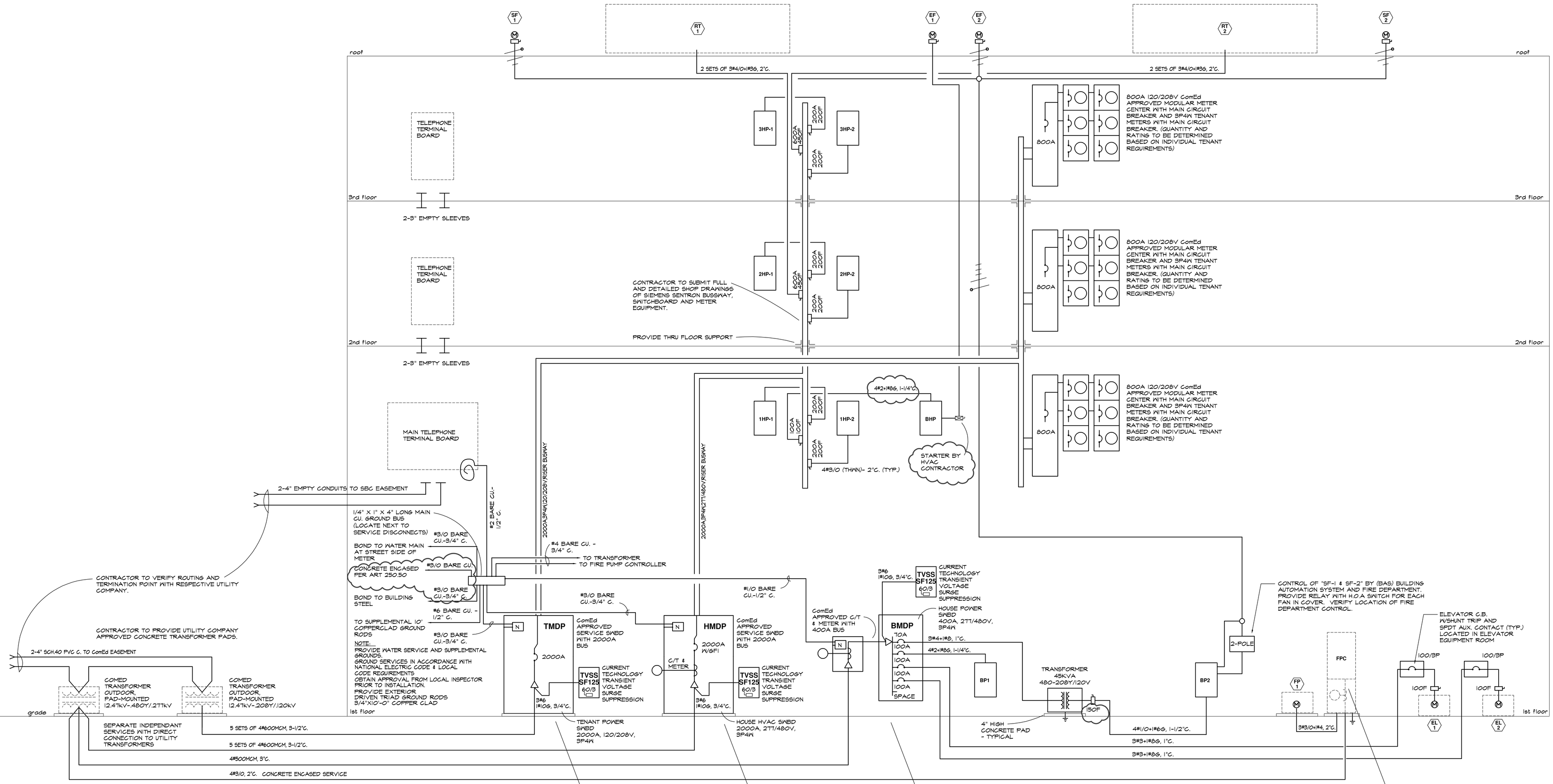

SERVICE SIZING CALCULATION

BUILDING CONSISTS OF APPROXIMATELY 90,000 SQUARE FEET OF GENERAL OFFICE SPACE. HEATING WILL BE ELECTRIC AND AIR CONDITIONING WILL BE BY DIRECT EXPANSION COOLING UNITS.

NOTE

SERVICE EQUIPMENT SHORT CIRCUIT RATING SHALL BE 125% OF THE AVAILABLE SHORT CIRCUIT CURRENT AT THE CUSTOMER SIDE OF THE UTILITY TRANSFORMER. CONTRACTOR SHALL VERIFY THIS VALUE WITH ComEd PRIOR TO ORDERING SERVICE EQUIPMENT.

TENANT SERVICE

TENANT SERVICE IS 120/208V WITH UNMETERD RISER WITH A METER CENTER ON EACH FLOOR. TENANT LOAD WILL CONSIST OF LIGHTING AND CONVENIENCE OUTLET POWER. PER NEC TABLE 220-3(b), GENERAL LIGHTING LOAD TO BE 3 1/2 VA PER SQUARE FOOT WITH AN ADDITIONAL 1 VA PER SQUARE FOOT FOR CONVENIENCE POWER (4 1/2 VA PER SQUARE FOOT TOTAL). GENERAL LIGHTING AND CONVENIENCE POWER LOAD SHALL BE 4 1/2 VA/SQ. FT. (CODE MINIMUM) X 90000 SQ. FT. = 405KVA, (1125A AT 120/208V) X 1.25 = 1406A - 1600A SERVICE (CODE MINIMUM). RECOMMENDED SERVICE SIZE 2000A, 6 1/2 VA/SQ. FT. CAPACITY.

HEATING SERVICE

HEATING SERVICE IS 277/480V. TENANT HEATING LOAD OF 5.5VA/SQ. FT. (500KVA = 602A @ 277/480V). THE TOTAL CONNECTED LOAD IS 1362A X 1.25 = 1,702A - 2000A SERVICE (CODE MINIMUM). RECOMMENDED SERVICE SIZE = 2000A, 14 1/2 VA/SQ. FT. CAPACITY.

ALL HVAC WILL BE ON ComEd RIDER 25 277/480V SERVICE.

ROOFTOP UNIT MOTOR LOAD = 116KW each
ROOFTOP UNIT HEATING LOAD = 200KW each
ROOFTOP UNIT COOLING LOAD = 210KW each

BUILDING SERVICE

BUILDING SERVICE IS 277/480V AND SERVES TWO 80HP HYDRAULIC ELEVATORS, COMMON AREA LIGHTING/POWER, AND EXTERIOR LIGHTING. THIS SERVICE IS CONSERVATIVELY SIZED AT 400A TO ACCOMODATE ANY FUTURE NON-TENANT LOAD REQUIREMENTS.

TOTAL CONNECTED LOAD = 125KW

IDENTIFICATION

WHERE A BUILDING OR STRUCTURE IS SUPPLIED BY MORE THAN ONE SERVICE, OR ANY COMBINATION OF BRANCH CIRCUITS, FEEDERS, AND SERVICES, A PERMANENT PLAQUE OR DIRECTORY SHALL BE INSTALLED AT EACH SERVICE DISCONNECT LOCATION DENOTING ALL OTHER SERVICES, FEEDERS, AND BRANCH CIRCUITS SUPPLYING THAT BUILDING OR STRUCTURE AND THE AREA SERVED BY EACH.

FIRE PUMP SERVICE

FIRE PUMP SERVICE IS 277/480V AND SERVES ONE FIRE PUMP.

"FPC" FIRE PUMP CONTROLLER (FBO) TO HAVE INTEGRAL C/T AND METER.

FIRE PUMP - 60HP 480V-3ø
FLAMPS X 1.25 = 96AMPS MIN.
#3/0 (200AMP) WIRE PROVIDED
VD = $\frac{2xLxRxI}{1000} \times .866$
#3/0 = 0.6VD (0.3%)

ELECTRICAL SERVICE RISER DIAGRAM

NTS

consulting engineers for the construction industry
Wm. J. Hoekstra Engineers, Inc.
HEATING AIR-CONDITIONING PLUMBING ELECTRICAL
5600 West 120th Street Alsip, IL 60803
(708) 389-5558 fax (708) 389-8293

120 HARVESTER DRIVE
THREE STORY OFFICE (SHELL) BUILDING
N.E. CORNER of HARVESTER DRIVE & FRONTAGE ROAD, BURR RIDGE, ILLINOIS
A DEVELOPMENT FOR MARS EQUITIES, INC.

No.	DATE	REVISION DESCRIPTION	No.	DATE	REVISION DESCRIPTION
1	5-31-06	For Permit			

DATE
JOB NUMBER
ELECTRICAL
SERVICE RISER DIAGRAM
SHEET No.
E105

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