ABBREVIATIONS

<u>ABR.</u>	DESCRIPTION	<u>ABR.</u>	DESCRIPTION	<u>ABR.</u>	DESCRIPTION
AB	ANCHOR BOLT	EXIST	EXISTING	PART BD	PARTICLE BOARD
ABS	ACRYLONITRILE-BUTADIENF	EXP	EXPANSION	PART'N	PARTITION
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-STYRENE	FXT	FXTFRIOR	P-I AM	PI ASTIC I AMINATE PI ATE
AC	ACOUSTIC. ACOUSTICAL	FD	FLOOR DRAIN	PLYWD	PLYWOOD
ACC STA	ACCESSIBLE STATION	FDN	FOUNDATION	PRFFAB	PREFARRICATED
AD	ADDENDUM	FFC	FIRE EXTINGUISHER CABINET	PROJ	PROJECTION
AD.I		FIN	FINISH	PT	PRESERVATIVE TREATED
AFF	ABOVE FINISH FLOOR	FIR	FLOOR	PVC	POLYVINYL CHLORIDE
ALT	ALTERNATE	FTG	FOOTING	TQ	OUABBY THE
ALUM	ALUMINUM	GA	GAUGE	R/	ROUND
ASI	ABCHITECT SUPPLEMENTAL	GAI V	GAI VANIZED	BAD	RADIUS
	INSTRUCTION	GI	GAI VANIZED IBON	RD	ROOF DRAIN
ASPH	ASPHALT	GYP BD	GYPSUM BOARD	RFF	REFRIGERATOR
			HARDWOOD	REINE	REINFORCE
BB	BASKETBALL	HM	HOLLOW METAL	RFV	REVISION
BD	BOARD	HORI7	HORIZONTAL	RFI	REQUEST FOR INFORMATION
BLDG	BUILDING	HT	HEIGHT	RO	ROUGH OPENING
BLEG	BLOCKING	חו		SCHED	SCHEDULE
BM	BENCH MARK	INSUI		SHT	SHEFT
BO	BOTTOM OF	INT		SIM	SIMILAR
BRG	BEARING	.IT	IOINT	SPEC	SPECIFICATION
RSMT	BASEMENT	KD		50	SOLIABE
BIIB		KO		50 50	STAINI ESS STEEL
C.	CHANNEL	I	ANGLE		STANDARD
CB					STANDAND
C C		ΜΔΥ		STOR	STORAGE
CLG	CEILING	MR		STRUCT	STRUCTURAL
CMU		MECH	MECHANICAL		
CO		MEB	MANUFACTURER	272	SVSTEM
COL		MH			
	CONCRETE	MIN	MINIMIM	TR	
CONN	CONNECTION	MISC			ΤΕΜΡΟΒΔΒΥ
CONT	CONTINUOUS	MO			
CONTR	CONTRACTOR	MT			
CT			METAI		
d					
u DIM				T.U. TOII	
וויו פח					
/F)		0.0. 00			
(L) EA					
				U.IN.U. M/	
EILQ				VV \\//	
		UF/UI			
EWU	ELEUTKIU WATEK UUULEK	0.1.5.	UPEN TO STRUCTURE	WWF	WELDED WIKE FABRIC

SHEET INDEX

NOTE: THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT ARE COMPOSED OF SETS OF DRAWINGS AND SPECIFICATIONS, AND THEREFORE SHALL BE USED AND MAINTAINED IN THEIR ENTIRETY. ANY CONTRACTOR, SUBCONTRACTOR, VENDOR OR PARTY PARTICIPATING IN OR BIDDING ON THIS PROJECT SHALL BE EXPECTED TO PERFORM DUE DILIGENCE TO ENSURE THEIR BID, WORK PERFORMED, AND MATERIALS PROVIDED CONFORMS TO THE INFORMATION PROVIDED WITHIN ANY AND ALL SHEETS OF DRAWINGS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO, ANY SUBSEQUENT ADDENDA OR CLARIFICATIONS THAT MAY BE ISSUED RELEVANT TO THEIR SCOPE OF WORK. PROJECT SCOPE MAY BE DEFINED WITHIN SPECIFICATIONS AND/OR DRAWINGS.

ADDITIONALLY, DRAWINGS MAY NOT BE RE-SCALED WHEN PRINTED, WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE, AND LARGER SCALE DRAWINGS SHALL HAVE PRECEDENCE OVER SMALLER SCALE DRAWINGS.

ANY DEVIATION FROM OR CONFLICT WITHIN THE DRAWINGS AND/OR SPECIFICATIONS, MUST BE SUBMITTED VIA REQUEST FOR INFORMATION (RFI) AND RESPONDED TO BY THE ARCHITECT PRIOR TO BID OR BEFORE CONTINUING THAT PORTION OF WORK.

GENERAL:	
G-001	COVER SHEET - PROJECT INFORMATION

ARCHITECTUR	AL:
A-101	FLOOR PLAN, DEMOLITION PLAN & DETAILS
A-601	SCHEDULE - FINISH
ELECTRICAL:	
EE001	ABBREVIATIONS, G.P.N. LEGEND & SHEET INDEX
EE002	SPECIFICATION

EE101 ELECTRICAL POWER PLAN

OWNER

BRIDGERLAND TECHNICAL COLLEGE 1301 N 600 W LOGAN, UT 84321 PHONE: 435.753.6780

ARCHITECT

DESIGN WEST ARCHITECTS 255 S 300 W LOGAN, UT 84321 PHONE: 435.752.7031 stephenw@designwestarchitects.com STEPHEN WILLIAMS

MATERIALS LEGEND

SYMBOLS LEGEND

DESCRIPTION	<u>SYMBOL</u>	DESCRIPTION	<u>SYMBOL</u>	MATERIAL	<u>SYMBOL</u>
BUILDING SECTION	A1 A-101			EARTH	
	\checkmark		A1 DETAIL	ASPHALT PAVING	
		DRAWING TAG	1/8" = 1'-0" SUB DESCRIPTION	COMPACTED GRANULAR FILL	
WALL SECTION	A-101			CONCRETE	
	•	WINDOW TYPES	STOREFRONT/	CONCRETE MASONRY UNITS	
DFTAII	A1		CURTAIN WALL	BRICK	
	A-101	WALL TYPES	— S6A	STEEL	
	\frown		DOOR NUMBER	CONTINUOUS WOOD	
SECTION DETAIL		DOOR TAG	ATUTB AQTIFINA FRAME TYPE	WOOD BLOCKING	
			HARDWARE #	PLYWOOD / OSB	
		Keynotes —————	04.03 NOTE #	PARTICLE BOARD	
ELEVATION LEVEL	ELEVATION		DIVISION #	INSULATION	
		REVISIONS		RIGID INSULATION	
	INTERIOR EXTERIOR		\bigcirc	GYPSUM BOARD	
ELEVATIONS	A1/A 101			GLU-LAMINATE BEAM	
	A-101			GLASS	
ROOM TAG		EQUIPMENT TAG			
	CEILING MILLWORK	FINISH TAG	<u> </u>		
ROOM FINISH TAG	FF BF WALL	NORTH ARROW			
	WALL SW		NORTH DIRECTION IS NORTH INDICATED BY THE DIRECTION THE FILLED ARROW IS POINTING		

DESIGN TEAM

PROJECT MANAGER

DFCM

CAPITAL HILL COMPLEX, 450 STATE ST SUITE 4110 SALT LAKE CITY, UT 84114 PHONE: 801.538.3018 jcfrancis@utah.gov CARL FRANCIS

ELECTRICAL

SINE SOURCE ENGINEERING 95 GOLF COURSE RD LOGAN, UT 84321 PHONE: 435.787.1445 ericr@sinesource.net ERIC RASMUSSEN

architects St MG design DFCM APPROVAL



LOGAN UT 84321 LAKE CITY UT 84103

WEST WEST

ITH 300 \ 8TH 400 \

SOU

255 795

BTECH MEAT SERVICES FREEZER FLOOR REPLACEMENT 1301 N 600 W, LOGAN, UT 84321 BRIDGERLAND TECHNICAL COLLEGE DFCM PROJECT #: 2346210





COVER SHEET -PROJECT INFORMATION

G-001

© COPYRIGHT DESIGN WEST ARCHITECTS 2021

CONSTRUCTION DOCUMENTS

VICINITY MAP



KEYNOTES (#>

- DESCRIPTION EXISTING FLOAT APPLIED FLOORING SYSTEM TO BE REMOVED. EXISTING QUARRY TILE AND GROUT TO BE REMOVED. EXISTING CONCRETE SUBSTRATE TO BE REMOVED. EXISTING INSULATION BELOW CONCRETE SUBSTRATE TO BE REMOVED
- REMOVE EXISTING THRESHOLD. MAINTAIN TO BE REINSTALLED. SAW CUT SUB-SLAB AS FLUSH AS POSSIBLE TO PREFABRICATED COOLER PANEL.
- OVEREXCAVATE SUBGRADE SUCH THAT 4" OF GRAVEL FILL CAN BE INSTALLED. 1" GALVANIZED CONDUIT FOR HEAT TRACE LINES IN 1" SAND BED LAYER.
- LOGAN UT 84321 AKE CITY UT 84103 **est** architects 3 design TH 300 \ TH 400 \ 255 SO 795 NC



DFCM APPROVAL

ENTS **CONSTRUCTION DOCUM**







FLOOR PLAN, **DEMOLITION PLAN &** DETAILS





GENERAL PROJECT NOTES

. ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST NEC AND LOCAL CODES.

2. REVIEW THE STATE DESIGN REQUIREMENTS MANUAL PRIOR TO BID

3. EMT IS NOT ALLOWED OUT OF DOORS.

4. MOUNTING HEIGHT OF GENERAL PURPOSE OUTLETS AND SWITCHES SHALL BE 16" TO BOTTOM AND 48" TO TOP RESPECTIVELY UNLESS

5. CIRCUIT WIRE SIZES MUST MATCH BRANCH CIRCUIT BREAKERS PER NEC. VERIFY WITH PANEL SCHEDULES BEFORE PULLING WIRE. 6. PANEL INDEXES SHALL INCLUDE ALL PERTINENT INFORMATION ON THE PANEL SCHEDULES INCLUDING INFORMATION ON LIGHTS AND

OUTLETS. DO NOT SIMPLY COPY THE CIRCUIT DESCRIPTION COLUMN. INDEXES TO BE TYPEWRITTEN.

7. BEFORE RUNNING CONDUITS, PLACING OUTLETS OR ORDERING EQUIPMENT, THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS AND DESIGN AND SHOP DRAWINGS OF THE OTHER TRADES SERVED BY THE CONDUIT, OUTLETS, AND/OR EQUIPMENT.

3. THE ELECTRICAL CONTRACTOR SHALL RUN BRANCH CIRCUIT CONDUITS IN A NEAT AND WORKMANLIKE MANNER SO AS TO CONSERVE OPEN SPACES AS MUCH AS POSSIBLE.

9. REMOVE ALL UNUSED CONDUITS AND CIRCUITS AS THEY ARE IDENTIFIED AS UNUSED OR ABANDONED.

10. THE CLARITY OF RECORD DRAWING CHANGES MADE BY THE CONTRACTOR SHALL BE EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ARCHITECT OR THE RECORD SET WILL BE RETURNED TO THE CONTRACTOR FOR CLARIFICATION.

1. WHEN THE GENERAL CONTRACT CALLS FOR "RECORD" OR "AS-BUILT" DRAWINGS TO BE FURNISHED BY THE CONTRACTOR AT JOB COMPLETION, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO FURNISH A COMPLETE SET OF "BLUE-PRINT READY" AUTOCAD ELECTRICAL DRAWINGS FOR ALL CONTRACTOR GENERATED CHANGES FROM THE DRAWINGS OF A CLARITY EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ENGINEER. CONTACT ARCHITECT FOR DISKS OR REPRODUCIBLE ORIGINAL MEDIA. PROVIDE DRAWINGS ON

12. ALL PATCH, REPAIR, REPAINT AND COVER UP REQUIRED AS A RESULT OF ELECTRICAL REMODEL IS TO BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, BUT ACTUAL WORK IS TO BE PERFORMED BY QUALIFIED PERSONNEL.

13. DO NOT SCALE ELECTRICAL FLOOR PLANS. FIELD VERIFY EXISTING CONDITIONS.

14. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR, PULLED INTO THE CONDUIT WITH THE PHASE CONDUCTOR, IN ALL SERVICE, FEEDER,

15. PROVIDE A NEUTRAL CONDUCTOR FOR EACH BREAKER TRIP HANDLE. NEUTRALS SHALL NOT BE SHARED BETWEEN BRANCH CIRCUITS.

16. ALL CIRCUITS TO BE MINIMUM #12 CU IN MINIMUM 3/4" CONDUIT UNLESS OTHERWISE NOTED.

17. MC CABLE IS NOT AN APPROVED ALTERNATE TO CONDUCTORS IN CONDUIT.

18. DO NOT INSTALL MORE THAN THREE PHASE CONDUCTORS IN ANY HOME-RUN CONDUITS UNLESS SPECIFICALLY INDICATED ON DRAWINGS.

19. WHERE THERE ARE CONFLICTS IN THE DRAWINGS AND/OR SPECIFICATIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BID. WHERE NO NOTIFICATION IS GIVEN THE MORE STRINGENT INTERPRETATION (GENERALLY INTERPRETED TO BE THE MORE

ELECTR	RICAL LEGEND
ANNOTAT	ONS
X XXX	DETAIL CALL-OUT; TOP "X" REFERS TO DETAIL NUMBER & BOTTOM "XXX" REFERS TO SHEET NUMBER
(#)	KEYED NOTE CALLOUT
#-#	EQUIPMENT CALLOUT
LIGHTING	FIXTURES
0	CEILING FIXTURE
LIGHTING	CONTROL
\$ <mark>P</mark>	PILOT LIGHT SWITCH
BRANCH C	VIRCUITING
C	DUPLEX OUTLET
Φ	FACELESS GFCI PROTECTION DEVICE
\oplus	DUPLEX OUTLET: GROUND FAULT INTERRUPTER
wp 🕀 =	DUPLEX OUTLET: WEATHERPROOF
\bigcirc	JUNCTION BOX
	DISCONNECT; NO OVER-CURRENT PROTECTION
Þ	FUSED DISCONNECT;
凶	COMBINATION DISCONNECT/MOTOR STARTER; NO OVER-CURRENT PROTECTION
\$ _m	MOTOR PROTECTIVE THERMAL SWITCH
	QUANTITY OF CONDUCTORS: SHORT LINES = PHASE /SWITCH, LONG LINES = NEUTRAL
	HOME-RUN
	HOME-RUN
	CIRCUITING:BREAK IN CIRCUIT
	CIRCUITING: EM SOURCE
	LIGHTING CONTROL-REFER TO LIGHTING CONTROL SHOP DRAWINGS
POWER AN	ND DISTRIBUTION
	DISTRIBUTION PANEL
	PANELBOARD
	METER / METER SOCKET
GENERAL WALL-	MOUNTED BOX HEIGHT DETAIL
	+XX = TOP OF BOX



REFER TO POWER, LIGHTING AND COMMUNICATIONS PLANS FOR SPECIFIC DIMENSIONS. SEE GENERAL NOTES AND SPECIFICATIONS WHERE NO HEIGHTS ARE INDICATED.

SHEET INDEX

|| Sheet Title EE001 ABBREVIATIONS, G.P.N., LEGEND & SHEET INDEX EE002 SPECIFICATIONS

EE101 ELECTRICAL POWER PLAN

ELE	ECTRICAL ABBREV	ΊΑΤ	IONS
Α	AMPERE	LTG	LIGHTING
AF	AMP FUSE	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG		MECH	MECHANICAL
ΔFI		MER	MANI IFACTI IRER
		MIN	
	ARCHITECT(URAL)		
AS	AMP SWITCH	NEC	NATIONAL ELECTRICAL CODE
AWG	AMERICAN WIRE GAUGE	NECA	NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION
BLDG	BUILDING	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATIO
BKBD	BACKBOARD	NEUT	NEUTRAL
С	CONDUIT	NFC	NATIONAL FIRE CODE
CAB	CABINET	NC	NORMALLY CLOSED
CAT	CATALOG/CATEGORY	NIC	NOT IN CONTRACT
C/B	CIRCUIT BREAKER	NL	NIGHT LITE
CKT	CIRCUIT	NO	NORMALLY OPEN
CLG	CEILING	NTS	NOT TO SCALE
CO		OCP	OVERCURRENT PROTECTION
COMM		P	
CONN	CONNECTION	PH	PHASE
		PNI	
		P\WR	
DWG			
EA	EACH		RIGID GALVANIZED STEEL CONDUIT
ELEC	ELECTRICAL		ROOM
ELEV	ELEVATOR	SCHED	SCHEDULE
EMER, EM	EMERGENCY	SECT	SECTION
EMT	ELECTRICAL METALLIC TUBING	SP	SINGLE POLE
EOLR	END OF LINE RESISTOR	SN	SOLID NEUTRAL
EQUIP	EQUIPMENT	SPEC	SPECIFICATION
EX, EXIST	EXISTING	SW	SWITCH
FBO	FURNISHED BY OTHERS	SWBD	SWITCHBOARD
FCU	FAN COIL UNIT	SWGR	SWITCH GEAR
FF	FINISHED FLOOR	SYS	SYSTEM
FIXT	FIXTURE	TEMP	TEMPORARY
FLEX	FLEXIBLE METALLIC CONDUIT (STEEL)	TELE	TELEPHONE
FLUOR	FLUORESCENT	XFMR	TRANSFORMER
FT	FEET OR FOOT	T-STAT	THERMOSTAT
GFI		TWP	
GND		TWSP	
HP		ТҮР	
HV/AC			
	HEATING, VENTILATING & AIR CONDITIONING		
			UNLESS NUTED OTHERWISE
	SHORT CIRCUIT AMPERES, KA	V V/A	VOLT OR VOLTAGE
JB, J-BOX	JUNCTION BOX	VA	VOLT AMPERE
KCMIL	THOUSAND CIRCULAR MILS	W	WATT
KVA	KILOVOLT AMPERE	W/	WITH
KW	KILOWATT	WG	WIRE GUARD
		WP	UL LISTED WEATHERPROOF, NEMA 3R or 4

architects LOGAN UT AKE CITY UT _____ St B 3 design 300 400 포판 SOI 255 795 **REVIEWED FOR** CODE COMPLIANCE Jom Au-Thomas W Peterson 07/03/2023 DFCM APPROVAL S SERVICE: ACEMENT AT SI 84321 - COLLI 210 BTECH MEA FREEZER FLOOR F 1301 N 600 W, LOGAN, UT 8 BRIDGERLAND TECHNICAL 0 DFCM PROJECT #: 234622 3203202 PROJECT #: DDS DRAWN BY: ECR CHECKED BY: 6.9.2023 ISSUED: OFESSI RASMUSSEN STATE OF UV ABBREVIATIONS, G.P.N., LEGEND &

S П

BID

SHEET INDEX

© COPYRIGHT DESIGN WEST ARCHITECTS 2020

EEOO1

84321 84103

	SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL	SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
	A. SEISMIC PERFORMANCE: ELECTRICAL EQUIPMENT SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO SEI/ASCE 7.	A. DESIGN SUPPORTS FOR MULTIPLE RACEWAYS CAPABLE OF SUPPORTING COMBINED WEIGH SUPPORTED SYSTEMS AND ITS CONTENTS.
	 THE TERM "WITHSTAND" MEANS "THE UNIT WILL REMAIN IN PLACE WITHOUT SEPARATION OF ANY PARTS FROM THE DEVICE WHEN SUBJECTED TO THE SEISMIC FORCES SPECIFIED." 	B. DESIGN EQUIPMENT SUPPORTS CAPABLE OF SUPPORTING COMBINED OPERATING WEIGHT O SUPPORTED EQUIPMENT AND CONNECTED SYSTEMS AND COMPONENTS.
	 1.2 QUALITY ASSURANCE A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN 	C. RATED STRENGTH: ADEQUATE IN TENSION, SHEAR, AND PULLOUT FORCE TO RESIST MAXIMU CALCULATED OR IMPOSED FOR THIS PROJECT, WITH A MINIMUM STRUCTURAL SAFETY FACT ENVELTIMED THE ADDIVES FOR FOR FOR THIS PROJECT.
	APPLICATION. 1.3. SLEEVES FOR RACEWAYS AND CARLES	1.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS A STEEL SLOTTED SUPPORT SYSTEMS WITH GALVANIZED COATINGS AND CHANNEL DIMENSION
	A. STEEL PIPE SLEEVES: ASTM A 53/A 53M, TYPE E, GRADE B, SCHEDULE 40, GALVANIZED STEEL, PLAIN ENDS.	SELECTED FOR APPLICABLE LOAD CRITERIA. B. RACEWAY AND CABLE SUPPORTS: AS DESCRIBED IN NECA 1 AND NECA 101.
D	 B. SLEEVES FOR RECTANGULAR OPENINGS: GALVANIZED SHEET STEEL. 1.4 SLEEVE SEALS 	C. CONDUIT AND CABLE SUPPORT DEVICES: STEEL HANGERS, CLAMPS, AND ASSOCIATED FITT DESIGNED FOR TYPES AND SIZES OF RACEWAY OR CABLE TO BE SUPPORTED.
	A. DESCRIPTION: MODULAR SEALING DEVICE, DESIGNED FOR FIELD ASSEMBLY, TO FILL ANNULAR SPACE BETWEEN SLEEVE AND RACEWAY OR CABLE.	D. STRUCTURAL STEEL FOR FABRICATED SUPPORTS AND RESTRAINTS: ASTM A 36/A 36M, STEE SHAPES, AND BARS; BLACK AND GALVANIZED.
	 SEALING ELEMENTS: EPDM OR NBR INTERLOCKING LINKS SHAPED TO FIT SURFACE OF CABLE OR CONDUIT. INCLUDE TYPE AND NUMBER REQUIRED FOR MATERIAL AND SIZE OF RACEWAY OR CARLE 	E. MOUNTING, ANCHORING, AND ATTACHMENT COMPONENTS: ITEMS FOR FASTENING ELECTRIC ITEMS OR THEIR SUPPORTS TO BUILDING SURFACES INCLUDE THE FOLLOWING:
	 PRESSURE PLATES: STAINLESS STEEL. INCLUDE TWO FOR EACH SEALING ELEMENT. CONNECTING BOLTS AND NUTS: STAINLESS STEEL OF LENGTH REQUIRED TO SECURE 	CEMENT CONCRETE, STEEL, OR WOOD, WITH TENSION, SHEAR, AND PULLOUT CAPACIT APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.
	PRESSURE PLATES TO SEALING ELEMENTS. INCLUDE ONE FOR EACH SEALING ELEMENT. 1.5 ELECTRICAL ENCLOSURES	 MECHANICAL-EXPANSION ANCHORS: INSERT-WEDGE-TYPE, STAINLESS STEEL, FOR USE HARDENED PORTLAND CEMENT CONCRETE WITH TENSION, SHEAR, AND PULLOUT CAP/
	 A. FLUSH- AND SURFACE-MOUNTED CABINETS. 1. RATED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION. 	APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS IN WHICH USED. 3. CONCRETE INSERTS: STEEL OR MALLEABLE-IRON, SLOTTED SUPPORT SYSTEM UNITS S TO MOD THE 40, CONFIDENTIAL AND MOD OF 50
	a. INDOOR DRY AND CLEAN LOCATIONS: NEMA 250, TYPE T. b. OUTDOOR LOCATIONS: NEMA 250, TYPE 3R. c. KITCHEN AREAS: NEMA 250, TYPE 4X, STAINI ESS STEEL	 CLAMPS FOR ATTACHMENT TO STEEL STRUCTURAL ELEMENTS: MSS SP-58, TYPE SUITA ATTACHED STRUCTURAL ELEMENT
	d. OTHER WET OR DAMP INDOOR LOCATIONS: NEMA 250, TYPE 4. 1.6 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION	 5. THROUGH BOLTS: STRUCTURAL TYPE, HEX HEAD, AND HIGH STRENGTH. COMPLY WITH 325.
	A. COMPLY WITH NECA 1.B. EQUIPMENT: INSTALL TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF	 TOGGLE BOLTS: ALL-STEEL SPRINGHEAD TYPE. HANGER RODS: THREADED STEEL.
	COMPONENTS OF BOTH ELECTRICAL EQUIPMENT AND OTHER NEARBY INSTALLATIONS. CONNECT IN SUCH A WAY AS TO FACILITATE FUTURE DISCONNECTING WITH MINIMUM INTERFERENCE WITH OTHER	 1.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES A. DESCRIPTION: WELDED OR BOLTED, STRUCTURAL-STEEL SHAPES, SHOP OR FIELD FABRICATED FOLLOWERS
	C. RIGHT OF WAY: GIVE TO PIPING SYSTEMS INSTALLED AT A REQUIRED SLOPE. 1.7 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS	 1.4 APPLICATION A. COMPLY WITH NECA 1 AND NECA 101 FOR APPLICATION OF HANGERS AND SUPPORTS FOR
	A. CONCRETE SLABS AND WALLS: INSTALL SLEEVES FOR PENETRATIONS UNLESS CORE-DRILLED HOLES OR FORMED OPENINGS ARE USED. INSTALL SLEEVES DURING ERECTION OF SLABS AND	ELECTRICAL EQUIPMENT AND SYSTEMS EXCEPT IF REQUIREMENTS IN THIS SECTION ARE ST 1.5 SUPPORT INSTALLATION
	WALLS. B. FIRE-RATED ASSEMBLIES: INSTALL SLEEVES FOR PENETRATIONS OF FIRE-RATED FLOOR AND WALL	A. COMPLY WITH NECA 1 AND NECA 101 FOR INSTALLATION REQUIREMENTS EXCEPT AS SPECIF THIS ARTICLE.
	ASSEMBLIES UNLESS OPENINGS COMPATIBLE WITH FIRESTOP SYSTEM USED ARE FABRICATED DURING CONSTRUCTION OF FLOOR OR WALL. C. SEAL SPACE OUTSIDE OF SUFFYES WITH GROUT FOR PENETRATIONS OF CONCRETE AND MASONRY	B. STRENGTH OF SUPPORT ASSEMBLIES: WHERE NOT INDICATED, SELECT SIZES OF COMPONE STRENGTH WILL BE ADEQUATE TO CARRY PRESENT AND FUTURE STATIC LOADS WITHIN SPE LOADING LIMITS, MINIMUM STATIC DESIGN LOAD LISED FOR STRENGTH DETERMINATION SHA
	 D. FIRE-RATED-ASSEMBLY PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT RACEWAY AND CABLE PENETRATIONS. INSTALL SLEEVES AND SEAL 	WEIGHT OF SUPPORTED COMPONENTS PLUS 200 LB. C. MOUNTING AND ANCHORAGE OF SURFACE-MOUNTED EQUIPMENT AND COMPONENTS: ANCH
	RACEWAY AND CABLE PENETRATION SLEEVES WITH FIRESTOP MATERIALS. E. ROOF-PENETRATION SLEEVES: SEAL PENETRATION OF INDIVIDUAL RACEWAYS AND CABLES WITH	FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTS TO BUILDING STRUCTURAL ELEMENTS BY FOLLOWING METHODS UNLESS OTHERWISE INDICATED BY CODE:
С	FLEXIBLE BOOT-TYPE FLASHING UNITS APPLIED IN COORDINATION WITH ROOFING WORK. 1.8 FIRESTOPPING A APPLY EIRESTOPPING TO DENETRATIONS OF EIRE RATED FLOOP AND WALL ASSEMBLIES FOR	 IO WOOD: FASTEN WITH LAG SCREWS OR THROUGH BOLTS. TO NEW CONCRETE: BOLT TO CONCRETE INSERTS. TO MASONEX: APPROVED TOCCLE TYPE POLTS ON HOLLOW MASCHERY UNITS AND SYSTEMATIC AND SYSTEMATICS AND SYSTEMA
	ELECTRICAL INSTALLATIONS TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.	 TO MASONRY: AFFROVED TOGGLE-THE BOLTS ON HOLLOW MASONRY UNITS AND EXP ANCHOR FASTENERS ON SOLID MASONRY UNITS. TO EXISTING CONCRETE: EXPANSION ANCHOR FASTENERS.
	SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES 1.1 CONDUCTOR MATERIAL APPLICATIONS	 INSTEAD OF EXPANSION ANCHORS, POWDER-ACTUATED DRIVEN THREADED STUDS PR WITH LOCK WASHERS AND NUTS MAY BE USED IN EXISTING STANDARD-WEIGHT CONCF
	A. BRANCH CIRCUITS: COPPER. SOLID OR STRANDED FOR NO. 10 AWG AND SMALLER; STRANDED FOR NO. 8 AWG AND LARGER, EXCEPT VFC CABLE, WHICH SHALL BE EXTRA FLEXIBLE STRANDED.	INCHES THICK OR GREATER. DO NOT USE FOR ANCHORAGE TO LIGHTWEIGHT-AGGREG CONCRETE OR FOR SLABS LESS THAN 4 INCHES THICK.
	 1.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS A. EXPOSED BRANCH CIRCUITS, INCLUDING IN CRAWLSPACES: TYPE THHN-2-THWN-2, SINGLE CONDUCTORS IN RACEWAY 	 TO STEEL: WELDED THREADED STUDS COMPLYING WITH AWS D1.1/D1.1M, WITH LOCK A AND NUTS BEAM CLAMPS (MSS TYPE 19, 21, 23, 25, OR 27) COMPLYING WITH MSS SP-69. TO LIGHT STEEL: SHEET METAL SCREWS
	 B. BRANCH CIRCUITS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN-2-THWN-2, SINGLE CONDUCTORS IN RACEWAY. 	 ITEMS MOUNTED ON HOLLOW WALLS AND NONSTRUCTURAL BUILDING SURFACES: MOL CABINETS, PANELBOARDS, DISCONNECT SWITCHES, CONTROL ENCLOSURES, PULL AND
	1.3 INSTALLATION OF CONDUCTORS AND CABLES A. CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS UNLESS OTHERWISE INDICATED.	JUNCTION BOXES, TRANSFORMERS, AND OTHER DEVICES ON SLOTTED-CHANNEL RACH ATTACHED TO SUBSTRATE BY MEANS THAT MEET SEISMIC-RESTRAINT STRENGTH AND
	B. COMPLETE RACEWAY INSTALLATION BETWEEN CONDUCTOR AND CABLE TERMINATION POINTS ACCORDING TO SECTION 260533 "RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS" PRIOR TO PULLING CONDUCTORS AND CABLES	ANCHORAGE REQUIREMENTS. SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEM
	C. USE MANUFACTURER-APPROVED PULLING COMPOUND OR LUBRICANT WHERE NECESSARY; COMPOUND USED MUST NOT DETERIORATE CONDUCTOR OR INSULATION. DO NOT EXCEED	 1.1 METAL CONDUITS, TUBING, AND FITTINGS A. LISTING AND LABELING: METAL CONDUITS, TUBING, AND FITTINGS SHALL BE LISTED AND LAB
	MANUFACTURER'S RECOMMENDED MAXIMUM PULLING TENSIONS AND SIDEWALL PRESSURE VALUES. D. USE PULLING MEANS, INCLUDING FISH TAPE, CABLE, ROPE, AND BASKET-WEAVE WIRE/CABLE GRIPS,	DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCAT APPLICATION.
	THAT WILL NOT DAMAGE CABLES OR RACEWAY. E. INSTALL EXPOSED CABLES PARALLEL AND PERPENDICULAR TO SURFACES OF EXPOSED STRUCTURAL MEMBERS, AND FOULOW SURFACE CONTOURS WHERE POSSIBLE	 B. GRC: COMPLY WITH ANSI C80.1 AND UL 6. C. PVC-COATED STEEL CONDUIT: PVC-COATED RIGID STEEL CONDUIT. 1. COMPLY WITH NEMA PN 1.
	 F. SUPPORT CABLES ACCORDING TO SECTION 260529 "HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS." 	 2. COATING THICKNESS: 0.040 INCH, MINIMUM. D. EMT: COMPLY WITH ANSI C80.3 AND UL 797.
	1.4 CONNECTIONS A. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS ACCORDING TO MANUFACTURER'S PUBLISHED	E. FMC: COMPLY WITH UL 1; ZINC-COATED STEEL.F. LFMC: FLEXIBLE STEEL CONDUIT WITH PVC JACKET AND COMPLYING WITH UL 360.
	TORQUE-TIGHTENING VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A-486B. MAKE SPLICES, TERMINATIONS, AND TARS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL	 G. FITTINGS FOR METAL CONDUIT: COMPLY WITH NEMA FB 1 AND UL 514B. 1. CONDUIT FITTINGS FOR HAZARDOUS (CLASSIFIED) LOCATIONS: COMPLY WITH UL 886 AI
	 D. WARE SPECES, TERMINATIONS, AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL. 1. USE OXIDE INHIBITOR IN EACH SPLICE, TERMINATION, AND TAP FOR ALUMINUM CONDUCTORS. C. WIRING AT OUTLETS: INSTALL CONDUCTOR AT EACH OUTLET, WITH AT LEAST 12 INCHES OF SLACK. 	 2. FITTINGS FOR EMT: a. MATERIAL: STEEL.
	1.5 IDENTIFICATION A. IDENTIFY AND COLOR-CODE CONDUCTORS AND CABLES ACCORDING TO SECTION 260553	b. TYPE: SETSCREW OR COMPRESSION.3. COATING FOR FITTINGS FOR PVC-COATED CONDUIT: MINIMUM THICKNESS OF 0.040 INC
в	"IDENTIFICATION FOR ELECTRICAL SYSTEMS." B. IDENTIFY EACH SPARE CONDUCTOR AT EACH END WITH IDENTITY NUMBER AND LOCATION OF OTHER END OF CONDUCTOR, AND DENTIFY AS SPARE CONDUCTOR	OVERLAPPING SLEEVES PROTECTING THREADED JOINTS. H. JOINT COMPOUND FOR IMC, GRC, OR ARC: APPROVED, AS DEFINED IN NFPA 70, BY AUTHORI HAVING, HIRISDICTION FOR LISE IN CONDULT ASSEMBLIES, AND COMPOLINIDED FOR LISE TO
S.DWG	 1.6 FIRESTOPPING A. APPLY FIRESTOPPING TO ELECTRICAL PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES 	LUBRICATE AND PROTECT THREADED CONDUIT JOINTS FROM CORROSION AND TO ENHANCE CONDUCTIVITY.
ATIONS	TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY ACCORDING TO SECTION 078413 "PENETRATION FIRESTOPPING."	1.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS A. LISTING AND LABELING: NONMETALLIC CONDUITS, TUBING, AND FITTINGS SHALL BE LISTED A
ECIFIC	SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS	LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTE LOCATION AND APPLICATION.
:002 SP	 1.1 CONDUCTORS A. INSULATED CONDUCTORS: COPPER WIRE OR CABLE INSULATED FOR 600 V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE OR AUTHORITIES HAVING JURISDICTION 	 B. RNC: TYPE EPC-40-PVC, COMPLYING WITH NEMA TC 2 AND UL 651 UNLESS OTHERWISE INDIC C. LFNC: COMPLY WITH UL 1660. D. FITTINGS FOR RNC: COMPLY WITH NEMA TC 3: MATCH TO CONDUIT OR TUBING TYPE AND MA
ETS/EE	 B. BARE COPPER CONDUCTORS: 1. SOLID CONDUCTORS: ASTM B 3. 	 E. FITTINGS FOR LFNC: COMPLY WITH UL 514B. F. SOLVENT CEMENTS AND ADHESIVE PRIMERS SHALL HAVE A VOC CONTENT OF 510 AND 550 (
CT/SHE	 STRANDED CONDUCTORS: ASTM B 8. BONDING CONDUCTOR: NO. 4 OR NO. 6 AWG, STRANDED CONDUCTOR. 	LESS, RESPECTIVELY, WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METH 1.3 BOXES, ENCLOSURES, AND CABINETS
PROJE	1.2 CONNECTORS A. LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR APPLICATIONS IN WHICH USED AND FOR SPECIFIC TYPES, SIZES, AND COMBINATIONS OF	A. GENERAL REQUIREMENTS FOR BOXES, ENCLOSURES, AND CABINETS: BOXES, ENCLOSURES CABINETS INSTALLED IN WET LOCATIONS SHALL BE LISTED FOR USE IN WET LOCATIONS. B. GENERAL REQUIREMENTS FOR BOXES, ENCLOSURES, AND CABINETS: BOXES, ENCLOSURES
	CONDUCTORS AND OTHER ITEMS CONNECTED. B. BOLTED CONNECTORS FOR CONDUCTORS AND PIPES: COPPER OR COPPER ALLOY.	CABINETS INSTALLED INSIDE CAR WASH TUNNEL SHALL BE RATED FOR HOSE-DIRECTED WA' (NEMA 4 ENCLOSURE OR EQUIVALENT) AND SHALL ALSO BE RATED FOR THE CORROSIVE
SINE SC	C. WELDED CONNECTORS: EXOTHERMIC-WELDING KITS OF TYPES RECOMMENDED BY KIT MANUFACTURER FOR MATERIALS BEING JOINED AND INSTALLATION CONDITIONS.	ENVIRONMENT. (STAINLESS STEEL OR EQUIVALENT) C. SHEET METAL OUTLET AND DEVICE BOXES: COMPLY WITH NEMA OS 1 AND UL 514A.
RICAL\S	 1.3 GROUNDING ELECTRODES A. GROUND RODS: COPPER-CLAD STEEL; 3/4 INCH BY 10 FEET. 1.4 FOURMENT GROUNDING 	D. CAST-METAL OUTLET AND DEVICE BOXES: COMPLY WITH NEMA FB 1, FERROUS ALLOY OR AL TYPE FD, WITH GASKETED COVER. 1.4 RACEWAY ARR LCATION
ELECTI	A. INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH ALL FEEDERS AND BRANCH CIRCUITS.	 A. OUTDOORS: APPLY RACEWAY PRODUCTS AS SPECIFIED BELOW UNLESS OTHERWISE INDICA 1. ABOVEGROUND: GRC.
IGS\05	1.5 INSTALLATION A. GROUND RODS: DRIVE RODS UNTIL TOPS ARE 2 INCHES BELOW FINISHED FLOOR OR FINAL GRADE	 UNDERGROUND CONDUIT: RNC, TYPE EPC-40-PVC,. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC
DRAWIN	UNLESS OTHERWISE INDICATED. B. BONDING STRAPS AND JUMPERS: INSTALL IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENANCE EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT	4. BOXES AND ENCLOSURES, ABOVEGROUND: NEMA 250, TYPE 3R.
PE\01	 BONDING TO STRUCTURE: BOND STRAPS DIRECTLY TO BASIC STRUCTURE, TAKING CARE NOT TO PENETRATE ANY ADJACENT PARTS. 	 EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE: EMT. EXPOSED AND SUBJECT TO SEVERE PHYSICAL DAMAGE: GRC.
EAT TA	 BONDING TO EQUIPMENT MOUNTED ON VIBRATION ISOLATION HANGERS AND SUPPORTS: INSTALL BONDING SO VIBRATION IS NOT TRANSMITTED TO RIGIDLY MOUNTED EQUIPMENT. 	 CONCEALED IN CEILINGS AND INTERIOR WALLS AND PARTITIONS: EMT. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC
A EZER H	 USE EXOTHERMIC-WELDED CONNECTORS FOR OUTDOOR LOCATIONS; IF A DISCONNECT-TYPE CONNECTION IS REQUIRED, USE A BOLTED CLAMP. 1.6 GROUNDING AND BONDING FOR PIPING: 	PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC, EXCEPT USE DAMP OR WET LOCATIONS.
AB FRE	 METAL WATER SERVICE PIPE: INSTALL INSULATED COPPER GROUNDING CONDUCTORS, IN CONDUIT, FROM BUILDING'S MAIN SERVICE EQUIPMENT. OR GROUNDING BUS. TO MAIN METAL 	 6. BOXES AND ENCLOSURES: NEMA 250, TYPE 1, EXCEPT USE NEMA 250, TYPE 4 STAINLES IN INSTITUTIONAL AND COMMERCIAL KITCHENS AND DAMP OR WET LOCATIONS
IEAT LA	WATER SERVICE ENTRANCES TO BUILDING. CONNECT GROUNDING CONDUCTORS TO MAIN METAL WATER SERVICE PIPES; USE A BOLTED CLAMP CONNECTOR OR BOLT A LUG-TYPE	 7. UNDER SLAB HEAT CABLE: GRC. D. MINIMUM RACEWAY SIZE: 3/4-INCH TRADE SIZE.
LECH M	CONNECTOR TO A PIPE FLANGE BY USING ONE OF THE LUG BOLTS OF THE FLANGE. WHERE A DIELECTRIC MAIN WATER FITTING IS INSTALLED, CONNECT GROUNDING CONDUCTOR ON	 E. RACEWAY FITTINGS: COMPATIBLE WITH RACEWAYS AND SUITABLE FOR USE AND LOCATION. 3. RIGID AND INTERMEDIATE STEEL CONDUIT: USE THREADED RIGID STEEL CONDUIT FITTING TO CONTRACT AND ADDRESS AND A
3046 B ⁻	STREET SIDE OF FITTING, BOND METAL GROUNDING CONDUCTOR CONDUIT OR SLEEVE TO CONDUCTOR AT EACH END. 2. WATER METER PIPING: USE BRAIDED-TYPE BONDING JUMPERS TO ELECTRICALLY BYPASS	UNLESS OTHERWISE INDICATED, COMPLY WITH NEMA FB 2.10. 4. PVC EXTERNALLY COATED, RIGID STEEL CONDUITS: USE ONLY FITTINGS LISTED FOR US THIS TYPE OF CONDUIT, PATCH AND SEAL ALL JOINTS, NICKS, AND SCRAPES IN PVC CO
BS\202	WATER METERS. CONNECT TO PIPE WITH A BOLTED CONNECTOR. 3. BOND EACH ABOVEGROUND PORTION OF GAS PIPING SYSTEM DOWNSTREAM FROM EQUIPMENT	AFTER INSTALLING CONDUITS AND FITTINGS. USE SEALANT RECOMMENDED BY FITTING MANUFACTURER AND APPLY IN THICKNESS AND NUMBER OF COATS RECOMMENDED BY
23 T:\JO	SHUTOFF VALVE.	MANUFACTURER. 5. EMT: USE SETSCREW OR COMPRESSION, FITTINGS. COMPLY WITH NEMA FB 2.10.
6/9/202		 THEXIBLE CONDULT: USE ONLY FITTINGS LISTED FOR USE WITH FLEXIBLE CONDULT. CON WITH NEMA FB 2.20. E. DO NOT INSTALL ALLIMINUM CONDULTS, BOXES, OR FITTINGS IN CONTACT WITH CONCRETE C
T SAVE	1 1	1. DO NOT INGTALL ALDIVINGUI CONDUTTO, BOALO, OK FITTINGO IN CONTACT WITH CONCRETE C
AS	1 1	1 2

SPECIFICATIONS

PORTING COMBINED WEIGHT OF BINED OPERATING WEIGHT OF ONENTS. T FORCE TO RESIST MAXIMUM LOADS STRUCTURAL SAFETY FACTOR OF

GS AND CHANNEL DIMENSIONS

) NECA 101. MPS. AND ASSOCIATED FITTINGS. SUPPORTED.

INTS: ASTM A 36/A 36M, STEEL PLATES, IS FOR FASTENING ELECTRICAL

HE FOLLOWING: FOR USE IN HARDENED PORTLAND EAR, AND PULLOUT CAPACITIES

ERIALS WHERE USED. STAINLESS STEEL, FOR USE IN

SHEAR, AND PULLOUT CAPACITIES ERIALS IN WHICH USED. O SUPPORT SYSTEM UNITS SIMILAR

NTS: MSS SP-58, TYPE SUITABLE FOR

H STRENGTH. COMPLY WITH ASTM A

S, SHOP OR FIELD FABRICATED TO

SERS AND SUPPORTS FOR ITS IN THIS SECTION ARE STRICTER.

REMENTS EXCEPT AS SPECIFIED IN SELECT SIZES OF COMPONENTS SO E STATIC LOADS WITHIN SPECIFIED

ENGTH DETERMINATION SHALL BE IT AND COMPONENTS: ANCHOR AND STRUCTURAL ELEMENTS BY THE

W MASONRY UNITS AND EXPANSION RIVEN THREADED STUDS PROVIDED

STANDARD-WEIGHT CONCRETE 4 TO LIGHTWEIGHT-AGGREGATE WS D1.1/D1.1M, WITH LOCK WASHERS

L BUILDING SURFACES: MOUNT ROL ENCLOSURES, PULL AND ON SLOTTED-CHANNEL RACKS RESTRAINT STRENGTH AND

S SHALL BE LISTED AND LABELED AS RKED FOR INTENDED LOCATION AND

ONS: COMPLY WITH UL 886 AND

UM THICKNESS OF 0.040 INCH, WITH ED IN NFPA 70. BY AUTHORITIES OMPOUNDED FOR USE TO DRROSION AND TO ENHANCE THEIR

FITTINGS SHALL BE LISTED AND NCY, AND MARKED FOR INTENDED

I UNLESS OTHERWISE INDICATED.

IIT OR TUBING TYPE AND MATERIAL.

CONTENT OF 510 AND 550 G/L OR FR 59, SUBPART D (EPA METHOD 24).

INETS: BOXES, ENCLOSURES, AND USE IN WET LOCATIONS. NETS: BOXES, ENCLOSURES, AND D FOR HOSE-DIRECTED WATER ED FOR THE CORROSIVE

OS 1 AND UL 514A. FB 1, FERROUS ALLOY OR ALUMINUM,

UNLESS OTHERWISE INDICATED:

ILESS OTHERWISE INDICATED.

TIONS: EMT. SFORMERS AND HYDRAULIC, IPMENT): FMC, EXCEPT USE LFMC IN

NEMA 250, TYPE 4 STAINLESS STEEL OR WET LOCATIONS.

BLE FOR USE AND LOCATION. RIGID STEEL CONDUIT FITTINGS NLY FITTINGS LISTED FOR USE WITH

(S, AND SCRAPES IN PVC COATING RECOMMENDED BY FITTING F COATS RECOMMENDED BY WITH NEMA FB 2.10.

ITH FLEXIBLE CONDUIT. COMPLY CONTACT WITH CONCRETE OR

G. INSTALL SURFACE RACEWAYS ONLY WHERE INDICATED ON DRAWINGS. H. DO NOT INSTALL NONMETALLIC CONDUIT WHERE AMBIENT TEMPERATURE EXCEEDS 120 DEG 1.5 INSTALLATION A. COMPLY WITH NECA 1 AND NECA 101 FOR INSTALLATION REQUIREMENTS EXCEPT WHERE REQUIREMENTS ON DRAWINGS OR IN THIS ARTICLE ARE STRICTER. COMPLY WITH NECA 102 FOR

ALUMINUM CONDUITS. COMPLY WITH NFPA 70 LIMITATIONS FOR TYPES OF RACEWAYS ALLOWED IN SPECIFIC OCCUPANCIES AND NUMBER OF FLOORS. B. KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR

HOT-WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING. C. COMPLY WITH REQUIREMENTS IN SECTION 260529 "HANGERS AND SUPPORTS FOR ELECTRICAL

SYSTEMS" FOR HANGERS AND SUPPORTS. D. ARRANGE STUB-UPS SO CURVED PORTIONS OF BENDS ARE NOT VISIBLE ABOVE FINISHED SLAB. E. INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90-DEGREE BENDS IN ANY CONDUIT RUN

EXCEPT FOR CONTROL WIRING CONDUITS, FOR WHICH FEWER BENDS ARE ALLOWED. SUPPORT WITHIN 18 INCHES OF CHANGES IN DIRECTION. F. CONCEAL CONDUIT AND EMT WITHIN FINISHED WALLS. CEILINGS, AND FLOORS UNLESS OTHERWISE INDICATED. INSTALL CONDUITS PARALLEL OR PERPENDICULAR TO BUILDING LINES.

G. SUPPORT CONDUIT WITHIN 18 INCHESOF ENCLOSURES TO WHICH ATTACHED.

H. STUB-UPS TO ABOVE RECESSED CEILINGS: 1. USE EMT, IMC, OR RMC FOR RACEWAYS

FARTH

- 2. USE A CONDUIT BUSHING OR INSULATED FITTING TO TERMINATE STUB-UPS NOT TERMINATED IN HUBS OR IN AN ENCLOSURE.
- I. THREADED CONDUIT JOINTS, EXPOSED TO WET, DAMP, CORROSIVE, OR OUTDOOR CONDITIONS: APPLY LISTED COMPOUND TO THREADS OF RACEWAY AND FITTINGS BEFORE MAKING UP JOINTS. FOLLOW COMPOUND MANUFACTURER'S WRITTEN INSTRUCTIONS.
- J. COAT FIELD-CUT THREADS ON PVC-COATED RACEWAY WITH A CORROSION-PREVENTING CONDUCTIVE COMPOUND PRIOR TO ASSEMBLY.
- K. RACEWAY TERMINATIONS AT LOCATIONS SUBJECT TO MOISTURE OR VIBRATION: USE INSULATING BUSHINGS TO PROTECT CONDUCTORS INCLUDING CONDUCTORS SMALLER THAN NO. 4 AWG.
- L. TERMINATE THREADED CONDUITS INTO THREADED HUBS OR WITH LOCKNUTS ON INSIDE AND OUTSIDE OF BOXES OR CABINETS. INSTALL BUSHINGS ON CONDUITS UP TO 1-1/4-INCH TRADE SIZE AND INSULATED THROAT METAL BUSHINGS ON 1-1/2-INCH TRADE SIZE AND LARGER CONDUITS TERMINATED WITH LOCKNUTS. INSTALL INSULATED THROAT METAL GROUNDING BUSHINGS ON SERVICE CONDUITS
- M. INSTALL PULL WIRES IN EMPTY RACEWAYS. USE POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB TENSILE STRENGTH. LEAVE AT LEAST 12 INCHES OF SLACK AT EACH END OF PULL WIRE. CAP UNDERGROUND RACEWAYS DESIGNATED AS SPARE ABOVE GRADE ALONGSIDE RACEWAYS IN USE.
- N. FLEXIBLE CONDUIT CONNECTIONS: COMPLY WITH NEMA RV 3. USE A MAXIMUM OF 60 INCHES OF FLEXIBLE CONDUIT FOR RECESSED AND SEMI-RECESSED LUMINAIRES, AND A MAXIMUM OF 36 INCHES OF FLEXIBLE CONDUIT FOR EQUIPMENT (WHERE SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT), TRANSFORMERS, AND MOTORS. 1. USE LFMC IN DAMP OR WET LOCATIONS.
- O. MOUNT BOXES AT HEIGHTS INDICATED ON DRAWINGS. IF MOUNTING HEIGHTS OF BOXES ARE NOT INDIVIDUALLY INDICATED, GIVE PRIORITY TO ADA REQUIREMENTS. INSTALL BOXES WITH HEIGHT AS INDICATED.
- P. HORIZONTALLY SEPARATE BOXES MOUNTED ON OPPOSITE SIDES OF WALLS SO THEY ARE NOT IN THE SAME VERTICAL CHANNEL.
- Q. LOCATE BOXES SO THAT COVER OR PLATE WILL NOT SPAN DIFFERENT BUILDING FINISHES. R. SUPPORT BOXES OF TWO GANGS OR MORE FROM MORE THAN ONE SIDE BY SPANNING TWO FRAMING MEMBERS OR MOUNTING ON BRACKETS SPECIFICALLY DESIGNED FOR THE PURPOSE.
- S. FASTEN JUNCTION AND PULL BOXES TO OR SUPPORT FROM BUILDING STRUCTURE. DO NOT SUPPORT BOXES BY CONDUITS.

SECTION 260548 - VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS 1.1 PERFORMANCE REQUIREMENTS

- A. SEISMIC-RESTRAINT LOADING:
 - SITE CLASS AS DEFINED IN THE IBC: D. ASSIGNED SEISMIC USE GROUP OR BUILDING CATEGORY AS DEFINED IN THE IBC: III. a. COMPONENT IMPORTANCE FACTOR:
 - GENERAL: 1.0.
 - 2) LIFE SAFETY (EM): 1.5 b. COMPONENT RESPONSE MODIFICATION FACTOR:
 - 1) FIXTURES: 1.0
 - 2) EQUIPMENT: 2.5 3) CONDUIT AND CABLES: 5.0.
 - c. COMPONENT AMPLIFICATION FACTOR: 2.5.
- 3. DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (0.2 SECOND): 173%. 4. DESIGN SPECTRAL RESPONSE ACCELERATION AT 1.0-SECOND PERIOD: 76%. 1.2 SEISMIC-RESTRAINT DEVICES
 - A. GENERAL REQUIREMENTS FOR RESTRAINT COMPONENTS: RATED STRENGTHS, FEATURES, AND APPLICATION REQUIREMENTS SHALL BE AS DEFINED IN REPORTS BY AN AGENCY ACCEPTABLE TO
 - AUTHORITIES HAVING JURISDICTION 1. STRUCTURAL SAFETY FACTOR: ALLOWABLE STRENGTH IN TENSION, SHEAR, AND PULLOUT FORCE OF COMPONENTS SHALL BE AT LEAST FOUR TIMES THE MAXIMUM SEISMIC FORCES TO
- WHICH THEY WILL BE SUBJECTED. B. RESTRAINT CABLES: ASTM A 603 GALVANIZED-STEEL CABLES WITH END CONNECTIONS MADE OF STEEL ASSEMBLIES WITH THIMBLES, BRACKETS, SWIVELS, AND BOLTS DESIGNED FOR RESTRAINING
- CABLE SERVICE; AND WITH A MINIMUM OF TWO CLAMPING BOLTS FOR CABLE ENGAGEMENT. C. MECHANICAL ANCHOR: DRILLED-IN AND STUD-WEDGE OR FEMALE-WEDGE TYPE IN ZINC-COATED STEEL FOR INTERIOR APPLICATIONS AND STAINLESS STEEL FOR EXTERIOR APPLICATIONS. SELECT ANCHORS WITH STRENGTH REQUIRED FOR ANCHOR AND AS TESTED ACCORDING TO ASTM E 488. MINIMUM LENGTH OF EIGHT TIMES DIAMETER.
- D. ADHESIVE ANCHOR: DRILLED-IN AND CAPSULE ANCHOR SYSTEM CONTAINING POLYVINYL OR URETHANE METHACRYLATE-BASED RESIN AND ACCELERATOR, OR INJECTED POLYMER OR HYBRID MORTAR ADHESIVE. PROVIDE ANCHOR BOLTS AND HARDWARE WITH ZINC-COATED STEEL FOR INTERIOR APPLICATIONS AND STAINLESS STEEL FOR EXTERIOR APPLICATIONS. SELECT ANCHOR BOLTS WITH STRENGTH REQUIRED FOR ANCHOR AND AS TESTED ACCORDING TO ASTM E 488. 1.3 APPLICATIONS
- A. STRENGTH OF SUPPORT AND SEISMIC-RESTRAINT ASSEMBLIES: WHERE NOT INDICATED, SELECT SIZES OF COMPONENTS SO STRENGTH WILL BE ADEQUATE TO CARRY PRESENT AND FUTURE STATIC AND SEISMIC LOADS WITHIN SPECIFIED LOADING LIMITS.
- 1.4 SEISMIC-RESTRAINT DEVICE INSTALLATION A. INSTALL BUSHING ASSEMBLIES FOR MOUNTING BOLTS FOR WALL-MOUNTED EQUIPMENT, ARRANGED TO PROVIDE RESILIENT MEDIA WHERE EQUIPMENT OR EQUIPMENT-MOUNTING CHANNELS ARE ATTACHED TO WALL
- B. ATTACHMENT TO STRUCTURE: IF SPECIFIC ATTACHMENT IS NOT INDICATED, ANCHOR BRACING TO STRUCTURE AT FLANGES OF BEAMS, AT UPPER TRUSS CHORDS OF BAR JOISTS, OR AT CONCRETE MEMBERS.
- C. DRILLED-IN ANCHORS: 1. IDENTIFY POSITION OF REINFORCING STEEL AND OTHER EMBEDDED ITEMS PRIOR TO DRILLING HOLES FOR ANCHORS. DO NOT DAMAGE EXISTING REINFORCING OR EMBEDDED ITEMS DURING CORING OR DRILLING. NOTIFY THE STRUCTURAL ENGINEER IF REINFORCING STEEL OR OTHER EMBEDDED ITEMS ARE ENCOUNTERED DURING DRILLING. LOCATE AND AVOID PRESTRESSED TENDONS, ELECTRICAL AND TELECOMMUNICATIONS CONDUIT, AND GAS LINES
- 2. DO NOT DRILL HOLES IN CONCRETE OR MASONRY UNTIL CONCRETE, MORTAR, OR GROUT HAS ACHIEVED FULL DESIGN STRENGTH. 3. WEDGE ANCHORS: PROTECT THREADS FROM DAMAGE DURING ANCHOR INSTALLATION.
- HEAVY-DUTY SLEEVE ANCHORS SHALL BE INSTALLED WITH SLEEVE FULLY ENGAGED IN THE STRUCTURAL ELEMENT TO WHICH ANCHOR IS TO BE FASTENED.
- 4. ADHESIVE ANCHORS: CLEAN HOLES TO REMOVE LOOSE MATERIAL AND DRILLING DUST PRIOR TO INSTALLATION OF ADHESIVE. PLACE ADHESIVE IN HOLES PROCEEDING FROM THE BOTTOM OF THE HOLE AND PROGRESSING TOWARD THE SURFACE IN SUCH A MANNER AS TO AVOID INTRODUCTION OF AIR POCKETS IN THE ADHESIVE.
- 5. SET ANCHORS TO MANUFACTURER'S RECOMMENDED TORQUE, USING A TORQUE WRENCH. 6. INSTALL ZINC-COATED STEEL ANCHORS FOR INTERIOR AND STAINLESS-STEEL ANCHORS FOR EXTERIOR APPLICATIONS.
- 1.5 ADJUSTING A. ADJUST ISOLATORS AFTER ISOLATED EQUIPMENT IS AT OPERATING WEIGHT.
 - B. ADJUST LIMIT STOPS ON RESTRAINED SPRING ISOLATORS TO MOUNT EQUIPMENT AT NORMAL OPERATING HEIGHT. AFTER EQUIPMENT INSTALLATION IS COMPLETE, ADJUST LIMIT STOPS SO THEY ARE OUT OF CONTACT DURING NORMAL OPERATION.
- C. ADJUST ACTIVE HEIGHT OF SPRING ISOLATORS. D. ADJUST RESTRAINTS TO PERMIT FREE MOVEMENT OF EQUIPMENT WITHIN NORMAL MODE OF

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

1.1 QUALITY ASSURANCE A. COMPLY WITH ANSI A13.1

OPERATION.

- B. COMPLY WITH NFPA 70.
- 1.2 CONDUCTOR IDENTIFICATION MATERIALS
- A. COLOR-CODING CONDUCTOR TAPE: COLORED, SELF-ADHESIVE VINYL TAPE NOT LESS THAN 3 MILS THICK BY 1 TO 2 INCHES WIDE. 1.3 WARNING LABELS AND SIGNS
- A. COMPLY WITH NFPA 70 AND 29 CFR 1910.145.
- B. WARNING LABEL AND SIGN SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING LEGENDS: 1. WORKSPACE CLEARANCE WARNING: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."
- 2. ARC FLASH HAZARD WARNING PER NFPA 70. 1.4 EQUIPMENT IDENTIFICATION LABELS
- A. SELF-ADHESIVE, ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL: ADHESIVE BACKED, WITH

- WHITE LETTERS ON A DARK-GRAY BACKGROUND. MINIMUM LETTER HEIGHT SHALL BE 3/8 INCH. 1.5 IDENTIFICATION SCHEDULE
- A. POWER-CIRCUIT CONDUCTOR IDENTIFICATION, 600 V OR LESS: FOR CONDUCTORS IN VAULTS, PULL AND JUNCTION BOXES, MANHOLES, AND HANDHOLES, USE COLOR-CODING CONDUCTOR TAPE TO IDENTIFY THE PHASE.
 - 1. COLOR-CODING FOR PHASE IDENTIFICATION, 600 V OR LESS: USE COLORS LISTED BELOW FOR UNGROUNDED SERVICE, FEEDER, AND BRANCH-CIRCUIT CONDUCTORS. a. COLORS FOR 208/120-V CIRCUITS:
 - 1) PHASE A: BLACK.
 - 2) PHASE B: RED. 3) PHASE C: BLUE
 - 4) NEUTRAL: WHITE WITH COLORED STRIPE TO MATCH ASSOCIATED PHASE
 - 5) GROUND: GREEN b. COLORS FOR 480/277-V CIRCUITS:

IS PROVIDED WITH ITS OWN IDENTIFICATION.

REQUIRED, USE LABELS 2 INCHES HIGH.

RATING OF THE ENCLOSURE.

1. STRAIGHT BLADE, FEED-THROUGH TYPE.

LONGER PROVIDES PROPER GFCI PROTECTION.

B. DUPLEX GFCI CONVENIENCE RECEPTACLES, 125 V, 20 A:

A. COMPLY WITH NEMA WD 1, UL 20, AND FS W-S-896

APPROPRIATE FOR VIEWING FROM THE FLOOR.

- 1) PHASE A: BROWN.
- PHASE B: YELLOW 3) PHASE C: PURPLE

SELF-ADHESIVE WARNING LABELS.

3 LABELING INSTRUCTIONS

1.1 GENERAL WIRING-DEVICE REQUIREMENTS

1.2 STRAIGHT-BLADE RECEPTACLES

A. GENERAL DESCRIPTION:

B. SWITCHES, 120/277 V, 20 A:

C. PILOT-LIGHT SWITCHES, 20 A:

"OFF.

A. DEVICE COLOR:

C. CONDUCTORS:

D. DEVICE INSTALLATION:

E. DIMMERS:

1.1 QUALITY ASSURANCE

APPLICATION.

COVER IN CLOSED POSITION.

GROUND CONDUCTORS.

1.2 NONFUSIBLE SWITCHES

B. ACCESSORIES:

OTHERWISE INDICATED.

B. COORDINATION WITH OTHER TRADES:

TERMINATED ON DEVICES

CONNECT CONDUCTORS.

THE LAST POSSIBLE MOMENT.

RIDING AGAINST OUTSIDE OF BOXES.

SYSTEM, CONDUCTORS, AND CABLES.

NFPA 70, ARTICLE 300, WITHOUT PIGTAILS.

6. TIGHTEN UNUSED TERMINAL SCREWS ON THE DEVICE.

1. INSTALL DIMMERS WITHIN TERMS OF THEIR LISTING.

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

SECTION 262726 - WIRING DEVICES

498, AND FS W-C-596.

1.3 GFCI RECEPTACLES

1.4 TOGGLE SWITCHES

1.6 WALL PLATES

1.7 FINISHES

1.8 INSTALLATION

1. COMPLY WITH 29 CFR 1910.145.

4) NEUTRAL: GRAY WITH COLORED STRIPE TO MATCH ASSOCIATED PHASE GROUND: GREEN WITH GRAY STRIPE

c. FIELD-APPLIED, COLOR-CODING CONDUCTOR TAPE: APPLY IN HALF-LAPPED TURNS FOR A MINIMUM DISTANCE OF 6 INCHES FROM TERMINAL POINTS AND IN BOXES WHERE SPLICES OR TAPS ARE MADE. APPLY LAST TWO TURNS OF TAPE WITH NO TENSION TO PREVENT SECTION 265100 - INTERIOR LIGHTING POSSIBLE UNWINDING. LOCATE BANDS TO AVOID OBSCURING FACTORY CABLE MARKINGS. 1.1 ACTION SUBMITTALS B. WARNING LABELS FOR INDOOR CABINETS, BOXES, AND ENCLOSURES FOR POWER AND LIGHTING: 1.2 GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS 2. EQUIPMENT IDENTIFICATION LABELS: ON EACH UNIT OF EQUIPMENT, INSTALL UNIQUE DESIGNATION LABEL THAT IS CONSISTENT WITH WIRING DIAGRAMS, SCHEDULES, AND THE OPERATION AND MAINTENANCE MANUAL. APPLY LABELS TO DISCONNECT SWITCHES AND PROTECTION EQUIPMENT, CENTRAL OR MASTER UNITS, CONTROL PANELS, CONTROL STATIONS, TERMINAL CABINETS, AND RACKS OF EACH SYSTEM, SYSTEMS INCLUDE POWER, LIGHTING, CONTROL, COMMUNICATION, SIGNAL, MONITORING, AND ALARM SYSTEMS UNLESS EQUIPMENT a. INDOOR EQUIPMENT: SELF-ADHESIVE, ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL. UNLESS OTHERWISE INDICATED, PROVIDE A SINGLE LINE OF TEXT WITH 1/2-INCH-HIGH LETTERS ON 1-1/2-INCH-HIGH LABEL; WHERE TWO LINES OF TEXT ARE 1.3 LED LUMINAIRES b. OUTDOOR EQUIPMENT: ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL. c. ELEVATED COMPONENTS: INCREASE SIZES OF LABELS AND LETTERS TO THOSE d. UNLESS PROVIDED WITH SELF-ADHESIVE MEANS OF ATTACHMENT, FASTEN LABELS WITH APPROPRIATE MECHANICAL FASTENERS THAT DO NOT CHANGE THE NEMA OR NRTL WIRING DEVICES, COMPONENTS, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION. CONVENIENCE RECEPTACLES, 125 V, 20 A: COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION 5-20R, UL 1.4 BALLASTS FOR LINEAR FLUORESCENT LAMPS 2. COMPLY WITH NEMA WD 1, NEMA WD 6, UL 498, UL 943 CLASS A, AND FS W-C-596. 3. INCLUDE INDICATOR LIGHT THAT SHOWS WHEN THE GFCI HAS MALFUNCTIONED AND NO 1.5 EMERGENCY FLUORESCENT POWER UNIT 1. DESCRIPTION: SINGLE POLE, WITH NEON-LIGHTED HANDLE, ILLUMINATED WHEN SWITCH IS D. SINGLE AND COMBINATION TYPES SHALL MATCH CORRESPONDING WIRING DEVICES. 1. PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE FINISH. 2. MATERIAL FOR FINISHED SPACES: SMOOTH, HIGH-IMPACT THERMOPLASTIC OR 0.035-INCH-THICK, SATIN-FINISHED, TYPE 302 STAINLESS STEEL 3. MATERIAL FOR UNFINISHED SPACES: GALVANIZED STEEL. 4. MATERIAL FOR DAMP LOCATIONS: THERMOPLASTIC OR CAST ALUMINUM WITH SPRING-LOADED LIFT COVER, AND LISTED AND LABELED FOR USE IN WET AND DAMP LOCATIONS. 1.6 EXIT SIGNS 1. WIRING DEVICES CONNECTED TO NORMAL POWER SYSTEM: AS SELECTED BY ARCHITECT UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70 OR DEVICE LISTING. B. WALL PLATE COLOR: FOR PLASTIC COVERS, MATCH DEVICE COLOR. A. COMPLY WITH NECA 1, INCLUDING MOUNTING HEIGHTS LISTED IN THAT STANDARD, UNLESS 1.7 FLUORESCENT LAMPS 1. PROTECT INSTALLED DEVICES AND THEIR BOXES. DO NOT PLACE WALL FINISH MATERIALS OVER DEVICE BOXES AND DO NOT CUT HOLES FOR BOXES WITH ROUTERS THAT ARE GUIDED BY 1.8 LIGHTING FIXTURE SUPPORT COMPONENTS 2. KEEP OUTLET BOXES FREE OF PLASTER, DRYWALL JOINT COMPOUND, MORTAR, CEMENT, CONCRETE, DUST, PAINT, AND OTHER MATERIAL THAT MAY CONTAMINATE THE RACEWAY 3. INSTALL DEVICE BOXES IN BRICK OR BLOCK WALLS SO THAT THE COVER PLATE DOES NOT CROSS A JOINT UNLESS THE JOINT IS TROWELED FLUSH WITH THE FACE OF THE WALL. 1.9 INSTALLATION 4. INSTALL WIRING DEVICES AFTER ALL WALL PREPARATION, INCLUDING PAINTING, IS COMPLETE. 1. DO NOT STRIP INSULATION FROM CONDUCTORS UNTIL RIGHT BEFORE THEY ARE SPLICED OR 1.10 FIELD QUALITY CONTROL 2. STRIP INSULATION EVENLY AROUND THE CONDUCTOR USING TOOLS DESIGNED FOR THE PURPOSE. AVOID SCORING OR NICKING OF SOLID WIRE OR CUTTING STRANDS FROM STRANDED 3. THE LENGTH OF FREE CONDUCTORS AT OUTLETS FOR DEVICES SHALL MEET PROVISIONS OF 1. REPLACE DEVICES THAT HAVE BEEN IN TEMPORARY USE DURING CONSTRUCTION AND THAT WERE INSTALLED BEFORE BUILDING FINISHING OPERATIONS WERE COMPLETE. 2. KEEP EACH WIRING DEVICE IN ITS PACKAGE OR OTHERWISE PROTECTED UNTIL IT IS TIME TO 3. DO NOT REMOVE SURFACE PROTECTION, SUCH AS PLASTIC FILM AND SMUDGE COVERS, UNTIL 4. CONNECT DEVICES TO BRANCH CIRCUITS USING PIGTAILS THAT ARE NOT LESS THAN 12 INCHES 5. WHEN CONDUCTORS LARGER THAN NO. 12 AWG ARE INSTALLED ON 15- OR 20-A CIRCUITS, SPLICE NO. 12 AWG PIGTAILS FOR DEVICE CONNECTIONS. 7. WHEN MOUNTING INTO METAL BOXES, REMOVE THE FIBER OR PLASTIC WASHERS USED TO HOLD DEVICE-MOUNTING SCREWS IN YOKES, ALLOWING METAL-TO-METAL CONTACT. 2. INSTALL UNSHARED NEUTRAL CONDUCTORS ON LINE AND LOAD SIDE OF DIMMERS ACCORDING TO MANUFACTURERS' DEVICE LISTING CONDITIONS IN THE WRITTEN INSTRUCTIONS. A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND A. TYPE GD, GENERAL DUTY, SINGLE THROW, 600 A AND SMALLER: UL 98 AND NEMA KS 1, HORSEPOWER

1. EQUIPMENT GROUND KIT: INTERNALLY MOUNTED AND LABELED FOR COPPER AND ALUMINUM

2. NEUTRAL KIT: INTERNALLY MOUNTED; INSULATED, CAPABLE OF BEING GROUNDED AND BONDED; LABELED FOR COPPER AND ALUMINUM NEUTRAL CONDUCTORS. 3. LUGS: SUITABLE FOR NUMBER, SIZE, AND CONDUCTOR MATERIAL

1.3 MOLDED-CASE CIRCUIT BREAKERS

FIXTURES.

D. DIFFUSERS AND GLOBES:

8. DIMMABLE

3. PROGRAM-START

TRANSFER RELAY.

B. INTERNALLY LIGHTED SIGNS:

STEEL, 12 GAGE.

EACH FIXTURE

SELF-CONTAINED POWER PACK.

20,000 HOURS UNLESS OTHERWISE INDICATED.

B. COMPLY WITH NFPA 70 FOR MINIMUM FIXTURE SUPPORTS.

b. UV STABILIZED.

NEMA LE 5 AND NEMA LE 5A AS APPLICABLE.

2. TRANSIENT VOLTAGE PROTECTION

3. POWER FACTOR: 0.90 OR HIGHER

- A. GENERAL REQUIREMENTS: COMPLY WITH UL 489, NEMA AB 1, AND NEMA AB 3, WITH INTERRUPTING CAPACITY TO COMPLY WITH AVAILABLE FAULT CURRENTS. B. THERMAL-MAGNETIC CIRCUIT BREAKERS: INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL
- OVERLOADS AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SHORT CIRCUITS. ADJUSTABLE MAGNETIC TRIP SETTING FOR CIRCUIT-BREAKER FRAME SIZES 250 A AND LARGER. C. FEATURES AND ACCESSORIES:
- 1. STANDARD FRAME SIZES, TRIP RATINGS, AND NUMBER OF POLES.
- 2. LUGS: SUITABLE FOR NUMBER, SIZE, TRIP RATINGS, AND CONDUCTOR MATERIAL. 3. APPLICATION LISTING: APPROPRIATE FOR APPLICATION; TYPE SWD FOR SWITCHING FLUORESCENT LIGHTING LOADS; TYPE HID FOR FEEDING FLUORESCENT AND HIGH-INTENSITY DISCHARGE LIGHTING CIRCUITS.
- 1.4 INSTALLATION A. INSTALL INDIVIDUAL WALL-MOUNTED SWITCHES AND CIRCUIT BREAKERS WITH TOPS AT UNIFORM HEIGHT UNLESS OTHERWISE INDICATED. B. COMPLY WITH NECA 1.

A. COMPLY WITH REQUIREMENTS IN SECTION 260553 "IDENTIFICATION FOR ELECTRICAL SYSTEMS."

A. PRODUCT DATA: FOR EACH TYPE OF LIGHTING FIXTURE, ARRANGED IN ORDER OF FIXTURE

A. RECESSED FIXTURES: COMPLY WITH NEMA LE 4 FOR CEILING COMPATIBILITY FOR RECESSED

B. FLUORESCENT FIXTURES: COMPLY WITH UL 1598. WHERE LER IS SPECIFIED, TEST ACCORDING TO

1. ACRYLIC LIGHTING DIFFUSERS: 100 PERCENT VIRGIN ACRYLIC PLASTIC. HIGH RESISTANCE TO

a. LENS THICKNESS: AT LEAST 0.125 INCH MINIMUM UNLESS OTHERWISE INDICATED.

A. INTERNAL TYPE: SELF-CONTAINED, MODULAR, BATTERY-INVERTER UNIT, FACTORY MOUNTED WITHIN

1. EMERGENCY CONNECTION: OPERATE ONE FLUORESCENT LAMP(S) CONTINUOUSLY AT AN

3. TEST PUSH BUTTON AND INDICATOR LIGHT: VISIBLE AND ACCESSIBLE WITHOUT OPENING

a. PUSH BUTTON: PUSH-TO-TEST TYPE, IN UNIT HOUSING, SIMULATES LOSS OF NORMAL

CHARGE; BRIGHT GLOW INDICATES CHARGING AT END OF DISCHARGE CYCLE.

5. CHARGER: FULLY AUTOMATIC, SOLID-STATE, CONSTANT-CURRENT TYPE WITH SEALED POWER

6. INTEGRAL SELF-TEST: FACTORY-INSTALLED ELECTRONIC DEVICE AUTOMATICALLY INITIATES

CODE-REQUIRED TEST OF UNIT EMERGENCY OPERATION AT REQUIRED INTERVALS. TEST

FAILURE IS ANNUNCIATED BY AN INTEGRAL AUDIBLE ALARM AND A FLASHING RED LED.

A. GENERAL REQUIREMENTS FOR EXIT SIGNS: COMPLY WITH UL 924; FOR SIGN COLORS, VISIBILITY,

2. SELF-POWERED EXIT SIGNS (BATTERY TYPE): INTEGRAL AUTOMATIC CHARGER IN A

A. T8 RAPID-START LAMPS CRI 85 (MINIMUM), COLOR TEMPERATURE 3500 K, AND AVERAGE RATED LIFE

B. WIRES FOR HUMID SPACES: ASTM A 580/A 580M, COMPOSITION 302 OR 304, ANNEALED STAINLESS

A. TEST FOR EMERGENCY LIGHTING: INTERRUPT POWER SUPPLY TO DEMONSTRATE PROPER

A. LIGHTING FIXTURES: SET LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALLS. INSTALL LAMPS IN

OPERATION. VERIFY TRANSFER FROM NORMAL POWER TO BATTERY AND RETRANSFER TO NORMAL

LUMINANCE, AND LETTERING SIZE, COMPLY WITH AUTHORITIES HAVING JURISDICTION.

1. LAMPS FOR AC OPERATION: LEDS, 50,000 HOURS MINIMUM RATED LAMP LIFE.

A. WIRES: ASTM A 641/A 641M, CLASS 3, SOFT TEMPER, ZINC-COATED STEEL, 12 GAGE.

b. INDICATOR LIGHT: LED INDICATES NORMAL POWER ON. NORMAL GLOW INDICATES TRICKLE

OUTPUT OF 1100 LUMENS EACH. CONNECT UNSWITCHED CIRCUIT TO BATTERY-INVERTER UNIT

YELLOWING AND OTHER CHANGES DUE TO AGING, EXPOSURE TO HEAT, AND UV RADIATION.

DESIGNATION. INCLUDE DATA ON FEATURES, ACCESSORIES, AND FINISHES.

C. METAL PARTS: FREE OF BURRS AND SHARP CORNERS AND EDGES.

A. SOLID STATE DRIVERS AND LED: COMPLY WITH DOE LM 79

5. HEAT SINK TO REMOVE HEAT FROM CIRCUITS

6. L70 COMPLIANT TO 70,000 HOURS MINIMUM

7. COLOR RENDERING INDEX: 80 CRI MINIMUM

A. GENERAL REQUIREMENTS FOR ELECTRONIC BALLASTS:

1. COMPLY WITH UL 935 AND WITH ANSI C82.11.

2. DESIGNED FOR TYPE AND QUANTITY OF LAMPS SERVED.

AND SWITCHED CIRCUIT TO FIXTURE BALLAST.

POWER AND DEMONSTRATES UNIT OPERABILITY.

4. BATTERY: SEALED, MAINTENANCE-FREE, NICKEL-CADMIUM TYPE.

FIXTURE OR ENTERING CEILING SPACE.

1. TOTAL HARMONIC DISTORTION RATING: LESS THAN 10 PERCENT

4. TEMPERATURES: MINUS 40 DEG F (MINUS 40 DEG C) AND HIGHER

a. DIMMING RANGE: 100 TO 1 PERCENT OF RATED LAMP LUMENS

LIGHTING FIXTURE BODY AND COMPATIBLE WITH BALLAST. COMPLY WITH UL 924.

2. NIGHTLIGHT CONNECTION: OPERATE ONE FLUORESCENT LAMP CONTINUOUSLY.

b. INPUT WATTS: CAN BE REDUCED TO 20 PERCENT OF NORMAL

1.5 IDENTIFICATION

- RATED, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH

- EE002 © COPYRIGHT DESIGN WEST ARCHITECTS 2020

- B 255 795 **REVIEWED FOR CODE COMPLIANCE** Tom the Thomas W Peterson DFCM APPROVAL
- \mathbf{O} T S REPL/ 84 L COLI 210 Б. Д 5 \mathbf{O} ≥ŏ \geq С ш LL і́ш Z **₩** E E 3203202 DDS DRAWN BY ECR CHECKED BY: 6.9.2023 ISSUED: RASMUSSEN
- SPECIFICATIONS







architects

┷

S

D

5

S

8432⁻ 8410(

T T

GAN CITY



	TVDE				EVIQ					2	ø	1	WIDE		277	/490			·e			LOCATION	М	OUNT	NG
	ITPE				EVIS	TING				3	Ø	4			211	/400		VOLI	3						
		*==																	- • • •					FLUSE	
	REMARKS	^PR(E NE	W HAC	JR RAI	ED BK	EAKER	IN EXIST	ING PANE	L. REFE	RIOHE	AT CABLE	- SPEC	SFOR	RECON	IMENDE	D BK	EAK	ER	IYPE			SURFA	ACE
3																							225	AMP N	1AIN
AKERS																								LUGS	
OUND BUS																								BREAK	KER
ECT (SPD)																									
CIRCUIT DESCR	RIPTION	L	0	м		WIRE	E/CND		CIRC.				CIRC.		WIRE	CND		L	0	М	CIRCUIT DESCI	RIPTION	BRI	٢R	No.
					Р	Ν	G	С	LUAD	А	В	С		Р	N	G	С						А	Р	
ANUFACTURING										0											(EX) TIME CLOCK S. EN	NT.	20	1	2
ANUFACTURING											0										(EX) BOILER ROOM LIC	GHTS	20	1	4
ANUFACTURING												0									(EX) OUTSIDE LIGHTS	WEST	20	1	6
ANUFACTURING										0											SPARE		20	1	8
CKS & STORAG	ЭE										0										SPARE		20	1	10
AUSAGE												0									SPARE		20	1	12
ASSROOM										0											SPARE		20	1	14
ETAIL SALES											0										SPARE		20	1	16
FF. CULINARY LC	CK											0									SPARE		20	1	18
ASSROOM										0											SPARE		20	1	20
SDA & LOCKERS											0										SPARE		20	1	22
												0									SPARE		20	1	24
										0											SPARE		20	1	26
											0										SPARE		20	1	28
•												0									SPARE		20	1	30
ORRIDOR LTS. C	LID									0											SPARE		20	1	32
-											0										SPARE		20	1	34
												0									SPARE		20	1	36
·										0											SPARE		20	1	38
											0										SPARE		20	1	40
ER HEAT TAPE*				3	10	10	10	3/4S	1890			1890									SPARE		20	1	42
									TOTALS	<u>0</u>	<u>0</u>	<u>1890</u>									AIC	MATCH EXIST	ING		
										0	0	7									SCCR	MATCH EXIST			
JEE UNE-LI		_						AIVIP	J/FHAJE	<u>U</u>	<u>0</u>	<u>/</u>									FARALLEL KUNO	SEE UNE-LIN			



C5

A5



HEAT TAPE CONDUIT DETAIL

FREEZER FLOOR





SE

BID