

A

three inches = one foot

B

one and one half inches = one foot

C

one inch = one foot

D

three quarters inch = one foot

E

one half inch = one foot

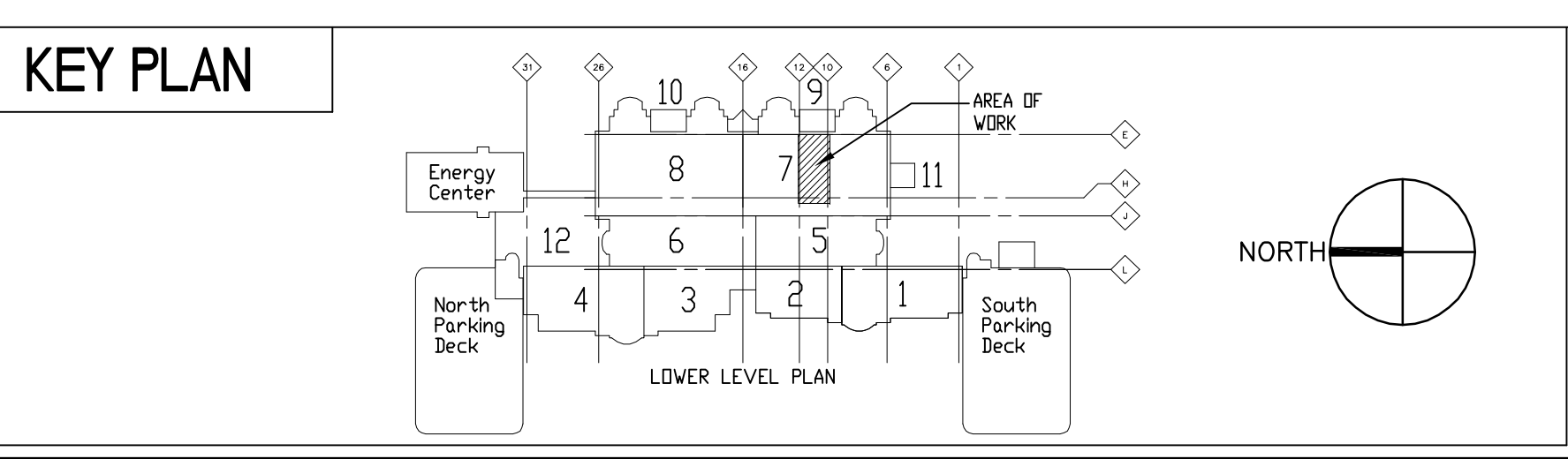
F

three eighths inch = one foot

one quarter inch = one foot

one eighth inch = one foot

ISSUE 006 - CD BID	01.20.11
ISSUE 005 - CD OWNER REVIEW	12.17.10
ISSUE 004 - DESIGN DEVELOPMENT RECORD	11.12.10
ISSUE 003 - DESIGN DEVELOPMENT REVIEW	09.08.10
Revisions	Date



US DEPARTMENT OF  
VETERANS AFFAIRS  
JOHN D. DINGELL  
VA MEDICAL CENTER  
4646 JOHN R. STREET  
DETROIT, MI 48202

ARCHITECT/ENGINEERS:

**Albert Kahn Associates, Inc.**  
Albert Kahn Building  
7430 Second Ave.  
Detroit, Michigan 48202-2798  
Albert Kahn Associates, Inc. is a member of  
the Albert Kahn Family of Companies. © 2007  
ALBERT KAHN JOB # 0088-00.000

Drawing Title  
**MECHANICAL  
SYMBOLS**

Approved Project Director  
**J. P. COLE**

Project Title  
**POLICE SERVICES RELOCATION**

Location  
**DETROIT, MICHIGAN**

Date  
**01-20-2011**

Checked  
**JPC**

Drawn  
**FME**

Project Number  
**553-11-108**

Building Number  
**100**

Drawing Number  
**M-002**  
Dwg. 25 of 50

Office of  
Construction  
and Facilities  
Management

Department of  
Veterans Affairs

DUCT AND FITTING DESIGN SYMBOLS			
RECTANGULAR DUCTWORK			
SINGLE LINE SYMBOL	DOUBLE LINE SYMBOL	ITEM	CATEGORY
		RECTANGULAR	DUCT (FIRST DIMENSION LISTED IS FOR SIDE SHOWN)
		RECTANGULAR	DUCT SECTION
		RADIUS THROAT	ENTRANCE
		SQUARE THROAT	
		BELLMOUTH	
		CHANGE DIMENSIONS	TRANSITION (IF ECCENTRIC FLAT TOP OR FLAT BOTTOM)
		CHANGE CONFIGURATION	
		UP	OFFSET
		DOWN	
		RADIUS ELBOW	ELBOW
		VANED ELBOW	
		SQUARE TAP & COLLAR EXTR	BRANCH TAKE-OFF
		RADIUS TOP ELBOW	
		RADIUS BOTTOM ELBOW	
		RADIUS TAP COLLAR	
		SQUARE TAP COLLAR	
		VANED SIDE ELBOW	
		VANED TOP ELBOW	
		VANED BOTTOM ELBOW	
		SIDE BY SIDE RADIUS ELBOWS	
		TOP & BOTTOM RADIUS ELBOWS	
		SIDE BY SIDE VANED ELBOWS	WYE BRANCH (TRANSITION IF REQUIRED)
		TOP & BOTTOM VANED ELBOWS	
		SUPPLY	
		RETURN OR EXHAUST	
ROUND AND OVAL DUCTWORK			
SINGLE LINE SYMBOL	DOUBLE LINE SYMBOL	ITEM	CATEGORY
		ROUND	DUCT (FIRST DIMENSION LISTED IS FOR SIDE SHOWN)
		FLAT OVAL	DUCT SECTION
		FLAT OVAL	DUCT SECTION
		ROUND	DUCT SECTION
		BELL MOUTH	ENTRANCE
		CHANGE DIMENSIONS	TRANSITION (IF ECCENTRIC FLAT TOP OR FLAT BOTTOM)
		CHANGE CONFIGURATION	
		UP	OFFSET
		DOWN	
		DIE STAMPED TO 8"	ELBOW
		FIVE PIECE OVER 8"	
		CONICAL TEE	BRANCH TAKE-OFF
		SPIN ON CONNECTION TO RECTANGULAR	
		CONICAL LATERAL	
		WYE OR TEE	WYE
		SUPPLY	
		RETURN OR EXHAUST	RISER THROUGH SLAB
		MAXIMUM LENGTH 5'-0"	
		MAXIMUM LENGTH 5'-0"	
		MAXIMUM LENGTH 5'-0"	FLEXIBLE DUCTWORK RUNOUTS
		MAXIMUM LENGTH 5'-0"	
		MAXIMUM LENGTH 5'-0"	

MECHANICAL SYMBOLS							
SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION	
CONTROLS				PLUMBING AND PIPING			
		AIR FLOW INDICATOR				BALL VALVE	
		GRAVITY DAMPER				BUTTERFLY VALVE	
		PARALLEL AND OPPOSED BLADE DAMPERS				GATE VALVE	
		COILS (COOLING, PREHEAT, REHEAT AND ELECTRIC)				GLOBE VALVE	
		GAS BURNER				PLUG VALVE	
		HUMIDIFIER				TWO-WAY CONTROL VALVE	
		FILTER				THREE-WAY CONTROL VALVE	
		FAN				CHECK VALVE	
		AIR TERMINAL UNIT				PRESSURE REDUCING VALVE	
		PUMP				RELIEF OR SAFETY VALVE	
		AUTOMATIC FLOW CONTROL VALVE				SOLENOID, PNEUMATIC OR MOTORIZED TWO-WAY VALVE	
		MOTORIZED 2-WAY AND 3-WAY CONTROL VALVES				LATERAL GATE VALVE	
		MOTOR STARTER				HOSE END DRAIN VALVE	
		VARIABLE SPEED DRIVE				SQUARE HEAD COCK	
		SENSORS				END CAP	
		SENSOR WITH AVERAGING ELEMENT				NIPPLE AND CAP	
		DIFFERENTIAL PRESSURE SENSOR				AIR TRAP	
		FREEZESTAT				FLANGED FITTINGS	
						FLOOR DRAIN	
						FUNNEL DRAIN, OPEN	
						STRAINER	
						STRAINER WITH BLOW-OFF VALVE	
						UNION	
						TRAP, SINGLE CLEAN OUT	
						TRAP, DOUBLE CLEAN OUT	
						TRAP, STEAM (DRIP & TRAP)	
						PRESSURE GAUGE	
						THERMOMETER WITH WELL	
						FLOW METER	
						FLOW SWITCH	
						FLOW PROBE	
						ELBOW, 90°	
						ELBOW, 45°	
						ELBOW, TURNED DOWN	
						ELBOW, TURNED UP	
						ELBOW DOWN OFFSET	
						ELBOW DOWN, 90 DEG OFFSET	
						ELBOW, BASE	
						TEE	
						CROSS	
						TEE, OUTLET UP	
						TEE, OUTLET DN	
						CONNECTION, TOP	
						CONNECTION, BOTTOM	
						TEE, SINGLE-SWEEP	
						ALIGNMENT GUIDE	
						ANCHOR	
						EXPANSION BEND	
						EXPANSION JOINT	
						FLEXIBLE CONNECTION	
						FLEXIBLE METAL HOSE	
				GENERAL			
				FIRE PROTECTION			
						NEW / EXISTING CONNECTION	
						STANDARD UPRIGHT SPRINKLER	
						STANDARD PENDANT SPRINKLER	
						DRY PENDANT SPRINKLER	
						UPRIGHT SPRINKLER ON 1" SPRIG UP	
						SIDEWALL SPRINKLER	
						SPOT NOZZLE	
						RADIAL NOZZLE	
						FIRE HOSE RACK/REEL	
						FIRE HOSE CABINET	
						FIRE HOSE HOLDER	
						ROOF HOSE BOX	
						AUTOMATIC SPRINKLER RISER	
						DRY PIPE VALVE / DELUGE VALVE	
						PRESSURE SWITCH	
						HEAT DETECTORS	
						SMOKE DETECTOR	
						MANUAL RELEASE	
						ALARM HORN	
						ALARM BELL	
						ALARM LIGHT	
						UNDERGROUND VALVE WITH INDICATOR POST	
						FIRE HYDRANT	
						FIRE DEPARTMENT SIAMESE CONNECTION	
						REMOVED OR ABANDONED FIRE LINE	
						GATE VALVE IN BOX	
				HVAC			
						DIFFUSERS, SUPPLY AND RETURN OR EXHAUST	
						AIRFLOW ARROWS, SUPPLY AND RETURN	
						MANUAL VOLUME DAMPER	
						MOTORIZED DAMPER	
						FIRE DAMPER HORIZONTAL	
						FIRE DAMPER, VERTICAL	
						FIRE DAMPER, EXISTING	
						SMOKE DAMPER, HORIZONTAL	
						SMOKE DAMPER, VERTICAL	
						COMBINATION FIRE/SMOKE DAMPER, HORIZONTAL	
						COMBINATION FIRE/SMOKE DAMPER, VERTICAL	
						AIR TERMINAL UNIT	
						UNIT HEATER, HORIZONTAL PROJECTION	
						UNIT HEATER, VERTICAL PROJECTION (LOUVER CONE)	
						UNIT HEATER, VERTICAL PROJECTION (TWO-WAY THROW)	

A

B

C

D

E

F

FULLY SPRINKLERED