RFB TO-21-05
QSS Digital Signage
Questions and Answers #2
October 13, 2020

Q1. Can the proposer suggest that the digital display products they propose are rated for 5-year usage and proposer can show that they have capabilities and references of supporting digital signage for 10 years plus?

A1. Yes. All hardware and equipment, excluding consumable material, must be certified to have a five-year minimum service life to withstand all weather-related elements. Ten-year service life is not required.

Q2. Is there a preference of size of the interior displays if LCD? Please be specific on what size, orientation and location of where the signs would be installed.

A2. Each display unit will need to exhibit text information in such a way as to be Americans with Disabilities Act (ADA) compliant based on display, size, location, and text sizes. Please see Addendum 1 for interior and exterior display unit locations.

Q3. Is there more defined information on where the interior and exterior signs would be installed? Is there power and networking cable available at each display unit location or is this an item that the installer would have in their scope?

A3. Yes. Please see Addendum 1 for interior and exterior display unit locations. Power is available at some display unit locations but not all. Installer will be responsible for running power workload on As-Built Plans. See pages 3-10.

Q4. Where is the CMS application to be installed? Is the CMS to be on premise and who is responsible for the computer and networking of the digital display system?

A4. Given the requirement for the CMS to be accessible from mobile devices, Topeka Metro expects a cloud-based CMS solution.

Q5. Is Topeka Metro intending to supply the content layouts to be displayed?

A5. Topeka Metro will display web pages, text from data feeds, and announcements. Topeka Metro will provide the text, pictures, content, etc. The CMS should handle the layout.

Q6. There is only mention of what Metro bus data is available from the DoubleMap CAD system. To make assurances that our CMS application can accommodate the request, we would need more information and sample data of the bus information that would be needed for the CMS to consume and display on the signs. Can this be made available?

A6. Topeka Metro will work with DoubleMap to make this data available.

Q7. What is the anticipated award date after RFP due date?

A7. Within three months of the Bid Deadline of October 29, 2020.

Q8. Is there an expected completion date of the project?

A8. By June 30, 2021. Please enter the estimated start and complete dates on the Price Quote Form.

Q9. Is there a way a prospect looking at this RFP be alerted of a new addendum on this project? Or does it require to look at the Metro RFP webpage manually? Is there a pre bid meeting sign-in sheet and plan holders list that can be made available to we can see on who we can team up with the provide a competitive proposal?

A9. Prospective bidders who have supplied Topeka Metro with their contact information will be notified when anything is posted to our website regarding this project. The contact information for any Pre-Bid Meetings attendees either in person or via Zoom will be posted to our website.

Q10. Is Topeka Metro interested in a proposal without the installation scope? Signs and CMS with technical support to establish the digital display system.

A10. No.

Q11. Will kiosks need audio announcements for arrival notifications and/or schedule notifications?

A11. Kiosks do not need to be interactive and do not need to be verbal.

SPECIAL OUTLET SCHEDULE

SYMBOL	DESCRIPTION
A	SERVICE FLUSH FLOOR BOX WITH (1) 20A. 125V. DUPLEX RECEPTACLE, (1) 20A. 125V. DUPLEX ISOLATED GROUND RECEPTACLE AND PROVISIONS FOR COMMUNICATIONS VIA 1"C. FROM SIDE ACCESS TO ABOVE NEAREST ACCESSIBLE CEILING. FLOOR BOX SHALL BE STEEL CITY #665 WITH (3) #665–RP FACE PLATES, #664–WT WIRE TUNNEL, AND #665–CSI CARPET PLATE, OR EQUAL BY HUBBELL. PROVIDE BRASS COVER.
B	SERVICE FLUSH FLOOR BOX WITH (1) 20A. 125V. DUPLEX RECEPTACLE, AND PROVISIONS FOR COMMUNICATIONS VIA 1"C. FLOOR BOX SHALL BE STEEL CITY #664 WITH (1) #664–RP FACE PLATES, #664–WT WIRE TUNNEL, AND TILE PLATE, OR EQUAL BY HUBBELL. PROVIDE BRASS COVER.
BMP	BOOK MOBILE ELECTRICAL SERVICE. PROVIDE FLUSH MOUNTED NEMA–3R LOCKABLE 18"x18"x9" BOX. MOUNT BOX IN POLE BASE. PROVIDE 60A. 240V. NEMA–3R DISCONNECT SWITCH WITH NEMA 14–50R RECEPTACLE 120/250V 3P. 4W. FIELD VERIFY ALL REQUIREMENTS WITH OWNER.
BMT	BOOK MOBILE TELEPHONE SERVICE. PROVIDE ONE TELEPHONE FS BOX IN THE SAME LOCKABLE POWER BOX (MOUNTED IN POLE BASE). PROVIDE TWO TELEPHONE OUTLETS (RJ45) FIELD VERIFY ALL REQUIREMENTS WITH OWNER.
	CHILD SAFETY RECEPTACLE: 20A. 125V. DUPLEX GROUNDED RECEPTACLE WITH TAMPER RESISTANT SAFETY SHUTTER. P & S #SG63 SERIES OR APPROVED EQUAL.

LIGHTING FIXTURE SCHEDULE (P.E.C.)

FIXT. LTR.	MANUFACTURER CATALOG NUMBER	MANUFACTURER CATALOG NUMBER	MANUFACTURER CATALOG NUMBER	MANUFACTURER CATALOG NUMBER	DESCRIPTION SEE NOTES	LAMP NO.	LAMP VOLTS	LENS\LOUVER\FINISH REMARKS	W	L	D
A3	WILLIAMS 50G–S24–3320C–SWKA125	COLUMBIA TB–5PS2G–52.125–243	LITHONIA 2SP–G–332–A12.125–PAF	METALUX 2GC–332–A125	2X4 LAY–IN ②	F032/835 3	120	ACRYLIC	2.0	4.0	
A3E	WILLIAMS 50G–S24–3320C–SWKA125	COLUMBIA TB–5PS2G–52.125–243	LITHONIA 2SP–G–332–A12.125–PAF	METALUX 2GC–332–A125	2X4 LAY–IN ②	F032/835 3	120	ACRYLIC	2.0	4.0	
PROVIDE TWO LAMP 90 MINUTE EMERGENCY BATTERY BODINE B50ST OR APPROVED EQUAL. (1300 LUMENS FOR 90 MINUTES)											
A4	WILLIAMS 50G–S24–4320C–SWKA125	COLUMBIA TB–4PS2G–52.125–244–SLL–PA	LITHONIA 2SP–G–432–A12.125–PAF	METALUX 2GC–432–A125–PAF	2X4 LAY–IN ②	F032/835 4	120	ACRYLIC	2.0	4.0	
CJ	WILLIAMS 92–4–2320C–A/WET/1	COLUMBIA LUM4–232–EB8–PAF	LITHONIA DDMW–232–WLF–PAF	METALUX VT2–232DR–WL–PAF	4' WET LABEL ②	F032/835 2	120	WHITE ENCLOSED AND GASKETED	.6771	4.333	
D3	WILLIAMS U4G–D24–3320C–36M	COLUMBIA 4924–3320–LS36–S–3EBB–PAF	LITHONIA 2PM4–G–332–18LS–PAF	METALUX 2PGX–332–S36MI	2X4 LAY–IN ②	F032/835 3	120	4" PARABOLIC SPECULAR LOW IRIDESCENT LOUVER	2.0	4.0	
D3E	WILLIAMS U4G–D24–3320C–36M	COLUMBIA 4924–3320–LS36–S–3EBB–PAF	LITHONIA 2PM4–G–332–18LS–PAF	METALUX 2PGX–332–S36MI	2X4 LAY–IN ②	F032/835 3	120	4" PARABOLIC SPECULAR LOW IRIDESCENT LOUVER	2.0	4.0	
PROVIDE TWO LAMP 90 MINUTE EMERGENCY BATTERY. BODINE B50ST OR APPROVED EQUAL (1300 LUMENS FOR 90 MINUTES).											
EB	HUBBELL HE6–25–2–R12H	HIGH–LITES NB–3–18–SP	LITHONIA ELU2PWLW–H1212	SURE–LITES XR–5 (29–15)	EMERGENCY FIXT ②	12W TUNGSTEN HALOGEN 2	120	WHITE WALL–MTD SEALED LEAD CALCIUM BATTERY	.75	1	
F	ELLIPTIPAR M404–0250–W–00–ELA02000				WALL SCONCE	250W MH 1	120	WHITE MOUNT AT 12'–0" AFF.			
F1	ELLIPTIPAR M404–0175–W–00–ELA02000				WALL SCONCE	175W MH 1	120	WHITE MOUNT AT 12'–0" AFF.			
F2	ELLIPTIPAR M453–0250–W–08–QLA02000				WALL SCONCE	250W MH 1	120	WHITE MOUNT AT 12'–0" AFF.			
UL LISTED FOR WET LOCATIONS.											
F4	WILLIAMS 76–4–2320C	COLUMBIA CS4–232–EB8–PAF	LITHONIA C–232–PAF	METALUX SS–232–PAF	4' STRIP ②	F032/835 2	120	WHITE		4.0	
F0	WILLIAMS 76–4–2320C WITH 0' BALLAST	COLUMBIA CS4–232–EB8–PAF	LITHONIA C–232–PAF	METALUX SS–232–PAF	4' STRIP ②	F032/835 2	120	WHITE		4.0	
H1	FAIL SAFE FRR–226–93				VANDELPROOF ②	26W DTT/35K 4–PIN 2	120	RECESSED VANDAL RESISTANT			
H1E	FAIL SAFE FRR–226–93				VANDELPROOF ②	26W DTT/35K 4–PIN 2	120	RECESSED VANDAL RESISTANT			
PROVIDE TWO LAMP 90 MINUTE EMERGENCY BATTERY. BODINE B74ST OR APPROVED EQUAL.											
HE	HALO H787IE–9871–U	INFINITY PH75–226Q–EB	LITHONIA AF–2/26DTT–8AR	PRESCOLITE CFR826UEB–ST492A	RECESSED ②	26W DTT/35K 4–PIN 2	120	LOW IRIDESCENT HORIZONTAL QUAD DOWNLIGHT (ELECT. BALLAST)	.615		
PROVIDE WITH TWO LAMP 90 MINUTE BATTERY. BODINE B50ST OR APPROVED EQUAL.											
HF	HALO H787IE–9871–U	INFINITY PH75–226Q–EB	LITHONIA AF–2/26DTT–8AR	PRESCOLITE CFR826UEB–ST492A	RECESSED ②	26W DTT/35K 4–PIN 2	120	LOW IRIDESCENT HORIZONTAL QUAD DOWNLIGHT (ELECT. BALLAST)	.615		
HR	HALO CS242–1E–9251–LI				HORIZONTALOPEN ②	42W TTT/35K 4–PIN 2	120	DOWN LIGHT HORIZONTAL TRIPLE DOWNLIGHT	.79		
HRE	HALO CS242–1E–9251–LI				HORIZONTALOPEN ②	42W TTT/35K 4–PIN 2	120	DOWN LIGHT HORIZONTAL TRIPLE DOWNLIGHT	.79		
PROVIDE 90 MINUTE EMERGENCY BATTERY BODINE B74ST OR APPROVED EQUAL.											
L	LEVITON 9875–2				INC LAMPHOLDER	100W MB–19 1	120	STANDARD	.375		
MB	HALO M7600T–730–43600C	INFINITY CMH90–70–ED17–MP–C/MED	LITHONIA AH–70M–6AR–TRW	PRESCOLITE RHD602–70MHFE–WTH602L	RECESSED	70W MH 1	120	LOW BRIGHTNESS DOWNLIGHT W/ DOUBLE ENVELOPE LAMP OR CLEAR SAFETY LENS	.5		
FIXTURE DEPTH SHALL BE LESS THAN 10".											
MC	HALO M7010T–750–55000C	INFINITY MH10–175	LITHONIA AH–175M–10AR–TRW	PRESCOLITE 1230M9–175MHFE–850L	RECESSED	175W MH 1	120	LOW BRIGHTNESS DOWNLIGHT W/ DOUBLE ENVELOPE LAMP OR CLEAR SAFETY LENS	.6333		
P	KIM 1A/RA255/250MH20B/BL–P				DIST. V	250W MH 1	208	BLACK			
PROVIDE 19'–6" KIM POLE #CSL20–64188A/BL–P–DR–GFL POLE SHALL BE DESIGNED TO ACCEPT SIGN AND CAMERA. REFER TO SHEET A–701.											
P2	KIM 1A/RA252/250MH20B/BL–P				DIST. II	250W MH 1	208	BLACK			
PROVIDE 19'–6" KIM POLE #CSL20–64188A/BL–P–DR–GFL POLE SHALL BE DESIGNED TO ACCEPT SIGN AND CAMERA. REFER TO SHEET A–701.											
P4H	KIM 1A/RA254/250MH20B/BL–P/HS				DIST. IV	250W MH 1	208	BLACK WITH HOUSE SHIELD			
PROVIDE 19'–6" KIM POLE #CSL20–64188A/BL–P–DR–GFL POLE SHALL BE DESIGNED TO ACCEPT SIGN AND CAMERA. REFER TO SHEET A–701.											
R1	ELLIPTIPAR M454–0250–W–02–VO–VL				UPLIGHT	250W MH 1	120	GLASS LENS MOUNT AT 11'–0" AFF.	1.08	1.22	.74
UL LISTED FOR WET LOCATIONS.											
R2	ELLIPTIPAR M454–0250–W–02–VO–VL				LT. GROUND	250W MH 1	120	GLASS LENS MOUNT AT 11'–0" AFF.	1.08	1.22	.74
UL LISTED FOR WET LOCATIONS.											
S	VISA CP3330				PENDANT ②	31W CF 4	120	BRUSHED AL. MOUNT AT 12'–6" AFF TO BOTTOM		48	
S1	ELLIPTIPAR M456–175–02–VOE–02–48–0					175W MH 2	120	PENDANT SUSPEND 36" BELOW CEILING.			
UL LISTED FOR WET LOCATIONS.											
S2	CASABLANCA 39991–9				CEILING FAN	52" BLADES –	120	WHITE MOUNT AT 12'–0" AFF			
PROVIDE WITH 3 SPEED CONTROLLER. PROVIDE REVERSIBLE SPEED TYPE FAN.											
T	LITHONIA RP–2–S–PBL				REC. PERMETER ②	F032/835 2	120	PARABOLIC			
FIELD VERIFY FIXTURE LENGTH AND NUMBER OF LAMPS PRIOR TO ORDERING. REFER TO DRAWING E201 FOR FIXTURE LENGTH.											
V4	FAIL SAFE FMR12–232–80–EB82				②	F032/835 2	120	RECESSED VANDAL RESISTANT			
XA	HUBBELL CMPRA–L9 (CLG MT:CMC–B)	HIGH–LITES ZBP–CLED–2–R	LITHONIA LE–S–1–R–ELN	SURE–LITES CAX–7–1–70–00–R	1/EM EXIT ③	PROVIDED WITH UNIT	120	CAST ALUMINUM RED SINGLE FACE W/ BATTERY	.167	1.1	.7
Z	KIM AFL21–250–BL–P				FLOOD LT.	250W MH 1	120	BLACK NARROW FLOOD			
TO LIGHT 40' HIGH FLAG POLE.											
Z1	KIM AFL12–175–BL–P				FLOOD LT.	175W MH 1	120	BLACK VERTICAL FLOOD			
TO LIGHT 8'–0" WIDE x 12'–0" HIGH CLOCK. FIXTURE MOUNTED 5'–0" FROM FACE OF CLOCK.											

1. Sheet E100: Lighting Fixture Schedule:
   a. Add "Prescolite Emergency" as an approved manufacturer for fixture 'EB' and 'XA'.
   b. Add "Prescolite" as an approved manufacturer for fixture 'H1', 'H1E', 'HR' and 'HRE'.
   c. Add "Cobra Lighting" as an approved manufacturer for fixture 'F'.
   d. Add "Winona Lighting, Inc." as an approved manufacturer for fixture 'V4'.
   e. Add "Visa" as an approved manufacturer for fixture 'R1', 'R2', 'S' and 'S1'.
   f. Add "Infinity" as an approved manufacturer for fixture 'F1', 'HE', 'HR' and 'HRE'.
   g. Add "Linear" as an approved manufacturer for fixture 'T'.
   h. Add "L. C. Doane" as an approved manufacturer for fixture 'V4'.

(1) GENERAL CONTRACTOR SHALL PROVIDE FIREPROOFING AROUND RECESSED FIXTURES INSTALLED IN FIRE RATED CEILING PER U.L. REQUIREMENTS. ELECTRICAL CONTRACTOR WILL COORDINATE.

(2) LIGHT FIXTURES SHALL BE PROVIDED WITH ELECTRONIC BALLASTS. COMPACT FLUORESCENT ELECTRONIC BALLASTS SHALL HAVE END–OF–LIFE PROTECTION CIRCUIT TO PREVENT WELDING OF LAMPS IN SOCKETS OR LAMP BREAKAGE. SEE THE SPECIFICATIONS.

(3) PROVIDE ARROWS AND FACES AS INDICATED ON THE DRAWINGS.

(4) MANUFACTURERS LISTED IN THIS SCHEDULE OR APPROVED BY WRITTEN ADDENDUM WILL BE THE ONLY APPROVED MANUFACTURERS TO BID THE LIGHTING FIXTURES FOR THIS PROJECT. CONTRACTORS AND SUPPLIERS USING PRICING FROM MANUFACTURERS NOT LISTED ON SCHEDULE OR BY ADDENDUM DO SO AT THEIR OWN RISK.

(5) LIGHT FIXTURE SELECTIONS ARE BASED ON THE MANUFACTURER IN THE LEFT MOST COLUMN AS LISTED IN THE SCHEDULE. FIXTURES APPROVED AS EQUALS IN THIS SCHEDULE OR BY ADDENDUM SHALL BE EQUAL TO THE UNIT SPECIFIED IN THE LEFT MOST COLUMN, IE: SPRING LOADED LATCHES, POST PAINTED FINISH, AND PHOTOMETRICS.

GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) & THE AMERICANS WITH DISABILITIES ACT (ADA).
2. REFER TO RELATED ARCHITECTURAL, MECHANICAL, AND STRUCTURAL DRAWINGS FOR RELATED INFORMATION.
3. REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
4. E.C. SHALL REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF MECHANICAL UNITS AND THERMOSTAT LOCATIONS.
5. COORDINATE OUTLET BOX LOCATIONS WITH MASONRY TO MINIMIZE CUTTING OF BRICK OR BLOCK.
6. ALL MOUNTING HEIGHTS TO CENTERLINE OF ITEM UNLESS OTHERWISE NOTED. VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH–IN.
7. CONDUIT RUN W/CONDUCTORS AS INDICATED & GROUND WIRE SIZED PER N.E.C. 250–122 (1999). CONDUIT SIZE AS REQUIRED.
8. WHEN INCREASED CONDUCTOR SIZES ARE SHOWN ON THE PLANS, THE LARGER CONDUCTOR SIZE SHALL BE USED THROUGHOUT THE LENGTH OF THE CIRCUIT, INCLUDING NEUTRAL AND GROUND.
9. "CT" INDICATED ADJACENT TO DEVICE INDICATES DEVICE MOUNTED ABOVE BACKSPLASH OF COUNTER TOP. VERIFY EXACT HEIGHT WITH ARCHITECTURAL PLANS AND ELEVATIONS.
10. FIELD VERIFY LOCATION OF AREA SMOKE DETECTORS AND HEAT DETECTORS. DO NOT LOCATE WITHIN 36" OF A HVAC DIFFUSER (SUPPLY OR RETURN), IN A DIRECT AIR FLOW OR WITHIN 36" OF A SPRINKLER HEAD. SMOKE DETECTORS FOR DOOR RELEASE SHALL BE LOCATED ON THE CENTER LINE OF THE DOOR AND A MAXIMUM OF 5 FEET FROM THE DOOR. THE MINIMUM DISTANCE FROM THE DOOR IS THE DEPTH OF THE WALL SECTION ABOVE THE DOOR, BUT NOT LESS THAN 12".
11. LABEL REMOTE ALARM INDICATOR FOR DUCT MOUNTED SMOKE DETECTORS (IE: RTU–1 SUPPLY, RTU–2 RETURN, FIRE/SMOKE DAMPER, ETC.). DUCT DETECTORS SHOULD BE LOCATED IN THE AREA BETWEEN 6 AND 10 DUCT EQUIVALENT DIAMETERS OF STRAIGHT, UNINTERRUPTED DUCTWORK. DUCT DETECTORS FOR FIRE/SMOKE DAMPERS SHOULD BE LOCATED BETWEEN THE LAST INLET OR OUTLET UPSTREAM OF THE DAMPER AND THE FIRST INLET OR OUTLET DOWNSTREAM OF THE DAMPER.
12. FAN SHUTDOWN RELAY WIRING SHALL BE LOCATED WITHIN 3 FEET OF THE FAN CONTROLS AND THE WIRING TO THE RELAY SHALL BE MONITORED.
13. PROVIDE 120V POWER AND FUSTAT FOR EACH FIRE/SMOKE DAMPER. INTERLOCK WITH FIRE ALARM CONTROL PANEL TO CLOSE FIRE/SMOKE DAMPER UPON ANY ALARM AT THE FIRE ALARM CONTROL PANEL AND TO SHUTDOWN ASSOCIATED MECHANICAL UNIT.
14. EACH DATA, TELEPHONE, VIDEO, OR OTHER SYSTEMS OUTLET REQUIRES 1"C. WITH PULL ROPE STUBBED 6" ABOVE NEAREST ACCESSIBLE CEILING UNLESS OTHERWISE NOTED ON PLANS. CONDUITS STUBBED UP ABOVE CEILINGS SHALL BE TURNED OUT 90°. PROVIDE INSULATED BUSHINGS ON ALL CONDUITS. LABEL CONDUIT TO IDENTIFY ITS INTENDED USE (IE: TELEPHONE, DATA, ETC.).
15. THE COLOR OF ISOLATED GROUND RECEPTACLES AND COVERPLATES SHALL MATCH THOSE OF OTHER DEVICES ON THE JOB. COVERPLATES SHALL BE ENGRAVED 'COMPUTER'.
16. PROVIDE 18" LONG (MIN.) CONDUIT SLEEVES THRU ALL WALLS WHERE CABLES ARE INDICATED OR REQUIRED TO PASS THRU WALLS. PROVIDE BUSHINGS ON BOTH ENDS. SIZE CONDUIT FOR CABLES INSTALLED. AT CABLE TRAYS, PROVIDE ONE 4" CONDUIT SLEEVE FOR EACH 4" WIDTH OF CABLE TRAY.

SYMBOL LIST

SYMBOL	DESCRIPTION	MOUNTING
A	LIGHT FIXTURE & FIXTURE LETTER	CEILING
A	STRIP LIGHT FIXTURE & FIXTURE LETTER	CEILING
A	LIGHT FIXTURE & FIXTURE LETTER	CEILING
A	LIGHT FIXTURE & FIXTURE LETTER	WALL
	EXIT LIGHT (SHADING DENOTES EXIT FACE SIDE)	CEIL./WALL
A	LIGHT FIXTURE & FIXTURE LETTER	WALL
	EMERGENCY BATTERY LIGHT FIXTURE	CEIL./WALL
$ $2 $3 $4	SWITCHES (1–POLE,2–POLE,3–WAY,4–WAY)	46"AFF
	CEILING FAN	CEILING
a,b,c	INDICATES SWITCHING SCHEME	
WP	WEATHERPROOF	
CT	SEE GENERAL NOTE 9	
AFF	ABOVE FINISHED FLOOR	
DF	DRINKING FOUNTAIN	
UON	UNLESS OTHERWISE NOTED	
NL	NIGHT LIGHT	
	DUPLEX GROUNDED RECEPTACLE	17"AFF
	CLG–MTD DUPLEX GROUNDED RECEPT.	CEILING MTD
	DOUBLE DUPLEX GROUNDED RECEPTACLE	17"AFF
	ISOLATED GROUND RECEPTACLE (GEN NOTE 15)	17"AFF
	DOUBLE DUPLEX ISOLATED GROUND REC. (GEN NOTE 15)	17"AFF
	GROUND FAULT DUPLEX RECEPTACLE	17"AFF
A, A	SPECIAL OUTLET (SEE SCHEDULE OR AS NOTED)	FLOOR/WALL
	SPECIAL DEVICE (AS NOTED)	
	JUNCTION BOX	
	FUSTAT BUSSY	
'A'	BRANCH CIRCUIT PANEL & PANEL DESIG.	72" TO TOP
	ELECTRICAL DISTRIBUTION EQUIPMENT	
1	FEEDER DESIGNATION	
	CONDUIT RUN 2#12 & 1#12 GRD.–1/2"C.	CEIL./WALL
	CONDUIT RUN 2#12 & 1#12 GRD.–3/4"C.	EARTH/FLOOR
	MASTER/SLAVE FIXTURE WHIP	CEILING
	CONDUIT RUN 2 CIRCUITS, 3#12 & 1#12 GRD.–3/4"C.	EARTH/FLOOR
	CONDUIT RUN PARTIAL CIRCUIT	
#10	SEE GENERAL NOTE 7, 8.	
	CONDUIT RUN TWO (2) CIRCUITS PHASE CONDUCTORS (#12 UON) NEUTRAL CONDUCTOR (#12 UON) SWITCH LEGS (#12 UON) GROUND CONDUCTOR (#12 UON) ISOLATED GROUND CONDUCTOR (#12 UON)	CEIL./WALL
'PAGP'	PA/SOUND SYSTEM W/RACK OR SHELF	FLOOR/WALL
	CEILING MOUNTED SPEAKER	CEILING
V	CEILING MOUNTED SPEAKER VANDAL RESISTANT	CEILING
V	VOLUME CONTROL	46"AFF
	SYSTEM CLOCK (A=ANALOG, D=DIGITAL)	WALL
	PUSH BUTTON	
	MICROPHONE OUTLET	
	DOOR ELECTRIC STRIKE	DOOR
'FACP'	FIRE ALARM CONTROL PANEL	WALL
	FIRE ALARM MANUAL STATION	46"AFF
	FIRE ALARM HORN	80" TO BOTTOM
	FIRE ALARM VISUAL SIGNAL	80" TO BOTTOM
	COMB. F.A. HORN & VISUAL SIGNAL	80" TO BOTTOM
	F.A. RELAY (GEN NOTE 12)	
	PHOTO ELECTRIC AREA SMOKE DETECTOR (GEN NOTE 10)	CEILING
	DUCT SMOKE DETECTOR (GEN NOTE 11)	DUCTWORK
H	HEAT DETECTOR (GEN NOTE 10)	CEILING
	ELECTROMAGNETIC DOOR HOLDER	WALL
FSD	DUCT SMOKE DETECTOR & FIRE/SMOKE DAMPER (GEN NOTE 11 & 13)	
	COMB. VOICE/DATA OUTLET (GEN NOTE 14)	17"AFF
	VOICE OUTLET (GEN NOTE 14)	17"AFF
	CABLE TV OUTLET (GEN NOTE 14)	17"AFF
P	PAY	42"AFF
W	WALL	46"AFF
	4" CONDUIT SLEEVE (GEN NOTE 16)	
	DOOR CONTACT. 3/4"C. W/PULL WIRE TO ABOVE CEILING. SIMILAR TO DTL. 7/E400.	
	SECURITY CAMERA	
	PANIC PUSH BUTTON	
	PIR MOTION DETECTOR	
	BURGLAR SYSTEM KEYPAD	

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Topeka Metropolitan Transit Authority
Bus Transfer Facility

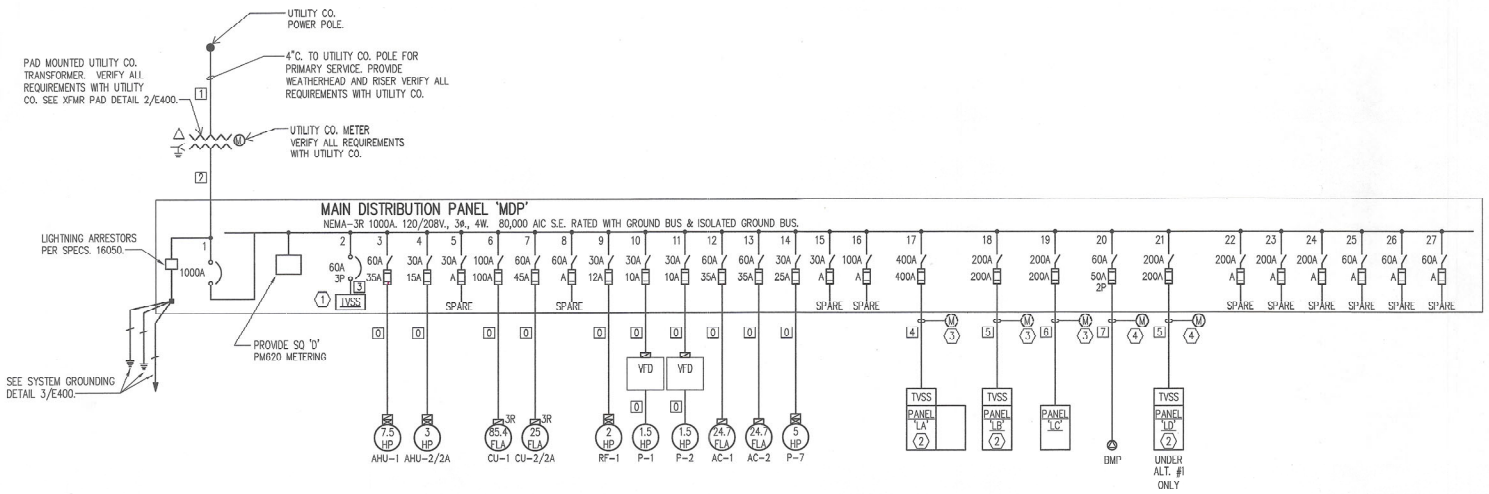
Topeka, Kansas

ELECTRICAL LIGHTING SCHEDULE AND SYMBOL LIST

ORIGINAL CONTRACT DOCUMENTS

ISSUE DATE: 9–29–2001
ARCH. PROJ. NO: 99–32

E100
SHEET NO:



1 ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

GENERAL ONE-LINE DIAGRAM NOTES:

1. UNLESS OTHERWISE NOTED, ALL CIRCUIT BREAKERS AND/OR SWITCHES ARE THREE POLE.

KEYED NOTES:

1. TVSS PER SPECIFICATION SECTION 16289.
2. PROVIDE PANEL WITH INTERNAL TVSS PER SPECIFICATIONS SECTION 16289.
3. PROVISION FOR METERING TO MEET ENERGY CODE REQUIREMENTS.
4. ELECTRIC METER E-MON D-MON 3 PHASE KWH.

FEEDER SCHEDULE

DESIG.	EQUIPMENT SERVED	CONDUCTORS SETS	CONDUCTORS NO.	CONDUCTORS SIZE	GROUND SIZE PER SET	ISOLATED GROUND SIZE	CONDUIT SIZE PER SET
0	SEE EQUIPMENT CONNECTION SCHEDULE FOR WIRE & CONDUIT SIZE						
1	UTILITY PRIMARY SERVICE	2	–	W/PULL WIRE	–	–	4"C.
2	'MDP'	3	4	#400 KCMIL CU	–	–	4"C.
3	TVSS	1	4	#4 AWG CU	#8	–	1-1/2"
4	PANEL 'LA'	1	4	#500 KCMIL CU	#3	#3	4"C.
5	PANEL 'LB' OR 'LD'	1	4	#4/0 AWG CU	#4	#4	3"C.
6	PANEL 'LC'	1	4	#4/0 AWG CU	#4	–	3"C.
7	BOOK MOBILE OUTLET	1	3	#4 AWG CU	#10	–	1-1/2"

Professional Engineering Consultants, P.A.
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Topeka Metropolitan Transit Authority
Bus Transfer Facility

Topeka, Kansas

ELECTRICAL ONE-LINE DIAGRAM

ORIGINAL CONTRACT DOCUMENTS

ISSUE DATE: 8-29-2001
ARCH. PROJ. NO. 99-32

E101
SHEET NO.

DSKR: MMH CPCR: MMH SCALE: 1/8"=1'-0"
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ALTERNATE #1

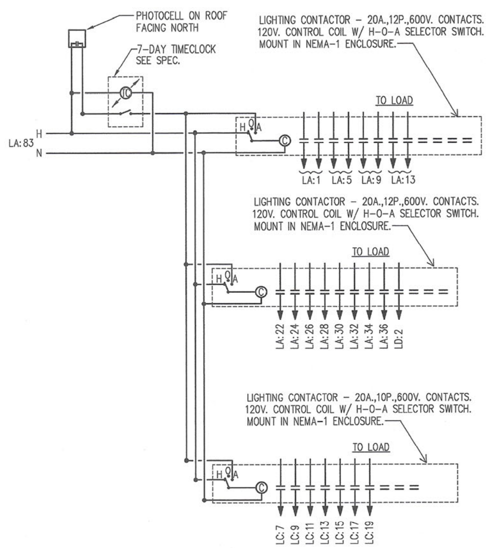
LD

FLUSH MTD., W/GRD. BUS & ISO. GRDBUS

120/208 VOLTS, 3 PHASE, 4 WIRE
225 AMP MLO
65,000 AIC LABELED

CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P.	AMP SIZE	PHASE	AMP SIZE	P.	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
1	400	RCPT	RM. 142	1	20	A	20	1	CANOPY LTS.	LGHT	1325	2 ①
3	1500	POWR	RM. 142	1	20	B	20	1	RM. 142	LGHT	840	4
5	1000	POWR	RM. 142	1	20	C	20	1	RM. 142	LGHT	1050	6
7	1200	RCPT	RM. 142	1	20	A	20	1	RM. 143,144	LGHT	840	8
② 9	1200	POWR	FSD'S	1	20	B	15	3	AHU-3	MECH	2800	10
11	1200	RCPT	RM. 142	1	20	C	----	-	---------------	-	------	12
13	1200	RCPT	RM. 142	1	20	A	----	-	---------------	-	------	14
15	1200	RCPT	RM. 142	1	20	B	20	1	RF-3	MECH	900	16
17	1200	RCPT	RM. 144	1	20	C	60	3	CU-3	MECH	11600	18
19	1200	RCPT	RM. 144	1	20	A	----	-	---------------	-	------	20
21	1200	RCPT	RM. 143	1	20	B	----	-	---------------	-	------	22
23	1200	RCPT	RM. 143	1	20	C	20	1	ZD-2,3	MECH	1400	24
25	100	MECH	EF-3	1	20	A	20	1	SPARE	SPAR		26
27		SPAR	SPARE	1	20	B	20	1	SPARE	SPAR		28
29		SPAR	SPARE	1	20	C	20	1	SPARE	SPAR		30
31		SPAR	SPARE	1	20	A	20	1	SPARE	SPAR		32
33		SPAR	SPARE	1	20	B	20	1	SPARE	SPAR		34
35		SPAR	SPARE	1	20	C	20	1	SPARE	SPAR		36
37		POWR	TVSS	3	60	A	20	1	SPARE	SPAR		38
39	------	-	---------------	-	----	B	20	1	SPARE	SPAR		40
41	------	-	---------------	-	----	C	20	1	SPARE	SPAR		42

①VIA CONTACTOR. SEE DETAIL 1/E102.
②PROVIDE LOCK-ON CLIP.



1 LIGHTING CONTROL WIRING DIAGRAMS
NO SCALE

TVSS PANEL

LA

FLUSH MTD., W/GRD. BUS & ISO GRD.BUS

120/208 VOLTS, 3 PHASE, 4 WIRE
400 AMP MLO
65,000 AIC LABELED

CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P.	AMP SIZE	PHASE	AMP SIZE	P.	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
① 1	2600	LGHT	PARKING LOT LTS	2	20	A	20	1	RM. 116,119	LGHT	1250	2
3	------	-	---------------	-	----	B	20	1	RM. 114,115	LGHT	980	4
① 5	2275	LGHT	PARKING LOT LTS	2	20	C	20	1	RM. 111,109,113	LGHT	980	6
7	------	-	---------------	-	----	A	20	1	RM. 108	LGHT	1040	8
① 9	2275	LGHT	PARKING LOT LTS	2	20	B	20	1	RM. 102,110	LGHT	1140	10
11	------	-	---------------	-	----	C	20	1	RM. 104,105	LGHT	980	12
① 13	2600	LGHT	PARKING LOT LTS	2	20	A	20	1	RM. 102	LGHT	1240	14
15	------	-	---------------	-	----	B	20	1	CEILING FANS	LGHT	1200	16
17	1300	RCPT	PARKING LOT REC	1	20	C	20	1	RM. 102	LGHT	900	18
19	800	RCPT	PARKING LOT REC	1	20	A	20	1	MEZZ. LTS.	LGHT	900	20
21	1400	RCPT	PARKING LOT REC	1	20	B	20	1	CANOPY LTS.	LGHT	600	22 ①
23	900	RCPT	PARKING LOT REC	1	20	C	20	1	CANOPY LTS.	LGHT	900	24 ①
25	900	RCPT	PARKING LOT REC	1	20	A	20	1	CANOPY LTS.	LGHT	675	26 ①
27	200	RCPT	WAITING RM.	1	20	B	20	1	CANOPY LTS.	LGHT	900	28 ①
29	1000	RCPT	RM. 101, 103	1	20	C	20	1	CANOPY LTS.	LGHT	675	30 ①
31	400	RCPT	RM. 102	1	20	A	20	1	CANOPY LTS.	LGHT	675	32 ①
33	600	POWR	DRINKING FOUNTA	1	20	B	20	1	FLAG LTS.	LGHT	600	34 ①
35	2000	POWR	HAND DRYER	1	20	C	20	1	CANOPY LTS.	LGHT	1050	36 ①
37	2000	POWR	HAND DRYER	1	20	A	20	1	EF-1	MECH	900	38
39	800	POWR	FLUSH VALVES	1	20	B	20	1	EF-2	MECH	800	40
41	500	POWR	CHANGE MACH.	1	20	C	20	1	EF-4	MECH	300	42
43	800	RCPT	RM. 102, 101	1	20	A	40	1	BLR-1	MECH	2600	44
45	800	RCPT	RM. 109	1	20	B	40	1	BLR-2	MECH	2600	46
47	400	RCPT	RM. 109	1	20	C	20	1	SEC. CAMERA	POWR	500	48
49	800	RCPT	RM. 109	1	20	A	20	1	UH-2	MECH	900	50
51	600	RCPT	RM. 109	1	20	B	20	1	WH-1, CP-1	MECH	1400	52
53	600	RCPT	RM. 109	1	20	C	20	1	ZD-1	MECH	700	54
55	800	RCPT	RM. 111	1	20	A	20	1	UH-1	MECH	900	56
② 57	1000	POWR	FSD'S	1	20	B	20	1	RF-2	MECH	900	58
59	1000	RCPT	MEZZ. RECEPT.	1	20	C	20	1	RM. 117	POWR	500	60
61	1200	POWR	DOOR OPERATOR	1	20	A	20	1	P-5	MECH	900	62
63	1200	POWR	DOOR OPERATOR	1	20	B	20	1	P-6	MECH	900	64
65	1200	POWR	DOOR OPERATOR	1	20	C	20	1	MEZZ. RECEPT.	RCPT	1400	66
67	800	POWR	RM. 108	1	20	A	20	1	SECURITY CTL. P	POWR	500	68 ②
② 69	1000	POWR	FACP	1	20	B	20	1	P-3	MECH	900	70
71		SPAR	SPARE	1	20	C	20	1	P-4	MECH	900	72
73		SPAR	SPARE	1	20	A	20	1	SPARE	SPAR		74
75		SPAR	SPARE	1	20	B	20	1	SPARE	SPAR		76
77		SPAR	SPARE	1	20	C	20	1	SPARE	SPAR		78
79		SPAR	SPARE	1	20	A	60	3	TVSS	POWR		80
81		SPAR	SPARE	1	20	B	----	-	---------------	-	------	82
83	200	POWR	LIGHTING CTL.	1	20	C	----	-	---------------	-	------	84

①VIA CONTACTOR. SEE DETAIL 1/E102.
②PROVIDE LOCK-ON CLIP.

TVSS PANEL

LB

FLUSH MTD., W/GRD. BUS & ISO. G. BUS

120/208 VOLTS, 3 PHASE, 4 WIRE
225 AMP MLO
65,000 AIC LABELED

CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P.	AMP SIZE	PHASE	AMP SIZE	P.	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
1	200	RCPT	EXT. RECEPT.	1	20	A	20	1	COFFEE MACHINE	POWR	1200	2
3	1200	RCPT	RM. 117	1	20	B	20	1	MICROWAVE	POWR	1500	4
5	1600	RCPT	RM. 117	1	20	C	20	1	DISPOSAL	POWR	1200	6
7	600	RCPT	RM. 119,116,118	1	20	A	20	1	COFFEE MACHINE	POWR	1200	8
9	1000	POWR	TTB	1	20	B	20	1	REFRIGERATOR	POWR	1200	10
11	500	POWR	IRRIG. CTL. PNL	1	20	C	20	1	HAND DRYER	POWR	2000	12
13	500	POWR	CLOCK CTL. PNL.	1	20	A	20	1	FLUSH VALVES	POWR	1000	14
15	500	POWR	PACP	1	20	B	20	1	HAND DRYER	POWR	2000	16
17	1000	RCPT	RM. 119,114,115	1	20	C	20	1	FLUSH VALVES	POWR	200	18
19	1200	POWR	RM. 116 VENDING	1	20	A	20	1	COPIER	POWR	1500	20
21	1200	POWR	RM. 116 VENDING	1	20	B	20	1	RM. 109,122	POWR	800	22
23	400	RCPT	RM. 116	1	20	C	20	1	DR. ELECT. STRI	POWR	200	24
25	400	RCPT	RM. 116	1	20	A	20	1	PHOTO ID	POWR	500	26
27	1000	RCPT	RM. 111,116	1	20	B	20	1	SPARE	SPAR		28
29	800	RCPT	RM. 116,109,111	1	20	C	20	1	RM. 109	RCPT	200	30
31	1200	POWR	COFFEE MACH.	1	20	A	20	1	RM. 109	RCPT	400	32
33	1200	POWR	TRASH COMPACTOR	1	20	B	20	1	SPARE	SPAR		34
35	1200	RCPT	RM. 118,117	1	20	C	20	1	SPARE	SPAR		36
37	600	POWR	DRINKING FOUNT.	1	20	A	60	3	TVSS	SPAR		38
39		SPAR	SPARE	1	20	B	----	-	---------------	-	------	40
41		SPAR	SPARE	1	20	C	----	-	---------------	-	------	42

LC

SURFACE MOUNTED, W/GROUND BUS

120/208 VOLTS, 3 PHASE, 4 WIRE
225 AMP MLO
65,000 AIC LABELED

CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P.	AMP SIZE	PHASE	AMP SIZE	P.	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
⑤ 1	400	RCPT	BOILER ROOM	1	20	A	15	3	P-8	MECH	2400	2
④ 3	400	LGHT	BOILER ROOM	1	20	B	----	-	---------------	-	------	4
② 5	1000	POWR	CLOCK	1	20	C	----	-	---------------	-	------	6
②① 7	900	LGHT	TOWER LTS.	1	20	A	45	3	P-9	MECH	8800	8
②① 9	900	LGHT	TOWER LTS.	1	20	B	----	-	---------------	-	------	10
②① 11	1325	LGHT	SHELTER LTS.	1	20	C	----	-	---------------	-	------	12
③① 13	1200	LGHT	SHELTER LTS.	1	20	A	25	3	UH-3	MECH	5900	14
③① 15	900	LGHT	SHELTER LTS.	1	20	B	----	-	---------------	-	------	16
③① 17	1200	LGHT	SHELTER LTS.	1	20	C	----	-	---------------	-	------	18
③① 19	1200	LGHT	SHELTER LTS.	1	20	A	40	1	BLR-3	MECH	2600	20
21		SPAR	SPARE	1	20	B	40	1	BLR-4	MECH	2600	22
23		SPAR	SPARE	1	20	C	20	1	SPARE	SPAR		24
25		SPAR	SPARE	1	20	A	20	1	SPARE	SPAR		26
27		SPAR	SPARE	1	20	B	20	1	SPARE	SPAR		28
29		SPAR	SPARE	1	20	C	20	1	SPARE	SPAR		30
31		SPAR	SPARE	1	20	A	20	1	SPARE	SPAR		32
33		SPAR	SPARE	1	20	B	20	1	SPARE	SPAR		34
35		SPAR	SPARE	1	20	C	20	1	SPARE	SPAR		36
37		SPAR	SPARE	1	20	A	20	1	SPARE	SPAR		38
39		SPAR	SPARE	1	20	B	20	1	SPARE	SPAR		40
41		SPAR	SPARE	1	20	C	20	1	SPARE	SPAR		42

①VIA CONTACTOR. SEE DETAIL 1/E102.
②ALTERNATE #2. SPARE IN BASE BID.
③BASE BID
④UNDER ALTERNATE #2 LOAD VA IS 580.
⑤UNDER ALTERNATE #2 LOAD VA IS 1000.

EQUIPMENT CONNECTION SCHEDULE

MECHANICAL EQUIPMENT CONNECTIONS

UNIT DESIG.	UNIT VOLTAGE	LOAD			PANEL DEVICE						DEVICE AT UNIT						SETS	FEEDER DESCRIPTION OR SEE THE FEEDER SCHEDULE	REMARKS OR SEE THE INDICATED NOTES BELOW
		H.P.	FLA	KVA	CIRCUIT NUMBER	BKR. AMPS	SW. AMPS	FUSE AMPS	POLE	NEMA START. SIZE	BKR. AMPS	SW. AMPS	FUSE AMPS	POLE	NEMA START. SIZE	OTHER			
AHU-	AIR HANLDING UNIT																		
1	208/3	7.5	24.2	8.8	MDP:3		60	35	3			60		3	'1'		1	3 #8 CU; #10 GRD; 3/4" C.	NOTE 3
2/2A	208/3	3	10.6	3.9	MDP:4		30	15	3			30		3	'0'		1	3 #12 CU; #12 GRD; 1/2" C.	NOTE 3
3	208/3	2	7.5	2.8	LD:10	15			3			30	12	3	'0'		1	3 #12 CU; #12 GRD; 1/2" C.	NOTE 3; ALT.#1
EF-	EXHAUST FAN																		
1	120/1	.33	7.2	.9	LA:38	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	INTERLOCK W/AHU#1
2	120/1	.33	7.2	.9	LA:40	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	INTERLOCK W/AHU#2
3	120/1		.9	.1	LD:25	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	INTERLOCK W/AHU#3,ALT#1
4	120/1		2.5	.3	LA:42	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	VIA TIME SWITCH BY E.C.
BLR-	BOILER																		
1	120/1		21.0	2.6	LA:44	40			1			60	30				1	2 #8 CU; #10 GRD; 3/4" C.	NOTE 5
2	120/1		21.0	2.6	LA:46	40			1			60	30				1	2 #8 CU; #10 GRD; 3/4" C.	NOTE 5
3	120/1		21.0	2.6	LC:20	40			1			60	30				1	2 #8 CU; #10 GRD; 3/4" C.	NOTE 5
4	120/1		21.0	2.6	LC:22	40			1			60	30				1	2 #8 CU; #10 GRD; 3/4" C.	NOTE 5
P-	PUMP																		
1	208/3	1.5	6.6	2.4	MDP:10		30	10	3			30		3	VFD		1	3 #12 CU; #12 GRD; 1/2" C.	
2	208/3	1.5	6.6	2.4	MDP:11		30	10	3			30		3	VFD		1	3 #12 CU; #12 GRD; 1/2" C.	
3	120/1	.33	7.2	.9	LA:70	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
4	120/1	.33	7.2	.9	LA:72	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
5	120/1	.3	7.2	.9	LA:62	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
6	120/1	.3	7.2	.9	LA:64	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
7	208/3	5	16.7	6.1	MDP:14		30	25	3			30		3	'1'		1	3 #10 CU; #10 GRD; 3/4" C.	
8	208/3	1.5	6.6	2.4	LC:2	15			3			30	10	3	'00'		1	3 #12 CU; #12 GRD; 1/2" C.	
9	208/3	7.5	24.2	8.8	LC:8	45			3			60	35	3	'1'		1	3 #6 CU; #10 GRD; 1" C.	
WH-	WATER HEATER																		
1	120/1	.2	5.8	.7	LA:52	20			1							RECEPT.	1	2 #12 CU; #12 GRD; 1/2" C.	RECEPT. 5'-0"AFF.
CU-	CONDENSING UNIT																		
1	208/3		85.9	31.0	MDP:6		100	100	3			100		3		NEMA 3R	1	3 #1 CU; #8 GRD; 1-1/2" C.	1"C. TO AHU FOR CONTROLS
2/2A	208/3		25.0	9.1	MDP:7		60	45	3			60		3		NEMA 3R	1	3 #6 CU; #10 GRD; 1" C.	1"C. TO AHU FOR CONTROLS
3	208/3		32.0	11.6	LD:18	60			3			60	45	3		NEMA 3R	1	3 #4 CU; #10 GRD; 1-1/4" C.	1"C. TO AHU FOR CTL,ALT1
UH-	UNIT HEATER																		
1	120/1	.3	7.2	.9	LA:56	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
2	120/1	.3	7.2	.9	LA:50	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
3	208/3	.2	16.3	5.9	LC:14	25			3			30	25	3			1	3 #10 CU; #10 GRD; 3/4" C.	
RF-	REFIEF FAN																		
1	208/3	2	7.5	2.8	MDP:9		30	12	3			30		3	'0'		1	6 #12 CU; #12 GRD; 3/4" C.	2 SPEED TWO WINDING MTR
2	120/1	.3	7.2	.9	LA:58	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
3	120/1	.3	7.2	.9	LD:16	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	ALT. #1
ZD-	ZONE DAMPER																		
1	120/1	.2	5.8	.7	LA:54	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	
2	120/1	.2	5.8	.7	LD:24	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	ALT. #1
3	120/1	.2	5.8	.7	LD:24	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	ALT. #1
CP-	CIRCULATING PUMP																		
1	120/1	.2	5.8	.7	LA:52	20			1							FUSTAT	1	2 #12 CU; #12 GRD; 1/2" C.	CONNECT AQUASTAT
AC-	AIR CURTAIN																		
1	208/3	.5	24.7	8.9	MDP:12		60	35	3			60		3			1	3 #8 CU; #10 GRD; 3/4" C.	
2	208/3	.5	24.7	8.9	MDP:13		60	35	3			60		3			1	3 #8 CU; #10 GRD; 3/4" C.	

1. ALL CONNECTIONS AND ELECTRICAL EQUIPMENT LISTED IN SCHEDULE SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. FIELD VERIFY CONNECTION REQUIREMENTS AND EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN.
2. REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTIONS OF INTERLOCKING, THERMOSTAT LOCATIONS, EXHAUST FAN CONTROL SWITCHES, AND OTHER CONTROLS OF MECHANICAL EQUIPMENT.
3. PROVIDE DUCT MOUNTED SMOKE DETECTORS IN THE SUPPLY AND RETURN DUCTS. VERIFY THE REQUIRED QUANTITY OF DUCT SMOKE DETECTORS FOR EACH UNIT WITH DUCTWORK LAYOUT TO MEET NFPA REQUIREMENTS. PROVIDE FAN SHUT DOWN RELAY TO SHUT DOWN MECHANICAL UNIT UPON ANY ZONE IN ALARM AT THE FIRE ALARM CONTROL PANEL.
4. PROVIDE A 30A., 1 POLE, 125V. HORSEPOWER RATED TOGGLE SWITCH WITH A 125V., 3/4 HP RATED FUSTAT (EQUAL TO BUSSMAN #SOY), SIZE FUSE PER MANUFACTURER'S RECOMMENDATION.
5. PROVIDE 20A., 1 POLE, 125V. TOGGLE SWITCH WITH LIFT UP COVER FOR EMERGENCY SHUTDOWN OF BOILER. LABEL SWITCH "BOILER EMERGENCY SHUTDOWN". WIRE SWITCH TO SHUT OFF POWER TO THE BOILER CONTROLS. SEE PLANS FOR QUANTITY OF SWITCHES REQUIRED.

Professional Engineering Consultants, P.A.
1820 W. 6TH STREET • LAWRENCE, KANSAS 66044
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MOHAMMED MONCEF HADHRI LICENSED 12973 8-31-01 KANSAS PROFESSIONAL ENGINEER

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Topeka Metropolitan
Transit Authority
Bus Transfer Facility

Topeka, Kansas

ELECTRICAL
SCHEDULES

ORIGINAL CONTRACT DOCUMENTS

ISSUE DATE: 8-29-2001
ARCH. PROJ. NO: 99-32

DSNR: MMH OPER: MMH SCALE: 1/8"=1'-0"
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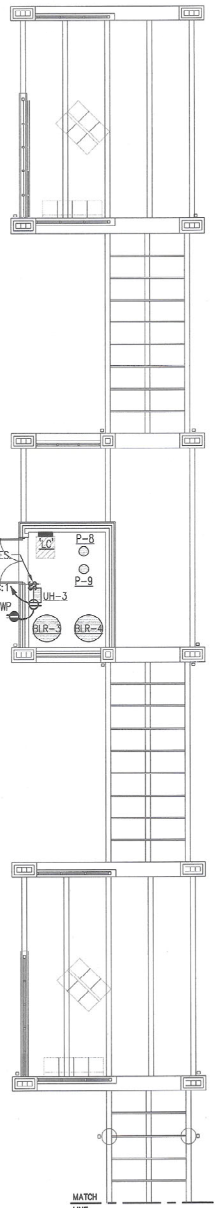
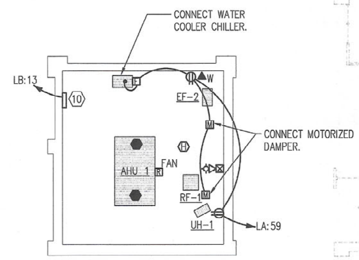


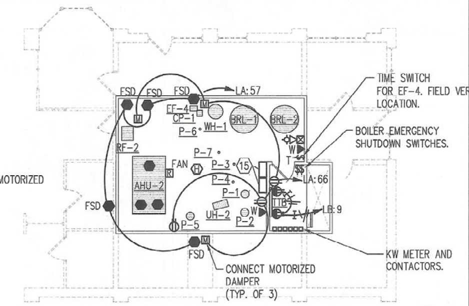
SHELTER POWER FLOOR PLAN
SCALE 1/8"=1'-0"

PLAN NOTES:

1. BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS FOR CLARITY ONLY. CONTRACTOR MAY GROUP SINGLE POLE BRANCH CIRCUITS IN MULTIPLE CIRCUIT HOME RUNS. (3 CIRCUITS MAXIMUM). A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL CONDUITS.
2. FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
3. ALL PENETRATIONS IN THE RATED WALLS AND CEILINGS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASSES. THE SEALANT SHALL HAVE A T-RATING OF ONE HOUR.
4. ALL PIPING, CONDUIT, AND OUTLET BOXES (ELECTRIC, TELEPHONE, COMPUTER, ETC.) IN THE RATED WALLS OR CEILING SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIAL.
5. OUTLET BOXES (ELECTRIC, TELEPHONE, COMPUTER, ETC.) SHALL BE LIMITED TO TWO OUTLET BOXES PER STUD SPACE. OUTLET BOXES ON OPPOSITE SIDES OF THE RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.
6. PROVIDE ALL ISOLATED GROUND CIRCUITS WITH INDIVIDUAL NEUTRAL CONDUCTORS.
7. FIELD VERIFY THE EXACT LOCATION OF ALL FLOOR BOXES AND WITH ARCHITECT PRIOR TO ROUGH-IN.
8. REFER TO ARCHITECTURAL FOR EXACT CLOCK LOCATION.
9. CLOCK TOWER SHALL BE CONTROLLED AND TIE IN TO BUILDING CLOCK SYSTEM. REFER TO ARCHITECTURAL FOR TOWER CLOCK SPECIFICATIONS.
10. CONTRACTOR SHALL VERIFY SECURITY, CCTV, AND FIRE ALARM SYSTEMS WITH OWNER. SECURITY, CCTV, AND FIRE ALARM SYSTEMS PROVIDED AND INSTALLED BY OTHERS. ALL CONDUITS AND PULL BOXES BY E.C.

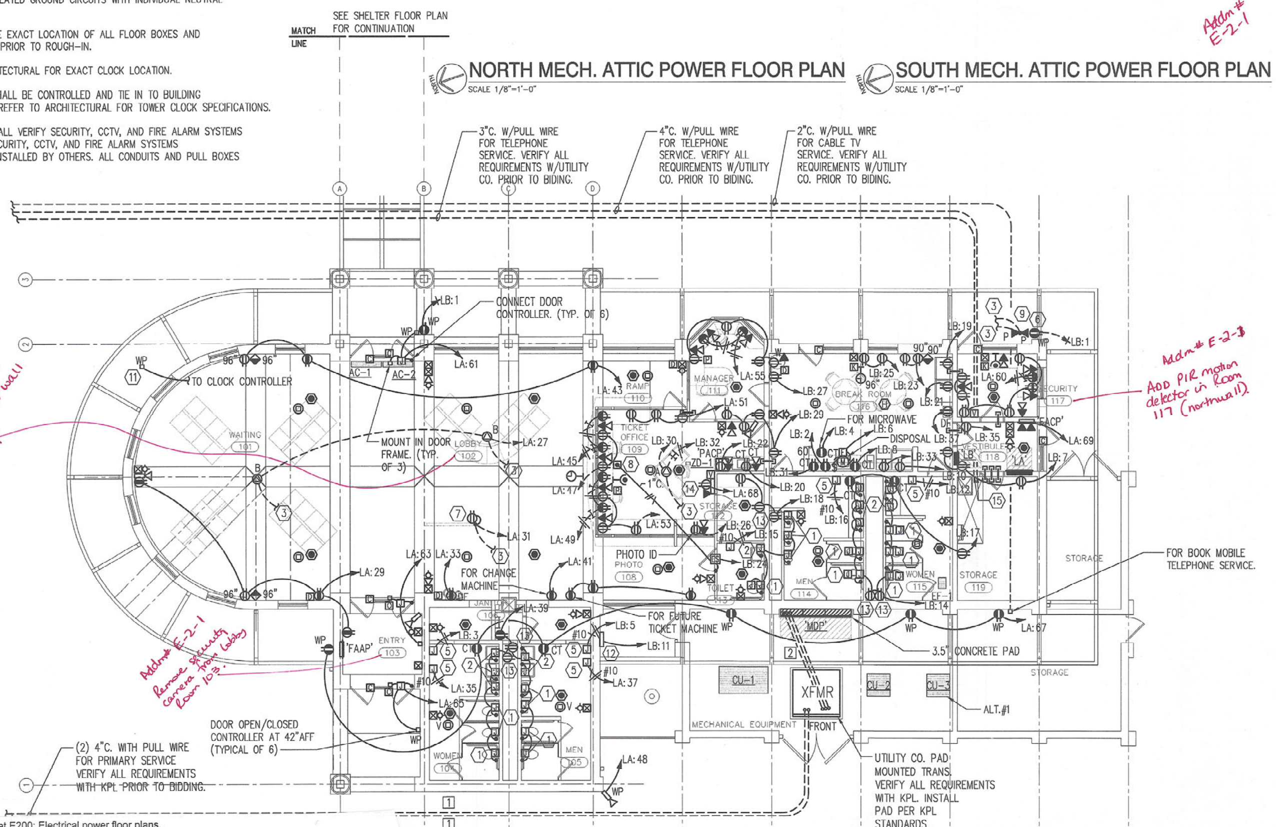


NORTH MECH. ATTIC POWER FLOOR PLAN
SCALE 1/8"=1'-0"



SOUTH MECH. ATTIC POWER FLOOR PLAN
SCALE 1/8"=1'-0"

Addm # E-2-1



POWER FLOOR PLAN
SCALE 1/8"=1'-0"

ADDM #3

2. Sheet E200: Electrical power floor plans.
   a. Shelter power floor plan: Add two door contacts on boiler room door.
   b. Add one security monitor in the Manager Room 111 and one security monitor in the ticket office Room 109. Run 1" conduit with pull wire from each location to the security control panel. Field verify location with owner.
   c. Relocate security control panel from Room 109 to Room 112 (south wall). Provide two 20 A. duplex receptacles and connect to circuit LA: 68. Provide two telephone lines for monitoring Fire Alarm/Intrusion System. Connect power supply for CCTV next to the security control panel in Room 112 to circuit LA: 68.
   d. Add one horn (part of the Intrusion Alarm System) in Room 109 next to security camera.
   e. Add the following Note: "Fire Alarm control panel (FACP) and Fire Alarm annunciator panel (FAAP) shall be installed by Electrical Contractor".
   f. Add one 1" conduit pull wire between security control panel and Fire Alarm control panel.
   g. Add one door contact on door # 109b
   h. Add four (6) 1" conduit from security control panel to above ceiling. Provide plastic bushing at end of each conduit.

KEYED NOTES:

(1) JUNCTION BOX FOR FLUSH VALVE. CONNECT AUTOMATIC FLUSH VALVE. FIELD VERIFY LOCATION WITH FLUSH VALVE PROVIDED PRIOR TO ROUGH-IN.
(2) JUNCTION BOX FOR AUTOMATIC FAUCET. CONNECT AUTOMATIC VALVE. FIELD VERIFY LOCATION WITH VALVE PROVIDED PRIOR TO ROUGH-IN.
(3) 1"C. WITH PULL WIRE TO CEILING VOID FOR TELE./DATA.
(4) PROVIDE VANDAL RESISTANT SPEAKER
(5) JUNCTION BOX AT 44" AFF FOR HAND DRYER. HAND DRYER PROVIDED BY GENERAL CONTRACTOR.
(6) PROVIDE WEATHERPROOF LOCKABLE RECEPTACLE.
(7) INSTALL RECEPTACLE ON DISPLAY SIGN AS DIRECTED BY ARCHITECT. REFER TO ARCHITECTURAL DRAWINGS. Extend circuit LA:31 to top of display case for display case lighting
(8) DOOR ELECTRIC STRIKE PUSH BUTTON. REFER TO ARCHITECTURAL FOR PUSH BUTTON EXACT LOCATION.
(9) FIELD VERIFY PUBLIC TELEPHONE LOCATION PRIOR TO ROUGH-IN.
(10) CLOCK SYSTEM CONTROLLER. PROVIDE AND INSTALL SIMPLEX CLOCK GPS SYSTEM 6810 OR APPROVED EQUAL. PROVIDE ADDITIONAL CONTACT TO ACCEPT TOWER CLOCKS. COORDINATE WITH TOWER CLOCK MANUFACTURER AND PROVIDE A COMPLETE AND FUNCTIONAL CLOCK SYSTEM.
(11) CLOCK GPS ANTENNA. MOUNT PER MANUFACTURER'S RECOMMENDATIONS. FIELD VERIFY LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. PROVIDE AND INSTALL 1-1/2"C. WITH PULL WIRE TO CLOCK CONTROLLER LOCATED IN STORAGE ROOM 119.
(12) WP IRRIGATION CONTROL PANEL. FIELD VERIFY LOCATION.
(13) RECEPTACLES FOR 50VA 120V PRI. TO 24V AC SEC. TRANSFORMER. MOUNT IN ACCESSIBLE LOCATION.
(14) SECURITY CONTROL PANEL. FIELD VERIFY LOCATION.
(15) UP TO MEZZANINE LEVEL TO TELEPHONE TERMINAL BOARD.
(15) P-1,P-2 VFD'S.

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Topeka Metropolitan Transit Authority Bus Transfer Facility

Topeka, Kansas

ELECTRICAL POWER FLOOR PLANS

ORIGINAL CONTRACT DOCUMENTS

ISSUE DATE: 8-29-2001
ARCH. PROJ. NO: 99-32
SHEET NO: E200

DSNR: MMH OPER: MMH SCALE: 1/8"=1'-0"
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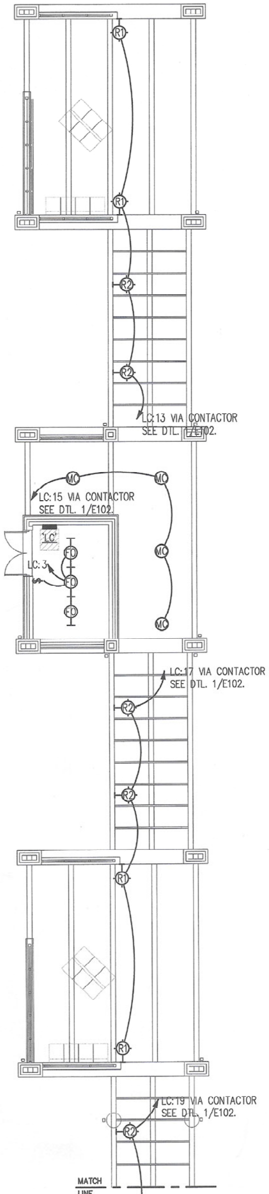
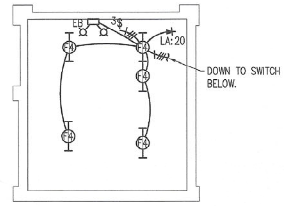
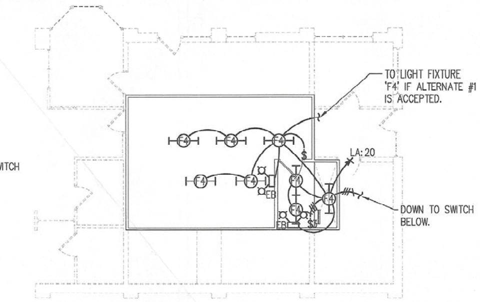


SHELTER LIGHTING FLOOR PLAN
SCALE 1/8"=1'-0"



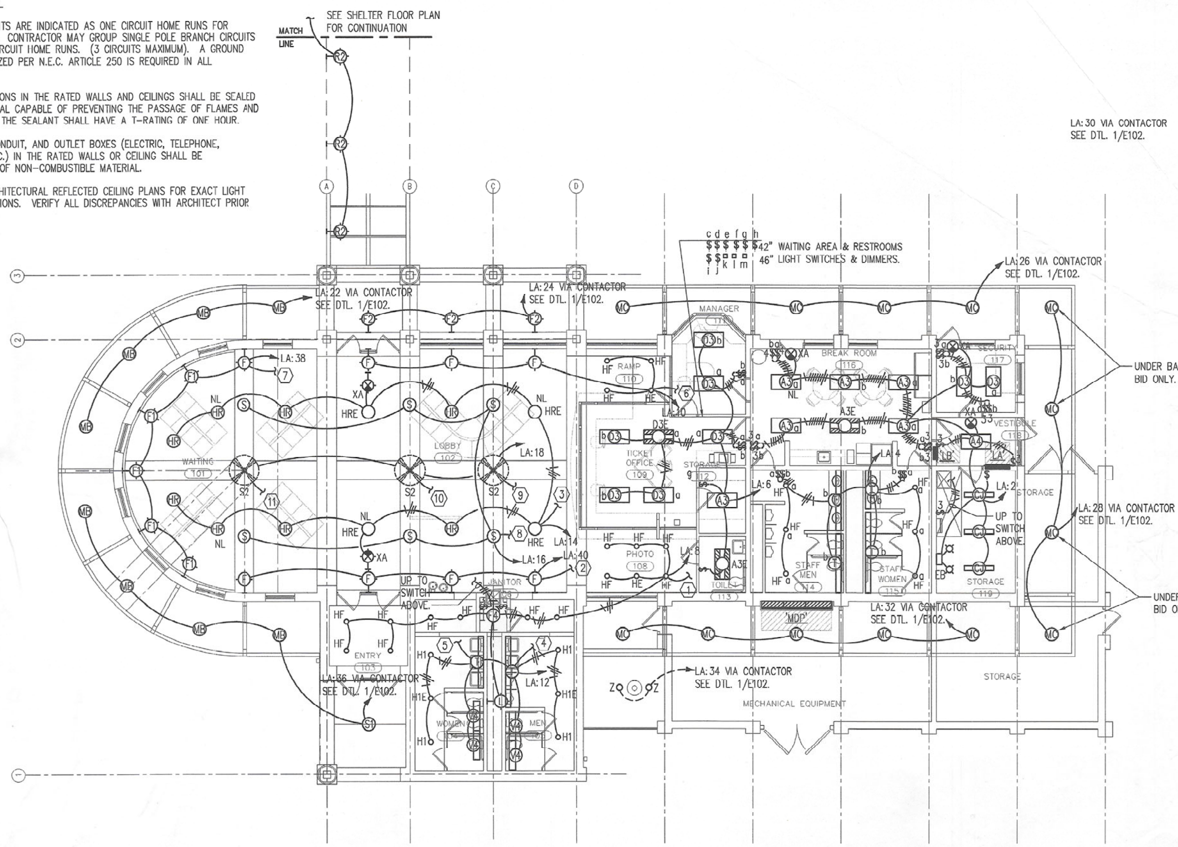
NORTH MECH. ATTIC LTG. FLOOR PLAN
SCALE 1/8"=1'-0"



SOUTH MECH. ATTIC LTG. FLOOR PLAN
SCALE 1/8"=1'-0"

PLAN NOTES:

1. BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS FOR CLARITY ONLY. CONTRACTOR MAY GROUP SINGLE POLE BRANCH CIRCUITS IN MULTIPLE CIRCUIT HOME RUNS. (3 CIRCUITS MAXIMUM). A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL CONDUITS.
2. ALL PENETRATIONS IN THE RATED WALLS AND CEILINGS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASSES. THE SEALANT SHALL HAVE A T-RATING OF ONE HOUR.
3. ALL PIPING, CONDUIT, AND OUTLET BOXES (ELECTRIC, TELEPHONE, COMPUTER, ETC.) IN THE RATED WALLS OR CEILING SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIAL.
4. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LIGHT FIXTURE LOCATIONS. VERIFY ALL DISCREPANCIES WITH ARCHITECT PRIOR TO ROUGH-IN.



LIGHTING FLOOR PLAN
SCALE 1/8"=1'-0"

KEYED NOTES:

1. TO SWITCH 'c' IN RM. 109.
2. TO SWITCH 'd' IN RM. 109.
3. TO SWITCH 'e' IN RM. 109.
4. TO SWITCH 'f' IN RM. 109.
5. TO SWITCH 'g' IN RM. 109.
6. TO SWITCH 'h' IN RM. 109.
7. TO SWITCH 'i' IN RM. 109.
8. TO SWITCH 'j' IN RM. 109.
9. TO SPEED CONTROLLER 'k' IN RM. 109.
10. TO SPEED CONTROLLER 'l' IN RM. 109.
11. TO SPEED CONTROLLER 'm' IN RM. 109.

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Topeka Metropolitan Transit Authority Bus Transfer Facility

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ELECTRICAL LIGHTING FLOOR PLANS

ORIGINAL CONTRACT DOCUMENTS

ISSUE DATE: 8-29-2001
ARCH. PROJ. NO: 99-32
SHEET NO: E201

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DSNR: MMH OPER: MMH SCALE: 1/8"=1'-0"
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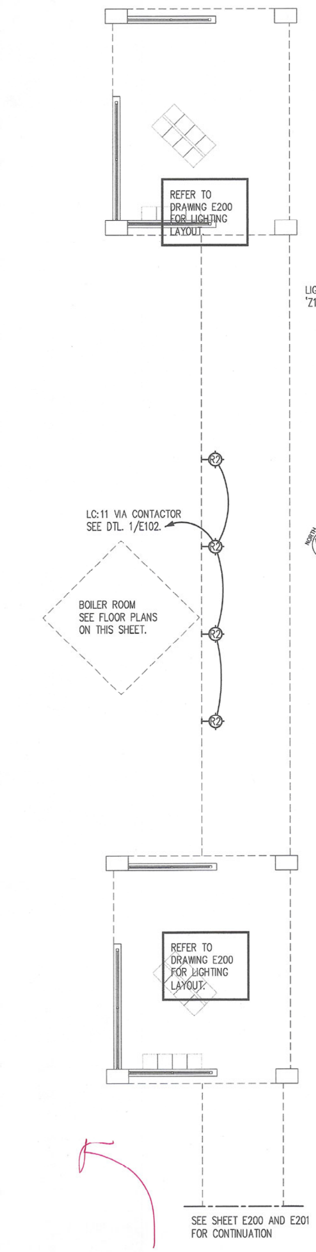
Addm#3

3. Sheet E202: Electrical Alt. # 1, 2 power/lighting floor plans.

   a. Shelter power lighting floor plan – Alt. #2. Remove one light fixture 'R2'. Readjust light fixtures 'R2' to be evenly spaced.
   b. Power Floor Plan – Alternate #1: Add one horn (part of the Intrusion Alarm System) in Room 142.
   c. Boiler room lighting floor plan – Alternate #2- Add the follgwing Note: "Provide tower clocks – total of four to comply with the following:

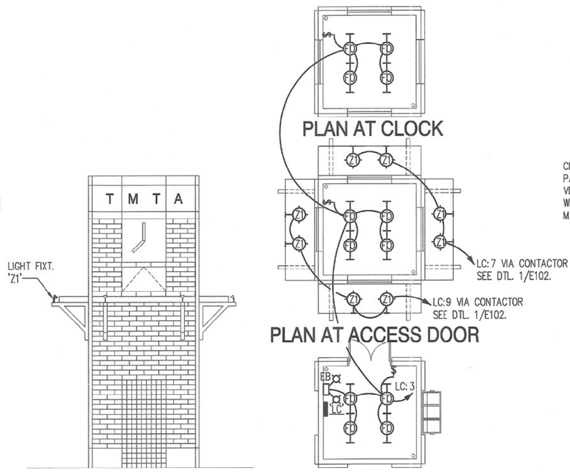
      1. Clock shall be by Electric Time Company, Inc.
         Outdoor silhouette clock
         Model/Style 1000
         Aluminum markers
         Conventional wall marker mounting
         60" diameter
         Rear mount movement assembly
         Face: Type – L
         Hands: Type LS
         Finish: Matte Black

      2. Provide 120V. to each controller and connect controllers to clock GPS system in the building.



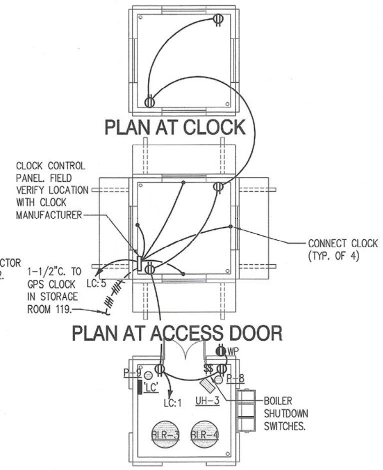
SHELTER POWER/LIGHTING FLOOR PLAN - ALT. #2

SCALE 1/8"=1'-0"



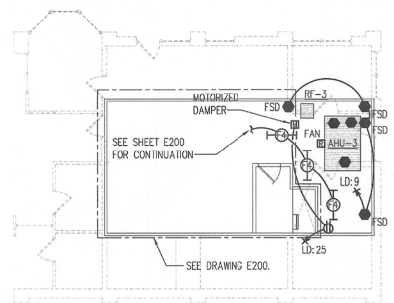
BOILER ROOM LIGHTING FLOOR PLAN - ALT. #2

SCALE 1/8"=1'-0"



BOILER ROOM POWER FLOOR PLAN - ALT. #2

SCALE 1/8"=1'-0"



S. MEZZ. POWER/LIGHTING FLOOR PLAN - ALT.#1

SCALE 1/8"=1'-0"

PLAN NOTES:

1. BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS FOR CLARITY ONLY. CONTRACTOR MAY GROUP SINGLE POLE BRANCH CIRCUITS IN MULTIPLE CIRCUIT HOME RUNS. (3 CIRCUITS MAXIMUM). A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL CONDUITS.
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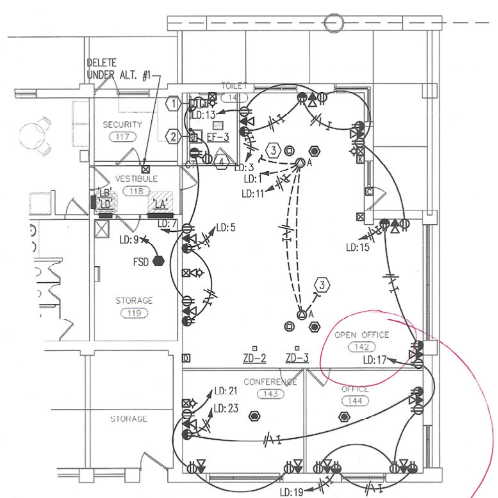
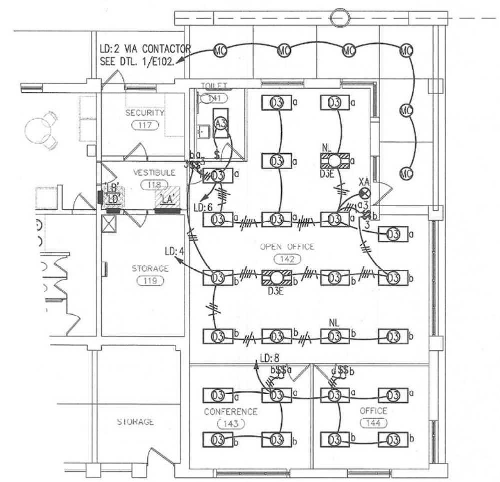
6. PROVIDE ALL ISOLATED GROUND CIRCUITS WITH INDIVIDUAL NEUTRAL CONDUCTORS.
7. FIELD VERIFY THE EXACT LOCATION OF ALL FLOOR BOXES AND WITH ARCHITECT PRIOR TO ROUGH-IN.
8. CONTRACTOR SHALL VERIFY SECURITY, CCTV, AND FIRE ALARM SYSTEMS WITH OWNER. SECURITY, CCTV, AND FIRE ALARM SYSTEMS PROVIDED AND INSTALLED BY OTHERS. ALL CONDUITS AND PULL BOXES BY E.C.



POWER FLOOR PLAN - ALTERNATE#1

SCALE 1/8"=1'-0"



LIGHTING FLOOR PLAN - ALTERNATE # 1

SCALE 1/8"=1'-0"

See Back of previous page

KEYED NOTES:

1. JUNCTION BOX FOR FLUSH VALVE. CONNECT AUTOMATIC FLUSH VALVE. FIELD VERIFY LOCATION WITH FLUSH VALVE PROVIDED PRIOR TO ROUGH-IN.
2. JUNCTION BOX FOR AUTOMATIC FAUCET. CONNECT AUTOMATIC VALVE. FIELD VERIFY LOCATION WITH VALVE PROVIDED PRIOR TO ROUGH-IN.
3. 1"C. WITH PULL WIRE TO ACCESSIBLE CEILING CAVITY FOR TELE./DATA.
4. RECEPTACLE FOR TRANSFORMER MOUNT ABOVE CEILING.

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ELECTRICAL ALTERNATE #1,2
POWER/LIGHTING FLOOR PLANS

ORIGINAL CONTRACT DOCUMENTS

ISSUE DATE: 8-29-2001
ARCH. PROJ. NO: 99-32

E202
SHEET NO:

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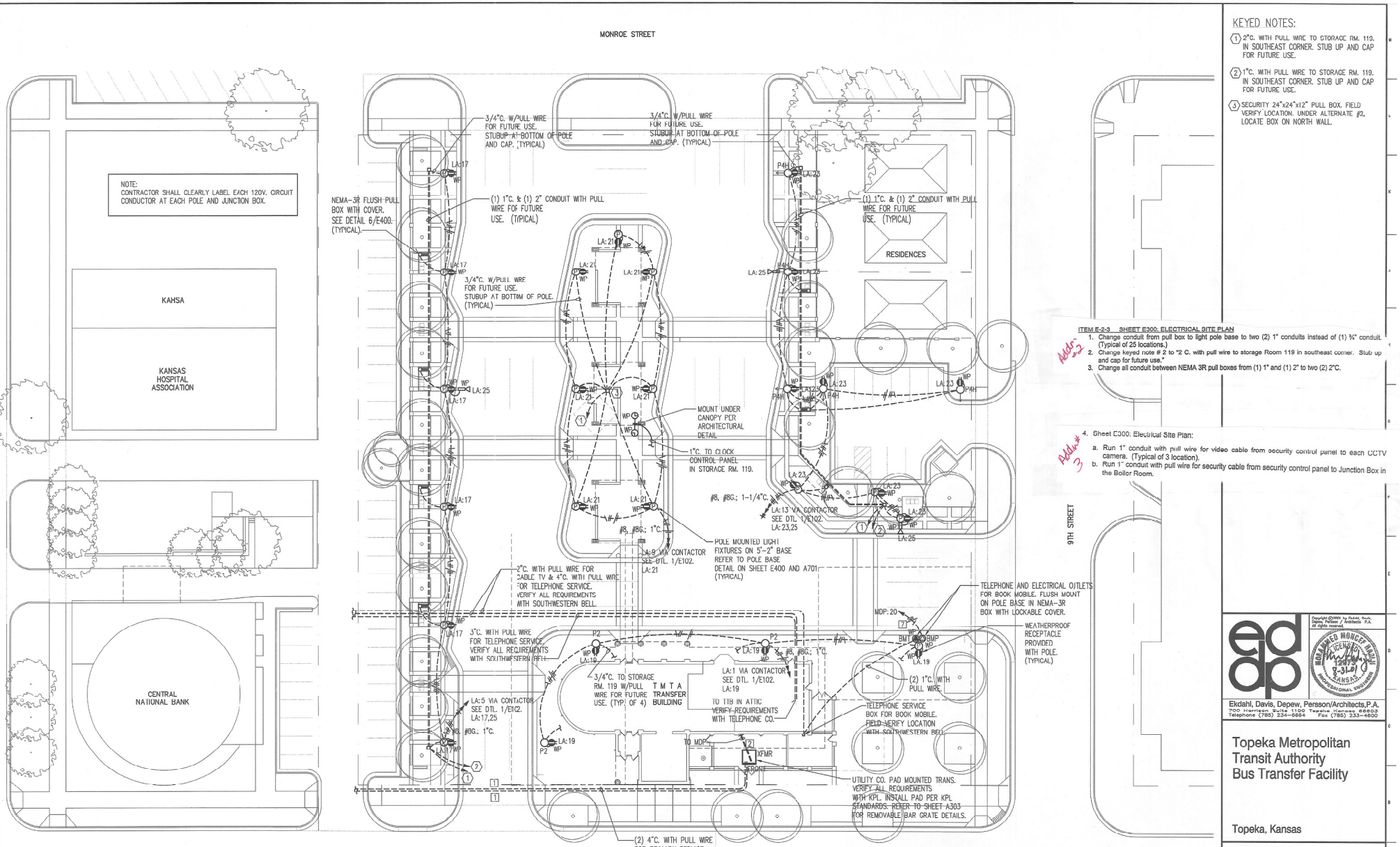

ELECTRICAL SITE PLAN

SCALE 1"=20'

KEYED NOTES:

1. 2"C. WITH PULL WIRE TO STORAGE RM. 119. IN SOUTHEAST CORNER. STUB UP AND CAP FOR FUTURE USE.
2. 1"C. WITH PULL WIRE TO STORAGE RM. 119. IN SOUTHEAST CORNER. STUB UP AND CAP FOR FUTURE USE.
3. SECURITY 24"x24"x12" PULL BOX. FIELD VERIFY LOCATION. UNDER ALTERNATE #2, LOCATE BOX ON NORTH WALL.

ITEM E-2-3 SHEET E300: ELECTRICAL SITE PLAN

Addn #2

1. Change conduit from pull box to light pole base to two (2) 1" conduits instead of (1) ¾" conduit. (Typical of 25 locations.)
2. Change keyed note # 2 to "2 C. with pull wire to storage Room 119 in southeast corner. Stub up and cap for future use."
3. Change all conduit between NEMA 3R pull boxes from (1) 1" and (1) 2" to two (2) 2"C.

Addn #3

4. Sheet E300: Electrical Site Plan:
   a. Run 1" conduit with pull wire for video cable from security control panel to each CCTV camera. (Typical of 3 location).
   b. Run 1" conduit with pull wire for security cable from security control panel to Junction Box in the Boiler Room.

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Topeka Metropolitan Transit Authority Bus Transfer Facility

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ELECTRICAL SITE PLAN

ORIGINAL CONTRACT DOCUMENTS

ISSUE DATE: 8-29-2001
ARCH. PROJ. NO: 99-32

SHEET NO: E300

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