WALL SECTIONS STAIR SECTIONS SCHEDULES **DETAILS DETAILS SPECIFICATIONS SPECIFICATIONS SPECIFICATIONS** 

MAIN FLOOR HVAC DUCTWORK PLAN MECHANICAL DETAILS & SCHEDULES MECHANICAL DETAILS & SCHEDULES MECHANICAL SPECIFICATIONS

**ELECTRICAL** 

MAIN FLOOR LIGHTING PLAN MAIN FLOOR POWER PLAN MEZZANINE FLOOR POWER PLAN **ELECTRICAL SYMBOLS AND ABBREVIATIONS** ELECTRICAL SCHEDULES AND SPECS

MAIN FLOOR WASTE & VENT PLAN P2 MAIN FLOOR WATER PLAN

Owner/Petitioner: 1302 N Court St Ottumwa, IA 52501

Engineer:

Phone: (319) 378-1401 ext. 7002 mdryden@willetthofmann.com

401 E Park Ave

Proposed Use: Maintenance Facility

Zoning: Current Zoning: R1-60 Proposed Zoning: R1-60 No change in zoning requested

Yard requirements: Front yard = 20' Side yard = 4' Rear yard = 25' Yard provided:

Front yard = 30' Side yard = 96.28' Rear yard = >100'

Parking required = (1 stall/300SF office x 1500SF of office) + (1 stall/1000SF x 5200SF of maintenance facility) = 11 stalls Parking provided = 13 stalls ADA parking required = 1 stall

## **INDEX OF DRAWINGS**

## **COVER SHEET**

ADA STANDARDS ADA STANDARDS ADA STANDARDS

ADA STANDARDS STANDARDS ABBREVIATIONS AND SYMBOLS CODE PLAN AND REVIEW

**BOUNDARY INFORMATION EXISTING CONDITIONS & CONTROL INFORMATION** 

C.03 REMOVALS C.04 SITE PLAN C.05 **UTILITIES PLAN** C.06 SITE DETAILS C.07 TYPICAL PAVEMENT SECTIONS PAVING AND GRADING PLAN

JOINTING PLAN

**EROSION CONTROL PLAN** 

**STRUCTURAL** 

FOUNDATION & FRAMING PLAN S1.1 S1.2 FOUNDATION DETAILS

REFLECTED CEILING PLANS EXTERIOR ELEVATIONS INTERIOR ELEVATIONS **BUILDING SECTIONS** 

MEZZANINE FLOOR HVAC DUCTWORK PLAN

## City of Ottumwa Cemetery

Willett, Hofmann & Associates, Inc. 625 32nd Ave SW Cedar Rapids, IA 52404 C/O: Mike Dryden

Address of Site:

Legal Description: Lot 1 of Mahon's 3rd Addition to the City of Ottumwa, Wapello County, Iowa

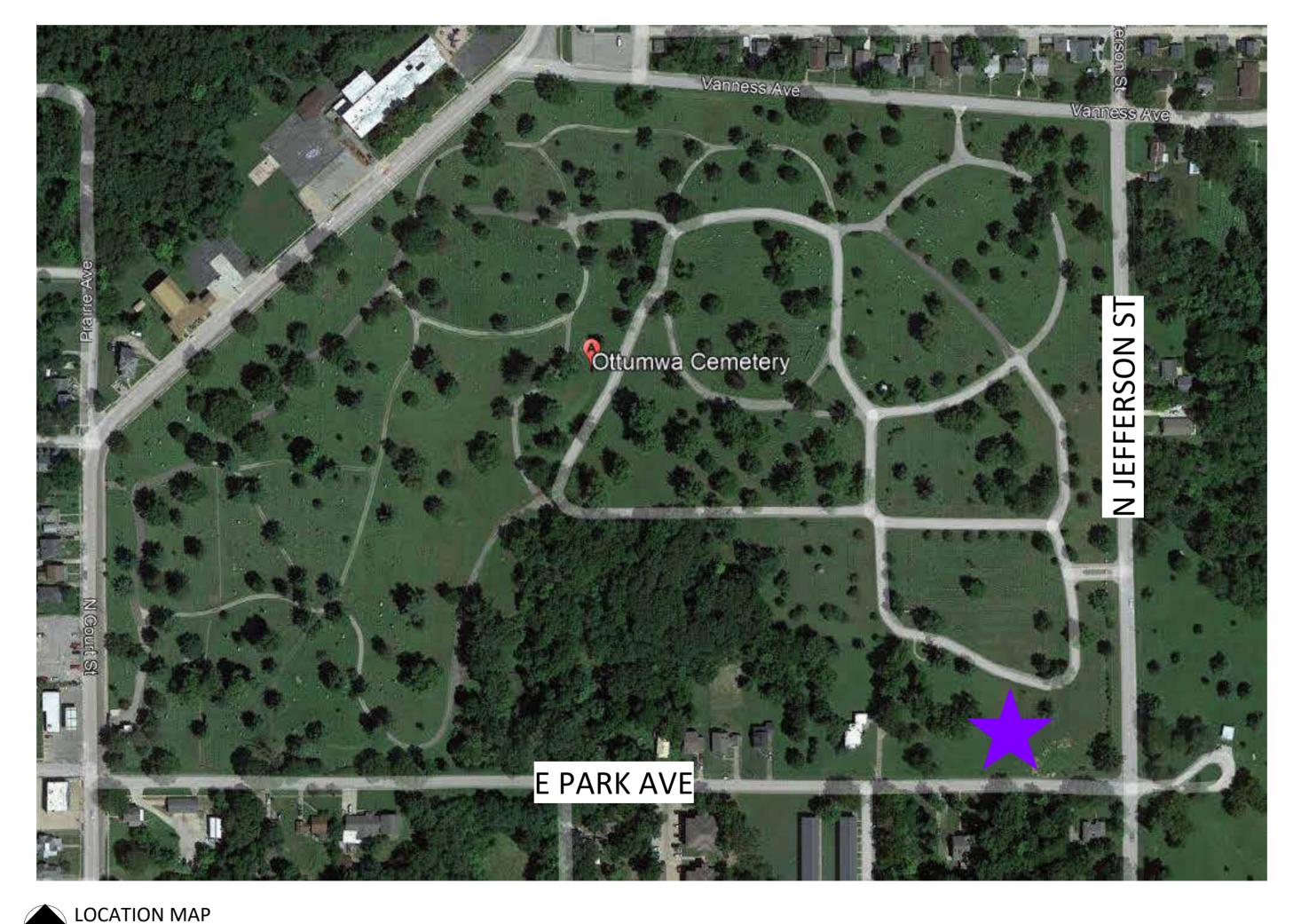
ADA parking provided = 2 stalls



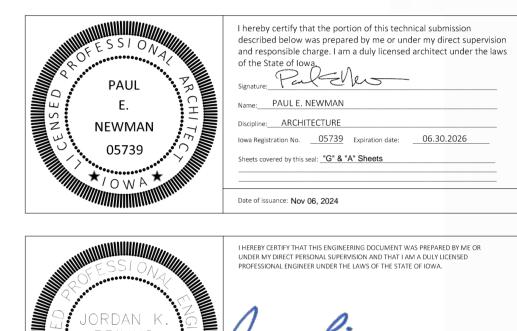
N NO SCALE

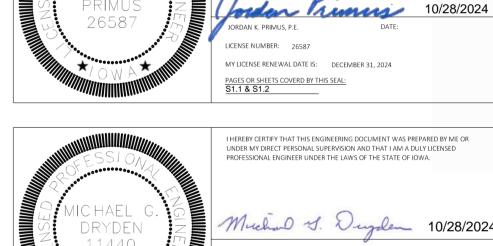
# OTTUMWA CEMETERY OFFICE & MAINTENANCE BLDG

OTTUMWA, IOWA

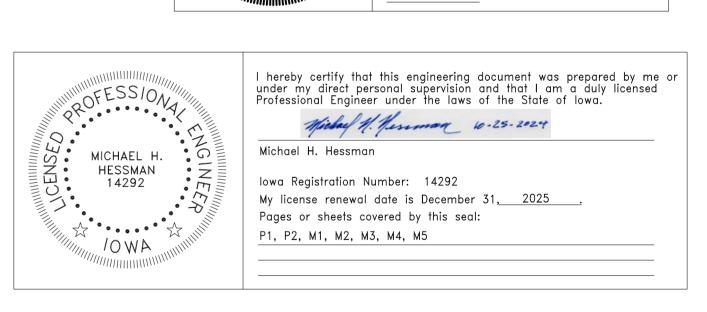


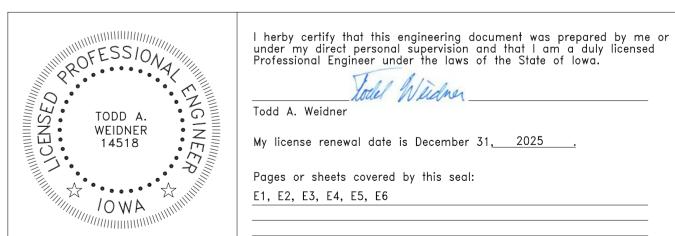


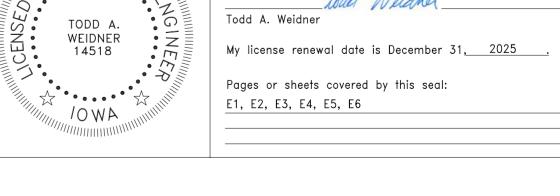




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IETERY OFFICE SOTTUMWA, IOWA

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1520C22 DATE 11-05-2024 SHEET

No. **G1.1** 

## ADA STANDARDS INFORMATION SHEET

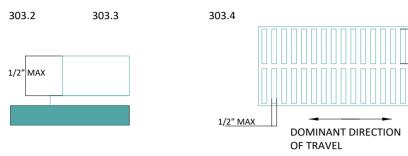
#### **CHAPTER 3: BUILDING BLOCKS**

#### 302 FLOOR OR GROUND SURFACES

302.1 GENERAL. FLOOR AND GROUND SURFACES SHALL BE STABLE, FIRM, AND SLIP RESISTANT AND SHALL COMPLY WITH 302. EXCEPTIONS: (1.) WITHIN ANIMAL CONTAINMENT AREAS, FLOOR AND GROUND SURFACES SHALL NOT BE REQUIRED TO BE STABLE, FIRM, AND SLIP RESISTANT. (2.) AREAS OF SPORT ACTIVITY SHALL NOT BE REQUIRED

302.2 CARPET. CARPET OR CARPET TILE SHALL BE SECURELY ATTACHED AND SHALL HAVE A FIRM CUSHION, PAD, OR BACKING OR NO CUSHION OR PAD. CARPET OR CARPET TILE SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT PILE, OR LEVEL CUT/UNCUT PILE TEXTURE. PILE HEIGHT SHALL BE ½" MAXIMUM. EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR SURFACES AND SHALL HAVE TRIM ON THE ENTIRE LENGTH OF THE EXPOSED EDGE. CARPET EDGE TRIM SHALL COMPLY WITH 303.

302.3 OPENINGS. OPENINGS IN FLOOR OR GROUND SURFACES SHALL NOT ALLOW PASSAGE OF A SPHERE MORE THAN ½" DIAMETER EXCEPT AS ALLOWED IN 407.4.3, 409.4.3, 410.4, 810.5.3 AND 810.10. ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL

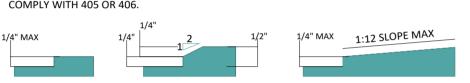


303.1 GENERAL. WHERE CHANGES IN LEVEL ARE PERMITTED IN FLOOR OR GROUND SURFACES, THEY SHALL COMPLY WITH 303. EXCEPTIONS: 1.) ANIMAL CONTAINMENT AREAS SHALL NOT BE REQUIRED TO COMPLY WITH 303. 2.) AREAS OF SPORT ACTIVITY SHALL NOT BE REQUIRED TO COMPLY WITH 303.

303.2 VERTICAL. CHANGES IN LEVEL OF ¼" HIGH MAXIMUM SHALL BE PERMITTED TO BE

303.3 BEVELED. CHANGES IN LEVEL BETWEEN ¼" HIGH MINIMUM AND ½" HIGH

MAXIMUM SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2. 303.4 RAMPS. CHANGES IN LEVEL GREATER THAN ½" HIGH SHALL BE RAMPED, AND SHALL



#### 304 TURNING SPACE

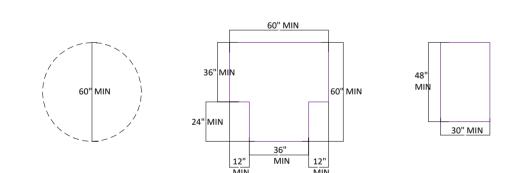
304.1 GENERAL. TURNING SPACE SHALL COMPLY WITH 304.

304.2 FLOOR OR GROUND SURFACES. FLOOR OR GROUND SURFACES OF A TURNING SPACE SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

304.3 SIZE. TURNING SPACE SHALL COMPLY WITH 304.3.1 OR 304.3.2. 304.3.1 CIRCULAR SPACE . THE TURNING SPACE SHALL BE A SPACE OF 60" DIAMETER MINIMUM. THE SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE

COMPLYING WITH 306. 304.3.2 T-SHAPED SPACE . THE TURNING SPACE SHALL BE A T-SHAPED SPACE WITHIN A 60" SQUARE MINIMUM WITH ARMS AND BASE 36" WIDE MINIMUM. EACH ARM OF THE T SHALL BE CLEAR OF OBSTRUCTIONS 12" MINIMUM IN EACH DIRECTION AND THE BASE SHALL BE CLEAR OF OBSTRUCTIONS 24" MINIMUM. THE SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH 306 ONLY AT THE END OF EITHER THE BASE OR ONE ARM.

304.4 DOOR SWING. DOORS SHALL BE PERMITTED TO SWING INTO TURNING SPACES.



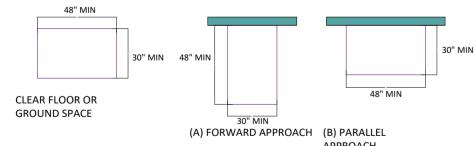
### 305 CLEAR FLOOR OR GROUND SPACE

305.1 GENERAL. CLEAR FLOOR OR GROUND SPACE SHALL COMPLY WITH 305. 305.2 FLOOR OR GROUND SURFACES. FLOOR OR GROUND SURFACES OF A CLEAR FLOOR OR GROUND SPACE SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

305.3 SIZE. THE CLEAR FLOOR OR GROUND SPACE SHALL BE 30" MINIMUM BY 48" 305.4 KNEE AND TOE CLEARANCE. UNLESS OTHERWISE SPECIFIED, CLEAR FLOOR OR

GROUND SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING

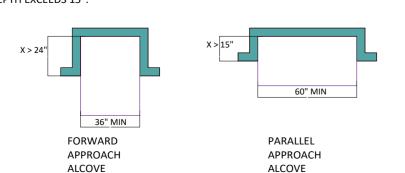
305.5 POSITION. UNLESS OTHERWISE SPECIFIED, CLEAR FLOOR OR GROUND SPACE SHALL BE POSITIONED FOR EITHER FORWARD OR PARALLEL APPROACH TO AN ELEMENT.



305.6 APPROACH. ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR OR GROUND SPACE SHALL ADJOIN AN ACCESSIBLE ROUTE OR ADJOIN ANOTHER CLEAR FLOOR OR

305.7 MANEUVERING CLEARANCE. WHERE A CLEAR FLOOR OR GROUND SPACE IS LOCATED IN AN ALCOVE OR OTHERWISE CONFINED ON ALL OR PART OF THREE SIDES, ADDITIONAL MANEUVERING CLEARANCE SHALL BE PROVIDED IN ACCORDANCE WITH 305.7.1 AND 305.7.2.

305.7.1 FORWARD APPROACH. ALCOVES SHALL BE 36" WIDE MINIMUM WHERE THE DEPTH EXCEEDS 24". 305.7.2 PARALLEL APPROACH. ALCOVES SHALL BE 60" WIDE MINIMUM WHERE THE DEPTH EXCEEDS 15".



#### 306 KNEE AND TOE CLEARANCI

306.1 GENERAL. WHERE SPACE BENEATH AN ELEMENT IS INCLUDED AS PART OF CLEAR FLOOR OR GROUND SPACE OR TURNING SPACE, THE SPACE SHALL COMPLY WITH 306. ADDITIONAL SPACE SHALL NOT BE PROHIBITED BENEATH AN ELEMENT BUT SHALL NOT BE CONSIDERED AS PART OF THE CLEAR FLOOR OR GROUND SPACE OR TURNING SPACE.

306.2.1 GENERAL. SPACE UNDER AN ELEMENT BETWEEN THE FINISH FLOOR OR GROUND AND 9" ABOVE THE FINISH FLOOR OR GROUND SHALL BE CONSIDERED TOE CLEARANCE AND SHALL COMPLY WITH 306.2. 306.2.2 MAXIMUM DEPTH. TOE CLEARANCE SHALL EXTEND 25" MAXIMUM UNDER AN

306.2.3 MINIMUM REQUIRED DEPTH. WHERE TOE CLEARANCE IS REQUIRED AT AN ELEMENT AS PART OF A CLEAR FLOOR SPACE, THE TOE CLEARANCE SHALL EXTEND 17"

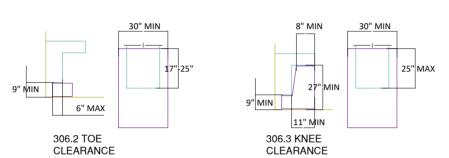
MINIMUM UNDER THE ELEMENT. 306.2.4 ADDITIONAL CLEARANCE. SPACE EXTENDING GREATER THAN 6" BEYOND THE AVAILABLE KNEE CLEARANCE AT 9" ABOVE THE FINISH FLOOR OR GROUND SHALL NOT BE CONSIDERED TOE CLEARANCE. 306.2.5 WIDTH. TOE CLEARANCE SHALL BE 30" WIDE MINIMUM.

306.3.1 GENERAL. SPACE UNDER AN ELEMENT BETWEEN 9" AND 27" ABOVE THE FINISH FLOOR OR GROUND SHALL BE CONSIDERED KNEE CLEARANCE AND SHALL COMPLY WITH

306.3.2 MAXIMUM DEPTH. KNEE CLEARANCE SHALL EXTEND 25" MAXIMUM UNDER AN ELEMENT AT 9" ABOVE THE FINISH FLOOR OR GROUND. 306.3.3 MINIMUM REQUIRED DEPTH. WHERE KNEE CLEARANCE IS REQUIRED UNDER AN ELEMENT AS PART OF A CLEAR FLOOR SPACE, THE KNEE CLEARANCE SHALL BE 11" DEEP MINIMUM AT 9" ABOVE THE FINISH FLOOR OR GROUND, AND 8" DEEP MINIMUM AT 27"

ABOVE THE FINISH FLOOR OR GROUND. LONG DIMENSION 306.3.4 CLEARANCE REDUCTION.

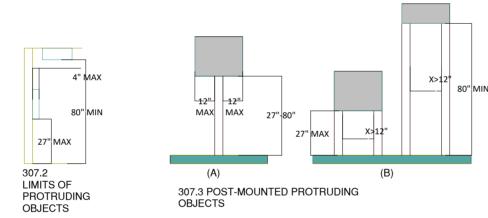
BETWEEN 9" AND 27" ABOVE THE FINISH FLOOR OR GROUND, THE KNEE CLEARANCE SHALL BE PERMITTED TO REDUCE AT A RATE OF 1" IN **DEPTH FOR EACH 6" IN HEIGHT** 306.3.5 WIDTH. KNEE CLEARANCE SHALL BE 30" WIDE MINIMUM.



#### 307 PROTRUDING OBJECTS

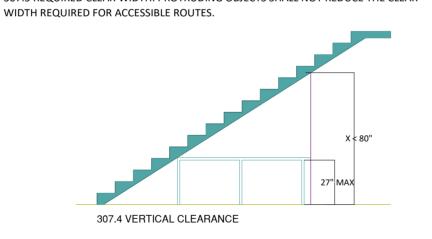
<u>307.1 GENERAL.</u> PROTRUDING OBJECTS SHALL COMPLY WITH 307. 307.2 PROTRUSION LIMITS. OBJECTS WITH LEADING EDGES MORE THAN 27" AND NOT MORE THAN 80" ABOVE THE FINISH FLOOR OR GROUND SHALL PROTRUDE 4" MAXIMUM HORIZONTALLY INTO THE CIRCULATION PATH. EXCEPTION: HANDRAILS SHALL BE PERMITTED TO PROTRUDE 4½" MAXIMUM.

307.3 POST-MOUNTED OBJECTS. FREE-STANDING OBJECTS MOUNTED ON POSTS OR PYLONS SHALL OVERHANG CIRCULATION PATHS 12" MAXIMUM WHEN LOCATED 27" MINIMUM AND 80" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. WHERE A SIGN OR OTHER OBSTRUCTION IS MOUNTED BETWEEN POSTS OR PYLONS AND THE CLEAR DISTANCE BETWEEN THE POSTS OR PYLONS IS GREATER THAN 12", THE LOWEST EDGE OF SUCH SIGN OR OBSTRUCTION SHALL BE 27" MAXIMUM OR 80" MINIMUM ABOVE THE FINISH FLOOR OR GROUND. EXCEPTION: THE SLOPING PORTIONS OF HANDRAILS SERVING STAIRS AND RAMPS SHALL NOT BE REQUIRED TO COMPLY WITH 307.3.



307.4 VERTICAL CLEARANCE. VERTICAL CLEARANCE SHALL BE 80" HIGH MINIMUM. GUARDRAILS OR OTHER BARRIERS SHALL BE PROVIDED WHERE THE VERTICAL CLEARANCE IS LESS THAN 80" HIGH. THE LEADING EDGE OF SUCH GUARDRAIL OR BARRIER SHALL BE LOCATED 27" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. EXCEPTION: DOOR CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78" MINIMUM ABOVE THE FINISH FLOOR OR GROUND.

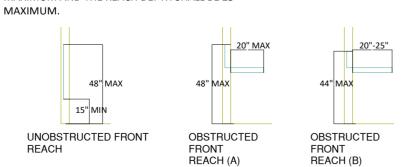
307.5 REQUIRED CLEAR WIDTH. PROTRUDING OBJECTS SHALL NOT REDUCE THE CLEAR



**308 REACH RANGES** 

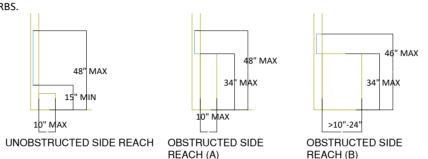
308.1 GENERAL. REACH RANGES SHALL COMPLY WITH 308. 308.2 FORWARD REACH

308.2.1 UNOBSTRUCTED. WHERE A FORWARD REACH IS UNOBSTRUCTED, THE HIGH FORWARD REACH SHALL BE 48" MAXIMUM AND THE LOW FORWARD REACH SHALL BE 15" MINIMUM ABOVE THE FINISH FLOOR OR GROUND. 308.2.2 OBSTRUCTED HIGH REACH. WHERE A HIGH FORWARD REACH IS OVER AN OBSTRUCTION, THE CLEAR FLOOR SPACE SHALL EXTEND BENEATH THE ELEMENT FOR A DISTANCE NOT LESS THAN THE REQUIRED REACH DEPTH OVER THE OBSTRUCTION. THE HIGH FORWARD REACH SHALL BE 48" MAXIMUM WHERE THE REACH DEPTH IS 20" MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 20", THE HIGH FORWARD REACH SHALL BE 44" MAXIMUM AND THE REACH DEPTH SHALL BE 25"



308.3.1 UNOBSTRUCTED. WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE SIDE REACH IS UNOBSTRUCTED, THE HIGH SIDE REACH SHALL BE 48" MAXIMUM AND THE LOW SIDE REACH SHALL BE 15" MINIMUM ABOVE THE FINISH FLOOR OR GROUND. EXCEPTIONS: 1.) AN OBSTRUCTION SHALL BE PERMITTED BETWEEN THE CLEAR FLOOR OR GROUND SPACE AND THE ELEMENT WHERE THE DEPTH OF THE OBSTRUCTION IS 10" MAXIMUM. 2.) OPERABLE PARTS OF FUEL DISPENSERS SHALL BE PERMITTED TO BE 54" MAXIMUM MEASURED FROM THE SURFACE OF THE VEHICULAR WAY WHERE FUEL DISPENSERS ARE INSTALLED ON EXISTING CURBS. 308.3.2 OBSTRUCTED HIGH REACH. WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE HIGH SIDE REACH IS OVER AN OBSTRUCTION, THE HEIGHT OF THE OBSTRUCTION SHALL BE 34" MAXIMUM AND THE DEPTH OF THE OBSTRUCTION SHALL BE 24" MAXIMUM. THE HIGH SIDE REACH SHALL BE 48" MAXIMUM FOR A REACH DEPTH OF 10" MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 10", THE HIGH SIDE REACH SHALL BE 46" MAXIMUM FOR A REACH DEPTH OF 24" MAXIMUM. EXCEPTIONS: (1.) THE TOP OF WASHING MACHINES AND CLOTHES DRYERS SHALL BE PERMITTED TO BE 36" MAXIMUM ABOVE THE FINISH FLOOR.

(2.) OPERABLE PARTS OF FUEL DISPENSERS SHALL BE PERMITTED TO BE 54" MAXIMUM MEASURED FROM THE SURFACE OF THE VEHICULAR WAY WHERE FUEL DISPENSERS ARE INSTALLED ON EXISTING



309.1 GENERAL. OPERABLE PARTS SHALL COMPLY WITH 309. 309.2 CLEAR FLOOR SPACE. A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305

309.3 HEIGHT. OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE OF THE REACH RANGES SPECIFIED IN 308. 309.4 OPERATION. OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL

NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUNDS MAXIMUM. EXCEPTION: GAS PUMP NOZZLES SHALL NOT BE REQUIRED TO PROVIDE OPERABLE PARTS THAT HAVE AN ACTIVATING FORCE OF 5 POUNDS

### **CHAPTER 4: ACCESSIBLE ROUTES**

#### **402 ACCESSIBLE ROUTES**

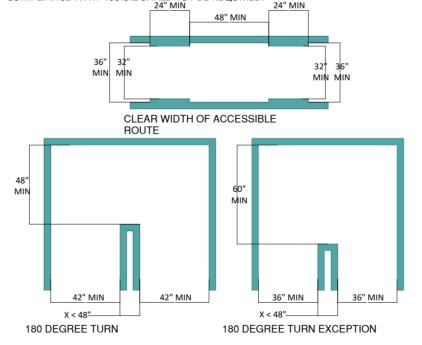
402.1 GENERAL. ACCESSIBLE ROUTES SHALL COMPLY WITH 402. 402.2 COMPONENTS. ACCESSIBLE ROUTES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING COMPONENTS: WALKING SURFACES WITH A RUNNING SLOPE NOT STEEPER THAN 1:20, DOORWAYS, RAMPS, CURB RAMPS EXCLUDING THE FLARED SIDES, ELEVATORS, AND PLATFORM LIFTS. ALL COMPONENTS OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF CHAPTER 4.

403.1 GENERAL. WALKING SURFACES THAT ARE A PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH 403. 403.2 FLOOR OR GROUND SURFACE. FLOOR OR GROUND SURFACES SHALL COMPLY

403.3 SLOPE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20. THE CROSS SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:48. 403.4 CHANGES IN LEVEL. CHANGES IN LEVEL SHALL COMPLY WITH 303. 403.5 CLEARANCES. WALKING SURFACES SHALL PROVIDE CLEARANCES COMPLYING WITH 403.5. EXCEPTION: WITHIN EMPLOYEE WORK AREAS, CLEARANCES ON COMMON USE CIRCULATION PATHS SHALL BE PERMITTED TO BE DECREASED BY WORK AREA EQUIPMENT PROVIDED THAT THE DECREASE IS ESSENTIAL TO THE FUNCTION OF THE WORK BEING

403.5.1 CLEAR WIDTH. EXCEPT AS PROVIDED IN 403.5.2 AND 403.5.3, THE CLEAR WIDTH OF WALKING SURFACES SHALL BE 36" MINIMUM, EXCEPTION: THE CLEAR WIDTH SHALL BE PERMITTED TO BE REDUCED TO 32" MINIMUM FOR A LENGTH OF 24" MAXIMUM PROVIDED THAT REDUCED WIDTH SEGMENTS ARE SEPARATED BY SEGMENTS THAT ARE 48" LONG MINIMUM AND 36" WIDE MINIMUM.

403.5.2 CLEAR WIDTH AT TURN. WHERE THE ACCESSIBLE ROUTE MAKES A 180 DEGREE TURN AROUND AN ELEMENT WHICH IS LESS THAN 48" WIDE, CLEAR WIDTH SHALL BE 42" MINIMUM APPROACHING THE TURN, 48" MINIMUM AT THE TURN AND 4" MINIMUM LEAVING THE TURN. EXCEPTION: WHERE THE CLEAR WIDTH AT THE TURN IS 60" MINIMUM COMPLIANCE WITH 403.5.2 SHALL NOT BE REQUIRED.

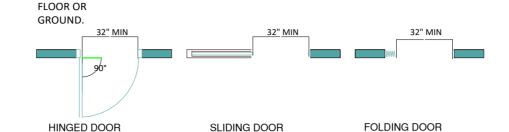


403.5.3 PASSING SPACES. AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH LESS THAN 60" SHALL PROVIDE PASSING SPACES AT INTERVALS OF 200' MAXIMUM. PASSING SPACES SHALL BE EITHER: A SPACE 60" MINIMUM BY 60" MINIMUM; OR, AN INTERSECTION OF TWO WALKING SURFACES PROVIDING A T-SHAPED SPACE COMPLYING WITH 304.3.2 WHERE THE BASE AND ARMS OF THE T-SHAPED SPACE EXTEND 48" MINIMUM BEYOND THE 403.6 HANDRAILS. WHERE HANDRAILS ARE PROVIDED ALONG WALKING SURFACES WITH RUNNING SLOPES NOT STEEPER THAN 1:20 THEY SHALL COMPLY WITH 505.

### 404 DOORS, DOORWAYS, AND GATES

404.1 GENERAL. DOORS, DOORWAYS, AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH 404. EXCEPTION: DOORS, DOORWAYS, AND GATES DESIGNED TO BE OPERATED ONLY BY SECURITY PERSONNEL SHALL NOT BE REQUIRED TO COMPLY WITH 404.2.7, 404.2.8, 404.2.9, 404.3.2 AND 404.3.4 THROUGH 404.3.7. 404.2 MANUAL DOORS, DOORWAYS, AND MANUAL GATES. MANUAL DOORS AND DOORWAYS AND MANUAL GATES INTENDED FOR USER PASSAGE SHALL COMPLY WITH 404.2. 404.2.1 REVOLVING DOORS, GATES, AND TURNSTILES. REVOLVING DOORS, REVOLVING GATES, AND TURNSTILES SHALL NOT BE PART OF AN ACCESSIBLE ROUTE. 404.2.2 DOUBLE-LEAF DOORS AND GATES. AT LEAST ONE OF THE ACTIVE LEAVES OF DOORWAYS WITH TWO LEAVES SHALL COMPLY WITH 404.2.3 AND 404.2.4.

404.2.3 CLEAR WIDTH. DOOR OPENINGS SHALL PROVIDE A CLEAR WIDTH OF 32" MINIMUM. CLEAR OPENINGS OF DOORWAYS WITH SWINGING DOORS SHALL BE MEASURED BETWEEN THE FACE OF THE DOOR AND THE STOP, WITH THE DOOR OPEN 90 DEGREES. OPENINGS MORE THAN 24" DEEP SHALL PROVIDE A CLEAR OPENING OF 36" MINIMUM. THERE SHALL BE NO PROJECTIONS INTO THE REQUIRED CLEAR OPENING WIDTH LOWER THAN 34" ABOVE THE FINISH FLOOR OR GROUND. PROJECTIONS INTO THE CLEAR OPENING WIDTH BETWEEN 34" AND 80" ABOVE THE FINISH FLOOR OR GROUND SHALL NOT EXCEED 4". EXCEPTIONS: (1.) IN ALTERATIONS, A PROJECTION OF 5/8" MAXIMUM INTO THE



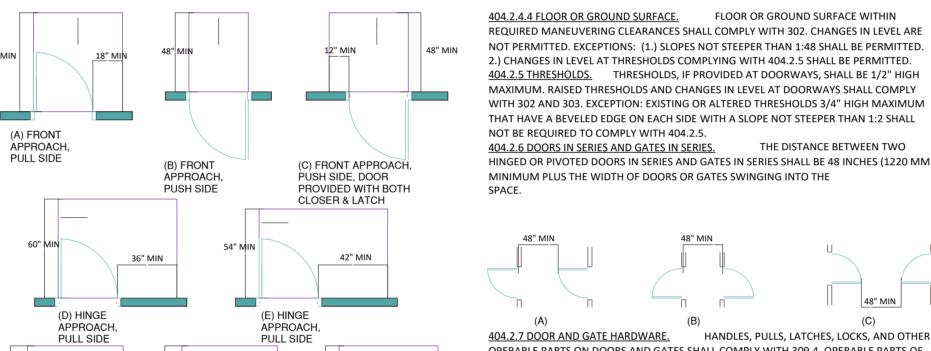
REQUIRED CLEAR WIDTH SHALL BE PERMITTED FOR THE LATCH SIDE STOP. (2.) DOOR

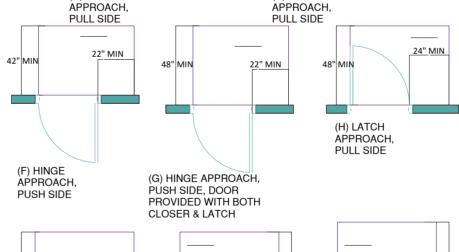
CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78" MINIMUM ABOVE THE FINISH

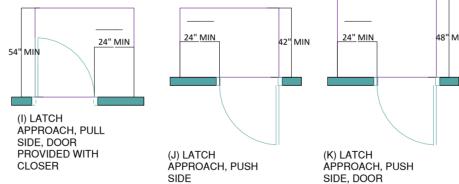
404.2.4 MANEUVERING CLEARANCES. MINIMUM MANEUVERING CLEARANCES AT DOORS AND GATES SHALL COMPLY WITH 404.2.4. MANEUVERING CLEARANCES SHALL EXTEND THE FULL WIDTH OF THE DOORWAY AND THE REQUIRED LATCH SIDE OR HINGE SIDE CLEARANCE. EXCEPTION: ENTRY DOORS TO HOSPITAL PATIENT ROOMS SHALL NOT BE REQUIRED TO PROVIDE THE CLEARANCE BEYOND THE LATCH SIDE OF THE DOOR. 404.2.4.1 SWINGING DOORS AND GATES. SWINGING DOORS AND GATES SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH TABLE

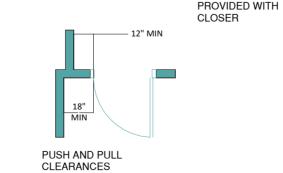
	SWINGING I	DOORS & GATES		
Т	YPE OF USE		ANEUVERING RANCE	
APPROACH DIRECTION	DOOR OR GATE SIDE	PERPENDICULAR TO DOORWAY	PARALLEL TO DOORWAY (BEYOND LATCH SIDE UNLESS NOTED)	
FROM FRONT	PULL	60"	18"	
FROM FRONT	PUSH	48"	0"	
FROM HINGE SIDE	PULL	60"	36" 42"	
FROM HINGE SIDE	PULL	54"		
FROM HINGE SIDE	PUSH	42"	22"	
FROM LATCH SIDE	PULL	48"	24"	
FROM LATCH SIDE PUSH		42"	24"	
1. ADD 12" IF CL	OSER AND LATCH ARE PR	OVIDED.		
2. ADD 6" IF CLC	OSER AND LATCH ARE PRO	OVIDED.		
3. BEYOND HING	GE SIDE.			

4. ADD 6" IF CLOSER IS PROVIDED





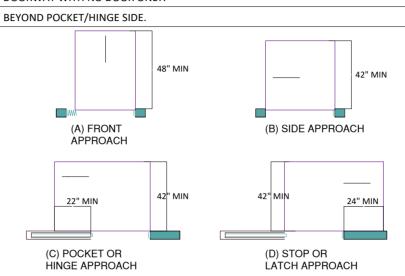




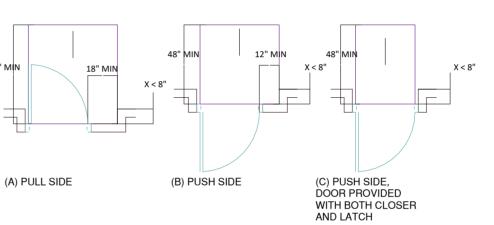
#### 404.2.4.2 DOORWAYS WITHOUT DOORS OR GATES, SLIDING DOORS, AND FOLDING DOORS.

DOORWAYS LESS THAN 36" WIDE WITHOUT DOORS OR GATES, SLIDING DOORS, OR FOLDING DOORS SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH TABLE

TABLE 404.2.4.2 MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS OR GATES, MANUAL SLIDING DOORS, AND MANUAL FOLDING DOORS								
	MINIMUM	1 MANEUVERING CLEARANCE						
APPROACH DIRECTION	PERPENDICULAR TO DOORWAY	PARALLEL TO DOORWAY (BEYOND STOP/LATCH SIDE UNLESS NOTED)						
FROM FRONT	48"	0"						
FROM SIDE	42"	0"						
FROM POCKET/HINGE SIDE	42"	22"						
FROM STOP/LATCH SIDE	42"	24"						
1. DOORWAY WITH NO DOOR ONLY.								
2. BEYOND POCKET/HINGE SIDE.								

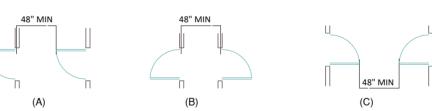


404.2.4.3 RECESSED DOORS AND GATES. MANEUVERING CLEARANCES FOR FORWARD APPROACH SHALL BE PROVIDED WHEN ANY OBSTRUCTION WITHIN 18" OF THE LATCH SIDE OF A DOORWAY PROJECTS MORE THAN 8" BEYOND THE FACE OF THE DOOR, MEASURED PERPENDICULAR TO THE FACE OF THE DOOR OR GATE.



404.2.4.4 FLOOR OR GROUND SURFACE. FLOOR OR GROUND SURFACE WITHIN REQUIRED MANEUVERING CLEARANCES SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTIONS: (1.) SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED. 2.) CHANGES IN LEVEL AT THRESHOLDS COMPLYING WITH 404.2.5 SHALL BE PERMITTED. 404.2.5 THRESHOLDS. THRESHOLDS, IF PROVIDED AT DOORWAYS, SHALL BE 1/2" HIGH MAXIMUM. RAISED THRESHOLDS AND CHANGES IN LEVEL AT DOORWAYS SHALL COMPLY WITH 302 AND 303. EXCEPTION: EXISTING OR ALTERED THRESHOLDS 3/4" HIGH MAXIMUM THAT HAVE A BEVELED EDGE ON EACH SIDE WITH A SLOPE NOT STEEPER THAN 1:2 SHALL NOT BE REQUIRED TO COMPLY WITH 404.2.5. 404.2.6 DOORS IN SERIES AND GATES IN SERIES. THE DISTANCE BETWEEN TWO

HINGED OR PIVOTED DOORS IN SERIES AND GATES IN SERIES SHALL BE 48 INCHES (1220 MM) MINIMUM PLUS THE WIDTH OF DOORS OR GATES SWINGING INTO THE



OPERABLE PARTS ON DOORS AND GATES SHALL COMPLY WITH 309.4. OPERABLE PARTS OF SUCH HARDWARE SHALL BE 34" MINIMUM AND 48" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. WHERE SLIDING DOORS ARE IN THE FULLY OPEN POSITION, OPERATING HARDWARE SHALL BE EXPOSED AND USABLE FROM BOTH SIDES. 404.2.8 CLOSING SPEED. DOOR AND GATE CLOSING SPEED SHALL COMPLY WITH 404.2.8. 404.2.8.1 DOOR CLOSERS AND GATE CLOSERS. DOOR CLOSERS AND GATE CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5

404.2.8.2 SPRING HINGES. DOOR AND GATE SPRING HINGES SHALL BE ADJUSTED SO THAT FROM THE OPEN POSITION OF 70 DEGREES, THE DOOR OR GATE SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM.

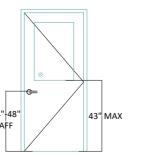
404.2.9 DOOR AND GATE OPENING FORCE. FIRE DOORS SHALL HAVE A MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY. THE FORCE FOR PUSHING OR PULLING OPEN A DOOR OR GATE OTHER THAN FIRE DOORS SHALL BE AS FOLLOWS:

INTERIOR HINGED DOORS AND GATES: 5 POUNDS MAXIMUM. SLIDING OR FOLDING DOORS: 5 POUNDS MAXIMUM.

EXTERIOR OR FIRE DOORS: 8.5 POUNDS MAXIMUM. THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR OR GATE IN A CLOSED POSITION. 404.2.10 DOOR AND GATE SURFACES. SWINGING DOOR AND GATE SURFACES WITHIN 10" OF THE FINISH FLOOR OR GROUND MEASURED VERTICALLY SHALL HAVE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN THESE SURFACES SHALL BE WITHIN 1/16" OF THE SAME PLANE AS THE OTHER. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED. EXCEPTIONS: (1.) SLIDING DOORS SHALL NOT BE REQUIRED TO COMPLY WITH 404.2.10. (2.) TEMPERED GLASS DOORS WITHOUT STILES AND HAVING A BOTTOM RAIL OR SHOE WITH THE TOP LEADING EDGE TAPERED AT 60 DEGREES MINIMUM FROM THE HORIZONTAL SHALL NOT BE REQUIRED TO MEET THE 10" BOTTOM SMOOTH SURFACE HEIGHT REQUIREMENT. (3.) DOORS AND GATES THAT DO NOT EXTEND TO WITHIN 10" OF THE FINISH FLOOR OR GROUND SHALL NOT BE REQUIRED TO COMPLY WITH 404.2.10. (4.) EXISTING DOORS AND GATES WITHOUT SMOOTH SURFACES WITHIN 10" OF THE FINISH FLOOR OR GROUND SHALL NOT BE REQUIRED TO PROVIDE SMOOTH SURFACES COMPLYING WITH 404.2.10 PROVIDED THAT IF

ADDED KICK PLATES ARE INSTALLED, CAVITIES CREATED BY SUCH KICK PLATES ARE CAPPED.

404.2.11 VISION LIGHTS. DOORS, GATES, AND SIDE LIGHTSADJACENT TO DOORS OR GATES, CONTAINING ONE OR MORE GLAZING PANELS THAT PERMIT VIEWING THROUGH THE PANELS SHALL HAVE THE BOTTOM OF AT LEAST ONE GLAZED PANEL LOCATED 43" MAXIMUM ABOVE THE FINISH FLOOR, EXCEPTION: VISION LIGHTS WITH THE LOWEST PART MORE THAN 66" FROM THE FINISH FLOOR OR GROUND SHALL NOT BE REQUIRED TO COMPLY WITH 404.2.11.



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COMPLY WITH 405.

EEPER THAT 1:12 BUT NOT STEEPER THAN 1:10	6 INCHES					
A SLOPE STEEPER THAN 1:8 IS PROHIBITED.						
.3 CROSS SLOPE. CROSS SLOPE OF RAMP RUNS SHALL NOT BE STEEPER THAN 1:48						

MAXIMUM RISE

405.3 CROSS SLOPE. CROSS SLOPE OF RAMP RUNS SHALL NOT BE STEEPER THAN 1:48 405.4 FLOOR OR GROUND SURFACES. FLOOR OR GROUND SURFACES OF RAMP RUNS

SHALL COMPLY WITH 302. CHANGES IN LEVEL OTHER THAN THE RUNNING SLOPE AND CROSS SLOPE ARE NOT PERMITTED ON RAMP RUNS. 405.5 CLEAR WIDTH. THE CLEAR WIDTH OF A RAMP RUN AND, WHERE HANDRAILS ARE PROVIDED, THE CLEAR WIDTH BETWEEN HANDRAILS SHALL BE 36" MINIMUM. EXCEPTION: WITHIN EMPLOYEE WORK AREAS, THE REQUIRED CLEAR WIDTH OF RAMPS

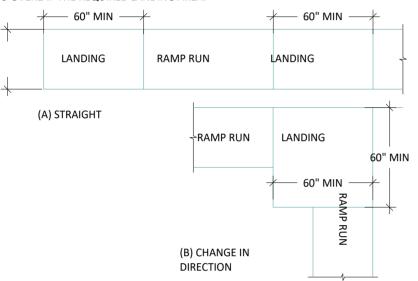
THAT ARE A PART OF COMMON USE CIRCULATION PATHS SHALL BE PERMITTED TO BE

DECREASED BY WORK AREA EQUIPMENT PROVIDED THAT THE DECREASE IS

#### ESSENTIAL TO THE FUNCTION OF THE WORK BEING PERFORMED. 405.6 RISE. THE RISE FOR ANY RAMP RUN SHALL BE 30" MAXIMUM.

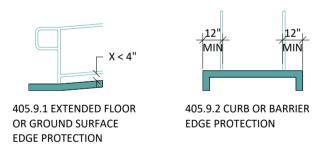
405.7 LANDINGS. RAMPS SHALL HAVE LANDINGS AT THE TOP AND THE BOTTOM OF EACH RAMP RUN. LANDINGS SHALL COMPLY WITH 405.7.405.7.1 SLOPE. LANDINGS SHALL HAVE HAVE A MAXIMUM SLOPE OF 1:48 IN ALL DIRECTIONS. .7.1 SLOPE. LANDINGS SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED. 405.7.2 WIDTH. THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING. 405.7.3 LENGTH. THE LANDING CLEAR LENGTH SHALL BE 60" LONG MINIMUM.

405.7.4 CHANGE IN DIRECTION. RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS SHALL HAVE A CLEAR LANDING 60" MINIMUM BY 60" MINIMUM. 405.7.5 DOORWAYS. WHERE DOORWAYS ARE LOCATED ADJACENT TO A RAMP LANDING, MANEUVERING CLEARANCES REQUIRED BY 404.2.4 AND 404.3.2 SHALL BE PERMITTED TO OVERLAP THE REQUIRED LANDING AREA.



405.8 HANDRAILS. RAMP RUNS WITH A RISE GREATER THAN 6" SHALL HAVE HANDRAILS COMPLYING WITH 505. EXCEPTION: WITHIN EMPLOYEE WORK AREAS, HANDRAILS SHALL NOT BE REQUIRED WHERE RAMPS THAT ARE PART OF COMMON USE CIRCULATION PATHS ARE DESIGNED TO PERMIT THE INSTALLATION OF HANDRAILS COMPLYING WITH 505. RAMPS NOT SUBJECT TO THE EXCEPTION TO 405.5 SHALL BE DESIGNED TO MAINTAIN A 36" MINIMUM CLEAR WIDTH WHEN HANDRAILS ARE INSTALLED.

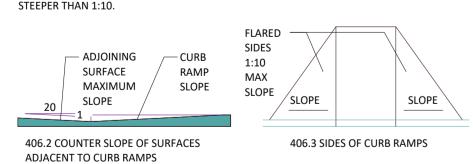
405.9 EDGE PROTECTION. EDGE PROTECTION COMPLYING WITH 405.9.1 OR 405.9.2 SHALL BE PROVIDED ON EACH SIDE OF RAMP RUNS AND AT EACH SIDE OF RAMP LANDINGS. EXCEPTIONS: (1.) EDGE PROTECTION SHALL NOT BE REQUIRED ON RAMPS THAT ARE NOT REQUIRED TO HAVE HANDRAILS AND HAVE SIDES COMPLYING WITH 406.3. (2.) EDGE PROTECTION SHALL NOT BE REQUIRED ON THE SIDES OF RAMP LANDINGS SERVING AN ADJOINING RAMP RUN OR STAIRWAY. (3.) EDGE PROTECTION SHALL NOT BE REQUIRED ON THE SIDES OF RAMP LANDINGS HAVING A VERTICAL DROP-OFF OF 1/2" MAXIMUM WITHIN 10" HORIZONTALLY OF THE MINIMUM LANDING AREA SPECIFIED IN 405.7 405.9.1 EXTENDED FLOOR OR GROUND SURFACE. THE FLOOR OR GROUND SURFACE OF THE RAMP RUN OR LANDING SHALL EXTEND 12" MINIMUM BEYOND THE INSIDE FACE OF A HANDRAIL COMPLYING WITH 505 405.9.2 CURB OR BARRIER. A CURB OR BARRIER SHALL BE PROVIDED THAT PREVENTS THE PASSAGE OF A 4" DIAMETER SPHERE, WHERE ANY PORTION OF THE SPHERE IS WITHIN 4" OF THE FINISH FLOOR OR GROUND SURFACE.



405.10 WET CONDITIONS. LANDINGS SUBJECT TO WET CONDITIONS SHALL BE DESIGNED TO PREVENT THE ACCUMULATION OF WATER.

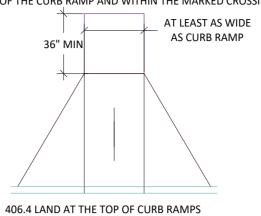
406.1 GENERAL. CURB RAMPS ON ACCESSIBLE ROUTES SHALL COMPLY WITH 406, 405.2 THROUGH 405.5, AND 405.10. 406.2 COUNTER SLOPE. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 1:20. THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS.

GUTTERS, AND STREETS SHALL BE AT THE SAME LEVEL. 406.3 SIDES OF CURB RAMPS. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT BE



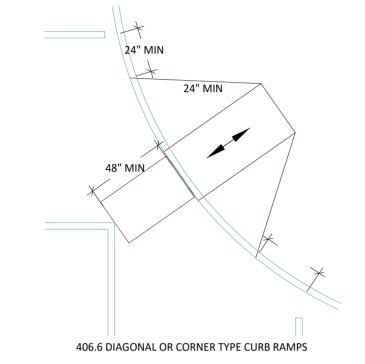
406.5 LOCATION. CURB RAMPS AND THE FLARED SIDES OF CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES, PARKING SPACES, OR PARKING ACCESS AISLES. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.

406.6 DIAGONAL CURB RAMPS. DIAGONAL OR CORNER TYPE CURB RAMPS WITH RETURNED CURBS OR OTHER WELL-DEFINED EDGES SHALL HAVE THE EDGES PARALLEL TO THE DIRECTION OF PEDESTRIAN FLOW. THE BOTTOM OF DIAGONAL CURB RAMPS SHALL HAVE A CLEAR SPACE 48" MINIMUM OUTSIDE ACTIVE TRAFFIC LANES OF THE ROADWAY. DIAGONAL CURB RAMPS PROVIDED AT MARKED CROSSINGS SHALL PROVIDE THE 48" MINIMUM CLEAR SPACE WITHIN THE MARKINGS. DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 24" LONG MINIMUM LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING.

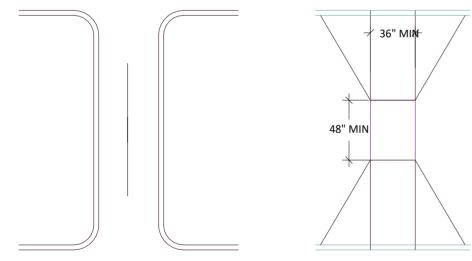


406.5 LOCATION. CURB RAMPS AND THE FLARED SIDES OF CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES, PARKING SPACES, OR PARKING ACCESS AISLES. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.

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406.7 ISLANDS. RAISED ISLANDS IN CROSSINGS SHALL BE CUT THROUGH LEVEL WITH HE STREET OR HAVE CURB RAMPS AT BOTH SIDES. EACH CURB RAMP SHALL HAVE A LEVEL AREA 48" LONG MINIMUM BY 36" WIDE MINIMUM AT THE TOP OF THE CURB RAMP IN THE PART OF THE ISLAND INTERSECTED BY THE CROSSINGS. EACH 48" MINIMUM BY 3" MINIMUM AREA SHALL BE ORIENTED SO THAT THE 48" MINIMUM LENGTH IS IN THE DIRECTION OF THE RUNNING SLOPE OF THE CURB RAMP IT SERVES. THE 48" MINIMUM BY 36" MINIMUM AREAS AND THE ACCESSIBLE ROUTE SHALL BE PERMITTED TO



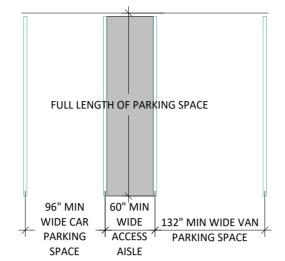
(A) CUT THROUGH AT ISLAND (B) CURB RAMP AT ISLAND 406.7 ISLANDS IN CROSSINGS

406.8 DETECTABLE WARNINGS. A CURB RAMP SHALL HAVE A DETECTABLE WARNING COMPLYING WITH 705. THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP (EXCLUSIVE OF FLARED SIDES) AND SHALL EXTEND EITHER THE FULL DEPTH OF THE CURB RAMP OR 24" DEEP MINIMUM MEASURED FROM THE BACK OF THE CURB ON THE RAMP SURFACE.

### CHAPTER 5: GENERAL SITE AND BUILDING **ELEMENTS**

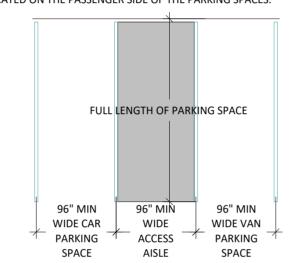
502.1 GENERAL. CAR AND VAN PARKING SPACES SHALL COMPLY WITH 502. WHERE PARKING SPACES ARE MARKED WITH LINES. WIDTH MEASUREMENTS OF PARKING SPACES AND ACCESS AISLES SHALL BE MADE FROM THE CENTERLINE OF THE MARKINGS. EXCEPTION: WHERE PARKING SPACES OR ACCESS AISLES ARE NOT ADJACENT TO ANOTHER PARKING SPACE OR ACCESS AISLE, MEASUREMENTS SHALL BE PERMITTED TO INCLUDE THE FULL WIDTH OF THE LINE DEFINING THE PARKING

502.2 VEHICLE SPACES. CAR PARKING SPACES SHALL BE 96" WIDE MINIMUM AND VAN PARKING SPACES SHALL BE 132" WIDE MINIMUM. SHALL BE MARKED TO DEFINE THE WIDTH, AND SHALL HAVE AN ADJACENT ACCESS AISLE COMPLYING WITH 502.3. EXCEPTION: VAN PARKING SPACES SHALL BE PERMITTED TO BE 96" WIDE MINIMUM WHERE THE ACCESS AISLE IS 96 INCHES" WIDE MINIMUM.



502.3 ACCESS AISLE. ACCESS AISLES SERVING PARKING SPACES SHALL COMPLY WITH 502.3. ACCESS AISLES SHALL ADJOIN AN ACCESSIBLE ROUTE. TWO PARKING SPACES SHALL BE PERMITTED TO SHARE A COMMON ACCESS AISLE. 502.3.1 WIDTH. ACCESS AISLES SERVING CAR AND VAN PARKING SPACES SHALL BE 60 INCHES (1525 MM) WIDE MINIMUM. 502.3.2 LENGTH. ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING

502.3.3 MARKING. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING 502.3.4 LOCATION. ACCESS AISLES SHALL NOT OVERLAP THE VEHICULAR WAY. ACCESS AISLES SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE EXCEPT FOR ANGLED VAN PARKING SPACES WHICH SHALL HAVE ACCESS AISLES LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACES.



502.4 FLOOR OR GROUND SURFACES. PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL COMPLY WITH 302. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

502.5 VERTICAL CLEARANCE. PARKING SPACES FOR VANS AND ACCESS AISLES AND VEHICULAR ROUTES SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF 98"

502.6 IDENTIFICATION. PARKING SPACE IDENTIFICATION SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY COMPLYING WITH 703.7.2.1. SIGNS IDENTIFYING VAN PARKING SPACES SHALL CONTAIN THE DESIGNATION "VAN ACCESSIBLE." SIGNS SHALL BE 60" MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE MEASURED TO THE BOTTOM OF THE SIGN.

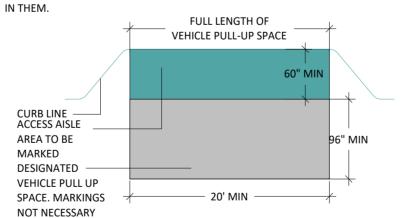
502.7 RELATIONSHIP TO ACCESSIBLE ROUTES. PARKING SPACES AND ACCESS AISLES SHALL BE DESIGNED SO THAT CARS AND VANS, WHEN PARKED, CANNOT OBSTRUCT THE REQUIRED CLEAR WIDTH OF ADJACENT ACCESSIBLE ROUTES.

#### **503 PASSENGER LOADING ZONES** 503.1 GENERAL. PASSENGER LOADING ZONES SHALL COMPLY WITH 503.

SPACES THEY SERVE.

503.2 VEHICLE PULL-UP SPACE. PASSENGER LOADING ZONES SHALL PROVIDE A VEHICULAR PULL-UP SPACE 96" WIDE MINIMUM AND 20' LONG MINIMUM.

503.3 ACCESS AISLE. PASSENGER LOADING ZONES SHALL PROVIDE ACCESS AISLES COMPLYING WITH 503 ADJACENT TO THE VEHICLE PULL-UP SPACE. ACCESS AISLES SHALL ADJOIN AN ACCESSIBLE ROUTE AND SHALL NOT OVERLAP THE VEHICULAR WAY. 503.3.1 WIDTH. ACCESS AISLES SERVING VEHICLE PULL-UP SPACES SHALL BE 60" WIDE 503.3.2 LENGTH. ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE VEHICLE PLILL-LIP SPACES THEY SERVE 503.3.3 MARKING. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING

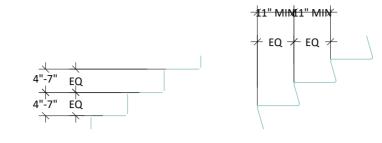


503.4 FLOOR AND GROUND SURFACES. VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL COMPLY WITH 302. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE VEHICLE PULL-UP SPACE THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

503.5 VERTICAL CLEARANCE. VEHICLE PULL-UP SPACES, ACCESS AISLES SERVING THEM, AND A VEHICULAR ROUTE FROM AN ENTRANCE TO THE PASSENGER LOADING ZONE, AND FROM THE PASSENGER LOADING ZONE TO A VEHICULAR EXIT SHALL PROVIDE A VERTICAL CLEARANCE OF 114" MINIMUM.

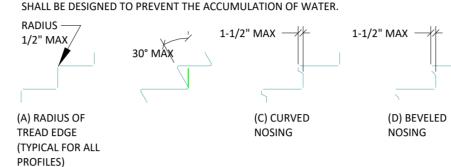
504.1 GENERAL. STAIRS SHALL COMPLY WITH 504. 504.2 TREADS AND RISERS. ALL STEPS ON A FLIGHT OF STAIRS SHALL HAVE UNIFORM RISER HEIGHTS AND UNIFORM TREAD DEPTHS. RISERS SHALL BE 4" HIGH MINIMUM AND 7" HIGH MAXIMUM. TREADS SHALL BE 11" DEEP MINIMUM.

504.3 OPEN RISERS. OPEN RISERS ARE NOT PERMITTED. 504.4 TREAD SURFACE. STAIR TREADS SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: TREADS SHALL BE PERMITTED TO HAVE A SLOPE NOT STEEPER THAN 1:48.



504.5 NOSINGS. THE RADIUS OF CURYATURE AT THE LEADING EDGE OF THE TREAD SHALL BE ½" MAXIMUM. NOSINGS THAT PROJECT BEYOND RISERS SHALL HAVE THE UNDERSIDE OF THE LEADING EDGE CURVED OR BEVELED. RISERS SHALL BE PERMITTED TO SLOPE UNDER THE TREAD AT AN ANGLE OF 30 DEGREES MAXIMUM FROM VERTICAL. THE PERMITTED PROJECTION OF THE NOSING SHALL EXTEND 1%" MAXIMUM OVER THE TREAD BELOW.

504.6 HANDRAILS. STAIRS SHALL HAVE HANDRAILS COMPLYING WITH 505. 504.7 WET CONDITIONS. STAIR TREADS AND LANDINGS SUBJECT TO WET CONDITIONS



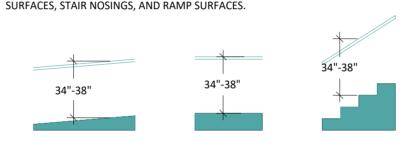
#### **505 HANDRAILS**

505.1 GENERAL. HANDRAILS PROVIDED ALONG WALKING SURFACES COMPLYING WITH 403, REQUIRED AT RAMPS COMPLYING WITH 405, AND REQUIRED AT STAIRS COMPLYING WITH 504 SHALL COMPLY WITH 505. 505.2 WHERE REQUIRED. HANDRAILS SHALL BE PROVIDED ON BOTH SIDES OF STAIRS

AND RAMPS. EXCEPTION: IN ASSEMBLY AREAS, HANDRAILS SHALL NOT BE REQUIRED ON BOTH SIDES OF AISLE RAMPS WHERE A HANDRAIL IS PROVIDED AT EITHER SIDE OR WITHIN THE AISLE WIDTH. 505.3 CONTINUITY. HANDRAILS SHALL BE CONTINUOUS WITHIN THE FULL LENGTH OF EACH STAIR FLIGHT OR RAMP RUN. INSIDE HANDRAILS ON SWITCHBACK OR DOGLEG STAIRS AND RAMPS SHALL BE CONTINUOUS BETWEEN FLIGHTS OR RUNS. EXCEPTION:

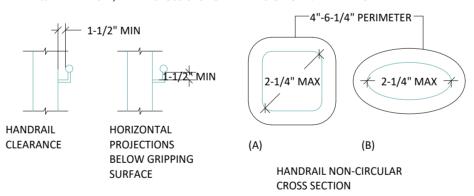
IN ASSEMBLY AREAS, HANDRAILS ON RAMPS SHALL NOT BE REQUIRED TO BE

CONTINUOUS IN AISLES SERVING SEATING. 505.4 HEIGHT. TOP OF GRIPPING SURFACES OF HANDRAILS SHALL BE 34" MINIMUM AND 38" MAXIMUM VERTICALLY ABOVE WALKING SURFACES, STAIR NOSINGS, AND RAMP SURFACES. HANDRAILS SHALL BE AT A CONSISTENT HEIGHT ABOVE WALKING



505.5 CLEARANCE. CLEARANCE BETWEEN HANDRAIL GRIPPING SURFACES AND ADJACENT SURFACES SHALL BE 11/2" MINIMUM. 505.6 GRIPPING SURFACE. HANDRAIL GRIPPING SURFACES SHALL BE CONTINUOUS ALONG THEIR LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES. THE BOTTOMS OF HANDRAIL GRIPPING SURFACES SHALL NOT BE OBSTRUCTED FOR MORE THAN 20 PERCENT OF THEIR LENGTH. WHERE PROVIDED, HORIZONTAL PROJECTIONS SHALL OCCUR 1½" MINIMUM BELOW THE BOTTOM OF THE HANDRAI GRIPPING SURFACE. EXCEPTIONS: (1.) WHERE HANDRAILS ARE PROVIDED ALONG WALKING SURFACES WITH SLOPES NOT STEEPER THAN 1:20. THE BOTTOMS OF HANDRAIL GRIPPING SURFACES SHALL BE PERMITTED TO BE OBSTRUCTED ALONG THEIR ENTIRE LENGTH WHERE THEY ARE INTEGRAL TO CRASH RAILS OR BUMPER GUARDS. (2.) THE DISTANCE BETWEEN HORIZONTAL PROJECTIONS AND THE BOTTOM OF THE GRIPPING SURFACE SHALL BE PERMITTED TO BE REDUCED BY 1/8" FOR EACH 1/2" OF ADDITIONAL HANDRAIL PERIMETER DIMENSION THAT EXCEEDS 4". 505.7 CROSS SECTION. HANDRAIL GRIPPING SURFACES SHALL HAVE A CROSS SECTION OMPLYING WITH 505.7.1 OR 505.7.2. 505.7.1 CIRCULAR CROSS SECTION. HANDRAIL GRIPPING SURFACES WITH A CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF 1¼" MINIMUM AND 2" ΜΑΧΙΝΛΙΙΚΑ

505.7.2 NON-CIRCULAR CROSS SECTIONS. HANDRAIL GRIPPING SURFACES WITH A NON-CIRCULAR CROSS SECTION SHALL HAVE A PERIMETER DIMENSION OF 4" MINIMUM AND 64" MAXIMUM, AND A CROSS-SECTION DIMENSION OF 24" MAXIMUM.

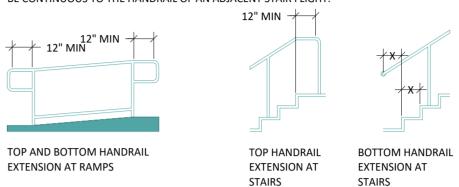


505.8 SURFACES. HANDRAIL GRIPPING SURFACES AND ANY SURFACES ADJACENT TO THEM SHALL BE FREE OF SHARP OR ABRASIVE ELEMENTS AND SHALL HAVE ROUNDED 505.9 FITTINGS. HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

505.10 HANDRAIL EXTENSIONS. HANDRAIL GRIPPING SURFACES SHALL EXTEND BEYOND AND IN THE SAME DIRECTION OF STAIR FLIGHTS AND RAMP RUNS IN ACCORDANCE WITH 505.10. EXCEPTIONS: (1.) EXTENSIONS SHALL NOT BE REQUIRED FOR CONTINUOUS HANDRAILS AT THE INSIDE TURN OF SWITCHBACK OR DOGLEG STAIRS AND RAMPS. (2.) IN ASSEMBLY AREAS, EXTENSIONS SHALL NOT BE REQUIRED FOR RAMP HANDRAILS IN AISLES SERVING SEATING WHERE THE HANDRAILS ARE DISCONTINUOUS TO PROVIDE ACCESS TO SEATING AND TO PERMIT CROSSOVERS WITHIN AISLES. (3.) IN ALTERATIONS, FULL EXTENSIONS OF HANDRAILS SHALL NOT BE REQUIRED WHERE SUCH EXTENSIONS WOULD BE HAZARDOUS DUE TO PLAN

505.10.1 TOP AND BOTTOM EXTENSION AT RAMPS. RAMP HANDRAILS SHALL EXTEND HORIZONTALLY ABOVE THE LANDING FOR 12" MINIMUM BEYOND THE TOP AND BOTTOM OF RAMP RUNS. EXTENSIONS SHALL RETURN TO A WALL, GUARD, OR THE LANDING SURFACE, OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT RAMP RUN. 505.10.2 TOP EXTENSION AT STAIRS. AT THE TOP OF A STAIR FLIGHT, HANDRAILS SHALL EXTEND HORIZONTALLY ABOVE THE LANDING FOR 12" MINIMUM BEGINNING DIRECTLY ABOVE THE FIRST RISER NOSING. EXTENSIONS SHALL RETURN TO A WALL, GUARD, OR THE LANDING SURFACE, OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT.

505.10.3 BOTTOM EXTENSION AT STAIRS. AT THE BOTTOM OF A STAIR FLIGHT. HANDRAILS SHALL EXTEND AT THE SLOPE OF THE STAIR FLIGHT FOR A HORIZONTAL DISTANCE AT LEAST EQUAL TO ONE TREAD DEPTH BEYOND THE LAST RISER NOSING. EXTENSION SHALL RETURN TO A WALL, GUARD, OR THE LANDING SURFACE, OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT.

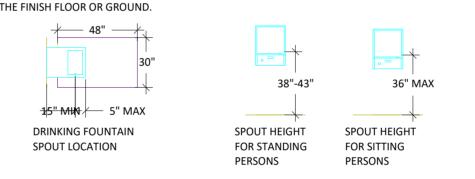


## **CHAPTER 6: PLUMBING ELEMENTS AND**

602.1 GENERAL. DRINKING FOUNTAINS SHALL COMPLY WITH 307 AND 602 602.2 CLEAR FLOOR SPACE. UNITS SHALL HAVE A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 POSITIONED FOR A FORWARD APPROACH AND CENTERED ON THE UNIT. KNEE AND TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED. EXCEPTION: A PARALLEL APPROACH COMPLYING WITH 305 SHALL BE PERMITTED AT UNITS FOR CHILDREN'S USE WHERE THE SPOUT IS 30" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND AND IS 31/2" MAXIMUM FROM THE FRONT EDGE OF THE UNIT, 602.3 OPERABLE PARTS. OPERABLE PARTS SHALL COMPLY WITH 309. 602.4 SPOUT HEIGHT. SPOUT OUTLETS SHALL BE 36" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.

602.5 SPOUT LOCATION. THE SPOUT SHALL BE LOCATED 15" MINIMUM FROM THE VERTICAL SUPPORT AND 5" MAXIMUM FROM THE FRONT EDGE OF THE UNIT, INCLUDING 602.6 WATER FLOW. THE SPOUT SHALL PROVIDE A FLOW OF WATER 4" HIGH MINIMUM AND SHALL BE LOCATED 5" MAXIMUM FROM THE FRONT OF THE UNIT. THE ANGLE OF THE WATER STREAM SHALL BE MEASURED HORIZONTALLY RELATIVE TO THE FRONT FACE OF THE UNIT. WHERE SPOUTS ARE LOCATED LESS THAN 3" OF THE FRONT OF THE UNIT, THE ANGLE OF THE WATER STREAM SHALL BE 30 DEGREES MAXIMUM. WHERE SPOUTS ARE LOCATED BETWEEN 3" AND 5" MAXIMUM FROM THE FRONT OF THE UNIT, THE ANGLE OF THE WATER STREAM SHALL BE 15 DEGREES MAXIMUM. 602.7 DRINKING FOUNTAINS FOR STANDING PERSONS. SPOUT OUTLETS OF DRINKING

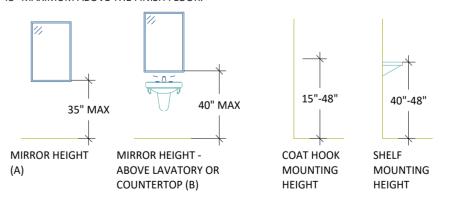
FOUNTAINS FOR STANDING PERSONS SHALL BE 38" MINIMUM AND 43" MAXIMUM ABOVE



**603 TOILET AND BATHING ROOMS** 603.1 GENERAL. TOILET AND BATHING ROOMS SHALL COMPLY WITH 603. 603.2 CLEARANCES. CLEARANCES SHALL COMPLY WITH 603.2. 603.2.1 TURNING SPACE. TURNING SPACE COMPLYING WITH 304 SHALL BE PROVIDED WITHIN THE ROOM. 603.2.2 OVERLAP. REQUIRED CLEAR FLOOR SPACES, CLEARANCE AT FIXTURES, AND TURNING SPACE SHALL BE PERMITTED TO OVERLAP. 603.2.3 DOOR SWING. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE. DOORS SHALL BE PERMITTED TO SWING INTO THE REQUIRED TURNING SPACE. EXCEPTIONS: (1.) DOORS TO A TOILET ROOM OR BATHING ROOM FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE

OFFICE AND NOT FOR COMMON USE OR PUBLIC USE SHALL BE PERMITTED TO SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE PROVIDED THE SWING OF THE DOOR CAN BE REVERSED TO COMPLY WITH 603.2.3. (2.) WHERE THE TOILET ROOM OR BATHING ROOM IS FOR INDIVIDUAL USE AND A CLEAR FLOOR SPACE COMPLYING WITH 305.3 IS PROVIDED WITHIN THE ROOM BEYOND THE ARC OF THE DOOR SWING, DOORS SHALL BE PERMITTED TO SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE.

603.3 MIRRORS. MIRRORS LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 40" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. MIRRORS NOT LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 35" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. 603.4 COAT HOOKS AND SHELVES. COAT HOOKS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN 308. SHELVES SHALL BE LOCATED 40" MINIMUM AND 48" MAXIMUM ABOVE THE FINISH FLOOR.



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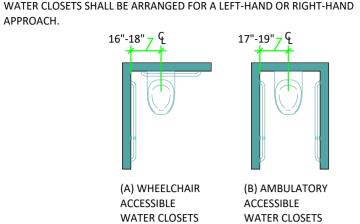
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604 WATER CLOSETS AND TOILET COMPARTMENTS

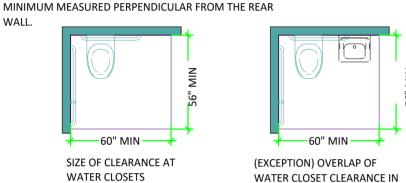
604.1 GENERAL. WATER CLOSETS AND TOILET COMPARTMENTS SHALL COMPLY WITH 604.2 THROUGH 604.8. EXCEPTION: WATER CLOSETS AND TOILET COMPARTMENTS FOR CHILDREN'S USE SHALL BE PERMITTED TO COMPLY WITH 604.9. 604.2 LOCATION. THE WATER CLOSET SHALL BE POSITIONED WITH A WALL OR PARTITION TO THE REAR AND TO ONE SIDE. THE CENTERLINE OF THE WATER CLOSET SHALL BE 16" MINIMUM TO 18" MAXIMUM FROM THE SIDE WALL OR PARTITION, EXCEPT THAT THE WATER CLOSET SHALL BE 17" MINIMUM AND 19" MAXIMUM FROM THE SIDE WALL OR PARTITION IN THE AMBULATORY ACCESSIBLE TOILET COMPARTMENT SPECIFIED IN 604.8.2.



604.3 CLEARANCE. CLEARANCES AROUND WATER CLOSETS AND IN TOILET COMPARTMENTS SHALL COMPLY WITH 604.3. 604.3.1 SIZE. CLEARANCE AROUND A WATER CLOSET SHALL BE 60" MINIMUM MEASURED

PERPENDICULAR FROM THE SIDE WALL AND 56" MINIMUM MEASURED PERPENDICULAR

FROM THE REAR WALL 604.3.2 OVERLAP. THE REQUIRED CLEARANCE AROUND THE WATER CLOSET SHALL BE PERMITTED TO OVERLAP THE WATER CLOSET, ASSOCIATED GRAB BARS, DISPENSERS, SANITARY NAPKIN DISPOSAL UNITS, COAT HOOKS, SHELVES, ACCESSIBLE ROUTES, CLEAR FLOOR SPACE AND CLEARANCES REQUIRED AT OTHER FIXTURES, AND THE TURNING SPACE. NO OTHER FIXTURES OR OBSTRUCTIONS SHALL BE LOCATED WITHIN THE REQUIRED WATER CLOSET CLEARANCE. EXCEPTION: IN RESIDENTIAL DWELLING UNITS, A LAVATORY COMPLYING WITH 606 SHALL BE PERMITTED ON THE REAR WALL 18" MINIMUM FROM THE WATER CLOSET CENTERLINE WHERE THE CLEARANCE AT THE WATER CLOSET IS 66"



RESIDENTIAL DWELLING UNITS

604.4 SEATS. THE SEAT HEIGHT OF A WATER CLOSET ABOVE THE FINISH FLOOR SHALL BE 17" MINIMUM AND 19" MAXIMUM MEASURED TO THE TOP OF THE SEAT. SEATS SHALL NOT BE SPRUNG TO RETURN TO A LIFTED POSITION. EXCEPTIONS: (1.) A WATER CLOSET IN A TOILET ROOM FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE PROVIDED THAT REINFORCEMENT HAS BEEN (2.) IN RESIDENTIAL DWELLING UNITS, THE HEIGHT OF WATER CLOSETS SHALL BE PERMITTED TO BE 15" MINIMUM AND 19" MAXIMUM ABOVE THE FINISH FLOOR MEASURED TO THE TOP

604.5 GRAB BARS. GRAB BARS FOR WATER CLOSETS SHALL COMPLY WITH 609. GRAB

BARS SHALL BE PROVIDED ON THE SIDE WALL CLOSEST TO THE WATER CLOSET AND ON THE REAR WALL. EXCEPTIONS: (1.) GRAB BARS SHALL NOT BE REQUIRED TO BE INSTALLED IN A TOILET ROOM FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE SHALL NOT BE REQUIRED TO COMPLY WITH 604.4. INSTALLED IN WALLS AND LOCATED SO AS TO PERMIT THE INSTALLATION OF GRAB BARS COMPLYING WITH 604.5. (2.) IN RESIDENTIAL DWELLING UNITS, GRAB BARS SHALL NOT BE REQUIRED TO BE INSTALLED IN TOILET OR BATHROOMS PROVIDED THAT REINFORCEMENT HAS BEEN INSTALLED IN WALLS AND LOCATED SO AS TO PERMIT THE INSTALLATION OF GRAB BARS COMPLYING WITH 604.5. (3.) IN DETENTION OR CORRECTION FACILITIES, GRAB BARS SHALL NOT BE REQUIRED TO BE INSTALLED IN HOUSING OR HOLDING CELLS THAT ARE SPECIALLY DESIGNED WITHOUT PROTRUSIONS FOR PURPOSES OF SUICIDE PREVENTION. 604.5.1 FIXED SIDE WALL GRAB BARS.

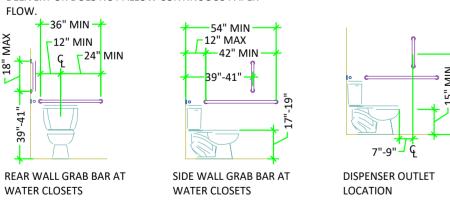
THE SIDE WALL GRAB BAR SHALL BE 42" LONG MINIMUM, LOCATED 12" MAXIMUM FROM THE REAR WALL AND EXTENDING 54" MINIMUM FROM THE REAR WALL. GRAB BAR SHALL BE MOUNTED SUCH THAT THE TOP OF THE GRAB BAR IS 33" MINIMUM AND 36" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. IN ADDITION, A VERTICAL GRAB BAR 18" MINIMUM IN LENGTH SHALL BE MOUNTED WITH THE BOTTOM OF THE BAR LOCATED 39" MINIMUM AND 41" MAXIMUM ABOVE THE FLOOR, AND WITH THE CENTER LINE OF THE BAR LOCATED 39" MINIMUM AND 41" MAXIMUM FROM

REAR WALL. 604.5.2 REAR WALL. THE REAR WALL GRAB BAR SHALL BE 36" LONG MINIMUM AND EXTEND FROM THE CENTERLINE OF THE WATER CLOSET 12" MINIMUM TO ONE SIDE AND 24" MINIMUM ON THE OTHER SIDE

\*ANSI REQUIREMENT: VERTICAL GRAB BAR SHALL BE 18" LONG MINIMUM AND SHALL BE

MOUNTED SUCH THAT THE CENTER OF THE BOTTOM EXTENSION OF THE GRAB BAR IS 39" MINIMUM AND 41" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. 604.6 FLUSH CONTROLS. FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOCRATIC. HAND OPERATED FLUSH CONTROLS SHALL COMPLY WITH 309. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET EXCEPT IN AMBULATORY ACCESSIBLE COMPARTMENTS COMPLYING WITH 604.8.2.

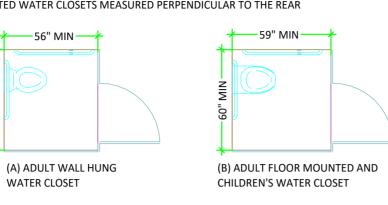
604.7 DISPENSERS. TOILET PAPER DISPENSERS SHALL COMPLY WITH 309.4 AND SHALL BE 7" MINIMUM AND 9" MAXIMUM IN FRONT OF THE FRONT EDGE OF THE WATER CLOSET MEASURED TO THE CENTERLINE OF THE DISPENSER. THE OUTLET OF THE DISPENSER SHALL BE 15" MINIMUM AND 48" MAXIMUM ABOVE THE FINISH FLOOR AND SHALL NOT BE LOCATED BEHIND GRAB BARS. DISPENSERS SHALL NOT BE OF A TYPE THAT CONTROLS DELIVERY OR DOES NOT ALLOW CONTINUOUS PAPER



604.8 TOILET COMPARTMENTS. WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS SHALL MEET THE REQUIREMENTS OF 604.8.1 AND 604.8.3. COMPARTMENTS CONTAINING MORE THAN ONE PLUMBING FIXTURE SHALL COMPLY WITH 603. AMBULATORY ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH 604.8.2 AND 604.8.3. 604.8.1 WHEELCHAIR ACCESSIBLE COMPARTMENTS. WHEELCHAIR ACCESSIBLE

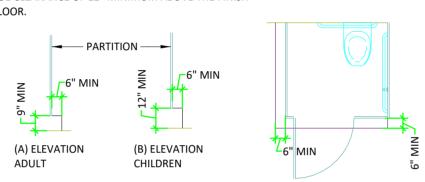
COMPARTMENTS SHALL COMPLY WITH 604.8.1. 604.8.1.1 SIZE. WHEELCHAIR ACCESSIBLE COMPARTMENTS SHALL BE 60" WIDE MINIMUM MEASURED PERPENDICULAR TO THE SIDE WALL, AND 56" DEEP MINIMUM FOR WALL HUNG WATER CLOSETS AND 59" DEEP MINIMUM FOR FLOOR MOUNTED WATER CLOSETS MEASURED PERPENDICULAR TO THE REAR WALL. WHEELCHAIR ACCESSIBLE COMPARTMENTS FOR CHILDREN'S USE SHALL BE 60" WIDE MINIMUM MEASURED

PERPENDICULAR TO THE SIDE WALL, AND 59" DEEP MINIMUM FOR WALL HUNG AND FLOOR MOUNTED WATER CLOSETS MEASURED PERPENDICULAR TO THE REAR



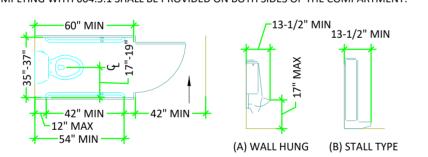
604.8.1.2 DOORS. TOILET COMPARTMENT DOORS, INCLUDING DOOR HARDWARE, SHALL COMPLY WITH 404 EXCEPT THAT IF THE APPROACH IS TO THE LATCH SIDE OF THE COMPARTMENT DOOR, CLEARANCE BETWEEN THE DOOR SIDE OF THE COMPARTMENT AND ANY OBSTRUCTION SHALL BE 42" MINIMUM. -4" MAX DOORS SHALL BE LOCATED IN THE FRONT PARTITION, THE DOOR OPENING SHALL BE 4" MAXIMUM FROM THE SIDE WALL OR PARTITION FARTHEST FROM THE WATER CLOSET. WHERE LOCATED IN THE SIDE WALL OR PARTITION, THE DOOR OPENING SHALL BE 4" MAXIMUM FROM THE FRONT PARTITION. THAT DOOR SHALL BE SELF-CLOSING. A DOOR PULL COMPLYING WITH 404.2.7 SHALL BE PLACED ON BOTH SIDES OF THE DOOR NEAR THE LATCH. TOILET COMPARTMENT DOORS SHALL NOT SWING INTO THE MINIMUM REQUIRED COMPARTMENT AREA.

604.8.1.3 APPROACH. COMPARTMENTS SHALL BE ARRANGED FOR LEFT HAND OR RIGHT-HAND APPROACH TO THE WATER CLOSET. 604.8.1.4 TOE CLEARANCE. THE FRONT PARTITION AND AT LEAST ONE SIDE PARTITION SHALL PROVIDE A TOE CLEARANCE OF 9" MINIMUM ABOVE THE FINISH FLOOR AND 6" DEEP MINIMUM BEYOND THE COMPARTMENT-SIDE FACE OF THE PARTITION, EXCLUSIVE OF PARTITION SUPPORT MEMBERS. COMPARTMENTS FOR CHILDREN'S USE SHALL PROVIDE A TOE CLEARANCE OF 12" MINIMUM ABOVE THE FINISH



604.8.1.5 GRAB BARS. GRAB BARS SHALL COMPLY WITH 609. A SIDE-WALL GRAB BAR COMPLYING WITH 604.5.1 SHALL BE PROVIDED AND SHALL BE LOCATED ON THE WALL CLOSEST TO THE WATER CLOSET. IN ADDITION, A REAR-WALL GRAB BAR COMPLYING WITH 604.5.2 SHALL BE PROVIDED.

604.8.2 AMBULATORY ACCESSIBLE COMPARTMENTS. AMBULATORY ACCESSIBLE COMPARTMENTS SHALL COMPLY 604.8.2. 604.8.2.1 SIZE. AMBULATORY ACCESSIBLE COMPARTMENTS SHALL HAVE A DEPTH OF 60" MINIMUM AND A WIDTH OF 35" MINIMUM AND 37" MAXIMUM. 604.8.2.3 GRAB BARS. GRAB BARS SHALL COMPLY WITH 609. A SIDE-WALL GRAB BAR COMPLYING WITH 604.5.1 SHALL BE PROVIDED ON BOTH SIDES OF THE COMPARTMENT.



604.8.3 COAT HOOKS AND SHELVES. COAT HOOKS SHALL BE LOCATED WITH ONE OF THE REACH RANGES SPECIFIED IN 308. SHELVES SHALL BE LOCATED 40" MINIMUM AND 48" MAXIMUM ABOVE THE FINISH FLOOR.

605 URINALS 605.1 GENERAL. URINALS SHALL COMPLY WITH 605. 605.2 HEIGHT AND DEPTH. URINALS SHALL BE THE STALL-TYPE OR THE WALL-HUNG TYPE WITH THE RIM 17" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. URINALS SHALL BE 13-1/2" DEEP MINIMUM MEASURED FROM THE OUTER FACE OF THE URINAL RIM TO THE BACK OF THE FIXTURE.

605.3 CLEAR FLOOR SPACE. A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH SHALL BE PROVIDED. 605.4 FLUSH CONTROLS. FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. HAND OPERATED FLUSH CONTROLS SHALL COMPLY WITH

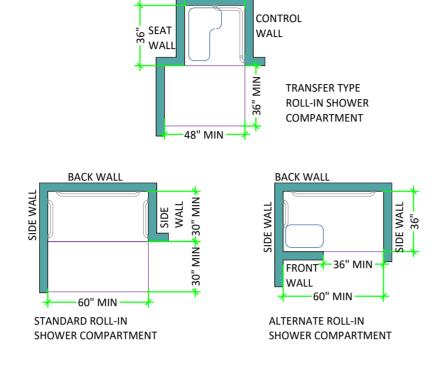
**606 LAVATORIES AND SINKS** 606.1 GENERAL. LAVATORIES AND SINKS SHALL COMPLY WITH 606. 606.2 CLEAR FLOOR SPACE. A CLEAR FLOOR SPACE COMPLYING WITH 305, POSITIONED

FOR A FORWARD APPROACH, AND KNEE AND TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED 606.3 HEIGHT. LAVATORIES AND SINKS SHALL BE INSTALLED WITH THE FRONT OF THE HIGHER OF THE RIM OR COUNTER SURFACE 34" MAXIMUM ABOVE THE FINISH FLOOR OR

606.4 FAUCETS. CONTROLS FOR FAUCETS SHALL COMPLY WITH 309. HAND OPERATED METERING FAUCETS SHALL REMAIN OPEN FOR 10 SECONDS MINIMUM. 606.5 EXPOSED PIPES AND SURFACES. WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES AND SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES AND SINKS. PIPE INSULATION/PROTECTION SHALL STILL COMPLY WITH KNEE AND TOE CLEARANCES

608.1 GENERAL. SHOWER COMPARTMENTS SHALL COMPLY WITH 608. 608.2 SIZE. SIZE AND CLEARANCES FOR SHOWER COMPARTMENTS. SHOWER COMPARTMENTS SHALL HAVE SIZES AND CLEARANCES COMPLYING WITH 608.2. 608.2.1 TRANSFER TYPE SHOWER COMPARTMENTS. TRANSFER TYPE SHOWER COMPARTMENTS SHALL BE 36" BY 36" CLEAR INSIDE DIMENSIONS MEASURED AT THE CENTER POINTS AND FINISH FACE OF OPPOSING SIDES AND SHALL HAVE 36" WIDE MINIMUM ENTRY ON THE FACE OF THE SHOWER COMPARTMENT. CLEARANCE OF 36" WIDE MINIMUM BY 48" LONG MINIMUM MEASURED FROM THE CONTROL WALL SHALL BE

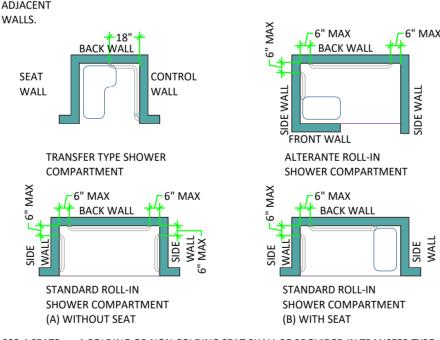
608.2.2 STANDARD ROLL-IN TYPE SHOWER COMPARTMENTS. TYPE SHOWER COMPARTMENTS SHALL BE 30" WIDE MINIMUM BY 60" DEEP MINIMUM CLEAR INSIDE DIMENSIONS MEASURED AT CENTER POINTS OF OPPOSING SIDES AND SHALL HAVE 60" WIDE MINIMUM ENTRY ON THE FACE OF THE SHOWER COMPARTMENT. 608.2.2.1 CLEARANCE. A 30" WIDE MINIMUM BY 60" LONG MINIMUM CLEARANCE SHALL BE PROVIDED ADJACENT TO THE OPEN FACE OF THE SHOWER COMPARTMENT. 608.2.3 ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENTS. ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENTS SHALL BE 36" WIDE AND 60" DEEP MINIMUM CLEAR INSIDE DIMENSIONS MEASURED AT THE CENTER POINTS OF OPPOSING SIDES. A 36" WIDE MINIMUM ENTRY SHALL BE PROVIDED AT ONE END OF THE LONG SIDE OF THE COMPARTMENT.



608.3 GRAB BARS. GRAB BARS SHALL COMPLY WITH 609 AND SHALL BE PROVIDED IN ACCORDANCE WITH 608.3. WHERE MULTIPLE GRAB BARS ARE USED, REQUIRED HORIZONTAL GRAB BARS SHALL BE INSTALLED AT THE SAME HEIGHT ABOVE THE FINISH FLOOR. 608.3.1 TRANSFER TYPE SHOWER COMPARTMENTS. IN TRANSFER TYPE SHOWER COMPARTMENTS, GRAB BARS SHALL BE PROVIDED ACROSS THE CONTROL WALL AND BACK WALL TO A POINT 18" FROM THE CONTROL WALL.

608.3.1.1 HORIZONTAL GRAB BARS. HORIZONTAL GRAB BARS SHALL BE PROVIDED ACROSS THE CONTROL WALL AND ON THE BACK WALL TO A POINT 18" FROM THE CONTROL

608.3.1.2 VERTICAL GRAB BAR. A VERTICAL GRAB BAR 18" MINIMUM IN LENGTH SHALL PROVIDED ON THE CONTROL END WALL 3" MINIMUM AND 6" MAXIMUM ABOVE THE HORIZONTAL GRAB BAR, 4" MAXIMUM INWARD FROM THE FRONT EDGE OF THE SHOWER. 608.3.2 STANDARD ROLL-IN TYPE SHOWER COMPARTMENTS. PROVIDED IN STANDARD ROLL-IN TYPE SHOWER COMPARTMENTS, GRAB BARS SHALL BE PROVIDED ON THE BACK WALL AND THE SIDE WALL OPPOSITE THE SEAT. GRAB BARS SHALL NOT BE PROVIDED ABOVE THE SEAT. WHERE A SEAT IS NOT PROVIDED IN STANDARD ROLL-IN TYPE SHOWER COMPARTMENTS, GRAB BARS SHALL BE PROVIDED ON THREE WALLS GRAB BARS SHALL BE INSTALLED 6" MAXIMUM FROM ADJACENT WALLS. 608.3.3 ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENTS. ROLL-IN TYPE SHOWER COMPARTMENTS, GRAB BARS SHALL BE PROVIDED ON THE BACK WALL AND THE SIDE WALL FARTHEST FROM THE COMPARTMENT ENTRY. GRAB BARS SHALL NOT BE PROVIDED ABOVE THE SEAT. GRAB BARS SHALL BE INSTALLED 6" MAXIMUM FROM **ADJACENT** 

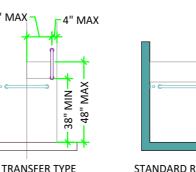


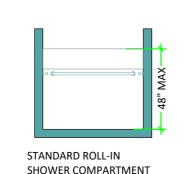
608.4 SEATS. A FOLDING OR NON-FOLDING SEAT SHALL BE PROVIDED IN TRANSFER TYPE SHOWER COMPARTMENTS. A FOLDING SEAT SHALL BE PROVIDED IN ROLL-IN TYPE SHOWERS REQUIRED IN TRANSIENT LODGING GUEST ROOMS WITH MOBILITY FEATURES COMPLYING WITH 806.2. SEATS SHALL COMPLY WITH 610.

309.4. 608.5.1 TRANSFER TYPE SHOWER COMPARTMENTS. IN TRANSFER TYPE SHOWER COMPARTMENTS, THE CONTROLS, FAUCETS, AND SHOWER SPRAY UNIT SHALL BE INSTALLED ON THE SIDE WALL OPPOSITE THE SEAT 38" MINIMUM AND 48" MAXIMUM ABOVE THE SHOWER FLOOR AND SHALL BE LOCATED ON THE CONTROL WALL 15" MAXIMUM FROM THE CENTERLINE OF THE SEAT TOWARD THE SHOWER OPENING.

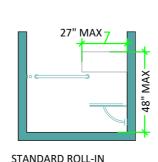
608.5 CONTROLS. CONTROLS, FAUCETS, AND SHOWER SPRAY UNITS SHALL COMPLY WITH

608.5.2 STANDARD ROLL-IN TYPE SHOWER COMPARTMENTS. ROLL-IN TYPE SHOWER COMPARTMENTS, THE CONTROLS, FAUCETS, AND SHOWER SPRAY UNIT SHALL BE LOCATED ABOVE THE GRAB BAR, BUT NO HIGHER THAN 48" ABOVE THE SHOWER FLOOR. WHERE A SEAT IS PROVIDED, THE CONTROLS, FAUCETS, AND SHOWER SPRAY UNIT SHALL BE INSTALLED ON THE BACK WALL ADJACENT TO THE SEAT WALL AND SHALL BE LOCATED 27" MAXIMUM FROM THE SEAT



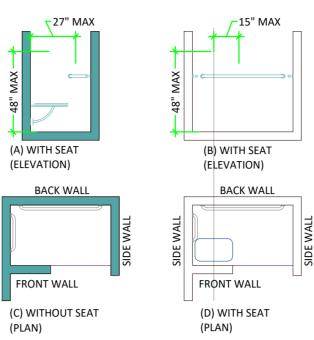


(A) WITHOUT SEAT



STANDARD ROLL-IN

608.5.3 ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENTS. ROLL-IN TYPE SHOWER COMPARTMENTS, THE CONTROLS, FAUCETS, AND SHOWER SPRAY UNIT SHALL BE LOCATED ABOVE THE GRAB BAR, BUT NO HIGHER THAN 48" ABOVE THE SHOWER FLOOR. WHERE A SEAT IS PROVIDED, THE CONTROLS, FAUCETS, AND SHOWER SPRAY UNIT SHALL BE LOCATED ON THE SIDE WALL ADJACENT TO THE SEAT 27" MAXIMUM FROM THE SIDE WALL BEHIND THE SEAT OR SHALL BE LOCATED ON THE BACK WALL OPPOSITE THE SEAT 15" MAXIMUM, LEFT OR RIGHT, OF THE CENTERLINE OF THE SEAT. WHERE A SEAT IS NOT PROVIDED, THE CONTROLS, FAUCETS, AND SHOWER SPRAY UNIT SHALL BE INSTALLED ON THE SIDE WALL FARTHEST FROM THE COMPARTMENT



608.6 SHOWER SPRAY UNIT AND WATER. A SHOWER SPRAY UNIT WITH A HOSE 59" LONG MINIMUM THAT CAN BE USED BOTH AS A FIXED-POSITION SHOWER HEAD AND AS A HAND-HELD SHOWER SHALL BE PROVIDED. THE SHOWER SPRAY UNIT SHALL HAVE AN ON/OFF CONTROL WITH A NON-POSITIVE SHUT-OFF. IF AN ADJUSTABLE-HEIGHT SHOWER HEAD ON A VERTICAL BAR IS USED, THE BAR SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE USE OF GRAB BARS. SHOWER SPRAY UNITS SHALL DELIVER WATER THAT IS 120°F

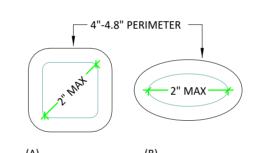
608.7 THRESHOLDS. THRESHOLDS IN ROLL-IN TYPE SHOWER COMPARTMENTS SHALL BE ½" HIGH MAXIMUM IN ACCORDANCE WITH 303. IN TRANSFER TYPE SHOWER COMPARTMENTS, THRESHOLDS ½" HIGH MAXIMUM SHALL BE BEVELED, ROUNDED, OR

608.8 SHOWER ENCLOSURES. ENCLOSURES FOR SHOWER COMPARTMENTS SHALL NOT OBSTRUCT CONTROLS, FAUCETS, AND SHOWER SPRAY UNITS OR OBSTRUCT TRANSFER FROM WHEELCHAIRS ONTO SHOWER SEATS.

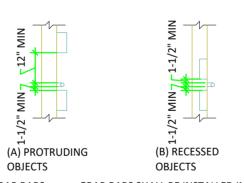
609 GRAB BARS GRAB BARS IN TOILET FACILITIES AND BATHING FACILITIES SHALL 609.1 GENERAL. COMPLY WITH 609.

609.2 CROSS SECTION. GRAB BARS SHALL HAVE A CROSS SECTION COMPLYING WITH 609.2.1 OR 609.2.2. 609.2.1 CIRCULAR CROSS SECTION. GRAB BARS WITH CIRCULAR CROSS SECTIONS

SHALL HAVE AN OUTSIDE DIAMETER OF 1¼" MINIMUM AND 2" MAXIMUM. 609.2.2 NON-CIRCULAR CROSS SECTION. GRAB BARS WITH NON-CIRCULAR CROSS SECTIONS SHALL HAVE A CROSS-SECTION DIMENSION OF 2" MAXIMUM AND A PERIMETER DIMENSION OF 4" MINIMUM AND 4.8" MAXIMUM.



609.3 SPACING. THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1½". THE SPACE BETWEEN THE GRAB BAR AND PROJECTING OBJECTS BELOW AND AT THE ENDS SHALL BE 1½" MINIMUM. THE SPACE BETWEEN THE GRAB BAR AND PROJECTING OBJECTS ABOVE SHALL BE 12" MINIMUM. EXCEPTION: THE SPACE BETWEEN THE GRAB BARS AND SHOWER CONTROLS, SHOWER FITTINGS, AND OTHER GRAB BARS ABOVE SHALL BE PERMITTED TO BE



609.4 POSITION OF GRAB BARS. GRAB BARS SHALL BE INSTALLED IN A HORIZONTAL POSITION, 33" MINIMUM AND 36" MAXIMUM ABOVE THE FINISH FLOOR MEASURED TO THE TOP OF THE GRIPPING SURFACE, EXCEPT THAT AT WATER CLOSETS FOR CHILDREN'S USE COMPLYING WITH 604.9, GRAB BARS SHALL BE INSTALLED IN A HORIZONTAL POSITION 18" MINIMUM AND 27" MAXIMUM ABOVE THE FINISH FLOOR MEASURED TO THE TOP OF THE GRIPPING SURFACE. THE HEIGHT OF THE LOWER GRAB BAR ON THE BACK WALL OF A BATHTUB SHALL COMPLY WITH 607.4.1.1 OR 607.4.2.1.

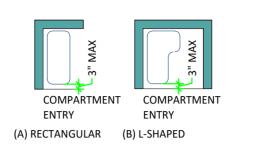
609.5 SURFACE HAZARDS. GRAB BARS AND ANY WALL OR OTHER SURFACES ADJACENT TO GRAB BARS SHALL BE FREE OF SHARP OR ABRASIVE ELEMENTS AND SHALL HAVE 609.6 FITTINGS. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS. 609.7 INSTALLATION. GRAB BARS SHALL BE INSTALLED IN ANY MANNER THAT PROVIDES

A GRIPPING SURFACE AT THE SPECIFIED LOCATIONS AND THAT DOES NOT OBSTRUCT THE REQUIRED CLEAR FLOOR SPACE. 609.8 STRUCTURAL STRENGTH. ALLOWABLE STRESSES SHALL NOT BE EXCEEDED FOR MATERIALS USED WHEN A VERTICAL OR HORIZONTAL FORCE OF 250 POUNDS IS APPLIED AT ANY POINT ON THE GRAB BAR, FASTENER, MOUNTING DEVICE, OR SUPPORTING STRUCTURE.

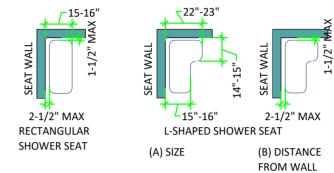


610.1 GENERAL. SEATS IN BATHTUBS AND SHOWER COMPARTMENTS SHALL COMPLY WITH 610.

610.3 SHOWER COMPARTMENT SEATS. WHERE A SEAT IS PROVIDED IN A STANDARD ROLL-IN SHOWER COMPARTMENT, IT SHALL BE A FOLDING TYPE, SHALL BE INSTALLED ON THE SIDE WALL ADJACENT TO THE CONTROLS, AND SHALL EXTEND FROM THE BACK WALL TO A POINT WITHIN 3" OF THE COMPARTMENT ENTRY. WHERE A SEAT IS PROVIDED IN AN ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENT, IT SHALL BE A FOLDING TYPE, SHALL BE INSTALLED ON THE FRONT WALL OPPOSITE THE BACK WALL, AND SHALL EXTEND FROM THE ADJACENT SIDE WALL TO A POINT WITHIN 3" OF THE COMPARTMENT ENTRY. IN TRANSFER-TYPE SHOWERS, THE SEAT SHALL EXTEND FROM THE BACK WALL TO A POINT WITHIN 3" OF THE COMPARTMENT ENTRY. THE TOP OF THE SEAT SHALL BE 17" MINIMUM AND 19" MAXIMUM ABOVE THE BATHROOM FINISH FLOOR. SEATS SHALL COMPLY WITH



610.3.1 RECTANGULAR SEATS. THE REAR EDGE OF A RECTANGULAR SEAT SHALL BE 2½" MAXIMUM AND THE FRONT EDGE 15" MINIMUM AND 16" MAXIMUM FROM THE SEAT WALL. THE SIDE EDGE OF THE SEAT SHALL BE 1½" MAXIMUM FROM THE ADJACENT WALL. 610.3.2 L-SHAPED SEATS. THE REAR EDGE OF AN L-SHAPED SEAT SHALL BE 2½" MAXIMUM AND THE FRONT EDGE 15" MINIMUM AND 16" MAXIMUM FROM THE SEAT WALL. THE REAR EDGE OF THE "L" PORTION OF THE SEAT SHALL BE 1½" MAXIMUM FROM THE WALL AND THE FRONT EDGE SHALL BE 14" MINIMUM AND 15" MAXIMUM FROM THE WALL. THE END OF THE "L" SHALL BE 22" MINIMUM AND 23" FROM THE MAIN SEAT



610.4 STRUCTURAL STRENGTH. ALLOWABLE STRESSES SHALL NOT BE EXCEEDED FOR MATERIALS USED WHEN A VERTICAL OR HORIZONTAL FORCE OF 250 POUNDS IS APPLIED AT ANY POINT ON THE SEAT, FASTENER, MOUNTING DEVICE, OR SUPPORTING

## **CHAPTER 7: COMMUNICATION ELEMENTS** AND FEATURES

610.3.1 OR

701.1 SCOPE. THE PROVISIONS OF CHAPTER 7 SHALL APPLY WHERE REQUIRED BY CHAPTER 2 OR WHERE REFERENCED BY A REQUIREMENT IN THIS DOCUMENT.

702.1 GENERAL. FIRE ALARM SYSTEMS SHALL HAVE PERMANENTLY INSTALLED AUDIBLE AND VISIBLE ALARMS COMPLYING WITH NFPA 72 (1999 OR 2002 EDITION) (INCORPORATED BY REFERENCE, SEE "REFERENCED STANDARDS" IN CHAPTER 1), EXCEPT THAT THE MAXIMUM ALLOWABLE SOUND LEVEL OF AUDIBLE NOTIFICATION APPLIANCES COMPLYING WITH SECTION 4-3.2.1 OF NFPA 72 (1999 EDITION) SHALL HAVE A SOUND LEVEL NO MORE THAN 110 DB AT THE MINIMUM HEARING DISTANCE FROM THE AUDIBLE APPLIANCE. IN ADDITION, ALARMS IN GUEST ROOMS REQUIRED TO PROVIDE COMMUNICATION FEATURES SHALL COMPLY WITH SECTIONS 4-3 AND 4-4 OF NFPA 72 (1999 EDITION) OR SECTIONS 7.4 AND 7.5 OF NFPA 72 (2002 EDITION). EXCEPTION: FIRE ALARM SYSTEMS IN MEDICAL CARE FACILITIES SHALL BE PERMITTED TO BE PROVIDED IN ACCORDANCE WITH INDUSTRY PRACTICE.

703.1 GENERAL. SIGNS SHALL COMPLY WITH 703. WHERE BOTH VISUAL AND TACTILE CHARACTERS ARE REQUIRED, EITHER ONE SIGN WITH BOTH VISUAL AND TACTILE CHARACTERS, OR TWO SEPARATE SIGNS, ONE WITH VISUAL, AND ONE WITH TACTILE CHARACTERS, SHALL BE PROVIDED.

703.2 RAISED CHARACTERS. RAISED CHARACTERS SHALL COMPLY WITH 703.2 AND SHALL BE DUPLICATED IN BRAILLE COMPLYING WITH 703.3. RAISED CHARACTERS SHALL BE INSTALLED IN ACCORDANCE WITH 703.4. 703.2.1 DEPTH. RAISED CHARACTERS SHALL BE 1/32 INCH (0.8 MM) MINIMUM ABOVE

THEIR BACKGROUND.

703.2.2 CASE. CHARACTERS SHALL BE UPPERCASE. 703.2.3 STYLE. CHARACTERS SHALL BE SANS SERIF. CHARACTERS SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS.

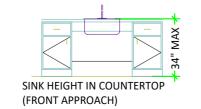
703.2.4 CHARACTER PROPORTIONS. CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 55% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I".

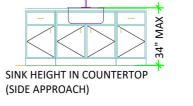
703.2.5 CHARACTER HEIGHT. CHARACTER HEIGHT MEASURED VERTICALLY FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8" MINIMUM AND 2" MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I". EXCEPTION: WHERE SEPARATE RAISED AND VISUAL CHARACTERS WITH THE SAME INFORMATION ARE PROVIDED, RAISED CHARACTER HEIGHT SHALL BE PERMITTED TO BE ½" MINIMUM.

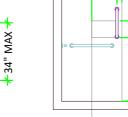


703.2.6 STROKE THICKNESS. STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15 PERCENT MAXIMUM OF THE HEIGHT OF THE CHARACTER. 703.2.7 CHARACTER SPACING. CHARACTER SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSEST POINTS OF ADJACENT RAISED CHARACTERS WITHIN A MESSAGE, EXCLUDING WORD SPACES. WHERE CHARACTERS HAVE RECTANGULAR CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/8" MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM. WHERE CHARACTERS HAVE OTHER CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/16" MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE BASE OF THE CROSS SECTIONS, AND 1/8" MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE TOP OF THE CROSS SECTIONS. CHARACTERS SHALL BE SEPARATED FROM RAISED BORDERS AND DECORATIVE ELEMENTS 3/8" MINIMUM. 703.2.8 LINE SPACING. SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF RAISED CHARACTERS WITHIN A MESSAGE SHALL BE 135% MINIMUM AND 17% MAXIMUM OF THE RAISED CHARACTER HEIGHT.

SINK HEIGHT (FRONT APPROACH)







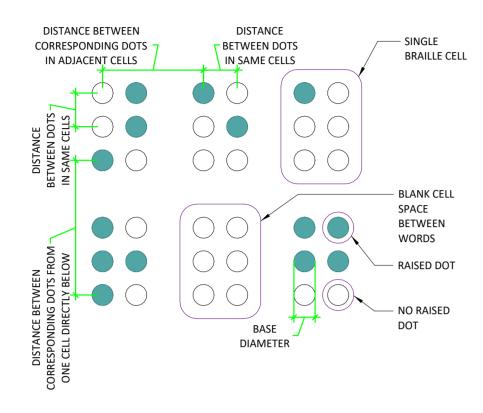
SHOWER

COMPARTMENT

SHOWER COMPARTMENT (B) WITH SEAT

ROUNDED SHAPE AND SHALL COMPLY WITH TABLE 703.3.1. THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, AND ACRONYMS.

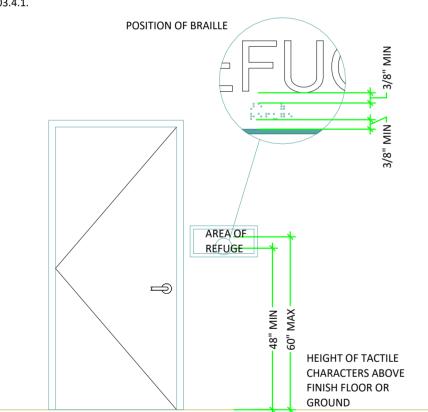
AND ACROINTIVIS.	
TABLE 703.3.1 BRAILLE	DIMENSIONS
MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
DOT BASE DIAMETER	0.059 TO 0.063
DISTANCE BETWEEN TWO DOTS IN THE SAME CELL	0.090 TO 0.100
DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS	0.241 TO 0.300
DOT HEIGHT	0.025 TO 0.037
DISTANCE BETWEEN CORRESPONDING DOTS FROM ONE CELL DIRECTLY BELOW	0.395 TO 0.400
1. MEASURED CENTER TO CENTER	



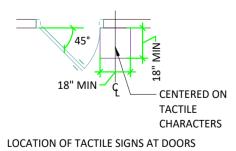
703.3.2 POSITION. BRAILLE SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT. IF TEXT IS MULTI-LINED, BRAILLE SHALL BE PLACED BELOW THE ENTIRE TEXT. BRAILLE SHALL BE SEPARATED 3/8" MINIMUM FROM ANY OTHER TACTILE CHARACTERS AND 3/8" MINIMUM FROM RAISED BORDERS AND DECORATIVE ELEMENTS. EXCEPTION: BRAILLE PROVIDED ON ELEVATOR CAR CONTROLS SHALL BE SEPARATED 3/16" MINIMUM AND SHALL BE LOCATED EITHER DIRECTLY BELOW OR ADJACENT TO THE CORRESPONDING RAISED CHARACTERS OR

SYMBOLS. SIGNS WITH TACTILE CHARACTERS 703.4 INSTALLATION HEIGHT AND LOCATION. SHALL COMPLY WITH 703.4.

703.4.1 HEIGHT ABOVE FINISH FLOOR OR GROUND. TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48" MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST TACTILE CHARACTER AND 60" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST TACTILE CHARACTER. EXCEPTION: TACTILE CHARACTERS FOR ELEVATOR CAR CONTROLS SHALL NOT BE REQUIRED TO COMPLY WITH



703.4.2 LOCATION. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MINIMUM BY 18" MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION. EXCEPTION: SIGNS WITH TACTILE CHARACTERS SHALL BE PERMITTED ON THE PUSH SIDE OF DOORS WITH CLOSERS AND WITHOUT HOLD-OPEN



703.3 BRAILLE. BRAILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH 703.5 VISUAL CHARACTERS. VISUAL CHARACTERS SHALL COMPLY WITH 703.5. EXCEPTION: WHERE VISUAL CHARACTERS COMPLY WITH 703.2 AND ARE ACCOMPANIED BY BRAILLE COMPLYING WITH 703.3, THEY SHALL NOT BE REQUIRED TO COMPLY WITH 703.5.2 BRAILLE DOTS SHALL HAVE A DOMED OR THROUGH 703.5.9.

703.5.1 FINISH AND CONTRAST. CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT

703.5.2 CASE. CHARACTERS SHALL BE UPPERCASE OR LOWERCASE OR A COMBINATION OF

703.5.3 STYLE. CHARACTERS SHALL BE CONVENTIONAL IN FORM. CHARACTERS SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS. 703.5.4 CHARACTER PROPORTIONS. CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 55% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I". 703.5.5 CHARACTER HEIGHT. MINIMUM CHARACTER HEIGHT SHALL COMPLY WITH TABLE 703.5.5. VIEWING DISTANCE SHALL BE MEASURED AS THE HORIZONTAL DISTANCE

BETWEEN THE CHARACTER AND AN OBSTRUCTION PREVENTING FURTHER APPROACH

TOWARDS THE SIGN. CHARACTER HEIGHT SHALL BE BASED ON THE UPPERCASE LETTER "I".

TABI	LE 703.5.5 VISUAL CHARA	CTER HEIGHT		
HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HIEGHT		
40" TO LESS THAN OR	LESS THAN 72"	5/8"		
EQUAL TO 70"	72" AND GREATER	5/8", PLUS 1/8" PER FOOT OF VIEWING DISTANCE ABOVE 72"		
GREATER THAN 70" TO LESS	LESS THAN 180"	2"		
THAN OR EQUAL TO 120"	180" AND GREATER	2", PLUS 1/8" PER FOOT OF VIEWING DISTANCE ABOVE 180"		
	LESS THAN 21'	3"		
GREATER THAN 120"	21' AND GREATER	3", PLUS 1/8" PER FOOT OF VIEWING DISTANCE ABOVE 21'		

703.5.6 HEIGHT FROM FINISH FLOOR OR GROUND. VISUAL CHARACTERS SHALL BE 40" MINIMUM ABOVE THE FINISH FLOOR OR GROUND. EXCEPTION: VISUAL CHARACTERS INDICATING ELEVATOR CAR CONTROLS SHALL NOT BE REQUIRED TO COMPLY WITH 703.5.6. 703.5.7 STROKE THICKNESS. STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 10% MINIMUM AND 30% MAXIMUM OF THE HEIGHT OF THE CHARACTER. 703.5.8 CHARACTER SPACING. CHARACTER SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSEST POINTS OF ADJACENT CHARACTERS, EXCLUDING WORD SPACES. SPACING BETWEEN INDIVIDUAL CHARACTERS SHALL BE 10% MINIMUM AND 35% MAXIMUM OF

CHARACTER HEIGHT. 703.5.9 LINE SPACING. SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF CHARACTERS WITHIN A MESSAGE SHALL BE 135% MINIMUM AND 170% MAXIMUM OF THE CHARACTER HEIGHT.

703.6 PICTOGRAMS. PICTOGRAMS SHALL COMPLY WITH 703.6. 703.6.1 PICTOGRAM FIELD. PICTOGRAMS SHALL HAVE A FIELD HEIGHT OF 6" MINIMUM. CHARACTERS AND BRAILLE SHALL NOT BE LOCATED IN THE PICTOGRAM FIELD. 703.6.2 FINISH AND CONTRAST. PICTOGRAMS AND THEIR

FIELD SHALL HAVE A NON-GLARE FINISH. PICTOGRAMS SHALL CONTRAST WITH THEIR FIELD WITH EITHER A LIGHT PICTOGRAM ON A DARK FIELD OR A DARK PICTOGRAM ON A LIGHT FIELD.

703.6.3 TEXT DESCRIPTORS. PICTOGRAMS SHALL HAVE TEXT DESCRIPTORS LOCATED DIRECTLY BELOW THE PICTOGRAM FIELD. TEXT DESCRIPTORS SHALL COMPLY WITH 703.2, 703.3 AND 703.4.

703.7 SYMBOLS OF ACCESSIBILITY. ACCESSIBILITY SHALL COMPLY WITH 703.7. 703.7.1 FINISH AND CONTRAST. SYMBOLS OF ACCESSIBILITY AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. SYMBOLS OF ACCESSIBILITY SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER A LIGHT SYMBOL ON A DARK BACKGROUND OR A DARK SYMBOL ON A LIGHT BACKGROUND. 703.7.2 SYMBOLS. 703.7.2.1 INTERNATIONAL SYMBOL OF ACCESSIBILITY

THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL

INTERNATIONAL SYMBOL OF ACCESSIBILITY

MEN NOT IN

PICTOGRAM

**PICTOGRAM** 

DISTANCE ABOVE 21'

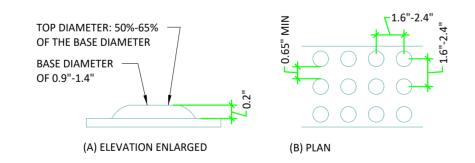
705 DETECTABLE WARNINGS

COMPLY WITH FIGURE 703.7.2.1.

705.1 GENERAL. DETECTABLE WARNINGS SHALL CONSIST OF A SURFACE OF TRUNCATED DOMES AND SHALL COMPLY WITH 705. 705.1.1 DOME SIZE. TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A BASE DIAMETER OF 0.9" MINIMUM AND 1.4" (36 MM) MAXIMUM, A TOP DIAMETER OF 50% OF THE BASE DIAMETER MINIMUM TO 65% OF THE BASE DIAMETER MAXIMUM,

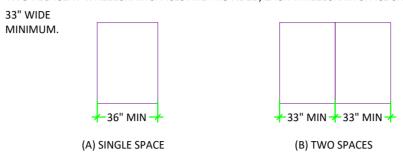
AND A HEIGHT OF 0.2". 705.1.2 DOME SPACING. TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6" MINIMUM AND 2.4" MAXIMUM, AND A BASE-TO-BASE SPACING OF 0.65" MINIMUM, MEASURED BETWEEN THE MOST ADJACENT DOMES ON A SQUARE GRID.

705.1.3 CONTRAST. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. 705.2 PLATFORM EDGES. DETECTABLE WARNING SURFACES AT PLATFORM BOARDING EDGES SHALL BE 24" WIDE AND SHALL EXTEND THE FULL LENGTH OF THE PUBLIC USE AREAS OF THE PLATFORM.

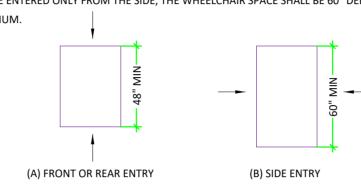


## **CHAPTER 8: SPECIAL ROOMS, SPACES, AND**

801.1 SCOPE. THE PROVISIONS OF CHAPTER 8 SHALL APPLY WHERE REQUIRED BY CHAPTER 2 OR WHERE REFERENCED BY A REQUIREMENT IN THIS DOCUMENT. 802 WHEELCHAIR SPACES , COMPANION SEATS, AND DESIGNATED AISLE SEATS 802.1 WHEELCHAIR SPACES. WHEELCHAIR SPACES SHALL COMPLY WITH 802.1. 802.1.1 FLOOR OR GROUND SURFACE. THE FLOOR OR GROUND SURFACE OF WHEELCHAIR SPACES SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED. 802.1.2 WIDTH. A SINGLE WHEELCHAIR SPACE SHALL BE 36" WIDE MINIMUM WHERE TWO ADJACENT WHEELCHAIR SPACES ARE PROVIDED, EACH WHEELCHAIR SPACE SHALL BE



802.1.3 DEPTH. WHERE A WHEELCHAIR SPACE CAN BE ENTERED FROM THE FRONT OR REAR, THE WHEELCHAIR SPACE SHALL BE 48" DEEP MINIMUM. WHERE A WHEELCHAIR SPACE CAN BE ENTERED ONLY FROM THE SIDE, THE WHEELCHAIR SPACE SHALL BE 60" DEEP



802.1.4 APPROACH. WHEELCHAIR SPACES SHALL ADJOIN ACCESSIBLE ROUTES. ACCESSIBLE ROUTES SHALL NOT OVERLAP WHEELCHAIR SPACES. 802.1.5 OVERLAP. WHEELCHAIR SPACES SHALL NOT OVERLAP CIRCULATION PATHS.

### CHAPTER 9: BUILT-IN ELEMENTS

902 DINING SURFACES AND WORK SURFACES

902.1 GENERAL. DINING SURFACES AND WORK SURFACES SHALL COMPLY WITH 902.2

902.2 CLEAR FLOOR OR GROUND SPACE. A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH SHALL BE PROVIDED. KNEE AND TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED. 902.3 HEIGHT. THE TOPS OF DINING SURFACES AND WORK SURFACES SHALL BE 28"

MINIMUM AND 34" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. 902.4 DINING SURFACES AND WORK SURFACES FOR CHILDREN'S USE. ACCESSIBLE DINING SURFACES AND WORK SURFACES FOR CHILDREN'S USE SHALL COMPLY WITH 902.4. EXCEPTION: DINING SURFACES AND WORK SURFACES THAT ARE USED PRIMARILY BY CHILDREN 5 YEARS AND YOUNGER SHALL NOT BE REQUIRED TO COMPLY WITH 902.4 WHERE A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 POSITIONED FOR A

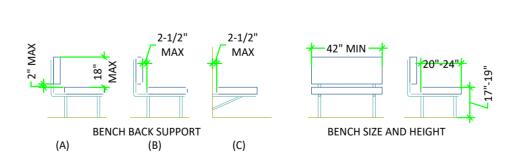
902.4.1 CLEAR FLOOR OR GROUND SPACE. A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR A FORWARD APPROACH SHALL BE PROVIDED. KNEE AND TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED, EXCEPT THAT KNEE CLEARANCE 24" MINIMUM ABOVE THE FINISH FLOOR OR GROUND SHALL BE PERMITTED. 902.4.2 HEIGHT. THE TOPS OF TABLES AND COUNTERS SHALL BE 26" MINIMUM AND 30" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.

903 BENCHES

903.1 GENERAL. BENCHES SHALL COMPLY WITH 903. 903.2 CLEAR FLOOR OR GROUND SPACE. CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE PROVIDED AND SHALL BE POSITIONED AT THE END OF THE BENCH SEAT AND PARALLEL TO THE SHORT AXIS OF THE BENCH. 903.3 SIZE. BENCHES SHALL HAVE SEATS THAT ARE 42" LONG MINIMUM AND 20" DEEP

MINIMUM AND 24" DEEP MAXIMUM. 903.4 BACK SUPPORT. THE BENCH SHALL PROVIDE FOR BACK SUPPORT OR SHALL BE AFFIXED TO A WALL. BACK SUPPORT SHALL BE 42" LONG MINIMUM AND SHALL EXTEND FROM A POINT 2" MAXIMUM ABOVE THE SEAT SURFACE TO A POINT 18" MINIMUM ABOVE THE SEAT SURFACE. BACK SUPPORT SHALL BE 2½" MAXIMUM FROM THE REAR EDGE OF THE

903.5 HEIGHT. THE TOP OF THE BENCH SEAT SURFACE SHALL BE 17" MINIMUM AND 19" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.



903.6 STRUCTURAL STRENGTH. ALLOWABLE STRESSES SHALL NOT BE EXCEEDED FOR MATERIALS USED WHEN A VERTICAL OR HORIZONTAL FORCE OF 250 POUNDS IS APPLIED AT ANY POINT ON THE SEAT, FASTENER, MOUNTING DEVICE, OR SUPPORTING STRUCTURE. 903.7 WET LOCATIONS. WHERE INSTALLED IN WET LOCATIONS, THE SURFACE OF THE SEAT SHALL BE SLIP RESISTANT AND SHALL NOT ACCUMULATE WATER.

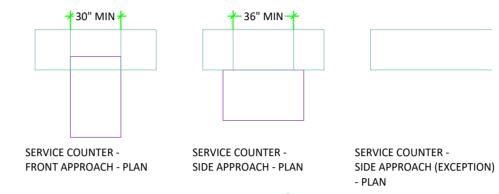
904 CHECK-OUT AISLES AND SALES AND SERVICE COUNTERS

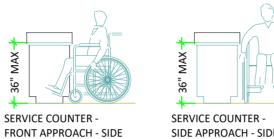
904.1 GENERAL. CHECK-OUT AISLES AND SALES AND SERVICE COUNTERS SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF 904. 904.4 SALES AND SERVICE COUNTERS. SALES COUNTERS AND SERVICE COUNTERS

SHALL COMPLY WITH 904.4.1 OR 904.4.2. THE ACCESSIBLE PORTION OF THE COUNTER TOP SHALL EXTEND THE SAME DEPTH AS THE SALES OR SERVICE COUNTER TOP. EXCEPTION: IN ALTERATIONS, WHEN THE PROVISION OF A COUNTER COMPLYING WITH 904.4 WOULD RESULT IN A REDUCTION OF THE NUMBER OF EXISTING COUNTERS AT WORK STATIONS OR A REDUCTION OF THE NUMBER OF EXISTING MAIL BOXES, THE COUNTER SHALL BE PERMITTED TO HAVE A PORTION WHICH IS 24" LONG MINIMUM COMPLYING WITH 904.4.1 PROVIDED THAT THE REQUIRED CLEAR FLOOR OR GROUND SPACE IS CENTERED ON THE ACCESSIBLE LENGTH OF THE COUNTER.

904.4.1 PARALLEL APPROACH. A PORTION OF THE COUNTER SURFACE THAT IS 36" LONG MINIMUM AND 36" HIGH MAXIMUM ABOVE THE FINISH FLOOR SHALL BE PROVIDED. A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE POSITIONED FOR A PARALLEL APPROACH ADJACENT TO THE 36" MINIMUM LENGTH OF COUNTER. EXCEPTION: WHERE THE PROVIDED COUNTER SURFACE IS LESS THAN 36" LONG, THE ENTIRE COUNTER SURFACE SHALL BE 36" HIGH MAXIMUM ABOVE THE FINISH FLOOR.

904.4.2 FORWARD APPROACH. A PORTION OF THE COUNTER SURFACE THAT IS 30" LONG MINIMUM AND 36" HIGH MAXIMUM SHALL BE PROVIDED. KNEE AND TOE SPACE COMPLYING WITH 306 SHALL BE PROVIDED UNDER THE COUNTER. A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE POSITIONED FOR A FORWARD APPROACH





SIDE APPROACH - SIDE

SERVICE COUNTER -

SIDE APPROACH (EXCEPTION)

 $\mathbf{\Omega}$ 

**PHASE** PRELIM

> PERMIT FINAL

BID CONST WHA No. 1520C22

11-05-2024 SHEET

NORTH

DEMOLITION KEY NOTE- REFERENCE PERTAINS TO ENTIRE ROOM OR AREA

STANDARD SYMBOL DEFINITIONS

NORTH ARROW- REFERENCE PERTAINS TO TRUE

DEMOLITION KEY NOTE- REFERENCE PERTAINS TO SPECIFIC OBJECT ONLY

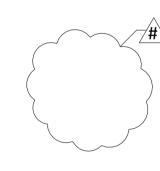
FLOOR PLAN AND REFLECTED CEILING PLAN KEY NOTE- REFERENCE PERTAINS TO ENTIRE ROOM OR AREA

> FLOOR PLAN AND REFLECTED CEILING PLAN KEY NOTE- REFERENCE PERTAINS TO SPECIFIC OBJECT

FIRST FLOOR CLEANING AND REFLECTED CEILING CLEANING PLAN KEY NOTE: REFERENCE PERTAINS TO ENTIRE ROOM OR AREA

FIRST FLOOR CLEANING AND REFLECTED CEILING CLEANING PLAN KEY NOTE: REFERENCE PERTAINS TO SPECIFIC OBJECT ONLY

PHOTO REFERENCE TAG: REFERENCE PERTAINS TO VIEW DIRECTION PHOTO WAS TAKEN



**REVISION TAG- REFERENCE PERTAINS TO** REVISED PORTION OF DRAWING AND **REVISION NUMBER** 

ROOM OR AREA TAG- REFERENCE PERTAINS TO ROOM OR AREA NAME

WINDOW TAG- REFERENCE PERTAINS TO SPECIFIC WINDOW FRAME TYPE

> DOOR TAGS- REFERENCE PERTAINS TO ROOM OR AREA WITH SAME NUMBERING. HANDING DETERMINED FROM OUTSIDE OF ROOM FACING DOOR.

WALL TYPE TAG- REFERENCE PERTAINS TO SPECIFIC WALL TYPE, SEE DESCRIPTION OF WALL TYPES FOR SPECIFIC INFORMATION

**ELEVATION TAG- REFERENCE PERTAINS TO** EXTERIOR ELEVATION BASED ON 100'-0"

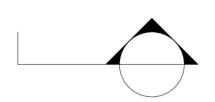
FINISHED FACE TO FINISHED FACE

**ELEVATION** 

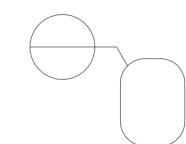


**ELEVATION TAG- REFERENCE PERTAINS TO** DIRECTION, NUMBER, AND PAGE LOCATION OF

DIMENSION LINE- REFERENCE PERTAINS TO



SECTION TAG- REFERENCE PERTAINS TO DIRECTION, NUMBER, AND PAGE LOCATION OF SECTION



DETAIL TAG- REFERENCE PERTAINS TO PORTION OF SECTION TO BE ENLARGED AND PROVIDES DETAILED INFORMATION. NUMBER AND PAGE LOCATION OF DETAIL.

## **STANDARD ABBREVIATIONS**

FINISHED FLOOR

**FINISHED** 

	IDANO ADDILLANA				
#	NUMBER	FRO	FOR REFERENCE ONLY	PLY	PLYWOOD
ACP	ACOUSTICAL CEILING	FRP	FIBERGLASS REINFORCED	PT	PAINT
	PANELS		PANELS	PVC	POLYVINYL CHLORIDE
ACT	ACOUSTICAL CEILING	G	GROUT	QT	QUARRY TILE
	TILE	GA	GAUGE	RAD	RADIUS
AFF	AFTER FINISHED FLOOR	GALV	GALVANIZED	RB	RUBBER BASE
ALUM	ALUMINUM	GC	GENERAL CONTRACTOR	RD	ROOF DRAIN
ANOD	ANODIZED	GHM	GALVANIZED HOLLOW	RES	RESINOUS FLOORING
ARGB	ABUSE-RESISTANT		METAL	REV	REVISION
	GYPSUM BOARD	GB	GYPSUM BOARD	RF	RUBBER FLOORING
B/	BOTTOM OF	HM	HOLLOW METAL	RJ	REVEAL JOINT
BBT	BIOBASED TILE	HORZ	HORIZONTAL	RO	ROUGH OPENING
BCMU	BURNISHED CONCRETE	HPC	HIGH PERFORMANCE	ROW	RIGHT-OF-WAY
	MASONRY UNIT		COATING	SC	SEALED CONCRETE
BE	BAKED ENAMEL	HPOF	HIGH PERFORMANCE	SF	SQUARE FOOT
BFF	BELOW FINISHED FLOOR		ORGANIC FINISH	SH	SINGLE HUNG
BM	BENCH MARK	HT	HEIGHT	SIM	SIMILAR
BMU	BRICK	HVAC	HEATING/VENTILATION/AIR	SN	STAIR NOSING
BRG	BEARING		CONDITIONING	SRFEC	SEMI-RECESSED FIRE
С	CHANNEL	ICP	INSULATED ALUMINUM		EXTINGUISHER CABINET
CFCI	CONTRACTOR FURNISHED		COMPOSITE PANEL	SS	SOLID SURFACE
	CONTRACTOR INSTALLED	ID	INSIDE DIAMETER	ST.STL.	STAINLESS STEEL
CFE	CITY FINANCED	IG	INSULATED GLASS	STN	STAIN
	ENHANCEMENT	IGHM	INSULATED GALVANIZED	SUSP	SUSPENDED
CFOI	CONTRACTOR FURNISHED		HOLLOW METAL	T&G	TONGUE AND GROOVE
	OWNER INSTALLED	IHM	INSULATED HOLLOW	TB	TACK BOARD
CJ	CONTROL JOINT		METAL	TERR	TERRAZZO
CL	CENTER LINE	ISG	INSULATED SPANDREL	TF	TACKABLE FABRIC
CLG	CEILING		GLASS	TG	TEMPERED GLASS
CLL	CONSTRUCTION LIMITS	L	ANGLE	TIG	TEMPERED INSULATED
	LINE	LB/LBS	POUND/POUNDS		GLASS
CMU	CONCRETE MASONRY	LP	LINER PANEL	T/	TOP OF
	UNIT	LVT	LUXURY VINYL TILE	TYP	TYPICAL
CONC	CONCRETE	MAH	MAXIMUM ATTAINABLE	UL	UNDERWRITERS
CONT	CONTINUOUS		HEIGHT		LABORATORIES, INC.
CPT	CARPET	MAX	MAXIMUM	UNO	UNLESS NOTED
CT	CERAMIC TILE	MC	MECHANICAL		OTHERWISE
СТСВ	CERAMIC TILE COVE BASE		CONTRACTOR	VB	VINYL BASE
CW	CURTAIN WALL	MFR	MANUFACTURER'S	VCT	VINYL COMPOSITION TILE
DB	DRY-ERASE BOARD	MH	MANHOLE	VERT	VERTICAL
DEMO	DEMOLISH/ DEMOLITION	mil	MIL THICKNESS	VIF	VERIFY IN FIELD
D.E.F.S.A.		MO	MASONRY OPENING	VWC	VINYL WALL COVERING
	EXTERIOR FINISH SYSTEM	MTD	MOUNTED	W/	WITH
DIA	DIAMETER	NIC	NOT IN CONTRACT	W/O	WITHOUT
DS	DOWNSPOUT	NTS	NOT TO SCALE	WD	WOOD
EC	ELECTRICAL	OA	OVERALL	WFE	WALL-MOUNTED FIRE
	CONTRACTOR	OC	ON CENTER		EXTINGUISHER
E.I.F.S.	EXTERIOR INSULATION &	OFCI	OWNER FURNISHED	WG	WIRE GLASS
	FINISH SYSTEM	<b>C.</b> C.	CONTRACTOR INSTALLED	WM	WALK-OFF MAT
EJ	EXPANSION JOINT	OFOI	OWNER FURNISHED	WT	WINDOW TREATMENT
ELEC	ELECTRICAL	0101	OWNER INSTALLED	WWF	WELDED WIRE FABRIC
ELEV	ELEVATION	OD	OUTSIDE DIAMETER	<b> ·</b>	
EPT	EPOXY PAINT	ОН	OVERHEAD		
EQ	EQUAL	OPP	OPPOSITE		
EWC	ELECTRIC WATER COOLER	ORD	OVERFLOW ROOF DRAIN		
EX	EXISTING	OSB	ORIENTED STRAND BOARD		
FD	FLOOR DRAIN	OTS	OPEN TO STRUCTURE		
FE	FIRE EXTINGUISHER	(P)	PATENTED		
FEC	FIRE EXTINGUISHER	PORT	PORCELAIN TILE		
— <del>-</del>	CABINET	PJ	PANEL JOINT		
FF	FINISHED FLOOR	DI L1	DIATE		

PLATE

PLASTIC LAMINATE

## STANDARD MATERIALS

BATT INSULATION BRICK CMU

CONCRETE CONTINUOUS WOOD

**GYPSUM BOARD GRANULAR FILL** 

PLYWOOD STEEL

**COLOR CODE** 

PURPLE = ADA REFERENCE INFORMATION RED = SPECIFIC PROJECT ITEMS GREEN = PHOTO DETAILS BLUE = TECHNICAL DETAILS

**GLASS** (ELEVATIONS)

COMPACTED FILL/

RIGID INSULATION

PHASE

WHA No.

1520C22 11-05-2024 SHEET

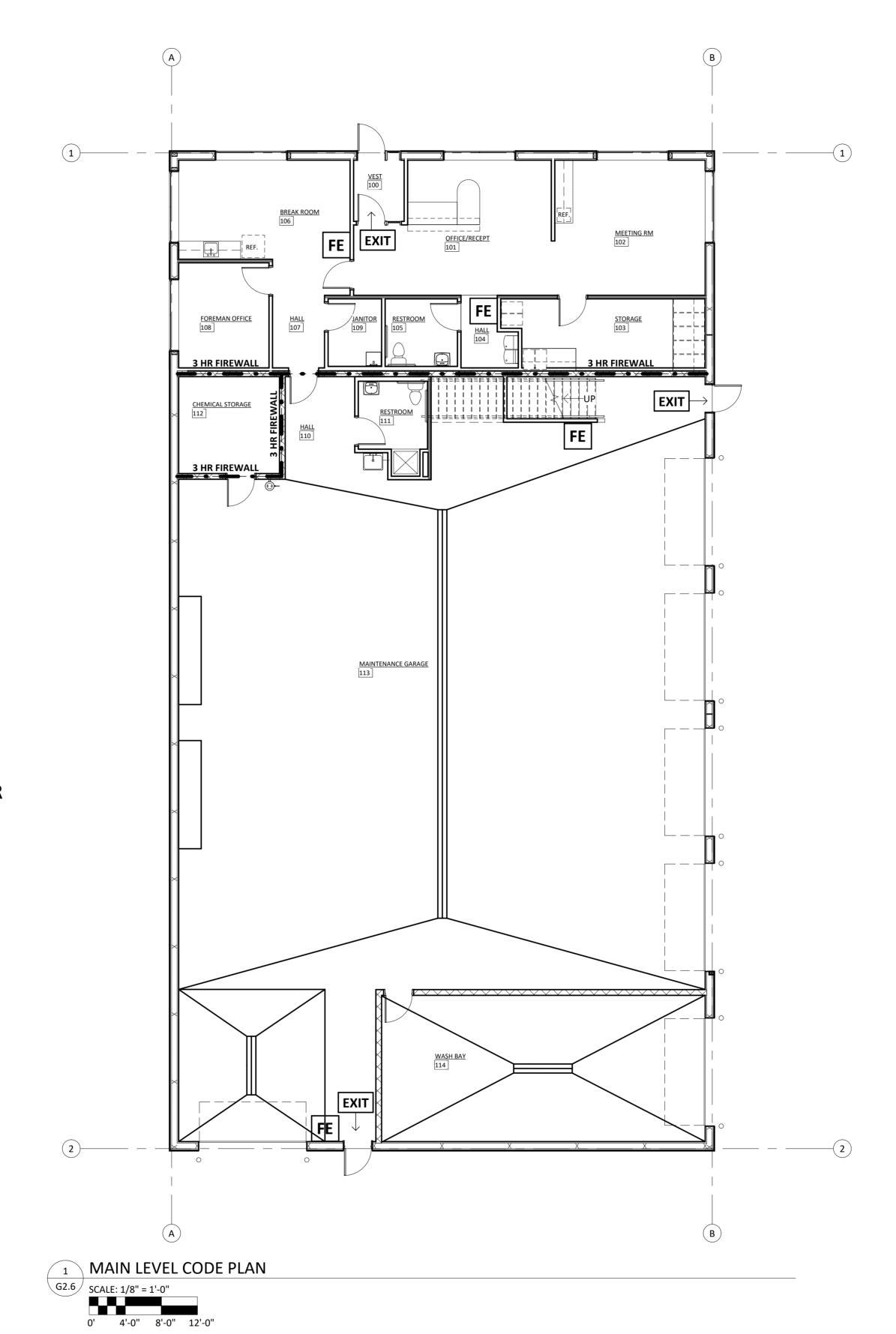
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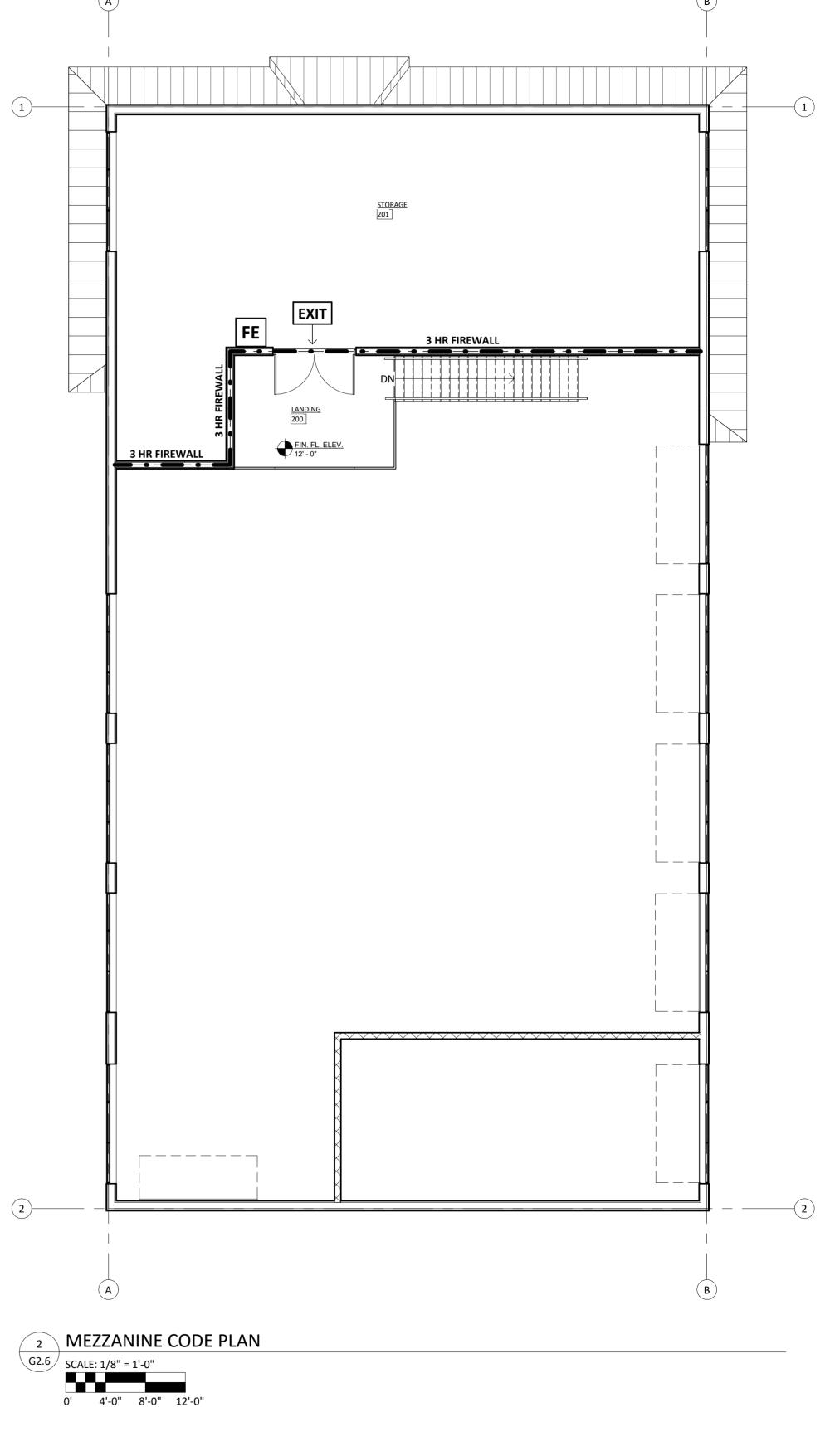
- <u>1.</u> AREA
- <u>a.</u> (B) OFFICE 1,485 SF
- b. (S1) CHEMICAL STORAGE 166 SF
- c. (S1) MAINTENANCE GARAGE 4,980 SF
- <u>d.</u> (S1) MEZZANINE 1,651 SF
- 2. SECTION 602 CONSTRUCTION TYPES
- a. CONSTRUCTION TYPE VB NON-SPRINKLERED
- 3. TABLE 504.3 BUILDING HT
- a. ALLOWABLE 40'
- b. ACTUAL 31'-7"
- 4. TABLE 504.4 ALLOWABLE NO OF STORIES ABOVE GRADE PLANE
- a. ALLOWED 1
- b. ACTUAL 1
- 5. SECTION 505.2 MEZZANINES
- a. 505.2.1 AREA LIMITATION
- 1.1/3 OF THE ROOM LOCATED
- 1. 1,651/4,980 = .332
- 6. TABLE 506.2 ALLOWABLE AREA
- a. (B) ALLOWED 9,000 SF
- b. (B) ACTUAL 1,485 SF
- c. (S1) ALLOWED 9,000 SF
- d. (S1) ACTUAL 5,146 SF
- 7. SECTION 903 AUTOMATIC SPRINKLER SYSTEM
- a. SECTION 903.2.9.1.4 REPAIR GARAGES
- 1.S1 FIRE AREA EXCEEDING 5,000 SF REQUIRES SPRINKLER SYSTEM. S1 FIRE AREA = 4,980 SF, THUS NO SPRINKLER SYSTEM IS REQUIRED.
- 8. SECTION 706 FIRE WALLS
- a. SECTION 706.4 FIRE RESISTANCE RATING B & S1 = 3 HR
- 9. SECTION 1004 OCCUPANT LOAD
- a. OFFICE AREA 1,485/100 = 14.85
- b. MAINTENACE/STORAGE 5,146/200 = 25.73
- <u>c. MEZZANINE 1,651/500 = 3.3</u>

**TOTAL** 

43.88

- 10. PLUMBING FIXTURES STATE PLUMBING CODE
- a. MEN (22)
- 1. TOILETS (R): 1 (P): 1
- 2. URINALS (R): 0 (P): 0
- 3. LAVS (R): 1 (P): 1
- b. WOMEN (22)
- 1. TOILETS (R): 1 (P): 1
- 2. LAVS (R): 1 (P): 1





1520C22 DATE 11-05-2024 SHEET

PHASE

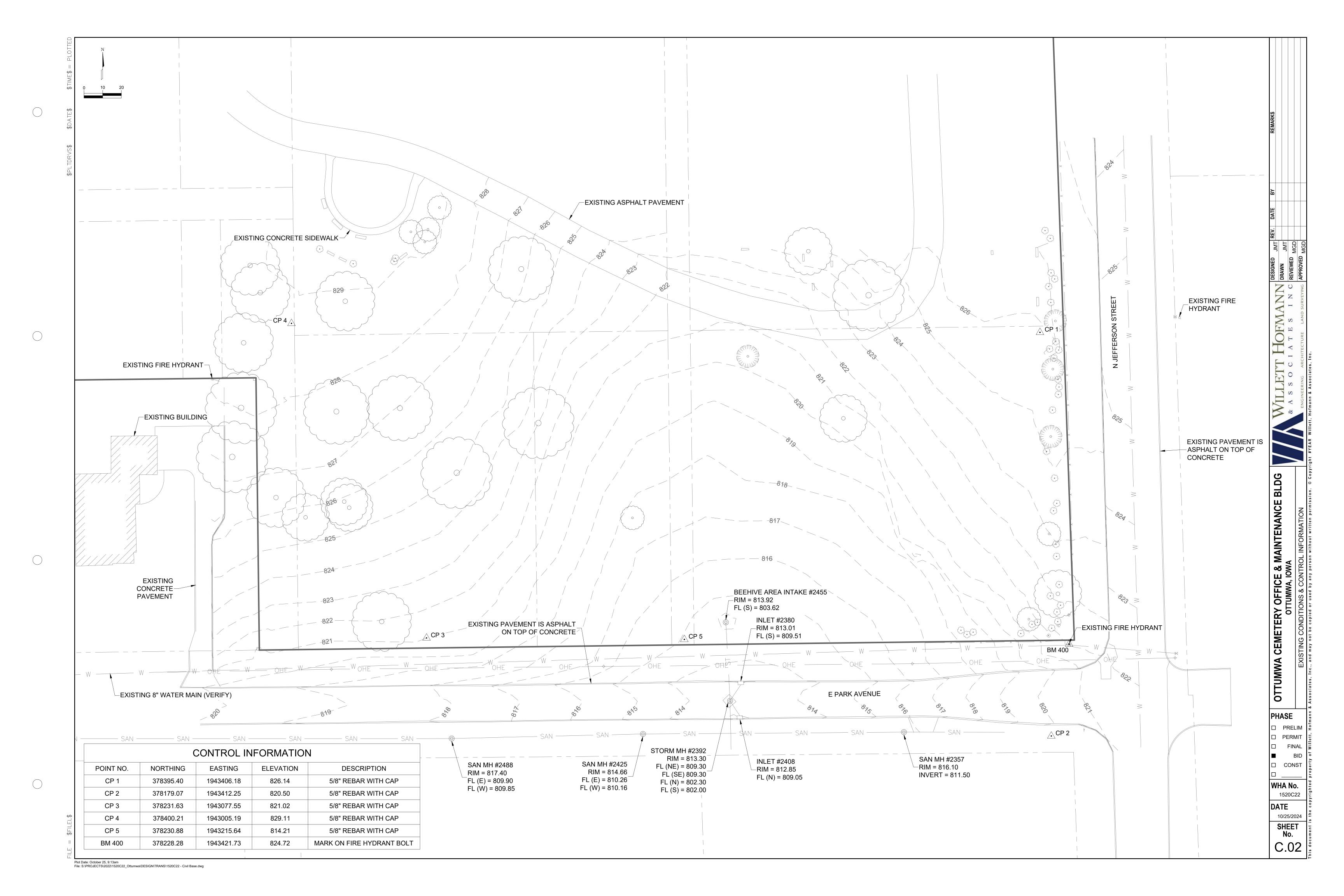
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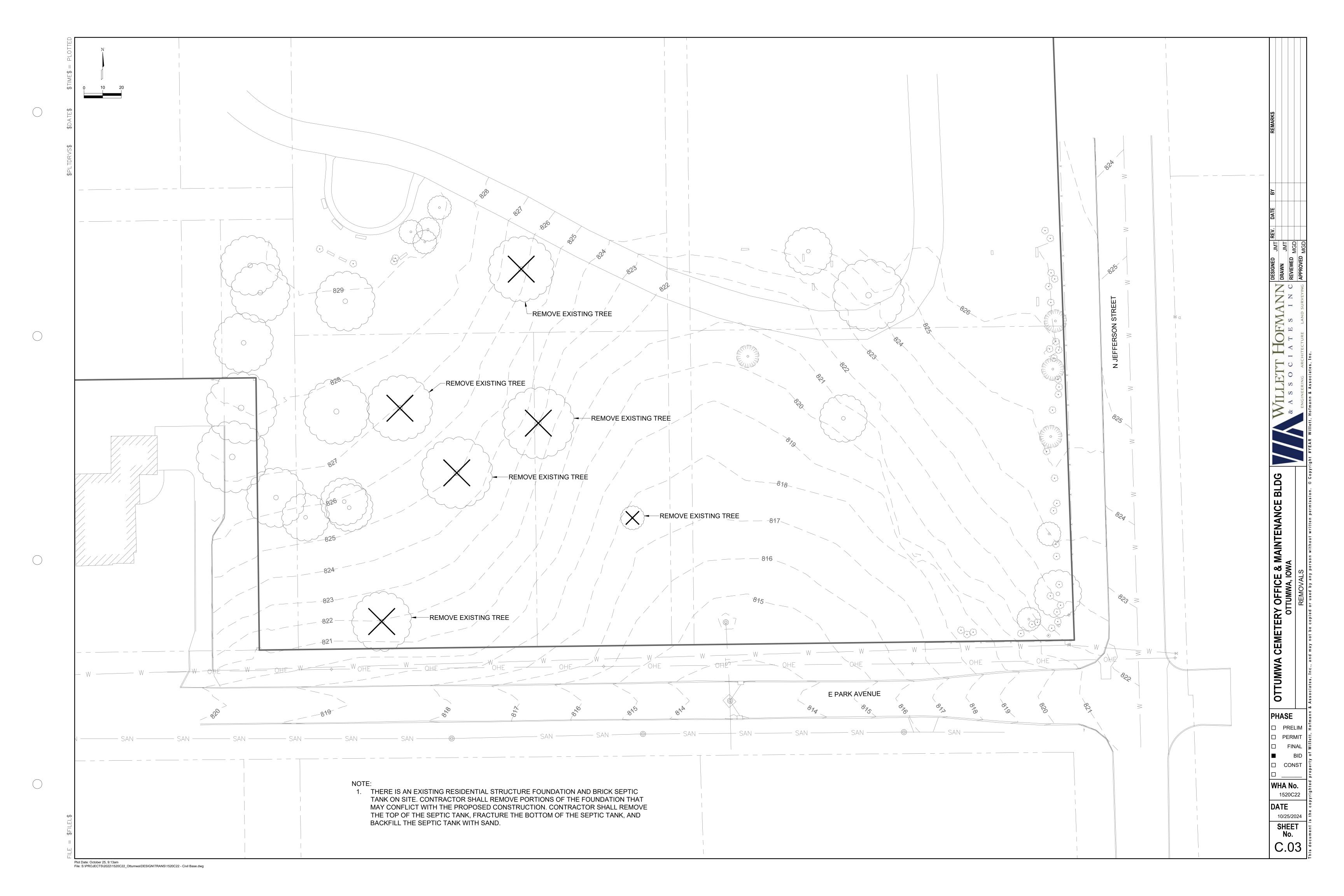
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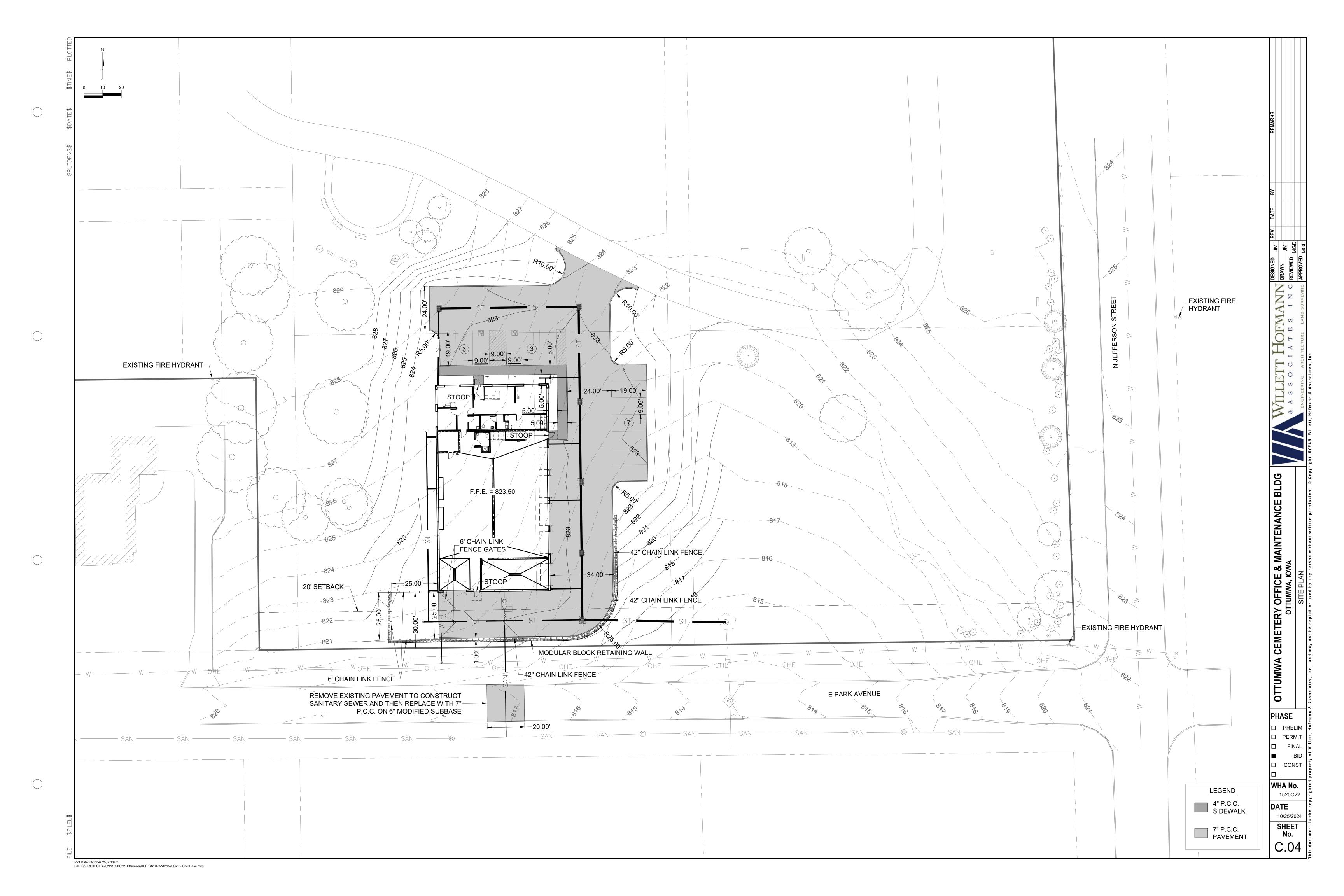
**G2.6** 

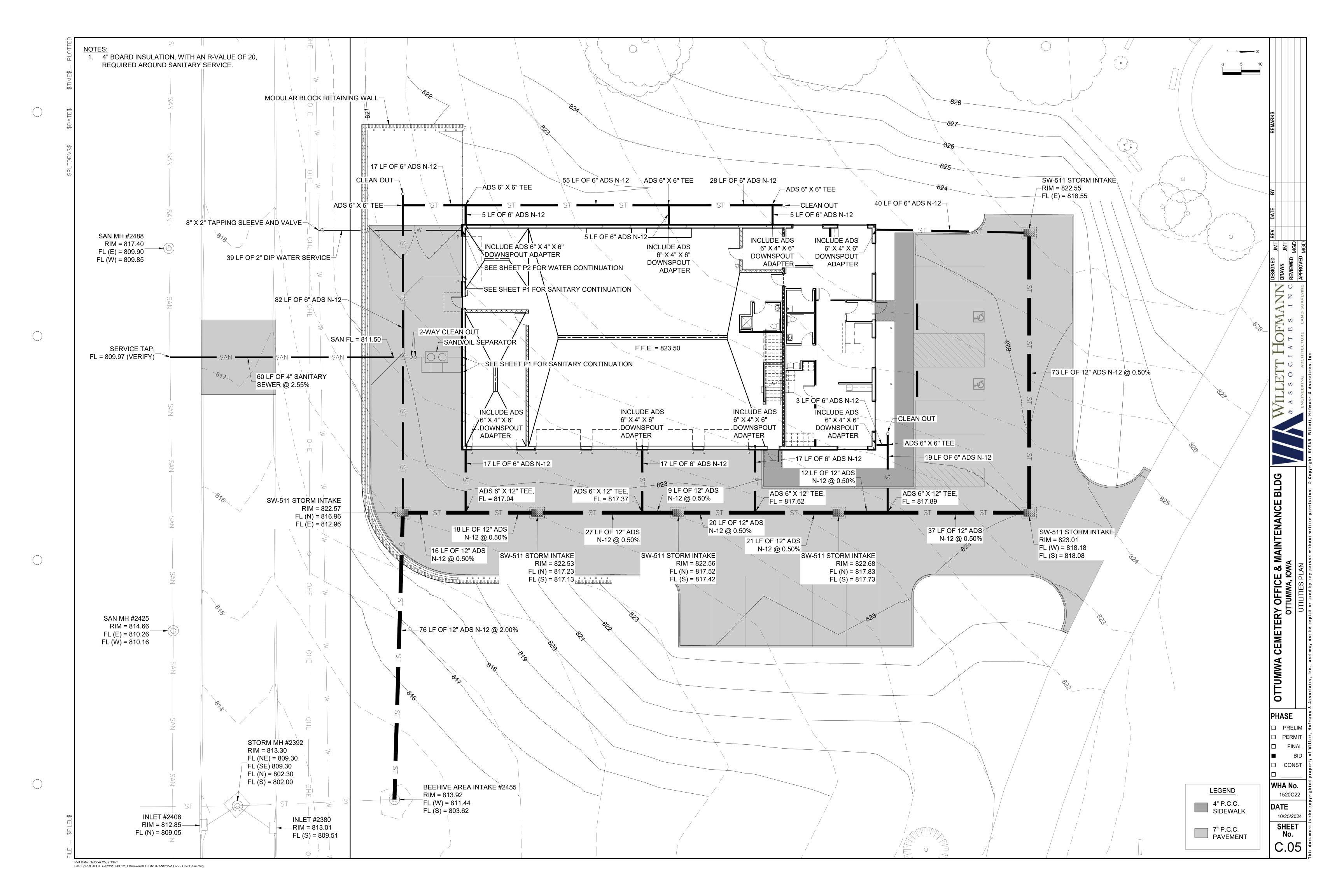
CITY OF OTTUMWA CITY OF OTTUMWA CITY OF OTTUMWA CITY OF OTTUMWA CEMETERY CITY OF OTTUMWA CEMETERY MAHON'S 3RD ADDITION MAHON'S 3RD ADDITION LOT 2 LOT 7 R1-60 R1-60 CITY OF OTTUMWA CEMETERY | CITY OF OTTUMWA CEMETERY MAHON'S SUBDIVISION MAHON'S SUBDIVISION LOT 4 LOT 4 R1-60 CITY OF OTTUMWA 401 E PARK CITY OF OTTUMWA CEMETERY CITY OF OTTUMWA CEMETERY BLDG 343 E PARK MAHON'S 3RD ADDITION MAHON'S 3RD ADDITION STUBBS, ALAN M. LOT 1 LOT 8 OTTUMWA CEMETERY OFFICE & MAINTENANCE OTTUMWA, IOWA PROPOSED BUILDING MAHON'S SUBDIVISION R1-60 R1-60 AUDITOR'S PARCEL "A" R1-60 E PARK AVENUE PHASE ☐ PRELIM ☐ PERMIT ☐ CONST WHA No. 342 E PARK 1520C22 410 E PARK VAN MOR PROPERTIES, LLC. 430 E PARK VEATCH, DANIEL L. & GAYLA J. DIEHL, LINDSAY S. MAHON'S 2ND SUBDIVISION 10/25/2024 R1-60 LOT 4 SHEET No. R1-60 R-5

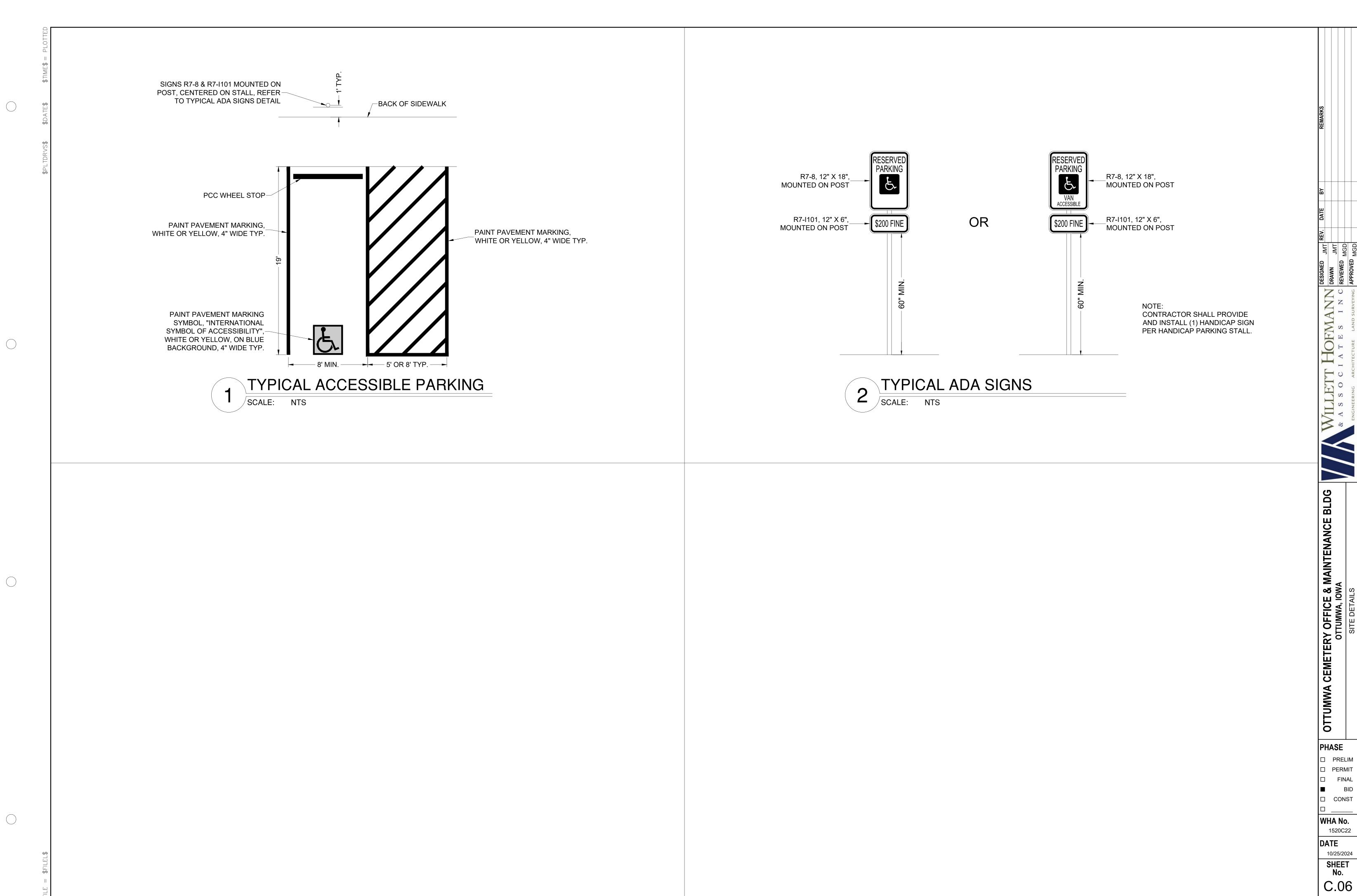
Plot Date: October 25, 9:13am File: S:\PROJECTS\2022\1520C22\_Ottumwa\DESIGN\TRANS\1520C22 - Civil Base.dwg











Plot Date: October 25, 9:13am
File: S:\PROJECTS\2022\1520C22\_Ottumwa\DESIGN\TRANS\1520C22 - Civil Base.dwg

4" P.C.C. SIDEWALK

6" COARSE AGGREGATE

4" P.C.C. SIDEWALK SECTION SCALE: NTS

Plot Date: October 25, 9:13am File: S:\PROJECTS\2022\1520C22\_Ottumwa\DESIGN\TRANS\1520C22 - Civil Base.dwg

#3 BAR @ 2FT O.C. EACH WAY OR WITH FIBER MESH 7" P.C.C. PAVEMENT 6" COARSE AGGREGATE

7" P.C.C. PAVEMENT SECTION 2 / P.C.C. NTS

JOINT SPACING: MINIMUM JOINT SPACING = 2 FEET TYPICAL JOINT SPACING = 10 FEET MAXIMUM JOINT SPACING = 15 FEET

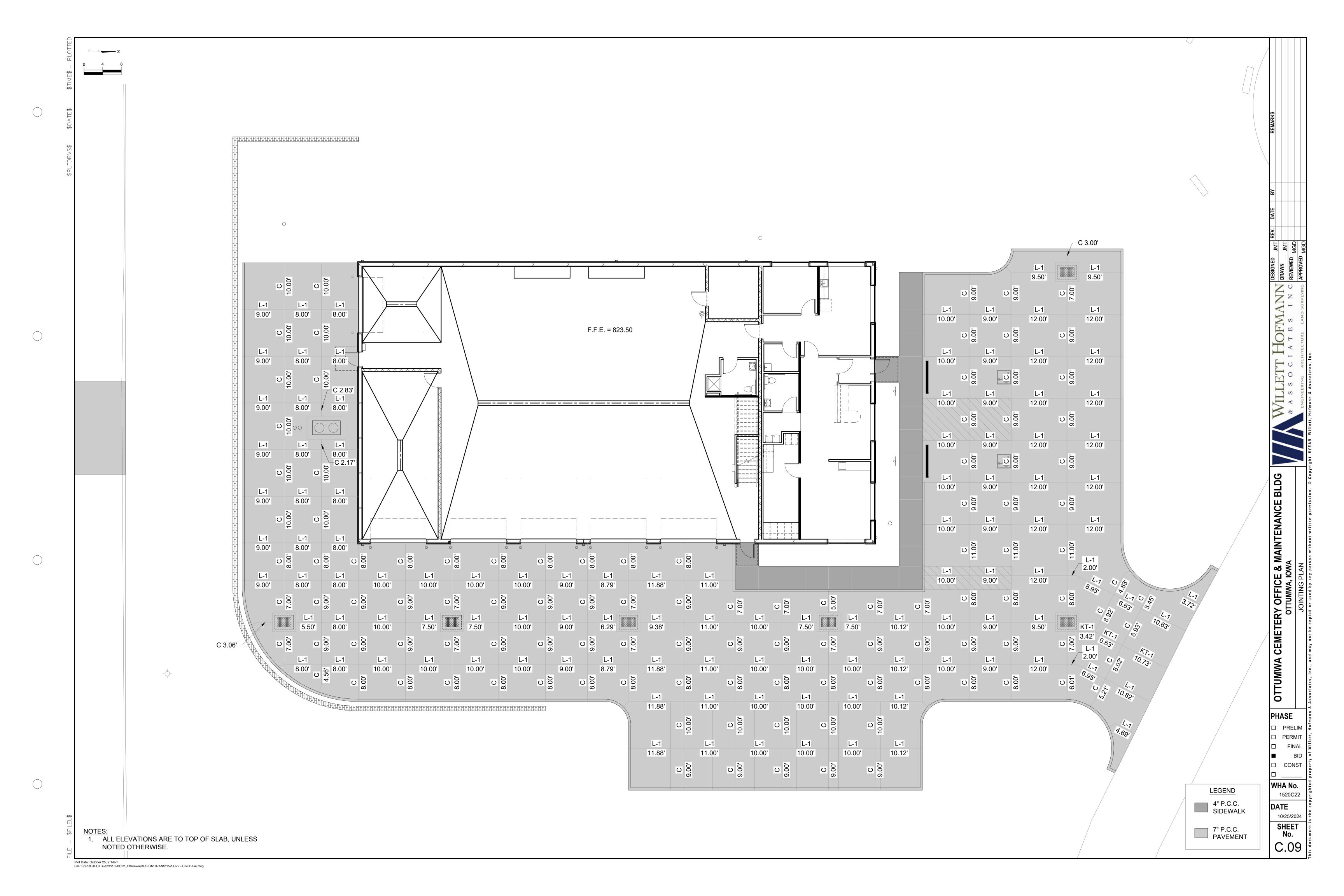
CEMETERY OFFICE & MAINTENANCE OTTUMWA, IOWA

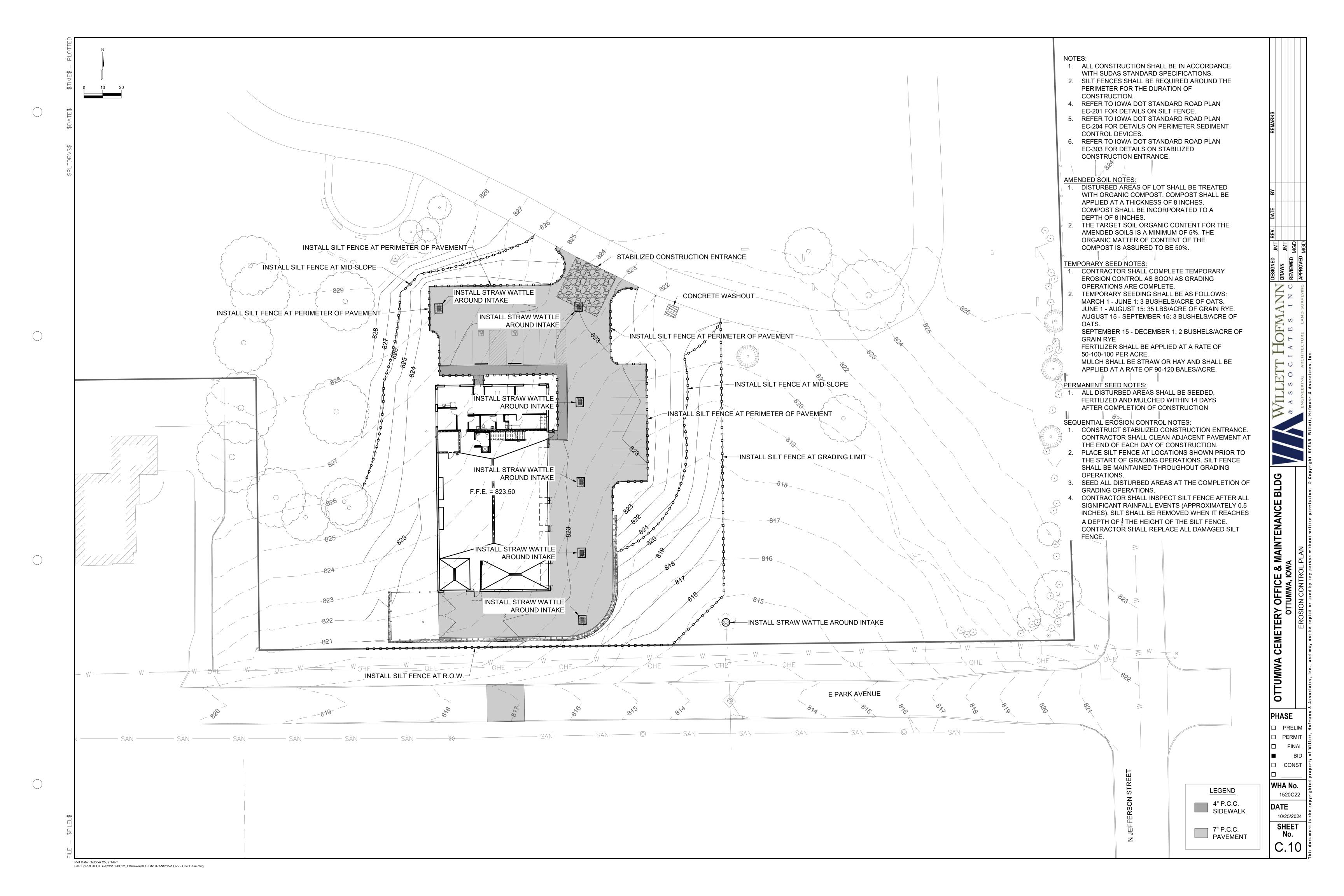
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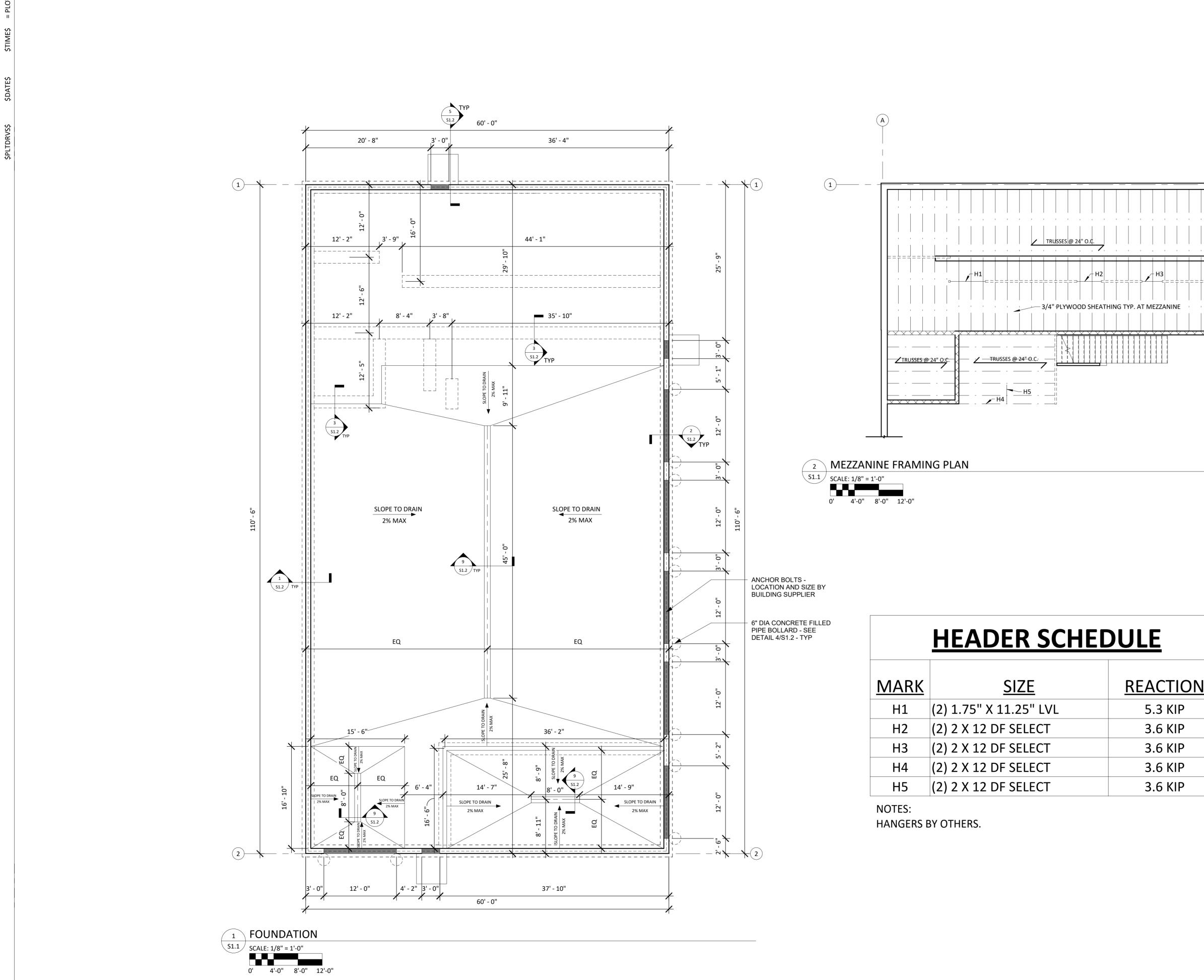
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1520C22

10/25/2024 SHEET







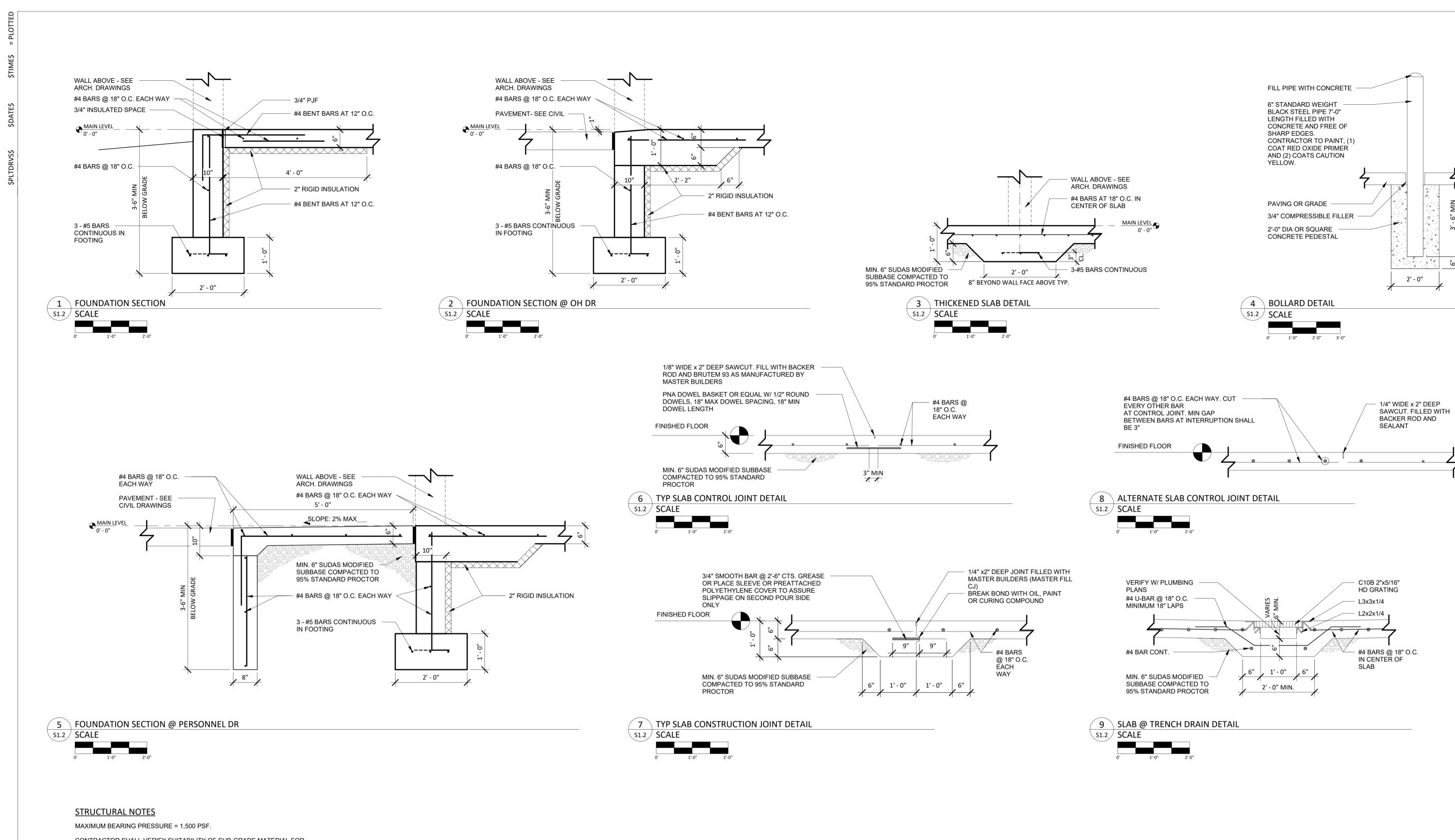
**REACTION** 

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WHA No. 1520C22 DATE

11-05-2024 SHEET No. **S1.1** 



CONTRACTOR SHALL VERIFY SUITABILITY OF SUB-GRADE MATERIAL FOR

CARRYING MAXIMUM PRESSURES.

FOOTING AND FOUNDATION WALL SIZES ARE BASED ON PRELIMINARY REACTIONS PROVIDED BY THE BUILDING MANUFACTURER. FINAL REACTIONS SHALL BE SUBMITTED TO AND CHECKED BY THE ENGINEER PRIOR TO CONSTRUCTING THE BUILDING.

BUILDING AND ANCHORAGE DESIGN BY OTHERS.

MINIMUM CONCRETE COMPRESSIVE STRENGTH FOR FOOTINGS AND FOUNDATION WALLS SHALL BE 3,000 PSI.

MINIMUM CONCRETE COMPRESSIVE STRENGTH FOR SLAB SHALL BE 3,500

MINIMUM YIELD STRENGTH OF REINFORCEMENT BARS SHALL BE 60,000 PSI.

MEZZANINE FRAMING BY OTHERS.

### MINIMUM LAP LENGTHS

#4 - 2'-4" #5 - 2'-10" #6 - 3'-5"

DATE 11-05-2024

SHEET No.

BLDG

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CEMETERY OFFICE 8
OTTUMWA, IOWA
FOUNDATION DETAILS

**PHASE** 

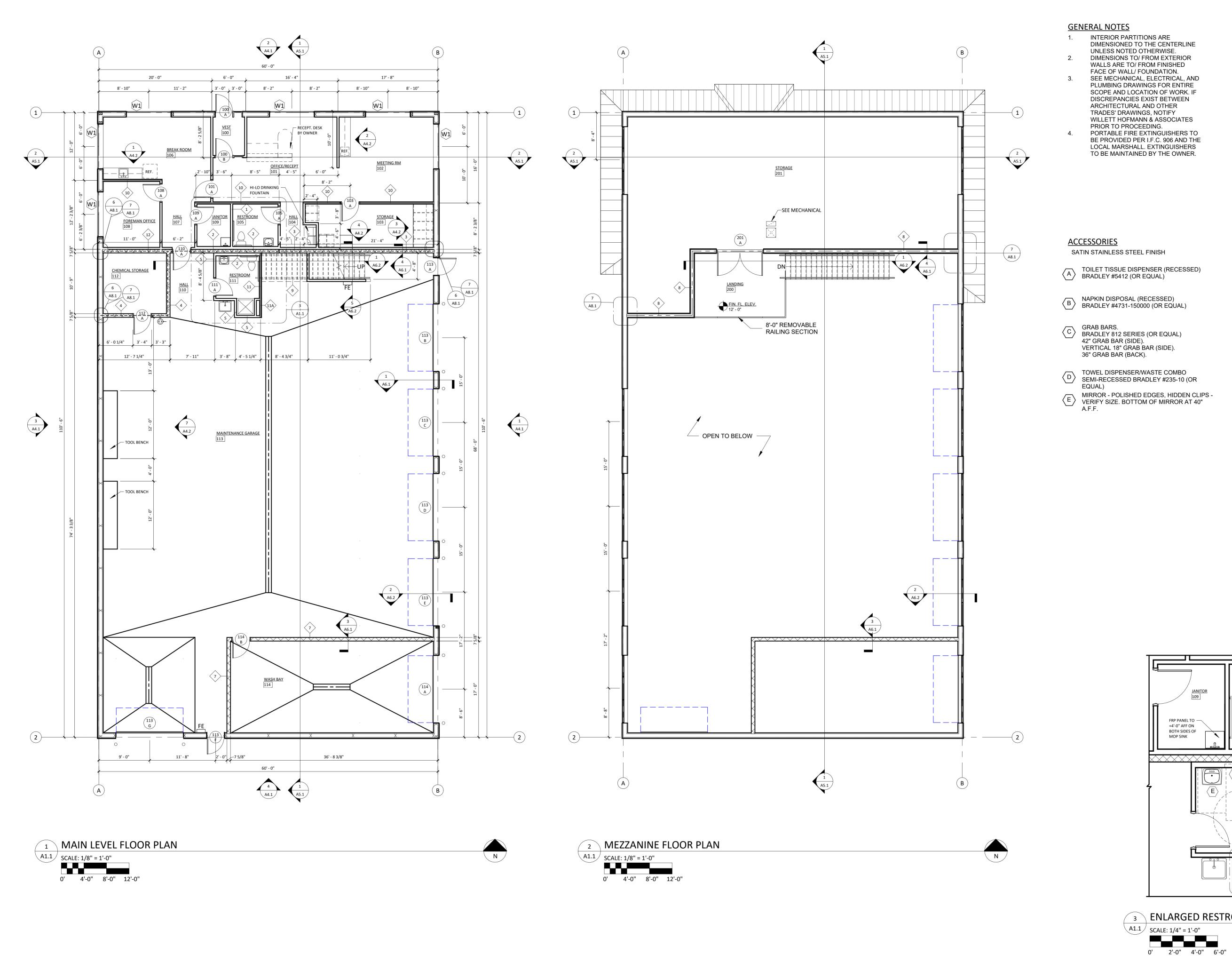
PRELIM

FINAL

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☐ CONST

WHA No. 1520C22



**PARTITIONS** 

NOTE: ALL PARTITIONS ARE NO. 1 EXCEPT WHERE NOTED DIFFERENTLY

3-5/8" STEEL STUDS @ 16" O.C. TO BOTTOM OF STRUCTURE (PROVIDE LONG-LEG SLIP 5/8" TYPE 'X' GYP. BD. BOTH SIDES. SOUND BATT INSULATION FULL HEIGHT.

3-HR FIRE WALL 6" STEEL STUDS @ 16" OC TO BOTTOM OF MEZZANINE STRUCTURE (PROVIDE LONG-LEG SLIP TRACK) OVER 3-HR RATED 8" CMU. 5/8" TYPE "X" GYP-BD ON ONE SIDE. 8" CMU TO EXTEND TO 12'-0" THEN UL U419 TO BOTTOM OF ROOF SHEATHING. U419 - (3) LAYERS 5/8" TYPE "X" GYP-BD & LINER PANEL EACH SIDE OF 6" STEEL STUDS @ 16" OC.

3-HR FIRE WALL 3-5/8" STEEL STUDS @ 16" OC TO GYP. BD ON BOTTOM OF STRUCTURE (PROVIDE LONG-LEG SLIP TRACK) OVER 3-HR RATED 8" CMU. 5/8" TYPE "X" GYP-BD ON ONE SIDE THEN UL U419 TO BOTTOM OF ROOF SHEATHING. U419 - (3) LAYERS 5/8" TYPE "X" GYP-BD & LINER PÁNEL OVER 7/8" METAL HAT CHANNELS @ 4'-0" OC EACH SIDE OF 6" STEEL STUDS @ 16" OC.

3-HR FIRE WALL 8" 3-HR RATED CMU TO +12'-0" AFF THEN UL U419 TO BOTTOM OF ROOF SHEATHING. U419 - (3) LAYERS 5/8" TYPE "X" GYP-BD EACH SIDE OF 6" STEEL STUDS @ 16" OC.

3-5/8" STEEL STUDS @ 16" OC TO BOTTOM OF STRUCTURE (PROVIDE LONG-LEG SLIP TRACK). LINER PANEL OVER 7/8" METAL HAT CHANNELS @ 4'-0" OC ON GARAGE SIDE, 5/8" TYP "X" GYP-BD ON OTHER SIDE.

6" STEEL STUDS @ 16" OC TO BOTTOM OF STRUCTURE (PROVIDE LONG-LEG SLIP TRACK). LINER PANEL OVER 5/8" TYPE "X" GYP-BD ON GARAGE SIDE.

8" CMU TO BOTTOM OF TRUSSES

8 3-HR RATED WALL - UL U419 TO BOTTOM OF ROOF SHEATHING. U419 - (3) LAYERS 5/8" TYPE "X" GYP-BD & LINER PANEL EACH SIDE OF 6" STEEL STUDS @ 16" OC.

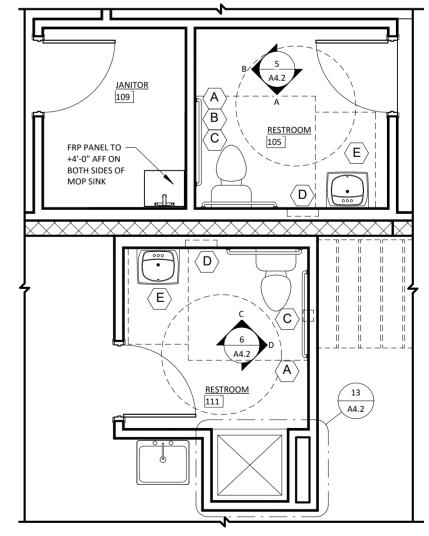
2X4 WOOD STUDS @ 16" OC W/ TREATED SILL PLATE - CONT TO **FÚRRING STRIPS** 

**LOAD BEARING WALL** 2X6 WOOD STUDS @ 16" OC - CONTINUE TO MEZZANINE STRUCTURE. COORDINATE WITH BEARING REQUIREMENTS OF MEZZANINE STRUCTURE. (1) LAYER 5/8" TYPE "X" GYP BD EACH SIDE. FILL CAVITY WITH SOUND BATT INSULATION.

**LOAD BEARING WALL** 2X6 STUDS @ 16" OC - CONTINUE TO MEZZANINE STRUCTURE COORDINATE WITH BEARING REQUIREMENTS OF MEZZANINE STRUCTURE. LINER PANEL OVER WOOD BLOCKING ON GARAGE SIDE. 5/8" TYPE "X" GYP BD ON OTHER SIDE. FILL CAVITY WITH

**LOAD BEARING WALL** 2X6 WOOD STUDS @ 16" OC - CONTINUE TO MEZZANINE STRUCTURE COORDINATE WITH BEARING REQUIREMENTS OF MEZZANINE STRUCTURE. LINER PANEL OVER 7/8" METAL HAT CHANNELS @ 4'-0" OC. FILL CAVITY WITH SOUND BATT INSULATION.

(3)HR RATED 8" CMU TO BOTTOM OF MEZZANINE W/ 5/8" GYP-BD OVER 3-5/8" METAL STUDS ON ONE SIDE





**PHASE** 

CEMETERY (OTTUMN

BLDG

PRELIM ☐ PERMIT **FINAL** 

☐ CONST

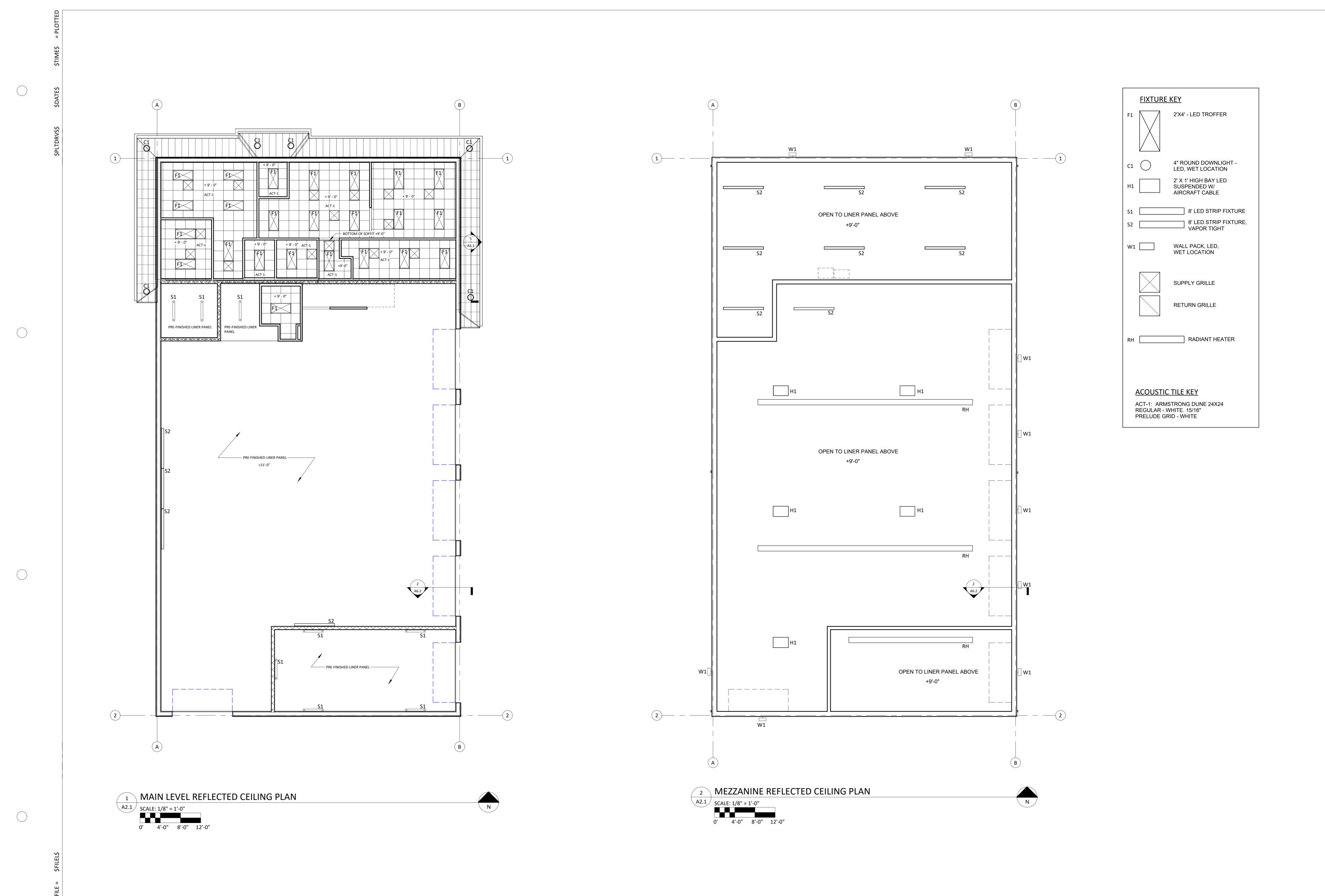
WHA No. 1520C22 DATE

11-05-2024

SHEET No.

BOTTOM OF STAIR. LINER PANEL (1) SIDE OVER TREATED WOOD

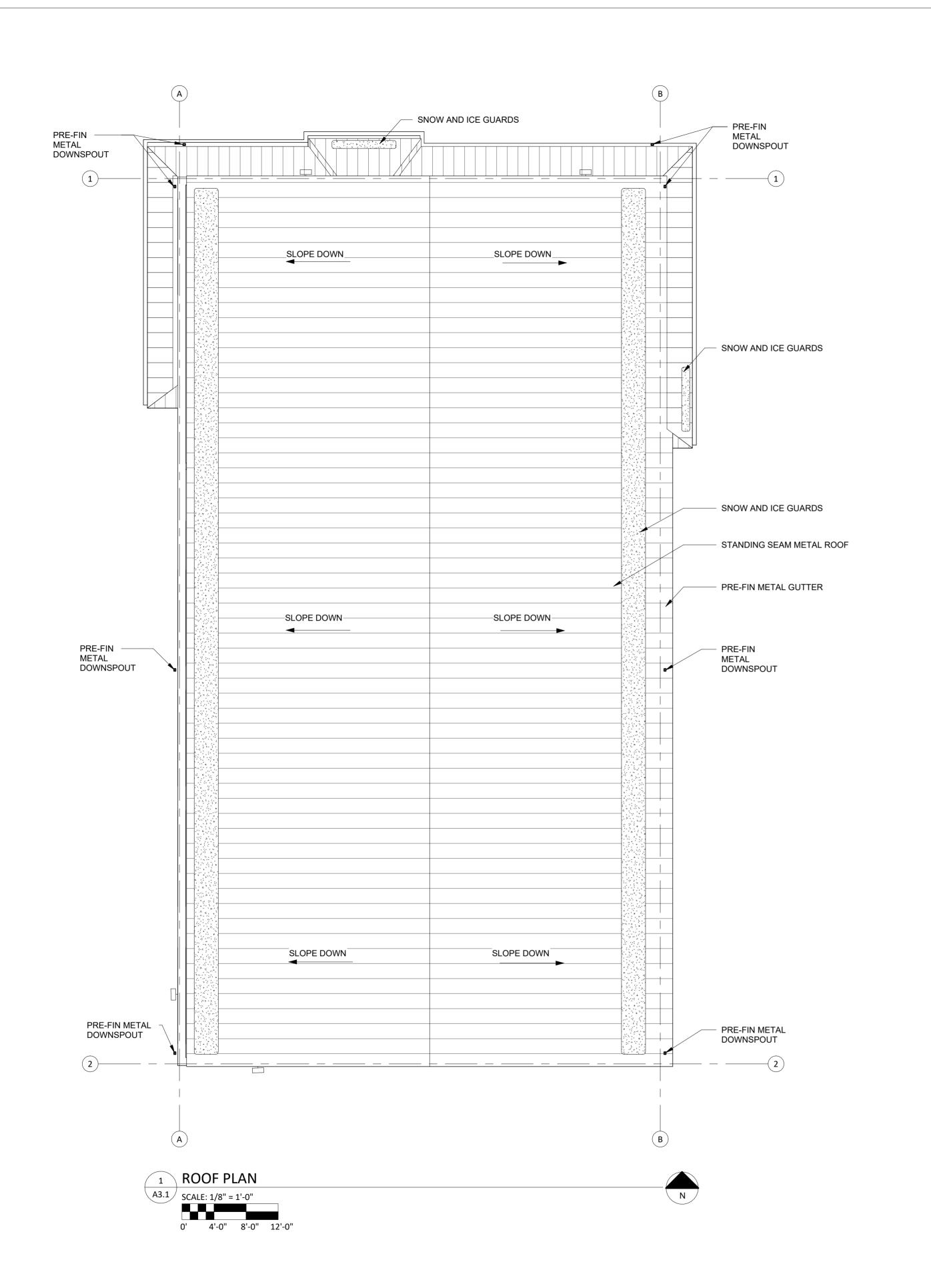
SOUND BATT INSULATION.



PHASE

WHA No. 1520C22 DATE

11-05-2024 SHEET



BLDG

CEMETERY OFFICE & MAINT.
OTTUMWA, IOWA
ROOF PLAN

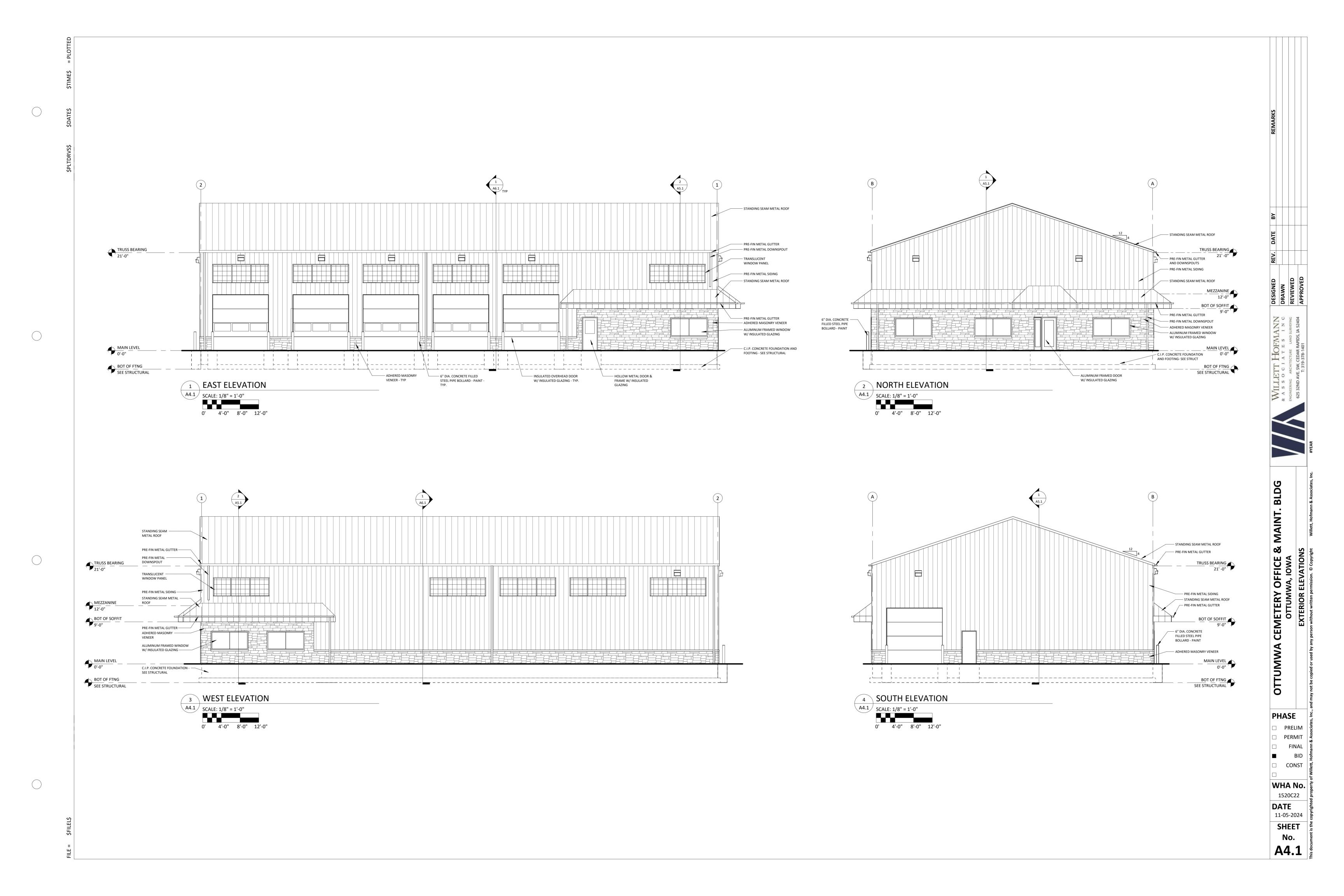
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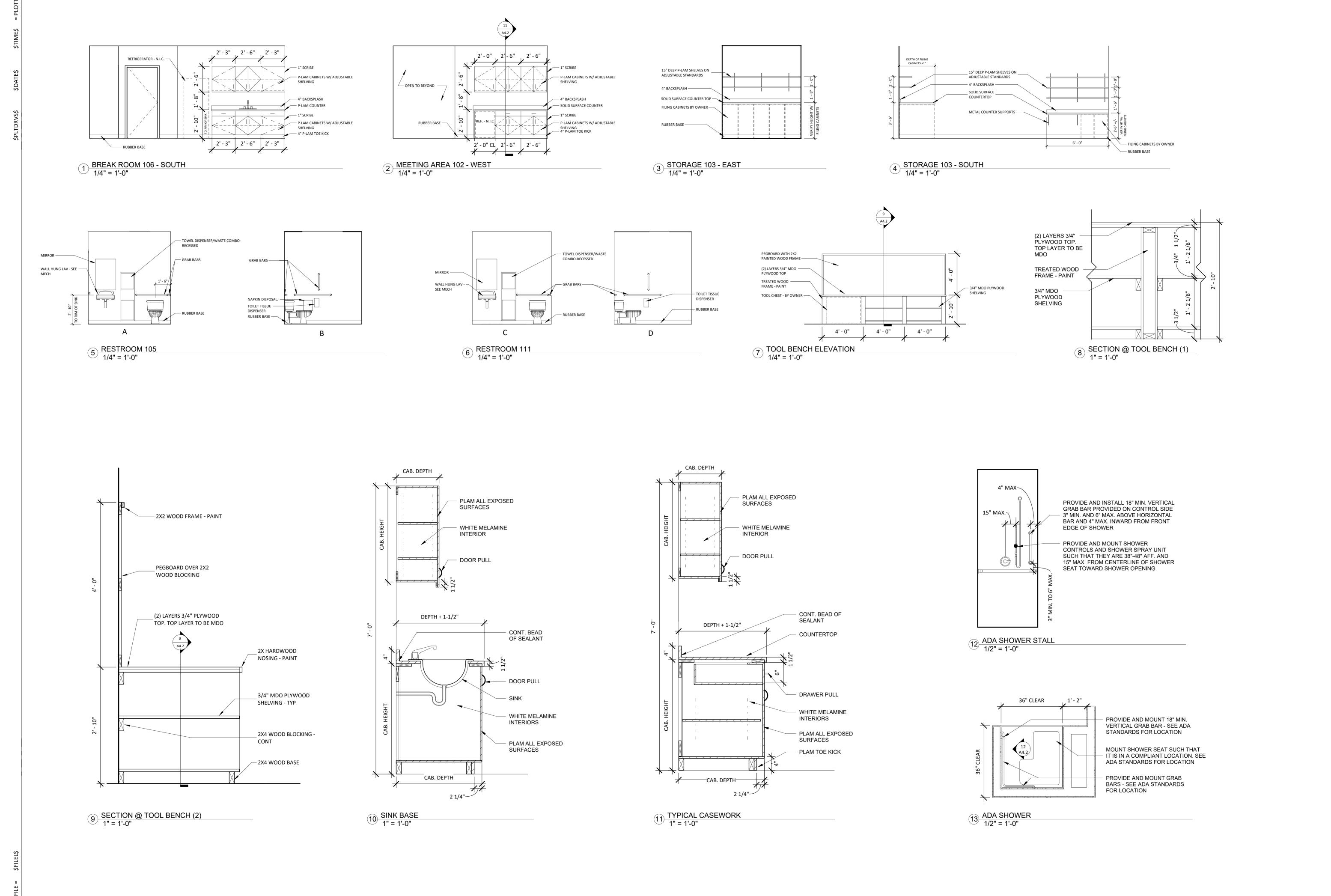
□ PERMIT

□ CONST WHA No. 1520C22

**DATE** 11-05-2024 SHEET No.

A3.1





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BLDG

CEMETERY OFFICE & OTTUMWA, IOWA INTERIOR ELEVATIONS

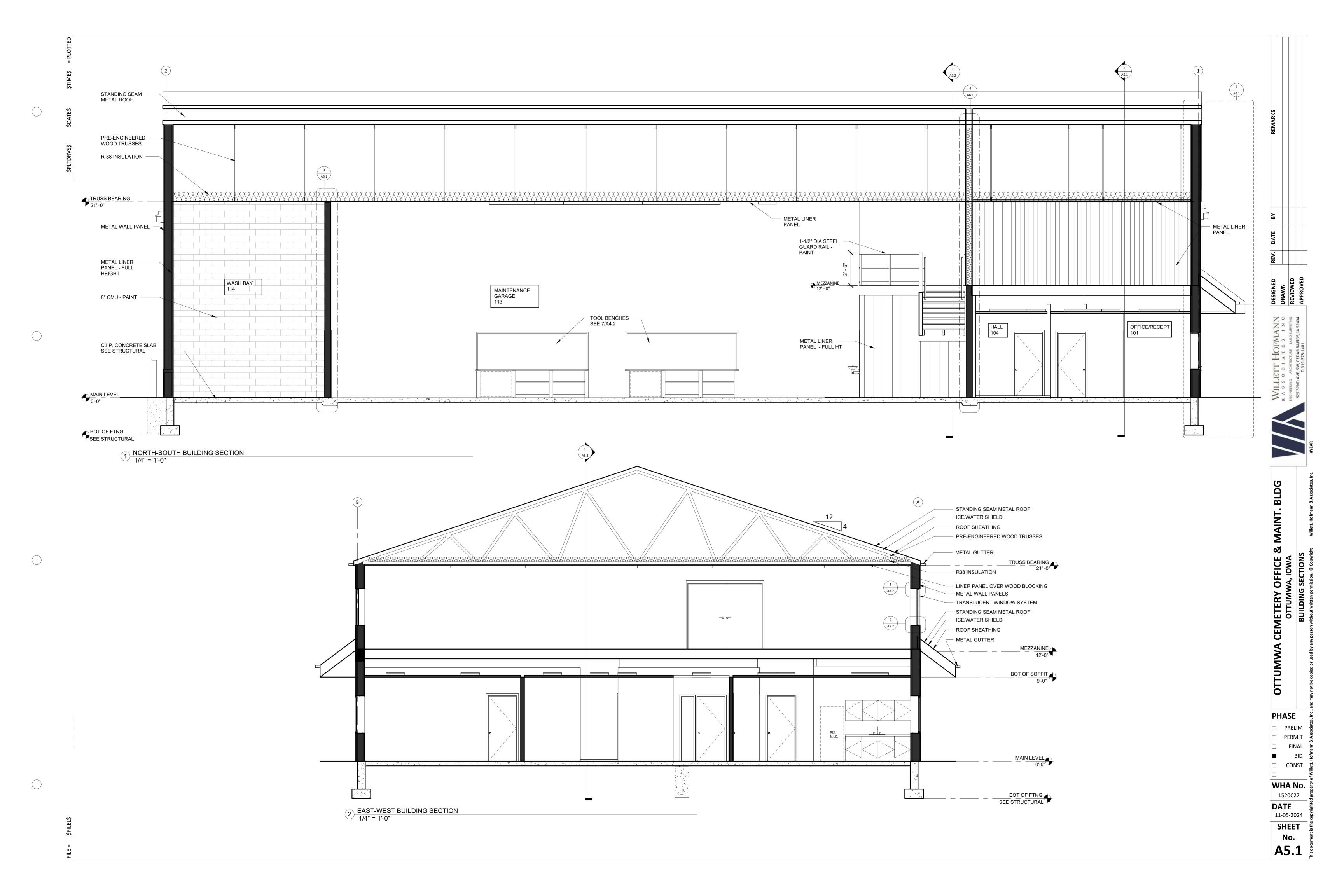
PHASE □ PRELIM PERMIT FINAL

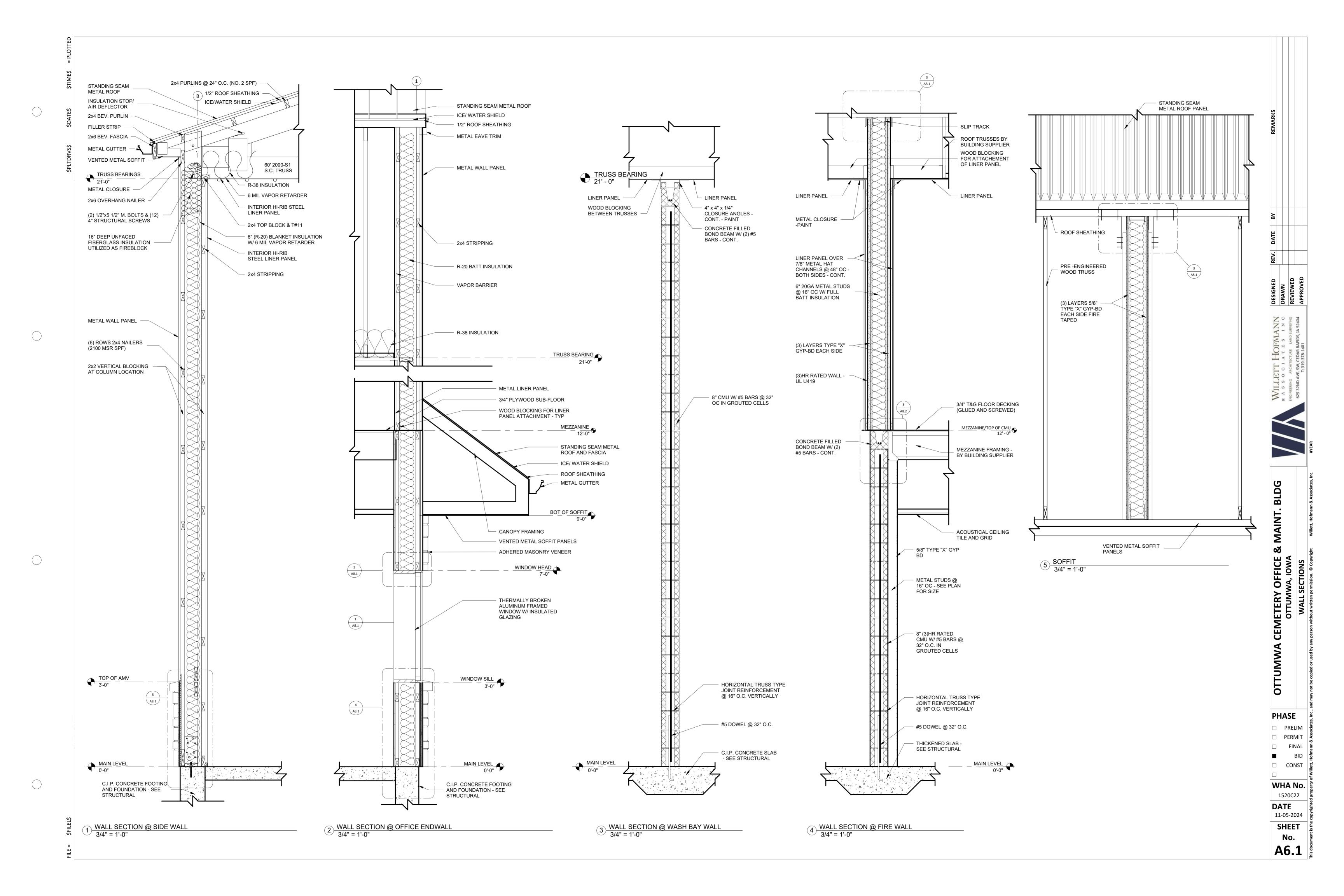
BID ☐ CONST

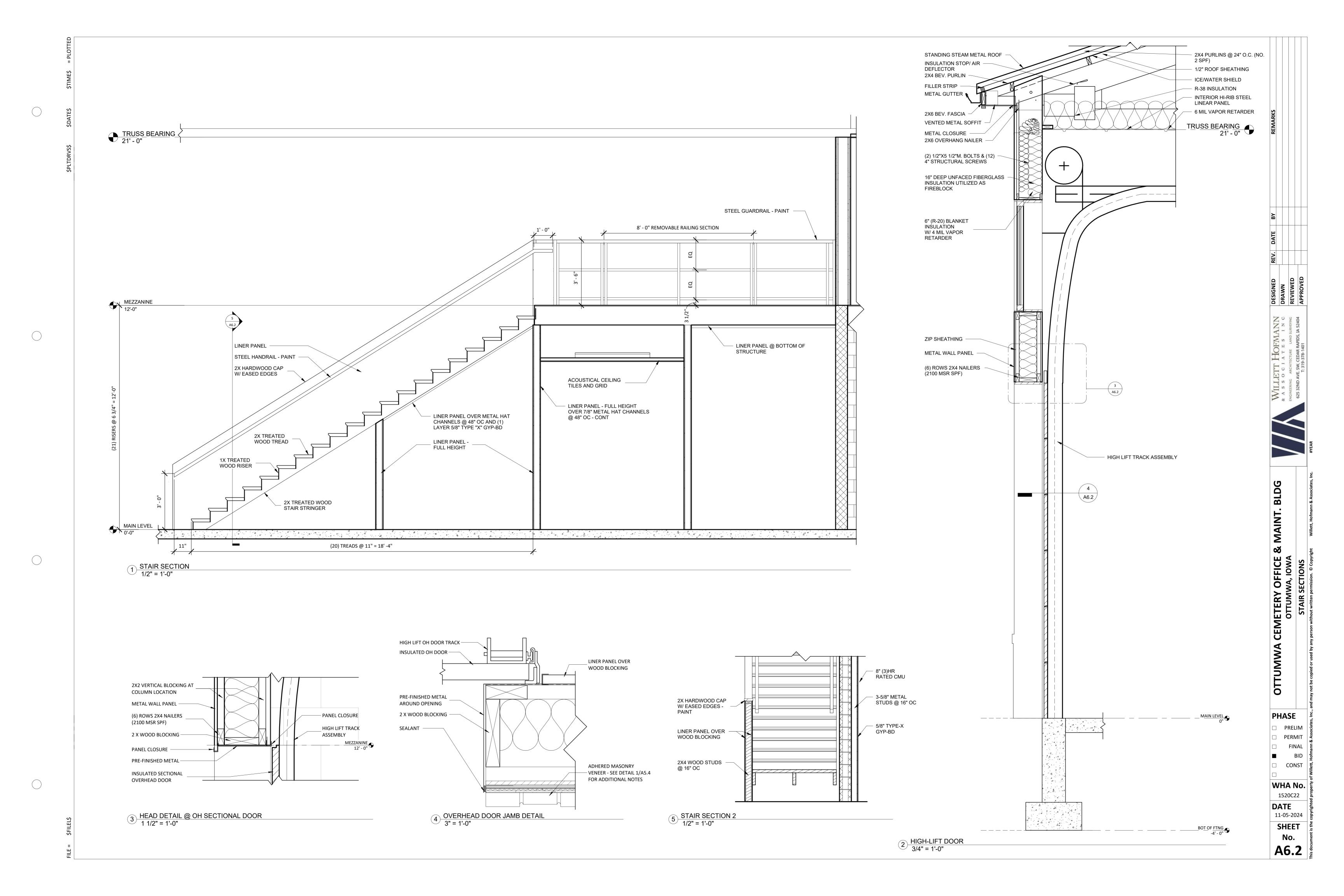
WHA No. 1520C22

DATE 11-05-2024 SHEET

No.







**OPENING SCHEDULE** TYPE MATL FINISH TYPE MATL FINISH LABEL GROUP SIZE 100 A 3'-0" x 7'-0" x 1 3/4" SET 1 100 B 3'-0" x 7'-0" x 1 3/4" SET 2 SET 10 101 A 3'-0" x 7'-0" x 1 3/4" SET 7 103 A 3'-0" x 7'-0" x 1 3/4" SET 12 105 A 3'-0" x 7'-0" x 1 3/4" SET 8 108 A 3'-0" x 7'-0" x 1 3/4" SET 9 109 A 3'-0" x 7'-0" x 1 3/4" SET 6 110 A 3'-0" x 7'-0" x 1 3/4" 111 A 3'-0" x 7'-0" x 1 3/4" SET 13 112 A 3'-0" x 7'-0" x 1 3/4" 113 A 3'-0" x 7'-0" x 1 3/4" SET 3 113 B 12'-0" x 12'-0" E STL 113 C 12'-0" x 12'-0" E STL 113 D 12'-0" x 12'-0" E STL 113 E 12'-0" x 12'-0" E STL SET 3 113 F 3'-0" x 7'-0" x 1 3/4" A HM PT HM-A HM PT 113 G 12'-0" x 12'-0" F STL

E | STL | - | - | -

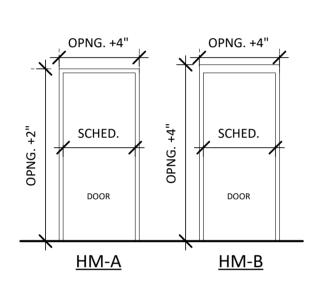
A HM PT HM-B HM PT

201 A | (2) 4'-0" x 7'-0" x 1 3/4" | A | HM | PT | HM-A | HM | PT | 3 HR

**HARDWARE GROUPS:** DOOR HARDWARE TO BE US-26D OR US 32D

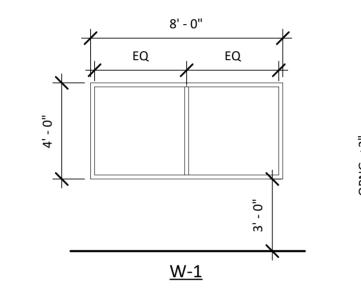
SEE SPECIFICATION DIVISION 08 - OPENINGS FOR HARDWARE GROUPS ON SHEET A9.1

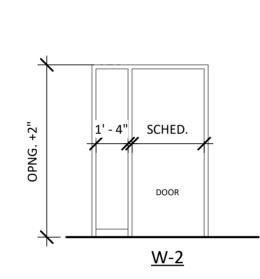
ROOM FINISH SCHEDULE													
ROOM		FLOOR		NORTH WALL		EAST WALL		SOUTH WALL		WEST WALL		CEILING	
NAME	NO.	MAT	FIN	BASE	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	MAT
VEST	100	CONC.	LVT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
OFFICE/RECEPT	101	CONC.	CPT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
MEETING RM	102	CONC.	CPT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
STORAGE	103	CONC.	CPT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
HALL	104	CONC.	LVT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
RESTROOM	105	CONC.	LVT	RB	GB	EPT	GB	EPT	GB	EPT	GB	EPT	ACT
BREAK ROOM	106	CONC.	LVT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
HALL	107	CONC.	LVT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
FOREMAN OFFICE	108	CONC.	CPT	RB	GB	PT	GB	PT	GB	PT	GB	PT	ACT
JANITOR	109	CONC.	SEALER	RB	GB	EPT	GB	EPT	GB	EPT	GB	EPT	ACT
HALL	110	CONC.	SEALER	-	CMU	EPT	LP	-	-	-	CMU	EPT	LP
RESTROOM	111	CONC.	SEALER	RB	GB	EPT	GB	EPT	GB	EPT	GB	EPT	ACT
CHEMICAL STORAGE	112	CONC.	SEALER	-	CMU	EPT	CMU	EPT	CMU	EPT	LP	-	LP
MAINTENANCE GARAGE	113	CONC.	SEALER	-	CMU/LP	EPT/-	CMU/LP	EPT/-	CMU/LP	EPT/-	LP	-	LP
WASH BAY	114	CONC.	SEALER	-	CMU	EPT	CMU	EPT	CMU	EPT	CMU	EPT	LP
LANDING	200	WD	-	-	LP	-	-	-	-	-	LP	-	LP
STORAGE	201	WD	-	-	LP	-	LP	-	LP	-	LP	-	LP



114 A | 12'-0" x 12'-0"

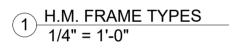
114 B 3'-0" x 7'-0" x 1 3/4"

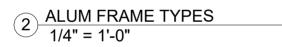


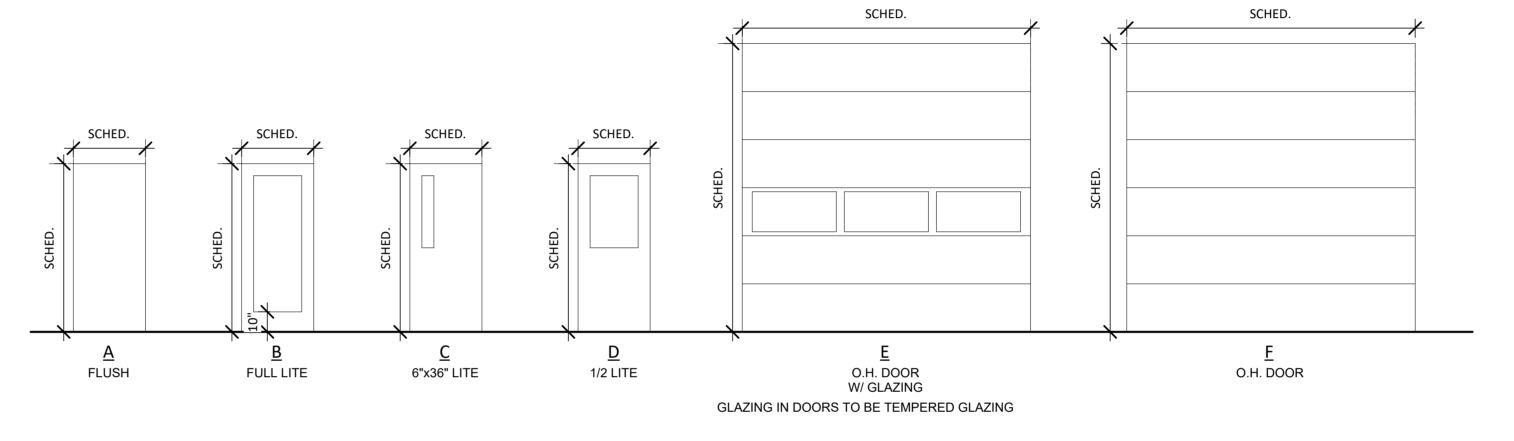


SET 11

SET 4







3 DOOR TYPES 1/4" = 1'-0"

CEMETERY OFFICE & MAINT.
OTTUMWA, IOWA
SCHEDULES

BLDG

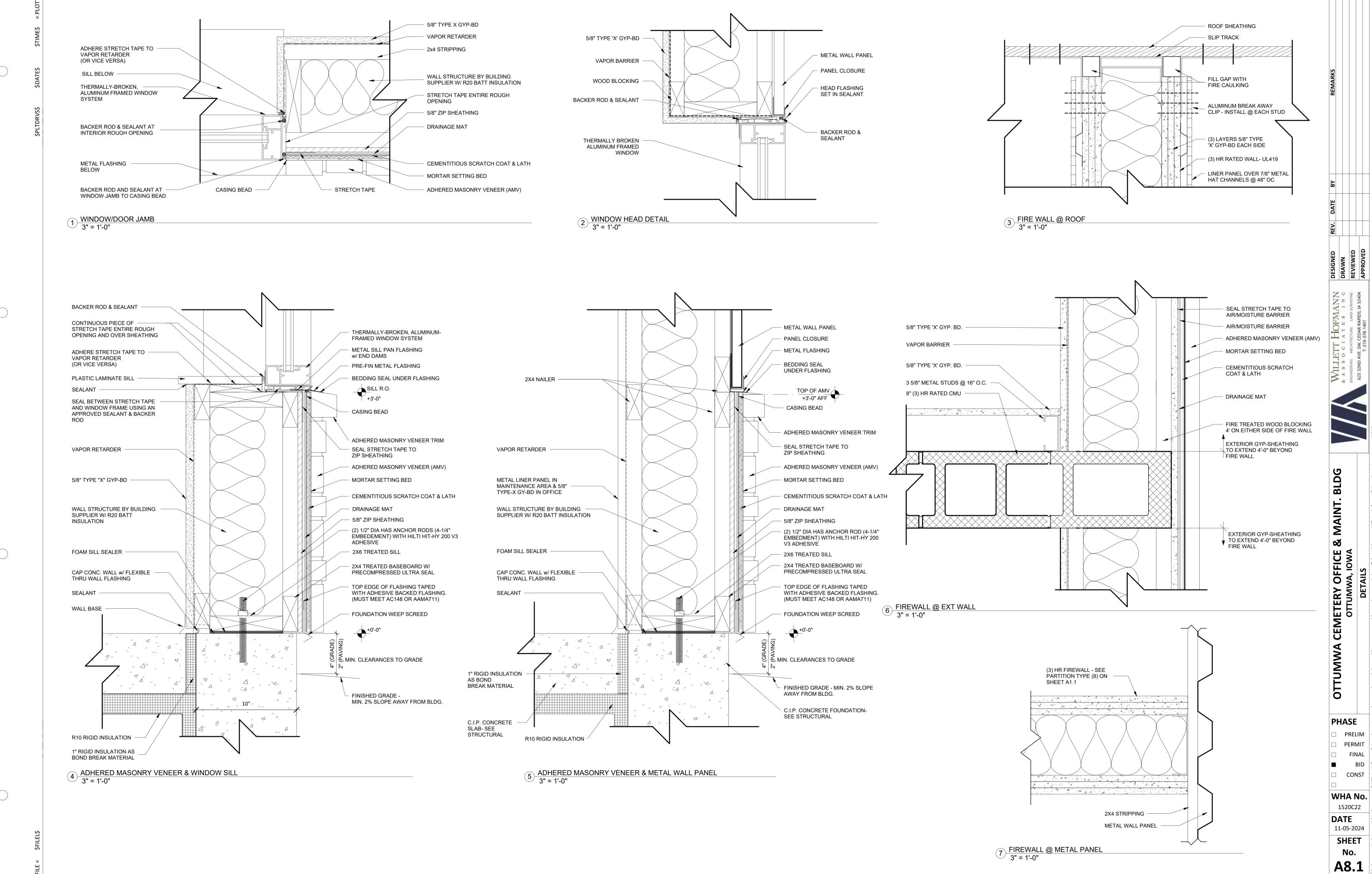
PHASE

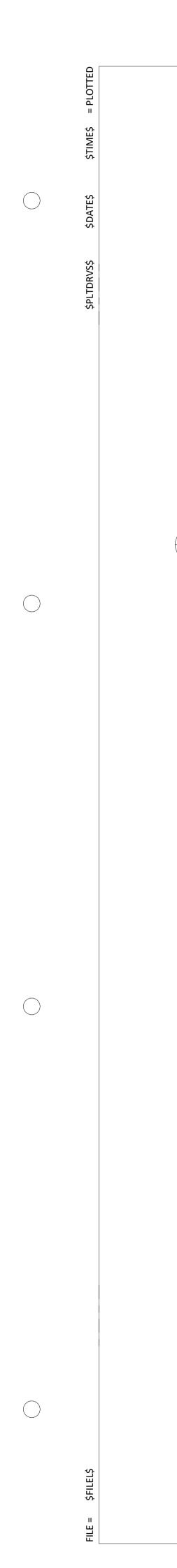
□ PERMIT FINAL

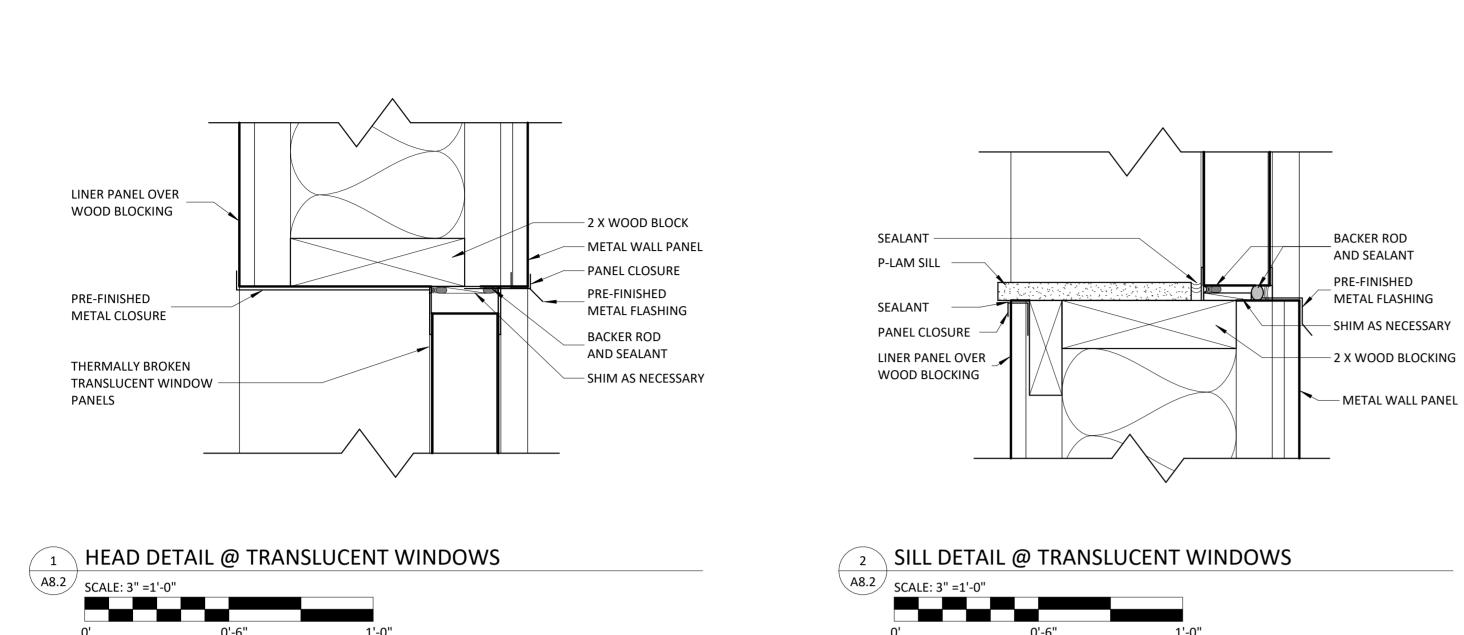
□ CONST WHA No. 1520C22

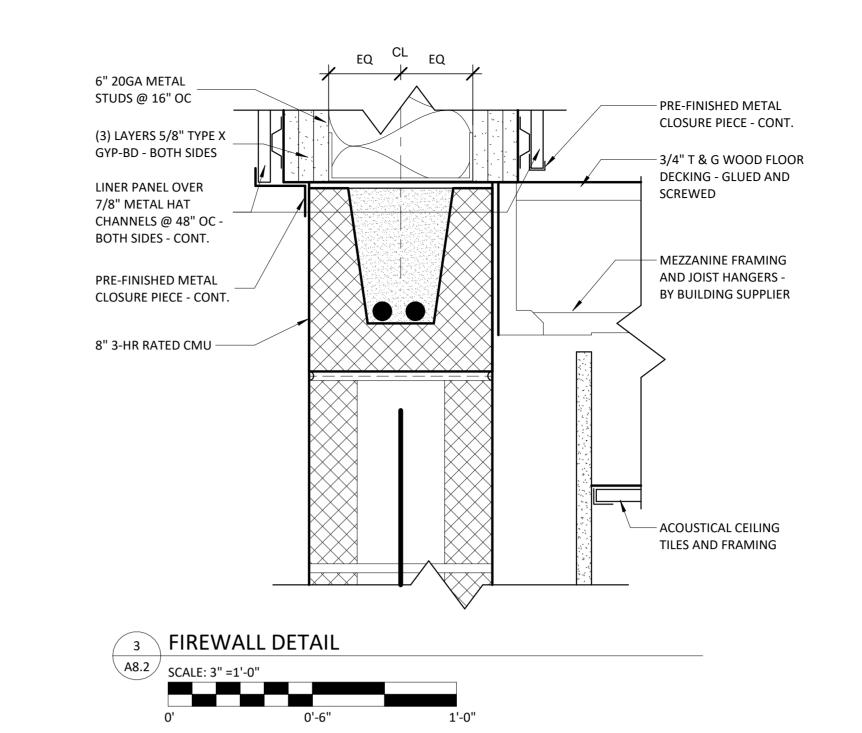
DATE 11-05-2024 SHEET

No. A7.1









WHA No. 1520C22

**DATE** 11-05-2024 SHEET

A8.2

**DIVISION 01 - GENERAL REQUIREMENTS** 

SUBMITTAL WITH WILLETT HOFMANN & ASSOCIATES.

**OPERATION AND MAINTENANCE DATA:** 

PRODUCTS AND EQUIPMENT.

**DIVISION 03 - CONCRETE** 

AS INDICATED ON THE DRAWINGS. REFER TO STRUCTURAL AND CIVIL DRAWINGS. PROVIDE A CONCRETE PAD AT TRANSFORMERS, AIR CONDITIONER UNITS. AND OTHER EXTERIOR EQUIPMENT AS REQUIRED.

2. STEEL-REINFORCED CONCRETE SLAB-ON-GRADE ON 15 MIL STEGO-WRAP VAPOR BARRIER ON

UPON PROJECT CLOSEOUT, ALL CONTRACTORS SHALL SUBMIT TO WILLETT HOFMANN &

HOFMANN & ASSOCIATES RECORD DRAWINGS. SPECIFICATIONS, AND/OR PRODUCT DATA

ASSOCIATES ALL EMERGENCY, OPERATION, AND MAINTENANCE MANUALS FOR

IF ITEMS IN THE PROJECT SPECIFICATIONS AND PROJECT DRAWINGS CONTRADICT EACH OTHER,

NOTIFY WILLETT HOFMANN & ASSOCIATES FOR CLARIFICATION PRIOR TO SUBMITTING A BID.

PROVIDE CONCRETE SPLASH PADS AT ALL DOWNSPOUT LOCATIONS IF NOT CONNECTED TO UNDERGROUND STORM LINE.

PROVIDE EXTERIOR DRIVE, PARKING AND SIDEWALK CONCRETE PAVING AS INDICATED ON THE DRAWINGS. REFER TO CIVIL DRAWINGS.

#### **DIVISION 04- MASONRY**

ADHERED MASONRY VENEER (AMV):

ADHERED MASONRY VENEER INSTALLED PER ASTM C1780.

FLASHING AND FLASHING ACCESSORIES TO BE CORROSION RESISTANT AND INTEGRATED WITH THE WEATHER BARRIER MATERIAL FLASHING TO BE INSTALLED AT ALL THROUGH WALL PENETRATIONS AND AT TERMINATIONS OF AMV INSTALLATIONS.

WEEP SCREEDS AND CASING BEADS TO BE CORROSION RESISTANT, WITH WEEP SCREEDS HAVING A MINIMUM VERTICAL ATTACHMENT FLANGE OF 3.5 INCHES THAT TERMINATES BEHIND THE WEATHER BARRIER MATERIAL METAL WEEP SCREEDS AND CASING BEADS TO BE MINIMUM 26 GAUGE. PLASTIC WEEP SCREEDS AND CASING BEADS TO BE MINIMUM .05 INCH THICK.

ALL LATH AND LATH ACCESSORIES TO BE CORROSION RESISTANT ALL LATH MATERIAL MUST BE SELF-FURRED OR USE SELF-FURRING FASTENERS

4.1. ACCEPTABLE LATH MATERIALS INCLUDE:

4.1.1. 2.5 LB/SQ. YD. (OR HEAVIER) SELF-FURRING METAL LATH MEETING ASTM C847

3/8 INCH RIB (HIGH RIB), 3.4 LB/SQ. YD. (OR HEAVIER), SELF-FURRING METAL LATH

WELDED WIRE LATH COMPLYING WITH ASTM C933

18 GAUGE (OR HEAVIER) WOVEN WIRE MESH MEETING ASTM C1032

4.1.5. METAL LATH TO BE APPLIED HORIZONTALLY AND TO OVERLAP A MINIMUM OF 1 INCH AT THE HORIZONTAL AND VERTICAL SEAMS. THE ENDS OF ADJOINING LATH PLACES TO BE STAGGERED. LATH "CUPS" (KEYS) TO BE INSTALLED FACING UP. LATH TO BE WRAPPED AROUND INSIDE AND OUTSIDE CORNERS A MINIMUM OF 12 INCHES. LATH TO BE FASTENED EVERY 6 INCHES VERTICALLY ON EACH STUD OR SIMILAR SPACING ON CONCRETE OR MASONRY WALL SURFACES. DO NOT END LATH AT CORNER FRAMING.

4.2. SEE DRAINAGE MAT SECTION FOR DRAINAGE MAT MATERIAL.

FASTENERS FOR FLASHING AND LATH TO BE CORROSION RESISTANT STAPLES, SCREWS OR NAILS ARE ALL ACCEPTABLE FASTENERS PROVIDED THE HEADS OR WASHERS OF THESE FASTENERS ARE LARGE ENOUGH TO NOT PULL THROUGH THE LATH AND THE FASTENER IS OF SUFFICIENT LENGTH TO PENETRATE INTO THE SUPPORTING MATERIAL REFER TO ASTM C1063.

5.1. WOOD FRAMING: STAPLES. ROOFING NAILS OR SCREWS WITH WASHERS OF SUFFICIENT LENGTH TO PENETRATE A MINIMUM OF 3/4 INCH INTO FRAMING MEMBERS.

5.2. METAL FRAMING OR PANELS: SELF-TAPPING SCREWS WITH SUFFICIENT LENGTH TO PENETRATE 3/8 INCH THROUGH METAL STUDS OR PANELS.

5.3. MASONRY OR CONCRETE WALLS/PANELS: CONCRETE SCREWS OR POWDER ACTUATED FASTENERS (OR CAP FASTENER).

SCRATCH COAT MORTARS

6.1. SITE MIXED: MEETING REQUIREMENTS OF ASTM C270 TYPE NOR TYPE S.

6.2. PREBLENDED: MEETING REQUIREMENTS OF ASTM C1714/C1714M TYPE NOR TYPE S.

SETTING BED MORTARS

7.1. SITE MIXED: MEETING REQUIREMENTS OF ASTM C270 TYPE NOR TYPE S. 8.2. PREPACKAGED/PREBLENDED: MEETING REQUIREMENTS OF ASTM C1714/C1714M TYPE NOR TYPE S, ANSI A 118.1, ANSI A118.4, OR ANSI A118.15. POINTING

8. MORTARS (GROUTING MORTARS)

8.1. SITE MIXED: MEETING REQUIREMENTS OF ASTM C270 TYPE NOR TYPE S.

8.2. PTRYEPME SIX. ED: MEETING REQUIREMENTS OF ASTM C1714 / C1714M TYPE NOR

**DIVISION 05 - METALS** 

PIPE AND TUBE RAILINGS:

TYPICAL RAILINGS TO BE:

1.1. 1-1/4" OUTSIDE DIAMETER STEEL PIPE TOP AND BOTTOM RAILS.

1.2. 1-1/4" OUTSIDE DIAMETER STEEL PIPE POSTS AND INTERMEDIATES.

1.3. 1-1/4" OUTSIDE DIAMETER STEEL PIPE HAND RAILS.

1.4. 1/2" STEEL ROD PICKETS.

ALL WELDS SHALL BE GROUND SMOOTH AND ASSEMBLY SHALL BE PAINT-READY

MAXIMUM HANDRAIL DIAMETER IS 1-1/2".

SEE DIVISION 9 FOR PAINT FINISH

#### **DIVISION 06 - WOOD, PLASTICS AND COMPOSITES**

PROTECT STORED ON-SITE AND INSTALLED ABSORPTIVE MATERIALS FROM MOISTURE DAMAGE.

ROUGH CARPENTRY MATERIALS TO INCLUDE "SPF" OR EQUAL FRAMING, BLOCKING AND FURRING. SIZE AND LOCATION PER PLANS.

3. PROVIDE BLOCKING IN WALLS FOR ALL WALL-MOUNTED ITEMS AS NEEDED.

PROTECT STORED ON-SITE AND INSTALLED ABSORPTIVE MATERIALS FROM MOISTURE DAMAGE.

EXTERIOR FIRE-RETARDANT-TREATED WOOD WALL SHEATHING TO BE 5/8" FIRE-RETARDANT-TREATED PLYWOOD SHEATHING (EXTERIOR RATED), OR AS INDICATED ON THE

WOOD ROOF SHEATHING TO BE 3/4" OSB SHEATHING (EXTERIOR RATED). OR AS INDICATED ON THE

4. ZIP SYSTEM SHEATHING TO BE ZIP SYSTEM WALL SHEATHING AS MANUFACTURED BY HUBER

ENGINEERED WOODS LLC, CHARLOTE, NC; WEBSITE: www.huberwood.com 4.1. WEATHER BARRIER FACER: MEDIUM-DENSITY, PHENOLIC-IMPREGNATED SHEET

MATERIAL QUALIFYING AS A GRADE D WEATHER-RESISTIVE BARRIER IN ACCORDANCE

4.2. FASTENERS TO BE CORROSION RESISTANT AND OF SIZE AND TYPE COMPLYING WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROJECT CONDITIONS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION

4.3. SHEATHING JOINT AND PENETRATION TREATMENT MATERIAL TO BE HUBER ENGINEERED WOODS ZIP SYSTEM TAPE.

4.4. SELF-ADHERING FLEXIBLE FLASHING TAPE TO BE HUBER ENGINEERED WOODS 4.5. INSTALL SHEATHING PANELS IN ACCORDANCE WITH MANUFACTURER'S

WRITTEN INSTRUCTIONS, REQUIREMENTS OF APPLICABLE EVALUATION REPORTS, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

4.6. COORDINATE SHEATHING INSTALLATION WITH FLASHING AND JOINT SEALANT INSTALLATION AND WITH ADJACENT BUILDING AIR AND MOISTURE BARRIER COMPONENTS TO PROVIDE COMPLETE, CONTINUOUS AIR AND MOISTURE BARRIER

4.5. DO NOT BRIDGE EXPANSION JOINTS; ALLOW JOINT SPACING EQUAL TO SPACING OF STRUCTURAL SUPPORTS.

4.6. INSTALL PANELS WITH LAMINATED FACER TO EXTERIOR. STAGGER END JOINTS OF ADJACENT PANEL RUNS. SUPPORT ALL PANEL EDGES.

4.7. ATTACH SHEATHING PANELS SECURELY TO SUBSTRATE WITH MANUFACTURER-APPROVED FASTENERS IN COMPLIANCE WITH ICC-ES ESR-1539 OR ICC-NES NER-272 FOR POWER-DRIVEN FASTENERS AND IBC TABLE 2304.9.1 FASTENING

4.8. APPLY SEAM TAPE AT ALL PANEL SEAMS, PENETRATIONS, AND FACER DEFECTS OR CRACKS TO FORM CONTINUOUS WEATHERTIGHT SURFACE. APPLY TAPE ACCORDING TO MANUFACTURER"S WRITTEN INSTRUCTIONS AND REQUIREMENTS OF ICC-ES APPLICABLE TO

4.9. APPLY ZIP SYSTEM STRETCH TAPE AROUND WINDOW FRAMES, DOOR FRAMES, RADIUS FENESTRATIONS AND WALL PENETRATIONS TO FORM A CONTINUOUS WEATHERTIGHT SURFACE. APPLY TAPE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND REQUIREMENTS OF IAPMO ER365 APPLICABLE TO TAPE APPLICATION.

## SHOP-FABRICATED WOOD TRUSSES:

1. PROVIDED BY PRE-ENGINEERED BUILDING SUPPLIER - SEE DIV 13.

**INTERIOR ARCHITECTURAL WOODWORK:** 

PROTECT STORED ON-SITE AND INSTALLED ABSORPTIVE MATERIALS FROM MOISTURE DAMAGE.

ALL CLEAR WOOD FINISHES AND STAINS SHALL NOT EXCEED VOC CONTENT LIMITS PER SCQAMD

2.1. STAIN: 250 g/L MAX.

2.2. CLEAR VARNISH: 350 g/L MAX. 3. PLASTIC LAMINATE COUNTERTOPS

3.1. SQUARE EDGE TYPICAL. NO POST FORM COUNTERTOPS.

3.2. T-MOLD EDGE AT DESK HEIGHT TOPS AND/OR TOPS WITH ROUNDED CORNERS.

3.3. PROVIDE BACK SPLASHES AT TOPS WITH SINKS AND/OR AS INDICATED ON THE DRAWINGS

3.4. DROP IN TRASH CHUTES (WHERE PRESENT) PROVIDED AND INSTALLED BY MILL WORK CONTRACTOR TRASH CHUTE TO BE ROUND STAINLESS STEEL TRASH GROMMET WITH MINIMUM 2 INCH DEPTH

3.5. 1 1/2" FRONT OVERHANG

3.6. 1/2" SIDE OVERHANG

3.7. STANDARD GRADE AT HORIZONTAL SURFACES

SOLID SURFACE COUNTERTOPS

4.1. ALL EXPOSED VERTICAL EDGES TO BE POLISHED TO MATCH FINISH OF HORIZONTAL

4.2. UNDERMOUNT SINKS (STAINLESS STEEL AND PORCELEIN) PROVIDED BY PLUMBING CONTRACTOR AND INSTALLED BY MILL WORK CONTRACTOR

4.3. SOLID SURFACE SINKS PROVIDED AND INSTALLED BY MILLWORK CONTRACTOR.

4.4. UNDERMOUNT TRASH CHUTES (WHERE PRESENT) PROVIDED AND INSTALLED BY MILLWORK CONTRACTOR. TRASH CHUTE TO BE ROUND STAINLESS STEEL

UNDERMOUNT TRASH GROMMET WITH MINIMUM 2 INCH DEPTH. 4.5.

FAUCETS PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR. FULL-OVERLAY

DOORS/DRAWERS, FRAMELESS BOXES.

DOOR/DRAWER PULLS AS INDICATED ON DRAWINGS.

8. CABINETRY AS SHOWN ON DRAWINGS. CABINET DOOR HINGES TO BE BLUM, INSERT A SOFT-CLOSE HINGES.

10. ALL DRAWERS TO HAVE BLUM BLUMOTION SELF-CLOSING DRAWER SLIDE SYSTEM WITH WHITE MELAMINE BOTTOM AND BACK. REFER TO DRAWINGS.

#### DIVISION 07 - THERMAL AND MOISTURE PROTECTION

WATERPROOFING:

FLEXIBLE THRU-WALL FLASHING TO BE W.R. GRACE PERM-A-BARRIER WALL FLASHING OR EQUAL WITH STAINLESS STEEL DRIP EDGE. PROVIDE END DAMS AT THE TOP AND BOTTOM OF ALL OPFNINGS

THERMAL INSULATION

PROTECT STORED ON-SITE AND INSTALLED ABSORPTIVE MATERIALS FROM MOISTURE DAMAGE. WALL INSULATION TO BE FRICTION FIT FIBERGLASS BATT INSULATION TO FILL STUD CAVITY. R-20

MINIMUM. GREENGUARD CERTIFIED. PROVIDED BY PRE-ENGINEERED BUILDING SUPPLIER - SEE DIV 3. VAPOR RETARDER TO BE CERTAINTEED MEMBRAIN SMART VAPOR RETARDER OR EQUAL. PROVIDED

RIGID FOUNDATION INSULATION TO BE HIGH-DENSITY EXTRUDED POLYSTYREN (XPS) BOARD INSULATION. OWENS CORNING FOAMULAR 250 OR DOW STYROFOAM.

FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS TO ACHIEVE A MINIMUM 1/8" CONTINUOUS DRAINAGE GAP TO FLASHING AND WEEPS.

ACCEPTABLE DRAINAGE MAT MATERIALS INCLUDE:

BY PRE-ENGINEERED BUILDING SUPPLIER - SEE DIV 13.

2.1. DRIWALL RAINSCREEN 013-1 BY KEENE

2.2. STUCO-O-FLEX WATERWAY 3 MM RAINSCREEN DRAINAGE MAT 2.3. SURE CAVITY OR GRAVITY CAVITY BY MASONRY TECHNOLOGY INCORPORATED (MTI).

2.4. SLICKER RAINSCREEN BY BENJAMIN OBDYKE.

2.5. MORTAIRVENT RAINSCREEN BY ADVANCED BUILDING PRODUCTS, INC.

CONTRACTOR OPTION: IT IS ALSO ACCEPTABLE TO USE LATHNET BY MORTAR NET SOLUTIONS WHICH FUNCTIONS AS BOTH THE DRAINAGE MAT AND METAL LATH.

PROVIDE FLASHING AND SHEET METAL ACCESSORIES PER ROOFING MATERIAL MANUFACTURER STANDARDS TO PROVIDE A COMPLETE, WEATHER-TIGHT ROOF SYSTEM. PROVIDED BY PRE-ENGINEERED BUILDING SUPPLIER - SEE DIV 13. WALL TRIMS AND FASCIA COVERS TO BE PRE-FINISHED 24-GAUGE GALVANIZED STEEL. PROVIDED BY PRE-ENGINEERED BUILDING SUPPLIER -

SEE DIV 13. SOFFIT PANELS AND BRAKE METAL TRIM - SEE DRAWINGS FOR SELECTIONS. PROVIDED BY PRE-ENGINEERED BUILDING SUPPLIER - SEE DIV 13.

### **DIVISION 08 - OPENINGS**

HOLLOW METAL FRAMES:

HOLLOW METAL FRAMES TO BE WELDED CONSTRUCTION.

1.1. 16 GA. COLD-ROLLED STEEL AT INTERIOR

1.2. 14 GA. GALVANEALED STEEL AT EXTERIOR

1.3. 2" FACE AT HEAD AND JAMB UNLESS NOTED OTHERWISE

1.4. SILENCERS ARE TO BE FURNISHED AND INSTALLED BY THE HOLLOW METAL FRAME

2. REFER TO DRAWINGS FOR FIRE-RATED DOOR LOCATIONS.

**HOLLOW METAL DOORS:** 

1. INTERIOR DOORS TO BE 18 GA. COLD-ROLLED STEEL WITH POLYSTYRENE CORES. FLUSH STYLE WITH

EXTERIOR DOORS TO BE 18 GA. GALVANEALED STEEL WITH POLYSTYRENE CORE. FLUSH STYLE WITH

REFER TO DRAWINGS FOR FIRE-RA TED DOOR LOCATIONS. FIRE-RATED DOORS ARE TO MEET UL 10C, POSITIVE PRESSURE FIRE TESTING AND ARE TO BE CATEGORY "A" DOORS WITH CONCEALED INTUMESCENCE FURNISHED BY THE DOOR MANUFACTURER.

FLUSH WOOD DOORS:

1. 1-3/4" SOLID CORE, PREMIUM GRADE, FLUSH STYLE, FIELD-FINISHED HARDWOOD VENEER DOORS. WOOD VENEER TO BE SELECTED BY ARCHITECT FROM MANUFACTURERS

HARDWOOD VENEER TO BE A-GRADE, PLAIN-SLICED, BOOK & RUNNING MATCH, MATCHING

STILES. PAIR MATCH DOUBLE DOORS.

ENGINEERED CORE AT "LITE" DOORS.

2-3/8" BACKSET AT FULL-LITE DOORS.

WINDOW KITS TO BE WOOD FLUSH.

STANDARD UNDERCUTS: 5/8" AT BOTTOM, 1/8" AT LOCK, HINGE AND TOP.

CYLINDRICAL LOCK PREP FOR 2-1/8". FULL LIP STRIKE PREP.

7. 2-3/4" BACKSET WITH SCREW-APPLIED LATCHBOLT SET.

REFER TO DRAWINGS FOR FIRE-RATED DOOR LOCATIONS. FIRE-RATED DOORS TO MEET UL10C, POSITIVE PRESSURE FIRE TESTING AND ARE TO BE CATEGORY "A" DOORS WITH CONCEALED INTUMESCENSE FURNISHED BY THE DOOR MANUFACTURER.

DOOR HARDWARE:

MOUNTING HEIGHTS OF HARDWARE TO BE PER DHI RECOMMENDED LOCATIONS AND ACCESSIBILITY

INSTALL HARDWARE ON FIRE-RATED DOORS AND FRAMES IN ACCORDANCE WITH APPLICABLE CODES

REFER TO DRAWINGS FOR DOOR HARDWARE FINISH (US-26D OR US-32D UNLESS NOTED OTHERWISE).

3.1. GRADE 1 HEAVY DUTY FOR EXTERIOR DOORS 3.2. GRADE 2 MEDIUM-DUTY FOR INTERIOR DOORS CYLINDRICAL LOCK

3.3. PREP FOR 2-1/8" 3.4. 2-3/4" BACKSET WITH SCREW-APPLIED LATCHBOL T SET 2-3/8"

3.5. BACKSET AT FULL-LITE DOORS

3.6. 1 1/2" ANSI STANDARD, CURVED FULL LIP STRIKE

4.1. HINGES: ANSI/BHMA A156.1 BUTT HINGES WITH NUMBER OF HINGE KNUCKLES AND OTHER OPTIONS AS SPECIFIED IN THE DOOR HARDWARE SETS.

CONTINUOUS HINGES 5.1. CONTINUOUS GEARED HINGES: ANSI/BHMA A156.26 GRADE 1-600 CONTINUOUS GEARED HINGE. WITH MINIMUM 0.120-INCH THICK EXTRUDED 6063-T6 ALUMINUM ALLOY HINGE LEAVES AND A MINIMUM OVERALL WIDTH OF 4 INCHES, HINGES ARE NON-HANDED. REVERSIBLE

AND A156.16. GRADE 1.

9. CYLINDRICAL LOCKS AND LATCHING DEVICES

AND FABRICATED TO TEMPLATE SCREW LOCATIONS. FACTORY TRIM HINGES TO SUIT DOOR HEIGHT AND PREPARE FOR ELECTRICAL CUT-OUTS. 6.1. FLUSH BOLTS AND SURFACE BOLTS: PROVIDE PRODUCTS CONFORMING TO ANSI/BHMA A156.3

6.2. COORDINATORS: ANSI/BHMA A156.3 DOOR COORDINATORS CONSISTING OF ACTIVE-LEAF. HOLD-OPEN LEVER AND INACTIVE-LEAF RELEASE TRIGGER. MODEL AS INDICATED IN HARDWARE SETS. DOOR PUSH PLATES AND PULLS: ANSI/BHMA A156.6 DOOR PUSHES AND PULL UNITS OF TYPE AND DESIGN SPECIFIED IN THE HARDWARE SETS. COORDINATE AND PROVIDE PROPER WIDTH AND HEIGHT

GENERAL: CYLINDER MANUFACTURER TO HAVE MINIMUM (10) YEARS EXPERIENCE DESIGNING SECURED MASTER KEY SYSTEMS AND HAVE ON RECORD A PUBLISHED SECURITY KEYING SYSTEM POLICY.

7.2. KEYING SYSTEM: EACH TYPE OF LOCK AND CYLINDERS TO BE FACTORY KEYED. 7.2. KEYING QUANTITY: PROVIDE THE FOLLOWING MINIMUM NUMBER OF KEYS: CHANGE KEYS PER CYLINDER: TWO (2) MASTER KEYS (PER MASTER KEY LEVEL/GROUP): FIVE (5)

AS REQUIRED WHERE CONFLICTING HARDWARE DICTATES.

CONSTRUCTION KEYS (WHERE REQUIRED): TEN (10)

MORTISE LOCKS AND LATCHING DEVICES 8.1. MORTISE LOCKSETS, GRADE 1 (HEAVY DUTY): PROVIDE ANSI/BHMA A156.13, SERIES 1000 OPERATIONAL GRADE 1 CERTIFIED PRODUCTS DIRECTORY (CPD) LISTED MORTISE LOCKSETS. LISTED MANUFACTURERS SHALL MEET ALL FUNCTIONS AND FEATURES AS SPECIFIED HEREIN.

9.1. CYLINDRICAL LOCKSETS, GRADE 1 (HEAVY DUTY): ANSI/BHMA A156.2, SERIES 4000, OPERATIONAL GRADE 1 CERTIFIED PRODUCTS DIRECTORY (CPD) LISTED CYLINDRICAL LOCKSETS, LISTED MANUFACTURERS SHALL MEET ALL FUNCTIONS AND FEATURES AS SPECIFIED HEREIN. LOCK AND LATCH STRIKE

10.1. STRIKES: PROVIDE MANUFACTURER'S STANDARD STRIKE WITH STRIKE BOX FOR EACH LATCH OR LOCK BOLT, WITH CURVED LIP EXTENDED TO PROTECT FRAME, FINISHED TO MATCH DOOR HARDWARE SET, UNLESS OTHERWISE INDICATED. 11. CONVENTIONAL EXIT DEVICES

11.1. CONVENTIONAL PUSH RAIL EXIT DEVICES (HEAVY DUTY): ANSI/BHMA A156.3, GRADE 1 CERTIFIED PRODUCTS DIRECTORY (CPD) LISTED EXIT DEVICES. LISTED MANUFACTURERS SHALL MEET ALL FUNCTIONS AND FEATURES AS SPECIFIED HEREIN. SURFACE DOOR CLOSERS 12.1. DOOR CLOSERS, SURFACE MOUNTED (LARGE BODY CAST IRON): ANSI/BHMA A156.4, GRADE 1

CERTIFIED PRODUCTS DIRECTORY (CPD) LISTED SURFACE MOUNTED, HEAVY DUTY DOOR CLOSERS WITH COMPLETE SPRING POWER ADJUSTMENT, SIZES 1 THRU 6; AND FULLY OPERATIONAL ADJUSTABLE ACCORDING TO DOOR SIZE, FREQUENCY OF USE, AND OPENING FORCE. CLOSERS TO BE RACK AND PINION TYPE, ONE PIECE CAST IRON BODY CONSTRUCTION, WITH ADJUSTABLE BACKCHECK AND SEPARATE NON-CRITICAL VALVES FOR CLOSING SWEEP AND LATCH SPEED CONTROL.

13.1. DOOR STOPS AND BUMPERS: ANSI/BHMA A156.16, GRADE 1 DOOR STOPS AND WALL BUMPERS.

PROVIDE WALL BUMPERS, FITHER CONVEX OR CONCAVE TYPES WITH ANCHORAGE AS INDICATED. UNLESS FLOOR OR OTHER TYPES OF DOOR STOPS ARE SPECIFIED IN HARDWARE SETS. DO NOT MOUNT FLOOR STOPS WHERE THEY WILL IMPEDE TRAFFIC. WHERE FLOOR OR WALL BUMPERS ARE NOT APPROPRIATE, PROVIDE OVERHEAD TYPE STOPS AND HOLDERS. DOOR HARDWARE SETS 14.1. THE HARDWARE SETS REPRESENT THE DESIGN INTENT AND DIRECTION OF THE OWNER AND ARCHITECT. THEY ARE A GUIDELINE ONLY AND SHOULD NOT BE CONSIDERED A DETAILED HARDWARE SCHEDULE.

DISCREPANCIES, CONFLICTING HARDWARE AND MISSING ITEMS SHOULD BE BROUGHT TO THE

ATTENTION OF THE ARCHITECT WITH CORRECTIONS MADE PRIOR TO THE BIDDING PROCESS. OMITTED ITEMS NOT INCLUDED IN A HARDWARE SET SHOULD BE SCHEDULED WITH THE APPROPRIATE ADDITIONAL HARDWARE REQUIRED FOR PROPER APPLICATION AND FUNCTIONALITY. 14.1.1. QUANTITIES LISTED ARE FOR EACH PAIR OF DOORS, OR FOR EACH SINGLE DOOR. 14.1.2. THE SUPPLIER IS RESPONSIBLE FOR HANDING AND SIZING ALL PRODUCTS. 14.1.3. WHERE MULTIPLE OPTIONS FOR A PIECE OF HARDWARE ARE GIVEN IN A SINGLE LINE ITEM. THE SUPPLIER SHALL PROVIDE THE APPROPRIATE APPLICATION FOR THE OPENING 14.1.4. AT EXISTING OPENINGS WITH NEW HARDWARE THE SUPPLIER SHALL FIELD INSPECT EXISTING CONDITIONS PRIOR TO THE SUBMITTAL STAGE TO VERIFY THE SPECIFIED

HARDWARE WILL WORK AS REQUIRED. PROVIDE ALTERNATE SOLUTIONS AND PROPOSALS 14.2. MANUFACTURER'S ABBREVIATIONS 14.2.1. MK - MCKINNEY PE - PEMKO SU - SECURITRON RO - ROCKWOOD

SA - SARGENT 14.3. DOOR HARDWARE

1 Sweep

1 Threshold

Hardware Sets Set: 1.0 Doors: 100A 1 Continuous Hinge KDFM83-HD1 x Height Required 1 Rim Exit Device, Storeroom AD8504 Less Pull US10BE SA RM201 Mtg-Type 1XHD 613E RF 1 Conc Overhead Stop 1-x36 281D EB 1 Drop Plate SA EB 1 Blade Stop Spacer 581-2 SA 281 P10 EB SA 1 Surface Closer OT 1 Gasketing Provided by Alum. Door Supplier

RF - RIXSON OT - OTHER

Notes: Door normally closed, latched and secured. Entry by pull when door manually dogged open by hex key in exit device rail or key override. Free egress at all times.

253x3DFG

3452DNB TKSP

Doors: 100B			
1 Continuous Hinge	KDFM83-HD1 x Height Required		PE
1 Push Pull	RM251	10BE	RO
1 Conc Overhead Stop	1-x36	613E	RF
1 Drop Plate	281D	EB	SA
1 Blade Stop Spacer	581-2	EB	SA
1 Surface Closer	281 P10	EB	SA

Doors: 113A, 113F

CFM83HD1-M x Height Required		PE
8813 ETL	US32D	SA
9-x36	630	RF
281 PD10	EN	SA
K1050 10" x 2" LDW CSK BEV	US32D	RO
2891APK TKSP8		PE
3452CNB TKSP8		PE
253x3AFG		PE
	8813 ETL 9-x36 281 PD10 K1050 10" x 2" LDW CSK BEV 2891APK TKSP8 3452CNB TKSP8	8813 ETL US32D 9-x36 630 281 PD10 EN K1050 10" x 2" LDW CSK BEV US32D 2891APK TKSP8 3452CNB TKSP8

Notes: Door normally closed, latched and secured. Entry by lever when unlocked by key. Free egress at all times.

Set: 4.0 Doors: 201A T4A3786 5" x 4-1/2" US26D MK 6 Hinge, Full Mortise, Hvy Wt 1 Auto Flush Bolt 2842 US26D RO 1 Dust Proof Strike 570 US26D RO 10XG05 LL US26D SA 1 Entry/Office Lock 2696 1 Coordinator Black RO 2601AB/C 2 Mounting Bracket Black RO 281 CPS EN 2 Door Closer SA K1050 10" x 1" LDW CSK BEV US32D RO 2 Kick Plate 18041CNB TKSP8 2 Astragal 1 Gasketing PE Set: 5.0 Doors: 112A US26D MK 3 Hinge, Full Mortise, Hvy Wt T4A3786 4-1/2" x 4-1/2" 1 Entry/Office Lock 10XG05 LL US26D SA

EN SA

US32D RO

US26D MK

US26D SA

US26D RO

US26D RO

RO

RO

1 Gasketing Set: 6.0

1 Door Closer

1 Kick Plate

1 Threshold

Doors: 108A

Doors: 109A

1 Wall Stop

3 Silencer

3 Silencer

3 Silencer

3 Hinge, Full Mortise

Doors: 110A 3 Hinge, Full Mortise, Hvy Wt T4A3786 4-1/2" x 4-1/2" US26D MK US26D SA 1 Passage Set 10XU15 LL 1 Door Closer 281 P10 EN SA K1050 10" x 2" LDW CSK BEV 1 Kick Plate US32D RO 400 / 403 US26D RO 1 Wall Stop 1 Gasketing S88BL 315CN TKSP 1 Sweep

173A

281 CPS

K1050 10" x 2" LDW CSK BEV

Set: 7.0 Doors: 103A

3 Hinge, Full Mortise, Hvy Wt T4A3786 4-1/2" x 4-1/2" US26D MK US26D SA 10XG04 LL 1 Storeroom Lock 281 O EN SA 1 Door Closer 1 Wall Stop 400 / 403 US26D RO 608-RKW 3 Silencer

US26D MK 3 Hinge, Full Mortise TA2714 4-1/2" x 4-1/2" US26D SA 1 Entry/Office Lock 10XG05 LL 400 / 403 US26D RO 1 Wall Stop 608-RKW 3 Silencer

10XU15 LL 1 Passage Set 1 Wall Stop 400 / 403 608-RKW 3 Silencer

Set: 10.0 Doors: 101A 3 Hinge, Full Mortise, Hvy Wt T4A3786 4-1/2" x 4-1/2" US26D MK 1 Passage Set 10XU15 LL US26D SA 1 Door Closer 281 P10

400 / 403

608-RKW

TA2714 4-1/2" x 4-1/2"

Set: 11.0 Doors: 114B

3 Hinge, Full Mortise, Hvy Wt T4A3386 4-1/2" x 4-1/2" US32D MK CPC 10XU15 LL US26D SA 1 Passage Set 1 Surface Closer SRI 281 P10 EN SA US32D-1 Kick Plate K1050 10" x 2" LDW CSK BEV 1 Wall Stop 400 / 403 US26D RO

608-RKW

Set: 12.0 Doors: 105A

3 Hinge, Full Mortise, Hvy Wt T4A3786 4-1/2" x 4-1/2" US26D MK 1 Privacy Set w/ Indicator V21 EMB 8265 LNL US26D SA 1 Door Closer 281 O EN SA 1 Wall Stop 400 / 403 US26D RO 608-RKW 3 Silencer

Set: 13.0 Doors: 111A 3 Hinge, Full Mortise, Hvy Wt T4A3786 4-1/2" x 4-1/2" US26D MK V21 EMB 8265 LNL US26D SA 1 Privacy Set w/ Indicator 1 Door Closer 281 O EN SA K1050 10" x 2" LDW CSK BEV US32D RO 1 Kick Plate 400 / 403 US26D RO 1 Wall Stop

608-RKW

Doors: 113B, 113C, 113D, 113E, 113G, 114A

1 Hardware supplied with door

Install gasketing prior to soffit mounted hardware. Do not notch gasketing for soffit mounted hardware.

 $oldsymbol{\Omega}$ 

OF ETEI OTTU

PHASE

PRELIM PERMIT FINAL BID ☐ CONST WHA No.

1520C22 11-05-2024 SHEET

## ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS:

EXTERIOR ALUMINUM STOREFRONT FRAMING TO BE KAWNEER 451T OR EQUAL.

ARCHITECTURAL CLASS II ANODIC COATING FINISH. REFER TO DRAWINGS FOR FINISH

IF ITEMS IN THE PROJECT SPECIFICATIONS AND PROJECT DRAWINGS CONTRADICT EACH OTHER,

NOTIFY WILLETT HOFMANN & ASSOCIATESFOR CLARIFICATION PRIOR TO SUBMITTING A BID

PROJECT OUTLINE SPECIFICATIONS

PROVIDE THERMALLY-BROKEN ALUMINUM PAN SILL SET IN A BED OF SEALANT AT WINDOW SILLS. ALUMINUM ENTRANCE DOORS TO BE KAWNEER 350 SERIES OR EQUAL.

WELDED CONSTRUCTION

FINISH TO MATCH ALUMINUM FRAMING 3.3. OFFSET PIVOTS

3.4. CO-12 / CP-11 PUSH/ PULL SETS OR AS INDICATED ON DRAWINGS. 3.5. LCN 1461 CLOSER OR EQUAL

3.6. REESE WEATHERSTRIPPING

3.7. ADA-COMPLIANT THRESHOLD MANUFACTURER'S 3.8. STANDARD DOOR SWEEP

3.9 MANUFACTURER'S STANDARD PANIC DEVICES AS REQUIRED. 3.10. RIM LATCH AT SINGLE DOORS AND CONCEALED ROD AT DOUBLE DOORS.

INTERIOR ALUMINUM STOREFRONT FRAMING TO BE KAWNEER 450 OR EQUAL. REFER TO DRAWINGS FOR FINISH SELECTION.

EXTERIOR VISION GLAZING TO BE 1" INSULATING GLASS UNITS BY PPG GLASS OR EQUAL. SOLARBAN 70

INTERIOR GLAZING TO BE 1/4" CLEAR GLASS

PROVIDE TEMPERED GLASS AT LOCATIONS REQUIRED BY CODE.

REFER TO DRAWINGS FOR LOCATIONS AND TYPES OF OBSCURE OR PATTERN GLASS. PROVIDE SAMPLES FOR APPROVAL.

PROVIDE MIRRORS AS INDICATED ON PLANS.

MIRRORS TO BE 1/4" MATERIAL WITH ALL EDGES POLISHED WITHOUT BEVEL. SIZE AS INDICATED ON

3. MOUNT TO WALL WITH BRUSHED ALUMINUM J-CHANNEL TOP AND BOTTOM.

#### TRANSLUCENT WALL ASSEMBLIES:

1.1 PERFORMANCE AND DESIGN CRITERIA

1. DESIGN AND SIZE COMPONENTS TO WITHSTAND LOADS CAUSED BY POSITIVE AND NEGATIVE WIND LOADS ACTING NORMAL TO PLANE OF WALL, INCLUDING BUILDING CORNERS. 2. COMPLY WITH APPLICABLE CODE, AS TESTED ACCORDING TO ASTM E330/E330M.

B. SEISMIC LOADS: DESIGN AND SIZE COMPONENTS TO WITHSTAND SEISMIC LOADS AND SWAY DISPLACEMENT, AS CALCULATED ACCORDING TO APPLICABLE CODE.

C. DEFLECTION: LIMIT TO 3/4 INCH, WITH FULL RECOVERY OF GLAZING MATERIALS.

 ACCOMMODATE FOLLOWING SYSTEM ASSEMBLY CRITERIA WITHOUT DAMAGE TO SYSTEM, COMPONENTS, OR DETERIORATION OF SEALS:

MOVEMENT WITHIN SYSTEM

MOVEMENT BETWEEN SYSTEM AND PERIMETER FRAMING COMPONENTS. DYNAMIC LOADING AND RELEASE OF LOADS.

DEFLECTION OF STRUCTURAL SUPPORT FRAMING. TOLERANCE OF SUPPORTING COMPONENTS.

E. LIGHT TRANSMISSION: MIN - 30% PERCENT.

F. SOLAR HEAT GAIN COEFFICIENT (SHGC): MAX - 0.40

G. THERMAL RESISTANCE OF ASSEMBLY: MAXIMUM U-VALUE OF 0.38 SQ. FT. X H X DEG. F/BTU, WHEN MEASURED ACCORDING TO NFRC 100.

H. SOUND ATTENUATION THROUGH WALL SYSTEM, EXTERIOR TO INTERIOR: SOUND TRANSMISSION CLASS 50, MEASURED ACCORDING TO ASTM E1332.

AIR INFILTRATION:

AXIMUM LIMIT THROUGH ASSEMBLY: 0.06 CFM/SQ. FT. OF WALL AREA. MEASUREMENT BASIS: DIFFERENTIAL PRESSURE ACROSS ASSEMBLY OF 1.57 PSF, MEASURED

ACCORDING TO ASTM E283.

VAPOR SEAL: INTERIOR ATMOSPHERIC STATIC PRESSURE OF 1 INCH AT 72 DEG. F AND 40 PERCENT ELATIVE HUMIDITY WITHOUT SEAL FAILURE.

WATER LEAKAGE: NONE, MEASURED ACCORDING TO AAMA 501 WITH TEST PRESSURE DIFFERENCE OF 20 PERCENT OF DESIGN PRESSURE, AND WITH MINIMUM DIFFERENTIAL OF 2.86 LBF/SQ. FT. AND MAXIMUM DIFFERENTIAL OF 12.00 LBF/SQ. FT.

EXPANSION AND CONTRACTION: PROVIDE FOR EXPANSION AND CONTRACTION WITHIN SYSTEM COMPONENTS CAUSED BY CYCLING TEMPERATURE RANGE OF 170 DEG. F OVER 12-HOUR PERIOD WITHOUT CAUSING DETRIMENTAL EFFECT TO SYSTEM COMPONENTS.

M. SYSTEM INTERNAL DRAINAGE: DRAIN WATER ENTERING JOINTS, CONDENSATION OCCURRING IN FRAMING SYSTEM, OR MIGRATING MOISTURE OCCURRING WITHIN SYSTEM TO EXTERIOR VIA WEEP

N. AIR AND VAPOR SEAL

1. MAINTAIN CONTINUOUS AIR BARRIER AND VAPOR RETARDER THROUGHOUT ASSEMBLY, PRIMARILY IN LINE WITH INSIDE FACE OF GLAZING PANEL AND HEEL BEAD OF GLAZING

O. NOT PERMITTED: VIBRATION HARMONICS, WIND WHISTLES, NOISES CAUSED BY THERMAL MOVEMENT, THERMAL MOVEMENT TRANSMITTED TO OTHER BUILDING ELEMENTS, AND LOOSENING, WEAKENING OR FRACTURING OF ATTACHMENTS OR SYSTEM COMPONENTS

1.2 TRANSLUCENT WALL AND ROOF ASSEMBLIES A. MANUFACTURERS:

> KALWALL HIGH PERFORMANCE TRANSLUCENT BUILDING SYSTEMS SUBSTITUTIONS: AS SPECIFIED IN SECTION 01 60 00 - PRODUCT REQUIREMENTS.

FACTORY-ASSEMBLED PANELS OF TRANSLUCENT SKINS BONDED TO ALUMINUM GRID CORE.

. FACTORY PREFINISHED, INCLUDING PERIMETER FLASHINGS. 3. FRAMING GRID: SELF-SUPPORTING.

C. DEFLECTION: LIMIT TO 3/4 INCH, WITH FULL RECOVERY OF GLAZING MATERIALS.

1. DESCRIPTION: SKINS BONDED TO BOTH SIDES OF STRUCTURAL EXTRUDED ALUMINUM GRID

2. EXPOSED SURFACES OF EXTERIOR SHEET: CHEMICALLY AND PERMANENTLY TREATED TO PROTECT AGAINST SURFACE EROSION AND EXTREME WEATHER CONDITIONS. 3. EXPOSED SURFACES OF INTERIOR SHEETS: FIRE RETARDANT TO A

FLAME-SPREAD/SMOKE-DEVELOPED RATING OF 25/450 AND COATED WITH POLYVINYL FLUORIDE FILM. PANEL THICKNESS: 2-3/4 INCHES.

EXTERIOR FACING SHEETS:

a. AS SELECTED BY ARCHITECT INTERIOR FACING SHEETS

D. GLAZING ACCESSORIES: MANUFACTURER'S RECOMMENDED TYPE TO SUIT APPLICATION TO ACHIEVE WEATHER, MOISTURE, AND AIR INFILTRATION REQUIREMENTS.

THERMALLY BROKEN, WITH INTERIOR SECTION INSULATED FROM EXTERIOR ATTACHMENTS.

b. SIZE AND STRENGTH: SUFFICIENT TO PROVIDE BITE ON PANELS PRIOR TO AND DURING

4. WEEP DRAINAGE SYSTEM: FURNISH DRAINAGE HOLES, DEFLECTOR PLATES, AND INTERNAL

5. INTERNAL BAFFLES: ELIMINATE STACK-EFFECT AIR MOVEMENT WITHIN INTERNAL SPACES. REINFORCED MULLION: a. CLADDING: EXTRUDED ALUMINUM.

b. INTERNAL REINFORCEMENT: SHAPED STEEL STRUCTURAL SECTION.

F. BATTENS, COVER STRIPS, COVER PLATES, AND INTEGRAL FLASHINGS: . MATERIAL: EXTRUDED ALUMINUM. 2. SIZE: TO RIGIDLY RETAIN PANELS IN PLACE

G. GLAZING MATERIALS: OPERATING SASH:

a. EXTERIOR: EXPANDED EPDM CLOSED CELL SPONGE GASKET.

 INTERIOR: DRIVEN EPDM WEDGE GASKET 2. FIXED: EXPANDED EPDM SYSTEM WITH SNAP-IN GLAZING BEAD. H. SEALANT AND BACKING MATERIALS:

1. PERIMETER SEALANT: a. MATERIAL: SILICONE

TYPE: HIGH PERFORMANCE, GENERAL PURPOSE, EXTERIOR, NONTRAFFIC.

SEALANT USED WITHIN SYSTEM AND NOT USED FOR GLAZING: . METAL-TO-METAL JOINTS: EXTERIOR METAL LAP-JOINT TYPE b. OTHER LOCATIONS: AS RECOMMENDED BY MANUFACTURER.

SECUREMENT: CONCEALED FASTENING METHOD.

a. MINIMUM THICKNESS: 0.032 INCH.

b. FINISH: MATCH ADJACENT ALUMINUM

#### **DIVISION 09 - FINISHES**

OWNER TO RETAIN ALL OVERAGES OF CARPET, CERAMIC TILE, ACOUSTICAL CEILING TILE. PAINT,

ALL FINISH MATERIALS TO BE INSTALLED ACCORDING TO PRODUCT MANUFACTURER'S MOST CURRENT RECOMMENDATIONS. SUBCONTRACTORS ARE RESPONSIBLE FOR VERIFYING THESE REQUIREMENTS WITH PRODUCT MANUFACTURERS.

ALL SUBCONTRACTORS TO PROVIDE PRIMUS COMPANIES WITH THE MOST CURRENT MANUFACTURER RECOMMENDATIONS FOR CARE AND MAINTENANCE FOR EACH FINISH MATERIAL INSTALLED UPON PROJECT COMPLETION.

#### GYPSUM BOARD ASSEMBLIES:

REFER TO ARCHITECTURAL DRAWINGS FOR BEARING WALL LOCATIONS AND REQUIREMENTS.

LIGHT GAUGE INTERIOR METAL STUD FRAMING WITH CONTINUOUS TOP AND BOTTOM TRACK TO BE CORROSION-RESISTANT GALVANIZED. 16" O.C. STUD SPACING WITH SIZE AND GAUGE TO ACHIEVE L/240 ALLOWABLE DEFLECTION. PROVIDE LONG-LEG SLIP TRACK AT TOP TO ACCOMMODATE DEFLECTION OF ROOF STRUCTURE.

5/8" TYPE "X" GYPSUM BOARD TYPICAL AT ALL FRAMED WALLS, SOFFITS AND CEILINGS.

4. GYPSUM BOARD TO BE INSTALLED HORIZONTALLY TO MINIMIZE TAPED JOINTS.

METAL CORNER BEADS ONLY. LIGHT ORANGE PEEL FINISH TYPICAL AT ALL GYPSUM BOARD SURFACES UNLESS NOTED OTHERWISE. PROVIDE A SPRAY TEXTURE FINISH SAMPLE FOR OWNER REVIEW AND APPROVAL.

GYPSUM BOARD IN TOILET ROOMS, SHOWER ROOMS AND AT SERVICE SINKS TO BE NATIONAL GYPSUM "XP" MOISTURE, MOLD AND MILDEW RESISTANT GYPSUM BOARD OR EQUAL.

WALL SURFACES AT SHOWER UNITS TO RECEIVE CEMENTITIOUS BACKER BOARD.

SOUND BATT INSULATION TO BE SOUND ATTENUATION FIBERGLASS BATTS BY OWENS CORNING OR EQUAL IN THICKNESS TO FILL CAVITY, GREENGUARD CERTIFIED.

PROVIDE CONTROL JOINTS IN WALLS AS INDICATED ON PLANS AND/OR WHERE A PARTITION OR FURRING LENGTH EXCEEDS 30 FEET. COORDINATE LOCATIONS WITH ARCHITECT/DESIGNER.

PROVIDE CONTROL JOINTS AT CEILINGS AS INDICATED ON PLANS AND/OR WHERE A CEILING DIMENSION EXCEEDS 30 FEET IN EITHER DIRECTION. COORDINATE LOCATIONS WITH ARCHITECT/

REFER TO DRAWINGS FOR FLOOR AND/OR WALL TILE SELECTIONS.

TRANSITIONS BETWEEN FLOOR TILE AND CONCRETE, RESILIENT SHEET OR TILE FLOORING TO BE SCHLUTER RENO-LI, SATIN NICKEL ANODIZED ALUMINUM FINISH OR EQUAL

4. TRANSITIONS BETWEEN FLOOR TILE AND CARPET TO BE SCHLUTER SCH I ENE, SATIN NICKEL ANODIZED

WALL TILE WAINSCOT TO BE CAPPED WITH SCHLUTER RON DEC TILE TRIM, SATIN NICKEL ANODIZED ALUMINUM FINISH OR EQUAL.

### ACOUSTIC PANEL CEILINGS:

REFER TO DRAWINGS FOR ACOUSTIC PANEL CEILING SELECTIONS.

### RESILIENT BASE AND ACCESSORIES

REFER TO DRAWINGS FOR RESILIENT WALL BASE SELECTIONS AND LOCATIONS.

PROVIDE RUBBER ROLL GOODS WITH COVED BASE UNLESS NOTED OTHERWISE. ADHESIVES SHALL NOT EXCEED VOC CONTENT LIMITS PER SCAQMD RULE 1168 (50 g/L).

## RESILIENT SHEET AND/OR TILE FLOORING

REFER TO DRAWINGS FOR RESILIENT FLOORING SELECTIONS. FLOORING TRANSITIONS TO BE JOHNSONITE SLIM LINE SERIES ADAPTORS OR EQUAL. ADHESIVES SHALL NOT EXCEED VOC CONTENT LIMITS PER SCAQMD RULE1168 (50 g/L).

REFER TO DRAWINGS FOR CARPET SELECTIONS.

FLOORING TRANSITIONS TO BE JOHNSONITE SLIM LINE SERIES ADAPTORS OR EQUAL.

CARPET AND PAD ADHESIVES SHALL NOT EXCEED VOC CONTENT LIMITS PER SCAQMD RULE 1168 (50 g/L). AT CARPET TILE PROJECTS, PROVIDE A MINIMUM 2 FULL BOXES OF CARPET TILE FOR ATTIC STOCK.

ALL SURFACES WITH A PAINT FINISH TO RECEIVE ONE (1) COAT OF PRIMER/SEALER TINTED TO MATCH FINISH COAT AND TWO (2) COATS OF FINISH PAINT (MINIMUM). SOME ACCENT / DARKER PAINTS MAY REQUIRE ADDITIONAL COATS IN ORDER TO ACHIEVE PROPER COVERAGE. PAINTER IS TO

PROVIDE AS MANY COATS AS NEEDED TO ACHIEVE PROPER AND APPROPRIATE COVERAGE.

ALL PAINTS, COATINGS AND PRIMERS APPLIED TO INTERIOR WALLS AND CEILINGS SHALL NOT EXCEED VOC CONTENT LIMITS PER GREEN SEAL STANDARD GS-11.

FLAT PAINTS = 50 g/L MAX. NON-FLAT PAINTS = 150 g/L MAX.

ALL SURFACES TO RECEIVE WALLCOVERING TO RECEIVE ONE (1) COAT OF PRIMER/SEALER TINTED TO MATCH WALLCOVERING BACKGROUND COLOR.

SATIN/EGGSHELL FINISH PAINT TYPICAL AT ALL GYPSUM BOARD WALLS, SOFFITS AND BULKHEADS, UNLESS NOTED OTHERWISE.

FLAT FINISH PAINT AT ALL GYPSUM BOARD CEILINGS.

WALL SURFACES AT "WET WALLS" AT URINALS, WATER CLOSETS, SHOWERS AND SERVICE SINKS THAT ARE A PAINTED FINISH TO BE AN EPOXY PAINT TO PROVIDE A SMOOTH, HARD, NON-ABSORBANT

SEMI-GLOSS FINISH PAINT AT INTERIOR WOOD MOULDINGS, TRIM, BASE, DOORS AND TRIM THAT SEMI-GLOSS FINISH SPRAY PAINT AT HOLLOW METAL FRAMES, HOLLOW METAL DOORS, AND STEEL STAIRS AND RAILINGS, WHERE PRESENT.

e. Wall stripping f. Prefinished ribbed metal panels

### STAINING AND TRANSPARENT FINISHING

INTERIOR WOOD MOULDINGS, TRIM, BASE AND DOORS THAT RECEIVE A STAINED FINISH TO HAVE

ALL CLEAR WOOD FINISHES AND STAINS SHALL NOT EXCEED VOC CONTENT LIMITS PER SCAQMD

STAINS= 250 g/L MAX.

**DIVISION 10 - SPECIALTIES** 

2.2. CLEAR VARNISH= 350 g/L MAX. REFER TO DRAWINGS FOR STAIN COLOR SELECTION.

INTERIOR SIGNAGE FOR RESTROOMS. EXTERIOR SIGNAGE FOR ADA COMPLIANT PARKING SPACES.

CODE COMPLIANT ADDRESS NUMERALS AT THE MAIN ENTRANCE.

REFER TO DRAWINGS FOR FIRE EXTINGUISHER CABINET SELECTION.

#### TOILET. BATH, SHOWER AND LAUNDRY ACCESSORIES:

REFER TO DRAWINGS FOR ACCESSORY SELECTIONS AND LOCATIONS. REFER TO DIVISION 8 FOR MIRRORS.

#### FIRE EXTINGUISHER CABINETS:

PORTABLE FIRE EXTINGUISHERS TO BE PROVIDED BY GENERAL CONTRACTOR. FIRE EXTINGUISHER SHALL BE 5 LB. 2A, 10B-C OR AS REQUIRED BY THE INTERNATIONAL FIRE CODE AND

PORTABLE FIRE EXTINGUISHERS SHALL BE MOUNTED IN CLEAR VIEW AND REACH. THE MAXIMUM

TRAVEL DISTANCE TO ANY PORTABLE FIRE EXTINGUISHER SHALL NOT EXCEED 75 FEET. ONE PORTABLE

FIRE EXTINGUISHER IS REQUIRED EVERY 150 FEET. THE MAXIMUM TRAVEL DISTANCE TO ANY PORTABLE FIRE EXTINGUISHER SHALL NOT

## **DIVISION 13 - SPECIAL CONSTRUCTION**

EXCEED 30 FEET WHERE COOKING IS PERFORMED.

SECTION 13 3418 - POST FRAME BUILDING SYSTEMS

#### **PART 1 GENERAL**

1.01 SECTION INCLUDES

A. Pre-Engineered factory and field fabricated Timber Column Structure and Mezzanine

B. Prefinished metal roofing and siding panels C. Prefinished metal trim items

D. Prefinished soffits E. Prefinished gutters and downspouts

1.02 PRODUCTS NOT FURNISHED UNDER THIS SECTION

1.03 RELATED SECTIONS

## A. None

F. Interior liner package

1.04 REFERENCE STANDARDS A. Building Design Standards

 2015 International Building Code 2. American Society of Civil Engineers; ASCE-7-22 Minimum Design Loads

American Wood Council (AWC)

a. National Design Specification (2018 NDS) for Wood Construction B. Preservative Treated Lumber American Wood Protection Association (AWPA)

 a. 2023 AWPA Book of Standards Use Category System U1, User Specification for Treated Wood ii. UC4A, Important Structural - Ground Contact

and Associated Criteria for Buildings and Other Structures

2. International Code Council - Evaluation Service Report 2240 a. Micronized Copper Azole preservative-treated lumber

C. Concrete Foundation and Flatwork 1. American Concrete Institute (ACI) a. ACI 318-19(22) Building Code Requirements for Structural Concrete

1. National Design Specification for Wood Construction (2018 NDS)

Southern Pine Inspection Bureau (SPIB) a. 2021 Standard Grading Rules for Southern Pine Lumber

3. National Lumber Grades Authority (NLGA) a. 2022 National Lumber Grades Authority Standard Grading Rules for Canadian Lumber

1. Truss Plate Institute (ANSI / TPI-1 - 2014 National Design Standard for Metal Plate Connected Wood Truss a. Design, engineering, and quality control requirements for manufactured wood trusses

## 1.05 SYSTEM DESCRIPTION

A. Post-Frame Construction Clear span 2. Primary Framing

a. Columns b. Trusses c. Lateral bracing

3. Mezzanine Framing a. Joists 4. Secondary framing

 a. Perimeter baseboards / preservative-treated b. Wall girts (nailers)

e. Ancillary blocking or furring as required Roof Covering a. Prefinished ribbed metal panels

Other roof coverings as required

d. Overhang rafters and fascia

6. Wall Covering a. Prefinished ribbed metal panels b. Other wall coverings as required Insulation and Liner Package

a. Wall insulation

b. Ceiling insulation

c. Air deflectors

d. Vapor retarder

#### 1.06 DESIGN REQUIREMENTS

A. Building shall be designed in accordance with standards identified in Section 1.04

a. Top and Bottom Truss Chords: See building plans for specific loads required

 Top Chord Live Load ii. Top Chord Dead Load

iii. Bottom Chord Dead Load

iv. Bottom Chord Point Load b. Unbalanced Snow Loads: In accordance with ASCE-7-22

Wind Speed: See building plans for specific wind speed requirements 3. Seismic Loads: See building plans for specific seismic load requirements

4. System Requirements a. Roof and wall system shall be able to withstand the imposed loads with maximum allowable deflection in accordance with 2015 IBC.

b. Assembly shall permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects. c. Size and fabrication of roof and wall systems to be free of distortion or defects that would be detrimental

#### 1.07 SUBMITTALS

A. Submit under provisions of Division 01

to appearance or performance

B. Provide 03 sets of the following bearing the seal of a Professional Engineer, registered in the state where the

1. Complete and detailed shop and erection drawings showing size and location of each part and component, certifying that the building design meets specified roof and wind loading requirements

2. Truss engineering analysis and design data, including the following a. Axial forces and bending moments for each member

c. Design analysis of each joint showing that proper plates have been applied

3. Manufacturer's metal panel standard color chart

1.08 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Division 01

1.09 QUALITY ASSURANCE

A. Truss Assembly Quality 1. Manufacturer shall provide evidence of compliance with quality control requirements of TPI-1 - 2014

2. Trusses shall be stamped to indicate quality assurance auditing by an independent agency B. Prefinished Ribbed Metal Panels 1. Manufacturer shall provide evidence of compliance with UL2218 and UL790 (Hail impact and external fire

resistance, respectively) for roofing panels a. Prefinished Ribbed Metal Panels to be applied as roofing shall be delivered with a certificate to indicate compliance with UL2218 Class 4 and UL790 Class A

C. Other Manufacturer Certifications and Approvals as Required

## 1.10 QUALIFICATIONS

A. Contractor shall have a minimum of forty years documented experience in the manufacture and erection of

B. Contractor shall present evidence of written procedures to describe how components are to be assembled during erection of the structure. C. Design of structural components shall be performed under the direct supervision of a Professional Engineer

D. The Contractor shall employ adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper and safe performance of the work.

E. Contractor shall be responsible for proper storage of all materials, including subcontractors' materials

experienced in design of this type of structure and licensed in the state where the project is located.

#### 1.11 REGULATORY REQUIREMENTS

B. Contractor shall cooperate with regulatory agencies or authorities to provide data as requested.

A. Contractor shall be responsible for compliance with all applicable building codes and ordinances covering

1.12 PRE-CONSTRUCTION MEETING

A. The contractor shall convene a meeting no later than one week prior to commencing work under provisions B. The meeting shall include owner(s), contractors, and subcontractors. C. The meeting's agenda shall include a review of the project, responsibilities, timing, and coordination

### 1.13 FIELD MEASUREMENTS

A. Field measurements shall be taken to verify that components match shop drawings

required of contractor and subcontractors, safety plans and other information pertinent to the project.

1.14 DELIVERY, STORAGE AND HANDLING A. The contractor shall deliver and store prefabricated components (trusses, columns, steel panels and other materials) to ensure that they will not be damaged or deformed. B. The contractor shall be responsible to stack materials on platforms, pallets or other structures covered with

tarpaulins or other suitable weather-tight ventilated covering. The contractor shall additionally handle and

store structural parts in a manner that will avoid deforming members or subjecting parts to excessive C. The contractor shall store roofing, siding, and interior panels to allow water to drain feely.

D. The contractor shall not store panels in contact with other materials that could cause corrosion, discoloration, or staining.

allow for attachment of other work.

1.15 PROJECT CONDITIONS A. Contractor shall coordinate the work with other trades. B. Contractor shall fit carpentry work to other work. Scribe and cope as required for accurate fitting. C. Contractor shall be responsible to correlate location of furring, interior stripping, blocking and supports to

### 1.16 CERTIFICATIONS

A. The bidder's proposal must include evidence that the material specifications will be met. 1. Provide written certification letter that materials will meet all requirements of Sections 2.02, 2.03 and 2.04. B. The bidder's proposal must include a sample warranty identical to the warranty to be issued at completion

1. The sample warranty shall verify that the warranty specification described in Section 1.17 will be met.

1.17 WARRANTY A. The building manufacturer shall supply a warranty to the Owner which will meet the following

Period of Coverage	Material	Claim Conditions
50 Years	Preservative Treated Lumber	Failure due to decay or insect attack
50 Years	Building Framework Including Roofing and/or Siding Panels	Direct damage by snow loads
35 Years	Roofing and Siding Panels	Paint separation from panels
35 Years	Roofing and Siding Panels	Chalk rating less than rating of 8 (ASTM D4212) under normal weathering
35 Years	Roofing and Siding Panels	Color change greater than 5 units (ASTM D2244) under normal weathering
10 Years	Roofing and Siding Panels	Red rust corrosion greater than 1/2 inch from a sheared edge, visible in casual observation under normal weathering
5 Years	Building Framework Including Roofing and/or Siding Panels	Direct damage by wind loads unless damage is caused by flying or falling objects
5 Years	Roof Leaks	Leaks due to material or workmanship defects
1 Voor	Any huilding part	Proven defect in material or workmanshin

#### PART 2 PRODUCTS

2.01 MANUFACTURERS - BUILDING SYSTEM

A. Morton Buildings, Inc., Morton, Illinois

 B. Other manufacturers offering similar systems As approved by project architect

See certification requirements Section 1.16. C. Substitutions to or deviations from these specifications

2.02 MATERIALS - FRAMING A. Concrete Foundation

1. See Structural sheets for concrete specifications

thickness and material properties to meet design requirements.

1. Design and fabricate column sockets to meet design requirements. 2. Column sockets shall be fabricated from ASTM A1018 HSLAS hot-rolled steel with specified minimum

3. Column sockets shall be factory painted to enhance corrosion resistance.

1. Factory fabricated from minimum 3-ply No. 1 (or better) southern yellow pine lumber 2. Attach column to column socket with appropriate number and size of mechanically driven fasteners & bolts.

3. Provide factory or field installed blocking on outside face of column between nailers D. Wood Trusses

a. Top Chord: southern yellow pine of size and grade to meet design requirements b. Bottom Chord: southern yellow pine of size and grade to meet design requirements

c. Webs: southern yellow pine of size and grade to meet design requirements 2. Trusses shall be constructed of surfaced lumber (S4S) and compliant with SPIB visual and structural grade

3. Plates: Connector plates shall meet design requirements and shall be compliant with applicable ICC-ES

4. Design and fabricate trusses and connections to withstand snow, wind, dead, and all other loads indicated.

5. Fabricate trusses in plant, using mechanical or hydraulic fixtures as required to bring members into contact.

Install plates in accordance with Truss Plate Institute TPI-1 - 2014.

3. Preservative shall penetrate sapwood in compliance with AWPA or ICC-ESR standards and specifications.

1. 2"x8" nominal No. 1 southern yellow pine with 1.2" x 7/16" notch to accommodate OSB protective liner as 2. Pressure treated with wood preservative to a retention in compliance with applicable AWPA or ICC-ESR standards and specifications, and kiln dried after treatment to 19% maximum moisture content.

As required on building plans.

G. Purlins and Truss Ties

H. Overhang Framing 1. Provide factory fabricated rafter frames 2. Provide 2"x6" No. 2 spruce-pine-fir factory beveled fascia boards

1. 2"x4" nominal No. 2 or machine stress rated spruce-pine-fir as required on building plans

I. Lateral Bracing 1. 2"x6" No. 2 spruce-pine-fir factory or field cut boards to brace end wall columns with nearest available

1. 2"x4" No. 2 spruce-pine-fir around personnel doors and windows, according to building plans. 2. 2"x6" No. 2 spruce-pine-fir around overhead door openings, according to building plans.

1. 2"x4" and/or 2"x6" No. 2 spruce-pine-fir

nominal dry film thickness of one (1) mil.

B. Interior Liner Ribbed Building Panels

1. Provide headers as required on building plans L. Incidental Framing

M. Interior Framing (Stripping)

2"x4" No. 2 spruce-pine-fir

2.03 MATERIALS - PREFINISHED METALS A. Roofing / Siding / Wainscot Ribbed Building Panels

1. Panel substrate shall be (Roofing - 24 gauge, Siding - 26 gauge) minimum thickness commercial steel sheet

with G90 (zinc) metallic coating per ASTM A653 or AZ55 (aluminum / zinc alloy) metallic coating per ASTM 2. The weather side of the panel shall receive a nominal two tenths (0.2) mil polyurethane primer and a

3. The non-weather side paint system shall consist of a two coat finish with a total nominal dry film thickness 4. Color selection of roofing / siding / wainscot panels shall be from the manufacturer's standard color chart.

nominal nine tenths (0.9) mil topcoat of 70% polyvinylidene difluoride (PVDF) resin to achieve a total

1. Panel substrate shall be 0.019" minimum thickness commercial steel sheet with G40 (zinc) metallic coating 2. The side of the panel facing the interior of the building shall receive a nominal two tenths (0.2) mil polyurethane primer and a nominal nine tenths (0.9) mil topcoat of polyester resin to achieve a total

nominal dry film thickness of one (1) mil. 3. The wall cavity or attic facing side paint system shall consist of a two coat finish with a total nominal dry 4. Color selection of interior liner panels shall be standard white, or panels may be selected from the

1. Die-formed steel from the same quality material as the siding panels. Steel substrate thickness may vary from that of ribbed building panels.

D. Gutters and Downspouts a. K-Style rollformed gutters in 5" or 6" open widths formed from 0.030" aluminum prefinished with color-matched nominal one (1) mil 70% PVDF coating system (including primer) on exposed visually

a. Rollformed steel from the same quality as siding panels. Steel substrate thickness may vary from that of

manufacturer's standard color chart of exterior quality ribbed building panels.

b. Interior of gutter to be coated with nominal one-half (0.5) mil paint wash coat

ribbed building panels. b. Downspouts to match standard colors

C. Interior liner fasteners

2.04 MATERIALS - OTHER

1. Provide 1-1/4" wide high tensile steel strapping to be installed in all unobstructed corners in a "X"

1. Center-drive carbon steel pan-head screws for ribbed steel panels, painted in standard white color, or

configuration B. Roofing / Siding / Wainscot fasteners 1. Center-drive stainless steel screws with EPDM-gasketed washers for ribbed steel panels

2. Center-drive stainless steel screws with EPDM-gasketed washers for optional exterior ribbed steel panels D. Closure strips

1. Strips shall be made from closed cell foam

2. Fasteners shall be painted to match selected colors

c. Downspouts to be sized to match gutter size

1. 100% neutral curing silicone sealants shall be applied where required. Paintable sealant shall be applied where required.

1. Minimum 6" thick, R-20 fiberglass blankets in wall cavity

2. Minimum R38 blown-in fiberglass insulation above ceiling

G. Vapor Retarder 1. 6 mil thickness polyethylene sheets.

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3.01 EXAMINATION

#### 3.06 TOLERANCES

A. Framing Members 1/4" from level

#### 2. 1/8" from plumb

B. Siding and Roofing Panels 1. 1/8" from true position

#### B. Make all components and building plumb, square, straight, and true to lines in accordance with National Frame Building Association's Accepted Practices and tolerances identified in Section 3.05 C. Provide adequate temporary bracing to assure structure remains plumb and square until permanent bracing

NOTIFY WILLETT HOFMANN & ASSOCIATESFOR CLARIFICATION PRIOR TO SUBMITTING A BID

D. Altering of structural members is not permitted

A. Verify site conditions under provisions of Division 01

3.02 ERECTION - FRAMING - GENERAL

#### 3.03 ERECTION - FRAMING

1. Align and locate sockets by type and install according to building plans.

A. Erect framing in accordance with manufacture's established construction procedures

- 2. Column sockets shall be anchored to concrete with adhesive anchors or with castin-place anchors of
- dimensions shown in building plans. a. Adhesive anchoring shall be performed according to procedures specified in adhesive manufacture's
- b. Cast-in-place anchoring shall be performed according to 2015 International Building Code and ACI 318 (19)22 standards.

## B. Wood Column

- 1. Set wood column to interlock with column socket connection bracket.
- 2. Install manufacturer's recommended quantity and size of mechanically driven fasteners and bolts

C. Baseboards 1. Install 2"x8" treated planks at grade using builder's recommended fasteners and brackets to attach to

## columns according to building plans

1. Install nailers as required on building plans according to manufacturers established construction

procedures.

#### E. Trusses

- 1. Set trusses in plane with the center member of the wood column using lifting methods as approved by the
- 2. When properly positioned, install two 1/2" diameter machine bolts and manufacturer-recommended 4" structural screws through two of the wood column laminates and the truss heel.
- 3. Brace trusses as recommended by the manufacturer.

- 1. Install 2"x4" purlins by attaching them to trusses according to manufacture's established construction procedures.
- 1. Install 2"x6" angled bracing at locations recommended by the manufacturer according to the manufacturer's established construction procedures.

### H. Incidental Framing

1. Install 2"x4" or 2"x6" blocking as required according to building manufacture's recommendations.

## Interior Framing (Stripping)

- 1. Install 2"x4" baseboard at 4 inch above grade and case in metal trims
- 2. Install 2"x4" horizontal stripping at 36" (maximum) on-center spacing in wall areas to support ribbed steel 3. Install 2"x4" horizontal stripping at 16" (maximum) on-center spacing in wall areas to support gypsum

### 3.04 ERECTION - INSULATION

- A. Wall Insulation
- 1. Install fiberglass batt insulation blankets to fill wall cavity between columns.
- 2. Install vapor retarder between insulation blankets and interior stripping.

### B. Ceiling Insulation

- 1. Install vapor retarder between lower truss chorda and ceiling panels
- 2. Install blown-in fiberglass in attic space

### 3.05 ERECTION - PREFINISHED METALS - GENERAL

### A. Roofing Panels

- 1. Install panels perpendicular to purlins, aligned straight with end fascia.
- 2. Fasten panels to purlins with screw fasteners.

## B. Siding and Wainscot Panels

- 1. Install panels perpendicular to nailers, aligned level and plumb (see Section 3.06). 2. Fasten panels to nailers with screw fasteners.
- C. Interior Panels

- 1. Install panels perpendicular to supports, aligned level and plumb 2. Fasten wall panels to wall stripping with 1" painted screws.
- 3. Fasten ceiling panels to truss lower chords with 1" painted screws.

### D. Trim Items

1. Install trim items at the base, at wainscot / siding panel transition, corners, top of steel siding, fascia, gables, and ridge using appropriate fasteners

## E. Ridge Treatments

1. Install over ridge trim using screw fasteners

- 1. Install soffit to interlock with trim items at top of steel siding and at fascia.
- 2. Use solid soffit at each end overhang per building plans
- 3. Use combination of solid and vented soffit to provide balanced ventilation at side overhangs per building

- G. Gutter and Downspouts 1. Install gutters with supporting hangers spaced 24" on-center
- 2. Silicone sealant and silicone rubber gaskets shall be used at laps to maintain leak prevention and to relieve
- 3. Install drop outlets and downspouts to allow drainage from gutter at locations specified on building plans.
- 4. Secure downspout to vertical wall panels or trims with conductor bands and screws.

## H. Filler Strips

1. Provide filler strips at the top and bottom of roofing panels.

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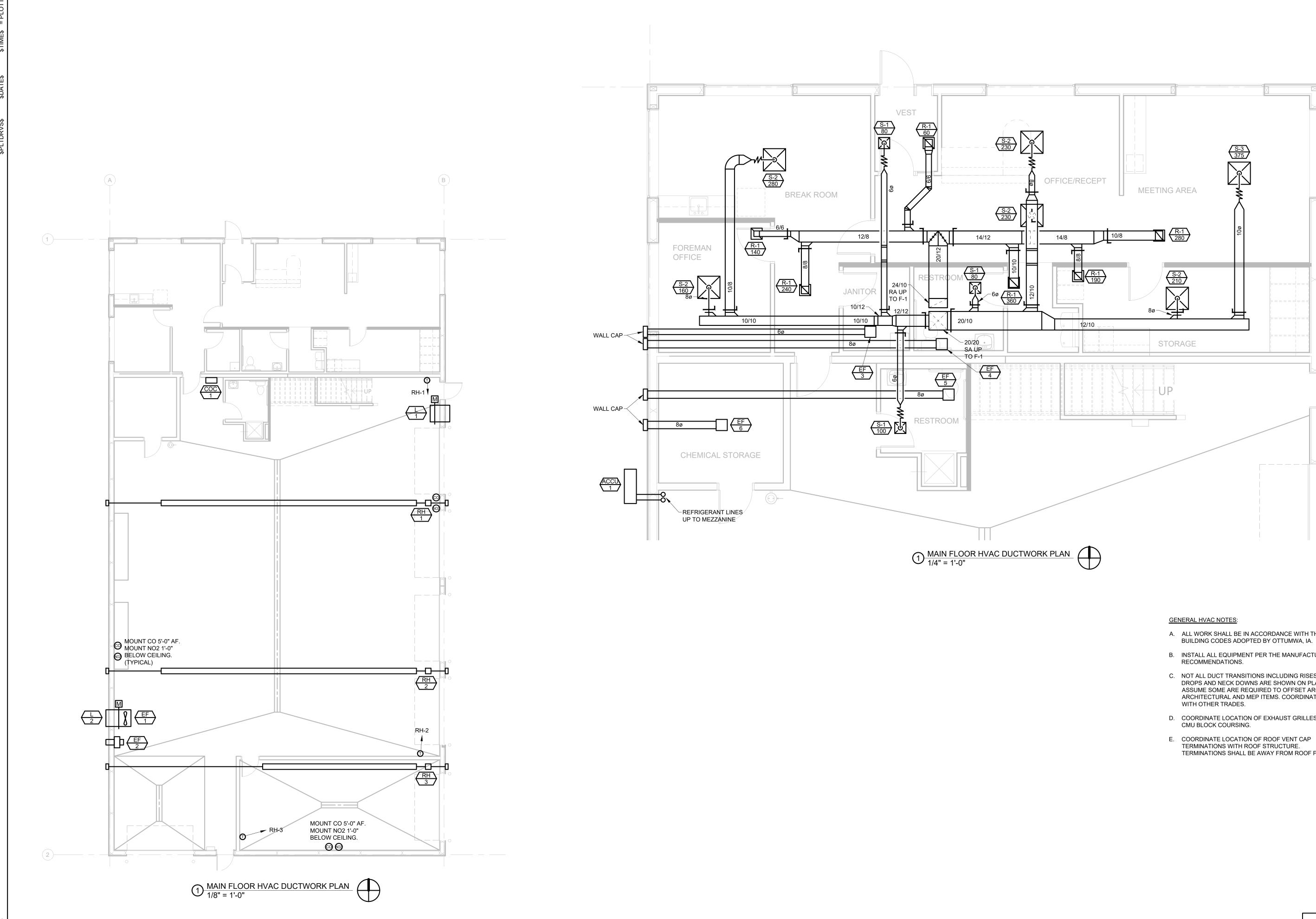
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- A. ALL WORK SHALL BE IN ACCORDANCE WITH THE
- B. INSTALL ALL EQUIPMENT PER THE MANUFACTURER'S RECOMMENDATIONS.
- C. NOT ALL DUCT TRANSITIONS INCLUDING RISES, DROPS AND NECK DOWNS ARE SHOWN ON PLANS. ASSUME SOME ARE REQUIRED TO OFFSET AROUND ARCHITECTURAL AND MEP ITEMS. COORDINATE
- D. COORDINATE LOCATION OF EXHAUST GRILLES WITH CMU BLOCK COURSING.
- TERMINATIONS WITH ROOF STRUCTURE. TERMINATIONS SHALL BE AWAY FROM ROOF PEAK.

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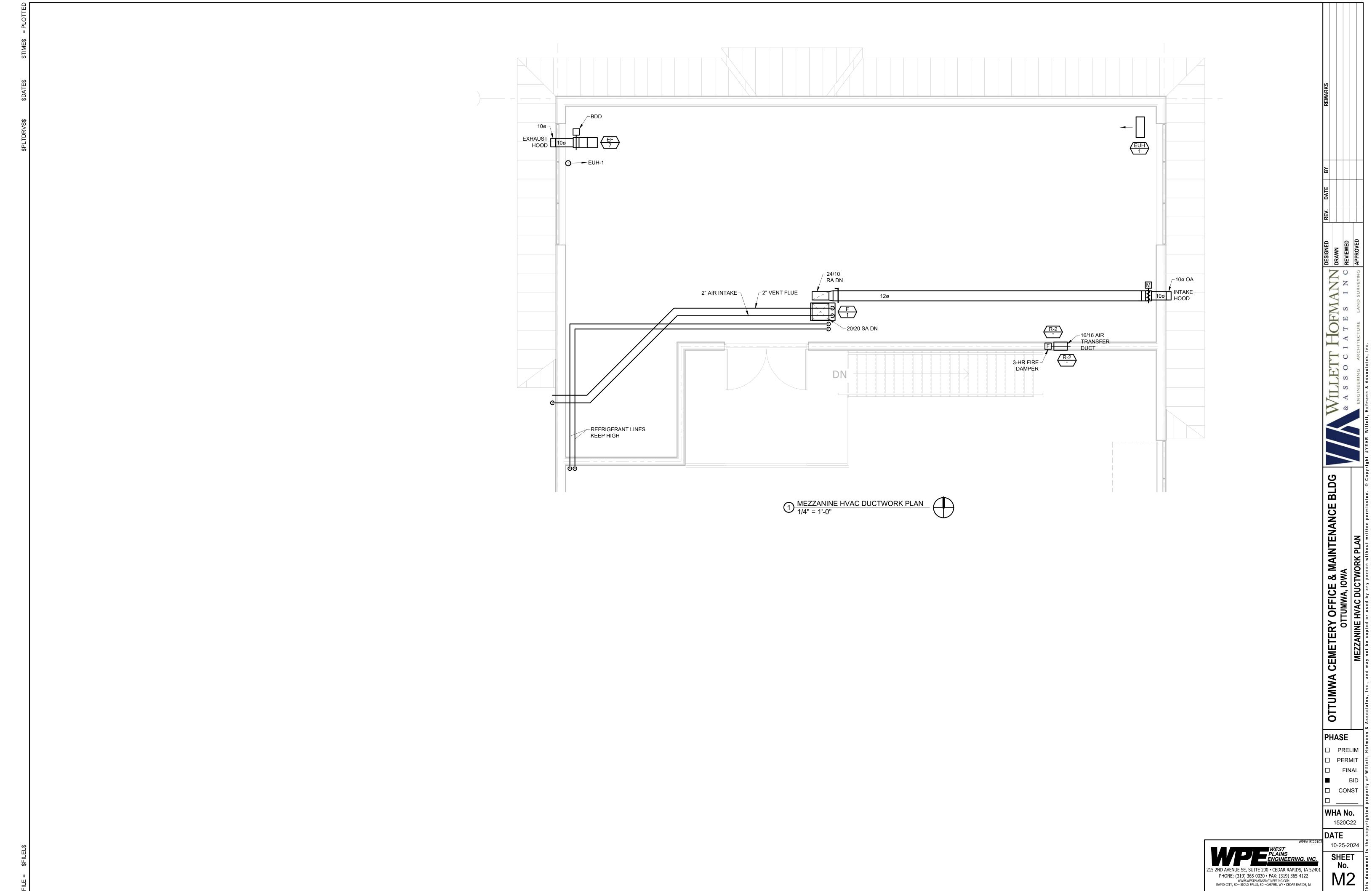
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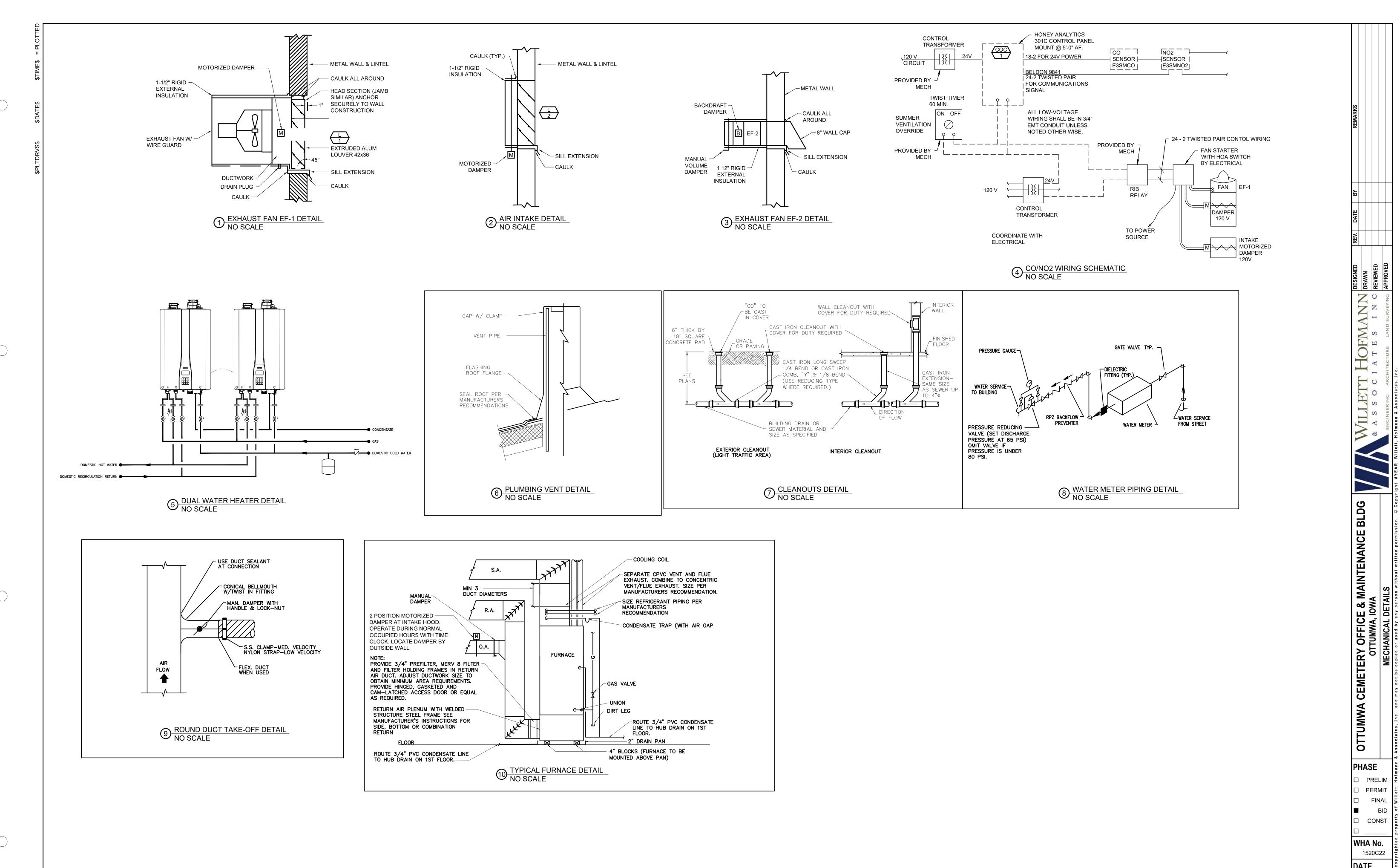
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10-25-2024 SHEET No.

	ELECTRIC UNIT HEATER SCHEDULE										
ITEM NO	MANUFACTURER'S DESIGNATION	TYPE	CFM	KW	AMPS	CON	TROL STEPS	AIR FLOW DIRECTION	ELECTRIC V/PH	REMARKS	
EUH-1	REDD-I 5100	DOWNFLOW	400	5	20.9	240	1	HORIZONTAL	240 /1	NOTES	
	·										

## REGISTER GRILLES AND DIFFUSER SCHEDULE

UNIT	MANUFACTURER'S	TYPE	NOMINAL	THROAT	MAX		T.P.D.		
NO	DESIGNATION		SIZE	SIZE	CFM	THROW	(IN.)	NC	REMARKS
S-1	TITUS - OMNI	PLAQUE	12" x 12"	6"	80	2-3-6	0.05	25	1,2,3
S-2	TITUS - OMNI	PLAQUE	24" x 24"	8"	280	4-6-12	0.07	17	1,2,3
S-3	TITUS - OMNI	PLAQUE	24" x 24"	12"	375	5-7-14	0.06	25	1,2,3
R-1	TITUS - 50F	EGG CRATE	12" x 12"	10" x 10"	420	_	0.10	20	1,2,3,4
R-2	TITUS - 350RL	35° FIXED DEFLECTION	18" x 18"	16" x 16"	1100	-	0.07	20	1,2,3

- NOTES: 1. COORDINATE FRAME STYLE WITH CEILING, WALL, SILL AND/OR DUCT.
  - 2. NECK SIZE TO MATCH DUCT SIZE UNLESS NOTED OTHERWISE. 3. TRANSITION DUCT AS REQUIRED TO THROAT SIZE OF GRILLE OR REGISTER.

NOTES: 1. PROVIDE REMOTE THERMOSTAT.

OVERHEAT PROTECTION

2. PROVIDE BUILT-IN 24V CONTROL TRANSFORMER.

 PROVIDE BUILT-IN DISCONNECT SWITCH. 5. PROVIDE WITH MOUNTING BRACKETS

4. PROVIDE OR BUILD A SHEETMETAL BACK PAN FOR EXHUAST OR RETURN DUCT CONNECTION.

## ELIDNIACE CCHEDIII E

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UNIT	MANUFACTURER'S		MIN			M	BH	AFUE	FAN		ELE	CTRICA	L .	CONFIGURATION	NOTES
NO	DESIGNATION	CFM	CFM OA	E.S.P.	FUEL	IN	OUT	AFUE	HP	V	PH	MCA	MOCP	CONFIGURATION	NOTES
F-1	DAIKIN DC96VC1005CN	1745	475	0.5	NG	100	96.1	+96%	1	115	1	13.9	20	DOWN FLOW	1-7

NOTES: 1. PROVIDE MANUFACTURERS RECOMMENDED INTAKE AND VENT FOR DIRECT VENT (2-PIPE SINGLE EXIT) SIDE WALL PENETRATION.

- 2. PIPE FURNACE CONDENSATE TO NEAREST FLOOR DRAIN.
- 3. PROVIDE MATCHING CONDENSING UNIT, SEE CONDENSING UNIT SCHEDULE.
- 4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT. PROVIDE UNIT MOUNTED DISCONNECT.
- 6. PROVIDE MERV 8 FILTER WITH ANGLE FRAME IN RETURN AIR DUCTWORK.
- 7. ELECTRONICALLY CONTROLLED MOTOR FOR VARIABLE SUPPLY FAN OPERATION.

		LOUVE	R SCHI	EDU	LE			
UNIT	MANUFACTURER'S DESIGNATION	FUNCTION	SERVES	SIZE W'XH''	CFM	S.P. (IN. W.G)	FREE AREA VELOCITY (FPM)	REMARKS
L-1	GREENHECK ESD-635	OUTSIDE AIR INTAKE	EASTSIDE	48" X 30"	3560	0.07	695	1-5
L-2	GREENHECK ESD-635	EXHAUSTAIR	WEST SIDE	48" X 30"	3560	0.06	695	1-5
	1. PROVIDE LOUVERS WITH BIRD SO	REENS	,	-			,	
	2. COORDINATE FRAME TYPE WITH	ARCHITECTURE DETAILS AND N	METAL WALLS.					
	3. ARCHITECT TO SELECT COLOR							

					WATE	R HE	ATER	SCHE	EDUL	.E				
UNIT	MANUFACTURER'S			67° F RISE	MIN FLOW		MIN INPUT	MAX INPUT	ОՄТРИТ	TURN DOWN	OPERATING	ELECT	RICAL	
NO	DESIGNATION	LOCATION	SERVES	GPM	GPM	FUEL	MBH	MBH	MBH	RATIO	TEMP F°	V/PH	AMPS	REMARKS
GWH-1	NAVIEN-NPE-240A2	JANITOR	DOMESTIC HW	5.6	0.1	NATURAL GAS	13.3	199.9	189.9	15:1	140	120/1	4	2" EXHAUST PVC, 2" INTAKE PVC
GWH-2	NAVIEN-NPE-240A2	JANITOR	DOMESTIC HW	5.6	0.1	NATURAL GAS	13.3	199.9	189.9	15:1	140	120/1	4	2" EXHAUST PVC, 2" INTAKE PVC
NOTES:	1. CONDENSATE NEUTRALIZ	ER KIT, VENT SCRE	ENS CAPS AND WAL	L FLANGES FOR WA	ALL VENT PENTRA	TIONS.								

2. STAINLESS STEEL HEAT EXCHANGERS CAPABLE OF 125°F - 140°F HOT WATER GENERATION, Wi-Fi CONTROL

- 3. NATURAL GAS PRESSURE 4" -10" RANGE. PROVIDE GAS PRESSURE REGULATOR VALVE TO REDUCE GAS PRESSURE FROM 2 PSIG TO INCHES OF WC.
- 4. PROVIDE PRESSURE & TEMPERATURE RELIEF VALVES, INTERNAL BUFFER TANK AND RECIRCULATION PUMP.

4. PROVIDE 4" DEEP, ALUMINUM FIXED, DRAINABLE LOUVER WITH KYNAR FINISH

5. PROVIDE DUCT ACCESS DOORS, DUCT DRAIN PORTS FOR DUCTS AT WALL LOUVERS.

5. SEALED COMBUSTION, ROUTE BOTH 2" INTAKE & EXHAUST THROUGH BASEMENT WINDOW BOARD.

	RA	DIANT	HE	ATE	R SC	HEDULE		
UNIT	MANUFACTURER'S	FUEL	INPUT	CONFIG.	LENGTH	ELECTRICAL:	MOUNTING	
NO	DESIGNATION		MBH		FT	<b>VOLT / IGNITION-AMPS</b>	ANGLE	NOTES
RH-1	RE-VERBER-RAY HL3-50-150	NATURAL GAS	100/150	STRAIGHT	50'-9"	120 / 4.8	0 DEG.	1,2,3
RH-2	RE-VERBER-RAY HL3-50-150	NATURAL GAS	100/150	STRAIGHT	50'-9"	120 / 4.8	0 DEG.	1,2,3
RH-3	RE-VERBER-RAY HL2-SS-30-75	NATURAL GAS	50/75	STRAIGHT	31'-3"	120 / 4.8	45 DEG.	1,2,3,4
NOTES	1. INSTALL PER MANUFACTURERS IN	STRUCTIONS. MA	INTAIN PRO	PER CLEARAN	ICES TO COM	MBUSTIBLES. MOUNT AS CLOSE	TO CEILING AS AL	LLOWED.
	2. PROVIDE WITH TWO-STAGE BURN	ER, OUTSIDE AIR W	/ALL CAP,	EXHAUST AIR F	ROOF CAP, A	ND 24V THERMOSTAT.		
	3. MBH INPUT VALUES ARE HIGH FIR	E/LOW FIRE.						
3	4. HEATER RATED FOR WASH BAY D	UTY, STAINLESS ST	TEEL CONS	STRUCTION & A	CCESSORIES	3.		

		PLUMBI	NG FIXTU	RE S	CHE	EDULE				
FIXTURE	MANUFACTURER'S	FIXTURE				FAUCET		SUF	PPLY	
NO	DESIGNATION	TYPE	MATERIAL	WASTE	VENT	MFGR MODEL	MISC.	CW	HW	NOTES
WC-1	AMERICAN STANDARD 2854.016	ADA FLOOR MOUNT WATER CLOSET - FLOOR OUTLET	VITREOUS CHINA	4"	2"		SLOAN ROYAL 113-1.6	1 1/4"	-	1,2
LAV-1	KOHLER K-1999	WALL-HUNG LAVATORY	VITREOUS CHINA	1-1/2"	1-1/4"	DELTA - 22C131	CERAMIC SHROUD	1/2"	1/2"	7, 8
S-1	ELKAYLFRAD191860	SINGLE COMPARTMENT DROP-IN 19"x18"x6" SINK	STAINLESS STEEL	1-1/2"	1-1/2"	KOHLER K-596 SIMPLICE	PULL-DOWN KITCHEN SINK FAUCET	1/2"	1/2"	8
S-2	MUSTEE 14CP UTILATUB	LAUNDRY/UTILITY TUB, 20 GAL 33"X23"X25"	RESIN	3"	2"	6" SWING SPOUT		3/4"	3/4"	3
SH-1	OASIS-SHFW-3837	ADA SHOWER VALVE & ACCESSORIES	FRP GELCOAT	2"	1-1/2"	DELTA T13H332	DELTA #R10700 UNWS	1/2"	1/2"	9
MS-1	FIAT MSB2424	MOP SINK	(2)	3"	2"	FIAT 830AA		3/4"	3/4"	4
EWC-1	ELKAY LMABFTL8WSLK	HI/ LO WATER COOLER WITH BOTTLE FILLING	STAINLESS STEEL	1-1/2"	1-1/2"			1/2"		115V/60 HZ, 6 FLA
HB-1	ACORN 8136	HOSE BIBB	STAINLESS STEEL	-	-			3/4"	-	
WH-1	WOODFORD 65P-4	WALL HYDRANT	BRASS	-	-	-	-	3/4"	-	LOOSE KEY OPERATION
FD-1	JAYR SMITH - 2005	FLOOR DRAIN	BRONZE	3"	1-1/2"	(*)	1=	-	-	5
TMV-1	POWERS LFE480	THERMOSTATIC MIXING VALVE	BRASS	-	-	(#.)	POINT-OF-USE TMV	-	-	(#)
BFP-1	WATTS LF009	RPZ BACKFLOW	BRONZE	-	-	-	-	2"	-	6
ES-1	BRADLEY S19-304	EMERGENCY SHOWER/EYE WASH		-	-	1=0	-	1 1/4"	1"	10
TMV-2	NAVIGATOR S19-2100 EFX25	EMERGENCY FIXTURE THERMOSTATIC MIXING VALVE	BRONZE	-	-	-	-	3/4"	3/4"	

NOTES: 1. PROVIDE WITH WHITE OPEN SEAT. 2. INSTALL AS ADA-COMPLIANT.

3. PROVIDE WITH 6" SWING SPOUT FAUCET, AERATOR, HOSE END, SUPPLY LINES, P-TRAP, TAIL PIECE AND DRAIN PLUG.

4. INCLUDE FIAT 889-CC, 832-AA, AND 833-AA MOP HANGER, HOSE, AND BRACKET.

5. PROVIDE WITH NICKEL BRONZE STRAINER HEAD.

PROVIDE WITH AIR GAP DRAIN CONNECTION.

8. PROVIDE A POINT-OF-USE THERMOSTATIC MIXING VALVE (TMV-1) FOR EACH FIXTURE OR GROUP OF FIXTURES.

9. PROVIDE ADA DELTA TRIM KIT - T17TH325, SHOWER HEAD 1.5 GPM, IN-WALL DIVERTOR. PROVIDE POWERS P905 PRESSURE BALANCE VALVE, HAND HELD SHOWER & SLIDE MECHANISIM WITH 60" FLEXIBLE SS HOSE W/ QUICK DISCONNECT & MOUNTING BRACKET. PROVIDE FOLD UP SEAT WITH WHITE PHENOLIC BENCH, HORIZONTAL GRAB BARS, CURTAIN ROD, HOOKS, A WHITE HEAVY PLASTIC CURTAIN, MOUNTING BRACKETS, IN-LINE VACUUM BREAKER, HOSE DISCONNECT, 24" SLIDE BAR, WALL HOOK.

PROVIDE CAST BRASS DRAIN WITH CHROME PLATED STRAINER.

10. PROVIDE TEMPERED WATER AT 85° WITH EMERGENCY THERMOSTATIC WATER MIXING VALVE NAVIGATOR \$19-2100 EFX25.

				FAN SCHED	ULE									
UNIT	MANUFACTURER'S					S.P.D.	FAN			МОТО	R			
NO	DESIGNATION	SERVES	LOCATION	FAN TYPE	CFM	(IN)	RPM	DRIVE	BHP	HP (WATTS)	FLA	ELEC.	SONES (dBA)	NOTES
EF-1	GREENHECK AER-24-0615-VG	VEHICLE FUME EXHAUST	SOUTH GARAGE WALL	SIDEWALL DIRECT DRIVE EXHAUST	3560	0.5	1,074	DIRECT	0.55	2	12.5	230/1	15.1	1,2,3,5
EF-2	GREENHECK SQ-97-VG	GARAGE CONTINUOUS EXHAUST	SOUTH GARAGE WALL	MIXED FLOW INLINE	240	0.4	1,585	DIRECT	0.13	1/4	3	115/1	13.5	4
EF-3	GREENHECK SP-B90	JANITOR EXHAUST	JANITOR	CEILING EXHAUST FAN	50	0.4	700	DIRECT	0.01	(20)	0.19	115/1	2.0	6
EF-4	GREENHECK SP-B150	BATHROOM EXHAUST	BATHROOM W/O SHOWER	CEILING EXHAUST FAN	120	0.5	892	DIRECT	0.04	(128)	1.8	115/1	2.5	6
EF-5	GREENHECK SP-B150	BATHROOM EXHAUST	BATHROOM W/ SHOWER	CEILING EXHAUST FAN	150	0.5	1,050	DIRECT	0.07	(128)	1.8	115/1	3.5	6
EF-6	GREENHECK SP-A390	CHEMICAL STORAGE EXHAUST	CHEMICAL STORAGE	CEILING EXHAUST FAN	220	0.5	1,096	DIRECT	0.04	(135)	1.4	115/1	3.0	6
EF-7	GREENHECK SP-A390	STORAGE EXHAUST VENT	MEZZANINE	DIRECT DRIVE CABINET	250	0.5	1140	DIRECT	0.05	(135)	1.5	115/1	5.5	4
NOTES	•								4	to.				

1. PROVIDE WITH VARI-GREEN ECM MOTOR OPTION FOR SPEED CONTROL ADJUSTMENT AND REMOTE DIAL OPERATION FOR INDOOR MOUNTING. PROVIDE WITH NON-FUSED DISCONNECT.

2. PROVIDE EF-1 FAN WITH LOW LEAKAGE MOTORIZED DAMPERS WITH 115V LINE VOLTAGE ACTUATORS FOR ON/OFF OPERATION, END SWITCH.

3. PROVIDE ENCLOSED FAN STARTER, OVERLOAD PROTECTION & PILOT LIGHT, NEMA 4 START/STOP SWITCHES, JUNCTION BOX, HAND-OFF-AUTO CONTROLLER, MOTOR SIDE GUARD, VIBRATION SPRING ISOLATION HANGERS, WALL BRACKETS FOR SIDE WALL MOUNTING, LONG W

4. VARI-GREEN EC MOTOR, CONTROL DIAL ON FAN HOUSING, JUNCTION BOX, NEMA-4 TOGGLE SWITCH, SPRING HANGING, ISOLATORS, BRACKETS, INLET GUARD, SQUARE DUCT MOUNTING COLLAR.

5. FAN CONTROLS TO BE INTERLOCKED WITH AUTOMATIC GAS DETECTION CONTROL SYSTEM. SEE DETAIL.

6. FACTORY INSTALLED BACKDRAFT DAMPER, PREWIRED DISCONNECT, FAN TO OPERATE WITH LIGHT WALL SWITCH.

4. PROVIDE ALL SENSORS AS SHOWN ON PLANS.

7. VARI-GREEN EC MOTOR, CONTROL DIAL ON FAN HOUSING, JUNCTION BOX, NEMA-4 TOGGLE SWITCH, SPRING HANGING, ISOLATORS, BRACKETS, INLET GUARD, SQUARE DUCT MOUNTING COLLAR, BACKDRAFT DAMPER.

UNIT		DETECTIO	ON RANGE	ACCL	JRACY	EL	ECTRICAL DA	ATA		
NO	DETECTOR TYPE	co	NO2	со	NO2	VA	VOLTS	PHASE	DESIGN BASIS	NOTES
COC-1	CONTROLLER					41	24	-	HONEYWELL ANALYTICS 301-C	1, 2, 3
СО	ELECTROCHEMICAL FOR CO	0-250 PPM		+/- 3%			24	-	HONEYWELL ANALYTICS E3SMCO	1, 2, 3
NO2	ELECTROCHEMICAL FOR NO2		0-10 PPM		+/- 3%		24	-	HONEYWELL ANALYTICS E3SMNO2	1, 2, 3

	AIR	COC	DLED CO	ONDE	ENSIN	G UN	IIT S	СНІ	EDI	JLE	•	
 UNIT NO	MANUFACTURER'S	SERVES	REQUIRED	AMBIENT	COIL	REF	SEER		T	CTRICA	,	NOTES
	DESIGNATION		CAPACITY MBH	TEMP.	EAT DB/WB	TYPE		V	PH	MCA	MAX FUSE	
ACCU-1	DAIKIN DX6VSS4810	F-1	45.0	95	95/75	R-410A	16	230	1	34.4	35	1 - 7
	<ol> <li>VARIABLE SPEED COMPR</li> <li>OUTDOOR THERMOSTAT T</li> <li>PROVIDE 5YR COMPRESS</li> </ol>	O SHUT UNIT	OFF AT TEMPERATUR	ES BELOW 50	DEG. F.					•		

4. ALL CAPACITIES ARE BASED ON INDOOR AND OUTDOOR UNITS AT ARI STANDARD 210/240-94 CONDITIONS (80 F DB, 67 F WB EVAPORATOR EAT).

5. PROVIDE ALL UNITS WITH FILTER-DRYER, CRANKCASE HEATER, LOW PRESSURE SWITCH, TIME-DELAY, RELAY AND CYCLE PROTECTOR.

6. PROVIDE WITH INDOOR COOLING COIL AND HOUSEKEEPING PAD FOR EXTERIOR MOUNTING.

7. PROVIDE PK/CAC INFINITY TOUCH CONTROL

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SECTION 22 0010 -PLUMBING GENERAL PROVISIONS

- MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIAL AND LABOR AS REQUIRED TO INSTALL THE PLUMBING SYSTEMS AS DESCRIBED ON THE DRAWINGS
- THE INSTALLATION OF ALL PLUMBING SYSTEMS SHALL CONFORM TO THE LATEST LOCAL, STATE AND FEDERAL CODES, REGULATIONS AND ORDINANCES.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR (1) ONE YEAR FROM DATE OF FINAL WORK ACCEPTANCE BY THE OWNER. ANY BREAKDOWN OCCURRING IN THE FIRST YEAR SHALL BE CORRECTED AT NO EXPENSE TO THE OWNER.
- PERSONNEL EMPLOYED ON THE JOB SHALL BE QUALIFIED AND SKILLED IN THE CRAFT THEY ARE PRACTICING AND ONLY FIRST CLASS WORKMANSHIP WILL BE ACCEPTED.
- SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT.

MECHANICAL CONTRACTOR SHALL COOPERATE WITH ALL OTHER CONTRACTORS TO RESOLVE ANY CONFLICTS AND SHALL COORDINATE HIS WORK WITH OTHER TRADES BEFORE INSTALLATION. ANY WORK INSTALLED WITHOUT DUE RESPECT TO THE OTHER TRADES WILL BE REDONE BY THIS CONTRACTOR AT NO COST TO THE OWNER. CONTRACTOR SHALL VISIT THE JOB SITE, AT HIS DISCRETION, AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.

MECHANICAL CONTRACTOR SHALL DO ALL CUTTING AND PATCHING FOR HIS WORK UNLESS CALLED OUT SPECIFICALLY TO BE BY PRIME CONTRACTOR. COORDINATE ALL CUTTING WITH PRIME CONTRACTOR. NO CUTTING SHALL IMPAIR THE STRENGTH OF ANY PART OF THE BUILDING. NO HOLES OR WELDS FOR CONNECTIONS OF MECHANICAL SUPPORTING DEVICES OR FOR CLEARANCE OF PIPING OR EQUIPMENT ARE TO BE MADE IN OR ON STRUCTURAL STEEL MEMBERS WITHOUT WRITTEN APPROVAL OF ARCHITECT.

ALL EQUIPMENT AND PIPING SHOWN ARE AT APPROXIMATE LOCATIONS. VERIFY EXACT LOCATIONS, SIZES AND ELEVATIONS OF EXISTING AND NEW UTILITIES PRIOR TO BEGINNING WORK AND COORDINATE WITH PRIME CONTRACTOR. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS. DO NOT SCALE DRAWINGS.

CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS INDICATING FINAL LOCATIONS OF ALL EQUIPMENT AND PIPING.

INSTALL ALL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. ALL MATERIALS SHALL BE NEW, UNLESS OTHERWISE INDICATED.

AFTER CONSTRUCTION IS COMPLETE THE CONTRACTOR SHALL CLEAN UP THE AREA FROM DEBRIS AND DISPOSE OF ALL UNWANTED MATERIAL.

TEST ALL THE PIPING SYSTEM BEFORE INSULATION IS APPLIED. TEST PIPING SYSTEM AS REQUIRED BY STATE AND LOCAL PLUMBING CODES. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL.

ALL TRADE PERMITS, TESTS, INSPECTIONS AND OTHER ASSOCIATED FEES AS REQUIRED SHALL BE SECURED AND PAID FOR BY THIS CONTRACTOR PRIOR TO COMMENCING THE WORK.

PROVIDE UNIONS IN ALL PIPE CONNECTIONS TO EQUIPMENT. PROVIDE DIELECTRIC FITTINGS AT ALL POINTS WHERE DISSIMILAR METALS ARE JOINED. PROVIDE AIR VENTS AT HIGH POINTS AND AS INDICATED ON DETAILS.

PROVIDE SLEEVES THROUGH WALLS, ETC. FOR PIPES PASSING THROUGH WALLS, ETC. PROVIDE PROPER SIZE SLEEVES TO FIT INSULATED AND NON-INSULATED PIPES. INSULATION SHALL BE CONTINUOUS THROUGH THE SLEEVES. PROVIDE ESCUTCHEON PLATES OVER EXPOSED OPENINGS IN FINISHED SPACES.

PLUMBING CONTRACTOR SHALL VERIFY AND COORDINATE EQUIPMENT VOLTAGE REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR AND CONFIRM IT WITH THE EQUIPMENT MANUFACTURER.

- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SWITCHES, DISCONNECTS, CONTACTORS, AND WIRING.
- ELECTRICAL PANEL WORKING CLEARANCES FOR ALL PLUMBING EQUIPMENT SHALL COMPLY WITH NATIONAL ELECTRIC CODE SECTION 110.26.
- PROVIDE OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT AT COMPLETION OF PROJECT. SUBMIT ONE COPY TO ENGINEER FOR REVIEW PRIOR TO ISSUING TO OWNER.

### SECTION 22 0519 - METERS AND GAGES FOR PLUMBING PIPING

PROVIDE THERMOMETERS IN PIPING SYSTEM AS IDENTIFIED ON THE DRAWINGS AND DETAILS. THERMOMETERS SHALL BE METAL-CASE, LIQUID-IN-GLASS TYPE. INCLUDE BRASS THERMOMETER WELLS WITH EXTENSIONS FOR INSULATED PIPING. THE SCALE RANGE SHALL BE 30° TO 240°F.

PROVIDE PRESSURE GAGES IN PIPING SYSTEM AS IDENTIFIED ON THE DRAWINGS AND DETAILS. PRESSURE GAGES SHALL BE METAL-CASE, INDICATING-DIAL TYPE. INCLUDE 1/4 TURN GAGE COCKS AT EACH PRESSURE GAGE. INCLUDE SIPHONS ON STEAM PIPING SYSTEMS. THE SCALE RANGE SHALL BE 0 PSI TO 80 PSI.

THERMOMETERS AND GAUGES SHALL BE MANUFACTURED BY TRERICE OR EQUAL.

### SECTION 22 0523 - GENERAL-DUTY VALVES FOR PLUMBING PIPING

PROVIDE SHUT-OFF VALVES, STRAINERS, CHECK VALVES, BALANCING VALVES, ETC. AS SHOWN ON DRAWINGS, AND/OR AS REQUIRED BY CODE OR TO FACILITATE MAINTENANCE.

PROVIDE SHUT-OFF VALVES AT BRANCH TAKE-OFF OF WATER MAINS.

INSTALL VALVES IN ACCESSIBLE LOCATIONS.

BRASS AND BRONZE BALL VALVES SHALL BE TWO-PIECE, FULL-PORT CONSTRUCTION. MANUFACTURERS SHALL BE APOLLO, CRANE, MILWAUKEE, NIBCO OR EQUAL.

BRONZE CHECK VALVES SHALL BE SWING TYPE WITH BRONZE DISC. MANUFACTURERS SHALL BE NIBCO, CRANE, MILWAUKEE OR EQUAL.

### SECTION 22 0529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PROVIDE HANGERS AND SUPPORTS FOR ALL PIPING THAT IS SUSPENDED FROM STRUCTURE AND/OR SUPPORTED OFF FLOOR. COMPLY WITH MSS SP-69 AND 89 FOR MINIMUM HANGER ROD SIZES AND MAXIMUM SPACING REQUIREMENTS. INSTALL HANGERS, SUPPORTS, CLAMPS, AND ATTACHMENTS AS REQUIRED TO PROPERLY AND SECURELY SUPPORT PIPING FROM BUILDING STRUCTURE.

HANGER TYPES SHALL BE STEEL CLEVISES, STEEL BAND HANGERS, AND STEEL OR ALLOY STEEL PIPE CLAMPS.

TRAPEZE HANGERS SHALL BE FABRICATED FOR SUPPORT OF MULTIPLE PIPE RUNS.

INCLUDE PIPE PROTECTION SHIELDS TO PREVENT CRUSHING OF INSULATION ON PIPING 1" AND LARGER.

HANGER MANUFACTURERS SHALL BE MASON, ANVIL, F & S CENTRAL OR EQUAL.

INSTALL PIPE LABELING FOR ALL PIPING SYSTEMS INSTALLED ON THE PROJECT. LABELING SHALL COMPLY WITH ASME A13.1 FOR LETTERING, SIZE, LENGTH OF COLOR, COLOR AND VIEWING ANGLES OF IDENTIFICATION DEVICES. CONFORM TO OWNER'S LABELING STANDARDS IF DIFFERENT FROM ASME STANDARDS. PROVIDE LABELS AT MAXIMUM 50-FOOT INTERVALS, NEAR WALL PENETRATIONS AND AT EQUIPMENT CONNECTIONS. LABELS SHALL BE SELF-ADHESIVE TAPE INDICATING PIPE SERVICE AND FLOW ARROW.

#### SECTION 22 0700 - PLUMBING INSULATION

INSULATE ALL DOMESTIC COLD WATER. HOT WATER, AND RECIRCULATING HOT WATER PIPING WITHIN THE BUILDING WITH PREFORMED FIBERGLASS PIPE INSULATION WITH FACTORY APPLIED ALL SERVICE JACKET (ASJ). INSTALL INSULATION ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

INSULATION APPLICATION SHALL BE AS FOLLOWS: DOMESTIC CW RIGID FIBERGLASS < 1-1/2 1/2" THICK DOMESTIC CW RIGID FIBERGLASS >1-1/4 1" THICK

DOMESTIC HW RIGID FIBERGLASS < 1-1/2 1" THICK DOMESTIC HW RIGID FIBERGLASS >1-1/4 1-1/2" THICK

RIGID FIBERGLASS ALL 1" THICK ROOF DRAIN BODIES RIGID FIBERGLASS ALL 1" THICK HORIZONTAL STORM

VERIFY INSULATION THICKNESS IS COMPLIANT WITH LOCAL ENERGY CODE PRIOR TO INSTALLATION.

INSULATION IS NOT REQUIRED ON PEX PIPING FOR RUN-OUTS TO FIXTURES.

INSULATION MANUFACTURES SHALL BE CERTAINTEED, JOHN MANVILLE, KNAUF, OWENS-CORNING OR EQUAL.

#### SECTION 22 1005 - PLUMBING PIPING

WATER DISTRIBUTION PIPING FOR COLD WATER, HOT WATER, AND RECIRCULATING HOT WATER SHALL BE TYPE L, HARD COPPER TUBE, ASTM B88. FITTINGS AND JOINING MATERIALS SHALL MATCH TO THE PIPING MATERIAL. LEAD-FREE FLUX AND LEAD-FREE ALLOY SOLDER SHALL BE USED. SEE SECTION 220700 FOR INSULATION.

WATER DISTRIBUTION PIPING FOR NPS 2-1/2 AND LARGER MAY BE SCHEDULE 40 BLACK STEEL PIPE, ASTM 53, GALVANIZED, WITH SCREWED FITTINGS OR GROOVED FITTINGS AND COUPLINGS.

PEX PIPING MAY BE USED FOR DISTRIBUTION PIPING 1" AND SMALLER.

CLEAN, DISINFECT, AND PRESSURE TEST PIPING PER LOCAL CODE REQUIREMENTS.

UNDERGROUND WASTE AND VENT PIPING SHALL BE HUB-AND-SPIGOT CAST IRON SOIL PIPE, SERVICE WEIGHT, ASTM A74 WITH COMPRESSION GASKETED JOINTS CONFIRMING TO ASTM C564; NO-HUB CAST IRON PIPE WITH STANDARD STAINLESS STEEL SHIELDED COUPLINGS CONFORMING TO CISPI 301; OR SCHEDULE 40 PCV PIPE, ASTM D 2665 WITH DWV SOCKET FITTINGS AND SOLVENT-CEMENTED JOINTS AS ALLOWED BY LOCAL CODE.

ABOVEGROUND WASTE AND VENT PIPING SHALL BE NO-HUB CAST IRON PIPE WITH STANDARD STAINLESS STEEL SHIELDED COUPLINGS CONFIRMING TO CISPI 301; OR SCHEDULE 40 PVC PIPE, ASTM D 2665 FITTINGS AND SOLVENT-CEMENTED JOINTS AS ALLOWED BY LOCAL CODE. DO NOT USE PVC PIPE WITHIN CEILING CAVITIES USED AS RETURN AIR PLENUMS. VENTS SHALL EXTEND 12" ABOVE ROOF.

HYDROSTATICALLY TEST SANITARY WASTE AND VENT SYSTEMS PER LOCAL CODE REQUIREMENTS.

#### SECTION 22 1006 - PLUMBING PIPING SPECIALITIES

PROVIDE BACKFLOW PREVENTION DEVICE FOR DOMESTIC WATER SERVICE AS REQUIRED BY LOCAL PLUMBING AUTHORITIES AND WATER DEPARTMENT.

BACKFLOW PREVENTERS SHALL BE PROVIDED WHERE DOMESTIC WATER SYSTEMS ARE USED FOR FILL AND MAKE-UP WATER FOR NON-POTABLE SERVICES AND HYDRONIC HEATING/COOLING SYSTEMS. BACKFLOW PREVENTERS SHALL BE REDUCED PRESSURE ZONE TYPE AS MANUFACTURED BY WATTS, CONBRACO OR

WATER HAMMER ARRESTORS SHALL BE INSTALLED IN ALL WATER LINES WITH QUICK OPEN/CLOSE VALVES AND AUTOMATIC FLUSH VALVES IN ACCORDANCE WITH 'PDI' RECOMMENDATIONS.

FLOOR DRAINS SHALL BE 5" DIAMETER JAY R SMITH 2005 SERIES TYPE ROUND STRAINER WITH NICKEL BRONZE STRAINER HEAD. REFER TO PLANS FOR OUTLET

MANUFACTURERS OF FLOOR DRAINS SHALL BE JOSAM, WADE, ZURN OR J.R. SMITH.

PROVIDE CLEANOUTS IN FLOORS AND WALLS AS REQUIRED BY CODE AND TO FACILITATE CLEANING OF THE SANITARY SYSTEMS. CLEANOUTS IN FLOORS IN FINISHED SPACES SHALL BE POLISHED BRASS COVERS. CLEANOUTS IN WALL SHALL HAVE ROUND STAINLESS STEEL ACCESS COVER.

### SECTION 22 3000 - PLUMBING EQUIPMENT

### FUEL-FIRED ON DEMAND DOMESTIC WATER HEATERS

WATER HEATERS SHALL BE NATURAL GAS FIRED, CONDENSING, WALL-MOUNTED, AND SHALL BE DIRECT VENT. WATER HEATER SHALL HAVE 15-YEAR LIMITED HEAT EXCHANGER WARRANTY AND 5-YEAR LIMITED PARTS WARRANTY. WATER HEATER SHALL HAVE INTERNAL CIRCULATION PUMP AND BUFFER TANK,

MANUFACTURERS OF WATER HEATERS SHALL BE NAVIEN, LOCHINVAR, OR APPROVED EQUAL. REFER TO SCHEDULE ON DRAWINGS FOR MAKE, MODEL, CAPACITY, AND CHARACTERISTICS.

PROVIDE THERMAL EXPANSION ABSORBER FOR HOT WATER HEATER.

### SECTION 22 4000 - PLUMBING FIXTURES

PROVIDE PLUMBING FIXTURES COMPLETE WITH ALL FIXTURES MOUNTS, FITTINGS, TRIM AND ACCESSORIES.

LAVATORIES SHALL BE WALL MOUNTED, VITREOUS CHINA, AND PROVIDED WITH CARRIER. LAVATORY MANUFACTURER SHALL BE KOHLER OR AMERICAN STANDARD. FAUCET SHALL BE ELECTRONIC SENSOR TYPE, 120V POWER SUPPLY TO 24V TRANSFORMER, AND UNDERCOUNTER THERMOSTATIC MIXING VALVE. FAUCET MANUFACTURER SHALL BE ZURN, DELTA, KOHLER, OR CHICAGO FAUCET.

WATER CLOSETS SHALL BE FLOOR MOUNTED, FLOOR OUTLET, ELONGATED BOWL, VITREOUS CHINA, WITH SIPHON JET ACTION. INCLUDE SOLID PLASTIC OPEN FRONT SEAT WITH CHECK HINGE. WATER CLOSET SHALL BE MANUFACTURED BY AMERICAN STANDARD OR KOHLER. 1.6 GALLONS PER FLUSH.

SINKS SHALL BE 20 GAUGE, 304 STAINLESS STEEL, AND SELF-RIMMING TYPE. SINKS SHALL BE MANUFACTURED BY DAYTON OR ELKAY. FAUCET SHALL HAVE GOOSENECK SPOUT WITH MAXIMUM OF 2.2 GPM AERATOR, AND 4" CENTERS. FAUCETS SHALL BE MANUFACTURED BY ZURN, OR DELTA.

MOP BASINS SHALL BE MOLDED STONE OR POLYMER CONSTRUCTION, 24"X24" SIZE, FLOOR MOUNTED. MOP BASINS SHALL BE MANUFACTURED BY MUSTEE OR FIAT. FAUCET SHALL BE WALL MOUNTED WITH INTEGRAL VACUUM BREAKER, HOSE END SPOUT CONNECTION, AND PAIL HOOK. FAUCET SHALL BE MANUFACTURED BY KOHLER, ZURN, FIAT, OR CHICAGO FAUCET.

ELECTRIC WATER COOLERS SHALL BE WALL MOUNTED, TWO-LEVEL HEIGHT, BOTTLE FILLER, ADA BARRIER-FREE ACCESS, AND 8.0 GPH WATER FLOW. ELECTRIC WATER COOLERS SHALL BE MANUFACTURED BY ELKAY. PROVIDE WITH EZH20 BOTTLE FILLING STATION.

PROVIDE MOLDED CLOSED-CELL VINYL INSULATING PIPE WRAP ON EXPOSED WATER AND WASTE PIPING TO HANDICAPPED FIXTURES AS MANUFACTURED BY TRUEBRO OR

REFER TO SCHEDULE ON PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON FIXTURE CHARACTERISTICS, PERFORMANCE, AND MODELS.

#### SECTION 23 0010 -HVAC GENERAL PROVISIONS

- MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIAL AND LABOR AS REQUIRED TO INSTALL THE MECHANICAL SYSTEMS AS DESCRIBED ON THE DRAWINGS.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR (1) ONE YEAR FROM DATE OF FINAL WORK ACCEPTANCE BY THE OWNER. ANY BREAKDOWN OCCURRING IN THE FIRST YEAR SHALL BE CORRECTED AT NO EXPENSE TO THE OWNER.
- PERSONNEL EMPLOYED ON THE JOB SHALL BE QUALIFIED AND SKILLED IN THE CRAFT

MECHANICAL CONTRACTOR SHALL COOPERATE WITH ALL OTHER CONTRACTORS TO RESOLVE ANY CONFLICTS AND SHALL COORDINATE HIS WORK WITH OTHER TRADES BEFORE INSTALLATION. ANY WORK INSTALLED WITHOUT DUE RESPECT TO THE OTHER TRADES WILL BE REDONE BY THIS CONTRACTOR AT NO COST TO THE OWNER. CONTRACTOR SHALL VISIT THE JOB SITE, AT HIS DISCRETION, AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.

MECHANICAL CONTRACTOR SHALL DO ALL CUTTING AND PATCHING FOR HIS WORK UNLESS CALLED OUT SPECIFICALLY TO BE BY PRIME CONTRACTOR. COORDINATE ALL CUTTING WITH PRIME CONTRACTOR. NO CUTTING SHALL IMPAIR THE STRENGTH OF ANY PART OF THE BUILDING. NO HOLES OR WELDS FOR CONNECTIONS OF MECHANICAL SUPPORTING DEVICES OR FOR CLEARANCE OF PIPING OR EQUIPMENT ARE TO BE MADE IN OR ON STRUCTURAL STEEL MEMBERS WITHOUT WRITTEN

ALL EQUIPMENT, PIPING, DUCT, ETC. SHOWN ARE AT APPROXIMATE LOCATIONS. VERIFY EXACT LOCATIONS, SIZES AND ELEVATIONS OF EXISTING AND NEW UTILITIES PRIOR TO BEGINNING WORK AND COORDINATE WITH PRIME CONTRACTOR. VERIFY

INSTALL ALL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. EXTEND GREASE FITTINGS, IF ANY, TO AN ACCESSIBLE LOCATION. ALL MATERIALS SHALL BE NEW, UNLESS OTHERWISE

#### ALL MOTORS SHALL BE HIGH EFFICIENCY AND ENERGY EFFICIENT

AFTER CONSTRUCTION IS COMPLETE THE CONTRACTOR SHALL CLEAN UP THE AREA FROM DEBRIS AND DISPOSE OF ALL UNWANTED MATERIAL.

TEST ALL THE PIPING SYSTEM BEFORE INSULATION IS APPLIED. TEST PIPING SYSTEM AS REQUIRED BY STATE AND LOCAL PLUMBING CODES. THE COMPLETED SYSTEMS

ALL TRADE PERMITS, TESTS, INSPECTIONS AND OTHER ASSOCIATED FEES AS REQUIRED SHALL BE SECURED AND PAID FOR BY THIS CONTRACTOR PRIOR TO COMMENCING THE WORK.

PROVIDE UNIONS IN ALL PIPE CONNECTIONS TO EQUIPMENT. PROVIDE DIELECTRIC FITTINGS AT ALL POINTS WHERE DISSIMILAR METALS ARE JOINED. PROVIDE AIR

PROVIDE SLEEVES THROUGH WALLS, ETC. FOR PIPES AND DUCTS PASSING THROUGH WALLS, ETC. PROVIDE PROPER SIZE SLEEVES TO FIT INSULATED AND NON-INSULATED DUCTS AND PIPES. INSULATION SHALL BE CONTINUOUS THROUGH THE SLEEVES. PROVIDE ESCUTCHEON PLATES OVER OPENINGS AT PIPING.

REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR AND CONFIRM IT WITH THE EQUIPMENT MANUFACTURER.

CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS INDICATING FINAL

LOCATIONS OF ALL EQUIPMENT AND PIPING. PROVIDE THREE (3) SETS OF OPERATION AND MAINTENANCE MANUALS FOR ALL

## SECTION 23 0529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

STRUCTURE AND/OR SUPPORTED OFF FLOOR. COMPLY WITH MSS SP-69 AND 89 FOR MINIMUM HANGER ROD SIZES AND MAXIMUM SPACING REQUIREMENTS. INSTALL HANGERS, SUPPORTS, CLAMPS, AND ATTACHMENTS AS REQUIRED TO PROPERLY

HANGER TYPES SHALL BE STEEL CLEVISES, STEEL BAND HANGERS, AND STEEL OR ALLOY STEEL PIPE CLAMPS.

TRAPEZE HANGERS SHALL BE FABRICATED FOR SUPPORT OF MULTIPLE PIPE RUNS.

PIPING 1" AND LARGER.

## SECTION 23 0593 - TESTING, ADJUSTING, AND BALANCING, FOR HVAC

TEST AND BALANCE VENTILATION SYSTEMS TO PROVIDE FOR THE AIR VOLUMES AS IDENTIFIED ON THE DRAWINGS AT EACH DIFFUSER. PROVIDE BELTS, SHEAVES AND ADJUSTMENTS AS NECESSARY TO ACHIEVE REQUIRED SYSTEM PERFORMANCE. TEST AND BALANCE WATER SYSTEMS TO PROVIDE FOR THE WATER FLOW RATES AS IDENTIFIED ON THE SCHEDULES. PROVIDE BALANCING VALVE AND CIRCUIT SETTER ADJUSTMENTS AS NECESSARY TO ACHIEVE REQUIRED SYSTEM PERFORMANCE. PROVIDE BALANCING REPORTS ON AIR AND WATER SYSTEMS.

THE TESTING CONTRACTOR SHALL BE AABC OR NEBB CERTIFIED.

## SECTION 23 0713 - DUCT INSULATION

INSULATE DUCTWORK WITH FLEXIBLE AND RIGID FIBERGLASS WITH FOIL REINFORCED KRAFT FACING (FSK). FLEXIBLE INSULATION SHALL HAVE "K" FACTOR OF 0.26 AND 1.0 LB/CF DENSITY. RIGID INSULATION SHALL HAVE "K" FACTOR OF 0.25 AND 6.0 LB/CF

INSULATION MANUFACTURES SHALL BE CERTAINTEED, JOHN MANVILLE, KNAUF, OR

INSULATION APPLICATION SHALL BE AS FOLLOWS:

<u>DUCTWORK</u>			
OUTSIDE AIR	ALL SIZES	RIGID FIBERGLASS	1½" THICK
OUTDOOR DUCTS	ALL SIZES	RIGID FIBERGLASS	3" THICK
RELIEF AIR	ALL SIZES	RIGID FIBERGLASS	1½" THICK
EXPOSED SUPPLY	ALL SIZES	RIGID FIBERGLASS	1½" THICK
CONCEALED SUPPLY	ALL SIZES	FLEXIBLE FIBERGLASS	1½ " THICK
DIFFUSER PLENUMS	ALL SIZES	FLEXIBLE FIBERGLASS	1½" THICK
TOP SIDE OF			
DIFFUSERS	ALL SIZES	FLEXIBLE FIBERGLASS	1½" THICK
RETURN AIR	ALL SIZES	DUCT LINER	1" THICK
EXHAUST AIR	ALL SIZES	RIGID FIBERGLASS	1½" THICK
(EXHAUST DUCTS SHAL	L BE INSULA	ATED A DISTANCE OF 10' FRO	M EXTERIOR RO
PENETRATION)			

#### SECTION 23 0719 - HVAC PIPING INSULATION

INSULATION MANUFACTURES SHALL BE CERTAINTEED, JOHN MANVILLE, KNAUF, OR OWENS-CORNING.

INSULATION APPLICATION SHALL BE AS FOLLOWS:

REFRIGERANT SUCTION ALL SIZES 3/4" THICK CELLULAR FORM CONDENSETE DRAINAGE ALL SIZES CELLULAR FORM 3/4" THICK

#### SECTION 23 1123 - FACILITY NATURAL-GAS PIPING

NATURAL GAS PIPING SHALL BE BLACK STEEL, SCHEDULE 40, ASTM A53, TYPE E OR S, SEAMLESS, GRADE B, WITH WELDED FITTINGS, THREADED FITTINGS MAY BE USED WHERE ALLOWED BY NATIONAL FUEL GAS CODE.

GAS PIPING VALVES 2" AND SMALLER SHALL BE ASME B16.33, 125 PSI WOG, CAST-IRON BODY, BRONZE PLUG, STRAIGHTAWAY PATTERN, SQUARE HEAD, TAPERED-PLUG TYPE, WITH THREADED ENDS. PROVIDE SHUTOFF VALVES SUITABLE FOR NATURAL GAS APPLICATION.

GAS PRESSURE REGULATORS SHALL BE ANSI Z21.80 FOR LINE REGULATORS AND ANSI Z21.18 FOR APPLIANCE REGULATORS, SINGLE STAGE, STEEL JACKETED, CORROSION RESISTANT. INCLUDE ATMOSPHERIC VENT. INLET PRESSURE RATING SHALL NOT LESS THAN SYSTEM PRESSURE. PROVIDE FACTORY OR FIELD INSTALLED CORROSION RESISTANT SCREEN IN OPENING WHEN NOT CONNECTED TO VENT

#### SECTION 23 2300 - REFRIGERANT PIPING

REFRIGERANT LIQUID, SUCTION AND HOT-GAS PIPING SHALL BE COPPER, ASTM B 88, TYPE ACR, ANNEALED-TEMPERED TUBING WITH WROUGHT-COPPER FITTINGS AND BRAZED OR SOLDERED JOINTS. INSTALL REFRIGERANT PIPING ACCORDING TO ASHRAE 15.

INSTALL PIPING AT RIGHT ANGLES WITH BUILDING WALLS. INSTALL PIPING ADJACENT TO MACHINES TO ALLOW SERVICE AND MAINTENANCE. INSTALL PIPING FREE OF SAGS AND BENDS. PROVIDE ROOF SUPPORTS ACCORDING TO ROOF MANUFACTURER'S RECOMMENDATIONS. INSTALL HOT-GAS PIPING IN A DOWNWARD SLOPE AWAY FROM COMPRESSOR. INSTALL SUCTION LINES IN DOWNWARD SLOPE TOWARD COMPRESSOR. INSTALL TRAPS AND DOUBLE RISERS TO ENTRAIN OIL IN VERTICAL RUNS. LIQUID LINES MAY BE INSTALLED LEVEL

SELECT COMPONENTS WITH PRESSURE RATING EQUAL TO OR GREATER THAN

WHEN BRAZING OR SOLDERING, REMOVE SOLENOID-VALVE COILS AND SIGHT GLASSES; ALSO REMOVE VALVE STEMS, SEATS, AND PACKING, AND ACCESSIBLE INTERNAL PARTS OF REFRIGERANT SPECIALTIES. DO NOT APPLY HEAT NEAR

CHARGE SYSTEM WITH PROPER REFRIGERANT USING THE FOLLOWING PROCEDURES. INSTALL CORE FILTER DRYERS AFTER LEAK TEST BUT BEFORE EVACUATION. EVACUATE ENTIRE REFRIGERANT SYSTEM WITH A VACUUM PUMP AND HOLD TEST TO ENSURE SYSTEM HAS NO LEAKS. BREAK THE VACUUM WITH REFRIGERANT GAS, ALLOWING PRESSURE TO BUILD UP TO 2 PSIG. CHARGE SYSTEM WITH A NEW FILTER-DRYER CORE IN CHARGING LINE.

## SECTION 23 3100 - HVAC DUCTS AND CASING

EXPANSION-VALVE BULB.

ALL DUCTWORK SHALL BE NEW SHEETS OF GALVANIZED SHEET STEEL. ALL DUCTWORK SHALL BE INSTALLED AIR-TIGHT THROUGH PROPER CAULKING, ETC. DUCTS SHALL BE SUFFICIENTLY BRACED TO PREVENT VIBRATION AND SAGGING. INSTALLATION SHALL BE ACCORDING TO SMACNA STANDARDS. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.

SUPPLY DUCTWORK FROM FURNACE SHALL BE 2" PRESSURE CLASS. RETURN, EXHAUST, DUCTWORK SHALL BE 2" PRESSURE CLASS.

ALL DUCTWORK SHALL BE INSTALLED AIR-TIGHT THROUGH PROPER CAULKING. DUCT LEAKAGE SHALL NOT EXCEED 5% OF THE AIR FLOW. ANY DUCT PENETRATION OF A FIRE OR SMOKE RATED WALL SHALL HAVE FIRE

DAMPER OR FIRE/SMOKE DAMPER IN THE DUCT AT THE WALL.

PROVIDE EXHAUST DUCT FROM EACH EXHAUST FAN, ROUTE IT THROUGH THE EXTERIOR WALL OR ROOF. TERMINATE WITH A WALL VENT OR GOOSENECK ABOVE THE ROOF.

DUCTWORK IS SHOWN DIAGRAMMATICALLY. VERIFY ALL SIZES AND ROUTING WITH EXISTING STRUCTURE AND CEILING HEIGHTS. DUCTWORK SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. ADJUST DUCT SIZING AS NECESSARY TO MEET EQUIVALENT SIZES INDICATED. CONTRACTOR HAS FLEXIBILITY TO USE EITHER SQUARE OR ROUND DUCTWORK. REFER TO SECTION 230700 FOR DUCTWORK INSULATION.

## SECTION 23 3300 - AIR DUCT ACCESSORIES

PROVIDE VOLUME CONTROL/BALANCING DAMPERS, FLEXIBLE DUCTWORK, DUCT HARDWARE (TEST HOLES), FLEXIBLE CONNECTIONS, DUCT ACCESS PANELS FOR ACCESS TO CONTROL DAMPERS, HUMIDIFIERS, AND/OR AS INDICATED ON THE DRAWINGS. FLEXIBLE DUCTS SHALL NOT BE LONGER THAN 5 FEET EXTENDED.

MOTORIZED DAMPERS SHALL BE MADE OF GALVANIZED STEEL. FRAMES SHALL BE MINIMUM 16 GAUGE, WELDED OR RIVETED WITH CORNER REINFORCEMENT. BLADES SHALL BE MINIMUM 16 GAUGE WITH TPE SEALS ATTACHED TO 1/2 INCH SHAFT WITH SET SCREW. MOTORIZED DAMPER OPERATORS SHALL BE 120V POWERED WITH ADJUSTABLE MECHANICAL END STOPS.

MANUFACTURERS OF MOTORIZED DAMPERS SHALL BE GREENHECK, RUSKIN, OR APPROVED EQUAL.

### SECTION 23 3423 - HVAC POWER VENTILATORS

CABINET EXHAUST FANS: SHALL BE CABINET EXHAUST TYPE, LOW SOUND TYPES, COMPLETE WITH FACE GRILLE FOR WALL OR CEILING MOUNTING. TOP OR SIDE DISCHARGE, INTEGRAL BACKDRAFT DAMPER, LIFETIME LUBRICATED MOTORS, INTEGRAL VIBRATION ISOLATION AND LINED HOUSING. WHEELS SHALL BE DYNAMICALLY BALANCED FOR VIBRATION FREE OPERATION. PROVIDE RHEOSTAT-TYPE FAN SPEED CONTROLLER.

INLINE FANS: V-BELT OR DIRECT DRIVEN, WITH GALVANIZED STEEL HOUSING LINED WITH ACOUSTIC INSULATION, RESILIENTLY-MOUNTED MOTOR, GRAVITY BACKDRAFT DAMPER IN DISCHARGE. PROVIDE WITH FACTORY WIRED DISCONNECT SWITCH.

POWER ROOF VENTILATORS: SHALL BE V-BELT OR DIRECT DRIVE AS INDICATED ON SCHEDULE. SHALL HAVE SPUN ALUMINUM HOUSING WITH RESILIENT MOUNTED MOTOR. PROVIDE WITH ALUMINUM WIRE BIRD SCREEN, FACTORY WIRED DISCONNECT SWITCH, BACKDRAFT DAMPER, AND ROOF CURB.

MANUFACTURERS OF POWER VENTILATORS SHALL BE GREENHECK, LOREN COOK, TWIN CITY, OR APPROVED EQUAL.

#### SECTION 23 3700 - AIR OUTLETS AND INLETS

PROVIDE CEILING PLAQUE DIFFUSERS AND EGG CRATE RETURN GRILLES. INLETS AND OUTLETS SHALL BE STEEL AND ALUMINUM CONSTRUCTION WITH WHITE PAINTED FINISH. REFER TO THE SCHEDULE ON THE DRAWINGS FOR MANUFACTURER AND MODEL NUMBERS OF DIFFUSERS, REGISTERS AND GRILLES.

COORDINATE LOCATION OF ALL CEILING DIFFUSERS, GRILLES, AND REGISTERS IN THE FIELD WITH THE ELECTRICAL AND GENERAL CONTRACTOR TO PREVENT CONFLICT WITH LIGHTS AND ANY OTHER ARCHITECTURAL ELEMENTS.

MANUFACTURER OF REGISTERS AND DIFFUSERS SHALL BE TITUS, NAILOR, PRICE, RAYMON DONCO, KREUGER OR EQUAL.

#### SECTION 23 5400 - FURNACES WITH DX COOLING

PROVIDE COMPLETE FACTORY-FABRICATED NATURAL GAS, CONDENSING FURNACE SYSTEM WITH DUCT-MOUNT DIRECT EXPANSION (DX) COOLING A-COIL, OUTDOOR CONDENSING UNIT AND PROGRAMMABLE THERMOSTAT CONTROL.

FURNACE CABINET SHALL BE FACTORY-PAINTED STEEL WITH LIFT OUT ACCESS PANEL. CABINET INTERIOR AROUND HEAT EXCHANGER SHALL BE FACTORY INSULATED.

FURNACE FAN SHALL BE CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT DRIVE TYPE. FAN SHALL BE SINGLE SPEED.

(TWO STAGE) GAS HEATING SECTION SHALL HAVE A 96 PERCENT AFUE EFFICIENCY. HEAT EXCHANGER SHALL HAVE ALUMINIZED STEEL PRIMARY EXCHANGER AND POLYETHYLENE-COATED STEEL SECONDARY EXCHANGER. BURNER SHALL HAVE 100 PERCENT SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUT-OFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD. ELECTRONIC PILOT IGNITION WITH HOT-SURFACE OR ELECTRIC SPARK IGNITION. BURNER SAFETY CONTROLS SHALL INCLUDE ELECTRONIC FLAME SENSOR, FLAME ROLLOUT SWITCH AND LIMIT CONTROL WITH AUTOMATIC RESET.

COMBUSTION AIR INDUCER SHALL BE CENTRIFUGAL FAN WITH THERMALLY PROTECTED MOTOR AND SLEEVE BEARINGS. FAN SHALL PREPURGE HEAT EXCHANGER AND VENT COMBUSTION PRODUCTS. PRESSURE SWITCH SHALL PREVENT FURNACE OPERATION IF COMBUSTION AIR INLET OR FLUE OUTLET IS BLOCKED.

FURNACE SHALL BE PROVIDED WITH 1 INCH DISPOSABLE FIBERGLASS MERV 8 FILTERS.

REQUIREMENTS. FOLLOW MANUFACTURER'S REQUIREMENTS FOR SIZING AND INSTALLATION OF COMBUSTION AIR AND VENT PIPING. INTEGRAL FURNACE CONTROLS SHALL CONSIST OF SOLID-STATE BOARD

COMBUSTION AIR AND VENT PIPING SHALL BE PVC OR CPVC PER MANUFACTURER'S

INTEGRATING IGNITION, HEAT, COOLING, FAN SPEED, FAN-ON AND FAN-OFF TIMING, TERMINALS FOR CONNECTION OF ACCESSORIES, AND DIAGNOSTIC LIGHT WITH PORT. THERMOSTAT SHALL BE WALL-MOUNT, PROGRAMMABLE UNIT WITH AUTOMATIC SWITCHING BETWEEN HEATING AND COOLING, SEVEN-DAY PROGRAMMABILITY WITH MINIMUM OF FOUR TEMPERATURE PRESETS PER DAY, AND BATTERY BACKUP

PROTECTION AGAINST POWER FAILURE FOR PROGRAM SETTINGS. LOW-VOLTAGE

CONTROL WIRING PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE HCFC-FREE AIR-COOLED COMPRESSOR-CONDENSER UNIT. CASING SHALL BE STEEL WITH BAKED-ENAMEL FINISH, REMOVABLE PANELS TO ACCESS CONTROLS, WEEP HOLES AND MOUNTING HOLES IN BASE. PROVIDE BRASS SERVICE VALVES, FITTINGS AND GAGE PORTS ON EXTERIOR OF CASING. COMPRESSOR SHALL BE HERMETICALLY SEALED RECIPROCATING OR SCROLL TYPE AS SCHEDULED ON DRAWINGS. PROVIDE CRANKCASE HEATER, COMPRESSOR VIBRATION ISOLATION MOUNTS, THERMAL AND CURRENT-SENSITIVE OVERLOAD DEVICES, START CAPACITOR, RELAY AND CONTACTOR. REFRIGERANT COIL SHALL BE COPPER TUBE WITH MECHANICALLY BONDED ALUMINUM FIN. COMPLYING WITH ARI 210/240. PROVIDE LOW AMBIENT OPERATING KIT PERMITTING OPERATION DOWN TO 0

## SECTION 23 8233 - RADIANT HEATERS

DEGREES F.

PROVIDE 2-STAGE BURNERS, GAS-FIRED, LOW INTENSITY HEATERS.

CONSTRUCTION SHALL BE 16 GAUGE, 4" O.D. ALUMINIZED COATED STEEL RADIANT EMITTER TUBES WITH CORROSION RESISTANT BLACK COATING, 0.95 EMISSIVITY WITH HIGHLY POLISHED ALUMINUM REFLECTORS.

SHALL BE MANUFACTURED BY RE-VERBER-RAY OR EQUAL

PROVIDE STAINLESS STEEL CONSTRUCTION FOR WET ENVIRONMENT.

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SECTION 22 0553 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

THE INSTALLATION OF ALL MECHANICAL SYSTEMS SHALL CONFORM TO THE LATEST LOCAL, STATE AND FEDERAL CODES, REGULATIONS AND ORDINANCES.

THEY ARE PRACTICING AND ONLY FIRST CLASS WORKMANSHIP WILL BE ACCEPTED.

#### SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT.

APPROVAL OF ARCHITECT.

ALL DIMENSIONS BY FIELD MEASUREMENTS. DO NOT SCALE DRAWINGS.

SHALL BE FULLY OPERATIONAL.

VENTS AT HIGH POINTS AND AS INDICATED ON DETAILS.

HVAC CONTRACTOR SHALL VERIFY AND COORDINATE HVAC EQUIPMENT VOLTAGE

THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SWITCHES, DISCONNECTS, CONTACTORS, AND WIRING.

### EQUIPMENT AT COMPLETION OF PROJECT.

PROVIDE HANGERS AND SUPPORTS FOR ALL PIPING THAT IS SUSPENDED FROM

AND SECURELY SUPPORT PIPING FROM BUILDING STRUCTURE.

INCLUDE PIPE PROTECTION SHIELDS TO PREVENT CRUSHING OF INSULATION ON

### HANGER MANUFACTURERS SHALL BE MASON, ANVIL, F & S CENTRAL OR EQUAL.

#### GENERAL ELECTRICAL NOTES:

- A. COORDINATE DEVICE LOCATIONS/HEIGHTS WITH ARCHITECTURAL ELEVATIONS/DETAILS PRIOR TO ROUGH-IN.
- B. COORDINATE WORK WITH THE HVAC CONTRACTOR, AND ANY OTHER ASSOCIATED CONTRACTORS. VERIFY ALL EQUIPMENT LOADS PRIOR TO INSTALLATION OF WIRING AND DEVICES.
- C. ALL COMMUNICATION CABLING AND DEVICES ARE BY OTHERS, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR RACEWAY AND ROUGH-IN BOXES ONLY.
- D. BELOW IS A LIST OF SOME COMMON REQUIREMENTS OUTLINED IN THE SPECIFICATION. REFER TO THE SPECIFICATION FOR MORE DETAILED INFORMATION FOR THESE AND ALL OTHER ITEMS. 1. CONDUIT PENETRATIONS THROUGH WALLS SHALL BE SEALED.
- 2. EMT FITTINGS SHALL BE SET SCREW TYPE. MINIMUM CONDUIT SIZE SHALL BE 1/2".
- 3. BOXES FLUSH IN COMMON WALL SHALL NOT BE BACK-TO-BACK OR THROUGH-WALL TYPE.
- 4. RECEPTACLES AND SWITCHES SHALL BE 20 AMP COMMERCIAL GRADE. 5. CONDUITS, JUNCTION BOXES, WIRING, AND EQUIPMENT SHALL BE
- LABELED PER NEC. 6. PROVIDE A GREEN GROUND CONDUCTOR THROUGHOUT ALL NEW
- ELECTRICAL WORK. 7. PROVIDE SEPARATE NEUTRAL FOR EACH ELECTRICAL PHASE.
- E. EXIT SIGNS AND EMERGENCY FIXTURES SHALL BE CONNECTED TO UNSWITCHED PORTION OF LIGHTING CIRCUIT.

#### **LIGHTING PLAN NOTES**:

- E101. ASTRONOMICAL TIME SWITCH "TS1" SHALL CONTROL LIGHTING IN GARAGE. SEE DETAIL.
- E102. ASTRONOMICAL TIME SWITCH "TS1" SHALL CONTROL EXTERIOR LIGHTING. SEE DETAIL.

LIGHTING/SWITCHING KEY

X# = LIGHT FIXTURE TYPE PER LIGHT FIXTURE SCHEDULE EM = EMERGENCY LIGHT FIXTURE HE EMERGENCY LIGHT FIXTURE

NL = NIGHT LIGHT FIXTURE

# = PANEL CIRCUIT NUMBER

##" = HEIGHT TO CENTER OF FIXTURE OR

SWITCH ABOVE FINISHED FLOOR

(46" FOR SWITCHES IF NOT SHOWN) x = SWITCHING SCHEME



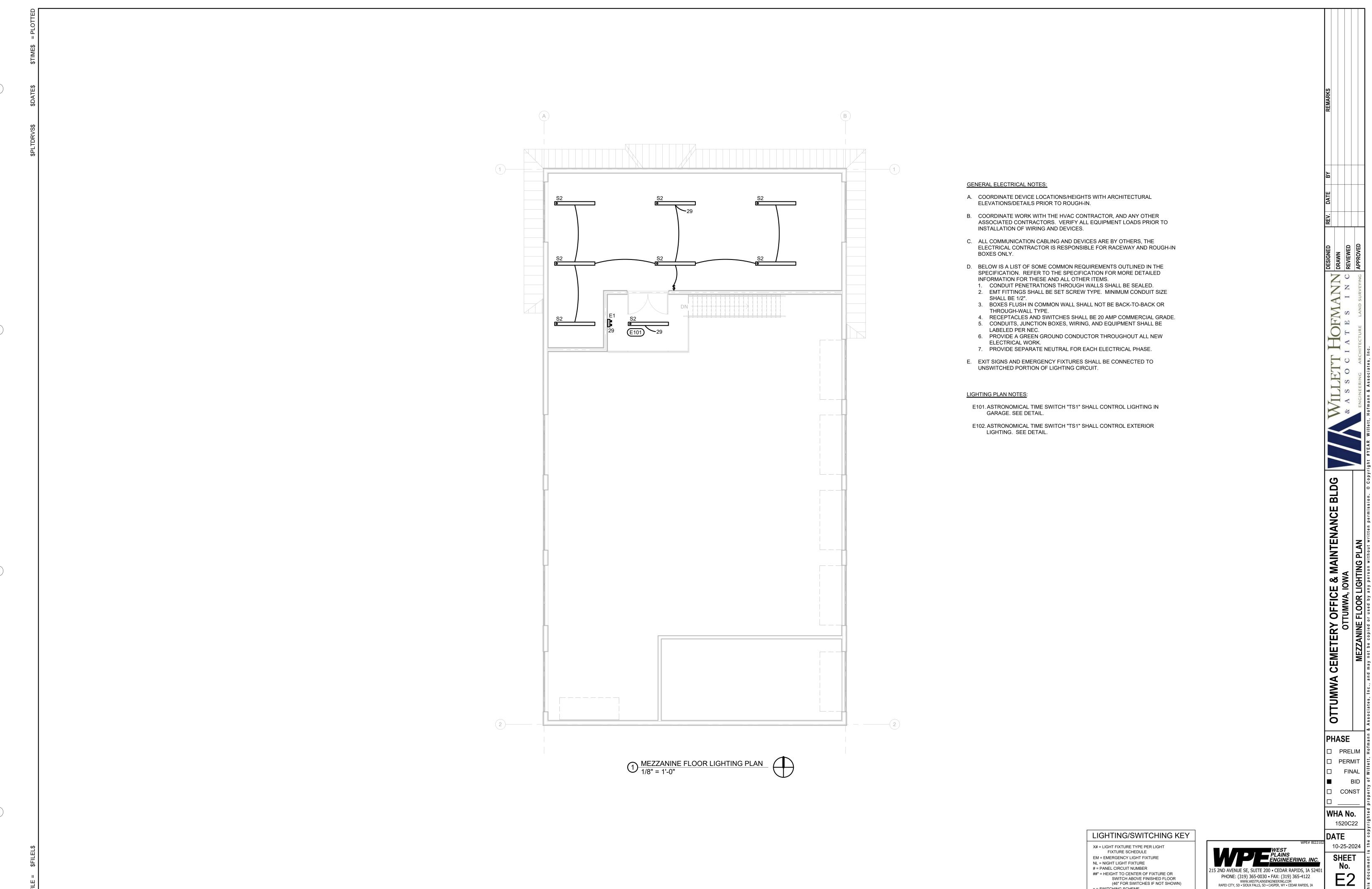
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x = SWITCHING SCHEME

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#### GENERAL ELECTRICAL NOTES:

- A. COORDINATE DEVICE LOCATIONS/HEIGHTS WITH ARCHITECTURAL ELEVATIONS/DETAILS PRIOR TO ROUGH-IN.
- B. COORDINATE WORK WITH THE HVAC CONTRACTOR, AND ANY OTHER ASSOCIATED CONTRACTORS. VERIFY ALL EQUIPMENT LOADS PRIOR TO INSTALLATION OF WIRING AND DEVICES.
- C. ALL COMMUNICATION CABLING AND DEVICES ARE BY OTHERS, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR RACEWAY AND ROUGH-IN BOXES ONLY.
- D. BELOW IS A LIST OF SOME COMMON REQUIREMENTS OUTLINED IN THE SPECIFICATION. REFER TO THE SPECIFICATION FOR MORE DETAILED INFORMATION FOR THESE AND ALL OTHER ITEMS. 1. CONDUIT PENETRATIONS THROUGH WALLS SHALL BE SEALED.
- 2. EMT FITTINGS SHALL BE SET SCREW TYPE. MINIMUM CONDUIT SIZE SHALL BE 1/2".
- 3. BOXES FLUSH IN COMMON WALL SHALL NOT BE BACK-TO-BACK OR THROUGH-WALL TYPE. 4. RECEPTACLES AND SWITCHES SHALL BE 20 AMP COMMERCIAL GRADE.
- 5. CONDUITS, JUNCTION BOXES, WIRING, AND EQUIPMENT SHALL BE LABELED PER NEC.
- 6. PROVIDE A GREEN GROUND CONDUCTOR THROUGHOUT ALL NEW ELECTRICAL WORK.
- 7. PROVIDE SEPARATE NEUTRAL FOR EACH ELECTRICAL PHASE.
- E. EXIT SIGNS AND EMERGENCY FIXTURES SHALL BE CONNECTED TO UNSWITCHED PORTION OF LIGHTING CIRCUIT.

#### POWER AND COMMUNICATION PLAN NOTES:

E201.PROVIDE AND INSTALL A 3/4", 4' X 4' PLYWOOD BOARD FOR TELECOM. PROVIDE TWO 2" CONDUITS TO BETWEEN SOUTH PARKING LOT AND EAST PARK AVENUE. COORDINATE WITH UTILITY.

#### E202. GAS DETECTION LOOP CONTROLLER.

- E203. CARBON MONOXIDE DETECTOR, INTERLOCK DAMPER WITH ASSOCIATED MOTOR, PROVIDE NECESSARY CONTROL WIRING AND CONDUIT. PROVIDE 120V CIRCUIT SHOWN FOR MOTORIZED DAMPER. SEE MECHANICAL DETAIL.
- E204.ELECTRICAL UTILITY METER. SEE ELECTRICAL SCHEMATIC RISER DIAGRAM.

### COMMUNICATIONS KEY

**Ψ** #D COMMUNICATIONS OUTLET RECEPTACLE/OUTLET KEY

# = PANEL CIRCUIT NUMBER

##" = HEIGHT TO CENTER OF RECEPTACLE OR OTHER OUTLET ABOVE FINISHED FLOOR (18" IF NOT SHOWN)

ac = RECEPTACLE OR OTHER OUTLET MOUNTED 8" ABOVE COUNTER OR 4" ABOVE BACKSPLASH

#V = QUANTITY OF VOICE JACKS/CABLES (ZERO IF NOT SHOWN) #D = QUANTITY OF DATA JACKS/CABLES (ZERO IF NOT SHOWN)

RI = ROUGH-IN ONLY (NO CABLES/JACKS) ##" = HEIGHT TO CENTER OF OUTLET (18" UNLESS NOTED OTHERWISE) TELEVISION OUTLET WITH (NO CABLES/JACKS)



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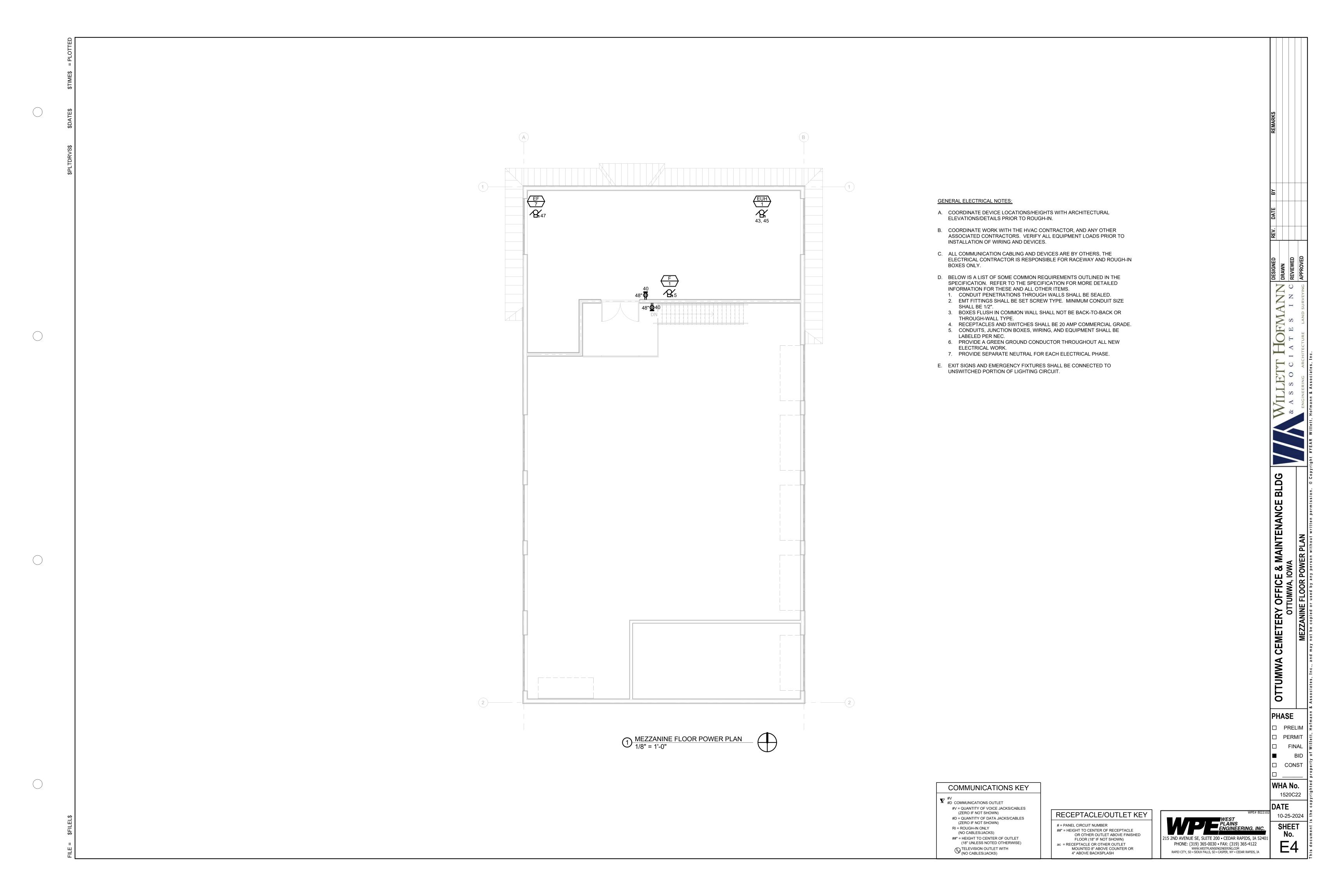
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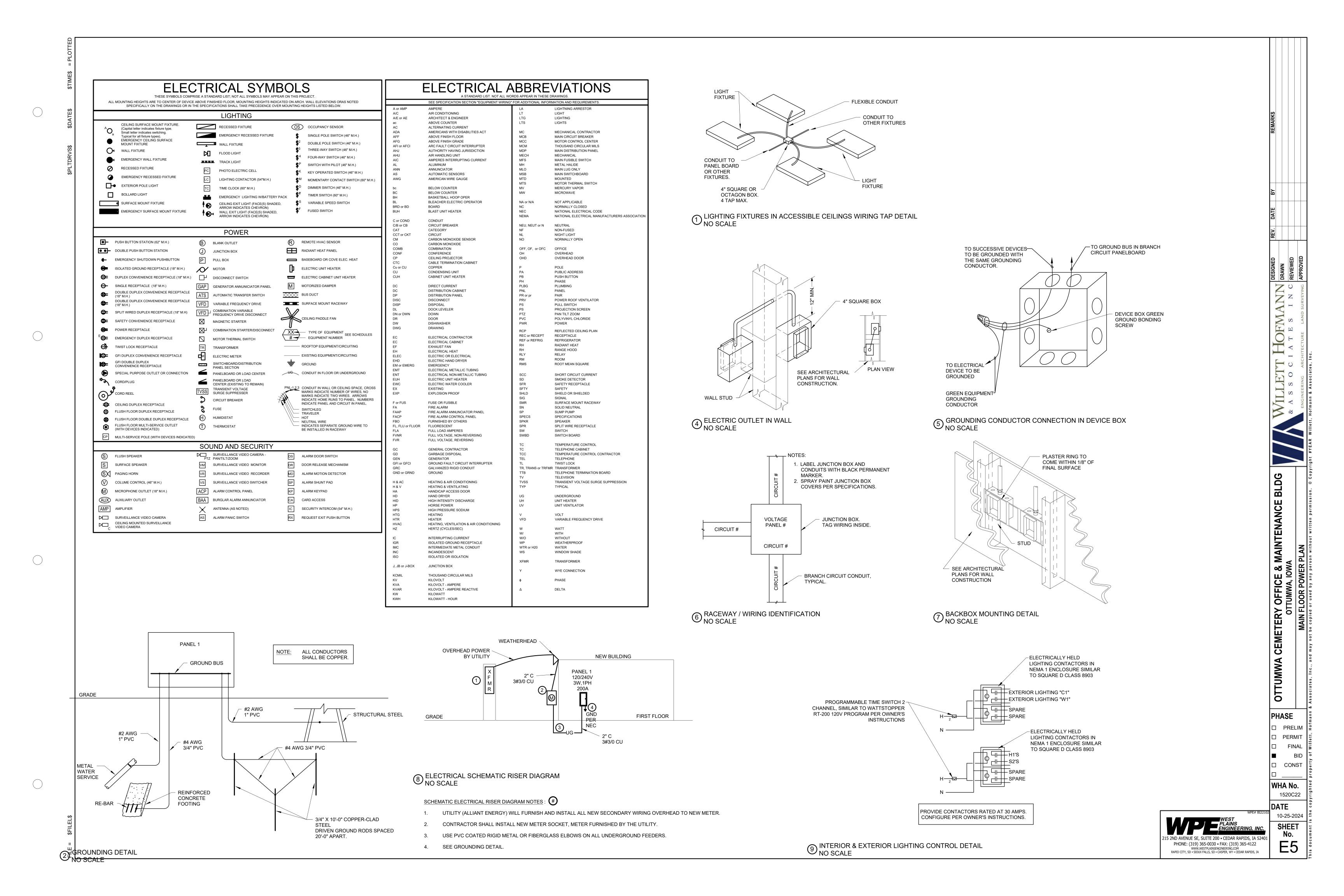
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COORDINATION OF WORK: COORDINATE LOCATION OF UTILITY TRANSFORMER WITH PRIMUS CONSTRUCTION. COORDINATE WORK WITH HVAC CONTRACTOR, SECURITY EQUIPMENT CONTRACTOR, AND ANY OTHER APPLICABLE CONTRACTORS. VERIFY ALL EQUIPMENT LOADS WITH HVAC CONTRACTOR,

ORDINANCES AND CODES: ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY ELECTRICAL ORDINANCES, OSHA, STATE ELECTRICAL CODE, ENERGY CODE (IECC), AND NATIONAL ELECTRICAL CODE (NEC). WHERE EVER THERE IS A CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL APPLY. ALL FEES, PERMITS, LICENSES, ETC., NECESSARY IN ORDER TO COMPLETE THE WORK OF THIS SECTION SHALL BE PAID BY THIS CONTRACTOR. CONTRACTOR SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE LOCAL UTILITY COMPANY.

WORKMANSHIP: THE INSTALLATION WORK INCLUDED IN THIS SPECIFICATION SHALL BE PERFORMED IN A NEAT WORKMANLIKE MANNER BY PERSONEL EXPERIENCED AND SKILLED IN THE ELECTRICAL TRADE. ONLY THE BEST QUALITY WORKMANSHIP WILL BE ACCEPTED. ALL EXPOSED PARTS OF THE ELECTRICAL WIRING SYSTEMS SUCH AS EXPOSED CONDUITS, FLUSH PLATES, CABINET TRIM, FIXTURES, ETC., SHALL BE SQUARE AND TRUE WITH THE BUILDING CONSTRUCTION.

GUARANTEE: THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DEFECTS WHICH MAY DEVELOP IN ANY PART OF HIS WORK CAUSED BY FAULTY WORKMANSHIP, MATERIAL OR EQUIPMENT, AND AGREES TO REPLACE, REPAIR. OR ALTER, AT HIS EXPENSE, ANY SUCH FAULTY WORKMANSHIP, MATERIAL, OR EQUIPMENT THAT HAS BEEN BROUGHT TO HIS ATTENTION DURING A PERIOD OF ONE YEAR FROM THE DATE OF THE FINAL CERTIFICATE FOR PAYMENT. ACCEPTANCE OF THE WORK SHALL NOT WAIVE THIS GUARANTEE.

QUALITY ASSURANCE: ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF BEST QUALITY, OF THE TYPE BEST SUITED FOR THE PURPOSE INTENDED, AND BE MADE BY NATIONALLY RECOGNIZED AND SUBSTANTIALLY ESTABLISHED MANUFACTURERS. ALL ELECTRICAL MATERIALS USED IN THIS WORK SHALL BE LISTED BY THE UNDERWRITERS LABORATORIES, INC., WHERE TESTING IS PROVIDED AND SHALL BEAR THEIR LABEL.

OMPLETED WORK: PRIOR TO ACCEPTANCE OF THE ELECTRICAL INSTALLATION, THE ELECTRICAL CONTRACTOR SHALL DEMONSTRATE TO THE OWNER ALL FUNCTIONS OF THE SYSTEMS, AND SHALL INSTRUCT THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF SUCH SYSTEMS. SYSTEMS SHALL BE COMPLETE, NON-HAZARDOUS, AND READY FOR NORMAL USE. THE CONTRACTOR SHALL CLEAN ALL MATERIAL AND LEAVE ALL MATERIAL IN NEW CONDITION. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE SITE ALL DEBRIS, EXCESS MATERIAL, AND EQUIPMENT LEFT DURING THE CONSTRUCTION OF THIS PROJECT.

**EQUIPMENT:** SUBMIT SHOP DRAWINGS FOR MAJOR EQUIPMENT FOR REVIEW. INCLUDE THE STAMP OF THE ELECTRICAL CONTRACTOR SHOWING THAT HE HAS REVIEWED AND APPROVED THEM. CONTRACTOR SHALL PROVIDE CORROSION RESISTANT SUPPORTS FOR THE PROPER INSTALLATION OF ALL

QUIPMENT IDENTIFICATION AND CLEANUP: ALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH IDENTIFICATION INDICATING ITS USE OR FUNCTION. EQUIPMENT TO BE IDENTIFIED SHALL INCLUDE PANELBOARDS, SPECIAL PANELS, MOTOR STARTERS, SPECIAL CONTROL SWITCHES, SPECIAL RECEPTACLES, JUNCTION BOXES AND EMPTY CONDUITS PROVIDED FOR FUTURE USE. ALL ELECTRICAL EQUIPMENT MUST BE KEPT COMPLETELY PROTECTED FROM WEATHER ELEMENTS, PAINTING, ETC. UNTIL THE BUILDING IS SUBSTANTIALLY COMPLETED. DAMAGE FROM RUST, PAINT, SCRATCHES, ETC., SHALL BE CORRECTED.

<u>CUTTING AND PATCHING</u>: IN EXISTING CONSTRUCTION THIS CONTRACTOR SHALL PERFORM ALL CUTTING REQUIRED AND ALL NECESSARY PATCHING AFTER COMPLETION TO RESTORE THE SURFACE TO ITS ORIGINAL CONDITION. UNLESS OTHERWISE INDICATED. THIS CONTRACTOR SHALL NOT ENDANGER THE STABILITY OF THE STRUCTURE BY CUTTING OR DIGGING.

RACEWAY: ALL WIRING SHALL BE INSTALLED IN RACEWAY; RIGID METAL CONDUIT, ELECTRICAL METALLIC TUBING, FLEXIBLE METAL CONDUIT, OR PVC. HEAVY WALL, GALVANIZED STEEL, OR INTERMEDIATE STEEL CONDUIT SHALL BE USED IN ALL RUNS WHERE REQUIRED FOR MECHANICAL PROTECTION, EMT MAY BE USED IN FURRED CEILING AREAS, INTERIOR PARTITIONS, AND SURFACE MOUNTED IN EQUIPMENT ROOMS. EMT SHALL NOT BE USED IN SLAB ON GRADE OR WHERE EXPOSED TO MOISTURE OR EARTH. PVC MAY BE USED IN SLAB ON GRADE OR WHERE EXPOSED TO MOISTURE OR EARTH. CONTRACTOR SHALL DO ALL EXCAVATING NECESSARY FOR UNDERGROUND WIRING/CONDUIT AND SHALL BACKFILL TRENCHES AND EXCAVATIONS AFTER WORK HAS BEEN INSPECTED.

RACEWAY FITTINGS: ON ALL CONDUIT SYSTEMS THE CONNECTOR FITTING SHALL BE OF THE INSULATED THROAT TYPE. WHERE RIGID CONDUIT IS CONNECTED TO A THREADLESS BOX, DOUBLE LOCKNUT METHOD SHALL BE USED. ALL CONDUIT FITTINGS SHALL BE OF STEEL OR MALLEABLE IRON CONSTRUCTION. INDENTER FITTINGS SHALL NOT BE USED FOR EMT. SET SCREW FITTINGS MAY BE USED FOR EMT IN DRY LOCATIONS.

RACEWAY INSTALLATIONS: CONDUITS SHALL BE SIZED AS NOTED OR AS REQUIRED BY NEC FOR NUMBER AND SIZE OF CONDUCTORS INSTALLED EXCEPT THAT 3/4 INCH SHALL BE MINIMUM SIZE FOR BRANCH CIRCUIT HOMERUNS. ALL CONDUIT AND RACEWAYS SHALL BE SECURELY POSITIONED BY GALVANIZED STEEL STRAPS, CLAMPS, AND HANGERS WITH SUITABLE FASTENINGS. CADDY FASTENERS AS MANUFACTURED BY ERICO PRODUCTS ARE ACCEPTABLE SUPPORT DEVICES WHERE APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO AND AT RIGHT ANGLES TO CONSTRUCTION LINES AND NEATLY GROUPED AND SUPPORTED WITH APPROVED CONDUIT HANGERS OR CHANNEL SUPPORTS.

WIRE AND CABLE: ALL WIRE AND CABLE FOR FEEDER AND BRANCH CIRCUITS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC AND SHALL MEET ALL RELEVANT ASTM SPECIFICATIONS. CONDUCTORS SHALL BE 600 VOLT RATED AND SHALL HAVE TYPE THWN/THHN INSULATION. #10 CONDUCTORS AND LARGER SHALL BE STRANDED, #12 CONDUCTORS AND SMALLER SHALL BE SOLID. MINIMUM SIZE CONDUCTOR SHALL BE #12 FOR POWER WIRING AND #14 FOR CONTROL WIRING. ALUMINUM CONDUCTORS SHALL NOT BE USED EXCEPT FOR WIRE SHOWN ON RISER. FOR ALL INTERIOR DRY LOCATIONS USE ONLY BUILDING WIRE IN RACEWAY OR METAL CLAD CABLE IF ALLOWED BY AHJ (AUTHORITY HAVING JURISDICTION). METAL CLAD CABLE, SHALL BE NFPA 70, TYPE MC, COPPER CONDUCTORS, 600 VOLTS INSULATIONS VOLTAGE RATING, THERMOPLASTIC INSULATION, ALUMINUM WITH INTERLOCKED METAL TAPE ARMOR. METAL CLAD CABLE FOR LOCATIONS REQUIRING REDUNDANT GROUNDING AND HOSPITAL GRADE RECEPTACLES SHALL BE HOSPITAL GRADE TYPE.

CONNECTIONS TO SPECIAL EQUIPMENT: SPECIAL EQUIPMENT IS HEREBY DEFINED AS ALL EQUIPMENT THAT IS NOT SPECIFIED UNDER THIS CONTRACT, BUT REQUIRES CONNECTIONS BY THIS CONTRACTOR, AS INDICATED ON THE DRAWINGS. SUCH CONNECTIONS SHALL BE PERFORMED BY THIS CONTRACTOR. THIS CONTRACTOR SHALL VERIFY THE LOCATIONS OF SUCH CONNECTION BY SECURING FROM THE EQUIPMENT SUPPLIER'S TEMPLATES, DETAIL DRAWINGS AND ROUGHING IN MEASUREMENTS. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR RESPONSIBLE FOR FURNISHING SUCH EQUIPMENT IS ALSO RESPONSIBLE FOR SETTING THE EQUIPMENT IN PLACE.

PULL BOXES AND JUNCTION BOXES: PULL BOXES AND JUNCTION BOXES ARE GENERALLY NOT INDICATED ON DRAWINGS EXCEPT FOR SPECIAL REQUIREMENTS. THIS CONTRACTOR SHALL INSTALL PULL BOXES OR JUNCTION BOXES AS REQUIRED TO FACILITATE WIRE PULLING. PULL BOXES AND JUNCTION BOXES SHALL BE GALVANIZED CODE GAUGE STEEL WITH REMOVABLE OR HINGED COVERS AND SHALL BE SIZED AS REQUIRED. PULL BOXES AND JUNCTION BOXES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS AND SHALL NOT BE INSTALLED IN FINISHED SPACES.

OUTLET BOXES: OUTLET BOXES SHALL BE METAL AT LEAST 1-1/2 INCHES DEEP, OR GANG STYLE TYPE OF SIZE TO ACCOMMODATE DEVICES NOTED. OUTLET BOXES ON EXPOSED CONDUIT RUNS IN UNFINISHED AREAS AND EQUIPMENT ROOMS SHALL BE 4 INCH SQUARE. ALL OUTLET BOXES SHALL BE CONCEALED EXCEPT WHERE SHOWN OR NOTED OTHERWISE. THIS CONTRACTOR SHALL VERIFY TYPE AND DEPTH OF FINISHED SURFACE SO THAT OUTLET WILL BE

PANELBOARDS: SHALL BE RATED FOR 120/240 VOLTS, SINGLE PHASE, DEAD FRONT CONSTRUCTION. CIRCUIT BREAKERS SHALL BE BOLT ON THERMAL MAGNETIC TYPE, QUICK-MAKE, QUICK-BREAK, A.C. RATED WITH A TRIP INDICATION DIFFERENT FROM THE ON OR OFF POSITION. MULTIPOLE BREAKERS SHALL BE COMMON TRIP WITHOUT RELYING ON HANDLE TIES. PANELS SHALL BE SIMILAR TO SQUARE D, TYPE NQOD, OR EQUAL BY GENERAL ELECTRIC, SIEMENS, OR CUTLER-HAMMER.

SAFETY SWITCHES: SHALL BE GENERAL DUTY 250 VOLT, QUICK-MAKE, QUICK-BREAK OPERATION, HORSEPOWER RATED, NEMA 1 ENCLOSURE NON-FUSED UNLESS NOTED FUSED, AND OF THE SIZE SHOWN ON THE DRAWINGS OR AS REQUIRED BY CODE. SAFETY SWITCHES SHALL BE OF THE SAME MANUFACTURE AS PANELBOARDS AND WHERE SHOWN AS WEATHERPROOF SHALL HAVE A NEMA 3R ENCLOSURE.

FUSES: ALL MOTORS SHALL BE PROTECTED BY DUAL-ELEMENT FUSES ABLE TO CARRY 500% OF RATING FOR A MINIMUM OF 10 SECONDS, AND SIZED AT 125% OF THE ACTUAL NAME PLATE AMPERE RATING. FUSES SHALL BE BUSSMAN-FUSETRON, FRN (250V), OR EQUAL.

<u>WIRING DEVICES</u>: SWITCH OUTLET - 20A, 120V, HUBBELL DECORATOR SERIES. RECEPTACLE OUTLET - 20A, 120V, 3 WIRE GROUNDING, TAMPER RESISTANT -HUBBELL DECORATOR SERIES. PROVIDE COLOR SAMPLES TO OWNER FOR

SELECTION.

MOTOR AND EQUIPMENT WIRING: THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL MOTOR STARTERS EXCEPT IN PACKAGE OR PRE-WIRED UNITS AS SHOWN ON DRAWINGS. ALL MOTORS WILL BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, BUT SHALL BE CONNECTED BY THE ELECTRICAL CONTRACTOR. SINGLE PHASE FRACTIONAL HORSEPOWER MOTORS SHALL HAVE MANUAL THERMAL ELEMENT STARTERS. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL MOTORS HAVE THE PROPER THERMAL OVERLOAD PROTECTION.

LIGHTING FIXTURES: PROVIDE LIGHTING FIXTURES AS SCHEDULED ON THE DRAWINGS. PROVIDE CUTSHEETS OF ALL FIXTURES FOR OWNER APPROVAL PRIOR TO ORDERING. LED FIXTURES SHALL HAVE A SYSTEM WARRANTY OF 5

TELEPHONE AND DATA CONDUIT AND OUTLET SYSTEM: THE CONTRACTOR SHALL PROVIDE ROUGH-IN ONLY OF CONDUIT AND BOXES AT LOCATIONS SHOWN ON PLANS. NO CONDUIT SMALLER THAN 3/4 INCH SHALL BE USED. PROVIDE A COMPLETE CONDUIT RUN WITH PULL STRING FROM THE OUTLET TO THE NEAREST ACCESSIBLE CEILING SPACE TERMINAL PANEL. ALL CONDUIT SHALL CONFORM TO CONDUIT, FITTINGS, AND SUPPORT SPECIFICATIONS. OUTLET BOXES SHALL BE STANDARD SWITCH BOXES AS SPECIFIED IN THE OUTLET BOXES SPECIFICATIONS.

GROUNDING: ALL SERVICE EQUIPMENT, PANELBOARDS, DEVICES, AND OTHER PERMANENTLY INSTALLED ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC TO FORM A CONTINUOUS GROUNDING SYSTEM. PROVIDE SEPARATE GREEN GROUND CONDUCTOR THROUGHOUT THE ENTIRE ELECTRICAL SYSTEM INCLUDING ALL OUTLETS AND WIRING DEVICES. PROVIDE A SECOND GROUND WIRE FOR REDUNDANT GROUNDING IN PATIENT ROOMS NOTED ON PLANS.

SPARE

	LIGHTING	CONTROL SCHEDUL	E	
MARK	DESCRIPTION	MA NUFA CTURER/	SIZE	
		SERIES		NOTES
OS1	DUAL TECHNOLOGY OCCUPANCY SENSOR	LEGRAND DSW-301	400 SQFT	1,2
	LINE VOLTAGE, WALL BOX, ON/OFF	ILC, COOPER, LEVITON, HUBBELL		
OS2	DUAL TECHNOLOGY OCCUPANCY SENSOR	LEGRAND D\W-311	400 SQFT	1,2
	LINE VOLTAGE, WALL BOX, ON/OFF	ILC, COOPER, LEVITON, HUBBELL		
TS1	ASTRONOMICAL TIME SWITCH	LEGRAND RT-200	N/A	2
	LINE VOLTAGE, WALL BOX	ILC, COOPER, LEVITON, HUBBELL		
TS2	ASTRONOMICAL TIME SWITCH	LEGRAND RT-200	N/A	2
	LINE VOLTAGE, WALL BOX	ILC, COOPER, LEVITON, HUBBELL		

GENERAL NOTES:

A. SET AND PROGRAM ALL SENSORS AS FOLLOWS:

a. SET SENSITIVITY TO MATCH ROOM SIZE AND SHAPE b. SET TIME DELAY TO MAXIMUM.

c. PROGRAM AND FINE TUNE EACH SENSOR, AND INSTRUCT OWNER ON ADJUSTMENTS.

d. MANUFACTURER SHALL ADVISE EXACT LOCATIONS IN ROOMS AND PROVIDE WIRING DIAGRAMS.

 e. PROVIDE 10' SERVICE LOOP FOR ALL SENSORS, FOR FUTURE RELOCATION. f. CEILING MOUNT ULTRASONIC SENSORS SHALL BE MOUNTED A MINIMUM OF 4 FEET FROM SUPPLY AIR DIFFUSERS.

B. CABLING AND LOW VOLTAGE DEVICES SHALL BE PLENUM RATED. C. BID SHALL BE BASED ON THE QUANTITY AND TYPE OF SENSORS SHOWN. MANUFACTURERS MAY NEED TO ADD ITEMS

(SENSORS, POWER PACKS, ETC) TO MEET THE REQUIREMENTS OF THE SPECIFIED MANUFACTURER'S PRODUCTS

D. TESTING, BY FACTORY A PPROVED PERSONNEL SHALL BE DONE FOR EACH SENSOR AND A DJUSTED FOR THE REQUIREMENTS FOR EACH ROOM.

SPARE

1. COORDINATE STANDARD COLOR AT TIME OF SHOP DRAWINGS.

BUT SHALL NOT DELETE ITEMS OR CHANGE THE SENSOR TY PES.

2. REQUIRES NEUTRAL WIRE AT SWITCHING LOCATION.

		VOLTS:	120/	240	PH	ASE:	1	WIRE:	3			MAIN CAP.	200	AMPERES	
	PANEL 1	AIC RATING	22,	000					SEF	RVICE RA	ATED, GF	ROUND BAR, T	YPEWRITTEN PANEL DIRECTO	DRY	
		MOUNTING:	RECE	SSED	FEEDE	ER SIZE:			SEE	RISER			MAIN CONNECTION	I: MCB	
ССТ		LOAD	WIRE	CIRC	UIT BRE	EAKER	NEUTRAL	CIRC	UIT BRE	AKER	WIRE	LOAD			CC
NO	ITEM FED	WATTS	SIZE	AMPS	POLES	FRAME		FRAME	POLES	AMPS	SIZE	WATTS	П	EM FED	N
1	AIR COOLED CONDENSING UNIT ACCU-1	4,128	8	35	2	100A	L1	100A	1	20	12	900	RECE	PT. GENERAL	2
3		4,128	8				L2	100A	1	20	12	180	RECEPT. BRE	EAKROOM COUNTER	
5	FURNACE F-1	1,668	12	20	1	100A	L1	100A	1	20	12	180	RECEPT. BRE	EAKROOM COUNTER	(
7	WATER HEATER WH-1	200	12	15	1	100A	L2	100A	1	20	12	180	RECEPT. BRE	AKROOM UNDERSINK	3
9	DOM HOT WATER HWCP-1	200	12	20	1	100A	L1	100A	1	20	12	700	REF	RIGERATOR	1
11	GAS RADIANT HEATER RH-1	576	12	15	1	100A	L2	100A	1	20	12	900	RECE	EPT. OFFICE	1
13	GAS RADIANT HEATER RH-2	576	12	15	1	100A	L1	100A	1	20	12	500	ELECTRIC W	ATER COOLER EWC	1
15	GAS RADIANT HEATER RH-3	576	12	15	1	100A	L2	100A	1	20	12	720	RECEP	T. RECEPTION	1
17	EXHAUST FAN EF-1	1,884	12	20	2	100A	L1	100A	1	20	12	360	RECEPT. 1	TELECOM BOARD	1
19		1,884	12				L2	100A	1	20	12	360	RECEPT. ABOVE COUNTE	R & FLOOR BOX MEETING ROOM	7
21	EXHAUST FAN EF-2	456	12	20	1	100A	L1	100A	1	20	12	500	UNDERC	OUNTER FRIDGE	2
23	LIGHTING OFFICES & EF-4 & EF-5	770	12	20	1	100A	L2	100A	1	20	12	1,080	RECEPT.	MEETING ROOM	7
25	LIGHTING GARAGE	1,000	12	20	1	100A	L1	100A	1	20	12	540	RECEP <sup>-</sup>	T. BATHROOMS	1
27	LIGHTING WASHBAY	500	12	20	1	100A	L2	100A	1	20	12	720	RECE	PT. GARAGE	7
29	LIGHTING MEZZANINE	480	12	20	1	100A	L1	100A	1	20	12	360	RECE	PT. GARAGE	1
31	LIGHTING EXTERIOR	750	10	20	1	100A	L2	100A	1	20	12	180	RECE	PT. WASHBAY	1
33	OVERHEAD DOORS OVHD-1	540	12	20	1	100A	L1	100A	1	20	12	180	RECE	PT. WASHBAY	1
35	OVERHEAD DOORS OVHD-1	540	12	20	1	100A	L2	100A	1	20	12	360	RECEPT. G	ARAGE BENCHES	7
37	EXHAUST FANS EF-3 & EF-6	500	12	20	1	100A	L1	100A	1	20	12	1,000	CON	IO2 SYSTEM	1
39	HOTSY OUTLET	4,000	8	50	2	100A	L2	100A	1	20	12	360	RECEP	T. MEZZANINE	4
41		4,000	8				L1	100A	1	20				SPARE	4
43	ELECTRIC UNIT HEATER EUH-1	3,125	10	30	2	100A	L2	100A	1	20				SPARE	
45		3,125	10				L1	100A	1	20				SPARE	4
47	EXHAUST FAN EF-7	225	12	20	1	100A	L2	100A	1	20				SPARE	4
49	SPARE			20	1	100A	L1	100A	1	20			, , , , , , , , , , , , , , , , , , , ,	SPARE	
51	SPARE			20	1	100A	L2	100A	1	20				SPARE	
		1	1		<del> </del>	1	T	7	1	1		1		······································	_

20 | 1 | 100A | L1 | 100A | 1 | 20 |

	EQUI	PIVIEI	VI C	OM	NEC	HON	I SCHEDUL	. <b>L</b>	
EQUIP	EQUIPMENT	VOLTS/	HP OR			OCPD	EQUIPMENT	DISCONNECT	
NO.	DESCRIPTION	PHASE	WATTS	FLA	MCA	SIZE	FEEDER	AT EQUIP.	NOTES
ACCU-1	AIR COOLED CONDENSING UNIT	240/1			34.4	35A	2#8 CU, 1#10 CU GRND	60/2, 35AF, WP	2
HWCP-1	HOT WATER CIRCULATION PUMP	120/1			MIN.	20A	2#12 CU, 1#12 CU GRND	1P SWITCH	
F-1	FURNACE	120/1			13.9	20A	2#12 CU, 1#12 CU GRND	1P SWITCH	
EF-1	EXHAUSTFAN	240/1		12.5	15.7	20A	2#12 CU, 1#12 CU GRND	IN STARTER	3
EF-2	EXHAUSTFAN	120/1		3.0	3.8	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	19
EF-3	EXHAUSTFAN	120/1		0.2	0.3	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
EF-4	EXHAUSTFAN	120/1		1.8	2.3	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
EF-5	EXHAUSTFAN	120/1		1.8	2.3	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
EF-6	EXHAUSTFAN	120/1		1.4	1.8	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
EF-7	EXHAUSTFAN	120/1		1.5	1.9	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
EUH-1	ELECTRIC UNIT HEATER	240/1	5 KW	20.9	26.2	30A	2#10 CU, 1#10 CU GRND	30/2, NF	
OVHD-1	OVERHEAD DOOR	120/1	180	1.5	1.9	20A	2#12 CU, 1#12 CU GRND	1P SWITCH	
RH-1	GAS RADIANT HEATER	120/1		4.8	6.0	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
RH-2	GAS RADIANT HEATER	120/1		4.8	6.0	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
RH-3	GAS RADIANT HEATER	120/1		4.8	6.0	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	
WH-1	GAS WATER HEATER	120/1			MIN.	15A	2#12 CU, 1#12 CU GRND	1P SWITCH	

FLA = FULL LOAD AMPS MCA = MINIMUM CIRCUIT AMPS 1P SWITCH = 1 POLE TOGGLE SWITCH FE = FURNISHED WITH EQUIPMENT

A. VERIFY ALL BREAKERS, FEEDER, AND DISCONNECT SIZES WITH MECHNICAL EQUIPMENT.

B. VERIIFY EQUIPMENT CONNECTION AND LOCATION PRIOR TO INSTALLATION.

CONTROL WITH LIGHTING IN THE AREA.

2. INSTALL DISCONNECT SWITCH ON GALVANIZED STEEL UNI-STRUT ADJACENT TO CONDENSING UNIT TO MAINTAIN WORKING CLEARANCE.

3. FAN CONTROLS SHALL BE INTERLOCKED WITH GAS DETECTION SYSTEM. SEE MECHANICAL PLANS. 4. FAN CONTROLLED BY SEPARATE SWITCH. SWITCH SHALL BE PROVIDED BY MC, INSTALLED BY EC. SEE MECHANICAL PLANS.

COMBO.	MOTOR STARTER S	CHEDULE
 MOTOR	STARTER	DISCONNECT

KEY NEMA ENCLOSURE **FEATURES** HP PHASE TYPE SIZE

A. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL SHOP DRAWINGS PRIOR TO ORDERING EQUIPMENT B. PROVIDE ALL STARTERS WITH 2 N.O & 2 N.C. AUXILIARY INTERLOCKING RELAYS AND ELECTRONIC OVERLOADS

B= HAND-OFF-AUTO SELECTOR SWITCH G= GREEN "OFF" PILOT LIGHT R= RED "ON" PILOT LIGHT FT = CONTROL XFMR 120V FUSED **FVNR= FULL VOLTAGE NON REVERSING** NF= NON-FUSIBLE

MARK	DESCRIPTION	MANUFACTURER AND SERIES	LAMPING		MOUNTING	VOLT.	WATT.	NOTES
			QTY.	TYPE				
C1	4" ROUND DOWNLIGHT	SIGNIFY Z4RDL20840WSDBZ10U	N/A	LED 4000K	RECESSED	UNV	20	1
	LED, WET LOCATION	HUBBELL, COOPER, WILLIAMS, ACUITY		2000 LUMENS				
E1	EMERGENCY LIGHT, REMOTE CAPABLE	SIGNIFY CLU2NW2R	N/A	LED	SURFACE	UNV	2	2
	LED, BATTERY BACK UP, SELF DIAGNOSTICS	HUBBELL, COOPER, WILLIAMS, ACUITY		INCLUDED				
E2	EMERGENCY LIGHT, WET LOCATION	SIGNIFY CLR2WG	N/A	LED	SURFACE	UNV	4	2
	LED, FED FROM REMOTE CAPABLE UNIT	HUBBELL, COOPER, WILLIAMS, ACUITY		INCLUDED				
F1	2'X4' TROFFER	SIGNIFY 2FPZ43L835-4D-DS-UNIV-DIM	N/A	LED 3500K	RECESSED	UNV	35	
	LED	HUBBELL, COOPER, WILLIAMS, ACUITY		4300 LUMENS				
H1	2'X1' HIGH BAY	SIGNIFY FBX16LL35-UNV	N/A	LED 3500K	SUSPENDED	UNV	100	
	LED, AIR CRAFT CABLE	HUBBELL, COOPER, WILLIAMS, ACUITY		16000 LUMENS				
S1	8' STRIP FIXTURE	SIGNIFY FSS880L835-UNV-DIM	N/A	LED 3500K	SURFACE	UNV	60	3
	LED	HUBBELL, COOPER, WILLIAMS, ACUITY		8000 LUMENS				
S2	8' STRIP FIXTURE, VAPOR TIGHT	SIGNIFY DWAE51L8358UNV	N/A	LED 3500K	SURFACE	UNV	100	3
	LED	HUBBELL, COOPER, WILLIAMS, ACUITY		10200 LUMENS				
W1	WALL PACK	SIGNIFY LPW-32-70-NW-G3-4-UNV	N/A	LED 4000K	SURFACE	UNV	70	1
	LED, WET LOCATION	HUBBELL, COOPER, WILLIAMS, ACUITY		7000 LUMENS				
X1	EXIT SIGN	SIGNIFY SCN2RWICT	N/A	LED	CEILING	UNV	2	2
	LED, BATTERY BACK UP, SELF DIAGNOSTICS	HUBBELL, COOPER, WILLIAMS, ACUITY		INCLUDED				

A	LED DRIVERS TO BE MULTIVOLT, 0-10V DIMMABLE, WITH 5 YEAR WARRANTY.
E	B. LED DRIVERS TO BE PHILIPS XITANIUM OR EQUAL SYLVANIE OR ACUITY.

COORDINATE STANDARD FINISH AT TIME OF SHOP DRAWINGS.

2. PROVIDE EMERGENCY BATTERY PACK AND SELF DIAGNOSTICS. 3. COORDINATE CEILING TYPE WITH HANGER TYPE.

7 10			FLOOR BOX SCHEDULE							
CONDUIT QUANTITY - SIZE										
POWER	COMM.	SPARE	COVER ASSEMBLY	NOTES						
1 - 3/4"	1 - 1 1/4"	1 - 1 1/4"	FPBTCXX	1,2						
TO CEILING	TO CEILING	TO CEILING								
	POWER 1 - 3/4"	POWER COMM. 1 - 3/4" 1 - 1 1/4"	POWER COMM. SPARE 1 - 3/4" 1 - 1 1/4" 1 - 1 1/4"	POWER         COMM.         SPARE         COVER ASSEMBLY           1 - 3/4"         1 - 1 1/4"         1 - 1 1/4"         FPBTCXX						

GENERAL NOTES

A. PROVIDE ALL NECESSARY DEVICE PLATES, DIVIDERS, AND ACCESSORIES FOR COMPLETE SYSTEM.

B. COORDINATE EXACT LOCATION WITH OWNER.

C. POWER MAY BE DAISY CHAINED BETWEEN ADJACENT BOXES BUT COMMUNICATIONS CONDUITS MUST BE SEPARATE HOMERUN FOR EACH BOX.

D. COORDINATE FINISH AT TIME OF SHOP DRAWINGS.

1. SEE FLOOR PLAN FOR QUANTITY OF OUTLETS. 2. EXTEND COMMUNICATIONS CONDUIT TO BELOW FLOOR AND SPARE CONDUITS TO ABOVE CEILING IN THE ROOM.

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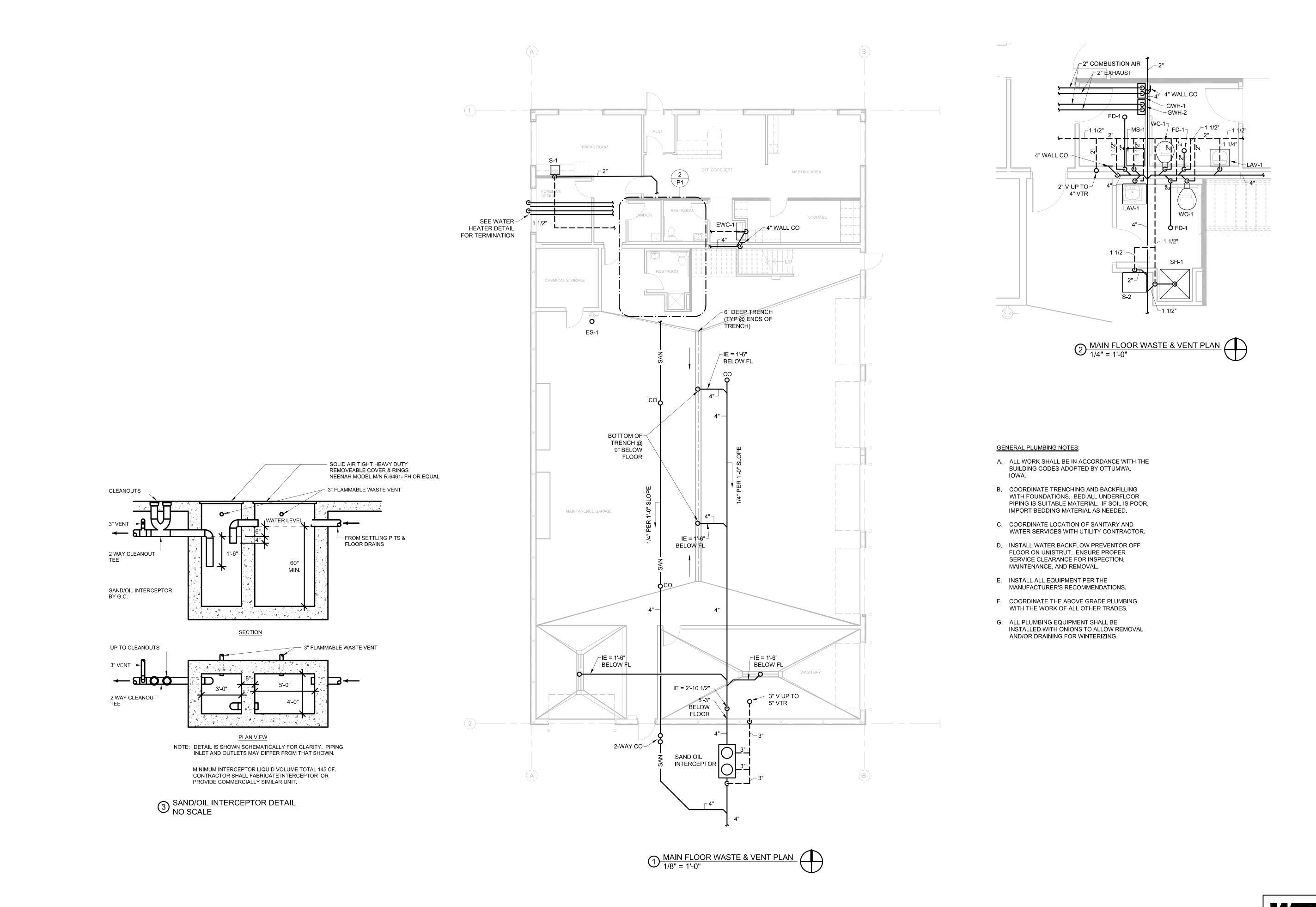
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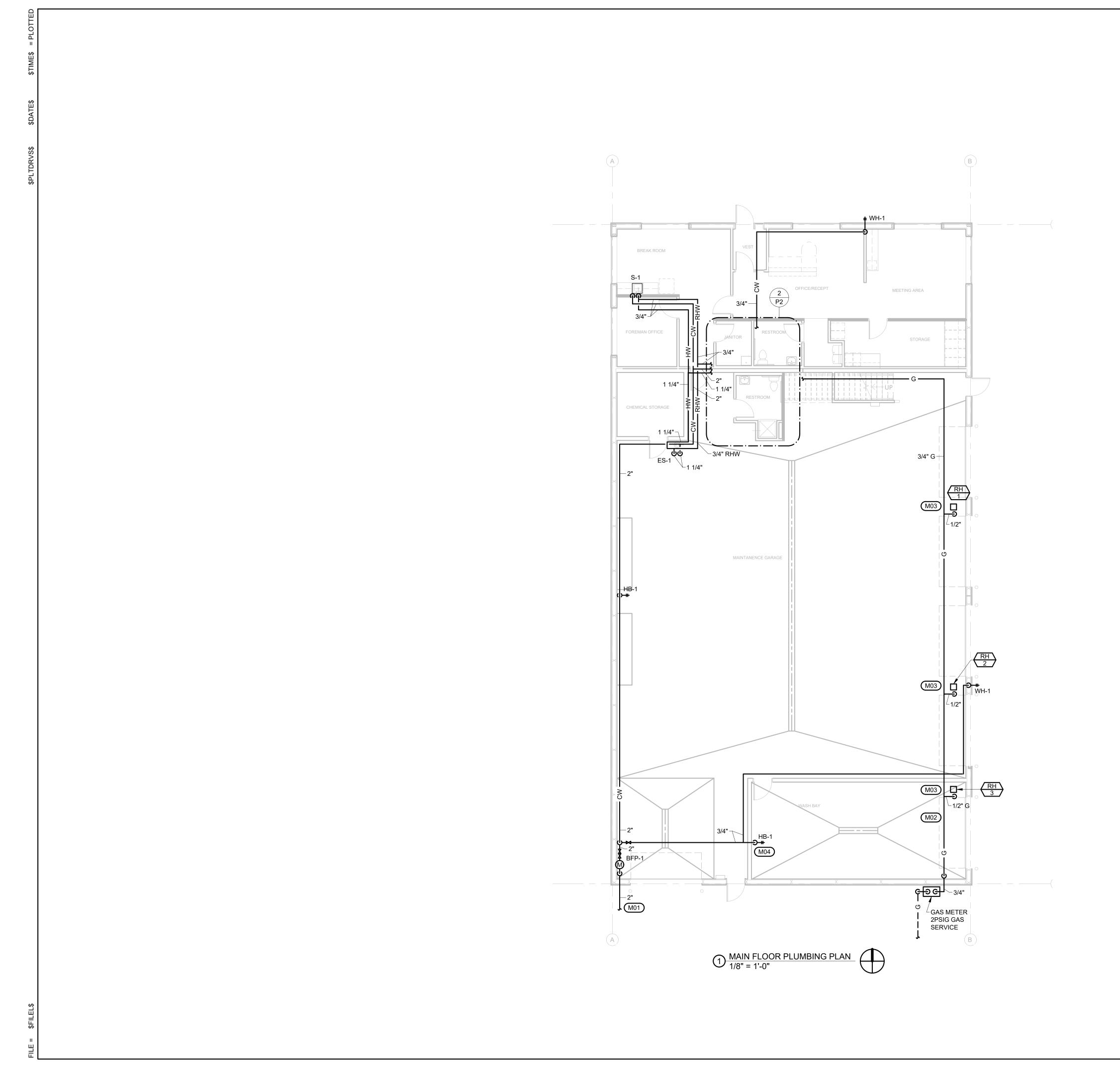
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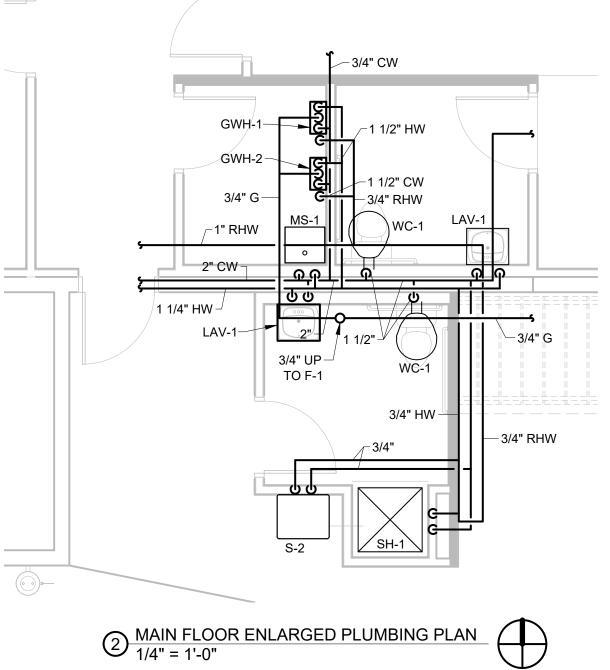
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### **GENERAL NOTES**:

- A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BUILDING CODES ADOPTED BY THE STATE OF IOWA AND CITY OF OTTUMWA, IA. INSTALL ALL EQUIPMENT PER THE MANUFACTURER'S RECOMMENDATIONS.
- B. COORDINATE NEW DUCTWORK, EQUIPMENT, PIPING WITH ALL OTHER
- C. CONTRACTOR SHALL PROVIDE REQUIRED TRANSITIONS TO EQUIPMENT AND THROUGH BUILDING WALLS OF ROOF STRUCTURE. ASSUME MECHANICAL MAY HAVE TO OFFSET AROUND ARCHITECTURAL AND STRUCTURAL ITEMS. COORDINATE WITH OTHER TRADES. PROVIDE OFFSET AS NECESSARY.
- D. EQUIPMENT TO BE INSTALLED IN UNIFORM OR PERPENDICULAR LINES.

### SPECIFIC MECHANICAL NOTES: M##

- M01. EXTEND 2" WATER INTO GARAGE. INSTALL CITY REQUIRED WATER METER WITH ISOLATION VALVES.
- M02. ROUTE ¾" GAS ABOVE GARAGE DOORS. COORDINATE WITH DOOR TRACKS & OPENER.
- M03. 1/2" GAS TO RADIANT HEATER BURNERS. COORDINATE WITH RADIENT HEATERS GAS PRESSURE REQUIRED. PROVIDE GAS PRESSURE REGULATOR AND RELIEF LINE TO THE OUTSIDE.
- M04. 3/4" WATER DOWN TO OWNER'S POWER WASHER. PROVIDE ISOLATION BALL VALVE.

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