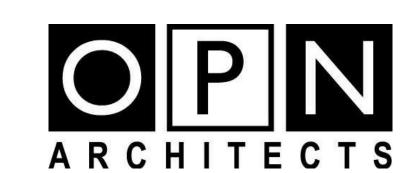


# PINNEY LIBRARY

516 COTTAGE GROVE ROAD, MADISON, WI









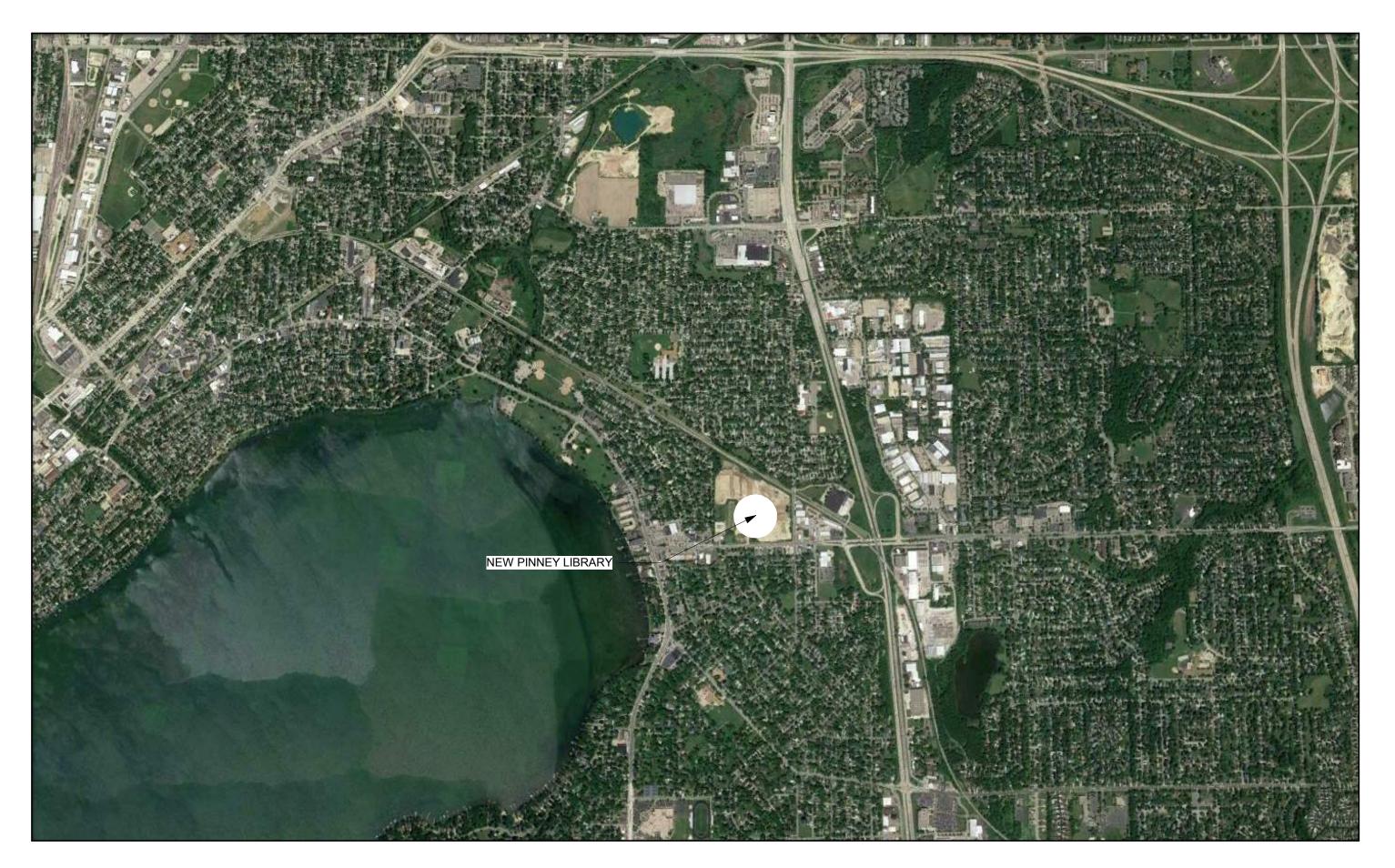


# PINNEY LIBRARY

516 COTTAGE GROVE ROAD, MADISON, WISCONSIN

## SHEET INDEX

SHEET NUMBER	SHEET NAME		
- GENERAL		M200	LEVEL 0 FLOOR PLAN - PIPING
AG001	SHEET INDEX AND STAMPS	M201	LEVEL 1 FLOOR PLAN - PIPING
AG002	GENERAL DRAWING INFORMATION	M300	ENLARGED PLANS AND SECTIONS - MECHANICA
AG003	WALL TYPES	M301	ENLARGED PLANS AND SECTIONS - MECHANICA
AG004	CODE REVIEW & LIFE SAFETY PLAN	M400	MECHANICAL DETAILS
		M401	MECHANICAL DETAILS
00 CIVIL (FOR	R REFERENCE ONLY)	M402	MECHANICAL DETAILS
C-1.1	SITE PLAN	M500	MECHANICAL DIAGRAMS
C-1.2	ENLARGED SITE PLAN - WEST	M501	MECHANICAL DIAGRAMS
C-1.3	ENLARGED SITE PLAN - EAST	M550	CONTROL DIAGRAMS - MECHANICAL
C-1.4	SITE LIGHTING PLAN	M551	CONTROL DIAGRAMS - MECHANICAL
C-2.0	GRADING AND EROSION CONTROL PLAN	M552	CONTROL DIAGRAMS - MECHANICAL
C-2.1	UTILITY AND FIRE LAN PLAN	M600	MECHANICAL SCHEDULES
C-2.2	SITE PLAN		
		04 ELECTF	RICAL
01 STRUCTU	RAL	E000	ELECTRICAL COVER SHEET
S000	GENERAL NOTES	E100	LEVEL 0 FLOOR PLAN - ELECTRICAL - LIGHTING
S100	FOUNDATION LAYOUT	E101	LEVEL 1 FLOOR PLAN - LIGHTING
		E200	LEVEL 0 FLOOR PLAN - ELECTRICAL - POWER
02 ARCHITEC	CTURE	E201	LEVEL 1 FLOOR PLAN - POWER
A100	FLOOR PLAN LOWER LEVEL	E300	LEVEL 0 FLOOR PLAN - ELECTRICAL - SYSTEMS
A101	FLOOR PLAN LEVEL 1	E301	LEVEL 1 FLOOR PLAN - FIRE ALARM
A101.1	RAISED ACCESS FLOOR PLAN LEVEL 1	E400	ELECTRICAL DETAILS
A121	REFLECTED CEILING PLAN BASEMENT & LEVEL 1	E500	ELECTRICAL ONE-LINE DIAGRAMS
A131	FINISH FLOOR PLAN LEVEL 1	E600	ELECTRICAL SCHEDULES
A141	ENLARGED FLOOR PLANS	E700	ELECTRICAL PANEL SCHEDULES
A142	ENLARGED FLOOR PLANS		
A151	ENLARGED REFLECTED CEILING PLANS	05 PLUMBI	
A161	FURNITURE PLAN LEVEL 1 - FOR REFERENCE ONLY	P000	PLUMBING COVER SHEET
A200	EXTERIOR ELEVATIONS	P100	LEVEL 0 FLOOR PLAN - PLUMBING
A300	BUILDING SECTIONS	P101	LEVEL 1 UNDER RAISED FLOOR PLAN - PLUMBIN
A310	DETAILS	P102	LEVEL 1 FLOOR PLAN - PLUMBING
A311	DETAILS	P200	ENLARGED PLANS AND SECTIONS - PLUMBING
A312	DETAILS	P300	RISER DIAGRAMS - PLUMBING
A320	PATIO ENCLOSURE PLAN, ELEVATIONS, AND DETAILS (ALTERNATE 1)	P301	RISER DIAGRAMS - PLUMBING
A321	PATIO ENCLOSURE PLAN, ELEVATIONS, AND DETAILS (ALTERNATE 1)	P302	RISER DIAGRAMS - PLUMBING
A322	PLAYLAB PLAN, ELEVATIONS, AND DETAILS	P500	PLUMBING DIAGRAMS
A323	PLAYLAB PLAN, ELEVATIONS, AND DETAILS	P600	PLUMBING SCHEDULES
A400	INTERIOR ELEVATIONS		
A401	INTERIOR ELEVATIONS		ROTECTION
A402	INTERIOR ELEVATIONS	F000	FIRE PROTECTION COVER SHEET
A403	INTERIOR ELEVATIONS	F100	LEVEL 0 FLOOR PLAN - FIRE PROTECTION
A500	CASEWORK DETAILS	F101	LEVEL 1 FLOOR PLAN - FIRE PROTECTION
A501	CUSTOM CASEWORK DETAILS		0.004
A600	ROOM FINISH SCHEDULE AND SPECIFICATION	07 TECHNO	
A601	DOOR SCHEDULE AND ELEVATIONS	T000	TECHNOLOGY COVER SHEET
A602	BORROWED LIGHT ELEVATIONS	T050	SITE PLAN - TECHNOLOGY
A700	3D PERSPECTIVES - FOR REFERENCE ONLY	T100	LEVEL 0 FLOOR PLAN - WEST - TECHNOLOGY
A701	3D PERSPECTIVES - FOR REFERENCE ONLY	T101 T300	LEVEL 1 FLOOR PLAN - TECHNOLOGY
OO MECHANICAL			ENLARGED PLANS - TECHNOLOGY
03 MECHANICAL			TECHNOLOGY DETAILS
M000	MECHANICAL COVER SHEET	T500	TECHNOLOGY DIAGRAMS
M001	SITE PLAN - PHASE 1 - MECHANICAL	T501	TECHNOLOGY DIAGRAMS
M002	SITE PLAN - PHASE 2 - MECHANICAL	T502	TECHNOLOGY DIAGRAMS
M100	LEVEL 0 FLOOR PLAN - VENTILATION	T600	TECHNOLOGY SCHEDULES
M101	LEVEL 1 UNDER RAISED FLOOR PLAN - MECHANICAL	T601	TECHNOLOGY SCHEDULES





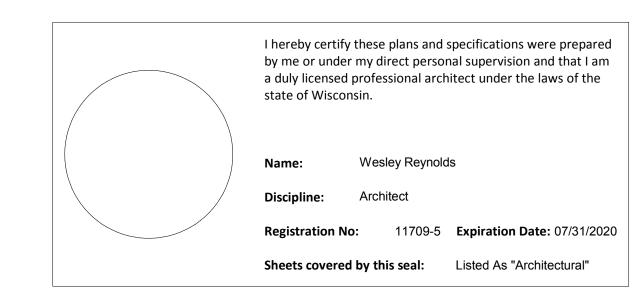
## PROJECT NARRATIVE

The project consists of a ~20,000 SF interior build out in the new Royster Corners development. The library will occupy half of the first floor of the new building which will have additional commercial and residential tenant spaces. As a neighborhood library, the project seeks to reflect the needs and values of the surrounding neighborhood by providing a welcoming and inclusive environment. A focus on early literacy will be at the forefront of the design with technology, print, and staff and patron interaction key components to connecting with the community.

## ARCHITECT OF RECORD:

LEVEL 1 FLOOR PLAN - VENTILATION

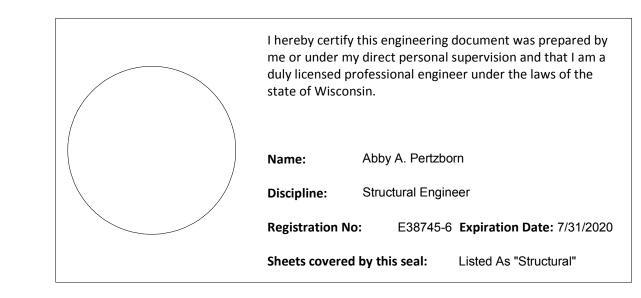
OPN ARCHITECTS



## STRUCTURAL ENGINEER:

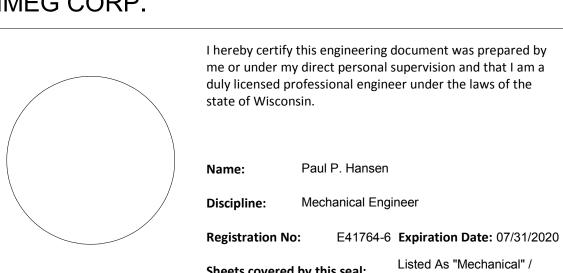
GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

IMEG CORP.



## **MECHANICAL**/ **PLUMBING ENGINEER:**

IMEG CORP.



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

PUBLIC IMPROVEMENT PROJECT APPROVED:

RES #: 18-00754

FILE ID: 53438

DATE: 10/30/2018

BY THE COMMON COUNCIL OF MADISON, WI DATE

PUBLIC IMPROVEMENT DESIGN APPROVED BY:

**CITY ENGINEER** 

OPN Project No. 17609000

City Contract No.

Sheet Issue Date

11/30/2018 **BID DOCUMENTS** 

Sheet Name SHEET INDEX AND STAMPS

Sheet Number

**AG001** 

301 N Broom St., Suite 100 Madison, WI 53703 P: 608-819-0260

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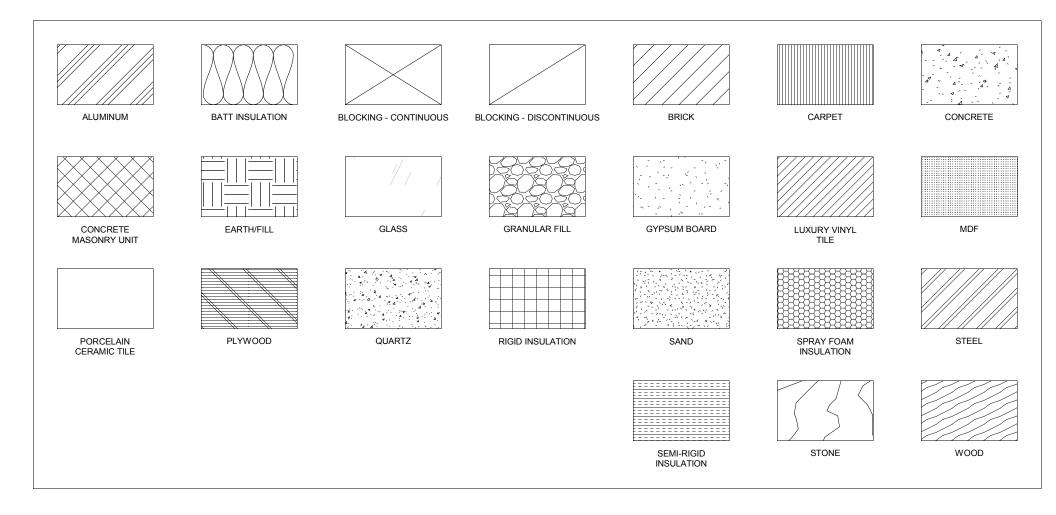
LIBRARY

**Foundation** 

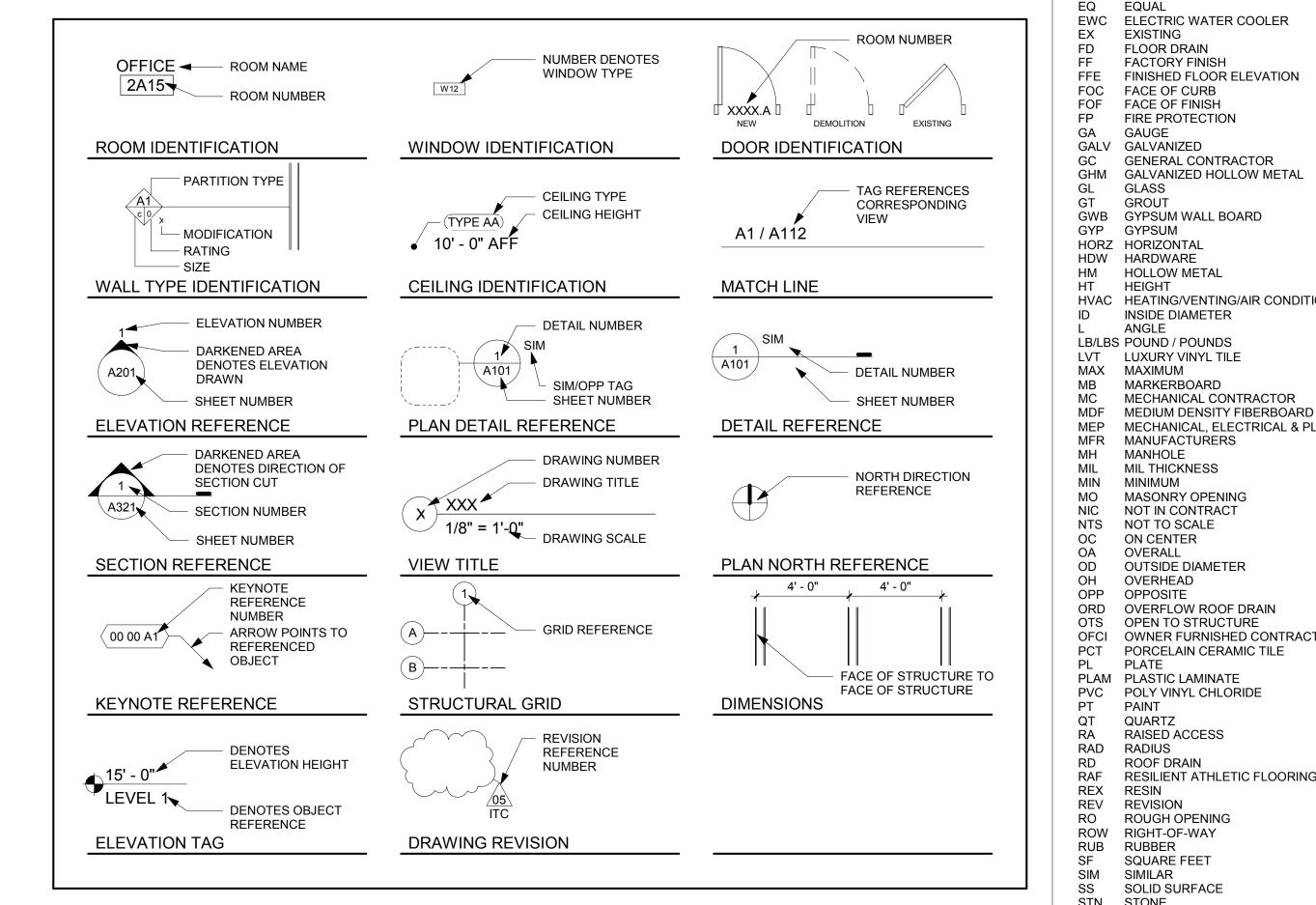
516 COTTAGE GROVE ROAD

P. 608.223.9600 F. 608.223.9601

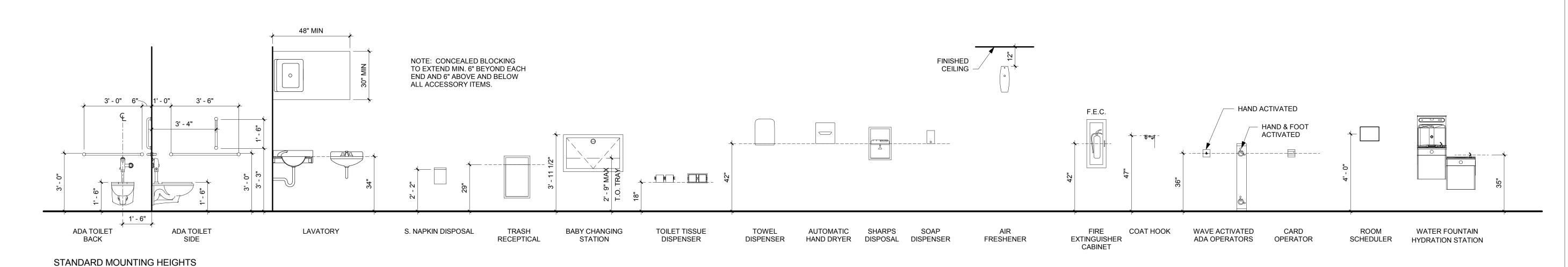
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### STANDARD MATERIAL DEFINITIONS



## STANDARD SYMBOLS



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25

| 13 |

1 2 3 4 5 6 7 8 9 10

## STANDARD ABBREVIATIONS

CHANNEL

CONC CONCRETE

CONT CONTINUOUS CPT CARPET CRK CORK

DIA DIAMETER
DN DOWN
DS DOWNSPOUT

EJ EXPANSION JOINT ELEC ELECTRICAL ELEV ELEVATION

EPF EPOXY FLOORING EPT EPOXY PAINT EQ EQUAL

FD FLOOR DRAIN

GA GAUGE

GALV GALVANIZED

HORZ HORIZONTAL

HDW HARDWARE

L ANGLE

MAX MAXIMUM

MIN MINIMUM

PL PLATE

QT QUARTZ

RAD RADIUS

REX RESIN REV REVISION

STN STONE

HM HOLLOW METAL HT HEIGHT

ID INSIDE DIAMETER

LB/LBS POUND / POUNDS

LVT LUXURY VINYL TILE

MFR MANUFACTURERS MH MANHOLE MIL MIL THICKNESS

MO MASONRY OPENING NIC NOT IN CONTRACT

ORD OVERFLOW ROOF DRAIN OTS OPEN TO STRUCTURE

PCT PORCELAIN CERAMIC TILE

RD ROOF DRAIN
RAF RESILIENT ATHLETIC FLOORING

PLAM PLASTIC LAMINATE

RA RAISED ACCESS

RO ROUGH OPENING ROW RIGHT-OF-WAY RUB RUBBER

SF SQUARE FEET SIM SIMILAR

SS SOLID SURFACE

TOW TOP OF WALL TP TOILET PARTITION TS TOP OF STAIR

TYP TYPICAL

VERT VERTICAL

W/O WITHOUT WD WOOD

WB WALL BASE
WC WALL COVERING
W/ WITH

WP WALL PROTECTION

WT WINDOW TREATMENT WWF WELDED WIRE FABRIC

ST STL STAINLESS STEEL SUSP SUSPENDED

T&G TONGUE AND GROOVE
TO TOP OF
TOC TOP OF CURB
TOM TOP OF MASONRY

TOS TOP OF SLAB / TOP OF STEEL

UNO UNLESS NOTED OTHERWISE

UL UNDERWRITERS LABORATORIES, INC.

PVC POLY VINYL CHLORIDE PT PAINT

NTS NOT TO SCALE OC ON CENTER OA OVERALL

MB MARKERBOARD
MC MECHANICAL CONTRACTOR

MDF MEDIUM DENSITY FIBERBOARD

MEP MECHANICAL, ELECTRICAL & PLUMBING

OFCI OWNER FURNISHED CONTRACTOR INSTALLED

FACTORY FINISH

GWB GYPSUM WALL BOARD GYP GYPSUM

HVAC HEATING/VENTING/AIR CONDITIONING

FP FIRE PROTECTION

CORNER GUARD

CONTROL JOINT

CL CENTER LINE
CLG CEILING
CLL CONSTRUCTION LIMITS LINE
CMU CONCRETE MASONRY UNIT
CO CLEANOUT

DEMO DEMOLISH / DEMOLITION DF DRINKING FOUNTAIN

ELECTRICAL CONTRACTOR EIFS EXTERIOR INSULATION FINISH SYSTEM

# NUMBER ACM ALUMINUM COMPOSITE METAL CEILING PANEL ACP ACOUSTICAL CEILING PANEL AFF ABOVE FINISH FLOOR BAS BUILDING AUTOMATION SYSTEM 301 N Broom St., Suite 100 BC BOTTOM OF CURB Madison, WI 53703 **BUTT GLAZE** P: 608-819-0260 BENCH MARK BOC BACK OF CURB BOS BOTTOM OF STEEL www.opnarchitects.com BOW BOTTOM OF WALL All reports, plans, specifications, computer files, field data, BRG BEARING BS BOTTOM OF STAIR









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MADISON, WI 53562 P. 608.223.9600 F. 608.223.9601

Key Plan

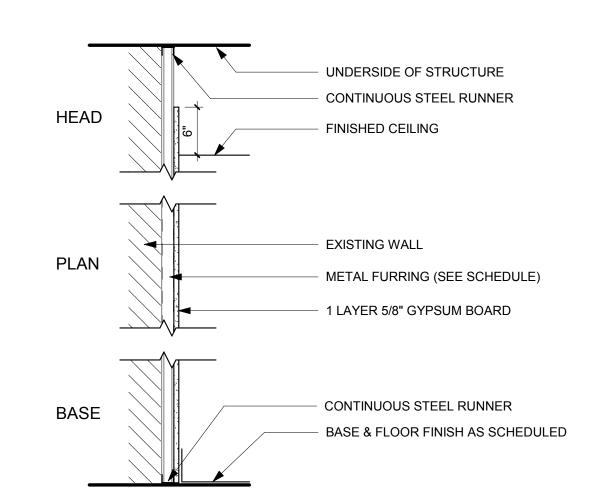
OPN Project No.

**GENERAL DRAWING** INFORMATION

**AG002** 

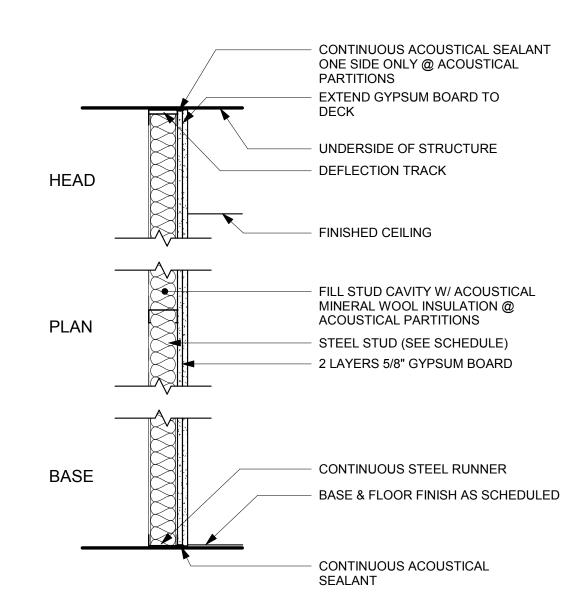
## C2 EXTERIOR FURRED PARTITION NON RATED / NON-LOAD BEARING

SIZE



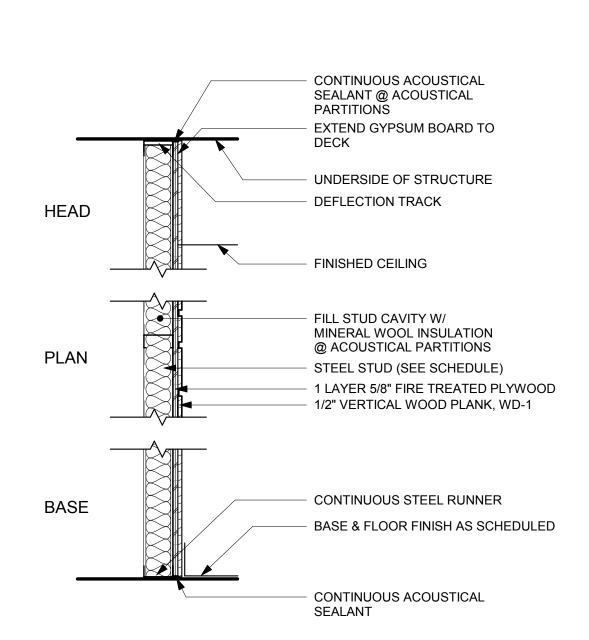
## 1 FURRED PARTITION

1 5/8" C1 3 5/8"



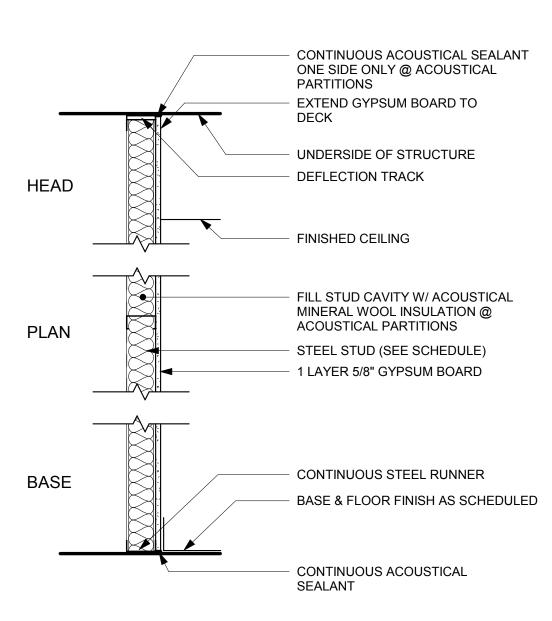
## **△ 2** STEEL FRAMED PARTITION

STUD SIZE



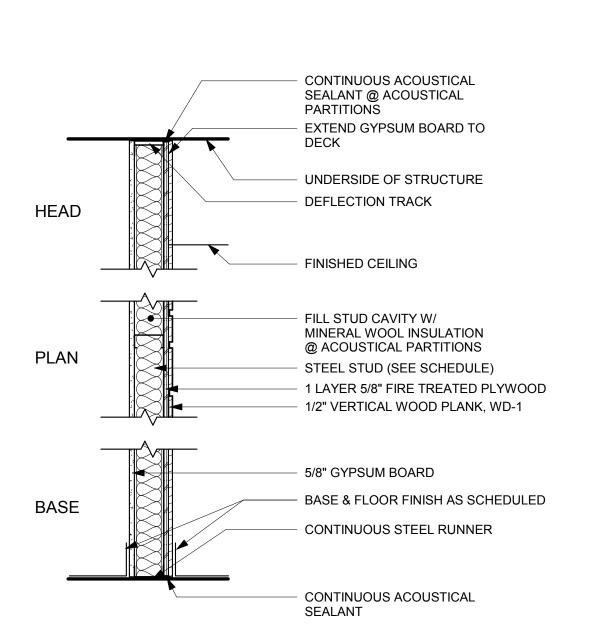
## A6 STEEL FRAMED PARTITION NON-LOAD BEARING

SIZE



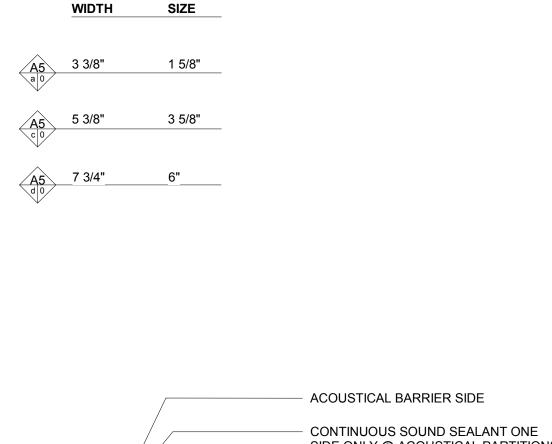
## ▲ 2 STEEL FRAMED PARTITION

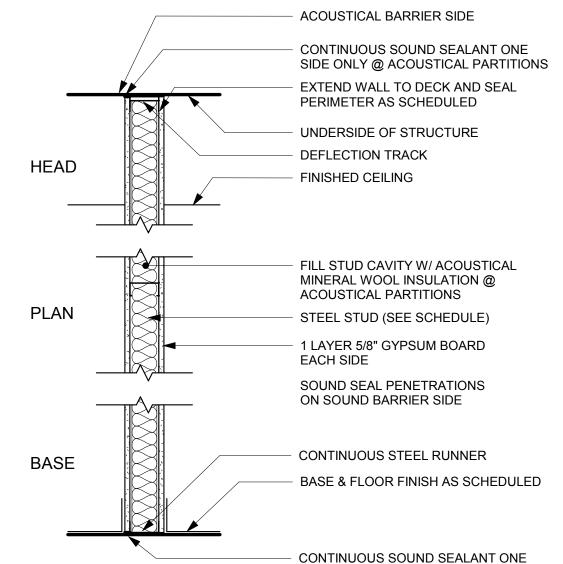
STUD SIZE

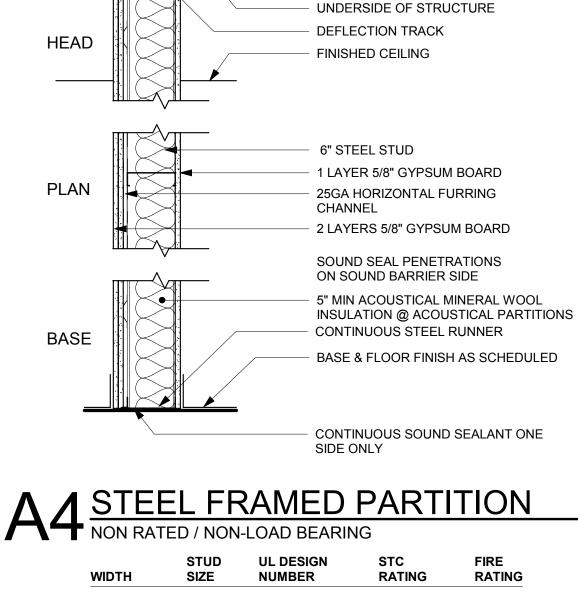


1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25

## A5 STEEL FRAMED PARTITION NON RATED / NON-LOAD BEARING







ACOUSTICAL BARRIER SIDE

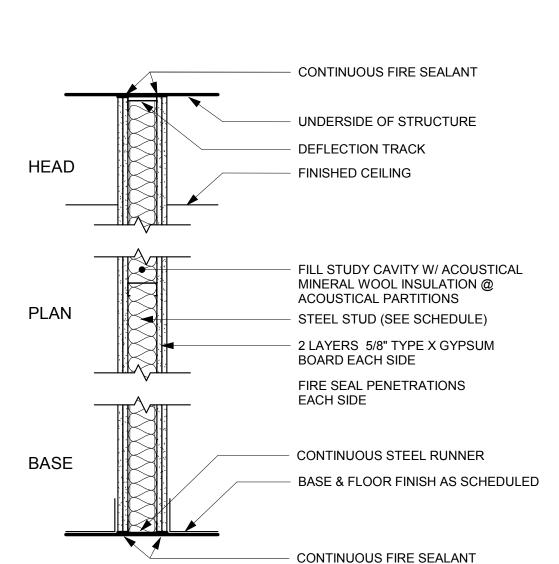
SIDE ONLY @ ACOUSTICAL

PERIMETER AS SCHEDULED

PARTITIONS

CONTINUOUS SOUND SEALANT ONE

- EXTEND WALL TO DECK AND SEAL



## 2 HOUR RATED / NON-LOAD BEARING

SIDE ONLY

	2110011101120710120710						
	WIDTH	STUD SIZE	UL DESIGN NUMBER	STC RATING	FIRE RATING		
A1 c 2	6 1/8"	3 5/8"	U419	54	2-HR		
A1	8 1/2"	6"	U419	54	2-HR		

#### **GENERAL NOTES**

1. REFER TO FLOOR PLANS FOR PARTITION TYPE LOCATIONS. 2. STEEL FRAME PARTITIONS ARE BASED ON DESIGN INFORMATION INCLUDED 301 N Broom St., Suite 100 IN PRODUCT TECHNICAL INFORMATION OF THE STEEL STUD Madison, WI 53703 MANUFACTURER'S ASSOCIATION P: 608-819-0260 (SSMA) PUBLICATION DATED 2000 AND

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THE FOLLOWING PERFORMANCE CRITERIA:

A. LIMITING HEIGHT CRITERIA: DEFLECTION OF L/360 AT ALL WALLS TO RECEIVE TILE. DEFLECTION OF L/240 AT ALL OTHER WALLS AT 5 LBS. PER SQ.

B. THICKNESS - STEEL COMPONENTS: **DESIGN THICKNESS** 0.0283 0.0346

0.0451 3. MINIMUM GAUGE: IF LIMITING HEIGHT AS SCHEDULED IN PARTITION DETAILS EXCEEDS PROJECT CONDITIONS OR IF THE SELECTED STEEL STUD MANUFACTURER'S THICKNESS OF STEEL COMPONENTS VARIES FROM THE BASIS OF DESIGN AS SET FORTH ABOVE, PROVIDE MANUFACTURER'S STANDARD THICKNESS(GAUGE) THAT MEETS OR EXCEEDS LIMITING HEIGHT PERFORMANCE CRITERIA FOR STUD DEPTH AND SPACING INDICATED.

4. WOOD BLOCKING CONCEALED BY GYPSUM BOARD DOES NOT NEED TO BE FIRE TREATED. 5. ACOUSTIC PARTITIONS: REFER TO FLOOR PLANS AND REFLECTED CEILING PLANS FOR ACOUSTIC PARTITIONS TO RECEIVE ACOUSTICAL

BATT INSULATION AND SOUND

SEALANT

B SHAFT WALL

C FURRED

D MASONRY

SIZE

a 1 5/8"

I 1 1/2" Z

m 2" Z

n 3" Z

STEEL STUD

E | SPECIAL FINISHES

T TEMPORARY PARTITION

PARTITION TYPE AND SYMBOL LEGEND PARTITION TYPE MODIFICATION RATING SIZE

PARTITION TYPE SYSTEM A STEEL FRAMED

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> > MADISON, WI 53562 P. 608.223.9600

F. 608.223.9601

Key Plan

b 2 1/2" c 3 5/8" e 7 1/4" SHAFT WALL STUD STEEL FURRING 7/8" Hat Channel k 1" Z

LIGHT GAUGE STRUCTURAL STEEL (SEE STRUCTURAL)

RATING 0 NON-RATED S SMOKE 1 1 HOUR 2 2 HOUR 3 3 HOUR 4 4 HOUR

> City Contract No. OPN Project No.

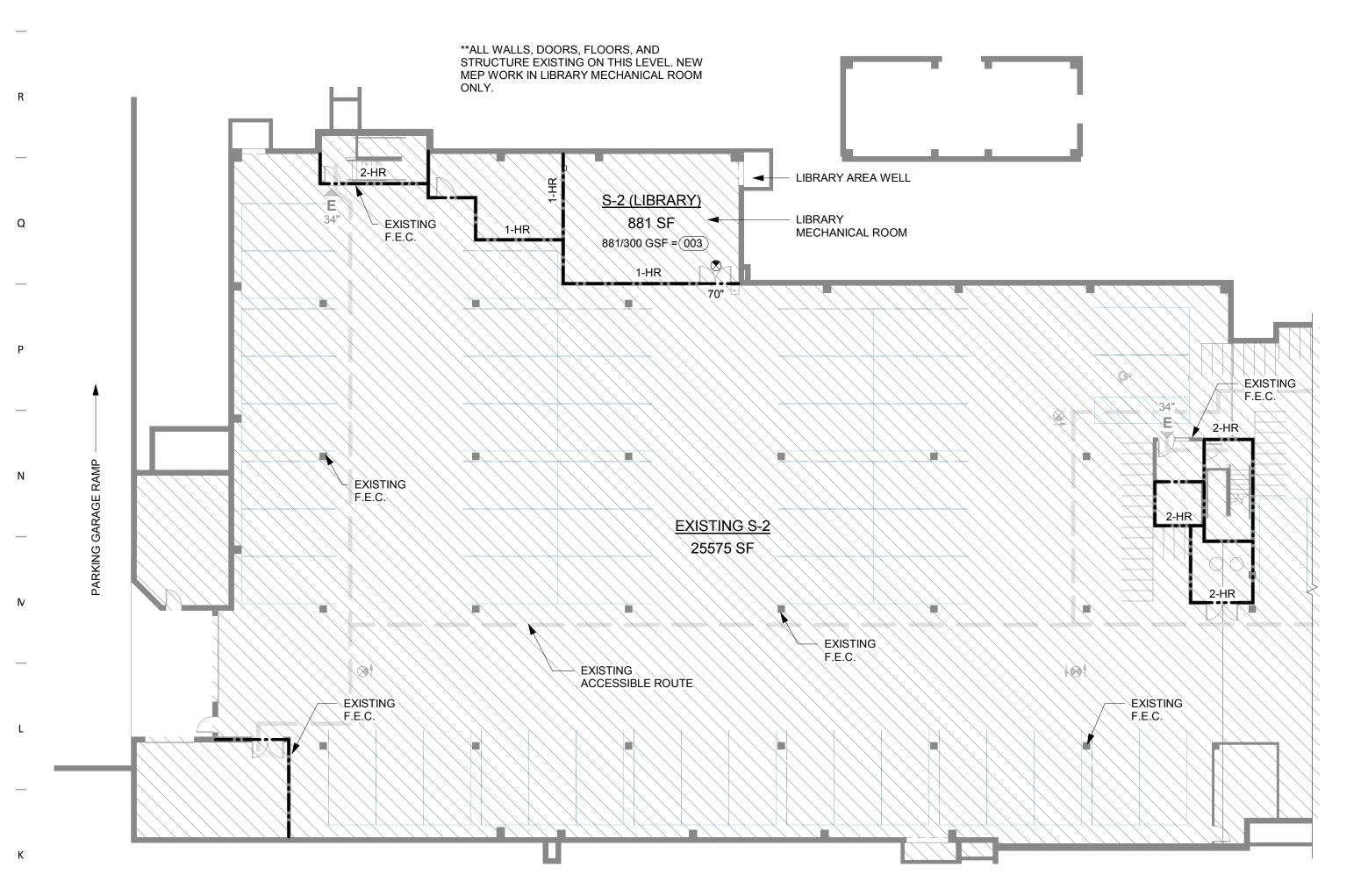
Sheet Issue Date

Sheet Name WALL TYPES

17609000

Sheet Number

**AG003** 



1046/50 GSF = (21)

## APPLICABLE CODE INFORMATION

### APPLICABLE CODE PER CITY OF MADISON AND STATE OF WISCONSIN

2015 International Building Code (IBC)

2015 International Energy Conservation Code 2015 International Fuel Gas Code

2015 International Mechanical Code International Fire Code

#### **BUILDING DESCRIPTION**

THE PROJECT INCLUDES A 20,460 SF FITOUT OF AN EXISTING 86 UNIT APARTMENT BUILDING ABOVE FIRST FLOOR COMMERCIAL SPACE WITH BASEMENT PARKING. THE FIT-OUT WILL OCCUPY HALF OF THE FIRST FLOOR AND WILL BE A SPRINKLERED, TYPE IA CONSTRUCTION WITH A 2-HR FIRE SEPARATION BETWEEN THE COMMERCIAL SPACE AND RESIDENTIAL UNITS. THE EXISTING CORE AND SHELL WILL BE CONSTRUCTED UNDER THE 2009 INTERNATIONAL BUILDING CODE AND THE NEW FIT-OUT WILL BE CONSTRUCTED UNDER THE 2015 INTERNATIONAL BUILDING CODE.

### INTERNATIONAL BUILDING CODE SUMMARY

### CHAPTER 3 - USE & OCCUPANCY CLASSIFICATION

OCCUPANCY CLASSIFICATION: ASSEMBLY (A-3) LIBRARY

## **303.4 ASSEMBLY GROUP A-3**

GROUP A-3 OCCUPANCY INCLUDES ASSEMBLY USES INTENDED FOR WORSHIP, RECREATION OR AMUSEMENT AND OTHER ASSEMBLY USES NOT CLASSIFIED ELSEWHERE IN GROUP A INCLUDING, BUT NOT LIMITED TO: LIBRARIES

#### CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

THE EXISTING BUILDING HEIGHTS AND AREAS MEET THE REQUIREMENTS OF THE 2009 INTERNATIONAL BUILDING CODE FOR BOTH HEIGHTS AND AREA FOR WHICH THE BUILDING WAS DESIGNED AND CONSTRUCTED. NO ALTERATIONS TO THE BUILDING HEIGHTS OR AREAS ARE MADE AS PART OF THIS PROJECT.

### **508 MIXED USE AND OCCUPANCY**

**508.1 GENERAL** ACCESSORY OCCUPANCIES ARE THOSE OCCUPANCIES THAT ARE ANCILLARY TO THE MAIN OCCUPANCY OF THE BUILDING OR POTION THEREOF. ACCESSORY OCCUPANCIES SHALL COMPLY WITH THE PROVISIONS OF

SECTIONS 508.2.1 THROUGH 508.2.4.

**508.2.4 SEPARATION OF OCCUPANCIES** NO SEPARATION IS REQUIRED BETWEEN ACCESSORY OCCUPANCIES AND

## THE MAIN OCCUPANCY.

**CHAPTER 6 - TYPES OF CONSTRUCTION** 

THE EXISTING SPACE WAS CONSTRUCTED AS A SPRINKLED, TYPE I BUILDING PER 2009 IBC. NO ALTERNATIONS TO THE TYPE OF CONSTRUCTION OR FIRE RATINGS ARE MADE AS PART OF THIS PROJECT.

ALL FIRE RATINGS WILL BE MAINTAINED IN ACCORDANCE WITH SECTION 602.2.

#### **CHAPTER 9 - FIRE PROTECTION SYSTEMS**

THE EXISTING SPACE WAS CONSTRUCTED AS A SPRINKLED SPACE PER 2009

MODIFICATIONS TO THE SYSTEM WILL BE MADE TO ACCOMMODATE THE NEW SPACE CONFIGURATION AND WILL BE UPDATED TO THE LATEST CODE.

## 906 PORTABLE FIRE EXTINGUISHERS

MAX TRAVEL DISTANCE = 75 FEET.

906.3 SIZE AND DISTRIBUTION THE SIZE AND DISTRIBUTION OF PORTABLE FIRE EXTINGUISHERS SHALL BE IN ACCORDANCE WITH SECTIONS 906.1 THROUGH 906.3.4.

## **CHAPTER 10 - MEANS OF EGRESS**

## **1004 DESIGN OCCUPANT LOAD**

#### LIBRARY A-3 ASSEMBLY

**TOTAL** 

100 GSF/OCCUPANT (STACK AREA) 13013 GSF/100 = 131 OCCUPANTS 3646 GSF/100 = 37 OCCUPANTS 100 GSF/OCCUPANT (STAFF AREA) 50 GSF/OCCUPANT (READING AREA) 1138 GSF/50 = 41 OCCUPANTS 15 SF/OCCUPANT (ASSEMBLY, UNCONCENTRATED) 723 NSF/15 = 154 OCCUPANTS 15 SF/OCCUPANT (OUTDOOR ASSEMBLY, UNCONCENTRATED) 2097 NSF/15 = 140 OCCUPANTS 300SF/OCCUPANT (MECHANICAL) 881 GSF/300 = 03 OCCUPANTS

#### **506 OCCUPANTS**

### **1005 MEANS OF EGRESS SIZING**

**EGRESS WIDTH** 0.2" X 506 OCCUPANTS = REQUIRED 100.6" < PROVIDED = 260"

1006.2.1 EGRESS BASED ON OCCUPANT LOAD AND COMMON PATH OF EGRESS TRAVEL DISTANCE TWO EXITS OR EXIT ACCESS DOORWAYS FROM ANY SPACE SHALL BE PROVIDED WHERE THE DESIGN OCCUPANT LOAD OR THE COMMON PATH OF EGRESS TRAVEL DISTANCE EXCEEDS THE VALUES LISTED IN TABLE 1006.2.1.

### 1017 EXIT ACCESS TRAVEL DISTANCE

TRAVEL DISTANCE WITHIN THE EXIT ACCESS PORTION OF THE MEANS OF EGRESS SYSTEM SHALL BE IN ACCORDANCE WITH THIS SECTION

#### A OCCUPANCY 250 TRAVEL DISTANCE (W/ SPRINKLER SYSTEM) 300 TRAVEL DISTANCE (W/ SPRINKLER SYSTEM) **B OCCUPANCY**

1020 DEAD ENDS WHERE MORE THAN ONE EXIT OR EXIT ACCESS DOORWAY IS REQUIRED. THE EXIT ACCESS SHALL BE ARRANGED SUCH THAT THERE ARE NO DEAD ENDS IN CORRIDORS MORE THAN 20 FEET IN LENGTH.

**EXCEPTION 2**: IN OCCUPANCIES IN GROUPS B, E, F, I-1, M, R-1, R-2, R-4, A AND Y, WHERE THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1, THE LENGTH OF THE DEAD-END CORRIDORS SHALL NOT EXCEED 50 FEET.

#### **EXCEPTION 3:**

A DEAD-END CORRIDOR SHALL NOT BE LIMITED IN LENGTH WHERE THE LENGTH OF THE DEAD-END CORRIDOR IS LESS THAN 2.5 TIMES THE LEAST WIDTH OF THE DEAD-END CORRIDOR.

#### **1024 EXIT PASSAGEWAYS**

#### 1024.2 WIDTH

THE REQUIRED CAPACITY OF EXIT PASSAGEWAYS SHALL BE DETERMINED AS SPECIFIED IN SECTION 1005.1 BUT THE MINIMUM WIDTH SHALL BE NOT LESS THAN 44 INCHES, EXCEPT THAT EXIT PASSAGEWAYS SERVING AN OCCUPANT LOAD OF LESS THAN 50 SHALL BE NOT LESS THAN 36 INCHES IN WIDTH. THE MINIMUM WIDTH OR REQUIRED CAPACITY OF EXIT PASSAGEWAYS SHALL BE UNOBSTRUCTED.

#### **CHAPTER 29 - PLUMBING SYSTEMS**

#### DESIGN OCCUPANT LOAD = 506 OCCUPANTS / 2 = 253 MALE & 253 FEMALE

(1 EXTRA)

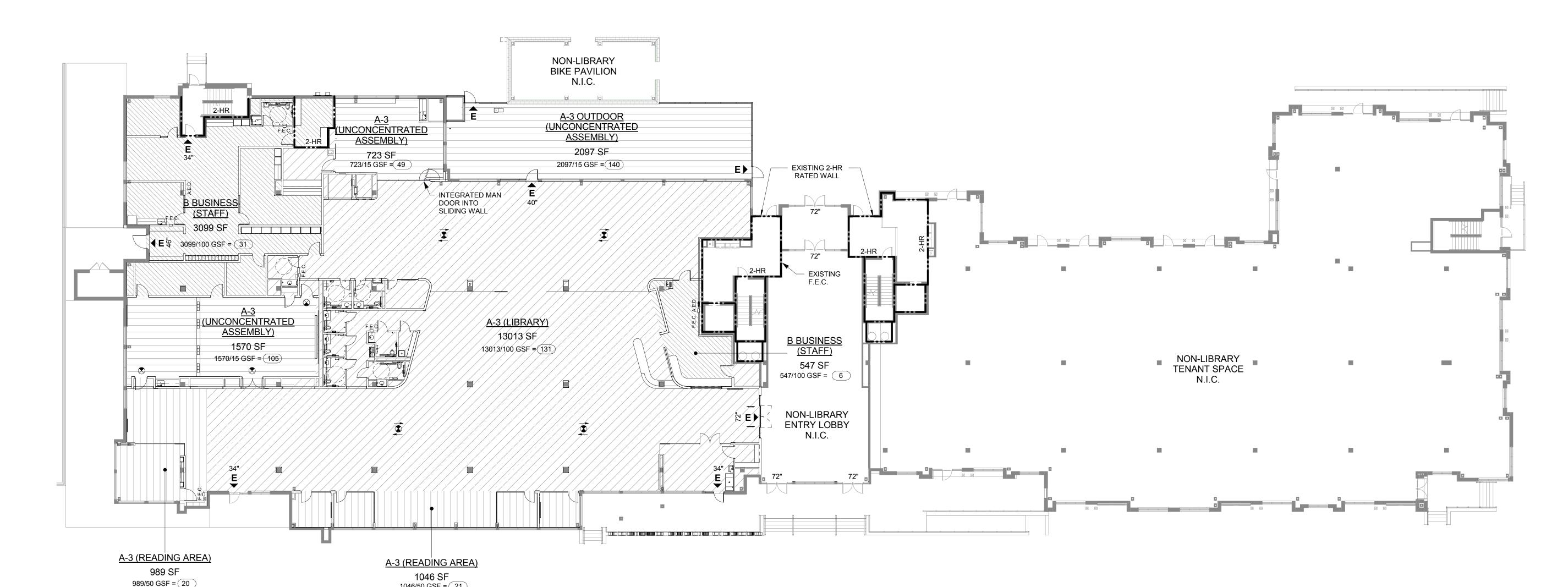
A-3 IS THE MAIN OCCUPANCY CLASSIFICATION AND IS ASSUMED FOR THE ENTIRE FACILITY: AUDITORIUMS WITHOUT PERMANENT SEATING, ART GALLERIES, EXHIBITION HALLS, MUSEUMS, LECTURE HALLS, LIBRARIES, ARCADES AND GYMNASIUMS.

#### **REQUIRED:** OCCUPANCY MALE W/C

	8 UNISEX TOILETS PROVIDED		8 UNISEX LAVS PROVIDED	1 SHOWER	3 DF	1 SERVICE SINK
PROVIDED: OCCUPANCY A-3	MALE W/C	FEMALE W/C	<u>LAVS</u> 8	BATH/SHWR	<u>DF</u>	<u>OTHER</u>
CALCULATED: OCCUPANCY A-3	MALE W/C 253/125 = <b>2.024</b>	FEMALE W/C 253/65 = <b>3.892</b>	<u>LAVS</u> 506/200 = <b>2.53</b>	BATH/SHWR 1	<u>DF</u> 506/500 = <b>1.012</b>	OTHER 1 SERVICE SINK
OCCUPANCY A-3	MALE W/C 1/125	FEMALE W/C 1/65	<u>LAVS</u> 1/200	BATH/SHWR 0	<u>DF</u> 1/500	OTHER 1 SERVICE SINK

(5 EXTRA)

**CODE PLAN LEGEND** 



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

1 HR FIRE BARRIER 2 HR FIRE BARRIER NON-RATED WALL EXISTING WALL FIRE EXTINGUISHER CABINET AUTOMATED EXTERNAL DEFIBRILLATOR 100 S.F. (GROSS) PER OCCUPANT LIBRARY STACKS 50 S.F. (NET) PER OCCUPANT LIBRARY READING ROOMS 15 S.F. (NET) PER OCCUPANT ☐ ASSEMBLY (UNCONCENTRATED) AREAS 300 S.F. (GROSS) PER OCCUPANT MECHANICAL ROOM / EXISTING PARKING GARAGE (S-2) 100 S.F. (GROSS) PER OCCUPANT STAFF WORK (B) 002 OCCUPANT LOAD REQUIRED EGRESS WIDTH: STAIRWAY = .2/PERSON (SEC. 1005.3.1 - EXCEPTION) DOORS = .15/PERSON

(SEC. 1005.3.2 - EXCEPTION)

OPN Project No 17609000 Sheet Issue Date

**SAFETY PLAN** 

Sheet Number

City Contract No.

301 N Broom St., Suite 100

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MADISON, WI

516 COTTAGE GROVE ROAD

1800 DEMING WAY, SUITE 200

MADISON, WI 53562

P. 608.223.9600

F. 608.223.9601

Key Plan

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Madison, WI 53703 P: 608-819-0260

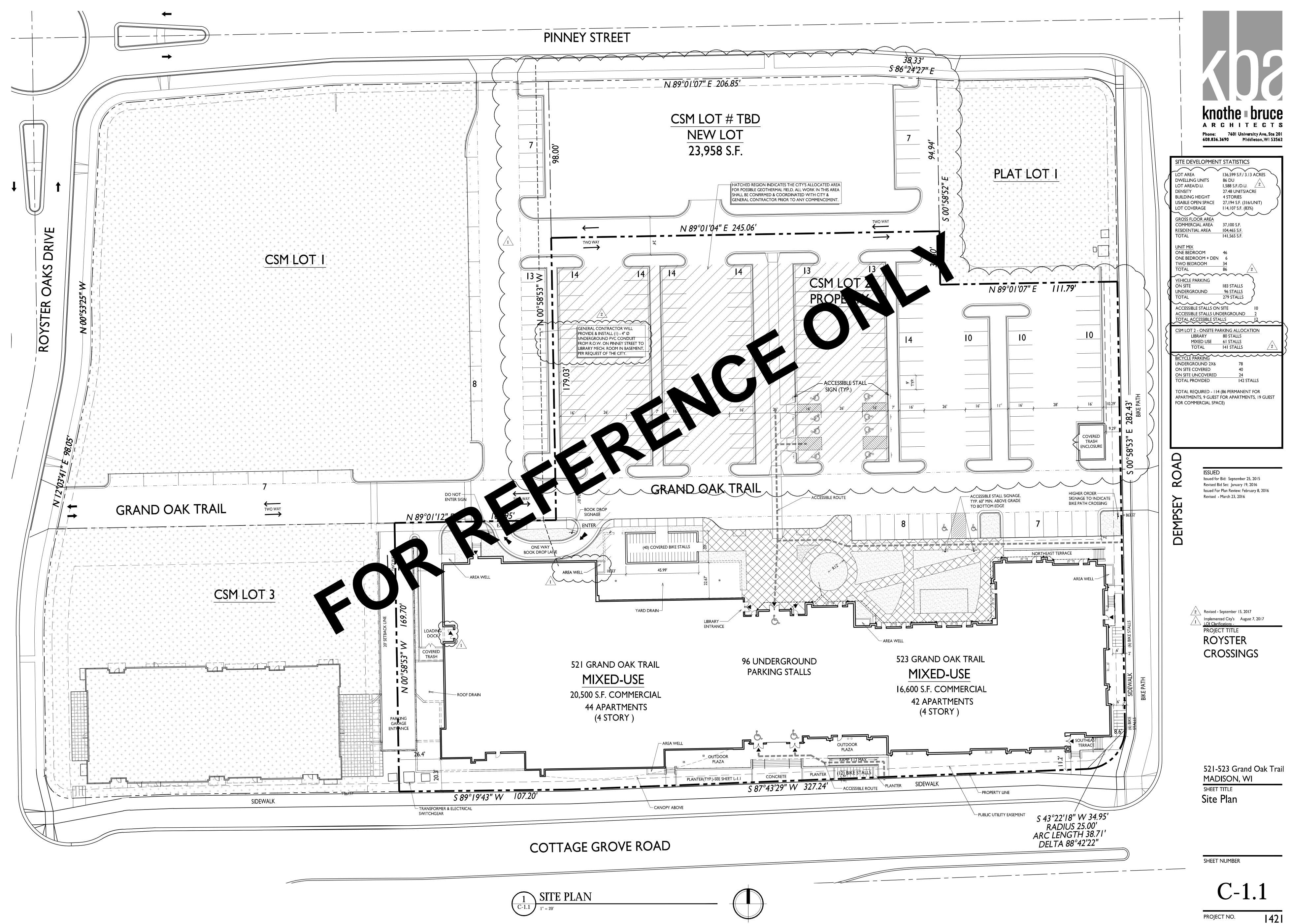
**BID DOCUMENTS** Sheet Name **CODE REVIEW & LIFE** 

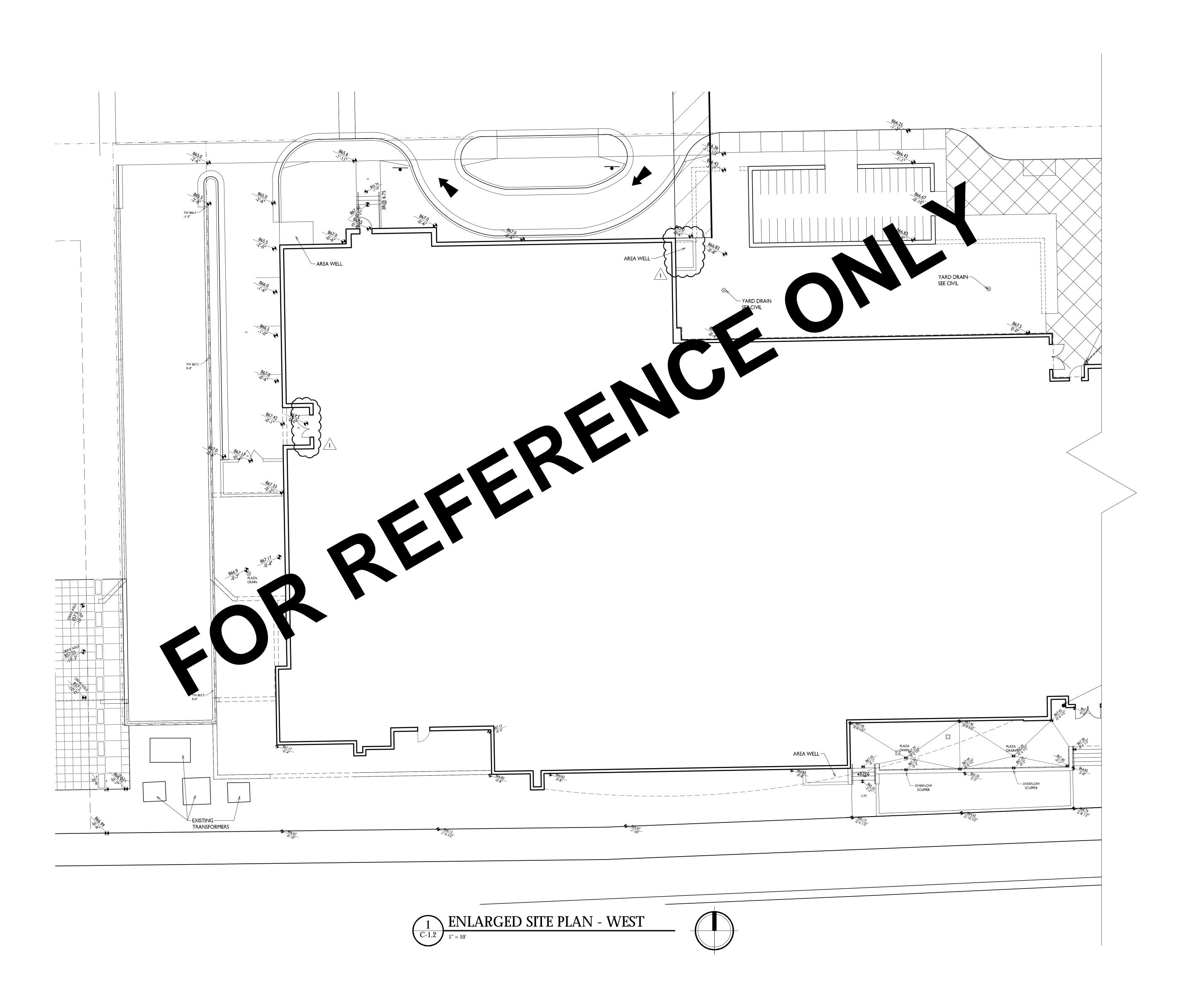
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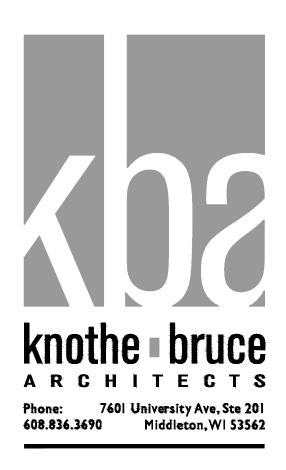
LEVEL 1 CODE PLAN 1/16" = 1'-0"

BASEMENT CODE PLAN

1/16" = 1'-0"







ISSUED Issued for Bid: September 25, 2015
Revised Bid Set: January 19, 2016
Issued For Plan Review: February 8, 2016

Implemented City's August 7, 2017
LOI Clarifications -

PROJECT TITLE ROYSTER CROSSINGS

521-523 Grand Oak Trail

MADISON, WI

SHEET TITLE

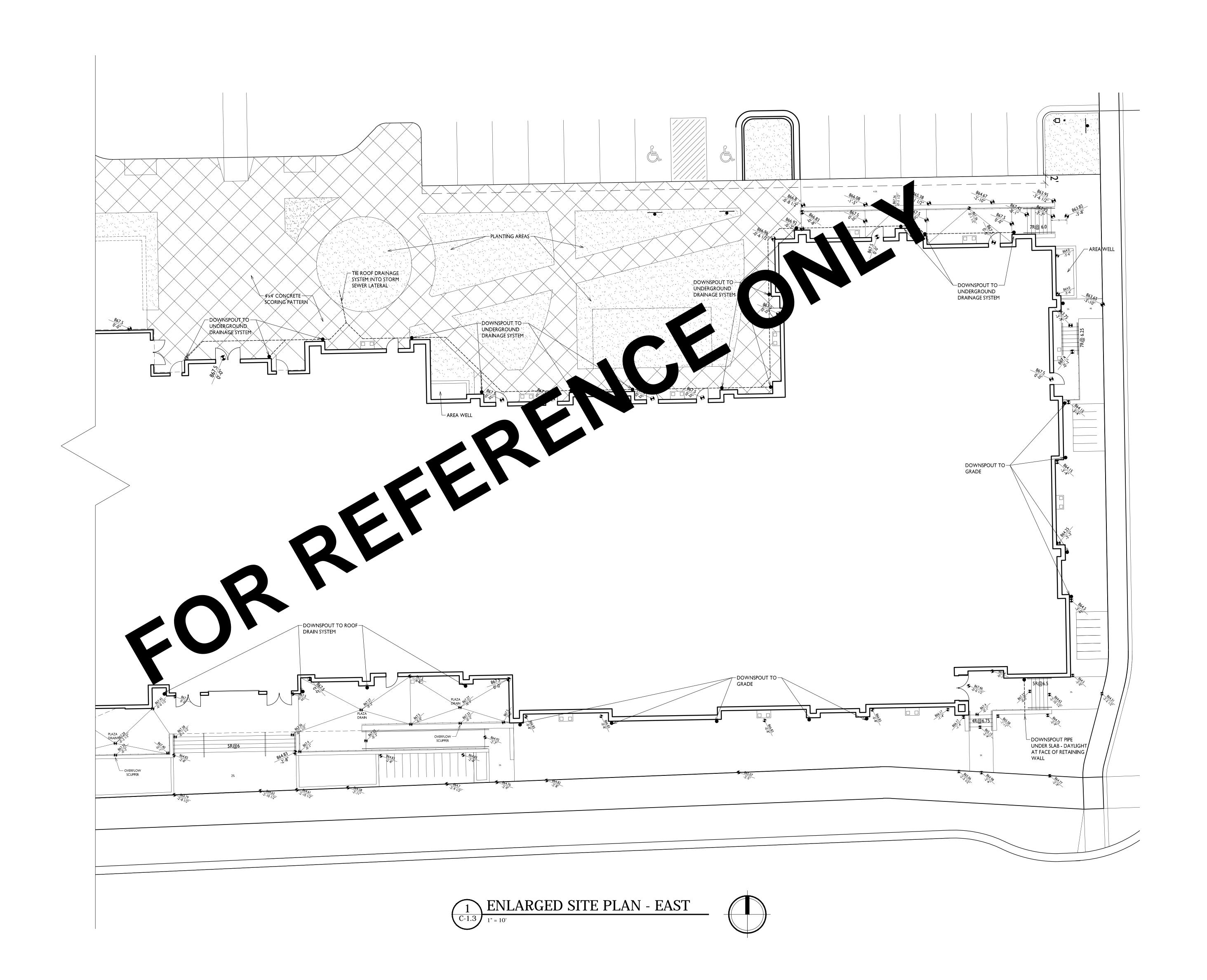
Enlarged

Site Plan - West

SHEET NUMBER

C-1.2





ISSUED
Issued for Bid: September 25, 2015
Revised Bid Set: January 19, 2016
Issued For Plan Review: February 8, 2016

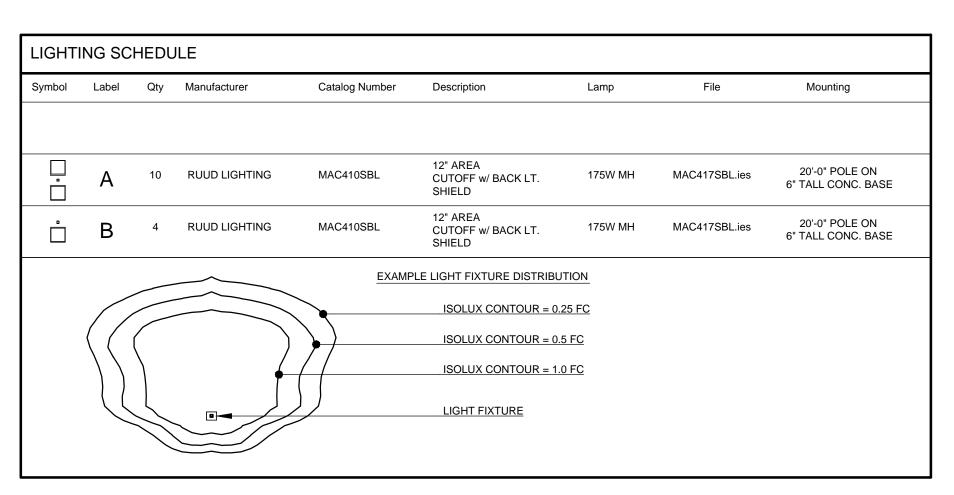
PROJECT TITLE
ROYSTER
CROSSINGS

521-523 Grand Oak Trail MADISON, WI
SHEET TITLE
Enlarged
Site Plan - East

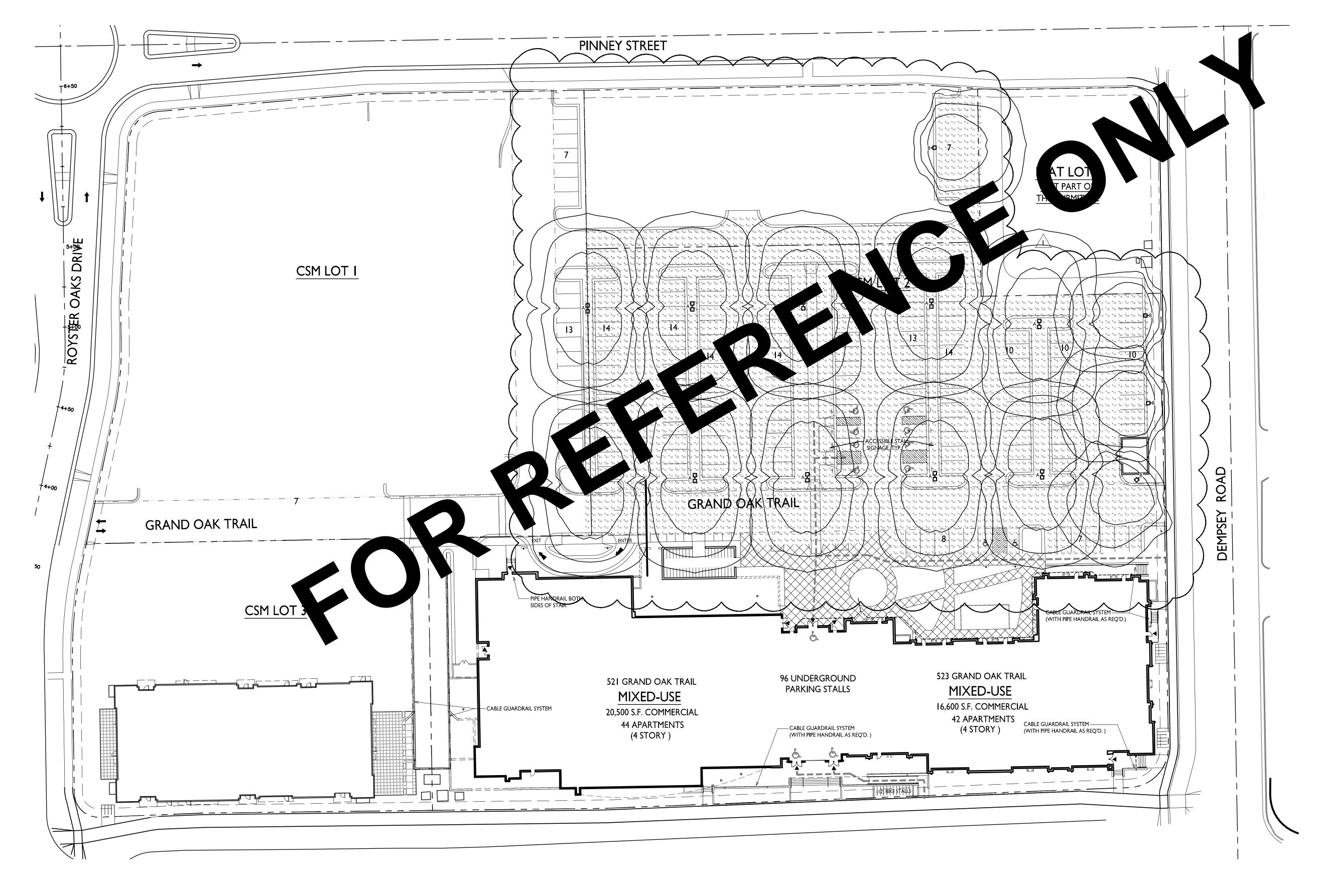
SHEET NUMBER

C-1.3

PROJECT NO. 142

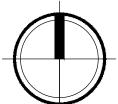


LIGHTING STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
PARKING / DRIVE	+	1.3 fc	4.1 fc	0.3 fc	13.7:1	4.3:1



SITE LIGHTING PLAN

1" = 30'-0"





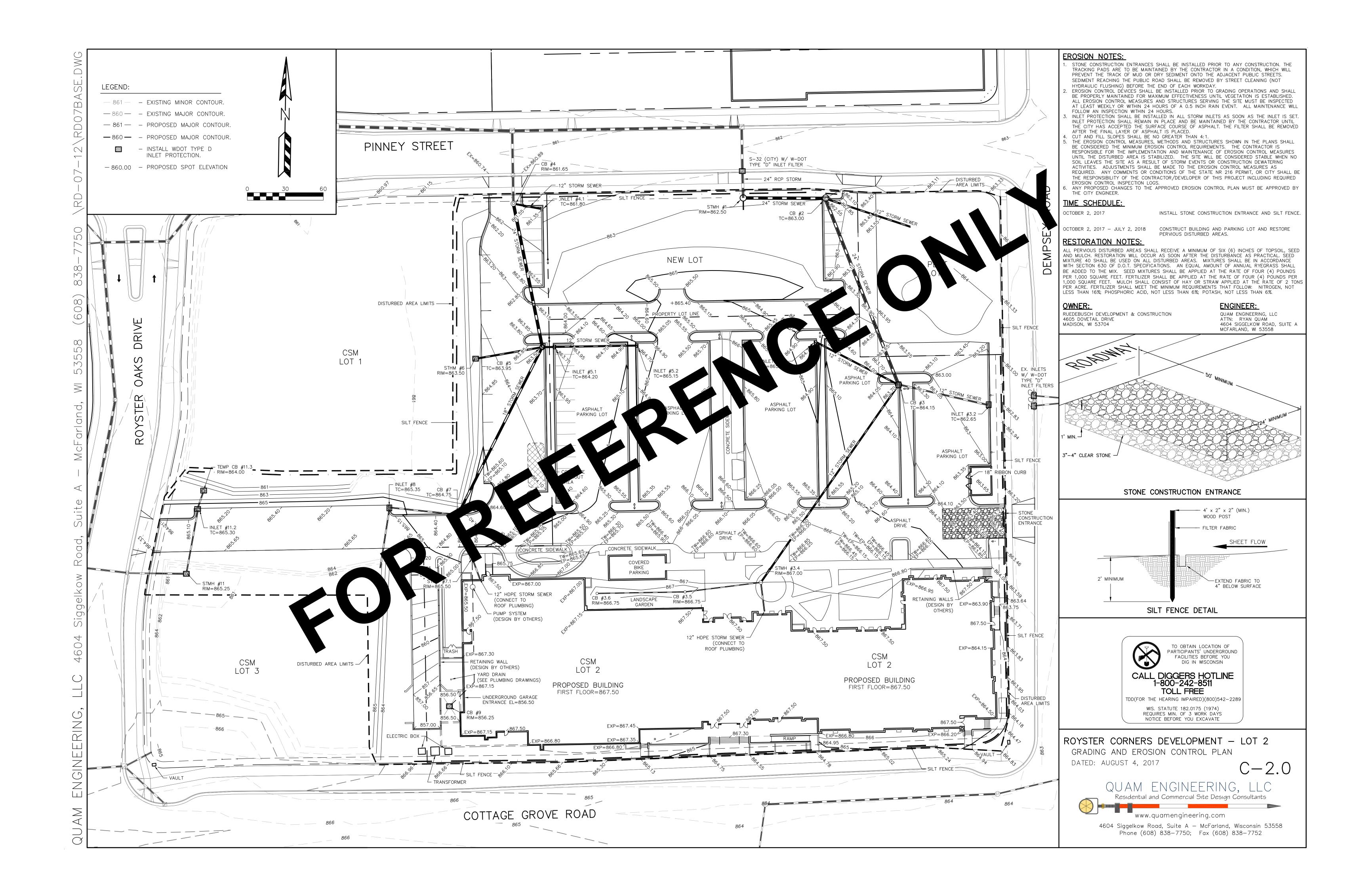
ISSUED Issued for Bid: September 25, 2015 Revised Bid Set: January 19, 2016 Issued For Plan Review: February 8, 2016

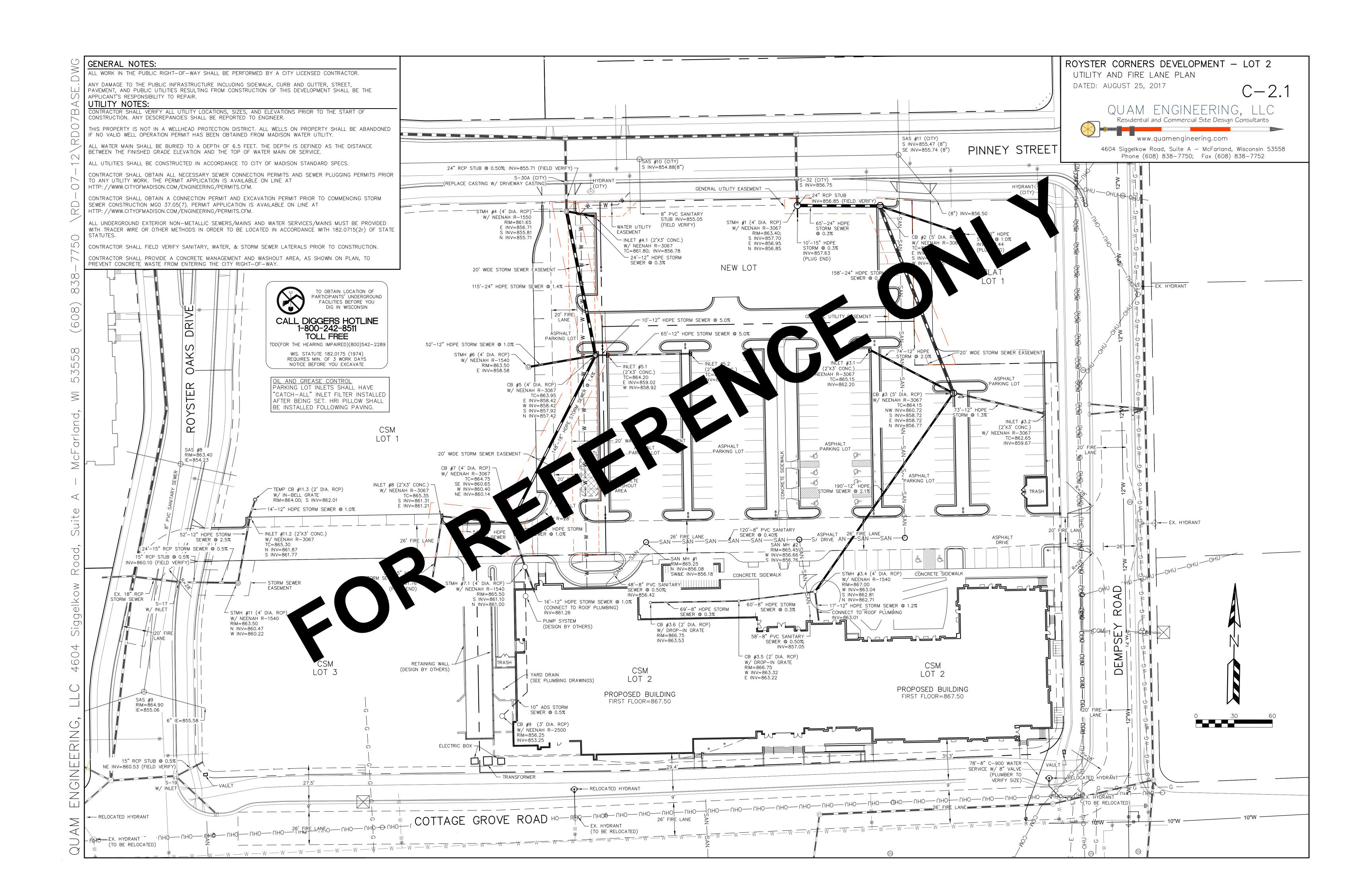
Implemented City's August 7, 2017
LOI Clarifications PROJECT TITLE ROYSTER CROSSINGS

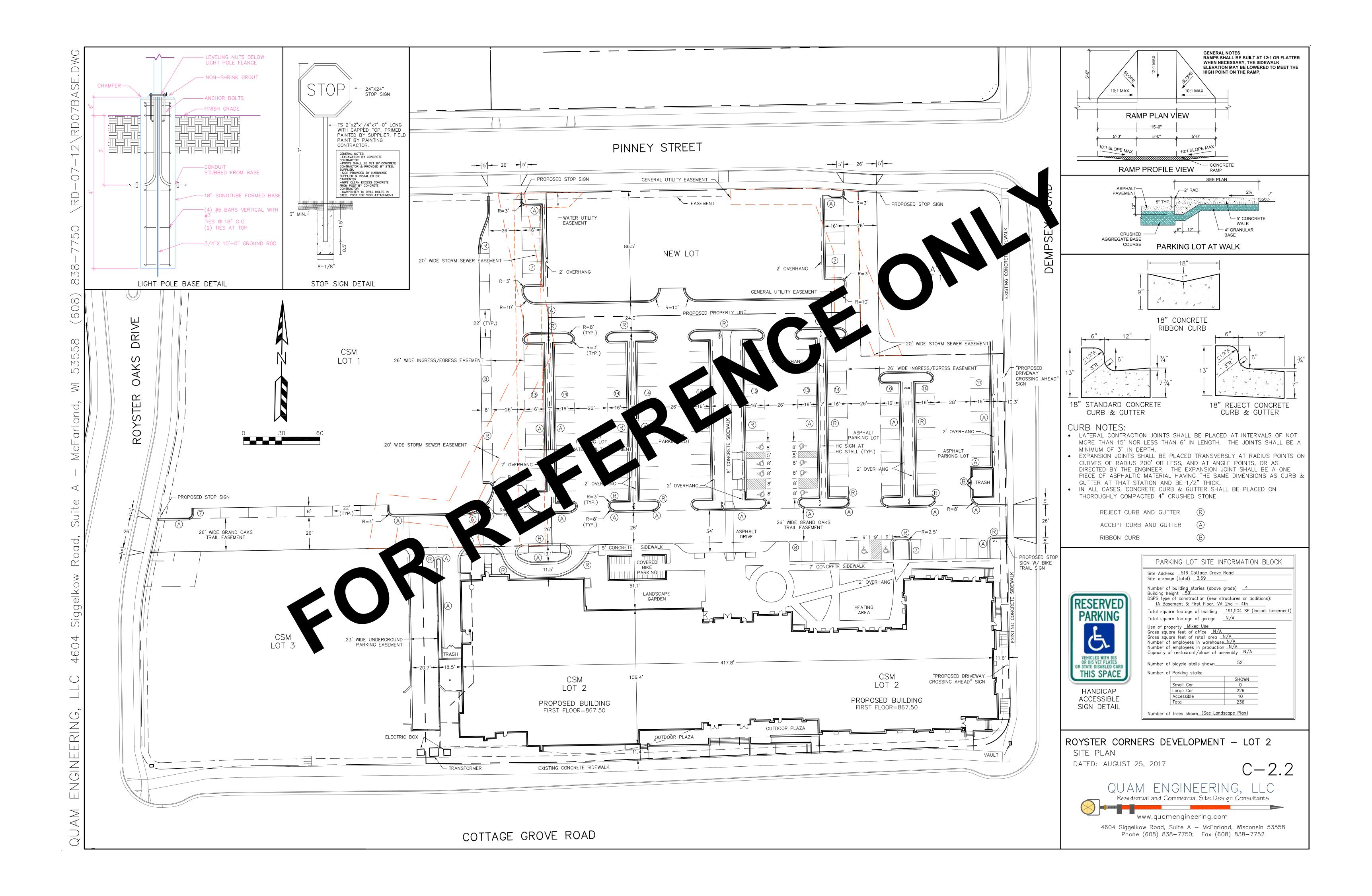
521-523 Grand Oak Trail MADISON, WI
SHEET TITLE
Site Lighting Plan

SHEET NUMBER

C-1.4







## **DESIGN CRITERIA** 1. CODES:

AMERICAN WELDING SOCIETY D1.1

INTERNATIONAL BUILDING CODE (IBC) 2015 CONCRETE (ACI 318-14)

AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR STRUCTURAL AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS ALLOWABLE STRENGTH DESIGN (ASD)(AISC 360-10) FOURTEENTH EDITION, 2010

2. DESIGN LOADS: RISK CATEGORY

PIER FOOTINGS

ANCHOR RODS

HIGH STRENGTH BOLTS

WIND - PARAMETERS **BASIC WIND SPEED** EXPOSURE CLASS

WIND - ELEMENTS AND COMPONENTS PER APPLICABLE BUILDING CODE

100 PSF UNREDUCIBLE PUBLIC SPACE 3. NET ALLOWABLE SOIL BEARING PRESSURES

4. MINIMUM FROST PROTECTION DEPTH FROM ADJACENT GRADE: EXTERIOR FOOTINGS IN UNHEATED AREA

5. SPECIFIED 28-DAY CONCRETE COMPRESSIVE STRENGTHS (fc)

PIER FOOTINGS 4000 PSI 4000 PSI SLABS ON GRADE TYPICAL - UNLESS NOTED OTHERWISE 4000 PSI 6. CONCRETE REINFORCING STEEL SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO THE

FOLLOWING STANDARDS: ASTM A615, GRADE 60 Fy = 60 KSIDEFORMED BARS WELDED WIRE REINFORCING ASTM A185 Fv = 65 KSI EPOXY-COATED REINFORCING BARS ASTM A775 Fy = 60 KSI7. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS: WIDE FLANGE SECTIONS ASTM A992 Fy = 50 KSIOTHER ROLLED SECTIONS Fy = 36 KSI ASTM A36 ASTM A500, GR B Fy = 46 KSI SQUARE AND RECTANGULAR HSS Fy = 36 KSICAP AND BASE PLATES ASTM A36 CONNECTION MATERIAL ASTM A36 Fv = 36 KSI STIFFENER PLATES ASTM A36  $F_V = 36 \text{ KSI}$ 

HEAVY HEX NUTS ASTM A563 WASHERS ASTM F436 HEADED WELDED STEEL STUDS ASTM A108, TYPE B ELECTRODES FOR ARC WELDING AWS 5.1, E70XX

#### **GENERAL NOTES**

1. NEITHER THE PROFESSIONAL ACTIVITIES OF THE ENGINEER, NOR THE PRESENCE OF THE ENGINEER OR HIS OR HER EMPLOYEES AND SUBCONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES, AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES, OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING, OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE ENGINEER AND HIS OR HER PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE JOBSITE SAFETY. THE ENGINEER AND THE ENGINEER'S CONSULTANTS SHALL BE MADE ADDITIONAL INSUREDS UNDER THE CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY.

ASTM F1554, GR 36

ASTM F3125, GRADE A325

Fy = 36 KSI

2. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL SO CONSTRUCT THE WORK SO THAT IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL AND ELECTRICAL DESIGN.

3. THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. UNLESS NOTED OTHERWISE, THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION.

4. DETAILS AND NOTES ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE.

5. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPES, INSERTS AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE

6. DIMENSIONS, NOTES, AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND

WHERE NEW CONSTRUCTION INTERFACES WITH EXISTING CONDITIONS, FIELD VERIFY EXISTING DIMENSIONS, MEMBER SIZES AND ELEVATIONS SHOWN ON THE DRAWINGS PRIOR TO STARTING CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE

8. REFER TO ARCHITECTURAL DRAWINGS FOR THE FOLLOWING: A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, UNLESS NOTED OTHERWISE. B. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC.

C. FLOOR, WALL AND ROOF FINISHES. D. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.

FIRE PROTECTION REQUIREMENTS.

9. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING: A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.

CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES OR CURBS AND ANCHOR BOLTS FOR MOTOR

10. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, EACH BIDDER SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPES OF EQUIPMENT, ETC. THE BID SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK WITHIN THE EXISTING CONDITIONS. DISRUPTION OF NORMAL ACTIVITIES IN THE WORK AREA SHALL

11. SHOP DRAWINGS PREPARED BY SUPPLIERS, SUBCONTRACTORS, AND OTHERS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED, INITIALED AND DATED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL

12. SHOP DRAWINGS PREPARED BY THE SUBCONTRACTORS, SUPPLIERS, AND OTHERS SHALL BE REVIEWED BY THE ARCHITECT ONLY FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. REVIEW BY THE ARCHITECT SHALL NOT BEGIN WITHOUT THE PRIOR COORDINATION AND REVIEW BY THE GENERAL CONTRACTOR. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE ARCHITECT. NOTATIONS MADE BY THE ARCHITECT ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.

13. OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES RESULTING FROM CHOOSING AN OPTION AND SHALL COORDINATE ALL DETAILS. THE COST OF ADDITIONAL DESIGN WORK NECESSITATED BY SELECTION OF AN OPTION SHALL BE BORNE BY THE CONTRACTOR.

14. THE COST OF ADDITIONAL DESIGN WORK DUE TO ERRORS OR OMISSIONS BY THE CONTRACTOR IN CONSTRUCTION SHALL BE BORNE BY THE CONTRACTOR.

15. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW OR RECORD SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF

16. ELEVATIONS ARE BASED ON THE EXISTING FIRST FLOOR ELEVATION OF (+ 0' - 0").

17. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILL MATERIAL OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS AND FOUNDATIONS. IF ANY SUCH

MATERIAL OR STRUCTURES ARE FOUND, ARCHITECT SHALL BE NOTIFIED IMMEDIATELY.

## FOUNDATIONS/SLAB-ON-GRADE

1. CROSS REFERENCE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ASSURE PROPER DIMENSIONS AND PLACEMENT OF ALL ANCHOR BOLTS, INSERTS, NOTCHES, EDGES IN GRADE BEAMS, FOUNDATION WALLS AND

2. FOUNDATION DESIGN BASED ON PRESUMED SOIL BEARING PRESSURES.

SLAB ON GRADE.

3. ALL EXCAVATIONS SHALL BE PROPERLY AND SAFELY BACKFILLED. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS, AND INSTALLATION OF SHORING AND/OR SHEETING.

4. PROVIDE SAW CUT CONTROL JOINTS IN ALL SLABS-ON-GRADE. LOCATE JOINTS ALONG COLUMN LINES WITH SHALL BE CONTINUOUS, NOT STAGGERED OR OFFSET, SLAB PANELS SHALL HAVE A MAXIMUM LENGTH TO

WIDTH RATIO OF 1.5 TO 1. PROVIDE ADDITIONAL CONTROL JOINTS AT ALL RE-ENTRANT CORNERS FORMED IN

SLAB ON GRADE MAX JOINT THICKNESS SPACING 15'-0" 18'-0" 24'-0" 30'-0" 36'-0"

## 5. CONTRACTOR SHALL PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND

2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21

WATER OR SEEPAGE.

6. CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEETING, AND SHORING REQUIRED TO SAFELY RETAIN EARTH BANKS AS REQUIRED.

7. ALL PIERS SHALL BE PLACED ONTO FIRM UNDISTURBED SOIL OR CONTROLLED COMPACTED FILL AS DIRECTED BY THE SOILS TESTING FIRM. EXCAVATIONS FOR PIERS SHALL BE INSPECTED AND APPROVED BY THE SOILS TESTING FIRM PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY SOILS TESTING FIRM

WHEN EXCAVATION IS READY FOR INSPECTION. TESTING FIRM IS TO SUBMIT LETTER OF COMPLIANCE TO

8. BOTTOM OF PIER ELEVATIONS SHOWN DESIGNATE A MINIMUM DEPTH WHERE A SAFE SOIL BEARING PRESSURE IS EXPECTED (REFER TO DESIGN CRITERIA). PIERS SHALL BE LOWERED OR EXTENDED AS REQUIRED TO REACH SOIL MEETING THE DESIGN BEARING PRESSURE.

9. ALL ABANDONED FOOTINGS, UTILITIES, AND OTHER STRUCTURES THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.

THE OWNER.

10. NO CONCRETE SHALL BE PLACED ONTO OR AGAINST SUBGRADES CONTAINING FREE WATER, FROST, ICE,

11. REINFORCING IN PIERS SHALL BE ACCURATELY PLACED, SPACED, SUPPORTED AND SECURED BEFORE

PLACING CONCRETE. 12. ALL UNACCEPTABLE MATERIAL AND ORGANIC MATERIAL SHALL BE REMOVED FROM BELOW ALL PROPOSED SLABS-ON-GRADE AND THE EXPOSED NATURAL SOIL SHALL BE PROOF ROLLED AND THE COMPACTION VERIFIED BY A QUALIFIED INDEPENDENT SOILS TESTING FIRM PRIOR TO PLACING FILL. AREAS EXHIBITING

#### CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE PUBLICATIONS: ACI 117, ACI 301, ACI 305.1, ACI 306.1, ACI 308.1, ACI 315 AND ACI 318 UNLESS NOTED

2. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL PENETRATIONS THROUGH CONCRETE BEFORE PLACING. SECURE SUCH SLEEVES TO PREVENT MOVEMENT DURING PLACING OPERATIONS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PENETRATIONS.

3. CUTTING OF REINFORCING WHICH CONFLICTS WITH EMBEDDED OBJECTS IS NOT ACCEPTABLE.

WEAKNESS SHALL BE REMOVED AND REPLACED BY ACCEPTABLE COMPACTED FILL.

4. CORE DRILLING CONCRETE IS NOT PERMITTED UNLESS NOTED OTHERWISE OR APPROVED IN WRITING BY THE ARCHITECT. NOTIFY THE ARCHITECT IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.

CONCRETE. 6. NO ALUMINUM SHALL BE ALLOWED IN THE CONCRETE WORK UNLESS COATED TO PREVENT ALUMINUM-

5. CONFIRM WITH ARCHITECT THAT MATERIALS TO BE EMBEDDED ARE SUITABLE FOR EMBEDMENT IN

CONCRETE REACTION. 7. PROJECTING CORNERS OF WALLS, ETC., SHALL BE FORMED WITH A 3/4 INCH CHAMFER, UNLESS NOTED

8. ALL SLABS-ON-GRADE, PADS, FILLS AND TOPPINGS SHALL HAVE A MINIMUM OF 6x6 - W1.4xW1.4 WELDED WIRE REINFORCING (WWR) CENTERED IN THE SLAB THICKNESS. LAP WWR MINIMUM 2 PANELS AT EDGES AND ENDS AND PROVIDE ADDITIONAL REINFORCING WHERE SHOWN ON THE DRAWINGS.

SLOPE SLABS TO DRAINS OR FOR POSITIVE DRAINAGE IF NO DRAINS ARE PRESENT, AND PROVIDE DEPRESSIONS WHERE SHOWN ON THE STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS, WITHOUT REDUCING THE THICKNESS OF SLAB INDICATED. FOR SLAB-ON-GRADE DEPRESSIONS GREATER THAN 1", REFER TO DETAIL FOR ADDITIONAL REINFORCING.

10. INTERNALLY VIBRATE ALL CAST-IN-PLACE CONCRETE EXCEPT SLABS-ON-GRADE WHICH NEED ONLY BE VIBRATED AROUND UNDER FLOOR DUCTS AND OTHER EMBEDDED ITEMS. VIBRATE TOPS OF PIERS.

11. CONCRETE SHALL NOT BE PERMITTED TO DROP MORE THAN 5 FEET.

OTHERWISE ON ARCHITECTURAL DRAWINGS.

12. THE DESIGN AND ENGINEERING OF FORM WORK, AS WELL AS ITS CONSTRUCTION, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, FORMS SHALL BE DESIGNED TO HAVE SUFFICIENT STRENGTH TO SAFELY WITHSTAND THE LOADS RESULTING FROM PLACEMENT AND VIBRATION OF THE CONCRETE, AND SHALL ALSO BE DESIGNED FOR SUFFICIENT RIGIDITY TO MAINTAIN SPECIFIED TOLERANCES. CONTRACTOR SHALL SUBMIT DETAILED FORM WORK SHOP DRAWINGS TO THE ARCHITECT TO BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN CONCEPT ONLY.

13. MIX - PIER CONC 100% PASSING 1 1/2" SIEVE COARSE AGGREGATE FINE AGGREGATE 100% PASSING 3/8" SIEVE 1" TO 4" MAXIMUM W/C RATIO AIR CONTENT 5% TO 8%

14. MIX - EXTERIOR SLAB ON GRADE CONC: COARSE AGGREGATE 100% PASSING 1 1/2" SIEVE 100% PASSING 3/8" SIEVE FINE AGGREGATE 4" TO 6" MAXIMUM W/C RATIO 0.50

AIR CONTENT 5% TO 8% OTHER REQUIREMENTS USE WATER REDUCING ADMIXTURE TO ACHIEVE SLUMP SPECIFIED

15. MIX - INTERIOR SLAB ON GRADE CONC: COARSE AGGREGATE 100% PASSING 1 1/2" SIEVE 100% PASSING 3/8" SIEVE FINE AGGREGATE 4" TO 6"

MAXIMUM W/C RATIO AIR CONTENT NOT APPLICABLE **USE WATER REDUCING ADMIXTURE** OTHER REQUIREMENTS TO ACHIEVE SLUMP SPECIFIED

## STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE ALL WELDS SHALL BE CONTINUOUS 1/4" FILLET WELDS

2. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS." REFER TO DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.

3. BOLTS IN SLOTTED HOLES SHALL BE LOCATED IN THE CENTER OF THE HOLE AFTER FIELD ASSEMBLY IS COMPLETE, UNLESS DETAILED OTHERWISE.

4. ALL STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) DESIGNATION GIVEN UNDER DESIGN CRITERIA HEREIN.

5. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS."

6. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL , FOR ARCHITECT'S REVIEW BEFORE FABRICATION.

7. STANDARD BOLT HOLES IN STEEL SHALL BE 1/16 INCH LARGER DIAMETER THAN NOMINAL SIZE OF BOLT USED UNLESS NOTED OTHERWISE. 8. ALL WELDS SHALL CONFORM TO THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE - STEEL

(AWS D1.1) AND BE MADE WITH APPROVED ELECTRODES. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING CALLED FOR. WELDERS SHALL HAVE BEEN RECENTLY

QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS). 10. FIELD CONNECTIONS SHALL BE WELDED OR BOLTED. SHOP CONNECTIONS SHALL BE WELDED UNLESS NOTED OTHERWISE. WELDS INDICATED WITH A SHOP WELD SYMBOL MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE STRUCTURAL ENGINEER THROUGH THE ARCHITECT. LOCATIONS OF ALL FIELD WELDS

SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS. WELDS SHALL BE DESIGNED TO BE FULLY

EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS DETAILED TO MINIMIZE BENDING IN THE CONNECTION. 11. ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE UNLESS NOTED OTHERWISE.

2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

12. CUTS, HOLES (OPENINGS), ETC., REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OF HOLES AND CUTS IN THE FIELD SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER OF RECORD THROUGH THE ARCHITECT, NO HOLES SHALL BE CUT IN STRUCTURAL STEEL BY OTHER TRADES UNLESS SHOWN ON STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

13. FURNISH AND INSTALL MISCELLANEOUS STEEL (CURBS, HANGERS, EXPANSION JOINT ANGLES, STRUTS,

ETC.) AS CALLED FOR OR AS NECESSARY PER ARCHITECTURAL AND MECHANICAL/ELECTRICAL DRAWINGS.

14. NON-SHRINK GROUT FOR BASE AND BEARING PLATES SHALL BE PRE-MIXED, NON-METALLIC, NON-CORROSIVE, NON-STAINING PRODUCTS CONTAINING SELECTED SILICA SAND, PORTLAND CEMENT, SHRINKAGE COMPENSATING AGENTS, PLASTICIZING AND WATER REDUCING AGENTS. MINIMUM COMPRESSIVE STRENGTH AT 28-DAYS SHALL BE 7,000 PSI.

## REINFORCING STEEL

1. FOR CAST-IN-PLACE CONCRETE THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3 INCHES

TO WEATHER OR IN CONTACT WITH EARTH

BEAMS AND COLUMNS NOT EXPOSED TO

WEATHER OR IN CONTACT WITH EARTH

CONCRETE EXPOSED TO EARTH OR WEATHER NO. 6 BARS OR LARGER NO. 5 BARS OR SMALLER 1 1/2 INCHES SLABS, WALLS, JOISTS NOT EXPOSED

1 1/2 INCHES NO. 14 AND NO. 18 BARS NO. 11 BARS OR SMALLER 3/4 INCHES

2. DIMENSIONS OF CONCRETE COVER FOR REINFORCEMENT INDICATED ON DRAWINGS ARE TO OUTERMOST REINFORCING BARS. FOR BEAMS OR COLUMNS WITH STIRRUPS OR TIES, CLEAR COVER INDICATED IS TO STIRRUPS OR TIES.

1 1/2 INCHES

3. BAR SPLICES: SPLICE REINFORCING WHERE INDICATED ON THE DRAWINGS. ALL SPLICES SHALL BE CLASS 'B' AS DEFINED IN ACI 318. IF SPLICE LENGTH IS NOT GIVEN ON THE DRAWINGS, PROVIDE LAP LENGTHS (IN INCHES) AS FOLLOWS:

	3000 PSI C	ONCRETE	<b>4000 PSI CONCRET</b>		
BAR SIZE	OTHER	TOP	OTHER	TOP	
#3	22	28	19	25	
#4	29	38	25	33	
#5	36	47	31	41	
#6	43	56	37	49	
#7	63	81	54	71	
#8	72	93	62	81	
#9	81	105	70	91	
#10	91	118	79	102	
#11	101	131	87	114	

LAP LENGTHS ASSUME CLEAR SPACING BETWEEN BARS OF 2 BAR DIAMETERS, AND A MINIMUM COVER OF 1 BAR DIAMETER. FOR DEVELOPMENT LENGTHS, DIVIDE BY 1.3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 1'-0" OF FRESH CONCRETE BELOW.

4. SUBMIT SHOP DRAWINGS SHOWING REINFORCING STEEL QUANTITIES AND PLACEMENT. REINFORCING STEEL DESIGNATIONS ON SHOP DRAWINGS SHALL BE INCH-POUND SIZES.

5. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE AMERICAN CONCRETE INSTITUTE "DETAILS AND DETAILING OF REINFORCED CONCRETE" (ACI 315) EXCEPT AS OTHERWISE SHOWN, NOTED OR SPECIFIED.

6. PROVIDE ADEQUATE TIES FOR ALL REINFORCING BARS IN CONCRETE SLABS AND PIERS. REINFORCING BARS TO BE HELD AT CORRECT DISTANCE FROM FORMS BY ADEQUATE CONCRETE BLOCKS, STEEL CHAIRS OR TIES. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE SECURED IN POSITION WITH TIES OR WELDS PRIOR TO PLACING CONCRETE

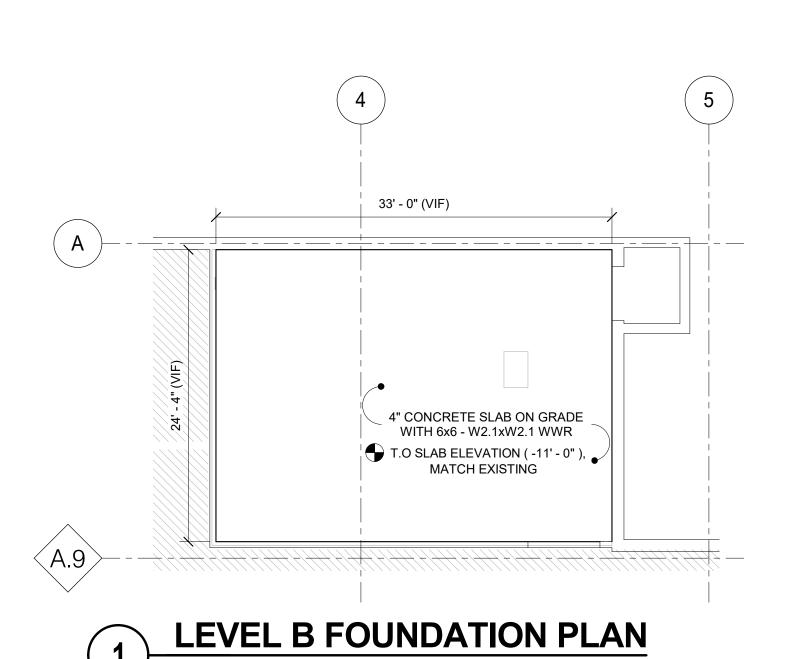
7. UNLESS NOTED OTHERWISE, SUPPORTS FOR REINFORCEMENT SHALL HAVE CLASS 2 PROTECTION AS DEFINED IN THE CRSI MANUAL OF STANDARD PRACTICE.

8. SUPPORTS FOR COATED REINFORCEMENT SHALL HAVE CLASS 1 PROTECTION AS DEFINED IN THE CRSI

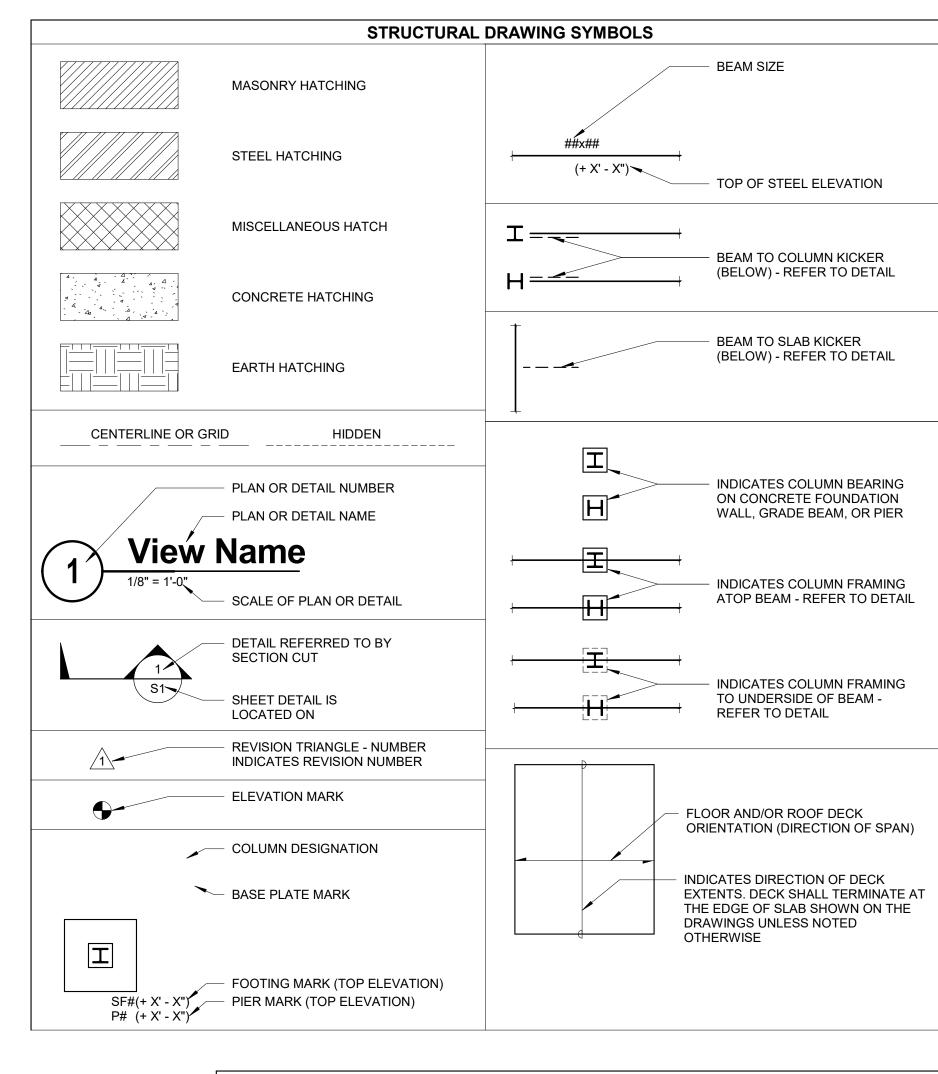
MANUAL OF STANDARD PRACTICE. 9. DOWELS BETWEEN PIERS AND SLAB SHALL BE THE SAME GRADE, SIZE AND SPACING OR NUMBER AS THE

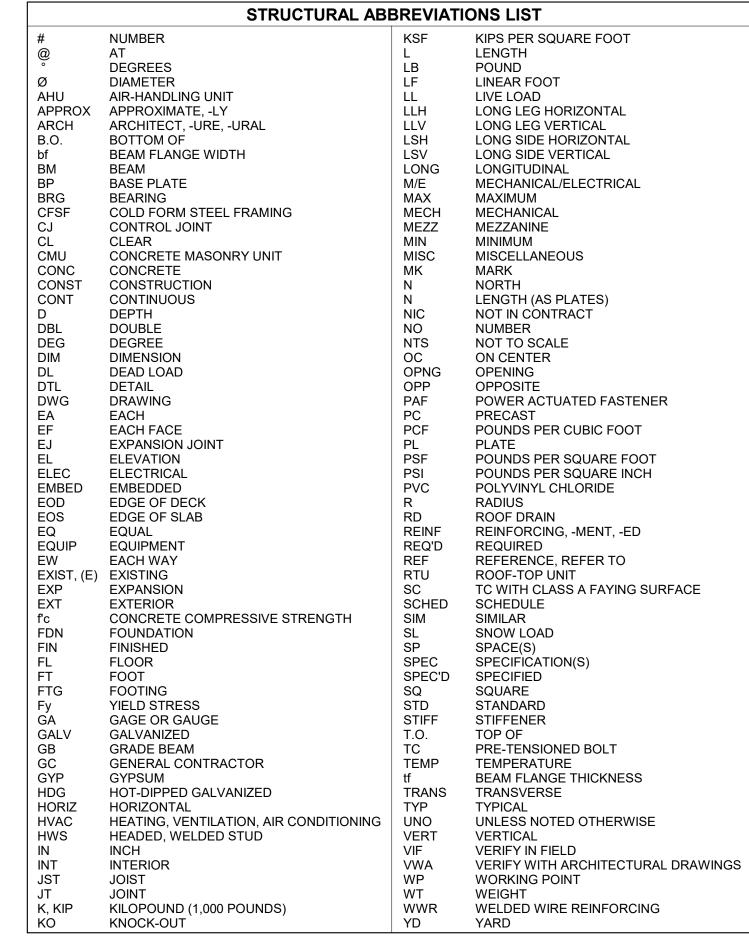
10. REINFORCING BARS SHALL BE BENT COLD, AND NO METHOD OF FABRICATION SHALL BE USED WHICH WOULD BE INJURIOUS TO THE MATERIAL. HEATING OF BARS FOR BENDING IS NOT PERMITTED.

VERTICAL REINFORCING, RESPECTIVELY, UNLESS NOTED OTHERWISE.



14 | 15 | 16 | 17 | 18 |





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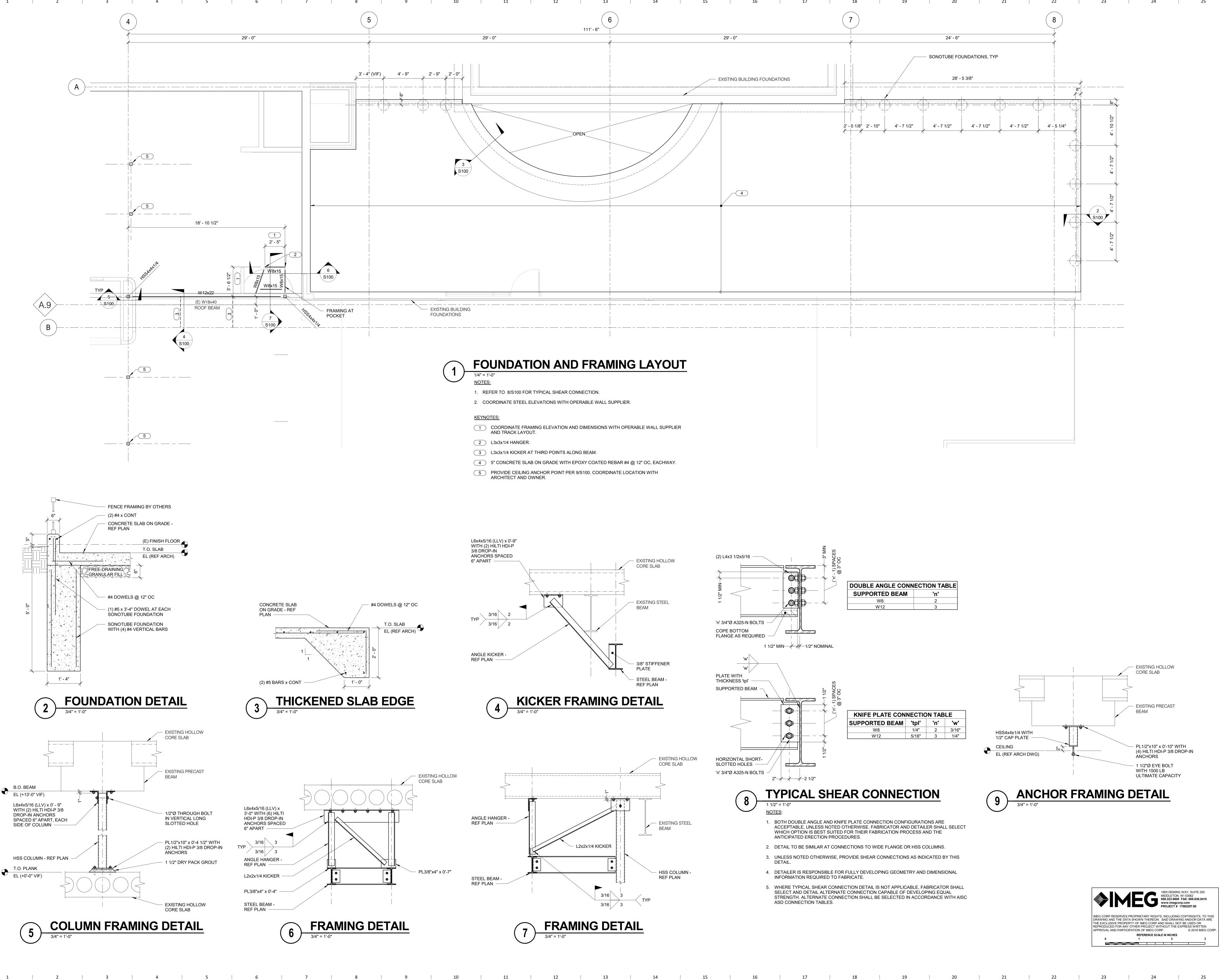
Key Plan

BID DOCUMENTS

**GENERAL NOTES** 

Sheet Number

**S000** 



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Revision

Key Plan

City Contract No.

7662

OPN Project No.

17609000

Sheet Issue Date

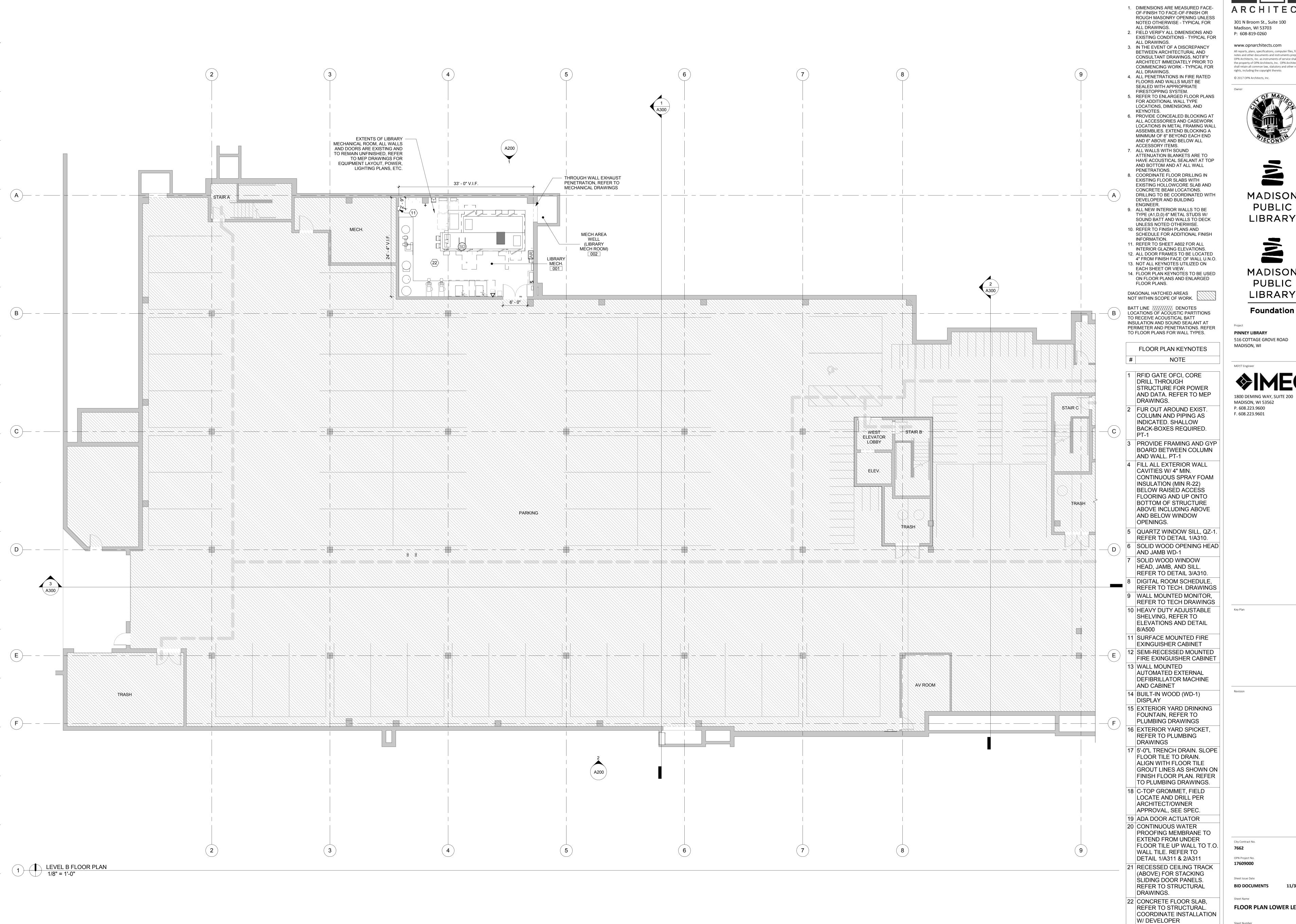
BID DOCUMENTS 11/30/20

Sheet Name

FOUNDATION LAYOUT

Sheet Number

**S100** 



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |

**GENERAL NOTES** 

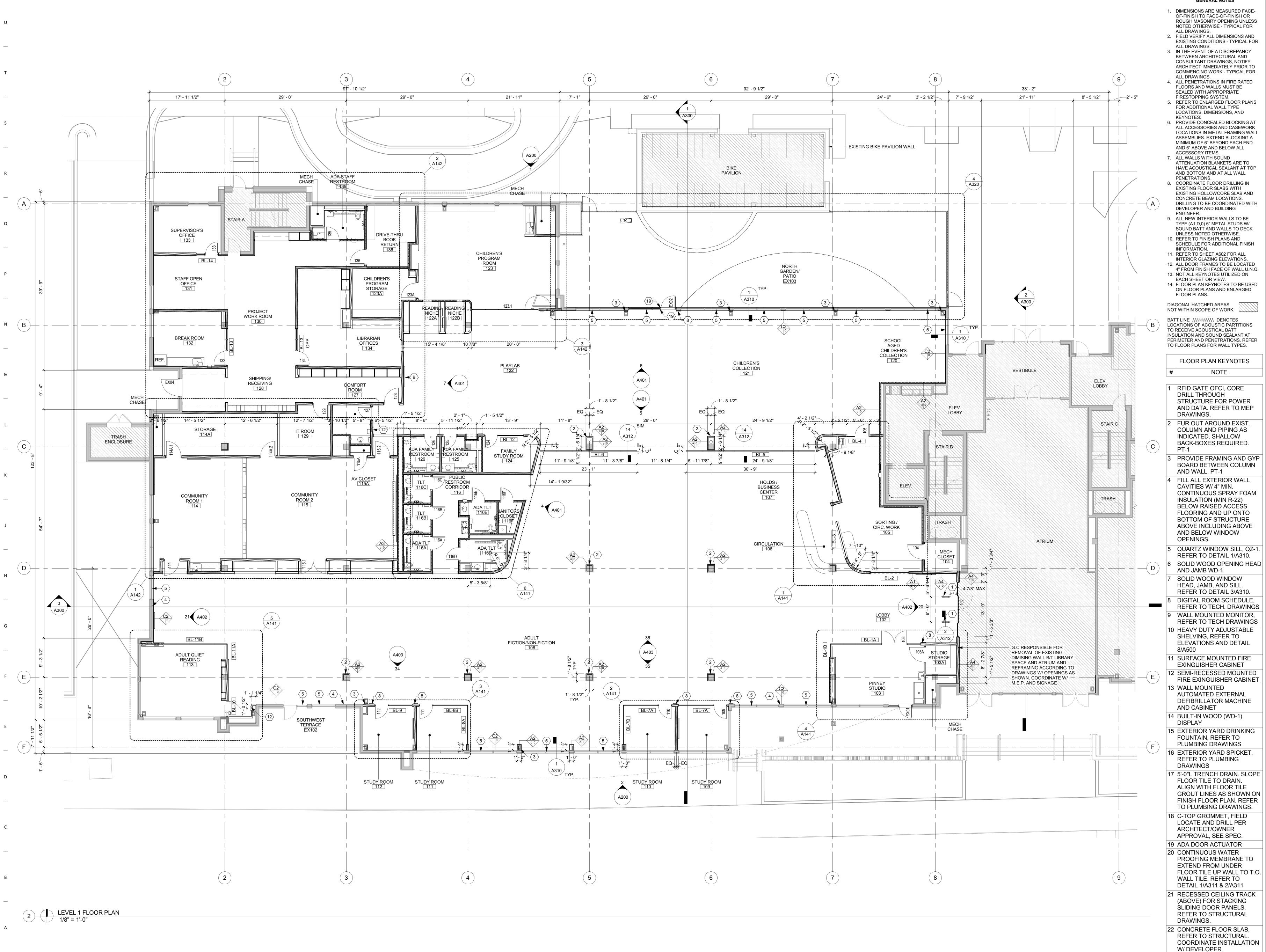
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FLOOR PLAN LOWER LEVEL



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

1 2 3 4 5 6 7 8 9 10

**GENERAL NOTES** 

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ROUGH MASONRY OPENING UNLESS NOTED OTHERWISE - TYPICAL FOR Madison, WI 53703 **EXISTING CONDITIONS - TYPICAL FOR** 

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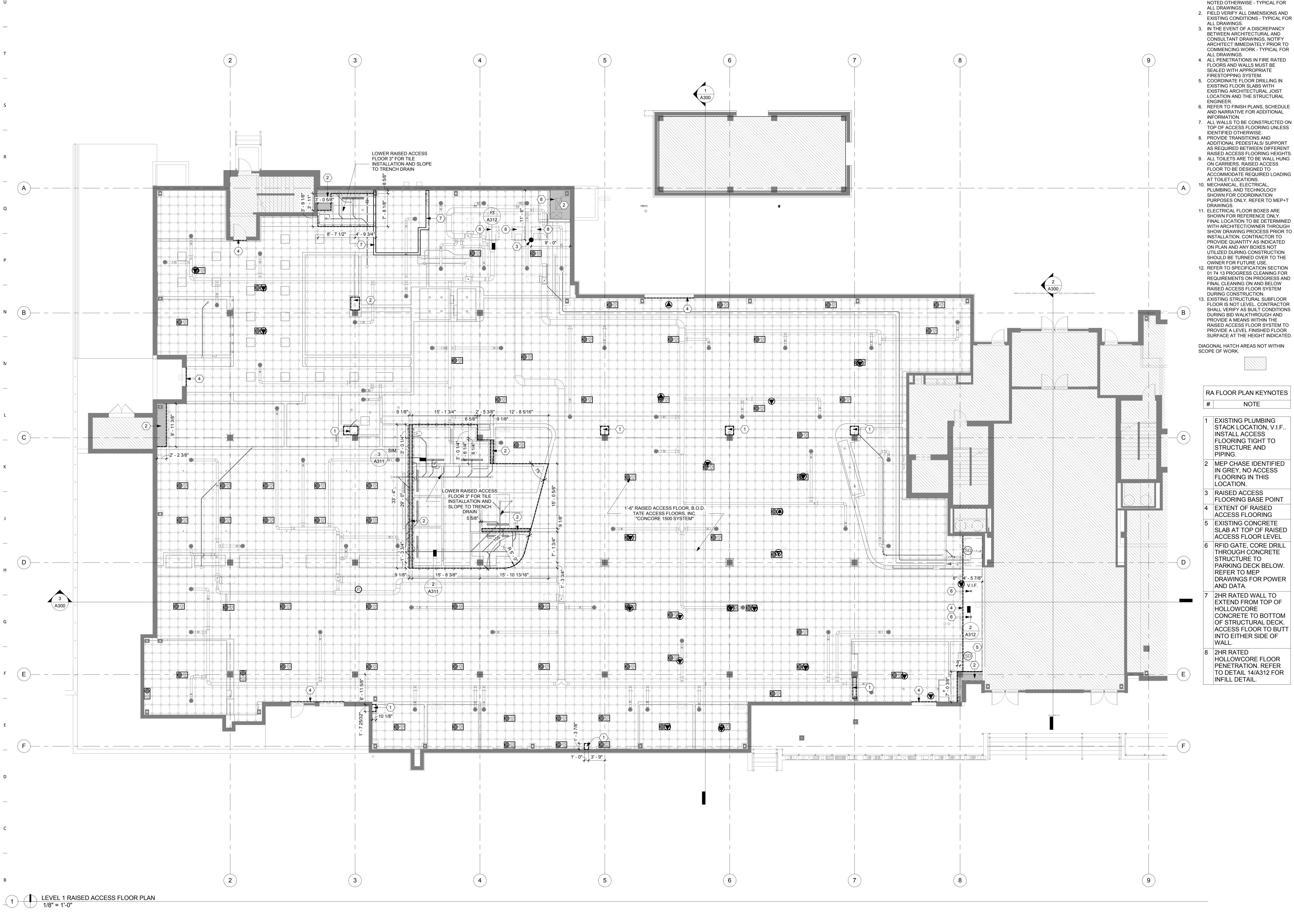
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OPN Project No.

Sheet Number

Sheet Issue Date **BID DOCUMENTS** 

Sheet Name **FLOOR PLAN LEVEL 1** 



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**GENERAL NOTES** 

1. DIMENSIONS ARE MEASURED FACE OF-FINISH TO FACE-OF-FINISH OR ROUGH MASONRY OPENING UNLESS

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RAISED ACCESS FLOOR PLAN LEVEL 1 Sheet Number

A101.1

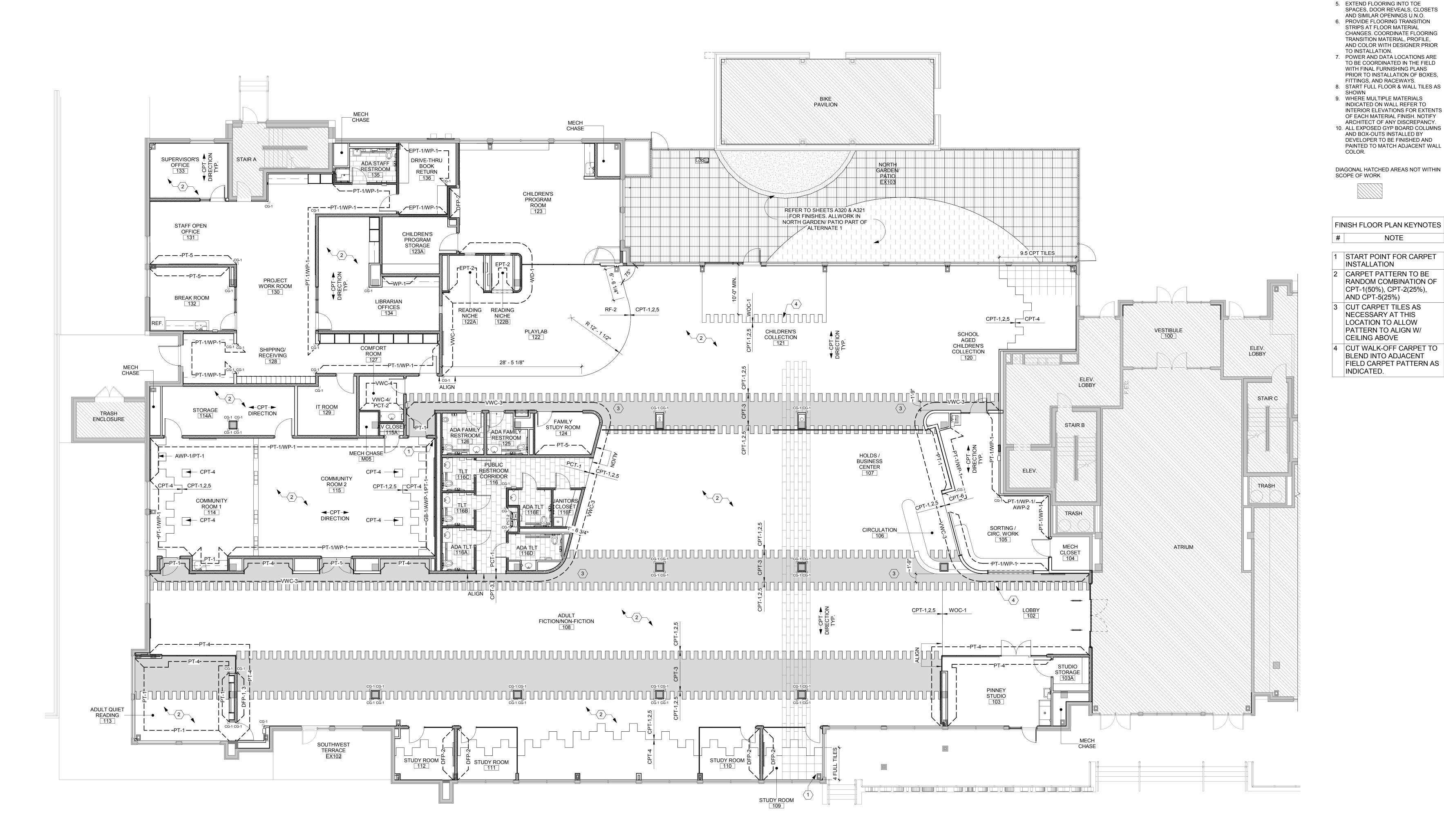


1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |

**GENERAL NOTES** 1. CEILING-MOUNTED FIXTURES,

REFLECTED CEILING PLAN BASEMENT & LEVEL 1

Sheet Number



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 | 25 |

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

LEVEL 1 FINISH FLOOR PLAN
1/8" = 1'-0"

### **GENERAL NOTES**

1. ALL WALLS TO BE FINISHED TO A STANDARD LEVEL 4 WALL FINISH

ON DRAWINGS AND FLOOR

SEAM LOCATIONS ARE TO BE

CLOSED POSITION U.N.O.

MATERIAL REFERENCES IDENTIFIED

2. NO FINISH WORK TO OCCUR ON LOWER LEVEL. 3. REFER TO SHEET A600 FOR INTERIOR FINISH SCHEDULE AND

TRANSITION DETAILS.

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PATTERN TO ALIGN W/ **CEILING ABOVE** CUT WALK-OFF CARPET TO BLEND INTO ADJACENT FIELD CARPET PATTERN AS INDICATED.



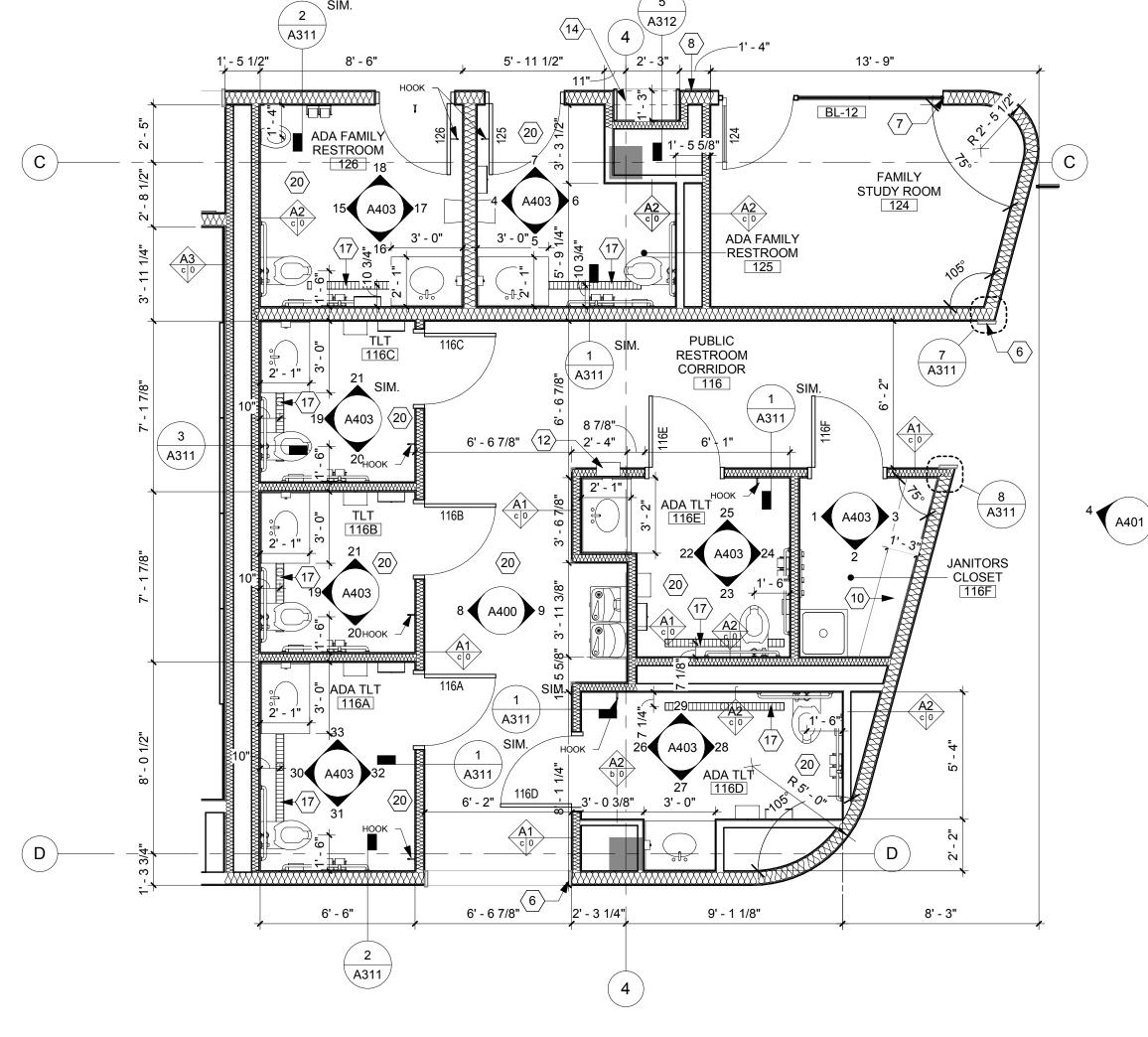
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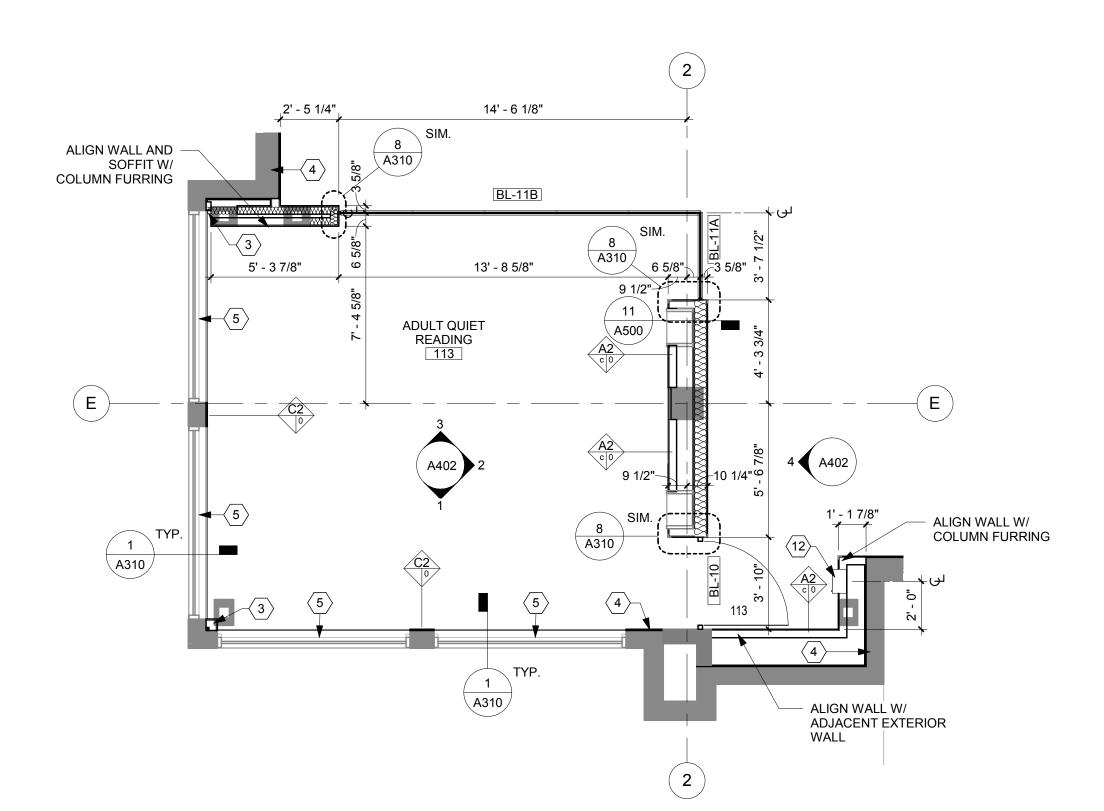
OPN Project No.

FINISH FLOOR PLAN LEVEL 1

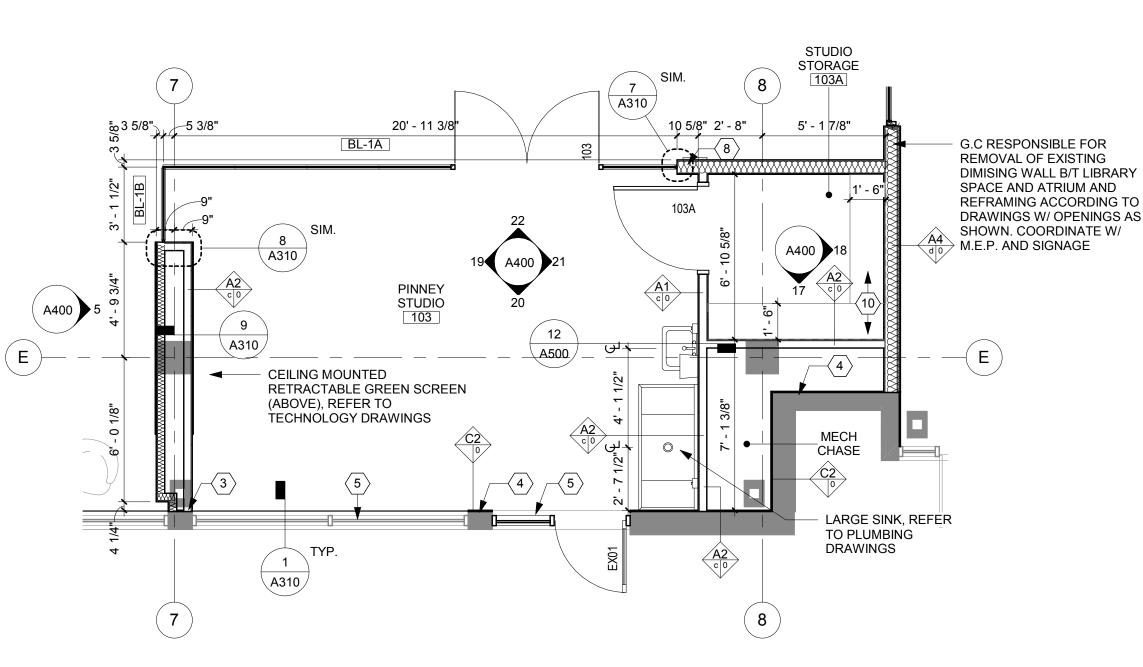
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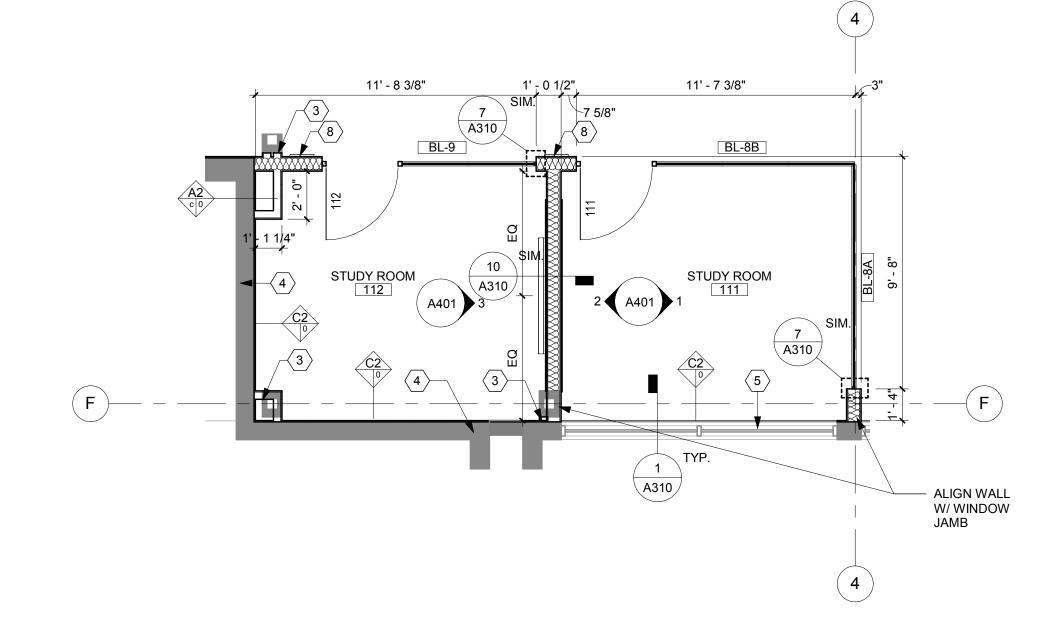
ENLARGED PUBLIC RESTROOMS, FAMILY RESTROOM, NEW MOMS ROOM AND FAMILY ROOM 1/4" = 1'-0"



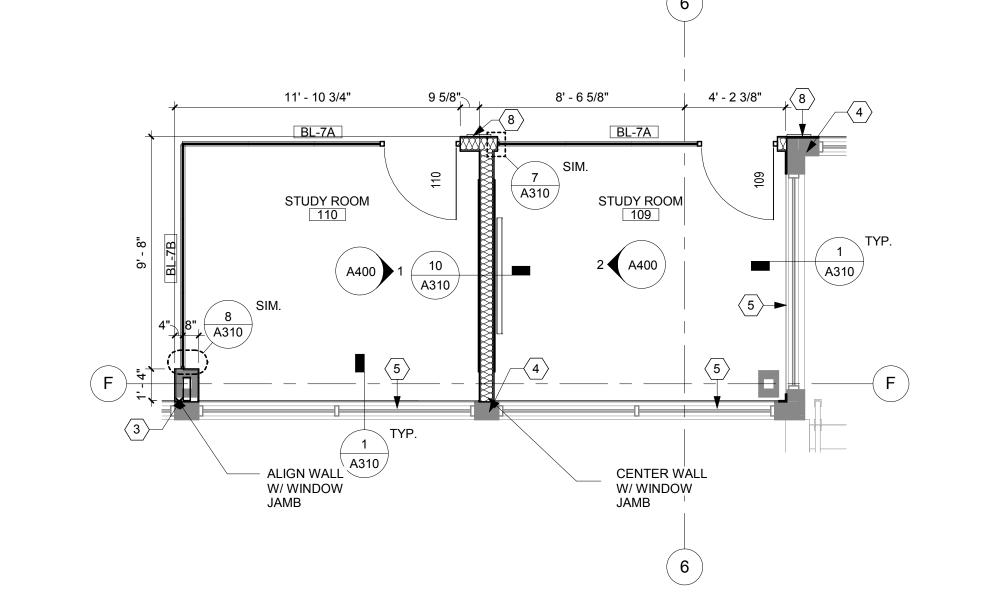
ENLARGED QUIET READING 1/4" = 1'-0"



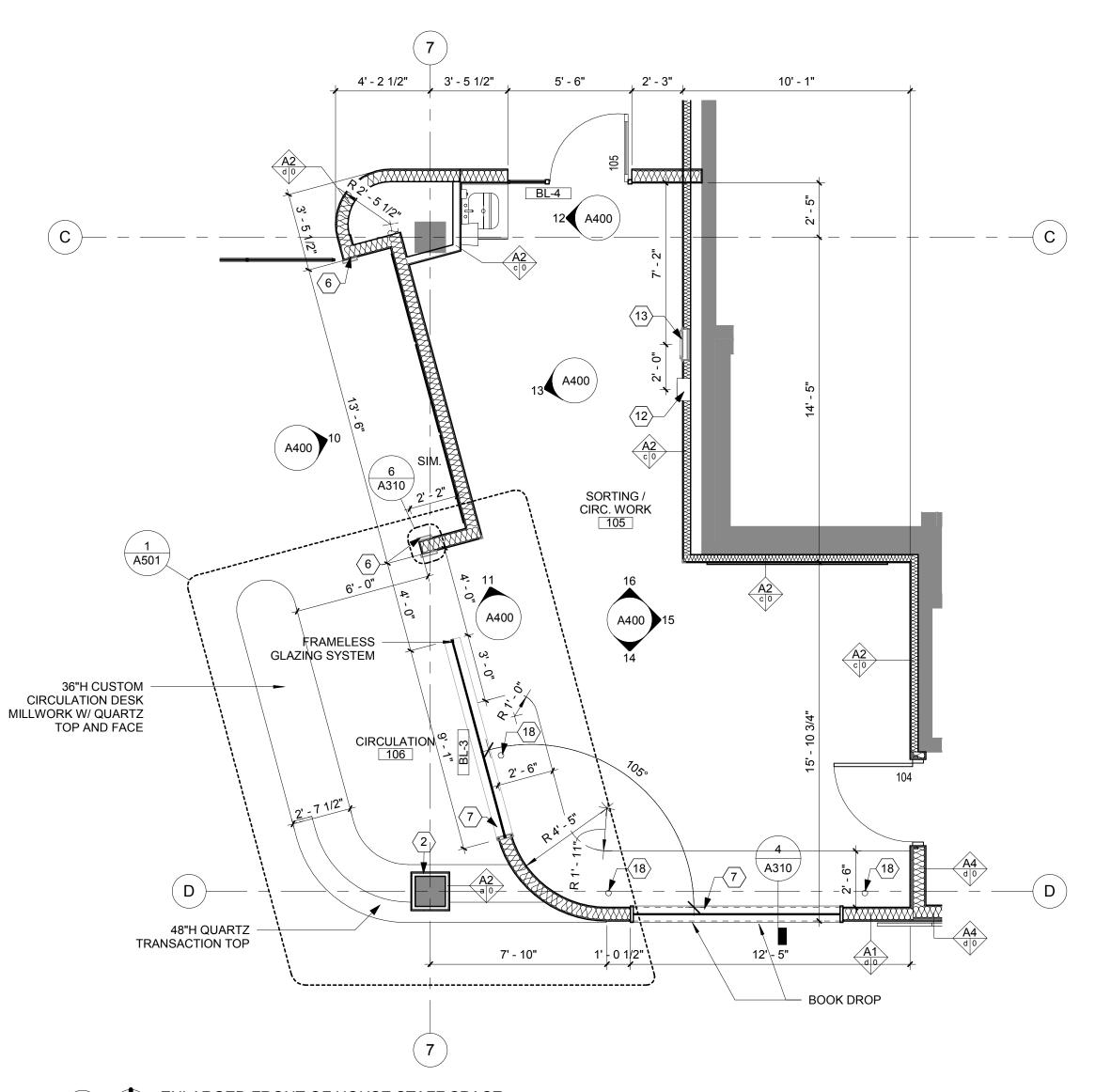
4 ENLARGED CREATOR SPACE 1/4" = 1'-0"



ENLARGED STUDY ROOM 111 & 112



2 ENLARGED STUDY ROOM 109 & 110 1/4" = 1'-0"



1 ENLARGED FRONT OF HOUSE STAFF SPACE
1/4" = 1'-0"

**GENERAL NOTES** 

- 1. DIMENSIONS ARE MEASURED FACE OF-FINISH TO FACE-OF-FINISH OR ROUGH MASONRY OPENING UNLESS
- NOTED OTHERWISE TYPICAL FOR ALL DRAWINGS. 2. FIELD VERIFY ALL DIMENSIONS AND **EXISTING CONDITIONS - TYPICAL FOR** ALL DRAWINGS. 3. IN THE EVENT OF A DISCREPANCY BETWEEN ARCHITECTURAL AND
- CONSULTANT DRAWINGS, NOTIFY ARCHITECT IMMEDIATELY PRIOR TO COMMENCING WORK - TYPICAL FOR ALL DRAWINGS. 4. ALL PENETRATIONS IN FIRE RATED
- FLOORS AND WALLS MUST BE SEALED WITH APPROPRIATE FIRESTOPPING SYSTEM. 5. REFER TO ENLARGED FLOOR PLANS FOR ADDITIONAL WALL TYPE
- LOCATIONS, DIMENSIONS, AND KEYNOTES. PROVIDE CONCEALED BLOCKING AT ALL ACCESSORIES AND CASEWORK LOCATIONS IN METAL FRAMING WALL ASSEMBLIES. EXTEND BLOCKING A MINIMUM OF 6" BEYOND EACH END AND 6" ABOVE AND BELOW ALL ACCESSORY ITEMS. 7. ALL WALLS WITH SOUND ATTENUATION BLANKETS ARE TO
- HAVE ACOUSTICAL SEALANT AT TOP AND BOTTOM AND AT ALL WALL PENETRATIONS. 8. COORDINATE FLOOR DRILLING IN EXISTING FLOOR SLABS WITH EXISTING HOLLOWCORE SLAB AND CONCRETE BEAM LOCATIONS. DRILLING TO BE COORDINATED WITH
- DEVELOPER AND BUILDING ENGINEER. 9. ALL NEW INTERIOR WALLS TO BE TYPE (A1,D,0) 6" METAL STUDS W/ SOUND BATT AND WALLS TO DECK
- UNLESS NOTED OTHERWISE. 10. REFER TO FINISH PLANS AND SCHEDULE FOR ADDITIONAL FINISH
- INFORMATION. 11. REFER TO SHEET A602 FOR ALL INTERIOR GLAZING ELEVATIONS.
- 12. ALL DOOR FRAMES TO BE LOCATED 4" FROM FINISH FACE OF WALL U.N.O.
- EACH SHEET OR VIEW. 14. FLOOR PLAN KEYNOTES TO BE USED ON FLOOR PLANS AND ENLARGED FLOOR PLANS.

13. NOT ALL KEYNOTES UTILIZED ON

DIAGONAL HATCHED AREAS NOT WITHIN SCOPE OF WORK.

LOCATIONS OF ACOUSTIC PARTITIONS TO RECEIVE ACOUSTICAL BATT INSULATION AND SOUND SEALANT AT PERIMETER AND PENETRATIONS. REFER TO FLOOR PLANS FOR WALL TYPES.

FLOOR PLAN KEYNOTES

1 RFID GATE OFCI, CORE DRILL THROUGH STRUCTURE FOR POWER AND DATA. REFER TO MEP DRAWINGS.

- FUR OUT AROUND EXIST COLUMN AND PIPING AS INDICATED. SHALLOW BACK-BOXES REQUIRED.
- PROVIDE FRAMING AND GYP BOARD BETWEEN COLUMN AND WALL. PT-1
- 4 FILL ALL EXTERIOR WALL CAVITIES W/ 4" MIN. CONTINUOUS SPRAY FOAM INSULATION (MIN R-22) BELOW RAISED ACCESS FLOORING AND UP ONTO BOTTOM OF STRUCTURE ABOVE INCLUDING ABOVE AND BELOW WINDOW OPENINGS.
- QUARTZ WINDOW SILL, QZ-1. REFER TO DETAIL 1/A310.
- 6 SOLID WOOD OPENING HEAD **AND JAMB WD-1**
- SOLID WOOD WINDOW HEAD, JAMB, AND SILL. REFER TO DETAIL 3/A310. 8 DIGITAL ROOM SCHEDULE,
- 9 WALL MOUNTED MONITOR, REFER TO TECH DRAWINGS 10 HEAVY DUTY ADJUSTABLE SHELVING, REFER TO **ELEVATIONS AND DETAIL**

REFER TO TECH. DRAWINGS

- 8/A500 11 SURFACE MOUNTED FIRE **EXINGUISHER CABINET**
- 12 SEMI-RECESSED MOUNTED FIRE EXINGUISHER CABINET
- 13 WALL MOUNTED **AUTOMATED EXTERNAL** DEFIBRILLATOR MACHINE AND CABINET
- 14 BUILT-IN WOOD (WD-1) DISPLAY
- 15 EXTERIOR YARD DRINKING FOUNTAIN, REFER TO PLUMBING DRAWINGS 16 EXTERIOR YARD SPICKET, REFER TO PLUMBING

DRAWINGS

- 17 5'-0"L TRENCH DRAIN. SLOPE FLOOR TILE TO DRAIN. ALIGN WITH FLOOR TILE GROUT LINES AS SHOWN ON FINISH FLOOR PLAN. REFER TO PLUMBING DRAWINGS.
- 18 C-TOP GROMMET, FIELD LOCATE AND DRILL PER ARCHITECT/OWNER APPROVAL, SEE SPEC.
- 19 ADA DOOR ACTUATOR 20 CONTINUOUS WATER PROOFING MEMBRANE TO EXTEND FROM UNDER FLOOR TILE UP WALL TO T.O.
- WALL TILE. REFER TO DETAIL 1/A311 & 2/A311 21 RECESSED CEILING TRACK (ABOVE) FOR STACKING SLIDING DOOR PANELS. REFER TO STRUCTURAL
- DRAWINGS. 22 CONCRETE FLOOR SLAB, REFER TO STRUCTURAL. COORDINATE INSTALLATION

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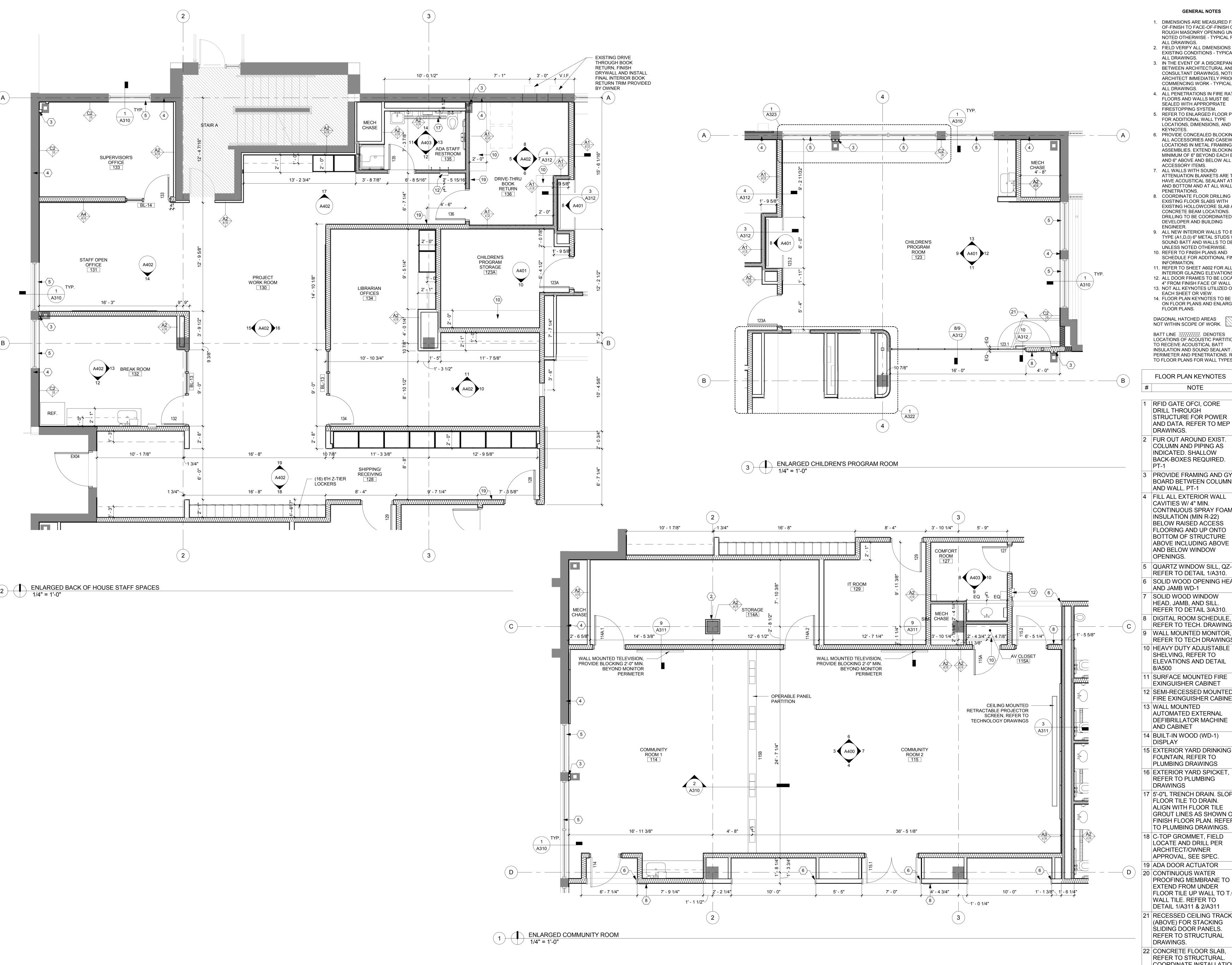


OPN Project No. 17609000

Sheet Number

Sheet Issue Date BID DOCUMENTS

Sheet Name **ENLARGED FLOOR PLANS** 



#### **GENERAL NOTES**

- 1. DIMENSIONS ARE MEASURED FACE OF-FINISH TO FACE-OF-FINISH OR ROUGH MASONRY OPENING UNLESS NOTED OTHERWISE - TYPICAL FOR P: 608-819-0260
- ALL DRAWINGS. 2. FIELD VERIFY ALL DIMENSIONS AND **EXISTING CONDITIONS - TYPICAL FOR** ALL DRAWINGS. 3. IN THE EVENT OF A DISCREPANCY BETWEEN ARCHITECTURAL AND CONSULTANT DRAWINGS, NOTIFY ARCHITECT IMMEDIATELY PRIOR TO
- COMMENCING WORK TYPICAL FOR ALL DRAWINGS. 4. ALL PENETRATIONS IN FIRE RATED FLOORS AND WALLS MUST BE SEALED WITH APPROPRIATE
- FIRESTOPPING SYSTEM. 5. REFER TO ENLARGED FLOOR PLANS FOR ADDITIONAL WALL TYPE LOCATIONS, DIMENSIONS, AND KEYNOTES. 6. PROVIDE CONCEALED BLOCKING AT
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- CONCRETE BEAM LOCATIONS. DRILLING TO BE COORDINATED WITH DEVELOPER AND BUILDING ENGINEER. 9. ALL NEW INTERIOR WALLS TO BE
- TYPE (A1,D,0) 6" METAL STUDS W/ SOUND BATT AND WALLS TO DECK UNLESS NOTED OTHERWISE. 10. REFER TO FINISH PLANS AND
- SCHEDULE FOR ADDITIONAL FINISH INFORMATION. 11. REFER TO SHEET A602 FOR ALL INTERIOR GLAZING ELEVATIONS.
- 12. ALL DOOR FRAMES TO BE LOCATED 4" FROM FINISH FACE OF WALL U.N.O. 13. NOT ALL KEYNOTES UTILIZED ON
- EACH SHEET OR VIEW. 14. FLOOR PLAN KEYNOTES TO BE USED ON FLOOR PLANS AND ENLARGED FLOOR PLANS.

#### DIAGONAL HATCHED AREAS NOT WITHIN SCOPE OF WORK.

LOCATIONS OF ACOUSTIC PARTITIONS TO RECEIVE ACOUSTICAL BATT INSULATION AND SOUND SEALANT AT PERIMETER AND PENETRATIONS. REFER TO FLOOR PLANS FOR WALL TYPES.

FLOOR PLAN KEYNOTES

1 RFID GATE OFCI, CORE DRILL THROUGH STRUCTURE FOR POWER

DRAWINGS. 2 FUR OUT AROUND EXIST COLUMN AND PIPING AS INDICATED. SHALLOW BACK-BOXES REQUIRED.

- PROVIDE FRAMING AND GYP BOARD BETWEEN COLUMN AND WALL. PT-1
- 4 FILL ALL EXTERIOR WALL CAVITIES W/ 4" MIN. CONTINUOUS SPRAY FOAM INSULATION (MIN R-22) BELOW RAISED ACCESS FLOORING AND UP ONTO BOTTOM OF STRUCTURE ABOVE INCLUDING ABOVE AND BELOW WINDOW
- QUARTZ WINDOW SILL, QZ-1. REFER TO DETAIL 1/A310.
- 6 | SOLID WOOD OPENING HEAD **AND JAMB WD-1** SOLID WOOD WINDOW
- HEAD, JAMB, AND SILL. REFER TO DETAIL 3/A310. B DIGITAL ROOM SCHEDULE, REFER TO TECH. DRAWINGS
- WALL MOUNTED MONITOR, REFER TO TECH DRAWINGS 10 HEAVY DUTY ADJUSTABLE SHELVING, REFER TO ELEVATIONS AND DETAIL
- 11 SURFACE MOUNTED FIRE **EXINGUISHER CABINET** 12 SEMI-RECESSED MOUNTED
- FIRE EXINGUISHER CABINET 13 WALL MOUNTED AUTOMATED EXTERNAL
- DEFIBRILLATOR MACHINE AND CABINET 14 BUILT-IN WOOD (WD-1)
- 15 EXTERIOR YARD DRINKING FOUNTAIN, REFER TO PLUMBING DRAWINGS 16 EXTERIOR YARD SPICKET,
- REFER TO PLUMBING DRAWINGS 17 5'-0"L TRENCH DRAIN. SLOPE FLOOR TILE TO DRAIN. ALIGN WITH FLOOR TILE
- GROUT LINES AS SHOWN ON FINISH FLOOR PLAN. REFER TO PLUMBING DRAWINGS. 18 C-TOP GROMMET, FIELD
- LOCATE AND DRILL PER ARCHITECT/OWNER APPROVAL, SEE SPEC.
- 19 ADA DOOR ACTUATOR 20 CONTINUOUS WATER PROOFING MEMBRANE TO EXTEND FROM UNDER FLOOR TILE UP WALL TO T.O. WALL TILE. REFER TO
- DETAIL 1/A311 & 2/A311 21 RECESSED CEILING TRACK (ABOVE) FOR STACKING SLIDING DOOR PANELS. REFER TO STRUCTURAL
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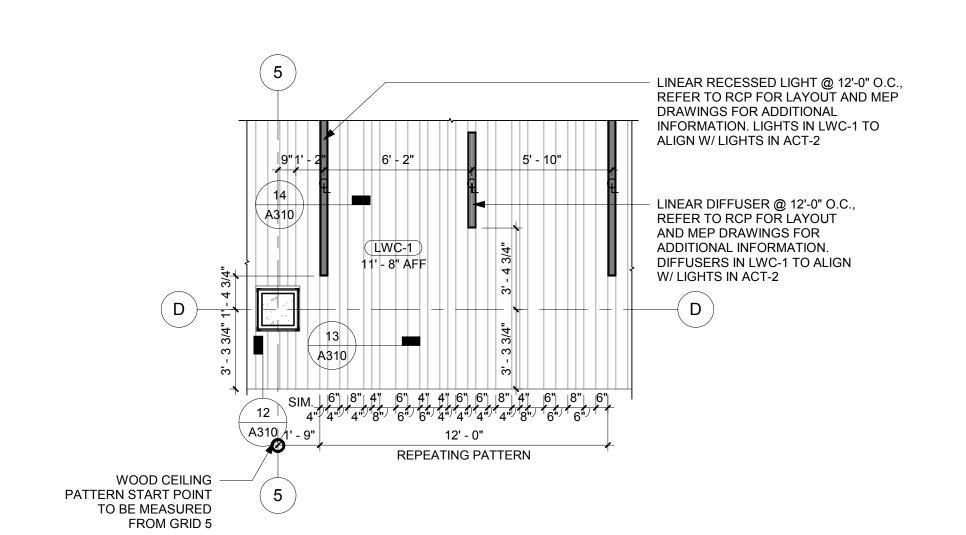
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**ENLARGED FLOOR PLANS** 

MADISON, WI

516 COTTAGE GROVE ROAD

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5 ENLARGED WOOD CORE REFLECTED CEILING PLAN
1/4" = 1'-0"

TYPICAL PENDANT LIGHT,

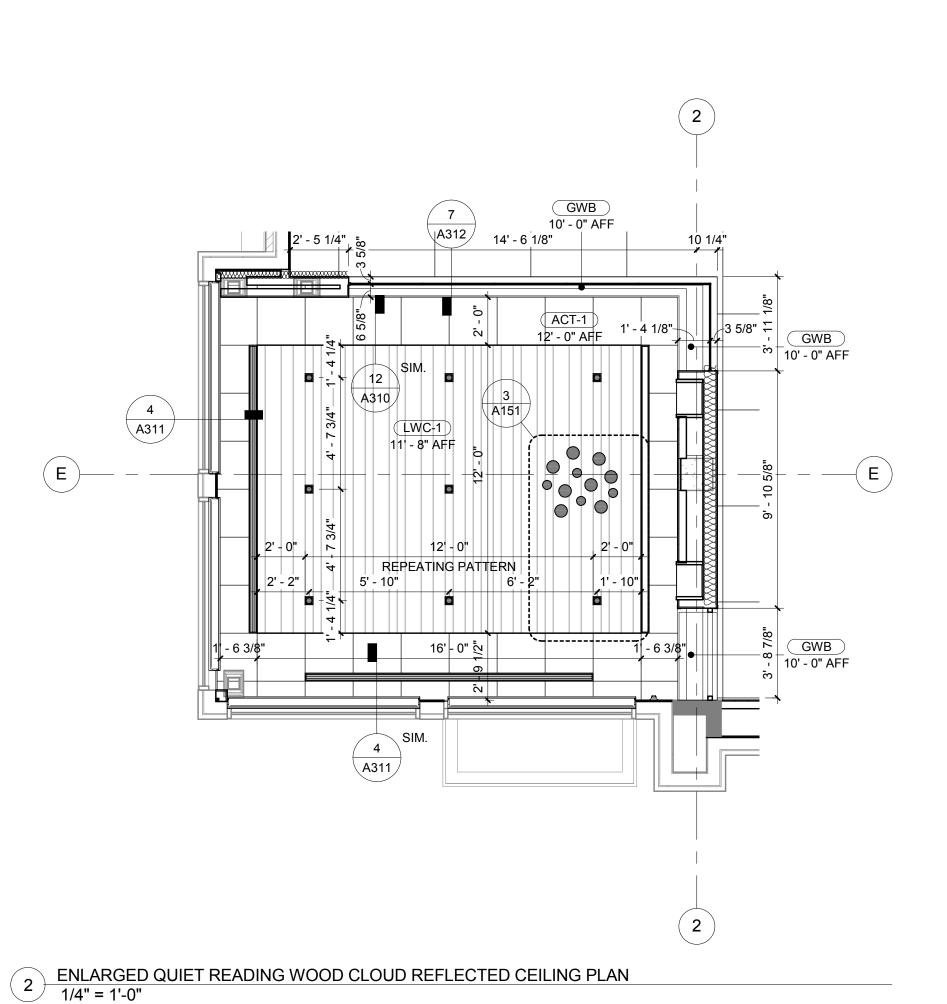
DRAWINGS, FINAL HEIGHT TO BE DETERMINED BY

REFER TO ELECTRICAL

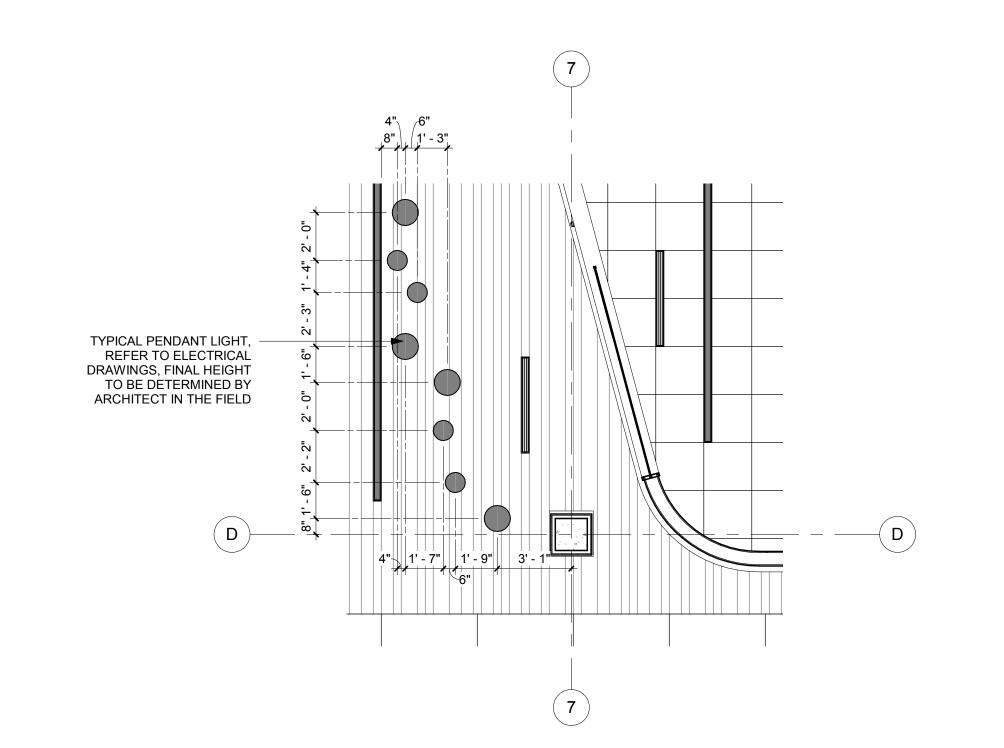
ARCHITECT IN THE FIELD

2" | 8" | 5" | 6" | 1' - 2"

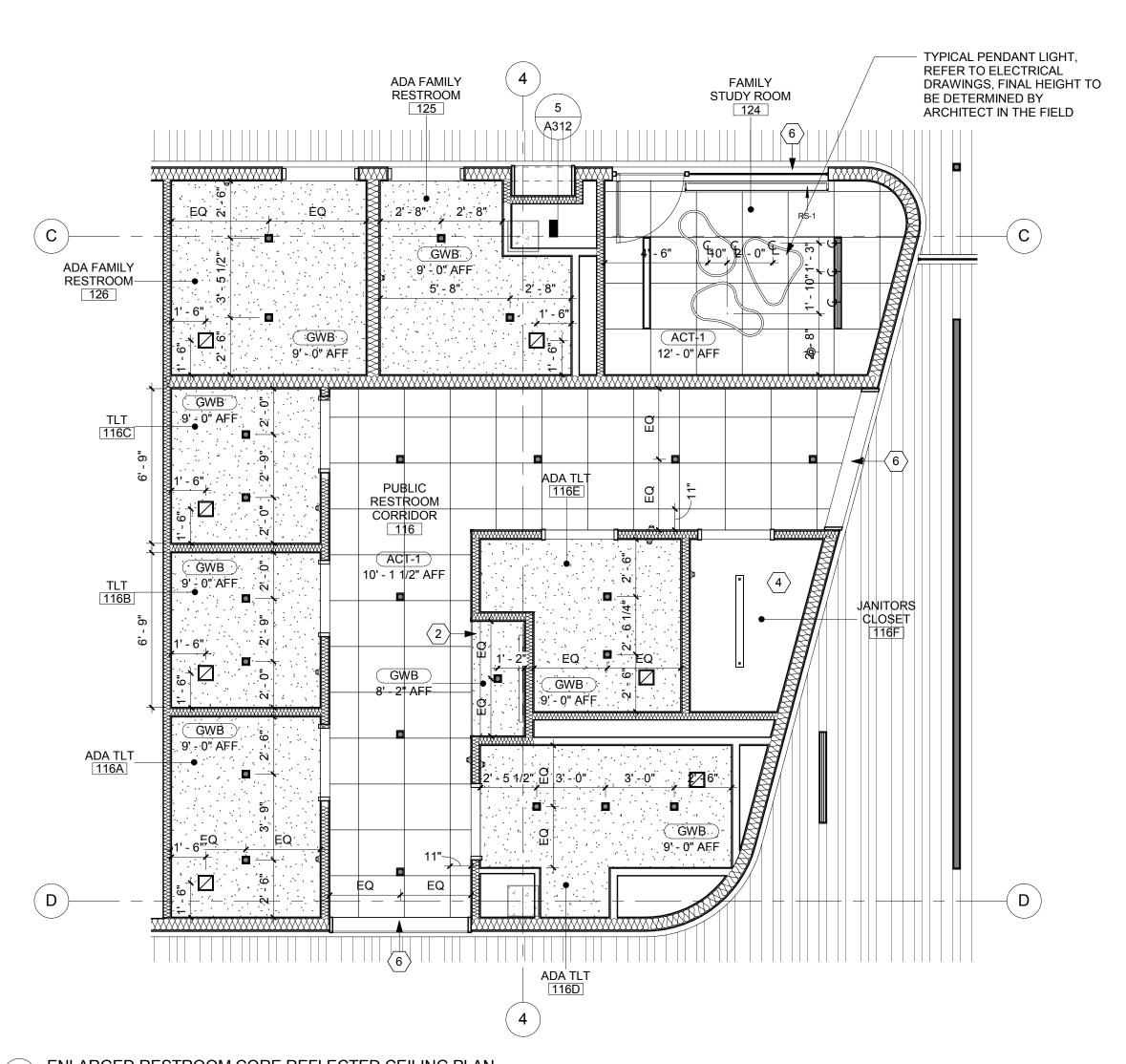
3 ENLARGED QUIET READING LIGHT GROUPING 1/2" = 1'-0"



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25



4 ENLARGED CIRCULATION DESK REFLECTED CEILING PLAN
1/4" = 1'-0"



1 ENLARGED RESTROOM CORE REFLECTED CEILING PLAN
1/4" = 1'-0"

**GENERAL NOTES** 

OTHERWISE.

1. CEILING-MOUNTED FIXTURES, SPRINKLERS AND EQUIPMENT SHALL

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- BE CENTERED IN CEILING PANELS OR GYPSUM BOARD SOFFITS AND EQUALLY SPACED U.N.O. 2. CENTER CEILING GRID IN ROOMS AS SHOWN UNLESS NOTED OTHERWISE. 3. CONCEALED SPRINKLER HEAD
- www.opnarchitects.com COVERS SHALL BE PAINTED BY All reports, plans, specifications, computer files, field data, MANUFACTURER TO MATCH ADJACENT notes and other documents and instruments prepared by SOFFIT/ACP UNLESS NOTED OPN Architects, Inc. as instruments of service shall remain the property of OPN Architects, Inc. OPN Architects, Inc. 4. COORDINATE LOCATIONS OF EXIT shall retain all common law, statutory and other reserved rights, including the copyright thereto.
- LIGHTS AND EMERGENCY LIGHTS SHOWN ON ARCHITECTURAL DRAWINGS. IN THE EVENT OF A DISCREPANCY, VERIFY WITH
- ARCHITECT PRIOR TO INSTALLATION. 5. CEILING FIXTURE DIMENSIONS ARE TAKEN FROM CENTERLINE OF FIXTURE UNLESS NOTED OTHERWISE. 6. REFER TO ARCHITECTURAL DRAWINGS
- (ELEVATIONS & REFLECTED CEILING PLANS) FOR ALL MECHANICAL AND ELECTRICAL DEVICE AND FIXTURE LOCATIONS & MOUNTING HEIGHTS. IF NOT CLEARLY SPECIFIED, CONTACT ARCHITECT FOR FURTHER CLARIFICATION. MECHANICAL & ELECTRICAL DRAWINGS ARE FOR FIXTURE TYPE REFERENCE ONLY.
- 7. PAINT ALL EXPOSED STRUCTURE, DECK, DUCTWORK, CONDUIT, ETC. IN AREAS NOTED TO BE OPEN TO STRUCTURE UNLESS NOTED OTHERWISE, PAINTING OF EXPOSED STRUCTURE TO BE DONE AFTER ALL UTILITIES ARE INSTALLED. 8. ALL CEILING MECHANICAL, ELECTRICAL
- AND FIRE PROTECTION DEVICES TO BE PAINTED BLACK IN WOOD CEILING. 9. NOT ALL KEYNOTES UTILIZED ON EACH SHEET OR VIEW. 10. REFER TO SHEET A600 FOR INTERIOR
- FINISH SCHEDULE AND MATERIAL REFERENCES IDENTIFIED ON DRAWINGS.

DIAGONAL HATCH AREAS NOT WITHIN SCOPE OF WORK.



BATT LINE DENOTES LOCATIONS OF ACOUSTIC PARTITIONS TO RECEIVE

> ACOUSTICAL BATT INSULATION AND SOUND SEALANT AT PERIMETER AND PENETRATIONS. REFER TO FLOOR PLANS FOR WALL TYPES.

LINEAR FIXTURE LINEAR PENDANT

## RECESSED FIXTURE

- RECESSED CAN
- DOWN LIGHT PENDANT
- SPRINKLER
- VACANCY SENSOR
- ☐ CEILING MOUNT CAMERA SPEAKER
- WIRELESS ACCESS POINT MICROPHONE
- FIRE ALARM NOTIFICATION
- PROJECTOR
- HVAC RETURN DIFFUSER
- HVAC SUPPLY DIFFUSER
- HVAC SLOT DIFFUSER
- CEILING MOUNTED MONITORS

## RCP KEYNOTES NOTE

CEILING MOUNTED GREEN SCREEN, REFER TO TECH DRAWINGS GYP. BOARD SOFFIT,

EXTEND VERTICAL WALL 6" MIN ABOVE ADJACENT CEILING CEILING MOUNTED

- OPERABLE ROOM PARTITION NO CEILING IN THIS ROOM. OPEN TO
- STRUCTURE. CEILING MOUNTED EYEBOLT, CONNECT TO STRUCTURE. REFER TO DETAIL 12/A311 AND
- STRUCTURAL DRAWINGS SOLID WOOD OPENING HEAD AND JAMB WD-1
- **CEILING MOUNTED EXIT**
- 8 WALL MOUNTED EXIT
- 10 LWC-1 CEILING, REFER TO 5/A151 FOR PATTERN START LOCATION AND DETAILS 11 CEILING MOUNTED
- PATRON COUNTING, OFCI. REFER TO TECH DRAWINGS FOR ADDITIONAL INFORMATION
- 12 RECESSED CEILING TRACK FOR STACKING SLIDING DOOR PANELS. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL SUPPORT INFORMATION.
- 13 CEILING MOUNTED PROJECTOR SCREEN, REFER TO TECH DRAWINGS

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**ENLARGED REFLECTED CEILING PLANS** Sheet Number

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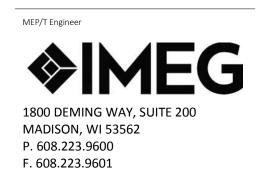
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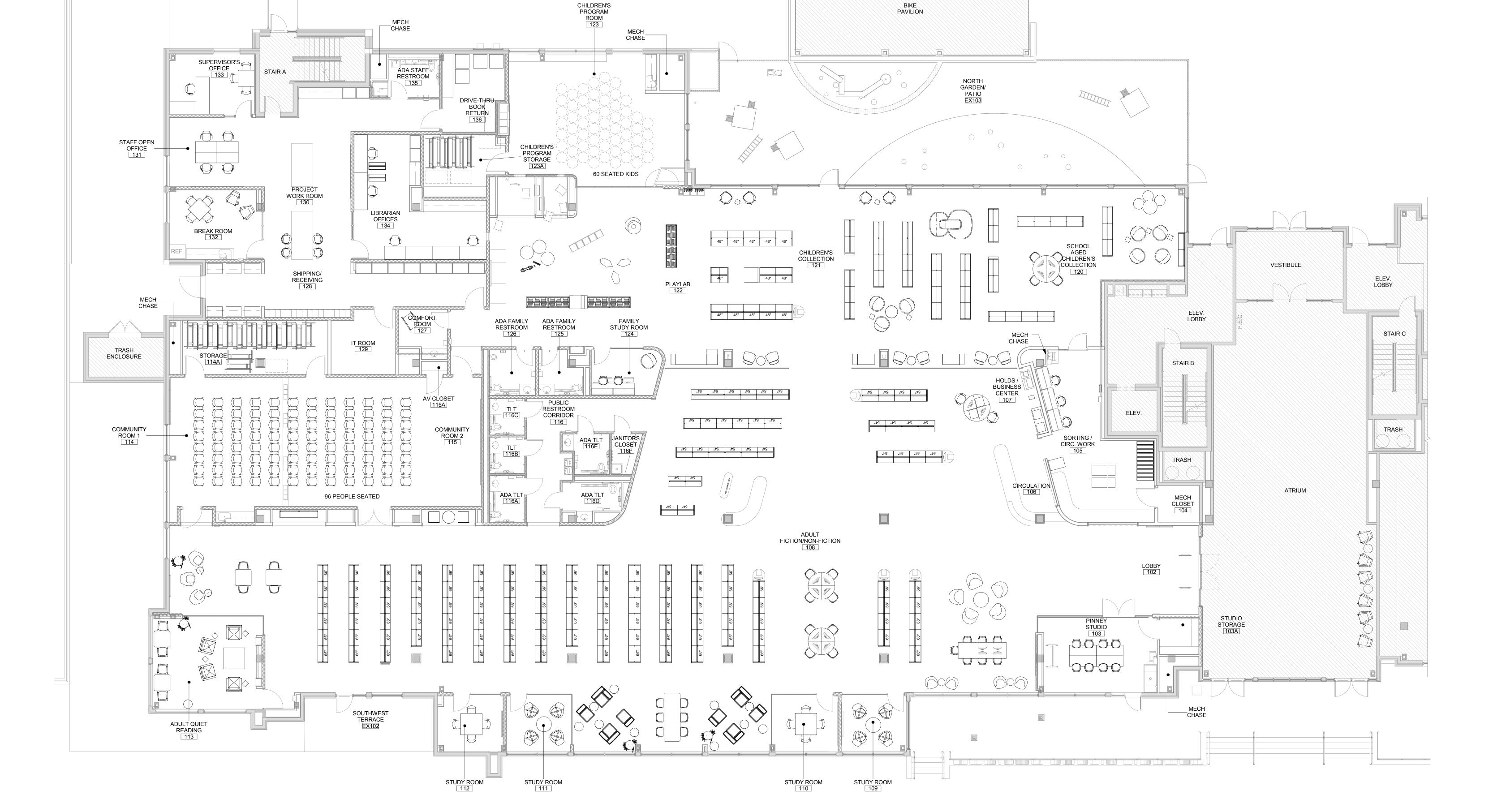
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FURNITURE PLAN LEVEL 1 FOR REFERENCE ONLY

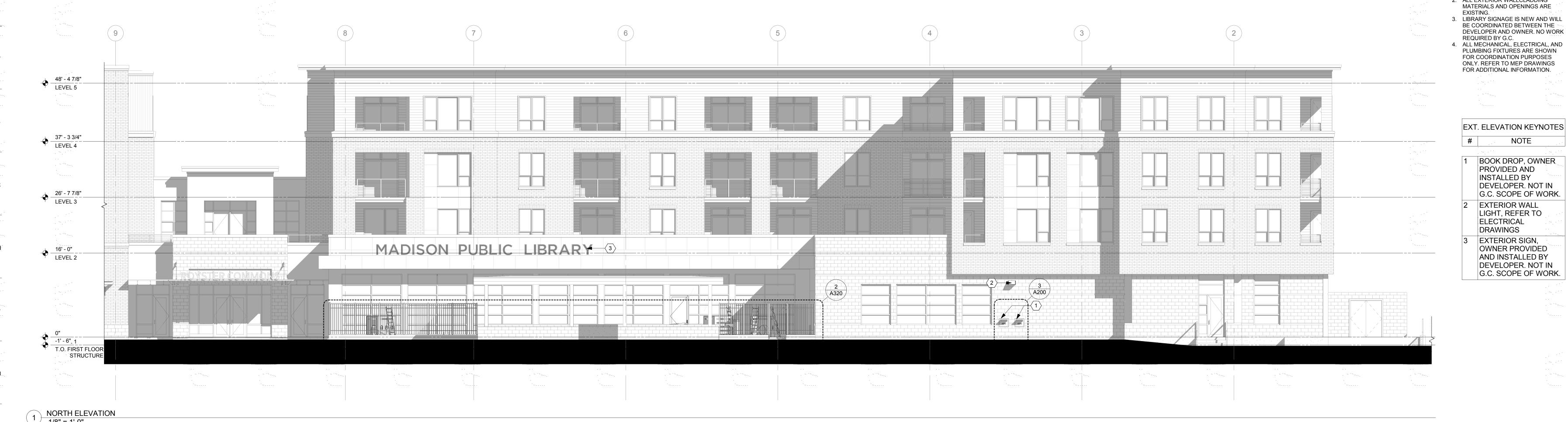
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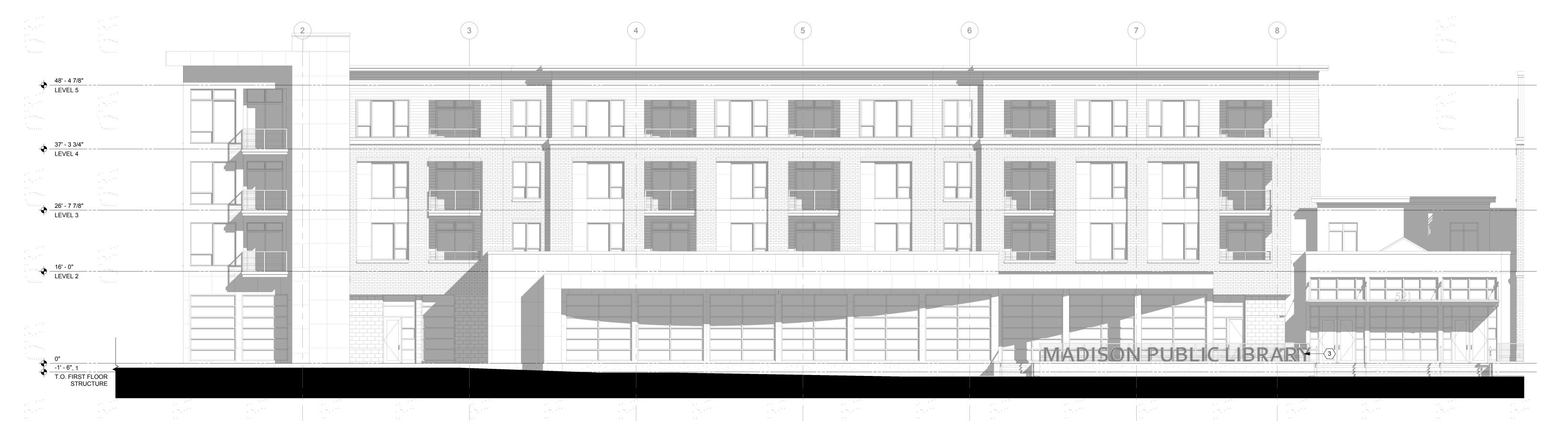
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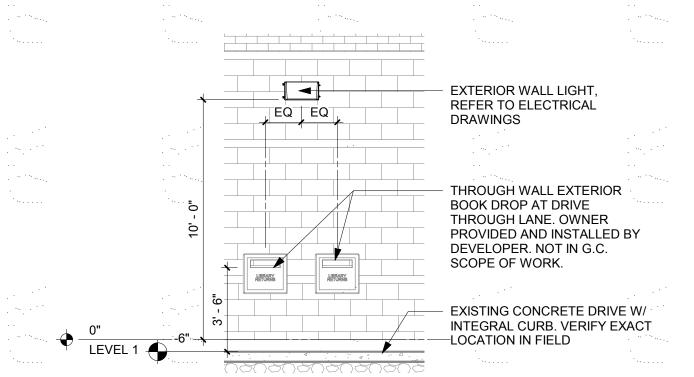
## FOR REFERENCE ONLY

1 LEVEL 1 FURNITURE FLOOR PLAN
1/8" = 1'-0"





1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |



**GENERAL NOTES** 1. EXTERIOR ELEVATIONS PRIMARILY

NOTE

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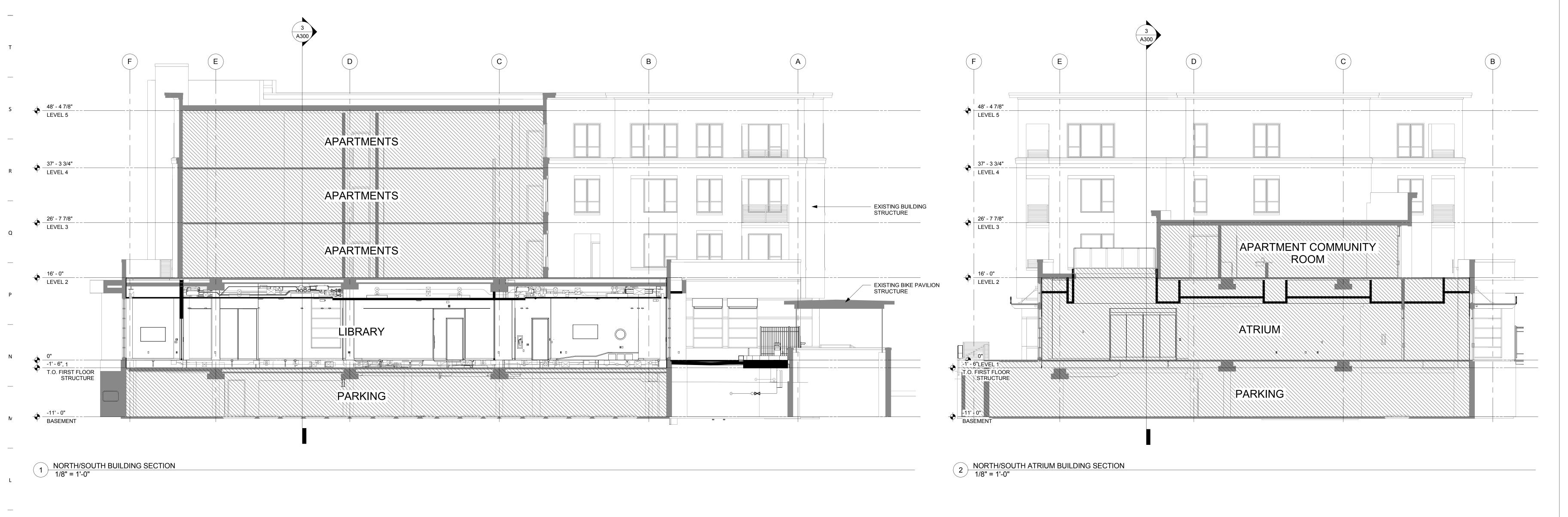
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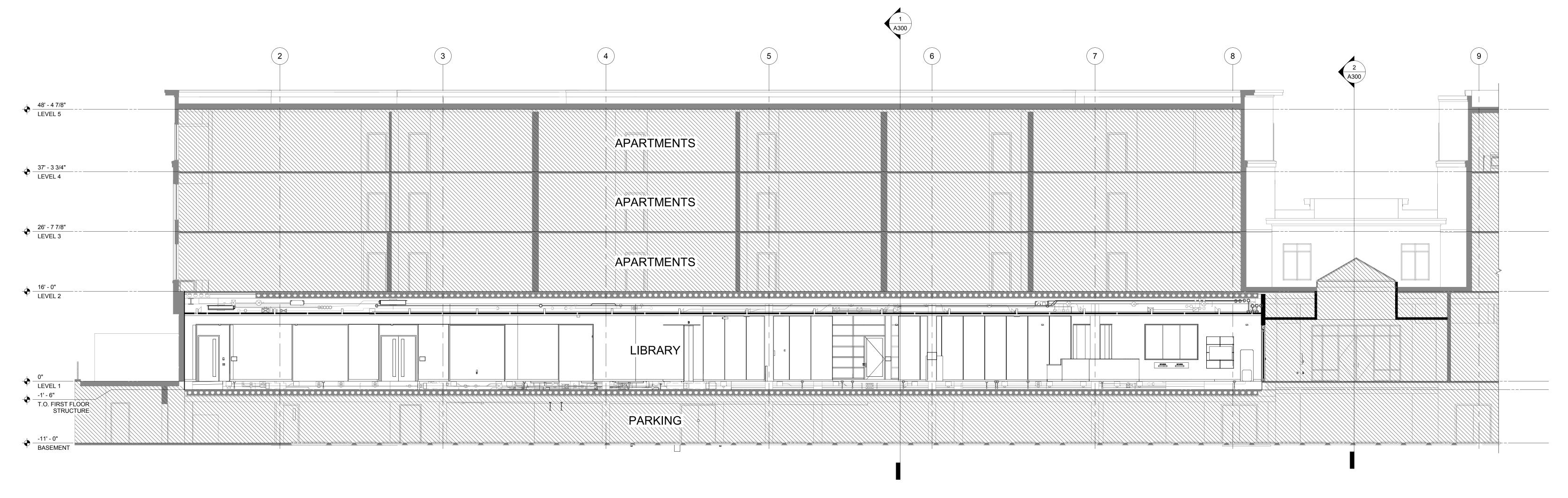
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Sheet Issue Date BID DOCUMENTS

Sheet Name . **EXTERIOR ELEVATIONS** 

Sheet Number





1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 |

BAST/WEST BUILDING SECT

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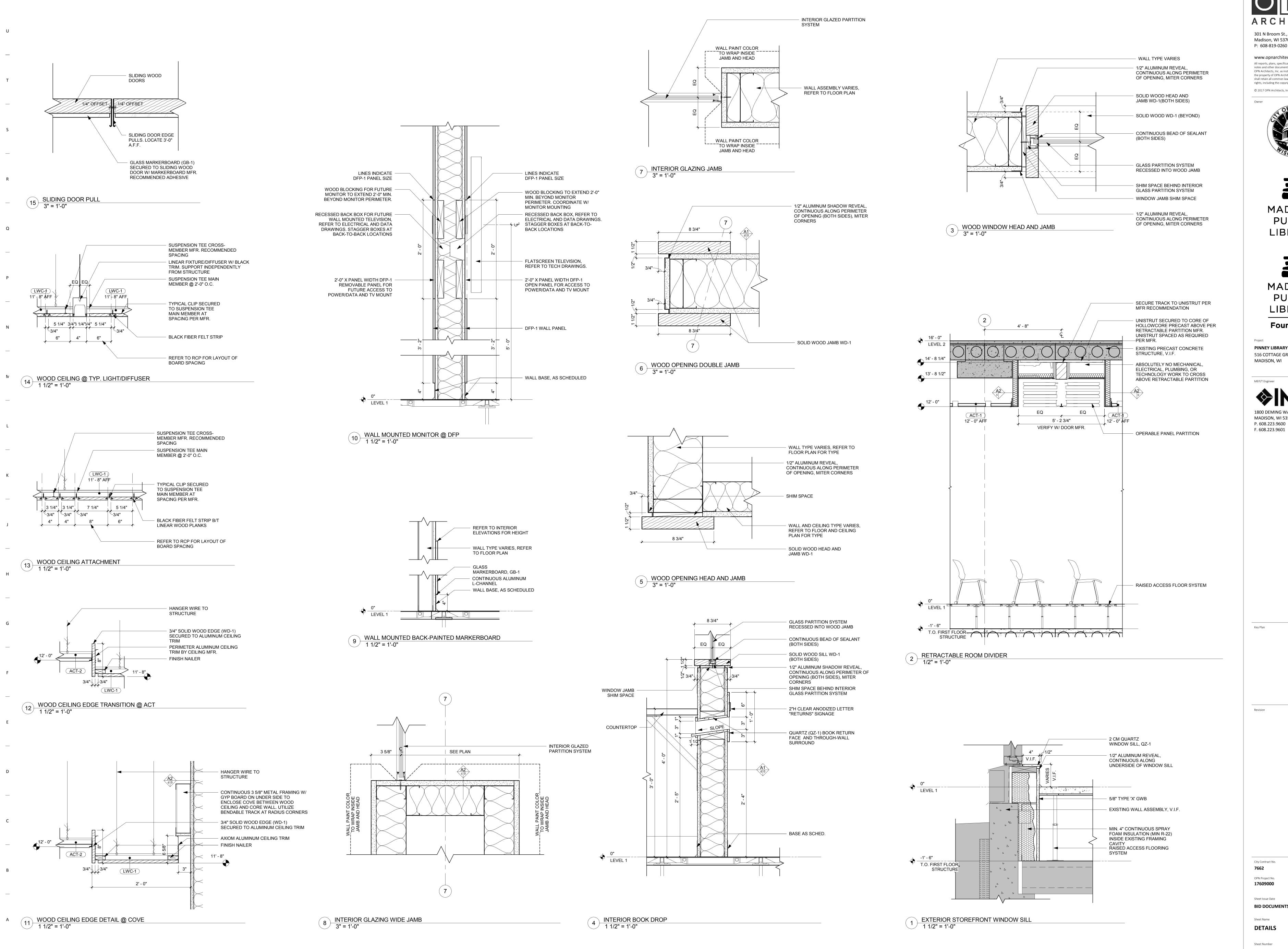
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Sheet Name

**BUILDING SECTIONS** 

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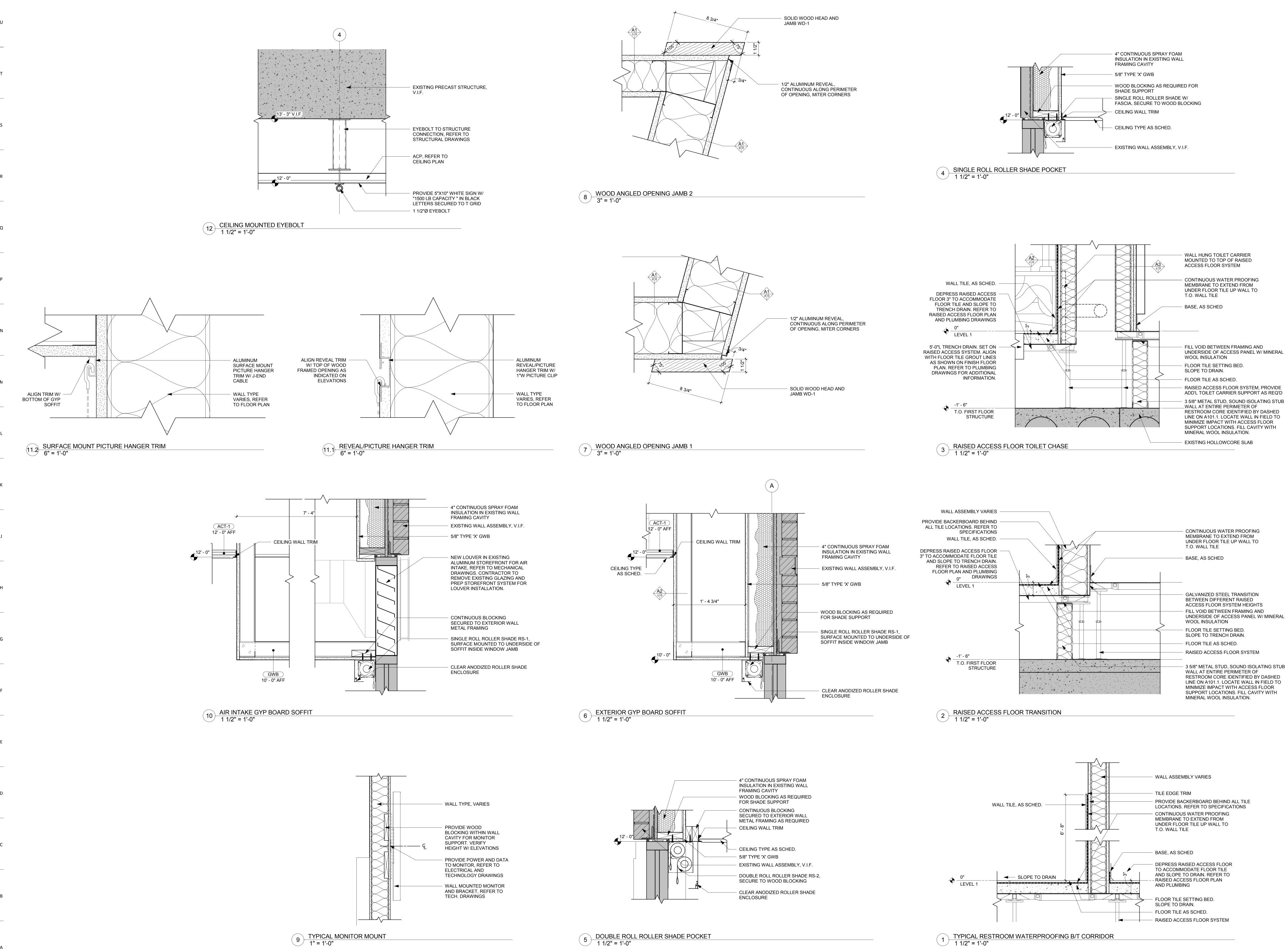


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Sheet Issue Date **BID DOCUMENTS** 

Sheet Name **DETAILS** 

Sheet Number



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12

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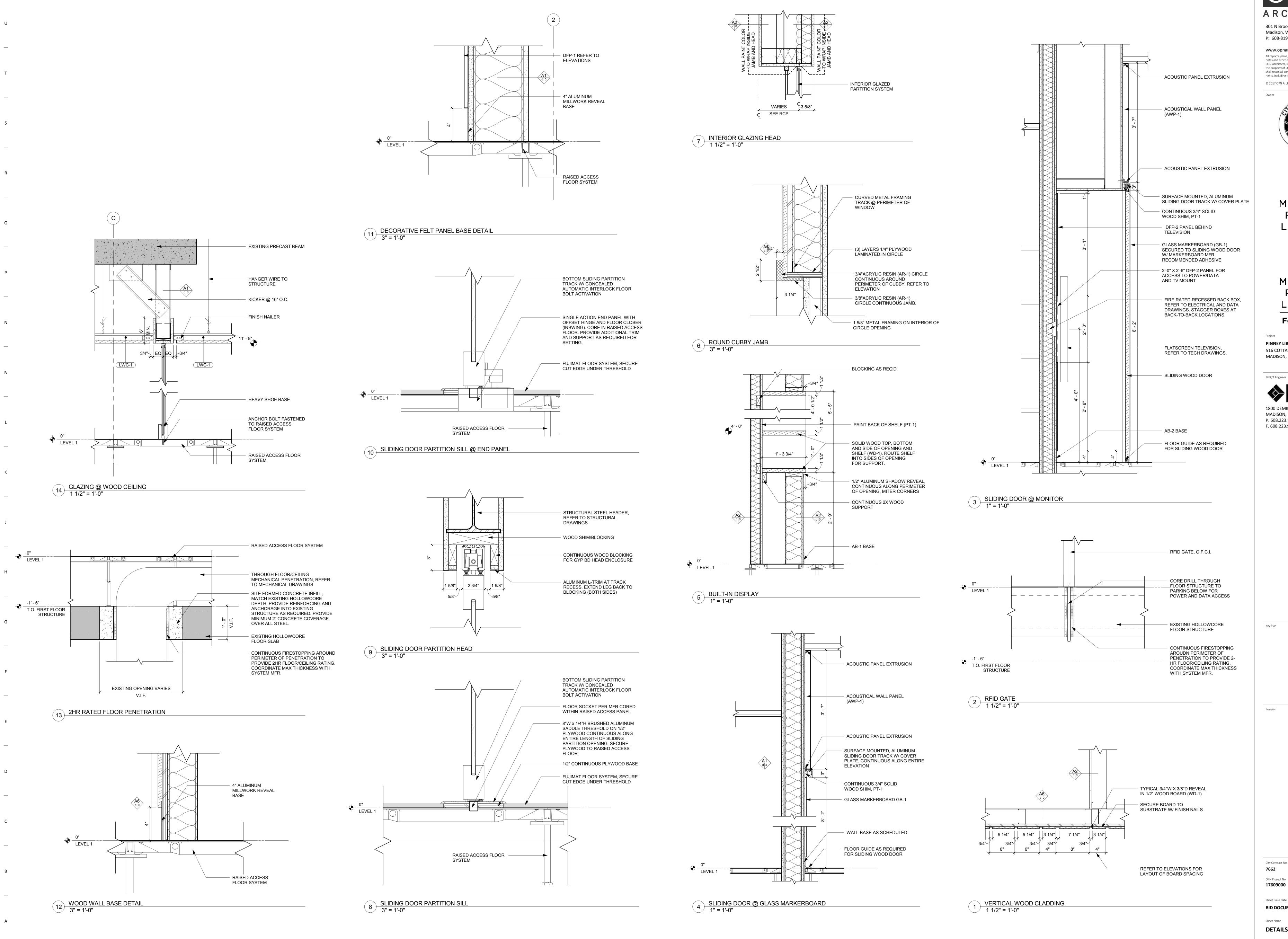
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Sheet Name **DETAILS** 

Sheet Number



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

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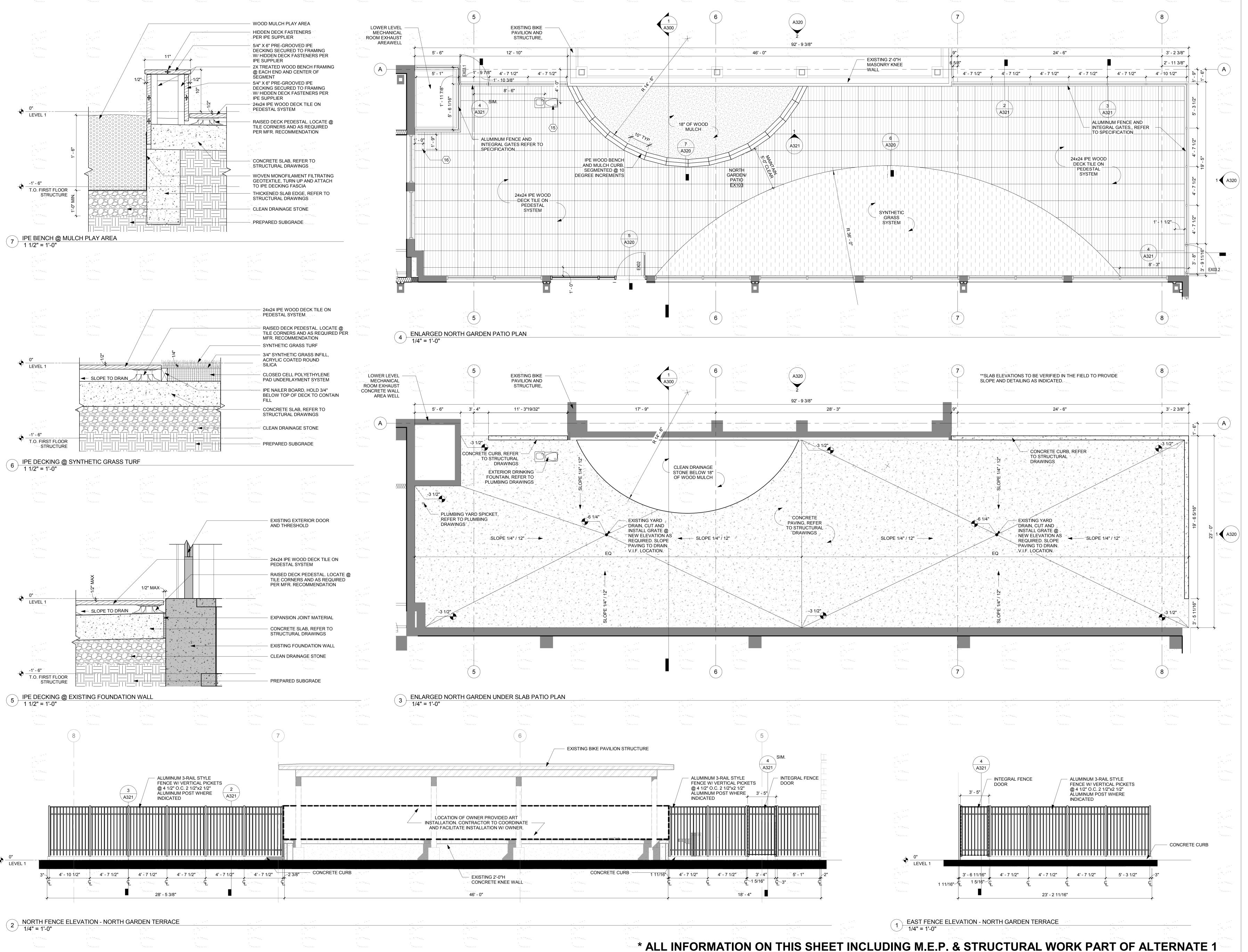


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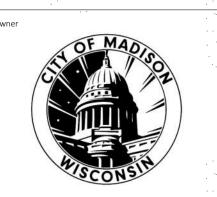
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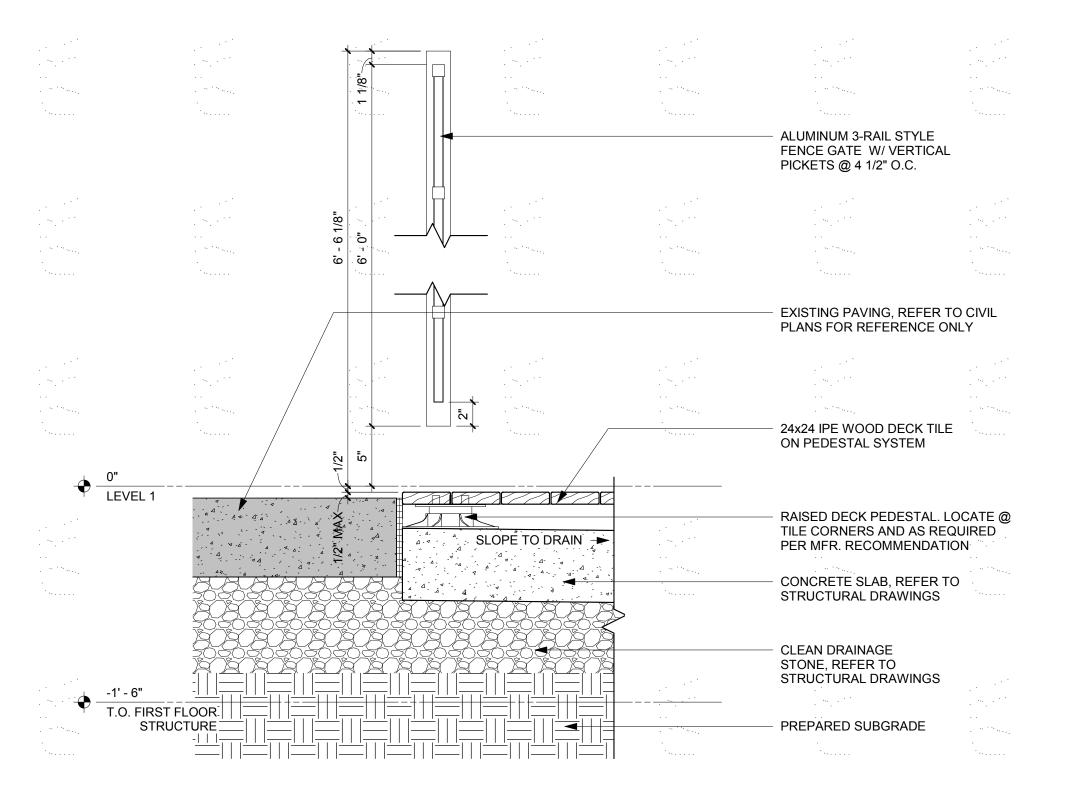
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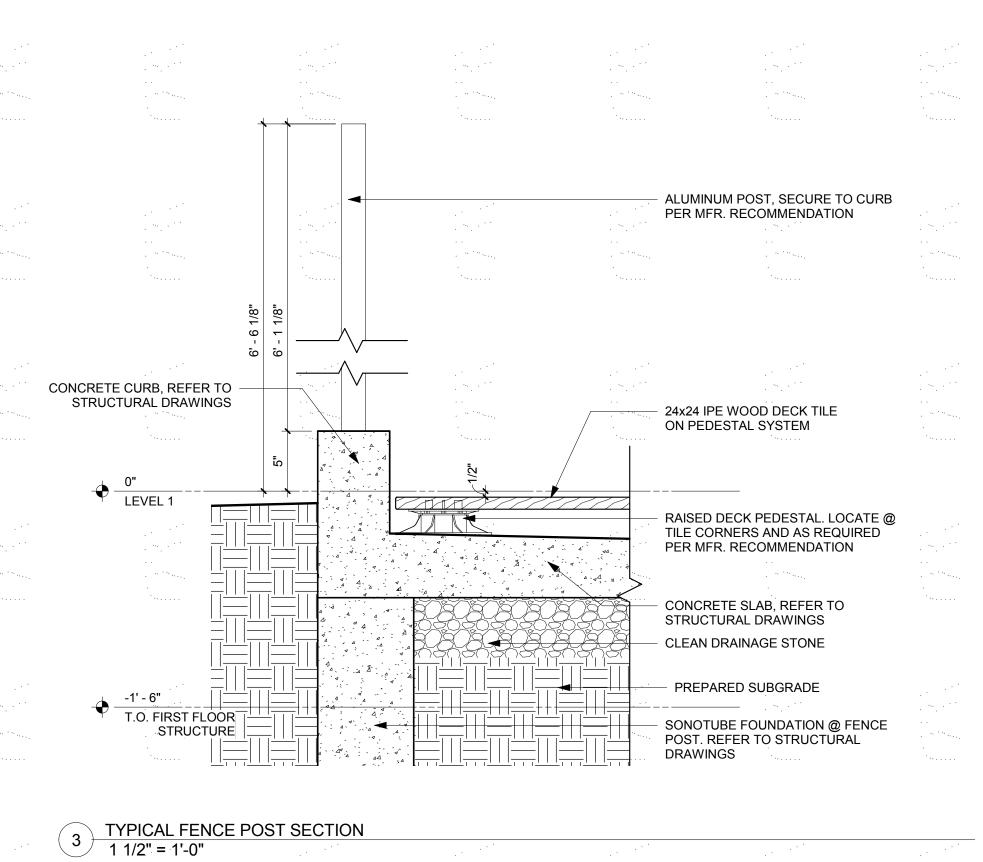
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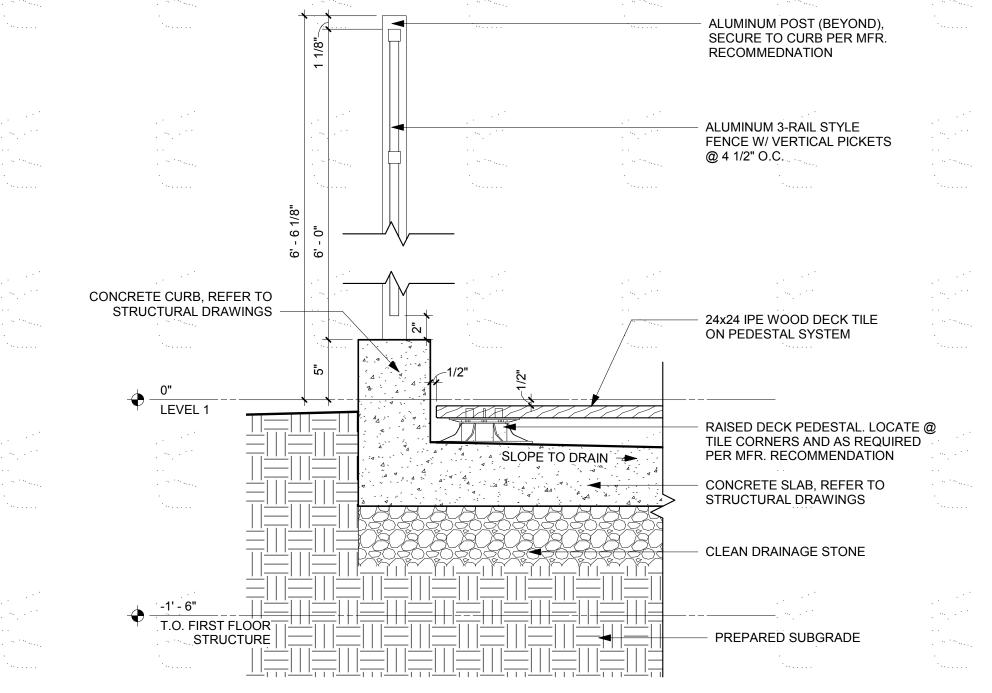
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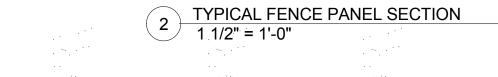
Sheet Name PATIO ENCLOSURE PLAN,

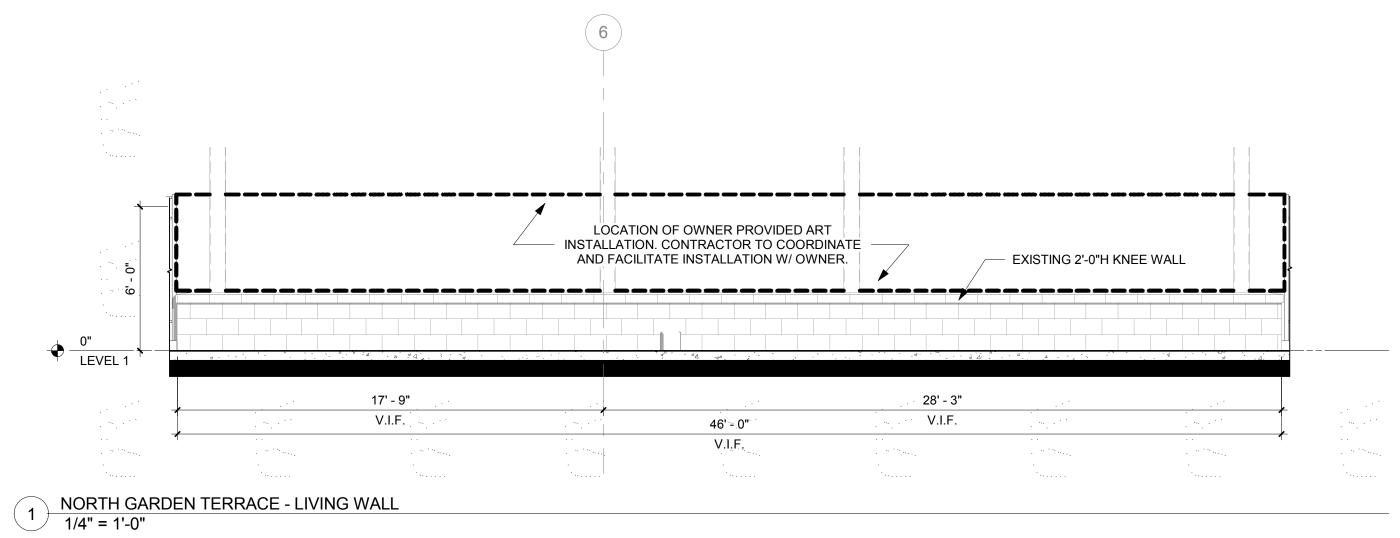


4 FENCE GATE SECTION
1 1/2" = 1'-0"









\* ALL INFORMATION ON THIS SHEET INCLUDING M.E.P. & STRUCTURAL WORK PART OF ALTERNATE 1



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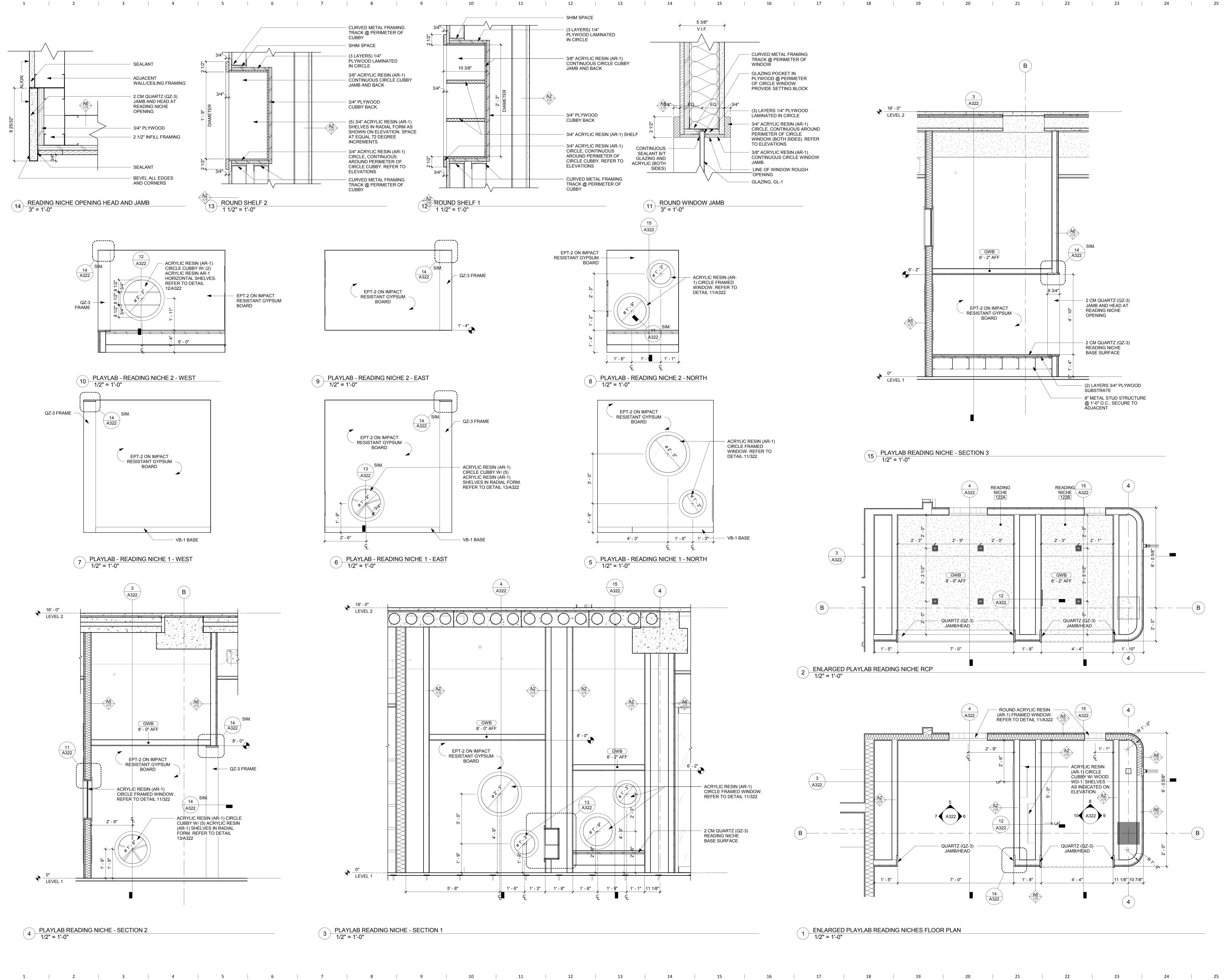
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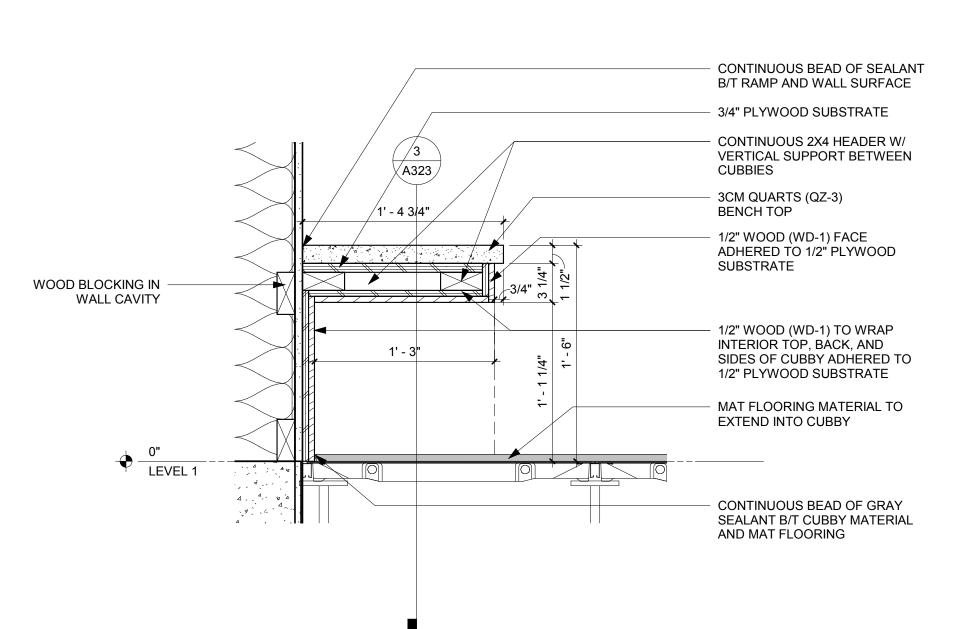
PLAYLAB PLAN,

ELEVATIONS, AND DETAILS

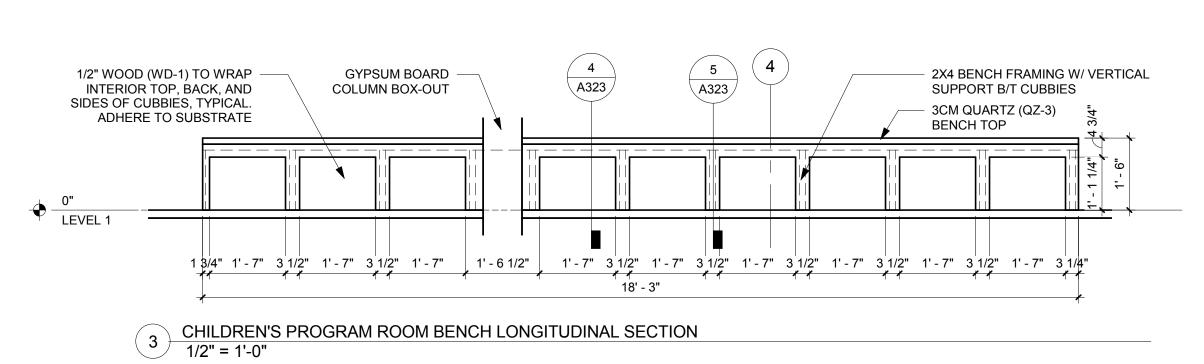
CONTINUOUS BEAD OF SEALANT
BIT RAMP AND WALL SURFACE
34\* PLYMOOD SUBSTRATE
CONTINUOUS 24\* HA FAPER W
VERTICAL SUPPORT BETWEEN
USER SECURE TO ACCESS
PLOOR SYSTEM

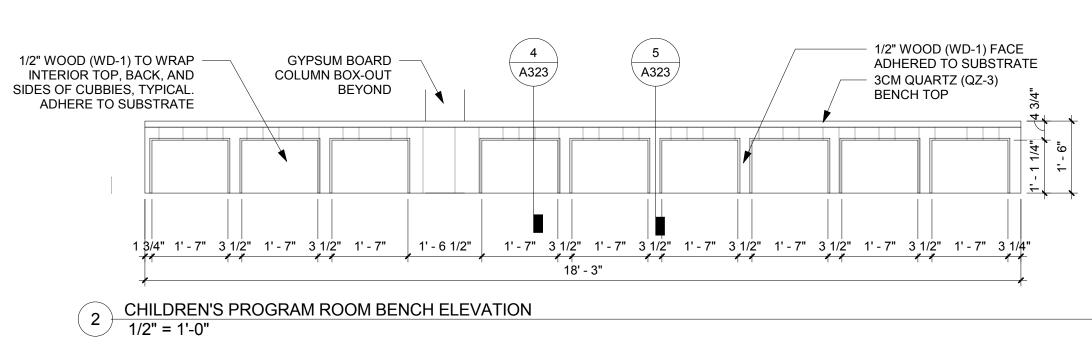
CONTINUOUS 244 BASE W/
VERTICAL SUPPORT BETWEEN
USER SECURE TO ACCESS
PLOOR SYSTEM

CHILDREN'S PROGRAM ROOM BENCH CROSS SECTION 2

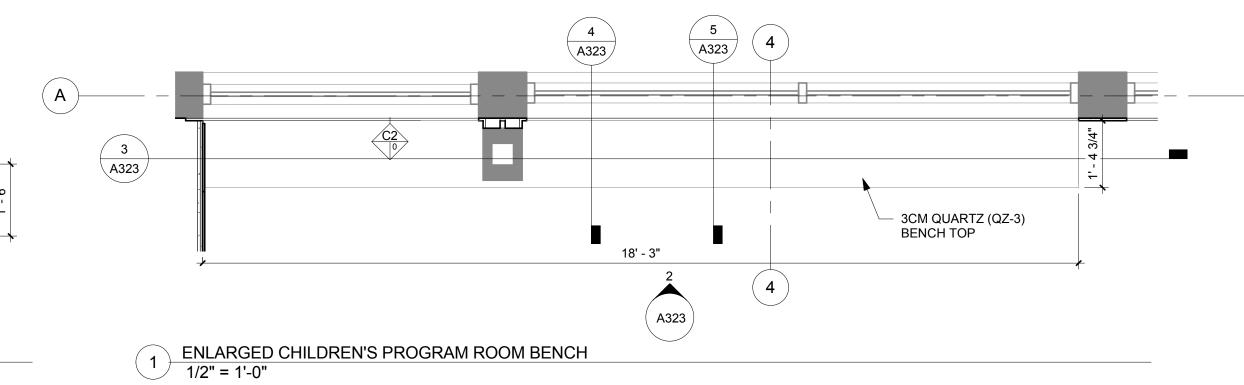


CHILDREN'S PROGRAM ROOM BENCH CROSS SECTION 1
1 1/2" = 1'-0"





1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |



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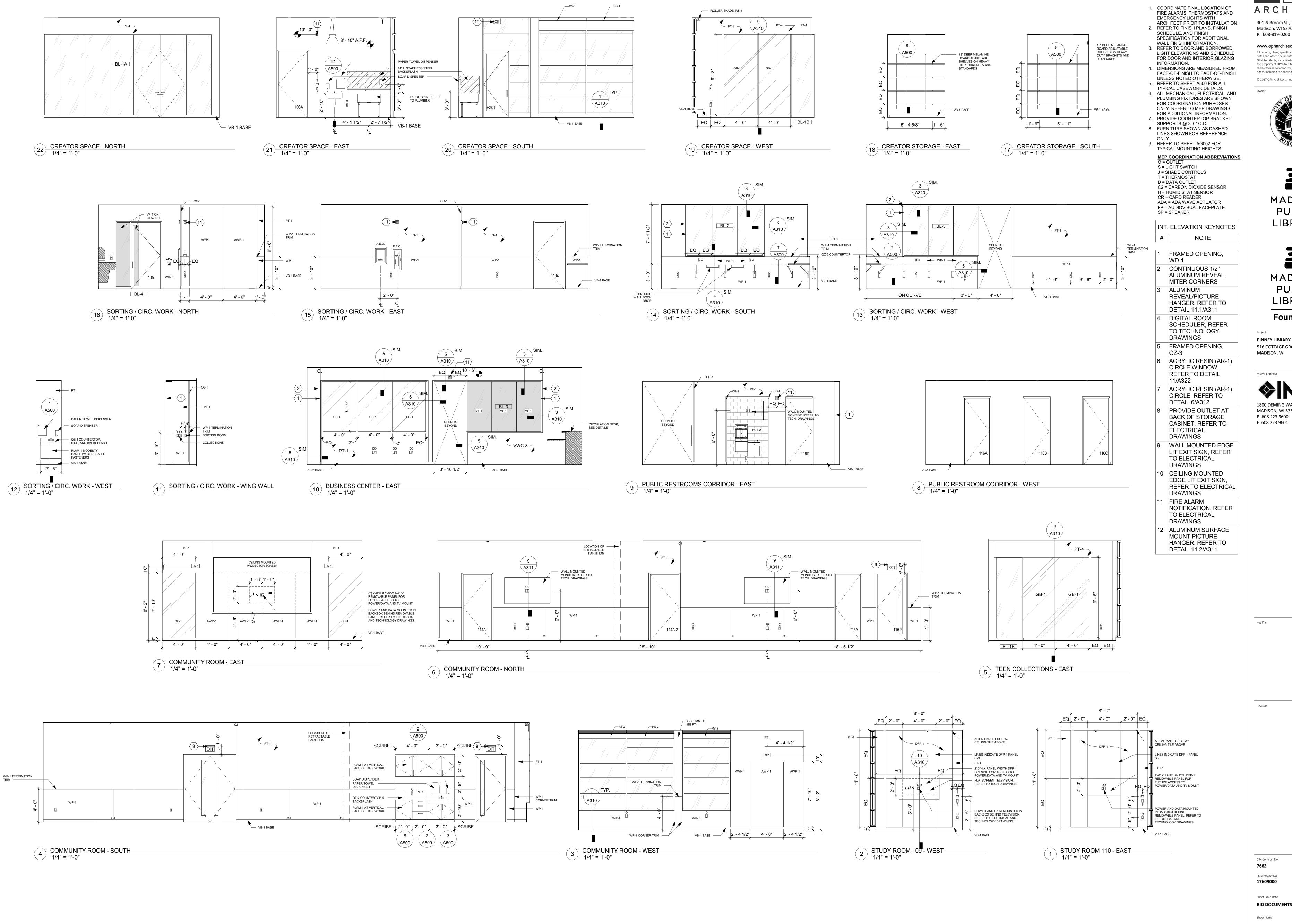
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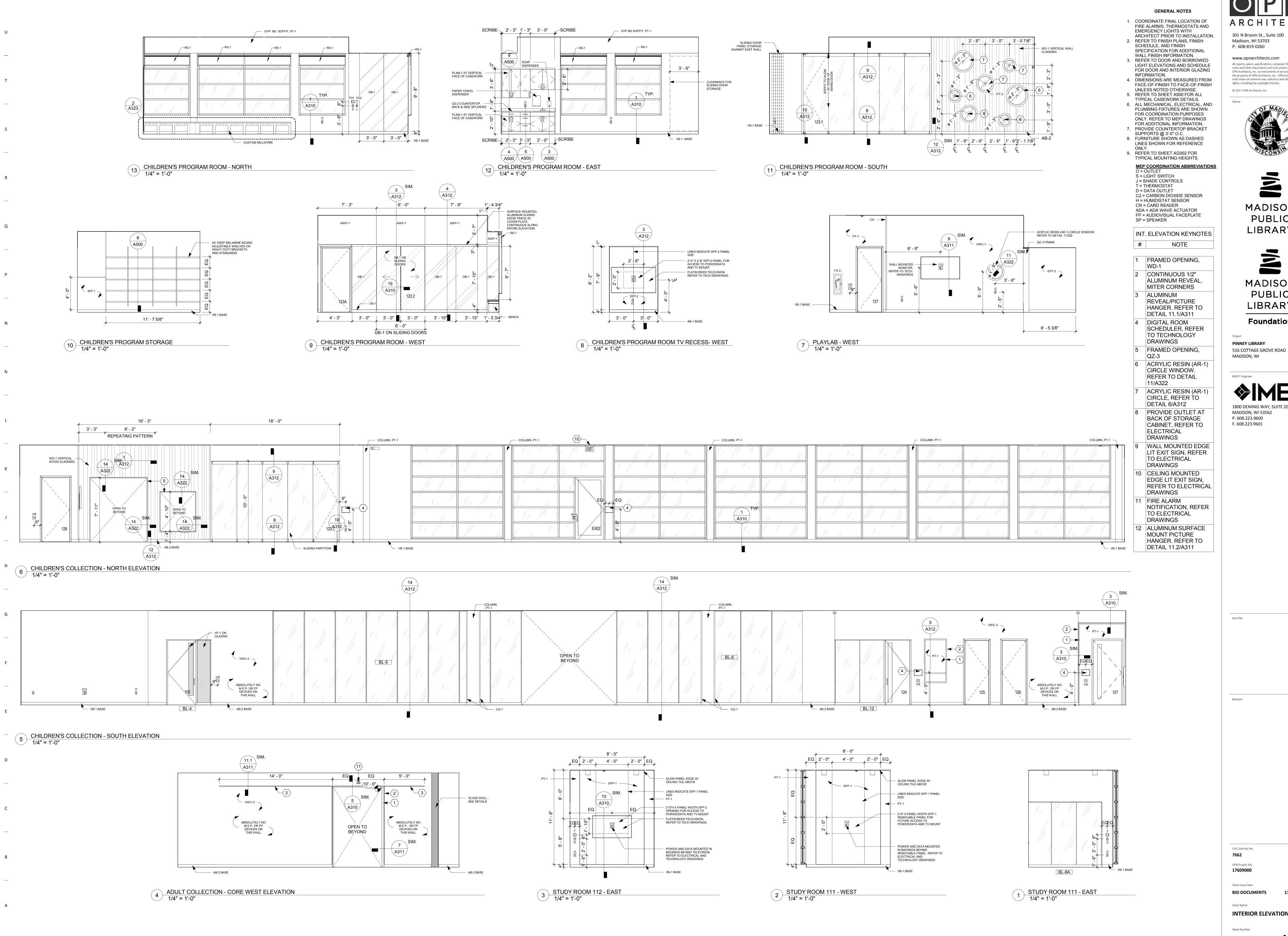
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Sheet Issue Date **BID DOCUMENTS** 

Sheet Name **INTERIOR ELEVATIONS** 

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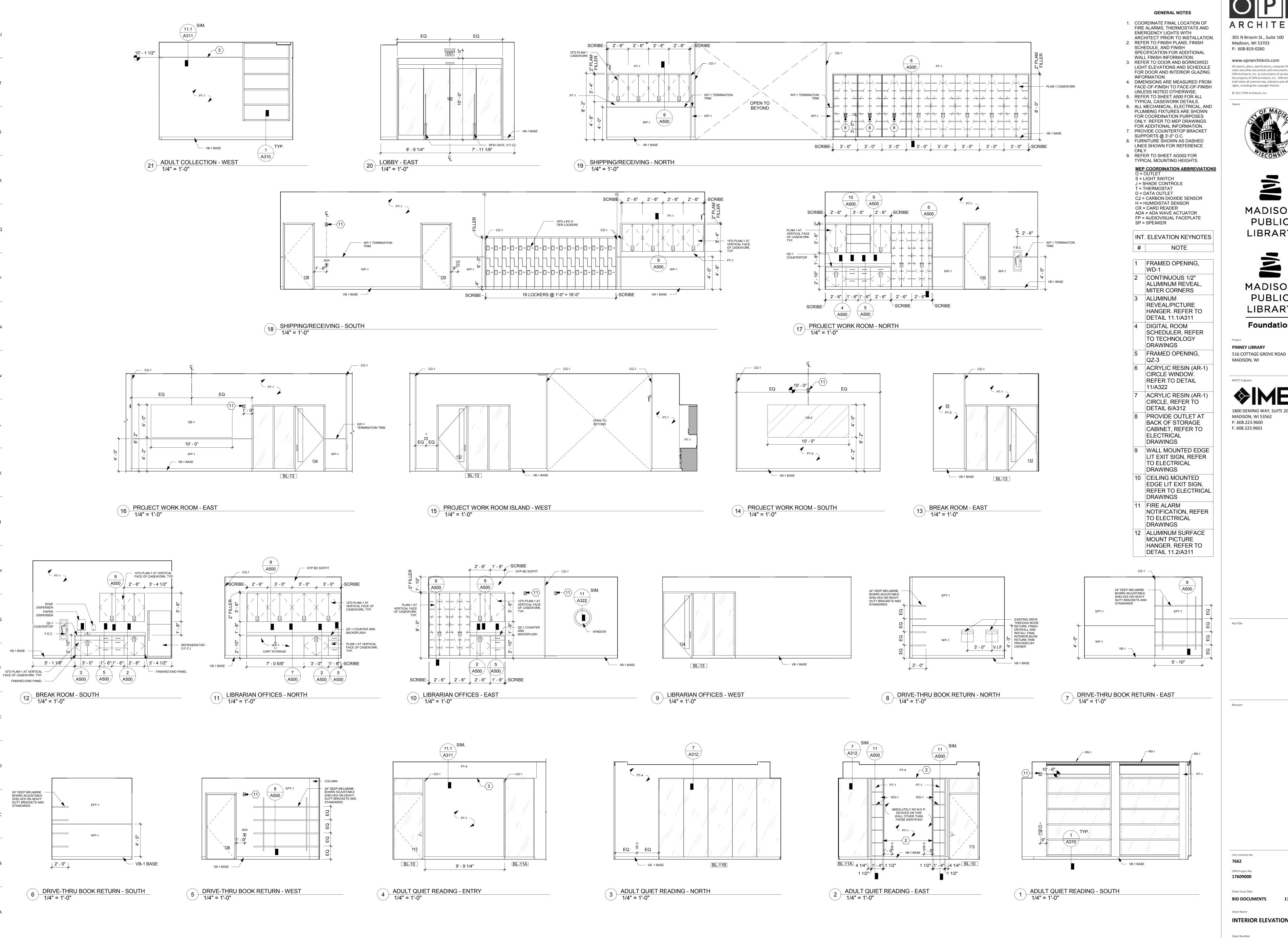


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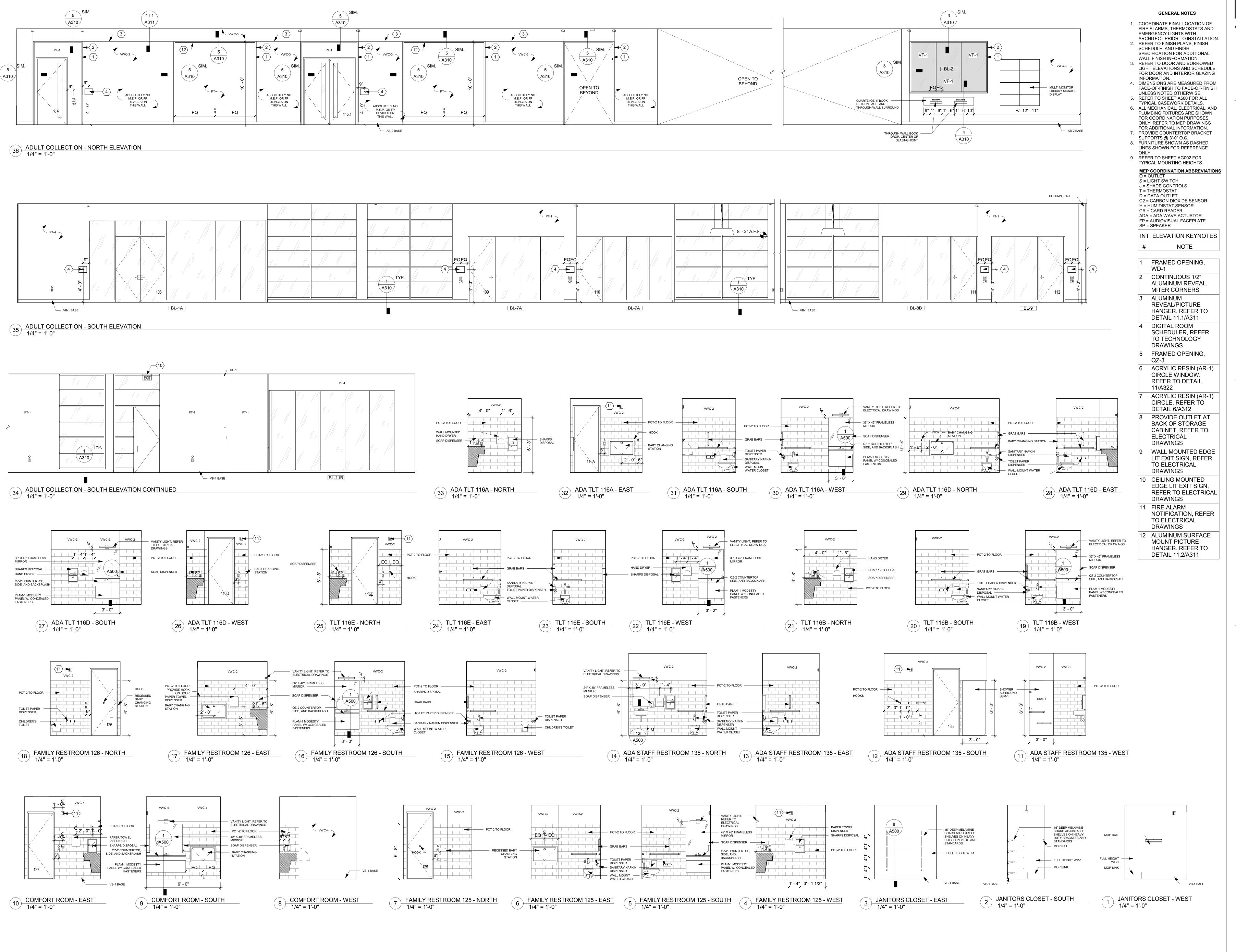
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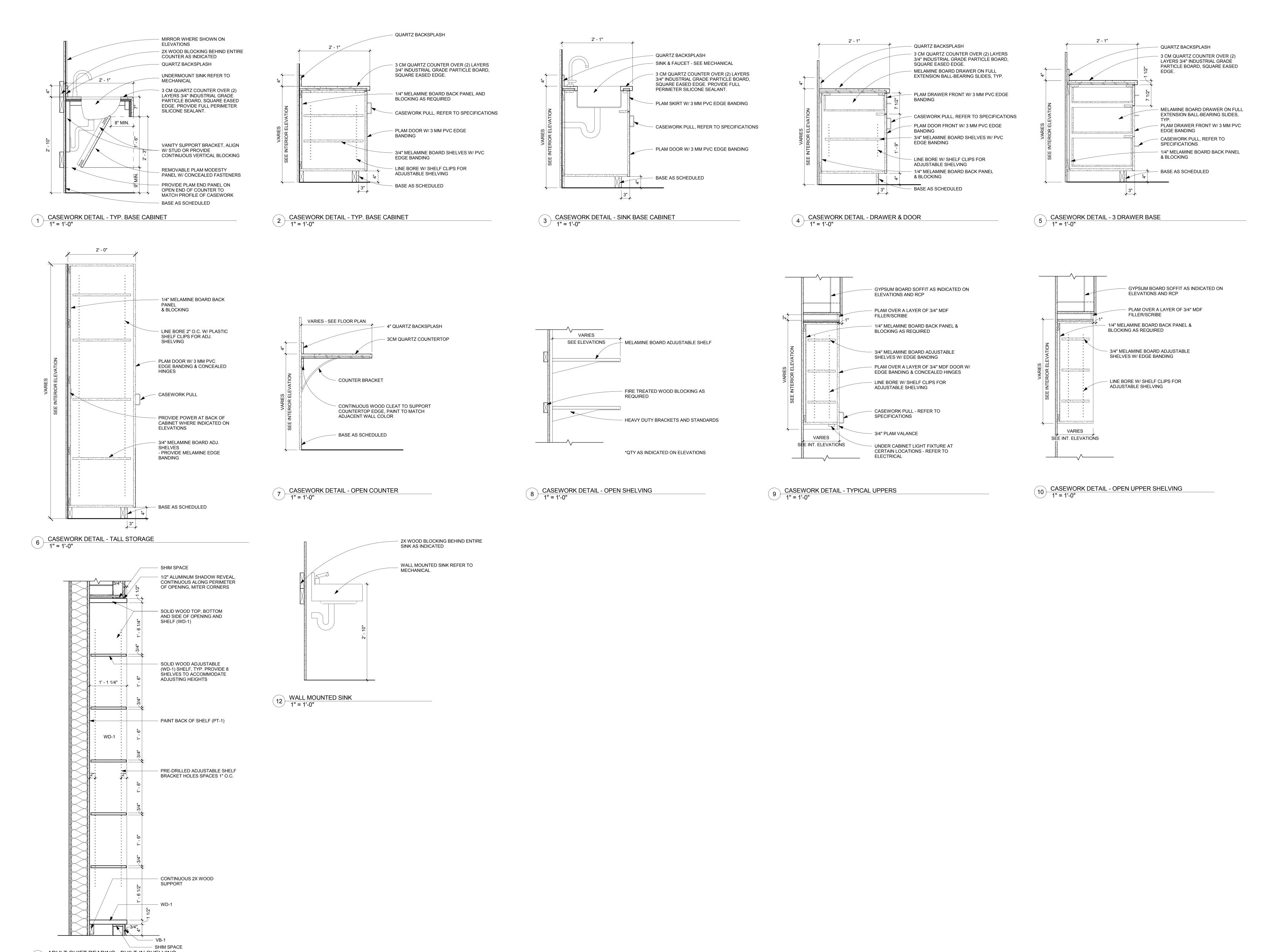
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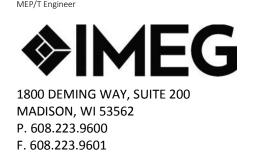






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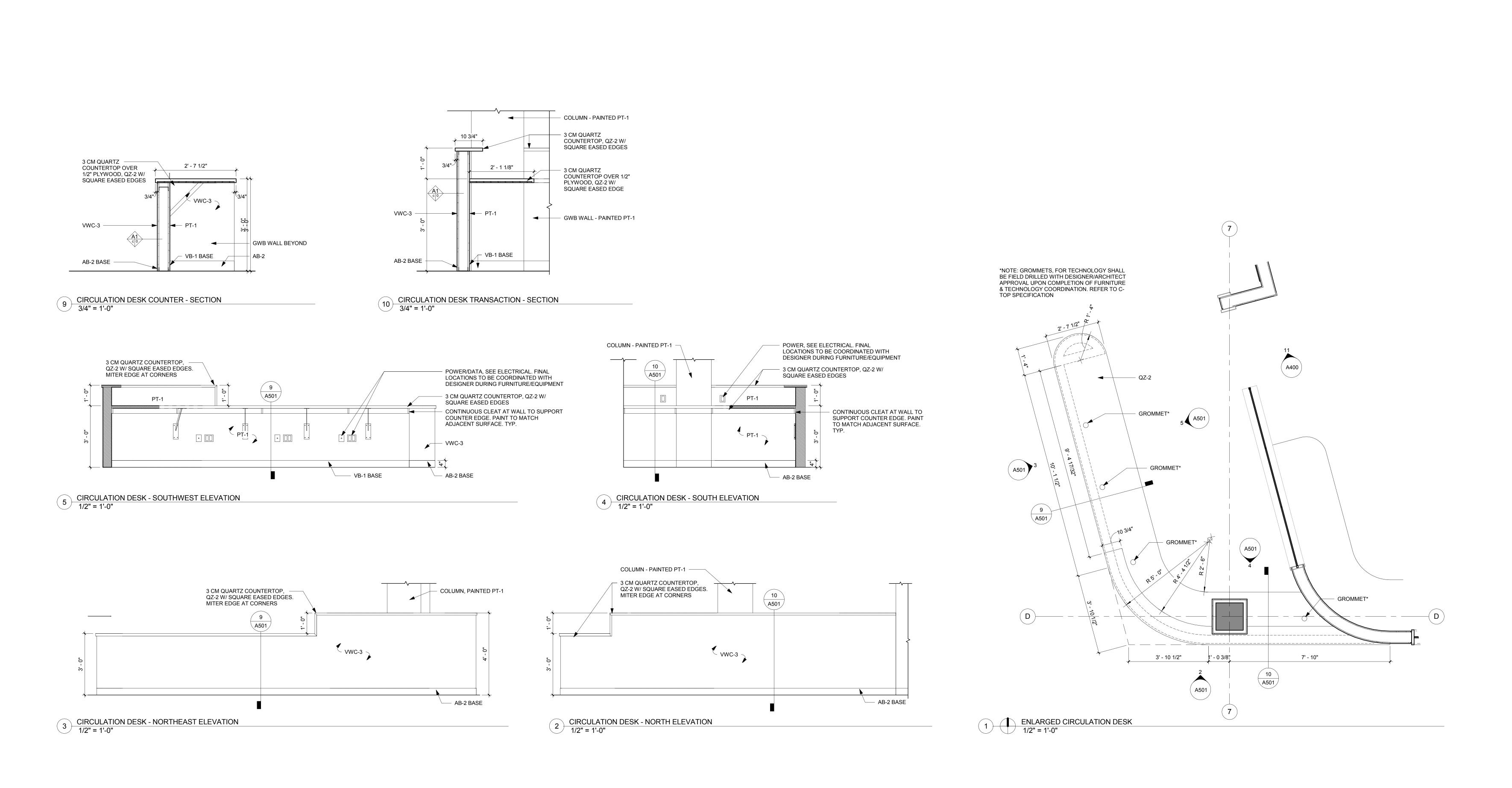
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**CASEWORK DETAILS** 

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CUSTOM CASEWORK
DETAILS
Sheet Number

**ACOUSTICAL CEILING TILE:** ACT-1: MANUFACTURER: ARMSTRONG STYLE: OPTIMA SIZE: 2' X 2' GRID: 9/16" WHITE EDGE PROFILE: SQUARE TEGULAR COLOR: WHITE PFRIMETER TRIM: WHITE

APPLICATION: AS SCHEDULED AND AS

ACT-2: MANUFACTURER: ARMSTRONG STYLE: OPTIMA SIZE: 4' X 4' GRID: 9/16" WHITE EDGE PROFILE: SQUARE TEGULAR COLOR: WHITE PERIMETER TRIM: WHITE APPLICATION: AS SCHEDULED AND AS

INDICATED ON DRAWINGS

**ACOUSTICAL WALL PANEL:** AWP-1: MANUFACTURER: NOVAWALL STYLE: ECOTRACK THICKNESS: 2" SIZE: VARIES - SEE ELEVATIONS

INDICATED ON DRAWINGS

EDGE PROFILE: WRAPPED SQUARE APPLICATION: AS INDICATED ON DRAWINGS MANUFACTURER: CARNEGIE XOREL STYLE: METEOR COLOR: 765

**ACRYLIC RESIN FABRICATION:** 

AR-1: MANUFACTURER: LIGHTBLOCKS STYLE: OPAQUE PALETTE COLOR: MATCH PT-3 THICKNESS: AS INDICATED ON DRAWINGS APPLICATION: CUSTOM PLAYLAB WINDOW FRAME **FABRICATIONS** 

**ALUMINUM BASE:** 

AB-1: MANUFACTURER: FRY REGLET STYLE: REVEAL BASE MWRB50400 FINISH: ANODIZED ALUMINUM - SATIN SIZE: 1/2" DEPTH, 4" HEIGHT STYLE: STRAIGHT FINISH: ANODIZED ALUMINUM - SATIN SIZE: 14 GAUGE, 4" HEIGHT

**CORNER GUARD:** 

CG-1: MANUFACTURER: INPRO STYLE: 1 1/2" WING SURFACE MOUNT 16GA STAINLESS STEEL HEIGHT: FULL HEIGHT OF GYPSUM **BOARD CORNER AND AS INDICATED ON ELEVATIONS. CORNER GUARD TO START** AT TOP OF WALL BASE LOCATION: ALL OUTIDCE GYPSUM BOARD CORNERS INSTALL: CEMENT ON (NO SCREWS)

CPT-1: MANUFACTURER: INTERFACE STYLE: WW870 COLOR: CHARCOAL WEFT SIZE: 25CM X 1M APPLICATION: AS SCHEDULED INSTALLATION: ASHLAR CONTACT: AMY SIMMONS 515.414.6231

CPT-2: MANUFACTURER: INTERFACE STYLE: SUMMERHOUSE SHADES COLOR: CHARCOAL SIZE: 25CM X 1M APPLICATION: AS SCHEDULED INSTALLATION: ASHLAR

CPT-3: MANUFACTURER: INTERFACE STYLE: ON LINE COLOR: PEPPER SIZE: 25CM X 1M APPLICATION: AS SCHEDULED INSTALLATION: ASHLAR

CPT-4: MANUFACTURER: INTERFACE STYLE: SUMMERHOUSE BRIGHTS COLOR: PAPRIKA / NATURAL SIZE: 50CM X 50 CM APPLICATION: AS SCHEDULED INSTALLATION: NON-DIRECTIONAL

CPT-5: MANUFACTURER: INTERFACE COLOR: CHARCOAL LOOM SIZE: 25CM X 1M APPLICATION: AS SCHEDULED

CPT-6: MANUFACTURER: INTERFACE STYLE: WW870 COLOR: CHARCOAL WEFT SIZE: 25CM X 1M **BACKING: CUSHIOBAC RENEW** APPLICATION: AS SCHEDULED

INSTALLATION: ASHLAR

INSTALLATION: ASHLAR

**DECORATIVE FELT PANEL:** 

DFP-1: MANUFACTURER: FILZFELT STYLE: AKUSTIKA 10 WALL COLOR: 312 LAGUNE EDGE STYLE: WRAPPED MOUNTING STYLE: INTERLOCKING MOUNTING SYSTEM APPLICATION: STUDY ROOMS

**GLASS BOARD:** 

GB-1: MANUFACTURER: CLARUS STYLE: FLOAT COLOR: CBC-100 PURE WHITE SIZE: SEE ELEVATIONS NOTE: MAGNETIC

GB-2: MANUFACTURER: CLARUS STYLE: FLOAT **COLOR: TO MATCH PT-5** SIZE: SEE ELEVATION NOTE: MAGNETIC

GL-1: MANUFACTURER: SEE SPECIFICATIONS STYLE: TEMPERED COLOR: CLEAR THICKNESS: 3/8" TYPICAL, OTHER THICKNESSES AS REQUIRED FOR APPLICATION SIZE: SEE ELEVATIONS

**GROUT:** MANUFACTURER: BOSTIK TRU COLOR COLOR: DELOREAN GRAY H160

JOINT THICKNESS: 1/8" APPLICATION: TO BE USED WITH PCT-1 G-2: MANUFACTURER: BOSTIK TRU COLOR COLOR: MISTY GRAY H144 JOINT THICKNESS: 1/8"

LINEAR ACOUSTIC WOOD CEILING: LWC-1: MANUFACTURER: ARCHITECTURAL COMPONENTS GROUP, INC.

APPLICATION: TO BE USED WITH PCT-2

STYLE: LINEAR SERIES 2 (LO2) FINISH: WD-1 APPLICATION: SUSPENDED WOOD CEILING SYSTEM

PLASTIC LAMINATE:

PLAM-1:MANUFACTURER: WILSONART COLOR: GREY FINISH: MATTE APPLICATION: VERTICAL CASEWORK, MODESTY PANELS

PAINT - EPOXY:

EPT-1: MANUFACTURER: GLIDDEN COLOR: TO MATCH PT-1 SHEEN: FLAT EPOXY APPLICATION: JANITORIAL/STORAGE AREAS

EPT-2: MANUFACTURER: GLIDDEN COLOR: TO MATCH PT-3 SHEEN: FLAT EPOXY APPLICATION: READING NICHES

PT-1: MANUFACTURER: PPG **COLOR: SWIRLING SMOKE 1007-2** SHEEN: EGGSHELL @ WALLS, SEMI-GLOSS @ DOOR FRAMES APPLICATION: FIELD, DOOR FRAMES

PT-2: MANUFACTURER: SHERWIN WILLIAMS COLOR: EXTRA WHITE SW 7006 SHEEN: FLAT APPLICATION: CEILING/SOFFIT

PT-3: MANUFACTURER: GLIDDEN COLOR: BEAR RUN #10BG 46/112 SHEEN: EGGSHELL @ WALLS, FLAT @ CFILINGS APPLICATION: BLUE ACCENT

PT-4: MANUFACTURER: GLIDDEN COLOR: SALSA #10YR 14/348 SHEEN: EGGSHELL AT WALLS, FLAT AT CEILINGS APPLICATION: RED ACCENT

PT-5: MANUFACTURER: SHERWIN WILLIAMS COLOR: MATURE GRAPE SHEEN: EGGSHELL APPLICATION: PURPLE ACCENT

**PORCELAIN/CERMAMIC TILE:** 

PCT-1: MANUFACTURER: DALTILE STYLE: AMBASSADOR COLOR: JET SETTER SIZE: 12" X 24" APPLICATION: FLOOR TILE CONTACT: AMANDA BALHORN 402-981-7045

NOTE: PROVIDE WATERPROOFING MEMBRANE CONTINUOUS UNDER FLOOR AND WALL TILE PCT-2: MANUFACTURER: ERGON COLLECTION: TREND STYLE: MAJOLICA COLOR: WHITE FINISH: GLOSS

SIZE: 12.25 CM X 25 CM APPLICATION: RESTROOM WALL TILE CONTACT: MICHAEL MONTORSI 630-539-4470 NOTE: PROVIDE SCHLUTER SYSTEMS, QUADEC, ANODIZED ALUMINUM AT TOP OF WAINSCOT AND

AT ALL OUTSIDE CORNERS PROVIDE WATERPROOFING MEMBRANE CONTINUOUS UNDER FLOOR AND WALL TILE

QZ-1: MANUFACTURER: WILSONART COLOR: PAPER LANTERN Q6001 THICKNESS: 3CM AT COUNTERTOPS, 2CM AT OTHER APPLICATIONS APPLICATION: SILLS @ EXTERIOR WINDOWS, CUSTOM FABRICATIONS, COUNTERTOPS - SEE ELEVATIONS

QZ-2: MANUFACTURER: ZODIAQ COLOR: SNOWDRIFT THICKNESS: 3CM

APPLICATION: COUNTERTOPS - SEE ELEVATIONS QZ-3: MANUFACTURER: DIFINITI COLOR: SILVER LAKE

APPLICATION: PLAY LAB TRIM DETAIL

**RAISED ACCESS FLOOR FINISH:** 

THICKNESS: 2CM

RAF-1: MANUFACTURER: CAPRI STYLE: MEDITERRA HOMOGENEOUS CORK COLOR: DARK THICKNESS: 5/16" APPLICATION: CHILDREN'S PROGRAM ROOM, FAMILY STUDY ROOM, CREATOR SPACE, COMMUNITY ROOM NOTE: TATE/KINGSPAN FACTORY LAMINATED CORK

RAF-2: MANUFACTURER: FORMICA STYLE: HPL **COLOR: STONE GRAFIX** APPLICATION: IT ROOM

NOTE: TATE/KINGSPAN FACTORY LAMINATED HPL RAF-3: UNFINISHED TATE/KINGSPAN RAISED ACCESS FLOOR

**RESILIENT FLOOR:** RF-1: MANUFACTURER: MANNINGTON STYLE: BIOSPEC

**COLOR: STONE GRAY** APPLICATION: JANITORS CLOSET NOTE: TO BE INSTALLED IN FIELD OVER RAF SYSTEM. RF-2: MANUFACTURER: FUJIMATS

STYLE: FUJI FLOOR COLOR: GREY THICKNESS: 9/16" **INSTALLATION: ASHLAR** APPLICATION: CHILDREN'S PROGRAM ROOM, PLAYLAB, AND READING NICHE NOTE: TO BE INSTALLED IN FIELD OVER RAF SYSTEM.

105

113

120

122

123

129

130

135

**ROLLER SHADES:** 

RS-1: MANUFACTURER: LUTRON SHADECLOTH: BASKETWEAVE **OPENESS FACTOR: 3%** COLOR: CHARCOAL **OPERATION METHOD: AUTOMATED** APPLICATION: SEE PLANS

RS-2: MANUFACTURER: LUTRON STYLE: DOUBLE ROLL **OPERATION METHOD: AUTOMATED** APPLICATION: COMMUNITY ROOM SHADECLOTH 1: BASKETWEAVE

**OPENESS FACTOR: BLACKOUT** 

SHADECLOTH: BASKETWEAVE

**OPERATION METHOD: MANUAL** 

APPLICATION: SEE PLANS

COLOR: CHARCOAL SHADECLOTH 2: BASKETWEAVE **OPENESS FACTOR: 3%** COLOR: CHARCOAL RS-3: MANUFACTURER: LUTRON

**OPENESS FACTOR: 3%** 

COLOR: CHARCOAL

**SOLID SURFACE:** SSM-1: MANUFACTURER: INPRO STYLE: BIOPRISM COLOR: BRIGHT WHITE P9011 THICKNESS: 1/4" APPLICATION: SHOWER WALL PANELS

**VINYL BASE:** 

VB-1: MANUFACTURER: JOHNSONITE STYLE: 4" ROLLED GOODS ONLY COLOR: GATEWAY STRAIGHT @ CARPET, COVE @ HARD FLOORING

VINYL FILM:

VF-1: MANUFACTURER: 3M STYLE: FASARA COLOR: TBD FROM ALL FASARA STYLE SELECTIONS APPLICATION: SEE ELEVATIONS FOR DETAILS AND DIMENSIONS

VINYL WALLCOVERING:

VWC-1: MANUFACTURER: DL COUCH PRODUCT: DIGITAL IMAGINARIUM COLOR: CUSTOM DESIGN TEXTURE/PATTERN: MYSTICAL APPLICATION: CUSTOM DIGITAL WALLCOVERING AT LOCATIONS INDICATED ON DRAWINGS

> NOTE: DRYWALL TO HAVE LEVEL 5 FINISH. COORDINATE GRAPHIC WITH DESIGNER. DESIGNER WILL PROVIDE ALL CUSTOM DIGITAL FILES FOR

VWC-2: MANUFACTURER: DL COUCH STYLE: BEACON HILL COLOR: PALE OAK APPLICATION: RESTROOMS

VWC-3: MANUFACTURER: CARNEGIE STYLE: XOREL PATTERN: PRISM COLOR: 161

VWC-4: MANUFACTURER: WOLF GORDON STYLE: TIVOLI COLOR: NECTAR APPLICATION: NEW MOM'S ROOM

APPLICATION: CORE ACCENT WALLS

WALL PROTECTION:

WP-1: MANUFACTURER: INPRO STYLE: PALLADIUM RIGID SHEET COLOR: TAUPE 0113 APPLICATION: PROGRAM ROOM, STORAGE, AND NOTES: PROVIDE COLOR MATCHING INSIDE, OUTSIDE, PANEL DIVIDER, AND TERMINATION TRIM

**WALK OFF CARPET TILE:** 

WOC-1: MANUFACTURER: INTERFACE STYLE: STEP REPEAT PATTERN: SR899 COLOR: IRON SIZE: 50CM X 50CM APPLICATION: ENTRY VESTIBULE

WD-1: SPECIES: URBAN ASH SOURCE: STATE OF WISCONSIN, REFER TO SPECIFICATIONS FOR SPECIFIC WOOD INSTALLATION SIZE: AS INDICATED ON DRAWINGS STAIN: TO MATCH DESIGNERS SAMPLE APPLICATION: CEILING, WOOD WALL CLADDING, INTERIOR DOOR AND WINDOW JAMBS

APPLICATION: WOOD DOORS

WD-2 SPECIES: ASH CUT: PLAIN SLICE STAIN: TO MATCH DESIGNERS SAMPLE

ROOM FINISH SCHEDULE **FLOOR WALL FINISH** CEILING ROOM# BASE **ROOM NAME FINISH** NORTH **EAST** SOUTH WEST CEILING MATERIAL REMARK FINISH LOBBY WOC-1/CPT-3 VB-1/AB-2 VWC-3 PT-1 PT-4 ACT-2/ LWC-1 |--/--1, 2, 3, 4 PT-1 PT-4 PINNEY STUDIO PT-4 PT-1 ACP-1 RAF-1 VB-1 2, 6 EPT-1 EPT-1 EPT-1 EPT-1 ACP-1 STUDIO STORAGE 7. EXTEND FLOORING INTO TOE SPACES. RAF-3 EPT-1 EPT-1 EPT-1 EPT-1 OTS PT-2 MECH CLOSET SORTING / CIRC. WORK CPT-6 VB-1 PT-1/WP-1 PT-1/WP-1 PT-1/WP-1 PT-1/WP-1 ACT-1 CPT-1, 2, 3, 5 VWC-3 LWC-1 CIRCULATION PT-1/VWC-3 CPT-1, 2, 3, 5 LWC-1/ GWB --/ PT-2 HOLDS / BUSINESS CENTER 1, 3, 6 CPT-1, 2, 3, 4, 5 PT-1, 4/VWC-3 PT-1. 4 ACT-2/ LWC-1 ADULT FICTION/NON-FICTION VB-1/AB-1, 2 PT-4/VWC-3 PT-1, 4/VWC-3/DFP-1 1, 2, 3, 4, 6, 9 CPT-1, 2, 4, 5 PT-1 ACT-1 STUDY ROOM PT-1 PT-1 PT-1/DFP-1 1, 2, 4 9. PAINT ALL INTERIOR MISCELLANEOUS PT-1 PT-1 ACT-1 STUDY ROOM CPT-1, 2, 4, 5 PT-1/DFP-1 PT-1 1, 2, 4 PT-1 PT-1 ACT-1 CPT-1, 2, 4, 5 VB-1 PT-1 PT-1/DFP-1 STUDY ROOM 1, 2, 4 PT-1 PT-1 ACT-1 STUDY ROOM CPT-1, 2, 4, 5 VB-1 PT-1/DFP-1 PT-1 1, 2, 4 PT-4 PT-1 ADULT QUIET READING CPT-1, 2, 3, 5 VB-1 PT-1/PT-4 PT-1 ACT-1/LWC-1/GWB | --/--/PT-2 1, 2, 3 PT-1/WP-1 PT-1/WP-1 PT-1 CPT-1, 2, 4, 5 **COMMUNITY ROOM 1** 1, 2, 5 STORAGE CPT-1, 2, 5 PT-1/ WP-1 PT-1/ WP-1 PT-1/ WP-1 ACT-1 114A PT-1/ WP-1 CPT-1, 2, 4, 5 PT-1/ WP-1 PT-1/ AWP-1/ GB-1 PT-1/ WP-1 ACT-1 **COMMUNITY ROOM 2** 1, 2, 5, 6 CPT-1, 2, 5 PT-1 PT-1 PT-1 PT-1 PT-2 115A AV CLOSET VB-1 GWB PT-1 PCT-2/PT-1 PT-1 --/PT-2 PCT-1 PCT-PT-1 ACT-1/GWB PUBLIC RESTROOM CORRIDOR 116A PCT-1 PCT-2/VWC-2 PCT-2/VWC-2 PCT-2/VWC-2 PCT-2 PCT-2/VWC-2 PT-2 ADA TL GWB 116B TLT PCT-1 PCT-2 PCT-2/VWC-2 PCT-2/VWC-2 PCT-2/VWC-2 PCT-2/VWC-2 GWB PT-2 PCT-1 PCT-2/VWC-2 PCT-2/VWC-2 GWB PCT-2 PCT-2/VWC-2 PCT-2/VWC-2 PT-2 116D ADA TL PCT-1 PCT-2/VWC-2 PCT-2/VWC-2 PCT-2/VWC-2 PCT-2/VWC-2 GWB PT-2 ADA TL PCT-1 PCT-2 PCT-2/VWC-2 PCT-2/VWC-2 PT-2 PCT-2/VWC-2 PCT-2/VWC-2 GWB 116F RF-1 VB-1 WP-1 WP-1 PT-2 JANITORS CLOSET WP-1 WP-1 SCHOOL AGED CHILDREN'S COLLECTION CPT-1, 2, 3, 4, 5 VB-1/AB-2 PT-1 PT-1 PT-1/VWC-3 ACT-2/LWC-1 1, 2, 3, 4, 7 --/--PT-1 CHILDREN'S COLLECTION CPT-1, 2, 3, 5/WOM-1 ACT-2/LWC-1, 2, 3 PT-1/WD-1 PT-1/VWC-3 PT-1/VWC-1/WD-1 ACT-2/LWC-1 PLAYLAB VB-1/AB-2 1, 2, 3, 4 RF-2 EPT-2 EPT-2 READING NICHE EPT-2 EPT-2 **GWB** QZ-3 EPT-2 FPT-2 EPT-2 EPT-2 **GWB** READING NICHE PT-1 PT-1 ACT-1 CHILDREN'S PROGRAM ROOM RF-2 VB-1/AB-1 PT-1/WD-1 PT-1/DFP-2 2, 4, 6 RAF-1 EPT-1/WP-ACT-1 123A EPT-1/WP-EPT-1/WP-1 EPT-1/WP-1 CHILDREN'S PROGRAM STORAGE RAF-1 PT-1 PT-1 PT-5 ACT-1 FAMILY STUDY ROOM VB-1 PT-1 PCT-1 PCT-2/VWC-2 PCT-2/VWC-2 ADA FAMILY RESTROOM PCT-2 PCT-2/VWC-2 PCT-2/VWC-2 GWB PT-2 PCT-1 PCT-2 PCT-2/VWC-2 PCT-2/VWC-2 GWB PT-2 PCT-2/VWC-2 PCT-2/VWC-2 ADA FAMILY RESTROOM PCT-2/VWC-4 PCT-2/VWC-4 PCT-2/VWC-4 GWB PT-2 COMFORT ROOM RAF-1 VB-1/PCT-2 VWC-4 2. 4 WOC-1 PT-1/WP-PT-1/WP-1 PT-1/WP-1 PT-1/WP-1 ACT-1 SHIPPING/ RECEIVING 1. 2 PT-1 IT ROOM RAF-2 VB-1 PT-1 PT-1 PT-1 OTS PT-2 10 PT-1/WP-PT-1/WP-1 PT-1/WP-1 ACT-1 PROJECT WORK ROOM WOC-1 PT-1. 5 1, 2, 6 ACT-1 WOC-1 STAFF OPEN OFFICE 1, 2, 6 **BREAK ROOM** RAF-1 PT-1 CPT-1, 2, 5 PT-1 PT-1 PT-1 ACT-1 SUPERVISOR'S OFFICE ACT-1 LIBRARIAN OFFICES CPT-1, 2, 5 PT<sub>-</sub>1 PT-1 PCT-2/VWC-2 PCT-1 PCT-2 ADA STAFF RESTROOM PCT-2/VWC-2 PCT-2/VWC-2 PCT-2/VWC-2 GWB PT-2 EPT-1/WP-1 EPT-1/WP-1 EPT-1/WP-1 EPT-1 ACT-1 DRIVE-THRU BOOK RETURN WOC-1

1. MULTIPLE FLOOR FINISHES, REFER TO FLOOR FINISH PLANS FOR ADDITIONAL INFORMATION. 2. MULTIPLE WALL FINISHES, REFER TO FLOOR FINISH PLANS & INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION 3. MULTIPLE CEILING FINISHES, REFER TO REFLECTED CEILING PLAN FOR ADDITIONAL INFORMATION

4. MULTIPLE BASE FINISHES, REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION 5. ROOM TO RECEIVE ACOUSTICAL WALL PANEL (AWP). SEE ELEVATIONS FOR DETAILS.

10. ALL WALLS TO BE 3/4" FIRE RETARDANT AC PLYWOOD FROM 4" A.F.F TO 8'-0" A.F.F., PAINT TO MATCH WALL.

9. WALL TO HAVE RECESSED PICTURE RAIL. SEE ELEVATIONS FOR DETAILS.

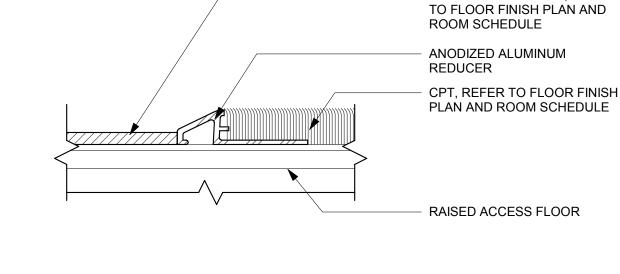
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 $6.\quad$  ROOM TO RECEIVE MAGNETIC BACKPAINTED GLASS BOARD(S) (GB). SEE ELEVATIONS FOR DETAILS. ROOM TO RECIEVE WALL MOUNTED LIGHTBLOCKS SHELVING INSTALLATION. SEE ELEVATIONS FOR DETAILS. 8. ROOM TO HAVE RECESSED WOOD CUBBIES. SEE ELEVATIONS/SECTIONS FOR DETAILS.

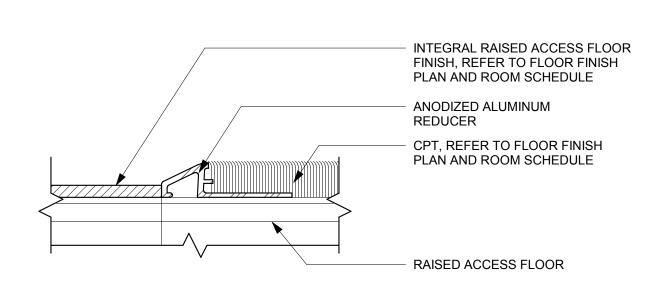
**ROOM FINISH SCHEDULE REMARKS** 

PCT, REFER TO FLOOR FINISH PLAN AND ROOM SCHEDULE ANODIZED ALUMINUM TRIM CPT, REFER TO FLOOR FINISH PLAN AND ROOM SCHEDULE RAISED ACCESS FLOOR 3" DEPRESSED ACCESS FLOOR W/ MORTAR BED

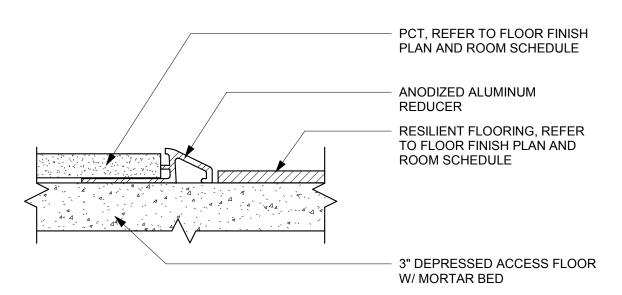
TYP. CARPET TO PORCELAIN TILE TRANSITION DETAIL



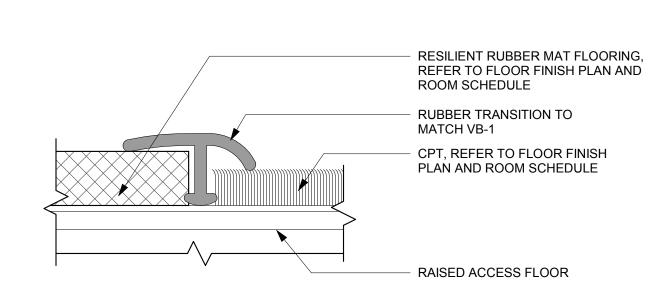
TYP. CARPET TO RESILIENT TRANSITION DETAIL



TYP. CARPET TO INTEGRAL RAISED FLOOR FINISH



TYP. PORCELAIN TILE TO RESILIENT TRANSITION DETAIL



**ROOM FINISH NOTES** 

MOUNTING HEIGHTS.

FINISH INFORMATION.

4. REFER TO INTERIOR ELEVATIONS AND

5. ALL PAINTED HOLLOW METAL DOORS

6. ALL EXPOSED DRYWALL TO RECEIVE

DOOR REVEALS, CLOSETS AND

PAINT UNLESS NOTED OTHERWISE.

CHANGES. COORDINATE FLOORING

METAL GRILLES, LOUVERS ACCESS

EXPOSED TO VIEW TO MATCH THE

10. ALL COLUMNS TO BE PAINTED PT-1

ACP ACOUSTICAL CEILING PANEL

CEILING PANEL

ALUMINUM BASE

CORNER GUARD

EPOXY FLOORING

GLASS BOARDS

OTS OPEN TO STRUCTURE

**EPOXY PAINT** 

LVT LUXURY VINYL TILE

PLAM PLASTIC LAMINATE

QZ QUARTZ

RESIN

WB WALL BASE

WOOD

RUBBER

GROUT

CARPET

CRK CORK

GYP GYPSUM

CG

FRP

RES

WALLS IN WHICH THEY OCCUR U.N.O.

FINISH ABBREVIATION LEGEND

ACOUSTICAL CEILING TILE

DECORATIVE FELT PANEL

PORCELAIN CERAMIC TILE

RAFF RAISED ACCESS FLOOR FINISH

RESILEINT FLOORING

SSM SOLID SURFACE MATERIAL

TOILET PARTITIONS

FLOOR TRANSITION

WALL PROTECTION

WINDOW TREATMENT

RESILIENT FLOORING, REFER

VWC VINYL WALL COVERING

VINYL BASE

WOD WALK OFF CARPET

ROLLER SHADE

FIBERGLASS REINFORCED PLASTIC

ACM ALUMINUM COMPOSITE METAL

PANELS, PIPES AND CONDUIT

COLOR WITH DESIGNER PRIOR TO

TRANSITION MATERIAL, PROFILE, AND

AND FRAMES TO BE PAINTED TO

WHICH THEY OCCUR U.N.O

SIMILAR OPENINGS U.N.O.

8. PROVIDE FLOORING TRANSITION

STRIPS AT FLOOR MATERIAL

INSTALLATION.

FINISH FLOOR PLAN FOR ADDITIONAL

MATCH THE COLOR OF THE WALL IN

1. START FULL WALL TILE AS SHOWN . START FULL FLOOR TILE AS SHOWN

. REFER TO SHEET AG002 FOR TYPICAL 301 N Broom St., Suite 100

Madison, WI 53703 P: 608-819-0260

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Key Plan

Revision

City Contract No.

OPN Project No 17609000

Sheet Issue Date **BID DOCUMENTS** 

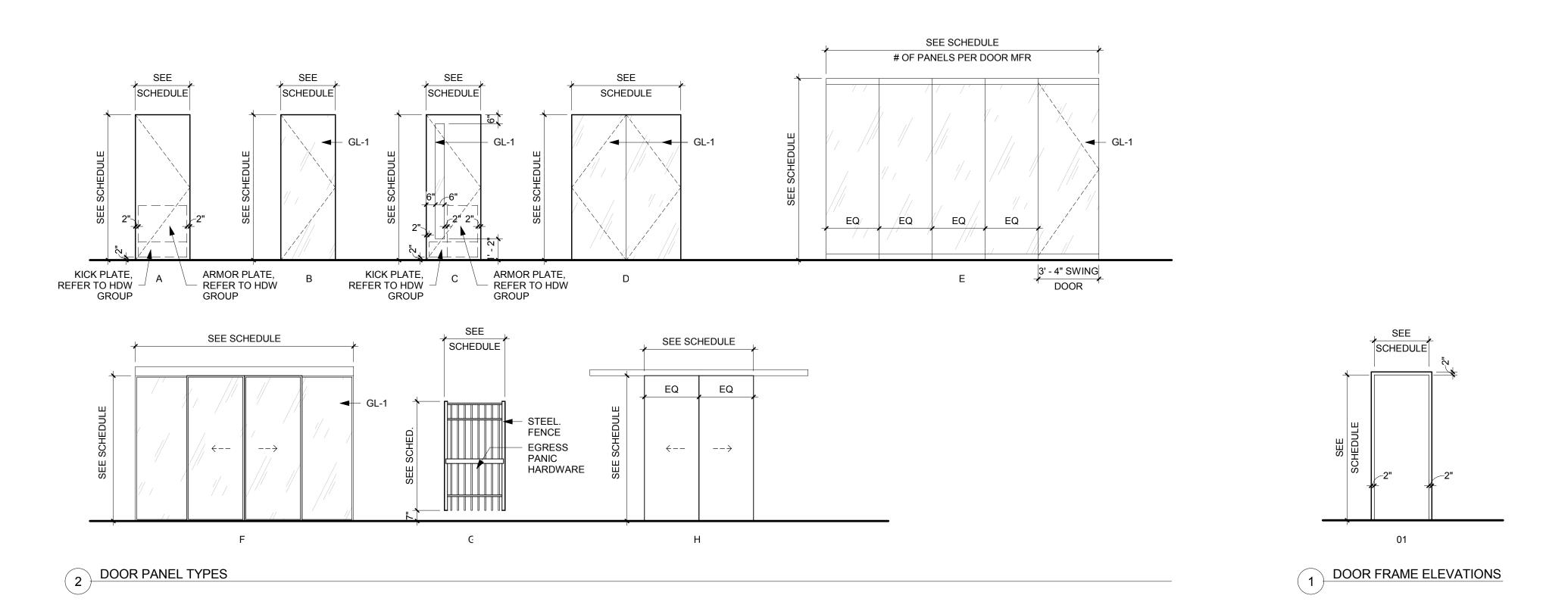
Sheet Name **ROOM FINISH SCHEDULE** AND SPECIFICATION Sheet Number

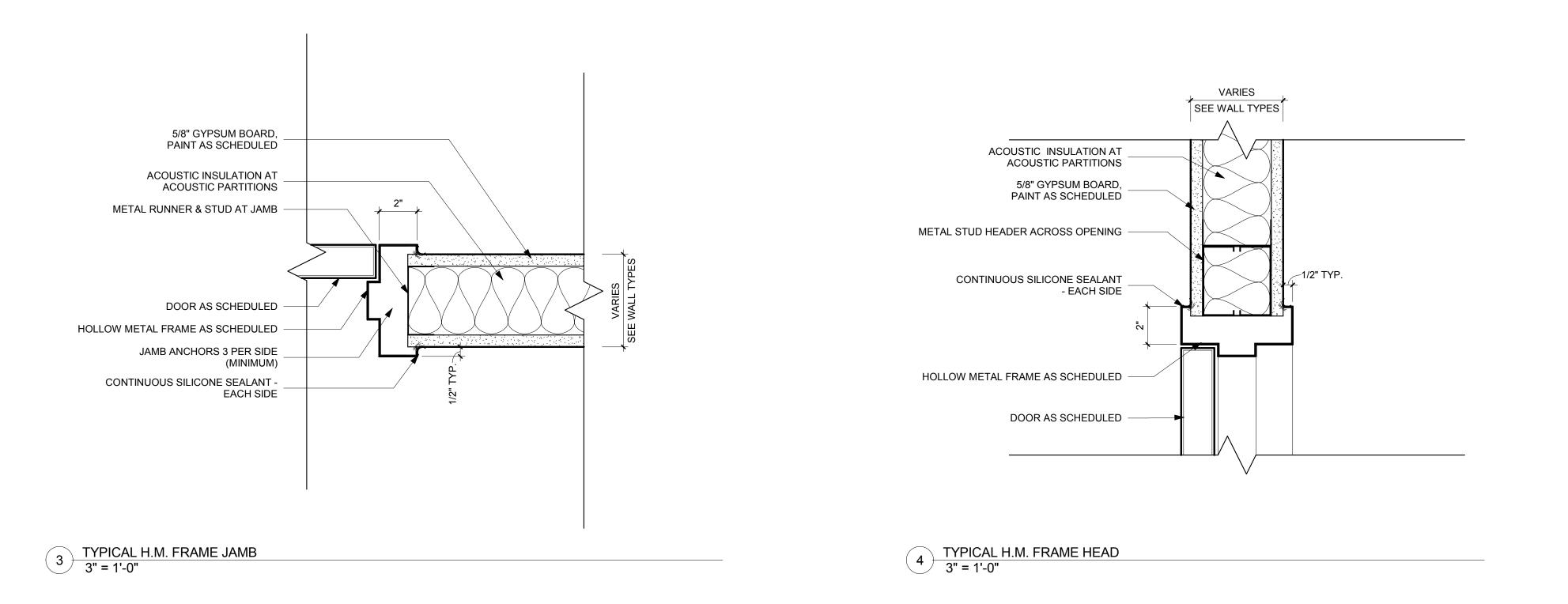
### DOOR SCHEDULE REMARKS

- 1. BORROWED LIGHT ELEVATION BL-1A.
- 2. BORROWED LIGHT ELEVATION BL-4
- 3. BORROWED LIGHT ELEVATION BL-7A 4. BORROWED LIGHT ELEVATION BL-8B
- 5. BORROWED LIGHT ELEVATION BL-9 6. BORROWED LIGHT ELEVATION BL-10
- 7. BORROWED LIGHT ELEVATION BL-12 8. BORROWED LIGHT ELEVATION BL-13 9. PROVIDE 1/2" CLEAR UNDERCUT IN DOOR FOR AIR TRANSFER
- 10. PROVIDE 3/4" CLEAR UNDERCUT IN DOOR FOR AIR TRANSFER 11. ACOUSTIC SOUND RATED DOOR 12. EXTEND TRACK/FASCIA ACROSS ENTIRE WALL. REFER TO
- ELEVATION FOR EXTENTS. 13. GLASS BOARD GB-1 TO BE ADHERED TO EACH DOOR LEAF. REFER
- TO DETAILS FOR ADDITIONAL INFORMATION. 14. VF-1 APPLIED TO DOOR GLAZING
- 15. SLIDING PANEL PARTITION, REFER TO OPERABLE PARTITION SYSTEMS SPECIFICATION.
- 16. VERTICAL OPERABLE PANEL PARTITION, REFER TO OPERABLE PARTITION SYSTEMS SPECIFICATION.

								DOOR SCHEDULE					
				F	PANEL			FRAME					
DOOR NUMBER	ROOM NAME	PANEL QUANTITY	PANEL TYPE	WIDTH	HEIGHT	PANEL MATERIAL	PANEL FINISH	FRAME TYPE	MATERIAL	FINISH	FIRE RATING	HARDWARE GROUP	REMARKS
102	LOBBY	1	F	13' - 0"	10' - 0"	GL-1	GL-1	PER MFR	ALUM	CLEAR ANOD		2	
103	PINNEY STUDIO	1	D	6' - 0"	8' - 0"	GL-1	GL-1		ALUM	CLEAR ANOD		5 1	
103A	STUDIO STORAGE	1	Α	3' - 6"	8' - 0"	WD-2	STN	01	НМ	PT-1		6	
104	MECH CLOSET	1	А	3' - 6"	8' - 0"	WD-2	PT-1	01	НМ	PT-1		1 1	1
105	SORTING / CIRC. WORK	1	A	3' - 6"	8' - 0"	WD-2	STN	REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD		17 2,	,14
109	STUDY ROOM	1	В	3' - 0"	8' - 0"	GL-1	GL-1	REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD			, 10
110	STUDY ROOM	1	В	3' - 0"	8' - 0"	GL-1	GL-1		ALUM	CLEAR ANOD			, 10
111	STUDY ROOM	1	В	3' - 0"	8' - 0"	GL-1	GL-1		ALUM	CLEAR ANOD			, 10
112	STUDY ROOM	1	В	3' - 0"	8' - 0"	GL-1	GL-1		ALUM	CLEAR ANOD			, 10
113	ADULT QUIET READING	1	В	3' - 6"	8' - 0"	GL-1	GL-1		ALUM	CLEAR ANOD		2 6	
114	COMMUNITY ROOM 1	1	С	3' - 6"	8' - 0"	WD-2	STN	01	HM	PT-1		18	
114A.1	STORAGE	1	A	3' - 6"	8' - 0"	WD-2	STN	01	HM	PT-1		4	
114A.2	STORAGE	1	A	3' - 6"	8' - 0"	WD-2	STN	01	HM	PT-1		4	
115.1	COMMUNITY ROOM 2	2	C	3' - 0"	8' - 0"	WD	STN	01	HM	PT-1		19	
115.2	COMMUNITY ROOM 2	1	С	3' - 6" 3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		6	
115A	AV CLOSET	PER MFR	PER MFR	24' - 0"	8' - 0"	WD-2 PER MFR	STN AWP-1	PER MFR	HM PER MFR	PT-1 PER MFR		9	6
115B 116A	ADA TLT	1	A PER IVIER	3' - 0"	12' - 0" 8' - 0"	WD-2	STN	01	HM	PER MIFR PT-1		PER MFR 10	0
116B	TLT	1	Α	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		7 9	
116C	TLT	1	Δ	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		7 9	
116D	ADA TLT	1	Δ	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		7 9	
116E	ADA TLT	1	A	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		7 9	
116F	JANITORS CLOSET	1	A	3' - 0"	8' - 0"	WD-2	STN	01	HM	PT-1		21 9	
123.1		PER MFR	E	16' - 0"	10' - 0"	GL-1	GL-1	PER MFR	ALUM	CLEAR ANOD		5 19	5
123.2	CHILDREN'S PROGRAM ROOM	2	H	6' - 0"	8' - 2"	WD-2	PT-1	SLIDING DOOR, REFER TO HARDWARE SCHEDULE		CLEAR ANOD			2, 13
123A	CHILDREN'S PROGRAM STORAGE	1	Α	3' - 6"	8' - 0"	WD-2	STN	01	НМ	PT-1		11	
124	FAMILY STUDY ROOM	1	С	3' - 0"	8' - 0"	WD-2	STN	REFER TO BORROWED LIGHT TYPE & ELEVATION	ALUM	CLEAR ANOD		10 5,	, 10
125	ADA FAMILY RESTROOM	1	Α	3' - 0"	8' - 0"	WD-2	STN	01	НМ	PT-1		7 10	0
126	ADA FAMILY RESTROOM	1	А	3' - 0"	8' - 0"	WD-2	STN	01	НМ	PT-1		7 10	0
127	COMFORT ROOM	1	А	3' - 0"	8' - 0"	WD-2	STN	01	НМ	PT-1		24 10	0
128	SHIPPING/ RECEIVING	1	A	3' - 6"	8' - 0"	WD-2	STN	01	НМ	PT-1		22	
129	IT ROOM	1	A	3' - 6"	8' - 0"	WD-2	STN	01	HM	PT-1		23	
132	BREAK ROOM	1	A	3' - 6"	8' - 0"	WD-2	STN	REFER TO BORROWED LIGHT TYPE & ELEVATION		CLEAR ANOD		3 7	
133	SUPERVISOR'S OFFICE	1	С	3' - 0"	8' - 0"	WD-2	STN	REFER TO BORROWED LIGHT TYPE & ELEVATION		CLEAR ANOD		3 8	
134	LIBRARIAN OFFICES	1		3' - 6"	8' - 0"	WD-2	STN	REFER TO BORROWED LIGHT TYPE & ELEVATION		CLEAR ANOD		3 7	
135	ADA STAFF RESTROOM	1	Α	3' - 0"	8' - 0"	WD-2	STN		HM	PT-1		8 10	0
136	DRIVE-THRU BOOK RETURN	1	Α	3' - 6"	8' - 0"	WD-2	STN		HM		0-MIN	12	
EX01	PINNEY STUDIO	1		3' - 0"	8' - 0"	ALUM				CLEAR ANOD		16	
EX02	CHILDREN'S COLLECTION	1		3' - 6"	8' - 0"	ALUM				CLEAR ANOD		13	
EX03.1	NORTH GARDEN/ PATIO	1		3' - 6"	6' - 2"	STL				PER FENCE DTL		14	
EX03.2	NORTH GARDEN/ PATIO	1	G	3' - 6"	6' - 2"	STL	PER FENCE DTL			PER FENCE DTL		14	
EX04	SHIPPING/ RECEIVING	1	EXISTING	4' - 0"	7' - 0"	HM	PT-1	EXISTING	HM	PT-1		13	

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25





1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25

### DOOR SCHEDULE NOTES

- SEE FRAME PLANS AND INTERIOR ELEVATIONS FOR DIMENSIONAL SIZES
- WITH MATERIALS OF FRAMES. PREPARE DOOR AND FRAME FOR

INFORMATION.

- PAINT BONDO DENTS AND SAND Madison, WI 53703 SCRATCHES SMOOTH. P: 608-819-0260 3. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO MANUFACTURING. BRING
- www.opnarchitects.com ALL DISCREPANCIES TO THE All reports, plans, specifications, computer files, field data, ATTENTION OF THE ARCHITECT PRIOR TO PROCEEDING. 4. REFER TO INTERIOR FINISH SPECIFICATION ON A600 AND GLAZING SPECIFICATION FOR GLASS TYPE



301 N Broom St., Suite 100







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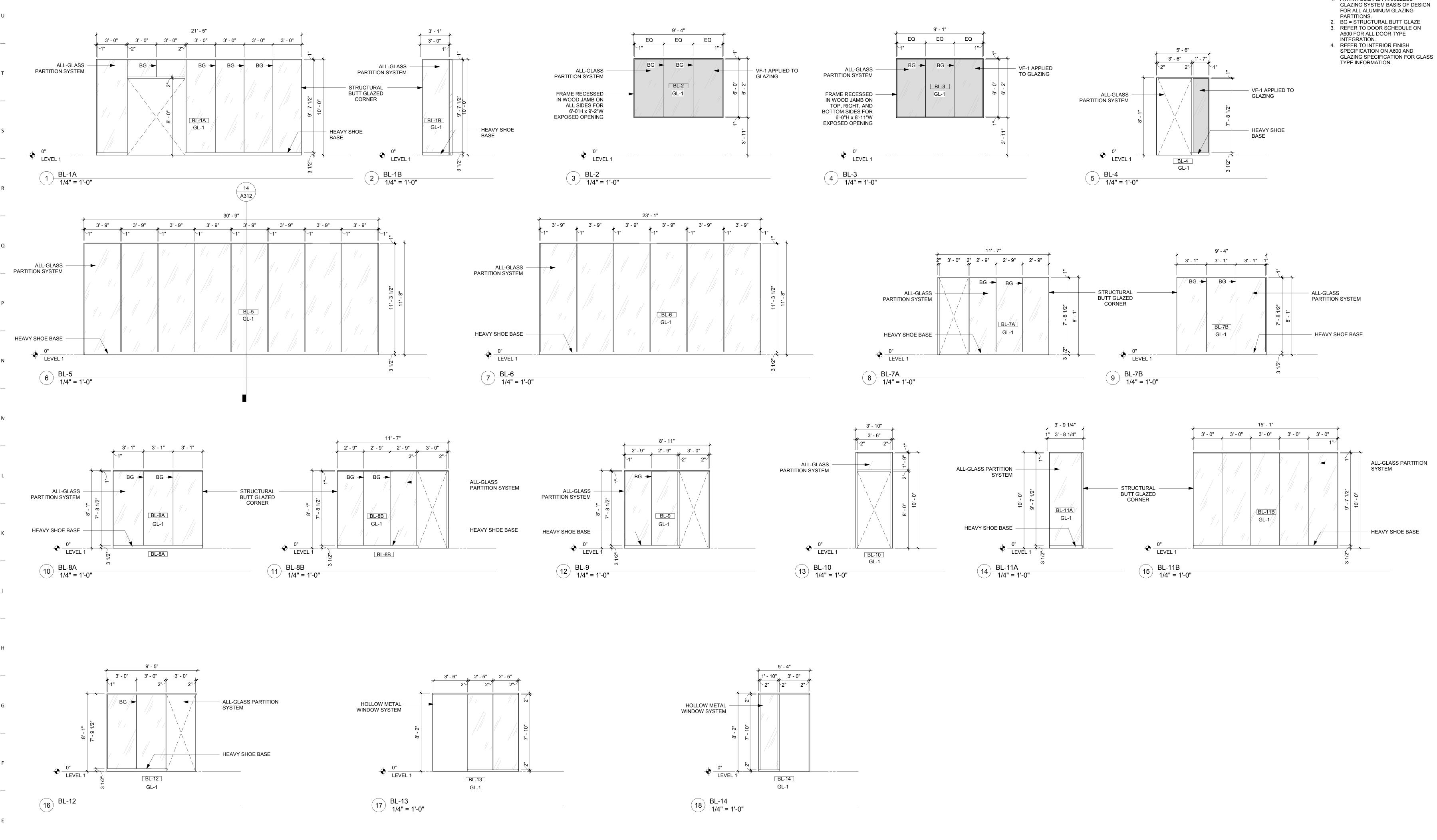
Key Plan

City Contract No.

OPN Project No. 17609000

Sheet Issue Date

Sheet Name DOOR SCHEDULE AND **ELEVATIONS** Sheet Number



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 | 25 |

**GENERAL NOTES**  AVANTI SOLARE FRAMELESS GLAZING SYSTEM BASIS OF DESIGN 301 N Broom St., Suite 100 Madison, WI 53703

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**Foundation** 

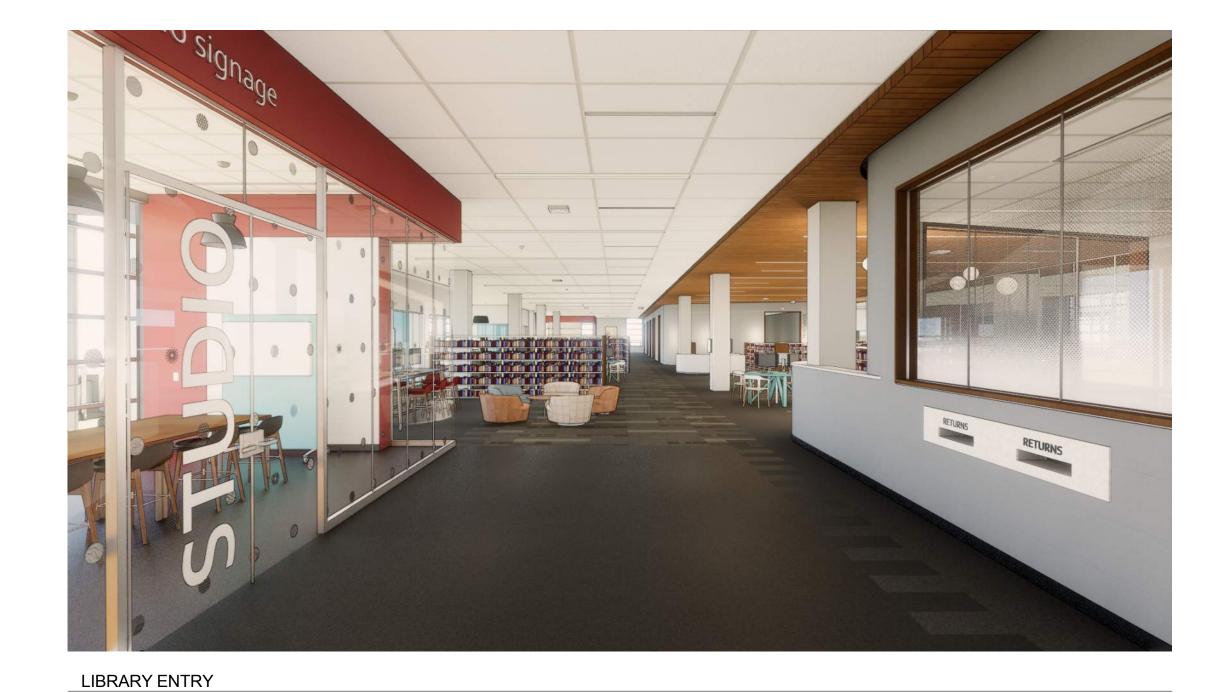
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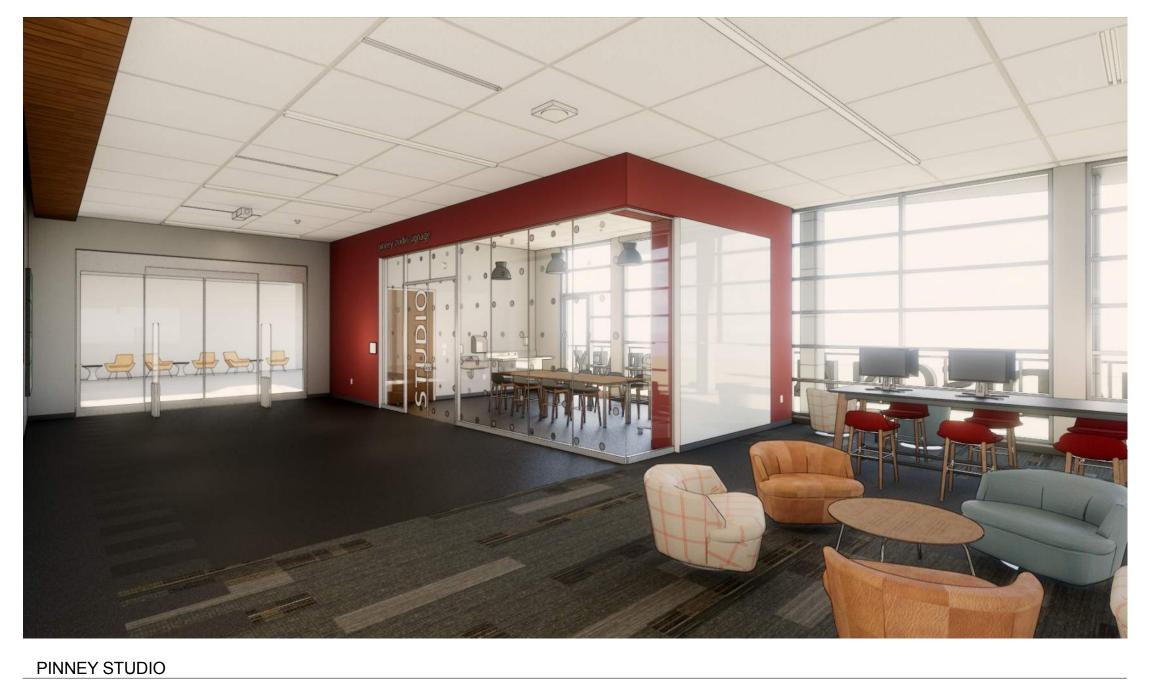


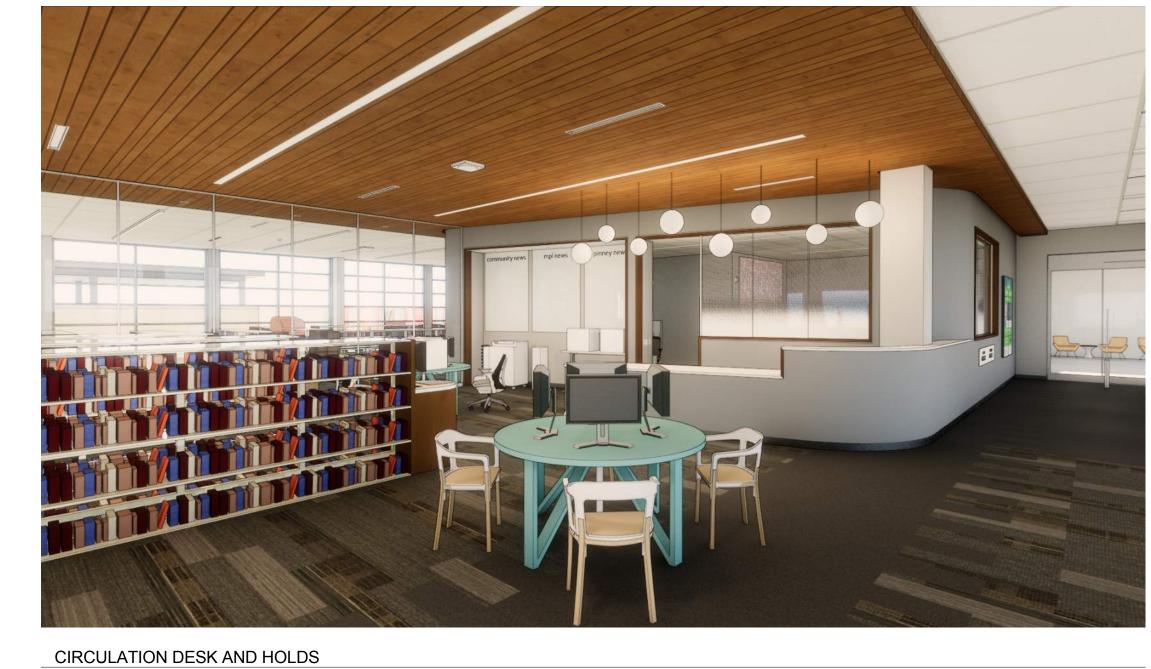
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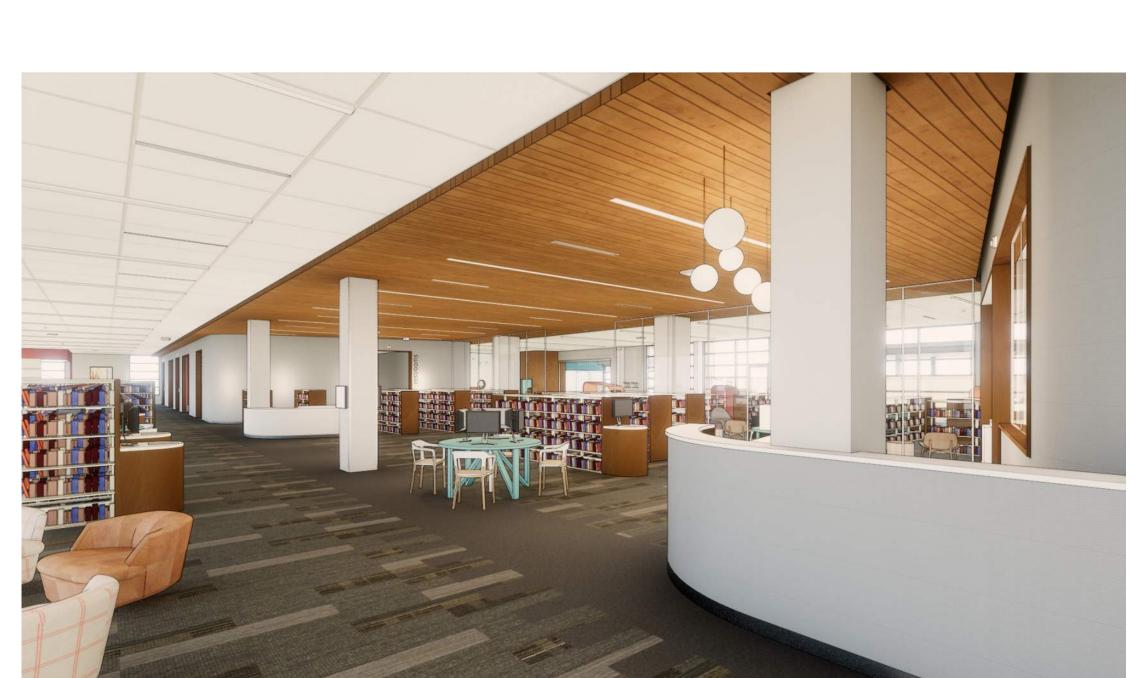
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**BORROWED LIGHT ELEVATIONS** 



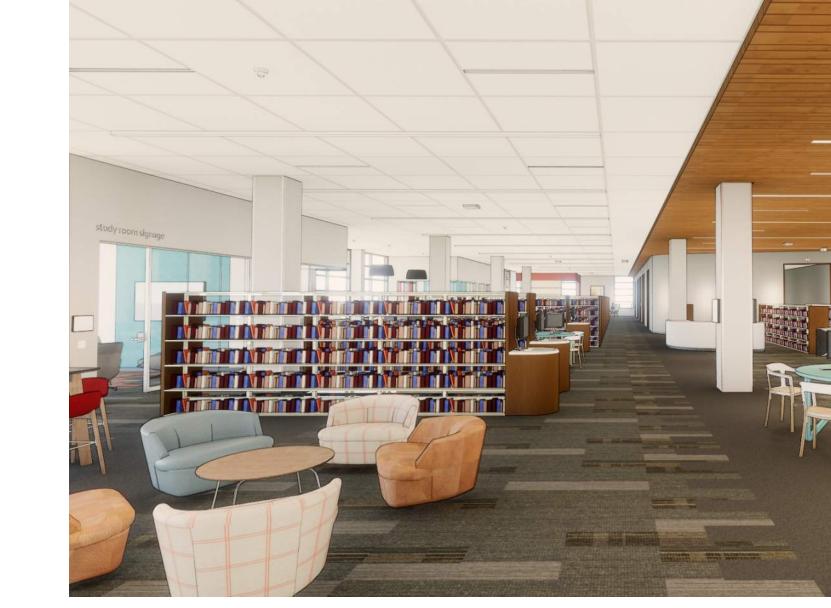


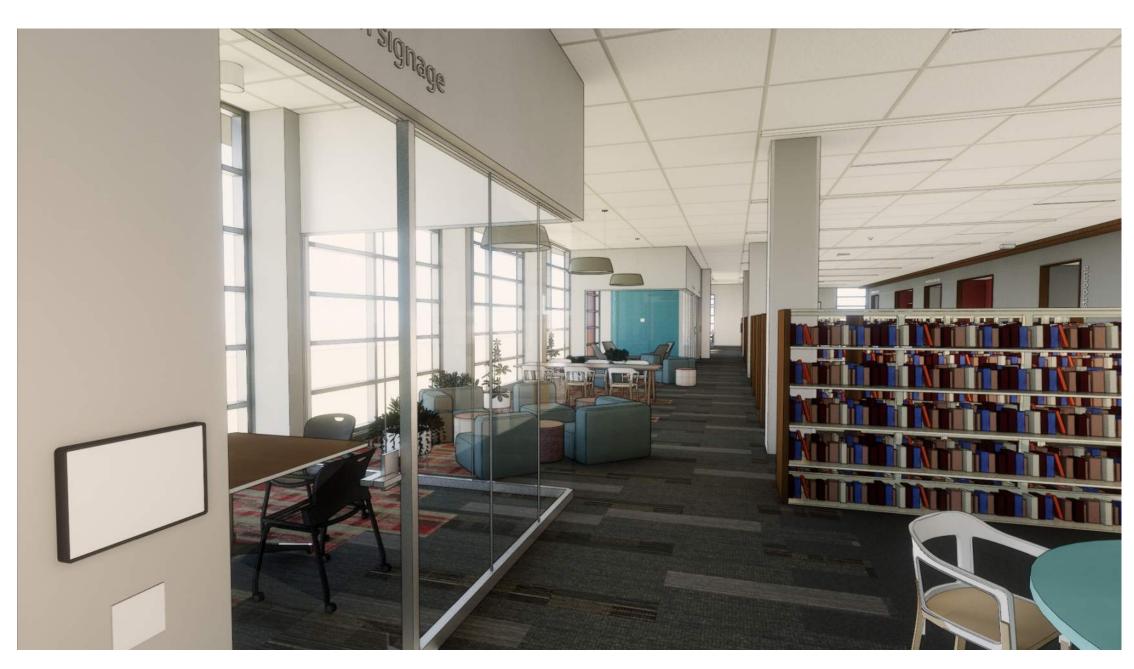




CIRCULATION, HOLDS, AND MEDIA

READING/STUDY AREA



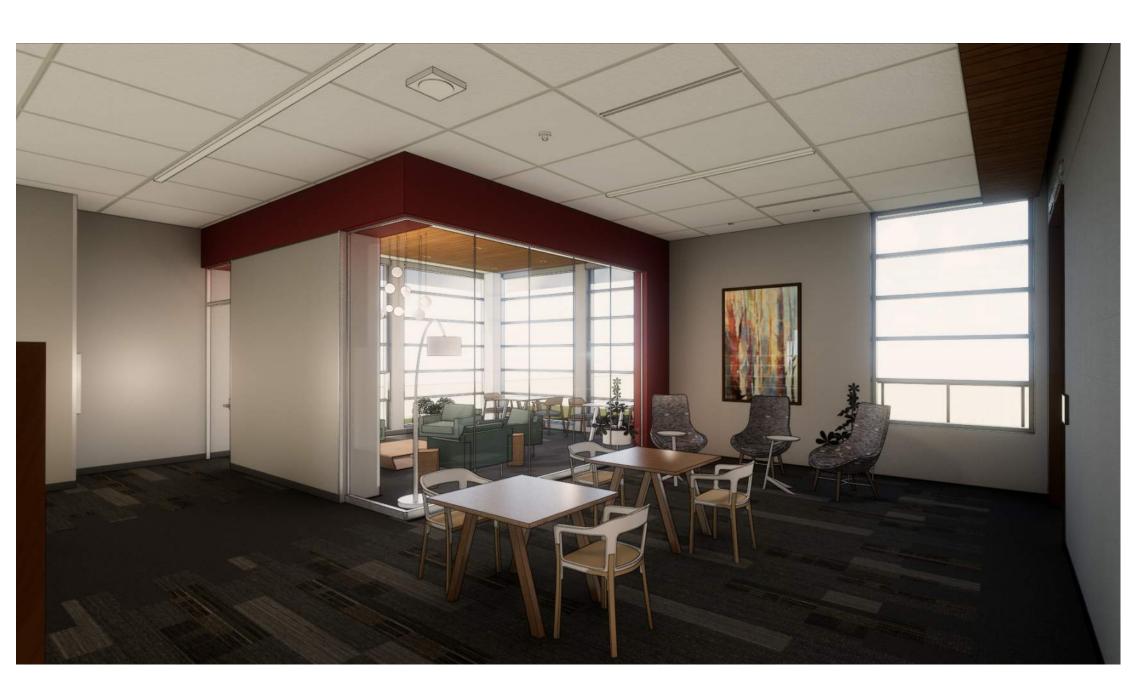


ADULT COLLECTION

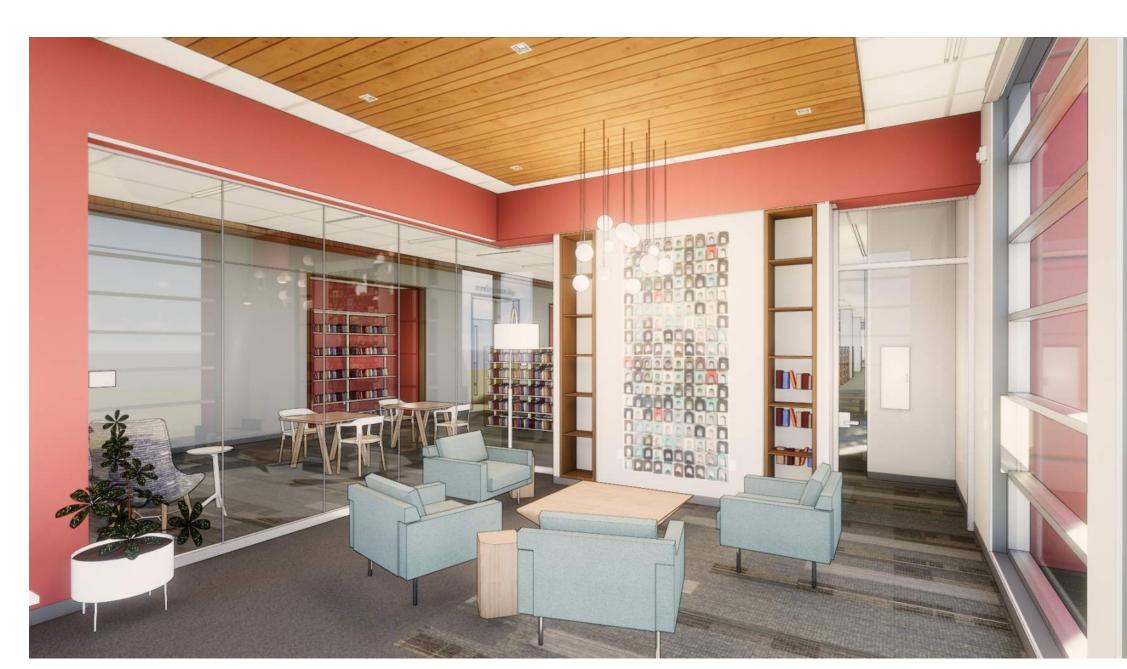












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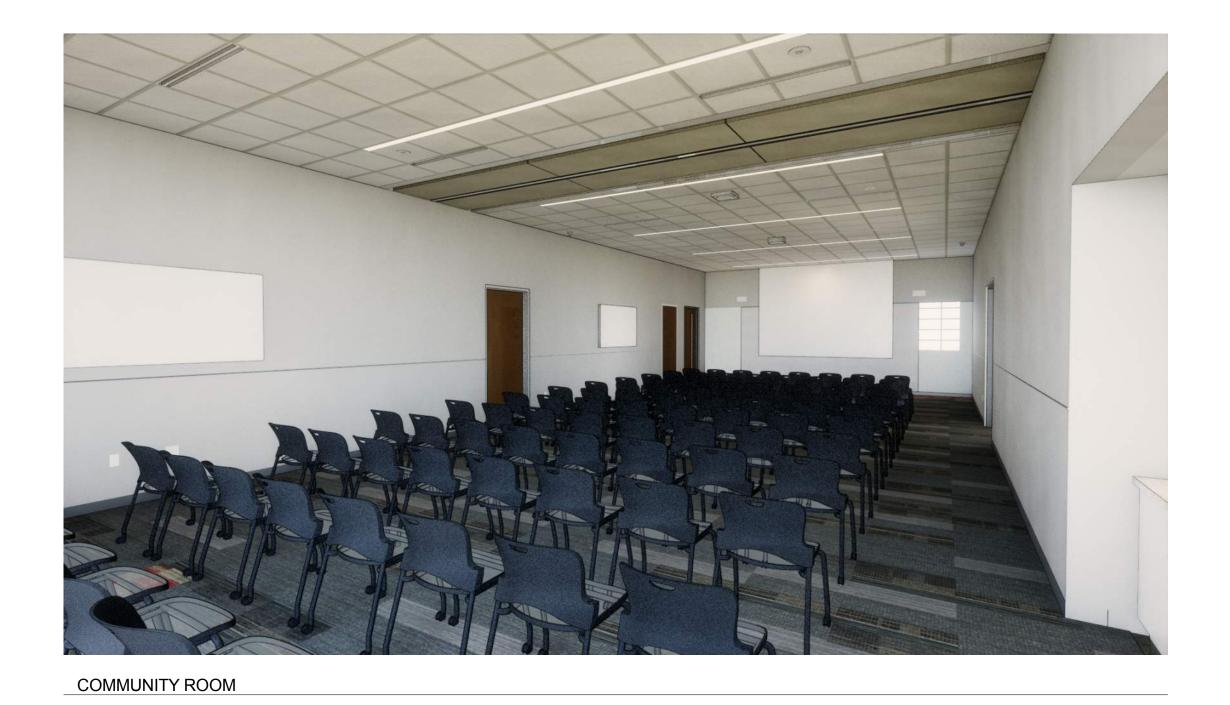




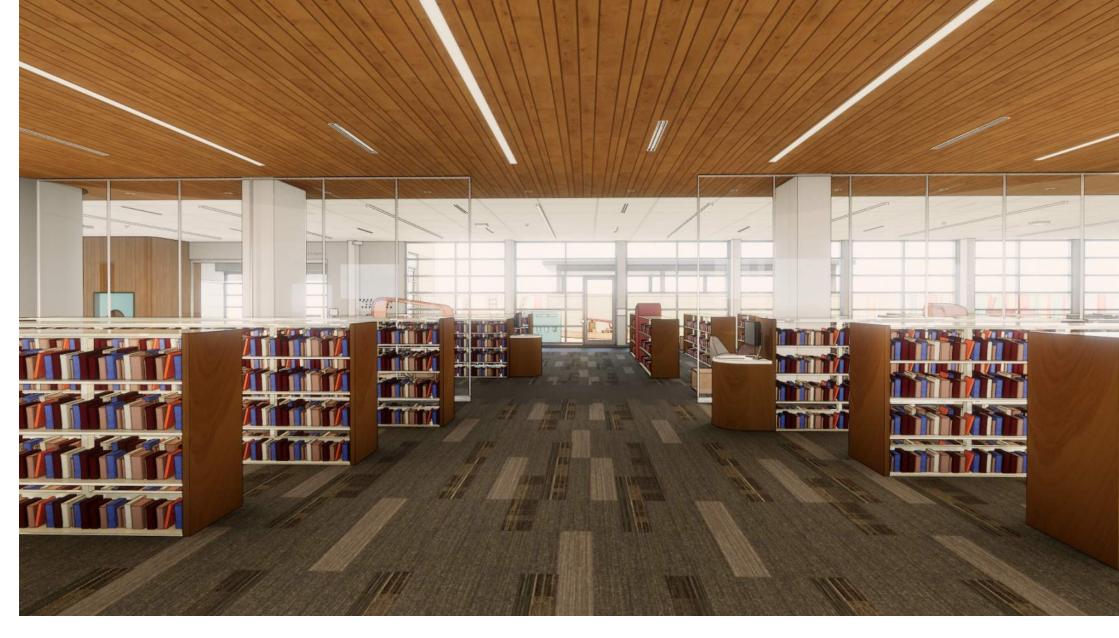
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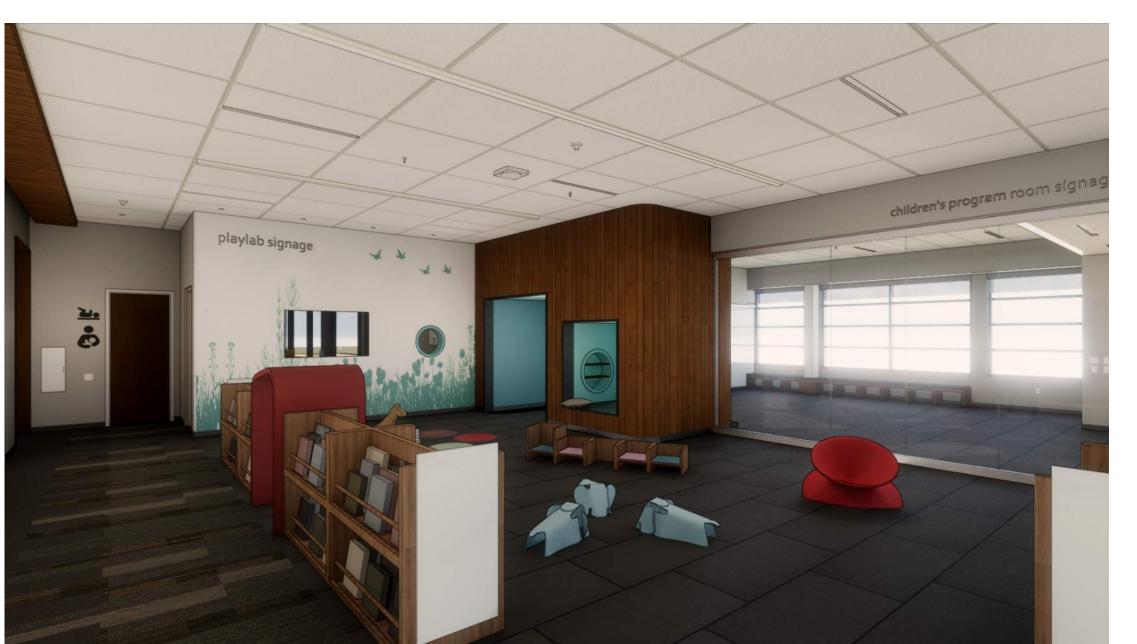




CHILDREN'S COLLECTION ENTRY



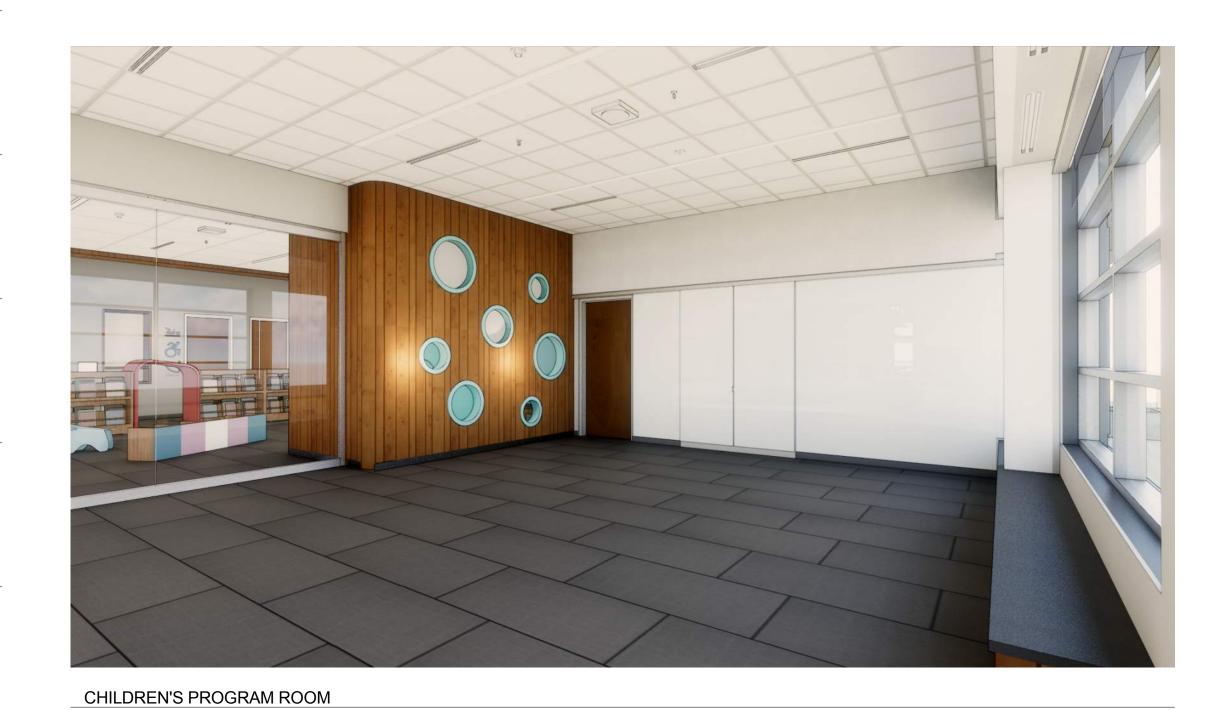




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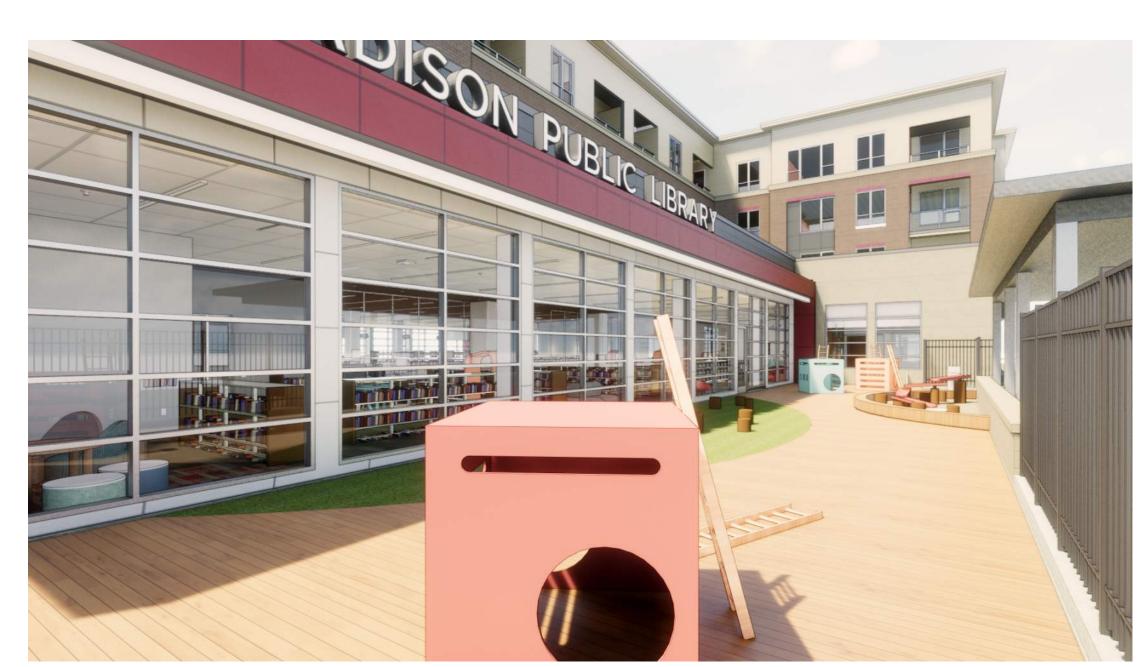


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GARDEN/ TERRACE



GARDEN/ TERRACE

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Sheet Name

3D PERSPECTIVES - FOR REFERENCE ONLY

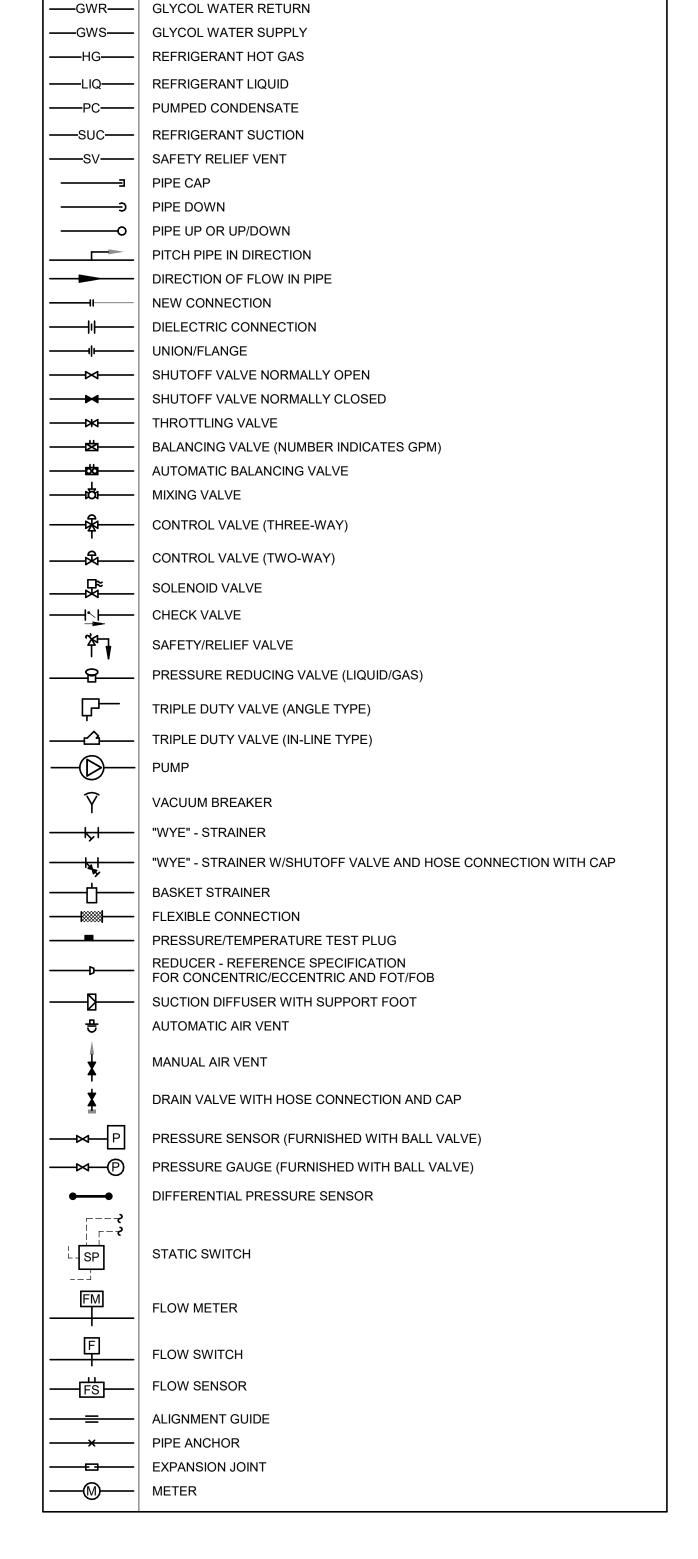
### **FIRE / SMOKE BARRIER DESIGNATIONS**

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

ALL FLOOR ASSEMBLIES SHALL BE DESIGNATED AS 2 HOUR FIRE BARRIER(S), UNLESS NOTED OTHERWISE ON THE PLANS. RATINGS WERE ACQUIRED FROM THE ARCHITECTURAL PLANS DATED 05/29/2018.

1 HOUR FIRE BARRIER	
2 HOUR FIRE BARRIER	

	CONTRACTOR ABBREVIATION KEY
ABBR:	DESCRIPTION:
A.V.C.	AUDIO/VISUAL CONTRACTOR
C.C.	CIVIL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
S.C.	SECURITY CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
TCC	TEMPERATURE CONTROLS CONTRACTOR

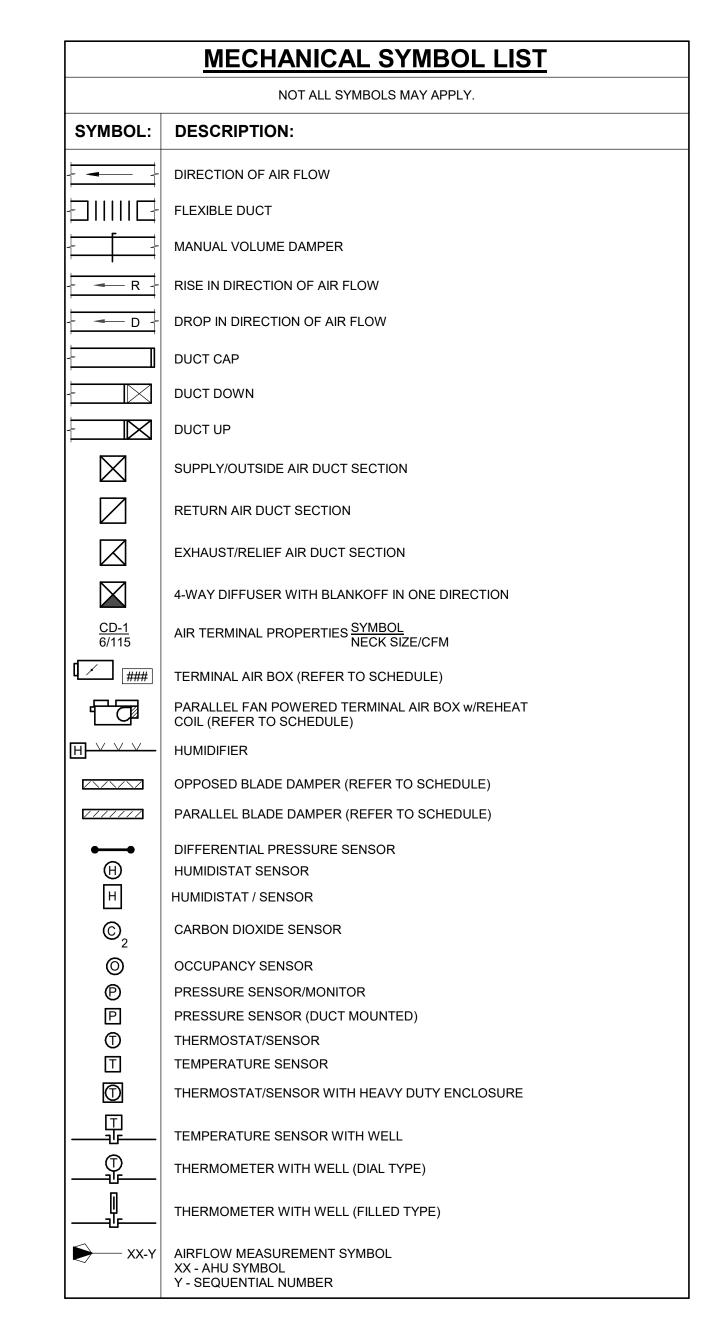


**MECHANICAL SYMBOL LIST** 

NOT ALL SYMBOLS MAY APPLY.

SYMBOL: DESCRIPTION:

——DPP—— DRAIN



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

### **MECHANICAL ABBREVIATION KEY** DESCRIPTION: ACCESS DOOR AFF ABOVE FINISHED FLOOR COMMON CO CLEANOUT CD-E CEILING DIFFUSER - EXISTING CONTROL/FIRE/SMOKE DAMPER DPG (0-2") DIFFERENTIAL PRESSURE GAUGE (RANGE) DIFFERENTIAL PRESSURE SWITCH EΑ EXHAUST/RELIEF AIR EXISTING CONTROL FIRE SMOKE DAMPER EFD EXISTING FIRE DAMPER **EFSD** EXISTING FIRE SMOKE DAMPER ELECTRICAL TO PNEUMATIC VALVE EXISTING SMOKE DAMPER FIRE DAMPER FLAT ON BOTTOM FLAT ON TOP FSD FIRE/SMOKE DAMPER MIXED AIR MIXING VALVE NC NEW CONNECTION NORMALLY CLOSED NIC NOT IN CONTRACT N.O. NORMALLY OPEN OA OUTSIDE AIR PS PRESSURE SWITCH RA RETURN AIR SUPPLY AIR SD SMOKE DAMPER TERMINAL AIR BOX TRANSFER DUCT UC-1 DOOR UNDERCUT BY OTHERS (1" TYPICAL)

UNLESS NOTED OTHERWISE

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 21 | 22 | 23 | 24

### **GENERAL NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBIN, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
- 2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
- 3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK, DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING
- WITH FABRICATION OR EQUIPMENT ORDERS. 4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER 5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO
- COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS. 6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL
- CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF 7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING
- MOUNTED DEVICES, OTHER THAN SPRINKLERS. 8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS, THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND
- 9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
- 10. SEAL ALL FLOOR AND WALL PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER
- 11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS
- 12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT. 13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS, CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND
- PIPING, DUCTWORK, ETC. 14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES. 15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR

REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS,

STARTERS, SWITCHES, AND DISCONNECTS. 16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT. 17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER

NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE

18. THERE ARE SIGNIFICANT DIFFERENCES BETWEEN THE VRF SYSTEM MANUFACTURERS. THE MECHANICAL CONTRACTOR SHALL CONFIRM WITH THE MANUFACTURER'S REPRESENTATIVES INCLUDE THE PRECISE QUANTITY AND SIZES OF ALL EQUIPMENT. COMPONENTS, REFRIGERANT PIPING, CONDENSATE PIPING, ELECTRICAL CONNECTIONS, CONTROLS, ETC. NECESSARY TO MAKE THE SYSTEM FULLY OPERATIONAL AND MAINTAIN ZONING CONTROL AS INDICATED ON DOCUMENTS PRIOR TO BID. THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL COSTS FOR SUCH IN HIS BID, INCLUDING ANY REQUIREMENTS OVER AND ABOVE THAT INCLUDE IN THE CONTRACT DOCUMENTS.

CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

### **PIPING GENERAL NOTES:**

- 1. THE SIZE OF BRANCH PIPING TO TERMINAL HEATING DEVICES AND COILS SHALL BE 3/4" UNLESS NOTED OTHERWISE.
- 2. PIPE DRAIN LINES FROM EQUIPMENT TO NEAREST FLOOR DRAIN. 3. INSTALL ALL REFRIGERANT LIQUID AND SUCTION PIPING SIZED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.

### **VENTILATION GENERAL NOTES:**

- 1. THE SIZE OF EACH BRANCH DUCT TO A TERMINAL AIR BOX (TAB) SHALL MATCH THE TAB'S INLET SIZE UNLESS THE BRANCH IS GREATER THAN 6 FEET IN LÉNGTH, IN WHICH CASE THE BRANCH SHOULD BE INCREASED ONE DUCT SIZE, OR AS NOTED OTHERWISE. 2. ALIGN TEMPERATURE SENSORS WITH LIGHT SWITCHES AND WHEN IN CLOSE PROXIMITY TO
- FACH OTHER 3. PROVIDE ACCESS DOORS AT ALL DUCT MOUNTED EQUIPMENT.

### **MECHANICAL SHEET INDEX**

MECHANICAL COVER SHEET SITE PLAN - PHASE 1 - MECHANICAL SITE PLAN - PHASE 2 - MECHANICAL LEVEL 0 FLOOR PLAN - VENTILATION LEVEL 1 UNDER RAISED FLOOR PLAN - MECHANICAL LEVEL 1 FLOOR PLAN - VENTILATION LEVEL 0 FLOOR PLAN - PIPING

LEVEL 1 FLOOR PLAN - PIPING **ENLARGED PLANS AND SECTIONS - MECHANICAL ENLARGED PLANS AND SECTIONS - MECHANICAL** 

MECHANICAL DIAGRAMS

M400 MECHANICAL DETAILS MECHANICAL DETAILS MECHANICAL DETAILS MECHANICAL DIAGRAMS M500

M001

M100

M101

**CONTROL DIAGRAMS - MECHANICAL** M551 **CONTROL DIAGRAMS - MECHANICAL** CONTROL DIAGRAMS - MECHANICAL MECHANICAL SCHEDULES

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City Contract No.

Key Plan

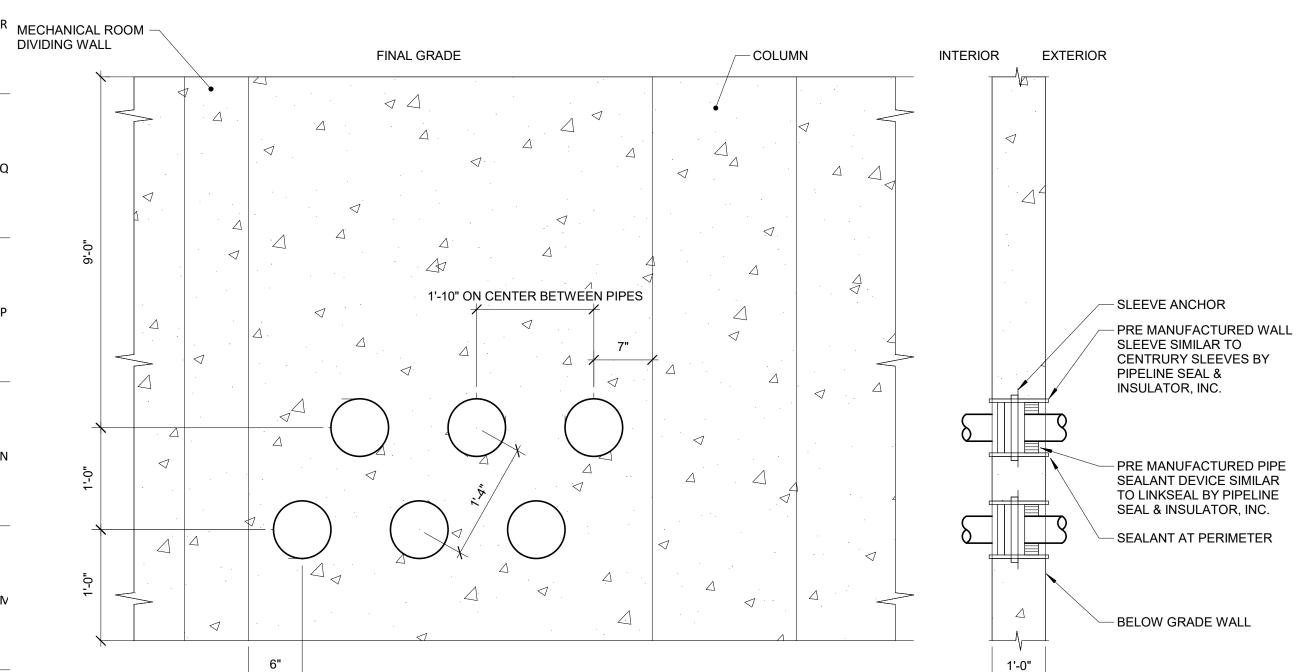
Sheet Issue Date BID DOCUMENTS

Sheet Name **MECHANICAL COVER SHEET** 

Sheet Number

**MECHANICAL SYMBOL LIST** NOT ALL SYMBOLS MAY APPLY.

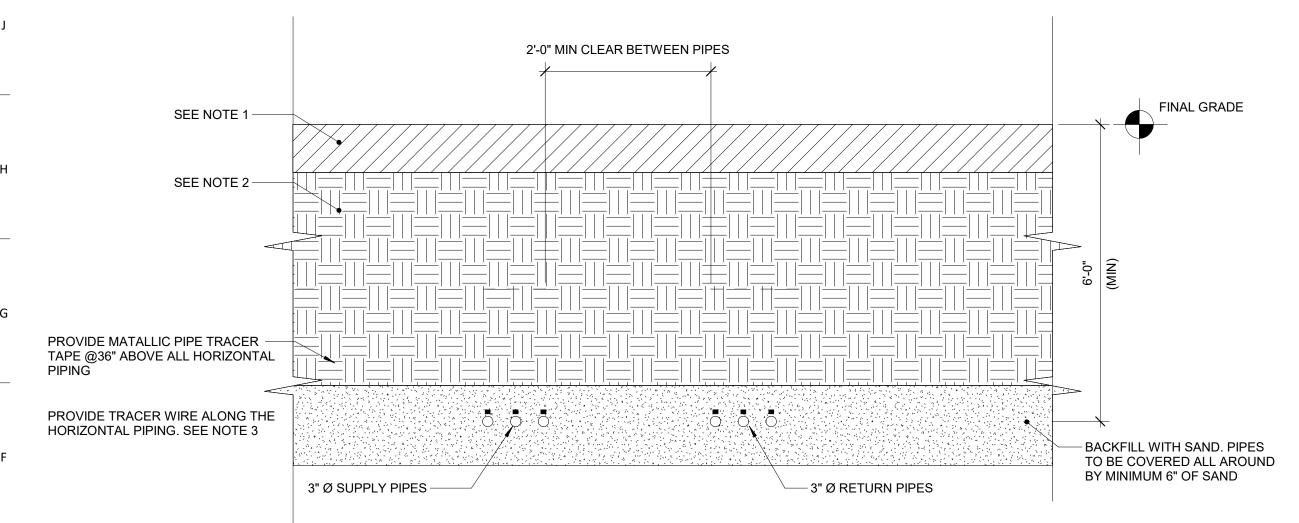
SYMBOL: DESCRIPTION: ——GWR—— GLYCOL WATER RETURN ——GWS—— GLYCOL WATER SUPPLY PIPE CAP



## GEOTHERMAL PIPE ENTRY DETAIL(FOR REFERENCE ONLY)

LINK SEAL : LS-300-S-316
 SLEEVE : CS-5-12

3. LINK SEALS AND SLEEVES ARE EXISTING THAT WERE INSTALLED BY DEVELOPER.



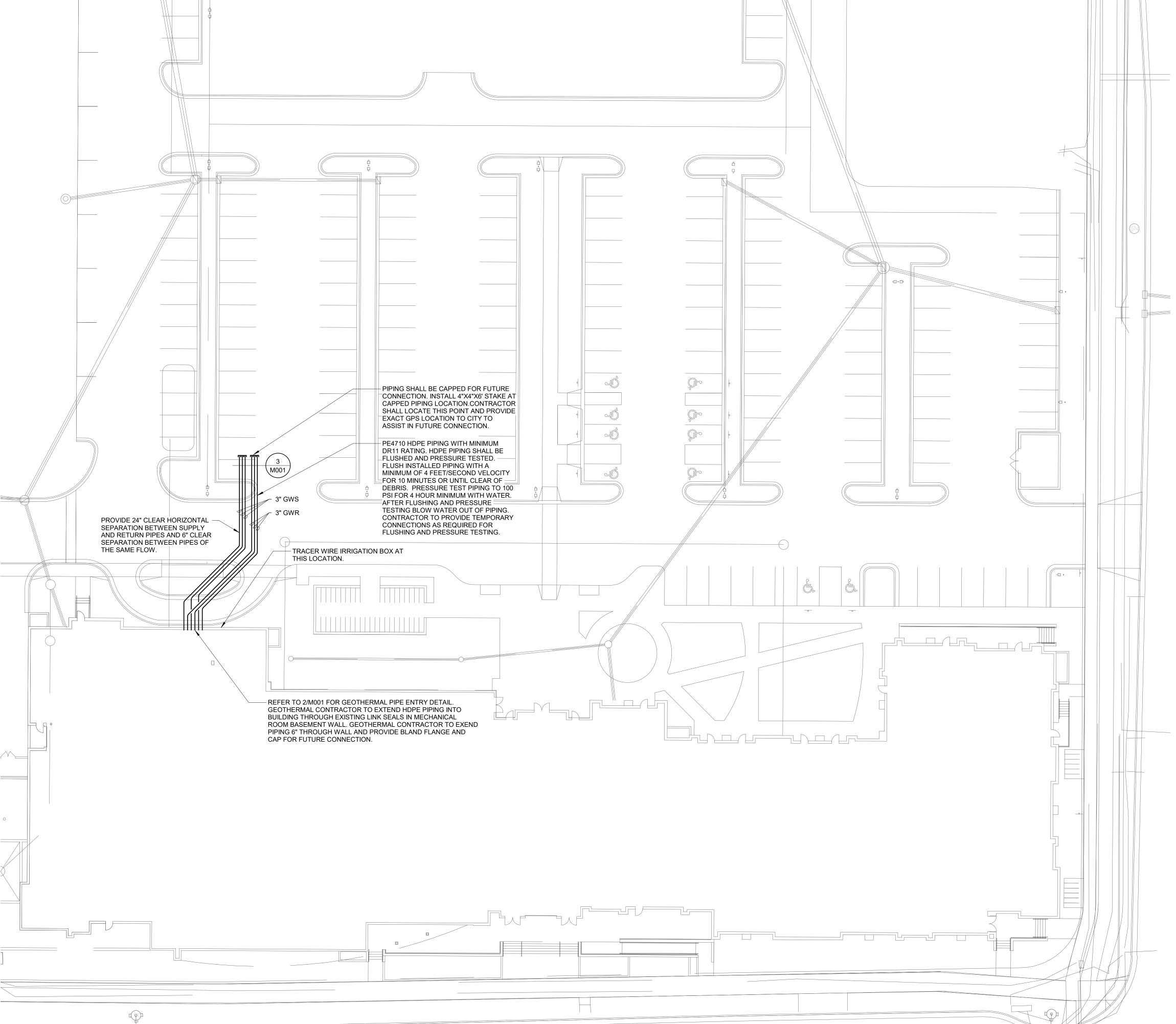
# GEO PIPE MAIN CIRCUIT TRENCH DETAIL

1. COORDINATE FINAL GRADE WITH DEVELOPER. PAVEMENT PER DEVELOPERS REQUIREMENTS.

2. BACKFILL WITH STRUCTURAL FILL TO ROUGH GRADE FOR ALL AREAS PER DEVELOPERS REQUIREMENTS. COMPACT TO 95%.

3. TRACER WIRE TO BE TERMINATED AT ABOVE- FINAL GRADE ACCESSIBLE LOCATION NEAR PIPE ENTRY POINT. BURIED IRRIGATION BOX OR EQUIVALENT. COORDINATE WITH

DEVELOPER REQUIREMENTS.



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25





**GENERAL NOTES:** 

AT LEAST 6'-0" OF COVER.

ALL EXTERIOR GWS/GWR PIPING SHALL HAVE

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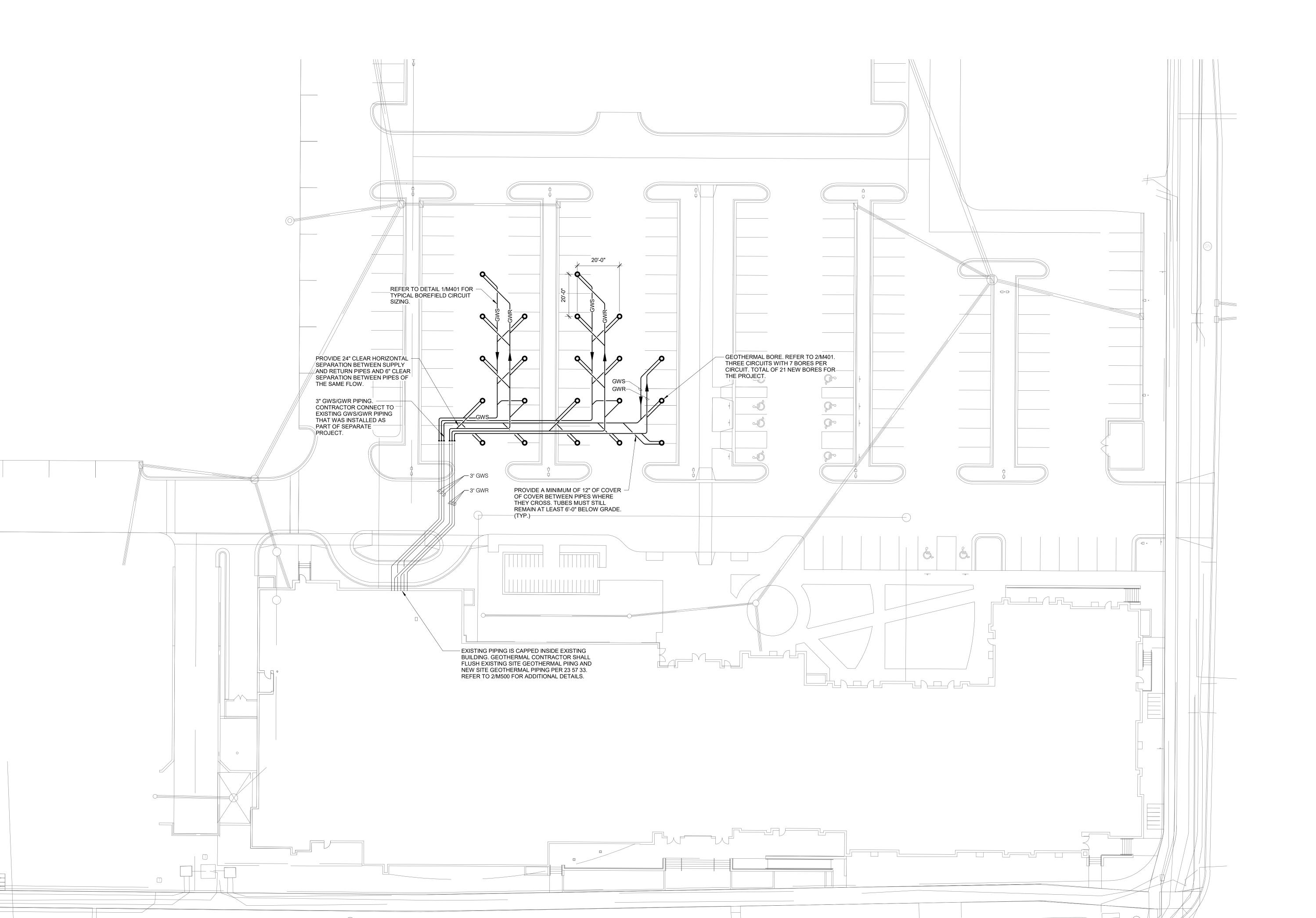
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Sheet Name

SITE PLAN - PHASE 1 -**MECHANICAL** Sheet Number

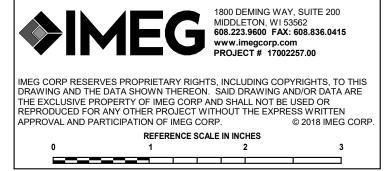
GENERAL NOTES :

ALL EXTERIOR GWS/GWR PIPING SHALL HAVE
 AT LEAST 6'-0" OF COVER.



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25 |





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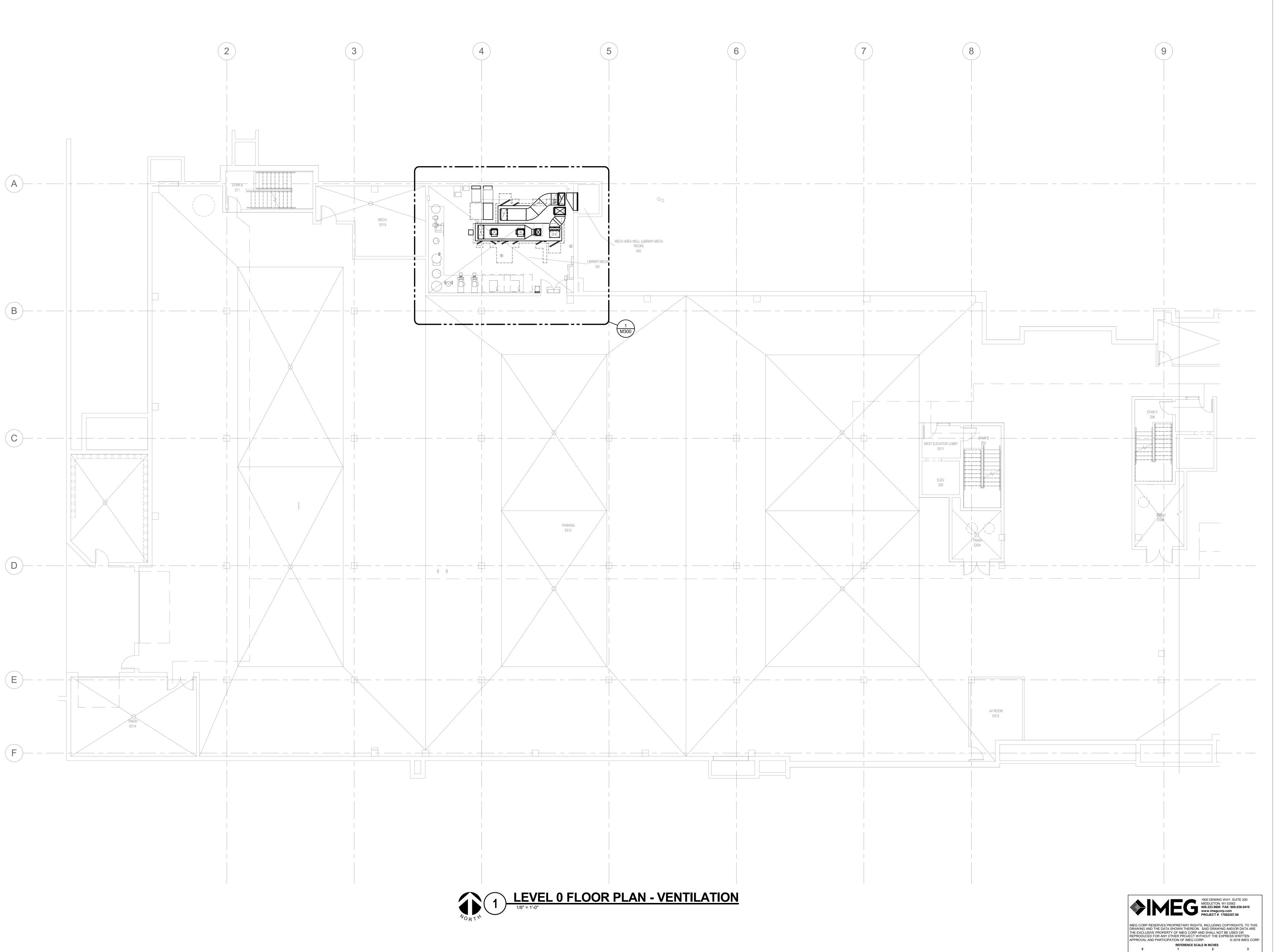
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Sheet Number

Sheet Issue Date

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SITE PLAN - PHASE 2 - MECHANICAL



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 21 | 22 | 23 | 24 | 25



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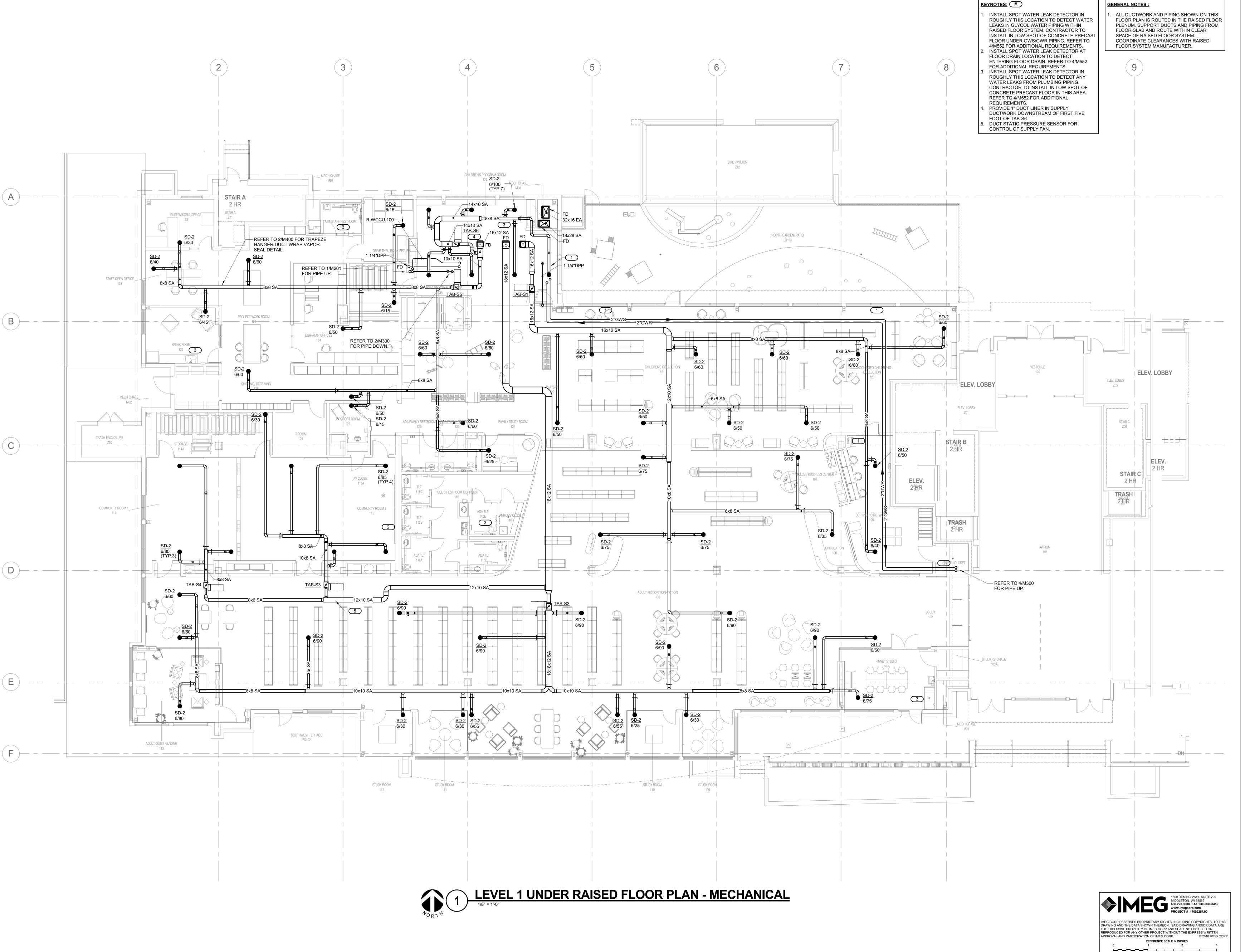
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BID DOCUMENTS 11/30/2018

Sheet Name

LEVEL 0 FLOOR PLAN VENTILATION
Sheet Number

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 | 25 |

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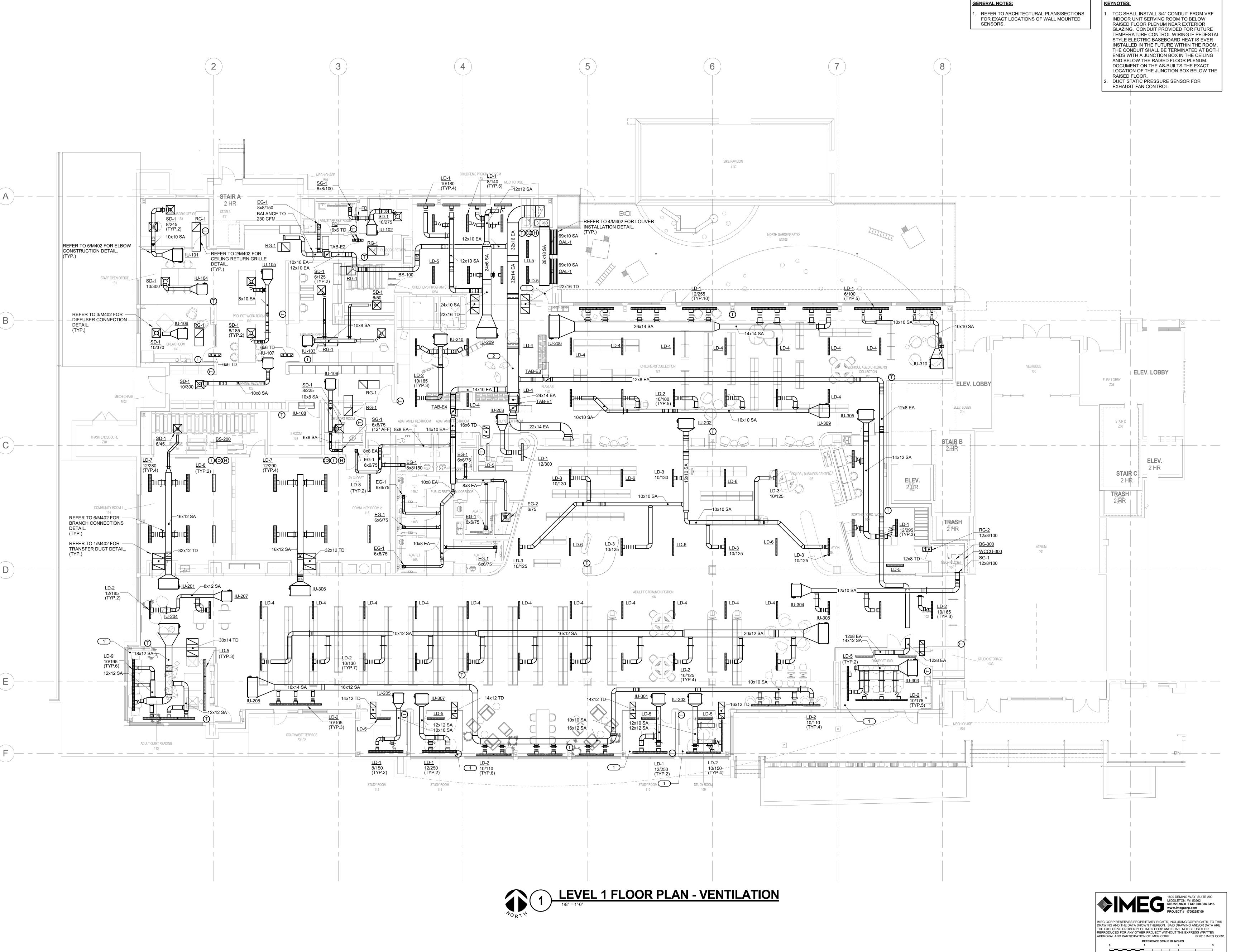
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OPN Project No. **17609000** 

Sheet Issue Date
BID DOCUMENTS 11/30/26

LEVEL 1 UNDER RAISED
FLOOR PLAN – MECHANICAL



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |

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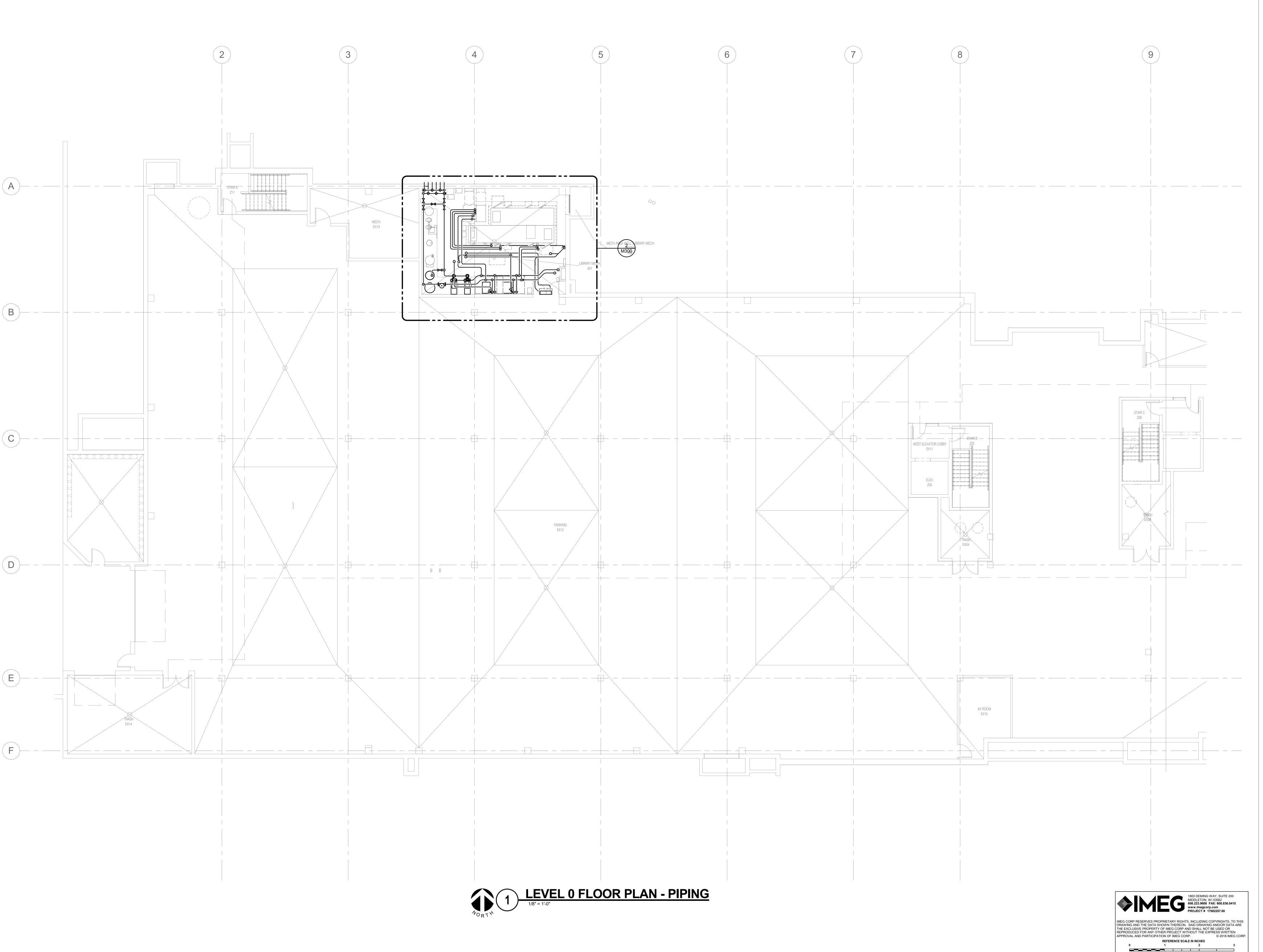
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OPN Project No.

17609000 Sheet Issue Date

**BID DOCUMENTS** Sheet Name **LEVEL 1 FLOOR PLAN -**

**VENTILATION** Sheet Number M102



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 24 | 25

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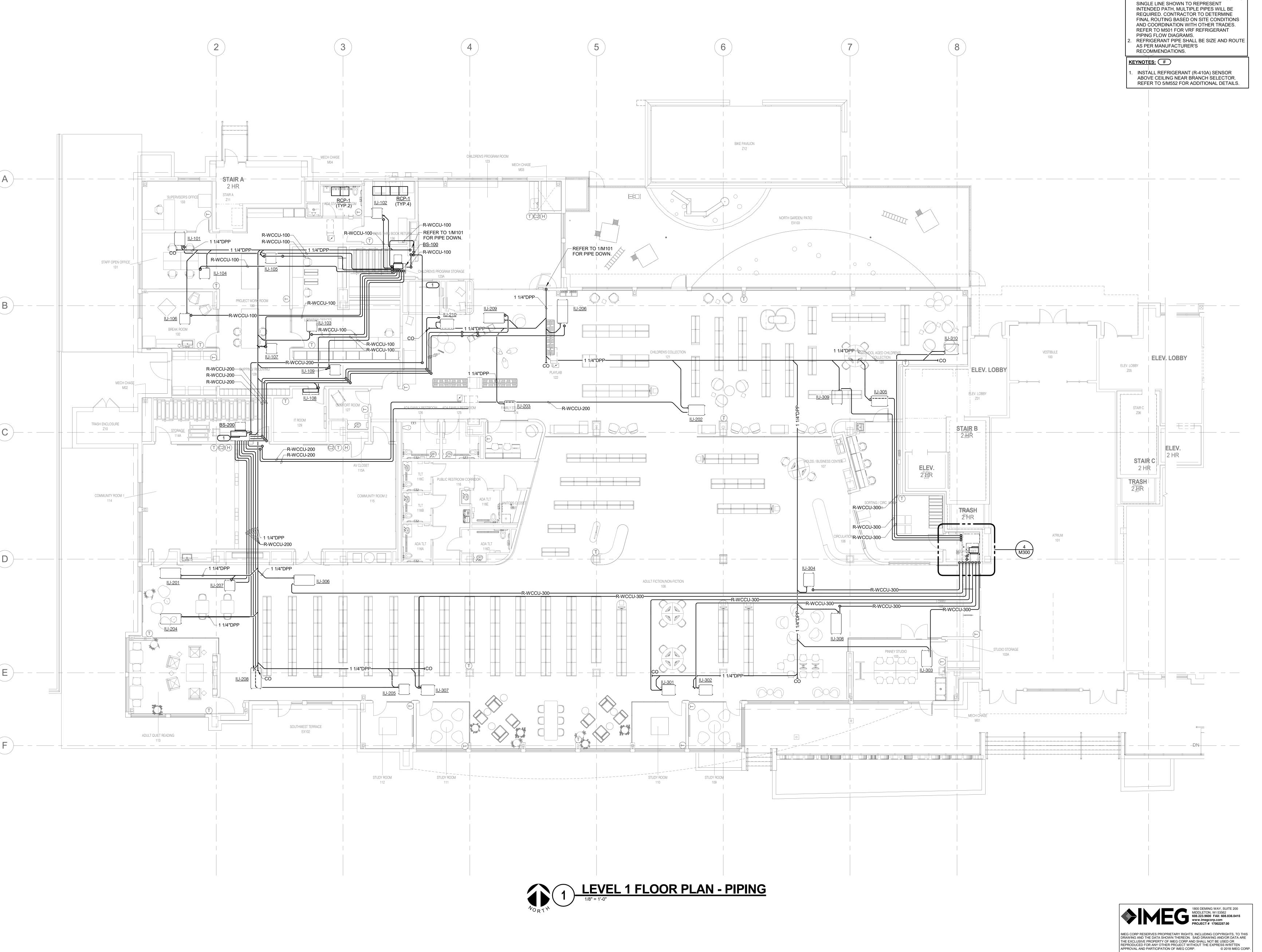
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Sheet Name **LEVEL 0 FLOOR PLAN -**PIPING

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12



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**GENERAL NOTES:** 

VRF REFRIGERANT PIPING GENERAL ROUTING

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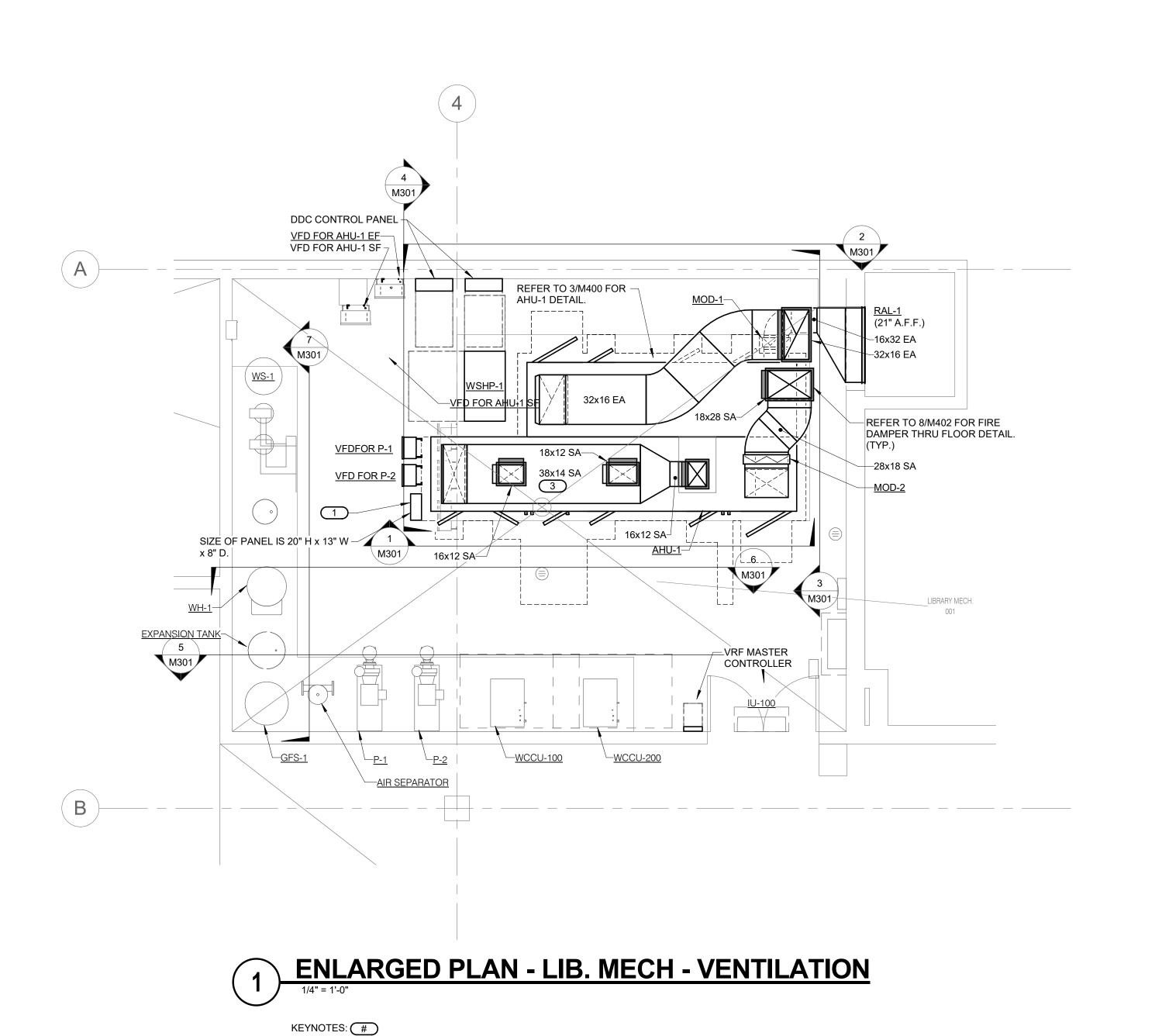
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Sheet Name

LEVEL 1 FLOOR PLAN 
PIPING



1. MOUNT REMOTE CONTROL PANEL FOR AHU-1 EMERGENCY ELECTRIC HEATER ON UNISTRUT AT END OF UNIT. UNITSTRUT

CONTRACTOR TO PROVIDE 4" HOUSEKEEPING PAD

UNDER WCCU-300.

SHALL BE SUPPORTED BETWEEN FLOOR AND CEILING STRUCTURE.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

REFER TO 1/M001 FOR 3"GWS— CONTINUATIONS. —<u>VFD FOR AHU-1 EF</u> 3"GWR-DDC PANEL \_\_\_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ REFER TO 1/M400 FOR REFRIGERANT PIPING REFER TO 7/M402 FOR CONDENSATE TRAP DEAIL. 1 1/2"GWR-1 1/2"GWS-1 1/4"DPP-\ 0 1 1/4"DPP 1 1/4"R-WCCU-200— EXPANSION TANK-AIR SEPARATOR -WCCU-200 - 2 1/2"GWS CONTROLLER 3/4"R-WCCU-100— ENLARGED PLAN - LIB. MECH - PIPING

**GENERAL NOTES:** REFER TO 2/M500 FOR GLYCOL WATER PIPING FLOW DIAGRAM AND 1/M501 FOR REFRIGERANT PIPING FLOW DIAGRAM. CONTRACTOR SHALL INSTALL ALL THE REQUIRED ACCESSORIES AS PER FLOW DIAGRAM. REFRIGERANT PIPE SHALL BE SIZE AND ROUTE PER MANUFACTURER'S RECOMMENDATIONS.

PROVIDE 2" DOUBLE WALL DUCTWORK WITH PERFORATED LINER IN MECHANICAL ROOM SUPPLY DUCTWORK. VRF REFRIGERANT PIPING GENERAL ROUTING

SINGLE LINE SHOWN TO REPRESENT

REFER TO M501 FOR VRF REFRIGERANT

PIPING FLOW DIAGRAMS.

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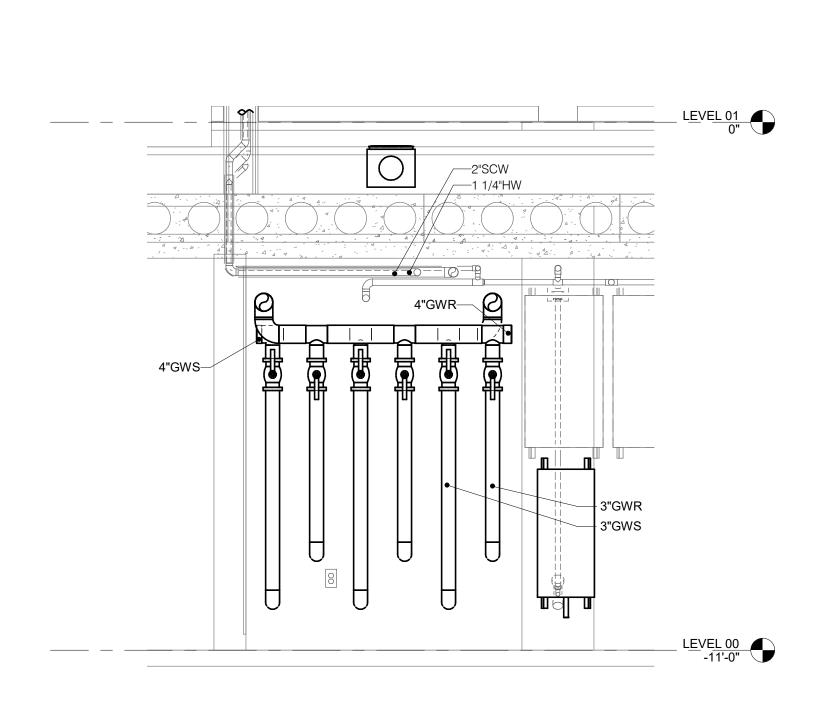


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KEYNOTES: # INSTALL REFRIGERANT (R-410A) SENSOR WITHIN ROOM 12" AFF. REFER TO 5/M552 FOR ADDITIONAL DETAILS. PROVIDE 4" BYPASS. REFER TO M500 FOR ADDITIONAL DETAILS.



1 1/4"HW----2"SCW----3/4"CW-3"GWR-3"GWS-

# **ENLARGED PLAN MECH CLOSET 104 - PIPING**

KEYNOTES: # INSTALL REFRIGERANT (R-410A) SENSOR WITHIN ROOM 12" AFF. REFER TO 5/M452 FOR ADDITIONAL DETAILS. ROUTE REFRIGERANT PIPING AND GWS/GWR PIPING TO WCCU-300/BS-300 PER MANUFACTURER'S REQUIREMENTS.

R-WCCU-300

R-WCCU-300-3

SECTION FOR GEOTHERMAL PIPING ENTRY FRONT

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

1. REFER TO FLOW DIAGRAM ON M500 FOR ADDITIONAL ACCESSORIES REQUIRED WITHIN PIPING.

# SECTION FOR GEOTHERMAL PIPING ENTRY SIDE

1. REFER TO FLOW DIAGRAM ON M500 FOR ADDITIONAL ACCESSORIES REQUIRED WITHIN PIPING.

> OPN Project No. 17609000 Sheet Issue Date

> > Sheet Number

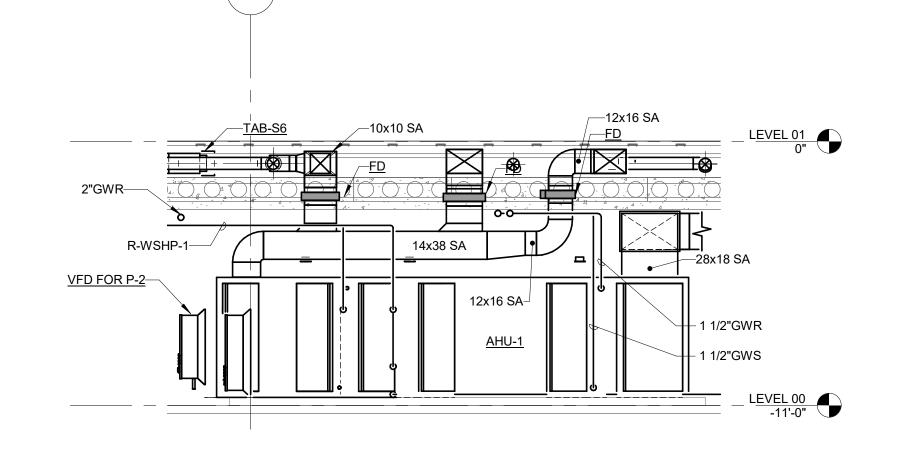
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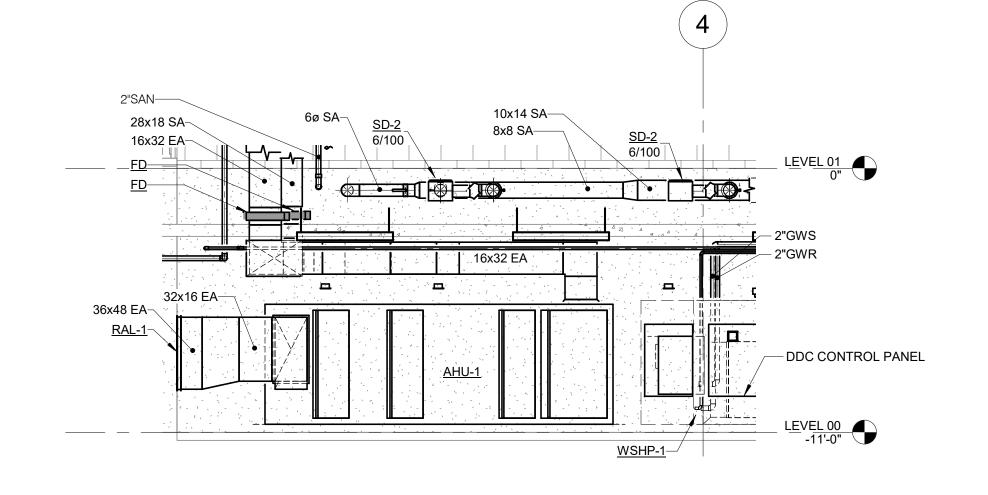
Key Plan

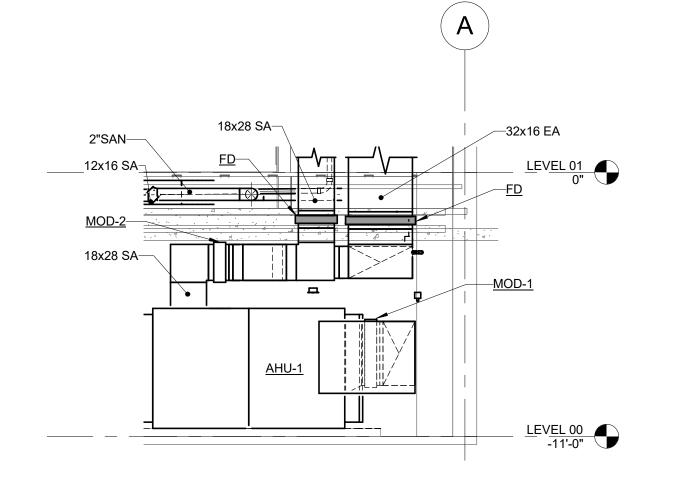
**BID DOCUMENTS** Sheet Name **ENLARGED PLANS AND** 

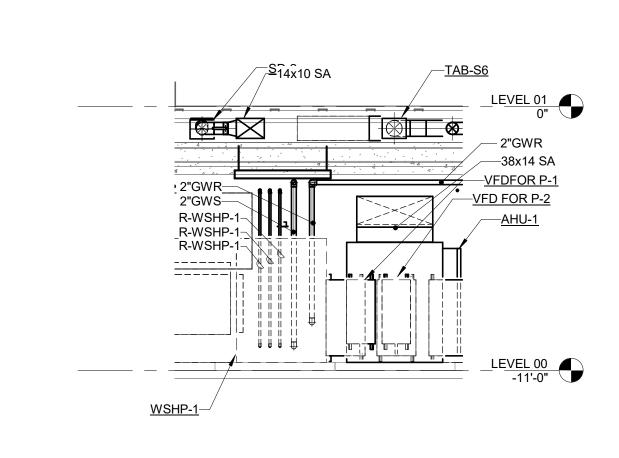
**SECTIONS - MECHANICAL** 

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1 SECTION FOR AHU-1 NORTH MECHANICAL

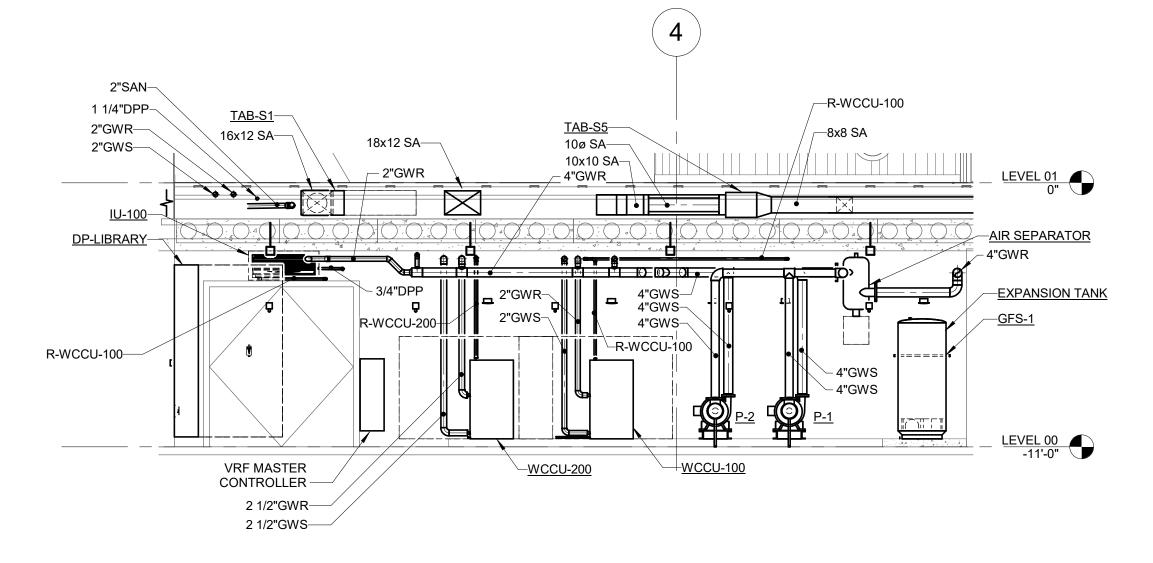
SECTION FOR AHU-1 SOUTH MECHANICAL

SECTION FOR AHU-1 WEST MECHANICAL

1/4" = 1'-0"

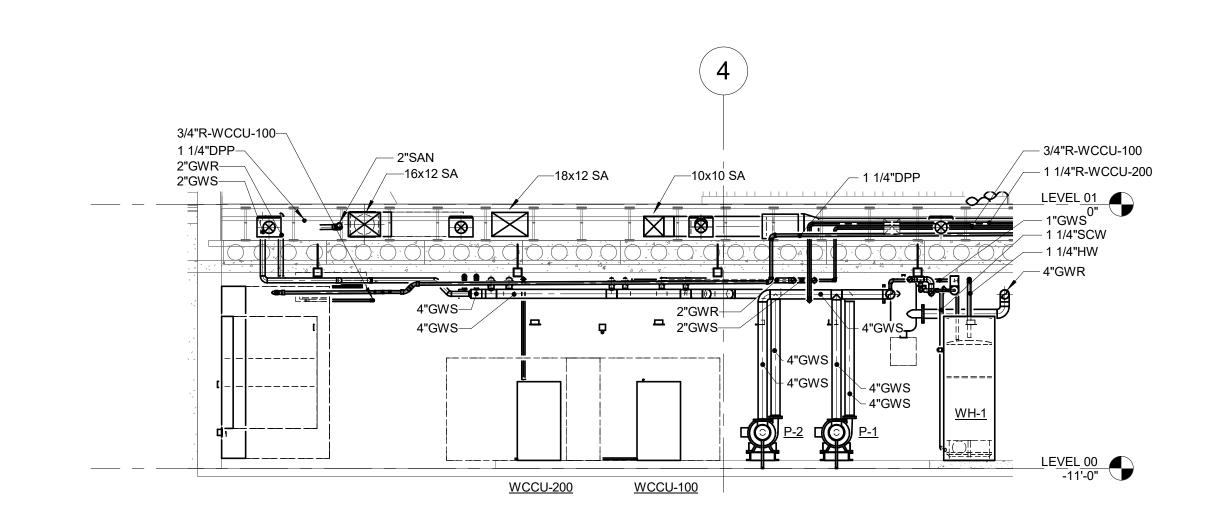
SECTION FOR AHU-1 EAST MECHANICAL

1/4" = 1'-0"



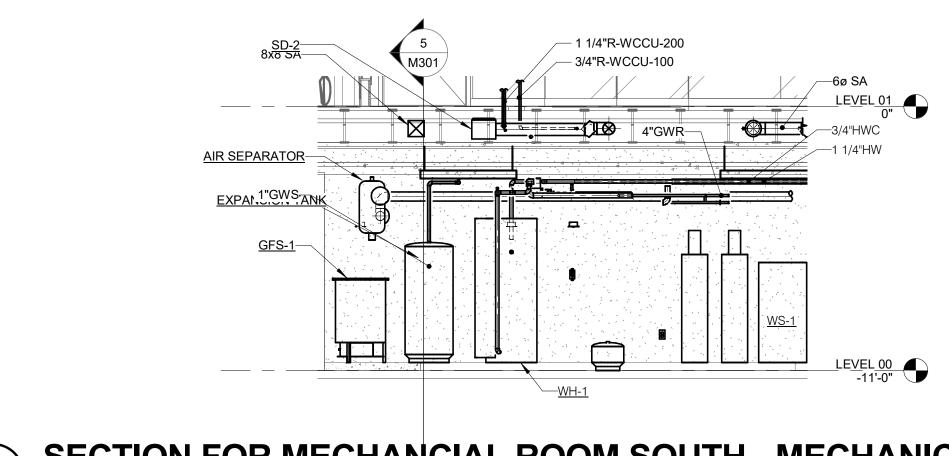
SECTION FOR WATER COOLED CONDENSING UNIT NORTH- MECHANICAL

1/4" = 1'-0"



SECTION FOR WATER COOLED CONDENSING UNIT SOUTH- MECHANICAL

1/4" = 1'-0"



SECTION FOR MECHANCIAL ROOM SOUTH - MECHANICAL

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0 1 2 3

8 ISOMETRIC PLAN- MECHANICAL

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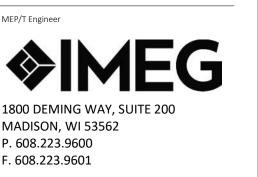






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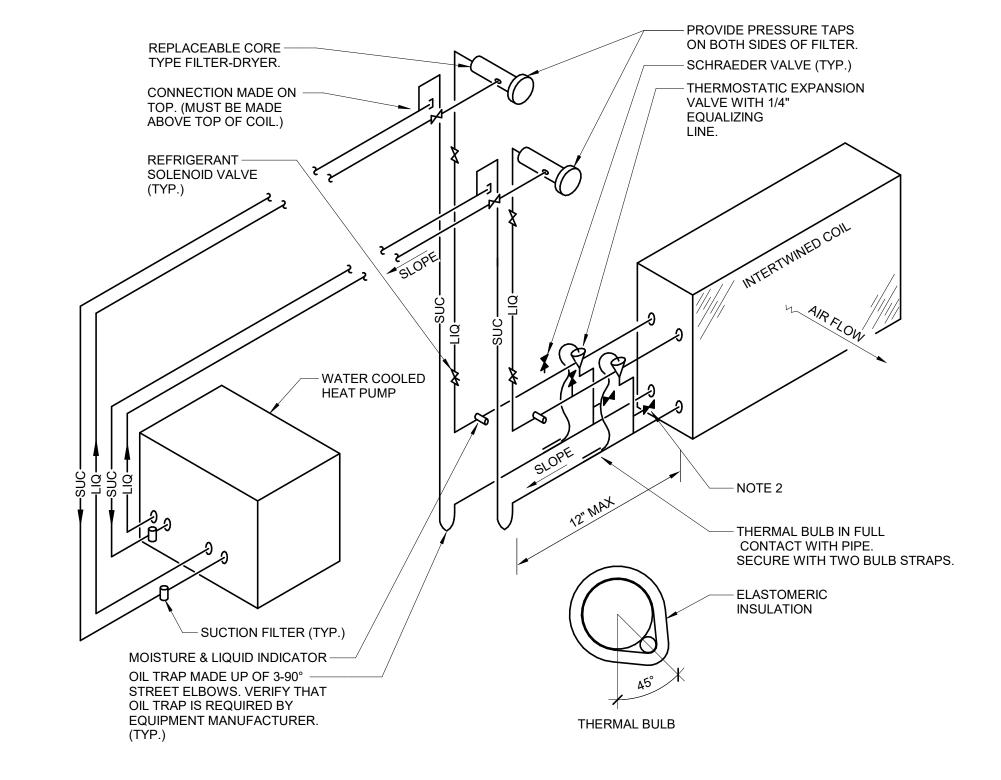
Sheet Issue Date

BID DOCUMENTS 11/30/2018

Sheet Name

ENLARGED PLANS AND

**SECTIONS - MECHANICAL** 

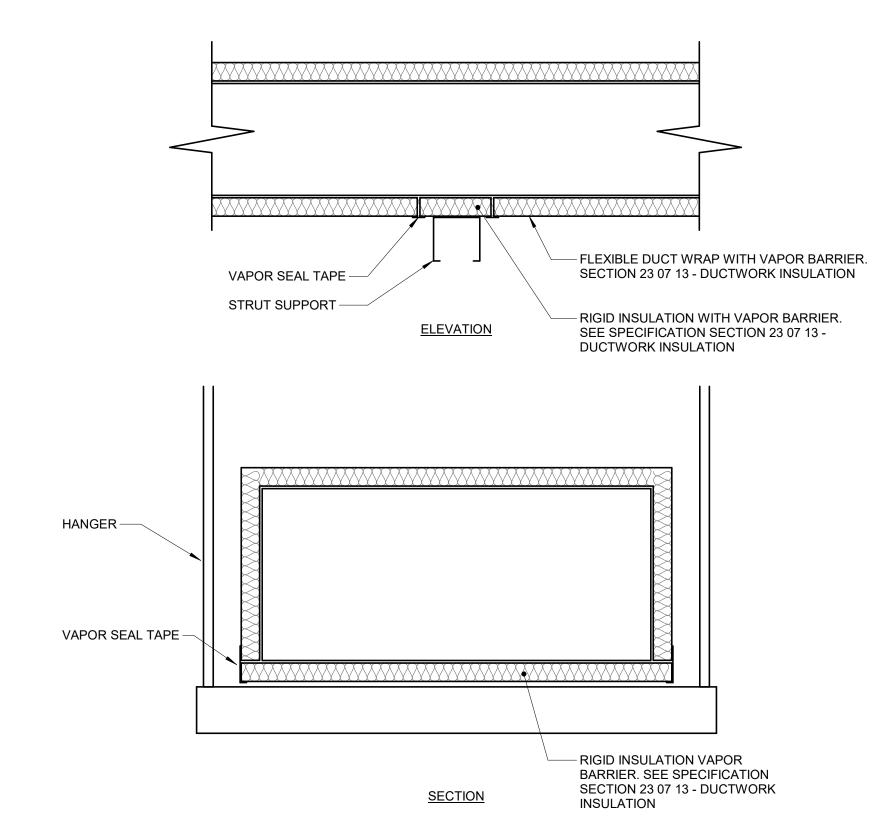


1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

# 1 REFRIGERANT PIPING DETAIL (VERT. INTERTWINED) NO SCALE

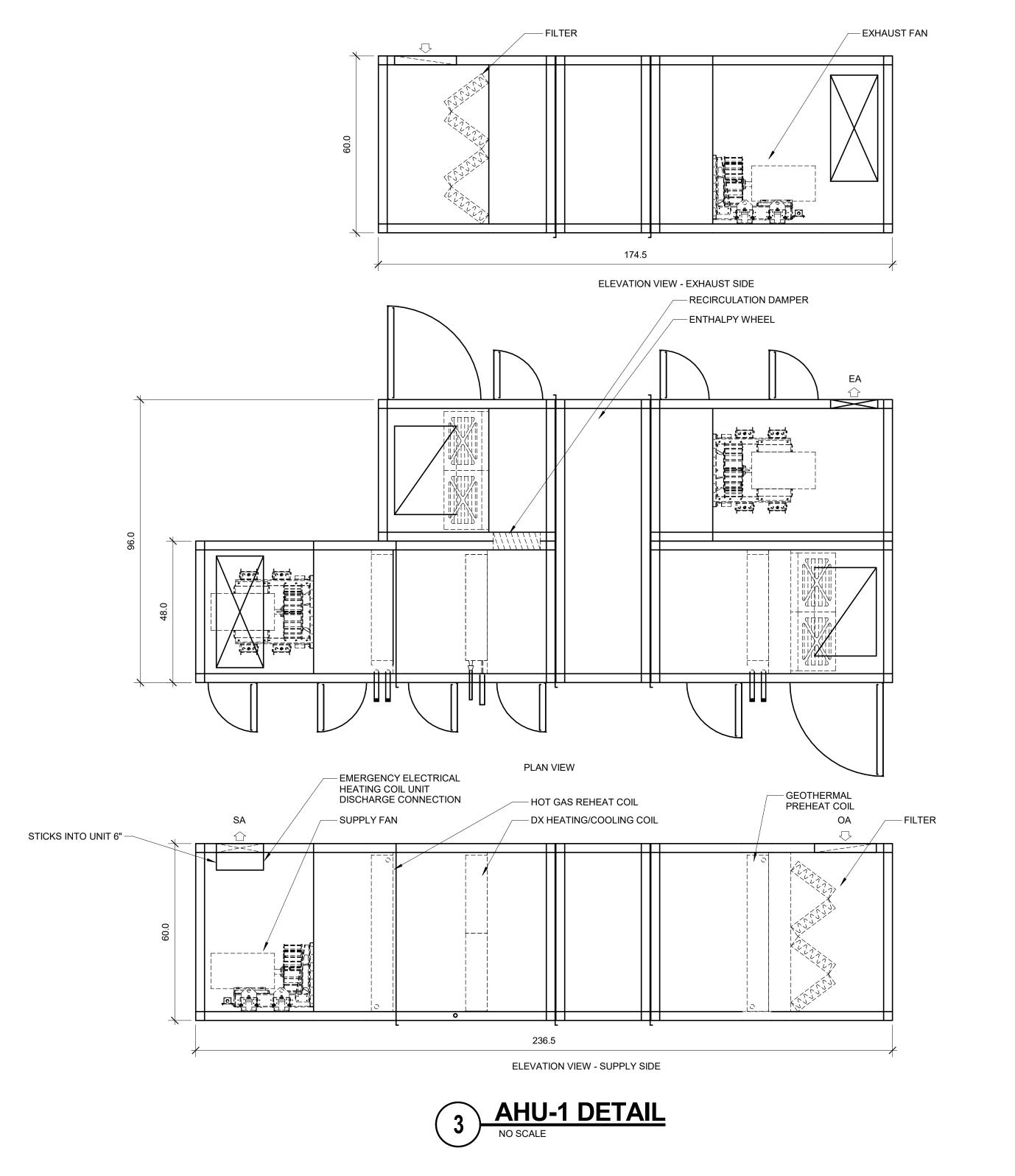
- THIS DIAGRAM IS SCHEMATIC IN NATURE. UNIT MANUFACTURER SHALL SUBMIT DETAILED PIPING DIAGRAM SHOWING RECOMMENDED PIPING ARRANGEMENT IF DIFFERENT FROM ABOVE.
- INSTALL 1/4" SCHRAEDER VALVES TO MEASURE REFRIGERANT PRESSURE WITH REFRIGERANT GAUGES.
   PIPE SIZES, IF SHOWN ON DRAWINGS, ARE ONLY FOR THE CONVENIENCE OF THE BIDDERS. ACTUAL NUMBERS AND SIZES
- OF PIPES AND ANY ACCESSORIES SUCH AS ACCUMULATORS, RECEIVERS, SEPARATORS AND HEAT TRACING SHALL BE DETERMINED BY THE COIL SUPPLIER AND SUBMITTED AS SHOP DRAWINGS. NO COMPENSATION WILL BE MADE IF ACTUAL
- NUMBER OR SIZES OF PIPES EXCEED WHAT IS SHOWN.

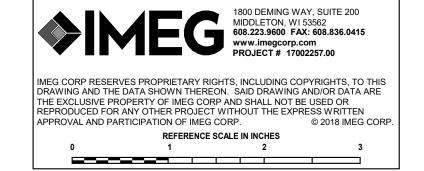
  4. QUANTITY OF COILS VARY PER UNIT, PROVIDE INTERTWINED COIL CONNECTIONS FOR STACKED COILS SO BOTH COILS HAVE EQUAL COOLING AT PART LOAD CONDITIONS.
- 5. PIPING DETAIL SHOWN IS FOR COOLING ONLY DX COIL. HEAT PUMP STYLE UNITS MAY REQUIRE ADDITIONAL ACCESSORIES FOR COMPLETE SYSTEM PER MANUFACTURER RECOMMENDATIONS.



TRAPEZE HANGER DUCT WRAP VAPOR SEAL DETAIL
NO SCALE

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25





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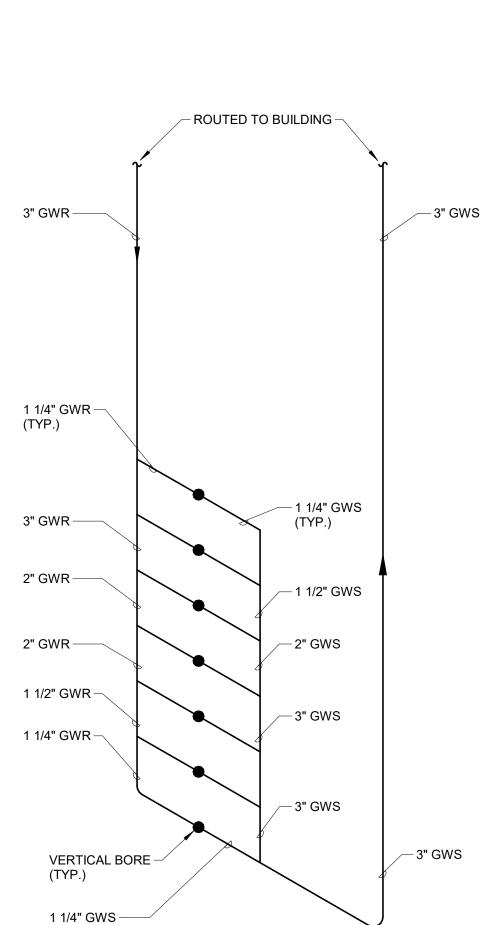
OPN Project No. **17609000** 

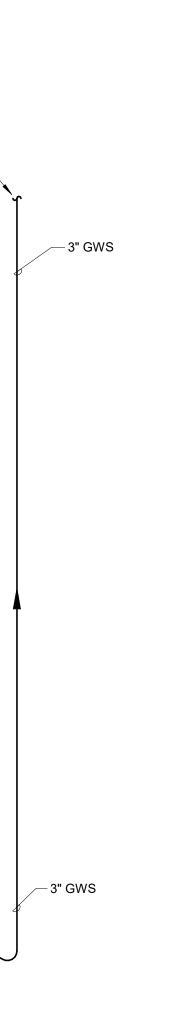
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MECHANICAL DETAILS

Sheet Number





# TYPICAL BOREFIELD CIRCUIT SIZING

1. ALL GWR/GWS PIPING FOR BOREFIELD CIRCUITS SHALL BE AT LEAST 6'-0" BELOW FINISHED GRADE.

# HARD / FIRM, SANDSTONE 234' RED, SHALE 249' VERTICAL BORE -PRESSURE GROUTED.

- WARNING TAPE

\_\_\_\_ 1 1/4" PE 4710 SDR 11 HDPE PIPE

GRADE 0'

SAND 35'

SAND AND GRAVEL 77'

SANDSTONE 405'

SOFT / LOOSE, SANDSTONE 90'

SAND & GRAVEL 13'

# **GEOTHERMAL EXCHANGER DETAIL**

WARNING TAPE -

6'-0" MIN.

GEOTHERMAL CIRCUIT PIPING IN TRENCH WITH

SAND BEDDING MINIMUM 12"

1 1/4" PE 4710 SDR 11 HDPE PIPE —

SAND LAYER.

1 LOCATING WIRE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS ON THE ENTIRE PERIMETER OF CIRCUIT PIPING AT EDGES OF WELL FIELD, ON CIRCUIT PIPING BETWEEN WELL FIELD AND BUILDING.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 |

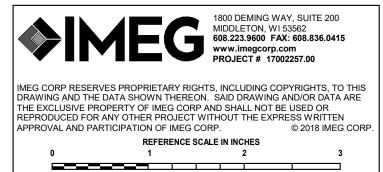
### **GEOTHERMAL FIELD INFORMATION** TOTAL NUMBER OF GEOTHERMAL BORES NUMBER OF BORES PER CIRCUIT BORE DEPTH TYPICAL BORE SPACING BOREFEILD FLUID TEMPERATURE ENTERING BUILDING WINTER BOREFEILD FLUID TEMPERATURE 90°F MAX ENTERING BUILDING SUMMER 25% FOOD GRADE GEOTHERMAL FLUID PROPYLENE GLYCOL GROUT THERMAL CONDUCTIVITY 1.0BTU/H-FT-°F FORMATION THERMAL CONDUCTIVITY 2.0 BTU/HR-FT-°F FORMATION THERMAL DIFFUSIUITY 1.28 FT2/ DAY FORMATION THERMAL TEMPERATURE 51.7°F- 53.5°F PEAK BLOCK COOLING LOAD PEAK BLOCK HEATING LOAD ASSUMED ANNUAL EFL COOLING HOURS

# **GEOTHERMAL FIELD INFORMATION**

ASSUMED ANNUAL EFL HEATING HOURS 750

KEYNOTES:

1. REFER TO 23 57 33 FOR ADDITIONAL REQUIREMENTS.



City Contract No. OPN Project No. 17609000

Sheet Issue Date **BID DOCUMENTS** Sheet Name

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M401

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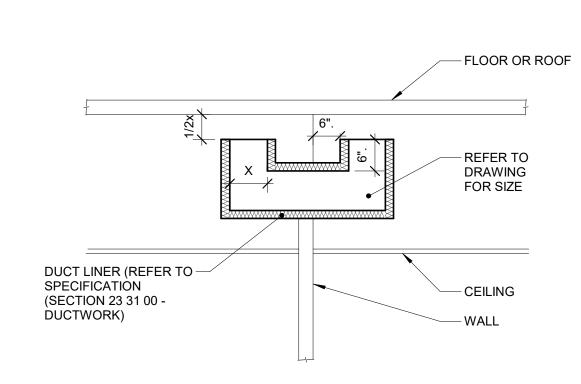




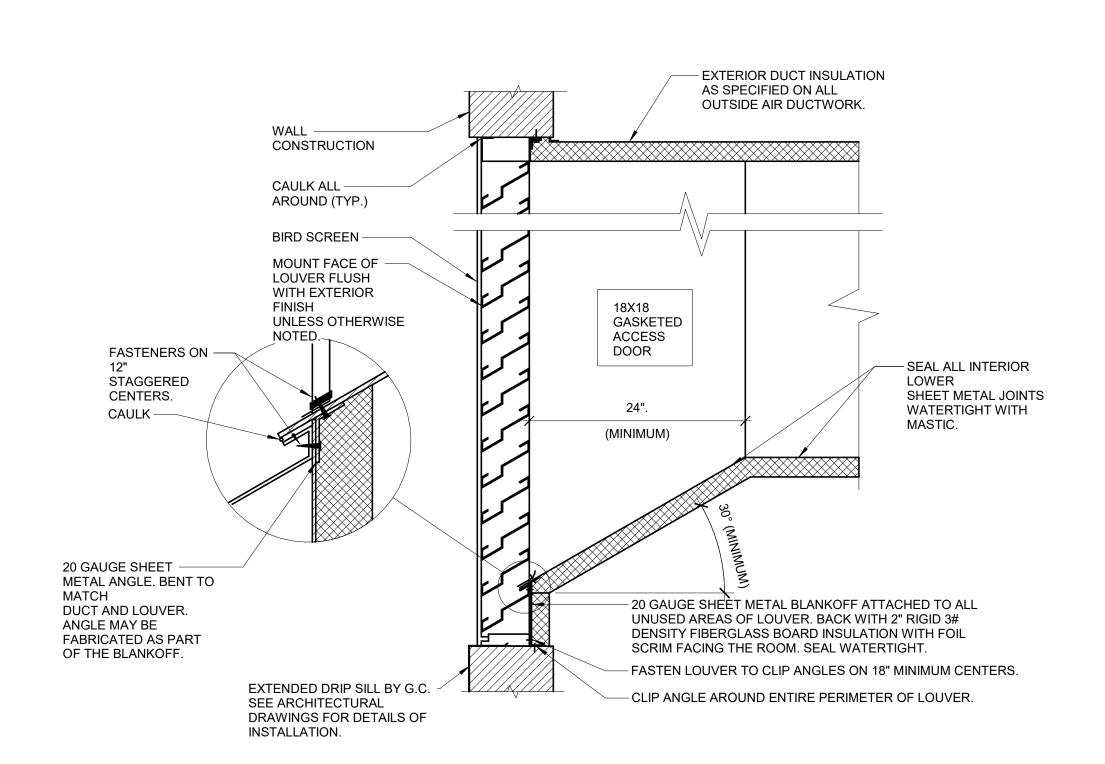
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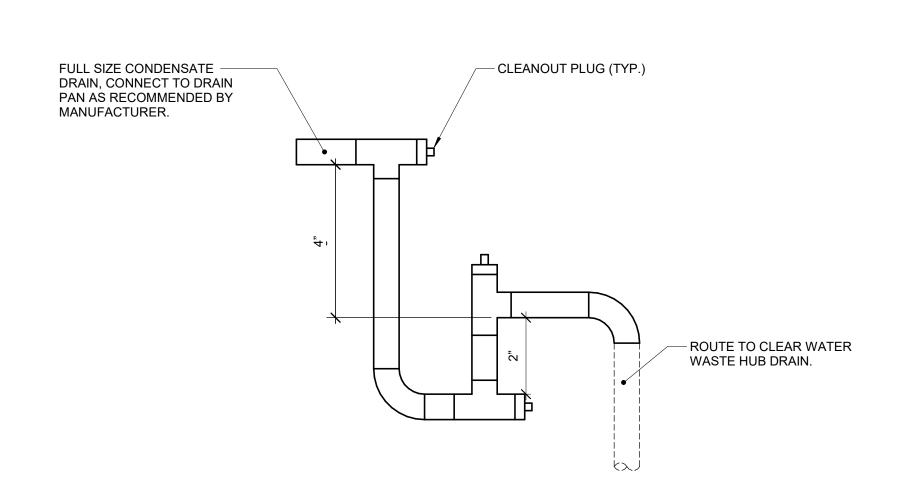


# TRANSFER DUCT DETAIL (ENDS UP)

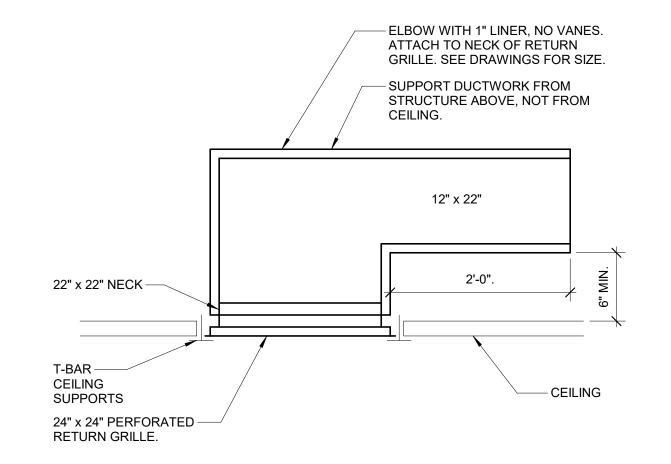


# LOUVER INSTALLATION DETAIL

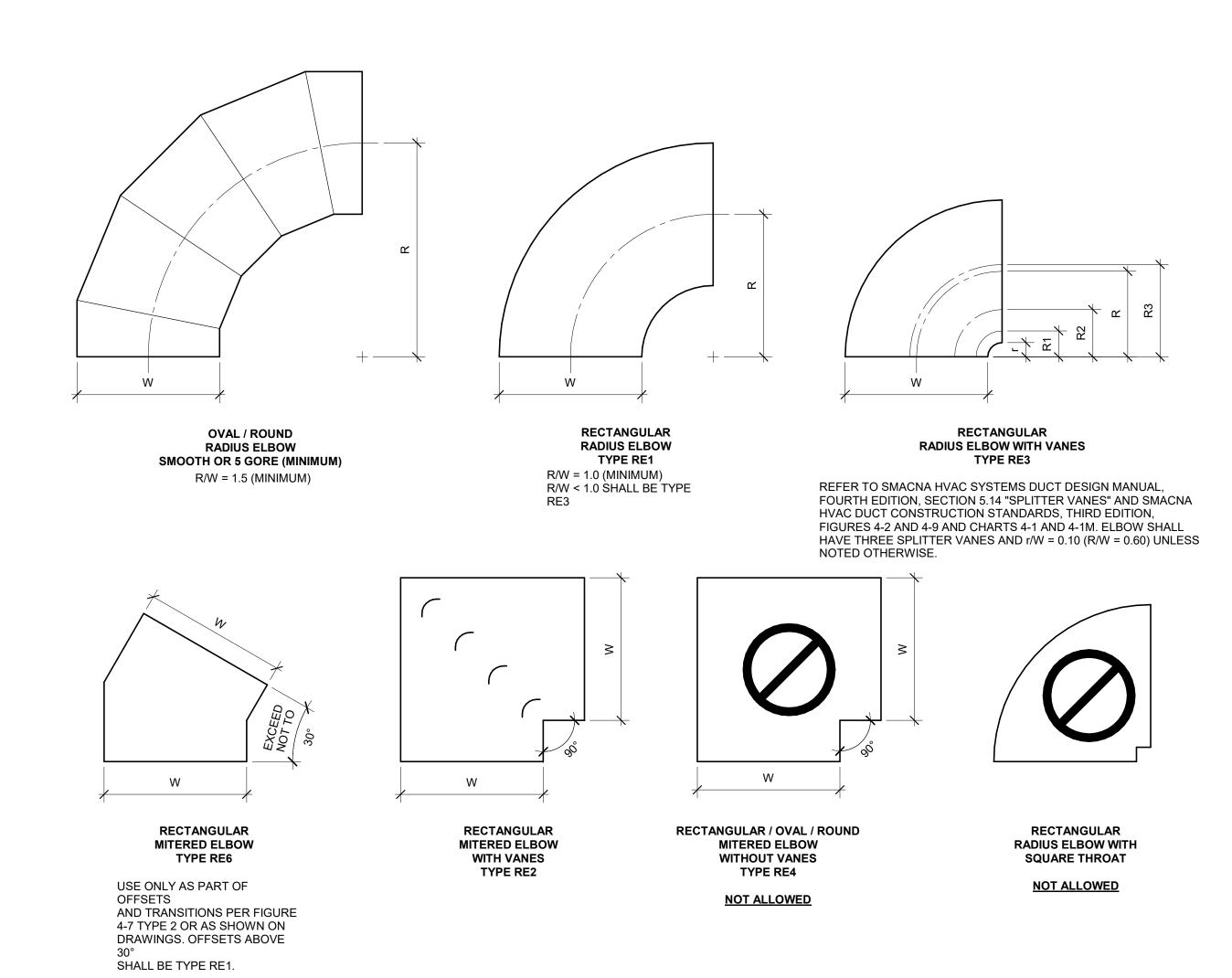
- 1. SEAL ALL JOINTS ON BOTTOM INTERIOR SURFACE OF DUCT WITHIN 6'-0" OF THE LOUVER WATER TIGHT.
- 2. MOUNT BOTTOM OF INTAKE LOUVERS AT LEAST 40" ABOVE GRADE OR ROOF ELEVATION TO MINIMIZE CHANCES OF SNOW
- DRIFTING INTO THE LOUVER. 3. CAULK SHEETMETAL SCREWS WHERE THEY PENETRATE



**CONDENSATE TRAP DETAIL (DRAW-THROUGH)** 

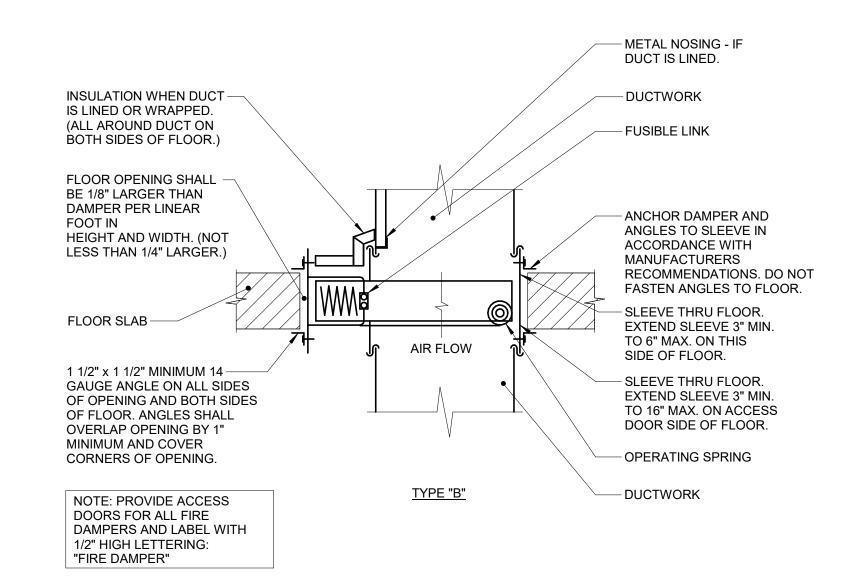


# **CEILING RETURN GRILLE**



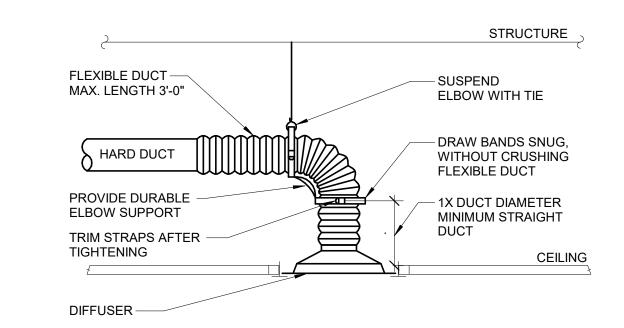
# **ELBOW CONSTRUCTION**

- 1. BEAD, CROSSBREAK, AND REINFORCE FLAT SURFACES AS IN STRAIGHT
- 2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- B. DEFAULT ELBOW SHALL BE TYPE "RE1". 4. ELBOW TYPES SHALL BE INSTALLED AS SHOWN AND NOT BE SUBSTITUTED WITHOUT PERMISSION. EXCEPTION: RE1 OR RE3 MAY BE SUBSTITUTED FOR



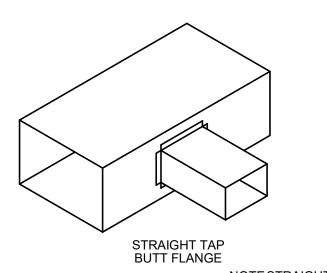
FIRE DAMPER THRU FLOOR DETAIL (TYPE B)

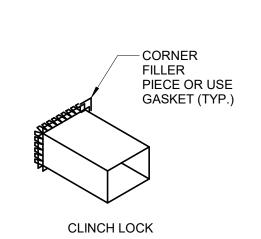
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |



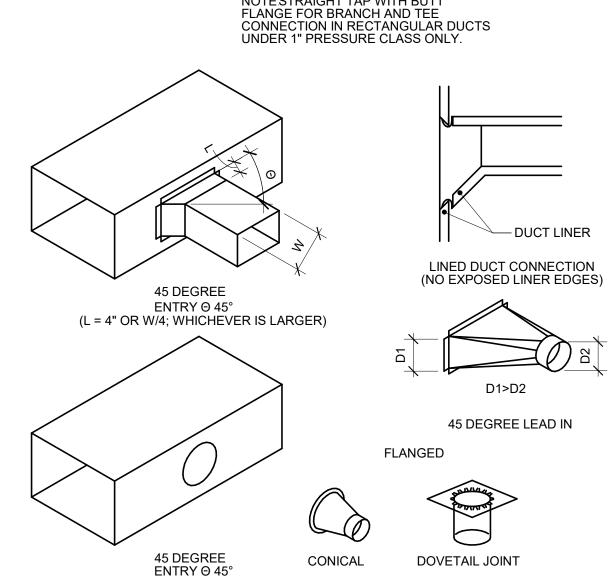
### DIFFUSER CONNECTION DETAIL (W/ RADIUS FORMING ELBOW)

- 1. TO ATTACH FLEX DUCT TO THE HARD DUCT, TAPE THE INNER LINER TO THE HARD DUCT THEN ATTACH WITH TWO NYLON TIE WRAPS; ONE FOR THE INNER LINER AND ONE FOR THE OUTER SHELL. FOLD THE OUTER SHELL INSIDE ITSELF SO IT HAS NEAT EDGES PRIOR TO TIE WRAPPING.
- 2. "SMARTFLOW" ELBOW THERMAFLEX "FLEXFLOW" AND "FLEXRIGHT" ARE ACCEPTABLE PRODUCTS FOR DURABLE ELBOW SUPPORT.



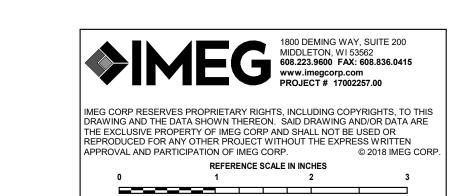


NOTESTRAIGHT TAP WITH BUTT FLANGE FOR BRANCH AND TEE CONNECTION IN RECTANGULAR DUCTS



# **BRANCH CONNECTIONS**

- 1. DO NOT USE CONNECTIONS WITH SCOOPS. 2. FIT ALL CONNECTIONS TO AVOID VISIBLE OPENINGS
- AND SECURE THEM SUITABLY FOR THE PRESSURE
- 3. ADDITIONAL MECHANICAL FASTENERS ARE REQUIRED FOR 4"W.G. AND OVER. 4. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



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Sheet Issue Date BID DOCUMENTS

Sheet Name **MECHANICAL DETAILS** 

Sheet Number

PRESSURE GAUGE WITH SNUBBER PER SECTION 23 09 13. INSTALL WITH MOUNTING ON WALL, STAND, OR VIBRATION-FREE PIPE ABOVE BRACKET PUMP FLEXIBLE CONNECTOR. INSTALL FLEXIBLE COPPER TUBING TO PIPING CONNECTIONS TO AVOID VIBRATION DAMAGE TO THE GAUGE. PREFERRED CONNECTION LOCATIONS ARE: (a) JUST UPSTREAM OF STRAINER, (b) GAUGE PORT ON SUCTION DIFFUSER OR BETWEEN STRAINER AND PUMP INLET (c) GAUGE TAPPING ON PUMP INLET FLANGE. (d) GAUGE TAPPING ON PUMP OUTLET FLANGE.

REMOVE & RETAIN TEMPORARY STRAINER FROM SUCTION DIFFUSER AT END OF CONSTRUCTION. PROVIDE SUPPORT LEG AS REQUIRED BY MANUFACTURER. INSTALL VIBRATION ISOLATORS. SIZE PER BLADDER TANK MANUFACTURER'S RECOMMENDATIONS BUT NOT SMALLER THAN CONNECTION TO TANK.

PROVIDE 4" THICK CONCRETE HOUSEKEEPING PADS UNDERNEATH ALL FLOOR MOUNTED MECHANICAL EQUIPMENT. CONCRETE PADS SHALL EXTEND MINIMUM 3" BEYOND ALL SIDES OF EQUIPMENT. EQUIPMENT ITEMS SHALL INCLUDE, BUT IS NOT LIMITED TO THE FOLLOWING: CHEMICAL FEEDER, EXPANSION TANK, BASE MOUNTED PUMPS, CONDENSING UNITS, GLYCOL FEED STATION, AIR

HANDLER AND THE LIKE. TCC SHALL PROVIDE MODULATING CONTROL VALVE WITH 0-10 VDC SIGNAL FOR PRESSURE HEAD CONTROL OF SYSTEM. REFER TO 23 81 45 FOR ADDITIONAL DETAILS. PROVIDE LINE SIZE NORMALLY CLOSED MANUAL VALVE FOR INDEPENDENT FLUSHING OF BUILDING AND

THE CLOSED POSITION AFTER FLUSHING. 8. INSTALL FLOW SWITCH IF REQUIRED PER MANUFACTURER REQUIREMENTS.

Owner

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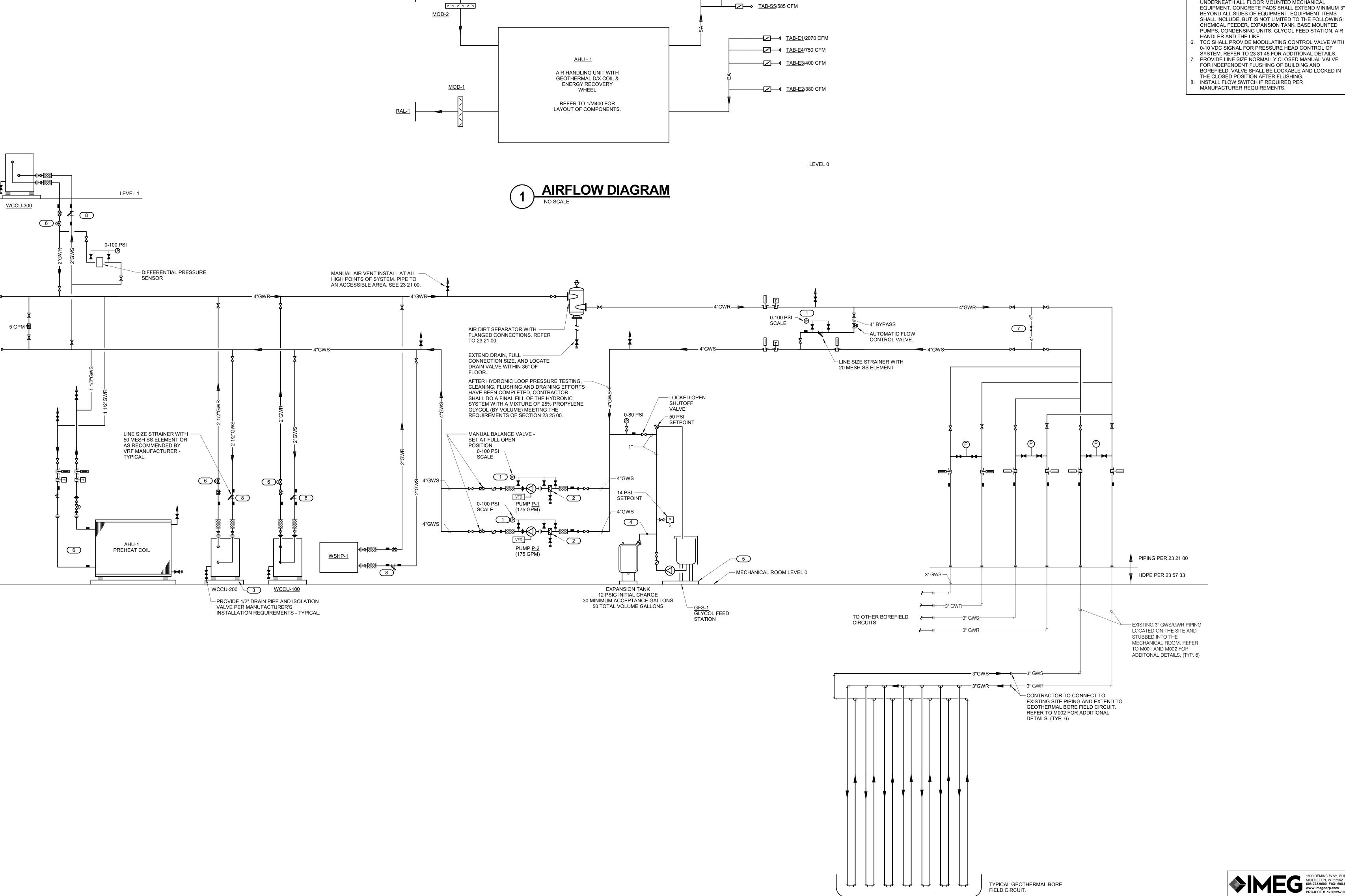
17609000

Key Plan

Sheet Name **MECHANICAL DIAGRAMS** 

Sheet Number

M500



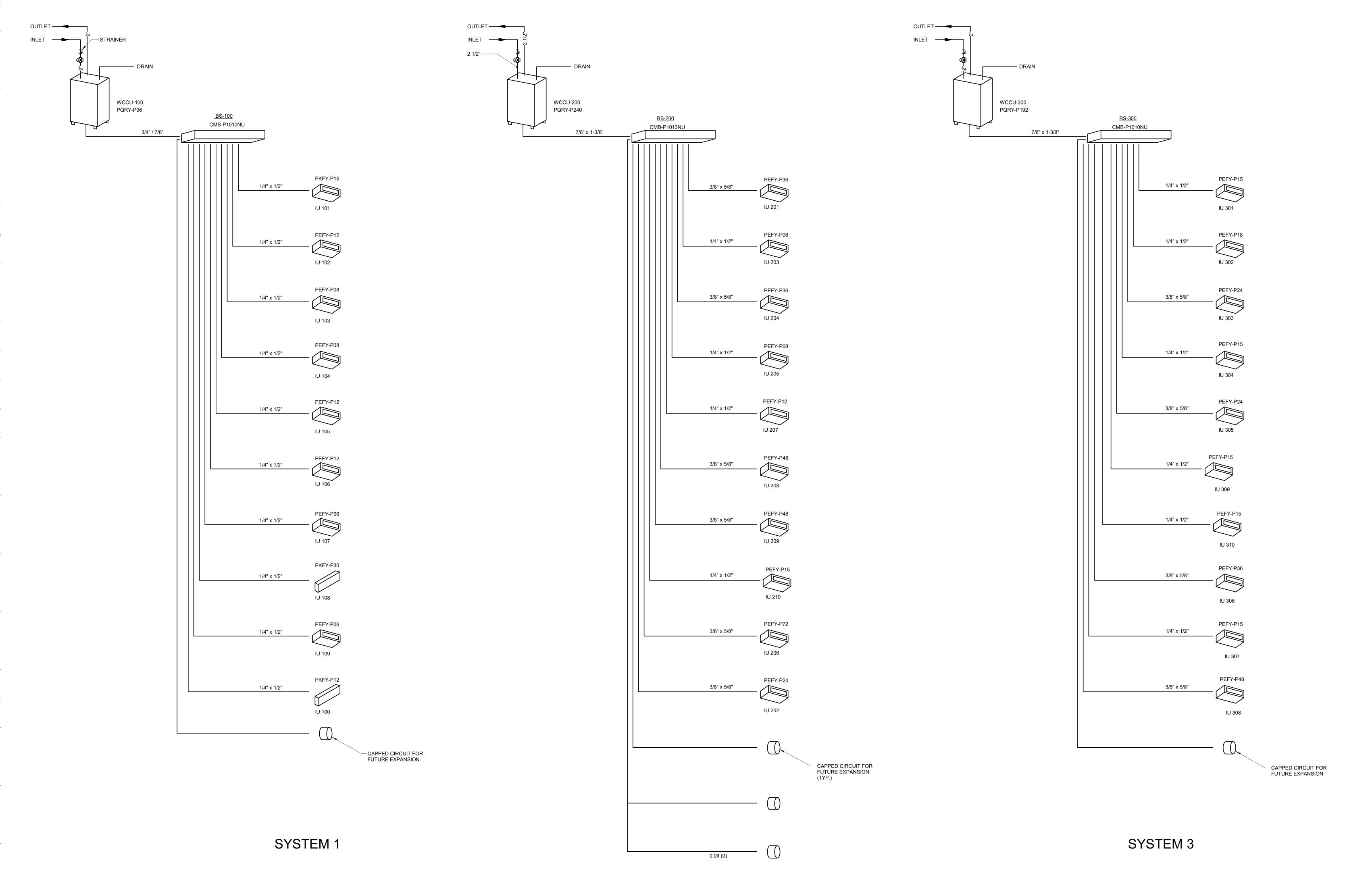
VRF GEOTHERMAL FLOW DIAGRAM
NO SCALE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 22 23 23 24 25 25

LEVEL 1

<u>TAB-S1</u>/1015 CFM

<u>TAB-S2</u>/1090 CFM



### SYSTEM 2

# VRF FLOW DIAGRAMS

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 | 25 |

NOTES:

1. DIAGRAMS PROVIDED FOR REFERENCE ONLY. CONFIRM FINAL PIPE SIZING, ROUTING, ACCESSRIES, QUANTITIES REQUIREMENTS WITH VRF MANUFACTURER. ZONING IS PER COMMON EXPOSURE/LOAD PROFILE. ALTERNATE CIRCUITING IS ACCEPTABLE IF EACH INDOOR UNIT IS PROVIDED WITH HEAT RECOVERY FUNCTIONALITY.

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| REFERENCE SCALE IN INCHES | 0 1 2 3 1 | 1 2 3 1 | 1 2 | 1 2 | 1 3 | 1 2 | 1 3 | 1 2 | 1 3 | 1 2 | 1 3 | 1 2 | 1 3 | 1 2 | 1 3 | 1 2 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3 | 1 3

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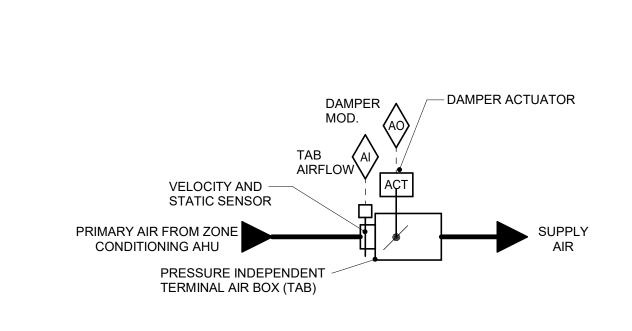
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Sheet Issue Date
BID DOCUMENTS 11/30/2018

MECHANICAL DIAGRAMS

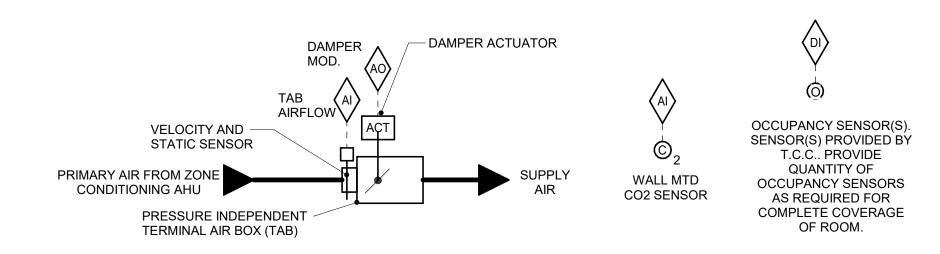
Sheet Number



SEQUENCE OF OPERATION:

FMCS TAB CONTROLLER SHALL MODULATE THE TAB DAMPER TO MAINTAIN SCHEDULED AIRFLOW FMCS TAB CONTROLLER SHALL UTILIZE OUTPUT FROM ALL TERMINAL AIR BOX POSITIONS TO RESET THE SUPPLY DUCT DIFFERENTIAL STATIC PRESSURE.

# **TAB CONTROL - VENTILATION**



### **SEQUENCE OF OPERATION:** OCCUPANCY SENSOR CONTROL

- PRIMARY OCCUPANCY SHALL BE SCHEDULED THROUGH THE BUILDING AUTOMATION SYSTEM (FMCS). REFER TO SPECIFICATIONS.
- IF FMCS IS SCHEDULED OCCUPIED AND SENSOR INDICATES OCCUPANCY, THEN THE TAB DAMPER SHALL CONTROL PER CO2 SENSOR CONTORL LISTED BELOW. IF FMCS IS SCHEDULED OCCUPIED AND THE SENSOR INDICATES UNOCCUPIED, THEN THE TAB DAMPER
- IF THE FMCS IS SCHEDULED UNOCCUPIED AND THE SENSOR INDICATES OCCUPANCY, THEN THE TAB DAMPER SHALL CLOSE. ALL PROGRAMMING FOR THE ABOVE SHALL RESIDE IN THE TERMINAL UNIT CONTROLLER, AND
- SUPERVISORY CONTROLLER SHALL NOT BE REQUIRED TO RESET ANY FLOW OR TEMPERATURE SETPOINTS BASED ON OCCUPANCY SENSOR STATUS. FMCS TAB CONTROLLER SHALL UTILIZE OUTPUT FROM ALL TERMINAL AIR BOX POSITIONS TO RESET THE SUPPLY DUCT DIFFERENTIAL STATIC PRESSURE.
- CO2 SENSOR CONTROL
- CO2 LEVELS SHALL ALTER SEQUENCES ONLY DURING SCHEDULED OCCUPIED HOURS. NOMINAL/ SETPOINT CO2 LEVEL IS 1000 (ADJ.) PPM. ASSUMMED AMBIENT CO2 LEVEL IS 400 (ADJ.) PPM WHEN THE ZONE CO2 SENSOR READING INDICATES THAT THE ZONE CO2 CONCENTRATION IS EQUAL TO OR LESS THAN THE AMBIENT CONCENTRATION OF 400 PPM (ADJ.), THE DAMPER SHALL MODULATE TO MAINTAIN THE MINIMUM SCHEDULED AIRFLOW RATE.
- SETPONIT OF 1000 PPM (ADJ.), THE DAMPER SHALL MODULATE TO MAINTAIN THE MAXIMUM SCHEDULED AIRFLOW RATE WHEN THE ZONE CO2 CONCENTRATION IS BETWEEN AMBIENT AND STEADY STATE CO2 SETPOINT CONCENTRATIONS, THE DAMPER SHALL MODULATE TO PROVIDE AN AIRFLOW RATE THAT IS LINEARLY PROPORTIONAL BETWEEN THE AMBIENT (400 PPM ADJ.) AND STEADY STATE SETPOINTS (1000 PPM

WHEN THE ZONE CO2 CONCENTRATION IS EQUAL TO OR HIGHER THAN THE STEADY STATE CO2

- ALARMS, INTERLOCKS & SAFETIES:
- SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF THE SPACE CO2 LEVEL EXCEEDS 1100 (ADJ.)

MOD.

FMCS TAB CONTROLLER SHALL MODULATE THE TAB DAMPER TO

THE FMCS SHALL UTILIZE OUTPUT FROM ALL TERMINAL AIR BOX

POSITIONS TO RESET THE EXHAUST DUCT DIFFERENTIAL STATIC

TAB CONTROL EXHAUST - CONSTANT

2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

MAINTAIN SCHEDULED AIRFLOW RATE DURING OCCUPIED

AIRFLOW\

VELOCITY AND -STATIC SENSOR

PRESSURE INDEPENDENT TERMINAL AIR BOX (TAB)

PRESSURE.

SEQUENCE OF OPERATION:

**EXHAUST AIF** FROM SPACE

TAB CONTROL - DEMAND CONTROL VENTILATION

### - LOCATE IN MECHANICAL MOD CLOSET 104 TO GEOTHERMAL GWR BOREFIELD PSTN **)** FDBK Al PRESS. COMMUNICATION LINK BETWEEN VFD GATEWAY & FMCS (TYPICAL EACH VFD)

COMMUNICATION LINK BETWEEN VFD GATEWAY & FMCS (TYPICAL EACH VFD)

**CONTROL SEQUENCE OF OPERATION:** WATER SOURCE VARIABLE REFRIGERANT FLOW (VRF) CONDENSING UNITS REMOVE HEAT FROM A GEOTHERMAL WATER LOOP WHEN THEY ARE IN HEATING MODE (ADDING HEAT TO THE BUILDING) AND REJECT HEAT TO THE CIRCULATING WATER LOOP

WHEN THEY ARE IN COOLING MODE (TAKING HEAT OUT OF THE BUILDING). THE FMCS SHALL SWITCH THE GEOTHERMAL WATER LOOP OPERATING MODE BASED ON THE FOLLOWING: HEATING MODE: WHEN GWR TEMP IS BELOW 45°F (ADJ.) BYPASS VALVE SHALL BE CLOSED. • ENTERING/EXITING HEATING MODE: WHEN GWR TEMP RISES/FALLS BETWEEN 45°F (ADJ.) AND 50°F (ADJ.) BYPASS VALVE SHALL MODULATE LINEARLY CLOSED. • FLOATING MODE: WHEN GWR TEMP IS BETWEEN 50°F (ADJ.) AND 75°F (ADJ.) BYPASS VALVE SHALL BE OPEN.

• ENTERING/EXITING COOLING MODE: WHEN GWR TEMP RISES/FALLS BETWEEN 75°F (ADJ.) AND 80°F (ADJ.) BYPASS VALVE SHALL MODULATE LINEARLY CLOSED.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

LOOP CIRCULATING PUMP SHALL BE STARTED AND STOPPED THROUGH A HAND-OFF-AUTO SWITCH ON THE FACE OF THE VFD. WHEN PLACED IN THE HAND POSITION THE PUMP SHALL RUN CONTINUOUSLY. WHEN PLACED IN THE AUTO POSITION THE FMCS SHALL CONTROL PUMP OPERATION. WHEN PLACED IN THE OFF POSITION THE PUMP MOTOR SHALL BE DE-ENERGIZED. THE LEAD PUMP SHALL RUN WHENEVER ANY OF THE FOLLOWING ARE ENABLED: HP-1, HP-2, WWHP-1. FMCS SHALL AUTOMATICALLY SWITCH THE LEAD AND LAG PUMP

ON A WEEKLY BASIS TO EQUALIZE RUN TIME. ONLY ONE GEOTHERMAL WATER PUMP SHALL RUN AT TIME. THE SECOND HEATING WATER PUMP IS FULLY REDUNDANT. FMCS SHALL AUTOMATICALLY ROTATE THE LEAD HEATING WATER PUMP ONCE/WEEK (10:00 AM EACH TUESDAY, ADJ.) TO EQUALIZE RUN TIME BETWEEN PUMPS. PROVIDE GRAPHICAL BUTTON ON OPERATOR WORKSTATION GRAPHICAL SCREEN TO ALLOW FMCS OPERATOR TO SWITCH LEAD PUMP TO NEXT ROTATION IN THE EVENT THE CURRENT LEAD PUMP REQUIRES

FMCS SHALL MODULATE SIGNAL TO LEAD PUMP VFD AS REQUIRED TO MAINTAIN HEATING WATER DIFFERENTIAL PRESSURE (DP) SETPOINT IN ADDITION TO MAINTAINING MINIMUM FLOW THROUGH THE WWHP-1 AS REQUIRED PER MANUFACTURER REQUIREMENTS. FMCS SHALL RESET GEOTHERMAL LOOP WATER | DIFFERENTIAL PRESSURE (DP) SETPOINT AS REQUIRED TO MAINTAIN AT LEAST 10 PSI (ADJ.) PRESSURE AT PRESSURE SENSOR

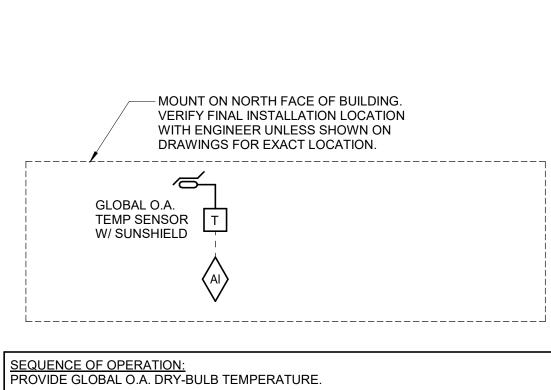
FINAL DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED BY THE BALANCING CONTRACTOR.

COOLING MODE: WHEN GWR TEMP IS ABOVE 80°F (ADJ.) BYPASS VALVE SHALL BE CLOSED.

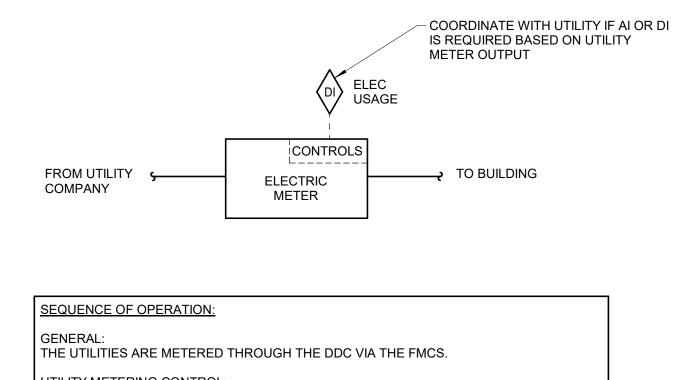
WHEN THE LEAD PUMP IS AT MINIMUM SPEED FOR 15 MINUTES (ADJ.) AND THE WSHP AND VRF COND UNITS ARE DISABLED, THE PUMP SHALL BE DE-ENERGIZED. WHEN THE LEAD PUMP IS OFF AND THE WSHP OR ONE OF THE VRF COND. UNITS IS ENABLED, THE WSHP AND VRF COND UNITS SHALL REMAIN DE-ENERGIZED FOR 5 MINUTES (ADJ.). AFTER THE LEAD PUMP IS ENABLED, FLOW IS PROVED AND THE ASSOCIATED CONTROL VALVE IS OPENED

ALARMS, INTERLOCKS & SAFETIES: AN ALARM SHALL BE INDICATED TO THE FMCS OPERATOR WORKSTATION IN THE EVENT ANY OF THE FOLLOWING OCCUR: AN ALARM IS INDICATED AT ANY VFD.

# GEOTHERMAL LOOP CONTROL NO SCALE



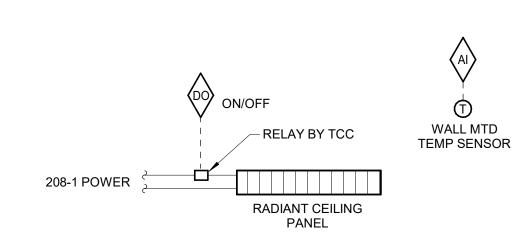
GLOBAL SENSORS SHALL CONTINUOUSLY UPDATE FMCS FOR USE IN CONTROLLING MECHANICAL EQUIPMENT AS REQUIRED IN SEQUENCES OF OPERATION.



UTILITY METERING CONTROL: ELECTRIC METERING: THE TCC SHALL CONNECT THE FMCS TO THE ELECTRICAL METER FOR ELECTRICAL USAGE INFORMATION.

11 | 12

| 13 |



**TEMPERATURE CONTROL GENERAL NOTES:** 

APPLY TO WHICH ITEMS OF EQUIPMENT, REFER TO TERMINAL AIR BOX (TAB) SCHEDULES

1. REFER TO EQUIPMENT SCHEDULES TO CROSS REFERENCE WHICH CONTROL DIAGRAMS

2. EACH D.I., D.O., A.I. AND A.O. POINT SHOWN FOR ALL CONTROL DIAGRAMS SHALL BE

3. ALL WIRING, CONTROL COMPONENTS, DEVICES AND PROGRAMMING SHOWN ON THESE

4. ALL ACTUATORS SHALL BE OF THE ELECTRICAL TYPE FOR THIS PROJECT UNLESS AN

5. ALL MODULATING DAMPER AND VALVE ACTUATORS SHOWN WITH POSITION FEEDBACK SHALL HAVE THE VALVE POSITION DISPLAYED ON GRAPHICAL SCREEN ADJACENT TO THE

CONTROL DRAWINGS SHALL BE PROVIDED BY THE TCC UNLESS SPECIFICALLY NOTED

ACTUATOR IS SPECIFICALLY INDICATED ON THE DRAWINGS OR SPECIFICATIONS TO BE

DAMPER/VALVE COMMAND SIGNAL. DISPLAYED VALVE POSITION SHALL BE FROM THE FEEDBACK DEVICE/CIRCUIT (OUTPUT SIGNAL FROM THE FMCS TO THE ACTUATOR IS NOT

PRESSURE TRANSMITTERS WHOSE SIGNAL IS UTILIZED FOR MAINTAINING DUCT STATIC

PRESSURE SHALL BE WIRED DIRECTLY TO THE CONTROLLER WHICH MODULATES FAN SPEED. SIGNAL SHALL BE COMPLETELY INDEPENDENT OF THE FMCS NETWORK.

SHALL BE MOUNTED IN STEEL ENCLOSURES WITH STEEL MOUNTING BACKPLATES PER

8. PRESSURE TRANSMITTERS WHOSE SIGNAL IS UTILIZED FOR MAINTAINING DIFFERENTIAL

9. ALL CONTROL COMPONENTS SUCH AS RELAYS, SWITCHES. DDC CONTROLLERS. ETC.

OPERATION AND CONTROL DIAGRAM INDICATING THE POINTS, COMPONENTS AND OPERATION OF EQUIPMENT ASSOCIATED WITH EACH PANEL. REFER TO SECTION 23 09 00

11. TCC SHALL WIRE THE CONTROL SIGNAL FROM THE ASSOCIATED AIR HANDLING UNIT TO

AIR HANDLING UNIT. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS. TCC SHALL

MULTIPLE SENSORS AND SWITCHES AS NEEDED TO ACHIEVE REQUIRED ELEMENT

14. CONTROL DIAGRAMS ARE SCHEMATIC IN NATURE AND DO NOT SHOW ALL REQUIRED

EQUIPMENT TO BE CONTROLLED AS DESCRIBED IN THE SEQUENCE OF OPERATION

SHALL BE MINIMUM 1 LINEAR FOOT PER SQUARE FOOT OF COIL SURFACE AREA. PROVIDE

LENGTHS. LOCATE RESET SWITCHES MAX. 6'-6" ABOVE ADJACENT STANDING SURFACE (I.E.

CONTROL DEVICES AND COMPONENTS. REFER TO FLOOR PLANS, FLOW DIAGRAMS AND DETAILS FOR ADDITIONAL CONTROL DEVICES, COMPONENTS AND REQUIREMENTS NOT

5. TCC SHALL PROVIDE ALL CONTROL COMPONENTS AND ACCESSORIES AS REQUIRED FOR

REGARDLESS OF WHETHER ALL CONTROL COMPONENTS OR POINTS ARE SHOWN IN THE

OTHER ELECTRICAL COMPONENTS REQUIRED FOR COMPLETE INSTALLATION.

EXTEND AND TERMINATE WIRING AS REQUIRED FOR EQUIPMENT SHUTDOWN.

CONTROL THE OPERATION OF SMOKE DAMPERS IN ACCORDANCE WITH SEQUENCE OF

DISCRETE FROM ALL OTHER POINTS EXCEPT AS SPECIFICALLY NOTED.

FOR TEMP SENSOR REQUIREMENTS FOR EACH TAB.

COMPLETELY INDEPENDENT OF THE FMCS NETWORK.

ARE NOT ACCEPTABLE).

SPECIFICATION 23 09 00.

FOR ADDITIONAL REQUIREMENTS.

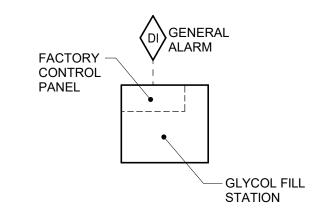
SHOWN ON THESE CONTROL DRAWINGS.

ASSOCIATED CONTROL DIAGRAM.

SEQUENCE OF OPERATION: WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE 60°F (ADJ.), THE RADIANT CEILING PANEL SHALL BE DISABLED. WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 60°F (ADJ.), TEMPERATURE SENSOR SHALL ENABLE/DISABLE THE RADIANT CEILING PANEL TO MAINTAIN A SPACE TEMPERATURE OF 70°F (ADJ.). ALARMS, INTERLOCKS & SAFETIES: SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF SPACE TEMPERATURE FALLS 10°F (ADJ.) BELOW SETPOINT.

# STAND ALONE RCP CONTROL

1. RCP LOCATED IN ROOM 135 SHALL BE CONTROLLED BY VRF IU-102. TCC TO PROVIDE RELAY AND ROUTE CONTROL WIRING BETWEEN RADIANT CEILING PANEL AND VRF UNIT.



SEQUENCE OF OPERATION:

| 15

THE GLYCOL FEED SYSTEM CONTROLLER SHALL OPERATE THE SYSTEM TO MAINTAIN THE SPECIFIED PRESSURE IN THE WATER SYSTEM.

<u> ALARMS, INTERLOCKS, AND SAFETIES:</u>

AN ALARM SHALL BE GENERATED AT THE FMCS OPERATOR INTERFACE IF THE GLYCOL CONTROLLER INDICATES AN ALARM.

GLYCOL FILL STATION CONTROL DIAGRAM

16 | 17

18

20

**CONTROL SYMBOL LIST** NOT ALL SYMBOLS MAY APPLY SYMBOL: DESCRIPTION: GEOTHERMAL WATER RETURN ——GWS—— | GEOTHERMAL WATER SUPPLY CONTROL VALVE (THREE-WAY) CONTROL VALVE (TWO-WAY) SOLENOID VALVE CHECK VALVE 6. MODULATING SIGNALS SHALL BE DISPAYED AS % OPEN (SIGNALS DISPLAYED AS % CLOSED THERMOSTAT THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE TEMPERATURE SENSOR (DUCT MOUNTED) PRESSURE OF ANY PUMPED WATER SYSTEM (E.G. GLYCOL WATER AND THE LIKE) SHALL BE TEMPERATURE SENSOR WITH WELL WIRED DIRECTLY TO THE CONTROLLER WHICH MODULATES PUMP SPEED. SIGNAL SHALL BE THERMOMETER WITH WELL (DIAL TYPE) 10. EACH CONTROL PANEL SHALL HAVE A LAMINATED COPY OF THE APPLICABLE SEQUENCE OF THERMOMETER WITH WELL (FILLED TYPE) **AVERAGING TEMPERATURE** OPERATION. TCC SHALL PROVIDE ALL WIRING, CONDUIT, TRANSFORMERS, FUSING AND ALL 12. TCC SHALL EXTEND CONTROL SIGNAL FROM ADDRESSABLE RELAY DEVICE SERVING EACH LOW LIMIT TEMPERATURE 13. ELEMENT LENGTHS FOR BOTH MIXED AIR TEMP SENSORS AND LOW LIMIT TEMP SWITCHES ROOF, PLATFORM OR FLOOR) SO THE RESET SWITCH CAN BE CYCLED WITHOUT THE NEED PROBE TEMPERATURE SENSOR PRESSURE SENSOR (FURNISHED WITH BALL VALVE) PRESSURE GAUGE (FURNISHED WITH BALL VALVE) DIFFERENTIAL PRESSURE SENSOR PRESSURE SENSOR (DUCT MOUNTED) STATIC SWITCH **ANALOG INPUT** DIGITAL INPUT DIGITAL OUTPUT ANALOG OUTPUT **HUMIDITY SENSOR** FLOW METER FLOW SWITCH HUMIDITY SENSOR (DUCT MOUNTED) FLOW SENSOR AIR FLOW SWITCH CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR **DUCT FLOW METER** CARBON MONOXIDE SENSOR (DUCT MOUNTED) CARBON DIOXIDE SENSOR (DUCT MOUNTED) DUCT SMOKE DETECTOR HEATING/ COOLING COIL TERMINAL AIR BOX AIR BLENDER OCCUPANCY SENSOR S SENSOR ACTUATOR MANUAL MOTOR STARTER w/THERMAL OVERLOAD **CURRENT SWITCH** 

MOTOR

**CONTACTOR** 

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NORMALL CLOSED CONTACT NORMALLY OPEN CONTACT OPPOSED BLADE DAMPER

PARALLEL BLADE DAMPER

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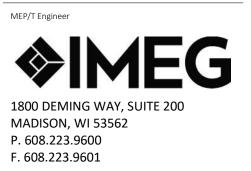






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Key Plan

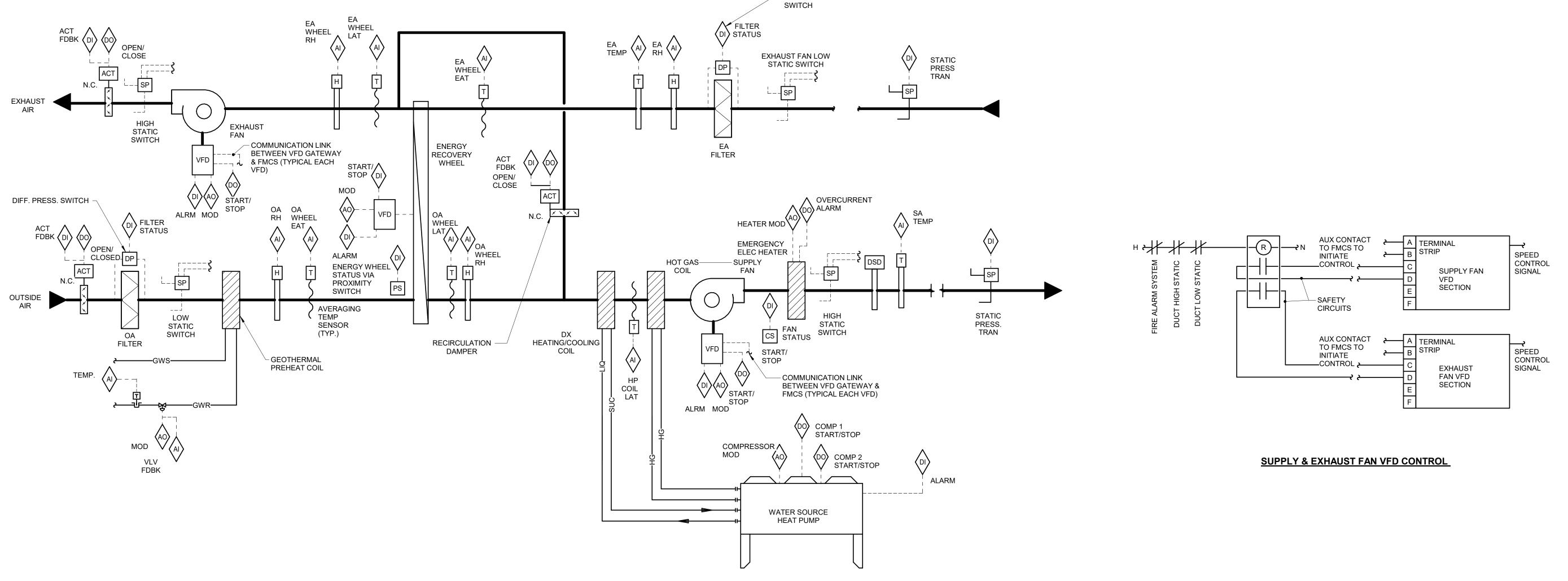
City Contract No.

OPN Project No 17609000 Sheet Issue Date

**MECHANICAL** 

Sheet Number

BID DOCUMENTS Sheet Name **CONTROL DIAGRAMS** 



**SEQUENCE OF OPERATION:** 

WHEN AHU IS INDEXED TO RUN, THE FOLLOWING SHALL OCCUR:

THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL OPEN AFTER A 30 SECOND (ADJ.) DELAY TO ALLOW STARTUP OF AHU-1. AFTER OUTSIDE AIR AND EXHAUST AIR DAMPERS ARE PROVEN OPEN THE SUPPLY FAN SHALL BE ENABLED TO RUN.

SUPPLY FAN OPERATION:
FMCS SHALL MODULATE SIGNAL TO SUPPLY FAN VFD AS REQUIRED TO MAINTAIN THE DUCT STATIC PRESSURE AS MEASURED BY STATIC PRESSURE TRANSMITTER NEAR THE END OF THE CRITICAL DUCT BRANCH.

EXHAUST FAN OPERATION:
EXHAUST FAN SHALL BE INDEXED TO RUN WHENEVER THE SUPPLY FAN IS INDEXED TO RUN. FMCS SHALL MODULATE SIGNAL TO EXHAUST FAN VFD AS REQUIRED TO MAINTAIN THE DUCT STATIC PRESSURE AS MEASURED BY STATIC PRESSURE TRANSMITTER NEAR THE END OF THE CRITICAL DUCT BRANCH.

DUCT STATIC PRESSURE RESET OPERATION:
FMCS SHALL RESET DUCT STATIC PRESSURE SETPOINT BELOW THE MAXIMUM SETPOINT AS REQUIRED TO MAINTAIN AT LEAST ONE TAB DAMPER (SUPPLY OR EXHAUST SYSTEMS.)
FMCS SHALL RESET DUCT STATIC PRESSURE SETPOINT BELOW THE MAXIMUM SETPOINT AS REQUIRED TO MAINTAIN AT LEAST ONE TAB DAMPER (SUPPLY AND EXHAUST SYSTEMS.)

GLYCOL WATER PRE-HEAT COIL CONTROL:

THE GLYCOL WATER PRE-HEAT COIL SHALL BE USED AS A FREE PRE-HEATER PRIOR TO OUTSIDE AIR ENTERING THE ENERGY RECOVERY WHEEL. THE GLYCOL WATER VALVE SHALL MODULATE TO A MINIMUM OF 10% (ADJ.) OPEN WHERE VALVE SHALL BE OVERRIDED AIR TEMPERATURES BELOW 10°F (ADJ.) IF OA WHEEL FAT SENSES AIR TEMPERATURES BELOW 10°F (ADJ.) IF OA WHEEL FAT SENSES AIR TEMPERATURES BELOW 10°F (ADJ.) IF OA WHEEL FAT SENSES AIR TEMPERATURE MEASUREMENT. OUTSIDE AIR TEMPERATURES ARE BETWEEN 30°F (ADJ.) AND 10°F (ADJ.) AND 10°F (ADJ.). THE GLYCOL WATER CONTRÓL VALVE SHALL BE OVERRIDEN TO 100% OPEN REGARDLESS OF GLOBAL OUTSIDE AIR TEMPERATURES BELOW 10°F (ADJ.). THE GLYCOL WATER CONTRÓL VALVE SHALL BE OVERRIDEN TO 100% OPEN REGARDLESS OF GLOBAL OUTSIDE AIR TEMPERATURE MEASUREMENT.

DOWN AND ALARM TO OPERATOR INTERFACE. **ENERGY RECOVERY WHEEL CONTROL** 

ENERGY RECOVERY WHEEL DISCHARGE AIR TEMPERATURE CONTROL: THE ENERGY RECOVERY WHEEL SHALL BE WODULATED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT SUBJECT TO THE FROST

CONTROL OVERRIDE. THE ENERGY RECOVERY WHEEL SHALL BE INDEXED OFF WHENEVER THE OUTDOOR AIR TEMPERATURE IS LESS THAN THE EA WHEEL EAT AND THE DISCHARGE TEMPERATURE SETPOINT IS LESS THAN THE OUTDOOR AIR TEMPERATURE. DEFROST CONTROL: OVERRIDE THE HEATING WHEEL SPEED CONTROL TO LIMIT THE LEAVING EXHAUST AIR TEMPERATURE FROM THE WHEEL TO 15°F (ADJ.) AT A RETURN AIR RELATIVE HUMIDITY OF 30% RH AND RESET TO 5°F (ADJ.) AT 20% RH.

PURGE CONTROL: WHEN THE HEAT WHEEL IS DEACTIVATED, THE WHEEL SHALL RUN FOR 20 SECONDS AT MINIMUM SPEED EVERY 30 MINUTES TO KEEP THE ROTOR SURFACE CLEAN. BYPASS DAMPERS SHALL REMAIN OPEN DURING PURGE SEQUENCE.

DISCHARGE AIR TEMPERATURE AND DEHUMIDIFICATION CONTROL: INSTALL A TEMPERATURE SENSOR IN THE SUPPLY DUCT DOWNSTREAM OF THE SUPPLY FAN AND ALSO A TEMPERATURE SENSOR DOWNSTREAM OF THE HEAT PUMP HEATING/COOLING COIL

DISCHARGE AIR TEMPERATURE SETPOINT: DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET LINEARLY PER FOLLOWING SCHEDULE:

DISCHARGE AIR SETPOINT SHALL BE 63°F (ADJ.) WHEN OUTSIDE AIR TEMPERATURE IS ABOVE 80°F (ADJ.). DISCHARGE AIR SETPOINT SHALL BE 70°F (ADJ.) WHEN OUTSIDE AIR TEMPERATURE IS BELOW 40°F (ADJ.).

THE ENERGY RECOVERY WHEEL AND WATER SOURCE HEAT PUMP (WSHP-1) DX COIL SHALL OPERATE IN SEQUENCE TO MAINTAIN THE EXHAUST AIR RELATIVE HUMIDITY UPSTREAM OF ENERGY WHEEL OR ANY SPACE HUMIDITY SENSORS OF ROOMA 114, 115, OR 123 EXCEEDS 55% RH (ADJ.) SETPOINT THE WSHP MAIN COIL COMPRESSORS SHALL MODULATE TO MAINTAIN HUMIDITY SETPOINT BY RESETTING THE COÓLING COIL DISCHARGE AIR SETPOINT TO 55°F (ADJ.) FOR ONE HOUR (ADJ.) BEFORE RELEASE BACK TO NORMAL CONTROL. THE HOT GAS REHEAT COIL SHALL MODULATE TO MAINTAIN A SUPPLY DUCT DISCHARGE AIR TEMPERATURE SETPOINT. WHEN IN HEATING MODE THE WSHP COMPRÉSSOR SHALL MODULATE TO MAINTAIN SUPPLY DUCT DISCHARGE TEMPERATURE SETPOINT.

EMERGENCY ELECTRIC HEATING COIL SHALL BE THE FINAL STAGE OF HEAT AND ONLY USED TO ACHIEVE DISCHARGE AIR TEMPERATURE SETPOINT. FMCS SHALL MODULATE SIGNAL TO ELECTRIC HEAT CONTROL PANEL TO MODULATE SCR CONTROLLED ELECTRIC HEATER. IF EMERGENCY ELECTRIC HEAT IS BEING USED AN NOTIFICATION SHALL ALERT TO OPERATOR INTERFACE TO ANNOCIATE THAT EMERGENCY ELECTRIC HEAT IS IN OPERATION.

THE DDC SYSTEM SHALL ALARM TO THE OPERATOR INTERFACE WHEN THE DISCHARGE AIR TEMPERATURE IS 10°F (ADJ.) FROM SETPOINT OR WHEN THE EXHAUST AIR RELATIVE HUMIDITY IS 10% FROM SETPOINT (ADJ.).

ALARMS, INTERLOCKS, AND SAFETIES:
WHEN FIRE ALARM CONTROL PANEL INDICATES AN ALARM CONDITION, AHU SHALL BE SHUTDOWN.

THE FOLLOWING CONDITIONS SHALL SHUTDOWN THE AHU AND SHALL INDICATE AN ALARM CONDITION AT THE FMCS WORKSTATION:

- LOW STATIC PRESSURE SWITCH INDICATES EXHAUST DUCT PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS. HIGH STATIC PRESSURE SWITCH INDICATES EXHAUST DUCT STATIC PRESSURE GREATER THAN THE SPECIFIED DUCT PRESSURE CLASS.
- LOW STATIC PRESSURE SWITCH INDICATES OUTSIDE AIR SECTION PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS OF THE OUTSIDE AIR DUCTWORK. HIGH STATIC PRESSURE SWITCH INDICATES SUPPLY DUCT STATIC PRESSURE GREATER THAN THE SPECIFIED DUCT PRESSURE CLASS.
- ANY ALARM CONDITION AS NOTED IN GLYCOL WATER PRE-HEAT COIL CONTROL SEQUENCE.
- THE FOLLOWING CONDITIONS SHALL INDICATE AN ALARM AT THE FMCS, HOWEVER AHU SHALL CONTINUE TO OPERATE: AN ALARM IS INDICATED AT ANY SUPPLY FAN VFD OR EXHAUST FAN VFD.
- DIFFERENTIAL PRESSURE SWITCH ACROSS ANY MERV 8 FILTER BANK EXCEEDS 0.55 INCHES W.G. (ADJ.) OF IT ANY MERV 13 FILTER BANK EXCEEDS 0.6 INCHES W.G. (ADJ.) SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF THE DISCHARGE AIR TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT FOR 10 MINUTES (ADJ.).
- THE HEAT WHEEL COMES WITH FACTORY EQUIPPED WITH A PROXIMITY SWITCH THAT SHALL PROVIDE A DRY CONTACT IN PUT TO THE DDC SYSTEM. IF THE WHEEL IS INDEXED TO RUN AND TWO SWITCH CLOSURES ARE NOT SEEN WITH 10 MINUTES, AN ALARM WILL BE SENT THROUGH THE DDC SYSTEM SIGNALING A WHEEL ROTATION FAILURE. SEND AN ALARM TO OPERATOR INTERFACE IS SUM OF SUPPLY AIR TERMINAL BOXES FALLS BELOW 10% OF SET POINT FOR MORE THAN 5 MINUTES (ADJ.) EMERGENCY ELECTRIC HEAT IS CALLED FOR OPERATION AND ELECTRIC HEAT OVERCURRENT ALARM CONTACT ON ELECTRIC HEATER CONTROL PANEL IS INDICATING AN ALARM CONDITION.

IN THE EVENT SUPPLY FAN IS NOT RUNNING (AS INDICATED BY THE VFD MONITORING) EXHAUST AIR FAN SHALL BE DE-ENERGIZED.

WHENEVER AHU IS SHUTDOWN THE FOLLOWING SHALL OCCUR: THE OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPER SHALL CLOSE. CONDENSING UNIT SHALL BE DENERGIZED.

MAXIMUM HUMIDITY SETPOINT 55% (ADJ.).

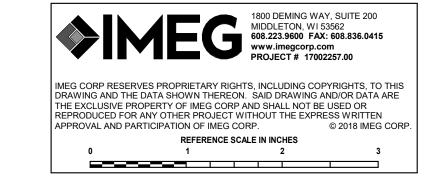
SUPPLY FAN AND EXHAUST FAN VFDS SHALL BE DE-ENERGIZED ENERGY RECOVERY WHEEL SHALL STOP.

UNOCCUPIED MODE:
UNIT SHALL BE DISABLED DURING UNOCCUPIED HOURS. OCCUPIED/UNOCCUPIED HOURS SHALL BE COORDINATED WITH OWNER.

RECIRCULATION MODE:
UNIT CONTAINS A RECIRCULATION DAMPER THAT IS MEANT FOR EMERGENCY HEATING/COOLING PURPOSES. DURING RECIRCULATION MODE OUTSIDE AIR DAMPER SHALL BE CLOSED. DURING RECIRCULATION MODE SUPPLY FAN, HEATING/COOLING COIL, HOT GAS A RECIRCULATION DAMPER SHALL BE CLOSED. TO MAINTAIN AN EXHAUST AIR TEMPERATURE OF 70°F IN HEATING AND 74°F IN COOLING. COIL, AND EMERGENCY HEATING ELECTRIC COIL SHALL OPERATE UNDER NORMAL CONDITIONS. EXHAUST FAN AND ENERGY WHEEL SHALL BE DISABLED. ALL TERMINAL AIR BOXES SHALL CONTROL TO MAXIMUM SET POINTS. DISCHARGE AIR TEMPERATURE OF 70°F IN HEATING AND 74°F IN COOLING. RECIRCULATION MODE EMERGENCY OPERATION SHALL HAVE A SELECTABLE ENABLE/DISABLE POINT THRUOGH THE OPERATOR INTERFACE AND THROUGH A TOGGLE IN THE DDC CONTROL PANEL.

<u>GRAPHICAL DISPLAY:</u> DISPLAY THE GLOBAL OA TEMPERATURE ON AHU GRAPHIC PAGE.





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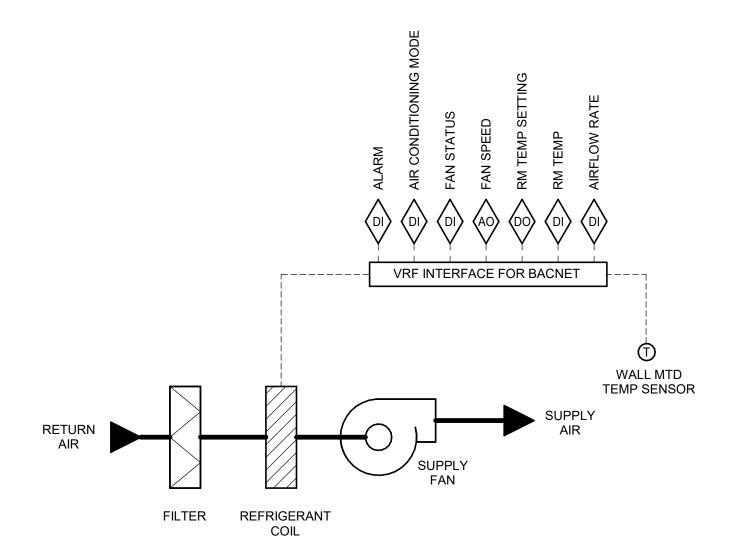


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> **CONTROL DIAGRAMS MECHANICAL** Sheet Number



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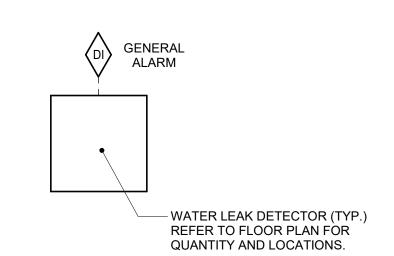
VRF SYSTEM CONTROLS SHALL OPERATE THE FAN COIL UNIT AS REQUIRED TO MAINTAIN SPACE TEMPERATURE. FAN SHALL RUN CONTINUOUSLY MODULATING SPEED WITH ROOM LOAD DURING OCCUPIED MODE. HEATING AND COOLING SHALL CYCLE AS NEEDED TO MAINTAIN SPACE TEMPERATURE SETPOINT.

DURING UNOCCUPIED MODE, FAN AND HEATING/COOLING STAGES SHALL CYCLE AS REQUIRED TO MAINTAIN

THE BMS SYSTEM SHALL COMMUNICATE THE FOLLOWING TEMPERATURE SETPOINTS TO THE VRF CONTROLLER: A. OCCUPIED COOLING: 74°F(ADJ.)

B. OCCUPIED HEATING: 70°F(ADJ.) UNOCCUPIED COOLING: 76°F(ADJ.) D. UNOCCUPIED HEATING: 66°F(ADJ.)

VRF IDU CONTROL

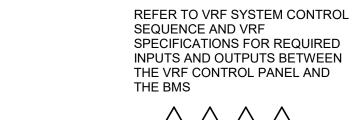


SEQUENCE OF OPERATION:

FMCS SHALL MONITOR EACH WATER LEAK DETECTOR AND ALARM TO THE OPERATOR INTERFACE IF ANY LEAK DETECTOR DETECTS WATER.

CONTROL CONTRACTOR SHALL PROVIDE GRAPHIC WITH FLOOR PLAN OF LIBRARY AND LOCATIONS OF EACH WATER LEAK DETECTOR IN THE APPROPRIATE INSTALLED LOCATION ON THE FLOOR PLAN TO ALERT STAFF OF THE LOCATION OF THE LEAK.





**COMMUNICATIONS LINK** COMMUNICATIONS LINK BETWEEN VRF CONTROL 2-VRF INTERFACE FOR BACNET BETWEEN VRF CONTROL PANEL AND ALL VRF PANEL AND BMS

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

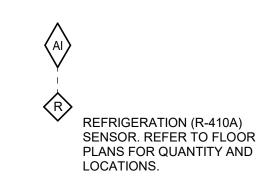
**EQUIPMENT** 

SEQUENCE OF OPERATION: VRF INDOOR UNITS AND VRF HEAT PUMP UNITS SHALL BE CONTROLLED BY FACTORY PROVIDED CONTROL SYSTEM. THE FACTORY CONTROL PANEL SHALL BE PROVIDED WITH A COMMUNICATION LINK BETWEEN THE PROPRIETARY CONTROL SYSTEM TO THE BMS. THE BMS SHALL CONVERT ALL METRIC OUTPUTS FROM VRF CONTROLLER TO IMPERIAL UNITS FOR DISPLAY (I.E. CELSIUS TO FAHRENHEIT) THE VRF CONTROLLER SHALL PROVIDE THE FOLLOWING MONITORING POINTS TO THE BMS AT A MINIMUM: COMPRESSOR STATUS OF EACH HEAT PUMP FILTER STATUS OF EACH INDOOR UNIT GENERAL ALARM SPACE TEMPERATURE SPACE THERMOSTAT STATUS AIR-CONDITIONING MODE STATUS (HEAT/COOL/VENTILATION) THE VRF CONTROLLER SHALL PROVIDE THE FOLLOWING CONTROLLABLE/ADJUSTABLE POINTS TO THE BMS AT A START/STOP AIR-CONDITIONING MODE SPACE TEMPERATURE SETPOINT FILTER ALARM RESET AIRFLOW RATE SETPOINT (HIGH/MEDIUM/LOW) AIR DIRECTION SETTING (FOR EXPOSED UNITS WITH ADJUSTABLE AIR PATTERNS) VRF CONTROLLER SHALL PROVIDE 0-10 VDC OUTPUT SIGNAL PER OUTDOOR UNIT FOR CONTROL OF MODULATING CONTROL VALVE PROVIDED BY TCC FOR HEAD PRESSURE CONTROL. ALARMS, INTERLOCKS & SAFETIES:
BMS SHALL INDICATE AN ALARM TO THE BMS OPERATOR WORKSTATION IN THE EVENT THE FOLLOWING OCCUR: A HEAT PUMP CALLS FOR COOLING OR HEATING BUT THE ASSOCIATED FLOW SWITCH DOES NOT PROVE GENERAL ALARM CONDITION IS REPORTED FROM THE VRF CONTROL PANEL TO THE BMS.

VRF SYSTEM REPORT GENERATION BMS SHALL MONITOR THE FOLLOWING POINTS ON 5 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR A 14-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL OVERWRITE THE OLDEST VALUES: DATE GLOBAL OUTSIDE AIR TEMP. (°F) LOOP WATER SUPPLY TEMP. (°F) OPERATIONAL STATUS OF HEAT PUMPS (ENABLED/DISABLED) VRF LOOP WATER FLOW (GPM) EACH VRF HEAT PUMP RETURN WATER TEMP (°F) ITHIS INFORMATION SHALL BE ACCESSIBLE TO VIEW IN EITHER TABULAR OR GRAPHICAL FORM ON THE BMS OPERATOR INTERFACE.

HIGH CONDENSATE LEVEL ALARM

### VRF SYSTEM CONTROL NO SCALE

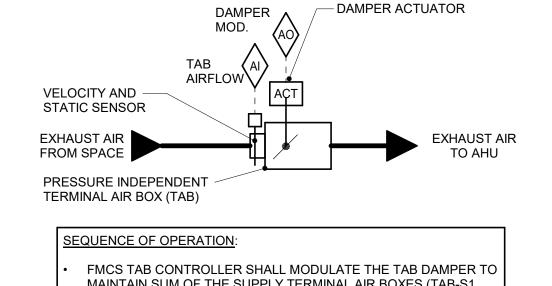


**SEQUENCE OF OPERATION:** FMCS SHALL MONITOR EACH REFRIGERANT SENSOR AND ALARM TO THE OPERATOR INTERFACE IF ANY SENSOR DETECTS R-410A LEVELS ABOVE 1,000 PPM (ADJ.) TO ALERT MAINTENANCE OF A POSSIBLE LEAK FOR REPAIR PURPOSES.

CONTROL CONTRACTOR SHALL PROVIDE GRAPHIC WITH FLOOR PLAN OF LIBRARY AND LOCATIONS OF EACH REFRIGERANT SENSOR IN THE APPROPRIATE INSTALLED LOCATION ON THE FLOOR PLAN TO ALERT STAFF OF THE LOCATION OF THE LEAK.

# REFRIGERANT SENSOR CONTROL

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25



MAINTAIN SUM OF THE SUPPLY TERMINAL AIR BOXES (TAB-S1, TAB-S2, TAB-S3, TAB-S4, TAB-S5, TAB-S6) MINUS THE SUM OF EXHAUST BOXES TAB-E2, TAB-E3, TAB-E4) MINUS 400 CFM (ADJ.) FOR SPACE PRESSURIZATION. THE FMCS SHALL UTILIZE OUTPUT FROM ALL TERMINAL AIR BOX POSITIONS TO RESET THE EXHAUST DUCT DIFFERENTIAL STATIC PRESSURE.

TAB CONTROL EXHAUST - VARIABLE NO SCALE

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**Foundation** 

PINNEY NEIGHBORHOOD LIBRARY 516 COTTAGE GROVE ROAD MADISON, WI



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REFERENCE SCALE IN INCHES

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Sheet Issue Date **BID DOCUMENTS** 

Sheet Name **CONTROL DIAGRAMS -MECHANICAL** Sheet Number

**AIR HANDLING UNIT** 1.PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13. 2.LAT LISTED IS AT LEAVING SIDE OF COOLING COIL. . ENERGY RECOVERY WHEEL SHALL HAVE 310 PURGE CFM. 4. BOTH FANS AND ENERGY WHEEL SHALL HAVE 208-3 POWER. 5. AT LEAST ONE COMPRESSOR SHALL HAVE DIGITAL SCROLL COMPRESSORS. 3. REFER TO SEPERATE SCHEDULES FOR AHU-1 PREHEAT SCHEULE AND AHU-1 EMERGENCY ELECTRIC HEATING COIL. **ELECTRICAL EXHAUST FAN ENERGY RECOVERY WHEEL SA FILTER** SUPPLY FAN DX COIL **EA FILTER** (NOTE 4) CONTROLLER/ CONTROLLER/ **HOT GAS COOLING COIL - DX (NOTE 2) EXHAUST AIR** STARTER STARTER REHEAT SUMMER SUMMER **WINTER** WINTER MODEL REMARKS NOTE 1,2,6 JOHNSON XT PLENUM FAN PLENUM FAN CONTROL **AIR HANDLING UNIT (AHU-1) PREHEAT COIL** AIR HANDLING UNIT (AHU-1) EMERGENCY ELECTRIC HEATING COIL

MITSUBISHI PEFY-P48NMAU-E NOTES 1,6

MITSUBISHI PEFY-P15NMAU-E NOTES 1,6

MITSUBISHI PEFY-P15NMAU-E NOTES 1,6

1.COIL SELECTION IS BASED ON 25% PROPYLENE GLYCOL 1. ELECTRIC COIL SHALL BE SCR CONTROLLED WITH 0-10 VDC INPUT FROM DDC AND ALARM OUTPUT. 2.LAT LISTED IS AT LEAVING SIDE OF COOLING COIL. 2. UNIT SHALL HAVE REMOTE CONTROL PANEL SHIPED LOOSE FOR FIELD MOUNTING **GLYCOL COIL** ELECTRICAL GLYCOL COIL GLYCOL COIL GLYCOL COIL GLYCOL COIL GLYCOL COIL GLYCOL COIL STATIC GLYCOL COIL GLYCOL COIL DISCONNECT CONTROLLER **AIRFLOW AIRFLOW** MAX **HEATING** CFM EAT DB EWT GPM LAT DB LWT PRESSURE TOTAL MBH (CFM) (CFM) EAT AIRFLOW OUTPUT KW PHASE VOLTAGE 4,000 CFM -15 °F 36 °F 16 GPM 6 °F 23 °F 0.07 in-wg 105 5 FT NOTE 1,2,6 2,690 CFM 4,000 CFM 55 70.8 20 MFR 3 208 V 55.5 A VRF INDOOR UNIT SCHEDULE

4.REFER TO SPECIFICATION 23 81 45 FOR DESCRIPTION OF CONTROLS. 5.INDOOR UNIT CFM SELECTED AT HIGH CFM. INDOOR UNIT SHALL HAVE CAPABILITY TO ADJUST CFM FOR FINAL AIR BALANCING UP OR DOWN THROUGH FIELD ADJUSTMENT. 6.DUCTED CONCEALED UNITS SHALL BE PROVIDED WITH SUPPLY AND RETURN DUCT FLANGES. 7. UNIT SHALL INCLUDE AUXILLARY CONTACT TO ENABLE AUXILLARY HEAT EITHER NOW OR IN THE FUTURE. MAX. DIMENSIONS **ELECTRICAL** CONTROLLER/ STARTER COOLING | HEATING **ASSOCIATED** DESIGN TAG **VRF HEAT** COOLING CAPACITY CAPACITY NAME **AREA SERVED** PKFY-P12NHMU-E NOTES 1,6 LIB. MECH SUPERVISOR OFFICE 13 WCCU-100 DRIVE THRU MFR WCCU-100 LIB OFFICES WCCU-100 PEFY-P08NMAU-E NOTES 1,6 STAFF OFFICE 129 PEFY-P08NMAU-E NOTES 1,6 PROJECT WORK ROOM 128 PEFY-P12NMAU-E NOTES 1.6 BREAK ROOM 130 PEFY-P12NMAU-E NOTES 1,6 CART STORAGE WCCU-100 IU-108 IT ROOM WCCU-100 NEW MOMS 123 IU-109 MFR **COMMUNITY ROOM 1** PEFY-P36NMAU-E NOTES 1,6 IU-202 | MEDIA AND PUBLIC COMPUTING 119 MFR PEFY-P24NMAU-E NOTES 1.6 WCCU-200 MFR **FAMILY ROOM 122** WCCU-200 PEFY-P06NMAU-E NOTES 1.6 ADULT QUIET READING WCCU-200 8000 4P STUDY 112 WCCU-200 R410A 84.4 1 7.70 15 A 72000 MITSUBISHI PEFY-P72NMHSU-E NOTES 1,6 IU-206 CHILDRENS COLL EXTERIOR WCCU-200 DUCTED R410A 84.4 72000 AUDULT FICT EXT. WEST MITSUBISHI PEFY-P12NMAU-E NOTES 1,6 AUDULT FICT EXT. SOUTH WCCU-200 MITSUBISHI PEFY-P48NMAU-E NOTES 1,6 CHILDRENS PROGRAM ROOM MITSUBISHI PEFY-P48NMAU-E NOTES 1.6.7 WCCU-200 PLAY LAB 122 MITSUBISHI PEFY-P15NMAU-E NOTES 1,6 4P STUDY 110 MITSUBISHI PEFY-P15NMAU-E NOTES 1,6,7 WCCU-300 IU-302 SMALL UNCONFERENCE 109 WCCU-300 MITSUBISHI PEFY-P18NMAU-E NOTES 1,6,7 CREATOR SPACE MITSUBISHI PEFY-P24NMAU-E NOTES 1,6,7 WCCU-300 LOBBY 102 WCCU-300 MITSUBISHI PEFY-P15NMAU-E NOTES 1,6 CIRCULATION 106 WCCU-300 MFR MITSUBISHI PEFY-P24NMAU-E NOTES 1.6 COMMUNITY ROOM 2 MITSUBISHI PEFY-P36NMAU-E NOTES 1,6 WCCU-300 MITSUBISHI PEFY-P15NMAU-E NOTES 1,6,7 4P STUDY 111 WCCU-300

17000

17000

15000

17000

208

15000 | 17000 | 208 | 1 | 1.45 | 15 A

	T PUMP S										GLYCOL. 3	. UNIT SH	IALL HA	VE HOT	GAS REHEAT CI	RCUIT. 4. UNIT SHALL HA	AVE SCCR RATING OF	TAT LEAST :	20,000 A.
				NOMINAL	COOLING		HEATING	WATER					EAC	H MODU ELE	LE CTRICAL				
TAG	1	COOLING		DESIGN	CAPACITY	MINIMUM	CAPACITY	SOURCE HP								CONTROLLER/STARTER			
NAME	TYPE	EWT	EWT	TONS	втин	EFFICIENCY	BTUH	COP AT OPER	_	WPD	VOLTAGE	PHASES	FLA	MOCP	BY (NOTE A)	BY (NOTE A)	MANUFACTURER	MODEL	REMARKS
WSHP-1	R-410A	90	36	23	277.2	14.01	202.2	3.40	52.5	9.3 FT	208	3	108.0	150	EC	MFR	CLIMATE MASTER	TMW340	NOTE 1, 2, 3, 4

1.25 495 0.6 R410A 55.6

DUCTED 1.25 495 0.6 R410A 55.6

R410A 55.6

15000

15000

			LED CO						OR A CIRCU	JIT SHALL EAST 20,00		ROSS THE	REFRIGERANT	VOLUME LIMIT PER IMC 20	12, TABLE 1103.1. 3	B. UNIT SHALL HAVE	SCCR RATING
				COOLING	HEATING							ELE	CTRICAL				
	COOLING	HEATING	NOMINAL	CAPACITY		NUMBER OF							DISCONNECT	CONTROLLER/STARTER			
TAG NAME	EWT	EWT	DESIGN TONS	BTUH	BTUH	MODULES	<b>GPM</b>	WPD	VOLTAGE	PHASES	MCA	MOCP	BY (NOTE A)	BY (NOTE A)	MANUFACTURER	MODEL	REMARKS
WCCU-100	90	36	8	96,000	108,000	1	25.4	11.2 FT	208	3	19.0	30	EC	MFR	MITSUBISHI	PQRY-P196TLMU-A	NOTE 1,2
WCCU-200	90	36	20	240,000	270,000	1	50.7	21.1 FT	208	3	79.0	125	EC	MFR	MITSUBISHI	PQRY-P1240TLMU-A	NOTE 1,2,3

WCCU-300 90 36 16 192,000 215,000 1 31.7 20.5 FT 208 3 54.0 90 EC MFR MITSUBISHI PQRY-P192TLMU-A NOTE 1,2

<b>PUN</b>	IP S	CHED	ULE														
_						R SPECIFICATION YCOL AND 36°F 1											
										ELEC	TRICAL (NOT	E 1)					
		PUMP FT.	MINIMUM								DISCO	ONNECT	CONTR STAF				
TAG NAME	GPM	HEAD AT DESIGN	PUMP EFFICIENCY	INLET SIZE	IMPELLER SIZE	BRAKE HORSEPOWER	HP (NOTE E)	RPM	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	MANUFACTURER	MODEL	NOTES
P-1	180.0	105.00	67.1	3"	10.375	7.1	10	1800	208	3	TCC	VFD	TCC	VFD	B & G	E-150	NOTE 2
P-2	180.0	105.00	67.1	3"	10.375	7.1	10	1800	208	3	TCC	VFD	TCC	VFD	B & G	E-150	NOTE 2

2.PROVIDE 30% FILTERS FOR EACH UNIT. FILTER MAY BE INTEGRAL OR SUITABLE FOR FIELD INSTALLATION IN FABRICATED FILTER ANGLES. FILTER ANGLES PROVIDED BY M.C

WCCU-300

WCCU-300

29 40 10 WCCU-300

DUCTED

3.UNIT SHALL BE PROVIDED WITH CONDENSATE PUMP.

AUDULT FICT INTERIOR

CHILD COLLECTION

IU-310 | SCHOOL AGE CHILD COLLECTION

IU-308

IU-309

MOT	OR OP	ERA	TED	DAN	1PE	R SCHEDU	JLE						
NOTES:	INIATE DAME			–									
1.COORL	INATE DAMP	ERACIU	ATOR LO	CATION	AND MC	JUNTING REQUIRED	MENIS WITH TER	MPERATURE (	CONTROL CONTRA	CTOR.			
TAG	AREA		ZE	CATION		BLADE	BLADE	MPERATURE (	ACTUATOR TYPE	I		POSITIVE POSITION	
		SI					BLADE		ACTUATOR TYPE	ACTUATOR	POWER FAILURE POSITION		NOTES
TAG	AREA	SI	ZE	CF	М	BLADE	BLADE		ACTUATOR TYPE (NOTE 1)	ACTUATOR			NOTES

					ELECTRIC	CAL					
					DISCO	NNECT	CONTROLLER/	1			
TAG NAME	AREA SERVED	ELEMENT (WATTS)	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	STARTER BY (NOTE A)	CONTROL	MANUFACTURER	MODEL	NOTES
RCP-1	STAFF REST ROOM, DRIVE THROUGH BOOK RETURN	375	208	1	-	-	TCC	8/M550	THERMAL EQUIPMENT SALES	CP375	

GLY	<b>COL FEE</b>	D SYS	TEM								
NOTES: 1.SEE 2	3 21 00 FOR ADDIT	ΓΙΟΝΑL SYST	EM REQUIREME	NTS.							
								ELEC	TRICAL		
TAG		TANK	SYSTEM FILL	PUMP					DISCONNECT BY	CONTROLLER/ STARTER	
NAME	AREA SERVED	<b>VOLUME</b>	PRESSURE	HEAD PSI	<b>GPM</b>	MHP	<b>VOLTAGE</b>	PHASES	(NOTE A)	BY (NOTE A)	NOTES
GFS-1	GLYCOL WATER	50.0	12	50	1.8	0.33	115	1	MFR	MFR	NOTE 1

	SCHEDULE GENERAL NOTES
KEY NAME	SCHEDULE GENERAL NOTES
A.	DISCONNECT AND CONTROLLER STARTER FURNISHED AND
	INSTALLED BY:
	MFR = MANUFACTURER
	EC = ELECTRICAL CONTRACTOR
	MC = FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED
	BY ELECTRICAL CONTRACTOR
	MFR/EC = FURNISHED LOOSE BY MANUFACTURER
	INSTALLED BY ELECTRICAL CONTRACTOR
	ATC = AUTOMATIC TEMPERATURE CONTROL CONTRACTOR
B.	DISCONNECT TYPE:
	F = FUSED
	NF = NON-FUSED
C.	CONTROLLER STARTER TYPE:
	FV = FULL VOLTAGE
	WYE = WYE-DELTA
	SS = SOLID STATE (SOFT START)
	MS = MANUAL STARTER
	VFD = VARIABLE FREQUENCY DRIVE
	VFD/B = VARIABLE FREQUENCY DRIVE WITH BYPASS
D.	FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE,
	WITH THE SCHEDULED WHEEL TYPE.
E.	NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR
	NAME PLATE RATING.
	MUST BE WITHIN +/- 10% OF SCHEDULED RPM.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 21 | 22 | 23 | 24

BRA	NCH S	ELEC	CTOI	R BC	X SCHE	DULE			
			Е	LECTRIC	AL				
					DISCONNET	CONTROLLER			
SYMBOL	VOLTAGE	PHASES	MCA	MOCP	BY (NOTE A)	BY (NOTE A)	MANUFACTURER	MODEL	REMARKS
BS-100	208	1	1.6	15	EC	MFR	MITSUBISHI	CMB-P1010NU-HA1	
BS-200	208	1	1.1	15	EC	MFR	MITSUBISHI	CMB-P1013NU-GA1	
BS-300	208	1	1.6	15	FC	MFR	MITSUBISHI	CMR-P1010NI LHA1	

2/M550

DESV NOTES 1

USING 5/8	R RADIATED NOR DISCHARGE SOU " 20-LB DENSITY MINERAL FIBER C ECIFICATION SECTION 23 09 00 FC	EILING TILE.				IC PRESSURE WHEN TE	STED PER AHI	RI STANDARD 885-2008
		CFM						
TAG NAME	AREA SERVED	COOLING MAX.	MIN.	MIN. INLET SIZE (IN.) DIA.	CONTROL TYPE (NOTE 2)	MANUFACTURER	MODEL	NOTES
TAB-S1	OPEN AREA	1015	1015	10"	3/M550	TITUS	DESV	NOTES 1
	OPEN AREA	1090	1090	10"	3/M550	TITUS	DESV	NOTES 1
TAB-S2	OPEN AREA	.000						
TAB-S2 TAB-S3	COMMUNITY ROOM 2	370	35	6"	2/M550	TITUS	DESV	NOTES 1
	\$1 = 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		35 60	6" 4"	2/M550 2/M550	TITUS TITUS	DESV DESV	NOTES 1 NOTES 1

TERMINAL AIR BOX SCHEDULE - SINGLE DUCT - EXHAUST AIR										
NOTES:										
1.NEITHER RADIATED NOR DISCHARGE SOUND LEVELS SHALL EXCEED NC 35 AT 1.5" INLET STATIC PRESSURE WHEN TESTED PER AHRI STANDARD 885-2008										
<b>USING 5/8'</b>	" 20-LB DENSITY MINEF	RAL FIBER CEI	LING TILE	Ξ.						
2.SEE SPE	ECIFICATION SECTION	23 09 00 FOR	DESCRIP	PTION OF CONT	ROL TYPE.					
CFM										
		CFM								
TAG		CFM COOLING		MIN. INLET	CONTROL					
TAG NAME	AREA SERVED		MIN.			MANUFACTURER	MODEL	NOTES		
	AREA SERVED OPEN AREA	COOLING				MANUFACTURER TITUS	MODEL DESV	NOTES 1		
NAME	7	COOLING MAX.	MIN.	SIZE (IN.) DIA.	TYPE (NOTE 3)					
NAME TAB-E1	OPEN AREA	COOLING MAX. 2070	<b>MIN.</b> 760	<b>SIZE (IN.) DIA.</b> 14"	<b>TYPE (NOTE 3)</b> 3/M552	TITUS	DESV	NOTES 1		

NOTES: I.FINISH TYPES: TYPE 1 - MILL FINISH, TYPE 2 - 204-R1 SATIN ANODIZED, TYPE 3 - BAKED ENAMEL FINISH ON PRETREATED PRIME PAINT. STANDARD COLOR - BELECTION BY ARCHITECT. TYPE 4 - BAKED EPOXY FINISH ON PRIME COATED METAL. STANDARD COLOR - SELECTION BY ARCHITECT. TYPE 5 - DURANODIC BRONZE - LIGHT, MEDIUM, DARK. TYPE 6 - PVDF (KYNAR 500, HYLAR 5000, OR DURANAR). STANDARD COLOR - SELECTION BY ARCHITECT.										
			SIZE (I	NCHES)	FREE AREA		FINISH			
TAG NAME	AREA SERVED	CFM	WIDTH	HEIGHT	VELOCITY	S.P. IN. W.C.	(NOTE 1)	MANUFACTURER	MODEL	NOTES
		<b>CFM</b> 2000	•	,		<b>S.P. IN. W.C.</b> 0.06	(NOTE 1) TYPE 2	MANUFACTURER RUSKIN	MODEL ELF375	NOTES
NAME	SERVED		WIDTH	HEIGHT	VELOCITY					NOTES

EAN	SOUND REQUI	DEMEN	TO SCUI							
	(1) REFER TO AIR HANDLING			ONAL FAN REQI	•	,	SHOWN ARE TH	HE FAN DISCHA	RGE SOUND.	(3) SOUND DAT
			M		HE FAN INLET	SOUND. ATED NOISE IN D	NR DE 10.12 WAT	Te		
TAG			IVI			NTER FREQUEN		13		
NAME	FAN	63	125	250	500	1000	2000	4000	8000	REMARKS
AHU-1	SF - DUCTED DISCHARGE	81	76	82	80	79	76	73	71	NOTE 1, 2
ΔΗΙ I_1	EE - DUCTED INLET	70	72	83	74	60	68	66	65	NOTE 1 3

ALL RUN INSTALL	OUT DUCTWOR	ETERMINE PROPER MARC RK TO DIFFUSERS SHALL OR SYSTEM. PROVIDE AC CTED INLET CONDITION.	BE NECK SIZ	ZE UNLESS O	THERWISE N	IOTED.				
TAG NAME	MATERIAL	CONFIGURATION	MARGIN (NOTE 1)	INLET SIZE (IN.) (NOTE 2)		VOLUME DAMPER REQUIRED	FINISH	MANUFACTURER	MODEL	NOTES
EG-1	STEEL	35 DEGREE DEFLECTION	1 1/4"	SEE DWG.	INLET +2	NO	WHITE	TITUS	350R	
EG-2	STEEL	PERFORATED FACE	LAY-IN	SEE DWG.	24x24	NO	WHITE	TITUS	PAR	
RG-1	STEEL	PERFORATED FACE	LAY-IN	SEE DWG.	24x24	NO	WHITE	TITUS	PAR	
RG-2	STEEL	35 DEGREE DEFLECTION	1 1/4"	SEE DWG.	INLET +2	NO	WHITE	TITUS	350R	
SD-1	STEEL	PANEL FACE	LAY-IN	SEE DWG.	24x24	NO	WHITE	TITUS	OMNI	FLUSH FACE PANEL
SD-2	ALUMINUM	DISPLACEMENT PATTERN	NOTE 3	SEE DWG	10"	NO	ALUMMINU M	PRICE	MFD-DP	NOTE 4
SG-1	STEEL	DOUBLE DEFLECTION	1 1/4"	SEE DWG.	INLET +2	NO	WHITE	TITUS	300R	FRONT BLADES VERTICAL UNLESS NOTED OTHERWIS

LINEA	K DIFFL	JSEK SC	HEDULE											
NOTES:  1. CONTRACTOR SHALL DETERMINE PROPER MARGIN STYLE TO MATCH CEILING CONSTRUCTION.  2. PROVIDE WITH CONCEALED FASTENERS.  3. DIFFUSERS WITH MULTIPLE SLOTS SHALL HAVE THE INNER MOST SLOT DIRECTED TOWARDS THE INTERIOR OF THE BUILDING, THE REMAINING SHALL BE DIRECTED TOWARDS THE EXTERIOR UNLESS NOTED OTHERWISE. 2 – 34375  4. PROVIDE UNIT WITH INTEGRAL OPPOSED BLADE DAMPER THAT IS ACCESSED FROM BELOW CEILING THROUGH THE DIFFUSER SLOT.  5. PLENUM SLOT DIFFUSER FOR RETURN WITH LIGHT SHIELD.														
TAG NAME	MATERIAL	SLOT WIDTH	NO. OF SLOTS	WIDTH	LENGTH	PLENUM REQUIRED	PLENUM INSULATION TYPE	PLENUM INLET SIZE	PATTERN CONTROL REQUIRED	BALANCING DAMPER REQUIRED	FINISH	MANUFACTURER	MODEL	NOTES
LD-1	STEEL	1"	3	6"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	TITUS	TBD	NOTE 1, 2, & 3
LD-2	STEEL	1"	2	4"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	TITUS	TBD	NOTE 1, 2, & 3
LD-3	STEEL	1"	2	4"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	Yes	BLACK	TITUS	TBD	NOTE 1, 2, 3, & 4
LD-4	STEEL	1"	2	4"	4'-0"	No	N/A	SEE DWG.	No	No	WHITE	TITUS	TBR	NOTE 1, 2, & 5
LD-5	STEEL	1"	3	6"	4'-0"	No	N/A	SEE DWG.	No	No	WHITE	TITUS	TBR	NOTE 1, 2, & 5
LD-6	STEEL	1"	2	4"	4'-0"	No	N/A	SEE DWG.	No	No	BLACK	TITUS	TBR	NOTE 1, 2, & 3
LD-7	STEEL	1"	4	8"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	TITUS	TBD	NOTE 1, 2, & 3
				0"	4'-0"	Nia	N/A	SEE DWG.	No	No	WHITE	TITUS	TBR	NOTE 1 2 9 2
LD-8	STEEL	1"	2	8"	4 -0	No	IN/A	SEE DWG.	INO	NO	VV □ I I ⊏	11103	IDK	NOTE 1, 2, & 3

TAB-S6 CHILDRENS PROGRAM ROOM 700 100

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City Contract No.
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Sheet Issue Date

BID DOCUMENTS 13

Sheet Name

MECHANICAL SCHEDULES

Sheet Number

SYMBOL:	TAG:	SPEC	SYMBOL LIST  DESCRIPTION:
GB	<u>GB</u>	26 05 26	GROUND BUS
[IBT]	IBT	26 05 26	INTERSYSTEM BONDING TERMINATION
	<u> 151</u>	20 03 20	INTERSTSTEM BONDING TERMINATION
E E	<u>ECONN</u>	26 05 33	ELECTRICAL CONNECTION
<u> </u>			
J	<u>JB</u>	26 05 33	JUNCTION BOX
00	<u>FB-1</u>	26 27 26	MODULAR SYSTEM FLOOR BOX
	<u>FB-2</u>	26 27 26	MODULAR SYSTEM FLOOR BOX
<b>6</b>	<u>FF-1</u>	26 27 26	MODULAR SYSTEM FURNITURE FEED
	PANEL '###'	26 24 16	PANELBOARD - RECESS MOUNT
	<u>PANEL '###'</u>	26 24 16	PANELBOARD - SURFACE MOUNT
	MX-#/MS-#/FCS-#	26 24 19	MANUAL SWITCH / STARTER / COMBINATION STARTER
<b>⇒</b>	REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V
<b>₩</b>	REC-DUP-GFI	26 27 26	DUPLEX GFI RECEPTACLE, 125V
w <b>≠</b>	REC-DUP-WP	26 27 26	DUPLEX GFI WEATHERPROOF RECEPTACLE 128
 ∪ <b>⇒</b>	REC-USB	26 27 26	DUPLEX RECEPTACLE, USB CHARGING
$\rightarrow$	REC-SIM-520R	26 27 26	SIMPLEX RECEPTACLE, 125V
<b>⇒</b> >	REC-TAMP	26 27 26	DUPLEX RECEPTACLE, TAMPERPROOF, 125V
<b>≠⊖</b> >	REC-TAMP-GFI	26 27 26	GFI DUPLEX RECEPTACLE, TAMPERPROOF, 125
<b>₩</b> >	REC-TAMP-QUAD	26 27 26	QUAD RECEPTACLE, TAMPERPROOF, 125V
₩	REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V
*	REC-QUAD-GFI	26 27 26	QUAD GFI RECEPTACLE, 125V
U <b>=∰</b>	REC-QUAD-USB	26 27 26	QUAD RECEPTACLE, USB 125V
v <del>*</del> ₩	REC-QUAD-WP	26 27 26	QUAD GFI WEATHERPROOF RECEPTACLE, 125\
DPM	<u>DPM</u>	26 24 16	DIGITAL POWER METER

ELECTRICAL SYMBOL LIST											
YMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:								
S	<u>SW-1P</u>	26 09 33	SWITCH - SINGLE POLE								
S <sub>T</sub>	SW-1P-ADJ	26 09 33	SWITCH - LOCAL TIMER - USER ADJUSTABLE								
S <sub>L</sub>	SW-1P-LH	26 09 33	SWITCH - LIGHTED HANDLE								
S <sub>M</sub>	SW-1P-M	26 09 33	SWITCH - MOMENTARY CONTACT								
Sp	SW-1P-PL	26 09 33	SWITCH - PILOT LIGHT								
$s_{3}$	SW-3W	26 09 33	SWITCH - THREE WAY								
S <sub>4</sub>	<u>SW-4W</u>	26 09 33	SWITCH - FOUR WAY								
D <sub>6</sub>	<u>SW-D-6</u>	26 09 33	DIMMER - 600W								
D <sub>D</sub>	SW-D-LED	26 09 33	DIMMER - LED								
D <sub>D3</sub>	SW-D3-LED	26 09 33	DIMMER - LED - 3-WAY								
D <sub>O</sub>	SW-OD	26 09 33	DIMMER - WALL DIMMER OCCUPANCY SENSOR								
$D_V$	SW-VD	26 09 33	DIMMER - WALL DIMMER VACANCY SENSOR								
LS	SW-LS-D	26 09 33	DAYLIGHT LEVEL SENSOR								
LS <sub>3D</sub>	SW-LS-D-3Z	26 09 33	DAYLIGHT LEVEL SENSOR								
PC	SW-LS-PC	26 09 33	PHOTOCELL								
$\odot_{D}$	SW-OC-D	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY								
OC D	SW-OC-D-W	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY - WALL MOUNTED								
$s_0$	SW-OC-P-0	26 09 33	SWITCH - OCCUPANCY SENSOR WALL SWITCH								
\$ <sub>02</sub>	SW-OC-P-02	26 09 33	SWITCH - OCCUPANCY SENSOR AND DUAL SWITCH								
© <sub>P</sub>	SW-OC-P-P	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED 360 DEGREE COVERAGE								
OC P	SW-OC-P-W	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED - WALL MOUNTED								
© <sub>U</sub>	SW-OC-U	26 09 33	OCCUPANCY SENSOR - ULTRASONIC 360 DEGREE COVERAGE								
⊚ <sub>A</sub>	SW-OC-U-A	26 09 33	OCCUPANCY SENSOR - ULTRASONIC TWO SIDED CORRIDOR COVERAGE								
OC U	SW-OC-U-W	26 09 33	OCCUPANCY SENSOR - ULTRASONIC - WALL MOUNTED								
⟨C⟩ <sub>D</sub>	SW-VS-D	26 09 33	VACANCY SENSOR - DUAL TECHNOLOGY								
	<u>DS-#</u>	26 28 16	DISCONNECT								
<u> </u>	<u>==</u> <u>F#</u>	26 51 00	LINEAR LUMINAIRES								
	— F#	26 51 00	TROFFER								
	<del>. "</del> F#	26 51 00	WALL SCONCE LUMINAIRE								
	<del>_</del>										
$\cup$	<u>F#</u>	26 51 00	DOWNLIGHT LUMINAIRE								
$\bigcap$	<u>F#</u>	26 51 00	INDUSTRIAL LUMINAIRE								
エエ	<u>F#</u>	26 51 00	WALL BRACKET LUMINAIRE								
$\otimes$	<u>X#</u>	26 51 00	SINGLE FACE EXIT SIGN								
8	<u>X#</u>	26 51 00	DOUBLE FACE EXIT SIGN								
WC	<u>WC</u>	26 09 33	WALL CONTROLLER								
SW	SW	26 09 33	ROOM CONTROLLER CONTROL STATION								
RC	RC	26 09 33	WALL MOUNTED ROOM CONTROLLER								
PS	<u>PS</u>	26 09 33	PARTITION SENSOR								
PP	<u>—</u> PP	ARCH	PUSH PAD								

	ELEC	CTRICAL	SYMBOL LIST
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
(SD)	<u>FA-120</u>	28 31 00	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED
(SD)	FA-122	28 31 00	FIRE ALARM DUCT SMOKE DETECTOR
SD	<u>FA-123</u>	28 31 00	FIRE ALARM IN DUCT SMOKE DETECTOR
F	FA-130	28 31 00	FIRE ALARM MANUAL PULL STATION
FT	FA-131	28 31 00	FIRE ALARM MANUAL PULL STATION W/ COVER
H	<u>FA-140</u>	28 31 00	FIRE ALARM HEAT DETECTOR
HF	<u>FA-141</u>	28 31 00	HEAT DETECTOR - 200 DEGREE
MM	<u>FA-160</u>	28 31 00	FIRE ALARM ADDRESSABLE MONITOR MODULE
AR	FA-161	28 31 00	FIRE ALARM ADDRESSABLE RELAY
V1 V3 V7 VH	<u>FA-200</u>	28 31 00	FIRE ALARM VISUAL NOTIFICATION DEVICE - WALL MOUNTED
(V1)(V3) (V7)(VH)	<u>FA-201</u>	28 31 00	FIRE ALARM VISUAL NOTIFICATION DEVICE - CEILING MOUNTED
A	<u>FA-210</u>	28 31 00	FIRE ALARM AUDIO NOTIFICATION DEVICE - WALL MOUNTED
A1 A3 A7 AH	<u>FA-211</u>	28 31 00	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE - WALL MOUNTED
AW	<u>FA-212</u>	28 31 00	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE - WALL MOUNTED - WEATHERPROOF
A	<u>FA-230</u>	28 31 00	FIRE ALARM AUDIO NOTIFICATION DEVICE - CEILING MOUNTED
(A1)(A3) (A7)(AH)	<u>FA-231</u>	28 31 00	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE - CEILING MOUNTED
RTS/I	<u>FA-240</u>	28 31 00	FIRE ALARM REMOTE INDICATOR AND TEST SWITCH
RI	<u>FA-241</u>	28 31 00	FIRE ALARM REMOTE INDICATOR

	<b>ELECTRICAL ABBREVIATION KEY</b>
ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
С	CONDUIT
GFI	GROUND FAULT INTERRUPTER
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
SV	SOLENOID VALVE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

	CONTRACTOR ABBREVIATION KEY							
ABBR:	DESCRIPTION:							
A.V.C.	AUDIO/VISUAL CONTRACTOR							
C.C.	CIVIL CONTRACTOR							
E.C.	ELECTRICAL CONTRACTOR							
G.C.	GENERAL CONTRACTOR							
M.C.	MECHANICAL CONTRACTOR							
S.C.	SECURITY CONTRACTOR							
T.C.	TECHNOLOGY CONTRACTOR							

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

TCC TEMPERATURE CONTROLS CONTRACTOR

TAG:	DESCRIPTION:						
<u>C-#</u>	GENERAL PURPOSE CONTACTOR	26 28 21					
<u>CB-#</u>	CIRCUIT BREAKER, REFER TO DISCONNECT AND STARTER SCHEDULE	26 14 19					
DP-#	DISTRIBUTION PANEL	26 24 16					
DS-#	DISCONNECT SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE	26 28 16					
<u>F#</u>	LUMINAIRE TYPE	26 51 00					
FAA-#	FIRE ALARM - ANNUNCIATOR	28 31 00					
FAP-#	FIRE ALARM - CONTROL PANEL	28 31 00					
FB-#	FLOOR BOX	26 27 26					
FDS-#	FUSIBLE DISCONNECT SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE	26 28 16					
<u>FF-#</u>	FURNITURE FEED	26 27 26					
<u>LC-#</u>	LIGHTING CONTACTOR	26 28 21					
LCS-#	LIGHTING CONTROL STATION	26 09 33					
MX-#	MANUAL SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE	26 24 19					
NEP-#	FIRE ALARM - EXTENDER PANEL	28 31 00					
PP-#	POWER PEDESTAL	26 27 26					
SPD-#	SURGE PROTECTION DEVICE	26 43 00					
<u>TC-#</u>	TIME SWITCH	26 09 33					
MS-#	MANUAL STARTER	26 24 19					

**SUGGESTED MATRIX OF RESPONSIBILITY** 

FURNISHED INSTALLED

SHOWN ON: BY: BY: NOTES:

I I LIVI.	SHOWIN OIN.	DI.	DI.	NOILS.
TECHNOLOGY ROUGH-IN, REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR DEFINITION	T-SERIES	E.C.	E.C.	3. 4.
INFORMATION OUTLET FACEPLATES, JACKS, AND TERMINATIONS	T-SERIES	T.C.	T.C.	
CONDUIT SLEEVES (WHEN SHOWN ON DRAWINGS)	T-SERIES	E.C.	E.C.	
CONDUIT SLEEVES (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	T.C.	2. 4.
TELECOMMUNICATION SYSTEMS ROUGH-IN	T-SERIES	T.C.	E.C.	1.
TELECOMMUNICATION EQUIPMENT, CABLING, AND TERMINATIONS	T-SERIES	T.C.	T.C.	
CABLE TRAY (INCLUDING WIRE BASKET TRAY) REFER TO SPECIFICATION SECTION 27 05 28 FOR DEFINITION	T-SERIES	E.C.	E.C.	
LADDER RACK	T-SERIES	T.C.	T.C.	5.
GROUNDING LUGS ON TECHNOLOGY EQUIPMENT	T-SERIES	T.C.	E.C.	6.
BONDING SYSTEM FOR TECHNOLOGY SYSTEM, REFER TO SPECIFICATION SECTION 27 05 26 FOR DEFINITION	T-SERIES	E.C.	E.C.	7. 8.
CONNECTION OF TECHNOLOGY BONDING SYSTEM TO THE ELECTRICAL GROUND SYSTEM	T-SERIES	E.C.	E.C.	
LINE VOLTAGE POWER (+120V OR GREATER)	E-SERIES	E.C.	E.C.	
LINE VOLTAGE POWER (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	E.C.	2. 4.
LINE VOLTAGE POWER FOR DOOR HARDWARE POWER SUPPLIES	ARCH SPEC	E.C.	E.C.	
LOW VOLTAGE CABLING FOR TECHNOLOGY SYSTEMS	T-SERIES	T.C.	T.C.	
CABLE HANGERS AND SUPPORTS OR OTHER CABLE ROUTING METHODS (OTHER THAN CONDUIT AND CABLE TRAY)	T-SERIES	T.C.	T.C.	5.
TECHNOLOGY SERVICE ENTRANCE CONDUITS, HANDHOLES, AND MANHOLES	T-SERIES	E.C.	E.C.	
FLOOR BOX (ROUGH-IN)	T & E SERIES	E.C.	E.C.	

### SUGGESTED MATRIX OF RESPONSIBILITY NOTES

- LOCATIONS OF TELECOMMUNICATIONS ROUGH-INS SHALL BE INDICATED BY THE INFORMATION OUTLET SYMBOLS ON THE DRAWINGS. REFER TO THE TECHNOLOGY SYMBOL LIST FOR ADDITIONAL INFORMATION.
- BASED ON THE INHERENT DIFFERENCES IN PRODUCTS FROM VARIOUS MANUFACTURERS, ALL REQUIRED EQUIPMENT MAY NOT BE SHOWN ON THE DRAWINGS FOR ALL ACCEPTABLE MANUFACTURERS.
- INCLUDES BACKBOXES AND CONDUIT REQUIRED FOR THE TECHNOLOGY SYSTEMS INSTALLATION. THE E.C. SHALL BASE THE BID ON THE BASIS OF DESIGN SHOWN ON THE
- CONTRACT DOCUMENTS. ALL CHANGES TO THE SLEEVES, BACKBOXES, CONDUITS, AND POWER REQUIRED BECAUSE OF THE T.C.'S SELECTION OF AN ALTERNATE ACCEPTABLE MANUFACTURER OR FROM SYSTEM
- IN THE T.C.'S BID. THIS BID SHALL INCLUDE INSTALLATION BY A LICENSED ELECTRICIAN. UNLESS TRADE RULES DICTATE OTHERWISE. FURNISHED AS PART OF THE EQUIPMENT WHEN POSSIBLE, OR FURNISHED TO THE E.C. FOR
- INSTALLATION IN THE FIELD. INCLUDES ALL CONDUCTORS, GROUND BARS, AND TERMINATIONS FOR THE COMPLETE

CONFIGURATIONS THAT ARE LEFT TO THE CHOICE OF THE CONTRACTOR SHALL BE INCLUDED

- BONDING SYSTEM REQUIRED BY THE SPECIFICATIONS. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS AND SWITCHBOARDS SHOWN
- IN THE TECHNOLOGY BONDING RISER DIAGRAM AND TYPICAL TELECOM ROOM BONDING FLOW

### FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT. ALL FLOOR ASSEMBLIES SHALL BE DESIGNATED AS 2 HOUR FIRE BARRIER(S), UNLESS NOTED OTHERWISE ON THE PLANS. RATINGS WERE ACQUIRED FROM THE ARCHITECTURAL PLANS

DATED 05/29/2018.

1 HOUR FIRE BARRIER	
2 HOUR FIRE BARRIER	

### **ELECTRICAL GENERAL NOTES:**

- 1. ##-### INDICATES ELECTRICAL EQUIPMENT DEFINED IN ELECTRICAL SCHEDULES OR SPECIFICATION. REFER TO DRAWINGS CONTAINING ELECTRICAL SCHEDULES. PERMANENT NAMEPLATE SHALL MATCH FINAL EQUIPMENT NOMENCLATURE, NOT ELECTRICAL
- EQUIPMENT TAG NAME, REFER TO SPECIFICATIONS. 2. {L###} INDICATES THE LIGHTING SEQUENCE OF OPERATION FOR THE SPACE. REFER TO THE
- LIGHTING SEQUENCE OF OPERATION MATRIX ON SHEET E600. 3. "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT.
- 4. SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE HAS BATTERY BACKUP.

LUMINAIRE KEY:

F1 = FIXTURE TAG 1 = CIRCUIT NUMBER LUMINAIRE a = SWITCH DESIGNATION NL = SUBSCRIPT (IF APPLICABLE)

> \*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1/1/a/NL

**DEVICE KEY:** DEVICE A = MOUNTING (IF APPLICABLE)
1 = CIRCUIT NUMBER

> \*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1

ELECTRICAL MOUNTING SUBSCRIPT KEY:

A MOUNT AT +8" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH MOUNT AT CEILING

MOUNT ORIENTED HORIZONTALLY MOUNT IN CASEWORK

MOUNT IN MODULAR FURNITURE MOUNT IN SURFACE RACEWAY

### **ELECTRICAL INSTALLATION NOTES:**

- 1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION. 2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH
- 3. CIRCUITS SERVING EMERGENCY AND EXIT LUMINAIRES WILL BE RUN IN A SEPARATE RACEWAY FROM ALL OTHER CIRCUITS. 4. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE
- DIMENSION), EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. 5. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND
- OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. 6. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF
- THROUGH-PENETRATION FIRESTOPS. 7. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED. 8. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED
- FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE. 9. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES
- IN CEILING TILE PATTERN. SMOKE DETECTORS AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE. 10. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE
- FURNITURE AND/OR EQUIPMENT. 11. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF. OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT
- SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER 12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL
- OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
- 13. ALL WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY STANDARDS. CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER CERTIFICATES QUALIFYING EACH WELDER, PRIOR TO START OF WORK. THE ARCHITECT/ENGINEER RESERVES THE RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF ANY WELDERS ASSIGNED TO THE JOB.
- 14. CONTRACTOR SHALL REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF ELECTRICAL WORK. CONTRACTOR SHALL REPLACE CEILING TILES WITH
- IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR. 15. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY
- AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.

16. COORDINATE ALL PENETRATIONS OF EXISTING FOUNDATIONS AND PRECAST PANELS WITH OWNER. LOCATE ALL PENETRATIONS AT EXISTING CORES OR LOCATIONS DICTATED BY

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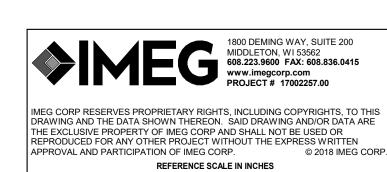
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**ELECTRICAL COVER SHEET** 

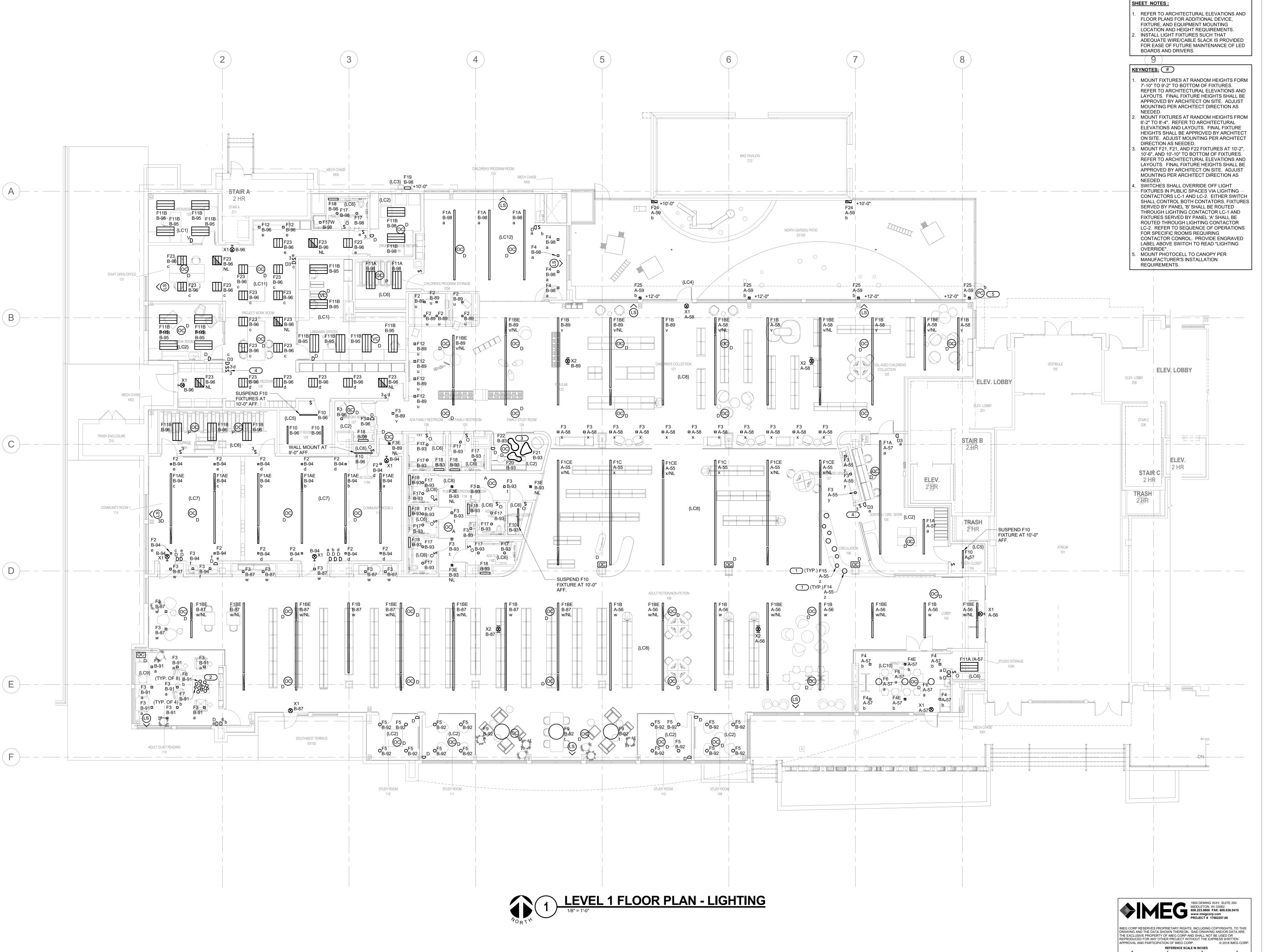
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LIGHTING Sheet Number



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ARCHITECTS

ARCHITECT

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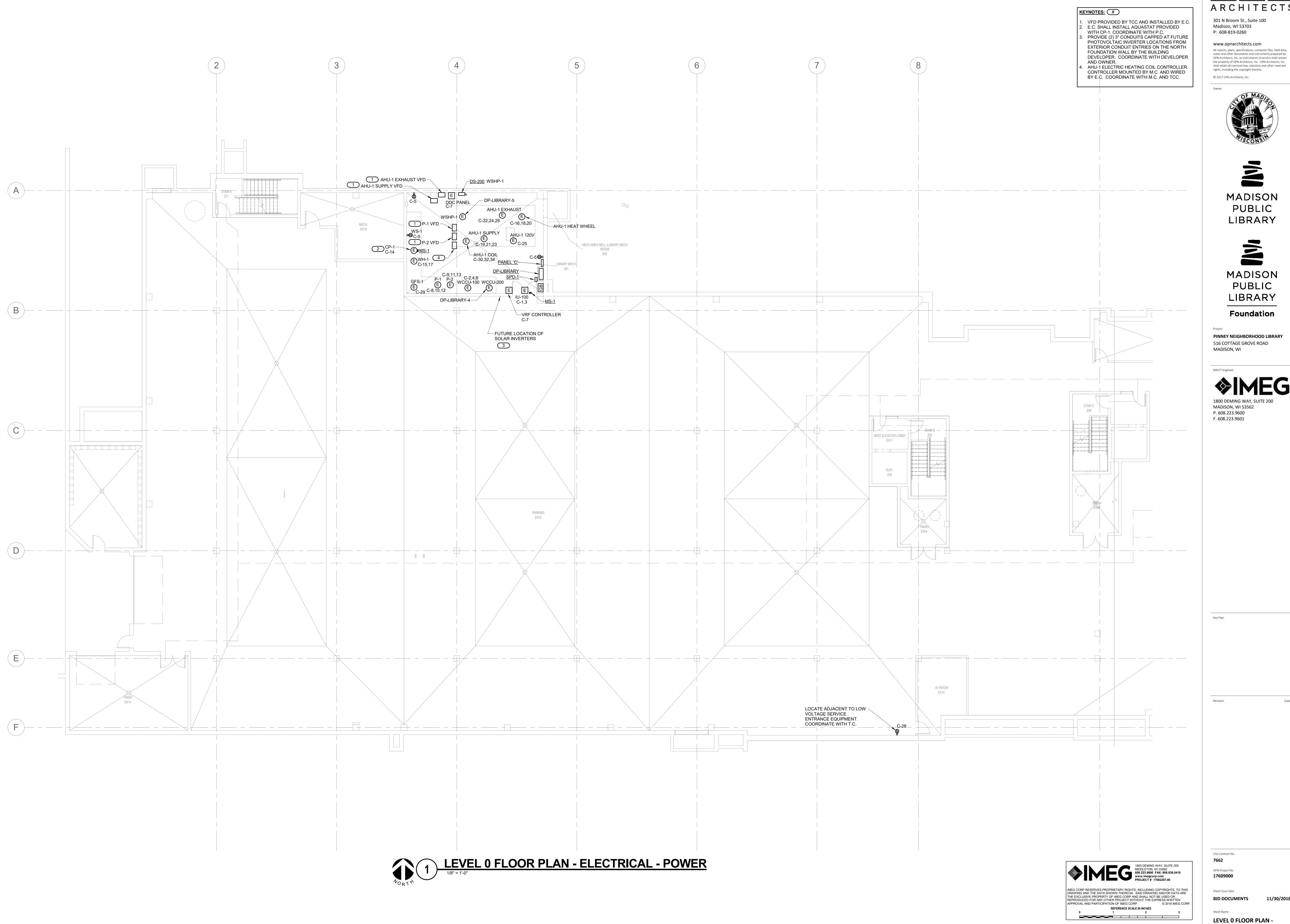
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Sheet Name

LEVEL 1 FLOOR PLAN -LIGHTING
Sheet Number



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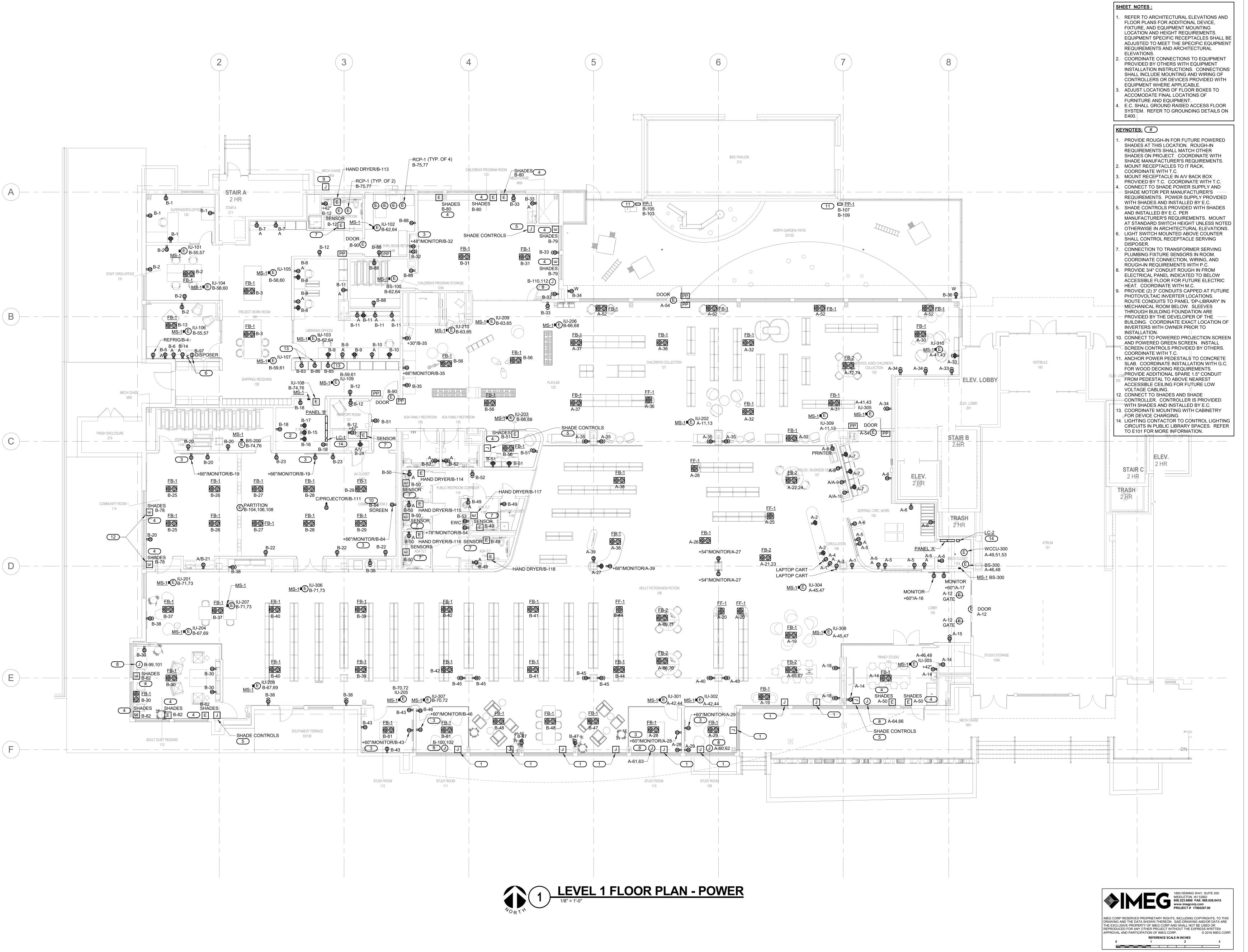




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**LEVEL 0 FLOOR PLAN -POWER** 

Sheet Number



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City Contract No. **7662** 

OPN Project No. **17609000** 

Sheet Number

Sheet Issue Date
BID DOCUMENTS 11/30/2018

Sheet Name

LEVEL 1 FLOOR PLAN 
POWER

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |

301 N Broom St., Suite 100 Madison, WI 53703 1. REFER TO ARCHITECTURAL ELEVATIONS AND FLOOR PLANS FOR ADDITIONAL DEVICE, P: 608-819-0260

SHEET NOTES:

EXISTING SYSTEM.

KEYNOTES: #

FIXTURE, AND EQUIPMENT MOUNTING LOCATION AND HEIGHT REQUIREMENTS.

NOTIFICATION DEVICE AND ONE SMOKE

TO SPECIFICATIONS FOR ADDITIONAL

E.C. SHALL REMOVE APPROXIMATELY ONE

DETECTOR IN LIBRARY MECHANICAL ROOM AND REPLACE WITH DEVICES SHOWN. REFER

INFORMATION ON EXTENDING/MODIFYING THE

1. ADDRESSABLE RELAY FOR AHU-1 SHUTDOWN.
MOUNT WITHIN 3' OF AHU CONTROLLER.
COORDINATE WITH M.C. AND TCC.

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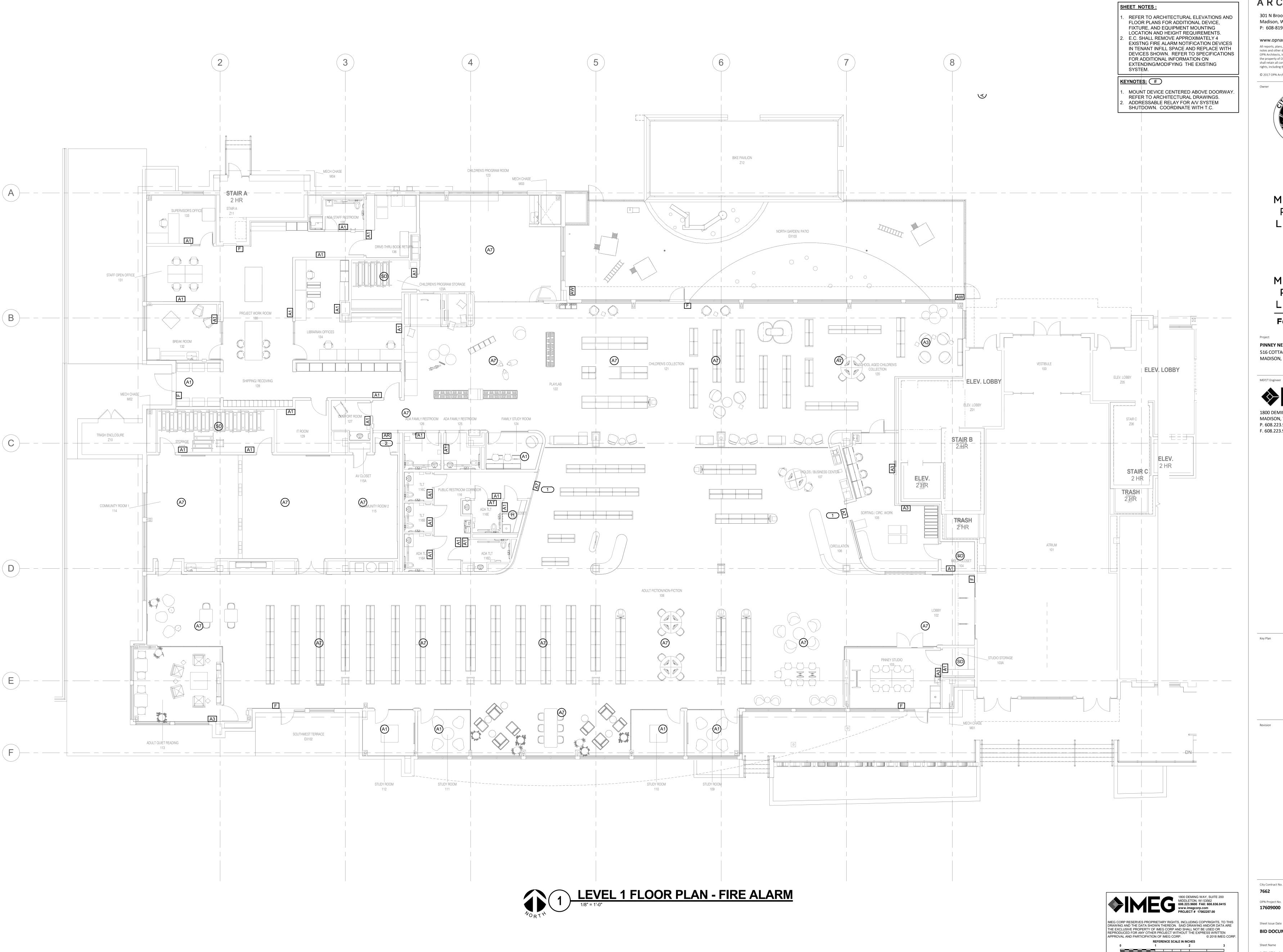
Sheet Number

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REFERENCE SCALE IN INCHES

Sheet Issue Date **BID DOCUMENTS** 

Sheet Name **LEVEL 0 FLOOR PLAN - FIRE** ALARM



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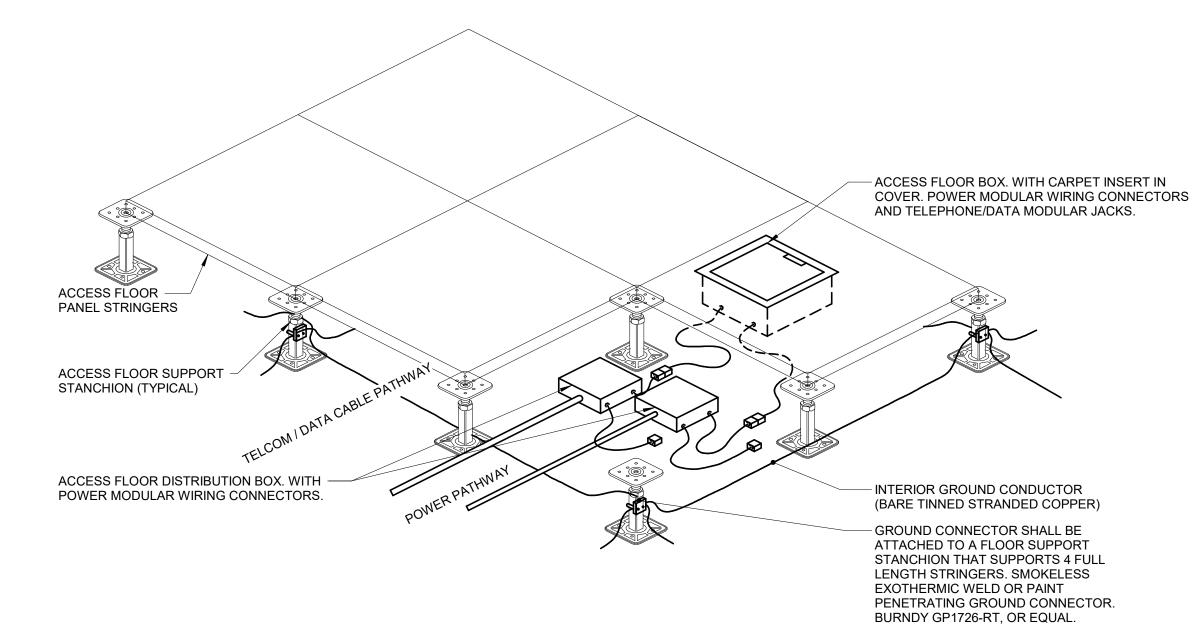
17609000 Sheet Issue Date

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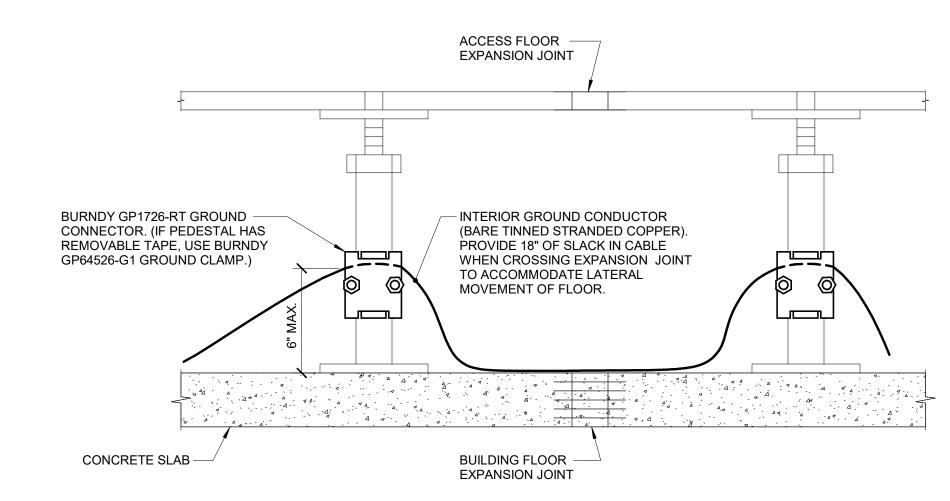
**LEVEL 1 FLOOR PLAN - FIRE ALARM** Sheet Number

							AR	AR	AR
SYSTEM INPUTS	SEQUENCE OF OPERATION	PANEL/ANNUNCIATOR ALARM INDICATION	PANEL/ANNUNCIATOR SUPERVISORY INDICATION	PANEL/ANNUNCIATOR TROUBLE INDICATION	AUDIBLE ALARMS SEQUENCE	VISUAL ALARMS SEQUENCE	AHU SHUTDOWN SEQUENCE	SOUND MASKING/ PAGING SYSTEMS SHUTDOWN SEQUENCE	A/V SYSTEM SHUTDOWN
FIRE ALARM PANEL, TRANSPON LOW BATTERY	DER, NAC PANEL		X						
FIRE ALARM PANEL, TRANSPON BATTERY OR CHARGER FAILUR				X					
FIRE ALARM PANEL, TRANSPON ABNORMAL SWITCH OR CONTR			Х						
FIRE ALARM PANEL, TRANSPON GROUND FAULT, OPEN CIRCUIT				X					
FIRE ALARM PANEL, TRANSPON AC POWER LOSS OR IRREGULA				X					
NOTIFICATION APPLIANCE CIRC GROUND FAULT, OPEN CIRCUIT				X					
INITIATING DEVICE FAILURE OR COMMUNICATION E	ERROR			X					
FIRE ALARM PANEL MANUAL FIRE DRILL			X		X	X			
MANUAL PULL STATION	FT F	Х			Х	X		Х	X
SMOKE DETECTOR	SD	Х			X	X		X	X
HEAT DETECTOR	H HF HX	Х			X	X		X	X
SMOKE DETECTOR FOR HVAC CONTROL	SD_ SD_		X				X		

1 FIRE ALARM OPERATION MATRIX
NO SCALE

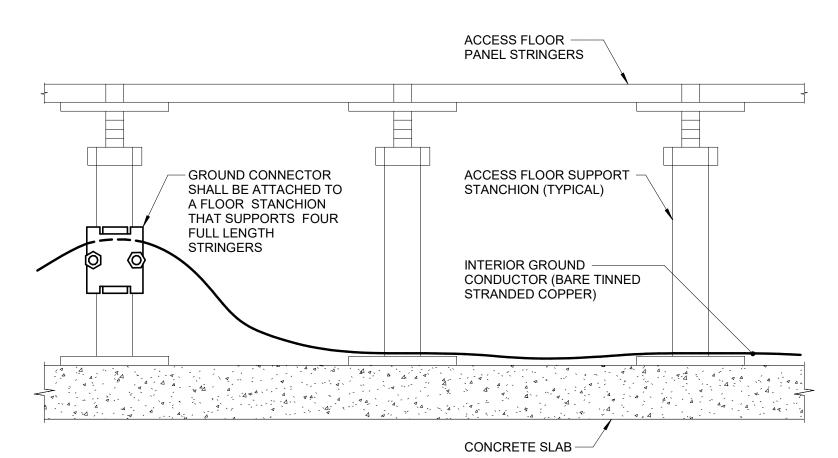


3 ACCESS FLOOR GROUNDING DETAIL
NO SCALE



2 ACCESS FLOOR EXPANSION JOINT DETAIL

NO SCALE



ACCESS FLOOR GROUNDING DETAIL

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |

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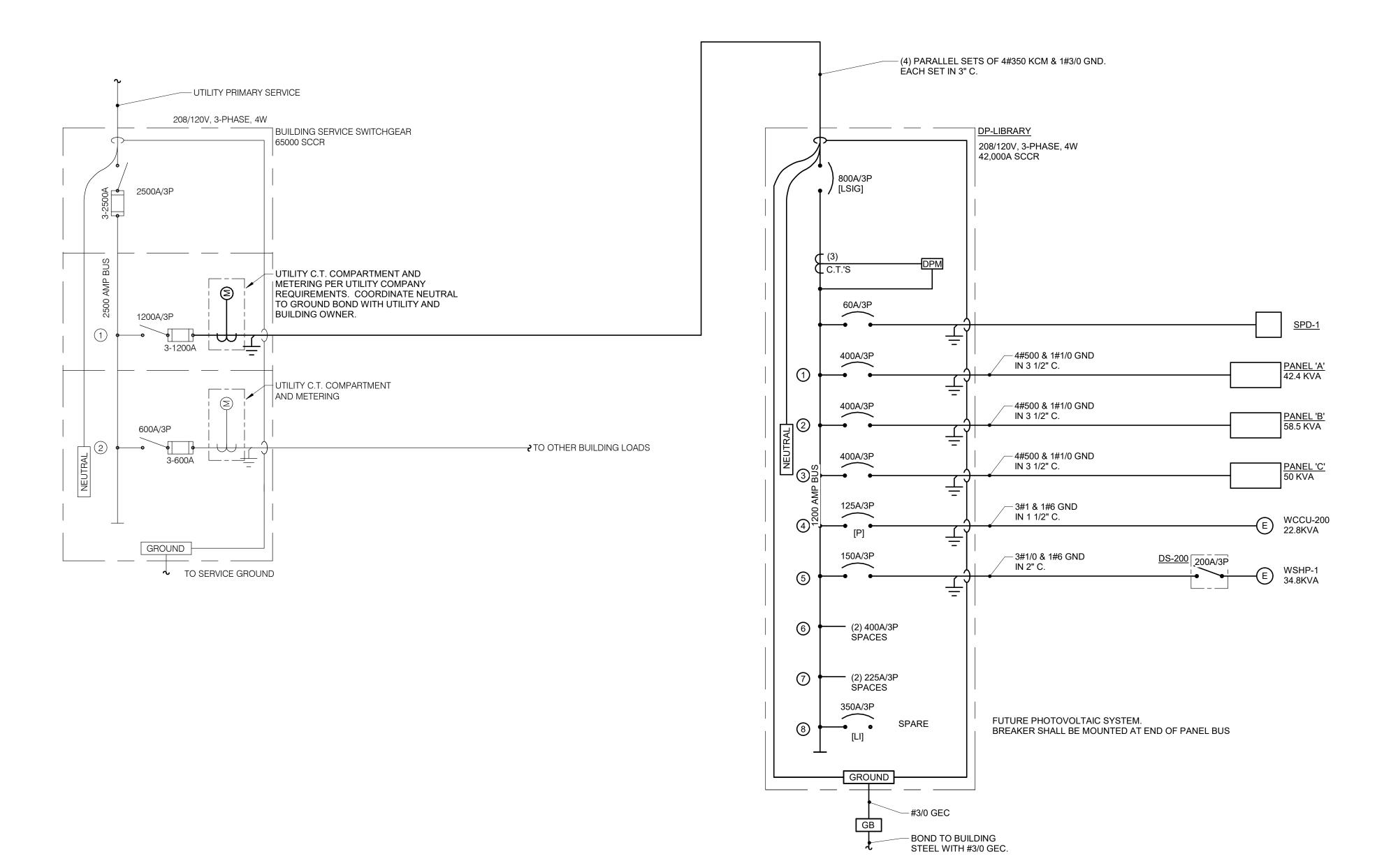
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Key Plan

Madison, WI 53703 P: 608-819-0260

ELECTRICAL DETAILS

Sheet Number



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ONE LINE DIAGRAM NOTES

INDICATES DIRECT CONNECTION OF ISOLATED GROUND CONDUCTOR TO ISOLATED GROUND BUS.

1. AIC RATINGS LISTED FOR EQUIPMENT ARE MINIMUM REQUIREMENTS FOR BUS BRACING AND DEVICE RATING. ALL EQUIPMENT SHALL BE FULLY RATED UNLESS SPECIFICALLY NOTED AS SERIES RATED.

2. LINDICATES DIRECT CONNECTION OF GROUND CONDUCTOR TO GROUND BUS. SUBSCRIPT "I"

INDICATES O.Z. GEDNEY OR EQUAL GROUND BUSHING BONDED TO GROUND BUS WITH CONDUCTOR SIZED TO MAXIMUM FEEDER GROUND CAPACITY.

6. AF INDICATES MOLDED/INSULATED CASE BREAKER FRAME SIZE, FOR ADJUSTABLE TRIP BREAKERS.

7. AT INDICATES MOLDED/INSULATED CASE BREAKER TRIP UNIT RATING, FOR ADJUSTABLE TRIP

 [LSIG] INDICATES FEATURES PROVIDED WITH SOLID STATE CIRCUIT BREAKER. [LONG TIME (W/DELAY), SHORT TIME (W/DELAY), INSTANTANEOUS, GROUND FAULT].

10. CONDUCTOR AND CONDUIT SIZES ON THE LINE AND LOAD SIDES OF ALL NON-FUSIBLE DISCONNECT

4. • INDICATES OVERLOADS SIZED PER MOTOR NAMEPLATE FULL LOAD AMPERES.

5. A INDICATES STARTER NEMA SIZE.

9. GF INDICATES GROUND FAULT RELAY.

11. DPM INDICATES DIGITAL POWER MONITOR.

SWITCHES SHALL BE IDENTICAL UNLESS NOTED OTHERWISE.

13. E INDICATES CURRENT TRANSFORMER, SIZE AS SPECIFIED.

14. [P] INDICATES PADLOCK HASP PROVIDED FOR BREAKER.

12. M INDICATES KILOWATT-HOUR METER AS SUPPLIED BY UTILITY COMPANY.



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Key Plan

Revision

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Sheet Issue Date

BID DOCUMENTS

Sheet Name

ELECTRICAL ONE-LINE

ELECTRICAL ONE-LINE DIAGRAMS
Sheet Number

E500

ITEM

DESCRIPTION

MTG) MOUNTING:	(TYPE) LAMP TECHNOLOGY:	(L/L) LENS / LOUVER:
RE - RECESSED	FL - FLUORESCENT	A125 ACRYLIC
SP - SUSPENDED	CF - COMPACT FLUORESCENT	B - BLACK BAFFLE
CL - CEILING SURFACE	HL - HALOGEN	C - CLEAR ALZAK
WL - WALL	IN - INCANDESCENT	D - PARABOLIC
UC - UNDER CABINET	LED - LIGHT EMITTING DIODE	F - FRESNEL
CV - COVE	HS - HIGH PRESSURE SODIUM	G - TEMPERED GLASS
PL - POLE	MH - METAL HALIDE	H - WALL WASHER
FR - FLANGED RECESSED	SMH - SUPER METAL HALIDE	P - POLYCARBONATE
O - OTHER (SEE DESCRIPTION)	PSMH - PULSE START METAL HALIDE	K - KSH12 .125" ACRYLIC
	CMH - CERAMIC METAL HALIDE	K19 - KSH19 .156" ACRYLIC
DOOR:	O - OTHER (SEE DESCRIPTION	L - LOW IRIDESCENT SPECULAR ALUM.
FA - FLAT ALUMINUM	XL - EXTENDED LIFE	N - NONE
FS - FLAT STEEL	XLP - EXTENDED LIFE & OUTPUT	R - HIGH IMPACT OR ACRYLIC
RA - REGRESSED ALUMINUM		O - OTHER (SEE DESCRIPTION)
RS - REGRESSED STEEL		
	(TYPE) BALLAST/DRIVER:	(TYPE) BALLAST/DRIVER:
FINISH:	DIM07 - LINE DIMMING	EB - ELECTRONIC BALLAST
PAF - PAINT AFTER FABRICATION	DIM10 - 0-10V DIMMING	EM - EMERGENCY BATTERY / DRIVER
CSA - FINISH SELECTION BY ARCHITECT	HL - HIGH / LOW LEVEL	DALI - DIGITAL DIMMING BALLAST
	ML - MULTI-LEVEL SWITCHING	MV - MULTI-VOLTAGE ELECTRONIC 120V-277V
	HP - HIGH PERFORMANCE / LBF	PRS - ELECTRONIC PROGRAM RAPID START BALLAST

CATALOG NUMBER SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. THE COMPLETE DESCRIPTION AND THE SPECIFICATION SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURE ! LISTED IS THE BASIS FOR DESIGN.

L W H DIA. MTG TYPE QTY MODEL VOLTS TYPE L/L

BALLAST/DRIVER

MANUFACTURER

REFER TO SPECIFICATION SECTIONS LIGHTING 26 51 00 AND EMERGENCY LIGHTING EQUIPMENT 26 52 00 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

ALL LAMPS FOR THIS PROJECT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. LAMP CORRELATED COLOR TEMPERATURE 4000°K, COLOR RENDERING INDEX (CRI) AT OR ABOVE 80, UNLESS NOTED OTHERWISE.

DIMENSIONS

F1A	DESCRIPTION  CONTINUOUS RECESSED LINEAR LED, FLUSH LENS, WHITE TRIM, UNIVERSAL CEILING MOUNTING. PROVIDE IN CONTINUOUS LENGTHS AS SHOWN ON PLANS.	L	4"	4"	DIA.	MTG	TYPE LED	QTY 1	MODEL MAX 30 WATT MIN 3000 LUMEN PER 4' SECTION	VOLTS 120 V	TYPE DIM10	L/L A	MANUFACTURER  LEDALITE TRUGROOVE  LAEQS  A-LIGHT D9 SERIES  AXIS LIGHTING BBRLED
F1AE	SIMILAR TO F1A. PROVIDE WITH 1100 LUMEN EMERGENCY BATTERY BACKUP FOR SECTION INDICATED ON PLANS.		4"	4"			LED	1	MAX 30 WATT MIN 3000 LUMEN PER 4' SECTION	120 V	DIM10 EM	A	LEDALITE TRUGROOVE LAEQS A-LIGHT D9 SERIES AXIS LIGHTING BBRLED
F1B	CONTINUOUS RECESSED LINEAR LED, FLUSH LENS, WHITE TRIM, UNIVERSAL CEILING MOUNTING. PROVIDE IN CONTINUOUS LENGTHS AS SHOWN ON PLANS		4"	4"			LED	1	MAX 42 WATT MIN 4000 LUMEN PER 4' SECTION	120 V	DIM10	A	LEDALITE TRUGROOVE LADQS A-LIGHT D9 SERIES AXIS LIGHTING BBRLED
F1BE	CONTINUOUS RECESSED LINEAR LED, FLUSH LENS, WHITE TRIM, UNIVERSAL CEILING MOUNTING. PROVIDE IN CONTINUOUS LENGTHS AS SHOWN ON PLANS. PROVIDE WITH 1100 LUMEN BATTERY BACKUP FOR SECTION INDICATED ON PLANS.		4"	4"			LED	1	MAX 42 WATT MIN 4000 LUMEN PER 4' SECTION	120 V	DIM10 EM	Α	LEDALITE TRUGROOVE LADQS A-LIGHT D9 SERIES AXIS LIGHTING BBRLED
F1C	CONTINUOUS RECESSED LINEAR LED, FLUSH LENS, BLACK TRIM, UNIVERSAL CEILING MOUNTING. PROVIDE IN CONTINUOUS LENGTHS AS SHOWN ON PLANS.		4"	4"			LED	1	MAX 42 WATT MIN 4000 LUMEN PER 4' SECTION	120 V	DIM10	A	LEDALITE TRUGROOVE LADQS A-LIGHT D9 SERIES AXIS LIGHTING BBRLED
F1CE	CONTINUOUS RECESSED LINEAR LED, FLUSH LENS, BLACK TRIM, UNIVERSAL CEILING MOUNTING. PROVIDE IN CONTINUOUS LENGTHS AS SHOWN ON PLANS. PROVIDE WITH 1100 LUMEN EMERGENCY BATTERY BACKUP FOR SECTION INDICATED ON PLANS.		4"	4"			LED	1	MAX 42 WATT MIN 4000 LUMEN PER 4' SECTION	120 V	DIM10 EM	A	LEDALITE TRUGROOVE LADQS A-LIGHT D9 SERIES AXIS LIGHTING BBRLED
F2	RECESSED TRIMLESS ADJUSTABLE DOWNLIGHT, WHITE HOUSING, FROSTED LENS, ADJUSTABLE 0-25 DEGREES, 33-46 DEGREE BEAM SPREAD.	3"	3"	3'-0"		RE	LED	1	MAX 10 WATT MIN 850 LUMEN	120 V	DIM10	0	INTERLUX WG-B150SRG XTA-940 965 46 UNV FR DELTALIGHT CARREE TRIMLESS OK LED KREON KUDWN-80 USAI LIGHTING BEVELED MINI
F3	4" SQUARE OPEN DOWNLIGHT, 40-45 DEGREE BEAM SPREAD, STANDARD FINISH AND COLOR.	4"	4"	0"		RE	LED	1	MAX 35 WATT MIN 2100 LUMEN	120 V	DIM10	N	INTENSE LIGHTING IHOL-4DS KURT VERSEN J1344 28 40 12 D USAI LIGHTING BEVELED 2.1
F3E	SIMILAR TO F3. PROVIDE WITH 20W EMERGENCY BATTERY BACKUP. MOUNT ABOVE NEAREST ACCESSIBLE CEILING.	4"	4"	0"		RE	LED	1	MAX 35 WATT MIN 2100 LUMEN	120 V	DIM10 EM	N	INTENSE LIGHTING IHOL-4DS KURT VERSEN J1344 28 40 12 D USAI LIGHTING BEVELED 2.1
F4	4" SQUARE OPEN DOWNLIGHT, 40-45 DEGREE BEAM SPREAD, STANDARD FINISH AND COLOR.	4"	4"	0"		RE	LED	1	MAX 20 WATT MIN 900 LUMEN	120 V	DIM10	N	INTENSE LIGHTING IHOL-4DS KURT VERSEN J1344 11 40 12 D USAI LIGHTING
F4E	4" SQUARE OPEN DOWNLIGHT, 40-45 DEGREE BEAM SPREAD, STANDARD FINISH AND COLOR. PROVIDE WITH 7W EMERGENCY BATTERY BACKUP.	4"	4"	0"		RE	LED	1	MAX 20 WATT MIN 900 LUMEN	120 V	DIM10 EM	N	BEVELED 2.1  INTENSE LIGHTING IHOL-4DS KURT VERSEN J1344 11 40 12 D USAI LIGHTING BEVELED 2.1
F5	SURFACE MOUNT DOWNLIGHT, CAST ALUMINUM HOUSING, TEMPERED GLASS LENS. BLACK FINISH.			6"	8"	CL	LED	1	MAX 40 WATT MIN 2700 LUMENS	120 V	DIM10	G	BEGA 66984 LITON DL360 USAI LIGHTING BEVELED LBRP6
F6	PENDANT FIXTURE, REFLECTOR SHADE WITH UPLIGHT DIFFUSER, FROSTED LENS.			1'-6"	1'-5"	SP	LED	1	MAX 54 WATT MIN 4200 LUMENS (SPLIT 50/50 UP/DOWN)	120 V	DIM10	N	BETA-CALCO 20 1801 40 HG DS PATHWAY LIGHTING P50LB79V
F7	PENDANT GLOBE, DARK BRONZE BASE AND CRYSTAL GLASS. RELABEL LAMP SOCKET FOR 10W MAX.			7"	6"	SP	LED	1	MAX 10 WATT MIN 280 LUMEN	120 V	DIM07	G	HENNEPIN MADE VELA
F8	PENDANT GLOBE, DARK BRONZE BASE AND CRYSTAL GLASS. RELABEL LAMP SOCKET FOR 10W MAX.			6"	8"	SP	LED	1	MAX 10 WATT MIN 280 LUMEN	120 V	DIM07	G	HENNEPIN MADE CARINA
F9	CIRCULAR PENDANT WITH ANGLED SIDE, LAMINATED FABRIC SHADE WITH SMOKE FINISH, AIRCRAFT CABLE SUSPENDED.			8"	3'-6"	SP	LED	1	MAX 150 WATT MIN 8800 LUMENS		DIM10	N	BARBICAN TAPIR 16-67 42D 10H ACW OCL LIGHTING
F10	LED LENSED STRIP LIGHT, 180 DEGREE FROSTED LENS. STEEL WITH BAKED ENAMEL FINISH.	4'-0"	3"	3"		SP/CL	LED	1	MAX 60 WATT MIN. 5800 LUMENS 4000K	120 V	DIM10		EATON SNLED LITHONIA ZL1D DAYBRITE LF H.E. WILLIAMS 75L COLUMBIA LCL LSI SDL MERCURY LW3
F11A	RECESSED INDIRECT/DIRECT, ACRYLIC DIFFUSER.	4'-0"	2'-0"	3 1/2"		RE	LED	1	MAX 46 WATT MIN 5400 LUMEN	120 V	DIM10		DAY-BRITE 2FG G 54L 840 4 D UNV METALUX 24CZ LD5 55 COLUMBIA LIGHTING LCAT24
F11B	RECESSED INDIRECT/DIRECT, ACRYLIC DIFFUSER.	4'-0"	2'-0"	3 1/2"		RE	LED	1	MAX 70 WATT MIN 7400 LUMEN	120 V	DIM10		DAY-BRITE 2FG G 74L 840 4 DS METALUX 24CZ LD5 50 COLUMBIA LIGHTING LCAT24
F12	4" SQUARE OPEN DIRECTIONAL DOWNLIGHT, 45 DEGREE BEAM SPREAD, 360 DEGREE ROTATION WITH UP TO 35 DEGREE ANGLE, STANDARD FINISH AND COLOR.	4"	4"	0"		RE	LED	1	MAX 20 WATT MIN 900 LUMEN	120 V	DIM10	N	INTENSE LIGHTING IHOL-4AS KURT VERSEN J2335 11 40 12 D USAI LIGHTING BEVELED 2.1
F14	LARGE PENDANT ROUND FROSTED GLASS, STAINLESS STEEL CANOPY AND STEM FINISH.			3"	1'-1"	SP	LED	1	MAX 30 WATT MIN 1600 LUMEN	120 V	DIM10	0	ARTEMIDE ITKA 50 BEGA 45140
F15	SMALL PENDANT ROUND FROSTED GLASS, STAINLESS STEEL CANOPY AND STEM FINISH.			3"	10"	SP	LED	1	MAX 22 WATT MIN 1200 LUMEN	120 V	DIM10	0	ARTEMIDE ITKA 35 BEGA 45139
F17	OPEN DOWNLIGHT, MATTE CLEAR SELF TRIMMING REFLECTOR. 0.75 - 1.2 SPACING RATIO. REMODEL FIXTURE OR REMOTE DRIVER FOR EASE OF MAINTENANCE.			9 1/2"	6"	RE	LED	1	MINIMUM 1500 LUMEN		DIM10	N	INTENSE LIGHTING SS6G3DRR GOTHAM EVO ALED PRESCOLITE RLC6
F17W	SIMILAR TO F17, EXCEPT WET LOCATION LISTED.			9 1/2"	6"	RE	LED	1	MINIMUM 1500 LUMEN	120 V	DIM10	N	INTENSE LIGHTING SS6G3DRR GOTHAM EVO ALED
F18	VANITY FIXTURE, TEMPERED GLASS SHADE, SATIN FINISH.	2'-3"	3"	5"		RE	LED	1	MAX 40 WATT MIN 3600 LUMEN	120 V	DIM10	0	PRESCOLITE RLC6  MODERN FORMS WS-25827 PLC LIGHTING BROOKLAND 55014
F19	LED WALL PACK LUMINAIRE, GLASS LENS, ALUMINUM HOUSING, POWDER COAT FINISH, GASKETED, DARK BRONZE, LISTED WET LOCATION. TYPE IV DISTRIBUTION, INTEGRAL PHOTOCELL.	1'-4"	1'-4"	9 1/2"		WL	LED	1	MAX 75 WATTS MINIMUM 5500 LUMENS	120 V		G	ARCHITECTURAL AREA LIGHTING M2WD LIGMAN LIGHTING UTR 31712

(MTG) MOUNTING:	(TYPE) LAMP TECHNOLOGY:	(L/L) LENS / LOUVER:
RE - RECESSED	FL - FLUORESCENT	A125 ACRYLIC
SP - SUSPENDED	CF - COMPACT FLUORESCENT	B - BLACK BAFFLE
CL - CEILING SURFACE	HL - HALOGEN	C - CLEAR ALZAK
WL - WALL	IN - INCANDESCENT	D - PARABOLIC
UC - UNDER CABINET	LED - LIGHT EMITTING DIODE	F - FRESNEL
CV - COVE	HS - HIGH PRESSURE SODIUM	G - TEMPERED GLASS
PL - POLE	MH - METAL HALIDE	H - WALL WASHER
FR - FLANGED RECESSED	SMH - SUPER METAL HALIDE	P - POLYCARBONATE
O - OTHER (SEE DESCRIPTION)	PSMH - PULSE START METAL HALIDE	K - KSH12 .125" ACRYLIC
	CMH - CERAMIC METAL HALIDE	K19 - KSH19 .156" ACRYLIC
DOOR:	O - OTHER (SEE DESCRIPTION	L - LOW IRIDESCENT SPECULAR ALUM.
FA - FLAT ALUMINUM	XL - EXTENDED LIFE	N - NONE
FS - FLAT STEEL	XLP - EXTENDED LIFE & OUTPUT	R - HIGH IMPACT OR ACRYLIC
RA - REGRESSED ALUMINUM		O - OTHER (SEE DESCRIPTION)
RS - REGRESSED STEEL		
	(TYPE) BALLAST/DRIVER:	(TYPE) BALLAST/DRIVER:
FINISH:	DIM07 - LINE DIMMING	EB - ELECTRONIC BALLAST
PAF - PAINT AFTER FABRICATION	DIM10 - 0-10V DIMMING	EM - EMERGENCY BATTERY / DRIVER
CSA - FINISH SELECTION BY ARCHITECT	HL - HIGH / LOW LEVEL	DALI - DIGITAL DIMMING BALLAST
	ML - MULTI-LEVEL SWITCHING	MV - MULTI-VOLTAGE ELECTRONIC 120V-277V
	HP - HIGH PERFORMANCE / LBF	PRS - ELECTRONIC PROGRAM RAPID START BALLAST

LISTED IS THE BASIS FOR DESIGN.

REFER TO SPECIFICATION SECTIONS LIGHTING 26 51 00 AND EMERGENCY LIGHTING EQUIPMENT 26 52 00 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

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			DIMEN	ISIONS				LAM	PS	BALLAS1	T/DRIVER		APPROVED
ITEM	DESCRIPTION	L	W	Н	DIA.	MTG	TYPE	QTY	MODEL	VOLTS	TYPE	L/L	MANUFACTURER
F20	SUSPENDED DIRECT/INDIRECT CURVED FORM LINEAR FIXTURE, WHITE FINISH.	3'-3"	2'-3"	3"	0"	SP	LED	1	MAX 67 WATT MINIMUM 6100 LUMEN	120 V	DIM10		BETA-CALCO PUZZLE 99 2111
F21	SUSPENDED DIRECT/INDIRECT CURVED FORM LINEAR FIXTURE, WHITE FINISH.	3'-3"	2'-11"	3"	0"	SP	LED	1	MAX 67 WATT MINIMUM 6400 LUMEN	120 V	DIM10		BETA-CALCO PUZZLE 99 0111
F22	SUSPENDED DIRECT/INDIRECT CURVED FORM LINEAR FIXTURE, WHITE FINISH.	3'-0"	2'-6"	3"	0"	SP	LED	1	MAX 63 WATT MINIMUM 5800 LUMEN	120 V	DIM10		BETA-CALCO PUZZLE 99 1111
F23	RECESSED INDIRECT/DIRECT, ACRYLIC DIFFUSER.	2'-0"	2'-0"	5 1/2"		RE	LED	1	MAX 45 WATT MINIMUM 4400 LUMEN	120 V	DIM10		DAY-BRITE 2FG G 45L 840 2 D UNV METALUX 22CZ LD5 44 COLUMBIA LIGHTING LCAT22
F24	LED WALL PACK LUMINAIRE, GLASS LENS, ALUMINUM HOUSING, POWDER COAT FINISH, GASKETED, DARK BRONZE, LISTED WET LOCATION. TYPE III DISTRIBUTION. PROVIDE WITH INTEGRAL BATTERY BACKUP.	1'-4"	1'-4"	9 1/2"		WL	LED	1	MAX 50 WATTS MINIMUM 4400 LUMENS	120 V	EM	G	EATON ENC F02 LED E1 BL3
F25	LED WALL PACK LUMINAIRE, SILICONE SEALED LED CHAMBER, ALUMINUM HOUSING, POWDER COAT FINISH, GASKETED, DARK BRONZE, LISTED WET LOCATION. TYPE IV DISTRIBUTION. PROVIDE WITH 2000 LUMEN REMOTE BATTERY PACK MOUNTED ABOVE NEAREST ACCESSIBLE CEILING.	6"	8"	4"		WL	LED	1	MAX 30 WATTS MINIMUM 2700 LUMENS	120 V		G	EATON XTOR3B-W
X1	EDGE-LIT SINGLE FACED EXIT SIGN, INJECTION MOLDED ACRYLIC MIRORR LENS AND EXTRUDED ALUMINUM HOUSING. HOUSING FINISH AND COLORS SELECTED BY ARCHITECT. VERIFY RECESSED END, BACK OR CEILING MOUNTING AND ARROWS WITH PLANS. EMERGENCY BATTERY BACKUP.	1'-1"	2"	9"		CL	LED	1	L.E.D.	120 V	EM	0	LITHONIA LRP 1 DUAL-LITE LE S PHILIPS CHLORIDE EVENLITE SOV 1C ISOLITE ELT
X2	EDGE-LIT DOUBLE FACED EXIT SIGN, INJECTION MOLDED ACRYLIC MIRROR BACKGROUND AND EXTRUDED ALUMINUM HOUSING. HOUSING FINISH AND COLORS SELECTED BY ARCHITECT. VERIFY RECESSED END, BACK OR CEILING MOUNTING AND ARROWS WITH PLANS. EMERGENCY BATTERY BACKUP	1'-1"	2"	9"		CL	LED	1	L.E.D.	120 V	EM	0	LITHONIA LRP 2 DUAL-LITE LS D PHILIPS CHLORIDE EVENLITE SOV 2M ISOLITE ELT

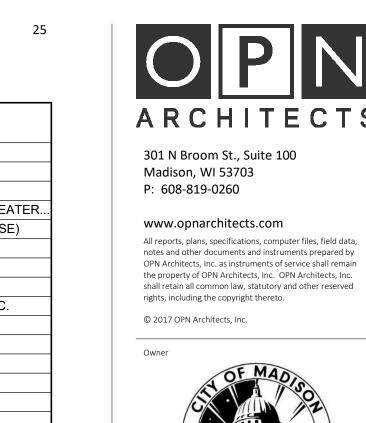
IGHTI	NG SEQUENCE OF OPERATION
PLAN ID	LIGHTING SWITCHED
{LC1}	Sequence: Dimmed lights are vacancy controlled in this space.  ON: The lights turned on using wall controller.  ADJUST: The dimming luminaires are raised / lowered using wall controller.  OFF: The lights turn off using wall controller. After the space has been vacant for 20 minutes, the lights will automatically turn off.
{LC2}	Sequence: Dimmed lights are occupancy controlled in this space.  ON: The lights turn on to last switched state upon occupancy control.  ADJUST: The dimming luminaires are raised / lowered using wall controller.  OFF: The lights turn off using a wall controller. After the space has been vacant for 20 minutes, the lights will automatically turn off.
{LC3}	Sequence: Switched luminaire is photocell controlled in this space.  ON: The lights turn on upon photocell control.  OFF: The lights turn off upon photocell control.
{LC4}	Sequence: Switched lights are photocell controlled in this space.  ON: The lights turn on with switch in Children's Program Room 123 and override off upon photocell control.  OFF: The lights turn off using a wall switch and photocell control.  Upon loss of power, the fixtures will transfer to battery backup and turn on.
{LC5}	Sequence: Switched lights are controlled in this space. ON: The lights turn on using switches. OFF: The normal lights turn off using switches.
{LC6}	Sequence: Switched luminaires are occupancy controlled in this space.  ON: The lights turn on to last switched state upon occupancy control.  OFF: The lights turn off using switches. After the space has been vacant for 20 minutes, the lights will automatically turn off.
{LC7}	Sequence: Multiple zones of dimmed lights are occupancy controlled in this space. Daylight sensing also controls fixtures within the daylit zones.  ON: Zones turn on to last switched state upon occupancy control.  ADJUST: Lights are raised/lowered using wall controllers. Dimmable lights will continuously adjust to the presence of dayligh to maintain 40 foot-candles at +30" within the daylit zones.  OFF: The lights may be turned off using a wall controller. After the space has been vacant for 20 minutes, the lights will automatically turn off.  Upon loss of power, the half shaded fixtures will transfer to battery backup and turn on.
{LC8}	Sequence: Multiple zones of lights are occupancy controlled in this space. Daylight sensing also controls fixtures within the daylit zones. Emergency night light fixtures remain on at all times. Light fixtures with subscripts 't' through 'z' in open areas 102, 106, 107, 108, 116, 120, 121, and 122 are controlled by wall controllers located at shipping/receiving area and circulatic desk.  ON: Zones turn on to last switched state upon occupancy control. Activation of any occupancy sensor in any zone will turn o all zones.  ADJUST: Dimmable lights will continuously adjust to the presence of daylight to maintain 40 foot-candles at +30" within the daylit zones. Half shaded fixtures or portions of fixtures will remain on at full illumination all times for egress purposes.  OFF: The lights may be turned off using a wall controller. After the space has been vacant for 30 minutes, all zones will automatically turn off simultaneously.
{LC9}	Sequence: Two zones of dimmed lights are occupancy controlled in this space with daylight sensing for fixtures within the daylit zones.  ON: Zones turn on to last switched state upon occupancy control.  ADJUST: Individual lighting zones are raised / lowered using wall controller. Dimmable lights will continuously adjust to the presence of daylight to maintain 40 foot-candles at +30" within the daylit zones.  OFF: The lights turn off using wall controller. After the space has been vacant for 20 minutes, the lights will automatically turn off.
{LC10}	Sequence: Two zones of dimmed lights are occupancy controlled in this space.  ON: Zones turn on to last switched state upon occupancy control.  ADJUST: Individual lighting zones are raised / lowered using wall controller.  OFF: The lights turn off using wall controller. After the space has been vacant for 20 minutes, the lights will automatically turn off.  Upon loss of power, the half shaded fixtures will transfer to battery backup and turn on.
{LC11}	Sequence: One zone of dimmed and two zones of switched lights are occupancy controlled in this space with daylight sensing for fixtures within the daylit zones. Half shaded fixtures will remain on at all times.  ON: Zones turn on to last switched state upon occupancy control.  ADJUST: Dimmed lighting zone is raised / lowered using wall controllers. Dimmable lights will continuously adjust to the presence of daylight to maintain 40 foot-candles at +30" within the daylit zones.  OFF: The lights turn off using wall controller. After the space has been vacant for 20 minutes, the lights will automatically turn off.  Upon loss of power, the half shaded fixtures will transfer to battery backup and turn on.
{LC12}	Sequence: Dimmed lights are occupancy controlled in this space with daylight sensing for fixtures within the daylit zones.  ON: The lights turn on to last switched state upon occupancy control.  ADJUST: The dimmed lights are raised / lowered using wall controller. Dimmable lights will continuously adjust to the presence of daylight to maintain 40 foot-candles at +30" within the daylit zones.  OFF: The lights turn off using a wall controller. After the space has been vacant for 20 minutes, the lights will automatically turn off.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |

1			NOTE: AL	L DISCON	NECTS (EXCEP	T MANUAL STA	ARTERS) SHALL BE I	HEAVY DUTY TYPE.			
DISCONNE	CT TYPE:				REMARKS:						
FU - FUSED					SA - STANDARI	O ACCESSORIE	ES (INCLUDES * ITEM	S) PF - PHASE L	OSS PROTECTION (5 HP OR GREA		
NF - NON-F	USED				*CT - CONTROL	TRANSFORM	ER, FUSED 120V	TO - MELTING	THERMAL OVERLOADS (1 PHASE		
CB - CIRCU	IT BREAKER				*EO - ELECTRO	NIC OVERLOA	D (3 PHASE MOTORS	TS - 2 SPEED	SELECTOR SWITCH IN DOOR		
					*HA - HAND-OF	F-AUTO IN DO	OR	GP - GREEN (	OFF) PILOT LIGHT IN DOOR		
STARTER T	YPE:				*RP - RED (RUN	N) PILOT LIGHT	IN DOOR	FA - 4-CONVE	FA - 4-CONVERTIBLE AUXILIARY CONTACTS		
FV - FULL VOLTAGE				*TA - TWO CON	IVERTIBLE AUX	KILIARY CONTACTS	EI - ELECTRIC	EI - ELECTRICAL INTERLOCK (2)-N.O. & (2)-N.C			
YD - WYE -	YD - WYE - DELTA				S/N - INSULATE	D NEUTRAL AS	SSEMBLY	SS - START-S	SS - START-STOP PUSHBUTTON IN DOOR		
RE - REVER	RSING							HL - HANDLE	PADLOCK HASP		
TW - 2 SPE	ED, 2 WINDIN	IG									
SW - 2 SPE	ED, 1 WINDIN	IG									
RV - REDUC	CED VOLTAG	E AUTOXFMI	₹								
SS - SOLID	STATE										
MS - MANU	AL STARTER										
MX - MANU	AL SWITCH										
FS - FUSED	SWITCH										
DISCONNECT TYPE & RATING			CIRCUIT		STAF	RTER	NEMA				
ITEM	TYPE	RATING	VOLTAGE	POLES	NEMA SIZE	TYPE	ENCLOSURE	REMARKS	APPROVED MANUFACTUR		
DS-200	NF	200 A	480 V	3			1		SQUARE D 3110 HU364 EATON TYPE DH		

MS-1

208 V



GENERAL ELECTRIC TYPE TH

GENERAL ELECTRIC CR101 SIEMENS TYPE SMF

SIEMENS TYPE HNF

SQUARE D 2510 FG5 EATON TYPE MS







Foundation

PINNEY NEIGHBORHOOD LIBRARY 516 COTTAGE GROVE ROAD MADISON, WI



City Contract No.

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REFERENCE SCALE IN INCHES

17609000 Sheet Issue Date

OPN Project No.

**BID DOCUMENTS** Sheet Name

**ELECTRICAL SCHEDULES** 

Sheet Number

PANEL NAME: A **CONNECTED** 42.3 kVA TYPE: BOLT-ON MAIN: 400A MCB MOUNTING: RECESSED SOLID NEUTRAL VOLTS: 120/208 Wye GROUND BUS FED FROM: DP-LIBRARY PHASE: 3 WIRE: 4 **SCCR:** 18,000A **LOCATION: MECH CLOSET 104 DEMAND:** 39.06 kVA Panel Notes: OVERCURREN OVERCURREN C T PROTECTION T PROTECTION A CKT NO. LOAD DESCRIPTION AMPS P P AMPS LOAD DESCRIPTION CKT NO. 1 20 A Receptacles A-1 Receptacles 20 A 1 0.36 0.72 A-2 
 20 A
 1
 20 A
 Receptacles

 20 A
 1
 20 A
 Receptacles

 20 A
 1
 20 A
 Receptacles
 A-3 Receptacles A-4 A-5 Receptacles A-6 20 A 1 1.08 0.18 1.08 0.9 A-7 Receptacles A-8 1 20 A Receptacles 0.36 0.18 A-9 Receptacles 20 A Receptacles A-10 20 A 1 0.36 0.18 15 A 2 0.43 0.72 A-12 A-11 IU-202, 309 0.43 0.45 1 20 A LOBBY DOOR, GATE A-13 --1 20 A Receptacles A-14 20 A 1 0.18 0.18 1 20 A Receptacles
20 A 1 0.36 0.36 1 20 A Receptacles
20 A 1 0.36 0.36 1 20 A Receptacles A-15 Receptacles A-16 A-17 Receptacles A-18 A-19 Receptacles A-20 A-22 A-21 Receptacles 2 20 A Receptacles A-23 --A-24 A-25 Receptacles 1 20 A Receptacles A-26 
 20 A
 1
 0.72
 0.54
 1
 20 A
 Receptacles

 20 A
 1
 0.54
 0.18
 1
 20 A
 Receptacles
 A-27 Receptacles A-28 A-29 Receptacles A-30 20 A 1 0.18 0.54 A-31 Receptacles A-32 1 20 A Receptacles 
 20 A
 1
 0.54
 0.54
 1
 20 A
 Receptacles

 20 A
 1
 0.36
 0.36
 1
 20 A
 Receptacles

 20 A
 1
 0.36
 0.36
 1
 20 A
 Receptacles
 A-33 Receptacles A-34 A-35 Receptacles A-36 A-37 Receptacles A-38 A-39 Receptacles 1 20 A Receptacles A-40 A-42 A-41 IU-305, 310 0.43 | 0.31 | 2 | 15 A | IU-301, 302 -- 0.43 0.31 A-43 --A-44 15 A 2 0.52 0.39 2 15 A BS-300, IU-303 A-45 IU-304, 308 A-46 A-47 --A-48 0.52 | 0.39 | -- | -- |--1 20 A SHADES \*P A-49 WCCU-300, #3 WIRE A-50 90 A 3 5.2 0.6 -- - 5.2 0.72 1 20 A Receptacles A-51 -A-52 A-53 --A-54 5.2 0.8 1 20 A DOORS A-55 Lighting A-56 20 A 1 1.57 0.68 1 20 A Lighting 20 A 1 0.76 0.9 1 20 A A-57 Lighting A-58 0.36 0 2 20 A FUTURE ELEC HEAT A-59 Lighting A-60 -- | -- |--A-62 A-61 FUTURE ELEC HEAT 20 A 2 0 0 A-63 --A-64 0 0 2 20 A FUTURE ELEC HEAT A-66 A-65 Receptacles 0.18 0 -- - --A-67 ---- - 0 0.18 2 20 A Receptacles A-68 20 A 2 0.18 0 -- -- --A-69 Receptacles A-70 A-71 --A-72 0 0.18 2 20 A Receptacles A-73 SPARE A-74 20 A 1 0 0 20 A 1 0 0 A-75 SPARE A-76 1 20 A SPARE A-77 SPARE 0 0 1 20 A SPARE A-78 20 A 1 0 0 A-79 SPARE 1 20 A SPARE A-80 20 A 1 0 0 0 20 A 1 0 0 0 A-81 SPARE 1 20 A SPARE A-82 20 A 1 0 0 0 1 20 A SPARE

20 A 1 0 0 1 20 A SPARE

20 A 1 0 0 1 20 A SPARE

20 A 1 0 0 0 1 20 A SPARE

20 A 1 0 0 0 -- SPACE A-83 SPARE A-84 A-85 SPARE A-86 A-87 SPARE A-88 A-89 SPACE -- - 0 0 0 -- SPACE -- - SPACE A-91 SPACE A-92 --A-93 SPACE A-94 --- -- SPACE A-95 SPACE A-96 ---- -- 0 0 0 -- -- SPACE
-- -- 0 0 0 -- -- SPACE
-- -- SPACE
-- -- SPACE A-97 SPACE A-98 --A-99 SPACE A-100 --A-101 SPACE A-102 --A-103 SPACE A-104 --A-105 SPACE A-106 --A-107 SPACE A-108 --**Total Amps:** 126.38 112.73 113.09

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25

TYPE: BOLT-ON MOUNTING: SURFACE FED FROM: DP-LIBRARY SCCR: 30,000A LOCATION: LIBRARY MECH. 001							ID NEU <sup>-</sup> OUND E			MAIN: 400A MLO VOLTS: 120/208 Wye PHASE: 3 WIRE: 4 DEMAND: 70 kVA			
Panel	Notes:												
CKT N	IO. LOAD DESCRIPTION	OVERC T PROTI AMPS			4	E	3	(	C		CURREN ECTION AMPS	LOAD DESCRIPTION	CKT NO
C-1		15 A	2	0.04	2.27					3		WCCU-100, #10 WIRE	C-2
C-3						0.04	2.27						C-4
C-5	Receptacles	20 A	1					0.54	2.27				C-6
C-7	-	15 A	1	0.8	3.73					3	70 A	P-1, #8 WIRE	C-8
C-9	P-2, #8 WIRE	70 A	3			3.73	3.73						C-10
C-11								3.73	3.73				C-12
C-13				3.73	0.9					1		CP-1	C-14
C-15		20 A	2			2.15	0.17			3	15 A	AHU-1 HEAT WHEEL	C-16
C-17								2.15	0.17				C-18
C-19	•	35 A	3	2.03	0.17								C-20
C-21						2.03	2.03			3	35 A	AHU-1 EXHAUST, #10 WIRE	C-22
C-23								2.03	2.03				C-24
C-25		20 A	1	0.5	2.03								C-26
C-27	0 0	20 A	1			0	0.18		0.07	1	20 A	Receptacles	C-28
C-29		20 A	1		0.07			0.8	6.67	3		Power	C-30
C-31		20 A	1	0	6.67	0	0.07					<del></del>	C-32
C-33		20 A	1			0	6.67	0	0				C-34
C-35	SPARE SPARE	20 A 20 A	1 1	0	0			0	0	1		SPARE SPARE	C-36 C-38
C-39		20 A 20 A		U	U	0	0			1		SPARE	C-36 C-40
			1			U	0		0	-			
C-41		20 A	1					0	0	1		SPARE	C-42
C-43		20 A	1	0	0	-				1		SPARE	C-44
C-45		20 A	1			0	0			1		SPARE	C-46
C-47		20 A	1					0	0	1		SPARE	C-48
C-49				0	0							SPACE	C-50
C-51	1 SPACE					0	0					SPACE	C-52
C-53	3 SPACE							0	0			SPACE	C-54
C-55	5 SPACE			0	0							SPACE	C-56
C-57	7 SPACE					0	0					SPACE	C-58
C-59	SPACE							0	0			SPACE	C-60
C-61				0	0							SPACE	C-62
C-63						0	0					SPACE	C-64
C-65								0	0			SPACE	C-66
C-67				0	0							SPACE	C-68
C-69						0	0					SPACE	C-70
C-71						J	J	0	0			SPACE	C-70
U-1	I OF AGE	Tota	al Load:			23		24.12	2 kVA			OI AOL	C-12
Key*:	*P = PADLOCK HASP	Tota	I Amps:	190	J.61	191	.86	201	1.19				

**Key\*:** \*P = PADLOCK HASP

		OVERC T PROT	<b>ECTION</b>	ON A		В			С	OVERCURREN T PROTECTION			
	CKT NO. B-1	LOAD DESCRIPTION Receptacles	AMPS 20 A	<b>P</b>	0.9	0.9					P         AMPS           1         20 A	LOAD DESCRIPTION  Receptacles	CK
	B-3	Receptacles	20 A	1	0.0	0.0	0.36	0.18			1 20 A	REFRIGERATOR	
	B-5	Receptacles	20 A	1					0.18	0.18	1 20 A	Receptacles	ı
	B-7	Receptacles	20 A	1	0.36	1.08					1 20 A	Receptacles	I
	B-9	Receptacles	20 A	1			0.9	0.54			1 20 A	Receptacles	E
	B-11	Receptacles	20 A	1					1.08	1.1	1 20 A	Receptacles	E
	B-13	Receptacles	20 A	1	0.18	0.18	0.40	0.10			1 20 A	Receptacles	E
	B-15 B-17	Receptacles	20 A 20 A	1			0.18	0.18	0.18	0.54	1 20 A 1 20 A	Receptacles	E
	B-17 B-19	Receptacles Receptacles	20 A 20 A	1	0.36	0.72			0.16	0.54		Receptacles Receptacles	<u> </u>
-	B-19 B-21	Receptacles	20 A	1	0.50	0.72	0.18	0.54			1 20 A	Receptacles	E
	B-23	Receptacles	20 A	1			00	0.0.	0.36	0.18	1 20 A	Receptacles	E
	B-25	Receptacles	20 A	1	0.36	0.36					1 20 A	Receptacles	Е
	B-27	Receptacles	20 A	1			0.36	0.36			1 20 A	Receptacles	E
	B-29	Receptacles	20 A	1					0.36	0.9	1 20 A	Receptacles	E
	B-31	Receptacles	20 A	1	0.36	0.36		0.10			1 20 A	Receptacles	E
	B-33	Receptacles	20 A	1			0.9	0.18	0.54	0.10	1 20 A	Receptacles	E
	B-35 B-37	Receptacles	20 A 20 A	1	0.36	0.9			0.54	0.18	1 20 A 1 20 A	Receptacles	E
	B-37 B-39	Receptacles Receptacles	20 A	1	0.00	0.8	0.36	0.36			1 20 A	Receptacles Receptacles	E
	В-39 В-41	Receptacles	20 A	1			0.00	0.00	0.36	0.36	1 20 A	Receptacles	E
	B-41	Receptacles Receptacles	20 A 20 A	1	0.72	0.36			0.00	0.00	1 20 A	Receptacles	E
	B-45	Receptacles	20 A	1	0.12	0.00	0.72	0.36			1 20 A	Receptacles	E
	B-45 B-47	Receptacles	20 A	1			0.12	0.00	0.54	0.36	1 20 A	Receptacles	E
	B-47 B-49	Receptacles	20 A	1	0.74	0.84			5.54	5.00		Receptacles	E
	B-49 B-51	Receptacles	20 A	1	3.74	5.04	1.38	0.54				Receptacles	E
*G	B-53	EWC	20 A	1			7.00	3.04	0.18	0.18		Receptacles	E
٦	B-55	IU-101, 106	15 A	2	0.28	0.72			0.10	0.10		Receptacles	E
	B-55				5.20	5.12	0.28	0.23				IU-105, 107	E
	B-59	IU-107, 109	15 A	2			3.20	3.20	0.22	0.23			E
	B-61				0.22	0.35			0.22	0.20		BS-100, IU-102, 103	E
	B-63	IU-209, 210	15 A	2	V	0.00	0.52	0.35					
	B-65								0.52	0.91	2 15 A	IU-203, 206	E
	B-67	IU-204, 208	15 A	2	0.73	0.91			0.02	0.0.			E
	B-69						0.73	0.26			2 15 A	IU-205, 307	E
	B-71	IU-201, 207, 306	15 A	2					0.86	0.26			E
	B-73				0.86	0.18					2 15 A	BS-200, IU-108	E
	B-75	RCP-1	15 A	2			1.13	0.18					E
	B-77								1.13	0.6	1 20 A	SHADES	E
	B-79	SHADES	20 A	1	0.6	0.9					1 20 A	SHADES	E
	B-81	Receptacles	20 A	1			0.36	1.2				SHADES	E
	B-83	Receptacles	20 A	1					0.18	0.68		SCREEN	E
	B-85	Receptacles	20 A	1	0.18	0.18					1 20 A	Receptacles	E
	B-87	Lighting	20 A	1			0.96	0.9			1 20 A	Receptacles	Е
	B-89		20 A	1					0.65	0.8	1 20 A	DOORS	E
	B-91	Lighting	20 A	1	0.4	0.81					1 20 A	Lighting	E
	B-93	Lighting	20 A	1			1.06	1.47			1 20 A	Lighting	E
	B-95	Lighting	20 A	1					0.7	1.23	1 20 A	Lighting	E
'G	B-97	DISPOSER	15 A	1	1.6	1.21					1 20 A	Lighting	E
	B-99	FUTURE ELEC HEAT	20 A	2			0	0			2 20 A	FUTURE ELEC HEAT	В
	B-101								0	0			В
	B-103	PP-1	20 A	1	0.4	0.53					3 20 A	PARTITION, 4#10 & 1#10 GND	В
	B-105	PP-1	20 A	1			0.4	0.53					В
	B-107	PP-1	20 A	1					0.4	0.53		<u></u>	В
	B-109	PP-1	20 A	1	0.4	0					2 20 A	Power	В
	B-111	PROJECTOR	20 A	1			0.6	0					В
	B-113	Power	20 A	1					12	12	1 20 A	Power	В
	B-115	Power	20 A	1	12	12					1 20 A	Power	В
	B-117	Power	20 A	1			12	12			1 20 A	Power	В
	B-119												В
	B-121												В
	B-123	SPARE	20 A	1			0	0				SPARE	В
	B-125	SPARE	20 A	1					0	0	1 20 A	SPARE	В
	B-127	SPARE	20 A	1	0	0					1 20 A	SPARE	В
	B-129	SPACE					0	0				SPACE	В
	B-131	SPACE							0	0		SPACE	В
	B-133	SPACE			0	0						SPACE	В
]	B-135	SPACE					0	0				SPACE	В
	B-137	SPACE							0	0		SPACE	В
]	B-139	SPACE			0	0						SPACE	В
]	B-141	SPACE					0	0				SPACE	В
]	B-143	SPACE							0	0		SPACE	В
	B-145	SPACE			0	0						SPACE	В
	B-147	SPACE					0	0				SPACE	В
	B-149	SPACE							0	0		SPACE	В
	B-151	SPACE			0	0						SPACE	В
	B-153	SPACE					0	0				SPACE	В
]	B-155	SPACE							0	0		SPACE	В
]	B-157	SPACE			0	0						SPACE	В
	B-159	SPACE					0	0				SPACE	В
- 1	B-161	SPACE	1						0		1	SPACE	В

PANEL NAME: B

SOLID NEUTRAL

GROUND BUS

TYPE: BOLT-ON

MOUNTING: SURFACE

FED FROM: DP-LIBRARY

**SCCR**: 18,000A

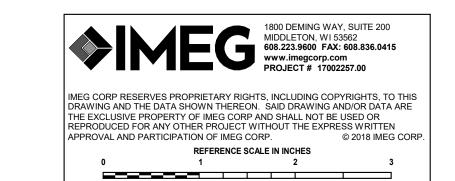
**CONNECTED** 130.9 kVA

PHASE: 3

WIRE: 4

MAIN: 400A MCB

VOLTS: 120/208 Wye



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Revision

City Contract No.

OPN Project No. **17609000** 

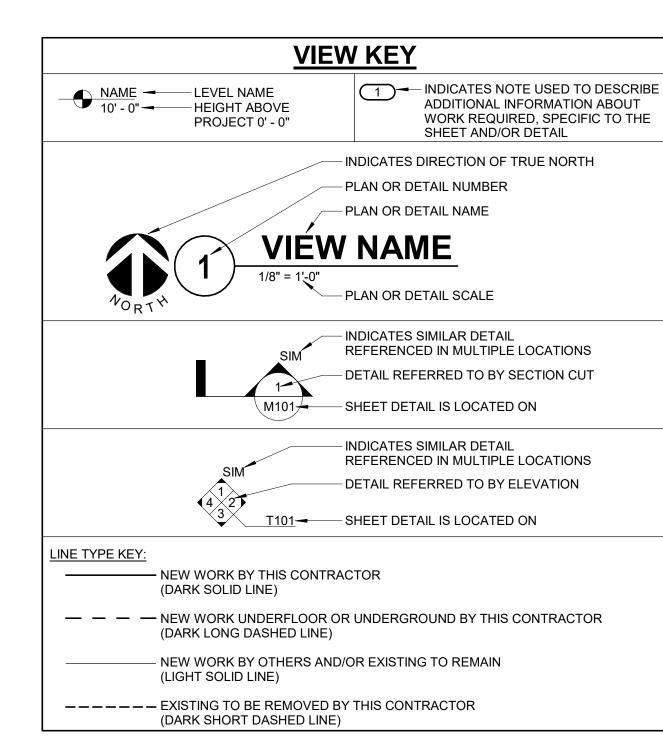
Sheet Number

Sheet Issue Date
BID DOCUMENTS

Sheet Name

ELECTRICAL PANEL
SCHEDULES

E700



## FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT. ALL FLOOR ASSEMBLIES SHALL BE DESIGNATED AS 2 HOUR FIRE BARRIER(S), UNLESS NOTED

OTHERWISE ON THE PLANS. RATINGS WERE ACQUIRED FROM THE ARCHITECTURAL PLANS DATED 05/29/2018.

\_\_\_\_\_\_\_\_\_\_

1 HOUR FIRE BARRIER 2 HOUR FIRE BARRIER

	CONTRACTOR ABBREVIATION KEY
ABBR:	DESCRIPTION:
A.V.C.	AUDIO/VISUAL CONTRACTOR
C.C.	CIVIL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
S.C.	SECURITY CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
TCC	TEMPERATURE CONTROLS CONTRACTOR

#### PLUMBING FIXTURE ROUGH-IN SCHEDULE NOTES: 1) SANITARY RISER UP IN WALL TO FIXTURE SHALL BE A MINUMUM OF 2". 2) 1/2" CW AND HW APPLIES ONLY TO THE FINAL VERTICAL RISE-DROP TO EACH FIXTURE, BRANCH PIPING TO VERTICAL RISE-DROP SHALL BE A MINIMUM OF 3/4" UNLESS NOTED OTHERWISE. 3) SIZES SHOWN ARE MINIMUMS.

SIZES SHOWN ON THE DRAWING THAT ARE LARGER THAN THE SIZES LISTED IN THE SCHEDULE SHALL

DICTATE THE ROUGH-IN SIZE. DOMESTIC DOMESTIC SANITARY VENT FIXTURE DESCRIPTION (NOTE 3) REMARKS (NOTE 3) (NOTE 3) (NOTE 3) **ELECTRIC WATER COOLER** FLOOR DRAIN/FLOOR SINK 1 1/2" FLOOR DRAIN/FLOOR SINK 1 1/2" HOSE BIBB 1 1/4" NOTE 1 & 2 LAVATORY 1 1/4" MOP BASIN 1 1/2" NOTE 2 SHOWER 1 1/2" 1 1/2" 1 1/2" NOTE 1 & 2 **UTILITY BOX - COLD WATER** 

	PLUMBING ABBREVIATION KEY
ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
ВТ	BATHTUB
СВ	CATCH BASIN
CI	CAST IRON
CO	CLEANOUT
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
E EWC	EXISTING ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FM	FLOW METER
FS	FLOOR SINK
GD	GARBAGE DISPOSER
НВ	HOSE BIBB
I.E.	INVERT ELEVATION (FOR REFERENCE ONLY)
LAV	LAVATORY
MB	MOP BASIN
MV	MIXING VALVE
NC	NEW CONNECTION
NIC	NOT IN CONTRACT
NT	NEUTRALIZATION TANK
RD	ROOF DRAIN
SH	SHOWER
SK	SINK
SS	SERVICE SINK
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP	TYPICAL
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WM	WATER METER
WS	WATER SOFTENER
UNO	UNLESS NOTED OTHERWISE
YCO	YARD CLEANOUT

108 WSFU

70 GPM

-6 FEET

340 FEET

91.0 PSI

91.0

0.01

0.0

91.0

-2.4

93.4

5.0

11.0

25.0

37.8

93 WSFU

66 GPM

0 GPM

21.8

0.0

525

4.2

SUBTOTAL

VALUE OF "B"

SUBTRACT VALUE OF "C"

SUBTOTAL

SUBTRACT VALUE OF "D"

SUBTRACT VALUE OF "F4"

SUBTOTAL

SUBTRACT VALUE OF "G"

DIVIDE BY VALUE OF "H"

SUBTOTAL

MULTIPLY BY:

A (PSI/100 FT)

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24

#### **PLUMBING GENERAL NOTES:**

1. THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR

ALL ELEVATIONS BEFORE BEGINNING WORK

- FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT. 2. CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER LISTED IS THE
- BASIS OF DESIGN. CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED PER ALL APPLICABLE STATE, LOCAL AND GOVERNING AUTHORITIES. 4. ALL FIXTURES SHALL CONFORM TO FEDERAL ACT S.3874

5. INVERT ELEVATIONS ARE FROM EXISTING DRAWINGS AND MAY NOT BE ACCURATE. VERIFY

- VERIFY UNDERGROUND PIPE SIZES, INVERT ELEVATIONS, AND LOCATIONS PRIOR TO BEGINNING ANY WORK.
- 7. REFER TO THE PLUMBING ROUGH-IN SCHEDULE FOR THE SIZES OF BRANCH PIPES TO PLUMBING FIXTURES. 8. FOR CLARITY, NOT ALL VALVES HAVE BEEN SHOWN. PROVIDE SHUTOFF VALVES IN
- BE CONSIDERED SHUTOFF VALVES. 9. P.C. SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW WORK UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 22 05 05 FOR ADDITIONAL INFORMATION.

DOMESTIC WATER PIPING SERVING EACH ROOM WITH FIXTURES. ANGLE STOPS SHALL NOT

	PLUMBING SHEET INDEX
Sheet Number	Sheet Name
P000	PLUMBING COVER SHEET
P100	LEVEL 0 FLOOR PLAN - PLUMBING
P101	LEVEL 1 UNDER RAISED FLOOR PLAN – PLUMBING
P102	LEVEL 1 FLOOR PLAN - PLUMBING
P200	ENLARGED PLANS AND SECTIONS - PLUMBING
P300	RISER DIAGRAMS - PLUMBING
P301	RISER DIAGRAMS - PLUMBING
P302	RISER DIAGRAMS - PLUMBING
P500	PLUMBING DIAGRAMS
P600	PLUMBING SCHEDULES

### **GENERAL NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBIN, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC.. AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE
- INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM
- ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE, REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. 3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING
- WITH FABRICATION OR EQUIPMENT ORDERS. 4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER
- 5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
- 6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF
- 7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
- 8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND 9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE
- PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING. 10. SEAL ALL FLOOR AND WALL PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND

GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE

- DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER 11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE
- 12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL
- RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT. 13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT

TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS

- MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS,
- 14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES. 15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR
- STARTERS, SWITCHES, AND DISCONNECTS.

PIPING, DUCTWORK, ETC.

- 16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT. 17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER
- NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS. 18. THERE ARE SIGNIFICANT DIFFERENCES BETWEEN THE VRF SYSTEM MANUFACTURERS. THE MECHANICAL CONTRACTOR SHALL CONFIRM WITH THE MANUFACTURER'S
- REPRESENTATIVES INCLUDE THE PRECISE QUANTITY AND SIZES OF ALL EQUIPMENT, COMPONENTS, REFRIGERANT PIPING, CONDENSATE PIPING, ELECTRICAL CONNECTIONS, CONTROLS, ETC. NECESSARY TO MAKE THE SYSTEM FULLY OPERATIONAL AND MAINTAIN ZONING CONTROL AS INDICATED ON DOCUMENTS PRIOR TO BID. THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL COSTS FOR SUCH IN HIS BID. INCLUDING ANY REQUIREMENTS OVER AND ABOVE THAT INCLUDE IN THE CONTRACT DOCUMENTS.

WATER CALCULATION WORKSHEET - HOT WAT	<u>ER</u>	
CALCULATE THE PRESSURE AVAILABLE FOR UNIFORM LOSS (VALUE OF "A")		
B. PRESSURE AVAILABLE AFTER THE BUILDING CONTROL VALVE (FROM #9 ABOVE):	VALUE OF "B"	93.4
C. PRESSURE LOSS OF WATER METER (WHEN METER IS REQUIRED) C.1 PRESSURE AFTER WATER METER:	SUBTRACT VALUE OF "C"	5.0 88.4 79.0
C.2 PRESSURE SETPOINT OF PRESSURE REDUCING VALVE C.3 PRESSURE LOSS THROUGH PRESSURE REDUCING VALVE AT PEAK FLOW		11.0
D. PRESSURE AT CONTROLLING FIXTURE:	SUBTOTAL	68.0
CONTROLLING FIXTURE IS: SHOWER	SUBTRACT VALUE OF "D"	25.0
	SUBTOTAL	43.0
E. DIFFERENCE IN ELEVATION BETWEEN BUILDING CONTROL VALVE AND THE CONTROLLING FIXTURE IN FEET: 12 X0.434 PSI/FT	SUBTRACT VALUE OF "E"	5.2
	SUBTOTAL	37.8
F. PRESSURE LOSS DUE TO WATER TREATEMENT DEVICES AND BACKFLOW PREVENTERS WHICH SERVE THE CONTROLLING FIXTURE (WATER SOFTENERS, FILTERS, ETC. PRESSURE LOSS DUE TO WATER SOFTENER		
F1. WSFU DOWNSTREAM OF WATER TREATEMENT DEVICE:		93 WSFU
F2. CONVERT WSFU TO GPM USING TABLE 382.40-3:		66 GPM
F3. CONVERT WSFU TO GPM USING TABLE 382.40-3E*: (FOR INDIVIDUAL DWELLING UNITS ONLY)		0 GPM
F4. REFER TO MANUF. GRAPH TO OBTAIN PRESSURE LOSS:	SUBTRACT VALUE OF "F4" SUBTOTAL	16.0 21.8
G. PRESSURE LOSS FOR FUTURE ALLOWANCE:	SUBTRACT VALUE OF "G"	0.0
	SUBTOTAL	21.8
H. PRESSURE LOSS THROUGH TANKLESS WATER HEATERS, COMBINATION BOILER/WATER HEATERS, HEAT EXCHANGERS WHICH SERVE THE CONTROLLING FIXTURE:	SUBTRACT VALUE OF "H"	0.0
	SUBTOTAL	21.8
	OODIOIAL	
I. DEVELOPED LENGTH FROM BUILDING CONTROL VALVE TO CONTROLLING FIXTURE IN FEET: FEET X 1.5: 350	DIVIDE BY VALUE OF "I"	525
I. DEVELOPED LENGTH FROM BUILDING CONTROL VALVE TO CONTROLLING FIXTURE IN FEET: FEET X 1.5: 350	DIVIDE BY VALUE OF "I"	
I. DEVELOPED LENGTH FROM BUILDING CONTROL VALVE TO CONTROLLING FIXTURE IN FEET: FEET X 1.5: 350  A. PRESSURE AVAILABLE FOR UNIFORM LOSS		525 0.042 100

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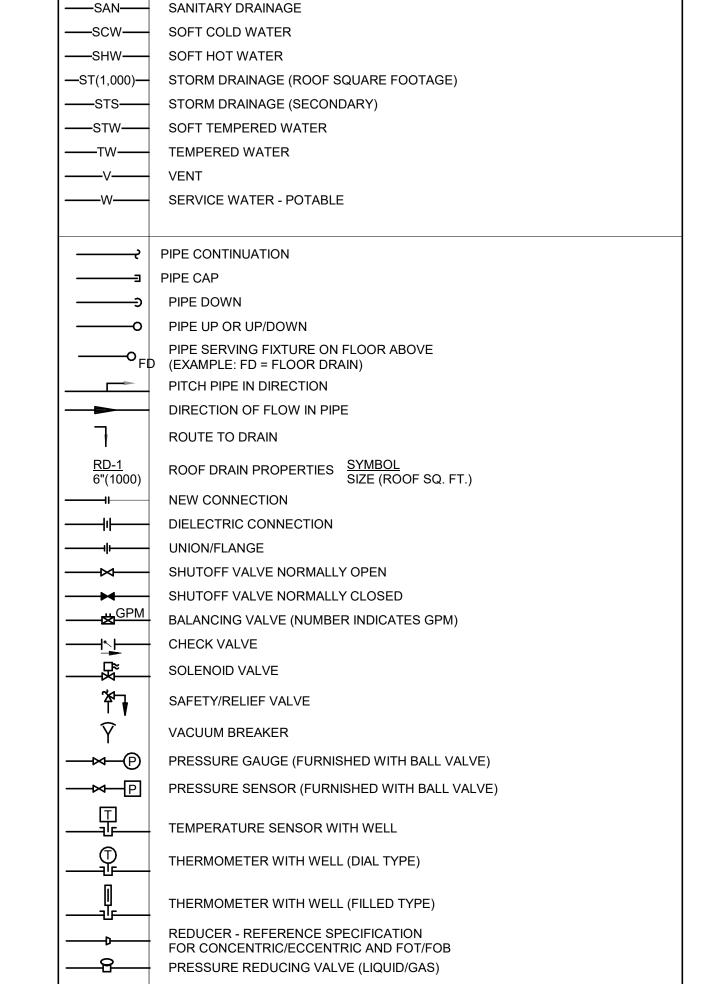
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BID DOCUMENTS

PLUMBING COVER SHEET

Sheet Number

**P000** 



INFORMATION REQUIRED TO SIZE WATER SERVICE AND WATER DISTRIBUTION (CW):

2. ELEVATION DIFFERENCE FROM MAIN OR EXTERNAL PRESSURE TANK TO BUILDING CONTROL VALVE:

SUBTRACT VALUE OF "7"

8. DETERMINE PRESSURE LOSS OR GAIN DUE TO ELEVATION, (MULTIPLY THE VALUE OF #2 ABOVE BY 0.434): SUBTRACT VALUE OF "8"

E. DIFFERENCE IN ELEVATION BETWEEN BUILDING CONTROL VALVE AND THE CONTROLLING FIXTURE IN FEET: 12x0.434 PSI/FT SUBTRACT VALUE OF "E"

4. DEVELOPED LENGTH FROM MAIN OR EXTERNAL PRESSURE TANK TO BUILDING CONTROL VALVE:

6. LOW PRESSURE AT MAIN IN STREET OR EXTERNAL PRESSURE TANK (VALUE OF #5 ABOVE):

7. DETERMINE PRESSURE LOSS DUE TO FRICTION IN 6" DIAMETER WATER SERVICE.

1. DEMAND OF BUILDING IN WATER SUPPLY FIXTURE UNITS (WSFU):

1A. DEMAND OF BUILDING IN WSFU CONVERTED TO GALLONS PER MINUTE:

5. LOW PRESSURE AT MAIN IN STREET OR EXTERNAL PRESSURE TANK:

WATER SERVICE PIPING MATERIAL IS: DUCTILE IRON

9. AVAILABLE PRESSURE AFTER THE BUILDING CONTROL VALVE

C. PRESSURE LOSS OF WATER METER (WHEN METER IS REQUIRED)

C.2 PRESSURE SETPOINT OF PRESSURE REDUCING VALVE

PRESSURE LOSS DUE TO WATER SOFTENER

F2. CONVERT WSFU TO GPM USING TABLE 382.40-3:

(FOR INDIVIDUAL DWELLING UNITS ONLY)

G. PRESSURE LOSS FOR FUTURE ALLOWANCE:

A. PRESSURE AVAILABLE FOR UNIFORM LOSS

WATER DISTRIBUTION PIPING IS: COPPER, TYPE L

F3. CONVERT WSFU TO GPM USING TABLE 382.40-3E\*:

F1. WSFU DOWNSTREAM OF WATER TREATEMENT DEVICE:

F4. REFER TO MANUF. GRAPH TO OBTAIN PRESSURE LOSS:

CALCULATE THE PRESSURE AVAILABLE FOR UNIFORM LOSS (VALUE OF "A")

C.3 PRESSURE LOSS THROUGH PRESSURE REDUCING VALVE AT PEAK FLOW

F. PRESSURE LOSS DUE TO WATER TREATEMENT DEVICES AND BACKFLOW PREVENTERS WHICH SERVE THE CONTROLLING FIXTURE (WATER SOFTENERS, FILTERS, ETC.)

H. DEVELOPED LENGTH FROM BUILDING CONTROL VALVE TO CONTROLLING FIXTURE IN FEET: FEET X 1.5: 350

B. PRESSURE AVAILABLE AFTER THE BUILDING CONTROL VALVE (FROM #9 ABOVE):

**WATER CALCULATION WORKSHEET - SOFTENED COLD WATER** 

1 2 3 4 5 6 7 8 9 10 11 12 13 14

——GSAN—— SANITARY DRAINAGE (GREASE SANITARY DRAINAGE)

SYMBOL: DESCRIPTION:

——DI—— DEIONIZED WATER

DRAIN

——DT—— DRAIN TILE

——G—— NATURAL GAS

COLD WATER - POTABLE

—GRV—GAS REGULATOR VENT

----HW------ HOT WATER - POTABLE

PD—PD—PUMPED DISCHARGE

ALIGNMENT GUIDE

CALCULATE WATER PRESSURE LOSS

PRESSURE LOSS PER 100 FEET:

C.1 PRESSURE AFTER WATER METER:

D. PRESSURE AT CONTROLLING FIXTURE:

CONTROLLING FIXTURE IS: SHOWER

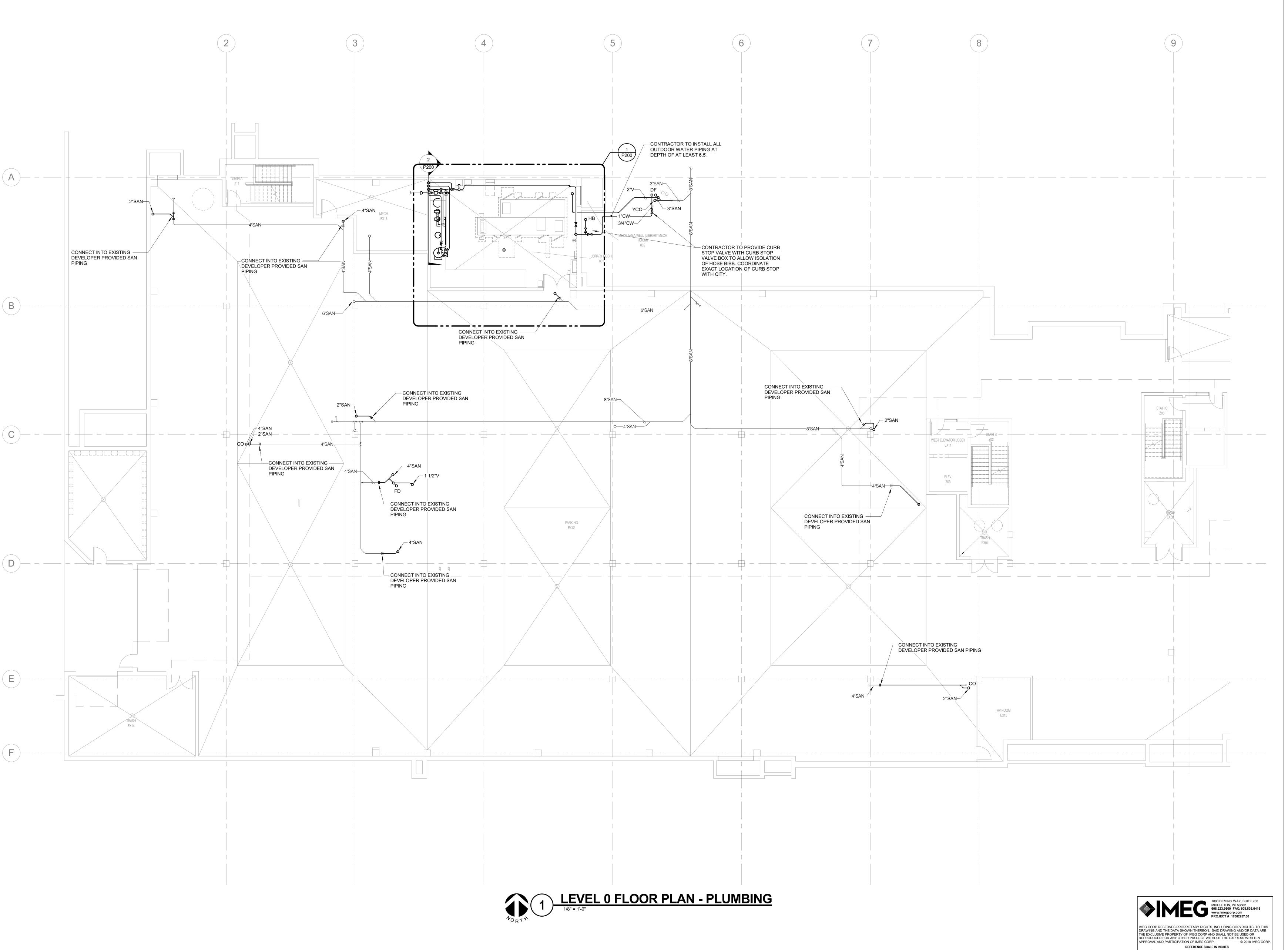
PIPE ANCHOR EXPANSION JOINT

—HWC— HOT WATER CIRCULATING - POTABLE

PLUMBING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY

2 1/2 INCHES



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25

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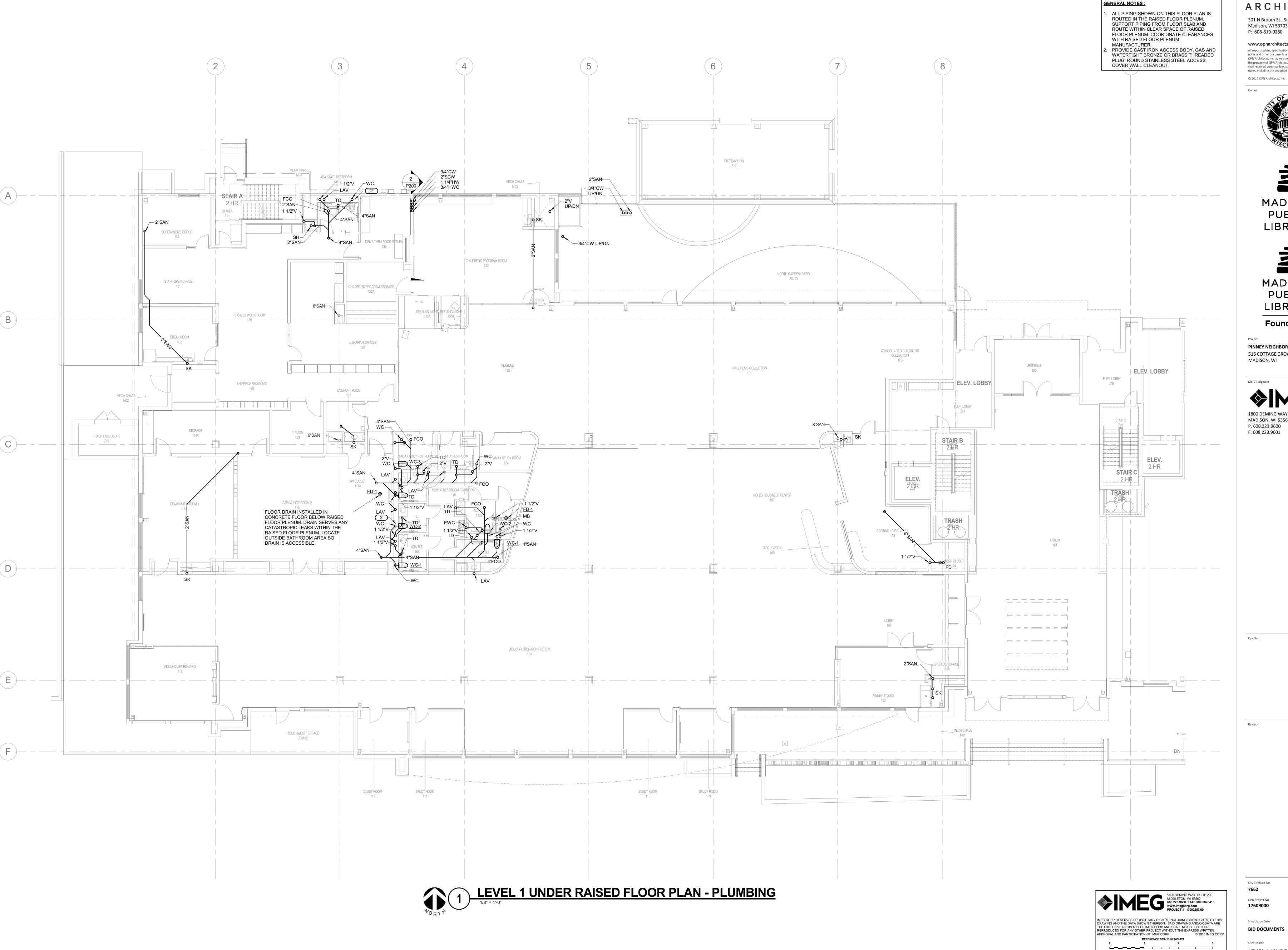
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**17609000**Sheet Issue Date

Sheet Name

LEVEL 0 FLOOR PLAN -

PLUMBING
Sheet Number



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 21 | 22 | 23 | 24 | 25

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

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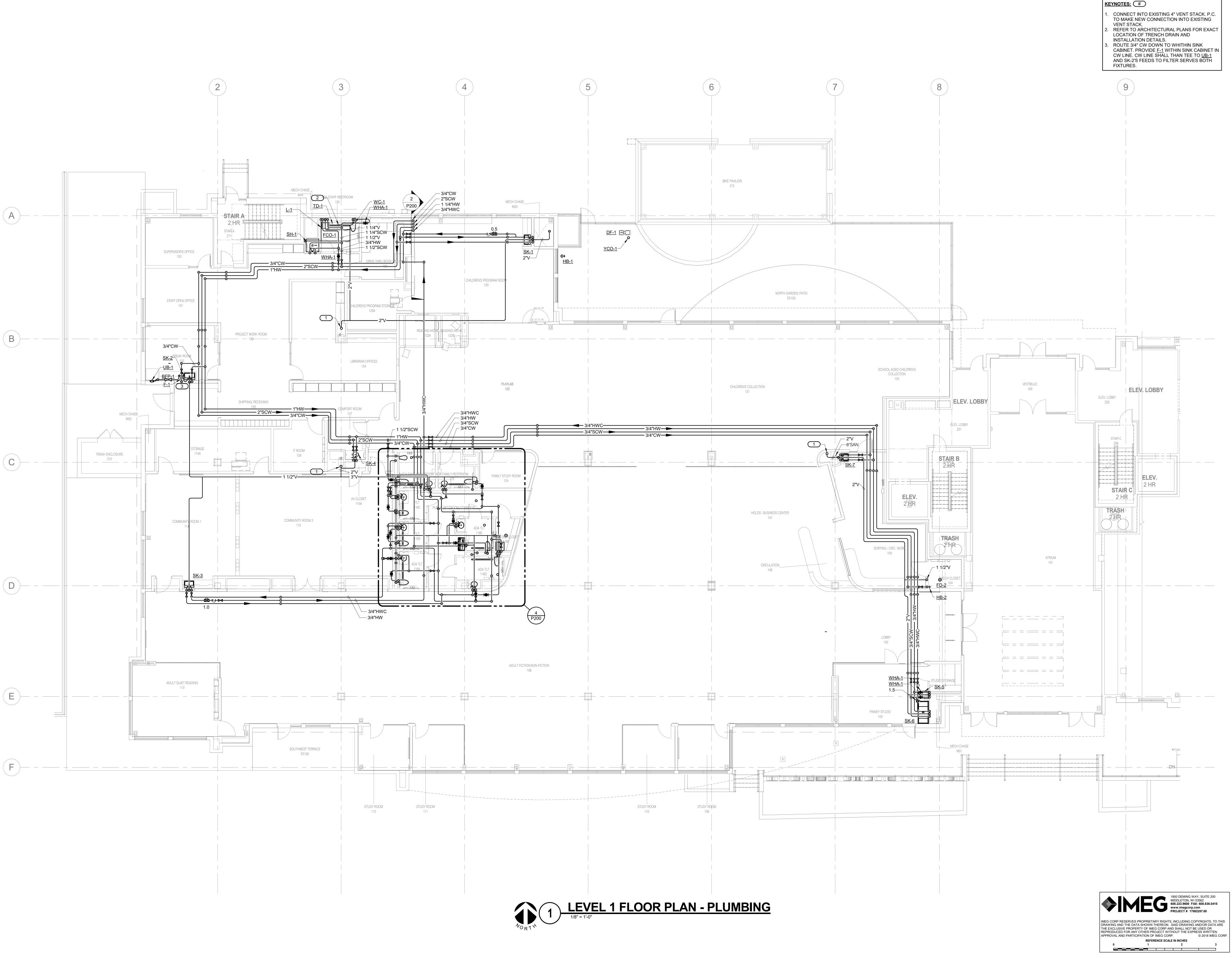


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**BID DOCUMENTS** Sheet Name

**LEVEL 1 UNDER RAISED** FLOOR PLAN – PLUMBING Sheet Number



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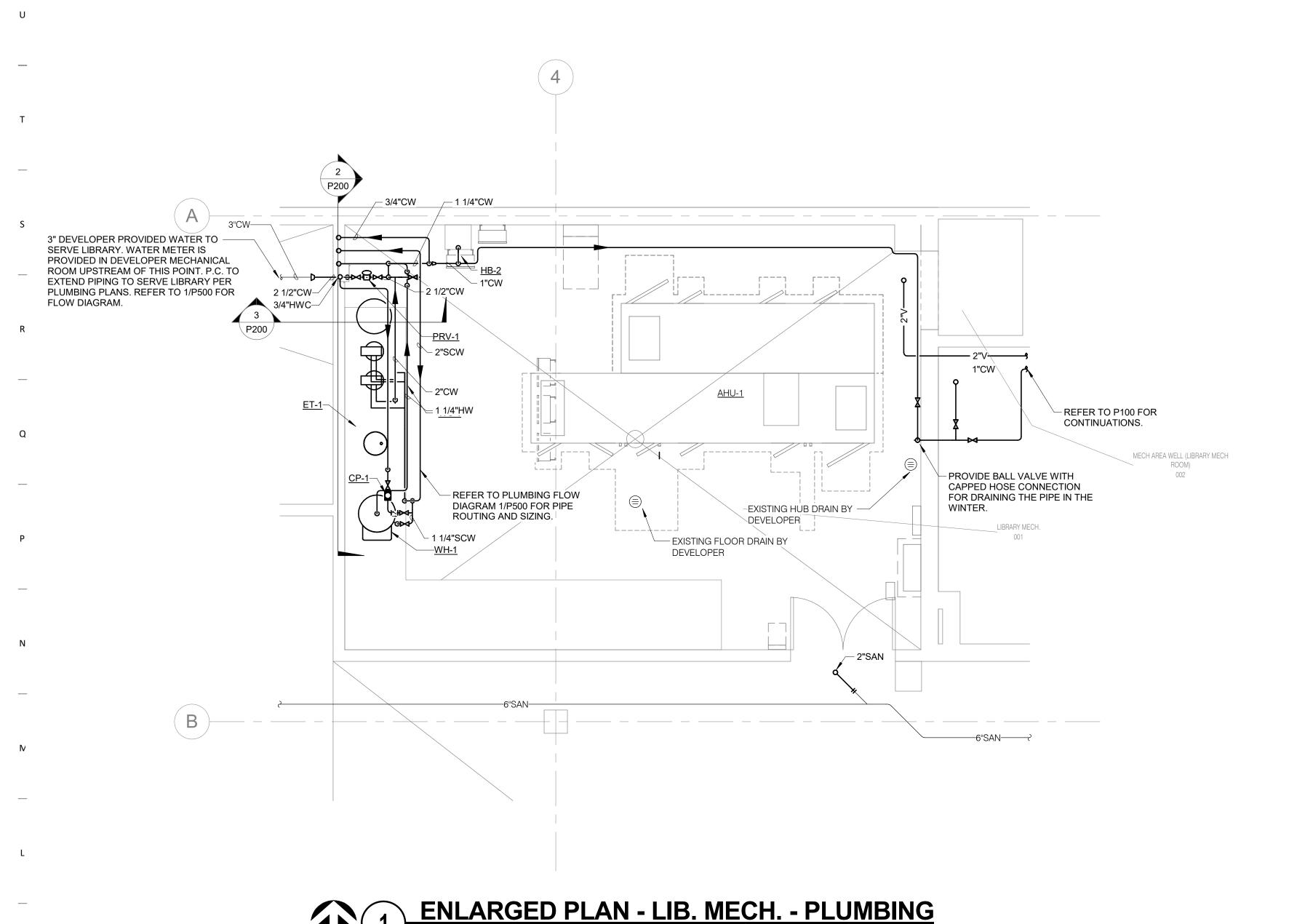
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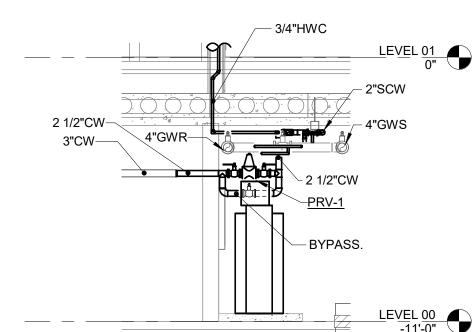
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LEVEL 1 FLOOR PLAN PLUMBING



3/4"HWC-1 1/4"HW-3/4"CW-3"GWR-3"GWS-

SECTION FOR MECH. ROOM PLUMBING



SECTION FOR MECH. ROOM PLUMBING

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 | 25 |

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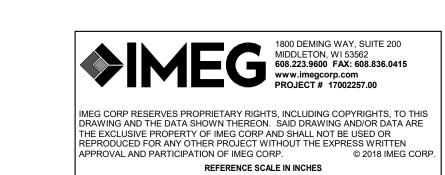
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FAMILY STUDY ROOM 1 1/4"SCW-1 1/2"V<sup>\_/</sup>

ENLARGED PLAN - BATHROOM GROUPS - PLUMBING



KEYNOTES: #

1. P.C. TO PROVIDE STRUCTURAL STAND UNDER ACCESS FLOOR TO SUPPORT FLOOR MOUNTED WATER CLOSET. STRUCTURAL

SLAB. BOLT WATER CLOSET TO STRUCTURAL

REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF TRENCH DRAIN AND

STAND SHALL BE BOLTED TO STRUCTURAL

STAND. COORDINATE INSTALLATION WITH

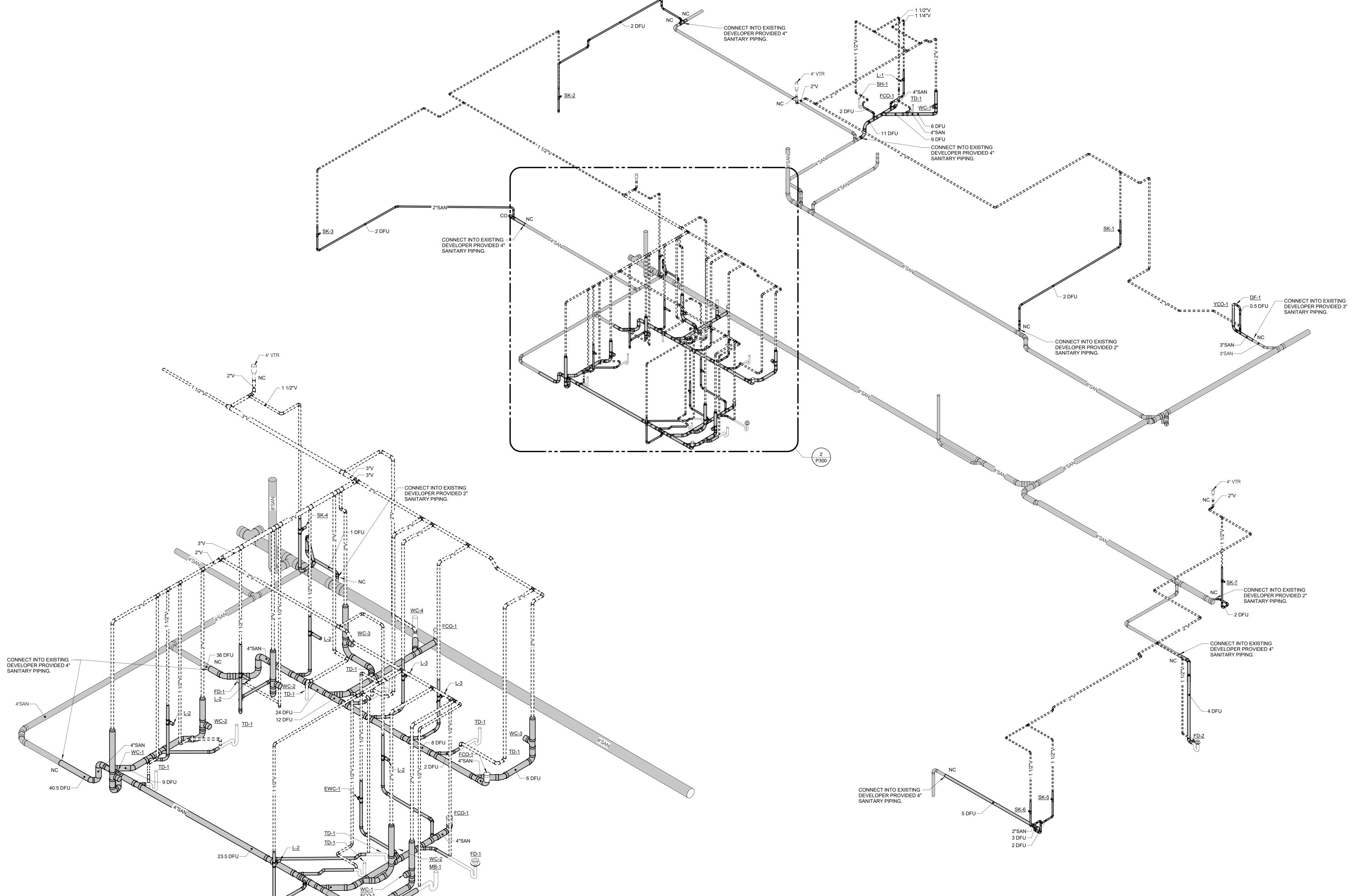
RAISED FLOOR MANUFACTURER.

INSTALLATION DETAILS.

OPN Project No. 17609000 Sheet Issue Date **BID DOCUMENTS** 

City Contract No.

Sheet Name **ENLARGED PLANS AND SECTIONS - PLUMBING** Sheet Number



ENIARGED PLAN FOR SAN-VENT RISER DIAGRAMS - PLUMBING

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Revision

City Contract No.

Sheet Number

OPN Project No. **17609000** 

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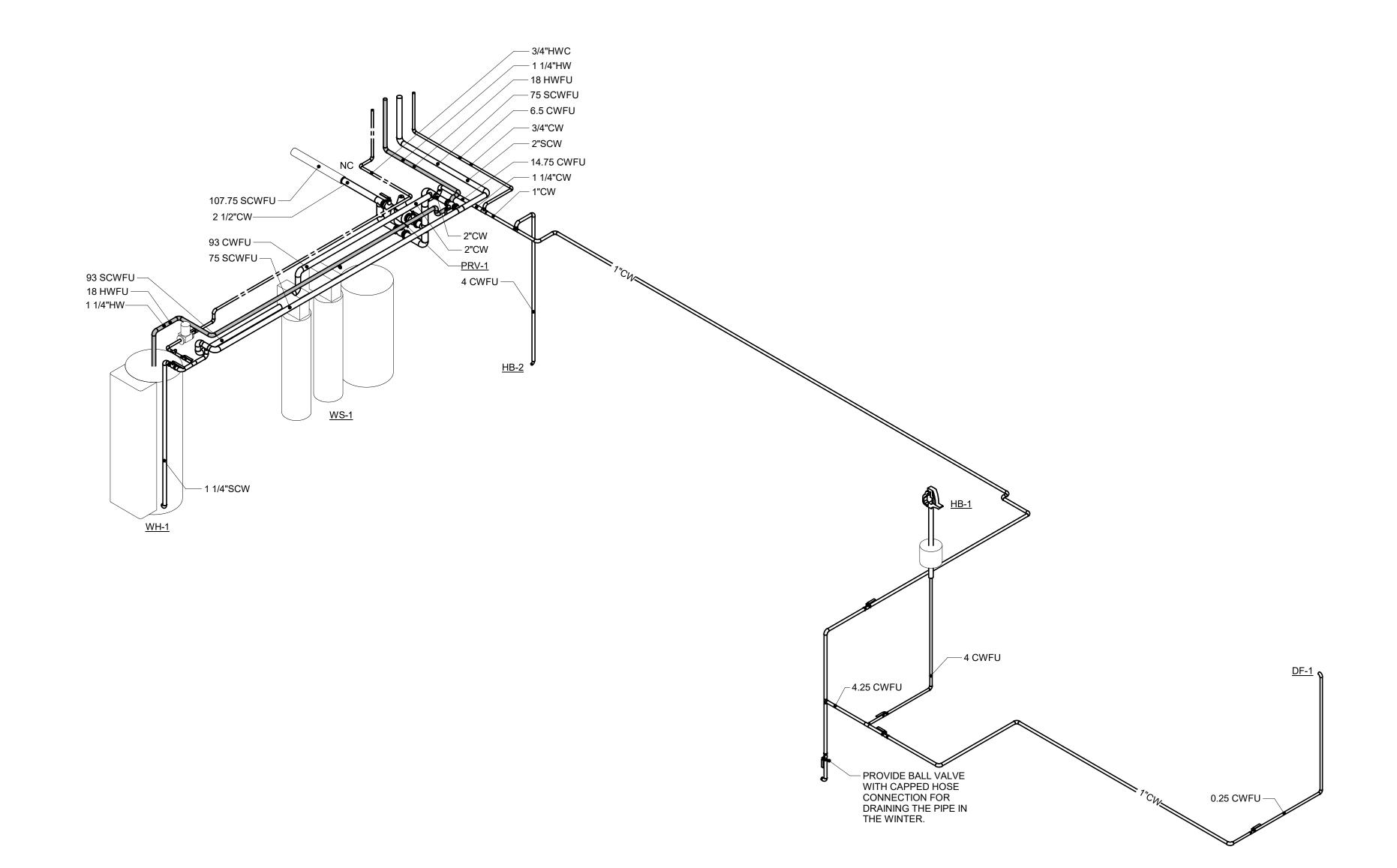
SAN-VENT RISER DIAGRAMS - PLUMBING
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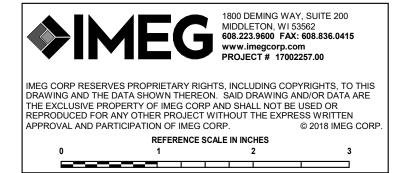
Sheet Name

RISER DIAGRAMS PLUMBING



1 DOMESTIC RISER DIAGRAMS - LEVEL 0 - PLUMBING
NO SCALE

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 21 | 25 | 25 |



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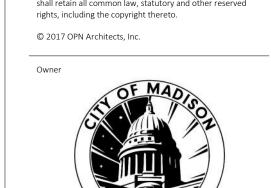
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P301

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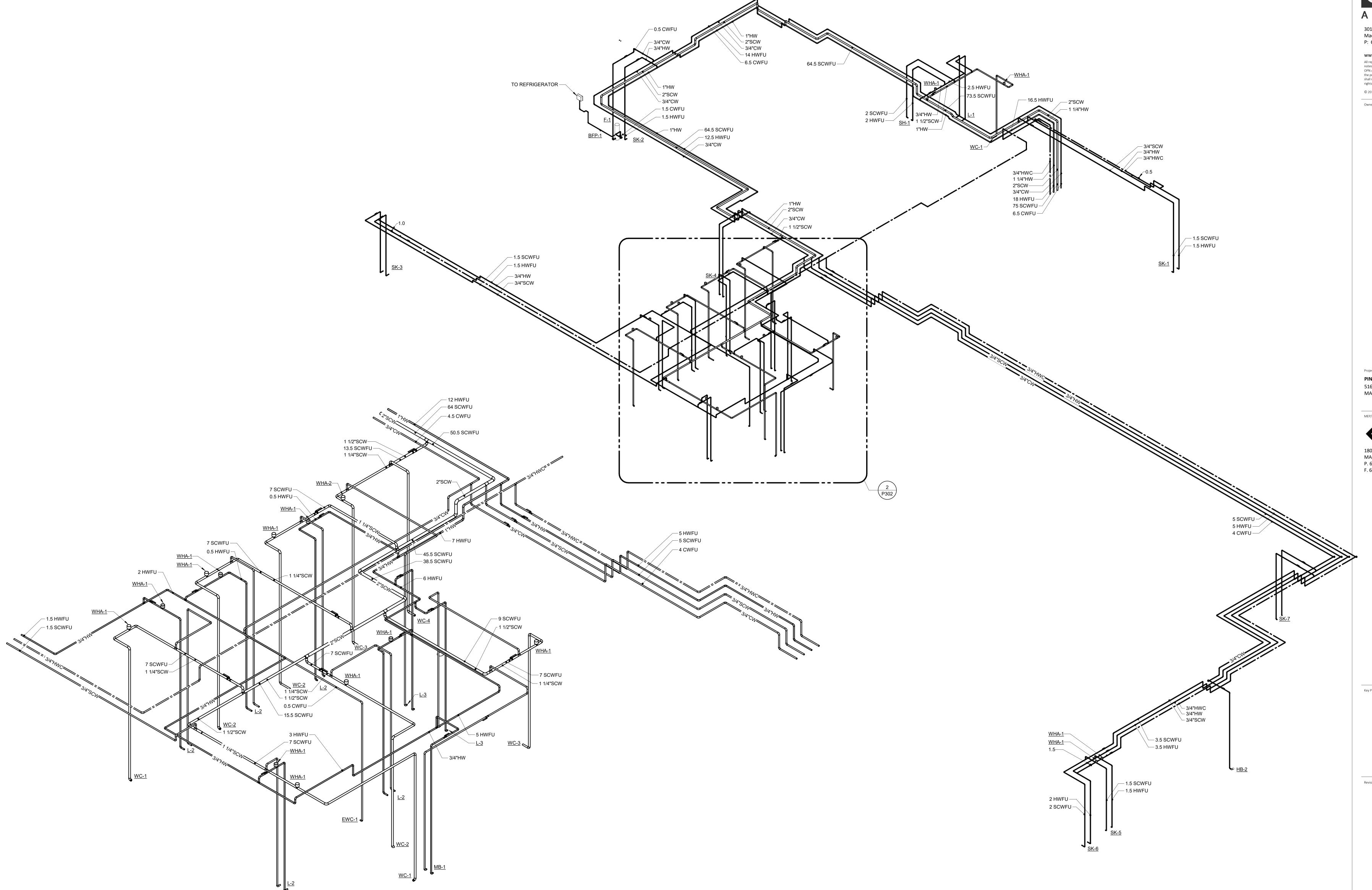
516 COTTAGE GROVE ROAD

MADISON, WI



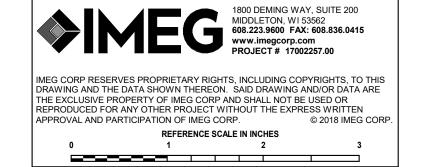
Key Plan

Revision



1 DOMESTIC RISER DIAGRAMS - LEVEL 1 - PLUMBING
NO SCALE

2 ENLARGED PLAN FOR DOMESTIC RISER DIAGRAMS - LEVEL 1 - PLUMBING
NO SCALE



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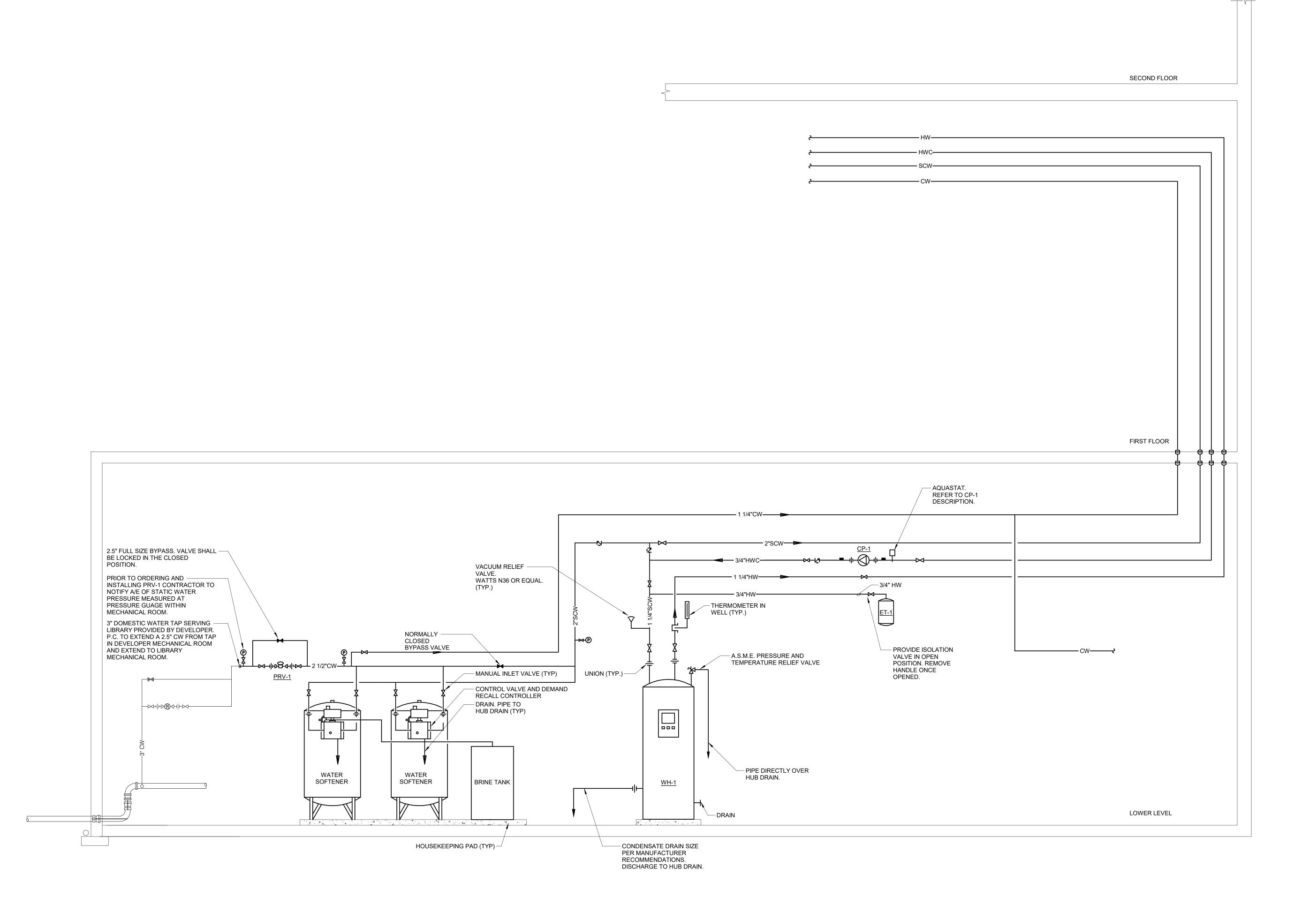
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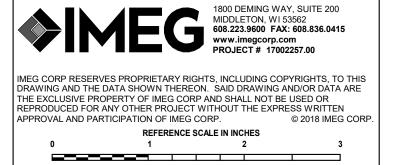
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RISER DIAGRAMS -



# 1 PLUMBING FLOW DIAGRAM No scale

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25



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516 COTTAGE GROVE ROAD

MADISON, WI



Key Plan

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7662

OPN Project No.

17609000

Sheet Name

Sheet Number

Sheet Issue Date

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PLUMBING DIAGRAMS

TAG NAME	PLUMBING FIXTURE SCHEDULE  DESCRIPTION	9 10  MANF. & MODEL	TAG NAME	PLUMBING FIXTURE SCHEDULE  DESCRIPTION  11 15 16 17  MANF. & MODEL	TAG NAME	PLUMBING FIXTURE SCHEDULE  DESCRIPTION	23 24  MANF. & MODEL
BFP-1 BACK FLOW PREVENT INTERNAL PARTS, INT SIZE, RATED FOR 175	R - DUAL CHECK, ATMOSPHERIC VENT, BRASS BODY, STAINLESS STEEL GRAL STRAINER, TIGHT SEATING RUBBER CHECK VALVE ASSEMBLIES, 3/4" SI AT 33°F TO 250°F, APPROVED BY ASSE 1012.	WATTS (SERIES 9D)	MB-1	MOP BASIN - MOLDED STONE, WHITE WITH BLACK ACCENTS, 24"x24"x10", STAINLESS STEEL DRAIN WITH COMBINATION DOME STRAINER AND LINT BASKET, 3" OUTLET, VINYL BUMPER GUARD ON EXPOSED SIDES.  TRIM - DELTA (28C2383), AMERICAN	SK-7	SINK - ACCESSIBLE, UNDERMOUNT WITH OVERFLOW, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, 21 1/2" (SIDE-TO-SIDE) x 18 1/2" (FRONT-TO-BACK) OVERALL SIZE, 19" x 16" x 5 3/8" DEEP BOWL, COMPLETELY UNDERCOATED, 3-3/8" DIAMETER DRAIN OUTLET LOCATION OFF-CENTERED	SINK - ELKAY (ELUHAD/LKAD18), JUST (US-ADA/J-ADA-35-FS), FRANKE (UCS) SINK TRIM - CHICAGO FAUCET (786)
PERMANENTLY LUBRI WITH INTEGRATED VA DRY CONTACTS FOR S	ARIABLE SPEED, LEAD FREE BRONZE OR STAINLESS STEEL CONSTRUCTION, ATED SEALED BEARINGS, MECHANICAL SEAL, OIL LUBRICATED, ECM MOTOR IABLE SPEED CONTROL AND THERMAL OVERLOAD PROTECTION, ONE SET OF TATUS OUTPUT TO BMS, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225 IDED PUMP BODY INSULATION KIT, UL LISTED.	PUMP - B&G (ECOCIRC XL SERIES), GRUNDFOS (MAGNA SERIES), WILO (STRATOS Z SERIES)  F, AQUASTAT - HONEYWELL, WHITE-RODGERS, JOHNSON CONTROLS.		TRIM - EXPOSED TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, SINGLE WING HANDLES, 1/4 TURN CERAMIC DISC CARTRIDGE, 3/4" HOSE THREAD SPOUT WITH ASSE 1053 RATED INTEGRAL VACUUM BREAKER, WALL BRACE, PAIL HOOK, CHECK STOPS OR INLINE CHECK (SC-5812), SYMMONS (S-2490), ZURN VALVES TO PREVENT THERMAL CROSSOVER. FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874.		SINK TRIM - TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, GOOSENECK RIGID SPOUT, NOMINAL 8" REACH, AERATOR, 4" WRISTBLADE HANDLES AT 8" CENTERS, 1/4-TURN OPERATION CERAMIC DISC CARTRIDGE.	SINK TRIM - CHICAGO FAUCET (700)
AQUASTAT - LINE VOL	EAD. MOTOR SHALL BE 1/2 HP. AGE, ADJUSTABLE SETTING OF 90-180°F WITH STRAP-ON REMOTE SENSOR BUL ITH TRANSFORMER IF REQUIRED. INSTALL PER MANUFACTURERS	SAME AS PUMP MANUFACTURER	PRV-1	ACCESSORIES - MOP HANGER, HOSE AND HOSE BRACKET, DEEP SEAL TRAP  PRESSURE REDUCING VALVE - SELF-CONTAINED, LOW LEAD BRONZE BODY AND BRONZE BELL HOUSING, ACCESS COVER FOR PLUNGER AND A BOLT TO ADJUST THE DOWNSTREAM PRESSURE.		MAXIMUM FLOW TO BE 1.5 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AND ESCUTCHEON PLATE AS REQUIRED.	
INSTRUCTIONS.  ELECTRICAL REQUIRE	IENTS - 115V, 1 PHASE (HARD-WIRE)			BRONZE BELL HOUSING AND ACCESS CAP SHALL BE THREADED TO THE BODY AND SHALL NOT REQUIRE THE USE OF FERROUS SCREWS. THE ASSEMBLY SHALL BE OF BALANCED PISTON DESIGN ADN SHALL REDUCE PRESSURE IN BOTH FLOW AND NO-FLOW CONDITIONS. THE ASSEMBLY SHALL BE ACCESSIBLE FOR MAINTENANCE WITHOUT HAVING TO REMOVE THE BODY FROM THE LINE. MAX INLET	TD 4	ACCESSORIES - OFFSET 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES.  TRENCH DRAIN - STAINLESS STEEL LINEAR SHOWER DRAIN. 4" WIDE STAINLESS STEEL LINEAR	ZUDN (70000) OD FOUN
MARINE-GRADE 316 S' FREEZE RESISTANT, \ ACTIVATION. LEED FR	OUTDOOR, PEDESTAL, NON FILTERED, NON-REFRIGERATED FREEZE RESISTAN' AINLESS STEEL CONSTRUCTION, HEAVY DUTY VANDAL RESISTANT, SEALED ANDAL RESISTANT BUBBLER, MECHANICAL FRONT BUBBLER BUTTON E, ADA COMPLIANT, CONFORMS TO LATEST ANSI 61 & 372 AND ADA STANDARD: ITH FEDERAL ACT S.3874.			PRESSURE OF 300 PSI AND MAXIMUM WORKING WATER TEMPERATURE OF 140°F. MAXIMUM LEAD CONTENT OF 0.25% WEIGHTED AVERAGE LEAD CONTENT. ADJUSTABLE SPRING SETTING BETWEEN 10 PSI TO 125 PSI.	TD-1	SLOTTED GRATE, VERTICALLY ADJUSTABLE ANCHORING SUPPORT LEGS, ANTI-PONDING V-SHAPED CHANNEL WITH 2" CENTER OUTLET. ADJUSTABLE SECURED LEVELING FRAME WITH BUILT-IN 1" FLANGE. DRAIN SHALL BE DESIGNED FOR INSTALLATION IN A MINIMUM 2" CONCRETE POUR.	ZURN (ZS880) OR EQUAL
ET-1 EXPANSION TANK - WI STAINLESS STEEL SYS LINER MECHANICALLY	DED BLACK STEEL CONSTRUCTION, GUARANTEED AIRTIGHT AND LEAKPROOF TEM CONNECTION, HEAVY DUTY BUTYL DIAPHRAGM AND RIGID POLYPROPYLEN BONDED TO TANK TO PROVIDE A 100% NON-CORROSIVE WATER RESERVOIR,			CERTIFIED TO NSF/ANSI 372. ASSE LISTED TO 1003.  1.5" SIZE WITH FLOW RATE OF 70 GPM AND MAXIMUM ALLOWABLE FALLOFF OF 11 PSI. SET UNIT TO 79 PSI OUTLET PRESSURE.	UB-1	P.C. TO COORDINATE MOUNTING OF TRENCH DRAIN WITH RAISED FLOOR SYSTEM MANUFACTURER. PROVIDE ADDITIONAL SUPPORTS BELOW RAISED FLOOR AS REQUIRED.  UTILITY BOX - GALVANIZED STEEL ENCLOSURE, ANGLE VALVE WITH 1/4" COMPRESSION OUTLET, INTREGAL WATER HAMMER ARRESTOR.	GUY GRAY (BIM875AB), OATEY (39140)
COMPONENTS OF FDA	SHALL BE APPROVED FOR USE IN POTABLE WATER SYSTEMS, ALL WETTED APPROVED MATERIALS. PROVIDE STANDARD SCHRADER AIR VALVE FOR FIELD L. COMPLY WITH FEDERAL ACT S.3874.		SH-1	SHOWER BASE - ACCESSIBLE, ONE PIECE, PRECAST TERRAZZO, 36"x36" (NOMINAL), 2" DRAIN, STAINLESS STEEL REMOVABLE STRAINER.  SHOWER VALVE - ACCESSIBLE, ONE PIECE, PRECAST TERRAZZO, 36"x36" (NOMINAL), 2" DRAIN, WILLIAMS, FLORESTONE, ACORN SHOWER VALVE - ACCESSIBLE, SINGLE HANDLE THERMOSTATIC/PRESSURE BALANCED MIXING FAUCET. SHOWER VALVE - POWERS (F710).	WC-1	WATER CLOSET - ACCESSIBLE, WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD.	WATER CLOSET - AMERICAN STANDARD (2257.101), SLOAN (ST-2050), ZURN (Z5615), KOHLER (K-4325), TOTO (CT708E)
MINIMUM ACCEPTING  TANK SHALL HAVE A V	OLUME TO BE 3.2 GALLONS  ORKING TEMPERATURE OF 200°F AND A WORKING PRESSURE OF 125 PSIG. ED FOR SHIPPING. FIELD CHARGE TANK TO 75 PSIG.			BRASS OR BRONZE CONSTRUCTION, WASHERLESS DESIGN, OFF-COLD-HOT TEMPERATURE RANGE INDICATOR DIAL, POLISHED CHROME CAST METAL LEVER HANDLE, INTEGRAL CHECK-STOPS, ADJUSTABLE SAFETY LIMIT STOP, ASSE 1016-T/P LISTED.		FLUSH VALVE - EXPOSED, WALL MOUNTED SENSOR OPERATION, HARDWIRED, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH IN, CHROME PLATED 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, MECHANICAL OVER-RIDE BUTTON, RANGE ADJUSTMENT SCREW, CHLORAMINE RESISTANT MATERIALS, CHROME PLATED COVER PLATE WITH TAMPER-PROOF	SEAT - BEMIS (3155C), CHURCH (3155C),
EWC-1 ELECTRIC WATER COU STEEL APRON INSTAL NON-SPLASH BASINS	LER - WALL HUNG, BI-LEVEL UNITS, ADA COMPLIANT WITH MATCHING STAINLES ED UNDER UPPER UNIT 18 GAUGE STAINLESS STEEL CABINETS AND ITH STAINLESS STEEL FINISH, STREAM PROJECTORS WITH PROTECTIVE	S ELKAY (LZST)		ACCESSORIES - ADJUSTABLE SPRAY HAND HELD SHOWER WITH 1.5 GPM FLOW AND 72" CHROME-PLATED METAL HOSE AND QUICK DISCONNECT, CHROME-PLATED BRASS SHOWERHEAD WITH SWIVEL BALL JOINT ADJUSTABLE SPRAY, CHROME-PLATED BRASS ARM AND FLANGE, CHROME-PLATED BRASS SWIVEL CONNECTOR, 36" CHROME-PLATED MOUNTING RAIL, CHROME-PLATED BRASS SUPPLY			WATER CLOSET MANUFACTURER
REGULATOR, GLASS F ACCESSORIES, TANK	LEVER OPERATING CONTROLS ON FRONT AND BOTH SIDES, BUILT-IN FLOW LLER, PLASTIC P-TRAP ASSEMBLY, ADJUSTABLE THERMOSTAT, MOUNTING RAIN AND ANGLE STOPS, HERMETIC COMPRESSOR TO OPERATE ON HFC-134a IANT TO LATEST ANSI A117.1 AND ADA STANDARDS. UNIT SHALL COMPLY WITH			ELBOW FLANGE, CHROME-PLATED IN-LINE VACUUM BREAKER WITH CHROME-PLATED PIPING AND FLANGES, CHROME-PLATED BRASS DIVERTER  INSTALL ALL CONTROLS BETWEEN 38" AND 48" ABOVE FINISHED FLOOR IN COMPLIANCE WITH LATEST		SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS.  CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN	
BOTTLE FILLING STAT DRAIN, SENSOR OPER	ON - UNIT MOUNTED, STAINLESS STEEL CONSTRUCTION AND FINISH, INTEGRAL TED WITH AUTOMATIC SHUTOFF, REPLACEABLE LEAD-CHLORINE-TASTE-ODOR E COUNTER, FILTER REPLACEMENT INDICATOR.		SK-1	ADA STANDARDS. INSTALL BOTTOM OF SHOWERHEAD AT 72" ABOVE FINISHED FLOOR. MAXIMUM FLOW TO BE 1.5 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). SET SAFETY LIMIT STOP TO 110 DEGREE F DISCHARGE.  SINK - ACCESSIBLE. UNDERMOUNT WITH OVERFLOW. SINGLE COMPARTMENT. 18 GAUGE TYPE 304 SINK - ELKAY (ELUHAD/LKAD18). JUST		STANDARD, KOHLER, SLOAN, OR ZURN  ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS.COORDINATE CARRIER WITH RAISED FLOOR MANUFACTURER.	
UNIT SHALL PROVIDE	0 GPH OF WATER FROM 80°F TO 50°F AT 90°F AMBIENT. WATER SYSTEM SHALI STRUCTION. TANK SHALL BE TESTED TO 125 PSIG.	-		STAINLESS STEEL, 30 1/2" (SIDE-TO-SIDE) x 18 1/2" (FRONT-TO-BACK) OVERALL SIZE, 28" x 16" x 5 3/8" DEEP BOWL, COMPLETELY UNDERCOATED, 3-1/2" DIAMETER DRAIN OUTLET LOCATION OFF-CENTERED REAR IN BOWL, PERFORATED TYPE 304 STAINLESS STEEL GRID STRAINER.  (US-ADA/J-ADA-35-FS), FRANKE (UCS) SINK TRIM - KOHLER (K-597), DELTA (9178-DST), AMERICAN STANDARD		MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO RAISED FLOOR. COORDINATE REQUIREMENTS WITH RAISED FLOOR MANUFACTURER. TOP OF SEAT SHALL BE AT 17"-19" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). VERIFY EQUIPMENT	
FLOOR ON UPPER UN COMPLIANCE WITH LA		ED		SINK TRIM - SINGLE HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, NOMINAL 10" HIGH-RISE SWING SPOUT, CERAMIC CARTRIDGE, NOMINAL 8" REACH, PULL DOWN SPRAY HOSE WITH AERATOR STREAM / SPRAY SELECTOR, LEVER HANDLE.	WC-2	EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD.	WATER CLOSET - AMERICAN STANDARD (2257.101), SLOAN (ST-2050), ZURN (Z5615), KOHLER (K-4325), TOTO (CT708E)
F-1 WATER FILTER - FILTE BRACKET, PRESSURE	MENTS - 115V-1 PHASE, CORD AND PLUG, 1/5 HP MOTOR  SYSTEM SHALL INCLUDE A HEAD ASSEMBLY WITH INTEGRAL MOUNTING  GUAGE, INTEGRAL SHUT-OFF VALVE, AND SINGLE CARTRIDGE FILTER. SYSTEM  STANDARD 42 AND FDA CFR-21 COMPLIANT.	3M (ICE140-S) FILTER SYSTEM  3M (HF40-S) REPLACEMENT CARTRIDGE		MAXIMUM FLOW TO BE 1.8 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AND ESCUTCHEON PLATE AS REQUIRED.		FLUSH VALVE - EXPOSED, WALL MOUNTED SENSOR OPERATION, HARDWIRED, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH IN, CHROME PLATED 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, MECHANICAL OVER-RIDE BUTTON, RANGE ADJUSTMENT	FLUSH VALVE - SLOAN (111-1.28 ESS)
	RTRIDGE, FDA APPROVED MATERIALS. CERTIFIED BY NSF TO STANDARD 53 FO		SK-2	ACCESSORIES - OFFSET 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES.  SINK - ACCESSIBLE, UNDERMOUNT WITH OVERFLOW, SINGLE COMPARTMENT, 18 GAUGE TYPE 304  SINK - ELKAY (ELUHAD/LKAD18), JUST		SCREW, CHLORAMINE RESISTANT MATERIALS, CHROME PLATED COVER PLATE WITH TAMPER-PROOF	
FCO-1 FLOOR CLEANOUT - A	V, 25,000 GALLON CAPACITY JUSTABLE, CAST IRON HOUSING, ANCHOR FLANGE, TAPERED THREAD PLUG, NZE TOP. TOP STYLE SHALL MATCH FLOOR FINISH AS FOLLOWS:	ZURN (Z1400), JOSAM (55000), MIFAB (C1100), SMITH (4000), WADE (6000), WATTS (CO-200)	5.1.2	STAINLESS STEEL, 30 1/2" (SIDE-TO-SIDE) x 18 1/2" (FRONT-TO-BACK) OVERALL SIZE, 28" x 16" x 5 3/8" DEEP BOWL, COMPLETELY UNDERCOATED, 3-1/2" DIAMETER DRAIN OUTLET LOCATION OFF-CENTERED REAR IN BOWL, PERFORATED TYPE 304 STAINLESS STEEL GRID STRAINER.  (US-ADA/J-ADA-35-FS), FRANKE (UCS) SINK TRIM - KOHLER (K-597), DELTA (9178-DST), AMERICAN STANDARD		SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS.	
TILE OR TERRAZZO - F CARPET - ROUND TOP				SINK TRIM - SINGLE HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, NOMINAL 10" HIGH-RISE SWING SPOUT, CERAMIC CARTRIDGE, NOMINAL 8" REACH, PULL DOWN SPRAY HOSE WITH AERATOR STREAM / SPRAY SELECTOR, LEVER HANDLE.  (4285.300), ELKAY (LK6000), MOEN (7594C), SYMMONS (S-2302-PD), IN-SINK-ERATOR (EVOLUTION SERIES),		CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN  ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. COORDINATE CARRIER WITH RAISED FLOOR MANUFACTURER.	
FLASHING COLLAR, SU INSTALLED IN RAISED	RFACE MEMBRANE CLAMP, DEEP SEAL TRAP. STABILIZER ASSEMBLY WHERE	FLOOR DRAIN - ZURN (Z-415), SMITH (2005), WADE (1100), JOSAM (30000), WATTS (FD-100), MIFAB (F1100), SUN (FD1000)		MAXIMUM FLOW TO BE 1.8 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AND ESCUTCHEON PLATE AS REQUIRED.  CARRAGE DISPOSER. CONTINUOUS FEED, SINGLE DIRECTION, CORRECTION SHIELD.		MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO RAISED FLOOR. COORDINATE REQUIREMENTS WITH RAISED FLOOR MANUFACTURER. TOP OF SEAT SHALL BE AT 16"-17" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). VERIFY EQUIPMENT	
PROVIDE ADDITIONAL REQUIRED.	C HOUSING WITH FLEXIBLE DIAPHRAGM. SEALING GASKETS. RECLOSES AND	TRAP SEAL - SMITH (QUAD CLOSE)		GARBAGE DISPOSER - CONTINUOUS FEED, SINGLE DIRECTION, CORROSION PROTECTION SHIELD, SERVICE WRENCH, STAINLESS STEEL GRINDING ELEMENTS, MANUALLY RESET OVERLOAD PROTECTION, FULL 4 YEAR WARRANTY.  ELECTRICAL REQUIREMENTS - 115V-1 PHASE, CORD AND PLUG HARD WIRED, 3/4 HP MOTOR, 15 AMPS.	WC-3	REQUIREMENTS AND ROUGH-IN LOCATIONS.  WATER CLOSET - ACCESSIBLE, WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET,	WATER CLOSET - AMERICAN STANDARD (2257.101), SLOAN (ST-2050), ZURN
SEALS WHEN DISCHAI  FD-2 FLOOR DRAIN - CAST I  OUTLET, MEDIUM SUM	GE IS COMPLETED, ASSE 1072. ON BODY, HEAVY DUTY CAST/DUCTILE IRON TOP, 12" ROUND, 4" BOTTOM F, FREE STANDING SEDIMENT BUCKET, FLASHING COLLAR, SURFACE MEMBRAN			ACCESSORIES - OFFSET 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES.		FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW,	(Z5615), KOHLER (K-4325), TOTO (CT708E)  FLUSH VALVE - SLOAN (111-1.28)
P.C. TO COORIDNATIO	MP. STABILIZER ASSEMBLY WHERE INSTALLED IN RAISED FLOOR SYSTEM.  MOUNTING OF FLOOR DRAIN WITH RAISED FLOOR SYSTEM MANUFACTURER.  SUPPORTS BELOW RAISED FLOOR TO SECURE STABILIZER ASSEMBLY AS	(F1340), SUN (FD1300) TRAP SEAL - SMITH (QUAD CLOSE)	SK-3	SINK - ACCESSIBLE, UNDERMOUNT WITH OVERFLOW, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, 30 1/2" (SIDE-TO-SIDE) x 18 1/2" (FRONT-TO-BACK) OVERALL SIZE, 28" x 16" x 5 3/8" DEEP BOWL, COMPLETELY UNDERCOATED, 3-1/2" DIAMETER DRAIN OUTLET LOCATION OFF-CENTERED			SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER
TRAP SEAL - 4", PLAST SEALS WHEN DISCHA	C HOUSING WITH FLEXIBLE DIAPHRAGM, SEALING GASKETS, RECLOSES AND GE IS COMPLETED, ASSE 1072.	W0005000 (00) 505575 51 0W		REAR IN BOWL, PERFORATED TYPE 304 STAINLESS STEEL GRID STRAINER.  SINK TRIM - TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, GOOSENECK SWING SPOUT, NOMINAL 8" REACH, AERATOR, 4" WRISTBLADE HANDLES AT 8" CENTERS,		CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN	
SPOUT, AUTOMATIC D CONNECTION, 1" I.P.S.	SS YARD HYDRANT, INTEGRAL VACUUM BREAKER, PULL DOWN DIVERTER AINING WITH SUB GRADE DRAINDOWN RESERVOIR, 3/4" MALE HOSE THREAD NLET, ONE PIECE PLUNGER, LOCKABLE HANDLE.	WOODFORD (S3), FREEZE FLOW (EXECUTIVE)		1/4-TURN OPERATION CERAMIC DISC CARTRIDGE.  MAXIMUM FLOW TO BE 1.5 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE		ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. COORDINATE CARRIER WITH RAISED FLOOR MANUFACTURER.  MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO RAISED FLOOR. COORDINATE REQUIREMENTS WITH RAISED FLOOR MANUFACTURER. TOP OF SEAT SHALL BE AT 17"-19" ABOVE	
HB-2 HOSE BIBB - FOR INDO THREAD, QUARTER TO		HOSE BIBB - AMERICAN VALVE (M71QT)		DEVICE AND ESCUTCHEON PLATE AS REQUIRED.  ACCESSORIES - OFFSET 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES.		FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). FLUSH HANDLE SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STALL AND BE 12" (MAXIMUM) ABOVE BOWL RIM AND OPERATE WITH NO GREATER THAN 5 LB FORCE IN COMPLIANCE WITH LATEST ADA STANDARDS. VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	
MOUNT AT 24" ABOVE L-1 LAVATORY - ACCESSI	ISTED AND APPROVED VACCUM BREAKER. INISHED FLOOR UNLESS NOTED OTHERWISE ON DRAWINGS. E, WALL MOUNTED, WHITE VITREOUS CHINA, 20"x18", 4" HIGH CONTOURED	LAVATORY -	SK-4	SINK - UNDER-COUNTER MOUNTED, 20-GAUGE STAINLESS STEEL, 16-3/4"x11-3/4" O.D OVAL BOWL, WITHOUT OVERFLOW.  SINK - KOHLER (K-2611)  SINK TRIM - CHICAGO FAUCET	WC-4	WATER CLOSET - FLOOR MOUNTED, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, WATER SAVING, ELONGATED BOWL, 10" RIM HEIGHT, 1-1/2" TOP SPUD, 10" ROUGH-IN, BOLT CAPS.	WATER CLOSET - AMERICAN STANDARD (2282.001), KOHLER (K-4321), ZURN (Z5670)
LAVATORY TRIM - SEN	FAUCET HOLE, DRILLED FOR CONCEALED ARM CARRIER.  OR ACTIVATED MIXING FAUCET, HARD-WIRED, BRASS CONSTRUCTION, H, CONVENTIONAL SPOUT WITH VANDAL RESISTANT AERATOR, SINGLE HOLE,	AMERICAN STANDARD (0356.421), KOHLER (K-2007), SLOAN (SS-3103), TOTO (LT307), ZURN (Z5361)		SINK TRIM - SINGLE HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, CONVENTIONAL SPOUT WITH AERATOR, WASHERLESS PUSH-PULL LEVER HANDLE WITH SUPPLIES AT 4" CENTERS SINGLE HOLE, CERAMIC DISC CARTRIDGE, PERFORATED GRID STRAINER WITH 1-1/4" 17 GAUGE TAILPIECE.  (2200-E2805ABCP) MIXING VALVE - WATTS (LFUSG-B), LAWLER (AUVER-1070T), ACORN CONTROLS		PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, ADA COMPLIANT, 3 YEAR WARRANTY.	FLUSH VALVE - SLOAN (111-1.28) SEAT - BEMIS (BB955C), BENEKE
FILTER, SOLID BRASS	RAINER WITH 1-1/4" 17 GAUGE TAILPIECE, SOLID BRASS SOLENOID WITH BUILT-I HERMOSTATIC MIXING VALVE MEETING ASSE 1070 REQUIREMENTS WITH TURE LIMIT STOP AND INTEGRAL CHECK VALVES, WATERPROOF CONNECTORS /ED TRANSFORMER.	LAVATORY TRIM -		MAXIMUM FLOW TO BE 0.5 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AS REQUIRED.  (ST70), APOLLO (34DLF), LEONARD (170-BP-LF), POWERS (LFE480), SLOAN (MIX-135-A), SYMMONS (7-210), WILKINS (ZW3870XLT)	WH-1	SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS.  WATER HEATER - HYBRID ELECTRIC, VERTICAL, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED	
	MENTS - 120 VAC INPUT  VATERPROOF VANDAL-RESISTANT ENCLOSURE BELOW LAVATORY. PROVIDE ABLE EXTENSIONS (AS REQUIRED) OR PLUG-IN TRANSFORMER. MOUNT	BROCAR PRODUCTS (TRAP WRAP), MCGUIRE (PROWRAP), PLUMBEREX (PRO-EXTREME)		MIXING VALVE - POINT-OF-USE ANTI-SCALD THERMOSTATIC MIXING VALVE FOR TEMPERED WATER CONTROL, ALL BRONZE/BRASS CONSTRUCTION, ROUGH FINISH, THREADED INLETS, TAMPER RESISTANT SETPOINT, 3/8" COMPRESSION INLETS AND OUTLETS, COLD WATER BYPASS IF USED WITH MIXING FAUCET.		WELDED STEEL TANK, 150 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, MAGNESIUM ANODE ROD, INDIVIDUAL FLANGE-MOUNTED IMMERSION HEATING ELEMENTS SHEATHED WITH CORROSION-RESISTANT METAL ALLOY, EXTERNALLY ADJUSTABLE AUTOMATIC IMMERSION WATER	BRADFORD WHITE, STATE, AMERICAN, HTP
ELECTRICAL CONTRAI VALVES TO REDUCE A	CEILING OR IN ACCÈSSIBLE PIPE ĆHASE. COORDINATE LOCATION WITH TOR. SELECT TRANSFORMER TO SERVE MAXIMUM NUMBER OF ELECTRONIC MOUNT OF TRANSFORMERS.			CABINET - SURFACE MOUNTED 18 GAUGE STAINLESS STEEL CABINET WITH 16 GAUGE LOCKING DOOR TO ENCLOSE VALVE, INLET STOPS, OUTLET THERMOMETER, AND OUTLET VALVES.		THERMOSTAT, MANUAL RESET HIGH TEMPERATURE CUTOFF SWITCH, ENCLOSED CONTROLS, VENTILATED CONTROL CABINET, PILOT LIGHTS INDICATING MAIN POWER AND HEATING STEPS, CONTROL CIRCUIT TOGGLE SWITCH, SEQUENCING STEP CONTROLLER, CONTROL TRANSFORMER, POWER CIRCUIT FUSES, MAGNETIC CONTACTORS, CERAMIC TERMINAL BLOCK, FACTORY ASSEMBLED AND WIRED. 3-YEAR WARRANTY. UL LISTED. NEC COMPLIANT ELECTRICAL COMPONENTS. COMPLIANT	
REQUIREMENTS (LEE	0.35 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION . FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE MOUNT MIXING VALVE UNDER COUNTER/LAVATORY. MIXING VALVE SHALL NO E.	т		0.5 GPM OUTPUT. UNIT TO MIX 120 DEGREE F HOT WATER SUPPLY AND 40 DEGREE F COLD WATER SUPPLY FOR 110 DEGREE F OUTLET.  UNIT SHALL BE ASSE 1070 LISTED AND APPROVED. VALVE SHALL COMPLY WITH FEDERAL ACT S.3874.		TO NAECA, ASHRAE 90.1 AND ASHRAE 90A.  80 GALLON CAPACITY, 5 KW ELECTRIC ELEMENT WITH HEAT PUMP FUNCTION, 89 G.P.H. FIRST HOUR RATING WITH 29 GPH RECOVERY RATE AT 90°F TEMPERATURE RISE. HEATING ELEMENTS RATED FOR	
ACCESSORIES - QUAR	MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES.  ER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY		016.5	ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, 1-1/4" 20 GAUGE CAST BRASS P-TRAP.  SINK - WALL MOUNTED, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, BOWL  SINK - ELKAY (ELV2219)		LESS THAN 75 WATTS PER SQUARE INCH.  ELECTRICAL REQUIREMENTS - 208V-1 PHASE 30 AMP HEATING CIRCUIT	
CAST BRASS P-TRAP, MOUNT LAVATORY WI	ED SOFT COPPER SUPPLY LINES, DRAIN AND OFFSET TAILPIECE, 1-1/4" 20 GAUG UPPORT CARRIER. H SUPPORT CARRIER BOLTED SECURELY TO FLOOR. TOP OF RIM SHALL BE AT OMPLIANCE WITH LATEST ADA STANDARD. PROVIDE 29" MINIMUM CLEARANCE		SK-5	SINK - WALL MOUNTED, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, BOWL DIMENSIONS 16" WIDE BY 11 1/2" FRONT TO BACK BY 5 1/2" DEEP, 2 1/2" HIGH BACKSPLASH, 5/32" RAISED RIMS. 1 3/4" RADIUS VERTICAL AND HORIZONTAL COVED CORNERS, SOUND DAMPENING PAD. EXPOSED SURFACES ARE HAND BLENDED TO A UNIFORM SATIN LUSTROUS FINISH. COMPLIANT TO LATEST ADA STANDARD AND ANSI A117.1.	WHA-1		ZURN (Z1700), JR SMITH (5005-5050), WADE (W5-100), JOSAM (75000 SERIES),
FROM FLOOR TO BOT ARMAFLEX WITH TAPE	OM OF APRON IN COMPLIANCE WITH LATEST ANSI A117.1 AND ADA STANDARDS IS NOT ACCEPTABLE IN LIEU OF INSULATION KIT.  UNTER MOUNTED, 20-GAUGE STAINLESS STEEL, 16-3/4"x11-3/4" O.D OVAL BOWI	. I AVATORY - KOHLER (K-2611)		SINK TRIM - SINGLE HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, CONVENTIONAL SPOUT WITH AERATOR, WASHERLESS PUSH-PULL LEVER HANDLE WITH SUPPLIES AT 4" CENTERS SINGLE HOLE, CERAMIC DISC CARTRIDGE, PERFORATED GRID STRAINER WITH 1-1/4" 17	WHA-2	INSTALL PER MANUFACTURER'S RECOMMENDATIONS.  WATER HAMMER ARRESTER - BELLOWS TYPE, PRE-CHARGED, ALL LEAD FREE STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI CERTIFIED, RATED FOR 12-32 FIXTURE UNITS.	WATTS (SS), MÍFAB (WHB)  ZURN (Z1700), JR SMITH (5005-5050), WADE (W5-100), JOSAM (75000 SERIES),
WITHOUT OVERFLOW:  LAVATORY TRIM - SEN CHROME-PLATED FINI	OR ACTIVATED MIXING FAUCET, HARD-WIRED, BRASS CONSTRUCTION, H, CONVENTIONAL SPOUT WITH VANDAL RESISTANT AERATOR, SINGLE HOLE,	LAVATORY TRIM - T&S BRASS (5EF-2D-DS)		GAUGE TAILPIECE.  MAXIMUM FLOW TO BE 0.35 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE	WS-1	INSTALL PER MANUFACTURER'S RECOMMENDATIONS.  WATER SOFTENER - PRE-PIPED AND SKID MOUNTED, DUPLEX SOFTENER TANKS, AUTOMATIC REGENERATION TYPE BASED ON MULTIPLE TANK PROGRESSIVE CONTROL SYSTEM, POWER SUPPLY	WATTS (SS), MIFAB (WHB)  REFER TO SPECIFICATIONS.
FILTER, SOLID BRASS	RAINER WITH 1-1/4" 17 GAUGE TAILPIECE, SOLID BRASS SOLENOID WITH BUILT-I HERMOSTATIC MIXING VALVE MEETING ASSE 1070 REQUIREMENTS WITH TURE LIMIT STOP AND INTEGRAL CHECK VALVES, WATERPROOF CONNECTORS /ED TRANSFORMER.	N S		MIXING VALVE - POINT-OF-USE ANTI-SCALD THERMOSTATIC MIXING VALVE FOR TEMPERED WATER CONTROL, ALL BRONZE/BRASS CONSTRUCTION, ROUGH FINISH, THREADED INLETS, TAMPER		WITH CORD AND PLUG.  CONTINUOUS FLOW RATE OF 25 GPM AT 15 PSI PRESSURE DROP  MAXIMUM FLOW RATE OF 34 GPM AT 25 PSI PRESSURE DROP  MINIMUM CARACITY OF 40 200 CRAINS PER TANK	
	VATERPROOF VANDAL-RESISTANT ENCLOSURE BELOW LAVATORY. PROVIDE			RESISTANT SETPOINT, 3/8" COMPRESSION INLETS AND OUTLETS, COLD WATER BYPASS IF USED WITH MIXING FAUCET.  CABINET - SURFACE MOUNTED 18 GAUGE STAINLESS STEEL CABINET WITH 16 GAUGE LOCKING DOOR TO ENCLOSE VALVE IN STATEMENT OF THE PROMETER AND OUTLET VALVES.		MINIMUM CAPACITY OF 40,000 GRAINS PER TANK.  SOFTENER TANK SIZE: BRINE TANK SIZE:	
TRANSFORMER ABOV ELECTRICAL CONTRA	ABLE EXTENSIONS (AS REQUIRED) OR PLUG-IN TRANSFORMER. MOUNT CEILING OR IN ACCESSIBLE PIPE CHASE. COORDINATE LOCATION WITH TOR. SELECT TRANSFORMER TO SERVE MAXIMUM NUMBER OF ELECTRONIC MOUNT OF TRANSFORMERS.			TO ENCLOSE VALVE, INLET STOPS, OUTLET THERMOMETER, AND OUTLET VALVES.  0.5 GPM OUTPUT. UNIT TO MIX 120 DEGREE F HOT WATER SUPPLY AND 40 DEGREE F COLD WATER SUPPLY FOR 110 DEGREE F OUTLET.		ELECTRICAL REQUIREMENTS - 120V-1 PHASE RECEPTACLE REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.	
REQUIREMENTS (LEEI	0.35 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION . FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE MOUNT MIXING VALVE UNDER COUNTER/LAVATORY. MIXING VALVE SHALL NO	Т		UNIT SHALL BE ASSE 1070 LISTED AND APPROVED. VALVE SHALL COMPLY WITH FEDERAL ACT S.3874.  INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES.	YCO-1		ZURN (Z1474), SMITH (4261), WADE (8401), JOSAM (58680), WATTS (CO-300-MF)
ACCESSORIES - QUAR	ER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY ED SOFT COPPER SUPPLY LINES, 1-1/4" 20 GAUGE CAST BRASS P-TRAP.			ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, 1-1/4" 20 GAUGE CAST BRASS P-TRAP.  MOUNT SINK WITH SUPPORT CARRIER BOLTED SECURELY TO FLOOR. TOP OF RIM SHALL BE AT 34"			
WITHOUT OVERFLOW	UNTER MOUNTED, 20-GAUGE STAINLESS STEEL, 16-3/4"x11-3/4" O.D OVAL BOWI	LAVATORY - KOHLER (K-2611)  LAVATORY TRIM - CHICAGO FAUCET (2200-E2805ABCP)		ABOVE FLOOR IN COMPLIANCE WITH LATEST ADA STANDARD. PROVIDE 29" MINIMUM CLEARANCE FROM FLOOR TO BOTTOM OF APRON IN COMPLIANCE WITH LATEST ANSI A117.1 AND ADA STANDARDS. ARMAFLEX WITH TAPE IS NOT ACCEPTABLE IN LIEU OF INSULATION KIT.			
CONVENTIONAL SPOU CENTERS SINGLE HOL GAUGE TAILPIECE.	WITH AERATOR, WASHERLESS PUSH-PULL LEVER HANDLE WITH SUPPLIES AT , CERAMIC DISC CARTRIDGE, PERFORATED GRID STRAINER WITH 1-1/4" 17	4" MIXING VALVE - WATTS (LFUSG-B), LAWLER (TMM-1070T), ACORN CONTROLS (ST70), APOLLO (34DLF), LEONARD	SK-6	SINK - SINGLE COMPARTMENT, FLOOR MOUNT, 16 GAUGE 304 STAINLESS STEEL WITH BUFFED SATIN FINISH, 63" (SIDE-TO-SIDE) x 29 3/4" (FRONT-TO-BACK) OVERALL SIZE, BOWL 24" x 24" x 12 3/4" DEEP, 6 1/4" BACKSPLASH WITH SLOPING TOP, 19 1/2" DRAINBOARDS, 3-1/2" DIAMETER DRAIN OUTLET, 16 GAUGE SINK TRIM - CHICAGO FAUCETS STAINLESS STEEL TUBULAR LEGS WITH ADJUSTABLE BULLET SHAPED FEET, NSF COMPLIANT. (510-GC613 SERIES)			
REQUIREMENTS (LEEI DEVICE AS REQUIRED	0.5 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION . FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE	(170-BP-LF), POWERS (LFE480), SLOAN (MIX-135-A), SYMMONS (7-210), WILKINS (ZW3870XLT)		SINK TRIM - TWO HANDLE MIXING VALVE, BRASS CONSTRUCTION, CHROME-PLATED FINISH, 14" REACH TUB SPOUT, AERATOR, 2" LEVER HANDLES AT 8" CENTERS, 1/4-TURN OPERATION CERAMIC DISC CARTRIDGE. FLEXIBLE HOSE WITH SPRAY HEAD, WALL/SPLASH GUARD MOUNTED, INTEGRAL STOPS,			
CONTROL, ALL BRONZ	DF-USE ANTI-SCALD THERMOSTATIC MIXING VALVE FOR TEMPERED WATER /BRASS CONSTRUCTION, ROUGH FINISH, THREADED INLETS, TAMPER 3/8" COMPRESSION INLETS AND OUTLETS, COLD WATER BYPASS IF USED WITH			14" SWINGING SPOUT.  ACCESSORIES - REMOVABLE STRAINER PLATES AND NEOPRENE STOPPERS, 2" 17 GAUGE CHROME-PLATED BRASS TAILPIECES AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME			1800 DEMING WAY, SI MIDDLETON, WI 53562 608.223.9600 FAX: 608 www.imegcorp.com PROJECT # 17002257
TO ENCLOSE VALVE, I	DUNTED 18 GAUGE STAINLESS STEEL CABINET WITH 16 GAUGE LOCKING DOOR LET STOPS, OUTLET THERMOMETER, AND OUTLET VALVES.			PLATED BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES.			IMEG CORP RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIG DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/O THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USE! REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS V APPROVAL AND PARTICIPATION OF IMEG CORP
SUPPLY FOR 110 DEG	T TO MIX 120 DEGREE F HOT WATER SUPPLY AND 40 DEGREE F COLD WATER EE F OUTLET. 170 LISTED AND APPROVED. VALVE SHALL COMPLY WITH FEDERAL ACT S.3874.						APPROVAL AND PARTICIPATION OF IMEG CORP. © 20  REFERENCE SCALE IN INCHES  0 1 2
	ER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY ED SOFT COPPER SUPPLY LINES, 1-1/4" 20 GAUGE CAST BRASS P-TRAP.						

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 |

		PLUMBING FIXTURE SCHEDULE	
F. & MODEL (MSB), WILLIAMS (MTB), (Z-1996), MUSTEE (63M) (2383), AMERICAN	TAG NAME SK-7	DESCRIPTION  SINK - ACCESSIBLE, UNDERMOUNT WITH OVERFLOW, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, 21 1/2" (SIDE-TO-SIDE) x 18 1/2" (FRONT-TO-BACK) OVERALL SIZE, 19" x 16" x 5 3/8" DEEP BOWL, COMPLETELY UNDERCOATED, 3-3/8" DIAMETER DRAIN OUTLET LOCATION OFF-CENTERED REAR IN BOWL, PERFORATED TYPE 304 STAINLESS STEEL GRID STRAINER.	MANF. & MODEL SINK - ELKAY (ELUHAD/LKAD18), JUST (US-ADA/J-ADA-35-FS), FRANKE (UCS) SINK TRIM - CHICAGO FAUCET (786)
012), CHICAGO FAUCETS 124), SPEAKMAN INS (S-2490), ZURN		SINK TRIM - TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, GOOSENECK RIGID SPOUT, NOMINAL 8" REACH, AERATOR, 4" WRISTBLADE HANDLES AT 8" CENTERS, 1/4-TURN OPERATION CERAMIC DISC CARTRIDGE.	
R - WATTS (8A), OR L DXL		MAXIMUM FLOW TO BE 1.5 GPM IN COMPLIANCE WITH PROJECT WATER CONSERVATION REQUIREMENTS (LEED). FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AND ESCUTCHEON PLATE AS REQUIRED.	
	TD-1	ACCESSORIES - OFFSET 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES.  TRENCH DRAIN - STAINLESS STEEL LINEAR SHOWER DRAIN. 4" WIDE STAINLESS STEEL LINEAR SLOTTED GRATE, VERTICALLY ADJUSTABLE ANCHORING SUPPORT LEGS, ANTI-PONDING V-SHAPED	ZURN (ZS880) OR EQUAL
		CHANNEL WITH 2" CENTER OUTLET. ADJUSTABLE SECURED LEVELING FRAME WITH BUILT-IN 1" FLANGE DRAIN SHALL BE DESIGNED FOR INSTALLATION IN A MINIMUM 2" CONCRETE POUR.  P.C. TO COORDINATE MOUNTING OF TRENCH DRAIN WITH RAISED FLOOR SYSTEM MANUFACTURER.	
	UB-1	PROVIDE ADDITIONAL SUPPORTS BELOW RAISED FLOOR AS REQUIRED.  UTILITY BOX - GALVANIZED STEEL ENCLOSURE, ANGLE VALVE WITH 1/4" COMPRESSION OUTLET, INTREGAL WATER HAMMER ARRESTOR.	GUY GRAY (BIM875AB), OATEY (39140)
REATIVE INDUSTRIES, STONE, ACORN	WC-1	WATER CLOSET - ACCESSIBLE, WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD.	WATER CLOSET - AMERICAN STANDARD (2257.101), SLOAN (ST-2050), ZURN
POWERS (E710), (2500-VOCCP), LAWLER		FLUSH VALVE - EXPOSED, WALL MOUNTED SENSOR OPERATION, HARDWIRED, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH IN, CHROME PLATED 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, MECHANICAL OVER-RIDE BUTTON, RANGE ADJUSTMENT SCREW, CHLORAMINE RESISTANT MATERIALS, CHROME PLATED COVER PLATE WITH TAMPER-PROOF SCREWS, TRANSFORMER AND LOW VOLTAGE WIRING, ADA COMPLIANT, 3 YEAR WARRANTY.	(Z5615), KOHLER (K-4325), TOTO (CT708E) FLUSH VALVE - SLOAN (111-1.28 ESS) SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME ASWATER CLOSET MANUFACTURER
		SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS.  CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN	4
HAD/LKAD18), JUST		ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS.COORDINATE CARRIER WITH RAISED FLOOR MANUFACTURER.	
ER (K-597), DELTA CAN STANDARD (LK6000), MOEN (7594C),		MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO RAISED FLOOR. COORDINATE REQUIREMENTS WITH RAISED FLOOR MANUFACTURER. TOP OF SEAT SHALL BE AT 17"-19" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	
-PD),	WC-2	WATER CLOSET - WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD.  FLUSH VALVE - EXPOSED, WALL MOUNTED SENSOR OPERATION, HARDWIRED, 1.28 GALLONS PER	WATER CLOSET - AMERICAN STANDARD (2257.101), SLOAN (ST-2050), ZURN (Z5615), KOHLER (K-4325), TOTO (CT708E)
		FLUSH, 11-1/2" ROUGH IN, CHROME PLATED 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, MECHANICAL OVER-RIDE BUTTON, RANGE ADJUSTMENT SCREW, CHLORAMINE RESISTANT MATERIALS, CHROME PLATED COVER PLATE WITH TAMPER-PROOF SCREWS, TRANSFORMER AND LOW VOLTAGE WIRING, ADA COMPLIANT, 3 YEAR WARRANTY.	FLUSH VALVE - SLOAN (111-1.28 ESS)  SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME ASWATER CLOSET MANUFACTURER
HAD/LKAD18), JUST FS), FRANKE (UCS)		SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC,	
ER (K-597), DELTA CAN STANDARD (LK6000), MOEN (7594C), -PD),		SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS.  CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN	J
EVOLUTION SERIES), ), WASTE KING (3300)		ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. COORDINATE CARRIER WITH RAISED FLOOR MANUFACTURER.	
		MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO RAISED FLOOR. COORDINATE REQUIREMENTS WITH RAISED FLOOR MANUFACTURER. TOP OF SEAT SHALL BE AT 16"-17" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	
	WC-3	WATER CLOSET - ACCESSIBLE, WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD.  FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME	(2257.101), SLOAN (ST-2050), ZURN (Z5615), KOHLER (K-4325), TOTO (CT708E)
HAD/LKAD18), JUST FS), FRANKE (UCS)		PLATED, 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, ADA COMPLIANT, 3 YEAR WARRANTY.  SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC,	FLUSH VALVE - SLOAN (111-1.28)  SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME A WATER CLOSET MANUFACTURER
GO FAUCET (786)		SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS.  CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN	J
		ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. COORDINATE CARRIER WITH RAISED FLOOR MANUFACTURER.	
		MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO RAISED FLOOR. COORDINATE REQUIREMENTS WITH RAISED FLOOR MANUFACTURER. TOP OF SEAT SHALL BE AT 17"-19" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). FLUSH HANDLE SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STALL AND BE 12" (MAXIMUM) ABOVE BOWL RIM AND OPERATE WITH NO GREATER THAN 5 LB FORCE IN COMPLIANCE WITH LATEST ADA STANDARDS. VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	
2611) GO FAUCET	WC-4	WATER CLOSET - FLOOR MOUNTED, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, WATER SAVING, ELONGATED BOWL, 10" RIM HEIGHT, 1-1/2" TOP SPUD, 10" ROUGH-IN, BOLT CAPS.	WATER CLOSET - AMERICAN STANDARD (2282.001), KOHLER (K-4321), ZURN (Z5670)
ATTS (LFUSG-B), 0T), ACORN CONTROLS 4DLF), LEONARD		FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, ADA COMPLIANT, 3 YEAR WARRANTY.	FLUSH VALVE - SLOAN (111-1.28)  SEAT - BEMIS (BB955C), BENEKE (323-5PC), KOHLER (K-4686-A), OLSONITE
RS (LFE480), SLOAN ONS (7-210), WILKINS	WH-1	SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS.  WATER HEATER - HYBRID ELECTRIC, VERTICAL, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED	(126CC), CHURCH (1580C), SAME AS WATER CLOSET MANUFACTURER
	VVIII	WELDED STEEL TANK, 150 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, MAGNESIUM ANODE ROD, INDIVIDUAL FLANGE-MOUNTED IMMERSION HEATING ELEMENTS SHEATHED WITH CORROSION-RESISTANT METAL ALLOY, EXTERNALLY ADJUSTABLE AUTOMATIC IMMERSION WATER THERMOSTAT, MANUAL RESET HIGH TEMPERATURE CUTOFF SWITCH, ENCLOSED CONTROLS, VENTILATED CONTROL CABINET, PILOT LIGHTS INDICATING MAIN POWER AND HEATING STEPS, CONTROL CIRCUIT TOGGLE SWITCH, SEQUENCING STEP CONTROLLER, CONTROL TRANSFORMER, POWER CIRCUIT FUSES, MAGNETIC CONTACTORS, CERAMIC TERMINAL BLOCK, FACTORY ASSEMBLED AND WIRED, 3-YEAR WARRANTY, UL LISTED, NEC COMPLIANT ELECTRICAL COMPONENTS, COMPLIANT TO NAECA, ASHRAE 90.1 AND ASHRAE 90A.	
		80 GALLON CAPACITY, 5 KW ELECTRIC ELEMENT WITH HEAT PUMP FUNCTION, 89 G.P.H. FIRST HOUR RATING WITH 29 GPH RECOVERY RATE AT 90°F TEMPERATURE RISE. HEATING ELEMENTS RATED FOR LESS THAN 75 WATTS PER SQUARE INCH.	
2219)		ELECTRICAL REQUIREMENTS - 208V-1 PHASE 30 AMP HEATING CIRCUIT	
GO FAUCETS	WHA-1	SET WATER TEMPERATURE AT 120°F.  WATER HAMMER ARRESTER - BELLOWS TYPE, PRE-CHARGED, ALL LEAD FREE STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI CERTIFIED, RATED FOR 1-11 FIXTURE UNITS.	ZURN (Z1700), JR SMITH (5005-5050), WADE (W5-100), JOSAM (75000 SERIES),
FRUEBRO (LAV-GUARD), TS (TRAP WRAP),		INSTALL PER MANUFACTURER'S RECOMMENDATIONS.	WATTS (SS), MIFAB (WHB)
AP)	WHA-2	WATER HAMMER ARRESTER - BELLOWS TYPE, PRE-CHARGED, ALL LEAD FREE STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI CERTIFIED, RATED FOR 12-32 FIXTURE UNITS.  INSTALL PER MANUFACTURER'S RECOMMENDATIONS.	ZURN (Z1700), JR SMITH (5005-5050), WADE (W5-100), JOSAM (75000 SERIES), WATTS (SS), MIFAB (WHB)
	WS-1	WATER SOFTENER - PRE-PIPED AND SKID MOUNTED, DUPLEX SOFTENER TANKS, AUTOMATIC REGENERATION TYPE BASED ON MULTIPLE TANK PROGRESSIVE CONTROL SYSTEM, POWER SUPPLY WITH CORD AND PLUG.	REFER TO SPECIFICATIONS.
		CONTINUOUS FLOW RATE OF 25 GPM AT 15 PSI PRESSURE DROP MAXIMUM FLOW RATE OF 34 GPM AT 25 PSI PRESSURE DROP MINIMUM CAPACITY OF 40,000 GRAINS PER TANK.  SOFTENER TANK SIZE:	
		BRINE TANK SIZE:  ELECTRICAL REQUIREMENTS - 120V-1 PHASE RECEPTACLE	
	YCO-1	REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.  YARD CLEANOUT - ROUND, DURA-COATED CAST IRON, SIZE AS LISTED ON DRAWINGS, DOUBLE	ZURN (Z1474), SMITH (4261), WADE (8401)



Sheet Issue Date REFERENCE SCALE IN INCHES 0 1 2 3

**BID DOCUMENTS** Sheet Name

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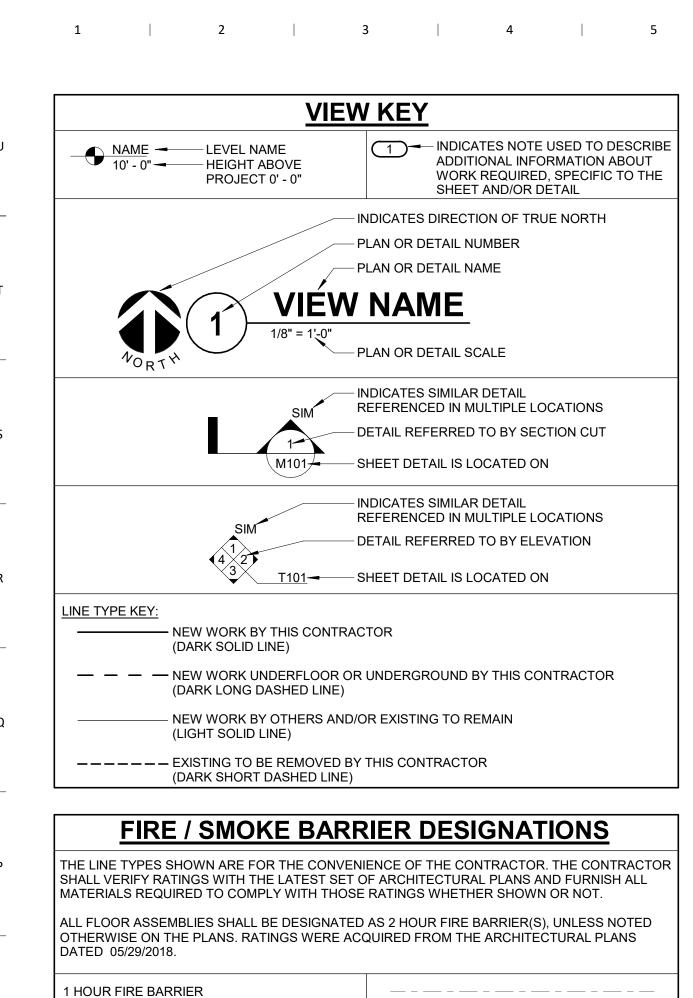
Key Plan

Madison, WI 53703 P: 608-819-0260

Sheet Number

City Contract No.

OPN Project No. 17609000



**CONTRACTOR ABBREVIATION KEY** 

\_\_\_ .. \_\_ .. \_\_ .. \_\_ .. \_\_ .. \_\_

2 HOUR FIRE BARRIER

**DESCRIPTION:** 

CIVIL CONTRACTOR

AUDIO/VISUAL CONTRACTOR

ELECTRICAL CONTRACTOR GENERAL CONTRACTOR

MECHANICAL CONTRACTOR

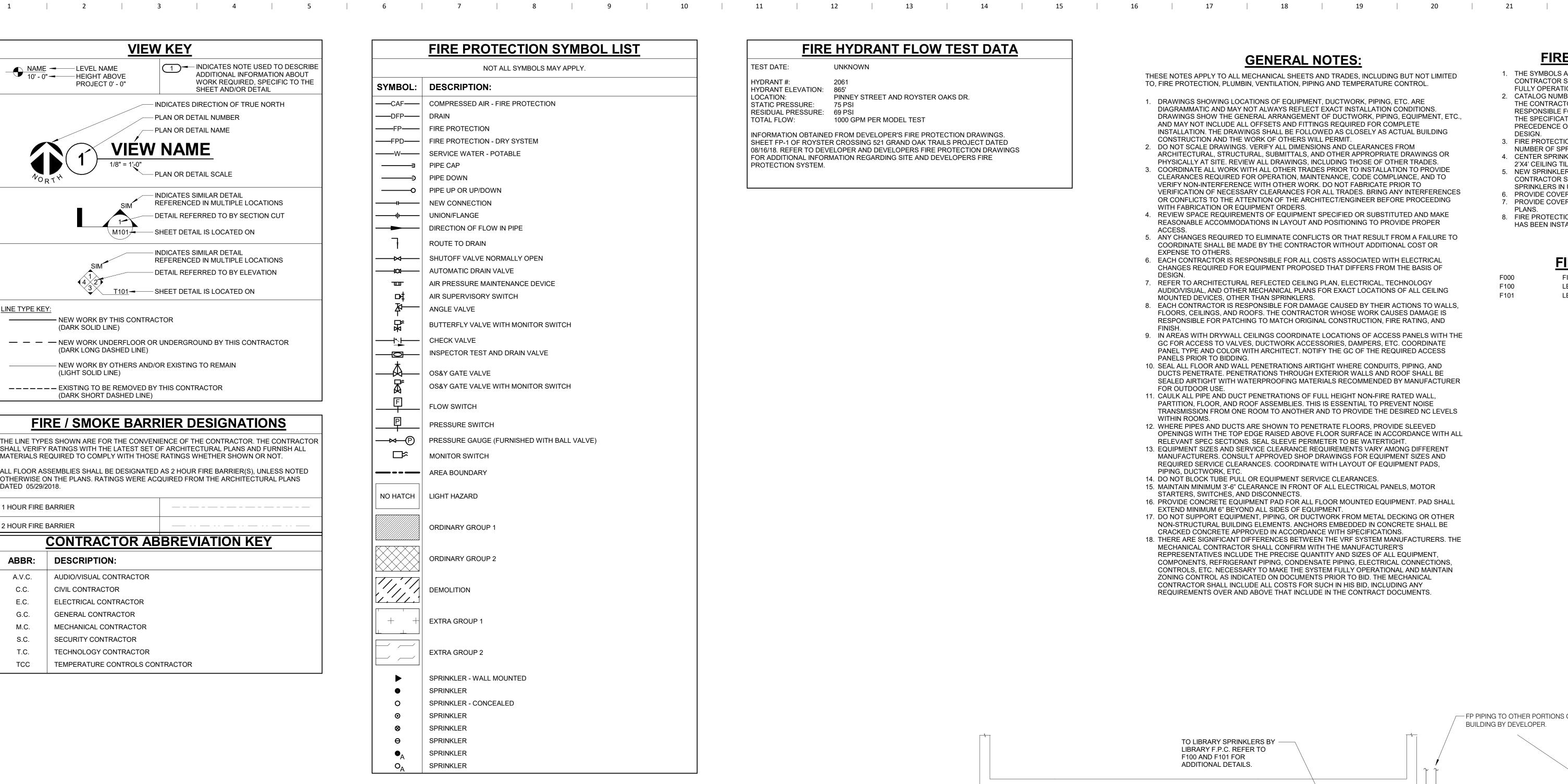
TECHNOLOGY CONTRACTOR

TEMPERATURE CONTROLS CONTRACTOR

SECURITY CONTRACTOR

ABBR:

E.C.



FIRE PROTECTION ABBREVIATION KEY							
ABBR:	DESCRIPTION:						
AD	ACCESS DOOR						
AFF	ABOVE FINISHED FLOOR						
BFP	BACKFLOW PREVENTER						
I.E.	INVERT ELEVATION						
NC	NEW CONNECTION						
N.C.	NORMALLY CLOSED						
NIC	NOT IN CONTRACT						
N.O.	NORMALLY OPEN						
TYP	TYPICAL						
UNO	UNLESS NOTED OTHERWISE						

TYCO TY-RFII, VICTAULIC V3802

FIRE SPRINKLER	<b>USAGE S</b>	CHEDUL	.E					
NOTES:  1. SEE FLOOR PLANS FOR ZONI 2. SPRINKLER SHALL HAVE COL 3. ALL SPRINKLERS SHALL BE U 4. CONTRACTOR TO VERIFY SPE REQUIREMENTS. 5. SYMBOL IS PRIMARILY FOR ID CONTRACTOR TO SUBMIT ALL 6. AREAS ARE GENERAL IN NATI	OR CODED BULB T JL LISTED. RINKLER REQUIREN ENTIFIYING SPRINK SPRINKLER TYPES	HERMAL ELEME MENTS BASED OI (LERS IN SUBMIT TO BE USED.	N ACTUAL INSTALLAT	Y NOT BE FOUND	ELSEWHERE ON T		A 13	
			SPRIN	NKLER				
AREA TYPE (NOTE 1 & 6)	AREA HAZARD	SYMBOL (NOTE 4 & 5)	TYPE	RESPONSE	FINISH	TEMPERATURE °F	MANUFACTURER & MODEL	REMARKS
MECHANICAL ROOMS	SEE PLANS	SPR-1	UPRIGHT	QUICK	ROUGH BRASS	155	VIKING VK, RELIABLE F1FR, TYCO TY-FRB, VICTAULIC V2704	NOTES 2,3
AREAS WITH FINISHED CEILINGS UNLESS NOTED OTHERWISE	SEE PLANS	SPR-2	CONCEALED	QUICK	WHITE	155	VIKING VK, RELIABLE G4A, TYCO TY-RFII, VICTAULIC V3802	NOTES 3
WOOD CEILINGS	SEE PLANS	SPR-3	CONCEALED	QUICK	BLACK	155	VIKING VK, RELIABLE G4A,	NOTES 3

### **GENERAL NOTES:**

**FIRE HYDRANT FLOW TEST DATA** 

PINNEY STREET AND ROYSTER OAKS DR.

1000 GPM PER MODEL TEST

INFORMATION OBTAINED FROM DEVELOPER'S FIRE PROTECTION DRAWINGS.

FOR ADDITIONAL INFORMATION REGARDING SITE AND DEVELOPERS FIRE

SHEET FP-1 OF ROYSTER CROSSING 521 GRAND OAK TRAILS PROJECT DATED

08/16/18. REFER TO DEVELOPER AND DEVELOPERS FIRE PROTECTION DRAWINGS

UNKNOWN

2061

TEST DATE:

HYDRANT #:

LOCATION:

TOTAL FLOW:

STATIC PRESSURE:

PROTECTION SYSTEM.

HYDRANT ELEVATION: 865'

RESIDUAL PRESSURE: 69 PSI

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBIN, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT. 2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM
- ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE, REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. 3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO
- VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
- 4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER
- 5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
- 6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF
- 7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY
- AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS. 8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS

RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND

- 9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC, COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
- 10. SEAL ALL FLOOR AND WALL PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE. 11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS
- 12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL
- RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT. 13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS,
- PIPING, DUCTWORK, ETC. 14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES. 15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR
- STARTERS, SWITCHES, AND DISCONNECTS. 16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL
- EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT. 17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE
- CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS. 18. THERE ARE SIGNIFICANT DIFFERENCES BETWEEN THE VRF SYSTEM MANUFACTURERS. THE MECHANICAL CONTRACTOR SHALL CONFIRM WITH THE MANUFACTURER'S REPRESENTATIVES INCLUDE THE PRECISE QUANTITY AND SIZES OF ALL EQUIPMENT, COMPONENTS, REFRIGERANT PIPING, CONDENSATE PIPING, ELECTRICAL CONNECTIONS. CONTROLS, ETC. NECESSARY TO MAKE THE SYSTEM FULLY OPERATIONAL AND MAINTAIN ZONING CONTROL AS INDICATED ON DOCUMENTS PRIOR TO BID. THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL COSTS FOR SUCH IN HIS BID. INCLUDING ANY

REQUIREMENTS OVER AND ABOVE THAT INCLUDE IN THE CONTRACT DOCUMENTS.

#### FIRE PROTECTION GENERAL NOTES:

- 1. THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT. 2. CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER IS THE BASIS OF
  - 3. FIRE PROTECTION PIPE ROUTING IS SHOWN FOR GENERAL LAYOUT. DETERMINE EXACT NUMBER OF SPRINKLERS, PIPE SIZING, AND PIPE ROUTING. 4. CENTER SPRINKLERS IN CEILING TILES IN BOTH DIRECTIONS IN ALL AREAS. IN AREAS WITH

7. PROVIDE COVERAGE ABOVE AND BELOW FLOATING CEILINGS, REFER TO ARCHITECTURAL

- 2'X4' CEILING TILES CENTERING USING A 2'X2' CEILING PATTERN IS ACCEPTABLE. 5. NEW SPRINKLERS SHALL BE QUICK RESPONSE TYPE, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL NOT MIX STANDARD RESPONSE SPRINKLERS WITH QUICK RESPONSE SPRINKLERS IN UNPARTITIONED SPACES. 6. PROVIDE COVERAGE ABOVE AND BELOW ALL DUCTWORK GREATER THAN 48" WIDE.
- 8. FIRE PROTECTION CONTRACTOR TO REMOVE ANY EXISTING FIRE PROTECTION PIPING THAT HAS BEEN INSTALLED AS PART OF SHELL SPACE.

### **FIRE PROTECTION SHEET INDEX**

FIRE PROTECTION COVER SHEET F000 F100 LEVEL 0 FLOOR PLAN - FIRE PROTECTION LEVEL 1 FLOOR PLAN - FIRE PROTECTION

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Key Plan

- FP PIPING TO OTHER PORTIONS OF BUILDING BY DEVELOPER. TO LIBRARY SPRINKLERS BY -LIBRARY F.P.C. REFER TO F100 AND F101 FOR ADDITIONAL DETAILS. FLOW SWITCH, ZONE VALVE, AND INSPECTOR DRAIN VALVE PROVIDED BY DEVELOPER. FP PIPING TO OTHER PORTIONS -OF BUILDING BY DEVELOPER. ELECTRIC BELL -STAIR B FIRE DEPARTMENT -CONNECTION. GRADE

**FIRE PROTECTION RISER DIAGRAM** 

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Sheet Issue Date **BID DOCUMENTS** Sheet Name

City Contract No.

OPN Project No 17609000

FIRE PROTECTION COVER SHEET Sheet Number

**F000** 

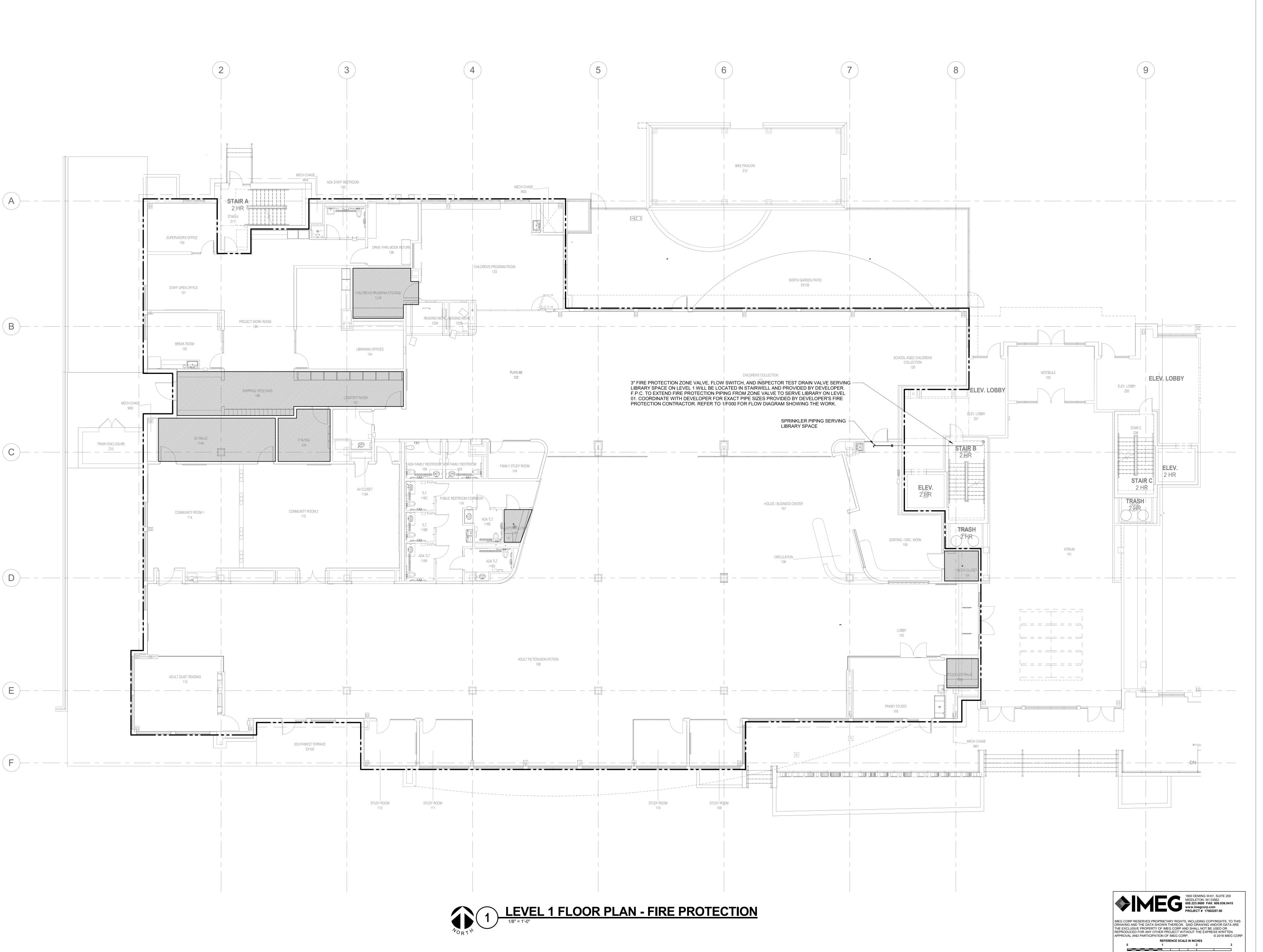
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F100

Sheet Number



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City Contract No.

OPN Project No.

17609000

Sheet Issue Date

BID DOCUMENTS 11/30/2018

Sheet Name

LEVEL 1 FLOOR PLAN - FIRE PROTECTION

Sheet Number

F101

<b>CONTRACTOR ABBREVIATION KEY</b>						
ABBR:	DESCRIPTION:					
A.V.C.	AUDIO/VISUAL CONTRACTOR					
C.C.	CIVIL CONTRACTOR					
E.C.	ELECTRICAL CONTRACTOR					
G.C.	GENERAL CONTRACTOR					
M.C.	MECHANICAL CONTRACTOR					
S.C.	SECURITY CONTRACTOR					
T.C.	TECHNOLOGY CONTRACTOR					
ГСС	TEMPERATURE CONTROLS CONTRACTOR					

	TECHNOLOGY SYMBOL LIST								
SYMBOL:	EQUIPMENT TAG:	DESCRIPTION:	NOTE						
CR	AC-CR-W	ACCESS CONTROL CREDENTIAL READER	2.						
CSS	N/A	CONTROLLED SECURITY SCHEME SCHEDULE IDENTIFIER	2.						
CM1	AV-CM1-W	AUDIO/VIDEO CAMERA (POLYCOM) - TYPE 1	•						
MP2	AV-MP2-C	MICROPHONE (CEILING) TYPE 2							
RS	AV-RS-W	ROOM SCHEDULER (WALL) - TYPE 1							
SP1)	AV-SP1-C	PERFORMANCE AUDIO SPEAKER (CEILING) - TYPE 1							
SP1	AV-SP1-W	PERFORMANCE AUDIO SPEAKER (WALL) - TYPE 1							
ТР	AV-TP-W	AUDIO/VIDEO TOUCH PANEL (WALL)							
WP1	AV-WP1-W	AUDIO/VISUAL FACEPLATE (WALL) - TYPE 1	•						
C#-WAP	SC-IO-CWAP	WIRELESS ACCESS POINT INFORMATION OUTLET (CEILING)	1.						
© <sup>C#</sup>	<u>SC-IO-C</u>	INFORMATION OUTLET (CEILING)	1.						
C#	SC-IO-W	INFORMATION OUTLET (WALL)	1.						
©C#	SC-IO-F	INFORMATION OUTLET (FLOOR)	1., 4.						
<b>©</b> C#	N/A	ELECTRICAL FLOOR BOX WITH TECHNOLOGY	1., 4.						
нн	N/A	HANDHOLE							
CAM ## - ##	N/A	CLOSED CIRCUIT TELEVISION (CCTV) SURFACE CAMERA	3.						
(CAM) ## - ##	N/A	CLOSED CIRCUIT TELEVISION (CCTV) CEILING CAMERA	3.						
WIDTH X	HEIGHT	CABLE TRAY, CHANNEL TRAY, BASKET TRAY							
WIDTH X	HËIGHT_	LADDER RACK							
DIAMET	ΓERø C <del></del>	CONDUIT							
	<del></del> ə	CONDUIT DOWN							
	<u> </u>	CONDUIT UP OR UP/DOWN							
<b>C</b>	<del></del> -	CONDUIT SLEEVE							
5		CONTINUATION							
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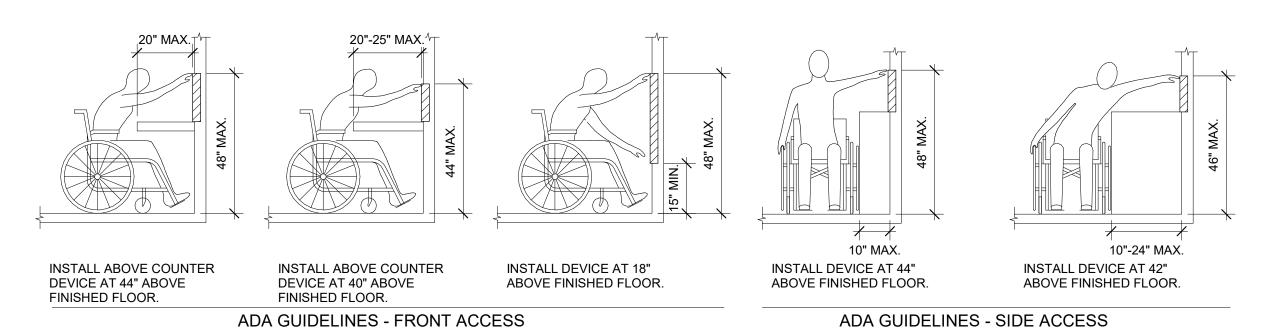
### **GENERAL NOTES:**

- ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT. REFER TO THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE FOR MORE COMPLETE
- DESCRIPTION AND ITEMS. ALL SYMBOLS AND ABBREVIATIONS REFER TO TECHNOLOGY SHEETS ONLY AS DEFINED ON THE SHEET INDEX. REFER TO THE GENERAL TECHNOLOGY NOTES FOR ADDITIONAL
- ALL SYMBOLS LISTED ABOVE ARE FOR REFERENCE ONLY. REFER TO PLANS AND LINE TYPE KEY FOR NEW, EXISTING TO REMAIN AND TO BE REMOVED ITEMS FOR ADDITIONAL INFORMATION.

### TECHNOLOGY SYMBOL NOTES:

- "C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. REFER TO CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE ON T601 FOR
- ADDITIONAL INFORMATION. REFER TO CLOSED CIRCUIT (CCTV) INDIVIDUAL CAMERA REQUIREMENTS SCHEDULE ON T601 AND CAMERA TYPE SCHEDULE ON T601 FOR ADDITIONAL INFORMATION. SYMBOL SUBSCRIPT INDICATES FLOOR NUMBER-CAMERA NUMBER. A CAMERA HEIGHT IDENTIFIES THE HEIGHT FROM THE FLOOR TO THE CENTER OF THE CAMERA LENS. NO HEIGHT REFERS TO MOUNTING THE CAMERA ON THE CEILING. REFER TO THE INDIVIDUAL CAMERA
- SCHEDULE AND THE INDIVIDUAL CAMERA TYPE SCHEDULE FOR ADDITIONAL INFORMATION. INFORMATION OUTLET INSTALLED IN E.C. PROVIDED FLOOR BOX. "C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. REFER TO THE TECHNOLOGY FLOOR PLANS AND GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON SHEET T602 FOR ADDITIONAL INFORMATION.

	<b>TECHNOLOGY ABBREVIATION KEY</b>
ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
С	CONDUIT
J-BOX	JUNCTION BOX
SIM	SIMILAR
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
+#	MOUNTING HEIGHT ABOVE FINISHED FLOOR
EF-#	ENTRANCE FACILITY
MC-#	MAIN CROSS-CONNECT
TR-#	TELECOMMUNICATIONS ROOM
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
НН	HANDHOLE



ADA STANDARDS FOR ACCESSIBLE DESIGN

### **TECHNOLOGY GENERAL NOTES:**

1. ###-### INDICATES GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ITEM LABELED AS "EQUIPMENT TAG"

2. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR FULL

DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.

TECHNOLOGY MOUNTING SUBSCRIPT KEY: MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH

MOUNT ORIENTED HORIZONTALLY MOUNT IN CASEWORK

SUGGESTED MATRIX OF RESPONSIBILITY

T-SERIES

T-SERIES

T-SERIES

T-SERIES

T-SERIES

T-SERIES

E-SERIES

ARCH SPEC

T-SERIES

T-SERIES

T-SERIES

SUGGESTED MATRIX OF RESPONSIBILITY NOTES

BASED ON THE INHERENT DIFFERENCES IN PRODUCTS FROM VARIOUS MANUFACTURERS. ALL REQUIRED EQUIPMENT MAY NOT BE SHOWN ON THE DRAWINGS FOR ALL ACCEPTABLE

ALL CHANGES TO THE SLEEVES, BACKBOXES, CONDUITS, AND POWER REQUIRED BECAUSE OF

THE T.C.'S SELECTION OF AN ALTERNATE ACCEPTABLE MANUFACTURER OR FROM SYSTEM

IN THE T.C.'S BID. THIS BID SHALL INCLUDE INSTALLATION BY A LICENSED ELECTRICIAN.

INCLUDES ALL CONDUCTORS, GROUND BARS, AND TERMINATIONS FOR THE COMPLETE

CONFIGURATIONS THAT ARE LEFT TO THE CHOICE OF THE CONTRACTOR SHALL BE INCLUDED

FURNISHED AS PART OF THE EQUIPMENT WHEN POSSIBLE, OR FURNISHED TO THE E.C. FOR

REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS AND SWITCHBOARDS SHOWN IN THE TECHNOLOGY BONDING RISER DIAGRAM AND TYPICAL TELECOM ROOM BONDING FLOW

TELECOM ROOM REFERENCES

FLOOR PLAN

REFERENCE

1/T101

ARCH ROOM NUMBER

129

OUTLET SYMBOLS ON THE DRAWINGS. REFER TO THE TECHNOLOGY SYMBOL LIST FOR

INCLUDES BACKBOXES AND CONDUIT REQUIRED FOR THE TECHNOLOGY SYSTEMS

INSTALLATION. THE E.C. SHALL BASE THE BID ON THE BASIS OF DESIGN SHOWN ON THE

LOCATIONS OF TELECOMMUNICATIONS ROUGH-INS SHALL BE INDICATED BY THE INFORMATION

E.C.

E.C.

T & E SERIES E.C. E.C.

TECHNOLOGY ROUGH-IN, REFER TO

GENERAL TECHNOLOGY EQUIPMENT

DEFINITION

DRAWINGS)

OF SYSTEM)

ROUGH-IN

LADDER RACK

GROUND SYSTEM

GREATER)

MANHOLES

**I**EQUIPMENT

SCHEDULE AND SPECIFICATIONS FOR

INFORMATION OUTLET FACEPLATES,

CONDUIT SLEEVES (WHEN SHOWN ON

CONDUIT SLEEVES (NOT SHOWN BUT

TELECOMMUNICATION SYSTEMS

CABLING, AND TERMINATIONS

TRAY) REFER TO SPECIFICATION

SECTION 27 05 28 FOR DEFINITION

GROUNDING LUGS ON TECHNOLOGY

SYSTEM, REFER TO SPECIFICATION

SECTION 27 05 26 FOR DEFINITION

LINE VOLTAGE POWER (+120V OR

LINE VOLTAGE POWER FOR DOOR

CABLE HANGERS AND SUPPORTS OR

OTHER CABLE ROUTING METHODS

(OTHER THAN CONDUIT AND CABLE

TECHNOLOGY SERVICE ENTRANCE

ADDITIONAL INFORMATION.

CONTRACT DOCUMENTS.

INSTALLATION IN THE FIELD.

TELECOM ROOM

MC-1

UNLESS TRADE RULES DICTATE OTHERWISE.

BONDING SYSTEM REQUIRED BY THE SPECIFICATIONS.

**DETAIL / SHEET** 

REFERENCE 1/T300

CONDUITS, HANDHOLES, AND

FLOOR BOX (ROUGH-IN)

BUT REQUIRED FOR PROPER

HARDWARE POWER SUPPLIES

LOW VOLTAGE CABLING FOR

TECHNOLOGY SYSTEMS

INSTALLATION OF SYSTEM)

LINE VOLTAGE POWER (NOT SHOWN

CONNECTION OF TECHNOLOGY

BONDING SYSTEM FOR TECHNOLOGY

BONDING SYSTEM TO THE ELECTRICAL

TELECOMMUNICATION EQUIPMENT.

CABLE TRAY (INCLUDING WIRE BASKET

REQUIRED FOR PROPER INSTALLATION

JACKS, AND TERMINATIONS

BY:

E.C.

E.C.

E.C.

E.C.

NOTES:

2. 4.

2. 4.

MOUNT IN MODULAR FURNITURE

MOUNT IN SURFACE RACEWAY

A SLASH IS USED BETWEEN TWO SUBSCRIPTS, E.G., A/H.

### **TECHNOLOGY INSTALLATION NOTES:**

1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION. 2. CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, ABOVE CEILING, IN FLOOR SLAB, ETC. UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS. CONDUIT IN

MECHANICAL ROOMS AND STORAGE ROOMS WITHOUT CEILINGS MAY BE EXPOSED ON BUILDING STRUCTURE. BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM

OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU-THE-WALL" BOXES SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

4. VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS, PRIOR TO MAKING THE ACTUAL TELECOMMUNICATIONS INSTALLATION, ADJUST OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.

5. TELECOMMUNICATIONS EQUIPMENT SHALL BE MOUNTED TO ALLOW ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF TELECOMMUNICATION DEVICES ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR SHALL BE APPROVED IN

ADVANCE BY THE OTHER CONTRACTOR. 6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.

7. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO DIVISION 7 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.

8. REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF TELECOMMUNICATIONS WORK THAT IS OUTSIDE THE CONTRACT LIMITS OF CONSTRUCTION. REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS

CONTRACTOR. 9. ALL LADDER RACK AND CABLE TRAY SIZES ARE AS DEFINED ON THE DRAWINGS. REFER TO SPECIFICATION SECTIONS 27 05 28 AND 27 11 00 FOR APPROVED MANUFACTURERS AND

INSTALLATION REQUIREMENTS. 10. FLUSH MOUNT ALL TELECOMMUNICATION OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.

## **TECHNOLOGY OUTSIDE PLANT NOTES**

1. THE LOCATION OF THE CONDUIT, HAND HOLES, AND MAINTENANCE HOLES SHOWN ARE APPROXIMATE LOCATIONS. FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIVATE AND/OR PUBLIC PRIOR TO THE INSTALLATION OF THE COMPONENT. FIELD COORDINATE THE FINAL

LOCATION WITH THE OWNER AND ENGINEER PRIOR TO INSTALLATION. POTHOLING TO LOCATE EXISTING UNDERGROUND UTILITIES, IF APPLICABLE, SHALL BE INCLUDED IN THE CONTRACTOR'S BID. CONTRACTOR IS RESPONSIBLE FOR FINAL PLACEMENT OF HANDHOLES MAINTENANCE HOLES AND SHALL NOTIFY THE ENGINEER OF FINAL LOCATIONS PRIOR TO INSTALLATION.

3. HAND HOLES MAINTENANCE HOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE FRAME WILL BE FLUSH WITH THE GROUND LINE. 4. REMOVAL AND REPLACEMENT OF THE EXISTING UNDERGROUND UTILITIES THAT ARE

REQUIRED TO COMPLETE THE INSTALLATION SHALL BE INCLUDED IN THE CONTRACTOR'S 5. CONTRACTOR SHALL INCLUDE WITHIN THEIR BID ANY REMOVAL AND REPLACEMENT OF EXISTING SIDEWALK, PAVEMENT, GRASS, SHRUBS, TREES, ETC. THAT WILL BE IMPACTED BY THE INSTALLATION OF THE NEW CONDUITS SHOWN ON THE DRAWINGS, IF TREES ARE

REQUIRED TO BE REMOVED THE CONTRACTOR SHALL CONTACT THE OWNER AND DISCUSS OPTIONS PRIOR TO CUTTING DOWN ANY TREE OR SHRUB OVER 5' IN HEIGHT. 6. NO ADDITIONAL COST SHALL BE APPROVED FOR PLACING CONDUITS DEEPER THAN

REQUIRED MINIMUM DEPTH TO AVOID EXISTING UNDERGROUND UTILITIES. PROVIDE A MINIMUM OF 25'-0" SLACK LOOP WITHIN EACH HAND HOLE MAINTENANCE HOLES. SLACK LOOP SHALL BE SECURE SO COPPER OR FIBER IS NOT RESTING ON EARTH AFTER FINAL INSTALLATION.

# **TECHNOLOGY SHEET INDEX**

T000 TECHNOLOGY COVER SHEET

T050 SITE PLAN - TECHNOLOGY

T100 LEVEL 0 FLOOR PLAN - WEST - TECHNOLOGY T101 LEVEL 1 FLOOR PLAN - TECHNOLOGY

T300 ENLARGED PLANS - TECHNOLOGY

TECHNOLOGY DETAILS T500 TECHNOLOGY DIAGRAMS

TECHNOLOGY DIAGRAMS

TECHNOLOGY DIAGRAMS TECHNOLOGY SCHEDULES

TECHNOLOGY SCHEDULES

T602 GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

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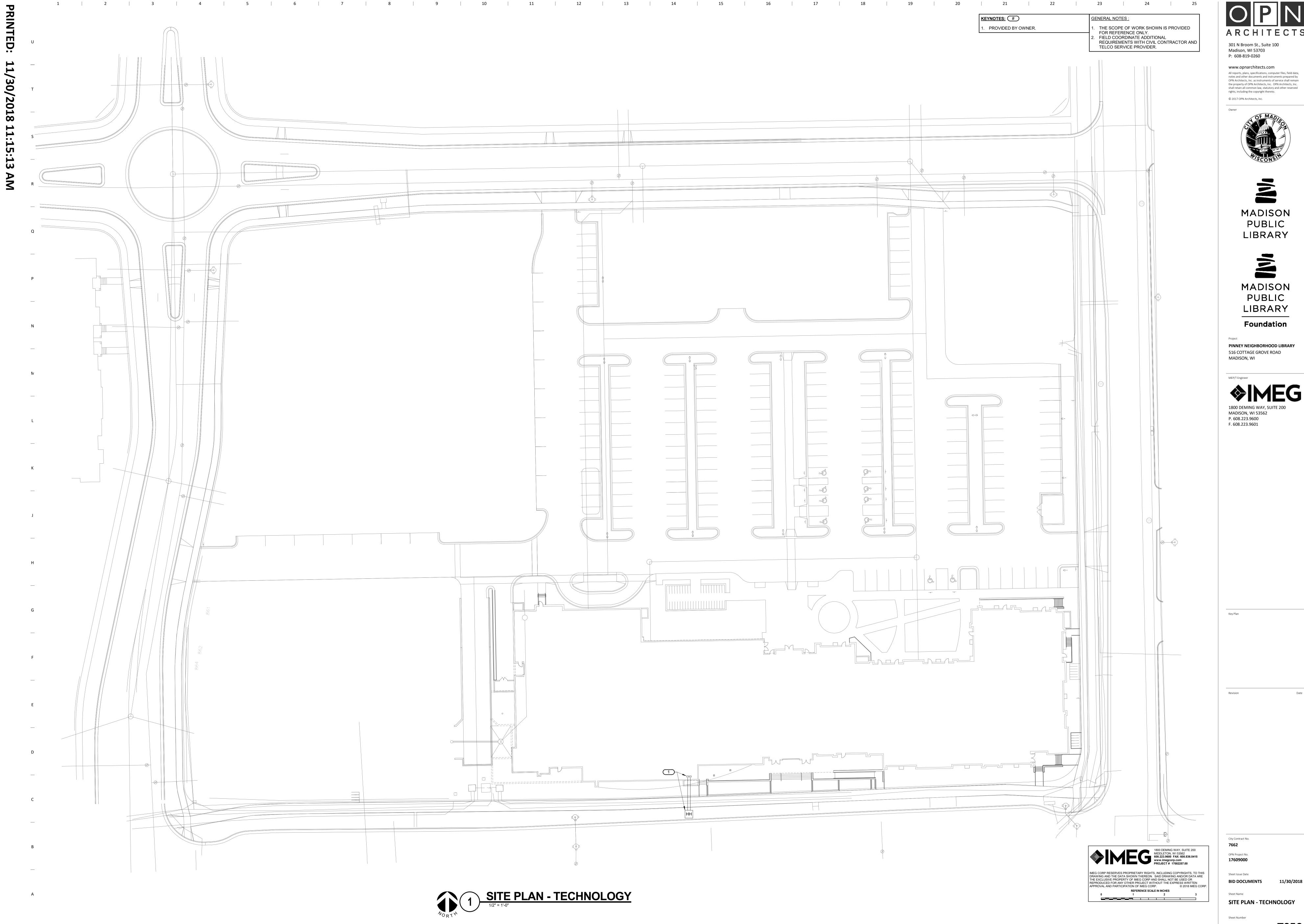
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TECHNOLOGY COVER SHEET

Sheet Number



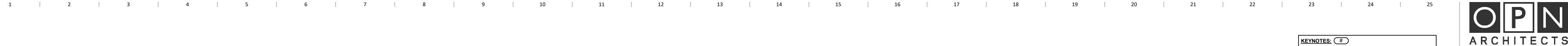
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ARCHITECTS





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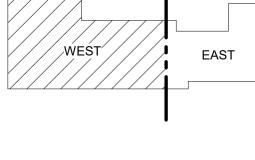




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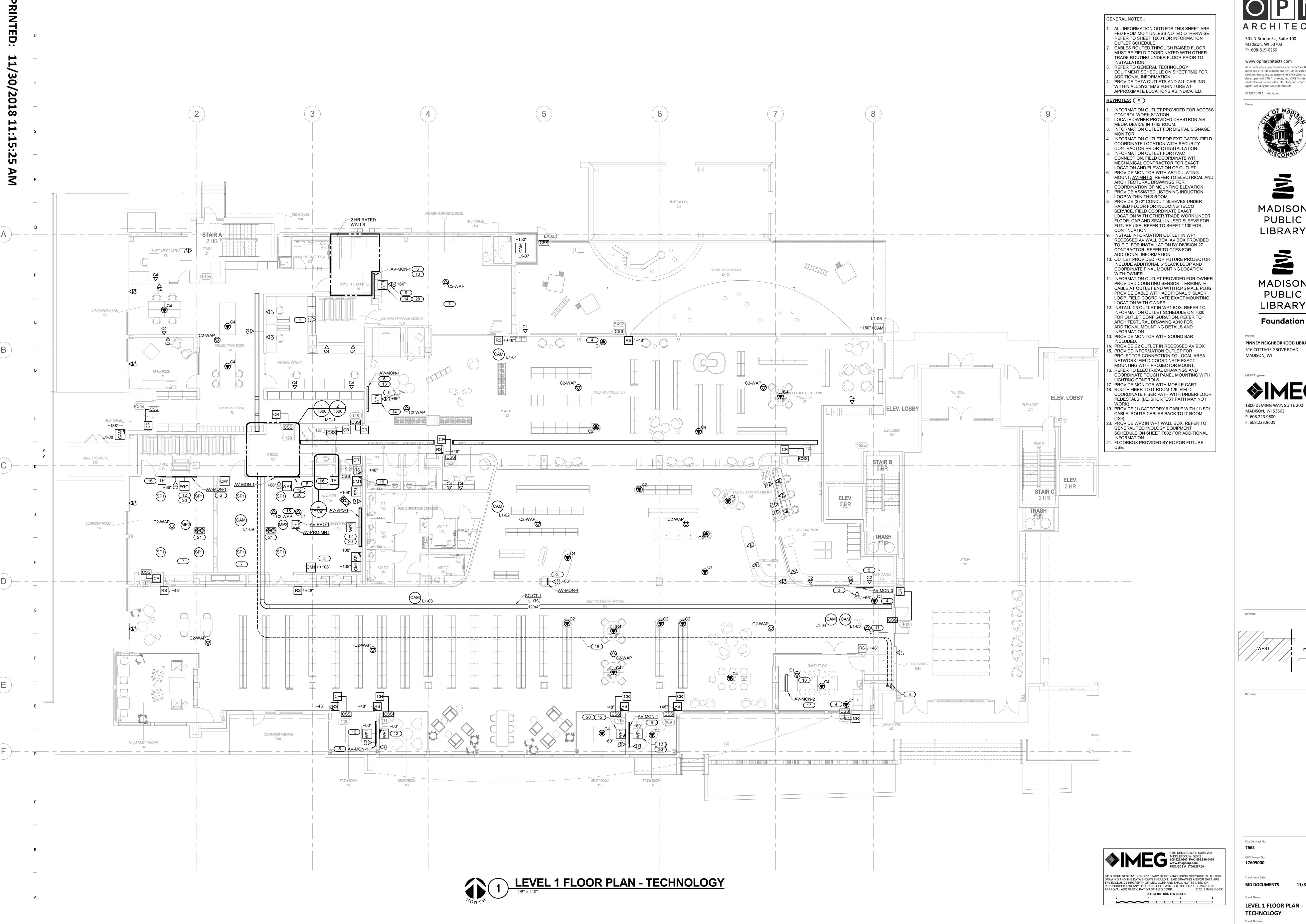


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OPN Project No. 17609000 Sheet Issue Date

**BID DOCUMENTS** Sheet Name

**LEVEL 0 FLOOR PLAN - WEST** - TECHNOLOGY Sheet Number



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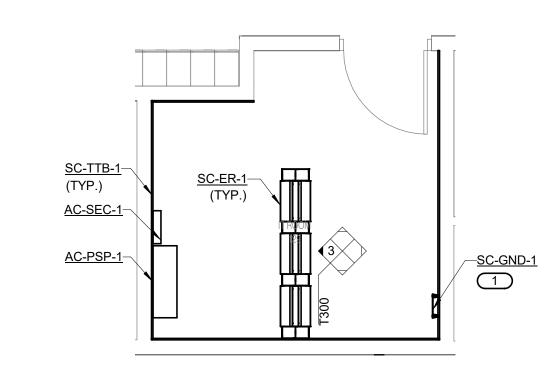


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LEVEL 1 FLOOR PLAN





# TELECOM ROOM 129 MC-1 ENLARGED PLAN

- 1. COORDINATE ALL DEVICE LOCATIONS AND MOUNTING LOCATIONS IN TELECOM ROOM 129 MC-1 ON SITE WITH OWNER'S IT STAFF PRIOR TO INSTALLATION.
- 2. COORDINATE INSTALLATION SCHEDULE FOR UTILITY/SERVICE POWER OUTLETS AND ANY EQUIPMENT POWER CONNECTION REQUIRED FOR CONTRACTOR FURNISHED AND INSTALLED EQUIPMENT IN TELECOM ROOM 129 MC-1 WITH ON SITE DIVISION 26 CONTRACTOR PRIOR TO ROUGH-IN.
- 3. REFER TO 2/T300 FOR TELECOM ROOM 129 MC-1 PATHWAY LAYOUT.

AV CLOSET 115A - ENLARGED PLAN

1/4" = 1'-0"

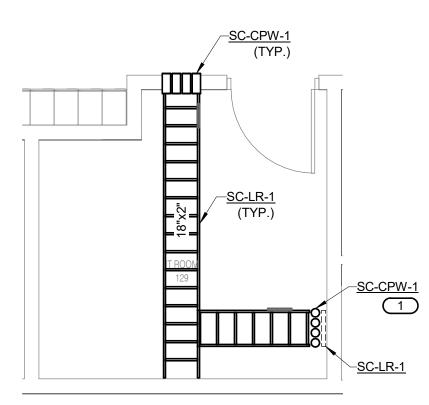
2. MAXIMUM HEIGHT AT TOP OF MOUNTED CABINET NOT TO EXCEED 72" AFF.

1. AV CABINET PROVIDED BY DIVISION 27 CONTRACTOR.

4. REFER TO 1/T501 FOR TECHNOLOGY BONDING RISER DIAGRAM.

KEYNOTES:

1. REFER TO 2/T400 FOR ADDITIONAL INFORMATION. INSTALL AT A HEIGHT OF 18" AFF TO THE TOP OF THE



# TELECOM ROOM 129 MC-1 PATHWAY LAYOUT

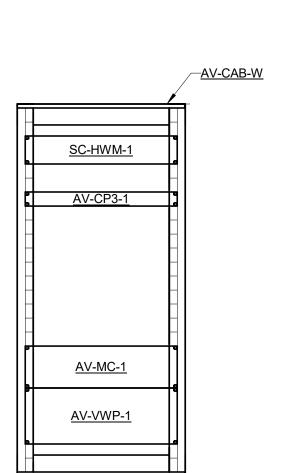
- 1. CONFIRM ALL DEVICE LOCATIONS AND MOUNTING LOCATIONS IN TELECOM ROOM 129 MC-1 ON SITE WITH
- OWNER'S IT STAFF PRIOR TO INSTALLATION. 2. FURNISH AND INSTALL CABLE RUNWAY RADIUS DROPS AT ALL AREAS WHERE CABLE TRANSITIONS ON TO OR OFF OF HORIZONTAL CABLE RUNWAY. REFER TO 3/T400 AND 4/T400 FOR ADDITION INFORMATION.
- 3. PROVIDE VERTICALLY MOUNTED LADDER RACK/CABLE MANAGEMENT TO ORGANIZE AND SUPPORT CABLES
- ROUTED OVER TO EQUIPMENT RACKS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

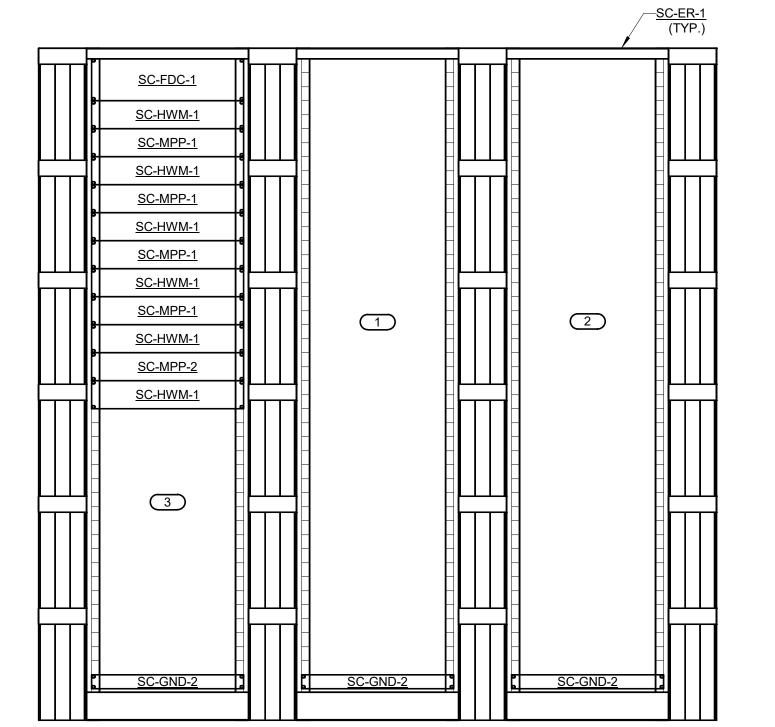
<u>KEYNOTES:</u>

1. SLEEVES PROVIDED IN RAISED FLOOR FOR CABLE DISTRIBUTION.

# **AV CLOSET 115A - RACK ELEVATION**1" = 1'-0"

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 25





# TELECOM ROOM 129 MC-1 RACK ELEVATION

- 1. COORDINATE ALL DEVICE LOCATIONS AND MOUNTING LOCATIONS IN TELECOM ROOM 129 MC-1 ON SITE WITH
- OWNER'S IT STAFF PRIOR TO INSTALLATION. 2. FURNISH AND INSTALL CABLE RUNWAY RADIUS DROPS AT ALL AREAS WHERE CABLE TRANSITIONS ON TO OR
- 3. PROVIDE CABLE MANAGEMENT AND COORDINATE AC POWER AND VENTILATION REQUIREMENTS.
- THAT WILL BE INSTALLED BY ANOTHER PROJECT. DO NOT INSTALL HORIZONTAL WIRE MANAGER AT THE VERY TOP OF THE RACK.

KEYNOTES:

1. SPACE FOR OWNER PROVIDED EQUIPMENT (ETHERNET SWITCHES, ETC.).

2. SPACE RESERVED FOR ADDITIONAL PATCH PANELS.

3. SPACE RESERVED FOR SOUTH-CENTRAL LIBRARY SYSTEM EQUIPMENTS.

OFF OF HORIZONTAL CABLE RUNWAY. REFER TO 3/T400 FOR ADDITION INFORMATION. 4. ALLOW AT LEAST 3 RACK UNIT AT TOP OF THE MAIN RACK FOR NEW OPTICAL FIBER CABLE PATCH PANEL

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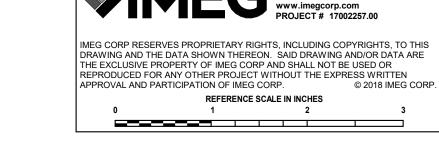
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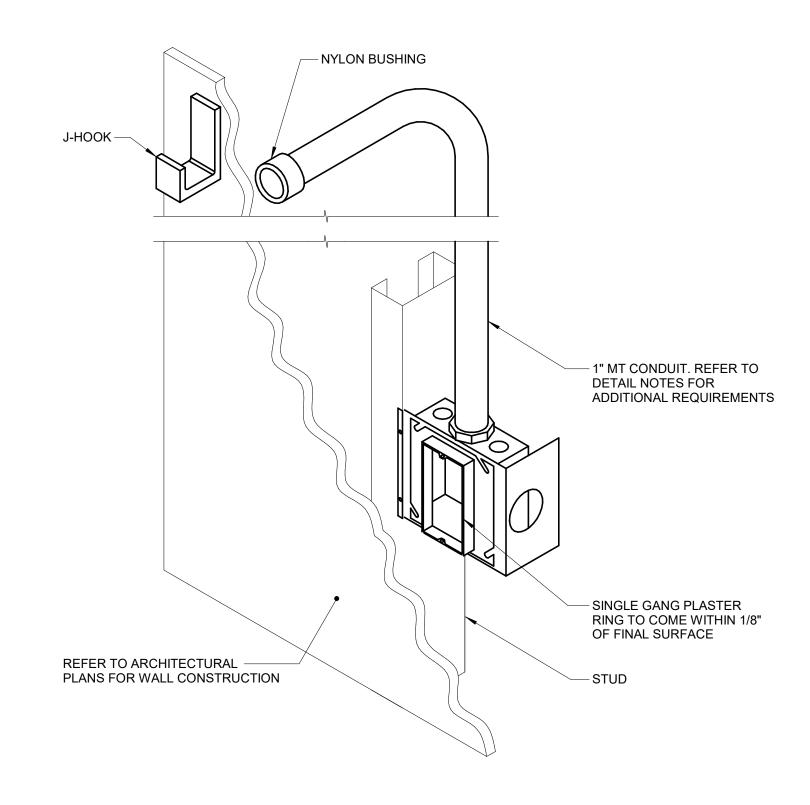
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Sheet Name **ENLARGED PLANS -TECHNOLOGY** Sheet Number

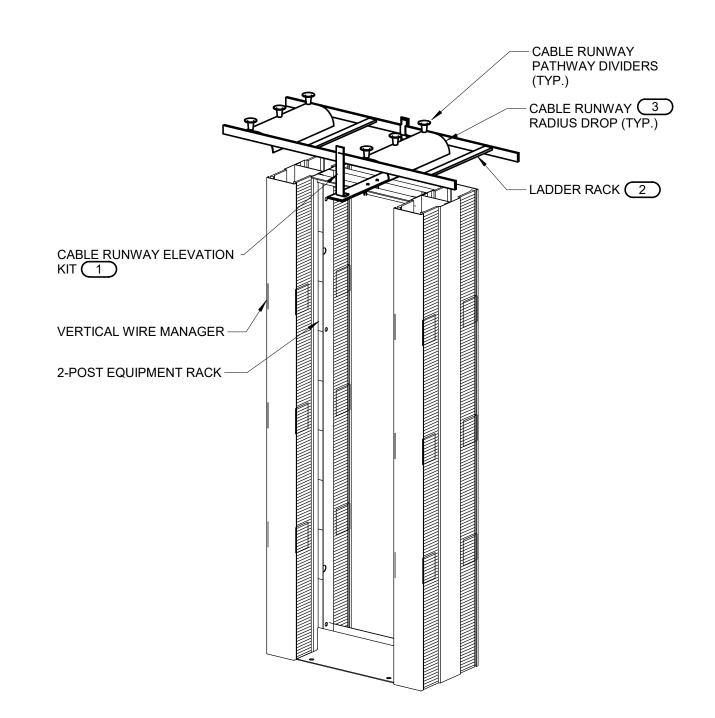




# **TECHNOLOGY ROUGH-IN MOUNTING DETAIL**

- NOTES:

  1. 1" EMT CONDUIT SHALL STUB UP TO NEAREST ACCESSIBLE CEILING AND TERMINATE ORIENTED HORIZONTALLY AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE. CONDUIT RUN SHALL NOT CONTAIN MORE THAN 180 DEGREES OF BEND BETWEEN ACCESSIBLE JUNCTION BOXES OR BETWEEN
- JUNCTION BOX AND END OF CONDUIT. 2. WHERE CONDUIT STUB IS LOCATED IN A ROOM WITH AN ACCESSIBLE CEILING AND IS NOT REQUIRED TO RUN TO CABLE ROUTE LOCATED OUTSIDE THE ROOM, STUB MUST TERMINATE ABOVE THE ACCESSIBLE CEILING WITH A 90-DEGREE BEND AT THE TOP ORIENTED IN TO THE ROOM AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE IN THE ROOM.
- 3. ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT. 4. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR TECHNOLOGY ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP REQUIREMENTS.



# LADDER RACK MOUNTING DETAIL

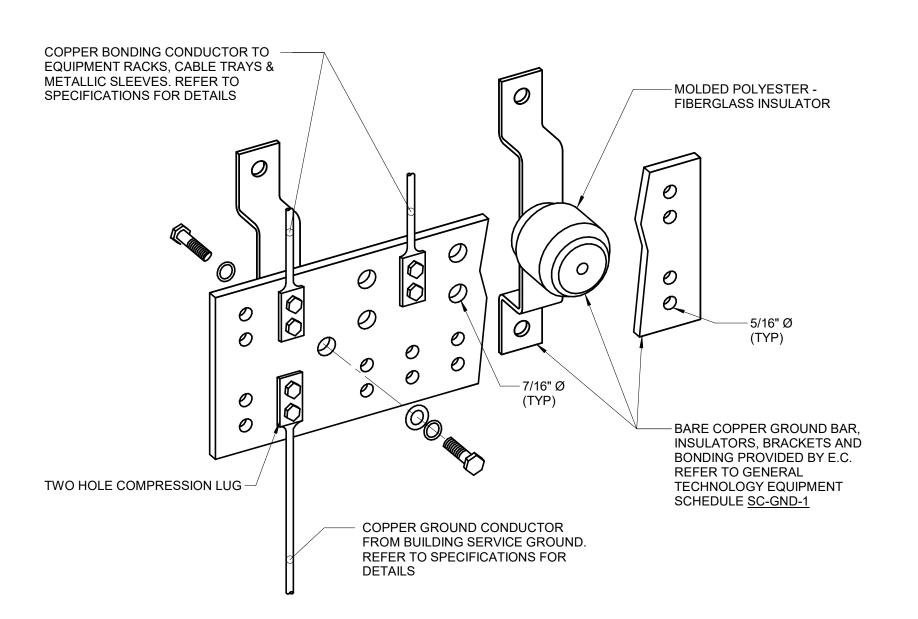
NOTES:

1. ALL LADDER RACK AND ACCESSORIES TO BE INSTALLED FOR A COMPLETE INSTALLATION SHALL BE FROM THE SAME MANUFACTURER.

- KEYNOTES:

  1. MOUNT THE LADDER RACK NO MORE THAN +6" ABOVE THE FLOOR MOUNTED RACK. ADJUST THE CABLE RUNWAY ELEVATION KIT AS REQUIRED.
- REFER TO THE INDIVIDUAL PATHWAY DRAWINGS FOR THE LADDER RACK SIZE. 3. A MINIMUM OF (1) RADIUS DROP INTO EACH VERTICAL WIRE MANAGER. REFER TO THE INDIVIDUAL TELECOM ROOM LAYOUTS, PATHWAY LAYOUTS, AND RACK

ELEVATIONS FOR QUANTITY OF WIRE MANAGERS AND ADDITIONAL INFORMATION.



# **BONDING BUS BAR DETAIL**

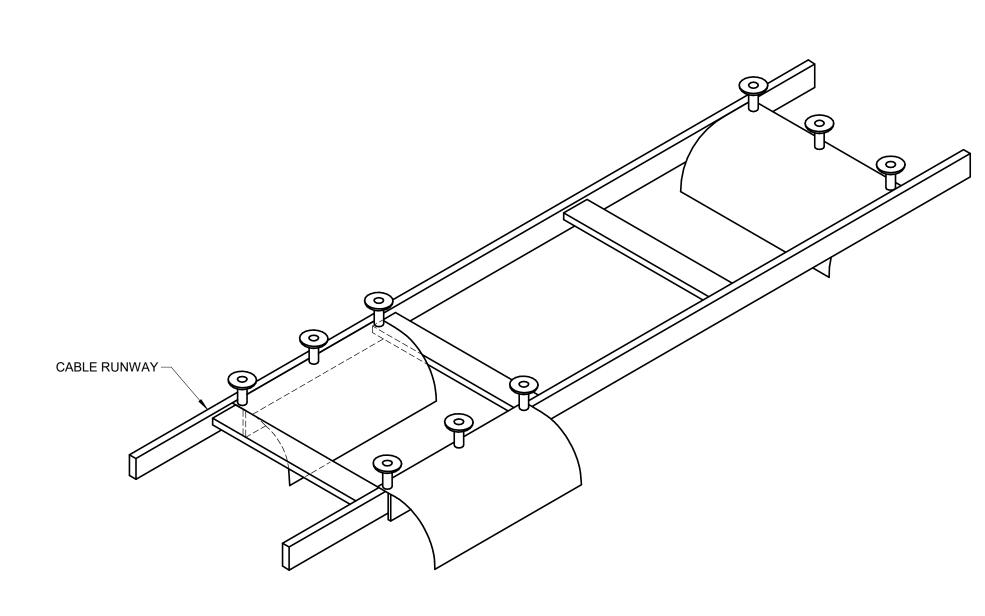
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- NOTES:

  1. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE SC-GND-1
- FOR WIDTH REQUIREMENTS.

  2. REFER TO 2/T501 FOR TYPICAL TELECOM ROOM BONDING FLOW

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |



CABLE RUNWAY RADIUS DROP



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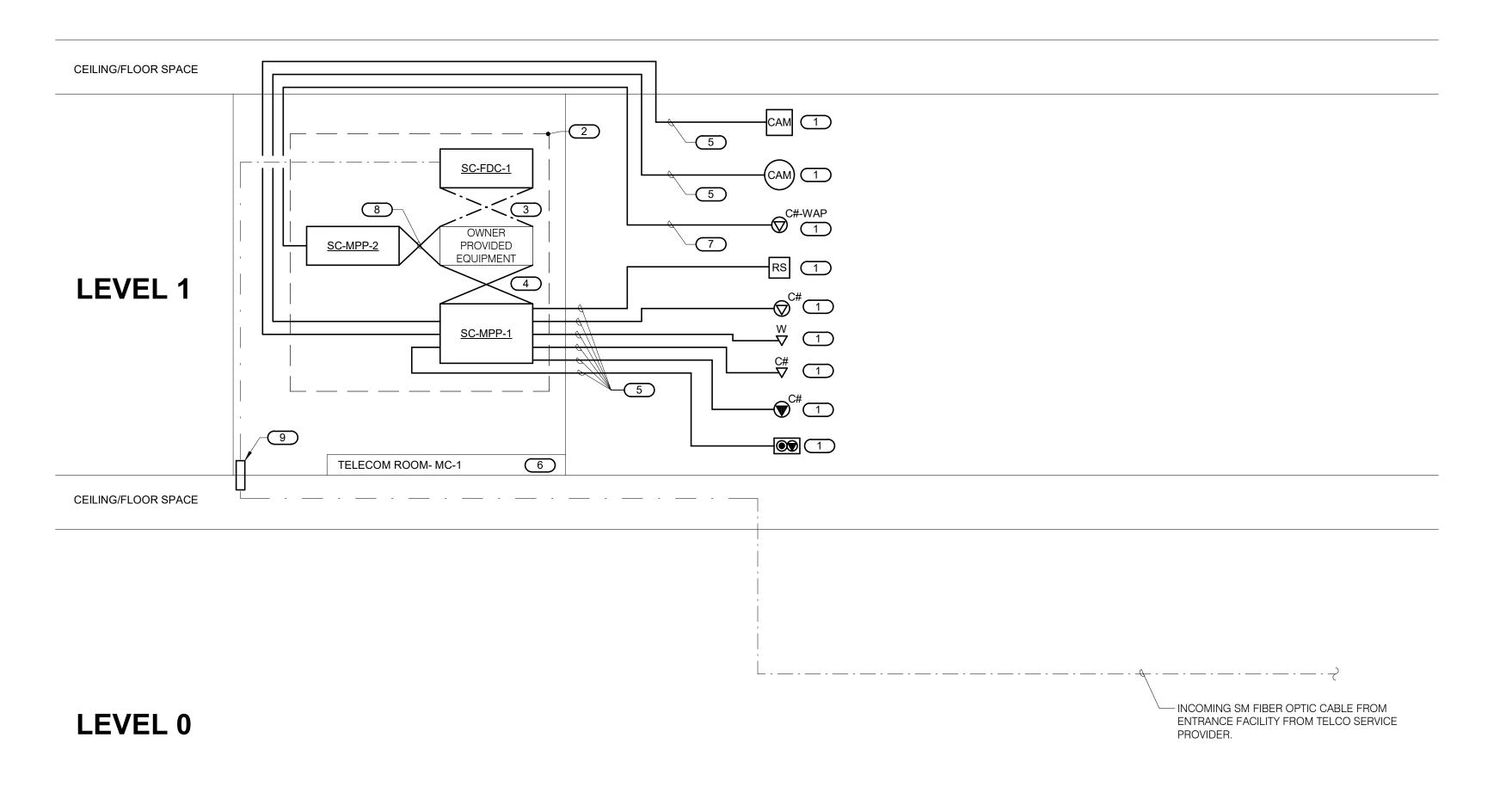
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Sheet Name **TECHNOLOGY DETAILS** 

Sheet Number



CEILING/FLOOR SPACE

FIBER AND COPPER RISER DIAGRAM

NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION(S), LOCATIONS AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

 REFER TO FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED AT EACH INFORMATION OUTLET. REFER TO SHEET T600 FOR INFORMATION OUTLET SCHEDULE. REFER TO SHEET 3/T300 FOR RACK ELEVATION.
 REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.

REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
 CABLES ROUTED TO FLOORBOXES LOCATIONS TO USE RAISED FLOOR CAVITY FOR PATHWAYS AS LONG AS THEY ARE SUPPORTED PER SPECIFICATIONS AND FIELD COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.

KEYNOTES:
1. C# INDICATES DATA FACEPLATE CONFIGURATION. REFER TO THE INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. REFER TO TECHNOLOGY FLOOR PLANS AND GENERAL TECHNOLOGY EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
2. RACK AS DEFINED ON THE TELECOM ROOM LAYOUT. REFER TO THE TELECOM ROOM REFERENCES

MATRIX ON SHEET T000 FOR LOCATION.

3. REFER TO SPECIFICATIONS FOR FIBER PATCH CORD REQUIREMENTS.

4. RJ-45 TO RJ45 CATEGORY 6 UTP PATCH CORDS, REFER TO SPECIFICATIONS.

5. 23 GAUGE 4-PAIR, CATEGORY 6, UNSHIELDED TWISTED PAIR CABLE. REFER TO SPECIFICATIONS

FOR CABLE REQUIREMENTS. ROUTE THROUGH (1) 1" CONDUIT TO MC-1. REFER TO SHEET 2/T300 FOR ADDITIONAL INFORMATION.
6. REFER TO SHEET T000 AND FLOOR PLANS FOR TELECOM ROOM LOCATIONS.
7. 23 GAUGE 4-PAIR, CATEGORY 6A, UNSHIELDED TWISTED PAIR CABLE. REFER TO SPECIFICATIONS FOR CABLE REQUIREMENTS.

10. COORDINATE SEPARATE PATCH PANEL LOCATION WITH OWNER PRIOR TO INSTALLATION.

 PROVIDE CATEGORY 6A PATCH CORD. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 DIVISION 27 CONTRACTOR RESPONSIBLE TO FIELD COORDINATE EXACT LOCATION OF PENETRATION IN RAISED FLOOR WITH EC FOR INCOMING TELCO SERVICE. LEVEL 1

| Comparison of the content of the content

LEVEL 0

CEILING/FLOOR SPACE

CEILING/FLOOR SPACE

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 25 |



NOTES:

1. THIS DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL DEVICE QUANTITIES OR LOCATIONS. ALL DEVICES SHOWN ARE TYPICAL AND MAY NOT REFLECT EVERY WIRE OR CONNECTION THAT MUST BE MADE. WIRING SHOWN ON THIS DIAGRAM REFLECTS THE REQUIREMENTS FOR THE BASIS OF DESIGN MANUFACTURER. ANY CHANGES REQUIRED DUE TO THE T.C.'S SELECTION OF AN ALTERNATE MANUFACTURER,

2. REFER TO SPECIFICATION SECTION 27 13 00 FOR SYSTEM REQUIREMENTS.

REQUIRED DUE TO THE T.C.'S SELECTION OF AN ALTERNATE MANUFACTURER, INCLUDING ANY POWER REQUIRED FOR FIELD LOCATED SECURITY CONTROLLERS, SHALL BE INCLUDED IN THE T.C.'S BID.

KEYNOTES:
1. CATEGORY 6 RJ-45 TO RJ-45 PATCH CABLE PROVIDED BY THIS CONTRACTOR.

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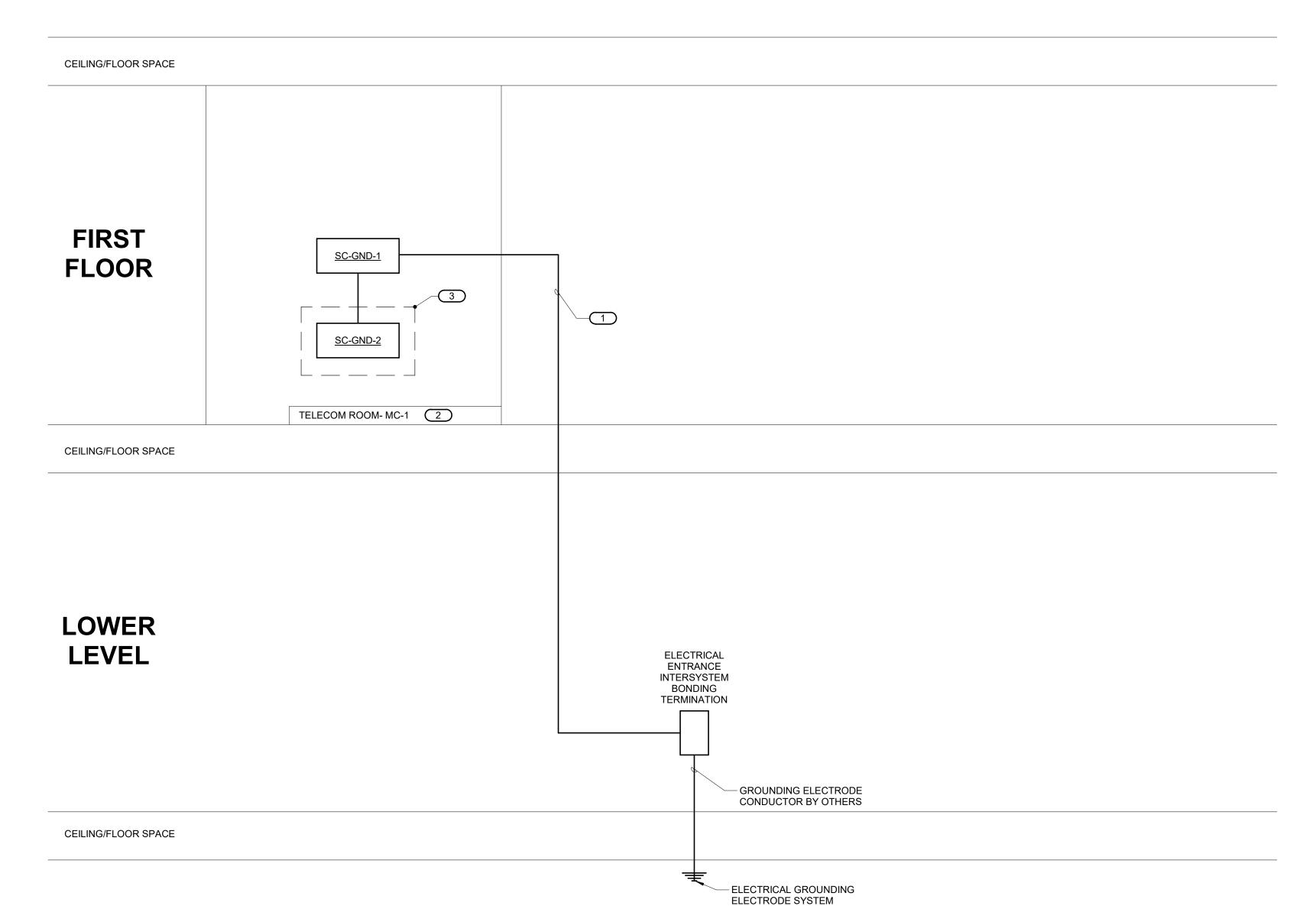
17609000

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BID DOCUMENTS 11/30/202
Sheet Name

TECHNOLOGY DIAGRAMS

Sheet Number



TECHNOLOGY BONDING RISER DIAGRAM

NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL

PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF 3/0 AWG PLENUM RATED COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR) UNLESS CONDUCTOR LENGTH IS LESS THAN 66 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 66 FEET IN LENGTH. REFER TO SPECIFICATIONS

PLENUM RATED COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR) UNLESS CONDUCTOR LENGTH IS LESS THAN 66 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 66 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

3. ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT

COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT

AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.

4. REFER TO 2/T501 FOR TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.

5. REFER TO TELECOM ROOM REFERENCES SCHEDULE ON DRAWING T000 FOR TELECOM ROOM

NUMBER AND LOCATION INFORMATION.

KEYNOTES:

1. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT). BCT SHALL BE THE SAME SIZE AS THE TBB OR LARGER. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING REQUIREMENTS.

3. RACK AS DEFINED ON THE TELECOM ROOM LAYOUT. REFER TO THE TELECOM ROOM REFERENCES

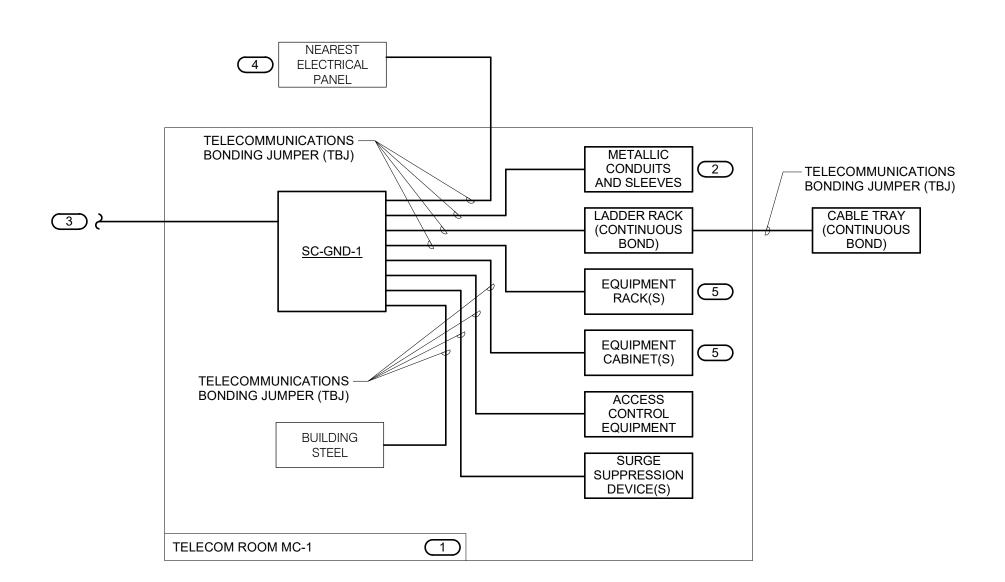
. REFER TO COVERPAGE AND FLOOR PLANS FOR TELECOM ROOM LOCATIONS.

MATRIX ON THE COVERPAGE FOR LOCATION.

BONDING CONDUC	SONDING CONDUCTOR SIZING SCHEDULE								
CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG								
SS THAN 13'	6								
- 20'	4								
- 26'	3								
- 33'	2								
- 41'	1								
- 52'	1/0								
- 66'	2/0								

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 21 | 22 | 23 | 24 | 25

GREATER THAN 66'



# TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM

NOTES:

1. THIS FLOW DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS FLOW DIAGRAM IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO

SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF 3/0 AWG PLENUM RATED COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR) UNLESS CONDUCTOR LENGTH IS LESS THAN 66 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 66 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

3. ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS

SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.

4. REFER TO 2/T400 FOR BONDING BUS BAR DETAIL AND ADDITIONAL INFORMATION AND REQUIREMENTS FOR <u>SC-GND-1</u>.

KEYNOTES:
1. REFER TO TELECOM ROOM REFERENCES SCHEDULE ON DRAWING T000 FOR TELECOM ROOM NUMBER AND LOCATION

5. PROVIDE SC-GND-2 RACK MOUNT TELECOMMUNICATIONS BONDING BUSBAR AT EACH EQUIPMENT RACK OR CABINET

4. REFER TO THE ELECTRICAL DRAWINGS FOR LOCATION.

INFORMATION.
2. INCLUDES HORIZONTAL AND VERTICAL CONDUIT SLEEVES FOR TECHNOLOGY CABLING.
3. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT), TO ELECTRICAL ENTRANCE INTERSYSTEM BONDING TERMINATION. REFER TO 1/T501 FOR TECHNOLOGY BONDING RISER DIAGRAM FOR CONTINUATION AND ADDITIONAL INFORMATION AND BEOLUBEMENTS.

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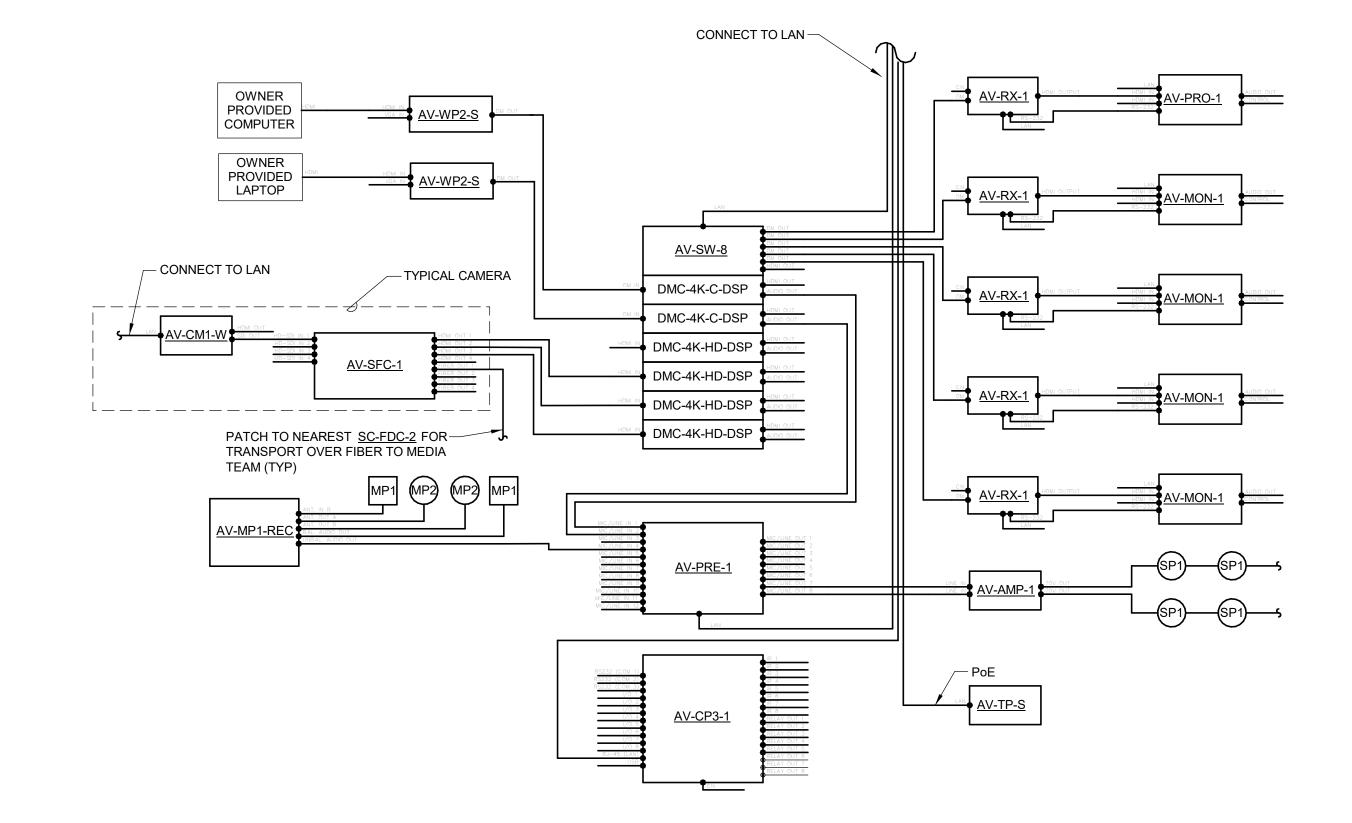
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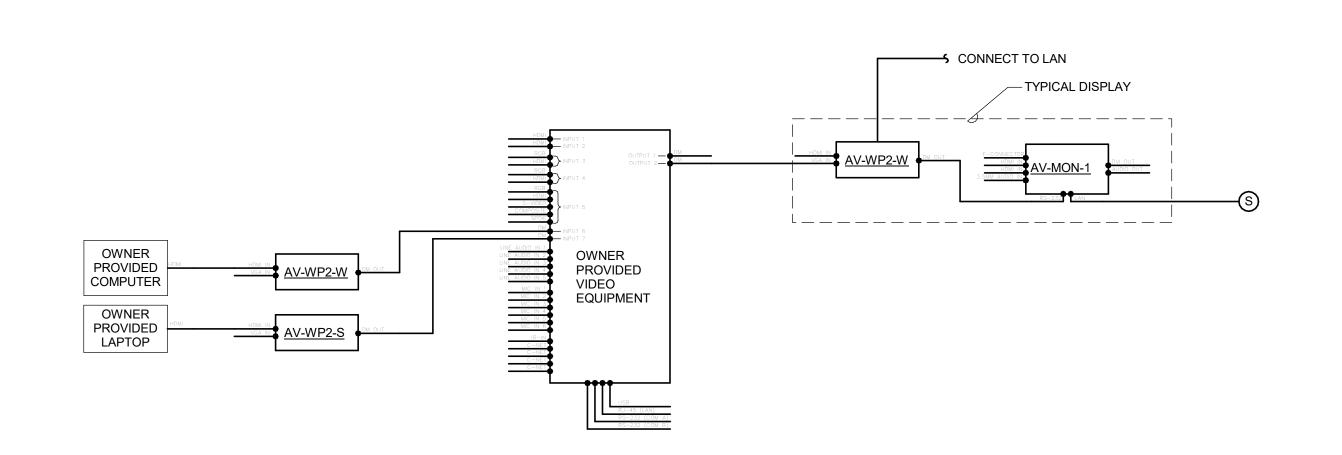
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# COMMUNITY ROOM AV RISER DIAGRAM

NOTES:
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPE. DEVICES SHOWN ARE TYPICAL OF THE DEVICES IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR ACTUAL QUANTITIES OF DEVICES.
2. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON T602 FOR ADDITIONAL

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25



# TYPICAL AV RISER DIAGRAM NO SCALE

NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPE. DEVICES SHOWN ARE TYPICAL OF THE DEVICES IN THE AREA SHOWN.

REFER TO FLOOR PLANS FOR ACTUAL QUANTITIES OF DEVICES.

2. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON T602 FOR ADDITIONAL INFORMATION.

<u>KEYNOTES:</u>
1. SPEAKER OR SOUNDBAR FURNISHED WITH MONITOR.

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Sheet Number

			IN	<b>IFOF</b>	RMAT	TION OUTLET SCHEDULE		
SINGLE GANG WALLPLAT	<u>ES</u>							
		2-Por	t Faceplat	e		I-Port Faceplate		
		IDI	ENTIFICATION			IDENTIFICATION 1 2		PAIR 3 PAIR 2 PAIR 1 PAIR 4
			1 2			3 4		1 2 3 4 5 6 7 8 WO O WG BL WBL G WBRBR
NUMBER INDICA FACEPLATE POS (TYP.)		<b></b>				REFER TO SPECIFICATIONS FOR IDENTIFICATION REQUIREMENTS (TYP.)		ANSI/TIA/EIA T568B PIN/PAIR ASSIGNMENT
NOTES:								LEGEND
PROVIDE REMOVABLE	BLANK IN	SERT(S) F	OR ALL U	NUSED F	PORTS.		CAT6	CAT6 RJ-45
2. REFER TO SPECIFICAL	TONS SEC	TION 27 0	5 53 FOR	ADDITIO	NAL INFO	RMATION ON LABELING REQUIREMENTS.	CAT6A	CAT6A RJ-45
							BL	BLANK FILLER MODULE
SUPPORT FOR POSSIE CATEGORY 6A RJ45 JA	BLE RELOC ACKS.	ATION AF	TER WIRE	ELESS SU ROOM SC	JRVEY. PI HEDULEF	PINT. PROVIDE A 20' SLACK COIL AT THE NEAREST CABLE ROVIDE WAP LOCATIONS WITH CATEGORY 6A CABLE AND REPORTED BETAILS.	HDMI	HDMI COUPLER MODULE
			ATE PORT					
	FACEPLATE PORTS	POSITION 1 JACK TYPE	POSITION 2 JACK TYPE	POSITION 3 JACK TYPE	POSITION 4 JACK TYPE			
CONFIGURATION	FAC	PÕ	Ğ	Ğ	PÕ	NOTES		
C1	2	CAT6	BL					
C2	2	CAT6	CAT6					
C2-WAP	2	CAT6A	CAT6A	11554	D'	1.		
C3	4	CAT6	CAT6	HDMI	BL			
C4 CAM	4	CAT6	CAT6	CAT6	CAT6			
RS	1	CAT6				2.		
1/0	I	LOVIO				<del> </del>		

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 | 25 |



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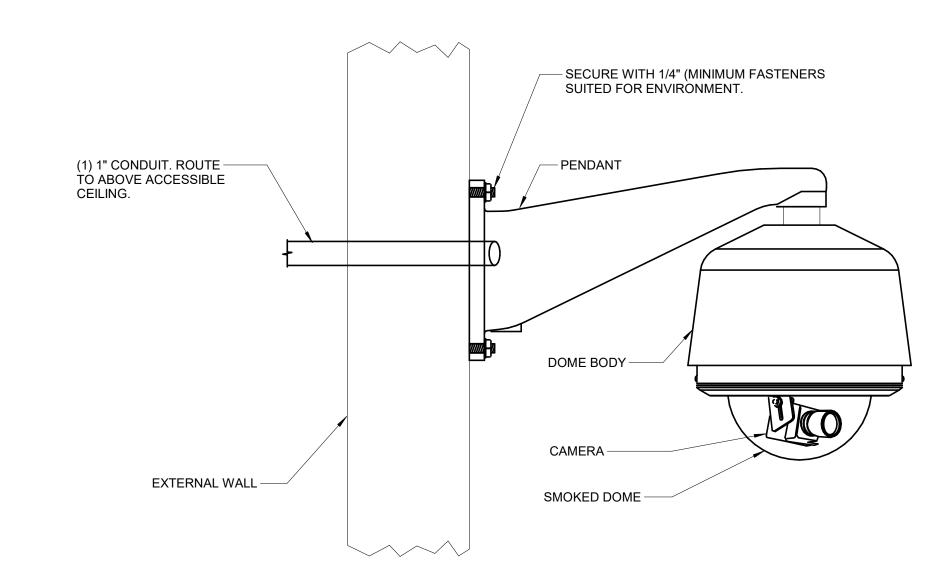
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LECTRONIC	DOOL	R HARI	DWAR	RE SU	CH AS											IAL R	EADE	R TY	OVIDED AND INSTALLED BY OTHERS. REFER TO THE GENERA PE INFORMATION.
		С	REDE REA	NTIAI DER	L	REG	QUEST EXIT	ТО		ı	DOOR	HARD	)WARI	E		(RI	OTHEI EFER NOTES	TO	
DOOR#	ROUGH-IN ONLY	CREDENTIAL READER TYPE	MULTIPLE CREDENTIAL READERS OPERATES SINGLE DOOR	OPERATES MULTIPLE DOORS	WIRELESS	INTERNAL ELECTRIFIED HARDWARE CONNECTION	LOCAL PUSHBUTTON DOOR HARDWARE OVERRIDE	MOTION DETECTOR	ELECTRONIC LOCKING HARDWARE (BY OTHERS)	MAG LOCK	LATCH STATUS DETECTION	LOCAL ALARM HORN	MONITOR LATCH BOLT	MONITOR DOOR POSITION SWITCH SPDT	MONITOR DOOR POSITION SWITCH DPDT	DELAYED EGRESS	LOCAL 120VAC POWER SUPPLY	SCHEDULE BASED LOCKING	NOTES
102		CR	_			•	_	_	•			_		•	_			•	
105		CR				•			•					•				•	
109		CR				•			•					•				•	
110		CR				•			•					•				•	
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										CAMERA	1								LEN	S							EN	CLOS	SURE							
		SEI	NSOF	R SIZE		MAXIMI SOLU			SENS	SITIVITY TYPE					FEA	ΓURE	s		F	EATL	JRES			TYPE			N	IOUN	Т			FE	ATUR	_		
САМЕ		FIXED CAMERA 1/4"		1/2.5" 1/2"		2	VERTICAL	DYNAMIC LOW LIGHT	WIDE DYNAMIC RANGE	MINIMUM ILLUMINATION	SHUTTER SPEED	COMPRESSION CODEC	MAXIMUM FRAME RATE	DAY/NIG	INFRARED DIGITAL ZOOM	TCP/IP			VARIFOCAL	AUTO ZOOM	[ [	DAY/NIGHT	FACE IV	PENDANT MOUNTED DOME LINEAR CAMERA HOUSING	EXPOSED CAMERA	WALL PENDANT	WALL MOUNT	CEILING MOUNT	POLE MOUNT	CORNER MOUNT	FINISH	INDOOR (N	OUTDOOR (NEMA3R) VANDAL PROOF (IEC 68 2 27)	DOME	BASIS OF DESIGN	NOTES:
CAM 1	•			•	192	20	1080	•	•	0.45 LUX @ F1.2	1/66500 - 2 s	H.264, MPEG-4, MOTION JPEG	30	•	•	•	•	4.7-47mm		•	•	•	•	• •	•		•			• B	LACK	•	•	•	AXIS P5624-E-MK2	
CAM 2	1	•	•		192	20	1080		•	0.15 LUX @ F1.4	1/66500 - 1 s	H.264, MPEG-4, MOTION JPEG	30	•	•	•	•	2.5 - 6 mm	ו	•	•	•	•		•			•		В	LACK		•	•	AXIS P5624-E-MK2	

INDIV	IDUAL C	CAMERA (CCTV) REQUIREME	ENTS SCHE	DULE
CAMERA#	CAMERA TYPE CODE	FIELD OF VIEW	DETAIL REFERENCE	NOTES
L1-01	CAM 2	PLAYLAB 122	3/T601	1.
L1-02	CAM 2	PUBLIC RESTROOMS 116 CORRIDOR	3/T601	1.
L1-03	CAM 2	PUBLIC RESTROOMS 116 CORRIDOR	3/T601	1.
L1-04	CAM 2	LOBBY 102	3/T601	1.
L1-05	CAM 2	EAST ENTRANCE DOORS OF LOBBY 102	3/T601	1.
L1-06	CAM 1	SOUTH-WEST VIEW NORTH GARDEN PATIO EX 103	2/T601	1.
L1-07	CAM 1	SOUTH-EAST VIEW NORTH GARDEN PATIO EX 103	2/T601	1.
L1-08	CAM 1	EXTERIOR VIEW OF WEST ENTRANCE DOORS	2/T601	1.
L1-09	CAM 2	PUBLIC RESTROOMS 116 CORRIDOR	3/T601	1.

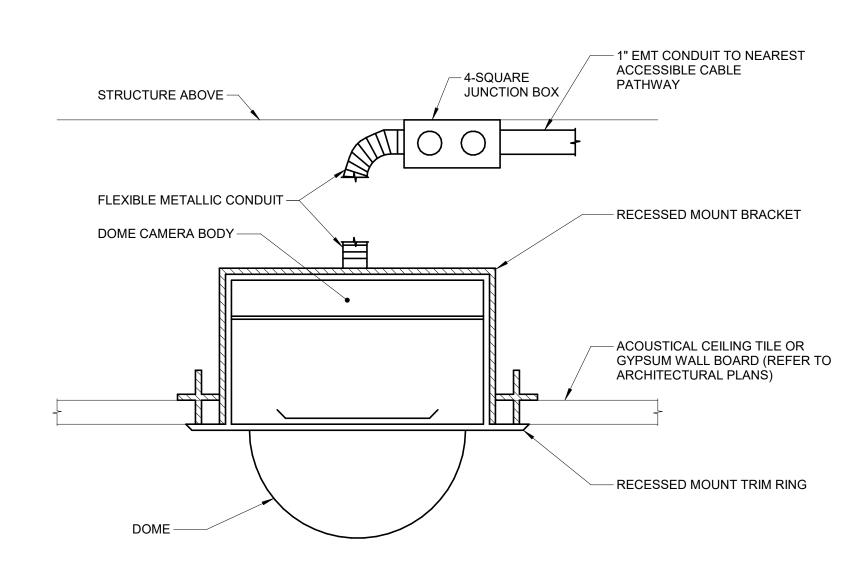
1. CONFIRM DESIRED VIEW WITH OWNER PRIOR TO INSTALLATION OF CAMERAS.





SECURE WALL MOUNT BASE PLATE TO CMU WITH MINIMUM 1/4" MASONRY FASTENERS. DO NOT ANCHOR TO FACE BRICK. 2. SEAL WALL MOUNT BASE PLATE TO FACE BRICK TO PREVENT WATER INFILTRATION.

3. REFER TO MANUFACTURER SPECIFICATIONS FOR INSTALLATION.



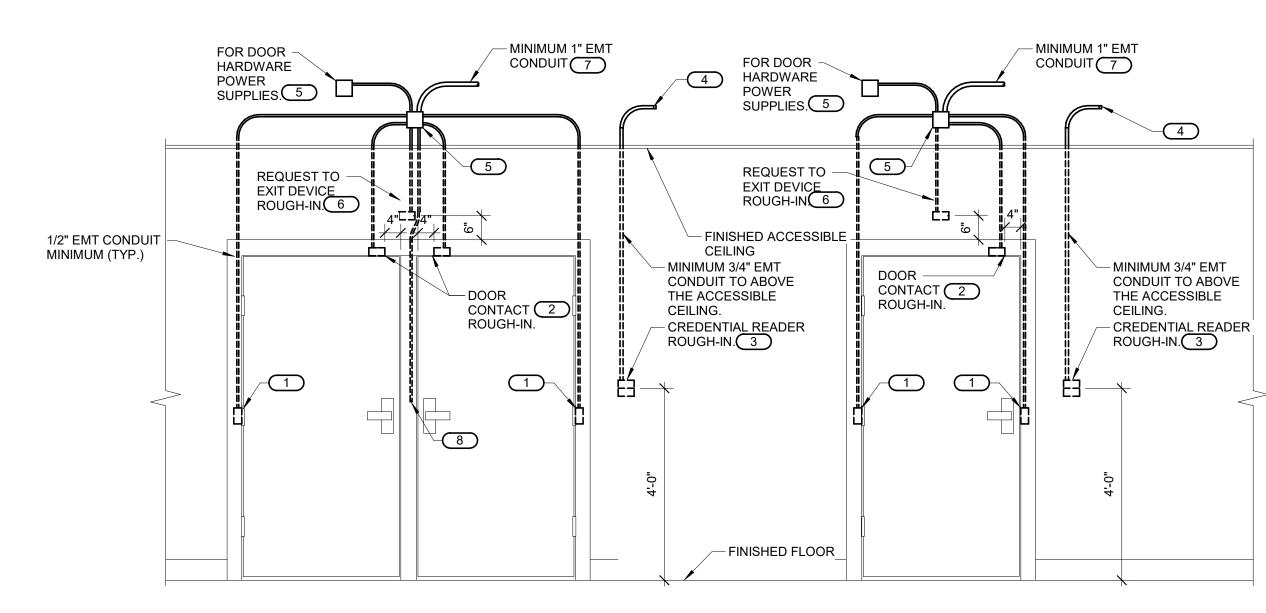
# INTERIOR RECESSED CEILING CAMERA MOUNT DETAIL

- NOTES:

  1. COORDINATE EXACT LOCATION ON SITE WITH WORK BY OTHER TRADES TO ENSURE DESIRED VIEWING AREA AND SERVICE ACCESS AFTER COMPLETION OF PROJECT AND TO MINIMIZE ANY POSSIBLE DAMAGE TO INSTALLED CAMERA OR ASSOCIATED CABLING. 2. CONDUIT SHALL STUB TO NEAREST ACCESSIBLE CEILING AND TERMINATE ORIENTED HORIZONTALLY AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE. CONDUIT RUN SHALL NOT CONTAIN MORE THAN 180 DEGREES OF BEND BETWEEN ACCESSIBLE JUNCTION BOXES OR BETWEEN JUNCTION BOX AND END OF CONDUIT. WHERE CONDUIT STUBS THROUGH A WALL IN TO A CORRIDOR AND TERMINATES AT AN ASSOCIATED J-HOOK ROUTE. THE CONDUIT SHOULD EXTEND NOT MORE THAN 2-4 INCHES IN TO THE CORRIDOR. WHERE CONDUIT STUBS TO AN ASSOCIATED CABLE TRAY, CONDUIT SHOULD EXTEND TO CABLE TRAY. ALL CONDUITS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT.
- 3. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR CAMERA ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP REQUIREMENTS.
- 4. CAMERA MOUNTING ACCESSORY SHALL BE FROM THE SAME MANUFACTURER OF THE CAMERA AND APPROVED BY THE MANUFACTURER FOR USE WITH THE SPECIFIC MODEL NUMBER OF CAMERA INSTALLED. CONTRACTOR SHALL INSTALL CAMERA MOUNTING ACCESSORY AND CAMERA PER MANUFACTURER'S INSTRUCTIONS.
- 5. MOUNT ENCLOSURE FLUSH IN HARD CEILINGS. MOUNT ENCLOSURE IN ACOUSTICAL CEILING TILE WITH APPROPRIATE BRIDGE BRACE IN ACCESSIBLE CEILINGS. INSTALL SAFETY WIRES OR CABLES FROM ENCLOSURE TO NEAREST STRUCTURE WHERE INSTALLED IN

6. LOCATE FLEXIBLE METALLIC CONDUIT CONNECTION TO CAMERA ENCLOSURE SUCH THAT THE ASSOCIATED CABLING CAN BE FED IN TO ENCLOSURE WITHOUT INTERFERING WITH CAMERA OPERATION.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 21 22 23 24



DOOR FRAME ROUGH-IN DIAGRAM (ALL DOUBLE DOORS WITH OR WITHOUT MULLION) DOOR FRAME ROUGH-IN DIAGRAM (ALL SINGLE DOORS)

# CONTROLLED SECURITY SCHEME DOOR ROUGH-IN DETAIL

NOTES:

1. CONFIGURATIONS SHOWN IN THE DETAIL ABOVE ARE DIAGRAMMATIC, INTENDED TO DESCRIBE THE CONTROLLED SECURITY SCHEME ROUGH-IN

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1. CONFIGURATIONS SHOWN IN THE DETAIL ABOVE ARE DIAGRAMMATIC, INTENDED TO DESCRIBE THE CONTROLLED SECURITY SCHEME ARE DIAGRAMMATIC. REQUIREMENTS OF THE DOORS. DETAILS ABOVE MAY NOT ACCURATELY REPRESENT DOOR SIZE, DOOR SWING, DOOR HARDWARE, OR DOOR FUNCTIONALITY. REFER TO ARCHITECTURAL DOOR HARDWARE SCHEDULE, DOOR HARDWARE GROUPS AND DOOR HARDWARE SPECIFICATIONS

- FOR COMPLETE INFORMATION. MIRROR THE DETAIL AS REQUIRED. 2. ROUGH IN SHOWN IN THE DETAIL ABOVE REPRESENTS THE MINIMUM REQUIREMENTS FOR ALL CONTROLLED SECURITY SYSTEM DEVICES AND CABLING UNLESS OTHERWISE NOTED. COORDINATE EXACT REQUIREMENTS WITH SELECTED DOOR MATERIALS, DOOR HARDWARE, AND
- CONTROLLED SECURITY DEVICES AND CABLING PRIOR TO INSTALLATION. 3. ALL CABLING IN WALLS AND WHERE EXPOSED ON VERTICAL SURFACES SHALL BE INSTALLED IN EMT CONDUIT OR SURFACE MOUNT RACEWAY. CABLING ROUTED HORIZONTALLY ABOVE THE ACCESSIBLE CEILING MAY BE INSTALLED FREE-AIR CABLING PROPERLY RATED FOR THE CEILING
- 4. THE ELECTRICAL OR SECURITY CONTRACTOR SHALL NOT MODIFY ANY FIRE RATED DOOR AND/OR DOOR FRAME. REFER TO THE ARCHITECTURAL DOOR SCHEDULE, DOOR HARDWARE SCHEDULE, AND DOOR HARDWARE SPECIFICATION FOR ADDITIONAL INFORMATION. MODIFICATION TO ANY
- 5. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR ALL CONTROLLED SECURITY SCHEME ROUGH-INS PER PROJECT

FIRE RATED DOOR AND/OR FRAME WILL REQUIRE A RE-CERTIFICATION OF THE DOOR AND FRAME WITH THE LOCAL AUTHORITY HAVING

- REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. 6. REFER TO THE ACCESS CONTROL RISER DIAGRAM 2/T500 FOR CABLING REQUIREMENTS AND THE CONTROLLED SECURITY SCHEME TYPE SCHEDULE
- ON T601 FOR ADDITIONAL INFORMATION. 7. INSTALLATION SHALL INCLUDE ALL POWER REQUIRED FOR SYSTEM OPERATION INCLUDING +120VAC. REFER TO THE SUGGESTED MATRIX OF SCOPE RESPONSIBILITY FOR ADDITIONAL INFORMATION.

7. CONDUIT SHALL ROUTE A MINIMUM OF 12" FROM THE JUNCTION BOX TO THE MAIN TELECOM ROOM.

LOCATIONS THAT REQUIRE THIS ROUGH-IN. PROVIDE A NYLON BUSHING ON THE CONDUIT END.

- KEYNOTES:

  1. PROVIDE JUNCTION BOXES IN THE DOOR FRAME WHERE SHOWN ON THIS DETAIL. ROUGH-IN SHALL BE PROVIDED WHETHER THE CURRENT SECURITY SCHEME UTILIZES THEM OR NOT. ALL CONDUITS SHALL BE EMT CONDUIT UNLESS OTHERWISE NOTED. FLEXIBLE CONDUIT OF ANY TYPE WILL NOT BE ACCEPTED. COORDINATE INSTALLATION WITH ON-SITE DOOR FRAME INSTALLATION CONTRACTOR.
- 2. ALL DOOR POSITION SWITCHES ARE REQUIRED TO BE RECESSED UNLESS OTHERWISE NOTED. ELECTRIC HINGE MONITORS ARE NOT AN ACCEPTABLE REPLACEMENT FOR THE RECESSED DOOR POSITION SWITCH.
- 3. DOUBLE GANG BACKBOX WITH SINGLE GANG PLASTER RING. REFER TO FLOOR PLAN(S) FOR ACTUAL CREDENTIAL READER TYPE AND ROUGH-IN
- 4. CONDUIT SHALL ROUTE FROM THE CREDENTIAL READER TO THE SECURE SIDE OF THE DOOR. CONDUIT SHALL ROUTE A MINIMUM OF 12" FROM THE JUNCTION BOX TO THE MAIN TELECOM ROOM.
- 5. MOUNT A MINIMUM 4" SQUARE 2-1/8" DEEP JUNCTION BOX WITH BLANK COVER PLATE ON THE SECURE SIDE OF THE DOOR ABOVE ACCESSIBLE CEILING. INSTALLING CONTRACTOR SHALL SIZE THE JUNCTION BOXES PER SYSTEM INSTALLATION REQUIREMENTS AND APPLICABLE CODES.
- MAINTAIN ACCESS TO THE JUNCTION BOX. 6. PROVIDE A HORIZONTALLY MOUNTED SINGLE GANG BACKBOX FOR THE REQUEST TO EXIT SENSOR. REFER TO THE CONTROLLED SECURITY SCHEME TYPE SCHEDULE ON T601 FOR DOORS THAT REQUIRE THIS ROUGH-IN.

8. CONDUIT INSTALLED IN PERMANENT MULLIONS ONLY. REFER TO THE ARCHITECTURAL DOOR SCHEDULE AND DOOR HARDWARE GROUPS FOR

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BID DOCUMENTS

**TECHNOLOGY SCHEDULES** 

T601

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### GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

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THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM. CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

EQUIPMENT TAG	EQUIPMENT LIST DESCRIPTION	EQUIPMENT LIST MANUFACTURER AND MODEL
AC-CR-W	ACCESS CONTROL DUAL PROXIMITY AND KEYPAD READER, WALL MOUNTED. INTEGRATED PROXIMITY AND KEYPAD READER. OCCUPIES ONE READER PORT ON KEYSCAN ACCESS CONTROL SYSTEMS. SUITABLE FOR OUTDOOR USE IN ALL WEATHER CONDITIONS. NMOUNTS TO A SINGLE GANG WALL BOX. BLUE BACKLIGHTING FOR USE IN LOW LIGHT AREAS. LIFETIME WARRANTY AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.	KEYSCAN K-KPR OR PRE-APPROVED EQUAL
AC-PSP-1	REFER TO T601 FOR CONTROLLED SECURITY SCHEME DOOR ROUGH-IN DETAIL. REFER TO 2/T500 FOR CABLING REQUIREMENTS.  ACCESS CONTROL LOW VOLTAGE DOOR POWER SUPPLY. 16 PTC PROTECTED OUTPUTS, 24 VDC @ 8 AMP TOTAL OUTPUT.  BUILT-IN CHARGER FOR LEAD ACID OR GEL TYPE BATTERIES. PROVIDE WITH (2) 12AH BATTERIES. AC FAIL SUPERVISION AND LOW BATTERY SUPERVISION FORM C CONTACT CLOSURES. UL 294 AND 1481 LISTED FOR ACCESS CONTROL AND FIRE SIGNALING.	*
AC-SEC-1	ACCESS CONTROL SECURITY CONTROL PANEL. REFER TO SPECIFICATION 28 13 00 FOR COMPLETE INFORMATION AND MODEL NUMBER.	*
AV-AMP-1	COMMERCIAL AMPLIFIER, REAR TO FRONT FAN COOLED, TWO XLR/TERMINAL BLOCK INPUTS, 2 X 300 WATTS @ 70V PER CHANNEL: 1 KHZ 1% THD, (2) RU SPACE, 3.5" H X 19" W X 14 D.	QSC CX302V CROWN
AV-ANT-W	2-CHANNEL ASSISTED LISTENING ROOM TRANSMITTER ANTENNA, IR TRANSMISSION TECHNOLOGY FOR MEDIUM TO LARGE ROOMS, BALANCED CABLING ROUTES SIGNAL INPUT FROM AV HEAD END THROUGH AV-WP1-W RECESSED DISPLAY BOX, MOUNTS ABOVE DISPLAY.	ATLAS LISTENTECH LT-84 OR PRE-APPROVED EQUAL
AV-AT-1	4 CHANNEL DANTE NETWORK INTERFACE, ONE 10/100 LAN PORT, 4 MIC INPUTS, INSTALL UNDER LECTERN FOR CONNECTION OF	SHURE
AV-CAB-W	AV-MP1-S AS SHOWN ON DRAWINGS.  A/V CABINET, WALL MOUNT.	ANI4IN OR PRE-APPROVED EQUAL HUBBELL HSQ2648
AV-CM1-W	AV PTZ CAMERA FOR VIDEO CONFERENCE, 10/100 LAN INTERFACE, HDMI OUTPUTS, WALL MOUNTED AS SHOWN ON DRAWING, MOUNT USING VADDIO 535-2000-243 STEEL SHELF (OR SIMILAR). PROVIDE CAMERA IN WHITE.	OR PRE-APPROVED EQUAL PANASONIC AW-UE70
AV-CP3-1	CONTROL PROCESSOR FOR SINGLE OR DIVISIBLE ROOM A/V CONTROL, SUPPORTS 7" WALL TOUCH PANEL INTERFACE AND HANDHELD HARD BUTTON RF REMOTE CONTROL, LOCAL AREA NETWORK CONTROL AND PROGRAMMING INTERFACE AND RS232, CONTACT CLOSURE AND INFRARED CONTROL FOR COMMERCIAL AND CONSUMER A/V DEVICES, 1 RU HEIGHT, REFER TO A/V	CRESTRON CP3
AV-DC-S	RISERS ON T502 FOR CONTROL PORT REQUIREMENTS.  DOCUMENT CAMERA, SURFACE OR TABLE MOUNT, FULL HD RESOLUTION, 16X OPTICAL ZOOM, LED LIGHTING AND ADJUSTABLE FREE ANGLE CAMERAARM, HDMI AND VGA OUTPUTS, COLLABORATIVE ANNOTATION AND INTEGRATION CAPABILITY.	ELMO P30HD EPSON
AV-DMP-1	NETWORK DIGITAL SIGNAGE PLAYER, DECODES AND PRESENTS IMAGES AND VIDEO FROM A LOCAL SSD DRIVE OR NETWORK STORE, (1) 100/1000 RJ-45 LAN CONNECTION AND (1) HDMI OUTPUT, SMALL FORMAT FOR REAR MOUNTING BEHIND A DISPLAY, 6.5" X 4.5" X 1.5" DIMENSIONS.	WOLFVISION BRIGHTSIGN
AV-MC-1	SCALING PRESENTATION SWITCHER AND CONTROLLER, 8 INPUTS INCLUDING MINIMUM 2 HDMI, 2 HDBASET, AND ANALOG RCA AUDIO, 2 SWITCHED HDMI AND 2 SWITCHED HDBASET OUTPUTS AND 1 ANALOG AUDIO OUTPUTS WITH INTEGRATED 70V AMPLIFIER, INPUT SCALING TO 1080P AND WUXGA (1920 X 1200) OUTPUT, LAN OR RS232 CONTROL OF AUDIO VIDEO EQUIPMENT, 3 RU HEIGHT.	OR PRE-APPROVED EQUAL CRESTRON DMPS3-4K-350-C
AV-MNT-1		EXTRON CHIEF XTM1U
AV-MNT-2	TILTING WALL-MOUNTED DISPLAY MOUNT, TILTS +5 TO -12 DEGREES, FITS SCREEN SIZES 50" TO 70", ADJUSTABLE LATERAL SHIFT, MAXIMUM WEIGHT 150 LBS.	PREMIER PEERLESS CHIEF LTM1U
AV-MNT-3	ARTICULATING WALL-MOUNTED DISPLAY MOUNT, TILTS +5 TO -12 DEGREES, FITS SCREEN SIZES 40" TO 60", ADJUSTABLE LATERAL SHIFT, MAXIMUM WEIGHT 100 LBS.	PREMIER PEERLESS CHIEF PNRUB
AV-MNT-4	TILTING WALL-MOUNTED MONITOR MOUNT, TILTS +5 TO -12 DEGREES, ABILITY TO LOCK MOVEMENT, VESA 100x100.	PREMIER PEERLESS CHIEF K0W100B PREMIER
		PEERLESS
AV-MON-1	LED/LCD DISPLAY MONITOR, 80", 16:9 ASPECT RATIO, 3840x2160 PIXEL RESOLUTION, 5000:1 CONTRAST RATIO, 3 HDMI IN, DISPLAYPORT INPUT, DVI-D INPUT, RJ45 AND DB9 SERIAL RS-232 IN AND OUT.	SAMSUNG QM-D SERIES SHARP
AV-MON-2	LED/LCD DISPLAY MONITOR, 65", 16:9 ASPECT RATIO, 3840x2160 PIXEL RESOLUTION, 5000:1 CONTRAST RATIO, 3 HDMI IN, DISPLAYPORT INPUT, DVI-D INPUT, RJ45 AND DB9 SERIAL RS-232 IN AND OUT.	OR PRE-APPROVED EQUAL SAMSUNG QM-H SERIES SHARP
AV-MON-3	LED/LCD DISPLAY MONITOR, 55", 16:9 ASPECT RATIO, 3840x2160 PIXEL RESOLUTION, 5000:1 CONTRAST RATIO, 3 HDMI IN, DISPLAYPORT INPUT, DVI-D INPUT, RJ45 AND DB9 SERIAL RS-232 IN AND OUT.	OR PRE-APPROVED EQUAL SAMSUNG QM-H SERIES
AV-MON-4	WALL MOUNT 22" LED TOUCH ENABLED PC DISPLAY.	SHARP OR PRE-APPROVED EQUAL SAMSUNG LH22DBDPTGC
AV-MP1-REC	STANDARD DIVERSITY WIRELESS MICROPHONE RECEIVER WITH HANDHELD MIC, PROGRAMMABLE CHANNELS, MIC AND LINE	OR PRE-APPROVED EQUAL SHURE
	OUTPUTS, DETACHABLE AND REMOTE LOCATABLE 1/2 WAVE ANTENNA, RACK MOUNTABLE IN 1 RU.	ULX AKG
AV-MP1-S	SURFACE MOUNT GOOSENECK MICROPHONE WITH BASE. PROVIDE TO OWNER TO FACILITATE FUTURE LARGE GROUP PANEL DISCUSSIONS.	TELEX SHURE MX412 AKG
AV-MP2-C	CEILING MOUNTED ACTIVE MICROPHONE ARRAY WITH DANTE CONNECTIVITY, 1 RJ-45 LAN CONNECTION, FITS 2x2 ACT GRID.	SHURE MXA910
AV-PRE-1	DANTE ENABLED DIGITAL PREAMP AND MIC/LINE MIXER WITH EIGHT MIC/LINE INPUTS AND MINIMUM TWO OUTPUTS WITH PARAMETRIC EQ, COMPRESSOR AND INPUT DUCKING, CONTROL INTERFACE VIA RS232 OR LAN WITH FULL DISCRETE COMMAND SET FOR ZONE VOLUME, INPUT LEVELS AND INPUT SWITCHING, 2 RU HEIGHT.	BIAMP TESIRAFORTE  CRESTRON
AV-PRO-1	VIDEO PROJECTOR: 6000 LUMENS 1 CHIP DLP, LASER DIODE PROJECTOR, WUXGA (1,920 x 1,200) RESOLUTION. HDMI AND DIGITAL LINK. POWERED ZOOM, POWERED FOCUS AND POWERED LENS SHIFT. VERIFY LENS REQUIRED FOR THROW DISTANCE TO PROVIDE FULL SCREEN IMAGE FILL.	PANASONIC
AV-PRO-MNT	VERIFY AND COORDINATE MOUNTING POSITION FOR THROW DISTANCE TO FULL DISPLAY IMAGE IN 16:10 FORMAT. COORDINATE LOCATION WITH POWER OUTLETS, AV CABLE OUTLET AND MANAGE CABLE NEATLY.  VIDEO PROJECTOR MOUNT. THIS BRACKET IS A SPECIAL MOUNT BRACKET WITH A 6-AXIS ADJUSTMENT MECHANISM WHICH IS USEFUL FOR INSTALLING THE PANASONIC PROJECTORS TO ENABLE SHORT FOCAL-LENGTH PROJECTION.	PANASONIC ET-PKD130H
AV-RS-W AV-RX-1	ROOM SCHEDULER, WALL MOUNT.  JUNCTION BOX MOUNT 4K DIGITAL MEDIA HDBASET RECEIVER AND DISPLAY CONTROLLER, ONE DM TWISTED PAIR INPUT, ONE HDMI OUPUT AND RS-232/INFRARED CONTROL OUTPUT, WHITE COLOR, MOUNT IN AV-WP1-W DISPLAY CONNECTIVITY BOX UNLESS OTHERWISE NOTED.	CRESTRON  CRESTRON  DM-RMC-4K-100-C-1G  EXTRON
AV-RX-2	NETWORK BASED AUDIO VIDEO RECEIVER WITH DANTE, CAPABLE OF DECODING NETWORK AUDIO AND 4K VIDEO WITH LESS THAN ONE FRAME (17ms) TOTAL ENCODE/DECODE LATENCY, ONE GIGABIT NETWORK CONNECTION, ONE HDMI AND LINE LEVEL AUDIO OUTPUT, RS232 CONTROL CAPABILITY.	CRESTRON DM-NVX-352 OR PRE-APPROVED EQUAL
AV-SFC-1	HD-SDI/3G-SDI TO FIBER CONVERTER TRANSCEIVER, FOR EXTENDING AV-CM1-W VIDEO SIGNAL OVER SINGLE MODE FIBER TO OWNER MEDIA TEAM, BNC HD-SDI/3G-SDI INPUTS, LC SINGLE MODE FIBER INPUTS/OUTPUTS, HDMI LOOP OUTPUTS, HDMI LOOP OUTPUTS USED TO SEND VIDEO TO AV SWITCHER AND/OR VIDEO CONFERENCING CODEC.	BLACKMAGIC ATEM CONVERTER SERIES OR PRE-APPROVED EQUAL
AV-SP1-C	PERFORMANCE AUDIO SPEAKER, RECESSED CEILING MOUNTED, PERFORMANCE AUDIO, 50 WATTS CONTINUOUS POWER HANDLING WITH 200 WATTS PEAK, 65Hz-20kHz ±3dB FREQUENCY RESPONSE, SENSITIVITY: 92dB@ 1 WATT/METER, 2100 Hz CROSSOVER FREQUENCY, 1" ALUMINUM DOME COMPRESSION DRIVER TWEETER, 5.25" IMG CONE/CAST POLYMER FRAME WOOFER.	JBL PRO 26CT  OR PRE-APPROVED EQUAL
AV-SP1-W	PERFORMANCE AUDIO SPEAKER, RECESSED WALL MOUNTED, PERFORMANCE AUDIO, 50 WATTS CONTINUOUS POWER HANDLING WITH 200 WATTS PEAK, 65Hz-20kHz ±3dB FREQUENCY RESPONSE, SENSITIVITY: 92dB@ 1 WATT/METER, 2100 Hz CROSSOVER FREQUENCY, 1" ALUMINUM DOME COMPRESSION DRIVER TWEETER, 5.25" IMG CONE/CAST POLYMER FRAME WOOFER.	JBL PRO 25AV  OR PRE-APPROVED EQUAL
AV-SW-8	8X8 HDMI MATRIX CARD FRAME SWITCH WITH MINIMUM TWO HDBASET TWISTED PAIR INPUTS, FOUR HDMI INPUTS, FIVE HDBASET TWISTED PAIR OUTPUTS, ONE HDMI OUTPUT.	CRESTRON DM SERIES EXTRON
A	TABLE TOR MOUNT TOUGHDANEL. THE CARACITIVE EDGE TO EDGE OF ACCURACY CONFERN DOE METALORY DOWER OF DEPORT	ODECTRON

TABLE TOP MOUNT TOUCHPANEL, 7" LED CAPACITIVE EDGE TO EDGE GLASS TOUCH SCREEN, POE NETWORK POWER SUPPORT. CRESTRON

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### GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

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AV-TP-W	FQUIPMENT LIST DESCRIPTION  7" LED CAPTIVE EDGE TO EDGE GLASS TOUCH SCREEN, WALL MOUNT. POE NETWORK POWER SUPPORT.	MANUFACTURER AND MC CRESTRON TSW-752
AV-TVT-1	OWNER PROVIDED, CONTRACTOR INSTALLED HIGH DEFINITION IPTV TUNER WITH ONE 10/100 LAN INPUT, ONE DVI/HDMI AND	OR PRE-APPROVED EQUAL
	COAXIAL OR OPTICAL DIGITAL AND ANALOG RCA OUTPUTS, INFRARED CONTROL WITH FULL DISCRETE COMMAND SET FOR POWER AND CHANNEL SELECTION, 1 RU MOUNTING HEIGHT.  NETWORK BASED AUDIO VIDEO TRANSMITTER WITH DANTE, CAPABLE OF ENCODING NETWORK AUDIO AND 4K VIDEO WITH LESS THAN ONE FRAME (17ms) TOTAL ENCODE/DECODE LATENCY, ONE GIGABIT NETWORK CONNECTION, ONE HDMI/VGA AND LINE	*
	LEVEL AUDIO INPUT, RS232 CONTROL CAPABILITY.  VIDEO CONFERENCING CODEC WITH LAN CONNECTION AND MINIMUM ONE HDMI/DVI AND ANALOG AUDIO INPUT, ONE HDMI/DVI AND ANALOG AUDIO OUTPUT, RS-232 FOR SYSTEM CONTROL PROVIDE POLYCOM DIGITAL EXTENDER WHERE NECESSARY, RACK MOUNTABLE.	POLYCOM GS SERIES
AV-VPS-1	A/V PROJECTOR SCREEN	TBD
AV-WMA-1	SPACE PROVISIONED FOR FUTURE VIDEO WALL PROCESSOR, 4U RACK UNITS.  WIRELESS MEDIA ADAPTER, PROVIDES WIRELESS A/V CONNECTIVITY TO LAPTOPS AND MOBILE DEVICES, ONE HDMI OUTPUT, ONE RJ-45 LAN CONNECTION, SMALL FORM FACTOR 6" X 2.4" X 1" FOR DISCRETE MOUNTING IN AV-WP1-W OR BEHIND DISPLAY.	CCS-FF-2
AV-WP1-W	A/V DISPLAY CONNECTIVITY BOX (FSR PWB-250 WHITE) 14.25" X 7" X 4" WALL RECESSED BOX WITH TWO SINGLE GANG AND ONE 1-1/4" KNOCKOUTS:	FSR PWB-250
	INSTALL ONE 3/4" CONDUIT FOR POWER, PROVIDE SINGLE GANG JUNCTION BOX AND DUPLEX RECEPTACLE. INSTALL ONE 1" CONDUIT TO NEAREST CABLE TRAY OR PATHWAY FOR INFORMATION OUTLET. INSTALL ONE 1-1/4" CONDUIT TO ABOVE ACCESSIBLE CEILING FOR ADDITIONAL LOW VOLTAGE CABLING, FINISH WITH NYLON BUSHING. INSTALL AT 60" OC AFF UNO.	OR PRE-APPROVED EQUAL
	WALL PLATE CONNECTION FOR HDMI AND 1/8" STEREO MINI AUDIO SOURCES, INSTALL TWO GANG LOW VOLTAGE BACKLESS BOX AND PROVIDE ONE 2" EMT CONDUIT TO ABOVE ACCESSIBLE CEILING AND TERMINATE WITH A NYLON BUSHING. INSTALL AT 18" OC AFF UNLESS OTHERWISE NOTED ON PLANS.	TBD
	FIRE RATED PATHWAY. 2"W X 4-5/8" H X12" L, BUILT IN SMOKE SEALING SYSTEM THAT AUTOMATICALLY ADJUSTS TO THE AMOUNT OF CABLES INSTALLED, ORANGE PAINT.	EZ-PATH 33 OR PRE-APPROVED EQUAL
	CABLE TRAY, WIRE MESH TYPE, 4" LOADING DEPTH, 12" WIDTH, COMPLETE WITH ALL FITTINGS AND MOUNTING HARDWARE. PROVIDE TRAPEZE SUPPORT WITH PLASTIC RETAINER. CUTTING OF THE MESH CABLE TRAY SHALL BE DONE WITH OFFSET BOLT CUTTERS ONLY. 10' MAXIMUM SUPPORT SPAN. EITHER SPLICE WASHERS OR TERMINAL GROUND SUPPORT AND JUMPER WIRE SHALL BE USED TO ATTAIN GROUNDING CONTINUITY THROUGHOUT. Z-BRACKETS SHALL BE USED FOR WALL MOUNTED APPLICATIONS. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS AND SPECIFICATION SECTION 27 05 28 FOR ADDITIONAL INFORMATION.	
SC-ER-1	PROVIDE COMPLETE WITH TWO (2) TWO-SIDED VERTICAL WIRE MANAGERS PER RACK, EACH WITH MINIMUM 6" X 6" CAPACITY	HUBBELL HP284RR-20
SC-FDC-1	FRONT AND REAR, AND WITH LADDER RACK CONNECTION HARDWARE ACCESSORIES AND RADIUS DROP LADDER RACK.  OPTICAL FIBER DISTRIBUTION CABINET, COMBINATION SHELF, 24 FIBER CAPACITY, SLIDE OUT RAILS TO FACILITATE FRONT ACCESS, JUMPER TROUGHS IN CONNECTOR PANELS TO REDUCE MOUNTING SPACE, PROVIDE WITH CLAMP AND GROUNDING KIT, COUPLING PANELS, [ST][SC][MT-RJ] CONNECTORS, COUPLINGS AND JUMPERS. REQUIRES (2) 1.75" MOUNTING SPACES.	OR PRE-APPROVED EQUAL HUBBELL FCR SERIES COMMSCOPE PANDUIT
	WALL-MOUNT GROUND BAR. MINIMUM 4" H X 12" L X 1/4" D COPPER, ELECTRICALLY ISOLATED BY INSULATORS INTEGRAL TO MOUNTING BRACKETS. PROVIDE UNIT CONFIGURED WITH SIXTEEN (16) SETS OF 5/16" HOLES SPACED 5/8" ON CENTER TO ACCOMMODATE "A" SPACED TWO-HOLE COMPRESSION LUGS AND THREE (3) SETS OF 7/16" HOLES SPACED 1" ON CENTER TO ACCOMMODATE "C" SPACED TWO-HOLE COMPRESSION LUGS. ANSI/EIA/TIA-607 AND BICSI COMPLIANT. UL LISTED. REFER TO 2/T400 FOR ADDITIONAL INFORMATION.	OR PRE-APPROVED EQUAL CHATSWORTH PRODUCTS 40153-012 ERICO HARGER
SC-GND-2	RACK MOUNT GROUND BAR. MINIMUM 3/16" D X 3/4" H X 19" W COPPER, CONFIGURED WITH MINIMUM EIGHT (8) #6-32 TAPPED HOLES	OR PRE-APPROVED EQUAL CHATSWORTH PRODUCTS
	AND MINIMUM FOUR (4) 5/16" UNTAPPED HOLES. UL LISTED AND ANSI/ÉIA/TIA-607 AND BICSI COMPLIANT. REQUIRES ONE (1) 1.75" RACK MOUNTING SPACE.	10610-019 ERICO HARGER
	HORIZONTAL CABLE MANAGEMENT, FINGER DUCT STYLE, 3" X 3" CAPACITY FRONT, 2" X 5" CAPACITY REAR. REMOVABLE FRONT AND REAR COVERS. PASS THROUGH HOLES TO FACILITATE FRONT TO REAR CABLING. REQUIRES (2) 1.75" MOUNTING SPACES.	OR PRE-APPROVED EQUAL HUBBELL HC219CC3P COMMSCOPE PANDUIT
		OR PRE-APPROVED EQUAL
SC-IO-C	INFORMATION OUTLET, CEILING MOUNT. 2 PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T600.  "#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION	FACEPLATE: HUBBELL IFP14EI
	OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS.  INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING (MINIMUM 6"	CAT6 JACK: HUBBELL HXJ6EI
	BEYOND BACK BOX).	BLANK: HUBBELL SFB10
		OR PRE-APPROVED EQUAL
SC-IO-CWAP	WIRELESS ACCESS POINT EQUIPMENT OUTLET, CEILING MOUNT. 2 PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T600.	FACEPLATE: HUBBELL
	"#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS.  INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING (MINIMUM 6" BEYOND BACK BOX).	OR PRE-APPROVED EQUAL
SC-IO-F	PROVIDE (2) TWO CATEGORY 6A CABLES AND JACKS PER WAP.  INFORMATION OUTLET, FLOOR MOUNT. 2 OR 4-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T600.	FACEPLATE: HUBBELL
	"C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS, ADDITIONAL INFORMATION AND REQUIREMENTS.	IFP14EI
	POWER/DATA RECESSED FLOOR BOX WITH HINGED COVER AND DIVIDED COMPARTMENT FOR AC POWER. BOX IS BY ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATIONS FOR CABLE LENGTHS. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION ABOUT BOXES AND CONDUITS.	HXJ6EI BLANK: HUBBELL SFB10
SC-IO-W	INFORMATION OUTLET, WALL MOUNT. 2 OR 4-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T600.	OR PRE-APPROVED EQUAL FACEPLATE: HUBBELL
	"#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T600 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS.	IFP14EI  CAT6 JACK: HUBBELL
	INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING. REFER TO 1/T400 FOR TECHNOLOGY ROUGH-IN MOUNTING DETAIL.	HXJ6EI BLANK:
	PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED FACEPLATE PORTS.	HUBBELL SFB10 OR PRE-APPROVED EQUAL
	LADDER RACK. 18" WIDE TUBULAR STEEL CONSTRUCTION, RUST RESISTANT BLACK ENAMEL FINISH, UL LISTED. PROVIDE COMPLETE WITH ALL NECESSARY ADAPTERS, SUPPORT HARDWARE, AND FITTINGS, TO INCLUDE RADIUS DROPS. REMOVE SHARP BURRS FROM LADDER RACK AND REPAINT ALL AREAS THAT HAVE BEEN FIELD MODIFIED, CUT OR EXPOSED.	CHATSWORTH PRODUCTS 11275-718 B-LINE
	MODULAR PATCH PANEL. FORTY EIGHT (48) MODULAR CAT 6 RJ-45 SNAP-IN JACKS. WELDED STEEL CONSTRUCTION, BLACK POWDER COAT FINISH, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK. REQUIRES (2) 1.75" MOUNTING SPACES.  PROVIDE FULLY POPULATED WITH JACKS.	HOFFMAN HUBBELL CAT 6: P6E48U
		OR PRE-APPROVED EQUAL
SC-MPP-2	MODULAR PATCH PANEL. FORTY EIGHT (48) MODULAR CAT 6A RJ-45 SNAP-IN JACKS. WELDED STEEL CONSTRUCTION, BLACK POWDER COAT FINISH, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK. REQUIRES (2) 1.75" MOUNTING SPACES.  PROVIDE FULLY POPULATED WITH JACKS.	HUBBELL CAT 6A: P6A48U



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