SHAKOPEE COMMUNITY CENTER - MEETING ROOM RENOVATION

1255 FULLER STREET SOUTH, SHAKOPEE, MN 55379

BUILDING CODE ANALYSIS

SUMMARY OF WORK:

THIS PROJECT CONSISTS OF DIVIDING THE EXISTING CHILD CARE CENTER IN THE SHAKOPEE COMMUNITY CENTER TO ADD 2 MEETING ROOMS.

APPLICABLE CODES:

BUILDING: 2020 MINNESOTA STATE BUILDING CODE (MSBC). THE 2020 MSBC INCLUDES THE 2018 INTERNATIONAL BUILDING CODE (IBC) WITH MINNESOTA AMENDMENTS.

FIRE PREVENTION:2015 MINNESOTA STATE FIRE CODE (MSFC). THE 2020 MSFC INCLUDES THE 2018 INTERNATIONAL FIRE CODE (IFC) WITH MINNESOTA AMENDMENTS.

ACCESSIBILITY:2020 MINNESOTA ACCESSIBILITY CODE (MAC)
ENERGY: 2020 MINNESOTA ENERGY CODE
ELECTRICAL: 2014 NATIONAL ELECTRICAL CODE (NFPA 70)
MECHANICAL: 2020 MINNESOTA MECHANICAL AND FUEL AND GAS CODE
PLUMBING: 2020 PLUMBING CODE
OTHER: NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS, AS REFERENCED BY THE MSBC AND MSFC.

USE AND OCCUPANCY CLASSIFICATION (MSBC – CHAPTER 3):

THE BUILDING IS CLASSIFIED AS NON-SEPARATED MIXED USE, WITH THE FOLLOWING OCCUPANCIES:
GROUP A-2 PARTY AND COMMUNITY ROOMS; TEEN CENTER; LOUNGE
GROUP A-3 GYMNASIUM; AQUATICS CENTER; MULTI-PURPOSE ROOMS; EXERCISE ROOMS
GROUP B OFFICES AND ADMINISTRATION AREAS
GROUP E DAY CARE CENTER

TYPES OF CONSTRUCTION (MSBC – CHAPTER 6):

THE EXISTING BUILDING IS TYPE II-A, AND NEW PORTIONS WILL BE CONSTRUCTED ACCORDING TO TYPE II-A AS DEFINED BY MSBC TABLE 601.

A.	STRUCTURAL FRAME:	1
B.	EXTERIOR BEARING WALLS:	1
C.	INTERIOR BERING WALLS:	1
D.	NON-BEARING EXTERIOR WALLS & PARTITIONS:	0
E.	NON-BEARING INTERIOR WALLS & PARTITIONS:	0
F.	FLOOR CONSTRUCTION (INCLUDING BEAMS & JOISTS):	1
G.	*ROOF CONSTRUCTION (INCLUDING BEAMS & JOISTS):	1

*FIRE PROTECTION OF ROOF FRAMING AND DECKING IS NOT REQUIRED WHEN THE ROOF CONSTRUCTION IS 20 FT OR MORE ABOVE ANY FLOOR IMMEDIATELY BELOW. ADDITIONALLY, AN ALTERNATE FIRE/LIFE SAFETY DESIGN WILL INCLUDE INCREASED SPRINKLER DENSITY, REDUCED SPRINKLER SPACING, ALARM/DETECTION, ETC. FOR AREAS ON THE 2ND FLOOR THAT ARE LESS THAN 20 FT FROM THE FLOOR TO THE EXISTING UNRATED STRUCTURAL MEMBERS ABOVE.

FIRE RESISTANCE RATED CONSTRUCTION (MSBC – CHAPTER 7):

MATERIALS AND ASSEMBLIES USED FOR STRUCTURAL FIRE RESISTANCE AND FIRE RESISTANCE RATED CONSTRUCTION SEPARATION OF ADJACENT SPACES ARE TO BE IN COMPLIANCE WITH THIS CHAPTER.

EXTERIOR WALL OPENINGS – NO LIMIT (MSBC TABLE 705.8)

INTERIOR FINISHES (MSBC – CHAPTER 8)

INTERIOR WALL & CEILING FINISH REQUIREMENTS BY OCCUPANCY (TABLE 803.9):

GROUP A-2/A-3 AREAS:	EXIT ENCLOSURES AND EXIT PASSAGEWAYS:	CLASS B
	CORRIDORS:	CLASS B
	ROOMS AND ENCLOSED SPACES:	CLASS C
GROUP B AREAS:	EXIT ENCLOSURES AND EXIT PASSAGEWAYS:	CLASS B
	CORRIDORS:	CLASS C
	ROOMS AND ENCLOSED SPACES:	CLASS C
GROUP E AREAS:	EXIT ENCLOSURES AND EXIT PASSAGEWAYS:	CLASS B
	CORRIDORS:	CLASS C
	ROOMS AND ENCLOSED SPACES:	CLASS C

FIRE PROTECTION SYSTEMS (MSBC – CHAPTER 9)

SPRINKLER PROTECTION PROVIDED THROUGHOUT IN ACCORDANCE WITH NFPA 13 (MSBC SECTION 903)

PORTABLE FIRE EXTINGUISHERS PER MSBC SECTION 906.1. RATINGS FOR EXTINGUISHERS SHALL FOLLOW THOSE OUTLINED IN MSBC TABLE 906.3(1). PROPOSED AMENDMENT TO 2012 WOULD ELIMINATE PORTABLE FIRE EXTINGUISHERS IN SELECT LOCATIONS. THIS AMENDMENT IS CONSISTENT WITH THE EXCEPTION TO SECTION 906.1(1) OF THE 2007 MINNESOTA STATE FIRE CODE (MSFC).

EMERGENCY VOICE/ALARM COMMUNICATION IS PROVIDED (MSBC SECTION 907)

PROJECT TEAM

OWNER:	ARCHITECT:	STRUCTURAL:	MECHANICAL ENGINEER:	ELECTRICAL ENGINEER:
CITY OF SHAKOPEE	292 DESIGN GROUP	NELSON-RUDIE & ASSOCIATES	NELSON-RUDIE & ASSOCIATES	NELSON-RUDIE & ASSOCIATES
DIRECTOR OF PARKS AND RECREATION	3533 EAST LAKE STREET	9100 49TH AVENUE NORTH	9100 49TH AVENUE NORTH	9100 49TH AVENUE NORTH
1255 FULLER STREET SOUTH	MINNEAPOLIS, MN 55406	NEW HOPE, MN 55428	NEW HOPE, MN 55428	NEW HOPE, MN 55428
SHAKOPEE, MN 55379	PHONE: 612.767.3773	PHONE: 963.367.7600	PHONE: 963.367.7600	PHONE: 963.367.7600
PHONE: 952.233.9514	CONTACT: THOMAS J. BETTI, AIA, NCARB	CONTACT: JOE PEARCE, PE	CONTACT: MICHAEL WOEHRLE, PE	CONTACT: JEFF PIEHL, PE
CONTACT: JAMIE POLLEY, CPRP				

INDICATION OF MATERIALS

- EARTH
- GRAVEL/STONE FILL
- CONCRETE
- TERRAZZO
- BRICK
- STONE
- MARBLE
- CONCRETE BLOCK
- TILE
- METAL STUD PARTITIONS
- WOOD STUD PARTITIONS (IN PLAN)
- *PLASTER, SAND, GROUT, ROOF FILL, GYPSUM BOARD, PARTICLE BOARD

*NOTE MATERIAL USED.

- SEALANT WITH BACKER ROD
- SHIM
- WOOD (FINISH)
- WOOD (BLOCKING OR FRAMING)
- PLYWOOD
- BATT INSULATION
- RIGID INSULATION
- METAL/STEEL
- ACOUSTICAL MATERIAL
- EXPANSION MATERIAL
- CARPET
- ASPHALT/BITUMINOUS PAVING

NOTE: ALL MATERIALS ARE IN SECTION.

SYMBOLS

DRAWING SHEET NUMBERS
DISCIPLINE — DRAWING NUMBER
A100

DRAWING REFERENCES
DETAIL — DETAIL NO. — SHEET NO. (2 / A2.0)
ELEVATION (2 / A2.0)
REFERENCE DETAIL OR ENLARGED PLAN — DETAIL NO. — SHEET NO. (2 / A2.0)
SECTION — SECTION NO. — SHEET NO. (2 / A2.0)

ROOM IDENTIFICATION
ROOM NAME
OFFICE 000 — ROOM NUMBER

MISC. IDENTIFICATION
KEY NOTE
REVISION TRIANGLE AND CLOUD FOR AREA REVISED BY BULLETIN OR ADDENDA
+ 100'-0" NEW SPOT ELEVATION
+ 100'-0" EXISTING SPOT ELEVATION
B/O SOFFIT 109' -0" ELEVATION & SECTION LINE
DIMENSION LINE

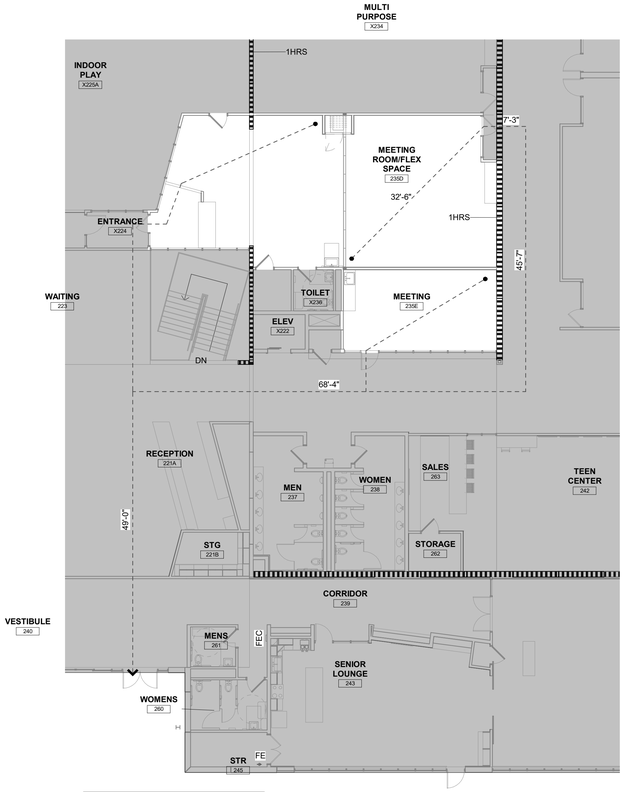
MISC. IDENTIFICATION
MATCH LINE
PROPERTY LINE
CENTER LINE-C OR FIN. FL. LINE
BROKEN LINE LINE ABOVE OR BELOW OR N.I.C. OR FUTURE EQUIPMENT
NEW PARTITION WITH WALL TYPE REFERENCE
SHADE INDICATES EXISTING WALLS
1-HOUR RATED FIRE BARRIER
2-HOUR RATED FIRE BARRIER
XXX DOOR NUMBER
F1 WINDOW TYPE
L1 LOUVER TYPE

MISC. IDENTIFICATION
LIGHT FIXTURE (SEE ELEC.)
LIGHT FIXTURE (SEE ELEC.)
LIGHT FIXTURE (SEE ELEC.)
MECHANICAL DIFFUSER (SEE MECH.)
RETURN AIR GRILL (SEE MECH.)
2x2 ACOUSTIC PANEL CEILING GRID - SEE ROOM FINISH SCHEDULE FOR TYPE
GYP. BRD. CEILING SEE ROOM FINISH SCHEDULE FOR FINISH
ACRYLIC STUCCO FINISH
X' - X" CEILING HEIGHT ABOVE FINISH FLOOR, UNLESS OTHERWISE NOTED
ACCESS PANEL
E.W.C. ELECTRIC WATER COOLER

MISC. IDENTIFICATION
FE FIRE EXTINGUISHER
FEC FIRE EXTINGUISHER CABINET
100 NEW CONTOUR LINE
100 EXISTING CONTOUR LINE
N NORTH ARROW

ARCHITECTURAL ABBREVIATIONS

&	AND	
"	INCH	
@	AT	
#	POUND OR NUMBER	
℄	PROPERTY LINE	
℄	CENTERLINE	
A. AB	ANCHOR BOLT	
ACC	ACCESIBLE	
ACSP	ACOUSTICAL SPRAY	
ADA	AMERICANS	
ADD	ADDITION	
ADDL	ADDITIONAL	
ADJ	ADJACENT/ADJUST/ADJACENT	
AFF	ABOVE FINISHED FLOOR	
ALT	ALTERNATE	
ALUM	ALUMINUM	
ANN	ANNUNCIATOR	
ANOD	ANODIZED	
AP	ACCESS PANEL	
APC	ACOUSTICAL PANEL CEILING	
APPROX	APPROXIMATE	
ARCH	ARCHITECT/ARCHITECTURAL	
ATV	ACOUSTICAL TILE CEILING (SPLINE)	
AUTO	AUTOMATIC	
AVG	AVERAGE	
AWP	ACOUSTICAL WALL PANEL	
B. BBD	BULLETIN BOARD	
BCMU	BURNISHED CONCRETE MASONARY UNIT	
BD	BOARD	
BET	BETWEEN	
BIT	BITUMINOUS	
BLDG	BUILDING	
BLKG	BLOCKING	
BLVD	BOULEVARD	
BM	BEAM	
BOT	BOTTOM	
BR	BRICK	
BRZ	BRONZE	
BRG	BEARING	
BSE	BASE/LEDGE	
BSMNT	BASEMENT	
BUR	BUILT UP ROOF/ROOFING	
C. CAB	CABINET	
CAP	CAPACITY	
CB	CATCH BASIN	
CBD	CHALK BOARD	
CC	CENTER TO CENTER	
CCTV	CLOSED CIRCUIT TELEVISION	
CEM	CEMENT	
CF	CUBIC FEET	
CFM	CUBIC FEET PER MINUTE	
CG	CORNER GUARD	
CH	CHAT HOLE	
CIP	CAST IN PLACE	
CIR	CIRCLE	
CJ	CONTROL JOINT	
CL	CEILING	
CL	CENTERLINE	
CLO	CLOSET	
CLR	CLEAR	
CMU	CONCRETE MASONRY UNIT	
CO	CASED OPENING	
COL	COLUMN	
CONC	CONCRETE	
CONF	CONFERENCE	
CONN	CONNECTION	
CONST	CONSTRUCTION	
CONTIN	CONTINUE/OUS/-ATION	
CONTR	CONTRACTOR	
COORD	COORDINATE	
CORR	CORRIDOR	
CPT	CARPET	
CSTN	CONCRETE STAIN	
CT	CERAMIC TILE	
CTR	CENTER	
CUH	CABINET UNIT HEATER	
CW	CURTAINWALL	
CY	CUBIC YARD	
CYL	CYLINDER	
D. D	DEPTH	
DBL	DOUBLE	
DEMO	DEMOLITION	
DEPT	DEPARTMENT	
DET	DETAIL	
DF	DRINKING FOUNTAIN	
DIA	DIAMETER	
DIAG	DIAGONAL	
DIM	DIMENSION	
DISP	DISPENSER	
DIV	DIVISION	
DL	DEAD LOAD	
DN	DOWN	
DP	DAMP PROOFING	
DS	DOWN SPOUT	
DWG	DRAWING	
DWR	DRAWER	
E. E	EAST	
EA	EACH	
EC	ELECTRICAL CABINET	
EJ	EXPANSION JOINT	
EL	ELEVATION	
ELEC	ELECTRICAL	
ELEV	ELEVATOR	
ENTR	ENTRANCE	
EP	EPOXY PAINT	
EQ	EQUAL	
EQUIP	EQUIPMENT	
EWC	ELECTRIC WATER COOLER	
EXH	EXHAUST	
EXIST/EX	EXISTING	
EXP	EXPANSION	
EXT	EXTERIOR	
F. F	FAHRENHEIT	
FA	FIRE ALARM	
FBO	FURNISHED BY OWNER	
FBR	FIBERGLASS	
FDN	FOUNDATION	
FDV	FIRE DEPARTMENT VALVE	
FDVC	FIRE DEPARTMENT VALVE CABINET	
FE	FIRE EXTINGUISHER	
FEC	FIRE EXTINGUISHER CABINET	
FF	FINISH FLOOR ELEVATION	
FH	FIRE HOSE	
FHC	FIRE HOSE CABINET	
FIB	FIBERGLASS	
FIN	FINISH	
FIXT	FIXTURE	
FL	FLOOR	
FLASH	FLASHING	
FLEX	FLEXIBLE	
FO	FLOOR OPENING	
FPR	FIREPROOFING (SPRAY APPLIED)	
FRP	FIBERGLASS REINFORCED PANELS	
FRZR	FREEZER	
FS	FLOOR SINK	
FSP	FOLDING SOUND PARTITION	
FT	FOOT/FEET	
FTG	FOOTING	
FUT	FUTURE	
FURR	FURRING	
FV	FIELD VERIFY	
G. G	GAS	
GA	GAUGE	
GAL	GALLONS	
GALV	GALVANIZED	
GB	GRAB BAR	
GC	GENERAL CONTRACTOR	
GCMU	GLAZED CONCRETE MASONARY UNIT	
GEN	GENERAL	
GFRP	GLASS FIBER REINFORCED PLASTER	
GL	GLASS	
GLAM	GLUED LAMINATE	
GND	GROUND	
GR	GRADE	
GSU	GLASED STRUCTURAL UNIT	
GYP	GYPSUM BOARD	
H. H	HIGH	
HB	HOSE BIB	
HD	HAND DRYER/HAIR DRYER	
HDWD	HARDWOOD	
HDWR	HARDWARE	
HM	HOLLOW METAL	
HORZ	HORIZONTAL	
HR	HOUR	
HT	HEIGHT	
HVAC	HEATING, VENTILATING, AIR CONDITIONING	
HW	HOT WATER	
HYD	HYDRANT	
I. ICF	INSULATED CONCRETE FORMWORK	
ID	INSIDE DIAMETER	
IF	INSIDE FACE	
IN	INCH-ES	
INCL	INCLUDE	
INFO	INFORMATION	
INSUL	INSULATION	
INT	INTERIOR	
INV	INVERT	
ISOL	ISOLATION	
J. JAN	JANITOR	
JST	JOIST	
JT	JOINT	
K. KIT	KITCHEN	
KO	KNOCKED OUT	
L. L	LENGTH	
LAB	LABORATORY	
LAV	LAVATORY	
LB	POUND (WEIGHT)	
LF	LINEAR FOOT	
LH	LEFT HAND	
LHR	LEFT HAND REVERSE	
LIB	LIBRARY	
LIN	LINEAL	
LKR	LOCKER	
LL	LIVE LOAD	
LLH	LONG LEG HORIZONTAL	
LLV	LONG LEG VERTICAL	
LOC	LOCATION	
LT	LIGHT	
LTG	LIGHTING	
LVR	LOUVER	
M. MAINT	MAINTENANCE	
MAN	MANUAL	
MAS	MASONARY	
MATL	MATERIAL	
MAX	MAXIMUM	
MB	MACHINE BOLT	
MBD	MARKER BOARD	
MC	MEDICINE CABINET	
MDF	MEDIUM DENSITY FIBERBOARD	
MDO	MEDIUM DENSITY OVERLAY	
MECH	MECHANICAL	
MEMB	MEMBRANE	
MET	METAL	
MEZZ	MEZZANINE	
MFR	MANUFACTURER	
MH	MANHOLE	
MIN	MINIMUM	
MISC	MISCELLANEOUS	
MO	MASONRY OPENING	
MONO	MONOLITHIC	
MTD	MOUNTED	
MTL	METAL	
MULL	MULLION	
N. N	NORTH	
NA	NOT APPLICABLE	
NIC	NOT AT CONTRACT	
NO	NUMBER	
NTS	NOT TO SCALE	
O. OC	ON CENTER	
OD	OUTSIDE DIAMETER	
OFF	OFFICE	
OFS	OVERFLOW SCUPPER	
OH	OVERHEAD	
OP	OPERABLE PARTITION	
OPNG	OPENING	
OPP	OPPOSITE	
ORD	OVERFLOW ROOF DRAIN	
P. PBD	PARTICLE BOARD	
PC	PRE CAST CONCRETE	
PCD	PAPER CUP DISPENSER	
PED	PEDESTAL	
PERF	PERFORATED	
PFN	PREFINISHED	
PKG	PACKAGE	
PKWY	PARKWAY	
PL	PLATE	
PLBG	PLUMBING	
PLAM	PLASTIC LAMINATE	
PLAS	PLASTER	
PLYD	PLYWOOD	
PNL	PANEL	
POLY	POLYURETHANE	
PR	PAIR	
PRE	PREFINISHED	
PRELIM	PRELIMINARY	
PREP	PREPARATION	
PRES	PLASTIC RESIN	
PROJ	PROJECTION SCREEN	
PRV	POWER ROOF VENTILATOR	
PT	PAINT	
PTD	PAPER TOWEL DISPENSER	
PTWR	WASTE RECEPTACLE	
PTN	PARTITION	
Q. QT	QUARRY TILE	
QTY	QUANTITY	
R. R	RISER/RADIUS	
R&S	TOP AND SHELF	
RCP	REFLECTED CEILING PLAN	
RD	ROOF DRAIN	
RE	RELOCATE EXISTING	
REC	RECESSED	
REF	REFERENCE	
REFR	REFRIGERATOR/-ED/-TION	
REG	REGISTER	
REINF	REINFORCE/-ED/-ING	
REL	RELOCATE	
REM	REMOVE	
REQ'D	REQUIRED	
RESIL	RESILIENT	
RF	RESILIENT FLOOR	
RH	RIGHT HAND	
RHR	RIGHT HAND REVERSE	
RM	ROOM	
RO	ROUGH OPENING	
RWL	RAIN WATER LEADER	
S. S	SINK/SOUTH	
SAN	SANITARY	
SCHED	SCHEDULE	
SD	SOAP DISPENSER	
SEAL	SEALER	
SECT	SECTION	
SF	SQUARE FOOT	
SFP	SPRAYED FIREPROOFING	
SH	SHOWER	
SHD	SHOWER HEAD	
SHT	SHEET	
SIP	STRUCTURAL INSULATED PANEL SYSTEM	
SIM	SIMILAR	
SLNT	SEALANT	
SM	SURFACE MOUNTED	
SND	SANITARY NAPKIN DISPOSAL	
SNV	SANITARY NAPKIN VENDOR	
SP	STANDPIPE	
SP	SUMP PUMP	
SPEC	SPECIFICATIONS	
SPF	SOLID POLYMER FABRICATION	
SQ	SQUARE	
SS	STAINLESS STEEL	
SSM	SOLID SURFACING MATERIAL	
ST	STREET	
STD	STANDARD	
STL	STEEL	
STN	STONE	
STNL	STONE LEDGE	
STOR	STORAGE	
STRUCT	STRUCTURAL	
SUSP	SUSPENDED	
SW	SWITCH	
SWT	SOFTWOOD	
SYM	SYMMETRICAL	
SYN	SYNTHETIC	
SYS	SYSTEM	
T. T	TREAD	
TAN	TANGENT	
TBD	TACK BOARD	
TD	TRENCH DRAIN	
TEL	TELEPHONE	
TEMP	TEMPERATURE/TEMPORARY	
TER	TERRAZZO	
TG	TONGUE AND GROOVE	
THRESH	THRESHOLD	
TN	TOP NAIL	
TOF	TOP OF	
TPD	TOILET PAPER DISPENSER	
TRANSF	TRANSFORMER	
TV	TELEVISION	
TYP	TYPICAL	
U. UC	UNDER COUNTER/CABINET	
UH	UNIT HEATER	
UNFIN	UNFINISHED	
UNO	UNLESS NOTED OTHERWISE	
UR	URINAL	
UT	UTILITY	
UV	UNIT VENTILATOR	
V. V	VOLTS	
VAC	VACUUM	
VAR	VARNISH	
VB	VINYL BASE	
VCT	VINYL COMPOSITION TILE	
VENT	VENTILATION	
VERT	VERTICAL	
VEST	VESTIBULE	
VOL	VOLUME	
VP	VENEER PLASTER	
VRB	VENTILATED RUBBER BASE	
VWC	VINYL WALL COVERING	
W. W	WIDTH/WEST	
W/	WITH	
WC	WATER CLOSET/WALLCOVERING	
WD	WOOD	
WDW	WINDOW	
WE	WIDE FLANGE	
WG	WALL GUARD	
WH	WATER HEATER	
WKSTN	WORKSTATION	
W/O	WITHOUT	
WP	WATERPROOF	
WPT	WRAPPED	
WR	WASTE RECEPTACLE	
WS	WEATHERSTRIP/WEATHERSTRIPING	
WSCT	WAINSCOT	
WT	WEIGHT	
WWF	WELDED WIRE FABRIC	
Y. YD	YARD	



MAX. TRAVEL DISTANCE PROVIDED = 202'-9"
MAX. TRAVLE DISTANCE ALLOWED = 300'-0"

1 LIFE SAFETY EXITING PLAN - UPPER LEVEL
3/32" = 1'-0"

OCCUPANCY AND OCCUPANT LOAD TABLE - MEETING ROOMS

ROOM	ROOM NAME	OCC CLASS	USE DESCRIPTION	AREA	AREA/OCC	GROSS/NET	LOAD
235A	CHILD CARE	E	DAY CARE	669 SF	35 SF	NET	20
235C	CHECK-IN	E	DAY CARE	84 SF	35 SF	NET	3
235E	MEETING	B	BUSINESS	369 SF	15 SF	GROSS	25
235D	MEETING ROOM/FLEX SPACE	B	BUSINESS	685 SF	15 SF	GROSS	46
				1807 SF			94

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

SHEET LIST

SHEET NUMBER	SHEET NAME	03.14.2022
ARCHITECTURAL		
A000	TITLE SHEET AND CODE DATA	•
A201	FLOOR PLANS AND DETAILS	
STRUCTURAL		
S100	GSN, EXISTING FRAMING PLANS & STRUCTURAL DETAILS	•
MECH/PLUMBING		
PM01	MECHANICAL TITLE SHEET, SYMBOLS, & ABBREVIATIONS	•
PM02	MECHANICAL SPECIFICATIONS	•
PM03	MECHANICAL SPECIFICATIONS	•
PM04	MECHANICAL SPECIFICATIONS	•
P201	SECOND FLOOR PLUMBING PLANS	•
P601	PLUMBING SCHEDULES	•
M201	SECOND FLOOR HVAC & FIRE PROTECTION PLANS	•
M601	MECHANICAL DETAILS & SCHEDULES	•
ELECTRICAL		
E000	ELECTRICAL TITLE SHEETS & DETAILS	•
E201	ELECTRICAL FLOOR PLAN	•
E500	ELECTRICAL SPECIFICATIONS	•

I hereby certify this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the MINNESOTA

Thomas J Betti

Date: 03.21.22 Reg. No: 44897

NO.	DESCRIPTION	DATE

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

TITLE SHEET AND CODE DATA

Project number	22019.00
Date	03.21.2022
Drawn by	SG / MMA
Checked by	PBA

A000

Scale As indicated

3/21/2022 3:22:01 PM

FOLDING PARTITION INFORMATION

ACCEPTABLE MANUFACTURERS:
1. HUFCOR, INC.; SERIES 631; WWW.HUFCOR.COM; BASIS OF DESIGN
2. MODERNFOLD, A DORMA GROUP COMPANY, ACOUSTI-SEAL #932; WWW.MODERNFOLD.COM

HORIZONTAL OPENING, SIDE STACKING, MANUALLY OPERATED. STYLE 4 (SIDE OPENING) DOOR STYLE AS SHOWN ON DRAWING.

MATERIALS:
VINYL COATED FABRIC PANEL FINISH WITH EXPOSED POWDER COATED TRIM AS SELECTED BY THE ARCHITECT.

PANEL SEALS:
1. PANEL TO PANEL: GROOVED AND GASKETED ASTRAGALS, WITH CONTINUOUS FLEXIBLE RIBBED VINYL SEAL FITTED TO PANEL EDGE CONSTRUCTION; COLOR TO MATCH PANEL FINISH.
2. ACOUSTIC SEALS: FLEXIBLE ACOUSTIC SEALS AT JAMBS, MEETING MULLIONS, CEILINGS, RETRACTABLE FLOOR AND CEILING SEALS, AND ABOVE TRACK TO STRUCTURE ACOUSTIC SEAL.

SUSPENSION SYSTEM:
1. TRACK: FORMED STEEL; 1-1/4" X 1-1/4" SIZE; THICKNESS AND PROFILE DESIGNED TO SUPPORT LOADS, STEEL SUB-CHANNEL AND TRACK CONNECTORS, AND TRACK SWITCHES.
2. CARRIERS: STEEL, BALL BEARING WHEELS ON TROLLEY CARRIER AT TOP OF EVERY SECOND PANEL, SIZED TO CARRY IMPOSED LOADS, WITH THREADED PENDANT BOLT FOR VERTICAL ADJUSTMENT.

PERFORMANCE:
1. ACOUSTIC: SOUND TRANSMISSION CLASS (STC): 48 TO 52 CALCULATED IN ACCORDANCE WITH ASTM E413, BASED ON TESTS CONDUCTED IN ACCORDANCE WITH ASTM E90, ON PANEL SIZE OF 100 SF.
2. INSTALLED PARTITION SYSTEM TRACK CAPABLE OF SUPPORTING IMPOSED LOADS WITH MAXIMUM DEFLECTION OF 1/360 OF SPAN.

ACCESSORIES:
1. POCKET ENCLOSURES: DOOR, FRAME, AND TRIM TO MATCH EXISTING ADJACENT WALLS.
2. ACOUSTIC SEALANT: AS RECOMMENDED BY PARTITION MANUFACTURER.

EXAMINATION:
1. FIELD VERIFY MEASUREMENTS.
2. VERIFY TRACK SUPPORTS ARE LATERALLY BRACED AND WILL PERMIT TRACK TO BE LEVEL WITHIN 1/4" OF REQUIRED POSITION AND PARALLEL TO THE FLOOR SURFACE.
3. VERIFY FLOOR FLATNESS OF 1/8" IN 10 FT.
4. VERIFY WALL PLUMBNESS OF 1/8" IN 10FT.

INSTALLATION:
1. INSTALL PARTITION PER MFR. REQUIREMENTS AND ASTM E557.
2. FIT AND ALIGN PARTITION ASSEMBLY AND POCKET DOORS LEVEL AND PLUMB.
3. LUBRICATE MOVING COMPONENTS.
4. INSTALL ACOUSTIC SEALANT TO ACHIEVE REQUIRED ACOUSTIC PERFORMANCE.
5. COORDINATE ELECTRICAL CONNECTIONS.

ADJUSTING:
1. ADJUST PARTITION ASSEMBLY TO PROVIDE SMOOTH OPERATION FROM STACKED TO FULL OPEN POSITION. DO NOT OVER-COMPRESS ACOUSTIC SEALS.
2. VISUALLY INSPECT PARTITION IN FULL EXTENDED POSITION FOR LIGHT LEAKS TO IDENTIFY A POTENTIAL ACOUSTICAL LEAK.
3. ADJUST PARTITION ASSEMBLY TO ACHIEVE LIGHTPROOF SEAL.

CLEANING:
1. CLEAN FINISH SURFACES AND PARTITION ACCESSORIES.

CLOSEOUT:
1. DEMONSTRATE OPERATION OF PARTITION AND IDENTIFY POTENTIAL OPERATIONAL PROBLEMS.

GENERAL NOTES - DEMOLITION PLAN

1. THE CONTRACTOR SHALL ACCEPT THE PROJECT AS IT EXISTS. ALL EXISTING CONDITIONS, WHETHER OR NOT SPECIFICALLY NOTED ON THE DRAWINGS, SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOT PROCEED WITH ANY ITEM(S) OF WORK WHICH IS REASONABLY QUESTIONABLE WITHOUT CONSULTING THE ARCHITECT.

2. ALL CONSTRUCTION SCHEDULING AND SEQUENCING SHALL BE COORDINATED WITH THE OWNER PRIOR TO BEGINNING ANY WORK TO ENSURE THERE IS MINIMAL DISRUPTION TO THE BUILDING'S OPERATIONS.

3. ERECT TEMPORARY PARTITIONS/BARRIERS AS REQUIRED TO PREVENT CONTAMINATION OF ADJACENT AREAS FROM DUST, DEBRIS AND EXCESSIVE NOISE.

4. SHORE AND/OR BRACE EXISTING WORK AS REQUIRED TO SAFELY REMOVE ITEMS OR AREAS OF WORK WITHOUT DAMAGE TO EXISTING WORK INDICATED TO REMAIN.

5. PATCH AND REPAIR ALL EXISTING CONSTRUCTION WHICH IS DAMAGED OR DISTURBED TO MATCH EXISTING OR RESTORE TO ORIGINAL CONDITION. WHERE AREAS OR ITEMS THAT ARE INDICATED TO BY REMOVED ABUT OR ADJOIN EXISTING CONSTRUCTION INDICATED TO REMAIN, SAWCUT OR OTHERWISE REMOVE TO PROVIDE A CLEAN EDGE. IF EVIDENCE OF DEMOLITION WILL NOT BE CONCEALED BY NEW WORK, PATCH AND/OR REPAIR TRANSITION TO MATCH ADJACENT SURFACE AND FINISH.

6. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR DETAILED INFORMATION REGARDING REMOVAL OF SPECIFIC EQUIPMENT, SYSTEMS AND COMPONENTS.

7. COORDINATE DEMOLITION ACTIVITIES WITH OWNER SUB-CONTRACTORS FOR SECURITY, TELECOMMUNICATIONS, DATA, AND AUDIO SYSTEMS, ETC.

8. FOR AREAS NOTED AS "NO WORK", SUBSTANTIAL DEMOLITION ACTIVITIES ARE NOT ANTICIPATED. INCIDENTAL MODIFICATION OR DEMOLITION MAY BE REQUIRED TO ACCOMMODATE NEW WORK/SYSTEMS AS INDICATED ON THE DRAWINGS.

9. ALL FIRE PROTECTION SYSTEMS TO REMAIN OPERATIONAL AND MODIFIED AS NECESSARY FOR CODE COMPLIANCE.

10. MECHANICAL AND ELECTRICAL CONTRACTOR'S TO FIELD VERIFY EXTENT OF MECHANICAL AND ELECTRICAL DEMOLITION REQUIRED TO ACCOMMODATE NEW WORK.

GENERAL NOTES - FLOOR PLAN

1. DO NOT SCALE DRAWINGS

2. PROVIDE SEALANT BETWEEN ALL DISSIMILAR MATERIAL, INCLUDING ALL AROUND PERIMETERS OF DOORS.

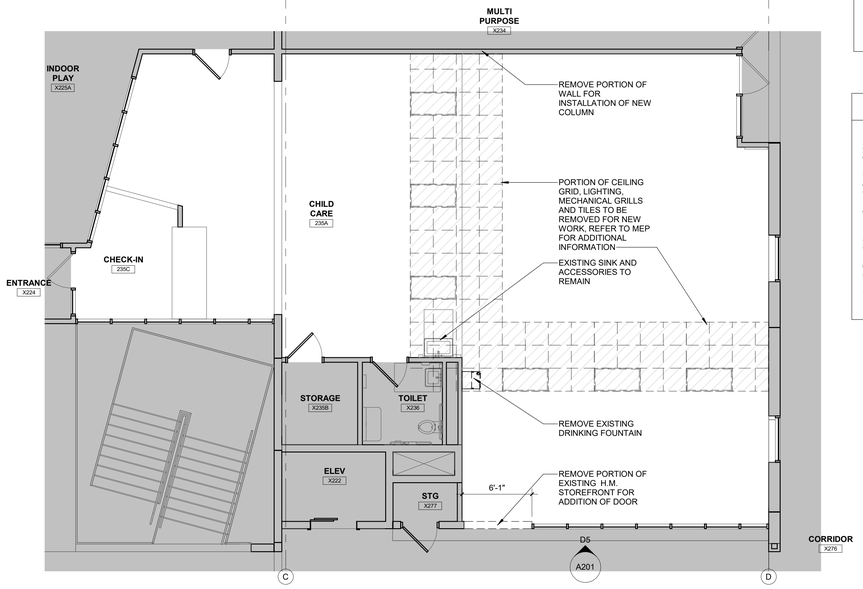
3. PROVIDE BLOCKING IN METAL STUD WALLS, AS NEEDED FOR MILLWORK AND EQUIPMENT. COORDINATE BLOCKING LOCATIONS WITH OWNER FOR OWNER INSTALLED ITEMS.

4. INSTALL FULL HEIGHT CORNER GUARDS AT ALL OUTSIDE CORNERS OF METAL STUD/GYP BD. PARTITIONS.

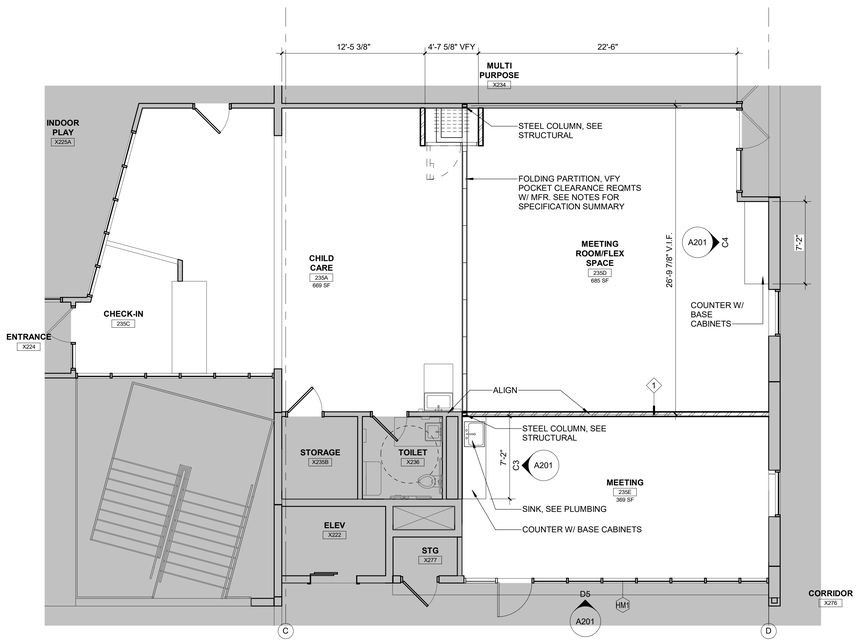
5. LOCATE ALL DOORS 4" FROM INSIDE CORNERS UNLESS DIMENSIOED OTHERWISE.

6. PAINT ALL EXISTING DOORS AND FRAME OPENINGS INTO NEW CONSTRUCTION.

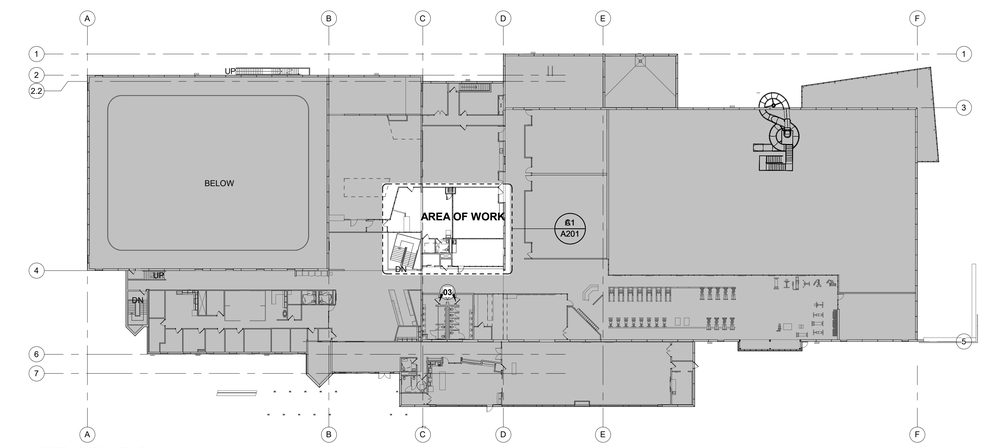
7. PATCH AND REPAIR ALL AREAS OF WORK TO MATCH EXISTING ADJACENT.



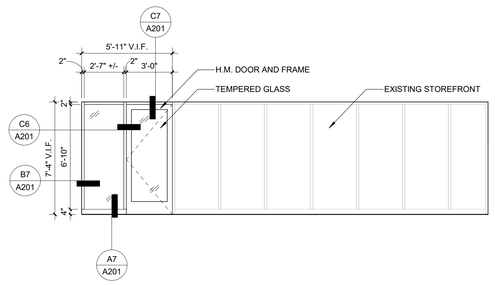
C1 MEETING ROOMS DEMO
3/16" = 1'-0"



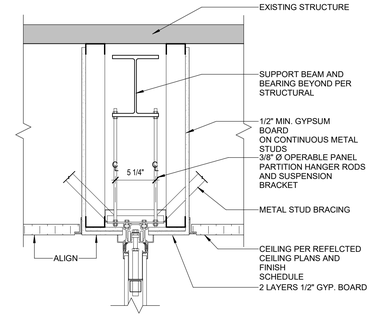
A1 MEETING ROOMS
3/16" = 1'-0"

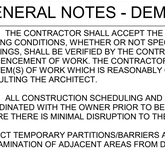


E5 UPPER LEVEL - KEY PLAN
1/32" = 1'-0"

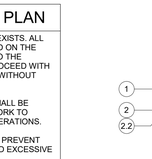


D5 HM-1
1/4" = 1'-0"





C3 MEETING ROOM CASEWORK
1/4" = 1'-0"



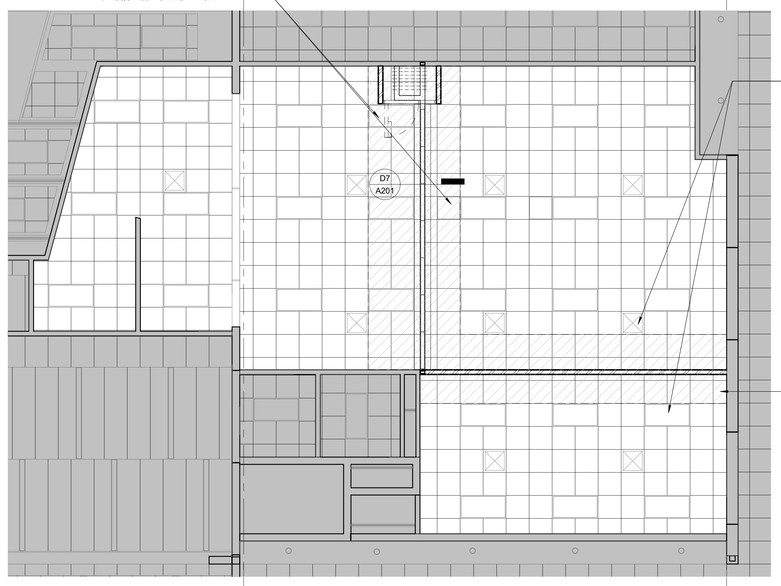
C4 FLEX SPACE CASEWORK
1/4" = 1'-0"

WALL TYPE MEETING ROOM
1/2" = 1'-0"

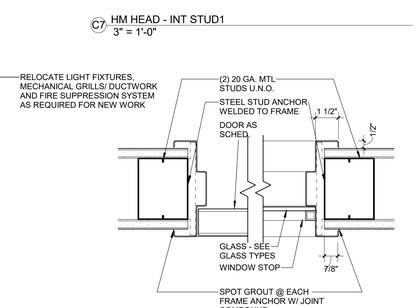
C6 HM JAMB - SIDELITE
3" = 1'-0"

D7 FOLDING PARTITION
1 1/2" = 1'-0"

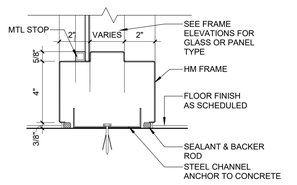
C7 HM HEAD - INT STUD1
3" = 1'-0"



A4 MEETING ROOMS
3/16" = 1'-0"



B7 HM JAMB - INT STUD1
3" = 1'-0"



A7 HM SILL - SIDELITE
3" = 1'-0"

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

I hereby certify this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the MINNESOTA

Thomas J Betti

Date: 03.21.22 Reg. No: 44897

NO.	DESCRIPTION	DATE

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

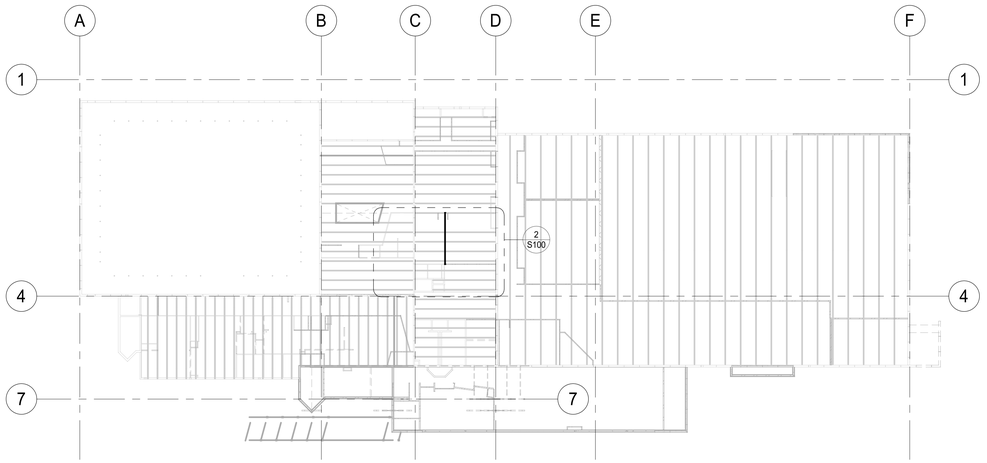
FLOOR PLANS AND DETAILS

Project number	22019.00
Date	03.21.2022
Drawn by	MCH
Checked by	TJB

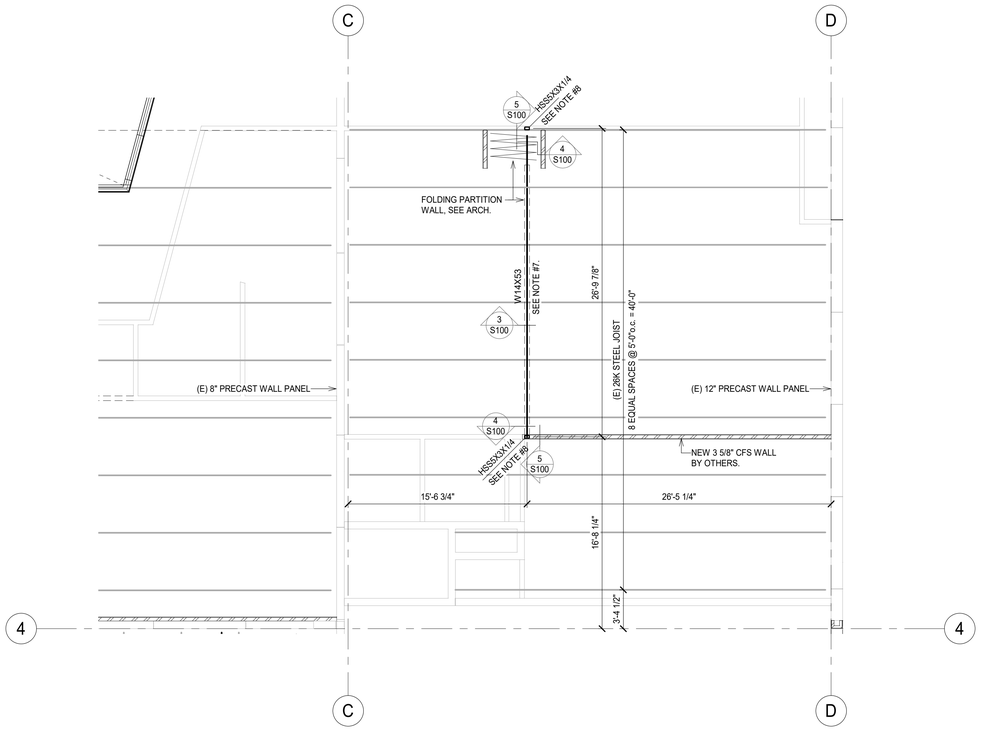
A201

Scale: As indicated

3/21/2022 5:19:52 PM

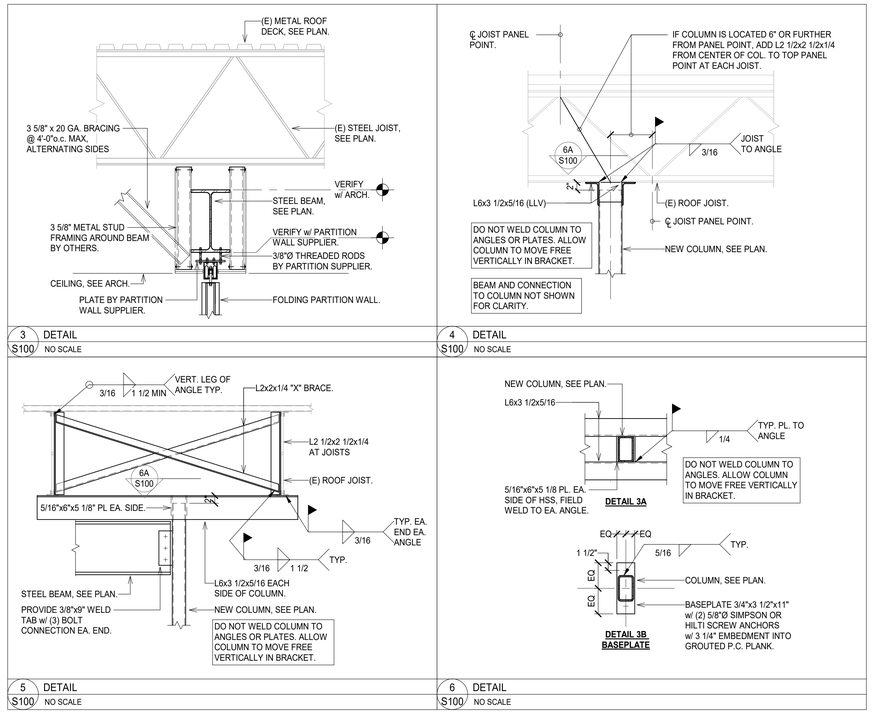


1 S100 UPPER FLOOR KEYPLAN
1/32" = 1'-0"



2 S100 PARTIAL EXISTING FRAMING PLAN
3/16" = 1'-0"

NOTES:
1. REFERENCE ELEVATION (110'-6") EQUALS ARCHITECTURAL 'UPPER LEVEL' FINISH FLOOR ELEVATION (110'-6"). ELEVATIONS GIVEN ARE NOTED FROM REFERENCE.
2. SEE ARCHITECTURAL FOR ALL DIMENSIONS AND ELEVATIONS.
3. U.N.O. DENOTES UNLESS NOTED OTHERWISE.
4. (E) DENOTES EXISTING STRUCTURAL FRAMING.
5. GENERAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, EXISTING FRAMING AND CONDITIONS PRIOR TO THE START OF CONSTRUCTION. NOTIFY STRUCTURAL ENGINEER OF ANY DISCREPANCIES.
6. ELEVATIONS SHOWN AT STEEL BEAMS DENOTES TOP OF STEEL ELEVATION, U.N.O.
7. VERIFY OPERABLE PARTITION SUPPORT ELEVATIONS, LOCATIONS AND DIMENSIONS WITH ARCH AND SUPPLIER. BEAM HAS BEEN DESIGNED FOR MAX DEFLECTION OF 1/4", VERIFY DEFLECTION TOLERANCE WITH PARTITION SUPPLIER.
8. WHERE NOTED ON PLAN, SEE DETAIL 6/S100 FOR COLUMN BASE PLATE.



GENERAL STRUCTURAL NOTES

BUILDING CODE
- 2020 MINNESOTA STATE BUILDING CODE, 2018 IBC

STRENGTH OF MATERIALS
- STRUCTURAL STEEL
  - RECTANGULAR HSS — ASTM A500, GRADE C (Fy = 50 ksi)
  - WIDE FLANGES — ASTM A992 (Fy = 50 ksi)
  - ALL OTHERS — ASTM A36 (Fy = 36 ksi)

DESIGN LOADS
- SEE PLANS FOR ADDITIONAL LOADING NOT NOTED BELOW
- FOLDING PARTITION DEAD LOAD — 15 PSF
- FOLDING PARTITION LATERAL LOAD — 5 PSF

ANCHORS, FASTENERS, & CONNECTORS
- SEE PLANS FOR SIZE, SPACING, EMBEDMENT AND QUANTITY.
- ALL PRODUCTS USED FOR INTERIOR USE IN CONTACT WITH WOOD CONTAINING MOISTURE PRESERVATIVE TREATED OR FIRE RETARDANT TREATED CHEMICALS SHALL BE HOT- DIP GALVANIZED OR AS APPROVED BY THE MANUFACTURER FOR THE SPECIFIC CONDITION.

STRUCTURAL STEEL
- CODE FOR STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION, A.I.S.C. (LATEST EDITION)
- ALL BOLTS SHALL BE: A.S.T.M. A325, 3/4" MINIMUM DIAMETER TYPE "N" UNLESS NOTED OTHERWISE. MINIMUM THICKNESS OF CONNECTION ANGLES SHALL BE 5/16"
- BEAM WEB COPES, WHERE REQUIRED, SHALL BE MADE A 1" MIN. RADIUS.
- STEEL ERECTOR SHALL PROVIDE THE NECESSARY BRACING DURING ERECTION UNTIL ALL STEEL IS PLUMBED AND SECURED.

REQUIRED SHOP DRAWINGS & SUBMITTALS
- STRUCTURAL STEEL
- FOLDING PARTITION

GENERAL NOTES
- THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION, NOR THE SAFETY ON THE JOBSITE, AND THESE RESPONSIBILITIES ARE INTENDED TO BE AND TO REMAIN SOLELY THOSE OF THE GENERAL CONTRACTOR.

INSPECTIONS
- CONTRACTOR SHALL NOTIFY THE BUILDING OFFICIAL WHEN WORK IS READY FOR THE REQUIRED INSPECTIONS BY THE BUILDING OFFICIAL IN ACCORDANCE WITH 2018 IBC SECTION 1704.
- SPECIAL INSPECTIONS SHALL BE MADE BY A QUALIFIED TESTING LABORATORY IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND 2018 IBC SECTION 1704 AS FOLLOWS:

  STRUCTURAL STEEL
  VISUAL WELD INSPECTIONS AND HIGH STRENGTH BOLTED CONNECTIONS.
  POST INSTALLED CONCRETE ANCHORS
  PERIODIC INSPECTIONS OF EACH ANCHOR TYPE, SIZE, SPACING, DRILL DEPTH AND PROPER USE OF MANUFACTURER'S INSTALLATION PROCEDURES.

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

I hereby certify this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Joseph M. Pearce

Date: 03/21/22 Reg. No: 19250

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

NO.	DESCRIPTION	DATE

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

GSN, EXISTING FRAMING PLANS & STRUCTURAL DETAILS

Project number	22-020
Date	03/21/2022
Drawn by	ALK
Checked by	EAN, JMP

S100

Scale: As indicated

3/21/2022 2:50:42 PM

SYMBOLS

Symbol	Description
	DETAIL REFERENCE
	SECTION CUT
	EQUIPMENT TAG
	KEY NOTES
	CONNECT TO EXISTING
	ROOF DRAIN
	FLOOR DRAIN
	CLEANOUT
	VENT THRU ROOF
	ELBOW DOWN
	ELBOW UP
	TEE DOWN
	TEE DOWN
	CAPPED LINE
	GATE VALVE
	WALL HYDRANT
	CONTROL VALVE
	RELIEF VALVE
	BALL VALVE
	ANGLE VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	UNION
	PIPE TO BE REMOVED
	CHECK VALVE
T	TEMPERATURE SENSOR
H	HUMIDITY SENSOR
D	DEW POINT SENSOR
A	AIR TERMINAL (TYPE) / AIR TERMINAL SIZE / AIR QUANTITY (CFM)
LG3 30	AIR TERMINAL (TYPE) / AIR QUANTITY (CFM)

DUCTWORK

Symbol	Description
	DUCT ELBOW UP
	DUCT ELBOW DOWN
	SUPPLY AIR
	RETURN AIR
	EXHAUST AIR
W X D	FIRST NUMBER IS DIMENSION OF SIDE SHOWN
	DUCT ELBOWS w/ TURNINGVANES OR RADIUS
	FLEXIBLE DUCT
	TAKE OFF w/ VOLUME DAMPER IN BRANCH DUCT
	SUPPLY REGISTER (SIDE WALL)
F	FIRE DAMPER & ACCESS PANEL
S	SMOKE DAMPER & ACCESS PANEL
C	COMBINATION FIRE/SMOKE DAMPER & ACCESS PANEL
M	MOTORIZED DAMPER & ACCESS PANEL
18"Ø	ROUND DUCT, SIZE SHOWN
	EXHAUST AIRFLOW
	SUPPLY AIRFLOW
	RETURN AIRFLOW
	MANUAL VOLUME, MVB CONTROL DAMPER
	BLANK-OFF PANEL SHADED SIDE OF DIFFUSER

PIPING

Symbol	Description
—— - ——	DOMESTIC COLD WATER
————	DOMESTIC HOT WATER
————	DOMESTIC RECIRC HOT WATER
—SW—	SANITARY WASTE ABOVE GRADE
— — — —	SANITARY WASTE BELOW GRADE
-----V-----	SANITARY VENT
—FCW—	FILTERED COLD WATER
—SCW—	SOFT COLD WATER
— F —	FIRE PROTECTION
— SD —	STORM - PRIMARY
—OSD—	STORM - OVERFLOW
— CD —	CONDENSATE DRAIN
— G —	GAS
— L —	REFRIGERATION LIQUID LINE
— S —	REFRIGERATION SUCTION LINE
—HWS—	HYDRONIC HOT WATER SUPPLY
—HWR—	HYDRONIC HOT WATER RETURN
—HWRR—	HYDRONIC HOT WATER REVERSE RETURN
—CHWS—	HYDRONIC CHILLED WATER SUPPLY
—CHWR—	HYDRONIC CHILLED WATER RETURN
—CHWRR—	HYDRONIC CHILLED WATER REVERSE RETURN

MECHANICAL ABBREVIATIONS

Abbr.	Meaning	Abbr.	Meaning
AC	AIR CONDITIONING	KW	KILOWATT
ACU	AC UNIT	KWH	KILOWATT PER HOUR
AD	AREA DRAIN	.	.
ADJ	ADJUSTABLE	LAT	LEAVING AIR TEMPERATURE
AFF	ABOVE FINISHED FLOOR	LAV	LAVATORY
AHU	AIR HANDLING UNIT	LF	LINEAR FEET
ALT	ALTERNATE	LOC	LOCATION
AMB	AMBIENT	LP	LIQUEFIED PETROLEUM
AMP	AMPERES	LTG	LIGHTING
AP	ACCESS PANEL	LWT	LEAVING WATER TEMPERATURE
APPROX	APPROXIMATELY	.	.
ARCH	ARCHITECT	M	MOTOR
ATM	ATMOSPHERIC	MAU	MAKE-UP AIR UNIT
AUTO	AUTOMATIC	MAX	MAXIMUM
AUX	AUXILLARY	MBH	BTU PER HOUR IN THOUSANDS
AVG	AVERAGE	MCF	CUBIC FEET IN THOUSANDS
.	.	MD	MOTORIZED DAMPER
BAL	BALANCING	MECH	MECHANICAL
BAR	BAROMETRIC	MEZZ	MEZZANINE
BBR	BASEBOARD RADIATION	MFR	MANUFACTURER
BDD	BACKDRAFT DAMPER	MIN	MINIMUM
BHP	BRAKE HORSEPOWER	MISC	MISCELLANEOUS
BLDG	BUILDING	MTD	MOUNTED
BOD	BOTTOM OF DUCT	MTG	MOUNTING
BSMT	BASEMENT	.	.
BTU	BRITISH THERMAL UNIT	NA	NOT APPLICABLE
BWV	BACKWATER VALVE	NC	NOISE CRITERIA; NORMALLY CLOSED
.	.		
CB	CATCH BASIN	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CCF	CUBIC FEET IN HUNDREDS		
CFH	CUBIC FEET PER HOUR	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NORMALLY OPEN
CHW	CIRCULATING HOT WATER	NTS	NOT TO SCALE
CI	CAST IRON	.	.
CL	CENTERLINE	OA	OUTSIDE AIR
CLG	COOLING; CEILING	OBD	OPPOSED BLADE DAMPER
CO	CLEANOUT	OC	ON CENTER
COMB	COMBUSTION	OD	OUTSIDE DIAMETER
COMP	COMPARTMENT; COMPRESSOR	.	.
COND	CONDENSATE	PART	PARTITION
CONN	CONNECTION	PD	PRESSURE DROP
CONST	CONSTRUCTION	PE	PNEUMATIC-ELECTRIC
CONTIN	CONTINUOUS; CONTINUATION	PLBG	PLUMBING
CONTR	CONTRACTOR	PROP	PROPELLER
CW	COLD WATER	PRV	PRESSURE REDUCING VALVE
.	.	PSI	POUNDS PER SQUARE INCH
DEG	DEGREE	PSF	POUNDS PER SQUARE FOOT
DF	DRINKING FOUNTAIN	PSIA	PSI ABSOLUTE
DIA	DIAMETER	PSIG	PSI GAUGE
DIFF	DIFFUSER	PVC	POLYVINYL CHLORIDE
DIM	DIMENSION	.	.
DIP	DUCTILE IRON PIPE	QTY	QUANTITY
DISCH	DISCHARGE	.	.
DS	DOWNSPOUT	RA	RETURN AIR
DWG	DRAWING	RCP	REINFORCED CONCRETE PIPE
.	.	RD	ROOF DRAIN
EAT	ENTERING AIR TEMPERATURE	REF	REFRIGERATION; REFERENCE
EF	EXHAUST FAN	REG	REGISTER
EL	ELEVATION	REQ	REQUIRED; REQUIREMENT
ELEC	ELECTRIC	RH	RELATIVE HUMIDITY
ESP	EXTERNAL STATIC PRESSURE	RO	ROUGH OPENING
EWC	ELECTRIC WATER COOLER	RPM	REVOLUTIONS PER MINUTE
EWH	ELECTRIC WATER HEATER	RHW	RECIRCULATING HOT WATER
EWT	ENTERING WATER TEMPERATURE	RTU	ROOFTOP UNIT
EXH	EXHAUST	.	.
EXP	EXPANSION	S	SANITARY
EXT	EXTERNAL; EXTERIOR	SA	SUPPLY AIR
.	.	SAT	SUPPLY AIR TEMPERATURE
F	FAHRENHEIT	SCH	SCHEDULE
FFE	FINISHED FLOOR ELEVATION	SD	SMOKE DAMPER; STORM DRAIN
FD	FIRE DAMPER; FLOOR DRAIN	SF	SQUARE FOOT or FEET
FL	FLOOR	SHR	SENSIBLE HEAT RATIO
FLEX	FLEXIBLE	SIM	SIMILAR
FM	FACTORY MUTUAL	SP	STATIC PRESSURE
FOG	FUEL OIL GAUGE	SPEC	SPECIFICATION
FOR	FUEL OIL RETURN	SPRK	SPRINKLER
FOS	FUEL OIL SUPPLY	SQ	SQUARE
FP	FIRE PROTECTION	SS	STAINLESS STEEL
FPM	FEET PER MINUTE	STD	STANDARD
FPS	FEET PER SECOND	STR	STRUCTURAL
FT or '	FOOT; FEET	SUC	SUCTION
F&T	FLOAT AND THERMOSTATIC	SUSP	SUSPENDED
FTG	FOOTING	SYS	SYSTEM
FTR	FINNED TUBE RADIATION	.	.
.	.	TA	TRANSFER AIR
GALV	GALVANIZED	TD	TEMPERATURE DIFFERENCE
GC	GENERAL CONTRACTOR	TEMP	TEMPERATURE
GEN	GENERAL	THERM	THERMOMETER
GPH	GALLONS PER HOUR	TONS	TONS OF AIR CONDITIONING
GPM	GALLONS PER MINUTE	TSP	TOTAL STATIC PRESSURE
GR	GRILLE	T-STAT	THERMOSTAT
GV	GATE VALVE	TYP	TYPICAL
GWH	GAS WATER HEATER	.	.
.	.	UG	UNDERGROUND
HB	HOSE BIBB	UH	UNIT HEATER
HOR	HORIZONTAL	.	.
HP	HORSEPOWER	V	VOLT; VOLTAGE; VENT
HTG	HEATING	VAV	VARIABLE AIR VOLUME
HVAC	HEATING, VENTILATING & AIR CONDITIONING	VCP	VITRIFIED CLAY PIPE
		VEL	VELOCITY
HW	HOT WATER	VENT	VENTILATION
.	.	VERT	VERTICAL
ID	INSIDE DIAMETER	VTR	VENT THRU ROOF
IE	INVERT ELEVATION	.	.
IN or "	INCHES	W	WASTE; WATT
INSUL	INSULATION	W/	WITH
INT	INTERIOR; INTERNAL	W/O	WITHOUT
INV	INVERT	WB	WET BULB
		WC	WATER CLOSET
		"WC	INCHES OF WATER COLUMN

PLUMBING & MECHANICAL GENERAL NOTES

A. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE MECHANICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS. NEITHER THE DRAWINGS NOR THE SPECIFICATIONS SHALL BE COMPLETE WITHOUT THE OTHER

B. THE DRAWINGS ARE DIAGRAMMATIC. BECAUSE OF THE SMALL SCALE OF THE DRAWING, AND COMPLEXITY OF INSTALLATION, THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL PLUMBING, DUCTWORK, AND PIPING SHALL BE CHECKED AND COORDINATED WITH THE DRAWINGS AND EXISTING CONDITIONS. VERIFY INSTALLATION REQUIREMENTS AT PRE-BID SITE INSPECTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING CONDITIONS AND OBSTACLES. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING PIPING, CONDITIONS, TIE-INS ETC.

C. PERFORM WORK, PROVIDE MATERIALS AND EQUIPMENT FOR SYSTEMS SHOWN, SPECIFIED AND DESCRIBED ON DRAWINGS. COMPLETELY COORDINATE WORK OF THIS CONTRACT WITH WORK OF OTHER CONTRACTORS AND PROVIDE COMPLETE AND FULLY FUNCTIONAL INSTALLATION. REMOVE ALL DEBRIS CAUSED BY THIS CONTRACTOR'S WORK.

D. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.

E. THE DOCUMENTS AND SPECIFICATIONS SHALL GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.

F. BEFORE SUBMITTING BID, VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK OF THIS SECTION. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY OF THE SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY AN EXPERIENCED OBSERVER.

G. CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS AT THE COMPLETION OF THE PROJECT. AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN COMPLETE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN. TURN OVER TO OWNER AT CONCLUSION OF CONSTRUCTION. "AS BUILT" DRAWINGS IN ACCORDANCE WITH CONTRACT GENERAL REQUIREMENTS AND PROJECT RECORD DOCUMENTS.

H. ADDRESS QUESTIONS REGARDING DRAWINGS TO ENGINEER IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ENGINEER'S INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.

J. EACH CONTRACTOR SHALL GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION FOR ITS WORK.

K. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS OF THIS SECTION.

L. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES AND DUCTS EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS. MATERIALS AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.

M. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS. INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER 48 HOURS IN ADVANCE. COMPLY WITH DIVISION 1 CONTINUITY OF SERVICES REQUIREMENTS.

N. ALL EQUIPMENT, PIPING, WIRING AND INSULATION, ETC,. INSTALLED IN HVAC AIR PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.

O. EACH CONTRACTOR SHALL FIRE STOP ALL NEW AND EXISTING SLEEVES THROUGH CONCRETE FLOOR AND FIRE RATED WALLS OR PARTITIONS WITH UL RATED ASSEMBLIES WITH EQUAL FIRE RATING.

P. EACH CONTRACTOR SHALL COORDINATE PROPER ACCESS TO EQUIPMENT THAT REQUIRES INSPECTION, REPLACEMENT OR REPAIR. ACCESS PANELS TO BE FURNISHED AND INSTALLED BY GENERAL CONTRACTOR. ALL LOCATIONS SHALL BE CONFIRMED AND COORDINATED WITH ENGINEER.

Q. DO NOT SUPPORT EQUIPMENT FROM SUSPENDED CEILINGS, ABOVE FLOOR SLAB OR ROOF, ALL SUPPORT SHALL COME FROM BUILDING STRUCTURE OR FROM CEILING SUSPENSION SYSTEM WHICH HAS BEEN REINFORCED.

R. PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF THE CONTRACT SHALL BE PROVIDED BY, COORDINATED, AND ARRANGED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER OR ENGINEER.

S. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT WITH OTHER CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.

T. EACH CONTRACTOR IS RESPONSIBLE FOR ITS CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF ITS NEW WORK. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.

U. PRIOR TO ACCEPTANCE OF THE FACILITY EACH RESPECTIVE CONTRACTOR SHALL ASSURE THAT ALL SYSTEMS SHALL BE TESTED, BALANCED AND ARE OPERATED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, AND AS A DEMONSTRATION TO THE OWNER, OR THE OWNER'S REPRESENTATIVE THAT THE INSTALLATION AND PERFORMANCE OF THESE SYSTEMS AND/OR PARTS CONFORM TO THE DESIGN INTENT.

V. ENTRY AND PLACEMENT OF EQUIPMENT: MAKE ALL PROVISIONS FOR ENTRY AND PLACEMENT OF EQUIPMENT TO THE INSTALLED LOCATIONS INDICATED AND ARRANGE FOR EQUIPMENT TO BE DELIVERED IN SECTIONS SMALL ENOUGH TO PERMIT USE OF REGULAR ENTRANCES. WHEN THIS IS NOT PRACTICAL SCHEDULE DELIVERY AND COORDINATE OPENINGS AND TIMES WHEN THE BUILDING HAS ADEQUATE ACCESS OPENINGS TO LOCATE EQUIPMENT WITHIN THE BUILDING.

W. EXISTING CONDITIONS WHERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS BUILT" CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

X. CONTROL SYSTEM DEMONSTRATION: PRIOR TO TURNOVER CONTRACTOR SHALL DEMONSTRATE THE OPERATION OF THE CONTROL SYSTEM WITH THE OWNER'S REPRESENTATIVE. INCLUDE DEMONSTRATION OF CONTROL SYSTEM INTERLOCK, COOLING, HEATING AND DEHUMIDIFICATION MODES OF OPERATION AND OUTSIDE AIR DAMPER MODULATION. OBTAIN DOCUMENTATION FROM OWNER THAT DEMONSTRATION HAS BEEN COMPLETED.

FIRE SPRINKLER GENERAL NOTES

A. THE INSTALLATION OF SPRINKLER SYSTEMS SHALL BE PERFORMED BY A LICENSED AND EXPERIENCED CONTRACTOR REGULARLY ENGAGED IN THIS TYPE OF WORK. **FIRE PROTECTION SYSTEM DESIGN AND SUBMITTED DOCUMENTS SHALL BE CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER.**

B. PRIOR TO INSTALLATION OF SPRINKLER SYSTEMS THE CONTRACTOR SHALL COORDINATE WORK WITH THE GENERAL CONTRACTOR AND WITH THE OTHER TRADES TO AVOID INTERFERENCE AND DELAYS. THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE REQUIREMENTS TO MAKE A SATISFACTORY INSTALLATION.

C. THIS CONTRACTOR SHALL REMOVE AND RELOCATE ALL EQUIPMENT AND PIPING WHICH INTERFERES WITH THE WORK OF OTHER TRADES AT THIS CONTRACTOR'S SOLE EXPENSE, IF THIS CONTRACTOR'S WORK IS NOT COORDINATED PRIOR TO THE BEGINNING OF WORK. NOTIFY THE ENGINEER OF ANY MAJOR CONFLICTS THAT CANNOT BE RESOLVED THROUGH NORMAL FIELD COORDINATION WITH OTHER TRADES.

D. THE INSTALLATION OF SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH NFPA STANDARD 13 AND STATE AND LOCAL CODES.

E. FURNISH TO OTHER TRADES, AS REQUIRED. ALL NECESSARY TEMPLATES, PATTERNS, SETTING PLANS, AND SHOP DETAILS FOR THE COORDINATING ADJACENT WORK.

F. UPON COMPLETION OF THE INSTALLATION, THE SYSTEM WILL BE HYDROSTATICALLY TESTED AND FLUSHED AS SPECIFIED IN NFPA STANDARD 13 AND 14 AND THE REQUIREMENTS OF THE LOCAL ADMINISTRATIVE AUTHORITY HAVING JURISDICTION.

G. SPRINKLER CONTRACTOR SHALL CHECK REQUIREMENTS OF LOCAL CODES INSURANCE UNDER WRITERS AND ANY OTHER AGENCY HAVING JURISDICTION TO MAKE SURE THE COMPONENTS OF THE SYSTEM ARE DESIGNED AND INSTALLED PROPERLY.

H. SPRINKLER CONTRACTOR SHALL COORDINATE PIPE AND HEAD LAYOUT WITH MECHANICAL AND ELECTRICAL TRADES, CEILING INSTALLATION AND EXISTING STRUCTURAL LAYOUT.

J. SPRINKLER PIPING SHALL BE INSTALLED TO ALLOW DRAINING BACK TO THE FIRE PROTECTION RISER.

K. PROVIDE AUXILIARY DRAINS WHERE NECESSARY AND REQUIRED BY CODE. LOCATE AUXILIARY DRAIN LINES IN ACCESSIBLE BUT UNFINISHED AREAS. AUXILIARY DRAINS ARE NOT ALLOWED ABOVE THE CEILING.

L. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL CEILING AREAS. COORDINATE EXACT LOCATIONS OF SPRINKLER HEADS IN AREA HAVING SUSPENDED CEILINGS WITH ARCHITECTURAL REFLECTED CEILING PLAN.

PLUMBING GENERAL NOTES

A. CONNECT DOMESTIC WATER, FIRE PROTECTION, SANITARY SEWER AND STORM SEWER SERVICES TO SITE UTILITIES PROVIDED BY SITE UTILITY CONTRACTOR 5'-0" FROM BUILDING UNLESS NOTED OTHERWISE.

B. [98'-6"] INDICATES INVERT ELEVATION FROM THE FINISHED FLOOR TO UNDERGROUND SEWER. THE FINISHED FLOOR ELEVATION IS CONSIDERED TO BE 100'-0". ELEVATIONS ARE SHOWN ON THIS REFERENCE.

C. VERIFY SIZE, LOCATION AND INVERT ELEVATION OF ALL SITE UTILITIES PRIOR TO BEGINNING WORK.

D. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND ELEVATIONS OF PLUMBING FIXTURES AND TOP OF FLOOR DRAIN ELEVATIONS.

E. COORDINATE ROUTING OF ALL PIPING WITH LIGHTING, MECHANICAL AND STRUCTURAL MEMBERS.

F. ADVISE THE GENERAL CONTRACTOR OF ALL ROOF, WALL AND FLOOR PENETRATIONS.

G. REFER TO EQUIPMENT SCHEDULE FOR INDIVIDUAL BRANCH PIPE SIZES TO FIXTURES AND ROUGH-IN REQUIREMENTS.

H. PROVIDE LEAD FREE PIPING, VALVES, FITTINGS AND FIXTURES FOR DOMESTIC WATER.

J. WASTE AND VENT PIPING BELOW FLOOR AND THROUGH FLOOR SHALL BE 2" MINIMUM.

K. PITCH UNDERFLOOR SANITARY WASTE AND STORM PIPING 4" AND GREATER AT 1/8" PER FOOT, UNLESS NOTED OTHERWISE. PITCH ALL OTHER WASTE PIPING AT 1/4" PER FOOT UNLESS NOTED OTHERWISE.

L. WHEN SAW CUTTING FLOORS FOR PIPING TRENCHES, CONTRACTOR SHALL PROVIDE BACKFILL FREE FROM DISCARDED CONSTRUCTION MATERIAL, AND DEBRIS. LOOSE EARTH FREE FROM ROCKS BROKEN IN 6-INCH LAYERS AND TAMPED IN PLACE UNTIL CROWN OF THE PIPE IN COVERED BY 12 INCHES OF TAMPED EARTH, OR ACCORDING TO STATE AND LOCAL CODES.

M. BELOW GRADE PLUMBING HAS BEEN COORDINATED WITH STRUCTURAL FOOTINGS TO PREVENT UNDERMINING OF THE FOOTINGS. ANY CHANGES TO UNDERFLOOR PIPE LOCATIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEER.

N. PLUMBING CONTRACTOR SHALL FLUSH OUT ALL PIPING AND DRAINAGE SYSTEM PRIOR TO CONNECTION TO FIXTURES OR EQUIPMENT. REFER TO SPECIFICATION FOR PROPER PROCEDURE.

O. PROVIDE ALL FLOOR DRAINS, TRENCH DRAINS AND FLOOR CLEANOUTS TO BE SET AND PLUMBED FLUSH WITH FINISHED FLOOR ELEVATIONS INDICATED ON ARCHITECTURAL PLANS. NO CRACKS, RISE OR FALLS IN FINISHED FLOOR AROUND DRAINS TOPS SHALL BE PERMITTED. CORRECTIONS TO BE AT CONTRACTOR'S EXPENSE WITH NO EXTRA COST TO TENANT.

P. PROVIDE VACUUM BREAKERS AND BACK FLOW PREVENTERS WHERE REQUIRED BY CODE OR WHERE THERE MAY BE ANY POSSIBLE CHANCE FOR CROSS CONTAMINATION.

Q. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS OR ON EXTERIOR SIDE OF BUILDING INSULATION ENVELOPE.

R. ALL CW, HW, HWR, VALVES ETC. SHALL BE INSULATED. INSULATION SHALL BE INSTALLED BY A LICENSED INSULATION CONTRACTOR.

S. PITCH VENT PIPING AT 1/8" PER FOOT TO DRAIN BACK TO WASTE PIPE.

T. VALVES TO BE LINE SIZE UNLESS NOTED OTHERWISE.

U. ALL PLUMBING FIXTURES SHUT-OFF AND/OR BALANCING VALVES INSTALLED IN PIPE CHASES TO BE ACCESSIBLE FROM JUST ABOVE THE CEILING LINE OR ACCESS DOORS PROVIDED LOW IN CHASE WALL.

V. INSTALL SHUT-OFF VALVES AT A MAXIMUM OF 1'-0" ABOVE THE FINISHED CEILING, WHERE CEILINGS ARE INSTALLED, WITH VALVE HANDLE ORIENTED DOWNWARD. PROVIDE ACCESS PANEL IF GYP CEILING. INSTALL SO SHUT OFF VALVE IS NOT DIRECTLY ABOVE EQUIPMENT OR FIXTURE FOR EASE OF ACCESS.

W. ALL PLUMBING VENTS TO BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE OR OPERABLE WINDOW.

HVAC GENERAL NOTES

A. ALL FRESH AIR INTAKES TO BE AT LEAST 10'-0" FROM EXHAUST OR FLUES.

B. ADVISE THE GENERAL CONTRACTOR OF ALL ROOF, WALL AND FLOOR PENETRATIONS. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONED LOCATIONS OF FRAMED OPENINGS FOR RTUS, PRVS, ROOF DRAINS AND OTHER FRAMED OPENINGS.

C. SUPPORT EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION.

D. COORDINATE LOCATION OF EQUIPMENT SUPPORTS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT. PROVIDE PROPER ACCESS TO MATERIALS AND EQUIPMENT THAT REQUIRE INSPECTION REPLACEMENT. REPAIR OR SERVICE SUCH AS COILS, DAMPERS, HEATERS, VALVES, ETC. IF PROPER ACCESS CANNOT BE PROVIDED. CONFER WITH THE ENGINEER AS TO THE METHOD OF APPROACH FOR MINIMIZING EFFECT OF REDUCED ACCESS WHICH MAY RESULT.

E. SEE SPECIFICATIONS FOR SPACING OF GAS PIPE SUPPORTS. PAINT ALL GAS PIPE FITTINGS AND EXPOSED THREADS TO PREVENT CORROSION. THOROUGHLY CLEAN PIPING BEFORE PAINTING.

F. DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST ISSUES OF SMACNA STANDARDS. PLUMBING SYSTEMS SHALL BE INSTALLED ACCORDING TO LOCAL, STATE, AND NATIONAL CODES.

G. MAINTAIN MAXIMUM HEADROOM AT ALL TIMES. RUN PIPES EXPOSED WHERE SHOWN AND/OR NOTED ON DRAWINGS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS. COORDINATE ELEVATIONS AND LOCATIONS WITH WORK OF OTHER CONTRACTORS.

H. KEEP ALL NEW DUCTWORK CLEAN DURING INSTALLATION, BY COVERING ENDS OF OPEN DUCT RUNS.

J. ALL CONCEALED SUPPLY DUCTWORK INSULATION SHALL BE FIRE RATED IN ACCORDANCE w/ ASHARE 90A, 50/20 SMOKE DEVELOPMENT & FLAME SPREAD REQUIREMENTS.

K. INSULATION SHALL NOT BE INSTALLED UNTIL AFTER ALL PIPE TESTING PROCEDURES HAVE BEEN COMPLETED, AND THE BUILDING IS COMPLETELY WATER PROOF. ANY INSULATION THAT GETS WET DURING CONTRUCTION SHALL BE REPLACED WITH NEW.

L. SUBSTITUTE FLAT OVAL OR RECTANGULAR DUCT WHERE CLEARANCES AND OTHER BUILDING COMPONENT RESTRICT THE USE OF ROUND DUCTWORK.

M. PROVIDE NEOPRENE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND ANY RECIPROCATING OR ROTATING EQUIPMENT.

N. STAIR, ELEVATOR SHAFT VENTS, HVAC EQUIPMENT, AND OTHER DAMPERS INTEGRAL TO THE BUILDING ENVELOPE MUST BE EQUIPPED WITH MOTORIZED DAMPERS AND 1/4" MECH SCREEN.

O. COORDINATE ROUTING OF ALL DUCTWORK WITH LIGHTING LAYOUT AND STRUCTURAL.

P. DIFFUSER SIZES SHOWN ARE NECK SIZES, REGISTER AND GRILLE SIZES ARE NOMINAL.

Q. COORDINATE LOCATION OF ALL DIFFUSERS, REGISTERS AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ALL TRADES.

R. BRANCH DUCTWORK TO DIFFUSERS TO BE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.

S. EQUIPMENT AND VALVES INSTALLED IN CEILING SPACE TO BE LOCATED NO HIGHER THEN 1'-0" ABOVE FINISHED CEILING.

DEMOLITION GENERAL NOTES

A. CONTRACTOR SHALL HAVE A THOROUGH KNOWLEDGE OF ALL DRAWINGS, SPECIFICATIONS AND EXISTING CONDITIONS PRIOR TO BID. FAILURE TO ACQUIRE SUCH KNOWLEDGE WILL NOT RELIEVE THE RESPONSIBILITY OF THIS CONTRACTOR FOR PERFORMING THE WORK PROPERLY. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED DUE TO THE CONTRACTORS FAILURE TO BECOME FAMILIAR WITH EXISTING CONDITIONS.

B. ALL EXISTING PIPING INDICATED ON PLAN WAS TAKEN FROM EXISTING MECHANICAL PLANS AND/OR FIELD OBSERVATION AND SHALL NOT BE CONSIDERED 100% ACCURATE. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING SYSTEMS PRIOR TO CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS.

C. FIELD VERIFY LOCATIONS AND QUANTITY OF ALL EXISTING EQUIPMENT. FIXTURES AND DUCTWORK NECESSARY TO COMPLETE SCOPE OF WORK.

D. CONTRACTOR SHALL COORDINATE ALL PHASES OF DEMOLITION WITH ARCHITECTURAL DEMOLITION PLANS.

E. PATCH ALL PENETRATIONS WHERE PIPING OR DUCTWORK IS REMOVED. PATCHING SHALL BE BY GENERAL CONTRACTOR.

F. ANY PIPING ABANDONED IN PLACE SHALL BE CAPPED, PLUGGED AND CONCEALED - PLUGGING AND CAPPING SHALL BE DONE IN A MANNER AS TO ALLOW REOPENING AND REUSE LATER.

G. CONCRETE CUTS (BY GENERAL CONTRACTOR) SHALL BE STRAIGHT AND CLEAN, REPLACE SLAB WITH CONCRETE FLUSH AND SMOOTH WITH ADJACENT SURFACE.

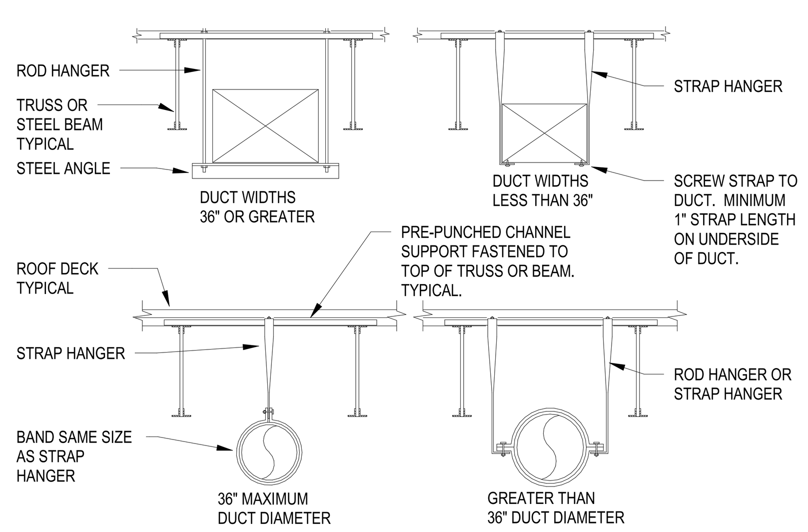
H. [hatched] INDICATED TO BE REMOVED - ALL REMOVED EQUIPMENT SHALL BE DISPOSED OF BY CONTRACTOR UNLESS NOTED AS RELOCATED/RETAINED IN NOTES.

J. *RTU-1* TYPICAL TEXT OF EXISTING CONDITIONS - CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS.

SHEET INDEX

PM01	MECHANICAL TITLE SHEET, SYMBOLS, & ABBREVIATIONS
PM02	MECHANICAL SPECIFICATIONS
PM03	MECHANICAL SPECIFICATIONS
PM04	MECHANICAL SPECIFICATIONS
P201	SECOND FLOOR PLUMBING PLANS
P601	PLUMBING SCHEDULES
M201	SECOND FLOOR HVAC & FIRE PROTECTION PLANS
M601	MECHANICAL DETAILS & SCHEDULES

1 / PM01 **NOT USED**
NOT TO SCALE



GENERAL NOTES:

A. REFER TO "SMACNA HVAC DUCT CONSTRUCTION STANDARDS" FOR HANGER REQUIREMENTS, INCLUDING SIZES OF STRAP HANGERS, ROD HANGERS, STEEL ANGLES AND FASTENERS.

B. SUPPORT FROM TRUSS TOP CHORD PANEL POINT AT TRUSS LOCTIONS.

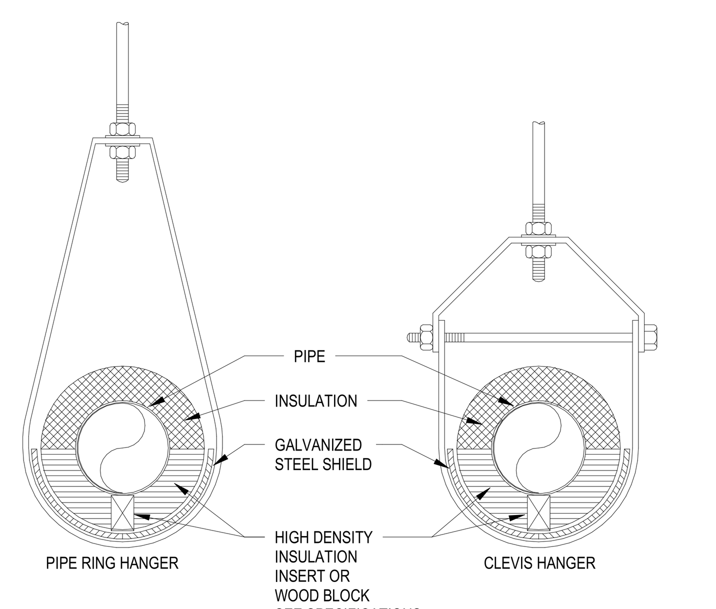
C. MAXIMUM LOAD ON A PANEL IS 100 LBS, UNLESS APPROVED BY STRUCTURAL ENGINEER. SEE STRUCTURAL FOR ADDITIONAL REQUIREMENTS.

D. NOT USED.

E. DO NOT INSTALL DUCTWORK CLOSER THAN 8" TO WATER, FIRE PROTECTION, AND GAS PIPING.

2 / PM01 **NOT USED**
NOT TO SCALE

3 / PM01 **DUCT HANGER DETAILS**
NOT TO SCALE



4 / PM01 **INSULATED PIPE AT HANGER DETAIL**
NOT TO SCALE

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

NRA
Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE
	PERMIT ISSUE	03/11/22

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

MECHANICAL TITLE SHEET, SYMBOLS, & ABBREVIATIONS

Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW

PM01

Scale	1/8" = 1'-0"

3/21/2022 1:30:32 PM

DIVISION 21 FIRE SUPPRESSION SPECIFICATIONS

PART 1 - GENERAL

1.01. GENERAL PROVISIONS

A. The General Provisions of the contract, including General and Supplementary Conditions and Division 1 General Requirements apply to the work in this Section.

B. The Mechanical Work specified includes the following:

1. General Provisions
2. Piping Materials
3. Fire Sprinkler System

C. Minor Items - Items which are obviously and reasonably necessary to complete the Work are to be provided, even though they may not be specifically mentioned.

D. Permits, Licenses and Fees - To be secured and paid for by the Contractor before actual work is done.

E. Codes and Ordinances - Installation shall comply with the current, applicable state and local codes, ordinances and/or regulations. Regular inspections shall be requested by each Contractor. Charges for inspections shall be paid by the Contractor. Where work required by the drawings and specifications is above the standards required by regulations, it shall be done as shown and/or specified.

F. Site Inspection - Before submitting a proposal on the Work contemplated, examine the site of the proposed work and become thoroughly familiar with existing conditions and limitations affecting the performance of the Work. Verify size, location, and elevation of existing equipment, piping and etc., before submitting a proposal. Additional compensation will not be allowed because of misunderstanding as to amount of work involved or bidders' lack of knowledge of existing conditions which could have been discovered or reasonably anticipated prior to bidding.

G. Cutting and Patching - Cutting and patching required to install any portion of this Work or to correct defects in work shall be done in a manner to match existing construction and as approved and directed by the Architect/Engineer.

H. Coordination - Consult general and electrical construction drawings for conditions affecting the Work. Verify spaces in which the Work will be installed.

I. Approval of Materials and Shop Drawings

1. If a substitute for any material is accepted, the Contractor is responsible for changes in piping, in space requirements and related equipment without additional cost to the Owner. Substitute equipment must perform the functions of the equipment specified in a manner satisfactory to the Owner.
2. **Prior to ordering equipment**, Contractor shall submit six (6) copies of shop drawings or product literature covering equipment. **Contractor shall review submittals and stamp them prior to submission to the Owner.**

J. Cleaning and Finishing - After tests have been made and accepted, inspect the whole job and clean fixtures, pipes, ductwork and other equipment installed under this Division and leave entire building clean and in complete working order.

K. Start-Up, Guarantee and Operating Manuals

1. Coordinate with equipment manufacturers to include start-up of each mechanical device. Include start-up certificates in Operation and Maintenance manuals.
2. The Contractor shall guarantee and maintain the stability of work and materials for a period of one (1) year after the final completion as evidenced by issuance of the final certificate by the Architect/Engineer.
3. The Owner's designated operating personnel shall be full instructed by the Contractor in the operation of each mechanical system at the time it is put into operation. The Contractor shall assemble and deliver two (2) Operation and Maintenance manuals to the Owner before final payment will be made.

L. Electrical - Unless otherwise specified herein, magnetic starters, disconnects, and power wiring shall be provided by the Electrical Contractor. Control and interlock wiring shall be provided by this Contractor unless otherwise noted.

M. Demolition - Work includes disconnection and removal of existing components and systems. Where new work does not connect to terminated ducts and/or pipes, remaining duct/pipes are to be capped to allow proper operation of remaining system. Questions regarding the extent of necessary demolition work or operation of systems involved with demolition are to be presented to the Architect/Engineer prior to proceeding with the Work.

PART 2 - PRODUCTS

2.01. PIPING MATERIALS

A. Fire Sprinkler Piping

1. Steel Pipe: Schedule 40 shall meet all of the requirements for electric-resistance welded steel pipe or seamless pipe as set forth by ASTM A-53 or A-135.
2. Light-wall Steel: Schedule 10, pipe shall meet all of the requirements for electrical-resistance welded steel pipe as set forth by ASTM A-135.
3. "XL" Threadable Lightwall Sprinkler Pipe: Complying with the requirements of ASTM A-135 and NFPA 13, 3-7.1.2 may be used for sizes up to 2" diameter. "XL" piping shall be joined by roll-grooved couplings welding, approved plain-end and NPT threaded fittings.

2.02. FIRE SPRINKLER SYSTEM

A. Components shall meet the requirements of the Building Owner's fire insurance underwriter, local codes and reviewing authorities.

B. Sprinkler heads are to be standard chrome pendants with adjustable 2-piece chrome escutcheons.

C. Provide dry pendent heads in coolers and freezers.

D. Furnish detector check valve, shut-off valve, bypass meter, siamese connection, flow switch, alarm bell, and other appurtenances to comply with local authorities requirements.

2.03. FIRESTOPPING

A. 3M brand 7900 Series system.

B. 3M brand CP 25 caulk. Dow Corning firestop sealant. GE RTV 7403.

C. 3M brand FS 195 wrap.

D. Similar products manufactured by Tremco, Dow Corning, GE., Hevi-Duty Nelson.

PART 3 - EXECUTION

3.01. FIRE SPRINKLER SYSTEM

A. Design and install a complete fire sprinkler system for the remodeling including sprinkler piping and heads in compliance with NFPA 13 and local code requirements.

B. Coordinate piping and sprinkler head layout with general, mechanical and electrical trades.

C. Submit complete sprinkler shop drawings to Owner's insurance underwriter, local fire marshal, fire chief for review and approval. When approved, submit copies to Architect for final review. When drawings have been reviewed and approved by all parties, install in accordance with approved shop drawings. Work done prior to receiving approved shop drawings will be adjusted to comply with shop drawings at the Contractor's expense.

D. Connect water to sprinkler riser assembly as indicated.

3.02. FIRE RATED BARRIERS

A. Division 21 is responsible for maintaining the integrity of all fire related barriers (walls, floors, etc.) penetrated by work installed under Division 21 of the specifications.

B. The following procedures shall be used as dictated by project conditions:

1. Penetration of floor slabs or concrete walls (poured or block) - sleeve or core drill floor or wall, and seal penetration between pipe or duct and sleeve with sealing system capable of passing a 3 hour test hour ASTM E814 (UL 1479).
2. Penetration of sheetrock walls, cut opening in wall, install penetration and caulk with firestop sealant.

END OF DIVISION 21

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

MECHANICAL SPECIFICATIONS

Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW

PM02

Scale

3/21/2022 1:30:35 PM

DIVISION 22 PLUMBING SPECIFICATIONS

PART 1 - GENERAL

1.01. GENERAL PROVISIONS

A. The General Provisions of the contract, including General and Supplementary Conditions and Division 1 General Requirements apply to the work in this Section.

B. The Plumbing Work specified includes the following:

1. General Provisions
2. Piping Materials
3. Valves
4. Insulation
5. Soil and Waste System
6. Water Supply System
7. Plumbing Fixtures and Trim
8. Testing

C. Minor Items - Items which are obviously and reasonably necessary to complete the Work are to be provided, even though they may not be specifically mentioned.

D. Permits, Licenses and Fees - To be secured and paid for by the Contractor before actual work is done.

E. Codes and Ordinances - Installation shall comply with the current, applicable state and local codes, ordinances and/or regulations. Regular inspections shall be requested by each Contractor. Charges for inspections shall be paid by the Contractor. Where work required by the drawings and specifications is above the standards required by regulations, it shall be done as shown and/or specified.

F. Site Inspection - Before submitting a proposal on the Work contemplated, examine the site of the proposed work and become thoroughly familiar with existing conditions and limitations affecting the performance of the Work. Verify size, location, and elevation of existing equipment, piping and etc., before submitting a proposal. Additional compensation will not be allowed because of misunderstanding as to amount of work involved or bidders' lack of knowledge of existing conditions which could have been discovered or reasonably anticipated prior to bidding.

G. Cutting and Patching - Cutting and patching required to install any portion of this Work or to correct defects in work shall be done in a manner to match existing construction and as approved and directed by the Architect/Engineer.

H. Coordination - Consult general and electrical construction drawings for conditions affecting the Work. Verify spaces in which the Work will be installed.

I. Approval of Materials and Shop Drawings

1. If a substitute for any material is accepted, the Contractor is responsible for changes in piping, in space requirements and related equipment without additional cost to the Owner. Substitute equipment must perform the functions of the equipment specified in a manner satisfactory to the Owner.
2. **Prior to ordering equipment**, Contractor shall submit six (6) copies of shop drawings or product literature covering equipment. **Contractor shall review submittals and stamp them prior to submission to the Owner.**

J. Cleaning and Finishing - After tests have been made and accepted, inspect the whole job and clean fixtures, pipes, and other equipment installed under this Division and leave entire building clean and in complete working order.

K. Start-Up, Guarantee and Operating Manuals

1. Coordinate with equipment manufacturers to include start-up of each mechanical device. Include start-up certificates in Operation and Maintenance manuals.
2. The Contractor shall guarantee and maintain the stability of work and materials for a period of one (1) year after the final completion as evidenced by issuance of the final certificate by the Architect/Engineer.
3. The Owner's designated operating personnel shall be full instructed by the Contractor in the operation of each mechanical system at the time it is put into operation. The Contractor shall assemble and deliver two (2) Operation and Maintenance manuals to the Owner before final payment will be made.

L. Electrical - Unless otherwise specified herein, magnetic starters, disconnects, and power wiring shall be provided by the Electrical Contractor. Control and interlock wiring shall be provided by this Contractor unless otherwise noted.

M. Demolition - Work includes disconnection and removal of existing components and systems. Where new work does not connect to terminated ducts and/or pipes, remaining duct/pipes are to be capped to allow proper operation of remaining system. Questions regarding the extent of necessary demolition work or operation of systems involved with demolition are to be presented to the Architect/Engineer prior to proceeding with the Work.

PART 2 - PRODUCTS

2.01. PIPING MATERIALS

A. Sanitary Sewer & Vent Piping

1. Below Grade: Centrifugally cast service weight cast iron with lead and oakum or neoprene compression joints, or No-Hub type cast iron pipe and jointing system. PVC or ABS Schedule 40 piping with solvent welded joints may be used where permitted by Code.
2. Above Grade: Cast iron soil pipe with lead and oakum or neoprene compression joints, schedule 40 galvanized steel with cast iron drainage fittings, or No-Hub type cast iron pipe and jointing system, where permitted by Code. PVC or ABS Schedule 40 piping with solvent welded joints may be used where permitted by Code.

B. Domestic Water Piping (Copper)

1. Pipe to be hard tempered, seamless copper tubing, ASTM B-88 and Federal Specification WW-T-799. Manufacturer's name or trademark and type of tubing to be identified at 3-foot intervals. Pipe to be Type K, L or M as hereinafter specified.
2. Fittings in copper tubing 2-1/2" and smaller to be wrought sweat type fittings manufactured of seamless tubing forged bronze or brass rod to meet ANSI B16.22 and ASTM B-75. Fittings in copper tubing 3" and larger to be cast red bronze solder type fittings, meeting ANSI B16.18 and ASTM B-62. Fittings of either type to have tubing stops.
3. If allowed by local code, Copper Press Fittings are an acceptable method of installation. Joints created in this manner to be installed in compliance with code and manufacturer's instructions and Article on "Installation, Copper Tubing" in Part 3 – Execution of this Section.
   a. Acceptable Manufacturers:
      (1) Viega
      17545 Daleview Dr.
      Lakewood, OH 44107 877.620.0016.
      (2) Ridge Tool Co.
      400 Clark Street
      Elyria, OH 44035
      800.519.3456.
   b. Material: Copper press fittings to conform to material and sizing requirements of ASME B16.18 or ASME B16.22. O-rings for copper press fittings to be EPDM.

C. Domestic Water Piping (Polyethylene (PEX) tubing and fittings)

1. If allowed by local code, Polyethylene (PEX) tubing and fittings is an acceptable method of installation for pipe 1-1/2-inches and smaller in diameter for above ground concealed installations only unless noted otherwise on Drawings.
2. Tubing:
   a. Material: Crosslinked polyethylene (PEX) manufactured by PEX-a (Engle method).
   b. Material Standard: Manufactured in accord with ASTM F 876 and ASTM F 877 and tested for compliance by an independent third party agency.
   c. Minimum Bend Radius (Cold Bending): No less than 6 times outside diameter. Use PEX tubing manufacturer bend supports if radius is less than stated.
3. Fittings:
   a. Furnished by PEX tubing manufacturer. Comply with requirements in ASTM F 877.
   b. Manufactured in accord with and from materials listed in ASTM F 1960.
   c. Fitting assembly consisting of barbed adapter and applicable sized PEX ring. Barbed insert manufactured with O-ring to facilitate pressure testing with air.
4. Manufacturers:
   a. Uponor, Inc. – Wirsbo AQUAPEX® tubing and ProPEX® fittings.
   b. REHAU North America – RAUPEX® tubing and EVERLOC® fittings.

2.02. VALVES

A. Plumbing

1. Gate Valves - 125# bronze, solder end, solid disc, rising stem, Stockham fig. B-109 or similar Crane, Jenkins, or Nibco.
2. Ball Valves - 125# WOG, stainless steel ball, bronze body, lever handle.
3. Acceptable Manufacturers (when product complies with specified criteria):Apollo, Crane, Jenkins, Nibco, Stockham, Watts.

2.03. PLUMBING SYSTEM INSULATION

A. Insulation shall carry the following composite (insulation, jacket or facing, and adhesive used to adhere the facing or jacket to the insulation) fire and smoke hazard ratings (unless specifically excluded) tested in accordance with ASTM E84, NFPA 255 and UL 723.

1. Flame Spread: 25 or less
2. Smoke Developed: 50 or less

B. Domestic Water Piping, & Non-potable Water Piping

1. Unless otherwise required, piping shall be insulated with Manville "Micro-Loc" fiberglass insulation with all purpose jacket, 1" thickness.
2. Piping located inside Car Wash Bay shall be polymer foam insulation shall be flexible, elastomeric, closed cell, foamed polymer material made from nitrile rubber/vinyl blend, nominal density of 1.5 pounds per cubic foot. Insulation shall have an average thermal conductivity not exceeding 0.25 BTU-in. per sq. ft. per degree Fahrenheit per hour at mean temperature of 75º F. Insulation shall be rated for a minimum temperature of -330ºF and a maximum temperature of 210º F. Maximum vapor transmission shall be 0.0 perm inches and water absorption shall be 0.0% by volume.
3. All exposed insulated pipe, fittings and accessories within 8'-0" of finished floor shall be protected with a PVC jacket.
4. Insulated pipe and fittings located in the carwash bay shall be protected with a PVC jacket. Jacket and covers shall be sealed water tight.

C. Other Acceptable Manufacturers:

1. Knauf
2. Owens Corning

2.04. PLUMBING

A. Cleanouts - Finished floor: Josam Series 56000 Nickaloy; wall, Josam Series 58600-4 stainless steel cover.

B. Pressure Regulating Valves - Bronze body with integral stainless steel strainer, threaded ends for 1/2" to 2" size, Watts No. 223S.

2.05. PLUMBING FIXTURES AND TRIM

A. Provide plumbing fixtures as shown on Drawings. See schedule for fixture types. Manufacturers shall be as follows:

1. Trim/Faucets - Chicago, Kohler.
2. Fixture Carriers: Josam, Smith, Wade, Zurn.
3. Stainless Steel Counter Sinks: Elkay, Just, Advance.
4. Handicapped lavatory and P-Trap and angle valve assemblies shall be insulated with the fully molded, TRUEBRO, Handi Lav-Guard insulation kit, or acceptable substitute. Color shall be as selected by Owner.

B. Provide chrome plated angle supplies with stops on water supplies.

2.06. FIRESTOPPING

A. 3M brand 7900 Series system.

B. 3M brand CP 25 caulk. Dow Corning firestop sealant. GE RTV 7403.

C. 3M brand FS 195 wrap.

D. Similar products manufactured by Tremco, Dow Corning, GE., Hevi-Duty Nelson.

PART 3 - EXECUTION

3.01. INSTALLATION

A. Install insulation continuous through wall, floor and ceiling openings. Insulation shall be applied on clean, dry surfaces. Insulation on cold surfaces where a vapor barrier is used shall extend full size through hangers and shall be protected at the hanger point by the use of inserts and saddles.

B. Insulate piping with fiberglass insulation and all purpose jacket.

1. Apply insulation to clean piping. Verify that insulation is correct size to snugly fit around exterior of specific piping material to be insulated. Apply mastic to piping to temporarily secure insulation to pipes when jacket is not permanently affixed to outside of insulation system.
2. Seal jackets and end laps with mastic applied to two surfaces or with self-sealing type lap system. Seal exposed ends of insulation with a full coat of mastic.
3. Fittings, valve bodies and flanges for pipe sizes 4" and smaller shall be finished with mineral fiber cement to same thickness as adjacent pipe insulation.
4. Fittings, valve bodies, and flanges for pipes over 4" shall be insulated with 3/4 lb. density fiberglass blanket compressed to the same thickness as adjacent pipe insulation, or mitered pipe insulation segments, or pre-molded fittings secured with 3-ply jute twine, fiberglass tape or 18 gauge galvanized steel wire, and finished with a smooth coat of mineral fiber cement.

5. After the cement is dry, fittings shall be finished with 4 oz. canvas adhered with permanent adhesive.
6. Fittings shall be sealed with vapor barrier mastic over the canvas for Domestic Cold Water & Condensate Drain

C. PVC insulated fittings covers are acceptable, where permitted by Code. If used, pre-cut insulation shall be applied to the fitting to provide a snug fit. Insulation shall be the same thickness as adjacent pipe insulation. Secure fitting covers by stapling and taping the ends to the adjacent pipe insulation. For piping systems required to have a vapor barrier, seal seam edges with vapor barrier adhesive and wrap ends with vapor barrier tape overlapping the adjacent jacket. Where PVC fitting covers are not acceptable to local authorities, aluminum pre-formed fitting covers are to be used.

D. Install inserts at hangers supporting insulated pipe. Extend vapor barrier over the insert and seal at insulation vapor barrier. Locate saddles beneath each insert, centered on the hanger.

3.02. SOIL AND WASTE SYSTEM

A. Connect to nearest adequate piping, verify invert elevation and location prior to commencing work.

B. Cleanouts: Install full size at the following locations. Base of waste stacks, ninety degree turns in mains, point where sewer leaves building, all other necessary points as indicated and required to permit easy system rodding. Provide cleanouts as follows at a minimum, every 50 feet on lines 3" or less in size, every 100 feet on lines 4" or more in size.

C. Plastic Pipe & Fittings - Thoroughly clean all joint surfaces before starting the joining process. Make all connections to other piping systems using adapters. Do not thread schedule 40 pipe. Schedule 80 pipe may be threaded.

1. PVC - Join piping by solvent welding using only PVC solvent and primer as recommended by the pipe and fitting manufacturer. Primer shall be a contrasting color to the pipe and solvent.
2. ABS - Join piping by solvent welding using only ABS solvent and primer as recommended by the pipe manufacturer. Primer shall be a contrasting color to the pipe and solvent.
3. Below grade piping shall be laid on a continuous granular bed. Installation shall comply with ASTM D2321.

D. Horizontal above grade plastic waste and vent piping shall not exceed thirty-five (35) feet in total length. Vertical waste and vent piping shall not exceed thirty-five (35) feet in length unless an approved expansion joint is installed at intervals not to exceed thirty-five (35) feet.

3.03. WATER SUPPLY SYSTEM

A. Connect to existing nearest adequate water piping and extend to new plumbing fixtures. Verify location of prior to start of work.

B. Disinfect water piping in accordance with local requirements and the following specific provisions. Fill the system with a solution containing 50 - 80 mg/L of chlorine for a period of 24 hours. The system then shall be flushed with clean water until the residual chlorine is not greater than 1.0 mg/L.

C. Copper Pipe & Fittings

1. Sweated joints in copper tubing to be made with the proper paste flux and 95-5 tin antimony solder.
2. Both male and female parts of each joint must be hand-burnished with wire brushes or abrasive cloth.
3. Mechanically Formed Tee Connections
   a. Mechanically formed tee connections may be used where permitted by local code and authorities having jurisdiction.
   b. Mechanically extracted collars shall be formed in a continuous operation consisting of drilling a pilot hole and drawing out the tube surface to form a collar having a height of not less than three times the thickness of the tube wall.
   c. The joining branch tube shall be permanently deformed to set the proper penetration of the branch tube into the fitting.
   d. Joints shall be brazed in accordance with the Copper Development Association Copper Tube Handbook using B-cup series filler metal. Note: Soldered joints will not be permitted.
   e. Mechanically formed tee connections may be used for branch line connections up to one pipe size smaller than main pipe size.

D. Polyethylene (PEX) tubing and fittings installation

1. Install tubing in accord with tubing manufacturer's recommendations and as indicated in tubing manufacturer's installation handbook.
2. Do not install within 6-inches of gas appliance vents and within 12-inches of recessed light fixtures.
3. Do not solder within 18-inches of tubing in same waterline. Make sweat connections prior to making tubing connections.
4. Do not expose tubing to direct sunlight for more than 30 days. If construction delays are encountered, cover tubing that is exposed to direct sunlight.
5. Ensure that no glues, solvents, sealants, and chemicals come in contact with tubing without prior permission from tubing manufacturer.
6. Use grommets or sleeves at penetrations for tubing passing through metal studs.
7. Protect tubing with sleeves where abrasion may occur.
8. Install engineered secondary pipe positioning and support systems where tubing penetrates stud and joists, and for horizontal supports.
9. Use tubing manufacturer supplied bend supports where bends are less than 6 times outside pipe diameter.
10. Locate supports at not less than 32-inches between hangers in accord with manufacturer's tubing installation handbook.

3.04. PLUMBING FIXTURES AND TRIM

A. Connect fixtures to water, soil, waste and vent pipes. Set fixtures plumb, and level. Support wall hung fixtures with carriers approved by fixture manufacturer. Particular care shall be exercised in hanging fixtures, especially lavatories to assure rigidity and performance. This Contractor will be held responsible for the secure mounting of hangers and lavatories on the hangers, and any breakage resulting from improper installation on any fixture.

B. Clean fixtures at completion of the Work.

C. Provide 17 gauge, chrome plated brass adjustable p-trap with cleanout on fixtures requiring traps.

D. Fixture wastes, other than water closets and trap standard fixtures shall be connected to waste lines with an iron ferrule and threaded pipe. Connections to water closets and trap standard fixtures shall be made with cast iron floor flange with ring gasket and bolts for caulking into soil pipe. Closets and other trap standard floor connections joint shall be made tight without the use of putty. Fixtures shall be hung or supported with 5/16 brass bolts of sufficient length to securely fasten the fixture to the backing. Exposed heads of bolts for fixtures shall be chrome plated.

E. Caulk around plumbing fixtures with a white silicone sealant.

F. Refer to Architectural Drawings for fixture locations and mounting heights.

G. Indirect waste piping shall be rigidly supported above the floor.

3.05. FIRE RATED BARRIERS

A. Division 22 is responsible for maintaining the integrity of all fire related barriers (walls, floors, etc.) penetrated by work installed under Division 22 of the specifications.

B. The following procedures shall be used as dictated by project conditions:

1. Penetration of floor slabs or concrete walls (poured or block) - sleeve or core drill floor or wall, and seal penetration between pipe or duct and sleeve with sealing system capable of passing a 3 hour test hour ASTM E814 (UL 1479).
2. Penetration of sheetrock walls, cut opening in wall, install penetration and caulk with firestop sealant.

3.06. TESTING

A. Piping systems shall be tested as required by code and as specified herein before work is concealed. Tests shall be made in the presence of the proper inspectors and certificates shall be furnished to the Architect that tests have been satisfactorily completed.

1. Sanitary, storm and vent piping shall be tested with air pressure of 5 PSIG for 15 minutes.
2. Domestic water piping shall be tested with hydraulic pressure of 125 PSIG for 2 hours.

END OF DIVISION 22

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

MECHANICAL SPECIFICATIONS

Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW

PM03

Scale

3/21/2022 1:30:38 PM

DIVISION 23 HEATING VENTILATING & AIR CONDITIONING SPECIFICATIONS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. The General Provisions of the contract, including General and Supplementary Conditions and Division 1 General Requirements apply to the work in this Section.

B. The Work specified includes the following:

1. General Provisions
2. Insulation
3. Air Distribution
4. Air Terminal Units
5. Testing and Balancing

C. Minor Items - Items which are obviously and reasonably necessary to complete the Work are to be provided, even though they may not be specifically mentioned.

D. Permits, Licenses and Fees - To be secured and paid for by the Contractor before actual work is done.

E. Codes and Ordinances - Installation shall comply with the current, applicable state and local codes, ordinances and/or regulations. Regular inspections shall be requested by each Contractor. Charges for inspections shall be paid by the Contractor. Where work required by the drawings and specifications is above the standards required by regulations, it shall be done as shown and/or specified.

F. Site Inspection - Before submitting a proposal on the Work contemplated, examine the site of the proposed work and become thoroughly familiar with existing conditions and limitations affecting the performance of the Work. Verify size, location, and elevation of existing equipment, piping and etc., before submitting a proposal. Additional compensation will not be allowed because of misunderstanding as to amount of work involved or bidders' lack of knowledge of existing conditions which could have been discovered or reasonably anticipated prior to bidding.

G. Cutting and Patching - Cutting and patching required to install any portion of this Work or to correct defects in work shall be done in a manner to match existing construction and as approved and directed by the Architect/Engineer.

H. Coordination - Consult general and electrical construction drawings for conditions affecting the Work. Verify spaces in which the Work will be installed.

I. Approval of Materials and Shop Drawings

1. If a substitute for any material is accepted, the Contractor is responsible for changes in piping, in space requirements and related equipment without additional cost to the Owner. Substitute equipment must perform the functions of the equipment specified in a manner satisfactory to the Owner.
2. **Prior to ordering equipment**, Contractor shall submit six (6) copies of shop drawings or product literature covering equipment. **Contractor shall review submittals and stamp them prior to submission to the Owner.**

J. Cleaning and Finishing - After tests have been made and accepted, inspect the whole job and clean fixtures, pipes, ductwork and other equipment installed under this Division and leave entire building clean and in complete working order.

K. Start-Up, Guarantee and Operating Manuals

1. Coordinate with equipment manufacturers to include start-up of each mechanical device. Include start-up certificates in Operation and Maintenance manuals.
2. The Contractor shall guarantee and maintain the stability of work and materials for a period of one (1) year after the final completion as evidenced by issuance of the final certificate by the Architect/Engineer.
3. The Owner's designated operating personnel shall be full instructed by the Contractor in the operation of each mechanical system at the time it is put into operation. The Contractor shall assemble and deliver two (2) Operation and Maintenance manuals to the Owner before final payment will be made.

L. Electrical - Unless otherwise specified herein, magnetic starters, disconnects, and power wiring shall be provided by the Electrical Contractor. Control and interlock wiring shall be provided by this Contractor unless otherwise noted.

M. Demolition - Work includes disconnection and removal of existing components and systems. Where new work does not connect to terminated ducts and/or pipes, remaining duct/pipes are to be capped to allow proper operation of remaining system. Questions regarding the extent of necessary demolition work or operation of systems involved with demolition are to be presented to the Holiday Project Manager prior to proceeding with the Work.

N. Equipment Refurbishing - Perform the following maintenance on the existing rooftop HVAC units remaining in operation. The work is to be accomplished so that the equipment is in clean condition and ready for operation at the time of turnover to the Owner. Submit a report to the Architect/Engineer indicating that the refurbishing is complete and list the work completed for the unit and identify additional items which may be required to place the unit in complete and satisfactory operating condition.

1. Replace existing filter media with new filter media.
2. Clean units inside and outside. Remove rust from unit casing and touch up with paint.
3. Inspect belts and replace if required with a matched set of new belts.
4. Tighten all screws.
5. Lubricate bearings and motor.
6. Check motor, blower and drive assembly for proper alignment and adjust if necessary.
7. Clean and tighten electrical connections.
8. Replace deteriorating insulation including pipe insulation.
9. Clean coils.
10. Repair refrigeration and oil leaks.
11. Inspect safety devices for proper operation and repair or replace as necessary.
12. Inspect condenser coil for finned surface damage and comb out as required.
13. Verify that the charge of refrigerant in the system is in accordance with the manufacturer's recommendations.

PART 2 - PRODUCTS

2.01 HVAC SYSTEM INSULATION

A. Insulation shall carry the following composite (insulation, jacket or facing, and adhesive used to adhere the facing or jacket to the insulation) fire and smoke hazard ratings (unless specifically excluded) tested in accordance with ASTM E84, NFPA 255 and UL 723.

1. Flame Spread: 25 or less
2. Smoke Developed: 50 or less

B. Direct expansion suction piping shall be insulated with foamed plastic insulation as manufactured by Armstrong "Armaflex II", 3/4" thickness.

C. Sheet Metal Ducts (Interior) - Schuller Permacote Linacoustic duct liner. 1-1/2 lb density, .25 btu/(hr-s.f.-F-in.) thermal conductivity at 75 F. 0.65 sound absorption coefficient at 500 Hz. Thickness shall be as follows:

1. Supply air -- 1" thickness
2. Return air -- 1" thickness
3. Transfer air -- 1" thickness

D. Exterior Duct Insulation - Fiberglass duct wrap not less than 0.75 lb/cubic foot density. Foil-Skrim-Kraft vapor barrier jacket. Insulate round, concealed supply air ducts and exhaust air ductwork with 1" duct wrap. Overlap facing and staple securely providing a tight-fitting vapor barrier installation.

E. Other Acceptable Manufacturers:

1. Knauf
2. Owens Corning

2.02 SHEET METAL MATERIALS

A. Ductwork - Constructed of heavy galvanized iron and shall be installed in accordance with the standards described in the latest edition of the SMACNA HVAC Duct Construction Standards.

B. Conform to the following gauges unless otherwise specified. Exposed ductwork from rooftop unit shall be a minimum of 16 gauge construction.

DUCT WIDTH (")	U.S. STANDARD GAUGE
0 to 12	#26
13 to 30	#24
31 to 54	#22

C. Concealed, round duct connections to ceiling diffusers may be flexible insulated ducts, such as Owens-Corning Class 1 air duct, complying with NFPA No. 90A with a flame spread rating of 25 or less and a smoke developed rating not higher than 50. Equal products such as manufactured by Flexible Technologies, Nailor Hart, or Geneflex will be acceptable.

D. Ductwork exposed to weather shall be constructed of galvanized sheets specially prepared for painting. Manufacturer and type shall be Inland Steel Co. Paint-tile, or Youngstown Sheet & Tube Company Tufkote Bonderized.

E. Hangers shall be constructed in accordance with the latest edition of SMACNA "HVAC Duct Construction Standards".

F. Provide fire resistive fabric material flexible connections between inlet and outlet of each fan and connection ductwork, and where ducts are crossing building expansion joints. The flexible connection shall be made of heavy glass fabric, double coated with neoprene similar to "Ventglas" for high pressure systems and "Ventfab" for low pressure systems as manufactured by Vent-fabrics, or approved equal. Materials shall be U.L. approved and shall have an adequate resistance to fire.

2.03 AIR TERMINAL UNITS

A. Furnish and install grilles, registers and diffusers as manufactured by Anemostat as scheduled. Acceptable substitutes as manufactured by Titus, Krueger or Metal-Aire. Other acceptable manufacturers are Tuttle & Bailey, Reliable, or Carnes, Price.

B. Supply grilles shall have individually adjustable vertical or horizontal double deflection bars.

C. At points indicated on the Drawings furnish and install individually adjustable deflecting vanes that will control air volume and deflect supply air for even distribution through branch duct, a supply grille, register or diffuser.

D. Grilles, registers and diffusers located in acoustical tile ceilings shall have a baked-on white enamel finish.

E. Grilles, registers and diffusers located on exposed ductwork or on walls shall be finished with a prime coat finish. Natural aluminum registers mounted on exposed ductwork may be left with a natural finish.

F. Rectangular to round adaptors shall be provided where required.

G. Provide a manufactured metal plaster frame for grilles or registers installed in plastered walls.

H. Unless otherwise noted, outlets to be selected on the basis of maintaining a maximum sound level range of NC 30.

2.04 FIRESTOPPING

A. 3M brand 7900 Series system.

B. 3M brand CP 25 caulk. Dow Corning firestop sealant. GE RTV 7403.

C. 3M brand FS 195 wrap.

D. Similar products manufactured by Tremco, Dow Corning, GE., Hevi-Duty Nelson.

PART 3 - EXECUTION

3.01 INSULATION

A. Install insulation continuous through wall, floor and ceiling openings. Insulation shall be applied on clean, dry surfaces. Insulation on cold surfaces where a vapor barrier is used shall extend full size through hangers and shall be protected at the hanger point by the use of inserts and saddles.

B. Interior Duct Lining

1. Duct liner shall be held in place by applying fire resistant adhesive over the entire metal surface then pressing insulation firmly in place. The mat faced surface shall face the air stream. Duct 18" wide and over shall have the duct liner additionally secured by welded pins and clips on not greater than 12" centers on top and side surfaces of the duct. Self adhering pins with clinch ends may be substituted for welded pins, when applied in accordance with manufacturers published instructions. Leading edges must be covered with metal nosing strip.
2. Duct sizes shown on drawings are inside clear dimensions. Increase sheet metal dimensions to accommodate duct liner thickness.

3.02 AIR DISTRIBUTION

A. Ducts up to 30": locked seams. Ducts 31" and wider: standing seams. Cross break panels over 12" wide or deep. Make elbows with an inside radius equal to 1/2 the width of the duct where space permits. Provide double wall turning vanes on elbows with an inside radius less than 1/2 of the duct width. Provide radius tap-ins for tee or side outlets from the trunk duct

B. Provide structural steel supports required to hang ducts, fans, etc. Support ducts over 36" in width with trapeze hangers on no greater than 4'-0" centers. Provide galvanized straps, bolted to the angle stiffeners or secured to the sides of the duct, adequately supported from the beams or top chord of the joists. Ductwork shall be adequately side-braced to prevent swaying.

C. Dampers shall be fitted with an arm outside the duct, set in the same direction as the plane of the damper and working over a quadrant or regulator. Blades shall not exceed 6" in width for ducts up to 24" and 8" for larger ducts. Damper rods shall be 5/16" and shall be fitted with brass bearings on each side. Manual volume dampers shall be installed in each branch supply, return and exhaust duct.

D. The flexible duct shall be capable of maintaining the shape required by job conditions without subsequent sagging or droop. Ducts shall be supported with 2" wide straps, 3 feet on center or by wire from grommets, factory installed for the purpose. Duct shall be installed in the shortest direct distance (8 ft. maximum) between components with a maximum of only one 90 degree turn in a runout. Duct connections to collars shall be made airtight and fastened in accordance with the duct manufacturer's recommendations, using a nylon or metal draw band. Two wraps of an approved duct tape over the vapor barrier to complete the airtight seal shall be required.

E. Ductwork which is mounted exposed to the weather shall have one side of duct constructed higher so that duct top slopes side to side a minimum of 1" per foot for proper drainage of water.

3.03 FIRE RATED BARRIERS

A. Division 23 is responsible for maintaining the integrity of all fire related barriers (walls, floors, etc.) penetrated by work installed under Division 23 of the specifications.

B. The following procedures shall be used as dictated by project conditions:

1. Penetration of floor slabs or concrete walls (poured or block) - sleeve or core drill floor or wall, and seal penetration between pipe or duct and sleeve with sealing system capable of passing a 3 hour test hour ASTM E814 (UL 1479).
2. Penetration of sheetrock walls, cut opening in wall, install penetration and caulk with firestop sealant.

3.04 AIR TERMINAL UNITS

A. Grilles, registers, and diffusers shall be fitted with gaskets, drawn tight to the surface and securely fastened to eliminate gaps and dirt streaking. Ducts behind grilles, registers, and diffusers shall be rigidly fastened and extra screws shall be added if necessary to draw the grilles, registers and diffusers tight to the surface.

3.05 TESTING AND BALANCING

A. Piping systems shall be tested as required by code and as specified herein before work is concealed. Tests shall be made in the presence of the proper inspectors and certificates shall be furnished to the Architect that tests have been satisfactorily completed.

1. Gas piping shall be air tested at 50 PSIG for 24 hours with no drop in pressure or as dictated by local codes or ordinances, if greater.
2. Test refrigerant piping with nitrogen. Leak tests shall be made before insulation is applied. Tests shall be conducted using 250 psig pressure on high side and 160 psig pressure on the low side of the system.

B. Air system Testing and balancing shall be performed by an independent testing and balancing contractor who is a fully certified member of the Associated Air Balance Council or the National Environmental Balancing Bureau. Balancing shall be completed for all new and existing equipment.

C. Submit six (6) copies of air system testing and balancing report to Engineer for review. They will forward the approved balancing report to the Owner.

D. When the work has been completed, the Contractor shall balance the air deliveries from each unit in accordance with the recommendations of the diffuser manufacturer, setting fan speeds, dampers, controls and/or other volume control devices in such a manner as to produce the air volume deliveries indicated.

E. Tests to the satisfaction of the Engineer shall also be conducted for satisfactory operation of equipment installed under Division 23 of the specifications, including packaged units, fans, motors, starters and drives.

F. On completion of the initial start-up operation of the packaged units, the Contractor shall test each unit for the actual performance versus the specified.

G. Instruments used for testing and balancing of air systems must have been calibrated within a period of six months prior to balancing. Final test analysis reports shall include a letter of certification listing instrumentation used and last date of calibration.

END OF DIVISION 23

292 Design
292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

MECHANICAL SPECIFICATIONS

Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW

PM04

Scale

3/21/2022 1:30:42 PM

PLUMBING FIXTURE SCHEDULE

TAG	TAG #	DESCRIPTION	MANUFACTURER	MODEL	ACCESSORIES	TRIM	CONNECTIONS					COMMENTS
							DIRECT WASTE	INDIRECT WASTE	VENT	CW	HW	
P	4D	KITCHEN SINK DROP IN	ELKAY	LRAD2521	C.P. P-TRAP W/ C.O., WATER STOPS	CHICAGO # 1100-GM8AE3-317, GOOSENECK FAUCET W/ WRIST BLADES	1-1/2"	---	1-1/2"	1/2"	1/2"	ADA, 6" BOWL DEPTH

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE
	PERMIT ISSUE	03/11/22

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

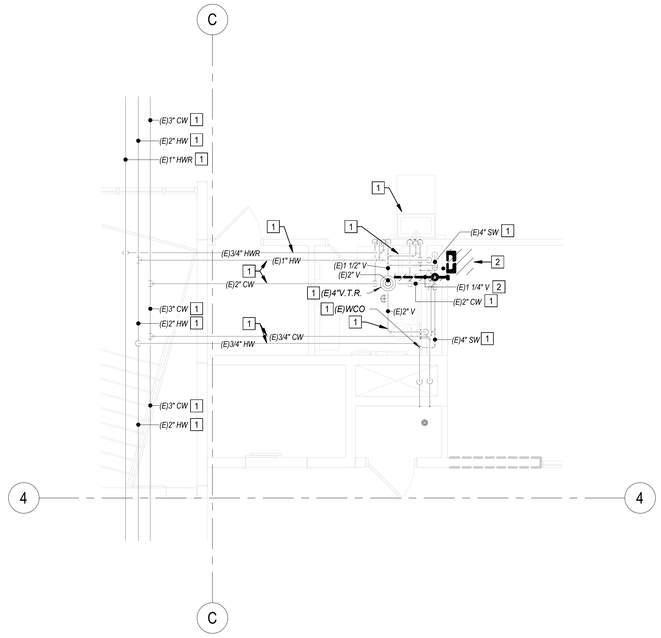
PLUMBING SCHEDULES

Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW

P601

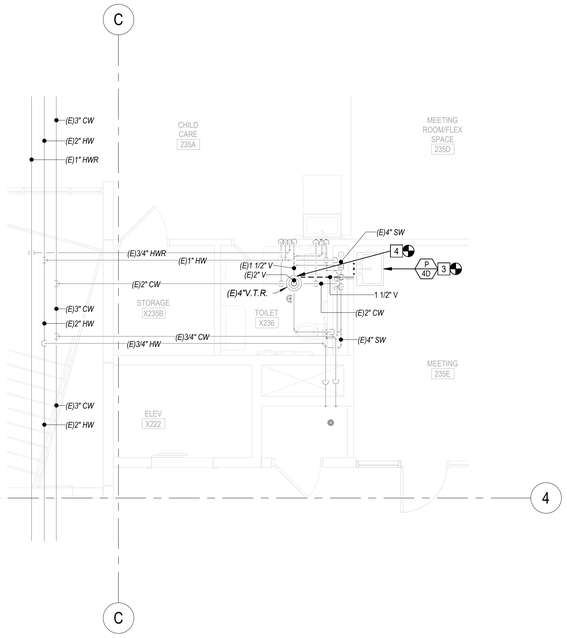
Scale

3/21/2022 1:30:45 PM



1 P201 SECOND FLOOR MEETING ROOMS PLUMBING DEMOLITION PLAN

1/4" = 1'-0"



2 P201 SECOND FLOOR MEETING ROOMS PLUMBING PLAN

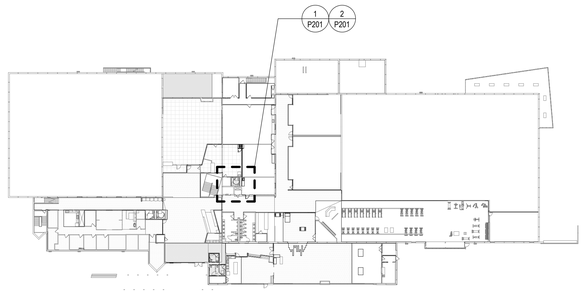
1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND ELEVATIONS OF PLUMBING FIXTURES AND TOP OF FLOOR DRAIN ELEVATIONS.
2. REFER TO SHEET P601 FOR INDIVIDUAL BRANCH PIPE SIZES TO FIXTURES, ROUGH-IN REQUIREMENTS, AND PLUMBING SCHEDULES.
3. SEE SHEET PM01 FOR TYPICAL PIPE HANGER DETAILS.
4. PITCH VENT PIPING AT 1/8" PER FOOT TO DRAIN BACK TO WASTE PIPE.
5. DIMENSIONS INDICATED ARE TO BE VERIFIED WITH OWNER'S REPRESENTATIVE AND ADJUSTED AS REQUIRED BY EQUIPMENT OR FIELD CONDITIONS.
6. COORDINATE PIPING INSTALLATION WITH DUCTWORK.
7. ALL DOMESTIC WATER AND VENT PIPING SHALL BE ROUTED BETWEEN JOISTS OR THROUGH JOIST WEB WHERE APPLICABLE.

KEYNOTES:

1. EXISTING TO REMAIN.
2. REMOVE EXISTING FIXTURE AND BRANCH VENT & WASTE PIPING TO MAINS.
3. PROVIDE NEW 1-1/2" WASTE, 1-1/2" VENT, AND 1/2" H.W. TO NEW SINK. CONNECT TO EXISTING WASTE AND 1/2" C.W. PIPE IN WALL.
4. CONNECT TO EXISTING. VERIFY SIZE AND LOCATION.



KEYPLAN

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE
	PERMIT ISSUE	03/11/22

Revisions

CITY OF SHAKOPEE

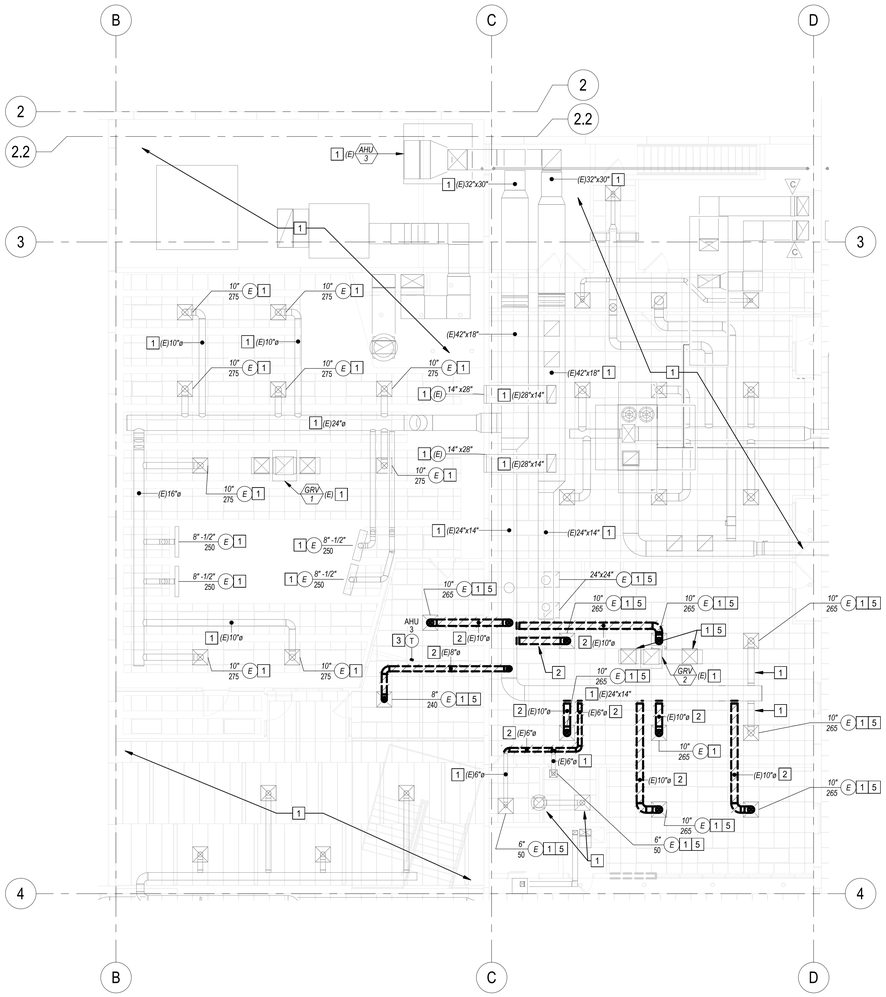
CC MEETING ROOMS

SECOND FLOOR PLUMBING PLANS

Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW
Scale	As indicated

P201

3/21/2022 1:30:51 PM



1 M201 SECOND FLOOR MEETING ROOMS HVAC DEMOLITION PLAN
1/8" = 1'-0"

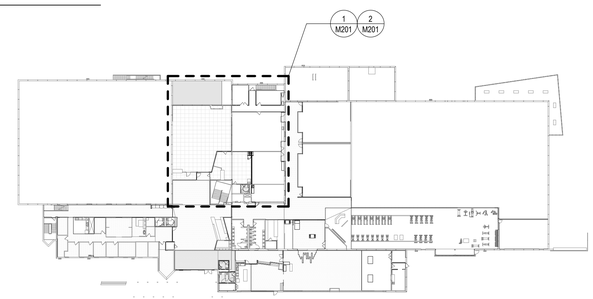
2 M201 SECOND FLOOR MEETING ROOMS HVAC PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO PM01 FOR GENERAL NOTES.
2. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS IN CEILING GRID.
3. SEE SHEET M601 FOR GRILLES, REGISTERS, AND DIFFUSERS SCHEDULES.
4. REFER TO SPECIFICATIONS FOR DUCT INSULATION REQUIREMENTS.
5. COORDINATE DUCTWORK INSTALLATION WITH STRUCTURE, PIPING, AND CONDUIT.

KEYNOTES:

1. EXISTING TO REMAIN.
2. REMOVE EXISTING DUCTWORK, EQUIPMENT, AND G.R.D.S SHOWN CROSSHATCHED. CAP DUCTWORK AIRTIGHT IF NOT REUSED.
3. EXISTING SENSOR TO BE REMOVED AND RELOCATED, VERIFY LOCATION.
4. CONNECT TO EXISTING. VERIFY SIZE AND LOCATION.
5. EXISTING DIFFUSER/REGISTER TO BE CLEANED.
6. NOT USED.
7. BALANCE DAMPER, MOUNT IN ACCESSIBLE LOCATION.
8. RELCOATED TEMPERATURE SENSOR, MOUNT AT 60" A.F.F.
9. BALANCE EXISTING DIFFUSER/REGISTER TO CFM INDICATED.
10. MODIFY SPRINKLER PIPING AND HEAD LOCATION FOR REVISED CEILING AND WALL LAYOUT IN ACCORDANCE WITH NFPA 13.



KEYPLAN

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE
	PERMIT ISSUE	03/11/22

Revisions

CITY OF SHAKOPEE

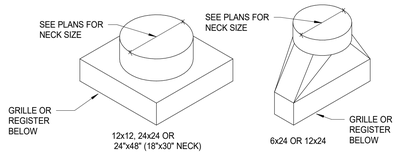
CC MEETING ROOMS

SECOND FLOOR HVAC & FIRE PROTECTION PLANS

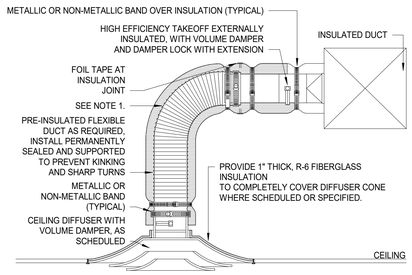
Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW
Scale	As indicated

M201

3/21/2022 1:30:58 PM



1 M601 GRILLE & REGISTER BOOT
NOT TO SCALE



NOTE:
1. EXTEND RIGID METAL DUCT SO THAT MAXIMUM FLEXIBLE DUCT LENGTH DOES NOT EXCEED 5'-0". PROVIDE RIGID 90° ELBOW WHERE REQUIRED TO KEEP FLEXIBLE DUCT WITHIN 5'-0" LENGTH LIMITATION.

2 M601 LAY-IN CEILING DIFFUSER DETAIL
NOT TO SCALE

AIR HANDLING UNIT SCHEDULE - EXISTING

TAG	TAG NUMBER	SERVES	AIRFLOW (CFM)	AIRFLOW OUTSIDE (CFM)	Comments
AHU	3	CHILD CARE & MEETING ROOMS	6100	1220	EXISTING TO BE REBALANCED.

AIR TERMINAL SCHEDULE

TAG	MANUFACTURER	MODEL	DIFFUSER SIZE	VOLUME CONTROL	MOUNTING TYPE	REMARKS
LG	TITUS	50F	SEE PLAN	NONE	LAY-IN	SEE PLANS FOR FACE SIZE.

292 Design
292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan or specification was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Michael D. Woehrle

Date: 03.11.22 Reg. No: 42815

NO.	DESCRIPTION	DATE
	PERMIT ISSUE	03/11/22

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

MECHANICAL DETAILS & SCHEDULES

Project number	22-020
Date	03.11.2022
Drawn by	CLL
Checked by	MDW

M601

Scale NOT TO SCALE

3/21/2022 1:31:01 PM

ELECTRICAL SYMBOLS

LIGHTING SYMBOLS

MNT HT	SYMBOL	DESCRIPTION
		WALL MOUNTED FLUORESCENT
		1X4 FLUORESCENT
		2X2 FLUORESCENT
		2X4 FLUORESCENT
		DOWNLIGHT
		WALLWASHER
		INT/EXT WALL FIXTURE/SCONCE
		HIGH BAY
		1X4 FLUORESCENT - EMERGENCY
		2X2 FLUORESENT - EMERGENCY
		2X4 FLUORESCENT - EMERGENCY
		STRIP FLUORESCENT
		STRIP/WRAP - EMERGENCY
		DOWNLIGHT - EMERGENCY
		WALLWASHER - EMERGENCY
	LT	LIGHTING TRACK/BUSWAY - HEADS PER DRAWINGS
		BATTERY PACK
		BATTERY PACK - 3 HEAD
		REMOTE HEADS - SINGLE, DOUBLE, TRIPLE
		EXIT LIGHT - WALL
		EXIT LIGHT wHEADS - WALL
		EXIT LIGHT - CEILING
		SITE LIGHT - POLE MOUNT
		IN-GRADE FIXTURE
		FLOOD LIGHT
48"	S	SWITCH - SIMPLEX
48"	S_{P}	SWITCH - PILOT LIGHT
48"	S_{D}	SWITCH - DIMMER; WATTAGE
	OS	OCCUPANCY SENSOR
	LC	LIGHTING CONTACTOR
	LR	LOW VOLTAGE RELAY
	PC	PHOTO-CELL
	OS_{S}	WALL SWITCH OCCUPANCY SENSOR

SYSTEMS SYMBOLS

MNT HT	SYMBOL	DESCRIPTION
80"	F	VISUAL ALARM ANNUNCIATOR
80"	F	AUDIBLE/VISUAL ALARM ANNUNCIATOR
48"	MP	MANUAL PULL
	F_{P}	SMOKE DETECTOR - PHOTOELECTRIC
	F_{I}	SMOKE DETECTOR - IONIZATION
	F_{DP}	DUCT SMOKE DETECTOR - PHOTOELECTRIC
	F_{DI}	DUCT SMOKE DETECTOR - IONIZATION
	F_{H}	HEAT DETECTOR
	H	DOOR HOLD OPEN
80"	B	BELL
80"	H	HORN
54"	FAAP	FIRE ALARM ANNUNCIATOR PANEL
54"	FACP	FIRE ALARM CONTROL PANEL
	FS	FLOW SWITCH
	TS	TAMPER SWITCH
	F 110cd	FIRE ALARM CEILING MTD STROBE
	F 110cd	FIRE ALARM CEILING MTD HORN/STROBE
	HB	HELP BUTTON
	CR	CARD READER
	RX	REQUEST TO EXIT MOTION DETECTOR
	MD	MOTION DETECTOR - CEILING
	MD	MOTION DETECTOR - WALL
	GB	GLASS BREAK DETECTOR - WALL
	GB	GLASS BREAK DETECTOR - CEILING
	AC	ALARM CONTACTS
	EL	ELECTRIC LOCK
	ES	ELECTRIC STRIKE
	ML	MAGNETIC LOCK
	KP	KEYPAD ARMING STATION
	KB	FIRE DEPARTMENT KEYBOX
		VEHICLE DETECTION LOOP
	SEC	CCTV CAMERA - CEILING
	SEC	CCTV CAMERA - WALL
	SEC	CCTV CAMERA - PAN TILT ZOOM
	DCP	DOOR CONTROL PANEL
	SCP	SECURITY SYSTEM CONTROL PANEL
	ET	EMERGENCY TELEPHONE
	ET	EMERGENCY TELEPHONE - BOLLARD

SYSTEMS SYMBOLS

MNT HT	SYMBOL	DESCRIPTION
18"		TELEPHONE OUTLET
54"	W	TELEPHONE OUTLET - WALL
		TELEPHONE OUTLET - FLOOR
		TELEPHONE BACKBOARD
18"		DATA OUTLET
		DATA OUTLET - FLOOR
18"		VOICE/DATA OUTLET
		VOICE/DATA OUTLET - FLOOR
18"		DUAL DATA
		DUAL DATA - FLOOR
	C	CLOCK OUTLET
		HORN
	S	SPEAKER - CEILING
	S	SPEAKER - WALL
54"	V	VOLUME CONTROL
54"	M	MICROPHONE - WALL
	M	MICROPHONE - FLOOR
		BUZZER
		BELL
		CHIME
54"		PUSHBUTTON
	PD	POWER/DATA RACEWAY
18"	TV	TV OUTLET - WALL
	TV	TV OUTLET - CEILING
		REFRIGERATION CONTROL CONDUIT

MISCELLANEOUS SYMBOLS

2	KEY NOTE
	EQUIPMENT TAG
AC	ABOVE COUNTER

POWER SYMBOLS

MNT HT	SYMBOL	DESCRIPTION
18"		RECEPTACLE - SIMPLEX
18"		RECEPTACLE - DUPLEX
18"		RECEPTACLE - QUADPLEX
		RECEPTACLE - CEILING MOUNT
18"		RECEPTACLE - DUPLEX EMERGENCY
18"		RECEPTACLE - QUADPLEX EMERGENCY
18"		RECEPTACLE - SWITCHED
		COMPUTER RECEPTACLE - DUPLEX
		COMPUTER RECEPTACLE - QUADPLEX
		COMPUTER RECEPTACLE - DUPLEX CEILING MOUNT
		COMPUTER RECEPTACLE - QUADPLEX CEILING MOUNT
		COMPUTER RECEPTACLE - DUPLEX FLOOR
		COMPUTER RECEPTACLE - QUADPLEX FLOOR
		RECEPTACLE - DUPLEX FLOOR
		RECEPTACLE - QUADPLEX FLOOR
		RECEPTACLE - QUAD FLOOR EMERGENECY
		RECEPTACLE - SPECIAL PURPOSE - SEE DWGS
18"		RECEPTACLE - SPECIAL PURPOSE - SEE DWGS
18"	J	JUNCTION BOX - WALL
	J	JUNCTION BOX - CEILING
	J	JUNCTION BOX - FLOOR
		MOTOR
54"		DISCONNECT SWITCH
54"	F	FUSED DISCONNECT SWITCH
54"		STARTER
		PUSHBUTTON
		MOTOR STARTER SWITCH
	T	THERMOSTAT
		COMBINATION STARTER-DISCONNECT
	C	CONTACTOR
		GROUND
	M	METER
	ATS	AUTOMATIC TRANSFER SWITCH
		LTG/REC PANELBOARD
		DISTRIBUTION PANELBOARD

ELECTRICAL SHEET INDEX

E000	ELECTRICAL TITLE SHEET
E201	ELECTRICAL FLOOR PLANS
E500	ELECTRICAL SPECIFICATIONS

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Jeffery A. Piehl

Date: 03.11.2022 Reg. No: 43926

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

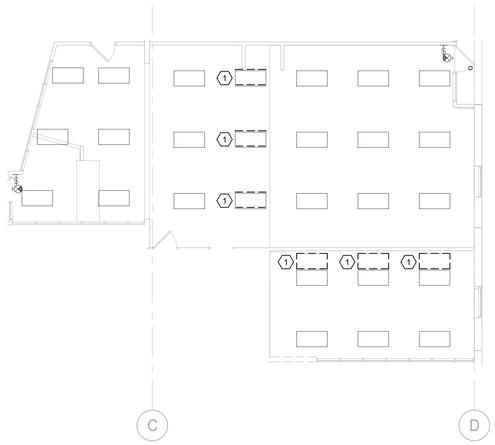
ELECTRICAL TITLE SHEET

Project number	22-020
Date	03.11.2022
Drawn by	SJG
Checked by	JAP

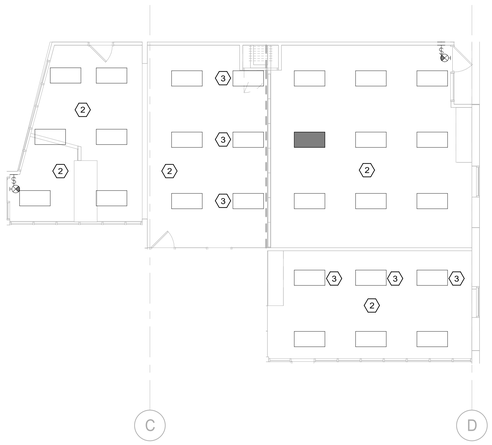
E000

Scale 1/8" = 1'-0"

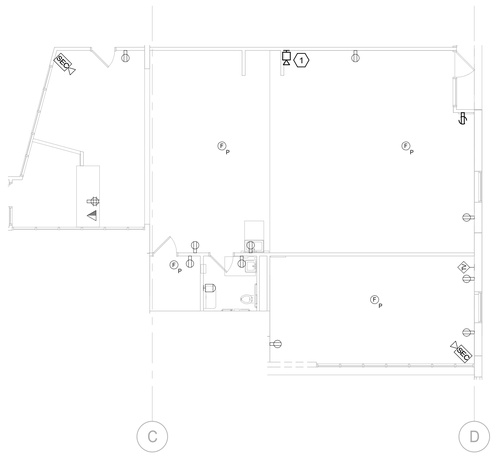
3/21/2022 1:47:24 PM



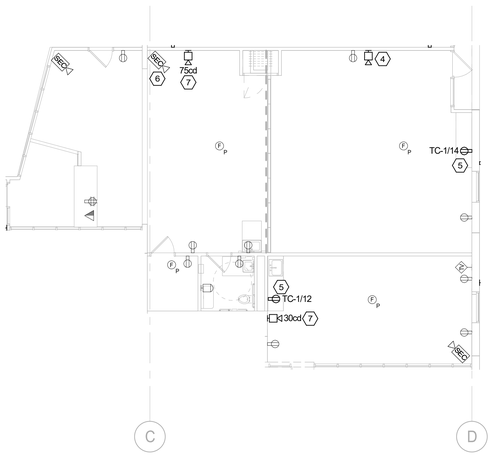
1 E201 LIGHTING PLAN - MEETING ROOMS DEMO
1/8" = 1'-0"



3 E201 LIGHTING PLAN - MEETING ROOMS
1/8" = 1'-0"



4 E201 POWER & SYSTEMS PLAN - MEETING ROOMS DEMO
1/8" = 1'-0"



5 E201 POWER & SYSTEMS PLAN - MEETING ROOMS
1/8" = 1'-0"

GENERAL NOTES

A. THESE PLANS WERE PREPARED USING EXISTING CONSTRUCTION DOCUMENTS AND CASUAL FIELD OBSERVATION. THE CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS ON SITE AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WORK.

B. THE CONTRACTOR SHALL MAINTAIN SERVICE TO ALL DOWNSTREAM DEVICES AND EQUIPMENT AFFECTED BY REMODELING. PROVIDE NEW CONDUITS, WIRING, AND CONNECTIONS AS REQUIRED.

C. EXISTING DATA, TELEPHONE AND LOW VOLTAGE CABLING THAT IS ABANDONED MUST BE REMOVED FROM THE SPACE OR COILED AND LABELED AS "FUTURE" AND INDICATING LOCATIONS AT BOTH ENDS, PER THE NEC. CONTRACTOR SHALL COORDINATE WITH THE OWNER OR OWNERS REPRESENTATIVE.

KEYNOTES

1. REMOVE EXISTING FIXTURE AND RETAIN FOR RELOCATION.
2. EXISTING ELECTRICAL DEVICES IN THIS ROOM TO REMAIN, UNLESS OTHERWISE NOTED.
3. RELOCATED LIGHT FIXTURE. RECONNECT TO EXISTING CIRCUITING AND CONTROLS IN THIS AREA.
4. RELOCATED FIRE ALARM DEVICE. RECONNECT TO EXISTING CIRCUITING.
5. NEW RECEPTACLES. INSTALL ABOVE COUNTER AND COORDINATE FINAL LOCATION WITH ARCHITECT. ROUTE CIRCUITING TO PANEL TC-1 OR NEAREST PANEL WITH SPARE CAPACITY AND POLE SPACE. EACH RECEPTACLE SHALL BE A DEDICATED CIRCUIT.
6. NEW SECURITY CAMERA. CONNECT TO EXISTING SYSTEM.
7. NEW FIRE ALARM DEVICE. CONNECT TO EXISTING SYSTEM.

292 Design
292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of
MINNESOTA

Jeffery A. Piehl

Date: 03.11.2022 Reg. No: 43926

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

ELECTRICAL FLOOR PLANS

Project number	22-020
Date	03.11.2022
Drawn by	SJG
Checked by	JAP

E201

Scale As indicated

N

3/21/2022 1:47:27 PM

DIVISION 26, 27, 28 ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. The General Provisions of the contract, including General and Supplementary Conditions and Division 1 General Requirements apply to the work in this section.

1.02 WORK SPECIFIED

A. Work specified includes, but is not limited to, the following items:

1. Branch Circuits
2. Wiring Devices and Cover Plates
3. Light Fixtures
4. Fire Alarm System
5. Final Connections to Equipment

1.03 PERMITS, INSPECTIONS, AND LICENSES

A. Secured and paid for by the Contractor before actual work is started.

1.04 CODES AND STANDARDS

A. All materials used and work performed shall comply with the following where applicable:

1. NEC National Electrical Code
2. ANSI American National Standards Institute
3. ASTM American Society for Testing Materials
4. EEI Edison Electric Institute
5. IEEE Institute of Electrical and Electronics Engineers
6. IES Illuminating Engineering Society
7. IPCEA Insulated Engineering Society
8. NEMA National Electrical Manufacturers Association
9. NFPA National Fire Protection Association
10. UL Underwriters' Laboratories, Inc.

B. All materials and work shall comply with applicable state and local codes or ordinances.

C. Where the specifications call for construction in excess of minimum code requirements, this document shall take precedence over the particular code requirements.

1.05 EXAMINATION OF SITE

A. Before submitting a proposal on the work contemplated, bidder shall examine the site of the proposed work and thoroughly familiarize himself with existing conditions and limitations affecting the performance of his work.

B. No extra compensation will be allowed because of misunderstanding as to the amount of work involved nor bidders lack of knowledge of existing conditions which he could have discovered or reasonably anticipated prior to bidding.

1.06 EQUIPMENT SUBSTITUTION

A. The project is based on equipment specified.

B. If a substitute for any material is accepted, the Contractor shall be responsible for any changes in wiring, in space requirements and related equipment without additional cost to the Owner.

C. All substituted equipment must perform the functions of the equipment specified in a manner satisfactory to the Engineer.

1.07 SHOP DRAWINGS

A. Submit shop drawings consisting of catalog cuts for all equipment used on this project. Submittal shall be marked up to clearly indicate exactly what is being provided.

1.08 EQUIPMENT MANUALS

A. Provide equipment manuals for any new equipment, different than existing.

B. Provide two (three-ring vinyl binder) bound sets of equipment manuals to the Architect for his approval as to content, clarity, and neatness.

C. Manuals shall have index tabs and a table of contents. Provide mylar sheet protectors as required. Sheets larger than 8-1/2" x 11" shall be neatly folded to approximately 8" x 10" size and inserted into clear, 8-1/2" x 11", 3-hole punch envelope jackets.

D. Provide the following information for all electrical equipment furnished and installed under this contract.

1. Installation instructions.
2. Test reports and procedures.
3. Operation instructions
4. Maintenance instructions.
5. Repair and troubleshooting instructions.
6. Spare parts identification list.
7. Local service organizations mailing address, manager's name, and telephone number.

PART 2 - PRODUCTS

2.01 RACEWAYS

A. Steel conduit (rigid, IMC, and EMT) shall be galvanized, inside and outside.

B. Flexible conduit in dry locations shall be spirally wound galvanized steel.

C. Aluminum Type AC or MC cable shall not be used without prior written authorization.

2.02 BOXES AND FITTINGS

A. Boxes for dry interior work shall be code gauge galvanized stamped sheet metal and shall be sized to meet code requirements.

B. Fittings for rigid steel conduit shall be cast ferrous alloy with threaded hubs.

2.03 WIRE AND CABLE

A. Conductors with type THW, THWN, XHHW, or THHN.

B. 600-volt insulation shall be used unless otherwise specified.

C. All conductors shall be copper.

D. Metal clad cable shall be a factory assembly of one or more conductors enclosed in a metallic sheath. Conductors and insulation shall conform to the requirements for single conductor insulated wire. Sheath shall consist of a spirally wrapped galvanized steel sheath with a Code Gauge integral green insulated ground wire.

2.04 WIRING DEVICES AND COVERPLATES

A. Receptacles shall meet the latest applicable Federal Specification W-C-596 and rated 20 amperes at 125 volts.

1. Receptacles shall be Hubbell 5362, Leviton CR20-W, or approved equal by Cooper, General Electric, or Pass and Seymour.

B. GFCI receptacles shall be Leviton #6398 or approved equal by Hubbell or Cooper.

C. Coverplates shall be: Match existing.

D. Receptacles, switches, and coverplates shall be color match nearby receptacle devices in the room.

E. Submit shop drawings.

2.16 LIGHT FIXTURES

A. Existing Fixtures

1. Relocate existing fixtures as shown on plans.
2. Contact Architect and Engineer about any unusable fixtures.
3. Replacement fixtures shall match existing.

2.21 FIRE ALARM SYSTEM

A. Revise the existing fire alarm system as indicated on the drawings.

PART 3 - EXECUTION

3.01 DEMOLITION

A. Unless noted otherwise, demolition plan shows work to be removed.

B. Remove surface mounted devices and conduit. Remove unused wiring back to its source or the nearest outlet box where the wiring is still in use.

C. Maintain service to devices and/or equipment still in use.

D. Provide blank plates on abandoned flush outlets, and correct panelboard schedules.

3.02 CUTTING AND PATCHING

A. All cutting and patching necessary to install any work shall be carefully done under the direction of the Architect. Damage caused through neglect of this clause shall be made good by this Contractor.

3.03 FIRE RATED BARRIERS

A. The Contractor is responsible for maintaining the integrity of all fire rated barriers (walls, floors, etc.) penetrated by conduit, boxes, etc. installed under Division 16000, to the satisfaction of the Architect.

B. The following procedures shall be used as dictated by project conditions:

1. Conduit penetration of floor slabs or concrete walls (poured or block) - Sleeve or core drill floor or wall, install conduit and seal penetration with sealing system capable of passing a three-hour test per ASTM EB14 (UL 1479). System shall be 3M brand fire barrier system 7904 or equal.
2. Conduit penetration of sheet rock walls - Cut opening in wall, install conduit and plaster opening closed.
3. Wireway penetration of walls - Same materials as for conduit penetration of concrete walls and floors.

3.04 ROUGH-IN

A. The Contractor shall confirm exact rough-in location and dimensions for connection to electrical items furnished by others. Shop drawings shall be secured from those furnishing equipment.

B. Verify exact location and/or mounting height of device openings on (1) perimeter walls where baseboard heating is to be installed, (2) above or adjacent to casework, (3) above backsplash, (4) electric water cooler locations, (5) tile wainscot, and (6) similar locations.

3.05 RACEWAY

A. Rigid steel conduit or IMC shall be used for all exterior conduit above ground, in wet locations, in concrete slabs, or underground.

B. Standard plastic conduit with code gauge ground wire may be used for all conduit buried in concrete slabs or underground and encased in concrete.

C. Electrical metallic tubing shall be used in dry interior locations.

D. Flexible metallic electrical conduit may be used in accordance with the National Electrical Code.

E. All raceway shall be securely fastened in position with rust-proofed steel straps, clamps, hangers, and trapeze as applicable. Raceway supports shall be of the type designed for electric raceway. Perforated iron strap and/or iron wire is not approved and shall not be used anywhere on the project.

F. Exposed conduit and raceway shall be run straight and true with the building lines.

G. Watertight fittings shall be used where conduit is to be embedded in concrete and in damp locations.

H. Minimum size conduit shall be 1/2" with a maximum fill of 25%.

I. Seal all conduit penetrations of smoke or fire rated walls or floors with intumescent type fire barriers, 3M or equal.

J. Seal all conduits where they pass through exterior walls and where they enter exterior fixtures.

3.06 BOXES AND FITTINGS

A. Boxes and fittings shall be securely fastened in place in alignment with building elements.

B. Boxes in ceilings shall be supported with channel or bar hangers securely fastened to the ceiling framework.

3.07 WIRE AND CABLE

A. Spliced joint for #10 wire and smaller shall be made by use of U.L. approved pressure connectors, 3M "Scotchlock, Ideal "Wing Nut", or approved equal. All taps and terminations for wire #8 and larger shall be made with solderless connectors and solderless lugs. Any splice requiring tape shall be wrapped with a minimum of two half-lapped layers of 3M "Scotch" electrical tape #33 or #88.

B. All taps and splices for wire #8 and larger shall be made with irreversible, high-pressure connectors.

C. Wires shall not be drawn into conduit until the conduit system is complete and has been thoroughly swabbed out. Wires shall be drawn into conduit in such a manner as to avoid injury to insulation or conductor.

D. Aluminum wire shall not be used for connections to vibrating equipment (e.g. - motors) nor chillers (cooling equipment).

E. MC cable may be used for branch circuits where concealed.

3.08 TELEPHONE AND DATA CABLE

A. Provide a cable from each telephone or data outlet to the telephone equipment room or computer server room, with a 12' coiled length at the end.

B. Provide a 1" empty conduit between the computer server and the telephone equipment. Verify exact location with Owner.

3.09 WIRING DEVICES

A. Switches and receptacles shall be installed straight and true with the building lines. Receptacles shall be mounted 18 inches to center above the floor in finished areas unless indicated otherwise. Switches shall be mounted 48 inches to center above the floor unless indicated otherwise. Receptacles in unfinished areas shall be mounted 48 inches to center above the floor unless indicated otherwise.

B. Engrave coverplates where indicated. Engraving shall be by a craftsman skilled in the trade. Characters shall be a minimum of 1/4" high and filled in with black enamel paint.

3.10 LIGHT FIXTURES

A. Fixtures shall be firmly supported from structural members of the building such as joists, beams, purlins, walls, or ceiling, etc.. Metal deck is not a structural member.

B. Coordinate fixture hanging with other crafts to avoid interferences and to provide symmetry with ceiling tile and structural members.

3.11 IDENTIFICATION LABELS

A. Black-white-black, laminated 1/8" thick plastic plates attached with self-tapping screws of suitable adhesive, characters shall be 1/2" high (cut through the black to show the white of the plate) and centered symmetrically on the plates.

B. Provide labels as specified herein. Labels shall describe item(s) controlled.

C. Labels shall be similar and equal to Seton Nameplate Corporation, New Haven, Connecticut, or Trophy House, Minneapolis, Minnesota.

3.12 SERVICE INTERRUPTIONS

A. Schedule all interruptions of electric power to the building and/or to areas of the building with the Owner's representative. Interruptions shall be scheduled to minimize the impact on the Owner and his operations.

B. After service has been restored following an interruption, the Electrical Contractor shall inspect all areas affected by the interruption and shall be responsible that all automatically controlled electrically operated equipment is returned to the same operating condition which existed prior to the interruption.

3.13 CLEAN-UP

A. When the electrical work is complete, the Contractor shall thoroughly clean all panels, fixtures, switches, plates, receptacles, equipment, etc., installed as part of the contract. The Contractor shall clean up and remove from the job site all dirt and debris due to his operations. All construction tools and equipment shall be removed from the job site.

END OF ELECTRICAL

292 DESIGN GROUP
3533 E. LAKE STREET MINNEAPOLIS, MN 55406

Nelson-Rudie & Associates, Inc.
Structural - Mechanical - Electrical
Consulting Engineers
9100 49th Ave. North
Minneapolis, MN 55428
Tel: (763) 367-7600
Fax: (763) 367-7601

I hereby certify this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA

Jeffery A. Piehl

Date: 03.11.2022 Reg. No: 43926

Revisions

CITY OF SHAKOPEE

CC MEETING ROOMS

ELECTRICAL SPECIFICATIONS

Project number	22-020
Date	03.11.2022
Drawn by	SJG
Checked by	JAP

E500

Scale

3/21/2022 1:47:32 PM