed for installation of new work, and where they would be exposed to view in the finished work.

# E. SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

1. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.

# F. DISPOSAL OF DEMOLISHED MATERIALS

- 1. Remove demolition waste materials from Project site and recycle or dispose of them per Section 01 7419 "Construction Waste Management and Disposal".
  - a. Do not allow demolished materials to accumulate on-site.
  - b. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- 2. Do not burn demolished materials on site.

# G. REPAIRS

- Repair demolition performed in excess of that required. Return structures and surfaces to remain to not less than original condition. Repair existing construction or surfaces soiled or damaged by selective demolition operations.
- 2. Promptly repair damages caused by demolition operations to existing construction indicated to remain, including areas of facility outside Project limits.

Selective Demolition 02 4119 - 3 of 4

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3. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

# H. CLEANING

- 1. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.
- 2. Change filters on air handling equipment on completion of selective demolition operations.
- 3. Remove protections, and temporary partitions and closures when no longer needed or when directed by Architect.

ISSUED	DATE
ISSUED FOR CONSTRUCTION	09/05/2023

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**END OF SECTION** 

Selective Demolition 02 4119 - 4 of 4

**Project Location: Charlotte-Douglas International Airport** 

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# SECTION 04 2200 CONCRETE UNIT MASONRY

# **PART 1 - GENERAL**

# 1.1 SUMMARY

- A. Section Includes:
  - 1. Interior CMU partitions.
- B. Related Sections:
  - 1. Section 03 3000: Installation of dovetail slots for masonry anchors.

# 1.2 ACTION SUBMITTALS

- A. Prepare submittals per requirements of Section 01 3300 Submittal Procedures.
- B. Product Data:
  - 1. Each type of CMU.
  - 2. Ready-mix mortar.
  - 3. Ties and horizontal joint reinforcing.
  - Admixtures.
- C. Shop Drawings:
  - 1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
  - 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."[<>]

# 1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each type and size of the following:
  - Masonry units.
    - a. Include material test reports substantiating compliance with requirements.
  - 2. Factory-blended, dry mortar mixes. Include description of type and proportions of ingredients.
  - 3. Grout mixes. Include description of type and proportions of ingredients.
  - 4. Anchors, ties, and metal accessories.
- B. Mix Designs: For each type of mortar and. Include description of type and proportions of ingredients.
  - 1. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- C. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

# 1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.

# 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in dry locations. Do not use cementitious materials that have become damp.

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C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

# 1.6 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

# **PART 2 - PRODUCTS**

# 2.1 MANUFACTURERS

- A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

# 2.2 PERFORMANCE REQUIREMENTS

- A. Provide unit masonry that develops indicated net-area compressive strengths at 28 days.
  - Determine net-area compressive strength of masonry from average net-area compressive strengths
    of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in
    ACI 530.1/ASCE 6/TMS 602.

# 2.3 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

# 2.4 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
  - 1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
- B. CMU: ASTM C 129.
  - 1. Unit Compressive Strength: Minimum average net-area compressive strength of 2150 psi.
  - 2. Unit Compressive Strength: Specified on Structural Drawings.
  - 3. Density Classification: Normal weight.
  - 4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

# 2.5 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
  - 1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C 114.

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- B. Mortar Cement: ASTM C 1329; Factory-blended mix of Portland cement, hydrated lime, and sand.
  - 1. Subject to compliance with requirements, supply one of the following:
    - a. Lafarge North America Inc
    - b. SPEC MIX; Preblended Mortar Mixes.
- C. Aggregate for Mortar: ASTM C 144.
  - 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
  - 2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
- D. Aggregate for Grout: ASTM C 404.
- E. Epoxy Pointing Mortar: ASTM C 395, epoxy-resin-based material formulated for use as pointing mortar for glazed or pre-faced masonry units; in color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's colors.
- F. Water: Potable.

# 2.6 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.
- B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.
- C. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.
  - 1. Interior Walls: Mill- galvanized, carbon steel.
  - 2. Wire Size for Side Rods: 0.148-inch diameter.
  - 3. Wire Size for Cross Rods: 0.148-inch diameter.
  - 4. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
- D. Masonry Joint Reinforcement for Single-Wythe Masonry: truss type with single pair of side rods.

# 2.7 TIES AND ANCHORS

- A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
  - Mill-Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 641/A 641M, Class 1 coating.
- B. Adjustable Anchors for Connecting to Concrete: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
  - 1. Connector Section: Screw-attached anchor section 1-1/4 inches wide by 6 inches long with screw holes top and bottom and with raised rib-stiffened strap stamped into center to provide slot between strap and base for inserting wire tie. Supply with concrete screws or expansion anchors.

# 2.8 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Factory-molded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from TBD.
- B. Manufactured Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

Concrete Unit Masonry 04 2200 - 3 of 6

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# 2.9 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
  - 1. Interior CMU: mortar cement mortar.
  - 2. Do not use calcium chloride in mortar or grout.
- B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
  - 1. For interior non-load-bearing partitions, Type O may be used instead of Type N.
- C. Grout for Unit Masonry: Comply with ASTM C 476.
  - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
  - 2. Proportion grout in accordance with ASTM C 476, TBD.
  - 3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

# **PART 3 - EXECUTION**

# 3.1 EXAMINATION

- A. Verify that reinforcing dowels are properly placed.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

# 3.2 INSTALLATION, GENERAL

A. Use full-size units without cutting where possible. If cutting is required to provide continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

# 3.3 TOLERANCES

- A. Dimensions and Locations of Elements:
  - For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
  - 2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
  - 3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.
- B. Lines and Levels:
  - 1. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
- C. Joints:
  - For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
  - 2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.

# 3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

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B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

- C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar before laying fresh masonry.
- D. Install compressible filler in joints between masonry and structural steel or concrete.

# 3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMU as follows:
  - 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- C. Cut joints flush for masonry walls that receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

# 3.6 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:
  - 1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials. Fill space with compressible filler or fiberglass board insulation.
  - 2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
  - 3. Space anchors as indicated, but maximum 24 inches o/c vertically and 36 inches o/c horizontally.

# 3.7 FIELD QUALITY CONTROL

- Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
- B. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.
- Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for TBD.
- D. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

# 3.8 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
  - Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

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- 2. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
- 3. Saturate wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
- Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

# 3.9 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

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**END OF SECTION** 

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## SECTION 07 8400 FIRESTOPPING

#### **PART 1 GENERAL**

#### 1.1 RELATED REQUIREMENTS

- A. Section 01 6116 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 01 7000 Execution and Closeout Requirements: Cutting and patching.
- C. Section 10 1473 Painted Signage: Fire and Smoke Assembly Identification

#### 1.2 REFERENCE STANDARDS

- A. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- B. ASTM E814 Standard Test Method for Fire Tests of Penetration Firestop Systems 2023a.
- C. ASTM E1966 Standard Test Method for Fire-Resistive Joint Systems 2015 (Reapproved 2019).
- D. ASTM E2174 Standard Practice for On-Site Inspection of Installed Firestop Systems 2020a.
- E. ASTM E2393 Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers 2020a.
- F. ASTM E2837 Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies 2013 (Reapproved 2017).
- G. SCAQMD 1168 Adhesive and Sealant Applications 1989, with Amendment (2022).
- H. UL 1479 Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.
- UL 2079 Standard for Tests for Fire Resistance of Building Joint Systems Current Edition, Including All Revisions.
- J. UL (FRD) Fire Resistance Directory Current Edition.

# 1.3 SUBMITTALS

- A. See Section 01 3300 for submittal procedures.
- B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
- C. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- D. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.
- E. Installer's qualification statement.

## 1.4 QUALITY ASSURANCE

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
- B. Installer Qualifications: Company specializing in performing the work of this section and:

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1. Verification of minimum three years documented experience installing work of this type.

#### 1.5 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

## **PART 2 PRODUCTS**

## 2.1 MANUFACTURERS

- A. Firestopping Manufacturers:
  - 1. 3M Fire Protection Products: www.3m.com/firestop/#sle.
  - 2. A/D Fire Protection Systems Inc: www.adfire.com/#sle.
  - 3. Hilti, Inc: www.hilti.com/#sle.
  - 4. Nelson FireStop Products: www.nelsonfirestop.com/#sle.
  - 5. RectorSeal, a CSW Industrials Company: www.rectorseal.com/firestop-solutions/#sle.
  - 6. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
  - 7. Substitutions: See Section 01 6000 Product Requirements.

#### 2.2 MATERIALS

- Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.
- B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- C. Fire Ratings: Refer to drawings for required systems and ratings.

## 2.3 FIRESTOPPING ASSEMBLY REQUIREMENTS

- A. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
  - 1. F-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated.
  - 2. T-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.

# 2.4 FIRESTOPPING SYSTEMS

- A. Firestopping: Any material meeting requirements.
  - Fire Ratings: Use system that is listed by UL (FRD) and tested in accordance with ASTM E814 or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

#### **PART 3 EXECUTION**

#### 3.1 EXAMINATION

- A. Verify openings are ready to receive the work of this section.
- B. Verify that surfaces of openings are sound, clean, dry, and ready to receive application of sealants.

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#### 3.2 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

- B. Comply with manufacturer recommendations and with the following requirements:
  - Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping materials.
  - 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping materials. Remove loose particles remaining from cleaning operation.
  - 3. Remove laitance and form-release agents from concrete.
- C. Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- D. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
- E. Apply materials so they contact and adhere to substrates formed by openings and penetrating item
- F. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.
- G. Do not cover installed firestopping until inspected by authorities having jurisdiction.
- H. Install labeling required by code.

# 3.3 FIELD QUALITY CONTROL

- A. Independent Testing Agency: Inspection agency employed and paid by Owner, will examine penetration firestopping in accordance with ASTM E2174 and ASTM E2393.
- B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

# 3.4 CLEANING

A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping system manufacturers and that do not damage materials in which openings occur.

## 3.5 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

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## SECTION 07 9200 JOINT SEALANTS

#### **PART 1 GENERAL**

#### 1.1 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Joint backings and accessories.

## 1.2 RELATED REQUIREMENTS

 Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

#### 1.3 REFERENCE STANDARDS

- A. ASTM C794 Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants 2018 (Reapproved 2022).
- B. ASTM C920 Standard Specification for Elastomeric Joint Sealants 2018.
- C. ASTM C1087 Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems 2023.
- D. ASTM C1193 Standard Guide for Use of Joint Sealants 2016 (Reapproved 2023).
- E. ASTM C1330 Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants 2023.
- F. ASTM C1521 Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints 2019 (Reapproved 2020).

#### 1.4 SUBMITTALS

- A. See Section 01 3300 for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
  - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
  - 2. List of backing materials approved for use with the specific product.
  - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
  - 4. Substrates the product should not be used on.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Field Quality Control Log: Submit filled-out log for each length or instance of sealant installed, within 10 days after completion of inspections/tests; include bagged test samples and photographic records, if any.
- E. Installer's qualification statement.
- F. Executed warranty.

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#### 1.5 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

- B. Field Quality Control Plan:
  - 1. Visual inspection of entire length of sealant joints.
  - 2. Nondestructive field adhesion testing of sealant joints, except interior acrylic latex sealants.
    - a. For each different sealant and substrate combination, allow for one test every 12 inches in the first 10 linear feet of joint and one test every 24 inches thereafter.
    - b. If any failures occur in the first 10 linear feet, continue testing at 12 inches intervals at no extra cost to Owner.
  - 3. Field testing agency's qualifications.
  - 4. Field Quality Control Log Form: Show same data fields as on Preinstallation Field Adhesion Test Log, with known information filled out and lines for multiple tests per sealant/substrate combinations; include visual inspection and specified field testing; allow for possibility that more tests than minimum specified may be necessary.
- C. Field Adhesion Test Procedures:
  - 1. Allow sealants to fully cure as recommended by manufacturer before testing.
  - 2. Have a copy of the test method document available during tests.
  - 3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
  - 4. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
  - 5. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
  - 6. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.
- D. Nondestructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Spot Method.
  - 1. Record results on Field Quality Control Log.
  - 2. Repair failed portions of joints.

#### 1.6 WARRANTY

- A. See Section 01 7800 Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

# **PART 2 PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Nonsag Sealants:
  - 1. Dow: www.dow.com/#sle.
  - 2. Hilti, Inc: www.hilti.com/#sle.
  - 3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
  - 4. Substitutions: See Section 01 6000 Product Requirements.

## 2.2 JOINT SEALANT APPLICATIONS

- A. Scope:
  - Interior Joints
    - a. Seal open joints except specific open joints indicated on drawings as not sealed.

2. Do Not Seal:

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a. Intentional weep holes in masonry.

- b. Joints indicated to be covered with expansion joint cover assemblies.
- Joints where sealant is specified to be furnished and installed by manufacturer of product to be sealed.
- d. Joints where sealant installation is specified in other sections.

#### 2.3 JOINT SEALANTS - GENERAL

- Sealants and Primers: Provide products with acceptable levels of volatile organic compound (VOC) content; see Section 01 6116.
- B. Colors: Grey

## 2.4 NONSAG JOINT SEALANTS

- A. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; multi-component; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 50 percent, minimum.
  - 2. Color: Match adjacent finished surfaces.
  - 3. Service Temperature Range: Minus 40 to 180 degrees F.
  - 4. Products:
    - a. Master Builders Solutions: www.master-builders-solutions.com/en-us/#sle.
    - b. Pecora Corporation: www.pecora.com/#sle.
    - c. Sika Corporation: www.usa.sika.com/#sle.
    - d. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
    - e. Substitutions: See Section 01 6000 Product Requirements.
- B. Acrylic-Urethane Sealant: ASTM C920, Grade NS, Uses M and A; single component; paintable; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 12-1/2 percent, minimum.

## 2.5 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
  - 1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type C Closed Cell Polyethylene.
  - 2. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

## **PART 3 EXECUTION**

# 3.1 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.

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C. Verify that backer rods are of the correct size.

## 3.2 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

#### 3.3 INSTALLATION

- Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

## 3.4 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements for additional requirements.
- B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- C. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet, notify Architect immediately.
- D. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.
- E. Repair destructive test location damage immediately after evaluation and recording of results.

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## SECTION 08 3100 ACCESS DOORS AND PANELS

#### **PART 1 GENERAL**

#### 1.1 SECTION INCLUDES

A. Wall- and ceiling-mounted access units.

#### 1.2 RELATED REQUIREMENTS

A. Section 23 3300 - Air Duct Accessories: Access doors in ductwork.

#### 1.3 REFERENCE STANDARDS

A. UL (FRD) - Fire Resistance Directory Current Edition.

#### 1.4 SUBMITTALS

- A. See Section 01 3300 Submittal Procedures, for submittal procedures.
- B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- C. Shop Drawings: Indicate exact position of each access door and/or panel unit.
- D. Manufacturer's Installation Instructions: Indicate installation requirements.

#### 1.5 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

# PART 2 PRODUCTS

#### 2.1 ACCESS DOORS AND PANELS ASSEMBLIES

- A. Fire-Rated Wall-Mounted Units:
  - 1. Location: As indicated on drawings.
  - 2. Wall Fire-Rating: 1 hour.
  - 3. Panel Material: Steel.
  - 4. Size: Field Verified Size.
  - 5. Door/Panel: Insulated double-surface panel, with tool-operated spring or cam lock and no handle.
- B. Fire-Rated Ceiling-Mounted Units:
  - 1. Location: As indicated on drawings.
  - 2. Ceiling Fire-Rating: 1 hour.
  - 3. Panel Material: Steel.
  - 4. Size: Field Verified Size.
  - 5. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

#### 2.2 WALL- AND CEILING-MOUNTED ACCESS UNITS

- A. Manufacturers:
  - 1. ACUDOR Products Inc: www.acudor.com/#sle.
  - 2. Babcock-Davis: www.babcockdavis.com/#sle.
  - 3. Cendrex, Inc: www.cendrex.com/#sle.
  - 4. Elmdor: www.elmdor.com/#sle.

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- 5. Nystrom, Inc; www.nystrom.com/#sle.
- 6. Substitutions: See Section 01 6000 Product Requirements.
- B. Wall- and Ceiling-Mounted Units: Factory-fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
  - Material: Steel.
  - 2. Style: Exposed frame with door surface flush with frame surface.
  - 3. Door Style: Single thickness with rolled or turned in edges.
  - 4. Insulation: Non-combustible mineral wool or glass fiber.
  - 5. Units in Fire-Rated Assemblies: Fire rating as required by applicable code for fire-rated assembly that access doors are being installed.
    - a. Provide products listed by UL (FRD) as suitable for purpose indicated.
    - b. Provide certificate of compliance from authorities having jurisdiction indicating approval of fire rated doors.
  - 6. Steel Finish: Primed.
  - 7. Primed and Factory Finish: Polyester powder coat; color GREY
  - Hardware:
    - a. Hardware for Fire-Rated Units: As required for listing.
    - b. Hinges for Non-Fire-Rated Units: Concealed, constant force closure spring type.
    - c. Latch/Lock: Prepared for mortise cylinder

#### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that rough openings are correctly sized and located.
- B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

## 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to proceeding with this work.
- B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

## 3.3 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in openings, and secure units rigidly in place.
- C. Position units to provide convenient access to concealed equipment when necessary.

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# SECTION 09 0561 COMMON WORK RESULTS FOR FLOORING PREPARATION

#### **PART 1 GENERAL**

#### 1.1 SECTION INCLUDES

- A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
  - 1. Fluid Applied Flooring.
- B. Removal of existing floor coverings.
- C. Preparation of existing concrete floor slabs for installation of floor coverings.
- D. Testing of concrete floor slabs for moisture and alkalinity (pH).
- E. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
  - Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.
- F. Patching compound.
- G. Remedial floor coatings/vapor sealers.

## 1.2 RELATED REQUIREMENTS

A. Division 09 flooring sections for acceptable moisture and alkalinity levels for each flooring type.

## 1.3 REFERENCE STANDARDS

- A. ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens) 2021.
- B. ASTM C472 Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete 2020.
- C. ASTM D4259 Standard Practice for Preparation of Concrete by Abrasion Prior to Coating Application 2018.
- D. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.
- E. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.

#### 1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordinate scheduling of cleaning and testing, so that preliminary cleaning has been completed for at least 24 hours prior to testing.

#### 1.5 SUBMITTALS

- A. See Section 01 3300 Submittal Procedures for submittal procedures.
- B. Visual Observation Report: For existing floor coverings to be removed.

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- C. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
  - Moisture and alkalinity (pH) limits and test methods.
  - 2. Manufacturer's required bond/compatibility test procedure.
- Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
  - Certificate: Manufacturer's certification of compatibility with types of flooring applied over remedial product.
- E. Installer's Qualification Statement.
- F. Testing Agency's Report:
  - 1. Description of areas tested; include floor plans and photographs if helpful.
  - 2. Summary of conditions encountered.
  - 3. Moisture and alkalinity (pH) test reports.
  - 4. Copies of specified test methods.
  - 5. Recommendations for remediation of unsatisfactory surfaces.
  - 6. Submit report directly to Owner.
  - 7. Submit report not more than two business days after conclusion of testing.
- G. Adhesive Bond and Compatibility Test Report.
- H. Floor Moisture Testing Technician Certificate: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician- Grade I certificate.

#### 1.6 QUALITY ASSURANCE

- A. Moisture and alkalinity (pH) testing shall be performed by an independent testing agency employed and paid by Contractor.
- B. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
- C. Contractor's Responsibility Relating to Independent Agency Testing:
  - 1. Provide access for and cooperate with testing agency.
  - 2. Achieve and maintain specified ambient conditions.
  - 3. Notify Owner when specified ambient conditions have been achieved and when testing will start.
- D. Floor Moisture Testing Technician Qualifications: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician Certification- Grade I.
- E. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years' experience installing moisture emission coatings.

## 1.7 WARRANTY

- A. Manufacturer Warranty: Warrant vapor sealer treatment performance for period of 15 years. Warranty shall include:
  - Cost of replacing floor covering products and their installation damaged by moisture vapor emission through treated concrete slabs.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.

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Keep materials from freezing.

#### 1.9 FIELD CONDITIONS

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

#### **PART 2 PRODUCTS**

#### 2.1 MATERIALS

- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
  - 1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
  - 2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
  - 3. Products:
    - a. ARDEX Engineered Cements; ARDEX Feather Finish: www.ardexamericas.com/#sle.
    - b. H.B. Fuller Construction Products, Inc; TEC Feather Edge Skim Coat: www.tecspecialty.com/#sle.
    - c. USG Corporation; Durock Brand Advanced Skim Coat Floor Patch: www.usg.com/#sle.
- B. Vapor Emission Coating/Sealer for Existing Concrete: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
  - 1. Thickness: As required for application and in accordance with manufacturer's installation instructions.
  - 2. Products:
    - a. ARDEX Engineered Cements; ARDEX MC RAPID: www.ardexamericas.com/#sle.
    - b. Creteseal; MAX System: www.creteseal.com/#sle.
    - LATICRETE International, Inc; LATICRETE NXT Vapor Reduction Coating : www.laticrete.com/#sle.
- C. Primer for Underlayment: As recommended by sealer manufacturer.

#### PART 3 EXECUTION

#### 3.1 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
  - 1. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:
    - a. Remove existing coatings and curing agents from surface according to recommendations of remedial coating manufacturer.
    - b. Prepare surface according to recommendations of remedial coating manufacturer and according to ASTM D4259.
  - 2. Preliminary cleaning.
  - 3. Moisture vapor emission tests; in each of the spaces designated on the drawings to receive new flooring; or as indicated or required by flooring manufacturer.
  - Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
  - 5. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
  - 6. Specified remediation, if required.

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- 7. Patching, smoothing, and leveling, as required.
- 8. Other preparation specified.
- 9. Adhesive bond and compatibility test.
- 10. Protection.

#### B. Remediations:

- Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
- Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of
  moisture present is available and acceptable to flooring manufacturer, use that adhesive for
  installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over
  entire suspect floor area.
- 3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

#### 3.2 REMOVAL OF EXISTING FLOOR COVERINGS

A. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

#### 3.3 PRELIMINARY CLEANING

- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

#### 3.4 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

# 3.5 ALKALINITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
  - 1. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
  - 2. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test

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paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.

- 3. Use of a digital pH meter with probe is acceptable; follow meter manufacturer's instructions.
- C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

## 3.6 PREPARATION

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

## 3.7 ADHESIVE BOND AND COMPATIBILITY TESTING

A. Comply with requirements and recommendations of floor covering manufacturer.

#### 3.8 APPLICATION OF REMEDIAL FLOOR COATING

A. Comply with requirements and recommendations of coating manufacturer.

# 3.9 PROTECTION

A. Cover prepared floors with building paper or other durable covering.

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## SECTION 09 6700 FLUID-APPLIED FLOORING

#### **PART 1 GENERAL**

#### 1.1 SECTION INCLUDES

A. Fluid-applied flooring and base.

#### 1.2 RELATED REQUIREMENTS

- A. Section 07 9200 Joint Sealants: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.
- B. Section 09 0561 Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

#### 1.3 REFERENCE STANDARDS

A. ANSI/ESD STM7.1 - The Protection of Electrostatic Discharge Susceptible Items Flooring Systems Resistive Characterization 2021.

## 1.4 SUBMITTALS

- A. See Section 001 3300 Submittal Procedures for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- C. Samples: Submit two samples, 12" square in size illustrating color and pattern for each floor material for each color specified, applied to rigid backing by Installer for this Project
- Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and application rate for each coat.
- E. Manufacturer's Qualification Statement.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 Product Requirements, for additional provisions.
  - Extra Top Coat Materials: 2 gallons.

# 1.5 SUSTAINABLE DESIGN SUBMITTALS

 Laboratory Test Reports: For flooring products, indicating compliance with requirements for low-emitting materials.

#### 1.6 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section.
  - 1. Minimum 3 years of documented experience.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store resin materials in a dry, secure area.
- B. Store materials for three days prior to installation in area of installation to achieve temperature stability.

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#### 1.8 FIELD CONDITIONS

- A. Maintain minimum temperature in storage area of 55 degrees F.
- B. Store materials in area of installation for minimum period of 24 hours prior to installation.
- C. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.

#### **PART 2 PRODUCTS**

#### 2.1 FLUID-APPLIED FLOORING SYSTEMS

- A. Fluid-Applied Flooring: Epoxy, with aggregate.
  - 1. Aggregate: Aluminum Oxide Broadcast.
  - 2. System Thickness: 40 mils, nominal, dry film thickness (DFT).
  - 3. Texture: Slip resistant.
  - 4. Sheen: Gloss.
  - 5. COLOR: Floor & Cove Base Slate Gray
  - 6. COLOR: Equipment Pads Safety Yellow
  - 7. Basis of Design Product: Dur-A-Flex;[Dur-A-Gard MR]: www.dur-a-flex.com
  - Products:
    - a. Elite Crete Systems; E100-NV4 Novolac Protective Coating: www.elitecrete.com/#sle.
    - b. PPG Flooring; Concrete Epoxy Primer Clear FLR900-0, Low Gloss, with Self-Leveling Epoxy FLR600 Series, High Gloss, and Epoxy Siloxane FLR450-0 Series, Satin: www.ppgpaints.com
    - c. Stonhard; Stonclad: www.stonhard.com/#sle.
    - d. Substitutions: See Section 01 6000 Product Requirements.

# 2.2 ACCESSORIES

- A. Floor Leveling Underlayment: See Section 03 5400 Cast Underlayment.
- B. Base Caps: Zinc with projecting base of 1/8 inch; color as selected.
- C. Cant Strips: Molded of flooring resin material.
- D. Subfloor Filler: Type recommended by fluid-applied flooring manufacturer.
- E. Primer: Type recommended by fluid-applied flooring manufacturer.

#### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dustfree, and are ready to receive flooring.
- C. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of materials to subfloor surfaces.
- D. Cementitious Subfloor Surfaces: Verify that substrates are ready for fluid-applied flooring installation by testing for moisture and alkalinity (pH).
  - 1. Test in accordance with Section 09 0561.
  - 2. Obtain instructions if test results are not within limits recommended by fluid-applied flooring manufacturer.

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3. Follow moisture and alkalinity remediation procedures in Section 09 0561.

## 3.2 PREPARATION

- A. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.
- D. Apply primer to surfaces required by flooring manufacturer.

#### 3.3 INSTALLATION - ACCESSORIES

- A. Install cant strips at base of walls where flooring is to be extended up wall as base.
- B. Install terminating cap strip at top of base; attach securely to wall substrate.

## 3.4 INSTALLATION - FLOORING

- A. Apply in accordance with manufacturer's instructions.
- B. Apply each coat to minimum thickness required by manufacturer.
- C. Finish to smooth level surface.
- D. Cove at vertical surfaces.

#### 3.5 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Test installed floor surface in accordance with ANSI/ESD STM7.1.

# 3.6 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.
- B. Barricade area to protect flooring until fully cured.

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# SECTION 10 1473 PAINTED SIGNAGE

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Wall-identification signs for fire and smoke assemblies.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For painted signs.
  - 1. Show message list, typestyles, graphic elements, and layout for each sign at least half size.

#### 1.3 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

#### **PART 2 - PRODUCTS**

## 2.1 PAINTED SIGNS

A. Wall-Identification Sign: Sign applied directly on indicated substrate to identify fire and smoke assemblies, including preparatory treatment as required.

#### 2.2 PAINT MATERIALS

- A. Sign Paints and Coatings: Inks, dyes, and paints that are recommended in writing by manufacturer for optimum adherence to substrate and are UV and water resistant for colors and exposure indicated.
  - 1. Compatibility: Provide paint materials that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- B. VOC Content
  - Flat Paints and Coatings: 50 g/L.
- C. Low-Emitting Materials: For field applications that are inside the weatherproofing system, 90 percent of paints and coatings shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

#### **PART 3 - EXECUTION**

# 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for conditions affecting performance. Comply with paint manufacturer's written instructions for inspection.
- B. Proceed with installation only after unsatisfactory conditions have been corrected and surface is dry.
  - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

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#### 3.2 INSTALLATION

- A. Appearance Standard: Completed sign work shall have a sharp and uniformly delineated appearance as viewed by Architect from building interior at 5 feet .
- B. Comply with manufacturers' written instructions for surface preparation and paint-application for each substrate condition.
- C. Install signs level, plumb, true to line, with uniform delineation and borders, and at locations and heights indicated.
  - Prespaced characters with template, cutout stencil, or ruler and straightedge.

## 3.3 MARKING FIRE AND SMOKE ASSEMBLIES

A. Wall-Identification Signs: Permanently identify both sides of each fire and smoke assembly indicated on Drawings. Place signs in accessible, concealed floor, floor-ceiling, or attic space at maximum 15 feet from end of wall and at maximum intervals of 30 feet , measured horizontally along the assembly. Locate signs for greatest visibility in the space.

# 3.4 ADJUSTING AND CLEANING

- A. Remove and reapply damaged or deformed signs and signs that do not comply with specified requirements. Reapply signs with damaged or deteriorated finishes that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- C. Remove temporary protective coverings and strippable films as signs are installed.

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**END OF SECTION** 

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Subject	Question	Response
- Who is validating floor drain working / in RM M0-4550 - Drilling/anchoring time restrictions from noise	-Successful bidder to confirm floor drain working before demolition and relocation. The successful bidder shall confirm sanitary drain pipe usage using sewer camera.	
	-Noise producing work times are location dependent. For this scope, Noise producing work will generally be allowed during normal working hours unless specific complaints from tenants are observed. In these cases, work will be scheduled for the least dispruptions.	
	-Hot taps will follow Successful Bidders means, methods, and safety procedures. These activities have the potential to impact operations, therefore approval of times and locations will be handled through the e-Builder Construction Logistics Impact notice process.	
	Chemical treatment allowance to be calculated by each bidder based on volume of pipe and noted isolation points. The approximate length of piping as shown in the bid documents is 500ft of 10° heating hot water piping and 500ft of 12° childle water piping. The successful bidder shall be responsible for draining this piping on a seasonal basis and shall be responsible for purging air during piping system reltif. All bidders shall carry an allowance of 500ff to their base bid to cover the cost of replenshing chemicals for this project.	
	- Hot tap work permit requirements - Need chem treatment allowance?	-See Chemical treatment response.
Mechanical Questions	- Any core drilling procedure requirements	-Successful bidder to bleed air from system with coordination from CLT.
Wednamear Questions		-Asbestos: It is the Airport's understanding that all existing piping insulation does not contain asbestos. It is the resopnsibility of the successful bidder to test all existing material in question of containing asbestos. Notify the Airport immediately of any materials testing positive.
- any future expansions valves needed for FCU piping - Is ProPress acceptable? - JCl is controls - do we carry them?	The Successful bidder will need to designate two Authorized Signers. These individuals will then be granted permission to submit badge applications for their employees. Generally, this requires application submissions with two forms of ID, flinger printing, background checks, and then passing a Badging Test for the applicant. Once the Test is passed, a badge will be issued. Access can then be requested for the work areas from Security.	
		-Core drilling will follow Successful Bidders means and methods. Any damage resulting from inaddequate investigation will be the the responsibility of the Successful Bidder to remedy at their cost.
	- Valves shall only be installed as shown on the plans for branch line and individual fan coil unit isolation Mechanically pressed fittings are acceptable for all copper piping 2" and smaller in easily accessible areas. Copper piping behind walls and in concealead areas shall be soldered. Piping larger than 2" shall be welded back steel. The valves being installed at the baggage handling room shall be fittinged.	
	- The successful bidder shall extend the existing Johnson Controls Metasys building automation system as needed to integrate the new mechanical equipment. A price to carry a specific controls vendor will not be included in this contract, but the bidder shall identify assumptions, controls equipment manufacturers, and proposed methods to extend the existing controls system E2	
Bid extension	Can we get a 1 week bid extension to finish up questions?	No.
Electrical Panelboard/Switchboard Manufacturer	Please refer to sheet E002 (Electrical Specifications): Section 26 24 fb; 2.1 A and 2.1. C. Many of the replaced panelboards/switchboards being replaced are GE (General Electric). Please advise if General	No. Contractor must meet all requirements of specifications including specified manufacturers
Electric is acceptable manufacturer for Panelboards and Switchboards, in lieu of Square D and Eaton, so long as all requirements of Drawings/Specs are met.		
Panel Schedule	I don't see the panel board schedules in the bid packages. Am I missing them?	Panel schedules will be included in addendum drawings which will clarify information on electrical sheets including but not limited to: riser diagrams, floor plans, and panel schedules.
Bid Bond Listing on Bid Form	Please advise why Bid Bond cost/amount is being listed on Bid Form. This is the first time I have ever seen the itemized cost required for the bid form. Please advise.	This is standard on our ITB construction template. It's not the "cost" to secure a 5% base bid bond. You're going to insert 5% of your base bid.

# A. ITEMIZED BID

with all conditions and requirements of the Wo	ined the Bidding and Contract Documents, and having visited the site, and being familia ork, hereby agrees to furnish all material, labor, equipment, permits and services, o complete the Work for the above-named project, in accordance with the requirements o	
BASE BID		
	Dollars (\$	)
TEN PERCENT (10%) OWNER'S CONTINGENCY	(Not included in Base Bid)	
	Dollars (\$	_)
after notice of award, if offered within 120 cal	Agreement for the above amount and to furnish surety as specified within 10 days lendar days after receipt of bids, and upon failure to do so agrees to forfeit the , U. S. money order, or bid bond, as liquidated damages for such failure, in the amount of the control of the co	
the stated amount constituting five percent (5%	Dollars (\$	_)
ADD ALTERNATE 01: Electrical Panel and Feede	er Cable Replacement (not included in base bid)	
	Dollars (\$	_)
the below subdivisions of work. A contractor the subcontractor listed in the original bid, exc		f
Floatrical	License #	
Electrical  Mechanical, if applicable	License #License #	
• • • • • • • • • • • • • • • • • • • •	License #	
Fire Protection, if applicable	License #	

Attached to this Bid Form and incorporated herein are the following documents, completed in full by the undersigned:

Certificate of Non-Discrimination CBI Form # 3 Bid Bond

**BID SUPPLEMENTS** 

**Project Name:** 

Project No.:

Charlotte Douglas International Airport

PLEASE NOTE: FAILURE TO SUBMIT THE REQUIRED BID SUPPLEMENTS MAY RESULT IN REJECTION OF BID.

## **CONTRACTOR'S LICENSE**

The undersigned further states that he is a duly licensed Contractor, for the type of work proposed, in the State of North Carolina, and that all fees, permits, etc., pursuant to the submission of this proposal have been paid in full. LICENSE # \_\_\_\_\_\_\_.

# **CONFIDENTIALITY REQUIREMENTS**

By signing this bid form, I acknowledge that I have read and understood the confidentiality agreement as stated in the Instruction to Bidders, Section 13.