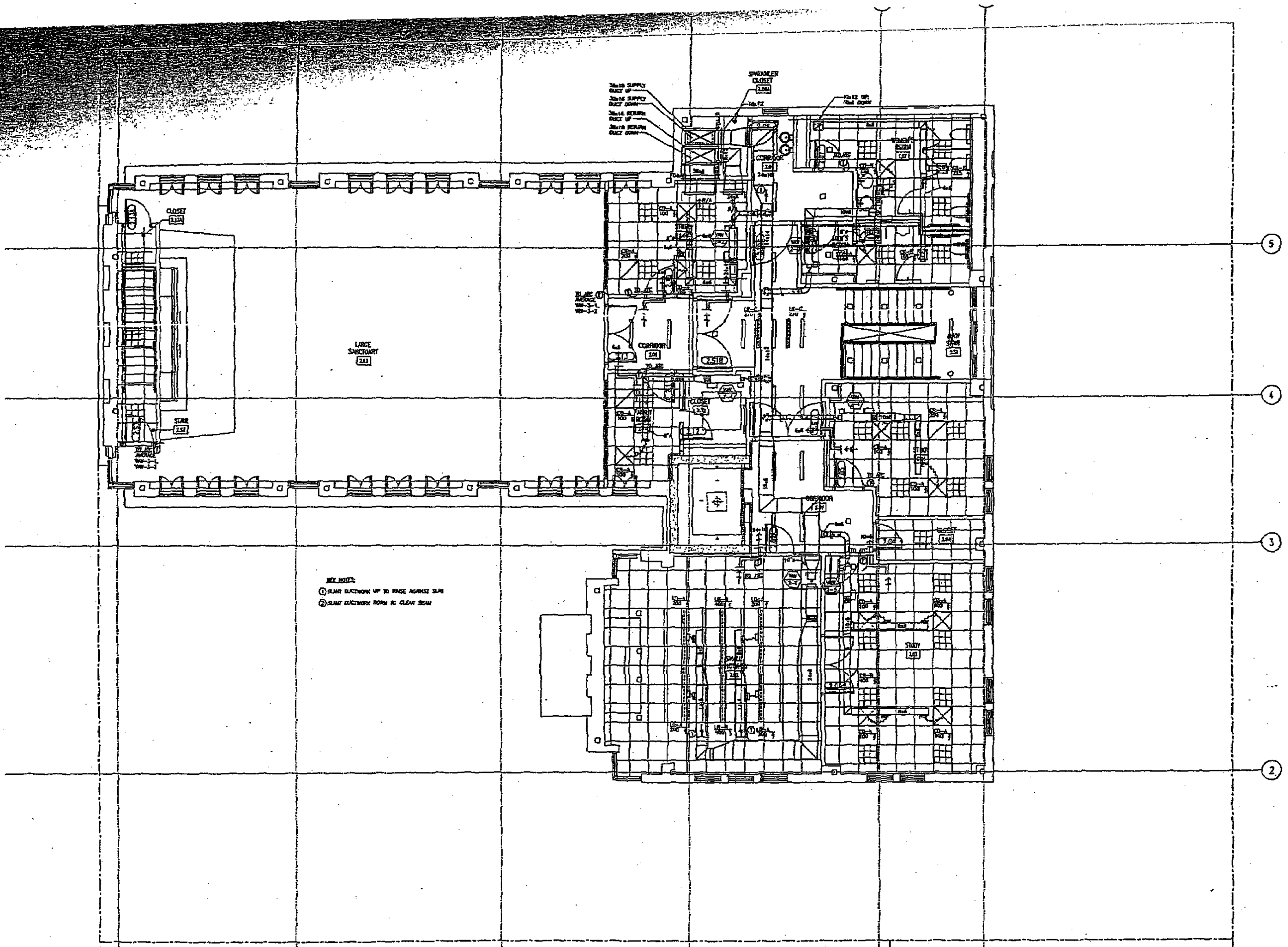

KEY NOTES:

① SLANT DUCTWORK UP TO RAISE AGAINST SLAB

② SLANT DUCTWORK DOWN TO CLEAR BEAM

① HVAC SECOND LEVEL DUCTWORK PLAN

SCALE: 1/4"=1'-0"

GENERAL NOTE: FOR FILTER REPLACEMENT DURING AND AFTER CONSTRUCTION, COORDINATE WITH ARCHITECTURAL RCP FOR LOCATIONS OF ACCESS PANELS.

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SEAL

KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	08/30/06
	90% CONST. DOCUMENTS	06/16/06
	50% CONST. DOCUMENTS	05/16/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE: 08-30-06

SHEET TITLE

HVAC
SECOND LEVEL
DUCTWORK PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
M.2-02

REVISION

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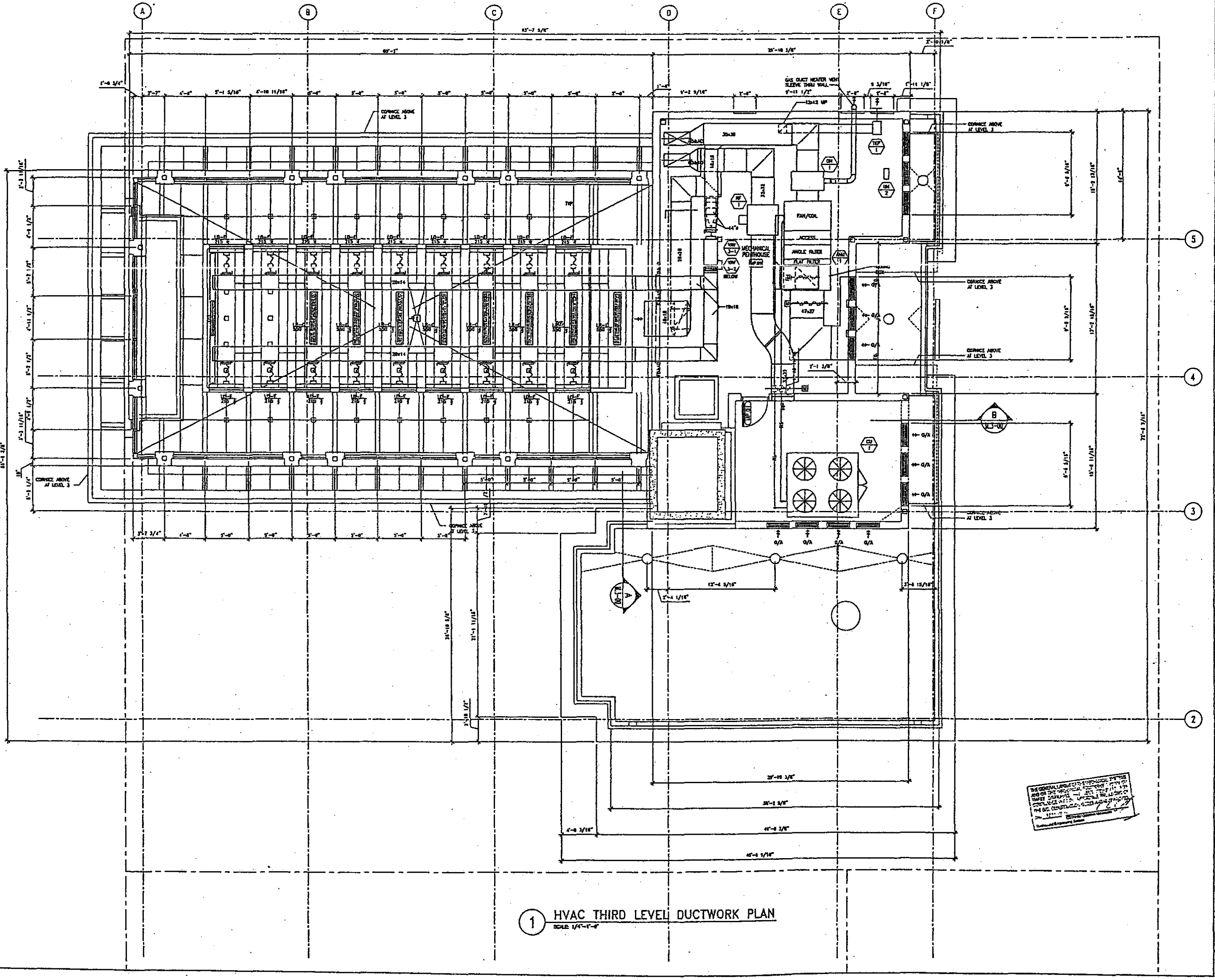
MECHANICAL

Board of Zoning Adjustment
District of Columbia
CASE NO. 17663
EXHIBIT NO. 23A2



① HVAC THIRD LEVEL DUCTWORK PLAN
SCALE: 1/4"=1'-0"

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KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	90% CONST. DOCUMENTS	06/16/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. DATE:
W050002 06-30-06

SHEET TITLE

HVAC
THIRD LEVEL
DUCTWORK PLAN
CONSTRUCTION
DOCUMENTS

SCALE 1/4" = 1'-0"

SHEET NO. REVISION
M.2-03

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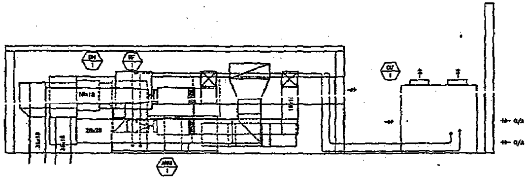
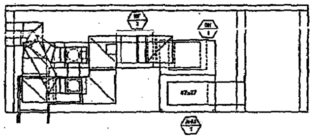
MECHANICAL



A
M2-04
HVAC PENTHOUSE SECTION VIEW
SCALE: 1/4"=1'-0"



B
M2-04
HVAC PENTHOUSE DUCT SHAFT SECTION VIEW
SCALE: 1/4"=1'-0"

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No.	Description	Date
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	90% CONST. DOCUMENTS	05/14/06
	50% CONST. DOCUMENTS	05/16/06
	100% DESIGN DEVELOPMENT	01/17/06
	50% DESIGN DEVELOPMENT	11/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
HVAC
PARTIAL PLANS

CONSTRUCTION
DOCUMENTS

SCALE 1/4" = 1'-0"

SHEET NO.
M3-00

REVISION

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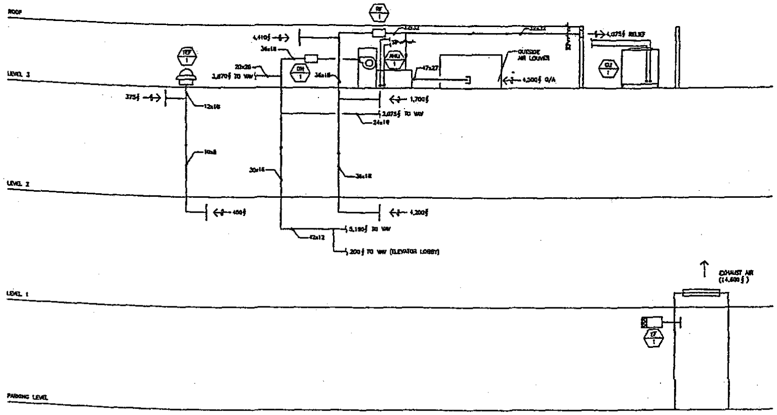

1 HVAC AIRFLOW RISER DIAGRAM

SCALE: NONE

NOTE: VALUES ABOVE REPRESENT SUM OF MAXIMUM VALUES FOR BALANCING PURPOSES
VALUES DO NOT REPRESENT ACTUAL BUILDING PEAK VALUE OF 9,600 CFM

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REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	90% CONST. DOCUMENTS	06/16/06
	50% CONST. DOCUMENTS	05/15/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W0500002
DATE 06-30-06

SHEET TITLE

HVAC
AIRFLOW
RISER DIAGRAM
CONSTRUCTION
DOCUMENTS

SCALE: NONE

SHEET NO.
M.4-00

REVISION

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MECHANICAL

SPLIT SYSTEM AIR HANDLER SCHEDULE

DESIGNATION	NOMINAL CFM	OUTSIDE AIR (CFM)	TOT. EXT. S.P.(MAX.)	COOLING COIL ENT. AIR TEMP.(db/wb)	LEAVING AIR TEMP.(db/wb)	TOTAL CAP. (MBH)	SEN. CAPACITY (MBH)	TYPE	FAN MOTOR RPM	HP	VOLT	PHASE(ø)	HERTZ(Hz)	STARTER TYPE	REMARKS
AHU-1	9,600	4,500	2.5"	83/75	55/54	560.0	306.29	AF	950	10	460	3	60	VFD	VERTICAL DRAW THROUGH ARRANGEMENT
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

AIR COOLED REFRIGERANT UNIT SCHEDULE

UNIT No.	LOCATION	SERVICE	ELECTRICAL DATA VOLTS	PHASE	HZ	COMPRESSOR DATA No.	KW (EA)	FLA (EA)	LRA (EA)	No. OF STEPS	REFRIGERANT	HEAT REJECTION EDB (°F)	LDB (°F)	CAPACITY (MBH)	CONDENSER FAN No. OF FANS	HP (EA)	CFM (EA)	EXTERNAL SP (IN. H_2O)	PHYSICAL CHARACTERISTICS LENGTH (FT-IN)	WIDTH (FT-IN)	HEIGHT (FT-IN)	OPERATING WT. (LBS)	MANUF. MODEL #	REMARKS
CU-1	MP.01	-	460	3	60	2	52.5	-	-	-	R-22	105	55	540	4	-	-	-	8'-1"	7'-3"	6'-6"	3309	CARRIER 38AH034-501FA	-
-	-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-

SEPARATED COMBUSTION DUCT FURNACE SCHEDULE

DESIGNATION	NOMINAL CFM	DUCT SIZE	PRESSURE DROP ("W.G.)	TEMPERATURE RISE (°F)	HEATING CAPACITY FUEL (PSIG)	INPUT (MBH)	OUTPUT (MBH)	ELEC. DATA FULL LOAD AMPS (115V)	CONTROL AMPS (24V)	MANUF. MODEL #
DF-1	9,600	28x28	-	20°	NAT. GAS (2)	300	240	-	-	REZNOR HSC
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

1. PROVIDE WITH ELECTRONIC MODULATION GAS CONTROL (28% TO 100%).

FAN SCHEDULE

UNIT No.	SYSTEM TYPE	LOCATION	SERVICE	PERFORMANCE DATA CFM	TOTAL SP (IN.)	RPM	MAX. BHP	MAX. OV (FPM)	CONSTRUCTION DATA CLASS	ROT	DISCHARGE	ARRANG.	DRIVE	FAN MOTOR DATA MHP	STARTER TYPE	ELECTRICAL DATA VOLTS	PHASE	HZ	VIBRATION ISOLATION SPECIFICATION MOUNTING TYPE	BASE TYPE	MIN. STATIC DEFLECTION (IN.)	MODEL NO.
RF-1	RETURN AIR	LEVEL 3	RETURN	9,400	1.50	825	4.5	846	-	-	-	-	-	5	VFD	460	3	60	-	-	-	COOK 300 SQN-B
EF-1	EXHAUST	PARKING	GARAGE EXHAUST	14,900	0.125	482	2.25	994	-	-	-	-	-	3	MAG.	460	3	60	-	-	-	COOK 365 SQN-B
EF-2	PROPELLER	PARKING	ELEC. ROOM	844	0.1	1,150	0.19	-	-	-	-	-	-	1/8	-	115	1	60	-	-	-	COOK SWD 12
EF-3	PROPELLER	PARKING	ELEV. ROOM	722	0.1	1,050	0.19	-	-	-	-	-	-	1/8	-	115	1	60	-	-	-	COOK SWD 12
TEF-1	TOILET EXHAUST	LEVEL 3	TOILET EXHAUST	825	0.50	1,725	0.5	-	-	-	-	-	-	1/2	-	115	1	60	-	-	-	GREENHECK SFD 7.5-5A

TERMINAL BOX SCHEDULE

DESIGNATION	BOX TYPE	BOX SIZE (INLET SIZE)	AIRFLOW RANGE (CFM) MIN.	MAX.	LOWEST MINIMUM CFM SETTING	MINIMUM STATIC PRESSURE ΔPS (IN W.C.)	ELECTRICAL DATA HEATING KW (STAGES)	VOLTAGE, PHASE	TYPE OF CONTROLS	MANUF. MODEL #	REMARKS
VAV-1-1	VAV	4"ø	75	225	100	0.01	-	-	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-2	VAV	10"ø	500	1400	800	0.15	6KW (3)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-3	VAV	6"ø	150	500	400	0.15	4KW (2)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-4	VAV	6"ø	150	500	300	0.17	3KW (2)	265V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-5	VAV	6"ø	150	500	300	0.02	4KW (2)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-6	VAV	8"ø	300	900	450	0.13	4KW (2)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-7	VAV	8"ø	300	900	600	0.05	5KW (2)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-8	VAV	10"ø	500	1400	900	0.19	7.5KW (3)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-9	VAV	8"ø	300	900	740	0.29	8KW (3)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-10	VAV	6"ø	150	500	270	0.13	6KW (3)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-1-11	VAV	6"ø	150	500	270	0.13	8KW (3)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-2-1	VAV	4"ø	75	225	100	0.01	1KW (1)	265V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-2-2	VAV	5"ø	125	350	200	0.05	2KW (2)	265V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-2-3	VAV	6"ø	150	500	375	0.13	3KW (2)	265V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-2-4	VAV	5"ø	125	350	200	0.05	2KW (2)	265V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-2-5	VAV	6"ø	150	500	400	0.15	3KW (2)	265V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-2-6	VAV	10"ø	500	1400	800	0.15	6KW (3)	460V, 1ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-3-1	VAV	14"ø	1,000	3,000	1,535	0.18	15KW (3)	460V, 3ø	DDC	-	SIMILAR TO TRANE VCEF
VAV-3-2	VAV	14"ø	1,000	3,000	1,535	0.18	15KW (3)	460V, 3ø	DDC	-	SIMILAR TO TRANE VCEF

1. ALL BOX CONTROLLERS SHALL BE PROVIDED WITH INTERNAL TRANSFORMERS (120V PRIMARY; 24V SECONDARY) FOR POWER SUPPLY.

CABINET UNIT HEATER SCHEDULE

UNIT No.	LOCATION	SERVICE	TYPE	ELECTRICAL DATA KW	No. OF STAGES	FLA	MOTOR (HP)	VOLTS	PHASE	HZ	MANUF. MODEL #	REMARKS
CUH-1	P.02	-	WALL	1.5	1	-	1/16	277	1	60	TRANE UHAA	-
CUH-2	STAIR P.S2	-	WALL	1.5	1	-	1/16	277	1	60	TRANE UHAA	-
CUH-3	STAIR 1.S2	-	WALL	1.5	1	-	1/16	277	1	60	TRANE UHAA	-
CUH-4	STAIR 1.S3	-	WALL	1.5	1	-	1/16	277	1	60	TRANE UHAA	-
UH-1	M.02	-	HUNG	3.0	1	-	1/16	277	1	60	TRANE UHEC	HORIZONTAL DISCHARGE; SEE ELECTRICAL POWER PLAN E.3-00M FOR EXACT LOCATION
UH-2	MP.01	-	HUNG	3.0	1	-	1/16	277	1	60	TRANE UHEC	HORIZONTAL DISCHARGE

1. ALL CABINET & UNIT HEATERS TO BE PROVIDED WITH INTEGRAL DISCONNECT & THERMOSTAT

DIFFUSER SCHEDULE

DESIGNATION	SERVICE	CFM RANGE	MAX NC	TYPE	NECK SIZE (IN.)/SIZE & NO. OF SLOTS	NOMINAL OVERALL DIMENSION WxL (IN.)	MANUF. MODEL	REMARKS
CD-A	SUPPLY	0-150	30	PANEL	6"ø	24"x24"	-	SIMILAR TO TITUS PSS
CD-B	SUPPLY	151-225	27	PANEL	8"ø	24"x24"	-	SIMILAR TO TITUS PSS
CR-A	RETURN	0-250	27	PANEL	6"x6"	24"x24"	-	SIMILAR TO TITUS PAR
CR-B	RETURN	251-400	26	PANEL	8"x8"	24"x24"	-	SIMILAR TO TITUS PAR
CR-C	RETURN	401-550	28	PANEL	10"x10"	24"x24"	-	SIMILAR TO TITUS PAR
CR-D	RETURN	551-700	28	PANEL	12"x12"	24"x24"	-	SIMILAR TO TITUS PAR
CR-E	RETURN	0-250	28	PANEL	6"x6"	12"x12"	-	SIMILAR TO TITUS PAR

LINEAR DIFFUSER SCHEDULE

DESIGNATION	SERVICE	TYPE	CFM/ LIN. FT.	No. OF SLOTS	SLOT SIZE (IN.)	ACTIVE LENGTH (FT.)	PLENUM SIZES LENGTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)	MANUF. MODEL #	REMARKS
LD-A	SUPPLY	SLOT	33.3	1	3/4"	6'	-	-	-	-	SIMILAR TO TITUS ML-38
LD-B	SUPPLY	SLOT	16.7	1	3/4"	6'	-	-	-	-	SIMILAR TO TITUS ML-38
LD-C	SUPPLY	SLOT	45	2	3/4"	3'	-	-	-	-	SIMILAR TO TITUS ML-38
LD-D	SUPPLY	SLOT	16.7	1	3/4"	2'	-	-	-	-	SIMILAR TO TITUS ML-38, BORDER TYPE 2, REMOVABLE CORE; INSTALLED IN FLOOR ABOVE
LD-E	SUPPLY	SIDEWALL	53.75	1	4"	4'	-	-	-	-	SIMILAR TO PRICE LBP 15A
LR-A	RETURN	SLOT	75	3	3/4"	6'	-	-	-	-	SIMILAR TO TITUS MLR-38
LR-B	RETURN	SLOT	66.7	3	3/4"	6'	-	-	-	-	SIMILAR TO TITUS MLR-38
LR-C	RETURN	SLOT	90	3	3/4"	3'	-	-	-	-	SIMILAR TO TITUS MLR-38

NOTES:

1. FINISHES SHALL BE SPECIFIED BY ARCHITECT.
2. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. ALL DIFFUSERS SHALL BE SUITABLE FOR THE TYPE OF CEILING CONSTRUCTION THAT ARE BEING INSTALLED IN.
4. PROVIDE LINEAR DIFFUSERS WITH PLENUM AND CORD OPERATED OPPOSED BLADE VOLUME DAMPER.
5. LINEAR DIFFUSER WIDTH IS DETERMINED BY THE # OF SLOTS. REFER TO DRAWING FOR # OF SLOTS AND ARCHITECTURAL DRAWINGS FOR EXACT LENGTH AND MOUNTING LOCATION.

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KEYPLAN

REVISIONS

No.	Description
	100% CONST. DOCUMENTS
	90% CONST. DOCUMENTS
	50% CONST. DOCUMENTS
	100% DESIGN DEVELOPMENT
	50% DESIGN DEVELOPMENT

PROJECT NO. W050002
DATE:

SHEET TITLE
HVAC
SCHEDULES

CONSTRUCTION
DOCUMENTS

SCALE: NONE

SHEET NO.
M.5-00

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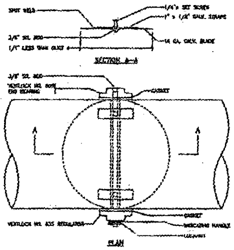
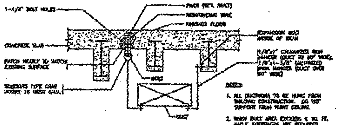
MECHANICAL



ROUND VOLUME DAMPER – UP TO 14 IN. DIAMETER, LOW PRESSURE

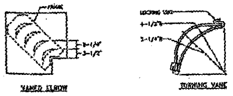


LONGEST DIMENSION OF DUCT	ROUND HANGERS	MAXIMUM SPACING NOTE 4	STRAP HANGERS	TRAPEZE SHELF ANGLES
UP TO 18"	8 GA. WIRE	8'-0"	1"x1/8"	1"x1"x1/8"
19" TO 30"	1/4" ROD	8'-0"	1"x1/8"	1"x1"x1/8"
31" TO 42"	1/4" ROD	8'-0"	1"x1/8"	1-1/2"x1-1/2"x1/8"
43" TO 60"	3/8" ROD	4'-0"	–	1-1/2"x1-1/2"x1/8"
61" TO 84"	3/8" ROD	4'-0"	–	2"x2"x1/8"
85" TO 96"	3/8" ROD	4'-0"	–	2"x2"x1/8"
OVER 97"	3/8" ROD	4'-0"	–	2"x2"x1/4"

NOTES:

1. ALL DUCTWORK TO BE HUNG FROM BUILDING CONSTRUCTION. DO NOT SUPPORT FROM HUNG CEILING.
2. WHEN DUCT AREA EXCEEDS 4 SQ. FT. ANGLE STIFFENERS ARE REQUIRED AROUND CIRCUMFERENCE EVERY 4'-0".
3. FOR DUCTS OVER 48" WIDE, HANGERS SHALL RUN UNDER DUCT AT LEAST 3" AND SHALL BE FASTENED TO THE BOTTOM AS WELL AS TO THE SIDES OF THE DUCT.
4. FOR DUCTS WITH A CROSS SECTIONAL AREA OF 4 SQ. FT. OR LESS, HANGERS SHALL BE NO MORE THAN 8 FT. APART. FOR DUCTS WITH A CROSS SECTIONAL AREA OF MORE THAN 4 SQ. FT. BUT NOT OVER 8 SQ. FT., HANGERS SHALL NOT BE MORE THAN 6 FT. APART. FOR DUCTS WITH A CROSS SECTIONAL AREA MORE THAN 8 SQ. FT., HANGERS SHALL NOT BE MORE THAN 4 FT. APART. THE DISTANCES BETWEEN HANGERS SHALL BE MEASURED UNIFORMLY ALONG THE DUCT.

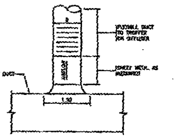
DUCT SUPPPORT FROM EXISTING CONCRETE SLAB



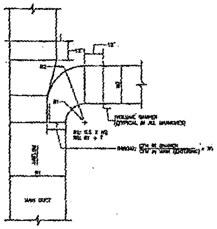
NOTES:

1. LOCKING LUGS INTEGRAL WITH VANE
2. MAXIMUM UNSUPPORTED VANE LENGTH 48"
3. FRAMES – BOLTED OR RIVETED TO ELBOW
4. VANES AND FRAMES – SAME GAUGE AS ELBOW

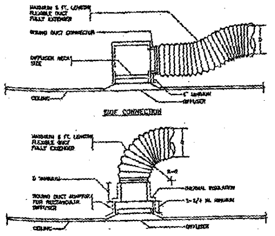
DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOWS



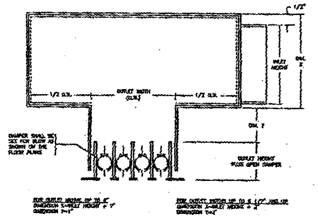
CIRCULAR BRANCH CONNECTION TO SINGLE OUTLET



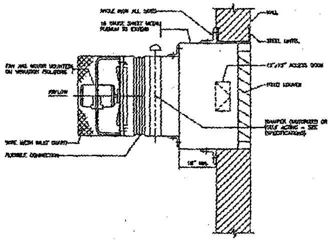
LOW PRESSURE BRANCH TAKE-OFF



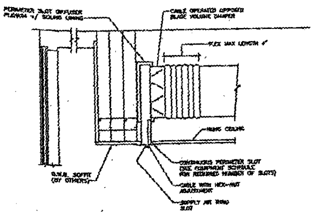
DIFFUSER CONNECTION DETAIL



LINEAR DIFFUSER PLENUM DETAIL



PROPELLER FAN DETAIL



SLOT DIFFUSER WITH VOLUME DAMPER DETAIL

SOKA GAKKAI
BUDDHIST
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Washington, D.C.

A K F
engineers

SEAL

KEYPLAN

REVISIONS

PROJECT NO.
WDS00012

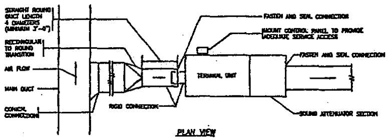
SHEET TITLE
HVAC
DETAILS

CONSTRUCTION
DOCUMENTS

SCALE: NONE

SHEET NO.
M.6-00

MECHANICAL

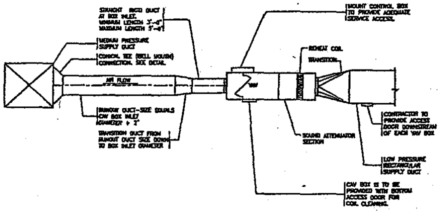

STRAIGHT ROUND DUCT LENGTH 4 DIAMETERS (MINIMUM 3'-0")
RECTANGULAR TO ROUND TRANSITION
AIR FLOW
MAIN DUCT
CONICAL CONNECTION
RIGID CONNECTION
FASTEN AND SEAL CONNECTION
MOUNT CONTROL PANEL TO PROVIDE ADEQUATE SERVICE ACCESS
FASTEN AND SEAL CONNECTION
TERMINAL UNIT
SOUND ATTENUATOR SECTION

PLAN VIEW

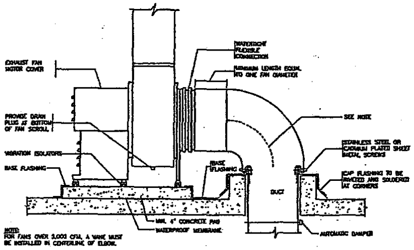
NOTES:

1. THE OPERATION OF VARIABLE VOLUME TERMINAL UNITS ARE AFFECTED BY EXCESSIVE TURBULENCE ON THE ENTERING SIDE OF EACH TERMINAL UNIT THEREFORE, TERMINAL UNITS MUST NOT BE INSTALLED TOO CLOSE TO MAIN DUCTS, ELBOWS AND FITTINGS.
2. WHEN MINIMUM UPSTREAM STRAIGHT DUCT CONNECTION TO TERMINALS AS INDICATED ABOVE CANNOT BE MAINTAINED, PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL UNIT MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
3. MANUFACTURER OF TERMINAL UNIT SHALL PROVIDE CONTROLS ON LEFT OR RIGHT SIDE AS REQUIRED BY FIELD CONDITIONS.
4. ARRANGE ACCESS TO PERMIT EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT.

TERMINAL UNIT INSTALLATION
(VAV)


STRAIGHT RIGID DUCT AT BOX INLET. MINIMUM LENGTH 3'-0" MAXIMUM LENGTH 5'-0"
MEDIUM PRESSURE SUPPLY DUCT
CONICAL TEE (BELL MOUTH) CONNECTION. SEE DETAIL
AIR FLOW
RUNOUT DUCT-SIZE EQUALS CAV BOX INLET DIAMETER + 2"
TRANSITION DUCT FROM RUNOUT DUCT SIZE DOWN TO BOX INLET DIAMETER
MOUNT CONTROL BOX TO PROVIDE ADEQUATE SERVICE ACCESS.
REHEAT COIL
TRANSITION
VAV
SOUND ATTENUATOR SECTION
CONTRACTOR TO PROVIDE ACCESS DOOR DOWNSTREAM OF EACH VAV BOX
LOW PRESSURE RECTANGULAR SUPPLY DUCT
CAV BOX IS TO BE PROVIDED WITH BOTTOM ACCESS DOOR FOR COIL CLEANING.

TERMINAL REHEAT BOX CONNECTIONS
(VAV)


EXHAUST FAN MOTOR COVER
PROVIDE DRAIN PLUG AT BOTTOM OF FAN SCROLL
VIBRATION ISOLATORS
BASE FLASHING
WATERTIGHT FLEXIBLE CONNECTION
MINIMUM LENGTH EQUAL TO ONE FAN DIAMETER
SEE NOTE
STAINLESS STEEL OR CADMIUM PLATED SHEET METAL SCREWS
BASE FLASHING
CAP FLASHING TO BE RIVETED AND SOLDERED AT CORNERS
DUCT
MIN. 4" CONCRETE PAD
WATERPROOF MEMBRANE
AUTOMATIC DAMPER

NOTE:
FOR FANS OVER 3,000 CFM, A VANE MUST BE INSTALLED IN CENTERLINE OF ELBOW.

UTILITY FAN DETAIL

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SEAL

KEYPLAN

REVISIONS

No.	Description
	100% CONST. DOCUMENTS
	90% CONST. DOCUMENTS
	50% CONST. DOCUMENTS
	100% DESIGN DEVELOPMENT
	50% DESIGN DEVELOPMENT

PROJECT NO. DATE:
W050002

SHEET TITLE

HVAC
DETAILS

CONSTRUCTIC
DOCUMENTS

SCALE: NONE

SHEET NO.
M.6-01

HELLMUTH, OBATA & KASSABAUM, P

MECHANICAL

ELECTRICAL SYMBOLS LIST
(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

LIGHTING SYMBOLS

2'x2' RECESSED FLUORESCENT CEILING MOUNTED FIXTURE
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'
NS = NOT SWITCHED
NL = NIGHT LIGHT
EM = EMERGENCY LIGHT W/BATTERY BALLAST ON EMERGENCY CIRCUIT

WALL / CEILING MOUNTED WRAP AROUND FLUORESCENT LIGHT FIXTURE
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'
NS = NOT SWITCHED
NL = NIGHT LIGHT
EM = EMERGENCY LIGHT W/BATTERY BALLAST ON EMERGENCY CIRCUIT

WALL / CEILING FLUORESCENT STRIP FIXTURE
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

FLUORESCENT STRIP FIXTURE-TYPE AS NOTED EQUIPPED WITH 90 MINUTS EMERGENCY BACKUP BATTERY PACK AND ON EMERGENCY LIFE SAFETY CIRCUIT
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

RECESSED LINEAR FLUORESCENT FIXTURE WITH THIN PROFILE.
'X' = FIXTURE TYPE
EM = EMERGENCY LIGHT W/BATTERY BALLAST ON EMERGENCY CIRCUIT

RECESSED CEILING MOUNTED FIXTURE OR SPECIALTY FIXTURE
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

RECESSED CEILING MOUNTED FIXTURE OR SPECIALTY FIXTURE EQUIPPED WITH 90 MINUTS EMERGENCY BACKUP BATTERY PACK OR ON EMERGENCY LIFE SAFETY CIRCUIT
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

WALL MOUNTED / SCONCE LIGHT FIXTURE
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

WALL MOUNTED / SCONCE LIGHT FIXTURE EQUIPPED WITH 90 MINUTS EMERGENCY BACKUP BATTERY PACK OR ON EMERGENCY LIFE SAFETY CIRCUIT
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

ACCENT LIGHT
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

DOWNLIGHT OR WALLWASHER
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

POOL LIGHT WET AND CORROSION RESISTANT LISTED
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

EXTERIOR STEP LIGHT WET LOCATION LISTED
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

WALL MOUNTED, WEATHERPROOFED WRAP AROUND FLUORESCENT LIGHT FIXTURE.
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

EMERGENCY BATTERY LIGHT UNIT.
'X' = FIXTURE TYPE
'a' = CONTROLLED BY SWITCH 'a'

CEILING MOUNTED EXIT LIGHT; TYPE 'X' – DIRECTIONAL ARROWS WHERE INDICATED – SHADED AREAS INDICATE ILLUMINATED FACE/FACES

WALL MOUNTED EXIT LIGHT; TYPE 'X' – DIRECTIONAL ARROWS WHERE INDICATED – SHADED AREAS INDICATE ILLUMINATED FACE/FACES

EXTERIOR LIGHTING FIXTURE (BRACKET TYPE)
'X' = FIXTURE TYPE

ROADWAY LIGHTING FIXTURE–SINGLE ARM
'X' = FIXTURE TYPE

ROADWAY LIGHTING FIXTURE–DOUBLE ARM
'X' = FIXTURE TYPE

POWER SYMBOLS

SINGLE POLE SWITCH, MTD. @ 48" A.F.F. U.O.N.
2 = DOUBLE POLE
3 = THREE–WAY
4 = FOUR–WAY
a = CONTROLLING OUTLET 'a'
D = DOOR
K = KEY OPERATED
MO = MOMENTARY CONTACT
P = PILOT LIGHT
TIMER = TIME SWITCH

DISCONNECT SWITCH – TOGGLE TYPE WITH WITH TERMAL OVERLOAD 250V OR 277V, HP RATED, MTD @ 48" A.F.F. U.O.N. TWO POLES, 30A RATED IN NEMA 1 ENCLOSURE.

WALL DIMMER – TYPE 'A'. STANDARD SHALL BE 1200W MIN. NUMBER INDICATES WATTAGE RATING. MTD. @ 48" A.F.F. U.O.N.

OCCUPANCY SENSOR, CEILING MOUNTED

OCCUPANCY SENSOR W/OVERRIGHT SWITCH – SINGLE MODULE, WALL MOUNTED @ 48" A.F.F. UN.O.N

PHOTO CONTROL SWITCH

TIME CLOCK – TYPE 'X'

LIGHTING CONTACTOR.

SINGLE CONTACTOR OR RELAY UNIT.

PUSH–BUTTON STATION WALL MOUNTED @ +48" A.F.F. (UON)
DB = DOOR BELL ACTIVATION
DR = DOOR LOCK RELEASE
H = HOLD UP
K = KEY OPERATED
P = PANIC BUTTON

SINGLE RECEPTACLE, 20A, 125V, 2P, W/G, WALL MTD. @ 18" A.F.F. U.O.N.

15A OR 20A, 125V, 2P W/G, DUPLEX RECEPTACLE – FLUSH WALL MOUNTED WALL MTD. @ 18" A.F.F. U.O.N.
TP = TAMPER PROOF
XP = EXPLOSION PROOF
GFI = GROUND FAULT INTERRUPTER
WP = WEATHER PROOF
XP = EXPLOSION PROOF
CL = CEILING MOUNTED

15A OR 20A, 125V QUADRUPLEX RECEPTACLE – FLUSH WALL MOUNTED WALL MTD. @ 18" A.F.F. U.O.N.

15 OR 20A, 125V ISOLATED GROUND, DUPLEX RECEPTACLE, FLUSH FLOOR MOUNTED, CONTROLLED FROM WALL SWITCH 'a' WALL MTD. @ 18" A.F.F. U.O.N.

15A OR 20A, 125V DUPLEX RECEPTACLE FLUSH WALL MOUNTED, GFI TYPE.

15A OR 20A, 125V ISOLATED GROUND QUADRUPLEX RECEPTACLE FLUSH WALL MTD. @ 18" A.F.F. U.O.N.– NUMBER INDICATES QUANTITIES OF IG TYPE RECEPTACLES.
1 = ONE DUPLEX IG TYPE & ONE DUPLEX STANDARD G. RECEPTACLE
2 = QUADRUPLEX IG TYPE RECEPTACLES.

15A OR 20A, 125V EMERGENCY DUPLEX RECEPTACLE. FLUSH WALL MOUNTED

SINGLE RECEPTACLE – FLUSH WALL MOUNTED @ 18" A.F.F. U.O.N.
FM = FLOOR MACHINE
EWC = ELECTRIC WATER COOLER
XR = X–RAY

FLUSH FLOOR MOUNTED JUNCTION BOX OR POKE–THRU FOR ELECTRIFIED FURNITURE POWER FEED – LETTER INDICATES ADDITIONAL FEED
C = VOICE/DATA FEED

SPECIAL PURPOSE RECEPTACLE – FLUSH WALL MTD. @ 18" A.F.F. U.O.N.
A = INDICATES NEMA TYPE

3 PHASE SPECIAL PURPOSE RECEPTACLE. NEMA TYPE AS INDICATED

15A OR 20A, 125V DUPLEX RECEPTACLE FLUSH FLOOR MOUNTED.

15A OR 20A, 125V QUADRUPLEX RECEPTACLE FLUSH FLOOR MOUNTED.

SPECIAL PURPOSE RECEPTACLE – FLUSH FLOOR MOUNTED
A = INDICATES NEMA TYPE

15A OR 20A, 125V DUPLEX RECEPTACLE FLUSH FLOOR MOUNTED. WITH COMBINATION VOICE/DATA OUTLET

15A, 125V PLUG–IN SURFACE METAL RACEWAY – LETTER INDICATES TYPE – OR WITH SPECIAL PURPOSE RECEPTACLES WHERE INDICATED

PEDESTAL MOUNTED 20A, 125V DUPLEX RECEPTACLE

PEDESTAL MOUNTED 20A, 125V QUADRUPLEX RECEPTACLE

PEDESTAL MOUNTED JUNCTION BOX OR POKE–THRU FOR ELECTRIFIED FURNITURE POWER FEED.

PEDESTAL MOUNTED SPECIAL PURPOSE RECEPTACLE LETTER INDICATES TYPE

PEDESTAL MOUNTED COMBINATION VOICE/DATA & POWER OUTLET

CEILING MOUNTED JUNCTION BOX WITH FINAL EQUIPMENT CONNECTION

FLUSH WALL MOUNTED JUNCTION BOX WITH FINAL EQUIPMENT CONNECTION

FLUSH FLOOR MOUNTED JUNCTION BOX

PULLBOX

DIMMER ZONE HOMERUN

F–3,3,1 HOMERUN–NUMERAL WHERE USED INDICATES DESIGNATED PANEL AND CIRCUIT NUMBER FOR REFERENCE ONLY. WHERE CONDUIT IS NOT SPECIFIED USE AC OR MC CABLE FOR APPLICATION.
2#12+1#12G–3/4"C FOR ONE CKT. HOMERUN IN CONDUIT, U.O.N.
3#12+1#12G–3/4"C FOR TWO CKT. HOMERUN IN CONDUIT, U.O.N.
4#12+1#12G–3/4"C FOR THREE CKT. HOMERUN IN CONDUIT, U.O.N

WIRING IN 3/4"C min. OR "MC" CABLE CONCEALED IN WALLS OR ABOVE CEILING. CROSSMARKS INDICATE NUMBER OF CONDUCTORS: 2 –PHASE CONDUCTORS AND 1– SHARED NEUTRAL CONDUCTOR. NUMBER INDICATES WIRE SIZE OF CURRENT CARRYING CONDUCTORS. RUNS WITHOUT WIRE SIZE CONTAIN 3 #12 AWG IN GROUNDED PER NEC RACEWAY.

BRANCH CIRCUIT WIRING CONCEALED IN WALLS AND/OR ABOVE CEILINGS. CROSSMARKS INDICATE NUMBER OF CURRENT CARRYING CONDUCTORS. FLAGGED CROSSMARK INDICATES ISULATED GROUNDING CONDUCTOR. SYMBOL INDICATES 2–PHASE CONDUCTORS, 1–SHARED NEUTRAL CONDUCTOR AND 1– INSULATED GROUND CONDUCTOR IN 3/4"C min OR OR "MC" CABLE WITH INSULATED GROUND CONDUCTOR. RUN WITHOUT WIRE SIZE NUMBER CONTAINS: ALL INSULATED 3 #12 AWG + #12 G.

WIRING IN 3/4"C min. OR "MC" WITH ISOLATED GROUND CONDUCTOR + INSULATED GROUND CONDUCTOR. CONCEALED IN WALLS OR ABOVE CEILING. CROSSMARKS INDICATE NUMBER OF CONDUCTORS, CROSSMARK WITH DOT INDICATES INSULATED/ISOLATED GROUND WIRE SAME SIZE AS CURRENT CARRYING CONDUCTORS CONNECTED TO ISOLATED GROUND BUS IN PANEL. FLAGGED CORSSMARK INDICATES INSULATED GROUNDING CONDUCTOR REQUIRED PER NEC, FOR MULTI CIRCUIT RUN AS SHOWN: 3 –PHASE CONDUCTORS, 3 –NEUTRAL CONDUCTORS AND 2 –INSULATED GROUND CONDUCTORS). RUN WITHOUT SIZE NUMBER CONTAINS ALL INSULATED: 6 #12 AWG. + #12 IG + #12 G. IN METAL RACEWAY.

CONDUIT OR RACEWAY TURNING UP

CONDUIT OR RACEWAY TURNING DOWN

CONDUIT STUB–UP WITH FLEXIBLE EQUIPMENT CONNECTION

FLEXIBLE EQUIPMENT CONNECTION

CAPPED CONDUIT

CONDUIT WITH BUSHING

CONDUIT WITH GROUNDING BUSHING

GROUND CONNECTION

SPLICE (JUNCTION) OF PATHS OF CONDUCTORS OR CABLES

CROSSING PATHS OF CONDUCTORS OR CABLES. (NO CONNECTIONS)

TRANSFORMER

MOTOR CONTROLLER

100/3 COMBINATION MOTOR CONTROLLER AND DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED

30/3 UNFUSED DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED

100/60/3 FUSED DISCONNECT SWITCH; SWITCH AMPS/FUSE AMPS/ # OF POLES, VOLTAGE RATING AS REQUIRED

100/80 ENCLOSED CIRCUIT BREAKER TRIP AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED
NA = NON–AUTOMATIC

SURFACE MOUNTED 208/120V PANELBOARD

FLUSH MOUNTED 208/120V PANELBOARD

SURFACE MOUNTED 480/277V PANELBOARD

FLUSH MOUNTED 480/277V PANELBOARD

SURFACE MOUNTED POWER DISTRIBUTION PANELBOARD

CONTACTOR PANEL

PODIUM MOUNTED A/V, TELECOM, AND POWER RECEPTACLES

VOICE/DATA/P.A. SYMBOLS

VOICE & DATA OUTLET WITH 3/4" CONDUIT IN DEMISING WALLS TERMINATED IN A 90 DEG. BEND 6" INTO ACCESSIBLE CEILING

VOICE OUTLET WITH 3/4" CONDUIT IN DEMISING WALLS TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING
P = PUBLIC MTD. @ +44"AFF
F = FAX

DATA OUTLET WITH 3/4" CONDUIT IN DEMISING WALLS TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING

TELEVISION OUTLET WITH 3/4"C IN DEMISING WALLS TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING

AUDIO VISUAL OUTLET – FLUSH WALL MOUNTED

SURFACE MOUNTED TELEPHONE TERMINAL CABINET

FLUSH MOUNTED TELEPHONE TERMINAL CABINET

CLOCK SYSTEMS

WALL MOUNTED CLOCK OUTLET

MASTER CLOCK

CEILING MOUNTED CLOCK OUTLET

WALL MOUNTED CLOCK
D = DOUBLE FACE

CEILING MOUNTED CLOCK
D = DOUBLE FACE

ELAPSED TIME CLOCK – WALL MOUNTED

ELAPSED TIME CLOCK CONTROL

DIGITAL ELAPSED TIME CLOCK

SINGLE LINE DIAGRAM SYMBOLS

ATS 100A 480,4P
ATS = AUTOMATIC TRANSFER SWITCH
MTS = MANUAL TRANSFER
POLES AND RATING AS NOTED

MOTOR

GENERATOR

GROUND CONNECTION

100/100 FUSED SWITCH
100 AMP SWITCH – 90 AMP TYPE 'FA' FUSE

100 UNFUSED SWITCH – 100 AMP SWITCH

100/90 CIRCUIT BREAKER – MOLDED CASE TYPE
100 AMP FRAME / 90 AMP TRIP
LT = LONG TIME SETTING
ST = SHORT TIME SETTING
I = INSTANTANEOUS SETTING

DIGITAL MULTIMETER

MOLDED CASE CIRCUIT BREAKER IN SWITCHBOARD OR POWER PANEL

EQUIPPED SPACE FOR MOLDED CASE CIRCUIT BREAKER

400/5 CURRENT TRANSFORMER
NUMBER AND RATIO AS INDICATED

CONTROL INDICATING LAMP "AMBER"
A = AMBER
R = RED
G = GREEN

FIRE ALARM SYSTEM

SPACE SMOKE DETECTOR
F = MOUNTED UNDER RAISED FLOOR

REMOTE SPACE SMOKE DETECTOR ALARM LIGHT – WALL MOUNTED

DUCT SMOKE DETECTOR

THERMAL DETECTOR RATE–OF–RISE
F = FIXED TEMPERATURE

SPRINKLER WATER FLOW SWITCH

SPRINKLER TAMPER SWITCH

SPRINKLER PRESSURE SWITCH, NUMBER INDICATES QUANTITIES
H = HIGH PRESSURE
L = LOW PRESSURE

MOTORIZED SMOKE DAMPER, FBO

FIRE ALARM PULL STATION

COMBINATION FIRE ALARM HORN AND STROBE LIGHT UNIT – FLUSH WALL MOUNTED

FIRE ALARM HORN – FLUSH WALL MOUNTED
C = CEILING MOUNTED

FIRE ALARM BELL – FLUSH WALL MOUNTED

FLUSH WALL MOUNTED STROBE LIGHT UNIT

DOOR HOLDERS

ELECTROMAGNETIC DOOR RELEASE

FAP / FAAP FIRE ALARM ANNUNCIATOR PANEL

FACP FIRE ALARM CONTROL PANEL

ESR ELEVATOR CONTROLLER

DACT DIGITAL ALARM COMMUNICATOR TRANSMITTER

FATC FIRE ALARM SYSTEM TERMINATION CABINET

FIRE ALARM SYSTEM TERMINATION BOX

REMOTE LED: MOUNTED IN THE VISUAL AND MANUALLY ACCESSIBLE LOCATION.

ABBREVIATIONS
(NOT ALL ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT)

A	AMPERE
AC	ABOVE COUNTER
ACB	AIR CIRCUIT BREAKER
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ALM	ALARM
AMM	AMMETER
ARF	ABOVE RAISED FLOOR
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
CAB	CABINET
CAT	CATALOG
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CLOS	CLOSET
CNTL	CONTROL
CO	CONDUIT ONLY
COMM	COMMUNICATION
CT	CURRENT TRANSFORMER
CU	COPPER
CUH	CABINET UNIT HEATER
DB	DECIBEL
DEG	DEGREE
DF	DRINKING FOUNTAIN
°C	DEGREE CELSIUS
°F	DEGREE FAHRENHEIT
DIA	DIAMETER
DN	DOWN
DP	DISTRIBUTION PANEL BOARD
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER or EM	EMERGENCY
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXT	EXTERIOR
FA	FIRE ALARM
FAP	FIRE ALARM PANEL
FCU	FAN COIL UNIT
FDR	FEEDER
FDS	FUSED DISCONNECT SWITCH
FIXT	FIXTURE
FL	FLOOR
FLEX	FLEXIBLE
FRZ	FREEZER
FT	FEET OR FOOT
G	GROUND
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
HID	HIGH INTENSITY DISCHARGE
HP	HORSE POWER
HZ	HERTZ
IC	INTERRUPTING CAPACITY
JB	JUNCTION BOX
KCM	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LTG	LIGHTING
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MFS	MAIN FUSED SWITCH
MH	MANHOLE
MIN	MINIMUM
MTD	MOUNTED
MTG	MOUNTING
MUFS	MAIN UNFUSED SWITCH
N	NEUTRAL
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NP	NETWORK PROTECTOR
NTS	NOT TO SCALE
OC	ON CENTER
PB	PULL BOX
PBS	PUSH BUTTON SWITCH
PHC	PIPE HEATING CABLE
ϕ	PHASE
PNL	PANEL
PS	PRESSURE SWITCH
PWR	POWER
RCS	REMOTE CONTROL SWITCH
RDCP	REMOTE DATA COLLECTION PANEL
(RE)	RELOCATED EXISTING
RECEPT	RECEPTACLE
REF	REFRIGERATOR
RM	ROOM
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SECT	SECTION
SIG	SIGNAL
SPEC	SPECIFICATION
SPKLR	SPRINKLER
SW	SWITCH
SWBD	SWITCHBOARD
TB	TROUBLE BELL
TEL	TELEPHONE
TEMP	TEMPERATURE
THERM	THERMOSTAT
TP	TAMPER PROOF
TRANSF	TRANSFORMER
TS	TAMPER SWITCH
TV	TELEVISION
TYP	TYPICAL
UH	UNIT HEATER
UNF	UNFUSED
UON	UNLESS OTHERWISE NOTED
V	VOLT OR VOLTAGE
VA	VOLT AMPERE
VM	VOLTMETER
W	WATT
WFS	WATER FLOW SWITCH
WHM	WATT HOUR METER
WP	WEATHERPROOF
WT	WATERTIGHT
XP	EXPLOSION PROOF

ELECTRICAL GENERAL NOTES

A. GENERAL

1. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION", AIA DOCUMENT A201, LATEST EDITION, AND INCLUDED SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

2. CODES: COMPLY WITH ALL APPLICABLE CODES, LAWS, REGULATIONS AND ORDINANCES GOVERNING OR RELATING TO ANY PORTION OF THIS WORK. NEC 1998, IBC 2000, BOCA 2004, IPC 2000, IMC 2000, IFC 2000 AND IECC 2000.
ANY WORK DONE BY THE CONTRACTOR CAUSING VIOLATION OF THE ABOVE CODES SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT ANY ADDITIONAL COST TO THE OWNER.

3. BIDDERS ARE CAUTIONED TO VISIT THE SITE PRIOR TO THE PREPARATION OF THEIR BID.

4. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF ALL DOCUMENTS, EQUIPMENT, ETC. WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH ALL CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID.
LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION.

5. MINOR DEVIATION FROM THE DRAWINGS MAY BE MADE TO ACCOMPLISH THIS WORK. CHANGES, WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL. THE CONTRACTOR MAY MODIFY EQUIPMENT LOCATION, CONDUIT ROUTE TO AVOID OBSTRUCTION. THE CONTRACTOR MAY ALTER PROPOSED WORK; RELOCATE CIRCUIT, JUNCTION BOX OR OTHER MINOR EQUIPMENT TO COMPLETE WORK. ALL OF SUCH WORK SHALL BE FORESEEN AND INCLUDED IN THE PRICE OF THE PROPOSAL.

6. THE OWNER RESERVES THE RIGHT TO REJECT ANY MATERIAL OR WORK IF IN HIS OPINION IT IS NOT IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENT.

7. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE AND CONDITIONS.

8. MAINTAIN ACCESSIBILITY REQUIREMENTS, HEADROOM AND WORKING SPACE AROUND EQUIPMENT FOR OPERATION, MAINTENANCE AND REPAIRS.

9. SECURE ALL SUPPORTS TO BUILDING STRUCTURE. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH WALL OR AT RIGHT ANGLES TO WALLS.

10. PROVIDE PULLBOXES WHERE INDICATED, WHERE REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES. PROVIDE PULL BOXES EVERY 100 FT FOR STRAIT RUN OR AT EVERY 270° OF TOTAL CONDUIT BEND. COORDINATE LOCATION WITH OTHER TRADES. ALL JUNCTION AND PULL SHALL BE CONCEALED UNLESS OTHER WISE INDICATED.

11. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.

12. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

13. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. EMPTY RACEWAYS OVER 10 FT LONG SHALL BE FURNISH WITH FISH WIRE.

14. CONNECT RIGID CONDUIT TO MOTOR TERMINAL BOXES WITH FLEXIBLE CONDUIT EXTENSION (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.

15. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. JUNCTION BOXES DEDICATED FOR EMERGENCY LIGHTING SHALL ALLOW FOR EMERGENCY AND NORMAL WIRING TO ENTER THE SAME BOX. EACH CIRCUIT SHALL BE PROPERLY TAGGED.

16. WIRE COLOR CODING : AS PER CODE. WHERE COLOR–CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTANTLY FOR THE ENTIRE PROJECT.

17. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE.

18. HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET:

RECEPTACLES AND TELEPHONES:	18"
OVER WORK BENCHES – KITCHEN	44"
OVER WORK BENCHES – GENERAL	42"
WALL SWITCHES	48"
WALL FIXTURES	84"
MOTOR CONTROLLERS	30"–72"
GONGS AND HORNS, CLOCKS	90"
FIRE ALARM STATIONS	48"
STROBE LIGHTS	80" AFF OR 6" BELOW CEILING (WHICHEVER IS LOWER).

EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE. INSTALLATION HEIGHT SHALL CONFORM TO ADA CODE REQUIREMENTS.

19. FIRE STOPPING SHALL BE INSTALLED WHEREVER WIRING OR RACEWAYS CROSS FIRE RATED CONSTRUCTION. SEAL OPENING THROUGH PARTITIONS, WALLS AND FLOORS WITH APPROVED FIREPROOFING MATERIAL.

20. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OF CONDUIT AND EQUIPMENT.
PROVIDE EQUIPMENT CURBS WHERE REQUIRED.

21. THE CONTRACTOR SHALL INCLUDE IN HIS COST ALL CUTTING, REPAIRES AND PATCHING OF THE BUILDING WALLS PENETRATIONS OR OTHER MATERIALS PENETRATIONS IN THE AREA OF WORK. THE CONTRACTOR SHALL RESTORE THESE AREAS TO THE CONDITIONS REQUIRED BY THE APPLICABLE CODES AND ARCHITECTURAL SPECIFICATION.

22. ALL MATERIALS AND EQUIPMENT FOR THIS WORK SHALL BE NEW, OF FIRST CLASS QUALITY AND APPROVED UNDER APPLICABLE STANDARDS. ALL MATERIALS FOR WHICH U.L. LABELING IS ESTABLISHED SHALL BEAR THE U.L. LABEL, UNLESS OTHERWISE NOTED

23. SUBMIT MANUFACTURER CERTIFICATION THAT PRODUCT CONFORMS WITH NEMA, ANSI AND FEDERAL SPECIFICATIONS. FAILURE TO SUBMIT THIS CERTIFICATION VOIDS APPROVAL OF THE SHOP DRAWINGS SUBMITTALS.

24. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

25. TEST: UPON COMPLETION OF WORK AND ADJUSTMENT OF EQUIPMENT, TEST ALL SYSTEMS FOR SHORT CIRCUIT, GROUND AND FUNCTIONAL PERFORMANCE.

26. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED AND TESTED THE EQUIPMENT AND AFFECTED SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVALS.

27. PROVIDE AS BUILT DRAWINGS TO OWNER AT THE END OF THE CONSTRUCTION.

28. KEEP ALL WORK AREAS CLEAN, CLEAN ALL EQUIPMENT, ETC. PRIOR TO FINAL PAINTING AND COMPLETION OF PROJECT.

29. THE CONTRACTOR SHALL PREPARE AND SUBMIT A COMPLETE SHORT CIRCUIT AND PROTECTIVE COORDINATION STUDY WITHIN 30 CALENDAR DAYS FOLLOWING THE COMPLETE APPROVAL OF CIRCUIT PROTECTIVE DEVICES, INCLUDING CIRCUIT BREAKERS, FUSES AND PROTECTIVE RELAYS.

30. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO CONTACT THE POWER COMPANY AND OBTAIN WRITTEN CONFIRMATION OF THE AVAILABLE FAULT CURRENT FOR THE SITE. CIRCUIT BREAKER A.I.C. RATING SHALL BE INCREASED OR DECREASED FROM FROM SPECIFIED A.I.C. BASED ON THE TOTAL FAULT CURRENT AT THE LINE SIDE OF THE SERVICE EQUIPMENT. SUBMIT INFORMATION TO ENGINEER FOR APPROVAL OF REVISED RATING. CIRCUIT BREAKERS SHALL BE RATED AT OR ABOVE FAULT CURRENT.

B. SCOPE OF WORK

1. SCOPE OF WORK SHALL CONSIST OF PROVIDING (FURNISHING AND INSTALLING) FIRST CLASS WORKING SYSTEMS. PROVIDE LABOR, MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE, NFPA AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS.

2. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP, MATERIAL AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF THE FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OF ACTUAL OCUPANCY OF SPACE BY OWNER, WHICHEVER DATE IS EARLIER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRES OR REPLACEMENTS IN INSTALLED EQUIPMENTS.

3. THE CONTRACTOR SHALL APPLY, FILE, PAY ALL REQUIRED FEES AND OBTAIN ALL PERMITS AND LICENSES NECESSARY TO CARRY OUT THIS WORK. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES AS NECESSARY EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL APPLICABLE REGULATIONS.

C. COORDINATION

1. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. LIGHT SWITCH BOXES ARE SUBJECT TO CHANGE AND SHALL BE INSTALLED ON THE LOCK SIDE OF THE DOOR. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO THE OWNER.

2. PASS RACEWAYS OVER WATER, STEAM OR OTHER PIPING WHEN PULL BOXES ARE NOT REQUIRED. NO RACEWAY WITHIN 3 INCHES OF STEAM OR HOT WATER PIPES OR APPLIANCES (EXCEPT PIPE CROSSINGS WHERE RACEWAY SHALL BE AT LEAST 1 INCH FROM PIPE COVERS).

3. THE LIGHTING FIXTURE SCHEDULE SHOWN ON ENGINEERING DRAWINGS ARE FOR INFORMATION PURPOSES ONLY.
LIGHTING FIXTURES SHOWN ARE THOSE SELECTED BY ARCHITECT. ENGINEER SHALL NOT BE RESPONSIBLE FOR INFORMATION SHOWN RELATED TO FIXTURE SELECTION AND OVERALL LIGHTING DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION

4. THE ELECTRICAL CONTRACTOR SHALL CONSULT PLANS OF ALL OTHER TRADES AND COORDINATE ALL INSTALLATIONS WITH RELATED AND ADJOINING WORK. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL EQUIPMENT. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR FOR CONSTRUCTION TYPE, HEADROOM, ROOM FINISHES, CEILINGS, RELATED DETAILS AND DIMENSIONS.

5. ALL DIMENSIONS ARE ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

6. OPENINGS IN NEW BUILDING STRUCTURE FOR PASSAGE OF CONDUITS/ CABLES SHALL NOT BE CUT UNTIL THE CONTRACTOR HAS ASKED FOR AND RECEIVED WRITTEN APPROVAL FROM THE ARCHITECT.

7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL EQUIPMENT, FIXTURE AND WIRING DEVICES LOCATION INCLUDING TELEPHONE AND DATA OUTLETS, MOUNTING HEIGHTS WITH THE ARCHITECTURAL AND ENGINEERING DRAWINGS OF ALL TRADES. SHOULD ANY CONFLICTS BECOME APPARENT, THE CONTRACTOR SHALL NOTIFY ENGINEER AND REQUEST CLARIFICATION PRIOR TO INSTALLATION. IF THE WORK IS NOT COORDINATED ANY REMEDIAL WORK SHALL BE REDONE AT NO ADDITIONAL COST TO THE OWNER.

8. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, REQUESTING A RULING SHOULD ANY M/P/E CONFLICTS ARISE. THE ENGINEER SHALL HAVE THE FINAL WORD.

9. CONTRACTOR SHALL VERIFY WIRE SIZES, C/B AND FUSE RATINGS FOR ALL HVAC EQUIPMENT SHIPPED TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ENGINEER ONLY DISCREPANCIES EFFECTING THE WORK PRIOR TO PROCEEDING.

10. HORSEPOWER RATINGS INDICATED ON DRAWING MAY DIFFER FROM ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR APPROPRIATE ACTION TO BE TAKEN.

11. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SIZING OF ALL MOTOR OVERLOAD DEVICES (HEATERS) IN STARTERS BASED ON ACTUAL NAMEPLATE RATINGS OF THE MOTOR BEING INSTALLED.

12. THE CONTRACTOR SHALL NOTE U.L. LABELS ON PACKAGED OF MECHANICAL EQUIPMENT IF U.L. LABEL ON MECHANICAL EQUIPMENT TO ACTUALLY BE INSTALLED CALLS FOR THE OVERCURRENT PROTECTIVE DEVICE TO BE FUSED, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A FUSED DISCONNECT SWITCH WITH PROPER SIZE FUSES AT THE SWITCH LOCATION INDICATED ON THE DRAWINGS AT NO ADDITIONAL CHARGE TO THE OWNER.

13. COORDINATE INSTALLATION OF PULL BOXES OR JUNCTION–BOXES WITH LOCATION OF THE LIGHTING FIXTURES. DO NOT INSTALL ANY BOX DIRECTLY ABOVE LIGHTING FIXTURE OR ANY OTHER SIMILAR INACCESSIBLE PLACES.

14. ALL WIRING SHOWN ON PLANS SHALL BE #12 AWG UNLESS OTHERWISE NOTED EXCEPT FOR 120 VOLT RUNS LONGER THAN 100 FEET PROVIDE #10 AWG AND FOR 277 VOLT RUNS LONGER THAN 150' PROVIDE #10 AWG.

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6/30/06

KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	90% CONST. DOCUMENTS	06/16/06
	60% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE: 06–30–06

SHEET TITLE
ELECTRICAL
SYMBOLS AND
ABBREVIATIONS
CONSTRUCTION
DOCUMENTS

SCALE: NONE

SHEET NO.
E.1-00

REVISION

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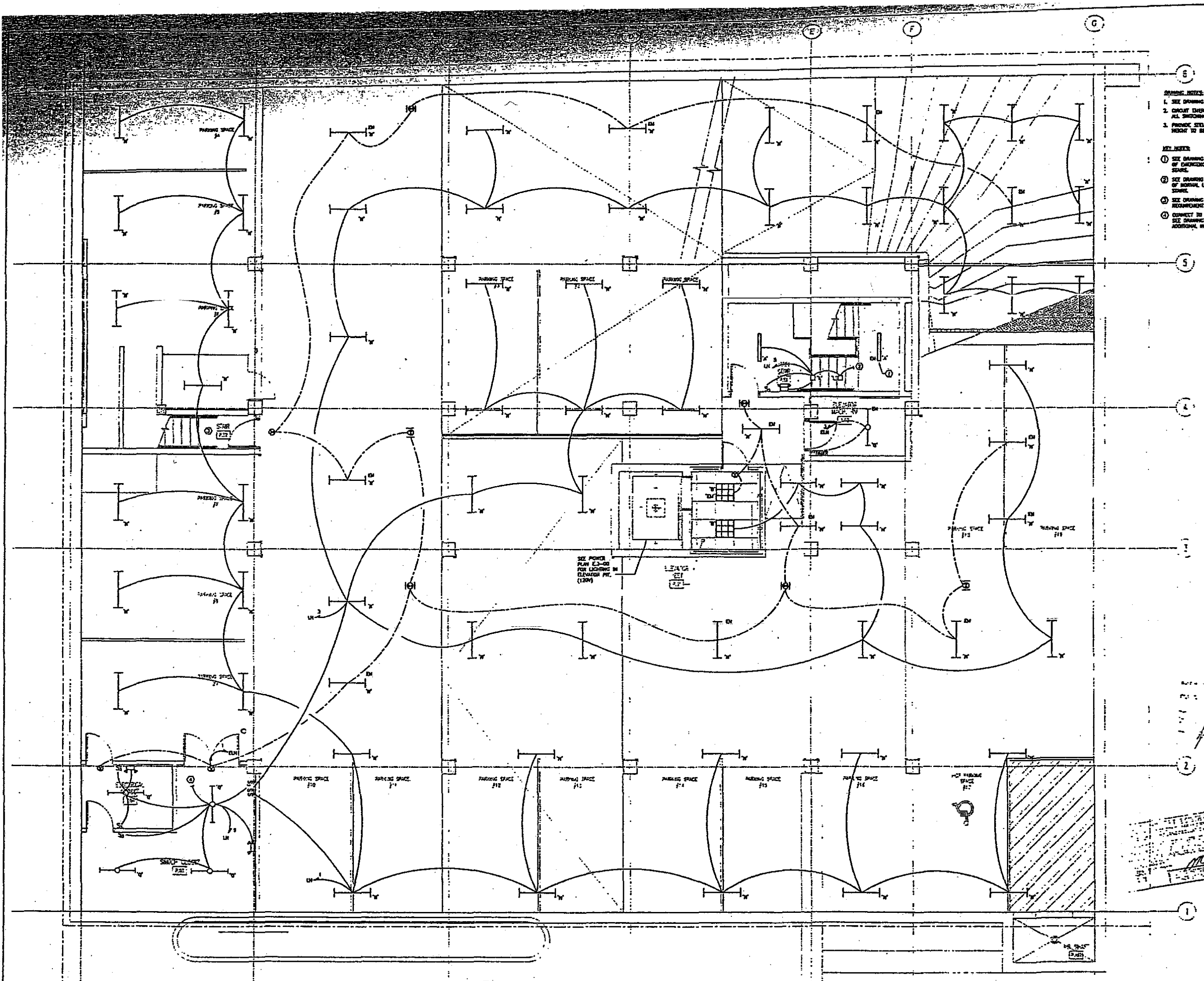

① ELECTRICAL PARKING LEVEL LIGHTING PLAN

SCALE: 1/4"=1'-0"

DRAWING NOTES:

1. SEE DRAWING E.6-01 FOR LIGHT FIXTURE SCHEDULE.
2. CIRCUIT EMERGENCY WALL PACK LIGHTING AHEAD OF ALL SWITCHING.
3. PROVIDE STEM MOUNTING FOR ALL GARAGE LIGHTING. HEIGHT TO BE SET BY ARCHITECT.

KEY NOTES:

① SEE DRAWING E.2-00M FOR CIRCUITING OF EMERGENCY LIGHTING CIRCUIT SERVING STAIRS.

② SEE DRAWING E.2-00M FOR CONTINUATION OF NORMAL LIGHTING CIRCUIT SERVING STAIRS.

③ SEE DRAWING E.2-00M FOR LIGHTING REQUIREMENTS IN THIS AREA.

④ CONNECT TO LIGHTING IN FIRE PUMP ROOM. SEE DRAWING E.2-00M KEY NOTE ④ FOR ADDITIONAL INFORMATION.

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No.	Description	D
	100% CONST. DOCUMENTS	06/
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	50% CONST. DOCUMENTS	05/
	100% DESIGN DEVELOPMENT	02/
	50% DESIGN DEVELOPMENT	10/

PROJECT NO. W050002
DATE 06-

SHEET TITLE
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CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
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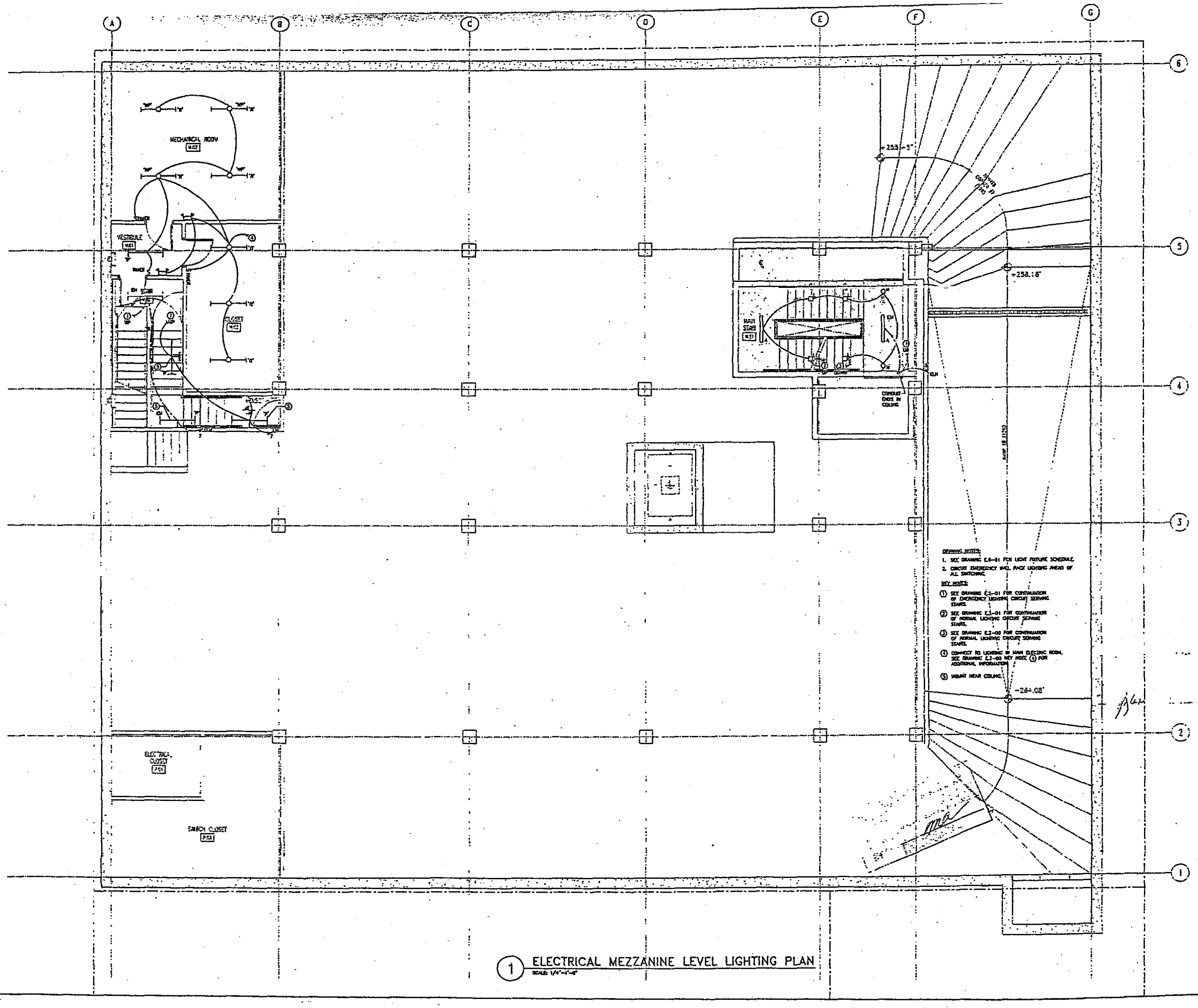

DRAWING NOTES:

1. SEE DRAWING E.6-01 FOR LIGHT FIXTURE SCHEDULE.
2. CIRCUIT EMERGENCY WALL PACK LIGHTING AHEAD OF ALL SWITCHING.

KEY NOTES:

① SEE DRAWING E.2-01 FOR CONTINUATION OF EMERGENCY LIGHTING CIRCUIT SERVING STAIRS.

② SEE DRAWING E.2-01 FOR CONTINUATION OF NORMAL LIGHTING CIRCUIT SERVING STAIRS.

③ SEE DRAWING E.2-00 FOR CONTINUATION OF NORMAL LIGHTING CIRCUIT SERVING STAIRS.

④ CONNECT TO LIGHTING IN MAIN ELECTRIC ROOM. SEE DRAWING E.2-00 KEY NOTE ④ FOR ADDITIONAL INFORMATION.

⑤ MOUNT NEAR CEILING.

① ELECTRICAL MEZZANINE LEVEL LIGHTING PLAN

SCALE: 1/4"=1'-0"

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No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	90% CONST. DOCUMENTS	06/16/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
ELECTRICAL MEZZANINE LEVEL LIGHTING PLAN
CONSTRUCTION DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
E.2-00M

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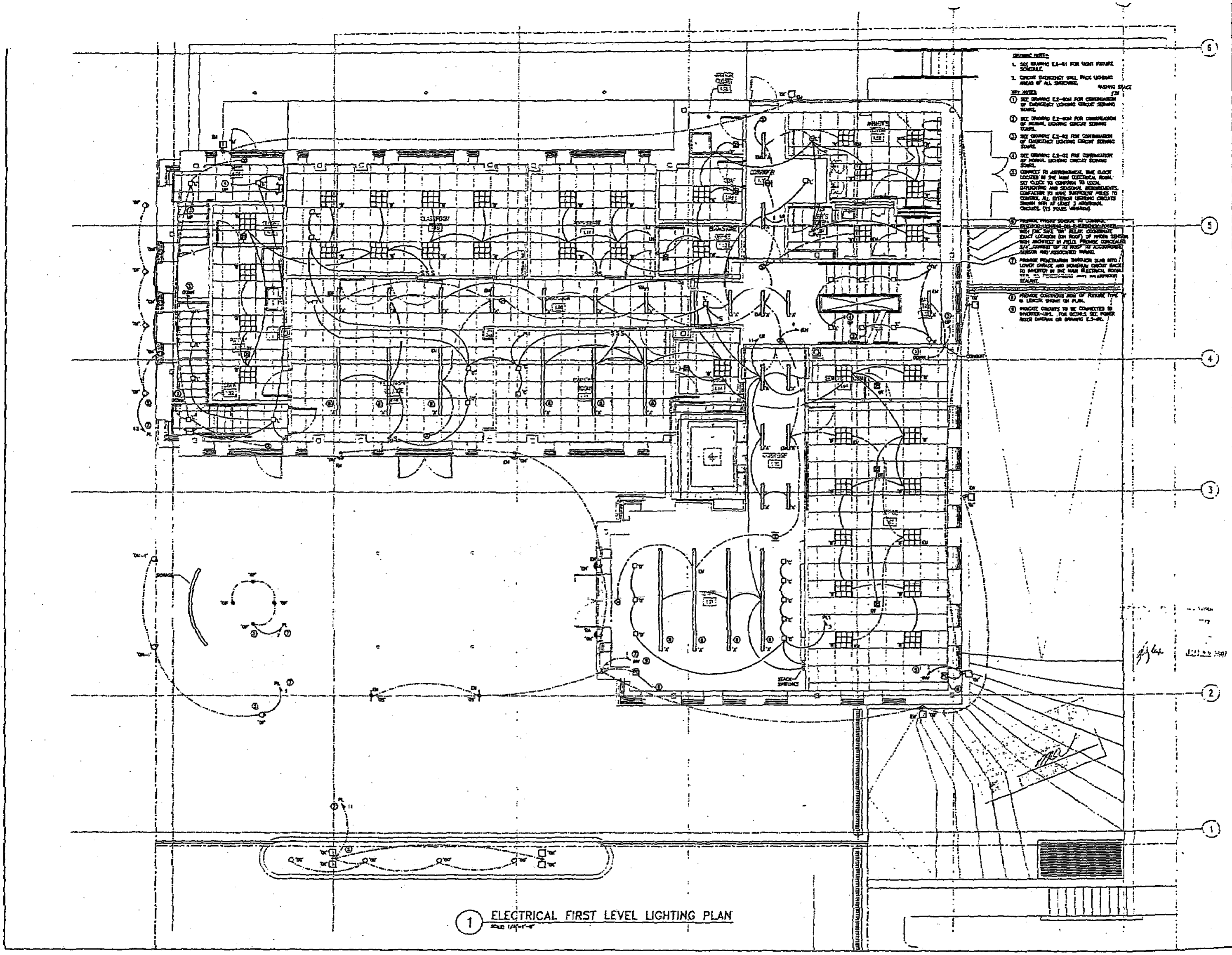

DRAWING NOTES:

1. SEE DRAWING E.6-01 FOR LIGHT FIXTURE SCHEDULE.
2. CIRCUIT EMERGENCY WALL PACK LIGHTING AHEAD OF ALL SWITCHING.

KEY NOTES:

① SEE DRAWING E.2-00M FOR CONTINUATION OF EMERGENCY LIGHTING CIRCUIT SERVING STAIRS.

② SEE DRAWING E.2-00M FOR CONTINUATION OF NORMAL LIGHTING CIRCUIT SERVING STAIRS.

③ SEE DRAWING E.2-02 FOR CONTINUATION OF EMERGENCY LIGHTING CIRCUIT SERVING STAIRS.

④ SEE DRAWING E.2-02 FOR CONTINUATION OF NORMAL LIGHTING CIRCUIT SERVING STAIRS.

⑤ CONNECT TO ASTRONOMICAL TIME CLOCK LOCATED IN THE MAIN ELECTRICAL ROOM. SET CLOCK TO CONFORM TO LOCAL DAYLIGHTING AND SEASONAL REQUIREMENTS. CONTACTOR TO HAVE SUFFICIENT POLES TO CONTROL ALL EXTERIOR LIGHTING CIRCUITS SHOWN WITH AT LEAST 3 ADDITIONAL CIRCUITS. (13 POLES MINIMUM)

⑥ PROVIDE PHOTO SENSOR TO CONTROL ~~EXTERIOR LIGHTING ON EMERGENCY POWER~~ WITH FAIL SAFE "ON" RELAY. COORDINATE EXACT LOCATION (ON ROOF) OF PHOTO SENSOR WITH ARCHITECT IN FIELD. PROVIDE CONCEALED 3/4" CONDUIT UP TO ROOF TO ACCOMMODATE SENSOR AND ASSOCIATED WIRING.

⑦ PROVIDE PENETRATION THROUGH SLAB INTO LOWER GARAGE AND HOMERUN CIRCUIT BACK TO INVERTER IN THE MAIN ELECTRICAL ROOM. [illegible] WATERPROOFING SEALANT.

⑧ PROVIDE CONTINUOUS ROW OF FIXTURE TYPE "K" IN LENGTH SHOWN ON PLAN.

⑨ INDICATE CIRCUITS TO BE CONNECTED TO INVERTER-UPS. FOR DETAILS SEE POWER RISER DIAGRAM ON DRAWING E.5-01.

① ELECTRICAL FIRST LEVEL LIGHTING PLAN

SCALE: 1/8"=1'-0"

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KEY PLAN

REVISIONS

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	100% CONST. DOCUMENTS	06/30/04
	95% CONST. DOCUMENTS	06/15/04
	50% CONST. DOCUMENTS	05/10/04
	100% DESIGN DEVELOPMENT	02/17/04
	50% DESIGN DEVELOPMENT	10/24/03

PROJECT NO. W050037
DATE 06-30-04

SHEET TITLE
ELECTRICAL
FIRST LEVEL
LIGHTING PLAN
CONSTRUCTION
DOCUMENTS

SCALE 1/4" = 1'-0"

SHEET NO.
E.2-01

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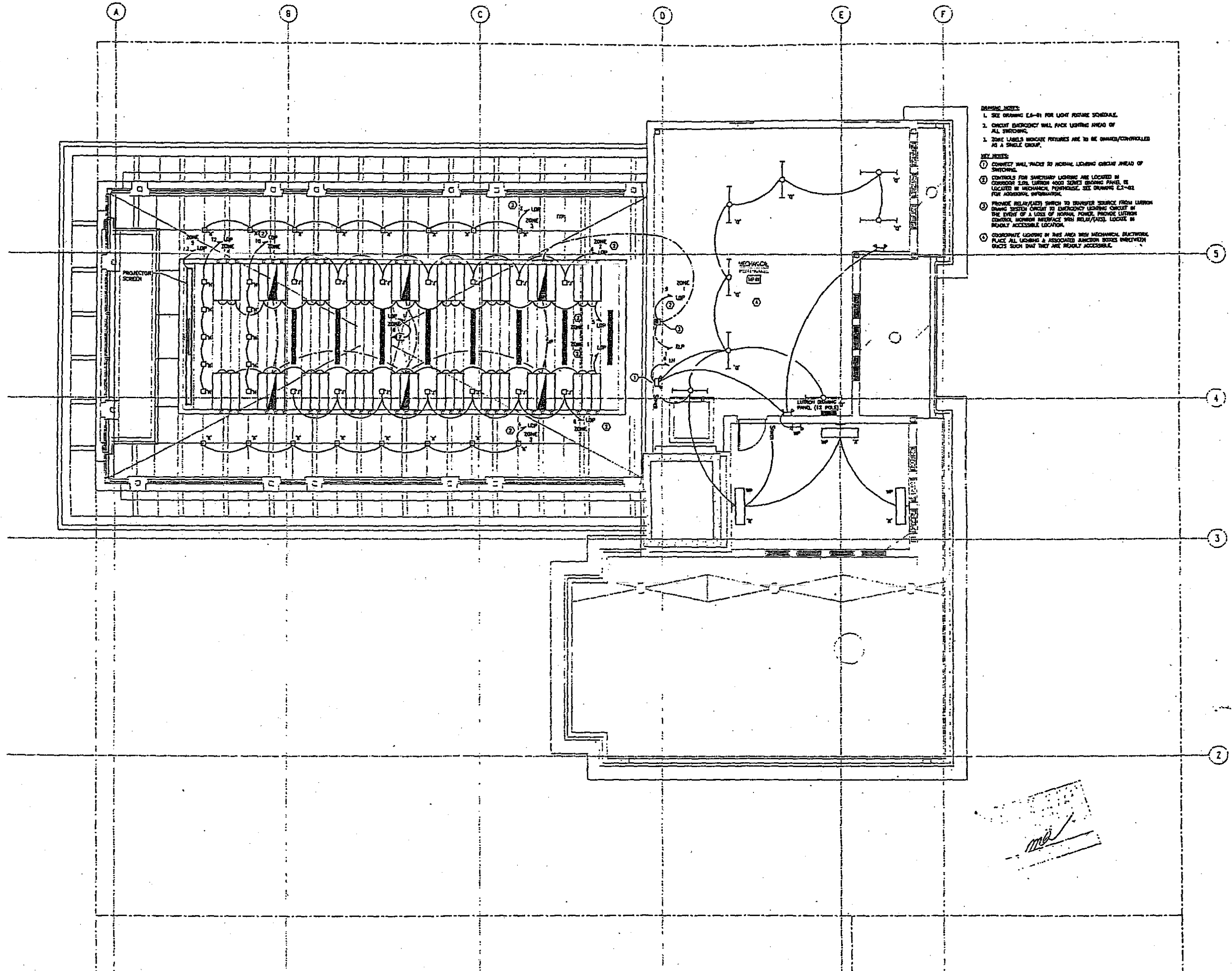

DRAWING NOTES:

1. SEE DRAWING E.6-01 FOR LIGHT FIXTURE SCHEDULE.
2. CIRCUIT EMERGENCY WALL PACK LIGHTING AHEAD OF ALL SWITCHING.
3. ZONE LABELS INDICATE FIXTURES ARE TO BE DIMMED/CONTROLLED AS A SINGLE GROUP.

KEY NOTES:

① CONNECT WALL PACKS TO NORMAL LIGHTING CIRCUIT AHEAD OF SWITCHING.

② CONTROLS FOR SANCTUARY LIGHTING ARE LOCATED IN CORRIDOR 2.01. LUTRON 4000 SERIES DIMMING PANEL IS LOCATED IN MECHANICAL PENTHOUSE. SEE DRAWING E.2-02 FOR ADDITIONAL INFORMATION.

③ PROVIDE RELAY/(ATS) SWITCH TO TRANSFER SOURCE FROM LUTRON DIMMING SYSTEM CIRCUIT TO EMERGENCY LIGHTING CIRCUIT IN THE EVENT OF A LOSS OF NORMAL POWER. PROVIDE LUTRON CONTROL MONITOR INTERFACE WITH RELAY/(ATS). LOCATE IN READILY ACCESSIBLE LOCATION.

④ COORDINATE LIGHTING IN THIS AREA WITH MECHANICAL DUCTWORK. PLACE ALL LIGHTING & ASSOCIATED JUNCTION BOXES INBETWEEN DUCTS SUCH THAT THEY ARE READILY ACCESSIBLE.

① ELECTRICAL THIRD LEVEL LIGHTING PLAN

SCALE: 1/4"=1'-0"

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	100% CONST. DOCUMENTS	
	90% CONST. DOCUMENTS	
	50% CONST. DOCUMENTS	
	100% DESIGN DEVELOPMENT	
	50% DESIGN DEVELOPMENT	

PROJECT NO.
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SHEET TITLE

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SHEET NO.
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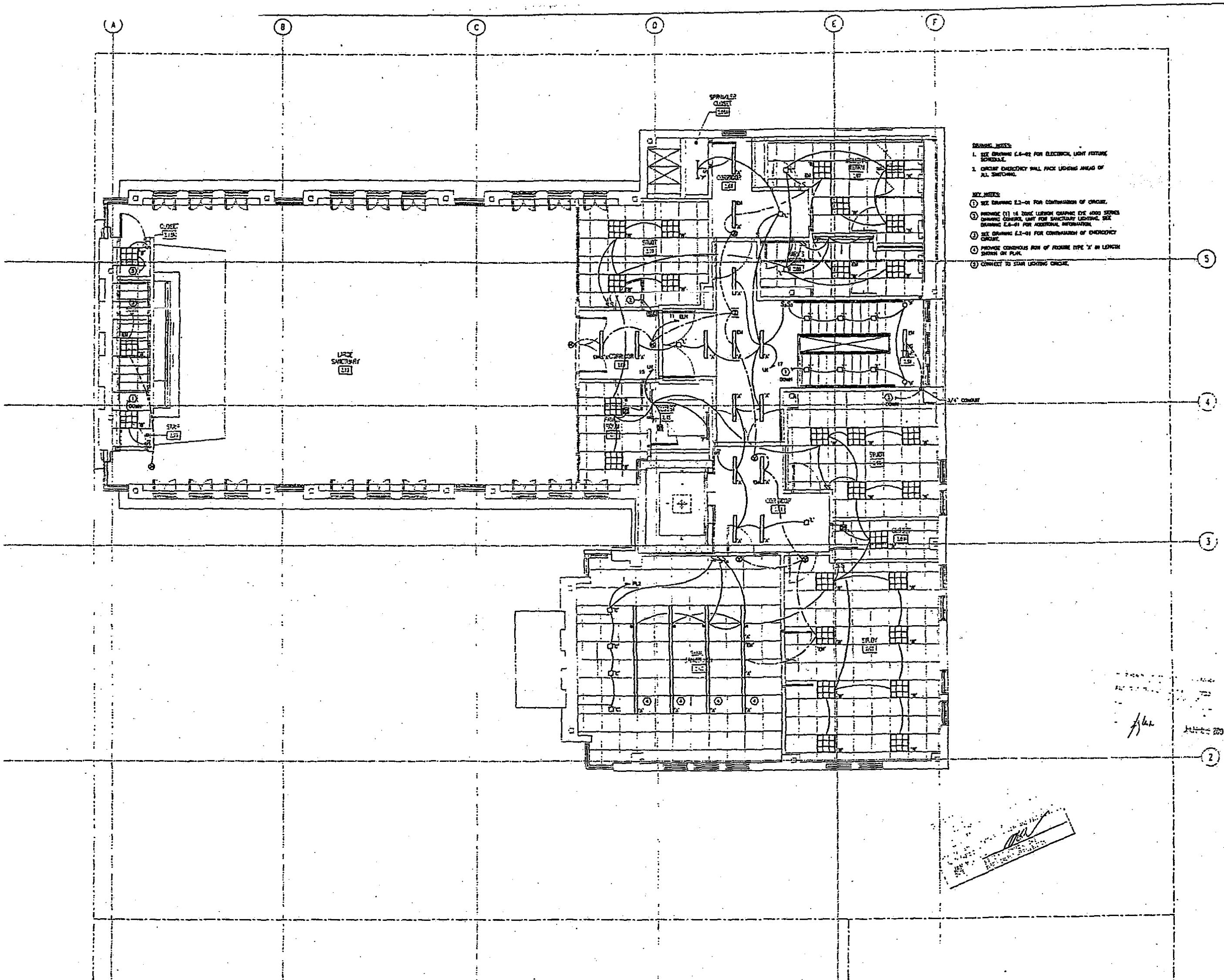

DRAWING NOTES:

1. SEE DRAWING E.6-02 FOR ELECTRICAL LIGHT FIXTURE SCHEDULE.
2. CIRCUIT EMERGENCY WALL PACK LIGHTING AHEAD OF ALL SWITCHING.

KEY NOTES:

① SEE DRAWING E.2-01 FOR CONTINUATION OF CIRCUIT.
② PROVIDE (1) 16 ZONE LUTRON GRAPHIC EYE 4000 SERIES DIMMING CONTROL UNIT FOR SANCTUARY LIGHTING. SEE DRAWING E.6-01 FOR ADDITIONAL INFORMATION.
③ SEE DRAWING E.2-01 FOR CONTINUATION OF EMERGENCY CIRCUIT.
④ PROVIDE CONTINOUS ROW OF FIXTURE TYPE 'X' IN LENGTH SHOWN ON PLAN.
⑤ CONNECT TO STAIR LIGHTING CIRCUIT.

① ELECTRICAL SECOND LEVEL LIGHTING PLAN
SCALE: 1/4"=1'-0"

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REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/20/06
	90% CONST. DOCUMENTS	06/16/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/21/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
ELECTRICAL
SECOND LEVEL
LIGHTING PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
E.2-02

REVISION

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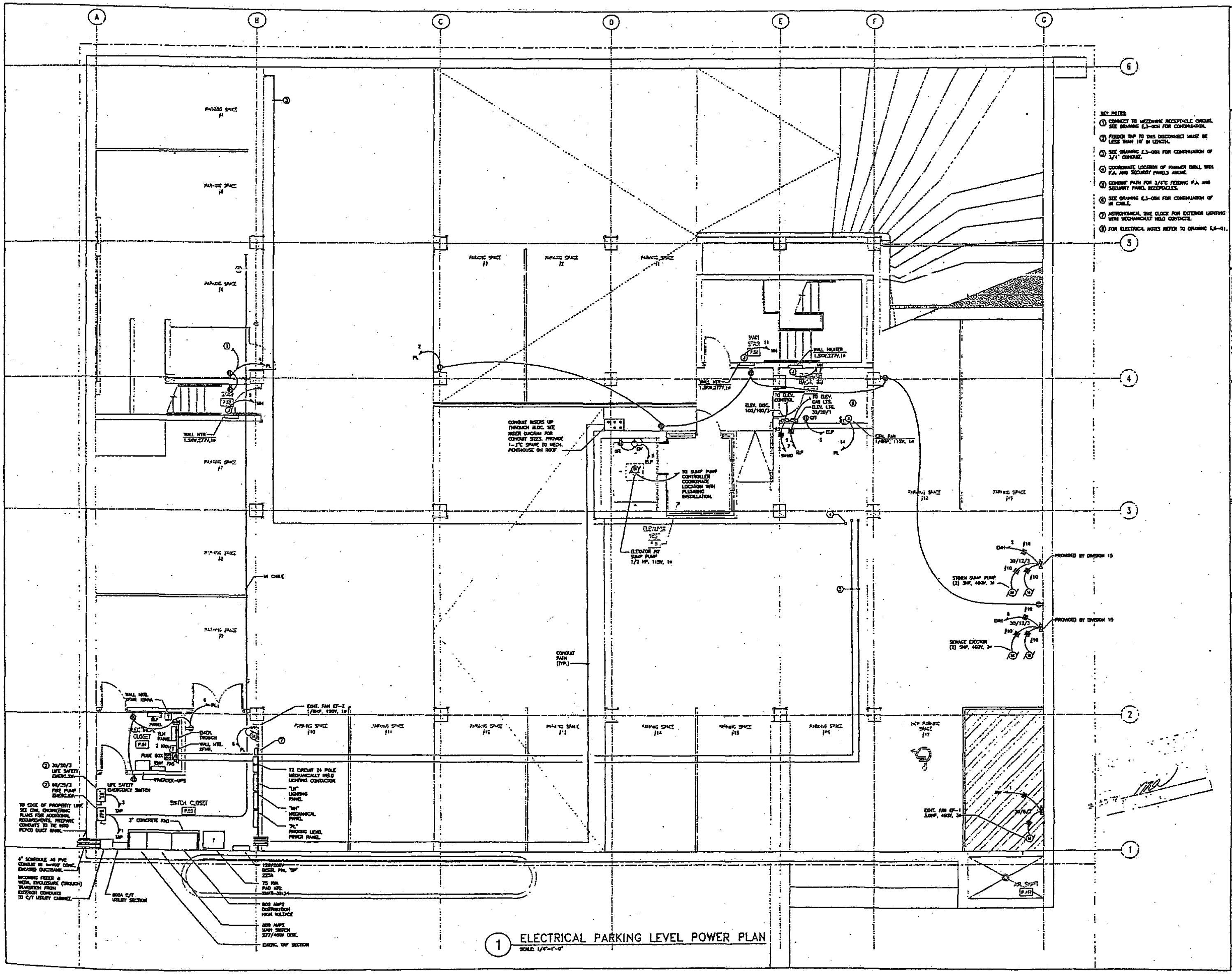
ELECTRICAL


A
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1
PARKING SPACE #1
PARKING SPACE #3
PARKING SPACE #4
PARKING SPACE #2
PARKING SPACE #8
PARKING SPACE #9
PARKING SPACE #12
PARKING SPACE #13
PARKING SPACE #10
PARKING SPACE #11
PARKING SPACE #14
PARKING SPACE #15
HCP PARKING SPACE #17
WALL HTR. 1.5KW,277V,1φ
MH CABLE
WAIT STAIR
WALL HEATER 1.5KW,277V,1φ
CONDUIT RISERS UP THROUGH BLDG. SEE RISER DIAGRAM FOR CONDUIT SIZES. PROVIDE 1-3"C SPARE TO MECH. PENTHOUSE ON ROOF
TO SUMP PUMP CONTROLLER COORDINATE LOCATION WITH PLUMBING INSTALLATION.
ELEVATOR PIT SUMP PUMP 1/2 HP, 115V, 1φ
TO ELEV. CONTROL
ELEV. DISC. 100/100/3
TO ELEV. CAB LTS.
ELEV. LTG. 30/20/1
CFI
ELP
CEIL. FAN 1/6HP, 115V, 1φ
CONDUIT PATH (TYP.)
EMH
30/12/3
PROVIDED BY DIVISION 15
STORM SUMP PUMP (2) 3HP, 460V, 3φ
SEWAGE EJECTOR (2) 5HP, 460V, 3φ
EXHT. FAN EF-1 3.0HP, 460V, 3φ
30/6/3
AIR SHAFT
WALL MTD. XFMR 15KVA
ELP PANEL
ELEC. PANEL CLOSET
F.04
ELH PANEL
2 XFMR
EMER. TROUGH
WALL MTD. XFMR.
FUSE BOX
EMH
FAS
INVERTER-UPS
EXHT. FAN EF-2 1/6HP, 120V, 1φ
② 30/20/3 LIFE SAFETY EMERG.SW.
② 60/25/3 FIRE PUMP EMERG.SW.
LIFE SAFETY EMERGENCY SWITCH
TAP
SWITCH CLOSET
F.03
3" CONCRETE PAD
TO EDGE OF PROPERTY LINE SEE CIVIL ENGINEERING PLANS FOR ADDITIONAL REQUIREMENTS. PREPARE CONDUITS TO THE 9800 PEPCO DUCT BANK.
12 CIRCUIT 24 POLE MECHANICALLY HELD LIGHTING CONTACTOR
"LH" LIGHTING PANEL
"MH" MECHANICAL PANEL
"PL" PARKING LEVEL POWER PANEL
4" SCHEDULE 40 PVC CONDUIT IN 4-WAY CONC. ENCASED DUCTBANK.
INCOMING FEEDER & METAL ENCLOSURE (TROUGH) TRANSITION FROM EXTERIOR CONDUITS TO C/T UTILITY CABINET.
800A C/T UTILITY SECTION
120/208V DISTR. PNL "DP" 225A
75 KVA PAD MTD. XFMR-30x24
800 AMPS DISTRIBUTION HIGH VOLTAGE
800 AMPS MAIN SWITCH 277/480V DISX.
EMERG. TAP SECTION

1 ELECTRICAL PARKING LEVEL POWER PLAN
SCALE: 1/4"=1'-0"

KEY NOTES:

① CONNECT TO MEZZANINE RECEPTACLE CIRCUIT. SEE DRAWING E.3-00M FOR CONTINUATION.

② FEEDER TAP TO THIS DISCONNECT MUST BE LESS THAN 10' IN LENGTH.

③ SEE DRAWING E.3-00M FOR CONTINUATION OF 3/4" CONDUIT.

④ COORDINATE LOCATION OF HAMMER DRILL WITH F.A. AND SECURITY PANELS ABOVE.

⑤ CONDUIT PATH FOR 3/4"C FEEDING F.A. AND SECURITY PANEL RECEPTACLES.

⑥ SEE DRAWING E.3-00M FOR CONTINUATION OF MH CABLE.

⑦ ASTRONOMICAL TIME CLOCK FOR EXTERIOR LIGHTING WITH MECHANICALLY HELD CONTACTS.

⑧ FOR ELECTRICAL NOTES REFER TO DRAWING E.6-01.

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	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE: 06-30-06

SHEET TITLE
ELECTRICAL
PARKING LEVEL
POWER PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO. E.3-00
REVISION

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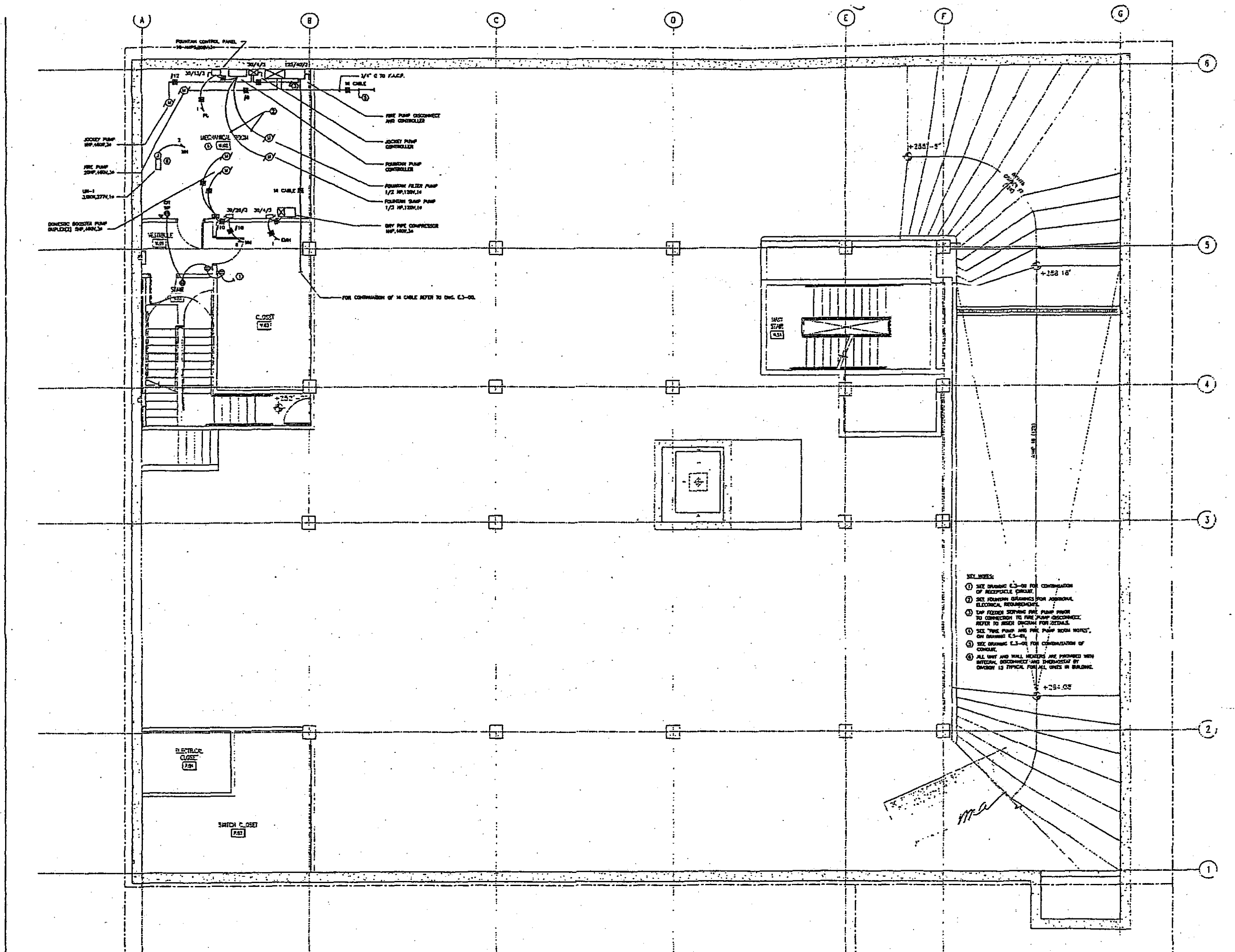

KEY NOTES:

① SEE DRAWING E.3-00 FOR CONTINUATION OF RECEPTACLE CIRCUIT.

② SEE FOUNTAIN DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS.

③ TAP FEEDER SERVING FIRE PUMP PRIOR TO CONNECTION TO FIRE PUMP DISCONNECT. REFER TO RISER DIAGRAM FOR DETAILS.

④ SEE "FIRE PUMP AND FIRE PUMP ROOM NOTES", ON DRAWING E.3-01.

⑤ SEE DRAWING E.3-00 FOR CONTINUATION OF CONDUIT.

⑥ ALL UNIT AND WALL HEATERS ARE PROVIDED WITH INTEGRAL DISCONNECT AND THERMOSTAT BY DIVISION 15 TYPICAL FOR ALL UNITS IN BUILDING.

① ELECTRICAL MEZZANINE POWER PLAN
SCALE: 1/4"=1'-0"

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REVISIONS

No.	Description	Date
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	90% CONST. DOCUMENTS	06/14
	50% CONST. DOCUMENTS	05/10
	100% DESIGN DEVELOPMENT	02/12
	50% DESIGN DEVELOPMENT	10/24

PROJECT NO. W050002
DATE: 06-3

SHEET TITLE

ELECTRICAL
MEZZANINE
POWER PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
E.3-00M

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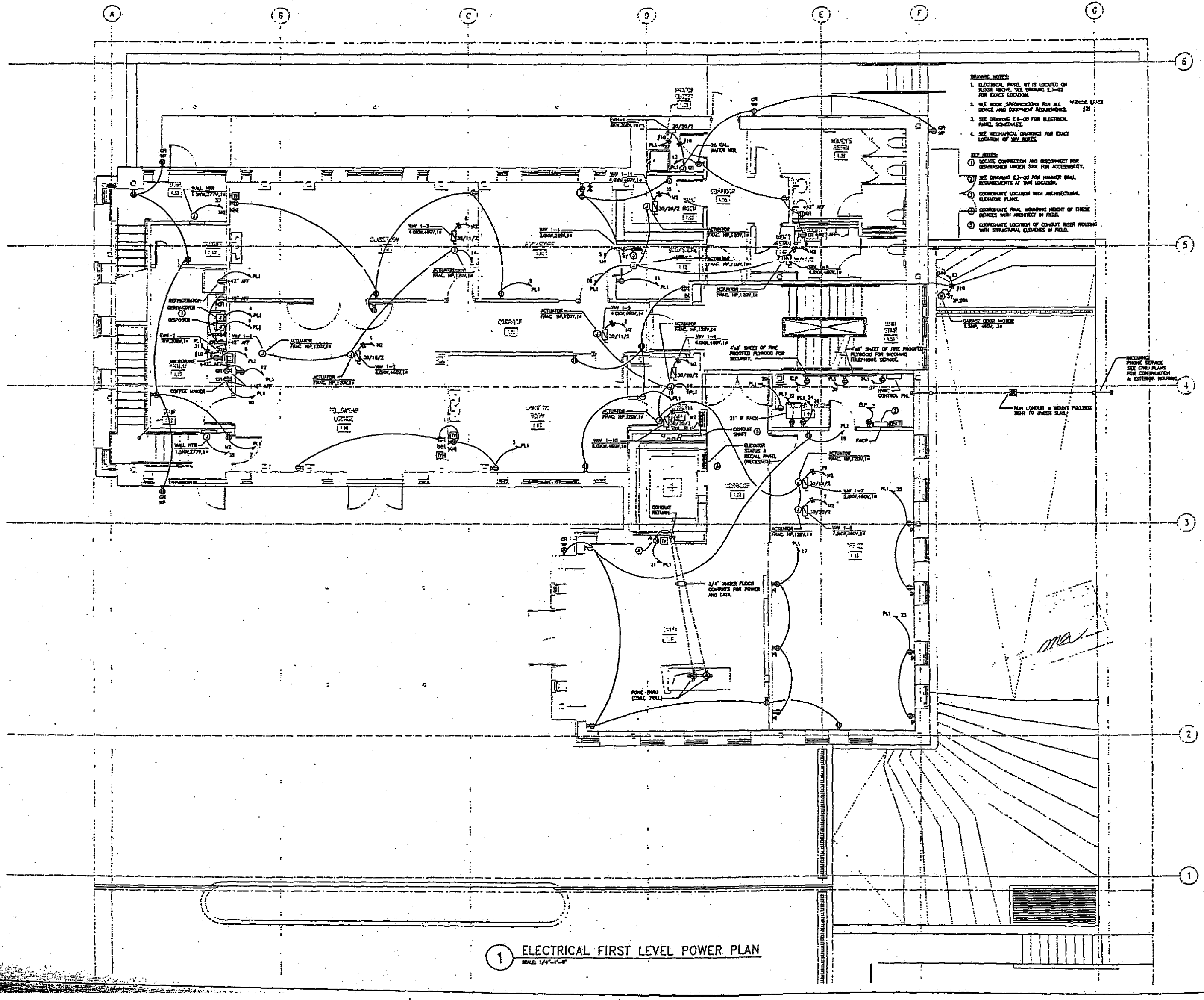
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REFRIGERATOR
DISHWASHER
DISPOSER
MICROWAVE
COFFEE MAKER
WALL HTR
ACTUATOR
GARAGE DOOR MOTOR 1.5HP, 460V, 3ø
INCOMING PHONE SERVICE. SEE CIVIL PLANS FOR CONTINUATION & EXTERIOR ROUTING.
RUN CONDUIT & MOUNT PULLBOX RIGHT TO UNDER SLAB.
4'x8' SHEET OF FIRE PROOFED PLYWOOD FOR SECURITY.
4'x8' SHEET OF FIRE PROOFED PLYWOOD FOR INCOMING TELEPHONE SERVICE.
21" 8' RACK
CONDUIT SHAFT
ELEVATOR STATUS & RECALL PANEL (RECESSED)
CONDUIT RETURN
3/4" UNDER FLOOR CONDUITS FOR POWER AND DATA.
POKE-THRU (CORE DRILL)
HVAC CONTROL PNL
FACP
20 GAL. WATER HTR
ma

DRAWING NOTES:

1. ELECTRICAL PANEL 1PL IS LOCATED ON FLOOR ABOVE. SEE DRAWING E.3-02 FOR EXACT LOCATION.
2. SEE BOOK SPECIFICATIONS FOR ALL DEVICE AND EQUIPMENT REQUIREMENTS.
3. SEE DRAWING E.6-00 FOR ELECTRICAL PANEL SCHEDULES.
4. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION OF VAV BOXES.

KEY NOTES:

① LOCATE CONNECTION AND DISCONNECT FOR DISHWASHER UNDER SINK FOR ACCESSIBILITY.
② SEE DRAWING E.3-02 FOR HAMMER DRILL REQUIREMENTS AT THIS LOCATION.
③ COORDINATE LOCATION WITH ARCHITECTURAL ELEVATOR PLANS.
④ COORDINATE FINAL MOUNTING HEIGHT OF THESE DEVICES WITH ARCHITECT IN FIELD.
⑤ COORDINATE LOCATION OF CONDUIT RISER ROUTING WITH STRUCTURAL ELEMENTS IN FIELD.

① ELECTRICAL FIRST LEVEL POWER PLAN
SCALE: 1/4"=1'-0"

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DISTRICT OF COLUMBIA
RICHARD R. SCHULTZ
REGISTERED
PROFESSIONAL ENGINEER
6/30/06

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No.	Description	Date
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	50% CONST. DOCUMENTS	05/16/06
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	50% DESIGN DEVELOPMENT	10/21/05

PROJECT NO.
W050002
DATE
06-30-06

SHEET TITLE

ELECTRICAL
FIRST LEVEL
POWER PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
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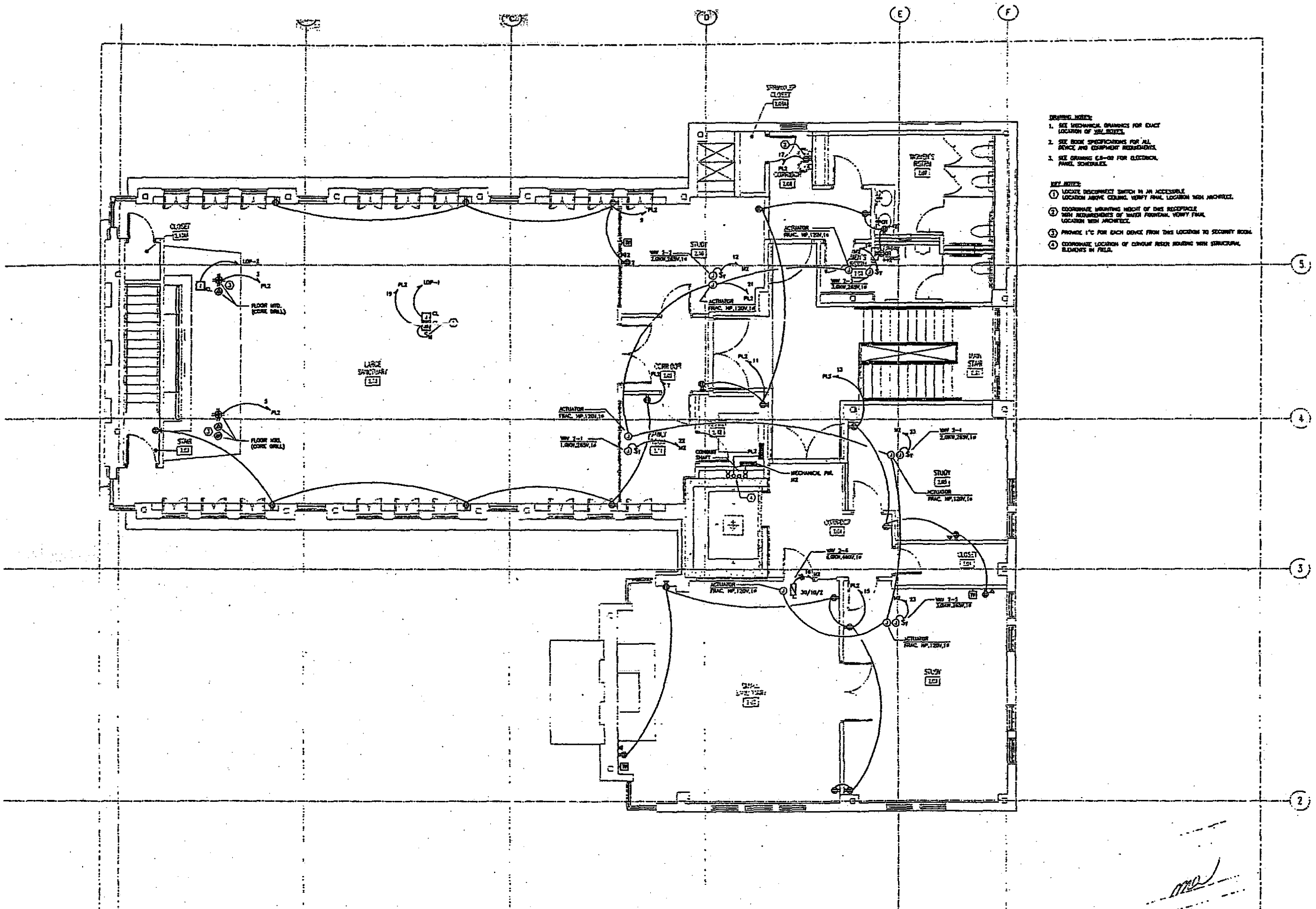

1 ELECTRICAL SECOND LEVEL POWER PLAN

SCALE: 1/4"=1'-0"

DRAWING NOTES:

1. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION OF VAV BOXES.
2. SEE BOOK SPECIFICATIONS FOR ALL DEVICE AND EQUIPMENT REQUIREMENTS.
3. SEE DRAWING E.8-00 FOR ELECTRICAL PANEL SCHEDULES.

KEY NOTES:

① LOCATE DISCONNECT SWITCH IN AN ACCESSIBLE LOCATION ABOVE CEILING. VERIFY FINAL LOCATION WITH ARCHITECT.

② COORDINATE MOUNTING HEIGHT OF THIS RECEPTACLE WITH REQUIREMENTS OF WATER FOUNTAIN. VERIFY FINAL LOCATION WITH ARCHITECT.

③ PROVIDE 1"C FOR EACH DEVICE FROM THIS LOCATION TO SECURITY ROOM.

④ COORDINATE LOCATION OF CONDUIT RISER ROUTING WITH STRUCTURAL ELEMENTS IN FIELD.

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	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE

ELECTRICAL
SECOND LEVEL
POWER PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

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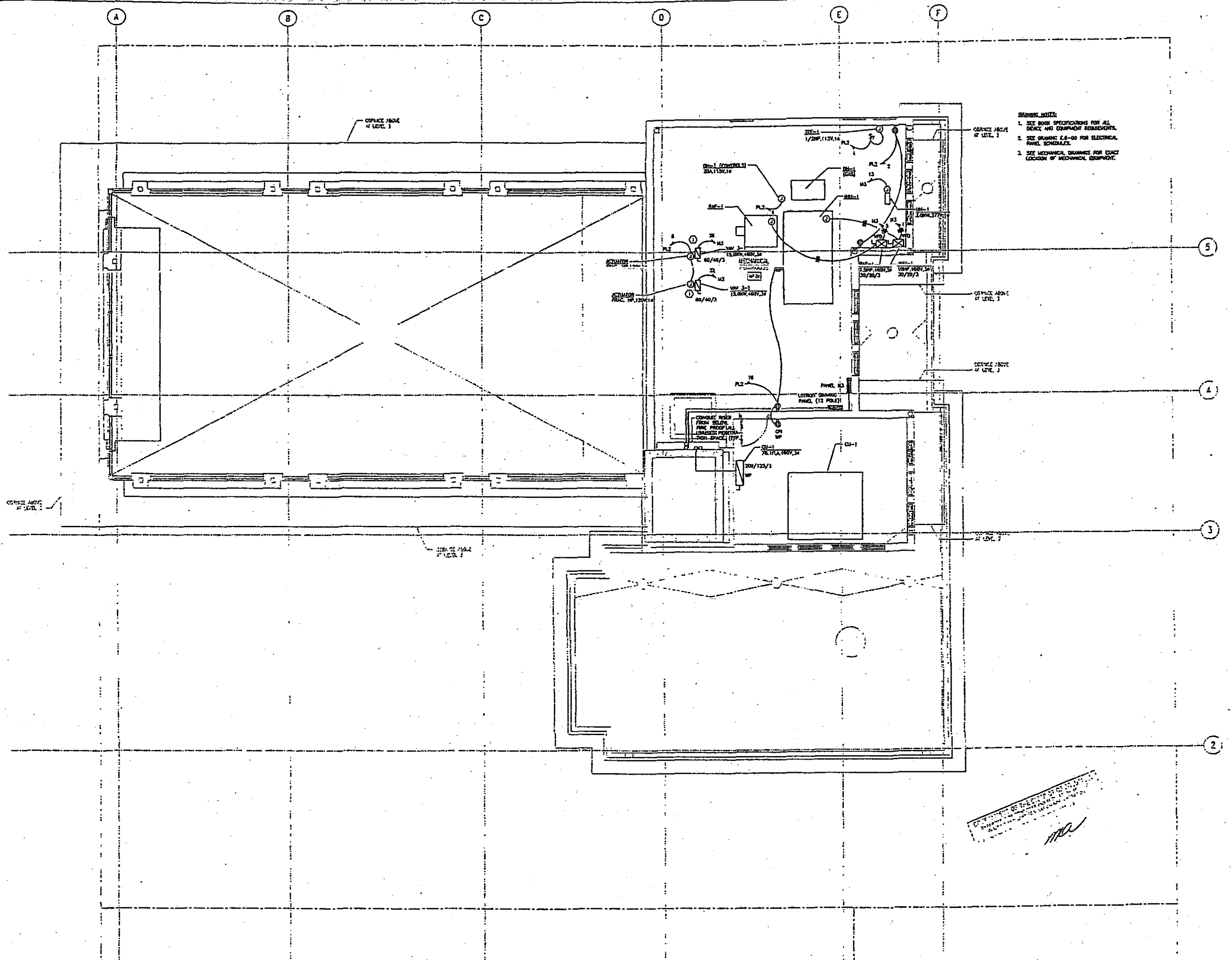

DRAWING NOTES:

1. SEE BOOK SPECIFICATIONS FOR ALL DEVICE AND EQUIPMENT REQUIREMENTS.
2. SEE DRAWING E.E-00 FOR ELECTRICAL PANEL SCHEDULES.
3. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.

① THIRD LEVEL ELECTRICAL POWER PLAN
SCALE: 1/4"=1'-0"

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	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO.
W050002
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06-30-06

SHEET TITLE
ELECTRICAL
THIRD LEVEL
POWER PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
E.3-03

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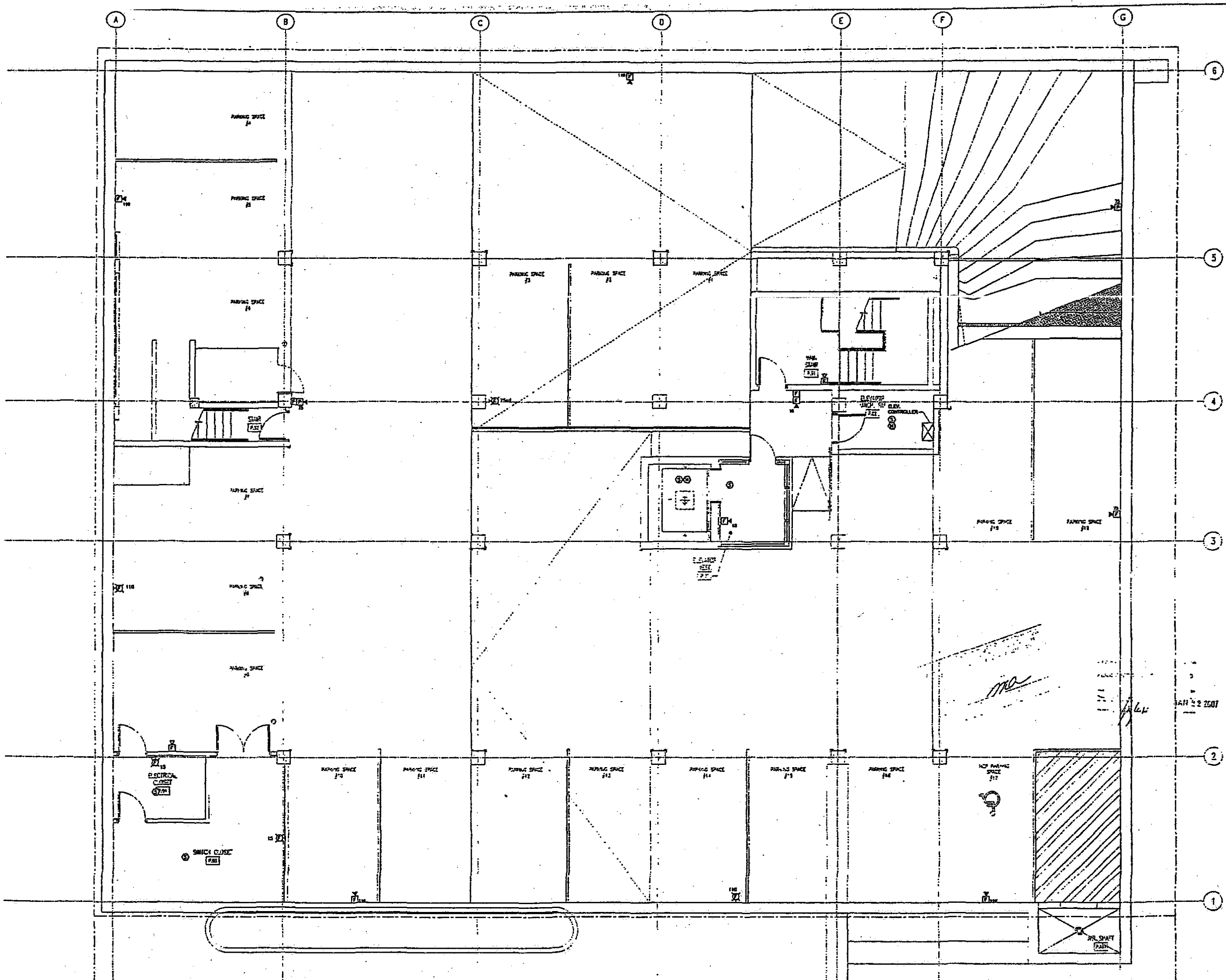

1 ELECTRICAL PARKING LEVEL FIRE ALARM PLAN
SCALE: 1/4"=1'-0"

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PROJECT NO. DATE
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SHEET TITLE
ELECTRICAL
PARKING LEVE
FIRE ALARM PL
CONSTRUCTION
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SCALE: 1/4" = 1'-0"

SHEET NO.
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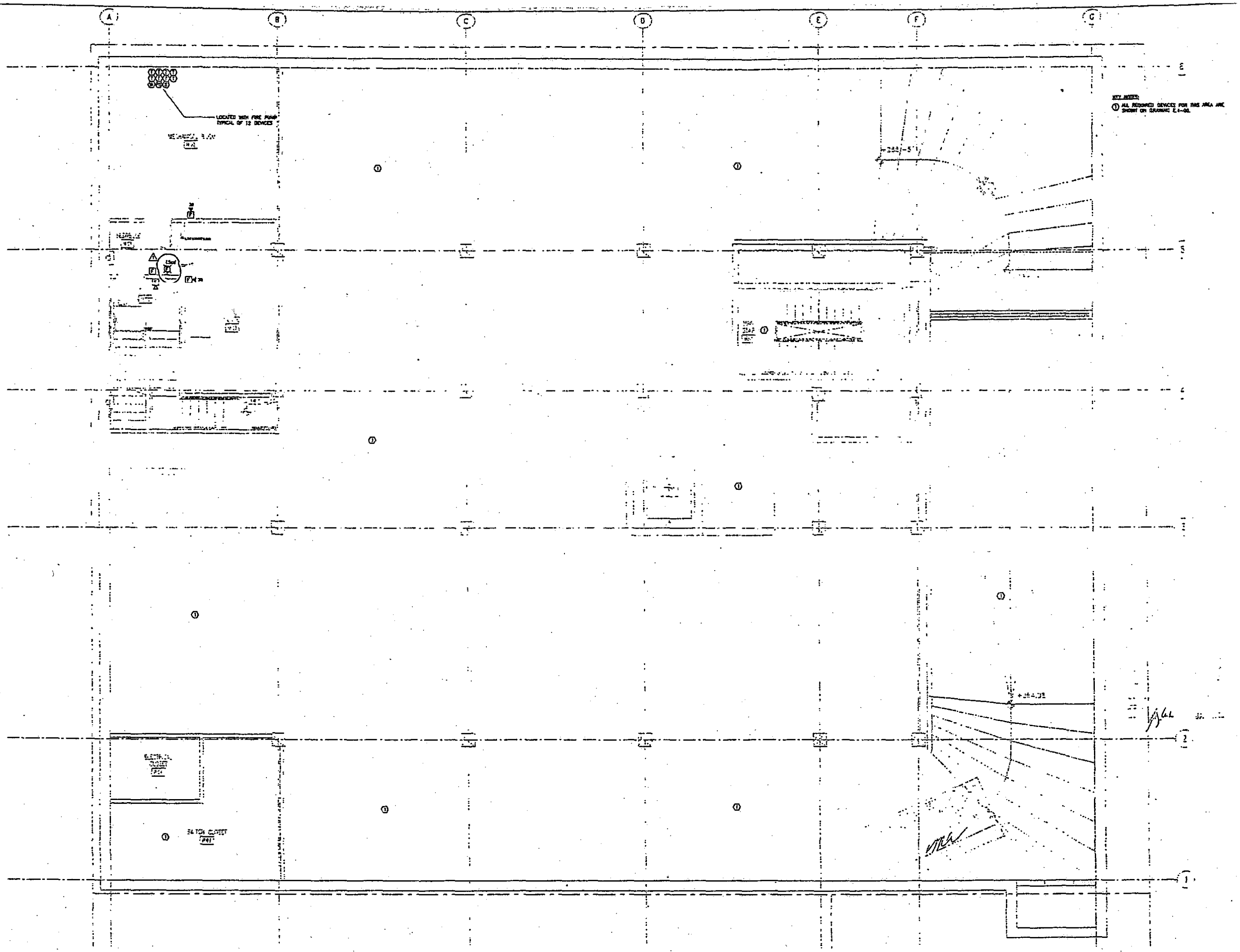

KEY NOTES:

① ALL REQUIRED DEVICES FOR THIS AREA ARE SHOWN ON DRAWING E.4-00.

① ELECTRICAL MEZZANINE FIRE ALARM PLAN

SCALE: 1/4"=1'-0"

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No.	Description
1	SOKA COMMENTS
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PROJECT NO. DATE
W050002

SHEET TITLE
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SCALE: 1/4" = 1'-0"

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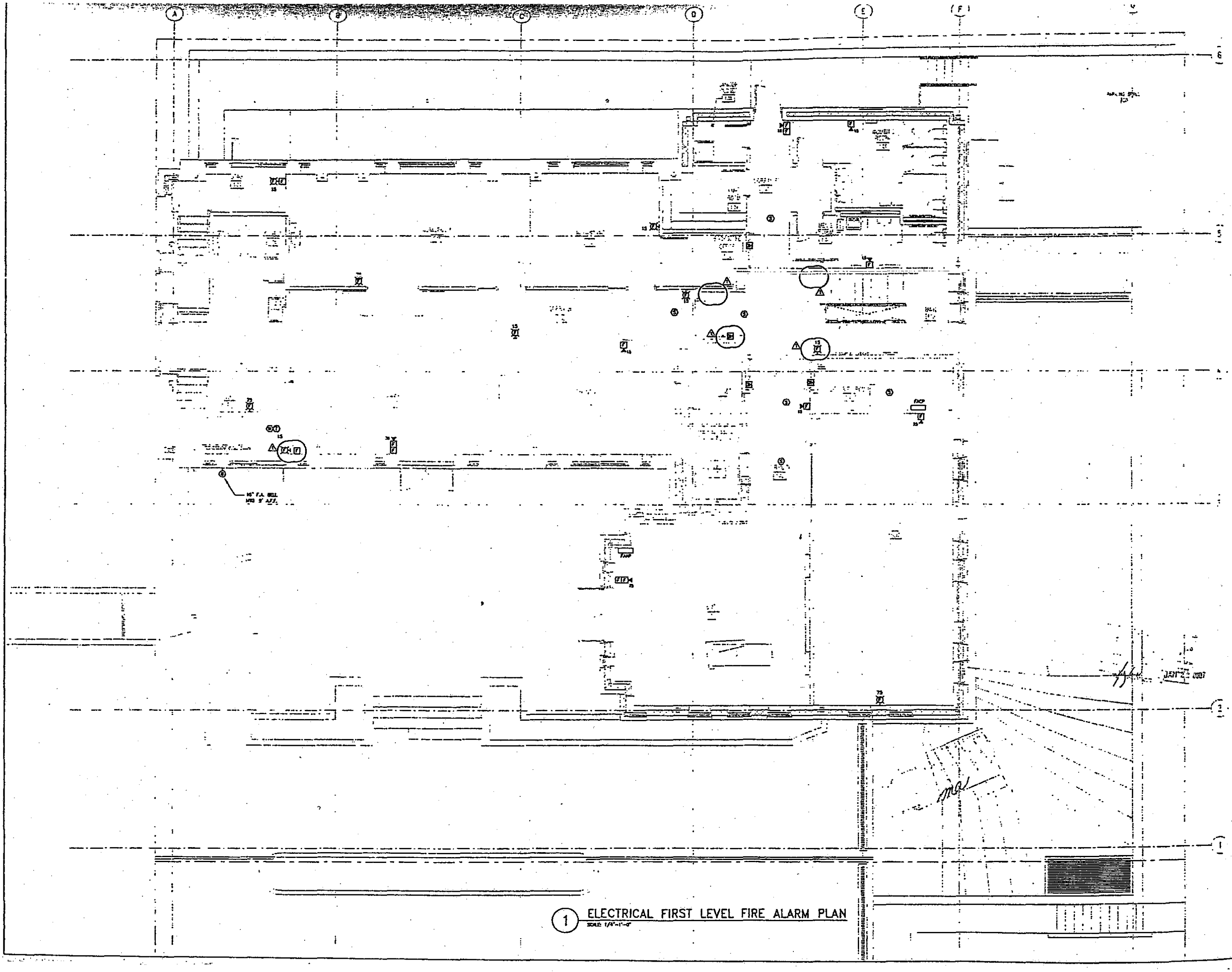

① ELECTRICAL FIRST LEVEL FIRE ALARM PLAN

SCALE: 1/4"=1'-0"

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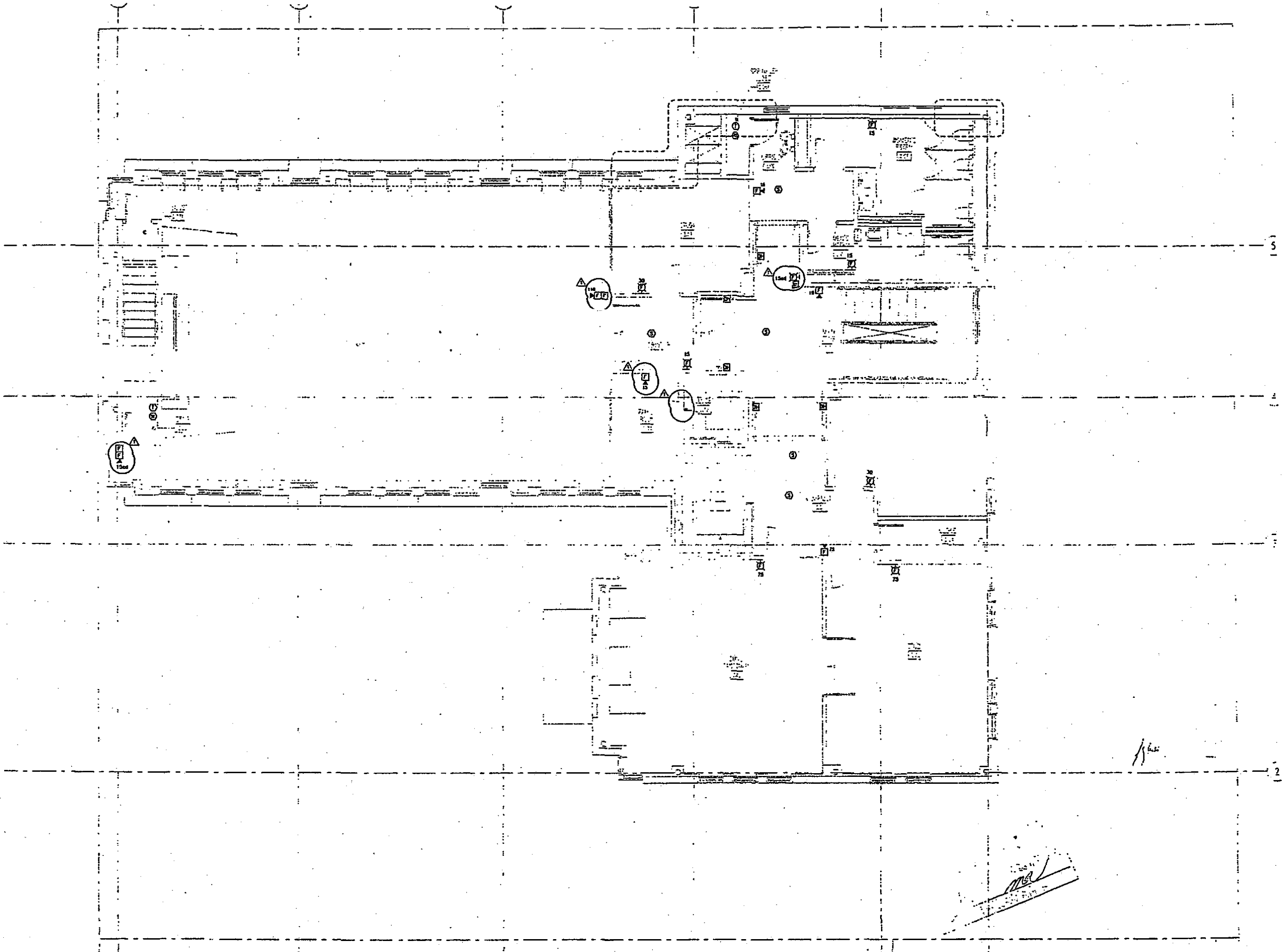

① ELECTRICAL SECOND LEVEL FIRE ALARM PLAN
SCALE: 1/4"=1'-0"

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PROJECT NO. DATE
W050002

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SCALE: 1/4" = 1'-0"

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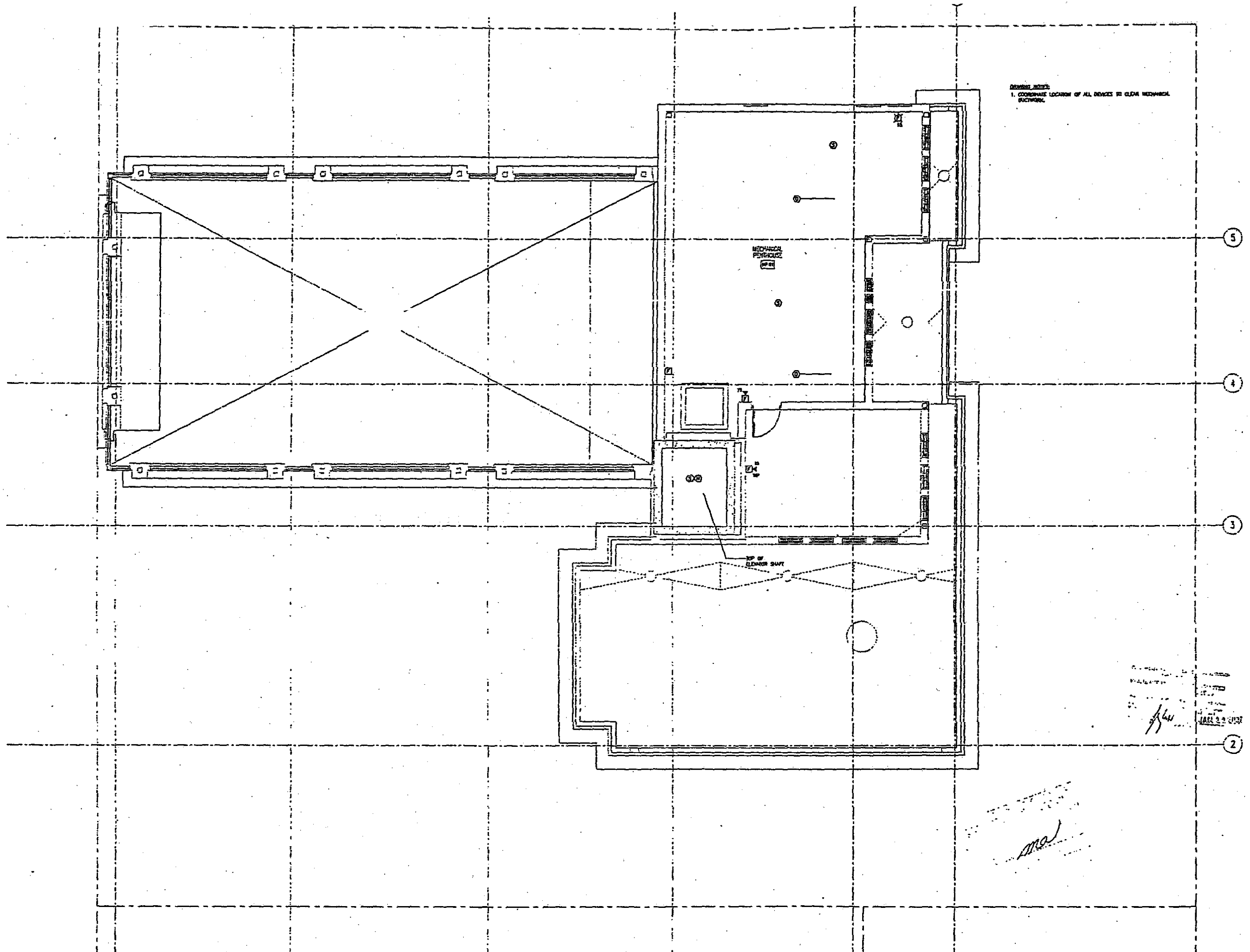

DRAWING NOTES:
1. COORDINATE LOCATION OF ALL DEVICES TO CLEAR MECHANICAL DUCTWORK.

① ELECTRICAL THIRD LEVEL FIRE ALARM PLAN

SCALE: 1/4"=1'-0"

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REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/0
	80% CONST. DOCUMENTS	06/16/0
	50% CONST. DOCUMENTS	05/10/0
	100% DESIGN DEVELOPMENT	02/17/0
	50% DESIGN DEVELOPMENT	10/24/0

PROJECT NO. W050002
DATE 06-30-

SHEET TITLE
ELECTRICAL
THIRD LEVEL
FIRE ALARM PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
E.4-03

REVISION

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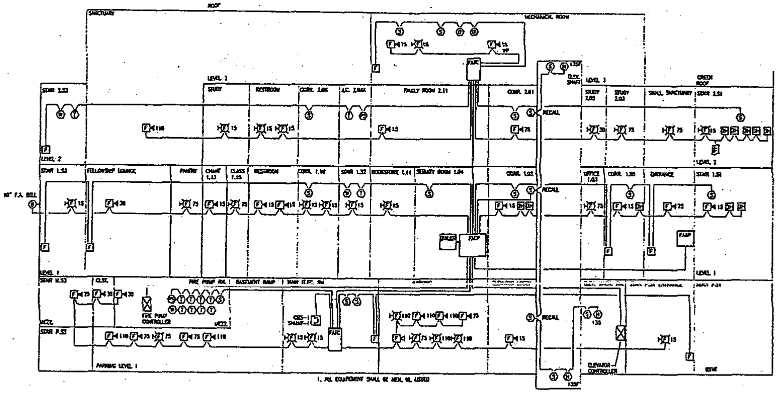


FIRE ALARM RISER DIAGRAM

GENERAL
1. ALL EQUIPMENT SHALL BE NEW, UL LISTED.

FIRE ALARM SYSTEM MATRIX

AREA	EVENT OR DEVICE	GENERAL ALARM	SHUT DOWN ASSOCIATED AIR HANDLING UNIT	RELEASE ALL MAGNETIC DOOR HOLD OPEN DEVICES	RELEASE ALL ELECTRIC DOOR LOCKS	RECALL ELEVATOR TO PRIMARY FL.	RECALL ELEVATOR TO SECONDARY FL.	ACTIVATE ELEVATOR SHUNT TRIP BREAKER	ANNUNCIATE FIRE ALARM AT FAAP/FACP AND SEND SIGNAL TO CENTRAL STATION	ANNUNCIATE TROUBLE SIGNAL AT FAAP/FACP AND SEND SIGNAL TO CENTRAL STATION	ANNUNCIATE SUPERVISORY SIGNAL AT FACP AND SEND SIGNAL TO CENTRAL STATION
ALL AREAS	SPRINKLER FLOW SWITCH	●		●	●	●			●		
ALL AREAS	MANUAL STATION	●		●	●	●			●		
ALL AREAS	SMOKE DETECTOR	●		●	●	●			●		
SMOKE DOOR	SMOKE DETECTOR	●		●	●	●			●		
ELEVATOR HOIST, PIT & MACHINE ROOM	SMOKE DETECTOR	●		●	●	●			●		
ELEVATOR HOIST, PIT & MACHINE ROOM	HEAT DETECTOR							●			●
ELEVATOR LOBBY PRIMARY FLOOR	SMOKE DETECTOR	●		●	●		●		●		
ELEVATOR LOBBY SECONDARY FLOOR	SMOKE DETECTOR	●		●	●	●			●		
AHU	DUCT DETECTOR	●	●	●	●				●		
THROUGHOUT BUILDING	DAMPER SWITCH										●
THROUGHOUT BUILDING	ANY SYSTEM MALFUNCTION										●

FIRE ALARM NOTES

FA1 PROVIDE NEW COMPLETE FIRE ALARM, SMOKE AND FIRE DETECTION SYSTEM. THE SYSTEM SHALL CONSIST OF FIRE ALARM CONTROL PANELS (FACP) REQUIRES NUMBER OF EXTENDER PANELS, FIRE ALARM ANNUNCIATOR PANEL (FAAP) WITH AUTOMATIC AND MANUAL CONTROLS. THE INITIATING DEVICES SHALL BE AREA SMOKE DETECTORS, DUCT SMOKE DETECTORS, HEAT DETECTORS, FLOW SWITCHES, DAMPER SWITCHES, PRESSURE SWITCHES AND MANUAL PULL STATIONS. THE ANNUNCIATING DEVICES SHALL BE STROBE LIGHTS, HORNS, HORN/STROBE LIGHT COMBINATION AND SINGLE 10" DIAMETER BELL ON THE EXTERIOR WALL OF THE BUILDING OF THE ADDRESS SIDE.

FA2 NEW FIRE ALARM SYSTEM SHALL BE MULTIPLEX, ADDRESSABLE ANALOG, NON CODED, ELECTRICALLY SUPERVISED GENERAL ALARM SYSTEM ARRANGED WITH SINGLE ZONE PER FLOOR, CONSISTING OF PROGRAMMED F.A.C.P. AND F.A.A.P. INTERLOCK TO MECHANICAL EQUIPMENT CONTROLS, ELEVATOR POWER SUPPLY AND ELEVATOR CONTROLS FOR ELEVATOR RECALL AND INTERLOCK TO THE SECURITY ACCESS SYSTEM.

FA3 ALL NEW FIRE ALARM AND DETECTION SYSTEMS, FIRE AND LIFE SAFETY SYSTEM CONTROLS AND SYSTEM SUPERVISION SHALL CONFORM TO THE DC FIRE MARSHALL FIRE PREVENTION CODE REFERENCE, INTERNATIONAL BUILDING CODE 2000, INTERNATIONAL FIRE CODE 2000, MANUFACTURER RECOMMENDATIONS AND APPLICABLE NFPA 1999 DOCUMENTS INCLUDING BUT NOT LIMITED TO: 13 –SPRINKLER SYSTEM, 14 –STANDPIPE, 20 –FIRE PUMP, 37 –GENERATORS, 70 –NEC, 72 –NFAC, 101 –LIFE SAFETY AND 110 –EMERGENCY AND STANDBY POWER. THE NEW SYSTEM, INSTALLATION AND PERFORMANCE SHALL ALSO COMPLY WITH DCMR-12 2004.

FA4 PROVIDE NEW FIRE ALARM SYSTEM THAT MEETS AND EXCEEDS REQUIREMENTS SHOWN IN THIS CONSTRUCTION DOCUMENT.

FA5 THE MAIN FIRE CONTROL PANEL SHALL BE LOCATED IN ELECTRICAL ROOM AS SHOWN ON THE DRAWING. THE EXACT LOCATION OF THE FIRE ALARM ANNUNCIATOR PANEL AND DISPLAY CONFIGURATION SHALL BE COORDINATED WITH FIRE MARSHALL BEFORE FABRICATION. SEE FLOOR PLAN FOR PROPOSED LOCATION OF THE FIRE ALARM ANNUNCIATOR PANEL.

FA6 PROVIDE AND INSTALL (EXTENDER PANELS) REMOTE FIRE ALARM UNITS IN LOCATIONS AS INDICATED ON RISER AND FLOOR PLANS TO SUPPORT INDICATING APPLIANCES. EACH EXTENDER REMOTE FIRE ALARM UNIT SHALL BE EQUIPPED WITH 8 MINIMUM 8 CIRCUITS CAPACITY. EACH USED CIRCUIT MAY BE LOADED TO NO MORE THAN 75% OF ITS ALLOWED CAPACITY. EACH ZONE/FLOOR SHALL UTILIZE 2 CIRCUITS MINIMUM. NO MORE THAN 50% OF INDICATING DEVICES CAN BE INOPERABLE IN THE ZONE UPON FAILURE OF ANY CIRCUIT IN THE SAME ZONE.

FA7 PROVIDE NEW CONDUIT RISERS AND TERMINAL CABINETS "TAFC" IN LOCATIONS AS SHOWN ON FLOOR PLAN AND RISER FOR FIRE ALARM WIRING BETWEEN FACP AND FIRE ALARM DEVICES. CONTRACTOR MAY USE SINGLE CONDUIT RISER FOR BOTH (INITIATING AND INDICATING DEVICES) CIRCUITS, IF PROPER SHIELDED WIRING IS UTILIZED TO PREVENT INTRODUCTION OF INDUCTION CURRENT IN INITIATING CIRCUITS DURING ALARM OR ABNORMAL CONDITION. CONDUIT CONNECTING THE TERMINAL CABINETS BETWEEN THE FLOORS SHALL BE 2" MIN. TERMINATION CABINET SHALL BE 20" x 24" x 6". ALL CONNECTIONS SHALL BE MADE WITH IDENTIFIED SCREW TYPE TERMINAL STRIPS AND LABELED WITH SYMBOLS CORRESPONDING TO F.A. SHOP DRAWINGS AND DIAGRAM.

FA8 IN ADDITION TO INDICATED BUILDING DEVICES INSTALLED UNDER THIS CONTRACT, PROVIDE SPARE CAPACITY ON A PER FLOOR BASIS IN THE FIRE ALARM CONTROL PANEL, TERMINAL CABINETS, EXTENDER PANELS AND POWER SUPPLIES TO ACCOMMODATE ANY ADDITIONAL FUTURE FIRE ALARM AND FIRE DETECTION DEVICES AS FOLLOWS: 25% FOR ALL INDICATED DEVICES WITH ASSUMPTION OF FUTURE VISUAL DEVICE RATED AT AVERAGE OF 75 CANDELAS AND WITH POWER SUPPLIES TO BE SIZED SO IF FULLY LOADED UNDER ALARM CONDITION INCLUDING ALL ESTIMATED FUTURE DEVICES THE CURRENT DRAW WILL NOT EXCEED 80% OF POWER SUPPLY CAPACITY.

FA9 THE SYSTEM SHALL BE CONTINUOUSLY ELECTRICALLY SUPERVISED AGAINST FAILURE ANY COMPONENT, APPLIANCES, WIRING, SWITCHES AND ELECTRICAL CONTACTS AND SHALL DETECT OPENS, SHORTS AND GROUND WHICH MIGHT AFFECT THE FUNCTION OF THE SYSTEM. BOTH A VISUAL AND AUDIBLE TROUBLE SIGNAL SHALL OPERATE AT FIRE CONTROL PANEL, F.A. ANNUNCIATOR PANEL AND CENTRAL STATION VIA COMMUNICATION LINE.

FA10 REFER TO FLOOR PLANS FOR DEVICE LOCATIONS. COORDINATE INSTALLATION WITH ARCHITECTURAL DETAILS AND CONFORM WITH REQUIREMENTS OF CODES LISTED IN NOTE FA3 AND DC FIRE MARSHALL.

FA11 PROVIDE DEDICATED 120V, 1PH, 20A CIRCUITS FOR EACH EXTENDER FIRE ALARM PANEL. PROVIDE TWO (2) 120V, 20A, 1Ø CIRCUITS TO FEED FACP. DERIVE CIRCUITS FROM EMERGENCY POWER SOURCE AS SHOWN ON THE DRAWING.

FA12 PROVIDE 4 HOUR MINIMUM BATTERY BACKUP FOR FIRE ALARM SYSTEM AS REQUIRED BY LOCAL CODES.

FA13 WHERE THERE ARE A NUMBER OF POWER REQUIRING DEVICES, SUCH AS SMOKE DETECTORS, FAN RELAYS, DOOR HOLDERS, STROBE LIGHTS AND SMOKE DAMPER OPERATORS INSTALLED IN A CIRCUIT, GROUP IN NUMBERS SO POWER REQUIRED DOES NOT EXCEED 80% OF MANUFACTURER'S POWER SUPPLY RATING. PROVIDE EXTRA CAPACITY OF POWER SUPPLIES REQUIRED TO FULFILL THAT REQUIREMENT. IN ADDITION PROVIDE EXTRA BRANCH WIRING OR LARGER SIZE WIRING TO ALLEVIATE VOLTAGE DROP. INSTALL ALL DEVICES IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

FA14 HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET:

DEVICE	HEIGHT
BELLS AND HORNS	7'-6". EXTERIOR AT 9' MINIMUM
FIRE ALARM STATIONS	4'-0"
STROBE LIGHTS	6'-8" AFF OR 6" BELOW CEILING (WHICHEVER IS LOWER).

FA14 NUMBER OF CONDUCTORS, SIZE, TYPE AND COLOR CODE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. INSTALL PER MANUFACTURER'S POINT-TO-POINT WIRING DIAGRAM. DETERMINE EXACT NUMBER OF WIRES FOR EACH FIRE AREA ZONE FROM NUMBER AND TYPES OF DEVICES INSTALLED.

FA15 ALL WIRING SHALL BE INSTALLED IN METALLIC TUBING OR METAL CONDUITS. THE INSTALLATION SHALL BE IN A MANNER WHICH WILL AFFORD THE MAXIMUM PROTECTION AGAINST THE EFFECTS OF FIRE AND OTHER PHYSICAL OR ACCIDENTAL DAMAGE. WIRING SHALL BE INSTALLED IN LOCATIONS WHICH WILL FACILITATE REPAIR OR REPLACEMENT. SURFACE INSTALLATION SHALL UTILIZE COMPRESSION FITTING AND KNOCKOUT BOXES WILL NOT BE ACCEPTABLE.

FA16 POWER SUPPLY AND FIRE ALARM CIRCUIT CONDUCTORS SHALL BE PERMITTED IN THE SAME CABLE, RACEWAY, JUNCTION BOX OR ENCLOSURE ONLY WHERE CONNECTED TO THE SAME EQUIPMENT.

FA17 SEQUENCE OF OPERATION – ELEVATOR RECALL

1) PROVIDE SMOKE DETECTOR IN ELEVATOR MACHINE ROOM, AT TOP AND BOTTOM OF HOISTWAYS AND IN EACH ELEVATOR LOBBY AND CONNECT TO ACTIVATE ALARM CONDITION AND RECALL THE ELEVATORS. SMOKE DETECTOR OPERATION MUST BE VERIFIED BEFORE INITIATING ALARM STATUS.

2) ELEVATOR LOBBY OR HOISTWAY OR MACHINE ROOM SMOKE DETECTION OR SYSTEM GENERAL ALARM ACTIVATION SHALL INITIATE ELEVATOR RECALL SEQUENCE.

3) UPON INITIATION OF ELEVATOR RECALL SEQUENCE, ELEVATORS SHALL RETURN TO THE DESIGNATED PRIMARY FLOOR, OPEN DOOR AND REMAIN IN THIS POSITION. IF THE ALARM IS INITIATED ON THE PRIMARY FLOOR, THE ELEVATOR SHALL RETURN TO THE ALTERNATE FLOOR. THE PRIMARY FLOOR SHALL BE 1ST FLOOR (GROUND FLOOR). AN ALTERNATE FLOOR SHALL BE BASEMENT LEVEL, TO BE VERIFY WITH FIRE MARSHALL.

4) SIGNAL FROM SMOKE DETECTORS OR GENERAL ALARM SIGNAL FROM FACP TO INITIATE ELEVATOR RECALL SEQUENCE SHALL OVERRIDE ALL OTHER ELEVATOR CONTROL COMMANDS.

5) COORDINATE WITH ELEVATOR MANUFACTURER TO ACCOMPLISH ELEVATOR RECALL SEQUENCE AND ELEVATOR SHUNT TRIP SEQUENCE.

FA18 ELEVATOR/FIRE ALARM INTERFACE – ELEVATOR SHUTDOWN.

1. PROVIDE 135°F HEAT DETECTORS IN ELEVATOR MACHINE ROOMS, AND ELEVATOR SHAFT AND PITS. INSTALL HEAT DETECTORS AT THE HIGHEST POINT IN THE CENTER OF EACH SPACE OR AS REQUIRED BY ROOM AND SPRINKLER HEAD LAYOUTS. CONNECT HEAT DETECTORS TO F.A. SYSTEM. PROVIDE ONE HEAT DETECTOR FOR EACH SPRINKLER HEAD WITHIN 2 FEET.

2. SEQUENCE OF OPERATION

   1) ANY HEAT DETECTOR ACTIVATION WILL ALARM SYSTEM.

   2) ACTIVATION OF ANY HEAT DETECTOR SHALL CAUSE THE CAPTURE OF THAT BANK OF ELEVATORS TO STOP AT NEAREST FLOOR, OPEN THE DOORS TO ALLOW EXIT, CLOSE THE DOOR, AND SHALL CAUSE THE ACTIVATION OF THE ELEVATOR SHUNT TRIP CIRCUIT BREAKER SUPPLYING THE ELEVATOR POWER TO TRIP. UPON COMPLETION OF THESE ACTIONS, ACTIVATE PRE-ACTION SYSTEM RELEASE PANEL.

   3) AUTOMATIC SPRINKLERS WILL NOT DISCHARGE WATER UNLESS OPERATING TEMPERATURES (165°F) ON INDIVIDUAL HEADS ARE REACHED.

3. POWER FOR SHUNT TRIPS TO BE CIRCUITED FROM 120/208V EMERGENCY PANEL.

FA19 PROVIDE DUCT SMOKE DETECTORS IN THE AHU RETURN AIR DUCTS AND/OR IN SUPPLY AIR AS INDICATED ON MECHANICAL DRAWINGS AND/OR FIRE ALARM DRAWINGS. PROVIDE INTERLOCK WITH EACH AHU'S SUPPLY AIR FAN MOTOR STARTER AND/OR THE RETURN AIR FAN STARTERS TO SHUT DOWN FANS ON INITIATION OF DUCT SMOKE DETECTOR OR ALARM SIGNAL. ACTIVATION OF DUCT SMOKE DETECTOR SHALL SEND SIGNAL TO F.A. SYSTEM. ALL DUCT SMOKE DETECTORS INSTALLED NOT IN DIRECT VIEW SHALL BE INSTALLED WITH THE REMOTE LED INDICATOR. THE REMOTE LED INDICATOR SHALL BE INSTALLED ON THE CEILING DIRECTLY BELOW RESPECTIVE DUCT SMOKE DETECTOR.

FA20 GENERAL: ALL FIRE ALARM SYSTEM FIELD RELAYS CONTROLLING OR DEACTIVATING ANY DEDICATED SECURITY DEVICES OR POWER CONTROL DEVICES SHALL BE INSTALLED WITHIN 3' OF CONTROL DEVICE.

FA21 RECEIPT OF ANY ALARM SIGNAL SHALL ACTIVATE VISUAL AND AUDIBLE GENERAL ALARM CONDITION THROUGHOUT THE BUILDING.

FA22 AREA SMOKE DETECTORS SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS. REFER TO FIRE ALARM SYSTEM MATRIX FOR SEQUENCE OF OPERATION.

FA23 COORDINATE WORK WITH ALL ELECTRICAL, MECHANICAL, OR PLUMBING EQUIPMENT SCHEDULES TO BE INTERLOCK WITH THE NEW FIRE ALARM SYSTEM.

FA25 PROVIDE REQUIRED CLEARANCE AROUND THE PANELS PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND NEC. (36" PER NEC)

FA26 THE FIRE ALARM SYSTEM SHALL BE DESIGNED AND INSTALLED SO ANY DAMAGE TO ANY TERMINAL UNIT WILL NOT RENDER MORE THAN ONE CIRCUIT LIMITED TO THE SINGLE ZONE OF THE ELEMENT INOPERATIVE. NO MORE THAN 50% OF FIRE ALARM DEVICES CAN INOPERABLE PER ZONE UPON THE CIRCUIT FAILURE.

FA27 THE SYSTEM SHALL BE INSTALLED SO TROUBLE CAN BE READILY DETECTED BY FLOOR AND DEVICE.

FA28 PROVIDE AND ARRANGE THE STROBE AND AUDIBLE CIRCUITS SO THERE SHALL BE MINIMUM OF TWO CIRCUITS PER ZONE ON EVERY FLOOR AND LOSS OF ONE CIRCUIT WILL NOT AFFECT MORE THAN 50% OF DEVICES PER ZONE.

FA29 LOCATION, SIZE, AND FINISH OF THE FIRE ALARM ANNUNCIATOR PANEL(S) SHALL BE COORDINATED WITH ARCHITECT/OWNER/FIRE MARSHALL PRIOR TO FABRICATION.

FA31 PROVIDE 1" CONDUIT FROM FACP TO ELEVATOR MACHINE ROOM FOR CONTROL SIGNAL AND FIRE ALARM INTERFACE. PROVIDE WIRING PER EQUIPMENT SUPPLIER.

FA32 PROVIDE MINIMUM 3/4" E.C. AND REQUIRED WIRING FROM FIRE ALARM CONTROL PANEL TO ACCESS CONTROL SYSTEM FOR FIRE ALARM INTERFACE WITH ELECTRIC DOOR LOCKS. ALL STAIR AND OTHER ELECTRIC DOOR LOCKS IN THE PATH OF THE EGRESS SHALL UNLOCK SIMULTANEOUSLY UPON ACTIVATION OF THE FIRE ALARM SYSTEM OR UPON LOSS OF PRIMARY POWER TO THE FIRE ALARM SYSTEM. PROVIDE CONDUIT AND CONTROL WIRING PER EQUIPMENT SUPPLIER REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED RELAYS, TRANSFORMERS, POWER SUPPLIES AND ALL OTHER DEVICES TO AFFECT AN INTERFACE BETWEEN THE FIRE ALARM AND SECURITY SYSTEM. AN AUXILIARY RELAY CONNECTED TO FIRE ALARM SYSTEM TO UNLOCK DESIGNATED DOORS SHALL BE LOCATED WITHIN 3' OF THE CONTROL DEVICE.

FA33 PROVIDE MINIMUM 3/4" E.C. AND REQUIRED WIRING FROM FIRE ALARM CONTROL PANEL TO DOOR HOLDER CONTROLLER FOR FIRE ALARM INTERFACE. PROVIDE CONDUIT AND CONTROL WIRING PER EQUIPMENT SUPPLIERS REQUIREMENTS. ALL DOOR HOLDERS SHALL BE RELEASE SIMULTANEOUSLY UPON ACTIVATION OF THE FIRE ALARM SYSTEM. PROVIDE SMOKE DETECTOR AT EACH SMOKE DOOR WHERE SHOWN ON THE DRAWING. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED RELAYS, TRANSFORMERS, POWER SUPPLIES AND ALL OTHER DEVICES TO AFFECT AN INTERFACE. AN AUXILIARY RELAY CONNECTED TO FIRE FIRE ALARM SYSTEM SHALL BE LOCATED WITHIN 3' OF CONTROL DEVICE.

FA34 PROVIDE MINIMUM 3/4" E.C. AND REQUIRED WIRING FROM FIRE ALARM CONTROL PANEL TO EMERGENCY FIRE PUMP CONTROL PANEL FOR FIRE ALARM INTERFACE. PROVIDE CONDUIT AND CONTROL WIRING PER EQUIPMENT SUPPLIERS REQUIREMENTS.

FA35 PROVIDE AUTOMATIC DIALER WITH MINIMUM TWO DEDICATED TELEPHONE LINES. THE DIALER SHALL INDICATE THE ALARM AND TROUBLE CONDITION AT THE SECURITY OFFICE RESPONSIBLE FOR CALLING THE FIRE DEPARTMENT

FA36 MINIMUM CONDUIT SIZE FOR BRANCH FIRE ALARM CIRCUIT SHALL BE 3/4".

FA37 ALL FIRE ALARM CABINETS AND TERMINAL BOXES SHALL BE PAINTED RED.

FA38 SYSTEM RESET SHALL BE PROVIDED AT FACP IN ELECTRICAL ROOM AND AT ANNUNCIATOR PANEL.

FA39 PROVIDE ALL SYSTEM COMPONENTS AS INDICATED ON THE DRAWINGS AND AS SPECIFIED BY THE MANUFACTURER.

FA40 PROVIDE EXTERIOR 10" DIAMETER FIRE BELL AND VISUAL DEVICE AT LOCATION SHOWN ON DWG. E-1. COORDINATE EXACT LOCATION WITH ARCHITECT AND FIRE MARSHAL.

FA41 ALL FIRE ALARM STROBES IN OPEN AREAS, GARAGES, CORRIDORS, LOBBIES AND RETAIL AREAS SHALL BE SYNCHRONIZED SO THE FLASH FREQUENCY WILL NOT EXCEED 2 Hz IN ANY SINGLE AREA OF VIEW.

FA42 FIRE ALARM CIRCUIT AND EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH NEC.

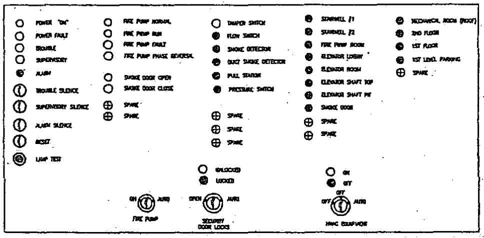
FA43 SUBMITTAL FOR FIRE ALARM SHOP DRAWINGS SHALL INCLUDE POINTS LIST WITH ALL ADDRESSES WRITTEN ON THE DRAWINGS (RISER AND FLOOR PLAN) NEXT TO EVERY DEVICE.

FA44 INSTALL, TEST AND OBTAIN DC FIRE MARSHALL APPROVAL FOR NEW F.A. SYSTEM INCLUDING F.A.C.P. AND F.A.A.P.

FA45 FOR ADDITIONAL INFORMATION ON FIRE ALARM SYSTEM SEE SPECIFICATION 13851.

FA46 REFER TO FIRE ALARM SYSTEM MATRIX FOR FIRE ALARM SEQUENCE OF OPERATION.

FA47 ALL FIRE ALARM DEVICES SHALL BE WHITE UNLESS MANDATED TO BE RED BY CODE I.E., FIRE ALARM PULL STATIONS.



FIRE ALARM ANNUNCIATION PANEL

NO SCALE

LEGENDA

○	GREEN
○	AMBER
●	RED
ⓘ	KEY OPERATED 3-POSITION SWITCH
ⓘ	KEY OPERATED 1-POSITION SWITCH
◉	PUSH BUTTON
⊕	SPACE FOR FUTURE LAMP

STORAGE ROOM SMOKE DETECTOR NOTES.

NO SCALE

① SMOKE DAMPER SHALL BE CLOSED UPON ACTIVATION OF AREA SMOKE DETECTOR INSTALLED IN THE RELATED SMOKE COMPARTMENT. THE SMOKE DETECTOR SHALL ALSO ACTIVATE ALARM MODE IN FIRE ALARM SYSTEM. PROVIDE 120V POWER CIRCUIT TO 60W, 120V SMOKE DAMPER FROM AVAILABLE 120V RECEPTACLE CIRCUIT IN THIS AREA.

SMOKE DETECTOR, DOOR RELEASE NOTES

② THE ELECTROMAGNETIC DOOR HOLDERS SHALL RELEASE DOOR TO CLOSE UPON ACTIVATION OF AREA SMOKE DETECTORS INSTALLED IN IN PROTECTED AREA. THE SMOKE DETECTOR SHALL ACTIVATE ALARM MODE IN THE FIRE ALARM SYSTEM. THE ELECTROMAGNETIC DOOR HOLDER SHALL RELESE DOOR ALSO UPON ACTIVATION OF ANY ALARM MODE IN THE FIRE ALARM SYSTEM. THE ELECTROMAGNETIC DOOR HOLDER SHALL RELESE DOOR ALSO UPON LOSS OF ELECTRIC POWER TO THE BUILDING.

JAN 22 2007

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SEAL

KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/20/06
	80% CONST. DOCUMENTS	08/18/06
	50% CONST. DOCUMENTS	05/10/05
	100% DESIGN DEVELOPMENT	03/17/05
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
FIRE ALARM
RISER DIAGRAM

CONSTRUCTION
DOCUMENTS

SCALE: NONE

SHEET NO.
E-5.00

REVISION

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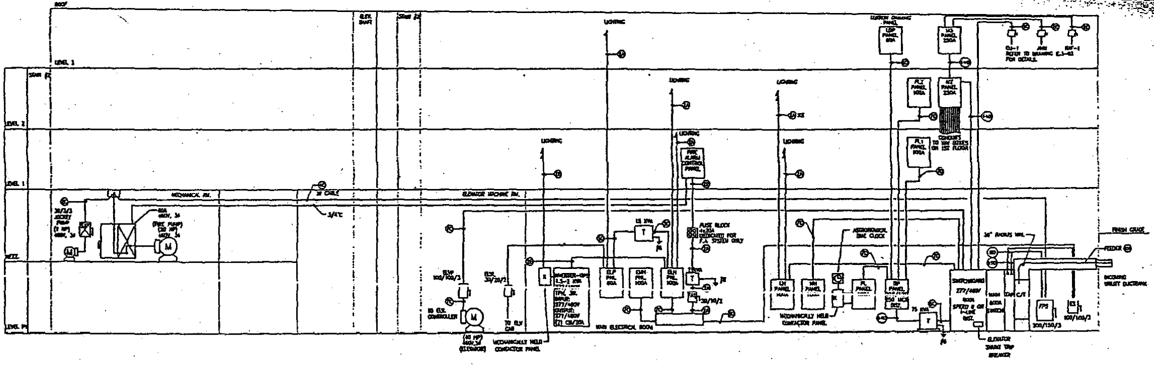
ELECTRICAL



① POWER RISER DIAGRAM NOTES

N.T.S.

GENERAL NOTE:

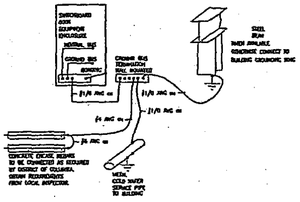
1. ALL EQUIPMENT SHALL BE NEW, UL LISTED.

PEPCO CONDITIONS:

1. CUSTOMER TO OBTAIN ALL PERMITS/PERMISSION REQUIRED BY OTHERS ON PRIVATE PROPERTY.
2. ALL MATERIALS USED ARE TO CONFORM TO PEPCO SPECIFICATIONS. ALL WORK MUST BE DONE IN ACCORDANCE WITH PEPCO'S STANDARDS AND SPECIFICATIONS.
3. ALL WORK SHALL BE DONE IN A MANNER ACCEPTABLE TO PEPCO AND INSPECTED BY PEPCO'S CONDUIT DEPARTMENT BEFORE ENCASEMENT OR BACKFILLING. FOR PROJECTS IN MONTGOMERY COUNTY, CALL 301-670-8808. IN PRINCE GEORGE'S COUNTY CALL 301-967-5420 AND IN DISTRICT CALL 202-265-7177 (48) HOURS IN ADVANCE TO ARRANGE INSPECTION. CALL BETWEEN 7-9 A.M. OR 3-4 A.M. (CUSTOMER MUST FIRST SUBMIT DRAWING OF THE FACILITIES TO BE BUILD FOR PEPCO AND BE APPROVED BY PEPCO.)
4. ALL METERING CURRENT TRANSFORMER MOUNTING DIMENSIONS, DRILLINGS SPACING AND STUDS MUST COMPLY WITH PEPCO SPECIFICATION DRAWING 7-5-404 REVISION A. THE MINIMUM ACCEPTABLE DIMENSIONS, DRILLINGS ETC. FOR PEPCO LINE CONNECTIONS TO C/T CABINET/COMPARTMENTS INCLUDING SAFETY BARRIER WHERE APPLICABLE, MAINLINE SWITCHES AND MAIN INCOMING BUS CABINETS/COMPARTMENTS/SECTIONS ARE SHOWN ON PEPCO PURCHASE SPECIFICATION DRAWINGS 7-5-480 REVISION B AND /OR 7-5-484 REVISION B.
5. CONDUITS TO BE BUILT IN ACCORDANCE WITH PEPCO SPECIFICATION DRAWING NO. 8-1-480 AND CE1.08 ALL SERVICE CONDUITS MUST BE 6" PVC ENCASED SCHEDULE 40. ALL NON-ENCASED CONDUITS MUST BE U.L. LISTED SCHEDULE 40.
6. THE SERVICE EQUIPMENT IS NOT APPROVED AT THIS TIME AND MUST BE APPROVED. THE CUSTOMER/ CONTRACTOR MUST SUBMIT: FOUR (4) COPIES OF THE SHOP DRAWINGS AND PROFILE VIEW OF THE ELECTRIC ROOM SHOWING WHERE THE EQUIPMENT WILL BE MOUNTED AND FOUR (4) COPIES OF THE MANUFACTURER'S CUTS OF ANY MAIN LINE SWITCH, CURRENT TRANSFORMER CABINET, SWITCHBOARD WITH BUILT-IN COMPARTMENT OR ANY OTHER CUSTOMER FURNISHED SWITCHGEAR FOR REVIEW BY PEPCO.
7. THE MINIMUM MOUNTING HEIGHT FOR METERS IS 30 INCHES TO THE BOTTOM OF THE METER GLASS. MAXIMUM MOUNTING HEIGHT IS 66 INCHES TO THE BOTTOM OF THE METER(S) GLASS.
8. CUSTOMER TO BUILD 6" 4 WAY CONDUIT FROM NEW SERVICE LOCATION TO EXISTING PEPCO SERVICE VAULT IN STREET (MASS. AVE). SEE CIVIL ENGINEERING PLANS FOR MORE INFORMATION.
9. THE FOLLOWING MINIMUM SEPARATION BETWEEN FOREIGN STRUCTURES AND CONDUITS SHALL BE MAINTAINED TELEPHONE CONDUIT- 3" CONCRETE OR 12" EARTH. MINIMUM 5' HORIZONTAL AND 1' VERTICAL FROM ANY OTHER UNDERGROUND UTILITIES.
10. ALL ON SITE STRUCTURAL FACILITIES INCLUDING CONDUITS, SPLICE BOXES, TRANSFORMER PADS ETC. SHALL BE PROVIDED INSTALLED, OWNED AND MAINTAINED BY THE CUSTOMER.
11. SWEEP BENDS MUST HAVE A RADIUS OF NO LESS THAN 36".
12. PEPCO TO PROVIDE AND INSTALL AT COST TO CUSTOMER 2 SETS OF 500 KCMIL CU CABLES TO 800 AMP C/T CABINET.
13. FOR LOCATION OF UTILITIES, CALL 24 HOURS A DAY 1-800-257-7777, 48 HOURS IN ADVANCE OF ANY WORK IN THIS VICINITY.
14. NO MORE THAN 180° OF BENDS OF DUCT LINE.
15. CONDUIT TO HAVE THREE FEET (3') OF COVER (TOP OF DUCT TO FINISHED GRADE).
16. CONDUIT TO BE ENCASED IN 3000 PSI CONCRETE WITH PEA GRAVEL. NO METALLIC MATERIALS (REBARS, HOLD DOWN WIRES ETC.) SHALL BE PERMITTED IN SPACES BETWEEN EACH DUCT.
17. MANHOLES TO BE CONSTRUCTED WITH 3000 PSI CONCRETE.
18. CUSTOMER TO MAKE FROM ROOS ALL CONDUITS, CLEAR ANY OBSTRUCTION AND PROVIDE NYLON PULL LINES IN EACH CONDUIT PRIOR TO INSTALLATION OF PEPCO CABLES.
19. CUSTOMER TO BUILD, OWN AND MAINTAIN ALL STRUCTURAL FACILITIES ON PRIVATE PROPERTY AND BE RESPONSIBLE FOR ANY WATER PROBLEMS.
20. CUSTOMER TO COORDINATE EXACT DEPTH OF ALL STUB-OUTS WITH PEPCO CONSTRUCTION
22. THE MAXIMUM SIZE OF A SERVICE CONDUCTOR RATED 600V OR LESS SHALL NOT EXCEED 500 KCMIL FOR COPPER OR ALUMINUM CONDUCTOR.
23. THE TRENCH MUST HAVE REMOVABLE COVERS WITH PROVISIONS FOR SEALS. ALL REMOVABLE COVERS TO BE ABLE TO BE HANDLED BY ONE MAN.
24. PEPCO IS TO BE NOTIFIED WITHIN 48 HOURS (2 WORKING DAYS) BEFORE THE SETTING OF ANY POLES, MANHOLES, POURING OF ANY CONCRETE AND/OR THE BACKFILLING OF ANY TRENCH TO MAKE ARRANGEMENTS FOR INSPECTION AND APPROVAL OF THE ON SITE SERVICE CONNECTIONS AND STRUCTURAL EQUIPMENT.
25. MAXIMUM SIZE OF PEPCO FIXTURE NEMA 2-HOLE SPACING.
26. REFER TO PEPCO STANDARD DRAWING CE.01.15 THROUGH CE.01.18 FOR METER EQUIPMENT MOUNTING INFORMATION. REFER TO PEPCO STANDARD DRAWINGS 7-5-0804, 7-5-0805 AND 7-5-0806 FOR SWITCHBOARD WITH BUILD-IN-COMPARTMENT/C.T. CABINET SPECIFICATIONS.
27. PEPCO WILL PROVIDE METERING EQUIPMENT AND METER LOCATION MUST BE APPROVED BY METER DEPARTMENT. 301-670-8867/301-967-5227.
28. ALL CUSTOMER INSTALLATIONS AND EQUIPMENT MUST MEET THE REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION AND ALL RULES AND REGULATIONS OF PEPCO.
29. POINT OF SERVICE: PEPCO'S PREFERRED SERVICE LOCATION IS CLOSE TO PEPCO MANHOLE ON MASSACHUSETTS AVENUE. SEE CIVIL ENGINEERING PLANS FOR ADDITIONAL INFORMATION.
30. 1-800A CURRENT TRANSFORMER CABINET MUST ACCOMMODATE 2 SETS OF 500 KCMIL CU MTLLIC WITH 2 HOLE NEMA TYPE DRILLINGS PER PHASE. THIS REQUIRES A 4 WAY (2H X2V) CONCRETE ENCASED CONDUIT. PEPCO HAS CALCULATED THE DEMAND ON THE 800 AMPS TERMINATIONS TO BE LESS THAN THE NAMEPLATE RATING AND WILL INSTALL THE SERVICE CABLES ACCORDINGLY. IT IS THE CUSTOMERS RESPONSIBILITY TO NOTIFY PEPCO WHEN ADDING ADDITIONAL LOAD AND OR MAKING CHANGES ON THESE TERMINATIONS.
31. CUSTOMER TO ELIMINATE CONDUIT ABOVE GRADE AND PROVIDE A TROUGH THE WIDTH AND DEPTH OF THE 800 AMP CURRENT TRANSFORMER CABINET (CTC). TROUGH TO BE OPEN ENTIRELY UNDER THE OPENING OF THE 800 AMP CTC. TROUGH SHALL HAVE A REMOVABLE COVER THAT CAN BE HANDLED BY ONE INDIVIDUAL. THERE MUST BE A MINIMUM OF 36" FROM THE STUBBED CONDUITS TO THE TERMINALS OF THE 800 AMP CTC. THIS RESULTS IN A MINIMUM TROUGH HEIGHT OF 28".
32. CUSTOMER TO STUB-OUT 4 INCH 4-WAY PVC CONDUIT TO SERVICE VAULT IN STREET AT A DEPTH OF 36" BELOW FINAL GRADE FOR PEPCO USE ONLY. TO PREVENT WATER LEAKAGE INTO SWITCHGEAR, CONDUIT MUST NOT ENTER DIRECTLY INTO OR OVER CTC.
33. ALL PEPCO NOTES THAT REFER TO THE "CUSTOMER" INDICATE WORK TO BE PROVIDED BY THE CONTRACTOR.

FIRE PUMP & FIRE PUMP ROOM NOTES:

1. PROVIDE MINIMUM 3/4" C. FROM FIRE PUMP CONTROL PANEL TO FIRE ALARM CONTROL PANEL. PROVIDE CONDUIT AND CONTROL WIRING PER F.A. SYSTEM SHOP DRAWING.
2. THE FIRE PUMP SERVICE DISCONNECT MEANS SHALL BE IDENTIFIED AS SUITABLE FOR USE AS SERVICE EQUIPMENT AND SHALL BE LOCKABLE IN THE CLOSED POSITION.
3. THE FIRE PUMPS SERVICE DISCONNECT AND FEEDER SHALL BE ELECTRICALLY SUPERVISED IN THE CLOSED POSITION, BY THE CENTRAL STATION OR THE REMOTE STATION. IN ADDITION, THE LOCAL SIGNAL SHALL CAUSE THE SOUNDING OF THE AUDIBLE SIGNAL AT THE LOCATION COORDINATED WITH FIRE MARSHALL. THE FIRE MARSHALL MAY REQUIRE ONLY THE LOCKING OF THE DISCONNECT IN THE CLOSE POSITION.
4. THE FIRE PUMPS SERVICE DISCONNECT SHALL BE MARKED "FIRE PUMP DISCONNECT". THE LETTERS SHALL BE AT LEAST 1" IN HEIGHT. THE SIGN SHALL BE PLACED ON THE FRONT SURFACE OF THE DISCONNECT.
5. PROVIDE PLACARD NEXT TO FIRE PUMP CONTROLLER STATING THE LOCATION OF FIRE PUMP SERVICE DISCONNECT MEANS AND THE LOCATION OF THE KEY.
6. ALL WIRING IN FIRE PUMP ROOM SHALL BE IN RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT, LIQUIDTIGHT FLEXIBLE METAL CONDUIT OR "MI" CABLE.
7. ALL ENERGIZED PARTS SHALL BE MOUNTED AT LEAST 12" AFF.
8. ANY FIRE PUMP CONTROL EQUIPMENT SHALL NOT BE MOUNTED ON COMBUSTIBLE BACKBOARDS SUCH AS PLYWOOD.
9. IF THE SENSORS OR REMOTE DEVICES ARE INSTALLED, THEY SHALL BE INSTALLED IN SUCH WAY THAT THEIR OPERATION, CONTROL OR MALFUNCTION WILL NOT PREVENT THE FIRE PUMP FROM STARTING.

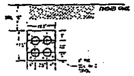

SWITCHBOARD
800A
EQUIPMENT
ENCLOSURE
NEUTRAL BUS
GROUND BUS
BONDING
GROUND BUS TERMINATION WALL MOUNTED
STEEL BEAM
WHEN AVAILABLE
REINFORCE CONNECT TO BUILDING GROUNDING RING
CONCRETE ENCASE REBARS TO BE CONNECTED AS REQUIRED BY DISTRICT OF COLUMBIA. OBTAIN REQUIREMENTS FROM LOCAL INSPECTOR.
METAL COLD WATER SERVICE PIPE TO BUILDING

NOTES.

1. VERIFY WITH LOCAL INSPECTOR POINTS AND FREQUENCY OF CONNECTION TO CONCRETE ENCASED REBARS.
2. VERIFY WITH LOCAL INSPECTOR THE QUANTITIES OF STEEL COLUMNS TO BE CONNECTED TO GROUNDING SYSTEM.

③ GROUNDING DETAIL

N.T.S.

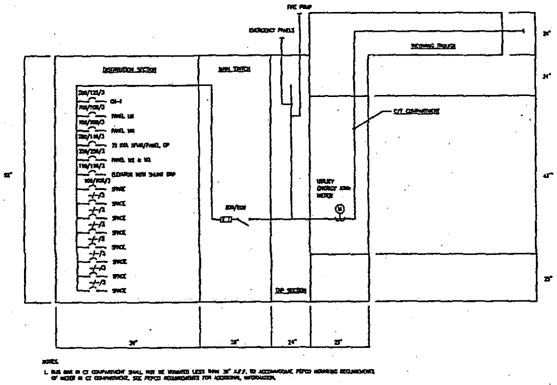


② CROSS SECTION 4-WAY DUCTBANK (H2xV2) SERVICE RUN #1 FROM PEPCO STRUCTURE

SCALE: N.T.S.

SERVICE ENTRANCE DUCTBANK NOTES:

1. CONTRACTOR SHALL SECURE APPROVAL FROM PEPCO FOR PROPOSED SERVICE ENTRANCE INSTALLATIONS. COORDINATE THE ENTIRE INSTALLATION WITH PEPCO POWER.
2. THE INNER SURFACE OF CONDUITS SHALL BE FREE OF OBSTRUCTIONS THAT MAY DAMAGE CABLING DURING INSTALLATION. CONTRACTOR SHALL INSTALL PLUGS OR EQUIVALENT IN ALL CUSTOMER OWNED CONDUIT TO PREVENT DIRT OR DEBRIS FROM ENTERING.
3. CONCRETE SHALL BE VIBRATED TO ELIMINATE VOIDS.
4. CONTRACTOR SHALL WATER-SEAL ALL CONDUITS ENTERING THE BUILDING.
5. PROVIDE PULL STRING IN ALL CONDUITS, INCLUDING SPARE CONDUITS.



NOTES.

1. BUS BAR IN CT COMPARTMENT SHALL NOT BE MOUNTED LESS THAN 30" A.F.F. TO ACCOMMODATE PEPCO MOUNTING REQUIREMENTS OF METER IN CT COMPARTMENT. SEE PEPCO REQUIREMENTS FOR ADDITIONAL INFORMATION.

④ SWITCHBOARD ELEVATION

N.T.S.

ELEVATOR NOTES:

1. ALL ELEVATOR RELATED EQUIPMENT, DEVICES, CONTROLS, AND SYSTEMS SHALL BE INSTALLED AND TESTED IN FULL COMPLIANCE WITH ASME A17.1, NEC, AND ALL LOCAL JURISDICTIONAL CODES.
2. PROVIDE LIGHT FIXTURE AND SWITCH FOR EACH ELEVATOR PIT. LOCATE SWITCH FOR ELEVATOR PIT LIGHT FIXTURE NEAR TOP OF PIT LADDER AS RECOMMENDED BY MANUFACTURER, AND IN ACCORDANCE WITH LOCAL JURISDICTIONAL CODES. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATOR PIT DETAILS.
3. PROVIDE 125 VOLT, 20 AMP SINGLE PHASE DUPLEX RECEPTACLE FOR EACH ELEVATOR PIT. RECEPTACLE SHALL BE OF GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) TYPE. PROVIDE WEATHERPROOF DEVICE PLATE.
4. ALL 125 VOLT, 20 AMP SINGLE PHASE DUPLEX RECEPTACLES INSTALLED IN ELEVATOR MACHINE ROOMS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION.
5. ALL FLUORESCENT STRIP LIGHT FIXTURES INSTALLED IN ELEVATOR MACHINE ROOMS AND IN ELEVATORS MACHINE CONTROLLER ROOMS SHALL HAVE PROTECTIVE WIRE GUARDS. COORDINATE LIGHT FIXTURE LOCATION WITH ELEVATOR EQUIPMENT AND LOCATE TO PROVIDE PROPER ILLUMINATION OF EQUIPMENT AND WALKWAYS. FIXTURE LOCATIONS SHOWN ON ELECTRICAL DRAWINGS ARE APPROXIMATE. INSTALL LIGHT FIXTURES IN ACCORDANCE WITH ALL LOCAL JURISDICTION CODES. INSTALL LIGHTING SWITCH WITHIN 18" OFF THE LOCK - JAMB SIDE. MINIMUM ILLUMINATION LEVEL SHALL BE 20FC MEASURED AT FLOOR LEVEL.
6. COORDINATE ALL FUSE SIZES, CIRCUIT BREAKERS, AND FEEDERS FOR ELEVATOR EQUIPMENT WITH THE ELEVATOR MANUFACTURER REQUIREMENTS PRIOR TO ROUGH-IN. INFORM ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
7. LOCATE ALL POWER, FIRE ALARM, SECURITY AND COMMUNICATIONS ROUGH-INS AND WIRING AS RECOMMENDED BY THE ELEVATOR SUPPLIER/INSTALLER.
8. REFER TO ALL RISER DIAGRAMS FOR REQUIREMENTS.
9. ALL ELEVATORS SHALL BE TESTED ON GENERATOR UNDER FULL RATED LOAD IN ACCORDANCE WITH ASME A17.1.
10. ALL ELECTRICAL FEEDERS AND BRANCH CIRCUITS WITHIN ELEVATOR MACHINE ROOMS SHALL BE ENCLOSED IN EMT WITH A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR.
11. LOCATE ALL SAFETY SWITCHES AND CIRCUIT BREAKERS ADJACENT TO THE DOOR OF THE ELEVATOR MACHINE ROOM. ALL SAFETY SWITCHES AND CIRCUIT BREAKERS SHALL BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION ONLY. PROVIDE CLEARANCE AROUND SAFETY SWITCHES AND CIRCUIT BREAKERS IN ACCORDANCE WITH NEC.
12. PROVIDE TWO 120V, 20A, SINGLE PHASE CIRCUITS PER CAR CONTROLLER FOR CAR LIGHT, FAN. PROVIDE LOCKABLE LOCK IN OPEN POSITION DISCONNECT SWITCH. INSTALL DISCONNECT IN GROUP WITH OTHER SERVICE ELEVATOR DISCONNECTS IN LOCATION BY THE ENTRY DOOR AS REQUIRED.
13. PROVIDE 120V, 15A 1-POLE CIRCUIT BREAKER CAPABLE OF BEING LOCKED IN OPEN POSITION AND SHALL BE LOCATED PER EQUIPMENT SUPPLIER LAYOUT. THIS POWER CIRCUIT SHALL BE DEDICATED FOR REMOTE MONITORING.
14. ONLY EQUIPMENT USED IN CONNECTION WITH THE FUNCTION OF THE ELEVATOR SHALL BE PERMITTED IN THE ELEVATOR CONTROL ROOM AND ELEVATOR MACHINE SPACES.
15. PROVIDE DEDICATED OUTSIDE TELEPHONE LINES TO EACH ELEVATOR MACHINE ROOM AS REQUIRED BY SECURITY AND SAFETY SYSTEM. COORDINATE QUANTITY AND LOCATIONS OF TELEPHONE LINES WITH SECURITY/SAFETY SYSTEM SUPPLIER/INSTALLER.
16. FOR HYDRAULIC ELEVATORS, PROVIDE (2) FIELD CONVERTIBLE AUXILIARY DRY CONTACTS INSTALLED IN MAIN LINE DISCONNECT SWITCH IN THE ELEVATOR MACHINE ROOM. COORDINATE CONTACT CONFIGURATIONS (NORMALLY OPEN, NORMALLY CLOSED) WITH ELEVATOR SUPPLIER/INSTALLER.
17. FOR HYDRAULIC ELEVATORS, PROVIDE 120V, 20A SINGLE PHASE WIRING TO BATTERY OPERATED EMERGENCY POWER SYSTEM.
18. PROVIDE WIRING IN 3/4"C FROM SMOKE DETECTOR SENSING DEVICE AUXILIARY CONTACTS TO THE ELEVATOR CONTROLLERS. COORDINATE THIS WORK WITH ELEVATOR EQUIPMENT SUPPLIER.
    - A. FOR EACH GROUP OF ELEVATORS PROVIDE NORMALLY CLOSED CONTACT REPRESENTING THE SMOKE DETECTOR AT THE DESIGNATED RETURN LANDING.
    - B. FOR EACH GROUP OF ELEVATORS PROVIDE NORMALLY CLOSED CONTACT REPRESENTING ALL SMOKE DETECTORS LOCATED IN ELEVATOR LOBBIES, ELEVATOR SHAFTS, ELEVATOR CONTROLLERS ROOM AND ELEVATOR MACHINE ROOM (SPACES). THIS SHALL BE PROVIDED SEPARATELY FROM THE SMOKE DETECTOR LOCATED AT DESIGNATED LANDINGS (SEE ABOVE).
    - C. COORDINATE WITH ELEVATOR SUPPLIER /INSTALLER EXACT REQUIREMENT FOR SMOKE DETECTORS CONTACTS CONFIGURATION AND CONNECTION AT DESIGNATED LANDING AND ALTERNATIVE LANDING IN RESPECT TO SMOKE DETECTORS LOCATED IN ELEVATOR SHAFT.
19. PROVIDE SHUNT TRIP CIRCUIT BREAKER AS SHOWN ON DRAWING TO SHUT DOWN THE TO AFFECTED ELEVATORS PRIOR TO THE APPLICATION OF SPRINKLER WATER. PROVIDE EACH SHUNT TRIP BREAKER WITH CONDUIT AND WIRING TO ASSOCIATED ELEVATOR CONTROLLERS.
20. PROVIDE 3/4" CONDUIT WITH PULL STRING FROM ELEVATOR MACHINE CONTROLLER TO CONTROL/INDICATOR PANEL REMOTELY LOCATED IN LOBBY. SEE ARCHITECTURAL PLANS FOR LOCATIONS AND ADDITIONAL INFORMATION.

COPPER WIRE & CONDUIT SIZING SCHEDULE

UNLESS OTHERWISE NOTED

AMPS	TAGS	WIRE SIZE (AWG/KCMIL)		NO. OF WIRES & CONDUIT SIZE (INCHES)			
		CONDUCTOR PHASE AND NEUTRAL	GROUND	A 1PH, 2W+G	B 1PH, 3W+G	C 3PH, 3W+G	D 3PH, 4W+G
15	1	14	14	3/4	3/4	3/4	3/4
20	2	12	12	3/4	3/4	3/4	3/4
30	3	10	10	3/4	3/4	3/4	3/4
50	4	8	10	3/4	3/4	3/4	3/4
65	5	6	10	3/4	1	1	1¼
85	6	4	8	1	1¼	1¼	1¼
100	7	3	8	1	1¼	1¼	1¼
115	8	2	6	1¼	1¼	1¼	1½
130	9	1	6	1¼	1½	1½	2
150	10	1/0	6	1¼	2	2	2
175	11	2/0	6	1½	2	2	2½
200	12	3/0	6	2	2	2	2½
230	13	4/0	4	2	2½	2½	2½
255	14	250	4	2	2½	2½	3
285	15	300	4	2½	3	3	3
310	16	350	4	2½	3	3	3
335	17	400	4	2½	3	3	3
380	18	500	3	3	3½	3½	4
420	19	600	3	3	3½	3½	4
460	20	(2) 4/0	(2) 2	–	2½	2½	2½
510	21	(2) 250	(2) 2	–	2½	2½	3
570	22	(2) 300	(2) 1	–	4	4	4
620	23	(2) 350	(2) 1	–	3	3	3
670	24	(2) 400	(2) 1/0	–	3	3	3
760	25	(2) 500	(2) 1/0	–	3½	3½	4
840	26	(2) 600	(2) 1/0	–	3½	3½	4
930	27	(3) 350	(3) 2/0	–	3	3	3
1005	28	(3) 400	(3) 2/0	–	3	3	3
1140	29	(3) 500	(3) 2/0	–	3½	3½	4
1260	30	[illegible]	[illegible]	–	3½	3½	4
1240	31	(4) 350	(4) 3/0	–	3	3	3
1340	32	(4) 400	(4) 4/0	–	3	3	3
1520	33	(4) 500	(4) 4/0	–	3½	3½	4

FEEDER SCHEDULE NOTES:

1. THE SCHEDULE IS BASED ON COPPER CONDUCTOR RATED 0-2000V WITH INSULATION LISTED IN NEC TABLE 310-16 FOR 75°C AMBIENT TEMPERATURE.

ⓍⒸ NUMBER INDICATES CONDUCTOR SIZE AND LETTER INDICATES THE CONDUIT SIZE.

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SEAL

KEYPLAN

REVISIONS

No.	Description
	100% CONST. DOCUMENTS
	95% CONST. DOCUMENTS
	50% CONST. DOCUMENTS
	100% DESIGN DEVELOPMEN
	50% DESIGN DEVELOPMEN

PROJECT NO.
W050002

SHEET TITLE
ELECTRI
RISER DIA

CONSTRUCT
DOCUMEN

SCALE: NONE

SHEET NO.
E.5-01

HELLMUTH, OBATA & KASSABAU

ELECTRICAL

SWITCHBOARD POWER AND DISTRIBUTION SCHEDULE

800A BUS, 460/265 VOLTAGE, 3 PHASE, 4 WIRES +G. U.O.N., 65KA AIC

SECTION	CKT. NO.	EQUIPMENT	LOAD (H.P.) KVA	BRANCH DEVICE FRAME (AMPS)	BRANCH DEVICE TRIP (AMPS)	BRANCH DEVICE POLES	FEEDER N=NEUTRAL, G=GROUND
TAP SECTION	TAP	FIRE PUMP	25	-	-	3	[illegible] N,G
	TAP	LIFE SAFETY	30	-	-	3	3/0 AWG, N,G
MAIN	MS	MAIN	-	800	800	3	N,G
DISTRIBUTION SECTION	1	CU-1	62	200	125	3	N,G
	2	PANEL LH	15	100	100	3	N,G
	3	PANEL MH	23	100	100	3	N,G
	4	TRANSFORMER/DP (75 KVA)	75	200	110	3	G
	5	M2 & M3 PANELS	116	250	250	3	N,G
	6	ELEVATOR W/SHUNT TRIP	58	100	110	3	4/0 AWG, 4/0 N, G
	7	SPARE	-	100	100	3	N,G
	8	SPACE	-	-	-	3	N,G
	9	SPACE	-	-	-	3	-
	10	SPACE	-	-	-	3	
	11	SPACE	-	-	-	3	
	12	SPACE	-	-	-	3	
	13	SPACE	-	-	-	3	
	14	SPACE	-	-	-	3	
		TOTAL CONNECTED LOAD	384				

PANEL: M2
LOCATION: LEVEL 2
BUILDING: -
FED FROM: SWITCHBOARD
FEEDER SIZE: SEE RISER

265/460 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 250 AMPS
MAIN BRK 250 AMPS - P
NEUTRAL - AIC 25KA
☒ LUGS ONLY
FEED: ☐ TOP ☒ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	VAV 1-2	3.0	5.0			2.0	VAV 1-5	20	2
3			3.0		5.0		2.0			4
5	20	VAV 1-4	3.0			5.0	2.0	VAV 2-4	20	6
7	20	VAV 1-6	3.8	5.8			2.0	VAV 1-8	20	8
9			3.8		5.8		2.0			10
11	20	VAV 1-10	3.0			5.0	2.0	VAV 2-2	20	12
13			3.0	6.0			3.0	VAV 2-3	20	14
15	20	VAV 1-11	3.0		6.0		3.0	VAV 2-6	20	16
17			3.0			6.0	3.0			18
19	20	VAV 1-7	2.5	2.5			-	SPARE	20	20
21			2.5		3.5		1.0	VAV 2-1	20	22
23	20	VAV 1-9	3.0			3.0	3.0	VAV 2-5	20	24
25			3.0	3.0			-	-	-	26
27	-	-	-		-		-	-	-	28
29	-	-	-			-	-	-	-	30
31	-	-	-	-			-	-	-	32
33	-	-	-		-		-	-	-	34
35	20	WALL HEATER 1.S2	1.0			1.0	-	-	-	36
37	20	WALL HEATER 1.S3	1.0	1.0			-	-	-	38
39	20	VAV 1-3 •	2.0		2.0		-	-	-	40
41			2.0			2.0	-	-	-	42
CONNECTED LOAD TOTAL = 63.6			33.4	-	-	-	30.0			

TOTAL CONNECTED FOR TWO PANELS = 145.9
TOTAL MECHANICAL 116 X 1.0 DEM= 116
TOTAL DEMAND 116 + 25% LARGEST= 119
TOTAL LOAD 119 KVA 150 AMPS

PANEL: M3
LOCATION: LEVEL 3
BUILDING: -
FED FROM: M2
FEEDER SIZE: SEE RISER

265/460 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 250 AMPS
MAIN BRK 250 AMPS - P
NEUTRAL - AIC 25KA
☒ LUGS ONLY
FEED: ☐ TOP ☒ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	30	AHU-1	3.7	8.7			5.0	VAV 3-1	25	2
3			3.7		8.7		5.0			4
5			3.7			8.7	5.0			6
7	20	RF-1	2.9	7.9			5.0	VAV 3-2	25	8
9			2.9		7.9		5.0			10
11			2.9			7.9	5.0			12
13	20	UH-1	3.0	3.0			-	-	-	14
15	-	-	-		-		-	-	-	16
17	-	-	-			-	-	-	-	18
19	-	-	-	-			-	-	-	20
21	-	-	-		-		-	-	-	22
23	-	-	-			-	-	-	-	24
25	-	-	-	-			-	-	-	26
27	-	-	-		-		-	-	-	28
29	-	-	-			-	-	-	-	30
19	-	-	-	-			-	-	-	20
21	-	-	-		-		-	-	-	22
23	-	-	-			-	-	-	-	24
25	-	-	-	-			-	-	-	26
27	-	-	-		-		-	-	-	28
29	-	-	-			-	-	-	-	30
CONNECTED LOAD TOTAL = 49.8			19.2	16.6	16.6	16.6	30.0			

PANEL: PL1
LOCATION: 1ST FLOOR
BUILDING: -
FED FROM: DP
FEEDER SIZE: SEE RISER

120/208 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☐ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 100 AMPS
MAIN BRK 100 AMPS - P
NEUTRAL 100% X AIC 10KA
☒ LUGS ONLY
FEED: ☐ TOP ☐ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	FELLOWSHIP ROOM DOWNLIGHTS	0.5	1.3			0.8	REFRIGERATOR	20	2
3	20	ENTRY ROOM DOWNLIGHTS & WW	0.7		2.1		1.4	DISHWASHER	20	4
5	20	RECEPTACLES	1.1			2.1	1.0	DISPOSER	20	6
7	20	RECEPTACLES	1.1	2.0			0.9	MICROWAVE	20	8
9	20	RECEPTACLES	1.1		2.4		1.3	COFFEE MAKER	20	10
11	20	RECEPTACLES	1.1			2.1	0.7	ABOVE COUNTER RECEPTACLES	20	12
13	20	RECEPTACLES	1.1	1.4			0.3	VAV ACTUATORS	20	14
15	20	RECEPTACLES	1.1		1.6		0.5	VAV ACTUATORS	20	16
17	20	RECEPTACLES	1.1			1.4	0.3	VAV ACTUATORS	20	18
19	20	RECEPTACLES	1.1	1.6			0.5	DATA ROOM RECEPTACLE	20	20
21	20	DISPLAY & POKE-THRU RECEPT.	0.8		1.1		0.3	DATA ROOM QUAD	20	22
23	20	OFFICE RECEPTACLE	0.7			1.2	0.5	DATA ROOM SPECIAL RECEPTACLE	20	24
25	20	OFFICE RECEPTACLE	0.7	1.2			0.5			26
27	20	WATER HEATER	1.5		1.8		0.3	SECURITY BACKBOARD QUAD	20	28
29			1.5			1.8	0.3	TELEPHONE BACKBOARD QUAD	20	30
31	20	WATER HEATER	1.5	2.0			0.5	HVAC CONTROL PANEL	20	32
33			1.5		-		-	-	-	34
35	-	-	-			-	-	-	-	36
37	-	-	-	-			-	-	-	38
39	-	-	-		-		-	-	-	40
41	-	-	-			-	-	-	-	42
CONNECTED LOAD TOTAL = 23.3 KVA			12.2	8.6	7.5	7.8	10.1			

TOTAL LIGHTING 1.2 X 1.0 DEM= 1.2
TOTAL RECEPTACLES 14.6 X DEM 12.3
MISCELLANEOUS 7.0 X 1.0 DEM = 7.0
TOTAL DEMAND 20.5 X 1.25 SPARE= 25.6
TOTAL LOAD 25.6 KVA 71.2 AMPS

PANEL: EM
LOCATION: MAIN ELEC. ROOM
BUILDING: -
FED FROM: EMERGENCY DP
FEEDER SIZE: SEE RISER

265/460 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 100 AMPS
MAIN BRK 100 AMPS - P
NEUTRAL 100% AIC 35KA
☒ LUGS ONLY
FEED: ☐ TOP ☒ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	30	DRY PIPE COMPRESSOR	0.6	3.1			2.5	STORM SUMP PUMP	20	2
3			0.6		3.1		2.5			4
5			0.6			3.1	2.5			6
7	20	GARAGE DOOR (1.5HP)	0.8	4.8			4.0	SEWAGE EJECTOR	20	8
9			0.8		4.8		4.0			10
11			0.8			4.8	4.0			12
13	30	SPARE	-	-			-	-	-	14
15			-		-		-	-	-	16
17			-			-	-	-	-	18
19	-	-	-	-			-	-	-	20
21	-	-	-		-		-	-	-	22
23	-	-	-			-	-	-	-	24
25	-	-	-	-			-	-	-	26
27	-	-	-		-		-	-	-	28
29	-	-	-			-	-	-	-	30
CONNECTED LOAD TOTAL = 23.7 KVA			[illegible]	-	-	-	19.5			

TOTAL MECHANICAL 23.7 X 1.0 DEM= 23.7
TOTAL RECEPTACLES - X DEM -
TOTAL DEMAND 23.7 + 25% LARGEST = 28
TOTAL LOAD 28 KVA 35 AMPS

PANEL: LH
LOCATION: PARKING LEVEL 1
BUILDING: -
FED FROM: SWITCHBOARD
FEEDER SIZE: SEE RISER

265/460 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 100 AMPS
MAIN BRK 100 AMPS - P
NEUTRAL - AIC 35KA
☒ LUGS ONLY
FEED: ☐ TOP ☒ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	PARKING LEVEL LIGHTING	1.4	-			0.8	1ST LEVEL EXTERIOR LIGHTING	20	2
3	20	PARKING LEVEL LIGHTING	1.6		-		0.4	SPARE	20	4
5	20	STAIR LIGHTING PS.1	0.6			-	0.7	3RD LEVEL LIGHTING	20	6
7	20	STAIR LIGHTING PS.2 & PS.3	0.5	-			-	-	-	8
9	20	MAIN ELECTRICAL ROOM LIGHTING	0.8		-		-	-	-	10
11	20	1ST LEVEL LIGHTING	0.9			-	-	-	-	12
13	20	1ST LEVEL LIGHTING	2.6	-			-	-	-	14
15	20	2ND LEVEL LIGHTING	2.5		-		-	-	-	16
17	20	2ND LEVEL LIGHTING (CORRIDOR)	0.5			-	-	-	-	18
19	-	-	-	-			-	-	-	20
21	-	-	-		-		-	-	-	22
23	-	-	-			-	-	-	-	24
25	-	-	-	-			-	-	-	26
27	-	-	-		-		-	-	-	28
29	-	-	-			-	-	-	-	30
CONNECTED LOAD TOTAL = 14 KVA			11.8				1.9			

TOTAL LIGHTING 14 X 1.0 DEM= 14
TOTAL RECEPTACLES - X DEM -
TOTAL DEMAND 14 X 1.25 SPARE= 17.5
TOTAL LOAD 17.5 KVA 22 AMPS

PANEL: PL
LOCATION: MAIN ELEC. ROOM
BUILDING: BUDDHIST CULTURAL CENTER
FED FROM: DP
FEEDER SIZE: SEE RISER

120/208 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☐ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 100 AMPS
MAIN BRK 100 AMPS - P
NEUTRAL 100% AIC 10KA
☒ LUGS ONLY
FEED: ☐ TOP ☐ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	WATER FOUNTAIN CONTROL PANEL	1.2	2.1			0.9	PARKING LEVEL RECEPTACLES	20	2
3			1.2		2.3		1.1	PARKING LEVEL RECEPTACLES	20	4
5			1.2			2.4	0.7	PARKING LEVEL RECEPTACLES	20	6
7	20	EXTERIOR POOL LIGHTS	0.1	0.6			0.5	MAIN ELEC. ROOM EXH. FAN 1/8hp	20	8
9	20	EXTERIOR SIGN & FLAG LIGHTS	0.2		-		-	-	-	10
11	20	EXTERIOR DRIVEWAY ISLE LIGHTS	0.4			-	-	-	-	12
13	20	EXTERIOR FRONT FACADE LIGHTS	0.4	-			-	-	-	14
15	-	-	-		-		-	-	-	16
17	-	-	-			-	-	-	-	18
19	-	-	-	-			-	-	-	20
21	-	-	-		-		-	-	-	22
23	-	-	-			-	-	-	-	24
25	-	-	-	-			-	-	-	26
27	-	-	-		-		-	-	-	28
29	-	-	-			-	-	-	-	30
CONNECTED LOAD TOTAL = 7.3 KVA			3.6	2.6	2.3	2.4	3.2			

TOTAL LIGHTING 3.6 X 1.0 DEM= 3.6
TOTAL RECEPTACLES 3.7 X DEM 3.7
TOTAL DEMAND 7.3 X 1.25 SPARE= 9.2
TOTAL LOAD 9.2 KVA 25 AMPS

PANEL: PL2
LOCATION: 2ND FLOOR
BUILDING: -
FED FROM: DP
FEEDER SIZE: SEE RISER

120/208 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☐ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 100 AMPS
MAIN BRK 100 AMPS - P
NEUTRAL 100% AIC 10KA
☒ LUGS ONLY
FEED: ☐ TOP ☐ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	SMALL STUDY DOWNLIGHTING	0.3	0.7			0.4	RECEPTACLE IN MECHANICAL ROOM	20	2
3	20	RECEPTACLES	0.4		1.5		1.1	TEF-1 IN MECH. RM.	20	4
5	20	RECEPTACLES	0.4			0.9	0.5	DH-1 CONTROLS IN MECH. RM.	20	6
7	20	RECEPTACLES	0.9	1.4			0.5	VAV ACTUATOR IN MECH. RM.	20	8
9	20	RECEPTACLES	0.5		0.9		0.4	RECEPTACLE IN MECHANICAL ROOM	20	10
11	20	RECEPTACLES	1.1			1.1	-	-	-	12
13	20	RECEPTACLES	1.1	1.1			-	-	-	14
15	20	RECEPTACLES	1.3		1.3		-	-	-	16
17	20	WATER FOUNTAIN	0.7			0.7	-	-	-	18
19	20	OVERHEAD PROJECTOR	1.5	1.5			-	-	-	20
21	20	2ND LEVEL ACTUATORS	0.2		-		-	-	-	22
23	-	-	-			-	-	-	-	24
25	-	-	-	3.1			3.1	LUTRON DIMMING PANEL	60	26
27	-	-	-		2.5		2.5			28
29	-	-	-			2.6	2.6			30
CONNECTED LOAD TOTAL = 18.9 KVA			8.2	7.8	6.2	5.3	10.7			

TOTAL LIGHTING 9 X 1.0 DEM= 9
TOTAL RECEPTACLES 5.9 X DEM 5.9
TOTAL DEMAND 19.1 X 1.25 SPARE= 24
TOTAL LOAD 24 KVA 67 AMPS

PANEL: MH
LOCATION: MAIN ELEC. ROOM
BUILDING: -
FED FROM: SWBD
FEEDER SIZE: SEE RISER

265/460 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 100 AMPS
MAIN BRK 100 AMPS - P
NEUTRAL 100% AIC 35KA
☒ LUGS ONLY
FEED: ☐ TOP ☒ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	EXHAUST FAN	1.0	3.1			2.0	UH-1	20	2
3			1.0		3.1		-	SPARE	20	4
5			1.0			3.1	-	SPARE	20	6
7	20	WALL HEATER	1.5	5.5			4	DOMESTIC BOOSTER PUMPS	20	8
9	20	WALL HEATER	1.5		5.5		4			10
11	20	WALL HEATER	1.5			5.5	4			12
13	20	SPARE	-	-			-	-	-	14
15	20	SPARE	-		-		-	-	-	16
17	20	SPARE	-			-	-	-	-	18
19	-	-	-	-			-	-	-	20
21	-	-	-		-		-	-	-	22
23	-	-	-			-	-	-	-	24
25	-	-	-	-			-	-	-	26
27	-		-		-		-	-	-	28
29	-		-			-	-	-	-	30
CONNECTED LOAD TOTAL = 22.5 KVA			7.5	-	-	-	15			

TOTAL MECHANICAL 22.5 X 1.0 DEM= 22.5
TOTAL RECEPTACLES - X DEM -
TOTAL DEMAND 22.5 + 25% LARGEST= 28
TOTAL LOAD 28 KVA 35 AMPS

PANEL: ELP
LOCATION: MAIN ELEC. ROOM
BUILDING: -
FED FROM: ELH VIA 30 KVA XFMR
FEEDER SIZE: SEE RISER

120/208 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 60 AMPS
MAIN BRK 60 AMPS 3 P
NEUTRAL 100% AIC 10KA
☐ LUGS ONLY
FEED: ☒ TOP ☐ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	EMERGENCY LIGHTS-SANCTUARY	0.3	0.8			0.5	SECURITY SYSTEM	20	2
3	20	ELEVATOR PIT SUMP PUMP	1.2		1.2		-	-	-	4
5	20	ELEVATOR PIT LIGHTS	0.4			0.4	-	-	-	6
7	20	ELEVATOR CAB LIGHTS.	0.2	0.2			-	-	-	8
9	20	ELEVATOR CAB LIGHTS	0.2		0.2		-	-	-	10
11	-	-	-			-	-	-	-	12
CONNECTED LOAD TOTAL = 2.8 KVA			2.3	1.0	1.4	0.4	0.5			

TOTAL LIGHTING 3 X 1.0 DEM= 3
TOTAL RECEPTACLES - X DEM -
TOTAL DEMAND 3 X 1.25 SPARE= 4
TOTAL LOAD 4 KVA 11 AMPS

PANEL: ELH
LOCATION: MAIN ELEC. ROOM
BUILDING: -
FED FROM: TAP SECTION
FEEDER SIZE: SEE RISER

277/480 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 60 AMPS
MAIN BRK 60 AMPS 3 P
NEUTRAL 100% AIC 25KA
☐ LUGS ONLY
FEED: ☒ TOP ☐ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	20	PARKING LEVEL LIGHTING	0.8	-			0.8	INVERTER UPS 1.5- 2KVA	20	2
3	20	ELEVATOR MACHINE ROOM LIGHTING	0.1		-		0.8		20	4
5	20	STAIR EMERGENCY LIGHTS PS.1	0.1			-	-	-	-	6
7	20	STAIR EMERG. LIGHTS PS.2 & PS.3	0.3	-			5	PANEL ELP VIA 30 KVA XFMR	25	8
9	20	1ST LEVEL EMERGENCY LIGHTING	0.7		-		5			10
11	20	2ND LEVEL EMERGENCY LIGHTING	0.3			-	5			12
13	-	SPACE	-	-			-	SPACE	-	14
15	-	SPACE	-		-		-	SPACE	-	16
17	-	SPACE	-			-	-	SPACE	-	18
CONNECTED LOAD TOTAL = 18.7 KVA			2.3				16.4			

TOTAL LIGHTING 8 X 1.0 DEM= 8
TOTAL RECEPTACLES - X DEM -
TOTAL DEMAND 8 X 1.25 SPARE= 10
TOTAL LOAD 10 KVA 12 AMPS

PANEL: LUTRON DIMMING PANEL
LOCATION: 2ND FLOOR
BUILDING: -
FED FROM: DP
FEEDER SIZE: SEE RISER

120/208 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☐ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 30 AMPS
MAIN BRK 30 AMPS 3 P
NEUTRAL 100% AIC 10KA
☒ LUGS ONLY
FEED: ☐ TOP ☐ BOTTOM

CKT. NO.	TRIP AMPS	LOAD TYPE	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	LOAD TYPE	TRIP AMPS	CKT. NO.
1	15	MOTOR -	PROJ. LOWER. MECHANISM	0.5	1.3			0.8	FIXTURE TYPE J	INCAND. PAR 38	15	2
3	15	MOTOR -	PROJ. SCREEN	0.5		1.3		0.8	FIXTURE TYPE J	INCAND. PAR 38	15	4
5	20	FLUOR. CL	FIXTURE TYPE G	1.3			1.8	0.5	FIXTURE TYPE X	INCAND. MR16	15	6
7	20	FLUOR. CL	FIXTURE TYPE G	1.3	1.8			0.5	FIXTURE TYPE X	INCAND. MR16	15	8
9	15	FLUOR. CL	FIXTURE TYPE G	0.4		1.2		0.8	FIXTURE TYPE H	INCAND. PAR 38	15	10
11	15	-	SPARE	-			0.8	0.8	FIXTURE TYPE H	INCAND. PAR 38	15	12
CONNECTED LOAD TOTAL = 8.2 KVA				4.0	3.1	2.5	2.6	4.2				

TOTAL LIGHTING 8.2 X 1.0 DEM= 8.2
TOTAL DEMAND 8.2 X 1.25 SPARE= 10.3
TOTAL LOAD 10.3 KVA 29 AMPS

PANEL: DP
LOCATION: PARKING LEVEL 1
BUILDING: -
FED FROM: SWITCHBOARD VIA 75KVA XFMR
FEEDER SIZE: SEE RISER

120/208 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☒ FLUSH
COPPER BUS ☒ ALUMINUM BUS ☐
ISOLATED GROUND BUS ☐
GROUND BUS ☒ • SHUNT TRIP BRKR

MAIN BUS 250 AMPS
MAIN BRK 250 AMPS 3 P
NEUTRAL - AIC 42KA
☐ LUGS ONLY
FEED: ☒ TOP ☐ BOTTOM

CKT. NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE (KVA) A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP AMPS	CKT. NO.
1	100	PANEL PL	3	-			7	PANEL PL2	100	2
3			3		-		7			4
5			3			-	7			6
7	100	PANEL PL1	8	-			4	LUTRON DIMMING PANEL	30	8
9			8		-		4			10
11			8			-	4			12
13	-	-	-	-			-	-	-	14
15	-	-	-		-		-	-	-	16
17	-	-	-			-	-	-	-	18
19	-	-	-	-			-	-	-	20
21	-	-	-		-		-	-	-	22
23	-	-	-			-	-	-	-	24
CONNECTED LOAD TOTAL = 66 KVA			33				33			

TOTAL ALL [illegible] X 1.0 DEM= [illegible]
TOTAL RECEPTACLES [illegible] X DEM [illegible]
TOTAL DEMAND 50 X 1.25 SPARE= 63
TOTAL LOAD 63 KVA 175 AMPS

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CENTER
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REGISTERED PROFESSIONAL ENGINEER
6/30/06

KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	90% CONST. DOCUMENTS	05/16/06
	50% CONST. DOCUMENTS	03/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
ELECTRICAL
PANEL SCHEDULES

CONSTRUCTION
DOCUMENTS

SCALE: NONE
SHEET NO. E.6-00
REVISION

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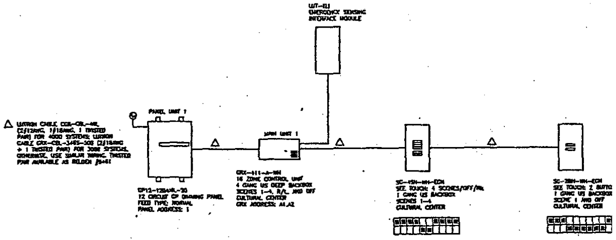
ELECTRICAL

FIXT. TYPE	DESCRIPTION	LAMPS NO.	LAMPS WATTS	LAMPS SHAPE	LAMPS COLOR	BALLAST NO.	BALLAST INTEGRAL	BALLAST REMOTE	VOLTAGE	MANUFACTURER	CATALOG NUMBER	REMARKS
A	RECESSED FLUORESCENT LINEAR TROFFER 2.75" X 4'	1	28	T5	3000	1	-	-	277	GAMMALUX -	GIESORC 128T5 277V ERS REC AS, WH BPE	PROVIDE LENGTHS AS SHOWN ON DRAWINGS. PROVIDE BATTERY BALLAST AS INDICATED ON DRAWINGS. G-BEAM RECESSED SERIES, DIRECT ILLUMINATION. "EM" - FIXTURE TO BE EQUIPPED WITH EMERGENCY BATTERY PACK
ALT 1										ZUMTOBEL STAFF -	L28FF-1285-OLP-277 -	
ALT 2												
B	2' X 2' INDIRECT FLUORESCENT TROFFER	2	40	U4T5	3000	1	-	-	277	LIGHTOLIER -	0VS2G2D0S2U4277SB (-G AS REQUIRED)	PROVIDE BATTERY BALLAST AS INDICATED ON DRAWINGS. 2'X2' INDIRECT TROFFER "EM" - FIXTURE TO BE EQUIPPED WITH EMERGENCY BATTERY PACK
ALT 1										COOPER LIGHTING NEORAY (FENESTRA)	222AR/2TSEDCI277VEB DU (-EM AS NOTED)	
ALT 2										ZUMTOBEL STAFF -	RCPU 22 240S HD W U (-EM AS NOTED)	
C	4 1/2" INCAND. WALLWASHER	1	75	PAR30 NFL HALOGEN	-	-	-	-	120V	KURT VERSEN -	H8431 -	4 1/2" SQUARE FULLY RECESSED PAR LENSED WALLWASHER.
ALT 1										KRAMER LIGHTING -	KL4507SPAR30CL3WCL CFF	
ALT 2												
D	4 1/2" INCANDESCENT DOWNLIGHT	1	100W	BT-15 HALOGEN	-	-	-	-	120V	KURT VERSEN -	H8415 150W/BT-15 HALOGEN	4 1/2" SQUARE FULLY RECESSED WIDE ANGLE HALOGEN DOWNLIGHT
ALT 1										KRAMER LIGHTING -	KL4501008T15SCLCFF	
ALT 2												
F	FLUORESCENT STRIP FIXTURE	1	28	T5	3000	-	-	-	277	BARTCO LIGHTING -	BFL5M-28/277/CU 28WT5 46 1/16"	BARE LAMP LINEAR T5 FLUORESCENT WITH INTEGRAL BALLAST.
ALT 1										NULITE	NS128T5 (1)FP28T5 46 1/8"	
ALT 2										LIGHTOLIER	SN128T5 (1)FP28T5 46 1/8"	
G	LINEAR FLUORESCENT PRISMATIC	2	28	T5	3000	-	-	-	120	ZUMTOBEL STAFF -	LFS 2281 4WP U (*) "LIGHT FIELDS"	11 3/4" LINEAR FULLY RECESSED LENSED FLUORESCENT WITH MICRO-PYRAMIDAL DIFFUSER AND DIMMING BALLASTS. SUSPENDED FIXTURE TYPE. PROVIDE UNISTRUT TO SUSPEND FIXTURE AROUND DUCTS. (*) LENGTH [illegible]
ALT 1												
ALT 2												
H	6" INCANDESCENT DOWNLIGHT ADJUSTABLE ANGLE	1	150	PAR 38	-	-	-	-	120	KURT VERSEN -	H8638	6" SQUARE FULLY RECESSED PAR38 ADJUSTABLE ANGLE DOWNLIGHT
ALT 1										KRAMER LIGHTING -	KL650150PAR38AG3SGC LCFF	
ALT 2												
J	6" INCANDESCENT DOWNLIGHT NARROW ANGLE	1	120	PAR 38 FL	-	-	-	-	120	KURT VERSEN -	H8634	6" SQUARE FULLY RECESSED PAR38 NARROW ANGLE DOWNLIGHT
ALT 1										KRAMER LIGHTING -	KL650250PAR38SCCFF 120-SPX	
ALT 2												
K	GLOWING PENDANT	1	60W	E14	-	-	-	-	120V	STENG -	TUBOLARE 60	3.5" DIAMETER BY 23.8" GLOWING PENDANT MOUNTED CYLINDER
ALT 1										SCHMITZ LIGHTING -	28983.06/3832	
ALT 2												
L	6" FLUORESCENT DOWNLIGHT	1	26W	TRIPLE TUBE	3000	1	YES	-	277	KURT VERSEN -	H8432-MP	6" SQUARE FULLY RECESSED MEDIUM LENSED COMPACT FLUORESCENT DOWNLIGHT
ALT 1										LIGHTOLIER -	4X6PLCCLP	
ALT 2										KRAMER -	KL650X26PLT2SCCFFU	
M	FLUORESCENT WALL SCONCE	1	24/27W	TWIN TUBE	3000	1	YES	-	277	LIGHTOLIER -	40631U-HPF ELECTRONIC 277V	WALL SCONCE WITH "CERAMIC WHITE" SILK SCREENED AND SANDBLASTED LIGHT SHIELD.
ALT 1										SCHMITZ LIGHTING -	18784.01/2705	
ALT 2												
N	FLUORESCENT STRIP	2	64	T8	3000	2	YES	-	277	LIGHTOLIER OR APPROVED EQUAL	SN4S232MPF ANGIW CSP	PARKING LEVEL LIGHTING. PROVIDE WIRE GUARD W/ 8' BALLASTS "EM" - FIXTURE TO BE EQUIPPED WITH EMERGENCY BATTERY PACK
ALT 1										METALUX -	SS232-277V-EB8-WG/SS-4FT	
ALT 2										COLUMBIA -	CS4232-C58G4	
P	WALL MOUNTED FLUORESCENT STAIR LIGHT	2	32	T8	3000	2	NO	-	277	LIGHTOLIER OR APPROVED EQUAL	LSW4132227TSB	DUAL MOUNTABLE STAIR LIGHT.
ALT 1										NULITE -	17-232 2-F32T8-4'	
ALT 2										- -	-	
Q	FLUORESCENT WRAP AROUND	2	32	T8	3500	2	YES	-	277	LIGHTOLIER OR APPROVED EQUAL	CW815FSML2321205D	FOR USE IN MECH. ROOM AND MAIN ELECTRIC ROOM. SPECIFIED W/ WIRE GUARD "EM" - FIXTURE TO BE EQUIPPED WITH EMERGENCY BATTERY PACK
ALT 1										FAILSAFE -	WM232 ACIF187 277 2R2	
ALT 2										- -	-	
R	WEATHERPROOF WALL MTD WALL MTD. STRIP SEALATRON	2	32	T8	3500	2	YES	-	277	LIGHTOLIER OR APPROVED EQUAL	ST4RA232	SUITABLE FOR WET LOCATION LISTED
ALT 1										PHOENIX -	LFSR 232 277 60HZ	
ALT 2										NULITE -	FG-232	
OF	EXTERIOR SPOT LIGHT	1	50W	MR16 OR 12V NARROW FLOOD	-	-	-	-	12V/120V	COOPER LUMIERE -	CAMBRIA 355 120V -	EXTERIOR SURFACE MOUNTED SPOT-LIGHT, DARK PLATINUM
ALT 1										B-K LIGHTING -	BA-5-BLP-13-B	
ALT 2										- -		
OG	EXTERIOR UPLIGHT	1	50W	MR16 WFL(FL36)	-	-	-	-	120V	COOPER LUMIERE -	BOCA 633-50 MR16 -120/12HER-TNW	FULLY RECESSED EXTERIOR ADJUSTABLE ANGLE UPLIGHT ADJUSTABLE ANGLE UPLIGHT
ALT 1										B-K LIGHTING -	B-HPZ-WATR-9-120V	
ALT 2										LUMASCAPE -	LS393	
OH	EXTERIOR WALL SCONCE	2	13W	CF	3000	-	-	-	277V	WINONA AARON -	3704-WL-F-277V OA-LBP-STD	EXTERIOR SURFACE MOUNTED WALL SCONCE WITH OPAL ACRYLIC LENS DARK PLATINUM W/ GBALLAST
ALT 1										VISA LIGHTING -	COLONNADE OW1054-30T13-277V OP.	
ALT 2										SHAPER -	623-WP-1(ECFL/2/26 2HTB/2VTB-BM	
OI	EXTERIOR WALL SCONCE	1	50W	MH	3000	-	-	-	277V	SHAPER -	682-WP-11-MH/1/50 277V-OP	EXTERIOR SURFACE MOUNTED WALL SCONCE WITH ONLY DOWNLIGHT COMPONENT-DARK PLATINUM
ALT 1										- -	-	
ALT 2										- -	-	
OK	EXTERIOR BOLLARD	1	32W	MH	3000	-	-	-	120V	SHAPER -	9KI-MP-1CFL-1 277V OP	EXTERIOR BOLLARD WITH DOWNLIGHT COMPONENT ONLY. DARK PLATINUM.
ALT 1										- -	-	
ALT 2										- -	-	
OM	EXTERIOR FLOOD LIGHT	1	50W	Q50T4	3000	-	-	-	12V/120V	COOPER LUMIERE -	CARMEL 403-BLACK-FS1	EXTERIOR SURFACE MOUNTED LOW VOLTAGE FLOOD LIGHT WITH REMOTE LOW VOLTAGE TRANSFORMER.
ALT 1										B-K LIGHTING -	SARASOTA SA-FL-65-BLP-13	
ALT 2										BEGA	7503-BLACK	

FIXT. TYPE	DESCRIPTION	LAMPS NO.	LAMPS WATTS	LAMPS SHAPE	LAMPS COLOR	BALLAST NO.	BALLAST INTEGRAL	BALLAST REMOTE	VOLTAGE	MANUFACTURER	CATALOG NUMBER	REMARKS
OM-1	EXTERIOR FLOOD LIGHT	1	50W	Q50T4	3000	-	-	-	12V/120V	COOPER LUMIERE -	CARMEL 403-BRONZE-CSB3	EXTERIOR SURFACE MOUNTED LOW VOLTAGE FLOOD LIGHT WITH REMOTE LOW VOLTAGE TRANSFORMER.
ALT 1										B-K LIGHTING -	SARASOTA SA-FL-65-BZP-13	
ALT 2												
OP	RECESSED POOL UPLIGHT	1	75W	75JT4 MINI-CAN QUARTZ	3000	-	-	-	12V/120V	HYDREL -	4800-BO-8-75T4-12-FL-MM-35'	FULLY RECESSED POOL UPLIGHT. BRUSHED STAINLESS STEEL FINISH
ALT 1										LUMASCAPE -	LS 222 MRS-2 -	
ALT 2												
OS	SMALL RECESSED STEP LIGHT	1	35W OR 7W	12VT4 OR CF	3000	-	-	-	12V/277V	COOPER LUMIERE -	ZUMA 1201-GRAY -	GRAY LOUVERED FACE PLATE
ALT 1										C.W. COLE -	F137-W-GRAY-277V -	
ALT 2										HUBBELL -	F811 -	
EP	ELEVATOR PIT LIGHT	1	18W	QUAD CF	3000	-	-	-	120V	HUBBELL LIGHTING OR APPROVED EQUAL	NVGA18CF -	WITH GLOBE AND WIREGUARD
ALT 1										PHOENIX -	VPC 18CFL -	
ALT 2												
	EMERGENCY LIGHTING WALL PACK	-	11	-	-	1	YES	-	120/277	LIGHTOLIER	ES SERIES WHITE	DUAL HEAD THERMOPLASTIC WALL PACK
ALT 1										HIGHLITES -	HL-90-OL -	
ALT 2										SURE LITES -	CC3-WC -	
	WALL MOUNTED MOTION SENSOR	-	-	-	-	-	-	-	120/277	WATTSTOPPER	WS-200	PASSIVE INFRARED DETECTOR
ALT 1										SENSOR SWITCH -	WSD -	
ALT 2												
DT	CEILING MOUNTED MOTION SENSOR-DUAL TECHNOLOGY	-	-	-	-	-	-	-	120/277	WATTSTOPPER	DT-355 SERIES	PASSIVE INFRARED AND ULTRASONIC DETECTOR
ALT 1										SENSOR SWITCH -	WV-PDT -	
ALT 2												
	EXIT LIGHT	-	3.2	-	-	1	YES	-	120/277	LIGHTOLIER OR APPROVED EQUAL	TX SERIES W/NiCd BATTERY	LED EXIT SIGNAGE, RED LETTERS ON WHITE BACKGROUND.
ALT 1										- -	- -	
ALT 2												



LUTRON MODEL NO.	DEVICE NAME	ADDRESS	DESCRIPTION	FUNCTION	LOCATION	NOTES
GP12-1204ML-20	DEVICE NAME	ADDRESS	120/208V, 3φ-4 WIRE MAIN LUGS GP DIMMING PANEL, CONTAINING 1 20A-1POLE BRANCH BREAKER RATED AT 10,000AIC FOR EACH OF THE 12 DIMMING CIRCUITS. MAX INPUT FEED - 80A			
GRX-4116-A-WH	MAIN UNIT 1	A1,A2	16 ZONE GRAFIK EYE 4000 CONTROL UNIT WITH OPAQUE TOP COVER. FOR USE WITH LUTRON GP, LP, AND XP POWER PANELS. 4 GANG US BACKBOX.	SCENES 1-4, R/L, AND OFF		
SG-4SN-WH-EGN		GRX WS 1	SEE TOUCH SERIES GRAFIK EYE WALLSTATION. RECALLS PRESET LIGHT LEVELS FOR UP TO 4 SCENES PLUS OFF. FINE-TUNING OF LIGHT LEVELS WITH MASTER RAISE/LOWER. NONINSERT VERSION; OPTIONAL BACKLIGHTING. 1 GANG US BACKBOX.	SCENES 1-4		
SG-2BN-WH-EGN		GRX WS 2	SEE TOUCH SERIES GRAFIK EYE WALLSTATION, 2-BUTTON CONTROL. CAN BE CONFIGURED TO SELECT SCENES, TOGGLE PARTITION STATUS, START AND STOP SEQUENCES, INITIATE A PANIC FUNCTION, OR FINE TUNE LIGHTING. NONINSERT VERSION; OPTIONAL BACKLIGHTING. 1 GANG US BACKBOX	SCENES 1 AND OFF		
LUT-ELI			EMERGENCY SENSING INTERFACE MODULE.			
APPROVED ALTERNATE DIMMING SYSTEM: ELECTRONICS DIVERSIFIED. ALTERNATE SYSTEM PROVIDED SHALL BE SIMILAR TO THE LUTRON SYSTEM SHOWN. SUBMIT FOR APPROVAL. OPTIONAL BACKLIGHTING. 1 GANG US BACKBOX						

① LUTRON GRAFIK EYE 4000 SERIES DIMMING SYSTEM

SCALE: N.T.S.

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KEYPLAN

REVISIONS

No.	Description	
	100% CONST. DOCUMENTS	06
	90% CONST. DOCUMENTS	06
	50% CONST. DOCUMENTS	05
	100% DESIGN DEVELOPMENT	02
	50% DESIGN DEVELOPMENT	12

PROJECT NO.
W050002
DATE:
06

SHEET TITLE
ELECTRICAL
SCHEDULE & NC

CONSTRUCTION
DOCUMENTS

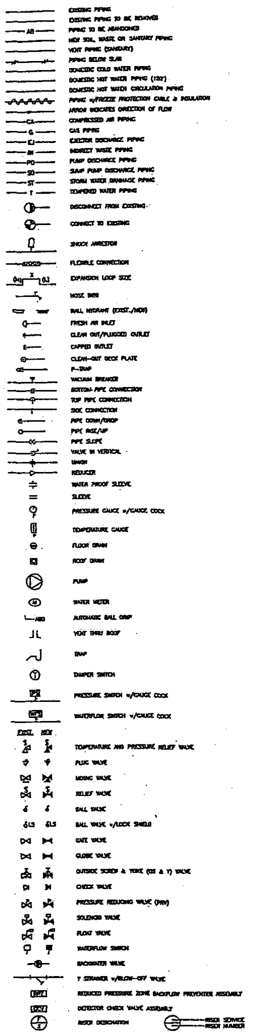
SCALE: NONE

SHEET NO.
E.6-01

HELLMUTH, OBATA & KASSABAUM, P.C.

ELECTRICAL

PLUMBING BASIC SYMBOLS
(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

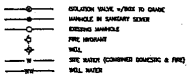


EXISTING PIPING
EXISTING PIPING TO BE REMOVED
PIPING TO BE ABANDONED
NEW SOIL, WASTE OR SANITARY PIPING
VENT PIPING (SANITARY)
PIPING BELOW SLAB
DOMESTIC COLD WATER PIPING
DOMESTIC HOT WATER PIPING (120°)
DOMESTIC HOT WATER CIRCULATION PIPING
PIPING w/FREEZE PROTECTION CABLE & INSULATION
ARROW INDICATES DIRECTION OF FLOW
COMPRESSED AIR PIPING
GAS PIPING
EJECTOR DISCHARGE PIPING
INDIRECT WASTE PIPING
PUMP DISCHARGE PIPING
SUMP PUMP DISCHARGE PIPING
STORM WATER DRAINAGE PIPING
TEMPERED WATER PIPING
DISCONNECT FROM EXISTING
CONNECT TO EXISTING
SHOCK ARRESTOR
FLEXIBLE CONNECTION
EXPANSION LOOP SIZE
HOSE BIBB
WALL HYDRANT (EXIST./NEW)
FRESH AIR INLET
CLEAN OUT/PLUGGED OUTLET
CAPPED OUTLET
CLEAN-OUT DECK PLATE
P-TRAP
VACUUM BREAKER
BOTTOM PIPE CONNECTION
TOP PIPE CONNECTION
SIDE CONNECTION
PIPE DOWN/DROP
PIPE RISE/UP
PIPE SLOPE
VALVE IN VERTICAL
UNION
REDUCER
WATER PROOF SLEEVE
SLEEVE
PRESSURE GAUGE w/GAUGE COCK
TEMPERATURE GAUGE
FLOOR DRAIN
ROOF DRAIN
PUMP
WATER METER
AUTOMATIC BALL DRIP
VENT THRU ROOF
TRAP
TAMPER SWITCH
PRESSURE SWITCH w/GAUGE COCK
WATERFLOW SWITCH w/GAUGE COCK
TEMPERATURE AND PRESSURE RELIEF VALVE
PLUG VALVE
MIXING VALVE
RELIEF VALVE
BALL VALVE
BALL VALVE w/LOCK SHIELD
GATE VALVE
GLOBE VALVE
OUTSIDE SCREW & YOKE (OS & Y) VALVE
CHECK VALVE
PRESSURE REDUCING VALVE (PRV)
SOLENOID VALVE
FLOAT VALVE
WATERFLOW SWITCH
BACKWATER VALVE
Y STRAINER w/BLOW-OFF VALVE
REDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY
DETECTOR CHECK VALVE ASSEMBLY
RISER DESIGNATION
RISER SERVICE
RISER NUMBER

PLUMBING ABBREVIATIONS
(NOT ALL ABBREV. ARE NECESSARILY USED ON THIS PROJECT)

AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
BLDG.	BUILDING
BOP	BOTTOM OF PIPE
CO	CLEANOUT
CODP	CLEANOUT DECK PLATE
CM	COFFEE MAKER
CV	CHECK VALVE
CVO	CAPPED AND VALVED OUTLET
CW	COLD WATER
CLG	CEILING
CONN	CONNECT
CONT	CONTINUATION
DIA	DIAMETER
DN	DOWN (PENETRATES FLOOR SLAB)
DR	DRAIN
DWG	DRAWING
(E)	EXISTING
(ER)	EXISTING TO BE REMOVED
(ERR)	EXISTING TO BE REMOVED & RELOCATED
EJ DIS	EJECTOR DISCHARGE
EL	ELEVATION
EWC	ELECTRIC WATER COOLER
FAI	FRESH AIR INLET
FD	FLOOR DRAIN
FU	FIXTURE UNIT
FL	FLOOR
FL H	FLOOR HYDRANT
FT	FEET
GC	GENERAL CONTRACTOR
GAL	GALLONS
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HCLG	HUNG CEILING
HW	HOT WATER
HWR	HOT WATER RETURN
ID	INSIDE DIAMETER
IW	INDIRECT WASTE
IN	INCH
JS	JANITOR'S SINK
LAV	LAVATORY
MAP	MEDICAL GAS ALARM PANEL
MAX	MAXIMUM
MIN	MINIMUM
MR	MOP RECEPTOR
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
PC	PLUMBING CONTRACTOR
PD	PUMP DISCHARGE
PO	PLUGGED OUTLET
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH (GAUGE)
RD	ROOF DRAIN
(RE)	RELOCATED EXISTING
(RRO)	EXISTING TO BE REMOVED AND RETURN TO OWNER
SA	SHOCK ABSORBER
SAN	SANITARY
SD	SUMP PUMP DISCHARGE
SH	SHOWER
SK	SINK
SQ FT	SQUARE FOOT
ST	STORM
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP (PENETRATES FLOOR SLAB)
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
ZCVB	ZONE CONTROL VALVE BOX

PLUMBING WATER SERVICE SYMBOLS
(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)



ISOLATION VALVE w/BOX TO GRADE
MANHOLE IN SANITARY SEWER
EXISTING MANHOLE
FIRE HYDRANT
WELL
SITE WATER (COMBINED DOMESTIC & FIRE)
WELL WATER

GENERAL PLUMBING NOTES:

1. EACH BIDDER SHALL VISIT THE SITE AND BECOME INFORMED AS TO THE CONDITION OF THE PREMISES AND THE EXTENT AND CHARACTER OF WORK REQUIRED. NO ADDITIONAL COMPENSATION WILL BE APPROVED DUE TO THE FIELD CONDITIONS.
2. ALL EXISTING SYSTEM SHALL BE LEFT IN PERFECT WORKING ORDER UPON COMPLETION OF ALL NEW WORK.
3. EXACT SIZES AND LOCATIONS OF ALL EXISTING PIPING SHALL BE VERIFIED ON THE SITE.
4. NO REMOVED EXISTING PIPING SHALL BE REUSED UNLESS OTHERWISE INDICATED.
5. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES OF THE EXISTING BUILDING NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESSED PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIMES SUITED BY THE OWNER.
6. UNDER NO CIRCUMSTANCES WILL THIS CONTRACTOR OR HIS WORKMEN BE PERMITTED TO USE ANY PART OF THE BUILDING AS A SHOP, EXCEPT PART DESIGNATED BY THE OWNER FOR SUCH PURPOSES.
7. UNNECESSARY NOISE SHALL BE AVOIDED AT ALL TIMES AND NECESSARY NOISE SHALL BE REDUCED TO A MINIMUM.
8. WHERE THE WORK MAKES TEMPORARY SHUT DOWN OF SERVICES UNAVOIDABLE, THEY SHALL BE MADE AT NIGHT OR AT TIMES AS THIS WILL CAUSE THE LEAST INTERFERENCE WITH THE ESTABLISHED OPERATING ROUTINE OF THE BUILDING.
9. THIS CONTRACTOR SHALL ARRANGE THE WORK CONTINUOUSLY, INCLUDING APPROVED BY THE ARCHITECT OVERTIME IF REQUIRED, TO ASSURE THAT SERVICES WILL BE SHUT DOWN AND CUT-INS ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTION TO EXISTING WORK.
10. THIS CONTRACTOR SHALL GIVE AMPLE WRITTEN NOTICE IN ADVANCE TO THE OWNER OF ANY REQUIRED SHUT DOWNS.
11. ANY AND ALL REQUIRED DEMOLITION WORK TO BE PERFORMED ABOVE EXISTING SUSPENDED CEILINGS AND FURRED OUT WALLS SHALL BE DONE AT THE TIME WHEN THE EXISTING CEILINGS AND FURRED OUT WALLS ARE REMOVED BY THE GENERAL CONTRACTOR.
12. TO ENSURE CONTINUOUS OPERATION, MAKE ALL NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK, ALL COST RESULTING FROM TEMPORARY SHUTDOWNS SHALL BE BORNE BY THIS CONTRACTOR.
13. PROVIDE DRAIN [illegible] AT THE BASE OF EACH HOT AND COLD WATER RISER.
14. ALL GAS, VENT, HOT WATER CIRCULATION, HOT AND COLD WATER PIPING ARE AT CEILING OR IN HUNG CEILING; EXCEPT IN PIPE SPACES OR OTHERWISE NOTED.
15. NO GAS VALVE SHALL BE LOCATED IN HUNG CEILING.
16. CONTRACTOR SHALL CHECK AND VERIFY THE EXACT LOCATION OF ALL PIPE PENETRATIONS; PIPE ELEVATIONS; LOCATION OF EXISTING DRYWELLS; AREA DRAINS; CESSPOOLS ETC.
17. ACCESS DOORS SHALL BE PROVIDED FOR ALL CLEANOUTS, VALVES, FLUSH VALVES, AND ANY OTHER EQUIPMENT AND ACCESSORIES THAT MAY REQUIRED ACCESS FOR MAINTENANCE OR OPERATION WHICH ARE LOCATED BEHIND WALLS AND PARTITIONS OR CONCEALED IN HUNG CEILINGS.
18. CONTRACTOR SHALL REFER TO AND COORDINATE WITH OTHER TRADES DRAWINGS FOR WORK OF CONCRETE PADS, HOUSE TRAP PIT AND GREASE TRAP PITS.
19. ALL PLUMBING WORK SHALL MEET THE REQUIREMENT OF NYC PLUMBING CODE, AND OTHER AGENCIES AND AUTHORITIES HAVING JURISDICTION.

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KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	90% CONST. DOCUMENTS	04/18/06
	50% CONST. DOCUMENTS	03/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
PLUMBING
SYMBOLS AND
ABBREVIATIONS
CONSTRUCTION
DOCUMENTS

SCALE: NONE

SHEET NO.
P.1-00

REVISION

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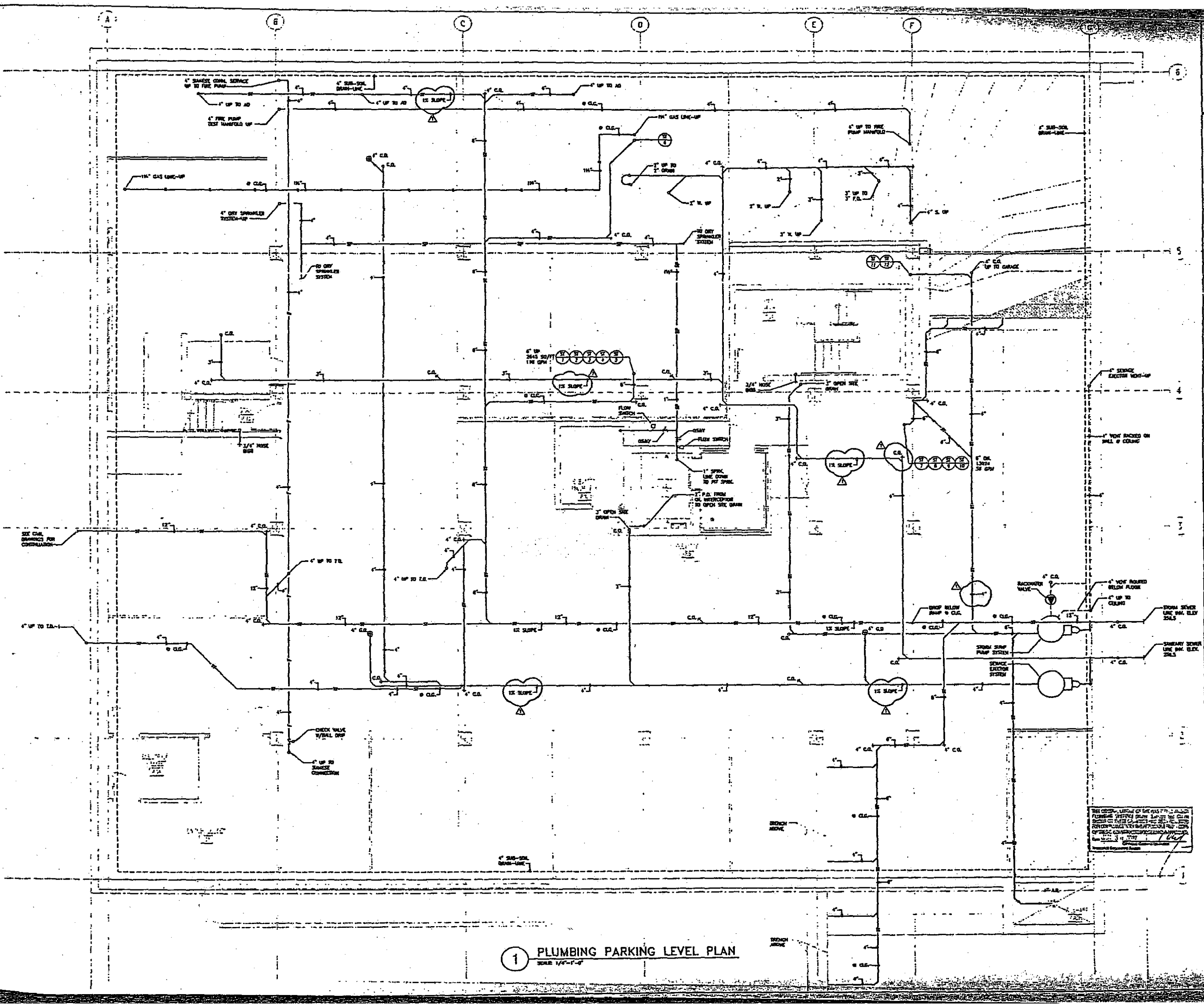
PLUMBING


A
B
C
D
E
F
6
5
4
3
2
1
1% SLOPE
C.O.
4" SUB-SOIL DRAIN-LINE
4" UP TO AD
4" FIRE PUMP TEST MANIFOLD UP
1¼" GAS LINE-UP
4" DRY SPRINKLER SYSTEM-UP
TO DRY SPRINKLER SYSTEM
4" UP TO FIRE PUMP MANIFOLD
3/4" HOSE BIBB
FLOW SWITCH
OS&Y
1" SPRK. LINE DOWN TO PIT SPRK.
3" OPEN SITE DRAIN
4" SEWAGE EJECTOR VENT-UP
4" VENT RACKED ON WALL @ CEILING
SEE CIVIL DRAWINGS FOR CONTINUATION
4" UP TO T.D.
BACKWATER VALVE
4" VENT ROUTED BELOW FLOOR
4" UP TO CEILING
STORM SEWER LINE INV. ELEV.
SANITARY SEWER LINE INV. ELEV.
STORM SUMP PUMP SYSTEM
SEWAGE EJECTOR SYSTEM
DROP BELOW SLAB @ C.O.
CHECK VALVE W/BALL DRIP
4" UP TO SIAMESE CONNECTION
TRENCH ABOVE

① PLUMBING PARKING LEVEL PLAN

SCALE: 1/4"=1'-0"

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KEYPLAN

REVISIONS

No.	Description
	DCRA COMMENTS
1	ADDENDUM 1
	100% CONST. DOCUMENTS
	90% CONST. DOCUMENTS
	50% CONST. DOCUMENTS
	100% DESIGN DEVELOPMENT
	50% DESIGN DEVELOPMENT

PROJECT NO.
W050002

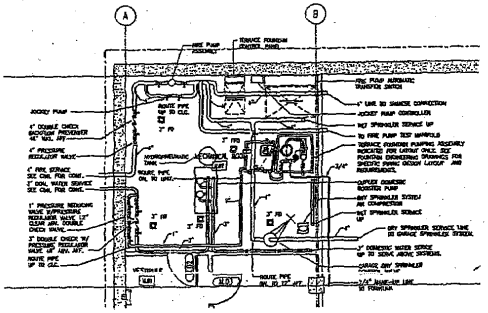
SHEET TITLE

PLUMBI
PARKING L
PLAN
CONSTRUCT
DOCUMEN

SCALE: 1/4" = 1'-0"

SHEET NO.
P.2-00

PLUMBING


A
B
FIRE PUMP ASSEMBLY
TERRACE FOUNTAIN CONTROL PANEL
FIRE PUMP AUTOMATIC TRANSFER SWITCH
4" LINE TO SIAMESE CONNECTION
JOCKEY PUMP CONTROLLER
WET SPRINKLER SERVICE UP
TO FIRE PUMP TEST MANIFOLD
TERRACE FOUNTAIN PUMPING ASSEMBLY INDICATED FOR LAYOUT ONLY. SEE FOUNTAIN ENGINEERING DRAWINGS FOR SPECIFIC PIPING DESIGN LAYOUT AND REQUIREMENTS.
DUPLEX DOMESTIC BOOSTER PUMP
DRY SPRINKLER SYSTEM AIR COMPRESSOR
WET SPRINKLER SERVICE UP
DRY SPRINKLER SERVICE LINE TO GARAGE SPRINKLER SYSTEM.
3" DOMESTIC WATER SERVICE UP TO SERVE ABOVE SYSTEMS.
GARAGE DRY SPRINKLER
3/4" MAKE-UP LINE TO FOUNTAIN
JOCKEY PUMP
4" DOUBLE CHECK BACKFLOW PREVENTER 48" MAX. AFF
4" PRESSURE REGULATOR VALVE
4" FIRE SERVICE SEE CIVIL FOR CONT.
3" DOM. WATER SERVICE SEE CIVIL FOR CONT.
1" PRESSURE REDUCING VALVE W/PRESSURE REGULATOR VALVE 12" CLEAR ABV. DOUBLE CHECK VALVE.
3" DOUBLE CHECK W/ PRESSURE REGULATOR VALVE 48" ABV. AFF.
ROUTE PIPE UP TO CLG.
ROUTE PIPE UP TO CLG.
3" FD
3" FFD
HYDROPNEUMATIC TANK
MECHANICAL ROOM
ROUTE PIPE DN. TO UNIT.
3" FD
3" FD
3" FD
1"
3"
3/4"
4"
VESTIBULE
ROUTE PIPE DN. TO 12" AFF.
FS

① PLUMBING MEZZANINE LEVEL PUMP ROOM
SCALE: 1/4"=1'-0"

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SEAL

KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	80% CONST. DOCUMENTS	06/14/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	08/24/05

PROJECT NO. WC50002
DATE 06-30-06

SHEET TITLE

PLUMBING
MEZZANINE
PUMP ROOM PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/8" = 1'-0"

SHEET NO.
P.2-00M

REVISION

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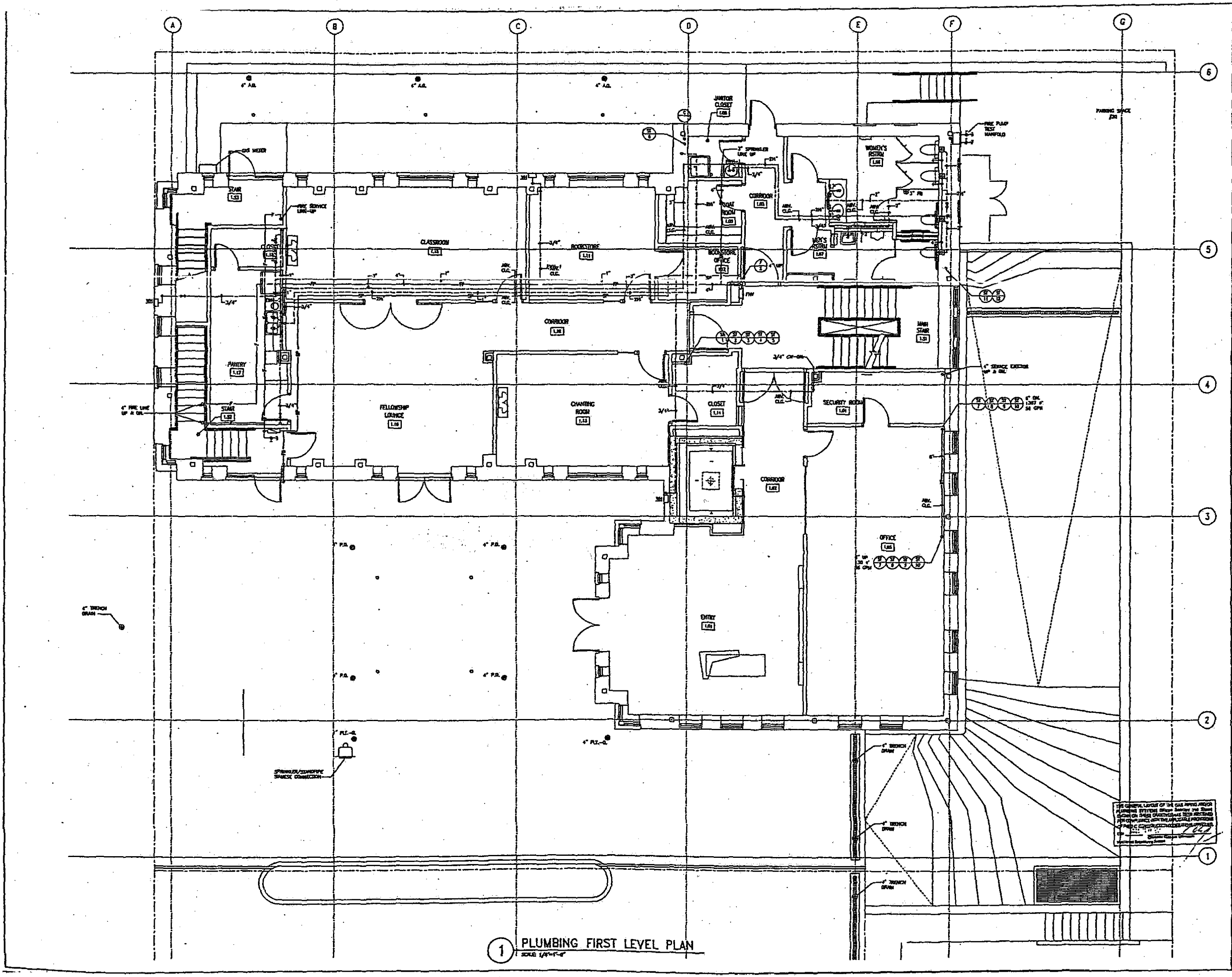
PLUMBING



THE GENERAL LAYOUT OF THE GAS PIPING AND/OR PLUMBING SYSTEMS [illegible] SHOWN ON THESE DRAWINGS HAS BEEN REVIEWED FOR COMPLIANCE WITH THE APPLICABLE PROVISIONS OF THE D.C. CONSTRUCTION CODES [illegible]

① PLUMBING FIRST LEVEL PLAN
SCALE: 1/4"=1'-0"

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KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	08/
	90% CONST. DOCUMENTS	06/1
	50% CONST. DOCUMENTS	05/1
	100% DESIGN DEVELOPMENT	02/1
	50% DESIGN DEVELOPMENT	10/2

PROJECT NO. W050002
DATE 05-

SHEET TITLE

PLUMBING
FIRST LEVEL
PLAN
CONSTRUCTION
DOCUMENTS

SCALE 1/4" = 1'-0"

SHEET NO.
P.2-01

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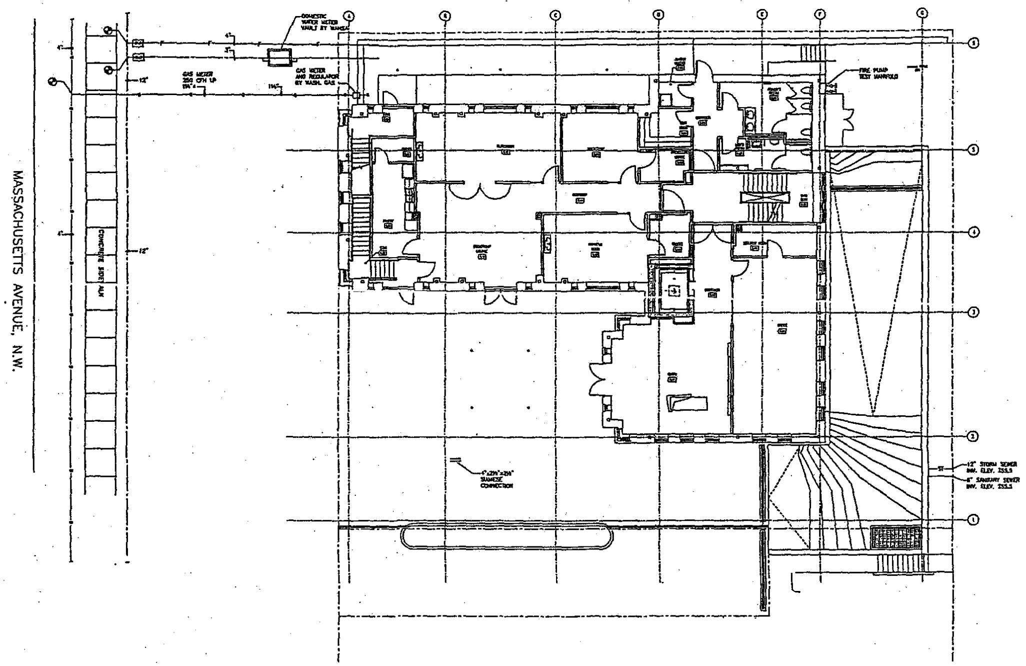
PLUMBING


MASSACHUSETTS AVENUE, N.W.
DOMESTIC WATER METER VAULT BY WASA
GAS METER 250 CFH UP 1¼"
GAS METER AND REGULATOR BY WASH. GAS
1¼"
4"
3"
12"
CONCRETE SIDEWALK
FIRE PUMP TEST MANIFOLD
12" STORM SEWER INV. ELEV. 255.5
8" SANITARY SEWER INV. ELEV. 255.5
4"x2½"x2½" SIAMESE CONNECTION
A
B
C
D
E
F
G
1
2
3
4
5
6

① PLUMBING SITE PLAN
SCALE: 1/8"=1'-0"

THE GENERAL LAYOUT OF THE GAS PIPING [illegible]

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KEYPLAN

REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	90% CONST. DOCUMENTS	06/16/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO.
W050002

DATE
06-30-06

SHEET TITLE

PLUMBING SITE PLAN

CONSTRUCTION DOCUMENTS

SCALE 1/8" = 1'-0"

SHEET NO.
P.2-01S

REVISION

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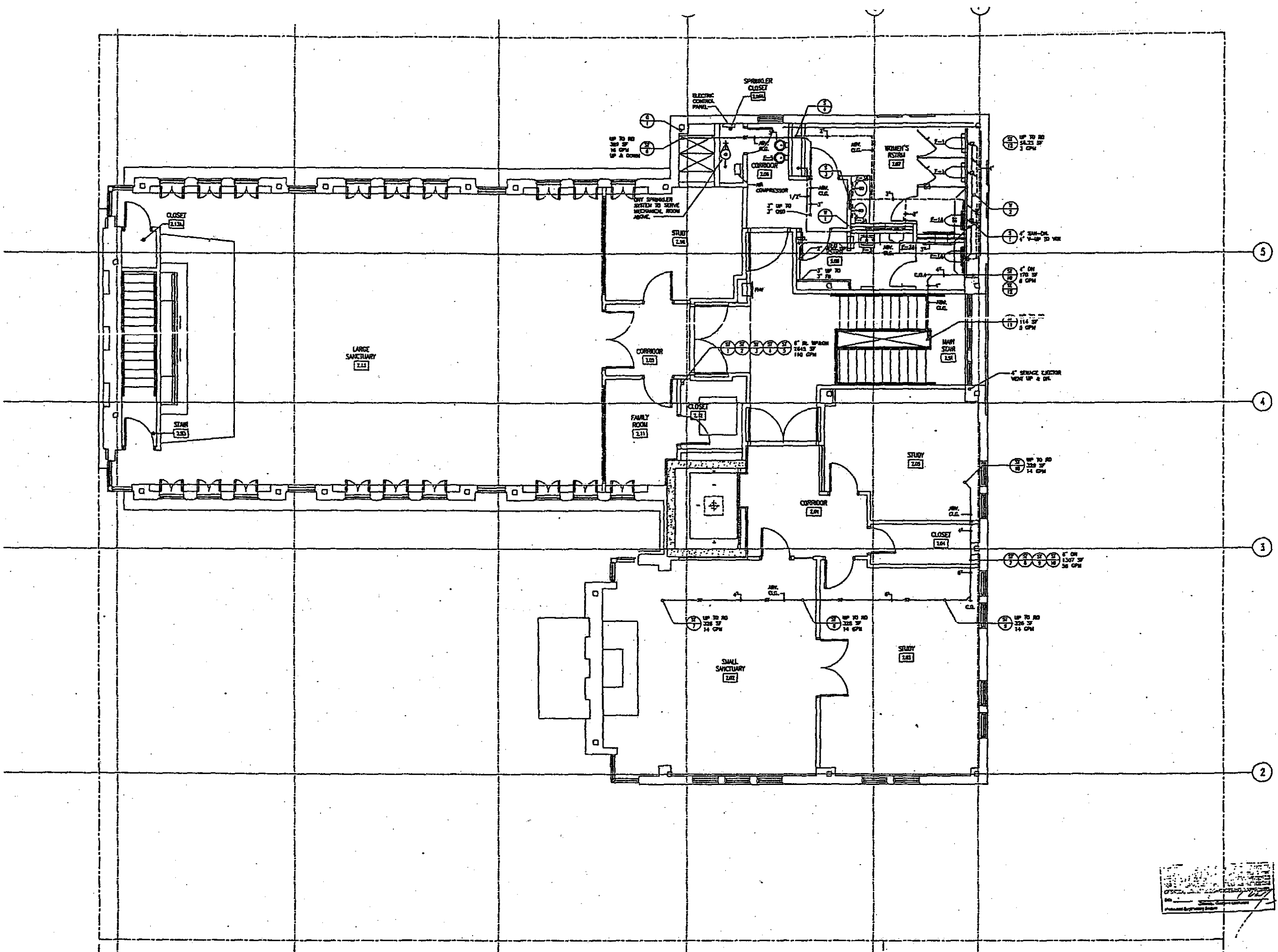
PLUMBING



① PLUMBING SECOND LEVEL PLAN
SCALE: 1/4"=1'-0"

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KEYPLAN

REVISIONS

No.	Description	Da
	100% CONST. DOCUMENTS	04/30
	95% CONST. DOCUMENTS	05/14
	50% CONST. DOCUMENTS	05/10
	100% DESIGN DEVELOPMENT	02/17
	50% DESIGN DEVELOPMENT	10/24

PROJECT NO. W050002
DATE

SHEET TITLE
PLUMBING SECOND LEVEL PLAN
CONSTRUCTION DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
P.2-02

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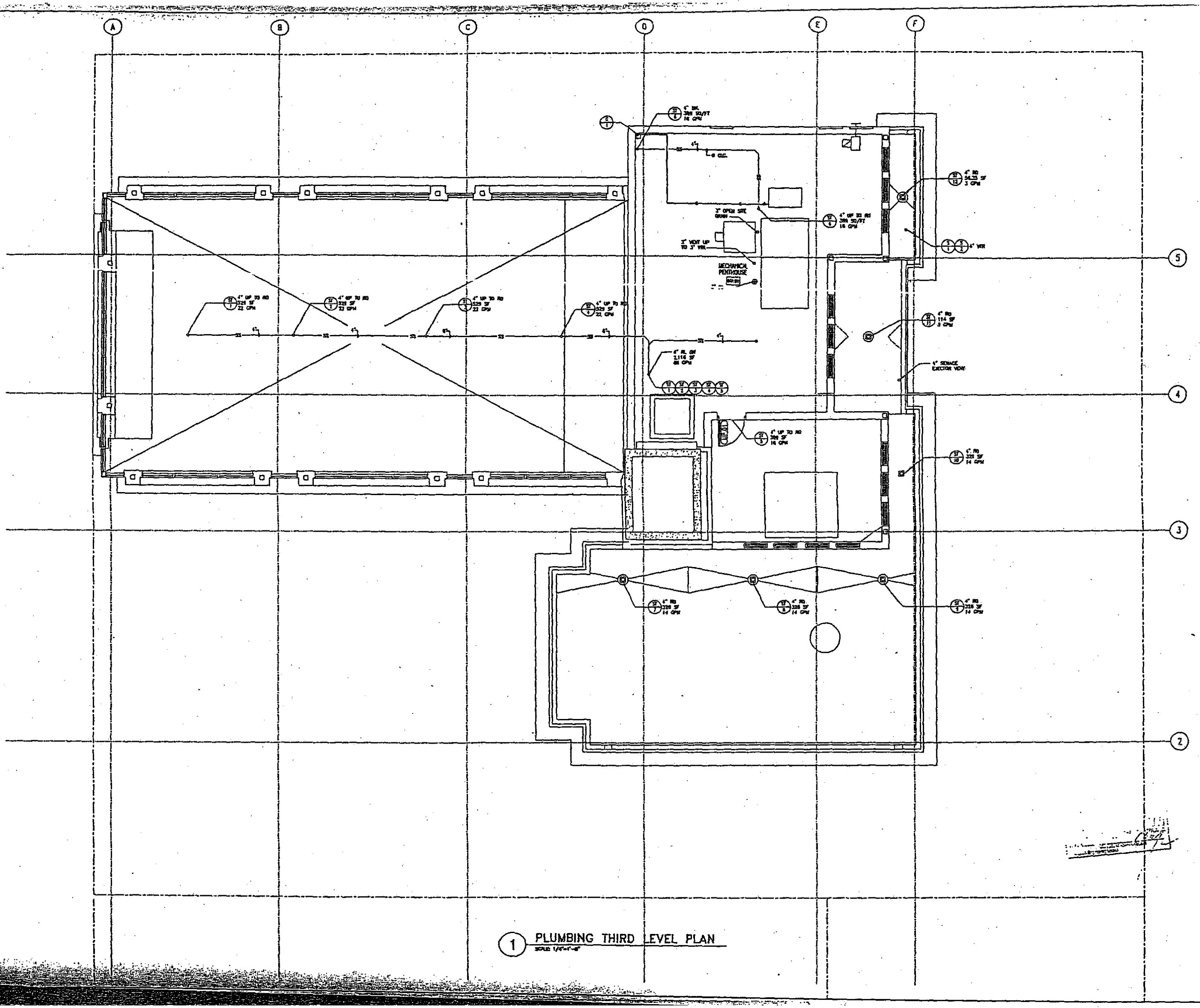
PLUMBING


A
B
C
D
E
F
5
4
3
2
G/1
ST/6 4" DN. 389 SQ/FT 16 GPM
SS
4"
O.C.
3" OPEN SITE DRAIN
3" VENT UP TO 3" VTR
MECHANICAL PENTHOUSE
ST/6 4" UP TO RD 389 SQ/FT 16 GPM
ST/12 4" RD 56.25 SF 3 GPM
S/1 S/2 4" VTR
ST/1 4" UP TO RD 529 SF 22 GPM
ST/2 4" UP TO RD 529 SF 22 GPM
ST/3 4" UP TO RD 529 SF 22 GPM
ST/4 4" UP TO RD 529 SF 22 GPM
4" RL DN 2,116 SF 88 GPM
ST/1 ST/2 ST/3 ST/4 ST/5
ST/11 4" RD 114 SF 5 GPM
4" SEWAGE EJECTOR VENT
ST/5 4" UP TO RD 389 SF 16 GPM
ST/10 4" RD 328 SF 14 GPM
ST/7 4" RD 328 SF 14 GPM
ST/8 4" RD 328 SF 14 GPM
ST/9 4" RD 328 SF 14 GPM

① PLUMBING THIRD LEVEL PLAN
SCALE: 1/4"=1'-0"

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	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
PLUMBING
THIRD LEVEL
PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
P.2-03

REVISION

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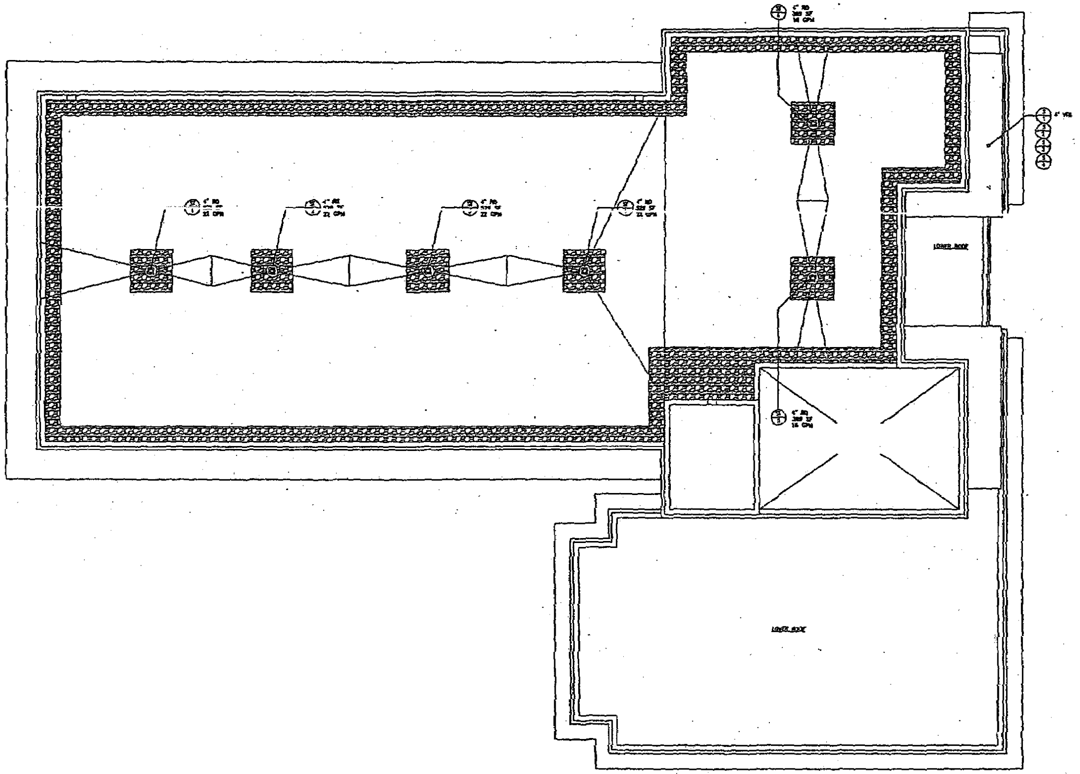
PLUMBING



1 PLUMBING ROOF LEVEL PLAN
SCALE 1/4"=1'-0"

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No.	Description	Date
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	50% CONST. DOCUMENTS	03/10/
	100% DESIGN DEVELOPMENT	02/17/
	50% DESIGN DEVELOPMENT	10/24/

PROJECT NO.
W050002
DATE
06-30

SHEET TITLE

PLUMBING
ROOF LEVEL
PLAN
CONSTRUCTION
DOCUMENTS

SCALE: 1/4" = 1'-0"

SHEET NO.
P.2-04

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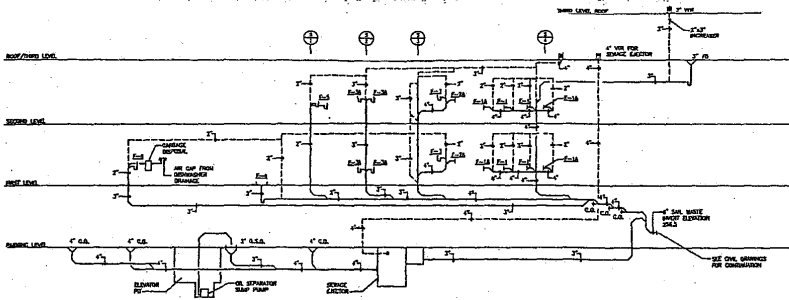
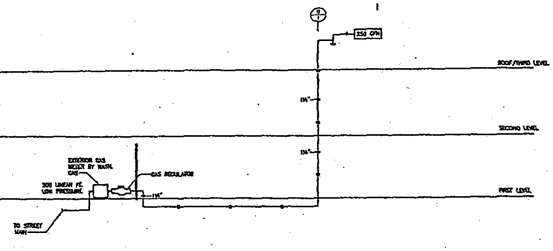
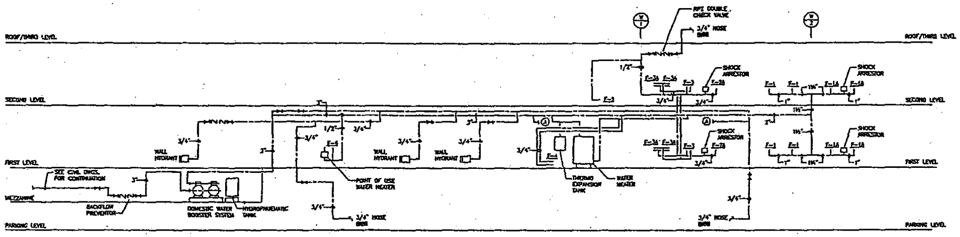
PLUMBING



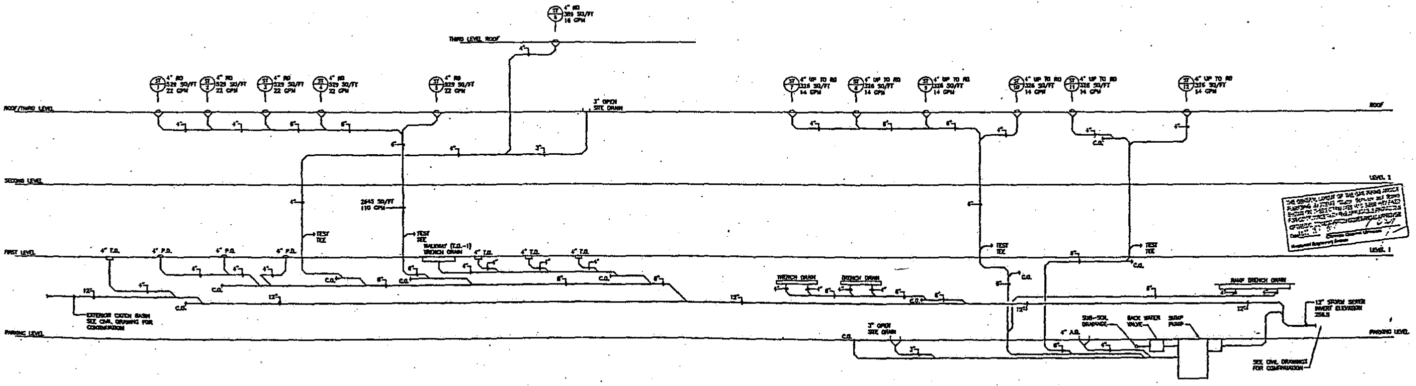
1 PLUMBING SANITARY RISER DIAGRAM
SCALE: N.T.S.



2 PLUMBING GAS RISER DIAGRAM
SCALE: N.T.S.



3 PLUMBING DOMESTIC WATER RISER DIAGRAM
SCALE: N.T.S.



4 PLUMBING STORM RISER DIAGRAM
SCALE: N.T.S.

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No.	Description	Date
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	90% CONST. DOCUMENTS	06/16/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE 06-30-06

SHEET TITLE
SANITARY,
DOMESTIC WATER,
GAS, & STORM
RISER DIAGRAM
CONSTRUCTION
DOCUMENTS

SCALE: NONE
SHEET NO.
P.4-00
REVISION

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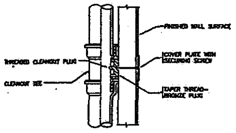
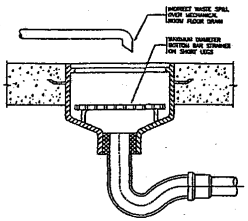
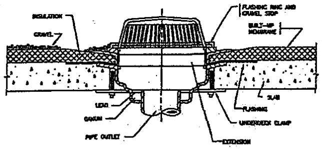
PLUMBING



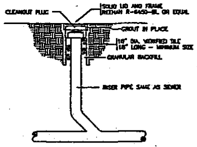
1 / P.5-00 CLEANOUT FOR DRAINAGE CONCEALED BEHIND WALLS


INDIRECT WASTE SPILL OVER MECHANICAL ROOM FLOOR DRAIN
MAXIMUM DIAMETER BOTTOM BAR STRAINER ON SHORT LEGS

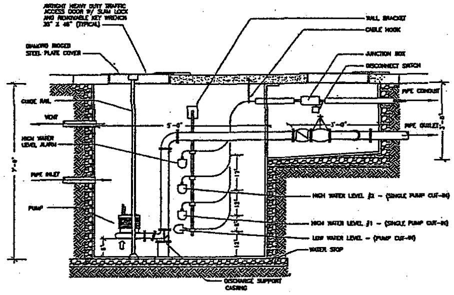
2 / P.5-00 TYPICAL MECHANICAL ROOM FLOOR DRAIN FOR INDIRECT WASTE



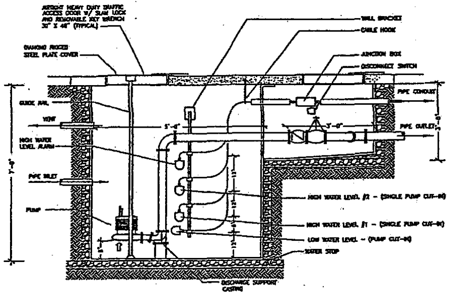
3 / P.5-00 DETAIL OF ROOF DRAIN (PRECAST CONCRETE WITH INSULATION LEVEL)


CLEANOUT PLUG
SOLID LID AND FRAME NEENAH R-6450-BL OR EQUAL
GROUT IN PLACE
10" DIA. VITRIFIED TILE 18" LONG - MINIMUM SIZE
GRANULAR BACKFILL
RISER PIPE SAME AS SEWER

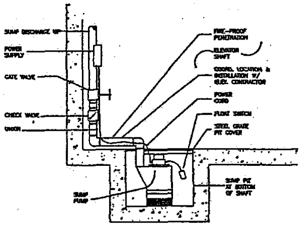
4 / P.5-00 'RH' — RODDING HOLE


AIRTIGHT HEAVY DUTY TRAFFIC ACCESS DOOR W/ SLAM LOCK AND REMOVABLE KEY WRENCH 30" X 48" (TYPICAL)
DIAMOND RIDGED STEEL PLATE COVER
WALL BRACKET
CABLE HOOK
JUNCTION BOX
DISCONNECT SWITCH
PIPE CONDUIT
GUIDE RAIL
VENT
5'-0"
3'-0"
PIPE OUTLET
HIGH WATER LEVEL ALARM
7'-0"
PIPE INLET
PUMP
HIGH WATER LEVEL #2 - (SINGLE PUMP CUT-IN)
HIGH WATER LEVEL #1 - (SINGLE PUMP CUT-IN)
LOW WATER LEVEL - (PUMP CUT-IN)
WATER STOP
DISCHARGE SUPPORT CASTING

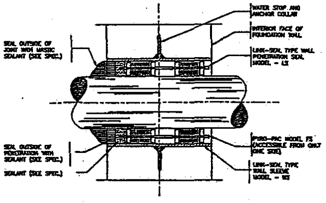
5 / P.5-00 SEWAGE EJECTOR DETAIL — ELEVATION


AIRTIGHT HEAVY DUTY TRAFFIC ACCESS DOOR W/ SLAM LOCK AND REMOVABLE KEY WRENCH 30" X 48" (TYPICAL)
DIAMOND RIDGED STEEL PLATE COVER
WALL BRACKET
CABLE HOOK
JUNCTION BOX
DISCONNECT SWITCH
PIPE CONDUIT
GUIDE RAIL
VENT
5'-0"
3'-0"
PIPE OUTLET
HIGH WATER LEVEL ALARM
7'-0"
PIPE INLET
PUMP
HIGH WATER LEVEL #2 - (SINGLE PUMP CUT-IN)
HIGH WATER LEVEL #1 - (SINGLE PUMP CUT-IN)
LOW WATER LEVEL - (PUMP CUT-IN)
WATER STOP
DISCHARGE SUPPORT CASTING

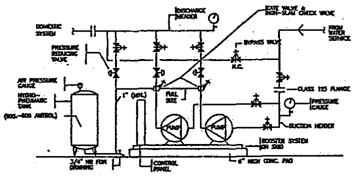
6 / P.5-00 STORM SUMP PUMP DETAIL — ELEVATION



7 / P.5-00 ELEVATOR SUMP PIT DETAIL 2


WATER STOP AND ANCHOR COLLAR
INTERIOR FACE OF FOUNDATION WALL
SEAL OUTSIDE OF JOINT WITH MASTIC SEALANT (SEE SPEC.)
LINK-SEAL TYPE WALL PENETRATION SEAL MODEL - LS
SEAL OUTSIDE OF PENETRATION WITH SEALANT (SEE SPEC.)
PYRO-PAC MODEL FS (ACCESSIBLE FROM ONLY ONE SIDE)
SEALANT (SEE SPEC.)
LINK-SEAL TYPE WALL SLEEVE MODEL - WS

8 / P.5-00 PIPE SLEEVE THRU EXTERIOR FOUNDATION WALL



9 / P.5-00 DUPLEX BOOSTER PUMP PIPING

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REVISIONS

No.	Description	Da
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	90% CONST. DOCUMENTS	04/1
	50% CONST. DOCUMENTS	05/1
	100% DESIGN DEVELOPMENT	02/1
	50% DESIGN DEVELOPMENT	10/2

PROJECT NO. W050002
DATE 06-

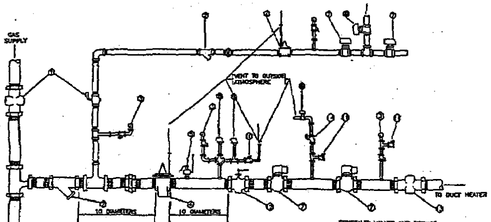
SHEET TITLE
PLUMBING DETAILS

CONSTRUCTION DOCUMENTS

SCALE: NONE
SHEET NO.
P.5-00

HELLMUTH, OBATA & KASSABAUM, P.C.

PLUMBING

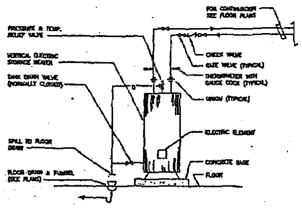


①	MANUAL PLUG LOCK	⑧	HIGH PRESSURE SWITCH
②	STRAINER	⑨	LOW PRESSURE SWITCH
③	GAUGE AND COCK	⑩	VENT COCK
④	PRESSURE REGULATOR	⑪	LEAKAGE TEST COCK
⑤	RELIEF VALVE	⑫	BURNER CONTROL VALVE
⑥	SOLENOID VENT VALVE (N.O.)	⑬	CHECKING CONTROL COCK
⑦	SAFETY SHUTOFF VALVES (N.C.)	⑭	PLUG COCK, LOCKED OPEN

CONCEALED VALVES AND FITTINGS
- WRAP WITH 1 INCH THICK, 1 POUND DENSITY TO REQUIRED PIPE INSULATION THICKNESS.
- SECURE WITH WIRE OR TAPE.
- VAPOR SEAL COLD WATER, CHILLED WATER AND STORM WATER PIPING.

EXPOSED VALVES AND FITTINGS
- PREMOLDED FIBERGLASS OR RADIAL MITERED PIPE INSULATION.
- SKIM COAT OF INSULATION CEMENT.
- COAT OF MASTIC
- OVERLAP 2 INCHES ON PIPE INSULATION.

I.R.I. GAS TRAIN P-34


FOR CONTINUATION SEE FLOOR PLANS
PRESSURE & TEMP. RELIEF VALVE
VERTICAL ELECTRIC STORAGE HEATER
TANK DRAIN VALVE (NORMALLY CLOSED)
CHECK VALVE
GATE VALVE (TYPICAL)
THERMOMETER WITH GAUGE COCK (TYPICAL)
UNION (TYPICAL)
ELECTRIC ELEMENT
SPILL TO FLOOR DRAIN
CONCRETE BASE
FLOOR
FLOOR DRAIN & FUNNEL (SEE PLANS)

ELECTRIC DOMESTIC WATER HEATER

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	95% CONST. DOCUMENTS	06/14/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W0500G2
DATE: 06-30-06

SHEET TITLE
PLUMBING
DETAILS

CONSTRUCTION
DOCUMENTS

SCALE: NONE

SHEET NO.
P.5-01

REVISION

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PLUMBING

ELECTRIC WATER HEATER SCHEDULE

SYMBOL	STORAGE GALS	RECOVERY		NUMBER ELEMENTS	ELECTRICAL				TEMP SETTING	MANUFACTURER & MODEL	REMARKS
		GPH	DEG RISE		KW	V	PH	HZ			
EWH-1	20	10	80	2	3	208	1	60	110		
EWH-2	10	12	80	2	3	208	1	60	110		

PLUMBING FIXTURE SCHEDULE

FIXTURES	FIXTURE #					SERVICE CONNECTION					MANUFACTURER AND EQUIPMENT	MODEL No.	REMARKS
WATER CLST	F-1	F-1A	F-1B	F-1C	F-1D	S	W	V	CW	HW			
FLUSH VALVE (BOTTOM OUTLET)											AMERICAN STANDARD CADET 17"H EL 1.6PF SLOAN ROYAL FLUSH VALVE OLSONITE OPEN FRONT SEAT LESS COVER	3043.102 111 95	FURNISH FIXTURE CARRIERS AS REQUIRED
FLUSH VALVE	•					4"		2"	1 1/4"		AMERICAN STANDARD AFWALL EL 1.6 SLOAN ROYAL FLUSH VALVE OLSONITE OPEN FRONT SEAT LESS COVER	2257.103 111 95	FURNISH FIXTURE CARRIERS AS REQUIRED
HANDICAPPED		•				4"		2"	1 1/4"		SAME AS F-1		MOUNT AT HANDICAPPED HEIGHT
URINALS	F-2	F-2A	F-2B										
BLOW-OUT													
WASH-OUT												6501.010 186-1	FURNISH FIXTURE CARRIERS AS REQUIRED
HANDICAPPED		•					2"	1 1/2"	1"		AMERICAN STANDARD WASHBROOK 1.0 SLOAN ROYAL FLUSH VALVE		MOUNT AT HANDICAPPED HEIGHT
LAVATORIES	F-3	F-3A	F-3B										
WALL HUNG	•						1 1/2"	1 1/2"	3/4"	3/4"			
HANDICAPPED							1 1/2"	1 1/2"	3/4"	3/4"	AMERICAN STANDARD LUCERNE TRIM: HERITAGE 4"O.C. TRUEBRO ADA 102	0355.012 7402.172H 102W WITH 103W	FURNISH OFFSET TRAP, VALVE STOPS, RISERS AND INSULATION KIT.
TRI-FOUNT													
SLOP SINKS	F-4	F-4A	F-4B										
WALL HUNG													
RECEPTOR	•						3"	1 1/2"	3/4"	3/4"	FIAT 36"x 24" x 10" MOLDED STONE FIAT BUMPERGUARD, MOP HANGER HOSE AND HOSE BRACKET. TRIM: CHICAGO FAUCET	MSB-300 E-77-AA, 889-CC, 832-AA MSG-3232	
MISC.	F-5	F-5A	F-5B										
TWO-LEVEL EWC	•						1 1/2"	1 1/2"	1/2"		HAWS	H1011.8	
PANTRY SINK			•				2"	1 1/2"	1/2"	1/2"	SS: JUST TRIM: CHICAGO FAUCET	DL-2037-A-GR 201-GN8A-CP-317	

PUMP SCHEDULE

DESIGNATION	NO. REQUIRED	SERVICE	MANUFACTURER AND MODEL NUMBER	PUMP										MOTOR					CONTROLS									SYSTEM						LOCATION	REMARKS
				FLOW RATE (G.P.M.)	MAXIMUM TOTAL DYNAMIC HEAD (FT.)	MINIMUM TOTAL DYNAMIC HEAD (FT.)	CASING PRESSURE (PSIG.)	STAGES	VERTICAL	HORIZONTAL	END SUCTION	IN LINE	SUBMERSIBLE	MINIMUM H.P.	R.P.M.	VOLTS	PHASE	CYCLES (HZ)	CONTROL PANEL	MANUAL CONTROL	AUTOMATIC CONTROL	TETHERED FLOAT	PILOT LIGHT	PRESSURE GAUGE RANGE	BAS CONNECTION	ALARMS REQUIRED	EMERGENCY POWER REQUIRED	SIMPLEX	DUPLEX	TRIPLEX	QUADPLEX	SKID MOUNTED	KNOCKED DOWN		
		DOM. BOOSTER PUMP		60		110		•						5		480			•										•			•			
		FIRE PUMP		500		147				•		•		77		480			•		•			•		•	•	•				•			
		JOCKEY PUMP		5		157				•				1		480					•			•			•								
		SUMP PUMP		35		45								3		480			•								•		•						
		SEWAGE EJECTOR		50		48								5		480			•								•		•						
		ELEV. SUMP PUMP		74		37								1/2		230			•									•							

NOTES:

1. REFER TO DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

DRAIN SCHEDULE

DESIGNATION	REQUIRED	SERIES NO. (ZURN / WADE / SMITH • / JOSAM)	BODY: CAST IRON	GALVANIZED	ALL BRONZE	SECONDARY CLAMP	CLAMPING DEVICE	DECK CLAMP	BACK WATER VALVE	SUMP RECEIVER	FLASHING COLLAR	STRAINER: CAST IRON	GALVANIZED	ALL BRONZE	NICKEL BRONZE (ADJUSTABLE)	CHROME PLATED	SEDIMENT BUCKET	SECONDARY STRAINER	POLISHED FINISH	SATIN FINISH	TRACTION GRATE	BRONZE MESH SCREEN	FUNNEL TOP	FLAT TOP	DOME	RAISED LIP	EXTENSION	LESS GRATE	BRONZE TOP	IRON GRATE	POLYETHYLENE	SOLID HINGED COVER	REMARKS: LOCATION
AD	•	2240	•								•						•												•				AREAWAYS
PLT-D	•	2871	•																														PLANTER DRAIN
FD	•	2210	•								•						•													•			MECHANICAL EQUIP. ROOM
FD	•	2005-A	•												•				•										•				TOILET ROOMS
GD	•	2142	•																•		•								•				GARAGE DRAIN
TD	•	2210-B	•														•								•								TRENCH DRAIN
RD	•	1017-CG-C	•					•		•	•																				•		GREEN ROOF
RD	•	1017-CG-C	•					•		•	•																						NON-GREEN ROOF

PLUMBING EQUIPMENT SCHEDULE

EQUIPMENT		ITEM No.	SERVICE CONNECTION					MANUFACTURER AND EQUIPMENT	MODEL No.	REMARKS
			S	W	V	CW	HW			
GREASE INTERCEPTOR										
BACKFLOW PREVENTER		BFP-1						WATTS REDUCED PRESSURE ZONE ASSEMBLY	909 QSY-RW w/909 AG	DOMESTIC WATER SERVICE SPILL TO FLOOR DRAIN
BACKFLOW PREVENTER		BFP-2						WATTS BACKFLOW PREVENTER w/ INTERMEDIATE ATMOSPHERIC VENT	9DM3	ICE MACHINE SPILL TO FLOOR DRAIN
SHOCK ARRESTOR		SA-C						J.R. SMITH SERIES 5000		LOCATE AS SHOWN ON PLAN
EXPANSION TANK										
KITCHEN	3 COMPARTMENT SINK									
	DISHWASHER									
	FREEZER									
	HANDSINK									
	2 COMPARTMENT SINK									
	ICE MACHINE									

NOTES:

1. ALL FLOOR DRAINS IN FINISHED AREAS AND ALL ROOF DRAINS SHALL BE LOCATED AS PER THE ARCHITECTURAL DRAWINGS.
2. ALL FLOOR DRAINS IN MECHANICAL EQUIPMENT, BOILER ROOMS, FAN ROOMS ETC., SHALL BE LOCATED IN COORDINATION WITH THE MECHANICAL CONTRACTOR.
3. THE CONTRACTOR SHALL VERIFY THE COMPATIBILITY OF THE DRAINS WITH THE APPROVED ROOFING AND/OR WATER PROOFING SYSTEMS PRIOR TO SUBMITTING SHOP DRAWINGS.
4. THE TOP OF CURVE OF ALL FLOOR DRAINS SHALL BE FLUSH WITH THE ADJACENT FINISHED FLOOR.

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SEAL

KEYPLAN

REVISIONS

No.	Description	D
	100% CONST. DOCUMENTS	06/
	90% CONST. DOCUMENTS	06/
	50% CONST. DOCUMENTS	05/
	100% DESIGN DEVELOPMENT	02/
	50% DESIGN DEVELOPMENT	10/

PROJECT NO. W050002
DATE 06-

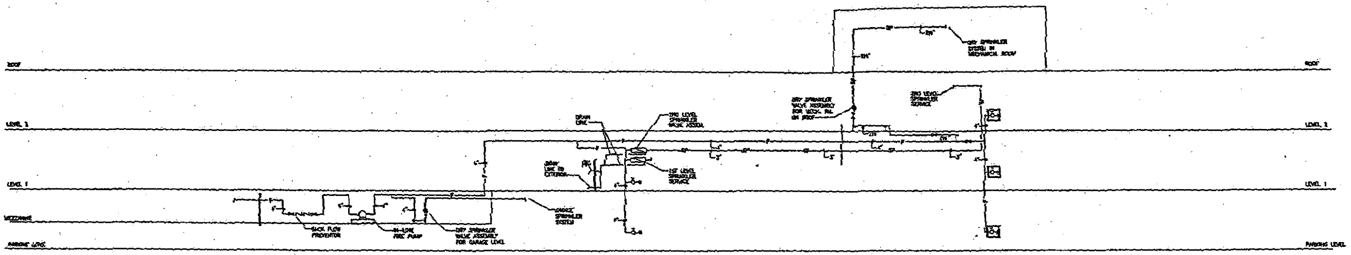
SHEET TITLE
PLUMBING SCHEDULES

CONSTRUCTION DOCUMENTS

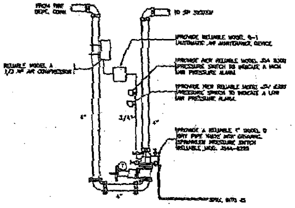
SCALE: NONE

SHEET NO.
P.6-00

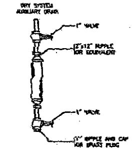
HELLMUTH, OBATA & KASSABAUM, P.C. &
PLUMBING


ROOF
LEVEL 2
LEVEL 1
MEZZANINE
PARKING LEVEL
DRY SPRINKLER SYSTEM IN MECHANICAL ROOM
DRY SPRINKLER VALVE ASSEMBLY FOR MECH. RM. ON ROOF
2ND LEVEL SPRINKLER SERVICE
DRAIN LINE
2ND LEVEL SPRINKLER VALVE ASSEM.
1ST LEVEL SPRINKLER SERVICE
DRAIN LINE TO EXTERIOR
BACK FLOW PREVENTOR
IN-LINE FIRE PUMP
DRY SPRINKLER VALVE ASSEMBLY FOR GARAGE LEVEL
GARAGE SPRINKLER SYSTEM

① SPRINKLER RISER DIAGRAM
SCALE: N.T.S.


FROM FIRE DEPT. CONN.
TO SP SYSTEM
PROVIDE RELIABLE MODEL A-1 AUTOMATIC AIR MAINTENANCE DEVICE
RELIABLE MODEL A 1/3 HP AIR COMPRESSOR
PROVIDE NEW RELIABLE MODEL JSA 8300 PRESSURE SWITCH TO INDICATE A HIGH AIR PRESSURE ALARM
PROVIDE NEW RELIABLE MODEL JSA 8300 PRESSURE SWITCH TO INDICATE A LOW AIR PRESSURE ALARM
4"
3/4"
4"
PROVIDE A RELIABLE 4" MODEL D DRY PIPE VALVE WITH GROOVED SPRINKLER PRESSURE SWITCH RELIABLE MOD. JSAA-8285
4"
SPILL INTO 45

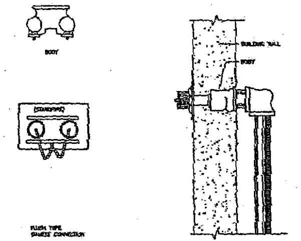
② DRY PIPE VALVE DETAIL (TYPE 2)
SCALE: N.T.S.


DRY SYSTEM AUXILIARY DRAIN
1" VALVE
2"x12" NIPPLE OR EQUIVALENT
1" VALVE
1" NIPPLE AND CAP OR BRASS PLUG

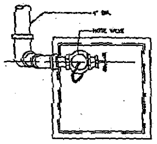
NOTE:

INSTALL ALL GARAGE SPRINKLER PIPING TIGHT TO UNDERSIDE OF BUILDING STRUCTURE AND PITCH ALL PIPING FOR COMPLETE DRAINAGE TO AUXILIARY DRAIN RIGS

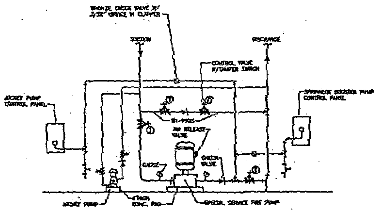
③ DRY PIPE SPRINKLER SYSTEM AUXILIARY DRAIN RIG
SCALE: 1/8" = 1'-0"



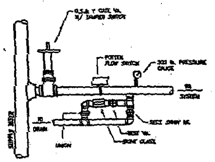
④ FIRE HYDRANT
SCALE: N.T.S.



⑤ VALVE CABINET
SCALE: N.T.S.


BRONZE CHECK VALVE W/ 3/32" ORIFICE IN CLAPPER
SUCTION
DISCHARGE
CONTROL VALVE W/TAMPER SWITCH
JOCKEY PUMP CONTROL PANEL
SPRINKLER BOOSTER PUMP CONTROL PANEL
BY-PASS
AIR RELEASE VALVE
GAUGE
CHECK VALVE
JOCKEY PUMP
4"HIGH CONC. PAD
SPECIAL SERVICE FIRE PUMP

⑥ SPRINKLER BOOSTER PUMP SCHEMATIC
SCALE: N.T.S.



⑦ SPRINKLER FLOOR CONTROL VALVE
SCALE: N.T.S.

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REVISIONS

No.	Description	Date
	100% CONST. DOCUMENTS	06/30/06
	95% CONST. DOCUMENTS	06/14/06
	50% CONST. DOCUMENTS	05/10/06
	100% DESIGN DEVELOPMENT	02/17/06
	50% DESIGN DEVELOPMENT	10/24/05

PROJECT NO. W050002
DATE: 06-30-06

SHEET TITLE
FIRE PROTECTION
RISER DIAGRAM
AND DETAILS
CONSTRUCTION
DOCUMENTS

SHEET NO.
FP.1-00

FIRE PROTECTION

DRAWING SYMBOLS

1. REFER TO SPECIFICATION SECTION 08710, DOOR HARDWARE, FOR DOOR RELATED SECURITY DEVICES.

2. REFER TO SPECIFICATION SECTION 13200 FOR ALL OTHER SECURITY DEVICES

ICM V	VIDEO INTERCOM MASTER
ICS V	VIDEO INTERCOM SLAVE
EXR	EMERGENCY EXIT DEVICE, RIM
EXC	EMERGENCY EXIT DEVICE, VERT. ROD
EXEL	EMERGENCY EXIT DEVICE, ELECTRIC LATCH
DUR	DURESS SWITCH
CR P	CARD READER, PROXIMITY
[illegible]	ELECTRIC STRIKE, SECURE
ESRS	ELECTRIC STRIKE, MORTISE, SECURE
RDP	REMOTE DATA PANEL
BMS	BMS, ROLLUP DOOR
MC	MAGNETIC CONTACT, SENTROL 10760
VL	VEHICLE LOOP
FBLT	FLUSH BOLTS
▽1	REQUEST TO EXIT PIR
GB	SENTROL SHATTER PRO GLASS BREAK SENSOR
DVR	DIGITAL RECORDER
▭	VIDEO CAMERA
[illegible]	SIGNAL PULL BOX
Ⓙ	JUNCTION BOX
⦶	120 VAC
XFRH	TRANSFER HINGE

ABBREVIATIONS

ACTE	SINGLE CARD READER INTERFACE
ACTD	DUAL CARD READER INTERFACE
ADA	AMERICAN WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
BLT	BOLT
BMS	BALANCED MAGNETIC SWITCH
BOL	BOLLARD
BPS	BACKUP POWER SUPPLY
CAM	VIDEO CAMERA
CCTV	CLOSED CIRCUIT TELEVISION CAMERA
CMP	COMPUTER
COM	COMMUNICATIONS
CPN	CARD READER, PIN PAD
CR	CARD READER
CMS	COMMAND MONITOR STATION
DG	FIELD PANEL
DUR	DURESS PUSHBUTTON
EML	ELECTROMAGNETIC LOCK
ENR	ENROLLMENT
ES	ELECTRIC STRIKE LOCK
EX	EXIT DEVICE
FIM	FOUR WIRE INTERFACE MODULE
F BLT	FLUSH BOLT
FO	FIBER OPTIC
FOR	FIBER OPTIC-RECEIVER
FOT	FIBER OPTIC TRANSCEIVER
FS	FILE SERVER
GAT	HANDICAP ACCESS GATE
HNG	HINGE
ICM	INTERCOM MASTER STATION
ICS	INTERCOM SLAVE STATION
JB	JUNCTION BOX
KEY	KEY SWITCH
MON	VIDEO MONITOR
PB	PULL BOX
PIR	PASSIVE INFRARED SENSOR
PPU	PRE-PROCESSOR UNIT
PR	PAIR
PTZ	PAN, TILT, ZOOM
PWR	AC POWER OUTLET
REX	REQUEST FOR EXIT PUSHBUTTON
RIM	REMOTE INPUT MODULE
RTU	REMOTE TERMINAL UNIT
SG	SECURITY GATE
SGR	SECURITY GATE REMOTE RELEASE
STP	SHIELDED TWISTED PAIR
TVI	CCTV, INTERIOR
TVE	CCTV WITH ENVIRONMENTAL HOUSING
TRN	TURNSTILE
UPS	UNINTERUPTABLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
VCM	VERSATILE COMMUNICATIONS MODEL
VEH	VEHICLE SENSOR LOOP
VHL	VEHICLE LOOP
VS	VIDEO SWITCHER
WS	WORK STATION
XFR	TRANSFORMER

WIRE & CABLE TYPES

TYPE	MFG.	MFG NO.	DESCRIPTION
A	BELDEN	9290	RG-6/U COAXIAL CABLE, .266" OD, .065 SQ IN, CCTV
B	BELDEN	8461	18 AWG, STRANDED 7X26, 1 TWISTED PAIR, .234" OD, .043 SQ IN, POWER
C	BELDEN	9156	18 AWG, STRANDED 16X30, 2 TWISTED PAIR, .333" OD, .088 SQ IN, POWER
D	BELDEN	8471	16 AWG, STRANDED 19X29, 1 TWISTED PAIR, .274" OD, .059 SQ IN, POWER
E	BELDEN	8473	14 AWG, STRANDED 42X30, 1 TWISTED PAIR, .340" OD, .091 SQ IN, POWER
F	BELDEN	8477	12 AWG, STRANDED 65X30, 1 TWISTED PAIR, .386" OD, .117 SQ IN, POWER
G	BELDEN	8444	22 AWG, STRANDED 7X30, 2 TWISTED PAIR, .185" OD, .027 SQ IN, DATA
H	BELDEN	8747	22 AWG, STRANDED 7X30, 6 TWISTED PAIR, .320" OD, .080 SQ IN, DATA
I	BELDEN	9842	24 AWG, STRANDED 7X32, 2 TWISTED PAIR, .232" OD, .042 SQ IN, COMM
K	BELDEN	9814	18 AWG, STRANDED 19X30, 2 SH TWISTED PAIR, .245" OD, .047 SQ IN, DATA

LEGEND

		CONDUIT FILL AREA SQ IN (MM^2)
— - —	4" (100MM) CONDUIT	4.87 (3141)
- — — -	3" (75MM) CONDUIT	2.73 (1767)
— - - —	2" (50MM) CONDUIT	1.22 (785)
- - - - -	1" (25MM) CONDUIT	.30 (196)
--------	POWER	

DEVICE MOUNTING DETAILS

DEVICE NO	DETAIL NO	WIRE LGTH
CR 1-01	B	60
HNG 1-01	B	0
ICS 1-01	B	60
LCK 1-01	B	60
MC 1-01A	B	60
MC 1-01B	B	60
MC 1-03A	SIMILAR B	55
MC 1-03B	SIMILAR B	55
MC 1-02	SIMILAR B	72
MC 1-04	SIMILAR B	90
MC 1-05	SIMILAR B	40
BMS M-01	D	125
DG 1-01	C	0
DVR 1-01	C	0
CR ELEV		60
GB 1-01	F	92
GB 1-02	F	70
GB 1-03	F	51
GB 1-04	F	80
GB 1-05	F	60
GB 1-06	F	30
GB 1-07	F	40
GB 1-08	F	30
ICM 1-01	DESK TOP	60
MC 3-01	SIMILAR B	20
MC P-02	SIMILAR B	15
MC P-01	SIMILAR B	75
PWR 1-01	C	0
PWR 1-02	C	0
TVE M-01	E	100
TVE P-01	E	70
TVE P-02	E	20
TVE P-03	E	105
VL M-01	MFG	25
VL M-02	MFG	25

GENERAL NOTES:

1. CARD READERS ARE INTERFACED WITH DOOR CONTACTS AND ELECTROMECHANICAL LOCKS.

2. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF FINAL SECURITY EQUIPMENT LAYOUT. CONFLICTS IF ANY SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE.

3. SECURITY SYSTEM ARCHITECTURE, SYSTEM COMPONENTS, CONDUCTORS, AND OTHER ATTENDANT INSTALLATION ASPECTS MAY VARY DEPENDING UPON WHICH MANUFACTURERS ARE APPROVED. CONTRACTOR SHALL VALIDATE INSTALLATION REQUIREMENTS BASED UPON APPROVED MANUFACTURERS.

4. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL MATERIALS AND COMPONENTS TO PROVIDE A FULLY OPERATIONAL SECURITY SYSTEM. ALL TERMINATIONS, INTERMEDIATE CABINETS, ETC. SHALL BE INCLUDED.

5. CONFLICTS BETWEEN THE SECURITY DRAWINGS AND ARCHITECTURAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE.

6. REFER TO SPECIFICATION SECTION 13200 FOR SECURITY RESTRICTIONS AND COORDINATION OF WORK.

7. SECURITY CLOSET REQUIRES 120 VAC ELECTRICAL POWER.

8. ALL WIRE RUNS SHALL BE HOME RUN IN EMT OR RIGID CONDUIT. A SPARE PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT.

9: ALL CCTV CAMERAS SHALL BE HOME RUN WITH RG-6 CABLE.

10. CONTRACTOR SHALL SUBMIT CONDUIT AND CONDUCTOR SHOP DRAWINGS FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY WORK.

12. CONTRACTOR SHALL OBSERVE ALL MANUFACTURERS INSTRUCTIONS WITH REGARD TO WIRE TYPES.

13. VARIOUS MANUFACTURERS SHOWN FOR DESIGN PURPOSES ONLY. OTHER MANUFACTURERS ACCEPTABLE UPON APPROVAL IN ACCORDANCE WITH SPECIFICATION SECTION 13200.

14. SECURITY CONTRACTOR TO REFER TO DOOR HARDWARE SCHEDULE FOR SECURITY HARDWARE. CONFLICTS BETWEEN DRAWINGS AND SCHEDULE SHOULD BE REFERRED TO OWNERS REPRESENTATIVE FOR RESOLUTION.

15. DOOR HARDWARE. CONTRACTOR TO VERIFY HARDWARE TYPES BEFORE INSTALLATION OF ANY SECURITY COMPONENTS. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER.

16. CONTRACTOR TO COORDINATE FINAL CARD READER LOCATIONS WITH INTERIORS ARCHITECT PRIOR TO INSTALLATION.

17. ELECTRICAL CONTRACTOR TO COORDINATE WITH SECURITY CONTRACTOR FOR FINAL EQUIPMENT POSITIONING.

18. VEHICLE SENSOR LOOPS SHOWN FOR CONTROL OF COILING DOOR. GC SHALL COORDINATE WITH SECURITY CONTRACTOR FOR DEVICE LOCATIONS.

GENERAL CONSTRUCTION NOTE:

1. SECURITY ITEMS ARE DIVIDED INTO 2 CATEGORIES - SECURITY DEVICES AND INFRASTRUCTURE. THE SECURITY CONTRACTOR IS RESPONSIBLE FOR INSTALLLING ALL SECURITY DEVICES AND WIRING EXCEPT THOSE PROVIDED BY THE DOOR HARDWARE CONTRACTOR. THE GC IS RESPONSIBLE FOR INSTALLING ALL CONDUIT, BACKBOXES, AND SIGNAL PULL BOXES.

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SEAL

KEYPLAN

REVISIONS

No.	Description	

PROJECT NO. HOK: 04-14021-00
DATE:

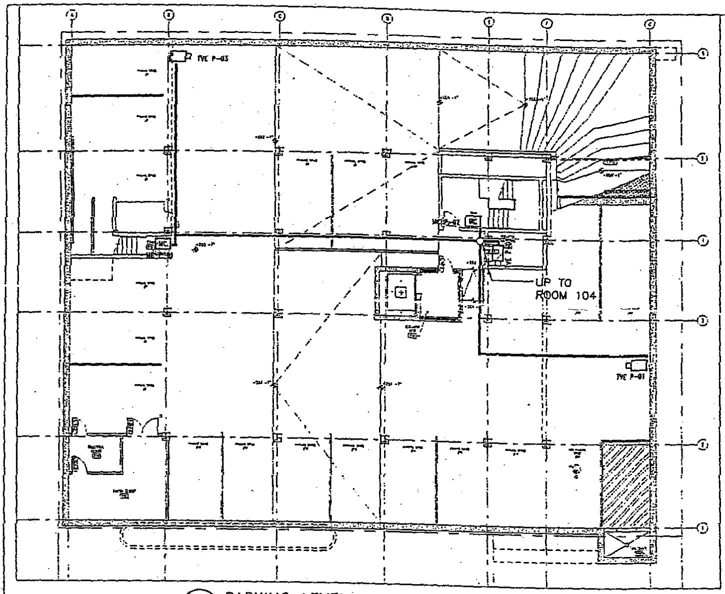
SHEET TITLE
SECURITY NOTES
SYMBOLS AND
ABBREVIATIONS

CONSTRUCTIO
DOCUMENTS

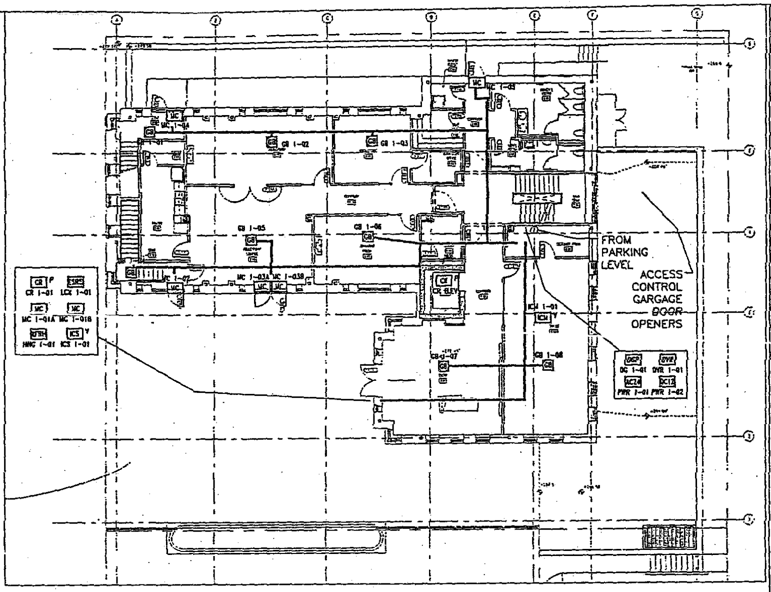
SCALE: NONE

SHEET NO.
SC.1-00

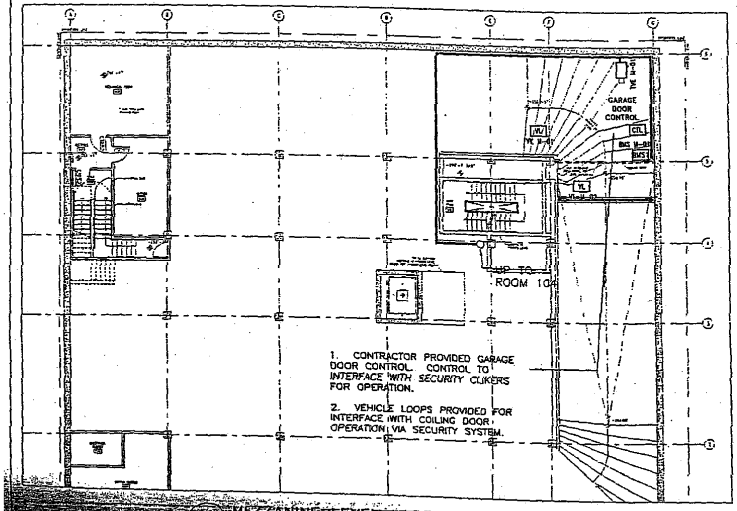
HELLMUTH, OBATA & KASSABAUM, PC
SECURITY



A PARKING LEVEL
1/8" = 1'-0"



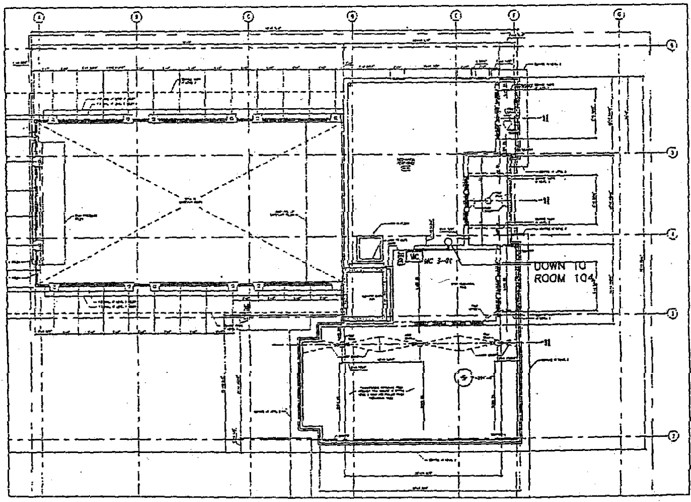
B FLOOR 1
1/8" = 1'-0"



1. CONTRACTOR PROVIDED GARAGE DOOR CONTROL. CONTROL TO INTERFACE WITH SECURITY CLIKERS FOR OPERATION.

2. VEHICLE LOOPS PROVIDED FOR INTERFACE WITH COILING DOOR OPERATION VIA SECURITY SYSTEM.

MEZZANINE LEVEL



D FLOOR 3
1/8" = 1'-0"

SOKA GAKKAI
BUDDHIST
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CENTER
Washington, D.C.

ARCHITECT

0 8' 16'

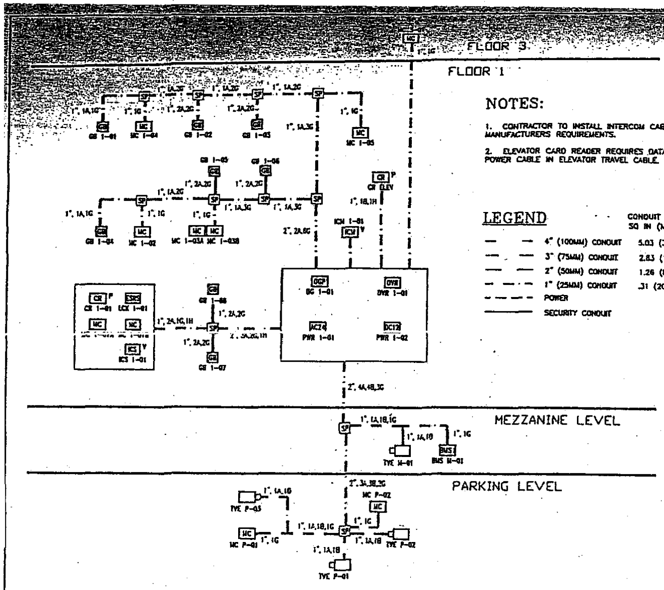
PROJECT NO.
HOK: 04-14021-00

SHEET TITLE
SECURITY
FLOOR
PLANS

CONSTRUCTION
DOCUMENTS

SCALE: 1/8"=1'-0"

SHEET NO.
SC.1-01



NOTES:

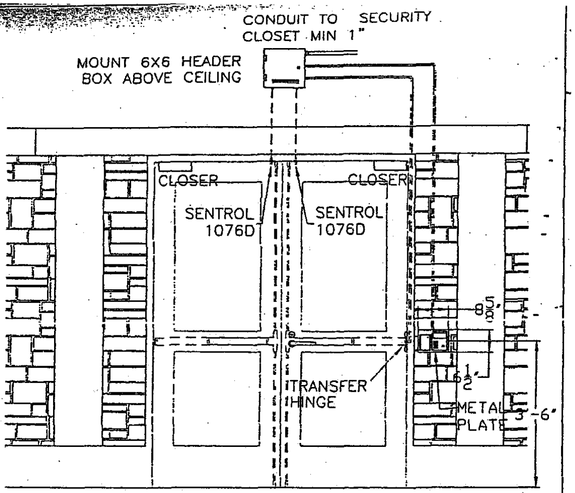
1. CONTRACTOR TO INSTALL INTERCOM CABLES PER MANUFACTURERS REQUIREMENTS.

2. ELEVATOR CARD READER REQUIRES DATA AND POWER CABLE IN ELEVATOR TRAVEL CABLE.

LEGEND

		CONDUIT FILL AREA SQ IN (MM^2)
— —	4" (100MM) CONDUIT	5.03 (3243)
— . —	3" (75MM) CONDUIT	2.83 (1824)
— —	2" (50MM) CONDUIT	1.26 (810)
– — · –	1" (25MM) CONDUIT	.31 (202)
- — — -	POWER	
———	SECURITY CONDUIT	

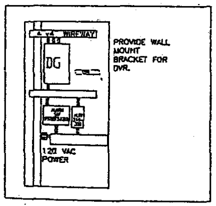
Ⓐ SECURITY RISER
NONE



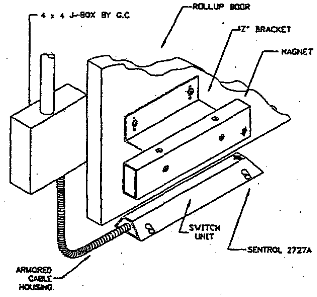
1. REFER TO DOOR HARDWARE FOR ADDTIONAL COMPONENTS.

2. PROVIDE 4" BACKBOX FOR MOUNTING CARD READER AND INTERCOM. ATTACH PLATE TO BACK BOX FOR MOUNTING DEVICES. PROVIDE PLATE SAMPLE TO CONSTRUCTION MANAGER.

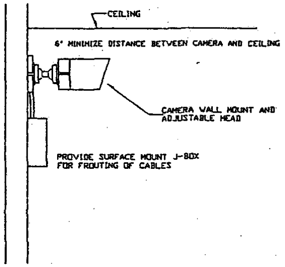
Ⓑ FRONT DOOR
1/8" = 1'-0"
0 8' 16' 24'



Ⓒ SECURITY CLOSET ELEVATION
1/2" = 1'-0"



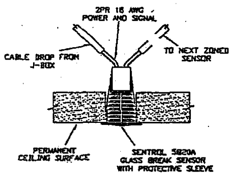
Ⓓ ROLLUP DOOR BMS
NONE


CEILING
6" MINIMIZE DISTANCE BETWEEN CAMERA AND CEILING
CAMERA WALL MOUNT AND ADJUSTABLE HEAD
PROVIDE SURFACE MOUNT J-BOX FOR FROUTING OF CABLES

Ⓔ CCTV CAMERA
NONE

NOTES:

1. ROUTE CONDUIT FROM CABLE TRAY TO J-BOX.
2. 1 INCH HOLE IN CEILING FOR PRESS FIT FOR SENSOR.
3. SENSORS HOME RUN UNLESS DRAWING INDICATES ZONES.
4. POWER IN SERIES BETWEEN SENSORS.


2PR 18 AWG POWER AND SIGNAL
CABLE DROP FROM J-BOX
TO NEXT ZONED SENSOR
PERMANENT CEILING SURFACE
SENTROL 5820A GLASS BREAK SENSOR WITH PROTECTIVE SLEEVE

Ⓕ GLASS BREAK SENSOR
NONE

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KEYPLAN

REVISIONS

No.	Description

PROJECT NO. DATE
HOK: 04-14021-00

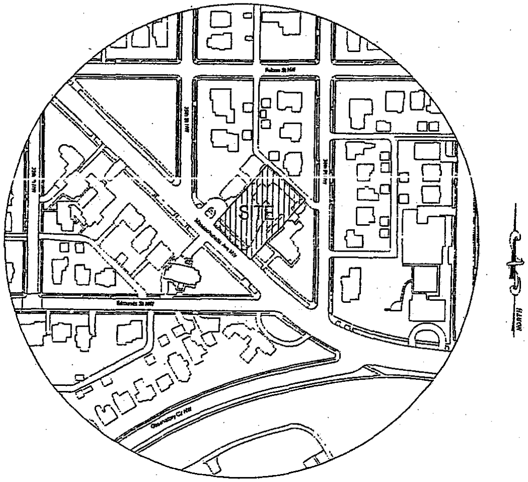
SHEET TITLE
SECURITY
RISER
DETAILS

CONSTRUCTI
DOCUMENT

SCALE 1/8"=1'-0"

SHEET NO.
SC 1.0

PERMANENT
FILE



VICINITY MAP
(NO SCALE)

CAE 11/9/06

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PERMANENT
FILE

GENERAL NOTES:

1. EXISTING CONDITIONS WERE REPRODUCED FROM SURVEYS PREPARED BY WMC DATED AUGUST 2004 AND FROM UTILITY RECORDS
2. WHERE NEW WORK MEETS EXISTING, NOTE FIELD LOCATION AND ELEVATIONS OF EXISTING FEATURES BEFORE BEGINNING CONSTRUCTION AND REPORT ANY DISCREPANCY TO THE ARCHITECT
3. VERIFY LOCATION OF EXISTING UTILITIES BEFORE PROCEEDING WITH WORK. NOTIFY OWNER'S REPRESENTATIVE MR. TED DYSON, DC DPW AND "MISS UTILITY" (1800-257-7777) 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATIONS. HAND DIG TEST PITS AT ALL UTILITY CROSSINGS AND DETERMINE EXACT CLEARANCE OF ALL PROPOSED INSTALLATIONS WELL IN ADVANCE OF CONSTRUCTION. NOTIFY ENGINEER OF ANY CONFLICTS WITH PLAN ELEVATIONS
4. WORK AND MATERIALS IN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE APPLICABLE D.C. DPW STANDARDS AND SPECIFICATIONS. ON-SITE WORK AND MATERIALS SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE D.C. PLUMBING CODE
5. ELEVATIONS SHOWN HEREON ARE BASED ON D.C. DATUM.
6. DIMENSIONS ARE TO FACE OF WALL AND CURB, EDGE OF WALK AND PAVEMENT, CENTERLINE OF COLUMN, PIPE AND UTILITY STRUCTURE, UNLESS OTHERWISE NOTED
7. FRAMES AND COVERS OF EXISTING STRUCTURES TO BE ADJUSTED TO MATCH NEW FINISHED GRADES
8. OMISSIONS AND/OR ADDITIONS OF UTILITIES FOUND DURING CONSTRUCTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY OF ANY INFORMATION CONCERNING FOUND UTILITY, NOT SHOWN ON PLANS
9. EXISTING SURFACE CONDITIONS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED TO MATCH EXISTING CONDITIONS. CONTRACTOR TO COORDINATE EXTENT WITH ARCHITECT
10. TEST PITS ARE REQUIRED AT ALL LOCATION(S) WHERE PROPOSED UTILITIES CROSS EXISTING UTILITIES. INVESTIGATION(S) TO IDENTIFY HORIZONTAL LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES. THE ENGINEER IS TO BE NOTIFIED OF THIS INFORMATION.
11. IF A 1' MINIMUM VERTICAL CLEARANCE CAN NOT BE MAINTAINED AT UTILITY CROSSING, THE CONTRACTOR IS TO NOTIFY THE ENGINEER BEFORE PROCEEDING WITH WORK
12. TRANSITION CURB, GUTTER, PAVING AND SIDEWALK TO MEET EXISTING IN LINE AND ON GRADE OR AS DIRECTED BY ENGINEER
13. ALL DEBRIS AND EXCESS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED OFF-SITE LOCATION
14. ALL ON-SITE WATER LINES TO HAVE A MINIMUM COVER OF 4'-0". WATER FITTINGS SHALL BE PROPERLY TIED AND ANCHORED, PER DPW STANDARDS
15. WHERE PORTIONS OF EXISTING BITUMINOUS OR CONCRETE PAVING ARE TO BE REMOVED, THE EXISTING PAVEMENT SHALL BE SAW-CUT.
16. REMOVE FRAMES AND COVERS OF SEWER MANHOLE/INLETS AND/OR WATER MAIN VALVE CASTINGS TO BE ABANDONED AND FILL TO GRADE.
17. ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE INSTALLED BEFORE THE START OF ANY EXCAVATION AND/OR CONSTRUCTION AS PER STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR THE DISTRICT OF COLUMBIA. IF AN ON-SITE INSPECTION REVEALS FURTHER EROSION CONTROL MEASURES ARE NECESSARY, THE SAME SHALL BE PROVIDED. SEE DRAWINGS C.06 AND C.07 FOR SEDIMENTATION AND EROSION CONTROL PLAN AND DETAILS.
18. ALL CURB SPOT SHOTS ARE TOP OF CURB, UNLESS OTHERWISE NOTED.
19. NOTIFY WASHINGTON GAS AT 202-750-4205, 48 HOURS PRIOR TO ANY EXCAVATION IN THE VICINITY OF ANY TRANSMISSION MAIN. FOR FURTHER INFORMATION OR PROBLEMS, CONTACT MR. CHUCK WHITLEY AT WASHINGTON GAS AT 703-750-4205
20. PROVIDE A MINIMUM OF 5 FEET HORIZONTAL AND 1 FOOT VERTICAL CLEARANCE BETWEEN 12" DIAMETER AND SMALLER DISTRIBUTION EXISTING GAS FACILITIES AND PROPOSED FACILITIES
21. PROVIDE A MINIMUM OF 5 FEET HORIZONTAL AND 2 FEET VERTICAL CLEARANCE BETWEEN 16" DIAMETER OR GREATER TRANSMISSION GAS FACILITIES AND PROPOSED FACILITIES
22. ALL PROPOSED WORK TO BE CONSTRUCTED IN ACCORDANCE WITH LATEST STANDARDS AND SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS - WATER AND SEWER UTILITY AUTHORITY
23. CONTRACTOR TO BE RESPONSIBLE FOR DESIGN OF SHEETING AND SHORING AND SUPPORT OF EXISTING UTILITIES AND ADJACENT STRUCTURES. SHORING, BRACING AND UNDERPINNING, DESIGNED BY STRUCTURAL ENGINEER LICENSED IN DISTRICT OF COLUMBIA SHALL BE PROVIDED AS NECESSARY TO ENSURE THEIR SUPPORT
24. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING SIDEWALK, CURB AND GUTTER TO REMAIN OR TO REPLACE SIDEWALK, CURB AND GUTTER DAMAGED DURING CONSTRUCTION
25. EXISTING FULL DEPTH PAVEMENT SECTION, CURB AND GUTTER TO BE REMOVED AND REPLACED TO EXTENT NECESSARY TO FACILITATE CONSTRUCTION OF NEW UTILITIES. MATERIALS TO COMPLY WITH DC/DPW STANDARDS AND SPECIFICATIONS

DRAWING INDEX

C.00	GENERAL NOTES AND VICINITY MAP
C.01	EXISTING CONDITION PLAN
C.02	DEMOLITION PLAN
C.03	SITE AND UTILITY PLAN
C.04	SITE GRADING PLAN
C.05	SITE DETAILS
C.06	UTILITY PROFILES
C.07	SEDIMENTATION AND EROSION CONTROL PLAN
C.08	SEDIMENTATION AND EROSION CONTROL DETAILS
C.09	STORM WATER MANAGMENT PLAN (GREEN ROOF)
C.09A	STORM WATER MANAGEMENT PLAN (GREEN ROOF)

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SEAL

10-10-06

REVISIONS

No.	Description	Date
1	ADDENDUM 1	08-31-06

PROJECT NO. HOK: 04-14021-00
DATE: 04-30-06

SHEET TITLE
GENERAL NOTES
AND
VICINITY MAP
CONSTRUCTION
DOCUMENTS

SCALE

SHEET NO. C-00
REVISION

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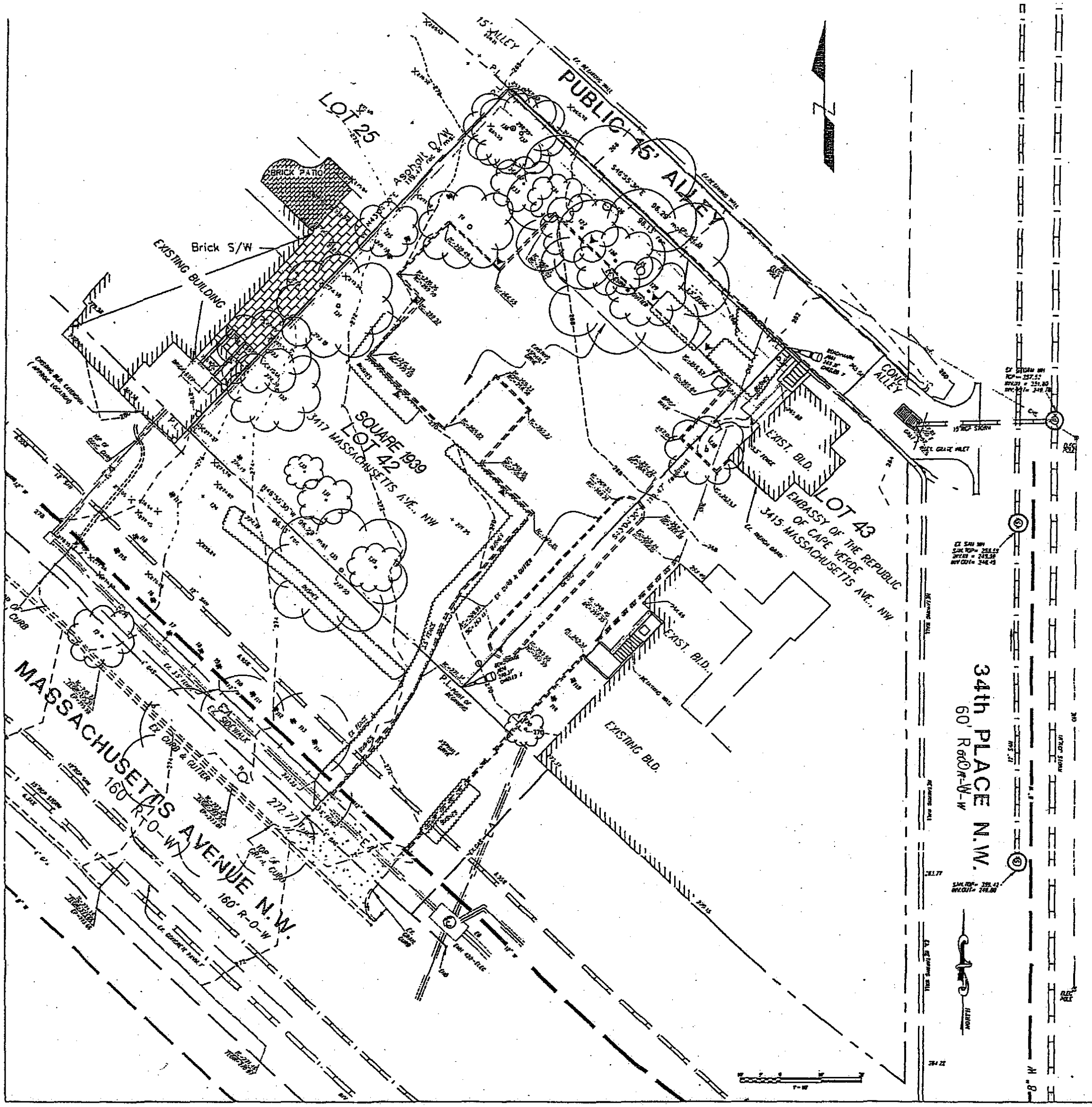


NOTE:

EXISTING UTILITIES TO BE REMOVED TO EXTENT NECESSARY TO FACILITATE CONSTRUCTION. UTILITIES TO BE CAPPED AND ABANDONED PER UTILITY SURVEYOR'S STANDARDS AND SPECIFICATION PRIOR TO ANY DEMOLITION

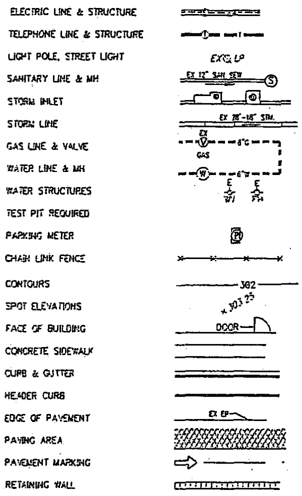
CONTACT 'MISS UTILITY' AT 1 800 257-7777 48 HOURS PRIOR TO CONSTRUCTION.

CONTACT DEPARTMENT OF PUBLIC WORKS-PUBLIC SPACE MAINTENANCE ADMINISTRATION 48 HOURS PRIOR TO START OF CONSTRUCTION AT (202)645-6030 OR (202)645-6031.

ALL PROPOSED WORK TO BE PERFORMED UNDER THE INSPECTION OF THE DEPARTMENT OF PUBLIC WORKS AND DCWASA USE MANHOLE ENTRY SEALS WHERE REQUIRED.

NOTE PROXIMITY OF ADJACENT STRUCTURES AND UTILITY LINES AND MAINTAIN CONTINUED SERVICE DURING CONSTRUCTION. COORDINATE WITH RESPECTIVE UTILITY COMPANIES AND ENGINEER SHOULD RELOCATION OF SERVICE BE REQUIRED.

LEGEND



ABBREVIATIONS

APX	APPROXIMATE	JB	JERSEY BARRIER
ASP	BITUMINOUS CONCRETE	LOD	LIMIT OF DISTURBANCE
BC	BOTTOM OF CURB	LP	LIGHT POLE
BLDG	BUILDING	MH	MANHOLE (STRUCTURE)
BRK	BRICK	O/H	OVERHEAD
BS	BOTTOM OF STEP	OHE	OVER HEAD ELECTRIC
CC	CONCRETE CURB	PCC	PORTLAND CONCRETE CEMENT
CG	CURB & GUTTER	P.L	PROPERTY LINE
CJ	CONTRACTION JOINT	PM	PARKING METER
CL	CENTER LINE	PROP	PROPOSED
CLF	CHAIN LINK FENCE	RAD	RADIUS
CO	CLEAN OUT	SAN	SANITARY
CONC	CONCRETE	SEW	SEWER
COMB	COMBINE(D)	STD	STANDARD
DIP	DUCTILE IRON PIPE	SD	STORM DRAIN
DOM	DOMESTIC	STY	STORY (FLOOR)
DWG	DRAWING(S)	S/W	SIDEWALK
E	ELECTRICAL	T	TELEPHONE
ELEV	ELEVATION	TYP	TYPICAL
ELEC	ELECTRIC(AL)	UGE	UNDERGROUND ELECTRIC UTILITY
ENT	ENTRANCE	UGG	UNDERGROUND GAS UTILITY
EX	EXISTING	UGSM	UNDERGROUND SEWER MAIN
FH	FIRE HYDRANT	UGW	UNDERGROUND WATER UTILITY
FT	FEET/FOOT	W	WATER
G	GAS	WL	WATER LINE
GRD	GUARD	WM	WATER MAIN
GRNT	GRANITE	WV	WATER VALVE
		XHCI	EXTRA HEAVY CAST IRON PIPE

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SEAL

10-10-06

KEYPLAN

REVISIONS

No.	Description	
1	ADDENDUM 1	04

PROJECT NO. HOK: 04-14021-00
DATE: 04

SHEET TITLE

EXISTING CONDITI
PLAN

CONSTRUCTION
DOCUMENTS

SCALE

SHEET NO.
C-01

HELLMUTH, OBATA & KASSABAUM, PC

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DEMOLITION NOTES

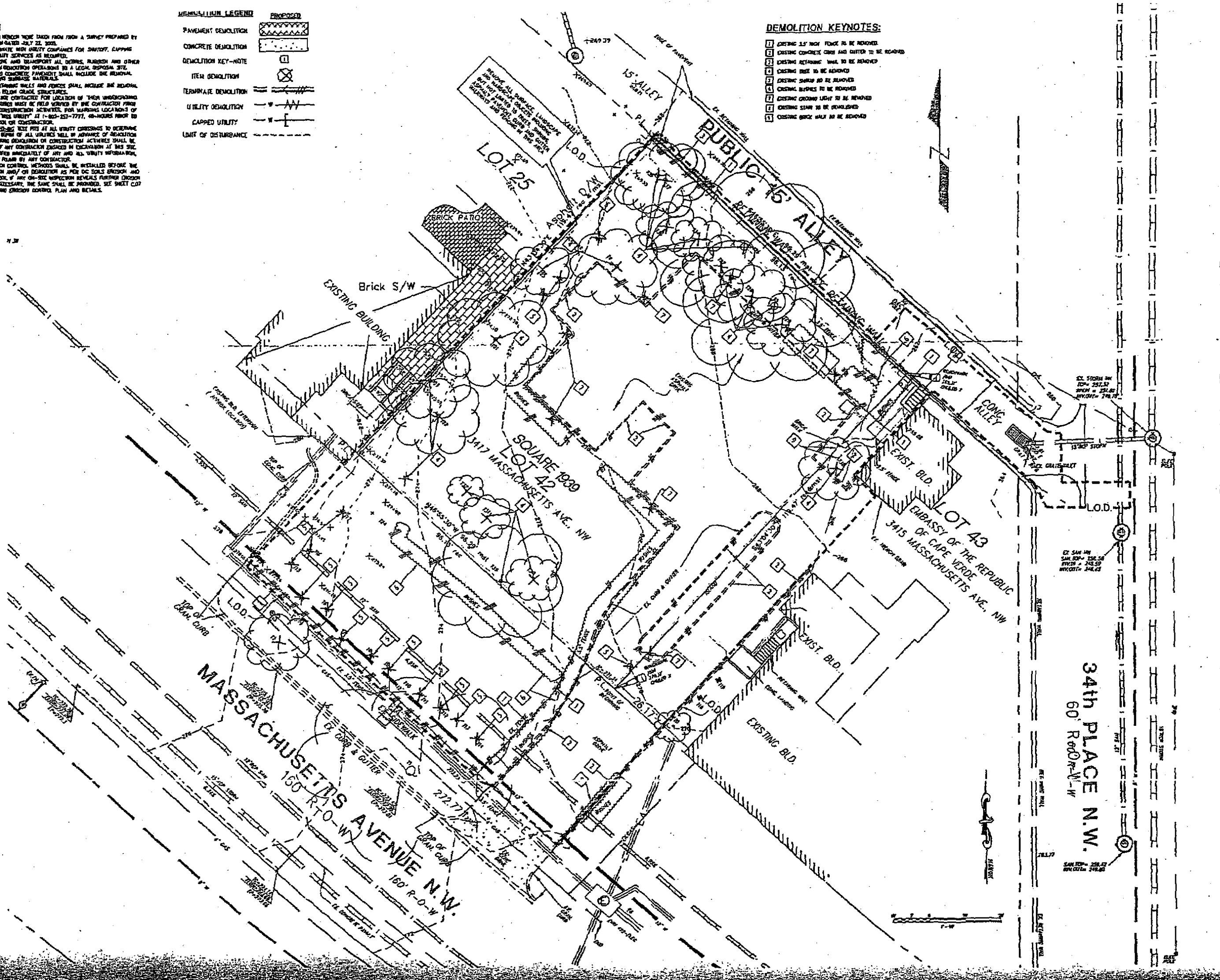
1. EXISTING CONDITIONS SHOWN HEREON WERE TAKEN FROM FROM A SURVEY PREPARED BY WILES MENSCH CORPORATION DATED JULY 22, 2005.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR SHUTOFF, CAPPING AND CONTINUATION OF UTILITY SERVICES AS REQUIRED.
3. CONTRACTOR SHALL REMOVE AND TRANSPORT ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS TO A LEGAL DISPOSAL SITE.
4. REMOVAL OF ASPHALT AND CONCRETE PAVEMENT SHALL INCLUDE THE REMOVAL OF ALL SURFACE, BASE, AND SUBBASE MATERIALS.
5. REMOVAL OF ALL WALLS/RETAINING WALLS AND FENCES SHALL INCLUDE THE REMOVAL OF ALL FOUNDATIONS AND BELOW GRADE STRUCTURES.
6. UTILITY COMPANIES WERE NOT CONTACTED FOR LOCATION OF THEIR UNDERGROUND UTILITIES. UNDERGROUND UTILITIES MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITIES. FOR MARKING LOCATIONS OF EXISTING UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-257-7777, 48-HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR CONSTRUCTION.
7. THE CONTRACTOR MUST HAND-DIG TEST PITS AT ALL UTILITY CROSSINGS TO DETERMINE THE EXACT LOCATION AND DEPTH OF ALL UTILITIES WELL IN ADVANCE OF DEMOLITION WORK. UTILITIES FOUND DURING DEMOLITION OR CONSTRUCTION ACTIVITIES SHALL BE THE SOLE RESPONSIBILITY OF ANY CONTRACTOR ENGAGED IN EXCAVATION AT THIS SITE. THE OWNER SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL UTILITY INFORMATION, OMISSIONS AND ADDITIONS FOUND BY ANY CONTRACTOR.
8. ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE INSTALLED BEFORE THE START OF ANY EXCAVATION AND/OR DEMOLITION AS PER DC SOILS EROSION AND SEDIMENT CONTROL HANDBOOK. IF ANY ON-SITE INSPECTION REVEALS FURTHER EROSION CONTROL MEASURES ARE NECESSARY, THE SAME SHALL BE PROVIDED. SEE SHEET C.07 AND C.08 FOR SEDIMENT AND EROSION CONTROL PLAN AND DETAILS.

DEMOLITION LEGEND

	PROPOSED
PAVEMENT DEMOLITION	▨
CONCRETE DEMOLITION	▒
DEMOLITION KEY-NOTE	1
ITEM DEMOLITION	⊗
TERMINATE DEMOLITION	═══ ═/═//═
UTILITY DEMOLITION	—W—/\/\/—
CAPPED UTILITY	—W—[—
LIMIT OF DISTURBANCE	- - - - - - -

DEMOLITION KEYNOTES:

1. EXISTING 3.5' HIGH FENCE TO BE REMOVED
2. EXISTING CONCRETE CURB AND GUTTER TO BE REMOVED
3. EXISTING RETAINING WALL TO BE REMOVED
4. EXISTING TREE TO BE REMOVED
5. EXISTING SHRUB TO BE REMOVED
6. EXISTING BUSHES TO BE REMOVED
7. EXISTING GROUND LIGHT TO BE REMOVED
8. EXISTING STAIR TO BE DEMOLISHED
9. EXISTING BRICK WALK TO BE REMOVED


REMOVE ALL SURFACE LANDSCAPE AND HARDSCAPE OBJECTS INCLUDING BUT NOT LIMITED TO TREES, SHRUBS, ASPHALT PAVEMENT, CURB AND GUTTER WALKWAYS AND FENCING IN THIS AREA
PUBLIC 15' ALLEY
15' ALLEY
LOT 25
BRICK PATIO
Asphalt D/W
Brick S/W
EXISTING BUILDING
L.O.D.
SQUARE 1939
LOT 42
3417 MASSACHUSETTS AVE., NW
LOT 43
EMBASSY OF THE REPUBLIC OF CAPE VERDE
3415 MASSACHUSETTS AVE., NW
EXIST. BLD.
EXISTING BLD.
CONC ALLEY
MASSACHUSETTS AVENUE N.W.
160' R-O-W
TOP OF GRAN. CURB
CURB & GUTTER
272.77
26.17
34th PLACE N.W.
60' R-O-W
N

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DISTRICT OF COLUMBIA
PROFESSIONAL ENGINEER
3/10/07

KEYPLAN

REVISIONS

No.	Description	Date
1	ADDENDUM 1	08-01-06
2	DC/WASA COMMENTS	11-16-06

PROJECT NO. HOK: 04-14021-00
DATE: 06-30-06

SHEET TITLE
DEMOLITION PLAN

CONSTRUCTION DOCUMENTS

SCALE:
SHEET NO.
C-02
REVISION

DC/WASA GENERAL NOTES:

1. NOTIFY DC/WASA ONE WEEK PRIOR TO START OF CONSTRUCTION, UTILITY INSPECTION SECTION AT 202-787-4399, WATER SERVICES 202-612-3401 OR 3400 AND SEWER SERVICES 202-264-3824 OR 3828.
2. DEVELOPERS, CONTRACTORS AND PLUMBERS MUST SUBMIT FINAL CONSTRUCTION AS-BUILT INFORMATION TO APPROPRIATE DC/WASA INSPECTOR(S) FOR REVIEW AND APPROVAL.
3. ONCE THE WASA INSPECTOR APPROVES THE AS-BUILT, A COPY MUST BE SUBMITTED TO THE DOCUMENTS AND PERMITS OFFICE AND THE WATER AND SEWER DESIGN SECTION AT 5000 OVERLOOK AVENUE, S.W., 5TH FLOOR
4. UNDER DC/WASA CUSTOMER FEES AND CHARGES, CONTRACTORS, PLUMBERS, OWNERS ARE RESPONSIBLE FOR EXCAVATIONS, BACKFILLING, REPAVING AND RESTORATION OF PUBLIC SPACE FOR STREET AND SIDEWALKS CUTS, FOR NEW UTILITIES, CONNECTIONS, TAPS AND ABANDONMENT OF SERVICES WITHIN PUBLIC SPACE UNDER DC/WASA INSPECTION. DC/WASA IS NOT RESPONSIBLE FOR FINAL RESTORATION OF STREET AND SIDEWALK CUTS PERFORMED

METER & METER TRANSMITTING DEVICES NOTES:

THE AUTHORITY HAS INSTALLED A FIXED NETWORK AUTOMATIC METER READING SYSTEM. THIS SYSTEM WILL ELIMINATE THE REQUIREMENT TO READ METERS MANUALLY. METERS INSTALLED BY WASA OR PRIVATE OWNERS OF METERS WILL NEED TO MEET THE FOLLOWING SPECIFICATIONS IN ORDER FOR WASA TO READ METERS AUTOMATICALLY:

1. METERS, INSTALLATIONS AND INSPECTIONS MUST COMPLY WITH ALL DCWR CODES AND SPECIFICATIONS.
2. ALL NEW METERS INSTALLED, INCLUDING PRIVATELY OWNED METERS MUST BE "TRUE ABSOLUTE ENCODER" TYPE METERS OR "DIRECT-READ" METERS THAT CONVERT METER READINGS TO DIGITAL PULSES FROM THE METER REGISTERS.
3. ALL METER REGISTERS SHOULD BE ABLE TO CONVERT ALL THE DIALS IN THE METER REGISTER TO DIGITAL PULSES.
4. THE METERS MUST MEASURE WATER IN 100 CUBIC FEET INCREMENTS. ALL NEW METERS MUST HAVE A METER READING TRANSMITTING UNIT ATTACHED TO THE METER REGISTERS, SEALED SO AS TO MAKE IT WATER TIGHT. THE TRANSMITTING UNIT SHOULD BE PROGRAMMABLE TO DCWASA'S FCC APPROVED RADIO FREQUENCY, AND COMPATIBLE WITH HEXAGRAM, INC HARDWARE AND SOFTWARE.
5. ALL NEW METERS 3" OR GREATER MUST HAVE TEST PLUG IN THE METER.
6. ALL NEW METERING CONFIGURATIONS SHOULD HAVE STRAINER WHERE APPROPRIATE TO MANUFACTURER'S SPECIFICATIONS.

OUTSIDE LOCATIONS:

A. THE NEW METER LID MUST BE OF A COMPOSITION AND TENSILE STRENGTH SO AS TO PERMIT A RADIO SIGNAL TO PROPAGATE THROUGH THE METER LID AND SECURE THE METER PIT, AGAINST LIGHT VEHICLE TRAFFIC AND PEDESTRIAN FOOT TRAFFIC. LARGE METER INSTALLATIONS MUST HAVE METER LIDS THAT MAY WITHSTAND HEAVY VEHICLE TRAFFIC
B. THE RADIO-TRANSMITTING DEVICE MUST BE SECURELY ANCHORED TO THE UNDERSIDE OF THE NEW TRANSMITTER FRIENDLY METER LID, SO AS TO PERMIT A RADIO SIGNAL TO COMMUNICATE WITH A DATA COLLECTION UNIT
C. THE RADIO-TRANSMITTING DEVICE MAY ALSO BE INSTALLED THROUGH THE EXISTING CAST IRON METER LID OR A NEW CAST IRON METER LIDS SO AS PERMIT A SIGNAL TO COMMUNICATE WITH A DATA COLLECTION DEVICE AND POSE NO TRIPPING HAZARD

APPROVED METERS, METER LIDS AND MTU CURRENTLY USED BY DCWASA:

1. HEXAGRAM INC METER TRANSMITTING UNIT.
2. ABB WATER METERS INC. WITH MIU PERMANENTLY POTTED AT THE FACTORY
   - MODEL C2000 2"-8" COMPOUND METERS.
3. ARMORCAST INC.
   - METER LID 21 1/2". METER LID MAY NEED TO BE HEAVY DUTY CAST IRON WITH THE RADIO TRANSMITTING DEVICE INSTALLED THROUGH THE EXISTING CAST IRON METER LID TO ALLOW REMOVAL OF THE LARGER SIZE METERS

* * CONTRACTOR SHALL PROVIDE A VIDEO INSPECTION ALONG THE EXISTING STORM DRAIN OVER WHICH STRUCTURE 02 WILL BE CONSTRUCTED AND SUBMIT THE VIDEO TAPE AS A SUBMITTAL TO THE A/E FOR APPROVAL.

PROPOSED KEYNOTE:

1. NEW 6" FIRE SERVICE AND 6" WATER VALVE CLOSING PER DC/WASA STANDARDS AND SPECIFICATIONS. REFER TO DC/WASA STANDARD DRAWING NO W/20.01
2. NEW 3" DIP CLASS 52 DOMESTIC SERVICE PER DC/WASA STANDARDS AND SPECIFICATIONS. BFP WATTS 909 COMPLY WITH ASSE1013.
3. NEW 4" DIP CLASS 52 FIRE SERVICE PER DC/WASA STANDARDS AND SPECIFICATIONS. BFP WATTS 909 OCDA COMPLY WITH ASSE1048.
4. PROPOSED STAIR. REFER ARCHITECTURAL/LANDSCAPE DRAWINGS FOR DETAIL.
5. NEW TELECOM LINE. REFER TO ELECTRICAL DRAWING FOR DETAILS. CONTRACTOR TO COORDINATE REQUIREMENTS AND POSSIBLE ROUTING WITH VERIZON.
6. PROPOSED 4-4" ELECTRIC CONDUIT. REFER TO ELECTRICAL DRAWINGS FOR DETAILS AND ACTUAL LOCATION. CONTRACTOR TO COORDINATE POSSIBLE ROUTING WITH PEPCO
7. MODIFIED 6' DIAMETER DROP MANHOLE WITH DOGHOUSE BASE PER DC/WASA STANDARDS AND SPECIFICATIONS. REFER TO DC/WASA STANDARD DRAWING NO S/20.02 AND S/25.01.
8. NEW 10" PVC SDR35 SANITARY SEWER PER DC/WASA STANDARDS AND SPECIFICATIONS.
9. ~~REFER TO~~ REPLACE THE EXISTING INLET ~~[illegible]~~ DURING THE INSTALLATION OF 10" SANITARY SEWER PIPE.
10. NEW 15" RCP STORM LINE.
11. PROPOSED PVC SCHEDULE 40 STORM SEWER FROM AREA DRAIN TO BUILDING PRIVATELY OWNED AND MAINTAINED. REFER PLUMBING DRAWING FOR CONNECTION
12. PROPOSED TRENCH DRAIN. REFER TO ARCHITECTURAL DRAWING FOR ACTUAL LOCATION AND PLUMBING DRAWING FOR CONNECTION
13. PROPOSED PVC SCHEDULE 40 SANITARY PIPE. REFER PLUMBING DRAWING FOR CONNECTION
14. PROPOSED UNDERGROUND PARKING/BUILDING. SEE ARCHITECTURAL PLANS FOR DETAIL.
15. PROPOSED WATER METER PER DC/WASA STANDARDS AND SPECIFICATIONS. REFER TO DC/WASA DRAWING W09/23.01 FOR DETAIL.
16. PROPOSED CONCRETE THRUST BLOCK PER DC/WASA STANDARDS AND SPECIFICATIONS. REFER TO DC/WASA DRAWING W/40.01. COORDINATE REQUIREMENTS WITH DC/WASA INSPECTOR MR. [illegible] AT 202-787-2377
17. PROPOSED 12"X12" AREA DRAIN. PRIVATELY OWNED AND MAINTAINED, REFER TO SHEET C-05 FOR DETAIL AND SPECIFICATION
18. PROPOSED RETAINING WALL. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DETAIL.
19. PROPOSED 4" DIA AREA DRAIN. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DETAIL.
20. NEW 1 1/4" GAS SERVICE. COORDINATE REQUIREMENTS WITH WASHINGTON GAS
21. PROPOSED CONCRETE CURB
22. ASPHALT TO BE RESURFACED
23. PROPOSED ASPHALT AREA
24. PROPOSED INCOMING PHONE SERVICE CONDUIT. CONTRACTOR TO COORDINATE POSSIBLE ROUTING WITH VERIZON
25. REFER TO ARCHITECTURAL PLANS FOR PAVERS DETAIL.
26. PROPOSED SWALE CONNECTION. REFER TO PLUMBING DRAWINGS.
27. THE CONTRACTOR IS TO CLEAN THE EXISTING PIPE FROM ANY DEBRIS OR CONCRETE FROM THE EXISTING STORM INLET TO EXISTING SEWER MANHOLE.

* THESE DIMENSIONS TO THE FACE OF CURB ARE AT THE REQUEST OF DC PERMITTING OFFICE. VERIFY LOCATION OF UTILITIES WITH MEP DRAWINGS AND NOTIFY ENGINEER OF ANY DISCREPANCIES. REFER TO MEP DRAWINGS FOR ACTUAL LOCATION.

TEST PITS ARE REQUIRED AT ALL PROPOSED UTILITY CROSSINGS WITH ALL EXISTING UTILITY LINES TO DETERMINE THE EXACT HORIZONTAL LOCATION, ELEVATION AND AND SIZE OF THE EXISTING UTILITIES. A MINIMUM OF ONE FOOT VERTICAL CLEARANCE SHALL BE PROVIDED BETWEEN EXISTING AND PROPOSED UTILITIES. TEST PITS SHOULD BE COMPLETED PRIOR TO ORDERING ANY STRUCTURES OR PIPE MATERIALS. NOTIFY ENGINEER OF ANY CONFLICT WITH PROPOSED PLANS.

NOTES:

1. EXISTING WATER AND SEWER SERVICES MUST BE ABANDONED BEFORE NEW CONNECTIONS ARE MADE.
2. PERMANENT WATER CONNECTIONS MUST BE INSTALLED FOR ALL CONSTRUCTION PURPOSES.
3. ALL DC/WASA DETAILS SHOWN ON THE DRAWING REFER TO THE DC/WASA STANDARD DETAILS BOOK DATED JULY 31, 2001.

LEGEND

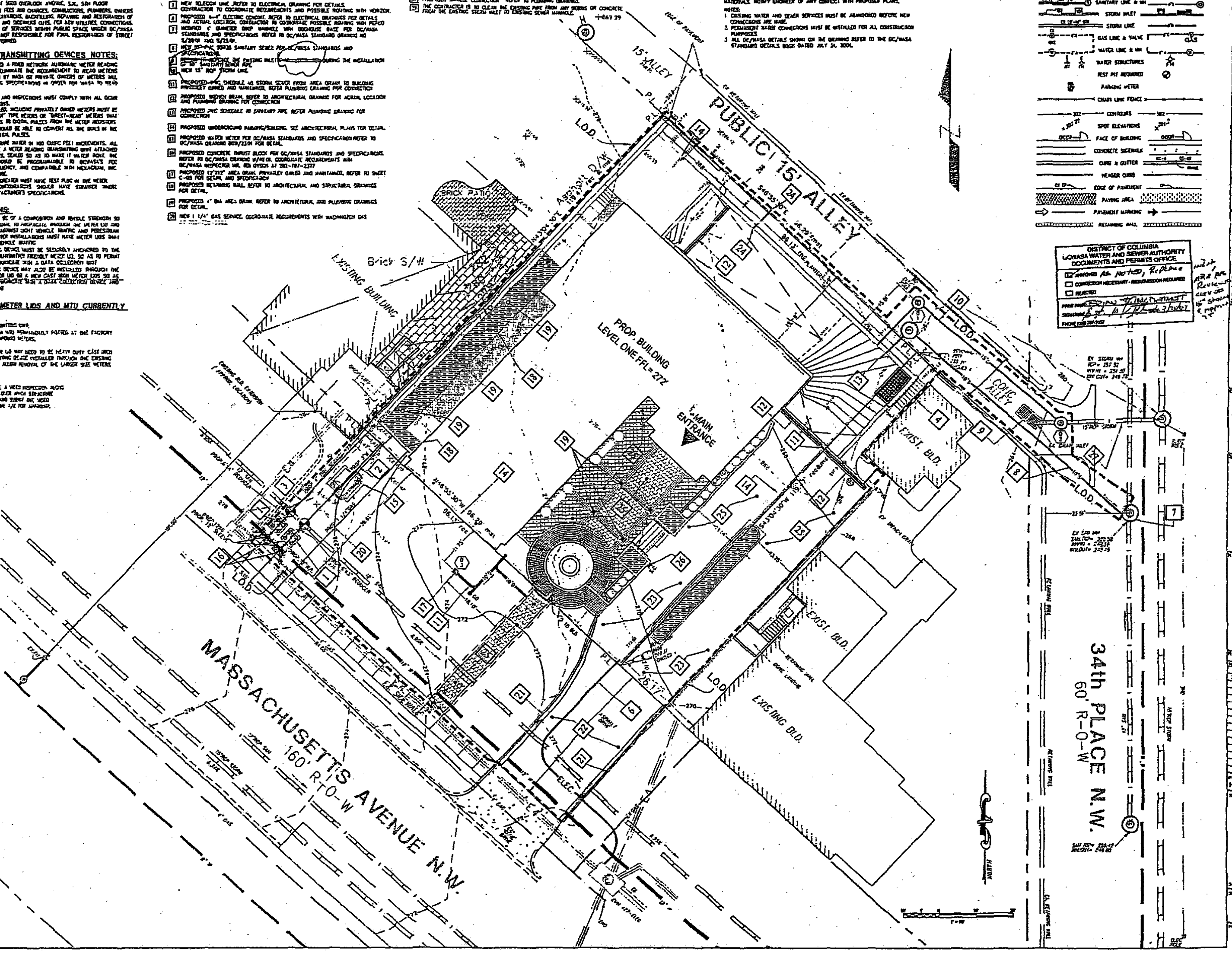
EXISTING	LEGEND	PROPOSED
	ELECTRIC LINE & STRUCTURE	
	TELEPHONE LINE & STRUCTURE	
	LIGHT POLE, STREET LIGHT	
	SANITARY LINE & MH	
	STORM INLET	
	STORM LINE	
	GAS LINE & VALVE	GAS
	WATER LINE & MH	
	WATER STRUCTURES	
	TEST PIT REQUIRED	
	PARKING METER	
	CHAIN LINK FENCE	
302	CONTOURS	302
	SPOT ELEVATIONS	
DOOR	FACE OF BUILDING	DOOR
	CONCRETE SIDEWALK	
	CURB & GUTTER	
	HEADER CURB	
	EDGE OF PAVEMENT	
▨	PAVING AREA	▨
⇨	PAVEMENT MARKING	➡
	RETAINING WALL	

DISTRICT OF COLUMBIA
DC/WASA WATER AND SEWER AUTHORITY
DOCUMENTS AND PERMITS OFFICE

☑ APPROVED As Noted, Replace
☐ CORRECTION NECESSARY - RESUBMISSION REQUIRED
☐ REJECTED

PRINT NAME [illegible]
SIGNATURE [illegible] DATE 3/[illegible]/07
PHONE (202) 787-[illegible]

inlet, are be Reviewed city [illegible] 15" storm & [illegible]



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(F) 703.264.[illegible]
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SEAL
JEFF ABRAVESH
3/19/07

REVISIONS

No.	DESCRIPTION	DATE
1	ADDENDUM 1	10-31-
2	DC/WASA COMMENTS	11-16-

PROJECT NO: HOK: 04-14021-00
DATE: 06-30-

SHEET TITLE
SITE AND UTILITY PLAN

CONSTRUCTION DOCUMENTS

SCALE: 1"=10'

SHEET NO.
C-03

HELLMUTH, OBATA & KASSABAUM, P.C. © 20

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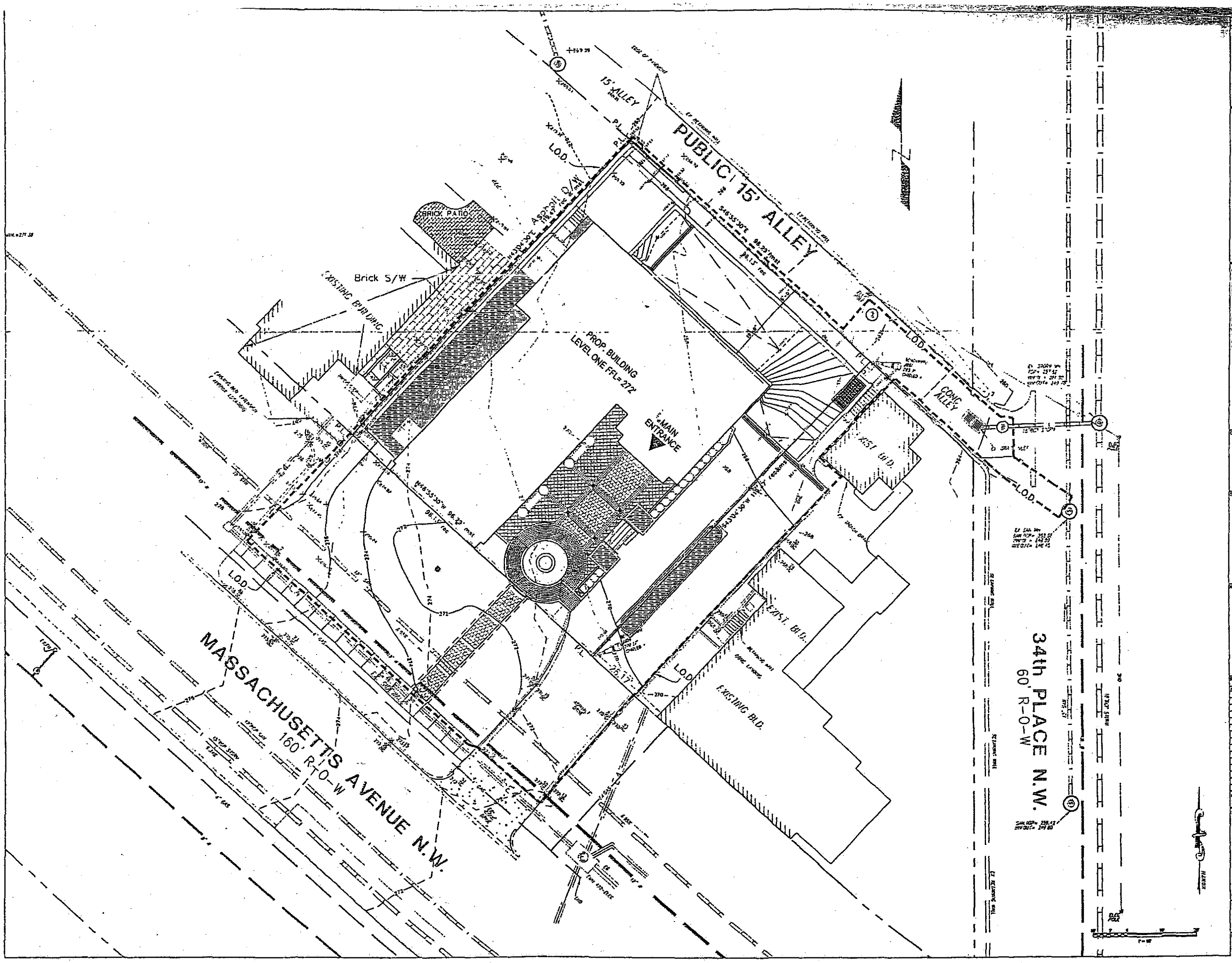

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KEYPLAN

REVISIONS

No.	Description	Date
1	ADDENDUM 1	05-[illegible]-06
2	DC/WASA COMMENTS	11-16-06

PROJECT NO. HOK 04-14021-00
DATE 06-30-06

SHEET TITLE
SITE GRADING PLAN

CONSTRUCTION
DOCUMENTS

SCALE: 1" = 10'

SHEET NO. C-04
REVISION

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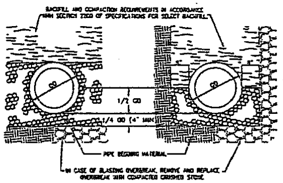

BACKFILL AND COMPACTION REQUIREMENTS IN ACCORDANCE WITH SECTION 2300 OF SPECIFICATIONS FOR SELECT BACKFILL
OD
1/2 OD
1/4 OD (4" MIN)
PIPE BEDDING MATERIAL
IN CASE OF BLASTING OVERBREAK, REMOVE AND REPLACE OVERBREAK WITH COMPACTED CRUSHED STONE

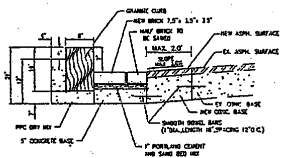
BACKFILL AT CROWN
(PIPE BEDDING FOR TRENCH WIDTH EXCEEDING WIDTH SPECIFIED)

BACKFILL AT SPRINGLINE
(PIPE BEDDING FOR TRENCH WITH WITHIN WIDTH SPECIFIED)

TRENCHING METHODS MUST BE IN COMPLIANCE WITH OSHA REQUIREMENTS.

THE PIPE SHALL BE BEDDED IN CAREFULLY COMPACTED PIPE BEDDING MATERIAL PLACED ON A FLAT TRENCH BOTTOM. THE PIPE BEDDING MATERIAL SHALL HAVE A MINIMUM HORIZONTAL THICKNESS OF ONE-FOURTH THE OUTSIDE PIPE DIAMETER (4" MINIMUM) AND SHALL EXTEND VERTICALLY IN ACCORDANCE WITH SECTION SHOWN. IF THE MAXIMUM WIDTH OF THE TRENCH AT THE TOP OF THE PIPE EXCEEDS THOSE SPECIFIED, PIPE BEDDING MATERIAL WILL BE BROUGHT TO THE TOP OF THE PIPE FOR THE FULL WIDTH OF THE TRENCH. THE REMAINDER OF THE SIDE FILLS AND OVER THE TOP OF THE PIPE SHALL BE FILLED WITH SELECT BACKFILL MATERIAL. SHOULD THE CONTRACTOR ELECT TO USE LARGER STONE TO CARRY THE WATER, THE LARGER STONE IS TO BE PLACED BENEATH THE SPECIFIED AMOUNT OF PIPE BEDDING MATERIAL. THE LARGER STONE IS NOT IN ANY WAY TO AFFECT THE AMOUNT OF PIPE BEDDING TO BE USED.

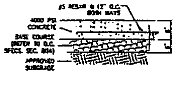
TYPICAL TRENCH SECTIONS
(NOT TO SCALE)



NOTE:

- NEW SURFACE, BASE AND SUBBASE COURSES TO MATCH EXISTING.
- ASPHALT PAVEMENT MATERIALS SHALL CONFORM TO THE REFERENCED PARAGRAPHS & TABLES OF THE DC DEPARTMENT OF HIGHWAYS & TRAFFIC STANDARDS & SPECIFICATIONS FOR HIGHWAYS & STRUCTURES LATEST EDITION & SUPPLEMENTS.

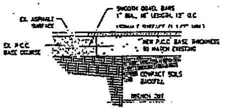
GRANITE CURB & BRICK GUTTER DETAIL
(NOT TO SCALE)


#5 REBAR @ 12" O.C. BOTH WAYS
4000 PSI CONCRETE
BASE COURSE (REFER TO D.C. SPECS. SEC. 804)
APPROVED SUBGRADE

NOTE:

1- REFER TO SITE PLAN FOR JOINT LOCATIONS
2- PROVIDE EXPANSION JOINTS ALONG FACE OF BUILDINGS, WHERE NEW CONCRETE PAVEMENT MEETS EXISTING AT ALL FIXED OBJECT AND AS SHOWN ON THE SITE PLAN.

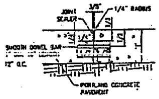
TYPICAL CONCRETE PAVEMENT DETAIL FOR DRIVEWAY APRON
(NOT TO SCALE)


EX. ASPHALT SURFACE
SMOOTH DOWEL BARS 1" DIA., 18" LENGTH, 12" O.C.
EX. P.C.C. BASE COURSE
NEW P.C.C. BASE THICKNESS TO MATCH EXISTING
COMPACT SOILS BACKFILL
TRENCH 2/3

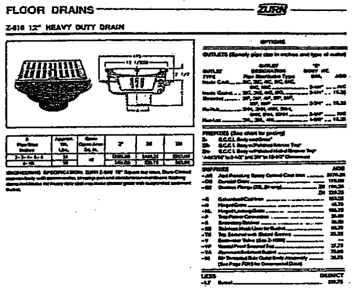
NOTE:

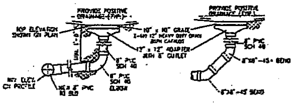
- NEW SURFACE, BASE AND SUBBASE COURSES TO MATCH EXISTING
- ASPHALT PAVEMENT MATERIALS SHALL CONFORM TO THE REFERENCED PARAGRAPHS & TABLES OF THE DC DEPARTMENT OF HIGHWAYS AND TRAFFIC STANDARDS & SPECIFICATIONS FOR HIGHWAYS & STRUCTURES LATEST EDITION & SUPPLEMENTS

PAVEMENT REPAIR DETAIL
(NOT TO SCALE)

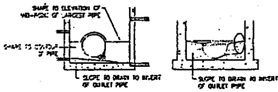


CONTRACTION JOINT WITH LOAD TRANSFER FOR CONCRETE DRIVEWAY APRON
(NOT TO SCALE)


FLOOR DRAINS
ZURN
Z-610 12" HEAVY DUTY DRAIN

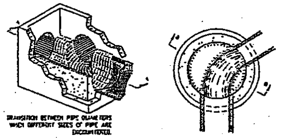

PROVIDE POSITIVE DRAINAGE (TYP.)
TOP ELEVATION SHOWN ON PLAN
10" x 10" GRATE Z-610 12" HEAVY DUTY DRAIN
12" x 12" ADAPTER WITH 8" OUTLET
8" PVC SCH 40
6" PVC SCH 40
8"x8"x45 BEND
8"x6" PVC
INV. ELEV. SHOWN ON PROFILE

TYPICAL AREA DRAIN
(NOT TO SCALE)


SHAPE TO ELEVATION OF MID-POINT OF LARGEST PIPE
SHAPE TO CONTOUR OF PIPE
SLOPE TO DRAIN TO INVERT OF OUTLET PIPE

SECTION A-A

SECTION B-B



TRANSITION BETWEEN PIPE DIAMETERS WHEN DIFFERENT SIZES OF PIPE ARE ENCOUNTERED.

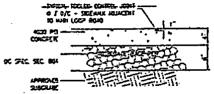
NOTES:

SHAPING OF MANHOLES AND INLET INVERTS IN ACCORDANCE WITH THIS DRAWING IS TO APPLY TO THOSE STRUCTURES SPECIFIED ON PLANS OR WHERE INVERT OF PIPE IS ABOVE INVERT OF STRUCTURE.

MANHOLE OR DROP INLET IS TO BE FORMED AND CONSTRUCTED IN ACCORDANCE WITH APPLICABLE STANDARD OR SPECIAL DRAWING. THE INVERT SHAPING AS DETAILED HEREON IS TO CONSIST OF A PORTLAND CEMENT CONCRETE MIX CONFORMING TO CLASS A3 OR CLASS C1, EXCEPT THAT 25% OF COARSE AGGREGATE MAY BE UP TO 4" DIAMETER AND CONSIST OF STONE, BROKEN BRICK, BROKEN CONCRETE, OR BROKEN CONCRETE BLOCK. THE SURFACE SHALL BE LEFT SMOOTH BY MEANS OF HAND TROWELLING. NONE OF THE COARSE AGGREGATE SHALL REMAIN EXPOSED.

DETAILS OF INVERT SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. EACH MANHOLE OR DROP INLET IS TO BE SHAPED INDIVIDUALLY TO BEST FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.

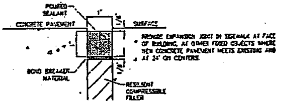
MANHOLE SHAPING METHOD
(NOT TO SCALE)


SMOOTH TOOLED CONTROL JOINTS @ 5' O/C - SIDEWALK ADJACENT TO MAIN LOOP ROAD
4000 PSI CONCRETE
DC SPEC. SEC. 804
APPROVED SUBGRADE

NOTE:

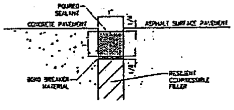
1. PROVIDE EXPANSION JOINT WHERE NEW CONCRETE SIDEWALK MEETS EXISTING.
2. REFER TO SITE PLAN FOR JOINT LOCATION.

TYPICAL CONCRETE SIDEWALK
(NOT TO SCALE)

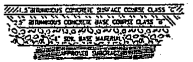


- PROVIDE EXPANSION JOINT IN SIDEWALK AT FACE OF BUILDING, AT OTHER FIXED OBJECTS WHERE NEW CONCRETE PAVEMENT MEETS EXISTING AND AT 24' ON CENTERS.

SIDEWALK EXPANSION JOINT DETAIL
(NOT TO SCALE)



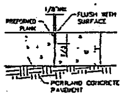
EXPANSION JOINT BETWEEN THE CONCRETE AND ASPHALT PAVEMENT DETAIL
(NOT TO SCALE)


1.5" BITUMINOUS CONCRETE SURFACE COURSE CLASS "C"
3" BITUMINOUS CONCRETE BASE COURSE CLASS "B"
6" SOIL BASE MATERIAL
APPROVED SUBGRADE

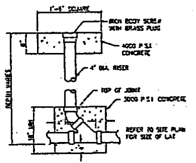
STANDARD PAVEMENT
TYPICAL ASPHALT
(NOT TO SCALE)

NOTE:

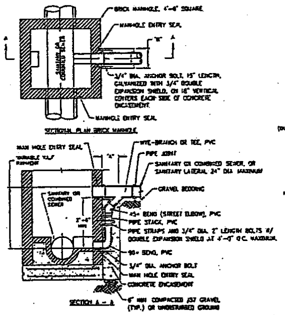
- ASPHALT AND SOIL BASE MATERIALS SHALL CONFORM TO THE REFERENCED PARAGRAPHS & TABLES OF THE DC DEPARTMENT OF HIGHWAYS AND TRAFFIC STANDARDS & SPECIFICATIONS FOR HIGHWAYS & STRUCTURES LATEST EDITION & SUPPLEMENTS
- TESTS OF SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION OF SUBBASE THICKNESS PRIOR TO CONSTRUCTION AND PAVEMENT DESIGN ADJUSTED IF REQUIRED



SIDEWALK CONTRACTION JOINT
(NOT TO SCALE)

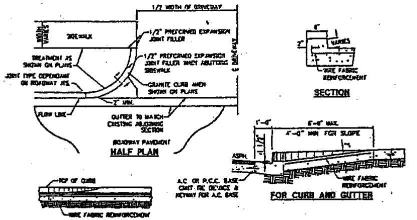


CLEANOUT DETAIL
(NOT TO SCALE)

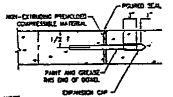

BRICK MANHOLE, 4'-6" SQUARE
MANHOLE ENTRY SEAL
3/4" DIA. ANCHOR BOLT, 15" LENGTH, GALVANIZED WITH 3/4" DOUBLE EXPANSION SHIELD, ON 16" VERTICAL CENTERS EACH SIDE OF CONCRETE ENCASEMENT.
MANHOLE ENTRY SEAL
SECTIONAL PLAN BRICK MANHOLE
MAN HOLE ENTRY SEAL
WYE-BRANCH OR TEE, PVC
PIPE JOINT
SANITARY OR COMBINED SEWER, OR SANITARY LATERAL 24" DIA. MAXIMUM
GRAVEL BEDDING
45° BEND (STREET ELBOW), PVC
PIPE STACK, PVC
PIPE STRAPS AND 3/4" DIA. 2" LENGTH BOLTS W/ DOUBLE EXPANSION SHIELD AT 4'-0" O.C. MAXIMUM
90° BEND, PVC
3/4" DIA. ANCHOR BOLT
MAN HOLE ENTRY SEAL
CONCRETE ENCASEMENT
6" MIN. COMPACTED #57 GRAVEL (TYP.) OR UNDISTURBED GROUND
SECTION A - A

SEWER OR LATERAL DIAMETER	STACK PIPE DIAMETER	DIMENSIONS "A" & "B"
4"	4"	16"
6"	6"	18"
8"	8"	20"
10"	10"	22"
12"	10"	24"
15"	12"	26"
18"	15"	28"
21"	18"	30"
24"	21"	32"

EXISTING DROP MANHOLE WITH NEW OUTSIDE DROP CONNECTION
(NOT TO SCALE)


1/2 WIDTH OF DRIVEWAY
SIDEWALK
1/2" PREFORMED EXPANSION JOINT FILLER
1/2" PREFORMED EXPANSION JOINT FILLER WHEN ABUTTING SIDEWALK
TREATMENT AS SHOWN ON PLANS
JOINT TYPE DEPENDANT ON ROADWAY JTS.
GRANITE CURB WHEN SHOWN ON PLANS
FLOW LINE
GUTTER TO MATCH EXISTING ADJOINING SECTION
ROADWAY PAVEMENT
HALF PLAN
SECTION
WIRE FABRIC REINFORCEMENT
4'-0" MIN FOR SLOPE
6'-6" MAX.
ASPH. PAVEMENT
A.C. OR P.C.C. BASE OMIT PIE DEVICE & RETAIN FOR A.C. BASE
WIRE FABRIC REINFORCEMENT
FOR CURB AND GUTTER
TOP OF CURB
WIRE FABRIC REINFORCEMENT
SECTION ELEVATION AT GUTTER LINE

DRIVEWAY ENTRANCE
(NOT TO SCALE)

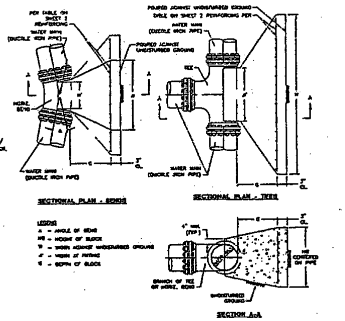

NON-EXTRUDING PREMOLDED COMPRESSIBLE MATERIAL
POURED SEAL
1/2 T
PAINT AND GREASE THIS END OF DOWEL
EXPANSION CAP

NOTE:

1. ALL FORMED JOINTS SHALL BE FINISHED WITH 1/4" RADIUS.
2. SIZE AND SPACING OF DOWELS IN TRANSITION SECTION SHALL BE GOVERNED BY THICKEST SLAB.

THICKNESS OF SLAB	DOWELS		
	DIAMETER	LENGTH	SPACING
	1"	18"	12"

DOWELED TRANSVERSE EXPANSION JOINT FOR CONCRETE DRIVEWAY APRON
(NOT TO SCALE)


POURED AGAINST UNDISTURBED GROUND
TABLE ON SHEET 2 REINFORCING PER
WATER MAIN (DUCTILE IRON PIPE)
POURED AGAINST UNDISTURBED GROUND
PER TABLE ON SHEET 2 REINFORCING
HORIZ. BEND
WATER MAIN (DUCTILE IRON PIPE)
SECTIONAL PLAN - BENDS
SECTIONAL PLAN - TEES
LEGEND
A = ANGLE OF BEND
HB = HEIGHT OF BLOCK
A = BEARING AGAINST UNDISTURBED GROUND
W = WIDTH AT FITTING
D = DEPTH OF BLOCK
BRANCH OF TEE OR HORIZ. BEND
UNDISTURBED GROUND
SECTION A-A

THRUST BLOCK DETAIL
(NOT TO SCALE)

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SEAL

KEYPLAN

REVISIONS

PROJECT NO. HOK: 04-14021-00
DATE: 06

SHEET TITLE
SITE DETAILS

CONSTRUCTION DOCUMENTS

SCALE: N.T.S.

SHEET NO.
C-05

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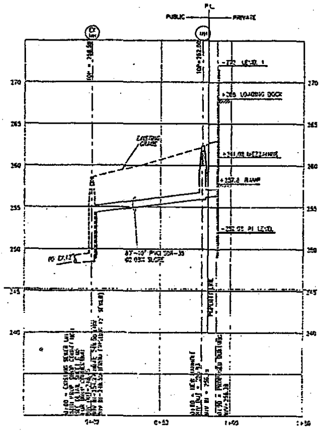
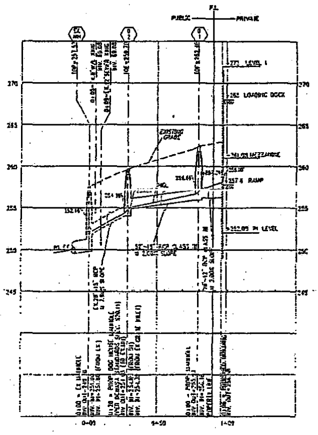


PROPOSED SANITARY LINE PROFILE

SCALE: HORIZ 1" = 30'
VERT 1" = 5'



PROPOSED STORM LINE PROFILE

SCALE: HORIZ 1" = 30'
VERT 1" = 5'

HYDRAULIC GRADE LINE SUMMARY SHEET													
Struct. No.	Down Stream HGL Elev	Struct Loss	Up Stream HGL Elev	Upstream Pipe Slope (%)	Downstream Pipe Slope (%)	Length of Upstream Pipe (ft)	Length of Downstream Pipe (ft)	Normal Depth Upstream (ft)	Normal Depth Downstream (ft)	Flow Upstream (cfs)	Flow Downstream (cfs)	Velocity Upstream (fps)	Velocity Downstream (fps)
EX MH			252.16	7.96		30		0.36		2.33		11.31	
D2	254.39	0.69	255.08	1.00	7.96	52	30	0.48	0.36	2.07	2.33	6.60	11.31
D1	[illegible]	[illegible]	[illegible]	1.00	1.00	[illegible]	52	0.54	0.48	2.07	2.07	[illegible]	6.60
BLDG UND	[illegible]				2.00		18		0.54				
BLDG CSTN			[illegible]	1.00		16.7		0.16		0.16	0.16	[illegible]	
D3	[illegible]				1.00		10.7		[illegible]		0.16		2.33

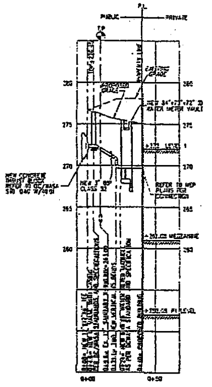
BUDDHIST CULTURE
HCL COMPUTATIONS

EXMH
15 in SD invert in = 251.80
Yn=0.36 upstream
HGL at upstream side of EXMH = 251.80 + 0.36 = 252.16

D2
15 in SD inv out = 254.03
15 in SD inv in = 254.89
Yn=0.36 downstream
Yn=0.48 upstream
HGL at downstream side of D2 = 254.03 + 0.36 = 254.39

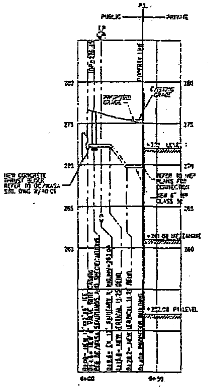
Losses at D2
d=45 deg
Kd=0.47 from chart
Vin=6.60 fps
Vout=11.31 fps
Ke=0.35
Ko=0.25

Entrance loss =Hi=0.35 x 6.66 x6.66/ (2g) = 0.24 ft
Contraction loss=Ho=0.25 x 11.31 x 11.31 /(2g) =0.50 ft
Bend loss=Hd=0.47 x 6.60 x 6.60 /(2g) = 0.32 ft
Total losses = 0.24 + 0.50 + 0.32 = 1.06 ft
Plunging loss=Hp=1.3 x 1.06 = 1.38 ft
Inlet shaping reduction = 0.50 x 1.38 = 0.69ft
Total head loss at D2=0.69 ft
HGL at upstream location in D2 = 254.39 + 0.69 = 255.08



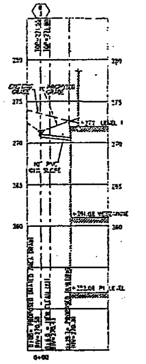
PROPOSED DOMESTIC WATER LINE PROFILE

SCALE: HORIZ 1" = 30'
VERT 1" = 5'



PROPOSED FIRE SERVICE PROFILE

SCALE: HORIZ 1" = 30'
VERT 1" = 5'



(PRIVATE)
PROPOSED YARD INLET PROFILE

SCALE: HORIZ 1" = 30'
VERT 1" = 5'

STORM DRAIN COMPUTATION

FROM STR #	TO STR #	DRAINAGE AREA (ac)	RUNOFF C	C x AREA IN	C x AREA ADD	C x AREA SUM	TIME OF CONC. TO MIN	TIME OF CONC. IN MIN	TIME OF CONC. ACCU. MIN	I IN/HR	INC. CFS	ADDITION CFS	TOTAL CFS	DIA IN.	SLOPE FT/FT	n	Q CFS	VELOCITY FULL FPS	VELOCITY ACTU. FPS
D3	BLD	0.07	0.35	0.02	0.00	0.02	5	0	5	7.56	0.2	0.0	0.2	10	0.01	0.013	2.2	4.019	2.492
BLD	MH-1	0.42	0.65	0.38	0.00	0.38	5	0	5	7.56	2.7	0.2	2.9	12	0.02	0.013	5.0	6.418	6.643
MH-1	MH-2	0.00	0.00	0.00	0.00	0.00	5	0	5	7.56	0.0	2.9	2.9	15	0.02	0.013	9.1	7.446	6.733
MH-2	EX MH	0.06	0.95	0.06	0.00	0.06	5	0	5	7.56	0.4	2.9	3.3	15	0.0796	0.013	18.2	14.88	11.23

* Drainage area calculated based on the available DCWASA drainage map by assuming the worst case scinario

TEST PITS ARE REQUIRED AT ALL PROPOSED UTILITY CROSSINGS WITH ALL EXISTING UTILITY LINES TO DETERMINE THE EXACT HORIZONTAL LOCATION, ELEVATION AND SIZE OF THE EXISTING UTILITIES. A MINIMUM OF ONE FOOT VERTICAL CLEARANCE SHALL BE PROVIDED BETWEEN EXISTING AND PROPOSED UTILITIES. TEST PITS SHOULD BE COMPLETED PRIOR TO ORDERING ANY STRUCTURES OR PIPE MATERIALS. NOTIFY ENGINEER OF ANY CONFLICT WITH PROPOSED PLANS.

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Reston, Virginia 20191
(T) 703.391.7900
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www.ekcorp.com

SEAL
JEFF JARAVESH
900499
3/19/07

KEYPLAN

REVISIONS

No.	Description	Date
1	ADDENDUM 1	04-21-[illegible]
2	DC/WASA COMMENTS	11-15-[illegible]

PROJECT NO. HOK: 04-14021-00
DATE: 06-30-06

SHEET TITLE
UTILITY PROFILES

CONSTRUCTION DOCUMENTS

SCALE: AS SHOWN

SHEET NO. C-06

REVISION

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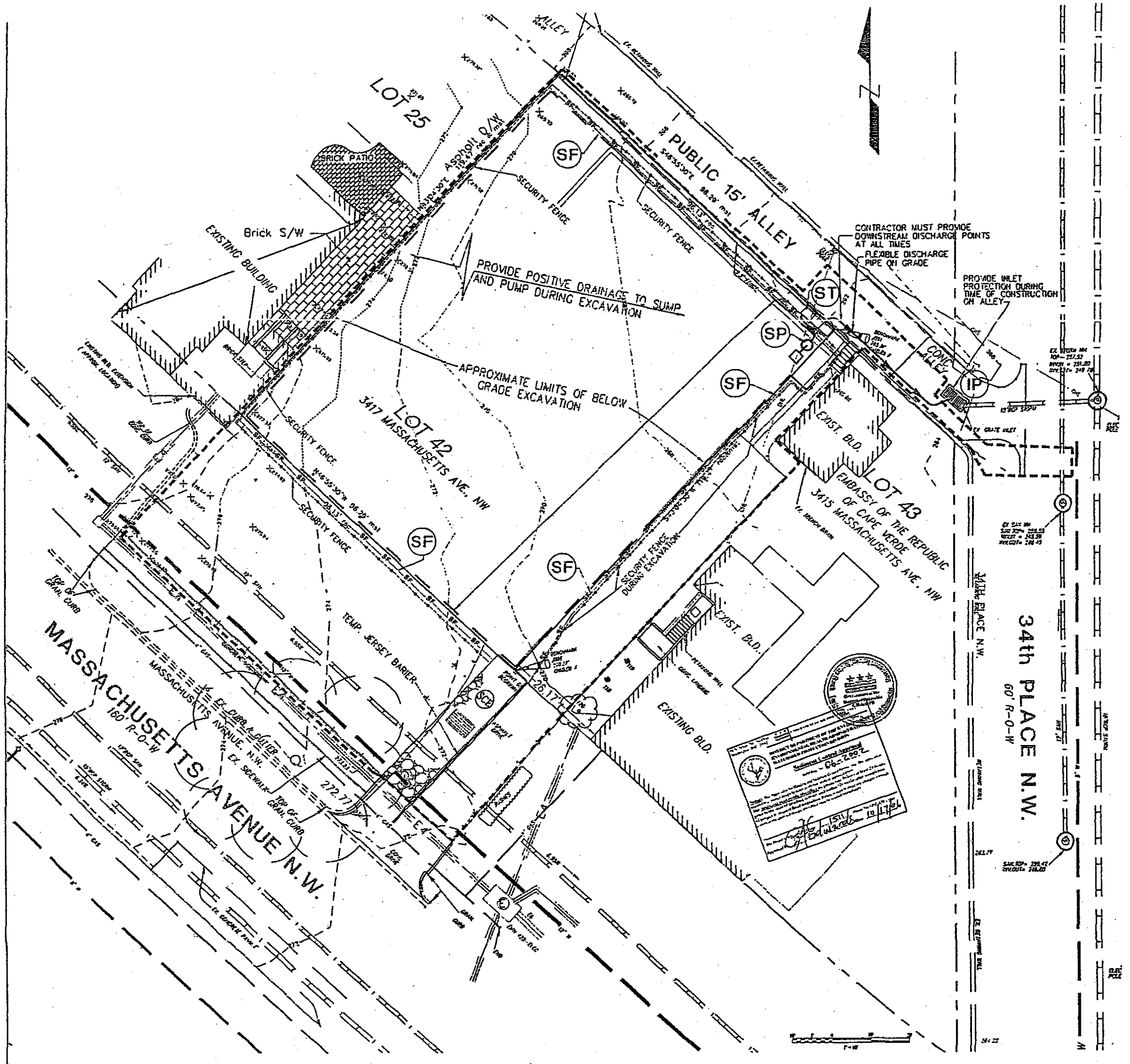

LOT 25
BRICK PATIO
Asphalt D/W
Brick S/W
EXISTING BUILDING
SECURITY FENCE
PUBLIC 15' ALLEY
S46°55'30"E 98.29'
N46°55'30"W 98.25'
PROVIDE POSITIVE DRAINAGE TO SUMP AND PUMP DURING EXCAVATION
APPROXIMATE LIMITS OF BELOW GRADE EXCAVATION
LOT 42
3417 MASSACHUSETTS AVE, NW
CONTRACTOR MUST PROVIDE DOWNSTREAM DISCHARGE POINTS AT ALL TIMES
FLEXIBLE DISCHARGE PIPE ON GRADE
PROVIDE INLET PROTECTION DURING TIME OF CONSTRUCTION ON ALLEY
CONC. ALLEY
SF
ST
SP
IP
SCE
EXIST. BLD.
LOT 43
EMBASSY OF THE REPUBLIC OF CAPE VERDE
3415 MASSACHUSETTS AVE, NW
SECURITY FENCE DURING EXCAVATION
EXISTING BLD.
34th PLACE N.W.
60' R-O-W
TEMP. JERSEY BARIER
MASSACHUSETTS AVENUE N.W.
160' R-O-W
EX. CURB & GUTTER
EX. SIDEWALK
TOP OF GRAN. CURB
272.77'
26.17'

THIS SHEET IS TO BE USED FOR SEDIMENTATION AND EROSION CONTROL PURPOSES ONLY !!!

1. INSTALL SEDIMENT AND EROSION CONTROL MEASURES INCLUDING STABILIZED CONSTRUCTION ENTRANCE, WASH RACK, INLET PROTECTION, SILT FENCE, AS INDICATED ON SHEET C.07. SEE SHEET C.08 FOR SEDIMENTATION AND EROSION CONTROL DETAILS.
2. SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AND APPROVED BY THE INSPECTOR PRIOR TO COMMENCING ANY OTHER LAND DISTURBING ACTIVITIES.
3. REMOVE ITEMS AS INDICATED ON DEMOLITION PLAN
4. INSTALL SITE IMPROVEMENTS AS INDICATED ON CONSTRUCTION DOCUMENTS FOR THE PROPOSED BUILDING
5. AT THE COMPLETION OF CONSTRUCTION AND AFTER THE INSPECTOR'S APPROVAL, ALL TEMPORARY SANITATION, SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE REMOVED

DUST CONTROL NOTES:

1. THE CONTRACTOR SHALL CONDUCT OPERATIONS AND MAINTAIN THE PROJECT SITE AS TO MINIMIZE THE CREATION AND DISPERSION OF DUST. DUST CONTROL SHALL BE USED THROUGHOUT THE WORK AT THE SITE
2. THE CONTRACTOR MUST PROVIDE CLEAN WATER, FREE FROM SALT, OIL AND OTHER DELETERIOUS MATERIAL TO BE USED FOR ON-SITE DUST CONTROL.
3. THE CONTRACTOR SHALL SUPPLY WATER SPRAYING EQUIPMENT CAPABLE OF ACCESSING ALL WORK AREAS.
4. THE CONTRACTOR SHALL IMPLEMENT STRICT DUST CONTROL MEASURES DURING ACTIVE CONSTRUCTION PERIODS ON-SITE. THESE CONTROL MEASURES WILL GENERALLY CONSIST OF WATER APPLICATIONS THAT SHALL BE APPLIED A MINIMUM OF ONCE PER DAY DURING DRY WEATHER OR MORE OFTEN AS REQUIRED TO PREVENT DUST EMISSIONS
5. FOR WATER APPLICATION TO UNDISTURBED SOIL SURFACES, THE CONTRACTOR SHALL:
   - A. APPLY WATER WITH EQUIPMENT CONSISTING OF TANK, SPRAY BAR, PUMP WITH DISCHARGE PRESSURE GAUGE;
   - B. ARRANGE SPRAY BAR HEIGHT, NOZZLE SPACING AND SPRAY PATTERN TO PROVIDE COMPLETE COVERAGE OF GROUND WITH WATER;
   - C. DISPERSE WATER THROUGH NOZZLES ON SPRAY BAR AT 20 PSI (137.9 K PA) MINIMUM KEEP AREAS DAMP WITHOUT CREATING NUISANCE CONDITIONS SUCH AS PONDING
6. FOR WATER APPLICATION TO SOIL SURFACES DURING DEMOLITION AND/OR EXCAVATION, THE CONTRACTOR SHALL:
   - A. APPLY WATER WITH EQUIPMENT CONSISTING OF A TANK, PUMP WITH DISCHARGE GAUGE, HOSES AND MIST NOZZLES;
   - B. LOCATE TANK AND SPRAYING EQUIPMENT SO THAT THE ENTIRE EXCAVATION AREA CAN BE MISTED WITHOUT INTERFERING WITH DEMOLITION AND/OR EXCAVATION EQUIPMENT OR OPERATIONS. KEEP AREAS DAMP WITHOUT CREATING NUISANCE CONDITIONS SUCH AS PONDING.
   - C. APPLY WATER SPRAY IN A MANNER TO PREVENT MOVEMENT OF SPRAY BEYOND SITE BOUNDARIES

NOTE:

CONTRACTOR TO REFER JJP TRAFIC CONTROL CONSULTANT,
12203 THERESA DR, SILVER SPRING MD 20904
FOR TRAFIC CONTROL DESIGN AND SPECIFICATION

CONSTRUCTION DATES:

- EXACT BEGINNING AND END OF CONSTRUCTION IS TO BE ESTABLISHED BY THE OWNER

SEDIMENTATION EROSION CONTROL NOTE:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN OF SHEETING AND SHORING AND SUPPORT OF EXISTING UTILITIES AND ADJACENT STRUCTURES. SHORING, BRACING, AND UNDERPINNING DESIGNED BY THE CONTRACTOR'S STRUCTURAL ENGINEER LICENSED IN THE DISTRICT OF COLUMBIA SHALL BE PROVIDED AS NECESSARY TO ENSURE THEIR SUPPORT.
2. PROVIDE SILT FENCE AT PERIMETER OF EXCAVATION AREA TO REMAIN IN PLACE UNTIL BELOW GRADE EXCAVATION HAS BEGUN UNLESS OTHERWISE APPROVED BY THE INSPECTOR
3. PROVIDE CONSTRUCTION FENCE AT PERIMETER OF EXCAVATION AREA TO REMAIN IN UNLESS OTHERWISE APPROVED BY THE INSPECTOR
4. CONTRACTOR TO PROVIDE ON SITE APPROVED STAMPED AND SIGNED SEDIMENTATION AND EROSION CONTROL DRAWINGS BY DEPARTMENT OF HEALTH, WATERSHED PROTECTION DIVISION
5. THE APPLICANT MUST NOTIFY THE DEPARTMENT OF HEALTH BY PHONE (202-535-2240) AT LEAST 24 HOURS PRIOR TO THE START OF GRADING ACTIVITY AND WITHIN (2) WEEKS AFTER COMPLETION OF PROJECT TO REQUEST INSPECTION. IF THERE IS NEED TO MAKE CHANGES OR MODIFICATIONS IN THE APPROVED DESIGN, DEPARTMENT OF HEALTH MUST BE NOTIFIED IMMEDIATELY

SEDIMENTATION AND EROSION CONTROL NARRATIVE:

THE PROPOSED DEVELOPMENT IS LOCATED AT 3417 MASSACHUSETTS AVE. NW. WASHINGTON DC. THE EXISTING SITE COMPRISES AN EXISTING ASPHALT DRIVE AND GRASS AREA.

THE DEVELOPMENT PLAN FOR THIS PROPERTY INCLUDES A NEW 3-STORY BUILDING WITH BASEMENT AND 2-LEVEL BELOW GRADE PARKING

SITE IMPROVEMENTS INCLUDE NEW DOMESTIC AND FIRE SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE, SANITARY AND STORM SEWER AND NEW STORM FILTER FOR STORMWATER MANAGEMENT, NEW DRIVEWAY ENTRANCE, AND CONCRETE SIDEWALK

VOLUME BELOW GRADE EXCAVATION

SITE AREA : 10580 SQUARE FEET OR 0.243 ACRE

FROM FIRST FLOOR TO P1 LEVEL:20 FT

$$\frac{\text{(AREA) } 10580 \text{ X (DEPTH) } 26 \text{ FT.}}{27} = 7811 \text{ CUYD}$$

TOTAL VOLUME OF FILL : 0.00 CUY

CONSTRUCTION DATES:

- EXACT BEGINNING AND END OF CONSTRUCTION IS TO BE ESTABLISHED BY THE OWNER

TOTAL DISTURBED AREA

AREA = 10580 SF = 0.24 ACRES

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN OF SHEETING AND SHORING AND SUPPORT OF EXISTING UTILITIES AND ADJACENT STRUCTURES. SHORING, BRACING, AND UNDERPINNING DESIGNED BY THE CONTRACTOR'S STRUCTURAL ENGINEER LICENSED IN THE DISTRICT OF COLUMBIA SHALL BE PROVIDED AS NECESSARY TO ENSURE THEIR SUPPORT

SEDIMENT CONTROL APPROVAL:

PLAN NUMBER

THIS APPROVAL IS FOR GRADING AND SEDIMENT CONTROL ONLY. PERMITEE/ CONTRACTOR IS REQUIRED TO CONSTRUCT DESIGN FEATURE SHOWN HEREON. HE SHALL NOTIFY THIS OFFICE AT NUMBER LISTED BELOW AT LEAST 24 HOURS BEFORE START OF GRADING ACTIVITY, AND WITHIN TWO WEEKS AFTER COMPLETION OF PROJECT FOR FINAL INSPECTION.

DATE

EROSION AND SEDIMENT CONTROL BRANCH

FOR FURTHER INFORMATION, PLEASE CALL:
GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH ADMINISTRATION
WATERSHED PROTECTION DIVISION

51 N. STREET, N.E., 5TH FLOOR
WASHINGTON, D.C. 20002
FAX NO. (202) 535-1364
TEL NO. (202) 535-2240

LEGEND:

TEMP CONSTRUCTION ENTRANCE	SCE
WASH RACK	
SILT FENCE	—SF—SF— SF
INLET PROTECTION	IP
SEDIMENT TANK	ST
SUMP PUMP	SP
APPROXIMATE LIMIT OF BELOW GRADE EXCAVATION FOR BUILDING STRUCTURE	— · — · —
APPROXIMATE LIMIT OF DISTURBANCE	- - - - - -
TEMP JERSEY BARRIER	
SECURITY FENCE	—○—○—○—

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Fax (202) 339 8800
www.hok.com

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Edwards
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SEAL

KEYPLAN

REVISIONS

No.	Description
1	ADDENDUM 1

PROJECT NO.
HOK: 04-14021-00

SHEET TITLE
SEDMENTATI
EROSION CO
PLAN

CONSTRUC
DOCUME

SCALE: 1"=10'-0"

SHEET NO.
C-07

HELLMUTH OBATA & KASSAB
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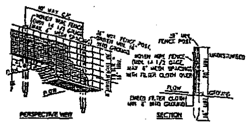

PERSPECTIVE VIEW
SECTION
WOVEN WIRE FENCE (MIN. 14 1/2 GAGE, MAX 6" MESH SPACING) WITH FILTER CLOTH OVER
FLOW
GROUND
UNDISTURBED
EMBED FILTER CLOTH MIN. 8" INTO GROUND

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

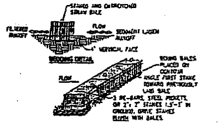
POSTS:
STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FENCE:
WOVEN WIRE, 14 1/2 GAGE 6" MAX MESH OPENING

FILTER CLOTH:
FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT:
GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

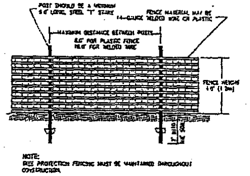
SILT FENCE
(NOT TO SCALE)


STAKED AND ENTRENCHED STRAW BALE
FILTERED RUNOFF
FLOW
SEDIMENT LADEN RUNOFF
4" VERTICAL FACE
BEDDING DETAIL
FLOW
BOUND BALES PLACED ON CONTOUR
ANGLE FIRST STAKE TOWARD PREVIOUSLY LAID BALE
2 RE-BARS, STEEL PICKETS, OR 2"x 2" STAKES 1.5'-2' IN GROUND. DRIVE STAKES FLUSH WITH BALES.
ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS:

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

STRAW BALE DIKE
(NOT TO SCALE)


POST SHOULD BE A MINIMUM 5'-6" LONG, STEEL "T" STAKE
FENCE MATERIAL MAY BE 14-GAUGE WELDED WIRE OR PLASTIC
MAXIMUM DISTANCE BETWEEN POSTS
8.0' FOR PLASTIC FENCE
10.0' FOR WELDED WIRE
FENCE HEIGHT 4.0' (1.2m)

NOTE:
TREE PROTECTION FENCING MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCE INSTALLATION DETAIL
(NOT TO SCALE)

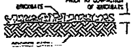
STANDARDS AND SPECIFICATIONS FOR BRICKBAT GROUND COVER

DEFINITION
TEMPORARY GROUND COVER CONSISTING OF BROKEN BRICK (1/2 PIECE OR SMALLER) PLACED OVER DISTURBED EARTH.

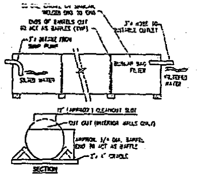
PURPOSE
BRICKBATS PROVIDE A TEMPORARY GROUND COVER OVER DENUDED URBAN EARTH TO PREVENT THE TRANSPORTATION OF SEDIMENT FROM THE SITE.

CONDITIONS WHEN PRACTICE APPLIES
BRICKBATS MAY BE USED ON ANY SITE IN NEED OF TEMPORARY GROUND COVER

DESIGN CRITERIA
THE BRICKBATS SHALL BE PLACED TO A DEPTH OF 3 INCHES TO 4 INCHES COVERING THE DISTURBED EARTH ON THE SITE, THEN COMPACTED AND LEVELED

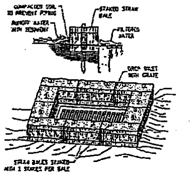


BRICKBAT DETAIL
(NOT TO SCALE)


55 GAL DRUMS OR SIMILAR, WELDED END TO END
ENDS OF BARRELS CUT TO ACT AS BAFFLES (TYP)
3" ø HOSE TO STABLE OUTLET
3" ø INTAKE FROM SUMP PUMP
BURLAP BAG FILTER
FILTERED WATER
SILTED WATER
12" (APPROX.) CLEANOUT SLOT
CUT OUT (INTERIOR WALLS ONLY)
APPROX. 3/4 DIA. BAFFLE END TO ACT AS BAFFLE
2"x 4" CRADLE
SECTION

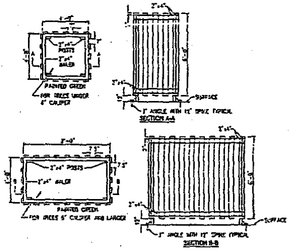
PORTABLE SEDIMENT TANK
(NOT TO SCALE)

CONSTRUCTION NOTES:
1. CLEAN OUT THE SEDIMENT TANK WHEN ONE THIRD (1/3) FILLED WITH SILT
2. STEEL DRUMS ARE USED AS AN EXAMPLE DUE TO THEIR READY AVAILABILITY. ANY TANKS MAY BE USED, PROVIDING THAT THE VOLUME REQUIREMENTS FROM PAGE [illegible] ARE MET.
3. ALL SEDIMENT COLLECTED IN THE TANK SHALL BE DISPOSED OF IN A SEDIMENT TRAPPING DEVICE OR AS APPROVED BY THE INSPECTOR.
4. TANK STORAGE VOLUME REQUIRED = 16 CUBIC FEET OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP DISCHARGE CAPACITY. MULTIPLE TANKS MAY BE USED

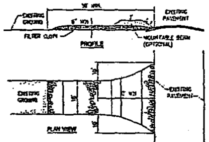

COMPACTED SOIL TO PREVENT PIPING
STAKED STRAW BALE
RUNOFF WATER WITH SEDIMENT
FILTERED WATER
DROP INLET WITH GRATE
STRAW BALES STAKED WITH 2 STAKES PER BALE

SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 CFS) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

STRAW BALE DROP INLET SEDIMENT FILTER
(NOT TO SCALE)

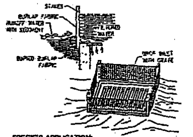

PAINTED GREEN
FOR TREES UNDER 6" CALIPER
2"x4" POSTS
2"x4" BALER
1" ANGLE WITH 12" SPIKE TYPICAL
SURFACE
SECTION A-A
FOR TREES 6" CALIPER AND LARGER
SECTION B-B

TYPICAL TREE PROTECTION FENCING
(NOT TO SCALE)



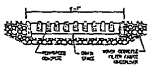
STABILIZED CONSTRUCTION ENTRANCE
(NOT TO SCALE)

CONSTRUCTION RAMP SPECIFICATION:
1. STONE SIZE- USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT
2. LENGTH- AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS- NOT LESS THAN SIX (6) INCHES.
4. WIDTH- TEN (10) FOOT MINIMUM, BUT NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH- WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY
8. WASHING- WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN

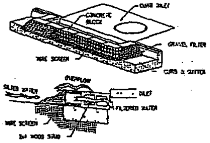


SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 CFS) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

BURLAP DROP INLET SEDIMENT FILTER
(NOT TO SCALE)

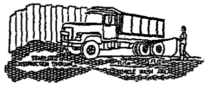


WASH RACK DETAIL
(NOT TO SCALE)

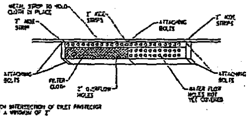


CURB INLET SEDIMENT FILTER
(NOT TO SCALE)

1. TWO CONCRETE BLOCKS SHALL BE PLACED ON THEIR SIDES ABUTTING THE CURB AT EITHER SIDE OF THE INLET OPENING.
2. A 2 INCH BY 4 INCH STUD SHALL BE CUT AND PLACED THROUGH THE OUTER HOLES OF EACH SPACER BLOCK TO HELP KEEP THE FRONT BLOCKS IN PLACE.
3. CONCRETE BLOCKS SHALL BE PLACED ON THEIR SIDES ACROSS THE FRONT OF THE INLET AND ABUTTING THE SPACER BLOCKS AS ILLUSTRATED.
4. WIRE MESH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE (WEBBING) OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. CHICKEN WIRE OR HARDWARE CLOTH WITH 1/2-INCH OPENINGS SHALL BE USED.
5. TWO TO THREE INCH STONE SHALL BE PILED AGAINST THE WIRE TO THE TOP OF THE BARRIER AS SHOWN.
6. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND REPLACED

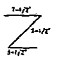


VEHICLE WASH DETAIL
(NOT TO SCALE)



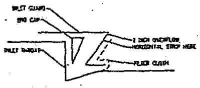
- AT EACH INTERSECTION OF INLET PROTECTOR OVERLAP A MINIMUM OF 3"

STANDARD INLET GUARD ATTACHMENT METHOD



- THE TOP MEASUREMENT OF 7-1/2" IS SET TO PROVIDE A 2" EXTENSION FOR OVERFLOW WHILE AVOIDING BLOCKAGE OF THE MANHOLE COVER
- MAKE A WATERTIGHT CONNECTION ALONG THE SIDES AND BOTTOM OF THE INLET GUARD WITH THE STREET AND CURB

STANDARD INLET GUARD DIMENSIONS



STANDARD INLET GUARD CROSS SECTION

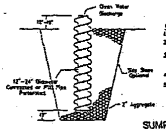
GRADE INLET GUARD
(NOT TO SCALE)

EROSION AND SEDIMENT CONTROL MEASURES AND SEQUENCE:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING.
2. PROVIDE TEMPORARY STONE CONSTRUCTION ENTRANCE AND WASH RACK WHERE SHOWN. PROVIDE WATER SOURCE AND HOSE TO CLEAN ALL EQUIPMENT LEAVING SITE
3. INSTALL STRAW BALE DIKE AS SHOWN ON SEDIMENT AND EROSION CONTROL PLAN
4. NO DISTURBED AREA WILL BE DENUDED FOR MORE THAN 7 CALENDAR DAYS. INSTALL THE NECESSARY TEMPORARY OR PERMANENT VEGETATIVE STABILIZATION MEASURES TO ACHIEVE ADEQUATE EROSION AND SEDIMENT CONTROL
5. ALL CONSTRUCTION TO BE INSPECTED DAILY BY THE CONTRACTOR, AND ANY DAMAGED SILTATION OR EROSION CONTROL DEVICES OR MEASURES WILL BE REPAIRED AT THE CLOSE OF THE DAY
6. ALL STRAW BALE DIKES TO BE MAINTAINED IN WORKING CONDITION
7. STABILIZED CONSTRUCTION ENTRANCES TO BE PERIODICALLY SUPPLEMENTED WITH ADDITIONAL STONE AS NEEDED
8. CONTROLS WILL BE REMOVED AFTER THEIR CONTRIBUTING BASINS HAVE BEEN PERMANENTLY STABILIZED.

SILTATION EROSION CONTROL NOTES:

1. ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE INSTALLED BEFORE THE START OF ANY EXCAVATION AND/OR CONSTRUCTION AS PER STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR THE DISTRICT OF COLUMBIA. IF AN ON-SITE INSPECTION REVEALS FURTHER EROSION CONTROL MEASURES ARE NECESSARY, THE SAME SHALL BE PROVIDED
2. ALL DEBRIS IS TO BE REMOVED FROM THE SITE.
3. ALLEY AND / OR STREET SHALL BE SWEPT CLEAN AT ALL TIMES DURING EXCAVATION AND CONSTRUCTION.
4. ALL SEDIMENT AND EROSION CONTROL MEASURES TO BE INSPECTED DAILY BY THE CONTRACTOR. ANY DAMAGED DEVICE OF MEASURE WILL BE REPAIRED OR REPLACED BY THE CLOSE OF DAY OR AS DIRECTED BY THE ARCHITECT.
5. ALL VEHICLES LEAVING THE SITE SHALL EXIT THROUGH THE CONSTRUCTION ENTRANCE ONLY AND SHALL BE WASHED DOWN TO REMOVE MUD FROM TIRES BEFORE ENTERING THE STREET. CONSTRUCTION ENTRANCE TO BE MAINTAINED IN GOOD WORKING CONDITIONS.
6. ALL CATCH BASINS AND AREA DRAINS SHALL BE PROTECTED DURING EXCAVATION AND CONSTRUCTION.
7. IF ANY CATCH BASIN OR DRAIN BECOMES CLOGGED AS A RESULT OF EXCAVATION OR CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS IMMEDIATE CLEANING.
8. ALL DISTURBED AREAS WITHIN THE LIMIT OF DISTURBANCE BOUNDARY NOT SHOWN TO BE PAVED SHALL BE SEEDED OR SODDED AS PER DC SPECIFICATIONS WITHIN SEVEN DAYS OF DISTURBANCE.
9. WHEN SEDIMENT TRAP/SEDIMENT TANK HAS REACHED 50% CAPACITY, CLEAN OUT OF SAME IS REQUIRED
10. ANY STOCKPILING, REGARDLESS OF LOCATION ON SITE SHALL BE STABILIZED WITHIN 14 DAYS AND COVERED WITH PLASTIC OR CANVAS, AFTER ITS ESTABLISHMENT AND FOR THE DURATION OF THE PROJECT
11. AFTER RAZE OR DEMOS, THERE IS NEED FOR GROUND COVER TO PREVENT EROSION AND SEDIMENT RUNOFF FROM OCCURRING, SUCH AS SEED, SOD, PAVING, BRICKBATS OR MULCH, ETC.
12. AT THE COMPLETION OF CONSTRUCTION PROJECT AND AFTER THE D.C. EROSION AND SEDIMENT CONTROL INSPECTOR APPROVAL, ALL TEMPORARY SILTATION, SEDIMENTATION AND EROSION CONTROL MEASURES AND DEVICES SHALL BE REMOVED AND ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED



CONSTRUCTION SPECIFICATIONS:
1. PIT DIMENSIONS ARE OPTIONAL.
2. THE STANDPIPE SHOULD BE CONSTRUCTED BY PERFORATING A 12"-24" DIAMETER CORRUGATED OR PVC PIPE.
3. A BASE OF 2" AGGREGATE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING THE STANDPIPE SHOULD THEN BE BACKFILLED WITH 2" AGGREGATE.
4. THE STANDPIPE SHOULD EXTEND 12"-18" ABOVE THE LIP OF THE PIT
5. IF DISCHARGE WILL BE PUMPED DIRECTLY TO A STORM DRAINAGE SYSTEM, THE STANDPIPE SHOULD BE WRAPPED WITH FILTER CLOTH BEFORE INSTALLATION. IF DESIRED, 1/4"-1/2" HARDWARE CLOTH MAY BE PLACED AROUND THE STANDPIPE, PRIOR TO ATTACHING THE FILTERCLOTH. THIS WILL INCREASE THE RATE OF WATER SEEPAGE INTO THE PIPE.

SUMP PIT
(NOT TO SCALE)

SOKA GAKKAI
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CENTER
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Washington, D.C.

CLIENT
Soka Gakkai International - USA

ARCHITECT
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Canal House, 3221 Grace Street, N.W.
Washington, DC 20007
Tel: (202) 339 8700
Fax: (202) 339 8800
www.hok.com

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[illegible]

SEAL
DISTRICT OF COLUMBIA
PROFESSIONAL ENGINEER

KEYPLAN

REVISIONS

No.	Description	Date
1	ADDENDUM 1	[illegible]

PROJECT NO: HOK: 04-14021-00
DATE: 06-30-06

SHEET TITLE
SEDIMENTATION AND EROSION CONTROL DETAILS

CONSTRUCTION DOCUMENTS

SCALE: NOT TO SCALE

SHEET NO.: C-08

REVISION:

HELLMUTH, OBATA & KASSABAUM, P.C. © [illegible]

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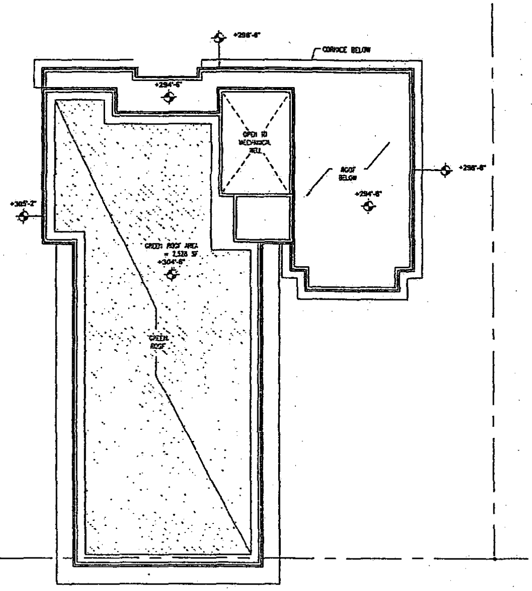
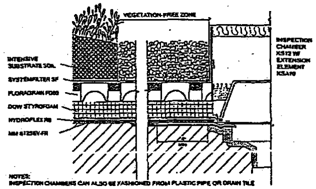


GREEN ROOF PLAN
SCALE 1/8" = 1'



NOTES:
INSPECTION CHAMBERS CAN ALSO BE FASHIONED FROM PLASTIC PIPE OR DRAIN TILE

TYPICAL DRAIN
NOT TO SCALE

	AREA (SF)	AREA (AC)
TOTAL AREA	11503.80	0.26
TREATED AREAS	2528	0.06
UNTREATED AREAS	8975.80	0.20

STORMWATER MANAGEMENT NARRATIVE:

THE STORMWATER MANAGEMENT FACILITY CONSISTS OF A ROOF TOP VEGETATIVE GARDEN WITH THE EXCEPTION OF MECHANICAL AREA, ELEVATOR ROOF TOP AND THE LOW-ROOF OVER THE SMALL SANCTUARY WING

SITE DATA: (WATER QUALITY DESIGN)

1) SITE DESCRIPTION: NEW CULTURE CENTER
2) OUTFALL DESCRIPTION: EXISTING 18" RCP STORM SEWER ON 34TH PLACE NW
3) EXISTING STORM SEWER INVERT: 252.04

STORM DATA:

STORM FREQUENCY = 15 YEARS
STORM DURATION = 24 HOURS
TIME OF CONCENTRATION = 5 MINS
STORM INTENSITY = 7.56 IN/HR
RAINFALL DEPTH = d = 0.83 INCH
RUNOFF COEF.(POST- DEVELOPMENT) C = 0.58

x PRE-DEVELOPED RUNOFF (15 YEAR STORM)

T_c = 5 MINUTES, I_{15} = 7.56 IN/HR, C=0.35
$Q_{pre} = C_{pre} \cdot A = 0.35 \times 7.56 \times \underline{0.26} = \underline{0.69}$ cfs

x POST-DEVELOPED RUNOFF (15 YEAR STORM)

T_c = 5 MINUTES, I_{15} = 7.56 IN/HR, C=0.58
$Q_{post} = C_{post} \cdot A = 0.90 \times 7.56 \times \underline{0.26} = \underline{1.14}$ cfs

x VOLUME OF STORAGE TREATED: V_q

where:
V_q = WATER QUALITY VOLUME TO BE TREATED
Q_1 = FIRST FLUSH RUNOFFS (0.3" FOR ROOFTOPS)
I_a = TREATED = 0.11
F = INFILTRATION RATE OF SAND AND SOIL MEDIA (1.18 FT/HR)
T = TIME DURATION (1 HR)
A_f = FILTER AREA USED IN DC DOH EMPHERICAL EQUATION FOR V

a. $V_q = Q_1 \times I_a - F \times T \times A_f$ . . . . (EQ. 21)
A_f = 50 + (A_{imp} − 0.1 ACRES) x 167 SQ. FT./ACRE
$A_f = 50 + (\underline{0.26} - 0.1) \times 167 = \underline{76.72}$ SQ FT
V_q = (0.3/12 FT x $\underline{11503.80}$ FT) − 1.18 FT/HR x 1 HR x 76.72 FT
V_q = $\underline{197.06}$ CF

** FOR QUALITY CONTROL PURPOSES, THE SFAQ WILL REQUIRE A VOLUME OF $\underline{197.00}$ CF.

x DETERMINE STORAGE VOLUME OF GREEN ROOF: V_{gr}

$V_{gr} = A_{gr} \times h \times \epsilon$

where:
A_{gr} = AREA OF GREEN ROOF
A_{gr} = $\underline{2528}$ SF

ϵ = void ratio
ϵ = 40% (PER MANUFACTURER)

h = THICKNESS OF GREEN ROOF (GROWTH MEDIA TO DRAIN MEDIA)
h = 4" (0.33')

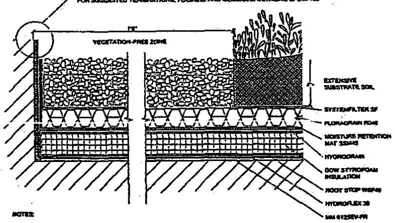
COMPUTE: V_{gr}

V_{gr} = $\underline{2528}$ SQ FT x 0.33 x 0.4
V_{gr} = $\underline{333.75}$ CF

COMPARE: V_{gr} TO V_q
V_{gr} = 333.69 > V_q = 197.06 CF

THEREFORE, REQUIRED STORAGE IS SATISFIED BY THE GREEN ROOF.

REFER TO HYDROTECHS GUIDELINE ROOFING & WATERPROOFING DETAILS FOR SUGGESTED TERMINATIONS, FLASHING AND MEMBRANE DETAILING SPECIFICS



NOTES:

WSF40 IS LOOSE LAID OVER THE HYDROFLEX 30 AND LAPPED A MINIMUM OF 3"

IF INSULATION IS NOT INSTALLED, THE HYDRODRAIN AIR LAYER MAY BE OMITTED. HYDRODRAIN IS REQUIRED WHENEVER SSM45 IS TO BE INSTALLED OVER THE INSULATION

THE VEGETATION-FREE ZONE MAY BE COMPOSED OF TYPICAL ROOF BALLAST OR CONCRETE PAVERS. V-F ZONES ARE REQUIRED AT ALL ROOF PERIMETERS AND ALL PENETRATIONS (PIPES, SKYLIGHTS, ETC)

TYP. EXTENSIVE GARDEN ROOF DETAIL
NOT TO SCALE

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

WITHIN 21 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE STORMWATER DISCHARGE FACILITY, PLEASE SEND THIS PAGE TO THE WATERSHED PROTECTION DIVISION– DEPARTMENT OF HEALTH.

1. STORMWATER DISCHARGE FACILITY INFORMATION:

SOURCE NAME: ______
SOURCE LOCATION: STREET: ______
CITY: ______
DCRA PERMIT NO.: ______
DATE ISSUED: ______

2. AS-BUILT CERTIFICATION:

I HEREBY CERTIFY THAT STORMWATER DISCHARGE FACILITY HAS BEEN BUILT SUBSTANTIALLY IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND THAT SUBSTANTIAL DEVIATIONS (NOTED BELOW) WILL NOT PREVENT THE SYSTEM FROM FUNCTIONING IN COMPLIANCE WITH THE REQUIREMENTS OF SECTION 528 THROUGH 535 OF DCMR-21, CHAPTER 5 WHEN PROPERLY MAINTAINED AND OPERATED. THESE DETERMINATIONS HAVE BEEN BASED UPON ON-SITE OBSERVATION OF CONSTRUCTION, SCHEDULED AND CONDUCTED BY ME OR BY A PROJECT REPRESENTATIVE UNDER MY DIRECT SUPERVISION. I HAVE ENCLOSED ONE SET OF AS-BUILT ENGINEERING DRAWINGS.

______ SIGNATURE OF ENGINEER
______ NAME (PLEASE TYPE) D.C. REG. NO.

AFFIX SEAL:

______ COMPANY NAME:
______ COMPANY ADDRESS:
DATE: ______ TELEPHONE: ______

SUBSTANTIAL DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS (ATTACH ADDITIONAL SHEETS IF REQUIRED)

______
______
______
______

STATEMENT BY PERSON RESPONSIBLE FOR MAINTENANCE

THE UNDERSIGNED AGREES TO MAINTAIN AND OPERATE THE DISCHARGE FACILITIES IN SUCH A MANNER AS TO COMPLY WITH THE PROVISIONS OF SECTION 526 THROUGH 535 OF DCMR-21, CHAPTER 5. RESPONSIBILITY FOR MAINTENANCE AND OPERATION MAY BE TRANSFERRED TO ANOTHER ENTITY UPON WRITTEN NOTICE TO THE WATERSHED PROTECTION DIVISION OF THE DEPARTMENT OF HEALTH FROM THE UNDERSIGNED AND THE ENTITY ASSUMING RESPONSIBILITY, CERTIFYING THAT THE TRANSFER OF RESPONSIBILITY FOR MAINTENANCE AND OPERATION IN COMPLIANCE WITH SECTION 526 THROUGH 535 OF DCMR-21, CHAPTER 5 HAS BEEN ACCEPTED. FOR MAINTENANCE AND OPERATION IN COMPLIANCE WITH SECTION 509 THROUGH 518 HAS BEEN ACCEPTED.

William Aiken
SIGNATURE OF PERSON RESPONSIBLE FOR MAINTENANCE (IT MAY BE THE APPLICANT)
William Aiken, OFFICE DIRECTOR
NAME AND TITLE (PLEASE TYPE)
3233 WISCONSIN Av. #306
ADDRESS:
WASHINGTON DC 20007
DATE: 10/9/06 PHONE NO. 202-338-1750

STATEMENT BY PROFESSIONAL ENGINEER REGISTERED IN THE DISTRICT OF COLUMBIA

THIS IS TO CERTIFY THAT THE ENGINEERING FEATURES OF THIS STORMWATER DISCHARGE FACILITY HAVE BEEN DESIGNED/EXAMINED BY ME AND FOUND TO BE IN CONFORMITY WITH MODERN ENGINEERING PRINCIPLES APPLICABLE TO THE TREATMENT AND DISPOSAL OF STORMWATER POLLUTANTS. I FURTHER CERTIFY THAT THE FACILITY HAS BEEN DESIGNED IN ACCORDANCE WITH THE SPECIFICATION REQUIRED UNDER SECTION 526 THROUGH 535 OF DCMR-21, CHAPTER 5. IT IS ALSO STATED THAT THE UNDERSIGNED HAS FURNISHED THE APPLICANT WITH A SET OF INSTRUCTIONS FOR MAINTENANCE AND OPERATION OF THE STORMWATER DISCHARGE FACILITY.

______ SIGNATURE OF THE ENGINEER

AFFIX SEAL:
JEFF ABRAVESH
10/9/06

Jeff Abravesh, P.E.
NAME AND TITLE (PLEASE TYPE):
11860 Sunrise Valley Drive, Suite 200
ADDRESS:
Reston, VA 20191
DATE: ______ PHONE NO. (703) 391-7600

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SEAL

KEYPLAN

REVISIONS

PROJECT NO.
HOK: 04-14021

SHEET TITLE
STOR
MANAG
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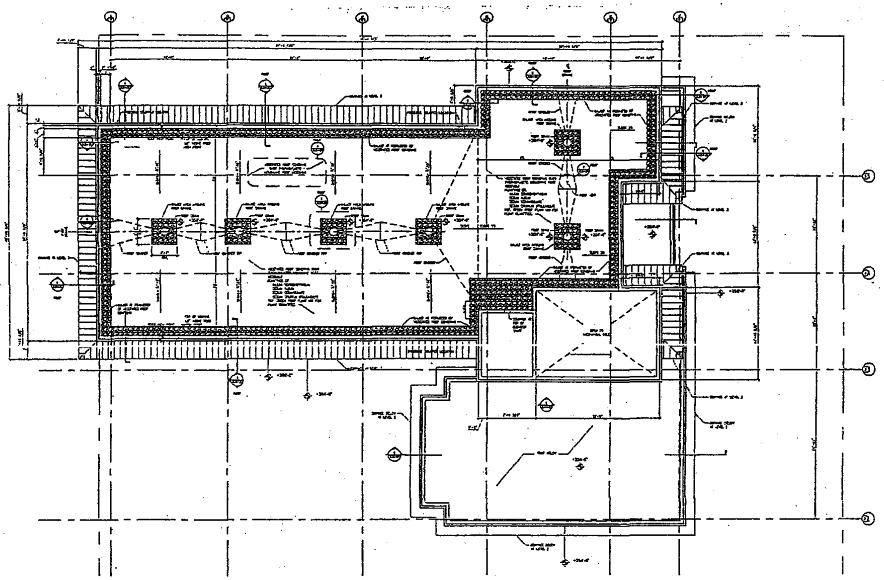
SCALE:

SHEET NO.
C-



Stormwater Management Approval

06 - 2002

1511

Edwards

10/17/06

PLANTING NOTES

1. INSPECT SITE PRIOR TO BEGINNING OF PLANTING OPERATIONS AND NOTIFY CONTRACTING OFFICER'S REPRESENTATIVE (C.O.R.) OF ANY DISCREPANCIES OR CONDITIONS THAT WOULD PREVENT HEALTHY GROWTH OF PLANT MATERIAL.

2. COORDINATE PLANTING INSTALLATION WITH C.O.R. AND OTHER TRADES TO PREVENT CONFLICT WITH REPRESENTATIVE (C.O.R.) OF ANY DISCREPANCIES OR CONDITIONS THAT WOULD PREVENT HEALTHY GROWTH OF PLANT MATERIAL.

3. COORDINATE PLANTING INSTALLATION WITH C.O.R. AND OTHER TRADES TO PREVENT CONFLICT WITH ONGOING CONSTRUCTION ACTIVITIES.

4. IF ANY DISCREPANCY OCCURS BETWEEN THE QUANTITIES CALLED FOR ON THE PLANT LIST AND THOSE INDICATED ON THE PLAN, THE GREATER QUANTITY WILL GOVERN.

5. IF SUBSTITUTIONS ARE NECESSARY (DUE TO LACK OF AVAILABILITY OF SPECIFIED PLANT) CONTRACTOR MUST REQUEST WRITTEN APPROVAL FROM C.O.R. PRIOR TO PURCHASE OF MATERIAL.

6. PLANT PLUGS SHOULD BE PLANTED TO THEIR CROWN LEAVING NO ROOT MASS EXPOSED TO THE AIR.

7. PLANTING AREA SHOULD BE WATERED THOROUGHLY UNTIL THE PLANT MEDIA IS SATURATED.

8. SUPPLEMENTAL IRRIGATION IN ADDITION TO NATURAL PRECIPITATION WILL BE NECESSARY AT A RATE OF ONCE A WEEK IN THE FIRST GROWING SEASON OR UNTIL PLANTS BECOME ESTABLISHED.

9. OCCASIONAL WEEDING OF THE MEDIA WILL BE NECESSARY UNTIL THE PLANTS BECOME ESTABLISHED.

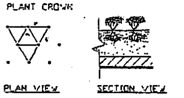
SOIL NOTES

1. USE MINERAL SOIL WITH 20 PERCENT ORGANIC (MAXIMUM). USE CRUSHED EXPANDED SHALE THAT IS SIFTED THROUGH A 3/8" SIEVE.

GREEN ROOF PLANT MIX

	BOTANICAL NAME	COMMON NAME	QTY.
PLANTS			
	ALLIUM SCHOENOPRASUM	CHIVE	1175
	SEDUM ALBUM	WHITE STONECROP	1175
	SEDUM SEXANGULARE	TASTELESS STONECROP	1175
	SEDUM SPURIUM 'FULDAGLUT'	FIREGLOW STONECROP	1175

NOTE:
NO ADJACENT PLUGS SHALL
BE THE SAME SPECIES



PLANT SPACING TO BE 2
PLANTS PER SQUARE FOOT

PLANTING SOIL TO BE 4"
MINIMUM AND 5" MAXIMUM.
SEE DETAIL 'A' THIS SHEET.

ROOF SYSTEM - SEE
ARCHITECTURE SHEETS

B PLANTING DETAILS

NTS

VEGETATED ROOF COVERINGS MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until acceptable vegetated roof covering is established, but for not less than the following periods:
1. Plugged Vegetated Roof Coverings: One year from date of Substantial Completion
B. Maintain and establish vegetated roof covering by watering, fertilizing, weeding, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas to produce a uniform vegetated roof covering
1. Anchor as required to prevent displacement.
C. Watering: Provide and maintain temporary hoses, and lawn-watering equipment to convey water from sources to vegetated roof coverings
1. Schedule watering as recommended by installer

DRAINAGE LAYER

A. Drainage/Water Retention Panel: Three-dimensional, nonbiodegradable, molded polyethylene panel with retention cups on the top side, drainage channels on top and bottom, and holes in the tops of the domes for ventilation and evaporation
1. Panel Height: 1 inch
2. Water Retention: Approximately 0.07 gal/sq ft
3. Minimum Compressive Strength: 3,440 lbf/sq. ft. when tested according to ASTM D 1621
4. Minimum In-Plane Flow Rate: 39 gpm/ft of unit width at hydraulic gradient of 1.0 when tested according to ASTM D 4716
B. Filter Fabric: Nonwoven needle-punched geotextile, manufactured for subsurface drainage, made from non-rotting polypropylene fibers; with elongation greater than 30 percent; complying with the following properties:
1. Flow Rate: 150 gal/min/sq ft.
2. Tensile Strength: 80 lbs per ASTM D 4632.
3. Mullen Burst: 150 lbs/sq. in per ASTM D 4632
4. Apparent Opening: No. 70 sieve, maximum, per AASHTO M 288

PLANTS

A. General: Furnish viable plants, strongly rooted, and capable of vigorous growth and development when planted; of the following species:
1. Sedum Species: As indicated on Drawings.
2. Non-Sedum Species: As indicated on Drawings
B. Plant Suppliers: Acceptable plant suppliers include, but are not limited to, the following:
1. Emery Knoll Farms, Inc. 3410 Ady Road, Street, MD 21154; Tel: 410-452-5880.

EXECUTION

EXAMINATION

A. Examine areas to receive vegetated roof coverings for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.
1. Vegetated roof coverings work shall not begin until final roof testing and inspection is completed and accepted. Refer to Division 7 Section "Thermoplastic Membrane Roofing."

PREPARATION

A. The surface of the roof system shall be cleaned by sweeping and washing with water.
B. Protect roofing system from damage caused by vegetated roof coverings installation operations

DRAINAGE LAYER INSTALLATION

A. Drainage/Water Retention Panels: Install drainage/water retention panels over the roof system in accordance with manufacturer's written recommendations. Butt adjacent panels together; do not overlap.
B. Filter Fabric: Install filter fabric over drainage/water retention panels, overlapping edges and ends at least 6 inches. Turn up filter fabric at vertical, roofed, and flashed surfaces 6 inches minimum above the anticipated growth media level. Trim excess down to level of the growth media after growth media installation

SATISFACTORY VEGETATED ROOF COVERINGS

A. Satisfactory Vegetated Roof Coverings: At end of maintenance period, a healthy, uniform, vegetated roof covering has been established, free of weeds and other undesirable vegetation with coverage exceeding 80 percent over any 400 sq. ft.
B. Reestablish vegetated roof coverings that do not comply with requirements and continue maintenance until vegetated roof coverings are satisfactory

CLEANUP AND PROTECTION

A. Promptly remove debris created by vegetated roof coverings work
B. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after vegetated roof coverings are established.

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SEAL

KEYPLAN

REVISIONS

No.	Description	
1	ADDENDUM 1	
2	D.O.H. - COMMENTS	

PROJECT NO. HOK: 04-14021-00
DATE:

SHEET TITLE
STORM WATER
MANAGEMENT PL
(GREEN ROOF)
CONSTRUCTION
DOCUMENTS

SCALE: 1:80'-0"

SHEET NO.
C-09 A

HELLMUTH, OBATA & KASSABAUM, P.C.
CIVIL

DEPARTMENT OF WATER SERVICES

1959

FIRE FLOW TEST

APPLICANT LOCATION 3418 Massachusetts Ave NW
JOB NO.
REASON FOR APPLICATION [illegible]
APPLICATION RECEIVED [illegible]

PRESSURE ZONE 3rd RESERVOIR ELEVATION 419 ft

DISCHARGE HYDRANT 1
Location NE Corner 38th & Fulton Street NW
Coeff. 0.9
Outlet Dia. 2.5 in
Velocity Pressure 20 psi
Rate 667 gpm

DISCHARGE HYDRANT 2
Location Northside Massachusetts between 35th Street & 33th Place NW
Coeff. 0.9
Outlet Dia. 2.5
Velocity Pressure 20 psi
Rate 667 gpm

DISCHARGE HYDRANT 3
Location
Coeff. 0.9
Outlet Dia. 0
Velocity Pressure 0 psi
Rate 0 gpm

TOTAL FLOW 1334 gpm

RESIDUAL HYDRANT
Location NE Corner 34th Street & Massachusetts Ave NW
Residual FH Elevation 246.87 ft
Static Pressure 72 psi
Residual Pressure 50 psi
Pressure Loss 22 psi

THEORETICAL HYDRANT PRESSURE 14.5 psi FLOW AVAILABLE AT 20psi RESIDUAL 2094 gpm

Flow at 20psi is an APPROXIMATION only. Distribution system capacity in the future depends on: Demands/ Pump Operation / Valve Positions / Water Main Deterioration / Water Main Breaks / Power Outages. WASA does not guarantee the availability of the above calculated flow at 20psi

Test Performed By [illegible]
Date of Test 8/27/2006 Time 2:00pm
Test Checked By J Duncan
TEST APPROVED BY

Report Printed: Wednesday, September 14, 20 Page 1 of 1

DCWASA
Backflow Prevention Form

Information Requirement For Approval of Backflow Preventers for Water Services

Project Location:

A. Street Address: 3415 MASSACHUSETTS AVE Quadrant: NW
WASHINGTON, DC 20007
B. Lot(s): 42 Square: 1937
C. Number of water services: 2 Size of water service(s): 1 – 3" DOM 1 – 8" FIRE
D. Closest cross street to the project: 35TH ST NW & MASSACHUSETTS AVE NW
E. Backflow Preventer Information:

	Domestic Service	Fire Service
Backflow Preventer Type	Double check	Double check RPZ
Manufacturer	WATTS	WATTS
Size	3"	4"
Model	709	909
ASSE #	1015	1013

Design Firm: AKF ENGRS
Address: 1655 N. FORT MYERS DRIVE
City: Arlington State: VA Zip Code: 22209
Tel: (703) 351-7686 Fax: (703) 351-0319 Date Requested:
Design Engineer (print) Donald Keith Signature:

Tel: ( ) Fax: ( ) Date:
Notes:
WASA Approval: (Name) Signature:

DC Water and Sewer Authority
Documents and Permits
5000 Overlook Avenue, SW • Washington, DC 20032
BACKFLOW PREVENTOR (BFP) APPROVAL
PH (202) 787-[illegible] FAX (202) 787-2483

	YES	NO	TYPE
BFP	☑	☐	RPBA/DCVA
APPROVED	☐	☐	
PRELIMINARY	☐	☐	
FINAL	☐	☐	

NOTE:
1. OWNER MUST INFORM DCWASA WATER QUALITY BRANCH (WQB) WHEN INSTALLATION IS COMPLETE FOR FINAL APPROVAL.
2. FORWARD TEST RESULTS ANNUALLY TO DCWASA WQB

COMMENTS:
APPROVAL: [illegible]
DATE: 11/[illegible]/06

Meter Sizing Worksheet (Page 1 of 2)

Project Name: Buddhist Cultural Center WASA Project No.:
Designer's Name / Telephone: Keith Designer's Signature / Date:
Print
WASA Reviewer / Telephone: WASA Signature / Date:
Print
Owner's Name: Owner's Telephone:
Address:
Lot: Square:
Residual System Pressure:

Type of Occupancy:
☐ Apartment ☐ Mixed ☐ Condominium ☐ Hotel ☐ Shopping Center ☐ Restaurant
☐ Hospital ☒ Public Building ☐ Public School ☐ Residential Home

Meter Model and Size: Meter Manufacturer / Serial #:

Total Fixture Value		=	42
Water Flow Demand from Figure 4.1 (gpm)		=	47 GPM
Pressure Factor from Table 4.4		X	1.22
Product of Water Flow Demand multiplied by Pressure Factor		=	57.34
Add Irrigation No. of Squares (100 SF)	X 1.16 or 0.40[1]	=	
Hose Bibbs 5	X 2.0	=	10
Subtotal of Domestic and Irrigation Demands (gpm)		=	67.3
Pressure Factor from Table 4.4		X	1.34
Product of domestic and Irrigation Flow Demand multiplied by Pressure Factor		=	76.98
Total Fixed Demands, if any (gpm)		=	0
Total Domestic/Mechanical/Irrigation Demands (gpm)		=	
Fire Flow Demand as per NFPA Requirements		=	
Total Domestic/ Mechanical/Irrigation and Fire Flow Demands (gpm)		=	

[1] Spray Systems use 1.16 and Rotary Systems use 0.40

Notes:
1) *Above Table adapted from American Water Works Association M22.*
2) *Designer is responsible to determine required fire flows and pressures of the occupancy in addition to the proper sizing of meters.*

Indoor meter installation:
☒ No
☐ Yes. Designer has confirmed that the sewer drainage system has the capacity to handle test flows.

Designer Signature / Date

1

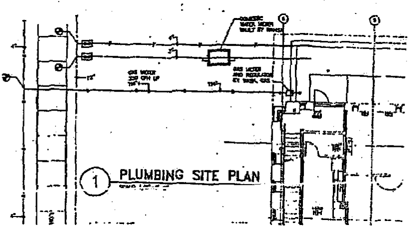
September 2, 2003
DCWASA Meter Selection/Configuration Guidelines

Meter Sizing Worksheet (Page 2 of 2)

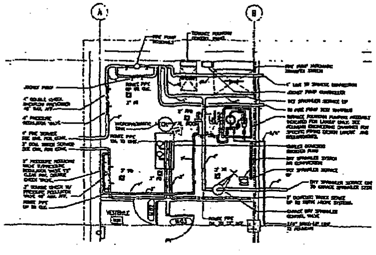
Fixture Type		Fixture Value Based on 35 psi at Meter Outlet		Number of Fixtures		Total Fixture Value
Bathtub (private)		1.4	x		=	
Bathtub (public)		4.0	x		=	
Bathroom Group (flush tank)		3.6	x		=	
Bathroom Group (flush valve)		8.0	x		=	
Bidet		2.0	x		=	
Dental Lavatory		2.0	x		=	
Drinking Fountain (public)		.25	x	1	=	.25
Kitchen Sink	Private	1.4	x		=	
	Hotel, Restaurant	4.0	x		=	
Lavatory	Private	0.7	x		=	
	Public	2.0	x	6	=	12
Laundry Tray	Private	1.4	x		=	
Shower Head Private		1.4	x		=	
Shower Head Public		4.0	x		=	
Service Sink		3.0	x	1	=	3
			x		=	
Urinal	1" valve	10.0	x		=	
	3/4" valve	5.0	x	3	=	15
	flush tank	2.0	x		=	
Wash Sink (each set of faucets)		4.0	x		=	
Water Closet	Flush Valve	[illegible]	x	5	=	45
	Tank Type	2.2	x	1	=	2.2
Dishwasher	1/2 - in. Connection	1.4	x	1	=	1.4
			x		=	
Washing Machine	(8lbs.) Private	1.4	x		=	
	(8 lbs.) Public	3.0	x		=	
	(15 lbs.) Public	4.0	x		=	
Hose Connections		2.0	x	5	=	10
			x		=	
Hose (50-ft. length – wash down) 1/2 - in.		6	x		=	
	5/8 - in. Connection	9	x		=	
	3/4 - in. Connection	12	x		=	
Total Fixture Value					=	97.85

Notes:
1) *Above Table adapted from ICC 2000 Plumbing Code*
2) *Designer is responsible to determine required fire flows and pressures of the occupancy in addition to the proper sizing of meters.*

Designer's Name / Telephone: Donald Keith Designer Signature / Date: 10/30/2006



1 PLUMBING SITE PLAN



1 PLUMBING MEZZANINE LEVEL PUMP ROOM
SCALE 3/16" = 1'-0"

FLOW DATA

DOMESTIC WATER	102 gpm (0.227 cfs)
FIRE WATER	500 gpm (1.114 cfs)
SANITARY SEWAGE	135 gpm (0.301 cfs)
STORM DRAIN	4715 gpm (10.501 cfs)

Sanitary Fixtures Count and GPM Load.

Fixtures	Numbers of Fixtures
Water Closets	8
Urinals	2
Lavatories	6
Service Sinks	1
Water Coolers	1
Total	18

GPM 18 X 7.5 = 135 GPM at Peak Load

Designer:

William F.
Skoda LLC

November 15, 2006

Mr. Brian McDermott, PE
District of Columbia
Water and Sewer Authority
Department of Engineering and Technical Services
5000 Overlook Avenue, SW
Washington, DC 20032

RE: SGI-USA, 3417 Massachusetts Ave
Interior Domestic and Fire Service Metering

Dear Mr. McDermott:

On behalf of and as an agent for SGI-USA, owner of the development project at 3417 Massachusetts Ave, I am hereby requesting permission from DC/WASA, under section 307.2 of Title 21 DCMR, to locate the water meter inside the building.

This request became necessary after a site review determined it is not feasible to install the interior domestic water meter and backflow preventer and metering device on the exterior of the building due to its size and the available space.

We would like to have a dedicated meter for this fire line and understand the conditions required by DC/WASA for inside metering, and we intend to comply with the following:

1. Provide access to the meter for maintenance and other routing work during normal business hours.
2. Install a floor drain located 5' from the meter for testing and leakage. The floor drain will be large enough to handle the flow rate from the DC/WASA periodic testing of the meter.
3. The layout of the piping at the inlet and meter discharge will adhere to DC/WASA Standard Details and will provide for adequate conditions for metering that will avoid turbulence or other interference.
4. The location of the meter will have a conduit to send and receive AMR signals from the meter. This will be accomplished by hard wiring the meter to the outside to a location where an MTU device will be mounted free of obstruction.
5. Unobstructed access will be provided via an 36" door for a replacement meter, large parts and/or test equipment to the location of the meter from the outside of the building.
6. The detector check/fire service meter will be accordance with DC/WASA Standards and will have a one-inch backflow preventer as required. It must meet ASSE #1047 or #1048.
7. The detector check/fire service meter will meet the same conditions as required for the inside location of the domestic water service.
8. Sufficient heat in the meter room to prevent freezing during severe winter months.

I trust that we have indicated all that is required in order to receive permission from DC/WASA to place our meter inside the building. Upon acceptance of our request, we will provide the necessary revised engineering drawings required to illustrate the placement of the water lines and metering for DC/WASA approval.

Thank you for your assistance in helping to resolve the matter and if you need any further information please contact me at the above number.

Sincerely,

William F. Skoda

William F. Skoda, PE
William F. Skoda, LLC
Agent for SGI-USA

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CENTER
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SEAL
JEFF ABRAVESH
900458
3/19/07

KEY PLAN

REVISIONS

No.	Description	Date
1	ADDENDUM 1	05-05-

PROJECT NO. HOK: 04-14021-00 DATE 06-30-

SHEET TITLE
DC/WASA METER PACKAGE

CONSTRUCTION DOCUMENTS

SCALE N.T.S.

SHEET NO. C-10

HELLMUTH, OBATA & KASSABAUM, P.C. ©

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