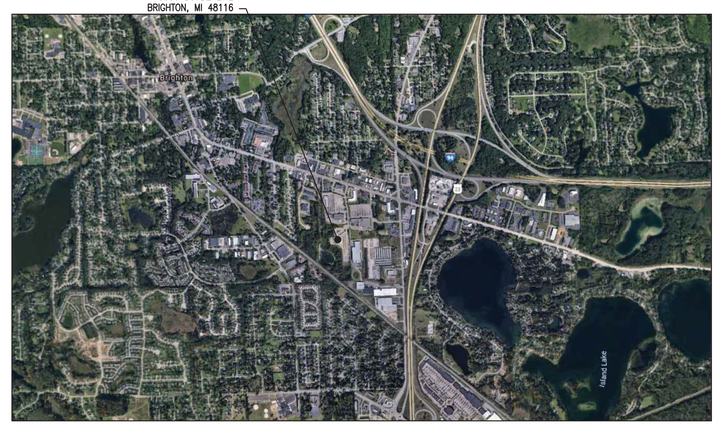
BRIGHTON AREA SCHOOLS
Brighton, Michigan

Maintenance Building - 2020 Bond Projects



LOCATION MAP N
NO SCALE

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IDI Project No: 18-785

FOR CONSTRUCTION: 5-26-20

ABBREVIATIONS

CIVIL

ABUT.	ABUTMENTS
AGG.BSE.CSE.	AGGREGATE BASE COURSE
ASPH.	ASPHALT
B TO B	BACK TO BACK OF CURB
B/C	BACK OF CURB
BIT.	BITUMINOUS
B.M.	BENCH MARK
BR.	BRIDGE
B.S.	BACKSLOPE
C	CENTERLINE
C.	CUT (PROFILE ONLY)
C.B.	CATCH BASIN
C–C	CENTER TO CENTER
CEN.	CENTER
C & G	CURB AND GUTTER
CIP	COMPACTED IN PLACE
C.I.P.	CAST IRON PIPE
C.M.P.	CORRUGATED METAL PIPE
C.O.	SANITARY SEWER CLEANOUT
CO.	COUNTY
COMB.	COMBINED
COMP.	COMPACTED
CONC.	CONCRETE
CONST.	CONSTRUCT
COR.	CORNER
CORR.	CORRUGATED
CR.	CREEK
C.S.P.	CORRUGATED STEEL PIPE
CULV.	CULVERT
CYD	CUBIC YARDS
D.	DEGREE OF CURVE
DEFL.	DEFLECTION
DEP.	DEPENDENT DITCH
DET.	DETAIL
D.I.P.	DUCTILE IRON PIPE
DR.	DRIVE
DWY.	DRIVEWAY
E.	EXTERNAL TO CURVE
E.G.	EARTHGRADE
EL.	ELEVATION
ELEC.	ELECTRIC
EMB.	EMBANKMENT
ENG.	ENGINEER
ENC.	ENCASED
EXIST.	EXISTING
EXC.	EXCAVATION
EXP.	EXPANSION
F.	FILL (PROFILE ONLY)
F.A.	FEDERAL AID
F.B.	FLAT BOTTOM
F/C	FACE CURB
F–F	FACE TO FACE OF CURB
FL.	FLOOR
F.L.	FLOW LINE
F.S.	FORE SLOPE
FT.	FOOT/FEET
FTG.	FOOTING
G.D.E.	GRADE
G.I.	GRADE INSPECTION
G.S.	GRADE SEPARATION
G.R.	GUARD RAIL
HDW.	HEADWALL
H.W.	HIGH WATER
HWY.	HIGHWAY
HYD.	HYDRANT
I.E.	INVERT ELEVATION
I.G.L.D.	INTERNATIONAL GREAT LAKES DATUM
I.L.	INLET
IN	INCH
IND.	INDEPENDENT DITCH
INSP.	INSPECTION (INSPECTOR)
INTER.	INTERSECTION
L.	LENGTH OF CURVE
LB.	POUND
LEV.CSE.	LEVEL COURSE
LFT	LINEAL FEET
L.M.	LOOSE MEASURE
L.W.	LOW WATER
MAINT.	MAINTENANCE
M.H.	MANHOLE
MON.	MONUMENT
N.G.V.D.	NATIONAL GEODETIC VERTICAL DATUM
N.W.	NORMAL WATER
O.H.	OVERHEAD
PAV'T.	PAVEMENT
P.C.	POINT OF CURVATURE
P.C.C.	POINT OF COMPOUND CURVATURE
P.I.	POINT OF INTERSECTION
P.L.	PROPERTY LINE
P.P.	POWER POLE
P.O.T.	POINT OF TANGENT
P.R.C.	POINT REVERSE CURVATURE
PROJ.	PROJECT
PROP.	PROPERTY
PROP.	PROPOSED
P.T.	POINT OF TANGENCY
P.V.C.	POINT VERTICAL CURVATURE
P.V.I.	POINT VERTICAL INTERSECTION
P.V.T.	POINT VERTICAL TANGENCY
R.B.	ROUND BOTTOM
R.C.P.	REINFORCED CONCRETE PIPE
RDY.	ROADWAY
R.E.C.P.	REINFORCE ELLIPTICAL CONCRETE PIPE
REINF.	REINFORCING OR REINFORCEMENT
ROW	RIGHT OF WAY
R.R.	RAILROAD
SALV.	SALVAGED
SAN.	SANITARY
SEC.	SECTION (LAND SURVEY)
SEW.	SEWER
S.G.	SUBGRADE
SHR.	SHRINKAGE
SHLD.	SHOULDER
SIG.	SIGNAL
SPEC.	SPECIAL
SPEC.	SPECIFICATIONS
SPEC.PROV.	SPECIAL PROVISIONS
SAN.	SANITARY SEWER
STD.SPEC.	STANDARD SPECIFICATIONS
ST.	STORM SEWER
SUB.	SUBBASE
SUPER ELEV.	SUPERELEVATION
SURF.	SURFACE
S.W.	SIDEWALK
T.	TANGENT
T/C	TOP CURB
T.CSE	TOP COURSE
T.L.	TRUNK LINE
TRANS.	TRANSMISSION
TWP.	TOWNSHIP
U.C.	UNDERCLEARANCE
U.G.	UNDERGROUND
UNIF.	UNIFORM
V.C.	VERTICAL CURVE
V.F.	VERTICAL FEET
VIT.	VITRIFIED
W.M.	WATER MAIN
W.S.	WATER SERVICE

ARCHITECTURAL

A.B.	ANCHOR BOLT
A/C	AIR CONDITIONING
ADD	ADDENDUM
ADH	ADHESIVE
ADJT	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AGG	AGGREGATE
AL	ALUMINUM
ALT	ALTERNATE
ANOD	ANODIZED
ARCH	ARCHITECTURAL
ASB	ASBESTOS
ASPH.	ASPHALT
AUTO	AUTOMATIC
AVE.	AVENUE
AV.	AVERAGE
BD	BOARD
BF	BOARD FEET
BIT	BITUMINOUS
BLDG.	BUILDING
BLK(G)	BLOCKING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BRK	BRICK
BRZ	BRONZE
BS	BOTH SIDES
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOFING
BVL	BEVELED
BW	BOTH WAYS
CAB	CABINET
C.B.	CATCH BASIN
CEM	CEMENT
CER	CERAMIC
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CFT	CUBIC FEET
CHAM	CHAMFER
C.I.	CAST IRON
CIR	CIRCLE
CIRC	CIRCUMFERENCE
CJ	CONTROL JOINT
CLG	CEILING
CLR	CLEAR
CK(G)	CAULKING
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
C.O.	CLEANOUT
COL	COLUMN
COMB	COMBINATION
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CONTR	CONTRACTOR
CORG	CORRUGATED
CORR	CORRIDOR
CRS	COURSE(S)
CPT	CARPET(ED)
CSMT	CASEMENT
CT	CERAMIC TILE
CTR	CENTER
CTSK	COUNTERSUNK SCREW
CYD	CUBIC YARD
DBL	DOUBLE
DEM	DEMOLISH
DEPT.	DEPARTMENT
DET.	DETAIL
D.F.	DRINKING FOUNTAIN
D.H.	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPENSER
DIV.	DIVISION
DL	DEAD LOAD
D.O.	DOOR OPENING
DO	DITTO
DP	DAMPPROOFING
DR	DRIVE
DRWG	DRAWING
DT	DRAIN TILE
DW	DUMBWAITER
DWR	DRAWER
E	EAST
EA	EACH
E.C.	ELECTRICAL CONTRACTOR
E.F.	EACH FACE
E.J.	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENGR	ENGINEER
E.O.	ELECTRICAL OUTLET
EQ	EQUAL
EQUIP	EQUIPMENT
ESC	ESCALATOR
EST	ESTIMATE
E.W.	EACH WAY
EWC	ELECTRIC WATER COOLER
EXC	EXCAVATE
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXPO	EXPOSED
EXS	EXISTING STRONG
EXT	EXTERIOR
F.A.	FIRE ALARM
F.B.	FACE BRICK
FBO	FINISHING BY OTHERS
F.D.	FLOOR DRAIN
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.F.L.	FINISHED FLOOR LINE
F.H.C.	FIRE HOSE CABINET
FOC	FACE OF CABINET
F.O.F.	FACE OF FINISH
FOM	FACE OF MASONRY
F.O.S.	FACE OF STUDS
FDN	FOUNDATION
FIN	FINISH
FLR	FLOOR
FLASH	FLASHING
FLUOR	FLUORESCENT
FP	FIREPROOF
FR	FRAME(D)(ING)
FS	FULL SIZE
FT	FOOT or FEET
FTG	FOOTING
FURR	FURR(ING)(ED)
FUT.	FUTURE
G	GUTTER
G.B.	GRAB BAR
G.C.	GENERAL CONTRACTOR
G.L.	GIRT LINE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GL	GLASS
GLB	GLASS BLOCK
GND	GROUND
GR	GRADE
GST	GLAZED STRUCTURAL TILE
GVL	GRAVEL
GYP	GYPSUM
HB	HOSEBIB
HBD	HARDBOARD
H.C.	HOLLOW CORE
H.M.	HOLLOW METAL
HDR	HEADER
HDW	HARDWARE
HK	HOOK
HORIZ	HORIZONTAL
H.R.	HANDRAIL
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING,VENTILATION,A/C
HWD	HARDWOOD
HWH	HOT WATER HEATER
I.D.	INSIDE DIAMETER
IN	INCHES
INCL	INCLUDE
INSUL	INSULATION
INT	INTERIOR
INTM	INTERMEDIATE
INV	INVERT
JAN	JANITOR
JC	JANITOR'S CLOSET
JST	JOIST
JT	JOINT
KIT	KITCHEN
KO	KNOCKOUT
KPL	KICKPLATE
LAB	LABORATORY
LAD	LADDER
LAM	LAMINATE
LAV	LAVATORY
LB	LOG BOLT
lb	POUND
LBL	LABEL
LH	LEFT HAND
LIN	LINEAR
LKR	LOCKER
L.L.	LIVE LOAD
L.O.A.	LENGTH OVERALL
LP	LIGHT PROOF
LPT	LOW POINT
L.S.	LICENSED SURVEYOR
LT	LIGHT
LTG	LIGHTING
LTL	LINTEL
LVR	LOUVER
LW	LIGHTWEIGHT
LWC	LIGHTWEIGHT CONCRETE
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MBR	MEMBER
M.C.	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MED	MEDIUM
MED	MEDICINE
MEM	MEMBRANE
MET	METAL
MEZZ	MEZZANINE
MFG	MANUFACTURING
MFR	MANUFACTURER
M.H.	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
M.O.	MASONRY OPENING
MOD	MODULAR
MOV	MOVABLE
MSRY	MASONRY
MTD	MOUNTED
MUL	MULLION
N	NORTH
NAT	NATURAL
N.I.C.	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
N.T.S.	NOT TO SCALE
O.A.	OVERALL
OBS	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFF	OFFICE
OH	OVERHEAD
OP	OPAQUE
OPG	OPENING
OPH	OPPOSITE HAND
OPP.	OPPOSITE
OPS	OPPOSITE SURFACE
PAR	PARALLEL
PART	PARTITION
PART BD.	PARTICLE BOARD
PB	PANIC BAR
PCC	PRECAST CONCRETE
pcf	POUNDS PER CUBIC FOOT
PCS	PIECES
PED	PEDESTAL
PERF	PERFORATE(D)
PERI	PERIMETER
PERM	PERMINATE
PERP	PERPENDICULAR
PFB	PREFABRICATE(D)
PFN	PREFINISHED
PG	PLATE GLASS
PK(G)	PARKING
P.L.	PROPERTY LINE
PL	PLATE
P.LAM.	PLASTIC LAMINATE
PLAS	PLASTER
PLF	POUNDS PER LINEAL FEET
PLYWD	PLYWOOD
PNL	PANEL
ONT	PAINT(ED)
PR	PAIR
PRF	PREFORMED
psf	POUNDS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
PT	POINT
P.T.D.	PAPER TOWEL DISPENSER
P.T.R.	PAPER TOWEL RECEPTACLE
PVMT	PAVEMENT
PWR	POWER
Q.T.	QUARRY TILE
R	RISER
RAD	RADIUS
R.B.	RUBBER BASE
R.D.	ROOF DRAIN
REF	REFERENCE
REFR	REFRIGERATOR
REINF	REINFORCED
REQ'D	REQUIRED
RES	RESILIENT
RET	RETURN
REV	REVISION
RFH	ROOF HATCH
RFG	ROOFING
RH	RIGHT HAND
RM	ROOM
R.O.	ROUGH OPENING
R.O.W.	RIGHT OF WAY
R.R.	RAILROAD
RVS	REVERSE SIDE
S	SOUTH
S.C.	SOLID CORE
SCH	SCHEDULE
SCT	STRUCTURAL CLAY TILE
S.D.	STORM DRAIN
SECT.	SECTION
SH	SHELF
SHO	SHOR(ING)(ED)
SHT	SHEET
SHTH	SHEATHING
SHWR	SHOWER
SIM	SIMILAR
SNT	SEALANT
SP	SOUNDPROOF
SPEC	SPECIFICATION
SPKR	SPEAKER
SPRKLR	SPRINKLER
SQ	SQUARE
S.S.	STAINLESS STEEL
SSR	SERVICE SINK
STA	STATION
STD	STANDARD
STG	SEATING
STL	STEEL
STOR	STORAGE
STRUCT.	STRUCTURAL
SUSP	SUSPENDED
SYM	SYMMETRICAL
SYS	SYSTEM
T.B.	TOWEL BAR
T.CONC.	TOP OF CONCRETE
TEL	TELEPHONE
TER	TERRAZZO
T&G	TONGUE AND GROOVE
THK	THICK
THR	THRESHOLD
TOL	TOLERANCE
TPD	TOILET PAPER DISPENSER
TPTN	TOILET PARTITION
T.PVMT	TOP OF PAVEMENT
TR	TREAD
T.SLAB	TOP OF SLAB
T.V.	TELEVISION
T.WALL	TOP OF WALL
TYP	TYPICAL
U.B.C.	UNIFORM BUILDING CODE
U.L.	UNDERWRITERS LABORATORIES
UNF	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
UR	URINAL
V.A.T.	VINYL ASBESTOS TILE
V.B.	VINYL BASE
VERT.	VERTICAL
VEST.	VESTIBULE
VNR	VENEER
VT	VINYL TILE
W.	WEST
W/	WITH
W.C.	WATER CLOSET
WD.	WOOD
WD	WOOD BASE
WGT	WEIGHT
W.H.	WALL HUNG
WI	WROUGHT IRON
WIN	WINDOW
W.M.	WIRE MESH
W/O	WITHOUT
WP.	WATERPROOF
WPT	WORKING POINT
WSCT.	WAINSCOT
W.W.F.	WELDED WIRE FABRIC

STRUCTURAL

ARCH	ARCHITECTURAL
B/	BOTTOM OF
BIT	BITUMINOUS
BM	BEAM
BRDG	BRIDGING
BRG	BEARING
C.J.	CONTROL/CONSTRUCTION JOINT
CANT	CANTILEVER
℄	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT(S)
COL	COLUMN
CONC	CONC
CONN	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE
db	BAR DIAMETER
ø	DIAMETER
DCA	DRILLED IN CONCRETE ANCHOR
DEMO	DEMOLISH/DEMOLITION
DIA	DIAMETER
DL	DEAD LOAD
DWL	DOWEL
E.F.	EACH FACE
E.W.	EACH WAY
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED
EQ	EQUAL
EXIST	EXISTING
FIN	FINISH
FLR	FLOOR
FND	FOUNDATION
FS	FAR SIDE
FTG	FOOTING
GA	GAGE
GALV	GALVANIZED
HK	HOOK
HORIZ	HORIZONTAL
I.R.	INSIDE RADIUS
INSUL	INSULATION
ISOL	ISOLATION
JG	JOIST GIRDER
JNT	JOINT
K	KIP(S) (1 KIP = 1000 lbs)
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG(S) HORIZONTAL
LLV	LONG LEG(S) VERTICAL
LOCS	LOCATIONS
MAS	MASONRY
MECH	MECHANICAL
MTL	METAL
NIC	NOT IN CONTRACT
NS	NEAR SIDE
O.C.	ON CENTER
O.H.	OPPOSITE HAND
O.R.	OUTSIDE RADIUS
OPNG	OPENING
PC	PIECE
P	PLATE
PREFAB	PREFABRICATED
PSI	POUNDS PER SQUARE INCH
R	RADIUS
REBAR	REINFORCING BAR
REINF	REINFORCE(D) (ING)
REQ'D	REQUIRED
SCHED	SCHEDULE
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SP	SPACE(D)
STD	STANDARD
STRUCT	STRUCTURAL
T&B	TOP AND BOTTOM
T/	TOP OF
T/S	TOP OF STEEL
TS	TUBE STEEL
TYP	TYPICAL
U.N.	UNLESS NOTED
USGS	UNITED STATES GEOLOGICAL SURVEY
VERT	VERTICAL
W.P.	WORK POINT
W/	WITH
WWF	WELDED WIRE FABRIC

MECHANICAL

AFF	ABOVE FINISH FLOOR
AP	ACCESS PANEL
AV	AIR VENT
B.A.C.	BUILDING AUTOMATED CONTROLS
BC	BALANCING COCK
BD	BALANCING DAMPER
BT	BATHTUB
C.	COMMON
CO	CLEANOUT
CV	CONTROL VALVE
DF	DRINKING FOUNTAIN
DG	DOOR GRILLE
E.C.	ELECTRICAL CONTRACTOR
EAT	ENTERING AIR TEMPERATURE
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
FA	FRESH AIR
FHC	FIRE HOSE CABINET
G.C.	GENERAL CONTRACTOR
IE	INVERT ELEVATION
L	LAVATORY
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MB	MOP BASIN
M.C.	MECHANICAL CONTRACTOR
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
OTCS	OPEN TO CEILING SYSTEM
RA	RETURN AIR
RD	ROOF DRAIN
S	SINK
SA	SHOCK ABSORBER
SH	SHOWER
SS	SERVICE SINK
TCC	TEMP CONTROL CENTER
TP	TEMP & PRESSURE TEST POINT
U	URINAL
U.C. 1"	UNDERCUT DOOR 1"
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WF	WASH FOUNTAIN

ELECTRICAL

AC	ALTERNATING CURRENT
AFF	ABOVE FINISH FLOOR
AFFF	AQUEOUS FILM FORMING FOAM
AHU	AIR HANDLING UNIT
A/C	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
ALT	ALTERNATE
AMP, A	AMPERE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL or ARCHITECT
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BD or BRD	BOARD
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
C or COND.	CONDUIT
CCT	CIRCUIT
CCT BKR	CIRCUIT BREAKER
CLG	CEILING
CNTL	CONTROL
COMB	COMBINATION
CONN	CONNECTION
CONSTR	CONSTRUCTION
CORR	CORRIDOR
CPL or ~	CYCLES PER SECOND
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DEV	DEVICES
DF	DRINKING FOUNTAIN
DIA or	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DIV	DIVISION
DWG	DRAWING
EF	EXHAUST FAN
ELEC	ELECTRIC or ELECTRICAL
EMER	EMERGENCY
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
EQUIP	EQUIPMENT
EST	ESTIMATE
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
EXP	EXPOSED
EXPL	EXPLOSION
EXT	EXTERIOR
FC	FOOT CANDLE
FDN	FOUNDATION
DIX	FIXTURE
FL or FLR	FLOOR
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FP	FIRE PROTECTION
GA	GAGE or GAUGE
GFI	GROUND FAULT INTERRUPTER
GND or GRND	GROUND
GOVT	GOVERNMENT
HP	HORSE POWER
HPS	HIGH PRESSURE SODIUM
HT	HEIGHT
IC	INTERCOM
ID	INSIDE DIAMETER
IES	ILLUMINATING ENGINEERING SOCIETY
INCAN	INCANDESCENT
JB	JUNCTION BOX
JCT	JUNCTION
K	KEY
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KW	KILOWATT
L	LUMEN
LD	LOAD
LDG	LOADING
LT	LIGHT
LTG	LIGHTING
MCA	MINIMUM CIRCUIT AMPS
MCM	THOUSAND CIRCULAR MILLS
MECH	MECHANICAL
MET	METAL
MFG	MANUFACTURING
MFF	MANUFACTURE
MG	MOTOR GENERATOR
MG	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MO	MOTOR
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
MV	MERCURY VAPOR
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELEC MANUFACTURERS ASSOC
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
NO	NORMALLY OPEN
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPNG	OPENING
OPS	OPERATIONS
P	PUMP
P	POLE
PA	PUBLIC ADDRESS
PBS	PUSH BUTTON STATION
PC	PHOTOCELL
PH	PHASE
PNL	PANEL
P.P.M.	PARTS PER MILLION
PR	PAIR
PRELIM	PRELIMINARY
PROJ	PROJECT
PWR	POWER
R or RSR	RISER
RCVR	RECEIVER
RECP	RECEPTACLE
RECEPT	RECEPTACLE
REFR	REFRIGERATOR
REM	REMOVABLE
REV	REVISIONS
RGE	RANGE
RLA	RATED LOAD AMPS
RM	ROOM
R.P.M.	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SHT	SHEET
SPEC	SPECIFICATIONS
SPKR	SPEAKER
STD	STANDARD
SURF	SURFACE
SUSP	SUSPENDED
SW	SWITCH
SWBD	SWITCHBOARD
TC	TIMECLOCK
TEL	TELEPHONE
TEMP	TEMPERATURE
TEMP	TEMPORARY
TERM	TERMINAL
TG;L	TOGGLE
TRANSF	TRANSFORMER
TSTAT	THERMOSTAT
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
UT	UTILITY
UTIL CO	UTILITY COMPANY
V	VOLT
W	WIRE
W/	WITH
WHM	WATTHOUR METER
W/O	WITHOUT
WP	WEATHER PROOF
XFMR	TRANSFORMER

MECHANICAL SYMBOL LEGEND

CONDENSATE OR EQUIPMENT DRAIN	D
CONDENSER SUPPLY	CS
CONDENSER RETURN	CR
REFRIGERANT LIQUID	RL
REFRIGERANT SUCTION	RS
LOW PRESSURE STEAM SUPPLY	
LOW PRESSURE STEAM RETURN	
MEDIUM PRESSURE STEAM SUPPLY	
MEDIUM PRESSURE STEAM RETURN	
HIGH PRESSURE STEAM SUPPLY	
HIGH PRESSURE STEAM RETURN	
INDICATION OF FLOW DIRECTION	
INDICATES PITCH DOWN	
PIPE ANCHORS	X X
PIPE GUIDES	
STORM SEWER LINES	
SANITARY VENT	V V
COLD WATER	
HOT WATER	
HOT WATER CIRCULATING	
HOT WATER SUPPLY	HWS
HOT WATER RETURN	HWR
CHILLED WATER SUPPLY	CWS
CHILLED WATER RETURN	CWR
FIRE SPRINKLER LINE	F
EXPANSION TANK LINE	XL
GAS	G
COMPRESSED AIR	CA
SANITARY SEWER LINES	

BUTTERFLY VALVE
GLOBE VALVE
GATE VALVE
BALL VALVE
CHECK VALVE
PLUG VALVE
THERMOSTAT / TEMP. SENSOR (T)
HUMIDISTAT / HUMIDITY SENSOR (H)
1–HR FIRE DAMPER
2–HR FIRE DAMPER
PRESSURE GAGE
THERMOMETER
DOOR GRILLE — DG
UNION
PRESSURE REDUCING VALVE
SAFETY RELIEF VALVE
UNDERCUT DOOR 1" — UC 1"
AUTOMATIC AIR VENT
GRILL, REGISTER, DIFFUSER — SIZE / CFM
PLUMBER RISER DIAGRAM — P
RADIATION — TYPE / LIN. FT. ELEMENT
MANUAL AIR VENT
FLEXIBLE PIPE CONNECTOR
HOSE END VALVE
BALANCING COCK
AUTOMATIC CONTROL VALVE
3–WAY CONTROL VALVE
STRAINER W/BLOW–OFF VALVE
WALL HYDRANT

ELECTRICAL SYMBOL LEGEND

LIGHT FIXTURES – NUMBER INDICATES CIRCUIT, LOWER CASE LETTER INDICATES SWITCH LEG, UPPER CASE LETTER INDICATES FIXTURE TYPE, SEE FIXTURE SCHEDULE. DARKENED SYMBOL INDICATES NIGHT LIGHT.

- A/1 a/b — FLUORESCENT RECESSED FIXTURE
- DOWN LIGHT OR INDUSTRIAL AS SCHEDULED
- SURFACE, CHAIN SUSPENDED OR INDIRECT PENDANT MOUNTED FLUORESCENT FIXTURE AS SCHEDULED
- SURFACE MOUNTED SQUARE LIGHT
- EXTERIOR AREA LIGHT
- EXTERIOR POLE MOUNTED FIXTURE
- $ — LIGHT SWITCH – SINGLE POLE UNLESS NOTED OTHERWISE, LOWER CASE LETTER INDICATES SWITCH LEG
  - 3 – THREE WAY SWITCH
  - K – KEYED SWITCH
- EXIT LIGHT
- EMERGENCY BATTERY LIGHT
- F — FIRE ALARM PULL STATION, MOUNT 48" A.F.F. TO TOP
- H — DOOR HOLDER/CLOSER
- F — HORN/STROBE LIGHT MOUNT 80" A.F.F. TO BOTTOM
- F — STROBE LIGHT, MOUNT 80" A.F.F. TO BOTTOM
- SD — SMOKE DETECTOR (D – DUCT MTD. TYPE)
- F — SPRINKLER SYSTEM FLOW SWITCH
- 1 — MOTOR SYMBOL, NUMBER INDICATES HORSEPOWER, F – FRACTIONAL HORSEPOWER
- DISCONNECT SWITCH, SIZE AND TYPE AS NOTED
  - N.F. – NON FUSED
- MOTOR STARTER
- MSS — MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD PROTECTION
- COMBINATION MOTOR STARTER/DISCONNECT DEVICE
- J — JUNCTION BOX (AS NOTED)
- A — SPECIAL PURPOSE RECEPTACLE, AS NOTED
- C — WALL MOUNTED CLOCK, AS SPECIFIED, MOUNT 8'–3" A.F.F. TO CENTER
- FLOOR MOUNTED RECEPTACLE OUTLET OR JUNCTION BOX AS NOTED.
- QUADRAPLEX RECEPTACLE
- DUPLEX RECEPTACLE
  - GFI – GROUND FAULT INTERRUPTER
  - WP – WEATHER PROOF COVER
- SIMPLEX RECEPTACLE
- COMMUNCIATION/DATA CABLE OUTLET.
- WIRELESS ACCESS POINT
- CCTV CAMERA
- I — INTERCOM STATION
- PANELBOARD; FLUSH MTD, SURFACE MTD
- CONDUIT NIPPLE (AS NOTED)
- SURFACE MOUNTED RACEWAY
- CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING
- CONDUIT RUN BELOW FLOOR SLAB OR GRADE
- HOMERUN TO PANELBOARD — CONDUIT, NEUTRAL, PHASE WIRE(S), GROUND WIRE, PANELBOARD (RLP–1), CIRCUIT(S) (2,4,6)

CODE

BRIGHTON AREA SCHOOLS

USE GROUP F–1; AUTOMOBILE AND MOTOR VEHICLES
OCCUPANCY IIB
NON–SPRINKLED
EXISTING BUILDING: 9,380 S.F. BUS BAYS
1,650 S.F. BUS WASH
PROPOSED: 5,062 S.F.

CODES:
2015 MICHIGAN BUILDING CODE
2015 MICHIGAN MECHANICAL CODE
2015 MICHIGAN PLUMBING CODE
2015 MICHIGAN ENERGY CODE
2017 NATIONAL ELECTRIC CODE

406.8 REPAIR GARAGES
406.1–406.8.6 VENTILATION, SURFACES, HEATING, GAS DETECTION

TABLE 504.3 ALLOWABLE BUILDING HEIGHT; 55 FT BUILDING HEIGHT
TABLE 504.4 ALLOWABLE NUMBER OF STORIES; 2

TABLE 506.2 ALLOWABLE AREA
F–1 NS 15,500 S.F.

TABLE 601 – TYPE II – 0 HRS, ALL CATEGORIES

TABLE 602 – 2 HOUR FIRE SEPARATION REQUIRED FOR F–1

TABLE 706.4 – FIRE WALL FIRE RESISTANCE RATING – 3 HR FOR F–1
706.5 HORIZONTAL CONTINUITY, EXCEPTION 1 AND 2
1. EXCEPTION 1: (1) HOUR, 4'–0" EACH SIDE OF WALL
2. EXCEPTION 2: TERMINATE AT NON–COMBUSTIBLE EXTERIOR SHEATHING (METAL PANELING EXISTING)

706.6 VERTICAL CONTINUITY, 30" ABOVE ROOF
1. EXCEPTION 3: WALLS TERMINATE AT UNDERSIDE OF NON–COMBUSTIBLE ROOF STRUCTURE WITH CLASS B

903.2.4 GROUP F–1
AUTOMATIC SPRINKLER SYSTEM, NOT REQUIRED
1. FIRE AREA DOES NOT EXCEEDS 12,000 S.F. (903.2.9.1)

1004 OCCUPANT LOAD CALCULATIONS
EXISTING AREA:
1,760 OFFICE
1,375 BUS WASH
5,460 AUTO REPAIR
800 STORAGE
1,025 EQUIPMENT MEZZANINE
2,735 MEZZANINE STORAGE

NEW AREA:
500 OFFICE
1,600 (800 NET) WOOD AND ASSEMBLY SHOP
2,540 AUTO REPAIR

TOTAL AREA:

2,360 OFFICE (1:100 GROSS)	24 OCC
1,375 BUS WASH (DRIVE THRU, NA)	0 OCC
8,000 AUTO REPAIR (1:300 GROSS)	27 OCC
800 WOOD / ASSEMBLY SHOP (1:50 NET)	16 OCC
800 STORAGE (1:300)	9 OCC
1,025 EQUIPMENT MEZZANINE (NA)	0 OCC
2,735 MEZZANINE STORAGE (1:300 GROSS)	10 OCC
TOTAL OCCUPANTS =	86 OCC

PLUMBING CALCULATIONS, MICHIGAN PLUMBING CODE TABLE 403.1:
OCCUPANTS:
TABLE 403.1 (F–1), 62 OCCUPANTS
WATER CLOSETS (1:100) = 1 REQUIRED PER SEX
LAVATORIES (1:100) = 1 REQUIRED PER SEX
DRINKING FOUNTAIN (1:400) = 1 REQUIRED
1 SERVICE SINK

TABLE 403.1 (B, BUSINESS FOR OFFICE AREA), 24 OCCUPANTS
WATER CLOSETS (1:25) = 1 REQUIRED PER SEX
LAVATORIES (1:40) = 1 REQUIRED PER SEX
DRINKING FOUNTAIN (1:100) = 1 REQUIRED
1 SERVICE SINK

PLUMBING FIXTURES PROVIDED/REQUIRED TOTAL

WOMEN, WATER CLOSETS	4 PROVIDED / 2 REQUIRED
MEN, WATER CLOSETS	2 PROVIDED / 2 REQUIRED
MEN, URINAL	1 PROVIDED / 0 REQUIRED
WOMEN, LAVATORIES	3 PROVIDED / 2 REQUIRED
MEN, LAVATORIES	2 PROVIDED / 2 REQUIRED
DRINKING FOUNTAIN	1 PROVIDED / 1 PROVIDED
DRINKING FOUNTAIN	1 PROVIDED / 1 REQUIRED
SERVICE SINK	1 PROVIDED / 1 PROVIDED

INDEX OF DRAWINGS

GENERAL NOTES

1. DO NOT SCALE DRAWINGS; USE FIGURED DIMENSIONS ONLY. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
2. FIELD VERIFY: ALL DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH WORK.
3. ENLARGED PLANS: WHERE ENLARGED OR PARTIAL PLANS ARE REFERENCED. DIMENSIONS, SPECIAL DETAILING, OR FINISH REQUIREMENTS ARE NOTED ON THE ENLARGED PLANS AND OMITTED ON THE SMALLER SCALE OR OVERALL PLANS.
4. EXPOSED WELDS: GRIND SMOOTH AND FIELD DRESS ALL WELDS TO REMAIN VISIBLE AND NOT CONCEALED BY OTHER FINISHES.
5. FIRE PROTECTION: FOR FIRE PROTECTION REQUIREMENTS OF STRUCTURAL FRAME AND ASSEMBLIES SEE U.L. ASSEMBLY RATING DESCRIPTION THIS SHEET OR DETAILS REFERENCED IN PLANS.
6. DOOR OPENINGS: REFERENCED IDENTIFICATION OF DOOR OPENINGS IS SCHEDULED BY THE CORRESPONDING ROOM NUMBER IN WHICH THE OPENING OCCURS OR GIVES ACCESS TO (DOOR SWING DIRECTION). IF MORE THAN ONE DOOR OCCURS IN A SPACE THE ADDITIONAL DOOR NUMBERS WILL BE FOLLOWED BY A SEQUENTIAL DECIMAL NUMBER.
7. WINDOW OPENINGS: REFERENCED IDENTIFICATION OF WINDOW OPENINGS IS SCHEDULED BY LOWER CASE LETTERS. SIMILAR WINDOWS ARE SCHEDULED BY THE SAME LETTER.
8. PARTITION STANDARD: IT IS INTENDED THAT THE FACE OF EVERY CONTINUOUS PARTITION BE FLUSH, WITHOUT OFFSETS, EVEN AT AN INTERMEDIATE CHANGE IN PARTITION THICKNESS. CHANGES IN PARTITION THICKNESS OCCUR ONLY AT INSIDE OR OUTSIDE CORNERS. THE FACES OF CORRIDOR WALLS MUST ALIGN WITHOUT OFFSETS (UNLESS GRAPHICALLY SHOWN OTHERWISE) ALONG THEIR ENTIRE LENGTH REGARDLESS OF INTERMEDIATE BREAKS OR INTERRUPTIONS. ALL ADJUSTMENTS DUE TO CHANGE IN PARTITION THICKNESS MUST OCCUR ON THE ADJOINING ROOM SIDE OF CORRIDOR PARTITIONS AT THE NEAREST INSIDE OR OUTSIDE CORNER.
9. ALL ELECTRICAL PANELS, FIRE EXTINGUISHER CABINETS, ETC., LOCATED IN RELATED PARTITIONS SHALL BE BACKED WITH GYPSUM BOARD AS REQUIRED TO RETAIN PARTITION RATING.
10. IN SPACES REQUIRING LEAD LINING, ALL WALL PENETRATIONS SHALL BE BACKED AND PROTECTED WITH LEAD SHIELDING TO MAINTAIN SHIELDING CONTINUITY.
11. INTERIOR DIMENSIONS ARE GENERALLY TO FACE OF GYPSUM BOARD AND TO CENTER LINE OF STEEL UNLESS SPECIFICALLY NOTED. ALL PUBLIC CORRIDOR DIMENSIONS ARE GIVEN IN CLEAR DIMENSIONS.
12. EXTEND ALL FIRE RATED PARTITIONS TIGHT TO DECK ABOVE AND FILL ALL VOIDS WITH SAFING MATERIALS OR GYPSUM BOARD MUDDING COMPOUND.
13. WHEN CONTRADICTIONS OCCUR BETWEEN PLANS AND SPECIFICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.

* SOME GENERAL NOTES ABOVE MAY NOT BE APPLICABLE TO PROJECT HEREIN.

GRAPHIC SYMBOLS

BUILDING SECTION/WALL SECTION
0 / A0.0 — INDICATES SECTION NUMBER; INDICATES NUMBER OF SHEET SECTION IS FOUND

DETAILS
0 / A0.0 — INDICATES DETAIL NUMBER; INDICATES NUMBER OF SHEET DETAIL IS FOUND

INTERIOR ELEVATION
0 / A0.0 (a, b) — NUMBER INDICATES ELEVATION & SHADING INDICATES INDICATES DIRECTION(S) OF VIEW; LETTER(S) DESIGNATE ELEV. WHERE MULTIPLE; INDICATES NUMBER OF SHEET ELEVATION IS FOUND

OTHER
0 — WALL TYPE
0 — REVISIONS
NAME / 000 — ROOM NAME & NUMBER
00.0 — DOOR NUMBER
a — WINDOW TYPE
0 — KEYNOTE

MARQUETTE OFFICE:
1021 W. BARAGA AVENUE
MARQUETTE, MI 49855
PHONE: (906)228-4480
FAX: (906)228-7524

BRIGHTON OFFICE:
8571 W. GRAND RIVER AVE., SUITE 600
BRIGHTON, MI 48816
PHONE: (810)229-2701
FAX: (810)229-6767

IDI INTEGRATED DESIGNS INC.
ARCHITECTURE
ENGINEERING
CONSULTING

BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	DESIGN DEV.	3-31-20
B	FINAL REVIEW	5-11-20
0	FOR CONSTRUCTION	5-26-20
-	-	-
-	-	-

	BY	DATE
DESIGN	-	-
DRAWN	-	-
CHECKED	-	-
APPROVED	-	-

INDEX

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I1.0

Topographical Survey

A Part of the Southwest 1/4 of Section 32
Town 2 North, Range 6 East
City of Brighton, Livingston County, Michigan

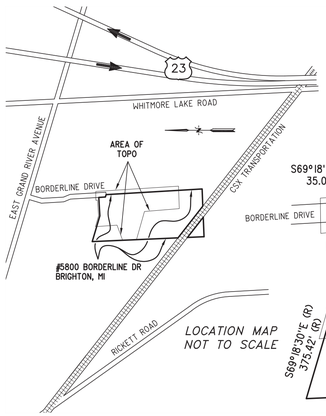
Brighton Area Schools
Transportation Center

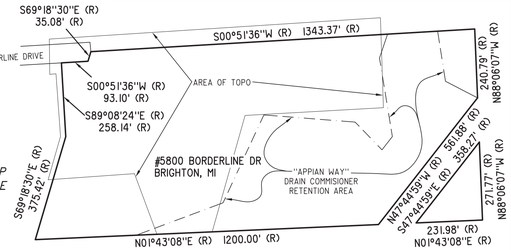
SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 feet

LEGAL DESCRIPTION OF RECORD
Reference: Tax Roll 2020 and as Depicted in Site Plans prepared by Greiner, Inc., File No. M9111, Revised Date: September 16, 1992.

Situated in the City of Brighton, County of Livingston and State of Michigan, and described as follows:

PARCEL No. 4718-32-300-022
Commencing at the Southwest Corner of Section 32, thence S88°06'07"E 1086.21 feet to the ***POINT OF BEGINNING;*** *thence along the Northerly line of C&O RR (100 foot wide) N47°44'59"W 561.88 feet; thence N01°43'08"E 1200.00 feet; thence S69°18'30"E 375.42 feet; thence S89°08'24"E 258.14 feet; thence S00°51'36"W 93.10 feet; thence S69°18'30"E 35.08 feet; thence S00°51'36"W 1343.37 feet; thence N88°06'07"W 240.79 feet to the Point of Beginning. Containing 20.42 acres of land, more or less.*
Also commencing at the Southwest Corner of Section 32; thence S88°06'07"E 660.00 feet to the ***POINT OF BEGINNING;*** *thence N01°43'08"E 231.98 feet to the Southerly Right Of Way of C&O RR (100 foot wide); thence S47°44'59"E 358.27 feet; thence N88°06'07"W 271.77 feet to the Point of Beginning. Being a part of the Southwest 1/4 of Section 32, Town 2 North, Range 6 East, City of Brighton, Livingston County, Michigan. Containing 0.72 acres of land, more or less. Subject to the rights of the public over that portion thereof occupied by Borderline Drive, also subject to and together with all easements and restrictions affecting title to the above described premises.*

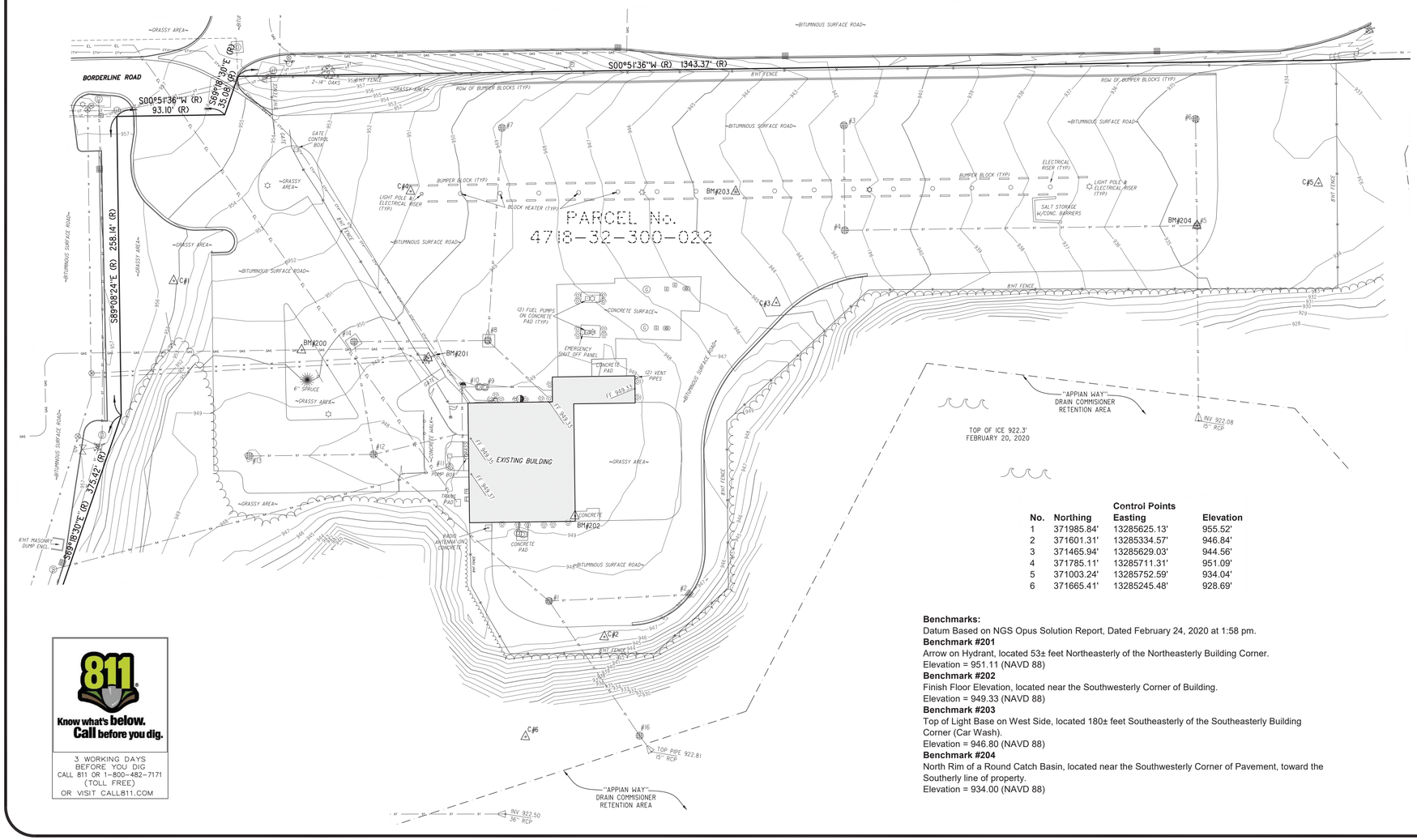




NOTES:
1) Horizontal control points coordinate values provided hereon are on grid North, Michigan coordinate system of 1983, South Zone (as defined in MCL 54.235a(c)) and have been obtained by GPS RTK observations. The NOAA/NGS published point (designated as AJ5553 (Brighton CORS)) has been used for locations determination. To convert from grid to ground coordinates apply Combined Scale Factor of 1.00012.
2) Elevations displayed hereon are related to North American Vertical Datum of 1988 and have been obtained by static GPS observations (NGS Opus Solution Report, Dated February 24, 2020 at 1:58 pm).
3) Parcel legal description has been obtained from available public records. Surveyor was not supplied with a Title Search at this time. Refer to the current policy for title insurance for proof of ownership and all encumbrances affecting title to the surveyed parcel. Parcel boundary lines depicted hereon are for informational purposes only; no boundary survey has been performed.
4) The locations of underground utility lines are based on field observations of the above ground structures, record drawings* and markings left by various utility companies. Actual locations of underground utilities/structures may vary from locations shown hereon. Additional buried utilities/structures may be encountered. No warranty is extended thereof as to accuracy and completeness of said underground utility lines.
   *Record Drawings by others:
   Mappings requested by the surveyor pursuant to an
   811 MissDig DESIGN Ticket Program, Ticket No. B000420773-00B:

AT & T	Responded with Mapping
City of Brighton	Responded with Mapping
Brighton Township	No Response as of yet
Green Oak Township	Responded - No Mapping at this time
Consumers Energy	Responded with Mapping
Comcast	Responded with Mapping
Detroit Edison	No Response as of yet
Livingston Community Water Authority	Responded - No Mapping at this time
Livingston County Drain Commission	Responded with Mapping (Appian Way)

   Site Plans prepared by Greiner, Inc., File No. M9111, Revised Date: Sept. 16, 1982
5) Property lies within Flood Zone X of Flood Hazard Area, as depicted on Flood Insurance Rate Map issued by Federal Emergency Management Agency, Map No. 26093C0345D, Effective date: September 17, 2008.



Control Points

No.	Northing	Easting	Elevation
1	371985.84'	13285625.13'	955.52'
2	371601.31'	13285334.57'	946.84'
3	371465.94'	13285629.03'	944.56'
4	371785.11'	13285711.31'	951.09'
5	371003.24'	13285752.59'	934.04'
6	371665.41'	13285245.48'	928.69'

Benchmarks:
Datum Based on NGS Opus Solution Report, Dated February 24, 2020 at 1:58 pm.
Benchmark #201
Arrow on Hydrant, located 53± feet Northeasterly of the Northeasterly Building Corner.
Elevation = 951.11 (NAVD 88)
Benchmark #202
Finish Floor Elevation, located near the Southwesterly Corner of Building.
Elevation = 949.33 (NAVD 88)
Benchmark #203
Top of Light Base on West Side, located 180± feet Southeasterly of the Southeasterly Building Corner (Car Wash).
Elevation = 946.80 (NAVD 88)
Benchmark #204
North Rim of a Round Catch Basin, located near the Southwesterly Corner of Pavement, toward the Southerly line of property.
Elevation = 934.00 (NAVD 88)

INVERTS

CATCH BASIN #1 – FLAT
NORTHERLY RIM 947.92
INVERTS
SOUTHWESTERLY 15" RCP 938.41
SOUTHERLY 12" RCP 938.81
NORTHEASTERLY 15" RCP 938.51

CATCH BASIN #2
ROAD SIDE RIM 947.05
INVERTS
NORTHERLY 12" RCP 939.40

CATCH BASIN #3 – FLAT
SOUTHERLY RIM 941.33
INVERTS
WESTERLY 12" RCP 937.33

CATCH BASIN #4 – FLAT
SOUTHERLY RIM 941.30
INVERTS
EASTERLY 12" RCP 936.90
SOUTHERLY 12" RCP 936.85

CATCH BASIN #5 – FLAT
NORTHERLY RIM 934.00
INVERTS
NORTHERLY 12" RCP 927.97
EASTERLY 12" RCP 928.50
WESTERLY 15" RCP 927.85

CATCH BASIN #6 – FLAT
NORTHERLY RIM 933.96
INVERTS
WESTERLY 12" RCP 929.41

CATCH BASIN #7 – FLAT
SOUTHERLY RIM 948.74
INVERTS
WESTERLY 12" RCP 944.16

CATCH BASIN #8 – FLAT
NORTHERLY RIM 947.92
INVERTS
EASTERLY 12" RCP 943.12
SOUTHWESTERLY 12"RCP 943.22
NORTHERLY 12" RCP 942.92

GRIT CHAMBER LID #9
NORTHERLY RIM 949.03
INVERTS
SOUTHERLY 6" PVC 947.08

GRIT CHAMBER LID #10
NORTHERLY RIM 949.02
INVERTS
NORTHERLY 6" PVC * 945.50
6" PVC T/PIPE ** 948.57
* = PIPE IS ENCLOSED W/VT C.O.
** = VT C.O. TOP OF STRUCTURE

SANITARY SEWER MANHOLE #11
NORTHERLY RIM 948.87
INVERTS
EASTERLY–WESTERLY
NORTH TOP OF PIPE 943.07
SOUTH TOP OF PIPE 942.87
NOTE:TWO 4" PIPES IN FROM EAST & ONE 4" PIPE OUT TO WEST

CATCH BASIN #12
NORTHERLY RIM 947.46
INVERTS
NORTHERLY 12" RCP 942.51
EASTERLY 12" RCP 941.06
SOUTHERLY 12" RCP 942.61
SOUTHWESTERLY 15" RCP 939.96

CATCH BASIN #13
NORTHERLY RIM 947.94
INVERTS
SOUTHERLY 12" RCP 943.29

CATCH BASIN #14
NORTHERLY RIM 949.31
INVERTS
SOUTHERLY 12" RCP 941.71
WESTERLY 12" RCP 941.51

CATCH BASIN #16 – FLAT
EASTERLY RIM 925.87
INVERTS
NORTHEASTERLY 15" RCP ± 922.12
SOUTHWESTERLY 15" RCP 922.02

LEGEND

= MISC. STRUCTURE (AS LABELED)
= SURVEYOR'S MONUMENTATION (AS LABELED)
= WELL / MONITOR WELL
= BOLLARD
= STOP SIGN / PEDESTRIAN CROSSING SIGN
= SIGN / MONUMENT SIGN
= CONTROL / BENCHMARK W/IDENTIFIER
= LIGHT BASE
= UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX, UTIL. BOX)
= AIR CONDITIONER UNIT
= UTILITY POLE W/GUY WIRE
= OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
= U/G UTILITY LINES (PHONE/FIBER OPTIC/ELECTRIC/CABLE TV/MISC UTILITIES)
= EDGE OF BRUSH
= EDGE OF WOODS / TREE DRIP LINE
= DECIDUOUS TREE W/IDENTIFIER
= CONIFEROUS TREE W/IDENTIFIER
= FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
= EDGE OF GRAVEL
= CONCRETE CURB (UNLESS OTHERWISE STATED)
= SANITARY SEWER MANHOLE W/IDENTIFIER
= GRINDER PUMP
= SANITARY SEWER PIPE
= CLEAN OUT
= STORM WATER MANHOLE W/IDENTIFIER
= CATCH BASIN W/IDENTIFIER
= FLARED END SECTION
= STORM WATER DRAINAGE PIPE
= HYDRANT
= WATER SHUT OFF
= WATER GATE VALVE WELL / MANHOLE
= WATER VALVE BOX
= IRRIGATION CONTROL VALVE
= WATER MAIN
= GAS MANHOLE / GASOLINE COVER
= GAS SHUT OFF
= U/G GAS
= SPOT ELEVATION
= 1' CONTOUR
= 5' CONTOUR

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DESINE INC
(810) 227-9533
CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

REVISED	
	SCALE: 1" = 50'
	PROJECT No.: 1-09-32-203841
	DWG NAME: 203841-TRAN CTR
	SHEET No.: 1 OF 1
	DATE: 03/13/2020

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 EDITION AND SUPPLEMENTAL SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR SPECIFICATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND SITE CONDITIONS BEFORE PROCEEDING WITH WORK. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING.
3. THE CONTRACTOR SHALL BE REQUIRED TO RESTORE ALL EXISTING TURF AREAS WHICH ARE DISTURBED BY CONSTRUCTION ACTIVITIES THROUGHOUT THE PROJECT OR AS SPECIFIED. TURF AREAS SHALL MATCH ADJACENT GRADES IN ADDITION TO GRADES SPECIFIED. TURF RESTORATION CONSISTS OF: SCREENED TOPSOIL SURFACE, 6 INCH; CHEMICAL FERTILIZER NUTRIENT, IF REQUIRED; MDOT SEED MIXTURE TDS; STRAW MULCH BLANKETS AND MULCH ANCHORING. THE CONTRACTOR SHALL BE REQUIRED TO WATER TURF AREAS TO PROMOTE HEALTHY GROWTH UNTIL THE FIRST CUTTING. AT THAT TIME THE OWNER SHALL TAKE ALL RESPONSIBILITY FOR MAINTENANCE.
4. THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY AND ALL AREAS DISTURBED OR DAMAGED OUTSIDE OF THE OWNERS PROPERTY, AS A RESULT OF THE CONTRACTORS OPERATIONS, AT NO ADDITIONAL COST TO THE PROJECT.
5. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL REGULATIONS AND ORDINANCES FOR WORK AT THE SITE. THIS SHALL INCLUDE ALL M.I.O.S.H.A. REGULATIONS.
6. THE CONTRACTOR SHALL CONTROL NOISE, CARRY OUT A PROGRAM FOR DUST CONTROL AND SHALL ALLOW NO ONSITE BURNING, WITHOUT PRIOR APPROVAL FROM THE OWNER, ENGINEER AND THE LOCAL FIRE DEPARTMENT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FEES AND OBTAINING ANY REQUIRED PERMITS FOR WORKING WITHIN THE RIGHT-OF-WAY INCLUDING SEWER TAPS, OFF STREET PARKING, SIDEWALK AND/OR ROAD CLOSURES, SIDEWALK AND CURB REPLACEMENT, ETC. THE CONTRACTOR SHALL PROVIDE THE LOCAL MUNICIPALITY WITH ANY ROAD CLOSURE AND DETOUR PLAN, IF REQUIRED, PRIOR TO PROCEEDING WITH WORK. CONTACT LOCAL MUNICIPALITY FOR REQUIREMENTS BEFORE PROCEEDING WITH WORK.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND LAYOUT FOR THIS PROJECT. THE CONTRACTOR SHALL PROTECT OR PLACE NEW BENCHMARKS AND/OR CONTROL POINTS, AS REQUIRED. AN ELECTRONIC COPY OF THE AUTOCAD ".DWG" FILE SHALL BE PROVIDED TO THE CONTRACTOR OR THEIR SURVEYOR.
9. ANY PROPERTY IRONS DAMAGED OR REMOVED BY THE CONTRACTORS OPERATIONS, SHALL BE REPLACED BY A SURVEYOR LICENSED IN THE STATE OF MICHIGAN AT NO COST TO THE PROJECT.
10. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE THEIR WORK WITH THE BUILDING CONTRACTORS OR UTILITY COMPANIES' WORK AT NO ADDITIONAL COST TO THE PROJECT.
11. SITE CLEARING SHALL INCLUDE SURFACE DEBRIS, REMOVING ABOVE AND BELOW GROUND IMPROVEMENTS, ROCKS, DESIGNATED TREES, SHRUBS AND OTHER VEGETATION AND ABANDONED UTILITIES AS NECESSARY TO PERFORM THE WORK IN THE CONTRACT. ALL REMOVAL ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL PROTECT ALL SURVEY CONTROL POINTS, BENCHMARKS AND/OR EXISTING STRUCTURES TO REMAIN FROM DAMAGE OR DISPLACEMENT.
12. TREES IN THE INFLUENCE OF THE PROPOSED NEW WORK SHALL BE REMOVED. TREE REMOVAL SHALL INCLUDE COMPLETE REMOVAL OF THE STUMP AND INCLUDE REMOVAL OF ANY ROOTS WHICH ARE LOCATED WITHIN THE INFLUENCE OF THE SUBBASE EXCAVATION, BUILDING CONSTRUCTION AND UTILITY TRENCH EXCAVATION. WHEN EXCAVATING THROUGH ROOTS, PERFORM WORK BY HAND AND CUT ROOTS WITH A SHARP AXE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF REMOVED, SURPLUS AND/OR WASTE MATERIAL FROM THE SITE. ALL TRANSPORTATION AND DISPOSAL OF THE REMOVED ITEMS SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATION AND ALL LOCAL, STATE AND FEDERAL LAWS.
14. SAW CUT EXISTING PAVEMENT TO FULL DEPTH PRIOR TO REMOVAL. WHERE SAW CUT IS REQUIRED IN CONCRETE SLABS AND/OR CURB & GUTTER, SAW CUT FULL DEPTH AT THE NEAREST JOINT. IF A SAWCUT EDGE BECOMES DAMAGED PRIOR TO THE INSTALLATION OF NEW WORK, THE EDGE SHALL BE RECUT, AS DIRECTED BY THE ENGINEER, AND THE PAVEMENT REPLACED AT NO ADDITION COST TO THE PROJECT.

TRAFFIC CONTROL AND MAINTENANCE

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), 2011 EDITION AND ALL CURRENT MDOT STANDARD PLANS, AS REQUIRED. THE CONTRACTOR SHALL SUBMIT A TRAFFIC MAINTENANCE PLAN TO THE ENGINEER FOR APPROVAL, 10 DAYS PRIOR TO BEGINNING WORK.
2. ALL SIGNS, BARRICADES, WARNING LIGHTS AND OTHER TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE MMUTCD. SIGNING FOR STREET CLOSURES SHALL BE IN ACCORDANCE WITH THE MMUTCD. ANY SIGNS TEMPORARILY REMOVED DUE TO CONSTRUCTION ACTIVITIES, SHALL BE TEMPORARILY RELOCATED, AS DIRECTED BY THE ENGINEER, UNTIL FINAL RESTORATION IS COMPLETED AND THEN RETURNED TO THEIR ORIGINAL LOCATION.
3. DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL PLACE THE PROPER CONSTRUCTION SIGNING IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND ALL CURRENT MDOT STANDARD PLANS, AS REQUIRED.
4. THE CONTRACTOR SHALL PROVIDE THE LOCAL MUNICIPALITY WITH ANY ROAD CLOSURE AND DETOUR PLAN, IF REQUIRED, PRIOR TO PROCEEDING WITH WORK. CONTACT LOCAL MUNICIPALITY FOR REQUIREMENTS BEFORE PROCEEDING WITH WORK.

UTILITY NOTES

1. UTILITIES AND UTILITY SERVICE INFORMATION, SHOWN ON THE PLANS, ARE BASED ON UTILITY STAKING AND IS FOR INFORMATION ONLY, AS ACTUAL LOCATIONS MAY VARY. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL UTILITY LOCATIONS BEFORE PROCEEDING WITH WORK.
2. FOR THE PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR IS REQUIRED TO CONTACT "MISS DIG" BY PHONE AT 811 OR 800-482-7171 OR VIA THE WEB AT EITHER ELOCATE.MISSDIG.ORG FOR SINGLE ADDRESS OR RTE.MISSDIG.ORG, A MINIMUM OF 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) IN ADVANCE OF ANY EXCAVATION.
3. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE ALL OF THEIR WORK WITH THE UTILITY COMPANIES WORK, IF ANY, AT NO ADDITIONAL COST TO THE PROJECT.
4. COSTS AND FEES CHARGED BY THE UTILITY COMPANIES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE MADE A PART OF THE CONTRACT.
5. DAMAGE TO EXISTING UTILITIES, OUTSIDE THE SCOPE OF WORK SHOWN ON THE PLANS, IS THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIR, AS SUCH, SHALL BE AT NO ADDITIONAL COST TO THE PROJECT.
6. IN CASES WHERE EXISTING SEWERS, DRAINS, GAS SERVICE CONNECTIONS, TELEPHONE OR ELECTRICAL FACILITIES, WATER SERVICE CONNECTIONS, ETC. ARE ENCOUNTERED, THE CONTRACTOR SHALL PERFORM THEIR WORK IN SUCH A MANNER THAT THE SERVICE WILL BE UNINTERRUPTED. THE CONTRACTORS METHOD FOR MAINTAINING AND SUPPORTING THE EXISTING UTILITIES AND THEIR SERVICE CONNECTIONS, IF REQUIRED, SHALL BE AS SUCH TO AVOID SETTLEMENT OF THE UTILITIES BEFORE AND AFTER PLACING BACKFILL.
7. STORM SEWER MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE CITY OF BRIGHTON STANDARD SPECIFICATION FOR STORM WATER COLLECTION SYSTEMS.
8. SANITARY SEWER MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE CITY OF BRIGHTON STANDARD SPECIFICATION FOR SANITARY SEWER COLLECTION SYSTEMS.
9. SEE ELECTRICAL, MECHANICAL AND PLUMBING PLANS FOR EXACT CONNECTIONS TO PROPOSED BUILDING UTILITIES.
10. UTILITY DISINFECTION AND ALL OTHER TESTING AS REQUIRED BY THE GOVERNING CODE IS THE RESPONSIBILITY OF THE CONTRACTOR.

MISS DIG 811.
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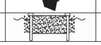
EROSION CONTROL NOTES

1. APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF EARTH DISTURBING ACTIVITIES AND SHALL REMAIN IN PLACE UNTIL ALL AREAS ARE FULLY RESTORED.
2. ALL SOIL EROSION & SEDIMENT CONTROL (SESC) MEASURES PLACED BY THE CONTRACTOR SHALL BE IN FULL COMPLIANCE WITH PUBLIC ACT 347 OF 1972 AS AMENDED AND THE ADMINISTRATIVE RULES. THE CONTRACTOR SHALL HAVE A DEQ CERTIFIED STORM WATER OPERATOR ASSIGNED TO THIS PROJECT.
3. A TRACKING PAD IS REQUIRED AT ANY CONTRACTOR INGRESS AND/OR EGRESS LOCATION WHERE SEDIMENT MAY BE TRACKED OFF-SITE. THE CONTRACTOR IS REQUIRED TO CLEAN ADJACENT STREETS OF ACCUMULATED SEDIMENT AS A RESULT OF THE CONTRACTORS ACTIVITY, AS DIRECTED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE PROJECT.
4. INSTALL SEDIMENT CONTROL, INLET PROTECTION, FABRIC DROP (SS8) AT EXISTING AND NEWLY CONSTRUCTED CATCH BASINS. AFTER RAIN EVENTS AND AT THE COMPLETION OF THE PROJECT, REMOVE AND CLEAN ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS.
5. AT THE COMPLETION OF THE PROJECT, ONCE ALL DISTURBED AREAS HAVE BEEN FULLY RESTORED, REMOVE ALL TEMPORARY EROSION CONTROL DEVICES AND ANY ACCUMULATED SEDIMENT.
6. THE CONTRACTOR SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF THE SITE HAS BEEN ESTABLISHED.
7. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS AS SOON AS POSSIBLE.

MICHIGAN UNIFIED KEYING SYSTEM
SOIL EROSION AND SEDIMENTATION CONTROL

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
	SEDIMENT CONTROLS		
E2	GRUBBING OMITTED		FOR USE ON STEEP SLOPES TO PREVENT RILLING, GULLYING AND REDUCE SHEET FLOW VELOCITY OR WHERE CLEAR VISION CORRIDORS ARE NECESSARY.
E5	DUST CONTROL		FOR USE ON CONSTRUCTION SITES, UNPAVED ROADS, ETC. TO REDUCE DUST AND SEDIMENTATION FROM WIND AND CONSTRUCTION ACTIVITIES.
E6	MULCH		FOR USE ON IN AREAS SUBJECT TO EROSIVE SURFACE FLOWS OR SEVERE WIND OR ON NEWLY SEEDED AREAS.
E7	TEMPORARY SEEDING		STABILIZATION METHOD UTILIZED ON CONSTRUCTION SITES WHERE EARTH CHANGE HAS BEEN INITIATED BUT NOT COMPLETED WITHIN A 2 WEEK PERIOD.
E8	PERMANENT SEEDING		STABILIZATION METHOD UTILIZED ON SITES WHERE EARTH CHANGE HAS BEEN COMPLETED (FINAL GRADING ATTAINED).
E9	MULCH BLANKETS		ON EXPOSED SLOPES, NEWLY SEEDED AREAS, NEW DITCH BOTTOMS OR AREAS SUBJECT TO EROSION.
E10	SODDING	.\SESC Key\Sodding.JPG	ON AREAS AND SLOPES WHERE IMMEDIATE STABILIZATION IS REQUIRED.
E12	RIPRAP	.\SESC Key\Riprap.JPG	USE ALONG SHORELINES, WATERWAYS, OR WHERE CONCENTRATED FLOWS OCCUR. SLOWS VELOCITY, REDUCES SEDIMENT LOAD, AND REDUCES EROSION.
	EROSION CONTROLS		
S31	CHECK DAM		USED TO REDUCE SURFACE FLOW VELOCITIES WITHIN CONSTRUCTED AND EXISTING FLOW CORRIDORS.
S51	SILT FENCE		USED ADJACENT TO CRITICAL AREAS, TO PREVENT SEDIMENT LADEN SHEET FLOW FROM ENTERING THESE AREAS.
S53	STABILIZED CONSTRUCTION ENTRANCE		USED AT EVERY POINT WHERE CONSTRUCT TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE.
S55	SEDIMENT BASIN		AT THE OUTLET OF DISTURBED AREAS AND AT THE LOCATION OF A PERMANENT DETENTION BASIN.
S56	SEDIMENT TRAP		IN SMALL DRAINAGE AREAS, ALONG CONSTRUCTION SITE PERIMETERS AND ABOVE CHECK DAMS OR DRAIN INLETS.
S57	VEGETATED BUFFER/ FILTER STRIP		USE ALONG SHORELINES, WATERWAYS, OR OTHER SENSITIVE AREAS. SLOWS VELOCITY, REDUCES SEDIMENT LOAD, AND REDUCES EROSION IN AREAS OF SHEET FLOW.
S58	INLET PROTECTION FABRIC DROP		USE AT STORM WATER INLETS, ESPECIALLY AT CONSTRUCTION SITES.
S61	TURBIDITY CURTAIN		USED DURING CONSTRUCTION ADJACENT TO A WATER RESOURCE, TO CONTAIN SEDIMENT WITHIN THE WORK AREA WHEN OTHER BMP'S CANNOT BE USED.

PROPOSED SITE WORK

1. CONCRETE FOR SIDEWALKS, DUMPSTER PADS, CURB & GUTTER, ETC. SHALL MEET EITHER MDOT GRADE P1 OR S2 SPECIFICATION, UNLESS OTHERWISE SPECIFIED.
2. AGGREGATE BASE MATERIAL SHALL MEET MDOT 21AA SPECIFICATIONS AND SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY, ACCORDING TO THE SPECIFICATIONS.
3. SUBBASE AND EMBANKMENT MATERIAL SHALL MEET MDOT CLASS II SPECIFICATIONS AND SHALL BE COMPACTED TO 95% MAXIMUM DENSITY, ACCORDING TO THE SPECIFICATIONS.
4. PLACE ½" EXPANSION JOINT BETWEEN SIDEWALKS AND ANY STRUCTURE. CUT CONTROL JOINTS AT 5' O.C. AND PLACE EXPANSION JOINTS AT 20' O.C. OR AS DIRECTED BY THE ENGINEER.
5. PLACE 1" FIBER JOINT AT 400' MAXIMUM INTERVAL IN CURB AND GUTTER. PLACE ½" EXPANSION JOINT BETWEEN CURB AND GUTTER AND CATCH BASINS. PLACE CONTRACTION JOINTS AT 40' MAXIMUM INTERVALS.
6. AREAS OF UNSTABLE SUBBASE NOT MEETING COMPACTION REQUIREMENTS, SHALL BE UNDERCUT AND BACKFILLED, IN ACCORDANCE WITH MDOT SUBGRADE UNDERCUTTING, TYPE II. THIS WORK SHALL BE MEASURED BY THE CUBIC YARD (CYD) AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR "SUBGRADE UNDERCUTTING".
7. CURB AND GUTTER RADII ARE DIMENSIONED FROM THE FRONT EDGE OF THE GUTTER PAN.

GRADING

1. FINAL GRADING SHALL PROVIDE POSITIVE DRAINAGE ACROSS THE ENTIRE SITE AWAY FROM BUILDINGS.
2. THE CONTRACTOR SHALL GRADE THE SITE ACCORDING TO THE GRADING PLAN. IN THE ABSENCE OF A PLAN, THE CONTRACTOR IS TO GRADE THE SITE SO THAT THE NEW GRADES BLEND GENTLY INTO THE EXISTING GRADES. CONTRACTOR TO SLOPE GRADE AWAY FROM BUILDINGS A MINIMUM OF 2 INCHES IN 10 FEET.
3. MAINTAIN OPTIMUM MOISTURE CONTENT OF MATERIALS WHEN GRADING.

NOTES APPLYING TO STANDARD PLANS & SPECIAL DETAILS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS., THEY ARE TO BE CONSTRUCTED ACCORDING TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD PLAN LISTED BELOW, UNLESS NOTED OTHERWISE. COPIES OF THESE MDOT STANDARD PLANS CAN BE OBTAINED FROM THE MDOT WEBSITE (WWW.MICHIGAN.GOV/MDOT).

ROAD STANDARD PLANS:

R-29-I	DRIVEWAY OPENINGS & APPROACHES AND CURB AND GUTTER
R-30-G	CONCRETE CURB AND CONCRETE CURB & GUTTER
R-37-B	ISOLATION JOINT DETAILS
R-74-D	BUMPER & PARKING RAILS AND MISC. WOOD POSTS
R-80-E	GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS
R-82-D	BEDDING AND FILLING AROUND PIPE CULVERTS
R-83-C	UTILITY TRENCHES
R-95-F	CULVERT SLOPED END SECTION
R-96-E	SOIL EROSION & SEDIMENTATION CONTROL MEASURES
R-100-H	SEEDING AND TREE PLANTING
R-107-H	SUPERELEVATION AND PAVEMENT CROWNS

ROAD SPECIAL DETAILS:

R-1-G	DRAINAGE STRUCTURES
R-28-J	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

PAVEMENT MARKING STANDARD PLANS:

PAVE-900-F	PAVEMENT ARROW AND MESSAGE DETAILS
PAVE-905-D	LONGITUDINAL LINE TYPES AND PLACEMENT
PAVE-930-C	PAVEMENT MARKINGS FOR NON-SIGNALIZED INTERSECTIONS
PAVE-935-D	LEFT TURN LANE MARKINGS
PAVE-940-C	RIGHT TURN LANE AND ISLAND PAVEMENT MARKINGS
PAVE-945-C	INTERSECTION, STOP BAR, AND CROSSWALK MARKINGS
PAVE-955-B	ON-STREET PARKING ZONE MARKINGS
PAVE-956-C	PARKING AREA PAVEMENT MARKINGS
PAVE-957-A	BACK-IN ANGLE PARKING
PAVE-960-B	SCHOOL MARKINGS
PAVE-965-D	RAILROAD GRADE CROSSING PAVEMENT MARKINGS

TRAFFIC SIGNING STANDARD PLANS:

SIGN-115-C	SIGN LOCATION CODES PLACEMENT
SIGN-130-B	RAILROAD CROSSING SIGN
SIGN-150-D	SIGN SUPPORT SELECTION CHARTS
SIGN-200-D	STEEL POSTS
SIGN-210-B	WOOD POSTS
SIGN-230-A	FOUNDATION (BREAK-AWAY)
SIGN-740-B	MISCELLANEOUS SIGN CONNECTION DETAILS

TRAFFIC SIGNING SPECIAL DETAILS:

SIGN-100-G	STANDARD SIGN INSTALLATIONS
SIGN-120-E	ROADSIDE SIGN LOCATIONS AND SUPPORT SPACING
SIGN-205-A	PERFORATED STEEL SQUARE TUBE SIGN BREAKAWAY SYS
SIGN-207-D	PERFORATED STEEL SQUARE TUBE SIGN BREAKAWAY SYS

SITE DATA

1. PROJECT LOCATION: SECTION 32, TOWNSHIP 2N, RANGE 6E
   CITY OF BRIGHTON, LIVINGSTON COUNTY, MICHIGAN
2. STREET ADDRESS: 5800 BORDERLINE DRIVE
   BRIGHTON, MI 48116

NOTE: THE CONSTRUCTION AND DIMENSIONS FOR ALL ATHLETIC FACILITIES SHALL CONFORM TO THE NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFHS) "COURT AND FIELD DIAGRAM GUIDE", CURRENT EDITION. THE CONTRACTOR SHALL REFERENCE THIS GUIDE BEFORE STARTING CONSTRUCTION.

LEGEND

2.00%→	GRADE
	EXISTING CONTOUR
	PROPOSED CONTOUR
EXISTING ELEVATION	582.34
PROPOSED ELEVATION	582.63 EB
GND	GROUND
BDG	BUILDING
ADJ	ADJUST ITEM
EB	EDGE OF HMA
EC	EDGE OF CONCRETE
IE	INVERT ELEVATION
BW	BACK OF WALK
FW	FACE OF WALK
TW	TOP OF WALK
EX	EXISTING
PR	PROPOSED
LF	LINEAR FEET
MP	MID POINT
PC	POINT OF CURVATURE
FFE	FINISHED FLOOR ELEVATION
TR	TOP OF ROCK
GRV	GRAVEL
CB	CATCH BASIN
MH	MANHOLE
STM	STORM SEWER
SAN	SANITARY SEWER
REM	REMOVE ITEM
REL	RELOCATE ITEM
FL	FLOW LINE

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8511 W. GRAND RIVER AVE., SUITE 600
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PHONE: (810)229-2701 FAX: (810)229-6767

D ARCHITECTURE ENGINEERING CONSULTING
integrated designs inc.

BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	FINAL REVIEW	05.11.20
0	FOR CONSTRUCTION	05.26.20

	BY	DATE
DESIGN	ADM	-
DRAWN	ADM	-
CHECKED	BLK	-
APPROVED	ADM	-

NOTES

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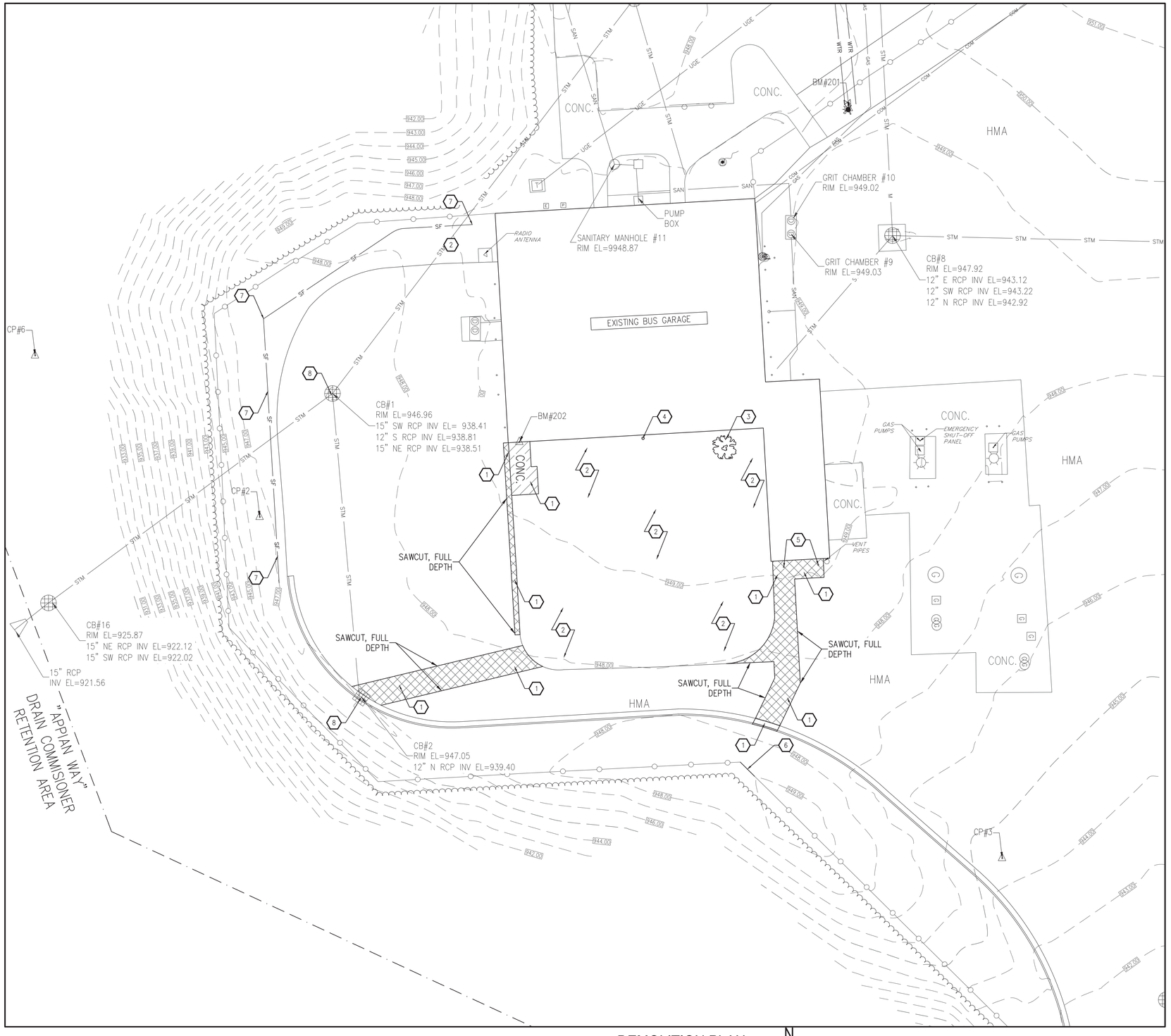

DEMOLITION PLAN

SCALE: 1 INCH = 20 FEET

KEYNOTES

– SEE CURRENT MDOT SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS UNLESS OTHERWISE SPECIFIED –

1. REMOVE EXISTING HMA, CONCRETE SIDEWALKS & SLABS, CURBS, GRAVEL AND UNDERLYING MATERIAL AS REQUIRED FOR NEW WORK. SAWCUT EXISTING PAVEMENT TO FULL DEPTH PRIOR TO REMOVAL. IF A SAWCUT EDGE BECOMES DAMAGED PRIOR TO THE INSTALLATION OF NEW MATERIAL, THE EDGE SHALL BE RECUT AS DIRECTED BY THE OWNER AND THE PAVEMENTS REPLACED AT NO ADDITIONAL COST TO THE PROJECT. SEE SITE PLAN.
2. REMOVE EXISTING TOPSOIL AND UNDERLYING MATERIAL AS REQUIRED FOR NEW WORK. SEE SITE PLAN.
3. REMOVE EXISTING TREE AND ANY ASSOCIATED ROOTS.
4. ADJUST EXISTING SANITARY SEWER CLEANOUT AS REQUIRED TO ACCOMMODATE BUILDING ADDITION. COORDINATE WITH THE PLUMBING AND BUILDING CONTRACTOR AS REQUIRED. SEE SITE, ARCHITECTURAL AND PLUMBING PLANS FOR MORE INFORMATION.
5. DO NOT DISTURB EXISTING BOLLARDS.
6. REMOVE ±8 LF OF EXISTING 8 FT TALL CHAIN LINK FENCE TO COMPLETE THE WORK. SALVAGE FENCE FOR RE-INSTALLATION AT THIS SITE. SEE SITE PLAN.
7. INSTALL ±180 LF OF SEDIMENT CONTROL, SILT FENCE. AT THE COMPLETION OF THE PROJECT, ONCE THE TURF IS WELL ESTABLISHED, REMOVE
8. INSTALL SEDIMENT CONTROL, INLET PROTECTION, FILTER DROP AT CATCHBASINS. AT THE COMPLETION OF THE PROJECT, ONCE THE TURF IS WELL ESTABLISHED, REMOVE INLET PROTECTIONS AND CLEAN ALL ACCUMULATED SEDIMENT FROM THE CATCHBAISN.
9. A TRACKING PAD IS REQUIRED AT ALL CONTRACTOR INGRESS/EGRESS LOCATIONS WHERE SEDIMENT MAY BE TRACKED OFF SITE. LOCATION SHOWN IS FOR INFORMATION ONLY AND MAY VARY WITH CONTRACTORS OPERATIONS. SEE DETAIL SHEET.

ALL KEYNOTES ARE SPECIFIC TO THAT SHEET ONLY

HMA REMOVAL LIMITS

CONC. REMOVAL LIMITS

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BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	DD's	03.31.20
B	FINAL REVIEW	05.11.20
0	FOR CONSTRUCTION	05.26.20
-	-	-
-	-	-

	BY	DATE
DESIGN	ADM	-
DRAWN	ADM	-
CHECKED	BLK	-
APPROVED	ADM	-

DEMOLITION PLAN

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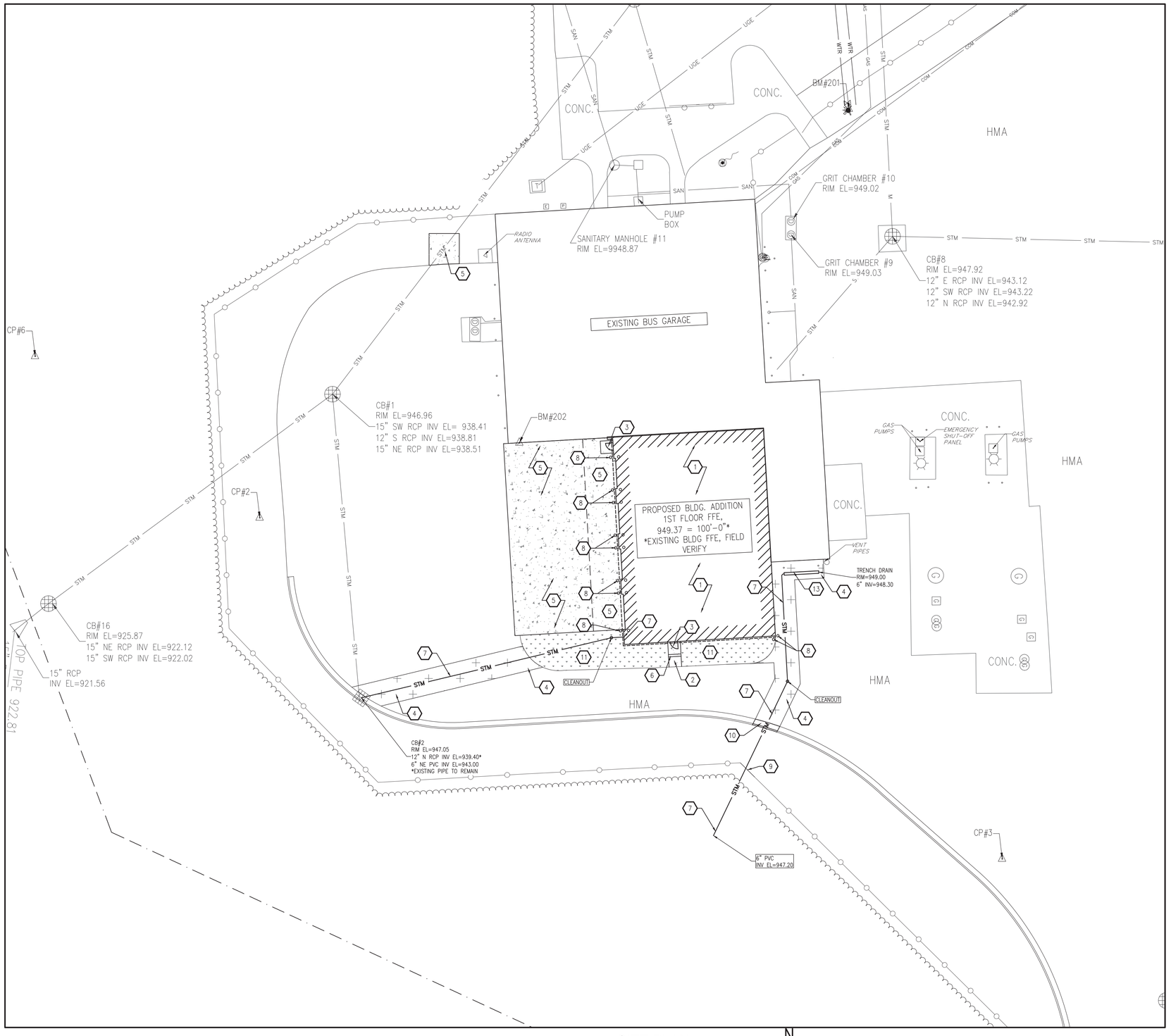

SITE PLAN

SCALE: 1 INCH = 20 FEET

N

GRAPHIC SCALE: 1 inch = 20 feet

0 10 20 40 60

KEYNOTES

– SEE CURRENT MDOT SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS UNLESS OTHERWISE SPECIFIED –

1. PROPOSED BUILDING ADDITION. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR MORE INFORMATION.
2. CONSTRUCT 4 INCH THICK REINFORCED CONCRETE SIDEWALK ON SUB-BASE, 6 INCH CIP MDOT CLASS II. REINFORCEMENT SHALL BE WWF, 6X6, W1.4XW1.4. SEE DETAIL SHEET.
3. CONSTRUCT SUPPORTED SLAB FOR PROPOSED DOOR. SEE STRUCTURAL AND ARCHITECTURAL PLANS.
4. CONSTRUCT A NEW PAVEMENT STRUCTURE THAT SHALL CONSIST OF SUBBASE, 12 INCH MDOT CLASS II, 6 INCH MDOT 21AA AGGREGATE BASE, HMA, 6 INCHES PLACED IN THREE LIFTS CONSISTING OF HMA, 4E1 275#/SYD BASE COURSE (2.5 INCH THICKNESS), HMA, 4E1 220#/SYD LEVELING COURSE (2.0 INCH THICKNESS), AND HMA, 5E1 165#/SYD TOP COURSE (1.5 INCH THICKNESS). SUBBASE AND AGGREGATE BASE SHALL EXTEND 2 FEET PAST PROPOSED HMA SURFACING LIMITS. CONSTRUCT A 2 FOOT SHOULDER, MDOT 23A, 6 INCH THICK AT AREAS NOT ADJACENT TO HARD SURFACING. IF AREAS OF UNSUITABLE SUBBASE ARE ENCOUNTERED, PERFORM MDOT SUBGRADE UNDERCUTTING, TYPE II AT CONTRACT UNIT PRICE. SEE GRADING AND DETAIL SHEET.
5. PLACE 8 INCH THICK REINFORCED CONCRETE PAVEMENT ON 8 INCH MDOT 21AA AGGREGATE BASE. REINFORCEMENT SHALL BE WWF, 6X6, W2.0XW2.0. JOINT PAVEMENT AT 12 FT MAX SPACING WITH MDOT DET B JOINT. SEAL JOINTS WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT JOINT SEALING COMPOUND. SEE DETAIL SHEET AND MDOT STANDARD PLAN R-41-H
6. PROPOSED CONCRETE STEPS. SEE GRADING SHEET AND STRUCTURAL PLANS..
7. INSTALL ±215 LF OF 6 INCH SDR-26 STORM SEWER PIPE WITH CLEANOUTS AS SHOWN. SEE DETAIL SHEET. COORDINATE WITH THE PLUMBING CONTRACTOR FOR CONNECTION TO THE BUILDING DOWNSPOUTS.
8. CONSTRUCT AND PAINT EIGHTEEN (18) PIPE BOLLARDS TOTAL (10 OUTSIDE AND 8 INSIDE THE BUILDING). CONSTRUCTION SHALL INCLUDE CORING AND PATCHING OF THE PAVEMENT, IF REQUIRED. COORDINATE WITH THE BUILDING CONTRACTOR, AS REQUIRED. SEE DETAIL SHEET AND ARCHITECTURAL PLANS.
9. REINSTALL ±8 LF OF 8 FT TALL CHAIN LINK FENCE SALVAGED FROM THIS SITE. ANY FENCE REPLACEMENT COMPONENTS SHALL MATCH THE EXISTING FENCE.
10. CONSTRUCT ±10 LF OF CURB, TYPE 1. SEE DETAIL SHEET.
11. PROPOSED TURF RESTORATION. SEE DETAIL SHEET.
12. NOT USED.
13. INSTALL ±16 LF OF 12 INCH WIDE EXTRA HEAVY DUTY PREFABRICATED SLOPED TRENCH DRAIN (12" WIDE ZURN Z882 TRENCH DRAIN OR APPROVED EQUAL) WITH CLASS 'C' ADA COMPLIANT DUCTILE IRON SLOTTED GRATE. SET IN CONCRETE PER MANUFACTURES RECOMMENDATION. CONNECT TO PROPOSED 6 INCH STORM SEWER WITH OUTLET TO SLOPE.

ALL KEYNOTES ARE SPECIFIC TO THAT SHEET ONLY

** CONTRACTOR RESPONSIBLE FOR ** EMPLOYING AN MDOT CERTIFIED TECHNICIAN FOR ALL MATERIAL AND COMPACTION TESTS.

PROPOSED CONCRETE

PROPOSED HMA

PROPOSED TURF RESTORATION

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BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	DD's	03.31.20
B	FINAL REVIEW	05.11.20
0	FOR CONSTRUCTION	05.26.20
–	–	–
–	–	–

	BY	DATE
DESIGN	ADM	–
DRAWN	ADM	–
CHECKED	BLK	–
APPROVED	ADM	–

SITE PLAN

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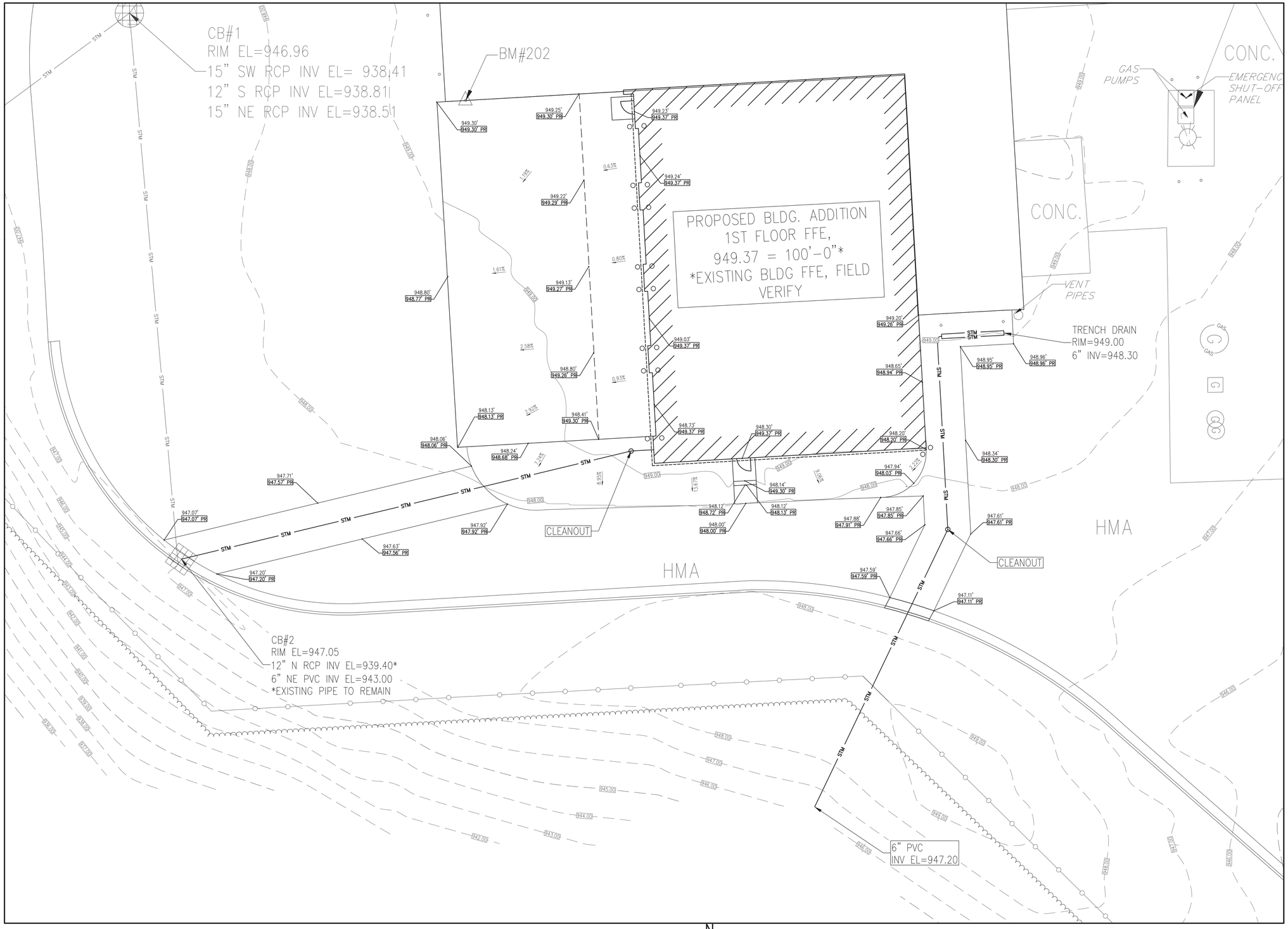

LEGEND

2.00%	GRADE
	EXISTING CONTOUR
	PROPOSED CONTOUR
EXISTING ELEVATION	582.34
PROPOSED ELEVATION	582.63 FR
GND	GROUND
BDG	BUILDING
ADJ	ADJUST ITEM
EB	EDGE OF HMA
EC	EDGE OF CONCRETE
IE	INVERT ELEVATION
BW	BACK OF WALK
FW	FACE OF WALK
TW	TOP OF WALK
EX	EXISTING
PR	PROPOSED
LF	LINEAR FEET
MP	MID POINT
PC	POINT OF CURVATURE
FFE	FINISHED FLOOR ELEVATION
TR	TOP OF ROCK
GRV	GRAVEL
CB	CATCH BASIN
MH	MANHOLE
STM	STORM SEWER
SAN	SANITARY SEWER
REM	REMOVE ITEM
REL	RELOCATE ITEM
FL	FLOW LINE

** CONTRACTOR RESPONSIBLE FOR ** EMPLOYING AN MDOT CERTIFIED TECHNICIAN FOR ALL MATERIAL AND COMPACTION TESTS.

GRADING PLAN

SCALE: 1 INCH = 10 FEET

N

GRAPHIC SCALE: 1 inch = 10 feet

0 5 10 20 30

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BRIGHTON AREA SCHOOLS
MAINTEANCE BUILDING
BRIGHTON, MICHIGAN

PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	DD's	03.31.20
B	FINAL REVIEW	05.11.20
0	FOR CONSTRUCTION	05.26.20
-	-	-
-	-	-

	BY	DATE
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DRAWN	ADM	-
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APPROVED	ADM	-

GRADING PLAN

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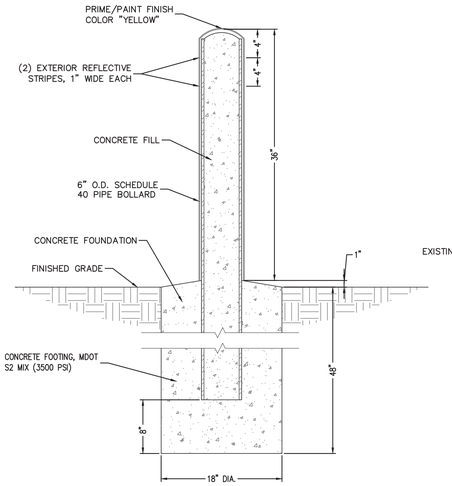
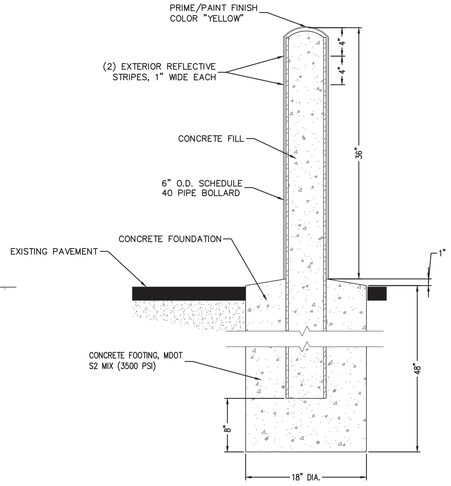


PIPE BOLLARD IN LAWN

NOT TO SCALE



PIPE BOLLARD IN PAVEMENT

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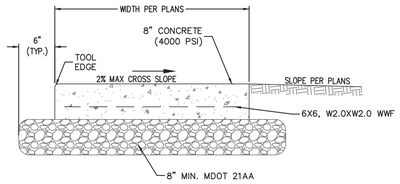

CONCRETE PAD

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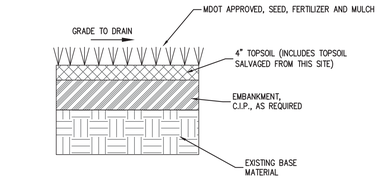
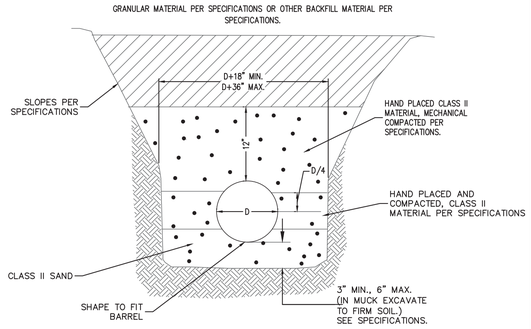


TURF RESTORATION DETAIL

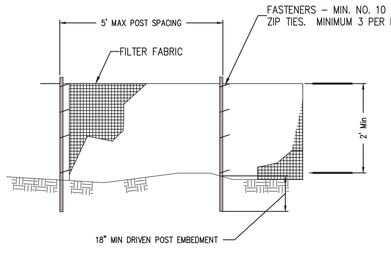
NOT TO SCALE



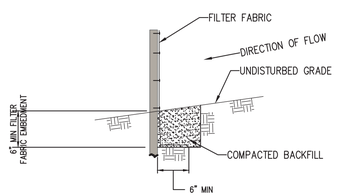
THE BACKFILL MATERIALS AND METHODS SHALL CONFORM WITH THE SPECIFICATIONS.

UTILITY TRENCH

NOT TO SCALE



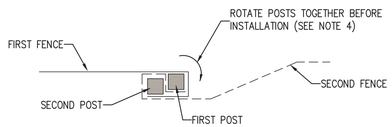
ELEVATION



FABRIC ANCHOR DETAIL

NOTES:
1. TEMPORARY SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. FENCE SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 GEOTEXTILE TABLE 1 OR 2, CLASS L WITH EQUIVALENT OPENING SIZE OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN.
3. FENCE POSTS SHALL BE EITHER WOOD POST WITH A MINIMU CROSS–SECTIONAL AREA OF 1.5" X 1.5" OR A STANDARD STEEL POST.
4. WHEN SPLICES ARE NECESSARY MAKE SPLICE AT POST ACCORDING TO SPLICE DETAIL. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE. ROTATE BOTH POSTS TOGETHER AT LEAST 180 DEGREES TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL. CUT THE FABRIC NEAR THE BOTTOM OF THE POSTS TO ACCOMMODATE THE 6 INCH FLAP. THEN DRIVE BOTH POSTS AND BURY THE FLAP. COMPACT BACKFILL WELL.

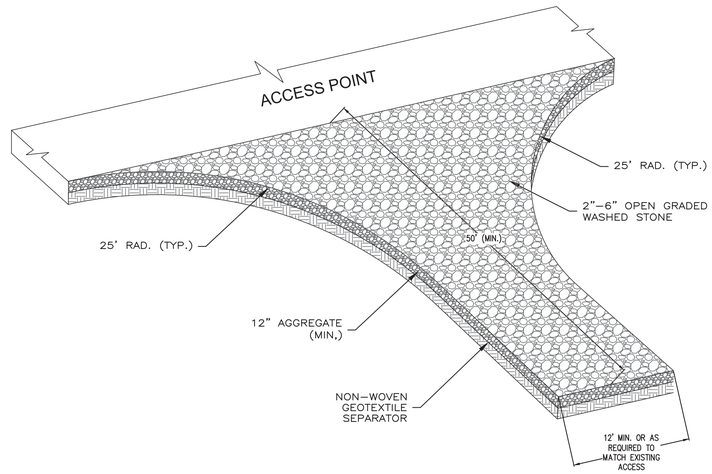
DETAIL MODIFIED FROM NRCS–IL STANDARD DRAWING NRCS141P2_029360



SPLICE DETAIL–PLAN VIEW

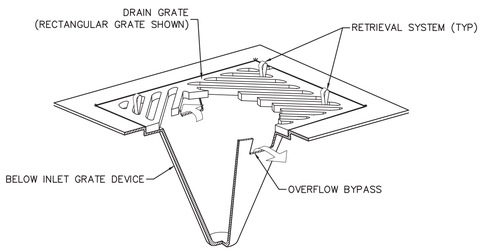
SILT FENCE INSTALLATION DETAIL

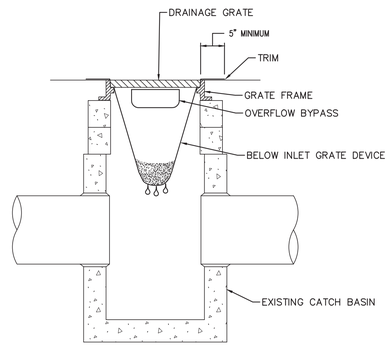
NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE





INLET PROTECTION FABRIC DROP

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	BY	DATE
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DRAWN	ADM	—
CHECKED	BLK	—
APPROVED	ADM	—

SITE DETAILS

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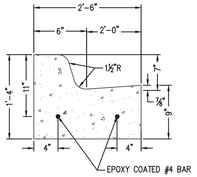
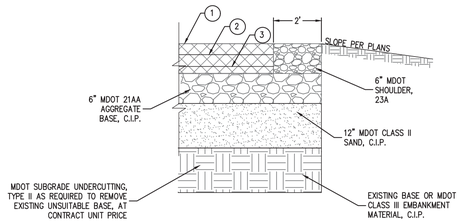


CURB, TYPE 1

NOT TO SCALE



TYPICAL PAVEMENT STRUCTURE

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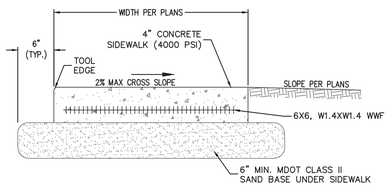
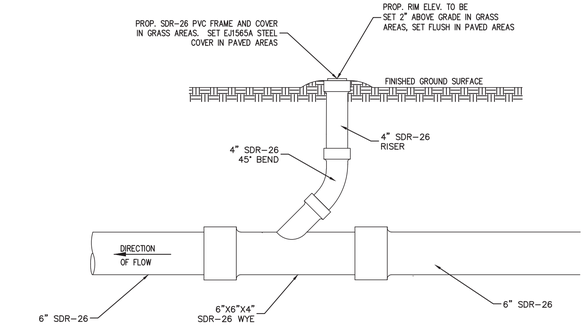


CONCRETE SIDEWALK

NOT TO SCALE

HMA APPLICATION TABLE				
IDENT. NO.	ITEM	APPLICATION RATE	PERFORMANCE GRADE	REMARKS
(1)	HMA, 5E1	165#/SYD	58-22	TOP COURSE
(2)	HMA, 4E1	165#/SYD	58-22	LEVELING COURSE
(3)	HMA, 4E1	275#/SYD	58-22	BASE COURSE
N/A	HAND PATCHING	VARIES	64-28	AS REQUIRED
HMA BOND COAT		0.05 - 0.15 GAL/SYD		FOR INFO ONLY



STORM SEWER CLEANOUT

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	BY	DATE
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SITE DETAILS

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TABLE 1705.6
REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X

TABLE 1705.3
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCED
1. INSPECTION OF REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	-	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING:			AWS D1.4 ACI 318: 26.6.4	
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	-	X		
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM $\frac{5}{16}$"; AND	-	X		
c. INSPECT ALL OTHER WELDS.	X	-		
3. INSPECT ANCHORS CAST IN CONCRETE	-	X	ACI 318: 17.8.2	
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.				
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	-	ACI 318: 17.8.2.4	
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	-	X	ACI 318: 17.8.2	
5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C 172, ASTM C 31 ACI 318: 26.4, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR:			ACI 318: 26.10	
a. APPLICATION OF PRESTRESSING FORCES; AND	X	-		
b. GROUTING OF BONDED PRESTRESSING TENDONS.	X	-		
10. ERECTION OF PRECAST CONCRETE MEMBERS.		X	ACI 318: CH 26.8	
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF CONCRETE BEING FORMED.	-	X	ACI 318: 26.11.1.2(b)	

TABLE 1.19.2
LEVEL C REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

VERIFICATION AND INSPECTION	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA		
	CONTINUOUS	PERIODIC	IBC SECTION	TMS 402/ACI 530/ASCE 5	TMS 602/ACI 530.1/ASCE 6
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS.	-	X	-	-	ART 1.5
2. VERIFICATION OF f'm AND f'aac PRIOR TO CONSTRUCTION EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE.	-	X	-	-	ART 1.4B
3. VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT.	X	-	-	-	ART 1.5B.1.b.3
4. THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:					
a. PROPORTIONS OF SITE-PREPARED MORTAR	-	X	-	-	ART 2.1, 2.6A
b. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	-	X	-	-	ART 2.4B, 2.4H
c. PLACEMENT OF MASONRY UNITS AND CONSTRUCTIONS OF MORTAR JOINTS	-	X	-	-	ART 3.3B
d. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ACHORAGES	-	X	-	-	ART 3.4, 3.6A
e. PRESTRESSING TECHNIQUE	-	X	-	-	ART 3.6B
f. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X(a)	X(b)	-	-	ART 2.1C
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
a. GROUT SPACE	-	X	-	-	ART 3.2D, 3.2F
b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ACNHORAGES	X	-	-	SEC 1.16	ART 2.4, 3.4
c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	X	-	SEC. 1.16	ART. 3.2E, 3.4, 3.6A
d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	-	X	-	-	ART 2.6B, 2.4G.1.b
e. CONSTRUCTION OF MORTAR JOINTS	-	X	-	-	ART 3.3B
4. VERIFY DURING CONSTRUCTION:					
a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	-	X	-	-	ART 3.3F
b. SIZE, TYPE AND LOCATION OF ANCHORS, INCLUDEING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION	-	X	-	SEC 1.16.4.3, 1.17.1	-
c. WELDING OF REINFORCEMENT	X	-	-	SEC 2.1.7.7.2, 3.3.3.4(c), 8.3.3.4(b)	-
d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))	-	X	-	-	ART 1.8C, 1.8D
e. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X	-	-	-	ART 3.6B
f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X	-	-	-	ART 3.5,3.6C
g. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X(a)	X(b)	-	-	ART 2.1C
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	-	X	-	-	ART 1.4B.2.a.3, 1.4B.2.b.3, 1.4B.2.c.3,1.4B.3, 1.4B.4

(a) REQUIRED FOR THE FIRST 5000 SQAURE FEET (465 SQUARE METERS) OF AAC MASONRY.
(b) REQUIRED AFTER THE FIRST 5000 SQAURE FEET (465 SQUARE METERS) OF AAC MASONRY.

TABLE 1705.2
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCED
1. MATERIAL VERIFICATION OF STRUCTURAL STEEL	-	X		
2. INSPECTION TASKS FOR STRUCTURAL STEEL WELDING:				
a. PRIOR TO WELDING (OBSERVE, OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360 TABLE N5.4-1)	SEE REFERENCED TABLE	SEE REFERENCED TABLE	AISC 360, SECTION N5.4 TABLE N5.4-1, AISC N5.4	
b. DURING WELDING (OBSERVE, OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360 TABLE N5.4-2)	SEE REFERENCED TABLE	SEE REFERENCED TABLE	AISC 360, SECTION N5.4 TABLE N5.4-2, AISC N5.4	
c. AFTER WELDING (OBSERVE, OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360 TABLE N5.4-3)	SEE REFERENCED TABLE	SEE REFERENCED TABLE	AISC 360, SECTION N5.4 TABLE N5.4-3, AISC N5.4	
d. NONDESTRUCTIVE TESTING (NDT) OF WELDED JOINTS:				
1) COMPLETE PENETRATION GROOVE WELDS $\frac{5}{16}$" OR GREATER IN RISK CATEGORY III OR IV	-	X	AISC 360, SECTION N5.5, AISC N5.5	
2) COMPLETE PENETRATION GROOVE WELDS $\frac{5}{16}$" OR GREATER IN RISK CATEGORY II	-	X		
3) THERMALLY CUT SURFACES OF ACCESS HOLES WHEN MATERIAL t > 2"	-	X		
4) WELDED JOINTS SUBJECTED TO FATIGUE WHEN REQUIRED BY AISC 360, APPENDIX 3, TABLE A-3.1	-	X	AISC 360, APPENDIX 3	
5) MANUFACTURERS NDT REPORTS WHEN PERFORMED	-	X		
2. INSPECTION TASKS FOR STRUCTURAL STEEL BOLTING:				
a. PRIOR TO BOLTING (OBSERVE, OR PERFORM TASKS FOR EACH BOLTED CONNECTION, IN ACCORDANCE WITH QA TASKS LISTED IN AISC 360, TABLE N5.6-1)	SEE REFERENCED TABLE	SEE REFERENCED TABLE	AISC 360, SECTION N5.6 TABLE N5.6-2, AISC N5.6	
b. DURING BOLTING (OBSERVE THE QA TASKS LISTED IN AISC 360, TABLE N5.6-2)	SEE REFERENCED TABLE	SEE REFERENCED TABLE	AISC 360, SECTION N5.6 TABLE N5.6-2, AISC N5.6	
1) PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION.	-	X	AISC 360, SECTION M2.5	
2) PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION.	X	-		
3) SNUG TIGHT JOINTS.	-	X		
c. AFTER BOLTING (PERFORM TASKS FOR EACH BOLTED CONNECTION IN ACCORDANCE WITH QA TASKS LISTED IN AISC 360, TABLE N5.6-3)	SEE REFERENCED TABLE	SEE REFERENCED TABLE	AISC 360, SECTION N5.6 TABLE N5.6-3, AISC N5.6	
3. REINFORCING STEEL:				
a. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.	-	X		
2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X	-		
3) SHEAR REINFORCEMENT.	X	-		
4) OTHER REINFORCING STEEL.	-	X		
4. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:				
a. DETAILS SUCH AS BRACING AND STIFFENING.	-	X		
b. MEMBER LOCATIONS.	X	-		
c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION.	-	X		
5. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK:				
a. IDENTIFICATION MARKINGS	-	X		
b. MANUFACTURERS CERTIFIED TEST REPORTS	-	X		
6. CONNECTION OF COLD-FORMED DECK TO SUPPORTING STRUCTURE:				
a. WELDING	-	X		
b. OTHER FASTENERS				
1) VERIFY FASTENERS ARE IN CONFORMANCE WITH APPROVED SUBMITTAL	-	X	AISC 360, SECTION N6	
2) VERIFY FASTENER INSALLATION IS IN CONFORMANCE WITH APPROVED SUBMITTAL AND MANUFACTURER'S RECOMMENDATIONS	-	X		

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GENERAL STRUCTURAL NOTES
AND
QUALITY ASSURANCE TABLES

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S0.1

STEEL NOTES

1. EXISTING STRUCTURAL INFORMATION, LOCATIONS AND ELEVATIONS ARE BASED ON RECORD DRAWINGS AND/OR FIELD OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY THIS INFORMATION PRIOR TO BEGINNING CONSTRUCTION.

2. STEEL MEMBER DESIGN IS BASED UPON THE ALLOWABLE STRENGTH(LOAD & RESISTANCE FACTOR) DESIGN METHOD OF THE 13TH EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION.

3. STRUCTURAL STEEL WIDE FLANGE("W") SHAPES–ASTM A992(50 KSI STEEL)
ALL OTHER STRUCTURAL STEEL PLATES & RODS_ASTM A36
STEEL PIPE WITH WALL THICKNESS GREATER THAN 5/8"_ASTM A53, GRADE B
ALL OTHER ROUND, SQUARE & RECTANGULAR HOLLOW STRUCTURAL SECTIONS_ASTM A500 GRADE B

4. BEAM CONNECTIONS SHALL BE DESIGNED TO SUPPORT HALF THE MAXIMUM TOTAL UNIFORM LOAD, FOR THE SPAN OF THE BEAM SHOWN ON THE PLANS. MAXIMUM TOTAL UNIFORM LOADS ARE PROVIDED IN TABLE 3–6 OF THE AISC MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION.

5. ALL STEEL TO STEEL CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER ASTM A325_N HEAVY HEX HEAD, TYPE 1, HIGH STRENGTH BOLTS OR E70XX ELECTRODES, U.N.O. ALL WELDING SHALL BE IN ACCORDANCE WITH LATEST AWS SPECIFICATIONS. MINIMUM WELD SIZE SHALL BE 3/16", U.N.O.

6. ALL BOLTS SHALL BE TIGHTENED TO "SNUG TIGHT"(PER 8.1 OF AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS), U.N.O. BOLTS DESIGNATED ON THE PLANS TO BE "FULLY TENSIONED" SHALL BE TIGHTENED TO THE REQUIRED LOAD BY THE "TURN OF THE NUT" METHOD.

7. ALL FIELD CONNECTIONS SHALL BE BOLTED, U.N.O.

8. MEMBER CONNECTIONS SHALL BE DETAILED FOR A MINIMUM FORCE OF NO LESS THAN 10 KIPS.

9. ALL JOISTS AND JOIST GIRDERS SHALL CONFORM TO SJI STANDARDS. EXTEND BOTTOM CHORDS TO CONNECT AT ALL COLUMNS. PROVIDE BRIDGING PER SJI STANDARDS. JOIST CAMBER FOR FLOOR JOISTS SHALL BE PER SJI SPECIFICATIONS. ROOF JOISTS SHALL BE CAMBERED NO MORE THAN REQUIRED TO OFFSET DEFELECTION DUE TO THE JOIST'S OWN WEIGHT.

10. METAL ROOF DECK SHALL BE ASTM A611, GRADES C, D OR E, AS APPLICABLE, FOR UNCOATED OR PAINTED DECK. FOR GALVANIZED ROOF DECK, CONFORM TO ASTM A653 STRUCTURAL QUALITY GRADE 33 OR HIGHER; WITH G60 GALVANIZED COATING CONFORMING TO ASTM A525. ALL ROOF DECK SHALL CONFORM TO SDI STANDARDS, AND BE PAINTED, EXCEPT WHERE SPRAYED ON FIREPROOFING IS TO BE APPLIED, WHERE DECK SHALL BE UNCOATED.

11. OPENINGS THROUGH ROOF DECK MAY OR MAY NOT BE SHOWN ON FRAMING PLANS. GENERAL CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND PROVIDE FOR OPENINGS AND FRAMES/REINFORCING AS FOLLOWS:
    A. OPENINGS UP TO 18"x18"–PROVIDE L2x2x3/16 ANGLES PERPENDICULAR TO DECK FLUTES, ON BOTH SIDES OF OPENING. EXTEND ANGLES A MINIMUM OF 2 FLUTES BEYOND EDGE OF OPENING. FASTEN ANGLES TO EACH FLUTE WITH #10 TEK SCREWS.
    B. OPENINGS LARGER THAN 18"x18"–PROVIDE A WELDED L4x4x1/4 FRAME SUPPORTED BY STEEL JOISTS OR BEAMS AS SHOWN IN "TYPICAL JOIST REINFORCING DETAIL" (SEE SHEET S4.0). REINFORCE STEEL JOISTS PER THE SAME DETAIL.

12. PROVIDE CONTINUOUS 12 GAUGE, 12"(MINIMUM) WIDE COVER PLATE WHERE ROOF DECK CHANGES DIRECTION. FASTEN TO DECK ON BOTH SIDES OF JOINT WITH #10 TEK SCREWS AT 12" O.C.

13. METAL FORM DECK SHALL BE ASTM A653 STRUCTURAL QUALITY GRADE 33 OR HIGHER; WITH G60 GALVANIZED COATING CONFORMING TO ASTM A525 OR PAINTED FINISH, AS INDICATED ON PLANS.

14. UNLESS NOTED OTHERWISE, METAL DECK SHALL BE FASTENED TO SUPPORT MEMBERS AT 18" O.C. PROVIDE TWO SIDELAP FASTENERS EVENLY SPACED BETWEEN SUPPORT MEMBERS. SUPPORT MEMBER FASTENERS SHALL BE #12 TEK SCREWS. SIDELAP FASTENERS SHALL BE #10 TEK SCREWS. METAL DECK SHALL NOT BE WELDED.

15. STEEL PAINTING_PROVIDE RED OXIDE SHOP COAT.

16. LOADS INDICATED ON PLANS ARE FULLY ADJUSTED CONNECTION DESIGN LOADS DO NOT INCREASE ALLOWABLE STRESSES FOR WIND, ETC.

17. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. FABRICATOR SHALL PRODUCE ERECTION DRAWINGS WITHOUT PHOTOCOPYING OR OTHERWISE REPRODUCING THE ARCHITECT'S DESIGN PLANS.

MASONRY NOTES

1. THE OWNER SHALL RETAIN THE SERVICES OF A QUALIFIED, INDEPENDENT, INSPECTION FIRM TO PERFORM ON–SITE INSPECTIONS OF MASONRY AS REQUIRED BY TABLE 1705.4 OF THE 2015 MICHIGAN BUILDING CODE.

2. ALL CONCRETE MASONRY SHALL CONFORM TO ASTM C90, HOLLOW LOADBEARING BLOCK UNITS. LAY BLOCK IN RUNNING BOND. ADD "DRY–BLOCK" BLOCK ADMIXTURE TO THE MIX FOR ALL CMU TO BE USED IN THE EXTERIOR WYTHE FOR ALL WALLS.

3. ALL MORTAR FOR CONCRETE MASONRY SHALL CONFORM TO ASTM C270, TYPE S. JOINTS SHALL BE TOOLED CONCAVE. ADD "DRY–BLOCK" MORTAR ADMIXTURE TO THE MIX FOR ALL MORTAR TO BE USED IN THE EXTERIOR WYTHE FOR ALL WALLS.

4. ALL GROUT SHALL CONFORM TO ASTM C476. MORTAR SHALL NOT BE SUBSTITUTED FOR GROUT. CORES CONTAINING REBAR SHALL BE GROUTED SOLID.
REBAR LAPS
    VERTICAL WALL REINFORCING–48 BAR DIAMENTERS
    BOND BEAMS–30 BAR DIAMETERS
REBAR SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO FABRICATION.

5. HORIZONTAL JOINT REINFORCEMENT SHALL BE LADDER TYPE, GALVANIZED FINISH, COLD DRAWN STEEL WITH 9 GAUGE SIDE RODS AND CROSS TIES. INSTALL JOINT REINFORCEMENT AT 16" O.C., VERTICALLY.

6. SEE LINTEL SCHEDULE FOR STEEL LINTELS. PROVIDE BOND BEAM MASONRY LINTELS OVER ALL WALL OPENINGS NOT SCHEDULED FOR STEEL LINTELS. BOND BEAM LINTELS SHALL BE 8" HIGH WITH TWO #5 BOTTOM BARS, U.N.O.

7. IN SINGLE WYTHE AND MULTI–WYTHE SOLID WALLS, STEEL LINTELS SHALL BE CENTERED ON THE WALL. IN MULTI–WYTHE CAVITY WALLS, STEEL LINTELS SHALL BE CENTERED ON THE CONCRETE MASONRY WYTHE AND THE BOTTOM PLATE FOR VENEER SUPPORT SHALL BE OFFSET AS REQUIRED.

8. STEEL BOTTOM PLATES SHALL BE WELDED TO BEAM SECTIONS TO CARRY MASONRY. PLATE WIDTH SHALL BE THE NOMINAL WALL THICKNESS MINUS 1". PLATE THICKNESS SHALL BE 1/4" FOR PLATES 12" AND LESS WIDE, AND 5/16" FOR PLATES WIDER THAN 12".

9. ALL LINTELS SHALL BEAR 8" EACH END, UNLESS A BEARING PLATE IS CALLED FOR ON THE PLANS. FIELD WELD LINTELS TO BEARING PLATES.

10. GROUT MASONRY CORES DIRECTLY BELOW JOIST, BEAM AND LINTEL BEARINGS IN NEW AND EXISTING MASONRY A MINIMUM OF ONE COURSE, U.N.O.

11. PROVIDE VERTICAL CONTROL JOINTS AT THE FOLLOWING LOCATIONS:
    A. AS SHOWN ON THE PLANS
    B. IF CONTROL JOINTS ARE NOT SHOWN ON THE PLANS, LOCATE AS FOLLOWS:
1. INTERSECTIONS OF PERPENDICULAR WALLS
2. CHANGES IN WALL HEIGHT
3. CHANGES IN WALL THICKNESS
4. TRANSITION BETWEEN SLAB & FOOTING SUPPORTED WALLS
5. SPACED NO MORE THAN 40 FEET OR TWICE THE WALL HEIGHT APART, WHICHEVER IS LESS

12. DO NOT PLACE VERTICAL CONTROL JOINTS THROUGH BOND BEAM MASONRY LINTELS, OR WITHIN 16" OF A BEAM OR JOIST BEARING POINT.

13. ALL "CAST_IN" ANCHOR RODS FOR STRUCTURAL STEEL COLUMNS SHALL BE ASTM F1554, GRADE 36.

14. ALL FOUNDATION ANCHORS FOR WOOD CONSTRCUTION SHALL BE ASTM A307 STEEL, U.N.O. GALVANIZE TO G60 COATING PER ASTM A153 FOR EXTERIOR AND HIGH HUMIDITY LOCATIONS; GALVANIZE TO G185 COATING PER ASTM A153 FOR ITEMS IN CONTACT WITH PRESERVATIVE TREATED WOOD; PLAIN FINISH FOR ALL OTHER LOCATIONS.

15. DRILLED IN CONCRETE ANCHORS(DCA'S) FOR GROUTED MASONRY SHALL BE AS FOLLOWS:
    A. HILTI HEAVY DUTY "KWIK BOLTS"
    B. RAMSET/REDHEAD "DYNABOLT SLEEVE"
    C. POWERS/RAWL "POWERBOLT"
    D. SIMPSON STRONG–TIE "WEDGE–ALL"
    E. E APPROVED EQUAL
PROVIDE STAINLESS STEEL OR GALVANIZED TO G185 COATING PER ASTM A153 FOR DCA'S IN CONTACT WITH PRESERVATIVE TREATED WOOD.

16. DRILLED IN CONCRETE ANCHORS(DCA'S) FOR HOLLOW MASONRY SHALL BE AS FOLLOWS:
    A. HILTI "SLEEVE ANCHORS"
    B. RAMSET/REDHEAD "DYNABOLT SLEEVE"
    C. POWERS/RAWL "LOK/BOLT"
    D. SIMPSON STRONG–TIE "SLEEVE–ALL"
    E. APPROVED EQUAL
PROVIDE STAINLESS STEEL OR GALVANIZED TO G185 COATING PER ASTM A153 FOR DCA'S IN CONTACT WITH PRESERVATIVE TREATED WOOD.

17. NO FILL SHALL BE PLACED AGAINST CONCRETE MASONRY WALLS UNTIL MORTAR HAS REACHED 75% OF DESIGN STRENGTH OR UNTIL DIRECTED BY THE ARCHITECT.

18. ALL INTERSECTING MASONRY WALLS(LOAD AND NONLOADBEARING) SHALL BE ANCHORED OR BONDED TOGETHER BY ONE OF THE METHODS DESCRIBED IN THE 2006 MICHIGAN BUILDING CODE 2109.7.2.1 THROUGH 2109.7.2.5, U.N.O. MASONRY WALLS INTERSECTING A PERPENDICULAR WALL OF DIFFERENT MATERIAL SHALL BE ANCHORED TO THAT WALL BY MEANS OF STEEL CONNECTORS PER THE 2006 MICHIGAN BUILDING CODE 2109.7.2.2 OR 2109.7.2.5, U.N.O.

19. INTERIOR NONLOADBEARING MASONRY WALLS, WITH AN UNSUPPORTED LENGTH BETWEEN INTERSECTING PERPENDICULAR WALLS GREATER THAN 36 TIMES THE WALL THICKNESS, SHALL BE BRACED TO THE FLOOR OR ROOF STRUCTURE ABOVE AT INTERVALS NOT EXCEEDING 36 TIMES THE WALL THICKNESS, U.N.O.

20. ALL COLD WEATHER MASONRY WORK SHALL BE DONE IN ACCORDANCE WITH "IMIAWC: RECOMMENDED PRACTICES AND GUIDE SPECIFICATION FOR COLD WEATHER MASONRY CONSTRUCTION". THE "IMIAWC" PROVISIONS SHALL BE CONSIDERED TO BE MANDATORY.

CONCRETE NOTES

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WITH MINIMUM LAPS OF 8".

2. PROVIDE CORNER BARS TO MATCH ALL HORIZONTAL REINFORCING IN WALLS AND FOOTINGS. ALL LAPS SHALL BE A MINIMUM OF 30 BAR DIAMETERS, U.N.O.

3. PROVIDE DOWELS BETWEEN ALL FOOTINGS, WALLS, AND PIERS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING. ALL LAPS SHALL BE A MINIMUM OF 30 BAR DIAMETERS, U.N.O.

4. ALL "CAST_IN" ANCHOR RODS FOR STRUCTURAL STEEL COLUMNS SHALL BE ASTM A307.

5. ALL FOUNDATION ANCHORS FOR WOOD CONSTRCUTION SHALL BE ASTM A307 STEEL, U.N.O. GALVANIZE TO G60 COATING PER ASTM A153 FOR EXTERIOR AND HIGH HUMIDITY LOCATIONS; GALVANIZE TO G185 COATING PER ASTM A153 FOR ITEMS IN CONTACT WITH PRESERVATIVE TREATED WOOD; PLAIN FINISH FOR ALL OTHER LOCATIONS.

6. ALL CONCRETE SHALL ATTAIN THE FOLLOWING 28 DAY COMPRESSIVE STRENGTHS:
    A. FOOTINGS, WALLS, PIERS........................3000 PSI
    B. SLABS ON GRADE OR METAL DECK......4000 PSI

7. PROVIDE AIR ENTRAINING FOR ALL CONCRETE EXCEPT INTERIOR SLABS AND INTERIOR FOOTINGS.

8. CONCRETE SHALL CONFORM TO THE FOLLOWING:
    A. ACI 301: SPECIFICATIONS FOR STRUCTURAL CONCRETE
    B. ACI 305: HOT WEATHER CONCRETING
    C. ACI 306: COLD WEATHER CONCRETING

9. NO FILL SHALL BE PLACED AGAINST CONCRETE WALLS UNTIL CONCRETE HAS REACHED 75% OF DESIGN STRENGTH OR UNTIL DIRECTED BY THE ARCHITECT.

10. DRILLED IN CONCRETE ANCHORS(DCA'S) SHALL BE AS FOLLOWS:
    A. HILTI HEAVY DUTY "KWIK BOLTS"
    B. RAMSET/REDHEAD "DYNABOLT SLEEVE"
    C. POWERS/RAWL "POWERBOLT"
    D. SIMPSON STRONG–TIE "WEDGE–ALL"
    E. APPROVED EQUAL
PROVIDE STAINLESS STEEL OR GALVANIZED TO G185 COATING PER ASTM A153 FOR DCA'S IN CONTACT WITH PRESERVATIVE TREATED WOOD.

11. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4".

12. ELECTRICAL CONDUITS, PIPES, DRAINS, ETC. SHALL BE IN PLACE BEFORE CONCRETE IS PLACED.

13. REBAR SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO FABRICATION. ALL SHOP DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI DETAILING MANUAL.

STRUCTURAL LOADS

1. DESIGN LOADS_IN ACCORDANCE WITH THE 2015 MICHIGAN BUILDING CODE & SEI/ASCE 7–10.

2. SNOW LOAD INFORMATION
    A. Pg=25 PSF
    B. Is=1.0(CATEGORY III)
    C. Ce=1.0(EXPOSURE B)
    D. Ct=1.0
    E. Pf=18 PSF=(25 PSF)(0.7)(1.0)(1.0)(1.0)

3. ROOF DEAD LOAD=20 PSF
ROOF SNOW LOAD=22.5 PSF UNIFORM (17.5 PSF SNOW + 5 PSF RAIN SURCHARGE)
UNBALANCED SNOW LOAD AND DRIFT LOAD CONDITIONS HAVE BEEN TAKEN INTO ACCOUNT FOR THE STRUCTURAL DESIGN–SEE DIAGRAM ON PLANS

4. WIND LOAD INFORMATION
    A. V=115 MPH
    B. Iw=1.0(CATEGORY III)
    C. EXPOSURE C
    D. GCpi=+0.18 & –0.18
    E. MWFS DESIGN PRESSURE = 16.7 PSF
    F. COMPONENTS & CLADDING DESIGN WIND PRESSURE=20 PSF

5. SEISMIC LOAD INFORMATION
    A. SEISMIC USE GROUP III(Ie=1.25)
    B. SPECTRAL RESPONSE ACCELERATIONS
        1. Ss=0.085g
        2. S1=0.046g
    C. SITE CLASS D
    D. SPECTRAL RESPONSE COEFFICIENTS
        1. Sds=0.091g
        2. Sd1=0.073g
    E. SEISMIC DESIGN CATEGORY B
    F. BASIC SEISMIC FORCE RESISTING SYSTEM=STEEL CONCENTRICALLY GRACED FRAME
    G. DESIGN BASE SHEAR= 15,510lb (PER 2015 MBC 1613.1)
    H. SEISMIC RESPONSE COEFFICIENT Cs=0.028
    I. RESPONSE MODIFICATION FACTOR R=3.25
    J. ANALYSIS PROCEDURE USED–EQUIVALENT LATERAL FORCE PROCEDURE PER 2015 MBC SECTION 1613.1

SITE PREP NOTES

1. REMOVE ALL TOPSOIL, ORGANIC SOIL, PEAT AND OTHER UNSUITABLE MATERIALS WITHIN THE FOOTPRINT OF THE BUILDING ADDITIONS AND TO A LATERAL DISTANCE 5 FEET BEYOND THE FOOTPRINT OF THE ADDITIONS. ANY EXCAVATION BELOW FINISHED GRADE NECESSARY TO REMOVE UNSUITABLE SOIL SHALL EXTEND LATERALLY A DISTANCE EQUAL TO THE DEPTH OF THE EXCAVATION IN ALL DIRECTIONS.

2. CONTACT THE ARCHITECT & CONSTRUCTION MANAGER IMMEDIATELY WHEN QUESTIONABLE SOILS ARE ENCOUNTERED.

3. FOOTINGS ARE DESIGNED TO BEAR ON NATURAL MATERIALS OR ENGINEERED FILL PER NOTE 6 WITH AN ASSUMED ALLOWABLE BEARING CAPACITY OF 2000 PSF PER TABLE 1806.2 OF THE 2015 MICHIGAN BUILDING CODE(CONTRACTOR TO VERIFY BY QUALIFIED TESTING AGENCY IN THE FIELD). IF MATERIAL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED, FOOTINGS SHALL BE LOWERED OR ENLARGED AT THE DIRECTION OF THE ARCHITECT.

4. THE FINAL 6" OF SOIL DIRECTLY BELOW FLOOR SLABS SHALL BE CLEAN GRANULAR FILL COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DENSITY AS DETERMINED BY MODIFIED PROCTOR.

5. PROOFROLL EXISTING FOOTING SUBGRADES TO IDENTIFY SOFT SPOTS. CUT OUT SOFT SPOTS AND RECOMPACT EXISTING SOIL OR REPLACE WITH ENGINEERED FILL PER NOTE 6.

6. A WELL GRADED, GRANULAR, ENGINEERED FILL SHALL BE USED TO REPLACE EXISTING SOILS WHICH HAVE BEEN REMOVED, AND TO ACHIEVE PROPER GRADE ELEVATIONS IN "FILL" SITUATIONS. ENGINEERED FILL SHALL NOT HAVE MORE THAN 7% BY WEIGHT PASSING THE NUMBER 200 SIEVE. PLACE FILL IN LIFTS NOT EXCEEDING 12" AND COMPACT TO 95% OF MODIFIED PROCTOR.

7. EXISTING INORGANIC SITE SOILS & FILL MAY BE USED AS ENGINEERED FILL IF IT MEETS THE GRADING REQUIREMENTS OF NOTE 6.

8. DO NOT UNDERMINE EXISTING FOUNDATIONS WHEN EXCAVATING ADJACENT TO THE EXISTING BUILDING. SHOULD IT BECOME NECESSARY TO EXCAVATE TO AN ELEVATION BELOW THE EXISTING FOOTINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND DESIGNING TEMPORARY SHORING OF THE EXISTING FOOTINGS, OR OTHER MEANS OF SAFEGUARDING THE EXISTING FOUNDATIONS.

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IDI INTEGRATED DESIGNS INC.
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BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	DESIGN DEVELOP	03.31.20
B	FINAL REVIEW	05-11-20
0	FOR CONSTRUCTION	05-26-20
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	BY	DATE
DESIGN	NPC	03.14.19
DRAWN	NPC	03.14.19
CHECKED	PDN	---
APPROVED	PDN	---

GENERAL STRUCTURAL NOTES
AND
QUALITY ASSURANCE TABLES

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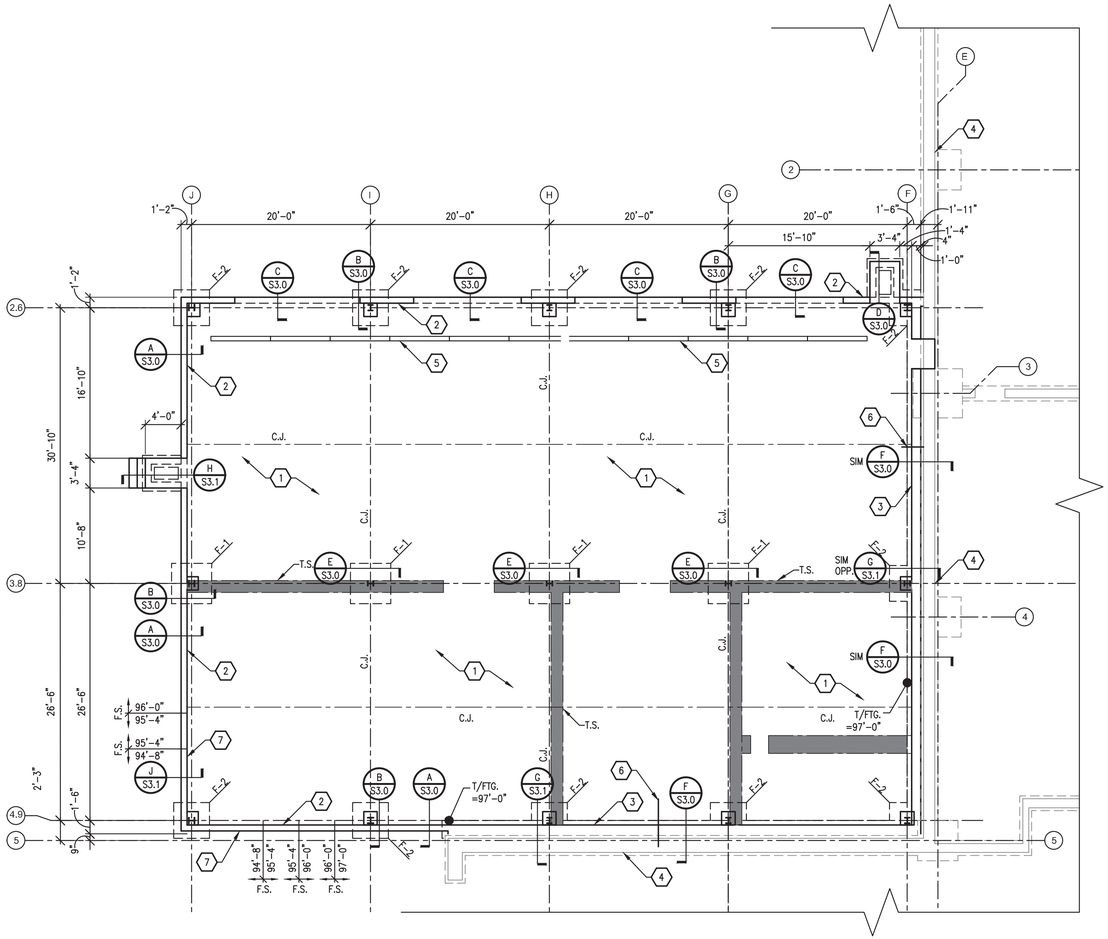
FOOTING SCHEDULE

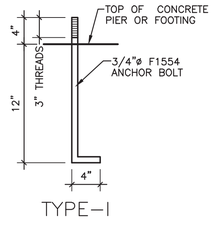
MARK	SIZE	REINFORCING	PIER	REMARKS
F-1	12"x4'-6"x4'-6"	(5) #5 EACH WAY	18"x18" (SEE DTLS FOR REINF.)	
F-2	12"x4'-0"x4'-0"	(4) #5 EACH WAY	18"x18" (SEE DTLS FOR REINF.)	



FOUNDATION PLAN

SCALE: 1/8"=1'-0"
T/SLAB = 100'-0" U.N.O. = 949.37' CIVIL
T/FTG. = 96'-0" U.N.O.

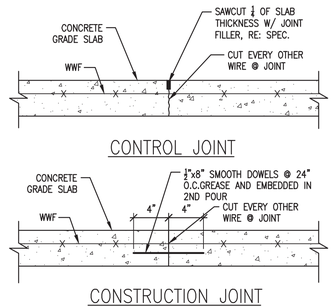
N



TYPE-I

TYPICAL COL. ANCHORS

NO SCALE



CONTROL/ CONSTRUCTION JOINTS

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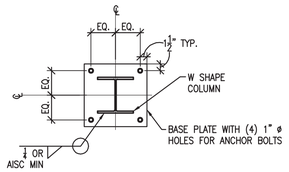
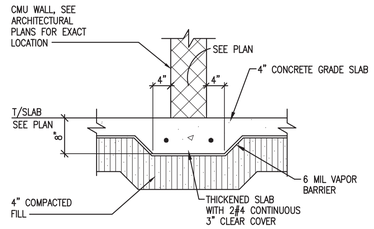


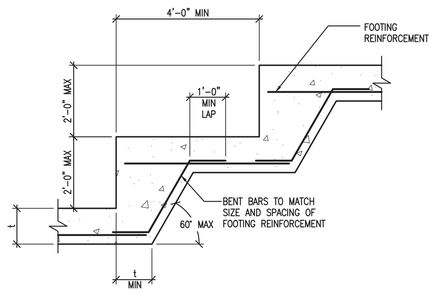
FOUR BOLT BASE PLATE

NO SCALE



THICKENED SLAB

SCALE: 3/4" = 1'-0"



FOOTING STEP DETAIL

NO SCALE

KEYNOTES

1. 6" CONCRETE GRADE SLAB W/ FIBER MESH REINFORCING OVER 10 MIL VAPOR BARRIER ON 12" COMPACTED GRANULAR FILL.
2. 8" REINFORCED CONCRETE FOUNDATION WALL.
3. 12" REINFORCED CONCRETE FOUNDATION WALL W/ CONT. STRIP FOOTING.
4. EXISTING FOUNDATION SYSTEM.
5. TRENCH DRAIN, RE: PLUMBING PLAN.
6. THRU WALL FOUNDATION WALL PIPE SLEEVE, COORD. LOCATION W/ PLUMBING PLAN.
7. STEP TOP OF FOUNDATION WALL W/ FOOTING STEP.

LEGEND

F.S.	FOOTING STEP
T/	"TOP OF"
EXIST.	EXISTING
F-x	FOOTING MARK
TYP.	TYPICAL
STEEL JOIST	——— ——— ——— ———
BEAM/LINTEL	———
L-x	LINTEL MARK
HORIZONTAL BRIDGING	———
CROSS BRIDGING	X
J.B.	JOIST BEARING ELEVATION
O.H.	OPPOSITE HAND
SIM.	SIMILAR
T/S	TOP OF STEEL
F.V.	FIELD VERIFY
N.T.S.	NOT TO SCALE
U.N.O.	UNLESS NOTED OTHERWISE

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BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
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A	DESIGN DEV	03-31-20
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0	FOR CONSTRUCTION	05-26-20
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	BY	DATE
DESIGN	NPC	02.18.20
DRAWN	NPC	02.18.20
CHECKED	PDN	---
APPROVED	PDN	---

FOUNDATION PLAN

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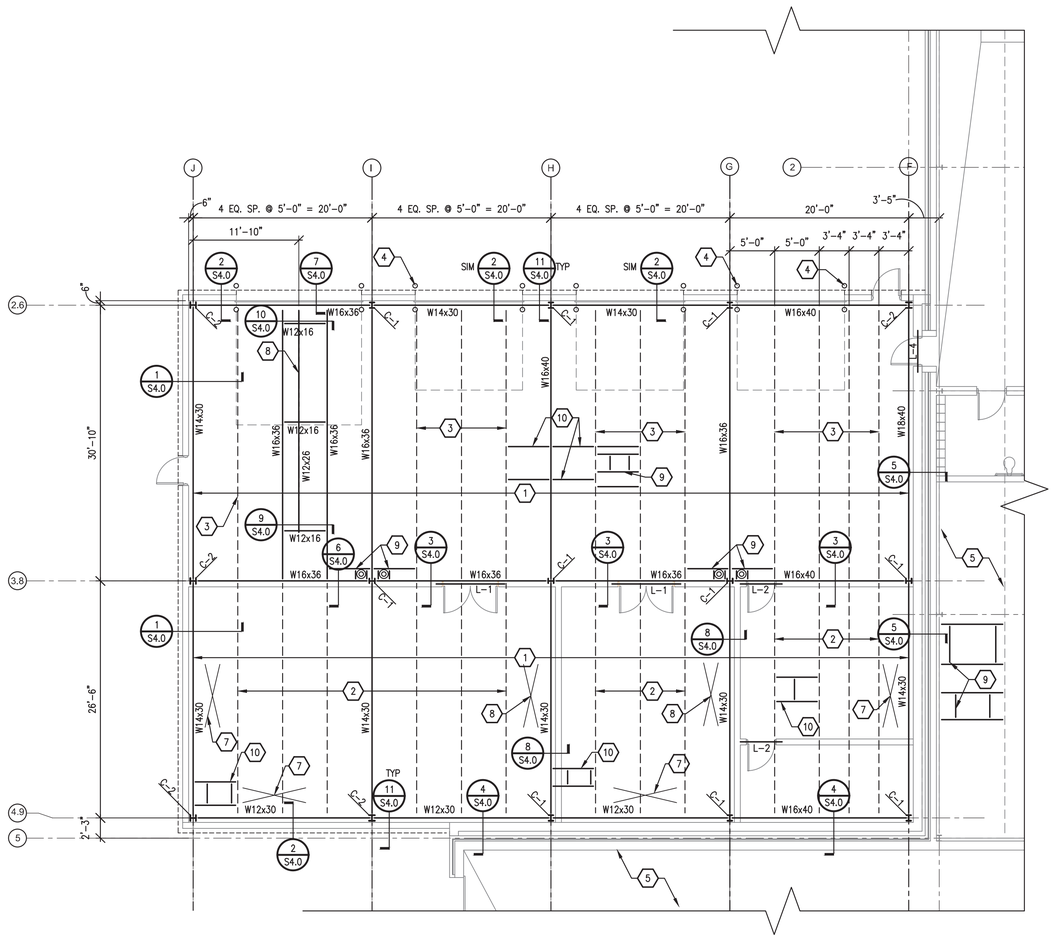
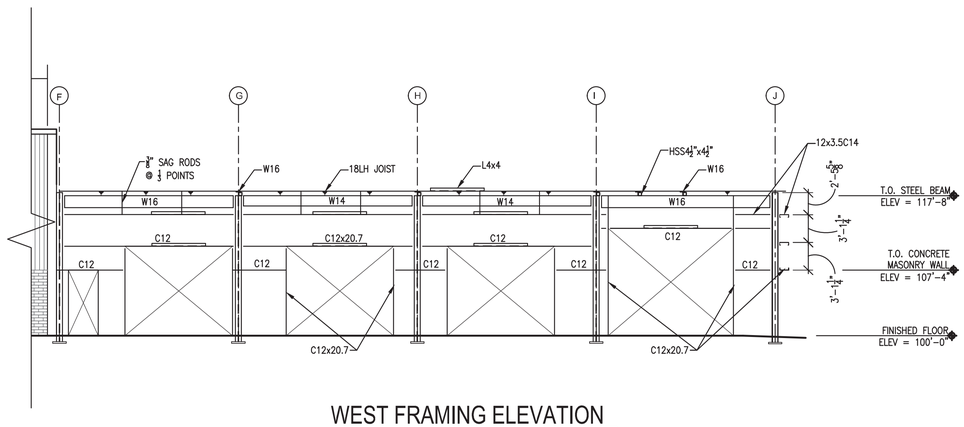


FRAMING PLAN

SCALE: 1/8"=1'-0"
T/JOIST = VARIES
T/STEEL= VARIES
T/COL LOW POINT = 117'-5" @ COLUMN LINES I/3.8 & G/3.8

N



WEST FRAMING ELEVATION

SCALE: 1/8"=1'-0"
C12 = C12x20.7

LINTEL SCHEDULE

MARK	SECTION	BEARING	REMARKS
L-1	(2) L3½"x3½"x⅝"	8"	--
L-2	(2) L3½"x3½"x¼"	8"	--
L-3	W8x10+ ¼"x7" BOTTOM PLATE	8"	--
L-4	W8x10+ ¼"x17" BOTTOM PLATE	8"	PROVIDE ¼" TRIANGULAR STIFFENERS AT 2'-0" O.C. FROM WEB TO BOTTOM PLATE

COLUMN SCHEDULE

MARK	SECTION	BASE PLATE	ANCHOR BOLTS	B/BASE PL EL.	REMARKS
C-1	W8x24	1 1/4"x14"x14"	(4) AB-I	99'-5"	
C-2	W8X31	1 1/4"x14"x14"	(4) AB-I	99'-5"	

KEYNOTES

1. 1-1/2" 22 GAGE, GALVANIZED METAL ROOF DECK, 3 SPANS CONTINUOUS MINIMUM, FASTEN TO SUPPORT MEMBERS W/ #12 TEK SCREWS @ 36/5 AND (4) SIDELAP FASTENERS EVENLY SPACED.
2. 18LH02 STEEL JOIST W/ 2 ROWS WELDED HORIZONTAL BRIDGING.
3. 18LH03 STEEL JOIST W/ 3 ROWS WELDED HORIZONTAL BRIDGING.
4. PIPE BOLLARDS, RE: CIVIL & ARCH. DWGS.
5. EXISTING ROOF STRUCTURE.
6. HOIST BEAM, MAXIMUM 3000LB.
7. L4x4x⅝" "X" BRACING.
8. L6x6x⅝" "X" BRACING.
9. ANGLE FRAME AT ROOF OPENING PER "STEEL NOTES" #11.
10. JOIST/ROOF REINFORCEMENT AT ROOF TOP MECHANICAL UNITS, COORD. LOCATIONS W/ MECH CONTRACTOR. RE: TYPICAL JOIST REINFORCEMENT DETAIL.

LEGEND

F.S.	FOOTING STEP
T/	"TOP OF"
EXIST.	EXISTING
F-x	FOOTING MARK
TYP.	TYPICAL
STEEL JOIST	——— ——— ——— ———
BEAM/LINTEL	———
L-x	LINTEL MARK
HORIZONTAL BRIDGING	———
CROSS BRIDGING	X
J.B.	JOIST BEARING ELEVATION
O.H.	OPPOSITE HAND
SIM.	SIMILAR
T/S	TOP OF STEEL
F.V.	FIELD VERIFY
N.T.S.	NOT TO SCALE
U.N.O.	UNLESS NOTED OTHERWISE

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BRIGHTON AREA SCHOOLS
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PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	DESIGN DEV	03-31-20
B	FINAL REVIEW	05-11-20
0	FOR CONSTRUCTION	05-26-20
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	BY	DATE
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FRAMING PLAN

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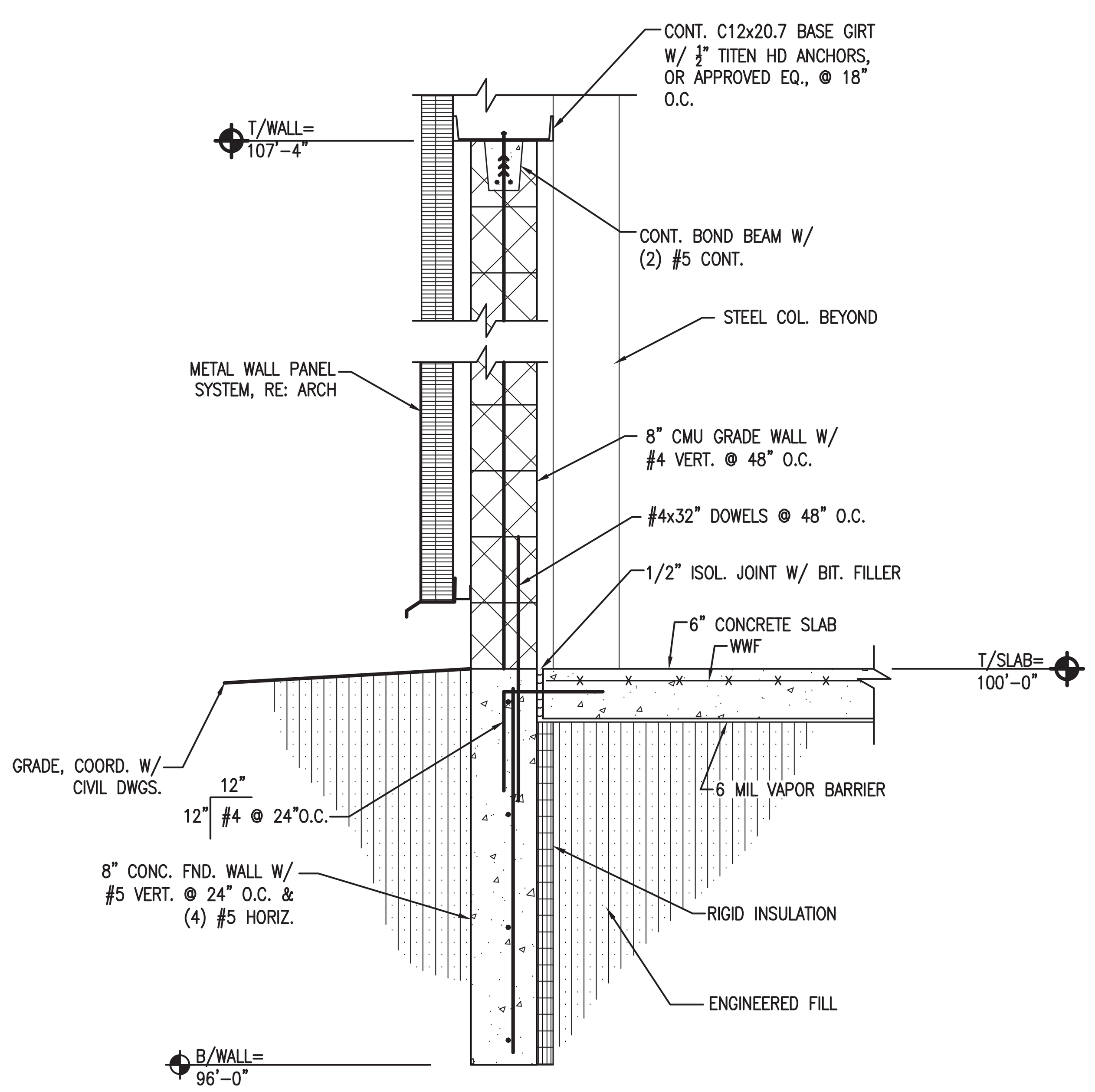
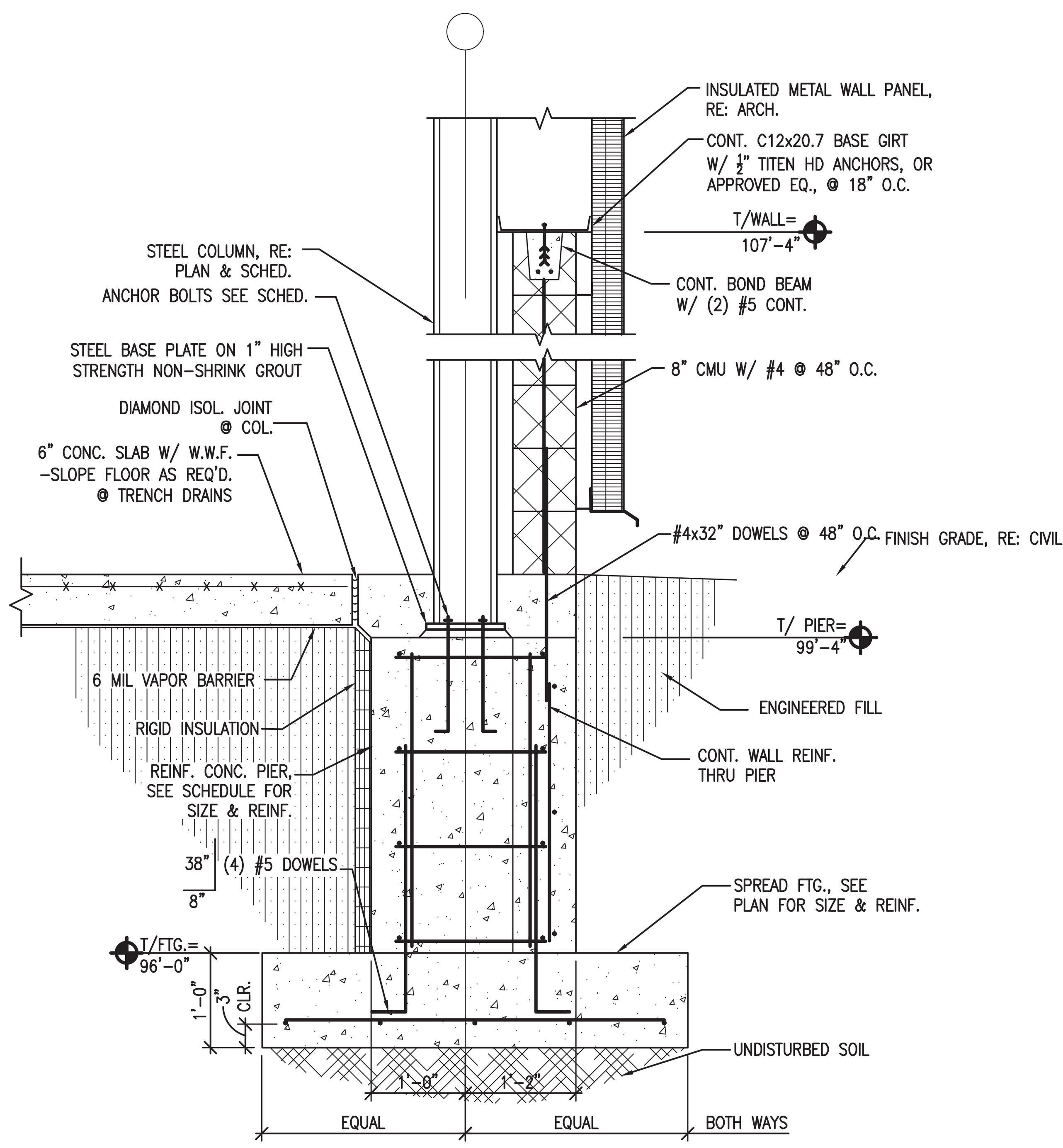
S2.0



DETAIL A / S1.0
SCALE: 3/4" = 1'-0"



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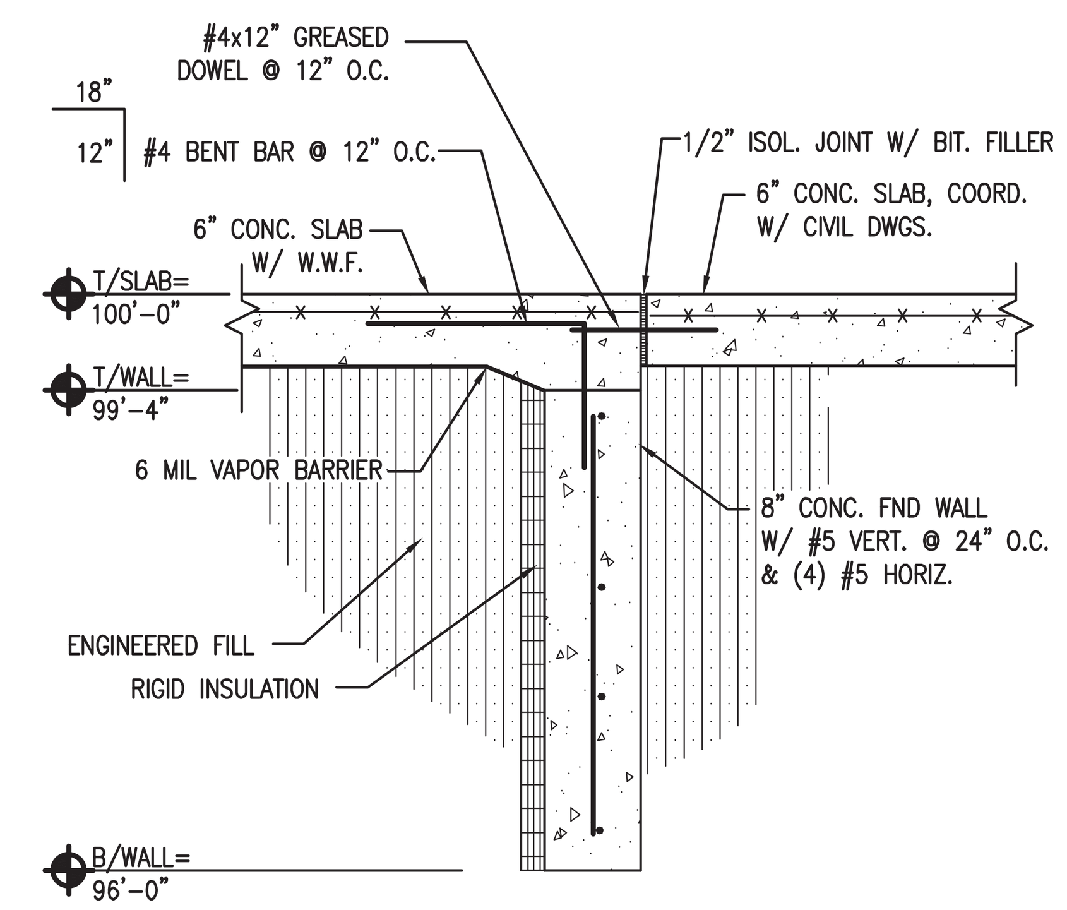

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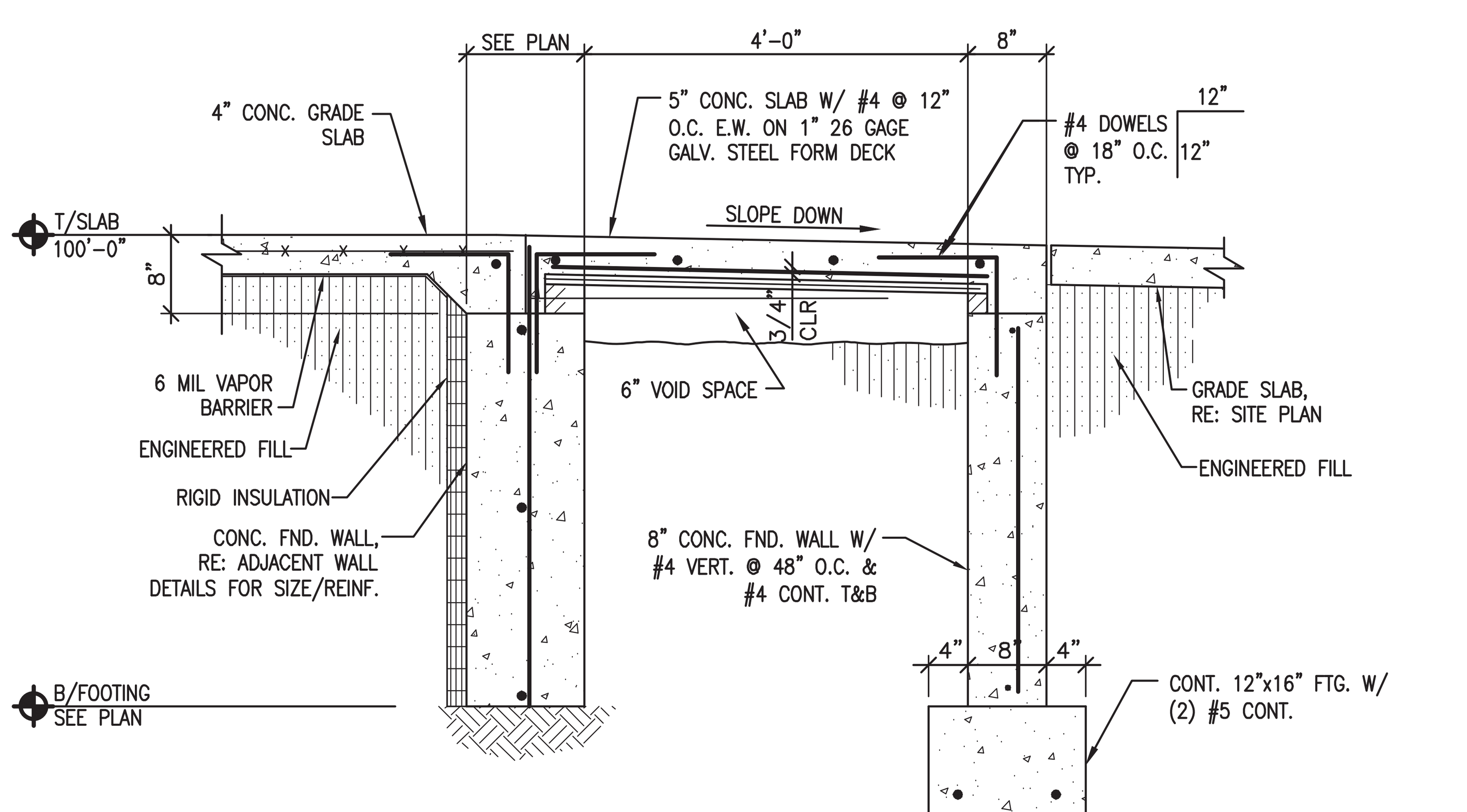

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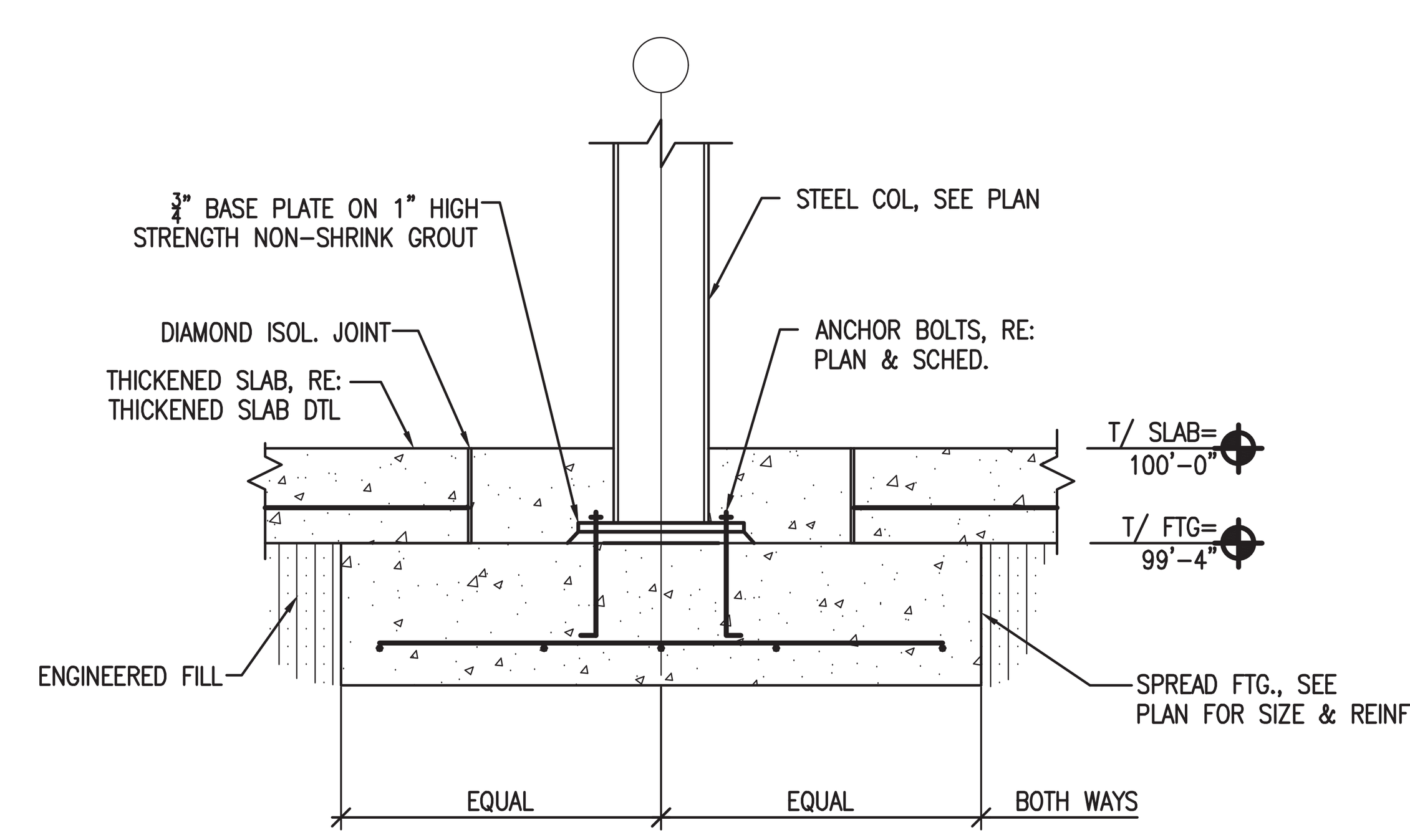

DETAIL E / S1.0
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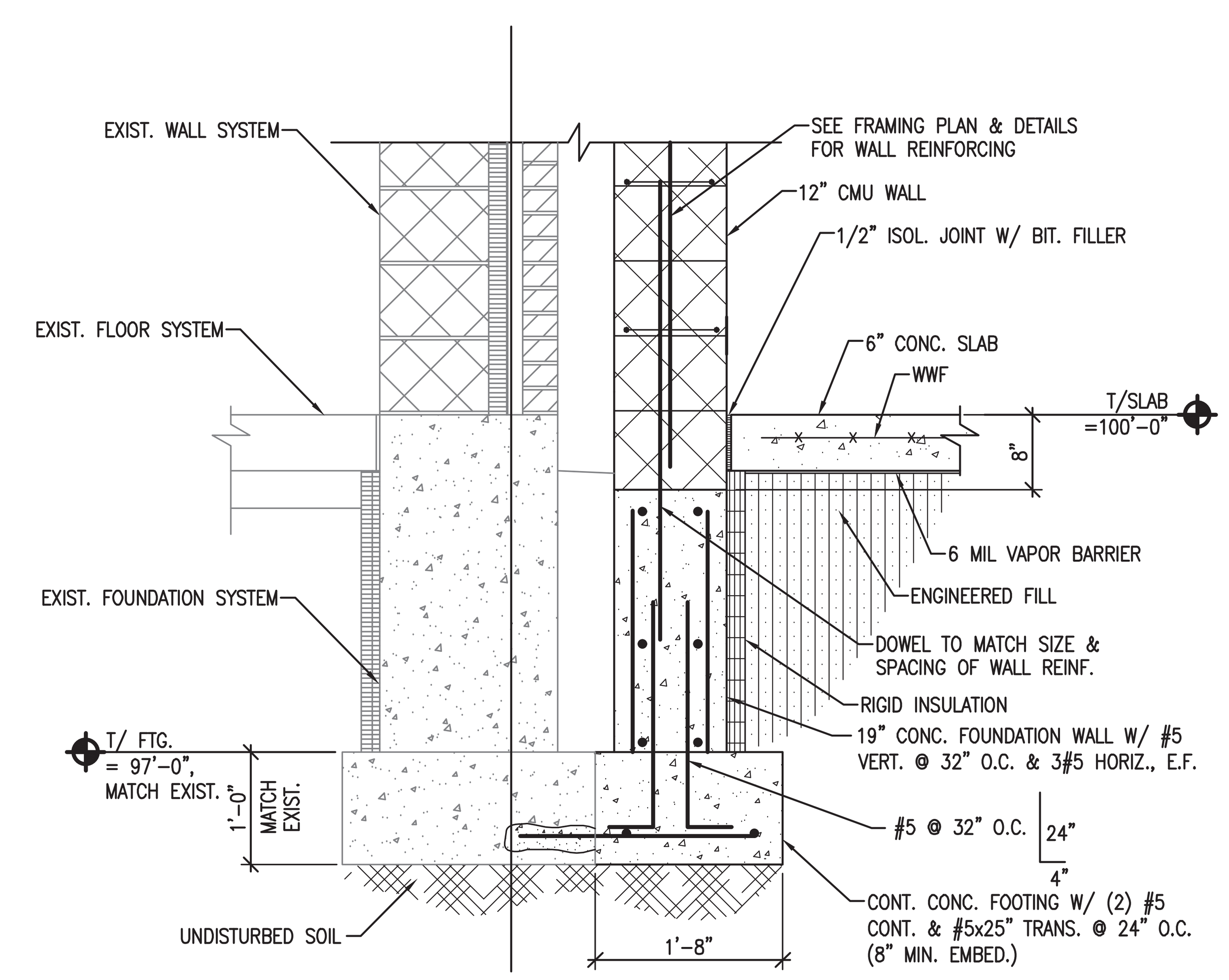

DETAIL F / S1.0
SCALE: 3/4" = 1'-0"

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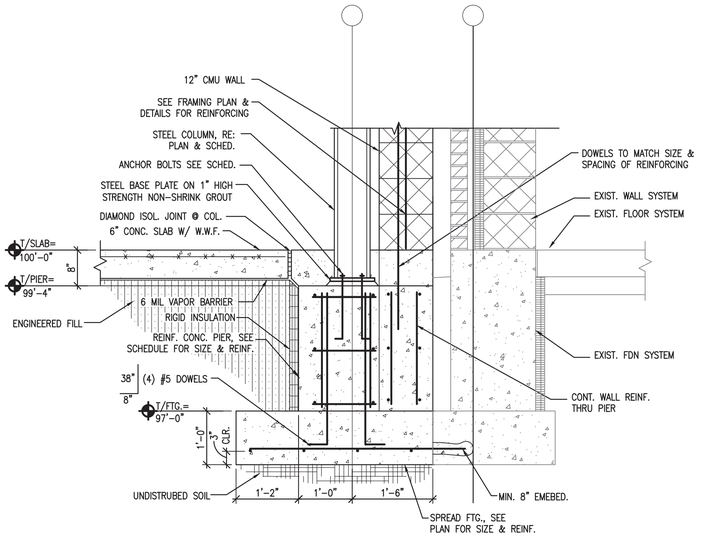
S3.0



DETAIL
SCALE: 3/4" = 1'-0"
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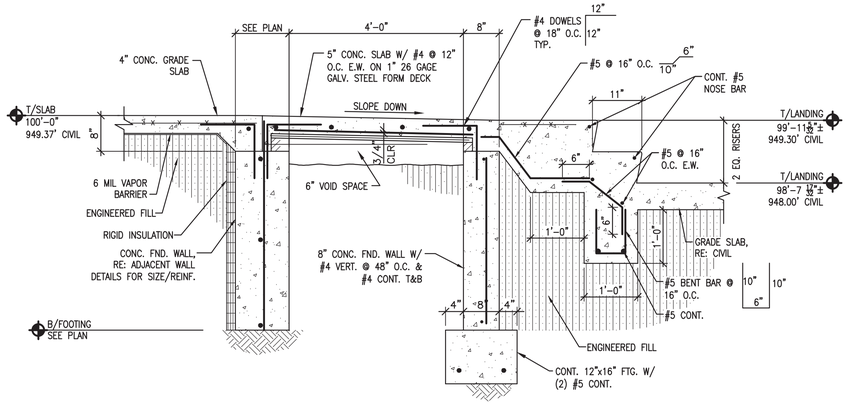
S1.0



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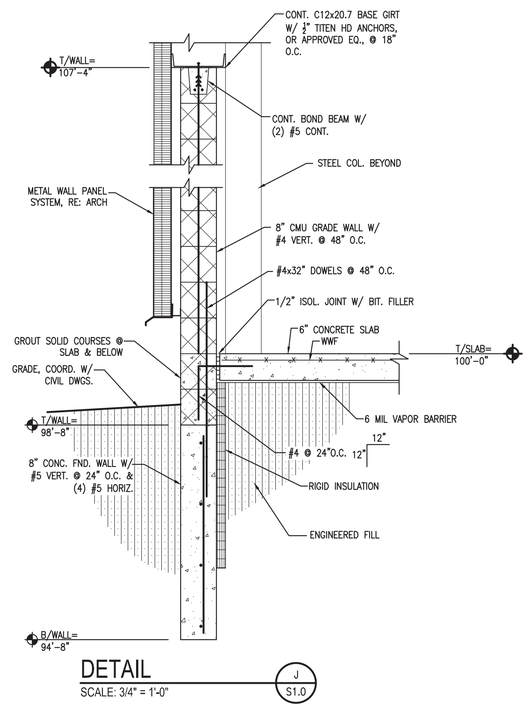
S1.0



DETAIL
SCALE: 3/4" = 1'-0"
J
S1.0

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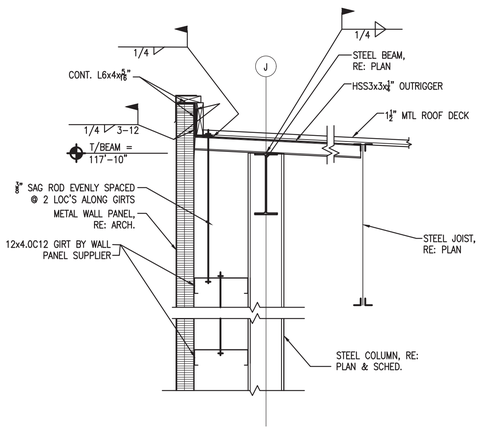
S3.1



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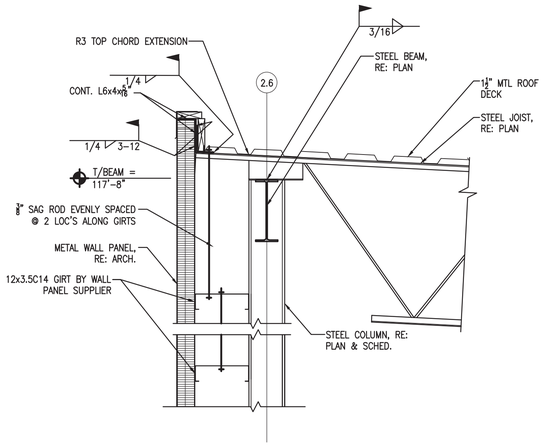

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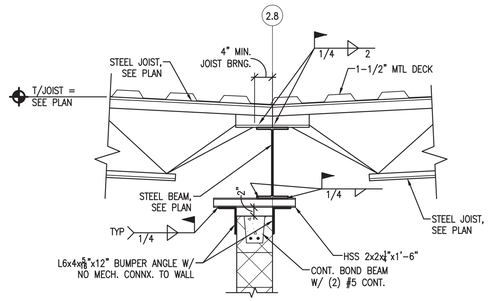

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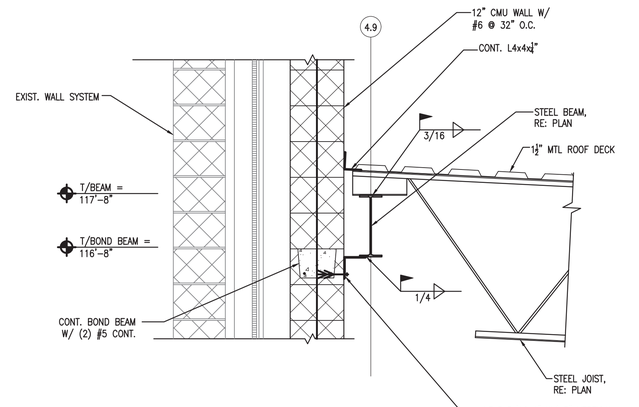

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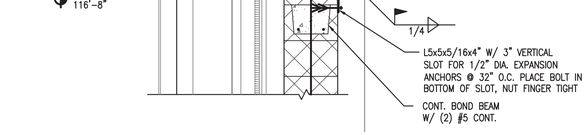

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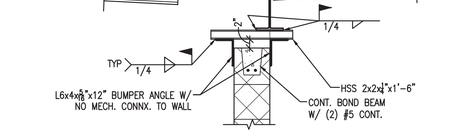

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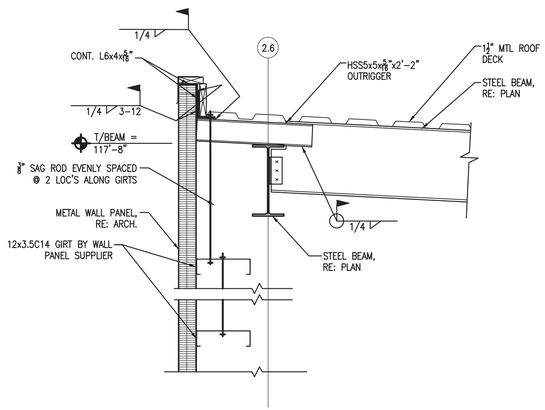

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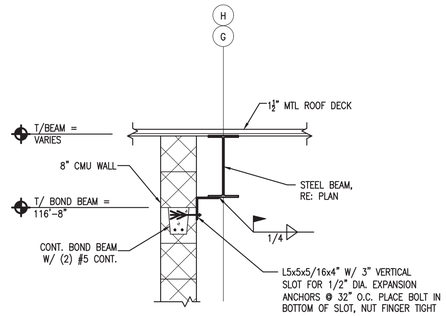

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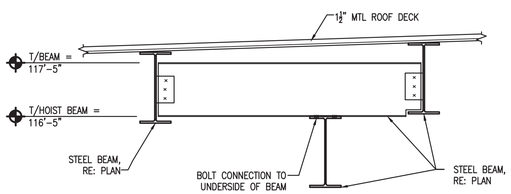

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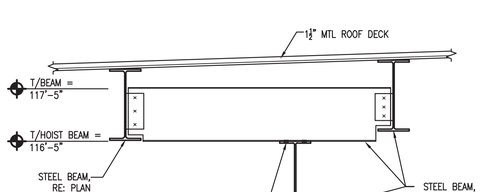

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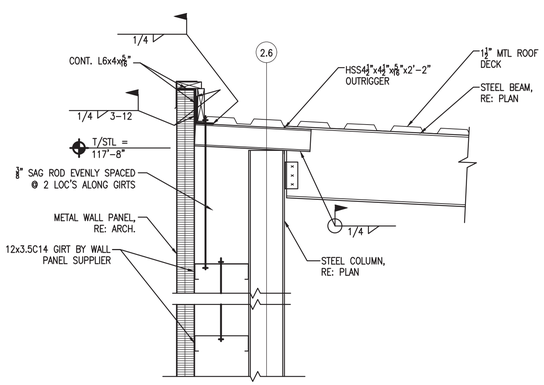

DETAIL
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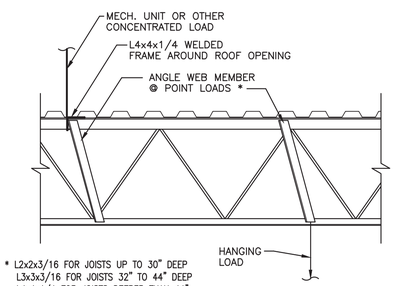
11 S2.0



* L2x2x3/16 FOR JOISTS UP TO 30" DEEP
L3x3x3/16 FOR JOISTS 32" TO 44" DEEP
L4x4x1/4 FOR JOISTS DEEPER THAN 44"

TYPICAL JOIST REINFORCING DETAIL

NO SCALE

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NO.	REVISIONS	DATE
B	FINAL REVIEW	05-11-20
C	FOR CONSTRUCTION	05-26-20

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S4.0

WALL TYPE LEGEND

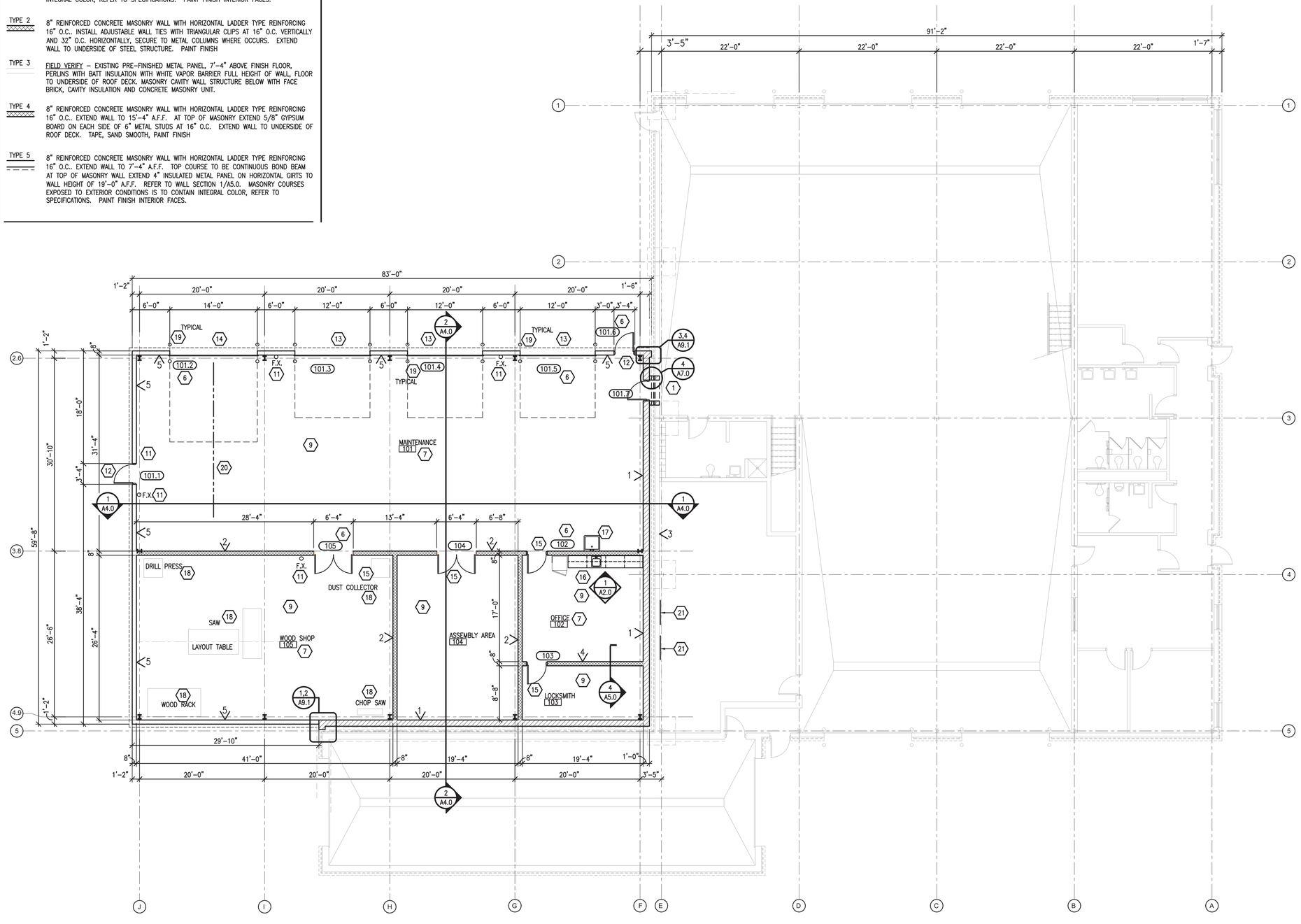
TYPE 1 — MAINTAIN FIRE SEPARATION CONSTRUCTION: (2 HOUR) 12 INCH REINFORCED CONCRETE MASONRY WALL WITH LADDER TYPE REINFORCING AT 16" O.C., FULL HEIGHT TO EXISTING BUILDING HEIGHT. TYPICAL WHERE NEW CONSTRUCTION ABUTS EXISTING TRANSPORTATION BUILDING. MASONRY COURSES EXPOSED TO EXTERIOR CONDITIONS IS TO CONTAIN INTEGRAL COLOR, REFER TO SPECIFICATIONS. PAINT FINISH INTERIOR FACES.

TYPE 2 — 8" REINFORCED CONCRETE MASONRY WALL WITH HORIZONTAL LADDER TYPE REINFORCING 16" O.C.. INSTALL ADJUSTABLE WALL TIES WITH TRIANGULAR CLIPS AT 16" O.C. VERTICALLY AND 32" O.C. HORIZONTALLY, SECURE TO METAL COLUMNS WHERE OCCURS. EXTEND WALL TO UNDERSIDE OF STEEL STRUCTURE. PAINT FINISH

TYPE 3 — FIELD VERIFY – EXISTING PRE-FINISHED METAL PANEL, 7'-4" ABOVE FINISH FLOOR, PERLINS WITH BATT INSULATION WITH WHITE VAPOR BARRIER FULL HEIGHT OF WALL, FLOOR TO UNDERSIDE OF ROOF DECK. MASONRY CAVITY WALL STRUCTURE BELOW WITH FACE BRICK, CAVITY INSULATION AND CONCRETE MASONRY UNIT.

TYPE 4 — 8" REINFORCED CONCRETE MASONRY WALL WITH HORIZONTAL LADDER TYPE REINFORCING 16" O.C.. EXTEND WALL TO 15'-4" A.F.F. AT TOP OF MASONRY EXTEND 5/8" GYPSUM BOARD ON EACH SIDE OF 6" METAL STUDS AT 16" O.C. EXTEND WALL TO UNDERSIDE OF ROOF DECK. TAPE, SAND SMOOTH, PAINT FINISH

TYPE 5 — 8" REINFORCED CONCRETE MASONRY WALL WITH HORIZONTAL LADDER TYPE REINFORCING 16" O.C.. EXTEND WALL TO 7'-4" A.F.F. TOP COURSE TO BE CONTINUOUS BOND BEAM AT TOP OF MASONRY WALL EXTEND 4" INSULATED METAL PANEL ON HORIZONTAL GIRTS TO WALL HEIGHT OF 19'-0" A.F.F. REFER TO WALL SECTION 1/A5.0. MASONRY COURSES EXPOSED TO EXTERIOR CONDITIONS IS TO CONTAIN INTEGRAL COLOR, REFER TO SPECIFICATIONS. PAINT FINISH INTERIOR FACES.



MAIN LEVEL FLOOR PLAN - E

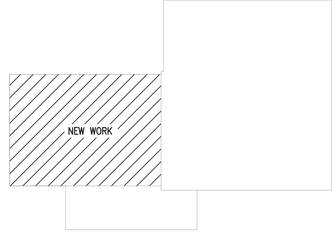
SCALE: 1/8" = 1'-0"

N

KEYNOTES

1. EXISTING MASONRY CAVITY WALL CONSTRUCTION TO BE REMOVED TO ACCOMMODATE NEW DOOR FRAME.
2. NOT USED
3. NOT USED
4. NOT USED
5. NOT USED
6. NUMBER REFERENCES DOOR NUMBER, REFER TO DOOR SCHEDULE SHEET A3.0.
7. NUMBER REFERENCES ROOM NUMBER, REFER TO ROOM FINISH SCHEDULE.
8. INDICATES WALL TYPE, REFER TO WALL TYPE LEGEND SCHEDULE.
9. REINFORCED CONCRETE SLAB ON GRADE. REFER TO STRUCTURAL DRAWINGS.
10. NOT USED
11. SURFACE MOUNTED FIRE EXTINGUISHER, MOUNT MAXIMUM 42" ABOVE FINISH FLOOR TO OPERATING HANDLE.
12. FRP DOOR, ALUMINUM FRAME AND HARDWARE, PRE-FINISH. REFER TO DOOR SCHEDULE.
13. INSULATED OVERHEAD SECTIONAL DOOR WITH STEEL FRAME. REFER TO DOOR SCHEDULE. PAINT FINISH STEEL FRAME.
14. OVERHEAD COILING DOOR WITH STEEL FRAME. REFER TO DOOR SCHEDULE. PAINT FINISH STEEL FRAME
15. HOLLOW METAL DOOR AND FRAME, DOOR HARDWARE, PAINT FINISH. REFER TO DOOR SCHEDULE.
16. BASE CABINETS, COUNTER AND OVERHEAD CABINETS.
17. UTILITY "SLOP" SINK, REFER TO PLUMBING DRAWINGS.
18. SHOP EQUIPMENT BY OTHERS. COORDINATE INSTALLATION WITH EQUIPMENT OWNER.
19. 6" DIAMETER CONCRETE FILLED STEEL PIPE BOLLARD, PAINT FINISH. CUT EXISTING CONCRETE SLAB AS NEEDED TO ACCOMMODATE INSTALLATION. PATCH AND REPAIR SLAB AS NEEDED AFTER INSTALLATION IS COMPLETE. REFER TO CIVIL PLANS.
20. STEEL HOIST BEAM ABOVE, REFER TO FRAMING PLAN. PAINT LARGE YELLOW BLOCK LETTERS TO READ "3,000 LBS MAXIMUM LOAD" ON EACH SIDE OF STEEL BEAM. LOCATE HOIST BEAM AT CENTERLINE OF OVERHEAD COILING DOOR.
21. WHERE THRU WALL MECHANICAL EQUIPMENT PREVIOUSLY REMOVED AT EXISTING MEZZANINE ABOVE, PROVIDE 3/4" PLYWOOD COVER AT RESULTING SIDING PENETRATION. SCREW/FASTEN PLYWOOD TO EXISTING SIDING, PAINT FINISH. FIELD VERIFY EXACT SIZE AND LOCATIONS OF PENETRATIONS.

KEY PLAN



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A	SCHEMATIC	2-21-20
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FLOOR PLAN

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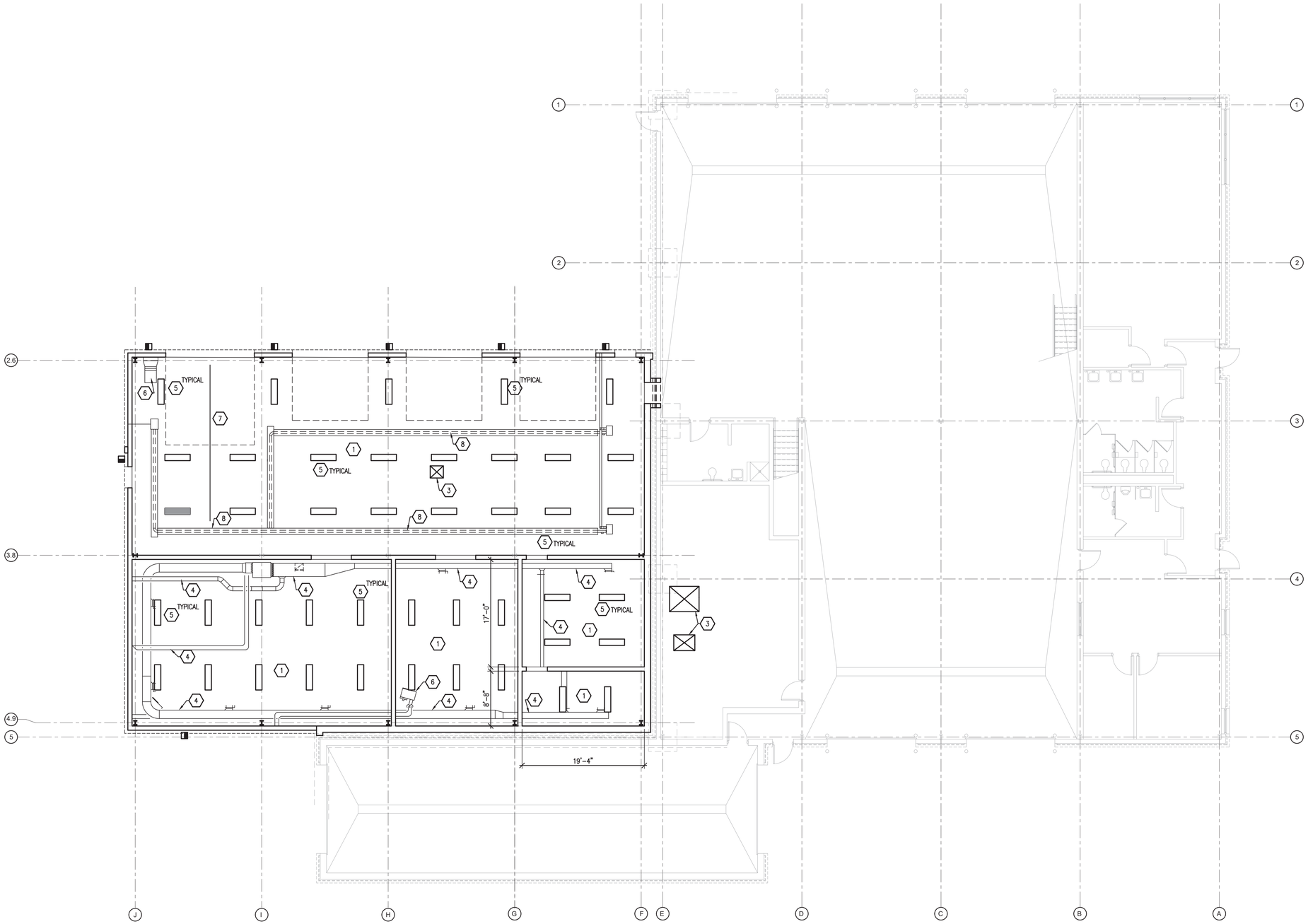


REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

N

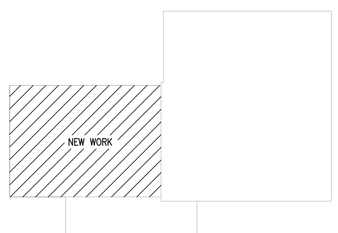
KEYNOTES

1. EXPOSED CONSTRUCTION, METAL DECK AND STRUCTURAL FRAMING ABOVE. PAINT FINISH ALL EXPOSED SURFACES.
2. NOT USED.
3. THROUGH ROOF MECHANICAL PENETRATION. REFER TO MECHANICAL PLANS.
4. MECHANICAL DUCT WORK REFER TO MECHANICAL PLANS
5. LIGHTING FIXTURE, REFER TO LIGHTING PLAN.
6. MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLAN.
7. STEEL HOIST BEAM, REFER TO STRUCTURAL. PAINT LARGE YELLOW BLOCK LETTERS TO READ "3,000 LBS MAXIMUM CAPACITY" ON BOTH SIDES OF BEAM.
8. HEATING TUBE, REFER TO MECHANICAL PLANS

GENERAL NOTES

1. STRUCTURAL FRAMING (JOISTS, BEAMS, ETC) ARE NOT SHOWN ON CEILING PLAN FOR CLARITY. REFER TO STRUCTURAL PLANS FOR ROOF FRAMING MEMBERS. PAINT FINISH ALL EXPOSED SURFACES.

KEY PLAN



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CHECKED	...	...
APPROVED	...	...

REFLECTED CEILING PLAN

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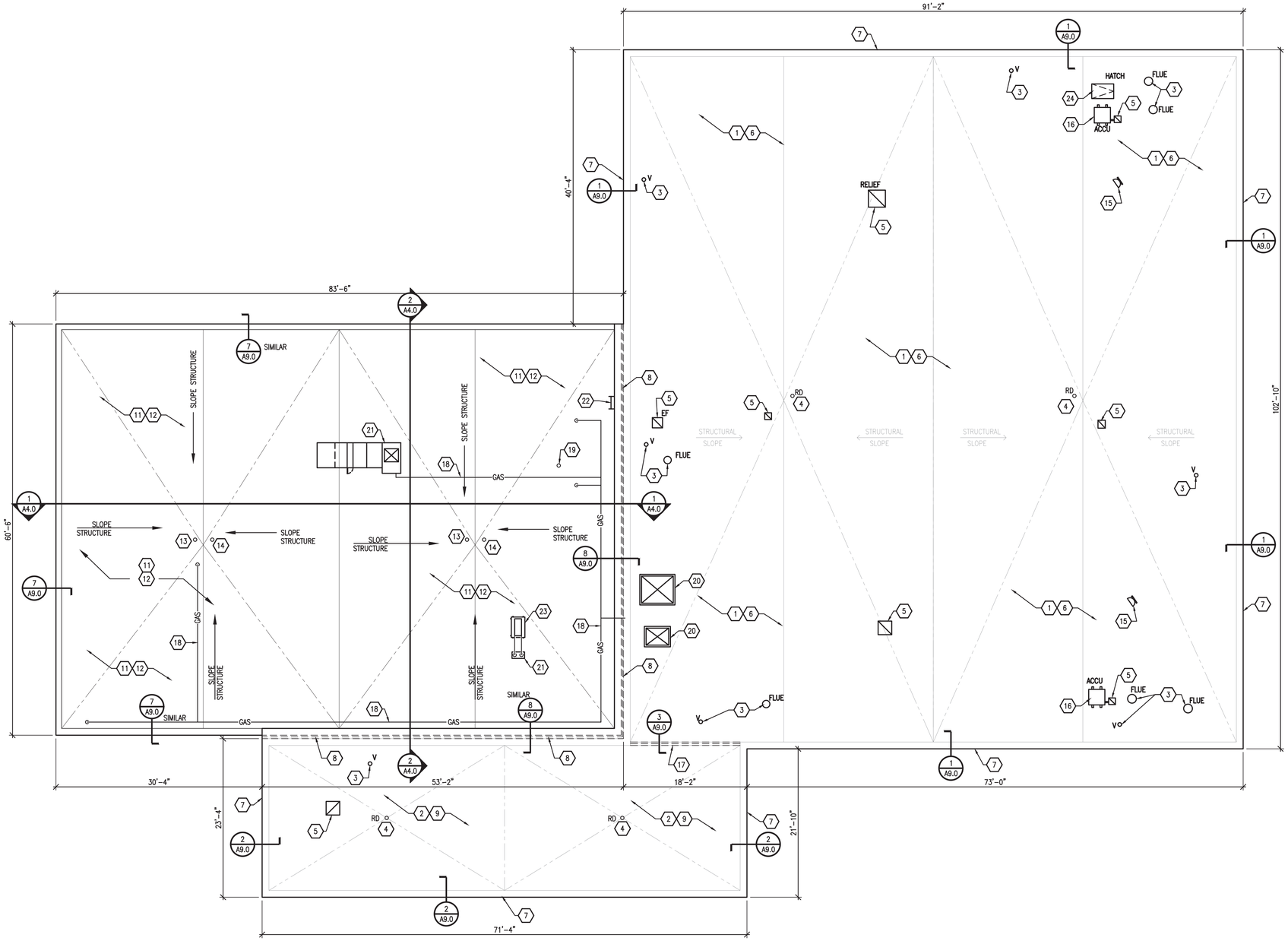


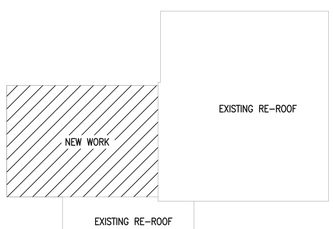
ROOF PLAN
SCALE: 1/8" = 1'-0"

N

KEYNOTES

1. EXISTING STONE BALLAST AND MEMBRANE ROOFING TO BE REMOVED. EXISTING INSULATION TO REMAIN OVER METAL ROOF DECK.
2. EXISTING BALLAST AND MEMBRANE ROOFING TO BE REMOVED. REMOVE AND SALVAGE EXISTING TAPERED INSULATION. EXISTING TAPERED INSULATION TO BE REINSTALLED OVER PRECAST CONCRETE DECK. REFER TO KEYNOTE #9
3. EXISTING VENT OR FLUE THRU ROOF TO REMAIN. CLEAN FOREIGN DEBRIS FROM VENTS. FLASH AND SEAL PER ROOFING MANUFACTURERS REQUIREMENTS. FIELD VERIFY EXACT QUANTITY, LOCATION AND SIZE. REFER TO DETAIL 5/A9.0.
4. EXISTING ROOF DRAIN TO BE MAINTAINED. REMOVE EXISTING DOME STRAINER. CLEAN FOREIGN DEBRIS FROM DRAIN PIPE. INSTALL NEW RE-ROOF DOME STRAINER. FIELD VERIFY EXACT QUANTITY, LOCATION AND SIZE. REFER TO DETAIL 4/A9.0.
5. EXISTING MECHANICAL CURB. REMOVE EXISTING MECHANICAL EQUIPMENT AS NECESSARY TO ACCOMMODATE REMOVAL OF ROOFING MATERIAL AND ASSOCIATED FLASHING. EXTEND EXISTING CURB AS NECESSARY WITH WOOD OR PRE-FABRICATED CURB TO ACCOMMODATE MINIMUM EQUIPMENT HEIGHT ABOVE FINISHED ROOF, FIELD VERIFY. RE-FLASH AND SEAL CURB PER NEW ROOFING MANUFACTURERS REQUIREMENTS. REINSTALL PREVIOUSLY REMOVED MECHANICAL EQUIPMENT. FIELD VERIFY EQUIPMENT TYPE, LOCATIONS, SIZE AND QUANTITY. REFER TO DETAIL 6/A9.0.
6. PROVIDE AND INSTALL NEW MECHANICALLY FASTENED EPDM ROOFING AND 1/2" INSULBASE HD COVERBOARD OVER EXISTING INSULATION MATERIALS. FIELD VERIFY EXISTING INSULATION FASTENING METHOD. MECHANICALLY FASTEN AS NEEDED. REFER TO SPECIFICATIONS.
7. REMOVE EXISTING METAL FASCIA/GRAVEL STOP. EXISTING WOOD NAILERS TO REMAIN. INSTALL NEW 8" PRE-FINISHED METAL FASCIA, TYPICAL AT ALL ROOF EDGES. COLOR TO MATCH EXISTING INSULATED PANEL SIDING. REFER TO SPECIFICATIONS.
8. EXPANSION JOINT WHERE EXISTING ROOF MEETS NEW CONCRETE MASONRY WALL, REFER TO SECTIONS AND DETAILS.
9. INSTALL 725TR VAPOR BARRIER DIRECTLY TO THE EXISTING CONCRETE DECK. REINSTALL AND FULLY ADHERE ALL LAYERS OF PREVIOUSLY REMOVED TAPERED INSULATION. INSTALL NEW FULLY ADHERED EPDM ROOFING MEMBRANE OVER TAPERED INSULATION. REFER TO SPECIFICATIONS.
10. INSTALL NEW ROOF PADS TO ALL MECHANICAL EQUIPMENT. TYPICAL.
11. METAL ROOF DECKING ON STEEL ROOF JOIST, STEEL BEAM CONSTRUCTION. SLOPED AS INDICATED. REFER TO STRUCTURAL DRAWINGS.
12. PROVIDE NEW MECHANICALLY FASTENED PVC, WHITE MEMBRANE ROOFING OVER 6 INCH POLYSTYRENE INSULATION OVER METAL ROOF DECKING.
13. ROOF DRAIN, REFER TO MECHANICAL AND DETAIL 9/A9.0.
14. OVERFLOW DRAIN, REFER TO MECHANICAL AND DETAIL 9/A9.0.
15. EXISTING ANTENNA EQUIPMENT. REMOVE ANTENNA AND ASSOCIATED CONCRETE BLOCK/WOOD SECURING MATERIALS AS NEEDED TO ACCOMMODATE ROOFING REMOVAL AND REPLACEMENT. REINSTALL EQUIPMENT IN SAME LOCATION WHEN ROOFING INSTALLATION IS COMPLETE.
16. EXISTING MECHANICAL EQUIPMENT. REMOVE AND SALVAGE EQUIPMENT AS NECESSARY TO ACCOMMODATE ROOFING REMOVAL AND REPLACEMENT. REMOVE EXISTING 4x4 WOOD SUPPORTS. REINSTALL EQUIPMENT WHEN ROOFING REPLACEMENT IS COMPLETE. PROVIDE NEW TREATED 4X4 WOOD SUPPORTS, 2 PER UNIT AT APPROXIMATELY 4'-0" LONG.
17. EXISTING EXPANSION JOINT. INSTALL COMPRESSIBLE INSULATION AND PRE-MANUFACTURED EXPANSION JOINT SUPPORT (OR FOAM TUBING) IN EXPANSION JOINT GAP. INSTALL PRE-MANUFACTURED EXPANSION JOINT COVER.
18. GAS PIPING, REFER TO MECHANICAL PLANS. PROVIDE PRE-MANUFACTURED PIPE SUPPORTS EQUAL TO FNW MODEL 7701PP SET ON ROOF MEMBRANE WEAR PAD AND SPACED APPROXIMATELY 8'-0" O.C. FLASH AND SEAL ROOF PENETRATIONS PER ROOFING MANUFACTURERS REQUIREMENTS.
19. VENT THROUGH ROOF. FLASH AND SEAL PER ROOFING MANUFACTURERS REQUIREMENTS. REFER TO DETAIL 5/A9.0
20. NEW MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLANS. REMOVE PORTION OF EXISTING RIGID INSULATION AND METAL ROOF DECK TO ACCOMMODATE NEW PENETRATION AND CURB INSTALLATION. COORDINATE EXACT LOCATION AND SIZE WITH MECHANICAL CONTRACTOR. INSTALL PRE-MANUFACTURED EQUIPMENT CURB. FLASH AND SEAL PER ROOFING MANUFACTURERS REQUIREMENTS.
21. NEW MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLANS. COORDINATE EXACT LOCATION AND PENETRATION SIZE WITH MECHANICAL CONTRACTOR. INSTALL PRE-MANUFACTURED EQUIPMENT CURB. FLASH AND SEAL PER ROOFING MANUFACTURERS REQUIREMENTS.
22. INSTALL WALL MOUNTED STEEL LADDER TO MASONRY WALL.
23. NEW MECHANICAL EQUIPMENT. PROVIDE (2) TREATED 4X4 WOOD SUPPORTS APPROXIMATELY 4'-0" LONG TO SUPPORT EQUIPMENT.
24. EXISTING ROOF HATCH. REMOVE FLASHING AS NEEDED TO ACCOMMODATE ROOFING REMOVAL AND REPLACEMENT. FLASH AND SEAL HATCH PER ROOFING MANUFACTURERS REQUIREMENTS.

KEY PLAN



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INTEGRATED DESIGNS INC.
ARCHITECTURE
ENGINEERING
CONSULTING

BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE	BY
A	SCHEMATIC	2-21-20	---
B	FINAL REVIEW	5-11-20	---
0	FOR CONSTRUCTION	5-26-20	---
---	---	---	---
---	---	---	---

DESIGN ---
DRAWN ---
CHECKED ---
APPROVED ---

ROOF PLAN

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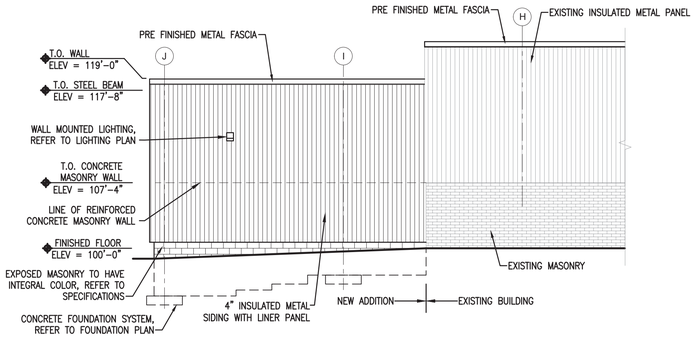
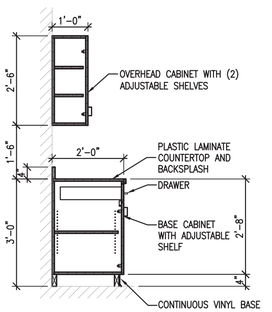
A1.2



EAST ELEVATION

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



CASEWORK SECTION

2 / A2.0

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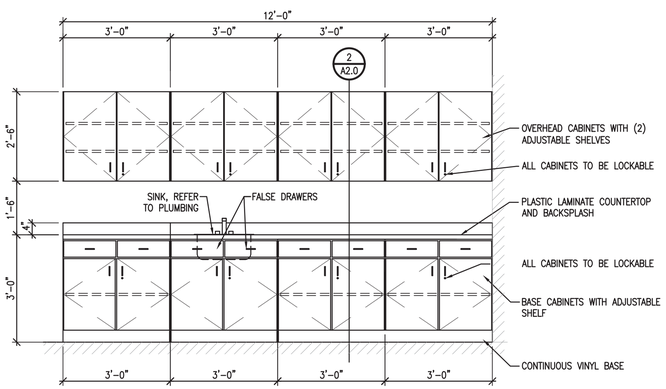
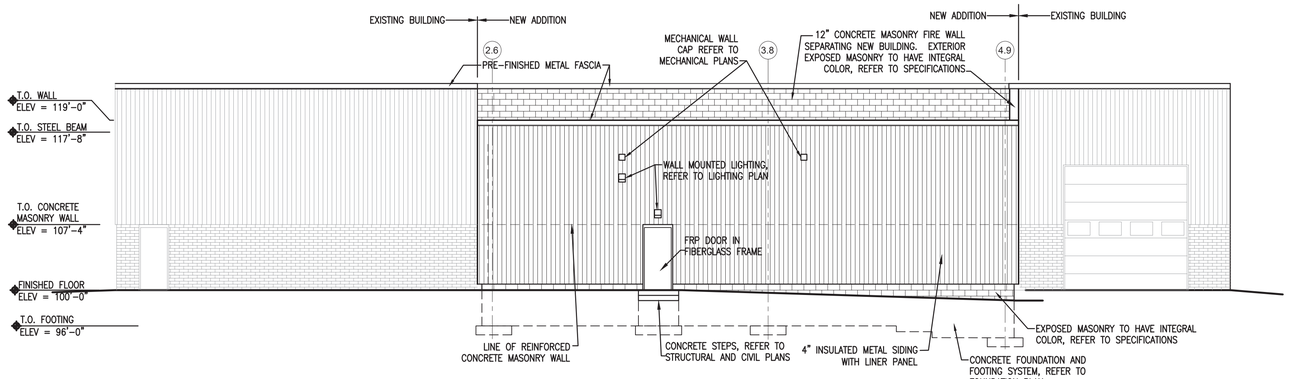


CASEWORK ELEVATION

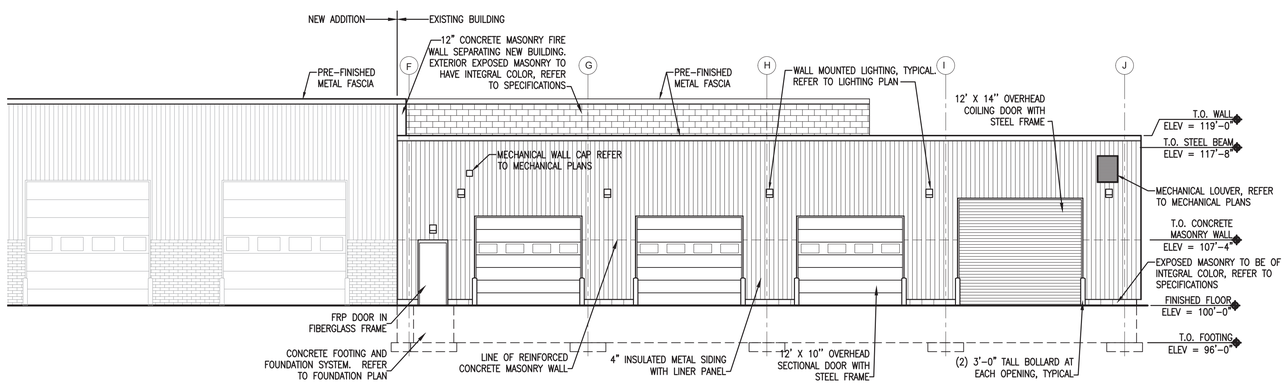
1 / A2.0

SCALE: 1/2" = 1'-0"



SOUTH ELEVATION

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



WEST ELEVATION

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

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...	...	...

BY:	DATE:
DESIGN	...
DRAWN	...
CHECKED	...
APPROVED	...

EXTERIOR
&
INTERIOR ELEVATIONS

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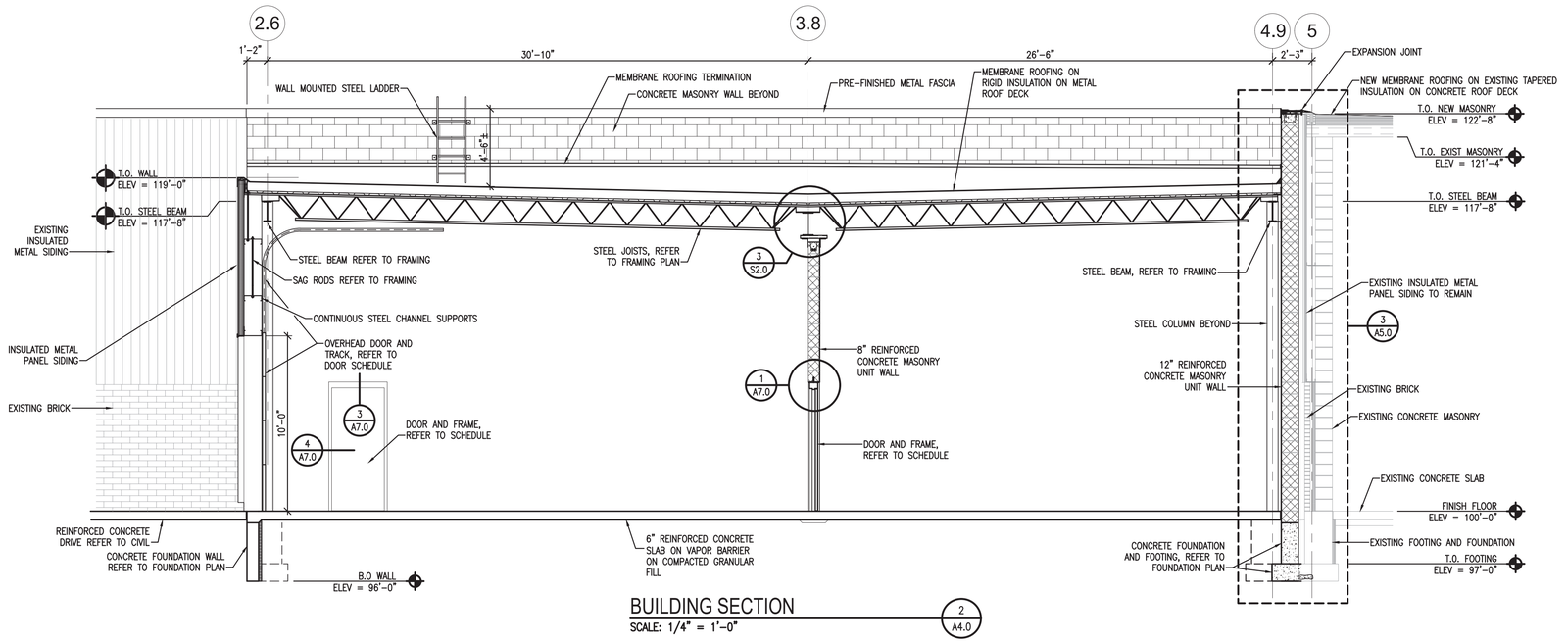
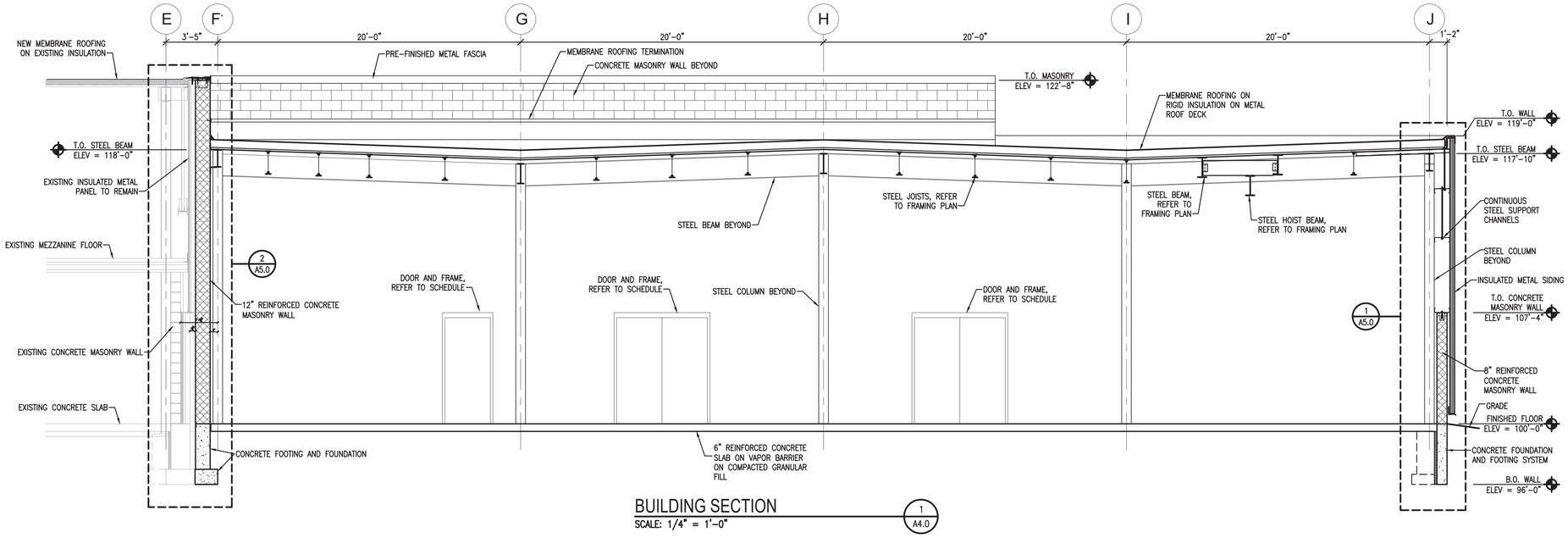
A2.0



BUILDING SECTION

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

2 A4.0



BUILDING SECTION

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

1 A4.0

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BUILDING SECTIONS

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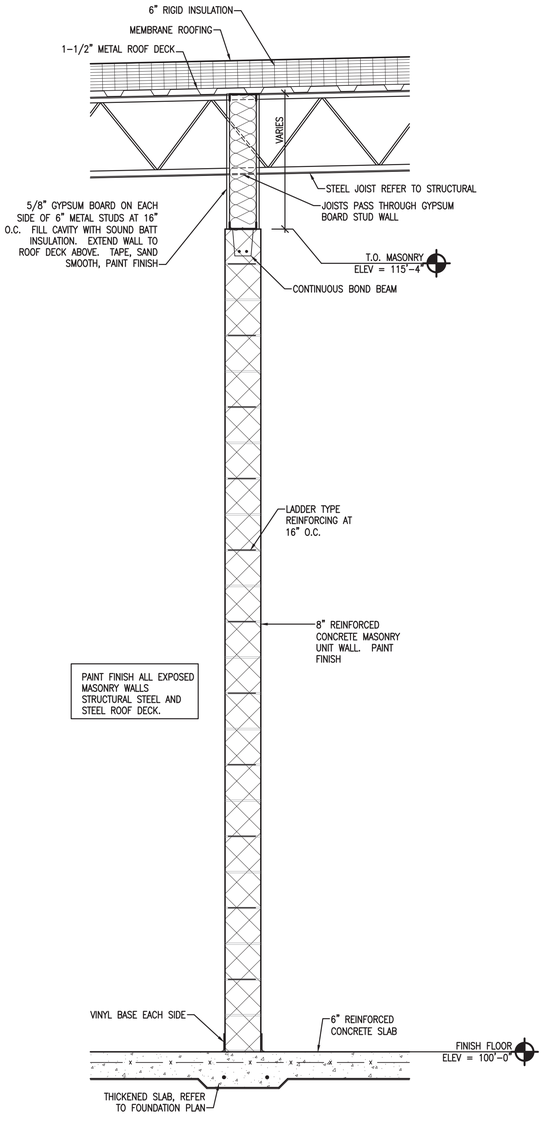
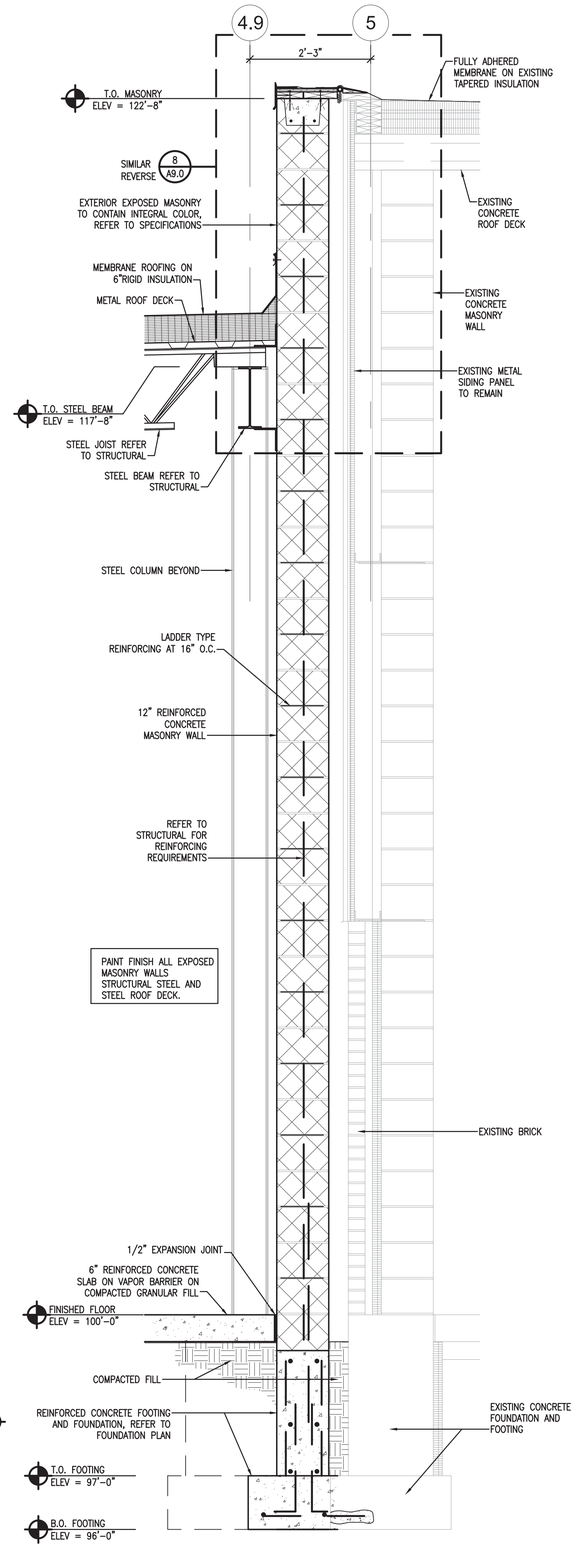
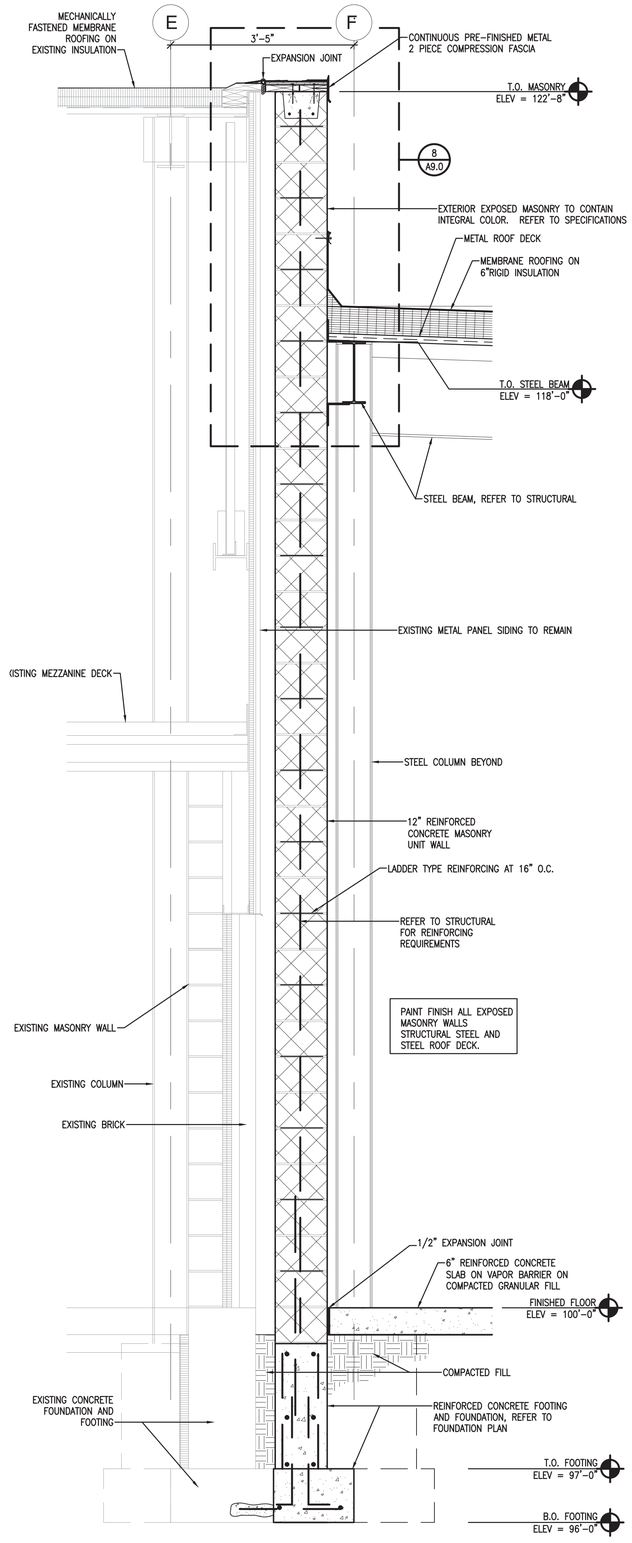
A4.0



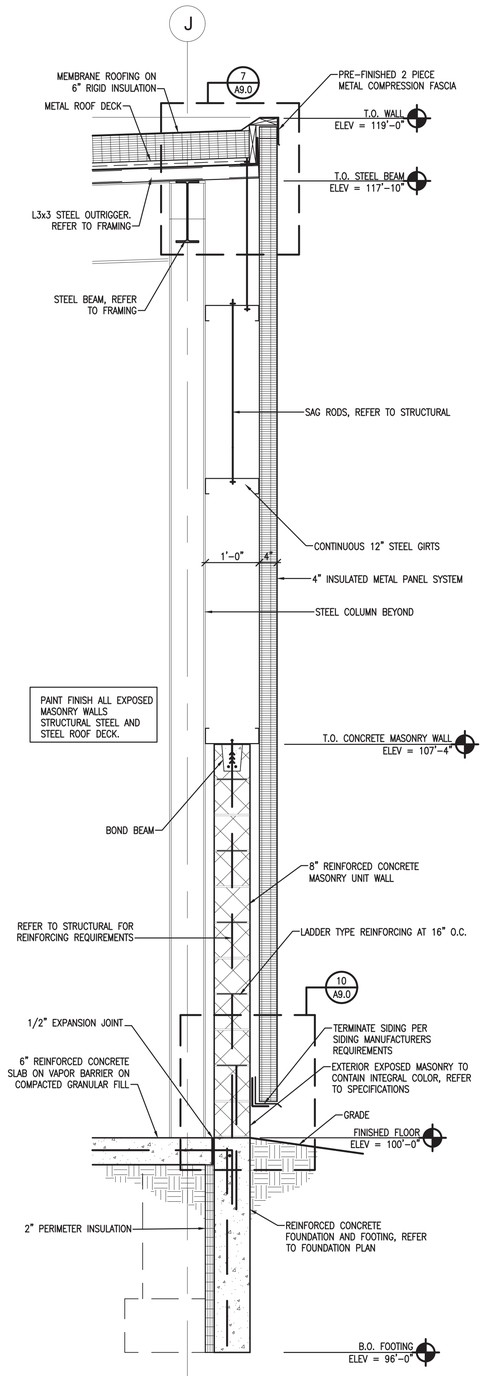
WALL SECTION 4 A5.0
SCALE: 3/4" = 1'-0"



WALL SECTION 3 A5.0
SCALE: 3/4" = 1'-0"



WALL SECTION 2 A5.0
SCALE: 3/4" = 1'-0"



WALL SECTION 1 A5.0
SCALE: 3/4" = 1'-0"

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WALL SECTIONS

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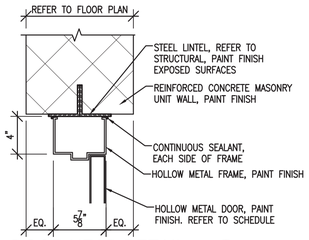
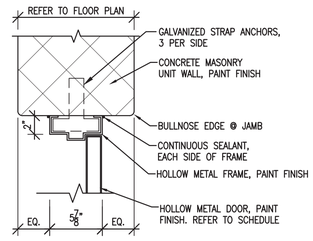
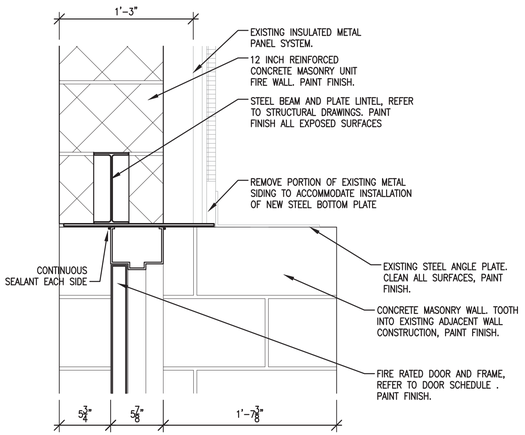
A5.0



DOOR HEAD DETAIL (1 / A7.0)
SCALE: 1-1/2" = 1'-0"



DOOR JAMB DETAIL (2 / A7.0)
SCALE: 1-1/2" = 1'-0"



HEAD DETAIL (3 / A7.0)
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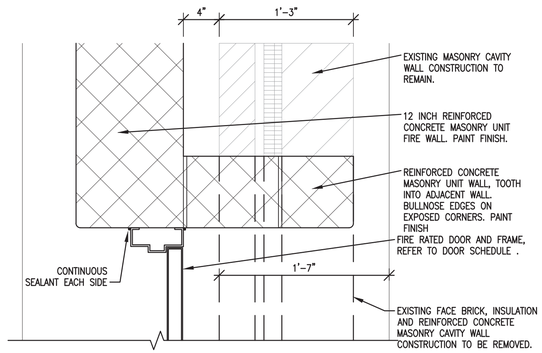

JAMB DETAIL (4 / A7.0)
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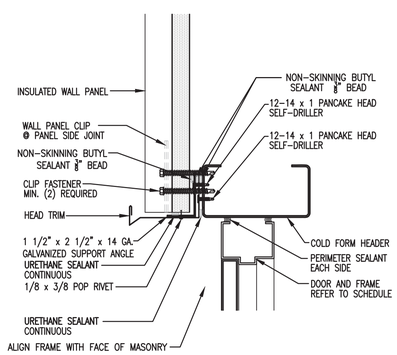

HEAD DETAIL (5 / A7.0)
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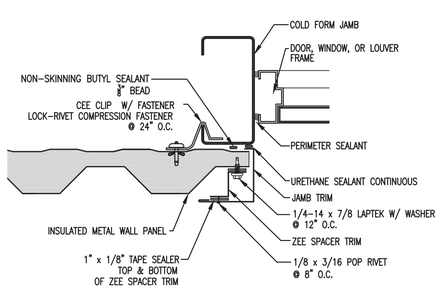

DOOR JAMB DETAIL (6 / A7.0)
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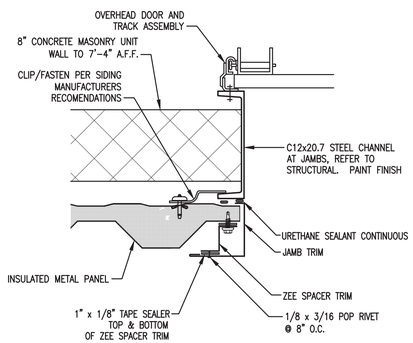

O.H. DOOR JAMB DETAIL (7 / A7.0)
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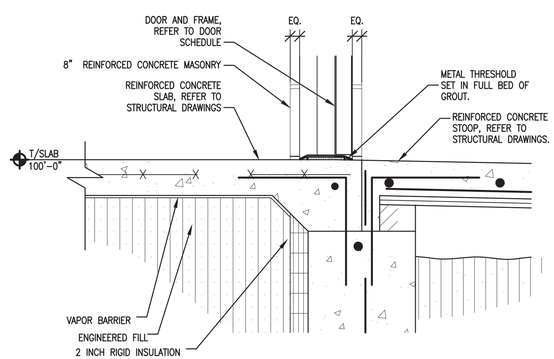

THRESHOLD DETAIL (8 / A7.0)
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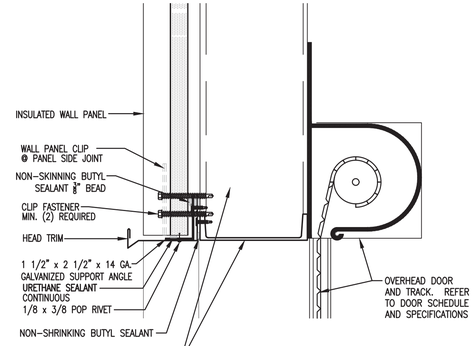


HEAD DETAIL (9 / A7.0)
SCALE: 1-1/2" = 1'-0"

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	CEILING TYPE	FLOOR	BASE	WALLS TYPICAL	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	SIGN TYPE	REMARKS
101	MAINTENANCE	EXP-1	CONC-1		PT-1						
102	OFFICE	EXP-1	CONC-1		PT-1						
103	LOCKSMITH	EXP-1	CONC-1		PT-1						
104	ASSEMBLY AREA	EXP-1	CONC-1		PT-1						
105	WOODSHOP	EXP-1	CONC-1		PT-1						

CODE TO ROOM FINISH SCHEDULE

-- CEILING FINISHES --

EXP-1 EXPOSED STRUCTURE, PAINT BEAMS, JOIST AND DECK PT-3.

-- CONCRETE --

CONC-1 CONCRETE, STEEL TROWELED WITH HARDENER AND SEALANT. FINISH WITH 8 COATS OF HIGH GRADE SOLVENT BASED FLOOR WAX.

-- PAINT FINISH --

PT-1 SHERWIN WILLIAMS, BUILDING STANDARD WALL PAINT, SEMIGLOSS FINISH. CONFIRM COLOR SELECTION WITH DISTRICT.
PT-2 SHERWIN WILLIAMS, BUILDING STANDARD DOOR AND DOOR FRAME PAINT, SEMIGLOSS FINISH. CONFIRM COLOR SELECTION WITH DISTRICT.
PT-3 SHERWIN WILLIAMS, STANDARD CEILING PAINT, WHITE, FLAT FINISH

-- CABINETRY --

PL-1 PLASTIC LAMINATE - WILSONART, COLOR: OILED SOAPSTONE 4882-38, TEXTURE: GLAZE FINISH-55, AEON
PL-2 PLASTIC LAMINATE - WILSONART, COLOR: BLOND ECHO 7939K-18, TEXTURE: LINEARITY FINISH-18

REMARKS TO FINISH

1.

GENERAL NOTES SCHEDULE

1. PAINT FINISH ALL INTERIOR EXPOSED STRUCTURAL COLUMNS, BEAMS, JOISTS, AND ROOF DECK PT-3.
2. ROOM: SEE FLOOR PLAN(S) FOR LOCATION OF ROOM NUMBERS AND NAMES.
3. CEILING TYPE, FLOOR, AND BASE: SEE "CODE TO ROOM FINISH SCHEDULE" FOR DEFINITION OF DESIGNATIONS.
4. WALLS: SEE "CODE TO ROOM FINISH SCHEDULE" FOR DEFINITION OF DESIGNATIONS IN TYPICAL, NORTH, SOUTH, EAST, AND WEST COLUMNS.
5. REMARKS: SEE "REMARKS TO FINISH SCHEDULE".

DOOR SCHEDULE (BASE BID)

DOOR NUMBER	FRAME MATERIAL	FRAME TYPE	DOOR MATERIAL	DOOR TYPE	DOOR FIRE RATING	DOOR SIZE	HARDWARE SET	DETAIL REFERENCE HEAD	DETAIL REFERENCE JAMB	DETAIL REFERENCE THRESHOLD	DETAIL REFERENCE MULLION	REMARKS
101.1	FIBER	A	FRP	2		3'-0" x 7'-0"	03	5/A7.0	6/A7.0	8/A7.0		
101.2			INS COIL	3		14'-0" x 12'-0"	01	9/A7.0	7/A7.0 SIM.			
101.3			INS SEC	4		12'-0" x 10'-0"	01	9/A7.0 SIM.	7/A7.0			
101.4			INS SEC	4		12'-0" x 10'-0"	01	9/A7.0 SIM.	7/A7.0			
101.5			INS SEC	4		12'-0" x 10'-0"	01	9/A7.0 SIM.	7/A7.0			
101.6	FIBER	A	FRP	2	45 MIN.	3'-0" x 7'-0"	03	5/A7.0	6/A7.0	8/A7.0		
101.7	HM	A	HM	2	90 MIN.	3'-0" x 7'-0"	05	3/A7.0	4/A7.0			*1
102	HM	A	HM	2		3'-0" x 7'-0"	04	1/A7.0	2/A7.0			*1
103	HM	A	HM	1		3'-0" x 7'-0"	02	1/A7.0	2/A7.0			*1
104	HM	B	HM	1		(2) 3'-0" x 7'-0"	06	1/A7.0	2/A7.0			*1
105	HM	B	HM	1		(2) 3'-0" x 7'-0"	06	1/A7.0	2/A7.0			*1

CODE TO DOOR SCHEDULE

INS COIL	INSULATED ROLL UP COILING DOOR
INS SEC	INSULATED OVERHEAD SECTIONAL DOOR
ALUM	ALUMINUM
HM	HOLLOW METAL
FRP	FIBERGLAS REINFORCED PLASTIC DOOR
FIBER	FIBERGLASS REINFORCED FRAME

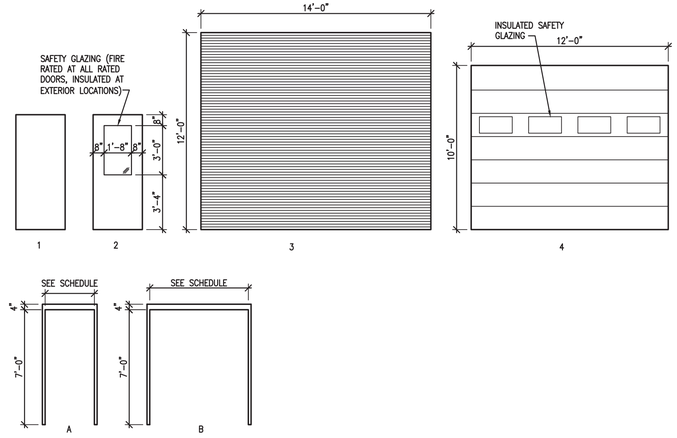
REMARKS TO DOOR SCHEDULE

1. PAINT FINISH HOLLOW METAL DOORS AND FRAMES PT-2. COLOR TO BE BUILDING STANDARD COLOR. CONFIRM COLOR SELECTION WITH DISTRICT

GENERAL NOTES TO DOOR SCHEDULE

1. DOOR NUMBER: SEE FLOOR PLAN(S) FOR LOCATION OF DOORS.
2. DOOR: SEE CODE TO "DOOR/WINDOW SCHEDULE" FOR DEFINITION OF DESIGNATIONS IN MATERIAL COLUMN. SEE "DOOR TYPES" FOR DESCRIPTION OF DESIGNATIONS IN DOOR TYPE COLUMN.
3. FIRE RATING: LABELING INDICATED IS PER NFPA 80. LABELS SHALL BE APPROVED AND PERMANENTLY AFFIXED.
4. SIZE: SIZE IS GIVEN AS WIDTH x HEIGHT.
5. HARDWARE SET: SEE HARDWARE SPECIFICATIONS FOR DESCRIPTIONS.
6. ALL INTERIOR AND EXTERIOR WINDOWS WITHIN 24" TO THE VERTICAL EDGE OF AN INTERIOR OR EXTERIOR DOOR MUST CONTAIN TEMPERED SAFETY GLASS.
7. MOUNT DOOR SO GLAZING IS ON OPPOSITE SIDE OF THE DOOR AS THE DOOR OPENING HARDWARE.
8. ALL NEW HOLLOW METAL DOORS AND DOOR FRAMES TO BE PAINTED PT-2.
9. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING OPENING SIZES WHERE NEW DOORS/WINDOWS/FRAMES ARE BEING INSTALLED.

DOOR / FRAME TYPES



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INTEGRATED DESIGNS INC.

BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE
A	SCHEMATIC	2-21-20
B	FINAL REVIEW	5-11-20
0	FOR CONSTRUCTION	5-26-20
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	BY	DATE
DESIGN	---	---
DRAWN	---	---
CHECKED	---	---
APPROVED	---	---

SCHEDULES

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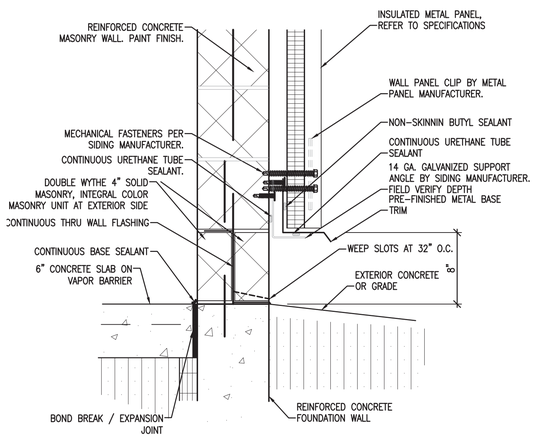

DETAIL
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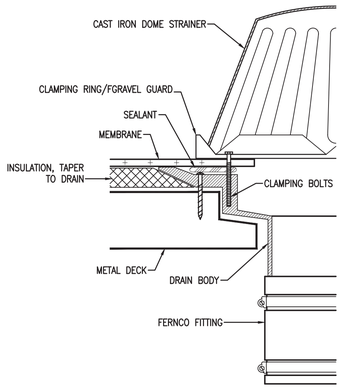

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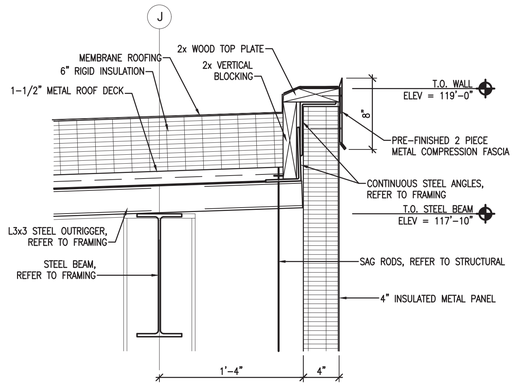

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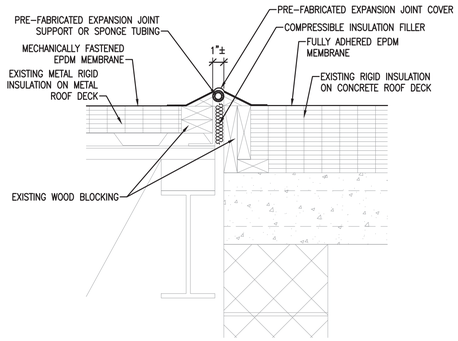

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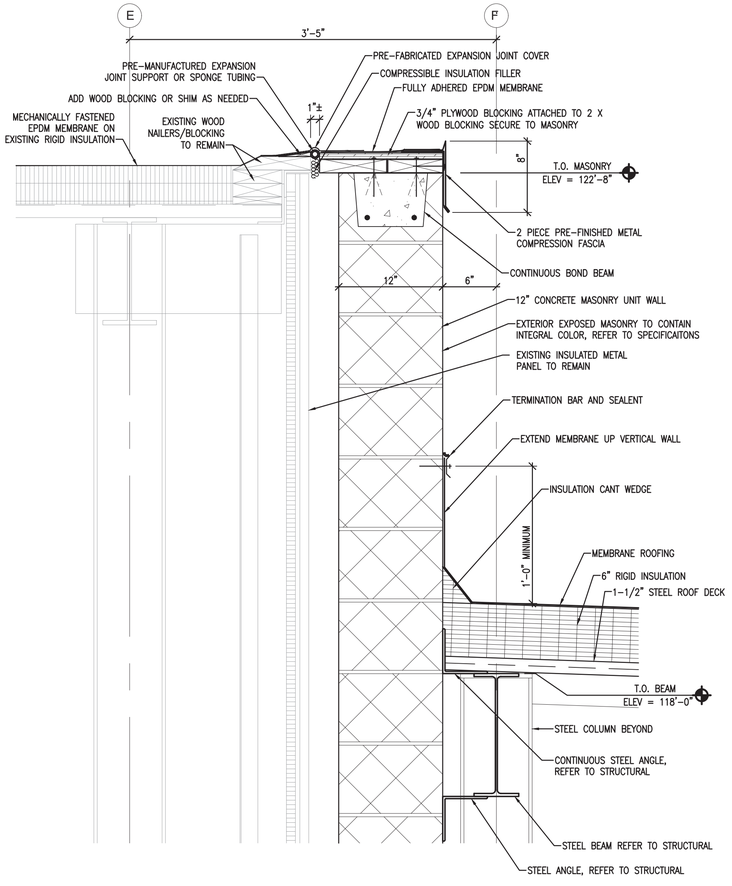

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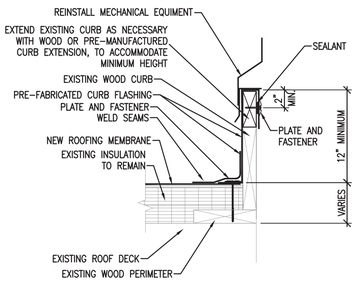

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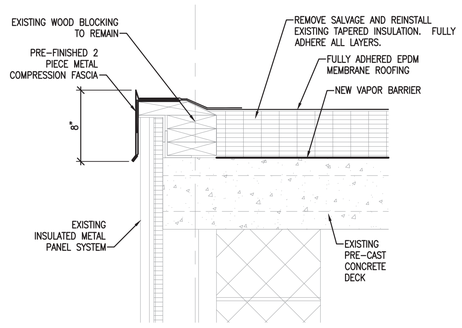

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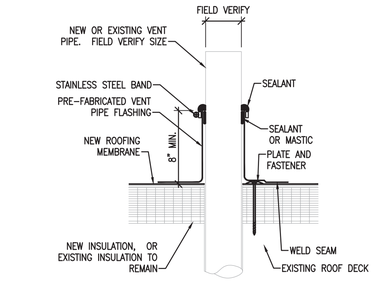

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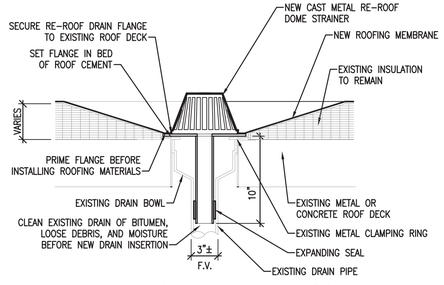

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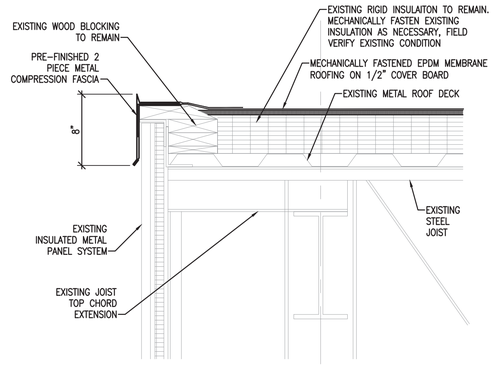

ROOF EDGE DETAIL
SCALE: 1-1/2" = 1'-0"
1 A9.0

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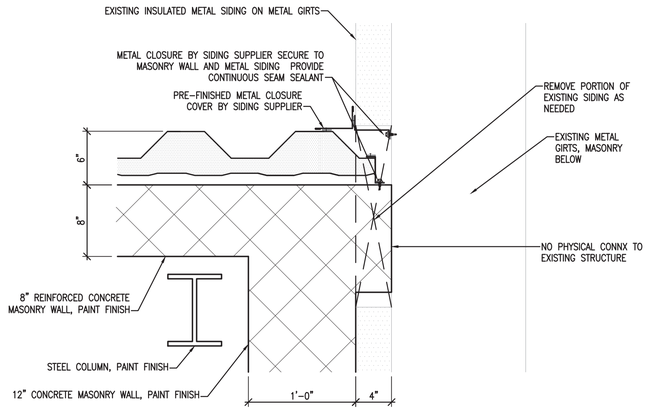

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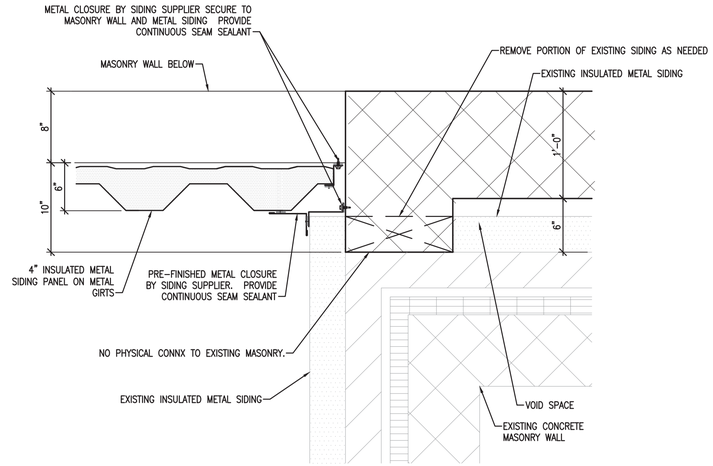

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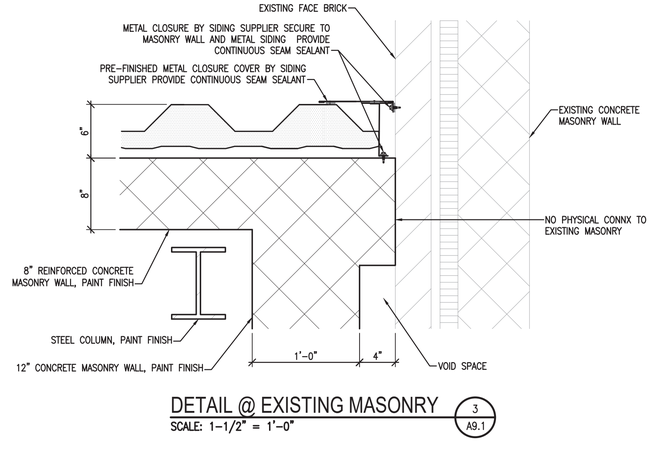

DETAIL @ EXISTING MASONRY

SCALE: 1-1/2" = 1'-0"

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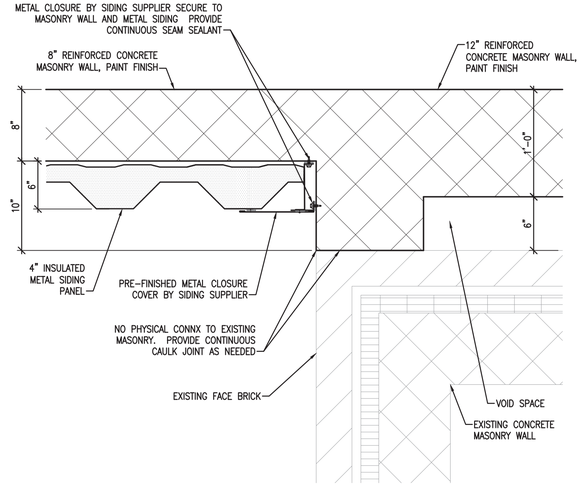

DETAIL @ EXISTING MASONRY

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1 A9.1

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DETAILS

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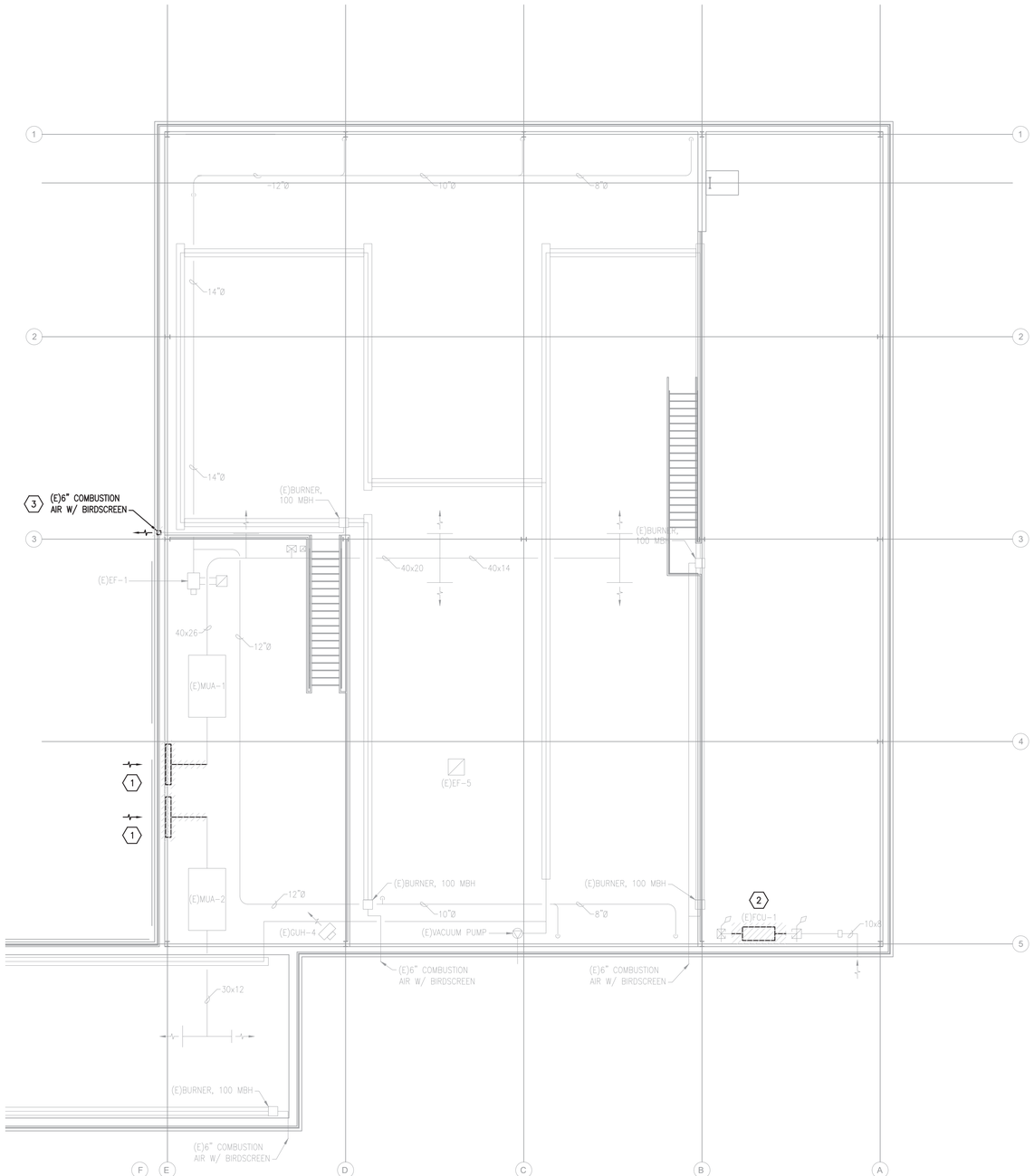

MECHANICAL DEMOLITION PLAN

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

N

KEYNOTES

1. REMOVE EXISTING OUTSIDE AIR INTAKE LOUVERS. REMOVE DUCTWORK BACK TO POINT SHOWN. COORDINATE WITH ARCHITECTURAL TRADES FOR WALL PATCH REQUIREMENTS.
2. REMOVE EXISTING HEATING ONLY FAN COIL UNIT. REMOVE DUCTWORK TO POINT SHOWN.
3. REMOVE EXISTING COMBUSTION AIR WALL HOOD AND PIPE PENETRATION.

GENERAL NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. MECHANICAL DEMOLITION WORK REQUIRED TO COMPLETE THE INSTALLATION OF NEW SYSTEMS SHALL BE PERFORMED AS PART OF THE PROJECT BASE BID.
2. INFORMATION SHOWN REFLECTS AVAILABLE EXISTING RECORDS, ON-SITE OBSERVATIONS, AND DISCUSSION WITH FACILITIES PERSONNEL.
3. CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID AND VERIFY LOCATIONS OF EXISTING EQUIPMENT, PIPING, AND SYSTEM COMPONENTS TO FAMILIARIZE THEMSELVES WITH THE SCOPE OF WORK.
4. PRIOR TO DEMOLITION THE CONTRACTOR SHALL NOTE DIFFERENCES IN THE FIELD CONDITIONS AND WHAT IS SHOWN ON THE CONTRACT DOCUMENTS AND NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH WORK.
5. THE CONTRACTOR SHALL PERFORM ALL DEMOLITION WORK NECESSARY TO PROPERLY COMPLETE THE NEW WORK SHOWN ELSEWHERE.
6. PROVIDE TEMPORARY MECHANICAL AS NECESSARY TO MAINTAIN OPERATION OF ALL SYSTEMS.
7. PATCH AND REPAIR ALL EXISTING SURFACES TO REMAIN THAT MAY BE DAMAGED BY THE PERFORMANCE OF THE DEMOLITION WORK.
8. PROTECT PIPING, DUCTWORK, CONDUIT, ETC. FROM ENTRANCE OF FOREIGN MATERIALS.
9. VERIFY AND PROTECT ANY EQUIPMENT, PIPING, COMPONENTS, CONTROLS TO REMAIN OR BE REUSED PRIOR TO DEMOLITION. ANY SUCH ITEMS THAT ARE DAMAGED DURING DEMOLITION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE CONTRACT.
10. OWNER SHALL HAVE THE FIRST RIGHT OF REFUSAL OF ANY EQUIPMENT NOTED TO BE REMOVED.

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DESIGN	CRP	01.24.20
DRAWN	CRP	01.24.20
CHECKED	SLB	05.07.20
APPROVED	SLB	05.07.20

NO.	REVISIONS	DATE
A	SD	02.21.20
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MECHANICAL
DEMOLITION PLAN

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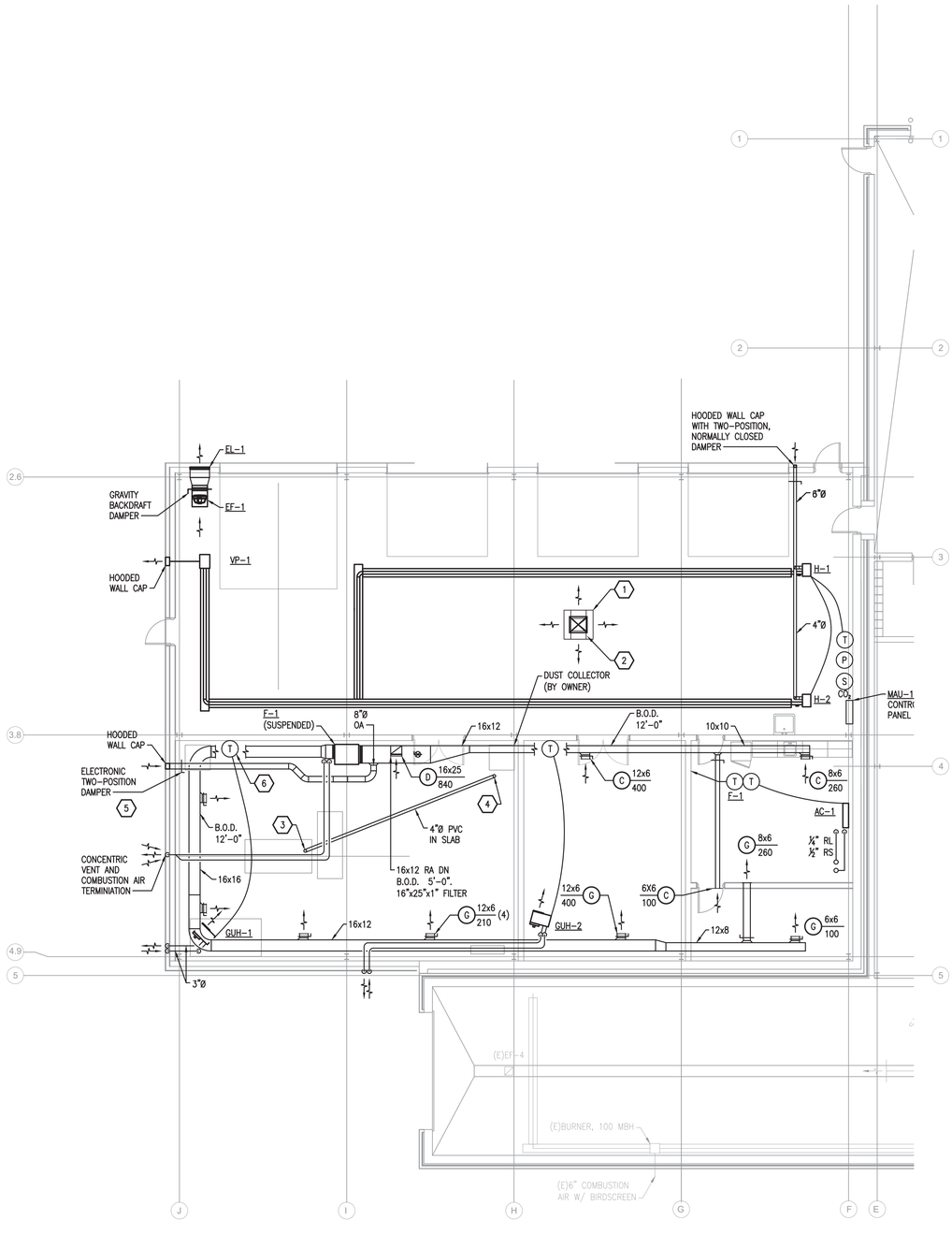


MECHANICAL NEW WORK PLAN

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

N

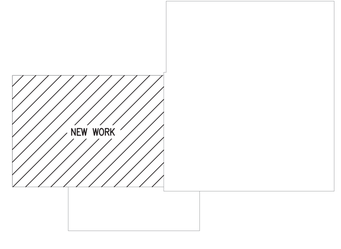
⬡ KEYNOTES ⬡

1. 4-WAY SUPPLY AIR DIFFUSER PROVIDED BY MAKEUP AIR UNIT SUPPLIER.
2. INSTALL 24"x24" SUPPLY DUCT UP TO MAKEUP AIR UNIT.
3. INSTALL 4"Ø SCHEDULE 80 PVC DUST COLLECTION PIPE BURIED WITHIN SLAB. LONG RADIUS ELBOW UP BENEATH THE NEW WORK BENCH. COORDINATE EXACT PENETRATION WITH OWNER.
4. INSTALL 4"Ø SCHEDULE 80 PVC DUST COLLECTOR PIPE. COORDINATE EXACT FLOOR PENETRATION WITH OWNER FURNISHED DUST COLLECTOR.
5. FURNACE OUTSIDE AIR DAMPER CONTROLLED BY TIME-CLOCK.
6. FURNACES HAVE LOW-VOLTAGE, MANUFACTURER SUPPLIED, 24-HOUR OCCUPIED/UNOCCUPIED THERMOSTATS WITH HEATING AND COOLING SETPOINTS, ON-OFF-AUTO FAN SETTING.

GENERAL NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. PROVIDE PLUMBING AND HVAC SYSTEMS COMPLETE PER SPECIFICATION, SMACNA STANDARDS, AND PER APPLICABLE CODES INCLUDING ALL NECESSARY OFFSETS, FITTINGS, SPECIAL RADIUS OR MITERED ELBOWS WHICH ARE REQUIRED DUE TO SPACE CONTRAINTS OR OTHER STRUCTURAL CONDITIONS.
2. CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE WORK OF ALL OTHER TRADES. VERIFY ALL CLEARANCES PRIOR TO THE FABRICATION OF ANY WORK.
3. DUCTWORK/PIPING SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT/PANELS. PROVIDE REQUIRED CLEARANCE IN FRONT OF OR ABOVE ELECTRICAL EQUIPMENT. DUCTWORK/PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
4. THE CONTRACTOR SHALL PROVIDE SUPPLEMENTAL STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL MECHANICAL SYSTEMS.
5. COORDINATE FLOOR, WALL, ROOF PENETRATIONS, LOUVER SIZES, PAD LOCATIONS, ETC. WITH ARCHITECTURAL TRADES.
6. ALL THERMOSTATS OR TEMPERATURE SENSORS MOUNTED ON EXTERIOR WALLS SHALL BE PROVIDED WITH INSULATED BASES.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF GRILLES, REGISTERS, AND DIFFUSERS.
8. PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
9. PIPING RUN-OUTS TO UNIT HEATERS, CABINET UNIT HEATERS AND FINNED TUBE ARE THE LARGER OF 3/4" NPS OR THE EQUIPMENT CONNECTION SIZE WHERE NO PIPE IS INDICATED.
10. PROVIDE CODE REQUIRED CLEARANCE/ACCESS DOORS FOR DAMPERS, VALVES, AND CLEANOUTS LOCATED IN WALLS OR ABOVE HARD CEILINGS, AND LOCATIONS OF CLEANOUTS INSTALLED IN STORM OR SANITARY PIPING. COORDINATE LOCATIONS WITH ARCHITECT. PROVIDE CLEANOUTS AT THE BASE OF ALL STACKS. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES.
11. FOR EQUIPMENT VALVING, COMPONENT, AND PIPING ARRANGEMENT REFER TO PIPING DIAGRAMS AND DETAILS.
12. BRANCH DUCTWORK TO GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE SAME SIZE AS THE GRILLE, REGISTER, OR DIFFUSER NECK SIZE WHERE NO DUCT SIZE IS INDICATED ON PLAN.
13. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 5'-0".

KEY PLAN



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MECHANICAL
NEW WORK PLAN

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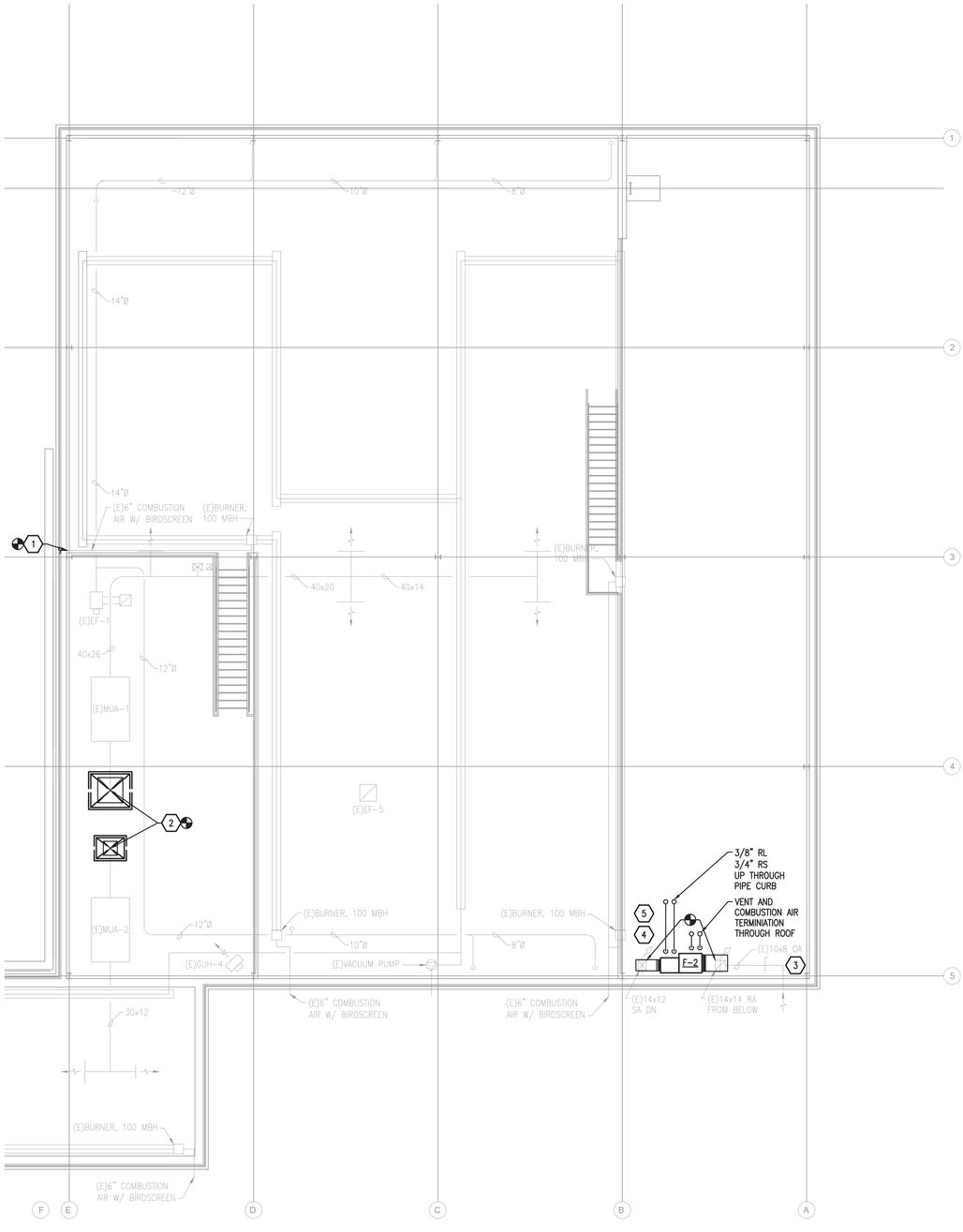

MECHANICAL MEZZANINE NEW WORK PLAN

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

N

KEYNOTES

1. EXTEND EXISTING COMBUSTION AIR PIPE TO NEW LOCATION. REFER TO SHEET M1.2 FOR CONTINUATION.
2. INSTALL NEW OUTSIDE AIR DUCTWORK OF SAME SIZE AS EXISTING UP TO NEW INTAKE HOODS ON ROOF. PROVIDE ELBOW WITH TURNING VANES.
3. FURNACE OUTSIDE AIR DAMPER CONTROLLED BY TIME-CLOCK.
4. FURNACES HAVE LOW-VOLTAGE, MANUFACTURER SUPPLIED, 24-HOUR OCCUPIED/UNOCCUPIED THERMOSTATS WITH HEATING AND COOLING SETPOINTS, ON-OFF-AUTO FAN SETTING.
5. INSTALL NEW GAS PIPING CONNECTION FOR FURNACE.

GENERAL NOTES

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4. THE CONTRACTOR SHALL PROVIDE SUPPLEMENTAL STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL MECHANICAL SYSTEMS.
5. COORDINATE FLOOR, WALL, ROOF PENETRATIONS, LOUVER SIZES, PAD LOCATIONS, ETC. WITH ARCHITECTURAL TRADES.
6. ALL THERMOSTATS OR TEMPERATURE SENSORS MOUNTED ON EXTERIOR WALLS SHALL BE PROVIDED WITH INSULATED BASES.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF GRILLES, REGISTERS, AND DIFFUSERS.
8. PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
9. PIPING RUN-OUTS TO UNIT HEATERS, CABINET UNIT HEATERS AND FINNED TUBE ARE THE LARGER OF 3/4" NPS OR THE EQUIPMENT CONNECTION SIZE WHERE NO PIPE IS INDICATED.
10. PROVIDE CODE REQUIRED CLEARANCE/ACCESS DOORS FOR DAMPERS, VALVES, AND CLEANOUTS LOCATED IN WALLS OR ABOVE HARD CEILINGS, AND LOCATIONS OF CLEANOUTS INSTALLED IN STORM OR SANITARY PIPING. COORDINATE LOCATIONS WITH ARCHITECT. PROVIDE CLEANOUTS AT THE BASE OF ALL STACKS. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES.
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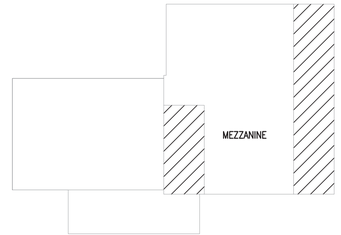
KEY PLAN



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MECHANICAL
MEZZANINE
NEW WORK PLAN

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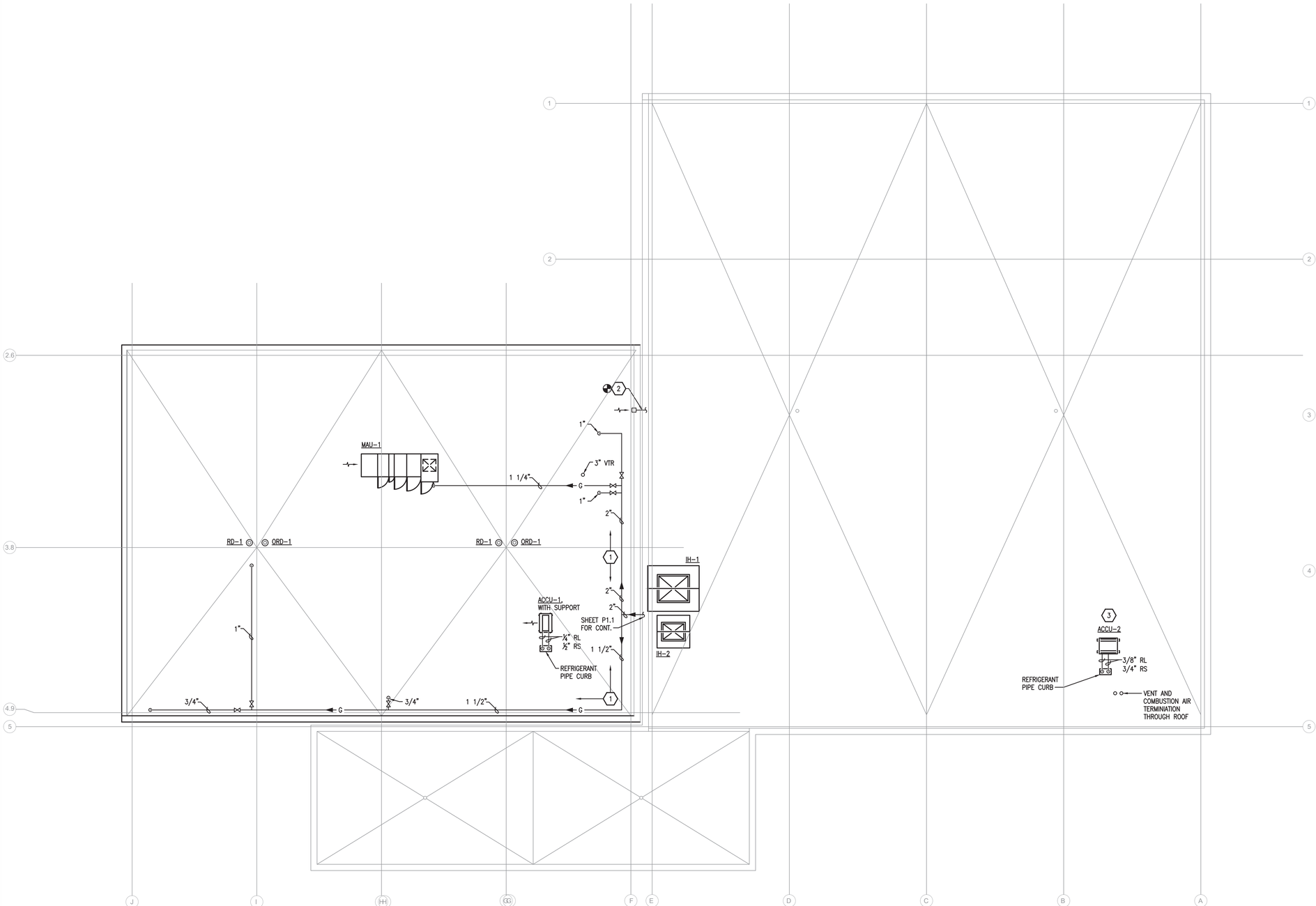

MECHANICAL NEW WORK ROOF PLAN

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

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KEYNOTES

1. INSTALL NEW GAS PIPE ON PRE-MANUFACTURED PIPE SUPPORTS EQUAL TO FNW MODEL 7701PP SET ON ROOF MEMBRANE WEAR PAD AND SPACED APPROXIMATELY 8'-0" O.C.
2. EXTEND EXISTING 6"Ø COMBUSTION AIR PIPE AND TERMINATE WITH WALL CAP AND BIRDSCREEN.
3. REFER TO STRUCTURAL JOIST REINFORCEMENT DETAIL ON STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

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8. PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
9. PIPING RUN-OUTS TO UNIT HEATERS, CABINET UNIT HEATERS AND FINNED TUBE ARE THE LARGER OF 3/4" NPS OR THE EQUIPMENT CONNECTION SIZE WHERE NO PIPE IS INDICATED.
10. PROVIDE CODE REQUIRED CLEARANCE/ACCESS DOORS FOR DAMPERS, VALVES, AND CLEANOUTS LOCATED IN WALLS OR ABOVE HARD CEILINGS, AND LOCATIONS OF CLEANOUTS INSTALLED IN STORM OR SANITARY PIPING. COORDINATE LOCATIONS WITH ARCHITECT. PROVIDE CLEANOUTS AT THE BASE OF ALL STACKS. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES.
11. FOR EQUIPMENT VALVING, COMPONENT, AND PIPING ARRANGEMENT REFER TO PIPING DIAGRAMS AND DETAILS.
12. BRANCH DUCTWORK TO GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE SAME SIZE AS THE GRILLE, REGISTER, OR DIFFUSER NECK SIZE WHERE NO DUCT SIZE IS INDICATED ON PLAN.
13. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 5'-0".

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BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

NO.	REVISIONS	DATE
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B	DD	03.31.20
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DRAWN	CRP	01.24.20
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APPROVED	SLB	05.07.20

MECHANICAL
NEW WORK ROOF PLAN

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GAS-FIRED FURNACE SCHEDULE

SYM	SERVES	HEATING			COOLING			FAN					ELECTRICAL				DIMENSIONS			AIR INTAKE & VENT SIZE	WEIGHT	MANUFACTURER & MODEL NUMBER	ORIENTATION
		MBH INPUT	MBH OUTPUT	EFFICIENCY	TOTAL COOLING (MBH)	SENS. COOLING (MBH)	ASSOC. CONDENSING UNIT	ESP (IN WG.)	DRIVE TYPE	CFM	CFM O.A.	H.P.	MCA	MOCP	VOLTS	PHASE	HEIGHT	WIDTH	DEPTH				
F-1	CLEANING SUPPLIES 102 WOOD SHOP 103 ASSEMBLY AREA 104 OFFICE 105 LOCKSMITH 109	60.0	57.6	96%	–	–	–	0.4	DIRECT	1600	200	1	7.8	15	120	1	34 1/2	17 1/2	28 3/4	2"	150	DAIKIN DM96VC0604B	HORIZONTAL
F-2	EXISTING OFFICES	60.0	58.0	96%	26.3	20.4	ACCU-2	0.61	DIRECT	876	55	1/2	7.8	15	120	1	59 1/2	17 1/2	28 3/4	2"	184	FURNACE: LENNOX SL297UH060NV36B COOLING COIL: LENNOX CHX35-30B-6F	HORIZONTAL

NOTES:
1. PROVIDE WITH VARIABLE SPEED FAN, TWO-STAGE GAS VALVE, 3" CONCENTRIC VENT KIT.

MAKE-UP AIR UNIT SCHEDULE

SYM	SERVES	AIRFLOW (CFM)	E.S.P. (IN-WG)	HEATING				BURNER TYPE	MIN. EFF. %	BLOWER HP	ELECTRICAL				CURB HEIGHT (IN)	WEIGHT (LBS)	MANUF. & MODEL
				GAS INPUT (MBH)	GAS OUTPUT (MBH)	EAT (°F)	LAT (°F)				VOLTS	PHASE	MCA	MOP			
MAU-1	MAINTENANCE 101	1905	0.25	200.0	160.0	-10	67.8	INDIRECT	80	1	208	3	7.7	15	14	938 (+/- 5%)	GREENHECK IGX-P109-H12-MF-G

NOTES:
1. PROVIDE WITH 4-WAY DIFFUSER.

INTAKE HOOD SCHEDULE

SYM	APPLICATION	ROOF OPENING SIZE (IN)	THROAT SIZE (IN)	CURB CAP SIZE (IN)	MINIMUM FREE AREA (FT^2)	CFM	VELOCITY (FPM)	PRESSURE DROP (IN. WG)	MANUFACTURER & MODEL NO.	REMARKS
IH-1	INTAKE	50.5 x 58.5	48 x 56	54 x 62	19	11500	616	0.09	GREENHECK #FGI-48x56	–
IH-2	INTAKE	32.5 x 42.5	30 x 40	36 x 46	8	3000	360	0.03	GREENHECK #FGI-30x40	–

NOTES:
1. PROVIDE WITH BIRD/INSECT SCREEN

CONDENSING UNIT SCHEDULE

SYM	ASSOCIATED INDOOR UNIT	COOLING				COMPRESSOR		ELECTRICAL			DISCONNECT			MANUFACTURER & MODEL
		NOMINAL TONNAGE	MINIMUM SEER	DESIGN AMBIENT	NO. OF FANS	NO.	TYPE	MFA	MCA	VOLTS/ PHASE	FURN. BY	INST. BY	TYPE	
ACCU-1	AC-1	3/4	17	95°F	1	1	DC INVERTER DRIVEN TWIN ROTARY	15	6.95	208/1	MAN'F	E	SWITCH	DAIKIN RKB09AXVJU
ACCU-2	F-2	2.5	14.5	95°F	1	1	SCROLL	20	15.6	208/1	MAN'F	E	SWITCH	LENNOX XC16S024-230

NOTES:
1. PROVIDE WITH 2-STAGE COOLING.

AIR CONDITIONING UNIT SCHEDULE

SYM	SERVES	SUPPLY AIRFLOW (CFM)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	DIMENSIONS			ELECTRICAL		DISCONNECT			MANUFACTURER & MODEL
					LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	FAN MOTOR FLA	VOLTS/ PHASE	FURN. BY	INST. BY	TYPE	
AC-1	OFFICE 105	215-330	8.8	7.2	35 1/16	8 1/4	11 11/16	.20	208/1	E	E	SWITCH	DAIKIN FTKB09AXVJU

NOTES:
1. INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT THROUGH FIELD-SUPPLIED INTERCONNECTED WIRING.
2. PROVIDE WITH CONDENSATE PUMP

GRILLE, REGISTER, DIFFUSER SCHEDULE

SYM	TYPE	PURPOSE	PATTERN	FRAME	MANUF. & MODEL	REMARKS
A	DIFFUSER	RETURN	PERFORATED	24x24 LAY-IN	PRICE PDDR	
B	DIFFUSER	RETURN	PERFORATED	12x12 LAY-IN	PRICE PDDR	
C	LOUVERED GRILLE	RETURN	FIXED 45° DEFLECTION	DUCT MOUNT	PRICE 530D	
D	FILTERED LOUVER	RETURN	FIXED 45° DELFECTION	DUCT MOUNT	PRICE 70FH	1/2" BLADE SPACING W/ HINGE. FOR USE WITH 16x25x1" FILTER. BLADES PARALLEL TO SHORT DIMENSION.
E	DIFFUSER	SUPPLY	SQUARE PLAQUE	24x24 LAY-IN	PRICE SPD	
F	DIFFUSER	SUPPLY	SQUARE PLAQUE	12x12 LAY-IN	PRICE SPD	
G	LOUVERED GRILLE	SUPPLY	DOUBLE DELFECTION	DUCT MOUNT	PRICE 520D	

EXHAUST FAN SCHEDULE

SYM	SERVES	TYPE	DRIVE	CFM	E.S.P. (IN-WG)	BHP	HP	RPM	DIMENSIONS		WEIGHT (LBS)	MANUF. & MODEL	REMARKS
									WIDTH (IN)	HEIGHT (IN)			
EF-1	MAINTENANCE 101	SIDEWALL	DIRECT	1905	0.1	0.12	1/2	1143	22	22	34	GREENHECK SE1-16-426-VG	

NOTES:
1. PROVIDE WITH FULLY ASSEMBLED WALL HOUSING MOUNTING ASSEMBLY, INCLUDING WALL COLLAR, FAN, GRAVITY BACKDRAFT DAMPER, AND DRIVE GUARD. PROVIDE WEATHERHOOD SHIPPED LOOSE.

LOUVER SCHEDULE

SYM	APPLICATION	SIZE (IN)	BLADE DEPTH (IN)	BLADE ORIENTATION	MINIMUM FREE AREA (FT^2)	CFM	VELOCITY (FPM)	PRESSURE DROP (IN. WG)	MANUFACTURER & MODEL NO.	REMARKS
EL-1	EXHAUST	28x36	4	HORIZONTAL	2.8	1905	690	0.09	GREENHECK EHH-401-28x36	WIND-DRIVEN RAIN RESISTANT

NOTES:
1. PROVIDE WITH BIRD/INSECT SCREEN

GAS-FIRED RADIANT TUBE HEATER SCHEDULE

SYM	SERVES	HIGH FIRE INPUT (MBH)	LOW FIRE INPUT (MBH)	ELECTRICAL				VENT	COMBUSTION AIR INLET	WEIGHT	MANUF. & MODEL
				IGNITION AMPS	RUNNING AMPS	VOLTS	PHASE				
H-1	MAINTENANCE 101	125.0	100.0	0.7	0.2	120	1	4"Ø	4"Ø	34 LBS/BURNER. 35 LBS/10 FT RADIANT PIPE AND REFLECTOR.	DETROIT RADIANT PRODUCTS CO. HLV-125
H-2	MAINTENANCE 101	125.0	100.0	0.7	0.2	120	1	4"Ø	4"Ø	34 LBS/BURNER. 35 LBS/10 FT RADIANT PIPE AND REFLECTOR.	DETROIT RADIANT PRODUCTS CO. HLV-125

NOTES:
1. MOUNT AT 0°.
2. PROVIDE WITH TWO-STAGE GAS VALVE AND 100% SAFETY SHUTOFF.

VACUUM PUMP SCHEDULE

SYM	SERVES	SYSTEM MBH	ELECTRICAL				WEIGHT	MANUF. & MODEL NO.
			RUNNING AMPS	HP	VOLTS	PHASE		
VP-1	H-1 & H-2	50-275	7.4	1/2	120	1	60 LBS	DETROIT RADIANT PRODUCTS CO. PB8A-1PH

GAS-FIRED UNIT HEATER SCHEDULE

SYM	SERVES	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	AIRFLOW CFM	LEAVING AIR TEMP °F	FAN		ELECTRICAL		VENT CONNECTION SIZE	MANUF. & MODEL	REMARKS
						HP	RPM	VOLTS	PHASE			
GUH-1	WOODSHOP 103	30.0	24.6	505	114	1/15	1550	115	1	3"Ø	MODINE HDS30	MOUNT AT 10'-0" AFF
GUH-2	ASSEMBLY AREA 104	30.0	24.6	505	114	1/15	1550	115	1	3"Ø	MODINE HDS30	MOUNT AT 10'-0" AFF

NOTES:
1. PROVIDE WITH TWO-STAGE CONTROL, 50% AND 100% FIRING RATE.
2. PROVIDE WITH ADDITIONAL 24V FOR REMOTE THERMOSTAT IN ADDITION TO SERVICE VOLTAGE

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BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
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DESIGN
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MECHANICAL SCHEDULES

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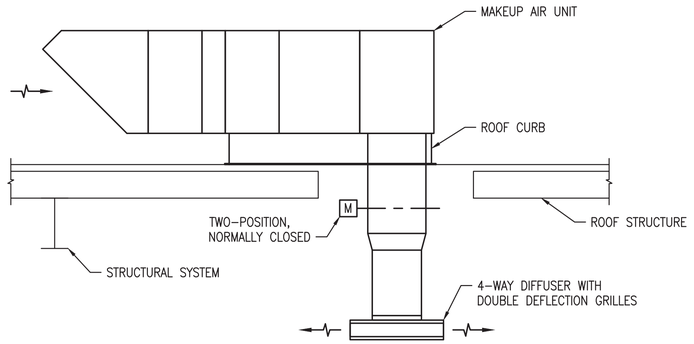
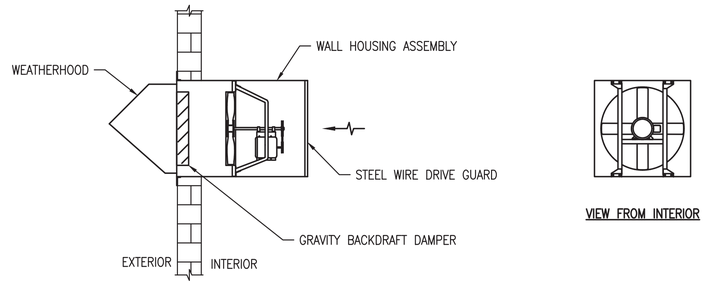
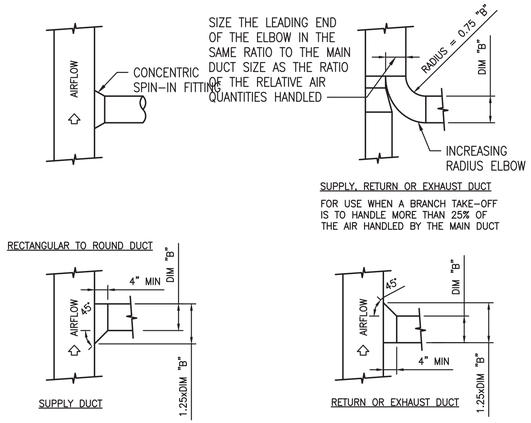


MAKEUP AIR UNIT AND DIFFUSER DETAIL
NOT TO SCALE

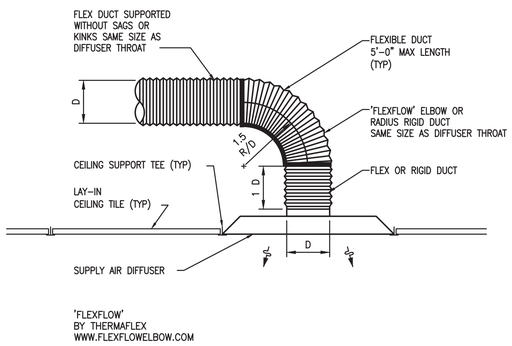


NOTE:
1. PROVIDE ADDITIONAL SUPPORT STEEL AS REQUIRED

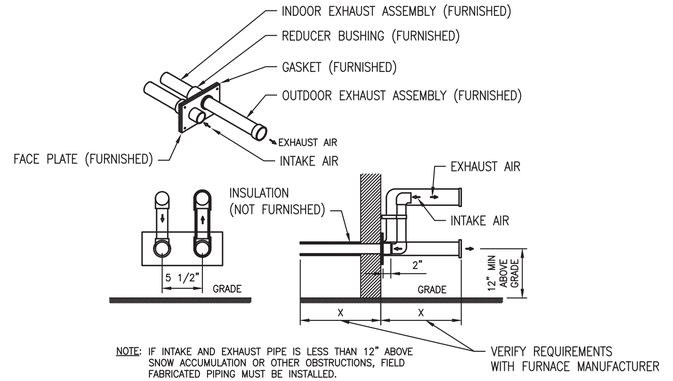
SIDEWALL EXHAUST FAN DETAIL
NOT TO SCALE



RECTANGULAR DUCT BRANCH TAKE-OFF DETAILS
NOT TO SCALE

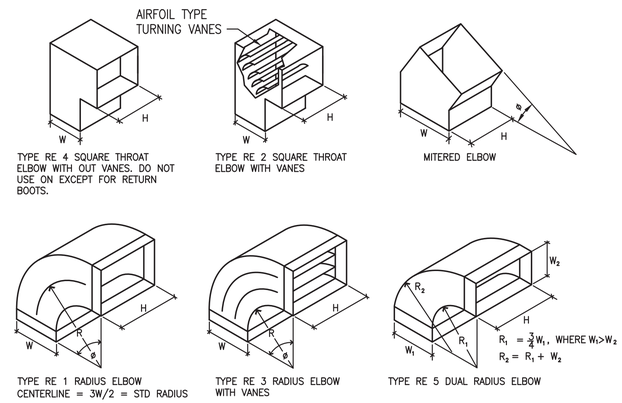


SUPPLY AIR DIFFUSER DETAIL
NOT TO SCALE



NOTE: IF INTAKE AND EXHAUST PIPE IS LESS THAN 12" ABOVE SNOW ACCUMULATION OR OTHER OBSTRUCTIONS, FIELD FABRICATED PIPING MUST BE INSTALLED.

FURNACE AND UNIT HEATER INTAKE/ EXHAUST WALL TERMINATION DETAIL
NOT TO SCALE



RECTAMGULAR SHEET METAL ELBOWS
NOT TO SCALE

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MECHANICAL
DETAILS

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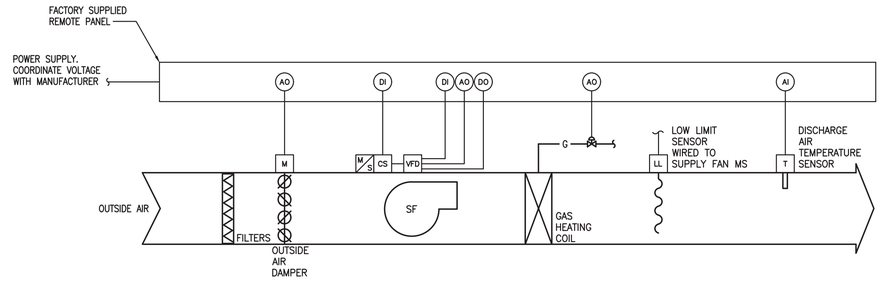

GAS FIRE MAKEUP AIR UNIT CONTROL DIAGRAM

NOT TO SCALE

GAS-FIRED DX MAKEUP AIR UNIT SEQUENCE OF OPERATION (TYPICAL)
NOTE: ALL SETPOINTS AND TIME INTERVALS SHALL BE ADJUSTABLE BY THE SYSTEM OPERATOR.

1. WITH THE SUPPLY FAN'S HAND/OFF/AUTO SWITCH IN THE "AUTO" POSITION, THE SUPPLY FAN SHALL BE AUTOMATICALLY STARTED AND STOPPED WITH A 7-DAY PROGRAMMABLE OCCUPANCY SCHEDULE. DURING OCCUPIED PERIODS THE UNIT SUPPLY FAN OPERATE CONTINUOUSLY. DURING UNOCCUPIED PERIODS THE FAN SHALL NOT OPERATE.
2. ROOM TEMPERATURE: THE DDC SYSTEM SHALL AVERAGE ALL OF THE FLOOR SPACE TEMPERATURE SENSORS TO DETERMINE CONTROL SETPOINT.
3. HEATING TEMPERATURE CONTROL: WHEN THE AVERAGE SPACE TEMPERATURE FALLS BELOW ITS SETPOINT THE DDC CONTROLLER SHALL MODULATE THE GAS BURNER TO MAINTAIN THE ROOM TEMPERATURE SETPOINT (72 DEGREES).
4. WHEN THE SUPPLY FAN IS DE-ENERGIZED, THE OUTSIDE AIR DAMPERS SHALL BE CLOSED.
5. THE DDC SYSTEM SHALL MONITOR THE FOLLOWING POINTS: DISCHARGE AIR TEMPERATURE, FILTER PRESSURE DIFFERENTIAL, SUPPLY FAN STATUS, REFRIGERATION CIRCUIT STATUS, GAS VALVE POSITION, AND ALL ALARMS.

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TEMPERATURE
CONTROLS

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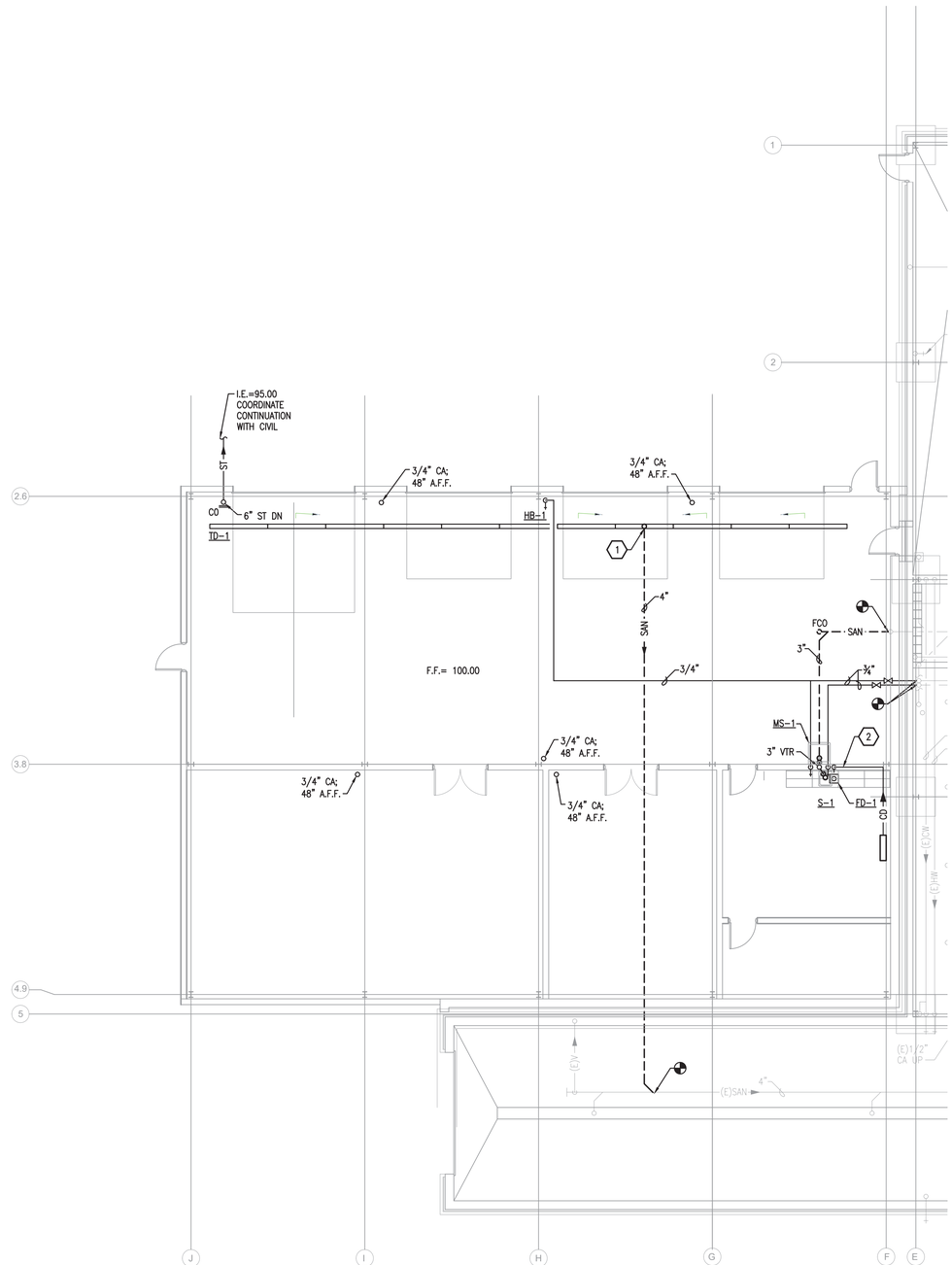


PLUMBING NEW WORK PLAN - FIRST FLOOR

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

N

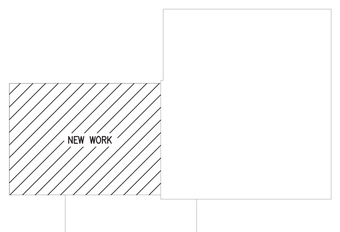
KEYNOTES

1. PROVIDE 4" NO-HUB BOTTOM OUTLET THIS SECTION OF TRENCH DRAIN.
2. ROUTE CONDENSATE DRAIN LINE BY GRAVITY BENEATH SINK TO FLOOR DRAIN WITH APPROVED AIR GAP.

GENERAL NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. PROVIDE PLUMBING SYSTEMS COMPLETE AND PER APPLICABLE CODES INCLUDING REQUIRED COMPONENTS, OFFSETS REQUIRED TO AVOID STRUCTURE, ETC.
2. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING AND PIPING WITH THE WORK OF ALL OTHER TRADES.
3. PIPING SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT/PANELS. PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT. PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
4. THE CONTRACTOR SHALL PROVIDE SUPPLEMENTAL STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL MECHANICAL SYSTEMS.
5. PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
6. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS OF AND EXACT LOCATIONS OF FIXTURES (STANDARD AND BARRIER FREE), SINKS, ETC. REFER TO PLUMBING FIXTURE SCHEDULES FOR CONNECTION SIZES, ACCESSORIES, AND ADDITIONAL INFORMATION.
7. HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR FIXTURE CONNECTION SIZES.
8. PLUMBING VENT PIPING THROUGH THE ROOF SHALL BE LOCATED A MINIMUM 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF A PARAPET.
9. PROVIDE ACCESS DOORS FOR CLEANOUTS OR VALVES LOCATED ABOVE HARD CEILINGS. COORDINATE WITH ARCHITECT. PROVIDE CODE REQUIRED CLEARANCE/ACCESS DOORS FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING SYSTEMS.
10. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
11. PROVIDE VALVES ON ALL BRANCH PIPING SERVING GROUP TOILET ROOMS. PROVIDE FULL OPEN VALVES AND SHUTOFF VALVES PER PLUMBING CODE.
12. PROVIDE TRAP SEAL PROTECTION ON ALL FLOOR DRAINS PER INTERNATIONAL PLUMBING CODE SECTION 1002.4.
13. COORDINATE LOCATIONS/SIZES OF ALL FLOOR/WALL PENETRATIONS AND SLEEVES WITH STRUCTURAL AND ARCHITECTURAL TRADES.

KEY PLAN



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PLUMBING
NEW WORK PLAN -
FIRST FLOOR

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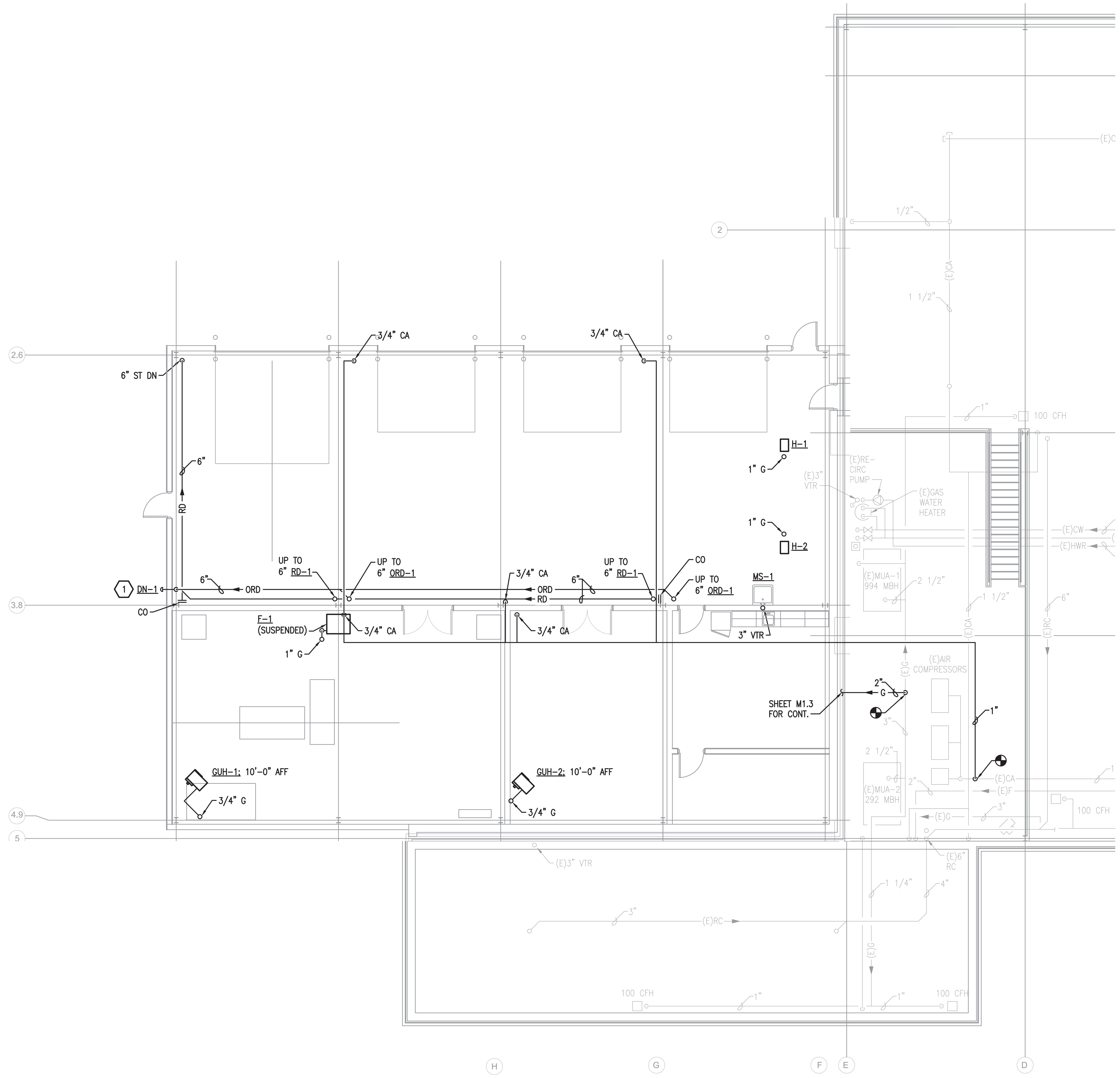


PLUMBING NEW WORK PLAN - SECOND FLOOR

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

N

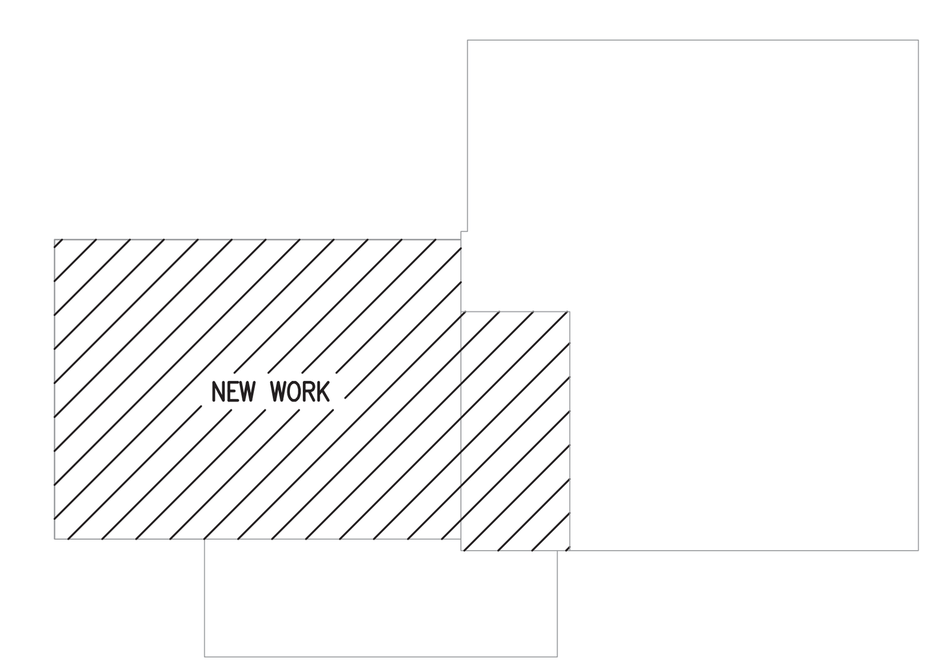
KEYNOTES

1. TERMINATE OVERFLOW ROOF DRAIN WITH DOWNSPOUT NOZZLE HIGH ON WALL.

GENERAL NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. PROVIDE PLUMBING SYSTEMS COMPLETE AND PER APPLICABLE CODES INCLUDING REQUIRED COMPONENTS, OFFSETS REQUIRED TO AVOID STRUCTURE, ETC.
2. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING AND PIPING WITH THE WORK OF ALL OTHER TRADES.
3. PIPING SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT/PANELS. PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT. PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
4. THE CONTRACTOR SHALL PROVIDE SUPPLEMENTAL STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL MECHANICAL SYSTEMS.
5. PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
6. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS OF AND EXACT LOCATIONS OF FIXTURES (STANDARD AND BARRIER FREE), SINKS, ETC. REFER TO PLUMBING FIXTURE SCHEDULES FOR CONNECTION SIZES, ACCESSORIES, AND ADDITIONAL INFORMATION.
7. HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR FIXTURE CONNECTION SIZES.
8. PLUMBING VENT PIPING THROUGH THE ROOF SHALL BE LOCATED A MINIMUM 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF A PARAPET.
9. PROVIDE ACCESS DOORS FOR CLEANOUTS OR VALVES LOCATED ABOVE HARD CEILINGS. COORDINATE WITH ARCHITECT. PROVIDE CODE REQUIRED CLEARANCE/ACCESS DOORS FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING SYSTEMS.
10. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
11. PROVIDE VALVES ON ALL BRANCH PIPING SERVING GROUP TOILET ROOMS. PROVIDE FULL OPEN VALVES AND SHUTOFF VALVES PER PLUMBING CODE.
12. PROVIDE TRAP SEAL PROTECTION ON ALL FLOOR DRAINS PER INTERNATIONAL PLUMBING CODE SECTION 1002.4.
13. COORDINATE LOCATIONS/SIZES OF ALL FLOOR/WALL PENETRATIONS AND SLEEVES WITH STRUCTURAL AND ARCHITECTURAL TRADES.

KEY PLAN



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BRIGHTON AREA SCHOOLS
MAINTENANCE BUILDING
BRIGHTON, MICHIGAN
PROJECT NO. 18-785

	BY	DATE
DESIGN	CRP	01.24.20
DRAWN	CRP	01.24.20
CHECKED	SLB	05.07.20
APPROVED	SLB	05.07.20

NO.	REVISIONS	DATE
A	SD	02.21.20
B	DD	03.31.20
C	FINAL REVIEW	05.11.20
1	FOR CONSTRUCTION	05.26.20
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PLUMBING
NEW WORK PLAN -
SECOND FLOOR

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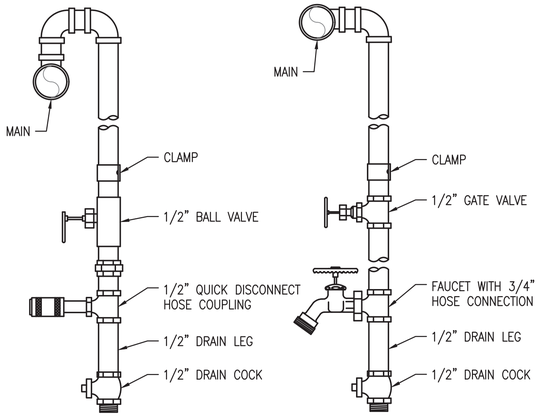
P1.1



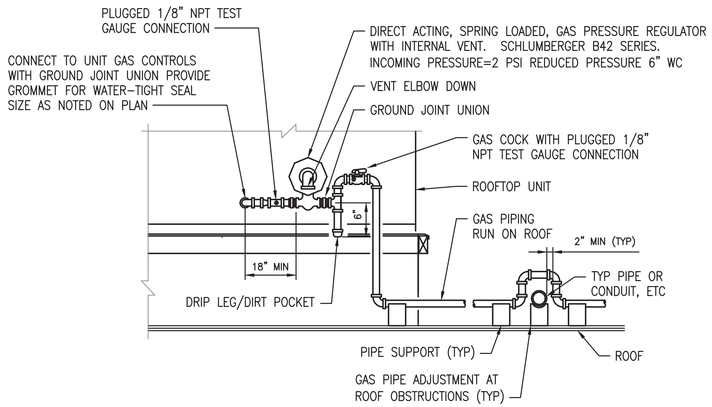
TYPICAL AIR AND WATER DROP DETAIL
NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

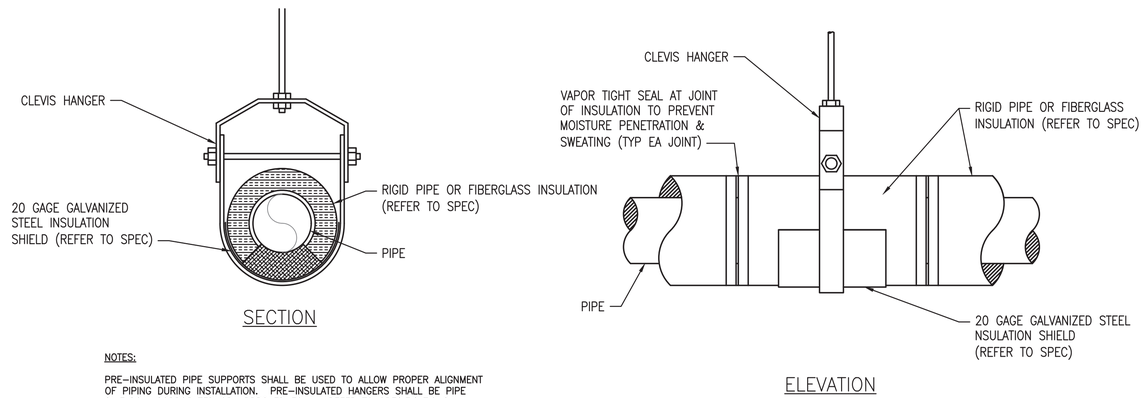
SYM	DESCRIPTION	W	V	HW	CW
DN–1	DOWNSPOUT NOZZLE – ZURN #Z199, NICKEL BRONZE BODY WITH NO–HUB INLET AND REMOVABLE STAINLESS STEEL SCREEN.	6"	–	–	–
FD–1	FLOOR DRAIN – JAY R. SMITH #2005, CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL CLAMPING COLLAR AND ADJUSTABLE SQUARE NICKEL BRASS STRAINER.	3"	1 1/2"	–	–
HB–1	HOSE BIBB – WOODFORD MODEL B65 FREEZEPROOF HOSE BIBB WITH ANTI–SIPHON VACUUM BREAKER, BRASS CONSTRUCTION & FINISH, ENCLOSED IN A FLUSH MOUNTING WALL BOX.	–	–	–	1/2"
MB–1	MOP BASIN – 'FIAT' MODEL MSB2424 MOLDED STONE MOP BASIN. PROVIDE 830–11 FAUCET, 889–CC MOP BRACKET AND 832–AA HOSE AND BRACKET.	3"	1 1/2"	3/4"	3/4"
ORD–1	OVERFLOW ROOF DRAIN – ZURN #Z–100, 15" DIAMETER CAST IRON ROOF DRAIN WITH COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARD AND LOW SILHOUETTE POLY–DOME. NO–HUB OUTLET. 2" HIGH EXTERNAL WATER DAM.	6"	–	–	–
RD–1	ROOF DRAIN – ZURN #Z–100, 15" DIAMETER CAST IRON ROOF DRAIN WITH COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARD AND LOW SILHOUETTE POLY–DOME. NO–HUB OUTLET.	6"	–	–	–
S–1	SINGLE BOWL SINK – ELKAY #DLR172010, STAINLESS STEEL SINK WITH CHICAGO FAUCETS #1100–L9–317ABCP FAUCET WITH WRIST BLADE HANDLES, FLEXIBLE SUPPLIES WITH ANGLE STOPS, LK–35 STRAINER. PROVIDE WITH ASSE 1070 MIXING VALVE.	1 1/2"	1 1/2	1/2"	1/2"
TD–1	TRENCH DRAIN – ZURN #Z886, 6" WIDE, 80" LONG HIGH DENSITY POLYETHYLENE TRENCH DRAIN SYSTEM. CHANNELS HAVE CLIPS MOLDED INTO THE SIDES TO ACCOMMODATE VERTICAL REBAR FOR POSITIONING AND ANCHORING. PROVIDE BOTTOM OUTLET AT LOW POINT. HEAVY DUTY GRATE FOR FORKLIFT TRAFFIC.	–	–	–	–

NATURAL GAS REQUIREMENTS

SYM	ITEM	CAPACITY (CFH)	GAS PIPE SIZE (IN)	REQUIRED OPERATING PRESSURE
MAU–1	MAKEUP AIR UNIT	200	1 1/4	6"–14"
F–1	FURNACE	100	1	7"
H–1	RADIANT HEATER	125	1	4"–14"
H–2	RADIANT HEATER	125	1	4"–14"
GUH–1	UNIT HEATER	30	3/4	7"
GUH–2	UNIT HEATER	30	3/4	7"
	TOTAL ADDED:	610		
	TOTAL EXISTING:	2200		
	TOTAL CONN.:	2810		



TYPICAL GAS PIPING CONNECTION DETAIL
NOT TO SCALE



NOTES:

PRE–INSULATED PIPE SUPPORTS SHALL BE USED TO ALLOW PROPER ALIGNMENT OF PIPING DURING INSTALLATION. PRE–INSULATED HANGERS SHALL BE PIPE SHIELDS INCORPORATED OR APPROVED EQUAL, REFER TO SPECIFICATIONS.

INSULATED PIPE HANGER DETAIL
NOT TO SCALE

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CONSULTING

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PLUMBING SCHEDULES & DETAILS

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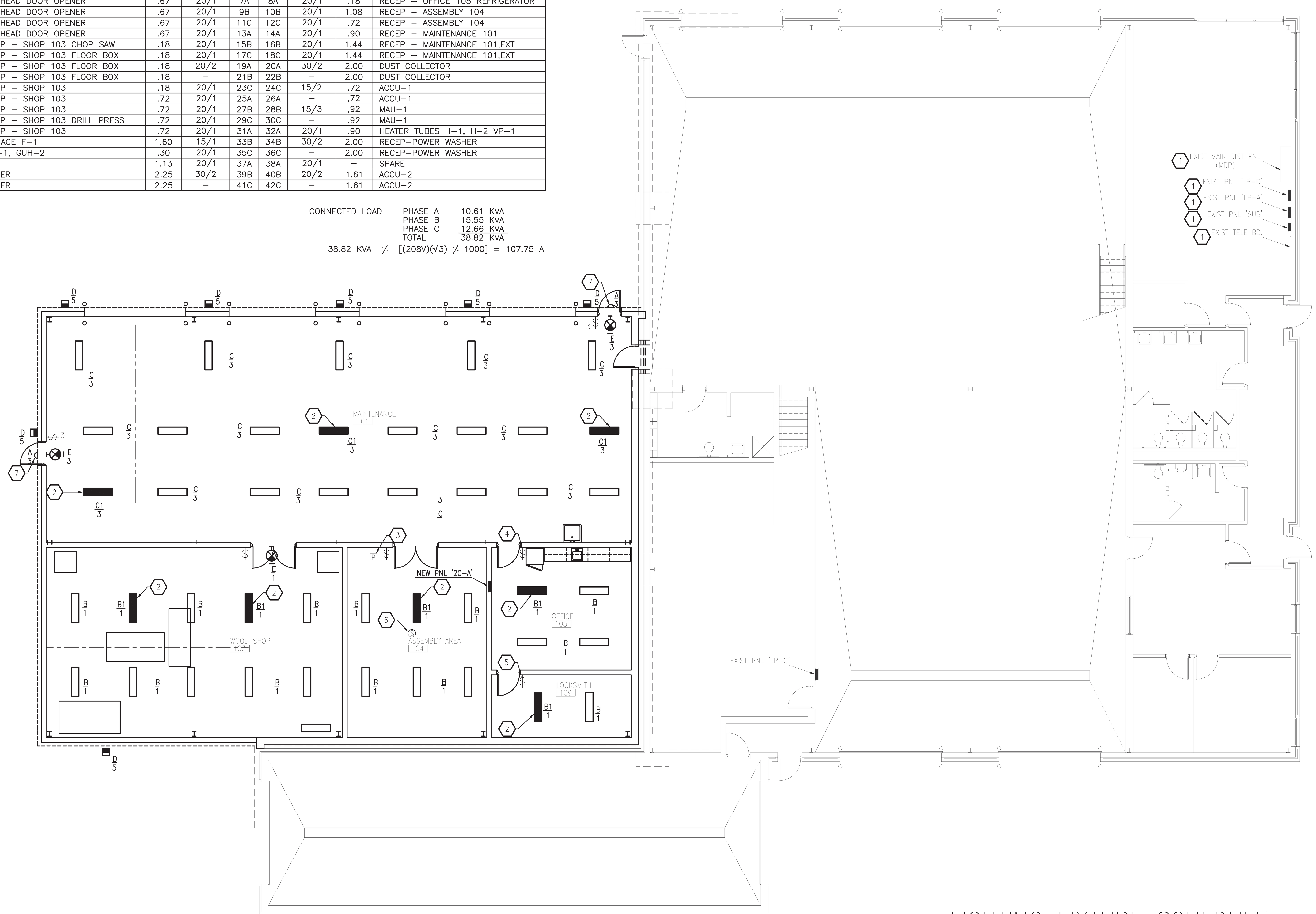
PANELBOARD SCHEDULE
PANEL '20-A'

225A, 120/208V, 3ø, 4W, MLO, SURF. MTD, 42 POLE

DESCRIPTION	CONN KVA	CCT BRKR AMP/POLES	CCT. NO.	CCT. NO.	CCT BRKR AMP/POLES	CONN KVA	DESCRIPTION
LTG – 103,104,105,109	1.10	20/1	1A	2A	20/1	.72	RECEP – LOCKSMITH 109
LTG – MAINTENANCE 101	1.10	20/1	3B	4B	20/1	1.08	RECEP – OFFICE 105
LTG – EXTERIOR	.41	20/1	5C	6C	20/1	.54	RECEP – OFFICE 105 COUNTER
OVERHEAD DOOR OPENER	.67	20/1	7A	8A	20/1	.18	RECEP – OFFICE 105 REFRIGERATOR
OVERHEAD DOOR OPENER	.67	20/1	9B	10B	20/1	1.08	RECEP – ASSEMBLY 104
OVERHEAD DOOR OPENER	.67	20/1	11C	12C	20/1	.72	RECEP – ASSEMBLY 104
OVERHEAD DOOR OPENER	.67	20/1	13A	14A	20/1	.90	RECEP – MAINTENANCE 101
RECEP – SHOP 103 CHOP SAW	.18	20/1	15B	16B	20/1	1.44	RECEP – MAINTENANCE 101,EXT
RECEP – SHOP 103 FLOOR BOX	.18	20/1	17C	18C	20/1	1.44	RECEP – MAINTENANCE 101,EXT
RECEP – SHOP 103 FLOOR BOX	.18	20/2	19A	20A	30/2	2.00	DUST COLLECTOR
RECEP – SHOP 103 FLOOR BOX	.18	–	21B	22B	–	2.00	DUST COLLECTOR
RECEP – SHOP 103	.18	20/1	23C	24C	15/2	.72	ACCU–1
RECEP – SHOP 103	.72	20/1	25A	26A	–	,72	ACCU–1
RECEP – SHOP 103	.72	20/1	27B	28B	15/3	,92	MAU–1
RECEP – SHOP 103 DRILL PRESS	.72	20/1	29C	30C	–	.92	MAU–1
RECEP – SHOP 103	.72	20/1	31A	32A	20/1	.90	HEATER TUBES H–1, H–2 VP–1
FURNACE F–1	1.60	15/1	33B	34B	30/2	2.00	RECEP–POWER WASHER
GUH–1, GUH–2	.30	20/1	35C	36C	–	2.00	RECEP–POWER WASHER
EF–1	1.13	20/1	37A	38A	20/1	–	SPARE
WELDER	2.25	30/2	39B	40B	20/2	1.61	ACCU–2
WELDER	2.25	–	41C	42C	–	1.61	ACCU–2

CONNECTED LOAD
PHASE A 10.61 KVA
PHASE B 15.55 KVA
PHASE C 12.66 KVA
TOTAL 38.82 KVA

38.82 KVA ⁄ [(208V)(√3) ⁄ 1000] = 107.75 A



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

LIGHTING FIXTURE SCHEDULE

TYPE	LED	DESCRIPTION	LAMP NO./TYPE	MANUFACTURER	VOLTS	NOTES
A	X	WALL MOUNTED REMOTE	LED	ISOLITE #OWLACBZMBHX	120	3
B	X	SURFACE WRAPAROUND	LED	METALUX #4WSLLD255SRSUNVL840CD1–U	120	
B1	X	SURFACE WRAPAROUND	LED	METALUX #4WSLLD255SRSUNVEL14WL840CD1–U	120	1
C	X	SUSPENDED	LED	METALUX #4WSLLD255SRSUNVL840CD1U–AYC–CHAIN	120	
C1	X	SUSPENDED	LED	METALUX #4WSLLD255SRSUNVEL14WL840CD1U–AYC–CHAIN	120	1
D	X	AREA LIGHT	LED	LUMARK #XTOR6BRLPC1	120	2
E	X	EXIT LIGHT	LED	SURELITES #LPX7	120	

NOTES TO LIGHTING FIXTURE SCHEDULE:
1. PROVIDE FIXTURE WITH EMERGENCY 1400 LUMENS MINIMUM.
2. MOUNT FIXTURE 12'–0" A.F.F. TO BOTTOM.
3. MOUNT FIXTURE 8'–0" A.F.F. TO BOTTOM.

KEYNOTES

1. APPROXIMATE LOCATION OF EXISTING ELECTRICAL EQUIPMENT LOCATED ON MEZZANINE ABOVE.
2. LIGHT FIXTURE TO BE DUAL FED WITH SWITCH LEG FOR CONTROL AS INDICATED AND AHEAD OF SWITCH LEG FOR EMERGENCY BATTERY/DRIVER FEED. LIGHT FIXTURE TO BE CONTROLLED BY SWITCH LEG DURING NORMAL OPERATION AND AUTOMATICALLY TRANSFER 'ON' DURING NORMAL POWER FAILURE.
3. PROVIDE EATON #SP20–MV, OR EQUAL, POWER PACK TO CONTROL LIGHTING IN THIS ROOM/AREA.
4. PROVIDE 0–10V DIMMER SWITCH EQUAL TO EATON #WBSD–010DEC–C2 TO CONTROL LIGHTING IN THIS ROOM/AREA.
5. PROVIDE EATON #ONW–D, OR EQUAL, WALL SWITCH SENSOR TO CONTROL LIGHTING IN THIS ROOM/AREA.
6. PROVIDE EATON #OAC–DT–2000–R, OR EQUAL, OCCUPANCY SENSOR TO CONTROL LIGHTING IN THIS ROOM/AREA.
7. EMERGENCY LIGHTING REMOTE HEAD TO REMAIN 'OFF' UNTIL NORMAL POWER OUTAGE OCCURS THEN FIXTURE WILL AUTOMATICALLY TURN 'ON'. TIE INTO LIGHTING CIRCUIT AHEAD OF ANY SWITCH LEG.

GENERAL NOTES

1. UNLESS NOTED OTHERWISE, ALL LIGHTING, DEVICES, EQUIPMENT, CIRCUITRY, ETC. DENOTED WITH BOLD (DARK) LINES REPRESENT WORK TO BE PERFORMED. ALL LIGHTING, DEVICES, EQUIPMENT, CIRCUITRY, ETC. DENOTED WITH LIGHT (SCREENED) LINES REPRESENT EXISTING TO REMAIN AND BE MAINTAINED.
2. EXISTING CONDITIONS SHOWN ON THESE DRAWINGS HAVE BEEN OBTAINED FROM EXISTING DRAWINGS AND FIELD INSPECTIONS. CONTRACTOR SHALL VERIFY EXACT LOCATIONS. REPORT DISCREPANCIES TO ARCHITECT/ENGINEER BEFORE DEMOLITION
3. COORDINATE LIGHT FIXTURE PLACEMENT WITH OTHER TRADES TO ELIMINATE INTERFERENCES.
4. ALL BRANCH CIRCUITRY INDICATED ON THIS SHEET SHALL BE FED FROM NEW ELECTRICAL PANEL '20–A', UNLESS NOTED OTHERWISE.

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BRIGHTON AREA SCHOOLS
2020 PROJECTS
BRIGHTON, MI
PROJECT NO. 18-875

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TRANSPORTATION BUILDING
LIGHTING PLAN
PLAN

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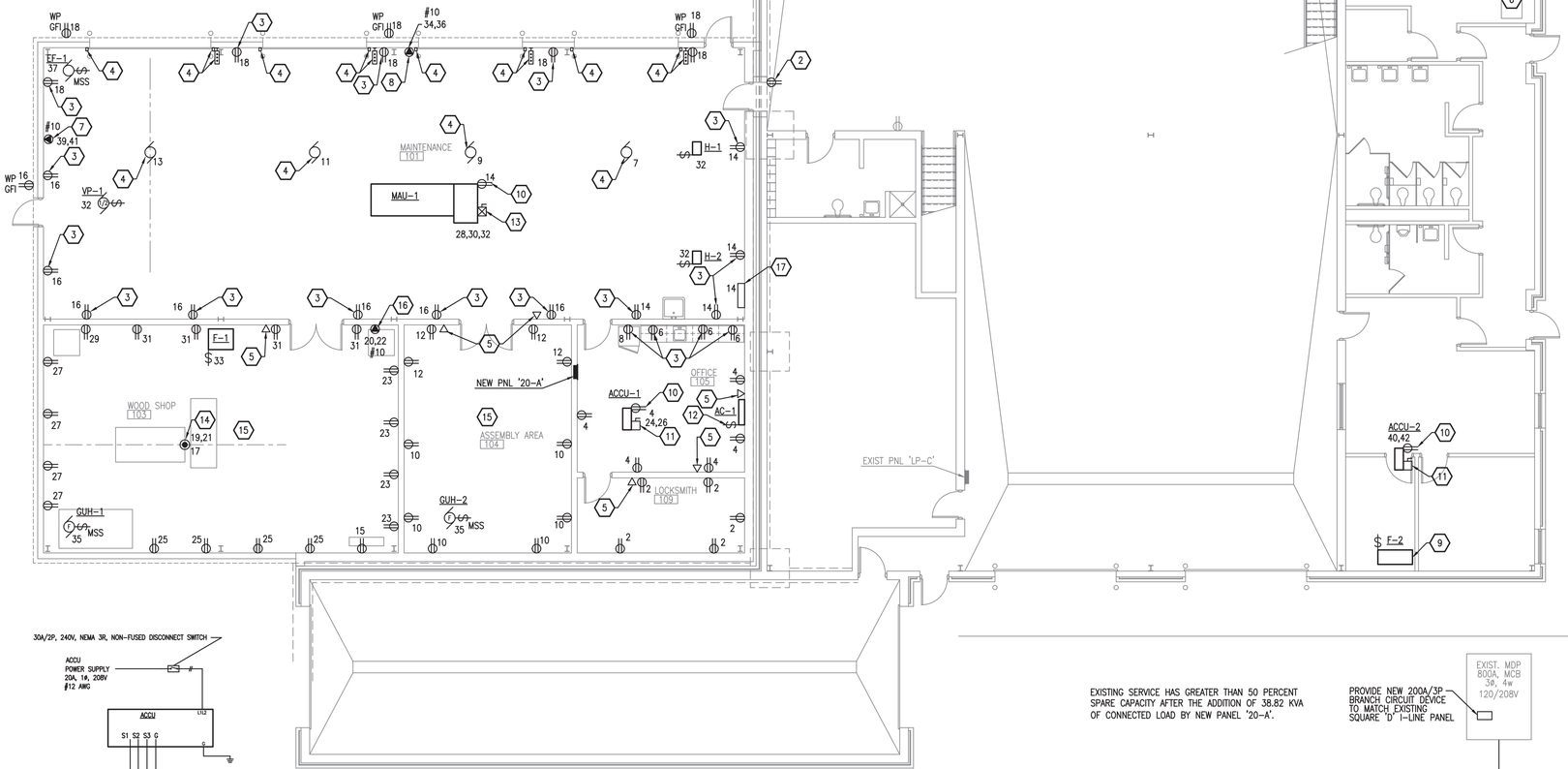
ELECTRICAL SYMBOL LEGEND

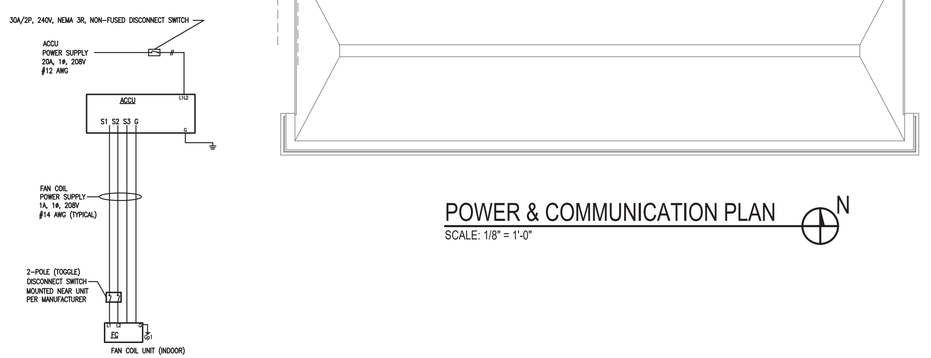
LIGHT FIXTURES – NUMBER INDICATES CIRCUIT, LOWER CASE LETTER INDICATES SWITCH LEG, UPPER CASE LETTER INDICATES FIXTURE TYPE, SEE FIXTURE SCHEDULE. DARKENED SYMBOL INDICATES NIGHT LIGHT.

- A/1 o/b — FLUORESCENT OR LED RECESSED FIXTURE
- DOWN LIGHT OR INDUSTRIAL AS SCHEDULED
- SURFACE, CHAIN SUSPENDED OR INDIRECT PENDANT MOUNTED FIXTURE AS SCHEDULED
- SURFACE MOUNTED SQUARE LIGHT
- EXTERIOR AREA LIGHT
- EXTERIOR POLE MOUNTED FIXTURE
- $ — LIGHT SWITCH – SINGLE POLE UNLESS NOTED OTHERWISE, LOWER CASE LETTER INDICATES SWITCH LEG
  3 – THREE WAY SWITCH
  K – KEYED SWITCH
- EXIT LIGHT
- EMERGENCY BATTERY LIGHT
- F — FIRE ALARM PULL STATION, MOUNT 48" A.F.F. TO TOP
- DOOR HOLDER/CLOSER
- F — HORN/STROBE LIGHT MOUNT 80" A.F.F. TO BOTTOM
  C – CEILING MOUNTED
- F — STROBE LIGHT, MOUNT 80" A.F.F. TO BOTTOM
- SD — SMOKE DETECTOR (D – DUCT MTD. TYPE)
- SPRINKLER SYSTEM FLOW SWITCH
- 1 — MOTOR SYMBOL, NUMBER INDICATES HORSEPOWER, F – FRACTIONAL HORSEPOWER
- DISCONNECT SWITCH, SIZE AND TYPE AS NOTED
  N.F. – NON FUSED
- MOTOR STARTER
- MSS — MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD PROTECTION
- COMBINATION MOTOR STARTER/DISCONNECT DEVICE
- J — JUNCTION BOX (AS NOTED)
- SPECIAL PURPOSE RECEPTACLE, AS NOTED
- WALL MOUNTED CLOCK, AS SPECIFIED, MOUNT 84" A.F.F. TO CENTER
- FLOOR MOUNTED RECEPTACLE OUTLET OR JUNCTION BOX AS NOTED.
- QUADRAPLEX RECEPTACLE
- DUPLEX RECEPTACLE
  GFI – GROUND FAULT INTERRUPTER
  WP – WEATHER PROOF COVER
- SIMPLEX RECEPTACLE
- COMMUNCIATION/DATA CABLE OUTLET.
- WIRELESS ACCESS POINT
- I — INTERCOM STATION
- CCTV CAMERA
- I — INTERCOM STATION
- PANELBOARD; FLUSH MTD, SURFACE MTD
- CONDUIT NIPPLE (AS NOTED)
- SURFACE MOUNTED RACEWAY
- CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING
- CONDUIT RUN BELOW FLOOR SLAB OR GRADE
- HOMERUN TO PANELBOARD
  CONDUIT
  NEUTRAL
  PHASE WIRE(S)
  GROUND WIRE
  PANELBOARD CIRCUIT(S)
  RLP–1 2,4,6



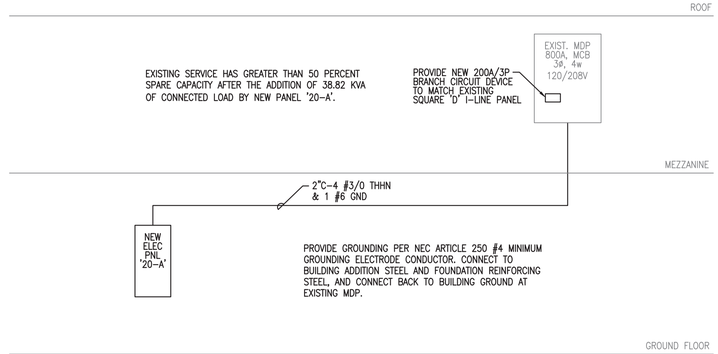
POWER & COMMUNICATION PLAN

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



MINI-SPLIT POWER WIRING DIAGRAM

SCALE: N.T.S.



PARTIAL POWER RISER DIAGRAM

N.T.S.

KEYNOTES

1. APPROXIMATE LOCATION OF EXISTING ELECTRICAL EQUIPMENT LOCATED ON MEZZANINE ABOVE.
2. REMOVE EXISTING RECEPTACLE DEVICE, WIRING, BOXES ETC DUE TO NEW DOOR INSTALLATION. MAINTAIN CIRCUIT CONTINUITY TO DEVICES AFFECTED BY DEMOLITION.
3. PROVIDE GFI TYPE RECEPTACLE MOUNTED AT 48" A.F.F. TO BOTTOM.
4. PROVIDE ALL POWER AND CONTROL WIRING FOR MOTORIZED OVERHEAD DOOR PER MANUFACTURER'S REQUIREMENTS. CONTROL WIRING SHALL BE RUN IN CONDUIT. PROVIDE BRANCH CIRCUITRY AS INDICATED.
5. PROVIDE 4" SQUARE, DEEP BOX WITH SINGLE GANG PLASTER RING AND 1–1" CONDUIT TO CEILING SPACE, PROVIDE PLASTIC BUSHING ON CONDUIT END. PROVIDE 1–CATEGORY 6 (VOICE) AND 2–CATEGORY 6 (DATA) CABLES FROM OUTLET TO TERMINAL BOARD, SEE KEYNOTE #6. TERMINATE BOTH ENDS PER SPECIFICATIONS.
6. APPROXIMATE LOCATION OF EXISTING DATA/COMMUNICATION TERMINATION EQUIPMENT.
7. PROVIDE 30A/250V RECEPTACLE TO MATCH OWNER SUPPLIED WELDER. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH–IN. MOUNT AT 48" A.F.F. TO BOTTOM.
8. PROVIDE 30A/250V RECEPTACLE TO MATCH OWNER SUPPLIED PRESSURE WASHER. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH–IN. MOUNT AT 48" A.F.F. TO BOTTOM.
9. EXISTING HEATING ONLY FAN COIL UNIT TO BE REMOVED. DISCONNECT EXISTING UNIT AND RECONNECT EXISTING BRANCH CIRCUITRY TO NEW FURNACE.
10. PROVIDE WEATHERPROOF, GFI TYPE RECEPTACLE MOUNTED ON OR NEAR ROOF TOP EQUIPMENT.
11. PROVIDE 30A/2P, NEMA 3R, 240V NON–FUSED DISCONNECT SWITCH MOUNTED ON OR NEAR ROOFTOP EQUIPMENT, PROVIDE BRANCH CIRCUITRY AS INDICATED.
12. PROVIDE 20A/2P, NON–FUSED DISCONNECT (TOGGLE STYLE) SWITCH MOUNTED ON OR NEAR FAN COIL UNIT. PROVIDE BRANCH CIRCUITRY AS INDICATED THROUGH OUTDOOR UNIT PER WIRING DETAIL ON THIS SHEET..
13. PROVIDE NEMA SIZE '00', 3R RATED, 240V COMBINATION MOTOR STARTER/DISCONNECT SWITCH MOUNTED ON OR NEAR ROOFTOP EQUIPMENT, PROVIDE BRANCH CIRCUITRY AS INDICATED.
14. PROVIDE 4 GANG FLOOR BOX LEGRAND/WIRMOLD #RFB4–OG AND 1 DUPLEX AND 1–220V RECEPTACLES WITH CIRCUITRY AS INDICATED. PROVIDE BRUSHED ALUMINUM FLANGED BLANK COVER ASSEMBLY #FPBTCAL. PROVIDE 1" CONDUIT FROM FLOOR BOX TO CEILING SPACE FOR FUTURE USE. PROVIDE PLASTIC BUSHINGS ON ALL CONDUIT ENDS.
15. MOUNT DEVICES 48" AFF TO BOTTOM IN THIS ROOM/AREA.
16. PROVIDE 30A/250V RECEPTACLE TO MATCH OWNER SUPPLIED DUST COLLECTOR. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH–IN. MOUNT AT 48" A.F.F. TO BOTTOM.
17. MUA–1 CONTROL PANEL PROVIDED AND SET BY MECHANICAL CONTRACTOR. MUA–1 SHALL BE INTERLOCKED TO OPERATE WITH EF–1. POWER WIRING BY ELECTRICAL CONTRACTOR. PROVIDE MANUAL OVERRIDE SWITCH TO TURN SYSTEM 'ON'.

GENERAL NOTES

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