ARCHITECTURE

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NEW SMITH MIDDLE SCHOOL

Troy School District - Troy, Michigan 48085

2022 BOND PROGRAM - BID BACKAGE 03C

Project Number 22102

PRE-PURCHASE PACKAGE

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LIST OF DRAWINGS

GENERAL INFORMATION

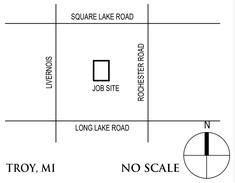
TS.1-03C	Cover Sheet - Bid Package 03C
TG.1	General Information

ELECTRICAL

E0.1	Electrical Standards and Drawing Index
E5.1	One Line Diagram

PROJECT DATA:

LOCATION MAP:



TROY, MI NO SCALE

ADDRESS: NEW SMITH MIDDLE SCHOOL
5835 Donaldson
Troy, Michigan 48085

BUILDING:

BUILDING AREA(S) = NOT APPLICABLE

CODE:

GOVERNING CODES:

- **2016 SCHOOL FIRE SAFETY RULES** (2012 Life Safety Code, plus amendments)
- **2015 MICHIGAN BUILDING CODE**
- **2015 REHABILITATION CODE FOR EXISTING BUILDINGS**
- **2018 MICHIGAN PLUMBING CODE**
- **2015 MICHIGAN MECHANICAL CODE**
- **2015 MICHIGAN UNIFORM ENERGY CODE** (ANSI/ASHRAE/IESNA Standard 90.1-2013)
- **2017 MICHIGAN ELECTRICAL CODE** (2017 NEC, plus Part 8 Rules)
- **2010 MICHIGAN ELEVATOR RULES** (ASME A17.1-2010, ASME A18.1-2011)
- **MICHIGAN BARRIER FREE CODE** (Michigan Building Code 2015 and ICC A117.1-2009)
- **2013 MICHIGAN BOILER CODE RULES** (ASME Boiler and Pressure Vessel Code, 2019 edition) (National Board Inspection Code [NBIC], 2019 edition)

USE GROUP CLASSIFICATION: **"E" EDUCATION**

CONSTRUCTION TYPE: **TYPE II (000) LSC**
TYPE II-B (MBC)

ISSUE DATES

DATE:	ISSUED FOR:
11-14-2023	PRE-PURCHASE PACKAGE

LICENSEE'S STATEMENT:

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PROJECT TITLE
NEW SMITH MIDDLE SCHOOL

PROJECT NO.
22102

DRAWING NO.
TS.1-03C

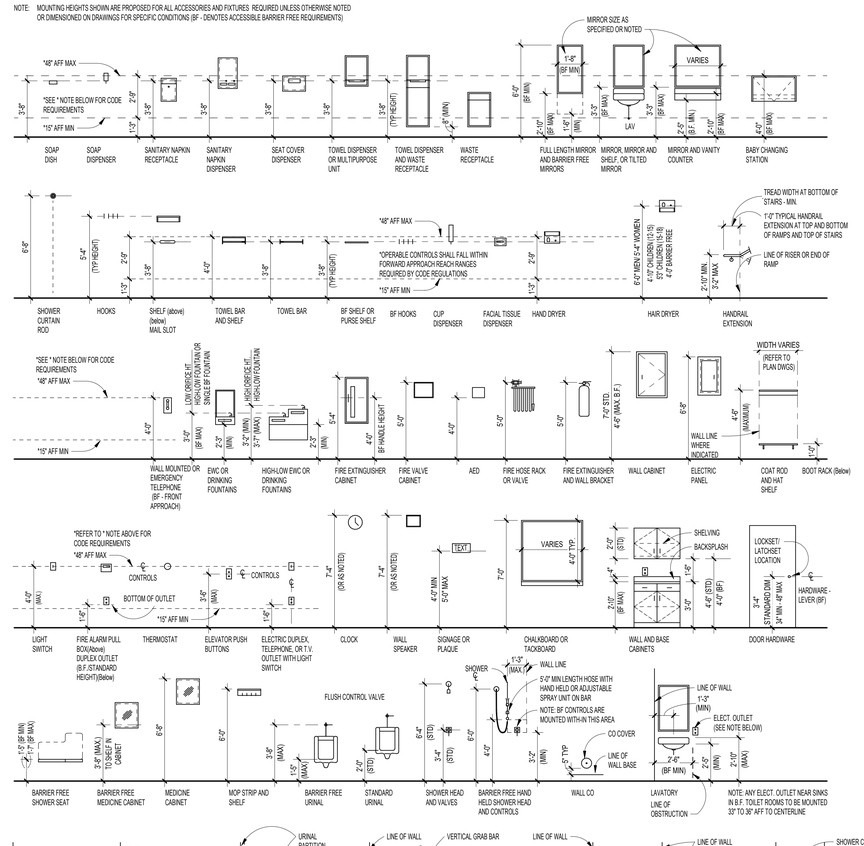
ABBREVIATIONS

A	
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
ARF	ABOVE REFERENCE FLOOR
ABR	ABRASIVE
ABS	ABSORBING
ACC	ACCESS
ACC PNL	ACCESS PANEL
AC	ACOUSTIC/ACOUSTICAL
ACT	ACOUSTIC TILE
AC INSUL	ACOUSTIC INSULATION
ADD	ADDENDUM
ADDN	ADDITION
ADDNL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
AGGR	AGGREGATE
ACB	AIR CIRCUIT BREAKER
A/C	AIR CONDITIONING
ACC	AIR CONDITIONING COMPRESSOR
ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM/AL	ALUMINUM
AMT	AMOUNT
AMP	AMPHERE
AMPL	AMPLIFIER
ANCH	ANCHOR
AB	ANCHOR BOLT
&	AND
ANGL	ANGLE
ANOD	ANODIZED
APT	APARTMENT
APPR	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECT/ARCHITECTURAL
A-	ARCHITECTURAL DRAWING-NO
AT	ASH TRAY
ATM	AUTOMATIC TELLER MACHINE
ASPH	ASPHALT
ASBY	ASSEMBLY
@	AT
AUTO	AUTOMATIC
ASR	AUTOMATIC SPRINKLER RISER
AUX	AUXILIARY
AVG	AVERAGE
B	
B/B	BACK-TO-BACK
BFP	BACK FLOW PREVENTER
BDD	BACK DRAFT DAMPER
BF	BARRIER FREE
BBR	BASE BOARD RADIATION
BPL	BASE PLATE
BSMT	BASEMENT
B	BATH ROOM
BM	BEAM
B/C	BACK OF CURB
BRG	BEARING
BR	BEDROOM
BM	BENCH MARK
BT	BENT
BETW	BETWEEN
BEV	BEVEL
BIT	BITUMINOUS
BI	BLACK-IRON
BLK	BLOCK
BLKG	BLOCKING
BD	BOARD
BLR	BOILER
BLR F	BOILER FEED
BH H	BOILER HOUSE
BK SH	BOOK SHELVES
BS	BOTH SIDES
BW	BOTH WAYS
BOT	BOTTOM
BOT EL	BOTTOM ELEVATION
BLVD	BOULEVARD
BDRY	BOUNDARY
BRKT	BRACKET
BR	BRASS
BRKR	BREAKER
BRK	BRICK
BTU	BRITISH THERMAL UNIT
BRZ	BRONZE
BLDG	BUILDING
BL	BUILDING LINE
BUR	BUILT-UP ROOFING
BN	BULLNOSE
BLKD	BULKHEAD
BULL	BULLETIN
BA	BURGLAR ALARM
BUZZ	BUZZER
C	
CAB	CABINET
CUH	CABINET UNIT HEATER
CAP	CAPACITY
CPT	CARPET
CRS	CARPET REDUCER STRIP
CSMT	CASEMENT
CSWRK	CASEWORK
CSG	CASING
CI	CAST IRON
CIF	CAST IRON FRAME
CIP	CAST IRON PIPE/CAST IN PLACE
CSTG	CASTING
CAT NO	CATALOG NUMBER
CB	CATCH BASIN
CLG	CEILING
CD	CEILING DIFFUSER
CLG HT	CEILING HEIGHT
CEM	CEMENT
CEM PLAS	CEMENT PLASTER
CTR	CENTER
C/C	CENTER-TO-CENTER
CER	CERAMIC
CT	CERAMIC TILE
CBD	CHALKBOARD
CHAM	CHAMFER
CHG	CHANGE
CHAN	CHANNEL
CHKD PL	CHECKERED PLATE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHD	CHORD
CIRCUM	CIRCUMFERENCE
CIR	CIRCLE/CIRCULAR
CIRC	CIRCUIT
CBR	CIRCUIT BREAKER
C-	CIVIL DRAWING-NO
CL	CLASS
CLRM	CLASSROOM
CO	CLEAN OUT
CLR	CLEAR
CLR GL	CLEAR GLASS
CLR WGL	CLEAR WIRE GLASS
CL	CLOSET
CLO	CLOSURE
CCL	COAT CLOSET
COEF	COEFFICIENT
CW	COLD WATER
COL	COLUMN
CO	COMPANY
COMPT	COMPARTMENT
COMPO	COMPOSITION
CA	COMPRESSED AIR
COMPR	COMPRESSOR
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CWR	CONDENSING WATER RETURN
CWS	CONDENSING WATER SUPPLY
COND	CONDUIT
CONF	CONFERENCE
CONN	CONNECT
CONST	CONSTRUCTION
CJ	CONTROL JOINT
CONT	CONTINUE/CONTINUOUS
CONTR	CONTRACTOR
CP	CONTROL PANEL
CONV	CONVECTOR
CNVYR	CONVEYOR
COR	CORNER
CG	CORNER GUARD
CORR	CORRIDOR/CORRUGATED
CPR	COPPER
CNTR	COUNTER
CTSK	COUNTERSINK
CRS	COURSE
COV	COVER
COV PL	COVER PLATE
CCT	CUBICAL CURTAIN TRACK
CUFT	CUBIC FEET/CUBIC FOOT
CFM	CUBIC FEET PER MINUTE
CY	CUBIC YARD
CULV	CULVERT
CD	CUP DISPENSER
CYL	CYLINDER
CYC	CYCLES
D	
DMPR	DAMPER
DMPFG	DAMPPROOFING
DL	DEAD LOAD
DB	DECIBLE
D	DEEP
DGL	DOOR GLAZING
DWG	DRAWING
DMT PARTN	DEMOUNTABLE PARTITION
DEPT	DEPARTMENT
DEPR	DEPRESSED
DES	DESIGN
DET	DETAIL
DE CO	DETROIT EDISON COMPANY
DIAG	DIAGONAL
DGM	DIAGRAM
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DR	DINING ROOM
DIR	DIRECTORY
DISC	DISCONNECT
DISCONT	DISCONTINUOUS
DW	DISHWASHER
DISP	DISPENSER
DIST	DISTANCE
DP	DISTRIBUTION PANEL
DO	DITTO (DO OVER)
DIV	DIVIDER/DIVISION
DR	DOOR
DH	DOOR OPENING
DR OP	DOOR OPERATOR
DBL	DOUBLE
DA	DOUBLE ACTING
DH	DOUBLE HUNG
DWL	DOWEL
DN	DOWN
DS	DOWNSPOUT
DRN	DRAIN
DT	DRAIN TILE
DTC	DRAIN TILE CONNECTOR
DWR	DRAWER
DF	DRINKING FOUNTAIN
DB	DRY BULB
DSP	DRY STAND PIPE
DBWTR	DUMBWAITER
DUP	DUPLICATE
DDR	DUTCH DOOR
E	
EA	EACH
EF	EACH FACE
EW	EACH WAY
E	EAST
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELAST	ELASTOMERIC
ELAST FLASH	ELASTOMERIC FLASHING
ELAST WP	ELASTOMERIC WATERPROOFING
ESR	ELASTOMERIC SHEET ROOFING
ELEC	ELECTRIC/ELECTRICAL
ELEC CL	ELECTRICAL CLOSET
ELEC CAB	ELECTRICAL CABINET
EC	ELECTRICAL CONTRACTOR
E-	ELECTRICAL DRAWING-NO
EP	ELECTRICAL PANEL
EWC	ELECTRICAL WATER COOLER
ELEC OPER	ELECTRICALLY OPERATED
EL	ELEVATION
ELEV	ELEVATOR
EMERG	EMERGENCY
ENCL	ENCLOSURE
ENGINEER	ENGINEER
E/E	END-TO-END
ENTR	ENTRANCE/ENTRY
EP	EPOXY
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESC	ESCALATOR
EST	ESTIMATE
EXC	EXCAVATED
EXH	EXHAUST
ED	EXHAUST DUCT
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ER	EXHAUST REGISTER
EXIST	EXISTING
EXP	EXPANSION
EXPB	EXPANSION BOLT
EJ	EXPANSION JOINT
EXPLP	EXPLOSION PROOF
EXPD	EXPOSED
EXTN	EXTENSION
EXT	EXTERIOR
EH	EXTRA HEAVY
EXTR	EXTRUDED
ESP	EXTERNAL STATIC PRESSURE
F	
FAB	FABRICATED/FABRIC
F/F	FACE-TO-FACE
FFIN	FACTORY FINISH
FCU	FAN COIL UNIT
FS	FAR SIDE
FAS	FASTENER
FDR	FEEDER
FT or '	FEET/FOOT
FPM	FEET PER MINUTE
FN	FENCE
FBD	FOAM BOARD
FIG	FIGURE
FIN	FINISH/FINISHED
FIN FL/RFF	FINISHED FLOOR
FTR	FINNED TUBE RADIATION
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
F BRK	FIRE BRICK
FD	FIRE DAMPER
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
FH	FIRE HYDRANT
FL	FIRE LINE
FR	FIRE RETARDANT/FIRE RATED
FRTWD	FIRE RETARDANT TREATED WOOD
FVC	FIRE VALVE CABINET
FP	FIREPLACE
FPRFG	FIREPROOFING
FIXT	FIXTURE
FLASH	FLASHING
FHMS	FLAT HEAD MACHINE SCREW
FHWS	FLAT HEAD WOOD SCREW
FC	FLEXIBLE CONNECTION
FLR	FLOOR
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FLR FIN	FLOOR FINISH
FLUOR	FLUORESCENT
FLDG	FOLDING
FTG	FOOTING
FM BD	FOAMBOARD
FDN	FOUNDATION
FR	FRAME
FR/COV	FRAME AND COVER
FRMG	FRAMING
FRZR	FREEZER
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FULL SIZE
FURN	FURNISH/FURNISHED
FURR	FURRING/FURRED
FUT	FUTURE
G	
GA	GAUGE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GALV	GALVANIZED
GALV I	GALVANIZED IRON
G	GAS
GSKT	GASKET
GV & B	GATE VALVE AND BOX
GENL	GENERAL
GL	GLASS
GLZ	GLAZING
GHT	GLAZED HOLLOW TILE
GB	GRAB BAR
GR	GRADE/GRILLE
GB	GRADE BEAM
GRAT	GRATING
GL	GRID LINE
GRN	GRANITE
GS	GREASE SEPARATOR
FT	GREASE TRAP
GND	GROUND
GFI	GROUND FAULT INTERRUPTOR
GT	GROUT
G	GUTTER ELEVATION
GYP	GYPSUM
GYPBD	GYPSUM BOARD
H	
HNDCP	HANDICAPPED
HR	HANDRAIL
HBD	HARDBOARD
HDWE	HARDWARE
HDWD	HARDWOOD
HD	HEAD
HDR	HEADER
HA GL	HEAT ABSORBING GLASS
HRU	HEAT RECOVERY UNIT
HTR	HEATER
HTG	HEATING
HV	HEATING AND VENTILATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HGT	HEIGHT
HEX	HEXAGON
H	HIGH
HID	HIGH INTENSITY DISCHARGE
HP	HIGH POINT
HPR	HIGH PRESSURE
HS	HIGH STRENGTH
HSB	HIGH STRENGTH BOLT
HV	HIGH VOLTAGE
HWY	HIGHWAY
HSTWY	HOISTWAY
HC	HOLLOW CORE
HM	HOLLOW METAL
HNYCB	HONEYCOMB
HK	HOOK
HORIZ	HORIZONTAL
HP	HORSEPOWER
HB	HOSE BIBB
HSP	HOSE STAND PIPE
HVC	HOSE VALVE CABINET
HOSP	HOSPITAL
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HR	HOUR
HO	HUB OUTLET
HYD	HYDRANT/HYDRAULIC
H	HYDROGEN
I	
ID	IDENTIFICATION
INCAND	INCANDESCENT
IN OR "	INCH/INCHES
INCIN	INCINERATOR
INCL	INCLUDE / INCLUDING
IW	INDIRECT WASTE
INFO	INFORMATION
ID	INSIDE DIAMETER
IF	INSIDE FACE
INSTL	INSTALL/INSTALLATION
INSUL	INSULATE/INSULATION
INT	INTERIOR
INTER	INTERMEDIATE
INV	INVERT
IE	INVERT ELEVATION
J	
JC	JANITOR CLOSET
JT	JOINT
JST	JOIST
JB	JUNCTION BOX
JR	JUNIOR
K	
KP	KICK PLATE
KV	KILOVOLT
KVA	KILOVOLT AMHERE
KW	KILOWATT
K	KIP (1008)
KIT	KITCHEN
KS	KNEE SPACE
KD	KNOCK DOWN
KOP	KNOCK-OUT PANEL
L	
LBL	LABEL
LAB	LABORATORY
LAD	LADDER
LB	LAG BOLT
LAM	LAMINATE/LAMINATED
LDG	LANDING
L-	LANDSCAPE DRAWING-NO
LGE	LARGE
LDRY	LAUNDRY
LAV	LAVATORY
LH	LEFT HAND
LHRB	LEFT HAND REVERSE BEVEL
LGTH	LENGTH
LEV	LEVEL
LIB	LIBRARY
LT	LIGHT
LPRF	LIGHTPROOF
LTG	LIGHTING
LP	LIGHTING PANEL
LRP	LIGHTING RECEPTACLE PANEL
LTWT	LIGHTWEIGHT
LTWT CONC	LIGHTWEIGHT CONCRETE
LMS	LIMESTONE
LTL	LINTEL
LIN DIFF	LINEAR DIFFUSER
LF	LINEAR FEET/FOOT
LIN SD	LINEAR SLOT DRAIN
LIQ	LIQUID
LPG	LIQUID PROPANE GAS
LPG	LIQUID PETROLEUM GAS
LL	LIVE LOAD
LR	LIVING ROOM
LOC	LOCATION
LKR	LOCKER
LG	LONG
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LVR	LOUVER
LO	LOUVER OPENING
LP	LOW POINT
LPR	LOW PRESSURE
LBR	LUMBER
LBS OR #	POUNDS
M	
MACH	MACHINE
MB	MACHINE BOLT
MACH RM	MACHINE ROOM
MAU	MAKE-UP AIR UNIT
MDP	MAIN DISTRIBUTION PANEL
MSB	MAIN SWITCHBOARD
MAINT	MAINTENANCE
MH	MANHOLE
MFR	MANUFACTURER
MAR	MARBLE
MK	MARK
MAS	MASONRY
MO	MASONRY OPENING
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
M-	MECHANICAL DRAWING-NO
MC	MEDICINE CABINET
MED	MEDIUM
MEMB	MEMBRANE
MET	METAL
MDS	METAL DIVIDER STRIP
MES	METAL EDGE STRIP
ML	METAL LATH
ML & PLAS	METAL LATH AND PLASTER
MT	METAL THRESHOLD
MET WP	METALLIC WATERPROOFING
MEZZ	MEZZANINE
MDOT	MICHIGAN DEPARTMENT OF TRANSPORTATION
MWK	MILLWORK
MIN	MINIMUM
MIR	MIRROR
M&S	MIRROR AND SHELF
MOD	MOTOR OPERATED DAMPER
MLDG	MOULDING
MTD	MOUNTED
MTG	MEETING/MOUNTING
MOV	MOVEABLE
MOV PARTN	MOVEABLE PARTITION
MULL	MULLION
M	THOUSAND (1000)
N	
NAT	NATURAL
NS	NEAR SIDE
NEUT	NEUTRAL
NRC	NOISE REDUCTION COEFFICIENT
NOM	NOMINAL
NOR	NORMAL
N	NORTH
NOS	NOSING
NIC	NOT-IN-CONTRACT
NTS	NOT-TO-SCALE
NO OR #	NUMBER
O	
OBS	OBSCURE
OBSGL	OBSCURE GLASS
OFF	OFFICE
OC	ON CENTER
OPQ	OPAQUE
OPG	OPENING
OPER	OPERATOR
OPP	OPPOSITE
OPP HD	OPPOSITE HAND
ORIG	ORIGINAL
ORN	ORNAMENTAL
OZ	OUNCE
O/O	OUT-TO-OUT
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OHS	OVAL HEAD SCREW
OA	OVERALL
OHD	OVERHEAD
OHDOR	OVERHEAD DOOR
OXY	OXYGEN
P	
PTD	PAINTED
PR	PAIR
PG	PAGE
PNL	PANEL
PTD	PAPER TOWEL DISPENSER
PTWR	PAPER TOWEL WASTE RECEPTACLE
PRL	PARALLEL
PKG	PARKING
PBD	PARTICLE BOARD
PRTN	PARTITION
PASS	PASSAGE
PAT	PATENT
PVMT	PAVEMENT
PVG	PAVING
PED	PEDESTAL
PERF	PERFORATED
PERIM	PERIMETER
PERM	PERMANENT
PERP	PERPENDICULAR
P	PHASE
PHOTO	PHOTOGRAPH
PH	PHYSICALLY HANICAPPED
PC	PIECE
PCS	PIECES
PLAS	PLASTER
PL LAM	PLASTIC LAMINATE
PL	PLATE
PL GL	PLATE GLASS
PLAT	PLATFORM
PLBG	PLUMBING
PLWD	PLYWOOD
PT	POINT
PT	POINT OF TANGENCY
PC	POINT OF CURVATURE
POL	POLISH/POLISHED
PVC	POLYVINYLCLORIDE
PORC	PORCELAIN
PORC ENAM	PORCELAIN ENAMEL
POR	POROUS
PORT	PORTABLE
POS	POSITION
PIV	POST INDICATOR VALVE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PCF	POUNDS PER CUBIC FOOT
PP	POWER PANEL
P/C	PRECAST
PTR	PRECAST TERRAZZO RECEPTOR
PREFAB	PREFABRICATED
PFN	PREFINISHED
PTWD	PRESERVATIVE TREATED WOOD
PG	PRESSURE GAUGE
PRV	PRESSURE REDUCING VALVE
PRIM	PRIMARY
PROJ	PROJECT/PROJECTION
PROP	PROPERTY/PROPOSED
PL	PROPERTY LINE
PA	PUBLIC ADDRESS
PS	PURSE SHELF
PB	PUSH BUTTON
Q	
QTY	QUANTITY
QT	QUARRY TILE
QTR	QUARTER
QTR RD	QUARTER ROUND
R	
RBT	RABBET
RAD or R	RADIUS
RWC	RAIN WATER CONDUCTOR
RR	RAILROAD
RECV	RECEIVE/RECEIVING
RECPT	RECEPTACLE
RP	RECEPTACLE PANEL
REC	RECESS
RECT	RECTANGLE/RECTANGULAR
RED	REDUCER
RWD	REDWOOD
REF	REFER/REFERENCE
REFL	REFLECTED/REFECTIVE
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCE/REINFORCING/ REINFORCEMENT
REM	REMOVE/REMOVABLE
REP	REPAIR
REQ'D	REQUIRED
RESIL	RESILIENT
RET	RETURN
PA	RETURN AIR
RAD	RETURN AIR DIFFUSER
RAF	RETURN AIR FAN
REV	REVISED/REVISION
RPM	REVOLUTIONS PER MINUTE
R	RISER
RH	RIGHT HAND
RHRB	RIGHT HAND REVERSE BEVEL
ROW	RIGHT OF WAY
RVT	RIVET
RD	ROAD
RSC	ROLLING STEEL CURTAIN
RF	ROOF
RC	ROOF CONDUCTOR
RD	ROOF DRAIN
RFH	ROOF HATCH
RS	ROOF SUMP
RV	ROOF VENTILATOR
RFG	ROOFING
RTU	ROOF TOP UNIT
RM	ROOM
RO	ROUGH OPENING
RND	ROUND
RHMS	ROUND HEAD MACHINE SCREW
RHWS	ROUND HEAD WOOD SCREW
RT	RUBBER TILE
S	
SAN	SANITARY
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
SCHED	SCHEDULE
SCN	SCREEN
STG	SEATING
SECT	SECTION
SERV	SERVICE
SS	SERVICE SINK
SHTHG	SHEATHING
SHT	SHEET
SHT MET	SHEET METAL
SH & R	SHELF AND ROD
SHWR	SHOWER
SCR	SHOWER CURTAIN ROD
SDR	SHOWER DOOR
SW	SIDEWALK
SIM	SIMILAR
SGL	SINGLE
SK	SINK
SD	SOAP DISPENSER
SC	SOLID CORE
SS	SOLID SURFACE
STC	SOUND TRANSMISSION CLASS
S	SOUTH
SP	SPACE
SPR	SPARE
SPKR	SPEAKER
SPEC	SPECIFICATIONS
SD	SPLITTER DAMPER
SPRYD	SPRAYED
SPKLR	SPRINKLER
SQ	SQUARE
SF	SQUARE FEET/SQUARE FOOT
STAG	STAGGERED
STSTL	STAINLESS STEEL
STD	STANDARD
S	
SP	STANDPIPE
SP	STATIC PRESSURE
STA	STATION
STM	STEAM
STL	STEEL
STL PL	STEEL PLATE
STIFF	STIFFENER
STO FR	STOREFRONT
STOR	STORAGE
STR	STRAIGHT
ST	STREET
STRUCT	STRUCTURAL
S-	STRUCTURAL DRAWING-NO
SGFT	STRUCTURAL GLAZED FACING TILE
SSTL	STRUCTURAL STEEL
SSD	SUBSOIL DRAIN
SSDC	SUBSOIL DRAIN CONNECTION
SUB	SUBSTATION
SAG	SUPPLY AIR GRILLE
SD	SUPPLY DIFFUSER/DUCT
SUBST	SUBSTITUTE
SAR	SUPPLY AIR REGISTER
SF	SUPPLY FAN
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMBOL/SYMMETRICAL
SYS	SYSTEM
SUPP	SUPPORT
SURF	SURFACES/SURFACING
SUSP	SUSPEND/SUSPENSION
T	
TBD	TACKBOARD
TAN	TANGENT
TECH	TECHNICAL
TEL	TELEPHONE
TEL CAB	TELEPHONE CABINET
TV	TELEVISION
TVM	TELEVISION MONITOR
TEMP	TEMPERATURE
TEMP GL	TEMPERED GLASS
TU	TERMINAL UNIT
TERR	TERRAZZO
TB	TEST BORING
T	THERMOSTAT
THK	THICK/THICKNESS
TS	THICKENED SLAB
THD	THREAD
THRESH	THRESHOLD
THRU	THROUGH
T/TOIL	TOILET
TPD	TOILET PAPER DISPENSER
TPH	TOILET PAPER HOLDER
T & G	TOUNGE AND GROOVE
T & B	TOP AND BOTTOM
T/C	TOP OF CURB
T/EL	TOP ELEVATION
T/F	TOP OF FOOTING
T/G	TOP OF GUTTER
T/M	TOP OF MASONRY
T/P	TOP OF PARAPET
T/P	TOP OF PAVEMENT
T/R	TOP OF RIM
T/S	TOP OF STEEL
T/W	TOP OF WALL
TB	TOWEL BAR
TD	TOWEL DISPENSER
TD & WR	TOWEL DISPENSER AND WASTE RECEPTACLE
TG	TRANSFER GRILLE
TRFR	TRANSFORMER
TRAN	TRANSOM
T	TREAD
TD	TRENCH DRAIN
TS	TUBE SECTION
TV	TURNING VANE
TT	TWIN TEE
TYP	TYPICAL
U	
UC	UNDERCUT
UG	UNDER GROUND
UL	UNDERWRITERS LABORATORY
ULT	ULTIMATE
UNFIN	UNFINISHED
UH	UNIT HEATER
USUB	UNIT SUBSTATION
UV	UNIT VENTILATOR
USGS	UNITED STATES GEOLOGICAL SURVEY
UON	UNLESS OTHERWISE NOTED
UR	URINAL
V	
VAC	VACUUM
VB	VACUUM BREAKER
VCO	VACUUM CLEANER OUTLET
V BARR	VAPOR BARRIER
VAR	VARIABLE
VARN	VARNISH
VNR	VENEER
V PLAS	VENEER PLASTER
V	VENT
VTR	VENT THRU ROOF
VENT	VENTILATE/VENTILATION
VIF	VERIFY IN FIELD
VS	VERSUS
VERT	VERTICAL/VERTICALLY
VERT C	VERTICAL CURVE
VEST	VESTIBULE
VI	VIBRATION ISOLATOR
VINY	VINYL
VCT	VINYL COMPOSITION TILE
VIN FAB	VINYL FABRIC
VRS	VINYL REDUCER STRIP
VIT	VITREOUS
VCP	VITRIFIED CLAY PIPE
VOL	VOLUME
VD	VOLUME DAMPER
V	VOLTS
W	
WAINS	WAINSCOT
WCAB	WALL CABINET
WCO	WALL CLEAN OUT
WH	WALL HYDRANT
WW	WALL-TO-WALL
WV	WALL VENT
WHSE	WAREHOUSE
WF	WASH FOUNTAIN
W	WASTE/WATTS
W & V	WASTE AND VENT
WR	WASTE RECEPTACLE
WC	WATER CLOSET
WG	WATER GUAGE
WH	WATER HEATER
WP	WATERPROOFING
WSTPG	WEATHERSTRIPPING
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W	WEST
WB	WET BULB
W	WIDE/WIDTH
W_x_	WIDE FLANGE SECTION
WT	WIDE FLANGE TEE SECTION
WO	WINDOW OPENING
WGL	WIRE GLASS
WM	WIRE MESH
w/	WITH
w/o	WITHOUT
WD	WOOD
WL	WORK LINE
WP	WORK POINT
WI	WROUGHT IRON
X	
Y	
YD	YARD
YP	YIELD POINT
YS	YIELD STRENGTH
YR	YEAR
Z	
ZC	ZINC

TYPICAL MOUNTING HEIGHTS

MISCELLANEOUS ACCESSORIES, TOILET ACCESSORIES AND FIXTURES

NOTE: MOUNTING HEIGHTS SHOWN ARE PROPOSED FOR ALL ACCESSORIES AND FIXTURES REQUIRED UNLESS OTHERWISE NOTED OR DIMENSIONED ON DRAWINGS FOR SPECIFIC CONDITIONS (BF - DENOTES ACCESSIBLE BARRIER FREE REQUIREMENTS)



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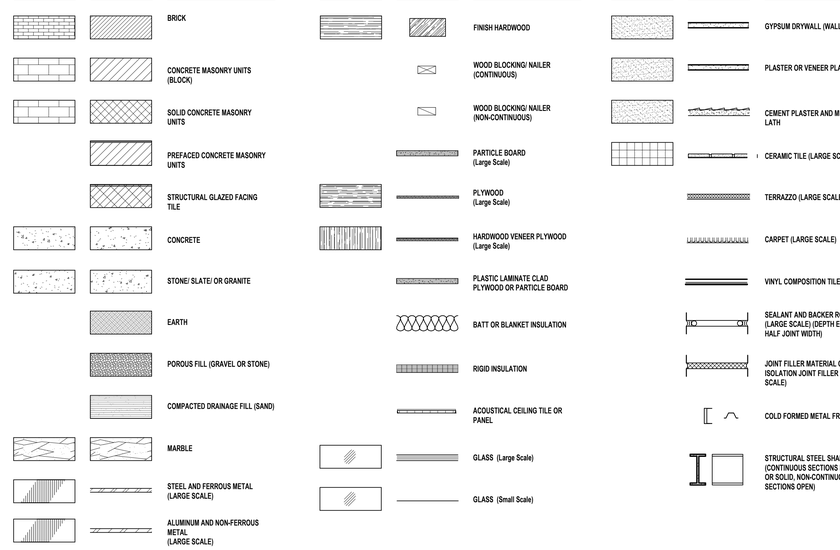
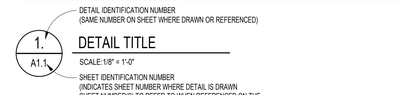


REFERENCE

DETAIL



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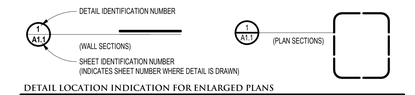

DETAIL IDENTIFICATION NUMBER
1
A1.1
(WALL SECTIONS)
SHE

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

SYMBOL	DESCRIPTION
X (NL)	X DENOTES FIXTURE TYPE (NL INDICATES NIGHT LIGHT)
	LIGHTING FIXTURE
	DIRECT/INDIRECT LIGHTING FIXTURE
	FILL DENOTES EMERGENCY LIGHTING FIXTURE
	LIGHTING FIXTURE
	WALL MOUNTED LIGHTING FIXTURE
	LIGHTING FIXTURE
	RECESSED OR SURFACE MOUNTED DIRECTIONAL LIGHTING FIXTURE
	PENDANT LIGHTING FIXTURE
	WALL SCONCE
	LIGHTING TRACK
	TRACK LIGHTING FIXTURE
	POLE MOUNTED LIGHTING FIXTURE
	POLE MOUNTED LIGHTING FIXTURE - POST TOP
	BOLLARD LIGHTING FIXTURE
	EMERGENCY LIGHTING UNIT
	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)
	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)
	EXIT LIGHTING FIXTURE - WALL MOUNTED
	EXIT/EMERGENCY LIGHTING COMBO
ALCR	AUTOMATIC LOAD CONTROL RELAY
BCELTS	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
LC	LIGHTING CONTROL DEVICE - REFER TO LIGHTING CONTROL SCHEDULE
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
D	DIMMER SWITCH
DO	DIMMER OCCUPANCY SENSOR SWITCH
DL	LOW VOLTAGE DIMMER SWITCH
D3	3 WAY DIMMER SWITCH
SP	PILOT SWITCH

SYMBOL	DESCRIPTION
TWC	TWO-WAY COMMUNICATION SYSTEM CALL STATION
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 ANNUNCIATOR PANEL
ATS	AUTOMATIC TRANSFER SWITCH
UPS	UNINTERRUPTIBLE POWER SUPPLY
CSX	LOW VOLTAGE CONTROL STATION "X" INDICATES TYPE
X	SINGLE / DUPLEX RECEPTACLE OUTLET "X" INDICATES TYPE
	SINGLE / DUPLEX RECEPTACLE OUTLET CONTROLLED BY AUTOMATIC CONTROL DEVICE / SYSTEM
	QUAD RECEPTACLE OUTLET
HH	ABOVE COUNTER DUPLEX RECEPTACLE OUTLET (SIMILAR FOR TAMPER RESISTANT, CONTROLLED, QUADS, EMERGENCY, UPS, USB, AND GFCI RECEPTACLE OUTLETS)
X	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
X	USB 4 PORT CHARGING STATION
X	CEILING MOUNTED DUPLEX / QUAD RECEPTACLE OUTLET
	MULTI-OUTLET SURFACE RACEWAY
	POWER POLE
	WALL / CEILING MOUNTED SPECIAL RECEPTACLE OUTLET - REFER TO ELECTRICAL STANDARD SCHEDULES
"X"	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
S3	DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
S3S3	3-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
S4S4	4-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
ST	DIGITAL TIME SWITCH
SI	ILLUMINATED TOGGLE SWITCH FOR CONTROL OF LIGHTING ON CRITICAL POWER-ILLUMINATED WHEN SWITCH IS IN "OFF" POSITION
SL	LOW VOLTAGE SWITCH
SO	OCCUPANCY SENSOR
SO2	OCCUPANCY SENSOR - REFER TO ELECTRICAL STANDARD SCHEDULE
OS X	OCCUPANCY SENSOR - REFER TO ELECTRICAL STANDARD SCHEDULES - "X" INDICATES TYPE

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
	HANDHOLE
X	CONDUIT SLEEVE WITH BUSHINGS LENGTH AS REQUIRED "X" INDICATES CONDUIT SIZE
	CONDUIT UP
	CONDUIT DOWN
	EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET MOUNTED 8" ABOVE COUNTERTOP
	EMPTY BOX FOR FUTURE CEILING MOUNTED TELECOMMUNICATION OUTLET
X	TELECOMMUNICATION OUTLET "X" INDICATES TYPE
X	TELECOMMUNICATION OUTLET MOUNTED 8" ABOVE COUNTERTOP "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
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
	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

REFER TO ELECTRICAL STANDARD SCHEDULES

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	SECURITY 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
PRM	PHASE ROTATION MONITOR
	CAMLOK - MALE
	CAMLOK - FEMALE
TDR	TIME DELAY RELAY
	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

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)
TD	THERMAL DETECTOR
BD	PROJECTED BEAM DETECTOR
F	FIRE ALARM BELL
F	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE
XX	FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
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
IM	ADDRESSABLE MONITORING MODULE
CM	ADDRESSABLE CONTROL MODULE
TS	TAMPER SWITCH
FS	FLOW SWITCH
DR	MAGNETIC DOOR RELEASE
	BRANCH CIRCUIT PANEL BOARD
	LOAD CENTER
	MOTOR CONTROL CENTER
T	TRANSFORMER
	DISTRIBUTION PANEL
GB	ELECTRICAL GROUNDING BUS BAR
PB	PLUG IN BUSWAY
FB	FEEDER BUSWAY

ELECTRICAL DRAWING INDEX

SHEET NO.	SHEET TITLE
E0.1	ELECTRICAL STANDARDS AND DRAWING INDEX
E5.1	ONE LINE DIAGRAM

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
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

ABBREVIATION	DESCRIPTION
JB	JUNCTION BOX
KA	THOUSAND AMP
KV	KILOVOLT
KVA	KILOVOLT - AMPERES
KW	KILOWATT
KWH	KILOWATT - HOURS
LA	LIGHTING 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

ABBREVIATION	DESCRIPTION
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
TTP	TELEPHONE TERMINAL BACKBOARD
TYP	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
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

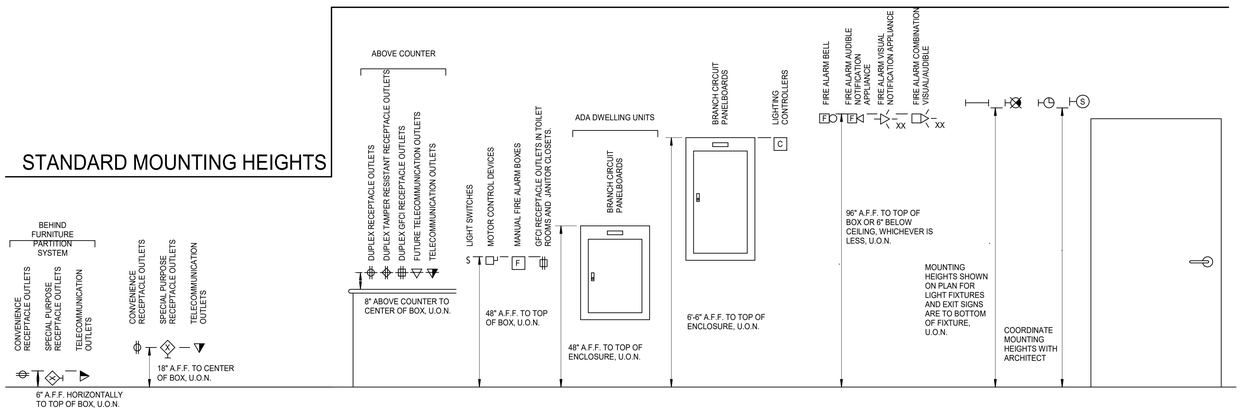
- 1 — CONSTRUCTION KEY NOTE (NUMBER) OR DEMOLITION KEY NOTE (LETTER)
- EF 1 — EQUIPMENT DESIGNATION. (i.e. EXHAUST FAN NUMBER 1)
- 123 — FOOD SERVICE EQUIPMENT TAG
- 1 E7.1 — SECTION NUMBER; SHEET ON WHICH SECTION IS DRAWN
- AREA OF ENLARGEMENT
- 1 E6.1 — PLAN NUMBER; SHEET ON WHICH ENLARGED PLAN IS DRAWN
- 1 E3.1 — SECTION OR PLAN NUMBER

SECTION OR ENLARGED PLAN

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

- SHEET E1.0 / SHEET E1.1 — SHEET ON WHICH SECTION IS DRAWN (ENLARGED PARTIAL PLAN SIMILAR); MATCH LINE
- HEAVY LINE WEIGHT INDICATES NEW WORK
- LIGHT LINE WEIGHT INDICATES EXISTING EQUIPMENT OR REFERENCED INFORMATION
- GRAY LINE INDICATES BACKGROUND INFORMATION
- THIN GRAY LINE INDICATES CEILING GRID
- DASHED LINES INDICATE CONDUIT ROUTED IN OR BELOW SLAB OR GRADE
- HATCH MARKS INDICATE EQUIPMENT OR MATERIALS TO BE DISCONNECTED AND REMOVED.
- CIRCUIT HOMERUN
- DUCT BANK - CONCRETE ENCASED / DIRECT BURIED; • IN USE ◦ SPARE

STANDARD MOUNTING HEIGHTS



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PBA Project No.: 2023.0154

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03C

Troy School District
TROY, MI

DRAWING TITLE

ELECTRICAL STANDARDS AND DRAWING INDEX

ISSUE DATES

DATE:	ISSUED FOR:
11-14-2023	PRE-PURCHASE PACKAGE

DRAWN	BAG
CHECKED	BAG
APPROVED	STP

PROJECT NO.

22102

DRAWING NO.

E0.1

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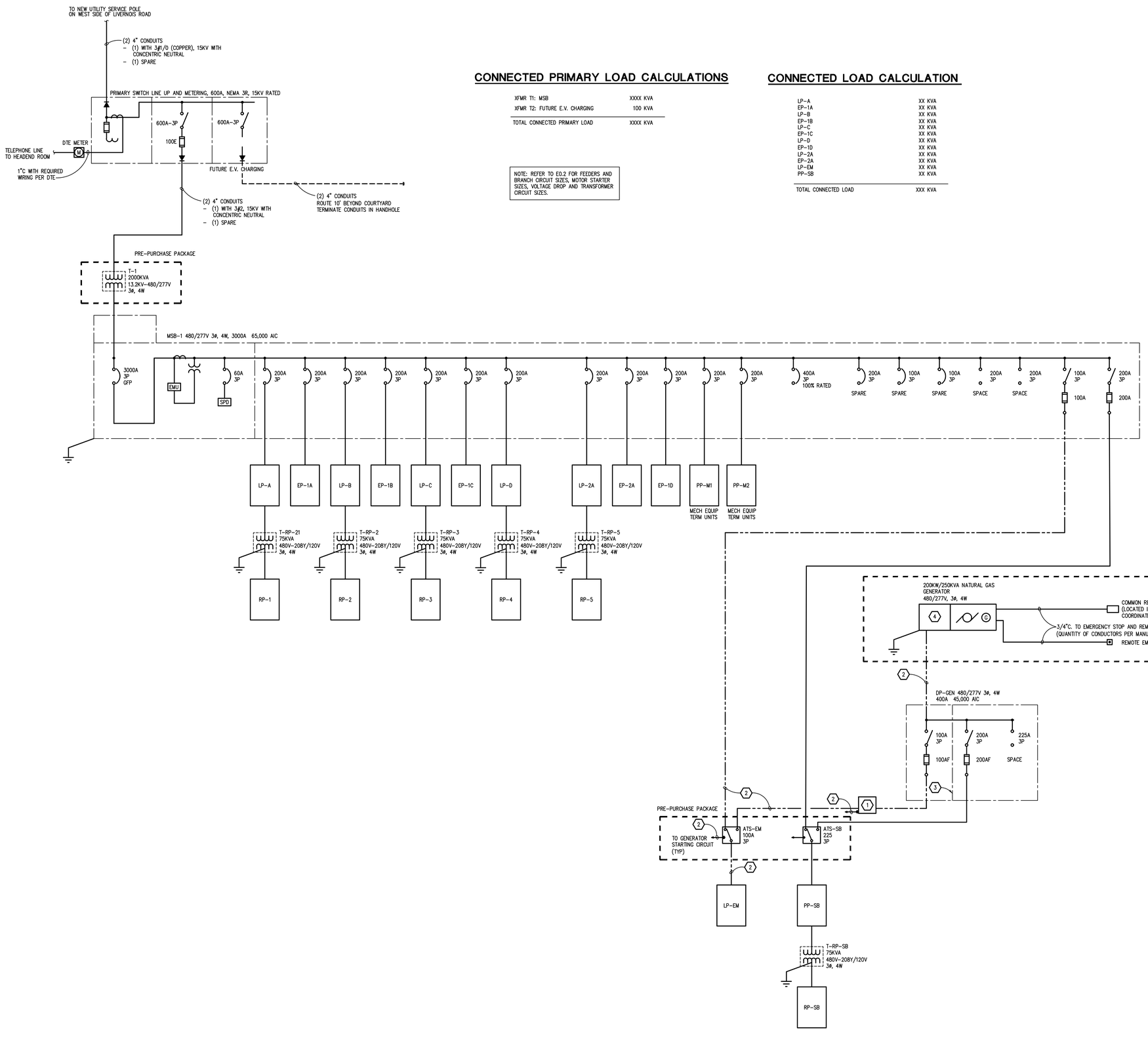

CONNECTED PRIMARY LOAD CALCULATIONS

XFMR T1: MSB	XXXX KVA
XFMR T2: FUTURE E.V. CHARGING	100 KVA
TOTAL CONNECTED PRIMARY LOAD	XXXX KVA

NOTE: REFER TO E0.2 FOR FEEDERS AND BRANCH CIRCUIT SIZES, MOTOR STARTER SIZES, VOLTAGE DROP AND TRANSFORMER CIRCUIT SIZES.

CONNECTED LOAD CALCULATION

LP-A	XX KVA
EP-1A	XX KVA
LP-B	XX KVA
EP-1B	XX KVA
LP-C	XX KVA
EP-1C	XX KVA
LP-D	XX KVA
EP-1D	XX KVA
LP-2A	XX KVA
EP-2A	XX KVA
LP-EM	XX KVA
PP-SB	XX KVA
TOTAL CONNECTED LOAD	XXX KVA

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 TRANSFER SWITCHES. IF THE CONTRACTOR ELECTS TO PROVIDE 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.
6. SELECTIVE COORDINATION (PER NEC ARTICLES 517.31(G), 700.32 AND 701.27) IS BASED ON SQUARE D DISTRIBUTION EQUIPMENT AND ASCO TRANSFER SWITCHES. ELECTRICAL CONTRACTOR SHALL SUBMIT SELECTIVE COORDINATION STUDY WITH TIME CURRENT CHARACTERISTIC CURVES (AND TABLES FOR TESTED PAIR INSTANTANEOUS COORDINATION) FOR THE EMERGENCY SYSTEMS. ELECTRICAL CONTRACTORS SHALL RECEIVE APPROVED SHOP DRAWINGS BACK FROM ENGINEER OF RECORD PRIOR TO PURCHASING OR INSTALLING ANY ELECTRICAL DISTRIBUTION EQUIPMENT. BREAKERS MUST BE COORDINATED WITH AUTOMATIC TRANSFER SWITCHES 3-CYCLE WITHSTAND RATING. ALTERNATE MANUFACTURERS SHALL MEET SELECTIVE COORDINATION CRITERIA AT NO ADDITIONAL COST TO THE PROJECT.
7. VARIABLE FREQUENCY CONTROLLERS (VFC) FURNISHED BY MECHANICAL TRADES. ELECTRICAL CONTRACTOR SHALL INSTALL VFC, PROVIDE POWER FEEDER FROM DISTRIBUTION EQUIPMENT TO VFC AND PROVIDE POWER FEEDER FROM VFC TO MOTOR. REFER TO SPECIFICATIONS FOR APPLICATION OF VFC POWER CABLE FROM VFC TO MOTOR.

CONSTRUCTION KEY NOTES:

1. PROVIDE NEMA 3R, 200A 3 POLE, 480Y/277V, 3 PHASE PORTABLE GENERATOR DOCKING STATION WITH INTEGRAL MANUAL TRANSFER SWITCH, OVER CURRENT PROTECTION, CAM-LOC CONNECTIONS, PHASE ROTATION MONITOR, GENERATOR START CONTACTS. MANUFACTURER SHALL BE TRYSTAR.
2. LISTED 2 HOUR FIRE-RATED CONDUIT AND CABLING ASSEMBLY PER 700.10(D)(1).
3. SEPARATE VERTICAL SECTIONS PER 700.10(B)(5).
4. PROVIDE GENERATOR PROTECTION RELAYS.

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PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03C

Troy School District
Troy, Michigan

DRAWING TITLE

ONE LINE DIAGRAM

ISSUE DATES

DATE:	ISSUED FOR:
11-14-2023	PRE-PURCHASE PACKAGE

DRAWN	BAG
CHECKED	BAG
APPROVED	STP

PROJECT NO.

22102

DRAWING NO.

E5.1

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