CPA-892	T-1	REPLACE ROOF CIVIC CENTER	Schedule of drawings	01/06/2004
CPA-893	A-1	ENG FILE # FPCC0010 ACCOUNT #	Roof plan	
CPA-894	A-2	02-0200-785-CC0011-00-Z	Sections	
CPA-895	A-3		Details	
CPA-896	A-4	,	Fascia sections and details	
CPA-897	A-5		Fascia details	
CPA-898	A-6		Elevations	·
CPA-899	A-7		Soffit plan	
CPA- 899A	A-8		Ladder elev and details	
CPA- 899B	A-9		Ladder plans and details	
CPA- 899C	A-10		Steel walkway	
CPA- 899D	A-11		Electrical panel platform	
CPA- 899E	E1 01		Soffit lighting plan	
CPA- 899F	E1 02		Electrical details	
CPA- 899G	E2 01		Electrical specifications	

(

Ì

REPLACE ROOF CIVIC CENTER

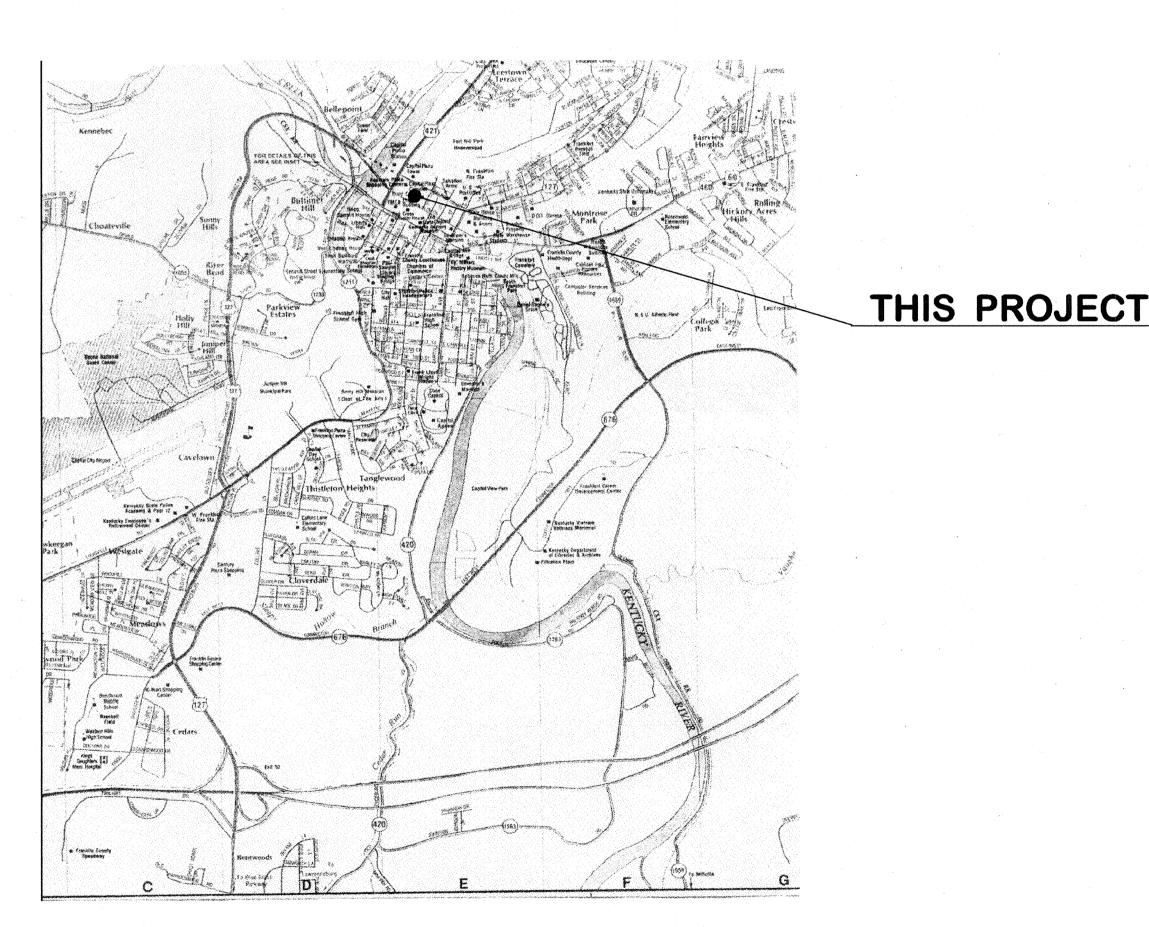
FRANKFORT, KENTUCKY

COMMONWEALTH OF KENTUCKY FINANCE AND ADMINISTRATION CABINET DEPARTMENT FOR FACILITIES MANAGEMENT DIVISION OF ENGINEERING FRANKFORT, KENTUCKY

PAUL E. PATTON, GOVERNOR STATE OF KENTUCKY

ENG. FILE NO. FPCC0010

ACCOUNT NO. 02-0200-785-D785-11-011-CC0011-00-Z



SITE LOCATION PLAN

N. T. S.

INDEX TO NOTES GENERAL 2. EXISTING TO REMAIN 2-1 Thru 2-21 Sh. A-1, A-6 21. EXISTING TO REMOVE 21-1 Thru 21-6 Sh. A-1, A-6 3. Not Used. LADDER AND PLATFORM 5-A Thru <u>5-21</u> Sh. <u>A-8, A-9</u> 51. STEEL STEPS (51-A) Thru 51-14 Sh. A-10, A-11 52. ELECTRIC PANEL PLATFORM 52-A Thru <u>52-11</u> Sh. <u>A-11</u> 6. <u>CARPENTRY</u> 6-1 Thru <u>6-15</u> Sh. <u>A-3</u> 7. INSULATION 7-1 Thru <u>7-9</u> Sh. <u>A-2</u> 71. ROOFING 71-1) Thru 71-15 Sh. A-2 72. ACCESSORIES 72-1) Thru <u>72-6</u> Sh. <u>A-3</u> 73. SHEET METAL 73-1 Thru 73-1 Sh. A-3

ABBREVIATIONS BUILDING BRICK SEAT CONCRETE DOWNSOUT **ELEVATION EXISTING EXTERIOR** FLOOR DRAIN MATERIAL NOT TO SCALE PLY. WD. REQUIRED ROOF DRAIN TOGGLE BOLT TYPICAL WATERPROOF COLD ROLLED **BOLTS AND SCREWS** 74. METAL FACIA PANELS 74-1 Thru 74-19 Sh. A-4, A-5, A-6 FLAT HEAD ROUND HEAD OVAL HEAD WOOD SCREW SHEET METAL SCREW

GYPSUM BOARD ROUGH LUMBER SITE DEVELOPMENT FINISH LUMBER INSULATION PLYWOOD **ALUMINUM** STEEL ARCHITECTURAL SHEET METAL EXIST. GRADE SECTION ON SHEET EXPANSION JT. MATERIAL GALVANIZED IRON MASONRY OPENING ROUGH OPENING STAINLESS STEEL TAPERED EDGE VENTING BASE SHEET BASE SHEET FASTNER

LEGEND

CONCRETE

GRAVEL

LADDER ELEVATIONS AND DETAILS (C.O.) LADDER PLANS AND DETAILS (C.O.) STEEL WALKWAY (C.O.) ELECTRIC PANEL PLATFORM (C.O.) STRUCTURAL NONE REQUIRED THIS PROJECT **PLUMBING** NONE REQUIRED THIS PROJECT HVAC NONE REQUIRED THIS PROJECT **ELECTRICAL** Electrical Details (C. O.) Electrical Specifications (C.O.)

SCHEDULE OF DRAWINGS

TITLE SHEET AND SCHEDULE OF DRAWINGS

NONE REQUIRED THIS PROJECT

FASCIA SECTIONS AND DETAILS

ROOF PLAN

FASCIA DETAILS

ELEVATIONS

SECTIONS

DETAILS

WILLIAM C. MARTIN, P.S.C.

ARCHITECTS - ENGINEERS



"AS-BUILT" NOTE: 25 July 2005

1. Added sheets A-8, A-9, A-10, A-11, E1.01, E1.02 and E2.01.

2. Added note series 5., 51. and 52.

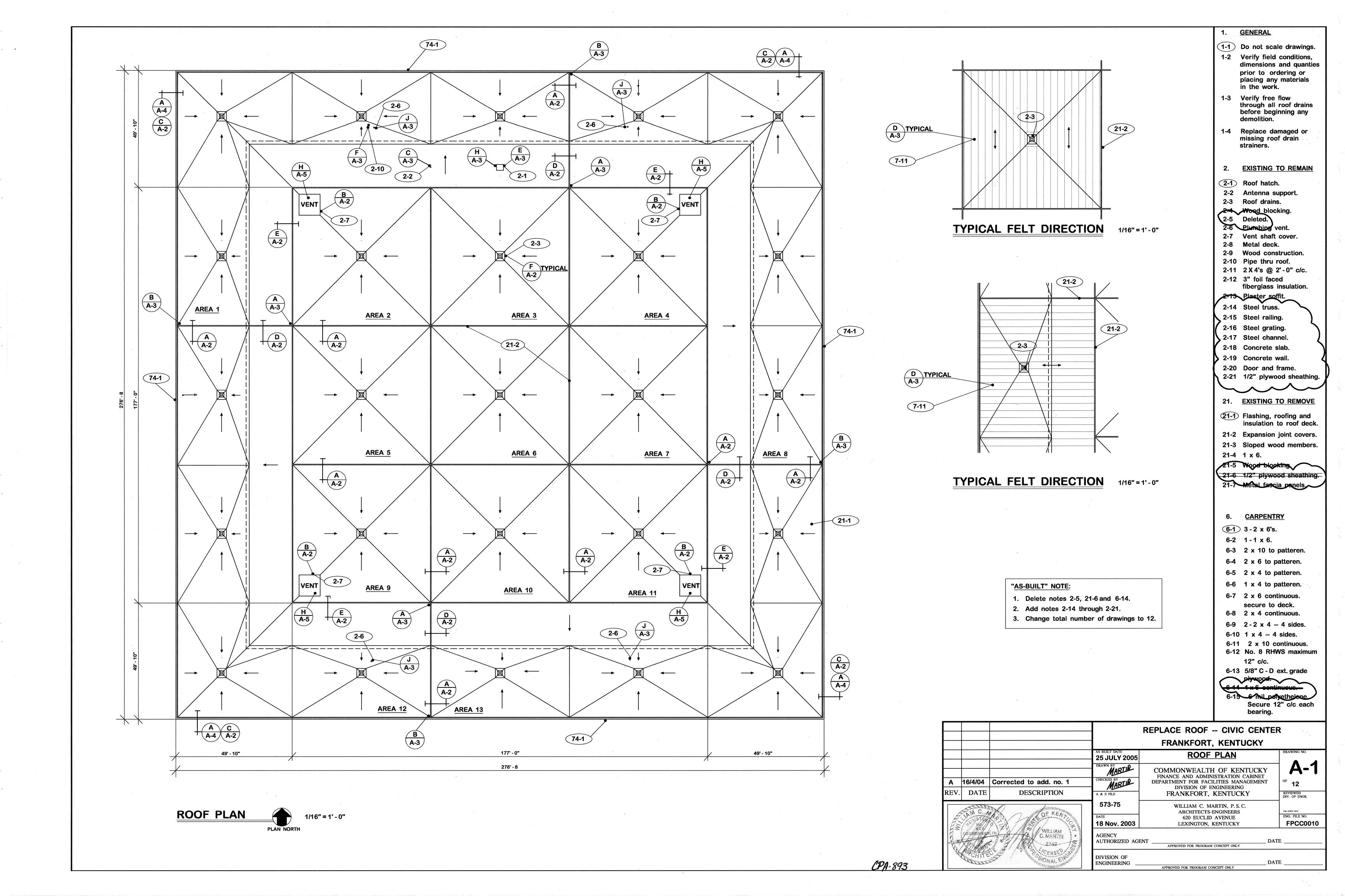
3. Change total number of drawings to 12.

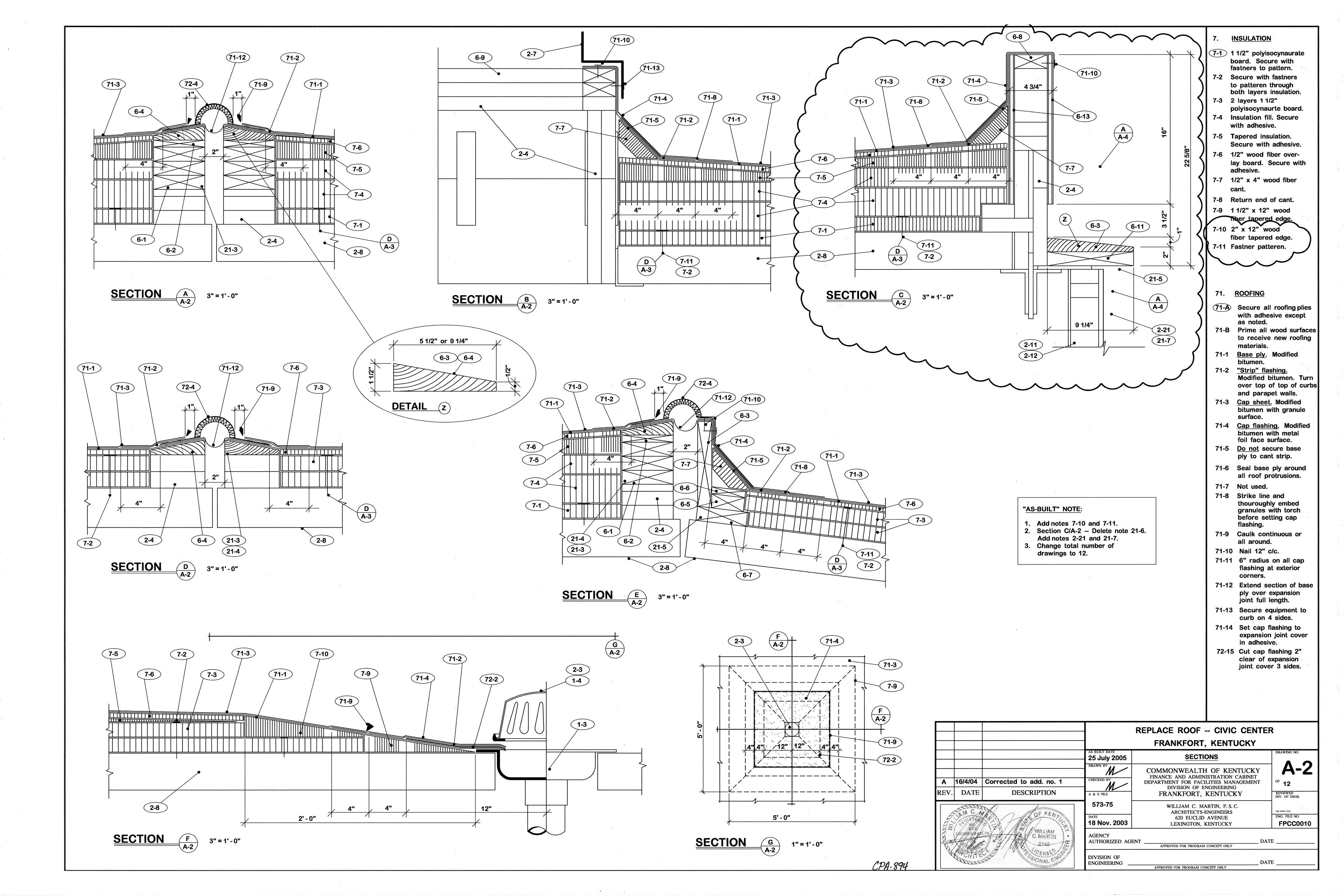
4. Composite aluminum panels are "Acolobond" by Alcan Industries, 208 West 5th street Benton, Kentucky.

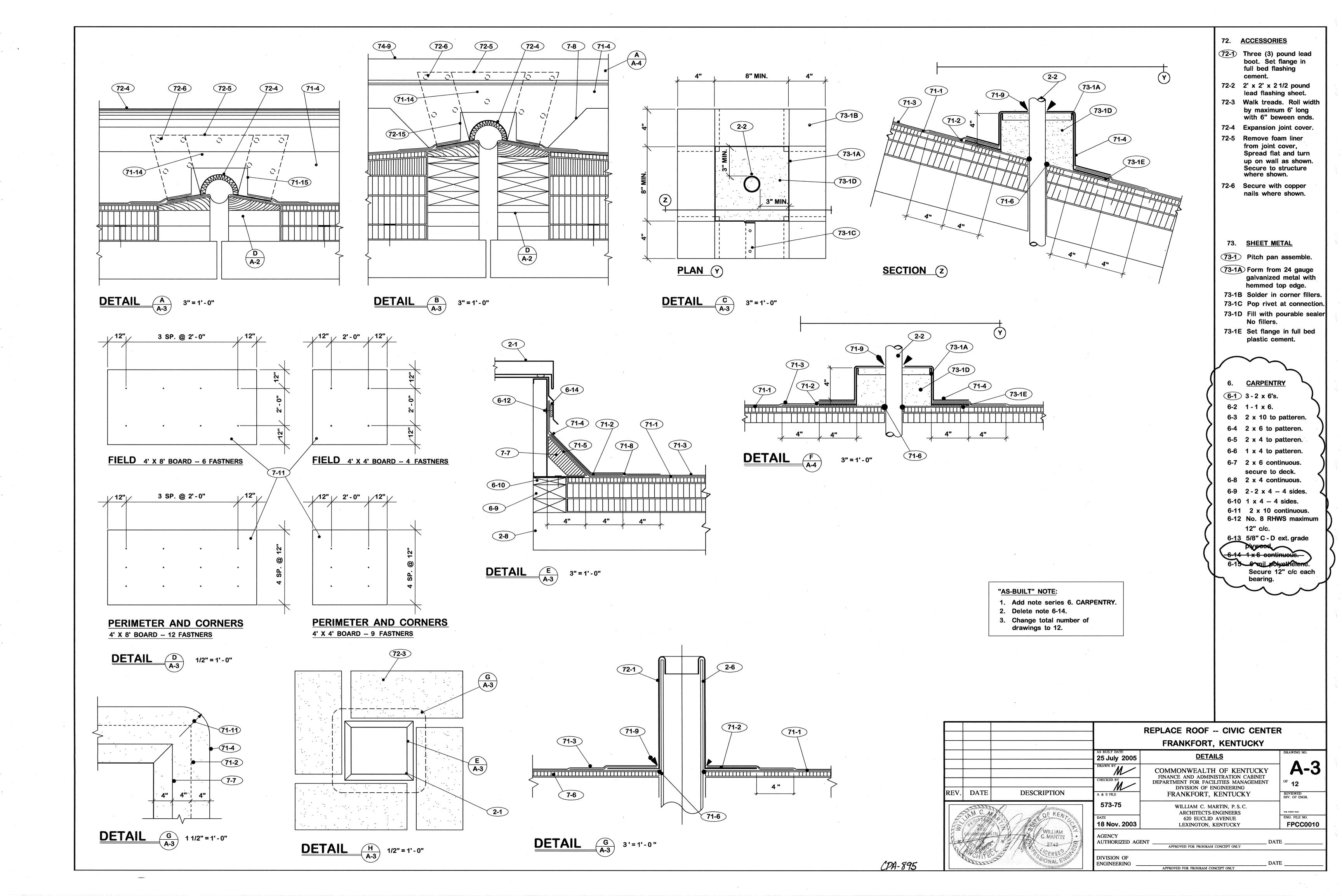
COMM. NO. 573-75 DATE: 18 NOVEMBER 2003 SHEET T-1 OF 12

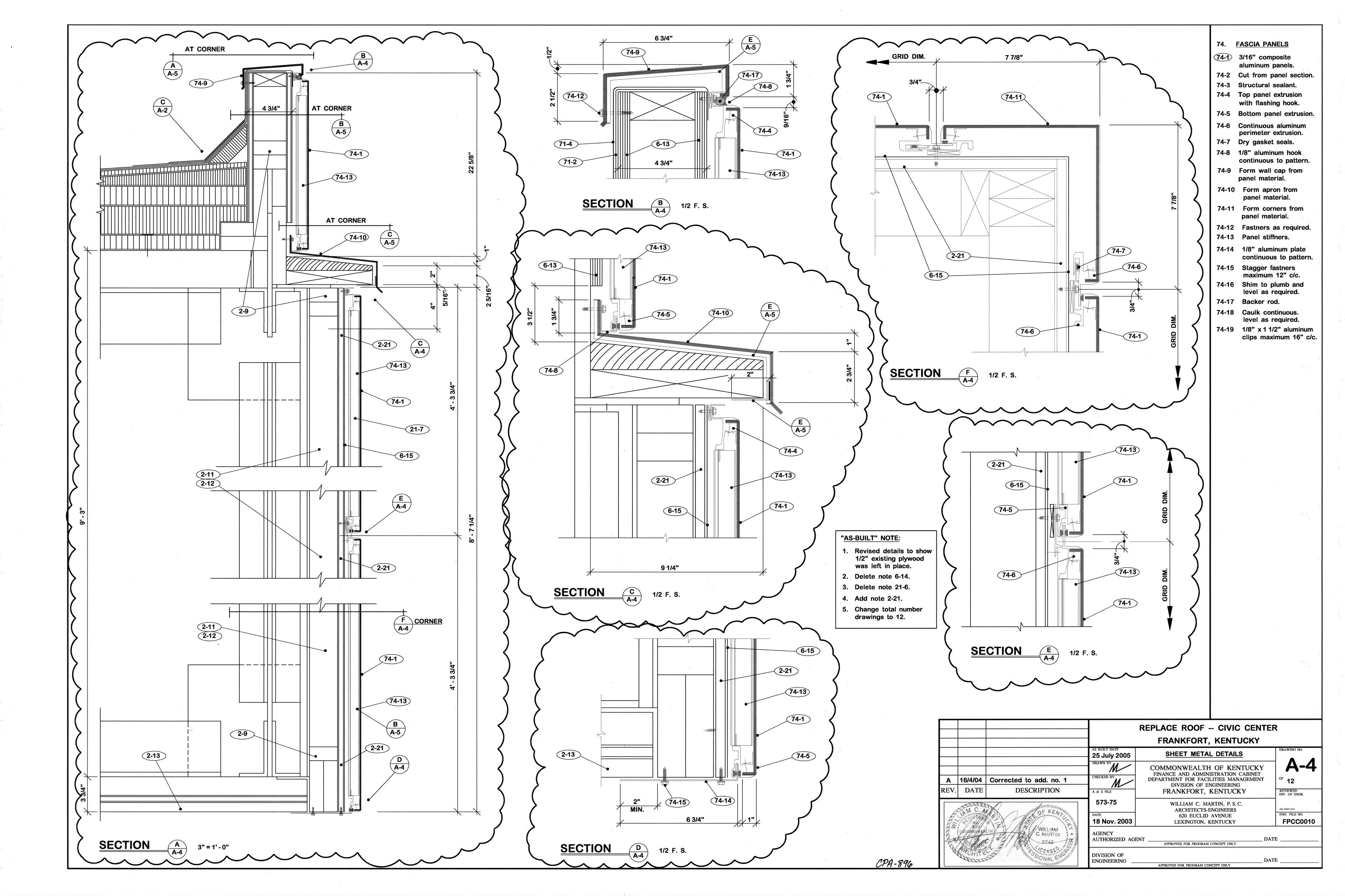
CPA-892

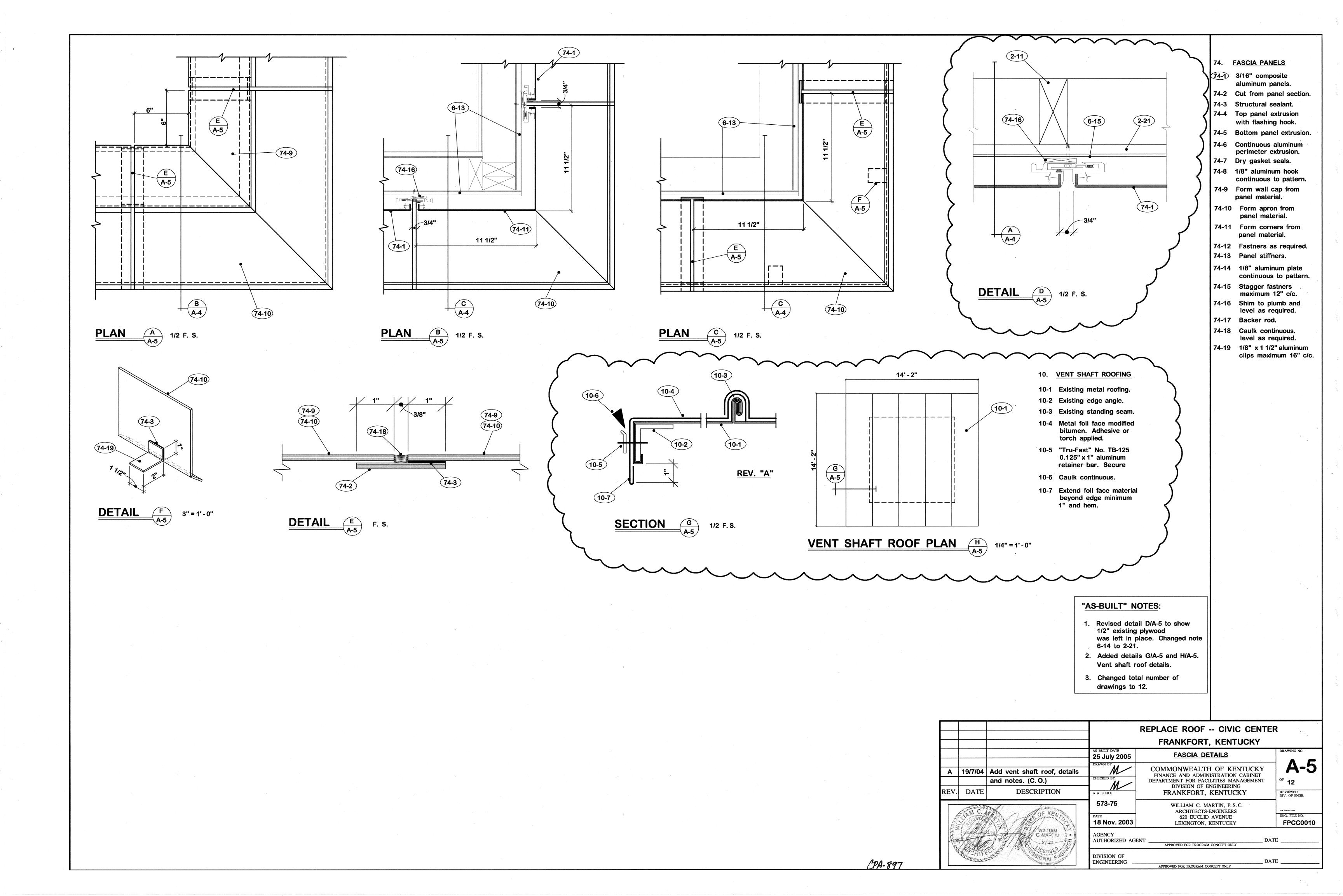
POWER DRIVEN FASTNER

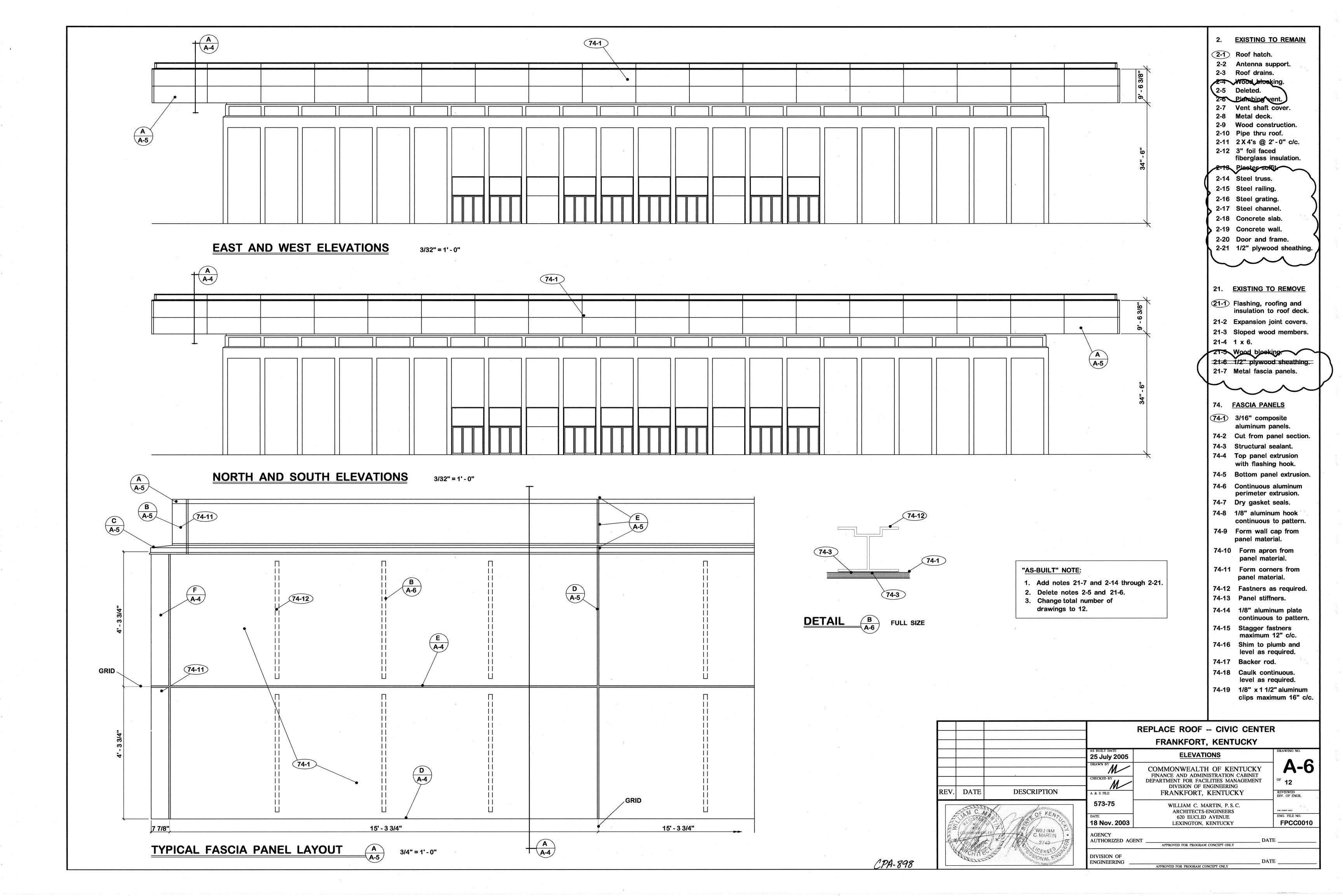


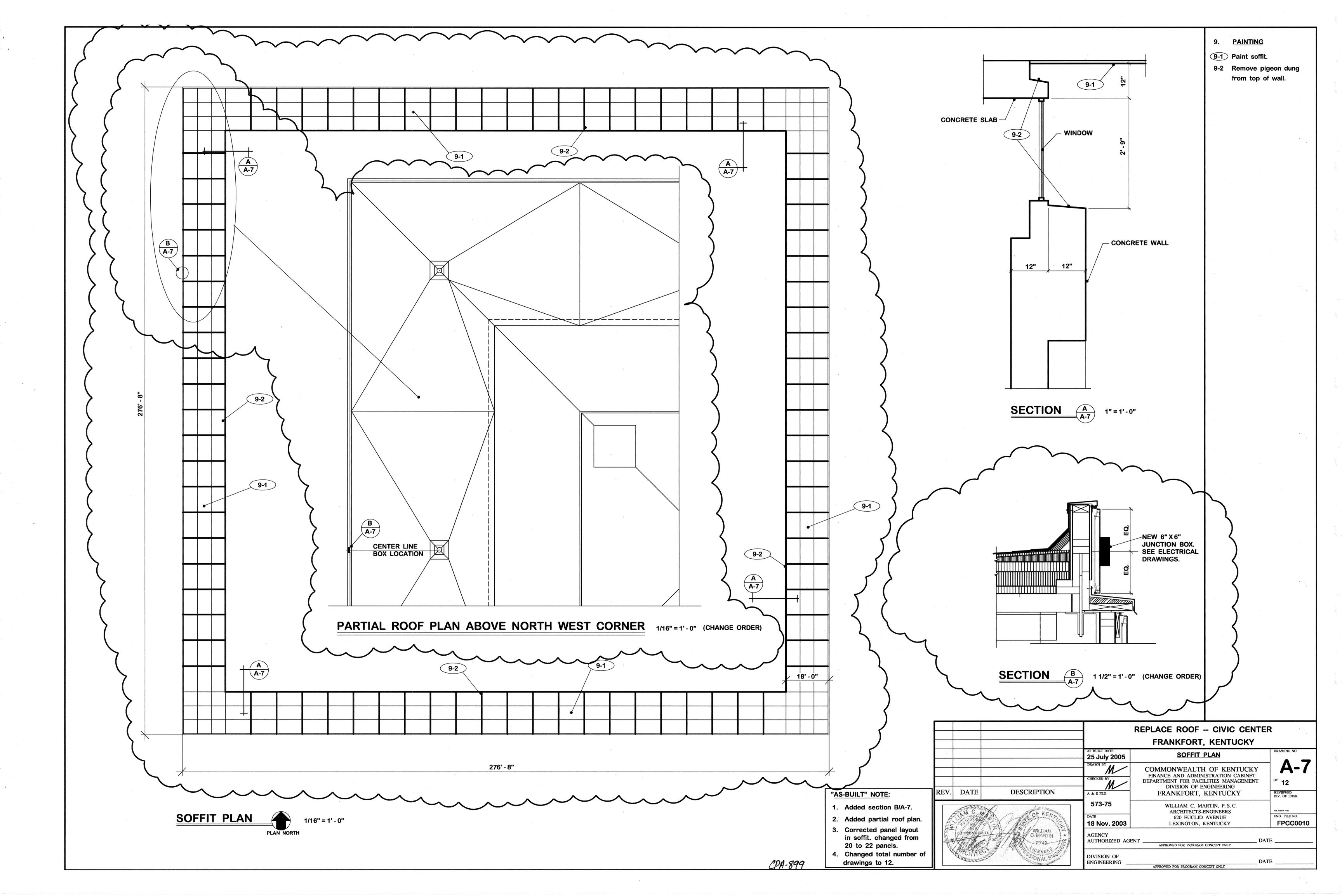


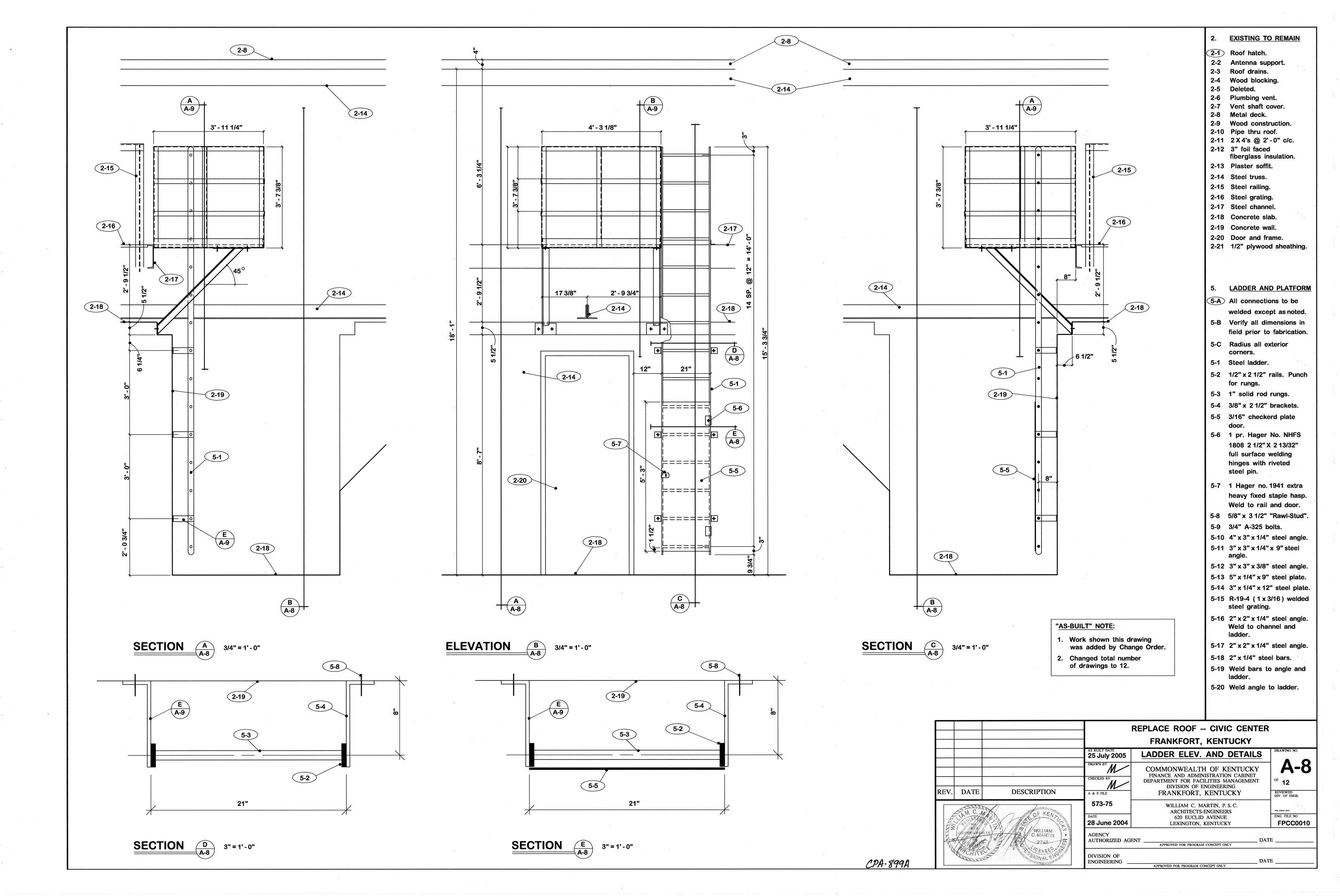


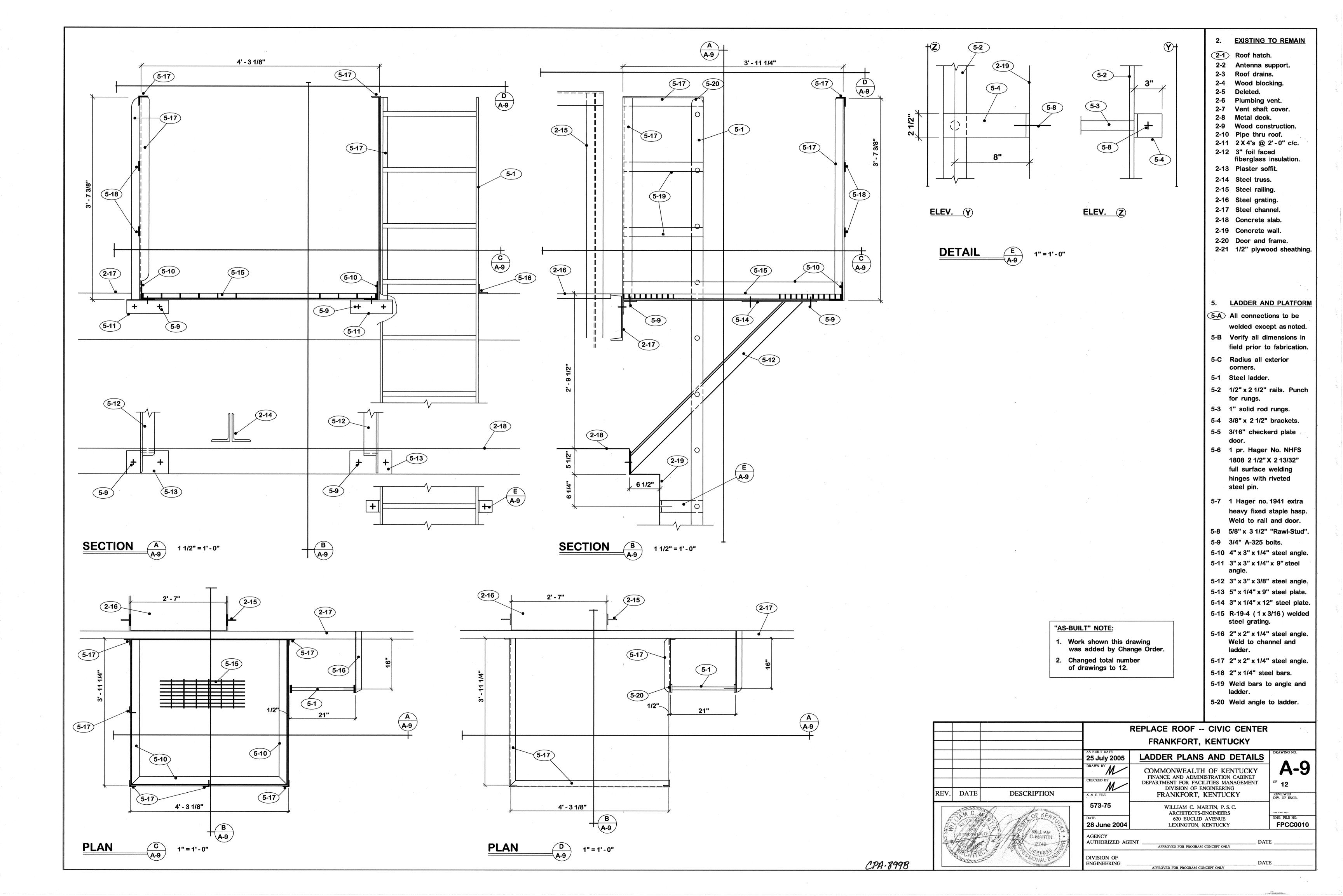


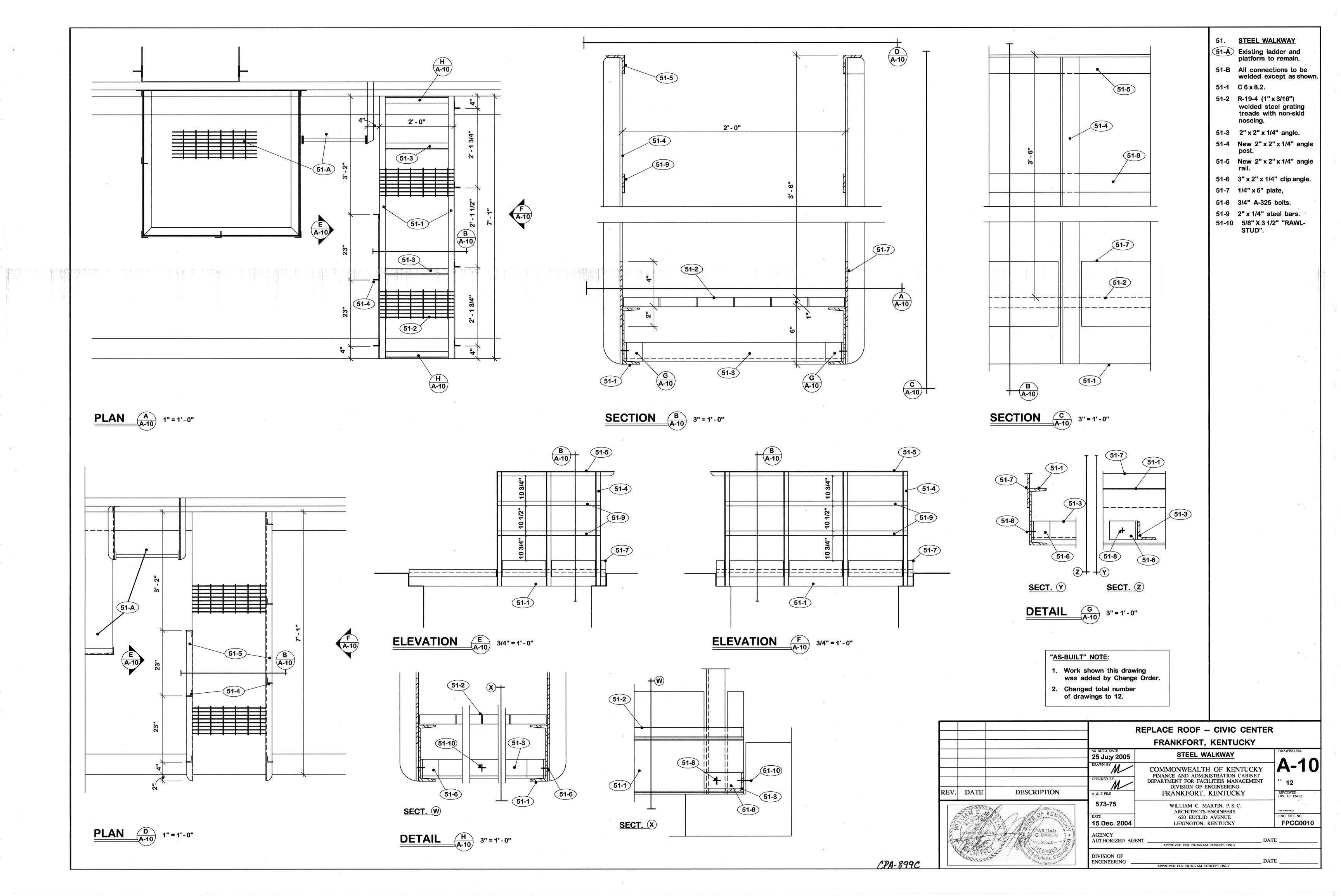


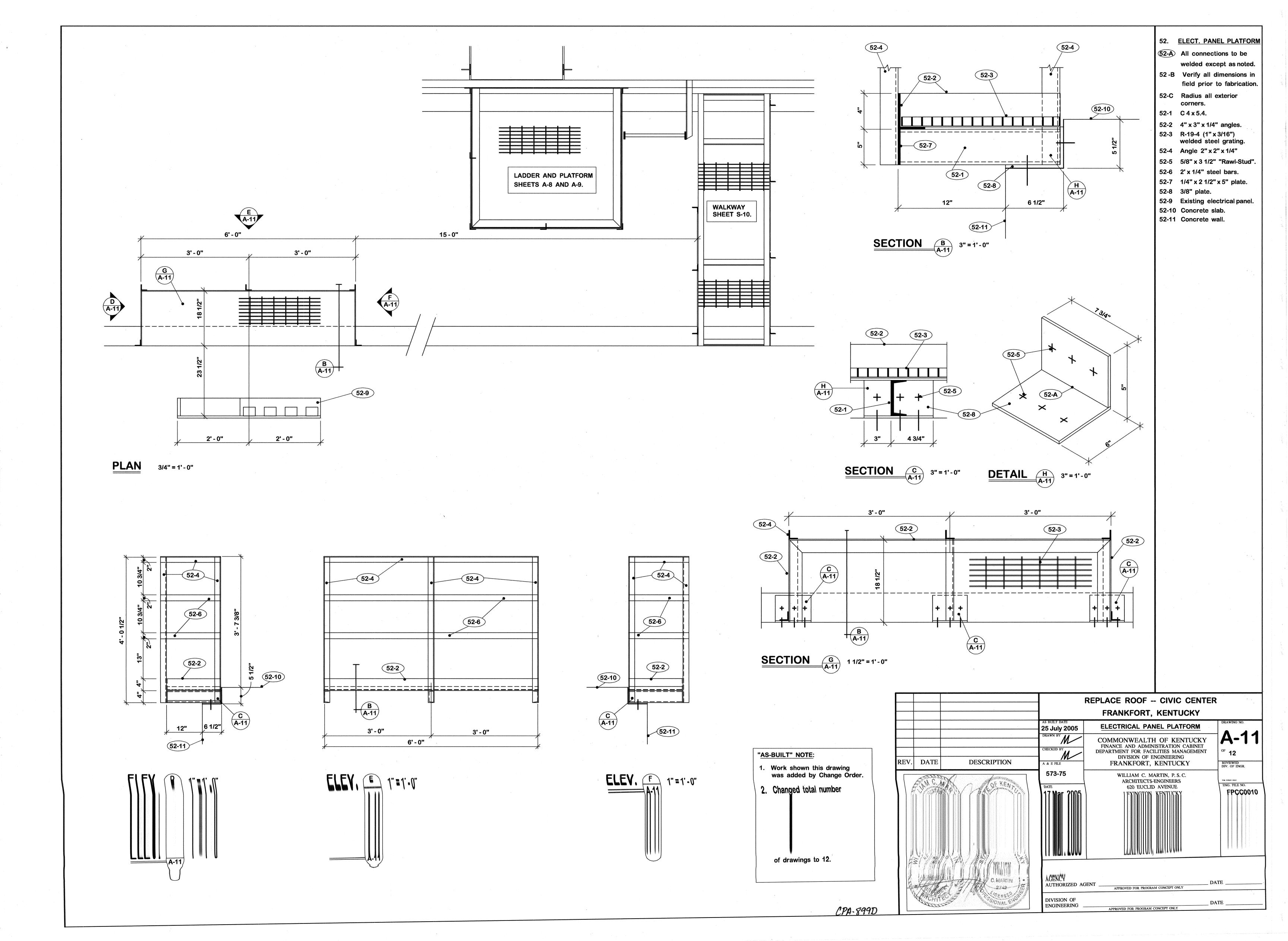


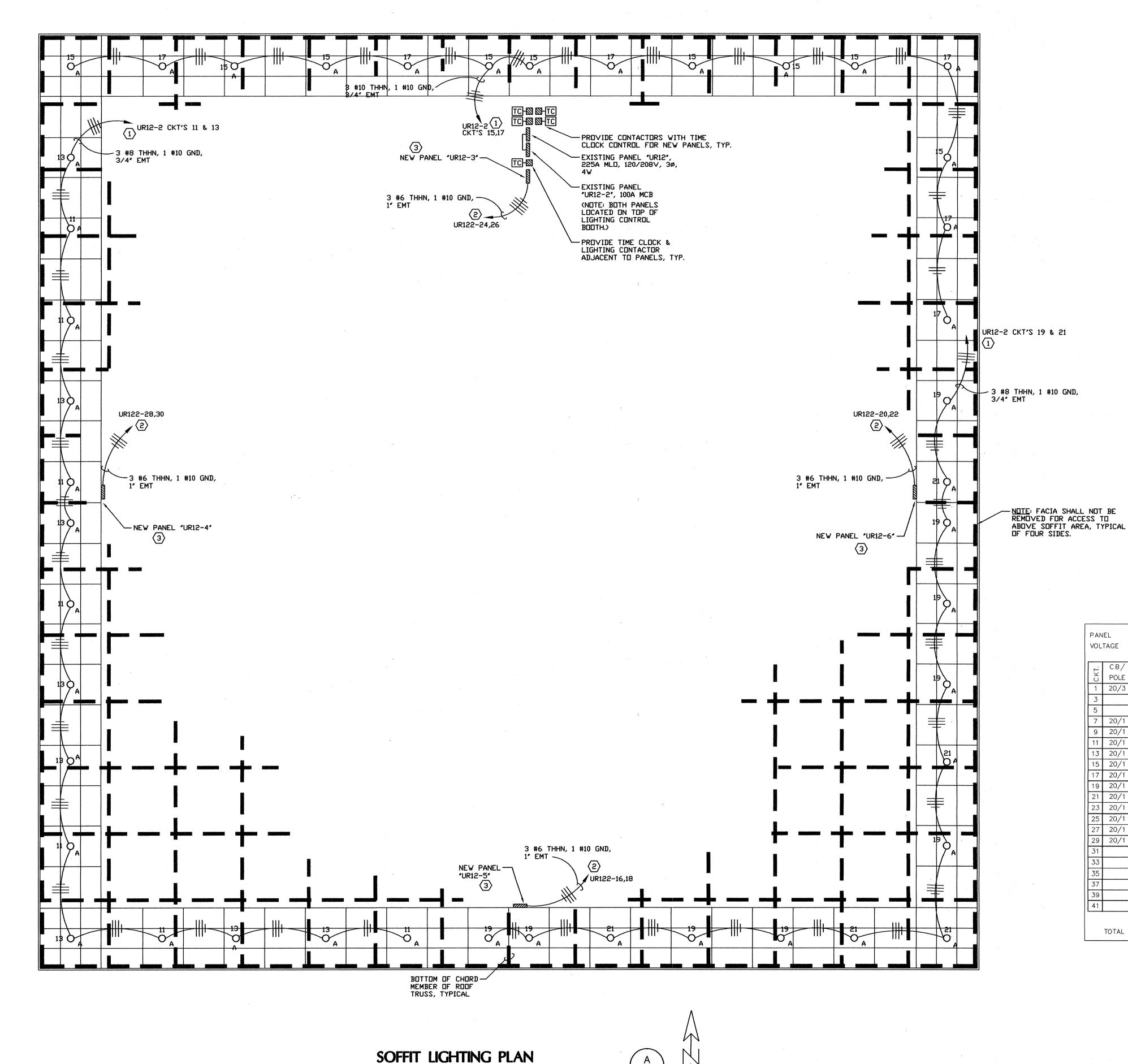












E1.01

SCALE: 1/16" = 1'-0"

GENERAL SHEET NOTES

- A. CONTRACTOR TO BE RESPONSIBLE FOR ALL FINAL DIMENSIONS.
- B. CONTRACTOR SHALL NOT CUT ANY BUILDING STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
- C. CONTRACTOR TO COORDINATE WORK SCHEDULE WITH OTHER TRADES AND
- D. CONTRACTOR TO COORDINATE ALL DEMOLITION AND NEW WORK SO AS NOT TO DAMAGE ANY EXISTING OR NEW EQUIPMENT.
- E. CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT PRIOR TO INSTALLING SAME.
- F. ALL WORK AREAS TO BE CLEANED AT THE END OF EACH WORK DAY.
- G. CONTRACTOR TO COORDINATE ALL ELECTRICAL CONDUIT AND EQUIPMENT PLACEMENT AND OTHER WORK WITHIN ALL TRADES AND EXISTING
- H. THE OWNER <u>WILL</u> RETAIN USE OF THIS FACILITY WHILE ELECTRICAL SYSTEMS ARE BEING INSTALLED.
- I. THIS CONTRACTOR IS RESPONSIBLE FOR SEALING ALL OPENINGS LEFT BY THE REMOVAL OF EQUIPMENT.
- J. THIS CONTRACTOR SHALL CUT, PATCH, SEAL, & PAINT (2 COATS) ALL OPENINGS TO MATCH EXISTING CEILINGS, IF EFFECTED OR DAMAGED BY

CODED SHEET NOTES:

- VIA TIMECLOCK AND LIGHTING CONTACTOR. PROVIDE THREE 20AMP, 1P, C/B'S IN PANEL TO MATCH EXISTING. CONDUITS SHALL BE SUPPORTED TO ROOF STRUCTURAL MEMBERS, LIGHT FIXTURES SHALL BE SUPPORTED FROM ROOF STRUCTURAL MEMBERS WITH #12 GAUGE WIRE ON EACH OF FOUR CORNERS OF FIXTURE HANGER.
- 2 PROVIDE 208VOLT, 30AMP, 2P CONTACTOR WITH TIMECLOCK WIRED TO CLOSING COIL CIRCUIT. PROVIDE 30AMP, 2P, C/B IN PANEL TO MATCH EXISTING. CONDUITS AND PANELS SHALL BE SUPPORTED TO STRUCTURAL MEMBERS WITH UNISTRUT BRACING.
- 3 PROVIDE SQUARE D OR EQUAL, MODEL # NQOD-424-L100-CU, 120/208V, 3Ø, 4W, 100 AMP MAIN, 30 AMP MCB, 12 POLE SPACES, 12-20 AMP, 1P, C/B'S AS SPARES, SURFACE MOUNTED.

ELECTRICAL SHEET LEGEND

- \$ WALL SWITCH
- ₩_{VP/GF}DUPLEX RECEPTACLE, GROUND FAULT STREET SUBBLE COVER
- \$3 3-WAY WALL SWITCH \$D SINGLE GANG WALL DIMMER
- \$k KEY SWITCH
- DUPLEX RECEPTACLE, GROUND FAULT

 INTERRUPTER, MOUNT @ 18' AFF TO CENTER. \$* MOTOR RATED STARTER SWITCH
- U ELECTRICAL DISCONNECT SWITCH A/V/P/H U ELECTRICAL JUNCTION BOX DENOTES AMPS, VOLTS, PHASE, HERTZ.

 NEMA 1 UNLESS OTHERWISE NOTED.

PANEL VOLTAGE		UR12-2 MOUNTING 120/208V PHASE		SURFACE			AIC 10,000 LOC AT			C ATION	TON ELECTRICAL MEZZANII			INE	
				3 WIRE		4 AMPERAGE		70		MAIN CIRCUIT BREAK	MAIN CIRCUIT BREAKER				
CKT.	CB/ POLE	WIRE/ COND.	LOAD SERVED		KVA	øΑ	LOAD	øС	KVA		LOAD SERVED	WIRE/	CB/ POLE	1 X 7	
1.	20/3	12,3/4	A/C UNIT	+	1.6	1.6		20	0.0	2	MAIN	COND.	70/3	2	
3				3	1.6		1.6		0.0	4		~	1	1	
5				5	1.6			1.6	0.0	6				+	
7	20/1	12,3/4	FURNACE/AIR HANDLER	7	1.2	2.4			1.2	8	FROSTY/ ROOF	12,3/4	20/1	1 8	
9	20/1	12,3/4	FURNACE/AIR HANDLER	9	1.2		2.4		1.2	10	FROSTY/ ROOF	12,3/4	20/1	1	
11	20/1	8,3/4	SOFFIT (WEST)	11	1.8			3.0	1.2	12	SPACE		20/1	1	
13	20/1	8,3/4	SOFFIT (SOUTHWEST)	13	1.8	3.6			1.8	14	SPACE		20/1	1	
15	20/1	8,3/4	SOFFIT (NORTH)	15	1.8		3.8		2.0	16	PANEL UR12-5	6,1	30/2	1	
17	20/1	8,3/4	SOFFIT (NORTHEAST)	17	1.8			3.8	2.0	18				1	
19	20/1	8,3/4	SOFFIT (SOUTH)	19	1.8	3.8			2.0	20	PANEL UR12-6	6,1	30/2	2	
21	20/1	8,3/4	SOFFIT (SOUTHEAST)	21	1.8		3.8		2.0	22				2	
23	20/1	12,3/4	TIME CLOCK	23	0.0			2.0	2.0	24	PANEL UR12-3	6,1	30/2	2	
25	20/1		SPACE .	25	0.0	2.0			2.0	26				2	
27	20/1		SPACE	27	0.0		2.0		2.0	28	PANEL UR12-4	6,1	30/2	2	
29	20/1		SPACE	29	0.0			2.0	2.0	30				3	
31				31		0.0				32		`		3	
33				33			0.0			34				3	
35				35				0.0		36	*			3	
37				37		0.0				38				3	
39				39			0.0			40				4	
41				41				0.0		42				4	
						13.4	13.6	12.4							
	TOTAL C	ONNEC TE	D 39.4 KVA	DEM	AND LO	AD	31.52	KVA			BUSSING COPPER	ONLY			

REVISIONS

RECORD DRAWINGS

THESE REVISED DRAWINGS HAVE BEEN PREPARED ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER OF RECORD WILL NOT BE RESPONSIBLE FOR ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT, DATED 08/01/05.

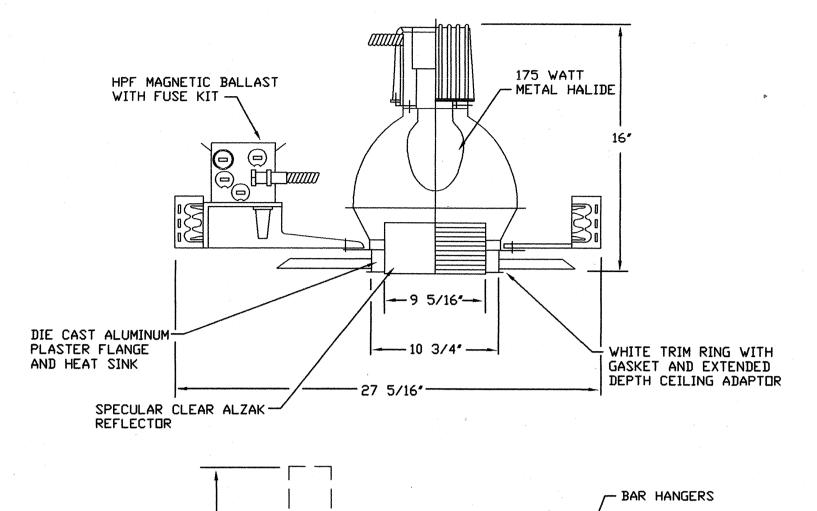
CPA-899E

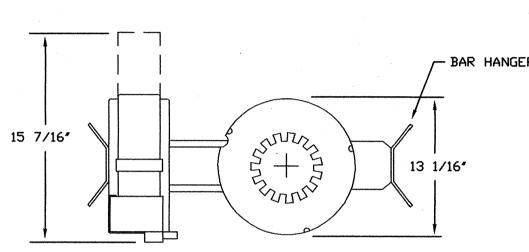
FRANKFORT, KENTUCKY DRAWING NO. SOFFIT LIGHTING PLAN DRAWN BY E1.01 COMMONWEALTH OF KENTUCKY STAFF FINANCE AND ADMINISTRATION CABINET DEPARTMENT FOR FACILITIES MANAGEMENT DIVISION OF ENGINEERING CHECKED BY WGW FRANKFORT, KENTUCKY REVIEWED DIV OF ENGR. A&E FILE NO 2004-458 CONSULTING ENGINEERS FOR INTENT ONLY 118 OLD LAFAYETTE AVENUE ENGR. FILE NO. JULY 2004 LEXINGTON, KENTUCKY 40502 FPCC0010 AUTHORIZED AGENT DIVISION OF ENGINEERING

REPLACE ROOF

CIVIC CENTER

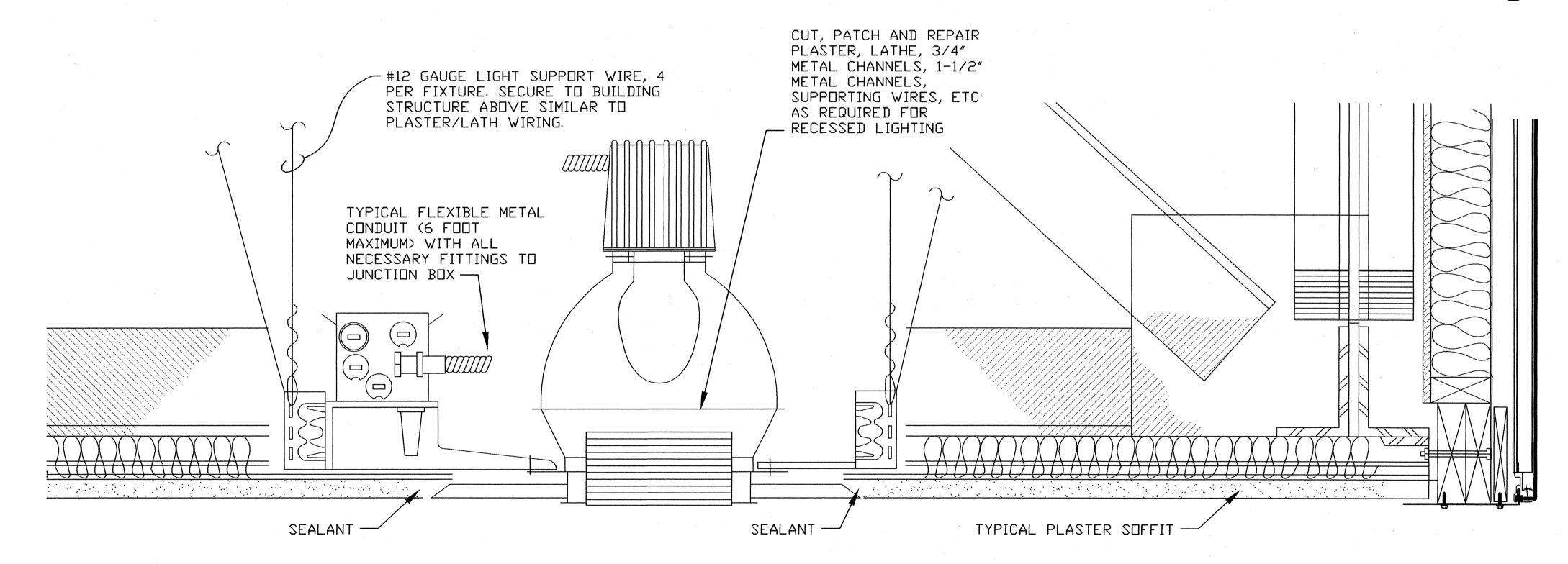
LIGHT FIXTURE SCHEDULE							
TYPE	SYMBOL	MANUFACTURER	MODEL NUMBER	VOLTS	QUALAMP	DESCRIPTION	REMARKS
Α	0	PRESCOLITE	1061-M9-FSDFA-175MHFE-836L-WT-TRG-B6-SCA10	120	(1) 175W METAL HALIDE	10" ELLIPSOIDAL METAL HALIDE DOWNLIGHT, UL LISTED, DAMP LOCATION, RECESSED WHITE TRIM RING, FUSE KIT, EXTENDED DEPTH CEILING ADAPTER, SPECULAR CLEAR ALZAK REFLECTOR, OPEN	SEE DETAILS FOR MOUNTING REQUIREMENTS. PROVIDE (1) 175W MH E/BT-28 LAMP. BALANCE LAMPS EQUALLY AMONG ALL THREE PHASES.





RECESSED SOFFIT LIGHT FIXTURE DETAIL SCALE: N.T.S.

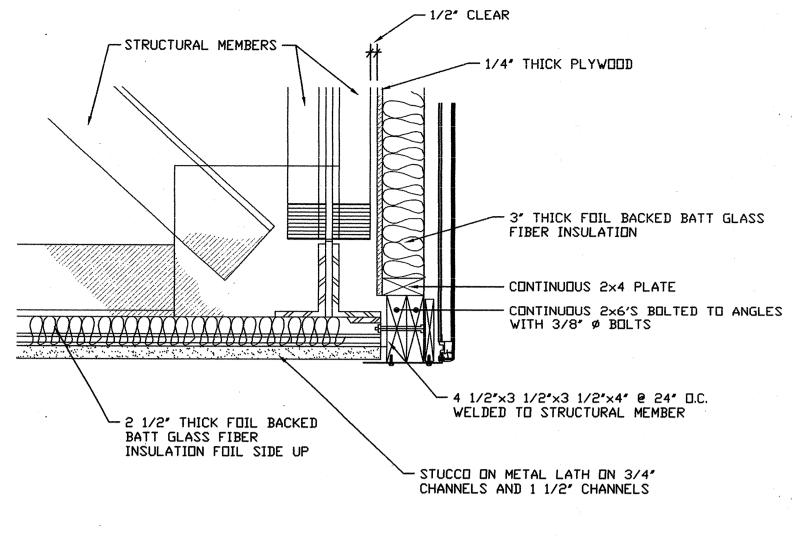




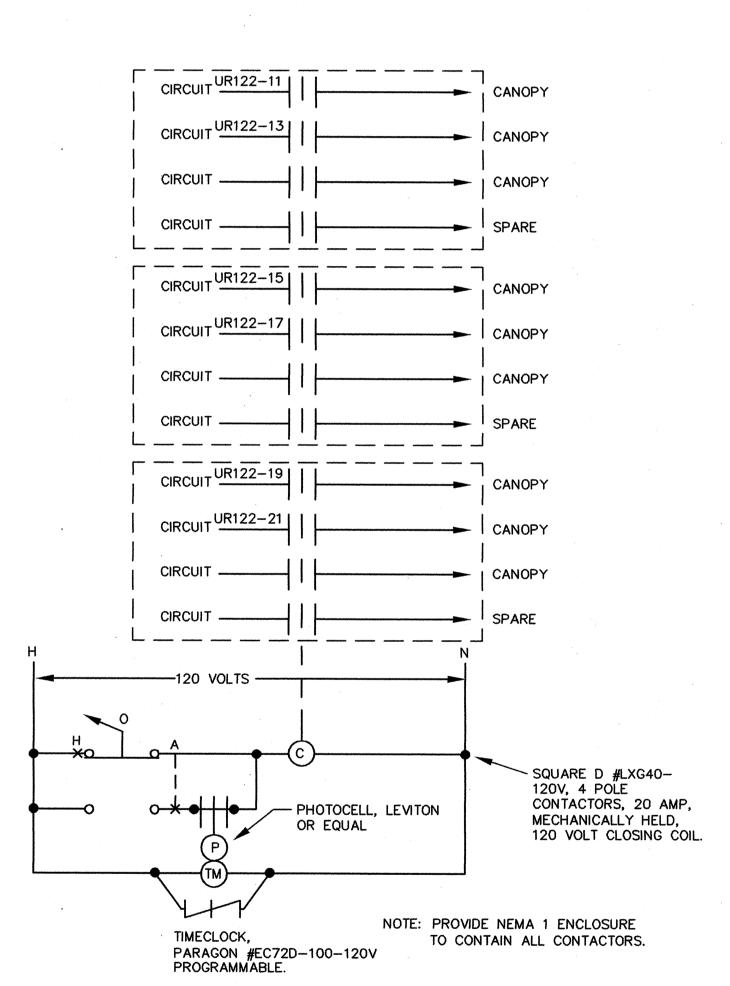


RECORD DRAWINGS

THESE REVISED DRAWINGS HAVE BEEN PREPARED ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER OF RECORD WILL NOT BE RESPONSIBLE FOR ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT, DATED 08/01/05.



ISTING	SOFFIT	DETAIL	В
E: N.T.S.			E1.02



TIME CLOCK/CONTACTOR DETAIL SCALE: N.T.S.



REVISIONS DATE								
2			FRANKFORT, KENTUCKY					
3		Record DATE	ELECTRICAL DETAILS	DRAWING NO.				
5 6		drawn by STAFF	COMMONWEALTH OF KENTUCKY FINANCE AND ADMINISTRATION CABINET	E1.02				
7		CHECKED BY WGW	DEPARTMENT FOR FACILITIES MANAGEMENT DIVISION OF ENGINEERING FRANKFORT, KENTUCKY					
9	Munimum.	A&E FILE NO. 2004-458 573-75	E-TECH CONSULTANTS, PLLC consulting engineers	REVIEWED DIV OF ENGR.				
	THE OF KENNING	date JULY 2004	118 OLD LAFAYETTE AVENUE LEXINGTON, KENTUCKY 40502	ENGR. FILE NO. FPCC0010				
	MINIMAN STATE OF STAT	AGENCY - AUTHORIZED AGENT	APPROVED FOR PROGRAM CONCEPT ONLY	DATE				
ONAL ENTITY		DIVISION OF - ENGINEERING	APPROVED FOR PROGRAM CONCEPT ONLY	DATE				

CPA.899F

SECTION 16000 - ELECTRICAL GENERAL PROVISIONS

PART 1 GENERAL

1.1 WORK INCLUDED

A. PROVIDE LABOR, EQUIPMENT, MATERIALS, SUPPLIES AND COMPONENTS, INCLUDING LAMPS AND FUSES; AND PERFORM ALL OPERATIONS NECESSARY FOR INSTALLATION OF COMPLETE

1.2 QUALITY ASSURANCE

- A. MINIMUM STANDARDS FOR ALL ELECTRICAL WORK SHALL BE LATEST REVISION OF NATIONAL ELECTRICAL CODE (NEC). WHENEVER AND WHEREVER OSHA, NFPA, STATE BUILDING CODES. FEDERAL AND STATE LAWS, REGULATIONS AND DESIGN REQUIRE HIGHER STANDARDS THAN THE NEC, THESE LAWS, REGULATIONS, AND DESIGNS SHALL BE FOLLOWED.
- B. ELECTRICAL INSPECTION ON ALL CONSTRUCTION PROJECTS IS REQUIRED. THE ELECTRICAL INSPECTION FOR THIS PROJECT SHALL BE PROVIDED BY A <u>STATE</u> ELECTRICAL INSPECTOR FROM THE KENTUCKY STATE FIRE MARSHALL'S OFFICE AND MAY BE ORDERED BY CALLING (502) 573-0364. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL ELECTRICAL INSPECTIONS AS REQUIRED BY THE <u>STATE</u> ELECTRICAL INSPECTOR. NOTIFY THIS <u>STATE</u> ELECTRICAL INSPECTOR IN WRITING IMMEDIATELY UPON START OF WORK AND PROVIDE A COPY OF START WORK NOTICE TO THE ARCHITECT/ENGINEER. THE OWNER WILL PAY FOR ALL REQUIRED ELECTRICAL INSPECTIONS.
- 1. PROVIDE ALL NECESSARY INSPECTIONS INCLUDING BOTH ROUGH AND FINISH WORK. SUBMIT COPIES OF ALL INTERIM INSPECTION REPORTS TO THE ARCHITECT/ENGINEER AS THEY
- 2. PRIOR TO FINAL ACCEPTANCE OF WORK AND RELEASE OF FINAL PAYMENT, SUBMIT TO THE ARCHITECT/ENGINEER THE CERTIFICATE OF FINAL INSPECTION.
- 3. APPROVAL FROM THE <u>STATE</u> ELECTRICAL INSPECTOR WILL NOT BE ALLOWED AS REASON FOR DEVIATION FROM CONTRACT
- C. OBTAIN ALL PERMITS REQUIRED FOR ENTIRE CONSTRUCTION OF ELECTRICAL SYSTEM FROM AUTHORITIES GOVERNING SUCH WORK.
- D. ALL MATERIALS SHALL BE NEW AND BEST OF THEIR RESPECTIVE KINDS UNLESS OTHERWISE SPECIFIED AND SHALL BE LISTED BY UL AND SHALL BE SO LABELED. ALL EQUIPMENT SHALL CONFORM TO LATEST APPROVED STANDARDS OF I.E.E.E., N.E.M.A., A.N.S.I., U.L. AND D.S.H.A. SEE INDIVIDUAL SPECIFICATION SECTIONS FOR OTHER SPECIFIC REQUIREMENTS.
- E. PERFORMANCE OF WORK SHALL BE IN STRICT ACCORDANCE WITH THE BEST COMMON PRACTICES IN A THOROUGH, SUBSTANTIAL, NEAT AND WORKMAN-LIKE MANNER BY COMPETENT, QUALIFIED WORKMEN.

END OF SECTION

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING:

1. SUPPORTING DEVICES FOR ELECTRICAL COMPONENTS. 1.2 QUALITY ASSURANCE

A.ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

B. COMPLY WITH NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORTING DEVICES

- A.MATERIAL: COLD-FORMED STEEL, WITH CORROSION-RESISTANT COATING ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
- B. RACEWAY AND CABLE SUPPORTS: MANUFACTURED CLEVIS HANGERS, RISER CLAMPS, STRAPS, THREADED C-CLAMPS WITH RETAINERS, CEILING TRAPEZE HANGERS, WALL BRACKETS, AND SPRING-STEEL CLAMPS OR CLICK-TYPE HANGERS.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

- A.HEADROOM MAINTENANCE: IF MOUNTING HEIGHTS OR OTHER LOCATION CRITERIA ARE NOT INDICATED, ARRANGE AND INSTALL COMPONENTS AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.
- B. MATERIALS AND COMPONENTS: INSTALL LEVEL, PLUMB, AND PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, UNLESS OTHERWISE INDICATED.

3.2 ELECTRICAL SUPPORTING DEVICE APPLICATION

- A. DRY LOCATIONS: STEEL MATERIALS.
- B. STRENGTH OF SUPPORTS: ADEQUATE TO CARRY PRESENT AND FUTURE LOADS, TIMES A SAFETY FACTOR OF AT LEAST FOUR; MINIMUM OF 200-LB DESIGN LOAD.

3.3 SUPPORT INSTALLATION

- A. INSTALL SUPPORT DEVICES TO SECURELY AND PERMANENTLY FASTEN AND SUPPORT ELECTRICAL COMPONENTS.
- B. SPRING-STEEL FASTENERS SPECIFICALLY DESIGNED FOR SUPPORTING SINGLE CONDUITS OR TUBING MAY BE USED INSTEAD OF MALLEABLE-IRON HANGERS FOR 1-1/2-INCH AND SMALLER RACEWAYS SERVING LIGHTING AND RECEPTACLE BRANCH CIRCUITS ABOVE SUSPENDED CEILINGS AND FOR FASTENING RACEWAYS TO SLOTTED CHANNEL AND ANGLE SUPPORTS.

END OF SECTION

SECTION 16110 - CONDUIT AND RACEWAYS

1.1 WORK INCLUDED

- A. PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR PROPER AND COMPLETE INSTALLATION OF ELECTRICAL RACEWAYS.
- B. THE REQUIREMENTS OF THIS SECTION APPLY TO ELECTRICAL RACEWAY WORK SPECIFIED ELSEWHERE IN THESE
- C. <u>DO NOT INSTALL ANY CONDUITS</u> IN ELEVATOR SHAFTS, VERTICALLY OR HORIZONTALLY, UNLESS THIS CONDUIT IS FOR USE ON ELEVATOR EQUIPMENT ONLY AND IS PERMITTED BY
- D. SIZE MAIN TRUNK CONDUITS AND RACEWAY FOR 90% FILL, 100% FILL BEING DEFINED AS THE MAXIMUM ALLOWABLE NUMBER OF CONDUCTORS PER THE NATIONAL ELECTRIC CODE (NEC).

- 2.1 CONDUIT REQUIREMENTS
- FOR EACH ELECTRICAL RACEWAY SYSTEM INDICATED INCLUDING, BUT NOT NECESSARILY LIMITED TO, CONNECTORS, COUPLINGS, OFFSETS, ELBOWS, STRAPS, BUSHINGS, EXPANSION JOINTS HANGERS, AND OTHER COMPONENTS AND ACCESSORIES NEEDED FOR
- C. MINIMUM SIZE: 3/4 INCH UNLESS OTHERWISE NOTED. SINGLE SWITCH LEGS OR SINGLE POWER RECEPTACLE DROPS MAY BE 1/2
- INFERIOR MATERIALS, SUCH AS "POT METAL", SHALL NOT BE USED ON ANY TYPE OF RIGID OR FLEXIBLE CONDUIT OR EMT.

3.1 INSTALLATION

ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC AND COMPLYING WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS SERVE INTENDED FUNCTIONS. HANDLE CONDUIT AND TUBING CAREFULLY TO PREVENT BENDING AND END-DAMAGE, AND TO AVOID SCORING FINISH.

B. CONDUIT SUPPORTS

- HANGERS, AND RISER CLAMPS AS NECESSARY TO SUPPORT THROUGHOUT. PROVIDE ALL U-BOLTS, CLAMPS, ATTACHMENTS AND OTHER HARDWARE NECESSARY FOR HANGER ASSEMBLY AND FOR SECURING HANGER RODS AND CONDUITS. DESIGN EACH THAN THE SUM OF WEIGHTS OF CONDUITS, WIRES, HANGER ITSELF AND 200 POUNDS.
- 2. ALL EMT AND CONDUITS SHALL BE SECURELY AND INDEPENDENTLY SUPPORTED SO THAT NO STRAIN WILL BE RANSMITTED TO OUTLET BOX AND PULL BOX SUPPORTS. SUPPORTS SHALL BE RIGID ENOUGH TO PREVENT DISTORTION OF CONDUITS DURING WIRE PULLING.
- 3. HANGERS AND CONDUIT SUPPORTS SHALL NOT UTILIZE OR DEPEND UPON THE SUPPORT SYSTEMS OF OTHER TRADES.
- PIPE STRAPS OR SEPARATE PIPE HANGERS FOR SIZES 1-1/2 INCH AND SMALLER, AND BY SEPARATE PIPE HANGERS FOR LARGER SIZES. SPRING STEEL FASTENERS MAY BE USED IN SMALLER IN TRY LITCATIONS ONLY. HANGER ROTS LISET WITH DIAMETER STEEL WITH CORROSION RESISTANT FINISH. SPRING STEEL FASTENERS SHALL BE SPECIFICALLY DESIGNED FOR SUPPORTING SINGLE CONDUITS OR EMT. DO NOT USE WIRE AS A MEANS FOR SUPPORT.
- CONDUIT AND EMT SHALL BE INSTALLED CONCEALED. CONDUIT AND EMT MAY BE RUN EXPOSED ON UNFINISHED WALLS. ON UNFURRED BASEMENT CEILINGS, IN PENTHOUSES, AND ATTIC SPACES UNLESS OTHERWISE NOTED.
- RACEWAY SYSTEM FROM REMAINDER OF ELECTRICAL SYSTEM.
- A. CONDUITS LESS THAN 2 INCH DIAMETER SHALL BE INSTALLED
- B. CONDUIT, INCLUDING BRANCH CIRCUITS AND CONDUIT FEEDING CEILING LIGHTING SHALL NOT BE SUPPORTED BY THE SUSPENDED CEILING OR ITS SUPPORTING MEMBERS, MECHANICAL PIPING OR
- C. RECESSED LIGHTING FIXTURES SHALL BE CONNECTED TO CONDUIT RUNS WITH NOT OVER SIX FEET OF FLEXIBLE METAL CONDUIT EXTENDING FROM A JUNCTION BOX TO THE FIXTURE.

SECTION 16120 - CABLE, WIRE AND CONNECTORS

PART 1 GENERAL

PART 2 - PRODUCTS

- A. PROVIDE ASSEMBLY OF CONDUIT, TUBING OR DUCT, AND FITTINGS
- B. PROVIDE METAL CONDUIT, TUBING AND FITTINGS OF TYPES, GRADES, SIZES AND WEIGHTS (WALL THICKNESSES) FOR EACH SERVICE INDICATED. WHERE TYPES AND GRADES ARE NOT INDICATED, PROVIDE PROPER SELECTION DETERMINED BY INSTALLER TO FULFILL WIRING REQUIREMENTS, AND COMPLY WITH APPLICABLE PORTIONS OF NATIONAL ELECTRICAL CODE FOR ELECTRICAL RACEWAYS.
- E. DIE-CAST ZINC-ALLOY FITTINGS AND FITTINGS MADE OF

PART 3 - EXECUTION

A. INSTALL CONDUIT, TUBING AND DUCT PRODUCTS AS INDICATED, IN

- 1. PROVIDE INDIVIDUAL PIPE HANGERS, MULTIPLE (TRAPEZE) PIPE CONDUITS. ALL PARTS AND HARDWARE SHALL BE ZINC-COATEI MULTIPLE HANGER TO SUPPORT A LOAD EQUAL TO OR GREATER
- LIEU OF PIPE STRAPS OR HANGERS FOR SIZES 1-1/2 INCH AND SPRING STEEL FASTENERS SHALL NOT BE LESS THAN 1/4 INCH
- C. UNLESS OTHERWISE SPECIFIED OR INDICATED ON DRAWINGS, ALL
- D. EMERGENCY POWER CIRCUITS SHALL BE INSTALLED IN SEPARATE
- 3.2 CONDUIT CONCEALED ABOVE FINISHED CEILING
- PARALLEL OR PERPENDICULAR TO BUILDING LINES. AIR CONDITIONING DUCTS.

END OF SECTION

PART 1 GENERAL

1.1 WORK INCLUDED

- A. PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR PROPER AND COMPLETE INSTALLATION OF CABLE, WIRE AND CONNECTORS.
- B. REQUIREMENTS OF THIS SECTION APPLY TO CABLE AND WIRE WORK SPECIFIED ELSEWHERE IN THESE SPECIFICATIONS.

PART 2 - PRODUCTS 2.1 BUILDING WIRE

- A. PROVIDE FACTORY-FABRICATED CABLE, WIRE AND CONNECTORS OF SIZES, RATINGS, MATERIALS AND TYPES INDICATED FOR EACH SERVICE. WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO COMPLY WITH PROJECT'S
- INSTALLATION REQUIREMENTS AND NEC STANDARDS. B. USE SINGLE CONDUCTOR ANNEALED COPPER TYPE FOR ALL WIRES AND CABLES FOR SECONDARY SERVICE, FEEDERS AND BRANCH CIRCUITS, UNLESS SPECIFIED OTHERWISE. MINIMUM 12 AWG FOR
- C. USE NO. 12 AWG OR NO. 10 AWG SOLID CONDUCTOR FOR BRANCH CIRCUIT WIRING CONNECTED TO RECEPTACLES, LIGHTING SWITCHES AND SNAP SWITCHES.
- D. USE MINIMUM 90 DEGREE C RATED INSULATION UNLESS SPECIFIED OTHERWISE, INDICATED ON DRAWINGS, OR REQUIRED BY NEC. INSULATION SHALL BE TYPE THWN/THHN. E. USE 600 VOLT INSULATION RATING UNLESS SPECIFIED OR

INDICATED OTHERWISE. WHERE OPERATING VOLTAGE IS LESS

THAN 100 VOLTS, WIRES OR CABLES MAY BE INSULATED FOR 300

VOLTS PROVIDED THEY ARE ISOLATED FROM HIGHER VOLTAGE

POWER AND LIGHTING CIRCUITS.

PART 3 - EXECUTION 3.1 INSTALLATION

- A. PROVIDE COMPLETE WIRING FROM POINT OF SERVICE CONNECTION TO ALL RECEPTACLES, LIGHTING FIXTURES, DEVICES, UTILIZATION EQUIPMENT AND OUTLETS FOR FUTURE EXTENSIONS AS INDICATED ON DRAWINGS. PROVIDE AMPLE SLACK WIRE FOR CONNECTIONS. UNLESS OTHERWISE SPECIFIED, PROVIDE NO. 12 AWG OR LARGER FOR ALL BRANCH CIRCUIT CONDUCTORS. IN DUTLET BOXES DESIGNATED FOR FUTURE USE, TAPE ENDS OF WIRES AND INSTALL BLANK COVERS.
- B. UNLESS OTHERWISE INDICATED, INSTALL ALL WIRING IN RIGID METAL CONDUIT, ELECTRIC METALLIC TUBING, OR FLEXIBLE METALLIC CONDUIT AS SPECIFIED OR INDICATED ON DRAWINGS
- C. INSTALL ELECTRICAL CABLE, WIRE AND CONNECTORS AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC AND NECA'S "STANDARD OF INSTALLATION", AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE PRODUCTS SERVE INTENDED FUNCTIONS.
- D. USE PULLING COMPOUND OR LUBRICANT, WHEN NECESSARY, COMPOUND MUST NOT DETERIORATE CONDUCTOR AND INSULATION.
- E. COLOR CODE: ALL SECONDARY SERVICE, FEEDER AND BRANCH CIRCUIT CONDUCTORS THROUGHOUT PROJECT AS FOLLOWS:

COLL CHIADO	CIUNS TRINUOGRUOT F	KUSECI AS FULLUWS
PHASE	120/208Y VOLTS	277/480Y VOLTS
Α	BLACK	BROWN
В	RED	DRANGE
С	BLUE	YELLOW
NEUTRAL	WHITE	WHITE
GROUND	GREEN	GREEN

- F. INSULATION ON SIZES 8 AWG AND SMALLER SHALL BE COLOR-CODED, ON LARGER SIZES PROVIDE PHASE COLOR WITH PRESSURE SENSITIVE TAPE.
- G. NEATLY TRAIN AND LACE WIRING INSIDE BOXES, EQUIPMENT AND
- H. ALL CONDUCTORS NO. 10 AND SMALLER LOCATED IN BRANCH CIRCUIT PANELBOARDS, SIGNAL CABINETS, SIGNAL CONTROL BOARDS, SWITCHBOARDS AND MOTOR CONTROL CENTERS SHALL NEATLY AND SECURELY BUNDLED. USE NYLON STRAPS MADE OF SELF-EXTINGUISHING NYLON HAVING A TEMPERATURE RANGE OF -65 DEGREES F. TO +350 DEGREES F. CONSTRUCT EACH STRAP WITH A LOCKING HUB OR HEAD ON ONE END AND A TAPER ON
- I. PLACE AN EQUAL NUMBER OF CONDUCTORS FOR EACH PHASE OF A CIRCUIT IN SAME RACEWAY OR CABLE. MAKE CONDUCTOR LENGTHS FOR PARALLEL CIRCUITS EQUAL. ALL CONDUCTORS IN ONE RACEWAY SHALL BE INSTALLED AT ONE TIME. DO NOT SPLIT PHASES INTO SEPARATE CONDUIT RUNS.
- J. NOT MORE THAN ONE MULTI-VIRE OR THREE CIRCUITS SHALL BE INSTALLED IN EACH RACEWAY UNLESS NOTED OTHERWISE ON PLANS. RACEWAYS CONTAINING MORE THAN ONE NEUTRAL SHALL TAGGED TO IDENTIFY ASSOCIATED BRANCH CIRCUIT.
- K. NOT MORE THAN ONE 120 OR 277 VOLT BRANCH CIRCUIT SHALI SERVED WITH A COMMON NEUTRAL. IN NO INSTANCE SHALL A COMMON NEUTRAL BE USED IN DIMMING CIRCUITS, GROUND FAULT PROTECTED CIRCUITS OR TWO CIRCUITS CONNECTED TO THE SAME PANEL BUS. PIGGY BACK CIRCUIT BREAKERS ARE NOT ALLOWED
- L. DO NOT INSTALL WIRE IN RACEWAY UNTIL INTERIOR OF BUILDING HAS BEEN PHYSICALLY PROTECTED FROM THE WEATHER AND ALL MECHANICAL WORK LIKELY TO DAMAGE CONDUCTORS HAS BEEN
- M. ALL CONDUCTORS SHALL BE PERMANENTLY TAGGED BY CIRCUIT NUMBER OR TERMINAL NUMBER IN ALL JUNCTION BOXES, PANELBOARDS OR OTHER TERMINATION ENCLOSURE.

N. MINIMUM WIRE SIZE FOR REMOTE D.C. EMERGENCY LAMPS SHALL BE NO. 10 AWG. FIELD VERIFY FOR MAXIMUM FIVE PERCENT VOLTAGE DROP WHERE WATTAGE EXCEEDS 25 WATTS ON A

3.2 CABLE INSTALLATION

- A. PROVIDE PROTECTION FOR EXPOSED CABLES WHERE SUBJECT TO
- B. SUPPORT CABLES ABOVE ACCESSIBLE CEILINGS; DO NOT REST ON CEILING TILES. USE SPRING METAL CLIPS AND/OR BRIDLE RINGS O SUPPORT CABLES FROM STRUCTURE. DO NOT ATTACH TO CONDUIT SYSTEMS.
- C. USE SUITABLE CABLE FITTINGS AND CONNECTORS. LEAVE MINIMUM 12 INCHES OF WIRE AT ALL OUTLETS FOR CONNECTIONS
- D. PROVIDE CONDUIT SLEEVES WITH BUSHINGS AT ALL WALL PENETRATIONS.
- E. MAINTAIN SEPARATION OF CABLES FROM PARALLEL POWER CONDUIT OR HOT PIPING SYSTEMS AND DUCTS.
- F. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR PULLING TENSION, MAXIMUM 25 POUNDS ON 4 PAIR CABLE. DO NOT SPLICE CABLE.

3.3 WIRING CONNECTIONS AND TERMINATIONS

- A. SPLICE ONLY IN ACCESSIBLE JUNCTION BOXES AND USE SPLICE AND TAP CONNECTORS WHICH ARE COMPATIBLE WITH CONDUCTOR
- B. SPLICES IN NO. 8 AWG AND SMALLER SHALL BE MADE WITH SPRING PRESSURE, INSULATED WIRE NUT CONNECTOR. SPLICES IN NO. 6 AWG AND LARGER SHALL BE MADE WITH COMPRESSION TYPE MECHANICAL CONNECTORS FULLY TAPED AND INSULATED TO FULL INSULATION VALUE OF THE CONDUCTOR.

END OF SECTION

SECTION 16130 - ELECTRICAL ENCLOSURES, BOXES AND FITTINGS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES FOR PROPER AND COMPLETE INSTALLATION OF ELECTRICAL BOXES AND FITTINGS. PROVIDE BOXES, CABINETS, AND FITTINGS AS INDICATED ON DRAWINGS, SCHEDULES, AND AS REQUIRED FOR
- B. EXTENT OF ELECTRICAL BOX AND ELECTRICAL FITTING WORK IS INDICATED BY DRAWINGS AND SCHEDULES, AND REQUIREMENTS OF

PART2 - PRODUCTS

- 2.1 INTERIOR OUTLET BOXES A. PROVIDE GALVANIZED PRESSED STEEL INTERIOR OUTLET WIRING
 - BOXES, OF TYPE, SHAPE AND SIZE, INCLUDING DEPTH OF BOX, TO SUIT EACH RESPECTIVE LOCATION AND INSTALLATION; CONSTRUCTED WITH STAMPED KNOCKOUTS IN BACK AND SIDES. AND WITH THREADED HOLES WITH SCREWS FOR SECURING BOX COVERS OR WIRING DEVICES. SINGLE AND DOUBLE GANG DUTLETS SHALL USE 4' SQUARE BOX, MINIMUM 1-1/2 INCH DEEP WITH APPROPRIATE PLASTER RING. GANGABLE BOXES SHALL NOT
 - B. INTERIOR DUTLET BOX ACCESSORIES: PROVIDE DUTLET BOX ACCESSORIES AS REQUIRED FOR EACH INSTALLATION, INCLUDING MOUNTING BRACKETS, WALLBOARD HANGERS, EXTENSION RINGS, FIXTURE STUDS, CABLE CLAMPS AND METAL STRAPS FOR SUPPORTING DUTLET BOXES, COMPATIBLE WITH DUTLET BOXES BEING USED AND MEETING REQUIREMENTS OF INDIVIDUAL WIRING
 - SITUATIONS. CHOICE OF ACCESSORIES IS INSTALLER'S OPTION. C. CEILING LIGHT DUTLET BOXES SHALL BE STANDARD 4 OCTAGONAL, NOT LESS THAN 2-1/8 INCH DEEP WITH LUGS OR EARS TO SECURE COVERS. DEVICE BOXES IN PLASTER OR DRYWALL CONSTRUCTION SHALL BE 4 INCH SQUARE, 2-1/8 INCH DEEP WITH PLASTER COVERS, WHERE ONLY ONE CONDUIT OR DEVICE IS INSTALLED BOX MAY BE 1-1/2 INCH DEEP. FLUSH BOXES IN MASONRY WALLS SHALL BE 2-1/2 INCH DEEP FOR

4-INCH BLOCK AND 3-1/2 INCH DEEP ELSEWHERE.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL ELECTRICAL BOXES AND FITTINGS AS INDICATED, OR IN COMPLIANCE WITH NEC REQUIREMENTS, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT BOXES AND FITTINGS

SERVE INTENDED PURPOSES. END OF SECTION

SECTION 16140 - WIRING DEVICES

PART 1 GENERAL

1.1 WORK INCLUDED

A. PROVIDE LABOR, MATERIAL, EQUIPMENT AND SERVICES FOR PROPER AND COMPLETE INSTALLATION OF WIRING DEVICES.

PART 2 - PRODUCTS

A. PROVIDE FACTORY-FABRICATED WIRING DEVICES, IN TYPE COLOR, AND ELECTRICAL RATING FOR SERVICE INDICATED AND ACCORDING TO ATTACHED WIRING DEVICE SCHEDULE. WHERE TYPE AND GRADE ARE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO FULFILL WIRING REQUIREMENTS, AND COMPLY WITH NEC AND NEMA STANDARDS FOR

WIRING DEVICES.

- 5'5 SMILCHE2 A. PROVIDE GENERAL-DUTY FLUSH TOGGLE SWITCHES, 20-AMPERE, 120-277 VOLTS AC, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIPPED WITH PLASTER EARS, SWITCH HANDLE,
- B. MOMENTARY CONTACT SWITCHES FOR CONTACTOR CONTROL SHALL BE HUBBELL 1556 OR 1556-L.

2.3 COVERPLATES

BACK AND SIDE-WIRED.

- A PROVIDE SWITCH AND DUTLET WALL PLATES FOR WIRING DEVICES, WITH GANGING AND CUTOUTS AS INDICATED, PROVIDE WITH METAL SCREWS FOR SECURING PLATES TO DEVICES, SCREW HEADS COLORED TO MATCH FINISH OF PLATE, AND WALL PLATES POSSESSING THE FOLLOWING ADDITIONAL CONSTRUCTION
- (1) WHITE PLATES IN FINISHED AREAS. (2) PLATES FOR SURFACE MOUNT BOXES IN UNFINISHED SPACES SHALL BE CADMIUM PLATED STEEL (3) AT WET LOCATIONS USE WEATHERPROOF (WF), COVER PLATES OF HEAVY CAST METAL, RUSTPROOF, WITH SPRING LOADED COVER FOR RECEPTACLE AND EXTERNAL HANDLE OR
- NEOPRENE COVER FOR SWITCH. B. IMPACT AND ABRASION RESISTANT NYLON PLATES FOR RECEPTACLES ON EMERGENCY CIRCUIT SHALL BE WHITE IN COLOR WITH THE PANEL AND CIRCUIT IDENTIFICATION ENGRAVED IN 3/16 INCH WHITE LETTERS.
- C. PLATES FOR FUTURE SYSTEM DUTLETS SHALL BE A BLANK COVER MATCHING DEVICE PLATES IN QUALITY AND FINISH.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL WIRING DEVICES WHERE INDICATED, IN ACCURDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS SERVE INTENDED FUNCTION

END OF SECTION

SECTION 16450 - ELECTRICAL GROUNDING

PART 1 GENERAL

1.1 WORK INCLUDED

A. PROVIDE LABOR, MATERIAL, EQUIPMENT AND SERVICES FOR PROPER AND COMPLETE ELECTRICAL GROUNDING SYSTEM IN ACCORDANCE WITH NATIONAL ELECTRIC CODE REQUIREMENTS AND AS INDICATED HERE-IN AND ON THE CONTRACT DRAWINGS.

1.2 SYSTEM DESCRIPTION

A. SIZE REQUIRED EQUIPMENT GROUNDING CONDUCTORS IN COMPLIANCE WITH NEC. PROVIDE EQUIPMENT GROUNDING CONDUCTORS WITH GREEN INSULATION EQUIVALENT TO INSULATION ON ASSOCIATED PHASE CONDUCTORS. CONNECT BRANCH CIRCUIT GROUNDING CONDUCTORS TO GROUNDING BAR WITH APPROVED PRESSURE CONNECTORS.

1.4. QUALITY ASSURANCE

- A. COMPLY WITH NFPA NO. 70, NATIONAL ELECTRICAL CODE, AS APPLICABLE TO MATERIALS AND INSTALLATION OF ELECTRICAL
- GROUNDING SYSTEMS AND ASSOCIATED EQUIPMENT AND WIRING. B. COMPLY WITH UL STANDARDS PERTAINING TO ELECTRICAL

GROUNDING AND BONDING. PART 2 - PRODUCTS

2.1 MATERIALS

A. ELECTRICAL CABLE, WIRE, CONNECTORS, CLAMPS, AND RACEWAY WORK ARE SPECIFIED IN APPLICABLE DIVISION 16 SECTIONS.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL ELECTRICAL GROUNDING SYSTEMS, IN ACCORDANCE WITH APPLICABLE PORTIONS OF NATIONAL ELECTRICAL CODE, AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT ELECTRICAL GROUNDING COMPLIES WITH REQUIREMENTS AND

SERVES INTENDED PURPOSES. END OF SECTION

SECTION 16500 - LIGHTING SYSTEMS

PART 1 GENERAL

1.1 WORK INCLUDED A. PROVIDE MATERIAL, EQUIPMENT, LABOR AND SERVICES NECESSARY FOR PROPER AND COMPLETE INSTALLATION OF A

B. WORK INCLUDED UNDER THIS SECTION: (A) INTERIOR LIGHT FIXTURES

(C) BALLASTS

PART 2 - PRODUCTS 2.1 LIGHT FIXTURES:

A. MANUFACTURERS: 1. LITHONIA 2. HUBBELL

3. HOLOPHANE

B. LIGHT FIXTURES SHALL CONSIST OF, BUT NOT BE LIMITED TO LAMPS, LAMPHOLDERS, REFLECTORS, BALLASTS, STARTERS, AND

A. PROVIDE NEW LAMPS IN ALL FIXTURES AS MANUFACTURED BY GENERAL ELECTRIC, PHILLIPS, OR WESTINGHOUSE. LAMP AND BALLAST COMBINATIONS SHALL BE LISTED FOR USE BY MANUFACTURER.

2.3 BALLASTS:

- A. FLUORESCENT BALLASTS 1. BALLAST SHALL BE HIGH PERFORMANCE ELECTRONIC TYPE TO DPERATE AT A FREQUENCY OF 20 KHZ OR HIGHER WITH LESS THAN 2% LAMP FLICKER AT AN INPUT VOLTAGE OF 108 TO 132 VAC, 60 HZ. BALLAST SHALL MEET REQUIREMENTS OF "CERTIFIED BALLAST MANUFACTURERS" (CBM). BALLASTS SHALL BE HIGH POWER FACTOR AUTOMATIC RESET "CLASS P" TYPE IN SIZES AVAILABLE COMMERCIALLY, ELECTRONIC BALLAST SHALL HAVE MINIMUM 3 YEAR MANUFACTURER'S
- 2. BALLASTS SHALL HAVE AN "A" SOUND RATING. BALLAST TOTAL HARMONIC DISTORTION SHALL NOT EXCEED 10%.
 BALLAST SHALL OPERATE NUMBER OF LAMPS SPECIFIED IN FIXTURE SCHEDULE, PROVIDE MULTIPLE BALLAST AS REQUIRED TO MEET SWITCHING REQUIREMENTS, BALLAST SHALL OPERATE AS A PARALLEL CIRCUIT ALLOWING REMAINING LAMPS TO
- 3. SECURELY FASTEN BALLASTS IN PLACE WITH MOUNTING SURFACE OF BALLAST MAKING AS COMPLETE CONTACT WITH SURFACE OF BALLAST MOUNTING AREA OF FIXTURE AS PRACTICAL. ATTACH BALLASTS TO MOUNTING SURFACE OF FIXTURE BY ONE BOLT AND NUT OR SHEET METAL SCREW FOR EACH BALLAST MOUNTING HOLE OR AS RECOMMENDED BY BALLAST MANUFACTURER FOR OPTIMUM HEAT TRANSFER.

MAINTAIN FULL LIGHT DUTPUT IF DNE DR MORE LAMPS FAIL.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. DELIVER LIGHTING FIXTURES INDIVIDUALLY WRAPPED IN FACTURY-FABRICATED FIBERBUARD TYPE CONTAINERS.
- B. HANDLE FIXTURES CAREFULLY TO PREVENT BREAKAGE, DENTING AND SCORING OF FIXTURE FINISHES. DO NOT INSTALL DAMAGED LIGHTING FIXTURES; REPLACE DAMAGED UNITS WITH EQUIPMENT
- C. STORE LIGHTING FIXTURES IN A CLEAN, DRY SPACE. STORE IN ORIGINAL CARTONS AND PROTECT FROM DIRT AND DEBRIS, PHYSICAL DAMAGE, WEATHER AND CONSTRUCTION TRAFFIC.
- D. EXIT AND EMERGENCY/NIGHT LIGHT LUMINAIRES SHALL BE CONNECTED TO UNSWITCHED CIRCUITS WITH EMERGENCY POWER FROM THE EMERGENCY GENERATOR CIRCUITS.
- E. SET LIGHTING FIXTURES AND EQUIPMENT PLUMB, SQUARE, AND LEVEL AND SECURE TO STRUCTURAL SUPPORT MEMBERS OF BUILDING. PROVIDE ALL STEEL SUPPORTS NECESSARY FOR LIGHTING FIXTURES IN ADDITION TO THOSE SPECIFIED UNDER GENERAL BUILDING CONSTRUCTION. FIXTURES SHALL BE
 SUPPORTED INDEPENDENT OF SUSPENDED CEILING SYSTEM BY AT
 LEAST TWO HANGERS AT DIAGONALLY OPPOSITE CORNERS. SECURE
 FIXTURES IN SUSPENDED CEILINGS TO FRAMING MEMBERS IN ACCORDANCE WITH NEC BY USING STANDARD CLIPS MADE FOR
- F. INSTALL RECESSED FLUORESCENT FIXTURES WITH FLEXIBLE METALLIC CONDUIT OF APPROXIMATELY 6 FEET IN LENGTH TO PERMIT RELOCATION FLEXIBILITY. CONNECT FIXTURE TO AN ACCESSIBLE JUNCTION BOX IN SUSPENDED CEILING WITH FLEXIBLE CONDUIT. CONSIDER WIRING IN FLEXIBLE CONDUIT AS BRANCH CIRCUIT CONDUCTORS, UNLESS OTHERWISE SPECIFIED. USE TAP CONDUCTORS WITH ADEQUATE TEMPERATURE RATING IN FLEXIBLE CONDUIT IN LIEU OF BRANCH CIRCUIT CONDUCTORS IN ALL CASES WHERE FIXTURE BRANCH CIRCUIT TERMINAL CONNECTION OPERATING TEMPERATURE EXCEEDS TEMPERATURE

THE PURPOSE, SHEET METAL SCREWS ARE NOT ACCEPTABLE.

G. CLEAN INTERIOR OF LIGHTING FIXTURES OF DIRT AND DEBRIS UPON COMPLETION OF INSTALLATION. PROTECT INSTALLED FIXTURES FROM DAMAGE DURING REMAINDER OF CONSTRUCTION

RATING OF BRANCH CIRCUIT CONDUCTORS.

H.HANDLE REFLECTORS, LENSES AND LOUVERS WITH CARE DURING INSTALLATION TO AVOID FINGERPRINTING OR OTHER DAMAGE. REPLACE DAMAGED LOUVERS AND REFLECTORS AS RECOMMENDED

BY MANUFACTURER. 3.2 LIGHTING FIXTURE SCHEDULE

A. AS SCHEDULED ON DRAWINGS.

END OF SECTION

CIVIC CENTER FRANKFORT, KENTUCKY Record DATE DRAWING NO. **ELECTRICAL SPECIFICATIONS** DRAWN B COMMONWEALTH OF KENTUCKY STAFF FINANCE AND ADMINISTRATION CABINET DEPARTMENT FOR FACILITIES MANAGEMENT CHECKED BY DIVISION OF ENGINEERING WGW FRANKFORT, KENTUCKY A&E FILE NO DIV OF ENGR. 2004-458 573-75 CONSULTING ENGINEERS 118 OLD LAFAYETTE AVENUE ENGR. FILE NO. JULY 2004 LEXINGTON, KENTUCKY 40502 FPCC0010 DATE -UTHORIZED AGENT APPROVED FOR PROGRAM CONCEPT ONLY DIVISION OF DATE -**ENGINEERING** APPROVED FOR PROGRAM CONCEPT ONLY

REPLACE ROOF

RECORD DRAWINGS THESE REVISED DRAWINGS HAVE BEEN

PREPARED ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER OF RECORD WILL NOT BE RESPONSIBLE FOR ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT, DATED 08/01/05.

CPA-899G