WASHTENAW COMMUNITY COLLEGE
Technical and Industrial Building - Generator Replacement

Ann Arbor, MI

BIDS 05/26/2026

WCC PROJECT# 75903

Washtenaw Community College

Peter Basso Associates
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48098-3276
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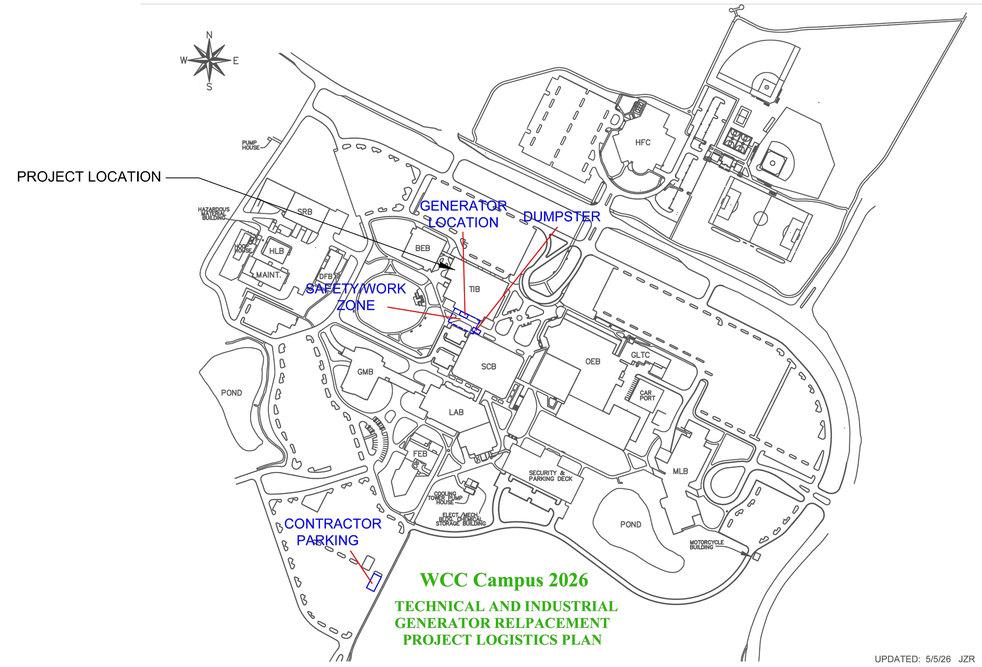
www.PeterBassoAssociates.com
PBA Project No.: 2026.0134



UPDATED: 5/5/26 JZR

CODES AND STANDARDS

2021	MICHIGAN BUILDING CODE
2021	MICHIGAN MECHANICAL CODE
2021	MICHIGAN PLUMBING CODE
2023	MICHIGAN ELECTRICAL CODE (INC. 2023 NATIONAL ELECTRICAL CODE)

BID ALTERNATES

BID ALTERNATE #1: ALL INTERIOR WORK TO BE PERFORMED DURING 3RD SHIFT, APPROXIMATELY 10PM-6:30AM.

BID ALTERNATE #2: ALL EXTERIOR WORK TO BE PERFORMED DURING 3RD SHIFT, APPROXIMATELY 10PM-6:30AM.

BID ALTERNATE #3: REMOVAL OF GENERATOR AND RELOCATION TO LOT 5 ON WCC CAMPUS.

BID ALTERNATE #4: GENERATOR TIE-INS FOR FIRE ALARM AND ACCESS CONTROL SYSTEMS.

BID ALTERNATE #5: GENERATOR TIE-INS FOR FREEZE PROTECTION AND ELEVATOR SYSTEMS.

BID ALTERNATE #6: GENERATOR TIE-INS FOR SITE LIGHTING.

BID ALTERNATE #7: DEDUCT ALTERNATE FOR ALL SITE WORK (EXCAVATION, GRADING, FLATWORK, FOUNDATIONS, ETC.)

WASHTENAW ENGINEERING COMPANY
WASHTENAW ENGINEERING
3526 W. LIBERTY RD, SUITE 400
ANN ARBOR, MI 48103
Ph: 734-761-8800

CIVIL DRAWING INDEX

BIDS 05-26-2026

SHEET NO.	SHEET TITLE
1	TECHNICAL & INDUSTRIAL BUILDING GENERATOR IMPROVEMENTS
2	DETAILS

MECHANICAL DRAWING INDEX

BIDS 05-26-2026

SHEET NO.	SHEET TITLE
M0.1	MECHANICAL STANDARDS AND DRAWING INDEX
M02.0	LOWER LEVEL MECHANICAL DEMOLITION PLAN
M2.0	LOWER LEVEL MECHANICAL NEW WORK PLAN
M6.1	MECHANICAL DETAILS
M7.1	MECHANICAL SCHEDULES
M8.1	TEMPERATURE CONTROLS

ELECTRICAL DRAWING INDEX

BIDS 05-26-2026

SHEET NO.	SHEET TITLE
E0.1	ELECTRICAL STANDARDS AND DRAWING INDEX
E0.2	ELECTRICAL SCHEDULES AND DETAILS
E02.0	LOWER LEVEL ELECTRICAL DEMOLITION PLAN
E3.0	LOWER LEVEL ELECTRICAL NEW WORK PLAN
E3.1	FIRST FLOOR ELECTRICAL NEW WORK PLAN
E3.2	SECOND FLOOR ELECTRICAL NEW WORK PLAN
E3.3	PENTHOUSE ELECTRICAL NEW WORK PLAN
E5.1	ONE LINE DIAGRAM – DEMOLITION
E5.2	ONE LINE DIAGRAM – NEW WORK
E5.3	PANEL SCHEDULES
E6.1	ELECTRICAL ENLARGED PLANS

LOCATION MAP
NO SCALE

PREPARED FOR:
PETER BASSO ASSOCIATES
5145 LIVERNOIS, STE 100
TROY, MI 48098
TEL: 248-879-5666

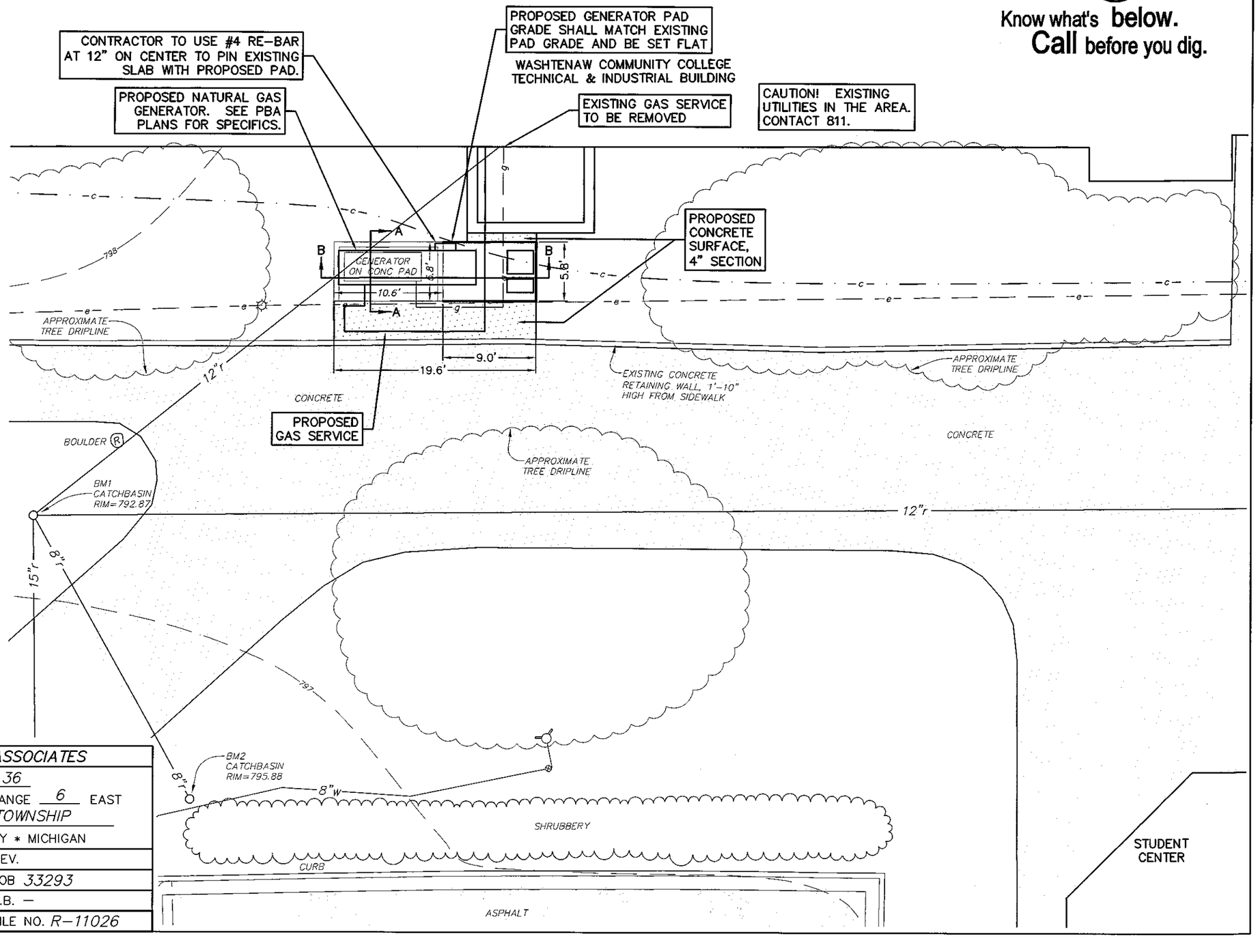
TECHNICAL & INDUSTRIAL BUILDING GENERATOR IMPROVEMENTS (SITE WORK IS A DEDUCT ALTERNATE) WCC PROJECT NO. 75903

Know what's **below.** **Call** before you dig.

SCALE: 1"=10'

CONSTRUCTION NOTES:

1. EXISTING GENERATOR GAS SERVICE TO BE REMOVED.
2. EXISTING ELECTRIC LINES; CONTRACTOR SHALL SEE ELECTRICAL PLANS FOR LOCATIONS AND LOCATION FOR PENETRATIONS IN CONCRETE PAD.
3. CONTRACTOR SHALL INSTALL CONDUITS IN PAD AREA PRIOR TO SETTING NEW CONCRETE.
4. INSTALL NEW GAS AND ELECTRICAL LINES PER MECHANICAL/ELECTRICAL PLANS.
5. CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC AND PEDESTRIAN CONTROLS.



STATE OF MICHIGAN
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No. 52559
LICENSED PROFESSIONAL ENGINEER

JOSEPH K. MAYNARD P.E., MICHIGAN NO. 52559

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www.washtenawengineering.com

CLIENT: PETER BASSO ASSOCIATES	
TOWN 2 SOUTH * RANGE 6 EAST SECTION 36 ANN ARBOR TOWNSHIP WASHTENAW COUNTY * MICHIGAN	
DATE 5-26-26	REV.
DRAWN DJH	JOB 33293
CHECK JKM	F.B. -
SHEET 1 OF 2	FILE NO. R-11026

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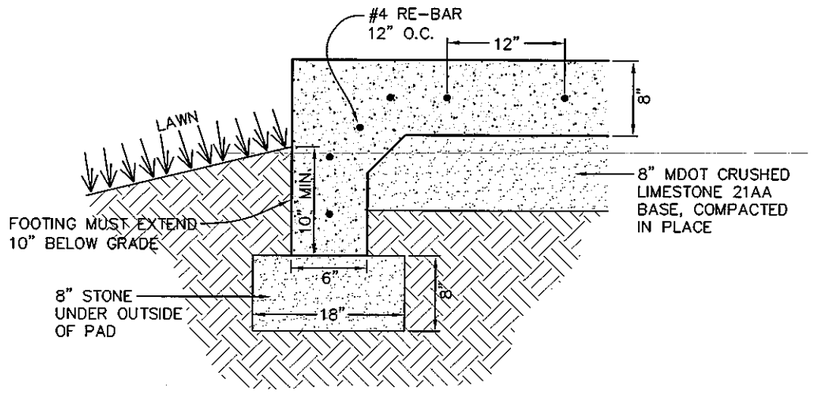
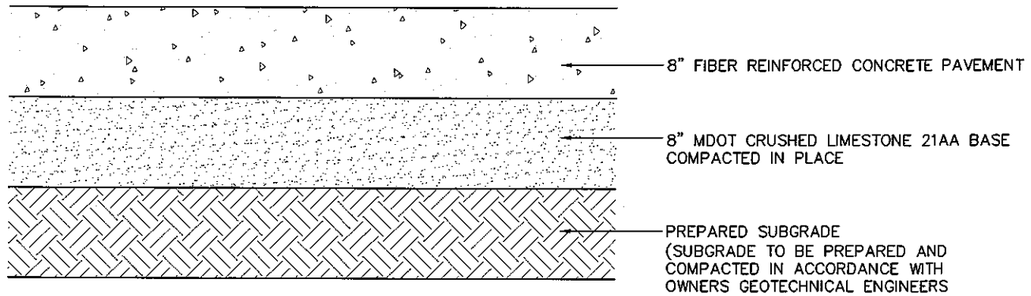
TECHNICAL & INDUSTRIAL BUILDING GENERATOR IMPROVEMENTS (SITE WORK IS A DEDUCT ALTERNATE) WCC PROJECT NO. 75903

SITE MATERIALS NOTES:
1. ALL MATERIALS AND COMPACTION REQUIREMENTS SHALL MEET MDOT STANDARDS.
2. ALL MATERIALS ARE TO BE COMPACTED TO THE REQUIREMENTS LISTED IN DIVISION 3 OF THE M.D.O.T. 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.



CONCRETE GENERATOR PAD SECTION
(NO SCALE)



CONCRETE SECTION
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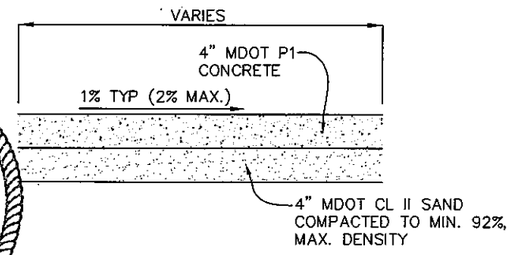
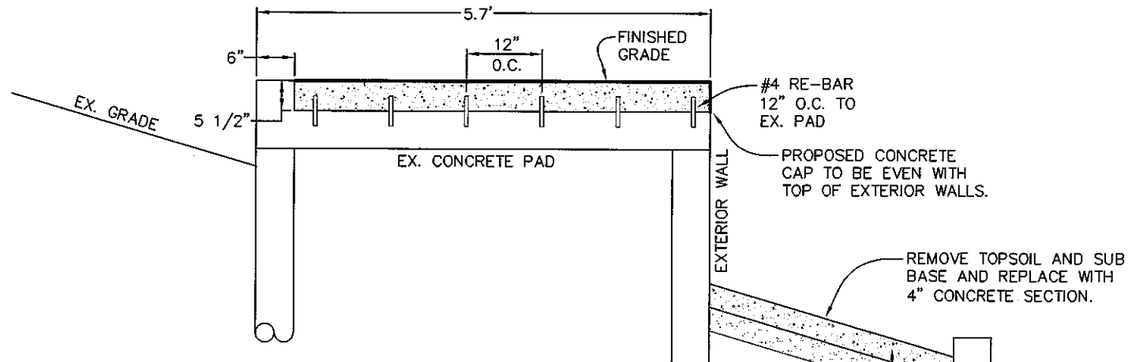


4" CONCRETE SECTION
NOT TO SCALE



SECTION A-A
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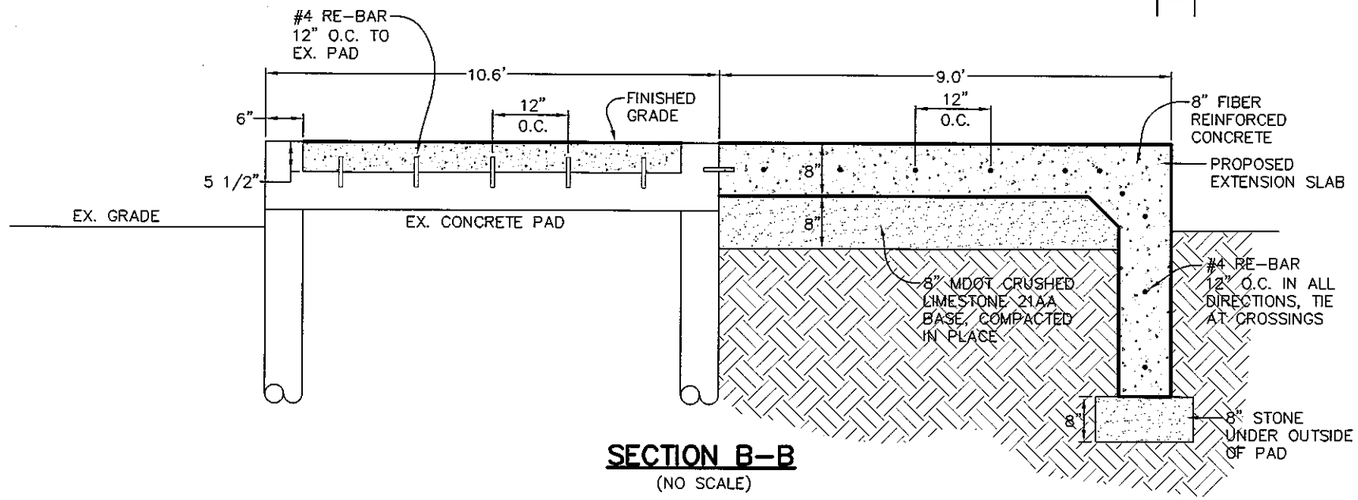

SECTION B-B
(NO SCALE)

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SHEET 2 OF 2	FILE NO. R-11026

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MECHANICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION
A	COMPRESSED AIR
A(___#)	COMPRESSED AIR (SPECIFIC PSIG)
AAV	AUTOMATIC AIR VENT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AD	AREA DRAIN
AE	AIR EXTRACTOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AMP	AMPERE
APD	AIR PRESSURE DROP
AR	ARGON
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR-CONDITIONING ENGINEERS
ASR	AUTOMATIC SPRINKLER RISER
ATD	AIR TRANSFER DUCT
AUX	AUXILIARY
AV	ACID VENT
AVTR	ACID VENT THROUGH ROOF
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BCU	BLOWER COIL UNIT
BDD	BACKDRAFT DAMPER
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BVC	BEVERAGE CONDUIT
BWV	BACKWATER VALVE
C	COMMON
CAP	CAPACITY
CAV	CONSTANT AIR VOLUME
CB	CATCH BASIN
CC	COOLING COIL
CD	COLD DECK
CD	CONDENSATE DRAIN
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHW	CHILLED WATER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	COOLING
CNDS	CONDENSATE
CNDS (___#)	CONDENSATE (SPECIFIC PSIG)
CO	CLEAN OUT
CO2	CARBON DIOXIDE
CONT	CONTINUATION OR CONTINUED
CONTR	CONTRACTOR
CONV	CONVECTOR
COP	COEFFICIENT OF PERFORMANCE
CP	CIRCULATING PUMP
CRU	CONDENSATE RETURN UNIT
CSS	CLINICAL SERVICE SINK
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CW	DOMESTIC COLD WATER
CWF	DOMESTIC COLD WATER - FILTERED
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D&T	DRIP AND TRAP
DA	DISCHARGE AIR
DAT	DISCHARGE AIR TEMPERATURE
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DIR	DEIONIZED RETURN
DIS	DEIONIZED SUPPLY
DMPR	DAMPER
D/N	DAY/NIGHT
DN	DOWN
DNZ	DOWNSPOUT NOZZLE
DS	DUCT SILENCER
DT	DRAIN TILE
DTC	DRAIN TILE CONNECTION
DWH	DOMESTIC WATER HEATER
DWG	DRAWING
(E)	EXISTING
E	EXHAUST GRILLE OR REGISTER
EA	EACH
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	EXPANSION COMPENSATOR
ECM	ELECTRONICALLY COMMUTATED MOTOR
ECUH	ELECTRIC CABINET UNIT HEATER
EDB	ENTERING DRY BULB
EER	ENERGY EFFICIENCY RATIO
EES	EMERGENCY EYE WASH / SHOWER
EEW	EMERGENCY EYE WASH
EF	EXHAUST FAN
EFF	EFFICIENCY
EHC	ELECTRIC HEATING COIL
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMS	ENERGY MANAGEMENT SYSTEM
ERL	ENERGY RECOVERY LOOP
ERLR	ENERGY RECOVERY LOOP RETURN
ERLS	ENERGY RECOVERY LOOP SUPPLY
ERU	ENERGY RECOVERY UNIT
ESH	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EWB	ENTERING WET BULB
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FIRE PROTECTION
°F	DEGREES FAHRENHEIT
F&B	FACE AND BYPASS
F&T	FLOAT AND THERMOSTATIC
FA	FACE AREA
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
FGR	FUEL GAS RETURN
FGS	FUEL GAS SUPPLY
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FLA	FULL LOAD AMPS
FLR	FLOOR
FMS	FLOW MEASURING STATION
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FP	FIRE PUMP
FPTU	FAN POWERED (AIR) TERMINAL UNIT
FS	FLOOR SINK
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR
FT	FEET
FTR	FINNED TUBE RADIATION
FV	FACE VELOCITY
G	NATURAL GAS
GA	GAUGE
GAL	GALLON
GRH	GRAVITY RELIEF HOOD
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSAN	GREASE SANITARY WASTE
H	HYDROGEN
HB	HOSE BIBB
HC	HEATING COIL
HD	HOT DECK
HEPA	HIGH EFFICIENCY PARTICULATE ARRESTANCE
HL	HIGH LIMIT
HOA	HAND/OFF/AUTO
HP	HEAT PUMP
HP	HORSEPOWER
HPCW	HIGH PRESSURE DOMESTIC COLD WATER
HPHW	HIGH PRESSURE DOMESTIC HOT WATER
HPHWR	HIGH PRESSURE DOMESTIC HOT WATER RETURN
HPL	HEAT PUMP LOOP
HPLR	HEAT PUMP LOOP RETURN
HPLS	HEAT PUMP LOOP SUPPLY
HR	HOUR
HTG	HEATING
HV	HEATING VENTILATING
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HWH	HOT WATER HEATING
HWHR	HOT WATER HEATING RETURN
HWHS	HOT WATER HEATING SUPPLY
HW	DOMESTIC HOT WATER
HW(___)	DOMESTIC HOT WATER (SPECIFIC TEMP °F)
HWR	DOMESTIC HOT WATER RETURN
HWR(___)	DOMESTIC HOT WATER RETURN (SPECIFIC TEMP °F)
HX	HEAT EXCHANGER
HZ	HERTZ
IAQ	INDOOR AIR QUALITY
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IH	INTAKE HOOD
IN	INCHES
IR	INFRARED HEATER
IW	INDIRECT WASTE
JC	JANITOR'S CLOSET
JP	JOCKEY PUMP
KA	THOUSAND AMP
KW	KILOWATT
KWH	KILOWATT-HOUR
LAT	LEAVING AIR TEMPERATURE
LAB	LABORATORY
LAV	LAVATORY
LBS	POUNDS
LDB	LEAVING DRY BULB
LL	LOW LIMIT
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MEDICAL COMPRESSED AIR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIL	1/1000th INCH
MIN	MINIMUM
MISC	MISCELLANEOUS
MMBH	MILLION BRITISH THERMAL UNITS PER HOUR
MOP	MAXIMUM OVERCURRENT PROTECTION
M/S	MOTOR STARTER
MTD	MOUNTED
MTR	MOTOR
MV	MANUAL AIR VENT
MVAC	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NCTC	NORMALLY CLOSED TIMED CLOSED
NCTO	NORMALLY CLOSED TIMED OPEN
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NOTC	NORMALLY OPEN TIMED CLOSED
NOTO	NORMALLY OPEN TIMED OPEN
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NPCW	NON POTABLE COLD WATER
NPHW	NON POTABLE HOT WATER
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OB	OUTLET BOX
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER/CENTER TO CENTER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OL	OVERLOAD
ORC	OVERFLOW RAIN CONDUCTOR
ORD	OVERFLOW ROOF DRAIN
OS&Y	OUTSIDE SCREW AND YOKE
OV	OUTLET VELOCITY
OWS	OPERATOR WORKSTATION
PACU	PACKAGED AIR CONDITIONING UNIT
PBD	PARALLEL BLADE DAMPER
PC	PUMPED CONDENSATE
PCW	PROCESS COOLING WATER
PCWR	PROCESS COOLING WATER RETURN
PCWS	PROCESS COOLING WATER SUPPLY
PD	PRESSURE DROP (FEET OF WATER)
PH	PERIMETER HEAT
PHR	PERIMETER HEAT RETURN
PHS	PERIMETER HEAT SUPPLY
PNL	PANEL
PPM	PARTS PER MILLION
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSAN	PUMPED SANITARY
PST	PUMPED STORM
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
PSIG	POUNDS PER SQUARE INCH - GAUGE
(R)	RELOCATED
R	RETURN GRILLE OR REGISTER
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RC	RAIN CONDUCTOR
RCP	RADIANT CEILING PANEL
RD	ROOF DRAIN
REQD	REQUIRED
REF	ROOF EXHAUST FAN
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID
RLFA	RELIEF AIR
ROR	REVERSE OSMOSIS RETURN
ROS	REVERSE OSMOSIS SUPPLY
RPM	REVOLUTIONS PER MINUTE
RPDA	REDUCED PRESSURE BACKFLOW PREVENTION DETECTION ASSY
RPZA	REDUCED PRESSURE BACKFLOW PREVENTION ZONE ASSY
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
S	SUPPLY AIR DIFFUSER OR GRILLE
SA	SOUND ATTENUATOR
SA	SUPPLY AIR
SAN	SANITARY WASTE
SAT	SUPPLY AIR TEMPERATURE
SECT	SECTION
SCCR	SHORT CIRCUIT CURRENT RATING
SF	SUPPLY FAN
SH	SHOWER
SK	SINK
SMR	SNOW MELT RETURN
SMS	SNOW MELT SUPPLY
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPKLR	SPRINKLER
SQFT	SQUARE FOOT/SQUARE FEET
S/S	START/STOP
SS	SERVICE SINK
ST	STORM
STD	STANDARD
STK	STACK
STM	STEAM
STM(___#)	STEAM (SPECIFIC PSIG)
S/W	SUMMER/WINTER
SW	SWITCH
T	TRANSFER GRILLE
TC	TEMPERATURE CONTROL
TC	TEMPERING COIL
TCP	TEMPERATURE CONTROL PANEL
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TEMP	TEMPORARY
TH	TERMINAL HEATING
THA	TOTAL HEAT ABSORBED
THR	TERMINAL HEATING RETURN
THR	TOTAL HEAT REJECTED
THS	TERMINAL HEATING SUPPLY
TK	TANK
TMR	TIMER SWITCH
TPD	TEPID WATER
TSP	TOTAL STATIC PRESSURE
TU	(AIR) TERMINAL UNIT
TV	TURNING VANES
TW	TEMPERED WATER
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORY
UON	UNLESS OTHERWISE NOTED
UR	URINAL
UV	UNIT VENTILATOR
V	VALVE
V	VENT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER (MANUALLY ADJUSTABLE)
VOL	VOLUME
VFC	VARIABLE FREQUENCY CONTROLLER
VTR	VENT THROUGH ROOF
VTU	VENTURI TERMINAL UNIT
VUV	VERTICAL UNIT VENTILATOR
W	WASTE
WAV	WASTE AND VENT
WAGD	WASTE ANESTHETIC GAS DISPOSAL
WB	WET BULB
WC	WATER CLOSET
WC	WATER COLUMN
WG	WATER GAUGE
WH	WALL HYDRANT
WMSD	WASHING MACHINE SUPPLY AND DRAIN BOX
WPD	WATER PRESSURE DROP
WT	WEIGHT
XFMR	TRANSFORMER
ZVB	ZONE VALVE BOX

TEMPERATURE CONTROL - PARTIAL SYMBOLS LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CO2	CARBON DIOXIDE SENSOR	OS	OCCUPANCY SENSOR
CO	CARBON MONOXIDE SENSOR	PT	PRESSURE TRANSMITTER
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	SP	STATIC PRESSURE SENSOR OR PROBE
FM	FLOW METER		VALVE - 2 WAY CONTROL VALVE
	GUARD FOR STAT OR SENSOR		VALVE - 3 WAY CONTROL VALVE
H	HUMIDISTAT OR HUMIDITY SENSOR (AS DEFINED ON TC DRAWINGS)	T	THERMOSTAT OR TEMPERATURE SENSOR (AS DEFINED ON TC DRAWINGS)

NOTE: LIST OF ADDITIONAL SYMBOLS & ABBREVIATIONS ASSOCIATED WITH TEMPERATURE CONTROLS ARE IDENTIFIED ON TC DRAWINGS.

MECHANICAL SYMBOL LIST

PIPING SYMBOLS

SYMBOL	DESCRIPTION
AV	AIR VENT - AUTOMATIC
MV	AIR VENT - MANUAL
BFP	BACKFLOW PREVENTER
	CATCH BASIN
	CIRCULATING PUMP
CO	CLEAN OUT - IN FLOOR
CO	CLEAN OUT - FLANGE
	DIRECTION OF FLOW
	DIRECTION OF PITCH - DOWN
	FINNED TUBE RADIATION
	FIRE PROTECTION - SIAMESE CONNECTION - FREE STANDING
	FIRE PROTECTION - SIAMESE CONNECTION - WALL MOUNTED
	FIRE PROTECTION - SPRINKLER HEAD, CONCEALED
	FIRE PROTECTION - SPRINKLER HEAD, PENDANT
	FIRE PROTECTION - SPRINKLER HEAD, UPRIGHT
	FIRE PROTECTION - SPRINKLER HEAD, SIDEWALL
	FLOOR DRAIN
	FLOOR DRAIN - ELEVATION
	FLOOR DRAIN - FUNNEL
	FLOOR DRAIN - FUNNEL, ELEVATION
FS	FLOW SWITCH
FM	FLOW METER
HB	HOSE BIBB
MH	MANHOLE
	OPEN SITE DRAIN
	PIPE - ANCHOR
	PIPE - CAP OR PLUG
	PIPE - ELBOW DOWN
	PIPE - ELBOW UP
	PIPE - EXPANSION JOINT OR COMPENSATOR
	PIPE - FLANGE
	PIPE - HOSE AND BRAID FLEXIBLE CONNECTION
	PIPE - RUBBER FLEXIBLE CONNECTION
	PIPE - GUIDE
	PIPE - TEE DOWN
	PIPE - TEE UP
	PIPE - UNION
P/T	PRESSURE AND TEMPERATURE TEST PLUG
	PRESSURE GAUGE AND COCK
	REDUCER - CONCENTRIC
	REDUCER - ECCENTRIC
	ROOF/OVERFLOW DRAIN
	STEAM TRAP - FLOAT AND THERMOSTATIC
	STEAM TRAP - BUCKET
	STRAINER
	STRAINER WITH VALVE AND BLOW-OFF
	THERMOMETER
	TRAP
	VALVE - ANGLE
	VALVE - BALL
	VALVE - BUTTERFLY
0.5	VALVE - BALANCE (i.e. BALANCE VALVE TO 0.5 GPM)
0.5	VALVE - COMBINATION BALANCE & FLOW MEASURING (i.e. BALANCE VALVE TO 0.5 GPM)
	VALVE - CHECK
	VALVE - SPRING CHECK
	VALVE - GAS (MANUAL)
	VALVE - GLOBE
	VALVE - ISOLATION
	VALVE - NEEDLE
	VALVE - OS&Y
	VALVE - PLUG
	VALVE - PRESSURE REGULATING
	VALVE - PRESSURE REDUCING
	VALVE - PRESSURE RELIEF
	VALVE - PRESSURE & TEMPERATURE RELIEF
VTR	VENT THROUGH ROOF
WH	WALL HYDRANT
	VENT
WM	WATER METER
GM	GAS METER

DOUBLE LINE PIPING SYMBOLS

SYMBOL	DESCRIPTION
	FLANGE
	FLEX CONNECTION
	STRAINER - BASKET
	STRAINER - Y TYPE
	VALVE - 2 WAY CONTROL
	VALVE - 3 WAY CONTROL
	VALVE - BUTTERFLY
	VALVE - CHECK
	VALVE - DETECTOR CHECK
	VALVE - OS&Y HORIZONTAL STEM
	VALVE - OS&Y VERTICAL STEM

DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
AU-101	AIR TERMINAL UNIT
AU-101	AIR TERMINAL UNIT WITH HEATING COIL
VTU-101	VENTURI AIR TERMINAL UNIT
VTU-101	VENTURI AIR TERMINAL UNIT WITH HEATING COIL
	DAMPER - HORIZONTAL FIRE (EXISTING, NEW)
	DAMPER - HORIZONTAL FIRE / SMOKE (EXISTING, NEW)
	DAMPER - SMOKE (EXISTING, NEW)
	DAMPER - VERTICAL FIRE (EXISTING, NEW)
	DAMPER - VERTICAL FIRE / SMOKE (EXISTING, NEW)
BDD	DAMPER - BACK DRAFT
M	DAMPER - MOTORIZED
	DAMPER - VOLUME (MANUALLY ADJUSTABLE)
	DIFFUSER - BLANK OFF
	DIFFUSER - LINEAR SLOT
	DIFFUSER - SQUARE OR RECTANGULAR
	DUCT CROSS SECTION - SUPPLY
	DUCT CROSS SECTION - RETURN
	DUCT CROSS SECTION - EXHAUST
	DUCT - FLEXIBLE CONNECTION
	DUCT - FLEXIBLE DUCT
	DUCT TAKE-OFF - ROUND CONICAL
	DUCT TAKE-OFF - RECTANGULAR WITH SHOE TAP
	ELBOW - RECTANGULAR WITH TURNING VANES
	ELBOW - RECTANGULAR/ ROUND SMOOTH RADIUS
	ELBOW DOWN - RECTANGULAR
	ELBOW DOWN - ROUND
	ELBOW UP - RECTANGULAR
	ELBOW UP - ROUND
	FAN - AXIAL
	FAN - CENTRIFUGAL (ELEVATION)
VFC XX-#	VARIABLE FREQUENCY CONTROLLER SERVING EQUIPMENT XX-#
	HEATING COIL
D	INCLINED DROP IN DIRECTION OF AIRFLOW
R	INCLINED RISE IN DIRECTION OF AIRFLOW
	INTAKE OR RELIEF HOOD
	REGISTER - RETURN OR EXHAUST
	REGISTER - RETURN WITH BOOT
	REGISTER - TRANSFER GRILLE
	ROOF EXHAUST FAN
	TRANSITION - CONCENTRIC
	TRANSITION - ECCENTRIC
	UNIT HEATER - HORIZONTAL THROW
	UNIT HEATER - VERTICAL THROW

DOUBLE LINE DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
	DUCT TAKE-OFF - RECTANGULAR WITH SHOE TAP
	DUCT TAKE-OFF - ROUND CONICAL
	ELBOW - RECTANGULAR WITH TURNING VANES
	ELBOW - RECTANGULAR SHORT RADIUS WITH SPLITTER VANES
	ELBOW - ROUND
	ELBOW - RECTANGULAR SMOOTH RADIUS
	ELBOW DOWN - RECTANGULAR
	ELBOW DOWN - ROUND
	ELBOW UP - RECTANGULAR
	ELBOW UP - ROUND
	HEATING COIL
D	INCLINED DROP IN DIRECTION OF AIRFLOW
R	INCLINED RISE IN DIRECTION OF AIRFLOW
	TRANSITION - CONCENTRIC
	TRANSITION - ECCENTRIC

MECHANICAL DRAWING INDEX

STANDARD METHODS OF NOTATION

S-1 / 10ø / 350-4 — SUPPLY DIFFUSER WITH SCHEDULE TAG "1", 10" DIAMETER NECK SIZE, 350 CFM TYPICAL FOR 4

R-1 / 22x22 / 640-2 — RETURN REGISTER WITH SCHEDULE TAG "1", 22"x 22" NECK SIZE, 640 CFM TYPICAL FOR 2, EXHAUST REGISTER E DESIGNATION SIMILAR.

AU-101 — AIR TERMINAL UNIT WITH HEATING COIL NO. 101 WITH SERVICE CLEARANCE SHOWN

VTU-101 — VENTURI AIR TERMINAL WITH HEATING COIL NO. 101 WITH SERVICE CLEARANCE SHOWN

(2)WC-1 / FD-1 — PLUMBING FIXTURE UNIT IDENTIFICATION TAG, WATER CLOSET TYPE "1", TYPICAL FOR 2

8 — PIPE DIAMETER NOTATION, ALL SIZES IN INCHES

8ø / 22x10 / 18x14ø — DUCT SIZE NOTATION, ALL SIZES IN INCHES; OVAL DUCT; RECTANGULAR DUCT

1 — CONSTRUCTION KEY NOTE (NUMBER) OR DEMOLITION KEY NOTE (LETTER)

EF 1 — EQUIPMENT DESIGNATION, (i.e. EXHAUST FAN NUMBER 1)

HW-1 — PIPING RISER DESIGNATION (i.e. HOT WATER RISER NUMBER 1)

NEW SYSTEM COMPONENT

EXISTING SYSTEM COMPONENT TO REMAIN

POINT OF NEW CONNECTION SYMBOL

SECTION OR PLAN NUMBER

1 / M5.1 — SHEET WHERE SECTION IS DRAWN

AREA OF ENLARGEMENT

PLAN NUMBER

1 / M5.1 — SHEET WHERE ENLARGED PLAN IS DRAWN

SECTION OR PLAN NUMBER

1 / M5.1 — **SECTION OR ENLARGED PLAN** SCALE: 1/8" = 1' - 0"

SHEET WHERE SECTION IS CUT OR ENLARGED PLAN IS REFERENCED

~~SHEET M1.0~~ / ~~SHEET M1.1~~ — MATCH LINE

HEAVY LINE WEIGHT INDICATES NEW WORK

LIGHT LINE WEIGHT INDICATES EXISTING EQUIPMENT OR REFERENCED INFORMATION

GRAY LINE INDICATES BACKGROUND INFORMATION

DASHED LINES INDICATE PIPING ROUTED BELOW SLAB OR GRADE

HATCH MARKS INDICATE EQUIPMENT OR MATERIALS TO BE DISCONNECTED AND REMOVED.

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.

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WASHTENAW COMMUNITY COLLEGE
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BLDG GENERATOR REPLACEMENT
WCC PROJECT # 75903
Ann Arbor,MI

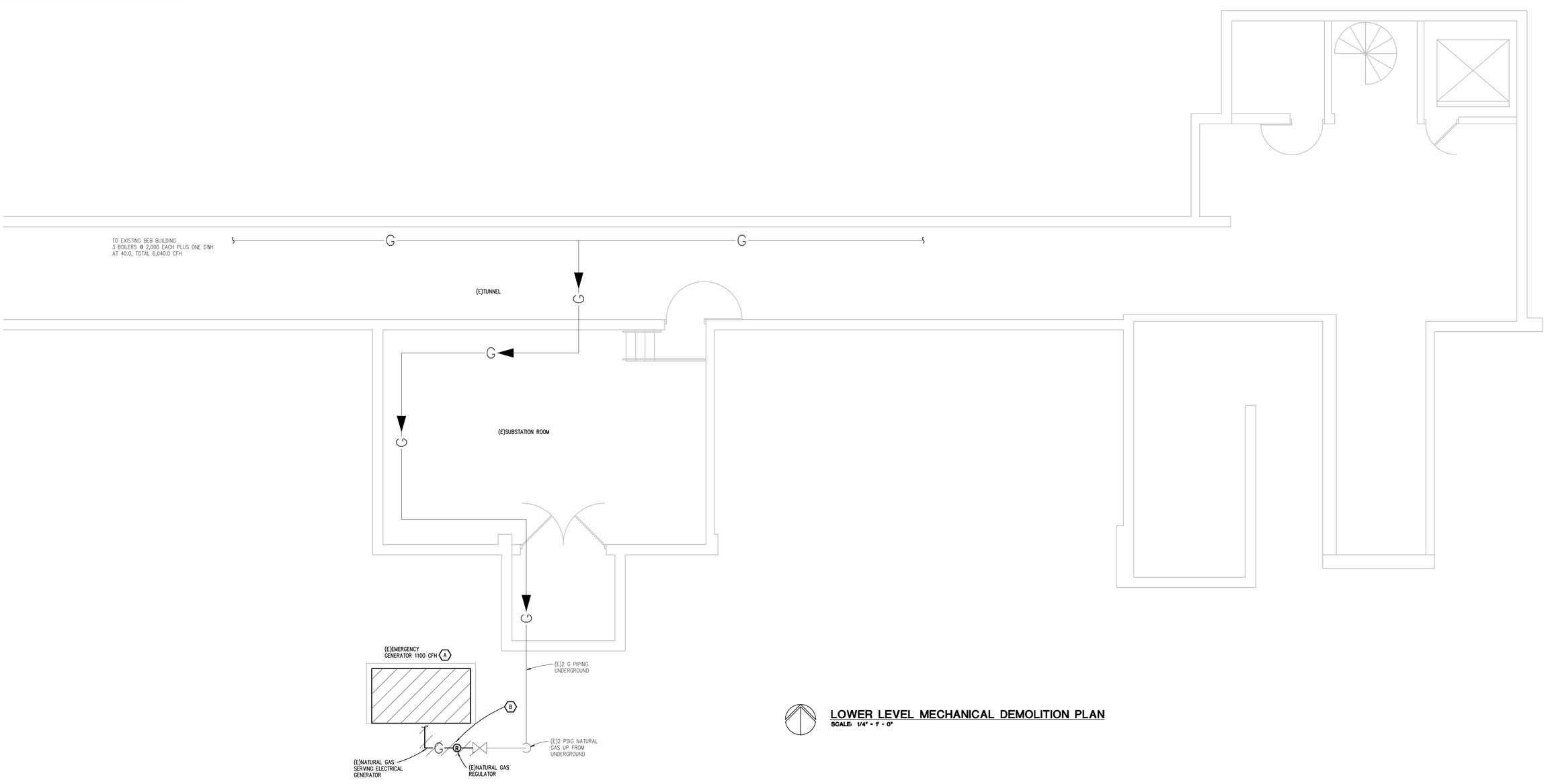
SHEET TITLE
MECHANICAL STANDARDS AND DRAWING INDEX

DATE
05-26-2026

ISSUE
BIDS

SHEET No.
M0.1

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



LOWER LEVEL MECHANICAL DEMOLITION PLAN
SCALE: 1/4" = 1' - 0"

MECHANICAL DEMOLITION GENERAL NOTES:

1. ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE.
2. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. ACTUAL ROUTING AND SIZES OF EXISTING PIPING AND DUCTWORK MIGHT DIFFER TO A LIMITED EXTENT FROM WHAT IS SHOWN. MAJOR DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL EXISTING CONDITIONS SHALL BE REPORTED TO THE ENGINEER.
3. THE EXACT EXTENT OF DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK.
4. ALL MECHANICAL ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE, INCLUDING ALL RELATED ITEMS SUCH AS HANGERS, SUPPORTS, CONTROLS, ETC. CAP ALL OPEN ENDED PIPES AND DUCTWORK.

(#) DEMOLITION KEY NOTES:

A. DISCONNECT EXISTING NATURAL GAS GENERATOR. ALTERNATE BID: RELOCATE GENERATOR TO LOT 5

B. DISCONNECT AND REMOVE EXISTING NATURAL GAS PIPING SERVING ELECTRICAL GENERATOR INCLUDING GAS REGULATOR.

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SHEET TITLE
LOWER LEVEL MECHANICAL
DEMOLITION PLAN

DATE
05-26-2026

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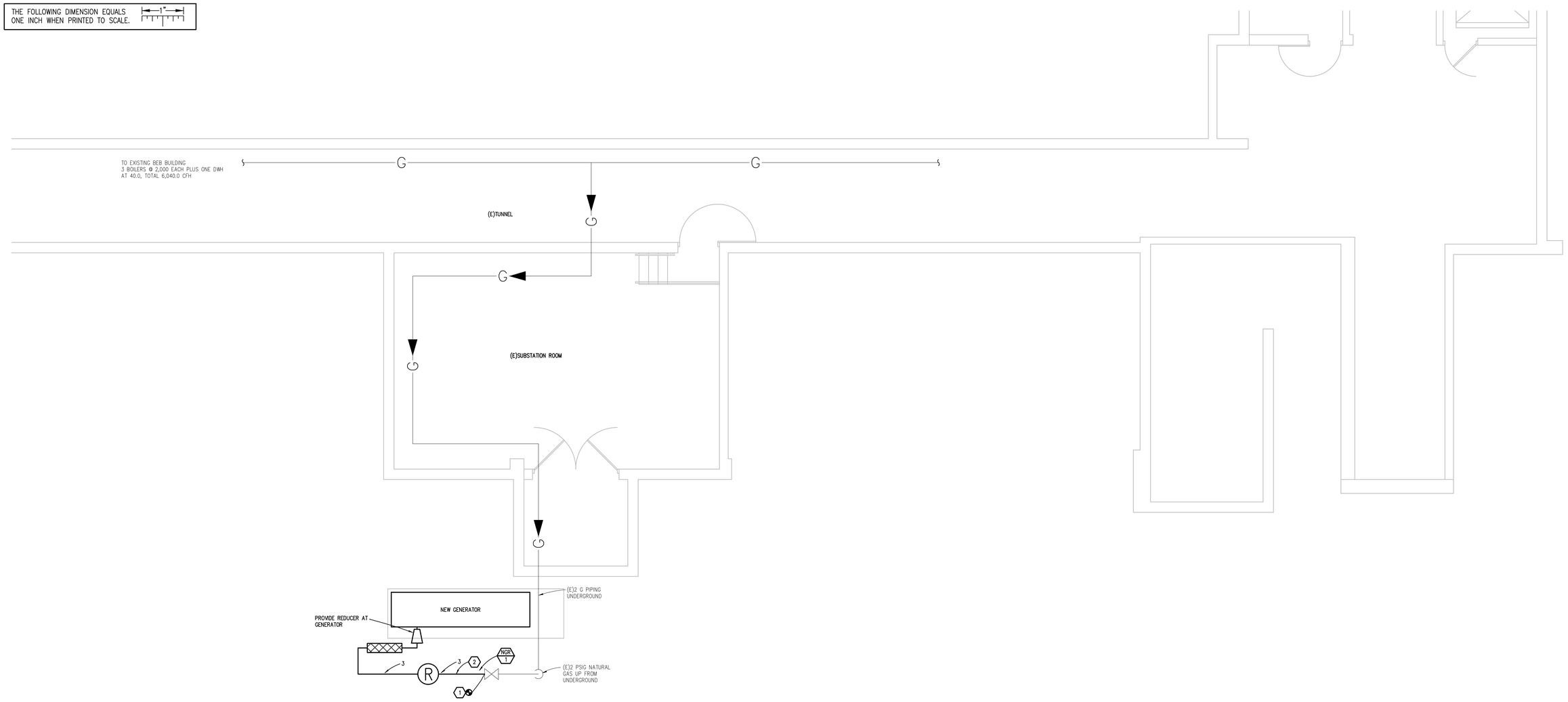
SHEET No.
MD2.0

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



LOWER LEVEL MECHANICAL NEW WORK PLAN

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

PLUMBING GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

⟨P⟩ CONSTRUCTION KEY NOTES:

1. CONNECT NEW NATURAL GAS TO EXISTING
2. SEE PIPING DIAGRAM ON SHEET M601 FOR PIPING DETAILS

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NEW WORK PLAN

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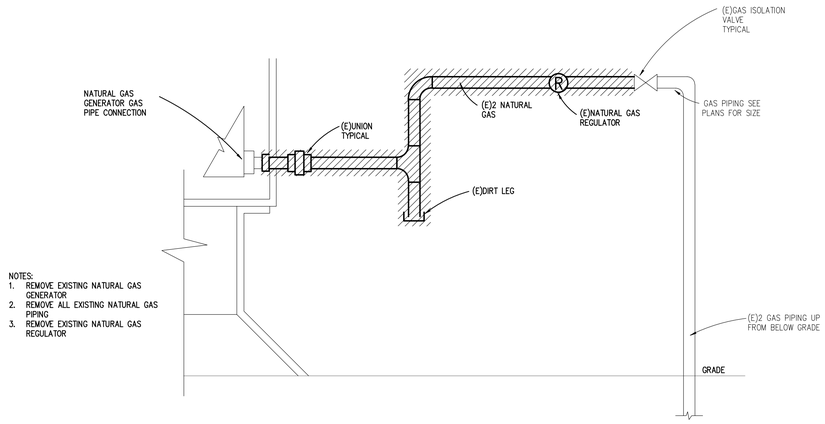
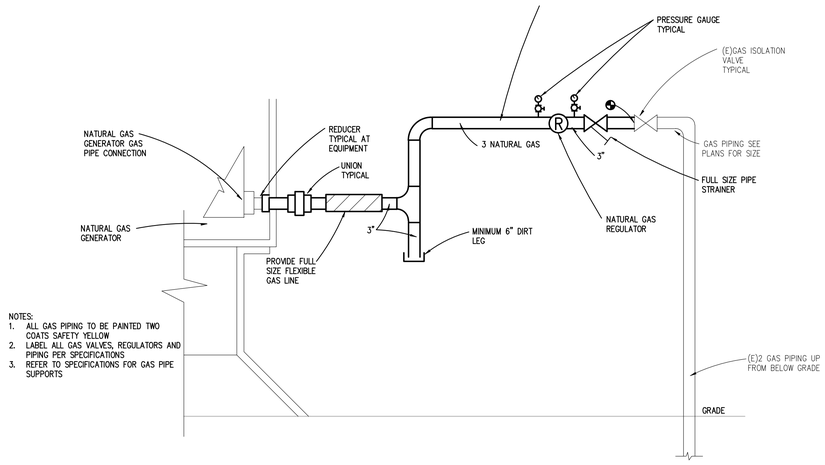


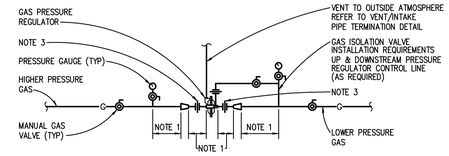
NOTES:
1. REMOVE EXISTING NATURAL GAS GENERATOR
2. REMOVE ALL EXISTING NATURAL GAS PIPING
3. REMOVE EXISTING NATURAL GAS REGULATOR

(E)NATRUAL GAS GENERATOR PIPING DETAIL
NO SCALE



NOTES:
1. ALL GAS PIPING TO BE PAINTED TWO COATS SAFETY YELLOW
2. LABEL ALL GAS VALVES, REGULATORS AND PIPING PER SPECIFICATIONS
3. REFER TO SPECIFICATIONS FOR GAS PIPE SUPPORTS

NEW NATRUAL GAS GENERATOR PIPING DETAIL
NO SCALE



NOTES:

1. PROVIDE STRAIGHT LENGTHS OF PIPING UPSTREAM AND DOWNSTREAM OF ALL COMPONENTS AS REQUIRED BY MANUFACTURER OF GAS PRESSURE REGULATOR PROVIDED.
2. VENT PIPING MATERIAL SHALL BE THE SAME AS THE GAS PIPING MATERIAL.
3. OMIT UNIONS WHERE CONNECTIONS ARE FLANGED.

GAS PRESSURE REGULATOR PIPING DETAIL
NO SCALE

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HORIZONTAL PIPING AND SUPPORT APPLICATION SCHEDULE

	HANGER OR SUPPORT TYPE						SHIELD TYPE			
METAL PIPE TYPE & SIZE	MSS TYPE 1 CLEVIS HANGER	MSS TYPE 10 SWIVEL RING BAND HANGER	MSS TYPE 41 DOUBLE ROD PIPE ROLLER	MSS TYPE 43 SINGLE ROD ROLLER HANGER	MSS TYPE 44 PIPE ROLLER & STAND	MSS TYPE 46 ADJUSTABLE PIPE ROLL STAND	MSS TYPE 39 PROTECTION SADDLE	MSS TYPE 40 INSULATION PROTECTION SHIELD	THERMAL-HANGER SHIELD	KEYED NOTES
UNINSULATED SINGLE PIPE										
UP TO 2 INCH	X	X								
2-1/2 INCH TO 4 INCH	X	X								
6 INCH TO 8 INCH	X									
10 INCH	X									
12 INCH			X							
14 INCH AND LARGER			X							
INSULATED SINGLE COLD PIPES										
UP TO 2 INCH	X	X						X	X	A
2-1/2 INCH TO 4 INCH	X								X	
6 INCH TO 8 INCH	X								X	
10 INCH	X								X	
12 INCH	X								X	
14 INCH AND LARGER	X								X	
INSULATED SINGLE HOT PIPES										
UP TO 2 INCH	X	X						X	X	A, C
2-1/2 INCH TO 4 INCH			X	X	X	X	X		X	B, C
6 INCH TO 8 INCH			X	X	X	X	X		X	B, C
10 INCH			X	X	X	X	X		X	B, C
12 INCH			X		X	X	X		X	B, C
14 INCH AND LARGER			X				X		X	B, C

GENERAL NOTES

1. "X" INDICATES APPROVED HANGER OR SUPPORT ELEMENTS. IF MORE THAN ONE HANGER OR SUPPORT ELEMENT IS INDICATED, SELECTION FROM APPROVED ELEMENTS IS CONTRACTOR'S OPTION.
2. REFER TO HANGER AND SUPPORT SECTION FOR APPROVED MANUFACTURERS.
3. HANGERS AND SUPPORTS USED FOR FIRE PROTECTION SERVICES SHALL BE UL LISTED OR FMG APPROVED.
4. HANGER ELEMENTS IN CONTACT WITH BARE COPPER PIPE SHALL BE COPPER PLATED, PLASTIC COATED, FELT LINED, OR USE MANUFACTURED COPPER TUBE ISOLATORS.
5. REFER TO INDIVIDUAL PIPING SPECIFICATION SECTIONS FOR HANGER SPACING.
6. MULTIPLE PARALLEL COLD PIPES MAY BE TRAPEZE SUPPORTED FROM BELOW USING U-BOLTS OR STRUT CLAMPS AND THERMAL HANGER SHIELDS. REFER TO KEYED NOTE A.
7. MULTIPLE PARALLEL COLD PIPES MAY BE TRAPEZE SUPPORTED FROM ABOVE USING STANDARD HANGER ELEMENTS INDICATED FOR SINGLE COLD PIPES.
8. MULTIPLE PARALLEL HOT PIPES MAY BE TRAPEZE SUPPORTED FROM BELOW USING ROLLER ELEMENTS AND THERMAL HANGER SHIELD OR INSULATION PROTECTION SADDLE. REFER TO KEYED NOTES B AND C.
9. MULTIPLE PARALLEL HOT PIPES MAY BE TRAPEZE SUPPORTED FROM ABOVE USING STANDARD ROLLER HANGERS INDICATED AND THERMAL HANGER SHIELD OR INSULATION PROTECTION SADDLE. REFER TO KEY NOTES B AND C.
10. REFER TO INDIVIDUAL PIPING SPECIFICATION SECTIONS FOR ADDITIONAL SYSTEM SPECIFIC HANGER APPLICATIONS.

KEYED NOTES

A. USE THERMAL HANGER SHIELD ON TRAPEZE SUPPORTED INSULATED PIPE TO PREVENT CRUSHING OF INSULATION.
B. USE THERMAL HANGER SHIELD DESIGNED FOR USE ON ROLLER SUPPORTS FOR INSULATED HOT PIPE.
C. USE TYPE 39 PROTECTION SADDLES IF INSULATION WITHOUT VAPOR BARRIER IS INDICATED. FILL INTERIOR VOIDS WITH INSULATION MATCHING ADJOINING INSULATION.

PLUMBING PIPING & VALVE APPLICATION SCHEDULE

	MATERIAL															PRESSURE CONNECTIONS											GRAVITY DWV CONNECTIONS				ISOLATION VALVES				
PIPE SIZE (INCHES)	SOFT COPPER TYPE K	HARD COPPER TYPE L	HARD COPPER TYPE M	CARBON STEEL (SCHED. 40)	CARBON STEEL (STD.)	GALV. STEEL (SCHED. 40)	STAINLESS STEEL (SCHED. 10)	PEX	PE PIPE	NO-HUB CISP	PVC TYPE DWV	PP DRAINAGE PIPE	COPPER TYPE DWV	DUCTILE IRON PIPE	SOLDERED	BRAZED	WELDED	THREADED	FLANGED	GROOVED	INSERT & CRIMP	FUSION	PRESSURE-SEAL	MECHANICALLY-FORMED TEE	MECHANICAL JOINT	PUSH-ON-JOINT	SOLVENT WELDED	SOLDERED	FUSION	CISP HUBLESS	HEAVY-DUTY HUBLESS	BALL	AGA BALL	GENERAL SERVICE BUTTERFLY	LUBRICATED PLUG	GATE	KEYED NOTES
ABOVEGROUND FUEL GAS - MIN. WORKING PRESS.: 100 PSIG																																					
UP TO 2				X														X	X														X				E
2-1/2 TO 3				X														X		X													X				E
4 TO 10				X														X		X													X			X	E

GENERAL NOTES

1. "X" INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A PIPING SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. DISSIMILAR-METAL PIPING JOINTS: CONSTRUCT JOINTS USING DIELECTRIC FITTINGS COMPATIBLE WITH BOTH PIPING MATERIALS.
   a. NPS 2 AND SMALLER: USE DIELECTRIC NIPPLE/WATERWAY.
   b. NPS 2-1/2 AND LARGER: USE DIELECTRIC FLANGE KITS.
3. INSTALL VALVES WITH UNIONS OR FLANGES AT EACH PIECE OF EQUIPMENT ARRANGED TO ALLOW SERVICE, MAINTENANCE, AND EQUIPMENT REMOVAL WITHOUT SYSTEM SHUTDOWN.
4. PLUMBING EQUIPMENT DRAINS, VENTS, SAFETY VALVE PIPING, BLOWDOWN PIPING AND THE LIKE SHALL BE SAME PIPING MATERIAL AS ASSOCIATED PIPING SYSTEM.
5. GROOVED END VALVES MAY BE USED WITH GROOVED PIPING.

KEYED NOTES

A. GROOVED AND FLANGED FITTINGS, JOINTS, AND COUPLINGS, IF INDICATED AS AN ACCEPTABLE SELECTION, MAY BE USED IN ACCESSIBLE LOCATIONS ONLY FOR THIS PIPING SYSTEM. ACCESSIBLE LOCATIONS ARE DEFINED AS EXPOSED CONSTRUCTION OR ABOVE LAY-IN CEILINGS.
B. JOINTS ARE NOT PERMITTED ON UNDERGROUND WATER PIPING.
C. USE CAST IRON DRAINAGE PATTERN (DURHAM) FITTINGS.
D. INSTALL IN CONTAINMENT JACKET, REFER TO SPECIFICATIONS.
E. VALVES, UNIONS, AND FLANGED JOINTS MAY BE USED IN ACCESSIBLE LOCATIONS ONLY, EXCLUDING CEILINGS USED AS AIR PLENUMS. ACCESSIBLE LOCATIONS ARE DEFINED AS EXPOSED CONSTRUCTION OR ABOVE LAY-IN CEILINGS. USE ONLY STEEL WELDED FITTINGS AND WELDED JOINTS IN CEILING USED AS AIR PLENUMS.
F. NO JOINTS ALLOWED UNDERGROUND.

NATURAL GAS REGULATOR SCHEDULE

MARK	FLOW SCFH	PRESSURE		MAXIMUM ALLOWABLE DOWNSTREAM PRESSURE	KEYED NOTES
		INLET	OUTLET		
NGR-1	2559.1	2 PSIG	6-13" WC	13" WC	#

SCHEDULES GENERAL NOTES:

TYPICAL FOR ALL SCHEDULE SHEETS:

1. REFER TO ELECTRICAL STANDARD SCHEDULES, ONE LINE DIAGRAM AND PANEL SCHEDULES FOR ADDITIONAL ELECTRICAL INFORMATION
2. PROVIDE THE FOLLOWING FACTORY-WIRED ELECTRICAL OPTIONS/ACCESSORIES WHERE INDICATED IN SCHEDULE:
   A - NON-FUSED DISCONNECT SWITCH
   B - UNIT SHALL BE SINGLE POINT ELECTRICAL CONNECTION WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS
   C - SERVICE RECEPTACLE
   D - FUSED DISCONNECT SWITCH
   E - COMBINATION STARTER
   F - UNIT SHALL HAVE (2) SINGLE POINT CONNECTIONS WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS. (1) CONNECTION SHALL BE FOR CONDENSING SECTION AND (1) CONNECTION SHALL BE FOR THE REMAINDER OF THE UNIT.
3. FOR MODULATION TYPE COLUMN, "AUTO" INDICATES AUTOMATIC OPERATION (CONTROLLED BY TEMPERATURE CONTROLS OR SELF CONTAINED CONTROLS), "MANUAL" INDICATES HAND OPERATION.
4. FOR VARIABLE FREQUENCY CONTROLLER COLUMN:
   A- 'NON-INTEGRAL'INDICATES THAT VARIABLE FREQUENCY CONTROLLER SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR (UNLESS OTHERWISE NOTED) AND INSTALLED BY THE ELECTRICAL CONTRACTOR, INCLUDING LINE SIDE AND LOAD SIDE WIRING TO THE MOTOR, AND INCLUDING MISCELLANEOUS STEEL WHEN REQUIRED FOR SUPPORT AND MOUNTING. REFER TO FLOOR PLANS FOR LOCATION.
   B- 'INTEGRAL' INDICATES THAT EQUIPMENT SHALL COME COMPLETE WITH VARIABLE FREQUENCY CONTROLLER WHICH IS FACTORY INSTALLED AND WIRED TO THE MOTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE VARIABLE FREQUENCY CONTROLLER.
   C- 'NONE' INDICATES THAT NO VARIABLE FREQUENCY CONTROLLER IS REQUIRED FOR THIS EQUIPMENT.
5. WHERE EQUIPMENT IS INDICATED TO HAVE A SINGLE POINT ELECTRICAL CONNECTION, THAT EQUIPMENT SHALL COME COMPLETE WITH FACTORY INSTALLED STARTERS, MOTOR OVERLOAD PROTECTION, CONTACTORS, FUSING AND ALL NECESSARY INTERNAL WIRING AND CONTROLS. PROVIDE A FACTORY MOUNTED UNIT DISCONNECTING MEANS WHERE THE ELECTRICAL CONTRACTOR SHALL MAKE SINGLE POINT CONNECTION. INSTALL PACKAGED EQUIPMENT SUCH THAT THE ELECTRICAL CONNECTION AND CONTROLS ARE ACCESSIBLE AND HAVE CLEARANCES MEETING THE NATIONAL ELECTRICAL CODE.
6. WHERE PACKAGED EQUIPMENT IS PROVIDED, NAMEPLATE MUST INDICATE MAXIMUM OVERCURRENT PROTECTION BY HACR RATED CIRCUIT BREAKERS OR FUSES. IF FUSE PROTECTION ONLY IS INDICATED, PROVIDE A FUSIBLE DISCONNECT AND FUSES WITH THE UNIT.
7. WHERE EQUIPMENT IS DESIGNATED BY MANUFACTURER AND MODEL NUMBER, THIS IS THE BASIS OF DESIGN. IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT BY OTHER SPECIFIED MANUFACTURERS OR PROPOSED ALTERNATE EQUIPMENT BY THE BASIS OF DESIGN MANUFACTURER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS TO ELECTRICAL REQUIREMENTS, STRUCTURAL LOADING, OR ARCHITECTURAL APPURTENANCES AND SHALL INCLUDE THE COST OF SUCH REVISIONS IN THEIR BID.
8. WHERE EQUIPMENT IS SCHEDULED TO INCLUDE A SERVICE RECEPTACLE, PROVIDE A FACTORY MOUNTED SERVICE RECEPTACLE WITH APPROPRIATE FUSES AND TRANSFORMERS CONNECTED ON THE LINE SIDE OF THE UNIT DISCONNECT. PROVIDE A NAMEPLATE ON THE DISCONNECT SWITCH INDICATING THE PRESENCE OF LIVE POWER TO THE SERVICE RECEPTACLE WHEN THE UNIT DISCONNECT IS IN THE OFF POSITION.
9. SIZE ALL EQUIPMENT FEEDERS BASED ON THE LISTED MOP (MAXIMUM OVERCURRENT PROTECTION). REFER TO THE FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE ON THE ELECTRICAL STANDARD SCHEDULES SHEET.

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TEMPERATURE CONTROL - SYMBOLS LIST

SCHEMATIC SYMBOLS

SYMBOL	DESCRIPTION
AQ	AQUASTAT, STRAP ON BULB
CO2	CARBON DIOXIDE SENSOR – WALL MOUNTED
CO2	CARBON DIOXIDE SENSOR – DUCT MOUNTED
CS	CURRENT SWITCH
CT	CURRENT TRANSDUCER
	DAMPER – OPPOSED BLADE
	DAMPER – PARALLEL BLADE
M	DAMPER MOTOR
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
ECM	ELECTRONICALLY COMMUTATED MOTOR
CM	FIRE ALARM SYSTEM, ADDRESSABLE CONTROL MODULE
FM	FLOW METER
FS	FLOW SWITCH
FZ	FREEZESTAT
	GUARD FOR STAT OR SENSOR
	HUMIDIFIER
H	HUMIDISTAT OR HUMIDITY SENSOR (AS DEFINED ON TC DRAWINGS)
H	HUMIDITY SENSOR, DUCT MOUNTED
LVL	LEVEL SWITCH OR TRANSMITTER
LS	LIMIT SWITCH
	LINE – ELECTRIC
	LINE – INSTRUMENT AIR (PNEUMATIC)
M/S	MOTOR STARTER
OS	OCCUPANCY SENSOR
PT	PRESSURE TRANSMITTER
R	RELAY, ELECTRIC
N	SELECTOR SWITCH, (N=NUMBER OF POSITIONS)
AI	SIGNAL – DDC/BAS, ANALOG INPUT
AO	SIGNAL – DDC/BAS, ANALOG OUTPUT
DI	SIGNAL – DDC/BAS, DIGITAL INPUT
DO	SIGNAL – DDC/BAS, DIGITAL OUTPUT
AI	SIGNAL – PACKAGED EQUIPMENT, ANALOG INPUT
AO	SIGNAL – PACKAGED EQUIPMENT, ANALOG OUTPUT
DI	SIGNAL – PACKAGED EQUIPMENT, DIGITAL INPUT
DO	SIGNAL – PACKAGED EQUIPMENT, DIGITAL OUTPUT
DD	SMOKE DETECTOR – DUCT MOUNTED
S/S	START/STOP RELAY
SPT	STATIC PRESSURE TRANSMITTER
SP	STATIC PRESSURE SENSOR OR PROBE

SCHEMATIC SYMBOLS (CONT.)

SYMBOL	DESCRIPTION
SW	SWITCH
T	TEMPERATURE SENSOR – RIGID ELEMENT IN WELL
T	TEMPERATURE SENSOR – STRAP ON BULB
T	TEMP SENSOR – DUCT MOUNTED AVG ELEMENT
T	TEMP SENSOR – DUCT MOUNTED RIGID ELEMENT
T	THERMOSTAT OR TEMPERATURE SENSOR (AS DEFINED ON TC DRAWINGS)
TMR	TIMER SWITCH
XF	TRANSFORMER
	VALVE – 2 WAY CONTROL VALVE
	VALVE – 3 WAY CONTROL VALVE
VFC	VARIABLE FREQUENCY CONTROLLER
VS	VELOCITY SENSOR
VIB	VIBRATION SWITCH

WIRING SYMBOLS

M/S	COIL – MOTOR STARTER CONTACTOR
R	COIL – RELAY
	CONTACT – INSTANT OPERATING, NO
	CONTACT – INSTANT OPERATING, NC
	GROUND
	MOTOR, SINGLE PHASE
	PUSH BUTTON – MOMENTARY, NC (MUSHROOM HEAD)
H O A	SWITCH – 3 POSITION SELECTOR HAND/OFF/AUTO
	SWITCH – FLOW (AIR, WATER, ETC.), NO
	SWITCH – LIMIT, NO
	SWITCH – PRESSURE & VACUUM, NC
	SWITCH – TEMPERATURE ACTUATED, NO
	THERMAL OVERLOAD, SINGLE PHASE
OLs	THERMAL OVERLOAD CONTACTS–3 PHASE
	TRANSFORMER
	WIRE TERMINATION AT DEVICE
	WIRE TO WIRE TERMINATION
	WIRING NOT CONNECTED

ABBREVIATIONS

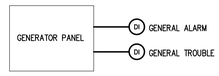
ABBREVIATION	DESCRIPTION
BAS	BUILDING AUTOMATION SYSTEM
DDC	DIRECT DIGITAL CONTROL
TC	TEMPERATURE CONTROLS
NO	NORMALLY OPEN
NC	NORMALLY CLOSED

NOTES:

1. SOME SYMBOLS & ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.
2. REFER TO MECHANICAL STANDARDS ON DRAWING M0.1 FOR ADDITIONAL SYMBOLS & ABBREVIATIONS THAT MAY BE USED ON TEMPERATURE CONTROL DRAWINGS.

TC GENERAL NOTES

1. THESE GENERAL NOTES SHALL BE APPLICABLE FOR ALL TEMPERATURE CONTROL (TC) DRAWINGS.
2. "PROVIDE" IS DEFINED AS "FURNISH AND INSTALL".
3. TEMPERATURE CONTROLS CONTRACTOR (TC CONTRACTOR) SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.
4. FOR TEMPERATURE CONTROL DRAWINGS ONLY: ALL DETAILED INFORMATION IDENTIFIED WITH HEAVY LINE WEIGHT SHALL BE PROVIDED BY TC CONTRACTOR. ALL OTHER INFORMATION IDENTIFIED WITH LIGHT LINE WEIGHT SHALL BE PROVIDED BY OTHER TRADES.
5. ALL CONTROL SCHEMATICS AND WIRING DIAGRAMS ARE FOR THE CLARIFICATION OF EQUIPMENT INTERLOCKING FUNCTIONS AND THE INTERFACE OF VARIOUS CONTRACTORS' WORK AND SHALL NOT BE MISTAKEN AS SHOP DRAWINGS FOR ACTUAL INSTALLATION.
6. TC CONTRACTOR SHALL PROVIDE DDC CONTROLLERS AS REQUIRED TO MEET INTENT OF DESIGN DOCUMENTS. REFER TO THE PLANS FOR THE DDC FUNCTIONS THAT APPLY TO EACH MECHANICAL SYSTEM.
7. ALL TC PROVIDED COMPONENTS AND ALL TC CONTRACTOR INSTALLED WIRING SHALL BE LABELED PER SPECIFICATIONS.
8. ALL WIRING AND SYSTEM CONTROL VOLTAGES SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATION AND THE ELECTRICAL SPECIFICATIONS.
9. VARIABLE FREQUENCY CONTROLLER, FAN AND PUMP MOTOR STARTERS, STARTER WIRING, CONTROL VOLTAGE TRANSFORMERS AND ASSOCIATED POWER WIRING SHALL BE PROVIDED BY OTHER TRADES.
10. ALL DDC AND CONTROL INTERLOCK WIRING SHALL BE BY TC CONTRACTOR UNLESS OTHERWISE NOTED.
11. ALL DDC AND CONTROL INTERLOCK WIRING BETWEEN COMPONENTS SHALL BE INSTALLED WITHOUT INTERMEDIATE STOPS. WIRE SPLICING AT INTERMEDIATE TERMINAL STRIPS IS NOT ACCEPTABLE.
12. ALL ELECTRICAL WIRING AND RACEWAY SYSTEMS SHALL COMPLY WITH ELECTRICAL SPECIFICATION REQUIREMENTS. WHERE RACEWAY IS REQUIRED, TWO SEPARATE ELECTRICAL RACEWAY SYSTEMS SHALL BE PROVIDED: ONE FOR 120V WIRING AND THE OTHER FOR 24V WIRING.
13. TC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER SUPPLIES REQUIRED FOR TC SYSTEM UNLESS OTHERWISE NOTED. REFER TO ELECTRICAL PANEL SCHEDULES FOR SPARE CIRCUITS OR CIRCUITS DEDICATED TO TEMPERATURE CONTROLS. COORDINATE CIRCUIT USE WITH ELECTRICAL CONTRACTOR.
14. TC CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL FIELD MOUNTED COMPONENTS.
15. TC CONTRACTOR SHALL PROVIDE AUXILIARY PANELS FOR REQUIRED PANEL MOUNTED EQUIPMENT SUCH AS RELAYS, TRANSDUCERS, CONTROL TRANSFORMERS, ETC. AUXILIARY PANELS SHALL BE LOCATED NEXT TO ASSOCIATED DDC PANEL. DEPENDING ON WIRE QUANTITY OR COMPLEXITY, PROVIDE CONDUITS BETWEEN PANELS OR WIRING THROUGH WITH CONDUIT STUBS ABOVE ALL ASSOCIATED PANELS.
16. REMOTELY MOUNTED FIELD DEVICES SUCH AS RELAYS, CONTROL TRANSFORMERS, ETC., SHALL BE HOUSED IN AN ENCLOSURE PROVIDED BY THE TC CONTRACTOR.
17. CONTROL TRANSFORMERS WHEN REQUIRED SHALL BE SIZED FOR 150% OF ACTUAL LOAD.
18. TC CONTRACTOR SHALL FIELD MOUNT ALL REQUIRED "SHIPPED LOOSE" PACKAGED CONTROL COMPONENTS FURNISHED BY EQUIPMENT SUPPLIERS WHERE INDICATED. ALL REQUIRED 24V AND 120V FIELD WIRING SHALL BE PROVIDED BY TC CONTRACTOR UNLESS NOTED OTHERWISE. TC CONTRACTOR SHALL COORDINATE SPECIFIC SYSTEM WIRING REQUIREMENTS WITH PACKAGED EQUIPMENT SUPPLIERS.



EMERGENCY GENERATOR MONITORING

NOTES:

1. DRY CONTACTS FOR REMOTE SYSTEM MONITORING SHALL BE PROVIDED WITH GENERATOR. COORDINATE WIRING REQUIREMENTS WITH SUPPLIER.
2. REFER TO ELECTRICAL DRAWINGS FOR LOCATION.

SEQUENCE OF OPERATION:

1. DDC SHALL MONITOR EMERGENCY GENERATOR FOR GENERAL ALARM AND TROUBLE STATUSES FOR BAS DISPLAY.

AUTOMATIC TRANSFER SWITCH MONITORING

TYPICAL FOR EACH ATS

NOTES:

1. DRY CONTACTS FOR REMOTE SYSTEM MONITORING SHALL BE PROVIDED WITH THE TRANSFER SWITCH. COORDINATE WIRING REQUIREMENTS WITH SUPPLIER.
2. REFER TO ELECTRICAL DRAWINGS FOR LOCATION.

SEQUENCE OF OPERATION:

1. DDC SHALL MONITOR EACH ATS FOR "ON GENERATOR POWER" STATUS FOR BAS DISPLAY.

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Washtenaw Community College

PROJECT TITLE
WASHTENAW COMMUNITY COLLEGE
TECHNICAL AND INDUSTRIAL
BLDG GENERATOR REPLACEMENT
WCC PROJECT # 75903
Ann Arbor,MI

SHEET TITLE
TEMPERATURE CONTROLS

DATE
05-26-2026

ISSUE
BIDS

SHEET No.
M8.1

ELECTRICAL SYMBOL LIST (NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT)

SYMBOL	DESCRIPTION
NL/EM X Y ZZ–#	DENOTES NIGHT LIGHT AND/OR EMERGENCY LIGHT X DENOTES FIXTURE TYPE y DENOTES LIGHTING CONTROL ZONE ZZ–# DENOTES PANELBOARD AND BREAKER
	FILL DENOTES EMERGENCY FIXTURE
	TROFFER LIGHT
	STRIP LIGHT
	LINEAR LIGHT
	MULTIHEAD ADJUSTABLE LIGHT
	DOWN LIGHT
	DIRECTIONAL DOWN LIGHT
	DECORATIVE LIGHT
	DECORATIVE LIGHT
	WALL MOUNTED LIGHT
	WALL SCONCE
	ARM MOUNTED LIGHT
	LIGHTING TRACK
	TRACK LIGHT
	ADJUSTABLE FLOOD LIGHT
	STEP LIGHT
---	LED TAPE
	REMOTE DRIVER
	HIGH BAY LIGHT
	POLE MOUNTED LIGHT
	POST TOP LIGHT
	BOLLARD LIGHT
	IN GROUND LIGHT
	EMERGENCY LIGHT
	EXIT LIGHT WITH DIRECTIONAL ARROWS (FILLED AREA INDICATES FACE)
	EXIT LIGHT WITH DIRECTIONAL ARROWS (FILLED AREA INDICATES FACE)
	EXIT LIGHT – WALL MOUNTED (FILLED AREA INDICATES FACE)
	EXIT/EMERGENCY LIGHT COMBO – WALL MOUNTED (FILLED AREA INDICATES FACE)
BCELTS	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
ALCR	AUTOMATIC LOAD CONTROL RELAY
LC y	LIGHTING CONTROL DEVICE – REFER TO LIGHTING CONTROL SCHEDULE y DENOTES LIGHTING CONTROL ZONE
CSX	LOW VOLTAGE CONTROL STATION "X" INDICATES TYPE
XX	ROOM CONTROL DESIGNATION – REFER TO LIGHTING CONTROL SCHEDULE
S	SINGLE POLE TOGGLE SWITCH
S2	TWO POLE TOGGLE SWITCH
S3	3 WAY TOGGLE SWITCH
S4	4 WAY TOGGLE SWITCH
K	KEY OPERATED SWITCH
K3	3 WAY KEY OPERATED SWITCH
K4	4 WAY KEY OPERATED SWITCH
KL	LOW VOLTAGE KEY OPERATED SWITCH
D	DIMMER SWITCH
D3	3 WAY DIMMER SWITCH
DO	DIMMER OCCUPANCY SENSOR SWITCH
SP	PILOT SWITCH

SYMBOL	DESCRIPTION
	TWO–WAY COMMUNICATION SYSTEM CALL STATION
TWC	
TWCD	TWO–WAY COMMUNICATION SYSTEM AUTO DIALER
TWCA	TWO–WAY COMMUNICATION SYSTEM ANNUNCIATOR & COMMUNICATION PANEL
TWCP	TWO–WAY COMMUNICATION SYSTEM POWER SUPPLY WITH BATTERY BACK–UP
TWCDP	TWO–WAY COMMUNICATION SYSTEM AUTO DIALER POWER SUPPLY WITH BATTERY BACK–UP
RGP	REMOTE GENERATOR ANNUCIATOR PANEL
ATS	AUTOMATIC TRANSFER SWITCH
UPS	UNINTERRUPTIBLE POWER SUPPLY
	SINGLE / DUPLEX RECEPTACLE OUTLET "X" INDICATES TYPE
	SINGLE/DUPLEX RECEPTACLE OUTLET CONTROLLED BY AUTOMATIC CONTROL DEVICE/SYSTEM (SIMILAR FOR TAMPER RESISTANT, GFCI, USB)
	DUPLEX / TAMPER RESISTANT RECEPTACLE OUTLET HALF CONTROLLED BY AUTOMATIC CONTROL DEVICE/SYSTEM
	QUAD RECEPTACLE OUTLET
	ABOVE COUNTER DUPLEX RECEPTACLE OUTLET (SIMILAR FOR TAMPER RESISTANT, CONTROLLED, SINGLE, QUADS, EMERGENCY, UPS, USB, AND GFCI RECEPTACLE OUTLETS)
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE OUTLET
	DEAD FRONT GROUND FAULT CIRCUIT INTERRUPTER
	DUPLEX EMERGENCY RECEPTACLE OUTLET
	DUPLEX TAMPER RESISTANT RECEPTACLE OUTLET
	QUAD TAMPER RESISTANT RECEPTACLE OUTLET
	DUPLEX UPS RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET WITH 2 USB PORTS
	4 PORT USB CHARGING STATION
	CEILING MOUNTED DUPLEX/QUAD RECEPTACLE OUTLET
	POWER POLE
	WALL/CEILING MOUNTED SPECIAL RECEPTACLE OUTLET – REFER TO ELECTRICAL STANDARD SCHEDULES
	MULTI–OUTLET SURFACE RACEWAY
	MULTI–SERVICE DROP SEE ELECTRICAL DETAILS AND DIAGRAMS SHEET "X" INDICATES TYPE
PTX	POKE–THROUGH ASSEMBLY "X" INDICATES TYPE
FBX	FLOOR SERVICE FITTING "X" INDICATES TYPE
AFX	ACCESS FLOOR SERVICE FITTING "X" INDICATES TYPE
RX	CORD REEL "X" INDICATES TYPE
	DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
	3–WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
	4–WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
	DIGITAL TIME SWITCH
	ILLUMINATED TOGGLE SWITCH FOR CONTROL OF LIGHTING ON CRITICAL POWER–ILLUMINATED WHEN SWITCH IS IN "OFF" POSITION
	OCCUPANCY SENSOR OCCUPANCY SENSOR
OS X	OCCUPANCY SENSOR "X" INDICATES TYPE

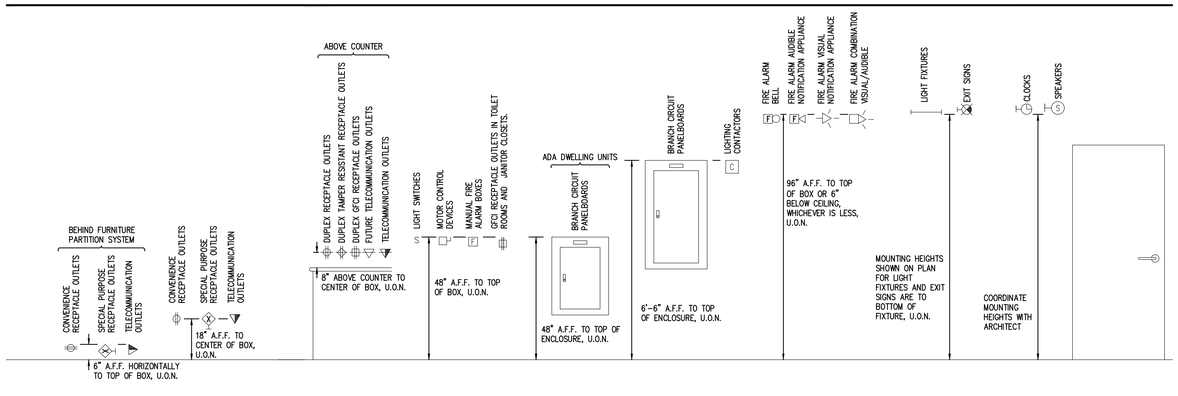
REFER TO ELECTRICAL STANDARD SCHEDULES

SYMBOL	DESCRIPTION
CP	CONTROL PANEL
	MOTOR
VFC	VARIABLE FREQUENCY CONTROLLER.
	MANUAL CONTROLLER
	MAGNETIC CONTROLLER
	COMBINATION MAGNETIC CONTROLLER
	NON–FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
CB	ENCLOSED CIRCUIT BREAKER
	PUSH BUTTON STATION
J	JUNCTION BOX
	HARD WIRE POWER CONNECTION
	GROUND ROD
	GROUND CONNECTION
HH	HANDHOLE
X	CONDUIT SLEEVE WITH BUSHINGS LENGTH AS REQUIRED "X" INDICATES CONDUIT SIZE
	CONDUIT UP
	CONDUIT DOWN
	EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	ABOVE COUNTER EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	EMPTY BOX FOR FUTURE CEILING MOUNTED TELECOMMUNICATION OUTLET
X	TELECOMMUNICATION OUTLET "X" INDICATES TYPE
X	ABOVE COUNTER TELECOMMUNICATION OUTLET "X" INDICATES TYPE
X	TELECOMMUNICATION CEILING MOUNTED OUTLET "X" INDICATES TYPE
	TELECOMMUNICATION BACKBOARD
TGB	TELECOMMUNICATION GROUNDING BUS BAR
TMGB	TELECOMMUNICATION MAIN GROUNDING BUS BAR
IC	INTERCOM OUTLET
S	SPEAKER
S	SPEAKER – WALL MOUNTED
MIC	MICROPHONE
VC	VOLUME CONTROL/STATION SELECTOR
B	SIGNALING BELL
	SINGLE FACE CLOCK – CEILING MOUNTED
	SINGLE FACE CLOCK – WALL MOUNTED
	DOUBLE FACE CLOCK – CEILING MOUNTED
S	DOUBLE FACE COMBINATION CLOCK/SPEAKER CEILING MOUNTED
	DOUBLE FACE CLOCK – WALL MOUNTED
S	DOUBLE FACE COMBINATION CLOCK/SPEAKER WALL MOUNTED
TC	TIME CLOCK
C	CONTACTOR
P	PHOTOCELL
TT	TWIST TIMER
EVSE	ELECTRICAL VEHICLE SUPPLY EQUIPMENT
DCFC	DC FAST CHARGER – STANDALONE
DCPM	DC FAST CHARGER – POWER MODULE
DCDP	DC FAST CHARGER – DISPENSER

SYMBOL	DESCRIPTION
	SECURITY CAMERA
MD	MOTION DETECTOR
K	SECURITY KEY SWITCH
DC	DOOR CONTACT
KP	KEY PAD
CR	CARD READER
DB	DURESS PUSH BUTTON STATION
DE	DELAYED EGRESS
REX	REQUEST TO EXIT STATION
PP	AUTOMATIC DOOR PUSH PAD OPERATOR
DO	DOOR OPERATOR
DA	DOOR ACTUATOR
AC	ACCESS CONTROL STATION
ACCP	ACCESS CONTROL CONTROL PANEL
ACPS	ACCESS CONTROL POWER SUPPLY
	CIRCUIT BREAKER
	DRAWOUT CIRCUIT BREAKER MANUALLY/ OPERATED
	DRAWOUT CIRCUIT BREAKER ELECTRICALLY/ OPERATED
	SWITCH
	AUTOMATIC OR MANUAL TRANSFER SWITCH
	FUSE
	TRANSFORMER
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	LIGHTNING ARRESTOR
X	PANELBOARD "X" INDICATES PANELBOARD NAME
	GROUND
	STRESS CONE TERMINATION
K	KEY INTERLOCK
G	ENGINE GENERATOR
M	UTILITY METER
EMU	ELECTRONIC METERING UNIT
A	AMMETER
V	VOLTMETER
AS	AMMETER SWITCH
VS	VOLTMETER SWITCH
SPD	SURGE PROTECTIVE DEVICE
CR	CONTROL RELAY
TDR	TIME DELAY RELAY
PRM	PHASE ROTATION MONITOR
	CAMLOK – MALE
	CAMLOK – FEMALE
	THERMAL OVERLOAD RELAY
	NORMALLY OPEN CONTACTS
	NORMALLY CLOSED CONTACTS
	N.O. PUSH BUTTON SINGLE CIRCUIT
	N.C. PUSH BUTTON SINGLE CIRCUIT
X–X	CABLE VAULT "X–X" INDICATES TYPE
	BRANCH CIRCUIT PANELBOARD
	LOAD CENTER
MCM	MULTI CHANNEL METER
	MOTOR CONTROL CENTER
T	TRANSFORMER
	DISTRIBUTION EQUIPMENT
GB	ELECTRICAL GROUNDING BUS BAR
PB	PLUG IN BUSWAY
FB	FEEDER BUSWAY
12x4	CABLE TRAY – ALL SIZES IN INCHES

SYMBOL	DESCRIPTION
F	MANUAL FIRE ALARM BOX
SD	SMOKE DETECTOR
DD	DUCT SMOKE DETECTOR
CO	CARBON MONOXIDE DETECTOR
RT	REMOTE TEST STATION (FOR DUCT DETECTOR)
HD	HEAT DETECTOR
BD	PROJECTED BEAM DETECTOR
F	FIRE ALARM BELL
F	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE
F XX	FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
F XX	FIRE ALARM COMBINATION VISUAL/ AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
F XX	FIRE ALARM COMBINATION VISUAL/ AUDIBLE NOTIFICATION APPLIANCE– CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
XX	FIRE ALARM VISUAL NOTIFICATION APPLIANCE CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
F	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE – CEILING MOUNTED
F	FIREFIGHTERS PHONE JACK
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANNUNCIATOR PANEL
NAC	NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
MM	ADDRESSABLE MONITORING MODULE
CM	ADDRESSABLE CONTROL MODULE
TS	ADDRESSABLE MONITORING MODULE FOR TAMPER SWITCH
FS	ADDRESSABLE MONITORING MODULE FOR FLOW SWITCH
DR	MAGNETIC DOOR RELEASE

STANDARD MOUNTING HEIGHTS

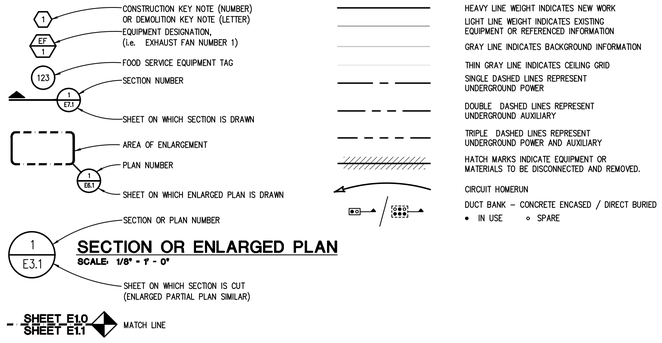


ELECTRICAL DRAWING INDEX

ELECTRICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION
A	AMPERES
AER	ARC ENERGY REDUCTION
AF	AMPERES FRAME (BREAKER RATING)
AFCI	ARC FAULT CIRCUIT INTERRUPTER
A.F.F.	ABOVE FINISH FLOOR
AIC	AMPS INTERRUPTING CAPACITY
AL	AUDIENCE LEFT
ALCR	AUTOMATIC LOAD CONTROL RELAY
AR	AUDIENCE RIGHT
AT	AMPERES TRIP (BREAKER SETTING)
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BCELTS	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
BKR	BREAKER
BPS	BOLTED PRESSURE SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
DEMO	DEMOLITION
DIM	DIMENSION
DISC	DISCONNECT
DP	DISTRIBUTION PANEL
DS	DOWNSTAGE
DWG	DRAWING
EBU	EMERGENCY BATTERY UNIT
EC	ELECTRICAL CONTRACTOR
ECM	ELECTRONICALLY COMMUTATED MOTOR
ELEC	ELECTRICAL
EM/ EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EO	ELECTRICALLY OPERATED
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
FA	FIRE ALARM
FLA	FULL LOAD AMPS
FLR	FLOOR
FOH	FRONT OF HOUSE
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR
FU	FUSE
G/GRD/EG	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HOA	HAND–OFF–AUTO
HP	HORSEPOWER
HV	HIGH VOLTAGE
HZ	HERTZ
IG	ISOLATED GROUND
JB	JUNCTION BOX
KA	THOUSAND AMP
KV	KILOVOLT
KVA	KILOVOLT – AMPERES
KW	KILOWATT
KWH	KILOWATT – HOURS
LA	LIGHTNING ARRESTOR
LP	LIGHTING PANEL
LDP	LIGHTING DISTRIBUTION PANEL
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MIN	MINIMUM
MISC.	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
MTG	MOUNTING
MTR	MOTOR
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON–FUSIBLE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
P	POLE
PB	PUSHBUTTON STATION
PH	PHASE
PT	POTENTIAL TRANSFORMER
PDP	POWER DISTRIBUTION PANEL
RECEPT.	RECEPTACLE
RDP	RECEPTACLE DISTRIBUTION PANEL
RP	RECEPTACLE PANEL
RSC	RIGID STEEL CONDUIT
SCCR	SHORT CIRCUIT CURRENT RATING
SCHED	SCHEDULE
SPD	SURGE PROTECTION DEVICE
ST	SHUNT TRIP
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TB	TERMINAL BOX
TELECOM	TELECOMMUNICATIONS
TR	TAMPER RESISTANT
TTB	TELEPHONE TERMINAL BACKBOARD
TYP	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
UVR	UNDERVOLTAGE RELEASE
US	UPSTAGE
V	VOLTS
W	WIRE OR WATTS
WAP	WIRELESS ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF
WR	WEATHER RESISTANT
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
(E)	EXISTING
(R)	RELOCATED

STANDARD METHODS OF NOTATION



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SHEET TITLE
ELECTRICAL STANDARDS AND DRAWING INDEX

DATE
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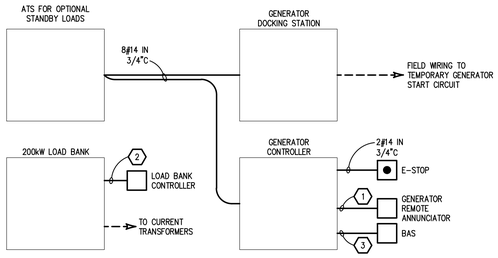
BIDS

SHEET No.
E0.1

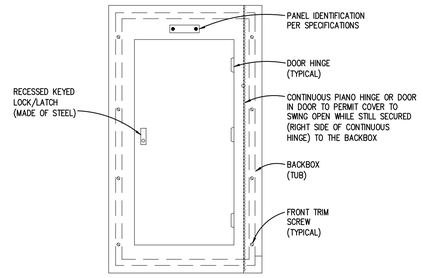


GENERATOR, LOAD BANK, AND ATS CONTROL WIRING CONNECTION DIAGRAM

NOTES:
1. VERIFY ALL WIRE AND CABLE SPECIFICATIONS WITH GENERATOR SUBMITTAL DRAWINGS, WIRING DIAGRAMS, AND MANUFACTURERS REQUIREMENTS.
2. PROVIDE CONDUIT FOR ALL CONTROL WIRING PER MANUFACTURERS SPECIFICATIONS.
3. COORDINATE ALL REQUIRED CONNECTIONS AND CONTROL WIRING REQUIREMENTS WITH PRODUCT MANUFACTURERS PRIOR TO EQUIPMENT PROCUREMENT.

(#) KEYED NOTES:

1. PROVIDE SHIELDED TWISTED PAIR (PER MANUFACTURERS RECOMMENDATIONS) AND 2#14 FOR ANNUNCIATOR DC POWER.
2. PROVIDE SHIELDED TWISTED PAIR (PER MANUFACTURERS RECOMMENDATIONS) AND 3#14 FOR CONTROLLER DC POWER.
3. PROVIDE SHIELDED TWISTED PAIR FOR COMMUNICATION LINK IN CONDUIT. COORDINATE WITH BAS INTEGRATOR.



PANELBOARD FRONT COVER DETAIL

NO SCALE

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.

FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE

OVERCURRENT DEVICE RATING (AMPERES)	COPPER CONDUCTORS: WIRE SIZE (AWG OR KCMIL) PHASE & NEUTRAL	WIRE SIZE (AWG OR KCMIL) GROUND	CONDUIT SIZE: SINGLE PHASE 2 WIRE+G (1PH, 1N, 1G, 2PH, 1G)	SINGLE PHASE 3 WIRE+G (2PH, 1N, 1G)	THREE PHASE 3 WIRE+G (3PH, 1G)	THREE PHASE & NEUTRAL 4 WIRE+G (3PH, 1N, 1G)	KEYED NOTES
15–20	12	12	3/4"	3/4"	3/4"	3/4"	
25–30	10	10	3/4"	3/4"	3/4"	3/4"	
35–40	8	10	3/4"	3/4"	3/4"	3/4"	
45–50	8 (6)	10	3/4"	3/4"	3/4"	3/4"	1
60	6 (4)	10	3/4" (1")	3/4" (1")	3/4" (1")	1" (1 1/4")	1
70	4	8	1"	1 1/4"	1 1/4"	1 1/4"	
80	4 (3)	8	1"	1 1/4"	1 1/4"	1 1/4"	1
90–100	3 (2)	8	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1
110	2 (1)	6	–	1 1/4"	1 1/4"	1 1/4" (1 1/2")	1
125	1 (1/0)	6	–	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/2"	1
150	1/0	6	–	1 1/2"	1 1/2"	1 1/2"	
175	2/0	6	–	2"	2"	2"	
200	3/0	6	–	2"	2"	2 1/2"	
225	4/0	4	–	2"	2"	2 1/2"	
250	250	4	–	2 1/2"	2 1/2"	2 1/2"	
300	350	4	–	2 1/2"	2 1/2"	3"	
350	500	3	–	3"	3"	3"	
400	500	3	–	3"	3"	3"	

GENERAL NOTES:
1. CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.
2. CONTRACTOR MAY COMBINE 20A CIRCUITS AS NOTED IN SPECIFICATION.
3. CONDUCTORS ARE BASED ON THHN/THWN-2 UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.
4. CONDUIT SIZES ARE VALID FOR EMT OR RSC. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.
5. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.
6. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.

KEYED NOTES:
1. CONDUCTORS ARE BASED ON 90°C, 600V INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C. FOR TERMINATION RATED AT 60°C, USE CONDUCTORS AND CONDUIT SIZES INDICATED IN PARENTHESES.

DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE

XFMR KVA	PRIMARY (480V) OVERCURRENT PROTECTION	SECONDARY (208Y/120 VOLT) OVERCURRENT PROTECTION	CONDUCTOR SIZE (AWG OR KCMIL) PHASE & NEUTRAL COPPER	PHASE & NEUTRAL ALUMINUM	SUPPLY SIDE BONDING JUMPER COPPER	SUPPLY SIDE BONDING JUMPER ALUMINUM	CONDUIT (4W + SSBJ) COPPER	CONDUIT (4W + SSBJ) ALUMINUM	GROUNDING ELECTRODE CONDUCTOR COPPER	GROUNDING ELECTRODE CONDUCTOR ALUMINUM	KEYED NOTES
9	20A	30A	10	NA	8	NA	3/4"	NA	8	NA	
15	25A	60A	6	NA	8	NA	1"	NA	8	NA	1
30	45A	100A	3	1	8	6	1 1/4"	1 1/2"	8	6	1
45	70A	175A	2/0	4/0	4	2	2"	2 1/2"	4	2	
75	125A	300A/225A	350 / 4/0	500 / 300	2	1/0	3"	3 1/2"	2	1/0	2
112 1/2	175A	400A	600	2–250	1/0	2	3 1/2"	2–2 1/2"	1/0	1/0	
150	225A	600A	2–350	2–500	2–2	2–1/0	2–3"	2–3 1/2"	2/0	4/0	
225	350A	800A	2–600	3–400	2–1/0	3–1/0	2–3 1/2"	3–3"	3/0	4/0	
300	500A	1200A	3–600	4–500	3–1/0	4–1/0	3–3 1/2"	4–3 1/2"	3/0	250	
500	800A	1600A	4–600	5–600	4–1/0	5–3/0	4–3 1/2"	5–3 1/2"	3/0	250	

GENERAL NOTES:
1. TRANSFORMERS AND FEEDERS ARE BASED ON 480 VOLT, 3 PHASE, 3 WIRE PRIMARY AND 208Y/120 VOLT, 3 PHASE, 4 WIRE, SECONDARY.
2. ALUMINUM CONDUCTORS ARE PERMITTED ONLY IF INCLUDED IN FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE.
3. PRIMARY OVERCURRENT PROTECTION IS SIZED AT 125% OF TRANSFORMER FULL LOAD CURRENT. PROVIDE PRIMARY OVERCURRENT DEVICE SELECTION TO ALLOW TRANSFORMER IN-RUSH CURRENT AND PROTECT BASED ON THE ANSI DAMAGE CURVE. IF MANUFACTURER REQUIRES PRIMARY OVERCURRENT GREATER THAN 125% (NOT TO EXCEED 250%) THEN PRIMARY FEEDER SHALL BE INCREASED ACCORDINGLY.
4. SECONDARY CONDUCTOR BASED ON TEN FOOT MAXIMUM LENGTH (NEC 240.21(C)(2)). IF CONDUCTORS ARE LONGER THAN TEN FOOT, REQUIREMENTS IN NEC 240.21(C)(6) MUST BE MET. IN NO CASE SHALL CONDUCTORS BE LONGER THAN TWENTY-FIVE FEET.

KEYED NOTES:
1. CONDUCTORS ARE BASED ON 90°C, 600V INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C.
2. THE SMALLER SIZE IS TO BE USED TO FEED 225A PANELBOARDS.

RACEWAY / CONDUCTOR / CABLE APPLICATION SCHEDULE

	WIRE: COPPER, TYPE THHN/THWN-2	WIRE: COPPER, TYPE XHHW-2	RACEWAY: ELECTRICAL METALLIC TUBING (EMT)	RACEWAY: RIGID STEEL CONDUIT (RSC)	RACEWAY: RIGID NON-METALLIC CONDUIT (RNC) TYPE EPC-40	RACEWAY: LIQUID TIGHT FLEXIBLE METAL CONDUIT (LFMC)	CABLE / CORD: POWER LIMITED CABLE
FEEDERS - EXTERIOR							
BELOW GREEN SPACE		X			X		
WITHIN 5' OF FOUNDATION WALL		X		X			
FEEDERS - INTERIOR							
CONCEALED, ACCESSIBLE CEILINGS	X		X				
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X		X				
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X		X				
BRANCH CIRCUITS - EXTERIOR							
BELOW GREEN SPACE		X			X		
WITHIN 5' OF FOUNDATION WALL		X		X			
ROOFTOPS (WHEN APPROVED BY ENGINEER)		X		X			
BRANCH CIRCUITS - INTERIOR							
CONCEALED, ACCESSIBLE CEILINGS	X		X				
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X		X				
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X		X				
SPECIAL APPLICATIONS							
CLASS 1 CONTROL CIRCUITS	X		X	X			
CLASS 2 CONTROL CIRCUITS	X		X	X			X
CONNECTIONS TO TRANSFORMERS, MOTORS AND VIBRATING EQUIPMENT		X				X	

GENERAL NOTES:
1. TRANSITION FROM PVC AND PROVIDE RIGID STEEL SWEEPS WHERE CONDUITS PENETRATE WALLS, CONCRETE SLABS, CONCRETE BASES.
2. EMT SHALL NOT BE USED ON THE EXTERIOR OF A BUILDING OR IN AREAS SUBJECT TO DAMAGE BELOW 10' AFF.

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS

BRANCH CKT RATING (A)	WIRE SIZE (AWG)	MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET) 120V	208V	240V	277V	480V
20A	12	83	143	165	191	331
	10	128	222	256	295	511
	8	201	348	402	464	804
	6	313	542	625	721	1250
30A	10	85	148	170	197	341
	8	134	232	268	309	536
	6	208	361	417	481	833
	4	313	542	625	721	1250

GENERAL NOTES:
1. THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD POWER FACTOR OF 0.85 PER NEC CHAPTER 9, TABLE 9.
2. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
3. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 9 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.
4. LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 64% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH ASHRAE 90.1 AND THE NEC. FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

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Washtenaw Community College

PROJECT TITLE
WASHTENAW COMMUNITY COLLEGE
TECHNICAL AND INDUSTRIAL
BLDG GENERATOR REPLACEMENT
WCC PROJECT # 75903
Ann Arbor,MI

SHEET TITLE
ELECTRICAL SCHEDULES AND DETAILS

DATE
05-26-2026

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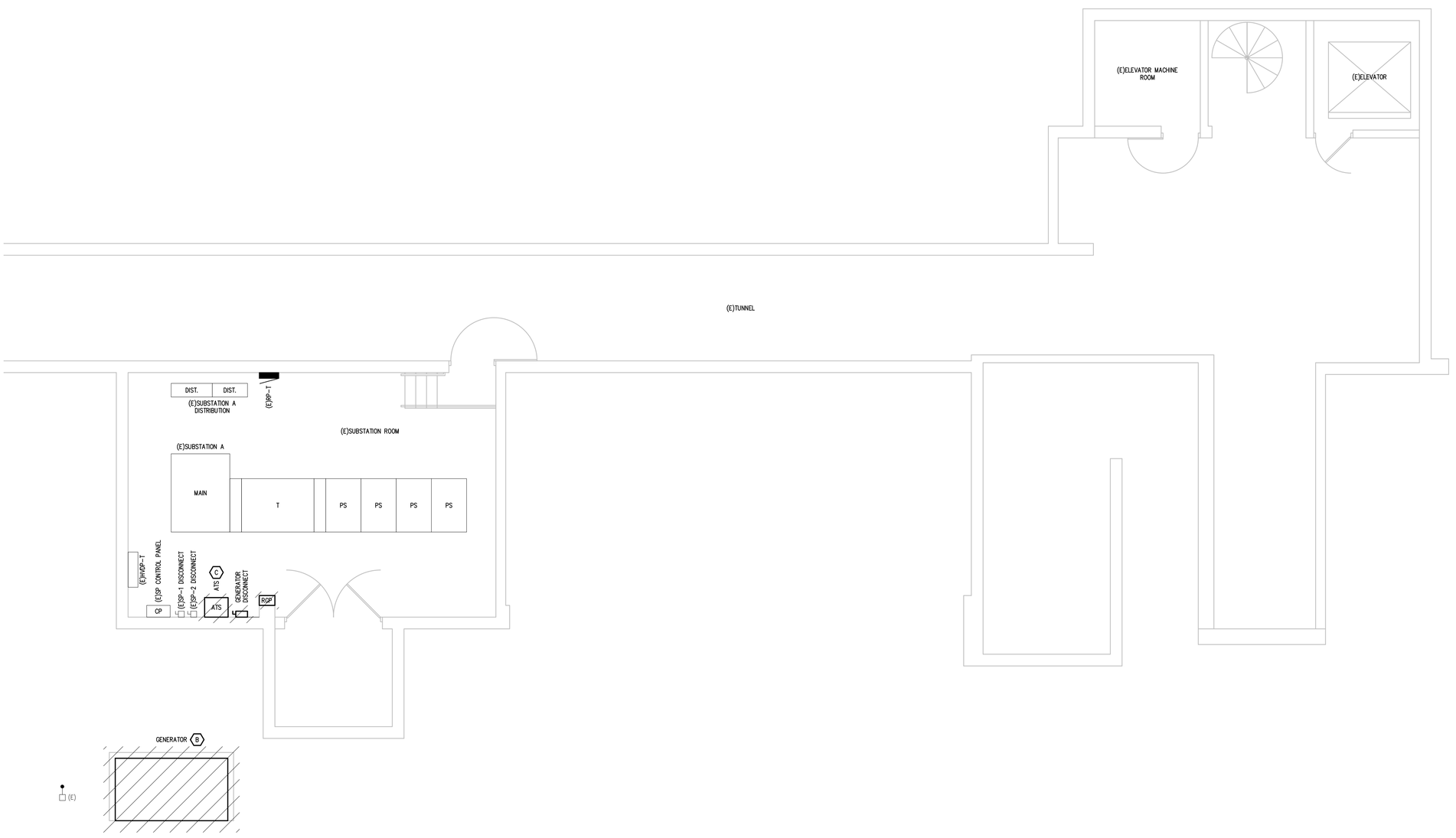
SHEET No.
E0.2

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



ELECTRICAL DEMOLITION GENERAL NOTES:

1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES AND BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES, WHETHER OR NOT SPECIFICALLY INDICATED.
3. REMOVE EQUIPMENT OR MATERIALS AS INDICATED ON PLAN WITH CROSS HATCHING. DEMOLITION SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE COMPONENTS SHOWN.
4. COORDINATE WITH NEW WORK PLANS AND ONE LINE DIAGRAMS FOR EXTENT OF DEMOLITION WORK.
5. PROVIDE PROPER SUPPORT FOR EXISTING TO REMAIN CONDUITS AND BOXES WHERE EXISTING SUPPORT IS TO BE REMOVED. RE-ROUTE BRANCH CIRCUIT CONDUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.
6. REMOVE ALL CONDUIT AND WIRE BACK TO THE SOURCE OR NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. MAINTAIN ELECTRICAL SERVICE TO ALL LIGHTING FIXTURES, DEVICES AND EQUIPMENT THAT ARE TO REMAIN. EXTEND CONDUIT AND WIRE AS REQUIRED WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM LOADS THAT ARE TO REMAIN.
8. DISPOSE OF ALL MATERIALS OFF SITE (U.O.N.) AND INCLUDE ALL COSTS FOR DISPOSAL IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING TCLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.
9. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS "SPARE".
10. PROVIDE UPDATED TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS ALTERATION.
11. VERIFY ALL UNDERGROUND AND IN SLAB UTILITY LOCATIONS PRIOR TO PENETRATING ANY FLOOR SLAB.
12. COORDINATE ANY SHUT DOWN OF EXISTING EQUIPMENT THAT ARE REMAINING IN USE WITH THE OWNER.

(#) DEMOLITION KEY NOTES:

A. REMOVE FEEDER BACK TO SOURCE. DISCONNECT BRANCH CIRCUITS AND MAKE ELECTRICALLY SAFE. REMOVE PANELBOARD INTERIOR (CIRCUIT BREAKERS, BUS, ETC.) AND RETURN BREAKERS TO OWNER. PANELBOARD TUB TO REMAIN FOR RE-USE IN NEW WORK.

B. BASE BID: DISPOSE OF GENERATOR OFF SITE PER LOCAL REGULATIONS.

ALTERNATE #3: REMOVE AND RELOCATE GENERATOR TO PARKING LOT 5. COORDINATE EXACT LOCATION WITH OWNER.

C. CONTRACTOR TO REMOVE AND DELIVER TO OWNER.

LOWER LEVEL ELECTRICAL DEMOLITION PLAN

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

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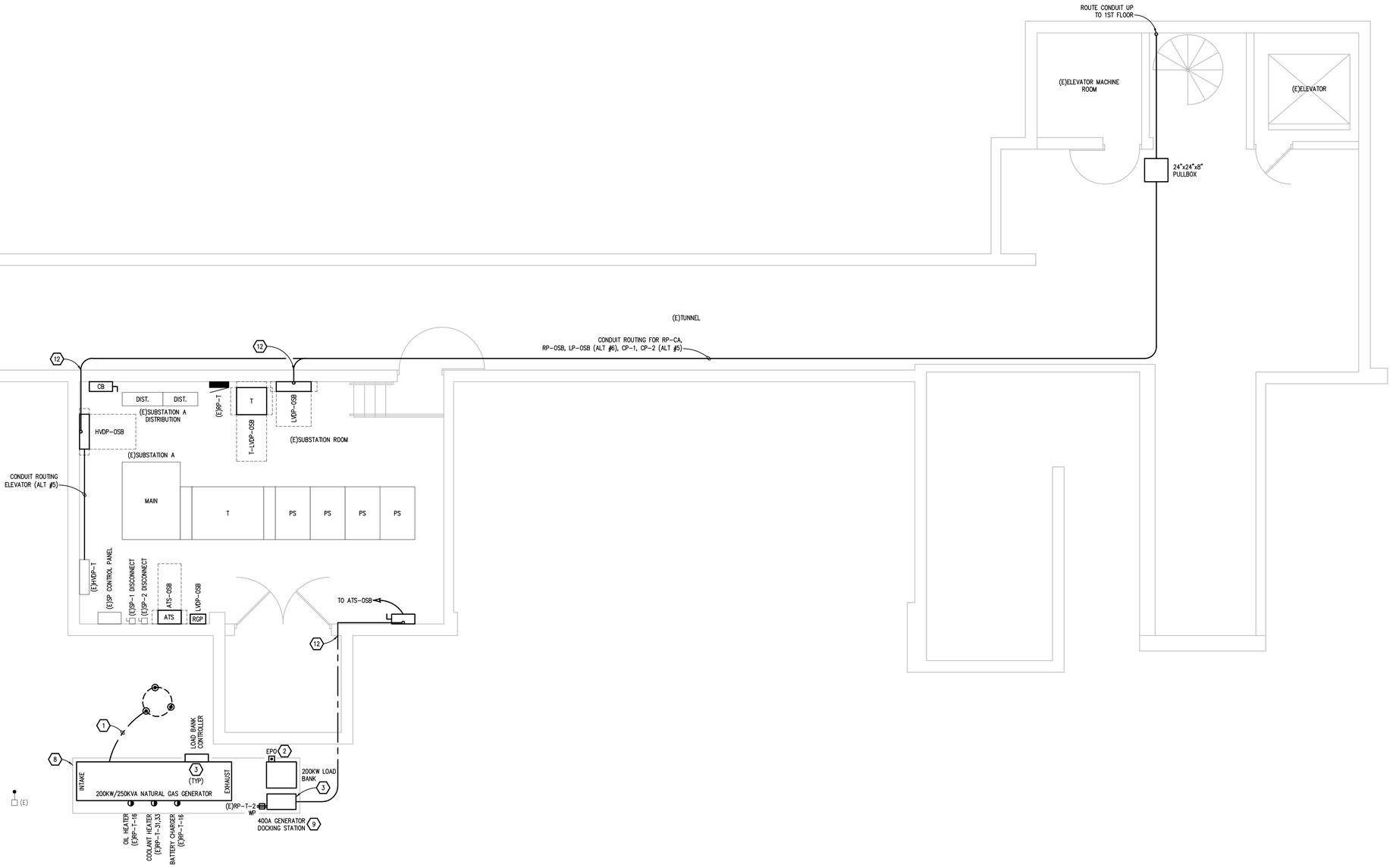
ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
4. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

(#) CONSTRUCTION KEY NOTES:

1. #4/0 BARE COPPER TO GENERATOR GROUND BUS.
2. PROVIDE REMOTE EMERGENCY STOP SWITCH FOR GENERATOR WITH ADDITIONAL CONTACT CAPABLE OF INTERFACING WITH BMS.
3. PROVIDE STEEL SLOTTED SUPPORT FOR ELECTRICAL DEVICE AS REQUIRED.
4. PROVIDE NEW PANELBOARD IN SAME LOCATION. EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED AND CONNECT TO NEW PANELBOARD.
5. DISCONNECT EXISTING BRANCH CIRCUITS RP-1A-1, RP-1A-5, RP-1A-11, RP-1A-35, RP-1A-40 (SEPERATE CUH-1,2,3 FROM DOORS), RP-1A-41, RP-1B-21, RP-1B-30, RP-1B-32, RP-1C-4, RP-1C-37C (ACU-2 CP ONLY), RP-1C-39,41 (ACU-2 ONLY), RP-1D-26 (CUH-4,5 ONLY), RP-1D-28 (UH-1 ONLY) AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-1CA AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
6. ALTERNATE #6: DISCONNECT EXISTING PARKING LOT AND INTERIOR WALKWAY LIGHTING BRANCH CIRCUITS LP-1A-15, 17, 20, 24, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD LP-OSB AS INDICATED. CONTRACTOR TO FIELD CONFIRM EXACT EXISTING CIRCUIT NUMBERS.
7. DISCONNECT EXISTING BRANCH CIRCUITS RP-2CG-2, RP-2CG-4, RP-2CG-6, RP-2CG-8, RP-2CG-10, RP-2CG-12, RP-2CG-14, RP-2CG-39, RP-2CG-41, RP-2I-37, RP-2I-39,41 (ACU-2 ONLY), RP-2G-15, RP-2CF-27,29, RP-2CF-31,33, RP-2CF-35,37, RP-2CF-39,41, RP-PH-35,37, RP-PH-39,41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-OSB AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
8. PROVIDE CONCRETE PAD FOR ELECTRICAL EQUIPMENT. REFER TO CIVIL DRAWINGS FOR EXACT REQUIREMENTS.
9. PROVIDE TRYSTAR 400A NEMA 3R GENERATOR DOCKING STATION.
10. CORE EXISTING ROOF TO FACILITATE INSTALLATION OF CONDUITS. PROVIDE BOOT FLASHING, SEAL, AND PATCH ROOF TO MATCH EXISTING.
11. ELECTRICAL FEEDER / BRANCH CIRCUIT TO BE ROUTED IN ACCESSIBLE CEILING SPACE. WORK WILL REQUIRE REMOVAL OF LAY-IN CEILING TILES AND GRID. ANY CEILING TILE, GRID, ETC. THAT IS DAMAGED SHALL BE REPLACED TO MATCH EXISTING CONDITIONS. REINSTALL TILES AND GRID FOLLOWING CONDUIT INSTALLATION.
12. CORE EXISTING MASONRY WALL / SLAB TO FACILITATE INSTALLATION OF CONDUITS. SEAL PENETRATION WITH FIRESTOP COMPOUND PER MANUFACTURER'S INSTRUCTIONS, PATCH, AND PAINT TO MATCH EXISTING.



LOWER LEVEL ELECTRICAL NEW WORK PLAN

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

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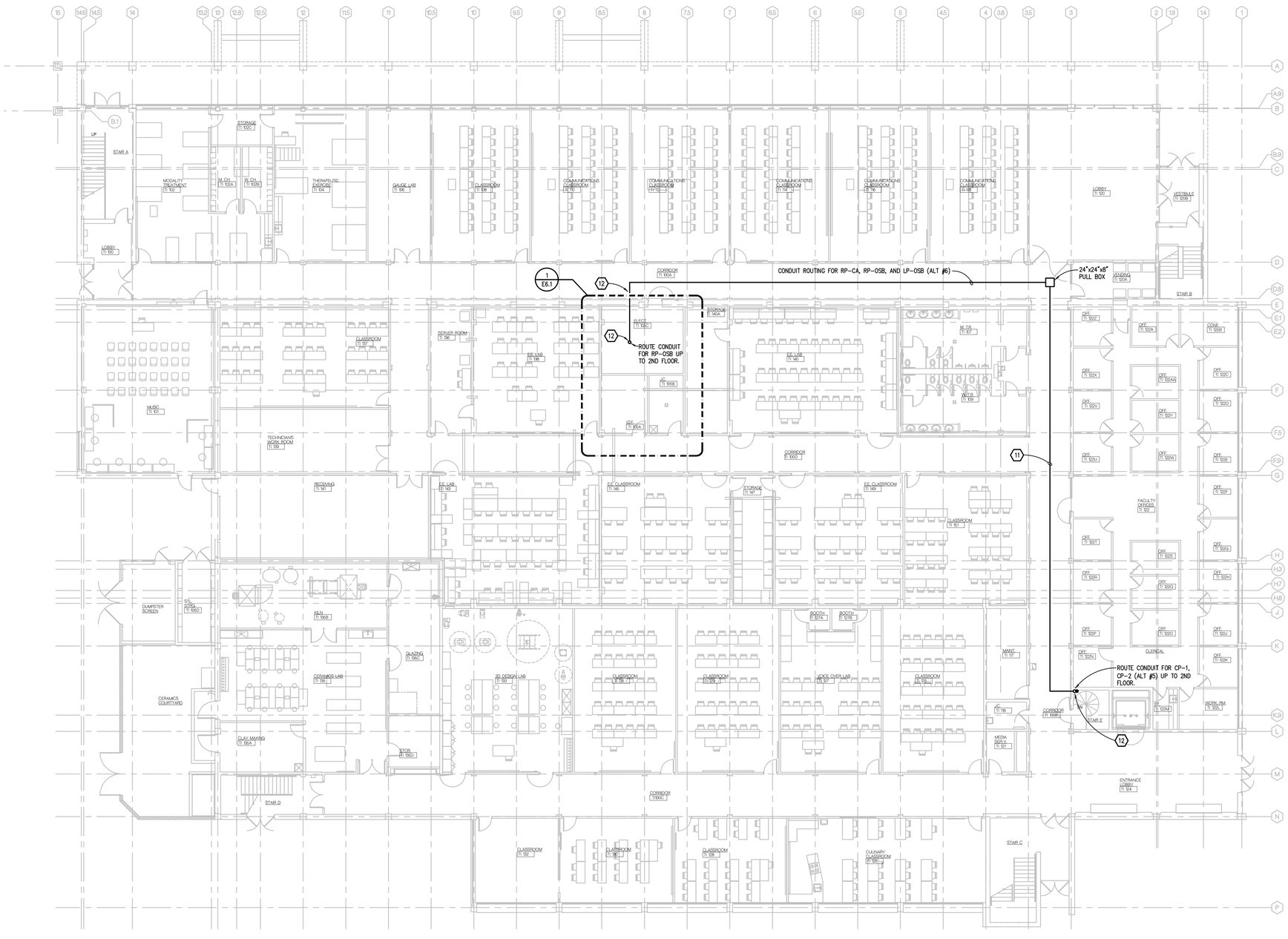

FIRST FLOOR ELECTRICAL NEW WORK PLAN

SCALE: 3/32" = 1' - 0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
4. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

(#) CONSTRUCTION KEY NOTES:

1. #4/0 BARE COPPER TO GENERATOR GROUND BUS.
2. PROVIDE REMOTE EMERGENCY STOP SWITCH FOR GENERATOR WITH ADDITIONAL CONTACT CAPABLE OF INTERFACING WITH BMS.
3. PROVIDE STEEL SLOTTED SUPPORT FOR ELECTRICAL DEVICE AS REQUIRED.
4. PROVIDE NEW PANELBOARD IN SAME LOCATION. EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED AND CONNECT TO NEW PANELBOARD.
5. DISCONNECT EXISTING BRANCH CIRCUITS RP-1A-1, RP-1A-5, RP-1A-11, RP-1A-35, RP-1A-40 (SEPERATE CUH-1,2,3 FROM DOORS), RP-1A-41, RP-1B-21, RP-1B-30, RP-1B-32, RP-1C-4, RP-1C-37C (ACU-2 CP ONLY), RP-1C-39,41 (ACU-2 ONLY), RP-1D-26 (CUH-4,5 ONLY), RP-1D-28 (UH-1 ONLY) AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-1CA AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
6. ALTERNATE #6: DISCONNECT EXISTING PARKING LOT AND INTERIOR WALKWAY LIGHTING BRANCH CIRCUITS LP-1A-15, 17, 20, 24, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD LP-OSB AS INDICATED. CONTRACTOR TO FIELD CONFIRM EXACT EXISTING CIRCUIT NUMBERS.
7. DISCONNECT EXISTING BRANCH CIRCUITS RP-2CG-2, RP-2CG-4, RP-2CG-6, RP-2CG-8, RP-2CG-10, RP-2CG-12, RP-2CG-14, RP-2CG-39, RP-2CG-41, RP-2I-37, RP-2I-39,41 (ACU-2 ONLY), RP-2G-15, RP-2CF-27,29, RP-2CF-31,33, RP-2CF-35,37, RP-2CF-39,41, RP-PH-35,37, RP-PH-39,41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-OSB AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
8. PROVIDE CONCRETE PAD FOR ELECTRICAL EQUIPMENT. REFER TO CIVIL DRAWINGS FOR EXACT REQUIREMENTS.
9. PROVIDE TRYSTAR 400A NEMA 3R GENERATOR DOCKING STATION.
10. CORE EXISTING ROOF TO FACILITATE INSTALLATION OF CONDUITS. PROVIDE BOOT FLASHING, SEAL, AND PATCH ROOF TO MATCH EXISTING.
11. ELECTRICAL FEEDER / BRANCH CIRCUIT TO BE ROUTED IN ACCESSIBLE CEILING SPACE. WORK WILL REQUIRE REMOVAL OF LAY-IN CEILING TILES AND GRID. ANY CEILING TILE, GRID, ETC. THAT IS DAMAGED SHALL BE REPLACED TO MATCH EXISTING CONDITIONS. REINSTALL TILES AND GRID FOLLOWING CONDUIT INSTALLATION.
12. CORE EXISTING MASONRY WALL / SLAB TO FACILITATE INSTALLATION OF CONDUITS. SEAL PENETRATION WITH FIRESTOP COMPOUND PER MANUFACTURER'S INSTRUCTIONS, PATCH, AND PAINT TO MATCH EXISTING.

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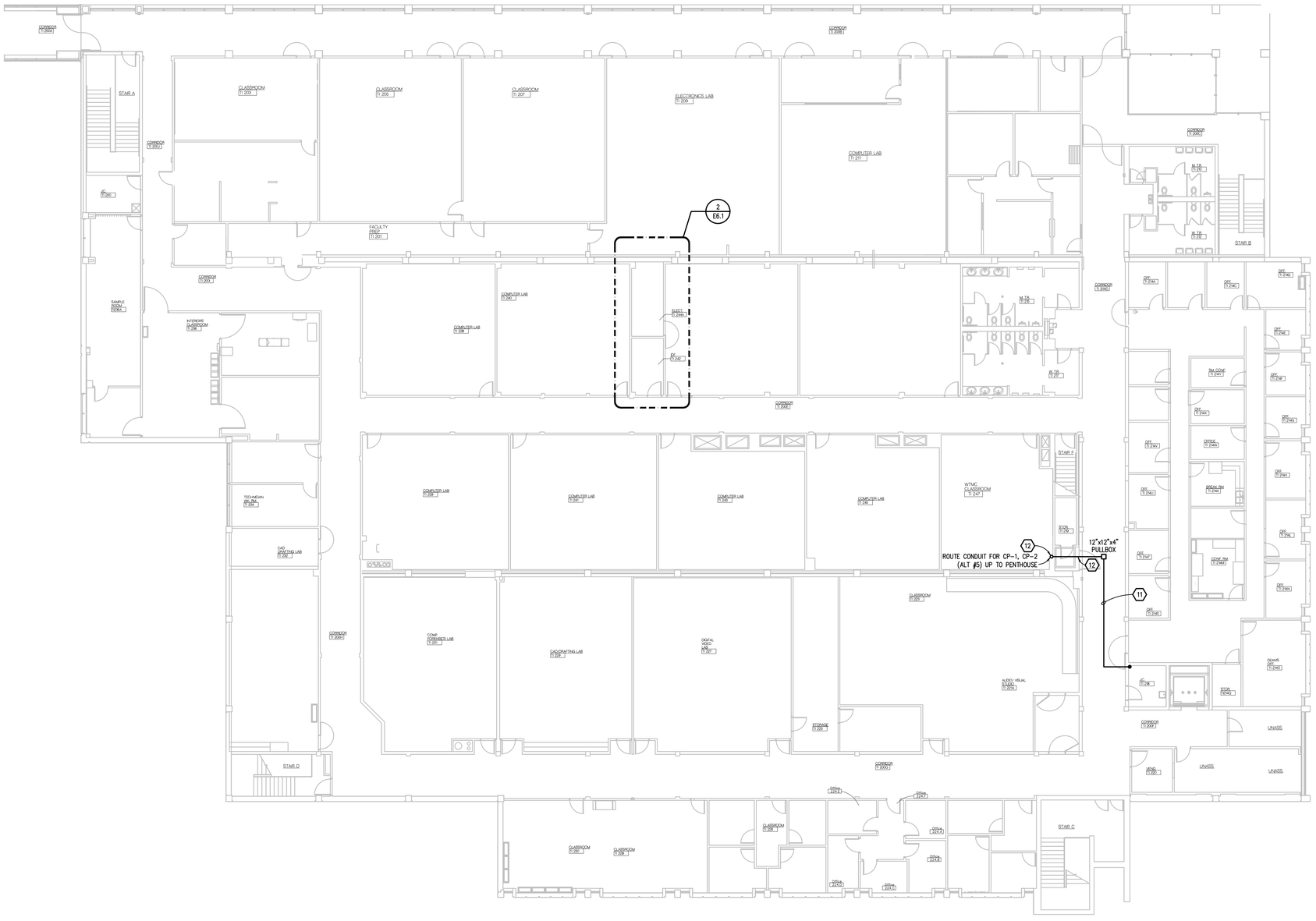

SECOND FLOOR ELECTRICAL NEW WORK PLAN

SCALE: 3/32" = 1' - 0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
4. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

(#) CONSTRUCTION KEY NOTES:

1. #4/0 BARE COPPER TO GENERATOR GROUND BUS.
2. PROVIDE REMOTE EMERGENCY STOP SWITCH FOR GENERATOR WITH ADDITIONAL CONTACT CAPABLE OF INTERFACING WITH BMS.
3. PROVIDE STEEL SLOTTED SUPPORT FOR ELECTRICAL DEVICE AS REQUIRED.
4. PROVIDE NEW PANELBOARD IN SAME LOCATION. EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED AND CONNECT TO NEW PANELBOARD.
5. DISCONNECT EXISTING BRANCH CIRCUITS RP-1A-1, RP-1A-5, RP-1A-11, RP-1A-35, RP-1A-40 (SEPERATE CUH-1,2,3 FROM DOORS), RP-1A-41, RP-1B-21, RP-1B-30, RP-1B-32, RP-1C-4, RP-1C-37C (ACU-2 C9 ONLY), RP-1C-39,41 (ACU-2 ONLY), RP-1D-26 (CUH-4,5 ONLY), RP-1D-28 (UH-1 ONLY) AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-1CA AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
6. ALTERNATE #6: DISCONNECT EXISTING PARKING LOT AND INTERIOR WALKWAY LIGHTING BRANCH CIRCUITS LP-1A-15, 17, 20, 24, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD LP-0SB AS INDICATED. CONTRACTOR TO FIELD CONFIRM EXACT EXISTING CIRCUIT NUMBERS.
7. DISCONNECT EXISTING BRANCH CIRCUITS RP-2CG-2, RP-2CG-4. RP-2CG-6, RP-2CC-8, RP-2CG-10, RP-2CG-12, RP-2CG-14, RP-2CG-39, RP-2CG-41, RP-2I-37, RP-2I-39,41 (ACU-2 ONLY), RP-2C-15, RP-2CF-27,29, RP-2CF-31,33, RP-2CF-35,37, RP-2CF-39,41, RP-PH-35,37, RP-PH-39,41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-0SB AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
8. PROVIDE CONCRETE PAD FOR ELECTRICAL EQUIPMENT. REFER TO CIVIL DRAWINGS FOR EXACT REQUIREMENTS.
9. PROVIDE TRYSTAR 400A NEMA 3R GENERATOR DOCKING STATION.
10. CORE EXISTING ROOF TO FACILITATE INSTALLATION OF CONDUITS. PROVIDE BOOT FLASHING, SEAL, AND PATCH ROOF TO MATCH EXISTING.
11. ELECTRICAL FEEDER / BRANCH CIRCUIT TO BE ROUTED IN ACCESSIBLE CEILING SPACE. WORK WILL REQUIRE REMOVAL OF LAY-IN CEILING TILES AND GRID. ANY CEILING TILE, GRID, ETC. THAT IS DAMAGED SHALL BE REPLACED TO MATCH EXISTING CONDITIONS. REINSTALL TILES AND GRID FOLLOWING CONDUIT INSTALLATION.
12. CORE EXISTING MASONRY WALL / SLAB TO FACILITATE INSTALLATION OF CONDUITS. SEAL PENETRATION WITH FIRESTOP COMPOUND PER MANUFACTURER'S INSTRUCTIONS, PATCH, AND PAINT TO MATCH EXISTING.

REVISION

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Washtenaw Community College

PROJECT TITLE
WASHTENAW COMMUNITY COLLEGE
TECHNICAL AND INDUSTRIAL
BLDG GENERATOR REPLACEMENT
WCC PROJECT # 75903
Ann Arbor,MI

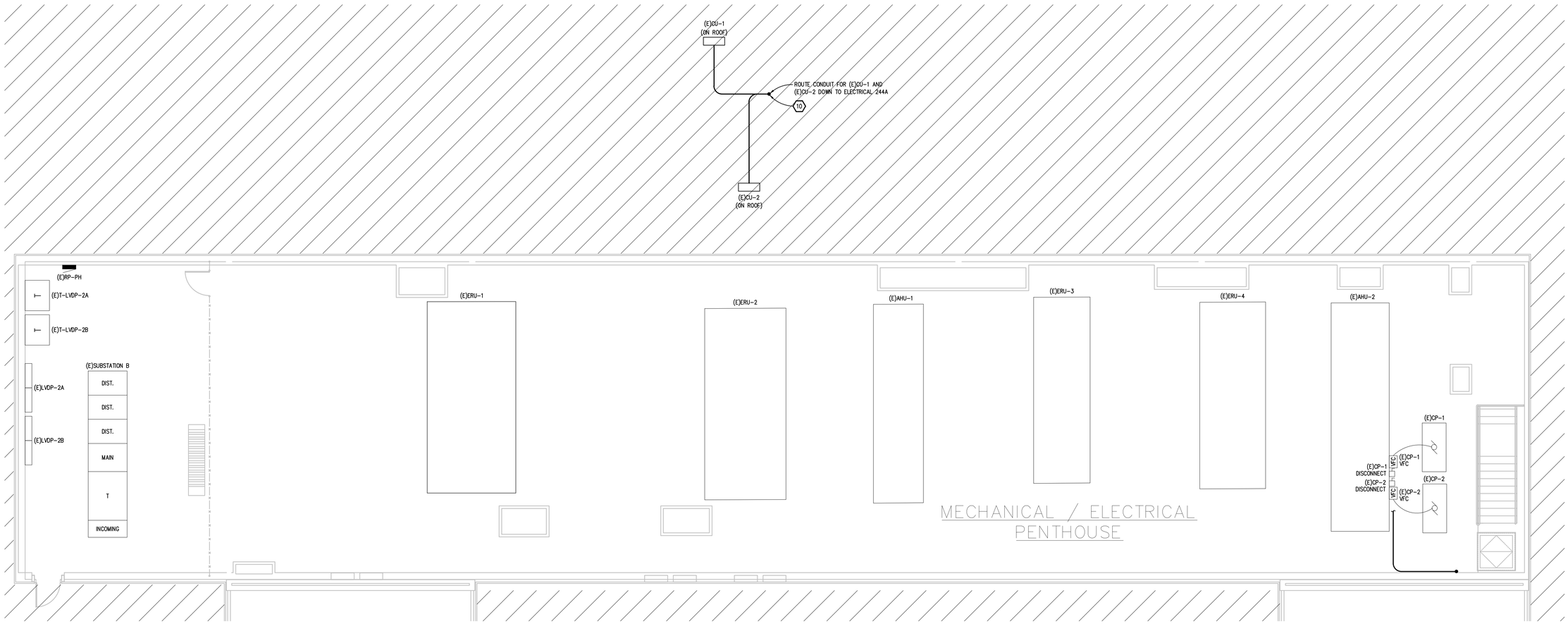
SHEET TITLE
SECOND FLOOR ELECTRICAL
NEW WORK PLAN

DATE
05-26-2026

ISSUE
BIDS

SHEET No.
E3.2

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



PENTHOUSE ELECTRICAL NEW WORK PLAN

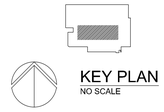
SCALE: 3/16" = 1' - 0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
4. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

(#) CONSTRUCTION KEY NOTES:

1. #4/0 BARE COPPER TO GENERATOR GROUND BUS.
2. PROVIDE REMOTE EMERGENCY STOP SWITCH FOR GENERATOR WITH ADDITIONAL CONTACT CAPABLE OF INTERFACING WITH BMS.
3. PROVIDE STEEL SLOTTED SUPPORT FOR ELECTRICAL DEVICE AS REQUIRED.
4. PROVIDE NEW PANELBOARD IN SAME LOCATION. EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED AND CONNECT TO NEW PANELBOARD.
5. DISCONNECT EXISTING BRANCH CIRCUITS RP-1A-1, RP-1A-5, RP-1A-11, RP-1A-35, RP-1A-40 (SEPERATE CUH-1,2,3 FROM DOORS), RP-1A-41, RP-1B-21, RP-1B-30, RP-1B-32, RP-1C-4, RP-1C-37C (ACU-2 CP ONLY), RP-1C-39,41 (ACU-2 ONLY), RP-1D-26 (CUH-4,5 ONLY), RP-1D-28 (UH-1 ONLY) AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-1CA AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
6. ALTERNATE #6: DISCONNECT EXISTING PARKING LOT AND INTERIOR WALKWAY LIGHTING BRANCH CIRCUITS LP-1A-15, 17, 20, 24, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD LP-OSB AS INDICATED. CONTRACTOR TO FIELD CONFIRM EXACT EXISTING CIRCUIT NUMBERS.
7. DISCONNECT EXISTING BRANCH CIRCUITS RP-2CG-2, RP-2CG-4, RP-2CG-6, RP-2CG-8, RP-2CG-10, RP-2CG-12, RP-2CG-14, RP-2CG-39, RP-2CG-41, RP-2I-37, RP-2I-39,41 (ACU-2 ONLY), RP-2G-15, RP-2CF-27,29, RP-2CF-31,33, RP-2CF-35,37, RP-2CF-39,41, RP-PH-35,37, RP-PH-39,41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-OSB AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
8. PROVIDE CONCRETE PAD FOR ELECTRICAL EQUIPMENT. REFER TO CIVIL DRAWINGS FOR EXACT REQUIREMENTS.
9. PROVIDE TRYSTAR 400A NEMA 3R GENERATOR DOCKING STATION.
10. CORE EXISTING ROOF TO FACILITATE INSTALLATION OF CONDUITS. PROVIDE BOOT FLASHING, SEAL, AND PATCH ROOF TO MATCH EXISTING.
11. ELECTRICAL FEEDER / BRANCH CIRCUIT TO BE ROUTED IN ACCESSIBLE CEILING SPACE. WORK WILL REQUIRE REMOVAL OF LAY-IN CEILING TILES AND GRID. ANY CEILING TILE, GRID, ETC. THAT IS DAMAGED SHALL BE REPLACED TO MATCH EXISTING CONDITIONS. REINSTALL TILES AND GRID FOLLOWING CONDUIT INSTALLATION.
12. CORE EXISTING MASONRY WALL / SLAB TO FACILITATE INSTALLATION OF CONDUITS. SEAL PENETRATION WITH FIRESTOP COMPOUND PER MANUFACTURER'S INSTRUCTIONS, PATCH, AND PAINT TO MATCH EXISTING.



KEY PLAN
NO SCALE

REVISION

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PENTHOUSE ELECTRICAL NEW
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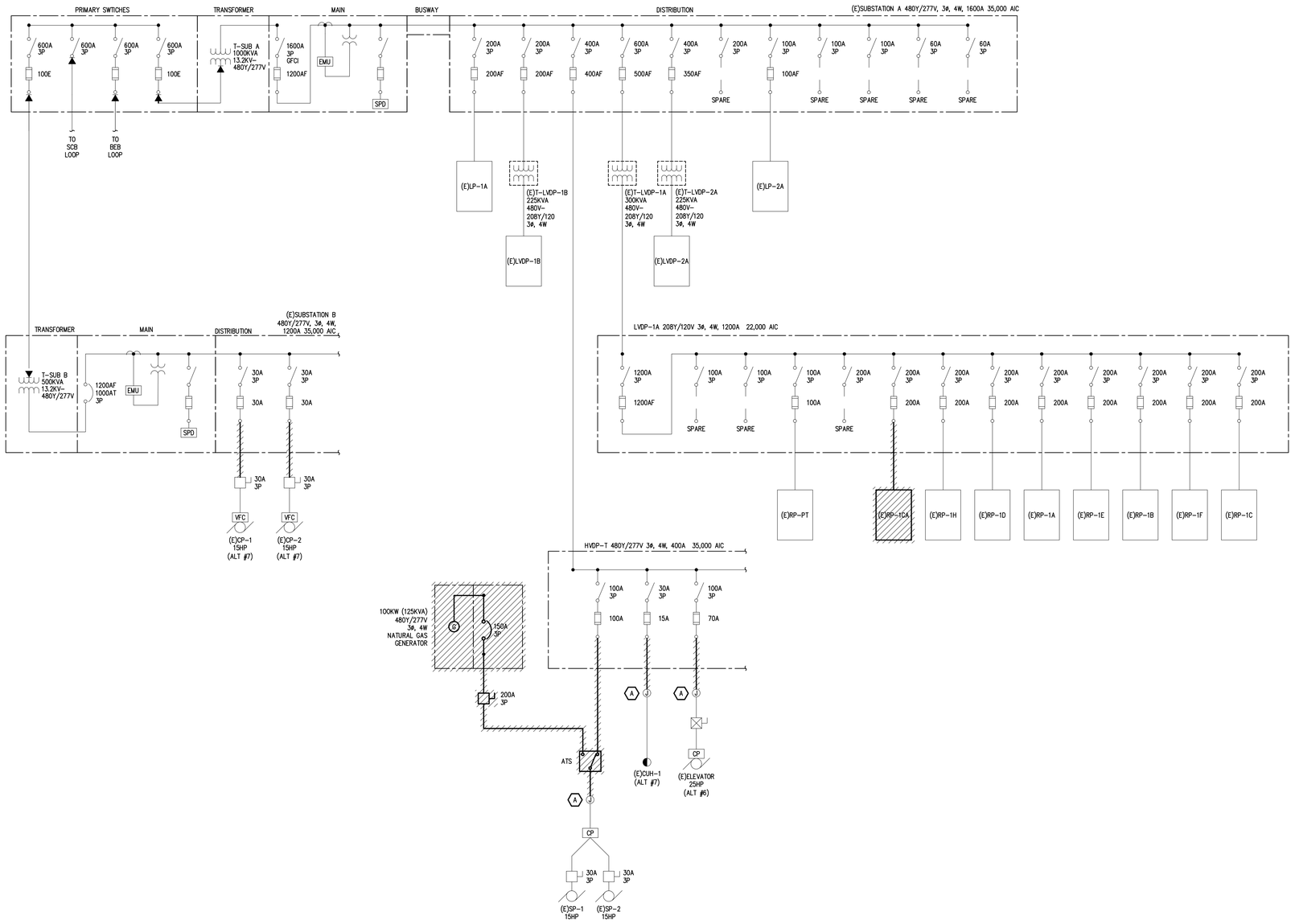

DIAGRAM GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE-GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
3. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "TRANSFORMER CIRCUIT SIZING SCHEDULE-GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
4. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH THE MOTOR CIRCUIT SIZING SCHEDULES ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
5. BASIS OF DESIGN IS SQUARE D DISTRIBUTION EQUIPMENT AND ASCO 300 SERIES TRANSFER SWITCHES. IF THE CONTRACTOR ELECTS TO PROVDE EQUIPMENT FROM OTHER APPROVED MANUFACTURERS, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE LAYOUT AND CLEARANCE REQUIREMENTS IN ALL SPACES CONTAINING ELECTRICAL EQUIPMENT AND PROVIDE EQUIPMENT MEETING THE SPECIFICATIONS AND ACHIEVING CODE REQUIRED CLEARANCES WITHIN THE SPACE PROVIDED.

(#) DEMOLITION KEY NOTES:

A. REMOVE BRANCH CIRCUIT/FEEDER BACK TO NEAREST ACCESSIBLE JUNCTION BOX.

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SHEET TITLE
ONE LINE DIAGRAM - DEMOLITION

DATE
05-26-2026

ISSUE
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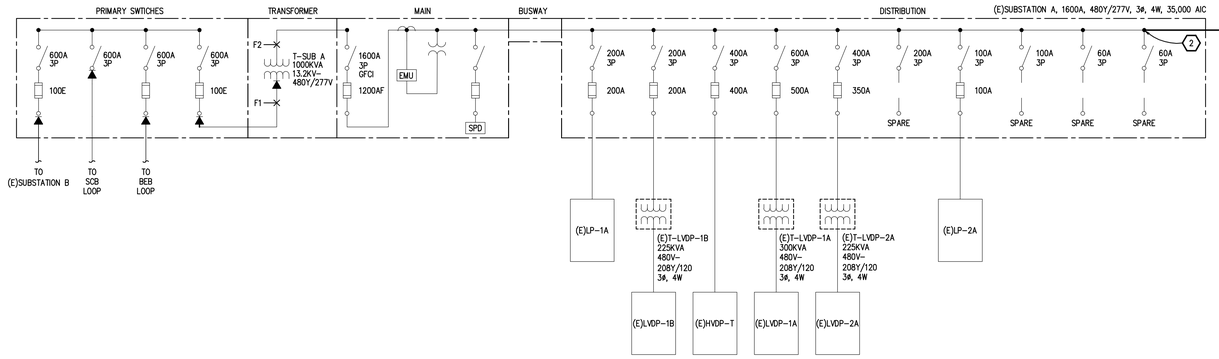
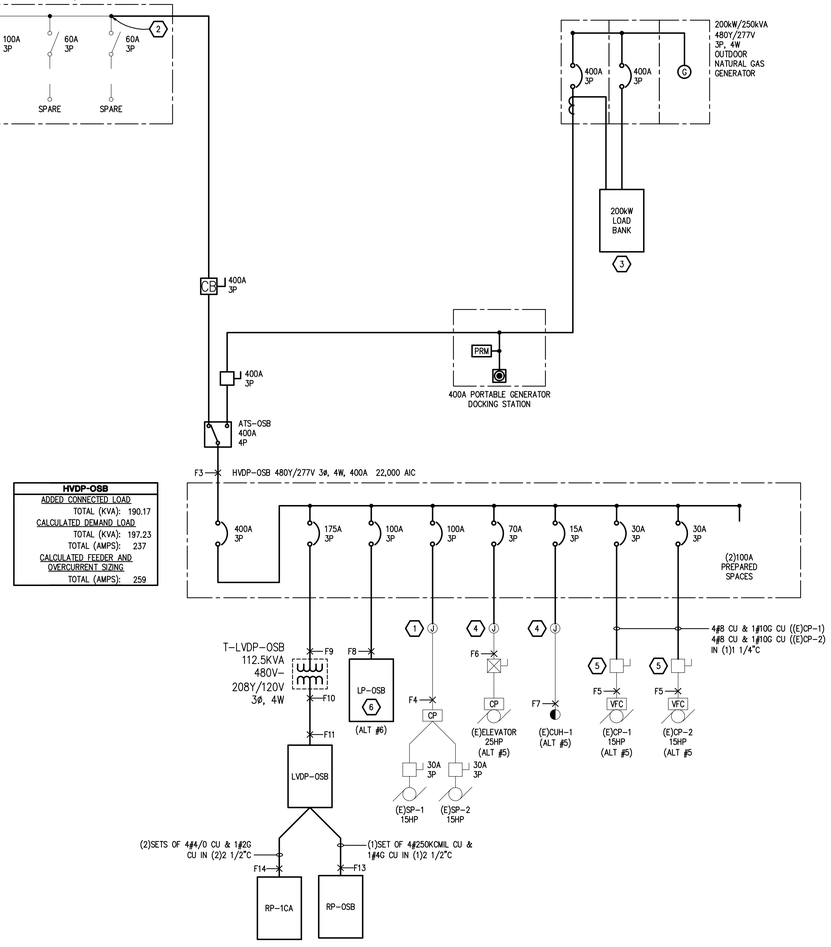
SHEET No.
E5.1





HVDP-OSB	
ADDED CONNECTED LOAD	
TOTAL (KVA):	190.17
CALCULATED DEMAND LOAD	
TOTAL (KVA):	197.23
TOTAL (AMPS):	237
CALCULATED FEEDER AND OVERCURRENT SIZING	
TOTAL (AMPS):	259

DIAGRAM GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
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(#) CONSTRUCTION KEY NOTES:

1. EXTEND EXISTING SUMP PUMP FEEDER AND CONNECT TO NEW CIRCUIT BREAKER.
2. TAP EXISTING BUSBAR FOR CONNECTION FOR ATS FEEDER. OBTAIN NRTL LISTING AFTER CONNECTION IS MADE. PROVIDE LABEL WITH NEW NRTL LISTING ON DISTRIBUTION SECTION.
3. PROVIDE TRYSTAR "LS" SERIES 200kW NEMA 3R PERMANENT LOAD BANK. LOAD BANK TO MONITOR HVDP-OSB FEEDER AND SHALL STEP LOAD BY 25kW TO ENSURE THAT GENERATOR HAS A MINIMUM LOAD OF 75kW.
4. ALTERNATE #5: EXTEND EXISTING FEEDER / BRANCH CIRCUIT FOR FREEZE PROTECTION LOAD / ELEVATOR AND CONNECT TO NEW CIRCUIT BREAKER.
5. ALTERNATE #6: PROVIDE PANELBOARD LP-OSB FOR SITE LIGHTING AS INDICATED.

SHORT-CIRCUIT CALCULATIONS

FAULT POINT	PANEL / TRANSFORMER	SOURCE FAULT POINT	SOURCE Isc	CONDUIT TYPE	CONDUCTOR MATERIAL	CONDUCTOR OR BUS SIZE	'C' VALUE	E (V)	L (FT)	XFMR kVA	XFMR %Z	f	M	Isc
1	UTILITY XFMR							480		1000	5.75			20,919
2	(E)SUBSTATION A	1	20,919	M	CU	1 SETS OF 1600 A BUS	129900	480	20.0			0.012	0.99	20,679
3	HVDP-OSB	2	20,679	M	CU	1 SETS OF 500 KCML	22185	480	54.0			0.182	0.85	17,500
4	(E)SP-1 / SP-2	3	17,500	M	CU	1 SETS OF 3	4774	480	20.0			0.265	0.79	13,839
5	(E)CP-1 / CP-2	3	17,500	M	CU	1 SETS OF 8	1557	480	315.0			12.775	0.07	1,270
6	(E)ELEVATOR	3	17,500	M	CU	1 SETS OF 4	3806	480	130.0			2.157	0.32	5,544
7	(E)ECUH-1	3	17,500	M	CU	1 SETS OF 12	617	480	300.0			30.704	0.03	552
8	LP-OSB	3	17,500	M	CU	1 SETS OF 3	4774	480	350.0			4.630	0.18	3,109
9	T-LVDP-OSB PRI	3	17,500	M	CU	1 SETS OF 2/0	10755	480	25.0			0.147	0.87	15,260
10	T-LVDP-OSB SEC	9	15,260			SETS OF	#N/A	208		112.5	3	3.379	0.23	8,042
11	LVDP-OSB	10	8,042	M	CU	1 SET OF 500 KCML	22185	208	10.0			0.030	0.97	7,806
12	RP-1CA	11	7,806	M	CU	2 SETS OF 4/0	15082	208	350.0			0.754	0.57	4,450
13	RP-OSB	11	7,806	M	CU	1 SET OF 250 KCML	16483	208	380.0			1.499	0.40	3,124

THE FOLLOWING THREE PHASE CALCULATIONS ARE BASED ON THE "POINT-BY POINT" METHOD WHERE:

$Isc = Isc \times M$, $M = 1/(1+f)$

CONDUCTOR OR BUS: $f = \frac{1.732 \times L \times Isc}{C \times n \times E}$

UTILITY XFMR: $Isc = \frac{kVA \times 100{,}000}{E \times 1.732 \times \%Z}$

XFMR: $f = \frac{Ip(sc) \times Ep \times 1.73 \times \%Z}{100{,}000 \times KVA}$ $Is(sc) = \frac{Ep \times M \times Ip(sc)}{Es}$

L = LENGTH (ft) OF CONDUCTOR, C = CONSTANT FROM TABLE, n = NUMBER OF CONDUCTORS PER PHASE
Isc = AVAILABLE SHORT CIRCUIT (A), E = VOLTAGE OF CIRCUIT

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SHEET TITLE
ONE LINE DIAGRAM - NEW WORK

DATE
05-26-2026

ISSUE
BIDS

SHEET No.
E5.2

PANELBOARD LP-OSB (ALT #6)

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	ØA	ØB	ØC	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	L	(E)LTG. TI PARKING LOT		20	975	1950			975	20		(E)LTG. TI PARKING LOT	L	2
3	L	(E)LTG. TI PARKING LOT		20	975		2775		1800	30		(E)LTG. SC PLAZA, GLTC	L	4
5	L	(E)LTG. POB SIDEWALK		20	1200			3000	1800				L	6
7	L	(E)LTG. BEB PARKING LOT		20	975	2175			1200	20		(E)LTG. WALKWAY TO HFC	L	8
9	L	(E)LTG. BEB PARKING LOT		20	975		1950		975	20		(E)LTG. TI PARKING LOT	L	10
11	L	(E)LTG. BEB PARKING LOT		20	975			1950	975	20		(E)LTG. TI PARKING LOT	L	12
13	L				572	1547			975	20		(E)LTG. TI PARKING LOT	L	14
15	L	(E)LTG. STUDENT CENTER DRIVE		20	572		1547		975	20		(E)LTG. TI PARKING LOT	L	16
17	L				572			1547	975	20		(E)LTG. TI PARKING LOT	L	18
19		SPARE		20						20		SPARE		20
21		SPARE		20						20		SPARE		22
23		SPARE		20						20		SPARE		24
25		SPARE		20						20		SPARE		26
27		SPARE		20						20		SPARE		28
29		SPARE		20						20		SPARE		30
						5672	6272	6497						
						ØA	ØB	ØC						

PANELBOARD INFORMATION
VOLTAGE: 480Y/277
BUS AMPACITY: 100A
MAIN TYPE: MLO
MINIMUM A.I.C.: 10,000
MOUNTING: SURFACE

[ ] FEED-THROUGH LUGS
[ ] DOUBLE LUGS
[ ] INTEGRAL SPD

PANELBOARD LOCATION
TI 105C

BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OCPD SIZING	NOTES:
CONTINUOUS LOAD (C)		100%		125%	
ELECTRIC HEAT (E)		100%		100%	
NON-CONTINUOUS LOAD (NC)		100%		100%	
KITCHEN LOAD (K)		100%		100%	
RECEPTACLE BASE LOAD (R)		100%		100%	
RECEPTACLE DEMAND LOAD (R)		50%		100%	
LIGHTING LOAD (L)	18441	100%	18441	125%	23051
ADDITIONAL TRACK LIGHTING LOAD					
MOTORS, HIGHEST LOAD (MH)		125%		100%	
MOTORS, REMAINING LOAD (M)		100%		100%	
NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED FROM CONNECTED LOAD		TOTAL(KVA):	18.44		
		TOTAL (AMPS):	22	TOTAL (AMPS):	28

PANELBOARD (E)RP-T

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	ØA	ØB	ØC	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1		SPARE	EXIST	20		180			180	20	EXIST	RECEPT.: EXTERIOR	R	2
3	R	(E)RECEPT.: TUNNEL EAST	EXIST	20	720		720			20	EXIST	SPARE		4
5	R	(E)RECEPT.: TUNNEL EAST	EXIST	20	720			720		20	EXIST	SPARE		6
7	R	(E)RECEPT.: TUNNEL WEST	EXIST	20	720	1220			500	20	EXIST	(E)RECEPT. & EM LTG	NC	8
9	R	(E)RECEPT.: NORTH WALL	EXIST	20	720		1720		1000	20	EXIST	(E)PHONEBOARD RM B-2	C	10
11	R	(E)RECEPT.: WEST WALL	EXIST	20	720			720		20	EXIST	SPARE		12
13	L	(E)LTG TUNNEL	EXIST	20	500	2000			1500	20	EXIST	(E)SIR DRYER	M	14
15	L	(E)LTG TUNNEL	EXIST	20	500		1500		1000	20	EXIST	GEN BATTERY CHARGER, OIL HTR	NC	16
17		SPARE	EXIST	20						20	EXIST	SPARE		18
19		SPARE	EXIST	20						20	EXIST	SPARE		20
21		SPARE	EXIST	20						20	EXIST	SPARE		22
23		SPARE	EXIST	20						20	EXIST	SPARE		24
25		SPARE	EXIST	20		2800			2800		EXIST		NC	26
27		SPARE	EXIST	20			2800		2800	30	EXIST	(E)PANELBOARD EXTERIOR	NC	28
29		SPARE	EXIST	20				2800	2800		EXIST		NC	30
31	C	GEN COOLANT HTR	EXIST	20	1250	1250						SPACE		32
33	C		EXIST	0A	1250		1250					SPACE		34
35		SPACE										SPACE		36
37		SPACE										SPACE		38
39		SPACE										SPACE		40
41		SPACE										SPACE		42
						7450	7990	4240						
						ØA	ØB	ØC						

PANELBOARD INFORMATION
VOLTAGE: 208Y/120
BUS AMPACITY: 225A
MAIN TYPE: MLO
MINIMUM A.I.C.: 10,000
MOUNTING: SURFACE

[ ] FEED-THROUGH LUGS
[ ] DOUBLE LUGS
[ ] INTEGRAL SPD

PANELBOARD LOCATION
SUBSTATION ROOM

BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OCPD SIZING	NOTES:
CONTINUOUS LOAD (C)	3500	100%	3500	125% 4375	PANELBOARD IS SQUARE D NQOD SERIES
ELECTRIC HEAT (E)		100%		100%	
NON-CONTINUOUS LOAD (NC)	9900	100%	9900	100% 9900	
KITCHEN LOAD (K)		100%		100%	
RECEPTACLE BASE LOAD (R)	3780	100%	3780	100% 3780	
RECEPTACLE DEMAND LOAD (R)		50%		100%	
LIGHTING LOAD (L)	1000	100%	1000	125% 1250	
ADDITIONAL TRACK LIGHTING LOAD				100%	
MOTORS, HIGHEST LOAD (MH)		125%		100%	
MOTORS, REMAINING LOAD (M)	1500	100%	1500	100% 1500	
NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED FROM CONNECTED LOAD		TOTAL(KVA):	19.68		
		TOTAL (AMPS):	55	TOTAL (AMPS): 58	

PANELBOARD RP-OSB

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	ØA	ØB	ØC	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	C	(E)IT EQUIPMENT RM 242		30	1248	1968			720	20		(E)RECEPT.: IDF 242	C	2
3	C				1248		1968		720	20		(E)RECEPT.: IDF 242	C	4
5	C	(E)IT EQUIPMENT RM 242		30	1248			1608	360	20		(E)RECEPT.: IDF 242	C	6
7	C				1248	1848			600	20		(E)TELECOM. RACK IDF 242	C	8
9	C	(E)IT EQUIPMENT RM 242		30	1248		1848		600	20		(E)TELECOM. RACK IDF 242	C	10
11	C				1248			2048	800	20		(E)TELECOM. RACK IDF 242	C	12
13	C	(E)IT EQUIPMENT RM 242		30	1248	2048			800	20		(E)TELECOM. RACK IDF 242	C	14
15	C				1248		1748		500	20	LOD	ALT #4: (E)NAC PANELS	C	16
17	C	ALT #4: (E)AUTOMATIC DOORS 2ND FLR		20	500			1500	1000	20		(E)CONTROL PANELS IDF 242	C	18
19	M	(E)ACU CONDENSATE PUMPS		20	250	1716			1466	20		(E)ACU-1	MH	20
21	M	(E)ACU 2		15	37			1503	1466				MH	22
23	M				37			1503	1466	20		(E)ACU-2	M	24
25		SPARE		20		1466			1466				M	26
27		SPARE		20						20		SPARE		28
29		SPARE		20						20		SPARE		30
31		SPARE		20						20		SPARE		32
33		SPARE		20						20		SPARE		34
35		SPARE		20						20		SPARE		36
37		SPARE		20						20		SPARE		38
39		SPARE		20						20		SPARE		40
41		SPARE		20						20		SPARE		42
						9046	7067	6659						
						ØA	ØB	ØC						

PANELBOARD INFORMATION
VOLTAGE: 208Y/120
BUS AMPACITY: 225A
MAIN TYPE: MLO
MINIMUM A.I.C.: 10,000
MOUNTING: SURFACE

[ ] FEED-THROUGH LUGS
[ ] DOUBLE LUGS
[X] INTEGRAL SPD

PANELBOARD LOCATION
TI 244A

BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OCPD SIZING	NOTES:
CONTINUOUS LOAD (C)	16584	100%	16584	125% 20730	
ELECTRIC HEAT (E)		100%		100%	
NON-CONTINUOUS LOAD (NC)		100%		100%	
KITCHEN LOAD (K)		100%		100%	
RECEPTACLE BASE LOAD (R)		100%		100%	
RECEPTACLE DEMAND LOAD (R)		50%		100%	
LIGHTING LOAD (L)		100%		125%	
ADDITIONAL TRACK LIGHTING LOAD				100%	
MOTORS, HIGHEST LOAD (MH)	2932	125%	3665	100% 3665	
MOTORS, REMAINING LOAD (M)	3256	100%	3256	100% 3256	
NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED FROM CONNECTED LOAD		TOTAL(KVA):	23.51		
		TOTAL (AMPS):	65	TOTAL (AMPS): 77	

PANELBOARD LVDP-OSB

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	ØA	ØB	ØC	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	C				17096	26142			9046				C	2
3	C	RP-1CA		225	16361		23428		7067	225		RP-05B	C	4
5	C				11917			18576	6659				C	6
7														8
9		SPARE		225						225		SPARE		10
11														12
13	MH	ACU-3		20	1466	1966			500	20		ALT #5: ELEVATOR CAR LTG	L	14
15	MH				1466		1966		500	20		ALT #5: RECEPT. LTG ELEVATOR PIT	L	16
17		SPARE		20				500	500	20		GENERATOR REMOTE ANNUNCIATOR	C	18
19		SPARE		20						20		SPARE		20
21		SPARE		20						20		SPARE		22
23		SPACE										SPACE		24
25		SPACE										SPACE		26
27		SPACE										SPACE		28
						28108	25394	19076						
						ØA	ØB	ØC						

PANELBOARD INFORMATION
VOLTAGE: 208Y/120
BUS AMPACITY: 400A
MAIN TYPE: 400A MCB
MINIMUM A.I.C.: 10,000
MOUNTING: SURFACE

[ ] FEED-THROUGH LUGS
[ ] DOUBLE LUGS
[ ] INTEGRAL SPD

PANELBOARD LOCATION
SUBSTATION ROOM

BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OCPD SIZING	NOTES:
CONTINUOUS LOAD (C)	68647	100%	68647	125% 85809	REMAINDER OF SPACE IN DISTRIBUTION PANEL IS TO BE PREPARED.
ELECTRIC HEAT (E)		100%		100%	
NON-CONTINUOUS LOAD (NC)		100%		100%	
KITCHEN LOAD (K)		100%		100%	
RECEPTACLE BASE LOAD (R)		100%		100%	
RECEPTACLE DEMAND LOAD (R)		50%		100%	
LIGHTING LOAD (L)	1000	100%	1000	125% 1250	
ADDITIONAL TRACK LIGHTING LOAD				100%	
MOTORS, HIGHEST LOAD (MH)	2932	125%	3665	100% 3665	
MOTORS, REMAINING LOAD (M)		100%		100%	
NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED FROM CONNECTED LOAD		TOTAL(KVA):	73.31		
		TOTAL (AMPS):	203	TOTAL (AMPS): 252	

PANELBOARD RP-1CA

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	ØA	ØB	ØC	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	R	(E)RECEPT.: SERVER RM 136		20	720	1440			720	20		(E)RECEPT.: IDF 105A	R	2
3	R	(E)RECEPT.: SERVER RM 136		20	720		1440		720	20		(E)RECEPT.: IDF 105A	R	4
5	R	(E)RECEPT.: SERVER RM 136		20	720			1440	720	20		(E)RECEPT.: IDF 105A	R	6
7	C	(E)TELECOM. RACK SERVER RM 136		30	600	1320			720	20		(E)RECEPT.: IDF 105A	R	8
9	C	(E)TELECOM. RACK SERVER RM 136		30	600		1400		800	20		(E)TELECOM. RACK IDF 105A	C	10
11	C	(E)TELECOM. RACK SERVER RM 136		30	800			1600	800	20		(E)TELECOM. RACK IDF 105A	C	12
13	C	(E)TELECOM. RACK SERVER RM 136		30	800	1200			400	20		(E)TELECOM. RACK IDF 105A	C	14
15	C	(E)TELECOM. RACK SERVER RM 136		30	400		800		400	20		(E)TELECOM. RACK IDF 105A	C	16
17	C	(E)TELECOM. RACK SERVER RM 136		30	400			1000	600	20		(E)TELECOM. RACK IDF 105A	C	18
19	C	(E)TELECOM. RACK SERVER RM 136		20	800	1400			600	20		(E)TELECOM. RACK IDF 105A	C	20
21	C	(E)TELECOM. RACK SERVER RM 136		20	800		800			20		SPARE		22
23	C	(E)TELECOM. RACK SERVER RM 136		20	600			600		20		SPARE		24
25	C	(E)TELECOM. RACK SERVER RM 136		20	600	1100			500	20	LOD	ALT #4: (E)NAC PANEL	C	26
27	C	(E)COMCAST SERVER		30	1248		3244		1996	30		(E)IT EQUIPMENT RM 105A	C	28
29	C				1248			3244	1996				C	30
31	C	(E)COMCAST SERVER		30	1248	3244			1996	30		(E)IT EQUIPMENT RM 105A	C	32
33	C				1248		3244		1996				C	34
35		SPARE		20				1996	1996	30		(E)IT EQUIPMENT RM 105A	C	36
37	C	(E)IT EQUIPMENT RM 105A		30	1996	3992			1996				C	38
39	C				1996		1996			30		SPARE		40
41		SPARE		20				500	500	20	LOD	ALT #4: (E)NAC PANEL	C	42
43	C	ALT #4: (E)SIMPLEX FOB PANELS 1,2		20	1000	1600			600	20		ALT #4: (E)AUTODOORS M107, W109, LOBBY	C	44
45	C	ALT #4: (E)SIMPLEX FOB PANELS 3,4,5		20	1500		2000		500	20	LOD	(E)SW EM PHONE	C	46
47	C	ALT #4: (E)ACCESS CONTROL PANEL 5		20	500			1000	500	20	LOD	(E)NE EM PHONE	C	48
49	NC	ALT #4: (E)STAIRWELL POWERED DOORS		20	400	900			500	20		ALT #5: (E)CUH-4, 5	M	50
51	C	ALT #4: (E)FACP		20	500		1000		500	20		ALT #5: (E)UH-1	MH	52
53	M	ALT #5: (E)CUH-1,2,3		20	500			500		20		SPARE		54
55	M	(E)ACU CONDENSATE PUMPS		20	500	500				20		SPARE		56
57	M	(E)ACU-1		15	37		37			20		SPARE		58
59	M				37			37		20		SPARE		60
61	NC	ALT #4: (E)AUTOMATIC DOOR LOBBY		20	400	400				20		SPARE		62
63	NC	ALT #4: (E)POWERED DOORS		20	400		400			20		SPARE		64
65		SPARE		20						20		SPARE		66
67		SPARE		20						20		SPARE		68
69		SPARE		20						20		SPARE		70
71		SPARE		20						20		SPARE		72
						17096	16361	11917						
						ØA	ØB	ØC						

PANELBOARD INFORMATION
VOLTAGE: 208Y/120
BUS AMPACITY: 225A
MAIN TYPE: MLO
MINIMUM A.I.C.: 10,000
MOUNTING: SURFACE

[ ] FEED-THROUGH LUGS
[ ] DOUBLE LUGS
[X] INTEGRAL SPD

PANELBOARD LOCATION
TI 105C

BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OCPD SIZING	NOTES:
CONTINUOUS LOAD (C)	37060	100%	37060	125% 46325	
ELECTRIC HEAT (E)		100%		100%	
NON-CONTINUOUS LOAD (NC)	1200	100%	1200	100% 1200	
KITCHEN LOAD (K)		100%		100%	
RECEPTACLE BASE LOAD (R)	5040	100%	5040	100% 5040	
RECEPTACLE DEMAND LOAD (R)		50%		100%	
LIGHTING LOAD (L)		100%		125%	
ADDITIONAL TRACK LIGHTING LOAD				100%	
MOTORS, HIGHEST LOAD (MH)	500	125%	625	100% 625	
MOTORS, REMAINING LOAD (M)	1575	100%	1575	100% 1575	
NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED FROM CONNECTED LOAD		TOTAL(KVA):	45.50		
		TOTAL (AMPS):	126	TOTAL (AMPS): 152	

REVISION

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Peter Basso Associates
CONSULTING ENGINEERS

Washtenaw Community College

PROJECT TITLE
WASHTENAW COMMUNITY COLLEGE
TECHNICAL AND INDUSTRIAL
BLDG GENERATOR REPLACEMENT
WCC PROJECT # 75903
Ann Arbor,MI

SHEET TITLE
PANEL SCHEDULES

DATE
05-26-2026

ISSUE
BIDS

SHEET No.
E5.3

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"

ELECTRICAL DEMOLITION GENERAL NOTES:

1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES AND BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES, WHETHER OR NOT SPECIFICALLY INDICATED.
3. REMOVE EQUIPMENT OR MATERIALS AS INDICATED ON PLAN WITH CROSS HATCHING. DEMOLITION SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE COMPONENTS SHOWN.
4. COORDINATE WITH NEW WORK PLANS AND ONE LINE DIAGRAMS FOR EXTENT OF DEMOLITION WORK.
5. PROVIDE PROPER SUPPORT FOR EXISTING TO REMAIN CONDUITS AND BOXES WHERE EXISTING SUPPORT IS TO BE REMOVED. RE-ROUTE BRANCH CIRCUIT CONDUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.
6. REMOVE ALL CONDUIT AND WIRE BACK TO THE SOURCE OR NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. MAINTAIN ELECTRICAL SERVICE TO ALL LIGHTING FIXTURES, DEVICES AND EQUIPMENT THAT ARE TO REMAIN. EXTEND CONDUIT AND WIRE AS REQUIRED WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM LOADS THAT ARE TO REMAIN.
8. DISPOSE OF ALL MATERIALS OFF SITE (U.O.N.) AND INCLUDE ALL COSTS FOR DISPOSAL IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING TCLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.
9. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS "SPARE".
10. PROVIDE UPDATED TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS ALTERATION.
11. VERIFY ALL UNDERGROUND AND IN SLAB UTILITY LOCATIONS PRIOR TO PENETRATING ANY FLOOR SLAB.
12. COORDINATE ANY SHUT DOWN OF EXISTING EQUIPMENT THAT ARE REMAINING IN USE WITH THE OWNER.

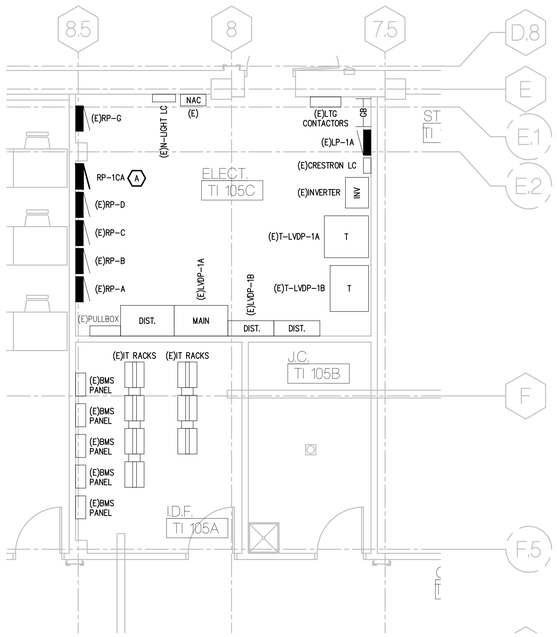
(#) DEMOLITION KEY NOTES:

A. REMOVE FEEDER BACK TO SOURCE. DISCONNECT BRANCH CIRCUITS AND MAKE ELECTRICALLY SAFE. REMOVE PANELBOARD INTERIOR (CIRCUIT BREAKERS, BUS, ETC.) AND RETURN BREAKERS TO OWNER. PANELBOARD TUB TO REMAIN FOR RE-USE IN NEW WORK.

B. BASE BID: DISPOSE OF GENERATOR OFF SITE PER LOCAL REGULATIONS.

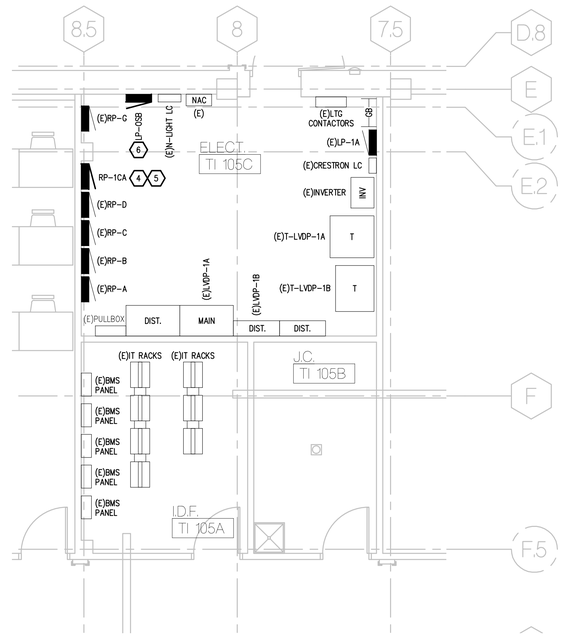
ALTERNATE #3: REMOVE AND RELOCATE GENERATOR TO PARKING LOT 5. COORDINATE EXACT LOCATION WITH OWNER.

C. CONTRACTOR TO REMOVE AND DELIVER TO OWNER.



1 / E3.1

FIRST FLOOR ELECTRICAL DEMOLITION PLAN
SCALE: 1/4" = 1' - 0"



1 / E3.1

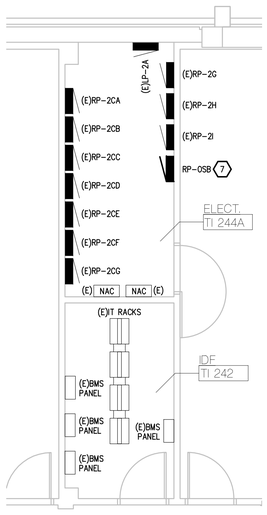
FIRST FLOOR ELECTRICAL NEW WORK PLAN
SCALE: 1/4" = 1' - 0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
4. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

(#) CONSTRUCTION KEY NOTES:

1. #4/0 BARE COPPER TO GENERATOR GROUND BUS.
2. PROVIDE REMOTE EMERGENCY STOP SWITCH FOR GENERATOR WITH ADDITIONAL CONTACT CAPABLE OF INTERFACING WITH BMS.
3. PROVIDE STEEL SLOTTED SUPPORT FOR ELECTRICAL DEVICE AS REQUIRED.
4. PROVIDE NEW PANELBOARD IN SAME LOCATION. EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED AND CONNECT TO NEW PANELBOARD.
5. DISCONNECT EXISTING BRANCH CIRCUITS RP-1A-1, RP-1A-5, RP-1A-11, RP-1A-35, RP-1A-40 (SEPERATE CUH-1,2,3 FROM DOORS), RP-1A-41, RP-1B-21, RP-1B-30, RP-1B-32, RP-1C-4, RP-1C-37C (ACU-2 CP ONLY), RP-1C-39,41 (ACU-2 ONLY), RP-1D-26 (CUH-4,5 ONLY), RP-1D-28 (UH-1 ONLY) AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-1CA AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
6. ALTERNATE #6: DISCONNECT EXISTING PARKING LOT AND INTERIOR WALKWAY LIGHTING BRANCH CIRCUITS LP-1A-15, 17, 20, 24, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD LP-OSB AS INDICATED. CONTRACTOR TO FIELD CONFIRM EXACT EXISTING CIRCUIT NUMBERS.
7. DISCONNECT EXISTING BRANCH CIRCUITS RP-2CG-2, RP-2CG-4, RP-2CG-6, RP-2CC-8, RP-2CG-10, RP-2CG-12, RP-2CC-14, RP-2CG-39, RP-2CG-41, RP-2I-37, RP-2I-39,41 (ACU-2 ONLY), RP-2G-15, RP-2CF-27,29, RP-2CF-31,33, RP-2CF-35,37, RP-2CF-39,41, RP-PH-35,37, RP-PH-39,41 AND MAKE ELECTRICALLY SAFE. EXTEND EXISTING BRANCH CIRCUITS AND CONNECT TO PANELBOARD RP-OSB AS INDICATED. REFER TO PANEL SCHEDULE FOR ALTERNATES.
8. PROVIDE CONCRETE PAD FOR ELECTRICAL EQUIPMENT. REFER TO CIVIL DRAWINGS FOR EXACT REQUIREMENTS.
9. PROVIDE TRYSTAR 400A NEMA 3R GENERATOR DOCKING STATION.
10. CORE EXISTING ROOF TO FACILITATE INSTALLATION OF CONDUITS. PROVIDE BOOT FLASHING, SEAL, AND PATCH ROOF TO MATCH EXISTING.
11. ELECTRICAL FEEDER / BRANCH CIRCUIT TO BE ROUTED IN ACCESSIBLE CEILING SPACE. WORK WILL REQUIRE REMOVAL OF LAY-IN CEILING TILES AND GRID. ANY CEILING TILE, GRID, ETC. THAT IS DAMAGED SHALL BE REPLACED TO MATCH EXISTING CONDITIONS. REINSTALL TILES AND GRID FOLLOWING CONDUIT INSTALLATION.
12. CORE EXISTING MASONRY WALL / SLAB TO FACILITATE INSTALLATION OF CONDUITS. SEAL PENETRATION WITH FIRESTOP COMPOUND PER MANUFACTURER'S INSTRUCTIONS, PATCH, AND PAINT TO MATCH EXISTING.



2 / E3.2

SECOND FLOOR ELECTRICAL NEW WORK PLAN
SCALE: 1/4" = 1' - 0"

REVISION

REVISION

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PBA Project No: 2026.0134

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CONSULTING ENGINEERS

Washtenaw Community College

PROJECT TITLE
WASHTENAW COMMUNITY COLLEGE
TECHNICAL AND INDUSTRIAL
BLDG GENERATOR REPLACEMENT
WCC PROJECT # 75903
Ann Arbor, MI

SHEET TITLE
ELECTRICAL ENLARGED PLANS

DATE
05-26-2026

ISSUE
BIDS

SHEET No.
E6.1

PREPARED FOR:
PETER BASSO ASSOCIATES
5145 LIVERNOIS, STE 100
TROY, MI 48098
TEL: 248-879-5666

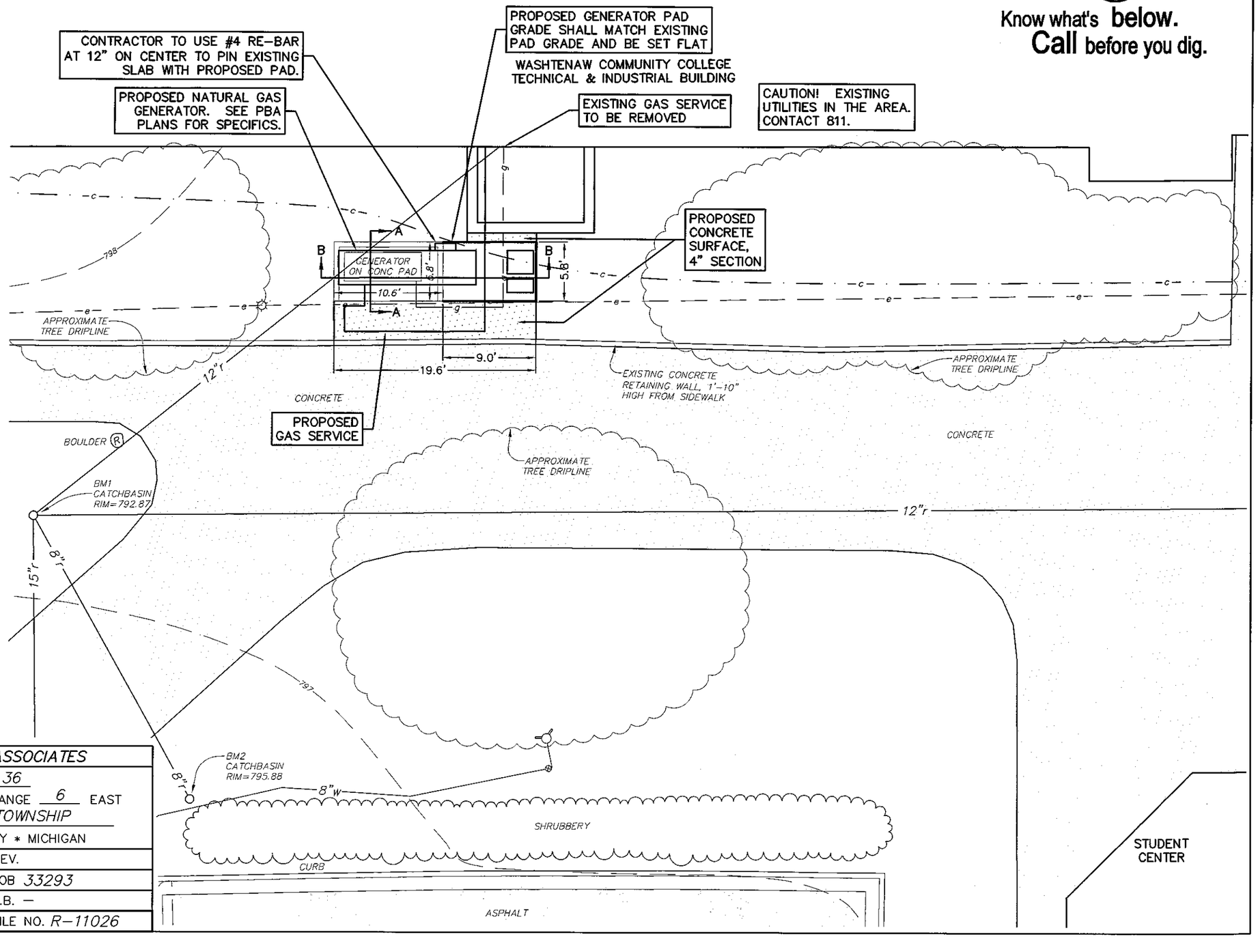
TECHNICAL & INDUSTRIAL BUILDING GENERATOR IMPROVEMENTS (SITE WORK IS A DEDUCT ALTERNATE) WCC PROJECT NO. 75903

Know what's **below.** **Call** before you dig.

SCALE: 1"=10'

CONSTRUCTION NOTES:

1. EXISTING GENERATOR GAS SERVICE TO BE REMOVED.
2. EXISTING ELECTRIC LINES; CONTRACTOR SHALL SEE ELECTRICAL PLANS FOR LOCATIONS AND LOCATION FOR PENETRATIONS IN CONCRETE PAD.
3. CONTRACTOR SHALL INSTALL CONDUITS IN PAD AREA PRIOR TO SETTING NEW CONCRETE.
4. INSTALL NEW GAS AND ELECTRICAL LINES PER MECHANICAL/ELECTRICAL PLANS.
5. CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC AND PEDESTRIAN CONTROLS.



STATE OF MICHIGAN
JOSEPH K. MAYNARD
ENGINEER
No. 52559
LICENSED PROFESSIONAL ENGINEER

JOSEPH K. MAYNARD P.E., MICHIGAN NO. 52559

WASHTENAW ENGINEERING COMPANY
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CLIENT: PETER BASSO ASSOCIATES	
TOWN 2 SOUTH * RANGE 6 EAST SECTION 36 ANN ARBOR TOWNSHIP WASHTENAW COUNTY * MICHIGAN	
DATE 5-26-26	REV.
DRAWN DJH	JOB 33293
CHECK JKM	F.B. -
SHEET 1 OF 2	FILE NO. R-11026

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PREPARED FOR:
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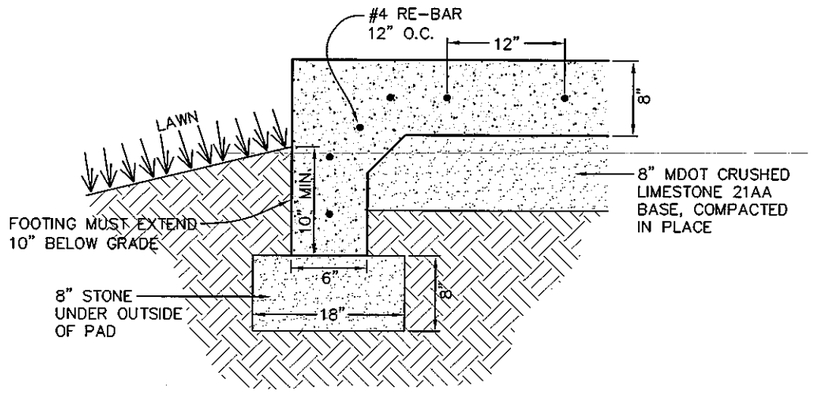
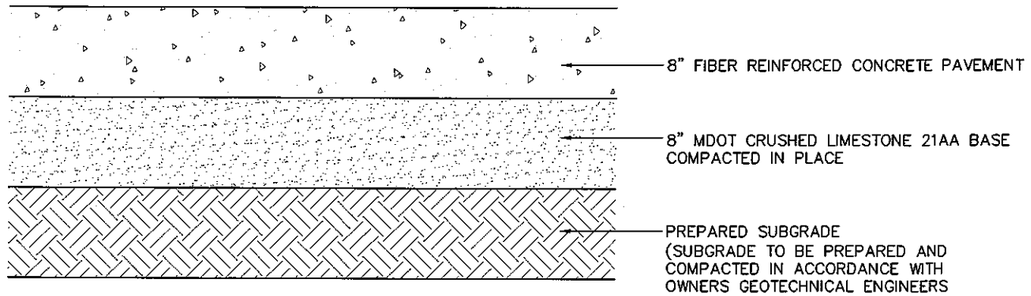
5145 LIVERNOIS, STE 100
TROY, MI 48098
TEL: 248-879-5666

TECHNICAL & INDUSTRIAL BUILDING GENERATOR IMPROVEMENTS (SITE WORK IS A DEDUCT ALTERNATE) WCC PROJECT NO. 75903

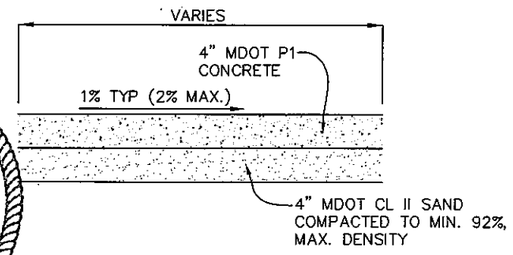
SITE MATERIALS NOTES:
1. ALL MATERIALS AND COMPACTION REQUIREMENTS SHALL MEET MDOT STANDARDS.
2. ALL MATERIALS ARE TO BE COMPACTED TO THE REQUIREMENTS LISTED IN DIVISION 3 OF THE M.D.O.T. 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.



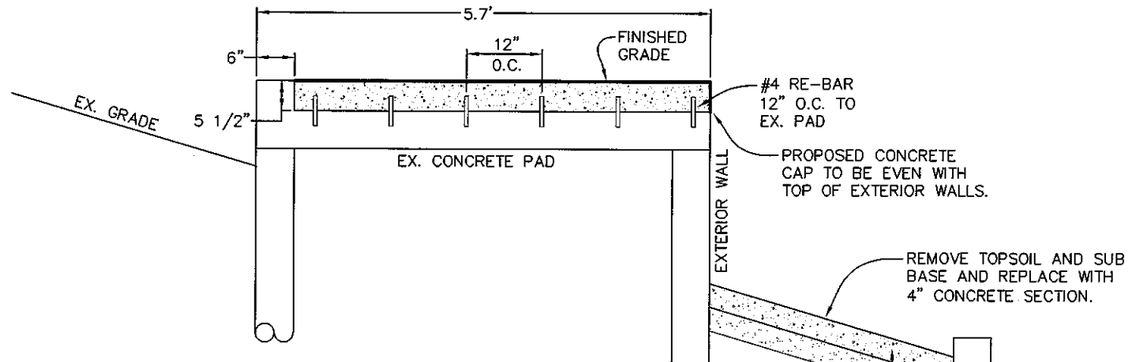
CONCRETE GENERATOR PAD SECTION
(NO SCALE)



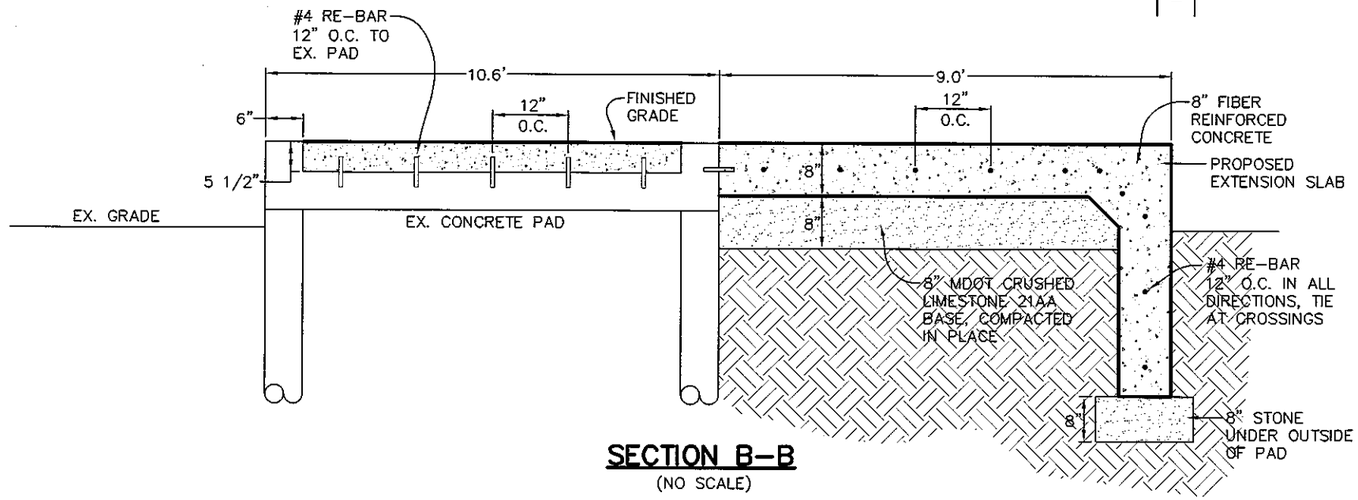
CONCRETE SECTION
(NO SCALE)



4" CONCRETE SECTION
NOT TO SCALE



SECTION A-A
(NO SCALE)



SECTION B-B
(NO SCALE)

STATE OF MICHIGAN
JOSEPH K. MAYNARD
ENGINEER
No. 52559
LICENSED PROFESSIONAL ENGINEER

JOSEPH K. MAYNARD P.E., MICHIGAN NO. 52559

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CLIENT: PETER BASSO ASSOCIATES	
SECTION 36 TOWN 2 SOUTH * RANGE 6 EAST ANN ARBOR TOWNSHIP WASHTENAW COUNTY * MICHIGAN	
DATE 5-26-26	REV.
DRAWN DJH	JOB 33293
CHECK JKM	F.B. -
SHEET 2 OF 2	FILE NO. R-11026

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