GENERAL NOTES

SUMMARY OF WORK:

1. Project Description: New Industrial Buildings
2. Work Involved:
   a. Interior walls:
      i. Provide new interior walls of 3 5/8" metal studs, drywall.
      ii. See wall legend for more details.
   b. Exterior Walls:
      i. Tilt-wall system.
   c. Interior ceilings:
      i. Drywall ceilings.
      ii. Open structure.
   d. Mechanical Work:
      i. See Mechanical Plans for full scope of work.
   e. Electrical Work:
      i. Emergency Lighting
      ii. Interior Lighting
      iii. Site Lighting and site power plans
      iv. See Electrical Plans for full scope
   f. Plumbing Work:
      i. Stub up plumbing for water and sanitary Sewer lines
3. Work completed shall meet all local and state building code requirements.

COORDINATION:

1. Contractor shall verify existing site conditions of project location prior to commencement of work.
2. Contractor shall coordinate and verify all utility requirements, compatibility and location of projected utilities of project, as shown on the drawings.
3. Contractor responsible for coordinating all trades to complete work. Contractor shall issue full sets of drawings to sub-contractors commissioned to complete the work.
4. Contractor shall verify space requirements and location of project utilities.
5. Contractor shall field verify all dimensions of project. Do not scale drawings.
6. Contractor shall notify Architect of any discrepancies in drawings and/or specifications of project. Commencement of the work without proper notification to the Architect, the contractor will assume responsibility for work performed.
7. Contractor shall notify the Architect, when the full intent of the drawings and/or specifications is not clear. Commencement of the work without proper notification to the Architect, the contractor will assume responsibility for work performed.
8. Owner and Contractor shall coordinate Schedule of Values, Application of Payment, Construction Cost and any other fees related to this project.
9. Owner and Contractor shall coordinate Schedule of Construction and notify Architect of schedule.

CHANGE PROCEDURES:

1. Architect will submit Supplemental Instructions for minor changes.
2. Contractor may propose changes by submitting a request for change to Architect. Architect and Owner shall give written approval for all changes made by the Contractor. Commencement of the work without written approval from Architect and Owner, the contractor will assume responsibility for the work performed.

SUBMITTAL:

1. Prior to construction Architect and Owner shall submit a list, to the Contractor of required shop drawings submittals for this project.
2. Prior to construction Architect and Owner shall submit a list to the Contractor of all required testing for this project. Contractor shall be responsible for the cost of any testing requested by the Owner.

TEMPORARY FACILITIES:

1. Contractor shall provide and maintain access to the site of the project.
2. Contractor shall coordinate with Owner for temporary facilities requirements, if required for this project.
3. Contractor shall be responsible for maintaining a clean and safe construction site.
4. Contractor is responsible for the removal of all construction debris.

MATERIALS:

1. Store and protect all project products and materials in accordance with manufacturer instructions. Products and materials for this project shall be installed free of damage.
2. Architect shall approve all product or material substitutions.

CLOSEOUT:

1. Contractor shall notify the Owner 30 days prior to the date of substantial completion. At the time of substantially complete, Contractor shall submit a list of items (punch list) to be completed or corrected within the final days of construction. Owner and Contractor will set the project completion date.
2. Owner and/or Architect will inspect with seven (7) days of receipt of substantially complete punch list. Owner and/or Architect may add items to complete or correct prior to final completion.
3. Contractor shall leave the site clean and free of any construction debris or equipment at the end of the project.
4. Contractor shall give Owner operating instructions for the mechanical, electrical, and other operating equipment installed for this project.
5. Contractor shall submit to the Owner all warranties, operating and maintenance manuals for the following products and equipment:
   a. Termite Soil Poisoning
   b. Roof System
   c. Impact Resistant Doors and Windows, if applicable
   d. HVAC unit(s)
   e. Finish Hardware, Keying system.
   f. Acoustical Ceiling Tile
   g. All installed Flooring
   h. Toilet Accessories
   i. Toilet Fixtures
6. Owner may request additional warranties for other products. Contractor will be given notice prior to work.

PROJECT INFORMATION

DESIGN PARAMETERS:

Florida Building Code (8th Edition, 2023)
Florida Residential Code (8th Edition, 2023)
Florida Existing Building Code (8th Edition, 2023)
Florida Plumbing Code (8th Edition, 2023)
Florida Mechanical Code (8th Edition, 2023)
Florida Fuel Gas Code (8th Edition, 2023)
2020 National Electric Code
2020 Florida Accessibility Code
Florida Energy Code (8th Edition, 2023)
Florida Fire Prevention Code (8th Edition)
2019 National Fire Alarm Code - (NFPA-72)

Building Design:	Enclosed
Utilimate Wind Speed:	176 mph
Nominal Design Wind Speed:	124 mph
Building Risk Category:	II
Wind Importance/Use Factor:	1.0
Internal Pressure Coefficient:	+/-0.18
Building Mean Height:	38'-0"
Roof Overhang:	-
Roof Pitch:	1/4" Per Foot
Exposure:	C
Design Loads:	Roof Dead Load/Live Load: (See Structural) Floor Dead Load/Live Load: (See Structural)
Impact Protection:	New Impact Resistant Windows + Doors

JURISDICTION:
St. Lucie County

OCCUPANCY:
Group 'I' - Industrial

CONSTRUCTION:
Building Type:
Fire Protection: Sprinklered
Fire Alarm: Alarmed
Exterior Bearing Walls: Tilt-Up wall
Roofing Structure: Engineered Metal Bar Joists
Interior Walls: metal studs
Roofing Material: TPO

AREA TABULATIONS:

Ground Floor Level:	38,039	Gross Sq. Ft.
Mezzanine Level:	14,053	Gross Sq. Ft.
Total Under-Air (Business):	13,919	Gross Sq. Ft.
Total Non A/C (Warehouse):	24,120	Gross Sq. Ft.
Total Area:	38,039	Gross Sq. Ft.
Total Non A/C (Future Mezzanine):	14,053	Gross Sq. Ft. (NIC)

*Refer to Life Safety Plan for Occupant Loads + A0.2 Code Analysis

INDEX OF DRAWINGS

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A0.2	Code Information	■					
A1.2	U.L. Details	■					
A2.0	Life Safety Plan + Notes	■					
A2.1.1	Ground Floor Plan + Notes	■					
A2.1.2	Second Floor Plan + Notes	■					
A2.2.1	Ground Floor Reflected Ceiling Plan + Notes	■					
A2.2.2	Second Floor Reflected Ceiling Plan + Notes	■					
A2.3	Roof Plan + Notes	■					
A2.4	Door, Window + Finish Schedule + Details	■					
A3.1	Exterior Elevations + Notes	■					
A3.2	Building Sections + Notes						
A3.3	Wall Sections + Details						
A3.4	Wall Sections + Details						
S0.1	General Notes	■					
S0.2	General Notes & Wind Pressures	■					
S1.1	Foundation Plan	■					
S1.2	Roof Framing Plan + Notes	■					
S1.3	Sections	■					
S5.1	Tilt-Up Wall Typical Details	■					
S5.2	Tilt-Up Joint Details	■					
S5.3	Framing Details	■					
M0.1	General Notes, Schedule + Details	■					
M2.1	Mechanical Plan+ Notes	■					
M6.1	Mechanical Schedules	■					
E0.1	General Notes, Schedule + Details	■					
E2.1	Lighting Plan	■					
E3.1	Power Plan + Notes	■					
E5.1	Riser Diagram	■					
P0.1	General Notes, Schedules, Risers + Details	■					
P2.1	Sanitary Sewer Plumbing Plan + Notes	■					
P3.1	Water Plumbing Plan + Notes	■					

SYMBOLS

X	Window	#/XX.X	Detail
##	Door	##	Keyed Note
XXX	Room Name	#/XX.X	Interior Elevation
X	Wall Type	#/XX.X	Exterior Elevation
#/XX.X	Wall Section	#/XX.X	Building Section
#	Revision	X	Miscellaneous Key

PRODUCT APPROVALS

PROJECT CONTACTS

OWNERS:
Trap Rock Industries
Brian Murphy
-
-
(609) 924-0300

ARCHITECT:
n2 architecture + design
Niki L. Norton, R.A.
710 SE Ocean Blvd.
Stuart, Florida 34994
(772) 220-4411

MEP ENGINEER:
KAMM Engineering
John Mayr
405 Angle Road
Fort Pierce, FL 34947
(954) 448-0792

STRUCTURAL ENGINEER:
ACCORD
Clifton Newkirk, PE, SI
433 Plaza Real, St. 275
Boca Raton, FL 33432
(833) 421-2347

GENERAL CONTRACTOR:
Caliber Contracting Inc.
John A. Hockey
(772) 285-5212

CIVIL ENGINEER:
Giangrande Engineering & Planning
Leo Giangrande
710 SE Ocean Blvd.
Stuart, Florida 34994
(772) 888-9076

LOCATION MAP

Commercial + Residential
710 SE Ocean Blvd.
Stuart, FL 34996
(772) 220-4411
www.n2archdesign.com

n2 architecture + design

Niki L. Norton, R.A.
AR91827

Butler Industrial Building
St. Lucie B lvd.
St Lucie County
- (xxx) xxx-xxxx

Rev. #	Date
X	Reason Date
Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	A0.1

Cover Sheet + General Notes

CODE INFORMATION

GENERAL INFORMATION

Name of Project:	Butler Industrial Park
Project Address:	St Lucie Bvld
	St. Lucie, FL
Proposed Use:	Factory/Business/Storage
Client:	Brian Murphy
Address:	-
	-

LEAD DESIGN PROFESSIONALS

Designer	Name	License #	Phone
Architectural:	Niki L. Norton, R.A.	AR91827	772.220.4411
Structural:	ACCORD	-	833.421.2347
MEP:	KAMM	-	954.448.0792
Civil:	Giagrande Engineer + Planning		772.888-9076
Fire Alarm:	By Others Under Separate Permit		
Fire Sprinkler:	By Others Under Separate Permit		

GENERAL DATA

Building & Fire Codes Used in Design:
- Florida Building Code (8th Edition, 2023)
- Florida Existing Building Code (7th Edition, 2023)
- Florida Plumbing Code (8th Edition, 2023)
- Florida Mechanical Code (8th Edition, 2023)
- Florida Fuel Gas Code (8th Edition, 2023)
- Florida Energy Code (8th Edition, 2023)
- Florida Fire Prevention Code (8th Edition)
- 2023 Florida Accessibility Code

Construction Description:
_X__New Construction ___Renovation ___TI (Tenant Improvement)
___Alteration ___Addition

Scope of Work: New Warehouse

Gross Square Footage:	52,092 Sq. Ft.
Fire Area:	52,092 Sq. Ft.
Exterior Walls:	Tilt up Walla
Interior Walls:	Metal Studs + Gypsum (Non-combustible)

3. OCCUPANCY CLASSIFICATION

(303) Assembly:	___A-1 ___A-2 _X_A-3 ___A-4 ___A-5
(304) Business:	_X__B
(305) Educational:	___E
(306) Factory	_X__F-1 ___F-2
(307) High-Hazard	___H-1 ___H-2 ___H-3 ___H-4 ___H-5 ___Multiple
(308) Institutional	___I-1 ___I-2 ___I-3 ___I-4 ___(Use Condition 1-4)
(309) Mercantile	___M
(310) Residential	___R-1 ___R-2 ___R-3 ___R-4 ___(Use Condition 1-2)
(311) Storage	_X__S-1 ___S-2
(312) Utility & Misc.	___U
(402) Covered Mall	___Yes
(403) High-Rise	___Yes
(405) Underground	___Yes
(406) Motor Vehicle	___U

4. SPECIAL DETAILED REQUIREMENTS

(402) Covered & Open Mall Buildings:	(425) Hyperbaric Facilities
(403) High Rise Buildings:	(426) Combustible Dusts & Grains
(404) Atriums	(449) Hospitals
(405) Underground Buildings	(450) Nursing Homes
(406) Motor Vehicle	(451) Ambulatory Surgical Centers
(407) I-2 Institutional	(452) Bathing Centers
(408) I-3 Institutional	(453) State Requirements for Education Fac.
(409) Motion Picture Projection Rooms	(454) Swimming Pools & Bathing
(410) Stages & Platforms	(455) Public Loading Establishments
(411) Special Amusement Buildings	(456) Public Food Service Establishments
(412) Aircraft-Released Occupancies	(457) Mental Health Programs
(413) Combustible Storage	(458) Manufactured Buildings
(414) Hazardous Materials	(459) Bootcamps for Children
(415) H-1, H-2, H-3, H-4, H-5	(460) Mausoleums and Columbarium
(416) Application of Flammable Finishes	(461) Transient Public Lodging Establishments
(417) Drying Rooms	(462) Use of Asbestos in New Gov. Buildings
(418) Organic Coatings	(463) Adult Day Care
(419) Live/Work Units	(464) Assisted Living Facility
(420) Groups I-1, R-1, R-2, R-3, R-4	(465) Control of Radiation Hazards
(421) Hydrogen Fuel Gas Rooms	(466) Day Care Occupancies
(422) Ambulatory Care Facilities	(467) Hospice Inpatient Facilities and Units
(423) Storm Shelters	(468) Schools, Colleges and Universities
(424) Children's Play Structure	(469) Office Surgery Suite

Special Requirements (List): ______________________

5. GENERAL BUILDING HEIGHTS AND AREAS

(504.3) Allowable Building Height
Allowable Height: 40'0 Sq.Ft
Actual Height: 38'-0" Sq. Ft.

(504.4) Allowable Stories
Allowable Stories: 3 Stories
Actual Stories: 2 Story

(505) Mezzanines __x__Yes ___ No
_X___Yes ____No Sprinklered (Y/N)

(505.2.1) Mezzanines shall be considered a portion of the story below. Such mezzanines shall not contribute to either the building area or number of stories. The area of the mezzanine shall be included in determining the fire area.

Mezzanine Area: 14,053 S.F. (No greater than 1/2 the floor area of the floor area located)

Exceptions (505.2.1):

Openness (505.2.3): A mezzanine shall be open & unobstructed to the room in which such mezzanine is located. The aggregate aerea of a mezzanine or mezzanines within a room shall be no greater than one-third of the floor area of that room or space in which they are located.

Open to Below? __X__Yes ____No (If Not, List Exceptions Below)

Exceptions (505.2.3):

(506.2) Allowable Area
Allowable Area: 92,00 S.F. (Business) 10,2000 S.F. (Factory)
Actual Area: 13,919 S.F. (Business) 14,053 S.F. (Factory)

(506.2.3) Area Increase Calculation:
$A_a = [\ A_t + (NS \times I_f)\ ] \times S_a$

= [- + (- x .-)] x
= [-] x -
= - sf Allowable Area

Amount of Increase: N/A

$I_f = [F/P - 0.25]\ W / 30$
[-/- – 0.25] - / -
[-] - / -
I_f = -

Definitions
A_t: Tabular allowable area factor in accordance with Table 506.2
I_f: Area factor increase due to frontage (percent)
S_a: Actual number of building stories above grade plane, not to exceed 3
P: Perimeter of entire building (feet)
W: Width of a public way or open space associated with that portion of the exterior perimeter wall
W: Calculated width of public way or open space
F: Building perimeter that front on a public way or open space

(508) Mixed Occupancies
Mixed Occupancies? _X_Yes (Separation Req'mt: 0 Hr) ___No

_X_Non-Separated Occupancies (508.3) ___Separated Occupancies (Table 508.4)

(509) Incidental Uses
Incidental uses are ancillary functions associated with a given occupancy that generally pose a greater level of risk to that occupancy.

Incidental Uses? ___Yes (If So, List Below) _X_No ___N/A

(510) Special Provisions: N/A

6. TYPES OF CONSTRUCTION

(601) Construction Type: ___IA ___IB ___IIA _ZX__IIB ___IIIA ___IIIB
___IV ___VA ___VB

Building Element	Req'd Rating	U.L. #
Primary Structural Frame	0	N/A
Bearing Walls		
Exterior	0	N/A
Interior	0	N/A
Non-Bearing Walls & Partitions		
Exterior	0	N/A
Interior	0	N/A
Floor Construction	0	N/A
Roof Construction	0	N/A

7. FIRE AND SMOKE PROTECTION FEATURES

(704.2) Structural Elements	0	-
(705) Exterior Walls:	0	-
(705.2.3) Combustible Projections:	0	-

Fire Separation (FSD) Distance (Feet)	Minimum Distance From Line Used Determine FSD
0 to less than 2	Projections not permitted
2 to less than 3	24 inches
3 to less than 5	24 inches plus 8 inches for every foot of FSD
	Beyond 3 feet or fraction thereof
5 or Greater	40 inches

Combustible projections extending to within 5 feet of the line used to determine the *fire separation distance* shall not be of less than 1-hour *fire-resistance rated* construction.

There are no nearby buildings on the same lot.

(706) Fire Walls:	N/A	-
(707) Fire Barriers:	N/A	-
(708) Fire Partitions:	N/A	-
(709) Smoke Barriers:	N/A	-
(710) Smoke Partitions:	N/A	-
(711) Floor & Roof Ass'ys:	0	-
(712) Vertical Shafts:	N/A	-
(718.2.2) Concealed Spaces:	N/A	-
(718.3) Draft Stopping in Floors	____Yes ____No _X_N/A	
(718.4) Draft Stopping in Attics	____Yes ____No _X_N/A	

In combustible, un-sprinklered construction…provide draft stopping…such that no horizontal areas exceeds 3,000 square feet.

8. INTERIOR FINISHES AND DECORATIVE MATERIALS

(803) Wall & Ceiling Finishes	Group "B"/Group'F"
Interior Exit Stairs/Ramps/Passages	B/C
Corridors & Exit Stairs/Ramps	C/C
Rooms & Enclosed Spaces	C/C

(804) Interior Floor Finish Requirement:

9. FIRE PROTECTION SYSTEMS

(903.2.x) Group
An automatic sprinkler system shall be provided for *fire areas* containing Group _B/F_ occupancies and intervening floors where one of the following exists:
9.1. The *fire area* exceeds 12,000 square feet
9.2. The *fire area* has an occupant load of 300 or more
9.3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

(907) Fire Alarm and Detection Systems
(907.X.X) Group B/F_:

10. MEANS OF EGRESS

(1003.5) Elevation Change
Where changes in elevation of less than 12 inches exist…sloped surfaces shall be used.
Exceptions: ___ Single step <7" (Group F, H, R-2, R-3, S and U)
___ Single riser, 2 risers w/ tread, min. depth 13" w/ handrail
___ Assembly seating aisle w/ handrail complying 1029.14

(1004.5) Areas Without Fixed Seating

Occupancy Type: OccupancyType						
Room Name	Actual Occupants	Occupants (NFPA)	Occupants (FBC)	LF (NFPA)	LF (FBC)	Occupied Area
100/101/102/103 Business 100A1/101A/102A/103A Factory	24 per unit 12 per unit →		150 500 150			
Total:	144	0	0			
Note: "→" Indicates the Occupant Load by area is deferred to for that Occupant Load calculation.						

Exceptions: (1004.5) Where *approved* by the *building official*, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design *occupant load.*

(1004.9) Every room or space that is an Assembly Occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible design and shall be maintained by the owner or authorized agent.

(1005.3.1) Stairways
{000 Occupants} x 0.3 Inches
Stair Width Required: 36 Inches
Stair Width Provided: 42 Inches

(1005.3.2) Other Egress Components
{000 Occupants} x 0.2 Inches
Egress Width Required: 36 Inches
Egress Width Provided: 4.8 business/2.4 Inches Factory

(1006) Number of Exit and Exit Access Doorways

(1006.2.1) Egress Based on Occupant Load and Common Path of Egress Travel Distance

	Required	Complies?
Common Path:	100'	Yes
Spaces w/ One Exit?:	__Yes X No	

(1006.2.1.1) / (1006.3.2) Three or More Exits or Exit Access Doorways

Occupant Load Per Space/Story	Min. # of Exits / Access Or Access to Exit
1-500	2
501-1,000	3
>1,000	4

(1006.2.2) Egress Based on Use
___ Boiler, Incinerator and Furnace Room ___ Refrigeration Machinery
___ Refrigerated Rooms or Spaces ___ Electrical Rooms
___ Day Care Facilities ___ Vehicular Ramps

Special Hardware Req'mts:

(1006.3.3) Single Exit from Stories And Single Exits From *Stories* or…Roofs

Story	Occupancy	Max. D/U	Max. Distance
0,1,2,3	R-2	4	125'
≥ 4	Not Permitted	N/A	N/A
1	A, B, E, F, M, U	49	100'
	H-2, H-3	3	25'
	H-4, H-5, I, R-1, R-2, R-4	10	75'
	S	29	75'
2	B, F, M, S	29	75'
≥ 3	Not Permitted	N/A	N/A

(1006.3.1) Adjacent Story
The path of egress travel to an exit shall not pass through more than one adjacent story.
Exceptions:

(1007) Exit Access Configuration
(1007.1.1) Diagonal Rule Applies? _X__Yes ___No ___N/A

Exceptions: __Y_ Sprinklered (Y/N)
Reduced to ≤ 1/3 Length of Max. Diag. Dimension

(1010) Doors, Gates and Turnstiles
(1010.1.3) Door Opening Force | The force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5 pounds. For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound force.

(1010.2.3) Hardware Height | Door handles, pulls, latches, locks and other operative devices shall be installed 34 inches minimum and 48 inches maximum. Locks used only for security purposes…are permitted at any height.

(1010.2.4) Locks and Latches | Shall be permitted to lock:

___ In buildings…having an occupant load of 300 or less, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
- The locking device is readily distinguishable as locked.
- A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch high on a contrasting background.
- The use of the key-operated locking device is revocable by the building official for due cause.

(1010.2.9) Panic and Fire Exit Hardware
Panic Hardware Required? _N__ (Y/N) ≥50 (Group A or E)

Exceptions: ___ Group A main exit permitted to lock (other means of egress req'd)
___ Outdoor gates (Residential / Commercial Swimming Pool)
___ Courtroom Doors Permitted to be locking

(1016) Exit Access
(1016.2) Egress Through Intervening Spaces
Egress through intervening spaces is required only through areas accessory to one another.

(1017.2) Exit Access Travel Distance:
Travel Distance: 250'/350' Ft. _Y_Sprinklered (Y/N)

(1019) Exit Access Stairways and Ramps:
(1019.1) General | *Exit Access stairways* and *ramps* serving as an exit access component in a means of egress system shall comply. The number of stories connected by exit access stairways and ramps shall include basements, but not mezzanines.

(1019.2) All Occupancies | Exit access stairways and ramps that serve floor *levels* within a single *story* are not required to be enclosed.

(1019.3) Occupancies Other Than Groups I-2 and I-3 | Floor openings containing *exit access stairways* or *ramps* shall be enclosed with a shaft enclosure.

Exceptions:

(1020) Corridors
(1020.2) Construction
Corridors shall be fire-resistance rated as *fire partitions.*

		Req'd Rating	
Occupancy	Occ. Load. Served	w/o Sprink.	w/ Sprink.
H-1, H-2, H-3	All	NP	1
H-4, H-5	>30	NP	1
A, B, E, F, M, S, U	>30	1	0
R	>10	NP	0.5
I-2, I-4	All	NP	0
I-1, I-3	All	NP	1

(1020.3) Width and Capacity

Facilities Not Listed	44"	Mech. Access	24"
Occupant Load <50	36"	Within D/U	36"
Group E Occ. Load ≥ 100	72"	Stretcher Traffic	72"
Group I-2 Bed Movement	96"		

(1020.5) Dead Ends

Occupancy	Sprinklered?	Dead-End
I-2 (Cond. 2)	Y, N	30'
I-3 (Cond. 2,3,4)	Y	50'
B, E, F, I-1, M, R-1, R-2, S, U	Y	50'
Length < 2.5 Times Width	Y, N	Unlimited
All Others	Y, N	20'

(1023) Interior Exit Stairways and Ramps
(1023.1) General
Shall be enclosed and lead directly to the exterior of the building or shall be extended to the exterior…with an *exit passageway.*

(1023.2) Construction
Shall be constructed as *fire barriers* with a resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours.

Connected Stories	Rating
≥ 4	≥2 Hr.
≤4	≥1 Hr.

(1023.5) Penetrations
Prohibited except for equipment and ductwork necessary for independent ventilation or pressurization.

(1027) Exterior Exit Stairways and Ramps
(1027.3) Open Side
Exterior exit stairways and ramps serving as an element of a required means of egress shall be open on not less than one side.
(1027.5) Location
Exterior exit stairways and ramps shall have a minimum fire separation distance of 10 feet measured at right angles from the exterior edge of the stairway or ramps, including landings, to:
1. Adjacent lot lines
2. Other portions of the building
3. Other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with Section 705 based on fire separation distance.

Exceptions:

(1027.6) Exterior Exit Stairway and Ramp Protection
Exterior exit stairways and ramps shall be separated from the interior of the building as required in Section 1023.2.

(1029) Assembly
(1029.2) Assembly Main Exit | Shall be of sufficient capacity to accommodate not less than one-half of the occupant load, but such capacity shall be not less than the total required capacity of all means of egress leading to the exit.

Main Exit Serves >300 __Yes X__No

11. ACCESSIBILITY

Number of Accessible Exit Accesses: 2 Exits
Accessible Access to Public Way: __X_Yes ___No ___Existing
Accessible Restrooms Provided: ___Yes _X__No(Future) ___Existing

Florida Accessibility Code Design Certification Form
Required for commercial addition & alteration permits (in applicable jurisdictions), where a portion of the overall cost must be allocated to improve access for disabled individuals concurrent with the standards of the ADAAG adopted by the jurisdiction.
___Provided ___Not Provided _X__N/A

17. SPECIAL INSPECTIONS

I have reviewed the requirements on Special Inspections and will perform the applicable required inspections as part of my responsibilities acknowledged under my letter of supervision.
___Yes _X__No ___N/A

24. GLASS AND GLAZING

I have identified on drawings where tempered glass is required in hazardous locations.
___Yes ___No __X_N/A

FBC: PLUMBING

(403.1) Minimum Number of Fixtures
Occupancy: OccupancyType
Total Persons: 144
Total Persons ÷ 2: XX Men & Women

	M. W/C	F. W/C	Urinal	M. Lav.	F. Lav.	Baths	D/F	Service Sink
Calculation	xx/xx	xx/xx	<67%	xx/xx	xx/xx	xx/xx	xx/xx	1 Req'd
Required	1	1	x	1	1	x	1	1
Provided	1	1	x	1	1	x	1	1

1

Note: The Occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

Separate Facilities Exceptions:
___ Small Occupancy (≤15) ___ Business & Mercantile Small Occupancy (≤15)
___ Dwelling & sleeping units not req'd ___ Mercantile Occupancies (≤100)

Service Sink Exception
___ Business / Mercantile (<15)

Commercial + Residential
710 SE Ocean Blvd.
Stuart, FL 34996
O:(772)220-4411
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n2 architecture + design

Niki L. Norton, R.A.
AR91827

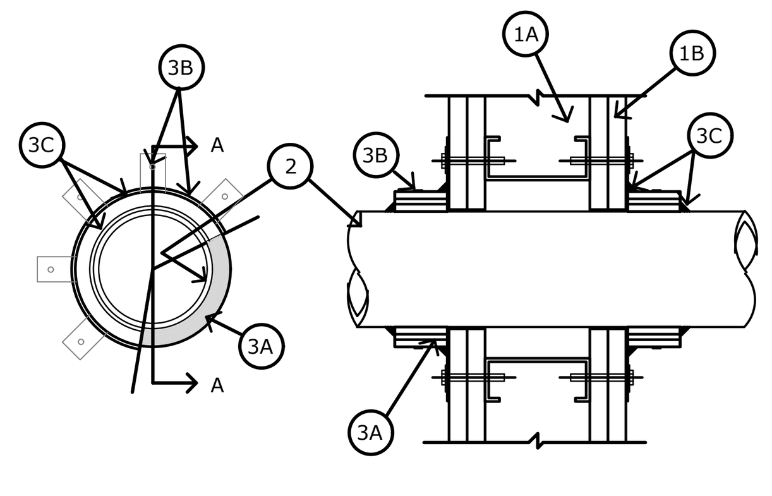
Butler Industrial Building
St. Lucie B lvd.
St Lucie County
-
(xxx) xxx-xxxx

Rev. #	Date

Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	A0.2
	Code Information

THROUGH-PENETRATION FIRESTOP SYSTEM UL N0. WL-2002

(FORMERLY SYSTEM NO. 148)
F RATINGS-1,1-1/2 AND 2 HR (SEE ITEM 3)
T RATINGS-3/4, 1, 1-1/2 AND 2 HR (SEE ITEM 3)
L RATING AT AMBIENT-7 CFM/SQ FT (SEE ITEM 3C)
L RATING AT 400 F-1 CFM/SQ FT (SEE ITEM 3C)



SECTION A-A

1. WALL ASSEMBLY-THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED I THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.
   B. WALLBOARD, GYPSUM*-5/8 IN. THICK, 4 FT WIDE SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 7 IN.
2. NONMETALLIC PIPE OR CONDUIT-ONE NONMETALLIC PIPE OR CONDUIT IS CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE INSTALLED NEAR CENTER OF STUD CAVITY WIDTH AND TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES OR CONDUIT MAY BE USED:
   A. NOM 6 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID-CORE POLYVINYL CHLORIDE (PVC) PIPE.
   B. NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE POLYVINYL CHLORIDE (PVC) PIPE.
   C. NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID-CORE ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PIPE.
   D. NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 40 FIRE RETARDANT POLYPROPYLENE (FRPP) PIPE.
   E. NOM 4 IN. DIAM (OR SMALLER) RIGID NONMETALLIC CONDUIT FORMED OF PVC.
   F. NOM 1 IN. DIAM (SMALLER) ELECTRICAL NONMETALLIC TUBING FORMED OF PVC.
   G. NOM 6 IN. DIAM (OR SMALLER) SCHEDULE 40 CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE.

SEE RIGID NONMETALLIC CONDUIT (DZKT) AND ELECTRICAL NONMETALLIC TUBING (FKHU) CATEGORIES IN UL ELECTRICAL CONSTRUCTION MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS.

3. FIRESTOP SYSTEM-INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY F AND T RATINGS FOR THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE TYPE AND SIZE OF NONMETALLIC PIPE OR CONDUIT, THE PIPING SYSTEM TYPE (CLOSED SYSTEMS SUCH AS PROCESS OR SUPPLY PIPING OR VENTED SYSTEMS SUCH AS DRAIN, WASTE OR VENT PIPING) AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE.

PIPE CONDUIT TYPE	NOM PIPE DIAM, IN	ANNULAR SPACE IN	PIPING SYSTEM (A)	WALL FIRE RATING, HR	F RATING, HR	T RATING, HR
FRPP	1/2 TO 2	0-3/16	V	2	1-1/2	1-1/2
FRPP, PB	1/2 TO 2	0-3/16	C	2	2	2
ABS	1/2 TO 4	0-3/16	C,V	1	1	3/4
ABS	1/2 TO 4	0-3/16	C,V	2	1-1/2	1-1/2
PVC	1/2 TO 4	0-3/16	C,V	1	1	1
PVC	1/2 TO 4	0-3/16	C,V	2	2	2
FRPP+	2-1/2 -4	0-3/16	C,V	2	1-1/2	1-1/2
PVC+	5,6	0-3/16	C,V	2	1-1/2	1-1/2

+PIPE COVERING MATERIAL WRAP REQUIRED ON PIPE ON BOTH SIDES OF WALL.
(A)C = CLOSED SYSTEMS, V = VENTED SYSTEMS.
THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS.

A. FILL, VOID OR CAVITY MATERIALS*-WRAP STRIP-NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS. NOM 2 IN. WIDE STRIPS TIGHTLY WRAPPED AROUND NONMETALLIC PIPE OR CONDUIT (FOIL SIDE EXPOSED) WITH THE EDGES BUTTED AGAINST THE SURFACE OF THE WALL. SUFFICIENT LAYERS OF WRAP STRIP SHALL BE INSTALLED TO LAP A MIN OF 3/16 IN. ON THE WALL SURFACE AROUND THE ENTIRE PERIMETER OF THE CIRCULAR THROUGH OPENING. FOR NOM 1/2 IN. TO NOM 2 IN. DIAM PIPES OR CONDUITS, A MIN OF ONE LAYER OF WRAP STRIP IS REQUIRED. FOR NOM 2-1/2 IN. AND NOM 3 IN. DIAM PIPES, A MIN OF TWO LAYERS OF WRAP IS REQUIRED. FOR NOM 3-1/2 IN. AND NOM 4 IN. DIAM PIPES, A MIN OF THREE LAYERS OF WRAP STRIP IS REQUIRED. FOR NOM 5 AND 6 IN. DIAM, TWO TIERS (4 IN. OVERALL LENGTH) OF THREE LAYERS OF WRAP STRIP IS REQUIRED, WITH ADJOINING WRAP STRIP LAYER EDGES BETWEEN TIERS TIGHTLY BUTTED. EACH LAYER OF WRAP STRIP TO BE INSTALLED WITH BUTTED SEAM, WITH BUTTED SEAMS IN SUCCESSIVE LAYERS STAGGERED. WRAP STRIP LAYERS TEMPORARILY HELD IN POSITION USING ALUMINUM FOIL TAPE, STEEL WIRE TIE OR EQUIVALENT.
MINNESOTA MINING & MFG. CO.-TYPE FS-195+

B. STEEL COLLAR-NOM 2 OR 4 IN. DEEP COLLAR WITH 1-1/4 IN. WIDE BY 2 IN. LONG ANCHOR TABS AND MIN 3/4 IN. LONG TABS TO RETAIN WRAP STRIP LAYERS. COILS OF RECUT 0.016 IN. THICK (NO. 30 GAUGE) GALV SHEET STEEL AVAILABLE FROM WRAP STRIP MANUFACTURER. AS AN ALTERNATE, COLLAR MAY BE FIELD-FABRICATED FROM MIN 0.016 IN. THICK (NO. 30 GAUGE) GALV SHEET STEEL IN ACCORDANCE WITH INSTRUCTION SHEET SUPPLIED BY WRAP STRIP MANUFACTURER. STEEL COLLAR, WITH ANCHOR TABS BENT OUTWARD 90 DEG, WRAPPED TIGHTLY AROUND WRAP STRIP LAYERS WITH MIN 1 IN. OVERLAP AT THE SEAM. WITH STEEL COLLAR ANCHOR TABS PRESSED TIGHTLY AGAINST WALL SURFACE, COMPRESS COLLAR AROUND WRAP STRIP LAYERS USING A MIN 1/2 IN. WIDE BY 0.028 IN. THICK STAINLESS STEEL BAND CLAMP WITH WORM DRIVE TIGHTENING MECHANISM AT THE COLLAR MID HEIGHT. AS AN ALTERNATE TO THE STAINLESS STEEL BAND CLAMP, THE STEEL COLLAR MAY BE COMPRESSED AROUND NOM 4 IN. DIAM (OR SMALLER) NONMETALLIC PIPES USING TWO MIN 16 SWG (0.0625 IN. DIAM) STEEL WIRES SECURED WITH MULTIPLE TWISTS. SECURE COLLAR TO WALL SURFACE WITH 3/16 IN. DIAM STEEL TOGGLE BOLTS (5/8 IN. OR 1-1/4 IN. GRIP) IN CONJUNCTION WITH MIN 1-1/2 IN. DIAM STEEL WASHERS.
THREE BOLTS, SYMMETRICALLY LOCATED, REQUIRED FOR 2 IN. DEEP STEEL COLLAR FOR NOM 1/2 IN. TO NOM 3 IN. DIAM PIPES. FOUR BOLTS, SYMMETRICALLY LOCATED, REQUIRED FOR 2 IN. DEEP STEEL COLLAR FOR NOM 3-1/2 AND 4 IN. DIAM PIPES. FIVE TO SEVEN BOLTS (EVERY OTHER ANCHOR TAB) REQUIRED FOR 4 IN. DEEP STEEL COLLAR FOR NOM 5 AND 6 IN. DIAM PIPES. AS A FINAL STEP, BEND RETAINER TABS 90 DEG TOWARD PIPE TO LOCK WRAP STRIP LAYERS IN POSITION.

C. FILL, VOID OR CAVITY MATERIALS*-CAULK OR PUTTY-GENEROUS BEAD OF CAULK APPLIED TO OUTER PERIMETER OR WRAP STRIP AT INTERFACE WITH WALL SURFACE AND TO PERIMETER OF PIPE OR CONDUIT AT ITS EGRESS FROM THE WRAP STRIP LAYERS.
MINNESOTA MINING & MFG. CO.-CP 25WP+ CAULK AND MPS-2+ PUTTY
(NOTE: L RATINGS APPLY ONLY WHEN TYPE CP-25 WB+ CAULK IS USED.)

D. PIPE COVERING*-(NOT SHOWN)-NOM 1 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. WHEN REQUIRED (SEE TABLE), MIN 6 IN. LENGTH OF PIPE COVERING INSTALLED AROUND PVC PIPE AT ITS EGRESS FROM STEEL COLLAR ON BOTH SIDES OF WALL. PIPE COVERING SECURED TO PIPE WITH STEEL WIRE TIES SPACED MAX 4 IN. OC. EDGE OF PIPE COVERING ABUTTING STEEL COLLAR TO BE SEALED WITH A MIN 1.4 IN. DIAM BEAD OF CAULK (ITEM C).
SEE PIPE AND EQUIPMENT COVERING-MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH FLAME SPREAD INDEX OF 25 OF LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS AMY BE USED.

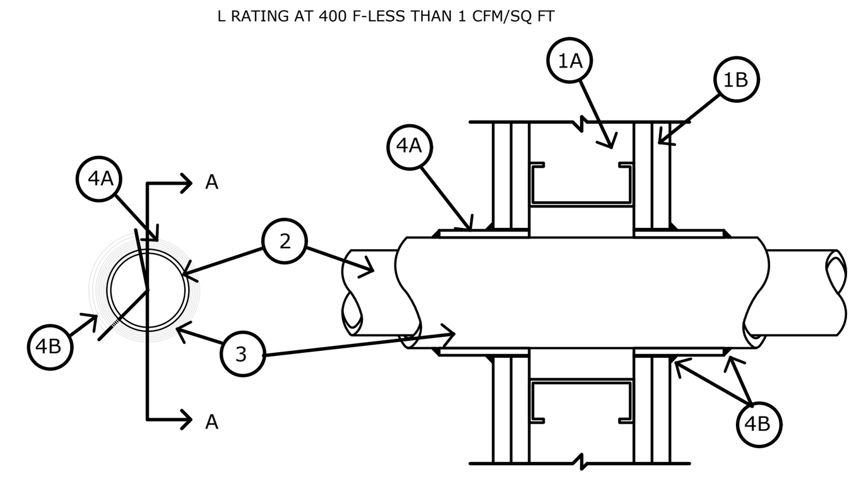
E. FIRESTOP DEVICE*-(NOT SHOWN)-AS AN ALTERNATE TO ITEMS A,B AND C FOR NOM 1-1/2, 2,3 OR 4 IN. DIAM NONMETALLIC PIPES, A FIRESTOP DEVICE CONSISTING OF A SHEET-STEEL SPLIT COLLAR LINED WITH INTUMESCENT MATERIAL AND PROVIDED WITH STEEL CLIPS FOR ATTACHMENT MAY BE USED. FIRESTOP DEVICE TO BE INSTALLED ON BOTH SIDES OF WALL IN ACCORDANCE WITH THE DEVICE TO BE INSTALLED ON BOTH SIDES OF WALL IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS.
MINNESOTA MINING CO. & MFG.-TYPES PPD 150, PPD 220, PPD 300, PPD 400
*BEARING THE UL CLASSIFICATION MARKING.

1 UL #W2002 THROUGH PENETRATION

NTS

THROUGH-PENETRATION FIRESTOP SYSTEM UL N0. WL-5001

(FORMERLY SYSTEM NO. 147)
F RATING-1 AND 2 HR (SEE ITEM 1)
T RATING-3/4, 1 AND 1-1/2 HR (SEE ITEM 3)
L RATING AT AMBIENT-2 CFM/SQ FT
L RATING AT 400 F-LESS THAN 1 CFM/SQ FT



SECTION A-A

1. WALL ASSEMBLY-THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE AND SPACED MAX 24 IN. OC.
   B. WALLBOARD, GYPSUM*-NOM 5/8 IN. THICK, 4 FT WIDE SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 14-1/2 IN FOR WOOD STUD WALLS AND 18 IN FOR STEEL STUD WALLS.
   THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS 1 HR WHEN INSTALLED IN A 1 HOUR FIRE RATED WALL AND 2 HR WHEN INSTALLED IN A 2 HR FIRE RATED WALL.
2. THROUGH PENETRANTS-ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED;
   A. STEEL PIPE-NOM 12 IN DIA (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. COPPER TUBING-NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   C. COPPER PIPE-NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPING.
3. PIPE COVERING*-NOM 1 OR 2 IN THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT. WHEN NOM 1 IN THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/4 IN TO MAX 3/8 IN. WHEN NOM 2 IN THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/2 IN TO MAX 3/4 IN.
   SEE-PIPE AND EQUIPMENT COVERING-MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
   THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 3/4 HR WHEN NOM 1 IN THICK PIPE COVERING IS USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 1 HR AND 1-1/2 HR WHEN NOM 2 IN THICK PIPE COVERING IS USED WITH 1 HR AND 2 HR FIRE RATED WALLS, RESPECTIVELY.
4. FIRESTOP SYSTEM-INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
   A. FILL, VOID OR CAVITY MATERIALS*-WRAP STRIP-NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACES ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS. NOM 2 IN. WIDE STRIP TIGHTLY WRAPPED AROUND PIPE INSULATION (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROX. 1-1/4 IN. SUCH THAT APPROX. 3/4 IN. OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP STRIP IS REQUIRED WHEN NOM 1 IN THICK PIPE COVERING IS USED. TWO LAYERS OF WRAP STRIP ARE REQUIRED WHEN NOM 2 IN THICK PIPE COVERING IS USED.
      MINNESOTA MINING & MFG. CO.-FS-195+
   B. FILL, VOID OR CAVITY MATERIALS*-CAULK-MIN 1/4 IN. DIAM CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL LAYER INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROX. 3/4 IN. FROM THE WALL SURFACE.
      MINNESOTA MINING MFG. CO.-CP 25WP+

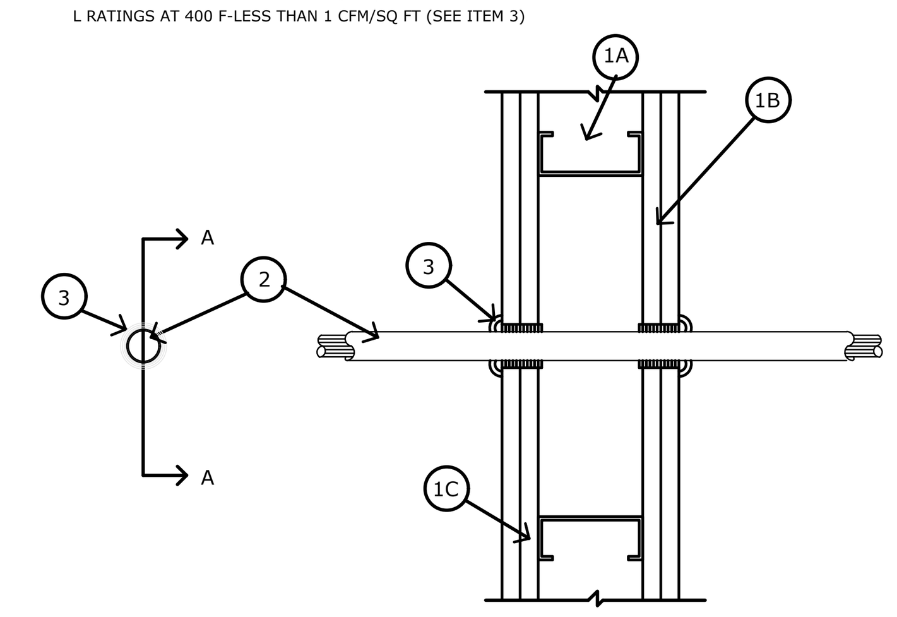
*BEARING THE UL CLASSIFICATION MARKING.

2 UL #W5001 THROUGH PENETRATION

NTS

THROUGH-PENETRATION FIRESTOP SYSTEM UL N0. WL-3001

(FORMERLY SYSTEM NO. 149)
F RATINGS-1 AND 2 HR (SEE ITEM 1)
T RATINGS-3/4, 1, 1-1/2 AND 2 HR (SEE ITEM 2)
L RATINGS AT AMBIENT-15 CFM/SQ FT (SEE ITEM 3)
L RATINGS AT 400 F-LESS THAN 1 CFM/SQ FT (SEE ITEM 3)



SECTION A-A

1. WALL ASSEMBLY-THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF HE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. ON OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.
   B. WALLBOARD, GYPSUM*-NOM 1/2 OR 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION DESIGN. DIAM OF CIRCULAR THROUGH OPENING TO BE 3/8 IN. TO 5/8 IN. LARGER THAN OUTSIDE DIAM OF CABLE OR CABLE BUNDLE.
   C. FASTENERS-WHEN WOOD STUD FRAMING IS EMPLOYED GYPSUM WALLBOARD LAYERS ATTACHED TO STUDS WITH CEMENT COATED NAILS AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION DESIGN. WHEN STEEL CHANNEL STUD FRAMING IS EMPLOYED, GYPSUM WALLBOARD ATTACHED TO STUDS WITH TYPE S SELF-DRILLING, SELF-TAPPING BUGLE-HEAD STEEL SCREWS AS SPECIFIED IN THE INDIVIDUAL WALL OR PARTITION DESIGN.

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

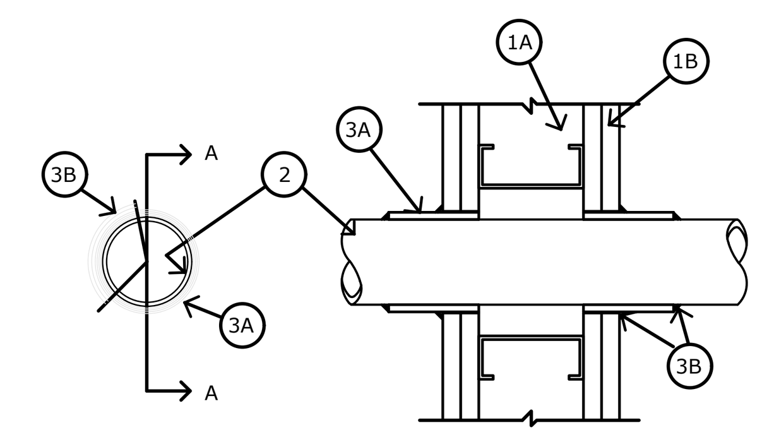
2. CABLES-INDIVIDUAL CABLE OR MAX 1 IN. DIAM CABLE BUNDLE INSTALLED IN THROUGH OPENING WITH AN ANNULAR SPACE OF MIN 0 IN. (POINT CONTACT) TO MAX 3/4 IN. CABLE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF CABLE MAY BE USED:
   A. MAX 150 PAIR NO. 24 AWG COPPER CONDUCTOR TELEPHONE CABLE WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET MATERIALS. WHEN MAX 25 PAIR TELEPHONE CABLE IS USED, T RATING IS 2 HR. WHEN 50 TO 150 PAIR TELEPHONE CABLE IS USED IN 1 HR FIRE RATED WALL, T RATING IS 3/4 HR. WHEN 50 TO 150 PAIR TELEPHONE CABLE IS USED IN 2 HR FIRE RATED WALL, T RATING IS 1 HR.
   B. MAX NO. 10 AWG MULTIPLE COPPER CONDUCTOR TYPE NM ("ROMEX") NONMETALLIC SHEATHED CABLE WITH PVC INSULATION AND JACKET MATERIALS. WHEN TYPE NM CABLE IS USED, MAX T RATING IS 1-1/2 HR.
   C. MULTIPLE FIBER OPTICAL COMMUNICATION CABLE JACKETED WITH PVC AND HAVING A MAX OUTSIDE DIAM OF 5/8 IN. WHEN FIBER OPTIC CABLE IS USED, MAX T RATING IS 2 HR.
   D. MAX 12 AWG MULTICONDUCTOR (MAX SEVEN CONDUCTORS) POWER/CONTROL CABLE WITH CROSS-LINKED POLYETHYLENE (XLPE) INSULATION AND XLPE OR PVC JACKET MATERIALS. WHEN MULTICONDUCTOR POWER/CONTROL CABLE IS USED, MAX T RATING IS 2 HR.
   E. MAX FOUR CONDUCTOR WITH GROUND NO. 2 AWG (OR SMALLER) ALUMINUM SER CABLES WITH POLYVINYL CHLORIDE INSULATION AND JACKET MATERIALS.
3. FILL, VOID OR CAVITY MATERIALS*-CAULK OR PUTTY-CAULK OR PUTTY FILL MATERIAL INSTALLED TO COMPLETELY FILL ANNULAR SPACE BETWEEN CABLE AND GYPSUM WALLBOARD ON BOTH SIDES OF WALL AND WITH A MIN 1/4 IN. DIAM BEAD OF CAULK OR PUTTY APPLIED TO PERIMETER OF CABLE(S) AT ITS EGRESS FROM EACH SIDE OF THE WALL. MINNESOTA MINING MFG. CO.-MPS-2+ PUTTY, CP 25WB+ CAULK. (NOTE: L RATINGS APPLY ONLY WHEN TYPE CP 25WB+ CAULK IS USED.) *BEARING THE UL CLASSIFICATION MARKING.

4 UL #W3001 THROUGH PENETRATION

NTS

THROUGH-PENETRATION FIRESTOP SYSTEM UL N0. WL-2003

F RATINGS-1 AND 2 HR (SEE ITEM 3)
T RATINGS-1 AND 2 HR (SEE ITEM 3)
L RATING AT AMBIENT-7 CFM/SQ FT (SEE ITEM 3B)
L RATING AT 400 F-LESS THAN 1 CFM/SQ FT (SEE ITEM 3B)



SECTION A-A

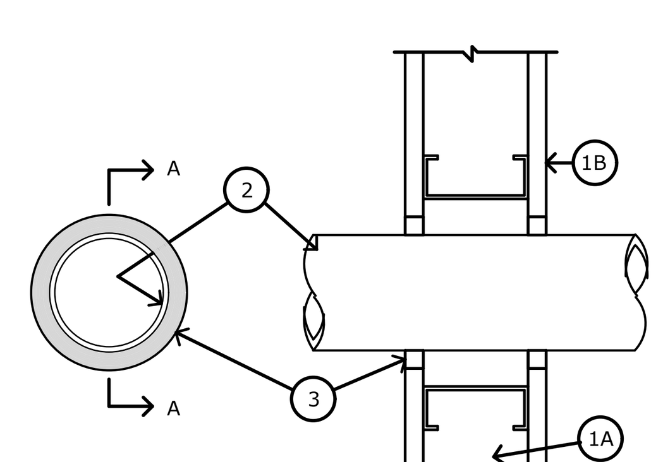
1. WALL ASSEMBLY-THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.
   B. WALLBOARD, GYPSUM*-5/8 IN. THICK, 4 FT WIDE SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 3-1/8 IN.
2. THROUGH PENETRANTS-ONE NONMETALLIC PIPE OR CONDUIT TO BE CENTERED IN THE THROUGH OPENING. THE ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND PERIPHERY OF OPENING SHALL BE MIN 1/4 IN. AND MAX 3/8 IN. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR-CEILING ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES OR CONDUITS MAY BE USED:
   A. POLYVINYL CHLORIDE (PVC) PIPE-NOM 2 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE PVC PIPE FOR USE INCLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   B. RIGID NONMETALLIC CONDUIT++-4 IN. DIAM (OR SMALLER) (SCHEDULE 40 OR 80) PVC CONDUIT INSTALLED IN ACCORDANCE WITH ARTICLE 347 OF THE NATIONAL ELECTRIC CODE (NFPA NO. 70).
   C. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE-NOM 2 IN. DIAM (OR SMALLER) SDR17 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   D. CELLULAR CORE POLYVINYL CHLORIDE (ccPVC) PIPE-NOM 2 IN. DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE PVC PIPE FOR USE INCLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   E. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE-NOM 2 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   F. CELLULAR CORE ACRYLONITRILE BUTADIENE STYRENE (ccABS) PIPE-NOM 2 IN. DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) SCHEDULE 40 CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
3. FIRESTOP SYSTEM-INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY F AND T RATINGS FOR THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY I WHICH IT IS INSTALLED. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS.
   A. FILL, VOID OR CAVITY MATERIALS*-WRAP STRIP-NOM 1/4 IN. THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. WIDE STRIPS. NOM 2 IN. WIDE STRIP TIGHTLY WRAPPED AROUND NONMETALLIC PIPE (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROX. 1-1/4 IN. SUCH THAT APPROX. 3/4 IN. OF THE WRAP STRIP PROTRUDES FROM THE WALL SURFACE. MINNESOTA MINING & MFG, CO.-FS-195+
   B. FILL, VOID OR CAVITY MATERIALS*-CAULK OR PUTTY-MIN 5/8 IN. THICKNESS OF CAULK OR PUTTY APPLIED INTO ANNULAR SPACE BETWEEN WRAP STRIP AND PERIPHERY OF OPENING. A NOM 1/4 IN. DIAM BEAD OF CAULK OR PUTTY TO BE APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYERS APPROX. 3/4 IN. FROM THE WALL SURFACE. MINNESOTA MINING & MFG CO.-CP 25WP+ CAULK OR MPS-2+ PUTTY. (NOTE: L RATINGS APPLY ONLY WHEN TYPE CP-25 WB+ CAULK IS USED.)
   C. FOIL TAPE-(NOT SHOWN)-NOM 4 IN. WIDE, 3 MIL THICK ALUMINUM TAPE WRAPPED AROUND PIPE PRIOR TO THE INSTALLATION OF THE WRAP STRIP (ITEM 3A). MIN OF ONE WRAP, FLUSH WITH BOTH SIDES OF WALL AND PROCEEDING OUTWARD. TAPE IS NOT REQUIRED FOR PIPES SHOWN IN ITEMS 2A, 2B, AND 2C. *BEARING THE UL CLASSIFICATION MARKING.

6 UL #W2003 THROUGH PENETRATION

NTS

THROUGH-PENETRATION FIRESTOP SYSTEM UL N0. WL-1052

F RATING-1 HR AND 2 HR
T RATING-0 HR
L RATING AT AMBIENT-LESS THAN 1 CFM/SQ FT
L RATING AT 400 F-4 CFM/SQ FT



SECTION A-A

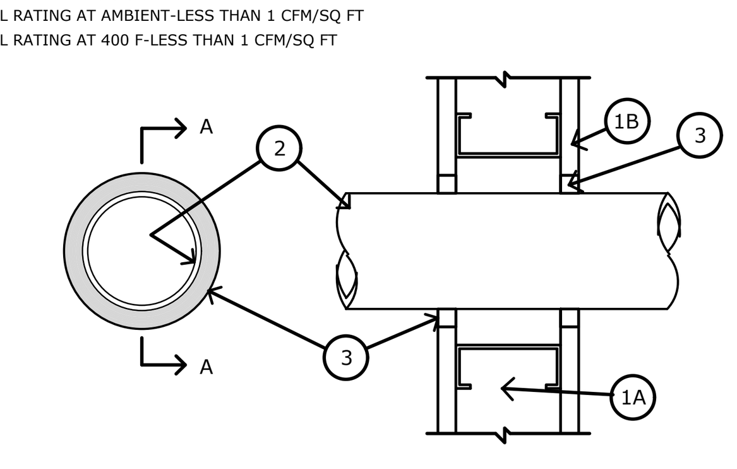
1. WALL ASSEMBLY- THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN. 2 1/2 IN. WIDE AND SPACED MAX 24 IN. OC.
   B. WALLBOARD, GYPSUM*-ONE LAYER OF 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE IN-DIVIDUAL WALL AND PARTITION DESIGN. MAX. DIAM. OF OPENING IS 12 IN.
2. THROUGH PENETRANTS-ONE METALLIC PIPE, CONDUIT OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. A NOM. ANNULAR SPACE OF 3/4 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   A. STEEL PIPE-NOM. 10 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. CONDUIT-NOM. 4 IN. DIAM. (OR SMALLER) ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.
   C. COPPER TUBING-NOM. 4 IN. DIAM. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   D. COPPER PIPE-NOM. 4 IN. DIAM. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. FILL, VOID OR CAVITY MATERIAL*-SEALANT-MIN . 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL.
   HILTI CONSTRUCTION CHEMICALS, INC.-FS601 SEALANT
   *BEARING THE UL CLASSIFICATION MARKING

3 UL #W1052 THROUGH PENETRATION

NTS

THROUGH-PENETRATION FIRESTOP SYSTEM UL N0. WL-1001

F RATINGS-1,2,3, AND 4 HR (SEE ITEMS 2 AND 3)
T RATINGS-0,1,2,3, AND 4 HR (SEE ITEM 3)
L RATING AT AMBIENT-LESS THAN 1 CFM/SQ FT
L RATING AT 400 F-LESS THAN 1 CFM/SQ FT



SECTION A-A

1. WALL ASSEMBLY-THE 1,2,3, OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL PARTITION DEIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS ((MAX 2 H FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN DEEP CHANNELS SPACED MAX 24 IN. OC.
   B. WALLBOARD, GYPSUM*-NOM 1/2 OR 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX 12 IN. DIAM OF OPENING IS 13-1/2 IN.
2. PIPE OR CONDUIT-NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE, NOM 12 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE, NOM 6 IN. DIAM (OR SMALLER) STEEL CONDUIT, NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING, NOM 6 IN. DIAM (OR SMALLER) TYPE L OR (OR HEAVIER) COPPER TUBING OR NOM 1 IN. DIAM (OR SMALLER) FLEXIBLE STEEL CONDUIT. WHEN COPPER PIPE IS USED, MAX F RATING OF FIRESTOP SYSTEM (ITEM 3) IS 2 H. STEEL PIPES OR CONDUITS LARGER THAN NOM 4 IN. DIAM MAY ONLY BE USED IN WALLS CONSTRUCTED USING STEEL CHANNEL STUDS. A MAX OF ONE PIPE OR CONDUIT IS PERMITTED IN THE FIRESTOP SYSTEM. PIPE OF CONDUIT TO BE INSTALLED NEAR CENTER OF STUD CAVITY WIDTH AND TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
3. FILL, VOID OR CAVITY MATERIAL*-CAULK-CAULK FILL MATERIAL INSTALLED TO COMPLETELY FILL ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND GYPSUM WALLBOARD AND WITH A MIN 1/4 IN. DIAM BEAD OF CAULK APPLIED TO PERIMETER OF PIPE OR CONDUIT AT ITS EGRESS FOR THE WALL. CAULK INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

MAX PIPE OR CONDUIT DIAM, IN	ANNULAR SPACE, IN	F RATING HR	T RATING HR
1	0 TO 3/16	1 OR 2	0+, 1 OR 2
1	1/4 TO 1/2	3 OR 4	3 OR 4
4	0 TO 1/4	1 OR 2	0
4	0 TO 1-1/2#	1 OR 2	0
6	1/4 TO 1/2	3 OR 4	0
12	3/16 to 3/8	1 or 2	0

*BEARING THE UL CLASSIFICATION MARKING

+WHEN COPPER PIPE IS USED, T RATING IS 0 H.
#0 TO 1-1/2 IN. ANNULAR SPACE APPLIES ONLY WHEN TYPE CP-25 WB+ CAULK IS USED AND ONLY WHEN THE MIN THICKNESS OF THE GYPSUM WALLBOARDS IS 5/8 IN. FOR 1 HR RATED WALLS AND 1-1/4 IN. FOR 2 HR RATED WALLS.

MINNESOTA MINING & MFG. CO.-CP 25WP+

5 UL #W1001 THROUGH PENETRATION

NTS

1. Floor Assembly — The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

   A. Steel Floor And Form Units* — Max 3 in. (76 mm) deep galv steel fluted units.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Spray-Applied Fire Resistive Materials* — (Optional, Not Shown)—Prior to the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B, respectively) the steel floor units may be sprayed with a min 5/16 in. (8mm) to max 1-3/4 in. (45 mm) thickness of fire resistive material.
   W R GRACE & CO - CONN — Type MK-6-HY

1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly.
The roof assembly shall include the following construction features:

   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Roof Insulation — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the floor units.

1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly.
The roof assembly shall include the following construction features:

   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Spray—Applied Fire Resistive Materials* — (Not Shown)—Prior to the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.

2. Wall Assembly — The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

   A. Steel Floor And Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B). Ceiling runner to be provided with 2 in. (51 mm) flanges. Ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors or welds spaced max 12 in. (305 mm) OC. When optional spray-applied fire resistive material is used on steel deck and when deflection channel is not used, ceiling runner secured through spray-applied material to each valleys of steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC.

   A1. Light Gauge Framing*-Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2A, slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Slotted ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When optional spray-applied fire resistive material is used on steel deck, slotted ceiling runner secured through spray-applied material to each valley of steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC.
   METAL-LITE INC — The System
   SCAFCO STEEL STUD MANUFACTURING CO
   SLIPTRACK SYSTEMS INC — SLP-TRK

   A2. Light Gauge Framing*-Vertical Deflection Ceiling Runner — When the nom joint width is less than or equal to 3/4 in. (19 mm), vertical deflection ceiling runner may be used as an alternate to the ceiling runners in Items 2A and 2A1. Vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clips provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2B). Vertical deflection ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When optional spray-applied fire resistive material is used on steel deck, vertical deflection ceiling runner secured through spray-applied material to each valley of steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC.
   THE STEEL NETWORK INC — VertiTrack VTD250, VTD358, VTD400, VTD600 and VTD800

   A3. Light Gauge Framing* — Clipped Ceiling Runner — As an alternate to the ceiling runner in Items 2A, 2A1 and 2A2, clipped runner to consist of galv steel channel with clips preformed in track flanges which positively engage the inside flange of the steel studs (Item 2B). Track sized to accommodate steel studs (Item 2B). Track flanges to be min 2-1/2 in. (64 mm). Clipped ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 OC. When optional spray-applied fire resistive material is used on steel deck, clipped ceiling runner secured through spray-applied material to each valley of steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC.
   TOTAL STEEL SOLUTIONS L L C — Snap Trak

   A4. Light Gauge Framing*- Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A3, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2B). Notched ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When optional spray-applied fire resistive material is used on the steel deck, notched ceiling runner secured through spray-applied material to each valley of steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC.
   DENMAR STEEL INC — Type SCR

   B. Studs — Steel studs to be min 2-1/2 in. (64 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through the bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

   C. Gypsum Board* — Gypsum board installed to a min total thickness of 5/8 in. and 1-1/4 in. (16 and 32 mm) on each side of wall for 1 and 2 hr rated assemblies, respectively. Wall to be constructed as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a max 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the bottom of the steel deck units and the top row of screws shall be installed into the studs 3-1/2 to 4 in. (89 to 102 mm) below the lower surface of the floor or roof. The hourly rating of the joint system is dependent on the hourly rating of the wall.

3. Joint System — Max separation between bottom of floor or roof and top of wall at time of installation of joint system is 1 in. (13 mm). The joint system is designed to accommodate a max 50 percent compression or extension from its installed width. The joint system consists of forming material and a fill material, as follows:

   A. Forming Material* — Nom 4 pcf (64 kg/m3) density mineral wool batt insulation cut approx 25 percent wider than the flutes and with a length approx equal to the overall thickness of the wall. Multiple pieces stacked on top of each other, as needed, and then compressed 50 percent in thickness and inserted into the flutes of the steel deck above the top of the ceiling runner. The mineral wool batt insulation is to project beyond each side of the ceiling runner, flush with wall surfaces. Additional 5/8 in. and 1-1/4 in. (16 and 32 mm) wide strips for 1 and 2 hr rated assemblies, respectively, of nom 4 pcf (64 kg/m3) mineral wool batt insulation are to be cut to fill the gap between the top of the gypsum board and bottom of the steel deck. The strips of mineral wool are compressed 50 percent and tightly packed, cut edge first, into the gap between the top of the gypsum board and bottom of the steel deck on both sides of the wall.
   ROCK WOOL MANUFACTURING CO — Delta- Board
   THERMAFIBER INC — Type SAF

   A1. Forming Material*—Plugs — (Optional, Not Shown) Preformed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the ceiling channel. The plugs shall project beyond each side of the ceiling runner, flush with wall surfaces. Additional forming material, described in Item 3A, to be used in conjunction with the plugs to fill the gap between the top of gypsum board and bottom of steel floor units.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP777 Speed Plugs

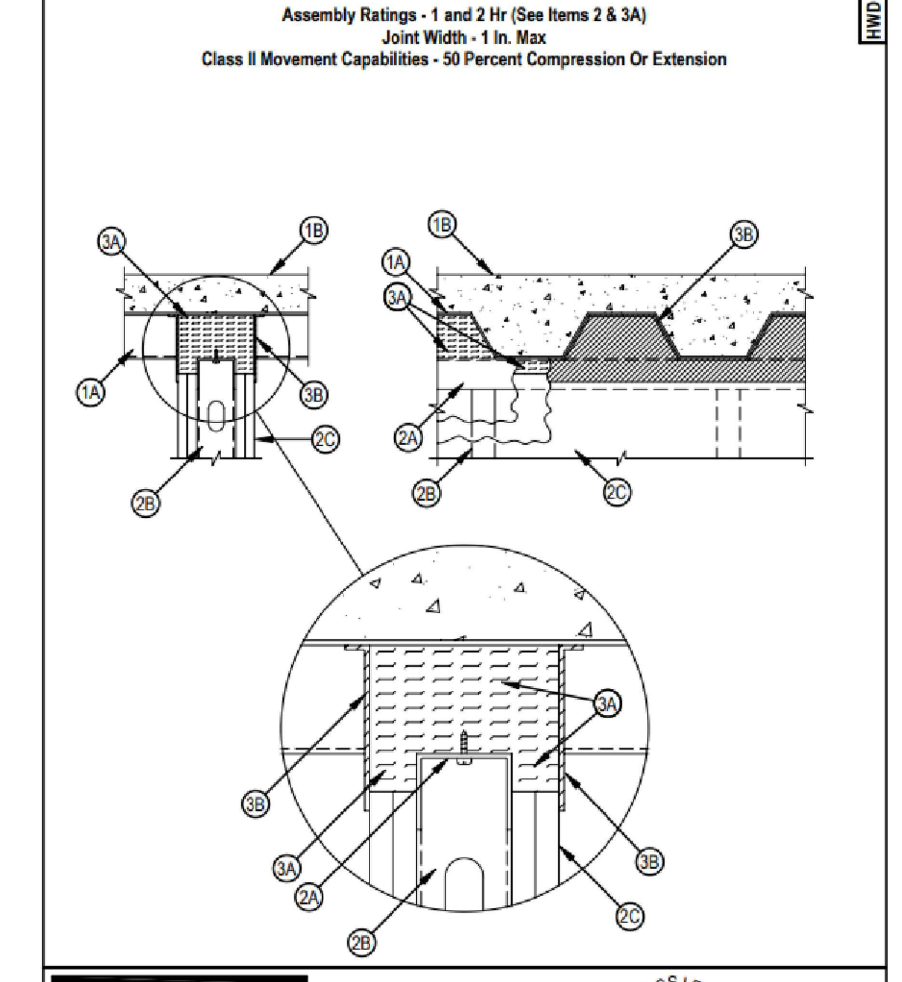
   A2. Forming Material* - Strips — (Optional) - Nom 5/8 in. and 1-1/4 in. (16 and 32 mm) wide by 2 in. (51 mm) high precut mineral wool strips for 1 and 2 hr rated assemblies respectively. The strips are compressed 50 percent and firmly packed, cut edge first, into the gap between the top of the gypsum board and bottom of the steel floor units on both sides of the wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 767 Speed Strips

   B. Fill, Void or Cavity Material* — Min 1/6 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material sprayed or troweled on each side of the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto gypsum board and steel deck on both sides of wall. When Spray-Applied Fire Resistive Material* is applied to the Steel Floor and Form Units*, the fill material is to overlap the gypsum board a min of 1/2 in. (13 mm) and the Spray-Applied Fire Resistive Material a min of 2 in. (51 mm) on both sides of wall. When spray-applied fire resistive materials are used, the CP 672 firestop spray shall overlap the wall a min 1/2 in. (13 mm) and overlap the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of the wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 672 Firestop Spray

*Bearing the UL Classification Mark

System No. HW-D-0042
Assembly Ratings - 1 and 2 Hr (See Items 2 & 3A)
Joint Width - 1 In. Max
Class II Movement Capabilities - 50 Percent Compression Or Extension

HWD 0042



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Hilti Firestop Systems
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CLASSIFIED C UL US
Page: 1 of 4

7 SYSTEM No. HW–D–0042

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Butler Industrial Building
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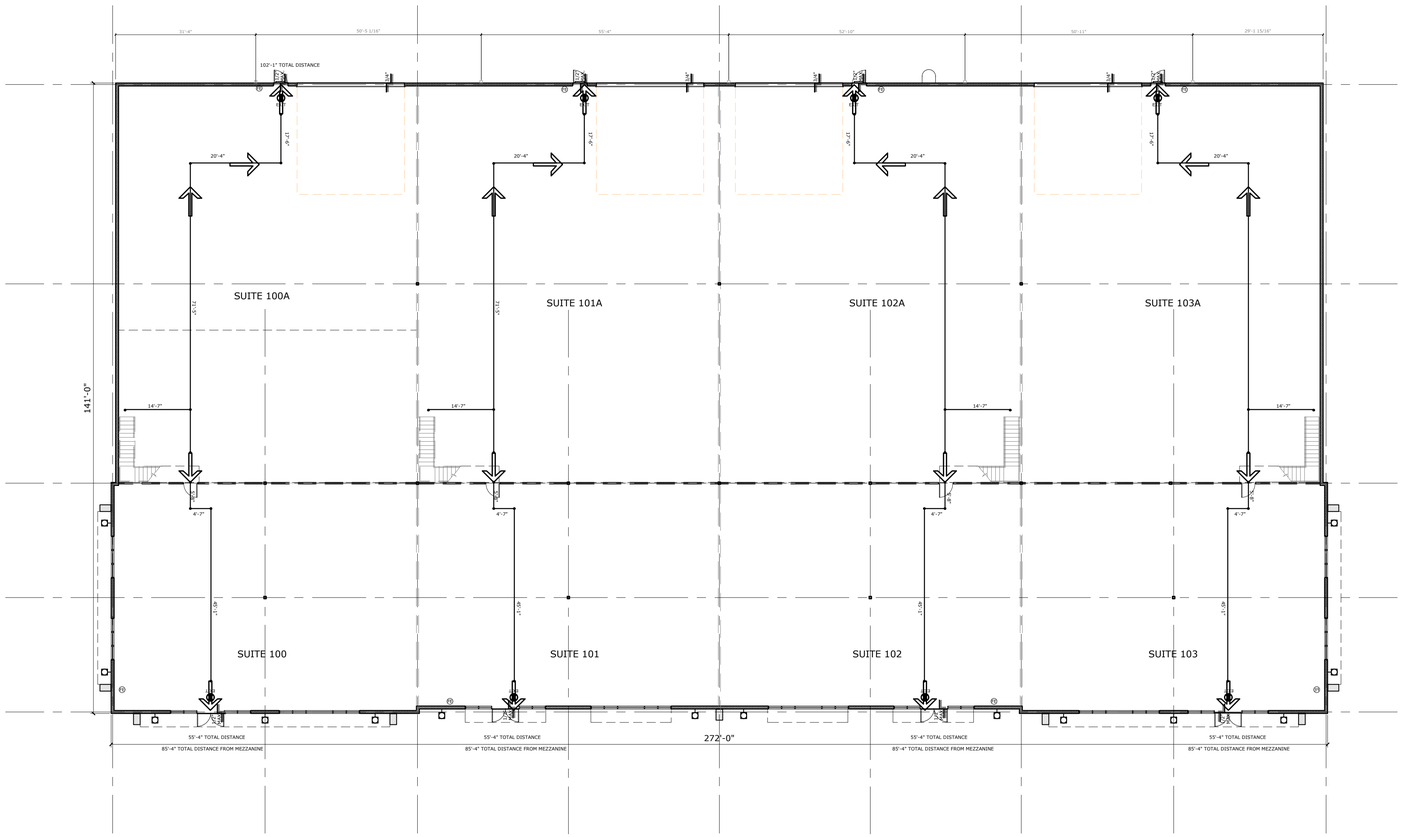
Rev. #	Date

Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	A1.2
	U.L. Details



1 - GROUND FLOOR LIFE SAFETY PLAN

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

N

LIFE SAFETY

FLORIDA BUILDING CODE (6TH EDITION, 2023)

OCCUPANCY (Chapter 3)	'F' FACTORY/'B' BUSINESS	
SEPARATION BETWEEN OCCUPANCIES (Table 508.4)	1 HOUR REQUIRED, PROVIDED (FUTURE TEANANT WALLS)	
FINISH CLASS (803)	B	INTERIOR EXIT STAIRWAYS, INTERIOR EXIT RAMPS & PASSAGES
	C	CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS & RAMPS
	C	ROOMS & ENCLOSED SPACES
SPRINKLER SYSTEM REQUIRED? (903.2.1.2)	YES	
EXIT ACCESS TRAVEL DISTANCE (Table 1017.2)	300' (SPRINKLERED)	
COMMON PATH OF EGRESS TRAVEL (Table 1006.2.1)	100' (SPRINKLERED)	
MAXIMUM DEAD END CORRIDOR (1020.4)	50'	
MINIMUM CORRIDOR WIDTH (Table 1020.2)	44 INCHES CLEAR	
MINIMUM CLEAR OPENING OF DOORS (11010.1.1)	32 INCHES CLEAR	
MINIMUM NUMBER OF EXITS (Tables 1006.3.1 & 1006.3.1)	1 REQUIRED.	
MINIMUM STAIR WIDTH (1011.2)	44 INCHES CLEAR (50 OR MORE PEOPLE)	
EGRESS WIDTH PER PERSON 3/0 WIDE DOOR= 32" CLEAR 2-3/0 WIDE DOORS= 68" CLEAR	0.2/FLOOR 0.3/STAIR 170 PERSONS/OPENING 340 PERSONS/OPENING	
TOTAL EGRESS WIDTH REQUIRED (1005.3.2):	36 PERSONS X 0.2 PER UNIT	7.2"
	÷12"	0.6"

SPECIAL REQUIREMENTS

1. Construction site safety shall be maintained as per NFPA 241.

SYMBOLS

WALL-MOUNTED EMERGENCY LIGHT W/ BATTERY BACKUP

WALL-MOUNTED EMERGENCY EXIT SIGN WITH 90m BATTERY BACKUP

FE FIRE EXTINGUISHER BY TENANT CLASS 2A-10BC

FLORIDA FIRE PREVENTION CODE (6TH EDITION) NFPA 101

CLASSIFICATION OF OCCUPANCY (Chapter 6)	FACTORY(Chap.)/BUSINESS (Chap. 39)
REQUIRED SEPARATION BETWEEN OCCUPANCIES? (Table 6.1.14.4.1(a))	0 HOURS REQ'D, 1 HOUR PROVIDED (SPRINKLERED)
ADJACENT OCCUPANCIES?	FACTORY/BUSINESS
SPRINKLER SYSTEM PRESENT?	YES
FINISH CLASS	/39.3.3.2
CORRIDORS, LOBBIES & ENCLOSED STAIRWAYS	B
ROOMS & ENCLOSED SPACES	C
EXIT ACCESS TRAVEL DISTANCE	/39.2.6.2
	/200' (SPRINKLERED)
COMMON PATH OF TRAVEL	/39.2.5.3.1
	/100' (SPRINKLERED)
MAXIMUM DEAD END CORRIDOR	/39.2.5.2
	/50 FEET
MINIMUM CORRIDOR WIDTH	/39.2.3.2
	44 INCHES
MINIMUM NUMBER OF EXITS	/39.2.4.3
	1 REQUIRED, 2 PROVIDED
PANIC HARDWARE	NOT REQUIRED
MINIMUM CLEAR OPENING OF DOORS	7.2.1.2.3.2
	32" CLEAR MINIMUM
MEANS OF EGRESS (CHAPTER 7.4)	TABLE 7.3.1.2 OCCUPANT LOAD FACTOR
	TOTAL = 36 PEOPLE PRE BAY
TOTAL EGRESS WIDTH REQUIRED (TABLE 7.3.3.1):	36 x 0.2 = 7.2"
TOTAL EGRESS WIDTH PROVIDED:	72"

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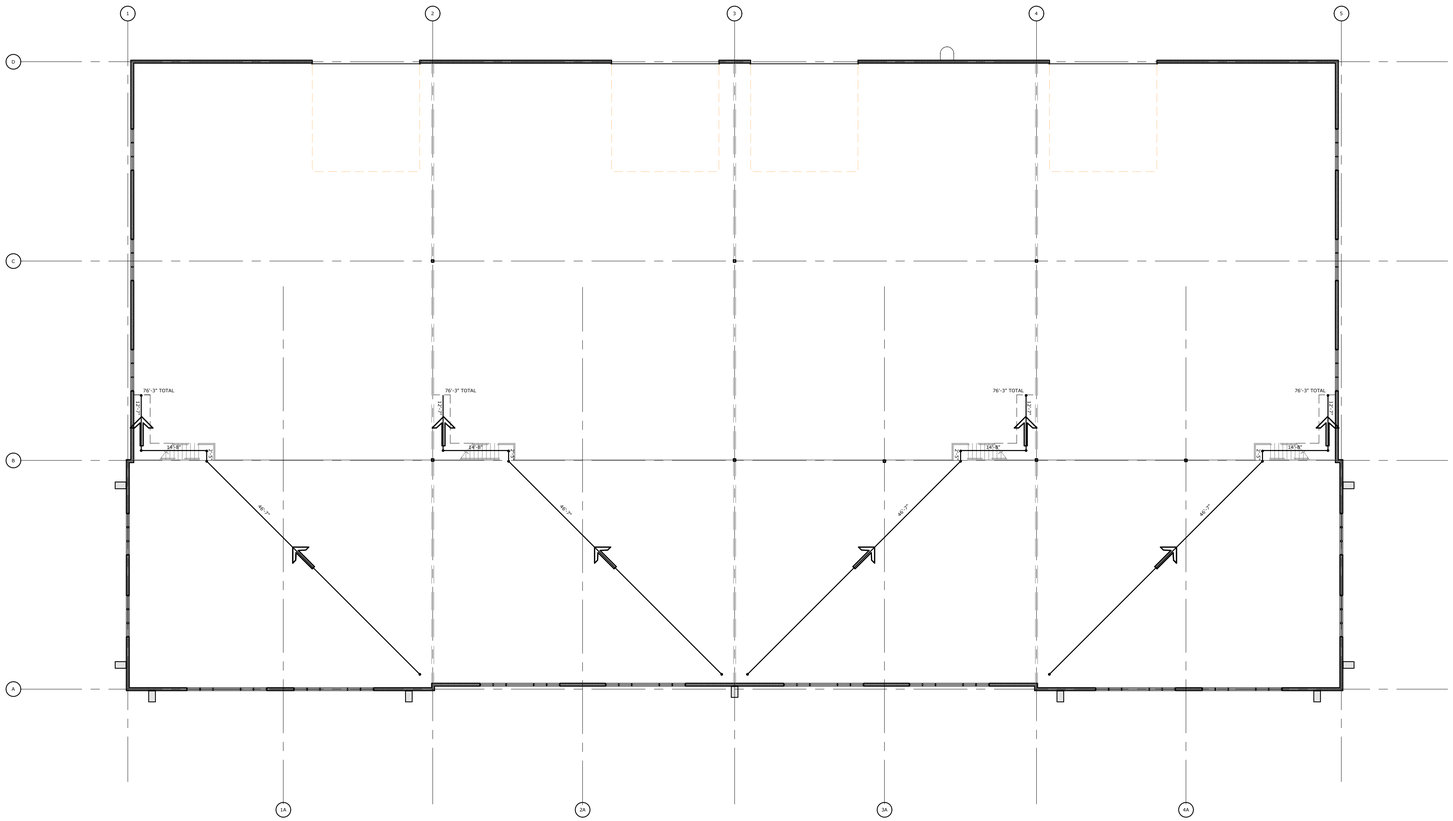
Rev. #	Date

Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	A2.0.1

Ground Floor Life Safety Plan + Notes



1 - MEZZANINE LIFE SAFETY PLAN

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

N

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Butler Industrial Building

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Rev. #	Date

Project Number	24-0976
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Sheet	A2.0.2

Mezzanine
Life Safety Plan
+ Notes

KEY NOTES

1. Ensure thresholds at all new interior and exterior doors not to exceed 1/2" in height including beveling as per FBC Accessibility Code (6th Edition, 2020) §404.2.4.4. and open and close with the required force and speed per §404.2.9. Taper floor finish as required.
2. Proposed metal stairs, if mezzanine installed in the future.
3. Roof ladder to the roof. Cage at top of ladder at top of roof. See details Roof Plan. \
4. Wall between warehouse and proposed office are optional.

GENERAL NOTES

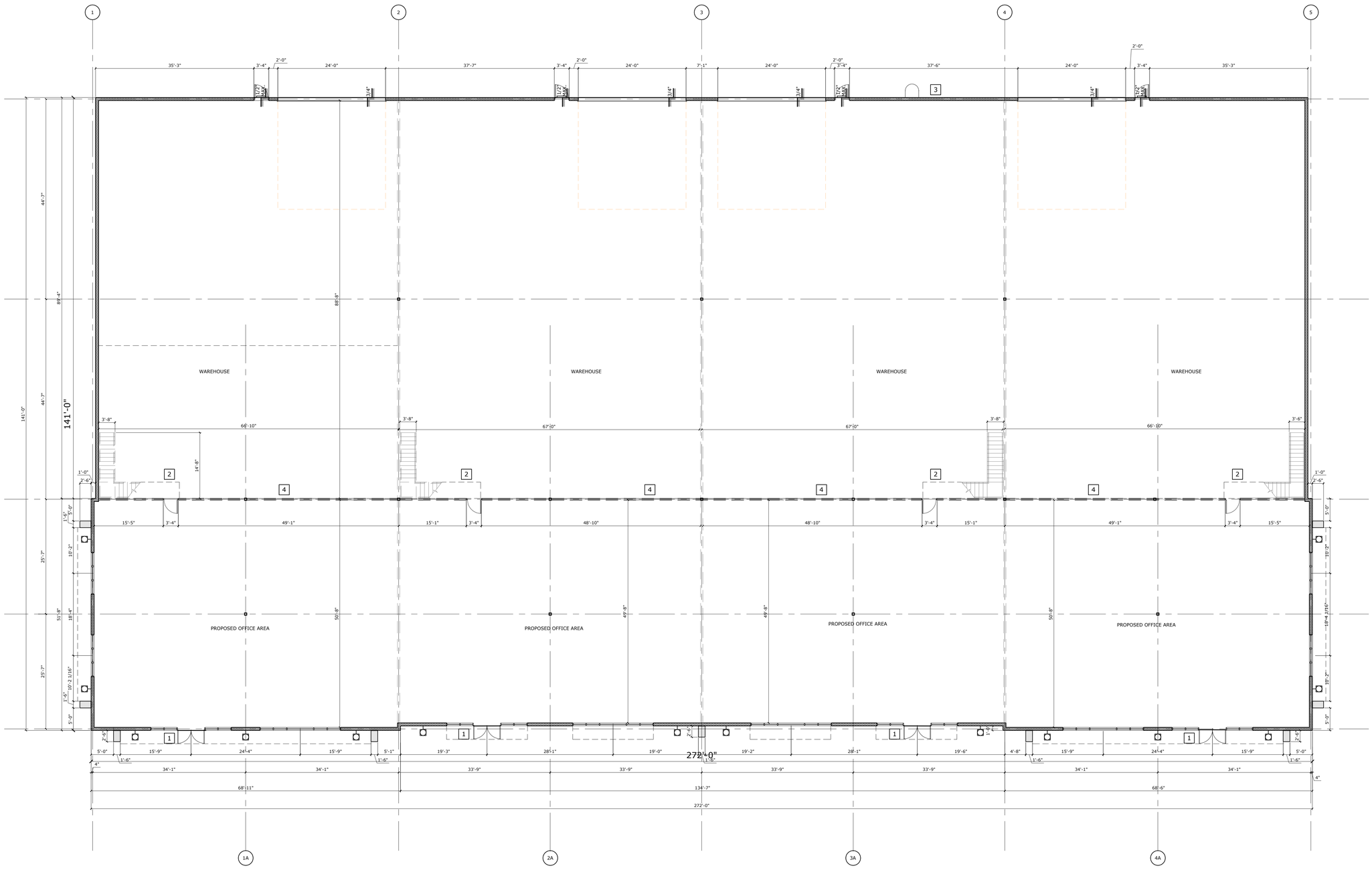
1. Field verify all existing dimensions and utilities prior to construction. Notify Architect of any discrepancies.
2. Bathroom location shall be located by Tenant. Plumbing fixture count shall be determined upon Tenant occupancy type and per FPC 2023.

WALL LEGEND

NEW TILT WALL

FUTURE TENANT/SEPARATION WALL

FUTURE METAL STUDS @ 16" O.C. W/ 5/8" THK GYPSUM WALLBOARD FINISH EACH SIDE (PAINTED). PROVIDE MIN. R-11 BATT INSULATION IN ALL WALLS



1 - GROUND FLOOR PLAN

SCALE:3/32" = 1'-0"

N

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Ground Floor Pln + Notes

KEY NOTES

1. Ensure thresholds at all new interior and exterior doors not to exceed 1/2" in height including beveling as per FBC Accessibility Code (6th Edition, 2020) §404.2.4.4. and open and close with the required force and speed per §404.2.9. Taper floor finish as required.
2. Proposed metal stairs, if mezzanine installed in the future.
3. Roof ladder to the roof. Cage at top of ladder at top of roof. See details Roof Plan. \
4. Wall between warehouse and proposed office are optional.

GENERAL NOTES

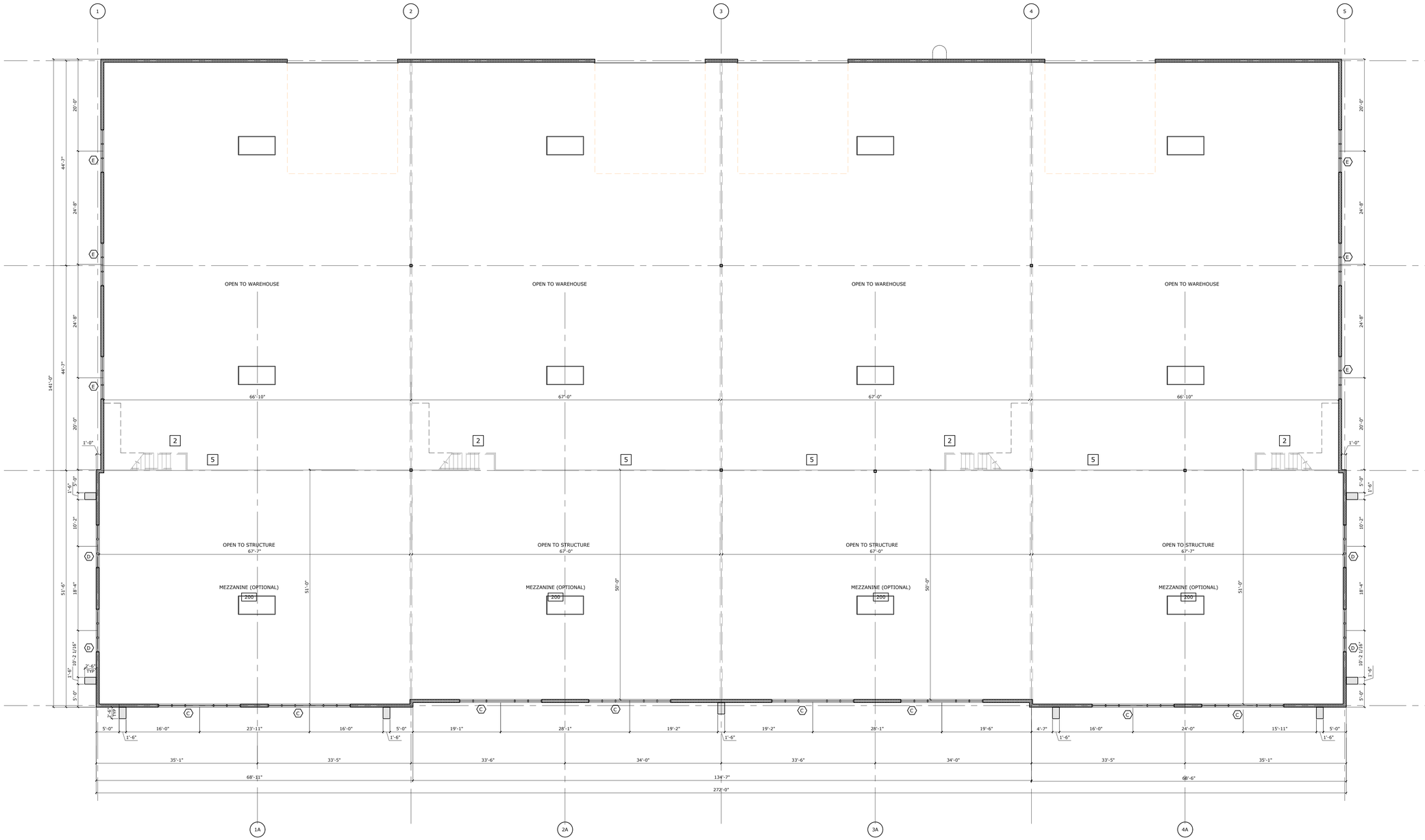
1. Field verify all existing dimensions and utilities prior to construction. Notify Architect of any discrepancies.
2. Bathroom location shall be located by Tenant. Plumbing fixture count shall be determined upon Tenant occupancy type and per FPC 2023.

WALL LEGEND

NEW TILT WALL

FUTURE METAL STUDS @ 16" O.C. W/ 5/8" THK GYPSUM WALLBOARD FINISH EACH SIDE (PAINTED). PROVIDE MIN. R-11 BATT INSULATION IN ALL WALLS

FUTURE TENANT/SEPARATION WALL



1 - SECOND FLOOR PLAN

SCALE: 3/32" = 1'-0"

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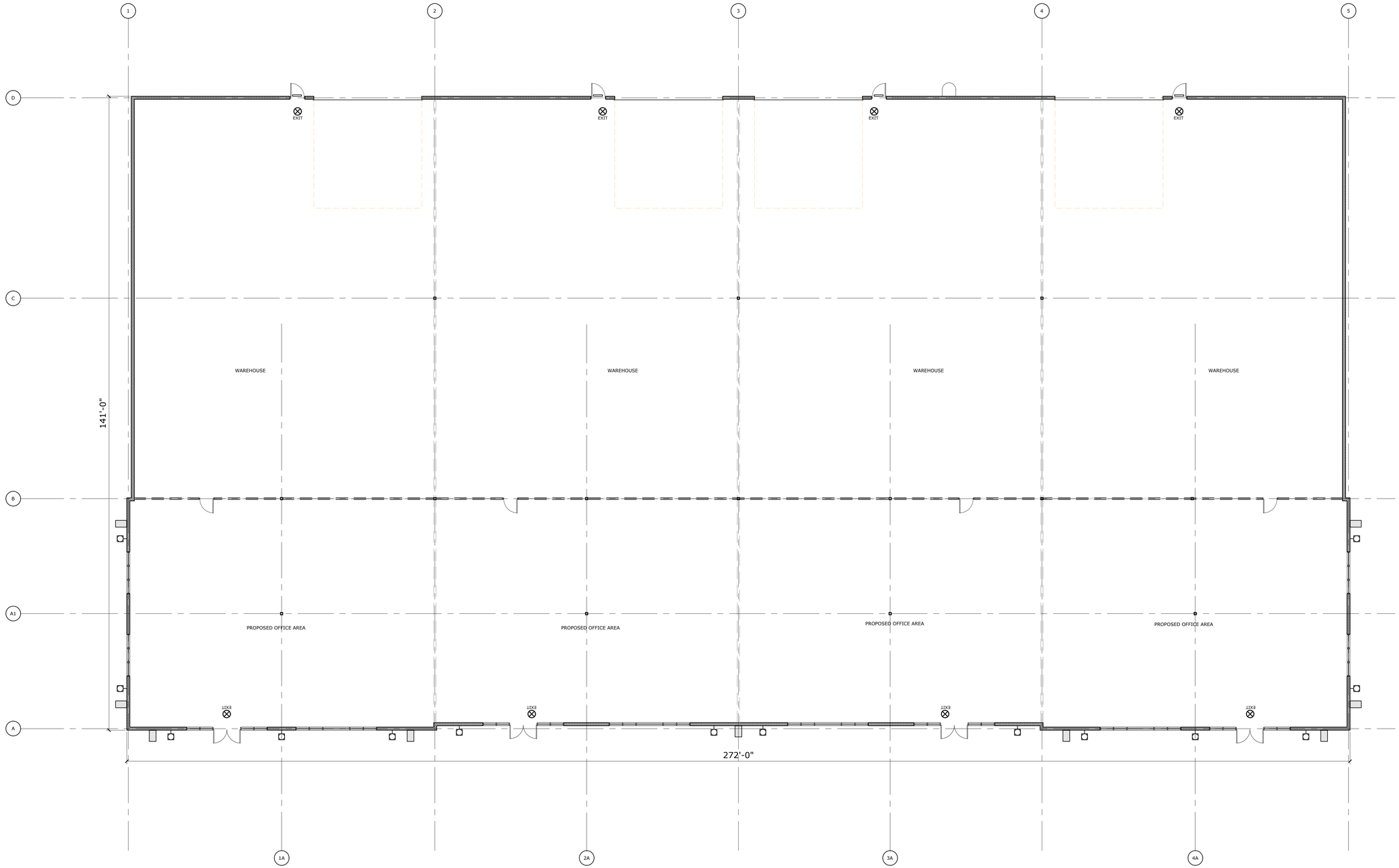
Mezzanine Floor Plan + Notes

GENERAL NOTES

1. Refer to Lighting Plans for exact light fixture locations and full Scope of Work.

RCP LEGEND

- Metal Awning By Others
- XX — 2x4 LED lights
- Illuminated Emergency Exit Sign
- Wall Mounted Exterior Light
- Exterior Wall Pack Light Fixture



1 - GROUND FLOOR REFLECTED CEILING PLAN

SCALE: 3/32" = 1'-0"

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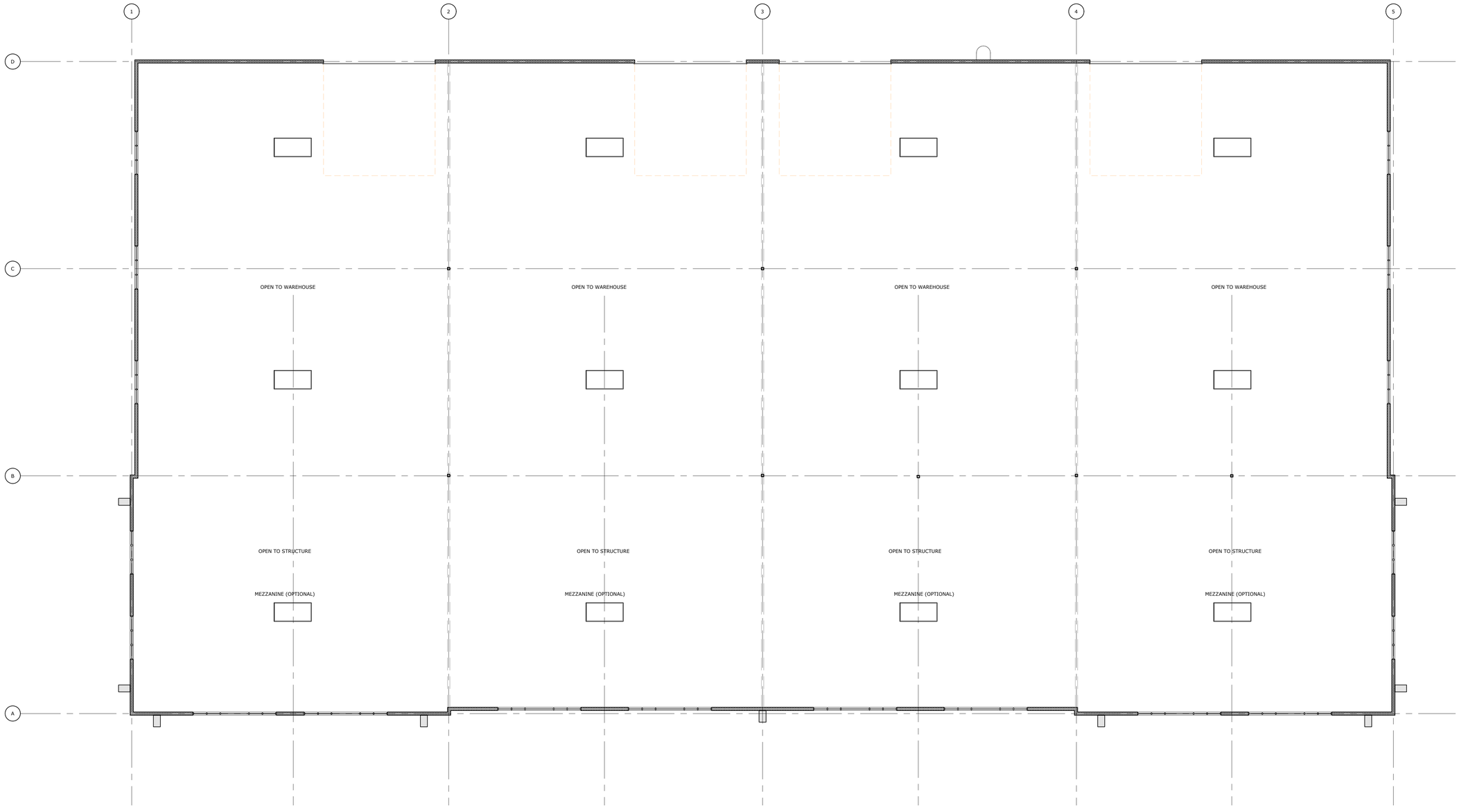
Ground Reflected Ceiling Plan

GENERAL NOTES

1. Refer to Lighting Plans for exact light fixture locations and full Scope of Work.

RCP LEGEND

- Metal Awning By Others
- XX — 2x4 LED lights
- Illuminated Emergency Exit Sign
- Wall Mounted Exterior Light
- Exterior Wall Pack Light Fixture



1 - SECOND FLOOR REFLECTED CEILING PLAN

SCALE: 3/32" = 1'-0"

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Second Floor Reflected Ceiling Plan

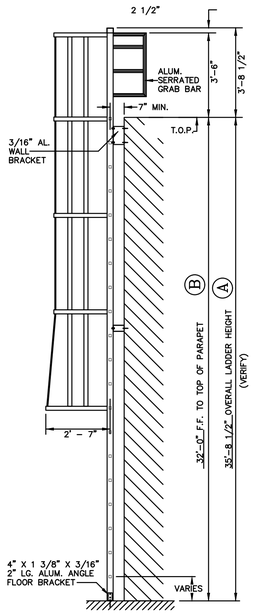
RF-X ROOFING SPECIFICATION

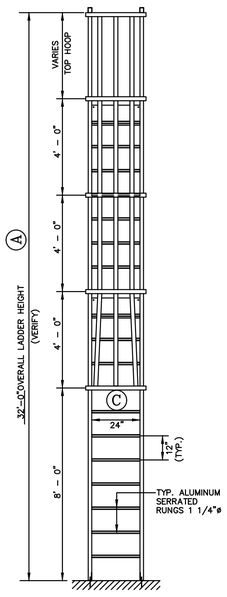
RF-1 GAD TPO roofing membranes with Flat Polyiso w/ GRF Facers (R-value = 20) or equal. Install roofing as per manufacturer specifications and Product Approval Requirements.

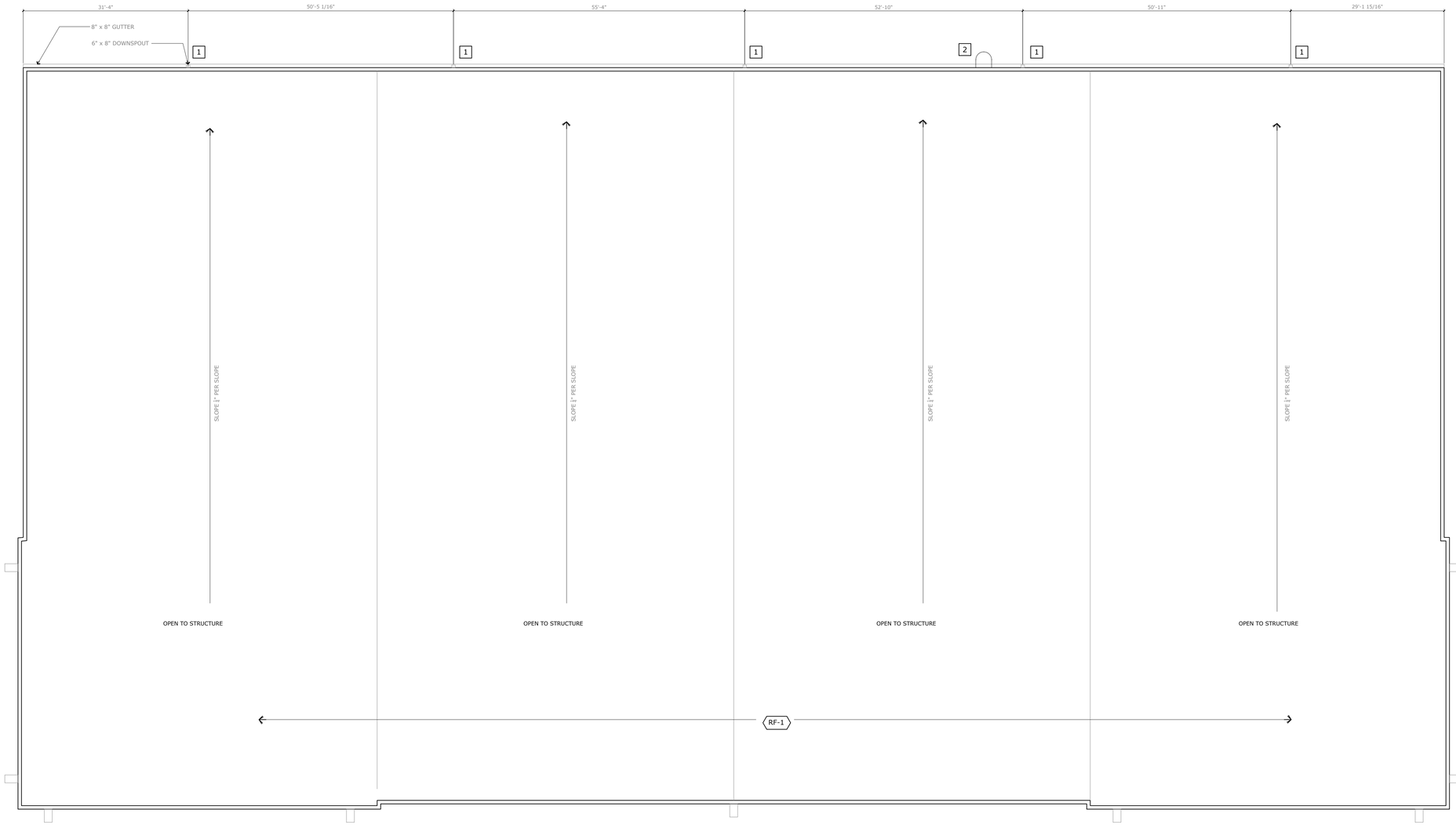
RF-2

KEY NOTES

1. Roof drains and gutters. Slope roof ¼" = 1'-0".
2. Caged ladder to the roof. O'Keeffee's Inc. Model # 532 Cage Ladder or equal







2 - ROOF LADDER DTLS

SCALE: NTS

1 - ROOF PLAN

SCALE: 3/32' = 1'-0"

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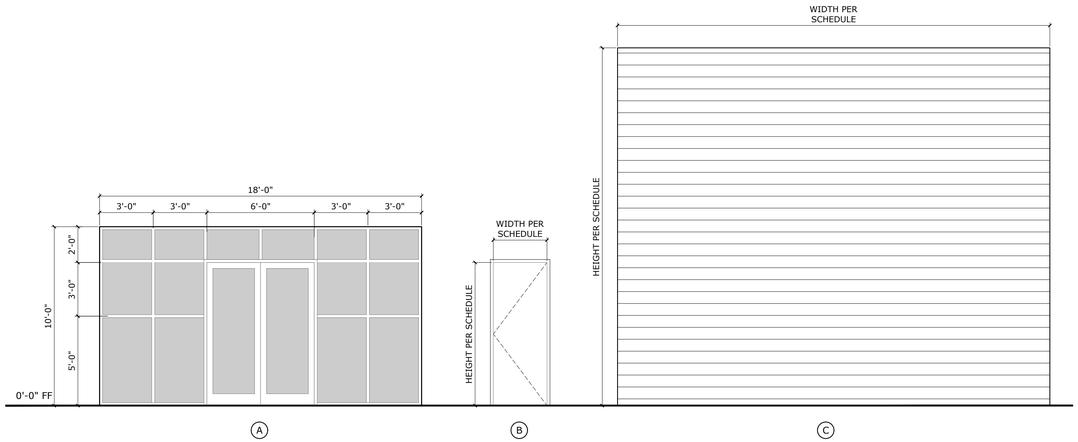
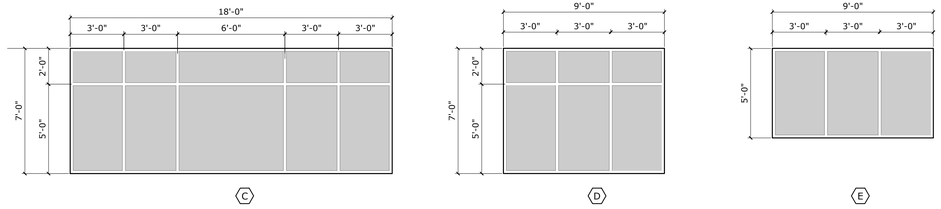
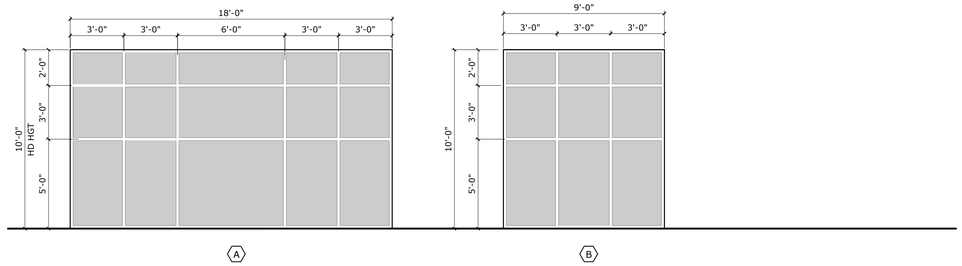
Roof Plan



3 - DOOR ELEVATIONS

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





2 - WINDOW ELEVATIONS

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

EXTERIOR WINDOW | INT. HINGED DOOR | EXT. STOREFRONT | EXTERIOR DOOR

1 - HSJ DETAILS

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

(##) DOOR SCHEDULE

DOOR NO.	SIZE			DOOR						FRAME			NOTES: (SEE BELOW)
	WIDTH	HEIGHT	THICK	MAT.	FINISH	HDW.	TYPE	ELEV.	MDL.	MAT.	FINISH	T'HOLD	
100	(2)3'-0"	8'-0"	1.75	AL	MRF	1	STOREFRONT	A	-	AL	FAC	AL	1,5,6
100A	3'-0"	8'-0"	1.375	SCW	PTD	2	FLUSH	B	-	WD	PTD	AL	1,2,3,6
100B	3'-0"	8'-0"	1.75	FBR	PTD	3	FLUSH	B	-	MTL	PTD	AL	1,5,6
100C	24'-0"	24'-0"	1.75	AL	MFR	4	ROLL UP DOOR	C	-	MTL	FAC		4,6
101	(2)3'-0"	8'-0"	1.75	AL	MRF	1	STOREFRONT	A	-	AL	FAC	AL	1,5,6
101A	3'-0"	8'-0"	1.375	SCW	PTD	2	FLUSH	B	-	WD	PTD	AL	1,2,3,6
101B	3'-0"	8'-0"	1.75	FBR	PTD	3	FLUSH	B	-	MTL	PTD	AL	1,5,6
101C	24'-0"	24'-0"	1.75	AL	MFR	4	ROLL UP DOOR	C	-	MTL	FAC		4,6
102	(2)3'-0"	8'-0"	1.75	AL	MRF	1	STOREFRONT	A	-	AL	FAC	AL	1,5,6
102A	3'-0"	8'-0"	1.375	SCW	PTD	2	FLUSH	B	-	WD	PTD	AL	1,2,3,6
102B	3'-0"	8'-0"	1.75	FBR	PTD	3	FLUSH	B	-	MTL	PTD	AL	1,5,6
102C	24'-0"	24'-0"	1.75	AL	MFR	4	ROLL UP DOOR	C	-	MTL	FAC		4,6
103	(2)3'-0"	8'-0"	1.75	AL	MRF	1	STOREFRONT	A	-	AL	FAC	AL	1,5,6
103A	3'-0"	8'-0"	1.375	SCW	PTD	2	FLUSH	B	-	WD	PTD	AL	1,2,3,6
103B	3'-0"	8'-0"	1.75	FBR	PTD	3	FLUSH	B	-	MTL	PTD	AL	1,5,6
103C	24'-0"	24'-0"	1.75	AL	MFR	4	ROLL UP DOOR	C	-	MTL	FAC		4,6

HARDWARE LEGEND

NO. 1
S.S. B.B. HINGES
AUTO CLOSER
PASSAGE HANDLES/PUSH/PULL
KEYED DEADBOLT
WEATHER STRIP

NO. 2
S.S. B.B HINGES
S.S. PASSAGE HARDWARE
AUTO-CLOSER
KEYED LOCK

NO. 3
S.S. B.B HINGES
S.S. PASSAGE HARDWARE
AUTO-CLOSER
DEADBOLT/KEYED LOCK
PEEP HOLE
WEATHER STRIPPING

NO. 4
MFR HARDWARE
MANUAL CHAIN OPENING

DOOR LEGEND

SCW	STAINED, SOLID CORE WOOD	MTL	METAL DOOR FRAME, WELDED	PTD	PAINTED
SCM	SOLID CORE METAL	WD	WOOD DOOR FRAME	GL	TEMPERED GLASS DOOR
HCM	HOLLOW CORE METAL	FAC	FACTORY FINISH	AL	ALUMINUM
HCW	HOLLOW CORE WOOD	MFR	MANUFACTURER RECOMMENDED		

NOTES

1. DOOR HARDWARE TO BE SELECTED BY OWNER.
2. INTERIOR DOORS & FRAMES, STYLE & FINISH TO BE SELECTED BY OWNER.
3. DOOR CASING TO BE SELECTED BY OWNER.
4. MANUFACTURER OR APPROVED EQUAL. SEE SPECIFICATIONS FOR CLEARANCES.
5. ALL EXTERIOR DOORS SHALL BE HURRICANE IMPACT RESISTANT, SEE ATTACHED NOA TEST REPORT AS APPLICABLE. SEE DETAILS PROVIDED BY MANUFACTURER.
   5.1. FLUSH EXTERIOR DOOR SHALL BE GALVANIZED STEEL ACCESS DOOR. PAINTED FIELD COLOR TO MATCH THE BUILDING.
   5.2. ROLL-UP DOORS BY . PAINTED FIELD COLOR TO MATCH BUILDING.
   5.3. STOREFRONT YKK AP MODEL # YES 40-FS - COMMERCIAL STOREFRONT SYSTEM OR EQUAL. COLOR WHITE.
6. ENSURE ALL DOORS OPEN & CLOSE WITH THE REQUIRED FORCE & SPEED AS PER FBC 2023 ACCESSIBILITY CODE (§404.2.9).

XXX FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	WALL BASE	WALLS				OTHER FINISHES	CEILINGS		NOTES: (SEE BELOW)
		TYPE	TYPE	N	E	S	W		MAT'L	HT./A.F.F.	
100	OFFICE	OPEN	-	-	-	-	-		PGW	11'-0"	1,2,3
100A	WAREHOUSE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2
100B	MEZZANINE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2
101	OFFICE	OPEN	-	-	-	-	-		OPEN	11'-0"	1,2,3
101A	WAREHOUSE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2
101B	MEZZANINE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2
102	OFFICE	OPEN	-	-	-	-	-		OPEN	11'-0"	1,2,3
102A	WAREHOUSE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2
102B	MEZZANINE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2
103	OFFICE	OPEN	-	-	-	-	-		OPEN	11'-0"	1,2,3
103A	WAREHOUSE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2
103B	MEZZANINE	OPEN	-	-	-	-	-		OPEN	OPEN	1,2

FINISH LEGEND

BFC	BROOM FINISHED CONCRETE	PWD	PAINTED WOOD MOULDING, BASE OR TRIM	PGW	PAINTED GYPSUM WALLBOARD
PC	POLISHED CONCRETE	SWD	STAINED WOOD MOULDING, BASE OR TRIM	PMRGW	PAINTED MOISTURE-RESISTANT GYP. WALLBD
TILE	CERAMIC FLOOR TILE	VB	VINYL 4" COVE BASE	UNFIN	UNFINISHED WALLS
EPOXY	EPOXY FLOOR SYSTEM W/ 6" INTEGRAL COVE BASE	TCB	6" COVE TILE BASE	FRP	FIBER-REINFORCED PLASTIC
		OPEN	OPEN TO EARTH	ACT	2X2 ACOUSTICAL CEILING TILE
VCT	VINYL COMPOSITION TILE				

NOTES

1. FINISH CLASSIFICATIONS FOR WALL, CEILING, AND FLOOR FINISHES:

   INTERIOR WALL & CEILING FINISH REQUIREMENTS AS PER TABLE 803:

AREA	OCCUPANCY
EXIT ENCLOSURES & EXIT PASSAGEWAYS	CLASS B
CORRIDORS	CLASS B
ROOMS & ENCLOSED SPACES	CLASS C

   FLOOR FINISH CLASSIFICATION SHALL BE CLASS II OR GREATER AS PER FBC SECTION 804

2. FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR ALL FINISHES AS LISTED BELOW:

   CLASS A FLAME SPREAD INDEX 0-25, SMOKE DEVELOPED INDEX 0-450
   CLASS B FLAME SPREAD INDEX 26-75, SMOKE-DEVELOPED INDEX 0-450
   CLASS C FLAME SPREAD INDEX 76-200, SMOKE-DEVELOPED INDEX 0-450

   FLOOR FINISH CLASSIFICATION SHALL BE CLASS II OR GREATER AS PER FBC SECTION 804.

3. PROVIDE (1) COAT OF PRIMER ON ALL WALLS AS APPLICABLE WITH (2) COATS PAINT, SMOOTH TEXTURE FINISH.
4. PROVIDE MOISTURE RESISTANT GYPSUM AT SINK AREA (ALL WET LOCATIONS.)

(X) WINDOW SCHEDULE

WIN. TYPE	SIZE		ROUGH OPENING		MUTTINS		FINISH		MANUFACTURER (STYLE)	MODEL #/SERIES	TYPE	NOTES: (SEE BELOW)
	WIDTH	HEIGHT	WIDTH	HEIGHT	COLOR	ELEV.	WINDOW	HARDW.				
A	18'-0	10'-0"	VERIFY	VERIFY	-	A	-	-	SEE COVERSHEET	YKK AP/YES 20 FS	FIXED	1,3,4,5
B	9'-0"	10'-0"	VERIFY	VERIFY	-	B	-	-	SEE COVERSHEET	YKK AP/YES 20 FS	FIXED	1,3,4,5
C	18'-0"	7'-0"	VERIFY	VERIFY	-	C	-	-	SEE COVERSHEET	YKK AP/YES 20 FS	FIXED	1,3,4,5
D	9'-0"	9'-0"	VERIFY	VERIFY	-	D	-	-	SEE COVERSHEET	YKK AP/YES 20 FS	FIXED	1,3,4,5
E	9'-0"	5'-0"	VERIFY	VERIFY		E			SEE COVERSHEET	YKK AP/YES 20 FS	FIXED	1,3,4,5

NOTES

1. IMPACT RESISTANT WINDOWS: SEE PRODUCT APPROVAL AS APPLICABLE. SEE DETAILS PROVIDED BY MANUFACTURER.
2. MANUFACTURER OR APPROVED EQUAL.
3. PROVIDE PRESCRIPTIVE CODE MINIMUM SHGC & U-FACTORS AS APPLICABLE. REFER TO GLASS SUPPLIER.
4. VERIFY ROUGH OPENING SIZES WITH MANUFACTURER PRIOR TO CONSTRUCTION.
5. INSTALL ALL WINDOWS AS PER PRODUCT APPROVAL AND MANUFACTURER SPECIFICATIONS.

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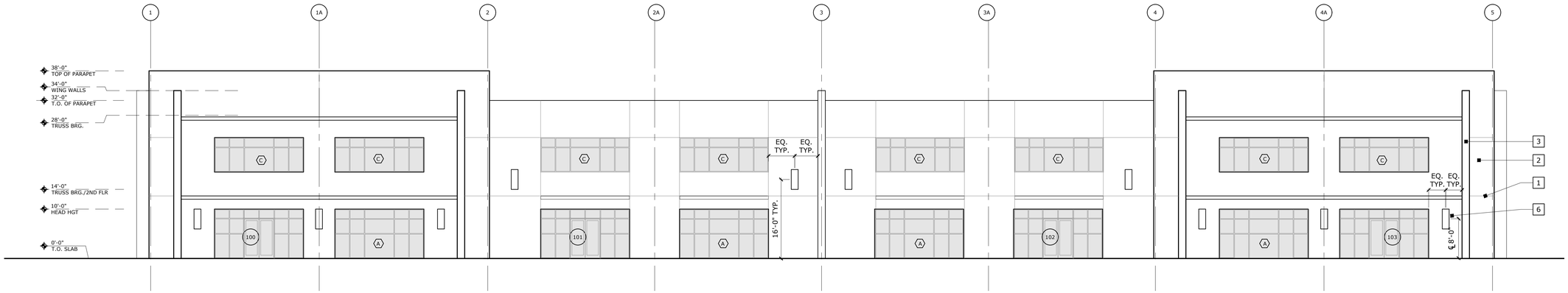
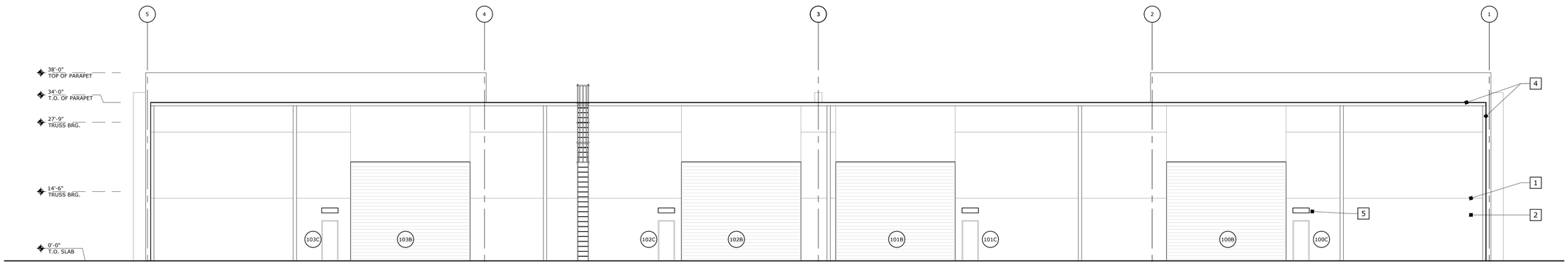
Schedules + Details



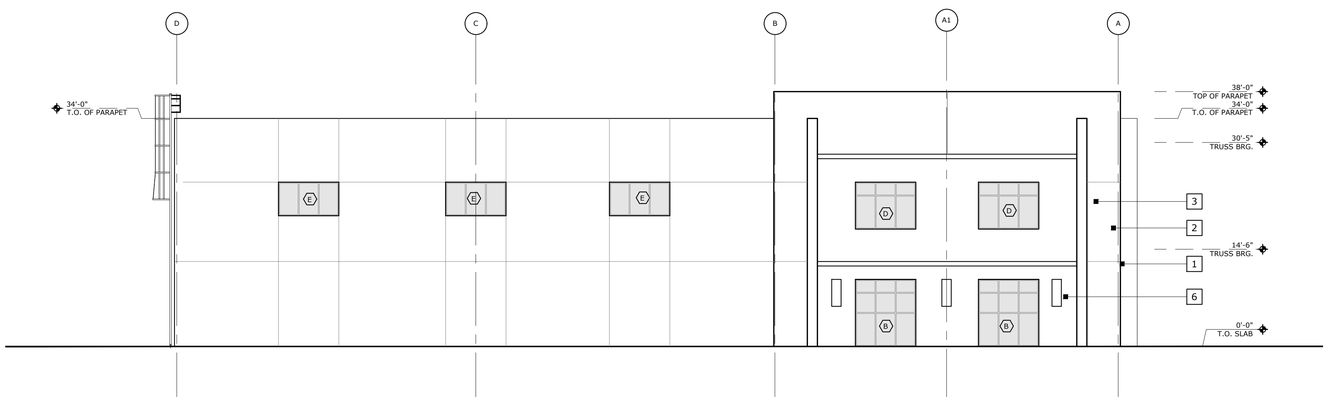
1 - SOUTH ELEVATION

SCALE: 3/32" = 1'-0"



2 - NORTH ELEVATION

SCALE: 3/32" = 1'-0"



3 - WEST/EAST (MIRRORED) ELEVATION

SCALE: 3/32" = 1'-0"

KEY NOTES

1. Tilt-up score line.
2. Painted tilt-up wall panel. Refer to Structural Drawings.
3. Light-gauge decorative walls. Finish with smooth stucco over ext. sheathing.
4. Pre-finished continuous gutter with downspouts down to grade. Refer to Civil Drawings for connection.
5. Wall pack light fixture. Refer to Electrical Lighting Plan for more information.
6. Decorative wall sconce light fixture. Refer to Electrical Lighting Plan for more information.

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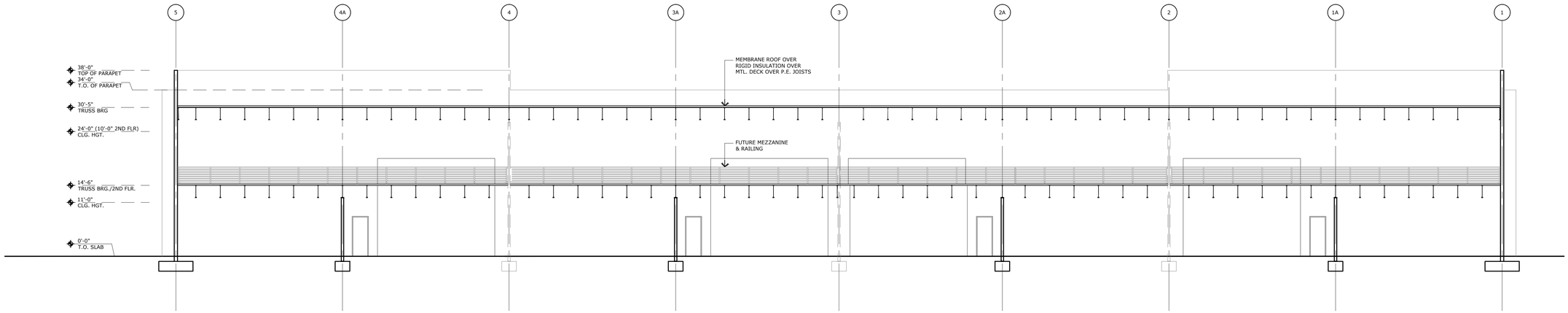
Exterior Elevations

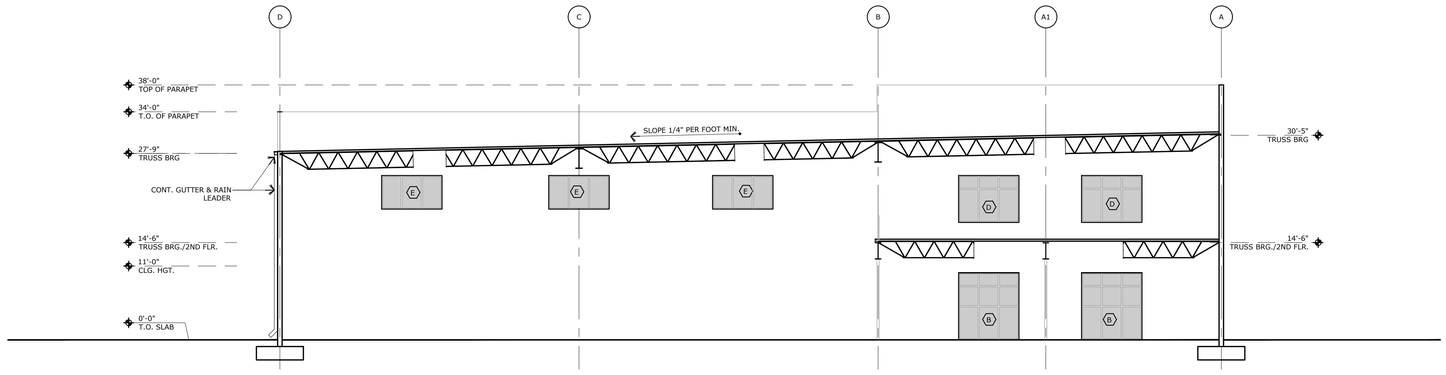
GENERAL NOTES

1. All exterior windows and doors shall be hurricane impact resistant.
2. All window and door headers shall align.
3. See Door + Window Schedule.
4. Refer to Structural Drawings for all foundation details, required reinforcing, & foundation wall configuration.
5. See Roof Plan for roofing slopes + scheduled materials.



1 - BUILDING SECTION

SCALE: 3/32" = 1'-0"



2 - BUILDING SECTION

SCALE: 3/32" = 1'-0"

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Building Sections

ABBREVIATIONS

AB	ANCHOR BOLTS	JT	JOINT
ABV	ABOVE	K	KIPS
ACI	AMERICAN CONCRETE INSTITUTE	KSI	KIPS PER SQUARE INCH
ADD'L	ADDITIONAL	LB/FT	POUNDS PER FOOT
AFG	ABOVE FINISH GRADE	L_d	DEVELOPMENT LENGTH
AGG	AGGREGATE	LL	LIVE LOAD
AHU	AIR HANDLING UNIT	LLH	LONG LEG HORIZONTAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LLV	LONG LEG VERTICAL
AISI	AMERICAN IRON AND STEEL INSTITUTE	LONG	LONGITUDINAL
ALT	ALTERNATE	LPT	LOW POINT
ANCR	ANCHOR	LRFD	LOAD RESISTANCE FACTOR DESIGN
ANG	ANGLE	LSH	LONG SIDE HORIZONTAL, LONG SLOTTED HOLE
APPD	APPROVED	LSV	LONG SIDE VERTICAL
APPROX	APPROXIMATE	M	MID-DEPTH
AR	ANCHOR ROD	MAX	MAXIMUM
ARCH	ARCHITECT, ARCHITECTURAL	MD	METAL DECK
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	MECH	MECHANICAL
ASTM	ASTM INTERNATIONAL	MEP	MECHANICAL, ELECTRICAL AND PLUMBING
AVG	AVERAGE	MEZZ	MEZZANINE
AWS	AMERICAN WELDING SOCIETY	MFR	MANUFACTURER
B	BASE	MID	MIDDLE
BKT	BRACKET	MIN	MINIMUM
BM	BEAM	MISC	MISCELLANEOUS
BO, B/	BOTTOM OF	MTL	METAL
BOT	BOTTOM	N	NORTH
BP	BASE PLATE	N/A	NOT APPLICABLE
BRG	BEARING	NE	NORTHEAST
BS	BOTH SIDES	NO	NUMBER
C	CHANNEL, CENTER	NOM	NOMINAL
CIP	CAST IN PLACE	NS	NEAR SIDE
CJ	CONTROL JOINT	NTS	NOT TO SCALE
CJP	COMPLETE JOINT PENETRATION	NW	NORTHWEST
CL	CENTERLINE	NWT	NORMAL WEIGHT
CLR	CLEAR/ CLEARANCE	OC	ON CENTER
COL	COLUMN	OH	OPPOSITE HAND
CONC	CONCRETE	OPNG	OPENING
CONFIG	CONFIGURATION	OPP	OPPOSITE
CONN	CONNECTION	PJP	PARTIAL JOINT PENETRATION
CONT	CONTINUOUS	PL	PLATE, PLAN, PROPERTY LINE
COORD	COORDINATE	PLF	POUNDS PER LINEAR FOOT/FEET
CORR	CORRUGATED	PRCST	PRECAST
D	DEEP, DEPTH	PREFAB	PREFABRICATED
DBL	DOUBLE	PSF	POUNDS PER SQUARE FOOT
DEG	DEGREE	PSI	POUNDS PER SQUARE INCH
DET	DETAIL	QTY	QUANTITY
DIA	DIAMETER	R	RISER, RADIUS
DIAG	DIAGONAL	RC	REINFORCED CONCRETE
DIM	DIMENSION	RD	ROOF DRAIN
DL	DEAD LOAD	RE	RIGHT END
DWG	DRAWING	REF	REFERENCE
E	EAST	REINF	REINFORCED / REINFORCEMENT
EA	EACH	REQD	REQUIRED
EB	EXPANSION BOLT	REQMTS	REQUIREMENTS
EF	EACH FACE	REV	REVISION
EJ	EXPANSION JOINT	RFI	REQUEST FOR INFORMATION
EL	ELEVATION	RO	ROUGH OPENING
EMBD	EMBEDMENT	S	SOUTH
EOR	ENGINEER OF RECORD	SCHED	SCHEDULE
EOS	EDGE OF SLAB	SE	SOUTHEAST
EOD	EDGE OF DECK	SECT	SECTION
EP	EMBED PLATE	SF	SQUARE FOOT / SQUARE FEET
EQ	EQUAL	SHT	SHEET
EQUIP	EQUIPMENT	SIM	SIMILAR
ES	EACH SIDE	SJ	SAW JOINT
EW	EACH WAY	SL	SLOPE
EXIST	EXISTING	SLV	SLEEVE
EXP	EXPANSION	SOG	SLAB ON GRADE
EXT	EXTERIOR/EXTENSION	SPEC	SPECIFICATION
F	FORCE	SQ	SQUARE
FBC	FLORIDA BUILDING CODE	SS	STAINLESS STEEL
FDN	FOUNDATION	SSH	SHORT SLOTTED HOLE, SHORT SIDE HORIZONTAL
FMG	FRAMING	STD	STANDARD
FO	FACE OF	STL	STEEL
FS	FAR SIDE	STIFF	STIFFENER
FT	FOOT / FEET	STRUCT	STRUCTURE / STRUCTURAL
FTG	FOOTING	SW	SOUTHWEST, SHEARWALL, SWITCH
GA	GAUGE	SYM	SYMMETRICAL
GALV	GALVANIZED	T&B	TOP AND BOTTOM
GC	GENERAL CONTRACTOR	TBD	TO BE DETERMINED
H	HIGH	TE	THICKEND EDGE
HD	HOT DIP, HEAD, HEAVY DUTY	THK	THICK, THICKNESS
HDS	HEADED STUD	THRU	THROUGH
HGT	HEIGHT	TO, T/	TOP OF
HK	HOOK	TOL	TOLERANCE
HORIZ	HORIZONTAL	TYP	TYPICAL
HPT	HIGH POINT	UON	UNLESS OTHERWISE NOTED
HSS	HOLLOW STRUCTURAL SECTION	VERT	VERTICAL
IF	INSIDE FACE	VIF	VERIFY IN FIELD
IJ	ISOLATION JOINT	W	WEST, WIDE, WIDTH
IN	INCH / INCHES	W/	WITH
INCL	INCLUDING	WF	WIDE FLANGE
INFO	INFORMATION	WL	WIND LOAD
INT	INTERIOR	WP	WORK POINT
JST	JOIST	WWR	WELDED WIRE REINFORCING

SHEET LIST

NUMBER	NAME	ISSUE DATE	REVISION	REVISION DATE
S0.1	GENERAL NOTES	11-Apr-25		
S0.2	GENERAL NOTES & WIND PRESSURES	11-Apr-25		
S1.1	FOUNDATION PLAN	11-Apr-25		
S1.2	ROOF FRAMING PLAN	11-Apr-25		
S1.3	SECTIONS	11-Apr-25		
S5.1	TILT-UP WALL TYPICAL DETAILS	11-Apr-25		
S5.2	TILT-UP JOINT DETAILS	11-Apr-25		
S5.3	FRAMING DETAILS	11-Apr-25		

SYMBOL LEGEND

SIM 1 S-101	SECTION MARK	1 S-101	CALLOUT MARK
1 S-101	ELEVATION MARK	1 / S-101	VIEW REFERENCE MARK
N	NORTH ARROW	WF-#	CONTINUOUS WALL FOOTING MARK
		F1	ISOLATED COLUMN FOOTING MARK
		HSS4x4x1/4	STEEL COLUMN
1	DRAWING REVISION MARK	W18X35	STEEL BEAM MARK
	ELEVATION INDICATOR		

STRUCTURAL GENERAL NOTES

PART 1 - STRUCTURAL DESIGN CRITERIA

APPLICABLE CODES AND STANDARDS

1. 2023 FLORIDA BUILDING CODE (FBC)
2. ASCE 7-22 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES W/ SUPPLEMENT NO. 1
3. ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
4. ACI 315 MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES
5. ANSI/AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
6. AWS D1.1 STRUCTURAL WELDING CODE - STEEL
7. ASTM MATERIAL STANDARDS AS NOTED.

DESIGN LOAD DATA

1. SUPERIMPOSED DESIGN GRAVITY LOADS

DESCRIPTION	LIVE LOAD (PSF)	DEAD LOAD (PSF)
ROOF	20	15

2. WIND DESIGN DATA
   - A. ULTIMATE DESIGN WIND SPEED — V_{ult} = 160 MPH
   - B. NOMINAL DESIGN WIND SPEED — V_{asd} = 124 MPH
   - C. RISK CATEGORY — II
   - D. WIND EXPOSURE — B
   - E. INTERNAL PRESSURE COEFFICIENT — ±0.18

3. ROOF RAIN LOAD DATA
   - RAIN LOAD — R = ## PSF
   - RAIN INTENSITY — i =

PART II CONSTRUCTION NOTES

GENERAL

1. THE FOLLOWING REQUIREMENTS TOGETHER WITH THE PROJECT PLANS AND SPECIFICATIONS SHALL APPLY TO THE STRUCTURES IN THIS CONTRACT. NOTES ON THE INDIVIDUAL DRAWINGS SHALL TAKE PRIORITY OVER GENERAL STRUCTURAL NOTES HEREIN.
2. TYPICAL NOTES AND DETAILS SHOWN ON STRUCTURAL TYPICAL DETAILS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE ON THE CONTRACT DOCUMENTS. DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR THE MOST NEARLY SIMILAR CONDITION ON THE DRAWINGS AS DETERMINED BY THE ENGINEER.
3. STRUCTURAL DRAWINGS SHOULD NOT BE SCALED. PRINTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS AND LARGE SCALE DETAILS OVER SMALL SCALE.
4. FOR ELEVATIONS REFER TO THE PLAN SHEETS.
5. IN THE EVENT OF A GRID LINE DIMENSION CONFLICT, THE ARCHITECTURAL DRAWINGS SHALL GOVERN AND THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF SUCH A CONFLICT TO DETERMINE IMPACT ON STRUCTURAL PERFORMANCE.
6. LOADS ON THE STRUCTURE SHALL NOT EXCEED THE DESIGN LOADS INDICATED IN THE DRAWINGS.
7. ALTERNATES FOR SPECIFIED ITEMS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. CONTRACTOR SHALL BUDGET FOR ASSOCIATED ENGINEERING FEES FOR REVIEWING THESE SUBMITTALS.
8. UNLESS NOTED OTHERWISE, TESTING AND INSPECTION SERVICES CALLED FOR SHALL BE PAID BY THE OWNER, AND ARE NOT PART OF THE BASIC DESIGN SERVICES OF THE STRUCTURAL ENGINEER.

NON-STRUCTURAL ITEMS SHOWN ON DRAWINGS

1. THE FOLLOWING NON-STRUCTURAL ITEMS MAY BE SHOWN ON THE STRUCTURAL AND/OR FOUNDATION DRAWINGS FOR THE PURPOSE OF CLARITY IN INTERFACE WITH STRUCTURAL AND/OR FOUNDATION WORK. ITEMS BELOW MAY NOT BE FULLY DEFINED ON THE STRUCTURAL/FOUNDATION DRAWINGS. THE INFORMATION FOR NON-STRUCTURAL ELEMENTS IS FURNISHED BY OTHER CONSULTANTS AS LISTED BELOW. ALL RFI AND SHOP DRAWINGS RELATED TO THESE NON-STRUCTURAL ITEMS SHALL BE SUBMITTED TO THE CONSULTANTS LISTED BELOW FOR THEIR REVIEW AND APPROVAL

   GEOTECHNICAL ENGINEER:
   - FOUNDATION/UNDERSLAB WATERPROOFING, DAMPPROOFING SYSTEMS
   - ROCK ANCHORS
   - CAISSONS AND PILES, INCLUDING REINFORCEMENT
   - ROCK CONTOURS

   CIVIL ENGINEER:
   - PAVEMENT INCLUDING MIX DESIGN AND REINFORCEMENT
   - WALL AND UNDERSLAB DRAINAGE SYSTEM, INCLUDING SUMP PITS, GRAVEL & PIPING, CLEANOUTS
   - RETENTION/DETENTION PONDS
   - GRADING

   ARCHITECT OF RECORD:
   - SUMP PITS
   - WATERPROOFING/DAMPPROOFING APPLIED TO EXPOSED SURFACES, ELEVATOR OR SUMP PIT INTERIOR SURFACES
   - PAINT
   - FIREPROOFING
   - CONCRETE CURBS: HEIGHT, WIDTH, EXTENT, LOCATION
   - BRICK, BLOCK, TILE MASONRY, METAL PANELS, PRECAST FACADE PANELS, CURTAIN WALLS AND ALL OTHER FACADE SYSTEMS
   - ROOFING SYSTEMS, DRAIN LOCATIONS, SLOPES TO DRAINS
   - FILLS, INSULATION, PAVERS OR GRAVEL
   - FLOATING/SECONDARY SLABS

   MECHANICAL, ELECTRICAL, & PLUMBING ENGINEERS:
   - HVAC EQUIPMENT
   - EQUIPMENT SUPPORT CURBS
   - GENERATORS
   - DUCTS & PIPES FOR PENETRATIONS IN STRUCTURE
   - SUMP PUMPS
   - FIRE SPRINKLERS

COORDINATION

1. THE STRUCTURAL DRAWINGS ARE PART OF THE CONSTRUCTIONS DOCUMENTS AND DO NOT PROVIDE ALL THE INFORMATION TO PROPERLY COMPLETE THE PROJECT STRUCTURE. THE CONTRACT DOCUMENTS CONSIST OF DRAWINGS AND DESIGN INFORMATION PREPARED BY MULTIPLE DISCIPLINES AND MUST BE USED AS A WHOLE AND IN COORDINATION WITH EACH OTHER.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR ELEVATIONS, DOORS, WINDOW, NON-LOAD BEARING WALLS, CURTAIN WALLS, ELEVATORS, STAIRS, SLOPES, CURBS, DRAINS, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES, ETC. NOT INCLUDED IN THE STRUCTURAL DRAWINGS.
3. STRUCTURAL DRAWINGS AND SPECIFICATIONS SHALL BE USED IN CONJUNCTION WITH THE CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS AND SPECIFICATIONS FOR LOCATION AND SIZE OF OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, CURBS, EMBEDDED SLEEVES AND INSERTS, SPECIAL FLOOR FINISHES, DOOR THRESHOLDS, SLOPES TO DRAWINGS, NAILERS, MISCELLANEOUS DETAILS, ETC.
4. THE LOCATION AND SIZE OF OPENINGS IN STRUCTURAL ELEMENTS SHALL BE COORDINATED BY THE CONTRACTOR. THE CONTRACTOR IS TO PROVIDE ALL ADDITIONAL FRAMING AND/OR REINFORCING TO ACCOMMODATE OPENINGS AS REQUIRED BY THE APPLICABLE STANDARD DETAILS SHOWN ON THE STRUCTURAL DRAWINGS OR PROVIDED BY THE SPECIALTY ENGINEER.
5. NO HOLES, NOTCHES, BLOCKOUTS, OPENINGS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS DETAILS ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
6. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXACT WEIGHT AND/OR LOCATION ELECTRICAL AND MECHANICAL ROOF MOUNTED OR SUSPENDED EQUIPMENT.
7. WHERE DIMENSIONS ARE PROVIDED FOR OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, CURBS, ETC., BUT MAY BE AFFECTED BY THE EQUIPMENT PURCHASED, THE CONTRACTOR SHALL VERIFY THE INFORMATION PROVIDED PRIOR TO CONSTRUCTION.
8. PRIOR TO ORDERING MATERIALS OR DOING ANY WORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS TO PROPERLY SIZE OR FIT THE WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED BY THE OWNER RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT.
9. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEERS OF ANY APPARENT DISCREPANCIES OR OMISSIONS OF INFORMATION NOT SHOWN ON THE STRUCTURAL DRAWINGS DURING THE SHOP DRAWINGS SUBMITTAL PROCESS AND BEFORE PROCEEDING WITH ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING ERRORS RESULTING FROM A LACK OF COORDINATION OF DOCUMENTS.
10. IN CASE OF DISCREPANCIES BETWEEN THE PLANS, SPECIFICATIONS, REFERENCE STANDARDS, AND GOVERNING CODE, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
11. IN CASE OF OMISSIONS AND CONFLICTS BETWEEN THE PLANS, SPECIFICATIONS, AND SITE CONDITIONS THE ENGINEER SHALL BE NOTIFIED BEFORE PROCEEDING WITH THE WORK.

CONTRACTOR RESPONSIBILITIES

1. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROCEDURES. THE STRUCTURAL ENGINEER OF RECORD IS NOT RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION OR FOR RELATED SAFETY PROCEDURES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE SURVEY AND FIELD VERIFYING ALL DIMENSIONS, ELEVATIONS, AND EXISTING SITE CONDITIONS PRIOR TO STARTING WORK. THE ARCHITECT/ENGINEER SHALL BE NOTIFIED IMMEDIATELY, IN WRITING, OF ANY DISCREPANCIES. MODIFICATION OF DETAILS OF CONSTRUCTION SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
3. CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE; PROTECT THE WORK, ADJACENT PROPERTY, AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED BY NEW WORK.

CONTRACTOR RESPONSIBILITIES (CONT'D)

4. ALL STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LOADS LISTED ONLY AS COMPLETED STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRUCTURAL STRENGTH AND STABILITY OF ALL PARTLY COMPLETED STRUCTURE, INCLUDING SHORING AND TEMPORARY BRACING OF ALL INTERMEDIATE CONDITIONS DURING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL ALSO ENSURE THAT ITS OPERATIONS AND PROCEDURES PROVIDE NO LOADING GREATER THAN THE DESIGN LOADS LISTED.
5. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS, TIE-DOWNS, AND/OR SHORING MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
6. THE GENERAL CONTRACTOR SHALL SUPPLY CALCULATIONS AND SHOP DRAWINGS TO THE EOR PRIOR TO CONSTRUCTION FOR ALL SHORING AND RE-SHORING DESIGNED BY A DELEGATED ENGINEER EXPERIENCE IN SUCH WORK AND LICENSED IN THE STATE OF **FLORIDA**. SUBMIT DRAWINGS TO THE ARCHITECT, ENGINEER, SPECIAL INSPECTOR, AND BUILDING OFFICIAL FOR RECORD ONLY.
7. THE DELEGATED ENGINEER WHO PREPARES THE SHORING AND RESHORING DRAWINGS SHALL INSPECT THE SHORING AND RESHORING. THEY SHALL PROVIDE A FIELD REPORT OF EACH INSPECTION TO THE CONTRACTOR AND ARCHITECT.

INSPECTIONS

1. A MINIMUM OF ONE FIELD OBSERVATION BY THE ENGINEER OF RECORD IS REQUIRED NEAR THE COMPLETION OF THE BUILDING STRUCTURE AND PRIOR TO OCCUPANCY, FOR DETERMINING GENERAL PERFORMANCE OF THE DESIGN. ADDITIONAL OBSERVATIONS SHALL BE ARRANGED AS DESCRIBED IN NOTE BELOW.
2. NO LATER THAN 24 HOURS IN ADVANCE, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED TO OBSERVE THE WORK AS ARRANGED WITH THE BUILDING DEPARTMENT OR REQUIRED BY THE OWNER WHICH WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETINGS.
3. THIS STRUCTURE IS A THRESHOLD BUILDING AS DEFINED BY THE **FLORIDA** BUILDING CODE. REFER TO THRESHOLD INSPECTION PLAN FOR ADDITIONAL INFORMATION.

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS FOR ALL PARTS OF THE WORK INCLUDING DESCRIPTION OF DEMOLITION, TEMPORARY BRACING, CONSTRUCTION METHODS AND SEQUENCING, WHERE APPLICABLE. NO PERFORMANCE OF WORK SHALL COMMENCE WITHOUT REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER.
2. WHERE SHOP DRAWINGS, MILL TESTS, OR OTHER ITEMS ARE REQUESTED, SUBMITTAL SHALL BE MADE TO THE STRUCTURAL ENGINEER BEFORE FABRICATION OR INSTALLATION IN THE STRUCTURE, UNLESS SPECIFICALLY NOTED.
3. REVIEW OF SUBMITTALS BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AS PRESENTED BY THE CONTRACT DOCUMENTS. NO DETAILED CHECK OF QUANTITIES OR DIMENSIONS WILL BE MADE. ONLY THOSE SHOP DRAWINGS REQUIRED BY THE CONTRACT DOCUMENTS TO BE SUBMITTED WILL BE REVIEWED. ALL OTHERS WILL BE RETURNED WITHOUT COMMENT.
4. REVIEW OF SHOP DRAWINGS IS TO BE LIMITED TO TWO (2) REVIEWS PER SUBMITTAL WITHIN THE SCOPE OF BASIC SERVICES (I.E., INITIAL SUBMITTAL REVIEW AND ONE RESUBMITTAL, IF NECESSARY). REVIEW OF ADDITIONAL RESUBMITTALS WILL BE CONSIDERED ADDITIONAL SERVICES, FOR WHICH THE GENERAL CONTRACTOR MAY BE HELD RESPONSIBLE. ADDITIONAL SERVICES COMPENSATION TO THE ENGINEER WILL BE IN ACCORDANCE WITH THE TERMS OF THE ARCHITECT-ENGINEER AGREEMENT FOR THIS PROJECT.
5. ALL SHOP DRAWINGS MUST BEAR EVIDENCE OF THE CONTRACTOR'S APPROVAL PRIOR TO SUBMITTING TO THE A/E. SHOP DRAWINGS WITHOUT BEARING THIS EVIDENCE WILL BE RETURNED WITHOUT COMMENT.
6. ALL CHANGES AND ADDITIONS MADE ON RESUBMITTALS MUST BE CLEARLY FLAGGED AND NOTED. THE PURPOSE OF THE RESUBMITTALS MUST BE CLEARLY NOTED ON THE LETTER OF TRANSMITTAL. ARCHITECT/ENGINEER REVIEW WILL BE LIMITED TO THOSE ITEMS CAUSING THE RESUBMITTAL.
7. FABRICATION PRIOR TO THE RECEiPT OF AN APPROVED SHOP DRAWINGS SHALL BE AT THE CONTRACTOR'S OWN RISK AND THAT INSTALLATION OF ANY WORK PRIOR TO RECEIPT OF AN APPROVED SHOP DRAWING SHALL BE STRICTLY PROHIBITED.
8. SHOP DRAWINGS NOT MEETING THE ABOVE CRITERIA OR SUBMITTED AFTER FABRICATION WILL NOT BE REVIEWED.
9. SHOP DRAWINGS SHALL BE SUBMITTED IN COMPLETE PACKAGES FOR THE FOLLOWING:
   - A. CONCRETE MIX DESIGN
   - B. CONCRETE REINFORCING STEEL AND WELDED WIRE FABRIC
   - C. CONCRETE MASONRY UNIT SUBMITTAL AND OTHER MASONRY ACCESSORIES
   - D. STRUCTURAL STEEL
   - E. STEEL DECK
   - F. ENGINEERED STEEL JOISTS AND JOIST GIRDERS
   - G. STRUCTURAL LIGHT-GAUGE METAL STUD FRAMING
   - H. PRE-ENGINEERED STAIRS
   - I. PRE-ENGINEERED WOOD TRUSSES
   - J. PRE-ENGINEERED METAL TRUSSES
   - K. CONCRETE TILT-UP PANELS
   - L. POST-TENSIONED CONCRETE
   - M. PRECAST CONCRETE, INCLUDING BUT NOT LIMITED TO HOLLOW CORE PLANKS, PRECAST JOISTS, SOFFIT BEAMS, DOUBLE-TEES, FILIGREE, PRECAST LINTELS AND OTHER PRECAST CONCRETE SYSTEMS
   - N. COMPOSITE FLOOR/ROOF FRAMING (I.E. EPICORE, HAMBRO, SUPRANO, ETC.)
   - O. PRE-ENGINEERED METAL BUILDINGS
   - P. STRUCTURAL ALUMINUM
   - Q. PRE-ENGINEERED WOOD SYSTEMS (I.E. TJI, PARALAM, MICROLAM, ETC.)
   - R. HEAVY TIMBER WOOD FRAMING
10. PRE-ENGINEERED ITEMS SHALL BE SUBMITTED SIGNED AND SEALED BY A SPECIALTY ENGINEER REGISTERED IN THE STATE OF **FLORIDA** AND IN ACCORDANCE WITH THE FOLLOWING SECTION.

SPECIALTY ENGINEERED PRODUCTS

1. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE THE PROPER SUBMISSION OF SPECIALTY ENGINEERED SHOP DRAWINGS WHICH SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF **FLORIDA**.
2. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THE SPECIALTY ENGINEERED SHOP DRAWINGS ARE SUBMITTED IN A TIMELY MANNER TO ALLOW REVIEWS AND RESUBMISSIONS AS REQUIRED.
3. ALL SPECIALTY ENGINEERED PRODUCTS SHALL BE DESIGNED FOR THE APPROPRIATE GRAVITY LOADS AND ENVIRONMENTAL LOADS.
4. IN ADDITION TO THE LOADS SHOWN IN THE DESIGN LOAD SCHEDULE, THE SPECIALTY ENGINEER SHALL DESIGN FOR THE WEIGHT OF ALL MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND FIXTURES, AS WELL AS CABINETS, AND OVERHEAD DOORS.
5. INTERIOR SPECIALTY PRODUCTS SHALL BE DESIGNED FOR A LATERAL LOADS TO ASSURE STABILITY.
6. SPECIALTY ENGINEERED PRODUCTS SHALL BE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   - A. PRE-CAST CONCRETE JOISTS AND SOFFIT BEAMS.
   - B. OPEN WEB STEEL JOISTS.
   - C. LIGHT GAUGE METAL, INCLUDING BUT NOT LIMITED TO, SOFFITS, CLADDING, CEILINGS, ETC.
   - D. GLAZED CURTAIN WALLS.
   - E. PRE-FABRICATED STEEL STAIRS.
   - F. RAILINGS.
   - G. STRUCTURAL STEEL CONNECTIONS REQUIRING ENGINEERING INPUT.
   - H. PRE-CAST CONCRETE PRIVACY SITE WALLS.
   - I. MISCELLANEOUS METALS INCLUDING STEEL STAIRS, HAND RAILS AND SAFETY RAILS, MECHANICAL EQUIPMENT SUPPORT, FRAMES THAT SUPPORT OF MECHANICAL SYSTEMS.
   - J. PHOTOVOLTAIC RACK SUPPORT FRAME/SYSTEM AND ANCHORAGE TO SUPPORT BUILDING / STRUCTURE.
   - K. STEEL OR ALUMINUM PERGOLA.
   - L. MISCELLANEOUS HANGARS, CHANDELIERS, CABINETS, METAL FRAMES, LADDERS, RIGGING, HANGING WALLS, RAILINGS, GLAZING FRAMES, CLADDING SUCH AS STONE, PRECAST, ALUMINUM, METAL PANELS, CABLE BARRIER SYSTEMS, ETC. OR ANY OTHER MISCELLANEOUS PRODUCT REQUIRED BY ANY OF THE CONSTRUCTION DOCUMENTS.
7. GENERAL CONTRACTORS TO INCLUDE IN THEIR BID THE COST OF THE ABOVE NOTED SPECIALTY ENGINEERING.
8. SPECIALTY ENGINEER:
   - A. DEFINITION - A **FLORIDA** REGISTERED PROFESSIONAL ENGINEER; NOT THE STRUCTURAL ENGINEER OF RECORD, WHO SPECIALIZES IN AND WHO UNDERTAKES THE DESIGN OF STRUCTURAL COMPONENTS OR STRUCTURAL SYSTEMS INCLUDED IN A SPECIFIC SUBMITTAL PREPARED FOR THIS PROJECT.
   - B. SHALL BE:
     - a. AN EMPLOYEE OR OFFICER OF A FABRICATOR.
     - b. AN EMPLOYEE OR OFFICER OF AN ENTITY SUPPLYING COMPONENTS TO A FABRICATOR.
     - c. AN INDEPENDENT CONSULTANT RETAINED BY THE FABRICATOR OR HIS SUPPLIER.
9. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCTS UTILIZED. GENERIC PRODUCTS WILL NOT BE ACCEPTED.
10. SHOP DRAWINGS AND CALCULATIONS MUST BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE SPECIALTY ENGINEER.
11. SHOP DRAWINGS AND CALCULATIONS REQUIRE THE SEAL, DATE AND SIGNATURE OF THE SPECIALTY ENGINEER. COMPUTER PRINTOUTS ARE AN ACCEPTABLE SUBSTITUTE FOR MANUAL COMPUTATIONS, PROVIDED THEY ARE ACCOMPANIED BY SUFFICIENT DESCRIPTIVE INFORMATION TO PERMIT THEIR PROPER EVALUATION. SUCH DESCRIPTIVE INFORMATION SHALL BEAR THE IMPRESSED OR DIGITAL SEAL AND SIGNATURE OF THE SPECIALTY ENGINEER AS AN INDICATION THAT HE HAS ACCEPTED RESPONSIBILITY FOR THE RESULTS. THE STRUCTURAL ENGINEER WILL RETAIN ONE SIGNED AND SEALED BLACKLINE PRINT FOR RECORD.
12. REVIEW OF SUBMITTALS BY THE ENGINEER OF RECORD IS LIMITED TO VERIFYING THE FOLLOWING:
    - A. THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHED.
    - B. THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE SPECIALTY ENGINEER.
    - C. THAT THE SPECIALTY ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA. (NO DETAILED CHECK OF CALCULATIONS WILL BE MADE.)
    - D. THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS. (NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE.)
13. A LIST OF DRAWINGS SHALL BE PREPARED AND MAINTAINED BY THE GENERAL CONTRACTOR FOR ALL SHOP DRAWINGS REQUIRING PARTICIPATION OF A SPECIALTY ENGINEER. THE LIST SHALL CONTAIN PROJECT NAME, NAME OF GENERAL CONTRACTOR, NAME OF SUBCONTRACTOR, NAME OF SPECIALTY ENGINEER, DRAWING NUMBER, DRAWING TITLE AND LATEST REVISION NUMBER AND DATE. FOR PARTIAL SUBMITTALS, THE LIST SHALL CONTAIN ALL ANTICIPATED DRAWING NUMBERS AND TITLES REQUIRED TO COMPLETE THE CONTRACT. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE LATEST UPDATED LIST OF DRAWINGS WITH EACH SUBMITTAL.

EARTHWORK

1. ALL EARTHWORK, INCLUDING BUT NOT LIMITED TO DEWATERING, EXCAVATION, FILL, AND COMPACTION IN PREPARATION FOR SLAB ON GRADE, WALLS, AND FOUNDATIONS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS IN THE GEOTECHNICAL INVESTIGATION REPORT BY ______________________________ PROJECT NUMBER ____________ DATED ____________.
2. ALL FOUNDATION EXCAVATIONS SHALL BE OBSERVED AND APPROVED BY THE GEOTECHNICAL ENGINEER TO ASSURE THE ADEQUACY OF ALL SUBGRADES, FILLS AND BACKFILLS BEFORE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS AND WALLS. THEY SHALL SUBMIT REPORTS TO THE STRUCTURAL ENGINEER DESCRIBING HIS INVESTIGATIONS INCLUDING ANY NON-CONFORMING WORK. CERTIFICATION SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF **FLORIDA** AND SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER PRIOR TO BEGINNING FOUNDATION WORK.
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURAL, STREETS, AND UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND OSHA REGULATIONS.
4. LOCATE EXISTING UTILITIES AND PROTECT FROM DAMAGE PRIOR TO EXCAVATION. DO NOT BREAK OR DISCONNECT UTILITY CONNECTIONS WITHOUT NOTIFICATION A MINIMUM OF 48 HOURS IN ADVANCE AND PROVIDING ACCEPTABLE TEMPORARY SERVICES. DAMAGES CAUSED BY CONTRACTOR NEGLIGENCE SHALL BE REPAIRED AS DIRECTED BY THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.
5. PROTECT STRUCTURES, SIDEWALKS, PAVEMENTS AND OTHER FACILITIES THAT ARE TO REMAIN IN AREAS OF WORK BY PROVIDING TEMPORARY OR PERMANENT SUPPORTS, SHORING, SHEETING, UNDERPINNING, OR BRACING SO THAT NO HORIZONTAL MOVEMENT OR VERTICAL SETTLEMENT OCCURS. COMPONENTS OF ANY SUPPORT OF EXCAVATION SYSTEM SHALL REMAIN IN PLACE UNTIL ALL PERMANENT STRUCTURAL SYSTEMS AT AND BELOW GROUND ARE IN PLACE.
6. DO NOT EXCAVATE BELOW THE BEARING ELEVATION OF ANY COMPLETED FOOTING NOR ANY CLOSER TO THE FOOTING THAN A SLOPE OF TWO HORIZONTAL (MEASURED FROM EDGE OF FOOTING TO NEAREST POINT IN EXCAVATION) TO ONE VERTICAL.
7. REMOVE EXISTING WALKS, DRIVES, CURBS, FOUNDATIONS, CISTERNS, BOULDERS, VEGETATION (TREES, STUMPS, AND ROOTS 1 INCH OR LARGER IN DIAMETER) A MINIMUM OF 5' - 0" BEYOND ALL FOUNDATION EDGES.
8. REMOVE ANY ABANDONED SEWER OR SERVICE LINE(S) ENCOUNTERED DURING EXCAVATION WITHIN THE BUILDING LINES. NOTIFY ARCHITECT/ENGINEER IF ANY SUCH LINES SHOULD BE FOUND BELOW OR ADJACENT TO FOUNDATION LOCATIONS.
9. ALL EXCAVATIONS SHALL BE DEWATERED SUCH THAT WATER DOES NOT POND IN FOUNDATION EXCAVATION. FAILURE TO KEEP EXCAVATION DRY WILL BE CAUSE FOR REQUIRING CONTRACTOR TO REMOVE WATER DAMAGED SOILS AND REPLACE WITH CONTROLLED FILL AS DIRECTED. NO CONCRETE SHALL BE PLACED IN WATER.
10. STRUCTURAL FILL SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE REFERENCED GEOTECHNICAL INVESTIGATION REPORT. FILL MATERIAL SHALL BE CLEAN, FREE OF ORGANIC MATERIAL, AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C136, ASTM C117, AND APPROVED BY THE GEOTECHNICAL ENGINEER.
11. SITE FILL AND BACKFILL MATERIAL SHALL CONSIST OF EXISTING ON-SITE MATERIAL FREE OF DEBRIS, BOULDERS, ORGANIC MATERIALS, AND SILT IF THE ABOVE REQUIREMENTS ARE MET AND THE MATERIAL IS APPROVED BY THE GEOTECHNICAL ENGINEER. STOCKPILE REUSABLE EXCAVATED MATERIALS WHERE DIRECTED BY CONTRACTOR UNTIL REQUIRED BY BACKFILL AND FILL.
12. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF UNUSABLE EXCAVATED MATERIAL.
13. STRUCTURAL FILL/BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS IN 6 INCH TO 8 INCH LOOSE LIFTS AND SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST **95%** OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 OR THE APPLICABLE ASTM STANDARD DESIGNATED BY THE GEOTECHNICAL ENGINEER UNLESS OTHERWISE RECOMMENDED IN THE REFERENCED GEOTECHNICAL INVESTIGATION REPORT. COMPACTION WITHIN 5 FEET OF FOUNDATION WALLS SHALL ONLY BE DONE WITH HAND OPERATED EQUIPMENT.
14. NO FILL OR BACKFILL SHALL BE "SETTLED" BY THE USE OF WATER.
15. TESTING:
    - A. THE OWNER SHALL PROVIDE THE SERVICES OF A QUALIFIED LICENSED GEOTECHNICAL ENGINEER TO APPROVE THE EXISTING SOIL AFTER EXCAVATION FOR FOUNDATIONS, SUPERVISE THE PLACING OF CONTROLLED FILL, AND TEST COMPACTION OF THE CONTROLLED FILL.
    - B. THE CONTRACTOR SHALL COOPERATE WITH THE GEOTECHNICAL ENGINEERING THE SCHEDULING AND EXECUTION OF THE WORK SO THAT THE REQUIRED TESTS AND INSPECTIONS MAY BE PERFORMED.
    - C. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER AS FAR AS POSSIBLE IN ADVANCE OF THE READINESS OF THE WORK. NO WORK SHALL PROCEED UNTIL THE REQUIRED INSPECTIONS AND TESTS HAVE BEEN PERFORMED.
    - D. NOTIFY TESTING AGENCY PRIOR TO PROCEEDING WITH PLACEMENT OF FOUNDATIONS, FILL OR OTHER CONSTRUCTION OVER SUB GRADES AND FILL. THE TESTING AGENCY MUST INSPECT AND APPROVE SUB GRADES AND FILL LAYERS BEFORE FURTHER CONSTRUCTION WORK IS PERFORMED THERE ON.
    - E. FILL PLACEMENT AND COMPACTION SHALL BE MONITORED AND ACCEPTED BY THE TESTING AGENCY AND GEOTECHNICAL ENGINEER. A MINIMUM OF ONE FIELD DENSITY TEST IN ACCORDANCE WITH ASTM D1556 OR ASTM D2922 FOR EACH 2500 SQUARE FEET OF EACH LAYER. THE TESTING AGENCY SHALL RANDOMLY SELECT TEST LOCATIONS.
    - F. REPORTS OF TESTS, INSPECTIONS, AND APPROVALS PERFORMED BY THE GEOTECHNICAL ENGINEER SHALL BE SUBMITTED TO THE GENERAL OWNER CONTRACTOR, ARCHITECT, AND STRUCTURAL ENGINEER.
16. SOIL WITHIN THE BUILDING EXTENTS SHALL BE TREATED FOR TERMITES. CERTIFICATE OF PROTECTIVE TREATMENT SHALL BE POSTED ON SITE IN ACCORDANCE WITH **FBC 105.10**.
17. NO CONCRETE FOUNDATION, PILE CAP, OR SLAB ON GRADE SHALL BE POURED SUBGRADE PREPARATION HAS BEEN APPROVED BY GEOTECHNICAL ENGINEER.

SHALLOW FOUNDATIONS

1. FOUNDATION SIZES AND REINFORCING ARE BASED ON AN ALLOWABLE SOIL BEARING CAPACITY OF ____ PSF FOR SUSTAINED GRAVITY LOAD AND ____ PSF FOR WIND LOAD CASES. ALL SHALLOW FOUNDATIONS SHALL BEAR ON STRUCTURAL FILL AS RECOMMENDED IN THE REFERENCED GEOTECHNICAL INVESTIGATION REPORT.
2. REFER TO CONCRETE NOTES IN THE FOLLOWING SECTIONS FOR ALL CONCRETE AND REINFORCEMENT REQUIREMENTS.
3. SIDES OF SHALLOW FOUNDATIONS SHALL BE FORMED UNLESS CONDITIONS PERMIT EARTH FORMING. FOUNDATIONS POURED AGAINST THE EARTH REQUIRE THE FOLLOWING PRECAUTIONS:
   - A. SLOPE SIDES OF EXCAVATIONS A APPROVED BY THE GEOTECHNICAL ENGINEER
   - B. CLEAN UP SLOUGHING BEFORE AND DURING CONCRETE PLACEMENT.
4. VERTICAL CONSTRUCTION JOINTS IN FOUNDATION WALLS SHALL BE USED ONLY IF UNAVOIDABLE OR OTHERWISE NOTED AND ARE TO BE LOCATED A MINIMUM OF 4' - 0" FROM ANY SUPPORTING COLUMN OR WALL OPENING.
5. HORIZONTAL CONSTRUCTION JOINTS IN SHALLOW FOUNDATIONS, INCLUDING GRADE BEAMS, ARE NOT PERMITTED.
6. WHERE FOUNDATION STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL.
7. CENTER ALL FOUNDATIONS UNDER WALLS, PIERS, OR COLUMNS ABOVE UNLESS OTHERWISE NOTED IN THESE DRAWINGS.
8. PROVIDE DOWELS FOR ALL WALLS AND CONCRETE COLUMNS EMBEDDED INTO FOUNDATIONS. DOWELS SHALL BE THE SAME SIZE AND SPACING AS VERTICAL WALL AND CONCRETE COLUMN REINFORCEMENT AND EXTEND THE SCHEDULED LAP SPLICE LENGTH.
9. ALL PLATES, ANGLES, ANCHOR BOLTS, AND MISCELLANEOUS ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE SECURELY AND ACCURATELY FASTENED TO THE CONCRETE FROM WORK BY A MINIMUM OF TWO (2) FASTENERS PRIOR TO CONCRETE PLACEMENT.
10. ALL PIPE SLEEVES, BOXED OPENINGS, ETC. AS REQUIRED BY THE VARIOUS TRADES SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER IN THE SHOP DRAWING SUBMISSION PROCEDURE AND APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CONCRETE PLACEMENT.

CONCRETE SLAB ON GRADE

1. ALL SLABS ON GRADE SHALL BE PLACED ON CLEAN, NON-ORGANIC FILL AS NOTED IN THE SECTIONS ABOVE.
2. REFER TO PLANS FOR SLAB ON GRADE REINFORCEMENT REQUIREMENTS.
3. COLUMNS, WALLS, BEAMS, OR ANY OTHER STRUCTURAL MEMBER PENETRATING SLABS ON GRADE SHALL BE ISOLATED BY 1/2" THICK PREMOLDED JOINT FILLER COMPLYING WITH ASTM D1752, TYPE 1.
4. INTERIOR SLABS ON GRADE SHALL BE CAST ON 10 MIL MINIMUM POLYETHYLENE SHEETING VAPOR BARRIER. DO NOT USE SHEETING BELOW EXTERIOR CONCRETE SLABS ON GRADE.
5. ALL PLATES, ANGLES, ANCHOR BOLTS, AND MISCELLANEOUS ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE SECURELY AND ACCURATELY FASTENED TO THE CONCRETE FROM WORK BY A MINIMUM OF TWO (2) FASTENERS PRIOR TO CONCRETE PLACEMENT.
6. ALL PIPE SLEEVES, BOXED OPENINGS, ETC. AS REQUIRED BY THE VARIOUS TRADES SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER IN THE SHOP DRAWING SUBMISSION PROCEDURE AND APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CONCRETE PLACEMENT.
7. SLABS ON GRADE SHALL BE SAWCUT THE DAY OF POUR IN A "CHECKERBOARD PATTERN" AT A MAXIMUM OF 15' -0" BY 15' 0" OR AS SHOWN ON PLAN.
8. ALL EXTERIOR CONCRETE SURFACES SHALL HAVE A LIGHT BROOM FINISH AND ALL INTERIOR SURFACES SHALL HAVE A SMOOTH TROWEL FINISH. REFER TO ARCHITECTURAL DRAWINGS FOR SUPPLEMENTAL CONCRETE FINISHES FOR HARD FLOORING COMPATIBILITY.
9. SEE ARCHITECTURAL DRAWINGS FOR SLAB ON GRADE DEPRESSIONS AND OTHER REQUIREMENTS.

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	GENERAL NOTES

STRUCTURAL GENERAL NOTES

DEVELOPMENT LENGTH TABLE (IN.)

f'_c (PSI)	REINFORCEMENT TYPE			BAR SIZE										
				#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18
3000 PSI	TENSION CLASS A LAP SPLICE	CASE 1	TOP	23	29	37	43	63	72	81	91	102	121	162
			OTHERS	17	22	28	33	48	55	62	70	78	93	124
		CASE 2	TOP	41	43	55	65	76	108	121	137	151	182	242
			OTHERS	31	33	42	50	58	83	93	105	116	140	186
	CLASS B LAP SPLICE	CASE 1	TOP	30	38	49	56	82	94	106	119	133	158	211
			OTHERS	23	29	37	43	63	72	81	91	102	121	162
		CASE 2	TOP	54	56	72	85	99	141	158	179	197	237	315
			OTHERS	41	43	55	65	76	108	121	137	151	182	242
	COMPRESSION			12	15	19	23	27	30	34	39	43	51	68
	HOOKED			6	6	8	11	14	16	20	23	27	36	55

DEVELOPMENT LENGTH NOTES:

1. TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE.
2. INTERPOLATION OF TABULATED VALUES IS ALLOWED.
3. TENSION DEVELOPMENT AND LAP SPLICE LENGTHS ARE BASED ON ACI 318-19 SECTION 25.4.2 AND 25.5.2, RESPECTIVELY. TABULATED VALUES FOR BEAM AND COLUMN ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS, LENGTHS ARE IN INCHES.
4. LAP CLASS "A" VALUES ARE THE REQUIREMENTS TENSION DEVELOPMENT LENGTHS, ld ; LAP SPLICE LENGTHS ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS; CLASS "A" = 1.0 ld AND CLASS "B" = 1.3 ld (ACI 318-14, SECTION 25.5.2-1).
5. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 IN OF CONCRETE CAST BELOW THE BARS.
6. CASE 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER, AND THE CENTER TO CENTER SPACING OF THE BARS, ARE DEFINED AS:

BEAMS & COLUMNS	CASE 1	COVER AT LEAST 1 d_b AND CC SPACING AT LEAST 1 d_b
	CASE 2	COVER LESS THAN 1 d_b AND CC SPACING LESS THAN 1 d_b
ALL OTHERS	CASE 1	COVER AT LEAST 1 d_b AND CC SPACING AT LEAST 2 d_b
	CASE 2	COVER LESS THAN 1 d_b AND CC SPACING LESS THAN 2 d_b

7. TENSION DEVELOPMENT LENGTHS OF STANDARD HOOKS ARE BASED ON ACI 318-19 SECTION 25.4.3 LENGTHS ARE IN INCHES.
8. FOR BARS SIZE #3 THROUGH #11 ONLY:
   A. IF CONCRETE COVER CONFORMS TO ACI 318-19, SECTIONS 25.4.3.2, THEN A MODIFICATION FACTOR OF 0.7 MAY BE APPLIED BUT THE RESULTING LENGTH MUST NOT BE LESS THAN 8db NOR 6 IN.
   B. IF HOOK IS ENCLOSED IN TIES OR STIRRUPS CONFORMING TO ACI 318-14 SECTION 25.4.3.2, THEN A MODIFICATION FACTOR OF 0.8 MAY BE APPLIED BUT THE RESULTING LENGTH MUST NOT BE LESS THAN 8db NOR 6 IN.
9. COMPRESSION DEVELOPMENT LENGTHS AND COMPRESSION LAP SPLICES ARE BASED ON ACI 318-19 SECTION 25.4.9.1 AND 25.5.5, RESPECTIVELY. LENGTHS ARE IN INCHES.
10. FOR COMPRESSION DEVELOPMENT LENGTHS , IF BARS ARE ENCLOSED IN SPIRALS OR TIES CONFORMING TO ACI 318-19, SECTION 25.4.9.3, THEN A MODIFICATION FACTOR OF 0.75 MAY BE APPLIED BUT THE RESULTING LENGTH MUST NOT BE LESS THAN 6 IN.
11. FOR COMPRESSION LAP SPLICE LENGTHS:
   A. IF BARS ARE ENCLOSED IN TIED-REINFORCED COMPRESSION MEMBER CONFORMING TO ACI 318-19 SECTION 10.7.5.2 1(a), THEN A MODIFICATION FACTOR OF 0.83 MAY BE APPLIED BUT THE RESULTING LENGTH MUST NOT BE LESS THAN 12 IN.
   B. IF BARS ARE ENCLOSED IN A SPIRALLY-REINFORCED COMPRESSION MEMBER CONFORMING TO ACI 318-19 SECTION 10.7.5.2 1(b), THEN A MODIFICATION FACTOR OF 0.75 MAY BE APPLIED BUT THE RESULTING LENGTHS MUST NOT BE LESS THAN 12 IN.

REINFORCED CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS", LATEST EDITION. DESIGN IS BASED ON ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
2. CONCRETE MATERIALS:
   - PORTLAND CEMENT — ASTM C150 TYPE 1
   - AGGREGATES — ASTM C33 (NORMAL WEIGHT); ASTM C330 (LIGHT WEIGHT)
   - WATER — ASTM C1602
3. REINFORCEMENT MATERIALS:
   - DEFORMED REINFORCING BARS — ASTM A615 GRADE 60
   - REINFORCING STEEL TO BE WELDED — ASTM A706
   - WELDED WIRE REINFORCING — ASTM A1064 MINIMUM YIELD STRENGTH OF 20,000 PSI
   - FIBER REINFORCEMENT — ASTM C116
4. ADMIXTURES
   - AIR-ENTRAINING ADMIXTURES — ASTM C260
   - CHEMICAL ADMIXTURES — ASTM C494 OR ASTM C1017
5. ALL CONCRETE SHALL BE NORMAL WEIGHT (139 PCF - 150 PCF) WITH MIXES DESIGNED TO MEET THE FOLLOWING CRITERIA:

LOCATION	f'_c (PSI)	MAX AGG SIZE (IN.)	MIN CEMENT (LBS PER CY)	W/C RATIO	AIR CONTENT (%)	SLUMP (IN.) (MIN./MAX.)	MIN. f'_c (PSI) @ STRESSING
FOUNDATION	3000	1	750	0.45	3	---	---

6. SUBMIT CONCRETE MIX DESIGNS IN ACCORDANCE WITH ACI 301 TO THE ARCHITECT AND TESTING AGENCY. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. RESPONSIBILITY FOR OBTAINING THE REQUIRED STRENGTH IS THE CONTRACTOR'S.
7. USE OF CALCIUM CHLORIDE, CHLORINE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
8. THE AIR CONTENT OF ALL CONCRETE EXPOSED TO WEATHER SHALL BE BETWEEN 4% AND 6%. EXCEPT AIR CONTENT FOR SLAB ON GRADE AND ELEVATED SLABS SHALL NOT EXCEED 3%.
9. COMPRESSIVE TEST SPECIMENS SHALL CONFORM TO ASTM C31. FOR EACH EACH REQUIRED SAMPLE MOLD AND STORE FOUR STANDARD CYLINDERS FOR LABORATORY-CURED TEST SPECIMENS EXCEPT WHEN FIELD-CURED SPECIMENS ARE REQUIRED.
10. THE TESTING AGENCY SHALL SAMPLE AND TEST ONE SET FOR EACH DAY'S POUR EXCEEDING 5 CUBIC YARDS PLUS ADDITIONAL SETS FOR EACH 100 CU. YARDS OR FRACTION THEREOF OF EACH CLASS OF CONCRETE PLACED EACH DAY. SAMPLE CONCRETE IN ACCORDANCE WITH ASTM C172. PERFORM THE FOLLOWING TESTS IN ACCORDANCE WITH THE INDICATED STANDARD:
    - SLUMP — ASTM C143
    - AIR CONTENT — ASTM C173
    - COMPRESSIVE STRENGTH — ASTM C39
11. COMPRESSIVE STRENGTH TESTS SHALL INCLUDE ONE CYLINDER AT 7 DAYS, TWO CYLINDERS AT 28 DAYS, AND ONE RETAINED FOR LATER TESTING IF REQUIRED.
12. REPORT ALL TEST RESULTS TO CONTRACTOR, ARCHITECT, AND OWNER IN WRITING ON THE SAME DAY AS TESTING.
13. ALL REINFORCEMENT SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI MNL-66 "DETAILING MANUAL", ACI 117, "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", LATEST EDITION AND CRSI MSP "MANUAL OF STANDARD PRACTICE". HOOKS AND BENDS, WHERE SHOWN ON THE DRAWINGS AND DETAILS, SHALL BE STANDARD OR SEISMIC HOOKS AND BENDS AS DEFINED BY ACI 318, UNLESS SPECIFICALLY DIMENSIONED OR NOTED OTHERWISE.
14. SUBMIT SHOP DRAWINGS FOR APPROVAL SHOWING ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING REINFORCING STEEL AND ACCESSORIES. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.
15. REINFORCEMENT SHALL BE FREE OF MUD, OIL, OR OTHER MATERIALS THAT REDUCE BOND TO CONCRETE. RUST OR MILL SCALE IS ALLOWED PROVIDED BAR WEIGHT AND DIMENSIONS CONFORM TO ASTM SPECIFICATIONS
16. DETAIL ALL CONCRETE WALLS AND BEAMS IN ELEVATION UNLESS SPECIFICALLY APPROVED OTHERWISE. CUT SECTIONS SHOWING BAR LOCATIONS AND CONCRETE COVER.
17. WELDED WIRE REINFORCING SHALL BE PROVIDED IN FLAT SHEETS (ROLLS NOT PERMITTED). LAP MESH 2 SQUARES AT SPLICES.
18. TIE ALL REINFORCING STEEL AND EMBEDMENTS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE REINFORCEMENT SUPPORTS IN ACCORDANCE WITH CRSI RB4.1 TO MAINTAIN THE POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES. "STICKING' DOWELS INTO WET CONCRETE IS NOT PERMITTED.
19. PROVIDE AND SCHEDULE ON SHOP DRAWINGS THE NECESSARY ACCESSORIES TO HOLD ALL REINFORCEMENT SECURELY IN POSITION
20. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, INSERTS, ETC., SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE. CONCRETE BLOCKS ONLY SHALL BE USED TO SUPPORT REINFORCING OFF GRADE.
21. PROVIDE MINIMUM CONCRETE COVERING FOR REINFORCEMENT AS FOLLOWS:

CONCRETE PLACEMENT	REINFORCEMENT SIZE	MINIMUM COVER (IN.)
DEPOSITED AGAINST EARTH	ALL	3
FORMED SURFACES EXPOSED TO WEATHER OR IN CONTACT WITH EARTH	#5 & SMALLER	1 1/2
	#6 THRU #18	2
SLABS, WALLS, AND JOISTS	#11 & SMALLER	3/4
	#14 & #18	1 1/2
BEAMS AND COLUMNS	ALL	1 1/2

22. CONTINUOUS REINFORCEMENT IN WALLS AND FOOTINGS MAY BE SPLICED AS REQUIRED, PROVIDED THAT BARS ARE OF THE LONGEST PRACTICAL LENGTH AND ALL SPLICES ARE SHOWN ON THE REINFORCING BAR SHOP DRAWINGS. SPLICES ARE TO BE STAGGERED WHEN POSSIBLE. PROVIDE LAP SPLICES AND DEVELOPMENT LENGTHS IN ACCORDANCE WITH THE DEVELOPMENT LENGTH AND LAP SPLICES SCHEDULE. USE CLASS B LAP SPLICES UNLESS NOTED OTHERWISE.
23. FIELD WELDING OR BENDING OF REINFORCING IS NOT PERMITTED EXCEPT AS INDICATED ON THE DRAWINGS OR AS APPROVED BY THE STRUCTURAL ENGINEER. USE LOW HYDROGEN ELECTRODES GRADE E70 OR E90 AS REQUIRED.
24. MECHANICAL CONNECTIONS MAY BE SUBSTITUTED FOR LAP SPLICES IFAPPROVED BY THE STRUCTURAL ENGINEER. SUCH CONNECTIONS SHALL DEVELOP AT LEAST 125% SPECIFIED YIELD STRENGTH OF THE BAR.
25. HOOK ALL COLUMN AND WALL REINFORCEMENT INTO SLAB/BEAM ABOVE WHERE COLUMN/WALL TERMINATES.
26. HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED ONLY WHERE INDICATED. THE LOCATION OF VERTICAL CONSTRUCTION JOINTS OR POUR JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER AND INDICATED ON APPROVED SHOP DRAWINGS. CONSTRUCTION JOINTS SHALL BE THOROUGHLY ROUGHENED BY MECHANICAL MEANS AND CLEANED AND SHALL BE SURFACE SATURATED DRY PRIOR TO SECOND POUR.
27. PROVIDE DOWELS OF SAME SIZE AND NUMBER FROM ADJACENT POUR, BOTH VERTICALLY AND HORIZONTALLY, TO MATCH TYPICAL REINFORCING SHOWN. LAPS TO BE IN ACCORDANCE WITH THE DEVELOPMENT LENGTH AND LAP SPLICE SCHEDULE. DOWELS SHALL BE CLEANED AFTER POUR.

REINFORCED CONCRETE (CONT'D)

28. TRANSPORT AND DELIVER CONCRETE IN EQUIPMENT CONFORMING TO ASTM C94.
29. ALL CONCRETE SHALL BE VIBRATED DURING PLACEMENT EXCEPT AS NOTED IN SPECIFICATIONS.
30. PROVIDE 3/4" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
31. NO STAKES, STEEL OR WOOD, SHALL BE PERMITTED IN ANY CONCRETE POUR. SUSPEND FORMS FROM ABOVE GRADE.
32. COAT ALL SLABS WITH CURING COMPOUND WITHIN 24 HOURS OF PLACING. PRODUCT USED SHALL CONFORM WITH ASTM C309, AND SHALL BE COMPATIBLE WITH ADHERED FINISHES. A DISSIPATING FORMULATION SHALL BE USED AT CEMENTITIOUS FINISHES. SUBMIT PRODUCT DATA TO THE ARCHITECT FOR REVIEW.
33. FLOOR SLABS SHALL MEET THE FLATNESS F(F) 35 AND LEVELNESS F(L) 25 REQUIREMENTS. EXTERIOR SLABS SHALL DRAIN FREELY WITH A MAXIMUM VARIATION FROM THE INDICATED PLANE OF 1/4" IN 10'-0"
34. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATION OF OPENINGS AND SLEEVES. SPREAD REINFORCEMENT AT OPENINGS AND SLEEVES UNLESS NOTED OTHERWISE. DO NOT CUT REINFORCEMENT UNLESS INDICATED BY SECTION OR DETAIL. CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES, INSERTS, ETC. WITH SHOP DRAWINGS FOR THE EQUIPMENT TO BE PROVIDED.
35. APPROVED ELECTRICAL CONDUIT MATERIAL CAST WITHIN STRUCTURAL CONCRETE MEMBERS SHALL CONFORM TO THE FOLLOWING:
   A. CONDUIT IN SLAB ON GRADE AND ELEVATED SLABS: DIAMETER OF A SINGLE CONDUIT OR TWO OR MORE VERTICALLY STACKED CONDUITS (INCLUDING CROSSOVERS) SHALL NOT EXCEED 1/3 THE THICKNESS OF THE SLAB. THE OUTSIDE DIMENSION OF TWO OR MORE ADJACENT CONDUITS SHALL NOT EXCEED TWICE THE DEPTH OF THE SLAB AND THE SEPARATION BETWEEN GROUPS OF CONDUITS SHALL NOT BE LESS THAN THE THICKNESS OF THE SLAB.

METAL DECK

1. UNLESS NOTED OTHERWISE, METAL DECK SHALL BE GALVANIZED G90 CONFORMING TO STEEL DECK INSTITUTE(SDI) SPECIFICATIONS.
2. DECKING SHALL BE CONTINUOUS OVER 3 SPANS MINIMUM WHERE SUPPORTING STRUCTURE PERMITS.
3. DECKING SHALL BE ERECTED IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
4. MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE. SUBMIT PRODUCT DATA INCLUDING SPAN TABLES FOR REVIEW.
5. SHEAR CONNECTORS SHALL BE ASTM A1108, TYPE B, HEADED STUD, COLD FINISHED CARBON STEEL, AWS D1.1.
6. TOUCH UP AREAS DAMAGED IN HANDLING AND ERECTION WITH GALVANIZING REPAIR PAINT.

STRUCTURAL STEEL

1. FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", LATEST EDITION. ALL STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO THE CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
2. MATERIAL REQUIREMENTS:

STRUCTURAL SHAPE	ASTM SPECIFICATION	MIN YEILD STRENGTH, f_y (KSI)
W-SHAPE	A992	50
CHANNEL	A36	36
ANGLES	A36	36
RECTANGULAR & ROUND HSS	A500, GRADE B	42
PLATE & BARS	A992	36
ANCHOR BOLTS	F1554 w/ WELDABILITY SUPPLEMENT S1	
BOLTS	A325 TYPE-N	

3. WHERE THE WORK OF OTHER TRADES REQUIRES CUTS OR OPENINGS TO BE MADE IN STRUCTURAL STEEL MEMBERS, APPROVAL SHALL BE OBTAINED FROM THE ENGINEER. SUCH OPENINGS SHALL BE MADE IN THE SHOP AND CLEARLY INDICATED ON THE SHOP DRAWING.
4. TO OBTAIN SPECIFIED ALIGNMENT AND FIT-UP U.N.O. FIELD WELDING MUST BE PERFORMED WHERE SPECIFICALLY NOTED. EDGE OF SLAB AND ROOF BENT PLATES, ANGLES AND OTHER MISC EXTERIOR, OR INTERIOR WALL ALIGNMENT ITEMS SHALL BE FIELD WELDED TO BEAMS. PROVIDE FABRICATION AND ERECTION TOLERANCES MORE STRINGENT THAN SPECIFIED BY AISC WHERE REQUIRED TO ACHIEVE THE DETAILS INDICATED.
5. E70XX ELECTRODES SHALL BE USED FOR ALL WELDING. PROPERLY QUALIFIED WELDERS SHALL PERFORM ALL WELDING, AS PRESCRIBED UNDER "STANDARD QUALIFICATION PROCEDURE" OF THE AMERICAN WELDING SOCIETY.
6. WELD LENGTHS CALLED FOR ON THE PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED BY AISC OR 3/16", WHICH EVER IS GREATER.
7. ALL HSS SECTIONS WITH OPEN ENDS SHALL BE CAPPED WITH A 1/4" THICK PLATE OF THE SAME CROSS SECTION, FULLY WELDED AND GROUND SMOOTH UNLESS NOTED OTHERWISE.
8. FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER FOR EACH INDIVIDUAL CASE.
9. PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD THE STRUCTURAL STEEL FRAME SECURELY IN POSITION. BRACING SHALL NOT BE REMOVED UNTIL THE PERMANENT LATERAL LOAD RESISTING SYSTEM IS IN PLACE. THE STEEL FRAME SHALL BE CONSIDERED A NON SELF-SUPPORTING FRAME UNTIL ALL LATERAL BRACING IS IN PLACE
10. STRUCTURAL STEEL EXPOSED TO THE WEATHER OR LOACTED IN A NONCONDITIONED SPACE, SHALL BE HOT DIPPED GALVANIZED.
11. STRUCTURAL STEEL SHOP DRAWINGS, PREPARED BY THE STEEL SUBCONTRACTOR, SHOWING COMPLETE DIMENSIONS AND DETAILS, SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION OF THE STEEL COMPONENTS. THE STRUCTURAL STEEL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING, VERIFICATION AND COORDINATION OF DIMENSIONS AND DETAILS WITH THE STRUCTURAL AND OTHER PORTIONS OF THE CONTRACT DRAWINGS. THE STEEL SUBCONTRACTOR SHALL NOT REPRODUCE ANY PORTION OF THE DRAWINGS HEREIN FOR UTILIZATION AS SHOP DRAWINGS, UNLESS APPROVAL OF THE STRUCTURAL ENGINEER IS OBTAINED.
12. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF STRUCTURAL STEEL CONNECTIONS NOT SPECIFICALLY DESIGNED OR SHOWN ON DRAWINGS. THE FABRICATOR IS RESPONSIBLE FOR RETAINING THE SERVICES OF A PROFESSIONAL REGISTERED STRUCTURAL ENGINEER FOR THE DESIGN OF ALL SUCH CONNECTIONS.

STEEL JOISTS

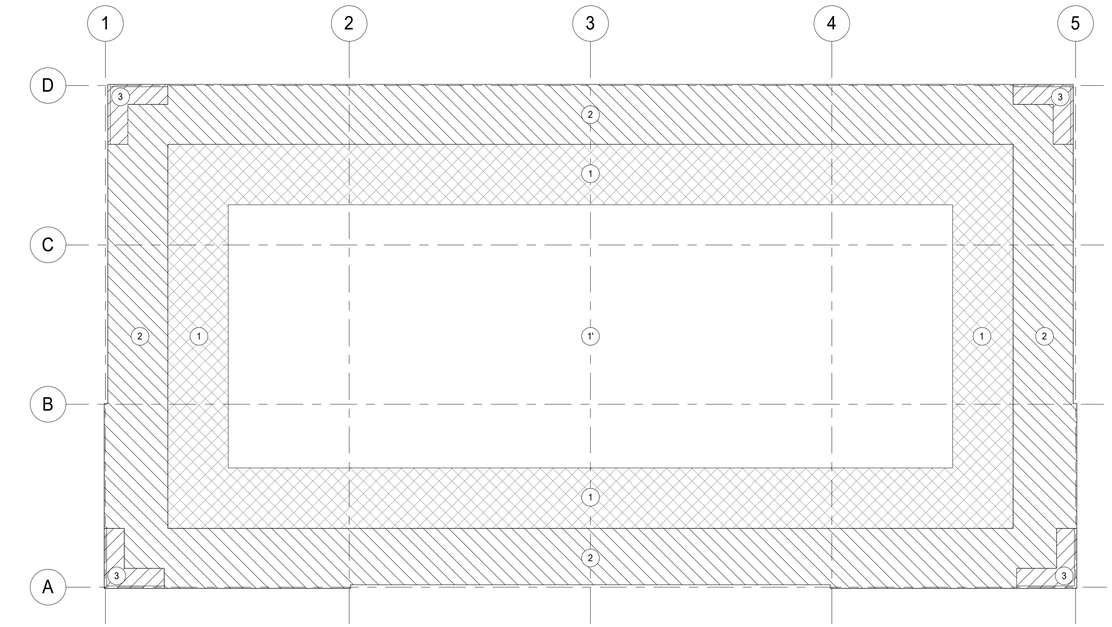
1. STEEL JOIST CONSTRUCTION SHALL CONFORM TO STEEL JOIST INSTITUTE LOAD TABLES, "STANDARD SPECIFICATIONS", AND "CODE OF STANDARD PRACTICE", LATEST EDITION.
2. IN ADDITION TO DEAD AND LIVE LOADS, STEEL ROOF JOISTS SHALL BE DESIGNED AND FABRICATED TO RESIST A NET WIND UPLIFT AS GIVEN IN THE COMPONENTS AND CLADDING WIND PRESSURE TABLE MINUS JOIST AND ROOFING SELF WEIGHT.
3. SUBMIT SHOP DRAWINGS COMPLETELY DETAILING THE JOISTS FOR ERECTION. INCLUDE BRIDGING AND CONNECTIONS. JOIST CALCULATIONS SHALL BE SUBMITTED WITH A COVER LETTER SEALED, SIGNED AND DATED BY THE STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA RESPONSIBLE FOR DESIGN OF JOISTS.
4. PROVIDE A COAT OF STANDARD PRIMER PAINT. PRIMER TO BE COMPATIBLE WITH FINISH COAT WHERE APPLICABLE. TOUCH UP AREAS DAMAGE D IN HANDLING AND ERECTION WITH SAME PAINT USED FOR SHOP COAT.

SITE PRE-CAST TILT UP WALLS

1. ALL WALLS SHOWN SHALL BE PRE CAST "TILT UP" AND SHALL BE LIFTED AND ERECTED ACCORDING SHOP DRAWINGS PREPARED BY A SPECIALTY ENGINEER WHO IS A REGISTERED PROFESSIONAL IN THE STATE OF FLORIDA.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, SIGNED AND SEALED BY THE SPECIALTY ENGINEER, SHOWING PANEL SIZES, LIFTING INSERT LOCATIONS, TYPES, AND CAPACITIES. DRAWINGS SHALL BE SUBMITTED IN QUADRUPLICATE.
3. SPECIALTY ENGINEER SHALL REFER TO THESE DRAWINGS FOR ALL PROPOSED WALL PENETRATION LOCATIONS AND ANY LOAD ECCENTRICITIES WHICH MAY RESULT.
4. LATERAL WIND DESIGN LOADS DUE TO WIND APPLIED PERPENDICULAR TO THE EXTERIOR FACE COMPLY WITH THE WIND DESIGN LOADINGS INDICATED IN THE NOTES.
5. THIS STRUCTURE IS STABILIZED BY LATERAL LOAD RESISTING TILT UP SHEAR WALLS. WALLS MAY BE DESIGN FOR K=1.0 AS BRACED AT THE ROOF CONNECTING LEVEL AGAINST LATERAL BUCKLING ABOUT THEIR WEAK AXIS. BOTTOM BRACING IS PROVIDED AT EITHER THE TOP OF FOOTING OR AT FLOOR LEVEL SEE PLAN.
6. WALL THICKNESS ARE SHOWN ON PANEL ELEVATIONS.
7. ALL TILT UP WALL CONCRETE SHALL BE A NORMAL WEIGHT AND A MINIMUM OF f'_c=4000 PSI. UON
8. ALL PANELS WHICH ARE CHIPPED, SPALLED OR HONEYCOMBED MUST BE REPAIRED BY PREPARATION (REMOVAL OF LOOSE CONCRETE, FORMING, BONDING AGENT) AND APPLICATION OF HIGH STRENGTH, NON SHRINKING GROUT, MATCH FINISHES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ERECTION BRACES TO SAFELY SUPPORT THE WALL PANELS UNTIL THE STRUCTURE IS COMPLETE AND CAPABLE OF PROVIDING PERMANENT SUPPORT FOR THE WALL PANELS, A MINIMUM OF TWO BRACES PER PANEL SHALL BE USED.
10. ALL RIGGINGS FOR LIFTING OR TILTING MUST BE PREPARED BY THE SPECIALTY ENGINEER. THE SPECIALTY ENGINEER SHALL CERTIFY ACCEPTANCE ON THE SHOP DRAWINGS.
11. SEE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ALL SIZES AND LOCATION OF PRE CAST WALL OPENINGS, RECESSES, REGLETS AND LEDGERS. THE CONTRACTOR SHALL VERIFY ALL WALL PANEL AND OPENING DIMENSIONS, RUSTICATION'S, BEARING POCKET AND WELD PLATE LOCATIONS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS. ANY DISCREPANCIES SHALL BE REPORTED TO THE STRUCTURAL ENGINEER BEFORE THE CASTING OF ANY WALL PANELS.
12. REFER TO REINFORCING STEEL AND CONCRETE NOTES FOR ADDITIONAL SPECIFICATIONS.
13. ALL PANEL JOINTS ARE TO BE FORMED AND SHALL BE 3/4", WEATHERPROOF WITH BURKE HYPHON SEALANT OR APPROVED ALTERNATIVE, OVER JOINT BACKER ROD.
14. ALL EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER, UNLESS NOTED.
15. BEFORE PANEL CONSTRUCTION
   A. SELECT A CRANE WITH ENOUGH CAPACITY TO LIFT THE HEAVIEST PANEL PLUS THE WEIGHT OF THE RIGGING GEAR. ALSO CONSIDER HOW FAR THE CRANE MUST REACH AND HOW FAR THE CRANE MAY HAVE TO TRAVEL WITH A PANEL.
   B. IF THE CRANE WILL BE STATIONED ON THE FLOOR SLAB, CHECK THAT THE SLAB HAS ADEQUATE STRENGTH TO SUPPORT THE CRANE.
   C. FOR EACH PANEL, OBTAIN APPROVED SHOP DRAWINGS SHOWING ALL PERTINENT INFORMATION. ALSO OBTAIN A BRACING MANUAL WITH BRACE DESIGNS FOR THE EXPECTED WIND LOADS.
   D. ALWAYS TEST THE BOND BREAKER BEFORE CASTING PANELS TO VERIFY THAT ITS COMPATIBLE WITH ANY CURING OR SEALING COMPOUNDS THAT MAY HAVE BEEN USED ON THE FLOOR SLAB.
16. BEFORE ERECTION:
   A. CHECK THAT ALL LIFTING INSERTS ARE PROPERLY LOCATED, STRONGBACKS ARE PROPERLY INSTALLED, AND THE CONCRETE HAS REACHED THE REQUIRED STRENGTH AT LIFTING. 4000 PSI.
   B. INSTALL ENTRANCE AND EXIT RAMPS SO THE CRANE CAN BE PROPERLY POSITIONED ON THE FLOOR SLAB. DO NOT ALLOW THE CRANE TO EXERT ITS WEIGHT ON THE EXTREME EDGE OF THE SLAB.
   C. MAKE SURE ALL BLOCKOUTS ARE COVERED. IF WATER GETS UNDER THE FLOOR SLAB, IT CAN WEAKEN THE SUBGRADE AND THE CRANE MAY CRACK THE SLAB.
   D. LOCATE PROPER SHIM POINTS ON THE FOOTING TO PREVENT OVERLOADING THE FOOTING PRIOR TO GROUTING UNDER THE PANELS
17. AFTER THE LIFT:
   A. DO NOT REMOVE ANY BRACES UNTIL ALL STRUCTURAL CONNECTIONS ARE COMPLETED AND THE LATERAL RESISTIVE SYSTEM IS IN PLACE.

COMPONENTS & CLADDING ULTIMATE WIND PRESSURES (PSF)

FLAT ROOFS		TRIBUTARY AREA					
		≤ 10 SF	20 SF	50 SF	100 SF	200 SF	≥ 500 SF
ZONE 1	SUCTION (-)	-101.0	-94.3	-85.5	-78.8	-72.2	-63.4
	PRESSURE (+)	25.8	24.2	22.0	20.4	20.4	20.4
ZONE 1'	SUCTION (-)	-58.0	-58.0	-58.0	-58.0	-49.9	-39.2
	PRESSURE (+)	25.8	24.2	22.0	20.4	20.4	20.4
ZONE 2	SUCTION (-)	-133.2	-124.6	-113.3	-104.7	-96.2	-84.8
	PRESSURE (+)	58.0	55.4	52.0	49.5	46.9	43.5
ZONE 3	SUCTION (-)	-133.2	-124.6	-113.3	-104.7	-96.2	-84.8
	PRESSURE (+)	58.0	55.4	52.0	49.5	46.9	43.5
WALLS							
ZONE 4	SUCTION (-)	-62.8	-60.3	-56.9	-54.3	-51.7	-48.3
	PRESSURE (+)	58.0	55.4	52.0	49.5	46.9	43.5
ZONE 5	SUCTION (-)	-77.3	-72.2	-65.4	-60.3	-55.1	-48.3
	PRESSURE (+)	58.0	55.4	52.0	49.5	46.9	43.5
PARAPET							
ZONE 4P	SUCTION (-) WINDWARD/LEEWARD	-142.0 / -67.0	-132.9 / -64.3	-120.8 / -60.6	-111.7 / -57.9	-102.6 / -55.2	-90.5 / -51.5
	PRESSURE (+)	61.8	59.1	55.5	52.7	50.0	46.4
ZONE 5P	SUCTION (-) WINDWARD/LEEWARD	-142.0 / -82.5	-132.9 / -77.0	-120.8 / -69.7	-111.7 / -64.3	-102.6 / -58.8	-90.5 / -51.5
	PRESSURE (+)	61.8	59.1	55.5	52.7	50.0	46.4



1 / S0.2 **COMPONENTS AND CLADDING ROOF DIAGRAM**

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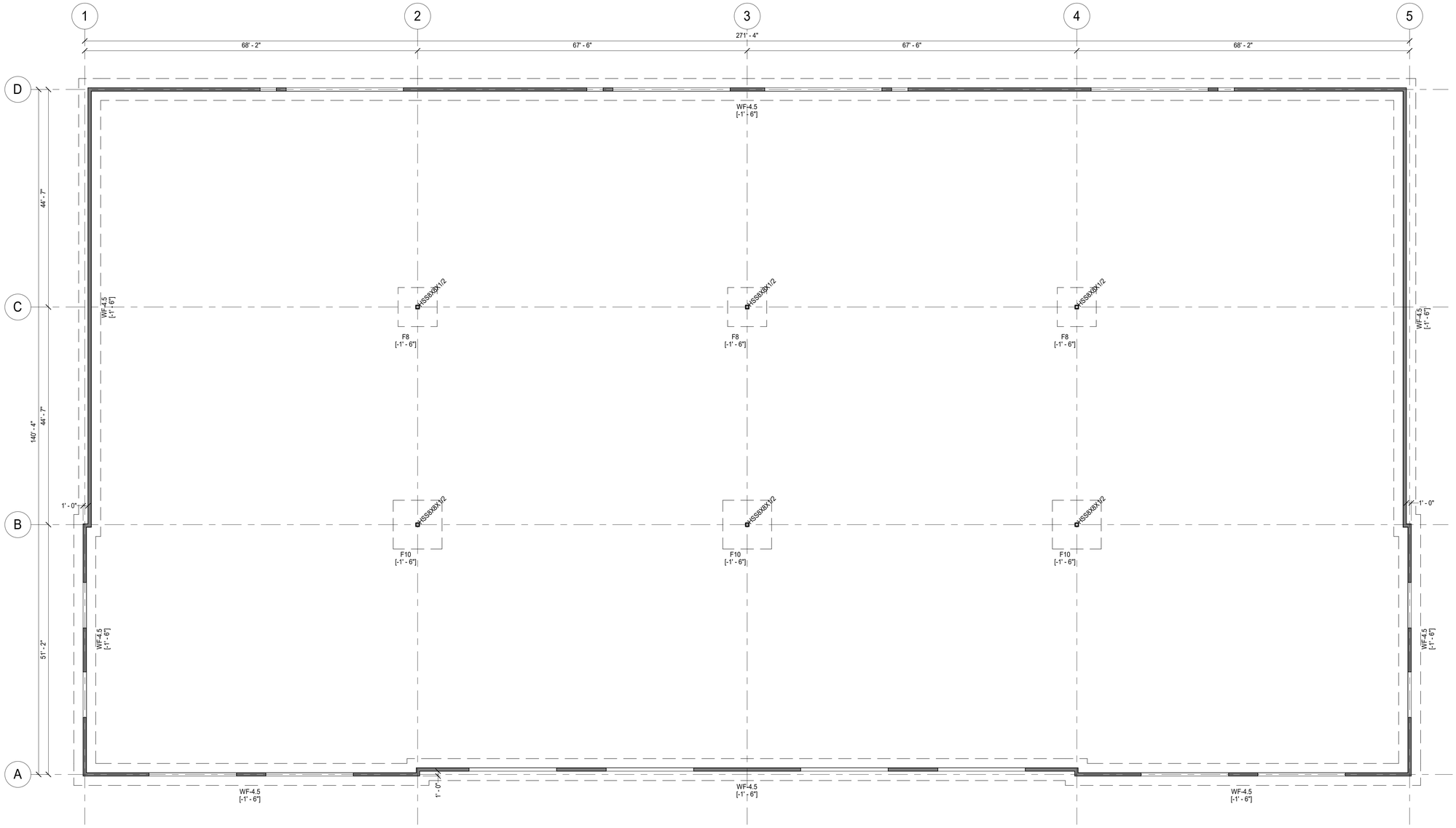
GENERAL NOTES & WIND PRESSURES

accord ENGINEERING



PLAN LEGEND

- 9 1/4" THICK TILT-UP CONCRETE WALL. REINF TO BE PROVIDED PER SPECIFIED LOADS
- WALL/FOUNDATION BELOW
- SQUARE / RECT STEEL COLUMN
- CJ — CONSTRUCTION/CONTRACTION JOINT

FOUNDATION PLAN NOTES

1. SEE S0.X SERIES SHEETS FOR GENERAL NOTES, LEGEND, & ABBREVIATIONS.
2. SEE S5.X FOR TYPICAL DETAILS.
3. VERIFY ELEVATIONS WITH ARCH DWGS PRIOR TO CONSTRUCTION.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS FOR ALL SLAB EDGES, OPENINGS, DEPRESSIONS, PADS, CURBS, ETC. GC TO VERIFY SIZE AND LOCATION OF SLAB OPENINGS WITH ARCHITECTURAL AND MEP DRAWINGS, PURCHASED EQUIPMENT, AND APPROVED SHOP DRAWINGS. REFER TO NOTES AND DETAILS FOR ADDITIONAL REQUIREMENTS RELATED TO SLAB OPENINGS.
5. GC TO COORDINATE DIMENSIONS OF ELEVATOR OPENINGS AND PITS WITH ACTUAL ELEVATOR SELECTED. PROVIDE ALL NECESSARY EMBED PLATES OR OPENINGS REQUIRED BY MANUFACTURER(S). REFER TO NOTES AND DETAILS FOR ADDITIONAL REQUIREMENTS RELATED TO EMBEDS AND OPENINGS.
6. REFER TO ARCH DRAWINGS FOR SLOPES, DIMENSION, GEOMETRY, ELEVATIONS, AND WATER PROOFING.
7. TOP OF FOOTING ELEV. UNO = -1' - 6"

FOOTING SCHEDULE

MARK	SIZE			REINFORCEMENT				COMMENTS
				BOTTOM		TOP		
	WIDTH	LENGTH	THICKNESS	LONGITUDINAL	TRANSVERSE	LONGITUDINAL	TRANSVERSE	
F8	8' - 0"	8' - 0"	12"	(9) #5	(9) #5			
F10	10' - 0"	10' - 0"	12"	(7) #7	(7) #7			
WF-4.5	4' - 6"	<varies>	12"	(4) #5	#5 @ 14" OC			

1 FOUNDATION PLAN

S1.1

3/32" = 1'-0"

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FOUNDATION PLAN

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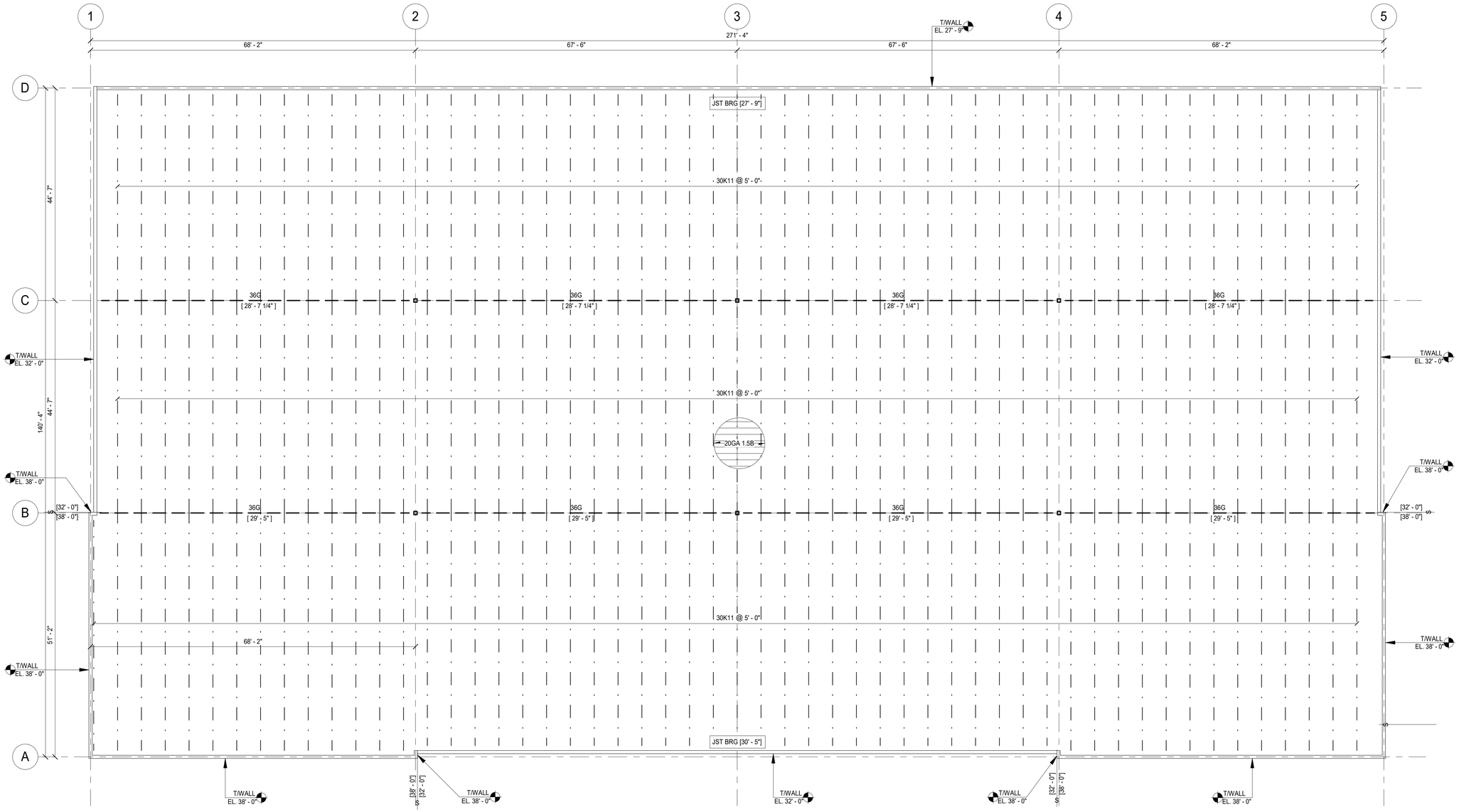

ROOF FRAMING PLAN NOTES

1. SEE S0.X SERIES SHEETS FOR GENERAL NOTES, LEGEND, & ABBREVIATIONS.
2. SEE S5.X FOR TYPICAL DETAILS.
3. GC MAY BE REQUIRED TO SHORE THE WALLS/COLUMNS DURING CONSTRUCTION WHILE UNBRACED BY THE ROOF/DECK STRUCTURE. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
4. VERIFY ELEVATIONS WITH ARCH DWGS PRIOR TO CONSTRUCTION.
5. GC TO COORDINATE ARCHITECTURAL, MECHANICAL, ELECTRICAL, & PLUMBING DRAWINGS WITH STEEL JOIST MANUFACTURERS SHOP DRAWINGS.
6. REFER TO ARCH DRAWINGS FOR ROOFING MATERIAL, SLOPES, DIMENSION, GEOMETRY, ELEVATIONS, AND WATER PROOFING.
7. GC TO COORDINATE RTU AND OTHER MECHANICAL ROOF TOP EQUIPMENT LOCATION, SIZE, WEIGHT, AND OPENING REQUIREMENTS WITH JOIST MANUFACTURER PRIOR TO JOIST FABRICATION. REFER TO ROOF OPENING DETAIL
8. STRUCTURAL STEEL JOIST SHOP DRAWINGS SHALL BE PROVIDED BY THE MANUFACTURER, SIGNED & SEALED BY A FLORIDA STATE PROFESSIONAL ENGINEER, PRIOR TO FABRICATION.
9. JOISTS SHALL BE DESIGNED FOR GRAVITY LOADS, WITH COMBINED WIND AS INDICATED IN THE ALLOWABLE WIND PRESSURE SCHEDULE.
10. PROVIDE JOIST BRIDGING W/ END CONNECTIONS TO WALLS AS REQ'D BY MANUFACTURER, AND DELEGATED ENGINEER.
11. ALL ROOF DECK SHALL BE 20 GA TYPE 1.5B, REFER TO FOR ROOF DECK FASTENING SCHEDULE. ROOF DECK TO BE CONT OVER 3 OR MORE SPANS (TYP).
12. ALL WALLS SHALL HAVE A CONT L4x4x3/8 ANGLE w/ 3/4" TITEN HD ANCHORS @ 24" OC (5" EMBED) FOR DECK SUPPORT. ATTACH DECK TO ANGLES AS NOTED IN THE ROOF DECK FASTENING SCHEDULE, SEE .
13. PROVIDE CONT L4x4x5/16 ANGLE AT ALL STEEL ROOF DECK PERIMETERS.
14. GC IS REQUIRED TO SHORE THE WALLS/COLUMNS DURING CONSTRUCTION WHILE UNBRACED BY THE ROOF/DECK STRUCTURE. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION
15. ELEVATIONS SHOWN ON PLAN ARE RELATIVE TO THE PROJECT BASE ELEVATION OF 0' - 0"

PLAN LEGEND

[X' - XX"] / [X' - XX"]	ELEVATION CHANGE		STEEL JOIST GIRDER
	SQUARE / RECT STEEL COLUMN		JOIST BRIDGING BY JOIST MANUFACTURER
16LH08 @ 4'-0" O.C.	STEEL JOIST TYPE & SPACING	1t	METAL DECK SPAN DIRECTION

1 ROOF FRAMING PLAN
S1.2 — 3/32" = 1'-0"

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ROOF FRAMING PLAN

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SECTIONS

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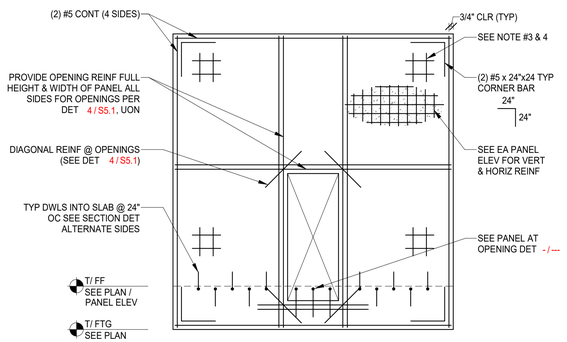
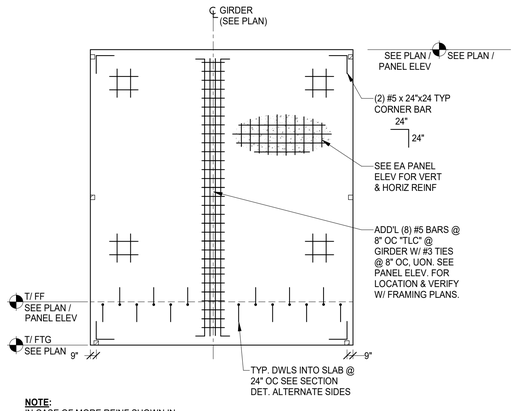


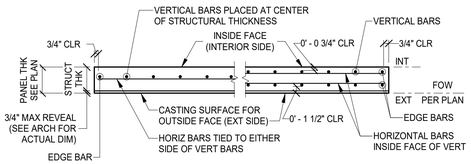
NOTES:
1. GC AND TILT-UP MFR VERIFY W/ ARCH PANEL OPENINGS & OVERALL DIMENSIONS.
2. SEE ARCH FOR PANEL FINISH & REVEALS.
3. GC SHALL BE RESPONSIBLE FOR DESIGN OF PICK UP DEVICES AND FOR ANY AUXILARY SUPPORT REQ'D.
4. GC SHALL BE RESPONSIBLE FOR ALL ADD'L REINFORCING REQUIRED FOR LIFTING.
5. VERIFY & COORDINATE WITH ARCH ALL OPENING LOCATIONS AND DETAILS.
6. SEE ARCH & STRUCT DETAILS FOR ITEMS CAST IN PANELS (ANCHORS, PLATES, ETC).
7. PLACE ADDITIONAL (1) #5 CONT BELOW EA SET OF HSA SUPPORTING BAR JOIST. SEE APPROPRIATE DETAILS.
8. ADDED BARS NOT REQ'D WHERE CONFLICTING W/ REINFORCEMENT ON BOTH FACES, (EF).

1 TYPICAL TILT-UP PANEL ELEVATION
S5.1 — NTS

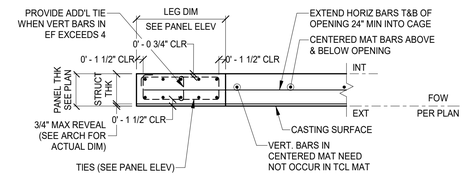


NOTE:
IN CASE OF MORE REINF SHOWN IN PANEL ELEVATIONS VS THIS DETAIL, THE MOST STRINGENT APPLIES

2 TYPICAL GIRDER BEARING PANEL
S5.1 — 3/4" = 1'-0"



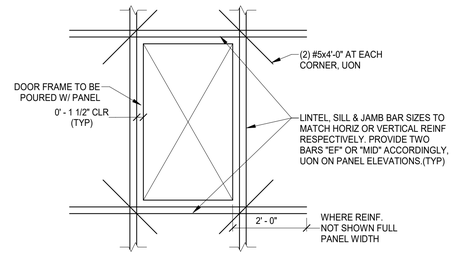
MID **EACH FACE (EF)**



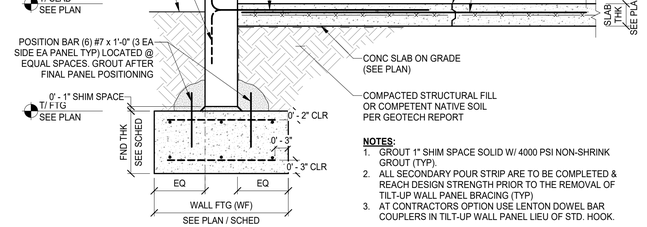
NOTES:
1. SHIFT TIES TO AVOID CONFLICT W/ REVEALS.
2. ALL BARS MUST BE PLACED INSIDE THE TIES.
3. DO NOT PLACE ANY BARS OUTSIDE OF THE TIES.

TIED LEG CAGE (TLC)

3 TYPICAL REINFORCEMENT PLACEMENT DIAGRAM
S5.1 — 3/4" = 1'-0"



4 TYPICAL REINFORCEMENT AT PANEL OPENINGS
S5.1 — NTS

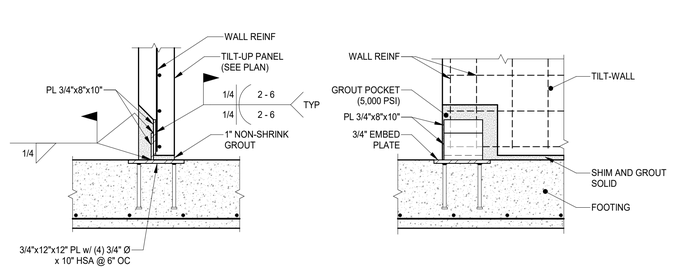


NOTES:
1. GROUT 1" SHIM SPACE SOLID W/ 4000 PSI NON-SHRINK GROUT (TYP).
2. ALL SECONDARY POUR STRIP ARE TO BE COMPLETED & REACH DESIGN STRENGTH PRIOR TO THE REMOVAL OF TILT-UP WALL PANEL BRACING (TYP)
3. AT CONTRACTORS OPTION USE LENTON DOWEL BAR COUPLERS IN TILT-UP WALL PANEL LIEU OF STD. HOOK.

5 TYPICAL TILT-UP WALL PANEL TO SLAB SECTION
S5.1 — 3/4" = 1'-0"

SUPPLEMENTAL TILT-WALL PANEL NOTES:

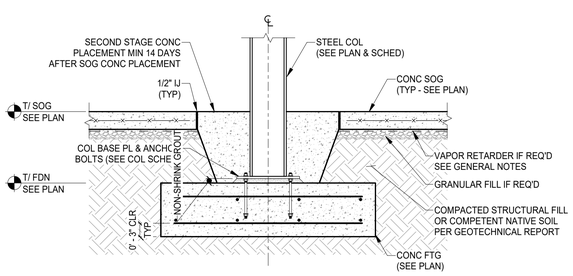
1. REFER TO GENERAL NOTES FOR TILT PANELS.
2. PANEL THICKNESS SHALL BE AS INDICATED ON PLANS. SPECIAL ATTENTION MUST BE GIVEN TO THE LOCATION AND PLACEMENT OF THE REINFORCING.
3. REFER TO THE ARCHITECTURAL DRAWINGS FOR FINISH RQMTS, CHAMFERS AND REVEALS.
4. THE CONTRACTOR SHALL CHECK ALL PANEL DIMENSIONS, PLATE LOCATIONS AND OPENING LOCATIONS AND DIMENSIONS. NO PANEL WORK SHALL BE PERFORMED WITHOUT THE CONTRACTORS PRIOR APPROVAL OF THE DIMENSIONAL SHOP DRAWINGS. THE CONTRACTOR SHALL INDICATE THAT HE HAS REVIEWED ALL DIMENSIONS AND DETAILS AND APPROVES THE PANEL DRAWINGS FOR ACCURACY IN WRITING ON THE SHOP DRAWINGS BEFORE COMMENCEMENT OF THE PANEL CONSTRUCTION.

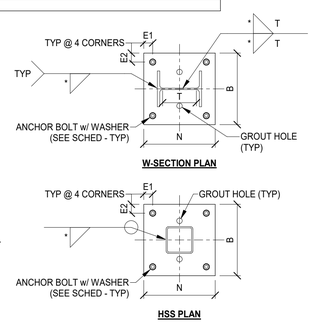


6 SHEAR WALL CONNECTION DETAIL
S5.1 — 3/4" = 1'-0"

STEEL COLUMN SCHEDULE

TYPE	BASE PLATE						ANCHOR BOLT		COMMENTS
	B	N	THICKNESS	E1	E2	WELD SIZE	DIAMETER	EMBED	
HSS8X8X1/2	12"	12"	1/2"	1.5"	1.5"	3/8"	3/4"	8"	

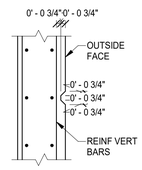




W-SECTION PLAN

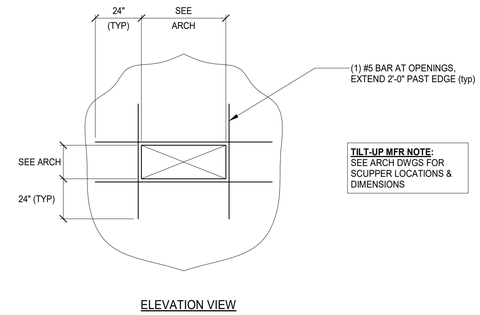
HSS PLAN

7 INTERIOR FOOTING WITH STEEL COLUMN
S5.1 — 3/4" = 1'-0"



NOTES:
1. PROVIDE 3" MIN CLEARANCE EDGE OF PANEL TO CENTER OF CONNECTOR PLATE STUDS (TYP).
2. PROVIDE (1) #5 AT EDGE BETWEEN HEADED STUD AND EDGE OF CONC (TYP).

8 CONC COVER AT REVEAL
S5.1 — 1" = 1'-0"



ELEVATION VIEW

9 TYPICAL SCUPPER/ROOF DRAIN OPENING
S5.1 — 1 1/2" = 1'-0"

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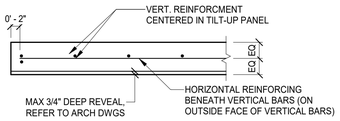
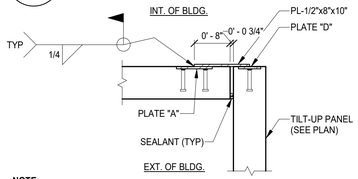
TILT-UP WALL TYPICAL DETAILS

accord ENGINEERING

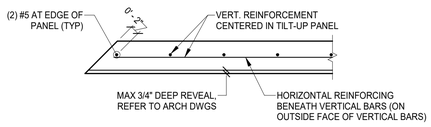


OUTSIDE FACE

1 TYPICAL PANEL EDGE REINFORCING
S5.2 3/4" = 1'-0"

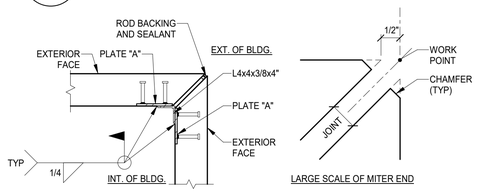


NOTE:
CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEV, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0"



OUTSIDE FACE

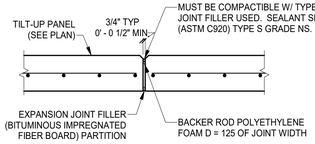
2 TYPICAL MITERED EDGE REINFORCING
S5.2 3/4" = 1'-0"



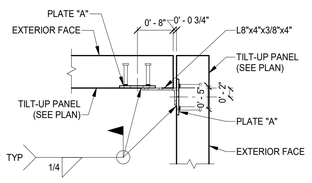
CORNER DETAIL

NOTE:
CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEVATION, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0"

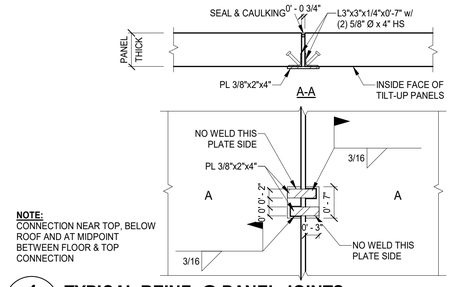
NOTE:
SEE ALTERNATE CORNER DETAIL X/XXX.



3 TYPICAL ISOLATION JOINT DETAIL
S5.2 3/4" = 1'-0"

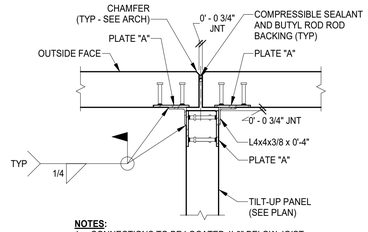


WARNING NOTE:
1. CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEVATION, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0". IF GC CHOOSES TO FORM TILT-UP PANELS W/ BUTT JOINT CORNERS IN LIEU OF MITER CORNERS, THEN ALL THE PANEL DIMENSIONS THAT ARE AFFECTED NEED TO BE ADJUSTED IN THE SUBMITTAL OF TILT-UP SHOP DRAWINGS.



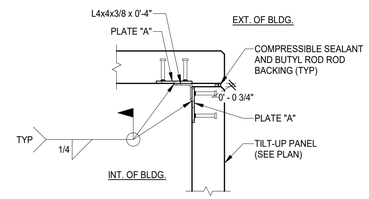
NOTE:
CONNECTION NEAR TOP, BELOW ROOF AND AT MIDPOINT BETWEEN FLOOR & TOP CONNECTION

4 TYPICAL REINF. @ PANEL JOINTS
S5.2 3/4" = 1'-0"



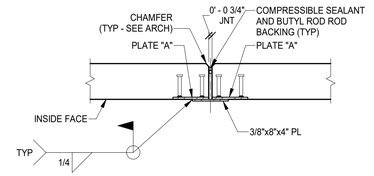
NOTES:
1. CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEV, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0".

9 TYPICAL BUTT JOINT AT PANEL JOINT
S5.2 3/4" = 1'-0"



NOTE:
CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEV, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0"

5 TYPICAL BUTT CORNER JOINT
S5.2 3/4" = 1'-0"



NOTES:
1. CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEV, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0".
2. INSTALL PLATES AFTER ALL PANELS HAVE BEEN ALIGNED AND BOTTOMS GROUTED, AND ROOF DECK HAS BEEN FULLY WELDED.

10 TYPICAL SQUARE JOINT
S5.2 3/4" = 1'-0"

NOTE:
CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEV, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0"

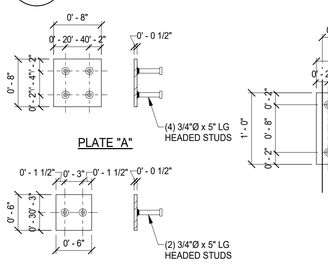
6 TYPICAL BUTT CONNECTION - INSIDE CORNER
S5.2 3/4" = 1'-0"

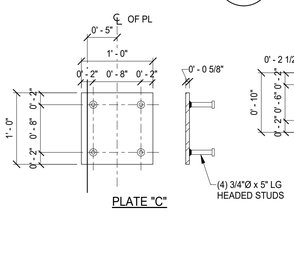
NOTE:
CONNECTIONS TO BE LOCATED 1'-0" BELOW ROOF BEARING, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0"

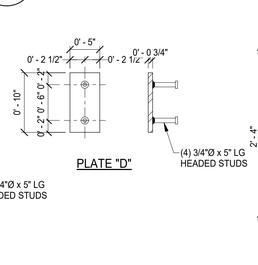
7 TYPICAL MITER JOINT CONNECTION
S5.2 3/4" = 1'-0"

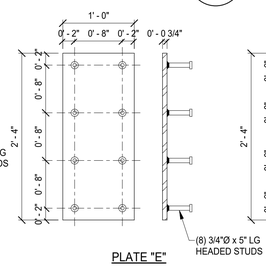
NOTES:
1. CONNECTIONS TO BE LOCATED 1'-0" BELOW JOIST BEARING ELEV, 1'-0" ABOVE FINISHED FLOOR AND AT APPROXIMATE EQUAL SPACES, NOT TO EXCEED 8'-0".

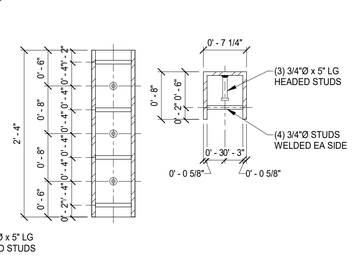
8 ALTERNATE TYPICAL BUTT CONNECTION
S5.2 3/4" = 1'-0"

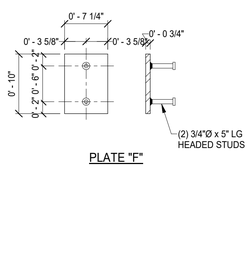


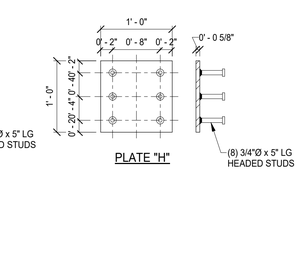












11 TYPICAL 135° BUTT CORNER JOINT
S5.2 3/4" = 1'-0"

12 TYPICAL BUTT CORNER JOINT
S5.2 3/4" = 1'-0"

13 TYPICAL PANEL OVERLAP JOINT
S5.2 3/4" = 1'-0"

16 PANEL EMBED PLATES
S5.2 1" = 1'-0"

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Niki L. Norton, R.A.
AR91827

Butler Industrial Building
St. Lucie Blvd.
St. Lucie County
-

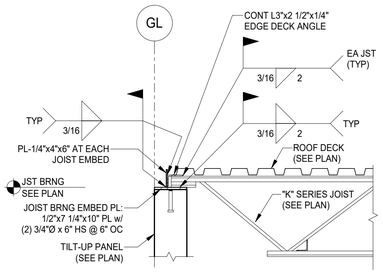
Rev. #	Date

Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	S5.2

TILT-UP JOINT DETAILS

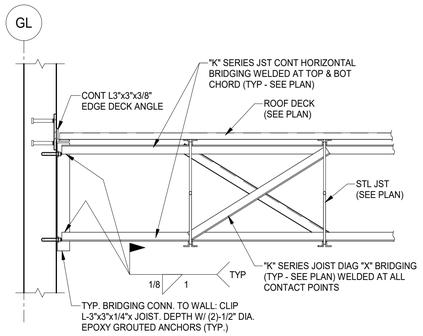
accord ENGINEERING

ACCORD ENGINEERING, INC. PROJECT # 250103-FL



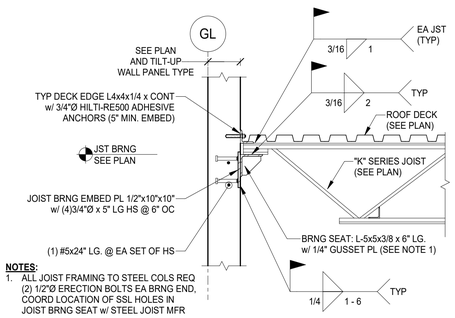
1 JOIST BEARING AT TILT-UP WALL PANEL

S5.3 3/4" = 1'-0"



2 JOIST BRIDGING CONN. AT TILT-UP WALL PANEL

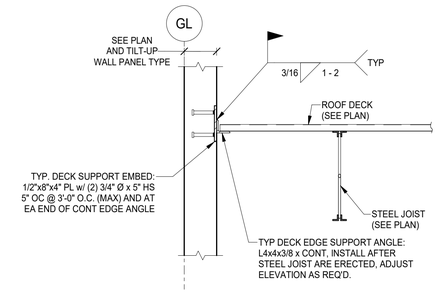
S5.3 3/4" = 1'-0"



NOTES:
1. ALL JOIST FRAMING TO STEEL COLS REQ (2) 1/2"Ø ERECTION BOLTS EA BRNG END, COORD LOCATION OF SSL HOLES IN JOIST BRNG SEAT w/ STEEL JOIST MFR

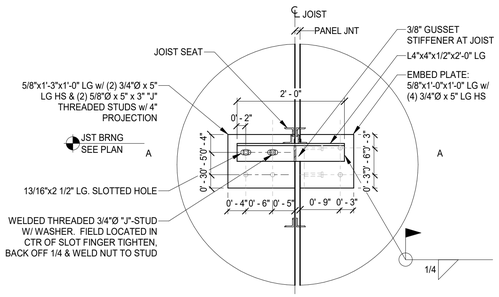
3 JOIST BEARING AT TILT-UP WALL PANEL

S5.3 3/4" = 1'-0"



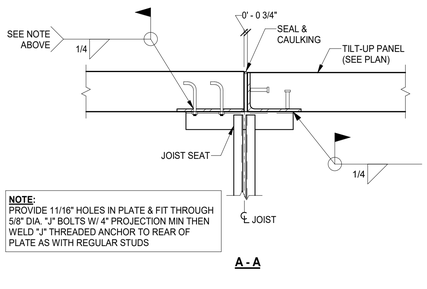
4 TYPICAL ROOF DECK SUPPORT AT TILT-UP WALL PANEL

S5.3 3/4" = 1'-0"



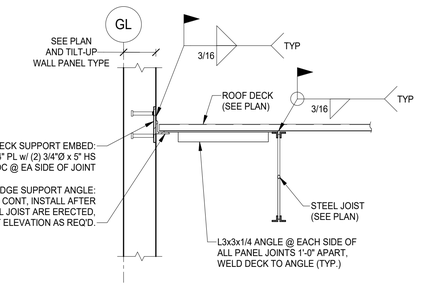
5 TYPICAL JOIST BRG. AT PANEL JOINTS

S5.3 3/4" = 1'-0"



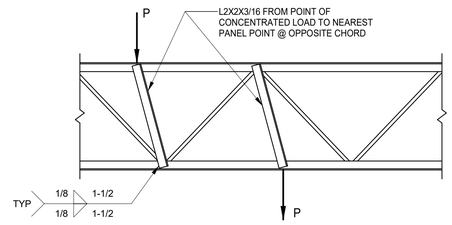
NOTE:
PROVIDE 11/16" HOLES IN PLATE & FIT THROUGH 5/8" DIA. "J" BOLTS W/ 4" PROJECTION MIN THEN WELD "J" THREADED ANCHOR TO REAR OF PLATE AS WITH REGULAR STUDS

A - A



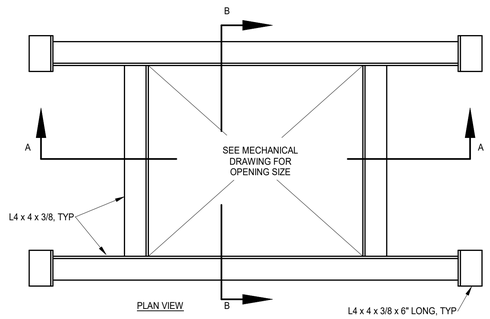
6 TYP ROOF DECK SUPPORT AT WALL PANEL JOINT

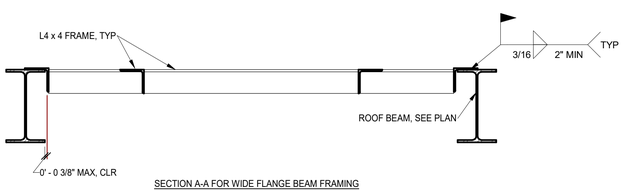
S5.3 3/4" = 1'-0"



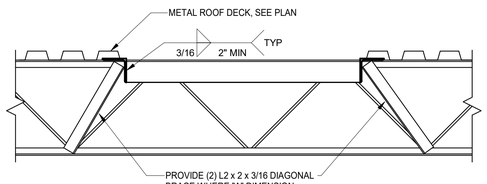
7 JOIST REINF FOR CONCENTRATED LOAD

S5.3 3/4" = 1'-0"

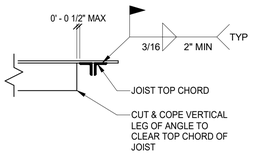




SECTION A-A FOR WIDE FLANGE BEAM FRAMING

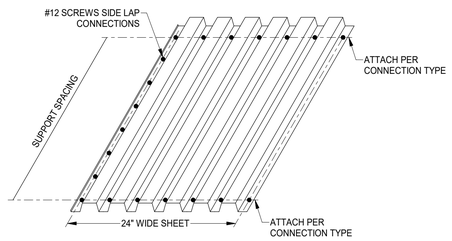


SECTION B-B FOR BAR JOIST FRAMING



8 TYP ROOF OPENING DETAIL

S5.3 1" = 1'-0"



DECK ATTACHMENT SCHEDULE				
SUPPORT TYPE	TYPE	WELD PATTERN	DIAMETER	SIDELAP
STEEL JOIST & ANGLE	1.5B	36/7	5/8"	(7)

9 DECK ATTACHMENT SCHEDULE

S5.3 3/4" = 1'-0"

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Butler Industrial Building

St. Lucie Blvd.
St. Lucie County
-

Rev. #	Date

Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	S5.3

FRAMING DETAILS

ACCORD ENGINEERING

BUTLER INDUSTRIAL BUILDING

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANF.	CATALOG NUMBER	VOLTAGE	KELVIN	LUMENS	LAMP TYPE	DIMMING	WATTAGE	MOUNTING	NOTES
INTERIOR LIGHTING											
A	2'X4' LED PANEL	METALUX	24CGTS-L3C3	120-277	LED (5500, 4000, 5000K)	6600	LED	0-10V	59.4	RECESSED, SURFACE, OR PENDANT	
AE	2'X4' LED PANEL WITH EMERGENCY	METALUX	24CGTS-L3C3 EL7W	120-277	LED (3500, 4000, 5000K)	6600	LED	0-10V	59.4	RECESSED, SURFACE, OR PENDANT	
B	2X4 CRUZE ST SELECTABLE TROFFER	METALUX	24CZSCT3-UNV	120-277	LED (3000,3500, 4000K)	3900	LED	0-10V	46.8	RECESSED	
BE	2X4 CRUZE ST SELECTABLE TROFFER WITH EMERGENCY	METALUX	24CZSCT3-UNV-EL7W	120-277	LED (3000,3500, 4000K)	3900	LED	0-10V	46.8	RECESSED	
C	LHBS LED HIGH BAY	METALUX	LHB-2436-UNV-L84050-U	120-277	LED (4000, 5000K)	24000	LED	0-10V	172	SURFACE, SUSPENDED	
CE	LHBS LED HIGH BAY WITH REMOTE EMERGENCY	METALUX	LHB-2436-UNV-L84050-U EL20W-REM	120-277	LED (4000, 5000K)	24000	LED	0-10V	172	SURFACE, SUSPENDED	
D	4" LED RECESSED LED DOWNLIGHT	HALO	LCR412RD9FSE020 HL4RSMF	120-277	LED (2700, 3000, 3500, 4000, 5000K)	1000	LED	0-10V	14.5	RECESSED	
DE	4" LED RECESSED LED DOWNLIGHT W/ EMERGENCY BATTERY	HALO	LCR412RD9FSE040 HL4RSMF	120-277	LED (2700, 3000, 3500, 4000, 5000K)	1000	LED	0-10V	14.5	RECESSED	
EXI	EDGE LIT EXIT	SURELITES	SCX70G	120-277	N/A	N/A	LED	N/A	2.5	UNIVERSAL	
EXI2	LED EMERGENCY LIGHT	SURE-LITES	APEL	120/277	N/A	N/A	LED	N/A	0.33	SURFACE	
EXTERIOR LIGHTING											
S1	EXTERIOR WALL SCONCE	SPECTRUM	CO618SQUDXT-20L-MD-20L-MD-40-EX-WL-TCY-SO-M3-MB	120/277	4000	4000	LED	0-10V	43.4	SURFACE	
S2	ARCHITECTURAL WALL PACK	INVUE	CCW-VA6-840-U-T4FT-BK-WPS2XX	120/277	4000	10000	LED	0-10V	106W	SURFACE	

FIXTURE SCHEDULE NOTES

GENERAL NOTES

*ANY REMOTE PUSH TO TEST BUTTONS NEED TO BE COORDINATED WITH ARCHITECT PRIOR TO INSTALL

*ALL REMOTE MOUNTED DRIVERS NEED TO BE COORDINATED WITH ARCHITECT PRIOR TO INSTALL

FOR QUESTIONS PERTAINING TO THIS FIXTURE SCHEDULE PLEASE CONTACT ANDREW TUCKER @ LIGHTING DYNAMICS- 954-299-5937

ELECTRICAL SPECIFICATIONS

PART 1 – GENERAL

A. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED. CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL ARCHITECT/ENGINEER HAS DIRECTED CORRECTIVE ACTION TO BE TAKEN.

B. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATIONS INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF.

C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION) AND ALL CODES AND ORDINANCES OF THE AUTHORITY HAVING JURISDICTION. THE SPECIFICATION, CODES AND STANDARDS LISTED BELOW ARE UTILIZED IN THIS PROJECT.
   1. NATIONAL ELECTRICAL CODE (NFPA–70)
   2. CODE FOR SAFETY TO LIFE (NFPA_101)
   3. STANDARD FOR THE INSTALLATION, MAINTENANCE AND USE OF LOCAL PROTECTIVE SIGNALING SYSTEMS (NFPA–72)
   4. UNDERWRITERS' LABORATORIES (UL)
   5. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
   6. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
   7. FEDERAL SPECIFICATION (FED. SPEC.)
   8. INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
   9. FLORIDA BUILDING CODE. FBC 2023 EDITION
   10. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
   11. ST. LUCIE COUNTY BUILDING CODE. (AMENDMENTS TO FLORIDA BUILDING CODE FBC 2023)
   12. ADDITIONALLY, DESIGNS, WORK PRACTICES AND CONDITIONS MUST CONFORM WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (OSHA)

D. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT. CONFIRM WITH OWNER'S REPRESENTATIVE.

E. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.

F. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FROM A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.

G. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THERE BY.

H. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT. THE TERM "PROVIDE" USED IN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS SHALL MEAN THAT THE CONTRACTOR IS TO FURNISH, INSTALL AND CONNECT COMPLETE.

PART 2 – PRODUCTS

A. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. (EXCEPT AS NOTED OTHERWISE FOR CONTROL WIRING). ALL CONDUCTORS SHALL BE 98% CONDUCTIVITY, COPPER WITH "THHN–THWN" INSULATION UNLESS OTHERWISE NOTED.

B. ELECTRICAL METALLIC TUBING (EMT) SHALL BE OF BEST QUALITY STEEL, SMOOTH INSIDE AND OUT AND SHALL BE HOT–DIPPED GALVANIZED.

C. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS

I. IN WET OR DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.

D. RIGID NONMETALIC CONDUIT SHALL BE SCHEDULE 40 PVC.

E. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.

F. PANELBOARDS:
   1. CURRENT CARRYING BUSES SHALL BE COPPER. GROUND BUS BARS SHALL BE COPPER.
   2. ALL CIRCUIT BREAKERS SHALL BE BOLT ON. PLUG–IN BREAKERS ARE NOT ACCEPTABLE.
   3. CIRCUIT BREAKERS USED AS SWITCHES IN FLUORESCENT OR HID LIGHTING CIRCUITS SHALL BE LISTED AND MARKED "SWD"
   4. ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE.
   5. A.I.C. RATINGS SHALL BE AS INDICATED ON PANELBOARD SCHEDULES.
   6. ALL PANELBOARDS SHALL BE FURNISHED WITH PLASTIC LAMINATE NAMEPLATES WITH 1/4" ENGRAVED LETTERING FOR PANEL IDENTIFICATION.
   7. ALL PANELBOARDS SHALL BE PROVIDED WITH TYPE–WRITTEN DIRECTORY OF BRANCH CIRCUIT DESIGNATIONS.

G. DISCONNECT SWITCHES SHALL BE H.P. RATED, HEAVY DUTY, QUICK–MAKE, QUICK–BREAK. ENCLOSURES SHALL BE NEMA–1 FOR INDOOR LOCATIONS, NEMA 3R FOR OUTDOOR LOCATIONSOR AS OTHERWISE NOTED.

H. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC AS INDICATED ON THE ELECTRICAL DRAWINGS, WITH OVERLOAD RELAYS IN EACH PHASE. WIRING DEVICES (GENERAL PURPOSE RECEPTACLES AND WALL SWITCHES) COLOR SHALL BE COORDINATED WITH CLIENT.

PART 3 – EXECUTION

A. COLOR CODING OF CONDUCTORS SHALL BE AS FOLLOWS:
   1. 208/120 VOLTS, 3 PHASE, 4–WIRE SYSTEM: UNGROUNDED CONDUCTORS: 1 BLACK, 1 RED AND 1 BLUE. GROUNDED (NEUTRAL) CONDUCTOR; WHITE. GROUNDING CONDUCTORS SHALL BE GREEN.
   2. 480/277 VOLT, 3–PHASE, 4–WIRE SYSTEM: UNGROUNDED CONDUCTORS: 1 BROWN, 1 YELLOW, AND 1 PURPLE. GROUNDED (NEUTRAL) CONDUCTORS; GREY. GROUNDING CONDUCTORS SHALL BE GREEN.
   3. BRANCH CIRCUIT WIRING (#6 AND SMALLER) SHALL BE COLOR CODED BY CONTINUOUS INSULATION COLOR AND FEEDERS AND SERVICES (#4 AND LARGER) SHALL BE CODED AT ALL JUNCTION OR PULL POINTS (EXCEPT LB'S OR LBD'S) USING COLOR MARKERS OR PLASTIC TAPE MANUFACTURED FOR THE PURPOSE.

I.

B. WIRING METHODS
   1. ALL CONDUCTORS SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE NOTED, SPECIFIED OR AS SPECIFICALLY PROHIBITED BY THE AUTHORITY HAVING JURISDICTION. ALL FITTINGS AND COUPLINGS FOR EMT CONDUIT SHALL BE ALL STEEL RAIN TIGHT COMPRESSION TYPE OR ALL STEEL CONCRETE TIGHT SET SCREW TYPE.
   2. SCHEDULE 40 PVC CONDUIT, WITH FITTINGS AND COUPLINGS APPROPRIATE FOR THE USE, SHALL BE INSTALLED UNDERGROUND OR BELOW SLABS ON GRADE.
   3. TYPE MC CABLE WITH ALUMINUM ARMOR AND INTERNAL GROUND IS ACCEPTABLE FOR USE AS GENERAL BRANCH CIRCUIT WIRING FOR CIRCUITS 20 AMPERES OR LESS AND CONCEALED IN WALLS OR ABOVE SUSPENDED CEILING AND AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.

C. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE LATEST EDITION OF THE N.E.C. AND LOCAL CODES.

D. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.

E. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

F. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES, AND SHALL BE FULLY COORDINATED WITH THEM PRIOR TO COMMENCEMENT OF WORK.

G. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, AND WIRING DEVICES, FOR ALL OUTLETS AS INDICATED.

H. MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SUCH AS APPEAR ON THE UL LIST OF APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF NEC, NEMA, AND IECE. CONTRACTOR SHALL SUBMIT AT LEAST FIVE (5) SETS OF SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF HIS WORK.

K. ALL LAY–IN LIGHTING FIXTURES SHALL BE SECURED TO THE SUSPENDED CEILING GRID AT EACH CORNER.

L. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.

M. ALL ELECTRICAL POWER WIRING FOR THE HVAC SYSTEM INCLUDING WIRING THRU LINE VOLTAGE CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

N. THE CONTRACTOR SHALL CONFIRM WITH THE ELECTRICAL UTILITY COMPANY ANY AND ALL REQUIREMENTS SUCH AS: METERING EQUIPMENT REQUIREMENTS AND METERING EQUIPMENT LOCATION, TRANSFORMER SIZE AND LOCATION OR SERVICE POINT, CONDUIT ENTRY AND LUG SIZE RESTRICTIONS. THE CONTRACTOR SHALL SCHEDULE ALL REQUIRED DOWN TIME FOR THE OWNERS CONFIRMATION. ANY CONFLICTS AND DESCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE

O. PROCEEDING WITH ANY WORK. PER NEC 210.8(B)(2) ALL 15– AND 20–AMPERE, 125–VOLT RECEPTACLES IN NONDWELLING–TYPE KITCHENS TO BE GFCI PROTECTED.

P. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% DESIGN LOAD. FBC 2023 FBC ENERGY CONSERVATION SECTION 405.7.3.

Q. FEEDER CONDUCTORS SHALL BE SIZED FOR A MAXIMUM OF 2% VOLTAGE DROP PER 405.7.3.

ELECTRICAL SHEET INDEX

ELECTRICAL LEGEND

▽	TELEPHONE OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. MOUNT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED.
▼	DATA OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. MOUNT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED.
▽	TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. MOUNTED ABOVE COUNTER, SEE ARCHITECTURAL DRAWING FOR SPECIFIC REQUIREMENTS.
▼	TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. MOUNT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED.
▽	TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT RUN TO THE NEAREST STUD WALL AND STUBBED OUT FROM WALL 6" ABOVE CEILING. PROVIDE BRASS COVER PLATE AND CARPET FLANGE.
	TELEVISION RECESSED OUTLET. LEGRAND "TV1WMTVSSWCC2". MOUNT AT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED.
	20 AMP SINGLE RECEPTACLE (NEMA 5–20R) MOUNTED AT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE.
	20 AMP DUPLEX RECEPTACLE (NEMA 5–20R) MOUNTED AT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE.
	20 AMP QUADRUPLEX RECEPTACLE (NEMA 5–20R) MOUNTED AT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE.
GFI	20 AMP DUPLEX RECEPTACLE (NEMA 5–20R) WITH GROUND FAULT CIRCUIT INTERRUPTER, MOUNT AT 18" A.F.F. TO CENTER LINE OF OUTLET. UNLESS NOTED OTHERWISE.
	20 AMP DUPLEX RECEPTACLE (NEMA 5–20R) MOUNTED ABOVE COUNTER SEE ARCHITECTURAL DRAWINGS FOR SPECIFIC REQUIREMENTS.
	20 AMP DUPLEX RECEPTACLE (NEMA 5–20R) WITH ISOLATED GROUND, MOUNT AT 18" A.F.F. TO CENTERLINE OF OUTLET UNLESS OTHERWISE NOTED.
	20 AMP QUADRUPLEX RECEPTACLE (NEMA 5–20R) WITH ISOLATED GROUND, MOUNT AT 18" A.F.F. TO CENTERLINE OF OUTLET UNLESS OTHERWISE NOTED.
	20 AMP DUPLEX RECEPTACLE (NEMA 5–20R), RECESS FLOOR MOUNTED. PROVIDE BRASS COVER PLATE AND CARPET FLANGE.
	20 AMP DUPLEX RECEPTACLE (NEMA 5–20R), CEILING MOUNTED.
	SPECIAL–PURPOSE RECEPTACLE
J	JUNCTION BOX
J P	SINGLE GANG JUNCTION BOX FOR POWER CONNECTION TO MODULAR FURNITURE SYSTEM INSTALL IN EXACT MANNER AS DIRECTED BY FURNITURE SUPPLIER.
J T/D	DOUBLE GANG JUNCTION BOX FOR TELEPHONE/DATA CONNECTION TO MODULAR FURNITURE SYSTEM. INSTALL IN EXACT MANNER AND LOCATION AS DIRECTED BY FURNITURE SUPPLIER. EXTEND (2) 3/4" EMPTY CONDUITS FROM JUNCTION BOX TO ABOVE CEILING AND TERMINATE WITH INSULATING BUSHING 6" FROM WALL.
	TELE/POWER POLE FOR TELEPHONE/DATA/POWER CONNECTION TO MODULAR FURNITURE 8 WIRE SYSTEM (SEE DETAIL THIS SHEET). INSTALL IN EXACT MANNER AND LOCATION AS DIRECTED BY FURNITURE SUPPLIER, WIREMOLD CATALOG # 2SDTP–4D W/IVORY FINISH.
	SPECIAL PURPOSE RECEPTACLE MOUNTED BELOW RAISE FLOOR.
EF	EXHAUST FAN. SEE MECHANICAL DRAWINGS FOR SPECIFICATIONS.
$	SINGLE POLE, 20 AMP, SWITCH. MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
$3	3–WAY, 20 AMP, SWITCH. MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
$D	SINGLE POLE, 20 AMP, SWITCH WITH DIMMER. MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
$M	MOTOR RATED SWITCH
$VS	VACANCY SENSOR SWITCH, WATTSTOPPER, MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
$	TWO POLE, 30 AMP SWITCH. MOUNT ADJACENT EQUIPMENT TO BE CONTROLLED.
⊠	FACTORY MOUNTED DISCONNECT/STARTER (SEE MECHANICAL SCHEDULE)
A B C	FUSIBLE DISCONNECT SWITCH A = POLES, B= FRAME SIZE, C= FUSE RATING
A B C	FUSIBLE MOTOR STARTER DISCONNECT SWITCH A = POLES, B= NEMA SIZE, C= FUSE RATING
⏚	GROUNDING ELECTRODE & CONDUCTOR SYSTEM
	TRANSFORMER
	ELECTRICAL PANELBOARD
	TELEPHONE WOOD BACKBOARD
WP	WEATHERPROOF
T/C	TIME CLOCK
RE	RELOCATED
E	EXISTING TO REMAIN
A.F.F.	ABOVE FINISH FLOOR
	CEILING MOUNTED DUAL TECHNOLOGY MOTION SENSOR BY WATTSTOPPER.
LV	CEILING MOUNTED LOW VOLTAGE DUAL TECHNOLOGY MOTION SENSOR BY WATTSTOPPER.
DS	CEILING MOUNTED DAY LIGHTING SENSOR. SENSOR TO CONTROL THE DIMMING OF ALL FIXTURES WITHIN 15' OF THE WINDOWS WITH IN ROOM.

ELECTRICAL NOTES

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PROJECT MANAGER: JOHN MAYR

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Rev. #	Date

Project Number	24-0976
Status	Bid Set
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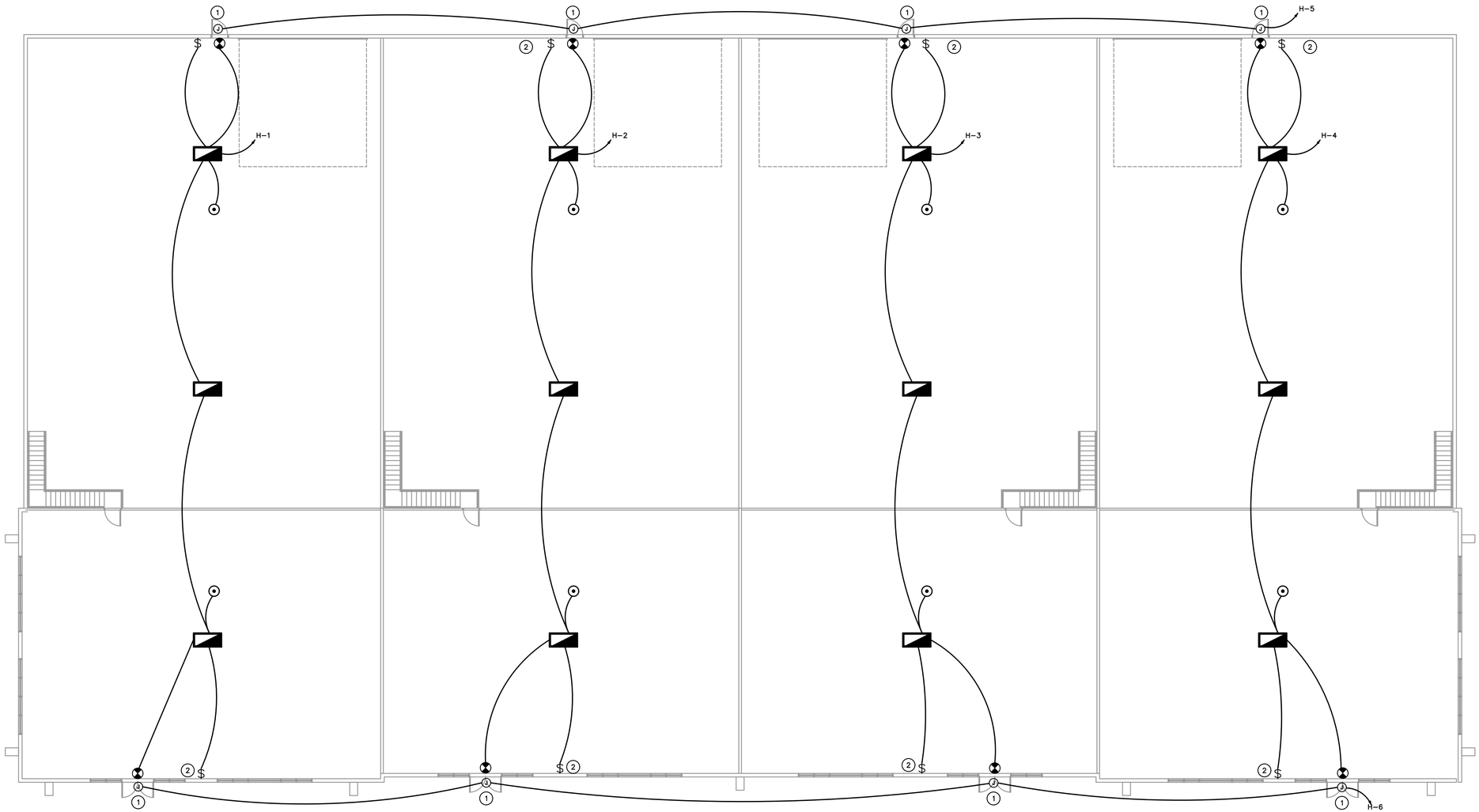

LIGHTING PLAN

3/32"=1'-0" NORTH

KEY NOTES

1. ELECTRICAL CONTRACTOR TO PROVIDE JUNCTION BOX FOR EXTERIOR EMERGENCY EGRESS LIGHT. CIRCUIT THRU PHOTOCELL/ TIMECLOCK.
2. ELECTRICAL CONTRACTOR TO PROVIDE OVERRIDE SWITCH.

LIGHTING PLAN

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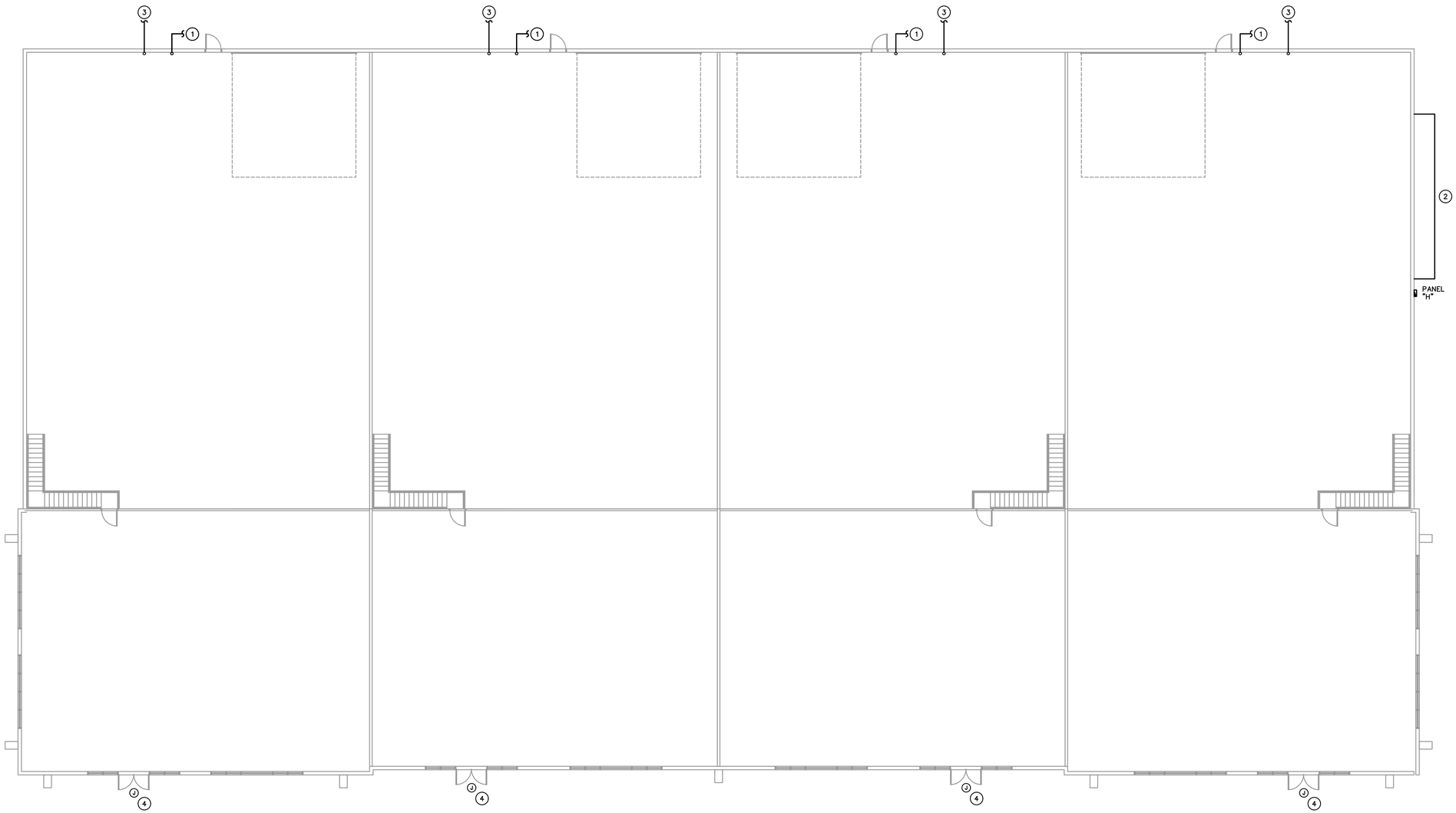

POWER PLAN
3/32"=1'-0" NORTH

KEY NOTES

1. ELECTRICAL CONTRACTOR TO PROVIDE 2" CONDUIT FOR TELEPHONE/DATA SERVICE. COORDINATE DEMARKATION POINT IN FIELD PRIOR TO ROUGH-IN.
2. MAIN ELECTRICAL SERVICE LOCATION. REFER TO RISER DIAGRAM SHEET E5.1.
3. ELECTRICAL CONTRACTOR TO PROVIDE 2-1/2" CONDUIT FOR FUTURE 400 AMP TENANT PANEL.
4. ELECTRICAL CONTRACTOR TO PROVIDE SIGN CIRCUIT. CIRCUIT THRU PHOTOCELL/TIMECLOCK. SEE EXTERIOR ELEVATIONS FOR SIGNAGE LOCATIONS.

POWER PLAN

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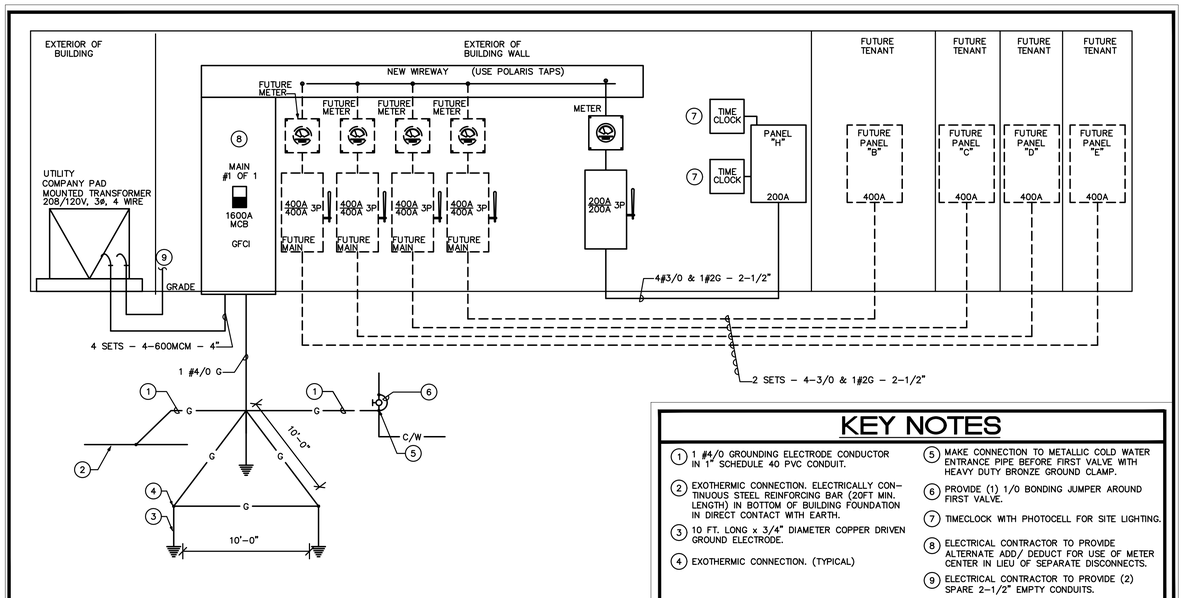

MAIN ELECTRICAL RISER DIAGRAM

NOT TO SCALE

KEY NOTES

1. 1 #4/0 GROUNDING ELECTRODE CONDUCTOR IN 1" SCHEDULE 40 PVC CONDUIT.
2. EXOTHERMIC CONNECTION. ELECTRICALLY CONTINUOUS STEEL REINFORCING BAR (20FT MIN. LENGTH) IN BOTTOM OF BUILDING FOUNDATION IN DIRECT CONTACT WITH EARTH.
3. 10 FT. LONG x 3/4" DIAMETER COPPER DRIVEN GROUND ELECTRODE.
4. EXOTHERMIC CONNECTION. (TYPICAL)
5. MAKE CONNECTION TO METALLIC COLD WATER ENTRANCE PIPE BEFORE FIRST VALVE WITH HEAVY DUTY BRONZE GROUND CLAMP.
6. PROVIDE (1) 1/0 BONDING JUMPER AROUND FIRST VALVE.
7. TIMECLOCK WITH PHOTOCELL FOR SITE LIGHTING.
8. ELECTRICAL CONTRACTOR TO PROVIDE ALTERNATE ADD/ DEDUCT FOR USE OF METER CENTER IN LIEU OF SEPARATE DISCONNECTS.
9. ELECTRICAL CONTRACTOR TO PROVIDE (2) SPARE 2–1/2" EMPTY CONDUITS.

SCHEDULE OF BRANCH CIRCUIT PANEL "H"

MAIN: 200 AMP / 3 POLE MAIN CIRCUIT BREAKER — VOLTAGE: 208/120V, 3ø, 4 WIRE
SPEC: SQUARE D OR APPROVED EQUIVALENT
MOUNTING: FLUSH — AIC SYMM: 22,000

DESCRIPTION	WIRE	GND.	COND.	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	COND.	GND.	WIRE	DESCRIPTION
LIGHTING	#12	#12	1/2"	20	1	0.8 | 0.8	——	——	2	20	1/2"	#12	#12	LIGHTING
LIGHTING	#12	#12	1/2"	20	3	——	0.8 | 0.8	——	4	20	1/2"	#12	#12	LIGHTING
EXTERIOR LIGHTING	#12	#12	1/2"	20	5	——	——	0.8 | 0.8	6	20	1/2"	#12	#12	EXTERIOR LIGHTING
SPARE	–	–	–	20	7	– | –	——	——	8	20	–	–	–	SPARE
SPARE	–	–	–	20	9	——	– | –	——	10	20	–	–	–	SPARE
SPARE	–	–	–	20	11	——	——	– | –	12	20	–	–	–	SPARE
SPARE	–	–	–	20	13	– | –	——	——	14	20	–	–	–	SPARE
SPARE	–	–	–	20	15	——	– | –	——	16	20	–	–	–	SPARE
SPARE	–	–	–	20	17	——	——	– | –	18	20	–	–	–	SPARE
SPARE	–	–	–	20	19	– | –	——	——	20	20	–	–	–	SPARE
SPARE	–	–	–	20	21	——	– | –	——	22	20	–	–	–	SPARE
SPARE	–	–	–	20	23	——	——	– | –	24	20	–	–	–	SPARE
SPARE	–	–	–	20	25	– | –	——	——	26	20	–	–	–	SPARE
SPARE	–	–	–	20	27	——	– | –	——	28	20	–	–	–	SPARE
SPARE	–	–	–	20	29	——	——	– | –	30	20	–	–	–	SPARE
SPARE	–	–	–	20	31	– | –	——	——	32	40	–	–	–	SPARE
SPARE	–	–	–	20	33	——	– | –	——	34	20	–	–	–	SPARE
SPARE	–	–	–	20	35	——	——	– | –	36	20	–	–	–	SPARE
SPARE	–	–	–	20	37	– | –	——	——	38	20	–	–	–	SPARE
SPARE	–	–	–	20	39	——	– | –	——	40	20	–	–	–	SPARE
SPARE	–	–	–	20	41	——	——	– | –	42	20	–	–	–	SPARE
						1.6	1.6	1.6	KVA PER PHASE					
						13.3	13.3	13.3	AMPS PER PHASE					
						4.8			TOTAL KVA					

RISER DIAGRAM

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MECHANICAL NOTES

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE FLORIDA BUILDING CODE 2023 AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST ADDITION OF THE FOLLOWING PUBLICATIONS; SMACNA–85, 92, 95; ASHRAE 15–01, 34–01, 62–04; NFPA 70–02, 72–02, 90A–02, 90B–02, 91–99, 96–01; ANSI Z10.1–98, Z10.3–98, Z21.8–94, Z21.83–98.

2. THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.

3. THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES.

4. THE CONTRACTOR SHALL SUPPLY THE ARCHITECT WITH "AS–BUILT" DRAWINGS.

5. CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE [5] COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT.

6. ALL MATERIAL SHALL BE NEW OF U.S. MANUFACTURER OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED AT INDUSTRY STANDARD QUALITY LEVEL BY CERTIFIED PROFESSIONALS. ALL EQUIPMENT SHALL BE UL OR ETL LISTED.
   ALL INSTALLATIONS SHALL COMPLY WITH FMC 2023, CH. 3, GENERAL REGULATIONS. BUILDINGS LOCATED WITHIN 3,000 FT FROM THE OCEAN SHALL UTILIZE NON–FERROUS MATERIALS FOR ALL OUTDOOR EXPOSED SUPPORTS, STANDS, FASTENERS, ETC.

7. DUCTWORK:
   A. ALL AIR CONDITIONING DUCT WORK SHALL BE OF 1–1/2" (R–6) HEAVY DUTY FOIL REINFORCED FIBERGLASS WITH MANUFACTURER'S LOGO PRINTED ON VAPOR BARRIER
   B. ALL FLEX DUCT SHALL BE RATED CLASS I, UL–181 LISTED WITH METALLIZED INNER AND OUTER FOIL LINERS, MIN. R–6 WITH A MAX. TOTAL LENGTH NOT TO EXCEED 15 FT.
   FLEXIBLE DUCTWORK ELBOW SUPPORTS AT EACH DIFFUSER, GRILLE, AND REGISTER EQUAL TO "FLEXFLOW ELBOW" AS MANUFACTURED BY "THERMAFLEX".
   C. ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS. ALL OUTSIDE AIR DUCT SHALL BE INSULATED WITH EXTERNAL BLANKET INSULATION R–6 MIN.
   ALL METAL EXHAUST, MAKE–UP OR OTHERWISE DUCTS INSTALLED IN LOCATIONS WHERE DEWPOINT CONDITIONS CAN OCCUR INSIDE THE DUCT SHALL BE EXTERNALLY INSULATED WITH R–6 MIN.
   THE CONTRACTOR SHALL PROVIDE ALL SHEETMETAL DUCTWORK, HANGERS, AUX. SUPPORT STEEL, ETC.
   ALL METAL DUCTS SHALL BE FABRICATED IN ACCORDANCE WITH LATEST EDITION OF S.M.A.C.N.A.
   SPECIAL NOTE:
   SMACNA DUCT PRESSURE CLASSES BASED ON OPERATING PRESSURE ARE: 1/2", 1", 2", 3", 4", 6", AND 10". EACH DUCT SYSTEM SHALL BE CONSTRUCTED FOR THE SPECIFIC DUCT PRESSURE CLASS SHOWN ON PLANS.
   WHERE NO PRESSURE CLASS IS SPECIFIED FOR CONSTANT VOLUME SYSTEMS, 1" W.G. PRESSURE CLASS IS THE BASIS OF COMPLIANCE WITH THE SMACNA STANDARDS REGARDLESS OF VELOCITY.
   WHERE NO PRESSURE CLASS IS SPECIFIED FOR VARIABLE VOLUME SYSTEMS, 2" W.G. PRESSURE CLASS IS THE BASIS OF COMPLIANCE WITH THE SMACNA STANDARDS FOR DUCTWORK UPSTREAM OF VAV BOXES.
   ALL DUCTWORK SHALL BE SEALED TO SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" FOR ITS PRESSURE CLASS SEALING METHODS.

9. OUTSIDE AIR INTAKES SHALL BE SCREENED WITH A CORROSION RESISTANT MATERIAL NOT LARGER THAN 1/2" MESH. O/A INTAKES SHALL NOT BE TAKEN FROM A LOCATION CLOSER THAN 10 FT. FROM ANY CHIMNEY, VENT OUTLET OR SANITARY SEWER VENT OUTLET, UNLESS SUCH VENT IS NOT LESS THAN 24 INCHES ABOVE THE OUTSIDE AIR VENT.
   OUTSIDE AIR INTAKE VENTS LOCATED ON ROOFS WILL BE PROPERLY MARKED WITH A UNIVERSAL MARKING "INTAKE", PERMANENTLY ATTACHED PER FMC 2023, SEC. 401.5

10. DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.

11. ALL AIR DEVICES (DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY ARCHITECT. DEVICES SHALL BE AS SPECIFIED OR EQUAL TO TITUS OR METALAIRE. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS AS INDICATED ON PLANS. PROVIDE BALANCING DAMPERS FOR ALL SUPPLY AND RETURN DIFFUSERS AND REGISTERS TO ENSURE COMPLAINCE WITH FMC 2023, PAR. 601.5 AND PAR. 603.18 FOR BALANCED AIR FLOW.

12. TEMPERATURE CONTROLS/THERMOSTAT:
   A. SHALL BE COMBINATION COOLING/HEATING, WITH SYSTEM "COOL–AUTO–HEAT–OFF" AND FAN "ON–AUTO" SELECTOR SWITCHES. PROVIDE PROGRAMMABLE TYPE AS RECOMMENDED BY MANUFACTURER, HONEYWELL OR EQUAL. PROVIDE TAMPER PROOF COVERS.

13. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ENGINEER BEFORE INSTALLATION. INSTALL THERMOSTAT 48" TO 54" A.F.F. PER A.D.A REQUIREMENTS WHERE APPLICABLE.
   MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR ALL REQUIREMENTS FOR JUNCTION BOXES, CONDUITS, CONTROL WIRING, POWER, ETC. AND DEFINE RESPONSIBILITIES AND SCOPE OF WORK FOR EACH TRADE PRIOR TO ANY PURCHASING OR INSTALLATION.
   WHENEVER THERE ARE MORE THAN ONE SENSOR OR THERMOSTAT, SIDE BY SIDE, THEY SHALL BE GANGED TOGETHER WITHIN THE SAME COVER PLATE WHEREVER POSSIBLE.
   CONTRACTOR SHALL COORDINATE THIS ISSUE WITH ARCHITECT/OWNER PRIOR TO INSTALLATION AND SHALL BRING ANY DISCREPANCY TO THE ENGINEER'S ATTENTION.

14. REFRIGERANT LINES SHALL BE COPPER, TYPE "L" HARD DRAWN WITH WROUGHT COPPER BRAZING–JOINT TYPE FITTINGS, USE BRAZING MATERIALS FOR HIGH PRESSURE PIPING PER AWS A5.8: BCuP SERIES COPPER–PHOSPHORUS ALLOY OR BAg1 SILVER ALLOY.
   REFRIGERANT LINES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
   SOFT COPPER TYPE "M" SHALL BE ALLOWED FOR RISER PIPING INSIDE CHASE TO LIMIT NUMBER OF JOINTS. COORDINATE WITH ENGINEER FOR PRIOR APPROVAL.
   ALL EXPOSED INSULATION SHALL BE PROTECTED WITH UV RESISTANT PAINT OR ALUMIN. SHIELD.

15. ARMAFLEX INSULATION SHALL BE USED FOR SUCTION LINES (1/2" FOR ABOVE 40' F AND 1" FOR BELOW 40' F) PER FLORIDA ENERGY CODE TABLE 4–11 FOR PIPING INSULATION. FILTER/DRYER AND SIGHT GLASS SHALL BE PROVIDED AT LIQUID LINES.

16. ALL BRANCH TAKE–OFFS TO BE PROVIDED W/ MANUAL VOLUME DAMPERS. PROVIDE RADIUS ELBOWS WHERE FEASIBLE, SQUARE ELBOWS AND TEE'S SHALL BE FURNISHED W/SINGLE FOIL TURNING VANES. PROVIDE MANUAL VOLUME DAMPERS WITH EXTRACTOR AT ALL FLEX TAKE–OFFS.
   PROVIDE REMOTE, CABLE OPERATED VOLUME DAMPERS IN INACCESIBLE AND HARD CEILING AREAS, "YOUNG REGULATOR" OR EQUAL.

17. PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE START–UP, REPLACE PRIOR TO FINAL ACCEPTANCE BY OWNER.

18. PROVIDE SMOKE DETECTORS WITH SERVICE ACCESS DOORS IN ALL SUPPLY AIR DUCTS FOR FANS AND AHU'S SERVING A COMMON PLENUM OF 2000 CFM OR ABOVE.
   FOR SMOKE DETECTORS NOT VISIBLE, IN CONCEALED SPACES, PROVIDE REMOTE ANNUNCIATION/TEST STATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION, COORDINATE PRIOR TO INSTALLATION.
   DETECTORS SHALL BE BY ONE MANUFACTURER, COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.

19. PROVIDE TYPE "B" DYNAMIC FIRE DAMPERS WITH SERVICE ACCESS DOORS IN ALL DUCTS AND OPENINGS PENETRATING FIRE RATED WALLS, MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, TENANT SEPARATION, PARTITIONS, FLOOR OR ROOF SLABS AND AT OUTSIDE AIR INTAKES AS REQUIRED. PROVIDE RADIATION DAMPERS IN RATED CEILINGS FOR ALL CEILING OPENINGS, CEILING FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY.
   PROVIDE LOW–LEAKAGE CLASS DAMPERS FOR ALL SITUATIONS WHERE THE AIRFLOW CFM HAS TO BE CONTROLLED. VERIFY AND REPLACE AS REQUIRED FOR EXISTING SYSTEMS.

20. HVAC CONTRACTOR SHALL PROVIDE A T & B REPORT PER F.B.C. 2023, CH. C408.2.2 (THE T & B REPORT SHALL BE INDEPENDENT FOR SYSTEMS OVER 15 TONS)
   FOR ALL MECHANICAL EQUIPMENT, AIR DEVICES, DAMPERS, AHU'S AND FANS.
   THE TEST AND BALANCE REPORT SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLES, RETURN GRILLES AND EXHAUST GRILLES AND THE LEAVING AND ENTERING AIR TEMPERATURE (°F) FROM SUPPLY GRILLES AND EVAPORATORS.
   FOR (EXISTING) SMOKE EVACUATION SYSTEMS HVAC CONTRACTOR SHALL PROVIDE A T & B REPORT PRIOR TO ANY NEW WORK, PROVING THAT THE SMOKE EVACUATION SYSTEM PERFORMS PER ORIGINAL DESIGN DOCUMENTS AND IS COMPLIANT WITH LOCAL CODE REQUIREMENTS.

21. RUN INSULATED FIRE RATED CONDENSATE DRAINS AS REQUIRED.

22. ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.

23. MECHANICAL EQUIPMENT ON ROOF OR ELEVATED STRUCTURES SHALL COMPLY WITH FBC 2023 PAR. 306.5 IF INSTALLED HIGHER THAN 16 FEET A.F.F.
   MECHANICAL EQUIPMENT INSTALLED IN ATTICS SHALL MEET THE REQUIREMENTS OF FBC–ENERGY 2023 PAR. C403.2.7.6 IF THE EQUIPMENT CAN NOT BE SERVICED/REMOVED THROUGH REQUIRED OPENING.
   MECHANICAL EQUIPMENT SHALL BE PROTECTED WITH MECHANICAL BARRIERS IF EXPOSED TO MECH. DAMAGE. ALL EQUIPMENT SHALL BE INSTALLED ON 6" CONCRETE PAD AT GRADE LEVEL .
   NOTE: AIR HANDLING UNITS ARE NOT ALLOWED IN COMMERCIAL ATTICS.
   SPECIAL NOTE:
   ALL WIND LOAD AND OTHER COMPLIANCE CALCULATIONS AND/OR INSTALLATION DETAILS FOR ROOF MOUNTED EQUIPMENT AS REQUIRED BY FBC 2023, SEC. 1509, 1522 AND CHAPTER 16, SHALL BE PROVIDED BY STRUCTURAL ENGINEER/ARCHITECT.

24. PROVIDE A MIN. OF 36" CLEARANCE IN FRONT OF ALL 120–208 VOLT PANELS AND MIN. 42" CLEARANCE IN FRONT OF ANY 240–480 VOLT PANEL. PROVIDE ADEQUATE SIDE CLEARANCE PER NEC.

25. MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, PLUMBING, ELECTRICAL, FIRE SPRINKLER, AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS.
   DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS SHALL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CHANGES IN DUCTWORK SIZE AND ROUTE WILL BE REQUIRED TO AVOID STRUCTURAL, PLUMBING, FIRE SPRINKLER AND ARCHITECTURAL BUILDING FEATURES. DUCTWORK CHANGES MAY BE MADE BY CONTRACTOR USING EQUIVALENT SIZED DUCT. CONTACT ENGINEER IF DUCT AREA WILL NOT FIT.

26. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION OR INSTALLATION OF MATERIALS OR EQUIPMENT, IN ORDER TO PROVIDE A FULLY INTEGRATED MECHANICAL AND CONTROLS SYSTEMS WITH THE EXISTING ONES. ANY DISCREPANCY BETWEEN EXISTING CONDITIONS AND PLANS, OR ADDITIONAL CLARIFICATION REQ'D SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO FINAL BIDDING AND WORK.

27. NO COMBUSTIBLE MATERIALS ARE ALLOWED IN RETURN AIR PLENUMS OR ABOVE CEILINGS USED AS RETURN AIR PLENUM. IF SPACE WITH RETURN AIR PLENUM HAS ANY DECK TO DECK PARTITIONS, AIR TRANSFER DUCTS MUST BE INSTALLED.
   WHEN CPVC PIPING IS USED FOR FIRE SPRINKLER SYSTEMS, THE R/A GRILLES LAYOUT SHALL BE (FIELD) COORDINATED WITH SUCH PIPING SO THAT NO PORTION OF THE GRILLES WILL BE DIRECTLY BELOW THE CPVC PIPING.

28. CONDENSATE DRAIN PIPING TO BE AS SPECIFIED PER PLUMBING PLANS, IF NOT SPECIFIED TO BE TYPE "L" COPPER OR PVC WHERE ALLOWED BY CODE WITH 1/2" ARMAFLEX INSULATION. PROVIDE APPROVED WATER LEVEL DETECTOR OR FLOAT SWITCH TO AUTOMATICALLY SHUT DOWN THE AIR COND. UNIT, AS A SECONDARY DRAIN SYSTEM TO COMPLY WITH FMC 2023, SEC. 307
   SUPPLY CONDENSATE PUMP WHERE NECESSARY AS IMPOSED BY FIELD CONDITIONS OR INSTALLATION CHANGES AND PIPE TO CONDENSATE DRAIN PER PLUMBING PLANS.

29. MANUFACTURER'S WARRANTY: CONTRACTOR SHALL PROVIDE WARRANTY FOR A PERIOD OF (1) ONE YEAR AFTER BUILDING C.O. FOR ALL MECHANICAL SYSTEMS, DUCTWORK, CONTROLS ACCESSORIES AND ALL OTHER EQUIPMENT, PARTS AND LABOR UNDER THESE DRAWINGS AND AND SPECIFICATIONS. CONTRACTOR SHALL PROVIDE WARRANTY FOR COMPRESSORS FOR (5) FIVE YEARS. ANY REPAIRS REQUIRING SYSTEM SHUTDOWN WILL BE DONE DURING NON–OPERATIONAL PERIODS OR AS AGREED WITH OWNER.

30. ON PROJECT SPECIFIED WITH EQUIPMENT UTILIZING HOT GAS REHEAT AND/OR DEHUMIDIFICATION; CONTRACTOR SHALL PROVIDE FACTORY STARTUP OF EQUIPMENT WITHIN THEIR BID. STARTUP REPORT DOCUMENT TO BE PROVIDED TO ENGINEER FOR REVIEW.

MECHANICAL SHEET INDEX

MECHANICAL LEGEND

- SUPPLY AIR CEILING DIFFUSER
- RETURN AIR CEILING GRILLE
- MANUAL VOLUME CONTROL DAMPER
- REDUCER OR INCREASER
- EXISTING DUCT
- FLEX DUCT
- ROUND UP
- SHOE TAP DAMPER
- CEILING OR INLINE EXHAUST FAN
- THERMOSTAT
- HUMIDISTAT
- MOTORIZED DAMPER

NOT ALL SYMBOLS MAY APPLY TO THESE PLANS

- SUPPLY AIR
- RETURN AIR
- D/C — DOOR UNDER CUT
- VCD — VOLUME CONTROL DAMPER
- MOD — MANUALLY OPERATED DAMPER
- TAG / CFM — SUPPLY AIR DIFFUSER OR GRILLE DESIGNATION
- TAG / CFM — RETURN/EXHAUST AIR DIFFUSER OR GRILLE DESIGNATION
- TAG - # — EQUIPMENT TAG
  - AHU– AIR HANDLED UNIT
  - KSF– KITCHEN SUPPLY FAN
  - KEF– KITCHE EXHAUST FAN
  - TEF– TOILET EXHAUST FAN

HVAC ABBREVIATION LEGEND

AC	AIR CONDITIONING
AFF	ABOVE FINISH FLOOR
BDD	BACK DRAFT DAMPER
CD	CONDENSATE DRAIN
COP	COEFFICIENT OF PERFORMANCE
DB	DRY BULB
DIA.	DIAMETER
E	EXISTING TO REMAIN
EER	ENERGY EFFICIENCY RATIO
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
F	FILTER
FD	FIRE DAMPER
FLA	FULL LOAD AMPS.
FMS	FLOW MEASURING STATION
IPLV	INTEGRATED PART–LOAD VALUE.
MCA	MINIMUM CIRCUIT AMPS (FOR WIRE SIZING)
MOD	MANUALLY OPERATED DAMPER
MOCP	MAXIMUM OVERCURRENT PROTECTION DEVICE AMPS
NC	NOISE CRITERIA
O/A	OUTSIDE AIR
OBD	OPOSITE BLADE DAMPER
PD	PRESSURE DROP.
R	EXISTING TO BE RELOCATED
R/A	RETURN AIR
RLA	RATED LOAD AMPS.
SEER	STANDARD ENERGY EFFICIENCY RATIO
TSP	TOTAL STATIC PRESSURE
VD	VOLUME CONTROL DAMPER
VFD	VARIABLE FRECUENCY DRIVE
WB	WET BULB

NOTE: NOT ALL SYMBOLS MAY APPLY TO THESE PLAN.

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Rev. #	Date

Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	M0.1

MECHANICAL NOTES

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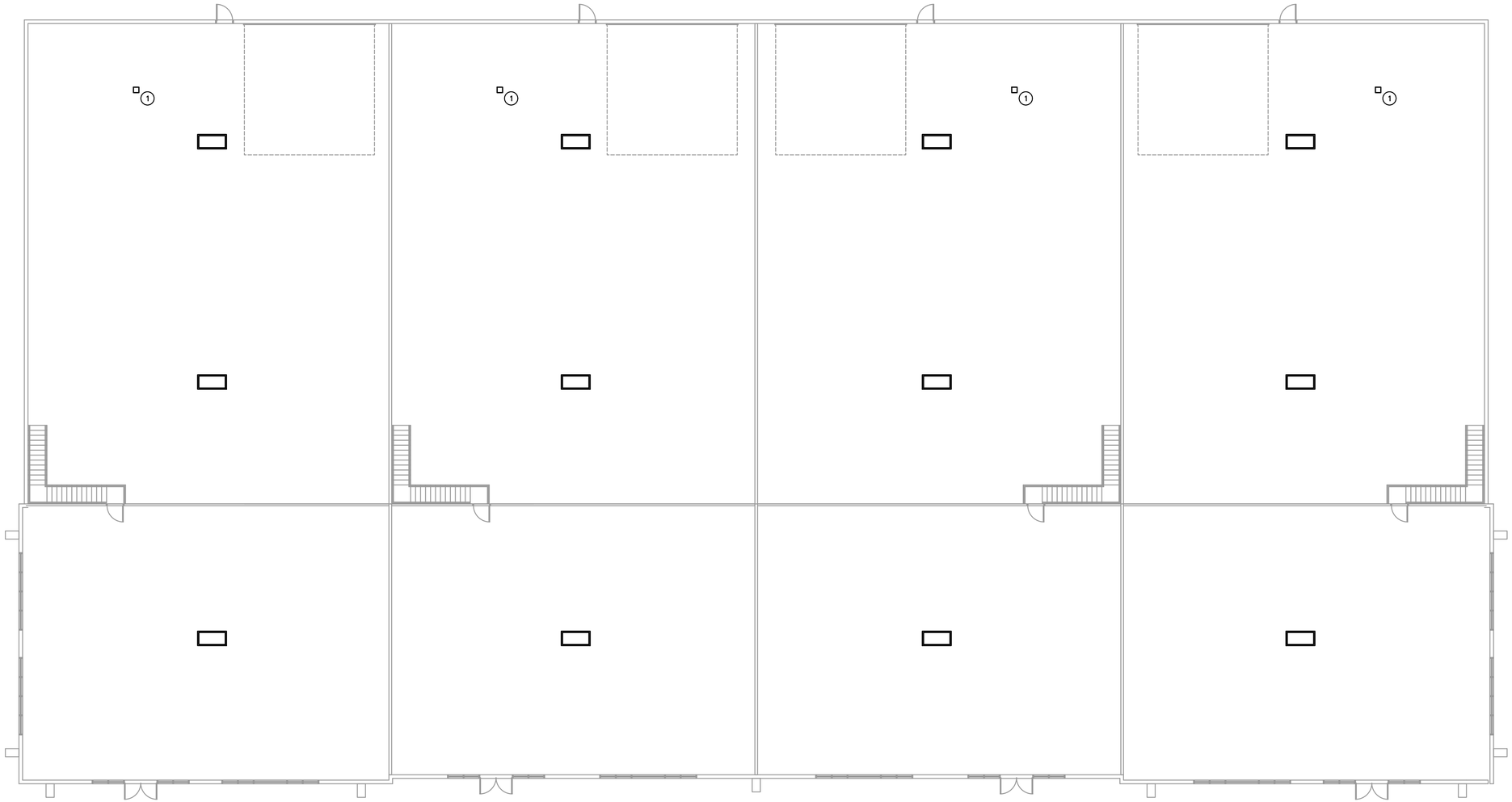

MECHANICAL PLAN

3/32"=1'-0" NORTH

KEY NOTES

1. PROVIDE ROOF CAP FOR FUTURE EXHAUST CONNECTION.

MECHANICAL PLAN

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PROJECT MANAGER: JOHN MAYR

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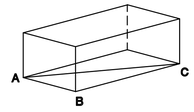
NOTE
DETAIL SHOWN FOR REFERENCE ONLY FOR ATTACHMENT PURPOSES. CODE COMPLIANCE SHALL BE DETERMINED AND VERIFIED BY A LICENSED STRUCTURAL ENGINEER.



MAX. ALLOWABLE DIFFERENCE (in)

A - B	B - C	A - C
0.5	1.0	1.0

ROOFTOP UNIT LEVELING TOLERANCES

ROOFTOP UNIT INSTALLATION NOTES

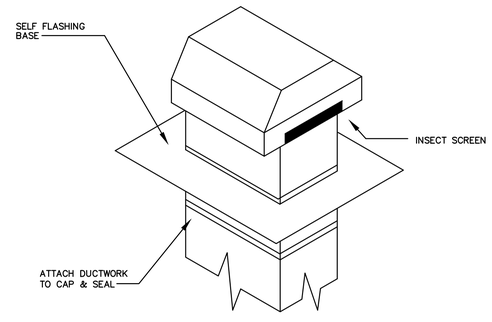
1. DUCT TRANSITION FROM RTU TO DUCT SIZE SHOWN ON MECH. FLOOR PLAN SHALL BE MADE BETWEEN RTU & TOP OF ROOF WITHIN CURB.
2. SIZE OF OPENING IN ROOF DECK TO BE AS SMALL AS POSSIBLE, 6" MAX. LARGER THAN DUCT SIZE SHOWN. COORDINATE W/STRUCTURAL PLANS.
3. INSTALL PER MANUFACTURER'S RECOMMENDATION AND INSTALLATION MANUAL.
4. ALL WIRING BY ELECTRICAL CONTRACTOR.
5. SHIM CURB AS REQUIRED TO PROVIDE HORIZONTAL INSTALLATION OF UNIT WITHIN PRESCRIBED TOLERANCES
6. CONTRACTOR SHALL COORDINATE LOCATION OF ROOF CURB WITH STRUCTURE PRIOR TO INSTALLATION.
7. ROOF CURB BY AIR CONDITIONER MANUFACTURER. PROVIDE ADDITIONAL BRACING AND SUPPORT. AS REQUIRED FOR ROOF CURB INSTALLATION TO WITHSTAND WIND LOAD PER LOCAL CODES.
8. CURB TO BE HEAVY GAUGE GALVANIZED STEEL CONSTRUCTION AS RECOMMENDED BY MANUFACTURER, ALL FASTENERS SHALL BE CORROSION PROTECTED IF EXPOSED TO OUTDOORS
9. FOR A/C UNIT ROOFCURB, PROVIDE 3/8" THRU BOLTS WITH MIN. LENGTH AS DETERMINED BY FIELD CONDITIONS TO INSURE PROPER ATTACHMENT TO STRUCTURE. PROVIDE ANCHORING AS RECOMMENDED BY STRUCTURAL ENGINEER.
10. CLEARANCE OF UNIT TO ABOVE FINISHED ROOF SHALL COMPLY WITH LOCAL CODE REQUIREMENTS: PAR. 1509.6.5 FOR FLORIDA BUILDING CODE, 2023 ED.

HVAC EQUIPMENT ROOF CURB DETAIL
NOT TO SCALE

ROOFTOP A/C EQUIPMENT SCHEDULE

SYSTEM	A/C UNIT TAG		12.5 TON	
	MANUFACTURER		CARRIER	
	MODEL		50HC*D14-5	
	TOTAL SENSIBLE CAP. MBH.		118.5	
	TOTAL COOLING CAP. MBH.		151.5	
	ENT. AIR TEMP D.B./W.B. °F		80°/67°	
	LEAV. AIR TEMP D.B./W.B. °F		–	
	SUPPLY AIR CFM		5000	
	OUTSIDE AIR CFM		500 – 500	
	VOLTAGE		208/3ø/60	
	MCA/MOCP		57.3/70.0	
	SEER/EER		–/12.4	
	OPERATING WEIGHT LBS.		1360	
	DIMENSIONS L x W x H (IN.)		116X64X58	
	NOTES		1-17	
COND. SECTION	REF./LBS.		R-410A/–	
	NOMINAL TONNAGE/STAGES		12.5/2	
	NO. OF COMPRESSORS		2	
	COMP. R.L.A. EACH		19.6/19.6	
	NO. OF OUTDOOR FANS		3	
	FAN FLA. EACH		1.5 ea	
EVAP. SECTION	INDOOR FAN TYPE		FC	
	FAN E.S.P. (IN. W.G.)		1"	
	FAN H.P./B.H.P.		3.7 HP	
	FAN F.L.A.		10.0	
	COIL ROWS/FPI		–	
	HEATER TYPE		ELECTRIC	
	HEATER K.W. @ RATED VOLTAGE		12.4 @ 208V/3ø	
	NO. OF STEPS		1	
	FILTER TYPE/EFF.			

NOTES:
1. UNITS SHALL BE "ARI" RATED. APPROVED EQUIVALENT: AAON, LENNOX, McQUAY, TRANE, YORK
2. PROVIDE FACTORY BUILT ROOFCURB 14"(OR 20" IF NECESSARY) HIGH, INSTALL UNIT LEVEL WITHIN PRESCRIBED TOLERENCES (SEE DETAIL)
3. PROVIDE COMPRESSOR 5-YEAR WARRANTY
4. PROVIDE SLOPED CONDENSATE DRAIN PAN AND INTERNAL TRAP.
5. PROVIDE CO2 SENSOR. CO2 SENSOR TO BE INTERLOCKED WITH MOTORIZED DAMPER.
6. PROVIDE MOTORIZED/MODULATING OUTSIDE AIR DAMPER
7. PROVIDE SERVICE CLEARANCES PER MFGR'S RECOMMENDATIONS.
8. PROVIDE SINGLE POINT POWER ENTRY.
9. PROVIDE FACTORY MOUNTED FUSED DISCONNECT, COORDINATE PRIOR TO PURCHASING
10. PROVIDE VIBRATION/SOUND ISOLATION CURB.
11. PROVIDE MOTOR OVERLOAD AND THERMAL PROTECTION.
12. PROVIDE MATCHING PROGRAMMABLE THERMOSTAT.
13. PROVIDE ELECTRONIC CONDENSATION CONTROL SYSTEM FOR DRAIN PAN(S).
14. PROVIDE ELECTRIC HEATER WITH MIN. 2 STAGES IF OVER 10 KW CAPACITY.
15. PROVIDE HOT GAS REHEAT.
16. PROVIDE RAWAL VALVE.
17. ALL EQUIPMENT SHALL COMPLY WITH WIND LOAD REQUIREMENTS SET BY LOCAL CODES, ORDINANCES, OR AUTHORITIES. WIND LOAD RATING MAY BE REQUIRED; CONTRACTOR TO PROVIDE NOA RATING IF REQUIRED.



ROOF CAP DETAIL
NOT TO SCALE

MECHANICAL SCHEDULES

KAMM CONSULTING PROJECT #: 2025-0053
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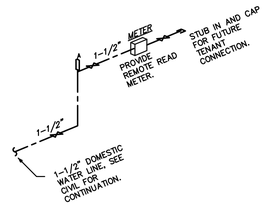


DOM. WATER ISOMETRIC
N.T.S.

SANITARY ISOMETRIC
N.T.S.

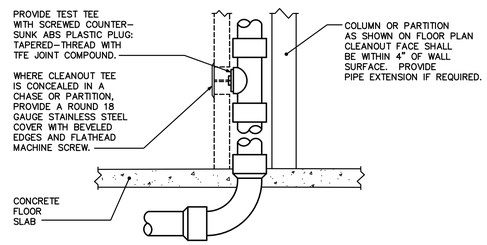
PLUMBING NOTES

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SCOPE OF WORK. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE FLORIDA BUILDING CODE 8th EDITION (2023) – PLUMBING, APPLICABLE LOCAL CODES, RULES, AND ORDINANCES.
2. PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
3. ALL MATERIALS SHALL BE NEW AND OF GOOD QUALITY.
4. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY-OPERATIONAL. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
5. REQUIRED INSURANCE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
6. PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTS. PLUMBING CONTRACTOR SHALL OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT. PLUMBING CONTRACTOR MUST BE PRESENT FOR ALL INSPECTIONS OF HIS WORK BY REGULATORY AUTHORITIES.
7. CONTRACTOR SHALL SUBMIT TO ARCHITECT/ENGINEER, FOR REVIEW & APPROVAL, FIVE (5) SETS OF MANUFACTURER'S CUT SHEETS FOR EACH FIXTURE, PIPING/FITTING MATERIAL AND EQUIPMENT ITEM WITH ASSOCIATED CONTROLS, THAT ARE INCLUDED IN THE CONTRACT.
8. DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
9. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. REPORT ANY DISCREPANCY TO ARCHITECT/ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
10. VERIFY LOCATION, SIZE, DIRECTION OF FLOW AND INVERT ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
11. WATER DISTRIBUTION PIPING ABOVE AND BELOW GROUND SHALL BE TYPE "L" COPPER. ALTERNATE PIPING & FITTING MATERIALS MAY BE USED IN ACCORDANCE WITH FLORIDA BUILDING CODE 8th EDITION (2023) – PLUMBING, TABLES 605.3, 605.4 & 605.5, WHEN APPROVED BY ENGINEER OF RECORD AND LOCAL AUTHORITY HAVING JURISDICTION. PROVIDE ALTERNATE FOR CPVC PIPING & FITTINGS EQUAL TO LUBRIZOL CORZAN OR FLOW-GUARD GOLD. PROVIDE ALTERNATE FOR PEX TYPE 'A' PIPING & FITTINGS EQUAL TO UPONOR. ALTERNATES ARE PERTINENT FOR WATER SERVICES KNOWN OR DETERMINED TO HAVE ACIDIC CHARACTERISTICS OR OTHER PARTICULAR CIRCUMSTANCES AS DEEMED APPROPRIATE BY DIRECTIVE FROM THE OWNER. CONTRACTOR SHALL PERFORM A WATER TEST TO DETERMINE WATER CHEMISTRY PRIOR TO ANY WORK OR PIPING INSTALLATION AND SHALL SUBMIT TEST RESULTS TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL. DISINFECTION OF POTABLE WATER SYSTEM SHALL COMPLY WITH FLORIDA BUILDING CODE 8th EDITION (2023) – PLUMBING, SECTION 610. ALL WATER PIPING & FITTINGS SHALL BE OF DOMESTIC MANUFACTURE; SPECIFICALLY IN THE UNITED STATES OF AMERICA.
12. SOIL, WASTE, VENT, AND RAINWATER (DWV) PIPING & FITTINGS SHALL BE CAST IRON OR PVC, WHERE CODE ALLOWS. PVC MAY NOT BE USED THRU RATED ASSEMBLIES OR IN PLENUMS. PVC PIPING SHALL BE SOLID-CORE ONLY; FOAM-CORE PIPING SHALL NOT BE ACCEPTED. CAST IRON PIPING & FITTINGS SHALL BEAR THE CISPI-301 MARK. ALL DWV PIPING & FITTINGS SHALL BE OF DOMESTIC MANUFACTURE; SPECIFICALLY IN THE UNITED STATES OF AMERICA.
13. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE ANGLE STOPS AND APPROPRIATELY MARKED ACCESS PANELS (WHERE REQUIRED). COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
14. PROVIDE APPROVED WATER HAMMER ARRESTORS FOR ALL (GROUP) PLUMBING FIXTURES, SIZED & LOCATED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS & PDI-WH201.
15. PROVIDE DIELECTRIC COUPLINGS OR FLANGES BETWEEN ALL DISSIMILAR METALS IN PIPING AND EQUIPMENT CONNECTIONS.
16. ISOLATE COPPER PIPING FROM METALLIC HANGERS OR SUPPORTS WITH ISOLATOR PADS OR NON-CONDUCTIVE MATERIAL.
17. ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE PROPERLY PROTECTED FROM FIRE, SMOKE AND WATER PENETRATION BY FILLING ANNULAR SPACE BETWEEN PIPING AND SLEEVES WITH INTUMESCENT CAULK, TO ACHIEVE THE SAME RATING AS WALLS OR FLOORS, AS PART OF THE PLUMBING CONTRACTOR'S WORK.
18. PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE BY OWNER. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
19. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES. ACCESS PANELS IN RATED WALLS SHALL MAINTAIN THE SAME RATING AND SHALL MATCH THE FINISH OF THE WALL IN WHICH IT IS INSTALLED.
20. PROVIDE COMBINATION CLEANOUT PLUG AND COVER PLATE OR ACCESS PANEL FOR ALL WALL CLEANOUTS. FINISH TO MATCH NEARBY FIXTURE TRIM.
21. NO COMBUSTIBLE MATERIAL SHALL BE INSTALLED IN MECHANICAL ROOMS NOR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
22. NO WATER, SANITARY OR DRAINAGE PIPING SHALL BE INSTALLED IN ELECTRICAL OR ELEVATOR EQUIPMENT ROOMS.
23. ALL CONTROL VALVES SHALL BE TAGGED AND MARKED. A REPRODUCIBLE DIAGRAM LOCATING ALL VALVES SHALL BE FURNISHED FOR OWNER/OPERATOR.
24. CONDENSATE DRAIN PIPING SHALL BE TYPE "L" COPPER WITH ARMAFLEX INSULATION AND A VAPOR-BARRIER JACKET PER FLORIDA BUILDING CODE 8th EDITION (2023) – ENERGY CONSERVATION, TABLE C403.2.8. PVC WITHOUT INSULATION IS ACCEPTABLE FOR RISERS AND BELOW GRADE PIPING. WHEN USED IN A RETURN AIR PLENUM, PVC PIPING WITH INSULATION IS ACCEPTABLE IN LOCATIONS WHERE ALLOWED BY LOCAL CODES. CONDENSATE PIPING SHALL NOT DRAIN ONTO THE ROOFING SYSTEM NOR ANY OF ITS COMPONENTS. CONDENSATE PIPING ARRANGEMENT IS EXEMPT FROM MINIMUM EQUIPMENT CLEARANCE REQUIREMENTS PER FLORIDA BUILDING CODE 8th EDITION (2023), SECTION 1522.3.5. ALL HORIZONTAL RAINWATER PIPING RUN ABOVE FINISHED FLOOR THAT RECEIVES CONDENSATE DISCHARGE SHALL BE INSULATED WITH ARMAFLEX AND A VAPOR-BARRIER JACKET.
25. HOT WATER PIPING INSULATION SHALL BE PROVIDED IN ACCORDANCE WITH FLORIDA BUILDING CODE 8th EDITION (2023) – PLUMBING, TABLE 607.5 & FLORIDA BUILDING CODE 8th EDITION (2023) – ENERGY CONSERVATION, TABLE C403.2.8. CONTRACTOR SHALL USE ARMAFLEX OR EQUAL WHERE APPLICABLE. WHERE DOMESTIC WATER TEMPERATURES CAN CAUSE SWEATING, ALL COLD WATER PIPING SHALL BE INSULATED WITH ARMAFLEX INSULATION AND A VAPOR-BARRIER JACKET, PER FLORIDA BUILDING CODE 8th EDITION (2023) – ENERGY CONSERVATION, TABLE C403.2.8.
26. AIR ADMITTANCE VALVES MAY BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF WHERE ACCEPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION. INSTALLATION METHODS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
27. PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
28. STUDOR MINI/MAXI AIR ADMITTANCE VALVES MAY BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF WHERE ACCEPTABLE BY THE PLUMBING OFFICIAL AND LOCAL CODES. INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
29. ALL HORIZONTAL RAINWATER PIPING THE RECEIVES CONDENSATE DISCHARGE FROM AIR CONDITIONING EQUIPMENT SHALL BE INSULATED WITH 1" THK. ARMAFLEX.
30. PLUMBING PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, FIRE SPRINKLER, STRUCTURAL AND CIVIL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. PIPING MODIFICATIONS SUCH AS OFFSETS, BENDS, TRANSITIONS, AND SIZES SHALL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CHANGES IN PIPE SIZES AND ROUTING SHALL BE REQUIRED BY THE CONTRACTOR TO AVOID CONFLICTS AND TO ADAPT TO EXISTING FIELD CONDITIONS PROVIDED THAT INSTALLATION MEETS ALL APPLICABLE CODES.
31. SUPPLY TRAP PRIMER FOR ALL FLOOR DRAINS, FLOOR SINKS, HUB DRAINS, ETC. SHOWN ON PLANS.
32. CONTRACTOR TO FIELD VERIFY ALL SUPPLY PRESSURE REQUIREMENTS AND LIMITATIONS. PROVIDE PRESSURE REDUCING VALVE IF REQUIRED.

PLUMBING SHEET INDEX

PLUMBING LEGEND

CO	CLEAN OUT		SANITARY SEWER PIPING
S.O.V.	SHUT-OFF VALVE		VENT PIPING
COTC	CLEAN OUT TO GRADE		DOMESTIC COLD WATER PIPING
FS	FLOOR SINK		HOT WATER PIPING (110°)
CW	DOMESTIC COLD WATER		HOT WATER PIPING (140°)
HW	DOMESTIC HOT WATER		HOT WATER RECIRCULATING PIPING
HWR	DOMESTIC HOT WATER RECIRCULATING	CD	CONDENSATE PIPING
HB	HOSE BIBB	CA	COMPRESSED AIR PIPING
VTR	VENT THRU ROOF	T&P	TEMPERATURE AND PRESSURE RELIEF
	GATE VALVE	SD	STORM DRAIN PIPING
	GLOBE VALVE	G	GAS PIPING
	BACKFLOW PREVENTOR LEAD FREE, PRE FBC PL 608.1		PIPE RISE UP
	GAS SOLENOID VALVE		PIPE DOWN OR DROP
	GAS COCK		CAPPED END OF PIPE
#	WATER HAMMER ARRESTER (PDI No.)		POINT OF CONNECTION
FD	FLOOR DRAIN		P-TRAP



NOTE:
PROVIDE WCO WHERE SHOWN ON PLAN, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT: LOCATE ABOVE FIXTURE FLOOD RIM WITHIN 4" OF FLOOR. CONSULT LOCAL CODES FOR OTHER WCO REQUIREMENTS.

WALL CLEANOUT DETAIL
NOT TO SCALE

SHOCK ARRESTOR SCHEDULE

P.D.I. DESIGNATION	MANUF. & MODEL	FIXTURE UNITS	CONNECTION
A	SIOUX CHIEF 652-A	1-11	1/2"
B	SIOUX CHIEF 653-B	12-32	3/4"
C	SIOUX CHIEF 654-C	33-60	1"

SIOUX CHIEF SHOCK ARRESTORS APPROVED FOR INSTALLATION WITH NO ACCESS DOOR REQUIRED. CONFORMS TO ANSI/ASSE 1010 STANDARDS.

SLOPE OF HORIZ. DRAINAGE PIPE

SIZE (inches)	MINIMUM SLOPE (inch per foot)
2-1/2 or less	1/4
3 to 6	1/8
8 or larger	1/16

TABLE 704.1 OF THE FLORIDA PLUMBING CODE 2023

PLUMBING NOTES

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Butler Industrial Building

St. Lucie B lvd.
St Lucie County
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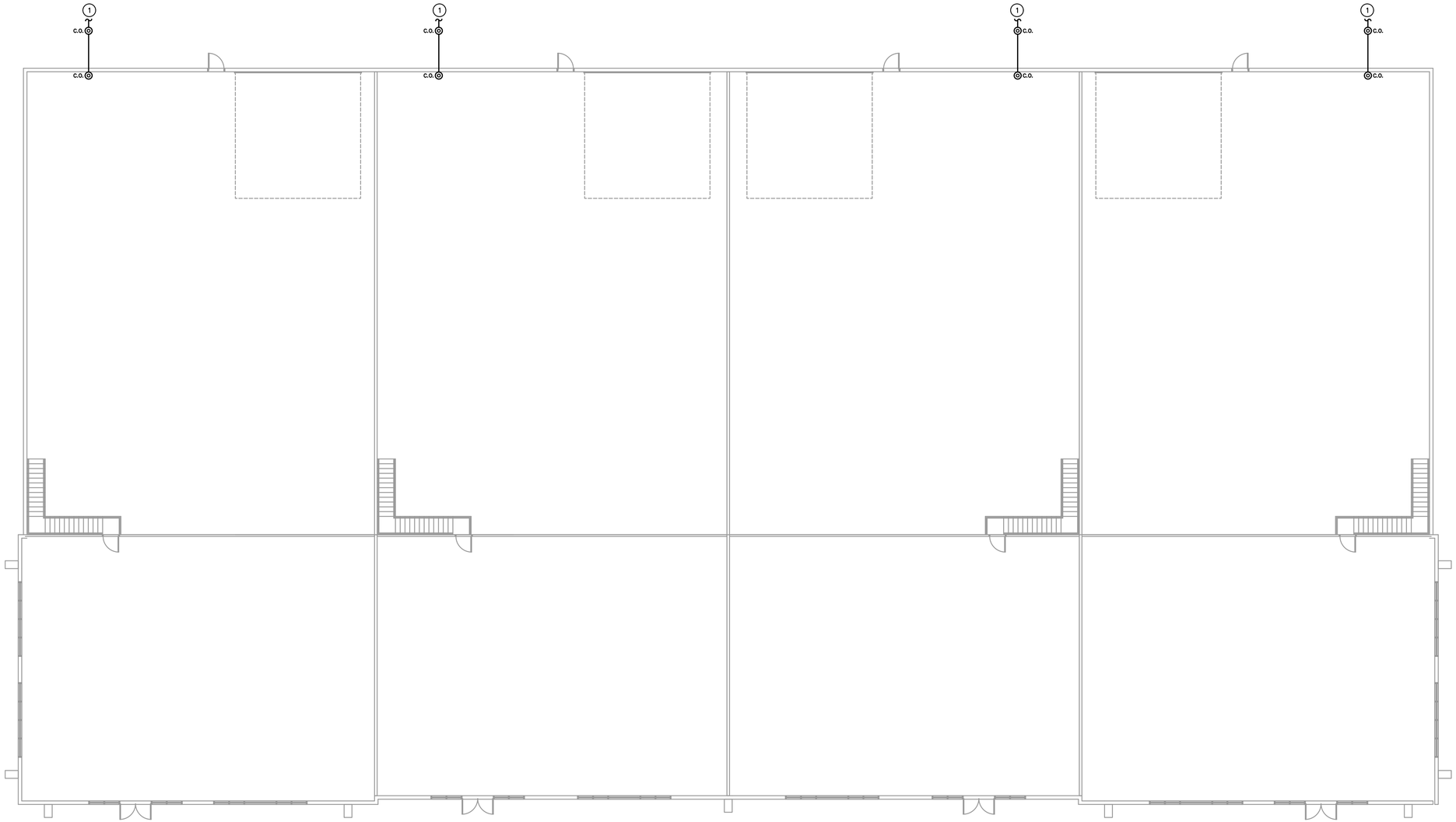
(xxx) xxx-xxxx

Rev. #	Date

Project Number	24-0976
Status	Bid Set
Issue date	11-Apr-25
Sheet	P0.1



SANITARY PLAN
3/32"=1'-0" NORTH

KEY NOTE

(1) 3" SANITARY LINE. STUB UP FOR FUTURE TENANT CONNECTION. SEE CIVIL FOR CONTINUATION.

SANITARY PLAN

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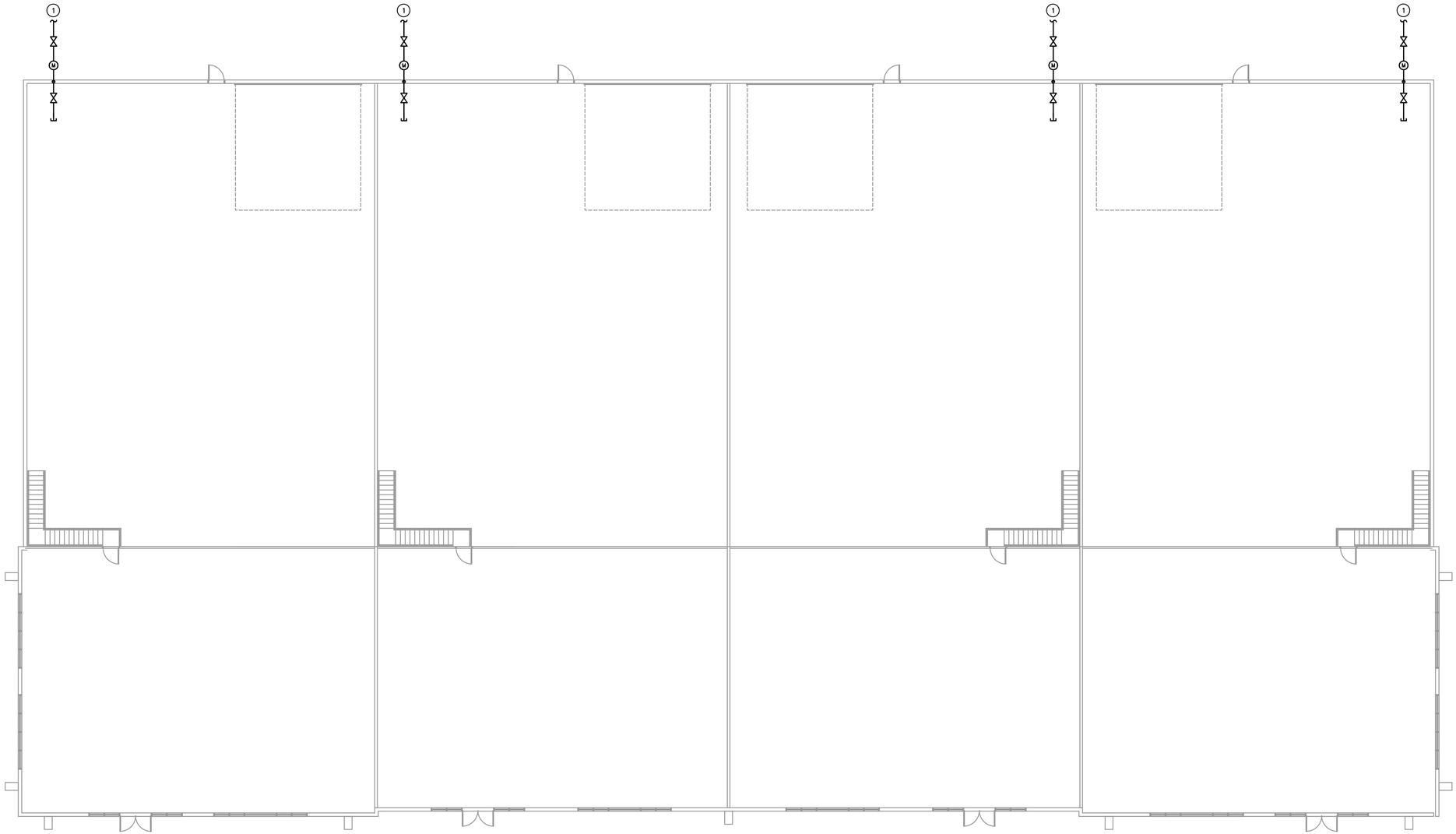

DOMESTIC WATER PLAN

3/32"=1'-0" NORTH

KEY NOTE

(1) 1-1/2" DOMESTIC WATER LINE. STUB IN FOR FUTURE TENANT CONNECTION. PROVIDE REMOTE READ METER. SEE CIVIL FOR CONTINUATION.

DOMESTIC WATER PLAN

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