INTERIORBUILDING REVATIONS

SIDNEY ELKS LODGE

I, Joseph R. Hewgley, Jr. am the Coordinating Professional on the Interior Renovations at the Sidney Elks Building

ARCHITECT
JOSEPH R. HEWGLEY, JR.
A-1455
STATE OF NEBRASKA

SCHEDULE OF SHEETS

ACHITECTURAL

A001	ARCHITECTURAL GENERAL NOTES
D101	BASEMENT/FIRST FLOOR DEMO PLAN
D102	2ND/3RD FLOOR DEMO PLAN
A101	BASEMENT/FIRST FLOOR PLAN
A102	2ND/3RD FLOOR PLAN
A201	EXTERIOR ELEVATIONS
A601	DOOR DETAILS & SCHEDULES

MECHANICAL

M001	MECHANICAL SYMBOLS & NOTES
M002	MECHANICAL SPECIFICATIONS
MD100	BASEMENT MECHANICAL DEMO PLAN
MD101	LEVEL 1 MECHANICAL DEMO PLAN
MD102	LEVEL 2 MECHANICAL DEMO PLAN
M100	BASEMENT HVAC PLAN
M101	LEVEL 1 HVAC PLAN
M102	LEVEL 3 HVAC PLAN
M501	MECHANICAL DETAILS
M701	MECHANICAL SCHEDULES

PLUMBING

PD101	BASEMENT PLUMBING DEMO PLAN
PD102	LEVEL 1 PLUMBING DEMO PLAN
PD103	LEVEL 2 PLUMBING DEMO PLAN
P101	BASEMENT PLUMBING PLAN
P102	LEVEL 1 PLUMBING PLAN
P103	ROOF PLUMBING DEMO PLAN
P301	PLUMBING FIXTURES
P501	PLUMBING DETAILS
P601	PLUMBING RISER DIAGRAMS

ELECTRICAL

E001	ELECTRICAL SYMBOLS & NOTES
E002	ELECTRICAL SPECIFICATIONS
ED001	BASEMENT ELECTRICAL DEMO PLAN
ED101	LEVEL 1 ELECTRICAL DEMO PLAN
ED102	LEVEL 2 ELECTRICAL DEMO PLAN
ED103	LEVEL 3 ELECTRICAL DEMO PLAN
E100	BASEMENT LIGHTING PLAN
E101	LEVEL 1 LIGHTING PLAN
E103	LEVEL 3 LIGHTING PLAN
E120	BASEMENT POWER & SYSTEMS PLAN
E121	LEVEL 1 POWER & SYSTEMS PLAN
E123	LEVEL 3 POWER & SYSTEMS PLAN
E501	LIGHTING SCHEDULE & NOTES
E601	ELECTRICAL ONE LINE DIAGRAMS
E701	PANEL SCHEDULES
E702	PANEL SCHEDULES

PROJECT ARCHITECT

JOSEPH R. HEWGLEY & ASSOCIATES, INC.

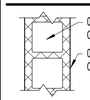
702 SOUTH BAILEY — (308) 534-4983 — NORTH PLATTE, NEBRASKA

MECHANICAL ENGINEER
FARRIS ENGINEERING
844 11TH AVE.
SIDNEY, NEBRASKA 69162
(308) 203-2222

ELECTRICAL ENGINEER
FARRIS ENGINEERING
844 11TH AVE.
SIDNEY, NEBRASKA 69162
(308) 203-2222

PARTITION TYPES

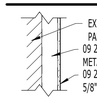
A (NOT USED)



A10	3 5/8"	4" SMOOTH FACE CMU
A11	3 5/8"	4" GROUND FACE CMU
A20	5 5/8"	6" SMOOTH FACE CMU
A21	5 5/8"	6" GROUND FACE CMU
A30	7 5/8"	8" SMOOTH FACE CMU
A31	7 5/8"	8" GROUND FACE CMU
A40	11 5/8"	12" SMOOTH FACE CMU
A41	11 5/8"	12" GROUND FACE CMU

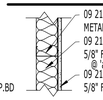
+ a = ACOUSTIC WALL: ACHIEVE **STC 55**
+ s = WALL TO RESIST THE PASSAGE OF SMOKE
+ r = RATED WALL: MEET UL ASSEMBLY **U905**

B



B00	5/8"	NO CHANCELS GYPSUM BOARD ONLY
B10	1 1/2"	7/8" 25 GA. MTL. HAT CHANNELS
B20	2 1/8"	1 1/2" 25 GA. MTL. HAT CHANNELS
B30	3 1/8"	2 1/2" 25 GA. MTL. STUDS

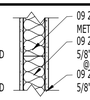
C



C10	4 1/4"	3 5/8" 25 GA. MTL. STUDS
C11	4 1/4"	ABUSE RESISTANT GYP BOARD TO 4'-0" AFF
C20	6 5/8"	6" 25 GA. MTL. STUDS
C21	6 5/8"	ABUSE RESISTANT GYP BOARD TO 4'-0" AFF

+ a = ACOUSTIC WALL
+ s = WALL TO RESIST THE PASSAGE OF SMOKE
+ e = ADDITION OF EXTERIOR METAL PANEL, VAPOR BARRIER, 5/8" OSB (8 7/8" THICK)

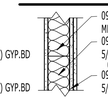
D



D10	4 7/8"	3 5/8" 25 GA. MTL. STUDS
D11	4 7/8"	ABUSE RESISTANT GYP BOARD TO 4'-0" AFF
D20	7 1/4"	6" 25 GA. MTL. STUDS
D21	7 1/4"	ABUSE RESISTANT GYP BOARD TO 4'-0" AFF
D30	9 1/4"	8" 25 GA. MTL. STUDS
D31	9 1/4"	ABUSE RESISTANT GYP BOARD TO 4'-0" AFF

+ a = ACOUSTIC WALL: ACHIEVE **STC 45**
+ s = WALL TO RESIST THE PASSAGE OF SMOKE
+ r = RATED WALL: MEET GA ASSEMBLY **WP1072**

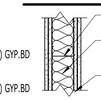
E



E10	5 1/2"	3 5/8" 25 GA. MTL. STUDS
E20	7 7/8"	6" 25 GA. MTL. STUDS

+ a = ACOUSTIC WALL: ACHIEVE **STC 53**
+ s = WALL TO RESIST THE PASSAGE OF SMOKE
+ r = RATED WALL: MEET GA ASSEMBLY **WP1052**

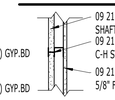
F



F10	6 1/8"	3 5/8" 25 GA. MTL. STUDS
F20	8 1/2"	6" 25 GA. MTL. STUDS

+ a = ACOUSTIC WALL: ACHIEVE **STC 59**
+ s = WALL TO RESIST THE PASSAGE OF SMOKE
+ r = RATED WALL: MEET GA ASSEMBLY **WP1522**

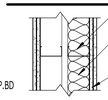
G



G10	3 1/8"	2 1/2" C-H STEEL STUDS

+ r = RATED WALL: MEET GA ASSEMBLY **WP7008**

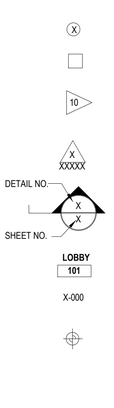
H

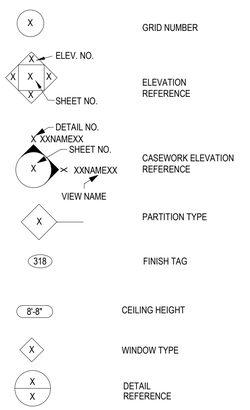


H10	10 3/4"	3 5/8" 25 GA. MTL STUDS EA. SIDE

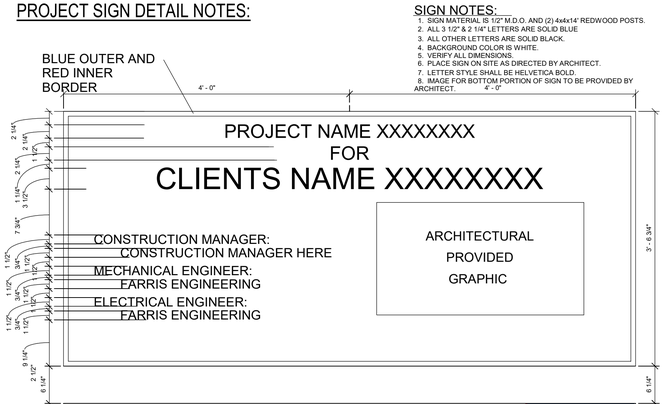
+ a = ACOUSTIC WALL: ACHIEVE **STC 65**
+ s = WALL TO RESIST THE PASSAGE OF SMOKE
+ r = RATED WALL: MEET GA ASSEMBLY **WP5060**

SYMBOLS:





PROJECT SIGN DETAIL NOTES:



SIGN NOTES:

1. SIGN MATERIAL IS 1/2" M.D.O. AND (2) 4x4x14' REDWOOD POSTS.
2. ALL 3 1/2" & 2 1/4" LETTERS ARE SOLID BLUE
3. ALL OTHER LETTERS ARE SOLID BLACK.
4. BACKGROUND COLOR IS WHITE.
5. VERIFY ALL DIMENSIONS.
6. PLACE SIGN ON SITE AS DIRECTED BY ARCHITECT.
7. LETTER STYLE SHALL BE HELVETICA BOLD.
8. IMAGE FOR BOTTOM PORTION OF SIGN TO BE PROVIDED BY ARCHITECT.

JOSEPH R. HEWGLEY AND ASSOCIATES INC.
"DESIGNING TODAY FOR A BETTER TOMORROW"
Member American Institute of Architects
ARCHITECTS AND PLANNERS
North Platte
702 South Bailey
P: 308.534.4983 | F: 308.534.4944
Scottsbluff
818 S. Beltline Hwy. E, Suite B
P: 308.633.3363 | F: 308.635.7807

ABBREVIATIONS:

ABV: Above
ADDL: Additional
ADH: Adhesive
AF: Above the Floor
AFF: Above Finished Floor
ALT: Alternate
APPD: Approved
APPROX: Approximate
APRVD: Approved
AVG: Average

B TO B: Back to Back
BEL: Below
BETW: Between
BLK: Block
BOT: Bottom

CAPT: Carpet
CF: Cubic Feet
CL: Centerline
CLG: Ceiling
CONC: Concrete
CTR: Center, Counter
CU. FT.: Cubic Feet
CU. YD.: Cubic Yard

DEMO: Demolition
DEPT: Department
DET: Detail
DIA: Diameter
DS: Downspout

E: East
E TO E: End to End
EA: Each
ELEV: Elevation OR Elevator
EST: Estimate

F: Degrees Fahrenheit, Fuse
F TO F: Face to Face
FA: Fire Alarm, Fresh Air
FE: Fire Extinguisher
FEC: Fire Extinguisher Cabinet
FF: Finished Floor
FFE: Finished Floor Elevation
FF&E: Fixtures, Furnishings & Equipment
FIX: Fixture
FLR: Floor
FP: Fireproof
FRPF: Fireproof
FUR: Furred
FURN: Furnish, Furniture

GA: Gauge, Gage
GL: Glass
GYP: Gypsum
GYP BD: Gypsum Board

HGT: Height
HM: Hollow Metal
HVAC: Heating, Ventilating & Air Conditioning

ID: Inside Diameter
INT: Interior

JST: Joist

LB: Pound (weight)
LL: Live Load

NRC: Noise Reduction Coefficient
NTS: Not To Scale

OC: On Center
OD: Outside Diameter
OF: Outside Face
OH: Overhead
OHD: Overhead Door

PAR: Parallel
PARTN: Partition
PERIM: Perimeter
PERP: Perpendicular
PNT: Paint

QTY: Quantity

RM: Room

SCHED: Schedule
SF: Square Foot
SIM: Similar
SS: Stainless Steel
STRG: Storage
SURF: Surface
SY: Square Yard
SYM: Symmetrical

T&B: Top and Bottom
T&G: Tongue & Groove
THK: Thick, Thickness
THRU: Through

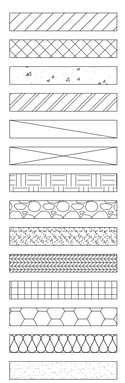
UH: Unit Heater
UNFIN: Unfinished
UNO: Unless Noted Otherwise

VCT: Vinyl Composition Tile
VOL: Volume

W: Width
W/: With
W/O: Without
WC: Watercloset
WD: Wood
WIN: Window

YD: Yard
YR: Year

MATERIALS LEGEND:



PARTITION NOTES:

1. INTERIOR WALL TYPES ARE NOTED ON THE FLOOR PLANS WITH THE FOLLOWING SYMBOL:

a = ACOUSTIC CONDITION. PARTITION TO MEET ACOUSTIC RATING AND ACOUSTIC STANDARDS AS DEFINED BY THE SPECIFICATIONS AND ACOUSTIC NOTES AND DETAILS ON THIS SHEET.
s = SMOKE CONDITION. PARTITION TO RESIST THE PASSAGE OF SMOKE AND INCORPORATE SMOKE

NOTES AND DETAILS ON THIS SHEET.
r = RATED CONDITION. PARTITION TO MEET FIRE RATING AS INDICATED ON CODE PLAN AND INCORPORATE FIRE RATING NOTES AND DETAILS ON THIS SHEET.

2. REFERENCE CODE PLAN FOR ALL SMOKE AND FIRE RATED PARTITION LOCATIONS.

3. REFERENCE REFLECTED CEILING PLANS FOR PARTITION HEIGHT. PARTITIONS ARE SHADED IN THE FOLLOWING MANNER:

NO SHADING INDICATES WALL EXTENDS 4" MIN ABOVE FINISH CEILING.

SHADING INDICATES WALL EXTENDS TO DECK (OR THROUGH SECOND FLOOR WHERE OCCURS).

4. REFERENCE FINISH PLANS FOR LOCATION OF RECESSED CARPET BASE, TILE, FRP, AND OTHER SPECIAL DETAIL AND FINISH CONDITIONS.

5. PROVIDE 1/2" PLYWOOD BACKING BEHIND GYP BOARD ON WALLS SCHEDULED TO RECIEVE SHELVING ON STANDARDS AND BRACKETS, (TYP).

6. BREAK METAL IS REQUIRED AT DECK WHERE IT IS EXPOSED. BREAK METAL SHALL BE 4" x 4" x 20 GA. UNO AND FASTENED WITH SCREWS TO DECK @ 2'-0" O.C.

7. REFERENCE DETAILS ON THIS SHEET FOR TOP OF WALL CONDITIONS.

GENERAL SITE NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND REQUIREMENTS OF THE DETAILED SPECIFICATIONS.
2. THE LOCATION OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES ARE APPROXIMATE OR MAY BE INDICATED IN THESE PLANS. UNDERGROUND FACILITIES, WHETHER INDICATED OR NOT, WILL BE LOCATED AND FLAGGED BY THE UTILITY COMPANIES AT THE REQUEST OF THE CONTRACTOR. NO EXCAVATION WILL BE PERMITTED IN THE AREA UNTIL ALL SUCH UNDERGROUND UTILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. IT SHALL BE THE RESPONSIBILITY O THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES, PAVEMENT, AND OTHER IMPROVEMENTS. ANY DAMAGE TO THE EXISTING UTILITIES AND/ OR PAVED STREETS CAUSED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL CALL FOR THE EXISTING UTILITY LOCATION STAKES 48 HOURS PRIOR TO DIGGING, CALL ALL APPLICABLE UTILITY COMPANIES.
4. ALL DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE HAULED OFF SITE AND DISPOSED OF PROPERLY.
5. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES, WARNING SIGNS, LIGHTS, AND FLAG MAN AS PER THE CITY WORK REQUIREMENTS. COST SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
6. PROTECT BY WHATEVER MEANS REQUIRED ALL FENCES, SIGNS, STRUCTURES, DRIVES, SIDEWALKS, STREETS, BUSHES, TREES, ETC. WHICH ARE NOT DESIGNATED FOR REMOVAL, OR ARE OUTSIDE THE LIMITS OF CONSTRUCTION.
7. PROVIDE POSITIVE DRAINAGE AT ALL TIME WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO POND IN EXCAVATION AREAS, AND MAINTAIN ALL EXISTING DRAINAGE PATTERS. A DIAMOND EDGE SAW BLADE SHALL BE USED FOR CUTTING ALL REQUIRED CONCRETE REMOVAL
8. THE CONTACTOR SHALL CONSTRUCT ALL PAVEMENT TO CONFORM WITH THE CORRECT LINES, AND FINISHED GRADES AS INDICATED ON THE PLANS. NO PONDING OF WATER WILL BE ALLOWED.
9. THE CONTRACTOR SHALL PAY ALL PERMIT FEES AND OTHER ASSOCIATED FEES REQUIRED TO SUCCESSFULLY COMPETE THE PROJECT. ALL REMOVED ITEMS ARE TO BE OFFERED TO THE OWNER BEFORE THE CONTRACTOR TAKES OWNERSHIP.
10. ALL DISTURBED VEGETATION GROUND COVER SHALL BE SODDED AND ANY DISTURBED GRAVEL GROUND COVER SHALL BE REPLACED WITH NEW GRAVEL. CONSTRUCT ALL THE SIDEWALKS WITH A SLOP OF ¼" PER FOOT AWAY FROM THE BUILDING.
11. ALL GRADE LEVELS SHOULD SLOPE AWAY FORT EH BUILDING AT A RATE OF A ¼" PER FOOT.
12. ALL PAVED AND PARKING SLOPES SHALL NOT EXCEED A 1:12 SLOP. CONTACT ARCHITECT IF CONDITIONS WILL NOT ALLOW.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS.

LUMBER AND FRAMING NOTES:

1. PROVIDE MATERIALS IN THE QUANTITIES NEEDED FOR THE WORK SHOWN ON THE DRAWINGS, AND MEETING OR EXCEEDING THE FOLLOWING STANDARDS OF QUALITY:
2. SILL AND PLATES, AND ALL OTHER LIGHT FRAMING: SPRUCE-PINE-FIR OR HEM-FIR, CONSTRUCTION GRADE OR BETTER.
3. SILL, PLATES AND WOOD BLOCKING IN CONTACT WITH CONCRETE, MASONRY, ROOF INSULATION, ROOF CURBS AND ROOF PARAPETS WALLS: PRESSURE-TREATED SOUTHERN PINE, CONSTRUCTION GRADE OR BETTER; OR CALIFORNIA REDWOOD, CONSTRUCTION HEART, MIXED, OR BETTER.
4. SILL SEALER UNDER WOOD SILL PLATES ON CONCRETE AND/OR MASONRY: ONE INCH THICK OWENS-CORNING FIBERGLASS SILL SEALER OR MANVILLE SILL SEALER.
5. STUDS: SPRUCE-PINE-FIR OR HEM-FIR, STUD GRADE.
6. SOUND BOARD: ½" THICK FIBER BOARD RATED AS A SOUND BOARD, IN 4' WIDTHS.
7. HEADERS AND BEAMS: HEM-FIR #2 OR BETTER, UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS.
8. LAMINATED WOOD BEAMS (NOTED AS "LVL" ON DRAWINGS) GANG-LAM LVL AS MANUFACTURED BY LOUSIANA-PACIFIC, OR EQUAL.
9. PLYWOOD FLOOR UNDERLAYMENT: APA 160C RATED STURD-I-FLOOR, EXPOSURE 1 (EXTERIOR GLUE), 23/32" MIN. THICKNESS, TONGUE AND GROOVE.
10. ROOF AND WALL SHEATHING: APA 32/16 RATED SHEATHING, EXPOSURE 1 (EXTERIOR GLUE), 5/8" MINIMUM THICKNESS, 4 PLY PLYWOOD (NO WAFERBOARD OR PARTICALBOARD ALLOWED).
11. INSULATING WALL SHEATHING (APPLY OVER WALL SHEATHING): ½" EXTRUDED POLYSTYRENE R-2.5 (DOW "BLUEBOARD" OR FOAMULA 250 SE)
12. ROOF UNDERLAYMENT: ASPHALT SATURATED FELT, NON-PERFORATED, 15#, CONFORMING TO ASTM D2226
13. JOIST HANGERS, WOOD CONNECTORS, ETC. SIMPSON CO., OR TECO, OR SILVER METAL PRODUCTS. PROVIDE IN SIZES AND TYPES REQUIRED.
14. STEEL HARDWARE: ASTM A 7 OR A 36 (USE GALVANIZED AT EXTERIOR LOCATIONS)
15. MACHINE BOLTS. ASTM A 307
16. LAG BOLTS: FED. SPEC. FF-B-561
17. NAILS: COMMON, EXCEPT AS NOTED OR REQUIRED FED. SPEC. FF-N-1-1 (USE GALVANIZED AT EXTERIOR LOCATINS)
18. WOOD PRESERVATIVE: WOLMANIZED PROCESS BY KOPPERS CO., INC.
19. ROOF VENTS: PROVIDE IN SIZES REQUIRED TO PROVIDE A FREE VENTILATING AREA OF 1/150 OF THE HORIZONTAL CEILING AREA. POVIDE GALVANIZED METAL ROOF VENTS WITH A MESH INSECT SCREEN, LAMONCO #750.

GENERAL PROJECT NOTES:

1. CONTRACTOR SHALL COMPLY WITH NATIONAL, STATE, & LOCAL CODES & NATIONAL, STATE & LOCAL ADA CODES.
2. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE, AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
3. ALL CONTRACTORS SHALL WORK FROM THE ENTIRE SET OF DRAWINGS.
4. IT IS THE RESPONSIBILITY THE GENERAL CONTRACTOR TO SUPPLY ANY SUBCONTRACTORS, SUPPLIERS, ETC. OF ALL REVISIONS OR CHANGES THROUGHOUT THE DURATION OF THE PROJECT.
5. SCHEDULING OF WORK SHALL BE AS OUTLINE IN SUPPLEMENTARY CONDITIONS
6. ALL LAWS, ORDINANCES, REGULATIONS, ORDERS, MANUALS, MANUFACTURES SPECIFICATIONS, OR PUBLICATIONS, WHERE OR NOT SPECIFICALLY MADE A PART OF OR INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS SHALL BE THE LATEST EDITION UNLESS SPECIFICALLY NOTED OTHERWISE.
7. ALL REFERENCE TO MANUFACTURES DIRECTIONS, SPECIFICATION OR RECOMMENDATION SHALL REFER TO THEIR REFERENCED MANUFACTURES CURRENT PUBLISHED MANUALS OR PUBLICATIONS. THESE PUBLICATIONS ARE HEREBY MADE A PART OF AND INCORPORATED BY THIS REFERENCES IN THE PROJECT SPECIFICATIONS.
8. MANUFACTURER'S DIRECTIONS- MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, AND CONDITIONED AS PER THE MANUFACTURE'S PRINTED DIRECTIONS.
9. EXCEPT AS OTHERWISE APPROVED BY THE ARCHITECT, DETERMINE AND COMPLY WITH MANUFACTURERS' RECOMMENDATIONS ON PRODUCT HANDLING, STORAGE, AND PROTECTION.
10. COOPERATION – ALL SUBCONTRACTORS SHALL COORDINATE THEIR WORK WITH ALL ADJACENT WORK AND WITH OTHER TRADES SO AS TO FACILITATE THE GENERAL PROGRESS OF THE WORK. EACH TRADE SHALL AFFORD ALL OTHER TRADES EVERY REASONABLE OPPORTUNITY FOR THE INSTALLATION OF THEIR WORK AND FOR THE STORAGE OF THEIR MATERIALS.
11. IT SHALL BE CLEARLY UNDERSTOOD THAT ALL WALLS, FLOORS, OR OTHER PORTIONS OF THE BUILDING SHALL BE "FINISHED SURFACES" I.E. PAINTED, CARPETED, ETC., UNLESS SPECIFICALLY NOTED OTHERWISE. ALL PATCHING OR REPLACEMENT OF WALLS, FLOORS, ETC. OR OTHER PORTION OF THE BUILDING SHALL BE FIGURES AS "FINISHED SURFACES" I.E. PAINTED, CARPETED, ETC., TO MATCH THE ADJACENT FINISH UNLESS SPECIFICALLY NOTED OTHERWISE.
12. PROTECT FINISHED SURFACES, INCLUDING JAMBS, AND SOFFITS OF OPENING USED AS PASSAGEWAYS, THROUGH WHICH EQUIPMENT AN MATERIALS ARE HANDLED.
13. PROVIDE PROTECTION FOR FINISHED FLOOR SURFACES IN TRAFFIC AREAS PRIOR TO ALLOWING EQUIPMENT OR MATERS TO BE MOVED OVER SUCH SURFACES.
14. MAINTAIN FINISHED SURFACES CLEAN, UNMARRED, AND SUITABLY PROTECTED UNTIL ACCEPTED BY THE OWNER.
15. PROVIDE CONCRETE SPLASH BLOCKS AT ALL DOWNSPOUTS.
16. ALL DIMENSIONS ARE TO THE CENTER OF STUD WALLS, THE EXTERIOR OF MASONRY WALLS, THE CENTER OF DOORS, AND EDGES OF WINDOWS UNLESS NOTED OTHERWISE.

GENERAL DEMOLITION NOTES:

1. THE ARCHITECT AND SUB-CONSULTANTS HAVE MADE EFFORTS TO CONFIRM AND VERIFY BUILDING CONDITIONS WHICH WILL AFFECT THE QUALITY, NATURE, AND PERFORMANCE OF THE WORK. THE EXISTING INFORMATION ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED WITH THE MATERIALS THE ARCHITECT AND CONSULTANTS WERE GIVEN.
2. THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS ARE INTENDED TO ASSIST THE CONTRACTOR IN UNDERSTANDING WHAT IS TO BE THE END RESULT OF THE PROJECT.
3. THE CONTRACTOR SHALL VERIFY EXISTING CONDITION PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO REMOVAL OF MATERIAL OR EQUIPMENT NOT INDICATED ON THE DRAWING TO BE REMOVED.
4. EXACT LOCATIONS, LEVELS, MEASUREMENTS, DISTANCES, ETC. WILL BE GOVERNED BY CONDITIONS AT THE JOB SITE. CONTRACTORS SHALL FIELD VERIFY ALL EXISTING CONDITIONS WHICH AFFECT WORK TO BE PERFORMED AS A PART OF THE PROJECT. UNUSUAL CONDITIONS OR DISCREPANCIES ENCOUNTERED DURING DEMOLITION SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BRING TO THE ATTENTION OF THE ARCHITECT ANY CONDITIONS WHICH WILL NOT PERMIT CONSTRUCTION ACCORDING TO THE INTENTIONS OF THESE DOCUMENTS.
5. IT IS THE RESPONSIBILITY OF THE ARCHITECT TO PROVIDE DETAILS AND OR DIRECTIONS REGARDING DESIGN INTENT WHERE IT IS ALTERED BY EXISTING CONDITIONS.
6. HALFTONE NOTES OR LINE WORK ON PLAN INDICATE MATTER OR EQUIPMENT THAT IS EXISTING. DASHED LINE WORK ON PLANS INDICATE MATTER OR EQUIPMENT THAT IS TO BE REMOVED.
7. EXISTING SURFACE DISTURBED BY NEW CONSTRUCTION SHALL BE PATCHED AND FINISHED TO MATCH ADJACENT SURFACES.
8. REMOVAL WORK AT EXTERIOR OF BUILDING SHALL BE DONE IN SUCH A MANNER AS TO PREVENT MATERIALS FROM DAMAGING ADJACENT STRUCTURES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING STRUCTURES SURROUNDING THE CONTRACT AREA. DAMAGE TO EXISTING STRUCTURE OR EQUIPMENT SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
10. PATCH, PREPARE, AND CLEAN EXISTING CONCRETE FLOORS AS REQUIRED TO RECEIVE NEW FLOORING MATERIALS OR FINISHES.
11. PORTIONS OF CONCRETE THAT ARE TO BE REMOVED SHALL HAVE SAW CUT EDGES THAT ARE RELATIVELY SMOOTH.
12. FOR ADDITIONAL DEMOLITION, SEE STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
13. LOOSE FURNITURE (I.E. DESKS, CHAIRS, CABINETS) ARE TO BE REMOVED BY OWNER AS REQUIRED.
14. THE OWNER HAS FIRST RIGHT OF REFUSAL FOR ALL MATERIALS REMOVED. IF THE OWNER DOES NOT WANT THE ITEM THEN THE CONTRACTOR IS RESPONSIBLE FOR RECYCLING THE PRODUCT IF POSSIBLE OR PROPERLY DISPOSING OF IT.
15. ALL PATCHING AND/ OR REPLACEMENT OF ANY PORTION OF THE BUILDING OR SITE SHALL, BE THE ULTIMATE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

ALL PENETRATIONS THROUGH THE ROOF, REMOVALS OF ROOF EQUIPMENT, AND PATCHES SHALL BE DONE PER THE ROOFING MANUFACTURE'S REQUIREMENTS. MANUFACTURER SHALL BE NOTIFIED PRIOR TO ANY WORK BEING DONE ON THE ROOF. CONTRACTOR IS RESPONSIBLE FOR THE EXISTING WARRANTY NOT BEING VOIDED DUE TO THE CONTRACTORS ACTIONS.

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

ARCHITECT
JOSEPH R. HEWGLEY, JR.
A-1455
STATE OF NEBRASKA
SEAL

INTERIOR BUILDING RENOVATION

for ELKS LODGE

SIDNEY

PROJECT #: R-0421
DATE: 3/29/21
DRAWN: RDS

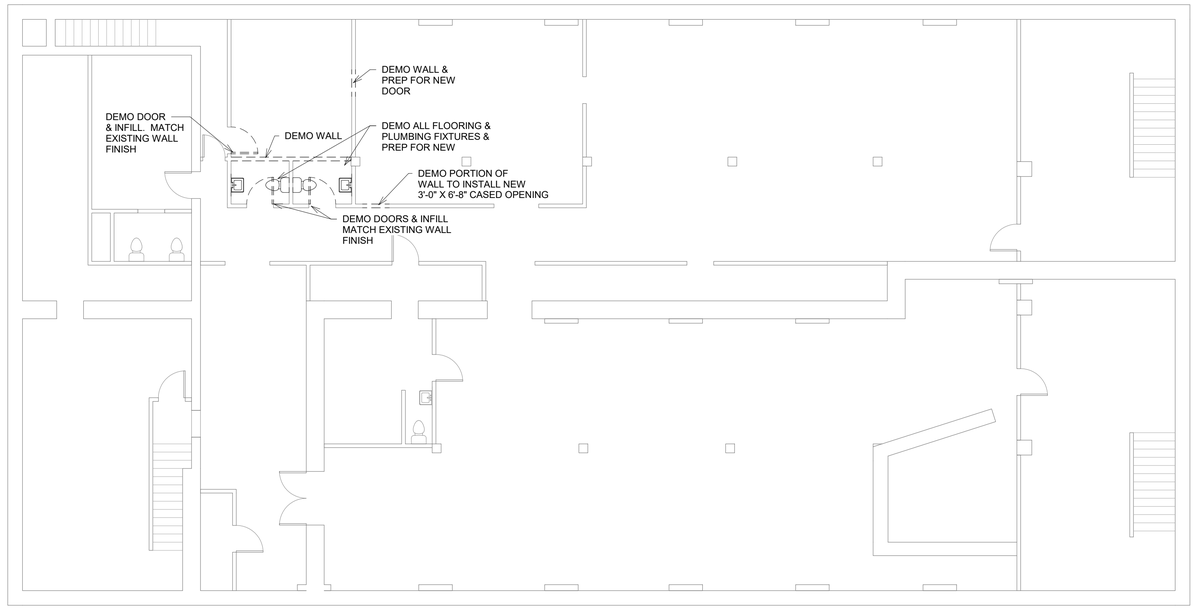
REVISIONS

DATE	DESCRIPTION

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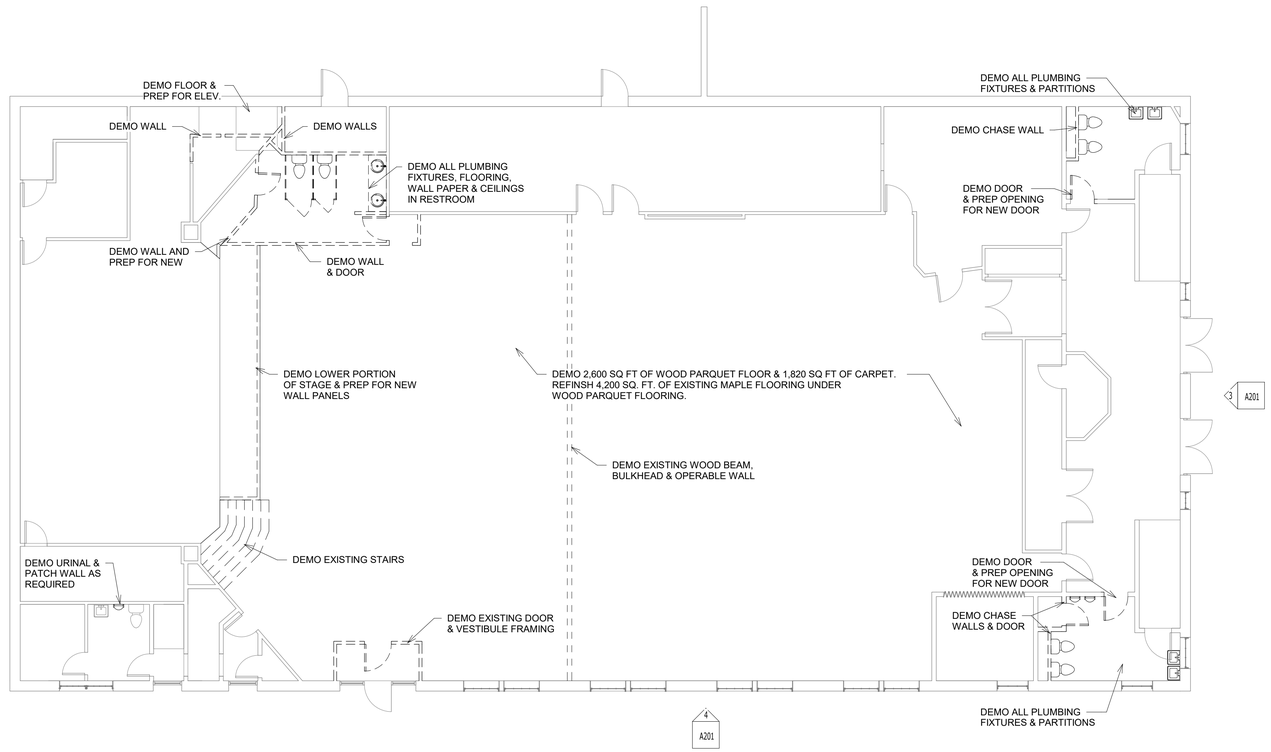
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SHEET
A001



1 BASEMENT DEMO PLAN

1/8" = 1'-0"



2 LEVEL 1 DEMO PLAN

1/8" = 1'-0"

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Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

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ARCHITECT
JOSEPH R. HEWGLEY JR.
A-1455
STATE OF NEBRASKA

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE

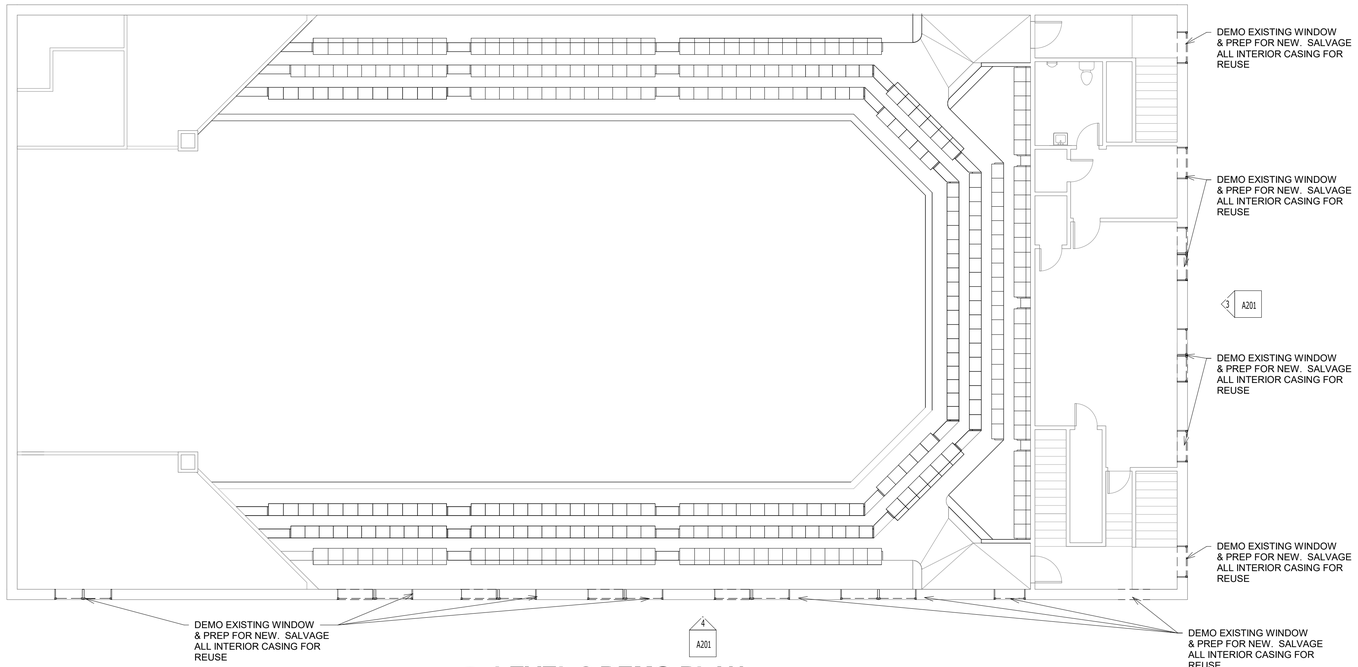
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DATE	DESCRIPTION

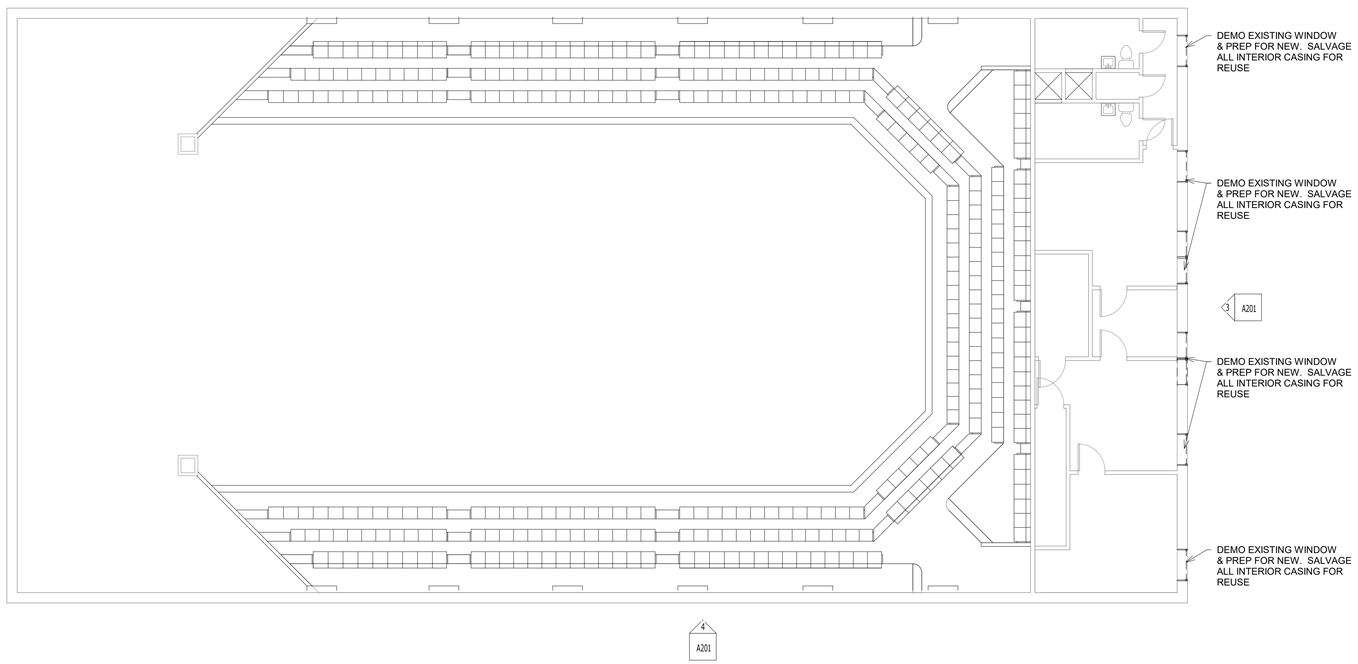
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1 LEVEL 2 DEMO PLAN
1/8" = 1'-0"



2 LEVEL 3 DEMO PLAN
1/8" = 1'-0"

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CONSTRUCTION DOCUMENTS

ARCHITECT
JOSEPH R. HEWGLEY, JR.
A-0456
STATE OF NEBRASKA

SEAL

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE

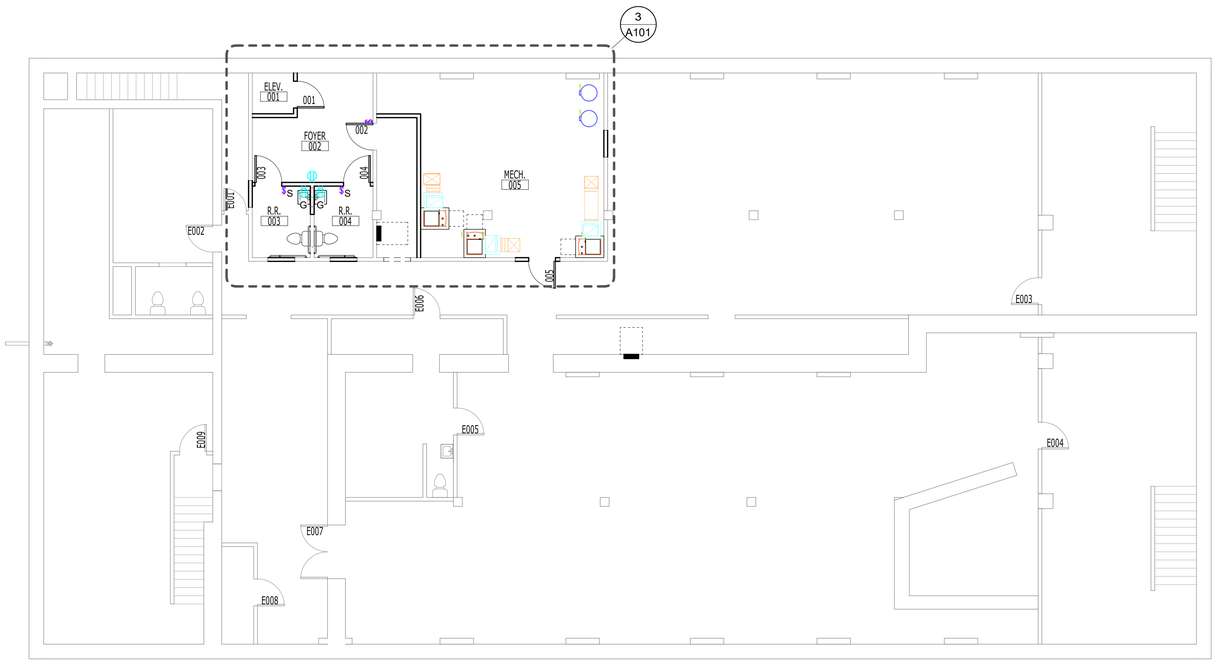
PROJECT #: R-0421
DATE: 3/29/21
DRAWN: RDS
REVISIONS

DATE	DESCRIPTION

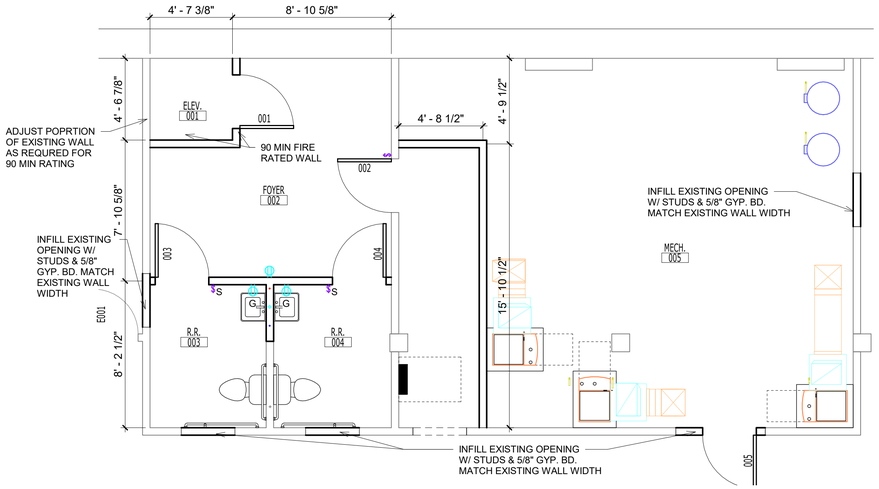
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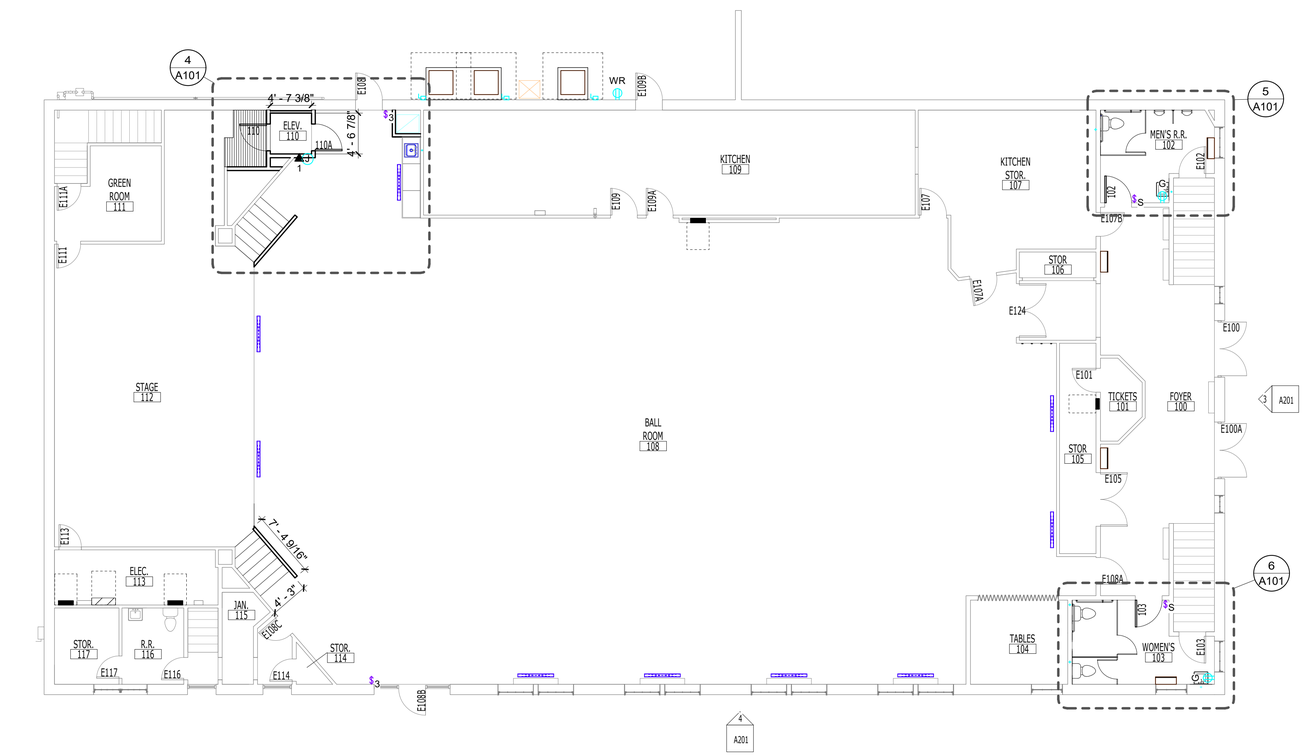
SHEET
D102



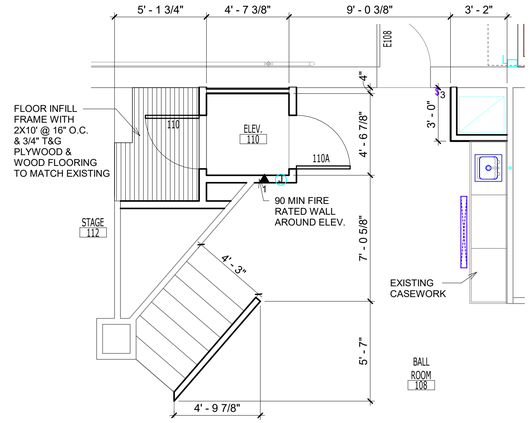
1 BASEMENT
1/8" = 1'-0"



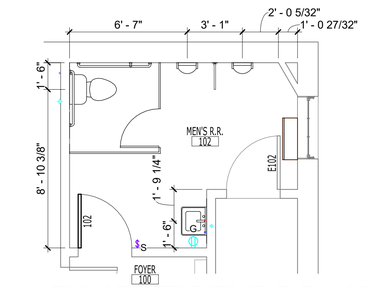
3 ENLARGED BASEMENT AREA PLAN
1/4" = 1'-0"



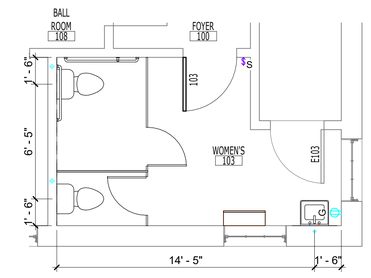
2 LEVEL 1
1/8" = 1'-0"



4 ENLARGED ELEVATOR AREA PLAN
1/4" = 1'-0"



5 ENLARGED MEN'S R.R. 102
1/4" = 1'-0"



6 ENLARGED WOMEN'S R.R. 103
1/4" = 1'-0"

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702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

ARCHITECT
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A-1455
STATE OF NEBRASKA

SEAL

INTERIOR BUILDING RENOVATION
for
SIDNEY ELKS LODGE

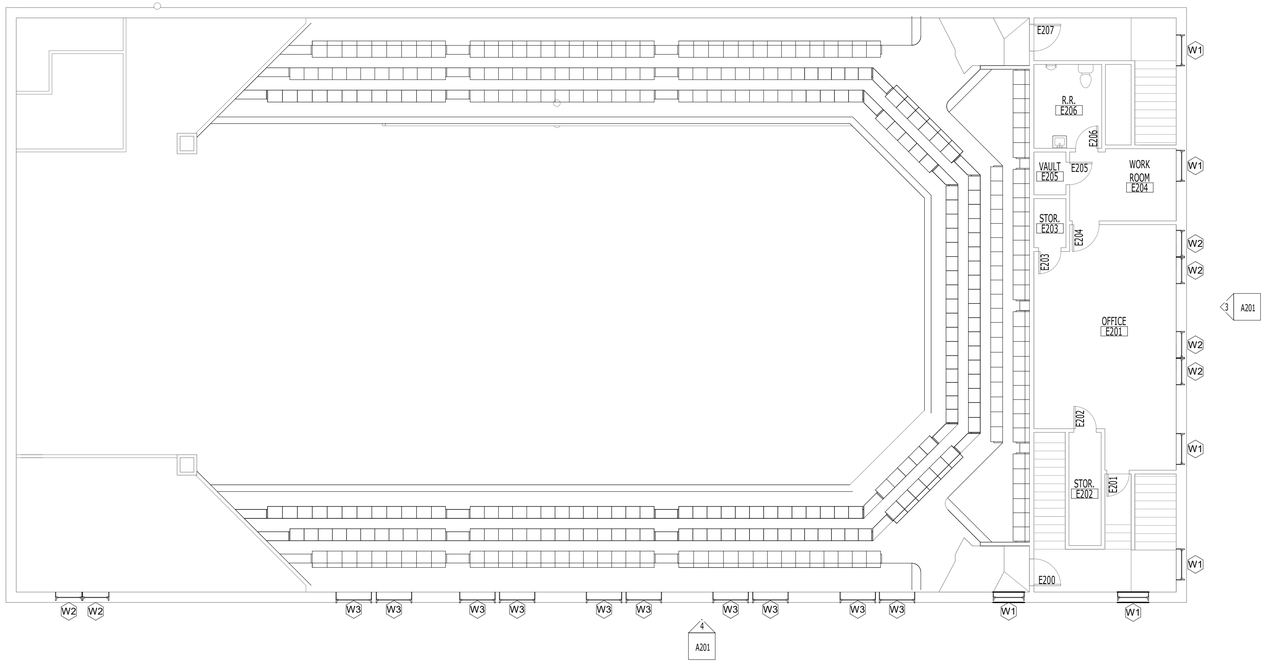
PROJECT #: R-0421
DATE: 3/29/21
DRAWN: RDS
REVISIONS

DATE	DESCRIPTION

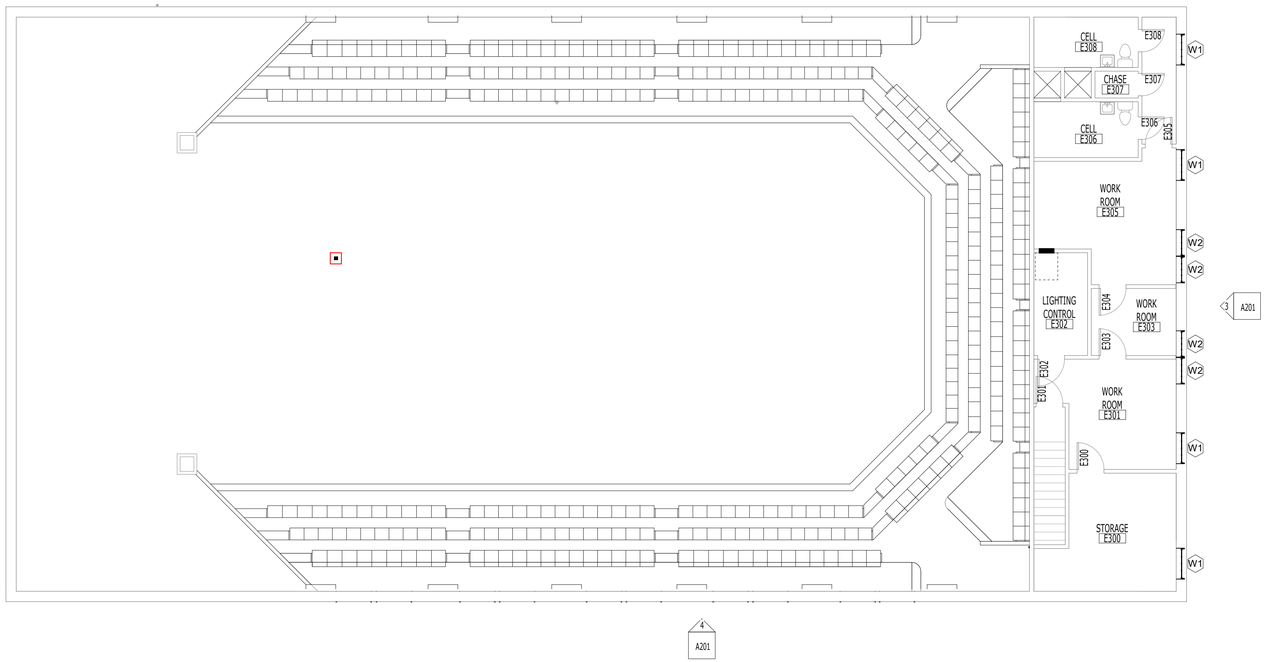
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1 LEVEL 2
1/8" = 1'-0"



2 LEVEL 3
1/8" = 1'-0"

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INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE

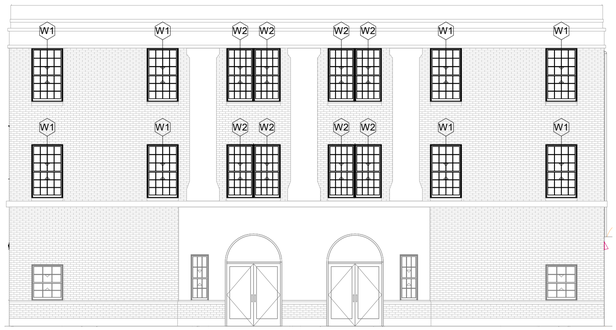
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DRAWN: RDS
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3 **SOUTH ELEVATION**
1/8" = 1'-0"



4 **WEST ELEVATION**
1/8" = 1'-0"

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Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

ARCHITECT
JOSEPH R. HEWGLEY, JR.
A-1655
STATE OF NEBRASKA

SEAL

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE

PROJECT #: R-0421
DATE: 3/29/21
DRAWN: RDS
REVISIONS

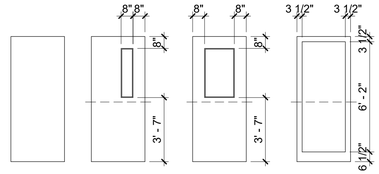
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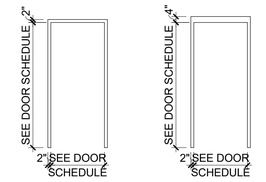
SHEET
A201

DOOR SCHEDULE											
MARK	WIDTH	HEIGHT	HARDWARE	DOOR MATERIAL	DOOR TYPE	DOOR FINISH	FRAME MATERIAL	FRAME TYPE	FRAME FINISH	FIRE RATING	COMMENTS
001	3' - 0"	6' - 8"		STEEL	N	PAINT	STEEL		PAINT	90 MIN	DOOR & HARDAWARE PROVIDED BY ELEVATOR LIFT COMPANY
002	3' - 0"	6' - 8"		WD	F	STAIN	HM	1	PAINT		
003	3' - 0"	6' - 8"		WD	F	STAIN	HM	1	PAINT		
004	3' - 0"	6' - 8"		WD	F	STAIN	HM	1	PAINT		
005	3' - 0"	6' - 8"		WD	N	STAIN	HM	1	PAINT		
102	3' - 0"	6' - 8"		WD	2 PANEL	STAIN	WOOD	2	STAIN		
103	3' - 0"	6' - 8"		WD	2 PANEL	STAIN	WOOD	2	STAIN		
110	3' - 0"	6' - 8"		STEEL	N	PAINT	STEEL		PAINT	90 MIN	DOOR & HARDAWARE PROVIDED BY ELEVATOR LIFT COMPANY
110A	3' - 0"	6' - 8"		STEEL	N	PAINT	STEEL		PAINT	90 MIN	DOOR & HARDAWARE PROVIDED BY ELEVATOR LIFT COMPANY



F N HG FG

1 DOOR ELEVATION SCHEDULE
1/4" = 1'-0"

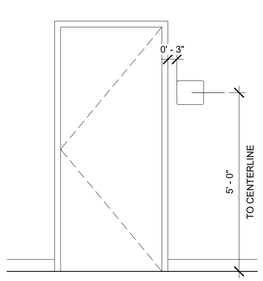


1 2

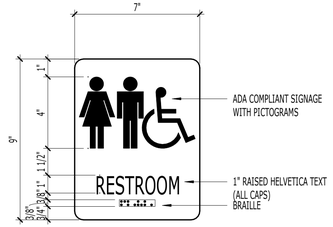
2 FRAME SCHEDULE
1/4" = 1'-0"

WINDOW SCHEDULE								
TYPE MARK	MANUFACTURER	MODEL	WIDTH	HEIGHT	MATERIAL	COLOR	GLASS TYPE	COMMENTS
W1	Pella	Reserve Double Hung	3' - 6"	6' - 0"	WD/CLAD	PUTTY	LOW-E	12 PANEL TRADITIONAL GRILLS
W2	Pella	Reserve Double Hung	3' - 0"	6' - 0"				
W3	Pella	Reserve Double Hung	4' - 0"	6' - 0"	WD/CLAD	PUTTY	LOW-E	12 PANEL TRADITIONAL GRILLS

FINISH SCHEDULE									
ROOM NUMBER	NAME	FLOOR	BASE	WALLS				Ceiling Finish	COMMENTS
				NORTH	EAST	SOUTH	WEST		
001	ELEV.	LVT	VB	PAINT	PAINT	PAINT	PAINT		
002	FOYER	LVT	VB	PAINT	PAINT	PAINT	PAINT	ACT	
003	R.R.	LVT	VB	PAINT	PAINT	PAINT	PAINT	ACT	
004	R.R.	LVT	VB	PAINT	PAINT	PAINT	PAINT	ACT	
005	MECH.								
100	FOYER				PAINT		PAINT		
101	TICKETS								
102	MEN'S R.R.			PAINT	PAINT	PAINT	PAINT		
103	WOMEN'S			PAINT	PAINT	PAINT	PAINT		
104	TABLES								
105	STOR								
106	STOR								
107	KITCHEN STOR.								
108	BALL ROOM	REFINISHED MAPLE/LVT	VB	PAINT	PAINT	PAINT	PAINT		REFINSH 4,200 SQ FT OF EXISTING MAPLE FLOORING & INSTALL 1,000 SQ. FT. OF LVT
109	KITCHEN								
110	ELEV.								
111	GREEN ROOM								
112	STAGE								
113	ELEC.								
114	STOR.								
115	JAN.								
116	R.R.			PAINT	PAINT	PAINT	PAINT		
117	STOR.								

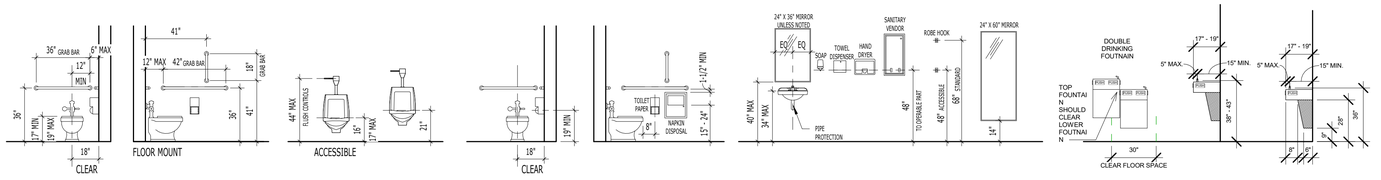


3 SIGNAGE MOUNTING HEIGHTS
1/2" = 1'-0"



TYPE 'A'
TOILET ROOMS

4 IDENTIFYING DEVICES
3" = 1'-0"



5 TYPICAL MOUNTING HEIGHTS
1/4" = 1'-0"

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

ARCHITECT
JOSEPH R. HEWGLEY JR.
A-3426
STATE OF NEBRASKA

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE

PROJECT #: R-0421
DATE: 3/29/21
DRAWN: RDS
REVISIONS

DATE	DESCRIPTION

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MECHANICAL SYMBOLS LEGEND
(AS APPLICABLE)

PIPING AND SPECIALTIES

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
RD	REFRIGERANT DISCHARGE	PGR	PROPYLENE GLYCOL RETURN		INLINE PUMP
RL	REFRIGERANT LIQUID	PGS	PROPYLENE GLYCOL SUPPLY	MV	AIR VENT - MANUAL
RS	REFRIGERANT SUCTION	FOR	FUEL OIL RETURN	A	AIR VENT - AUTOMATIC
CD	COIL CONDENSATE DRAIN	FOS	FUEL OIL SUPPLY	FS	FLOW SWITCH
LPS (XX)	LOW PRESSURE STEAM (PRESSURE)	FOV	FUEL OIL VENT	PS	PRESSURE SWITCH
MPS (XX)	MEDIUM PRESSURE STEAM (PRESSURE)	CR	CONDENSER WATER RETURN	AS	AIR SEPARATOR
HPS (XX)	HIGH PRESSURE STEAM (PRESSURE)	CS	CONDENSER WATER SUPPLY		THERMOMETER
LPC	LOW PRESSURE CONDENSATE	HPWR	HEAT PUMP WATER RETURN	TW	THERMOMETER WELL
MPC	MEDIUM PRESSURE CONDENSATE	HPWS	HEAT PUMP WATER SUPPLY		BALL JOINT
HPC	HIGH PRESSURE CONDENSATE	D/R	PITCH OF PIPE, RISE (R) OR DROP (D)	PSD	PUMP SUCTION DIFFUSER
PC	PUMPED CONDENSATE		PIPE ANCHOR - MAIN		FLOAT THERMOSTATIC TRAP
MU	MAKE-UP WATER		PIPE ANCHOR - INTERMEDIATE		FLOWMETER - ORIFICE
HCR	HOT/CHILLED WATER RETURN	H	HANGER - ROD		FLOWMETER - VENTURI
HCS	HOT/CHILLED WATER SUPPLY	H	HANGER - SPRING		DUPLEX STRAINER
HWR	HEATING WATER RETURN		ALIGNMENT GUIDE		
HWS	HEATING WATER SUPPLY		FLEX CONNECTOR		
CWR	CHILLED WATER RETURN		EXPANSION - LOOP		
CWS	CHILLED WATER SUPPLY		EXPANSION - JOINT		
EGR	ETHYLENE GLYCOL RETURN				
EGS	ETHYLENE GLYCOL SUPPLY				

DUCTWORK

RECT. RND. OVAL

	SUPPLY (SA), OUTSIDE (OA), VENTILATION (VA) AIR DUCT (UP/DOWN/SECTION)	R	ELEVATION CHANGE (RISE OR DROP)
	RETURN (RA) AIR DUCT (UP/DOWN/SECTION)		HIGH EFF. TAKE OFF FITTING WITH VOLUME DAMPER
	EXHAUST (EA) AIR DUCT (UP/DOWN/SECTION)	BD	BACKDRAFT DAMPER
10/6 SA	RECTANGLE DUCT (WIDTH/HEIGHT/SYSTEM)		TURNING VANES
10 Ø SA	ROUND DUCT (DIAMETER/SYSTEM)	VD	VOLUME CONTROL DAMPER
10/6 Ø SA	FLAT OVAL DUCT (WIDTH/HEIGHT/SYSTEM)		VOLUME CONTROL DAMPER
	FLEXIBLE DUCTWORK		OPPOSED BLADE DAMPER
			PARALLEL BLADE DAMPER

FD	FIRE DAMPER (IN HORIZONTAL DUCT)
SD	SMOKE DAMPER (IN HORIZONTAL DUCT)
FD	FIRE DAMPER (IN VERTICAL DUCT)
SD	SMOKE DAMPER (IN VERTICAL DUCT)
FSD	FIRE/SMOKE DAMPER (IN HORIZONTAL DUCT)
FSD	FIRE/SMOKE DAMPER (IN VERTICAL DUCT)
AD	DUCT ACCESS PANEL
RP	RELIEF PANEL
CAP	DUCT END CAP

H.V.A.C.

	SUPPLY DIFFUSER		VAV TERMINAL UNIT
	SUPPLY REGISTER		FAN POWERED VAV TERMINAL UNIT
	SUPPLY SLOT DIFFUSER		SIDE WALL DIFFUSER
	RETURN REGISTER		ROUND DIFFUSER
	RETURN GRILLE		EXTERIOR LOUVER
	EXHAUST REGISTER	X / CFM	SUPPLY IDENTIFICATION TAG X DENOTES TYPE
	EXHAUST GRILLE	X / CFM	RETURN/ EXHAUST/LOUVER IDENTIFICATION TAG X DENOTES TYPE
	DUAL DUCT TERMINAL UNIT	M	MOTORIZED ACTUATOR
			PNEUMATIC ACTUATOR

T	THERMOSTAT
TG	THERMOSTAT WITH GUARD
S XX-X	TEMPERATURE SENSOR - XX-X DENOTES SERVED
SCO	CARBON MONOXIDE SENSOR
SCO2	CARBON DIOXIDE SENSOR
SNOX	NITROGEN DIOXIDE SENSOR
SH	HUMIDITY SENSOR
SP	PRESSURE SENSOR
SG	TEMPERATURE SENSOR WITH GUARD
H	HUMIDISTAT
	EMERGENCY SHUTDOWN SWITCH

FITTINGS

SINGLE LINE	DOUBLE LINE		SINGLE LINE	DOUBLE LINE		SINGLE LINE	DOUBLE LINE	
		ELBOW			ELBOW - DOUBLE BRANCH			REDUCER - CONCENTRIC
		LONG RADIUS ELBOW			ELBOW - SIDE OUTLET UP			REDUCER - ECCENTRIC
SR	SR	SHORT RADIUS ELBOW			ELBOW - SIDE OUTLET DOWN			CAPPED CONNECTION
		45° ELBOW			ELBOW - OUTLET DOWN			THREADED CONNECTION
		TEE			ELBOW - OUTLET UP			FLANGED CONNECTION
		CROSS			TEE - OUTLET DOWN			STRAINER
		LATERAL			TEE - OUTLET UP			STRAINER WITH BALL VALVE DRAIN
		TEE - SINGLE SWEEP			TEE - SIDE OUTLET DOWN			STRAINER WITH COUPLER
					TEE - SIDE OUTLET UP			BUSHING
					SIAMESE CONNECTION			FLOW DIRECTION

VALVES

	GATE VALVE		STOP/CHECK GATE VALVE (ARROW IND. FLOW)
	ANGLE GATE VALVE		SPRING GATE CHECK VALVE (ARROW IND. FLOW)
	BALL VALVE		SWING GATE CHECK VALVE (ARROW IND. FLOW)
L	LOCKABLE BALL VALVE		ANGLE STOP/CHECK VALVE
M	BUTTERFLY VALVE	M	2-WAY ELECTROMOTOR VALVE
	GLOBE VALVE	P	2-WAY AIRMOTOR VALVE
	ANGLE GLOBE VALVE		2-WAY MANUAL VALVE
M	PLUG VALVE	M	3-WAY ELECTROMOTOR VALVE
	DIAPHRAGM VALVE	P	3-WAY AIRMOTOR VALVE
	DIAPHRAGM ACTUATED VALVE		3-WAY MANUAL VALVE
	VALVE IN VERTICAL LINE		SAFETY PRESSURE RELIEF VALVE
	HOSE GATE VALVE		PRESSURE RELIEF VALVE
	HOSE GLOBE VALVE		TEMPERATURE MIXING VALVE
	HOSE ANGLE VALVE		AUTO FLOW VALVE
SOL	SOLENOID VALVE		FLOAT VALVE
PIV	POST INDICATOR VALVE		LOCK SHIELD
			CIRCUIT SETTER

	MULTIPURPOSE VALVE
PRV-X	PRESSURE REDUCING VALVE
PRV-X	PRESSURE REDUCING PILOT VALVE
RPBP	REDUCED PRESS. BACKFLOW ASSY.
DC	DOUBLE CHK VALVE BACKFLOW ASSY.
DDC	DOUBLE DETECTOR CHECK VALVE
	OUTSIDE STEM & YOKE VALVE
	QUICK CLOSING FUSIBLE LINK VALVE
	QUICK OPENING VALVE
	PRESSURE GAUGE & BALL VALVE
	GATE VALVE WITH GLOBE VALVE BY-PASS
	GLOBE VALVE WITH GLOBE VALVE BY-PASS
	SPRINKLER - CONCEALED
R	SPRINKLER - RECESSED
	SPRINKLER - SIDEWALL
	SPRINKLER - UPRIGHT
	SPRINKLER - ZONE CONTROL

PLUMBING

	PIPE REMOVAL	NPCW	NON-POTABLE COLD WATER	P	TRAP PRIMER
DCW	DOMESTIC COLD WATER	NPHW	NON-POTABLE HOT WATER	HB	HOSE BIBB
DHW	DOMESTIC HOT WATER	NPSW	NON-POTABLE SOFT WATER	WH	WALL HYDRANT
RHW	DOMESTIC HOT WATER RECIRC.	PD	PUMPED DISCHARGE	RH	ROOF HYDRANT
DSW	DOMESTIC SOFT WATER	G (XX)	NATURAL GAS (PSIG)	CO	CLEAN OUT
SAN	SANITARY	PG (XX)	PROPANE GAS (PSIG)	FCO	FLOOR CLEAN OUT
ST	STORM	V	VENT	FD	FLOOR DRAIN
SO	STORM OVERFLOW	AW	ACID WASTE	VTR	VENT THRU ROOF (X DENOTES IDENTIFICATION)
GW	GREASE WASTE	AV	ACID VENT	RD	ROOF DRAIN
CA	COMPRESSED AIR	OSW	OIL/SAND	ORD	OVERFLOW ROOF DRAIN
PA	PROCESSED AIR	IR	IRRIGATION	DSN	DOWNSPOUT NOZZLE

MISCELLANEOUS

XX / X	EQUIPMENT IDENTIFICATION TAG (ELECTRICAL CONNECTION REQUIRED)		NEW CONNECTION POINT	WC	WATER CLOSET
X / XX	DETAIL REFERENCE SHEET REFERENCE		POINT OF DISCONNECT	UR	URINAL
		OA	OUTSIDE AIR	L	LAVATORY
X / XX X / XX	SECTION CUT REFERENCE SHEET REFERENCE	VA	VENTILATION AIR	S	SINK
		EA	EXHAUST AIR	DF	DRINKING FOUNTAIN
	ELECTRICAL PANEL - SHOWN FOR COORDINATION PURPOSES ONLY	RA	RELIEF OR RETURN AIR	EWC	ELECTRIC WATER COOLER
		SA	SUPPLY AIR	SS	SERVICE SINK
	ELECTRICAL PANEL - SHOWN FOR COORDINATION PURPOSES ONLY	MA	MIXED AIR	SH	SHOWER
		RF	RELIEF OR RETURN FAN	DWH	DOMESTIC WATER HEATER
	ELECTRICAL PANEL - SHOWN FOR COORDINATION PURPOSES ONLY	EF	EXHAUST FAN	MSB	MOP SINK BASIN
					DASHED DARK LINEWORK = DEMOLITION
T	ELECTRICAL TRANSFORMER - SHOWN FOR COORDINATION PURPOSES ONLY	DCE	DUST COLLECTION EXHAUST	(E)	LIGHT LINEWORK = EXISTING
		(TYP)	TYPICAL		DARK LINEWORK = NEW

GENERAL MECHANICAL NOTES

APPLY TO ALL MECHANICAL DUCTWORK SHEETS

A. LIGHT LINE WEIGHT INDICATES EXISTING ITEMS AND ASSOCIATED MATERIALS TO REMAIN. BOLD LINE WEIGHT INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
B. ROUTING INDICATED ON DRAWINGS IS APPROXIMATE AND DOES NOT INCLUDE ALL OFFSETS, FITTINGS, VALVES, ETC. CONTRACTOR TO FIELD VERIFY DUCT SIZE AND SERVICE PRIOR TO FINAL CONNECTION. COORDINATE LOCATION OF HVAC WORK WITH LIGHTING, STRUCTURAL MEMBERS, PIPING SYSTEMS, ETC. PROVIDE OFFSETS AND CLEARANCES OR RELOCATE HVAC WORK AS REQUIRED TO AVOID CONFLICTS WITH WORK OF ALL OTHER TRADES.
C. HVAC WORK SHALL NOT BE LOCATED OVER ELECTRICAL, DATA, OR COMMUNICATION EQUIPMENT ROOMS. HVAC WORK SHALL NOT BE LOCATED ABOVE ELECTRICAL / DATA / COMMUNICATION EQUIPMENT OR PANELS.
D. SUPPORT ALL DUCTWORK, PIPING, EQUIPMENT, ETC. FROM BUILDING STRUCTURE. HOLD PIPING TIGHT TO BOTTOM OF STRUCTURAL MEMBERS OR RUN THROUGH JOIST WEBS IF POSSIBLE. DO NOT USE WIRE OR PERFORATED METAL TO SUPPORT PIPING. DO NOT SUPPORT PIPING FROM OTHER PIPING, DUCTWORK AND/OR ELECTRICAL CONDUITS. DO NOT SUPPORT FROM BOTTOM OF CHORD OF BAR JOIST OR FROM METAL ROOF DECK.
E. ALL DUCT SIZES SHOWN ARE CLEAR AIRWAY DIMENSIONS. INCREASE SHEET METAL SIZE TO ACCOMMODATE DUCT LINER AS REQUIRED.
F. ELBOWS SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF DUCT. WHERE SPACE CONDITIONS DO NOT PERMIT THIS RADIUS OR WHERE INDICATED ON DRAWINGS SQUARE ELBOWS WITH TURNING VANES SHALL BE USED.
G. SIZE TRANSITIONS WITH A MINIMUM SLOPE OF 1:4.
H. PROVIDE DRAW BANDS AND SEAL END OF DUCT INSULATION ON ALL FLEXIBLE CONNECTIONS. MAXIMUM LENGTH OF FLEXIBLE DUCTS SHALL BE THREE FEET.
I. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SEALING PENETRATIONS THROUGH A FIRE RATED, SMOKE RATED OR COMBINATION FIRE & SMOKE RATED SEPARATIONS. SEE SPECIFICATIONS FOR FIRE & SMOKE RATED SEALANTS. SEE ARCHITECTURAL PLANS FOR RATED SEPARATIONS.
J. COORDINATE ALL GRILLE, REGISTER AND DIFFUSER LOCATIONS WITH REFLECTED CEILING PLAN, LIGHT FIXTURES, SPRINKLER HEADS, COMMUNICATION/SOUND DEVICES AND FIRE ALARM DEVICES.
K. INSTALL ESCUTCHEON PLATES ON ALL WALL PENETRATIONS SERVING ROUND DUCT WALL PENETRATIONS. FABRICATE ESCUTCHEON PLATES TO TRIM THE OPENING IN THE WALL.
L. INSTALL WALL ANGLE FOR ALL RECTANGULAR DUCT PENETRATIONS THROUGH WALLS.
M. FOR EXPOSED DUCTWORK THOROUGHLY CLEAN, REMOVE ALL SHIPPING LABELS AND OTHER IDENTIFICATION TAGS. DUCTWORK DESIGNATED TO BE PAINTED SHALL HAVE PHOSPHATIZED FINISH. PROVIDE MILL-PHOSPHATIZED FINISH FOR EXPOSED NOT DESIGNATED TO BE PAINTED. COORDINATE WITH ARCHITECTURAL DRAWINGS DUCTWORK DESIGNATED FOR PAINTING AND EXPOSED DUCTWORK REQUIREMENTS.
N. PROVIDE DUCT MOUNTED ACCESS DOOR AT FIRE DAMPER, SMOKE DAMPER OR COMBINATION FIRE/SMOKE DAMPERS TO ALLOW FOR MAINTENANCE AND VISUAL INSPECTION PER NFPA REQUIREMENTS.
O. VOLUME DAMPERS ABOVE INACCESSIBLE CEILINGS SHALL HAVE EXTENSION RODS AND ESCUTCHEON PLATES.
P. LOCATE AND INSTALL EQUIPMENT TO PROVIDE ALL CODE AND MANUFACTURER'S RECOMMENDED CLEARANCES. KEEP HVAC PIPING, DUCTWORK, ETC. OUT OF CLEARANCE AREAS.
Q. ALL OPENINGS IN WALLS AND FLOORS FOR PIPING SHALL BE CORE DRILLED OR SAW CUT, UNLESS OTHERWISE NOTED.
R. ALL HVAC PIPING WORK SHALL BE LOCATED ABOVE CEILINGS, IN A PIPE CHASE, OR OTHER CONCEALED LOCATIONS, UNLESS OTHERWISE NOTED. LOCATE AND ARRANGE VALVES, DRAIN FITTINGS, ETC. TO BE ACCESSIBLE THROUGH LAY-IN CEILINGS, ACCESS PANELS OR ACCESS DOORS. PROVIDE ACCESS PANEL OR ACCESS DOOR FOR ALL VALVES, DRAIN FITTINGS, ETC. AT NON-ACCESSIBLE LOCATIONS.
S. INSTALL SECTIONAL VALVES ON EACH BRANCH AND/OR RISER SERVING TWO OR MORE HYDRONIC TERMINALS OR EQUIPMENT CONNECTIONS. INSTALL VALVES ADJACENT TO MAIN.
T. INSTALL SHUTOFF VALVES ON INLET AND OUTLET OF EACH MECHANICAL EQUIPMENT ITEM AND/OR EACH HYDRONIC TERMINAL.
U. SLOPE HVAC PIPING TO DRAIN VALVES. PROVIDE MANUAL AIR VENTS AT HIGH POINTS AND AT TOP OF RISERS.
V. SEAL ALL HVAC PENETRATIONS. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS OR CEILINGS WITH MATERIALS APPROPRIATE FOR RATING.
W. PIPING IN EXTERIOR WALLS SHALL BE LOCATED ON THE INTERIOR SIDE OF BUILDING INSULATION AND VAPOR BARRIER.
X. COORDINATE INSTALLATION OF BUILDING INSULATION TO RUN CONTINUOUS BETWEEN PIPING AND EXTERIOR WALL SURFACE.
Y. PVC PIPING SHALL NOT BE INSTALLED IN ANY RETURN AIR PLENUM UNLESS THE PIPING IS INSTALLED IN A PRE-APPROVED RATED ASSEMBLY.
Z. COORDINATE DUCTWORK WITH STRUCTURAL CROSS BRACING. PROVIDE TOP AND BOTTOM BRIDGING BETWEEN JOISTS WHERE DUCTWORK IS TO BE INSTALLED BETWEEN THE JOISTS. COORDINATE WITH ALL TRADES.

GENERAL MECHANICAL / PLUMBING DEMOLITION NOTES

APPLY TO ALL MECHANICAL AND PLUMBING SHEETS

1. ALL EXISTING ITEMS AND ASSOCIATED PIPING, ACCESSORIES, SUPPORTS AND HANGARS INDICATED BY BOLD, DASHED, HEAVY LINES OR IDENTIFIED BY NOTES, SHALL BE COMPLETELY REMOVED. PRIOR TO PROPER DISPOSAL OF REMOVED ITEMS, OWNER SHALL HAVE FIRST RIGHT OF REFUSAL.
2. DRAWINGS INDICATE APPROXIMATE ROUTING OF PIPING, DUCTWORK AND MAJOR COMPONENTS AND DO NOT INCLUDE ALL OFFSETS, FITTINGS, VALVES, ETC. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND ROUTING PRIOR TO REMOVAL OR RELOCATION. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF MISCELLANEOUS MECHANICAL ITEMS LOCATED ON OR IN ANY WALLS TO BE REMOVED.
3. EXISTING INSULATION DAMAGED DURING DEMOLITION / CONSTRUCTION ACTIVITIES SHALL BE REPAIRED WITH SIMILAR MATERIALS.
4. ALL OPENINGS THROUGH WALLS AND FLOOR SLABS NOT BEING REUSED SHALL BE PATCHED WITH LIKE MATERIALS AND PAINTED TO MATCH EXISTING.
5. ALL OPENINGS THROUGH ROOF NOT BEING REUSED SHALL BE PATCHED WITH LIKE MATERIALS AND SEALED WATERTIGHT.
6. CONTRACTOR SHALL REMOVE ALL MATERIALS AS REQUIRED AND SHALL GIVE OWNER THE OPPORTUNITY TO INSPECT SUCH MATERIALS FOR POTENTIAL SALVAGE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL MATERIALS DEEMED "NON-SALVAGEABLE" BY THE OWNER. CONTRACTOR SHALL TURN OVER TO OWNER ALL MATERIALS DEEMED "SALVAGEABLE" BY THE OWNER.

GENERAL PLUMBING NOTES

APPLY TO ALL PLUMBING SHEETS

A. LIGHT LINE WEIGHT INDICATES EXISTING ITEMS AND ASSOCIATED MATERIALS TO REMAIN. BOLD LINE WEIGHT INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
B. ROUTING INDICATED ON DRAWINGS IS APPROXIMATE AND DOES NOT INCLUDE ALL OFFSETS, FITTINGS, VALVES, ETC. CONTRACTOR TO FIELD VERIFY PIPE SIZE AND SERVICE PRIOR TO FINAL CONNECTION. COORDINATE LOCATION OF PLUMBING PIPING WORK WITH LIGHTING, STRUCTURAL MEMBERS, HVAC, PIPING SYSTEMS, ETC. PROVIDE OFFSETS AND CLEARANCES OR RELOCATE PLUMBING WORK AS REQUIRED TO AVOID CONFLICTS WITH WORK OF ALL OTHER TRADES.
C. PLUMBING WORK SHALL NOT BE LOCATED OVER ELECTRICAL, DATA OR COMMUNICATION EQUIPMENT ROOMS. PLUMBING WORK SHALL NOT BE LOCATED ABOVE ELECTRICAL / DATA / COMMUNICATION EQUIPMENT OR PANELS.
D. SUPPORT ALL PLUMBING PIPING, EQUIPMENT, ETC. FROM BUILDING STRUCTURE. HOLD PIPING TIGHT TO BOTTOM OF STRUCTURAL MEMBERS OR RUN THROUGH JOIST WEBS IF POSSIBLE. DO NOT USE WIRE OR PERFORATED METAL TO SUPPORT PIPING. DO NOT SUPPORT PIPING FROM OTHER PIPING, DUCTWORK AND/OR ELECTRICAL CONDUITS. DO NOT SUPPORT FROM BOTTOM OF CHORD OF BAR JOIST OR FROM METAL ROOF DECK.
E. ROUTE ABOVE GRADE DRAINAGE PIPING AS HIGH AS POSSIBLE AND COORDINATE WITH OTHER TRADES.
F. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SEALING PENETRATIONS THROUGH A FIRE RATED, SMOKE RATED OR COMBINATION FIRE & SMOKE RATED SEPARATIONS. SEE SPECIFICATIONS FOR FIRE & SMOKE RATED SEALANTS. SEE ARCHITECTURAL PLANS FOR RATED SEPARATIONS.
G. INSTALL ESCUTCHEON PLATES ON ALL WALL AND FLOOR PENETRATIONS SERVING EXPOSED PLUMBING PIPING WALL PENETRATIONS.
H. ALL OPENINGS IN WALLS AND FLOORS FOR PIPING SHALL BE CORE DRILLED OR SAW CUT, UNLESS OTHERWISE NOTED.
I. LOCATE AND INSTALL EQUIPMENT TO PROVIDE ALL CODE AND MANUFACTURER'S RECOMMENDED CLEARANCES. KEEP HVAC PIPING, DUCTWORK, ETC. OUT OF CLEARANCE AREAS.
J. ALL PLUMBING PIPING WORK SHALL BE LOCATED ABOVE CEILINGS, IN A PIPE CHASE, OR OTHER CONCEALED LOCATIONS, UNLESS OTHERWISE NOTED. LOCATE AND ARRANGE VALVES, DRAIN FITTINGS, ETC. TO BE ACCESSIBLE THROUGH LAY-IN CEILINGS, ACCESS PANELS OR ACCESS DOORS. PROVIDE ACCESS PANEL OR ACCESS DOOR FOR ALL VALVES, DRAIN FITTINGS, ETC. AT NON-ACCESSIBLE LOCATIONS.
K. INSTALL SECTIONAL VALVES ON EACH BRANCH AND/OR RISER SERVING TWO OR MORE PLUMBING FIXTURES OR EQUIPMENT CONNECTIONS. INSTALL VALVES ADJACENT TO MAIN.
L. INSTALL SHUTOFF VALVES ON INLET AND OUTLET OF PLUMBING EQUIPMENT.
M. INSTALL STOPS AT EACH PLUMBING FIXTURE EXCEPT AT FLUSHOMETER LOCATIONS.
N. SEAL ALL PLUMBING PIPING PENETRATIONS. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS OR CEILINGS WITH MATERIALS APPROPRIATE FOR RATING.
O. PIPING IN EXTERIOR WALLS SHALL BE LOCATED ON THE INTERIOR SIDE OF BUILDING INSULATION AND VAPOR BARRIER.
P. COORDINATE INSTALLATION OF BUILDING INSULATION TO RUN CONTINUOUS BETWEEN PIPING AND EXTERIOR WALL SURFACE.
Q. COORDINATE EXACT LOCATION OF FLOOR DRAINS AND FLOOR SINKS. TOP OF GRATE SHALL BE 1/8" BELOW FINISHED FLOOR ELEVATION.
R. COMPLY WITH LOCAL UTILITY COMPANY RULES AND REGULATIONS FOR ALL GAS METER INSTALLATIONS. COORDINATE EXACT LOCATION OF GAS CONNECTIONS WITH EQUIPMENT SUPPLIED.
S. COPPER PIPING LOCATED ABOVE GRADE SHALL BE TYPE "L"; COPPER PIPING LOCATED BELOW GRADE SHALL BE TYPE "K" AND RUN CONTINUOUS WITHOUT JOINTS BELOW GRADE. TYPE "M" COPPER SHALL NOT BE USED ON PRESSURIZED PIPING SYSTEMS.
T. DRAINAGE PIPING 3 INCHES AND SMALLER SHALL SLOPE NO LESS THAN 1/4 INCH PER FOOT. DRAINAGE PIPING 4 INCHES AND LARGER SHALL SLOPE NO LESS THAN 1/8 INCH PER FOOT.
U. INSTALL WALL CLEAN OUTS (WCO) WHEN LOCATED BEHIND A WATER CLOSET AT 30" A.F.F. OR AT 42" A.F.F. ABOVE CABINETRY ON ALL SANITARY & STORM STACKS.
V. COORDINATE EXACT STORM PIPE CONNECTIONS WITH STORM DRAIN LOCATIONS SHOWN ON ARCHITECTURAL ROOF PLAN.
W. INSTALL VENT-THRU-ROOF (VTR) A MINIMUM OF 10'-0" AWAY FROM ANY OUTSIDE AIR INTAKE.
X. REMOVE, REPAIR AND REPLACE WALLS, FLOORS, ROOFS AND CEILINGS TO MATCH EXISTING, WHERE NECESSARY FOR PIPING AND FIXTURE REMOVAL & INSTALLATION.
Y. KITCHEN EQUIPMENT FURNISHED BY KITCHEN EQUIPMENT CONTRACTOR - PLUMBING CONTRACTOR SHALL ROUGH-IN AND MAKE FINAL CONNECTIONS TO UTILITIES REQUIRED AND PROVIDE PIPING, STOPS, WATER HAMMER ARRESTERS, TRAPS AND FITTINGS FOR EQUIPMENT TO BE IN OPERATIONAL ORDER. COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER FOR CONNECTIONS AND LOCATIONS. SEE KITCHEN EQUIPMENT CONNECTION SCHEDULE FOR RESPONSIBILITY OF WHO FURNISHES VACUUM BREAKERS AND PRESSURE REDUCING VALVES.
Z. PVC PIPING SHALL NOT BE INSTALLED IN ANY RETURN AIR PLENUM UNLESS THE PIPING IS INSTALLED IN A PRE-APPROVED RATED ASSEMBLY.
AA. PROVIDE ACCESSIBLE SHUTOFF VALVE INSIDE THE BUILDING FOR EACH WALL HYDRANT.
BB. CONTRACTOR SHALL COORDINATE ALL CONNECTIONS OF PLUMBING SYSTEMS WITH EXTERIOR SITE UTILITIES AND SERVICES PRIOR TO INSTALLING ANY PIPING ON THE INTERIOR. CONTRACTOR SHALL CONFIRM THAT ALL INTERIOR PIPE INVERTS AND PIPE INVERTS AT THE 5' LINE MATCH EXTERIOR PIPE INVERTS, PRIOR TO INSTALLING ANY INTERIOR PIPING BELOW FLOOR.

NOTICE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SHOP AND OTHER APPROPRIATE DRAWINGS OR AT SITE. LAY OUT AND COORDINATE ALL WORK PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, AND CODES. VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCES FOR ALL TRADES. THIS NOTICE APPLIES TO ALL MECHANICAL / PLUMBING PLANS.

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FE#:201028

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

PROFESSIONAL MECHANICAL ENGINEER
BENJAMIN M. SCHMITT
E-14489
STATE OF NEBRASKA
03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: LMB

REVISIONS

DATE	DESCRIPTION

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MEMBER AMERICAN INSTITUTE of ARCHITECTS

SHEET
M001

MECHANICAL SPECIFICATIONS

GENERAL MECHANICAL

1. **COORDINATION OF WORK:** THE MECHANICAL CONTRACTOR SHALL PLAN ALL WORK SUCH THAT IT PROCEEDS WITH A MINIMUM OF INTERFERENCE WITH OTHER TRADES.
   A. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE INSTALLATION OF HIS WORK WITH LIGHTING PLANS, REFLECTED CEILING PLANS, SPRINKLER PLANS, AND ALL OTHER TRADES.
   B. THE INSTALLATION OF ALL EQUIPMENT, DEVICES AND MATERIALS REQUIRING ACCESS SHALL BE MADE IN SUCH A MANNER AS TO MAKE THE EQUIPMENT, DEVICES AND MATERIALS READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIRS.

2. **SUBSTITUTIONS FOR MATERIAL SPECIFIED:** MATERIAL AND ITEMS OF EQUIPMENT FURNISHED MUST MEET THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AS TO QUALITY, PERFORMANCE, SUITABILITY, AND APPEARANCE.
   A. THIS IS AN "OR EQUAL" SPECIFICATION. MATERIALS AND EQUIPMENT SPECIFIED BY NAME OR NAMES OF ONE OR MORE MANUFACTURERS MAY BE SUPPLIED SIMILAR OR EQUAL TO THE PRODUCT OF THE MANUFACTURER SPECIFIED.
   B. THE ENGINEER SHALL BE THE SOLE AND FINAL JUDGE AS TO THE SUITABILITY OF SUBSTITUTION ITEMS.
   C. THE ENTIRE COST OF ALL CHANGES OF ANY KIND, DUE TO SUBSTITUTIONS FOR MATERIALS SPECIFIED, SHALL BE BORNE BY THE CONTRACTOR MAKING THE SUBSTITUTION AT NO ADDITIONAL COST TO THE OWNER.

3. **SHOP DRAWINGS:** THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS ON ALL EQUIPMENT AND ITEMS USED IN THE INSTALLATION. SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY TO THE ARCHITECT/ENGINEER. ALL SHOP DRAWINGS SHALL BE SUBMITTED WITH SUFFICIENT TIME FOR REVIEW PRIOR TO THE REQUIRED INSTALLATION DATE.
   A. ALL SHOP DRAWINGS SHALL CLEARLY INDICATE PROPOSED ITEMS, CAPACITIES, CHARACTERISTICS AND DETAILS IN CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL EQUIPMENT SHALL BE MARKED WITH THE SAME ITEM NUMBER AS USED ON THE DRAWINGS. CAPACITIES, DIMENSIONS, AND SPECIAL FEATURES SHALL BE CERTIFIED BY THE MANUFACTURER.

4. **GUARANTEE:** ALL MATERIAL AND WORKMANSHIP SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER.

5. ALL MATERIALS SHALL BE NEW, UNUSED, AND THE BEST OF THEIR RESPECTIVE KINDS AND FREE OF DEFECTS.

6. DRAWINGS ARE DIAGRAMMATIC ONLY, INTENDING TO SHOW GENERAL ROUTING AND LOCATIONS OF THE WORK AND ARE NOT INTENDED TO BE RIGID IN SPECIFIC DETAIL.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE SITE IN RELATION TO HIS WORK PRIOR TO INSTALLATION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR LACK OF COORDINATION DURING THE COURSE OF THIS CONTRACT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL MEASUREMENTS AT THE SITE.

9. STORAGE OF CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE ONLY IN SPACES AS DESIGNATED BY THE ARCHITECT/OWNER.

10. CONSTRUCTION DEBRIS AND RUBBISH GENERATED BY THE CONTRACTOR SHALL BE REMOVED FROM THE PREMISES AS OFTEN AS NECESSARY OR AS DIRECTED TO MAINTAIN A CLEAN AND WORKABLE SITE.

11. ALL WORK, INCLUDING INSIDE OF HVAC DUCTS, AND EQUIPMENT WITHIN THE CONTRACT AREA FURNISHED AND INSTALLED UNDER THE CONTRACT SHALL BE CLEANED TO THE SATISIFACTION OF THE OWNER PRIOR TO TURNING OVER TO THE OWNER.

12. INTERRUPTION OF WATER, SEWER, HEATING, POWER OR AUXILIARY SYSTEMS WHERE AND IF REQUIRED SHALL BE COORDINATED AND SHALL OCCUR ONLY DURING PREARRANGED ACCEPTABLE TIMES.

13. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, CONDUIT, AND EQUIPMENT.

DEMOLITION WORK

1. **SCOPE OF WORK:** FULL-TONED EQUIPMENT, DUCTWORK, PLUMBING AND PIPING ON DEMOLITION PLANS SHALL BE REMOVED AND/OR RELOCATED AS INDICATED. EXISTING EQUIPMENT AND DUCTWORK TO REMAIN IS SHOWN HALF-TONED AND SHALL BE PROTECTED FROM DAMAGE DURING THE DEMOLITION AND NEW CONSTRUCTION PHASES OF THE JOB.

2. **MAINTAINING EXISTING CONDITIONS:** LEAVE ALL SPACES – INCLUDING ALL STRUCTURAL SYSTEMS, ROOM FINISHES, FIXTURES, AND EQUIPMENT (WHETHER BUILT-IN OR MOVEABLE) IN THE SAME GENERAL CONDITION AS IT IS FOUND AT THE START OF THE WORK. ALL FIXTURES AND EQUIPMENT MOVED OR DISTURBED IN CONNECTION WITH THE NEW WORK SHALL BE PROPERLY REINSTALLED IN THE MANNER CORRESPONDING TO THE ORIGINAL METHOD OF INSTALLATION. ALL DAMAGE TO EXISTING FIXTURES, INSULATING MATERIALS, AND EQUIPMENT SHALL BE FULLY REPAIRED.

3. **VARIANCE FROM DRAWINGS:** THE DEMOLITION SHEETS WERE DEVELOPED BY EXAMINING THE EXISTING DRAWINGS (WHERE AVAILABLE) AND REVIEWING FIELD CONDITIONS. IT IS THE INTENT OF THE DEMOLITION DRAWINGS TO SHOW A REPRESENTATIVE AMOUNT OF MECHANICAL EQUIPMENT, DUCTWORK AND ACCESSORIES TO BE REMOVED. THE ACTUAL LOCATIONS OF HVAC EQUIPMENT, DUCTWORK, PIPING, PLUMBING FIXTURES AND ACCESSORIES MAY VARY FROM LOCATIONS SHOWN DUE TO AS-BUILT CONDITIONS. THE CONTRACTOR SHALL VERIFY ALL SCOPE OF WORK AND EXISTING CONDITIONS IN THE FIELD ON-SITE. THE CONTRACTOR SHALL BE ALERT TO ANY EVIDENCE OR INDICATION OF EXISTING CONDITIONS NOT INDICATED ON THE DRAWINGS.

4. **PHASING:** THE CONTRACTOR SHALL BE AWARE OF ALL PHASING FOR THE PROJECT AND COORDINATE DEMOLITION EFFORTS WITH CONSTRUCTION PHASES, AS DETERMINED BY THE GENERAL CONTRACTOR AND THE OWNER.

PLUMBING

1. **CODES AND PERMITS:** ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL AND STATE CODES AND UTILITY COMPANY REGULATIONS. ALL FEES AND PERMITS SHALL BE PAID FOR BY THE CONTRACTOR.

2. **WORKMANSHIP:** ALL MATERIALS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE OF THE INDUSTRY.

3. **GENERAL:**
   A. SUPPORT NEW PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING.
   B. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTAINENCE, AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL.

4. **PIPING:**
   A. WATER PIPING – TYPE "L" COPPER ABOVE GROUND WITH WROUGHT-COPPER SOLDER-JOINT FITTINGS AND SOLDERED JOINTS. TYPE "K" COPPER UNDERGROUND WITH WROUGHT-COPPER SOLDER-JOINT FITTINGS AND BRAZED JOINTS.
   B. STORM, WASTE , AND VENT PIPING (ABOVE GROUND) – SERVICE WEIGHT CAST IRON WITH HUB AND SPIGOT FITTINGS, SERVICE WEIGHT CAST IRON WITH NO-HUB FITTINGS, OR PVC TYPE DWV PIPE AND FITTINGS AS ALLOWED BY LOCAL CODE.
   C. STORM, WASTE, AND VENT PIPING (BELOW GRADE) – SERVICE WEIGHT CAST IRON WITH HUB AND SPIGOT FITTINGS, SERVICE WEIGHT CAST IRON WITH NO-HUB FITTINGS, OR PVC SEWER PIPE AND FITTINGS AS ALLOWED BY LOCAL CODE.
   D. NATURAL GAS PIPING – SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS.
   E. DEIONIZED, DISTILLED, OR REVERSE-OSMOSIS (PURIFIED) WATER PIPING – STAINLESS STEEL PIPING AND FITTINGS, OR NSF 61-RATED CPVC PIPING AND FITTINGS. CLEANING REQUIREMENTS AND VALIDATION (IF REQUIRED BY OWNER) SHALL BE COORDINATED WITH THE OWNER PRIOR TO INSTALLATION.

5. **PIPE INSULATION:** DOMESTIC WATER PIPING EXCEPT THAT EXPOSED AT FIXTURES SHALL BE INSULATED WITH ½-INCH 4-PCF DENSITY PRE-FORMED FIBERGLASS PIPE INSULATION WITH FIRE-RESISTIVE, ASJ VAPOR BARRIER JACKET AND SELF-ADHERING AND SELF-SEALING OVERLAPPING FLAP.

6. **FIXTURES:** SHALL BE OF MANUFACTURER INDICATED ON PLANS OR APPROVED EQUAL. ALL FIXTURES SHALL BE FURNISHED WITH EITHER CHROME PLATED SUPPLIES AND STOP VALVES OR INTEGRAL STOPS. ALL EXPOSED TRAPS SHALL BE CHROME PLATED.

HEATING AND AIR CONDITIONING

1. **CODES AND PERMITS:** ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL AND STATE CODES AND UTILITY COMPANY REGULATIONS. ALL FEES AND PERMITS SHALL BE PAID FOR BY THE CONTRACTOR.

2. **WORKMANSHIP:** ALL MATERIALS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE OF THE INDUSTRY.

3. **DUCTWORK:**
   A. MATERIAL: ALL DUCTS SHALL BE GALVANIZED STEEL UNLESS OTHERWISE NOTED ON THE PLANS. DUCT GAUGE AND BRACING SHALL CONFORM TO NFPA 90A AND SMACNA – HVAC DUCT CONSTRUCTION STANDARDS: METAL AND FLEXIBLE.
   B. MINIMUM SHEET METAL THICKNESS SHALL BE 26 GA.
   C. ALL DUCT JOINTS SHALL BE SEALED USING DUCT SEALANT AS MANUFACTURED BY UNITED SHEET METAL, OR EQUAL. ALL DUCTWORK SHALL BE FABRICATED FOR 2-INCH WATER GAGE PRESSURE CLASS.
   D. STRAP HANGERS SHALL NOT BE LESS THAN 1" WIDE BY 22 GAUGE, ON SIX (6) FOOT CENTERS AND ATTACHED TO THE SIDE OF THE DUCT WITH SHEET METAL SCREWS. INSULATED FLEXIBLE DUCT MAY BE USED FOR LOW PRESSURE RUNOUTS TO INDIVIDUAL DIFFUSERS IN LENGTHS NOT TO EXCEED 3'-0" FOR EACH DIFFUSER. SEAL ALL SHEET METAL SCREW PENETRATIONS.
   E. PROVIDE FLEXIBLE CONNECTION BETWEEN ALL FAN POWERED EQUIPMENT AND CONNECTING DUCTWORK.
   F. DUCTWORK SUPPORT MATERIALS: EXCEPT AS OTHERWISE INDICATED, PROVIDE GALVANIZED STEEL FASTENERS, ANCHORS, RODS, STRAPS, WIRE ROPE, TRIM AND ANGLES FOR SUPPORT OF DUCTWORK. SUPPORT ALL DUCTWORK FROM THE STRUCTURE ONLY. DO NOT SUPPORT FROM DECK.

4. **DUCT INSULATION:**
   A. SEE THE DUCT INSULATION SCHEDULE ON THE PLANS FOR REQUIREMENTS BY APPLICATION.
   B. ALL CONCEALED RECTANGULAR AND ROUND SUPPLY DUCTWORK SHALL BE EXTERNALLY INSULATED WITH FIBERGLASS DUCT WRAP UNLESS INDICATED OTHERWISE ON THE DRAWINGS. INSULATION SHALL HAVE A MINIMUM THICKNESS THAT CONFORMS TO THE STANDARD OF THE APPLICABLE CODE, SHALL IN NO CASE BE LESS THAN 2" THICK AND SHALL HAVE A CONTINUOUS VAPOR BARRIER JACKET WITH ALL JOINTS TAPED AND SEALED.
   C. ALL INSULATION, JOINING MATERIALS, SEALER, ETC. SHALL HAVE A U.L. FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE DEVELOPMENT RATING OF NOT MORE THAN 50.

5. **CONDENSATE DRAIN PIPING:**
   A. MATERIAL: PIPING SHALL BE TYPE "M" DRAWN-TEMPER COPPER TUBING WITH WROUGHT COPPER FITTINGS AND SOLDERED JOINTS, OR SCHEDULE 40 PVC PIPE, FITTINGS, AND JOINTS. GENERALLY SPEAKING, PVC SHALL BE USED FOR OUTDOOR EQUIPMENT DRAINS, COPPER SHALL BE USED FOR INDOOR. PVC SHALL NOT BE INSTALLED IN RETURN AIR PLENUMS.
   B. PIPE INSULATION: 1-INCH, 4-PCF DENSITY FIBERGLASS INSULATION WITH FIRE-RESISTIVE ASJ VAPOR BARRIER.

6. **EQUIPMENT:**
   A. REFER TO MECHANICAL PLANS FOR SPECIFICATIONS, CAPACITIES, AND PERFORMANCE OF EQUIPMENT.
   B. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
   C. COORDINATE EQUIPMENT LOCATION WITH ALL OTHER TRADES AND SITE CONDITIONS. ANY MODIFICATIONS RESULTING FROM SUBMITTED EQUIPMENT DIFFERING FROM THE BASIS OF DESIGN - WEIGHTS, DIMENSIONS, ORIENTATIONS, PIPING CONNECTIONS, DUCT CONNECTIONS, SERVICE CLEARANCES, OR UTILITY DEMANDS - SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (AT NO ADDITIONAL COST TO THE OWNER).

7. **CONTROLS:**
   A. PROVIDE CONTROLS AS SPECIFIED ON THE DRAWINGS.
   B. PACKAGED AIR-HANDLING UNITS AND ROOFTOP UNITS: THESE UNITS SHALL BE PROVIDED WITH INTEGRAL CONTROL PACKAGES AND FUNCTIONALITY FROM THE MANUFACTURER. ANY BUILDING CONTROL SYSTEM (IF PRESENT) WILL ONLY ENABLE AND MONITOR THESE UNITS, WITH THE FOLLOWING EXCEPTIONS: OCCUPANCY SCHEDULES, ROOM TEMPERATURE SETPOINTS.
   C. THE CONTRACTOR SHALL PROVIDE ALL WIRING INCLUDING CONNECTIONS, CHECK, TEST AND START-UP.
   D. COORDINATE INTERFACE OF DUCT MOUNTED SMOKE DETECTOR (WHEN SPECIFIED OR REQUIRED) WITH ELECTRICAL CONTRACTOR TO STOP FAN.

8. **TESTING, ADJUSTING AND BALANCING:**
   A. CONTRACTOR SHALL PROCURE THE SERVICES OF AN INDEPENDENT NEBB, AABC OR TABB CERTIFIED BALANCE AND TESTING AGENCY TO BALANCE, ADJUST AND TEST ALL EQUIPMENT AND AIR OUTLETS AND INLETS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING THE BALANCE/TEST AGENCIES REPORT TO THE ARCHITECT/ENGINEER FOR REVIEW AS A SHOP DRAWING.

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702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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PROFESSIONAL MECHANICAL ENGINEER
BENJAMIN M. SCHMITT
E-14489
STATE OF NEBRASKA
03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: LMB

REVISIONS

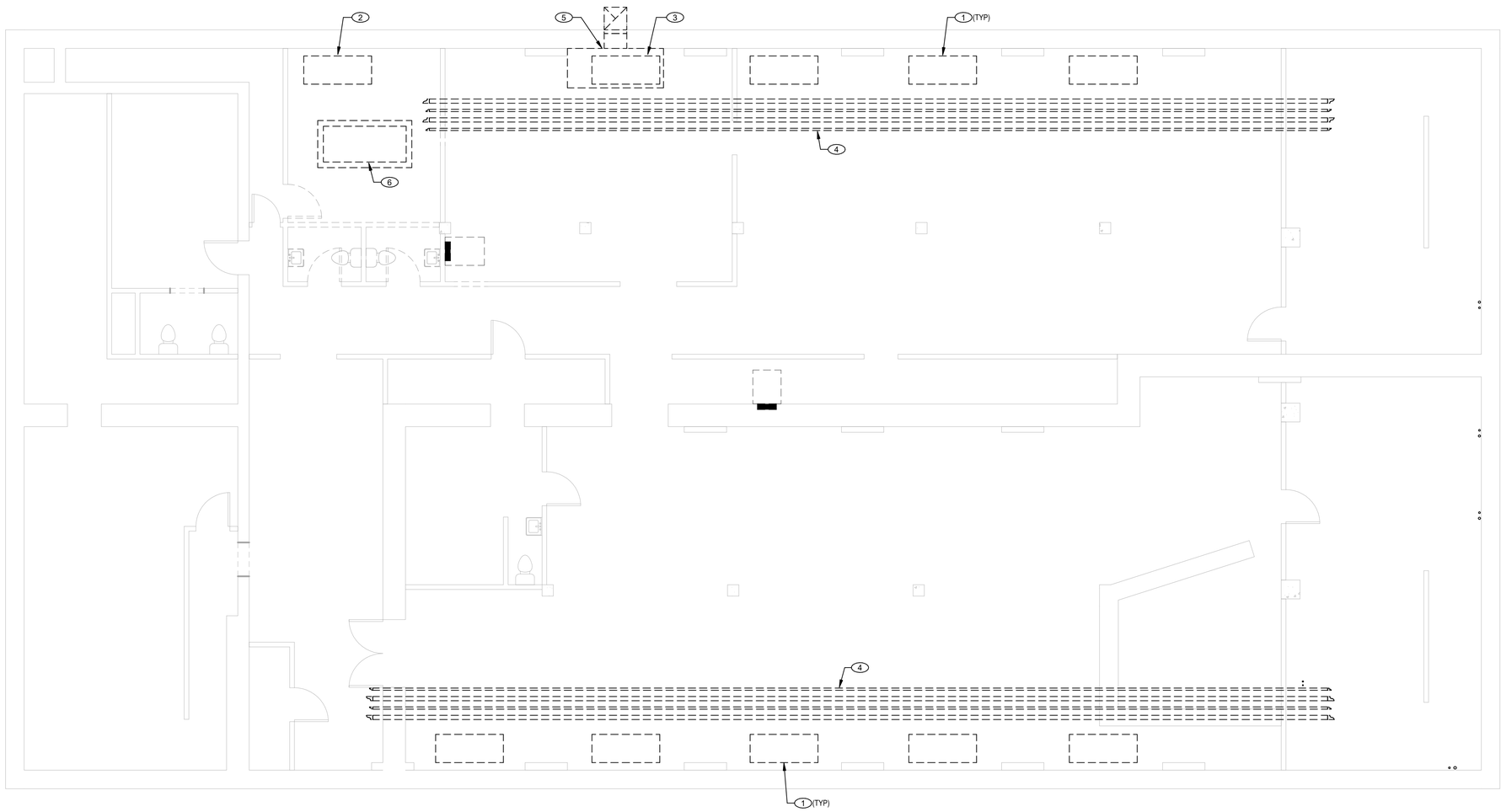
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KEYNOTES	
1	DEMO ABANDONED STEAM RADIATORS.
2	DEMO EXISTING STEAM RADIATOR.
3	DEMO EXISTING STEAM RADIATOR INSTALLED ABOVE KITCHEN HOOD.
4	DEMO ALL ABANDONED STEAM AND CONDENSATE PIPING IN THIS AREA.
5	DEMO ABANDONED KITCHEN HOOD, DUCT, GOOSENECK AND ACCESSORIES.
6	DEMO ABANDONED BOILER, PIPING, FLUE, COMBUSTION AIR DUCTWORK AND ACCESSORIES. CAP NATURAL GAS AT NEAREST ACTIVE MAIN.



1 BASEMENT MECHANICAL DEMOLITION PLAN

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

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Phone: 308/534-4983 • Fax: 308/534-4944

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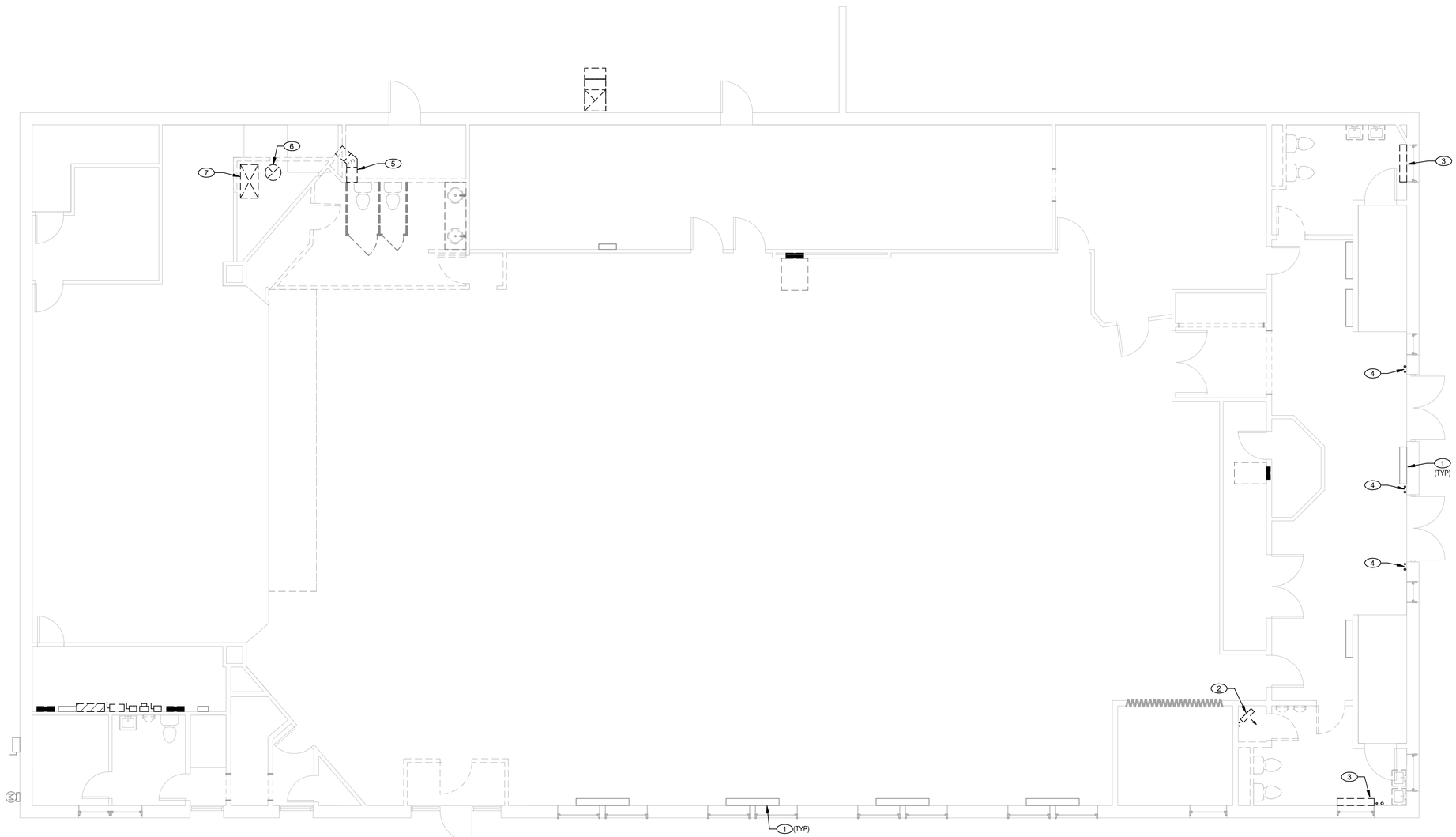
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KEYNOTES	
1	EXISTING STEAM RADIATOR (TO REMAIN, NOT IN SERVICE).
2	DEMO STEAM UNIT HEATER AND STEAM/CONDENSATE PIPING.
3	DEMO STEAM RADIATOR AND STEAM/CONDENSATE PIPING.
4	DEMO ABANDONED STEAM AND CONDENSATE PIPING. PATCH TO MATCH EXISTING ADJACENT CONSTRUCTION.
5	DEMO EXISTING TRANSFER AIR DUCT.
6	DEMO EXISTING BOILER FLUE IN CHASE.
7	DEMO EXISTING DUCT IN CHASE.



1 LEVEL 1 MECHANICAL DEMOLITION PLAN
SCALE: 3/16" = 1'-0"

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Phone: 308/534-4983 • Fax: 308/534-4944

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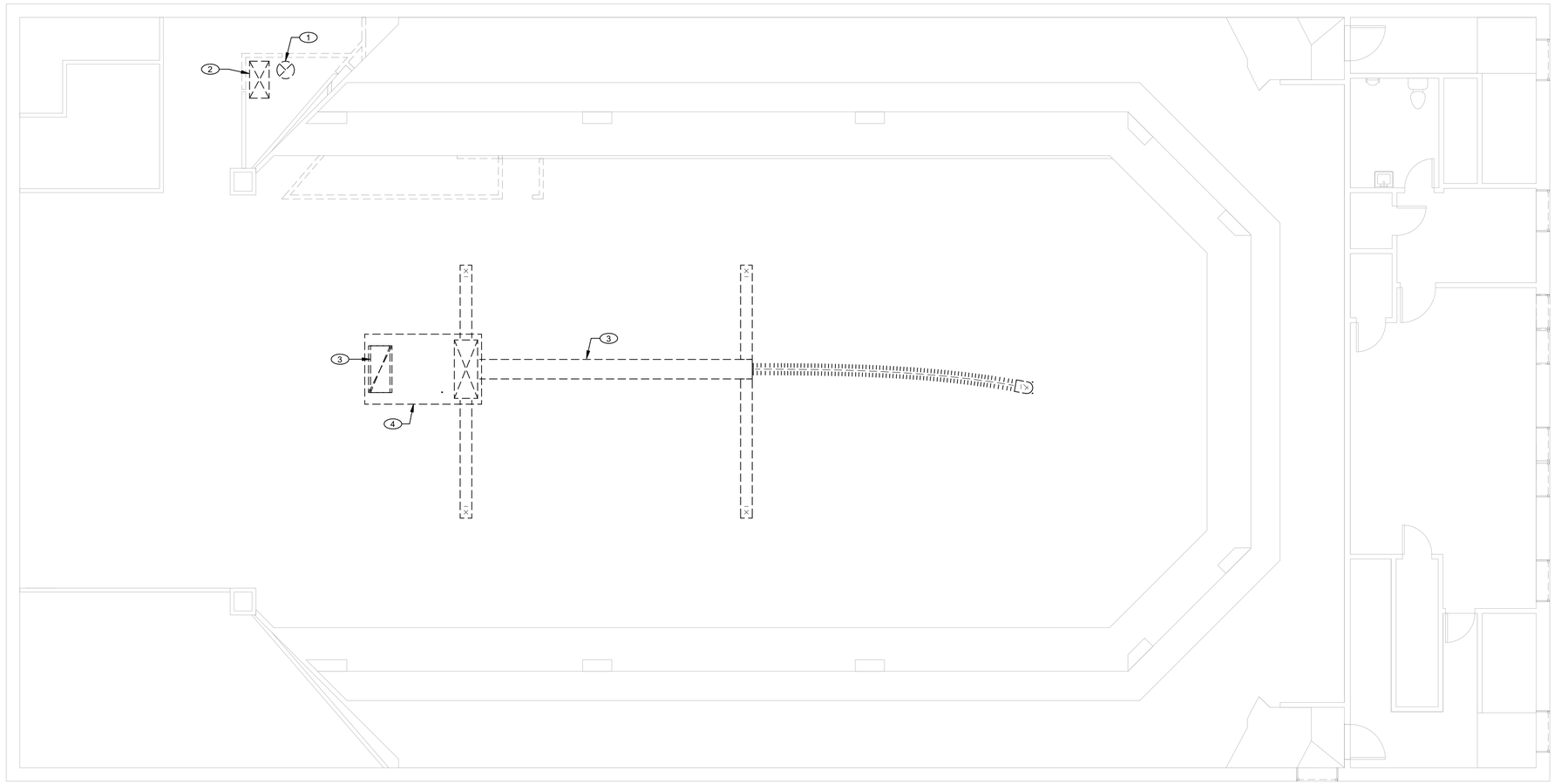
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KEYNOTES	
1	DEMO EXISTING BOILER FLUE IN CHASE UP THROUGH ROOF. PATCH AND INSULATE ROOF TO MATCH EXISTING ADJACENT CONSTRUCTION.
2	DEMO EXISTING DUCT IN CHASE UP THROUGH ROOF. PATCH AND INSULATE ROOF TO MATCH EXISTING ADJACENT CONSTRUCTION.
3	DEMO EXISTING SUPPLY AND RETURN DUCTWORK.
4	DEMO EXISTING ROOFTOP UNIT, CURB AND ACCESSORIES. DISCONNECT NATURAL GAS PIPING AND PREPARE FOR CONNECTION TO NEW RTU.



1 LEVEL 2 MECHANICAL DEMOLITION PLAN

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

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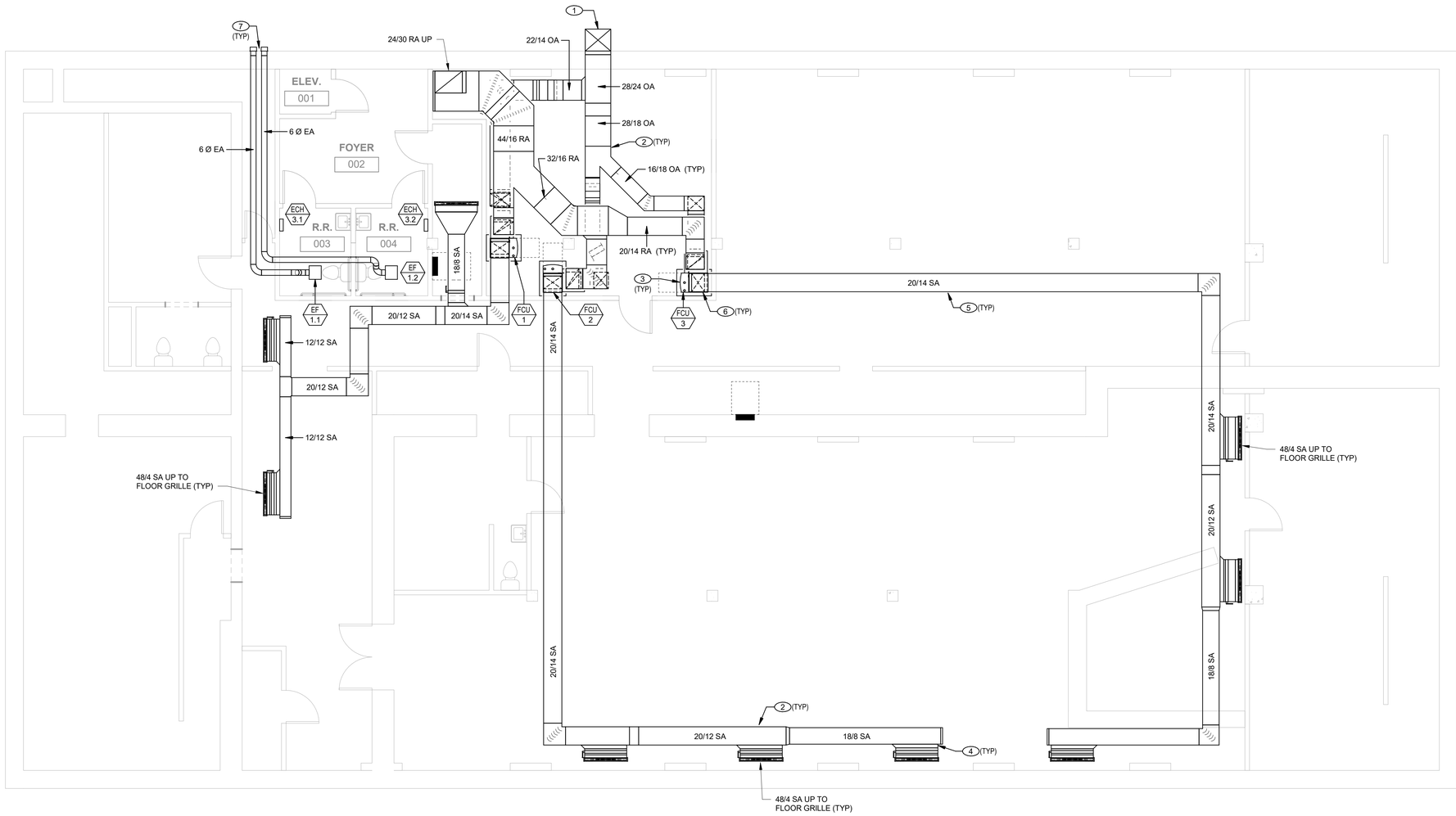
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KEYNOTES	
1	NEW OA DUCT WITH GOOSENECK UP IN PLACE OF OLD EA DUCT.
2	INSTALL DUCTWORK THROUGHOUT THE BASEMENT AS HIGH AS POSSIBLE.
3	ROUTE REFRIGERANT PIPING FROM FCU TO CONDENSING UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. SUBMIT REFRIGERANT PIPING SCHEMATIC DRAWING SHOWING ROUTING, VALVES, AND ALL ACCESSORIES DURING SHOP DRAWING REVIEW PHASE.
4	REFER TO TYPICAL LOW PRESSURE DUCT DETAIL 1/M501.
5	REFER TO DUCTWORK HANGERS 2/M501.
6	ROUTE CONDENSATE TO NEAREST FLOOR DRAIN. REFER TO CONDENSATE DRAIN P-TRAP DETAIL 4/M501.
7	PROVIDE WEATHER HOOD WITH BAROMETRIC BACKDRAFT DAMPER AND BIRD SCREEN.



1 BASEMENT HVAC PLAN

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

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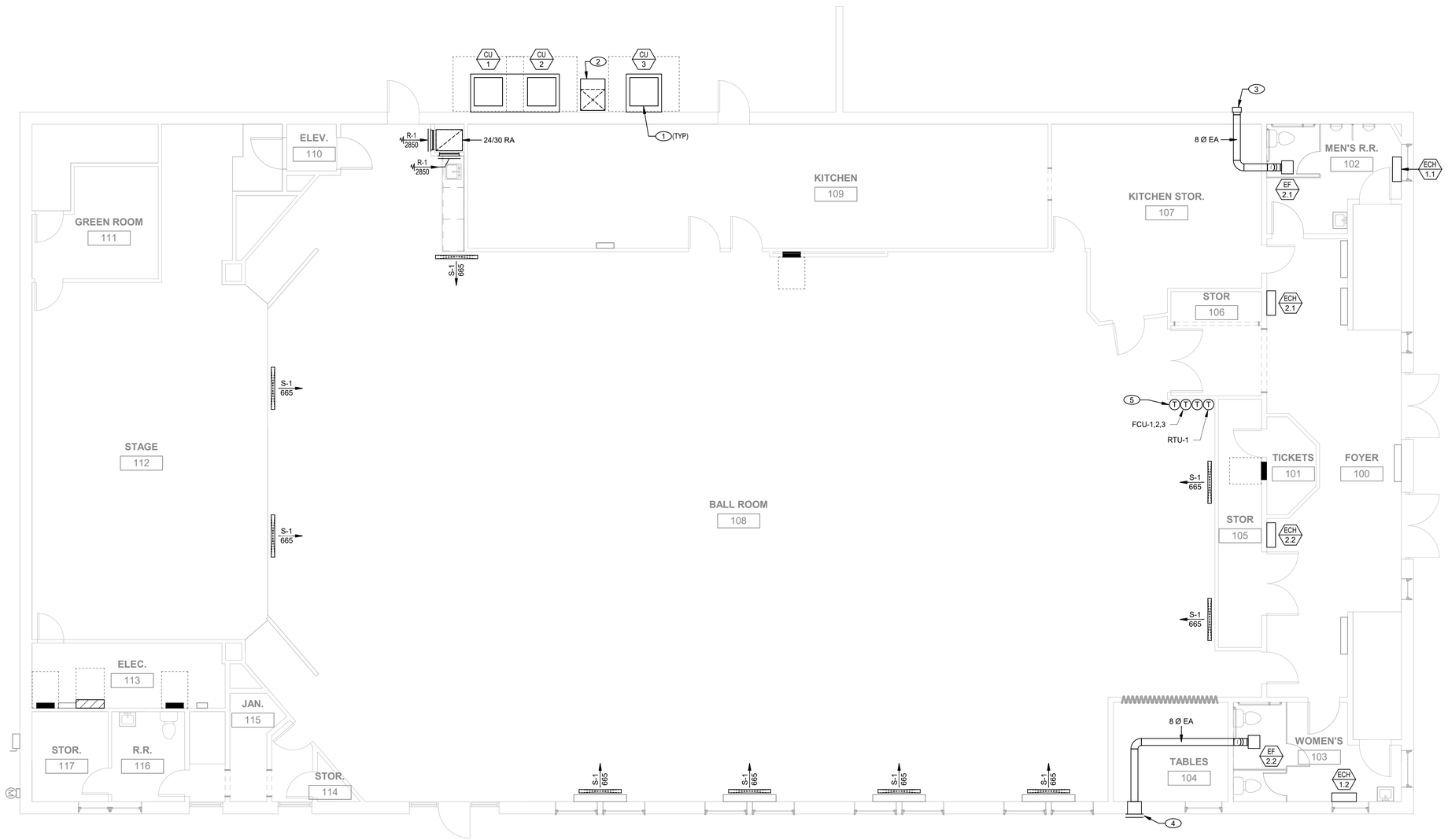
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KEYNOTES	
1	ROUTE REFRIGERANT PIPING FROM FCU TO CONDENSING UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. SUBMIT REFRIGERANT PIPING SCHEMATIC DRAWING SHOWING ROUTING, VALVES, AND ALL ACCESSORIES DURING SHOP DRAWING REVIEW PHASE.
2	PROVIDE GOOSENECK TERMINATION 10'-0" ABOVE GRADE. PROVIDE BIRD SCREEN.
3	DISCHARGE MINIMUM 18" ABOVE ROOF OF ADJACENT BUILDING. PROVIDE WEATHER HOOD WITH BACKDRAFT DAMPER AND BIRDSCREEN.
4	PROVIDE BRICK VENT/LOUVER, APPROXIMATELY 16"X8", RUSKIN BV100 OR EQUIVALENT. CONTRACTOR TO VERIFY EXACT DIMENSIONS AND MOUNTING STYLE. COORDINATE COLOR/FINISH WITH ARCHITECT.
5	PROVIDE TAMPER RESISTANT LOCKABLE COVER FOR THERMOSTATS.



1 LEVEL 1 HVAC PLAN

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

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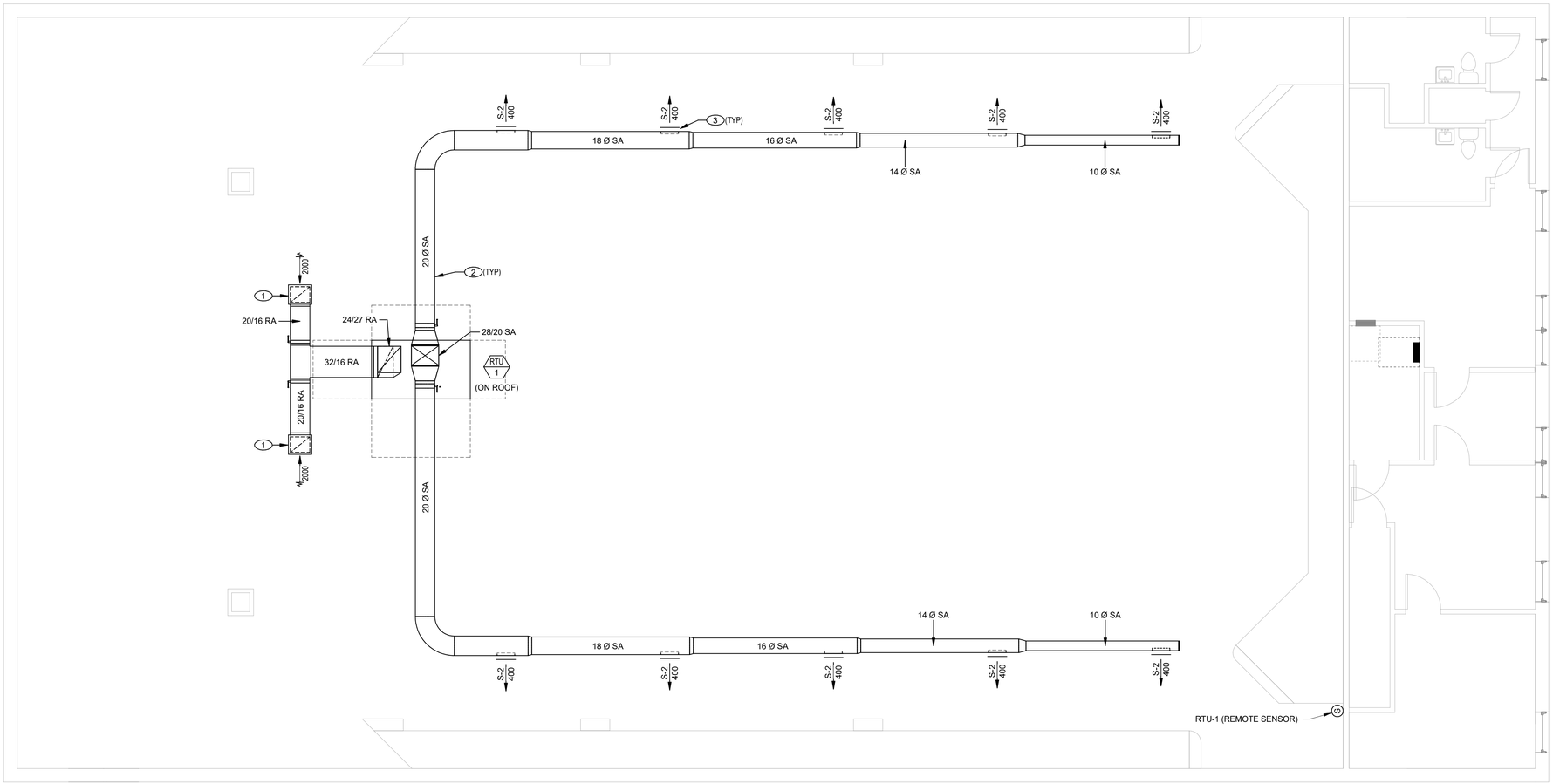
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KEYNOTES	
1	TERMINATE RA WITH ELBOW UP, BELLMOUTH OPENING.
2	REFER TO DUCTWORK HANGERS 2/M501.
3	REFER TO SPIRAL DUCT MOUNTED GRILLE 3/M501.



1 LEVEL 3 HVAC PLAN

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

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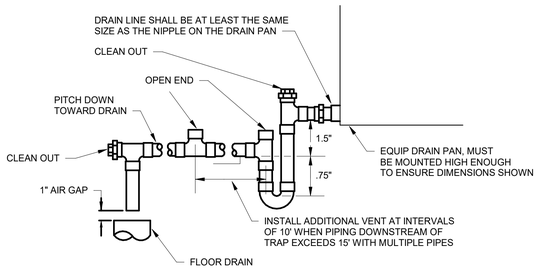
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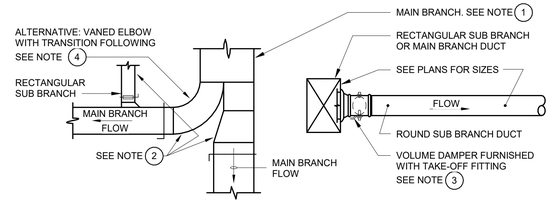
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4 CONDENSATE DRAIN P-TRAP DETAIL

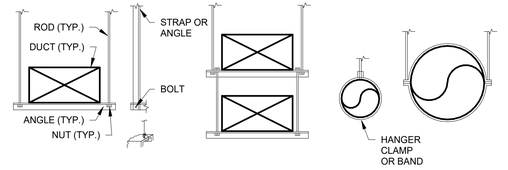
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1. DUCT SPLITS TO DIVIDE FLOW SHALL BE PROPORTIONATE TO SUM TOTAL OF BRANCH DUCT CFM SHOWN ON FLOOR PLANS.
2. ELBOW RADIUS, TAKE-OFF ANGLE AND TRANSITION ANGLE SHALL BE PER SMACNA RECOMMENDATIONS.
3. ROUND DUCT TAKE-OFFS FROM RECTANGULAR DUCTS SHALL BE MADE WITH A HIGH EFFICIENCY FLANGED AND GASKETED FITTING. THE MOUNTING GROOVE SHALL BE SO CONSTRUCTED AS TO ENSURE CONSTANT FIT CONTROL. BALANCING DAMPERS SHALL BE FACTORY INSTALLED WITH SPRING LOADED RETRACTABLE BEARINGS AND A POSITIVE LOCKING WING NUT FOR EASY READJUSTMENT WHEN NEEDED. FITTING SHALL BE FULLY GASKETED ON ALL FLANGES AND CORNERS FOR HIGH EFFICIENCY TAKE-OFF FITTINGS.
4. ALL ELBOWS SHALL BE RADIUS TYPE, EXCEPT WHERE SPACE RESTRICTIONS NECESSITATE USING 90° MITERED VANED ELBOWS.
5. VOLUME DAMPERS SHALL BE PROVIDED ON ALL LOW PRESSURE SUPPLY DUCT BRANCHES AND ON ALL RETURN AND EXHAUST DUCT BRANCHES.

1 TYPICAL LOW PRESSURE DUCT DETAIL

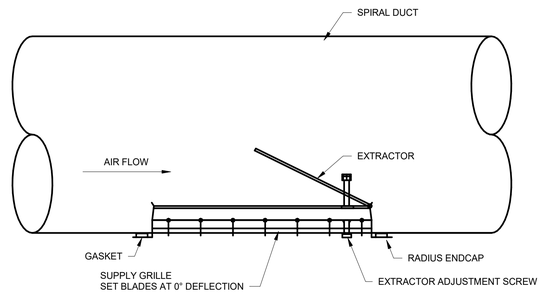
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NOTES:
1. DO NOT EXCEED ALLOWABLE LOAD LIMITS OF ANY OR ALL OF THE INDIVIDUAL TRAPEZE PARTS.
2. DO NOT PENETRATE DUCT OR DUCT INSULATION VAPOR BARRIER WHEN SECURING HANGERS TO DUCTWORK. EVENTUALLY THE PENETRATIONS WILL LEAK.
3. USE HANGER CLAMPS OR BANDS FOR ROUND DUCT AS ROUND DUCT TENDS TO DEFORM ON TRAPEZE HANGERS.
4. TEARS, PUNCTURES, ETC. SHALL BE REPAIRED WITH TAPE OR MASTIC TO MAINTAIN THE INTEGRITY OF THE VAPOR BARRIER.
5. DO NOT USE ANY STRAP HANGERS WITH SCREWS ON ANY DUCTWORK THAT IS EXTERNALLY WRAPPED.

2 DUCTWORK HANGERS

NOT TO SCALE



3 SPIRAL DUCT MOUNTED GRILLE

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ROOFTOP AIR HANDLING UNIT SCHEDULE

MARK	LOCATION	SERVES	SUPPLY AIR (CFM)	MINIMUM OA (CFM)	HEATING SECTION						COOLING SECTION						SUPPLY FAN			ELECTRICAL		WEIGHT (LBS)	MANUFACTURER & MODEL NO.	REMARKS
					AMBIENT DB (°F)	EAT DB (°F)	LAT DB (°F)	GAS HEAT INPUT (MBH)	GAS HEAT OUTPUT (MBH)	STAGES	AMBIENT DB/WB (°F)	EAT DB/WB (°F)	LAT DB/WB (°F)	TOTAL CAP (MBH)	SENS CAP (MBH)	EER	NO. FANS	ESP (IN WG)	MOTOR (HP)	V	PH			
RTU-1	ROOF	BALL ROOM BALCONY	4,000	1,000	-8	50	84	180	144	2	97/69	80/67	59.6/57.5	110.8	74.0	11.0	1	0.50	3	208	3	1,300	LENNOX KGB120S4B	1 THRU 11

REMARKS:
1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2. PROVIDE DISCONNECT SWITCH.
3. PROVIDE FIELD WIRED GFI SERVICE RECEPTACLE WITH WEATHERPROOF COVER. COORDINATE WITH ELECTRICIAN.
4. PROVIDE DRY BULB ECONOMIZER WITH BAROMETRIC RELIEF DAMPER AND WEATHER HOODS.
5. PROVIDE CONDENSATE DRAIN TRAP.
6. PROVIDE HINGED ACCESS PANELS.
7. PROVIDE CONDENSER HAIL GUARD.
8. PROVIDE 7-DAY DIGITAL PROGRAMMABLE LOW VOLTAGE THERMOSTAT WITH REMOTE TEMPERATURE SENSOR.
9. PROVIDE 14" TALL INSULATED ROOF CURB.
10. PROVIDE LOW AMBIENT KIT.
11. PROVIDE FACTORY MOUNTED SMOKE DETECTOR ON SUPPLY SIDE OF UNIT.

FCU & CONDENSING UNIT SCHEDULE

OUTDOOR	INDOOR	TOTAL	MIN.	ESP	COOLING CAP. (MBH)			HEATING CAP. (MBH)			COND. UNIT MANUFACTURER	FAN COIL MANUFACTURER	REMARKS
COND. UNIT	FAN COIL	CFM	OA	(IN WC)	TOTAL	SENS.	STAGES	INPUT	OUTPUT	STAGES	& MODEL NO.	& MODEL NO.	
CU-1	FCU-1	1995	300	0.65	58.9	45.5	2	110	106	2	LENNOX 16ACX-060-230	LENNOX EL296UH110XV60C & CX35-60C-F	1 THRU 10
CU-2	FCU-2	1995	300	0.65	58.9	45.5	2	110	106	2	LENNOX 16ACX-060-230	LENNOX EL296UH110XV60C & CX35-60C-F	1 THRU 10
CU-3	FCU-3	1995	300	0.65	58.9	45.5	2	110	106	2	LENNOX 16ACX-060-230	LENNOX EL296UH110XV60C & CX35-60C-F	1 THRU 10

REMARKS:
1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2. REFRIGERANT SHALL BE R-410A.
3. PROVIDE SINGLE POINT POWER SUPPLY CONNECTION.
4. PROVIDE HAILGUARDS AND LOW AMBIENT KIT.
5. PROVIDE LOW VOLTAGE PROGRAMMABLE THERMOSTAT WITH TOUCH SCREEN DISPLAY.
6. PROVIDE HINGED FILTER RACK AND 1-INCH THROW AWAY FILTER.
7. PROVIDE INSULATED LINE SETS.
8. PROVIDE PVC REFRIGERANT LINE CHANNELS AND FITTINGS TO CONCEAL EXTERIOR PIPING.
9. PROVIDE PVC COMBUSTION AIR INTAKE AND CPVC EXHAUST FLUE WITH THROUGH ROOF TERMINATIONS PER LOCAL CODE.
10. PROVIDE FULL ECONOMIZER AND ALL ASSOCIATED DAMPERS, CONTROLS, AND ACCESSORIES.

REGISTER - GRILLE - DIFFUSER SCHEDULE

MARK	FUNCTION	TYPE	CFM RANGE	MAX N.C.	SIZE (INCHES)	BORDER OR FRAME	MATERIAL		FINISH	ACCESS.	MANUFACTURER & MODEL NO.	REMARKS
							ALUM.	STEEL				
S-1	SUPPLY	LINEAR BAR	0 - 665	25	48 x 4	FLOOR MOUNT	X	-	REMARK 3	-	KRUEGER 1800	1, 2, 3
S-2	SUPPLY	DOUBLE DEFLECTION	0 - 400	25	18 x 8	DUCT MOUNT	X	-	REMARK 3	-	KRUEGER 5DMGDR	1, 2, 3
R-1	RETURN	SINGLE DEFL. 0° BLADE	0 - 2850	25	22 x 34	SURFACE MOUNT	X	-	REMARK 3	-	KRUEGER S80	1, 2, 3

REMARKS:
1. PROVIDE SPECIFIC NOISE CRITERIA (NC) DATA FOR EACH LINE ITEM WITH SHOP DRAWINGS.
2. COORDINATE BORDER OR FRAME TYPE WITH MOUNTING LOCATION.
3. COORDINATE FINISH/COLOR WITH ARCHITECT.

DUCTWORK INSULATION SCHEDULE

DUCTWORK SYSTEM	ACOUSTICAL LINER	FLEXIBLE FIBERGLASS	RIGID FIBERGLASS	THICKNESS (INCHES)	REMARKS
CONCEALED SUPPLY/OUTSIDE AIR		X		2	-
EXPOSED SUPPLY/OUTSIDE AIR (RECTANGULAR)	X			1 1/2	-
EXPOSED SUPPLY/OUTSIDE AIR (ROUND)				-	-
CONCEALED RETURN/EXHAUST AIR	X			1 1/2	-
EXPOSED RETURN/EXHAUST AIR (RECTANGULAR)	X			1 1/2	-
EXPOSED RETURN/EXHAUST AIR (ROUND)				-	-

MECHANICAL / ELECTRICAL COORDINATION SCHEDULE

ABBREVIATION:

E	ELECTRICAL CONTRACTOR	HP	HORSEPOWER	4X	NEMA 4X	V	VOLTAGE
M	MECHANICAL CONTRACTOR	KW	KILOWATTS	PH	PHASE	VFD	VARIABLE FREQUENCY
I	INTEGRAL WITH EQUIPMENT	MR	PER MANUFACTURER'S	RE	REVERSING		DRIVE
C	COMBINATION STARTER AND		RECOMMENDATION	RV	REDUCED VOLTAGE	2S	TWO SPEED
	SAFETY SWITCH	NF	NON-FUSED	SF	FUSE HOLDER WITH SWITCH	3S	THREE SPEED
CB	CIRCUIT BREAKER	NR	NON-REVERSING	SS	SAFETY SWITCH		
FV	FULL VOLTAGE	N1	NEMA 1	SH	HP RATED SWITCH		
FLA	FULL LOAD AMPS	3R	NEMA 3R	ST	THERMAL ELEM. SWITCH		

REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

MARK	DESCRIPTION	RATING			DISCONNECT					MOTOR STARTER			NAMEPLATE	REMARKS
		LOAD	V	PH	FURNISH/ INSTALL BY	TYPE	RATING (AMPS)	FUSE SIZE	ENCL.	FURNISH/ INSTALL BY	TYPE/ NEMA SIZE	ENCL.	MINIMUM SCCR (AMPS)	
FCU-1	FAN COIL	12 MCA	120	1	E/E	SS	30	MR	N1	M/I	-	-	-	-
FCU-2	FAN COIL	12 MCA	120	1	E/E	SS	30	MR	N1	M/I	-	-	-	-
FCU-3	FAN COIL	12 MCA	120	1	E/E	SS	30	MR	N1	M/I	-	-	-	-
CU-1	CONDENSING UNIT	36 MCA	208	1	E/E	SS	60	MR	3R	M/I	-	-	5,000	-
CU-1	CONDENSING UNIT	36 MCA	208	1	E/E	SS	60	MR	3R	M/I	-	-	5,000	-
CU-3	CONDENSING UNIT	36 MCA	208	1	E/E	SS	60	MR	3R	M/I	-	-	5,000	-
RTU-1	ROOFTOP UNIT	52 MCA	208	3	M/I	-	-	-	-	M/I	-	-	5,000	-
EF-1	EXHAUST FAN	1.2 FLA	120	1	M/I	-	-	-	-	M/I	-	-	-	-
EF-2	EXHAUST FAN	0.6 FLA	120	1	M/I	-	-	-	-	M/I	-	-	-	-
ECH-1	ELECTRIC CABINET HEATER	3 KW	208	3	M/I	-	-	-	-	-	-	-	-	-
ECH-2	ELECTRIC CABINET HEATER	5 KW	208	3	M/I	-	-	-	-	-	-	-	-	-
ECH-3	ELECTRIC CABINET HEATER	1.5 KW	208	1	M/I	-	-	-	-	-	-	-	-	-

GENERAL NOTES:
A. VERIFY/COORDINATE ALL RATINGS FOR EQUIPMENT. WHERE SUCH RATINGS ARE OTHER THAN THAT INDICATED ON MECHANICAL/ELECTRICAL COORDINATION SCHEDULE, PROVIDE DISCONNECTS, MOTOR STARTERS, OVERCURRENT DEVICES AND RELATED REVISIONS ACCORDINGLY. WHERE EQUIPMENT IS PROVIDED WITH RATINGS OTHER THAN THAT INDICATED, CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND ASSOCIATED COSTS FOR REVISIONS.

B. PROVIDE FRACTIONAL HORSEPOWER MOTORS WITH INTEGRAL OVERLOAD PROTECTION.

C. EQUIPMENT LISTED IN SCHEDULE MAY APPEAR IN NUMEROUS LOCATIONS. EQUIPMENT MARKS ARE DESIGNATED BY UNIQUE IDENTIFIERS ON THE PLANS; I.E., HP-1.1, HP-1.2. IN THESE INSTANCES, THE ELECTRICAL REQUIREMENTS DO NOT CHANGE FROM ONE MARK TO THE NEXT, ONLY THE UNIQUE IDENTIFIER CHANGES.

D. HORSEPOWER RATED SWITCHES (SH): FOR 120 V MOTORS LESS THAN 1/2 HP, PROVIDE FUSEHOLDER WITH SWITCH, FUSED PER MANUFACTURER'S RECOMMENDATION AND NEC REQUIREMENTS. FOR 120 V MOTORS RATED 1/2 HP OR 3/4 HP, PROVIDE HP RATED TOGGLE SWITCH (WHERE BRANCH CIRCUIT OVERCURRENT DEVICE MEETS NEC REQUIREMENTS FOR SHORT-CIRCUIT PROTECTION) OR FUSED SAFETY SWITCH.

E. INDUSTRIAL CONTROL PANELS (COMBINATION MOTOR STARTER AND SAFETY SWITCH, VFDS, ETC) AS DEFINED BY THE NEC ARTICLE 409, SHALL BE PROVIDED WITH A FACTORY INSTALLED NAMEPLATE WITH MARKINGS AS INDICATED BY NEC 409.110. SHORT-CIRCUIT CURRENT RATING (SCCR) LABEL SHALL BE AS INDICATED ABOVE.

REMARKS:
1. CORD AND PLUG ELECTRICAL CONNECTION.

EXHAUST FAN SCHEDULE

MARK	SERVES	TYPE	CFM	EXT. S.P.	DRIVE	MAX SONES	VARIABLE CONTROL	MANUFACTURER & MODEL NO.	REMARKS
EF-1	RESTROOM	CEILING CABINET	100	0.375	DIRECT	2.0	-	GREENHECK SP-B110	1 THRU 5
EF-2	RESTROOM	CEILING CABINET	225	0.375	DIRECT	3.5	-	GREENHECK SP-A250	1 THRU 5

REMARKS:
1 SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2. UNIT RATED FOR 4,100 FT ELEVATION.
3. PROVIDE BAROMETRIC BACKDRAFT DAMPER.
4. PROVIDE VIBRATION ISOLATION HANGER KIT.
5. PROVIDE DISCONNECT SWITCH.

ELECTRIC UNIT HEATER SCHEDULE

MARK	TYPE	LOCATION	ELECTRIC COIL		MANUFACTURER & MODEL NO.	REMARKS
			CFM	KW		
ECH-1	SURFACE MOUNTED	RESTROOMS	250	3	INDEECO CUI	1 THRU 4
ECH-2	SURFACE MOUNTED	FOYER	250	5	INDEECO CUI	1 THRU 4
ECH-3	SURFACE MOUNTED	RESTROOMS	70	1.5	INDEECO EWI	1 THRU 4

REMARKS:
1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ELECTRICAL DATA.
2. PROVIDE DISCONNECT SWITCH AND BUILT-IN TAMPER-RESISTANT THERMOSTAT.
3. PROVIDE MOUNTING ACCESSORIES FOR ARRANGEMENT SHOWN ON PLANS.
4. PROVIDE COLOR CHART FOR SELECTION OF COLOR BY ARCHITECT.

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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PROFESSIONAL ENGINEER — MECHANICAL — BENJAMIN M. SCHMITT E-14489 — STATE OF NEBRASKA

03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: LMB
REVISIONS

DATE	DESCRIPTION

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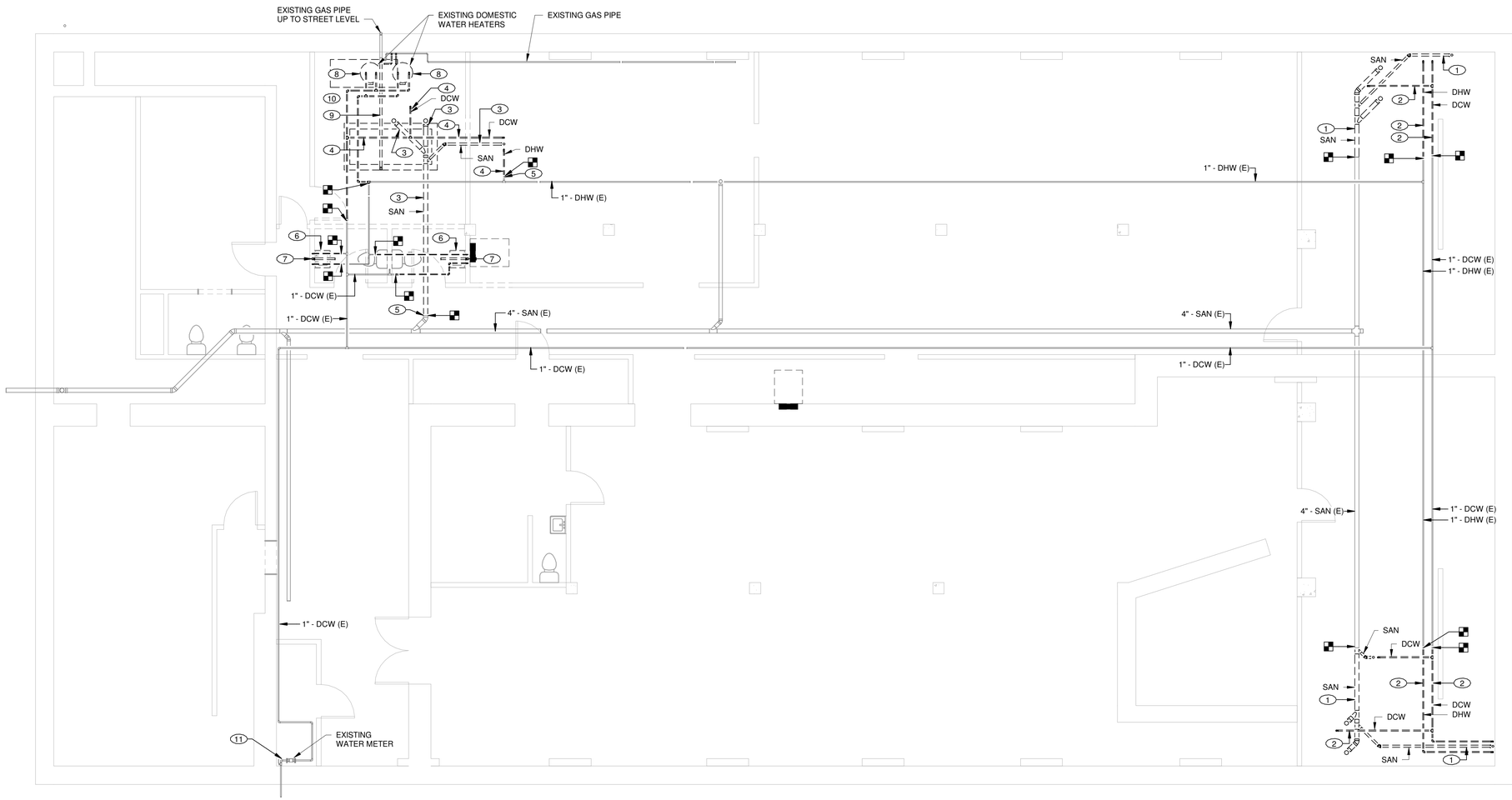
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KEYNOTES	
1	REMOVE EXISTING SANITARY PIPING SERVING PLUMBING FIXTURES ABOVE TO A POINT TO ACCOMMODATE NEW SANITARY PIPING CONNECTION SERVING NEW PLUMBING FIXTURES ABOVE. CONTRACTOR TO VERIFY PIPE SYSTEM AND ROUTING TO PLUMBING FIXTURE ABOVE PRIOR TO DEMOLITION.
2	REMOVE EXISTING DOMESTIC WATER PIPING SERVING PLUMBING FIXTURES ABOVE TO A POINT TO ACCOMMODATE NEW DOMESTIC WATER PIPING CONNECTION SERVING NEW PLUMBING FIXTURES ABOVE. CONTRACTOR TO VERIFY PIPE SYSTEM AND ROUTING TO PLUMBING FIXTURE ABOVE AND TO SYSTEM MAIN CONNECTION POINT PRIOR TO DEMOLITION.
3	REMOVE EXISTING SANITARY PIPING SERVING PLUMBING FIXTURES ABOVE. CONTRACTOR TO VERIFY PIPE SYSTEM AND ROUTING TO PLUMBING FIXTURE ABOVE PRIOR TO DEMOLITION.
4	REMOVE EXISTING DOMESTIC WATER PIPING SERVING PLUMBING FIXTURES ABOVE. CONTRACTOR TO VERIFY PIPE SYSTEM AND ROUTING TO PLUMBING FIXTURE ABOVE AND TO SYSTEM MAIN CONNECTION POINT PRIOR TO DEMOLITION.
5	CAP EXISTING PIPE . MATCH EXISTING PIPE MATERIAL.
6	REMOVE EXISTING PLUMBING FIXTURE AND DOMESTIC WATER PIPING SERVING PLUMBING FIXTURE. CONTRACTOR TO VERIFY PIPE SYSTEM AND ROUTING TO PLUMBING FIXTURE AND TO SYSTEM MAIN CONNECTION POINT PRIOR TO DEMOLITION.
7	REMOVE EXISTING VENT PIPING SERVING PLUMBING FIXTURE BACK TO MAIN. CONTRACTOR TO VERIFY PIPE SYSTEM AND ROUTING TO PLUMBING FIXTURE AND TO SYSTEM MAIN CONNECTION POINT PRIOR TO DEMOLITION. REMOVE SANITARY PIPE SERVING PLUMBING FIXTURE. CAP EXISTING SANITARY PIPE BELOW NEW FINISHED FLOOR.
8	REMOVE EXISTING DOMESTIC WATER, GAS AND VENT PIPING FOR RELOCATION OF EXISTING DOMESTIC WATER HEATERS.
9	REMOVE EXISTING GAS LINE SERVING EXISTING BOILER BEING REMOVED.
10	VERIFY LOCATION OF ALL EXISTING DOMESTIC WATER, GAS, VENT WATER HEATER VENT AND SANITARY PIPING IN LOCATION OF NEW CHAIR LIFT / ELEVATOR. REROUTE ANY EXISTING TO REMAIN AS REQUIRED FOR INSTALLATION OF CHAIR LIFT / ELEVATOR.
11	EXISTING 1" SHUTOFF VALVE AND WATER METER TO REMAIN.



1 BASEMENT PLUMBING DEMOLITION PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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PROFESSIONAL MECHANICAL ENGINEER
BENJAMIN M. SCHMITT
E-14489
STATE OF NEBRASKA

03/24/2021

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for

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SIDNEY, NE 69162

PROJECT #: 3-11-2011
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DRAWN: DPB

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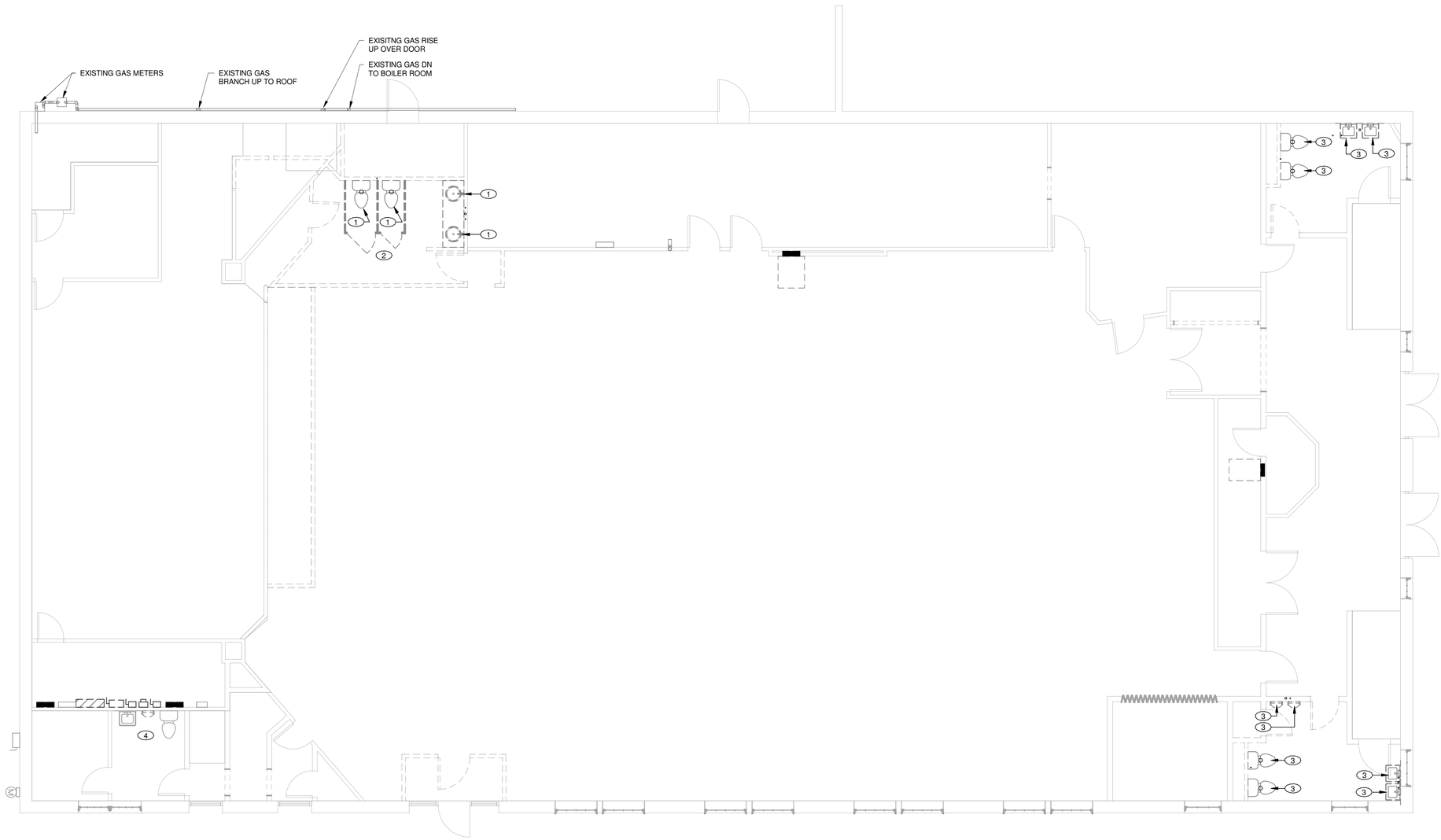
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KEYNOTES	
1	REMOVE EXISTING PLUMBING FIXTURE AND ASSOCIATED DOMESTIC WATER, SANITARY AND VENT PIPING.
2	DURING DEMOLITION OF WALLS, CONTRACTOR TO LOCATE AND VERIFY EXISTING VENT PIPING SERVING PLUMBING FIXTURES LOCATED ON LEVEL BELOW. REROUTE EXISTING VENT PIPING IN COORDINATION WITH NEW ARCHITECTURAL FLOOR PLAN TO MAINTAIN PROPER SYSTEM VENT FOR PLUMBING FIXTURES ON LEVEL BELOW. CAP EXISTING VENT PIPES AT MAIN SERVING PLUMBING FIXTURES BEING REMOVED FROM THIS AREA.
3	REMOVE EXISTING PLUMBING FIXTURE, DOMESTIC WATER, SANITARY AND VENT PIPING TO ALLOW INSTALLATION OF NEW PLUMBING FIXTURES. CONTRACTOR TO VERIFY LOCATION OF EXISTING VENT PIPING SERVING PLUMBING FIXTURES BEING REMOVED IN THIS AREA. EXISTING VENT PIPING WILL BE USED TO SERVE NEW PLUMBING FIXTURES BEING INSTALLED.
4	REMOVE EXISTING LAVATORY, URINAL AND WATER CLOSET. LAVATORY AND WATER CLOSET TO BE REPLACED WITH NEW FIXTURES. URINAL WILL NOT BE REPLACED. CAP, REMOVE AND RECONFIGURE EXISTING WASTE, VENT AND DOMESTIC WATER IN WALL AS REQUIRED TO ACCOMMODATE NEW FIXTURES.



1 LEVEL 1 PLUMBING DEMOLITION PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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BENJAMIN M. SCHMITT
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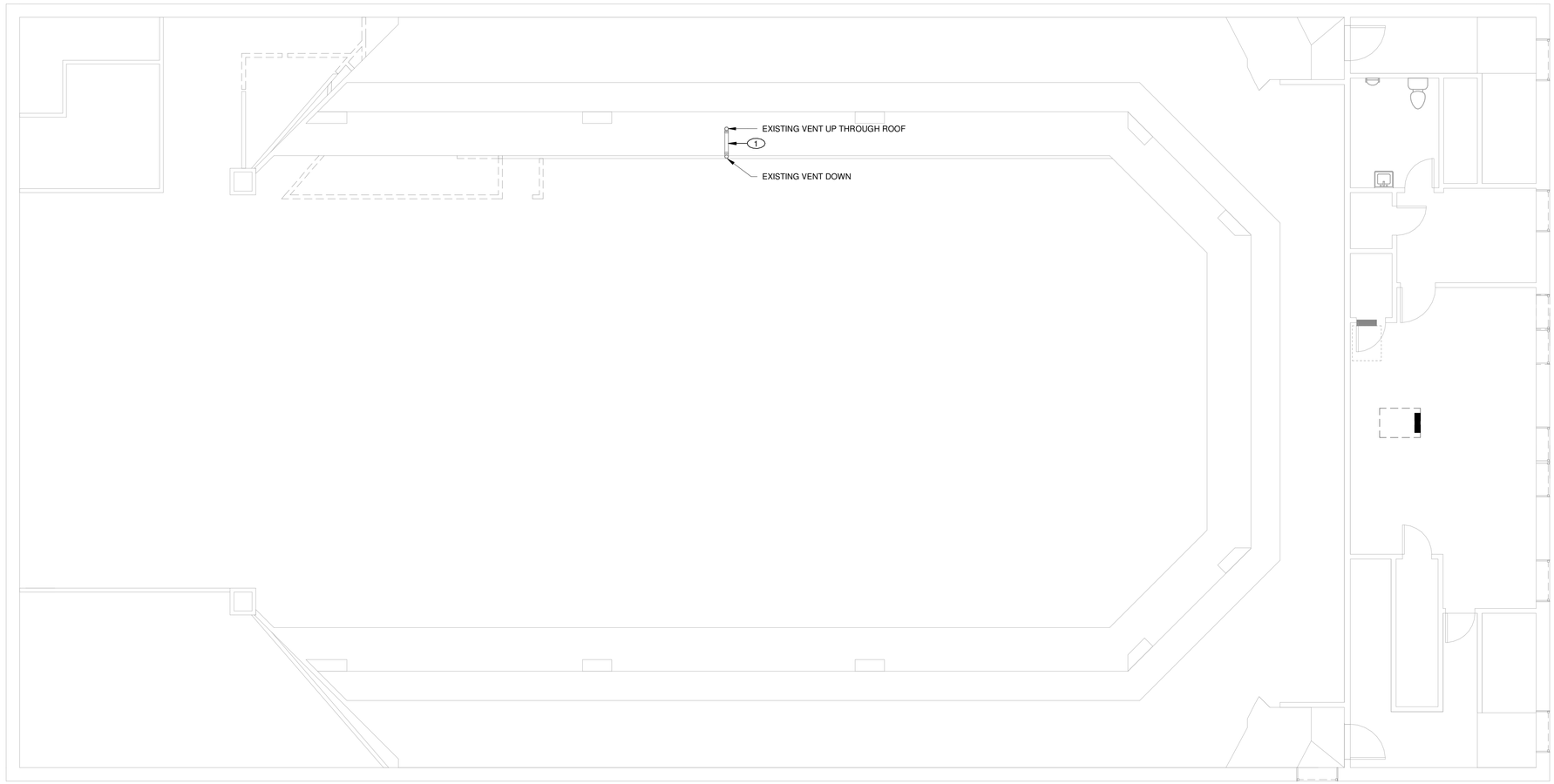
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KEYNOTES	
1	EXISTING VENT SERVING KITCHEN EQUIPMENT BELOW. REROUTE VENT AS REQUIRED TO MOVE FROM BALCONY WALKWAY AND SEATING. PROVIDE NEW VENT THROUGH ROOF LOCATION IF NEEDED. PATCH EXISTING VENT THROUGH ROOF LOCATION TO MATCH EXISTING IF REQUIRED.



1 LEVEL 2 PLUMBING DEMOLITION PLAN

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

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E-14489
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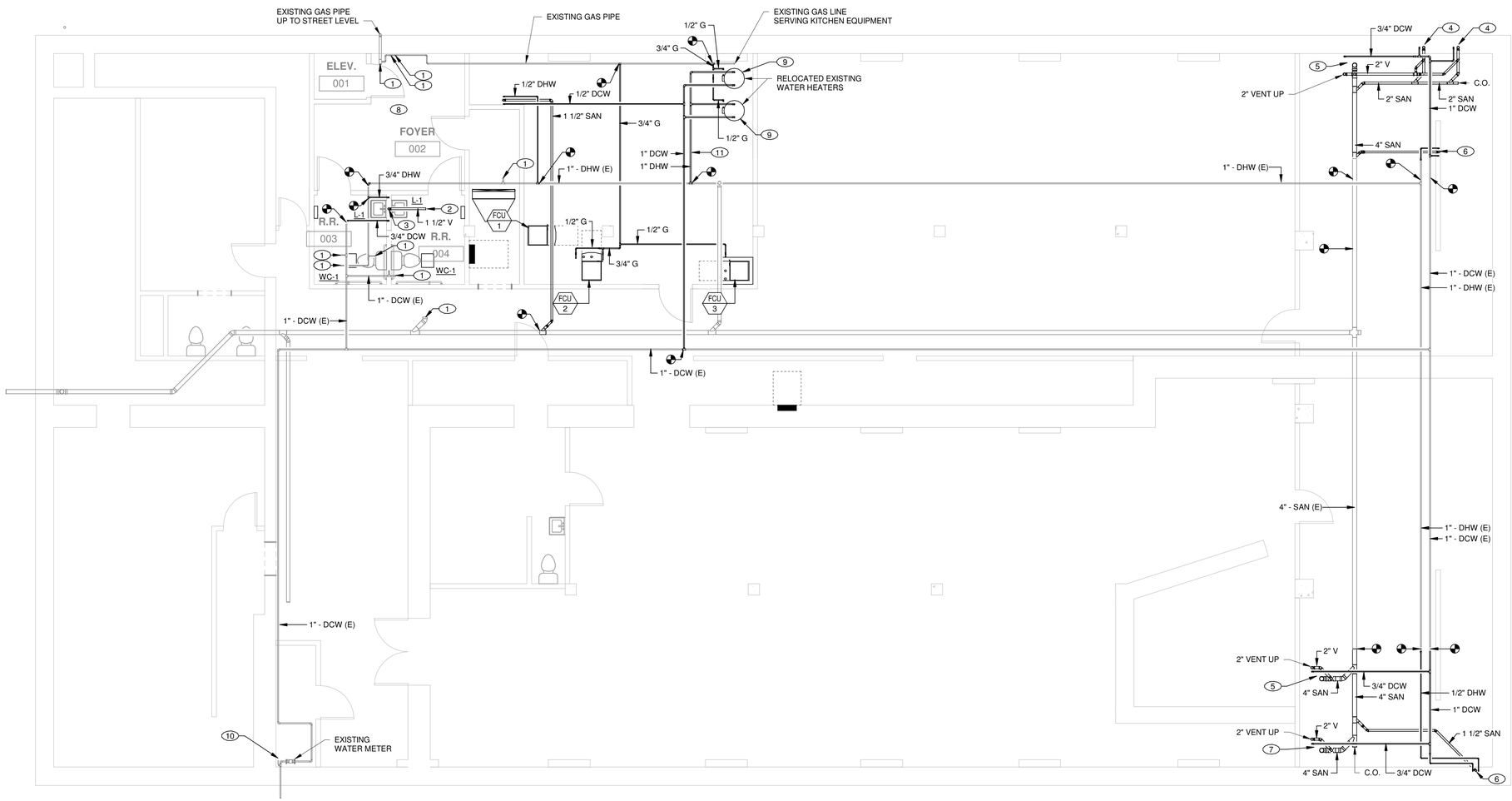
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KEYNOTES	
1	CAP EXISTING PIPE . MATCH EXISTING PIPE MATERIAL.
2	CONTRACTOR TO VERIFY LOCATION OF EXISTING VENT PIPE MAIN IN THIS AREA. CONNECT NEW 1-1/2" VENT SERVING NEW PLUMBING FIXTURES TO EXISTING VENT MAIN (MINIMUM 1-1/2" MAIN).
3	INSTALL 2" SANITARY PIPE BELOW FLOOR TO SERVE NEW PLUMBING FIXTURES. CONTRACTOR TO VERIFY LOCATION OF EXISTING SANITARY PIPING BELOW FLOOR. CONNECT NEW 2" SANITARY TO EXISTING SANITARY BELOW FLOOR (2" MINIMUM).
4	2" SAN AND 3/4" DCW UP TO UR-1.
5	4" SAN & 3/4" DCW UP TO WC-1.
6	1 1/2" SAN, 1/2" DCW & 1/2" DHW UP TO L-1.
7	4" SAN & 3/4" DCW UP TO WC-2.
8	VERIFY LOCATION OF ALL EXISTING DOMESTIC WATER, GAS, VENT WATER HEATER VENT AND SANITARY PIPING IN LOCATION OF NEW CHAIR LIFT / ELEVATOR. REROUTE ANY EXISTING TO REMAIN AS REQUIRED FOR INSTALLATION OF CHAIR LIFT / ELEVATOR.
9	CONTRACTOR TO VERIFY ROUTING OF DOMESTIC WATER HEATER VENT. NEW VENT PIPING TO MATCH EXISTING SIZE OF VENT PIPING PRIOR TO RELOCATION OF DOMESTIC WATER HEATERS.
10	EXISTING 1" SHUTOFF VALVE AND WATER METER TO REMAIN.
11	ROUTE AND CONNECT NEW 1" DCW AND 1" DHW TO EXISTING 1" DCW AND 1" DHW PIPING. CONTRACTOR TO VERIFY ROUTING AND LOCATION OF EXISTING PIPING.



1 BASEMENT PLUMBING PLAN

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

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Phone: 308/534-4983 • Fax: 308/534-4944

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PROFESSIONAL MECHANICAL ENGINEER
BENJAMIN M. SCHMITT
E-14489
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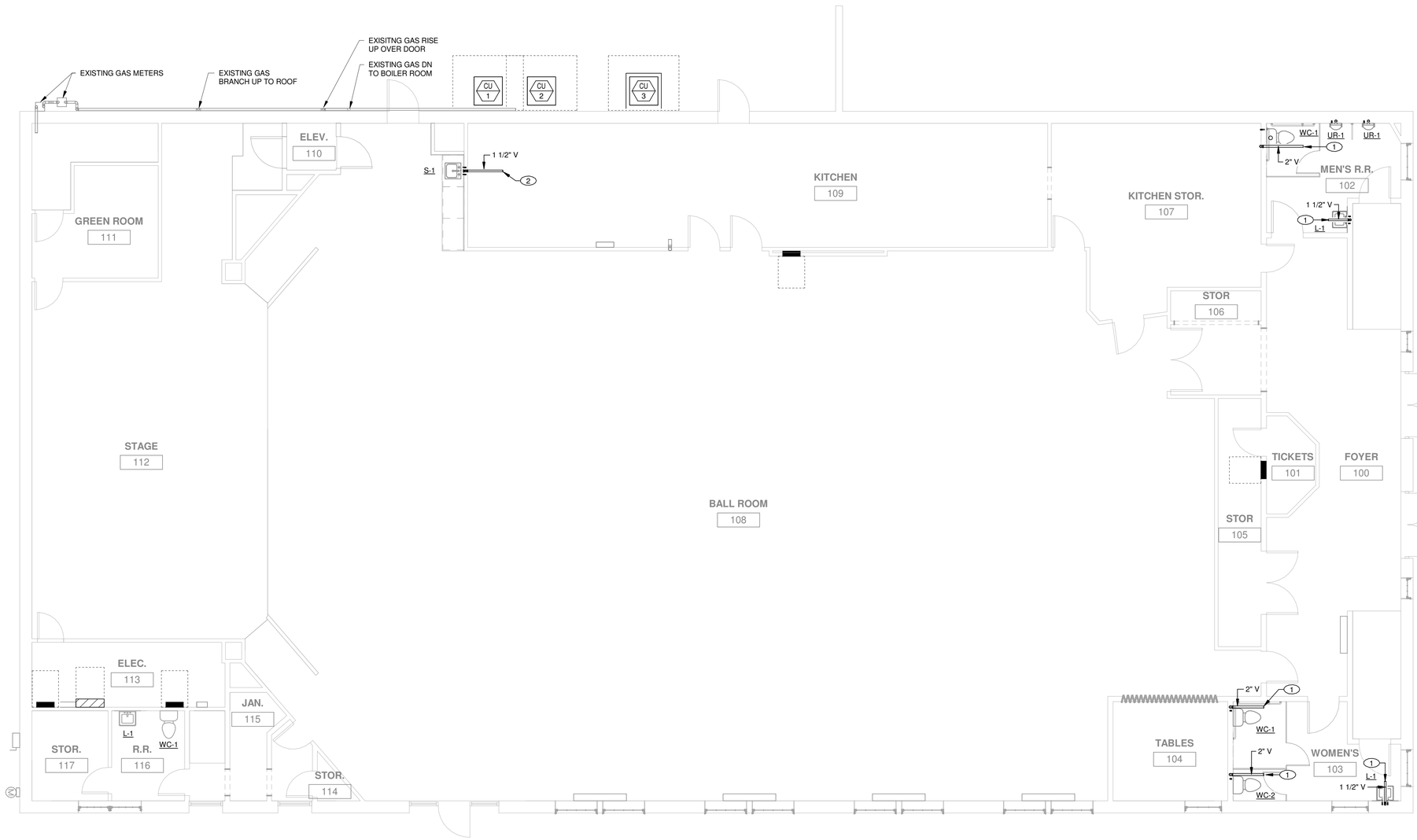
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KEYNOTES	
1	CONNECT NEW VENT PIPING TO EXISTING VENT MAIN. DOMESTIC WATER SERVING PLUMBING FIXTURE IS FROM BELOW.
2	ROUTE 1 1/2" SANITARY VENT TO EXISTING 1 1/2" OR LARGER SANITARY VENT IN THIS AREA..



1 LEVEL 1 PLUMBING PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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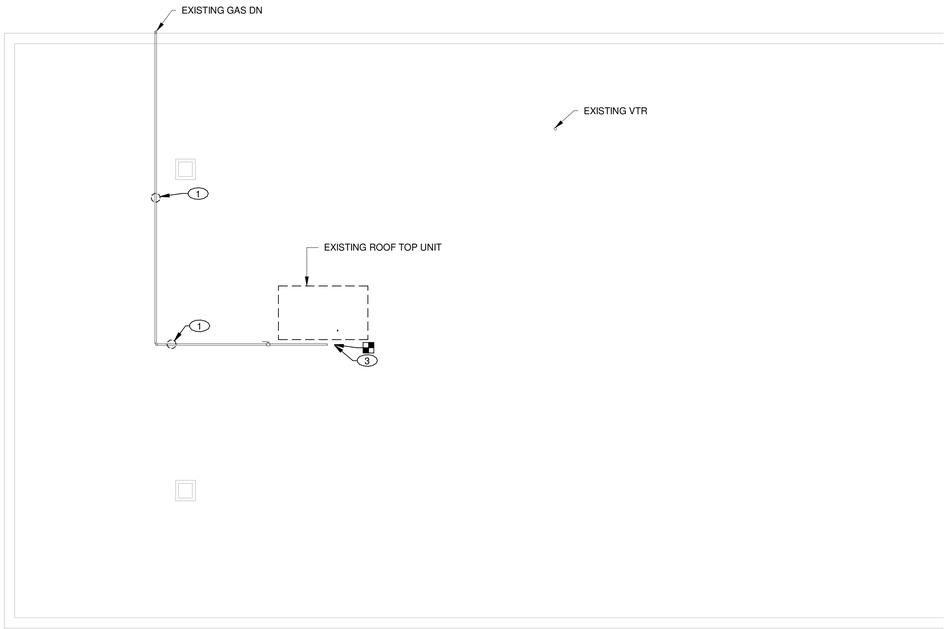
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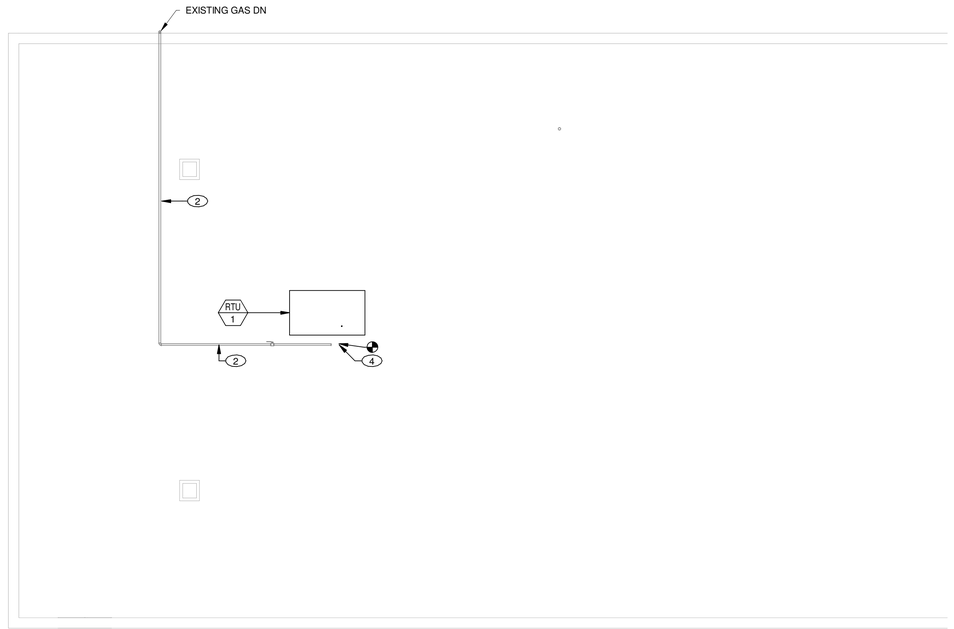
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KEYNOTES	
1	REMOVE EXISTING PIPE SUPPORTS.
2	PROVIDE NEW GAS PIPE SUPPORTS.
3	DISCONNECT EXISTING GAS PIPE FROM EXISTING ROOF TOP UNIT BEING REMOVED.
4	CONNECT EXISTING GAS PIPE TO NEW RTU-1.



1 ROOF PLUMBING DEMOLITION PLAN

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



2 ROOF PLUMBING PLAN

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

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702 South Bailey • North Platte, Ne. 69101
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WATER CLOSET: WC-1

FIXTURE
ELONGATED FLOOR MOUNT VITREOUS CHINA SIPHON JET WATER CLOSET, LOW CONSUMPTION (6.0 LPF/1.6 GPF) FULLY GLAZED 2" BALLPASS TRAPWAY, 11" x 9" WATER SURFACE, CLOSE COUPLED TANK. COLOR MATCHED TRIP LEVER.
AMERICAN-STANDARD "CADET EL" 2462.016.
KOHLER "WELLWORTH K-3432-RA.

TRIM
COMMERCIAL WEIGHT SOLID PLASTIC OPEN FRONT LESS COVER FOR ELONGATED BOWL. LARGE INTEGRAL BUMPER SHALL BE COLOR-MATCHED MOLDED PLASTIC. HINGES TO FEATURE EXTERNAL CHECK AND INTERNAL SELF-SUSTAINING MECHANISMS IN BOTH HINGES. COLOR TO BE WHITE.
CHURCH MODEL #295SSC.

COMPLETE WITH: CHROME PLATED SOLID BRASS STOP WITH BRASS STEM, BRAIDED STAINLESS STEEL OR POLYMER FLEXIBLE CONNECTOR, ALL CHLORAMINE-CHLORINE RESISTANT. CHROME PLATED BRASS ESCUTCHEON. SOLID BRASS BOLTS AND WASHERS SHALL BE USED AT BOWL CONNECTION TO CLOSET FLANGE.

NOTE: PROVIDE LOOSE KEY STOPS WHERE FIXTURES ARE SUBJECT TO VANDALISM.



WATER CLOSET: WC-2

FIXTURE
ADA ELONGATED FLOOR MOUNT VITREOUS CHINA SIPHON JET WATER CLOSET, LOW CONSUMPTION (6.0 LPF/1.6 GPF) FULLY GLAZED 2" BALLPASS TRAPWAY, 11" x 9" WATER SURFACE, CLOSE COUPLED TANK. COLOR MATCHED TRIP LEVER.
AMERICAN-STANDARD "CADET 16 1/2" H EL" 2849.128.
KOHLER "HIGHLINE" K-3611.

TRIM
COMMERCIAL WEIGHT SOLID PLASTIC OPEN FRONT LESS COVER FOR ELONGATED BOWL. LARGE INTEGRAL BUMPER SHALL BE COLOR-MATCHED MOLDED PLASTIC. HINGES TO FEATURE EXTERNAL CHECK AND INTERNAL SELF-SUSTAINING MECHANISMS IN BOTH HINGES. COLOR TO BE WHITE.
CHURCH MODEL #295SSC.

COMPLETE WITH: CHROME PLATED SOLID BRASS STOP WITH BRASS STEM, BRAIDED STAINLESS STEEL OR POLYMER FLEXIBLE CONNECTOR, ALL CHLORAMINE-CHLORINE RESISTANT. CHROME PLATED BRASS ESCUTCHEON. SOLID BRASS BOLTS AND WASHERS SHALL BE USED AT BOWL CONNECTION TO CLOSET FLANGE.



SINK: S-1

(INSTALL PER A.D.A REQUIREMENTS)

FIXTURE
18 GAUGE, TYPE 304 STAINLESS STEEL SINK, SINGLE COMPARTMENT COUNTERTOP SELF RIMMING, 1-3/4" RADIUS COVED CORNERS AND UNDERSIDE FULLY UNDERCOATED. COMPARTMENT AND FAUCET DECK ARE RECESSED 3/16" BELOW OUTSIDE EDGE OF SINK, 3 FAUCET HOLES AND 3-1/2" DRAIN OPENING.
OVERALL DIMENSIONS: 20" LONG X 17" WIDE
BOWL DIMENSIONS: 14" LONG X 14" WIDE X 6-1/2" DEEP
ELKAY LRAD-172065.

TRIM
CHROME FINISHED, COMBINATION FITTING WITH 4" WRIST BLADE HANDLES, 8" GOOSENECK RIGID/SWING SPOUT, 6-1/8" OUTLET HEIGHT, 2.5 GPM FLOW RESTRICTOR, AERATOR AND 3-HOLE INSTALLATION.
CHICAGO FAUCET 786-GN-8A-E3.

COMPLETE WITH SOLID BRASS STOPS WITH ALL BRASS STEMS AND CHLORAMINE-CHLORINE RESISTANT WASHERS, CHLORAMINE-CHLORINE RESISTANT BRAIDED STAINLESS STEEL FLEXIBLE CONNECTORS (SUPPLY TUBES), STAINLESS STEEL BASKET STRAINER WITH STAINLESS STEEL BASKET, CAST BRASS LOCK AND COUPLING NUTS, BRASS 4" 17 GAUGE TAILPIECE, HEAVY CAST BRASS ADJUSTABLE P-TRAP WITH 17 GAUGE TUBULAR WALL BEND AND BRASS ESCUTCHEONS. (ALL BRASS MATERIALS SHALL BE CHROME PLATED)



LAVATORY: L-1

(MOUNT @ A.D.A. HEIGHT)

FIXTURE
20" x 18" SIZE, VITREOUS CHINA, WALL HUNG LAVATORY (COMPLIES WITH ADA) WITH BACK, PUNCHED FOR CONCEALED ARM CARRIER, ANTI-SPLASH RIM AND FRONT OVERFLOW.
AMERICAN STANDARD "LUCERNE" 0355.012.
KOHLER "KINGSTON" K-2005.

TRIM
CHROME PLATED METAL CONSTRUCTION, 4" CENTERSET LAVATORY FAUCET WITH VANDAL RESISTANT 1.2 GPM AERATOR, INDEXED LEVER HANDLE, HOT LIMIT SAFETY STOP, 1/2" MALE THREADED CONNECTORS AND SUPPLY NUTS.
AMERICAN STANDARD "RELIANT 3" 7385.000.
KOHLER K-15592F-5.

COMPLETE WITH SOLID BRASS STOPS WITH ALL BRASS STEMS AND CHLORAMINE-CHLORINE RESISTANT WASHERS. CHLORAMINE-CHLORINE RESISTANT BRAIDED STAINLESS STEEL OR POLYMER FLEXIBLE CONNECTORS. CAST BRASS SOLID TOP OPEN GRID P.O. PLUG WITH 6" 17 GAUGE TAILPIECE WITH CAST BRASS LOCKNUT. HEAVY CAST BRASS ADJUSTABLE P-TRAP WITH 17 GA TUBULAR WALL BEND AND BRASS SLIP NUTS. (ALL BRASS MATERIALS SHALL BE CHROME PLATED)

PROVIDE TRUEBRO "LAV-GUARD" MODEL #103.
PROVIDE TRUEBRO "LAV-GUARD" MODEL #103K

CARRIER
FOR BLOCK WALL CONSTRUCTION:
WALL-MOUNT, SINGLE LAVATORY CARRIER WITH CONCEALED ARMS, LEVELING AND SECURING SCREWS AND ADJUSTABLE WALL PLATE.
SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.
VERIFY WALL THICKNESS PRIOR TO ORDERING CARRIER(S).

FOR STUD WALL CONSTRUCTION:
FLOOR-MOUNT, SINGLE LAVATORY CARRIER WITH CONCEALED ARMS, LEVELING AND SECURING SCREWS, STRUCTURAL UPRIGHTS AND BLOCK BASES.
SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.
VERIFY WALL THICKNESS PRIOR TO ORDERING CARRIER(S).



URINAL: UR-1

COMPLIES WITH A.D.A. HANDICAPPED REQUIREMENTS WHEN INSTALLED PER MANUFACTURES RECOMMENDATIONS. FLUSH VALVE TO BE A MAXIMUM OF 44" A.F.F.

FIXTURE
WALL HUNG, VITREOUS CHINA, FLUSHING RIM, LOW CONSUMPTION (3.8 LPF/1.0 GPF) SIPHON JET FLUSH ACTION, EXTENDED SIDES FOR PRIVACY, 3/4" TOP SPUD, 2" THREADED OUTLET CONNECTION AND TWO WALL HANGERS.
AMERICAN STANDARD "TRIMBROOK" 6561.017.
KOHLER "DEXTER" MODEL #K-5016-ET.

TRIM
EXPOSED, QUIET, DIAPHRAGM TYPE, CHROME PLATED CLOSET FLUSHOMETER. DUAL FILTERED BY-PASS DIAPHRAGM, STOP SEAT AND VACUUM BREAKER SHALL BE CHLORAMINE RESISTANT MATERIALS. ADA COMPLIANT METAL NON-HOLD-OPEN HANDLE, 3/4" I.P.S. SCREWDRIVER BAK-CHEK ANGLE STOP, FREE SPINNING VANDAL RESISTANT STOP CAP, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, SWEAT SOLDER ADAPTER WITH COVER TUBE AND CAST SET SCREW WALL FLANGE.
SLOAN ROYAL MODEL 186-1.

CARRIER
FOR STUD WALL/PLUMBING CHASE CONSTRUCTION:
FLOOR-MOUNTED SINGLE URINAL CARRIER WITH HANGER PLATE, BEARING PLATE, ADJUSTABLE SUPPORTING RODS, STRUCTURAL UPRIGHTS, WELDED FEET AND SUPPLY PIPE SUPPORT. ALL PORTIONS OF CARRIER SHALL BE CONCEALED WITHIN WALL/PIPE CHASE CONSTRUCTION.
SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.
VERIFY WALL/CHASE THICKNESS PRIOR TO ORDERING CARRIER(S).

FOR BLOCK WALL CONSTRUCTION:
WALL-MOUNTED SINGLE URINAL CARRIER WITH HANGER PLATES AND ADJUSTABLE SUPPORTING RODS.
SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.
VERIFY BLOCK WALL THICKNESS PRIOR TO ORDERING CARRIER(S).

PLUMBING FIXTURE GENERAL NOTES

A. PLUMBING FIXTURES SHALL BE OF ONE OF THE MANUFACTURER'S INDICATED AND IN ACCORDANCE WITH THE INFORMATION AND MANUFACTURER'S CATALOG NUMBERS INDICATED. WHERE MANUFACTURER'S CATALOG NUMBERS HAVE BEEN UPDATED OR DELETED, FIXTURES SHALL BE OF SIMILAR CONFIGURATION AND OF SIMILAR OR BETTER QUALITY THAN THAT INDICATED.
B. VERIFY ALL MOUNTING HEIGHTS OF PLUMBING FIXTURES PRIOR TO ORDERING EQUIPMENT. MOUNTING HEIGHTS SHALL BE AS INDICATED ON ARCHITECTURAL DRAWINGS AND COMPLY WITH ADA REQUIREMENTS.
C. VERIFY FIXTURE COLORS WITH ARCHITECT PRIOR TO ORDERING EQUIPMENT.
D. FOR ALL COUNTERTOP SINKS, CONTRACTOR SHALL COORDINATE WITH CABINET WORK TO INSURE THAT THE SINK WILL FIT IN CABINET PRIOR TO ORDERING FIXTURE.
E. FIXTURE DRAWINGS DEPICTED MAY NOT NECESSARILY BE AN ACCURATE DEPICTION OF ACTUAL MODELS DUE TO RECENT PRODUCT UPDATES.
F. ALL FIXTURE STOPS SHALL BE LOOSE KEY.

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Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

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PROFESSIONAL MECHANICAL ENGINEER
BENJAMIN M. SCHMITT
E-14489
STATE OF NEBRASKA
03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: DPB

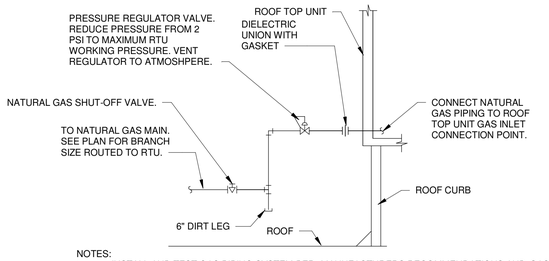
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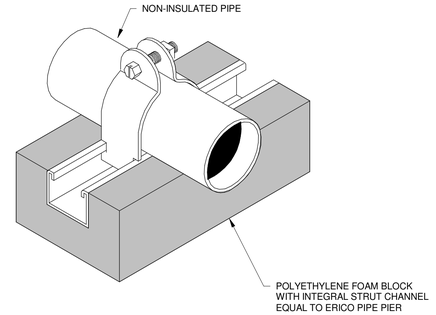
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NOTES:
1. INSTALL AND TEST GAS PIPING SYSTEM PER MANUFACTURERS RECOMMENDATIONS AND GAS UTILITY REQUIREMENTS.
2. PROVIDE AND INSTALL ANY ADDITIONAL ITEMS REQUIRED PER GAS UTILITY.
3. FOR NATURAL GAS SHUT-OFF VALVE SERVING KITCHEN MAKE-UP AIR UNIT - PROVIDE NECESSARY INTERLOCKS PER CODE TO CLOSE VALVE UPON KITCHEN FIRE SUPPRESSION SYSTEM ACTIVATION.

3 RTU NATURAL GAS CONNECTION DETAIL

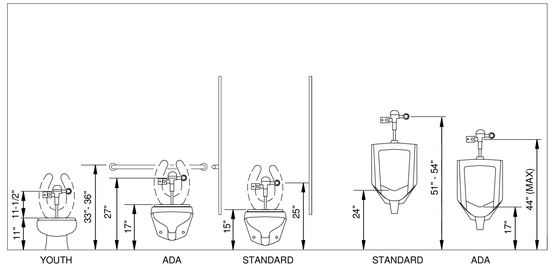
NOT TO SCALE



NOTE:
INSTALL PIPE PIER SUPPORT EVERY 15' AND AT EVERY CHANGE IN DIRECTION.
DO NOT SECURE TO ROOF. THE SUPPORT SHALL REST FREELY ON THE ROOF. SIZE EACH SUPPORT PER MANUFACTURERS RECOMMENDATIONS.

1 PIPE SUPPORT AT ROOF DETAIL

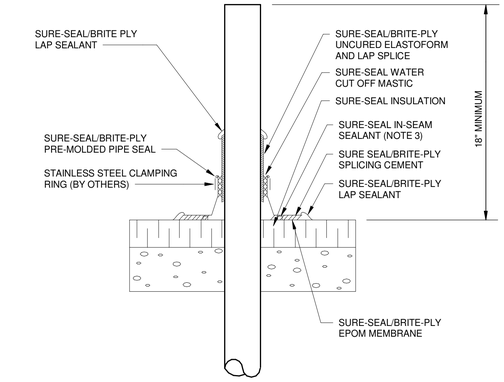
SCALE: 12" = 1'-0"



GENERAL NOTES:
1. ADA URINAL DIMENSIONS ARE SHOWN FROM FINISHED FLOOR TO CENTER LINE OF FLUSHOMETER ACTUATOR. ALL OTHER DIMENSIONS ARE SHOWN FROM FINISHED FLOOR TO CENTER LINE OF WATER INLET.
2. WATER CLOSET MOUNTING HEIGHT DIMESIONS ARE SHOWN FROM FINISHED FLOOR TO TOP OF SEAT WHEN IN DOWN POSITION.
3. URINAL MOUNTING HEIGHT DIMENSIONS ARE SHOWN FROM FINISHED FLOOR TO FLOOD RIM OF URINAL.

4 FLUSH VALVE ELEVATION DETAIL

NOT TO SCALE



NOTES:
1. REMOVE ALL LEAD AND OTHER FLASHING.
2. PRE-MOLDED PIPE SEAL MUST HAVE INTACT RIB AT TOP EDGE, REGARDLESS OF PIPE DIAMETER.
3. APPLY IN-SEAM SEALANT 1/2" FROM INSIDE EDGE OF PIPE SEAL FLANGE.
4. DECK FLANGES OF THE PRE-MOLDED PIPE FLASHING SHALL NOT BE OVERLAPPED.

2 VENT THRU ROOF DETAIL - PRE-MOULDED SEAL

SCALE: 12" = 1'-0"

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
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03/24/2021

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for

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SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: CJB

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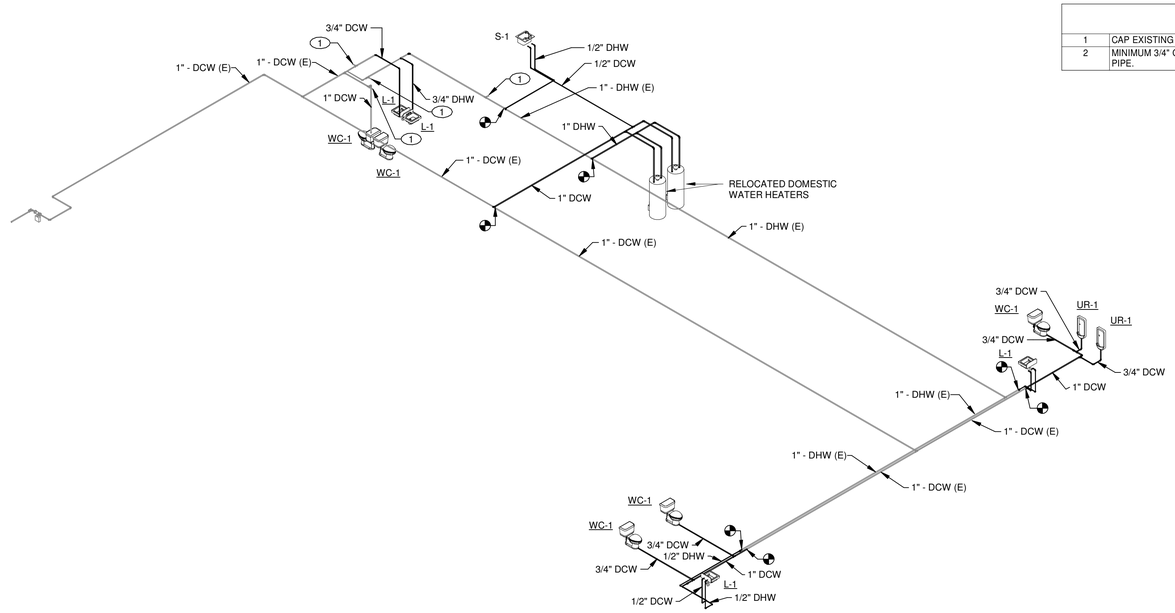
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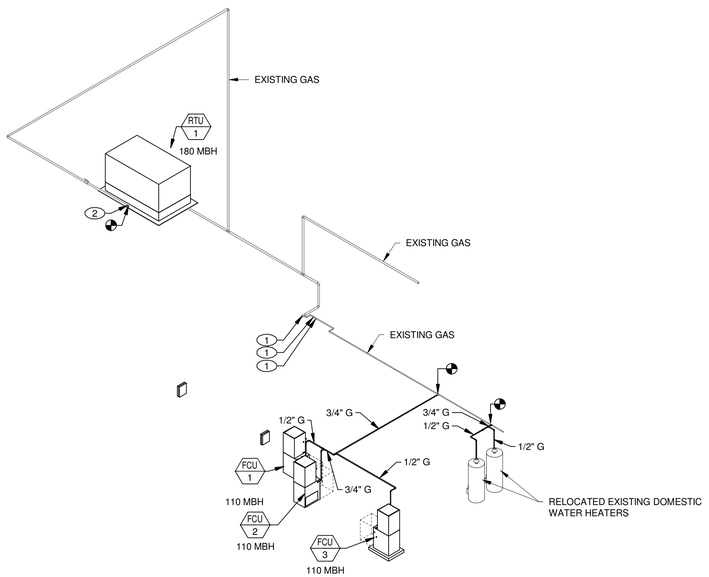
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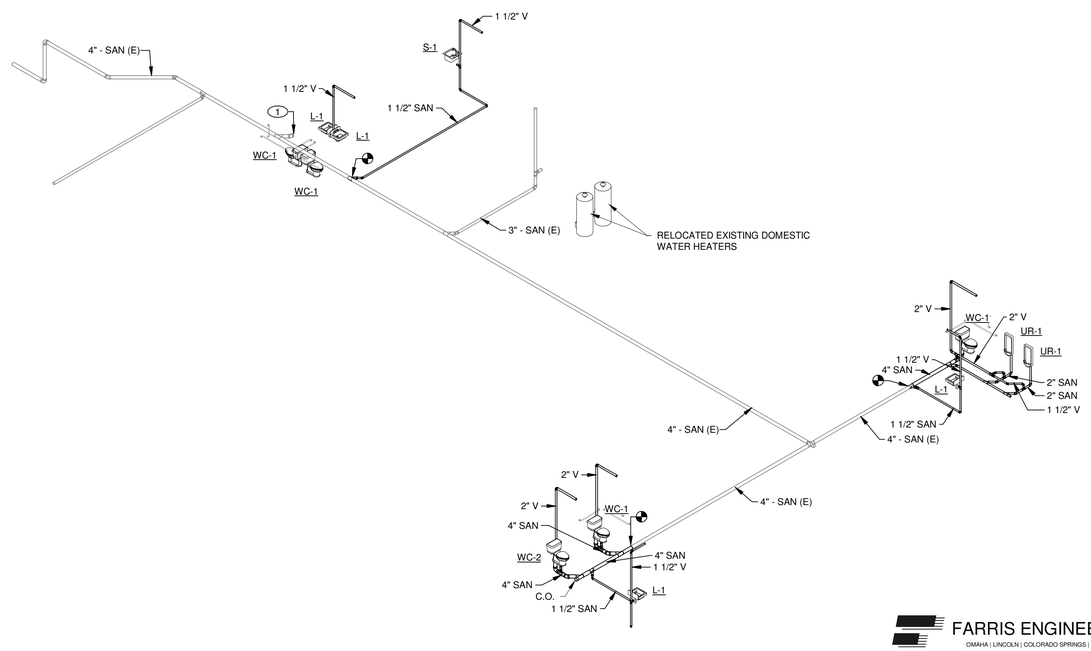
KEYNOTES	
1	CAP EXISTING PIPE . MATCH EXISTING PIPE MATERIAL.
2	MINIMUM 3/4" GAS PIPE TO SERVE NEW RTU-1. CONTRACTOR TO VERIFY SIZE OF EXISTING GAS PIPE.



1 DOMESTIC WATER PLUMBING ISOMETRIC
SCALE:



3 NATURAL GAS ISOMETRIC
SCALE:



2 DWV PLUMBING ISOMETRIC
SCALE:

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ELECTRICAL SYMBOLS LEGEND

(AS APPLICABLE)

SWITCHING

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
$a	SINGLE POLE SWITCH - LETTER INDICATES SWITCH LEG	$M	MOMENTARY CONTACT SWITCH
$2	DOUBLE POLE SWITCH	$K	KEY OPERATED SWITCH
$3	THREE-WAY SWITCH	$P	PILOT LIGHT SWITCH
$4	FOUR-WAY SWITCH	$T	TIMER SWITCH
$D	DIMMER SWITCH	$S	SENSOR SWITCH - WALL MOUNTED: SEE LIGHTING CONTROL SCHEME NARRATIVE FOR TYPE
$H	HORSEPOWER RATED SWITCH	S,#	SENSOR - CEILING MOUNTED: SEE LIGHTING CONTROL SCHEME NARRATIVE FOR TYPE
$F	FUSED SWITCH	S,#	SENSOR - WALL MOUNTED: SEE LIGHTING CONTROL SCHEME NARRATIVE FOR TYPE
$TE	THERMAL ELEMENT	DS,#	DAYLIGHTING SENSOR - CEILING MOUNTED
(a)	LIGHTING CONTROL STATION - LETTER INDICATES TYPE		

NUMBER INDICATES ZONE OF LUMINAIRES TO BE CONTROLLED BY SENSOR(S). NO NUMBER INDICATES ALL ROOM LUMINAIRES TO BE CONTROLLED BY SENSOR(S).

LIGHTING

LABEL INFORMATION [○ / A, #] LETTER INDICATES LUMINAIRE MARK, NUMBER INDICATES ZONE IDENTIFIER, NO NUMBER INDICATES SINGLE ZONE

○	LUMINAIRE		WALL MOUNTED LUMINAIRE
	LUMINAIRE - LAMPS SWITCHED SEPARATE		WALL MOUNTED LUMINAIRE - NIGHT LIGHT
○	LUMINAIRE WITH AUXILIARY LIGHT		WALL MOUNTED LUMINAIRE - EMERGENCY
●	LUMINAIRE - EMERGENCY		EXIT SIGN - WALL/CEILING MOUNTED
	LUMINAIRE - NIGHT LIGHT		EXIT SIGN/EMERGENCY LUMINAIRE COMBINATION WALL/CEILING MOUNTED
	WALL MOUNTED LUMINAIRE		PHOTOCELL, DAYLIGHT SENSOR
	WALL MOUNTED LUMINAIRE - EMERGENCY		EXTERIOR LUMINAIRE - POLE MOUNTED
	WALL MOUNTED LUMINAIRE - NIGHT LIGHT		EXTERIOR LUMINAIRE - POLE MOUNTED
	STRIP LUMINAIRE		EXTERIOR LUMINAIRE - POLE MOUNTED
	STRIP LUMINAIRE - EMERGENCY		EXTERIOR LUMINAIRE - POLE MOUNTED
	STRIP LUMINAIRE - NIGHT LIGHT		FLOOD LIGHT LUMINAIRE
○	LUMINAIRE		EMERGENCY BATTERY PACK
○	LUMINAIRE - NIGHT LIGHT		EMERGENCY LUMINAIRE REMOTE HEADS
●	LUMINAIRE - EMERGENCY		TRACK LUMINAIRE

POWER DEVICES

	SINGLE RECEPTACLE		LIGHTING & APPLIANCE PANELBOARD
	DUPLEX RECEPTACLE		POWER DISTRIBUTION EQUIPMENT
	FOUR-PLEX RECEPTACLE - TWO DUPLEX RECEPTACLES	T	TRANSFORMER
	RANGE RECEPTACLE		ENCLOSED CIRCUIT BREAKER
	SPECIAL RECEPTACLE		CABINET (TYPE INDICATED)
G	DUPLEX RECEPTACLE - GROUND-FAULT CIRCUIT-INTERRUPTER		MOTOR STARTER, LIGHTING CONTACTOR
IG	DUPLEX RECEPTACLE - ISOLATED GROUND		SAFETY SWITCH
WR	DUPLEX RECEPTACLE - WEATHER-RESISTANT GROUND-FAULT CIRCUIT-INTERRUPTER		COMBINATION MOTOR STARTER & SAFETY SWITCH
A	DUPLEX RECEPTACLE - ON APPLIANCE CIRCUIT		MOTOR
T	DUPLEX RECEPTACLE - TAMPER-RESISTANT	J	CORD DROP (J-BOX AT CEILING)
F	DUPLEX RECEPTACLE - ARC-FAULT RATED		CORD DROP (SPECIAL RECEPTACLE AT CEILING)
M	DUPLEX RECEPTACLE - MOUNTED IN MILLWORK		MULTI-OUTLET ASSEMBLY
B	DUPLEX RECEPTACLE - MOUNTED BELOW COUNTER		FLUSH FLOOR BOX
	DUPLEX RECEPTACLE - CEILING MOUNTED		FLUSH POKE-THRU
	DUPLEX RECEPTACLE - BOTTOM HALF SWITCHED		DAMPER
	SPLIT-WIRE RECEPTACLE	S	SOLENOID
J	JUNCTION BOX		

RACEWAYS

	HOME RUN TO PANEL	T	TELEPHONE CONDUIT
	UNSWITCHED LIGHTING CIRCUIT		CONDUIT UP
A	MASTER SATELLITE FIXTURE CONNECTION		CONDUIT DOWN
E	EMERGENCY CIRCUIT		CONDUIT SEAL
NL	NIGHT LIGHTING CIRCUIT		CABLE TRAY
S	SOUND SYSTEM RACEWAY	#	CONDUIT SLEEVE (NUMBER INDICATES SIZE)

MISCELLANEOUS

XX / X	EQUIPMENT IDENTIFICATION TAG	WP	WEATHER-PROOF
X / XXX	DETAIL REFERENCE / SHEET REFERENCE	WG	WIRE GUARD
FACP	FIRE ALARM CONTROL PANEL	XP	EXPLOSION PROOF
FAAP	FIRE ALARM ANNUNCIATOR PANEL	30/3/10/3R	RATED AMPACITY/NO. POLES/FUSING REQ'D/NEMA ENCL. NO.
HOA	HAND-OFF-AUTO	PX	PROJECTOR INPUT STATION - LETTER INDICATES TYPE
CCT.	CIRCUIT		PROJECTOR CONTROL STATION
PART. CCT.	PARTIAL CIRCUIT		LIGHT LINEWORK = EXISTING
NF	NON-FUSED		DARK/DASHED LINEWORK = DEMOLITION
			DARK LINEWORK = NEW

COMMUNICATIONS

W	TELEPHONE OUTLET - WALL MOUNTED		TELEPHONE CABINET
#	TELEPHONE OUTLET BOX	C	CLOCK HANGER OUTLET
#	DATA OUTLET BOX	C	CLOCK - WALL MOUNTED
#	PHONE OUTLET BOX - CEILING MOUNTED	C 2	CLOCK - CEILING MOUNTED (DOUBLE FACE)
#	DATA OUTLET BOX - CEILING MOUNTED	C S	CLASSROOM CLOCK & SPEAKER
WAP	WIRELESS ACCESS POINT - CEILING MOUNTED	P	PROGRAM BELL
	COMBINATION TELEPHONE/DATA OUTLET BOX - ONE JACK EACH		INTERCOM CALL SWITCH
	DATA OUTLET BOX - BLANK PLATE, 1" CONDUIT	X	INTERCOM ADMINISTRATION STATION (LETTER INDICATES TYPE)
M #	MICROPHONE OUTLET (NUMBER INDICATES QUANTITY)	X	INTERCOM CLASSROOM/STAFF STATION (LETTER INDICATES TYPE)
M #	MICROPHONE OUTLET - WALL MOUNTED (NUMBER INDICATES QUANTITY)	X	AUDIO/VISUAL AUXILIARY OUTLET (LETTER INDICATES TYPE)
L #	LINE INPUT OUTLET (NUMBER INDICATES QUANTITY)	A	T.V. ANTENNA OUTLET
L #	LINE INPUT OUTLET - WALL MOUNTED (NUMBER INDICATES QUANTITY)	V	INTERCOM/PAGING VOLUME CONTROL
S	INTERCOM/PAGING SPEAKER - CEILING MOUNTED	V	SOUND SYSTEM VOLUME CONTROL
S	INTERCOM/PAGING SPEAKER - WALL MOUNTED		GROUND BAR
S	INTERCOM/PAGING SPEAKER HORN - WALL MOUNTED		NOTE: SYMBOLS SHOWN "STACKED" ON THE FLOOR PLANS INDICATE THAT THE DEVICES ARE TO BE LOCATED IN THE SAME OUTLET BOX AND FACEPLATE. (I.E. ▼ 1 / ▽ 2)
S	SOUND SYSTEM SPEAKER - CEILING MOUNTED		
S	SOUND SYSTEM SPEAKER - WALL MOUNTED		

NUMBER BY SYMBOL INDICATES QUANTITY OF JACKS. ZERO INDICATES EMPTY OUTLET BOX , BLANK PLATE AND CONDUIT.

FIRE ALARM

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
HD R/T	HEAT DETECTOR - COMBINATION	F	FIRE ALARM HORN - CEILING MOUNTED
HD F	HEAT DETECTOR - FIXED TEMPERATURE		FIRE ALARM VISUAL SIGNAL - CEILING MOUNTED
HD EV	HEAT DETECTOR - FIXED TEMPERATURE (CONNECTED TO ELEVATOR RECALL)		FIRE ALARM COMBINATION HORN/VISUAL - CEILING MOUNTED
SD	SMOKE DETECTOR	F	FIRE ALARM SPEAKER - CEILING MOUNTED
SD DM	SMOKE DETECTOR - DUCT MOUNTED		FIRE ALARM COMBINATION SPEAKER/VISUAL - CEILING MOUNTED
SD EV	SMOKE DETECTOR (CONNECTED TO ELEVATOR RECALL)		FLOW SWITCH
F	FIRE ALARM MANUAL STATION		TAMPER SWITCH
F	FIRE ALARM HORN - WALL MOUNTED		DUCT DETECTOR REMOTE ALARM INDICATOR
	FIRE ALARM VISUAL SIGNAL - WALL MOUNTED	R	FAN SHUT-DOWN RELAY
	FIRE ALARM COMBINATION HORN/VISUAL - WALL MOUNTED		MAGNETIC DOOR HOLDER
F	FIRE ALARM SPEAKER - WALL MOUNTED	SBD	SMOKE BEAM DETECTOR
	FIRE ALARM COMBINATION SPEAKER/VISUAL - WALL MOUNTED	R	SMOKE BEAM REFLECTOR
F	FIRE ALARM BELL - WALL MOUNTED		

SECURITY

	PUSHBUTTON STATION		MOTION DETECTOR
	PUSHBUTTON STATION, 'P' INDICATES PILOT	KP	KEYPAD
	DOOR MONITOR SWITCH	ES	ELECTRIC STRIKE
	DOOR SWITCH	CR	CARD READER
	DOOR BELL CHIME/BUZZER	PS	POWER SUPPLY
	DOOR CONTACT		SECURITY CAMERA

GENERAL ELECTRICAL NOTES

APPLY TO ALL ELECTRICAL SHEETS

A. MOUNTING HEIGHTS INDICATED ARE TO CENTER OF ROUGH-IN ABOVE FINISHED FLOOR (AFF).

B. INSTALL ALL CONDUCTORS IN CONTINUOUS RACEWAY. PROVIDE INSULATED EQUIPMENT GROUNDING CONDUCTOR.

C. PROVIDE DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT PHASE CONDUCTOR. EXCEPTION: WHERE AN EQUIPMENT MANUFACTURER REQUIRES A MULTIWIRE BRANCH CIRCUIT FOR ONLY ONE UTILIZATION EQUIPMENT AND WHERE ALL UNGROUNDED CONDUCTORS OF THAT CIRCUIT ARE OPENED SIMULTANEOUSLY BY THE BRANCH CIRCUIT OVERCURRENT DEVICE.

D. CONCEAL ALL CONDUITS IN NEW WALLS, EXISTING STUD WALLS, OR ABOVE SUSPENDED CEILINGS.

E. WHERE CONDUIT CANNOT BE CONCEALED IN EXISTING WALL OR CEILING CAVITIES, INSTALL CONDUCTORS IN SURFACE METAL RACEWAYS; SURFACE CONDUIT OR METAL SURFACE RACEWAY AT ENGINEER'S DISCRETION.

F. PAINT SURFACE CONDUIT IN FINISHED AREAS, WHEN ALLOWED, TO MATCH SURROUNDING SURFACES. COORDINATE FINISHES WITH ARCHITECT.

G. METAL SURFACE RACEWAYS SHALL BE WIREMOLD #V500, #V700, OR #V2400 SERIES WITH FACTORY IVORY FINISH OR APPROVED EQUIVALENT. METAL SURFACE RACEWAYS FOR TELEVISION CABLE SHALL BE WIREMOLD #V700 OR LARGER. METAL SURFACE RACEWAYS FOR TELECOMMUNICATIONS CABLES SHALL BE #V2400 OR LARGER. COMPLY WITH EIA/TIA STANDARDS FOR CABLE BENDING RADIUS.

H. INSTALL EXPOSED OR CONCEALED RACEWAY NEAR METAL CORRUGATED SHEET ROOF DECKING SO NEAREST OUTER RACEWAY SURFACE IS NOT LESS THAN 6 INCHES FROM THE NEAREST SURFACE OF THE ROOF DECKING. EXCEPTION: RIGID METAL CONDUIT AND INTERMEDIATE METAL CONDUIT SHALL NOT BE REQUIRED TO MAINTAIN THIS CLEARANCE.

I. PATCH, PAINT, REPAIR OR REPLACE ALL WALLS, CEILINGS, OR OTHER BUILDING ELEMENTS DISTURBED DURING INSTALLATION OF ELECTRICAL WORK.

J. USE ROOM NUMBERS ASSIGNED BY OWNER AND NOT ROOM NUMBERS LISTED ON DRAWINGS FOR LABELING OF PANELBOARD DIRECTORIES, FIRE ALARM PANEL PROGRAMMING, ETC. INCLUDE A DESCRIPTION OF LOAD SUCH AS LIGHTS, RECEPTACLES, MECHANICAL UNIT LOCATIONS, ETC. ON TYPED PANELBOARD DIRECTORIES.

K. LOCATIONS AND QUANTITIES OF OCCUPANCY SENSORS ON THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE ONLY THE ROOM/AREA CONTROLLED BY THE SENSORS. PROVIDE ADDITIONAL SENSORS AND RELATED EQUIPMENT FOR COMPLETE COVERAGE AND SWITCHING ARRANGEMENTS INDICATED.

L. REFER TO MECHANICAL/ELECTRICAL COORDINATION SCHEDULE SHEET M701 FOR ADDITIONAL REQUIREMENTS ON DISCONNECTS, MOTOR STARTERS, ETC.

M. CONNECT SMOKE AND FIRE/SMOKE DAMPERS TO 120V POWER AND CONTROL WITH FIRE ALARM SYSTEM. VERIFY EXACT QUANTITY AND LOCATION OF DAMPERS WITH MECHANICAL DRAWINGS.

O. COORDINATE LOCATION OF RECESSED LUMINAIRES, SPEAKERS, ETC. WITH FIRE RATED CEILINGS. PROVIDE ENCLOSURES TO MAINTAIN THE FIRE INTEGRITY RATING OF THE CEILING. COORDINATE EXACT LOCATIONS OF FIRE RATED CEILINGS WITH ARCHITECTURAL DRAWINGS.

GENERAL ELECTRICAL DEMOLITION NOTES

APPLY TO ALL ELECTRICAL SHEETS

A. COMPLETELY REMOVE ALL ELECTRICAL WIRING, CONDUIT, SWITCHES, DISCONNECTS, LUMINAIRES, AND ASSOCIATED ANCILLARY EQUIPMENT INDICATED BY BOLD, DASHED LINES OR IDENTIFIED BY NOTES. ITEMS INDICATED FOR REMOVAL ARE ONLY SUGGESTIVE OF THE AMOUNT OF DEMOLITION WORK INVOLVED. PERFORM A SITE INVESTIGATION TO AID IN DETERMINING THE COMPLETE EXTENT OF DEMOLITION WORK.

B. COORDINATE AND SCHEDULE ALL NECESSARY POWER OUTAGES WITH THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH SUCH WORK SO OPERATIONS IN ADJACENT OCCUPIED PORTIONS OF THE BUILDING ARE NOT INTERRUPTED OR RESTRICTED WITHOUT PRIOR APPROVAL.

C. REMOVE ALL EXISTING BRANCH CIRCUITS INDICATED AS COMPLETELY AS POSSIBLE. REMOVE EXISTING CONDUCTORS COMPLETELY FROM THEIR RACEWAYS AND DO NOT REUSE EXCEPT WHERE SPECIFICALLY INDICATED. WHERE AN EXISTING DEVICE IS REMOVED FROM AN EXISTING CIRCUIT, PROVIDE NEW WIRING AND MAINTAIN CONTINUITY OF EXISTING CIRCUIT.

D. REMOVE EXISTING LUMINAIRES, LAMPS, BALLASTS, AND RELATED COMPONENTS INDICATED AS COMPLETELY AS POSSIBLE. DELIVER EQUIPMENT CONSIDERED SALVAGEABLE BY THE OWNER'S REPRESENTATIVE AND NOT SHOWN FOR REUSE TO THE OWNER'S STORAGE LOCATION. REMOVE NON-SALVAGEABLE EQUIPMENT FROM THE SITE. PROPERLY DISPOSE OF LAMPS AND BALLASTS CONSIDERED HAZARDOUS WASTE.

E. REMOVE EXISTING SURFACE MOUNTED BOXES, CONDUIT, SURFACE METAL RACEWAY, WIREWAY, ETC. INDICATED AS COMPLETELY AS POSSIBLE. PATCH ABANDONED PENETRATIONS FROM REMOVED FASTENERS. ABANDON IN PLACE NON-ACCESSIBLE BOXES SHOWN REMOVED AND COVER WITH STAINLESS STEEL COVER PLATES. ABANDON IN PLACE NON-ACCESSIBLE CONDUIT SHOWN REMOVED AND CAP OFF IN A SUITABLE MANNER PER LOCAL INSPECTOR'S REQUIREMENTS. CHISEL RACEWAYS STUBBED FROM A CONCRETE FLOOR OR WALL 2 INCHES BELOW ADJACENT SURFACE, GROUT, AND SCREED.

F. COORDINATE REUSED EXISTING BOX AND CONDUIT LOCATIONS WITH NEW WORK LOCATIONS.

G. REMOVE ELECTRICAL WORK AT ALL MECHANICAL EQUIPMENT SHOWN REMOVED. COORDINATE EQUIPMENT REMOVAL LOCATIONS WITH MECHANICAL DRAWINGS.

NOTICE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SHOP AND OTHER APPROPRIATE DRAWINGS OR AT SITE. LAY OUT AND COORDINATE ALL WORK PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, AND CODES.
VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCES FOR ALL TRADES. THIS NOTICE APPLIES TO ALL ELECTRICAL PLANS.

FARRIS ENGINEERING
OMAHA | LINCOLN | COLORADO SPRINGS | SIDNEY
farris-usa.com
FE#:201028

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Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. NIENHUESER
E-15966
STATE OF NEBRASKA
03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: DLB

REVISIONS

DATE	DESCRIPTION

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JOSEPH R. HEWGLEY & ASSOCIATES, Inc.

MEMBER AMERICAN INSTITUTE of ARCHITECTS

SHEET
E001

COMcheck Software Version 4.1.1.0

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: INTERIOR BUILDING RENOVATION
Project Type: Alteration

Construction Site:
SIDNEY ELKS LODGE
SIDNEY, NE 69162

Owner/Agent:
SIDNEY ELKS LODGE

Designer/Contractor:
FARRIS ENGINEERING
844 11TH AVENUE
SIDNEY, NE 69162

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Office	2400	0.79	1896
		Total Allowed Watts =	1896

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Office (2400 sq ft.)				
DECORATIVE LED WRAP: A: Other:	1	8	36	288
VANITY LED: B: Other:	1	4	26	104
4' LINEAR LED: C;CA: Other:	1	20	25	500
4' LINEAR LED: D: Other:	1	4	20	80
			Total Proposed Watts =	972

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

ERICKA M. NIENHUESER - ELEC. ENG. — Name - Title
Signature
03/24/2021 — Date

COMcheck Software Version 4.1.1.0

Inspection Checklist

Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2.2 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2.1, C405.2.2.2 [EL21][2]	Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3.1, C405.2.3.2 [EL23][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL26][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.3 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][1]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.4.1 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
C408.2.5.1 [FI16][1]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

ELECTRICAL SPECIFICATIONS

A. GENERAL:
1. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS FOR THE INSTALLATION OF THE ELECTRICAL WORK.
2. ALL MATERIAL AND EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL BE NEW.
3. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2017 NATIONAL ELECTRICAL CODE (NEC) AND ALL INSPECTION AUTHORITIES HAVING JURISDICTION.
4. PROCURE AND DELIVER ALL LICENSES AND CERTIFICATES REQUIRED TO THE ARCHITECT. ALL INSPECTION AND POWER COMPANY FEES SHALL BE PAID BY THE CONTRACTOR.
5. COORDINATION:
   a. COORDINATE WORK WITH THE WORK OF OTHER TRADES.
6. THE CONTRACTOR, BY THE ACCEPTANCE OF THIS SPECIFICATION AND THE SIGNING OF THE CONTRACT, ACKNOWLEDGES HIS ACQUAINTANCE WITH THE REQUIREMENTS AND GUARANTEES THE WORKMANSHIP, EQUIPMENT AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE.
7. SHOP DRAWINGS:
   a. SHOP DRAWINGS, CATALOG SHEETS AND MANUFACTURER'S DATA SHALL BE SUBMITTED ON OR BEFORE THIRTY DAYS AFTER AWARD OF CONTRACT. THE CONTRACTOR SHALL SUBMIT FOUR COPIES OF ALL FABRICATED WORK AND EQUIPMENT TO BE PURCHASED. DATA SHALL BE SUFFICIENTLY COMPLETED TO PERMIT EVALUATION AND COMPARISON WITH SPECIFIED EQUIPMENT AND MATERIAL.
   b. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING: LUMINAIRES, DRIVERS, WIRING DEVICES, SAFETY SWITCHES, PANELBOARDS, AND LIGHTING CONTROL DEVICES.

B. BASIC METHOD AND MATERIALS:
1. MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL BE NEW.
2. ALL WIRING SHALL BE INSTALLED IN A CONTINUOUS METALLIC RACEWAY. WIRING SHALL BE RUN CONCEALED IN FINISHED ROOMS. IN UNFINISHED ROOMS WIRING MAY BE RUN EXPOSED IN RACEWAY.

C. RACEWAYS AND FITTINGS:
1. ELECTRICAL METALLIC TUBING (EMT): PROVIDE ELECTRICAL METALLIC TUBING CONFORMING TO FS WW-C-563, ANSI C80.3 AND UL 797. FITTINGS SHALL BE STEEL AND OF THE SCREW OR COMPRESSION TYPE EXCEPT THAT IN POURED CONCRETE THE SCREW TYPE IS NOT ACCEPTABLE. INDENTER FITTINGS ARE NOT ACCEPTABLE. ALL EMT CONNECTORS SHALL BE OF THE INSULATED THROAT TYPE.
2. RIGID STEEL CONDUIT: PROVIDE RIGID STEEL, ZINC-COATED, THREADED TYPE CONFORMING TO FS WW-C-581, ANSI C80.1 AND UL 6. PROVIDE ZINC COATING FUSED TO INSIDE AND OUTSIDE WALLS. RIGID METAL CONDUITS SHALL HAVE THREADED COUPLINGS WHEN INSTALLED IN CONCRETE OR DIRECT BURIAL IN THE GROUND. OTHER INSTALLATIONS IN DRY LOCATIONS MAY BE THREADLESS RIGID FITTINGS.
3. RIGID NON-METALLIC CONDUIT: SCHEDULE 40, 90C; UL-RATED, CONSTRUCT OF POLYVINYL CHLORIDE AND CONFORMING TO NEMA TC-2, FOR DIRECT BURIAL, OR NORMAL ABOVE GROUND USE, UL-LISTED AND IN CONFORMITY WITH NEC ARTICLE 457.
4. ALL CONDUIT SHALL BE 3/4" MINIMUM TRADE SIZE.

D. CONDUIT INSTALLATION:
1. ALL CONDUITS SHALL BE CONCEALED UNLESS NOTED OTHERWISE. INSTALL CONCEALED CONDUITS EITHER IN WALLS, SLABS, OR ABOVE HUNG CEILINGS. IN EXISTING WORK WHERE CONDUITS CANNOT BE CONCEALED IN FINISHED AREAS, SURFACE METAL RACEWAYS SHALL BE USED.
2. PROVIDE RIGID CONDUIT WHERE EMBEDDED IN CONCRETE ON OR BELOW GRADE, IN DIRECT CONTACT WITH EARTH OR FILL BELOW SLAB, WET LOCATIONS, IN SIZES LARGER THAN 2 INCHES, OR INSTALLED OUTDOORS. FOLLOW MINIMUM REQUIREMENTS IN OTHER AREAS AS FOLLOWS:
   a. USE STEEL ZINC-COATED EMT FOR RACEWAY SYSTEMS EXCEPT AS SPECIFICALLY SPECIFIED PREVIOUSLY, WHERE NOT ALLOWED BY NEC OR NOTED ON DRAWINGS. ADDITIONALLY EMT SHALL NOT BE ACCEPTABLE BELOW GRADE, IN OR UNDER SLABS ON GRADE, IN WET LOCATIONS OR IN SIZES LARGER THAN 2 INCHES.
   b. RIGID NON-METALLIC CONDUITS MAY BE USED BELOW GRADE OR EMBEDDED IN CONCRETE ON OR BELOW GRADE ONLY
3. THE ELECTRICAL CONTRACTOR SHALL FIRE CAULK ALL PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS.

E. CONDUCTORS:
1. ALL SERVICE ENTRANCE CIRCUIT WIRING SHALL BE COPPER TYPE XHHW-2.
2. ALL FEEDER AND BRANCH CIRCUIT WIRING SHALL BE COPPER TYPE THHN/THWN.
3. MINIMUM WIRE SIZE SHALL BE #12 UNLESS OTHERWISE NOTED.

F. WIRING DEVICES:
1. SWITCHES AND RECEPTACLES SHALL BE OF THE SPECIFICATION GRADE, 20 AMP, EXTRA HEAVY-DUTY. WIRING DEVICES SHALL BE MANUFACTURED BY HUBBELL, P&S, LEVITON, COOPER OR ARROW HART.
2. COLOR SHALL BE IVORY WITH IVORY COVERS UNLESS INDICATED OTHERWISE. VERIFY COLOR WITH ARCHITECT PRIOR TO ORDERING AND INSTALLATION.
3. LOCATE WIRING DEVICES TO COMPLY WITH APPLICABLE BUILDING CODES AND ADA.

G. SWITCHES AND PANELBOARDS:
1. DISCONNECT SWITCHES: PROVIDE SURFACE-MOUNTED, SHEET-STEEL ENCLOSEDSWITCHES, OF TYPES, SIZES, AND ELECTRICAL CHARACTERISTICS INDICATED, WITH REQUIRED NUMBER OF POLES. EQUIP WITH OPERATING HANDLE WHICH IS INTEGRAL PART OF ENCLOSURE BASE AND IS CAPABLE OF BEING PADLOCKED IN OFF POSITION.
2. ALL EQUIPMENT SHALL BE OF ONE MANUFACTURER AND SHALL HAVE NEMA RATED ENCLOSURES AS REQUIRED BY THE NEC AND TO SUIT THE ATMOSPHERIC CONDITIONS OF THE EQUIPMENT SURROUNDINGS.
3. POWER DISTRIBUTION PANELBOARDS SHALL BE CIRCUIT BREAKER TYPE DEAD-FRONT SAFETY CONSTRUCTED POWER DISTRIBUTION PANELBOARDS, WITH PANELBOARD SWITCHING AND PROTECTIVE DEVICES IN QUANTITIES AND RATINGS AS INDICATED ON THE DRAWINGS (SQUARE D I-LINE OR EQUAL). FURNISH COMPLETE WITH TYPED DIRECTORY ON INSIDE PANEL COVER. PROVIDE PANELBOARDS WITH UL MARKINGS INDICATED 'SUITABLE FOR USE AS SERVICE-ENTRANCE EQUIPMENT'.
4. LIGHTING PANELS SHALL BE OF THE BOLT-ON CIRCUIT BREAKER TYPE IN QUANTITIES AND RATINGS AS INDICATED ON THE DRAWINGS (SQUARE D NQOD OR EQUAL). FURNISH COMPLETE WITH TYPED DIRECTORY ON INSIDE PANEL COVER. PROVIDE PANELBOARDS WITH UL MARKINGS INDICATED 'SUITABLE FOR USE AS SERVICE-ENTRANCE EQUIPMENT'. LOAD CENTER TYPE PANELBOARDS WILL NOT BE ACCEPTABLE.
5. ACCEPTABLE MANUFACTURERS SHALL INCLUDE: SQUARE D, GENERAL ELECTRIC, SIEMENS, AND CUTLER-HAMMER.

H. GROUNDING:
1. ALL CONDUITS SHALL CONTAIN A MINIMUM OF ONE SEPARATE EQUIPMENT GROUNDING CONDUCTOR IDENTIFIED AND SIZED ACCORDING TO NEC.

I. LUMINAIRES:
1. LUMINAIRES SHALL BE AS PER THE LUMINAIRE SCHEDULE.
2. FURNISH AND INSTALL NEW LAMPS IN ALL LUMINAIRES.
3. CLEAN ALL LUMINAIRES AND LAMPS UPON THE CONCLUSION OF THE WORK. LUMINAIRES THAT ARE CRACKED, BROKEN, RUSTED OR OTHERWISE DAMAGED SHALL BE REPLACED BY THE CONTRACTOR. ALL LUMINAIRES SHALL BE INSTALLED FREE OF GAPS, UNEVEN ROW EXTENSIONS, OR LIGHT LEAKS AROUND RECESSED FIXTURE TRIM.

J. OCCUPANCY SENSORS:
1. OCCUPANCY SENSORS SHALL BE PROVIDED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE POWER PACKS, ADDITIONAL SENSORS, ETC. AS REQUIRED FOR A COMPLETE OCCUPANCY SENSOR BASED LIGHTING CONTROL SYSTEM WHERE INDICATED ON THE DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL PROPER ADJUSTMENTS TO ENSURE OWNER SATISFACTION WITH THE OCCUPANCY SENSOR SYSTEM.
2. WALL MOUNTED OCCUPANCY SENSOR SWITCHES SHALL BE PROVIDED WITH MANUAL ON/OFF CONTROL. PROVIDE IVORY COLOR SWITCHES AND IVORY COVERPLATES. VERIFY COLOR WITH ARCHITECT PRIOR TO ORDERING AND INSTALLATION.
3. ALL SENSORS SHALL BE UL RATED.

K. SPECIAL SYSTEMS:
1. SPECIAL SYSTEMS SHALL INCLUDE TELEPHONES, COMPUTER, ETC. AS INDICATED ON THE DRAWINGS.
2. UNLESS NOTED OTHERWISE ON THE DRAWINGS EACH SYSTEM SHALL INCLUDE OUTLET BOXES WITH STAINLESS STEEL BLANK COVER AND 3/4 INCH CONDUIT TO ACCESSIBLE CEILING SPACE. WHERE ACCESSIBLE CEILING SPACE IS NOT AVAILABLE, THE CONDUIT RUNS SHALL EXTEND BACK TO A COMMON LOCATION AS INDICATED ON THE DRAWINGS

L. IDENTIFICATION:
1. EQUIPMENT IDENTIFICATION LABELS: ON EACH UNIT OF EQUIPMENT, INSTALL UNIQUE DESIGNATION LABEL THAT IS CONSISTENT WITH WIRING DIAGRAMS, SCHEDULES, AND THE OPERATION AND MAINTENANCE MANUAL. APPLY LABELS TO DISCONNECT SWITCHES AND PROTECTION EQUIPMENT, CENTRAL OR MASTER UNITS, CONTROL PANELS, CONTROL STATIONS, TERMINAL CABINETS, AND RACKS OF EACH SYSTEM. SYSTEMS INCLUDE POWER, LIGHTING, CONTROL, COMMUNICATION, SIGNAL, MONITORING,AND ALARM SYSTEMS UNLESS EQUIPMENT IS PROVIDED WITH ITS OWN IDENTIFICATION.
2. EQUIPMENT TO BE LABELED:
   a. PANELBOARDS: TYPEWRITTEN DIRECTORY OF CIRCUITS IN THE LCOATION PROVIDED BY PANELBOARD MANUFACTURER. PANELBOARD INDENTIRICATION SHALL BE SELF-ADHESIVE, ENGRAVED LAMINATED ACRYLIC OR MELAMINE LABEL AND SHALL ALSO INDICATE DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES.
   b. ENCLOSURES AND ELECTRICAL CABINETS.
   c. ACCESS DOORS AND PANELS FOR CONCEALED ELECTRICAL ITEMS.
   d. ENCLOSED SWITCHES.
   c. ENCLOSED CONTROLLERS.
   d. VARIABLE-SPEED CONTROLLERS.
3. FAULT CURRENT DATA CALCULATED PER SHORT-CIRCUIT STUDY SPECIFICATION SECTION SHALL BE APPLIED VIA ADHESIVE LABEL TO ELECTRICAL EQUIPMENT PER NFPA 70, NATIONAL ELECTRICAL CODE (NEC) OR AS NOTED BELOW. PROVIDE ENGRAVED NAMEPLATES FOR EQUIPMENT STATING THE NAME OF EQUIPMENT, VOLTAGE, AND POWER SOURCE. THE EQUIPMENT TO BE LABELED WITH FAULT CURRENT DATA, AND NAMEPLATE IDENTIFICATION DATA SHALL INCLUDE BUT NOT BE LIMITED TO:
   a. SERVICE EQUIPMENT, SERVICE EQUIPMET RATED 1200 AMPS OR HIGHER SHALL ALSO INCLUDE THE CLEARING TIME OF OVERCURRENT PROTECTIVE DEVICES BASED ON THE AVAILABLE FAULT CURRENT AT THE SERVICE EQUIPMENT AND THE DATE THE LABEL WAS APPLIED.
   b. SWITCHBOARDS/PANELBOARDS
   c. DISCONNECT SWITCHES AND ENCLOSED CIRCUIT BREAKERS
   d. MOTOR CONTROLLERS
   e. CONTROL PANELS OF MULTI-MOTOR AND COMBINATION LOAD EQUIPMENT OF AIR CONDITIONING AND REFRIGERATION EQUIPMENT.
   f. INDUSTRIAL CONTROL PANELS
4. THE FOLLOWING EQUIPMENT SHALL BE PERMANENTLY LABELED BY THE MANUFACTURER ON THE EXTERIOR OF THE CONTROL PANEL WITH THE EQUIPMENT'S SHORT CIRCUIT CURRENT RATING (SCCR):
   a. HERMETIC REFRIGERANT MOTOR COMPRESSORS AND EQUIPMENT. NEC ARTICLE 440.4(B).
   b. INDUSTRIAL CONTROL PANELS. NEC ARTICLE 409.110(4).
   c. MOTOR CONTROLLERS. NEC ARTICLE 430.8.

M. SHORT-CIRCUIT STUDY:
1. SUBMIT COMPUTER-BASED, FAULT-CURRENT STUDY TO DETERMINE THE MINIMUM INTERRUPTING CAPACITY OF CIRCUIT PROTECTIVE DEVICES.
2. SHORT-CIRCUIT STUDY AND EQUIPMENT EVALUATION REPORT SHALL BE SIGNED, DATED, AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER.
3. COMPUTER SOFTWARE SHALL COMPLY WITH IEEE 399 AND IEEE 551 AND SHALL BE CAPABLE OF PLOTTING AND DIAGRAMMING TIME-CURRENT-CHARACTERISTIC CURVES AS PART OF ITS OUTPUT.
4. SHORT-CIRCUIT STUDY REPORT CONTENTS:
   a. STUDY DESCRIPTIONS, PURPOSE, BASIS, AND SCOPE.
   b. ONE-LINE DIAGRAM SHOWING PROTECTIVE DEVICE DESIGNATIONS AND AMPERE RATINGS, CABLE SIZE AND LENGTHS, TRANSFORMER KILOVOLT AMPERE (KVA) AND VOLTAGE RATINGS, MOTOR AND GENERATOR DESIGNATIONS AND KVA RATINGS, AND SWITCHGEAR, SWITCHBOARD, MOTOR-CONTROL CENTER, AND PANELBOARD DESIGNATIONS.
   c. COMMENTS AND RECOMMENDATIONS FOR SYSTEM IMPROVEMENTS, WHERE NEEDED.
   d. EVALUATION OF EQUIPMENT AND PROTECTIVE DEVICES COMPARED TO SHORT-CIRCUIT RATINGS.
   e. LOW-VOLTAGE FAULT REPORT: THREE-PHASE AND UNBALANCED FAULT CALCULATIONS SHOWING VOLTAGE, CALCULATED FAULT-CURRENT MAGNITUDE AND ANGLE, FAULT-POINT X/R RATIO, AND EQUIVALENT IMPEDANCE FOR EACH OVERCURRENT DEVICE LOCATION.
   f. MOMENTARY DUTY REPORT: THREE-PHASE AND UNBALANCED FAULT CALCULATIONS SHOWING VOLTAGE, CALCULATED SYMMETRICAL FAULT-CURRENT MAGNITUDE AND ANGLE, FAULT-POINT X/R RATIO, AND CALCULATED ASYMMETRICAL FAULT CURRENTS FOR EACH OVERCURRENT DEVICE LOCATION.
   g. INTERRUPTING DUTY REPORT: THREE-PHASE AND UNBALANCED FAULT CALCULATIONS SHOWING VOLTAGE, CALCULATED SYMMETRICAL FAULT-CURRENT MAGNITUDE AND ANGLE, FAULT-POINT X/R RATIO, NO AC DECREMENT (NACD) RATIO, EQUIVALENT IMPEDANCE, MULTIPLYING FACTORS FOR 2-, 3-, 5-, AND 8-CYCLE CIRCUIT BREAKERS RATED ON A SYMMETRICAL BASIS, AND MULTIPLYING FACTORS FOR 2-, 3-, 5-, AND 8-CYCLE CIRCUIT BREAKERS RATED ON A TOTAL BASIS FOR EACH OVERCURRENT DEVICE LOCATION.
5. THE EXTENT OF THE ELECTRICAL POWER SYSTEM TO BE STUDIED IS INDICATED ON DRAWINGS.
6. BEGIN SHORT-CIRCUIT CURRENT ANALYSIS AT THE SERVICE, EXTENDING DOWN TO THE SYSTEM OVERCURRENT PROTECTIVE DEVICES.
7. CALCULATE SHORT-CIRCUIT MOMENTARY AND INTERRUPTING DUTIES FOR A THREE-PHASE BOLTED FAULT AT EACH OF THE FOLLOWING: ELECTRIC UTILITY'S SUPPLY TERMINATION POINT, SERVICE EQUIPMENT, SWITCHBOARDS, STANDBY GENERATORS, TRANSFER SWITCHES, PANELBOARDS, DISCONNECT SWITCHES AND ENCLOSED CIRCUIT BREAKERS, MOTOR CONTROLLERS, CONTROL PANELS OF MULTI-MOTOR AND COMBINATION LOAD EQUIPMENT OF AIR CONDITIONING AND REFRIGERATION EQUIPMENT, ELEVATOR CONTROL PANELS, AND INDUSTRIAL CONTROL PANELS.

N. ARC-FLASH STUDY:
1. SUBMIT COMPUTER-BASED, ARC-FLASH STUDY TO DETERMINE THE ARC-FLASH HAZARD DISTANCE AND THE INCIDENT ENERGY TO WHICH PERSONNEL COULD BE EXPOSED DURING WORK ON OR NEAR ELECTRICAL EQUIPMENT.
2. ARC-FLASH STUDY REPORT SHALL BE SIGNED, DATED, AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER.
3. ARC-FLASH HAZARD ANALYSIS SOFTWARE SHALL COMPLY WITH IEEE 1584 AND NFPA 70E AND SHALL BE CAPABLE OF CALCULATING "MANDATORY," "VERY DESIRABLE," AND "DESIRABLE" FEATURES AS LISTED IN IEEE 399.
4. ARC-FLASH STUDY REPORT CONTENTS:
   a. EXECUTIVE SUMMARY.
   b. STUDY DESCRIPTIONS, PURPOSE, BASIS, AND SCOPE.
   c. ONE-LINE DIAGRAM SHOWING PROTECTIVE DEVICE DESIGNATIONS AND AMPERE RATINGS, CABLE SIZE AND LENGTHS, TRANSFORMER KILOVOLT AMPERE (KVA) AND VOLTAGE RATINGS, MOTOR AND GENERATOR DESIGNATIONS AND KVA RATINGS, AND SWITCHGEAR, SWITCHBOARD, MOTOR-CONTROL CENTER, AND PANELBOARD DESIGNATIONS.
   d. SHORT-CIRCUIT STUDY OUTPUT.
   e. INTERRUPTING DUTY REPORT: THREE-PHASE AND UNBALANCED FAULT CALCULATIONS SHOWING VOLTAGE, CALCULATED SYMMETRICAL FAULT-CURRENT MAGNITUDE AND ANGLE, FAULT-POINT X/R RATIO, NO AC DECREMENT (NACD) RATIO, EQUIVALENT IMPEDANCE, MULTIPLYING FACTORS FOR 2-, 3-, 5-, AND 8-CYCLE CIRCUIT BREAKERS RATED ON A SYMMETRICAL BASIS, AND MULTIPLYING FACTORS FOR 2-, 3-, 5-, AND 8-CYCLE CIRCUIT BREAKERS RATED ON A TOTAL BASIS FOR EACH OVERCURRENT DEVICE LOCATION.
   f. INCIDENT ENERGY AND FLASH PROTECTION BOUNDARY CALCULATIONS: ARCING FAULT MAGNITUDE, PROTECTIVE DEVICE CLEARING TIME, DURATION OF ARC, ARC-FLASH BOUNDARY, WORKING DISTANCE, INCIDENT ENERGY, HAZARD RISK CATEGORY, AND RECOMMENDATIONS FOR ARC-FLASH ENERGY REDUCTION.
5. ARC-FLASH WARNING LABELS: PRODUCE A 3.5-BY-5-INCH THERMAL TRANSFER LABEL OF HIGH-ADHESION POLYESTER FOR EACH WORK LOCATION INCLUDED IN THE ANALYSIS. THE LABEL SHALL HAVE AN ORANGE HEADER WITH THE WORDING, "WARNING, ARC-FLASH HAZARD," AND SHALL INCLUDE LOCATION DESIGNATION, NOMINAL VOLTAGE, FLASH PROTECTION BOUNDARY, HAZARD RISK CATEGORY, INCIDENT ENERGY, WORKING DISTANCE, AND ENGINEERING REPORT NUMBER, REVISION NUMBER, AND ISSUE DATE. LABELS SHALL BE MACHINE-PRINTED, WITH NO FIELD-APPLIED MARKINGS.

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

ERICKA M. NIENHUESER - ELEC. ENG. — E-15966 — STATE OF NEBRASKA — PROFESSIONAL ELECTRICAL ENGINEER
03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: DLB
REVISIONS

DATE	DESCRIPTION

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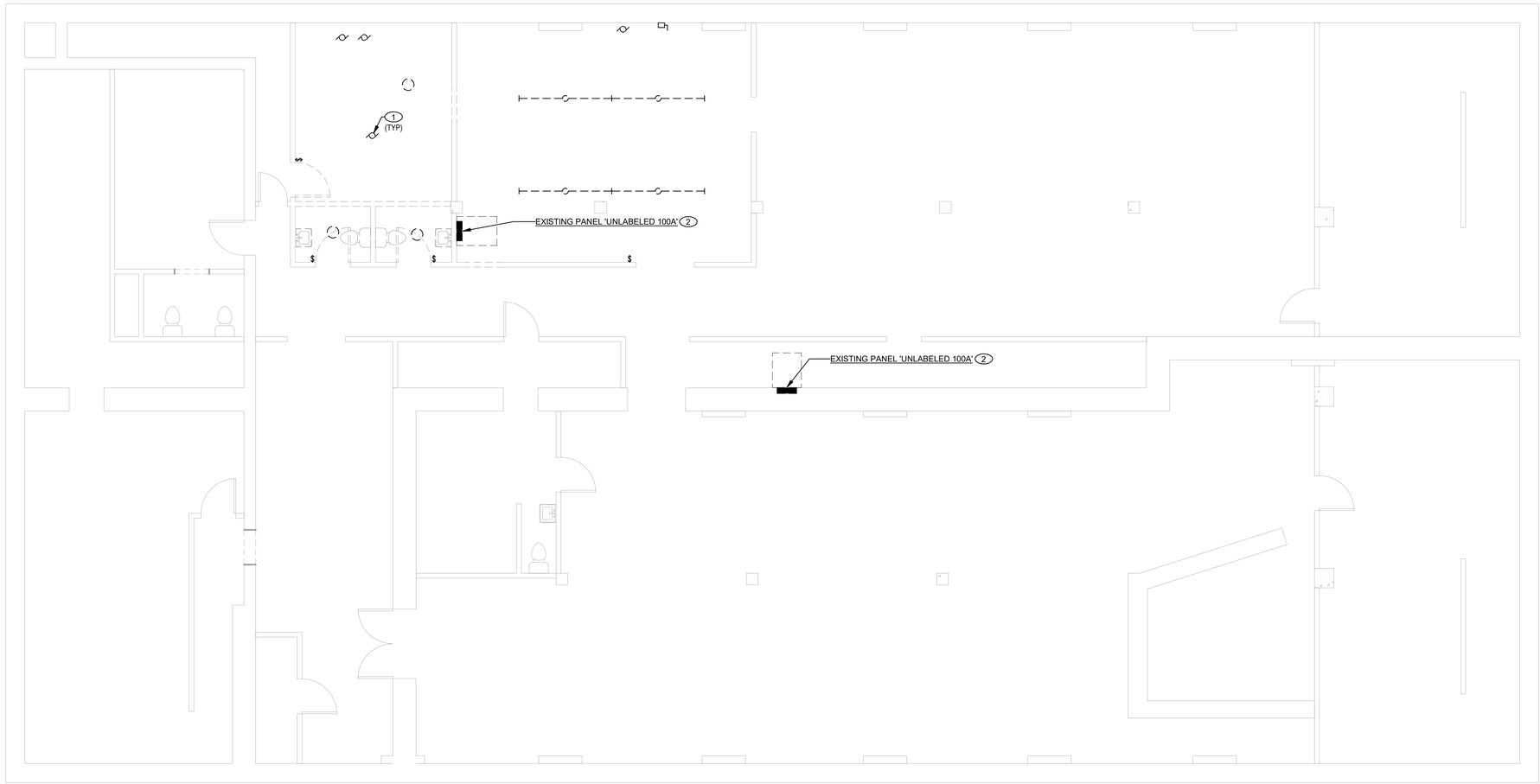
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SHEET
E002

KEYNOTES	
1	EXISTING MECHANICAL EQUIPMENT TO BE REMOVED, COORDINATE BRANCH CIRCUITING REMOVAL WITH MECHANICAL CONTRACTOR.
2	PATCH WALL, AS REQUIRED FOR NEW PANEL, TO MATCH EXISTING ADJACENT CONSTRUCTION.



1 BASEMENT ELECTRICAL DEMOLITION PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

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NEBRASKA PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. WIENHOESTER
E-15966
STATE OF NEBRASKA

03/24/2021

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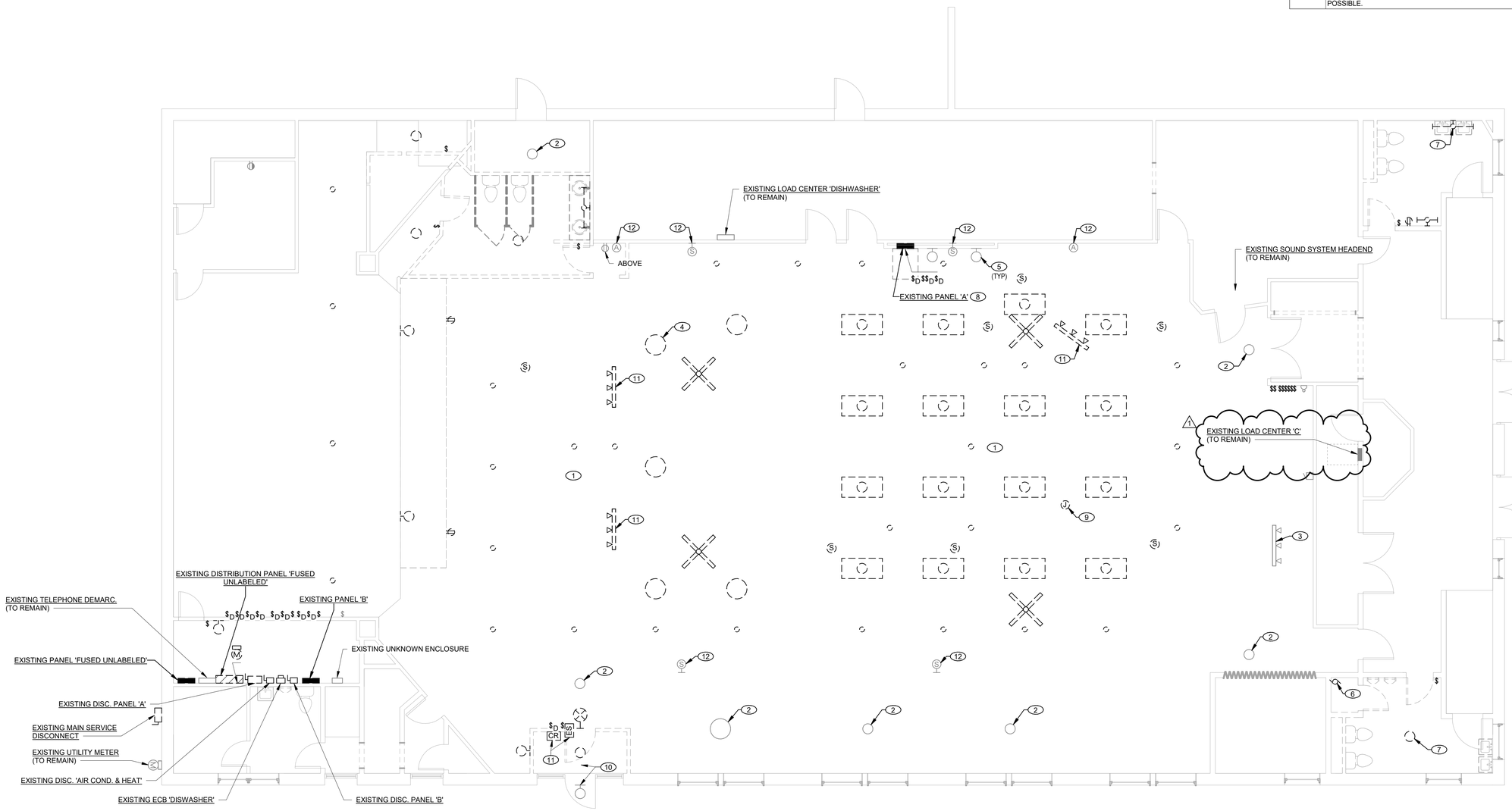
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SHEET
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KEYNOTES	
1	EXISTING GRID TILE CEILING WITHIN AREA TO BE REMOVED. REMOVE ALL ELECTRICAL DEVICES LOCATED WITHIN CEILING GRID. REMOVE ALL CONDUIT AND CONDUCTORS AS COMPLETELY AS POSSIBLE.
2	EXISTING DECORATIVE PENDANT LUMINAIRES TO BE REMAIN. CONTRACTOR SHALL CLEAN EXISTING FIXTURE HOUSING AND LENS AND REMOVE EXISTING LAMPS FOR REPLACEMENT.
3	EXISTING TRACK AND TRACK HEAD LUMINAIRES TO BE REMAIN. CONTRACTOR SHALL CLEAN EXISTING FIXTURE HOUSING AND REMOVE EXISTING LAMPS FOR REPLACEMENT.
4	SALVAGE EXISTING DECORATIVE PENDANT LUMINAIRE FOR RELOCATION. CONTRACTOR SHALL CLEAN EXISTING LUMINAIRE HOUSING AND REMOVE EXISTING LAMPS FOR REPLACEMENT.
5	EXISTING WALL SCONCE LUMINAIRES TO REMAIN. CONTRACTOR SHALL CLEAN EXISTING FIXTURE HOUSING AND REMOVE EXISTING LAMPS FOR REPLACEMENT.
6	EXISTING MECHANICAL EQUIPMENT TO BE REMOVED, COORDINATE BRANCH CIRCUITING REMOVAL WITH MECHANICAL CONTRACTOR.
7	EXISTING LUMINAIRES TO BE REMOVED, SALVAGE EXISTING BRANCH CIRCUITING FOR REUSE FOR NEW LIGHTING IN THIS AREA. CONTRACTOR SHALL VERIFY CONDITION OF EXISTING BRANCH CIRCUITING.
8	PATCH WALL, AS REQUIRED FOR NEW PANEL, TO MATCH EXISTING ADJACENT CONSTRUCTION.
9	STAR PENDANT LUMINAIRE, SALVAGE FOR RELOCATION. COORDINATE EXACT MOUNTING LOCATION WITH OWNER.
10	COORDINATE POWER CONNECTION OF EXTERIOR SIGNAGE WITH DEMOLITION WORK WITHIN AREA. COORDINATE EXISTING SIGNAGE CONTROLS WITH OWNER AND PROVIDE NEW AS REQUIRED.
11	SALVAGE EXISTING DEVICE AND TURN OVER TO OWNER.
12	EXISTING LOW VOLTAGE CABLING TO BE REROUTED BY OWNER. COORDINATE EXISTING ROUTING AND PROVIDE NECESSARY RACEWAY(S) TO ALLOW CABLING TO BE CONCEALED AS MUCH AS POSSIBLE.



1 LEVEL 1 ELECTRICAL DEMOLITION PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

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PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. NIENABER
E-15966
STATE OF NEBRASKA

03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #:	3-11-2011
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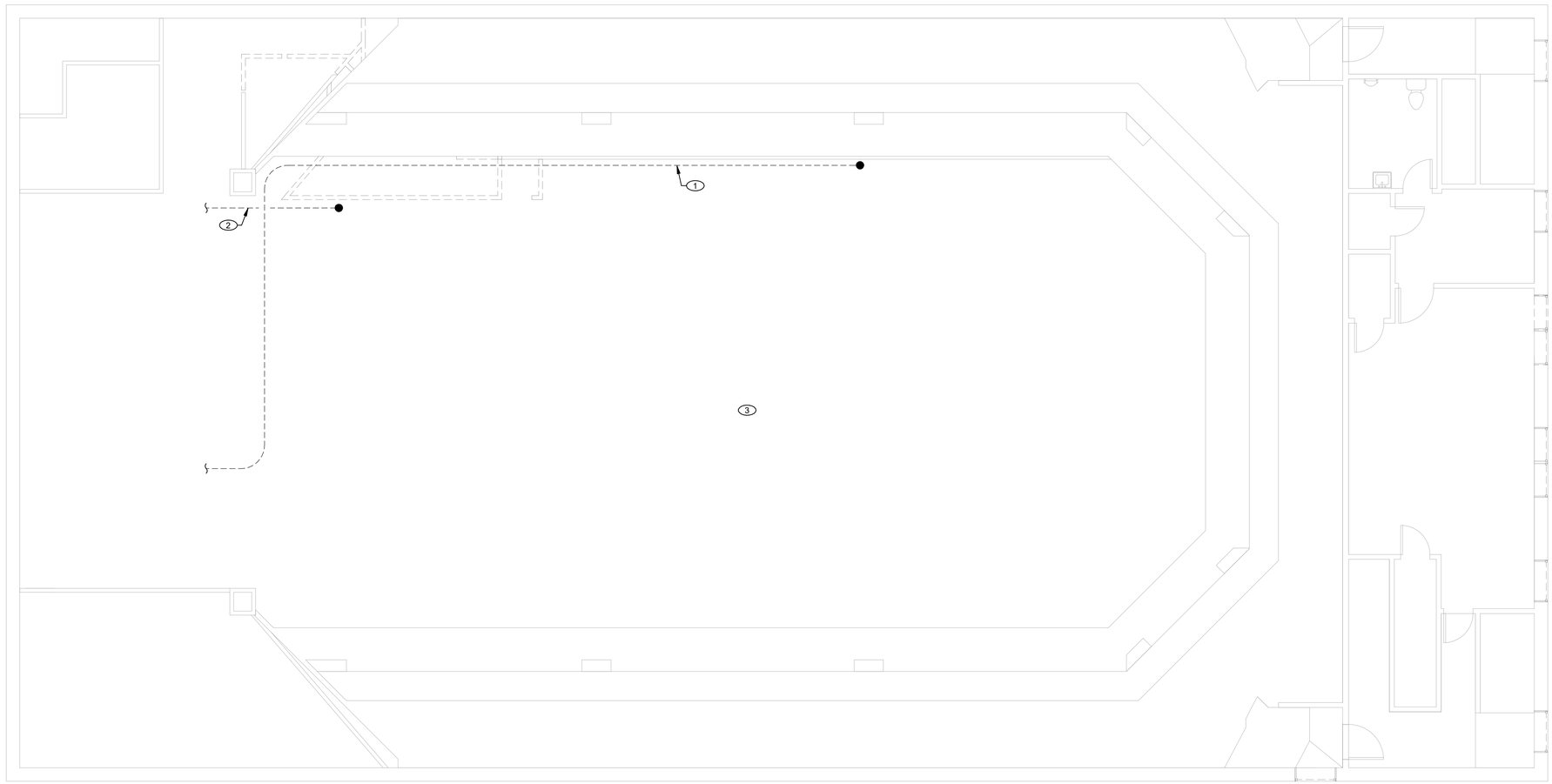
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SHEET
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KEYNOTES	
1	EXISTING FEEDER SERVING EXISTING PANEL 'A'/NEW PANEL 'L1C', REFER TO LEVEL 1 PLANS FOR LOCATION. EXISTING FEEDER SHALL BE REROUTED AS EXISTING DROP CEILING WILL BE REMOVED IN THIS AREA. COORDINATE RE-ROUTING WITH EXISTING CONDITIONS, PROVIDE NEW FEEDER AS REQUIRED. NEW FEEDER SIZE SHALL MATCH EXISTING TO BE REPLACED. CONDUIT SHALL BE CONCEALED AS MUCH AS POSSIBLE. IF SURFACE RACEWAY IS REQUIRED, LOCATION SHALL BE APPROVED BY ARCHITECT AND SURFACE RACEWAY SHALL BE PAINTED TO MATCH EXISTING CONDITIONS.
2	EXISTING FEEDER SERVING DISHWASHER LOAD CENTER, REFER TO LEVEL 1 PLANS FOR LOCATION. EXISTING FEEDER SHALL BE REROUTED AS EXISTING DROP CEILING WILL BE REMOVED IN THIS AREA. COORDINATE RE-ROUTING WITH EXISTING CONDITIONS, PROVIDE NEW FEEDER AS REQUIRED. NEW FEEDER SIZE SHALL MATCH EXISTING TO BE REPLACED. CONDUIT SHALL BE CONCEALED AS MUCH AS POSSIBLE. IF SURFACE RACEWAY IS REQUIRED, LOCATION SHALL BE APPROVED BY ARCHITECT AND SURFACE RACEWAY SHALL BE PAINTED TO MATCH EXISTING CONDITIONS.
3	ALL CONDUITS AND CONDUCTORS SERVING ELECTRICAL DEVICES BEING REMOVED IN EXISTING DROP CEILING BEING REMOVED SHALL BE COMPLETELY REMOVED.



1 LEVEL 2 ELECTRICAL DEMOLITION PLAN
SCALE: 3/16" = 1'-0"

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. NIENABER-SCHMIDT
E-15966
STATE OF NEBRASKA

03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
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DRAWN: DLB

REVISIONS

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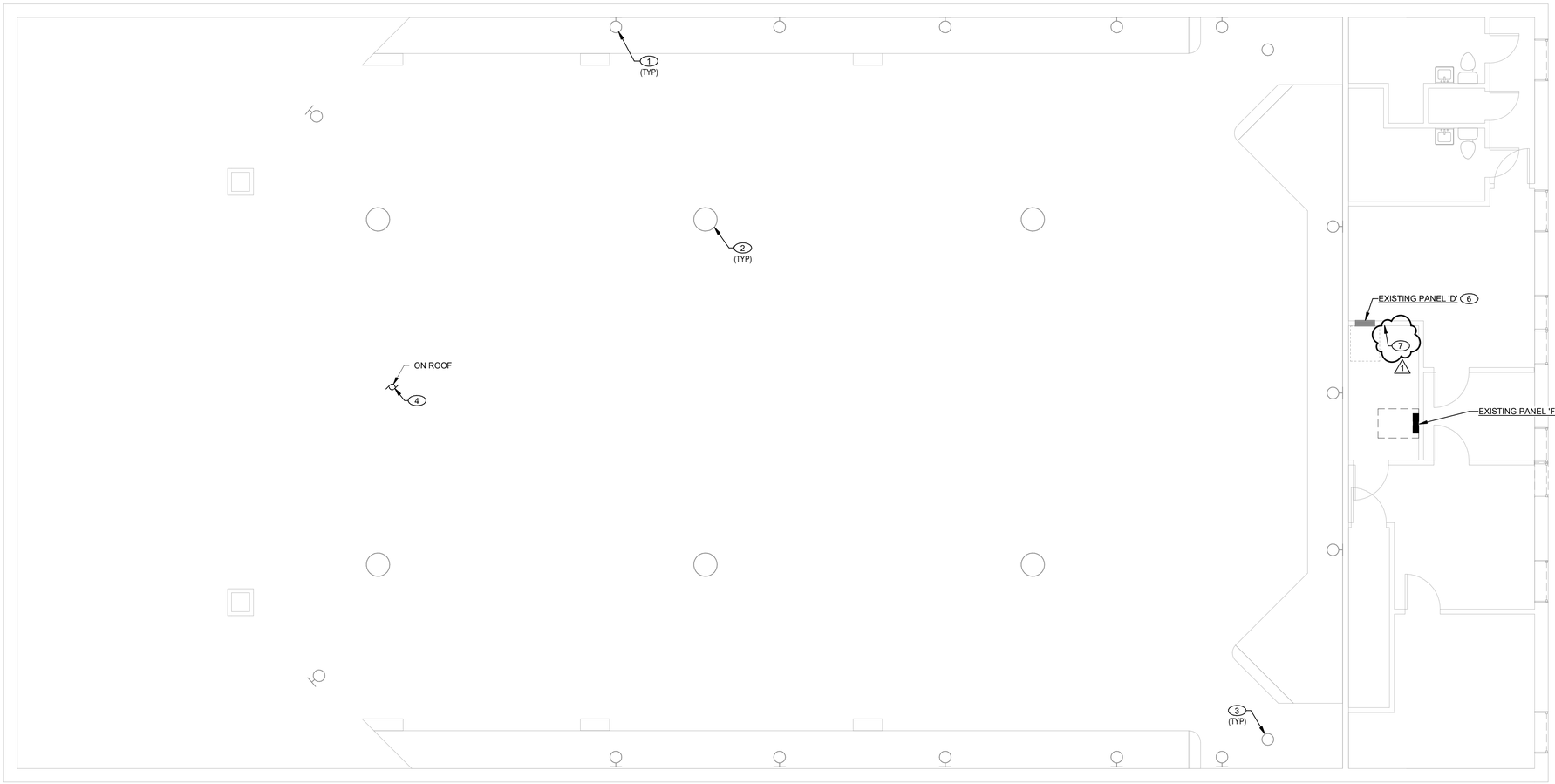
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KEYNOTES	
1	EXISTING THREE LAMP WALL SCONCE LUMINAIRES TO REMAIN. CONTRACTOR SHALL CLEAN EXISTING FIXTURE HOUSING AND REMOVE EXISTING LAMPS FOR REPLACEMENT.
2	EXISTING DECORATIVE PENDANT LUMINAIRES TO BE REMAIN. CONTRACTOR SHALL CLEAN EXISTING FIXTURE HOUSING AND LENS AND REMOVE EXISTING LAMPS FOR REPLACEMENT.
3	EXISTING SURFACE MOUNT LUMINAIRE TO REMAIN. CONTRACTOR SHALL CLEAN EXISTING FIXTURE HOUSING AND LENS AND REMOVE EXISTING LAMP FOR REPLACEMENT.
4	EXISTING MECHANICAL EQUIPMENT TO BE REMOVED, COORDINATE BRANCH CIRCUITING REMOVAL WITH MECHANICAL CONTRACTOR.
5	PATCH WALL WHERE PANEL IS REMOVED.
6	EXISTING PANEL SHALL PHYSICALLY REMAIN IN SPACE. CONTRACTOR SHALL REMOVE EXISTING FEEDERS FROM PANEL, SO THAT PANEL IS NO LONGER ENERGIZED. REMOVE PANEL INTERIOR AND PROVIDE BLANK COVER AND UTILIZE PANEL BACK-BOX AS BRANCH CIRCUIT SPLICE BOX, EXTEND EXISTING BRANCH CIRCUITS TO NEW PANEL 'L3A'.
7	EXISTING LIGHTING DIMMER TO REMAIN, REMOVE EXISTING BRANCH CIRCUITING SO THAT EQUIPMENT IS NO LONGER ENERGIZED.



1 LEVEL 3 ELECTRICAL DEMOLITION PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. NIENHUESER-JAEL
E-15966
STATE OF NEBRASKA

03/24/2021

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SIDNEY, NE 69162

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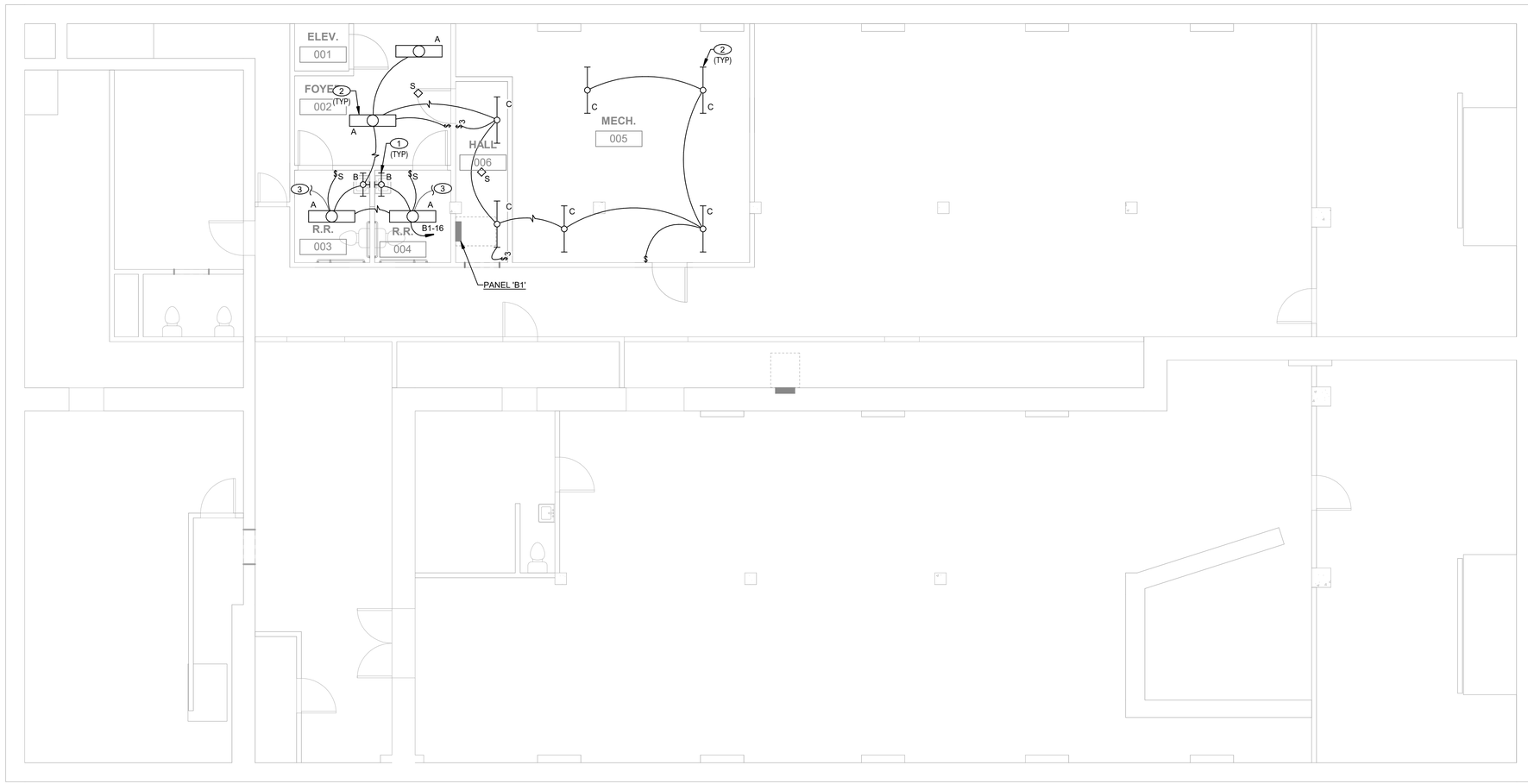
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GENERAL LIGHTING NOTES
(APPLIES TO SHEETS E101, AND E103)

A. REFER SHEET E501 FOR LUMINAIRE REQUIREMENTS.
B. REFER SHEET E501 FOR LIGHTING CONTROL REQUIREMENTS.
C. LIGHTING CONTROL WIRING IS NOT SHOWN. PROVIDE ALL LIGHTING CONTROL WIRING FOR FUNCTIONAL SYSTEM BASED ON SUPPLIED CONTROL SYSTEM.
D. ALL BRIDGES AND LIGHTING CONTROL DEVICES REQUIRING A POWER CONNECTION SHALL BE CONNECTED TO NORMAL LIGHTING CIRCUIT FROM THE ELECTRICAL PANEL SERVING LIGHTING IN THE CONTROLLED ZONE.

KEYNOTES	
1	MOUNT LUMINAIRE ABOVE MIRROR, COORDINATE EXACT LOCATION WITH ARCHITECT.
2	FIELD COORDINATE EXACT LOCATION TO AVOID MECHANICAL DUCTWORK, PIPING, ETC.
3	CONNECTION TO EXHAUST FAN, SEE POWER & SPECIAL SYSTEMS PLAN.



1 BASEMENT LIGHTING PLAN
SCALE: 3/16" = 1'-0"

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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SEAL

ERICKA M. WIENHOESTER
E-15966
PROFESSIONAL ELECTRICAL ENGINEER
STATE OF NEBRASKA

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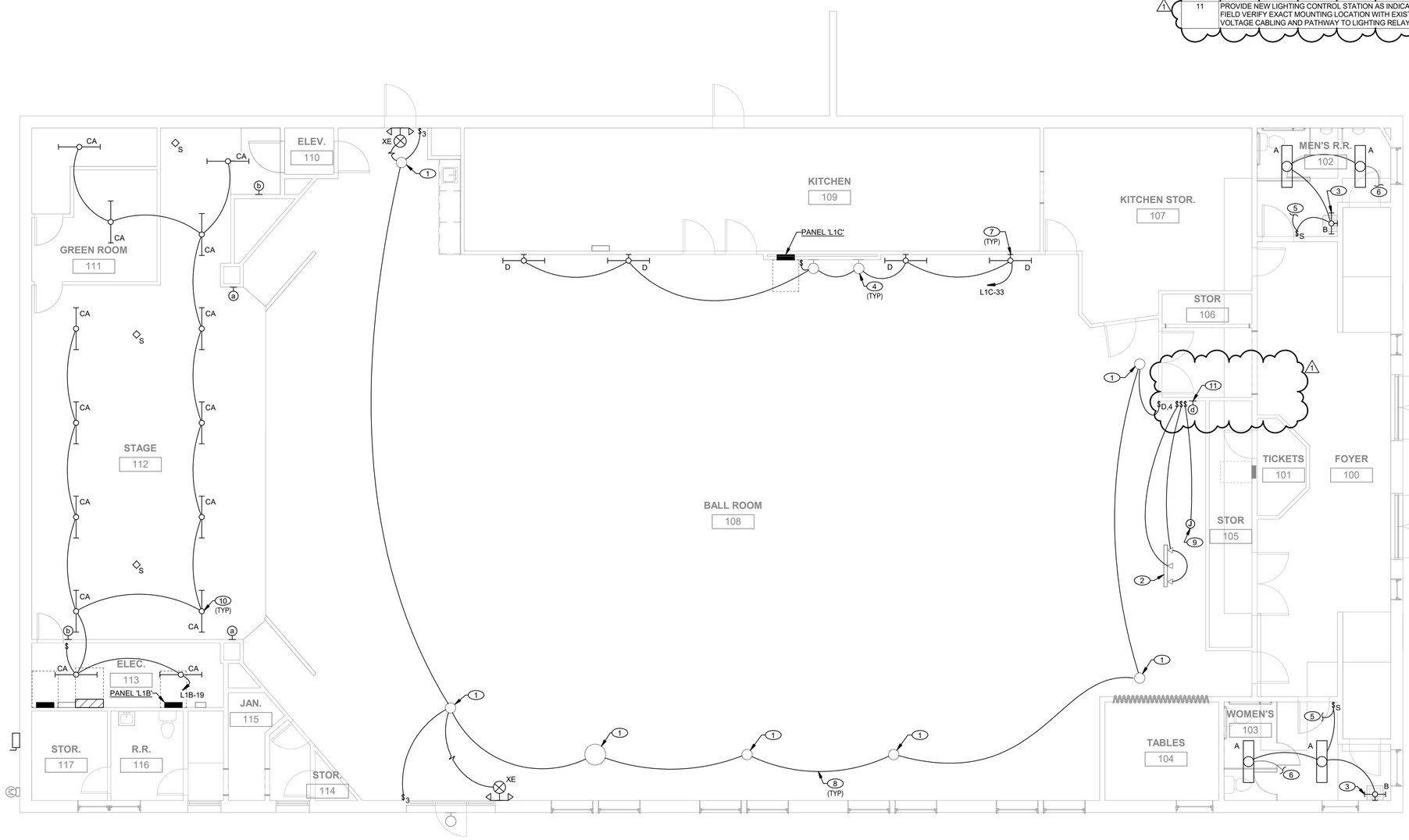
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KEYNOTES	
1	EXISTING DECORATIVE PENDANT LUMINAIRES TO BE RELAMPED. CONTRACTOR SHALL VERIFY QUANTITY OF LAMPS REQUIRED PER LUMINAIRE AND PROVIDE NEW LAMPS AS REQUIRED. CONTRACTOR SHALL VERIFY EXISTING LAMP SOCKET TYPE AND RATED WATTAGE. NEW LAMPS SHALL BE LED 3000K CCT, DIMMABLE TYPE. ENSURE FUNCTIONALITY WITH NEW DIMMING CONTROLS.
2	EXISTING TRACK HEAD LUMINAIRES TO BE RELAMPED. CONTRACTOR SHALL VERIFY QUANTITY OF LAMPS REQUIRED PER LUMINAIRE AND PROVIDE NEW LAMPS AS REQUIRED. CONTRACTOR SHALL VERIFY EXISTING LAMP SOCKET TYPE AND RATED WATTAGE. NEW LAMPS SHALL BE LED 3000K CCT.
3	MOUNT LUMINAIRE ABOVE MIRROR, COORDINATE EXACT LOCATION WITH ARCHITECT.
4	EXISTING WALL SCONCE LUMINAIRES TO BE RELAMPED. CONTRACTOR SHALL VERIFY QUANTITY OF LAMPS REQUIRED PER LUMINAIRE AND PROVIDE NEW LAMPS AS REQUIRED. CONTRACTOR SHALL VERIFY EXISTING LAMP SOCKET TYPE AND RATED WATTAGE. NEW LAMPS SHALL BE LED 3000K CCT.
5	RECONNECT TO EXISTING BRANCH CIRCUITING MADE AVAILABLE DURING DEMOLITION.
6	CONNECTION TO EXHAUST FAN, SEE POWER & SPECIAL SYSTEMS PLAN.
7	WALL MOUNT LUMINAIRE SO THAT BOTTOM IS +8'-6" AFF, COORDINATE FINAL HEIGHT AND LOCATION WITH OWNER PRIOR TO INSTALLATION.
8	UTILIZE EXISTING CONDUCTORS AND CONDUCT, CONTRACTOR TO VERIFY CONDITION OF EXISTING TO BE REUSED. PROVIDE NEW AS REQUIRED FOR MODIFICATIONS AS SHOWN.
9	STAR PENDANT LUMINAIRE, SALVAGE FOR RELOCATION. COORDINATE EXACT MOUNTING LOCATION WITH OWNER.
10	SUSPEND LUMINAIRE SO THAT BOTTOM IS +10'-0" AFF. FIELD COORDINATE EXACT LOCATION TO AVOID EXISTING CONDITIONS, MECHANICAL DUCTWORK, PIPING, ETC.
11	PROVIDE NEW LIGHTING CONTROL STATION AS INDICATED TO CONTROL EXISTING LUMINAIRES. FIELD VERIFY EXACT MOUNTING LOCATION WITH EXISTING CONDITIONS. PROVIDE NEW LOW VOLTAGE CABLING AND PATHWAY TO LIGHTING RELAY PANEL/CONTROLLER.



1 LEVEL 1 LIGHTING PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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SEAL

PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. WIENHOLDER
E-15966
STATE OF NEBRASKA

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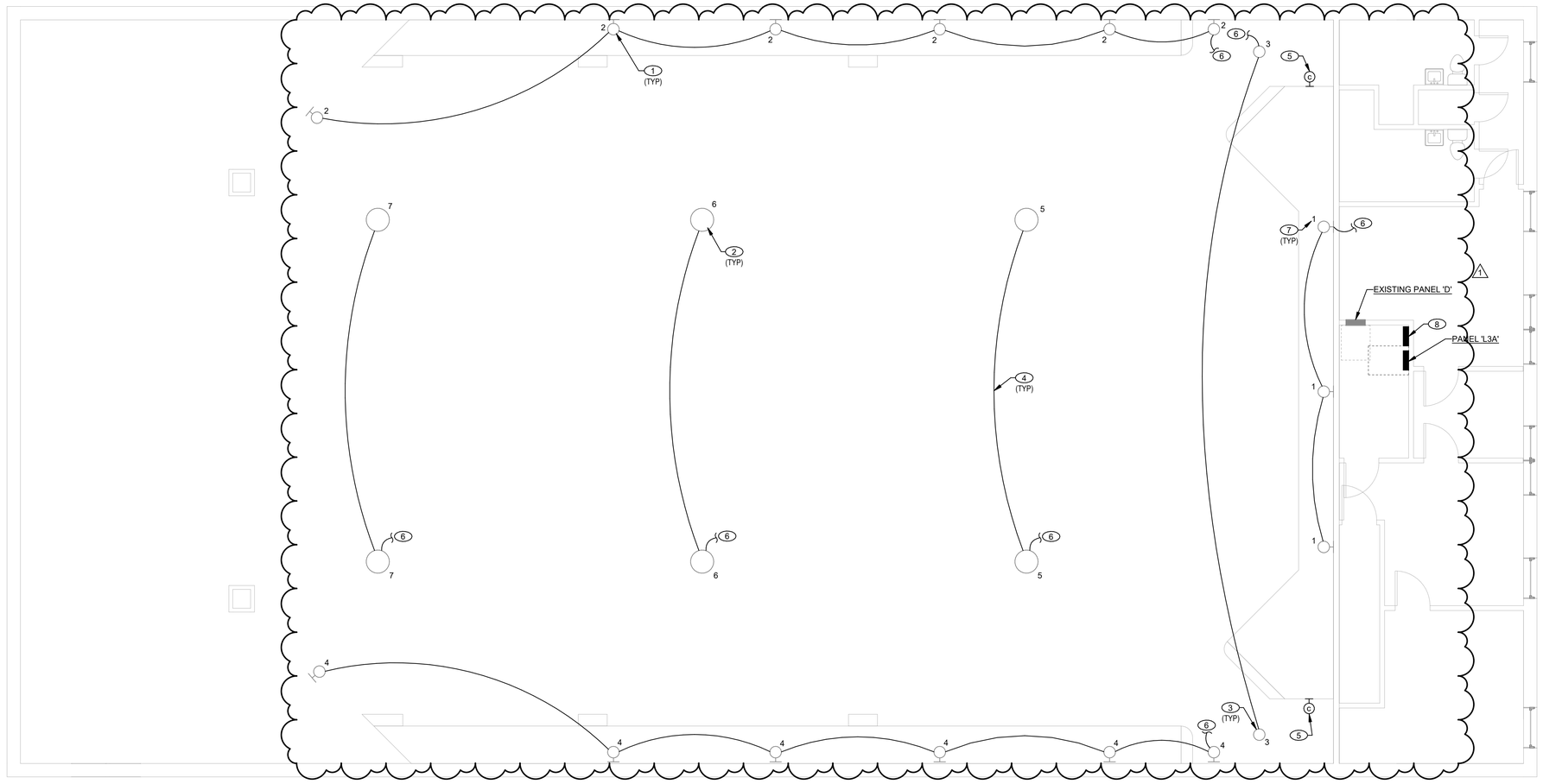
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KEYNOTES	
1	EXISTING THREE LAMP WALL SCONCE LUMINAIRES TO BE RELAMPED. PROVIDE THREE (3) EDISON STYLE CLEAR LENSED LAMPS. CONTRACTOR SHALL VERIFY EXISTING LAMP SOCKET TYPE AND RATED WATTAGE. NEW LAMPS SHALL BE LED 3000K CCT, DIMMABLE TYPE. ENSURE FUNCTIONALITY WITH NEW DIMMING CONTROLS.
2	EXISTING DECORATIVE PENDANT LUMINAIRES TO BE RELAMPED. CONTRACTOR SHALL VERIFY QUANTITY OF LAMPS REQUIRED PER LUMINAIRE AND PROVIDE NEW LAMPS AS REQUIRED. CONTRACTOR SHALL VERIFY EXISTING LAMP SOCKET TYPE AND RATED WATTAGE. NEW LAMPS SHALL BE LED 3000K CCT, DIMMABLE TYPE. ENSURE FUNCTIONALITY WITH NEW DIMMING CONTROLS.
3	EXISTING SURFACE MOUNT LUMINAIRE TO BE RELAMPED. CONTRACTOR SHALL VERIFY EXISTING LAMP SOCKET TYPE AND RATED WATTAGE. NEW LAMPS SHALL BE LED 3000K CCT.
4	UTILIZE EXISTING CONDUCTORS AND CONDUIT. CONTRACTOR TO VERIFY CONDITION OF EXISTING TO BE REUSED. PROVIDE NEW AS REQUIRED FOR MODIFICATIONS AS SHOWN.
5	PROVIDE NEW LIGHTING CONTROL STATION AS INDICATED TO CONTROL EXISTING LUMINAIRES. FIELD VERIFY EXACT MOUNTING LOCATION WITH EXISTING CONDITIONS. PROVIDE NEW LOW VOLTAGE CABLING AND PATHWAY TO LIGHTING RELAY PANEL/CONTROLLER.
6	ROUTE BRANCH CIRCUITING TO NEW LIGHTING CONTROLS.
7	LIGHTING ZONE DESIGNATION, REFER TO SHEET E501 FOR ADDITIONAL INFORMATION.
8	LIGHTING RELAY PANEL/CONTROLLER LOCATION FOR LIGHTING CONTROL SCHEME 'BR7A'. COORDINATE EXACT MOUNTING LOCATION(S) WITH EXISTING CONDITIONS. PREVIOUS LUMINAIRE CONTROLS WERE IN EXISTING PANEL 'D' VIA MANUAL OPERATION OF CIRCUIT BREAKERS SERVING LUMINAIRES WITHIN THIS SPACE. FIELD VERIFY EXACT ROUTING OF CONDUIT, CONDUCTORS, AND GROUPING OF EXISTING LUMINAIRES. ENSURE DIMMING FUNCTIONALITY PROVIDED IS COMPATIBLE WITH NEW LAMPS PROVIDED WITHIN EXISTING FIXTURES.



1 LEVEL 3 LIGHTING PLAN
SCALE: 3/16" = 1'-0"

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

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PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. NIENHUESER-JAEL
E-15966
STATE OF NEBRASKA

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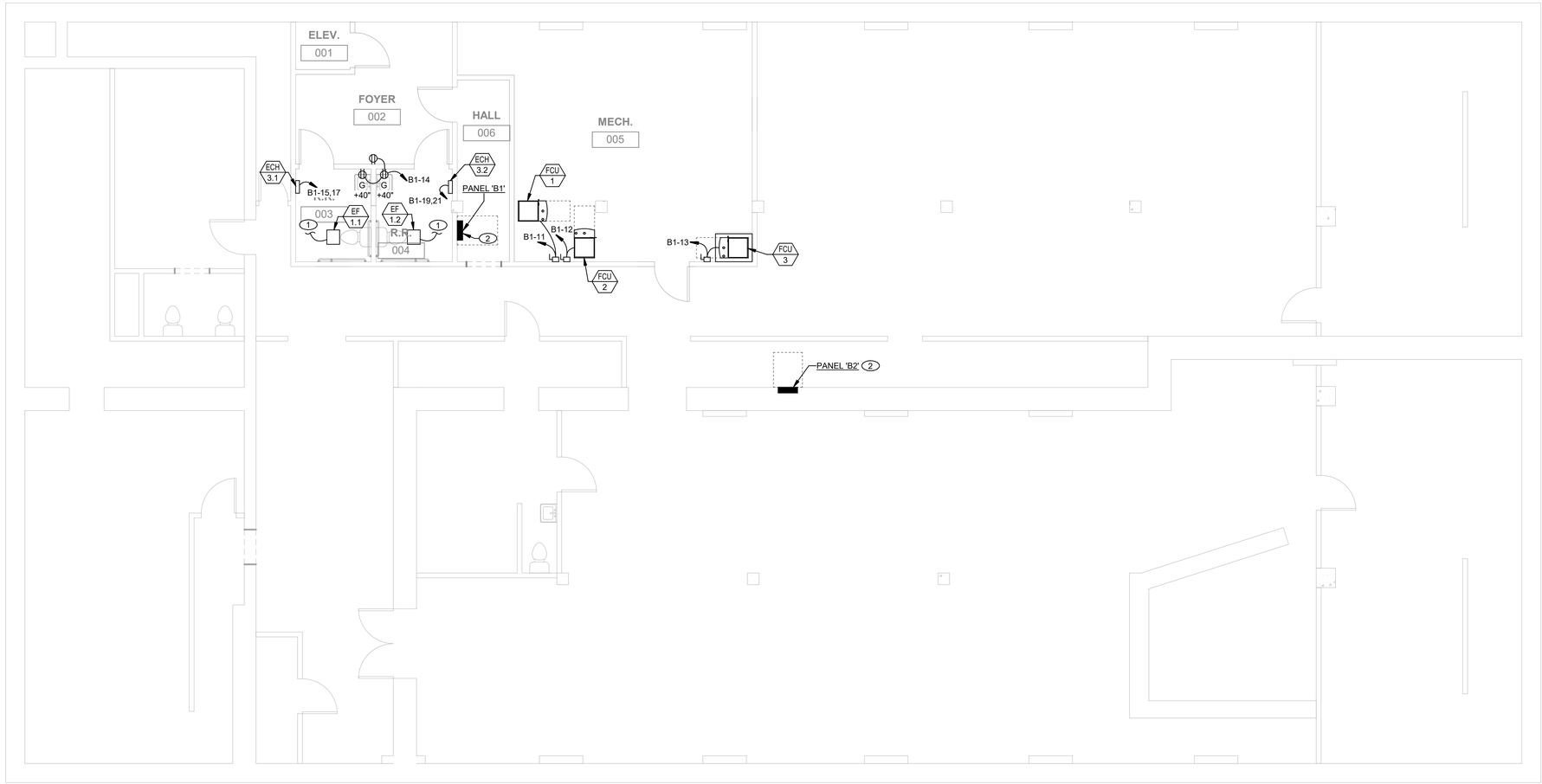
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KEYNOTES	
1	EXHAUST FAN WITHIN RESTROOM TO BE CONTROLLED AND POWERED BY ROOM LIGHTING CONTROLS. SEE LIGHTING PLAN SHEETS FOR CONTROL LOCATION.
2	PATCH WALL, AS REQUIRED FOR NEW PANEL, TO MATCH EXISTING ADJACENT CONSTRUCTION.



1 BASEMENT POWER & SPECIAL SYSTEMS PLAN

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

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Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. WIENRIESER-HEWGLEY
E-15966
STATE OF NEBRASKA

03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #:	3-11-2011
DATE:	3-24-2021
DRAWN:	DLB

REVISIONS

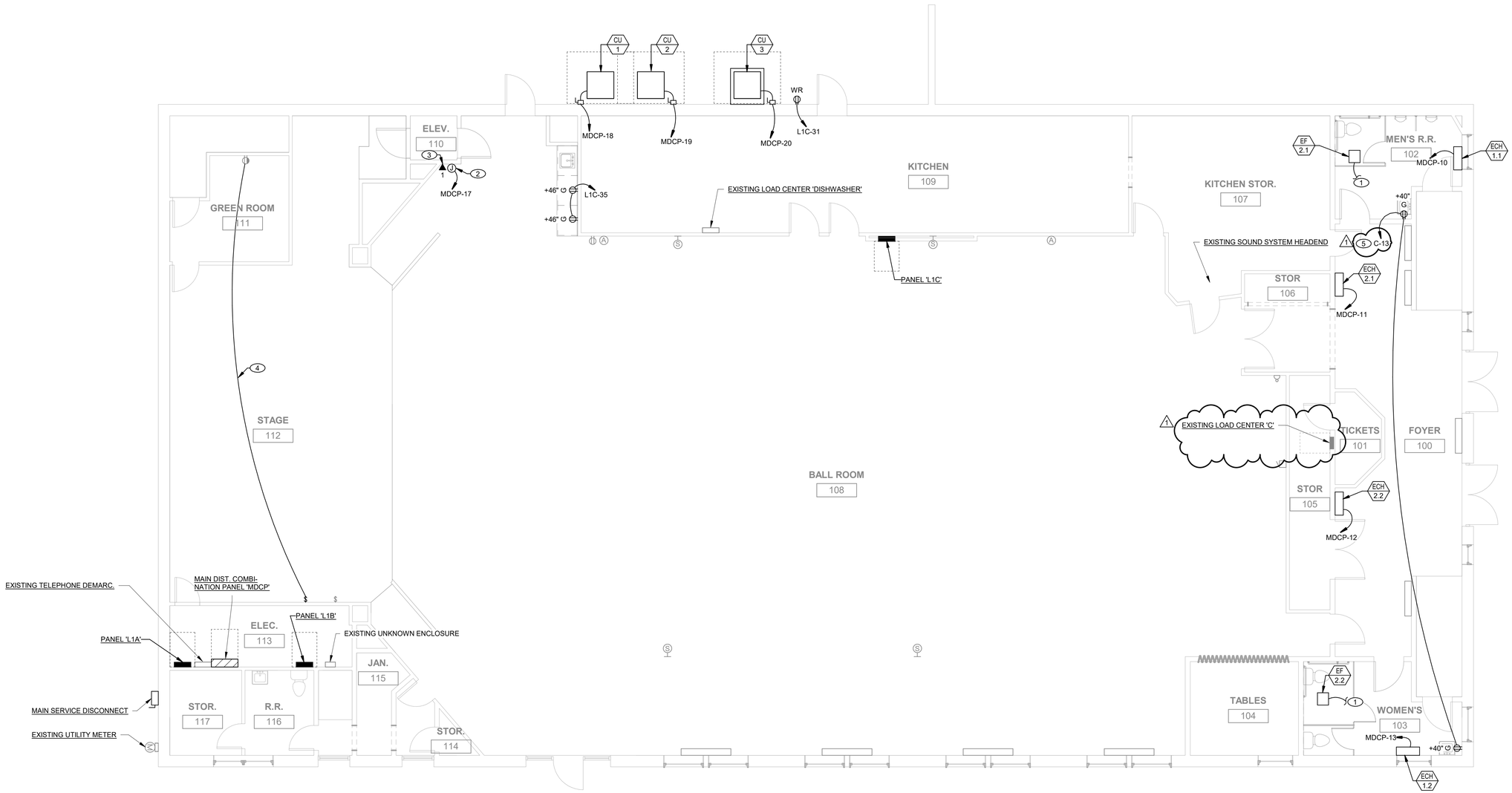
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KEYNOTES	
1	EXHAUST FAN WITHIN RESTROOM TO BE CONTROLLED AND POWERED BY ROOM LIGHTING CONTROLS. SEE LIGHTING PLAN SHEETS FOR CONTROL LOCATION.
2	PROVIDE CONNECTION TO DISCONNECT FURNISHED WITH LIFT, COORDINATE EXACT LOCATION IN FIELD.
3	PROVIDE CABLING FROM EXISTING TELEPHONE DEMARCATION TO LIFT FOR CONNECTION TO AUTODIAL TELEPHONE FURNISHED WITH LIFT, COORDINATE EXACT LOCATION IN FIELD.
4	RECONNECT TO EXISTING SWITCHED RECEPTACLE, VERIFY CONDUIT AND CONDUCTOR ROUTING FOR REUSE.
1 5	PROVIDE NEW 20A/1P CIRCUIT BREAKER IN SPACE AVAILABLE WITHIN EXISTING SQUARE D QOC LOAD CENTER FOR CONNECTION.



1 LEVEL 1 POWER & SPECIAL SYSTEMS PLAN

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

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

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PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. VIENHOESTER-HALL
E-15966
STATE OF NEBRASKA
03/24/2021

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for

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SIDNEY, NE 69162

PROJECT #:	3-11-2011
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4/15/21	ADDENDUM #1

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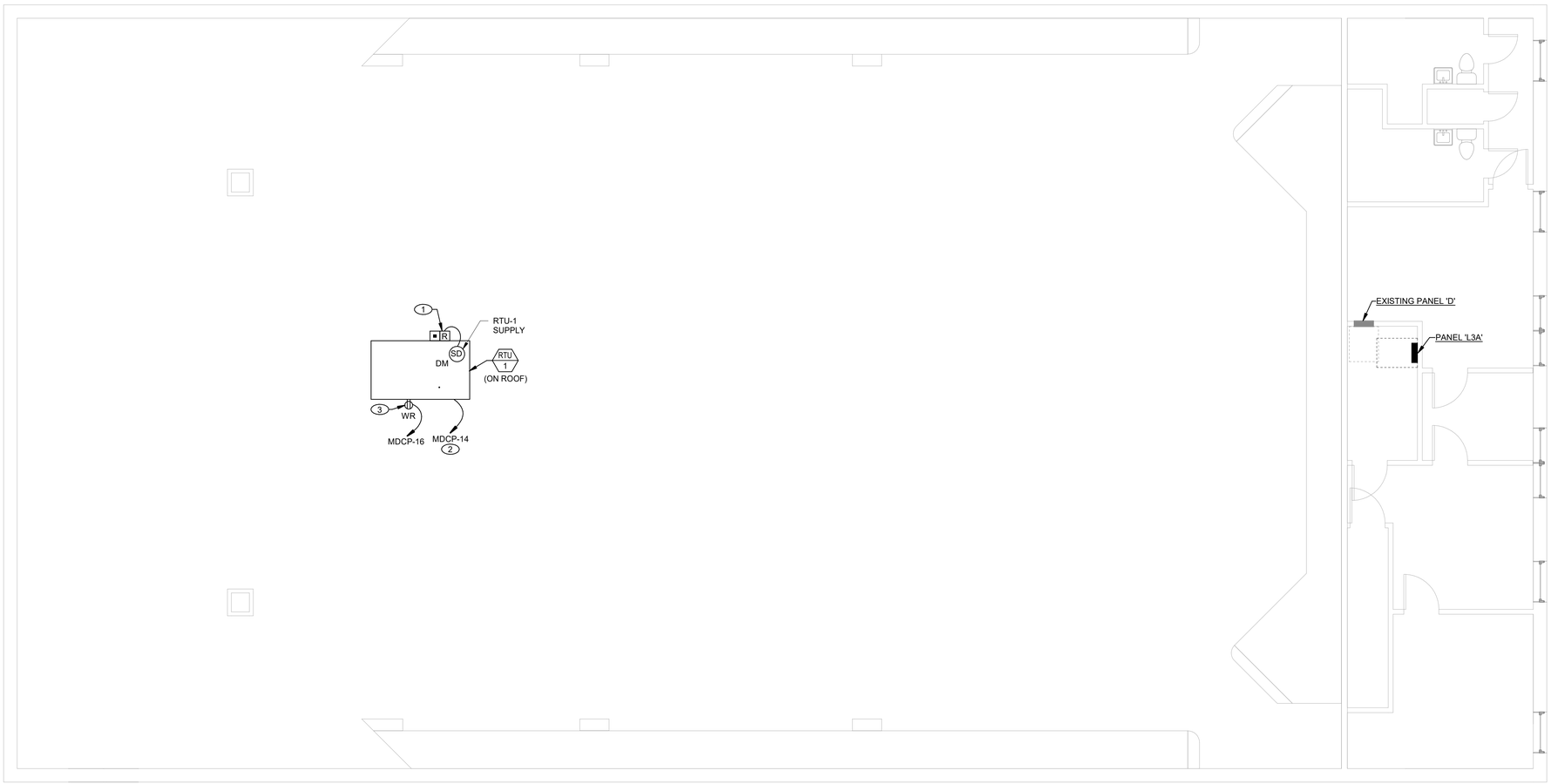
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KEYNOTES	
1	PROVIDE CONNECTION FROM SUPPLY AIR STAND ALONE DUCT MOUNTED SMOKE DETECTORS AND RELAY TO SHUT DOWN MECHANICAL EQUIPMENT UPON ACTIVATION OF DUCT DETECTOR. COORDINATE EXACT MOUNTING LOCATION AND ADDITIONAL REQUIREMENTS WITH MECHANICAL CONTRACTOR. PROVIDE 120V POWER CONNECTION AS REQUIRED.
2	PROVIDE CONNECTION TO DISCONNECT FURNISHED WITH MECHANICAL EQUIPMENT. COORDINATE EXACT LOCATION IN FIELD. MECHANICAL EQUIPMENT IS SERVED BY SHUNT TRIP TYPE CIRCUIT BREAKER.
3	CONVENIENCE RECEPTACLE FURNISHED WITH UNIT. PROVIDE 120V CIRCUIT TO UNIT, COORDINATE EXACT LOCATION IN FIELD.



1 LEVEL 3 POWER & SPECIAL SYSTEMS PLAN
SCALE: 3/16" = 1'-0"

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Phone: 308/534-4983 • Fax: 308/534-4944

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER/SERIES	CATALOG NO.	LIGHT SOURCE QTY	LIGHT SOURCE TYPE	FINISH	MOUNTING	INPUT WATTS	VOLTS	ACCEPTABLE MANUFACTURERS	REMARKS
A	4' DECORATIVE LINEAR LED WRAP	LITHONIA	FMLBML-48IN-30K-80CRI-BN	-	3400 LUMEN / 3000K / LED	BRUSHED NICKEL	SURFACE	36 VA	120	REMARK 1	5
B	2' LINEAR ROUND LED VANITY	LITHONIA	FMVTRL-24IN-MVOLT-30K-90CRI-BN	-	1363 LUMEN / 3000K / LED	BRUSHED NICKEL	WALL	26 VA	120	REMARK 1	5
C	4' LINEAR LED LENSED	LITHONIA	ZL1N-L48-3000LM-FST-MVOLT-30K-80CRI-WH	-	3000 LUMEN / 3000K / LED	WHITE	SURFACE	25 VA	120	REMARK 1	-
CA	4' LINEAR LED LENSED - SUSPENDED	LITHONIA	ZL1N-L48-3000LM-FST-MVOLT-30K-80CRI-WH-ZACVH	-	3000 LUMEN / 3000K / LED	WHITE	SUSPENDED	25 VA	120	REMARK 1	-
D	4' LINEAR LED LENSED - DIRECT ONLY	PEERLESS	RD4WS-LLP-4F-MSL4-80CRI-30K-400LMF-DARK-ZT-120-SCT-C032	-	1600 LUMEN / 3000K / LED	WHITE	WALL	20 VA	120	REMARK 1	-
XE	EXIT SIGN COMBINATION EMERGENCY	LITHONIA	LHQM-LED-R-HO-SD	-	LED FURNISHED IN UNIT	WHITE	WALL	4 VA	120	REMARK 2	3,4

LUMINAIRE SCHEDULE REQUIREMENTS

A. SUBMIT SHOP DRAWINGS FOR EACH LUMINAIRE, BALLAST/DRIVER, AND LAMP TYPE USED ON PROJECT.
B. ACCEPTABLE MANUFACTURERS LISTED ARE CAPABLE OF PROVIDING EQUIVALENT LUMINAIRES. SUBMIT PRODUCT AND ACCESSORIES EQUIVALENT OR SUPERIOR TO THE SPECIFIED LUMINAIRE IN PHOTOMETRIC PERFORMANCE, CONSTRUCTION QUALITY, INCLUDED ACCESSORIES, AND AESTHETICS. ADDITIONAL MANUFACTURERS NOT LISTED MAY ALSO BE SUBMITTED FOR APPROVAL PRIOR TO BID. APPROVAL WILL BE BASED ON AN ASSESSMENT OF THE PRODUCT'S QUALITY, PHOTOMETRIC PERFORMANCE, INCLUDED ACCESSORIES, AND AESTHETICS.
C. ALL LUMINAIRES SHALL HAVE A U.L. LABEL. ALL LUMINAIRES USED IN EXTERIOR APPLICATIONS SHALL HAVE A U.L. WET LABEL.
D. VERIFY MOUNTING COMPATIBILITY OF LUMINAIRES WITH CEILING SYSTEMS/MATERIALS PRIOR TO ORDERING LUMINAIRES. NOTIFY ENGINEER OF ANY CONFLICTS WITH THE PROPOSED INSTALLATION.
E. FOR ALL SUSPENDED LUMINAIRES PROVIDE MOUNTING TYPE INDICATED IN LUMINAIRE SCHEDULE. REFER TO PLANS FOR SUSPENSION LENGTH(S) REQUIRED.
F. ALL LUMINAIRES SHALL BE PAINTED AFTER FABRICATION AND HAVE HOUSINGS WITH A MINIMUM DEPTH OF 4". PROVIDE EXTRUDED ALUMINUM TYPE DOOR FRAMES WHERE LUMINAIRES ARE SPECIFIED WITH ALUMINUM DOOR FRAMES.
G. RECESSED DOWNLIGHTS SHALL HAVE ALZAK FINISH SELF-TRIMMING REFLECTORS. DOWNLIGHTS SHALL HAVE HARDWARE MOUNTING FOR REFLECTOR, SPRING CLIPS ARE NOT ACCEPTABLE.
H. ALL COMPACT FLUORESCENT LUMINAIRES SHALL HAVE ELECTRONIC BALLASTS AND END OF LAMP LIFE PROTECTION.
I. PHILIPS, OSRAM SYLVANIA, G.E., CREE, NICHIA, XICATO, AND SAMSUNG ARE ACCEPTABLE LED MANUFACTURERS.
J. PROVIDE LED LUMINAIRES WITH MINIMUM 5-YEAR WARRANTY AND INTEGRAL SURGE PROTECTION. LED MODULES, DRIVERS, AND POWER SUPPLIES SHALL BE FIELD-REPLACEABLE.

LUMINAIRE SCHEDULE REMARKS

1. LITHONIA, COLUMBIA, DAY-BRITE, H.E. WILLIAMS, AND METALUX ARE ACCEPTABLE MANUFACTURERS FOR LUMINAIRE TYPE INDICATED.
2. LITHONIA, DUAL-LITE, CHLORIDE, EMERGI-LITE, HUBBELL, AND SURE-LITES ARE ACCEPTABLE MANUFACTURERS FOR LUMINAIRE TYPE INDICATED.
3. REFER TO DRAWINGS FOR MOUNTING REQUIREMENTS SUCH AS WALL MOUNT, END MOUNT, CEILING MOUNT AND PROVIDE LUMINAIRES ACCORDINGLY. PROVIDE DIRECTIONAL CHEVRON ARROWS AS INDICATED ON PLANS.
4. PROVIDE WITH SELF-DIAGNOSTIC MAINTENANCE ELECTRONICS.
5. COORDINATE FINISH SELECTION WITH ARCHITECT.

Lighting Controls Room Schedule

Number	Name	Lighting Control Scheme
002	FOYER	121A
003	R.R.	111A
004	R.R.	111A
103	WOMEN'S	111A
102	MEN'S R.R.	111A
006	HALL	161A
005	MECH.	011A
112	STAGE	ST1A
113	ELEC.	011A
108	BALL ROOM	BR7A

LIGHTING CONTROL SYSTEM BASIS OF DESIGN:

LIGHTING CONTROL SCHEME NARRATIVE

ST1A - STAGE (ONE ZONE)
- ZONES: ROOM LIGHTING
- LIGHTING CONTROL STATIONS: a,b
- CONTROLLERS: VACANCY SENSOR
- OPERATION: ALL LUMINAIRE SHALL BE CONTROLLED BY VACANCY SENSOR. REFER TO LIGHTING CONTROL STATION DETAILS FOR MANUAL 'ON' OPERATION.
- NOTES: NONE

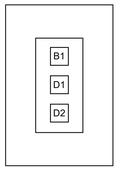
BR7A - BALLROOM (SEVEN ZONES)
- ZONES: REFER TO LOCATIONS ON PLAN
- LIGHTING CONTROL STATIONS: c,d
- CONTROLLERS: NONE
- OPERATION: REFER TO LIGHTING CONTROL STATION DETAILS FOR MANUAL 'ON' OPERATION.
- NOTES: ENSURE DIMMINING OPERATIONS PROVIDED ARE COMPATIBLE WITH NEW LAMPS PROVIDED WITHIN EXISTING FIXTURES.

CONVENTIONAL LIGHTING CONTROL SYSTEMS

111A - OCCUPANCY SENSOR WALL SWITCH (LINE VOLTAGE SWITCHING)
121A - CEILING OCCUPANCY SENSOR WITH WALL SWITCH (LINE VOLTAGE SWITCHING)
161A - CEILING OCCUPANCY SENSOR(S) WITH THREE-WAY SWITCHES (LINE VOLTAGE SWITCHING)

LIGHTING CONTROL REQUIREMENTS:

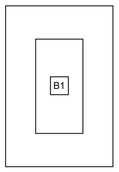
1. PROVIDE SYSTEM FOR LIGHTING CONTROLS AS SHOWN ON PLANS, SCHEDULES, AND NOTES. SUBMIT SHOP DRAWING OF COMPLETE SYSTEM. COOPER GREEN GATE, HUBBELL BUILDING AUTOMATION, WATTSTOPPER, NLIGHT, LC&D, LUTRON, LEVITON, AND INTELLIGENT LIGHTING CONTROLS (ILC) SHALL BE CONSIDERED ACCEPTABLE MANUFACTURERS SUBJECT TO COMPLIANCE WITH REQUIREMENTS.
2. PROVIDE PROGRAMMING AS REQUIRED FOR LIGHTING CONTROL (ON/OFF, DIMMING, OCCUPANCY/VACANCY SENSOR) AS INDICATED. PROVIDE INTERFACE BETWEEN LIGHTING CONTROL SYSTEM AND NETWORK TO ALLOW PROGRAMMING AND CALIBRATION OF SYSTEM THROUGH SOFTWARE.
3. REFER TO SPECIFICATIONS FOR OCCUPANCY/VACANCY SENSOR REQUIREMENTS AND LOCATIONS. CONNECT ALL SENSORS IN CORRESPONDING AREAS TOGETHER TO FEED INPUT OF OCCUPANCY/VACANCY TO CONTROL DEVICE. REFER TO DRAWINGS FOR QUANTITY OF SENSORS.
4. PROVIDE CAT. 5 PATCH CABLE WITH RJ45 CONNECTORS TO CONNECT ALL CONTROL DEVICES AND CONTROL STATIONS TOGETHER. COORDINATE REQUIREMENTS WITH EQUIPMENT SUPPLIER.
5. INITIAL START-UP, COMMISSIONING, AND PROGRAMMING MUST BE COMPLETED BY A QUALIFIED FACTORY REPRESENTATIVE. PROVIDE 2 HOURS OF TRAINING FOR THE OWNER. COORDINATE TIME WITH ARCHITECT, LIGHTING DESIGNER, AND OWNER. COORDINATE FINAL CONTROL SEQUENCING WITH OWNER AND LIGHTING DESIGNER.
6. ALL LOW VOLTAGE CAT 5 CABLING TERMINATIONS SHALL BE FACTORY MOLDED FOR RUNS LESS THAN 30'. WHERE CABLES ARE GREATER THAN 30', A LOW VOLTAGE LICENSED TECHNICIAN AND/OR QUALIFIED CONTRACTOR SHALL PERFORM THE TERMINATIONS. POOR TERMINATIONS WILL RESULT IN A NON-OPERATING SYSTEM. INSTALLER SHALL USE ANY SPECIFIC TERMINATION TOOLS PROVIDED BY THE FACTORY - SEE INSTALLATION REQUIREMENTS. CABLE SHALL BE COLORED DIFFERENTLY THAN TELEPHONE, DATA, AND OTHER SYSTEMS CABLING. PROVIDE CABLE COLOR WITHIN SUBMITTAL.
7. LIGHTING CONTROL WIRING AND CABLES ARE NOT SHOWN ON PLAN LAYOUTS. CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING AND CABLING AS REQUIRED TO PROVIDE LIGHTING CONTROLS AS INDICATED.
8. OCCUPANCY/VACANCY SENSOR TIME DELAYS: 15 MIN (TOILETS, HALLWAYS/CORRIDORS), 5 MIN (STORAGE). COORDINATE FINAL TIME DELAYS WITH OWNER.
9. ALL CONTROL RELAYS AND INTERFACE DEVICES SHALL BE INSTALLED INSIDE IN INSULATED, ACCESSIBLE AREAS UNLESS RATED FOR OUTDOOR USE. LIGHTING CONTROL DEVICES SHALL NOT BE INSTALLED EXPOSED IN OPEN CEILING AREAS. LOCATE ABOVE ACCESSIBLE ACOUSTICAL GRID CEILINGS IN ADJACENT ROOMS.
10. ELECTRONIC LIGHTING SWITCHES AND SENSOR SWITCHES SHALL USE A NEUTRAL FOR THE RETURN CURRENT, NOT THE EQUIPMENT GROUNDING CONDUCTOR.



CONTROL STATION 'a' ⓐ

CONTROL ELEMENTS:
- B1: ON/OFF ALL ROOM LIGHTING; ON TO 100%, FULL OUTPUT
- D1: DIMMER TO PROVIDE MANUAL RAISE FOR ALL ROOM LIGHTING
- D2: DIMMER TO PROVIDE MANUAL LOWER FOR ALL ROOM LIGHTING

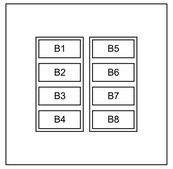
APPLICATION: STAGE



CONTROL STATION 'b' ⓑ

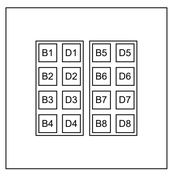
CONTROL ELEMENTS:
- B1: ON/OFF ZONE ONE LIGHTING; ON TO 100%, FULL OUTPUT
- B2: ON/OFF ZONE TWO LIGHTING; ON TO 100%, FULL OUTPUT
- B3: ON/OFF ZONE THREE LIGHTING; ON TO 100%, FULL OUTPUT
- B4: ON/OFF ZONE FOUR LIGHTING; ON TO 100%, FULL OUTPUT
- B5: ON/OFF ZONE FIVE LIGHTING; ON TO 100%, FULL OUTPUT
- B6: ON/OFF ZONE SIX LIGHTING; ON TO 100%, FULL OUTPUT
- B7: ON/OFF ZONE SEVEN LIGHTING; ON TO 100%, FULL OUTPUT
- B8: ON/OFF ALL LIGHTING ZONES; ON TO 100%, FULL OUTPUT

APPLICATION: BALLROOM



CONTROL STATION 'c' ⓒ

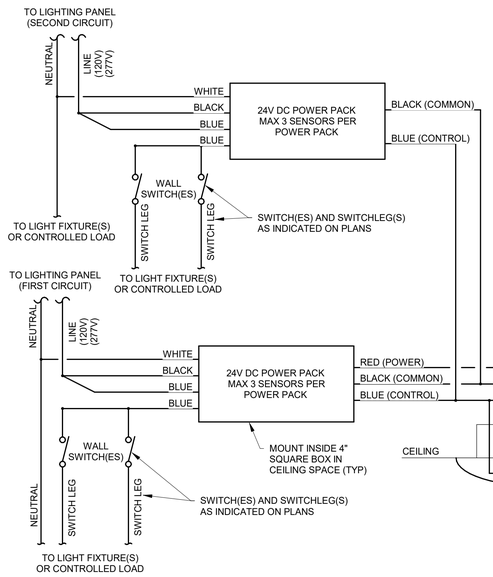
CONTROL ELEMENTS:
- B1: ON/OFF ZONE ONE LIGHTING; ON TO 100%, FULL OUTPUT
- D1: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ZONE ONE LIGHTING
- B2: ON/OFF ZONE TWO LIGHTING; ON TO 100%, FULL OUTPUT
- D2: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ZONE TWO LIGHTING
- B3: ON/OFF ZONE THREE LIGHTING; ON TO 100%, FULL OUTPUT
- D3: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ZONE THREE LIGHTING
- B4: ON/OFF ZONE FOUR LIGHTING; ON TO 100%, FULL OUTPUT
- D4: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ZONE FOUR LIGHTING
- B5: ON/OFF ZONE FIVE LIGHTING; ON TO 100%, FULL OUTPUT
- D5: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ZONE FIVE LIGHTING
- B6: ON/OFF ZONE SIX LIGHTING; ON TO 100%, FULL OUTPUT
- D6: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ZONE SIX LIGHTING
- B7: ON/OFF ZONE SEVEN LIGHTING; ON TO 100%, FULL OUTPUT
- D7: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ZONE SEVEN LIGHTING
- B8: ON/OFF ALL LIGHTING ZONES; ON TO 100%, FULL OUTPUT
- D8: DIMMER TO PROVIDE MANUAL RAISE/LOWER FOR ALL LIGHTING ZONES



CONTROL STATION 'd' ⓓ

APPLICATION: BALLROOM

2 LIGHTING CONTROL STATIONS
NOT TO SCALE



1 CONNECTION DIAGRAM CEILING MOUNT NON-NETWORK STANDALONE OCCUPANCY SENSOR WITH AUTOMATIC 'ON' CONTROL
NOT TO SCALE

Joseph R. Hewgley & Associates, Inc.
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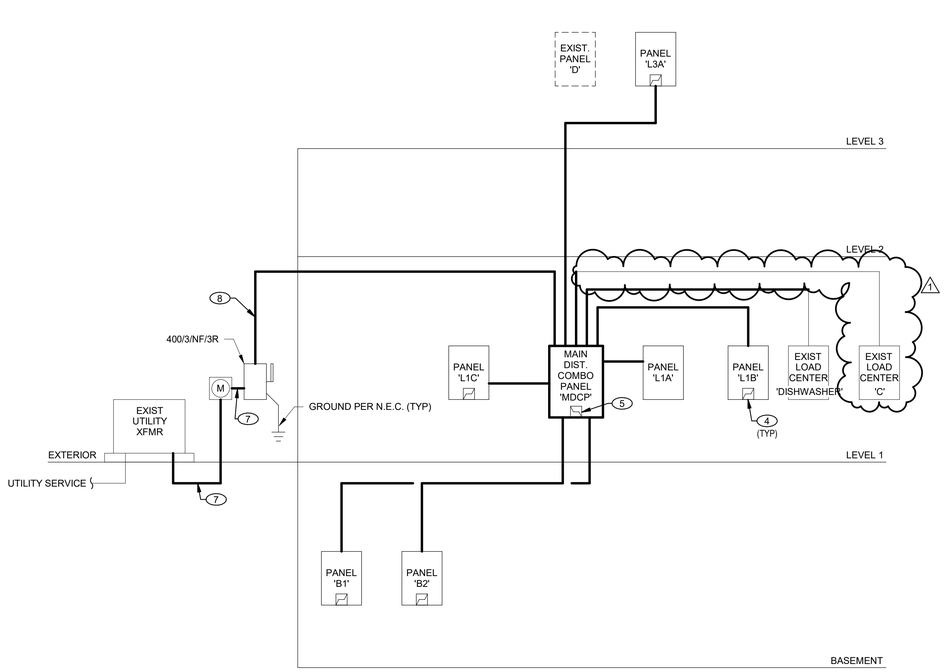
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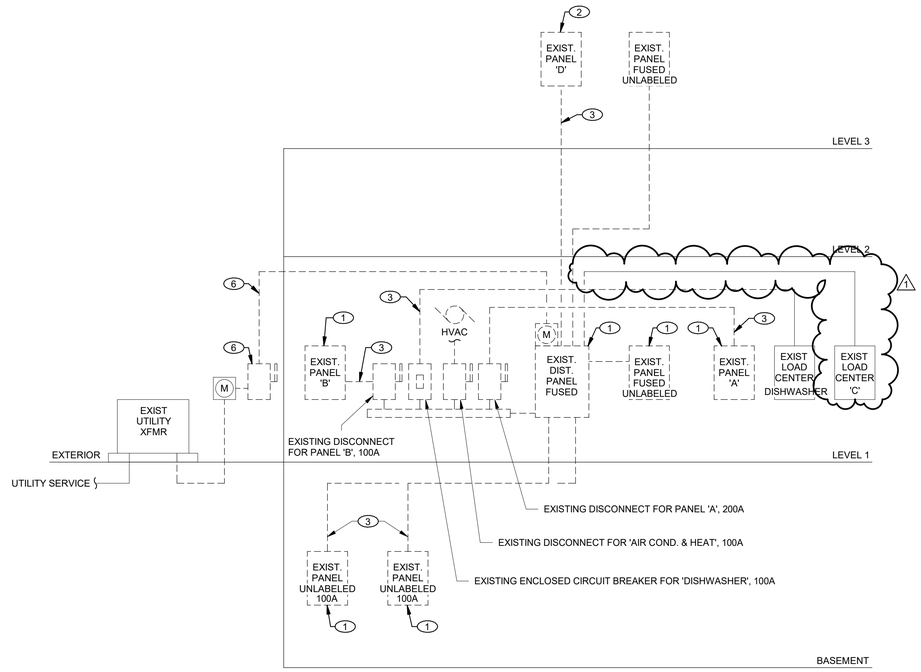
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KEYNOTES	
1	EXISTING PANEL INDICATED TO BE REPLACED IN PLACE. PREVIOUS LOADS SERVED BY EXISTING PANEL REMOVED SHALL BE RECONNECTED, UNLESS NOTED OTHERWISE. COORDINATE EXISTING LOADS AND AMPERAGE REQUIREMENTS.
2	EXISTING PANEL SHALL PHYSICALLY REMAIN IN SPACE. CONTRACTOR SHALL REMOVE EXISTING FEEDERS FROM PANEL, SO THAT PANEL IS NO LONGER ENERGIZED. REMOVE PANEL INTERIOR AND PROVIDE BLANK COVER AND UTILIZE PANEL BACK-BOX AS BRANCH CIRCUIT SPLICE BOX, EXTEND EXISTING BRANCH CIRCUITS TO NEW PANEL 'L3A'.
3	REMOVE EXISTING FEEDERS AND PROVIDE NEW FEEDERS TO REPLACED PANELS. FIELD VERIFY CONDITION OF EXISTING CONDUIT, PROVIDE NEW CONDUIT AS REQUIRED TO REPLACE EXISTING CONDUIT NOT IN ACCEPTABLE SHAPE.
4	FOR BRANCH CIRCUIT PANELS PROVIDE A SURGE PROTECTIVE DEVICE (SPD) INTEGRAL WITH PANELBOARDS INDICATED. SPD SHALL BE DIRECTLY CONNECTED TO THE PANELBOARD BUS. THE SPD SHALL COMPLY WITH UL-1449 FOURTH EDITION AND PROVIDE SEVEN MODE (L-N, L-G, N-G) PROTECTION. SPD SHALL INCLUDE SURGE RATED INPUT FUSES, POWER STATUS INDICATOR LIGHTS AND SHALL BE RATED FOR A SURGE CURRENT OF 50,000 AMPS PER PHASE.
5	FOR DISTRIBUTION PANELS/SWITCHBOARD PROVIDE A SURGE PROTECTIVE DEVICE (SPD) INTEGRAL WITH PANELBOARDS INDICATED. SPD SHALL BE DIRECTLY CONNECTED TO THE PANELBOARD BUS. THE SPD SHALL COMPLY WITH UL-1449 FOURTH EDITION AND PROVIDE SEVEN MODE (L-N, L-G, N-G) PROTECTION. SPD SHALL INCLUDE SURGE RATED INPUT FUSES, POWER STATUS INDICATOR LIGHTS AND SHALL BE RATED FOR A SURGE CURRENT OF 80,000 AMPS PER PHASE.
6	REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS AND MAIN SERVICE DISCONNECT. CONTRACTOR TO VERIFY EXISTING CONDUIT SIZE FOR POSSIBLE REUSE. EXISTING CONDUIT SHALL BE OF ADEQUATE CAPACITY FOR NEW SERVICE ENTRANCE CONDUCTORS.
7	PROVIDE NEW 4-#4/0 IN 2" CONDUIT.
8	PROVIDE NEW 4-#4/0, 1-#4 GRD., IN 2 1/2" CONDUIT.



2 NEW ELECTRICAL ONE-LINE RISER DIAGRAM

NOT TO SCALE



1 EXISTING ELECTRICAL ONE-LINE RISER DIAGRAM

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MAIN SWITCHBOARD MDCP

MAINS: 225 A - MCB
VOLTAGE: 208/120 Wye
PHASE: 3
WIRES: 4
MOUNTING: WALL

REMARK 1

AIC RATING: 22,000
BUS RATING: 225 A

CCT	AMPS	P	LOAD DESCRIPTION	Load	WIRE SIZE/CONDUIT SIZE	REMARKS
1	225 A	3	MAIN BREAKER	0.0	--	-
2	100 A	2	PANEL 'B1', BASEMENT	17.9	NEW, MATCH EXISTING	2
3	100 A	2	PANEL 'B2', BASEMENT	0.0	NEW, MATCH EXISTING	2
4	100 A	3	PANEL 'L1A', ELEC. 113	0.0	NEW, MATCH EXISTING	2
5	100 A	2	PANEL 'L1B', ELEC. 113	0.0	NEW, MATCH EXISTING	2
6	100 A	2	PANEL 'L1C', BALL ROOM 108	0.7	NEW, MATCH EXISTING	2
7	60 A	2	PANEL ' L1D', STOR 105	0.4	NEW, MATCH EXISTING	2
8	60 A	2	PANEL 'L3A', 3RD FLOOR OPERATIONS BOOTH	0.0	NEW, MATCH EXISTING	2
9	20 A	2	EXISTING LOAD CENTER 'DISHWASHER'	0.0	NEW, MATCH EXISTING	2
10	20 A	3	ECH-1.1, MEN'S R.R 102	3.5	MINIMUM PER SPECIFICATIONS.	-
11	20 A	3	ECH-2.1, FOYER 100	5.5	MINIMUM PER SPECIFICATIONS.	-
12	20 A	3	ECH-2.2, FOYER 100	5.5	MINIMUM PER SPECIFICATIONS.	-
13	20 A	3	ECH-1.2, WOMEN'S 103	3.5	MINIMUM PER SPECIFICATIONS.	-
14	60 A	3	RTU-1, ROOF	18.7	3-#4, 1-#10, IN 1 1/4" CONDUIT.	-
15	--	1	SHUNT TRIP	--	--	-
16	20 A	1	REC RTU-1, ROOF	0.2	MINIMUM PER SPECIFICATIONS.	-
17	20 A	1	POWER ELEV. 110	1.9	MINIMUM PER SPECIFICATIONS.	-
18	50 A	2	CU-1, EXTERIOR	6.0	2-#6, 1-#10 GRD., IN 1" CONDUIT.	-
19	50 A	2	CU-2, EXTERIOR	6.0	2-#6, 1-#10 GRD., IN 1" CONDUIT.	-
20	50 A	2	CU-3, EXTERIOR	6.0	2-#6, 1-#10 GRD., IN 1" CONDUIT.	-
21	20 A	1	SPARE	0.0	--	-
22	20 A	1	SPARE	0.0	--	-
23	20 A	1	SPARE	0.0	--	-
24	20 A	1	SPARE	0.0	--	-
25	--	1	SPACE ONLY	--	--	-
26	--	1	SPACE ONLY	--	--	-
27	--	1	SPACE ONLY	--	--	-
28	--	1	SPACE ONLY	--	--	-
29	--	1	SPACE ONLY	--	--	-
30	--	1	SPACE ONLY	--	--	-
				75.9 kVA		

REMARKS:
1. THIS PANEL SHOWN TO BE A COMBINATION LIGHTING APLLIANCE AND DISTRIBUTION PANEL TO ACCOMMODATE THE CIRCUIT BREAKERS INDICATED. PANEL SHALL NOT EXCEED DIMENSIONS SHOWN ON FLOOR PLANS.
2. CONTRACTOR SHALL VERIFY CONDITION OF EXISTING CONDUIT, REPLACE AS REQUIRED.
L = PROVIDE LOCKING HANDLE DEVICE
G - PROVIDE GFI TYPE CIRCUIT BREAKER

PANEL B1

MAINS: 100 A - MCB
VOLTAGE: 208/120 Single
PHASE: 1
WIRES: 3
MOUNTING: Surface

AIC RATING: 10,000

CCT	AMPS	P	DESCRIPTION	REM	A		B		REM	DESCRIPTION	P	AMPS	CCT
1	30 A	1	EXIST. CCT. 1**		0 VA	0 VA				EXIST. CCT. 2**	1	30 A	2
3	30 A	1	EXIST. CCT. 3**				0 VA	0 VA		EXIST. CCT. 4**	1	30 A	4
5	30 A	1	EXIST. CCT. 5**		0 VA	0 VA				EXIST. CCT. 6**	1	30 A	6
7	60 A	2	EXIST. CCT. RANGE**				0 VA	0 VA		EXIST. CCT. WATER HEATER**	2	60 A	8
9					2880 VA	2880 VA							10
11	20 A	1	FCU-1, BASEMENT				1440 VA	1440 VA		FCU-2, BASEMENT	1	20 A	12
13	20 A	1	FCU-3, BASEMENT		1440 VA	600 VA				REC RR. 003, 004	1	20 A	14
15	20 A	2	ECH-3.1, R.R. 003				1748 VA	246 VA		LTG RM 002, 003, 004	1	20 A	16
17					1748 VA	0 VA				SPARE	1	20 A	18
19	20 A	2	ECH-3.1, R.R. 004				1748 VA	0 VA		SPARE	1	20 A	20
21					1748 VA	0 VA				SPARE	1	20 A	22
23	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	24

REMARKS:
** = CONTRACTOR SHALL VERIFY EXISTING LOAD CONDITIONS AND REQUIREMENTS, ADJUST NEW CIRCUIT BREAKER CHARACTERISTICS AS REQUIRED.
L = PROVIDE LOCKING HANDLE DEVICE.

PANEL B2

MAINS: 100 A - MCB
VOLTAGE: 208/120 Single
PHASE: 1
WIRES: 3
MOUNTING: Recessed

AIC RATING: 10,000

CCT	AMPS	P	DESCRIPTION	REM	A		B		REM	DESCRIPTION	P	AMPS	CCT
1	20 A	1	SPARE (BOILER REMOVED)		0 VA	0 VA				E. CCT. 2 JNITR, FIRE CLUB REC**	1	30 A	2
3	30 A	1	E. CCT. 3 DRESS RM & TLTS**				0 VA	0 VA		E. CCT. 4 LOCKR, HALL, SHWR**	1	30 A	4
5	30 A	1	E. CCT. 5 KITCHEN**		0 VA	0 VA				E. CCT. 6 DININ ROOM WEST**	1	15 A	6
7	30 A	1	E. CCT. 7 DINING RM EAST**				0 VA	0 VA		E. CCT. 8 WOMENS EAST REC**	1	30 A	8
9	30 A	1	E. CCT. 9 MENS CLUB RM EAST**		0 VA	0 VA				E. CCT. 10 MENS WEST REC**	1	30 A	10
11	30 A	1	E. CCT. 11 WEST WALL REC**				0 VA	0 VA		E. CCT. 12 MENS LOUNGE REC**	1	30 A	12
13	30 A	1	E. CCT. 13 MENS LOUNGE**		0 VA	0 VA				E. CCT. 14 UPSTAIRS BARR**	1	20 A	14
15	30 A	1	E. CCT. 15 WOMENS WEST REC**				0 VA	0 VA		E. CCT. 16 WOMENS RR REC**	1	30 A	16
17	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	18
19	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	20
21	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	22
23	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	24

REMARKS:
** = CONTRACTOR SHALL VERIFY EXISTING LOAD CONDITIONS AND REQUIREMENTS, ADJUST NEW CIRCUIT BREAKER CHARACTERISTICS AS REQUIRED.

PANEL L1A

MAINS: 100 A - MCB
VOLTAGE: 208/120 Wye
PHASE: 3
WIRES: 4
MOUNTING: Surface

AIC RATING: 22,000

CCT	AMPS	P	DESCRIPTION	REM	A		B		C		REM	DESCRIPTION	P	AMPS	CCT
1	100 A	3	EXIST. CCT. 1 MOTOR GENERATOR IN BOOTH**		0 VA	0 VA						EXIST. CCT. 2 FAN ON ROOF**	3	60 A	2
3							0 VA	0 VA							4
5									0 VA	0 VA					6
7	15 A	2	EXIST. CCT. 3 SUMP PUMP IN BASEMENT**		0 VA	0 VA						EXIST. CCT. 4 STOVE**	2	30 A	8
9							0 VA	0 VA							10
11	20 A	1	SPARE						0 VA	0 VA		SPARE	1	20 A	12
13	20 A	1	SPARE		0 VA	0 VA						SPARE	1	20 A	14
15	20 A	1	SPARE				0 VA	0 VA				SPARE	1	20 A	16
17	20 A	1	SPARE						0 VA	0 VA		SPARE	1	20 A	18

REMARKS:
** = CONTRACTOR SHALL VERIFY EXISTING LOAD CONDITIONS AND REQUIREMENTS, ADJUST NEW CIRCUIT BREAKER CHARACTERISTICS AS REQUIRED.

PANEL L1B

MAINS: 100 A - MCB
VOLTAGE: 208/120 Single
PHASE: 1
WIRES: 3
MOUNTING: Surface

AIC RATING: 22,000

CCT	AMPS	P	DESCRIPTION	REM	A		B		REM	DESCRIPTION	P	AMPS	CCT
1	20 A	1	E. CCT. 1 LIGHTS & CO BAR**		0 VA	0 VA				E. CCT. 2 LIGHTS CLOSETS**	1	20 A	2
3	20 A	1	E. CCT. 3 REC BEER MACHINE**				0 VA	0 VA		E. CCT. 4 CO NORTH**	1	20 A	4
5	20 A	1	E. CCT. 5 CO**		0 VA	0 VA				E. CCT. 6 LIGHTS GAME RM**	1	20 A	6
7	20 A	1	E. CCT. 7 CO BAR**				0 VA	0 VA		E. CCT. 8 LIGHTS GAME RM**	1	20 A	8
9	20 A	1	E. CCT. 9 LIGHTS**		0 VA	0 VA				E. CCT. 10 LIGHTS GAME RM**	1	20 A	10
11	20 A	1	E. CCT. 11 BAR LIGHTS**				0 VA	0 VA		E. CCT. 12 LIGHTS CLUB RM**	1	20 A	12
13	20 A	1	E. CCT. 13 CO WEST**		0 VA	0 VA				E. CCT. 14,16 BAR COOLERS**	2	20 A	14
15	20 A	2	E. CCT. 15,17 ICE MAKER**				0 VA	0 VA					16
17					0 VA	0 VA				E. CCT. 18 SMOKE EATERS**	1	15 A	18
19	20 A	1	LTG STAGE 112, ELEC. 113				25 VA	0 VA		E. CCT. 20 KENO REC**	1	20 A	20
21	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	22
23	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	24
25	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	26
27	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	28
29	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	30

REMARKS:

PANEL L1C

MAINS: 100 A - MCB
VOLTAGE: 208/120 Single
PHASE: 1
WIRES: 3
MOUNTING: Recessed

AIC RATING: 10,000

CCT	AMPS	P	DESCRIPTION	REM	A		B		REM	DESCRIPTION	P	AMPS	CCT
1	20 A	1	E. CCT. 1 OVERHEAD LIGHT**		0 VA	0 VA				E. CCT. 2,4**	2	30 A	2
3	20 A	1	E. CCT. 3 FRIG & ICE**				0 VA	0 VA					4
5	20 A	2	E. CCT. 5,7 STEAM TABLE REC		0 VA	0 VA				E. CCT. 6,8 HOOD CONTROL & LIGHTS**	2	20 A	6
7							0 VA	0 VA					8
9	20 A	1	E. CCT. 9 HEAT LAMP**		0 VA	0 VA				E. CCT. 10 KITCHEN**	1	20 A	10
11	20 A	1	E. CCT. 11 COFFEE COUNTER**				0 VA	0 VA		E. CCT. 12 KITCHEN**	1	20 A	12
13	20 A	1	E. CCT. 13 COFFEE**		0 VA	0 VA				E. CCT. 14 KITCHEN**	1	20 A	14
15	20 A	1	E. CCT. 15 DISPOSAL & DW**				0 VA	0 VA		E. CCT. 16 NORTH LIGHTS**	1	20 A	16
17	20 A	1	E. CCT. COFFEE COUNTER**		0 VA	0 VA				E. CCT. 16 NORTH LIGHTS**	1	20 A	18
19	20 A	1	E. CCT. LIGHTS**				0 VA	0 VA		E. CCT. 18,20 FREEZER**	2	40 A	20
21	20 A	1	E. CCT. DINING ROOM**		0 VA	0 VA							22
23	20 A	1	E. CCT. DINING ROOM**				0 VA	0 VA		E. CCT. 22,24 KITCHEN**	2	20 A	24
25	50 A	2	E. CCT. 25, 27 HOOD FAN**		0 VA	0 VA							26
27							0 VA	0 VA		E. CCT. 26, 28 STEAM TABLE**	2	30 A	28
29	30 A	1	E. CCT. 2 LIGHTS**		0 VA	0 VA							30
31	20 A	1	REC EXTERIOR				200 VA	0 VA		E. CCT. 30 SALAD BAR**	1	20 A	32
33	20 A	1	LTG BAR/WAITER BALL ROOM 108		80 VA	0 VA				E. CCT. 30 SALAD BAR**	1	20 A	34
35	20 A	1	RECEPT BALL ROOM 108				400 VA	0 VA		SPARE	1	20 A	36
37	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	38
39	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	40
41	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	42

REMARKS:
** = CONTRACTOR SHALL VERIFY EXISTING LOAD CONDITIONS AND REQUIREMENTS, ADJUST NEW CIRCUIT BREAKER CHARACTERISTICS AS REQUIRED.

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

PROFESSIONAL ELECTRICAL ENGINEER
ERICKA M. NIENHUESER-JAHN
E-15966
STATE OF NEBRASKA

03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: DLB

REVISIONS

DATE	DESCRIPTION

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MEMBER AMERICAN INSTITUTE of ARCHITECTS

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SHEET
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PANEL L3A

MAINS: 60 A - MCB
VOLTAGE: 208/120 Single
PHASE: 1
WIRES: 3
MOUNTING: Recessed

AIC RATING: 10,000

CCT	AMPS	P	DESCRIPTION	REM	A		B		REM	DESCRIPTION	P	AMPS	CCT
1	30 A	1	E. CCT. 1 AUDT BACK CENTER**		0 VA	0 VA				E. CCT. 2 AUDT MIDDLE SIDES**	1	30 A	2
3	30 A	1	E. CCT. 3 AUDT FRONT CENTER**				0 VA	0 VA		E. CCT. 4 AUDT BACK SIDES**	1	30 A	4
5	20 A	1	E. CCT. 5 AUDT MID CENTER**		0 VA	0 VA				E. CCT. 6 AUDT FRONT SIDES**	1	25 A	6
7	25 A	1	E. CCT. 7 BALC. E. SIDE CNTR**				0 VA	0 VA		E. CCT. 8 BALC W. SIDE CENTER**	1	30 A	8
9	25 A	1	E. CCT. 9 BALC SIDES E. SIDE**		0 VA	0 VA				E. CCT. 10 OPERATIONS BOOTH**	1	30 A	10
11	20 A	1	E. CCT. 11 BALC SIDES W. SIDE**				0 VA	0 VA		E. CCT. 12 JAIL HALL & CELLS**	1	30 A	12
13	15 A	1	E. CCT. 13 3RD FLR OFFICES**		0 VA	0 VA				E. CCT. 14 3RD FLR REC & FANS**	1	20 A	14
15	20 A	1	E. CCT. 15 2ND FLR OFFICES**				0 VA	0 VA		E. CCT. 16 2ND FLR REC & FANS**	1	30 A	16
17	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	18
19	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	20
21	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	22
23	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	24
25	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	26
27	20 A	1	SPARE				0 VA	0 VA		SPARE	1	20 A	28
29	20 A	1	SPARE		0 VA	0 VA				SPARE	1	20 A	30

REMARKS:
** = CONTRACTOR SHALL VERIFY EXISTING LOAD CONDITIONS AND REQUIREMENTS, ADJUST NEW CIRCUIT BREAKER CHARACTERISTICS AS REQUIRED.

Joseph R. Hewgley & Associates, Inc.
702 South Bailey • North Platte, Ne. 69101
Phone: 308/534-4983 • Fax: 308/534-4944

CONSTRUCTION DOCUMENTS

SEAL

PROFESSIONAL ENGINEER
ERICKA M. NIENABER
E-15966
STATE OF NEBRASKA

03/24/2021

INTERIOR BUILDING RENOVATION

for

SIDNEY ELKS LODGE
SIDNEY, NE 69162

PROJECT #: 3-11-2011
DATE: 3-24-2021
DRAWN: DLB

REVISIONS

DATE	DESCRIPTION
4/15/21	ADDENDUM #1

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JOSEPH R. HEWGLEY & ASSOCIATES, Inc.

MEMBER AMERICAN INSTITUTE of ARCHITECTS

SHEET
E702

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FE#:201028

SET # ___
March, 2021

PROJECT MANUAL for

INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE SIDNEY, NEBRASKA

PROJECT #R-0421

OWNER:

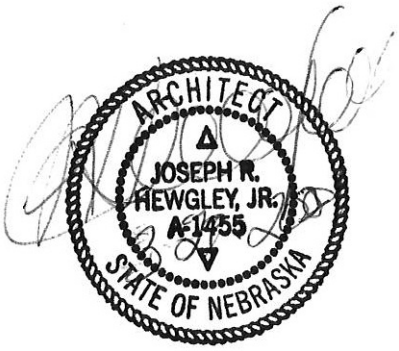
CITY OF SIDNEY NEBRASKA

PROJECT ARCHITECT:

JOSEPH R. HEWGLEY & ASSOCIATES, INC.
702 South Bailey, North Platte, Nebraska 69101
(308) 534-4983

MECHANICAL/ELECTRICAL ENGINEER:

Farris Engineering
844 11th Ave.
Sidney, NE 69162
(308) 203-2222



I, Joseph R. Hewgley, Jr. am the Coordinating Professional on the Interior Renovations at the Sidney Elks Building

SECTION 00 00 02

PROJECT DIRECTORY

Owner: City of Sidney
1115 13th Ave.
Sidney, NE 69162
(308) 254-5300
Attn: Kim Matthews

Architect: Joseph R. Hewgley & Associates, Inc.
702 South Bailey
North Platte, Nebraska 69101
(308) 534-4983
Attn: Ryan Stearns
ryan@jrharchitecture.com

Electrical/
Mechanical Eng: Farris Engineering
844 11th Ave.
Sidney, NE 69162
(308) 203-2222

END OF SECTION 00 00 02

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Refer to Plan Sheets

END OF SECTION 00 00 10

SECTION 00 10 00

INSTRUCTIONS TO BIDDERS

1. EXAMINATION OF PREMISES

A. Before Submitting proposals, each bidder shall carefully examine all the contract documents, visit the site to obtain knowledge of existing conditions under which he will be obligated to operate or that will any way affect his work, familiarize himself with Federal, State, and Local any laws, ordinances, rules or regulations which may effect on any work in this contract.

B. The submission of a bid will serve a representation by the bidder that he has complied with paragraph A above

C. After execution of Agreement, no consideration will be given to any claim or misunderstanding of the contract documents, alleged unfamiliarity of site conditions, or any regulations affecting the work.

D. Bidders shall use the entire set of plans to bid from, carefully examine all sheets.

2. INTERPRETATION OF CONTRACT DOCUMENTS

A. If, during the bidding period, a bidder observes any error, discrepancy, ambiguity, or omission in, or requires clarification as to the meaning of the drawings and/or specifications, he shall immediately, in writing, request interpretations or corrections by the Architect, who, if appropriate, will issue a written clarification, by addendum to all known bidders. Questions received less the eight calendar days prior to the date for receipt of bids will not be answered.

B. Should there be any doubt as to the exact meaning of the documents which reasonably should have been apparent during the bidding period, and or, brought to the attention of the Architect prior to receipt of bids. No additional claim or payment shall be allowed thereafter for a claim of "misunderstanding" of the contract documents.

C. It is the intent of these specifications, for bidding purposes, that each prime Subcontractor i.e. Mechanical, Electrical, shall be responsible for the coordination of any demolition, including any replacement or repair required, with the General Contractor.

D. All patching and/or replacement of any portion of the building or site shall, however, be the ultimate responsibility of the General Contractor.

E. It shall be clearly understood that all walls, floors, or other portions of the building shall be "finished surfaces" i.e. painted, carpeted, etc., unless specifically noted otherwise. All patching or replacement of walls, floors, etc., or other portions of the building shall be figured as "finished surfaces" i.e. painted, carpeted, etc., to match the adjacent finish unless specifically noted otherwise. No allowance will be made after the opening of bids for work involving finish treatment of any walls, floors, or other portions of the building whether noted or not.

3. PROPOSALS

A. Proposals shall be made upon the Bid Forms provided by the Architect, with all blank spaces dully filled in; numbers stated in both figures and in writing, where so provided in the Bid Form; signatures shall be in long hand, executed by principals authorized or qualified to obligate the bidder to the extent of the Bid. Bidders legal name fully stated; if a corporate name or co-partnership, by a member of the firm. Completed form shall be without interlineations, alterations, or erasures.

B. Bidders shall be responsible to ascertain that all addenda, complete, have been received, and to indicate receipt of same in the space provided on the Bid Form.

C. Failure to submit proposals on or before the time stipulated may result in a disqualification of the bid.

4. FILING OF BID PROPOSALS

A. Owner requests a combined bid for all, General, Civil, Mechanical and Electrical Work. Each bid proposal shall be enclosed in a sealed opaque envelope and filed with the Architect prior to letting. Face of envelope shall bear the following information:

Project Number: R-0421
Project Name: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

Bidders Name and Address:_____

B. Proposals may be withdrawn at any time prior to the time scheduled for the receiving of bids. Bids not withdrawn prior to this time, may not be withdrawn for a period of thirty (30) days thereafter.

C. Any bidder may modify his bid by telegraphic communication provided such communication is received by the Owner prior to the published time for receipt of bids. Written confirmation of such modification must be received by the North Platte Supt. of Schools within two (2) working days from the receipt of bids.

5. OPENING OF BIDS

A. The receiving and opening of the proposals will be in an open bid letting at the time and place listed in the Notice to Bidders. The successful bid will be based upon cost and may also be affected by other pertinent data contained in the proposal.

B. The Owner reserves the right to reject any or all bids or to accept any bid considered advantageous to them. The Owner further reserves the right to delay the award of contract up to thirty (30) days after receipt of proposals, with no change in the Base Bid or other conditions or prices stated in the proposals.

C. The Bidder agrees that this Base Bid Proposal is contingent upon the Bidder being fully prepared to commence work within ten (10) working days of receipt of a written "Letter of Intent", or "Notice To Proceed".

6. ADDENDA

All addenda are to be incorporated in the Proposal and shall become a part of the Contract Documents.

7. BID BOND

All bids must be accompanied by a certified or cashier's check or bid bond made payable to the Owner in an amount equal to five percent (5%) of the total base bid.

8. PERFORMANCE AND PAYMENT BOND

The successful bidders shall be required to furnish a Performance Bond, AIA Document A 311, Labor and Material Payment Bond, AIA Document A 311, in an amount equal to one hundred percent (100%) of the contract. All Bonds shall be furnished within ten (10) calendar days of Notice of the Notice of Acceptance by the owner. Work will not commence until a copy of all bonds have been delivered to the Arch.

9. TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. The Contractor hereby agrees to commence work under this Contract within an agreed upon number of calendar days from the owners notice to proceed and endeavor to substantially complete said project within agreed upon consecutive calendar days thereafter.

b. No liquidated damages will be assessed on this project.

10. PROGRESS SCHEDULE

Work progress is considered critical. It is a condition precedent to submitting of a proposal for this work that Contractor agrees to maintain a work force adequate to comply with all work schedules and deadlines, including those contained in these documents.

11. SALES TAX

Contractor shall not figure Nebraska sales tax in his bid. The successful bidder shall be designated as a purchasing agent on behalf of the Owner.

12. QUALIFICATIONS

A. Owner will not award Contract to any bidder who does not furnish, upon request, satisfactory evidence that he has the necessary ability and experience in work of this scope, financial resources, facilities and plant to enable him to successfully complete the project as shown and described in the Contract Documents.

B. Unless waived by the Architect, the bidder shall, within seven days of notification of selection of the award of a Contract for the Work, submit the following information to the Architect:
   1. A designation of the Work to be performed by the Bidder with his own forces.
   2. The proprietary names and the suppliers of principal items of systems of material and equipment proposed for the Work.

3. A list of names of the subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

C. The Bidder will be required to establish to the satisfaction of the Architect and the Owner the reliability and responsibility of the proposed subcontractors to furnish and perform the Work described in the sections of the Specifications pertaining to such proposed subcontractors respective trades.

D. Prior to the award of the Contract the Architect will notify the Contractor in writing of any subcontractor either the Owner or Architect have a reasonable and substantial objection to and refuses to accept on the project. The Contractor can, at his option, either withdraw his bid or submit an acceptable substitute subcontractor, with any increase in his bid price as may be warranted by this change. The owner may, at his option, accept the increased bid price or disqualify the bidder. In either event the "Bid Security" will not be forfeited not withstanding anything to the contrary in paragraph "Bid Security" in this section.

E. Subcontractors, material suppliers, and other persons or firms proposed by the Contractor and accepted by the Owner may not be changed without written approval of both the Owner and Architect.

13. TOUR OF EXISTING BUILDING (if needed)

A. A Prebid walk through will be held at 10:00am mtn October 19th, 2021 @ The project site located at 1040 Jackson St.

END OF SECTION 00 10 00

SECTION 002000

NOTICE TO BIDDERS

Sealed bids will be received at the City of Sidney Board Room, 1115 13th Ave., Sidney, Nebraska, until 1:00p.m. MST on the 22nd day of March, 2022, for the Interior Building Renovation for Sidney Elks Lodge, Sidney, NE. All bids, properly received, will be opened at that time in an open and public letting. The owner will review all bids with the architect with the intent of awarding a contract for all construction to the lowest responsible bidder.

Separate proposals shall be accepted for Demolition, Interior framing & Drywall, Exterior Windows, Painting & Floor Finishing, HVAC, Plumbing, Electrical, & Fire Sprinkler.

Digital Plans and specifications for the above construction may be obtained after March 4th, 2022 by contacting Joseph R. Hewgley and Associates, (1-308-534-4983). Each bidder will be required to furnish a certified check, cashier's check or bid bond in an amount equal to five percent (5%) of their total bid. The owner reserves the right to reject any or all bids or to accept any bid considered most advantageous to them.

By: City Council
City of Sidney

Date of publications:

Sidney Sun Telegraph

March 9th, 2022
March 16th, 2022

END OF SECTION 002000

SECTION 00 31 00

BID PROPOSAL PACKAGE #1

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR ALL INTERIOR DEMOLITION (EXLUDING STRUCTURAL CONCRETE FLOOR).

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 31 00

BID PROPOSAL PACKAGE #2

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR ALL STRUCTURAL FLOOR CUTTING, INTERIOR FRAMING, INSULATION, DRYWALL, DOORS, & ELEVATOR.

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 31 00

BID PROPOSAL PACKAGE #3

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR THE REMOVAL & REPLACEMENT OF THE EXTERIOR WINDOWS.

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 31 00

BID PROPOSAL PACKAGE #4

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR ALL INTERIOR PAINTING & FLOOR REFINISHING.

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 31 00

BID PROPOSAL PACKAGE #5

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR THE REMOVAL & REPLACMENT OF HVAC SYSTEMS AND COMPONENTS.

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 31 00

BID PROPOSAL PACKAGE #6

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR THE REMOVAL & REPLACMENT OF PLUMBING SYSTEMS AND COMPONENTS.

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 31 00

BID PROPOSAL PACKAGE #7

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR THE REMOVAL & REPLACMENT OF ELECTRICAL SYSTEMS AND COMPONENTS.

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 31 00

BID PROPOSAL PACKAGE #8

BID PROPOSAL FOR: INTERIOR BUILDING RENOVATIONS FOR SIDNEY ELKS LODGE
CITY OF SIDNEY
SIDNEY, NEBRASKA

ONE LUMP SUM PROPOSAL FOR THE INSTALLATION OF FIRE SPRINKLER SYSTEM.

The undersigned, being familiar with the local conditions affecting the cost of the work and the Contract Documents, including Instructions to Bidders, General and Supplemental Conditions, Plans and Specifications hereby proposes to furnish all labor, materials and equipment required to complete the Contract in accordance with Plans, Specifications and Contract Documents for the sum of:

BASE BID: **_____ ($_____)**

To be completed within _____calendar days.

The undersigned acknowledges receipt of Addenda No(s). _____ prior to the time of submitting this proposal, and all items therein are included in this proposal.

CITY OF SIDNEY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS OR TO ACCEPT ANY BID CONSIDERED THE MOST ADVANTAGEOUS TO THEM.

Corporation Seal

Respectfully Submitted by:

Firm Name:
_____

By:
_____

Address:
_____

Date:
_____

END OF SECTION 00 31 00

SECTION 00 43 21

ALLOWANCE FORM

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: **INTERIOR BUILDING RENOVATIONS TO SIDNEY ELKS LODGE**

C. Project Location: **SIDNEY NEBRASKA.**

D. Owner: **CITY OF SIDNEY**

E. Architect: **JOSEPH R. HEWGLEY & ASSOCIATES, INC.**

F. Architect Project Number: **R-0421.**

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those allowances described in the Contract Documents and scheduled in Section 01 21 00 "Allowances."

1.3 SUBMISSION OF SUPPLEMENT

Respectfully submitted this ____ day of _____, 2016.

Submitted By: _____
(Name of bidding firm or corporation)

Authorized Signature: _____
(Handwritten signature)

Signed By: _____
(Type or print name)

Title: _____
(Owner/Partner/President/Vice President)

END OF SECTION 00 43 21

SECTION 00 44 00

SUBSTITUTION LISTING

TO: City of Sidney hereinafter referred to as "Owner"

1. Pursuant to bidding requirements for the work titled:

Interior Building Renovations to Sidney Elks Lodge, Sidney, Nebraska

The Contract Sum proposed by the undersigned on the bid form is for the Work as shown on the Drawings, described in the Specifications, and otherwise defined in the Contract Documents. However, the undersigned proposes the following substitutions for the Owners consideration. If the Owner should accept any or all of the proposed substitutions, the Contract Sum may be reduced or increased by an appropriate amount.

2.

Specified Product or Material	Drawing # or Spec. Section	Proposed Substitution	Proposed Red. or add. Contract Sum
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

PROVIDE SIGNATURE IDENTICAL TO THAT SHOWN ON THE BID FORM

BIDDER:

_____

by_____

END OF SECTION 00 44 00

SECTION 00 80 00

SUPPLEMENTARY CONDITIONS

1. GENERAL NOTES:

The Special Conditions herein stated shall be included and shall become a part of these specifications.

These specifications are of the abbreviated type and may include incomplete sentences omissions of words or phrases such as "in conformity therewith", "as noted", "a", "an", "the" are international. Omitted words and phrases shall be supplied by inference in the same manner as they are when a "note" occurs on drawings. Words "shall be", "shall", or "similar to", or other appropriate words or phrases, shall be supplied by inference.

The American Institute of Architects Document A201, 2007 edition, “General Conditions of the Contract for Construction”. A copy of this document is on file for reference at the office of the Architect.

2. LAWS, REGULATIONS AND SPECIFICATIONS:

A. All laws, ordinances, regulations, orders, manuals, manufacturers specifications, or publications, whether or not specifically made a part of or incorporated by reference in the Contract Documents shall be the latest edition unless specifically noted otherwise.

B. All references to manufacturers directions, specifications or recommendations shall refer to the referenced manufacturers current published manuals or publication. These publications are hereby made a part of and incorporated by this reference into the Project Specifications.

C. No provision or term of any referenced manual, or publication shall change the duties or responsibilities of the Architect, his agents, consultants or their employees as established in the Owner-Architect Agreement.

D. If any materials or equipment is "Furnished by Others" for the Contractors installation, the Contractor shall use the manufacturers or suppliers detailed drawings to establish roughing-in dimensions and service locations. Except for aesthetic or structural considerations the manufacturers detailed drawings shall be used where any conflicts may occur.

3. EXECUTION, CORRELATION AND INTENT

A. Add the following to subparagraph 1.2.3 of the GENERAL CONDITIONS.

1.2.3.1. The Contract Documents are diagrammatic in nature, showing the design intent but not showing every detail for the completed construction. By execution of the Contract by the Contractor, he represents that the Contract Documents, in addition to the subsequent submittals provided by the Contractor and approved by the Architects, are adequate to complete the construction of the several kinds called for.

1.2.3.2. In addition to the Contract documents, other drawings may be necessary for the Contractor to carry the Work to a successful conclusion. Such things as additional details and shop drawings may be necessary, and the Contractor shall be responsible for preparing all such drawings and submitting them for the

Architect's review as required to confirm the intent of the design. The Contractor's schedule shall allow time for submittals of interpretation/clarification and Drawings so as to cause no delay in the Work.

The Owner will not consider any additional cost or additional contract time for preparing these additional drawings, nor will any additional cost or additional contract time be considered for the Work shown in these additional drawings unless it is Work clearly outside the scope of the Contract Documents.

4. SUPERVISION AND CONSTRUCTION PROCEDURES

A. Add the following to paragraph 3.3.1 of the GENERAL CONDITIONS:

3.3.1.1. It is the Contractor's responsibility to complete the Work using the information given in the Contract Documents. The Contractor shall have sufficient engineering and technical resources available to prepare and necessary additional drawings based on the design and specifications contained in the Contract Documents.

3.3.1.2. The Contractor's responsibilities for coordination of the Work extends to coordination of the shop drawings and other drawings necessary, whether prepared by the Architect of the Contractor, to insure the proper execution and completion of the Work.

5. COST INFORMATION

A. Before a Contract is executed, the successful Bidder shall supply to the Architect the following:
1. A schedule of wage rates in effect at the time the Contract is to be dated.
2. Amounts of overhead and profit which he proposes to add in Change Orders involving additional Work.

6. FORM OF AGREEMENT

A. The form of agreement to be used for this Project is the American Institute of Architects Documents A101, 1987 edition, "Standard Form of Agreement Between Owner and Contractor." A copy of this document is on file for reference at the office on the Architect.

7. PHOTOGRAPHS

A. Contractor shall cause to be taken at his own expense on about the first of each calendar month during the progress of the construction, and finally at its conclusion, six (6) 3 inch x 5 inch archive quality photographs of the building from station points designated by the Architect. Two (2) color glossy prints shall be made from each negative, and shall be inserted in separate, 3 -hole heavy-duty vinyl (free of PVC) photo pages, and promptly delivered: one print to the Owner and one (1) to the Architect. Each negative and print to bear date of exposure and project identification on the face.

B. Each of the first prints submitted to the Owner and Architect shall be included in a black vinyl, three ring photo album. Each album shall be provided with 1 ½ inch rings to accommodate additional prints.

8. EXIT

A. When the business is in session the Contractor shall maintain free and usable, all exits from the building, or make alternate exiting provisions to the satisfaction of the Fire Marshal, throughout the duration of the construction operations.

9. OWNER-FURNISHED ITEMS (if any are noted)

A. Certain item will be furnished by the Owner and shall be installed by the Contraction. This includes all items which are generally categorized in the grouping hereinafter, but does not preclude the inclusion of other items as noted on the Drawings. The Owner will deliver these items to the Site, unload same and stack materials where directed by the Contractor and approved by the Architect. The Contractor will be responsible for unwrapping, uncrating, counting, verifying sizes and lengths and providing all labor, equipment and services necessary for the erection of all materials detailed or specified herein.

B. The Owner will provide the Contractor with adequate shop drawings to cover the complete installation of all Owner-furnished items, except when items are existing, relocated or reused.

C. This Contractor shall be required to perform all field cutting, fitting and adjustments as might be required to complete the Work. He shall carefully coordinate his Work with the Owner to preclude omission or double supply. The Contractor shall submit a delivery date request to the Architect for all Owner-supplied materials to insure the availability of these materials as they become needed.

10. SCHEDULING OF WORK

A. While Business is in session all Work in existing buildings must be coordinated with and approved by the Owner.

11. COPIES OF CONTRACT DOCUMENTS

A. With reference to subparagraph 2.2.5 of the GENERAL CONDITIONS, the Contractor will be supplied with a digit set of Contract Documents. Additional complete sets or portions thereof may be issued upon request and on payment of reproduction costs.

12. SPECIAL CONDITIONS

A. Before submitting proposals for this work, each bidder shall be held to have examined the premises and satisfied himself as to the existing conditions under which he will be obliged to operate or that will in any way affect the work under this contract. No consideration will be given to the Contractor subsequent to the opening of bids for lack of information, or misinformation regarding this site.

B. Time for Completion - The Contractor shall commence work under this contract on a date to be specified in contract and shall fully complete all work there unto within the time limit set forth in Section 00100 Instructions To Bidders. Each Subcontractor shall coordinate his work with General Contractor so that all work shall be completed within time specified.

C. Progress Chart - Within two weeks after the award of contract, the Contractor shall submit, for approval of Architect, a "progress chart" of sufficient detail, as determined by the Architect, to clearly show the estimated progress for each

component of the work, and the estimated progress for all work under this contract.

With each Application For Payment and for the purposes of comparison, the Contractor shall submit an identical chart showing the actual rate of progress to date, beside the estimated rate of progress, for each component of work and the work as a whole. Payment will not be made to the Contractor until such schedule has been received and reviewed by the Architect. If at any time the Contractors working force, in the opinion of the Architect, shall be inadequate for securing the necessary progress, the Contractor shall, if so directed increase the working force and/or equipment to such extent as to give reasonable assurance of compliance with the Schedule of Progress. Failure by the Architect to make such demand however shall not relieve Contractor of his obligation to secure a safe and quality rate of progress required by contract.

D. Temporary Services and Facilities - General Contractor shall furnish the following temporary services and shall maintain such services throughout construction.

Temporary Heat - Temporary heat, if required, is any and all heat necessary to provide working temperatures adequate to facilitate proper construction, and shall be provided by the General Contractor. Such temporary heat shall be provided by means such that neither the heat nor its effect will endanger health or property.

All heating required after enclosure of building, and before substantial completion, shall be classified as temporary heat. The building shall be considered as enclosed when it is roofed and has such protection at doorways, windows, and other openings as will provide a reasonable heat retention. The Contractor shall be responsible to furnish and maintain all temporary heat throughout the duration of the project. Unless specifically noted otherwise, a minimum temperature of 50 degrees and a maximum temperature of 75 degrees shall be maintained in the building during working hours, or at other times to facilitate temperatures adequate for various stages of work.

Temporary Light and Power - All temporary light and power shall be the responsibility of the Contractor.

Water - Water for all construction shall be provided by Contractor, and the contractor shall be responsible for any hoses required for the use of such water. The Contractor may request the use of water from the Owner but will still be responsible for the delivery of such water to the required construction areas.

Field offices and sheds shall be furnished by General Contractor and shall be weather tight with lighting, electrical outlets, and layout table suitable for the review of drawings by the Architect. Field offices shall be equipped with a phone and fax machine for us by the Contractor and Architect. Storage sheds for tools, materials and equipment shall be weather tight with adequate space for organized storage and access, and lighting for inspection of stored materials.

E. Manufacturers Directions - Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as per the manufacturers printed directions.

F. Maintenance Manual - At termination of work, Contractor shall submit to the Architect for review, three (3) properly bound and indexed maintenance manuals

presenting full details for care and maintenance of visible surfaces and equipment.

G. Guaranty - Warranty - At termination of work, Contractor shall secure and submit to Architect for review, two (2) properly bound and indexed manuals with all guarantees and warranties for all equipment and materials having such guarantees or warrantees and shall be addressed to and in favor of Owner.

H. Payments to Contractor - Owner shall make payments on account of contract herewith. Ninety percent (90%) of the value, proportionate to the amount of contract of the labor and materials incorporated in the work, and materials suitably stored on the premises, less the aggregate sum of previous payments up to fifty percent (50%) of the completion of the project. Thereafter there shall be no additional retainage withheld.

I. Cooperation - All subcontractors shall coordinate their work with all adjacent work and with other trades so as to facilitate the general progress of the work.

Each trade shall afford all other trades every reasonable opportunity for the installation of their work and for the storage of their materials.

J. Reimbursement to Owner - Contractor and subcontractors shall reimburse Owner for expenses incurred by Architect at rates established in the Owner/Architect agreement for any of the following reasons:

1. At the specific request of Contractor or subcontract to Owner or Architect for the purpose of coordinating the work or resolving disputes.

2. Failure of Contractor or Subcontractor to carry out Architects previous instructions or directions and thereby causing additional expense to Architect.

3. Expense of reproduction of drawings or specifications specifically requested by Contractor or subcontractors over and above original sets issued to the General Contractor for distribution to his various subcontractors and/or suppliers.

K. Complaints Due to Adjustments and Repairs - Any complaints received due to adjustments, operational difficulties or repairs, within the construction time or guarantee time, shall be turned over to Contractor. The Contractor upon notice by letter, wire, or phone shall investigate complaint immediately and complete all necessary work within 72 hours of such notice. Failure to comply will necessitate Architect having work done and back-charged to Contractor. Contractor shall be back-charged at the rate of $75.00 per hour or 1.5 times the amount billed to the Architect by his consultants, which ever is greater, for Architects time in arranging for others to do work.

L. Arbitration Deleted - Delete reference to Arbitration in Articles 2.2.10, 2.2.11, and 7.10 in AIA Document A-210-General Conditions of the contract for construction. All disputes shall be settled by Architect, the parties to the contract, or the courts.

M. Indemnification - Delete in its entirety subparagraph 3.18.1 of the GENERAL CONDITIONS and substitute the following: To the fullest extent allowed by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architects Consultants, their agents and employees of any of the above, from and against any claims, damages, losses, and or expenses, including but not limited to

attorney's fees, arising out of or resulting from performance of the work, provided that such claim, damage, loss or expense is attributable to the bodily injury, sickness, disease or death, or to injury to or destruction of any tangible property, other than the work itself, including loss of use resulting therefrom. Such indemnification shall only apply to such extent caused in whole or in part by negligent acts or omissions of the Contractor, subcontractors, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, except to the it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in paragraph 3.18.

N. Progress Payments - On or before the twenty-fifth day of each month, Contractor shall submit to Architect an itemized application for payment supported to the extent required by Architect by receipts or other vouchers showing payments for materials and labor, payments to subcontractors and such evidence of Contractors right to payment as Architect may direct. If payments are made on valuation of work done, Contractor shall, before the first application, submit to Architect a schedule of values of the various parts of the work, including quantities, aggregating the total sum of the contract, and divided as to facilitate payments to subcontractors in accordance with Article 5.4, made out in such form as the Architect may direct, and if required, supported by such evidence as the Architect may deem necessary. This schedule, when approved by Architect, shall be used as a basis for all Certificates of Payment. In applying for payments, Contractor shall submit all statements based upon this schedule. If payments are made on account of materials not incorporated in the work but delivered and suitably stored at the site, or at some other location agreed upon in writing, such payments shall be conditioned upon submission by contractor of bills of sale or such other procedure as will establish Owners title to such materials or otherwise adequately protect Owners interest including any and all applicable insurance.

0. Final Payment - Final payment to Contractor shall be due thirty (30) days after all work is completed, approved by Architect and accepted by Owner. Any delay in payment after thirty (30) days and not due to any fault of Contractor shall entitle Contractor to receive from Owner 10% interest per annum on any unpaid balance

P. Contractor's Liability Insurance - During the term of this contract, Contractor shall maintain such insurance as will protect him from claims set forth below which may arise out of or result from Contractor's operations under the contract whether such operations be by himself or by a Subcontractor, Sub-subcontractor or anyone directly or indirectly employed by the Contractor, Subcontractor, or Sub-subcontractor or by anyone individual whose acts may cause any one of them to be held liable.

1) For claims arising under any Workmen Compensation, Employer's Liability, or any similar employee benefit act.

2) For claims because of bodily injury, sickness, disease or death of any person or persons other than his employees, and for claims because of damage to or destruction of property of others resulting therefrom including loss of use thereof.

Such insurance shall be written for amounts not less than the following with respect to subparagraph (1) above:

Workmen's Compensation	Statutory
Employer's Liability	$100,000
Each Occurrence	

And with respects to subparagraph (2) above:

Bodily Injury and Property Damage with	$1,000,000
a Combined Single Limit of Liability	Each Occurrence

Or

Bodily Injury

General and Automobile	$500,000 Each Person
General and Automobile	$1,000,000 Each Occurrence
Property Damage General and Automobile	$500,000
Each Person General and Automobile	$1,000,000
Each Aggregate	

The insurance referred to above shall be written under Comprehensive General and Comprehensive Automobile liability policy forms, including coverage for all owner-hired and non-owner automobiles. Contractor may at his option, provide the limits of liability as set out above by a combination of the above described forms and an Umbrella Excess Liability policy.

It is a condition of Contract that the policy or policies afford coverage for damage to property of others rising out of the perils of damage to underground facilities, and it is a further condition that the policy or policies afford the same limits of liability as set out above for liability assumed under contract, including CONTRACTUAL LIABILITY as set out in Paragraphs of the General Conditions, AIA Document No. A-201 "INDEMNIFICATION" as modified.

All responsibility for payment of any sums resulting from any deductible provision corridor or self-insured retention conditions of the policy or policies shall remain with Contractor.

It is a condition of the insurance by Owner shall not in any way relieve or decrease the liability of Contractor hereunder, and it is expressly understood that Owner/Architect does not in any way represent that the above specified insurance or limits of liability are sufficient or adequate to protect Contractors interests or liabilities.

Q. Builders Risk Insurance - Owner shall furnish standard form "All Risk Builders Risk Insurance" completed value insurance, Form 60-SBR as published by Nebraska Inspection Bureau. This insurance shall include but not be limited to fire, lightning, extended coverage, and optional perils. Owner shall furnish Architect and Contractor with Certificate of Insurance.

R. Definition of Terms - The following terms as employed in these specifications are hereby defined:

Contractor: Person or Persons, firm or corporation that enters into a contract with the Owner for the performance of Work.

Bidder: Person or Persons, firm or corporation submitting a bid or proposal to Owner for consideration of a contract for performance of Work.

Owner: City of Sidney Nebraska
1115 13th Ave.
Sidney, Nebraska 69162

Architect: Joseph R. Hewgley & Associates, Inc.
702 South Bailey
North Platte, Nebraska 69101

Work: Includes equipment, tools, materials and labor necessary to fulfill all obligations of the Contract Documents.

Notice To Proceed:

A written notice given by the Owner to the Contractor, with a copy to the Architect, fixing the date on which the Contract Time will commence to run and on which the Contractor shall start to perform his obligation under the Contract Documents.

13. REFERENCE STANDARDS

A. Industry Standards

1. Except where Contract Documents include more stringent requirements, applicable construction industry standards have same force and effect as if bound or copied directly into Contract Documents to extent referenced. Such standards are made a part of Contract Documents by reference.
2. Comply with standard in effect as of date of Contract Documents, unless specific date is specified.
3. Where compliance with two or more standards is specified and standards apparently establish different or conflicting requirements for minimum quantities or quality levels, refer to Architect for decision before proceeding. Quantity or quality level shown or specified shall be minimum provided or performed. Actual installation may comply exactly with minimum quantity or quality specified, or it may exceed minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for context of requirements. Refer uncertainties to Architect for decision before proceeding.
4. Each entity engaged in construction on Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with Contract Documents. Where copies of standards are needed for performance of a required construction activity, Contractor shall obtain copies directly from publication source.
5. Trade association names and titles of general standards are frequently abbreviated. Following acronyms or abbreviations, as referenced in Contract Documents, are defined to mean associated names. Names and addresses are subject to change and are believed to be, but are not assured to be, accurate and up to date as of date of Contract Documents.

   AABC Associated Air Balance Council, 1518 K St NW, Suite 503, Washington, D.C. 20005 (202) 737-0202

AAMA American Architectural Manufacturers Assoc, 1540 K Street NW, Palatine, IL 60067 (708) 202-1350
AAN American Association of Nurserymen, 1250 Eye St NW, Suite 500, Washington, D.C. 20005 (202) 789-2900
AASHTO American Association of State Highway & Transportation Officials, 444 North Capitol St, Suite 249, Washington, D.C. 20001 (202) 624-5800
ACI American Concrete Institute, P.O. Box 19150, 22400 West 7 Mile Rd, Detroit, MI 48219 (313) 532-2600
AGA American Gas Assoc, 1515 Wilson Blvd, Arlington, VA 22209 (703) 841-8400
AIA American Institute of Architects, 1735 New York Ave NW, Washington, D.C. 20006 (202) 626-7300
AISC American Institute of Steel Construction, One East Wacker Drive, Suite 3100, Chicago, IL 60601-2001 (312) 670-2400
AISI American Iron & Steel Institute, 1101 17th St NW, Washington, D.C. 20036-4700 (202) 452-7100
AITC American Institute of Timber Construction, 7012 South Revere Parkway #140, Englewood, CO 80112 (303) 792-9559
AMCA Air Movement & Control Assoc, 30 West University Dr, Arlington Heights, IL 60004 (312) 394-0150
ANSI American National Standards Institute, 11 West 42nd St, New York, NY 10036 (212) 642-4900
APA American Plywood Assoc, P.O. Box 11700 (98411), 7011 South 19th St (98466), Tacoma, WA (206) 565-6600
ARI Air Conditioning & Refrigeration Institute, 4301 Fairfax Drive, Suite 425, Arlington, VA 22203 (703) 524-8800
ASHRAE American Society of Heating, Refrigerating, & Air-Conditioning Engineers, 1791 Tullie Circle NE, Atlanta, GA 30329 (404) 636-8400
ASME American Society of Mechanical Engineers, 345 East 47th St, New York, NY 10017 (212) 705-7722
ASTM American Society for Testing & Materials, 1916 Race St, Philadelphia, PA 19103 (215) 299-5400
AWI Architectural Woodwork Institute, 13924 Braddock Road, Suite 100, P O Box 1550, Centreville, VA 22020 (703) 222-1100
AWPA American Wood Preservers' Assoc, P.O. Box 286, Woodstock, MD 21163-0286 (410) 465-3169
AWS American Welding Society, 550 LeJeune Road NW, P.O. Box 351040, Miami, FL 33135 (305) 443-9353
AWWA American Water Works Assoc, 6666 West Quincy Ave, Denver, CO 80235 (303) 794-7711
BHMA Builders' Hardware Manufacturers Assoc, 355 Lexington Ave, 17th Floor, New York, NY 10017 (212) 661-4261
CFI International Certified Floorcovering Installers Association, 10336 NW Prairie View Rd, Kansas City, MO 64153 (816) 880-9999
CRI Carpet & Rug Institute, P O Box 2048, Dalton, GA 30722 (706) 278-3176
CRSI Concrete Reinforcing Steel Institute, 933 Plum Grove Rd, Schaumburg, IL 60173 (312) 517-1200
DHI Door & Hardware Institute, 14170 Newbrook Drive, Chantilly, VA 22021 (703) 222-2010
EIMA EIFS Industry Manufacturers Association, 2759 State Road 580, Suite 112, Clearwater, FL 34621 (813) 726-6477

FM Factory Mutual Research Organization, 1151 Boston-Providence Turnpike, Norwood, MA 02062 (617) 762-4300
GA Gypsum Association, 810 First Street NE, Suite 510, Washington, D.C. 20002 (202) 289-5440
ICBO International Conference of Building Officials, 5360 S. Workman Mill Rd, Whittier, CA (310)-699-0541
LPI Lightning Protection Institute, 3365 North Arlington Heights Road, Arlington Heights, IL 60004 (800) 488-6864
MFMA Maple Flooring Manufacturers' Assoc, 60 Revere Dr, Suite 500, Northbrook, IL 60062 (708) 480-9138
NAAMM National Association of Architectural Metal Manufacturers, 600 South Federal St, Suite 400, Chicago, IL 60605 (312) 922-6222
NEC National Electric Code (from NFPA)
NEMA National Electrical Manufacturer's Association, 2101 'L' St, NW, Washington, D.C. 20037 (202) 457-8400
NFPA National Fire Protection Assoc, One Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 (800) 344-3555
NFRC National Fenestration Rating Council, 1300 Spring Street, Suite 120, Silver Spring, MD 20910 (301) 589-6372
NSF National Sanitation Foundation, 3475 Plymouth Rd, P.O. Box 1468, Ann Arbor, MI 48106 (313) 769-8010
NWWDA National Wood Window and Door Association, 1400 East Touhy Ave, #G54, Des Plaines, IL 60018 (312) 299-5200
PCA Portland Cement Assoc, 5420 Old Orchard Road, Skokie, IL 60077 (312) 966-6200
PCI Prestressed Concrete Institute, 175 West Jackson Blvd, Chicago, IL 60604 (312) 786-0300
PEI Porcelain Enamel Institute, 102 Woodmont Boulevard, Suite 360, Nashville, TN 38205 (615) 385-0758
SDI Steel Door Institute, 30200 Detroit Road, Cleveland, OH 44145 (216) 899-0010
SIGMA Sealed Insulating Glass Manufacturers Association, 401 North Michigan Avenue, Chicago, IL 60611 (312) 644-6610
SJI Steel Joist Institute, 1205 48th Avenue North, Suite A, Myrtle Beach, SC 29577 (803) 449-0487
SMACNA Sheet Metal and Air Conditioning Contractors National Association, 4201 Lafayette Center Drive, Chantilly, VA 22116 (703) 803-2980
SPIB Southern Pine Inspection Bureau, 4709 Scenic Highway, Pensacola, FL 32504 (904) 434-2611
TCA Tile Council of America, P.O. Box 326, Princeton, NJ 08542 (609) 921-7050
TPI Truss Plate Institute, 583 D'Onofrio Drive, Suite 200, Madison, WI 53719 (608) 833-5900
UL Underwriters Laboratories, 333 Pfingsten Rd, Northbrook, IL 60062 (708) 272-8800
WWPA Western Wood Products Assoc, Yeon Building 522 SW 5th Avenue, Portland, OR 97204-2122 (503) 224-3930

B. Federal Government Agencies - Names and titles of federal government standard or specification producing agencies are often abbreviated. Following acronyms or abbreviations referenced in Contract Documents represent names of standard or specification producing agencies of federal government. Names and addresses are subject to change but are believed to be, but are not assured to be, accurate and up to date as of date of Contract Documents.

CS Commercial Standard (U.S. Department of Commerce), Government Printing Office, Washington, D.C. 20402 (202) 377-2000
EPA Environmental Protection Agency, 401 'M' St SW, Washington, D.C. 20460 (202) 382-2090
FCC Federal Communications Commission, 1919 'M' St NW, Washington, D.C. 20554 (202) 632-7000
FS Federal Specification (from GSA), Specifications Unit (WFSIS), 7th & D St SW, Washington, D.C. 20406 (202) 708-9205
MIL Military Standardization Documents (U.S. Department of Defense), Naval Publications & Forms Center, 5801 Tabor Ave, Philadelphia, PA 19120
OSHA Occupational Safety & Health Administration (U.S. Department of Labor), 200 Constitution Ave NW, Washington, D.C. 20410 (202) 219-6091
PS Product Standard of NBS (U.S. Department of Commerce), Government Printing Office, Washington, D.C. 20402 (202) 783-3238

END OF SECTION 00 80 00

BONDING AND INSURANCE REQUIREMENTS
CODE OF FEDERAL REGULATIONS 2 CFR 200.325
Community Development Block Grant Regulations

(h) Bonding requirements. For construction or facility improvement contracts or subcontracts exceeding the ***simplified acquisition threshold*,*** the awarding agency may accept the bonding policy and requirements of the grantee or subgrantee provided the awarding agency has made a determination that the awarding agency's interest is adequately protected. If such a determination has not been made, the minimum requirements shall be as follows:

(1) A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

(2) A performance bond on the part of the contractor for 100 percent of the contract price. A ``performance bond'' is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

(3) A payment bond on the part of the contractor for 100 percent of the contract price. A ``payment bond'' is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

*fixed at 41 U.S.C. 403(11) (currently set at $150,000)

CIVIL RIGHTS AND EQUAL OPPORTUNITY PROVISIONS

Public Law 88-352, Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000(d), et. seq.) (24 CFR part 1).
The law provides that, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Section 109 of the Housing and Community Development Act of 1974, As Amended.
The law requires that, "[n]o person in the United States shall on the ground of race, color, national origin, religion, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this chapter. Any prohibition against discrimination on the basis of age under the Age Discrimination Act of 1975 [42 U.S.C. 6101 et seq.] or with respect to an otherwise qualified handicapped individual as provided in section 794 of Title 29 also shall apply to any such program or activity."

Age Discrimination Act of 1975, As Amended (42 U.S.C. 6101, Et, seq.).
The law provides that, "no person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program or activity receiving Federal financial assistance."

Section 504 of the Rehabilitation Act of 1973, As Amended (29 U.S.C. 794).
"Section 504 provides that no otherwise qualified individual with a disability shall, solely by reason of his or her disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Section 3 of the Housing and Urban Development Act of 1968, As Amended (12 U.S.C. 170lu).
The law provides that, "to the greatest extent feasible, recipients of HUD funds (and their contractors and subcontractors) provide jobs and other economic opportunities to low-income persons, particularly public housing residents. Section 3 helps create employment for low-income persons and contracting opportunities for businesses that are owned by low-income people or that provide employment to low-income people."

CERTIFICATION OF BIDDER REGARDING SECTION 3 AND SEGREGATED FACILITIES

Name of Prime Contractor	**Project Name and Number**

The undersigned herby certifies that:

(a) Section 3 provisions are included in the contract.

(b) A written Section 3 plan was prepared and submitted as part of the bidding proceedings (if bid equals or exceeds $100,000).

(c) No segregated facilities will be maintained.

Name & Title of Signer (Print or Type)

Signature	**Date**

CONTRACTOR
Section 3 Plan

_____ agrees to implement the following specific affirmative action steps directed at increasing the utilization of lowest income residents and businesses within the Village/City/County of _____.

A. To ascertain from the locality's CDBG program official the exact boundaries of the Section 3 covered project area and where advantageous, seek the assistance of local officials in preparing and implementing the affirmative action plan.

B. To attempt to recruit from within the city the necessary number of lower income residents through local advertising media; signs placed at the proposed site for the project; and community organizations and public or private institutions operating within or serving the project area, such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U.S. Employment Service.

C. To maintain a list of all lower income residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and if a vacancy exists.

D. *To insert this Section 3 plan in all bid documents, and to require all bidders and subcontracts to submit a Section 3 affirmative action plan that includes utilization goals and the specific steps planned to accomplish these goals.

E. *To insure that subcontracts (typically let on a negotiated rather than bid basis in areas other than Section 3 covered project areas), also are let on a negotiated basis, where feasible, when let in a Section 3 covered project area.

F. To formally contact unions, subcontractors and trade associations to secure their cooperation for this program.

G. To insure that all appropriated project area business concerns are notified of pending sub contractual opportunities.

H. To maintain records, including copies of correspondence, memoranda, etc., that document all above affirmative action steps have been taken.

I. To appoint or recruit an executive official of the company or agency as Equal Opportunity Officer to coordinate the implementation of the Section 3 plan.

*Loans, grants, contracts and subsidies for less than $100,000 will be exempt.

SPECIAL EQUAL OPPORTUNITY PROVISIONS

A. Activities and Contracts Not Subject to Executive Order 11246, As Amended
(Applicable to Federally assisted construction contracts and related subcontracts $10,000 and under)
During the performance of this contract.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, or national origin. Such action shall include, but not be limited to: employment upgrade, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay, or other forms of compensation; and selection for training, including apprenticeship.

(2) The contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by contracting officer setting forth the provisions of the nondiscrimination clause. The contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(3) Contractors shall incorporate foregoing requirements in all subcontracts.

B. Executive Order 11246 (contract/subcontracts above $10,000)

1. SEC. 202. Except in contracts exempted in accordance with Section 204 of this order, all Government contracting agencies shall include in every government contract hereafter entered into the following:
During the performance of this contract:

(1) The contractor will not discriminate against any employee a applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to: employment upgrade, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay, or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause.

(2) The contractor will, in all solicitations or advancements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the [Contract Compliance Officer], advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and the rules, regulations, and relevant orders of the U.S. Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records, and accounts by the [Department] and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract, or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor *will* take such action with respect to any subcontract or purchase order as may be directed by the [Department and the] Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction [by the Department], the contractor may request the United States to enter into such litigation to protect the interests of the United States [italics added]."

ACCESS TO AND MAINTENANCE OF RECORDS

The Consultant/Contractor agrees to maintain such records and follow such procedures as may be required under HUD Community Planning and Development (CPD) subpart J, 570.502 (paragraph a. 16.) and 2 CFR 200.318(i) and any such procedures that the Department may prescribe. In general such records will include information pertaining to the contract, obligations and unobligated balances, assets and liabilities, outlays, equal opportunity, labor standards (as appropriate), and performance.

All such records and all other records pertinent to this contract and work undertaken under this contract shall be retained by the Consultant/Contractor or grantee for a period of three years after the final audit of the grantee's CDBG project, unless a longer period is required to resolve audit findings or litigation. In such cases, the grantee shall request a longer period for record retention.

The grantee, the Department and duly authorized officials of the state and federal government shall have full access and the right to examine any pertinent documents, papers, records and books of the Consultant/Contractor involving transactions to this local program and contract.

Conflict of Interest

From 2 CFR 200.318(c)(1)., no officer, employee or agent of the grantee who will participate in the selection, the award, or the administration of this grant, may obtain a personal or financial interest or benefit from the activity or have an interest in any contract, subcontract or agreement with respect thereto, or the proceeds thereunder either for themselves or those with whom they have family or business ties, during their tenure or for one year thereafter. It is further required that this stipulation be included in all subcontracts to this contract. Upon written request, exceptions may be granted on a case-by-case basis when it is determined that such an exception will serve to further the purposes of the Act and the effective and efficient administration of the recipient's program or project. These exceptions are granted by the Department.

CLEAN AIR AND WATER ACTS – REQUIRED CLAUSES

This clause is required in all third-party contracts involving projects subject to the Clean Air Act (42 U.S.C. s/s 7401 et seq. (1970)), the Federal Water Pollution Control Act (33 U.S.C. 1251 et. seq.), and the regulation of the Environmental Protection Agency with respect to 40 CFR32 as amended. It also should be mentioned in the bid document.

During the performance of this contract:

(1) The CONTRACTOR will certify that any facility to be utilized in the performance of any nonexempt contract or subcontract is not listed on the List of Violating Facilities issued by the Environmental Protection Agency pursuant to 48 CFR 9.40 and 40CFR32.20.

(2) The CONTRACTOR agrees to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 U.S.C. 7414) and Section 308 of the Clean Water Act, as amended (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.

(3) The CONTRACTOR agrees that as a condition for the award of the contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, and Environmental Protection Agency, indicating that a facility utilized, or to be utilized for the contract is under consideration to be listed on the Environmental Protection Agency List of Violating Facilities.

(4) The CONTRACTOR agrees that it will include or cause to be included the criteria and requirements in Paragraphs (1) through (4) of this section in every nonexempt subcontract and require every subcontractor to take such action as the government may direct as a means of enforcing such provisions.

"General Decision Number: NE20220082 02/25/2022

Superseded General Decision Number: NE20210082

State: Nebraska

Construction Type: Building

Counties: Cheyenne and Dundy Counties in Nebraska.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be

adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts.

Modification Number	Publication Date
0	01/07/2022
1	02/25/2022

BOIL0083-002 01/01/2021

	Rates	Fringes
BOILERMAKER	$ 41.52	30.36

ELEC0265-003 08/30/2021

	Rates	Fringes
ELECTRICIAN		
Zone 1	$ 30.00	15.38
Zone 2	$ 30.30	15.41
Zone 3	$ 30.60	15.45
Zone 4	$ 31.00	15.50

ZONE DEFINITIONS:
Zone 1: 0 to 35 miles from the main Post Office in Lincoln
Zone 2: 36 to 50 miles from the main Post Office in Lincoln
Zone 3: 51 to 75 miles from the main Post Office in Lincoln
Zone 4: 76 miles and over from the main Post Office in Lincoln

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IRON0021-004 06/01/2021

DUNDY COUNTY

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 32.35	19.23

IRON0027-017 07/01/2021

CHEYENNE COUNTY

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 30.83	24.45

LABO1140-010 06/01/2016

	Rates	Fringes
LABORER (Mason Tender, Brick & Hod)	$ 20.63	9.40

PLUM0016-007 05/16/2021

DUNDY COUNTY

	Rates	Fringes
PLUMBER	$ 39.95	13.81

PLUM0192-003 01/01/2021

CHEYENNE COUNTY

	Rates	Fringes
PIPEFITTER	$ 36.92	18.07
PLUMBER	$ 36.92	18.07

PLUM0464-008 05/30/2021

DUNDY COUNTY

	Rates	Fringes
PIPEFITTER	$ 39.89	18.71

SHEE0103-001 06/01/2011

	Rates	Fringes
SHEET METAL WORKER (Includes HVAC Duct Installation)	$ 24.34	16.06

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* SUNE2012-019 04/19/2012

	Rates	Fringes
BRICKLAYER	$ 25.00	10.75

CARPENTER.....$ 16.42 1.95

CEMENT MASON/CONCRETE FINISHER...$ 17.52 1.31

LABORER: Common or General.....$ 10.24 ** 0.00

OPERATOR:
Backhoe/Excavator/Trackhoe.....$ 20.24 2.84

OPERATOR: Loader.....$ 16.58 0.94

ROOFER.....$ 14.27 ** 0.65

TRUCK DRIVER: Dump, Lowboy
and Tandem.....$ 14.56 ** 1.68

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($15.00) or 13658 ($11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

SECTION 01 10 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work by Owner.
5. Work under separate contracts.
6. Future work.
7. Purchase contracts.
8. Owner-furnished products.
9. Contractor-furnished, Owner-installed products.
10. Access to site.
11. Coordination with occupants.
12. Work restrictions.
13. Specification and drawing conventions.
14. Miscellaneous provisions.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: INTERIOR BUILDING RENOVATIONS FOR SIDNEL ELKS LODGE
CITY OF SIDNEY
PROJECT NO. R-0421

1. Project Location: SIDNEY, NEBRASKA

B. Owner: CITY OF SIDNEY

1. Owner's Representative: MELISSA NORGARD.

C. Architect:

JOSEPH R. HEWGLEY & ASSOCIATES INC., 702 SO. BAILEY, NORTH PLATTE, NE. 69101.

D. Architect's Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Farris Engineering, 844 11th Ave., Sidney, Nebraska 69162

E. Project Web Site: A project Web site administered by Contractor will be used for purposes of managing communication and documents during the construction stage.

1. See Section 013100 "Project Management and Coordination." for requirements for administering and using the Project Web site.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Interior building Renovation to the Sidney Elks Lodge, Sidney, Ne.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 WORK BY OWNER

A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

1.6 OWNER-FURNISHED PRODUCTS

A. Owner will furnish products indicated. The Work includes receiving, unloading, handling, storing, protecting, and installing Owner-furnished products and making building services connections.

1.7 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project (as applicable)

B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Limit site disturbance, including earthwork and clearing of vegetation, to 40 feet (12.2 m) beyond building perimeter; 10 feet (3 m) beyond surface walkways, patios, surface parking, and utilities less than 12 inches (300 mm) in diameter; 15 feet (4.5 m) beyond primary roadway curbs and main utility branch trenches; and 25 feet (7.6 m) beyond constructed areas with permeable surfaces (such as pervious paving areas, storm water detention facilities, and playing fields) that require additional staging areas in order to limit compaction in the constructed area.
2. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

    a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.8 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to normal business working hours Monday through Friday, unless otherwise indicated and approved by Owner.

1. Weekend Hours: As approved by Owner and Architect
2. Early Morning Hours: As approved by Owner and Architect and according to regulations by authorities having jurisdiction for restrictions on noisy work.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than two days in advance of proposed utility interruptions in area.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Architect and Owner not less than two days in advance of proposed disruptive operations.

E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor-air intakes.

F. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

H. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 21 00

ALLOWANCES

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements governing lump-sum allowances.

B. Related Sections:
1. Division 01 Section ”Contract Modification Procedures.”
2. Division 01 Section "Quality Control" for procedures governing the use of allowances for testing and inspecting.
3. Individual specification Sections

C. Selected material and equipment, and in some cases, their installation are shown and specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. Additional requirements, if necessary, will be issued by Change Order.

1.2 SELECTION AND PURCHASE

A. At the earliest feasible date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying in performance of the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.3 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

D. Architect Responsibilities:
1. Consult with Contractor for consideration and selection of materials, suppliers, and installers.
2. Select materials in consultation with Owner and transmit decision to Contractor.
3. Prepare Change Order.

E. Contractor Responsibilities:
1. Assist Architect in election of materials, suppliers, and installers.
2. Obtain bids and offer recommendations.
3. On notification of selection by Architect, execute purchase agreement with designated supplier and installer.

4. Arrange for and process Shop Drawings, Product Data, and Samples. Arrange for delivery.
5. Promptly inspect materials upon delivery for completeness, damage, and defects. Submit claims for transportation damage.
6. Differences in cost will be adjusted by Change Order.

1.4 UNUSED MATERIALS

A. Return unused materials to the manufacturer of supplier for credit to the Owner, after installation has been completed and accepted.

B. Where it is not economically feasible to return unused material for credit and when requested by Architect, prepare unused material for the Owner's storage, and deliver to the Owner's storage space as directed. Otherwise, disposal of excess material is the Contractor's responsibility.

C. Unused materials should be considered for recycling to meet the requirements of Division 01 Section "Construction Recycling."

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 LUMP-SUM ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include freight, and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.7 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for losses due to cutting, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 INSPECTION

A. Inspect products promptly upon delivery for damage or defects.

3.3 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.4 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: unforeseen Structural repairs: $20,000

1. This allowance includes construction, material cost, receiving, handling, and installation, and Contractor overhead and profit. Refer to drawings.

END OF SECTION 01 21 00

SECTION 01 25 13

PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Contractor's selection of products

B. Requests for substitution of products

1.02 RELATED REQUIREMENTS

A. Section 00 21 13 - Instructions to Bidders

B. Section 00 70 00 - General Conditions

C. Section 00 80 00 - Supplementary Conditions

D. Section 01 33 00 - Submittals

E. Section 01 33 23 - Shop Drawings, Product data, and Samples

F. Section 01 77 00 - Closeout Procedures

G. Section 01 78 23 - Operation and Maintenance Data

H. Section 01 78 39 - Project Record Documents

1.03 SELECTION OF PRODUCTS

A. Contractor(s) bid shall be based on the products, materials, or systems specified in the project manual (or as indicated on the drawings) to establish the standard of quality required and a uniform basis for evaluating the bids.

B. For products specified by naming only one manufacturer, that manufacturer is to be included in the base bid.

C. For products specified by naming more than one manufacturer, any of the listed manufacturers of that section may be used in the base bid.

D. When product or manufacture's names are not specifically specified, provide products, materials, or systems in strict accordance with performance requirements and install such products in strict accordance with the material manufacturer's recommendations.

E. "Acceptable Substitution"

1. For any listing of products and manufacturers found in the specification, it is understood that the phrase "Acceptable Substitution" will apply to that listing except as otherwise noted.
2. Requests for approval of substitute products will not be considered prior to the Bid Opening Date or as options submitted with Bids. Bids must be submitted in accordance with the product option criteria stated herein, and bids must be based on the name brand products, model numbers, or styles where specifications are based on proprietary brand names.
3. Where the phrase "Acceptable Substitution" occurs in the project manual, do not assume that the products, materials or system submitted for substitutions will be

accepted (even if accepted for use on previous projects) until the item has been specifically so accepted for this work by the Architect.

4. Acceptance or rejections of a request for an “Acceptable Substitution” will be based on the Architect’s opinion, as concurred by the Owner, to the adaptability, durability, quality, aesthetics, and contract amount change, compare to the specified or noted items.
5. The decision of the Architect shall be final.

1.04 REQUESTS FOR SUBSTITUTIONS

A. Substitutions in the case of product unavailability after contract award, will be considered under the following criteria:

1. Cannot be delivered during the progress of the work.
   a. Submit a letter to this effect written by the manufacturer.
2. Will no longer be available during the progress of the work.
   a. Submit a letter to this effect written by the manufacturer
3. The quality of the material, as specified, no longer meets the specification
   a. The Architect shall specify a substitute.

B. Substitutions will be considered after bidding if the proposed substitution will provide a substantial savings to the Owner. The material cost differential will be reflected in a change order to the contractor.

C. The request for a subsequent substitution constitutes a representation that the Contractor has investigated the proposed product and has determined that it is equal to or superior in all respects to the specified product. In addition, the Contractor;
   1. Will provide same warranty for substitution as for specified product.
   2. Will coordinate installation of Acceptable Substitution, making such changes as may be required for Work to be complete in all respects.
   3. Will certify that cost data presented is complete and includes all related costs under this Contract.
   4. Waives claims for additional costs related to substitution which may later become apparent.
   5. Will reimburse Owner and Architect/Engineer for review or redesign services associated with obtaining approval from regulating authorities.
   6. Will reimburse Owner and Architect/Engineer for review or redesign services after originally specified product has been reviewed by Architect.

D. Acceptance or rejection of a request for an “Acceptable Substitution” will be based on the Architect’s opinion, as concurred by the Owner, to adaptability, durability, quality, aesthetics, and Contract Amount change, compare to the specified or noted items.

E. For acceptable products, submit shop drawings, product data and samples under provisions of Sections 01 33 00 and 01 33 23.

F. Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 25 13

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
2. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
3. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
4. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.

1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:

    a. Application for Payment forms with continuation sheets.
    b. Submittal schedule.
    c. Items required to be indicated as separate activities in Contractor's construction schedule.

2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

3. Subschedules for Phased Work: (AS APPLICABLE) Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
4. Subschedules for Separate Elements of Work: (AS APPLICABLE) Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

    a. Project name and location.
    b. Name of Architect.
    c. Architect's project number.
    d. Contractor's name and address.
    e. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:

    a. Related Specification Section or Division.
    b. Description of the Work.
    c. Name of subcontractor.
    d. Name of manufacturer or fabricator.
    e. Name of supplier.
    f. Change Orders (numbers) that affect value.
    g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

        1) Labor.
        2) Materials.
        3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.

5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

    a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.

7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by

measured quantity. Use information indicated in the Contract Documents to determine quantities.

9. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
10. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

    a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.

11. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

   1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

   1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
   2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
   3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
   4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

   1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.

2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms, acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
5. Products list (preliminary if not final).
6. Schedule of unit prices.
7. Submittal schedule (preliminary if not final).
8. List of Contractor's staff assignments.
9. List of Contractor's principal consultants.
10. Copies of building permits.
11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
12. Initial progress report.
13. Report of preconstruction conference.
14. Certificates of insurance and insurance policies.
15. Performance and payment bonds.
16. Data needed to acquire Owner's insurance.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's construction schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Material location reports.
6. Site condition reports.
7. Special reports.

B. Related Requirements:
1. Section 013300 "Submittals" for submitting schedules and reports.
2. Section 014000 "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF electronic file.
3. Two paper copies.

B. Startup construction schedule.

1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.

E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.
4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.

F. Construction Schedule Updating Reports: Submit with Applications for Payment.

G. Daily Construction Reports: Submit at weekly intervals.

H. Material Location Reports: Submit at weekly intervals.

I. Site Condition Reports: Submit at time of discovery of differing conditions.

J. Special Reports: Submit at time of unusual event.

K. Qualification Data: For scheduling consultant.

1.5 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review submittal requirements and procedures.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
10. Review and finalize list of construction activities to be included in schedule.
11. Review procedures for updating schedule.

1.6 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.

2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittals" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.

4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
6. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use of premises restrictions.

f. Provisions for future construction.
g. Seasonal variations.
h. Environmental control.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Subcontract awards.
b. Submittals.
c. Purchases.
d. Mockups.
e. Fabrication.
f. Sample testing.
g. Deliveries.
h. Installation.
i. Tests and inspections.
j. Adjusting.
k. Curing.
l. Building flush-out.
m. Startup and placement into final use and operation.

8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

a. Structural completion.
b. Temporary enclosure and space conditioning.
c. Permanent space enclosure.
d. Completion of mechanical installation.
e. Completion of electrical installation.
f. Substantial Completion.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion, and the following interim milestones

1. Temporary enclosure and space conditioning.

E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.

1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and Contract Time.

G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means

by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

1. Use Microsoft Project, Primavera, for Windows 7 operating system.

2.2 STARTUP CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within seven days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. Startup Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

C. CPM Schedule: Prepare Contractor's construction schedule using a cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 60 days after date established for the Notice to Proceed.

a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.

2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
4. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

a. Preparation and processing of submittals.
b. Mobilization and demobilization.
c. Purchase of materials.
d. Delivery.
e. Fabrication.
f. Utility interruptions.
g. Installation.
h. Work by Owner that may affect or be affected by Contractor's activities.
i. Testing and commissioning.
j. Punch list and final completion.
k. Activities occurring following final completion.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

    a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

5. Cost- and Resource-Loading of CPM Schedule: Assign cost to construction activities on the CPM schedule. Do not assign costs to submittal activities. Obtain Architect's approval prior to assigning costs to fabrication and delivery activities. Assign costs under main subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project record documents, and demonstration and training (if applicable), in the amount of 5 percent of the Contract Sum.

    a. Each activity cost shall reflect an appropriate value subject to approval by Architect.
    b. Total cost assigned to activities shall equal the total Contract Sum.

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.

F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Main events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.
10. Dollar value of activity (coordinated with the schedule of values).

G. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

H. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.

1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
2. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
4. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.

    a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
    b. Submit value summary printouts one week before each regularly scheduled progress meeting.

2.4 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (see special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.5 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.

1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

C. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their

assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

SECTION 01 32 33

PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Web-based (web-cam) construction photographic documentation.

B. Related Requirements:

1. Section 012200 "Unit Prices" for procedures for unit prices for extra photographs.
2. Section 013300 "Submittals" for submitting photographic documentation.
3. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
4. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 SUBMITTALS

A. Qualification Data: For photographer.

B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

C. Digital Photographs: Submit image files within three days of taking photographs.

1. Digital Camera: Minimum sensor resolution of 8 megapixels.
2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect.
d. Name of Contractor.

e. Date photograph was taken.
f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
g. Unique sequential identifier keyed to accompanying key plan.

D. Construction Photographs: Submit (e-mail) photographs within seven days of taking photographs.
1. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect.
d. Name of Contractor.
e. Date photograph was taken if not date stamped by camera.
f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
g. Unique sequential identifier keyed to accompanying key plan.

E. End of Project: Submit CD of all construction progress photos at completion of project (with project closeout).

1. Identification: With submittal, provide the following information: Name of Project.
a. Name and address of photographer.
b. Name of Architect.
c. Name of Contractor.
d. Date recorded.
e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of **8** megapixels, and at an image resolution of not less than **3200 by 2400** pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software showing date and time on each image.

1. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times. Identify images the same as those submitted to Architect.

C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Flag construction limits before taking construction photographs.
2. Take 20 photographs to show existing conditions adjacent to property before starting.
3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take **20** photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

Take photographs of critical elements, utilities, systems, etc. prior to them being concealed by construction.

E. Architect-Directed Construction Photographs: From time to time, Architect will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.

F. Final Completion Construction Photographs: Take **20** color photographs after date of Substantial Completion for submission as project record documents. **Architect** will inform photographer of desired vantage points.

1. Do not include date stamp.

G. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

    a. Special events planned at Project site.
    b. Immediate follow-up when on-site events result in construction damage or losses.
    c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    d. Substantial Completion of a major phase or component of the Work.
    e. Extra record photographs at time of final acceptance.
    f. Owner's request for special publicity photographs.

END OF SECTION 01 32 33

SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for the following Submittals:

1. Submittal schedule.
2. Expanded Construction Progress Schedules
3. Construction Progress Schedule
4. Schedule of Values
5. Shop Drawings Submittal Schedule
6. Manufacturer’s Instructions
7. Hazardous Materials
8. Spare Parts
9. Other submittals required at Pre-Construction Conference
10. Mock Up Schedule

B. In accordance with the General Conditions of the Contract.

C. Submittals constitute an implied statement by the Sub- and General Contractors that submitted items:

1. Have been reviewed and approved by the Sub- and General Contractor.
2. Have been verified and coordinated with specifications, measurements, conditions, and relevant criteria of the Contract Documents.
3. Can be fabricated and delivered to the project site within the proposed Project Schedule.

D. No Finish selection will be made until all appearance-related submittals have been received.

E. Under no circumstances shall unreviewed or unapproved submittals be used in conjunction with the work.

F. Review by the Architect and Maxwell Public School District shall not relieve the Contractor from full compliance with the Construction Documents

G. Related Sections:

1. Division 01 Section “Shop Drawings, Product Data, and Samples”
2. Division 01 Section "Product Substitution Procedures."
3. Division 01 Section "Applications for Payment."
4. Division 01 Section "Submittal Matrix."
5. Division 01 Section "Coordination" for submitting schedules and reports, including Contractor's construction schedule.
6. Division 01 Section "Product Substitution Procedures."
7. Division 01 Section "Closeout Procedures."
8. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
9. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
10. Division 01 Section "Demonstration and Training" for submitting video recordings of

demonstration of equipment and training of Owner's personnel.

H. Paper Use Reduction:

1. It is the intention of the Owner and the entire Project Team to reduce the amount of paper products used. With that in mind, all product catalogs, literature, cut sheets, etc. shall be submitted electronically (only as pdf). Furthermore, all documents 11” x 17” or less shall be submitted electronically.
2. Large format drawings (such as steel shop drawings) shall be submitted on hard copies. (no less than 3 copies)
3. Physical samples must be submitted for selection of colors and textures.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic copies of CAD Drawings of certain Contract Drawings will be provided by Architect for Contractor's use in preparing bids and submittals, as follows:

1. Grading plan will be made available during bidding.
2. Reflected Ceiling Plans will be made available after Notice to Proceed.
3. Other drawings may be issued at the Architect’s digression.
4. All contractors requesting files must first complete and sign an Electronic Media Release form which will be provided by the Architect.
5. BIM files will not be released to bidders / contractors.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension

of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 business days for initial review of each submittal. Allow additional time if
   coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 business days for review of each resubmittal.

D. Identification and Information: Place a permanent label or title block on each hard-copy submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Number and title of appropriate Specification Section
    d. Name of Architect.
    e. Name of Contractor and person reviewing submittal for Contractor.
    f. Name of firm or entity that prepared submittal.
    g. Name of subcontractor.
    h. Name of supplier.
    i. Name of manufacturer.
    j. Submittal number or other unique identifier, including revision identifier.
        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    k. Drawing number and detail references, as appropriate.
    l. Location(s) where product is to be installed, as appropriate.
    m. Other necessary identification.

E. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.

    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., SVVSSD-ES#26 - 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., SVVSSD-ES#26 - 061000.01.A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Include the following information on an inserted cover sheet:

    a. Project name.
    b. Date.
    c. Number and title of appropriate Specification Section

d. Name and address of Architect.
e. Name of Contractor and person reviewing submittal for Contractor.
f. Name of firm or entity that prepared submittal.
g. Name of subcontractor.
h. Name of supplier.
i. Name of manufacturer.
j. Drawing number and detail references, as appropriate.
k. Location(s) where product is to be installed, as appropriate.
l. Related physical samples submitted directly.
m. Other necessary identification.

F. Options: Identify options requiring selection by the Architect.

G. Deviations: Identify deviations from the Contract Documents on submittals.

H. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

I. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.

1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

L. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.

M. Maintain one copy of Architect-reviewed submittals throughout the project in the on-site Construction Office.

1.5 PROCEDURES

A. Within 30 days following Notice to Proceed, provide a complete schedule of submittals, anticipated submittal dates, and prioritization of urgency.

B. After Contractor has reviewed each submittal and indicated his action thereon (except for samples and selection submittals), deliver submittals to the Architect at address listed in the Project Manual, unless otherwise instructed. If it is apparent to the Architect that the Contractor has not thoroughly reviewed a submittal, the Architect will terminate his review

and so notify the Contractor who will be required to perform the required review and resubmit the submittal in total. Any mailing/delivery costs for such procedure shall be borne by the Contractor.

C. Transmit each item with a separate Submittal Routing Form.

D. Identify project, project number, contractor, subcontractor, major supplier, pertinent drawings sheet(s) and detail number, specification section number, and individual product or other descriptive date as appropriate. Identify deviations from Contract Documents. If deviations are not indicated, submittal will be reviewed as contract compliant.

E. Coordinate submittals of related items.

F. Hard-copy submittals: The number of submittals for each item may vary. Contractor to submit, at a minimum, 2 Architect, 1 Owner, 1 Commissioner.

1.6 EXPANDED SUBCONTRACTORS AND MATERIAL SUPPLIERS LISTING

A. Submit in duplicate "Expanded Subcontractor Listing" to the Owner and Architect at Preconstruction Conference.

1.7 CONSTRUCTION PROGRESS SCHEDULE

A. Submit proposed Construction Progress Schedule in duplicate to the Owner and Architect at the Pre-Construction Conference.

1.8 SCHEDULE OF VALUES

A. Submit proposed schedule of values in duplicate to the Owner and Architect at the Pre-Construction Conference.

1.10 MANUFACTURER’S INSTRUCTIONS

A. When required in individual specification section, submit manufacturer’s printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for product data.

B. When required in individual specification sections, any software and/or hardware unique to components, equipment or systems applied under this contract require to setup, operate, maintain, calibrate, trouble shoot or repair such components and equipment or systems shall be provided by the contractor/manufacturer/vendor.

1.11 HAZARDOUS MATERIALS

A. All Contractors and Subcontractors bringing hazardous materials to an Owner’s facility must submit a Material Safety Data Sheet (MSDS) along with the Submittal Routing Form. Submit a MSDS for each hazardous material prior to use. Include information pertaining to the hazardous material with the MSDS.

1.12 SPARE PARTS AND MAINTENANCE MATERIALS

A. Submit an expanded list of products requiring spare parts.This detailed list is to include manufacturer’s product description and quantity description and quantity of spare parts

by individual product, maintenance tools and maintenance material to be provided to the owner. This detailed list is required thirty (30) days prior to substantial completion.

1.13 SUPERINTENDENT RESUME

A. Submit proposed Superintendent's Resume in duplicate to the Owner and Architect at the Pre-Construction Conference.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Submit electronic submittals via email as PDF electronic files.

    a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Action Submittals: Submit three paper copies of each submittal, unless otherwise indicated. Architect will return two copies.

3. Informational Submittals: Submit two paper copies of each submittal, unless otherwise indicated. Architect will not return copies.

4. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

5. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

    a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
    b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

6. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

B. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Submit product schedule in the following format:
    a. PDF electronic file.
    b. Three paper copies of product schedule or list, unless otherwise indicated. Architect will return two copies.

C. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

D. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

E. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment

Procedures."

F. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.

1. Submit subcontract list in the following format:

a. PDF electronic file.
b. Number of Copies: Three paper copies of subcontractor list, unless otherwise indicated. Architect will return two copies.

G. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

H. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

I. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.

J. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

K. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

L. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

M. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

N. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

O. Product Test Reports: Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

P. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

Q. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

R. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation

of product, for compliance with performance requirements in the Contract Documents.

S. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

T. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

U. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

V. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 33 00

SECTION 01 33 23

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Shop Drawings
B. Product Data
C. Samples
D. Contractor Review
E. Submittal Requirements
F. Re-Submittals
G. Architect Review
H. Distribution

1.02 RELATED REQUIREMENTS

A. Section 01 29 10 - Application for Payment
B. Section 01 33 00 - Submittals
C. Section 01 60 00 - Product Requirements
D. Section 01 63 00 - Product Substitution Procedures
E. Section 01 77 00 - Closeout Procedures
F. Divisions 2 through 33

1.03 SHOP DRAWINGS

A. Present in a clear and thorough manner. Title each drawing with Project name and number; identify each element of drawings by reference to sheet number and detail, schedule, or room number of Contract Documents.

B. Identify field dimensions; show relation to adjacent or critical features or work or products.

C. Minimum Sheet Size: Multiples of 8.5 x 11 inches.

D. Maximum sheet size: 30 x 42 inches

E. Scale required: unless otherwise specifically directed by the Architect, make all shop drawings accurate to a scale sufficiently large to show all pertinent features of the item and its methods of connection to the Work.

1.04 PRODUCT DATA

A. Submit only pages which are pertinent: mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and Article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.

B. Modify manufacture’s standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work. Delete information not applicable.

1.05 SAMPLES

A. Submit to the Architect the full range of manufacturer's standard finishes except when more restrictive requirements are specified, indicating colors, textures, and patterns, for Architect selection. All color charts are to be originals (no photo reproduction copies).

B. Submit samples to illustrate functional characteristics of products, including parts and attachments.

C. Approved samples which may be used in the Work are indicated in the specification section. Label each sample with identification required for transmittal letter.

D. Provide field samples of finishes and assemblies at the site, at location acceptable to the Architect, as required by individual specification sections. Install each sample or assembly complete and finished. Acceptable finishes in place may be retained in completed Work.

E. Architect reviewed samples will set the standard by which all Work performed thereafter will be judged.

F. Label each sample with identification required for transmittal letter.

1.06 CONTRACTOR REVIEW

A. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of Contract Documents.

B. Coordinate submittals with requirements of Work and of Contract Documents.

C. Sign or initial each sheet of shop drawings and product data, and each sample label to certify compliance with requirements of Contract Documents using submittal stamp illustrated under 1.7C of this Section.

D. Do not fabricate products or begin Work which requires submittals until submittal is returned with Architect's stamp of review.

1.07 SUBMITTAL REQUIREMENTS

A. Paper Use Reduction:

1. It is the intention of the Owner and the entire Project Team to reduce the amount of paper products used. With that in mind, all product catalogs, literature, cut sheets, etc. shall be submitted electronically (pdf). Furthermore, all documents 11" x 17" or less shall be submitted electronically.
2. Large format drawings (such as steel shop drawings) shall be submitted on hard copies.
3. Physical samples must be submitted for selection of colors and textures.

E. Transmit submittals in accordance with Shop Drawings Submittal Schedule – Section 01 33 23 form follows this section, in such sequence to avoid delay in the Work. The Contractor is solely responsible for coordinating the delivery of submittals, including any necessary corrections and re-submittals, to assure that Architect's review can be obtained without delaying the Work. All submittals are to be delivered to the Architect within 120 calendar days after the Pre-construction Conference.

1. At the Pre-Construction Conference, submit two (2) copies of Attachment B to the Architect and Owner.
2. Attachment B shall be prepared in detail, using one line for each item, sorted by section.
3. The Architect shall have approval of the proposed Shop Drawings Submittal Schedule.

F. Contractor shall have prepared and will use the submittal stamp (or one similar/approved by Architect) as illustrated. Provide 4 x 5 inch blank space on each submittal for the submittal stamp.

> By making this submittal No._____, Contractor Name does hereby approve said submittal and does certify that it has determined and verified all materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within this submittal with the requirements of the Work and of the contract documents. The Contractor further certifies that, to the best of its knowledge, the material described within this submittal does not contain any asbestos containing materials.
>
> _____ _____
> Signed for the Contractor Date

Number submittals sequentially and by Section Number. Re-submittals shall be identified by means of an alphabetical suffix (beginning with A) after original submittal number.

G. Coordinate submittals into logical grouping to facilitate interrelation of the several items:

1. Finishes which involve Architect selection of colors, textures, or patterns.
2. Associated items which require correlation for efficient function or for installation.
3. Provide:
   a. All submittals required by a particular section at one time.
   b. Shop drawings, schedules, product data, coordination drawings, samples, color charts and other information required (whether listed or not) for Architects complete evaluation.
4. Incomplete information or partial submittal shall be cause for rejection.

H. For 'hard-copy' submittals, submit one copy of shop drawings when reviewed by Architect only, and two copies when reviewed by Architect's Consultant. Provide additional copies when additionally reviewed by Commissioning Agent and/or Owner.

I. Submit a minimum of one (2) copies of samples (unless otherwise specified in specific Section).

J. Contractor will be responsible for making copies of approved submittals; for Owner, Architect, subcontractors as required.

K. Contract Documents shall not be used or reproduced as submittals or any part thereof.

L. Submit number of samples specified in individual specification sections.

M. Submit in accordance with provisions of Section 01 33 00.

N. All submittals shall be made through the Contractor or they will be rejected.

O. No portion of the Work which requires a shop drawing or sample submissions shall be commenced until the submission has been reviewed and returned by the Architect.

1.08 RE-SUBMITTALS

A. Make re-submittals under procedures specified for initial submittals; identify changes made since previous submittal.

B. The Owner will not authorize a reduction in retainage unless all shop drawing submittals have been received and reviewed by the Architect with no required re-submittals.

1.09 ARCHITECT REVIEW

A. The Architect will review shop drawings, product data, and samples and return submittals to the Contractor.

B. Contractor is to schedule his submittals so that the Architect has twelve (12) working days after receipt at Architects office to review each submittal, however, should more time be required for evaluation, coordination, and/or review, the Contractor will be so notified.

C. Extension of review time shall not constitute a basis to automatically extend the Contract Time.

D. The Contractor shall make any corrections required by the Architect and shall resubmit the required number of corrected copies of shop drawings or new samples. The Contractor shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the correction required by the Architect on previous submissions.

1.10 DISTRIBUTION

A. Duplicate and distribute reproductions of shop drawings, copies of product data, and samples, which bear Architect stamp of review, to job site file, record documents file, subcontractors, suppliers, and other entities requiring information.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 33 23

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Commissioning Agent, or authorities having jurisdiction are not limited by provisions of this Section.
4. Specific test and inspection requirements are not specified in this Section.

C. Related Requirements:

1. Section 012100 "Allowances" for testing and inspecting allowances.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size physical assemblies that are constructed on-site. Refer to Section 01 33 00 for mockup requirements.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 ACTION SUBMITTALS

A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.

1. Indicate manufacturer and model number of individual components.
2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.

D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.

B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
3. Owner-performed tests and inspections indicated in the Contract Documents**,** including tests and inspections indicated to be performed by the Commissioning Authority.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.

2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
f. When testing is complete, remove test specimens, assemblies, and mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and Commissioning Authority, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work: Refer to Section 01 33 00.

1.10 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

F. Testing Agency Responsibilities: Cooperate with Architect**,** Commissioning Agent and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect, Commissioning Agent, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify

agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

1. Distribution: Distribute schedule to Owner, Architect, Commissioning Agent, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner and as follows:

B. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, Commissioning Agent and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect and Commissioning Agent with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's**,** Commissioning Agent, reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 42 00

REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "No Exceptions Taken": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association (The) www.aluminum.org	(703) 358-2960
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
ACI	American Concrete Institute www.concrete.org	(248) 848-3700
AHRI	Air-Conditioning, Heating, and Refrigeration Institute, The www.ahrinet.org	(703) 524-8800
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
ALSC	American Lumber Standard Committee, Incorporated www.alsc.org	(301) 972-1700
ANSI	American National Standards Institute	(202) 293-8020
APA	Architectural Precast Association www.archprecast.org	(239) 454-6989

ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ASCE/SEI	*(*See ASCE)	
ASHRAE	www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (973) 882-1170
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
ATIS	Alliance for Telecommunications Industry Solutions	
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWPA	American Wood Protection Association (Formerly: American Wood Preservers' Association) www.awpa.com	(205) 733-4077
AWI	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
BIA	Brick Industry Association (The) www.bia.org	
CCC	Carpet Cushion Council www.carpetcushion.org	(610) 527-3880
CLFMI	Chain Link Fence Manufacturer Institute www.chainlinkinfo.org	(301) 596-2583
CRI	Carpet and Rug Institute www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200 (800) 328-6306
CSI	Electrical Components Association www.csinet.org	(800) 689-2900
DHI	Door and Hardware Institute www.dhi.org	(703) 295-6000

EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
GA	Gypsum Association www.gypsum.org	(301) 277-8686
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GS	Green Seal www.greenseal.org	(202) 872-6400
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
IGMA	Insulating Glass Manufacturers Alliance www.igmaonline.org	(613) 233-1510
LMA	Laminating Materials Association (Now part of CPA)	
MFMA	Metal Framing Manufacturers Association, Inc. www.metalframingmfg.org	(312) 644-6610
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937 (604) 298-7578
NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NGA	National Glass Association www.glass.org	(866) 342-5642 (703) 442-4890
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393

NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070 (888) 846-7622
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(301) 587-1400
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
RCSC	Research Council on Structural Connections www.boltcouncil.org	(706) 882-3833
RFCI	Resilient Floor Covering Institute www.rfci.com www.scte.org	(706) 882-3833
SDI	Steel Deck Institute www.sdi.org	(847)458-4647
SDI	Steel Door Institute www.steeldoor.org (See ASCE)	(440) 899-0010
SEI/ASCE	Security Industry Association www.siaonline.org	
SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
TCNA	Tile Council of North America, Inc. www.tileusa.com	(864) 646-8453
TMS	The Masonry Society www.masonrysociety.org	(303) 939-9700
TPI	Turfgrass Producers International www.turfgrasssod.org	(800) 405-8873 (847) 649-5555

UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
USGBC	U.S. Green Building Council www.usgbc.org	(800) 795-1747
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (312) 321-6802
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California) www.wicnet.org	(916) 372-9943
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

DIN	Deutsches Institut fur Normung e.V. www.din.de	49 30 2601-0
IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
ICC	International Code Council www.iccsafe.org	(888) 422-7233

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce www.commerce.gov	(202) 482-2000
DOE	Department of Energy www.energy.gov	(202) 586-9220
EPA	Environmental Protection Agency www.epa.gov	(202) 272-0167

FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742 (202) 693-1999

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA) Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities Available from U.S. Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080
CFR	Code of Federal Regulations Available from Government Printing Office www.gpoaccess.gov/cfr/index.html	(866) 512-1800 (202) 512-1800
FED-STD	Federal Standard (See FS)	
UFAS	Uniform Federal Accessibility Standards Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080

PART 2- PRODUCTS (Not Used)

PART 3- EXECUTION (Not Used)

END OF SECTION 01 42 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Section 012100 "Allowances" for products selected under an allowance.
2. Section 012300 "Alternates" for products selected under an alternate.
3. Section 012500 "Substitution Procedures" for requests for substitutions.
4. Section 014200 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

    a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
    b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

    a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience **will** be considered.
    b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience **will** be considered **unless otherwise indicated**.
    b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 **COMPARABLE PRODUCTS** (Refer to Section 01 25 31 Request for Substitutions)

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 00

EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least **10** days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.

2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.

    a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

C. Certified Surveys: Submit two copies signed by professional engineer.

D. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection

2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

3. List below is an example only. Revise to suit Project. With advice of counsel, delete below if Architect's review is not required. If list is deleted, delete option in "Operational Elements" Subparagraph above.

    a. Primary operational systems and equipment.
    b. Fire separation assemblies.
    c. Air or smoke barriers.
    d. Fire-suppression systems.
    e. Mechanical systems piping and ducts.
    f. Control systems.
    g. Communication systems.
    h. Fire-detection and -alarm systems.
    i. Conveying systems.
    j. Electrical wiring systems.

k. Operating systems of special construction.

4. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

5. List below is an example only. Revise to suit Project. With advice of counsel, delete below if Architect's review is not required. If list is deleted, delete option in "Other Construction Elements" Subparagraph above.

   a. Water, moisture, or vapor barriers.
   b. Membranes and flashings.
   c. Exterior curtain-wall construction.
   d. Sprayed fire-resistive material.
   e. Equipment supports.
   f. Piping, ductwork, vessels, and equipment.
   g. Noise- and vibration-control elements and systems.

6. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a professional engineer to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

E. Final Property Survey: Engage a professional engineer to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that

adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 **OWNER-INSTALLED PRODUCTS** (if applicable)

A. Site Access: Provide access to Project site for Owner's construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.8 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01 73 00

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Administrative provisions for Substantial Completion and for final acceptance.

1.02 RELATED REQUIREMENTS

A. Document 00700 - General Conditions: Fiscal provisions and additional administrative requirements.
B. Section 01 11 00 - Summary of Work
C. Section 01 45 00 - Quality Control
D. Section 01 66 13 - Non-Utilization of Asbestos Material
E. Section 01 71 23 - Field Engineering / Survey
F. Section 01 74 23 - Final Cleaning
G. Section 01 78 23 - Operation and Maintenance Data
H. Section 01 78 39 - Project Record Documents
I. Section 01 78 43 - Spare Parts and Maintenance Materials
J. Section 01 91 13 - General Commissioning Requirements
K. All other Sections and submittals/requirements therein.

1.03 SUBSTANTIAL COMPLETION

A. Courtesy Inspection: When Contractor considers Work or designated portion of Work is nearly or substantially complete, he shall submit written notice and request a courtesy inspection by the Architect. If the courtesy inspection indicates Contractor is ready for Substantial Completion Inspection, it will be scheduled at this time. Contractor to provide 10 days notice.

B. Contractor is to conduct Punch List inspection prior to Substantial Inspection. Contractor is to submit the punch list with the request for Substantial Completion Inspection. Punch List by Contractor should show all items found, noting which remain deficient, indicating the minimal items that might remain.

C. Contractor is to have completed functional performance testing with the commissioning authority outlined in 23 08 00, 26 09 23, & 26 09 33. Deficiencies and issues that are identified through the commissioning process are to be substantially resolved prior to substantial completion. The commissioning authority and the owner and design team will make the judgment on whether or not this has occurred at the time of submission for substantial completion

D. Substantial Completion Inspection: Upon written notice, and submission of Contractor's deficiency list, the Architect will inspect the project with the Contractor. Additional deficiencies will be noted and a comprehensive list of items to be completed or corrected shall be prepared by the Architect.

1. During the inspection, should the list become too extensive in the judgment of the Architect to constitute Substantial Completion, the inspection may be terminated, and the Contractor notified in writing. Reinspection will not take place until the majority of deficiencies are corrected. Contractor would have to formally request the reinspection.

2. Reinspection Fee: Should the Contractor fail to complete and correct punch list items such that numerous additional inspections are required by the Architect, the Contractor will be billed at $95 per hour, including travel time and mileage for the Architect's and/or his consultants time or additional services. The Architect shall inform the Contractor prior to coordinating inspections that will be charged in this manner. If the Contractor has any questions with regard to any items on the punch list, he shall request clarification before final inspection. The Architect is to conduct a Substantial Completion Inspection and a Final Inspection for each area as agreed upon during the Project.
3. Should the Architect find the Work is Substantially Complete after reviewing the list, a Certificate of Substantial Completion shall be prepared in accordance with provisions of the General Conditions of the Contract Documents (Refer to section 9.8 of the AIA A201). The list of deficiencies shall be attached to the Certificate of Substantial Completion. List shall include all inspections i.e. mechanical, electrical, landscaping, and structural depending on portion of work being inspected for Substantial Completion.

E. Should the Architect's inspection find Work that is not substantially complete, he will promptly notify Contractor in writing, listing observed deficiencies.

F. Contractor shall remedy deficiencies and send a second written notice of Substantial Completion.

1.04 FINAL COMPLETION

A. When Contractor considers Work is complete, submit written certification:

1. Contract Documents have been reviewed.
2. Work has been inspected for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents, and deficiencies listed with Certificate of Substantial Completion have been corrected in full.
4. Equipment and systems have been tested, adjusted and balanced and are fully operational.
5. Operation of systems has been demonstrated to Owner's personnel.
6. Operation of HVAC and lighting control systems have been demonstrated to Commissioning Authority through functional performance testing per 23 08 00, 26 09 23, & 26 09 33. Associated deficiencies and open issues are to be closed out and completed prior to receiving final completion.
7. Work is complete and ready for final inspection.
8. Contractor to allow 10 days notice for coordination of Final Inspection.

B. Should the Architect find Work incomplete, he will promptly notify Contractor in writing listing observed deficiencies.

C. Contractor shall remedy deficiencies and send a second certification of final completion.

D. When the Architect finds work is complete, closeout submittals will be considered.

1.05 REINSPECTION FEES

A. Should status of completion of Work require reinspection by the Architect due to failure of Work to comply with Contractor's claims on initial inspection, Owner will deduct the amount of Architect's compensation for reinspection services from final payment to Contractor.

1.06 CLOSEOUT SUBMITTALS

A. Evidence of compliance with requirements of governing authorities, governing entities, and governing utility companies:

1. Certificate of Occupancy (permit sign off)
2. Certificate of Inspection required for fire alarm, sprinkler, sound, mechanical and electrical systems (others as applicable).
3. Letter of Acceptance from governing entity for all offsite improvements.
4. Letters of Acceptance from sanitation district, water district, electric company, gas company and telephone company.
5. Completion of Final Inspection Punchlist items.

B. Project record documents: under provisions of Section 01 78 90.

C. Operation and Maintenance Data: under provisions of Section 01 78 30.

D. Warranties and Bonds

E. Spare Parts and Maintenance Materials: under provisions of Section 01 78 43.

F. Keys and keying schedule: under provisions of Division 8.

G. Evidence of Payment and Release of Liens: in accordance with Conditions of the Contract.

H. Consent of Surety to Final Payment.

I. Certificates of Insurance for Products and Completed Operations: in accordance with Supplementary Conditions.

J. Contractor’s one year guarantee of materials and workmanship

K. All guarantees, warranties and submittals, as specified

L. Receipts for extra materials delivered to the Owner

M. Miscellaneous keys, switches, etc.

N. Final Application for Payment

O. HVAC Test and Balance Report

P. Spare Parts

Q. Construction Photographs

R. Survey per Section 01 71 23.

S. Non-utilization of asbestos material –Section 01 66 13.

1.07 STATEMENT OF ADJUSTMENT OF ACCOUNTS

A. Submit final statement reflecting adjustments to Contract Sum indication.
1. Original Contract Sum
2. Previous change orders

3. Changes under unit prices
4. Deductions for uncorrected work
5. Deduction for liquidated damages
6. Deductions for reinspection fees
7. Other adjustments to Contract Sum
8. Total Contract Sum as adjusted
9. Previous payments
10. Sum remaining due

B. The Architect will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made by change orders.

1.08 APPLICATION FOR FINAL PAYMENT

A. Submit application for final payment in accordance with provisions of the Contract Documents.

B. Final Payment will be made to the Contractor after all listed deficiencies have been corrected, all closeout submittal have been received/approved, all certification(s) and/or authorizations from the Nebraska State Labor Commission and the State Industrial Insurance System (SIIS) have been received and approved by the Owner.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 77 00

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Product maintenance manuals.
5. Systems and equipment maintenance manuals.

B. Related Requirements:

1. Section 011200 "Multiple Contract Summary" for coordinating operation and maintenance manuals covering the Work of multiple contracts.
2. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operations and maintenance manuals in the following format:

1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.

    a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
    b. Enable inserted reviewer comments on draft submittals.

2. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect, will return two copies.

C. Initial Manual Submittal: Submit draft copy of each manual at least [30] days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's and Commissioning Agent's Authority's comments. Submit copies of each corrected manual within [15] days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Architect.
7. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
8. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, post-type binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.

4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of operation and maintenance manuals.
2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."

G. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training video recordings.

B. Allowances: Furnish demonstration and training instruction time under the Demonstration and Training Allowance as specified in Section 012100 "Allowances."

C. Unit Price for Instruction Time: Length of instruction time will be measured by actual time spent performing demonstration and training in required location. No payment will be made for time spent assembling educational materials, setting up, or cleaning up. See requirements in Section 012200 "Unit Prices."

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Attendance Record: For each training module, submit list of participants and length of instruction time.

C. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.

1. Identification: On each copy, provide an applied label with the following information:

    a. Name of Project.
    b. Name and address of videographer.
    c. Name of Architect.
    d. Name of Construction Manager.
    e. Name of Contractor.
    f. Date of video recording.

2. Transcript: Prepared and bound in format matching operation and maintenance manuals. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video recording. Include name of Project and date of video recording on each page.
3. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
4. At completion of training, submit complete training manual(s) for Owner's use prepared and bound in format matching operation and maintenance manuals or in PDF electronic file format on compact disc.

1.5 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.

D. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

    1. Inspect and discuss locations and other facilities required for instruction.
    2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
    3. Review required content of instruction.
    4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.6 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Operations manuals.
    c. Maintenance manuals.
    d. Project record documents.
    e. Identification systems.
    f. Warranties and bonds.
    g. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.
    b. Equipment or system break-in procedures.
    c. Routine and normal operating instructions.
    d. Regulation and control procedures.

e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
2. Owner will furnish an instructor to describe Owner's operational philosophy.
3. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

3.3 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Video: Provide minimum 640 x 480 video resolution converted to format file type acceptable to Owner, on electronic media.

1. Electronic Media: Read-only format compact disc acceptable to Owner, with commercial-grade graphic label.
2. File Hierarchy: Organize folder structure and file locations according to project manual table of contents. Provide complete screen-based menu.
3. File Names: Utilize file names based upon name of equipment generally described in video segment, as identified in Project specifications.
4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training DVD that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:

a. Name of Contractor/Installer.

b. Business address.
c. Business phone number.
d. Point of contact.
e. E-mail address.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.

a. Produce segments to present a single significant piece of equipment per segment.
b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.

1. Furnish additional portable lighting as required.

E. Transcript: Provide a transcript of the narration. Display images and running time captured from videotape opposite the corresponding narration segment.

F. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

END OF SECTION 01 79 00

SECTION 03 10 00

CONCRETE FORMWORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Provide formwork in accordance with provisions of this Section for cast-in-place concrete shown on the Drawings or required by other Sections of the Specifications.

B. Related work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Section 02220: Excavating for footings.
3. Section 03200: Concrete reinforcement.
4. Section 03300: Cast-in-place concrete.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Design of formwork is the Contractor's responsibility.

C. Standards: In addition to complying with pertinent regulations of governmental agencies having jurisdiction, comply with pertinent provisions of ACI 347.

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Product data: Within 35 calendar days after the Contractor has received the Owners Notice to Proceed, submit manufacturers data and installation instructions for proprietary materials including form coatings, ties, and accessories, and manufactured for systems if used.

1.4 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01640.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Except for metal forms, use new materials. Materials may be re-used during progress of the Work, provided they are completely cleaned and reconditioned, recoated for each use, and capable of producing formwork of the required quality.

B. For footings and foundations, use Douglas Fir boards or planks secured to wood or steel stakes, substantially constructed to shapes indicated and to support the required loads.

C. For studs, wales, and supports, use Standard grade or better Douglas Fir, dimensions as

required to support the loads but not less than 2" x 4".

D. Column forms, if required:
   1. For square or rectangular columns, use 2" thick Douglas Fir planks or joists, surfaced one and two edges, or use metal forms.
   2. Construct column forms with tight joints and securely clamped together with steel clamps.

2.2 FORM TIES

A. Hold inner and outer forms for vertical concrete together with combination steel ties and spreaders approved by the Architect.
   1. Space ties symmetrically in tiers and rows, each tier plumb from top to bottom and each row level.
   2. At horizontal pour lines, locate ties not more than 6" below the pour lines. Tighten after concrete has set and before the next pour is made.
   3. For exposed concrete surfaces, provide form ties of removable type with she-bolts equipped with permanent plugs and a system approved by the Architect for fixing the plugs in place.
   4. Use a working strength of not less than 3000 pounds and a type that will, upon removal, leave no metal closer than 1 1/2 inches to the exposed surface.

2.3 DESIGN OF FORMWORK

A. General:
   1. Design, erect, support, brace, and maintain formwork so it will safely support vertical and lateral loads that might be applied, until such loads can be supported by the concrete structure.
   2. Carry vertical and lateral loads to ground by formwork system and in-place construction that has attained adequate strength for that purpose.
   3. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position.
   4. Design forms and falsework to include assumed values of live load, dead load, weight of moving equipment operated on the formwork, concrete mix, height of concrete drop, vibrator frequency, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to safety of the structure during construction.
   5. Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations, using wedges or jacks or a combination thereof.
   6. Provide trussed supports when adequate foundations for shores and struts cannot be secured.
   7. Support form materials by structural members spaced sufficiently close enough to prevent excessive deflection.
   8. Fit forms placed in successive units for continuous surfaces to accurate alignment, free from irregularities, and within the allowable tolerances.
   9. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints, and provide backup material at joints as required to prevent leakage and prevent fins.
   10. Provide camber in formwork as required for anticipated deflections due to weight and pressures of fresh concrete and construction loads.

2.4 EARTH FORMS

A. Side forms for footings may be omitted, and concrete may be placed directly against excavation, only when requested by the Contractor and approved by the Arch.

B. When omission of forms is accepted, provide additional concrete 1" on each side of the minimum design profiles and dimensions shown on the Drawings.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FORM CONSTRUCTION

A. General:
   1. Construct forms complying with ACI 347 to the exact sizes, shapes, and dimensions shown, and as required to obtain accurate alignment, location, grades, and level and plumb work in the finished structure.
   2. Provide for openings, offsets, keyways, recesses, moldings, reglets, champfers, blocking, screeds, bulk-heads, anchorages, inserts, and other features as required.

B. Fabrication:
   1. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
   2. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
   3. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and assure ease of removal.
   4. Provide top forms for inclined surfaces where so directed by the Architect.

C. Forms for exposed concrete:
   1. Drill forms to suit ties being used, and to prevent leakage of cement paste around tie holes. Do not splinter forms by driving ties through improperly prepared holes.
   2. Provide sharp, clean corners at intersecting planes, without visible edges or offsets. Back the joints with extra studs or girts to maintain true, square intersections.
   3. Use extra studs, wales, and bracing to prevent objectionable bowing of forms between studs, and to avoid bowed appearance in concrete. Do not use narrow strips of form material which will produce bow.

D. Corner treatment:
   1. Unless shown otherwise, form champfers with 3/4"x3/4" strips, accurately formed and surfaced to produce uniformly straight lines and tight edges.
   2. Extend terminal edges to required limit, and miter the champfer strips at changes in direction.

E. Locate control joints as indicated on the Drawings and, where required but not shown on the Drawings, as approved by the Architect.

F. Provisions for other trades:
   1. Provide openings in concrete formwork to accommodate work of other trades.
   2. Verify size and location of openings, recesses, and chases with the trade requiring such items.

3. Accurately place and securely support items to be built into the concrete.

3.3 FORM COATINGS

A. Coat form contact surfaces with form coating compound before reinforcement is placed.

3.4 REMOVAL OF FORMS.

1. Do not allow excess form coating material to accumulate in the forms or to come in contact with
surfaces which will bond to fresh concrete.
2. Apply the form coating material in strict accordance with its manufacturer's recommendations.
3. Use "Nox-Crete form Coating" manufactured by the Nox-Crete Company, Omaha, Nebraska, or "Debond Form Coating" manufactured by Land M Construction Chemicals, Inc., Omaha, Nebraska. The coating shall be a chemical type nonstaining release agent which will not affect the bonding of plaster, paint, waterproofing, or other materials to the concrete.

A. General:
1. Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety.
2. Do not remove shoring until the member has acquired sufficient strength to support its own weight, the load upon it, and the added load of construction.
3. Do not strip floor slabs in less than two days.
4. Do not strip vertical concrete in less than seven days.

B. Finished surfaces:
1. Exercise care in removing forms finished concrete surfaces so that surfaces are not marred or gouged, and that corners are true, sharp, and unbroken.
2. Release sleeve nuts or clamps, and pull the form ties neatly.
3. Do not permit steel spreaders, form ties, or other metal to project from, or be visible on, any concrete surface except where so shown on the Drawings.
4. Solidly pack form tie holes, rod holes, and similar holes in the concrete. For packing, use the cement grout specified on Section 03300 of these Specifications, flushing the holes with water before packing, screeding off flush, and grinding to match adjacent surfaces.

END OF SECTION 03 10 00

SECTION 03 20 00

CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Provide concrete reinforcement were shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Section 03100: Concrete formwork.
   3. Section 03300: Cast-in-place concrete.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Comply with pertinent provisions of the following, except as may be modified herein.
   1. ACI 315 and 318;
   2. CRSI "Manual of Standard Practice."

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Product data: Within 35 calendar days after the Contractor has received the Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section;
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
   3. Shop Drawings showing details of bars, anchors, and other items, if any, provided under this Section.

1.4 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01640.

B. Delivery and storage:
   1. Use necessary precautions to maintain identification after bundles are broken.
   2. Store in a manner to prevent excessive rusting and fouling with dirt, greases, and other bond-breaking coatings.

PART 2 - PRODUCTS

2.1 REINFORCEMENT MATERIALS AND ACCESSORIES

A. Bars:
   1. Provide deformed billet steel bars complying with ASTM A615, using grades shown on the Drawings.
   2. Where grades are not shown on the Drawings, use grade 60.

B. Steel wire:
   1. Comply with ASTM A82.
   2. For tie wire, comply with Fed Spec QQ-W-461, annealed steel, black, 16 gage minimum.

C. Welded wire fabric:
   1. Provide welded steel, complying with ASTM A185.

D. Welding electrodes:
   1. Comply with AWS A5.1, low hydrogen, E70 series.

E. Welded reinforcing bars:
   1. Welding of reinforcing bars will not be allowed except where specifically shown on the Drawings.
   2. For reinforcing bars which are to be welded, conform with "structural welding code-reinforcing steel", AWS D1.4. Use bars conforming to ASTM A706.

F. Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement in place:
   1. Use wire bar type supports complying with CRSI recommendations, unless otherwise shown on the Drawings.
   2. Do not use wood, brick, or other non-complying material.
   3. For slabs on grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
   4. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with either hot-dip galvanized or plastic-protected legs.

2.2 FABRICATION

A. General:
   1. Fabricate reinforcing bars to conform to the required shapes and dimensions, with fabrication tolerances complying with the CRSI Manual.
   2. In case of fabricating errors, do not straighten or rebend reinforcement in a manner that will weaken or injure the material.
   3. Reinforcement with any of the following defects will not be acceptable.
      a. Bar lengths, depths, and/or bends exceeding the specified fabrication tolerances;
      b. Bends of kinks not shown on the Drawings;
      c. Bars with reduced cross-section due to excessive rusting or other cause.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. General:
   1. Comply with the specified standards for detail and method of placing

reinforcement and supports, except as may be modified herein.

2. Clean reinforcement to remove loose rust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
3. Position, support, and secure reinforcement against displacement by formwork, construction, and concrete placing operations.
4. Locate and support reinforcement by metal chairs, runners, bolsters, spacers, and hangers, as required.
5. Place reinforcement to obtain minimum coverages for concrete protection.
6. Arrange, space, and securely tie bars and bar supports together with the specified tie wire.
7. Set wire ties so twisted ends are directed away from exposed concrete surfaces.

B. Install welded wire fabric in as long lengths as practicable, lapping adjoining pieces at least one full mesh.

C. Provide sufficient numbers of supports, and of strength to carry the reinforcement.

D. Do not place reinforcing bars more than 2" beyond last leg of any continuous bar support.

E. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.

3.3 SPLICES

A. Lap splices:
1. Tie securely with the specified wire to prevent displacement of splices during placement of concrete.

B. Splice devices:
1. Obtain the Architect's approval prior to using splice devices.
2. Install in accordance with manufacturer's written instructions.
3. Do not splice bars except at locations shown on the Drawings, except as otherwise specifically approved by the Architect.
4. Splice in a manner developing at least 125% of the yielding strength of the bar.

C. Welding:
1. Perform in accordance with AWS D1.4-79.

END OF SECTION 03 20 00

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Provide cast-in-place concrete were shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related work:
   1. Documents affecting work of this Section included but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Quality control:
   1. Do not commence placement of concrete until mix designs have been reviewed and approved by the Architect and all governmental agencies having jurisdiction.

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified items.

1.4 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01640.

PART 2 - MATERIALS

2.1 CEMENT

A. Provide a standard brand of portland cement complying with ASTM C 150, type I, low Alkali. Do not change the brand of cement during progress of the work except as approved in writing by the Architect.

2.2 AGGREGATES

A. General:
   1. Provide hardrock aggregate complying with ASTM C33, with additional attributes as specified herein.
   2. For making grading tests of fine and course Platte River aggregates, use square mesh wire cloth complying with ASTM E11.

B. Fine Aggregate:

1. Provide washed natural sand having strong, hard durable particles, and containing not more than 2% by weight of deleterious matter such as clay lumps, mica, shale, or schist.
2. Grade from coarse to fine within the following limits:

Sieve Size:	Percentage by weight passing Sieve Minimum:	Maximum:
3/8"	100	---
No. 4	95	100
No. 8	65	95
No. 16	45	75
No. 30	30	50
No. 50	10	22
No. 100	2	8

C. Coarse aggregate:

1. Provide coarse aggregate consisting of clean, hard, fine grained, sound crushed rock or washed gravel, or a combination of both, containing not more than 5% by weight of flat, chip-like, thin, elongated, friable, or laminated pieces, nor more than 2% by weight of shale or cherty material.
   a. Any piece having a length in excess of five times the average thickness shall be considered flat or elongated.
2. Use coarse aggregate of the largest practicable size for each condition of placement, subject to the following maximum size limitations:
   a. Do not exceed 3/4 of the clear distance between reinforcing bars, 1/5 of the narrowest dimension between sides of forms, or 1/3 the depth of any slab section.
3. Grade combined aggregates within the following limits.

Sieve size or size in inches:	Percentage by weight passing sieve: 1-1/2" aggregate: Min:	Max:	1" aggregate: Min:	Max:	3/4" aggregate: Min:	Max:
1-1/2"	95	---	---	---	---	---
1"	75	90	90	100	---	---
3/4"	55	77	70	90	90	100
3/8"	40	55	45	65	60	80
No. 4	30	40	31	47	40	60
No. 8	22	35	23	40	30	45
No. 16	16	30	17	35	20	35
No. 30	10	20	10	23	13	23
No. 50	2	8	2	10	5	15
No. 100	0	3	0	3	0	5

D. Lightweight aggregate, coarse and fine: Provide rounded, sealed, expanded shale or clay conforming to ASTM C330.

2.3 WATER

A. Use only water which is clean and free from deleterious amounts of acid, alkali, salt, and organic materials.

2.4 ADMIXTURES

A. Use only a standard brand of admixture for concrete, approved by the Architect, meeting or exceeding the following requirements.
   1. Reduce the required mixing water at least 75% without entraining air in excess of 2% by volume.
      a. If the admixture used entrains more than 2% air, the water reduction shall be at least 10%, but in no case shall the volume of air entrained exceed 5%.
   2. A separate approved air-entraining agent may be used in addition to the water-reducing admixture, provided the combination of the two admixtures meets the requirements listed above.
   3. Calcium cliloride shall not be used.
   4. Use only automatic dispensers approved by the testing agency for adding admixture.
   5. If an air-entraining agent is used, run air content determinations periodically during the pour to make certain the volume or air entrained is less than 5%.

2.5 OTHER MATERIALS

A. Expansion joint filler;
   1. Provide preformed strips, non-extruding and resilient bituminous type, of thickness indicated, complying with ASTM D1751.
   2. If sealants specified in Section 07920 are used in the joints built under this Section, provide a filler complying with ASTM D1752.

B. Curing materials:
   1. Liquid curing compounds:
      a. Provide a standard brand, clear or black as directed by the Architect for the particular application, and complying with ASTM C309.
      b. When black compound is used, provide compatibility with the adhesive used for laying floor covering in such areas.

C. Floor hardener:
   1. Provide mineral or metallic hardener, natural gray in color, where no floor indicated on drawings.
   2. Acceptable products:
      a. "Lapidolith" by Sonneborn Building Products;
      b. "Hydroment" by the Upco Company;
      c. "Colorcron" or "Masterplate" by Master Builders;
      d. "Chem Hard" by L & M Construction-Chemicals
      e. "Filpor" by West Chemical Products

D. Vapor barrier membrane:
   1. Provide polyethylene sheet of the thickness shown on the Drawings, complying with ASTM D2103.
   2. If vapor barrier is shown on the Drawings, but thickness is not indicated, provide 6 mil thickness.

E. Dovetail Slots:
   1. Use slots manufactured by Burke, Progress Unlimited or Heckman Building Products, Inc. Slots shall be formed of galvanized sheet steel not less than 24 gauge.

2.6 CONCRETE MIXES

A. Provide a mix design prepared by the approved testing agency, based on strengths of the approved materials, and meeting the requirements stated on the Drawings.
   1. Secure the Architect's approval of each mix design, including new mix designs required to be prepared should there occur a change in materials being used.
   2. All laboratory and field tests used shall have been conducted within 12 months prior to the date of submittal to the Architect.

B. Concrete Classes:

	Maximum Size of Aggregates (inches)	Minimum/ Maximum Slump (inches)	Minimum 28-day Strength (psi)	Minimum Cement per Cu.Yd. (sacks)	Maximum Water Gal./Sac
A.=	1"	2/4	3,500	6.00	5.5
B.=	1"	2/4	4,000	7.00	5.2

A.= Footings, Piers, Walls and Interior Slab-on-Grade
B.= Concrete Exposed to Weather
(A & B both use Platte River Aggregates)

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 CONCRETE MIXING

A. Concrete for minor work, when approved by the Architect, may be mixed at the site in a power mixer when the mixer has a capacity not less than one full sack batch.

B. Unless otherwise approved by the Architect, use ready mixed concrete complying with ASTM C94, except as may be modified by the following.
   1. For materials for ready mixed concrete, and for methods of measuring materials, comply with applicable provisions of this Section.
   2. Equip the loading plant to handle not less than four sizes of aggregate in such a manner as to prevent intermixing of aggregates until loaded into the weighing hopper.
   3. Equip truck mixers with a mixing water tank fitted with a water gage.
   4. Mixing:
      a. Mix each batch of concrete not less than 15 minutes, five minutes of which shall be at the site.
      b. Rotate the drum at the rate specified by the manufacturer of the mixer as "mixing speed."
      c. Whenever there is a delay in unloading, rotate the drum slowly at intervals to prevent incipient set of concrete.
      d. Concrete will be rejected if not placed in final position within 1-1/2 hours after water is first added to the batch.
   5. Addition of water:
      a. Indiscriminate addition of water to increase slump shall not be permitted.
      b. Any addition of water above that permitted by the limitation on water-

cement ratio must be accompanied by a quantity of cement sufficient to maintain the proper water-cement ratio, and then only when acceptable to the Architect.

6. Concrete at time of placing shall be in such condition that it can be placed properly.
7. Discharge all wash water from the mixing drum before the truck reloads at the batching plant.
8. Drivers are required to deliver signed dispatch tickets showing where the load was dispatched, when it left the mixing plant and the exact time (to the nearest minute) the batch was mixed. Failure to show the tickets properly filled out, will be considered as a basis for rejecting the entire batch. Dispatch tickets shall record any and all additives incorporated in the batch, including any water added after the batch was mixed.

C. Concrete consistency:
1. Use the amount of water established by the approved mix design.
   a. Do not exceed the maximum quantity specified for the grade of concrete.
   b. Use the minimum amount of water necessary to produce concrete of the workability required by the Architect.
   c. Do not supplement the predetermined amount of water with additional water for any reason.
2. Measure concrete consistency by ASTM C143 method.
   a. As part of the routine testing and inspecting, test twice each day or partial day's run of the mixer.
   b. Maintain a complete and accurate record of tests.
3. Provide maximum slumps of concrete as:
   a. Footings, and slabs on soil: 4"
   b. Other concrete: 4"

D. Cement grout and dry-pack grout:
1. Mix at the site, in composition of one volume of portland cement to 2-1/2 volumes of fine aggregate.
2. Mix the materials dry; then add sufficient water to make the mixture flow under its own weight.
3. When grout is used as dry-pack concrete, add sufficient water to make a stiff mixture, which can be molded into a sphere.

E. Miscellaneous provisions:
1. Provide strengths of concrete as specified.
2. Provide concrete dense and free from honeycomb and other defects.
3. Place and finish members to conform to the shapes and dimensions indicated, with all surfaces true to line, plumb, and level.

3.3 INSERTS, ANCHORS, AND EMBEDDED ITEMS

A. Powder driven concrete fasteners:
1. In addition to their use where the pins are loaded in shear, powder driven concrete fasteners may be used in tension for support of light loads such as acoustical ceilings, duct work, conduits, pipes, and similar items when such loads are limited to less than 75lbs.
2. Testing:
   a. Secure prequalification of operator, tool, and fastener by an approved testing agency, who shall observe testing of the first ten fastener installations.

b. Apply a test "pull-out" load of not less than twice the design load or 150 lbs, whichever is the greater, to the pin in such a manner as not to resist the spalling tendency of the concrete surrounding the pin.
c. Thereafter, secure random tests by the approved testing agency of approximately one in ten pins; except that when the design load exceeds 75lbs, test one-half of the pins.
d. Should failure occur on any pin tested, test all installations under observation of the approved testing agency, and replace all unqualifying pins at no additional cost to the Owner.
e. Where "Red Head" or similar types of concrete anchor bolts are used for significant gravity loads or seismic anchorage, test in the presence of the approved testing agency:
(1) Proof test 50% of the bolts (alternate bolts in any group arrangement) to twice that allowable load;
(2) If there are any failures, also test the immediately adjacent bolt.

3. Where hanger rods, bolts, wire, or similar items are used to suspend construction items, place in the concrete as required and/or indicated.
4. Where suspended ceilings with metal carrying systems are called for on the Drawings:
a. Provide hanger wires in the slab, as shown on the Drawings or otherwise required, of sufficient length to extend 12" below the line of the finish ceiling;
b. Place the hanger wires in line to receive runner channels, beginning 6" from the walls parallel to the runners.

B. Reglets and rebates:
1. Form reglets and rebates as required to receive frames, flashing, and other equipment.
2. Verify the dimensions and positions of required reglets and rebates with trades whose work is related to or contingent upon such dimensions and positions.
3. If concrete slabs on earth join a wall or other perpendicular concrete surface, form a reglet in the wall to receive and carry the horizontal concrete work.
a. Provide reglet full thickness of the slab and 3/4" deep, unless otherwise shown on the Drawings.
b. Exterior walks need not be provided for in this way except where so detailed on the Drawings.

C. Embedded piping and rough hardware:
1. Coordinate the various trades who are required to fasten work to the structure, or are required to insert therein any sleeve, box, bolt, anchor, insert, or other rough hardware.
2. Provide every facility for setting all required accurately in the forms.
3. Be responsible for changes positions of such items after they have been set.
4. Provide in the forms for all sleeves, boxes, bolts, anchors, inserts, strap anchors for frames, and other rough hardware required for the Work, and which are shown or required to be embedded in the concrete.
5. Conduits and sleeves:
a. Locate so as not to reduce the strength of construction. Do not place pipes, except conduits, in a slab of less than 3-1/2" thickness.
b. In supported concrete slabs, do not bury conduit having an outside diameter greater than 33% of the thickness of the slab. Increase slab thickness locally to meet this requirement.
c. Do not place conduit between the bottom of reinforcing steel and the bottom of supported slab.

d. In placing conduits at slabs on earth, placed below the reinforcement, and encase in concrete by increasing thickness of the slab locally to at least 3" of concrete around the conduit on all sides.

D. Where openings in floors and walls are required by the various trades, but are not detailed on the Drawings, reinforce as directed by the Architect.

3.4 CONVEYING AND PLACING CONCRETE

A. Before placing concrete, thoroughly clean forms, wash out with water, and make tight.

B. Time of placing:
1. Do not place concrete until reinforcement, conduits, outlet boxes, anchors, sleeves, hangers, bolts, and other embedded materials are securely and properly fastened in their correct positions.
2. Secure the Architect's approval of reinforcement before commencing placement of concrete.

C. Preparation:
1. Before new concrete is deposited upon or against concrete that has taken its initial set or has hardened, remove all incrustations from forms and reinforcement.
2. Remove all laitance, oil, and loose particles from concrete and concrete surfaces, and thoroughly clean the forms with water under stiff pressure.
3. Remove laitance after concrete has hardened partially (not less than two hours nor more than four hours after placing) by brushing with stiff bristles, or by directing a stream of water from a 1/4" nozzle, or by other method approved by the Architect, to expose the clean top surface of the coarse aggregate.
4. Where cleaning is not satisfactory to the Architect, sandblast the surface and then wash again.

D. Method of placing:
1. Place concrete only under the degree of inspection described elsewhere in these Specifications, and as required by governmental agencies having jurisdiction.
2. Do not place concrete outside of regular working hours unless required inspection authorities have been notified properly and are present.
3. Spouts, pipes, troughs, belts, chain buckets, and other equipment may be used in conveying concrete, but the manner and method used shall be only as approved by the Architect.
4. Do not permit concrete to free drop more than 6'-0"
5. Deposit concrete direct into conveyances, and direct from conveyances to final points of repose, except where troughs, buckets, or the like are used, in which case dump concrete into hoppers and then into the conveyances.
6. Where tremies are used, or where the free drop is 5'-0" or more, and through reinforcement, use a dumping box or board, moving the concrete therefrom by shovels or hoes.
7. Deposit concrete so that the surface is kept level throughout, a minimum being permitted to flow from one position to another, and place as rapidly as practicable after mixing.
8. Do not use in this Work any concrete not placed within 30 minutes after leaving the mixer.

E. Tamping and conveying:
1. Thoroughly work concrete around reinforcement and embedded fixtures, and into corners of forms, during placing operations.

2. Completely compact with tamping poles and by tapping forms until the concrete is thoroughly compact and without voids. Determine the number of tampers needed by the amount and method of placing concrete.
3. Exercise care to tamp concrete vigorously and thoroughly to obtain maximum density.
4. Use manual tampers as well as mechanical vibrators.
    a. Exercise care to direct the quick handling of vibrators from one position to another.
    b. Do not over-vibrate concrete.
    c. Do not move concrete by use of vibrator.

F. Stoppages:
1. Stop concrete placing at natural breaks of direction or where approved by the Architect.
2. Maintain flow surfaces of freshly placed concrete as level whenever a pour is stopped, providing tight dams to accomplish this.
3. Make construction joints only where unavoidable, and then only at points determined by the Architect.
4. Make horizontal construction joints only where shown on the Drawings or specifically approved by the Architect.
5. Provide keys and dowels at construction joints where indicated on the Drawings, and where concrete placement is interrupted.

3.5 STEPS, SLABS, WALKS, AND PAVING ON EARTH

A. Preparation for slabs on earth:
1. Prepare the subgrade as specified in other Sections.
2. Dampen the subgrade for exterior slabs and paving prior to placing concrete, but do not dampen subgrade at interior floor slabs.
3. Provide the specified vapor barrier membrane, with the bedding and covering shown on the Drawings, beneath floor slabs on grade.
    a. Place the membrane in as large of sheets as practical lapping 12" in the top lap placed in direction concrete will be spread.
    b. Carefully cut, fit, and seal the membrane to all pipes and conduits projecting through the membrane, using small sheets, where necessary, and pressure-sensitive tape.
    c. Make necessary repairs to the membrane, and secure to the Architect's approval before placing concrete.
    d. Do not permit membrane to be punctured except at screed stakes and utility risers.

B. Placing and finishing:
1. Tamp the freshly placed concrete, except slabs to receive separate topping finish or mortar setting bed, using a heavy tamper, until at least 3/8" of mortar is brought to the surface.
2. Use tampers having a face consisting essentially of a grid of parallel metal bars.
3. Tamp with a light tamper, and screed with a heavy straightedge, until depressions and irregularities are worked out and the surface is true to finish grades and elevations.
4. Remove excess water and debris worked to the surface in compacting and screeding.
5. At slabs to receive separate topping finish of mortar setting beds, do not continue tamping to raise the mortar described in subparagraph 3.5-B-1 above.
6. Remove laitance as described in subparagraph 3.4-C-3 above.

7. When concrete has hardened sufficiently, float to a compact and smooth surface.
8. Provide the finish surfaces shown on the Drawings or otherwise directed by the Architect, in accordance with pertinent provisions of Section 03345 of these Specifications.
9. All sidewalk along the sides of the building should have a slope of 1/4" per foot away from the building

C. Cure and protect concrete in accordance with pertinent provisions of Section 03345 of these
Specifications.

3.6 SODA AND ACID WASH

A. At concrete surfaces to receive, plaster, paint, or other finish, and which have been formed by oil-coated forms, scrub with a solution of 1-1/2 lbs caustic soda to one gal of water.

B. On surfaces where smooth wood or waste molds have been used, scrub with a solution of 20% muriatic acid or hydrochloric acid.

C. After the surfaces have been scrubbed, wash with clean water as soon as possible.

3.7 DEFECTIVE CONCRETE

A. The following concrete will be deemed to be defective, and shall be removed promptly from the job site.
1. Concrete which is not formed as indicated, is not true to intended alignment, is not plumb or level where so intended, is not true to intended grades and levels;
2. Has voids or honeycomb that have been cut, filled or resurfaced, without Architects approval.
3. Has sawdust, shavings, wood, or embedded debris;
4. Or does not conform fully to provisions of the Contract Documents.

B. Repairs and replacements:
1. Defective concrete may be cut out and repaired with gunite, or other approved methods, when and as directed by the Architect.
2. Where defective concrete is found after removal of the forms, cut out the defective concrete, if necessary, and make the surfaces match adjacent surfaces.
3. Work uneven surfaces and angles of concrete to a surface matching adjacent concrete surfaces.

3.8 GROUTING AND CEMENT POINTING

A. After steel columns have been installed and leveled, dry-pack the space between the bottom of the plate and concrete, using cement grout driven in to completely fill the space and forming solid bearing for the column base plate.

3.9 MISCELLANEOUS CONCRETE ITEMS

A. Walls and curbs:
1. Construct header walls and curbs as shown on the Drawings.
2. Trowel exposed concrete surfaces smooth.

B. Leave openings in floor slabs and future foundations for machines and equipment, where so indicated on the Drawings, and in dimensions and arrangements required for the approved machines and equipment.

END OF SECTION 03 30 00

SECTION 03 34 50

CONCRETE FINISHING

PART I - GENERAL

1.01 DESCRIPTION

A. Work included: Provide finishes on cast-in-place concrete as called for on the Drawings, specified
herein, and needed for a complete and proper installation.

B. Related work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division I of these Specifications.
2. Section 03300: Cast-in-place concrete.

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Except as may be modified herein or otherwise directed by the Architect, comply with ACI 301, "Specifications for Structural Concrete for Buildings."

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
1. Materials list of items proposed to be provided under this Section;
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
3. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

1.04 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01640.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:
1. Carefully study the Drawings and Specifications to determine the location, extent, and type of finish required.
2. Provide the following materials, or equals approved in advance by the Architect.

B. Concrete materials: Comply with pertinent provisions of Section 03300, except as may be modified herein.

C. Liquid bonding agent: "Weld-Crete," manufactured by the Larsen Products Corporation.

D. Curing and protection paper:
   1. Approved products:
      a. "Sisalkraft, Orange Label";
      b. Equal products complying with ASTM C171.
   2. Where concrete will be exposed and will be subjected to abrasion, such as floor slabs, use non-staining paper such as "Sisalkraft, Seekure 896," or equal paper faced with polyethylene film.

E. Liquid curing agents:
   1. Where application of specified finish materials will be inhibited by use of curing agents, cure the surface by water only; do not use chemical cure.
   2. For curing other areas, use "Hunt TLF" manufactured by Hunt Process Company, Inc.

F. Floor sealer: Two (2) coats, Acceptable products:
   1. "Superkote Special Clear Sealer" manufactured by Ven-Chem Company, Inc., P. 0. Box 3186, Santa Barbara, California 93105 (213) 342-1195.
   2. "Supershield" manufactured by James Darcey Company, Inc., 19712 Merridy Street, Chatsworth, California 91311 (213) 349-3705.

2.02 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FINISHING OF FORMED SURFACES

A. General:
   1. After removal of forms, give the concrete surfaces one or more of the finishes specified
      below where so indicated on the Drawings.
   2. Revise the finishes as needed to secure the approval of the Architect.

B. As-cast finish:
   1. Rough form finish:
      a. Leave surfaces with the texture imparted by forms, except patch tie holes and defects.
      b. Remove fins exceeding 1/4" in height.
   2. Smooth form finish:
      a. Coordinate as necessary to secure form construction using smooth, hard, uniform surfaces, with number of seams kept to a practical minimum and in a uniform and orderly pattern.
      b. Patch tie holes and defects.
      c. Remove fins completely.

C. Rubbed finishes:
   1. Provide rubbed finish on all exposed concrete steps and piers which are formed with a "smooth form finish" base as described above.
   2. Smooth rubbed finish.
      a. Produce on newly hardened concrete no later than the day following form removal.
      b. Wet the surfaces, and rub with Carborundum brick or other abrasive until uniform color and texture are produced.
      c. Do not use a cement grout other than the cement paste drawn from the concrete itself by the rubbing process.
   3. Grout cleaned finish:
      a. Do not start cleaning operations until all contiguous surfaces to be cleaned are completed and accessible.
      b. Do not permit cleaning as the work progresses.
      c. Mix one part portland cement and 1-1/2 parts fine sand with sufficient water to produce a grout having the consistency of thick paint.
      d. Substitute white portland cement for part of the gray portland cement as required to produce a color matching the color of surrounding concrete, as determined by a trial patch.
      e. Wet the surface of the concrete sufficiently to prevent absorption of water from the grout, and apply the grout uniformly with brushes or spray gun.
      f. Immediately after applying the grout, scrub the surface vigorously with a cork float or stone to coat the surface and fill all air bubbles and holes.
      g. While the grout is still plastic, remove all excess grout by murking the surface with a rubber float, sack, or other means.
      h. After the surface whites from drying (about 30 minutes at normal temperatures), rub vigorously with clean burlap.
      i. Keep the surface damp for at least 36 hours after final rubbing.

D. Unspecified finish: If the finish of formed surfaces is not specifically called out elsewhere in the Contract Documents, provide the following finishes as applicable.
   1. Rough form finish:
      a. For all concrete surfaces not exposed to public view.
   2. Smooth form finish:
      a. For all concrete surfaces exposed to public view.

3.03 FINISHING SLABS

A. Definition of finishing tolerances:
   1. "Class A": True plane within 1/8" in ten feet as determined by a ten foot straightedge placed anywhere on the slab in any direction.

B. Floated finish:
   1. After the concrete has been placed, consolidated, struck off, and leveled, do not work the concrete further until ready for floating.
   2. Begin floating when the water sheen has disappeared and when the surface has stiffened sufficiently to permit the operation.
   3. During or after the first floating, check the planeness of the surface with a ten foot straightedge applied at not less than two different angles.
   4. Cut down high spots and fill low spots, and produce a surface with a Class A tolerance throughout.
   5. Refloat the slab immediately to a uniform sandy texture.

C. Troweled finish:
1. Provide a floated finish as described above, followed by a power troweling, and then a hand troweling as required, at all interior concrete slabs.
a. Produce an initial surface which is relatively free from defects, but which still may show some trowel marks.
b. Provide hand troweling when a ringing sound is produced as the trowel is moved over the surface.
c. Thoroughly consolidate the surface by hand troweling.
2. Provide a finished surface essentially free from trowel marks, uniform in texture and appearance, and in a plane of Class A tolerance.
a. On surfaces intended to support floor coverings, use grinding or other means as necessary and remove all defects of such magnitude as would show through the floor covering.

D. Broom finish: (Exterior Conc. Walks and Ramps.)
1. Provide a floated finish as described above.
2. While the surface is still plastic, provide a texture finish by drawing a fiber bristle broom
uniformly over the surface.
3. Unless otherwise directed by the Architect, provide the texturing in short direction only.
4. Provide "light," texturing as directed by the Architect or otherwise called for on the Drawings.

E. Unspecified finish: If the finish of slab surfaces is not specifically called for elsewhere in the Contract Documents, provide the following finishes as directed by the Architect or applicable:
1. Scratched finish:
a. For surfaces scheduled to receive bond-applied cementitious applications.
2. Burlap finish:
a. For surfaces intended for vehicular traffic.
3. Troweled finish:
a. For floors intended as walking surfaces;
b. Floors scheduled to receive floor coverings or waterproof membrane;
4. room finish:
a. Exterior pedestrian ramps.
5. on-slip finish:
a. platforms, steps, and landings;
b. Exterior pedestrian ramps.

3.04 CURING AND PROTECTION

A. Beginning immediately after placement, protect concrete from premature drying, excessively hot and cold temperatures, and mechanical injury.

B. Preservation of moisture:
1. Unless otherwise directed by the Architect, apply one of the following procedures to concrete not in contact with forms, immediately after completion of placement and finishing.
a. Ponding or continuous sprinkling;
b. Application of absorptive mats or fabric kept continuously wet;
c. Application of sand kept continuously wet;
d. Continuous application of steam (not exceeding 150 degrees F) or mist

spray;

e. Application of waterproof sheet materials specified in Part 2 of this Section;

f. Application of other moisture-retaining covering as approved by the Architect;

g. Application of the curing agent specified in Part 2 of this Section or elsewhere in the Contract Documents.

2. Where forms are exposed to the sun, minimize moisture loss by keeping the forms wet until they can be removed safely.

3. Cure concrete by preserving moisture as specified above for at least seven days.

C. Temperature, wind, and humidity:

1. Cold weather:

a. When the mean daily temperature outdoors is less than 40 degrees F, maintain the temperature of the concrete between 50 degrees F and 70 degrees F for the required curing period.

b. When necessary, provide proper and adequate heating system capable of maintaining the required heat without injury due to concentration of heat.

c. Do not use combustion heaters during the first 24 hours unless precautions are taken to prevent exposure of the concrete to exhaust gases which contain carbon dioxide.

2. Hot weather: When necessary, provide wind breaks, fog spraying, shading, sprinkling, ponding, or wet covering with a light colored material, applying as quickly as concrete hardening and finishing operations will allow.

3. Rate of temperature change: Keep the temperature of the air immediately adjacent to the concrete during and immediately following the curing period as uniform as possible and not exceeding a change of 5 degrees F in any one hour period, or 50 degrees F in any 24 hour period.

D. Protection from mechanical injury:

1. During the curing period, protect the concrete from damaging mechanical disturbances such as heavy shock, load stresses, and excessive vibration.

2. Protect finished concrete surfaces from damage from construction equipment, materials, and methods, by application of curing procedures, and by rain and running water.

3. Do not load self-supporting structures in such a way as to overstress the concrete.

END OF SECTION 03 34 50

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sill and top plates., Corian, Dupont or approved equal
B. Rough opening framing for doors, windows, and roof openings.
C. Roof-mounted curbs including Section 08 62 23 tubular skylights.
D. Preservative treated wood materials.
E. Fire retardant treated wood materials.
F. Miscellaneous framing and sheathing.
G. Communications and electrical room mounting boards.
H. Concealed wood blocking, nailers, and supports.
I. Miscellaneous wood nailers, plywood, furring, and grounds.
J. Furnish Only: Bolts for anchoring wood to concrete, masonry or steel.

1.02 RELATED REQUIREMENTS

A. Section 01 81 13 - Sustainable Design Requirements.
B. Section 05 12 00 - Structural Steel Framing: Prefabricated beams and columns for support of wood framing.
C. Section 05 50 00 - Metal Fabrications: Miscellaneous steel connectors and support angles for wood framing.
D. Section 06 18 00 - Glued-Laminated Construction.
E. Section 06 4100 - Custom Cabinets.
F. Section 07 62 00 - Sheet Metal Flashing and Trim: Sill flashings.
G. Section 09 21 16 - Gypsum Board Assemblies: Gypsum-based sheathing.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 1999.
B. APA PRP-108 - Performance Standards and Qualification Policy for Structural-Use Panels (Form E445); 2001.
C. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2005.
D. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2009
E. ASTM D 2898 - Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2007.
F. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010.
G. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood-Protection Association; 2009.
H. ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers; ICC Evaluation Service, Inc.; 2009.
I. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2005.
J. WCLIB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau; 2004, and supplements.
K. WWPA G-5 - Western Lumber Grading Rules; Western Wood Products Association; 2005.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Product Data: Provide technical data on insulated sheathing, wood preservative materials, and application instructions.
C. Structural Composite Lumber: Submit manufacturer's published structural data including span tables, marked to indicate which sizes and grades are being used; if structural composite lumber is being substituted for dimension lumber or timbers, submit grading agency structural tables marked for comparison.
D. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

1.06 MOCKUP

A. an entire mockup wall assembly including masonry, window, flashings, copings, metal wall panels, insulation, glazing, sealants, etc. will be required for review by Architect before proceeding with Work.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
    1. Species: Douglas Fir-Larch or Hem-Fir, unless otherwise indicated.
    2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
    3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
B. Lumber fabricated from old growth timber is not permitted.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: West Coast Lumber Inspection Bureau (WCLIB).
B. Grading Agency: Western Wood Products Association (WWPA).
C. Sizes: Nominal sizes as indicated on drawings, S4S.
D. Moisture Content: S-dry or MC19.
E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
    1. Lumber: S4S, No. 2 or Standard Grade.
    2. Boards: Standard or No. 3.

2.03 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
    1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Fire Retardant Treatment:
   1. Manufacturers:
      a. Arch Wood Protection, Inc: www.wolmanizedwood.com.
      b. Hoover Treated Wood Products, Inc: www.frtw.com.
      c. Osmose, Inc: www.osmose.com.
   2. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E 84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D 2898.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Do not use treated wood in direct contact with the ground.
   3. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E 84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Do not use treated wood in applications exposed to weather or where the wood may become wet.

C. Preservative Treatment:
   1. Manufacturers:
      a. Arch Wood Protection, Inc: www.wolmanizedwood.com.
      b. Chemical Specialties, Inc: www.treatedwood.com.
      c. Osmose, Inc: www.osmose.com.
   2. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
      a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
      b. Treat lumber exposed to weather.
      c. Treat lumber in contact with roofing, flashing, or waterproofing.
      d. Treat lumber in contact with masonry or concrete.
      e. Treat lumber less than 18 inches above grade.
      f. Treat lumber in other locations as indicated.
   3. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
      a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
      b. Treat plywood in contact with roofing, flashing, or waterproofing.
      c. Treat plywood in contact with masonry or concrete.
      d. Treat plywood less than 18 inches above grade.
      e. Treat plywood in other locations as indicated.
   4. Preservative Pressure Treatment of Lumber in Contact with Soil: AWPA U1, Use Category UC4A, Commodity Specification A using waterborne preservative to 0.4 lb/cu ft retention.
      a. Preservative for Field Application to Cut Surfaces: As recommended by manufacturer of factory treatment chemicals for brush-application in the field.
      b. Restrictions: Do not use lumber or plywood treated with chromated copper arsenate (CCA) in exposed exterior applications subject to leaching.
   5. All adhesives, sealants, paints and coatings used on the interior of the building.

PART 3 EXECUTION

3.01 PREPARATION

A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.
B. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.
B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim. Examine architectural, mechanical and electrical drawings to identify all zones and areas in which blocking is required.
B. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
D. Option: Provide mechanically fastened steel sheet blocking.
E. Specifically, provide the following non-structural framing and blocking:
    1. Sill plates.
    2. Top of parapet plates.
    3. Cabinets and shelf supports.
    4. Wall brackets.
    5. Handrails.
    6. Grab bars.
    7. Towel and bath accessories.
    8. Wall-mounted door stops and door holders.
    9. Chalkboards and marker boards.
    10. Wall paneling and trim.
    11. Joints of rigid wall coverings that occur between studs.
    12. Projection screen brackets.

3.04 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
B. Secure roof blocking to resist wind loads of 200 lbs/lf.
C. Provide wood curb at all roof openings except where specifically indicated otherwise. Form corners by alternating lapping side members. Construct curb members of single pieces for each side. At prefabricated curb conditions, install blocking to level equipment and to provide 8 inches minimum between bottom of counterflashing and horizontal roof surface per NRCA requirements. Coordinate all roof edge blocking heights with Division 07 contractor's tapered insulation heights prior to installation.
D. The amount of blocking shown on Drawings is not intended to define the amount necessary to complete construction at all areas of the roof. This amount varies and must be determined by the Contractor and coordinated with roofing and insulation Shop Drawings. No extras will be allowed for additional roof blocking not shown on Drawings but required to provide a complete

roofing installation.

E. Provide continuous wood blocking support under prefabricated metal curb flanges. Bevel blocking to allow prefabricated curb to sit square, level and plumb. Attach blocking and metal curb flanges to structure to resist wind pressures specified for roofing.

3.05 INSTALLATION OF CONSTRUCTION PANELS

A. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
    1. At fire-rated walls, install fire treated plywood over wall board indicated.
    2. Install with grade stamp/label exposed to view. Do not paint.
    3. Install adjacent boards without gaps.
    4. Size: 48 by 96 inches, installed horizontally, 2 rows boards high, beginning at 1 foot aff.
    5. Location: As indicated on drawings.

3.06 SITE APPLIED WOOD TREATMENT

A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.

B. Allow preservative to dry prior to erecting members.

3.07 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.08 CLEANING

A. Waste Disposal: Comply with the requirements of Section 01 81 13.
    1. Comply with applicable regulations.
    2. Do not burn scrap on project site.
    3. Do not burn scraps that have been pressure treated.
    4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.

B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.

C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION 06 10 00

SECTION 06 20 00

FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fasteners.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Support framing, grounds, and concealed blocking.
B. Section 09 21 60 - Gypsum Board Assemblies.
C. Division 26 - Electrical.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2005, 8th Ed., Version 2.0.
B. WI (MAN) - Manual of Millwork; Woodwork Institute; 2003.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preconstruction meeting required. Review installation methods.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect materials from moisture damage.
B. Store materials in the area of the building where it is to be installed, as soon as building temperature is stabilized for at least 10 days.
D. Store materials for a minimum of 7 days after placing in area to be installed to acclimate.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fasteners: Of size and type to suit application; finish in concealed locations and finish in exposed locations.
B. Concealed Joint Fasteners: Threaded steel.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.
B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

A. Set and secure materials and components in place, plumb and level.
B. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

C. Install materials in as long lengths as possible, using best specimens of entire material furnished.
D. Attach to substrate as indicated.
E. Provide additional trim materials required for complete installation of same species and finish to match existing.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.
B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION 06 20 00

SECTION 07 21 00

THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation at perimeter foundation wall as shown on drawings.

1.02 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on characteristics, performance criteria, and product limitations.

1.03 DELIVERY, STORAGE AND PROTECTION

A. General Requirements: Section 01 60 00.

B. Polystyrene is combustible; observe fire safety practices.

1.04 QUALITY ASSURANCE

A. Work shall be performed by experienced installers, according to mfr's installation instructions, providing an unbroken insulation barrier between the inside and outside the building.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation at Perimeter of Foundation: Extruded polystyrene board.

2.02 INSULATION MATERIALS

A. 3-1/2" Sound Batts

PART 3 EXECUTION

3.01 BOARD INSTALLATION AT FOUNDATION PERIMETER

A. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.02 INSTALLATION

A. Install the work of this section in strict accordance with the original design, requirements of governmental agencies having jurisdiction and the manufacturer's recommended installation procedures as approved by the architect, anchoring all components firmly into position.

END OF SECTION 07 21 00

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings and counter flashings.
B. Brake metal trim to match aluminum storefront and curtainwall.
C. Parapet caps.
D. Overflow scuppers.
E. End covers for glue laminated beams.
F. Window and Door Sealing Flashing Tape.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood nailers.
B. Section 07 54 00: Thermoplastic Membrane Roofing system.
C. Section 07 61 00 - Sheet Metal Roofing.
D. Section 07 90 05 - Joint Sealers.
E. Section 08 43 13 - Aluminum Framed Storefronts.
F. Section 08 44 13 - Glazed Aluminum Curtain Walls.
G. Section 08 62 23 – Tubular Skylights

1.03 REFERENCE STANDARDS

A. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2007.
B. ASTM B 209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate Metric; 2007.
C. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction; 2003.
D. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007.
E. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2003.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.
B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
B. Prevent contact with materials that could cause discoloration or staining.

1.07 WARRANTY

A. Furnish twenty year manufacturer's warranty for pre-painted finishes, covering chalk, fade and film integrity.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. 24 gauge equivalent thickness except for 22 gauge copings, gutters and accessories and 20 gauge downspouts and fascias.
B. Galvalume: Grade A, ASTM A792, 55 percent aluminum, 1.6 percent silicone and 43.4 percent zinc by weight (AZ55), 24 gauge core steel.
C. Aluminum: ASTM B 209 (ASTM B 209M); 0.032 inch thick; anodized finish of color as selected.
D. Pre-Finished Aluminum Brake Metal Trim: ASTM B 209 (ASTM B 209M); 0.060 inch thick; plain finish shop pre-coated with fluoropolymercoating.
    1. Color: As selected by Architect from manufacturer's custom colors (match storefront and curtainwall).
E. Copper: ASTM B370, cold rolled 16 oz/sq ft thick; natural finish.

2.02 ACCESSORIES

A. Fasteners: Galvanized steel, with soft neoprene washers.
B. Underlayment: Ice and Water Guard rubberized asphalt and polyethylene laminated waterproof membrane, self-adhesive sheet 40 mils thick.
    1. Manufacturers:
        a. W.R. Grace; "Bituthene Ice and Watershield": www.grace.com
        b. Polyken Technologies; "Polyken 640".
        c. Polyguard Products; "Polyguard Deck Guard".
C. Window and Door Sealing Flashing Tape:
    1. Protecto Wrap #89720933; www.protectowrap.com.
D. Primer: Zinc chromate type.
E. Protective Backing Paint: Zinc molybdate alkyd.
F. Sealant: Type specified in Section 07 90 05.
G. Plastic Cement: ASTM D 4586, Type I.
H. Pourable Sealer: Two component RTV urethane self-leveling pourable sealant.
I. Epoxy Seam Sealer: 2 part, non-corrosive aluminum seam-cementing compound, recommended by aluminum mfr for exterior non-moving joints, including riveted joints.

2.03 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
B. Form pieces in longest possible lengths.
C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
F. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
G. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.
H. Fabricate storm collars from 24 gauge galvanized steel for pipes greater than 3 inches in diameter. Spot weld angle brackets to collar (properly spaced) and drill two 3/16 inch diameter holes on vertical leg of brackets to secure collar with a nut and bolt assembly. For small pipes,

fabricate from 4 pound desilverized pig lead. Secure with a stainless steel draw band. Seal top edge of storm collars with sealant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.
B. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.
C. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

A. Install exposed sheet metal work without oil canning, buckling and tool marks.
B. Provide closure for sheet metal flashing terminations. The butt ends shall be fabricated with flanges that conform to the face of the adjacent wall or substrate. "Dog ears" or gussets shall be attached and soldered where the metal is cut and bent to change planes. Seal butt plate along the tope edge with caulking. Butyl sealant tape shall be sandwiched between the wall and the metal flange.
C. Contractor shall round the corners of all flanges that are to be nailed and set over the completed membrane or flashings.
D. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 40 feet with no joints allowed 1 foot 6 inches of corner or intersection. Form expansion joints not less than 1 inch deep, filled with mastic sealant concealed within joints.
E. Pre-finished Metal: Metal shall be cut, formed or riveted using hand or power tools. Use color matched touch up paint and rivets where required.
F. Insert flashings into reglets to form tight fit. Secure in place with lead wedges. Pack remaining spaces with lead wool. Seal flashings into reglets with sealant.
G. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
H. Metal Coping:
    1. Install coping after composition flashing has been installed as shown in detailed drawings. The top surface of the coping shall slope to drain towards the inside of the roof (unless shown otherwise on Drawings) and be fully supported below by a tapered wood nailer or tapered edge strip. Sections shall be joined with standing seam joints, in accordance with SMACNA Chart 12 Coping Design. Fabricate with an edge style E1. Terminations against walls or elevation changes shall receive a custom fabricated “L” termination piece with wall flanges, set into butyl tape, fastened and caulked along the edges.
    2. Under the coping, install a sheet of waterproof membrane, extending 1-1/2 inches past the joint between the wood nailer and exterior wall joint and 1-1/2 inches past the top edge of the membrane flashing. The side laps shall be a minimum of 6 inches and sealed.
    3. Attach coping using a continuous galvanized metal cleat or hook strip on the exterior and hex head screws with sealing/bearing washers on the interior. Fasten the cleat 1 foot 4 inches to 2 feet o.c. and space the grommetted fasteners 2 feet o.c.
I. Counterflashings:
    1. Fabricate in lengths not to exceed 10 feet.

2. Coordinate installation of counterflashings with installation of roofing to be protected by counterflashing. Secure in a waterproof manner by means of snap-in installation and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2 inches and bed with sealant.
3. Furnish counterflashing and counterflashing insert with positive slope outward to prevent water being carried into wall.
4. Form metal to provide a spring action against base flashing.
5. Fasten surface-mounted counterflashings with appropriate grommetted fasteners, spaced a minimum of 8 inches o.c.
6. Reglets with slotted holes shall be fastened a minimum of 4 inches o.c. with appropriate fasteners through a 3/4 inch minimum sealing bearing washer.
7. Provide masonry anchors and screws when flashing to a masonry wall.

J. Apply plastic cement compound between metal flashings and felt flashings.
K. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
L. Seal metal joints watertight.

3.04 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
B. Advise Contractor of required procedures for protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of completion and acceptance.

END OF SECTION 07 62 00

SECTION 07 84 13

PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
    1. Penetrations in fire-resistance-rated walls.
B. Related Sections:
    1. Division 07 Section "Fire-Resistive Joint Systems" for joints in or between fireresistance-rated construction, at exterior curtain-wall/floor intersections, and in smoke barriers.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.
B. Product Schedule: For each penetration firestopping system. Include location and design designation of qualified testing and inspecting agency.
    1. Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping condition, submit illustration, with modifications marked, approved by penetration firestopping manufacturer's fire-protection engineer as an engineering judgment or equivalent fireresistance-rated assembly.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.
B. Installer Certificates: From Installer indicating penetration firestopping has been installed in compliance with requirements and manufacturer's written recommendations.
C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for penetration firestopping.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A firm experienced in installing penetration firestopping similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its penetration firestopping products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.
B. Fire-Test-Response Characteristics: Penetration firestopping shall comply with the following requirements:
    1. Penetration firestopping tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
    2. Penetration firestopping is identical to those tested per testing standard referenced in

       "Penetration Firestopping" Article. Provide rated systems complying with the following requirements:

a. Penetration firestopping products bear classification marking of qualified testing and inspecting agency.
b. Classification markings on penetration firestopping correspond to designations listed by the following:
1) UL in its "Fire Resistance Directory."

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install penetration firestopping when ambient or substrate temperatures are outside limits permitted by penetration firestopping manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.
B. Install and cure penetration firestopping per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.7 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping is installed according to specified requirements.
B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping.
C. Notify Owner's testing agency at least seven days in advance of penetration firestopping installations; confirm dates and times on day preceding each series of installations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. 3M Fire Protection Products.
2. USG Corporation.
3. Hilti

2.2 PENETRATION FIRESTOPPING

A. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg
1. Fire-resistance-rated walls include fire walls and fire partitions.
2. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
C. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping manufacturer and approved by qualified testing and inspecting agency for firestopping indicated.

1. Permanent forming/damming/backing materials, including the following:
a. Slag-wool-fiber or rock-wool-fiber insulation.
b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
c. Fire-rated form board.
d. Fillers for sealants.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean out openings immediately before installing penetration firestopping to comply with manufacturer's written instructions and with the following requirements:
    1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping.
    2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping. Remove loose particles remaining from cleaning operation.
    3. Remove laitance and form-release agents from concrete.
B. Priming: Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3 INSTALLATION

A. General: Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

3.4 IDENTIFICATION

A. Identify penetration firestopping with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches
    1. The words "Warning - Penetration Firestopping - Do Not Disturb. Notify Building Management of Any Damage." of firestopping edge so labels
    will be visible to anyone seeking to remove penetrating items or firestopping. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
    2. Contractor's name, address, and phone number.
    3. Designation of applicable testing and inspecting agency.
    4. Date of installation.
    5. Manufacturer's name.
    6. Installer's name.

3.5 CLEANING AND PROTECTION

A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping manufacturers and that do not damage materials in which openings occur.
B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping is without damage or deterioration at time of Substantial Completion.

If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping and install new materials to produce systems complying with specified requirements.

END OF SECTION 07 84 13

SECTION 07 90 05

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing including, but not limited to:
   1. Masonry control joints.
   2. Sealing at open penetrations.
   3. Bedding for thresholds and stud tracks in exterior walls.
   4. Construction and expansion joints.
   5. Sidewalk/Foundation wall joints, curb/sidewalk joints and open joints between sidewalk sections.
   6. Precast concrete joints.
   7. Sealing of sawcut joints in special finish concrete slabs (See Section 03300).
B. Acoustical sealant.
C. Pre-compressed foam sealers.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping: Firestopping sealants.
B. Section 08 80 00 - Glazing: Glazing sealants and accessories.

1.03 REFERENCE STANDARDS

A. ASTM C 834 - Standard Specification for Latex Sealants; 2005.
B. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 2008.
C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2005.
D. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2009.
E. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Poly(Vinyl Chloride) Foam (Closed-Cell); 2005.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with other sections referencing this section.

1.05 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Product Data: Provide data indicating sealant chemical characteristics.
C. Samples: Submit two samples, 1/2 inch x 6 inches in size illustrating sealant colors for selection.
E. Manufacturer's Installation Instructions: Indicate special procedures.
F. Submit schedule or matrix listing locations of use and dissimilar materials sealed for each product.

1.06 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.
B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
C. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years experience.

D. Sealant not fully adhered to joint surfaces and not neat and workmanlike in appearance will be rejected. Rejected work shall be removed and joints thoroughly cleaned prior to installing new sealant.

1.07 MOCK-UP

A. Provide mock-up of sealant joints in conjunction with window under provisions of Section 01 45 00.
B. Per Section 01 45 00, an entire mockup wall assembly including masonry, window, flashings, copings, metal wall panels, insulation, glazing, sealants, etc. will be required for review by Architect before proceeding with Work.
C. Construct mock-up with specified sealant types and with other components noted.
D. Locate where directed.
E. Install 5 lineal feet of each type of exposed to view sealant for acceptance of color and workmanship by Architect. Installation may become part of final work if accepted. Performing work without Architect's acceptance will be subject to rejection and removal by this contractor.

1.08 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.09 WARRANTY

A. See Section 01 77 00 - Closeout Procedures, for additional warranty requirements.
B. Correct defective work within a three year period after Date of Substantial Completion.
C. Warranty: Include written coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Silicone Sealants:
    1. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
    2. Pecora Corporation: www.pecora.com.
B. Polyurethane Sealants:
    1. Pecora Corporation: www.pecora.com.
    2. BASF Construction Chemicals-Building Systems: www.chemrex.com.
C. Acrylic Emulsion Latex Sealants:
    1. Pecora Corporation
    2. BASF Construction Chemicals-Building Systems
D. Preformed Compressible Foam Sealers:
    1. Dow "Ethafoam".
    2. Sonneborn "Sonofoam".
    3. Denver Foam.
E. Exterior Paving Sealants
    1. Sika Flex 2CSL

2.02 SEALANTS

A. Sealants and Primers - General: Provide products having volatile organic compound (VOC) content as specified in Section 01 81 13.
B. Silicone Sealant: ASTM C 920, Grade NS, Class 25, Uses NT, A, G, M, O; single component, solvent curing, non-sagging, non-staining, fungus resistant, non-bleeding.
    1. Color: Standard colors matching finished surfaces.

2. Movement Capability: Plus and minus 50 percent.
3. Service Temperature Range: -65 to 180 degrees F.
4. Shore A Hardness Range: 15 to 35.
5. Use for:
    a. Control, expansion and soft joints in masonry, exterior and interior.
    b. Joints between concrete and other materials.
    c. Joints between exterior metal frames and other materials.
    d. Joints between bottom of stud tracks in exterior walls and adjacent materials.
    e. Other exterior non-traffic joints for which no other sealant is indicated.

C. General Purpose Traffic Bearing Self-Leveling Exterior Sealant: Polyurethane; ASTM C 920, Type P, Grade NS, Class 25, Uses T, M, and A; single component, non-staining, non-bleeding.
1. Color: Standard colors matching finished surfaces.
2. Use for:
    a. Pedestrian and vehicular traffic bearing joints, exterior and interior.
    b. Joints between foundation walls and adjacent sidewalks.
    c. Joints between curbs and sidewalks and open joints between sidewalk sections.
    d. Other exterior traffic bearing joints for which no other sealant is indicated.

D. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, non-sagging, non-bleeding paintable.
1. Color: Standard colors matching finished surfaces.
2. Applications: Use for:
    a. Interior wall and ceiling control joints (except masonry control and expansion joints).
    b. Joints between door and window frames and wall surfaces.
    c. Other interior joints for which no other type of sealant is indicated.

E. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
1. Color: Match adjacent finished surfaces.

F. Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning. Comply with ASTM C834 per ASTM E90.
1. Applications: Use for concealed locations only:
    a. Sealant bead between top stud runner and structure and between bottom stud track and floor.

2.03 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.
B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.
D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
B. Perform installation in accordance with ASTM C 1193. Installation not tooled correctly or overrun on other materials is cause for rejection.
C. Install sealant between all dissimilar materials, whether or not shown on Drawings.
D. Install sealant at all conduit, pipe and duct penetrations in walls, floors and ceilings to comply with requirements of Building Code and Health Department. Coordinate work with Section 07 8400, Firestopping.
E. Perform acoustical sealant application work in accordance with ASTM C 919.
F. Apply sealant prior to masonry having sealer applied.
G. Apply sealant to gypsum board only after gypsum board has been primed.
H. Install bottoms of stud tracks at exterior walls in bed of sealant.
I. Install sealant in joints between sidewalks and foundation walls, joints between curbs and sidewalks and open joints between sidewalk sections.
J. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
K. Install bond breaker where joint backing is not used.
L. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
M. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
N. Tool joints concave.
O. Pre-compressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.
P. Compression Gaskets: Avoid joints except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION

A. Protect sealants until cured.

END OF SECTION 07 90 05

SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated steel doors and frames.
B. Thermally broken steel frames.
C. Steel frames for wood doors.
D. Fire-rated steel doors and frames.
E. Thermally insulated steel doors.
F. Steel glazing frames.
G. Screen door at Kitchen entry.
H. Factory installed security items.

1.02 RELATED REQUIREMENTS

A. Section 08 71 00 - Door Hardware.
B. Section 08 80 00 - Glazing: Glass for doors and borrowed lites.
C. Section 09 9000 - Painting and Coating: Field painting.
D. Division 26 - Electrical.
E. Division 28 - Electronic Safety and Security.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
B. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.
C. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2004).
D. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2009.
E. ASTM E 1408 - Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems; 1991 (Reapproved 2000).
F. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames; 2006.
G. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2007.
H. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2006.
I. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2010.
J. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association; 2008.
K. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.
L. UL 10B - Standard for Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
M. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittals for submittal procedures.
B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
E. Templates: Hardware templates for hardware mounted on hollow metal work shall be submitted under Section 08 71 00 directly to the hollow metal manufacturer immediately after approval of the hardware schedule. Report failure to receive templates with reasonable promptness to the General Contractor.
F. Coordinate submittals carefully with Wood Door and Finish Hardware suppliers.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
B. Maintain at the project site a copy of all reference standards dealing with installation.
C. Perform work in accordance with DHI "Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware."

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with NAAMM HMMA 840.
B. Inspect doors and frames for shipping damage and manufacturer's defects upon receipt.
C. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.
D. Store doors and frames away from possible damage by unloading of other materials.
E. Blemishes and dents shall be cause for rejection.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Steel Doors and Frames:
    1. Rocky Mountain Metals.
    2. Gateway Metal Products.
    3. Southwestern Hollow Metal.
    4. West Central Manufacturing.
    5. Curries

2.02 DOORS AND FRAMES

A. Requirements for All Doors and Frames:
    1. Accessibility: Comply with ANSI/ICC A117.1.
    2. Door Top Closures: Flush with top of faces and edges.
    3. Door Edge Profile: Beveled on both edges.
    4. Door Texture: Smooth faces.
    5. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
    6. Hardware Preparation: In accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
    7. Galvanizing for Units in Wet Areas: All components hot-dipped zinc-iron alloy-coated (galvannealed), manufacturer's standard coating thickness.
    8. Finish: Factory primed, for field finishing.
    9. Factory installed security contacts.
B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 STEEL DOORS

A. Exterior Doors:
    1. Grade: ANSI A250.8 Level 4, physical performance Level A, Model 2, seamless.
    2. Core: Polystyrene foam, bonded.
    3. Drip Caps.
    4. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
    5. Insulating Value: U-value of 0.50, when tested in accordance with ASTM C 1363.
    6. Weatherstripping: Separate, see Section 08 71 00.
B. Interior Doors , Non-Fire-Rated:
    1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 2, seamless.
    2. Core: Cardboard honeycomb.
    3. Thickness: 1-3/4 inches.
C. Interior Doors , Fire-Rated:
    1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 2, seamless.
    2. Fire Rating: As indicated on Door and Frame Schedule, tested in accordance with UL 10C ("positive pressure").
        a. Provide units listed and labeled by UL.
        b. Attach fire rating label to each fire rated unit.
    3. Core: Mineral fiberboard.
D. Interior Smoke and Draft Control Doors (Indicated as "S" on Drawings): Same construction as fire-rated doors with indicated fire rating, plus:
    1. Maximum Air Leakage: As specified by IBC 715.3.1..
    2. Gasketing: No added gasketing or seals allowed.
    3. Label: UL "S" label.

2.04 STEEL FRAMES

A. General:
    1. Comply with the requirements of grade specified for corresponding door.
        a. ANSI A250.8 Level 3 Doors: 16 gage frames.
        b. ANSI A250.8 Level 4 Doors: 14 gage frames.
        c. Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 2
    2. Finish: Same as for door.
    3. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
B. Interior Door Frames , Non-Fire-Rated: Fully welded type.
C. Interior Door Frames , Fire-Rated: Fully welded type.
    1. Fire Rating: Same as door, labeled.
D. Frames for Interior Glazing or Borrowed Lights: Construction and face dimensions to match door frames, and as indicated on drawings.
E. Hardware Reinforcement:
    1. Factory installed to accommodate hardware according to templates provided by hardware supplier. Minimum 12 gage except:
        a. Hinge and Pivot Reinforcements7 gage x 1-1/4 inches x 10 inches in length
        b. Continuous Hinge Reinforcement7 gage x 1-14 inches x length of hinge
    2. Metal plaster or mortar guards shall be provided for all mortised cutouts.
    3. Galvanized frames shall have galvanized reinforcement.
F. Floor Anchors: Minimum 14 gage; provide each anchor with two holes for fasteners.
G. Jamb Anchors: Appropriate for wall condition according to HMMA 861.
H. Fabricate doors and frames with hardware reinforcement welded in place. Provide mortar guard boxes. Refer to Section 08 71 00 for mounting height of hardware items.
I. Reinforce frames wider than 4 feet with roll formed steel channels fitted tightly into frame head,

flush with top.
J. Drill interior door frames for silencers, except for openings requiring sound or smoke gasketing. Silencers are provided by hardware supplier.
K. Install security equipment and conduits for electrified hardware.

2.05 ACCESSORY MATERIALS

A. Glazing: As specified in Section 08 80 00.
B. Removable Stops: Formed sheet steel, shape as indicated on drawings, mitered or butted corners ; prepared for countersink style tamper proof screws.
C. Grout for Frames: Portland cement grout of maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.
D. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
E. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.
F. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.
G. Minimal Expanding Foam Insulation: Must meet ASTM E84 CAN/ULC S102-M88, NFPA 90A and 90B, NFPA 255 and UL 723. Flamespread < 25; smoke developed < 450.

2.06 FINISH MATERIALS

A. Primer: Rust-inhibiting, complying with ANSI A250.10 , door manufacturer's standard.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Prior to installation of hollow metal window frames and door sidelite frames, refer to the Drawings for varying glazing stop locations to accommodate mini-blinds. Verify in field with Architect. Incorrect installation shall result in removal and reinstallation.

3.02 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.
B. Coat inside of other frames with bituminous coating to a thickness of 1/16 inch.

3.03 INSTALLATION

A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.
B. In addition, install fire rated units in accordance with NFPA 80.
C. Set steel frames accurately in accordance with details, straight and free of twist with head level and jambs plumb. Rigidly anchor to walls and partitions and securely brace until surrounding work is completed. Provide deflection clearances at frame heads where indicated.
D. Make welds full length of joints. Remove splatter and grind exposed welds to match adjacent surfaces. Architect shall inspect welds before finish operations begin.
E. Wherever possible, leave spreader bars in place until frames are securely anchored.
F. Fill jambs, heads and sills in construction other than masonry with minimal expanding foam insulation.
G. Coordinate frame anchor placement with wall construction and in frame conduits.
H. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
I. Coordinate installation with steel columns. Provide closure plates required for finished

installation.
J. Coordinate installation of hardware. Hang doors to be free of binding with hardware functioning properly.
K. Coordinate installation of glazing.
L. Coordinate installation of electrical connections to electrical hardware items.

3.04 TOLERANCES

A. Clearances Between Door and Frame: As specified in ANSI A250.8.
B. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.
B. Adjust sound control doors so that seals are fully engaged when door is closed.
C. Test sound control doors for force to close, latch, and unlatch in accordance with ASTM E 1408; adjust as required to comply.

END OF SECTION 08 11 13

SECTION 08 14 16

FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush configuration; fire rated, non-rated, and acoustical.

1.02 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Doors and Frames.
B. Section 08 71 00 - Door Hardware.
C. Section 08 80 00 - Glazing.

1.03 REFERENCE STANDARDS

A. ASTM E 413 - Classification for Rating Sound Insulation; 2004.
B. ASTM E 1408 - Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems; 1991 (Reapproved 2000).
C. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2005, 8th Ed., Version 2.0.
D. ICC (IBC) - International Building Code; 2009.
E. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.
F. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2010.
G. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association; 2008.
H. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.
I. UL 10B - Standard for Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
J. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
K. WDMA I.S.1-A - Architectural Wood Flush Doors; Window and Door Manufacturers Association; 2004.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittals for submittal procedures.
B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
C. Specimen warranty.
D. Test Reports: Show compliance with specified requirements for the following:
    1. Sound-retardant doors and frames; sealed panel tests are not acceptable.
E. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required , special beveling , special blocking for hardware , factory machining criteria , factory finishing criteria.
F. Manufacturer's Installation Instructions: Indicate special installation instructions.
G. Warranty, executed in Owner's name, including reasonable cost of rehanging and refinishing.

1.05 QUALITY ASSURANCE

A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.
B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

C. Installed Fire Rated Door and Transom Panel Assembly: Conform to NFPA 80 for fire rated class as indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.
B. Accept doors on site in manufacturer's packaging. Inspect for damage. Blemishes and dents shall be cause for rejection.
C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.07 WARRANTY

A. See Section 01 77 00 - Closeout Procedures for additional warranty requirements.
B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
    1. Graham Wood Doors: www.grahamdoors.com.
    2. Eggers Industries: www.eggersindustries.com.
    3. Haley Brothers: www.haleybros.com.
    4. Marshfield DoorSystems, Inc: www.marshfielddoors.com.

2.02 DOORS AND PANELS

A. All Doors: See drawings for locations and additional requirements.
    1. Quality Level: Custom Grade, in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1300.
    2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
    1. Provide solid core doors at all locations.
    2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with International Building Code ("positive pressure"); UL or WH (ITS) labeled without any visible seals when door is open.
    3. Smoke and Draft Control Doors (Indicated as "S" on Drawings): In addition to required fire rating, provide door assemblies tested in accordance with IBC 715.3.1; with "S" label; if necessary, provide additional gasketing or edge sealing.
    4. Sound Retardant Doors: Minimum STC of 44, calculated in accordance with ASTM E 413, tested in accordance with ASTM E 1408.
    5. Wood veneer facing with factory transparent finish.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated above.
B. Fire Rated Doors: Mineral core, Type FD, plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.
C. Sound Retardant Doors: Equivalent to Type PC construction with core as required to achieve rating specified; plies and faces as indicated above.

2.04 DOOR FACINGS

A. Wood Veneer Facing for Transparent Finish: Red oak veneer grade as specified by quality standard, plain sliced, book veneer match, running assembly match; unless otherwise indicated.
    1. Vertical Edges: Same species as face veneer.
    2. Pairs: Pair match each pair; set match pairs within 10 feet of each other when doors are closed.
B. Facing Adhesive: Type I - waterproof.

2.05 ACCESSORIES

A. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.

2.06 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.
B. Cores Constructed with stiles and rails:
    1. Provide solid blocks at lock edge for hardware reinforcement.
    2. Provide solid blocking for other through bolted hardware.
C. Where supplementary protective edge trim is required, install trim after veneer facing has been applied full-width.
D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
F. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

2.07 FACTORY FINISHING - WOOD VENEER DOORS

A. Factory finish doors in accordance with AWI Quality Standard 1500:
    1. Transparent Finish: Transparent conversion varnish, Custom quality, satin sheen.
B. Seal door top edge with color sealer to match door facing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
    1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
C. Use machine tools to cut or drill for hardware.
D. Coordinate installation of doors with installation of frames and hardware.
E. Coordinate installation of glazing.

3.03 TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.
B. Conform to specified quality standard for maximum diagonal distortion.
C. Maximum Vertical Distortion (Bow): 1/8 inch measured with straight edge or taut string, top to bottom, over an imaginary 36 by 84 inches surface area.
D. Maximum Width Distortion (Cup): 1/8 inch measured with straight edge or taut string, edge to edge, over an imaginary 36 by 84 inches surface area.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.
B. Adjust closers for full closure.

END OF SECTION 08 14 16

SECTION 08 52 13

ALUMINUM-CLAD WOOD DOUBLE-HUNG WINDOWS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Aluminum-clad wood double-hung windows.

1.2 RELATED SECTIONS

A. Section 07 27 00 - Air Barriers: Water-resistant barrier.

B. Section 07 92 00 - Joint Sealants: Sealants and caulking.

1.3 REFERENCES

A. American Architectural Manufacturers Association (AAMA):
1. AAMA 502 - Voluntary Specification for Field Testing of Windows and Sliding Doors.
2. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
4. AAMA 612 Voluntary Specification, Performance Requirements, and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum.

B. American Society for Testing and Materials (ASTM):
1. ASTM B 117 - Operating Salt Spray (Fog) Apparatus.
2. ASTM C 1036 - Flat Glass.
3. ASTM C 1048 - Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
4. ASTM D 1149 - Rubber Deterioration – Surface Ozone Cracking in a Chamber.
5. ASTM D 2803 - Filiform Corrosion Resistance of Organic Coatings on Metal.
6. ASTM D 3656 - Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns.
7. ASTM D 4060 - Abrasion Resistance of Organic Coatings by the Taber Abraser.
8. ASTM E 283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen.
9. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
10. ASTM E 547 - Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.
11. ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
12. ASTM G 85 - Modified Salt Spray (Fog) Testing.

C. Screen Manufacturers Association (SMA):
1. SMA 1201 - Specifications for Insect Screens for Windows, Sliding Doors and Swinging Doors.

D. Window and Door Manufacturers Association (WDMA):
1. AAMA/WDMA/CSA 101/I.S.2/A440 – North American Fenestration Standard/Specification for windows, doors and skylights
2. WDMA I.S.4 - Industry Specification for Preservative Treatment for Millwork.

1.4 PERFORMANCE REQUIREMENTS

A. Windows shall be Hallmark certified to a rating of H-CW-PG[50] specifications in accordance with ANSI/AAMA/WDMA 101/I.S.2/A440-08 or ANSI/AAMA/WDMA 101/I.S.2/A440-11.

B. Window Unit Air Leakage, ASTM E 283, 1.57 psf (25 mph): 0.3 cfm per square foot of frame or less.

C. Window Unit Water Penetration: No water penetration through window unit when tested in accordance with ASTM E 547, under static pressure of 7.5 psf (52 mph)] after 4 cycles of 5 minutes each, with water being applied at a rate of 5 gallons per hour per square foot.

1.5 SUBMITTALS

A. Comply with Division 1 requirements.

B. Product Data: Submit manufacturer's product data, including installation instructions.

C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections and locations, anchorage methods and locations, hardware locations, and installation details.

D. Samples: Submit full-size or partial full-size sample of window illustrating glazing system, quality of construction, and color of finish.

E. Warranty: Submit manufacturer’s standard warranty.

1.6 QUALITY ASSURANCE

A. Mockup:
   1. Provide sample installation for field testing window performance requirements and to determine acceptability of window installation methods.

   2. Approved mockup shall represent minimum quality required for the Work.

   3. Approved mockup shall remain in place within the Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site undamaged in manufacturer's or sales branch's original, unopened containers and packaging, with labels clearly identifying manufacturer and product name. Include installation instructions.

B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities.

C. Handling: Protect materials and finish during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Pella Corporation, 102 Main Street, Pella, Iowa 50219. Toll Free (800) 54-PELLA. Phone (641) 621-1000. Website www.pellaADM.com.

2.2 ALUMINUM-CLAD WOOD DOUBLE-HUNG WINDOWS

A. Aluminum-Clad Wood Double-Hung Windows: Architect Series factory-assembled aluminum-clad wood double-hung windows. Sash shall tilt to interior without removal for cleaning.

B. Frame:
   1. Select softwood, water-repellent, preservative-treated with EnduraGuard® in accordance with WDMA I.S.-4. EnduraGuard includes water-repellency, three active fungicides and an insecticide applied to the frame.
   2. Interior Exposed Surfaces: Clear Pine with no visible fastener holes.
   3. Exterior Surfaces: Clad with aluminum.
   4. Components are assembled with screws, staples and concealed corner locks.
   5. Vinyl jamb liner with wood / clad inserts.
   6. Overall Frame Depth: 5 inches (127 mm).
   7. Factory-applied jamb extensions available between 4-9/16" (116 mm) and 7-3/16" (183 mm) wall depths.

C. Sash:
   1. Select softwood, water water-repellent, preservative-treated with EnduraGuard in accordance with WDMA I.S.-4. EnduraGuard includes water-repellency, three active fungicides and an insecticide applied to the sash.
   2. Interior Exposed Surfaces: Clear Pine with no visible fastener holes..
   3. Exterior Surfaces: Clad with extruded aluminum butt-jointed at all corners of the sash with through-stile construction to reflect historic window joinery.
   4. Sash Profile: Exterior profile is ogee, interior profile is ogee.
   5. Corners: Mortised and tenoned, glued and secured with metal fasteners.
   6. Operable sash tilt to interior for cleaning or removal.
   7. Sash Thickness: 1-7/8 inches (47 mm).
   8. Sash Face to Glass Reveal: 0.63 inches (16 mm) to reflect historic window proportions.
   9. Factory-applied sash lugs that align to exterior sash with a sliding mechanism to allow the sash to pivot to the interior. Color to match exterior.

D. Weatherstripping:

   1. Water-stop santoprene wrapped foam at head and sill.
   2. Thermal-plastic elastomer bulb with slip coating set into lower sash for tight contact at checkrail.
   3. Vinyl-wrapped foam inserted into jamb liner to seal to sides of sash.

2.3 GLAZING

A. Glazing:
   1. Float Glass: ASTM C 1036, Quality 1.
      a. Tempered Glass: ASTM C 1048.

   2. Type: Silicone-glazed 11/16-inch dual-seal, insulating glass, multi-layer Low-E coated with argon with non-glare spacer.

   3. Integral Light Technology Glazing and Grilles:
      a. Non-glare Grid: Adhered to glass to mimic the look of historic true divided light.
      b. Bars shall be adhered to both sides of insulating glass with VHB acrylic adhesive tape and aligned with foam grid.
      c. Grille edge to glass Reveal: 0.63 inches (16 mm) to reflect historic window proportions.
      d. Finish: Finish color matches interior and exterior finish colors.

2.4 OPTIONS

A. Insect Screens: Vivid View® full.
   1. Compliance: ASTM D 3656 and SMA 1201.
   2. Screen Cloth: Vinyl-coated fiberglass, 21/17 mesh, with minimum 78 percent light transmissivity.
   3. Set in [standard] [extruded (optional on clad exterior units < 84" height, standard on units >84")] aluminum frame fitted on exterior side of window.
   4. Complete with necessary hardware.
   5. Full screen spreader bar placed on units > 37" width or > 65" height.
   6. Screen Frame Finish: Baked enamel.
      a. Color: Finish to match exterior window cladding.

2.5 HARDWARE

A. Balances:
   1. Block-and-tackle balances connected to self-locking shoes with zinc die cast terminals concealed within the frame.
   2. Balances are attached to frame and connected to sash with polyester cord.

B. Locking System:

   1. Two piece locking system with lock and keeper historic spoon-style.
   2. One installed on units with frame width less than 37 inches, 2 locks installed on units with frame width of 37 inches or greater.

C. Sash Lifts:
   1. Sash lift furnished for field installation.
   2. One sash lift on units with frame width less than 37 inches, 2 sash lifts on units with frame width of 37 inches or greater.

D. Lock and Sash Lift Finish: Champagne

2.6 TOLERANCES

A. Windows shall accommodate the following opening tolerances:
   1. Vertical Dimensions Between High and Low Points: Plus 1/4 inch, minus 0 inch.
   2. Width Dimensions: Plus 1/4 inch, minus 0 inch.
   3. Building Columns or Masonry Openings: Plus or minus 1/4 inch from plumb.

2.7 FINISH

A. Exterior Finish System: Pella EnduraClad.
   1. Exterior aluminum surfaces shall be finished with the following multi-stage system:
      a. Clean and etch aluminum surface of oxides.
      b. Pre-treat with conversion coating.
      c. Top coat with baked-on polyester enamel.
   2. Color: Select from Mfg. standard colors.
   3. Performance Requirements: Exterior aluminum finishes shall meet or exceed all performance requirements of AAMA 2604 and the following performance requirements of AAMA 2605:
      a. Dry Film Hardness: Eagle Turquoise Pencil, H minimum.
      b. Film Adhesion: 1 mm crosshatch, dry, wet, boiling water.
      c. Impact Resistance: 1/10-inch distortion, no film removal.
      d. Chemical Resistance: 10 percent Muriatic acid, 15 minutes. Mortar pat test, 24 hours.
      e. Detergent Resistance: 3 percent at 100 degrees F, 72 hours.

f. Corrosion Resistance: ASTM G85-A5, 2000 hours. Humidity, 3,000 hours. Salt spray exceeds 3,000 hours.

D. Interior Finish: [Unfinished, ready for site finishing.

2.8 INSTALLATION ACCESSORIES

A. Flashing/Sealant Tape: Pella SmartFlash.
1. Aluminum-foil-backed butyl window and door flashing tape.
2. Maximum Total Thickness: 0.013 inch.
3. UV resistant.
4. Verify sealant compatibility with sealant manufacturer.

B. Interior Insulating-Foam Sealant: Low-expansion, low-pressure polyurethane insulating window and door foam sealant.

C. Exterior Perimeter Sealant: “Pella Window and Door Installation Sealant” or equivalent high quality, multi-purpose sealant as specified in the joints sealant section.

2.9 SOURCE QUALITY CONTROL

A. Factory Testing: Factory test individual standard operable windows for air infiltration in accordance with ASTM E 283, to ensure compliance with this specification.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive windows. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install windows in accordance with manufacturer's instructions and approved shop drawings.

B. Install windows to be weather-tight and freely operating.

C. Maintain alignment with adjacent work.

D. Secure assembly to framed openings, plumb and square, without distortion.

E. Integrate window system installation with exterior weather-resistant barrier using flashing/sealant tape. Apply and integrate flashing/sealant tape with weather-resistant barrier using watershed principles in accordance with window manufacturer's instructions.

F. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using insulating-foam sealant.

G. Seal window to exterior wall cladding with sealant and related backing materials at perimeter of assembly.

H. Leave windows closed and locked.

3.3 CLEANING

A. Clean window frames and glass in accordance with Division 1 requirements.

B. Do not use harsh cleaning materials or methods that would damage finish.

C. Remove labels and visible markings.

3.4 PROTECTION

A. Protect installed windows to ensure that, except for normal weathering, windows will be without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 08 71 00

FINISH HARDWARE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:
   1. Furnish finish hardware required to complete the work as shown on the Drawings and, or as specified.
   2. Furnish trim attachments and fastenings, specified or otherwise required, for proper and complete installation;
   3. Deliver to the job site those items of finish hardware scheduled to be installed at the job site; and deliver to other points of installation those items of finish hardware scheduled to be factory installed.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Installation of finish hardware is described in other Sections of these Specifications.

C. Definitions:
   1. "Hardware groups" described in the Hardware Schedule in Part 3 of this Section are as shown on the Door schedule.

1.2 QUALITY ASSURANCE

A. Provide the services of an AHC or DAHC member of the American Society of Architectural Hardware Consultants to:
   1. Be available for consultation with the Architect at no additional cost to the Owner during progress of construction;
   2. Be present at completion of construction, and:
      a. Inspect installation of all finish hardware
      b. Make all minor adjustments required
      c. Report to the Architect on completeness of the installation.

B. The hardware consultant may be an employee of the supplier.

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Product data: Within 35 calendar days after the Contr. has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be Provided under this section.
      a. In this regard, note that the Finish Hardware Schedule in Part 3 of this Section is firm and that substitutions will not be considered except as approved in advance by the Architect or as shown to be required because of non-availability of the specified item.
      b. Approval of this list by the Architect will not relieve the Contractor of the responsibility to provide all finish hardware items required for the Work even though such required items may not have been shown on the approved list.

C. Samples:
   1. Within 15 calendar days after being so requested by the Architect, deliver to the Architect Samples of each finish hardware item.
   2. All Samples will be returned to the Contractor; provided those Samples approved by the Architect are positively identified and are installed in the Work at locations agreed to by the Architect.

D. Templates: In a timely manner to assure orderly progress of the Work, deliver templates or physical samples of the approved items to pertinent manufacturers of interfacing items such as doors, frames.

1.4 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01340.

B. Individually package each unit of finish hardware, complete with proper fastenings and appurtenances, clearly marked on the outside to indicate contents and specific locations in the work.

PART 2 - PRODUCTS

2.1 GENERAL

A. Fasteners:
   1. Furnish necessary screws, bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
   2. Where necessary furnish fasteners with toggle bolts expansion shields, sex bolts, and other anchors approved by the Architect, according to the material which the hardware is to be applied and according to the recommendations of the hardware manufacturer
   3. Provide fasteners which harmonize with the hardware as to finish and material.

B. Where butts are required to swing 180 degrees, furnish butts of sufficient throw to clear the trim.

C. Furnish silencers for door frames at the rate of three for each single door and two for each door or pair of doors; except weather-stripped doors and doors with light seals or sound seals.

2.2 KEYING

A. Factory key, masterkey, and grand-masterkey locks and cylinders as directed by the Architect.

B. Construction keying:
   1. Furnish a construction masterkey system with 15 keys for locks and cylinders.
   2. Use only the construction keys during construction.
   3. Upon Substantial Completion of the Work, as that Date is established by the Architect, void the construction key system and, in the presence of the Architect, demonstrate that the specified keying system is operating properly.

C. Identification and delivery:
   1. Factory stamp permanent keys, "DO NOT DUPLICATE."
   2. Identify permanent keys with tags, and send direct to the Owner.

2.3 TOOLS AND MANUALS

A. With the delivery of permanent keys, deliver to the Owner one complete set of adjustment tools and one set of maintenance manuals for locksets, latchsets, closers, and panic devices.

2.4 ACCEPTABLE PRODUCTS

A. Single source for items:
   1. Unless specifically approved otherwise by the Architect, furnish for each item only the product of a single manufacturer if possible.

B. Provide the finishes shown on the schedule.

2.5 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 DELIVERIES

A. Stockpile items in advance to assure availability, and make necessary deliveries in a timely manner to assure orderly progress of the total Work.

3.2 COORDINATION

A. Coordinate as necessary with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Upon completion of the Work, and as a condition of its, acceptance, provide the inspection, adjustment, and report described in Article 1.2 above.

C. Cross reference all room numbers, schedules and hardware items with Architectural Drawing Sheet.

3.3 HARDWARE SCHEDULE

A. Furnish the following hardware groups in the amounts indicated on the Drawings, and as follows:

SECTION 08 90 00

LOUVERS AND VENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections: Division 01 Section “Sustainable Design Requirements” for general requirements and procedures for compliance with certain USGBC LEED credits.

C. Related Sections: Division 01 Section 019113 “General Commissioning Requirements” for general commissioning requirements and procedures.

1.2 SUMMARY

A. Section Includes:

1. Fixed, extruded-aluminum louvers.
2. FEMA 361 Grille.

1.3 PERFORMANCE REQUIREMENTS

A. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

B. Grille Performance Ratings: Missile impact protective grille with a nominal 2x4 of not less than 15 lbs. in weight at a velocity of not less than 155 ft./sec. Grille must withstand impacts without visible damage and must prevent missile from penetrating through.

1. Design Wind Load: Incorporate structural supports and mullions required to withstand design wind load of ±150 PSF (±7.18kPa).

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

1. Show weep paths, gaskets, flashing, sealant, and other means of preventing water intrusion.

2. Show mullion profiles and locations.

C. Samples for Initial Selection: For units with factory-applied color finishes.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain louvers and vents from single source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.

B. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T5, T-52, or T6.

B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), Alloy 3003 or 5005 with temper as required for forming, or as otherwise recommended by metal producer for required finish.

C. Aluminum Castings: ASTM B 26/B 26M, Alloy 319.

D. Fasteners: Use types and sizes to suit unit installation conditions.

1. For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.
2. For color-finished louvers, use fasteners with heads that match color of louvers.

E. Post-installed Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, made from stainless-steel components, with capability to sustain, without failure, a load equal to 4 times the loads imposed, for concrete, or 6 times the load imposed, for masonry, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

F. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.2 FABRICATION, GENERAL

A. Assemble louvers in factory to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Vertical Assemblies: Where height of louver units exceeds fabrication and handling limitations, fabricate units to permit field-bolted assembly with close-fitting joints in jambs and mullions, reinforced with splice plates.

1. Continuous Vertical Assemblies: Fabricate units without interrupting blade-spacing pattern.

C. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

D. Include supports, anchorages, and accessories required for complete assembly.

E. Provide subsills made of same material as louvers or extended sills for recessed louvers.

2.3 FIXED, EXTRUDED-ALUMINUM LOUVERS

A. Horizontal Storm-Resistant Louver:

1. Louver Depth: 4 inches (100 mm).
2. Frame and Blade Nominal Thickness: Not less than 0.060 inch (1.52 mm) for blades and 0.080 inch (2.03 mm) for frames.
3. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.4 LOUVER SCREENS

A. General: Provide screen at each exterior louver.

1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Bird screening.

B. Secure screen frames to louver frames.

C. Louver Screen Frames: Fabricate with mitered corners to louver sizes indicated.

1. Metal: Same kind and form of metal as indicated for louver to which screens are attached.
2. Finish: Mill finish unless otherwise indicated.
3. Type: Non-rewirable, U-shaped frames.

D. Louver Screening for Aluminum Louvers:

1. Bird Screening: Aluminum, 1/2-inch- (13-mm-) square mesh, 0.063-inch (1.60-mm) wire.

2.5 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.6 ALUMINUM FINISHES

A. Finish louvers after assembly.

B. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

1. Color: By Architect.

2.7 STEEL FINISHES

A. General: Comply with NAAMM “Metal Finishes Manual” for finish designations and application recommendations, except as otherwise indicated. Apply finishes in factory. Protect finishes on exposed surfaces prior to shipment. Remove scratches and blemishes from exposed surfaces that will be visible after completing finishing process. Provide color as selected by architect.

B. Fluorocarbon Coating

1. Grilles to be finished with an inhibitive thermo-cured primer, 0.2 mil minimum dry film thickness, and a thermo-cured fluorocarbon coating containing “Kynar 500” resin, 1.0 mil minimum dry film thickness.
2. All material shall be thoroughly cleaned and given a pre-treatment before application of the Kynar/Hylar coating. The coating shall receive a bake cycle of 17 minutes at 450°F. All finishing procedures shall be one continuous operation in the plant of the manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.3 INSTALLATION

A. Locate and place louvers and vents level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.

C. Form closely fitted joints with exposed connections accurately located and secured.

D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

E. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.

F. Protect unpainted galvanized and nonferrous-metal surfaces that will be in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

G. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required.

3.4 ADJUSTING AND CLEANING

A. Test operation of adjustable louvers and adjust as needed to produce fully functioning units that comply with requirements.

B. Clean exposed surfaces of louvers and vents that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate during construction period.

C. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

D. Restore louvers and vents damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

1. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 08 90 00

SECTION 09 21 16

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.
B. Metal stud wall framing.
C. Metal channel ceiling framing.
D. Acoustic insulation.
E. Gypsum sheathing.
F. Cementitious backing board.
G. Gypsum wallboard.
H. Joint treatment and accessories.
I. Impact rated gypsum board on all circulation space walls.
J. Rated gypsum board enclosure for Kitchen equipment hood exhaust duct.

1.02 RELATED REQUIREMENTS

A. Section 05 40 00 - Cold-Formed Metal Framing: Exterior wind-load-bearing metal stud framing.
B. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.
C. Section 07 90 05 - Joint Sealers: Acoustic sealant.
D. Section 09 30 00 - Tiling: Tile backing board.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 1999 (R2005).
B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (R2005).
C. ASTM C 475/C 475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
D. ASTM C 645 - Standard Specification for Nonstructural Steel Framing Members; 2007.
E. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2006.
F. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2007.
G. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board; 2007.
H. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2007.
I. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.
J. ASTM C 1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2005.
K. ASTM C 1177/C 1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2006.
L. ASTM C 1278/C 1278M - Standard Specification for Fiber-Reinforced Gypsum Panel; 2007a.
M. ASTM C 1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cement Substrate Sheets; 2004.
N. ASTM C 1396/C 1396M - Standard Specification for Gypsum Board; 2006a.
O. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; 2005.

P. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2007.
Q. ICC (IBC) - International Building Code; 2009.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
D. Test Reports: For all stud framing products that do not comply with ASTM C 645 or C 754, provide independent laboratory reports showing maximum stud heights at required spacing and deflections.

1.05 DELIVERY, STORAGE AND PROTECTION

A. Inspect gypsum board products for shipping damage upon receipt.
B. Protect gypsum board products. Do not store in damp or wet areas. Store away from damage by unloading of other materials. Damaged materials shall be cause for rejection.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Observe environmental precautions based on conditions.
B. During gypsum panel application and finishing maintain temperatures within the building within the range of 55 degrees F to 70 degrees F. Provide adequate ventilation to dissipate excess moisture.

1.07 QUALITY ASSURANCE

A. Do not install exterior wall cavity insulation or interior vapor barrier and finish until the exterior of the building is completely dried in and sealed. For masonry veneer construction, this includes installation of veneer and sealants at all joints and penetrations.
B. Installer Qualifications: Company specializing in performing, with minimum three years of documented experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C 840 and GA-216.

2.02 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
    1. Clark Western Building Systems: www.clarkwestern.com.
    2. Dietrich Metal Framing: www.dietrichindustries.com.
    3. Marino: www.marinoware.com.
    4. Phillips Manufacturing Company: www.phillipsmfg.com.
B. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
    1. Exception: The minimum metal thickness and section properties requirements of ASTM C 645 are waived provided steel of 40 ksi minimum yield strength is used, the metal is continuously dimpled, the effective thickness is at least twice the base metal thickness, and maximum stud heights are determined by testing in accordance with ASTM E 72 using assemblies specified by ASTM C 754.

2. Studs: "C" shaped with flat or formed webs with knurled faces.
3. Runners: U shaped, sized to match studs.
4. Ceiling Channels: C shaped.
5. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
6. Resilient Furring Channels: 1/2 inch depth, for attachment to substrate through one leg only.

C. Loadbearing Studs for Application of Gypsum Board: As specified in Section 05 40 00.
D. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.
E. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
1. American Gypsum: www.americangypsum.com.
2. CertainTeed Corporation: www.certainteed.com.
3. Georgia-Pacific Gypsum LLC: www.gp.com/gypsum.
4. National Gypsum Company: www.nationalgypsum.com.
5. Temple-Inland Inc: www.templeinland.com.
6. USG Corporation: www.usg.com.

B. Gypsum Board: Paper-faced gypsum board as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Thickness:
a. Vertical Surfaces: 5/8 inch.

C. Impact-Rated Gypsum Board: Tested to Level 3 soft-body and hard-body impact in accordance with ASTM C 1629.
1. Application: High-traffic areas indicated.
2. Paper-Faced Type: Gypsum wallboard as defined in ASTM C 1396/C 1396M.
3. Unfaced Type: Interior fiber-reinforced gypsum panels as defined in ASTM C 1278/C 1278M.
4. Type: Fire-resistance rated Type X, UL or WH listed.
5. Thickness: 5/8 inch.
6. Edges: Tapered.
7. Products:
a. National Gypsum Company; Gold Bond Hi-Impact Brand XP Wallboard.
b. USG Corporation; Fiberock Brand Panels--VHI Abuse-Resistant.

D. Cementitious Backing Board: One of the following products:
1. Application: Surfaces behind tile.
2. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C 1325.
a. Thickness: 1/2 inch.
b. Products:
1) Custom Building Products; Wonderboard.
2) National Gypsum Company; PermaBase Brand Cement Board.
3) National Gypsum Company; PermaBase Flex Brand Cement Board.
4) USG Corporation; Durock Brand Cement Board.

E. Ceiling Board: Special sag-resistant gypsum ceiling board as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
2. Thickness: 5/8 inch.
3. Edges: Tapered.
4. Products:

a. American Gypsum; Interior Ceiling Board.
b. CertainTeed Corporation; ProRoc Interior Ceiling.
c. Georgia-Pacific Gypsum LLC; ToughRock CD Ceiling Board.
d. National Gypsum Company; High Strength Brand Ceiling Board.
e. Temple-Inland Inc; Span24 Ceiling Board.
f. USG Corporation; Sheetrock Brand Sag-Resistant Interior Gypsum Ceiling Board.

2.04 ACCESSORIES

A. Acoustic Insulation: ASTM C 665; preformed glass fiber, friction fit type, unfaced. Thickness: 4 and 6 inch.
    1. Manufacturers:
        a. Johns Manville.
        b. Owens Corning.
        c. Certainteed.
B. Acoustic Sealant: As specified in Section 07 90 05.
C. Finishing Accessories: ASTM C 1047, galvanized steel or rolled zinc, unless otherwise indicated.
    1. Types: As detailed or required for finished appearance.
        a. Corner Beads: USG #101 "Dur-a-Bead".
        b. Edge Trim: GA-216, Type L, USG #200-B.
        c. Control Joint: USG #093.
    2. Bullnose Corners: Gordon "158-90"; Fry Reglet "Radius Corner Trim"; 5/8 inch radius.
        a. Required at interior jambs of exterior windows in lieu of standard corner beads.
D. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer.
    1. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
    2. Ready-mixed vinyl-based joint compound.
E. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.
F. Screws for Attachment to Steel Members From 0.033 to 0.112 Inch in Thickness: ASTM C 954; steel drill screws for application of gypsum board to loadbearing steel studs.
G. Option for Kitchen Hood Exhaust Duct Enclosure: Johns Manville (800-872-0338) UL approved grease duct enclosure "Super Firetemp T" insulation board, "Firetemp" wrap, 3M "3MU/FRD 120-05", FyreWrap "Max 2.0". Install per manufacturer's requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.
B. Verify that wood or mechanically fastened steel sheet blocking for support of framed openings, wall mounted cabinets and shelving, plumbing fixtures, toilet partitions, toilet accessories, wall mounted door hardware, handrails, markerboards and tackboards, wall paneling and trim and joints of rigid wall coverings occurring between studs is installed by Section 06 1000 contractor before installing wallboard.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C 754 and manufacturer's instructions.
B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
    1. Level ceiling system to a tolerance of 1/1200.
    2. Laterally brace entire suspension system.
    3. Install bracing as required at exterior locations to resist wind uplift.

C. Studs: Space studs at 16 inches on center.
    1. Extend partition framing to structure where indicated and 4 inches above ceiling otherwise - (see the Wall Types on the Drawings).
    2. Partitions Terminating above Ceiling: Attach ceiling runner securely to to ceiling framing in accordance with details. Install additional bracing for partitions extending above ceiling at maximum 4 feet on center.
    3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double 20 gage studs at jambs. Double 20 gage studs required at corners and partition intersections also.
E. Compress sill sealer behind studs at junctions with masonry walls.
F. Where stud walls are constructed on slabs on grade, do not connect stud walls to exterior walls located on independent foundations.
G. Acoustic Furring: Install resilient channels at maximum 16 inches on center. Locate joints over framing members.
H. Blocking: Do not install wallboard until verifying installation of wood or mechanically fastened steel sheet blocking for support of framed openings, wall mounted cabinets and shelving, plumbing fixtures, toilet partitions, toilet accessories, wall mounted door hardware, handrails, markerboards and tackboards, wall paneling and trim and joints of rigid wall coverings occurring between studs.
I. Ceiling Framing:
    1. Install in accordance with ASTM C754 and GA-216.
    2. Install minimum 20 gage, 0.036 inch studs with intermediate supports to limit deflections to 1/360 of the span.
    3. Hang 1-1/2 cold rolled channels supported every 4 feet with #9 wire to structure. Locate first channel no more than 6 inches from parallel walls.
    4. Set hat channels perpendicular to cold rolled channels at a spacing of 16 inches on center and screw attach at each contact point. Locate first hat channel no more than 1 inch from parallel walls, and extend to 1 inch from end walls.
    5. Install ceiling framing independent of walls, columns and above ceiling work.
    6. Coordinate location of hangers with other work. Brace to maintain lines, shape and level ceiling.
    7. Reinforce openings in ceiling suspension system interrupting main carrying channels or furring channels with lateral channel bracing.
    8. Laterally brace entire suspension system.
    9. In areas with poor clearance, use a 1-1/2 inch cold rolled channel inserted through punched holes in studs to hang ceiling from structure above.
    10. Coordinate soffit framing members with light fixture pattern.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly, but do not compress or pack, within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
    1. Place one bead continuously on substrate before installation of perimeter framing members.
    2. Place continuous bead at perimeter of each layer of gypsum board.
    3. In non-fire-rated construction, seal around all penetrations by conduit, pipe, ducts, and rough-in boxes.
    4. Install sill sealer under all partitions with acoustic insulation.
    5. Install resilient channels at maximum of 1 foot 4 inches on center. Locate joints over

framing members.

6. Seal joints where stud partitions meet floors, ceiling and walls. In STC rated acoustic walls, between metal stud track/runner and adjacent construction and between devices and gypsum board, apply acoustical sealant in compliance with ASTM C919. Apply sill sealer under runners. After track is laid, apply bead of sealant on outside edge of floor, ceiling and intersection tracks on both sides of the partition. Seal both the space between the floor track and the floor and between the panel and the track.

3.04 BOARD INSTALLATION

A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
B. Fasten with screws spaced per International Building Code requirements.
C. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
D. Double-Layer Non-Rated: Use gypsum board for first layer, placed perpendicular to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
E. Gypsum Sheathing: Comply with ASTM C 1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing. Fasten to steel studs with approved fasteners at 6 inches on center along panel edges and 1 foot on center in field.
F. Exterior Soffit Board: Install perpendicular to framing, with staggered end joints over framing members or other solid backing.
G. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions. Install behind ceramic tile. Fasten to steel studs with approved fasteners at 6 inches on center along panel edges and 1 foot on center in field.
H. Installation on Metal Framing: Use screws for attachment of all gypsum board.
I. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum soffit board with sealant.
J. Apply sealants only after gypsum board has been primed by Section 09 90 00 Contractor.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
    1. Not more than 30 feet apart on walls and ceilings.
    2. At exterior soffits, not more than 30 feet apart in both directions.
    3. Break framing behind control joints. Verify locations with Architect where not specifically shown.
    4. Place at point of maximum stress due to openings, deflection or other movement.
    5. At stud walls perpendicular to exterior walls located on slabs on grade with independent foundations.
B. Corner Beads: Install at external corners, using longest practical lengths. Bullnose where indicated.
C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and indicated.

3.06 JOINT TREATMENT

A. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
B. Finish gypsum board in accordance with levels defined in ASTM C 840, as follows:
    1. Level 5: Walls and ceilings to receive paint finish and other areas specifically indicated.
    2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
    3. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the

completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
    1. Feather coats of joint compound so that camber is maximum 1/32 inch.
    2. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.
    3. Taping, filling and sanding is not required at base layer of double layer applications unless required by International Building Code for fire resistance requirements.
D. Fill and finish joints and corners of cementitious backing board as recommended by mfr.

3.07 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION 09 21 16

SECTION 09 22 16

NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.

B. Related Requirements:

1. Division 05 Section "Cold-Formed Metal Framing" for exterior and interior load-bearing and exterior non-load-bearing wall studs; floor joists; roof rafters and ceiling joists; and roof trusses.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For dimpled steel studs and runners, from ICC-ES.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. Protective Coating: Coating with equivalent corrosion resistance of ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized unless otherwise indicated.

B. Studs and Runners: ASTM C 645. Use either steel studs and runners or dimpled steel studs and runners.

1. Steel Studs and Runners:

    a. Minimum Base-Metal Thickness: As indicated on Drawings.
    b. Depth: As indicated on Drawings.

2. Dimpled Steel Studs and Runners:

    a. Minimum Base-Metal Thickness: As indicated on Drawings.
    b. Depth: As indicated on Drawings.

C. Slip-Type Head Joints: Where indicated, provide one of the following:

1. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
2. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

    a. Products: Subject to compliance with requirements, provide one of the following:

        1) Dietrich Metal Framing; SLP-TRK Slotted Deflection Track.

D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Minimum Base-Metal Thickness: As indicated on Drawings.

E. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Minimum Base-Metal Thickness: As indicated on Drawings.
2. Depth: As indicated on Drawings.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.

B. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch (4.12 mm) in diameter.

C. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.053 inch (1.34 mm) and minimum 1/2-inch- (13-mm-) wide flanges.

1. Depth: As indicated on Drawings.

D. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. USG Corporation; Drywall Suspension System.

2.4 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

B. Coordination with Sprayed Fire-Resistive Materials:

1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling runners (tracks) to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches (610 mm) o.c.
2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive

materials below that required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.

1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C 841 that apply to framing installation.
2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.
3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C 844 that apply to framing installation.
4. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies.

D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Single-Layer Application: 24 inches (610 mm) o.c. unless otherwise indicated.
2. Tile Backing Panels: 16 inches (406 mm) o.c. unless otherwise indicated.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

    a. Install two studs at each jamb unless otherwise indicated.
    b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.

c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.

E. Direct Furring:

1. Screw to wood framing.
2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.

F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

3.5 INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Hangers: 48 inches (1219 mm) o.c.
2. Carrying Channels (Main Runners): 48 inches (1219 mm) o.c.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.

3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Do not attach hangers to steel roof deck.
5. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
6. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.

7. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 09 22 16

SECTION 09 51 00

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.
B. Acoustical units.

1.02 RELATED REQUIREMENTS

A. Section 01 61 16.
B. Section 07 90 05 - Joint Sealers: Acoustical sealant.

1.03 REFERENCE STANDARDS

A. ASTM C 635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2004.
B. ASTM C 636/C 636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2006.
C. ASTM E 580/E 580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2008a.
D. ASTM E 1264 - Standard Classification for Acoustical Ceiling Products; 2008.
E. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
B. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Shop Drawings: Indicate grid layout and related dimensioning.
C. Product Data: Provide data on suspension system components.
D. Manufacturer's Installation Instructions: Indicate special procedures.
E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
    1. See Section 01 60 00 - Product Requirements, for additional provisions.
    2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.06 QUALITY ASSURANCE

A. Fire-Resistive Assemblies: Complete assembly listed and classified by UL for the fire resistance indicated.
B. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
C. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
D. Installer: Company specializing in performing Work of this section with minimum three years experience approved by manufacturer.

1.07 DELIVERY, STORAGE AND PROTECTION

A. Inspect acoustical ceiling products for shipping damage upon receipt.
B. Protect acoustical ceiling products. Do not store in damp or wet areas. Store away from damage by unloading of other materials. Damaged materials shall be cause for rejection.

1.08 FIELD CONDITIONS

A. Do not install acoustical ceilings until dust generating activities are completed, wet work has dried and overhead mechanical work is completed.
B. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. AC-1 Performa, Baroque: 2 feet x 2 feet x 5/8 inch, mineral fiber, white, reveal edge, NRC 0.60, CAC 35, light reflectance 0.83 (min).
    1. Certainteed "Baroque " #BET 154.
    2. USG - Acceptable Substitution.
    3. Armstrong - Acceptable Substitution.

2.02 SUSPENSION SYSTEM(S)

A. Manufacturers:
    1. Non-Rated Products:
    2. Armstrong World Industries, Inc; Product "Prelude Exposed T": www.armstrong.com.
    3. CertainTeed Corporation; Product "900": www.certainteed.com.
    4. Chicago Metallic Corporation; Product "Series 200 or 1800": www.chicagometallic.com.
    5. USG; Product "DX-24": www.usg.com.
B. Suspension Systems - General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
B. Perimeter Moldings: Same material and finish as grid.
    1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
C. Preformed perimeter trim at bullnosed wall intersections.
D. Custom perimeter trim as shown on Drawings. USG "Compasso" or Armstrong / Certainteed equal.
    1. 6 inches deep unless noted otherwise.
E. Acoustical Sealant For Perimeter Moldings: Specified in Section 07 90 05.
F. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C 636/C 636M, ASTM E 580/E 580M, and manufacturer's instructions and as supplemented in this section.
B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
C. Locate system on room axis according to reflected plan.
D. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
E. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
I. Do not eccentrically load system or induce rotation of runners.
J. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions. Install bullnose perimeter trim at bullnosed wall intersections.
    1. Install in bed of acoustical sealant.
    2. Use longest practical lengths.
    3. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.
B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
C. Fit border trim neatly against abutting surfaces.
D. Install units after above-ceiling work is complete.
E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
F. Cutting Acoustical Units:
    1. Cut to fit irregular grid and perimeter edge trim.
    2. Make field cut edges of same profile as factory edges.
    3. Double cut and field paint exposed reveal edges.
G. Where round obstructions occur, provide preformed closures to match perimeter molding.
H. Install hold-down clips on panels within 10 ft of an exterior door.
I. Install ceilings indicated to receive isolation hangers per isolation hanger manufacturer's instructions.
J. Paint all exposed unpainted edges of acoustical ceiling panels with manufacturer's standard white edge sealant to match ceiling panel surface.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION 09 51 00

SECTION 09 65 19

RESILIENT FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Luxury Vinyl Tile Flooring (LVT)

B. Related Sections:

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of product indicated.

C. Samples for Verification: For each type of product indicated, in manufacturer's standard-size samples of each resilient product color, texture, and pattern required.

D. Product Schedule: For resilient products. Use same designations indicated on Drawings**.**

1.4 QUALITY ASSURANCE

A. Mockups: Provide resilient products with mockups specified in other Sections.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by Mohawk Group, Inc, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

1.6 PROJECT CONDITIONS

A. Install resilient products after other finishing operations, including painting, have been completed.

B. Maintain ambient temperatures within range recommended by Mohawk Group, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C) in spaces to receive resilient products during the following time periods:
   1. 48 hours before installation
   2. During installation
   3. 48 hours after installation

C. Maintain the ambient relative humidity between 40% and 60% during installation.

D. Until Substantial Completion, maintain ambient temperatures within range recommended by Mohawk Group, but not less than 55 deg F (13 deg C) or more than 90 deg F (32 deg C).

PART 2 - PRODUCTS

2.1 RESILIENT LUXURY VINYL TILE (LVT): Mohawk Group, Inc. or an approved equal.

A. Resilient Vinyl Composition Tile Flooring (VCT)
   1. Mohawk Group specify – Luxury Vinyl Tile: Global Entry Collection: Matuto Tile Flooring with the following physical characteristics:
      a. Complies with requirements for ASTM F 1700, Class III, and Type A.
      b. Wear layer/Overall thickness: 20 mil (0.5mm) / 2.5mm ± 0.13mm
      c. Gauge: 0.10” (2.5mm)
      d. Tile sizes:12" x 24" (30.5 cm x 61 cm)
      e. Slip Resistance: ADA Compliant
      f. ASTM F 970, Standard Test Method for Static Load Limit – 1500 PSI
      g. ASTM E 648, Standard Test method for Critical Radiant Flux of 0.45 watts/cm^2 or greater, Class I
      h. Warranty: Limited 10 year Commercial
      i. Refer to the product’s Technical Specifications data sheet for detailed specifications.
      j. Choose from any of the Mohawk Group’s complete line of colors(indicate the item number).
      k. Global Entry. All products are FloorScore® certified.
      l. This product is manufactured in a factory that has ISO 9002 and ISO 14001 certifications.
      m. Product must be 100% virgin vinyl and contain at least 8% bio-based renewable material.
      n. Product must have an enhanced urethane wear layer.

B. Adhesives: As recommended by Mohawk Group to meet site conditions.
   1. Use of Mohawk Group’s M700 Pressure Sensitive, M95.0 Acrylic or MS160 Spray adhesive is required. M700 covers 220-260 sf/gallon and M95.0 covers 175-225 sf/gallon when applied with the recommendation notched trowel. MS160 covers 145-160 sf/22 oz can.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. All subfloors should be smooth, flat and dust free with the tolerance not exceeding more that 1/8” in a 10’ span. All subfloor and underlayment patching must be performed with a non-shrinking, water-resistant Portland cement patching compound.

B. Mechanically remove all surface contaminants such as paint, oil, grease, varnish, adhesive as well as various other products such as treatment compounds.

C. Measure the humidity and pH levels in the cement in compliance with the following standards before installation:

1. ASTM F 1869, Anhydrous Calcium Chloride test for moisture levels. The Maximum allowable reading for M700 adhesive is 5lbs/1,000 sq. ft./24 hours (2.26 kg/92.9 sq. m/24 hours).
2. ASTM F 2170, Relative Humidity (RH) test using in situ probes. The maximum allowable reading is:
   a. 85%RH for M700 Adhesive
   b. 95%RH for M95.0 Adhesive
   c. 93%RH for the MS160 Spray Adhesive
3. ASTM F 710, pH levels (test procedure 5.3.1). The readings should be between 8 and 9. The ASTM test frequency recommendation is 3 measures for the first 1,000 sq. ft. (92.9 sq. m) and one measeure for each additional 1,000 sq. ft. (92.9 sq. m).

D. Ensure Moisture, Relative Humidity and pH tests have all been conducted and measurements meet Mohawk Group's recommendations.

E. In case of doubt, test the adhesion on the cement subfloor or other surface that will be covered by the flooring. Do the test using the specified flooring and recommended adhesive.

F. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

G. Floor covering shall not be installed over expansion joints.

H. Do not install resilient products until they are same temperature as the space where they are to be installed.
   1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

I. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 RESILIENT TILE FLOORING INSTALLATION

A. Install the flooring according to the latest version of Mohawk Group's Installation Instructions. Use the tools, adhesives, trowel types and procedures recommended in the instructions.

B. Acclimatize the subfloor, all flooring material and adhesive for 48 hours before and during the installation by temperature between 55 deg F (13 deg C) and 90 deg F (32 deg C).

3.4 CLEANING AND PROTECTION

A. Remove all excess adhesive immediately after installation as recommended in Mohawk Group's Installation Instructions.

B. Before allowing traffic after installation, consult and follow the recommendations in Mohawk Group's Maintenance Instructions when performing initial and regular maintenance procedures.

C. Following installation and cleanup, if the work of all other trades has not yet been completed, protect the flooring by laying sheets of non-staining brown Kraft paper, and then a layer of plywood sheets (roll of non-staining heavy cardboard material could also be used for protection).

D. Follow the instructions in the Mohawk Group's Maintenance Instructions when performing initial and regular maintenance procedures.

END OF SECTION 09 65 19

SECTION 09 90 00

PAINTS AND COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.
B. Field application of paints, stains, varnishes, and other coatings.
C. Surfaces to be finished are indicated in this section and on the Drawings.

1.02 RELATED SECTIONS

A. Section 32 17 23.13 - Painted Pavement Markings: Pavement markings.
B. Section 05 50 00 - Metal Fabrications: Shop-primed items.
C. Section 05 51 00 - Metal Stairs: Shop-primed items.

1.03 REFERENCES

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.
C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Master Painters and Decorators Association; 2004.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Product Data: Provide complete list of all products to be used, with the following information for each:
    1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
    2. Cross-reference to specified paint system(s) product is to be used in; include description of each system (copy of relevant MPI Manual page is acceptable).
    3. Manufacturer's installation instructions.
C. Certification by manufacturer that products comply with Contract Documents and are compatible with applicable substrates and with each other.
D. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.
E. Samples: Submit two paper "drop" samples, 8-1/2 by 11 inches in size, illustrating range of colors, stains and textures available for each finishing product specified. Refer to Sections 06 20 00, 06 41 00 and 08 21 00 for wood species to submit. Remake samples until acceptable to Architect.
    1. Submit samples in semi-gloss sheen only, unless scheduled otherwise.
    2. Allow 30 days for approval process, after receipt of complete samples by Architect.
    3. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as masonry, have been approved.
F. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

G. Color Schedule: Architect will provide color documentation to the Contractor listing paint colors selected. If materials of other manufacturers are accepted by Architect, colors must match those of paint colors selected.

H. Accent colors or deep tone colors (contrasting bright colors) shall be applied where indicated on forthcoming Color Documentation, approximately 5 different colors, not including base wall color. These accents constitute up to 20 percent of all areas to be painted. Where bright colors are selected, apply extra coats of paint where required to obtain a completely opaque surface. Additional labor or materials to achieve this level of finish will not be accepted as "extra cost".
I. At Final Completion, submit list, by room number, of paint color and manufacturer for inclusion in Operations and Maintenance Manuals.

1.05 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years of experience.
B. Material Safety Data Sheets: At project site maintain file of MSDS sheets for each product used; become familiar with and follow manufacturer's stated application and safety requirements.
C. Workmanship shall be first class throughout or work will be subject to rejection and refinishing at no additional cost to Owner.

1.06 MOCK-UP

A. See Section 01 45 00 - Quality Requirements, for general requirements for mock-up.
B. Samples shall serve as a standard for similar work throughout the project. Paint mason's block sample wall at time of its construction to establish acceptance quality of filling and finish coats.
C. Provide door and frame assembly illustrating coating color, texture, and finish.
D. Mock-up may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND PROTECTION

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
C. If woodwork, metal or any other surface to be finished cannot be put in proper condition for finishing by customary cleaning, sanding and puttying operations, notify General Contractor and Architect in writing or assume responsibility for any unsatisfactory resulting finish.
D. Do not apply paint, stains or finishes in areas where dust is being generated or where rubbish has accumulated or is being removed.
E. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
F. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior and interior; unless required otherwise by manufacturer's instructions.

G. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
H. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.09 EXTRA MATERIALS

A. See Section 01 60 00 - Product Requirements, for additional provisions.
B. Supply 2 gallons, full and unopened, of each color; store where directed.
C. Label each container with color number of formula in addition to the manufacturer's label.
D. Epoxy and high performance coatings are not included.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
B. Provide all paint and coating products from the same manufacturer.
C. Paints, Transparent Finishes and Stains: Manufacturers are limited to the following:
    1. Sherwin Williams: www.sherwin-williams.com. “Harmony”
    2. KWAL - "EnvirKote" Zero VOC

2.02 MATERIALS - GENERAL

A. Volatile Organic Compound (VOC) Content:
    1. Provide coatings that comply with the most stringent requirements specified in the following:
        a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
        b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
            1) Opaque, Flat: 50 g/L, maximum.
            2) Opaque, Nonflat: 150 g/L, maximum.
            3) Opaque, High Gloss: 250 g/L, maximum.
            4) Varnishes: 350 g/L, maximum.
    2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
B. Chemical Content: The following compounds are prohibited:
    1. Aromatic Compounds: In excess of 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
    2. Acrolein, acrylonitrile, antimony, benzene, butyl benzyl phthalate, cadmium, di (2-ethylhexyl) phthalate, di-n-butyl phthalate, di-n-octyl phthalate, 1,2-dichlorobenzene, diethyl phthalate., dimethyl phthalate, ethylbenzene, formaldehyde, hexavalent chromium, isophorone, lead, asbestos, mercury, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, naphthalene, toluene (methylbenzene), 1,1,1-trichloroethane, vinyl chloride.

C. Paints and Coatings: Provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI Categories, except as otherwise indicated.
    1. Provide ready mixed paints and coatings, except field-catalyzed coatings.
    2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
D. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
E. Patching Material: Latex filler.
F. Fastener Head Cover Material: Latex filler.
G. All adhesives, sealants, paints and coatings used on the interior of the building (defined as

inside the weatherproofing system and applied on-site) shall comply with the requirements in Section 01 81 13 - Sustainable Design Requirements.

2.03 PAINT SYSTEMS

A. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.
B. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.
C. Extend colors to surface edges; colors may change at any edge as directed by Architect.

PART 3 - INSTALLATION

3.01 SCOPE -- SURFACES TO BE FINISHED

A. Paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.
B. Paint the surfaces described in PART 2, indicated on the Drawings, and as follows:
    1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
    2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
    3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings, using primer only, prior to installation of the permanent item.
    4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.
    5. Finish top, bottom, and side edges of exterior doors the same as exposed faces.
    6. Paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment occurring in finished areas to match background surfaces, unless otherwise indicated.
    7. Paint equipment, piping, conduit, and exposed duct work in utility areas in colors according to the color coding scheme indicated.
        a. Refer to Division 22 and Division 26 for schedule of color coding of equipment, duct work, piping, and conduit.
    8. Paint all mechanical and electrical equipment, except that which is factory finished or aluminum, exposed to weather or to view on the roof and outdoors.
    9. Paint shop-primed mechanical and electrical items occurring in finished areas.
    10. Remove louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately. These items shall be spray painted in colors as directed by Architect (generally to match adjacent finished materials), and returned for installation. Touch up screws and scuffed spots, or repaint to achieve uniform finish.
    11. Paint interior surfaces of air ducts and convector and baseboard heating cabinets with flat, nonspecular black paint where visible through registers, grilles, or louvers.
    12. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
    13. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
C. Do Not Paint or Finish the Following Items:
    1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
2. Items indicated to receive other finish.
3. Items indicated to remain naturally finished.

4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
5. Anodized aluminum.
6. Polished and brushed stainless steel items.
7. Brick, precast concrete, integrally colored plaster.
8. Concrete masonry in utility, mechanical, and electrical spaces unless noted to be painted.
9. Polished and brushed stainless steel, anodized aluminum, bronze, terne, and lead.
10. Acoustical materials.
11. Concealed piping, ductwork, and conduit.

3.02 EXAMINATION

A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.
B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
C. Test shop-applied primer for compatibility with subsequent cover materials; report incompatible primer conditions and submit recommended changes for Architect's approval.
D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
    1. Plaster and Gypsum Board: 12 percent.
    2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
    3. Interior Wood: 12 percent, measured in accordance with ASTM D 4442.
    4. Exterior Wood: 12 percent, measured in accordance with ASTM D 4442.
    5. Concrete Floors: 8 percent.
E. Measure the ph factor of concrete, masonry, and mortar before starting any finishing process, using the method specified in MPI Architectural Painting Manual.
    1. Report results in writing to Architect before starting work.
    2. If results of test indicate need for remedial action, provide written description of remedial action. If a different primer or paint systems is required, state the total cost of the change. Do not proceed with remedial action or change without receiving written authorization from Architect.

3.03 PREPARATION

A. Prepare surfaces as specified in MPI Architectural Painting Specification Manual and as follows for the applicable surface and coating; if multiple preparation treatments are specified, use as many as necessary for best results; where the Manual references external standards for preparation (e.g. SSPC standards), prepare as specified in those standards; comply with coating manufacturer's specific preparation methods or treatments, if any.
B. Coordinate painting work with cleaning and preparation work so that dust and other contaminants do not fall on newly painted, wet surfaces.
C. Surface Appurtenances: Prior to preparing surfaces or finishing, remove electrical plates, hardware, light fixtures, light fixture trim, escutcheons, machined surfaces, fittings, and similar items already installed that are not to be painted.
    1. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before preparation and finishing.
    2. After completing painting in each space or area, reinstall items removed using workers skilled in the trades involved.
D. Surfaces: Correct defects and clean surfaces which affect work of this section.
E. Marks: Seal with shellac those which may bleed through surface finishes.
F. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
G. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
H. Insulated Coverings to be Painted: Remove dirt, grease, and oil from canvas and cotton.
I. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with

solvent. Apply coat of etching primer.

1. Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical or chemical methods as recommended as best practice by primer manufacturer.

J. Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.

1. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with the same primer as the shop coat.

K. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

L. Interior Wood Items to Receive Transparent Finish: Sand wood to obtain a uniform appearance before immediately starting work. Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

M. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.

N. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.04 APPLICATION

A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.

1. Provide completed work matching approved samples for color, texture, and coverage.
2. Remove, refinish, or repaint work not complying with requirements.

B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.

C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.

1. Brush Application: Use brushes best suited for the type of material applied; use brush of appropriate size for the surface or item being painted; produce results free of visible brush marks.
2. Roller Application: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
3. Spray Application: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
4. Where application method is listed in the MPI Manual for the paint system that application method is required; otherwise any application method recommended by manufacturer for material used and objects to be painted is acceptable.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.

1. Number of coats and film thickness required are the same regardless of application method.
2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.
3. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent to that of flat surfaces.

E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, flashing or other surface imperfections.
    1. Before applying finish coats, apply a prime coat of material recommended by manufacturer, unless the surface has been prime coated by others; where evidence of suction spots or unsealed areas in first coat appear, recoat primed and sealed surfaces to ensure finish coat with no burn through or other defects due to insufficient sealing.
    2. Apply first coat to surface that has been cleaned, pretreated, or otherwise prepared as soon as practical after preparation and before subsequent surface deterioration.
    3. Do not apply succeeding coats until the previous coat has cured as recommended by manufacturer.
    4. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat will not cause the undercoat to lift or lose adhesion.
    5. If manufacturer's instructions recommend sanding to produce a smooth, even surface, sand between coats.
    6. Before applying next coat vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
F. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

3.05 WORKMANSHIP

A. Ensure complete coverage of block filler such that pores and pinholes are filled. At Toilet Rooms and Food Preparation areas apply filler coats until completely smooth and acceptable to Health Department having jurisdiction.
B. Paint entire wall where patching is to be painted and nearest horizontal break line, or ceiling, if none is existing.

3.06 CLEANING AND PROTECTION

A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.
B. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from site.
C. Protect other work, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting as approved by Architect.
D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Clean off paint, varnish and stains from floors, glass, walls, ceilings, doors, cabinets and hardware. Do not scratch or damage adjacent finished surfaces. Glass shall be cleaned only in a manner that does not cause scratches. Comply with procedures specified in MPI Manual.

3.07 EXTERIOR SURFACES SCHEDULE:

A. Ferrous Metals, including areas on roof not visible from ground. First coat not required on items with prime coat applied by manufacturer. Two finish coats over primer.
    1. Primer: Synthetic rust-inhibiting primer, total dry film thickness of not less than 1.4 mils.
        a. First and Second Coats: Acrylic gloss alkyd enamel, total dry film thickness of not less than 3.7 mils.
B. Zinc Coated Metals (Galvanized) including areas on roof not visible from ground. Gloss Enamel: Two finish coats over primer.
    1. Treatment as described in Part 3, Preparation, for galvanized metal.

2. Primer: Galvanized metal primer, total dry film thickness not less than 2.5 mils.
3. First and Second Coats: Acrylic gloss enamel, total dry film thickness not less than 2.6 mils.

C. Gypsum Board, Cement Plaster Soffits:
1. Primer: Latex based, total dry film thickness of not less than 1.5 mils.
2. First and Second Coats: Satin, exterior acrylic latex, total dry film thickness of not less than 2.4 mils.

D. Exterior Structural Steel (Not Galvanized):
1. Shop Primed by 05120 Contractor, not less than 3.0 mils:
2. Final Coat, not less than 2.0 mils:

E. Glue Lam Beams:
1. Messmer's "UV Plus"; www.messmers.com. 1 gallon per 150 square feet - apply until completely saturated.

3.08 INTERIOR SURFACES:

A. Concrete Block - Semi Gloss Latex Enamel Finish: Two finish coats over an undercoat and a filled surface.
1. Block Filler: High performance latex-based block filler applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness not less than 5.0 mils. Apply in two coats to permit identification and correction of CMU surface irregularities, pinholes not filled and the like after the first coat.
2. First and Second Coats: Interior, satin latex enamel, total dry film thickness of not less than 2.8 mils.

B. Concrete Block - Epoxy Emulsion Coating: Where indicated on Finish Schedule and/or on Drawings, provide one coat block filler and two finish coats epoxy emulsion.
1. Block Filler: Total dry film thickness not less than 5.0 mils.
2. First and Second Coats: Epoxy Emulsion, semi-gloss finish.
3. All walls above 7 feet 2 inches high “rail”:
a. Block Filler: High performance latex-based block filler applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness not less than 5.0 mils. Apply in two coats to permit identification and correction of CMU surface irregularities, pinholes not filled and the like after the first coat.
b. First and Second Coats: Interior flat latex enamel, Pure Brilliant White, 92% Directional Reflectance per ASTM E97, total dry film thickness not less than 3.2 mils.

C. Gypsum Board: Spot prime taped and spackled areas with primer before texturing.
1. Primer: White, interior, latex-based primer, total dry film thickness not less than 1.2 mils.
2. First and Second Coats: Interior semi-gloss latex enamel, total dry film thickness not less than 2.8 mils.

D. Gypsum Board - Epoxy Emulsion Coating: Where indicated on Finish Schedule and /or on Drawings, provide one coat primer as recommended by coating manufacturer and two finish coats epoxy emulsion.
1. Bond Coat: Primer White, Interior Latex Based Primer.
2. First and Second Coats: Epoxy Emulsion, semi-gloss finish.
3. All walls above 7 feet 2 inches high “rail”:
a. Primer: White, interior, latex-based primer, total dry film thickness not less than 1.2 mils.
b. First and Second Coats: Interior flat latex enamel, Pure Brilliant White, 92% Directional Reflectance per ASTM E97, total dry film thickness not less than 3.2 mils.

E. Zinc Coated Metal (Galvanized): Acrylic Semi-Gloss Finish: Two finish coats over a primer.
1. Primer: Galvanized metal primer, total dry film thickness of not less than 1.2 mils.
2. Finish Coats: Exterior, semi-gloss, acrylic enamel, total dry film thickness of not less than 1.2 mils each.

F. Ferrous Metal: Full Gloss Enamel Finish: Two coats over a primer.
    1. Primer: Synthetic, quick-drying, rust-inhibiting primer, total dry film thickness of not less than 1.5 mils.
    2. Finish Coat: Exterior, gloss, acrylic enamel, total dry film thickness of not less than 1.2 mils.

G. Interior Wood (Transparent Finish):
    1. Oil Based Stain to achieve color:
    2. Sealer:
    3. Two Finish Coats:
    4. Sand between each coat.

H. Exposed Metal Decking and Framing (Dry Fall):
    1. First and Second Coats: Flat, alkyd enamel, total dry film thickness of not less than 2.8 mils.

I. Surfaces to Receive Wallcovering:
    1. Primer: Alkyd, total dry film thickness of not less than 1.4 mils.

J. Colors: Architect will provide color documentation to the contractor listing paint colors selected, including accent or deep tone colors. Allow approximately 10 colors, not including base wall color. Accents may constitute up to 20% of all areas painted. Where bright colors are selected, apply extra coats of paint where required to obtain a completely opaque surface. Additional labor or materials to achieve this level of finish will not be accepted as "extra Cost".

END OF SECTION 09 90 00

SECTION 10 14 00

SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Room and door signs.

1.02 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
B. ATBCB ADAAG - Americans with Disabilities Act Accessibility Guidelines; 2002.

1.03 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
    1. When room numbers to appear on signs differ from those on the drawings, include the drawing room number on schedule.
    2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
    3. Submit for approval by Owner through Architect prior to fabrication.
D. Samples: Submit two samples of each type of sign, actual physical samples of size similar to that required for project, illustrating sign style, font, and method of attachment. Provide actual physical samples of each type of sign material for color selection.
E. Manufacturer's Installation Instructions: Include installation templates and attachment devices.
F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
    1. See Section 01 60 00 - Product Requirements, for additional provisions.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.
B. Package room and door signs in sequential order of installation, labeled by floor or building.
C. Store tape adhesive at normal room temperature.

1.06 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Flat Signs:
    1. Manufacturer: Inpro, Inc: www.inprocorp.com.
    2. ASI Sign Systems: www.asimodulex.com.

2.02 SIGNAGE APPLICATIONS

A. Accessibility Compliance: All signs are required to comply with ADAAG and ANSI/ICC A 117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
    1. Glue on letters or etched backgrounds are unacceptable.
B. All Signage Types:
    1. Character Font: Helvetica 2L.
    2. Character Case: Upper Case Only.
    3. Background Color: To be selected by Architect from manufacturer's standard colors.
    4. Character Color: RT-01 white.
C. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.
    1. Sign Type: Flat signs with engraved panel media as specified.
    2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
    3. Character Height: 0.875 inch.
    4. Sign Height: 8 inches, unless otherwise indicated or required by amount of information.
    5. Doors: Identify with room numbers to be determined later, not the numbers shown on the drawings; in addition, provide "window" section for replaceable occupant name.
    6. Service Rooms: Identify with room names and numbers to be determined later, not those shown on the drawings.
    7. Rest Rooms: Identify with pictograms, the names "MEN" and "WOMEN", room numbers to be determined later, and braille. Use "BOYS" and "GIRLS" for all restrooms other than Staff restrooms.

2.03 TACTILE SIGNAGE MEDIA

A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
    1. Total Thickness: 1/8 inch.
    2. Panel Edges: Square.
    3. Panel Corners: Radiused.
    4. Mounting: Mechanical anchorage with predrilled holes, set in clear silicone sealant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.
B. Install neatly, with horizontal edges level.
C. Locate signs where indicated:
    1. Room and Door Signs: Locate on wall at latch side of door with centerline of sign at 60 inches above finished floor.
    2. If no location is indicated obtain Owner's instructions.
D. Protect from damage until Substantial Completion; repair or replace damage items.

END OF SECTION 10 14 00

SECTION 10 21 00
TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Solid plastic toilet compartments including the following: (Hiny Hiders)
   1. Floor mounted overhead-braced toilet compartments.
   2. Privacy screens.

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications.

B. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

A. ASTM A 666 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

B. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

C. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

D. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Provide layout drawings and installation details with location and type of hardware required.

D. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns.

E. Sustainable Design Submittals:
   1. Recycled Content: Certify percentages of post-consumer and pre-consumer recycled content.
   2. Regional Materials: Certify distance between manufacturer and Project and between manufacturer.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar

service conditions for not less than 5 years.

B. Installer Qualifications: A company regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.

C. Materials: Doors, panels and pilasters, constructed from high density polyethylene (HDPE) resins. Partitions to be fabricated from polymer resins compounded under high pressure, forming a single component which is waterproof, nonabsorbent and has a self-lubricating surface that resists marks from pens, pencils, markers and other writing instruments. Cover all plastic components with a protective plastic masking.

D. Performance Requirements:
   1. Fire Resistance: Partition materials shall comply with the following requirements, when tested in accordance with ASTM E 84:
      a. Class A flame spread/smoke developed rating.
      b. Class B flame spread/smoke developed rating.
   2. Material Fire Ratings:
      a. National Fire Protection Association (NFPA) 286: Pass.
      b. International Code Council (ICC): Class B.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. Manufacturer guarantees its plastic against breakage, corrosion, and delamination under normal conditions for 25 years from the date of receipt by the customer. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge. Labor not included in warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Scranton Products, which is located at: 801 E. Corey St.; Scranton, PA 18505; Toll Free Tel: 800-445-5148; Fax: 855-376-6161; Email:request info (info@scrantonproducts.com); Web:www.scrantonproducts.com
   1. Fabricator: Santana Toilet Partitions.
   2. Fabricator: Comtec Toilet Partitions.
   3. Fabricator: Capitol Toilet Partitions.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 MATERIAL

A. Plastic Panels: High density polyethylene (HDPE) suitable for exposed applications, waterproof, non-absorbent, and graffiti-resistant textured surface.

B. Zinc Aluminum Magnesium and Copper Alloy (Zamac): ASTM B 86.

C. Stainless Steel Castings: ASTM A167, Type 304.

D. Aluminum: ASTM 6463-T5 alloy.

2.3 SOLID PLASTIC TOILET COMPARTMENTS

A. Basis of Design: Hiny Hiders Toilet Partitions as manufactured by and supplied by Scranton Products.
   1. Style: Floor mounted overhead-braced toilet compartments.

B. Doors, Panels, and Pilasters: 1 inch (25 mm) thick with all edges rounded to a radius. Mount doors and dividing panels based on height of specified system.
   1. Door and Panel Height: 55 inches (1397 mm).
   2. Aluminum heat sink fastened to bottom edges.
   3. Panel Edge: Standard.
   4. Pilasters: 82 inches (2083 mm) high and fastened to floor.

C. Panel Color: Traditional Series.
   1. Black - Orange Peel.
   2. Black - Grip Ex.
   3. Paisley - Orange Peel.
   4. Shale - Orange Peel.
   5. Charcoal Grey - Orange Peel.
   6. Grey - Orange Peel.
   7. Glacier Grey - Orange Peel.
   8. White - Orange Peel.

D. Panel Color: Warm Series.
   1. Mahogany - Orange Peel.
   2. Concrete - Orange Peel.
   3. Linen - Orange Peel.
   4. Sandcastle - Orange Peel.
   5. Sandstone - Orange Peel.
   6. Desert Beige - Orange Peel.
   7. Mocha - Orange Peel.

E. Pilaster Shoes: 3 inches (76 mm) high one-piece molded HDPE. Secured to pilasters with a stainless steel tamper resistant Torx head sex bolt.
   1. Pilaster Plastic Shoe Color: Mocha.
   2. Pilaster Plastic Shoe Color: Black.
   3. Pilaster Plastic Shoe Color: Grey.
   4. Pilaster Plastic Shoe Color: Linen.
   5. Pilaster Plastic Shoe Color: Beige.
   6. Pilaster Plastic Shoe Color: Blueberry.

F. Headrail: Heavy-duty extruded 6463-T5 alloy aluminum with anti-grip design. Finish to be clear anodized. Fastened to headrail brackets with stainless steel tamper resistant Torx head sex bolt, and fastened at the top of the pilaster with stainless steel tamper resistant Torx head screws.
   1. Headrail Brackets: 20 gauge stainless steel with satin finish. Secured to the wall with stainless steel tamper resistant Torx head screws.

G. Wall Brackets:
   1. Aluminum Brackets: Heavy-duty aluminum 6463-T5 alloy.
   2. PVC Brackets: Extruded PVC plastic.
   3. Stainless Steel Brackets: Stainless steel type 304.
   4. Brackets are fastened to pilasters with stainless steel tamper resistant Torx head

screws and fastened to the panels with stainless steel tamper resistant Torx head sex bolts.
5. Bracket Type: Continuous 54 inches (1372 mm) stainless steel.

H. Door Hardware:
1. Continuous Aluminum Hinge:
a. Length: 54 inches (1372 mm).
2. Door Strike/Keeper: Heavy-duty extruded aluminum 6436-T5 alloy with a bright dip anodized finish. Secured to pilasters with stainless steel tamper resistant Torx head sex bolts. Bumper shall be made of extruded black vinyl.
a. Style: 6 inches (152 mm) aluminum.
3. Aluminum Slide Bolt Latch and Housing: Heavy-duty extruded 6463-T5 alloy aluminum. Latch and housing to have a bright dip anodized finish. Slide bolt and button to have a black anodized finish.
4. Doors supplied with one coat hook/bumper and door pull made of chrome plated Zamak.
5. Equip outswing handicapped doors with second door pull and door stop.

2.4 SOLID PLASTIC PRIVACY SCREENS

A. Provide plastic privacy screens in urinal and entry toilet room applications as indicated or scheduled.

B. Panels, and pilasters, if required, 1 inch (25 mm) thick with edges rounded to a radius. Screens to be mounted at 14 inches (356 mm) above the finished floor. Color as selected by Architect from manufacturer's full line of current colors.
1. Aluminum heat sink fastened to bottom edges.

C. Screen Type: Wall mounted.
1. Urinal Screens: 24 inches (610 mm) wide by 55 inches (1397 mm) high.

D. Screen Type: Pilaster supported.
1. Configuration: Floor to ceiling pilaster supported screen.
2. Urinal Screens: 24 inches (610 mm) wide by 55 inches (1397 mm) high.
3. Pilaster: Pilaster screens shall be 56 inches (1422 mm) high.
4. Headrail: Heavy-duty extruded 6463-T5 alloy aluminum with anti-grip design and integrated curtain track. Finish to be clear anodized. Fastened to the headrail bracket with a stainless steel tamper resistant Torx head sex bolt and fastened at the top of the pilaster with stainless steel tamper resistant Torx head screws.
5. Floor to Ceiling Supported Pilaster: A stainless steel angle to be used to attach pilasters to floor and ceiling. Attach angles to pilasters with 3/4 inch (19 mm) stainless steel tamper resistant Torx head screws. Pilaster sleeve height to be 4 inches (102 mm) high.
6. Pilaster Sleeves: One-piece molded HDPE secured to the pilaster with a stainless steel tamper resistant Torx head sex bolt.
a. Pilaster Sleeve Color: Mocha.
b. Pilaster Sleeve Color: Black.
c. Pilaster Sleeve Color: Grey.
d. Pilaster Sleeve Color: Linen.
e. Pilaster Sleeve Color: Beige.
f. Pilaster Sleeve Color: Blueberry

E. Wall Brackets: Extruded PVC plastic. Fastened to the panel/pilaster with stainless steel tamper resistant torx head screws and fastened to wall with stainless steel tamper resistant torx head sex bolts.
1. Length of Wall Brackets: 54 inches (1327 mm).
2. Bracket Color: Mocha.

3. Bracket Color: Black.
4. Bracket Color: Grey.
5. Bracket Color: Linen.
6. Bracket Color: Beige.
7. Bracket Color: Blueberry.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Examine areas to receive toilet partitions, screens, and shower compartments for correct height and spacing of anchorage/blocking and plumbing fixtures that affect installation of partitions. Report discrepancies to the architect.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install partitions rigid, straight, plumb, and level manor, with plastic laid out as shown on shop drawings.

C. Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed 3/8 inch (9.5 mm).

D. No evidence of cutting, drilling, and/or patching shall be visible on the finished work.

E. Finished surfaces shall be cleaned after installation and be left free of imperfections.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 10 28 00

TOILET ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Accessories for toilet rooms.
B. Grab bars.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Concealed supports for accessories, including in wall framing and plates.
B. Section 09 21 06 - Gypsum Board Assemblies: Concealed supports for accessories, including in wall framing and plates.
C. Section 10 21 13.19 - Plastic Toilet Compartments.

1.03 REFERENCE STANDARDS

A. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on iron and Steel Products; 2002.
B. ASTM A 167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel
Plate, Sheet, and Strip; 1999 (Reapproved 2004).
C. ASTM A 269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2008.
D. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel
Sheet, Strip, Plate, and Flat Bar; 2003.
E. ASTM B 456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2003.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

1.05 SUBMITTALS

A. See Section 01 33 00 - Submittals, for submittal procedures.
B. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.
C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Toilet Accessories:
    1. A & J Washroom Accessories Inc: www.ajwashroom.com.
    2. American Specialties, Inc: www.americanspecialties.com.
    3. Bobrick Washroom Accessories, Inc: www.bobrick.com.
    4. Bradley Corporation: www.bradleycorp.com.

B. All items of each type to be made by the same manufacturer.

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
    1. Grind welded joints smooth.
    2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.
B. Keys: Provide 2 keys for each accessory to Owner; master key all lockable accessories.
C. Stainless Steel Sheet: ASTM A 666, Type 304.
D. Stainless Steel Tubing: ASTM A 269, Type 304 or 316.
E. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof, security type.
F. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.03 FINISHES

A. Stainless Steel: No. 4 satin brushed finish, unless otherwise noted.
B. Chrome/Nickel Plating: ASTM B 456, SC 2, satin finish, unless otherwise noted.
C. Galvanizing for Items Other than Sheet: Comply with ASTM A 123/A 123M; galvanize ferrous metal and fastening devices.
D. Back paint components where contact is made with building finishes to prevent electrolysis.

2.04 TOILET ROOM ACCESSORIES

A. 1 ½" Dia. Stainless Steel Grab Bars w/ Snap Flange:
    1. Bobrick Model B-6806x18. Provide one for each ADA Water Closet.
    2. Bobrick Model B-6806x36. Provide one for each ADA Water Closet.
    3. Bobrick Model B-6806x42. Provide one for each ADA Water Closet.
B. Frame Mirror: Bobrick Model B-2908, 24" x 36" with stainless steel angle frame. Provide one for each countertop lavatory unless provided with Tilt Mirror.
C. Tilt Mirror: Bobrick Model B-293, 24x36" with stainless steel frame. Provide one for one lavatory in each restroom.
D. Surface-mounted Multi-roll Toilet Tissue Dispenser: Bobrick Model B-2888. Provide one for each Water Closet.
E. Surface-mounted Soap Dispenser: Bobrick Model B-4112. Provide 1 for each lavatory.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify exact location of accessories for installation.
C. Verify that field measurements are as indicated on drawings.
D. See Sections 06 10 00 and 09 21 06 for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.
B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions.
B. Install plumb and level, securely and rigidly anchored to substrate.
C. Mounting Heights and Locations: As required by accessibility regulations and as indicated on drawings

END OF SECTION 10 28 00

SECTION 14 42 16
VERTICAL WHEELCHAIR LIFTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Shaftway Vertical Wheelchair Lift.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 04 40 00 - Stone Assemblies.

C. Section 06 10 00 - Rough Carpentry.

D. Section 09 21 16.23 - Gypsum Board Shaft Wall Assemblies.

E. Division 16 - Electrical: Dedicated telephone service and wiring connections.

F. Division 16 - Electrical: Lighting and wiring connections at top of shaft.

G. Division 16 - Electrical: Electrical power service and wiring connections.

1.3 REFERENCES

A. ASME A17.1 - Safety Code for Elevators and Escalators.

B. ASME A17.5 - Elevator and Escalator Electrical Equipment.

C. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.

D. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.

E. NFPA 70 - National Electric Code.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Submit manufacturer's installation instructions, including preparation, storage and handling requirements.
2. Include complete description of performance and operating characteristics.
3. Show maximum and average power demands.

C. Shop Drawings:
1. Show typical details of assembly, erection and anchorage.
2. Include wiring diagrams for power, control, and signal systems.
3. Show complete layout and location of equipment, including required clearances and coordination with shaftway.

D. Selection Samples: For each finished product specified, provide two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finished product specified, two samples, minimum size 1-3/4

inch by 2-1/4 inches, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm with minimum 10 years experience in manufacturing of vertical platform lifts, with evidence of experience with similar installations of type specified.

B. Installer Qualifications: Licensed to install equipment of this scope, with evidence of experience with specified equipment. Installer shall maintain an adequate stock of replacement parts, have qualified people available to ensure fulfillment of maintenance and callback service without unreasonable loss of time in reaching project site.

1.6 REGULATORY REQUIREMENTS

A. Provide platform lifts in compliance with:
1. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
2. ASME A17.1 - Safety Code for Elevators and Escalators.
3. ASME A17.5 - Elevator and Escalator Electrical Equipment.
4. NFPA 70 - National Electric Code.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store components off the ground in a dry covered area, protected from adverse weather conditions.

1.8 PROJECT CONDITIONS

A. Do not use wheelchair lift for hoisting materials or personnel during construction period.

1.9 WARRANTY

A. Warranty: Provide a two year limited warranty for wheelchair lift materials and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Garaventa Lift; United States - P.O. Box 1769, Blaine, WA 98231-1769. Canada - 18920 - 36th Ave., Surrey, BC V3Z 0P6. ASD. Toll Free: 800-663-6556. Tel: (604) 594-0422. Fax: (604) 594-9915. Email:productinfo@garaventalift.com. Web:www.garaventalift.com.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 SHAFTWAY VERTICAL WHEELCHAIR LIFT

A. Capacity: 750 lbs (340 kg) rated capacity.

B. Mast Height:
1. Model GVL SW -168; 171 inches (4343 mm) maximum lifting height, using hydraulic drive, only.

C. Nominal Clear Platform Dimensions:
1. Standard: 39 inches (992 mm) by 54 inches (1370 mm).

D. Platform Configuration:

1. Straight Through Entry/Exit: Front and rear openings.

E. Landing Openings:
1. Lower Landing: Door.
2. Intermediate Landing: Door.
3. Upper Landing: Door.

F. Door Construction:
1. Fire Rated Doors: 1-1/2 hour B label rating. Pre-hung, constructed of 16 gauge (1.5 mm) steel, with a vision panel, delayed action door closer, pull handle and integrated interlock. Doors mount flush to the inside wall of the shaftway.
    a. Panels of 16 gauge (1.5 mm) galvanized steel.
    b. D-Handle Pull: 12 inch (305 mm) offset D-Handle.
2. Door Width:
    a. Lower Landing:
        1) 35-5/8 inches (905 mm).
    b. Intermediate Landing:
        1) 35-5/8 inches (905 mm).
    c. Upper landing:
        1) 35-5/8 inches (905 mm).

G. Lift Components:
1. Machine Tower: Custom aluminum extrusion.
2. Base Frame: Structural steel tubing.
3. Platform Side Wall Panels: 16 gauge (1.5 mm) galvanized steel sheet. Custom aluminum extrusion tubing frame.

H. Base Mounting and Access to Lift at Lower Landing:
1. Floor Mount: Base of lift shall be mounted on the floor surface of the lower landing. For access onto the platform provide a ramp of 16 gauge (1.5 mm) galvanized steel sheet with a slip resistant surface.

I. Drive Mast Side Wall Panels: Provide 16 gauge (1.5 mm) galvanized panels and mounting hardware to cover the void between both sides of the mast and the side of the shaftway. Panels to cover the front and top of the void area to the height of the top surface of the drive mast.

J. Hydraulic Drive:
1. Drive Type: Chain hydraulic.
2. Emergency Operation: Manual device to lower platform and auxiliary battery power to raise or lower platform.
3. Safety Devices:
    a. Slack chain safety device.
    b. Shoring device.
4. Travel Speed: 17 fpm (5.2 m/minute).
5. Motor: 3.0 hp (2.2 kW); 24 volts DC.
6. Power Supply:
    a. 120 VAC single phase; 60 Hz on a dedicated 15 amp circuit.
    b. Powered by continuous building mains converted to 24 VDC equipped with auxiliary battery power system capable of running lift up and down for a minimum of 5 trips with rated load. Required for high usage lifts.

K. Platform Controls: 24 VDC control circuit with the following features.
1. Direction Control: Constant pressure rocker switch.
2. Illuminated and audible emergency stop switch shuts off power to lift and activates audio alarm equipped with battery backup.
3. Keyless operation.

4. Emergency Telephone: Platform shall be equipped with ADA compliant autodialer telephone with a stainless steel faceplate. Telephone shall operate in the event of power failure. A telephone line shall be supplied to the lift site as specified under Division 16.
5. Arrival Gong and Digital Floor Display.

L. Call Station Controls: 24 VDC control circuit with the following features.
1. Direction Control: Constant pressure switches.
2. Safety indicator lamp.
3. Keyless operation.
4. Call Station Mounting:
    a. Lower:
        1) Frame mounted.
    b. Intermediate:
        1) Frame mounted.
    c. Upper:
        1) Frame mounted.

M. Safety Devices and Features:
1. Grounded electrical system with upper, lower, and final limit switches.
2. At all landings a solenoid activated interlock shall electrically monitor that the door is in the closed position and the lock is engaged before lift can move from landing.
3. Electrical disconnect shall shut off power to the lift.

N. Finishes
1. Aluminum Extrusions: Electrostatically applied baked powder finish Fine Textured Silver Moon (RAL 7047).
2. Ferrous Components: Electrostatically applied baked powder finish, fine textured.
    a. Color: Silver Moon.
3. Lift Finish: Baked powder coat finish as selected by the Architect from manufacturer's optional RAL color chart.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify shaft and machine space are of correct size and within tolerances.

C. Verify required landings and openings are of correct size and within tolerances.

D. Verify electrical rough-in is at correct location.

E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install lifts in accordance with applicable regulatory requirements including ASME A 17.1, ASME A 18.1 and the manufacturer's instructions.

B. Install system components and connect to building utilities.

C. Accommodate equipment in space indicated.

D. Startup equipment in accordance with manufacturer's instructions.

E. Adjust for smooth operation.

3.4 FIELD QUALITY CONTROL

A. Perform tests in compliance with ASME A 17.1 or A18.1 and as required by authorities having jurisdiction.

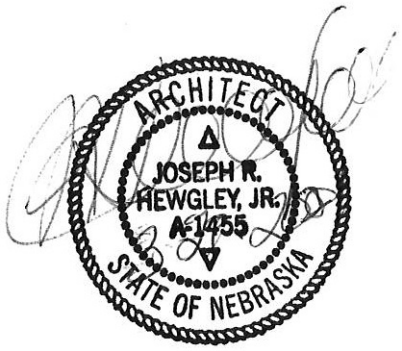
B. Schedule tests with agencies and Architect, Owner, and Contractor present.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION



SECTION 21 13 13

WET-PIPE FIRE SUPPRESSION SPRINKLERS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Pipes, fittings, and specialties.
   2. Fire-protection valves.
   3. Fire-department connections.
   4. Sprinklers.
   5. Excess-pressure pumps.
   6. Alarm devices.
   7. Manual control stations.
   8. Control panels.
   9. Pressure gages.

1.02 DEFINITIONS

A. Standard-Pressure Sprinkler Piping: Wet-pipe sprinkler system piping designed to operate at working pressure of 175 psig maximum.

1.03 SYSTEM DESCRIPTIONS

A. Wet-Pipe Sprinkler System: Automatic sprinklers are attached to piping containing water and that is connected to water supply through alarm valve. Water discharges immediately from sprinklers when they are opened. Sprinklers open when heat melts fusible link or destroys frangible device. Hose connections are included if indicated.

1.04 PERFORMANCE REQUIREMENTS

A. Standard-Pressure Piping System Component: Listed for 175-psig minimum working pressure.
B. High-Pressure Piping System Component: Listed for 250-psig minimum working pressure.
C. Delegated Design: Design sprinkler system(s), including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
D. Sprinkler system design shall be approved by authorities having jurisdiction.
   1. Margin of Safety for Available Water Flow and Pressure: 20 percent, including losses through water-service piping, valves, and backflow preventers.
   2. Sprinkler Occupancy Hazard Classifications:
      a. Building Service Areas: Ordinary Hazard, Group 1.
      b. Electrical Equipment Rooms: Ordinary Hazard, Group 1.
      c. General Storage Areas: Ordinary Hazard, Group 1.
      d. Libraries except Stack Areas: Light Hazard.
      e. Library Stack Areas: Ordinary Hazard, Group 2.
      f. Mechanical Equipment Rooms: Ordinary Hazard, Group 1.
      g. Office and Public Areas: Light Hazard.
   3. Minimum Density for Automatic-Sprinkler Piping Design:
      a. Light-Hazard Occupancy: 0.10 gpm over 1500-sq. ft. area.
      b. Ordinary-Hazard, Group 1 Occupancy: 0.15 gpm over 1500-sq. ft. area.
      c. Special Occupancy Hazard: As determined by authorities having jurisdiction.
   4. Maximum Protection Area per Sprinkler: Per UL listing.

5. Total Combined Hose-Stream Demand Requirement: According to NFPA 13 unless otherwise indicated:
    a. Light-Hazard Occupancies: 100 gpm for 30 minutes.
    b. Ordinary-Hazard Occupancies: 250 gpm for 60 to 90 minutes.
    c. Extra-Hazard Occupancies: 500 gpm for 90 to 120 minutes.

1.05 SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
B. Shop Drawings: For wet-pipe sprinkler systems. Include plans, elevations, sections, details, and attachments to other work.
    1. Wiring Diagrams: For power, signal, and control wiring.
C. Delegated-Design Submittal: For sprinkler systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
D. Coordination Drawings: Sprinkler systems, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
    1. Items penetrating finished ceiling include the following:
        a. Lighting fixtures.
        b. Air outlets and inlets.
E. Qualification Data: For qualified Installer NICET Level III/IV Designer.
F. Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by authorities having jurisdiction, including hydraulic calculations if applicable.
G. Welding certificates.
H. Fire-hydrant flow test report.
I. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping."
J. Field quality-control reports.
K. Operation and Maintenance Data: For sprinkler specialties to include in emergency, operation, and maintenance manuals.

1.06 QUALITY ASSURANCE

A. Installer Qualifications:
    1. Installer's responsibilities include designing, fabricating, and installing sprinkler systems and providing professional engineering services needed to assume engineering responsibility. Base calculations on results of fire-hydrant flow test.
        a. Engineering Responsibility: Preparation of working plans, calculations, and field test reports by a NICET Level III/IV Designer.
B. Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.
C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
D. NFPA Standards: Sprinkler system equipment, specialties, accessories, installation, and testing shall comply with the following:
    1. NFPA 13, "Installation of Sprinkler Systems."
E. Owner’s Insurance Company: Comply with the design and installation requirements of the Owner’s current insurance company.

1.07 PROJECT CONDITIONS

A. Interruption of Existing Sprinkler Service: Do not interrupt sprinkler service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary sprinkler service according to requirements indicated:
    1. Notify Owner no fewer than 10 days in advance of proposed interruption of sprinkler service.
    2. Do not proceed with interruption of sprinkler service without Owner's written permission.

1.08 COORDINATION

A. Coordinate layout and installation of sprinklers with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.

1.09 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
    1. Sprinkler Cabinets: Finished, wall-mounted, steel cabinet with hinged cover, and with space for minimum of six spare sprinklers plus sprinkler wrench. Include number of sprinklers required by NFPA 13 and sprinkler wrench. Include separate cabinet with sprinklers and wrench for each type of sprinkler used on Project.

PART 2 - PRODUCTS

2.01 PIPING MATERIALS

A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.

2.02 STEEL PIPE AND FITTINGS

A. Standard Weight, Black-Steel Pipe: ASTM A 53/A 53M, Type E, Grade B. Pipe ends may be factory or field formed to match joining method.
B. Schedule 10, Black-Steel Pipe: ASTM A 135 or ASTM A 795/A 795M, Schedule 10 in NPS 5 and smaller; and NFPA 13-specified wall thickness in NPS 6 to NPS 10, plain end.
C. Black-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M, standard-weight, seamless steel pipe with threaded ends.
D. Uncoated, Steel Couplings: ASTM A 865, threaded.
E. Uncoated, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.
F. Malleable- or Ductile-Iron Unions: UL 860.
G. Cast-Iron Flanges: ASME 16.1, Class 125.
H. Steel Flanges and Flanged Fittings: ASME B16.5, Class 150.
I. Steel Welding Fittings: ASTM A 234/A 234M and ASME B16.9.
J. Grooved-Joint, Steel-Pipe Appurtenances:
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. Anvil International, Inc.
        b. Tyco Fire & Building Products LP.
        c. Victaulic Company.
    2. Pressure Rating: 175 psig minimum.
    3. Uncoated, Grooved-End Fittings for Steel Piping: ASTM A 47/A 47M, malleable-iron casting or ASTM A 536, ductile-iron casting; with dimensions matching steel pipe.

4. Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213, rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, EPDM-rubber gasket, and bolts and nuts.

2.03 PIPING JOINING MATERIALS

A. Pipe-Flange Gasket Materials: ASME B16.21, nonmetallic and asbestos free.
   1. Class 125, Cast-Iron Flanges and Class 150, Bronze Flat-Face Flanges: Full-face gaskets.
   2. Class 250, Cast-Iron Flanges and Class 300, Steel Raised-Face Flanges: Ring-type gaskets.

B. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.

2.04 LISTED FIRE-PROTECTION VALVES

A. General Requirements:
   1. Valves shall be UL listed or FM approved.
   2. Minimum Pressure Rating for Standard-Pressure Piping: 175 psig.
   3. Minimum Pressure Rating for High-Pressure Piping: 250 psig.

B. Ball Valves:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Anvil International, Inc.
      b. Victaulic Company.
   2. Standard: UL 1091 except with ball instead of disc.
   3. Valves NPS 1-1/2 and Smaller: Bronze body with threaded ends.
   4. Valves NPS 2 and NPS 2-1/2: Bronze body with threaded ends or ductile-iron body with grooved ends.
   5. Valves NPS 3: Ductile-iron body with grooved ends.

C. Bronze Butterfly Valves:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Fivalco Inc.
      b. Global Safety Products, Inc.
      c. Milwaukee Valve Company.
   2. Standard: UL 1091.
   3. Pressure Rating: 175 psig.
   4. Body Material: Bronze.
   5. End Connections: Threaded.

D. Iron Butterfly Valves:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Anvil International, Inc.
      b. Fivalco Inc.
      c. Global Safety Products, Inc.
      d. Kennedy Valve; a division of McWane, Inc.
      e. Milwaukee Valve Company.
      f. NIBCO INC.
      g. Pratt, Henry Company.
      h. Shurjoint Piping Products.
      i. Tyco Fire & Building Products LP.
      j. Victaulic Company.
   2. Standard: UL 1091.
   3. Pressure Rating: 175 psig.
   4. Body Material: Cast or ductile iron.

5. Style: Lug or wafer.
6. End Connections: Grooved.

E. Check Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. AFAC Inc.
    b. American Cast Iron Pipe Company; Waterous Company Subsidiary.
    c. Anvil International, Inc.
    d. Clow Valve Company; a division of McWane, Inc.
    e. Crane Co.; Crane Valve Group; Crane Valves.
    f. Crane Co.; Crane Valve Group; Jenkins Valves.
    g. Crane Co.; Crane Valve Group; Stockham Division.
    h. Fire-End & Croker Corporation.
    i. Fire Protection Products, Inc.
    j. Fivalco Inc.
    k. Globe Fire Sprinkler Corporation.
    l. Groeniger & Company.
    m. Kennedy Valve; a division of McWane, Inc.
    n. Matco-Norca.
    o. Metraflex, Inc.
    p. Milwaukee Valve Company.
    q. Mueller Co.; Water Products Division.
    r. NIBCO INC.
    s. Potter Roemer.
    t. Reliable Automatic Sprinkler Co., Inc.
    u. Shurjoint Piping Products.
    v. Tyco Fire & Building Products LP.
    w. United Brass Works, Inc.
    x. Venus Fire Protection Ltd.
    y. Victaulic Company.
    z. Viking Corporation.
    aa. Watts Water Technologies, Inc.
2. Standard: UL 312.
3. Pressure Rating: 250 psig minimum.
4. Type: Swing check.
5. Body Material: Cast iron.
6. End Connections: Flanged or grooved.

F. Bronze OS&Y Gate Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. Crane Co.; Crane Valve Group; Crane Valves.
    b. Crane Co.; Crane Valve Group; Stockham Division.
    c. Milwaukee Valve Company.
    d. NIBCO INC.
    e. United Brass Works, Inc.
2. Standard: UL 262.
3. Pressure Rating: 175 psig.
4. Body Material: Bronze.
5. End Connections: Threaded.

G. Iron OS&Y Gate Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. American Cast Iron Pipe Company; Waterous Company Subsidiary.
    b. American Valve, Inc.
    c. Clow Valve Company; a division of McWane, Inc.

d. Crane Co.; Crane Valve Group; Crane Valves.
e. Crane Co.; Crane Valve Group; Jenkins Valves.
f. Crane Co.; Crane Valve Group; Stockham Division.
g. Hammond Valve.
h. Milwaukee Valve Company.
i. Mueller Co.; Water Products Division.
j. NIBCO INC.
k. Shurjoint Piping Products.
l. Tyco Fire & Building Products LP.
m. United Brass Works, Inc.
n. Watts Water Technologies, Inc.

2. Standard: UL 262.
3. Pressure Rating: 250 psig minimum.
4. Body Material: Cast or ductile iron.
5. End Connections: Flanged or grooved.

H. Indicating-Type Butterfly Valves:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Anvil International, Inc.
   b. Fivalco Inc.
   c. Global Safety Products, Inc.
   d. Kennedy Valve; a division of McWane, Inc.
   e. Milwaukee Valve Company.
   f. NIBCO INC.
   g. Shurjoint Piping Products.
   h. Tyco Fire & Building Products LP.
   i. Victaulic Company.
2. Standard: UL 1091.
3. Pressure Rating: 175 psig minimum.
4. Valves NPS 2 and Smaller:
   a. Valve Type: Ball or butterfly.
   b. Body Material: Bronze.
   c. End Connections: Threaded.
5. Valves NPS 2-1/2 and Larger:
   a. Valve Type: Butterfly.
   b. Body Material: Cast or ductile iron.
   c. End Connections: Flanged, grooved, or wafer.
6. Valve Operation: Integral electrical, 115-V ac, prewired, single-circuit, supervisory switch indicating device.

I. NRS Gate Valves:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. American Cast Iron Pipe Company; Waterous Company Subsidiary.
   b. American Valve, Inc.
   c. Clow Valve Company; a division of McWane, Inc.
   d. Crane Co.; Crane Valve Group; Stockham Division.
   e. Kennedy Valve; a division of McWane, Inc.
   f. Mueller Co.; Water Products Division.
   g. NIBCO INC.
   h. Tyco Fire & Building Products LP.
2. Standard: UL 262.
3. Pressure Rating: 250 psig minimum.
4. Body Material: Cast iron with indicator post flange.
5. Stem: Nonrising.
6. End Connections: Flanged or grooved.

J. Indicator Posts:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Cast Iron Pipe Company; Waterous Company Subsidiary.
b. American Valve, Inc.
c. Clow Valve Company; a division of McWane, Inc.
d. Crane Co.; Crane Valve Group; Stockham Division.
e. Kennedy Valve; a division of McWane, Inc.
f. Mueller Co.; Water Products Division.
g. NIBCO INC.
h. Tyco Fire & Building Products LP.
2. Standard: UL 789.
3. Type: Horizontal for wall mounting.
4. Body Material: Cast iron with extension rod and locking device.
5. Operation: Wrench.

2.05 TRIM AND DRAIN VALVES

A. General Requirements:
1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
2. Pressure Rating: 175 psig minimum.
B. Angle Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Fire Protection Products, Inc.
b. United Brass Works, Inc.
C. Ball Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Affiliated Distributors.
b. Anvil International, Inc.
c. Barnett.
d. Conbraco Industries, Inc.; Apollo Valves.
e. Fire-End & Croker Corporation.
f. Fire Protection Products, Inc.
g. Flowserve.
h. FNW.
i. Jomar International, Ltd.
j. Kennedy Valve; a division of McWane, Inc.
k. Kitz Corporation.
l. Legend Valve.
m. Metso Automation USA Inc.
n. Milwaukee Valve Company.
o. NIBCO INC.
p. Potter Roemer.
q. Red-White Valve Corporation.
r. Southern Manufacturing Group.
s. Stewart, M. A. and Sons Ltd.
t. Tyco Fire & Building Products LP.
u. Victaulic Company.
v. Watts Water Technologies, Inc.

2.06 SPECIALTY VALVES

A. General Requirements:
   1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
   2. Pressure Rating:
      a. Standard-Pressure Piping Specialty Valves: 175 psig minimum.
   3. Body Material: Cast or ductile iron.
   4. Size: Same as connected piping.
   5. End Connections: Flanged or grooved.

B. Alarm Valves:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. AFAC Inc.
      b. Globe Fire Sprinkler Corporation.
      c. Reliable Automatic Sprinkler Co., Inc.
      d. Tyco Fire & Building Products LP.
      e. Venus Fire Protection Ltd.
      f. Victaulic Company.
      g. Viking Corporation.
   2. Standard: UL 193.
   3. Design: For horizontal or vertical installation.
   4. Include trim sets for bypass, drain, electrical sprinkler alarm switch, pressure gages, and fill-line attachment with strainer.
   5. Drip Cup Assembly: Pipe drain with check valve to main drain piping.

2.07 SPRINKLER SPECIALTY PIPE FITTINGS

A. Branch Outlet Fittings:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Anvil International, Inc.
      b. National Fittings, Inc.
      c. Shurjoint Piping Products.
      d. Tyco Fire & Building Products LP.
      e. Victaulic Company.
   2. Standard: UL 213.
   3. Pressure Rating: 175 psig minimum.
   4. Body Material: Ductile-iron housing with EPDM seals and bolts and nuts.
   5. Type: Mechanical-T and -cross fittings.
   6. Configurations: Snap-on and strapless, ductile-iron housing with branch outlets.
   7. Size: Of dimension to fit onto sprinkler main and with outlet connections as required to match connected branch piping.
   8. Branch Outlets: Grooved, plain-end pipe, or threaded.

B. Flow Detection and Test Assemblies:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. AGF Manufacturing Inc.
      b. Reliable Automatic Sprinkler Co., Inc.
      c. Tyco Fire & Building Products LP.
      d. Victaulic Company.
   2. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
   3. Pressure Rating: 175 psig minimum.

4. Body Material: Cast- or ductile-iron housing with orifice, sight glass, and integral test valve.
5. Size: Same as connected piping.
6. Inlet and Outlet: Threaded.

C. Branch Line Testers:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. Elkhart Brass Mfg. Company, Inc.
    b. Fire-End & Croker Corporation.
    c. Potter Roemer.
2. Standard: UL 199.
3. Pressure Rating: 175 psig.
4. Body Material: Brass.
5. Size: Same as connected piping.
6. Inlet: Threaded.
7. Drain Outlet: Threaded and capped.
8. Branch Outlet: Threaded, for sprinkler.

D. Sprinkler Inspector's Test Fittings:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. AGF Manufacturing Inc.
    b. Triple R Specialty.
    c. Tyco Fire & Building Products LP.
    d. Victaulic Company.
    e. Viking Corporation.
2. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
3. Pressure Rating: 175 psig minimum.
4. Body Material: Cast- or ductile-iron housing with sight glass.
5. Size: Same as connected piping.
6. Inlet and Outlet: Threaded.

E. Flexible, Sprinkler Hose Fittings:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. Aquaflex.
    b. Fivalco Inc.
    c. FlexHead Industries, Inc.
    d. Gateway Tubing, Inc.
2. Standard: UL 1474.
3. Type: Braided stainless steel flexible hose for connection to sprinkler, and with bracket for connection to ceiling grid.
4. Pressure Rating: 175 psig minimum.
5. Size: Same as connected piping, for sprinkler.

2.08 SPRINKLERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFAC Inc.
2. Globe Fire Sprinkler Corporation.
3. Reliable Automatic Sprinkler Co., Inc.
4. Tyco Fire & Building Products LP.
5. Venus Fire Protection Ltd.
6. Victaulic Company.
7. Viking Corporation.

B. General Requirements:
    1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
    2. Pressure Rating for Residential Sprinklers: 175 psig maximum.
    3. Pressure Rating for Automatic Sprinklers: 175 psig minimum.
    4. Pressure Rating for High-Pressure Automatic Sprinklers: 250 psig minimum.
C. Automatic Sprinklers with Heat-Responsive Element:
    1. Early-Suppression, Fast-Response Applications: UL 1767.
    2. Nonresidential Applications: UL 199.
    3. Residential Applications: UL 1626.
    4. Characteristics: Nominal 1/2-inch orifice with Discharge Coefficient K of 5.6, and for "Ordinary" temperature classification rating unless otherwise indicated or required by application.
D. Sprinkler Finishes:
    1. Chrome plated.
    2. Bronze.
    3. Painted.
E. Sprinkler Escutcheons: Materials, types, and finishes for the following sprinkler mounting applications. Escutcheons for concealed, flush, and recessed-type sprinklers are specified with sprinklers.
    1. Ceiling Mounting: Chrome-plated steel, one piece, flat.
    2. Sidewall Mounting: Chrome-plated steel, one piece, flat.
F. Sprinkler Guards:
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. Reliable Automatic Sprinkler Co., Inc.
        b. Tyco Fire & Building Products LP.
        c. Victaulic Company.
        d. Viking Corporation.
    2. Standard: UL 199.
    3. Type: Wire cage with fastening device for attaching to sprinkler.

2.09 ALARM DEVICES

A. Alarm-device types shall match piping and equipment connections.
B. Water-Flow Indicators:
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. ADT Security Services, Inc.
        b. McDonnell & Miller; ITT Industries.
        c. Potter Electric Signal Company.
        d. System Sensor; a Honeywell company.
        e. Viking Corporation.
        f. Watts Industries (Canada) Inc.
    2. Standard: UL 346.
    3. Water-Flow Detector: Electrically supervised.
    4. Components: Two single-pole, double-throw circuit switches for isolated alarm and auxiliary contacts, 7 A, 125-V ac and 0.25 A, 24-V dc; complete with factory-set, field-adjustable retard element to prevent false signals and tamperproof cover that sends signal if removed.
    5. Type: Paddle operated.
    6. Pressure Rating: 250 psig.
    7. Design Installation: Horizontal or vertical.

C. Pressure Switches:
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. AFAC Inc.
        b. Barksdale, Inc.
        c. Detroit Switch, Inc.
        d. Potter Electric Signal Company.
        e. System Sensor; a Honeywell company.
        f. Tyco Fire & Building Products LP.
        g. United Electric Controls Co.
        h. Viking Corporation.
    2. Standard: UL 346.
    3. Type: Electrically supervised water-flow switch with retard feature.
    4. Components: Single-pole, double-throw switch with normally closed contacts.
    5. Design Operation: Rising pressure signals water flow.
D. Valve Supervisory Switches:
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. Fire-Lite Alarms, Inc.; a Honeywell company.
        b. Kennedy Valve; a division of McWane, Inc.
        c. Potter Electric Signal Company.
        d. System Sensor; a Honeywell company.
    2. Standard: UL 346.
    3. Type: Electrically supervised.
    4. Components: Single-pole, double-throw switch with normally closed contacts.
    5. Design: Signals that controlled valve is in other than fully open position.
E. Indicator-Post Supervisory Switches:
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. Potter Electric Signal Company.
        b. System Sensor; a Honeywell company.
    2. Standard: UL 346.
    3. Type: Electrically supervised.
    4. Components: Single-pole, double-throw switch with normally closed contacts.
    5. Design: Signals that controlled indicator-post valve is in other than fully open position.

2.10 PRESSURE GAGES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    1. AMETEK; U.S. Gauge Division.
    2. Ashcroft, Inc.
    3. Brecco Corporation.
    4. WIKA Instrument Corporation.
B. Standard: UL 393.
C. Dial Size: 3-1/2- to 4-1/2-inch diameter.
D. Pressure Gage Range: 0 to 250 psig minimum.
E. Water System Piping Gage: Include "WATER" or "AIR/WATER" label on dial face.
F. Air System Piping Gage: Include retard feature and "AIR" or "AIR/WATER" label on dial face.

PART 3 - EXECUTION

3.01 PREPARATION

A. Perform fire-hydrant flow test according to NFPA 13 and NFPA 291. Use results for system design calculations required in "Quality Assurance" Article.
B. Report test results promptly and in writing.

3.02 WATER-SUPPLY CONNECTIONS

A. Connect sprinkler piping to building's interior water-distribution piping.
B. Install shutoff valve, backflow preventer, pressure gage, drain, and other accessories indicated at connection to water-distribution piping.

3.03 PIPING INSTALLATION

A. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated, as far as practical.
    1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
B. Piping Standard: Comply with requirements for installation of sprinkler piping in NFPA 13.
C. Use listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.
D. Install unions adjacent to each valve in pipes NPS 2 and smaller.
E. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.
F. Install "Inspector's Test Connections" in sprinkler system piping, complete with shutoff valve, and sized and located according to NFPA 13.
G. Install sprinkler piping with drains for complete system drainage.
H. Install sprinkler control valves, test assemblies, and drain risers adjacent to standpipes when sprinkler piping is connected to standpipes.
I. Install automatic (ball drip) drain valve at each check valve for fire-department connection, to drain piping between fire-department connection and check valve. Install drain piping to and spill over floor drain or to outside building.
J. Install alarm devices in piping systems.
K. Install hangers and supports for sprinkler system piping according to NFPA 13. Comply with requirements for hanger materials in NFPA 13.
L. Install pressure gages on riser or feed main, at each sprinkler test connection, and at top of each standpipe. Include pressure gages with connection not less than NPS 1/4 and with soft metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal, and install where they will not be subject to freezing.
M. Fill sprinkler system piping with water.
N. Install electric heating cables and pipe insulation on sprinkler piping in areas subject to freezing.

3.04 JOINT CONSTRUCTION

A. Install couplings, flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.
B. Install unions adjacent to each valve in pipes NPS 2 and smaller.
C. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.
D. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

E. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
F. Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.
G. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
    1. Apply appropriate tape or thread compound to external pipe threads.
    2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
H. Welded Joints: Construct joints according to AWS D10.12M/D10.12, using qualified processes and welding operators according to "Quality Assurance" Article.
    1. Shop weld pipe joints where welded piping is indicated. Do not use welded joints for galvanized-steel pipe.
I. Steel-Piping, Cut-Grooved Joints: Cut square-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe joints.
J. Steel-Piping, Roll-Grooved Joints: Roll rounded-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe grooved joints.
K. Dissimilar-Material Piping Joints: Make joints using adapters compatible with materials of both piping systems.

3.05 VALVE AND SPECIALTIES INSTALLATION

A. Install listed fire-protection valves, trim and drain valves, specialty valves and trim, controls, and specialties according to NFPA 13 and authorities having jurisdiction.
B. Install listed fire-protection shutoff valves supervised open, located to control sources of water supply except from fire-department connections. Install permanent identification signs indicating portion of system controlled by each valve.
C. Install check valve in each water-supply connection. Install backflow preventers instead of check valves in potable-water-supply sources.
D. Specialty Valves:
    1. General Requirements: Install in vertical position for proper direction of flow, in main supply to system.
    2. Alarm Valves: Include bypass check valve and retarding chamber drain-line connection.

3.06 SPRINKLER INSTALLATION

A. Install sprinklers in suspended ceilings in center of narrow dimension of acoustical ceiling panels.
B. Install dry-type sprinklers with water supply from heated space. Do not install pendent or sidewall, wet-type sprinklers in areas subject to freezing.
C. Install sprinklers into flexible, sprinkler hose fittings and install hose into bracket on ceiling grid.

3.07 IDENTIFICATION

A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.
B. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26 Section "Electrical Identification."

3.08 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:
    1. Leak Test: After installation, charge systems and test for leaks. Repair leaks and retest until no leaks exist.
    2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
    3. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.
    4. Energize circuits to electrical equipment and devices.
    5. Start and run excess-pressure pumps.
    6. Coordinate with fire-alarm tests. Operate as required.
    7. Coordinate with fire-pump tests. Operate as required.
    8. Verify that equipment hose threads are same as local fire-department equipment.
C. Sprinkler piping system will be considered defective if it does not pass tests and inspections.
D. Prepare test and inspection reports.

3.09 CLEANING

A. Clean dirt and debris from sprinklers.
B. Remove and replace sprinklers with paint other than factory finish.

3.10 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain specialty valves.

3.11 PIPING SCHEDULE

A. Sprinkler specialty fittings may be used, downstream of control valves, instead of specified fittings.
B. Standard-pressure, wet-pipe sprinkler system, NPS 2 and smaller, shall be one of the following:
    1. Standard-weight, black-steel pipe with threaded ends; uncoated, gray-iron threaded fittings; and threaded joints.
C. Standard-pressure, wet-pipe sprinkler system, NPS 2-1/2 to NPS 4, shall be one of the following:
    1. Standard-weight, black-steel pipe with threaded ends; uncoated, gray-iron threaded fittings; and threaded joints.
    2. Standard-weight, black-steel pipe with cut- or roll-grooved ends; uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.
    3. Schedule 10, black-steel pipe with roll-grooved ends; uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.
D. Standard-pressure, wet-pipe sprinkler system, NPS 5 and larger, shall be one of the following:
    1. Standard-weight, black-steel pipe with threaded ends; uncoated, gray-iron threaded fittings; and threaded joints.
    2. Standard-weight, black-steel pipe with cut- or roll-grooved ends; uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.

3.12 SPRINKLER SCHEDULE

A. Use sprinkler types in subparagraphs below for the following applications:
    1. Rooms without Ceilings: Upright sprinklers.
    2. Rooms with Suspended Ceilings: Recessed sprinklers.
    3. Wall Mounting: Sidewall sprinklers.
    4. Spaces Subject to Freezing: Pendent, dry sprinklers.

B. Provide sprinkler types in subparagraphs below with finishes indicated.
    1. Concealed Sprinklers: Rough brass, with factory-painted white cover plate.
    2. Flush Sprinklers: Bright chrome, with painted white escutcheon.
    3. Recessed Sprinklers: Bright chrome, with bright chrome escutcheon.
    4. Upright Pendent and Sidewall Sprinklers: Chrome plated in finished spaces exposed to view; rough bronze in unfinished spaces not exposed to view.

END OF SECTION