Wilmington International Airport (ILM) Curbside Improvements Phase 2

Addendum 1B | Issue Date: April 14, 2025

This Addendum 1B is to accompany with the original Addendum 1 issued 4/12/2025 and includes the following:

1. RS&H Addendum 1
    a. **REPLACE Addendum 1 - Vol 1 Base Bid - Addendum 1 Specs, Drawings, & Narrative** with the attached versions.

Monteith Construction Corp.

2024 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOMES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: ILM Airport Boulevard and Parking Improvements – Phase II Vol 1 Parking Garage
Address: 1740 Airport Blvd., Wilmington, NC Zip Code 28405
Owner/Authorized Agent: Mike Doyle Phone # (910) 899 - 2446 E-Mail mdoyle@monmotheco.com
Owned By: Private
Code Enforcement Jurisdiction: County

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	RS&H	Joseph Epstein	14318	(740)940-4733	joseph.epstein@rsandh.com
Civil	RS&H	Dale Stubbs	015021	(678)921-1983	dale.stubbs@rsandh.com
Electrical	RS&H	Chris Durrod	056778	(904)356-3190	chris.durrod@rsandh.com
Fire Alarm	RS&H	Scott Leopold	052256	(904)356-2273	Scott.Leopold@rsandh.com
Plumbing	RS&H	Keith Nix	31858	9043256-2525	keith.nix@rsandh.com
Mechanical	RS&H	Keith Nix	31858	(904)256-2424	keith.nix@rsandh.com
Sprinkler-Standpipe	RS&H	Scott Leopold	052256	(904)256-2373	Scott.Leopold@rsandh.com
Structural	RS&H	Donald Waller	045636	(904)256-2331	donald.waller@rsandh.com
Retaining Walls >5' High	RS&H	Donald Waller	045636	(904)256-2331	donald.waller@rsandh.com
Other	( )				

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2024 NC BUILDING CODE: New Building

2024 NC EXISTING BUILDING CODE: N/A N/A N/A
CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): _____
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): _____

RISK CATEGORY (Table 1604.5): **Current:** N/A **Proposed:** II

BASIC BUILDING DATA
Construction Type: 1A
Sprinklers: Yes N/A
Standpipes: Class I - Dry
Primary Fire District: No **Flood Hazard Area:** No
Special Inspections Required: Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor	N/A	107,772	107,772
2nd Floor	N/A	114,502	114,502
Mezzanine	N/A	N/A	N/A
1st Floor	N/A	120,049	120,049
Basement	N/A	N/A	N/A
TOTAL	N/A	342,323	342,323

ALLOWABLE AREA

Primary Occupancy Classification(s): Storage - S-2 Select one Select one Select one Select one
Accessory Occupancy Classification(s): N/A
Incidental Uses (Table 509): N/A
Special Uses (Chapter 4 – List Code Sections): 406.5 Open Parking Garage
Special Provisions: (Chapter 8 – List Code Sections): N/A
Mixed Occupancy: No Separation: N/A Select one Exception: N/A

Select one
Actual Area of Occupancy A / *Allowable Area of Occupancy A* + *Actual Area of Occupancy B* / *Allowable Area of Occupancy B* ≤ 1
_____ + _____ + ... = _____ ≤ 1.00

STOR. Y NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(b) TABLE 506.2[4] AREA	(c) AREA FOR FRONTAGE INCREASE[1,2]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1	Parking Garage S-2	120,049 SF	Unlimited	Not Calc.	Unlimited
2	Parking Garage S-2	114,502 SF	Unlimited	Not Calc.	Unlimited
3	Parking Garage S-2	107,772 SF	Unlimited	Not Calc.	Unlimited

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (*P*)
b. Total Building Perimeter = _____ (*P*)
c. Ratio (*F/P*) = _____ (*F/P*)
d. *W* = Minimum width of public way = _____ (*W*)
e. Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30 =$ _____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x *D* (maximum 3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]	Unlimited	40'-8"	N/A
Building Height in Stories (Table 504.4) [3]	12	3	N/A

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING PROVIDED (w/ REDUCTION) * REQ'D	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		3 HRS 3 HRS		PCI 124-18	3.2.1(a-w) 2.4.1.4	
Bearing Walls		3 HRS 3 HRS		PCI 124-18	3.2.2(t)	
Exterior North		3 HRS 3 HRS		PCI 124-18	3.2.2(t)	
East		3 HRS 3 HRS		PCI 124-18	3.2.2(t)	
West		3 HRS 3 HRS		PCI 124-18	3.2.2(t)	
South		3 HRS 3 HRS		PCI 124-18	3.2.2(t)	
Interior		3 HRS 3 HRS		PCI 124-18	3.2.2(t)	
Nonbearing Walls and Partitions Exterior walls		0 HRS 0 HRS		PCI 124-18	3.2.2(t)	
North		0 HRS 0 HRS				
East		0 HRS 0 HRS				
West		0 HRS 0 HRS				
South		0 HRS 0 HRS				
Interior walls and partitions		0 HRS 0 HRS				
Floor Construction Including supporting beams and joists		2 HRS 2 HRS		PCI 124-18, PEIS, UL1709	3.2.2(t) 1	
Floor Ceiling Assembly		2 HRS 2 HRS		PEIS, UL1709		
Columns Supporting Floors		3 HRS 3 HRS		PEIS, UL1709		
Roof Construction, including supporting beams and joists		1 1/2 HRS	1 1/2 HRS	PEIS, UL1709		
Roof Ceiling Assembly		1 1/2 HRS	1 1/2 HRS	PEIS, UL1709		
Columns Supporting Roof		3 HRS 3 HRS		PCI 124-18, PEIS, UL1709	3.2.1(a)	
Shaft Enclosures - Exit		N/A N/A	N/A	N/A	N/A	N/A
Shaft Enclosures – Other 10" Min. CIP		1 HR 1 HR		A607-A609	NCSBCC Table 721.1(2)	PCI124-18 3.2.2(b)
Shaft Enclosures – Other 10" Min. CIP		1 HR 1 HR		A607-A609	NCSBCC Table 721.1(2)	PCI 124-18 3.2.2(b)
Shaft Enclosures – Other Joist		1 HR 1 HR		A607-A609	UL419	PCI 124-18 3.2.2(b)
Corridor Separation		0 HR 0 HR		N/A	N/A	N/A N/A
Occupancy/Fire Barrier Separation		0 HR 0 HR		N/A	N/A	N/A N/A
Party/Fire Wall Separation		0 HR 0 HR		N/A	N/A	N/A N/A
Smoke Barrier Separation		0 HR 0 HR		N/A	N/A	N/A N/A
Smoke Partition		0 HR 0 HR		N/A	N/A	N/A N/A
Tenant/Dwelling Unit/ Sleeping Unit Separation		0 HR 0 HR		N/A	N/A	N/A N/A
Incidental Use Separation		0 HR 0 HR		N/A	N/A	N/A N/A

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (Table 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
Terminal 143'-6"	None. Section 705.8.1	Unlimited	None. Section 705.8.1

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: Yes
Exit Signs: Yes
Fire Alarm: No
Smoke Detection Systems: No
Carbon Monoxide Detection: No

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G101, G102, G103

- [x] Fire and/or smoke rated wall locations (Chapter 7)
- [ ] Assumed and real property line locations (if not on the site plan) N/A
- [ ] Exterior wall opening area with respect to distance to assumed property lines (705.8) N/A
- [x] Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
- [x] Occupant loads for each area
- [x] Exit sign locations (1013)
- [x] Exit access travel distances (1017)
- [x] Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
- [ ] Dead end lengths (1020.4) N/A
- [x] Clear exit widths for each exit door
- [x] Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
- [x] Actual occupant load for each exit door
- [ ] A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation N/A
- [ ] Location of doors with panic hardware (1010.1.10) N/A
- [ ] Location of doors with delayed egress locks and the amount of delay (1010.1.9.7) N/A
- [ ] Location of doors with electromagnetic egress locks (1010.1.9.8) N/A
- [ ] Location of doors equipped with hold-open devices N/A
- [ ] Location of emergency escape windows (1030) N/A
- [ ] The square footage of each fire area (202) N/A
- [ ] The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) N/A
- [x] Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

UNIT CLASSIFICATION	TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A								

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED		TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	96" SPACES	132" SPACES	
N/A First Floor Garage	N/A	301	5	3	8
Second Floor Garage	N/A	314	4	3	7
Third floor Garage	N/A	0	0	0	0
TOTAL	N/A	615	9	6	15

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATER CLOSETS		URINALS	LAVATORIES			SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G	N/A								
	NEW	1	2	0	1	1	0	0	1	1
	REQ'D	N/A								

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

_____

_____

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimums and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: N/A

Exempt Building: No Provide code or statutory reference:

Climate Zone: 3A

Method of Compliance: Energy Code - Prescriptive
(If "Other" specify source here)_____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: Min. R-25 continuous insulation
Skylights in each assembly: _____
U-Value of skylight: _____
total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: Min. R-13 + R7.5 continuous insulation
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
projection factor: _____
Door R-Values: Min. per wall assembly

Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: Min. R7.5 continuous insulation

Floors over unconditioned space (each assembly)
Description of assembly: N/A
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: concrete slab on grade
U-Value of total assembly: N/R
R-Value of insulation: N/R
Horizontal/vertical requirement: N/R
slab heated: N/A

2024 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (Is) 1.0
Seismic (Ie) 1.0

Live Loads: Roof 20 psf
Mezzanine N/A psf
Floor 60 psf

Ground Snow Load: 10 psf

Wind Load: Ultimate Wind Speed 145 mph (ASCE-7)
Exposure Category C

SEISMIC DESIGN CATEGORY: B
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) II
Spectral Response Acceleration S_s 0.153 %g S_1 0.067 %g
Site Classification (ASCE 7) D
Data Source: Field Test
Basic structural system Moment Frame
Analysis Procedure: Equivalent Lateral Force
Architectural, Mechanical, Components anchored? N/A

LATERAL DESIGN CONTROL: Earthquake

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) 2,000 psf
Pile size, type, and capacity 18" diameter Auger Cast-in-Place, 220kips Compression 40kips uplift, 22.8kips lateral

2024 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: 27.5
summer dry bulb: 91.2

Interior design conditions:
winter dry bulb: 70
summer dry bulb: 74
relative humidity: 50%

Building heating load: See Schedules

Building cooling load: See Schedules

Mechanical Spacing Conditioning System
Unitary
description of unit: Split System
heating efficiency: See Schedules
cooling efficiency: See Schedules
size category of unit: See Schedules
Boiler
Size category. If oversized, state reason.: N/A
Chiller
Size category. If oversized, state reason.: N/A

List equipment efficiencies: See Schedules

2024 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code - Prescriptive

Lighting schedule (each fixture type)
lamp type required in fixture: **LED**
number of lamps in fixture: **N/A**
ballast type used in the fixture: **N/A**
number of ballasts in fixture: **N/A**
total wattage per fixture: **See Luminaire Schedules**
total interior wattage specified vs. allowed (whole building or space by space): **47,500W vs. 68,464W**
total exterior wattage specified vs. allowed: **1,190W vs. 1,200W**

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
- [ ] C406.2 More Efficient HVAC Equipment Performance
- [x] C406.3 Reduced Lighting Power Density
- [ ] C406.4 Enhanced Digital Lighting Controls
- [ ] C406.5 On-Site Renewable Energy
- [ ] C406.6 Dedicated Outdoor Air System
- [ ] C406.7 Reduced Energy Use in Service Water Heating

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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SEAL:
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

SHEET TITLE:
APPENDIX B

SHEET ID:
G003

PROJECT STATUS:
100% BID SET

4/11/2025 5:47:32 PM Autodesk Docs://1003007004_ILM TO4 Rdwy Inf Improv Design/2003007006_ILM_TO6_Parking Garage and Shuttle Plaza_A_R24.rvt

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CODE ANALYSIS

PROJECT DESCRIPTION

PROJECT CONSISTS OF A NEW PARKING GARAGE AND VERTICAL CIRCULATION CORE. CONSTRUCTION TO INCLUDE NEW FOUNDATIONS, EXTERIOR WALLS, FLOOR SLABS, AND THE BUILDOUT OF VERTICAL CORE WITH ELEVATORS AND ESCALATORS. WORK TO INCLUDE ALL ELECTRICAL, PLUMBING AND MECHANICAL ELEMENTS REQUIRED TO SUPPORT THE BUILDING.

APPLICABLE CODES

MINIMUM STANDARD CODES :
2024 NORTH CAROLINA BUILDING CODE (NCBC)
2024 INTERNATIONAL FIRE CODE (IFC)
2024 INTERNATIONAL PLUMBING CODE
2024 INTERNATIONAL MECHANICAL CODE
2024 INTERNATIONAL FUEL GAS CODE
2024 NATIONAL ELECTRIC CODE (NEC)
2024 INTERNATIONAL ENERGY CONSERVATION CODE
2009 ANSI A117.1 ACCESSIBILITY STANDARD
2012 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101

BUILDING DATA

PROJECT TYPE: NEW CONSTRUCTION
CONSTRUCTION TYPE: IA
TOTAL GROSS BUILDING SQUARE FOOTAGE: 339,090 SF
NUMBER OF FLOORS: 3
HEIGHT OF BUILDING: 40'-8" OVERALL
SPRINKLERED: NO
OCCUPANCY CLASSIFICATION: LOW-HAZARD STORAGE (PARKING) S-2

CONSTRUCTION CLASSIFICATION (NCSBC)

THE PARKING GARAGE IS CLASSIFIED AS LOW-HAZARD STORAGE GROUP S-2, TABLE 406.5.4 ALLOWS UNLIMITED AREA FOR OPEN PARKING GARAGES WITH TYPE IA CONSTRUCTION.

THE ACTUAL AREA PER STORY IS:
GROUND FLOOR - 120, 049 SF
SECOND FLOOR - 114, 502 SF
THIRD FLOOR - 107, 772 SF
TOTAL - 342, 323 SF

TABLE 406.5.4 PERMITS 12 TIERS FOR OPEN PARKING GARAGES
THE ACTUAL HEIGHT IS 3 STORIES AND 40' - 8".

NOTE: THE ABOVE ALLOWANCES DO NOT INCLUDE INCREASES PERMITTED FOR SPRINKLER SYSTEMS

CODE ANALYSIS

FIRE-RATED CONSTRUCTION (NCSBC)

UNDER TYPE IA CONSTRUCTION STRUCTURAL ELEMENTS REQUIRE THE FOLLOWING FIRE RATINGS (TABLE 601):

PRIMARY STRUCTURAL FRAME	3 HOURS
BEARING WALLS	3 HOURS
FLOOR CONSTRUCTION	2 HOURS
ROOF CONSTRUCTION*	1 1/2 HOURS
ROOF SECONDARY FRAMING*	1 1/2 HOURS

* ROOF CONSTRUCTION AND SECONDARY FRAMING ONLY MAY BE OMITTED IF ALL ELEMENTS ARE LOCATED ENTIRELY ABOVE 20' AFF. TABLE 602 DOES NOT REQUIRE ANY EXTERIOR WALL RATINGS

FIRE-RATED SEPARATIONS (NCSBC)

THE FOLLOWING FIRE RATED SEPARATIONS ARE REQUIRED:

TYPE	RATING	OPENING PROTECTION
OCCUPANCY SEPARATION(508.3)	0 HOURS	N/A
SHAFTS	1 HOUR	60 MINUTES
ESCALATOR*	1 HOUR	45 MINUTES
EXIT ACCESS CORRIDORS	0 HOUR	N/A

EXIT STAIRWAY EXCEPTION:
EXIT STAIRWAYS IN OPEN PARKING GARAGES ARE NOT REQUIRED TO BE ENCLOSED WITH A SHAFT ENCLOSURE IN ACCORDANCE WITH SECTION 713 (NCBC 1019.3 EXCEPTION 6)

*ESCALATOR VERTICAL OPENINGS NON-REQUIRED PER 406.5.9 ENCLOSURE OF VERTICAL OPENINGS.

FIRE-RESISTANCE RATING AND SEPARATION (NCSBC)

THE FOLLOWING FIRE RATED SEPARATIONS ARE REQUIRED:

DISTANCE	CONSTRUCTION TYPE	S-2 OCCUPANCY
X < 5'	ALL	1 HOUR

402.4.2.3 AN ATTACHED GARAGE FOR THE STORAGE OF PASSENGER VEHICLES HAVING A CAPACITY OF NOT MORE THAN NINE PERSONS AND OPEN PARKING GARAGES SHALL BE CONSIDERED AS A SEPARATE BUILDING WHERE IT IS SEPARATED FROM THE COVERED OR OPEN MALL BUILDING OR ANCHOR BUILDING BY NOT LESS THAN 2-HOUR FIRE BARRIERS CONSTRUCTED IN ACCORDANCE WITH SECTION 707...

OCCUPANT LOAD (NCSBC)

USE AND OCCUPANCY CLASSIFICATION:	OCCUPANT LOAD FACTOR:	AREA:	OCCUPANTS:
GROUND FLOOR			
PARKING GARAGE	1 PER 200 (1/200)	110,561 SF	557
STORAGE/UTILITY	1 PER 300 (1/300)	1,864 SF	7
BUSINESS (RAC KIOSKS)	1 PER 150 (1/150)	600 SF	4
SECOND FLOOR			
PARKING GARAGE	1 PER 200 (1/200)	105,147 SF	526
STORAGE/UTILITY	1 PER 300 (1/300)	532	2
THIRD FLOOR			
PARKING GARAGE	1 PER 200 (1/200)	105,308 SF	527
STORAGE/UTILITY	1 PER 300 (1/300)	589 SF	2

TOTAL BUILDING (3 FLOORS) OCCUPANCY: 1, 625 PERSONS

CODE ANALYSIS

MEANS OF EGRESS (NCSBC)

MAXIMUM TRAVEL DISTANCE (TABLE 1017.2)

	PROVIDED	REQUIRED
GROUND FLOOR (LEVEL 1)	-	
TRAVEL DISTANCE	293' - 8"	300' - 0" MAX.
NO. OF EXITS	3	3
CLEAR WIDTH OF EXIT ACCESS	162"	114" (570 X .2")
SECOND FLOOR (LEVEL 2)		
TRAVEL DISTANCE	299'-5"	300' - 0" MAX.
NO. OF EXITS	3	3
CLEAR WIDTH OF EXIT ACCESS	162"	117.2" (586 X .2")
REQUIRED STAIR WIDTH	180"	175.8" (586 X .3")
THIRD FLOOR (LEVEL 3)		
TRAVEL DISTANCE	299-5"	300' - 0" MAX.
NO. OF EXITS	3	3
CLEAR WIDTH OF EXIT ACCESS	162"	108.2" (541 X .2")
REQUIRED STAIR WIDTH	180"	162.3" (541 X .3")

PLUMBING FIXTURE COUNT (NCSBC)

403.3 PUBLIC TOILET FACILITIES SHALL NOT BE REQUIRED IN OPEN PARKING GARAGES WITH NO PARKING ATTENDANT.

PLUMBING FIXTURES:

BUSINESS OCCUPANTS: 4	LOAD FACTOR: 1 PER 25	REQUIRED TOILETS: 1 (TOTAL PROVIDED) 2
BUSINESS OCCUPANTS: 4	LOAD FACTOR: 1 PER 40	REQUIRED LAVATORIES: 1 (TOTAL PROVIDED) 3
BUSINESS OCCUPANTS: 4	LOAD FACTOR: 1 PER 100	REQUIRED DRINKING FOUNTAINS: 1 (TOTAL PROVIDED) 3

OPEN PARKING GARAGE CLASSIFICATION (NCBC 406.5.2)

"FOR NATURAL VENTILATION PURPOSES, THE EXTERIOR SIDE OF THE STRUCTURE SHALL HAVE UNIFORMLY DISTRIBUTED OPENINGS ON TWO OR MORE SIDES. THE AREA OF SUCH OPENINGS IN EXTERIOR WALLS ON A TIER SHALL BE NOT LESS THAN 20 PERCENT OF THE TOTAL PERIMETER WALL AREA OF EACH TIER. THE AGGREGATE LENGTH OF THE OPENINGS CONSIDERED TO BE PROVIDING NATURAL VENTILATION SHALL BE NOT LESS THAN 40 PERCENT OF THE PERIMETER OF THE TIER. INTERIOR WALLS SHALL BE NOT LESS THAN 20 PERCENT OPEN WITH UNIFORMLY DISTRIBUTED OPENINGS."

EXCEPTION 1: OPENINGS ARE NOT REQUIRED TO BE DISTRIBUTED OVER 40 PERCENT OF THE BUILDING PERIMETER WHERE THE REQUIRED OPENINGS ARE UNIFORMLY DISTRIBUTED OVER TWO OPPOSING SIDES OF THE BUILDING.

LIFE SAFETY LEGEND

SYMBOL LEGEND

- ESCAPE ROUTE TRAVEL PATH
- FEC — FIRE EXTINGUISHER CABINET
- FE — FIRE EXTINGUISHER
- EXIT SIGN
- EXIT

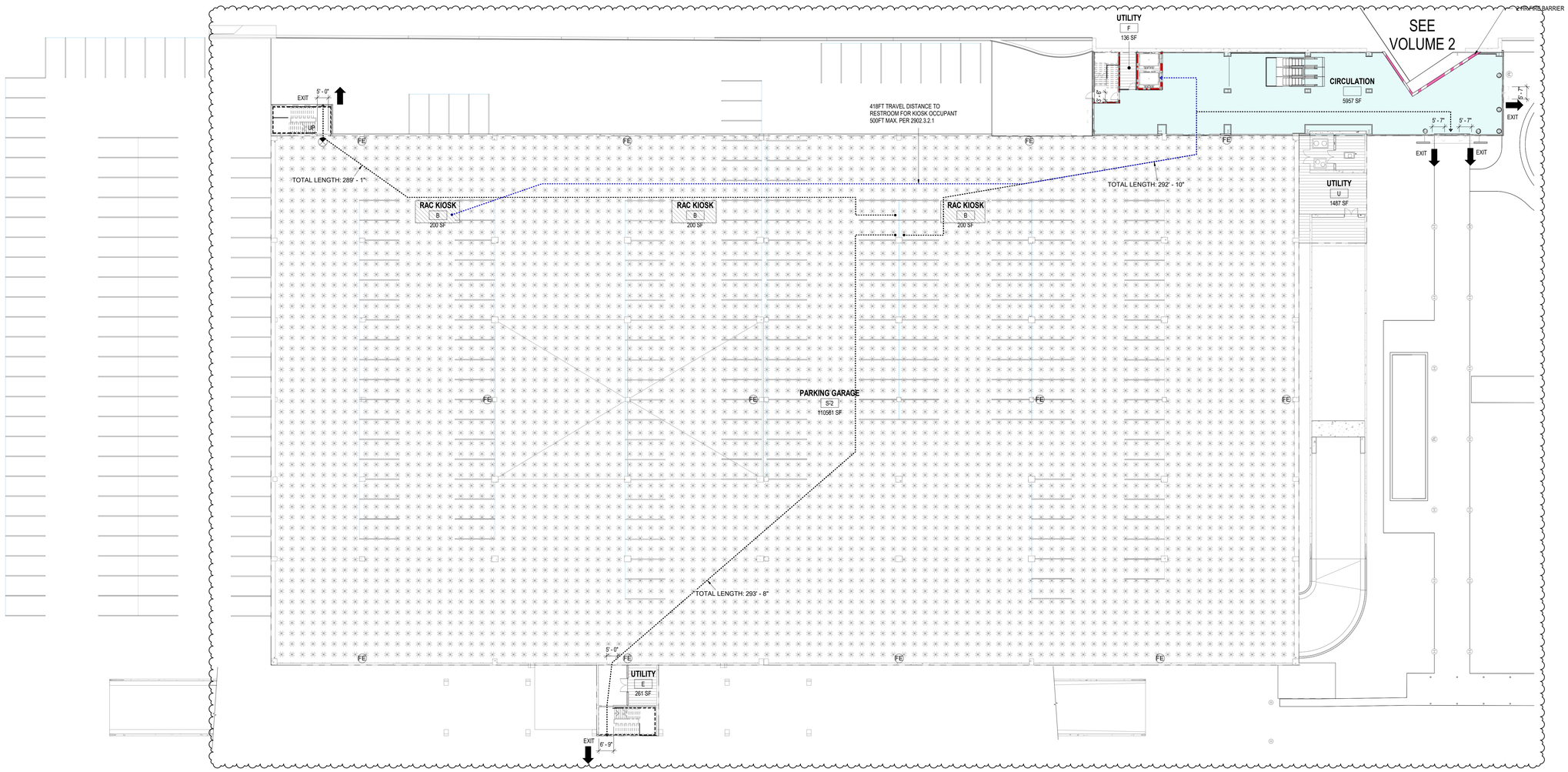
OCCUPANCY LEGEND

- NONE
- ACCESSORY STORAGE AREA, ELECTRICAL AND MECHANICAL EQUIPMENT ROOM
- BUSINESS
- PARKING GARAGES

PARTITION LEGEND

- NON-RATED WALL SYSTEM
- 1-HOUR RATED WALL SYSTEM
- 2-HOUR RATED WALL SYSTEM
- 3-HOUR RATED WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS FOR PARTITION TYPE DETAILS



PN
N

A1 GROUND FLOOR LIFE SAFETY PLAN
SCALE: 3/64" = 1'-0"

16 0 16 32 48
SCALE: 3/64" = 1'-0"

RS&H
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Charlotte, NC 28203
Phone: 704-752-0610, Fax: 704-949-2672
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North Carolina License Nos. 50073 *
F-0493 * C-28

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG
PROJECT NUMBER:	2003-0070-006

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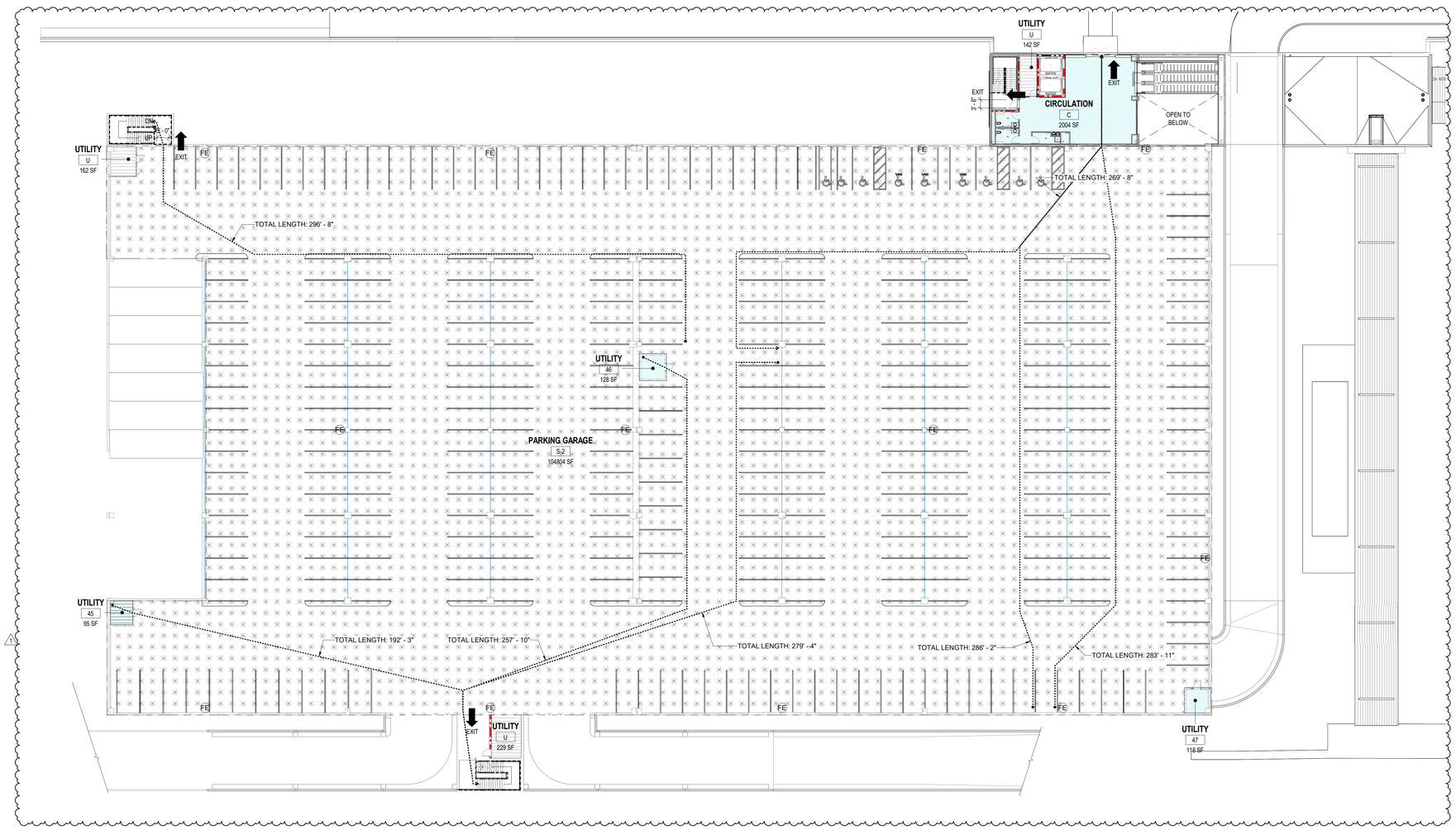
SHEET TITLE:
PROJECT INFORMATION, BUILDING CODE ANALYSIS, AND LIFE SAFETY PLANS

SHEET ID:
G101

PROJECT STATUS:
100% BID SET

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PN

A1 SECOND FLOOR LIFE SAFETY PLAN

SCALE: 3/64" = 1'-0"

16 0 16 32 48

SCALE: 3/64" = 1'-0"

LIFE SAFETY LEGEND

SYMBOL LEGEND

- ESCAPE ROUTE TRAVEL PATH
- FEC — FIRE EXTINGUISHER CABINET
- FE — FIRE EXTINGUISHER
- EXIT SIGN
- EXIT

OCCUPANCY LEGEND

- NONE
- ACCESSORY STORAGE AREA, ELECTRICAL AND MECHANICAL EQUIPMENT ROOM
- BUSINESS
- PARKING GARAGES

PARTITION LEGEND

- NON-RATED WALL SYSTEM
- 1-HOUR RATED WALL SYSTEM
- 2-HOUR RATED WALL SYSTEM
- 3-HOUR RATED WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS FOR PARTITION TYPE DETAILS

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
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PROJECT NUMBER:
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SHEET TITLE:

PROJECT INFORMATION, BUILDING CODE ANALYSIS, AND LIFE SAFETY PLANS

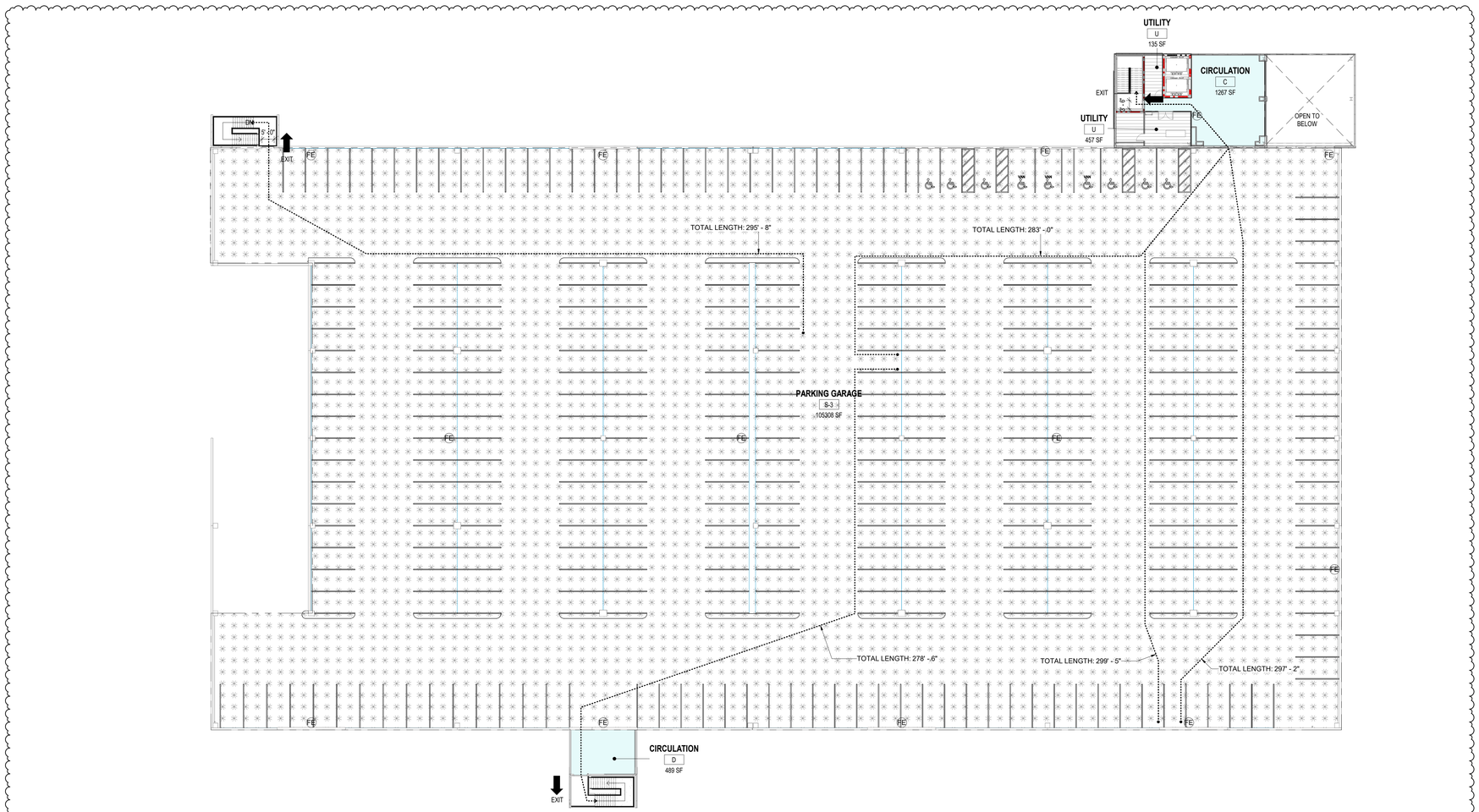
SHEET ID:

G102

PROJECT STATUS:
100% BID SET

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LIFE SAFETY LEGEND

SYMBOL LEGEND

- ESCAPE ROUTE TRAVEL PATH
- FEC — FIRE EXTINGUISHER CABINET
- FE — FIRE EXTINGUISHER
- EXIT SIGN
- EXIT

OCCUPANCY LEGEND

- NONE
- ACCESSORY STORAGE AREA, ELECTRICAL AND MECHANICAL EQUIPMENT ROOM
- BUSINESS
- PARKING GARAGES

PARTITION LEGEND

- NON-RATED WALL SYSTEM
- 1-HOUR RATED WALL SYSTEM
- 2-HOUR RATED WALL SYSTEM
- 3-HOUR RATED WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS FOR PARTITION TYPE DETAILS

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ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

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SEAL:
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SHEET TITLE:
PROJECT INFORMATION, BUILDING CODE ANALYSIS, AND LIFE SAFETY PLANS

SHEET ID:
G103

PROJECT STATUS:
100% BID SET

PN
N

A1 THIRD FLOOR LIFE SAFETY PLAN
SCALE: 3/64" = 1'-0"

16 0 16 32 48
SCALE: 3/64" = 1'-0"

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GENERAL STRUCTURAL NOTES

DESIGN CRITERIA:

1. ALL WORK TO CONFORM TO THE 2024 NORTH CAROLINA STATE BUILDING CODE.

2. DEAD LOADS:
   - STRUCTURE SELF-WEIGHT
   - GARAGE COLLATERAL LOAD — 5 PSF

3. LIVE LOADS:
   - SLAB-ON-GRADE
   - ELEVATED LEVELS (PASSENGER VEHICLES ONLY) — 250 PSF; 40 PSF (UNIFORM); 3,000 LBS (CONCENTRATED); ACTING ON AREA 4.5 IN x 4.5
   - LOBBIES — 100 PSF
   - STAIRS — 100 PSF
   - PASSENGER BRIDGE (LEVEL 2) — 100 PSF
   - MECHANICAL / ELECTRICAL ROOMS — 150 PSF (SEE PLAN FOR LOCATIONS)
   - ROOFS — 20 PSF
   - VEHICLE BARRIERS: ALL VEHICULAR IMPACT BARRIERS ALONG THE PERIMETER OF THE PARKING GARAGE AND ALONG INTERIOR RAMPS SHALL BE DESIGNED FOR A 6,000 LB LOAD BETWEEN 18" AND 27" ABOVE FINISHED FLOOR, LOCATED TO PRODUCE THE MAXIMUM LOAD EFFECT. THE LOAD IS APPLIED TO A ONE FOOT SQUARE AREA IN ACCORDANCE WITH SECTION 4.5.3 OF ASCE 7-16.

4. RAIN LOADS:
   - INTENSITY — 60 MINUTE / 100 YEAR - 4.53 INCHES / HOUR; 15 MINUTE / 100 YEAR - 8.59 INCHES / HOUR; 25 PSF MIN (LEVEL 3)

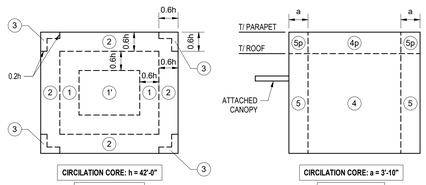
5. SNOW LOADS:
   - GROUND SNOW LOAD — Pg = 10 PSF

6. SEISMIC DESIGN DATA (ASCE 7-16):
   - SEISMIC IMPORTANCE FACTOR — Ie = 1.00
   - MAPPED SPECTRAL RESPONSE ACCELERATIONS — Ss = 0.153 & S1 = 0.067
   - SITE CLASSIFICATION — D
   - SPECTRAL RESPONSE COEFFICIENTS — SDS = 0.163 & SD1 = 0.108
   - SEISMIC DESIGN CATEGORY — B
   - ANALYSIS PROCEDURE — EQUIVALENT LATERAL FORCE PROCEDURE

   GARAGE
   - SEISMIC-FORCE-RESISTING SYSTEM — INTERMEDIATE REINFORCED CONCRETE MOMENT FRAMES
   - RESPONSE MODIFICATION COEFFICIENT — R = 5.0
   - SEISMIC RESPONSE COEFFICIENT — Cs = 0.033
   - DESIGN BASE SHEAR — V = Cs * WEIGHT

   CIRCULATION CORE
   - SEISMIC-FORCE-RESISTING SYSTEM — STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
   - RESPONSE MODIFICATION COEFFICIENT — R = 3.0
   - SEISMIC RESPONSE COEFFICIENT — Cs = 0.055
   - DESIGN BASE SHEAR — V = Cs * WEIGHT

7. WIND DESIGN DATA (ASCE 7-16):
   - ULTIMATE DESIGN WIND SPEED, Vult (3-SECOND GUST) — 145 MPH
   - NOMINAL DESIGN WIND SPEED, Vasd (3-SECOND GUST) — 112 MPH
   - BUILDING RISK CATEGORY — II
   - WIND EXPOSURE — C
   - INTERNAL PRESSURE COEFFICIENT — +/- 0.18



CIRCULATION CORE							
COMPONENTS AND CLADDING ULTIMATE WIND PRESSURE (PSF)							
ROOFS							
ZONE	EFFECTIVE WIND AREA (SF)						
	≤ 10	20	50	100	200	500	≥ 1000
1'	-51.9	-51.9	-51.9	-51.9	-44.7	-35.1	-27.9
1	-90.3	-84.5	-76.4	-70.6	-64.4	-56.7	-56.7
2	-119.1	-111.4	-101.4	-93.7	-86.0	-75.9	-75.9
3	-162.4	-147.0	-126.8	-111.4	-96.1	-75.9	-75.9
ALL ZONES	23.1	21.6	19.7	18.3	18.3	18.3	18.3
WALLS, WINDOWS AND DOORS							
ZONE	EFFECTIVE WIND AREA (SF)						
	≤ 10	20	50	100	200	≥ 500	
4	-56.2	-54.0	-51.0	-48.4	-46.3	-43.2	
5	-69.2	-64.4	-58.4	-54.0	-49.3	-43.2	
ALL ZONES	51.9	49.7	46.7	44.1	41.9	38.9	
PARAPETS							
ZONE	EFFECTIVE WIND AREA (SF)						
	≤ 10	20	50	100	200	≥ 500	
4P	-91.9	-87.5	-81.4	-76.1	-71.7	-65.6	
	155.6	145.6	132.3	121.9	111.9	98.7	
5P	-105.0	-98.0	-88.8	-81.8	-74.8	-65.6	
	199.3	181.6	158.1	139.9	122.2	98.7	

NOTES:
1. EDGE ZONE (a) IS DISTANCE FROM CORNERS OF BUILDINGS AND IS SHOWN ON GENERIC BUILDING DIAGRAMS ABOVE.
2. POSITIVE AND NEGATIVE SIGNS SIGNIFY PRESSURES ACTING TOWARDS AND AWAY FROM THE BUILDING SURFACES, RESPECTIVELY.
3. FOR EFFECTIVE AREAS BETWEEN VALUES GIVEN, INTERPOLATION MAY BE USED. OTHERWISE USE THE LOWER EFFECTIVE AREA.
4. PRESSURES SHOWN ARE ULTIMATE PRESSURES. MULTIPLY BY 0.6 FOR NOMINAL PRESSURES.
5. CALCULATE NET UPLIFT PRESSURES USING ASCE 7 LOAD COMBINATIONS: 0.6D+0.6W (ASD) OR 0.9D+W (LRFD)

GARAGE							
COMPONENTS AND CLADDING ULTIMATE WIND PRESSURE (PSF)							
ROOFS							
ZONE	EFFECTIVE WIND AREA (SF)						
	≤ 10	20	50	100	200	500	≥ 1000
1'	-47.0	-47.0	-47.0	-47.0	-40.5	-31.8	-25.3
1	-81.9	-76.7	-69.3	-64.0	-58.4	-51.4	-51.4
2	-108.0	-101.0	-91.9	-84.9	-78.0	-68.8	-68.8
3	-147.2	-133.3	-115.0	-101.0	-87.1	-68.8	-68.8
ALL ZONES	20.9	19.6	17.9	16.6	16.6	16.6	16.6
WALLS, WINDOWS AND DOORS							
ZONE	EFFECTIVE WIND AREA (SF)						
	≤ 10	20	50	100	200	≥ 500	
4	-51.0	-49.0	-46.3	-43.9	-41.9	-39.2	
5	-62.7	-58.4	-52.9	-49.0	-44.7	-39.2	
ALL ZONES	47.0	45.1	42.3	40.0	38.0	35.3	

GENERAL:

1. NOTES ON THIS AND THE FOLLOWING SHEETS ARE PART OF THE PROJECT REQUIREMENTS BUT ARE NOT INTENDED TO REPLACE THE PROJECT SPECIFICATIONS. IN CASE OF CONFLICTS BETWEEN THE REQUIREMENTS OF THE SPECIFICATIONS AND THESE SHEETS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
2. THIS STRUCTURAL DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS, AS AN INSTRUMENT OF SERVICE, ARE INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY RS&H ARCHITECTS-ENGINEERS-PLANNERS, INC. (RS&H) SHALL BE WITHOUT LIABILITY TO RS&H.
3. IT IS UNDERSTOOD THAT THE STRUCTURAL ENGINEER OF RECORD MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO FINDINGS, DESIGNS, RECOMMENDATIONS, SPECIFICATIONS, OPINION, OR PROFESSIONAL ADVICE, EXCEPT THAT THESE DOCUMENTS HAVE BEEN PREPARED IN ACCORDANCE WITH THE CURRENT GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRACTICES.
4. ALL STRUCTURAL MEMBERS SHOWN HEREIN HAVE BEEN DESIGNED FOR THE FINAL DESIGN LOADS PROVIDED IN THIS DOCUMENT IN THE FINAL ERECTED CONDITION SHOWN HEREIN. THE CONTRACTOR IS RESPONSIBLE FOR CONDITIONS ENCOUNTERED DURING ERECTION AND HANDLING, AND NECESSARY TEMPORARY BRACING AND SHORING. SHORING AND BRACING SHALL BE DESIGNED TO PRECLUDE ANY STRUCTURAL ELEMENT FROM BEING OVERSTRESSED AT ANY POINT DURING CONSTRUCTION.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON JOB SITE WITH COMPLETE SET OF LATEST DRAWINGS. NOTES AND DIMENSIONS SHALL BE CHECKED AND VERIFIED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE COMMENCING WORK SO THAT PROPER REMEDIAL WORK CAN BE EXECUTED.
6. CONTRACTOR SHALL REFER TO THE ENGINEER FOR INSTRUCTION FOR ANY DIMENSION NOT GIVEN ON OR OBTAINABLE FROM THE DRAWING. THE CONTRACTOR SHALL NOT USE SCALE TO OBTAIN OR VERIFY ANY DIMENSIONS SHOWN ON THESE DRAWINGS.
7. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR OPENINGS, SLEEVES, ETC. NOT SHOWN ON STRUCTURAL DRAWINGS. PROVIDE FRAMING OR REINFORCING AT FLOOR AND ROOF OPENINGS. ALL STRUCTURAL OPENINGS AROUND OR AFFECTED BY ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT SHALL BE VERIFIED WITH THE EQUIPMENT PURCHASED BEFORE PROCEEDING WITH STRUCTURAL WORK AFFECTED.
8. DETAILS AND CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN FOR SIMILAR CONDITIONS AND MATERIAL.

DELEGATED DESIGN SUBMITTALS:

1. DELEGATED DESIGN SUBMITTALS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND THE ARCHITECT / ENGINEER AND SHALL BE REVIEWED PRIOR TO INSTALLATION.
2. ALL DELEGATED DESIGN SUBMITTALS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA.
3. DELEGATED DESIGN SUBMITTALS ARE AS FOLLOWS:
   - COLD-FORMED STEEL FRAMING
   - PRECAST CONCRETE
   - SEGMENTAL RETAINING WALL (SRW)
   - NCDOT BARRIER WALL AND MOMENT SLAB
   - PRE-ENGINEERED ALUMINUM CANOPIES
   - STEEL STAIRS

CAST-IN-PLACE CONCRETE:

1. ALL CONCRETE SHALL BE DESIGNED PER ACI 318-19.
2. ALL CONCRETE SHALL BE DESIGNED BY AN APPROVED LABORATORY, AND THE DESIGN MIX SHALL SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO USE.

LOCATION	STRENGTH (f'c) @ 28 DAY
NORMAL WEIGHT (NWT) CONCRETE	
ACIP PILES	5000 PSI
SPREAD FOOTINGS	5000 PSI
PILE CAPS	5000 PSI
GRADE BEAMS	5000 PSI
SLAB-ON-GRADE	5000 PSI
WALLS	5000 PSI
ALL OTHER CONCRETE	4500 PSI
LIGHT WEIGHT (LWT) CONCRETE	
INTERIOR ELEVATED SLAB ON COMPOSITE DECK	4000 PSI

3. NO PIPES OR DUCTS SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION OF SLEEVES, MOULDS, FLOOR HINGES, ETC. TO BE CAST INTO THE CONCRETE.
4. EMBEDDED ITEMS THAT WILL SUPPORT STRUCTURAL STEEL CONSTRUCTION SHALL BE PLACED WITHIN THE TOLERANCES PRESCRIBED IN THE LATEST EDITION OF THE AISC "CODE OF STANDARD PRACTICE." FIELD VERIFY LOCATION OF EMBEDDED ITEMS PRIOR TO FABRICATION AND DELIVERY OF STRUCTURAL STEEL TO THE PROJECT SITE.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.
6. FOR MISCELLANEOUS CONCRETE PADS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL.

REINFORCING STEEL:

1. ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
2. WHERE WELDING IS REQUIRED, REINFORCING STEEL SHALL BE ASTM A706, GRADE 60, AND SHALL BE WELDED WITH E80 ELECTRODES.
3. ALL WELDED WIRE REINFORCING SHALL BE ASTM A1064.
4. SPLICES IN REINFORCING, WHERE PERMITTED, SHALL BE CLASS B TENSION LAP SPLICES, UNLESS NOTED OTHERWISE. REFER TO CONCRETE TENSION LAP SPLICE SCHEDULE ON THIS SHEET.
5. MINIMUM LAP OF WELDED WIRE FABRIC REINFORCING SHALL BE ONE FULL MESH SIZE PLUS 2", OR A LAP OF 6", WHICHEVER IS GREATER.
6. CONCRETE REINFORCING SHALL HAVE THE FOLLOWING MINIMUM CLEAR COVER, UNLESS NOTED OTHERWISE:

AUGER-CAST PILES	3"
PILE CAPS	3" BOTTOM & SIDES, 2" TOP
GRADE BEAMS	3" BOTTOM & SIDES, 2" TOP
FOOTINGS	3" BOTTOM & SIDES, 2" TOP
SLAB-ON-GRADE	2" FROM TOP
CAST-IN-PLACE WALLS	2"

7. DETAILING OF REINFORCING SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE ACI DETAILING MANUAL AND THE LATEST EDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE."
8. ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONFORMANCE WITH THE CRSI "MANUAL OF STANDARD PRACTICE" DURING PLACING OF CONCRETE.
9. PROVIDE CORNER REINFORCING TO MATCH HORIZONTAL REINFORCING AT ALL CORNERS OF CONTINUOUS FOOTINGS, GRADE BEAMS AND WALLS.
10. ALL HOOKS IN REINFORCING BARS SHALL BE ACI STANDARD 90-DEGREE HOOKS WITH EMBEDMENT INTO CONCRETE GREATER THAN OR EQUAL TO THE DEVELOPMENT LENGTH (Ldh) FOR STANDARD 90-DEGREE HOOKS, UNLESS NOTED OTHERWISE. REFER TO THE DEVELOPMENT LENGTH (Ldh) SCHEDULE.
11. DOWELS FROM FOUNDATIONS OR SLABS TO WALLS SHALL MATCH WALL REINFORCING, UNLESS NOTED OTHERWISE. DOWELS SHALL BE PLACED BEFORE CONCRETE IS POURED AND SHALL NOT BE PUSHED INTO THE CONCRETE.

PRECAST STRUCTURAL CONCRETE:

1. ALL CONCRETE SHALL BE DESIGNED PER ACI 318-19.
2. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA WHO SHALL BE THE DELEGATED ENGINEER.
3. PRECAST MANUFACTURER SHALL VERIFY SIZE, LOCATION AND NUMBER OF FLOOR PENETRATIONS WITH MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS.
4. PRECAST CONCRETE DESIGN COMPRESSIVE STRENGTH SHALL BE A MINIMUM 5000 PSI AT 28 DAYS. AT PRECASTER'S OPTION, HIGHER STRENGTH CONCRETE MAY BE USED IN ORDER TO REDUCE THE AMOUNT OF STEEL REINFORCING REQUIRED. SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
5. DIAPHRAGM CHORD REINFORCING SHALL BE DESIGNED AND DETAILED BY THE PRECASTER.

MASONRY:

1. ALL MASONRY SHALL BE DESIGNED PER THE FOLLOWING:
   - TMS 402-2016 BUILDING CODE FOR MASONRY STRUCTURES
   - TMS 602-2016 SPECIFICATION FOR MASONRY STRUCTURES
2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 WITH A NET AREA COMPRESSIVE STRENGTH AS FOLLOWS:
   2000 PSI FOR TYPE M OR S
3. MORTAR SHALL CONFORM TO ASTM C270 TYPE S OR M. USE TYPE M BELOW GRADE WHEN MASONRY IS IN CONTACT WITH SOIL.
4. GROUT SHALL CONFORM TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. GROUT ALL CELLS WITH REINFORCING OR EMBEDDED ANCHORS.
5. MINIMUM COMPRESSIVE STRENGTH OF THE MASONRY (f'm) SHALL BE 2000 PSI UNLESS NOTED OTHERWISE.
6. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615 GRADE 60.
7. HORIZONTAL JOINT REINFORCING SHALL BE 9 GAGE GALVANIZED LADDER TYPE. SPACE JOINT REINFORCING AT A MAXIMUM 16" OC VERTICAL.
8. BOND OF BLOCK SHALL BE RUNNING BOND UNLESS NOTED OTHERWISE.
9. FILL ALL CAVITIES AND CELLS IN MASONRY BELOW FINISHED FLOOR WITH GROUT.
10. REFER TO GENERAL NOTE 4. IF CONTRACTOR'S ENGINEER DETERMINES THAT WALLS REQUIRE TEMPORARY SHORING OR BRACING, WALLS SHALL BE PROPERLY BRACED AGAINST LATERAL LOADS UNTIL THE ROOF DIAPHRAGM OR OTHER LATERAL SUPPORT SYSTEM HAS BEEN INSTALLED.
11. ALL LOAD BEARING MASONRY SHALL BE INSPECTED PER TMS 402.

AUGER CAST-IN-PLACE PILE FOUNDATIONS:

1. GEOTECHNICAL REPORT BY: S&ME, INC.
   ILM PARKING DECK
   PROJECT NO. 23060158 (REV 1)
   NOVEMBER 15, 2024
2. THE GENERAL CONTRACTOR SHALL OBTAIN A COPY OF THE REPORT AND REVIEW THE RECOMMENDATIONS AND REQUIREMENTS INCLUDED THEREIN.
3. THE PARKING STRUCTURE SHALL BE SUPPORTED BY AUGERED CAST-IN-PLACE (ACIP) PILE FOUNDATIONS AS SHOWN ON PLAN, UNLESS NOTED OTHERWISE.
4. NON-PRODUCTION TEST PILES SHALL BE INSTALLED AT THE LOCATIONS DETERMINED BY THE GEOTECHNICAL ENGINEER.
5. THE REQUIRED SERVICE LEVEL CAPACITIES INDICATED IN THE TABLE BELOW SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER WITH A LOAD TESTING PROGRAM PRIOR TO PRODUCTION PILE INSTALLATION.
6. MIN. CENTER-TO-CENTER PILE SPACING = 3 X DIAMETER.
7. THE MINIMUM 28-DAY GROUT COMPRESSIVE STRENGTH = 5,000 PSI.
8. MINIMUM ALLOWABLE GROUT FACTOR = 1.2
9. SEE SHEET S601 FOR PILE DETAILS.

ACIP PILE PARAMETERS	18" Ø ACIP PILE
COMPRESSION CAPACITY *	220 KIPS
UPLIFT CAPACITY *	40 KIPS
LATERAL CAPACITY *	22.8 KIPS (1/2" DEFLECTION)
MINIMUM TIP ELEVATION **	42 FT BELOW ELEVATION 86'-0", SEE S102 & S103 FOR DATUM ELEVATION

* CAPACITIES INDICATED IN TABLE ARE SERVICE LEVEL
** BASED ON THE GEOTECHNICAL REPORT'S RECOMMENDED MINIMUM TIP ELEVATION BELOW EXISTING GRADE.

FOUNDATIONS - GENERAL :

1. GEOTECHNICAL REPORT BY: S&ME, INC
   ILM PARKING DECK
   PROJECT NO. 23060158 (REV 1)
   NOVEMBER 15, 2024
2. ALLOWABLE SOIL BEARING PRESSURE: 2000 PSF
3. THE GENERAL CONTRACTOR SHALL OBTAIN A COPY OF THE REPORT AND REVIEW THE RECOMMENDATIONS AND REQUIREMENTS INCLUDED THEREIN.
4. THE GEOTECHNICAL ENGINEER SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF UNDERLYING MATERIAL TO SUPPORT FOUNDATIONS AND SHALL APPROVE BEARING MATERIAL PRIOR TO FOUNDATION INSTALLATION.
5. AN INDEPENDENT TESTING AGENCY SHALL INSPECT AND VERIFY COMPACTION OF ALL SUBGRADES AND FILL MATERIALS BEFORE FURTHER CONSTRUCTION WORK IS PERFORMED.
6. IF FOOTINGS SHOWN OCCUR IN A DISTURBED, UNSTABLE OR UNSUITABLE SOIL CONTACT THE GEOTECHNICAL ENGINEER AND STRUCTURAL ENGINEER OF RECORD BEFORE PROCEEDING WITH WORK.
7. ALL FOUNDATIONS SHALL BE FORMED TO PREVENT THE CREATION OF AN ENLARGED AREA OF CONCRETE (MUSHROOM).
8. CONCRETE SHALL BE PLACED IMMEDIATELY AFTER FOOTING EXCAVATION AND PLACEMENT OF REINFORCING STEEL TO AVOID BEARING SOILS EXPOSURE TO WETTING AND DRYING. ANY WATER SHALL BE PUMPED OUT OF THE FOOTING EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.

EARTHWORK:

SITE PREPARATION

1. CLEARING AND STRIPPING SHALL CONSIST OF REMOVING VEGETATION, TOPSOIL, ROOT MATS, DEBRIS, AND OTHER DELETERIOUS MATERIAL IN THEIR ENTIRETY. STRIPPING SHALL EXTEND AT LEAST 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT, WHERE PRACTICAL.
2. AFTER EXCAVATION TO FINAL FOOTING ELEVATIONS, PERFORM AT LEAST ONE TEST PER SOIL STRATUM TO VERIFY ALLOWABLE DESIGN BEARING CAPACITIES.
3. ANY EXPOSED SUBGRADE SOILS THAT ARE FOUND TO BE UNSTABLE OR UNSUITABLE SHALL BE REMOVED IN THEIR ENTIRETY AND REPLACED WITH COMPACTED STRUCTURAL FILL.
4. THE UPPER 12 INCHES (AS A MINIMUM) OF NEWLY EXPOSED SUBGRADE SOILS SHALL BE RECOMPACTED TO 98 PERCENT OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT.
5. FOUNDATION BEARING SURFACES AND FLOOR SLAB SUBGRADES SHALL BE PROTECTED FROM EXPOSURE TO WATER PRIOR TO INSTALLATION OF ENGINEERED FILL AND CONCRETE. WATER RUNOFF SHALL NOT BE PERMITTED TO COLLECT IN THE FOOTING EXCAVATIONS OR WITHIN THE BUILDING FOOTPRINT. SOILS SOFTENED OR LOOSENED BY PONDED WATER OR DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REMOVED AND REPLACED WITH COMPACTED ENGINEERED FILL.
6. FILL SHALL NOT BE PLACED IN A FROZEN CONDITION OR UPON A FROZEN SUBGRADE. FROZEN MATERIALS SHALL NOT BE USED AS ENGINEERED FILL AND NO FILL, FOOTINGS OR SLAB SHALL BE PLACED ON SOILS THAT ARE FROZEN OR CONTAIN FROZEN MATERIAL.

ENGINEERED FILL AND COMPACTION

1. ENGINEERED FILL SHALL BE A CLEAN GRANULAR FILL FREE OF ORGANICS, OR ANY OTHER UNSUITABLE MATERIAL WITH A PLASTICITY INDEX (PI) OF 6 PERCENT OR LESS (ASTM D4318), SILT/CLAY FINES CONTENT NOT GREATER THAN 25 PERCENT BY WEIGHT (ASTM D1140), MOISTURE CONTENT WITHIN 3 PERCENT, PLUS OR MINUS, OF THE STANDARD PROCTOR (ASTM D698) AT OPTIMUM MOISTURE CONTENT (ASTM D2216)
2. ENGINEERED FILL SHALL BE APPROVED BY A QUALIFIED GEOTECHNICAL ENGINEER.
3. ENGINEERED FILL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 12 INCHES FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT AND 4 TO 6 INCHES FOR MATERIAL COMPACTED BY SMALL WALK-BEHIND COMPACTION EQUIPMENT.
4. ENGINEERED FILL SHALL BE COMPACTED TO 98 PERCENT OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT.
5. THE UPPER 12 INCHES OF SUBGRADE IN FOOTING, SLAB AND PAVEMENT AREAS SHALL BE COMPACTED TO 98 PERCENT OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT.
6. IN-PLACE DENSITY TESTS SHALL BE PERFORMED BY A QUALIFIED GEOTECHNICAL ENGINEER.

STRUCTURAL STEEL:

1. STRUCTURAL STEEL SHALL BE DESIGNED PER AISC 360-16. MATERIALS SHALL BE AS FOLLOWS:
   - W-SHAPES — ASTM A992, Fy = 50 KSI
   - HSS SHAPES (RECT) — ASTM A500 GRADE C, Fy = 50 KSI
   - HSS SHAPES (ROUND) — ASTM A500 GRADE C, Fy = 46 KSI
   - PLATES — ASTM A36, Fy = 36 KSI
   - ALL OTHER STEEL — ASTM A572, Fy = 50 KSI; ASTM A36, Fy = 36 KSI
2. ALL BOLTS SHALL BE 3/4"Ø ASTM A325N AND SHALL BE SNUG TIGHTENED, UNLESS NOTED OTHERWISE.
3. ALL ANCHOR RODS SHALL BE ASTM F1554 GRADE 36, UNLESS NOTED OTHERWISE.
4. BEAM-TO-BEAM AND BEAM-TO-COLUMN CONNECTIONS SHALL BE AS SHOWN ON DETAIL A1/S533, UNLESS NOTED OTHERWISE. BEAM-TO-HSS COLUMN SHALL BE AS SHOWN ON DETAIL A4/S533, UNLESS NOTED OTHERWISE.
5. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS AND SHALL CONFORM TO ANSI/AWS D1.1.
6. MINIMUM SIZE OF ALL FILLET WELDS SHALL CONFORM TO TABLE J2.4 OF AISC SPECIFICATIONS EVEN IF SHOWN OTHERWISE ON ARCHITECTURAL, MECHANICAL, OR STRUCTURAL DRAWINGS.
7. STRUCTURAL STEEL NOT ENCASED IN CONCRETE, MASONRY, OR SPRAY APPLIED FIRE PROOFING SHALL BE SHOP PAINTED AS SPECIFIED. ANY ABRASIONS SHALL BE TOUCHED UP AFTER ERECTION.
8. STRUCTURAL STEEL EXPOSED TO WEATHER IN FINISHED STRUCTURE SHALL BE HOT DIP GALVANIZED PER ASTM A123.
9. ALL EXPOSED STRUCTURAL STEEL, WHERE INDICATED ON PLAN, SHALL BE FABRICATED AND ERECTED PER SECTION 10, "ARCHITECTURALLY EXPOSED STRUCTURAL STEEL" OF THE AISC CODE OF STANDARD PRACTICE.
10. FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO STRUCTURAL ENGINEER FOR REVIEW PRIOR TO START OF FABRICATION. FABRICATION SHALL CONFORM TO AISC SPECIFICATIONS.
11. STRUCTURAL GROUT FOR STEEL COLUMNS SHALL BE A NON-SHRINK, NON-EXPANSIVE, NON-METALLIC GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI WHEN TESTED IN ACCORDANCE WITH ASTM C109.
12. UNLESS OTHERWISE DETAILED IN THE STRUCTURAL DRAWINGS, ALL METAL PAN STAIRS AND LANDINGS SHALL BE DESIGNED BASED ON THE GEOMETRY AND DETAILS PROVIDED IN THE ARCHITECTURAL PLANS AND SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA, UNLESS NOTED OTHERWISE. SIGNED AND SEALED CALCULATIONS SHALL BE PROVIDED THAT CLEARLY DEPICT THE LOADS TRANSMITTED TO THE SUPPORTING STRUCTURAL MEMBERS.
13. FLOOR FRAMING HAS BEEN DESIGNED TO LIMIT DEFLECTION TO L/360 UNDER THE WEIGHT OF CONCRETE PLACEMENT.

STEEL ROOF DECK:

RX

1. ROOF DECK WITH THE MINIMUM DECK PROPERTIES SHALL BE AS FOLLOWS:

DECK MARK	DECK TYPE	GAUGE	THICKNESS (in)	Ip (in⁴/ft)	Sp (in³/ft)	In (in⁴/ft)	Sn (in³/ft)	Fy (ksi)
R1	1.5B22	22	0.0295	0.155	0.169	0.178	0.179	50
R2	1.5B20	20	0.0358	0.197	0.224	0.217	0.229	50

   A. DECK SHALL BE BY VULCRAFT OR APPROVED EQUAL.
2. ROOF DECK ATTACHMENT PATTERNS ARE AS FOLLOWS:
   R1: 36 / 5 - 24
   R2: 36 / 7 - 12
   INSTALLATION OF FASTENERS SHALL BE PER MANUFACTURER'S STANDARD INSTALLATION INSTRUCTIONS. PROVIDE THE FOLLOWING:
   AT SUPPORTS: 5/8"ø PUDDLE WELDS
   AT SIDELAPS: #12 TEK SCREWS
3. DECK ATTACHMENT DESIGNATION:
   36 / X - XX
   - SPACING OF SIDELAP FASTENERS
   - NUMBER OF SUPPORT FASTENERS PER SHEET
   - SHEET WIDTH
4. FASTEN DECK AT ALL EDGE SUPPORTS AT 6" OC.
5. ALL DECK SHALL BE ERECTED AS THREE SPAN CONTINUOUS, UNLESS NOTED OTHERWISE.

STEEL FLOOR DECK:

FX

1.

FLOOR DECK MARK	OVERALL FLOOR THICKNESS (in)	CONCRETE	STEEL DECK TYPE	REINFORCING
F1	5 1/2	LWT	2VLI20	6X6-W2.9XW2.9 WWF
F2	10	NWT	2VLI20	#6 @ 8" OC EA WAY, TOP & BOTT
F3	2 1/2	NWT	1.0C22	6X6-W2.1XW2.1 WWF

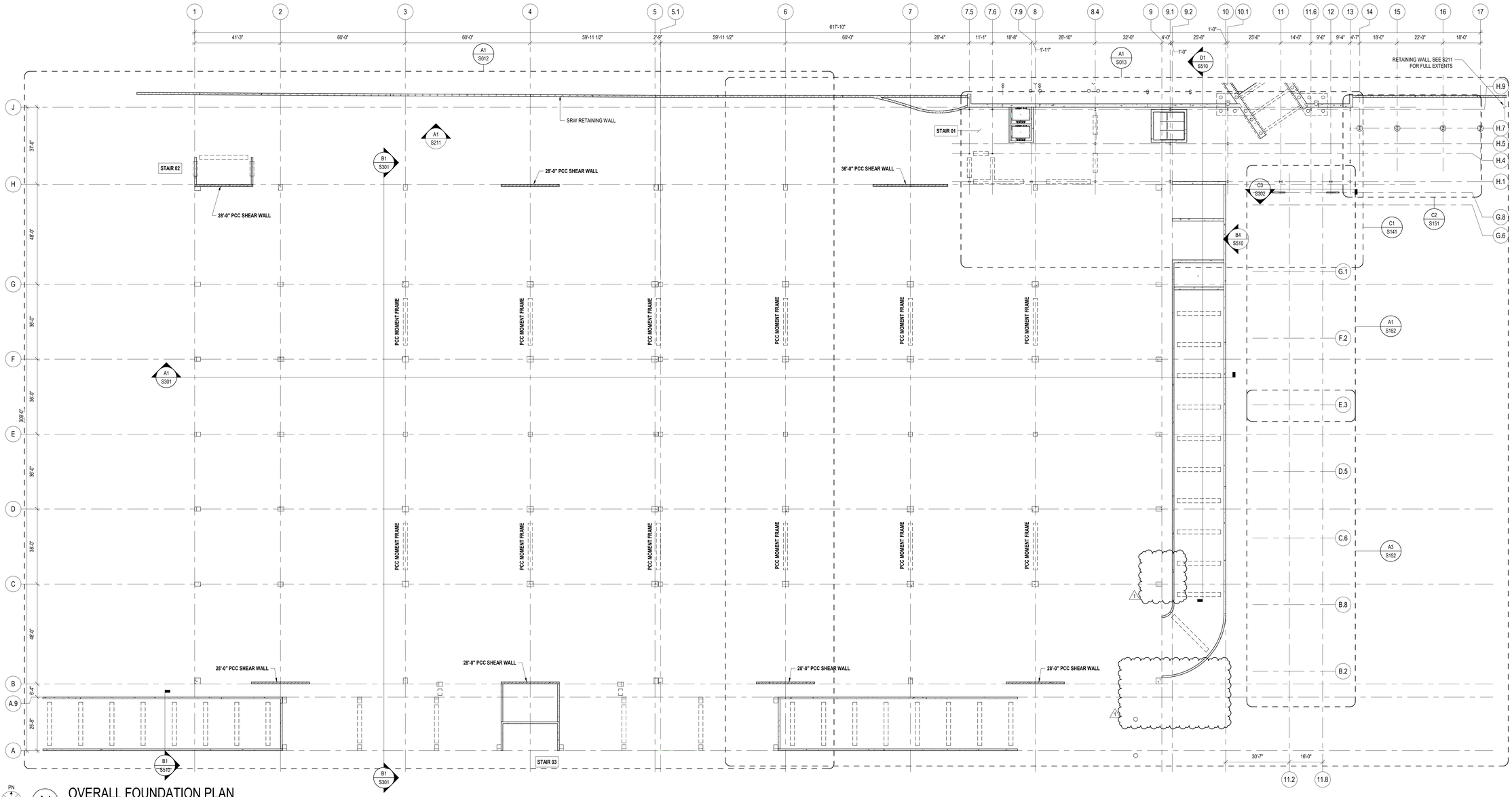
   A. SEE CAST-IN-PLACE CONCRETE NOTES FOR ADDITIONAL INFORMATION.
2. STEEL FLOOR DECK WITH THE MINIMUM DECK PROPERTIES SHALL BE AS FOLLOWS:

STEEL DECK TYPE	GAUGE	STEEL THICKNESS (in)	Ip (in⁴/ft)	Sp (in³/ft)	In (in⁴/ft)	Sn (in³/ft)	Fy (ksi)
1.0C22	22	0.0295	0.070	0.129	0.070	0.131	60
2VLI20	20	0.0358	0.404	0.326	0.402	0.337	50

   A. DECK SHALL BE BY VULCRAFT OR APPROVED EQUAL.
3. FLOOR DECK ATTACHMENT PATTERNS ARE AS FOLLOWS:
   36 / 4 - 18
   INSTALLATION OF FASTENERS SHALL BE PER MANUFACTURER'S STANDARD INSTALLATION INSTRUCTIONS. PROVIDE THE FOLLOWING:
   AT SUPPORTS: 5/8"ø PUDDLE WELDS
   AT SIDELAPS: #12 TEK SCREWS
4. DECK ATTACHMENT DESIGNATION:
   36 / X - XX
   - SPACING OF SIDELAP FASTENERS
   - NUMBER OF SUPPORT FASTENERS PER SHEET
   - SHEET WIDTH
5. FASTEN DECK AT ALL EDGE SUPPORTS AT 12" OC.
6. ALL DECK SHALL BE ERECTED AS THREE SPAN CONTINUOUS, UNLESS NOTED OTHERWISE.

COLD-FORMED METAL FRAMING:

1. ALL COLD FORMED METAL FRAMING SHALL BE DESIGNED PER AISI S100 - 16(2020) W/S2-20. NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS, 2016 EDITION (REAFFIRMED 2020) WITH SUPPLEMENT 2, 2020 EDITION.
2. THE M



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A1 OVERALL FOUNDATION PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

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KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	MCM
DRAWN BY:	DFW
DESIGNED BY:	DFW
PROJECT NUMBER:	

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SHEET TITLE:

OVERALL FOUNDATION PLAN

SHEET ID:

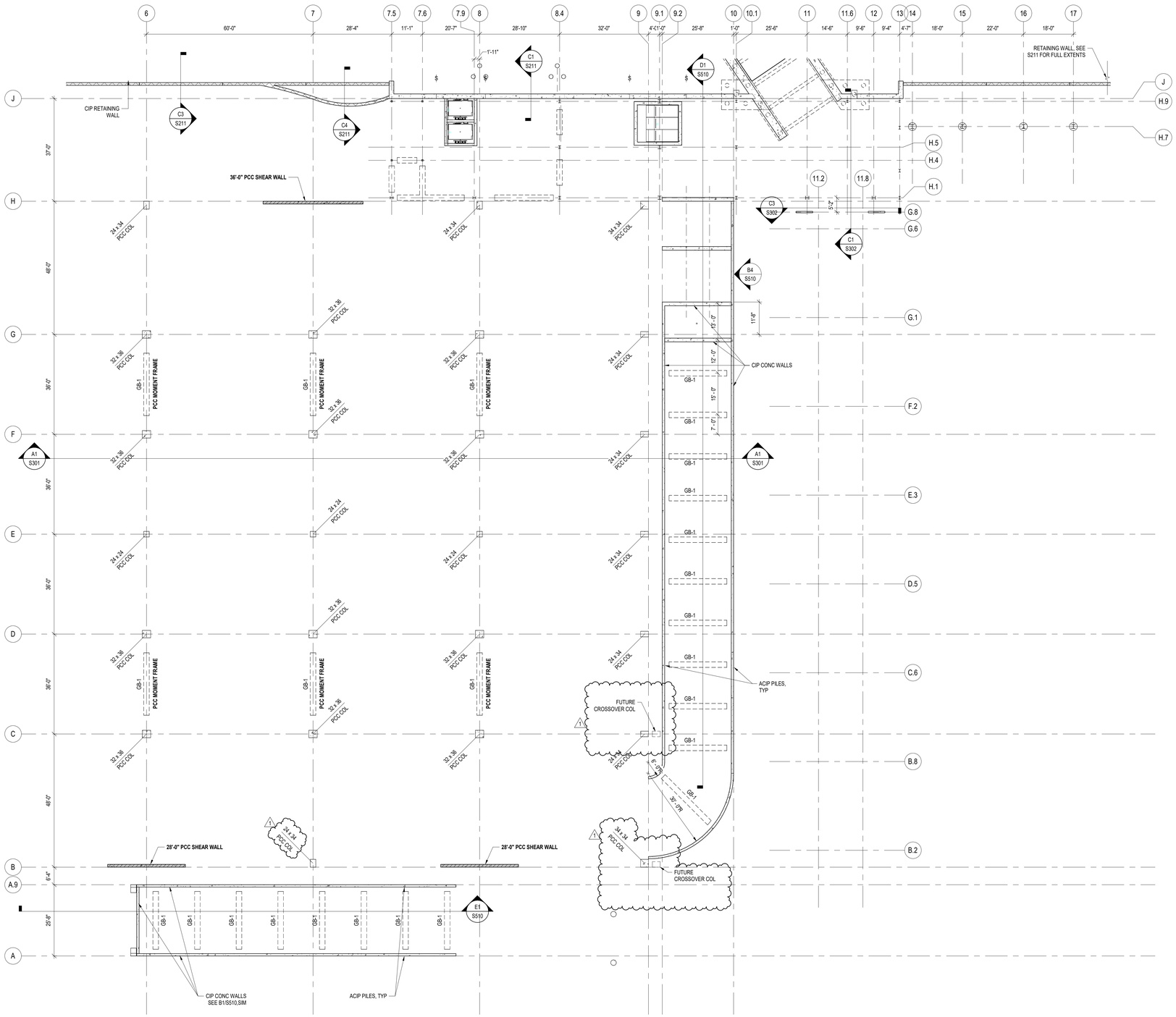
S011

PROJECT STATUS:
100% BID SET

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FOUNDATION SHEET NOTES

1. DATUM ELEVATION 29.7' EQUALS REFERENCE ELEVATION 86'-0", UNLESS NOTED OTHERWISE.
2. T/ PILE CAP EQUALS ELEVATION 84'-0", UNLESS NOTED OTHERWISE.
3. **"PC-X"** INDICATES PILE CAP TYPE. SEE S601 FOR PILE CAP SCHEDULE & DETAILS.
4. **"GB-X"** INDICATES GRADE BEAM TYPE. SEE S602 FOR GRADE BEAM SCHEDULE & DETAILS.
5. PILE CAPS SHALL BE CENTERED ON PRECAST CONCRETE COLUMNS AND WALLS, UNLESS NOTED OTHERWISE.
6. GRADE BEAM REINFORCEMENT SHALL BE CONTINUOUS THROUGH PILE CAPS.
7. **-69-** INDICATES SLAB STEP, SEE PLAN.
8. SEE C1/SS01 FOR TYPICAL COLUMN - PILE CAP SECTION.
9. SEE C3/SS01 FOR TYPICAL SHEAR WALL - PILE CAP SECTION.



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A1 FOUNDATION PLAN - AREA B

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

16 0 16 32

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

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FOUNDATION PLAN - AREA B

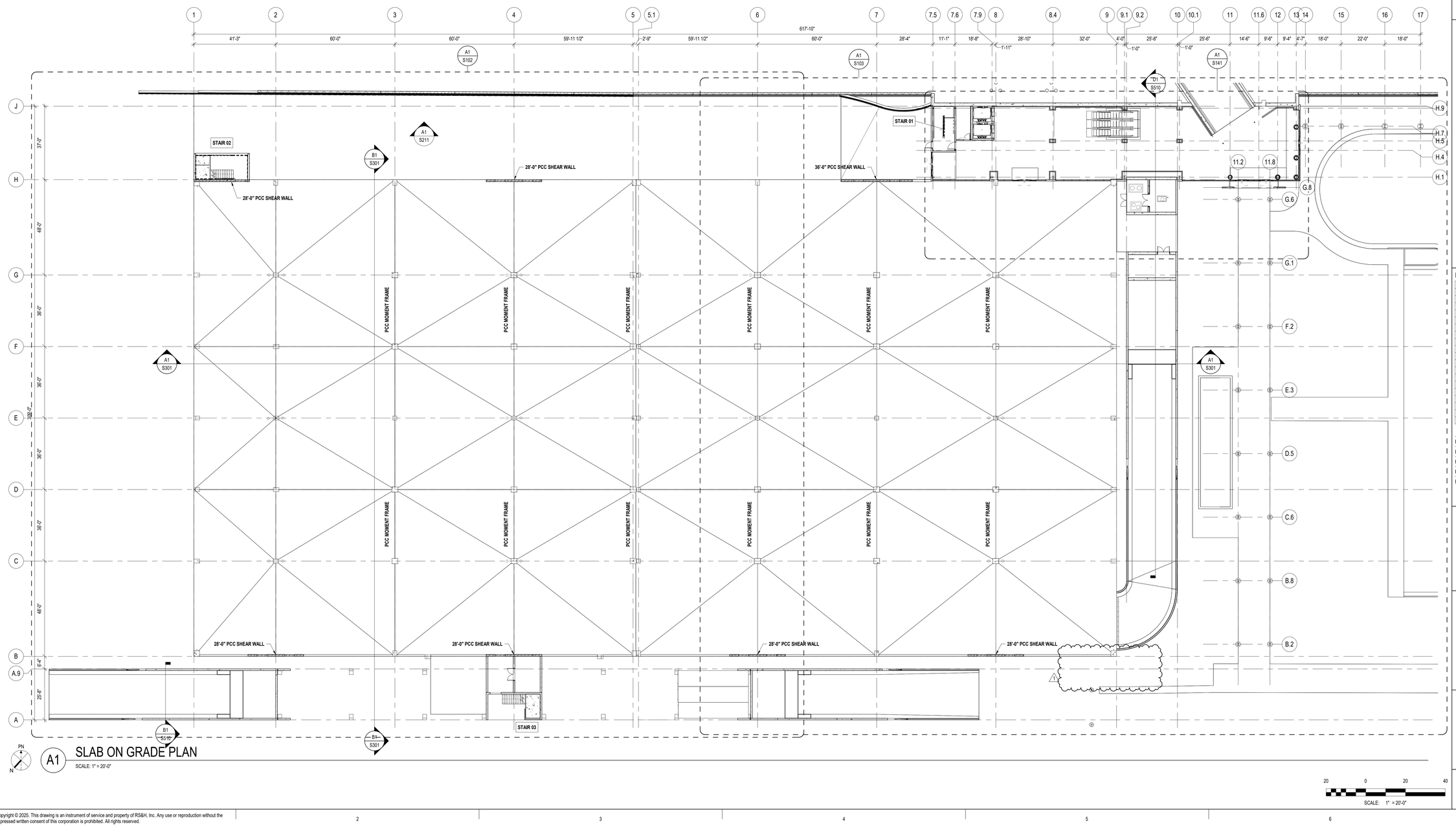
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KEY PLAN

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OVERALL SLAB ON GRADE PLAN

SHEET ID:

S101

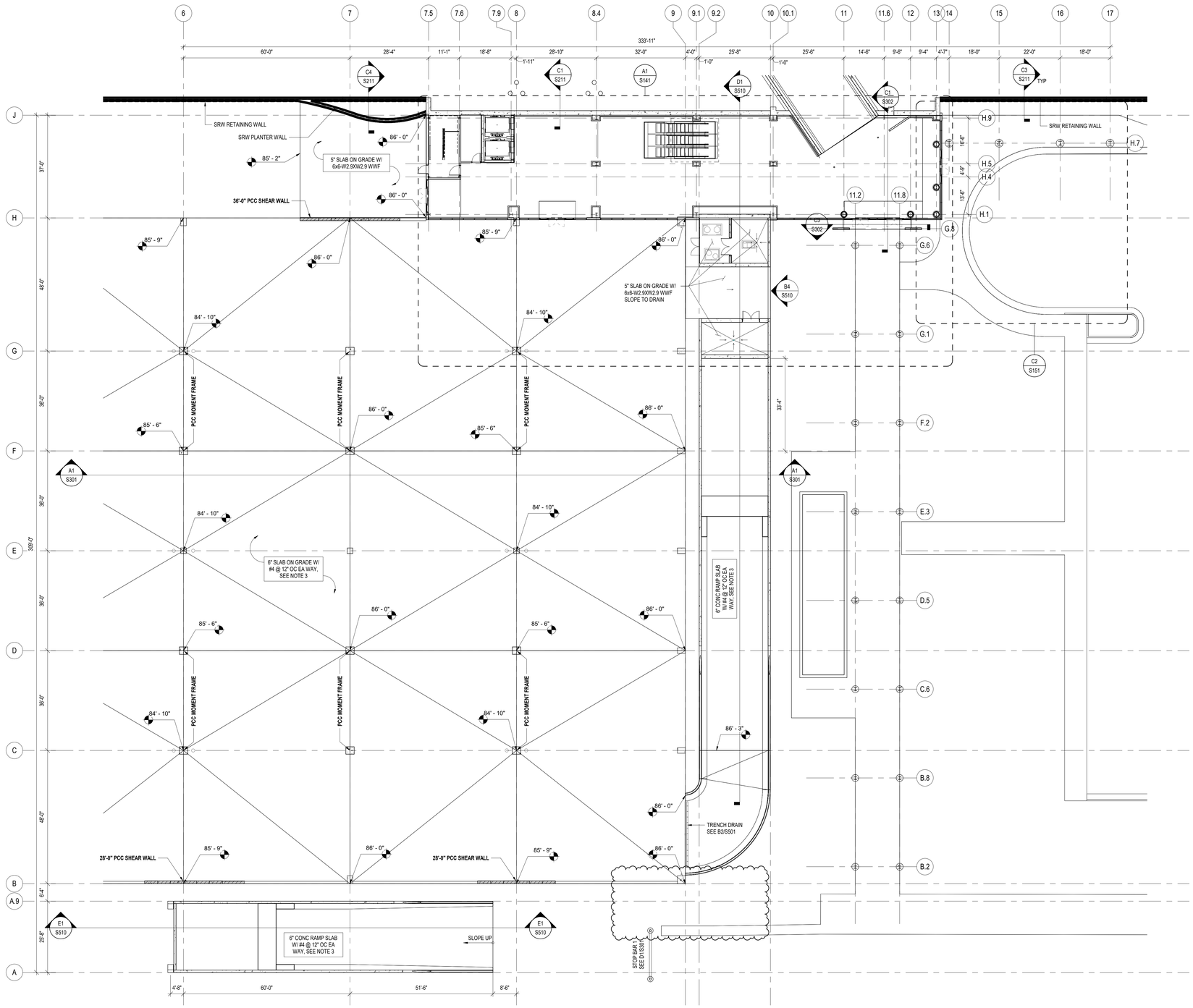
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SLAB-ON-GRADE SHEET NOTES

1. DATUM ELEVATION 29.7' EQUALS REFERENCE ELEVATION 86'-0", UNLESS NOTED OTHERWISE.
2. SEE SHEET S501 FOR TYPICAL SLAB DETAILS.
3. PROVIDE VAPOR BARRIER AND DRAINAGE LAYER PER E3/S501.
4. PROVIDE CRACK CONTROL JOINTS IN SLAB-ON-GRADE ALONG COLUMN LINES & EQUALLY SPACED BETWEEN COLUMN LINES, 15'-0" OC MAXIMUM. SEE E1/S501 FOR TYPICAL SLAB-ON-GRADE JOINT DETAILS.
5. PROVIDE CONTROL JOINTS AT COLUMNS PER E4/S501.
6. PROVIDE (2) #4 X 4'-0" LONG BARS IN SLAB AT ALL RE-ENTRANT CORNERS, PLACED AT 45 DEGREES, TYPICAL.
7. PROVIDE THICKENED SLAB EDGE AT ALL EDGE OF SLAB CONDITIONS, UNLESS NOTED OTHERWISE, SEE S501.
8. COORDINATE FLOOR DRAIN LOCATIONS WITH PLUMBING DRAWINGS.



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A1 LEVEL 1 SOG PLAN - AREA B

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

16 0 16 32

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

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KEY PLAN

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1	Addendum 1	4/10/2025

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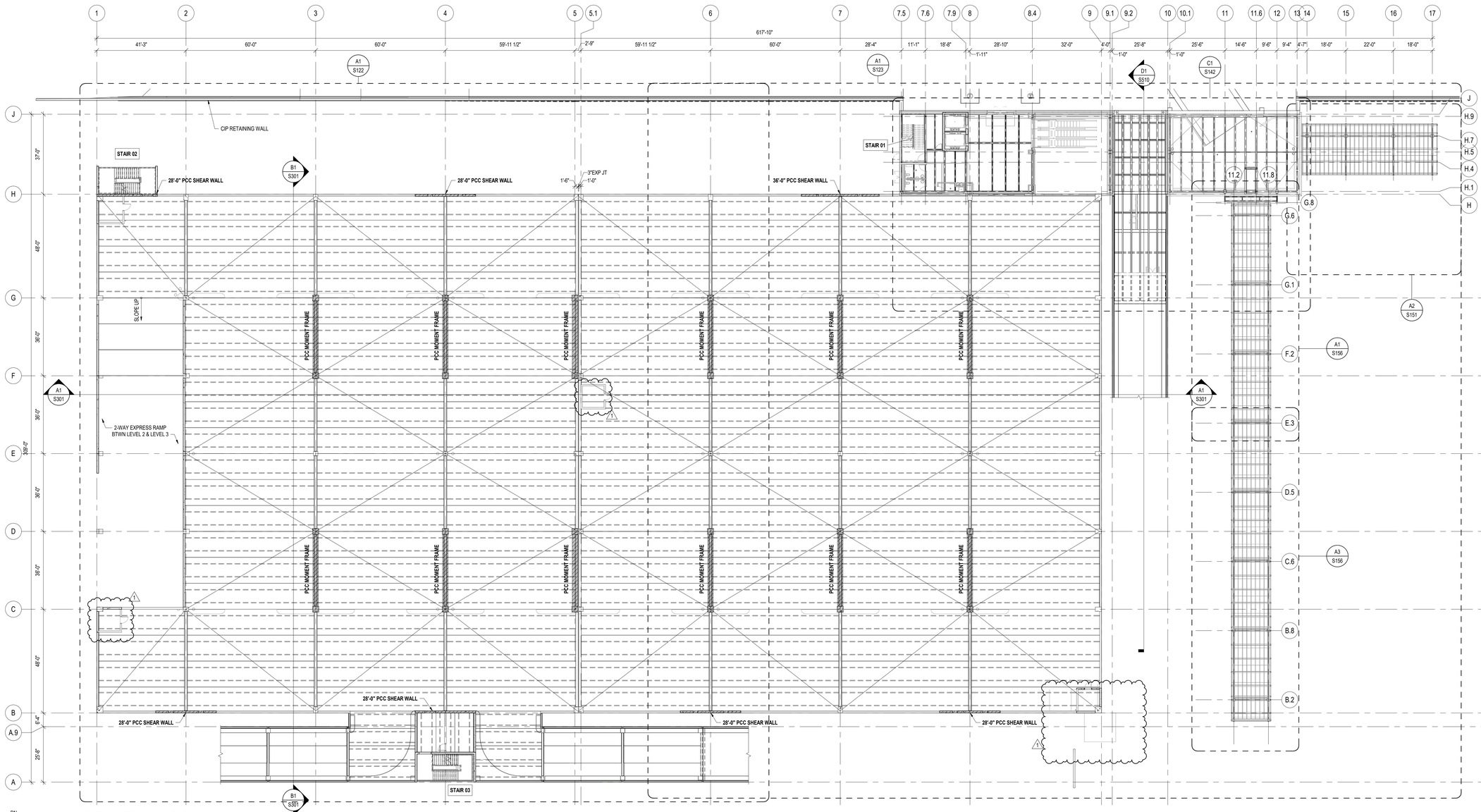
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SLAB ON GRADE PLAN - AREA B

SHEET ID:
S103

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KEY PLAN

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SHEET TITLE:

OVERALL LEVEL 2 FRAMING PLAN

SHEET ID:

S121

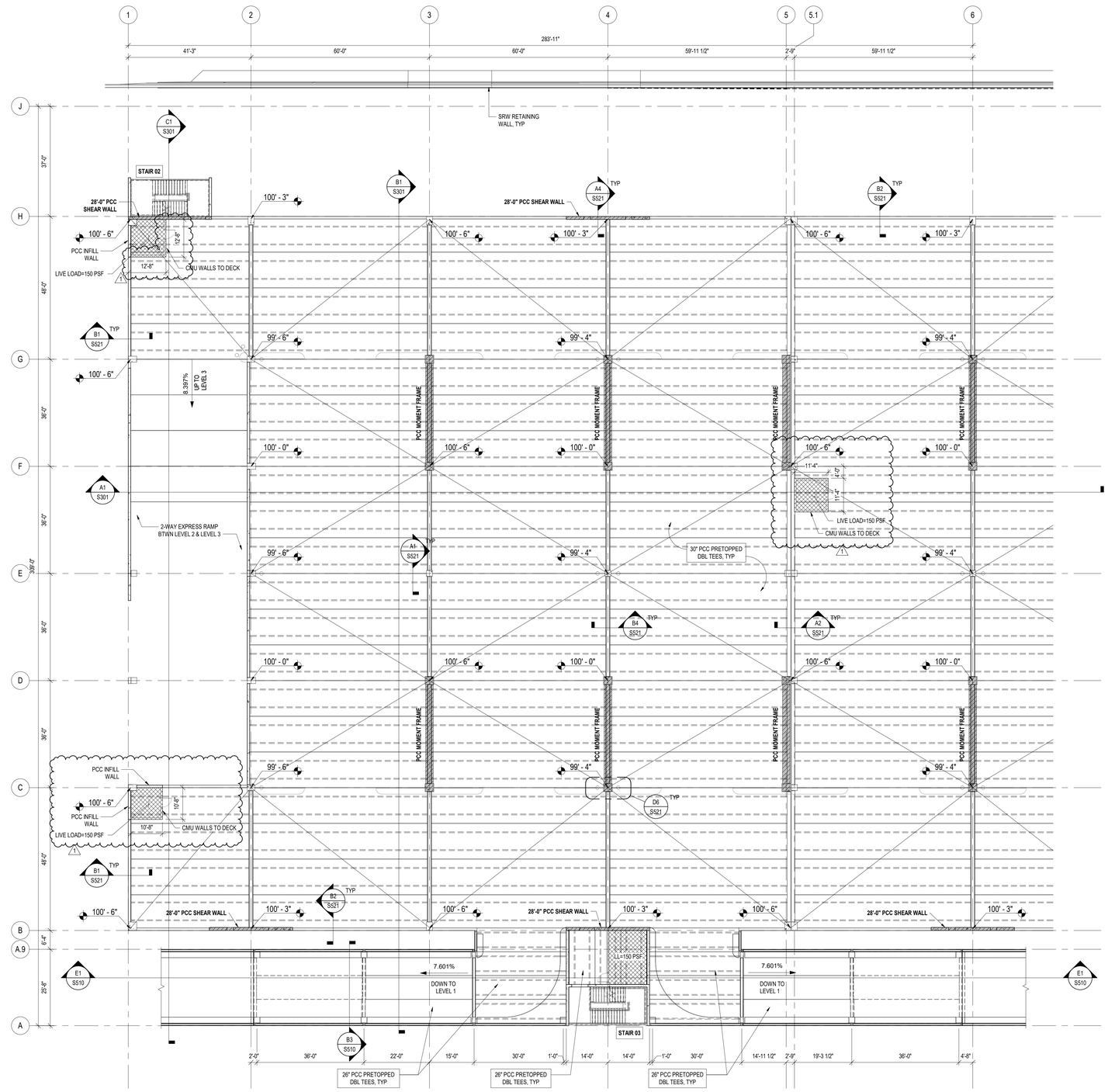
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LEVEL 2 SHEET NOTES

1. CONCRETE TOPPING AND PRECAST FRAMING ELEVATIONS VARY, SEE PLAN.
2. SEE SHEET S201 FOR PRECAST MOMENT FRAME AND SHEAR WALL ELEVATIONS, SECTIONS, AND DETAILS.
3. SEE SHEET S521 FOR TYPICAL PRECAST DETAILS.



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A1 LEVEL 2 FRAMING PLAN - AREA A

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

16 0 16 32

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

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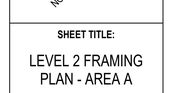
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LEVEL 2 FRAMING PLAN - AREA A

SHEET ID:

S122

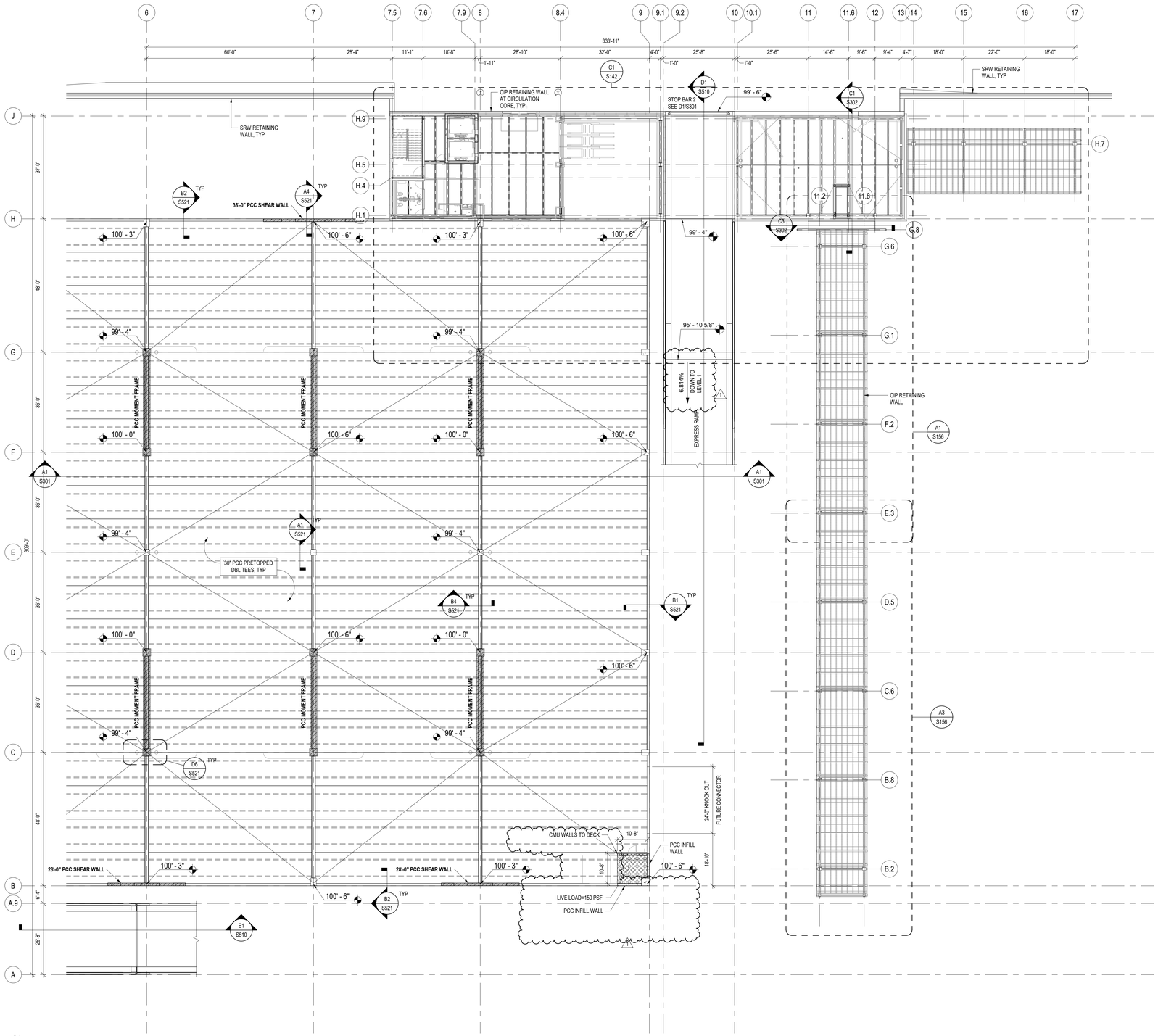
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LEVEL 2 SHEET NOTES

1. CONCRETE TOPPING AND PRECAST FRAMING ELEVATIONS VARY, SEE PLAN.
2. SEE SHEET S201 FOR PRECAST MOMENT FRAME AND SHEAR WALL ELEVATIONS, SECTIONS, AND DETAILS.
3. SEE SHEET S521 FOR TYPICAL PRECAST DETAILS.



A1 LEVEL 2 FRAMING PLAN - AREA B

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

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

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KEY PLAN



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1	Addendum 1	4/10/2025

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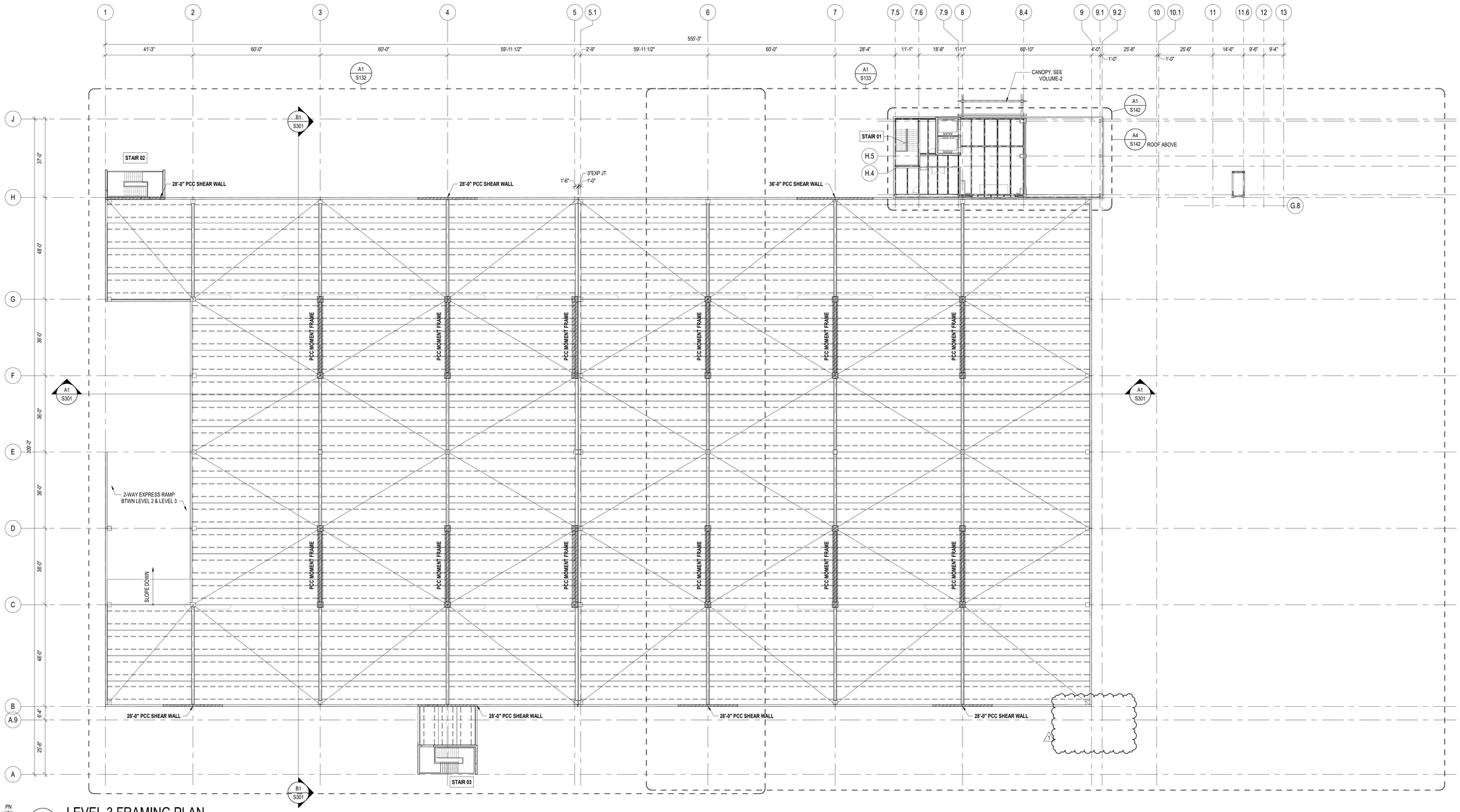
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LEVEL 2 FRAMING PLAN - AREA B

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S123

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A1 LEVEL 3 FRAMING PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

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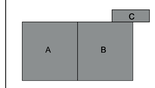
Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN



REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	MCM
DRAWN BY:	DFW
DESIGNED BY:	DFW

PROJECT NUMBER:
2003-0070-006

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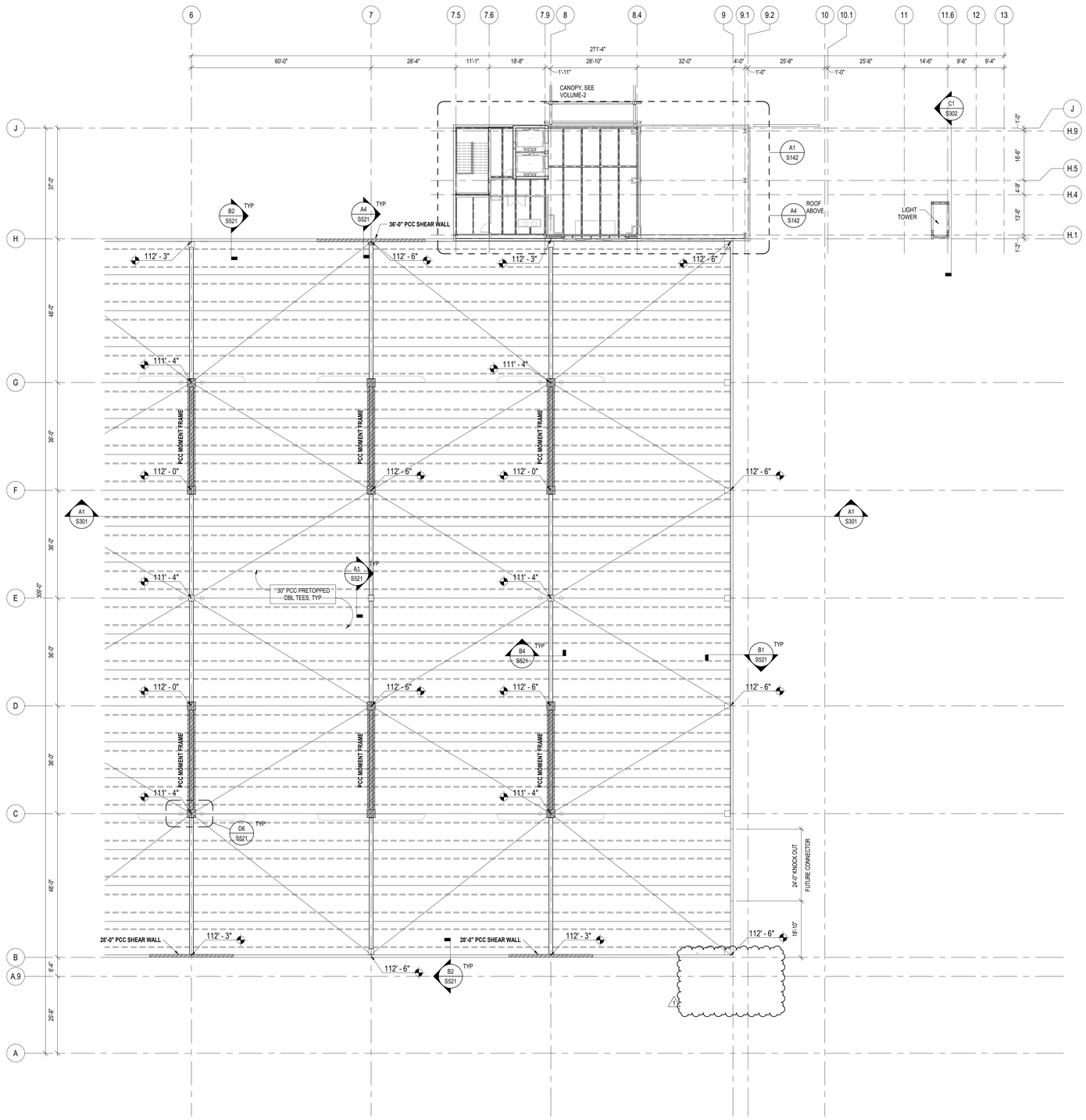
SHEET TITLE:
OVERALL LEVEL 3 FRAMING PLAN

SHEET ID:
S131

PROJECT STATUS:
100% BID SET

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PN

N

A1 LEVEL 3 FRAMING PLAN - AREA B

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

16 0 16 32

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

ALL ELEVATIONS ON PLAN REVISED

LEVEL 3 SHEET NOTES

1. CONCRETE TOPPING AND PRECAST FRAMING ELEVATIONS VARY, SEE PLAN.
2. SEE SHEET S201 FOR PRECAST MOMENT FRAME AND SHEAR WALL ELEVATIONS, SECTIONS, AND DETAILS.
3. SEE SHEET S521 FOR TYPICAL PRECAST DETAILS.

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KEY PLAN

C
A B

REVISIONS

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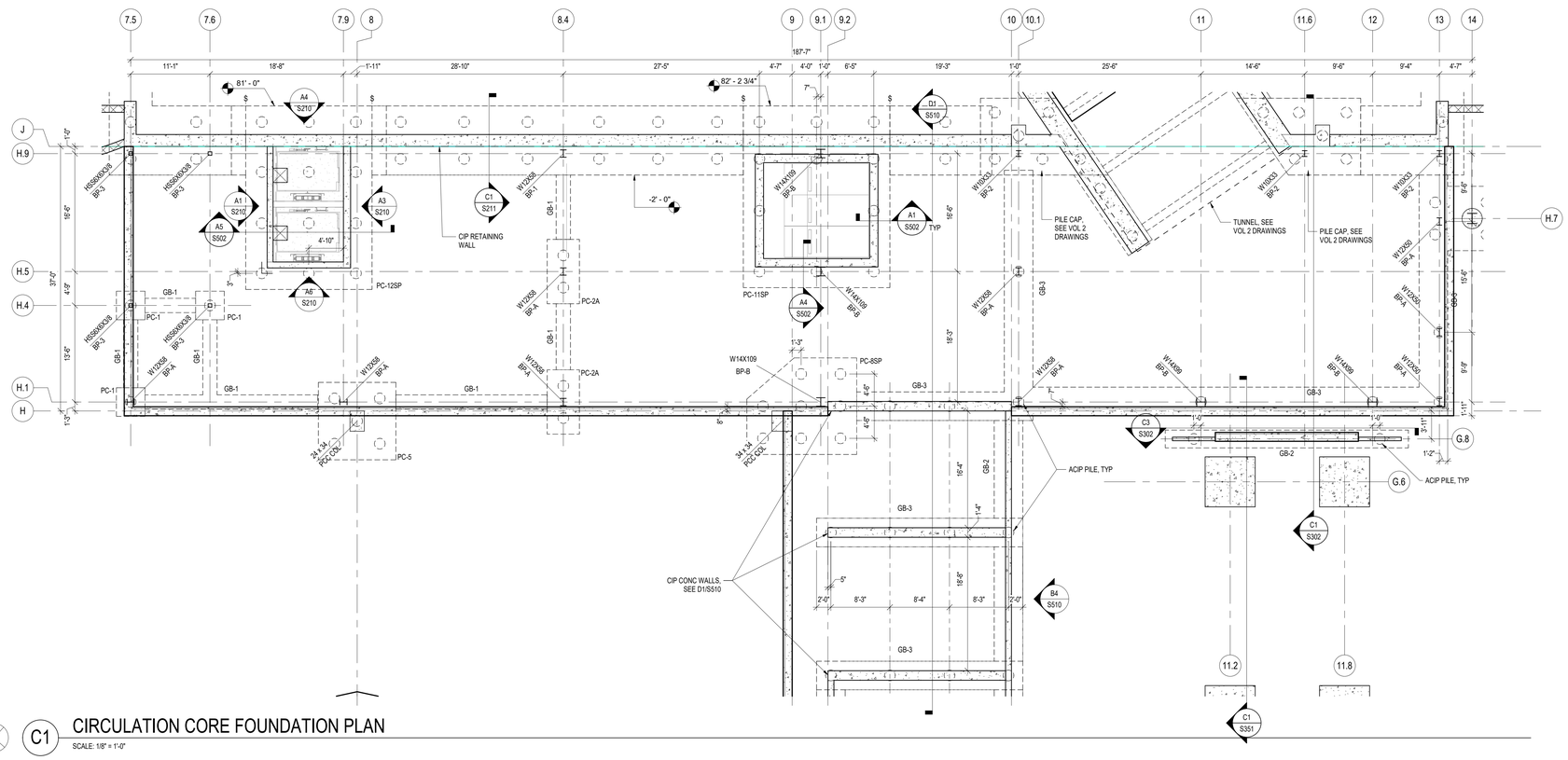
SHEET TITLE:
LEVEL 3 FRAMING PLAN - AREA B

SHEET ID:
S133

PROJECT STATUS:
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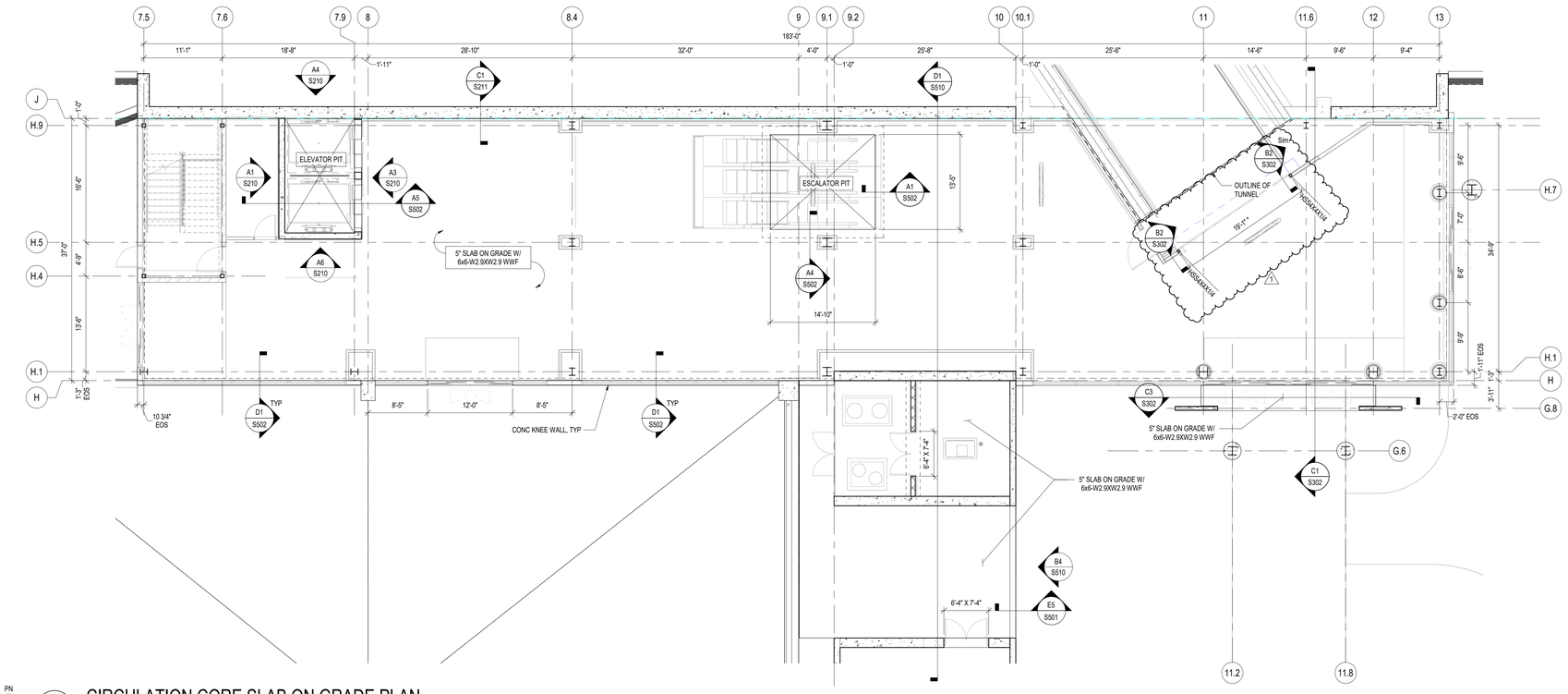
PN

N

C1

CIRCULATION CORE FOUNDATION PLAN

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



PN

N

A1

CIRCULATION CORE SLAB ON GRADE PLAN

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

CIRCULATION CORE FOUNDATION SHEET NOTES

1. DATUM ELEVATION 29.7' EQUALS REFERENCE ELEVATION 86'-0", UNLESS NOTED OTHERWISE.
2. T/ PILE CAP EQUALS ELEVATION 84'-0", UNLESS NOTED OTHERWISE.
3. **"PC-X"** INDICATES PILE CAP TYPE. SEE S601 FOR PILE CAP SCHEDULE & DETAILS.
4. **"GB-X"** INDICATES GRADE BEAM TYPE. SEE S602 FOR GRADE BEAM SCHEDULE & DETAILS.
5. PILE CAPS SHALL BE CENTERED ON PRECAST CONCRETE COLUMNS AND WALLS, UNLESS NOTED OTHERWISE.
6. GRADE BEAM REINFORCEMENT SHALL BE CONTINUOUS THROUGH PILE CAPS.
7. **-69-** INDICATES STEP IN SLAB, SEE PLAN.
8. SEE C1/S501 FOR TYPICAL COLUMN-PILE CAP SECTION.
9. SEE C3/S501 FOR TYPICAL SHEAR WALL-PILE CAP SECTION.
10. SEE C4/S501 FOR TYPICAL STEEL COLUMN BASE CONNECTION.

CIRCULATION CORE SLAB ON GRADE SHEET NOTES

1. DATUM ELEVATION 29.7' EQUALS REFERENCE ELEVATION 86'-0", UNLESS NOTED OTHERWISE.
2. SEE SHEET S501 FOR TYPICAL SLAB DETAILS.
3. PROVIDE VAPOR BARRIER AND DRAINAGE LAYER PER E3/S501.
4. PROVIDE CRACK CONTROL JOINTS IN SLAB-ON-GRADE ALONG COLUMN LINES & EQUALLY SPACED BETWEEN COLUMN LINES AS SHOWN. SEE S501 FOR TYPICAL SLAB-ON-GRADE JOINT DETAILS.
5. PROVIDE (2) #4 X 4'-0" LONG BARS IN SLAB AT ALL RE-ENTRANT CORNERS, PLACED AT 45 DEGREES, TYPICAL.
6. PROVIDE THICKENED SLAB EDGE AT ALL EDGE OF SLAB CONDITIONS, UNLESS NOTED OTHERWISE, SEE S501.
7. COORDINATE FLOOR DRAIN LOCATIONS WITH PLUMBING DRAWINGS.
8. * DENOTES COORDINATION OF HSS POST REQUIRED WITH OVERHEAD DOOR PROVIDED. 1

8 0 8 16

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

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KEY PLAN



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DATE ISSUED:	03/14/2025
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DESIGNED BY:	DFW

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SHEET TITLE:

CIRCULATION CORE FOUNDATION AND SLAB ON GRADE PLANS

SHEET ID:

S141

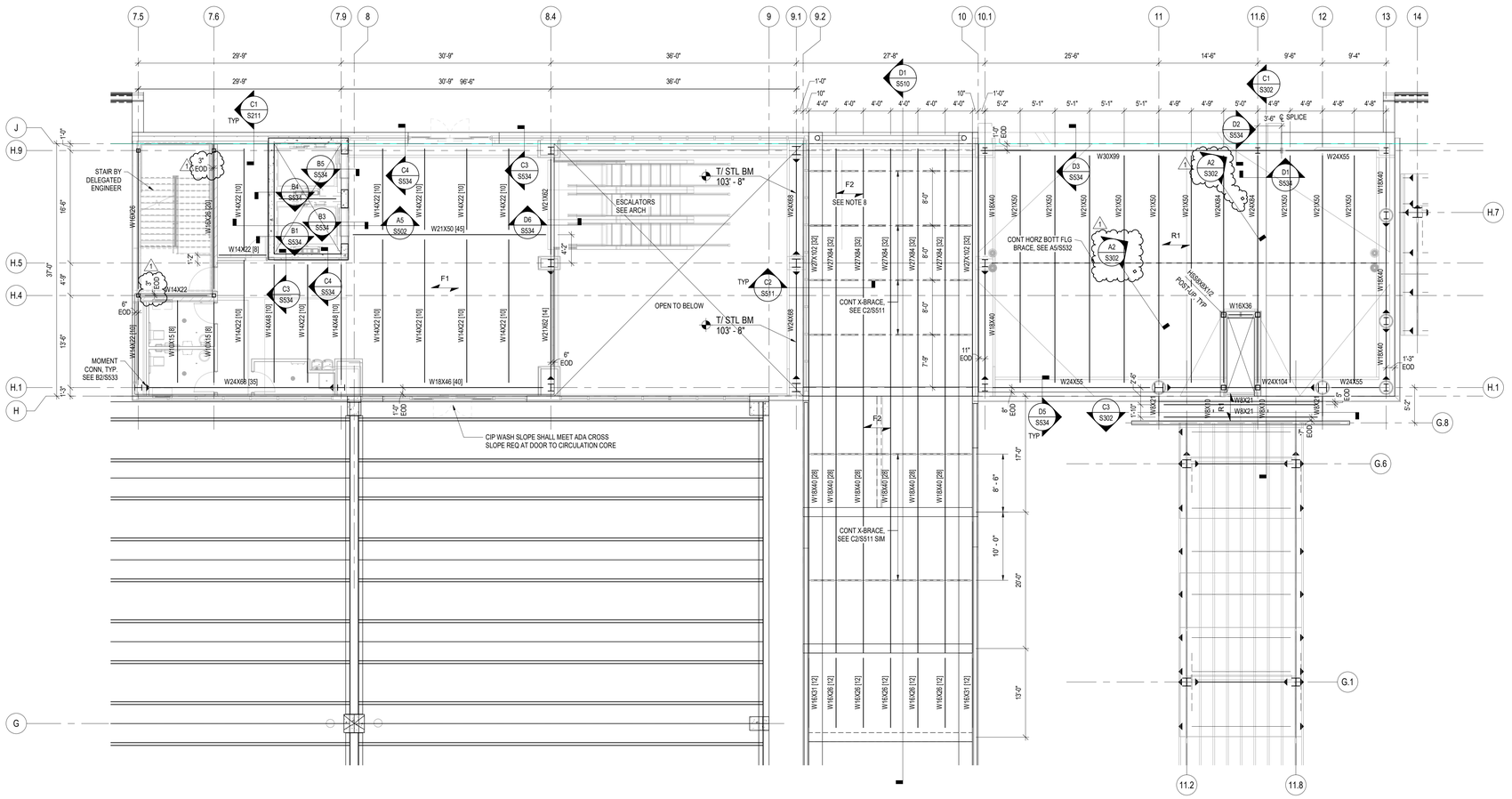
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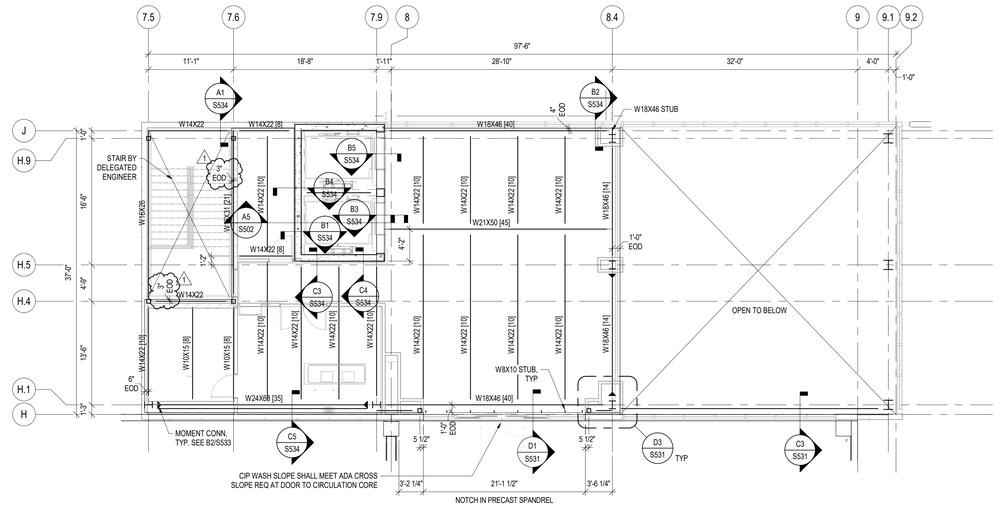
CIRCULATION CORE ELEVATED FLOORS SHEET NOTES

1. T/ STEEL 2ND FLOOR ELEVATION = 100' - 0 1/2" UNO ON PLAN.
2. T/ STEEL LOW ROOF ELEVATION = 102' - 0 1/2" UNO ON PLAN.
3. T/ STEEL 3RD FLOOR ELEVATION = 112' - 0 1/2" UNO ON PLAN.
4. T/ STEEL HIGH ROOF ELEVATION = 127' - 0 1/2" UNO ON PLAN.
5. **"FX"** INDICATES FLOOR DECK TYPE. SEE SEE GENERAL NOTES S001.
6. **"RX"** INDICATES ROOF DECK TYPE. SEE SEE GENERAL NOTES S001.
7. SEE E4/S532 FOR TYPICAL ROOF OPENING FRAMING.
8. SLOPE CONCRETE SLAB UP FOR A TOTAL THICKNESS OF 12" AT RETAINING WALL.



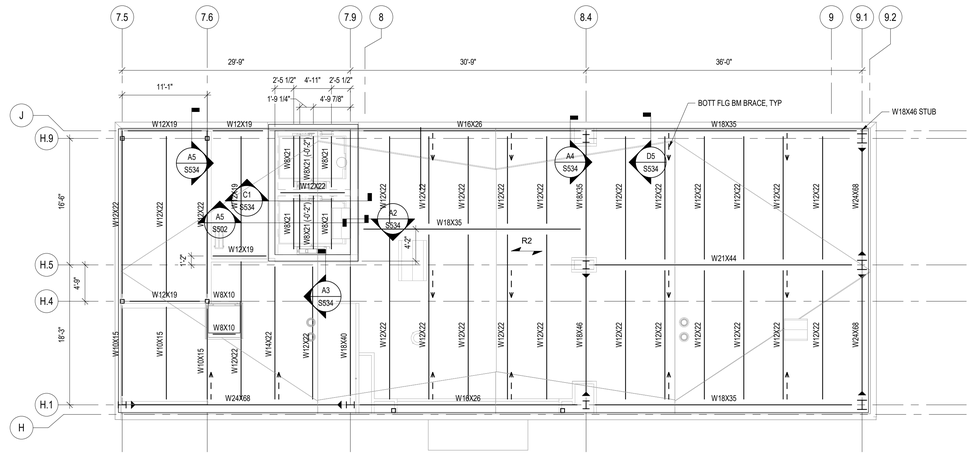
C1 CIRCULATION CORE 2ND FLOOR FRAMING PLAN

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



A1 CIRCULATION CORE 3RD FLOOR FRAMING PLAN

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



A4 CIRCULATION CORE ROOF FRAMING PLAN

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

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

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SHEET TITLE:

CIRCULATION CORE 2ND, 3RD, AND ROOF FRAMING PLANS

SHEET ID:

S142

PROJECT STATUS:
100% BID SET

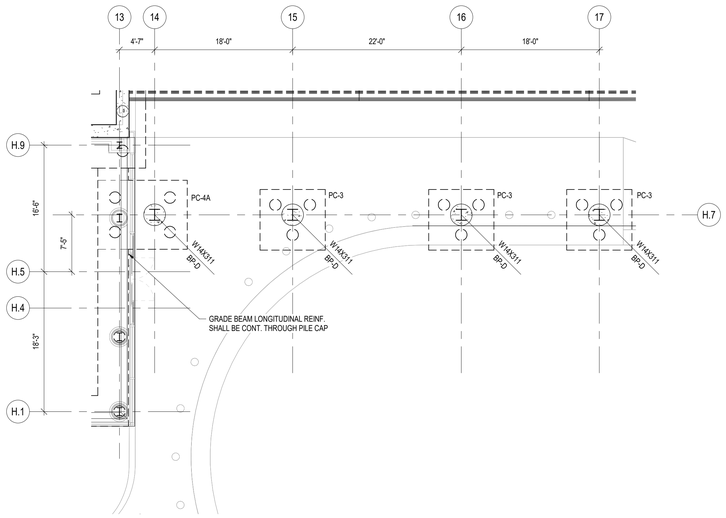
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CANOPY DESIGN CRITERIA:

DESIGN PER:
- 2024 *NORTH CAROLINA STATE BUILDING CODE*

1. DEAD LOADS:
   - SELFWEIGHT + ROOF ASSEMBLY
   - CANOPY COLLATERAL _____ 6 PSF
2. LIVE LOADS (PER ASCE 7-16):
   - ROOF _____ 20 PSF
3. WIND LOADS (PER ASCE 7-16):
   - ULTIMATE DESIGN WIND SPEED, V_{ult} _____ 145 MPH
   - NOMINAL DESIGN WIND SPEED, V_{asd} _____ 112 MPH
   - RISK CATEGORY _____ II
   - WIND EXPOSURE CATEGORY _____ C
   - INTERNAL PRESSURE COEFFICIENT _____ ± 0.00
   - COMPONENTS AND CLADDING WIND PRESSURES _____ SEE A5/S151 & D1/S156
   - HURRICANE-PRONE REGION _____ YES, GLAZED OPENINGS SHALL BE PROTECTED AGAINST WIND-BORNE DEBRIS
4. EARTHQUAKE DESIGN DATA (PER ASCE 7-16):
   - SEISMIC IMPORTANCE FACTOR _____ I_E = 1.00
   - MAPPED SPECTRAL RESPONSE ACCELERATIONS _____ S_S = 0.153
   - MAPPED SPECTRAL RESPONSE ACCELERATIONS _____ S_1 = 0.067
   - SPECTRAL RESPONSE COEFFICIENT _____ S_{DS} = 0.163
   - SPECTRAL RESPONSE COEFFICIENT _____ S_{D1} = 0.108
   - SITE CLASS _____ D
   - SEISMIC DESIGN CATEGORY _____ B
   - BASIC SEISMIC FORCE-RESISTING SYSTEMS _____ STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
   - RESPONSE MODIFICATION COEFFICIENT: _____ R = 3
   - SEISMIC RESPONSE COEFFICIENT: _____ C_s = 0.054
   - DESIGN BASE SHEAR _____ V = 2.59 KIP
   - ANALYSIS DESIGN PROCEDURE _____ EQUIVALENT LATERAL FORCE PROCEDURE
5. SNOW LOADS (PER ASCE 7-16):
   - GROUND SNOW LOAD _____ P_g = 10 PSF
   - FLAT ROOF SNOW LOAD _____ P_f = 9.24 PSF
   - SNOW EXPOSURE FACTOR _____ C_e = 1.0
   - SNOW LOAD IMPORTANCE FACTOR _____ I_s = 1.1
   - THERMAL FACTOR _____ C_t = 1.2
   - DRIFT SURCHARGE LOADS _____ SEE CS/S151
   - WIDTH OF SNOW DRIFT _____ SEE CS/S151
6. RAIN INTENSITY (PER NOAA):
   - PRECIPITATION INTENSITY (15-MINUTE) _____ i_{15} = 8.59 IN/HR
   - PRECIPITATION INTENSITY (60-MINUTE) _____ i_{60} = 4.53 IN/HR
7. FOUNDATION SYSTEM:
   - SHALLOW FOUNDATION SYSTEM
     - ALLOWABLE BEARING PRESSURE _____ 2000 PSF
   - DEEP FOUNDATION SYSTEM
     - AUGER CAST PILES (ACP) _____ SEE S001 & S601



C2 DROP-OFF CANOPY FOUNDATION PLAN

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

A2 DROP-OFF CANOPY FRAMING PLAN

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

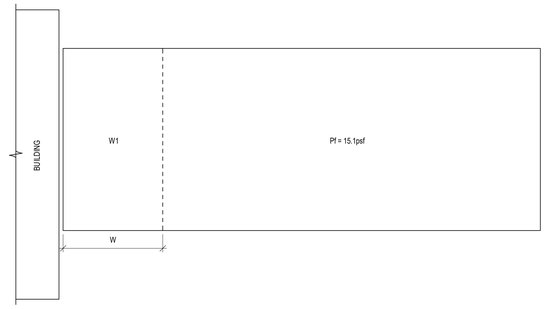
PLAN LEGEND AND SHEET NOTES

FRAMING PLAN LEGEND

DESCRIPTION	SYMBOL
1. CONCRETE COLUMN WRAP, SEE DETAIL A5/S152	
2. STEEL COLUMN: A. COLUMN SIZE _____ W##X##, SEE PLAN B. BASE PLATE _____ BP-#, SEE SCHEDULE A1/S532	W##X## BP-#
3. STEEL FRAMING: A. BEAM SIZE _____ W##X## B. TOP OF STEEL _____ (###'-#")	W##X## (###'-#")
4. MOMENT CONNECTION _____ B3/S355	
5. PILE CAP FOUNDATION _____ PC-#, SEE SCHEDULE D3/S601	PC-#

FRAMING PLAN NOTES

1. CANOPY STEEL FRAMING:
   A. FRAME-2 _____ A1/S351
2. TOP OF DROPOFF PILE CAP FOUNDATION ELEVATION = 84'-0", UNO
3. COLUMN CONCRETE WRAPS FOR CANOPY COLUMNS SHALL BE TYPE-2, SEE DETAIL A5/S152



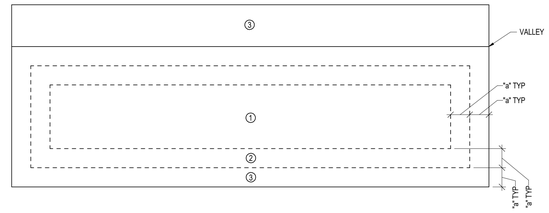
SNOW DRIFT SURCHARGE		
MARK	DRIFT WIDTH [W]	DRIFT LOAD SURCHARGE [Pd]
W1	14'-9"	56.0 PSF

NOTES:

1. SNOW PRESSURES SHOWN ARE SERVICE PER ASCE 7-16
2. Pf (PSF) DENOTES BALANCED SNOW LOAD PER ASCE 7-16
3. SNOW DRIFT LOAD CONFIGURATION PER ASCE.

C5 SNOW DRIFT LOAD DIAGRAM

SCALE: N.T.S.



DROP-OFF CANOPY COMPONENTS AND CLADDING PRESSURES (PSF)						
ZONE a = 3'-0"		EFFECTIVE WIND AREA				
		10 SF	50 SF	100 SF	200 SF	500 SF
ROOF	ALL ZONES	+85.3	+56.9	+56.9	+56.9	+56.9
	ZONE 1	-54.9	-54.9	-54.9	-54.9	-54.9
	ZONE 2	-83.1	-54.9	-54.9	-54.9	-54.9
	ZONE 3	-83.1	-54.9	-54.9	-54.9	-54.9

NOTES:

1. ALL WIND LOADS SHOWN ARE ULTIMATE PER ASCE 7-16 WITH UNITS IN PSF.
2. PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARDS AND AWAY FROM THE SURFACES, RESPECTIVELY.
3. EACH COMPONENT MUST BE DESIGNED FOR MAXIMUM POSITIVE AND NEGATIVE PRESSURES.
4. EDGE ZONE ("a") IS DISTANCE FROM CORNERS OF BUILDINGS.
5. FOR EFFECTIVE AREAS BETWEEN VALUES GIVEN, INTERPOLATION MAY BE USED. OTHERWISE, USE THE LOWER EFFECTIVE AREA.

A5 DROP-OFF CANOPY COMPONENTS AND CLADDING WIND PRESSURES

SCALE: N.T.S.

8 0 8 16

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

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DESIGNED BY:	DFW

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SHEET TITLE:
CANOPY DESIGN CRITERIA, DROP-OFF CANOPY PLANS

SHEET ID:
S151

PROJECT STATUS:
100% BID SET

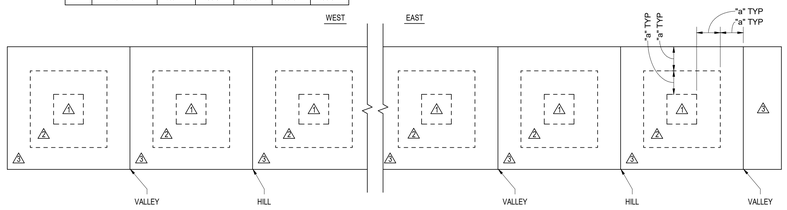
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WALKWAY CANOPY COMPONENTS AND CLADDING PRESSURES (PSF)						
ZONE ⚠1 a = 3'-0"		EFFECTIVE WIND AREA				
		10 SF	50 SF	100 SF	200 SF	500 SF
ROOF	ALL ZONES	+56.9	+36.8	+36.8	+36.8	+36.8
	ZONE 1	-38.8	-38.8	-38.8	-38.8	-38.8
	ZONE 2	-59.1	-38.8	-38.8	-38.8	-38.8
	ZONE 3	-59.1	-38.8	-38.8	-38.8	-38.8

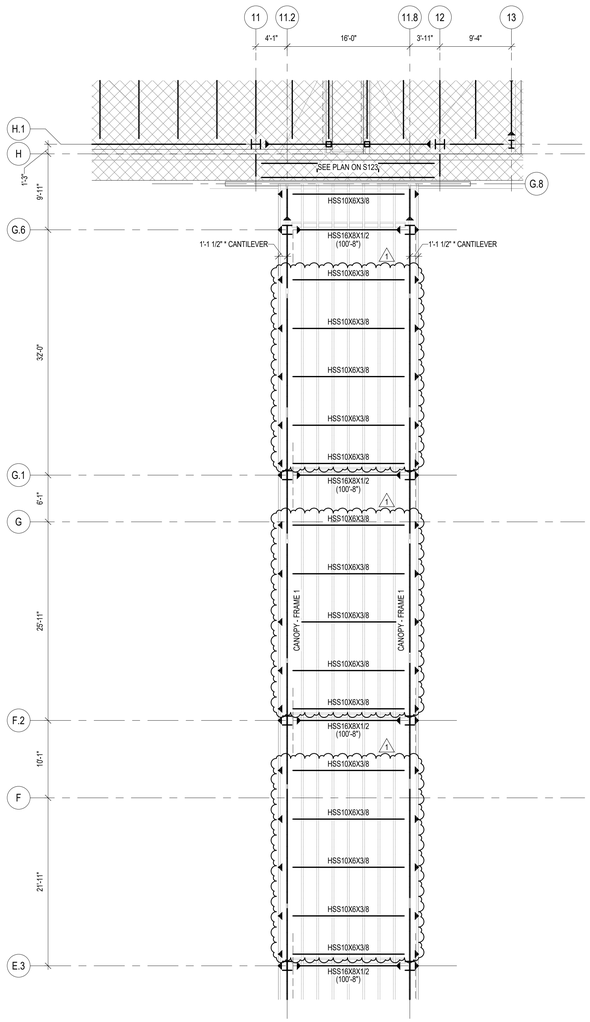
NOTES:

1. ALL WIND LOADS SHOWN ARE ULTIMATE PER ASCE 7-16 WITH UNITS IN PSF.
2. PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARDS AND AWAY FROM THE SURFACES, RESPECTIVELY.
3. EACH COMPONENT MUST BE DESIGNED FOR MAXIMUM POSITIVE AND NEGATIVE PRESSURES.
4. EDGE ZONE ("a") IS DISTANCE FROM CORNERS OF BUILDINGS.
5. FOR EFFECTIVE AREAS BETWEEN VALUES GIVEN, INTERPOLATION MAY BE USED. OTHERWISE, USE THE LOWER EFFECTIVE AREA.



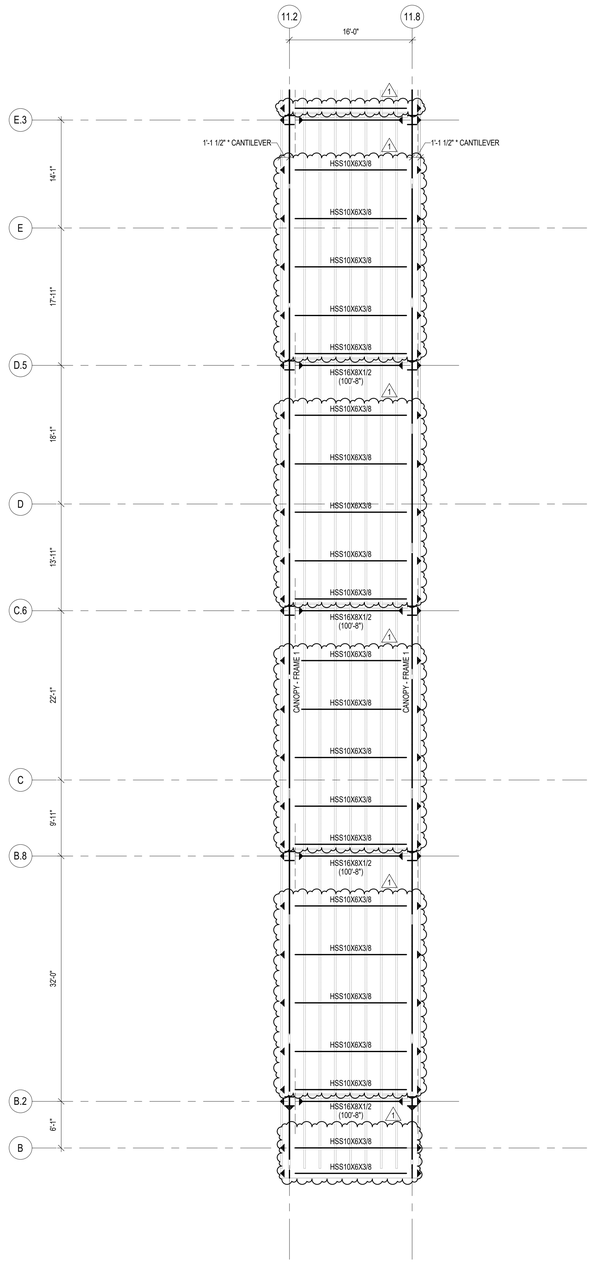
D1 WALKWAY CANOPY COMPONENTS AND CLADDING WIND PRESSURES

SCALE: N.T.S.



A1 WALKWAY CANOPY FRAMING PLAN - EAST

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



A3 WALKWAY CANOPY FRAMING PLAN - WEST

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

PLAN LEGEND AND SHEET NOTES

FRAMING PLAN LEGEND

DESCRIPTION	SYMBOL
1. STEEL FRAMING A. BEAM SIZE _____ W##X## B. TOP OF STEEL _____ (###'-#")	W##X## (###'-#")
2. MOMENT CONNECTION _____ B3/S335	

FRAMING PLAN NOTES

1. CANOPY STEEL FRAMING:
   A. FRAME-1 _____ C1/S351
2. * DENOTES COORDINATION REQUIRED WITH ROOF PANEL SYSTEM

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WALKWAY CANOPY FRAMING PLAN

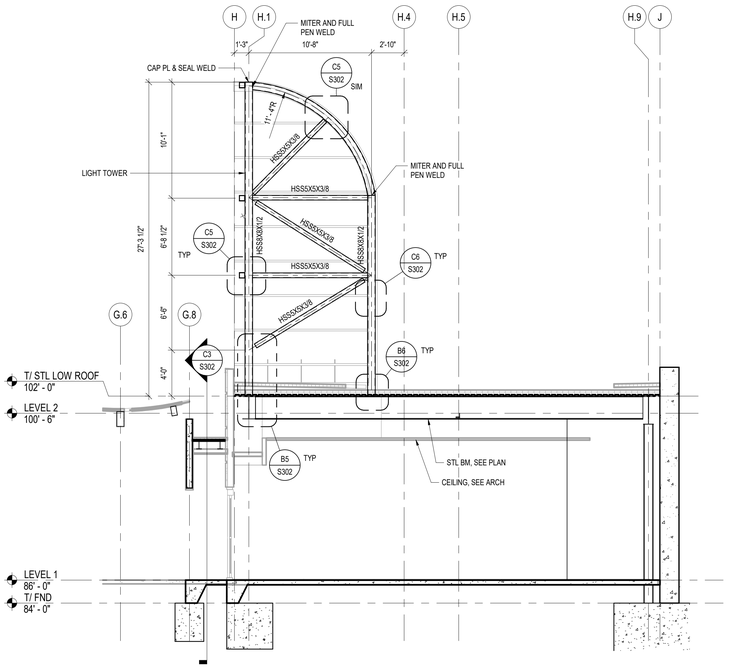
SHEET ID:
S156

PROJECT STATUS:
100% BID SET

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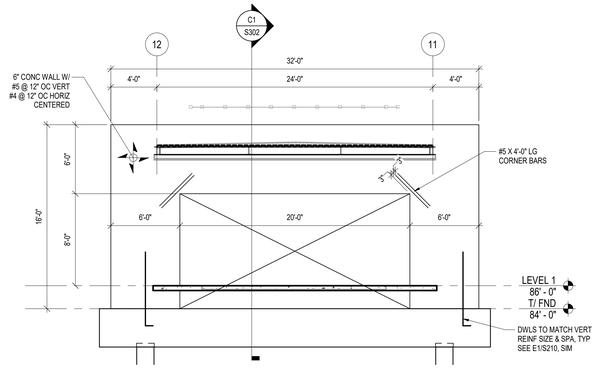
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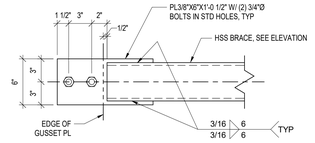
C1 VERTICAL CORE LOW ROOF SECTION

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



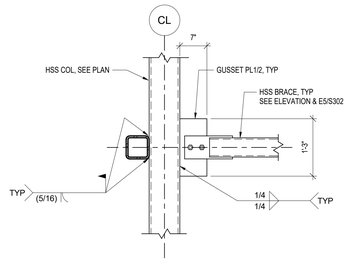
C3 VERTICAL CORE SOUTH ENTRANCE WALL ELEVATION

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



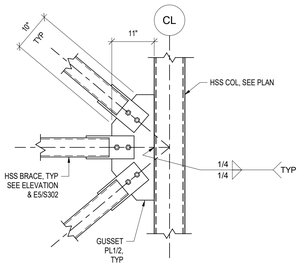
E5 BRACE PLATE DETAIL

SCALE: N.T.S.



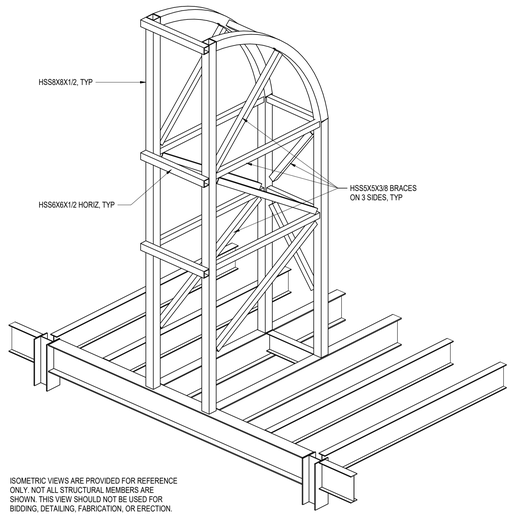
C5 HSS BRACE DETAIL

SCALE: N.T.S.



C6 HSS BRACE DETAIL

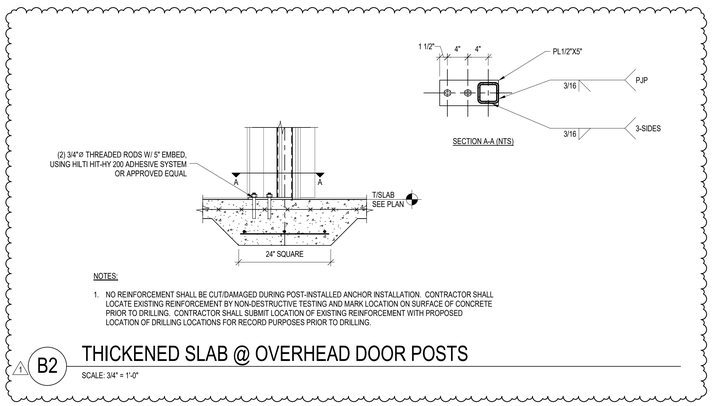
SCALE: N.T.S.



ISOMETRIC VIEWS ARE PROVIDED FOR REFERENCE ONLY. NOT ALL STRUCTURAL MEMBERS ARE SHOWN. THIS VIEW SHOULD NOT BE USED FOR BIDDING, DETAILING, FABRICATION, OR ERECTION.

A1 VERTICAL CORE LOW ROOF LIGHT TOWER ISO

SCALE:

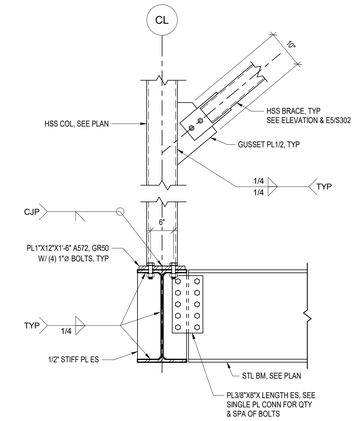


NOTES:

1. NO REINFORCEMENT SHALL BE CUT/DAMAGED DURING POST-INSTALLED ANCHOR INSTALLATION. CONTRACTOR SHALL LOCATE EXISTING REINFORCEMENT BY NON-DESTRUCTIVE TESTING AND MARK LOCATION ON SURFACE OF CONCRETE PRIOR TO DRILLING. CONTRACTOR SHALL SUBMIT LOCATION OF EXISTING REINFORCEMENT WITH PROPOSED LOCATION OF DRILLING LOCATIONS FOR RECORD PURPOSES PRIOR TO DRILLING.

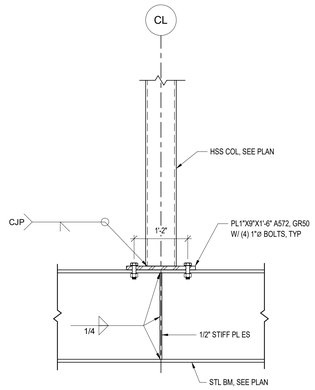
B2 THICKENED SLAB @ OVERHEAD DOOR POSTS

SCALE: 3/4" = 1'-0"



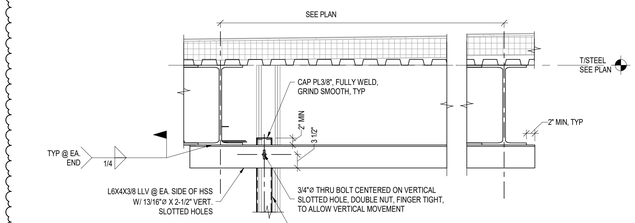
B5 HSS COL BASE DETAIL

SCALE: N.T.S.



B6 HSS COL BASE DETAIL

SCALE: N.T.S.



A2 SECTION @ OVERHEAD DOOR POSTS

SCALE: 3/4" = 1'-0"

4 0 4 8 12

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

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	MCM
DRAWN BY:	DFW
DESIGNED BY:	DFW
PROJECT NUMBER:	

2003-0070-006

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SEAL:

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SHEET TITLE:

LOW ROOF AND LIGHT TOWER SECTIONS AND DETAILS

SHEET ID:

S302

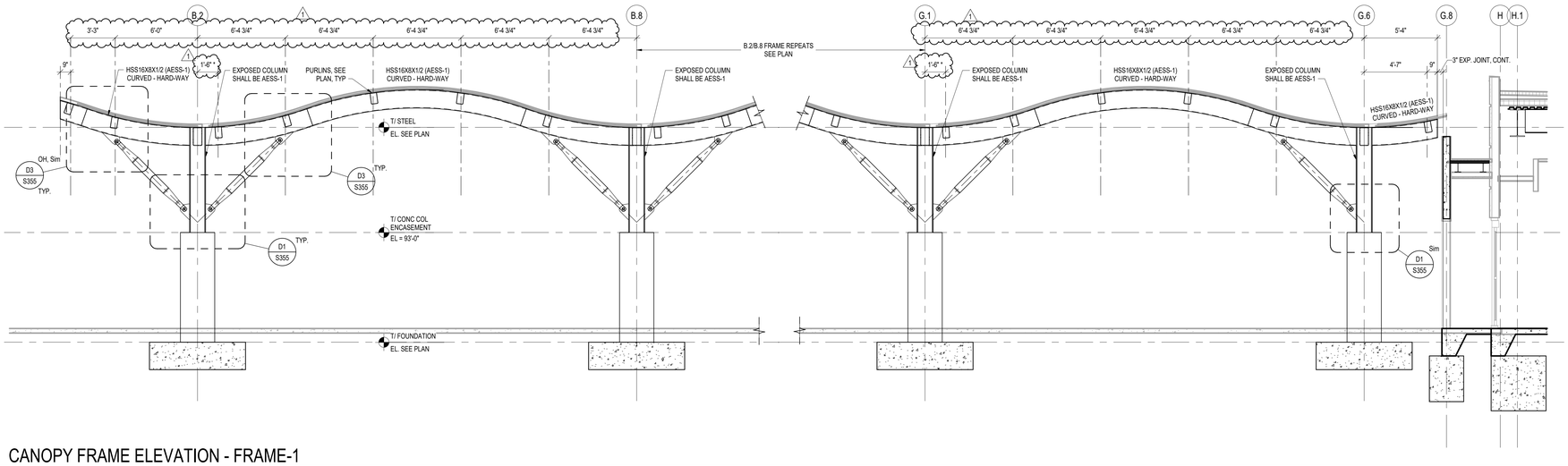
PROJECT STATUS:
100% BID SET

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4/10/2025 1:31:07 PM Autodesk Docs://1003007004_ILM TO4 Rdwy Int Improv Design/2003007006_ILM_TO6_Parking Garage and Shuttle Plaza_S_R24.rvt

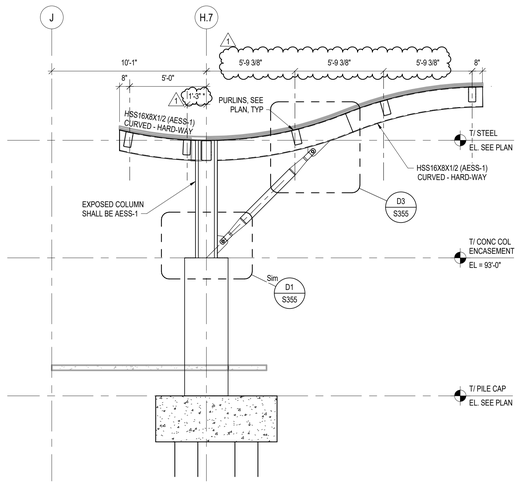
CANOPY FRAME ELEVATION SHEET NOTES

1. ALL HSS SPLICES SHALL BE COMPLETE JOINT PENETRATION WELDS, SEE DETAIL D3/S355
2. HSS CONNECTIONS, REFERENCE TYPICAL CONNECTION DETAILS ON SHEET S355
3. PROVIDE (1) 1/4" WEEP HOLE FOR EACH HSS SPAN WITH THE FOLLOWING CRITERIA:
   A. 12" FROM EACH END
   B. CENTERED ON THE HSS BOTTOM WALL
4. INTERNAL HSS CAP PLATES SHALL BE PROVIDED AT ALL OPEN ENDS, UNO
   A. CAP PLATE SHALL BE 1/8" LESS THAN THE HSS WALL THICKNESS AND GREATER THAN 1/4"
   B. CAP PLATE SHALL BE FULLY WELDED AND GRIND SMOOTH, AESS-1
6. ALL CANOPY STEEL FRAMING SHALL BE PAINTED WITH A HIGH PERFORMANCE COATING AND FINISHING, SEE ARCH. AND SPECIFICATION 099600
7. SEE ARCH. SHEET A320 FOR GEOMETRY
8. (1) DENOTES COORDINATION REQUIRED WITH ARCHITECTURAL GUTTER SYSTEM



C1 CANOPY FRAME ELEVATION - FRAME-1

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



A1 CANOPY FRAME ELEVATION - FRAME 2

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

4 0 4 8

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

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: DFW
DESIGNED BY: DFW
PROJECT NUMBER: 2003-0070-006

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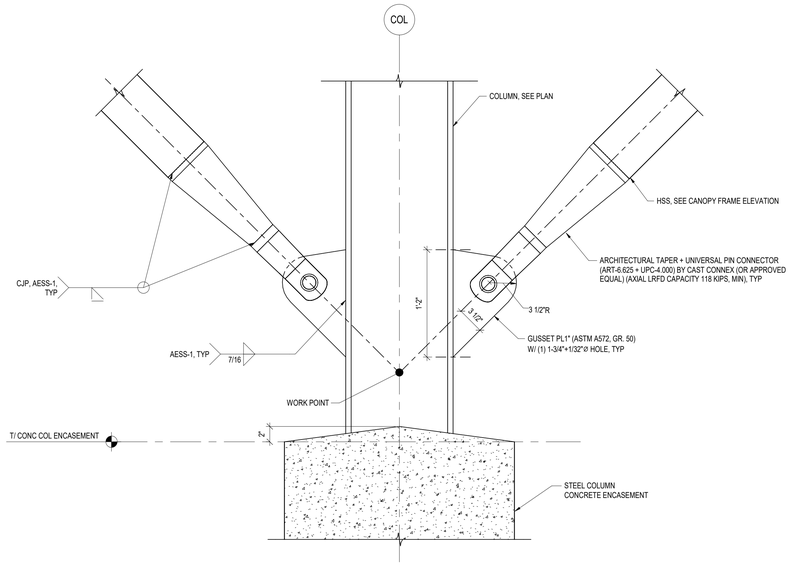
SHEET TITLE:
OVERALL CANOPY SECTIONS

SHEET ID:
S351

PROJECT STATUS:
100% BID SET

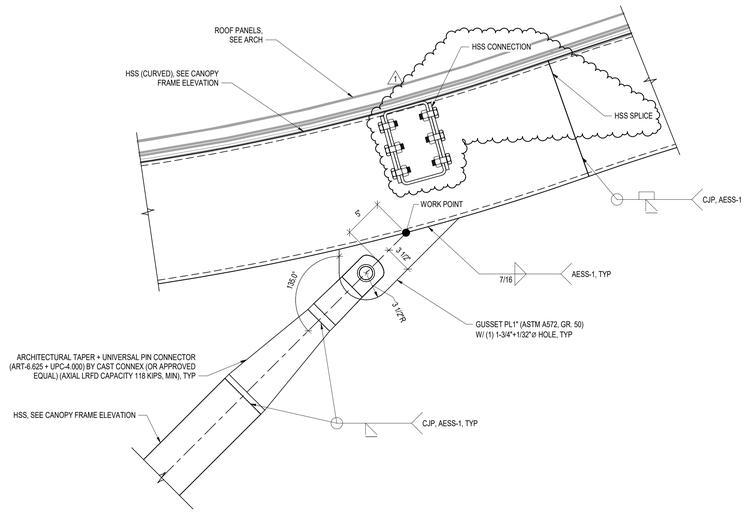
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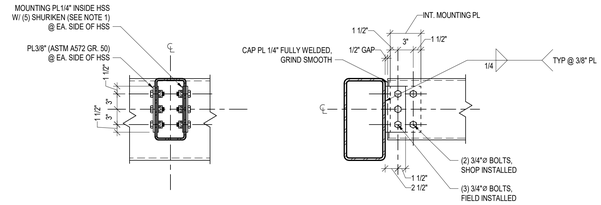
D1 SECTION @ BRACE TO COLUMN CONNECTION

SCALE: N.T.S.



D3 SECTION @ BRACE TO FRAME CONNECTION

SCALE: N.T.S.

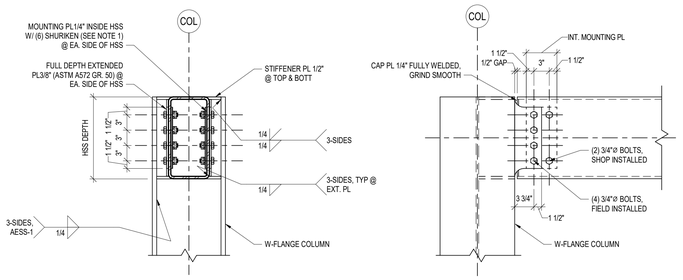


NOTES:

1. SHURIKEN STRUCTURAL NUT POSITIONERS BY ATLAS TUBE OR APPROVED EQUAL
   A. STRUCTURAL NUT POSITIONERS SHALL BE TACK WELDED TO MOUNTING PLATE PER MANUFACTURER'S WRITTEN INSTRUCTIONS
   B. ENSURE THAT EVERY STRUCTURAL NUT POSITIONERS HAS A STRUCTURAL NUT WITHIN

D5 HSS12 TO HSS16 TYPICAL SHEAR CONNECTION

SCALE: N.T.S.

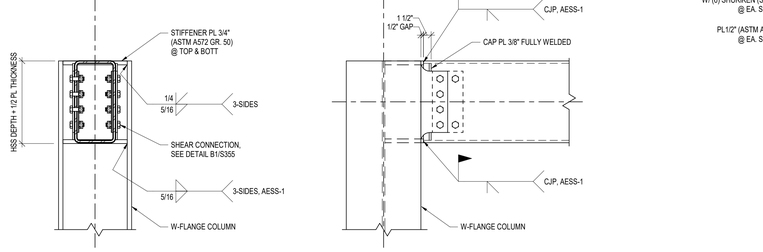


NOTES:

1. SHURIKEN STRUCTURAL NUT POSITIONERS BY ATLAS TUBE OR APPROVED EQUAL
   A. STRUCTURAL NUT POSITIONERS SHALL BE TACK WELDED TO MOUNTING PLATE PER MANUFACTURER'S WRITTEN INSTRUCTIONS
   B. ENSURE THAT EVERY STRUCTURAL NUT POSITIONERS HAS A STRUCTURAL NUT WITHIN
   C. SLOTTED HOLES NOT PERMITTED

B1 HSS16 TO W14-WEB TYPICAL SHEAR CONNECTION

SCALE: N.T.S.

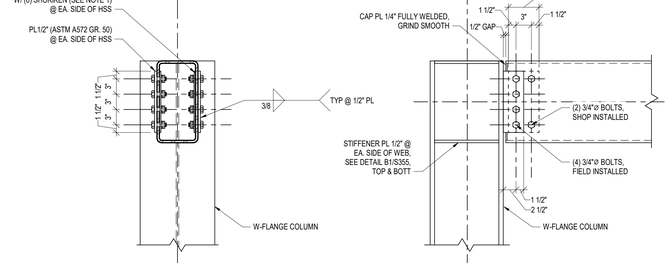


NOTES:

1. SHURIKEN STRUCTURAL NUT POSITIONERS BY ATLAS TUBE OR APPROVED EQUAL
   A. STRUCTURAL NUT POSITIONERS SHALL BE TACK WELDED TO MOUNTING PLATE PER MANUFACTURER'S WRITTEN INSTRUCTIONS
   B. ENSURE THAT EVERY STRUCTURAL NUT POSITIONERS HAS A STRUCTURAL NUT WITHIN
   C. SLOTTED HOLES NOT PERMITTED

B3 HSS16 TO W14-WEB TYPICAL MOMENT CONNECTION

SCALE: N.T.S.

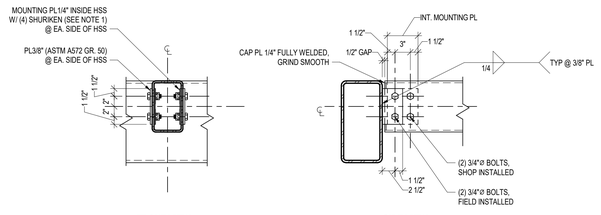


NOTES:

1. SHURIKEN STRUCTURAL NUT POSITIONERS BY ATLAS TUBE OR APPROVED EQUAL
   A. STRUCTURAL NUT POSITIONERS SHALL BE TACK WELDED TO MOUNTING PLATE PER MANUFACTURER'S WRITTEN INSTRUCTIONS
   B. ENSURE THAT EVERY STRUCTURAL NUT POSITIONERS HAS A STRUCTURAL NUT WITHIN
   C. SLOTTED HOLES NOT PERMITTED

B5 HSS16 TO W14-FLANGE TYPICAL SHEAR CONNECTION

SCALE: N.T.S.

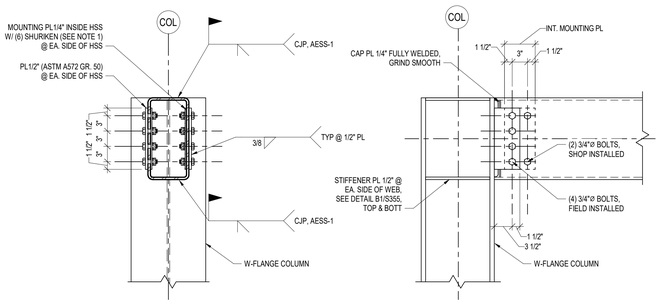


NOTES:

1. SHURIKEN STRUCTURAL NUT POSITIONERS BY ATLAS TUBE OR APPROVED EQUAL
   A. STRUCTURAL NUT POSITIONERS SHALL BE TACK WELDED TO MOUNTING PLATE PER MANUFACTURER'S WRITTEN INSTRUCTIONS
   B. ENSURE THAT EVERY STRUCTURAL NUT POSITIONERS HAS A STRUCTURAL NUT WITHIN

A1 HSS10 TO HSS16 TYPICAL SHEAR CONNECTION

SCALE: N.T.S.

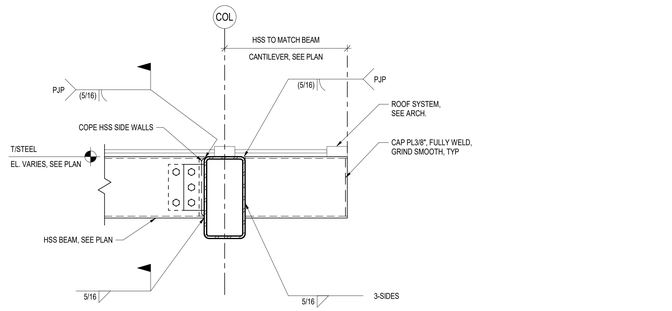


NOTES:

1. SHURIKEN STRUCTURAL NUT POSITIONERS BY ATLAS TUBE OR APPROVED EQUAL
   A. STRUCTURAL NUT POSITIONERS SHALL BE TACK WELDED TO MOUNTING PLATE PER MANUFACTURER'S WRITTEN INSTRUCTIONS
   B. ENSURE THAT EVERY STRUCTURAL NUT POSITIONERS HAS A STRUCTURAL NUT WITHIN
   C. SLOTTED HOLES NOT PERMITTED

A3 HSS16 TO W14-FLANGE TYPICAL MOMENT CONNECTION

SCALE: 1" = 1'-0"



NOTES:

1. SIMILAR W-FLANGE COLUMN, EXTEND HSS CANTILEVER TO COLUMN WEB AND WELD AS SHOWN IN THIS DETAIL
2. ALL WELDS SHALL MEET AESS-1 CRITERIA

A5 SECTION @ CANTILEVER CANOPY

SCALE: N.T.S.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	RS&H
DRAWN BY:	DFW
DESIGNED BY:	DFW
PROJECT NUMBER:	**2003-0070-006**

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SHEET TITLE:
CANOPY FRAMING SECTIONS

SHEET ID:
S355

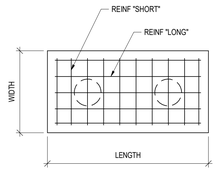
PROJECT STATUS:
100% BID SET

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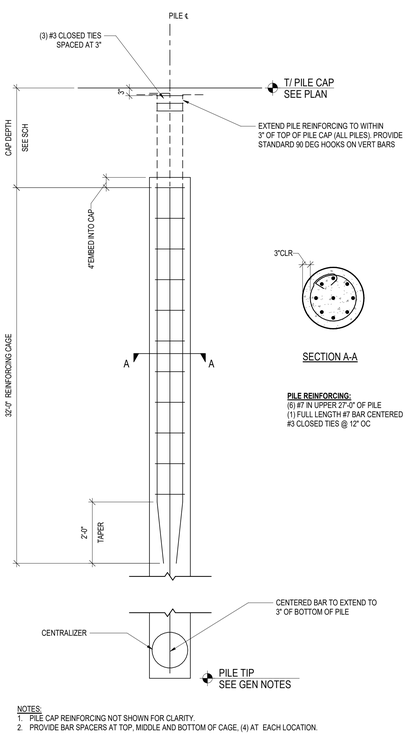
PILE CAP SCHEDULE					
TYPE	# OF PILES	WIDTH X LENGTH	DEPTH	REINFORCING	NOTES
PC-1	1	4'-0" X 4'-0"	3'-4"	(5) #5 EA WAY	
PC-2	2	4'-6" X 9'-0"	4'-0"	(5) #10 LONG, (9) #10 SHORT	
PC-2A	2	4'-6" X 9'-0"	3'-4"	(5) #10 LONG, (9) #10 SHORT	
PC-3	3	7'-11" X 8'-6"	3'-4"	(11) #8 EA WAY, TOP & BOTTOM	
PC-4	4	9'-0" X 9'-0"	4'-4"	(9) #10 EA WAY	
PC-4A	4	9'-0" X 11'-8"	4'-0"	(14) #8 LONG, (18) #8 SHORT, TOP & BOTTOM	
PC-5	5	10'-10" X 10'-10"	4'-4"	(14) #10 EA WAY, TOP & BOTTOM	
PC-7	7	12'-6" X 13'-6"	4'-4"	(15) #10 EA WAY, TOP & BOTTOM	
PC-8	8	12'-6" X 13'-6"	4'-4"	(15) #10 EA WAY, TOP & BOTTOM	
PC-8SP	8	SEE A3/S601	4'-4"	#8 @ 12" OC EA WAY, TOP #10 @ 12" OC EA WAY, BOTTOM	
1					
PC-10	10	9'-0" X 37'-0"	4'-4"	(10) #8 LONG, #8 @ 12" OC SHORT, TOP (10) #10 LONG, #10 @ 12" OC SHORT, BOTT	
PC-11SP	11	20'-6 X 25'-5"	3'-4"	#9 @ 12" OC EA WAY, TOP #9 @ 12" OC EA WAY, BOTTOM	SEE PILE CAP DETAIL FOR ADDITIONAL REINF INFORMATION
PC-12SP	12	17'-8" X 25'-8"	4'-4"	#8 @ 12" OC EA WAY, TOP #10 @ 12" OC EA WAY, BOTTOM	SEE PILE CAP DETAIL FOR ADDITIONAL REINF INFORMATION
PC-14	14	9'-0" X 45'-0"	4'-4"	(10) #8 LONG, #8 @ 12" OC SHORT, TOP (10) #10 LONG, #10 @ 12" OC SHORT, BOTT	

NOTES:
1. SEE A1/S601 FOR ACIP PILE DETAILS.
2. REINFORCING AT BOTTOM OF PILE CAP ONLY, UNLESS NOTED OTHERWISE.
3. ALL BOTTOM BARS SHALL HAVE 90-DEGREE STANDARD ACI HOOK EACH END, UNLESS NOTED OTHERWISE.



D3 PILE CAP SCHEDULE

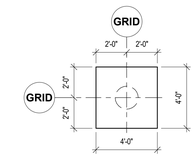
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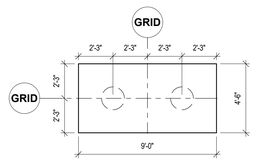
NOTES:
1. PILE CAP REINFORCING NOT SHOWN FOR CLARITY.
2. PROVIDE BAR SPACERS AT TOP, MIDDLE AND BOTTOM OF CAGE, (4) AT EACH LOCATION.

A1 TYPICAL AUGERCAST PILE DETAIL

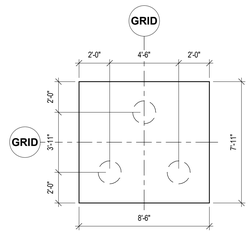
SCALE: N.T.S.



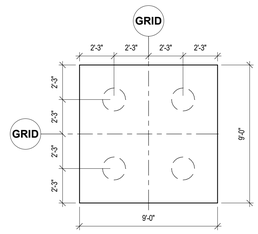
PC-1



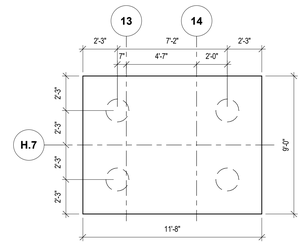
PC-2 & PC-2A



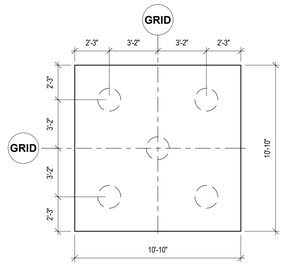
PC-3



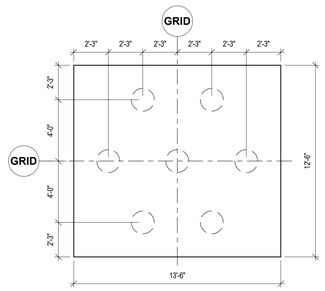
PC-4



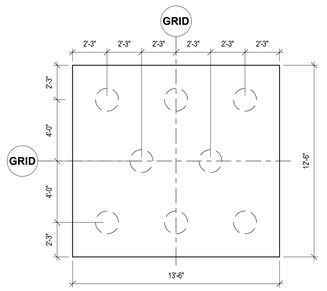
PC-4A



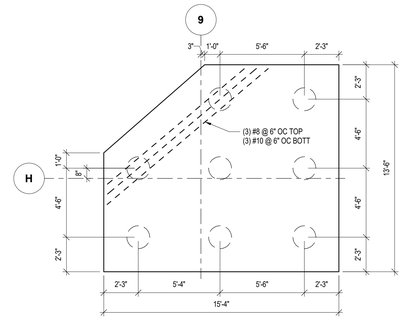
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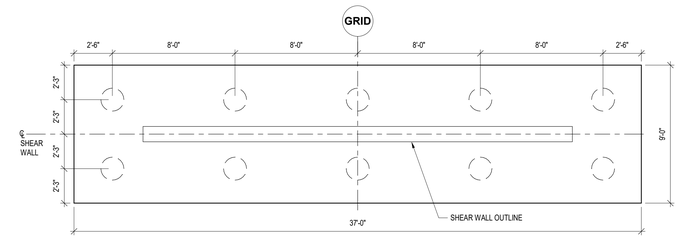
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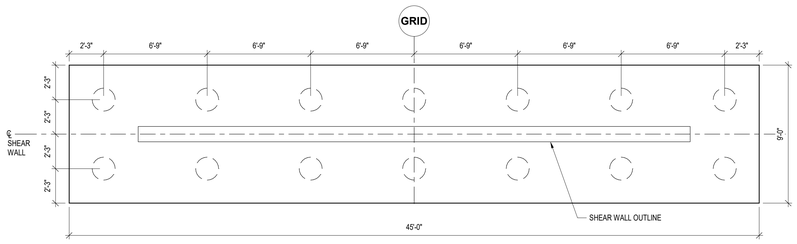
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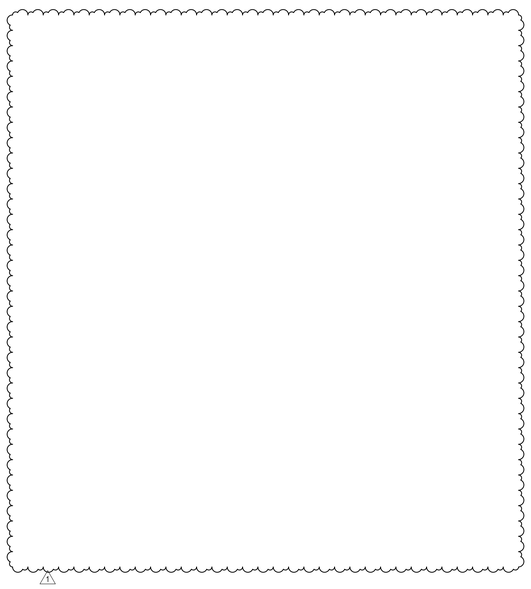
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PC-10

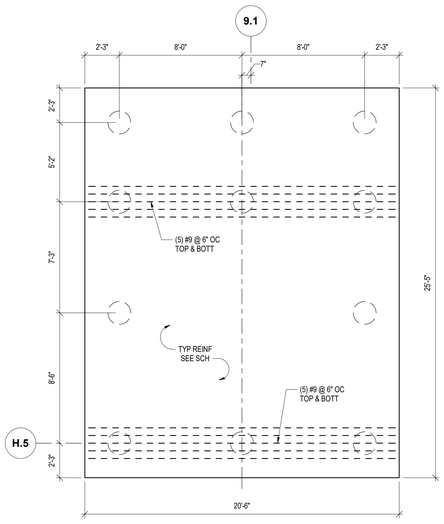


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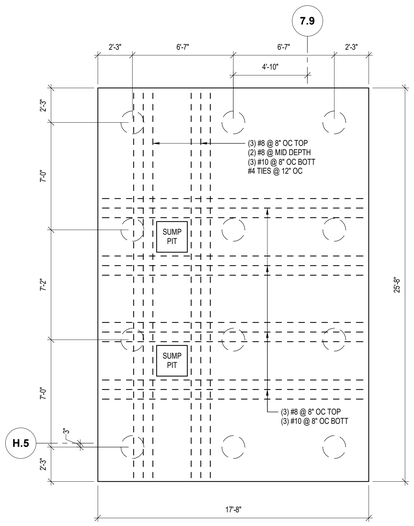


A3 TYPICAL PILE CAP DETAILS

SCALE: N.T.S.



PC-11SP



PC-12SP

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: MCM
DRAWN BY: DFW
DESIGNED BY: DFW
PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
ACIP PILE AND PILE CAP SCHEDULE AND DETAILS

SHEET ID:
S601

PROJECT STATUS:
100% BID SET

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PARKING TOTALS			
LEVEL 1			
FIRST LEVEL PARKING BY RENTAL CAR AGENCY			
LEVEL 2			
TYPE	LENGTH	WIDTH	COUNT
ACCESSIBLE STANDARD	18'-0"	9'-0"	5
ACCESSIBLE VAN	18'-0"	11'-0"	3
STANDARD	18'-0"	9'-0"	292
TOTAL LEVEL 2			301
LEVEL 3			
TYPE	LENGTH	WIDTH	COUNT
ACCESSIBLE STANDARD	18'-0"	9'-0"	4
ACCESSIBLE VAN	18'-0"	11'-0"	3
STANDARD	18'-0"	9'-0"	307
TOTAL LEVEL 3			314
GRAND TOTAL			615

FLOOR PLAN LEGEND & SHEET NOTES

PARTITION LEGEND

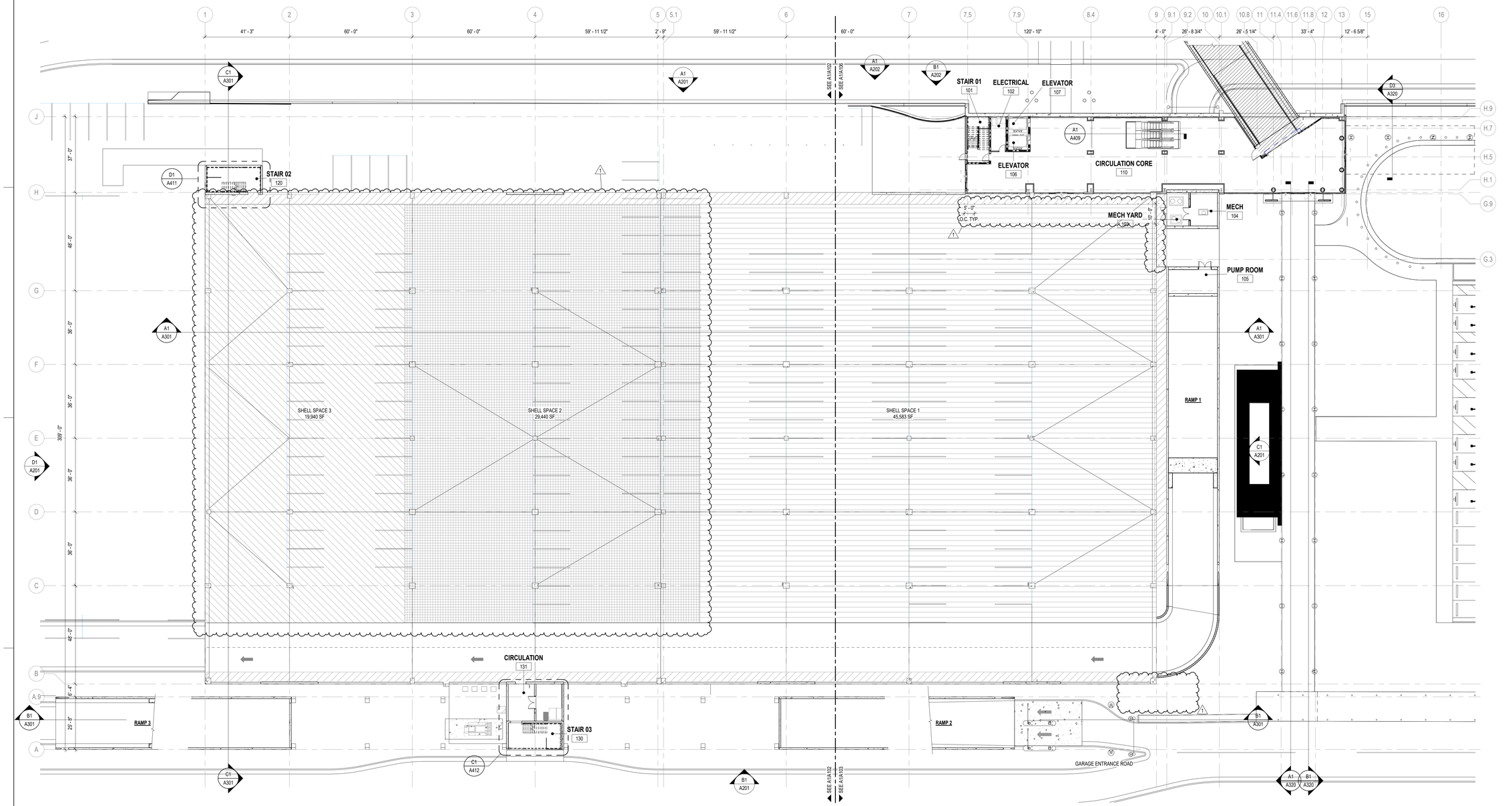
- NON-RATED WALL SYSTEM
- 1-HOUR RATED WALL SYSTEM
- 3-HOUR RATED WALL SYSTEM
- PRECAST OR C.I.P. CONCRETE WALL SYSTEM
- CONCRETE MASONRY UNIT WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS AND PARTITION TYPE DETAILS

REFER TO VOLUME 2 PACKAGE

GENERAL SHEET NOTES

1. ALL EXTERIOR WALLS TO BE DIMENSIONED TO THE FACE OF SHEATHING OR CONCRETE U.N.O.
2. ALL INTERIOR WALLS TO BE DIMENSIONED TO THE FACE OF STUD U.N.O.
3. SEE ENLARGED PLANS FOR PARTITION TAGS NOT IDENTIFIED ON OVERALL FLOOR PLANS.
4. PROVIDE 5/8" WATER-RESISTANT GWB IN LIEU OF TYPICAL GWB AT ALL WET AREAS INCLUDING, BUT NOT LIMITED TO:
   A. RESTROOMS
   B. JANITOR CLOSETS
5. EXTEND SMOKE BARRIER PARTITION WALLS TO BOTTOM OF UPPER FLOOR STRUCTURE.
6. FIELD VERIFY ALL DIMENSIONS, REPORT ANY DISCREPANCIES TO THE ARCHITECT FOR CLARIFICATION PRIOR TO PROCEEDING WITH CONSTRUCTION.
7. SEAL ALL PENETRATIONS ON EXTERIOR WALLS.
8. ALL PLYWOOD TO BE FIRE TREATED, U.N.O.
9. DOOR FRAMES TO BE LOCATED 4" FROM CORNER OF WALL U.N.O.



PN

N

A1 OVERALL GROUND FLOOR PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG
PROJECT NUMBER:	
2003-0070-006	

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SEAL:

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SHEET TITLE:
OVERALL GROUND FLOOR PLAN

SHEET ID:
A101

PROJECT STATUS:
100% BID SET

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PARKING TOTALS			
LEVEL 1			
FIRST LEVEL PARKING BY RENTAL CAR AGENCY			
LEVEL 2			
TYPE	LENGTH	WIDTH	COUNT
ACCESSIBLE STANDARD	18'-0"	9'-0"	5
ACCESSIBLE VAN	18'-0"	11'-0"	3
STANDARD	18'-0"	9'-0"	292
TOTAL LEVEL 2			301
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ACCESSIBLE VAN	18'-0"	11'-0"	3
STANDARD	18'-0"	9'-0"	307
TOTAL LEVEL 3			314
GRAND TOTAL			615

FLOOR PLAN LEGEND & SHEET NOTES

PARTITION LEGEND

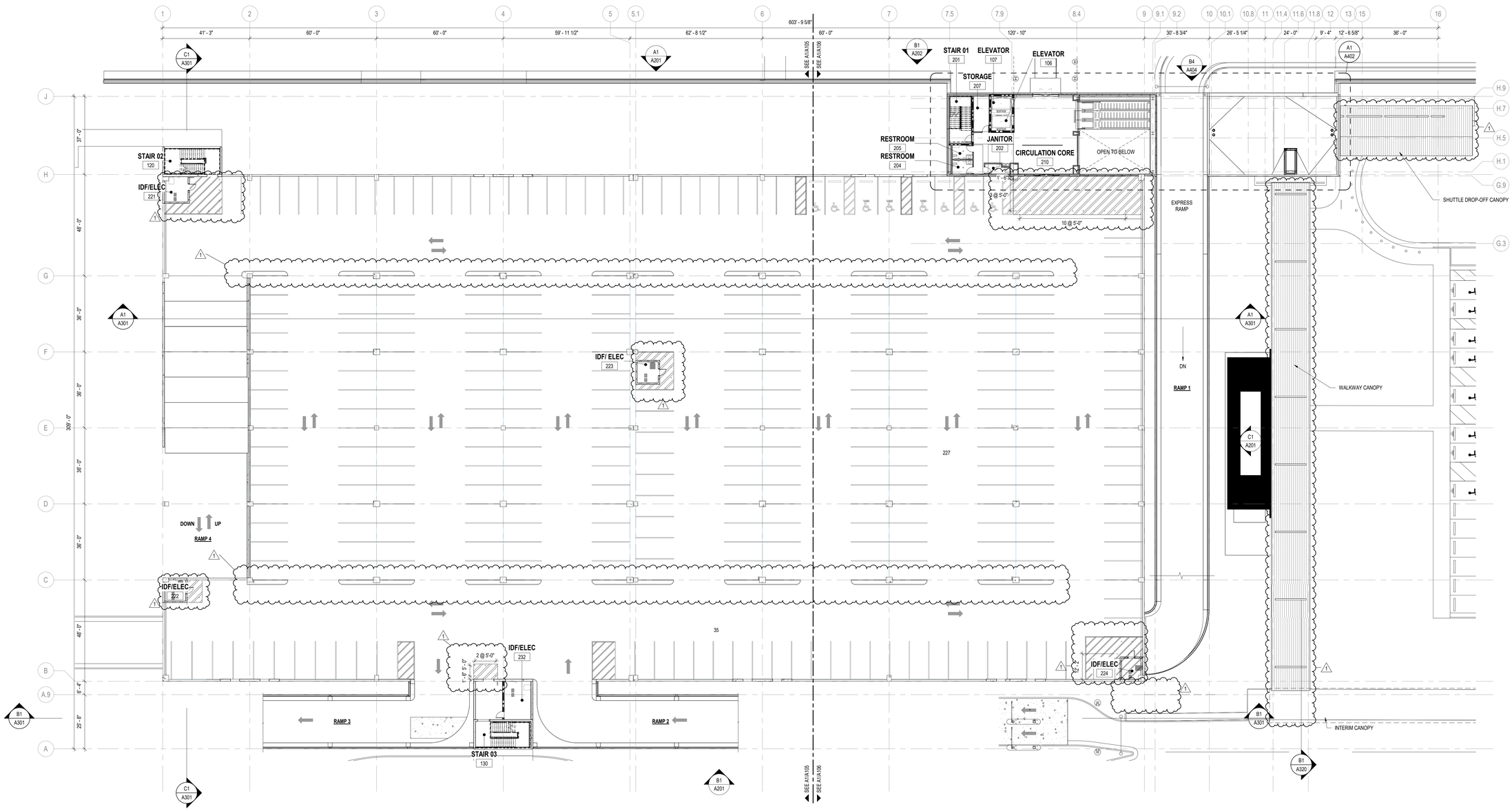
- NON-RATED WALL SYSTEM
- 1-HOUR RATED WALL SYSTEM
- 3-HOUR RATED WALL SYSTEM
- PRECAST OR C.I.P. CONCRETE WALL SYSTEM
- CONCRETE MASONRY UNIT WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS AND PARTITION TYPE DETAILS

REFER TO VOLUME 2 PACKAGE

GENERAL SHEET NOTES

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7. SEAL ALL PENETRATIONS ON EXTERIOR WALLS.
8. ALL PLYWOOD TO BE FIRE TREATED, U.N.O.
9. DOOR FRAMES TO BE LOCATED 4" FROM CORNER OF WALL U.N.O.



PN

A1 OVERALL SECOND LEVEL FLOOR PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

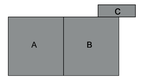
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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN



REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG
PROJECT NUMBER:	
2003-0070-006	

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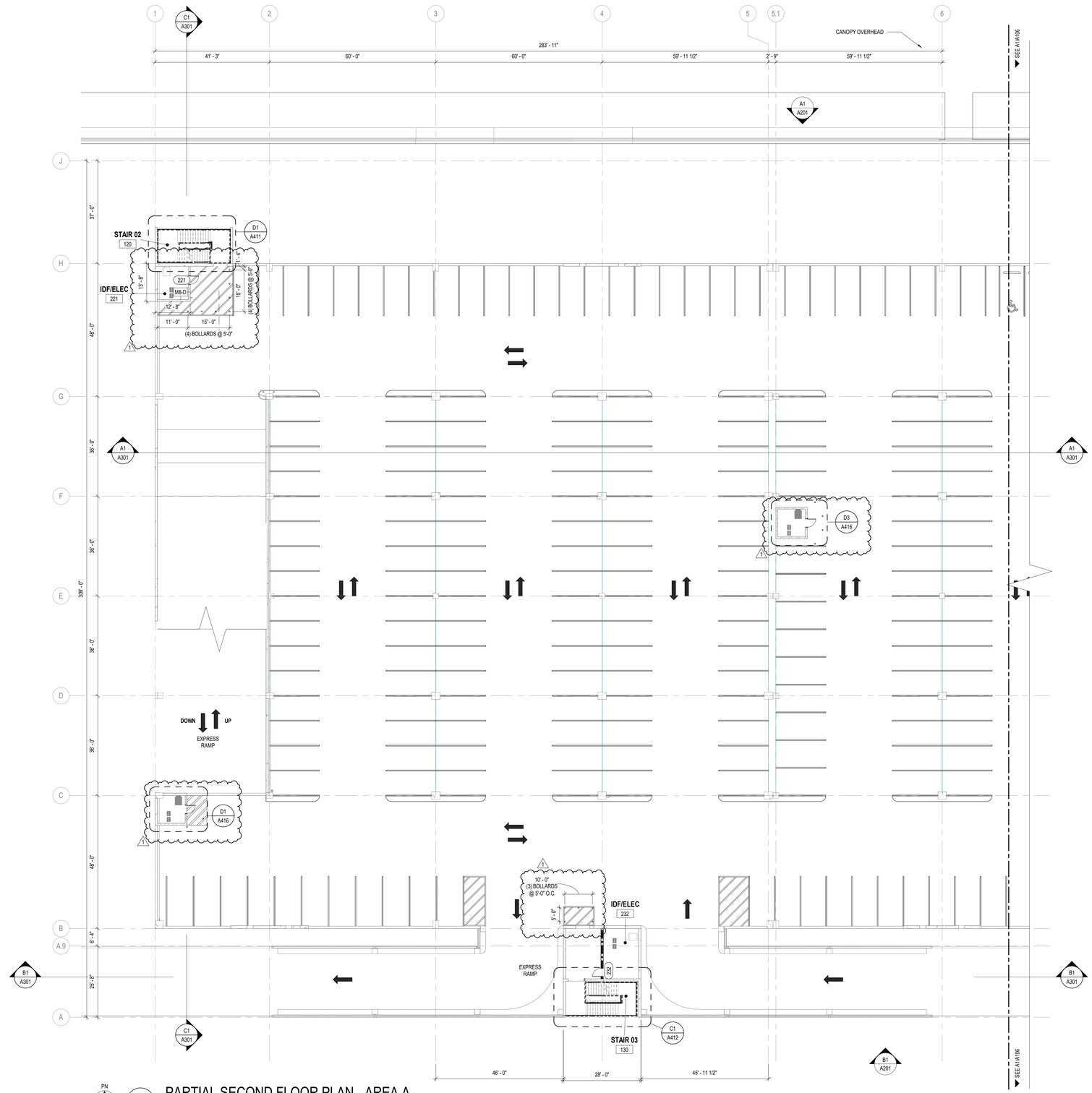
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OVERALL SECOND FLOOR PLAN

SHEET ID:
A104

PROJECT STATUS:
100% BID SET

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PN

N

A1 PARTIAL SECOND FLOOR PLAN - AREA A

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

FLOOR PLAN LEGEND & SHEET NOTES

PARTITION LEGEND

- NON-RATED WALL SYSTEM
- 1-HOUR RATED WALL SYSTEM
- 3-HOUR RATED WALL SYSTEM
- PRECAST OR C.I.P. CONCRETE WALL SYSTEM
- CONCRETE MASONRY UNIT WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS AND PARTITION TYPE DETAILS

REFER TO VOLUME 2 PACKAGE

GENERAL SHEET NOTES

1. ALL EXTERIOR WALLS TO BE DIMENSIONED TO THE FACE OF SHEATHING OR CONCRETE U.N.O.
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8. ALL PLYWOOD TO BE FIRE TREATED, U.N.O.
9. DOOR FRAMES TO BE LOCATED 4" FROM CORNER OF WALL U.N.O.

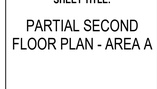
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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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WILMINGTON, NC 28405

KEY PLAN



REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
PARTIAL SECOND FLOOR PLAN - AREA A

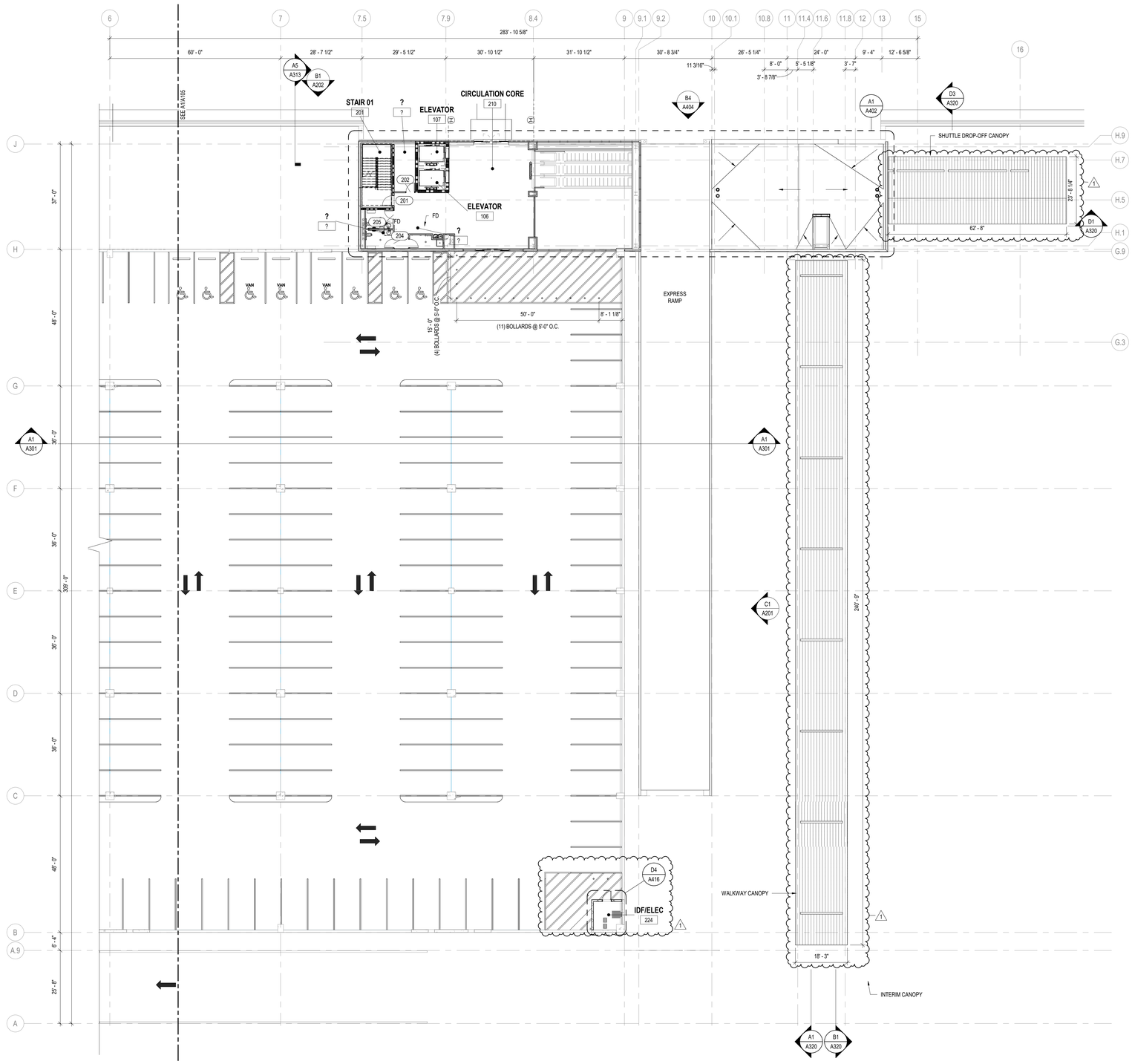
SHEET ID:
A105

PROJECT STATUS:
100% BID SET

16 0 16 32
SCALE: 1/16" = 1'-0"

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PN

A1 PARTIAL SECOND FLOOR PLAN - AREA B

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

16 0 16 32

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

FLOOR PLAN LEGEND & SHEET NOTES

PARTITION LEGEND

- NON-RATED WALL SYSTEM
- 1-HOUR RATED WALL SYSTEM
- 3-HOUR RATED WALL SYSTEM
- PRECAST OR C.I.P. CONCRETE WALL SYSTEM
- CONCRETE MASONRY UNIT WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS AND PARTITION TYPE DETAILS

REFER TO VOLUME 2 PACKAGE

GENERAL SHEET NOTES

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
PARTIAL SECOND FLOOR PLAN - AREA B

SHEET ID:
A106

PROJECT STATUS:
100% BID SET

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PARKING TOTALS			
LEVEL 1			
FIRST LEVEL PARKING BY RENTAL CAR AGENCY			
LEVEL 2			
TYPE	LENGTH	WIDTH	COUNT
ACCESSIBLE STANDARD	18'-0"	9'-0"	5
ACCESSIBLE VAN	18'-0"	11'-0"	3
STANDARD	18'-0"	9'-0"	292
TOTAL LEVEL 2			301
LEVEL 3			
TYPE	LENGTH	WIDTH	COUNT
ACCESSIBLE STANDARD	18'-0"	9'-0"	4
ACCESSIBLE VAN	18'-0"	11'-0"	3
STANDARD	18'-0"	9'-0"	307
TOTAL LEVEL 3			314
GRAND TOTAL			615

FLOOR PLAN LEGEND & SHEET NOTES

PARTITION LEGEND

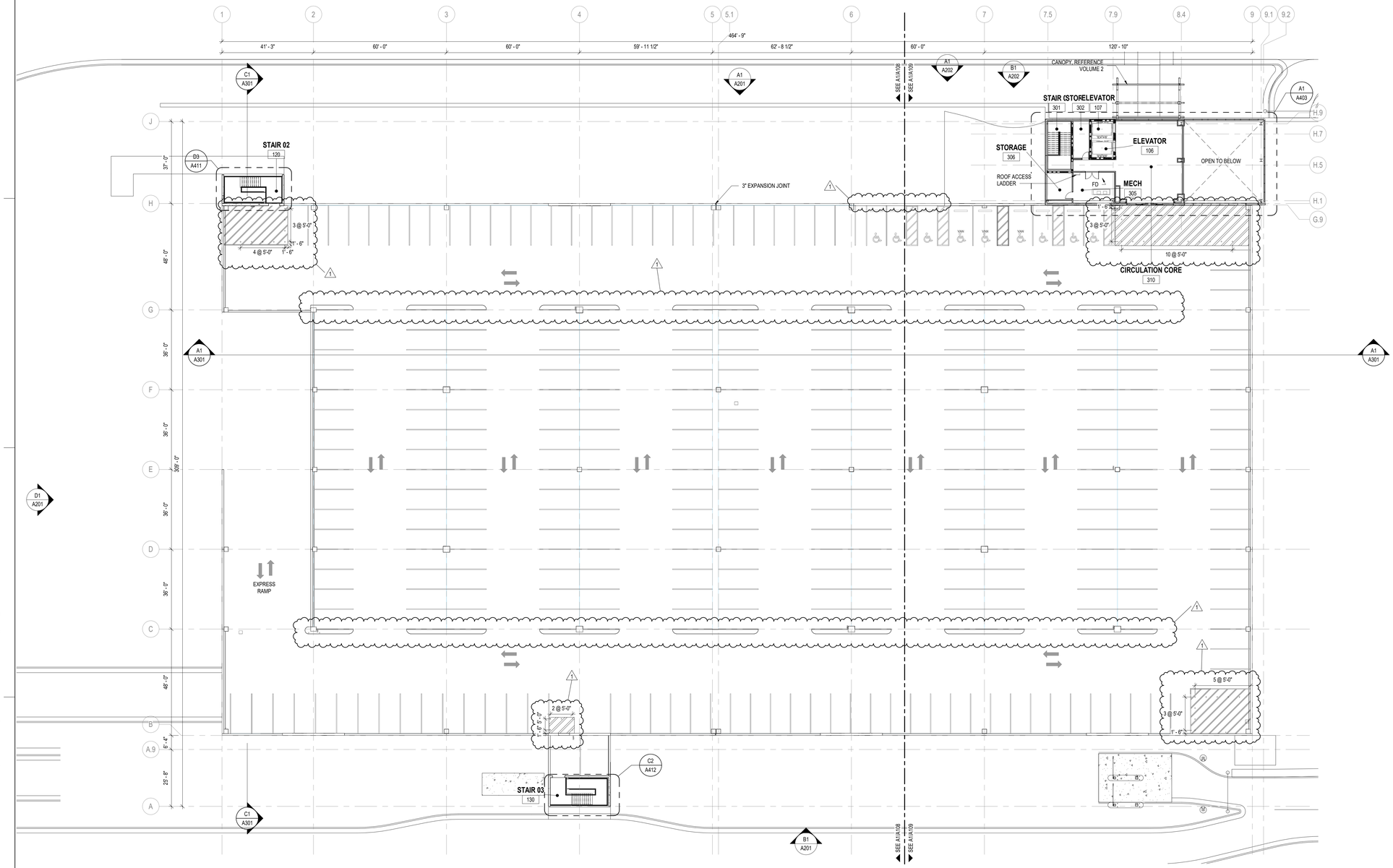
- NON-RATED WALL SYSTEM
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- 3-HOUR RATED WALL SYSTEM
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- CONCRETE MASONRY UNIT WALL SYSTEM

NOTE: REFER TO PARTITION TAGS ON PLANS AND PARTITION TYPE DETAILS

REFER TO VOLUME 2 PACKAGE

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   B. JANITOR CLOSETS
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9. DOOR FRAMES TO BE LOCATED 4" FROM CORNER OF WALL U.N.O.



PN

N

A1 OVERALL THIRD FLOOR PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG
PROJECT NUMBER:	
2003-0070-006	

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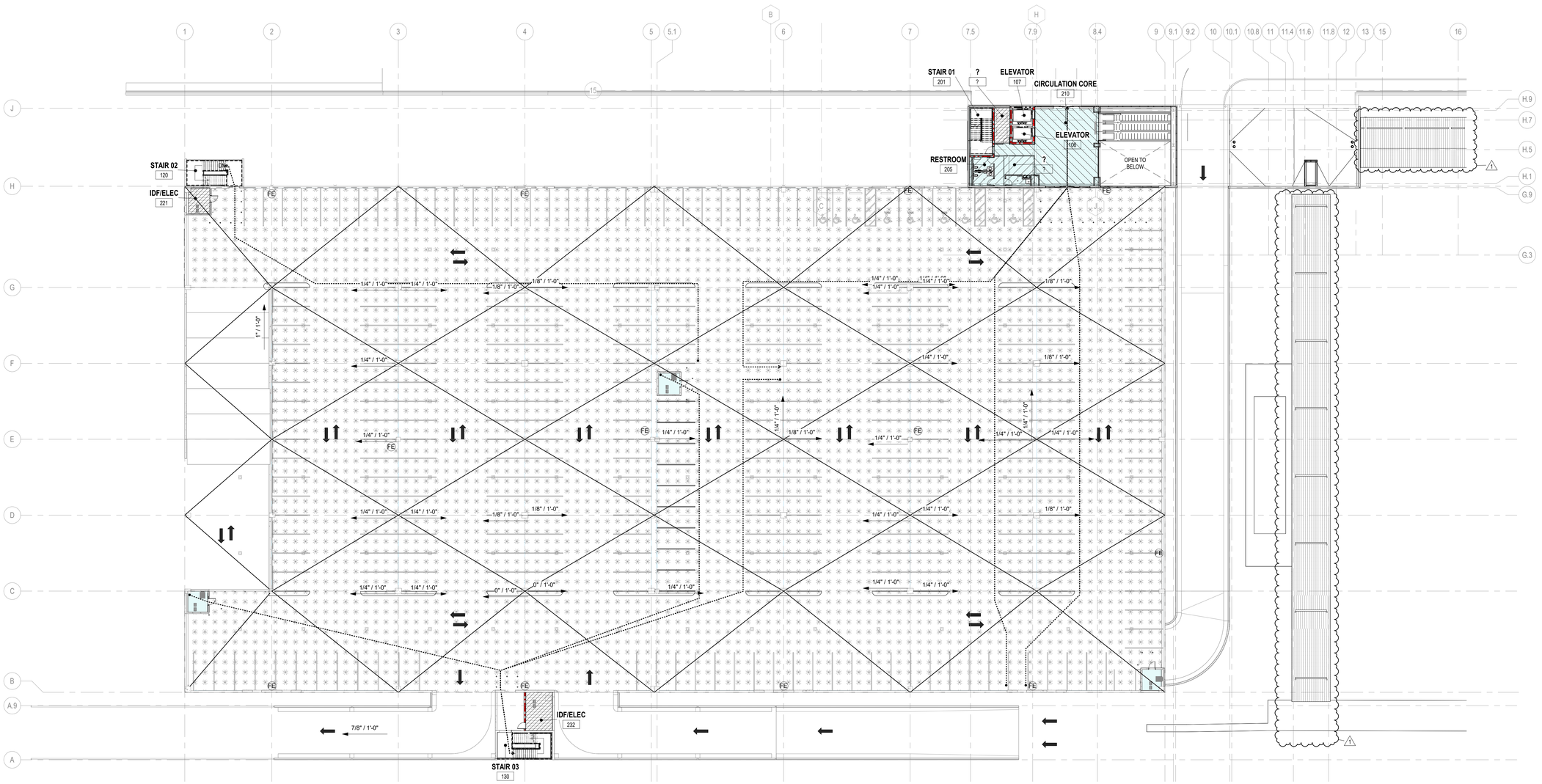
SHEET TITLE:
OVERALL THIRD FLOOR PLAN

SHEET ID:
A107

PROJECT STATUS:
100% BID SET

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PN
N

A1 SECOND FLOOR DRAINAGE PLAN

SCALE: 3/64" = 1'-0"

16 0 16 32 48

SCALE: 3/64" = 1'-0"

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	PB
DESIGNED BY:	FG
PROJECT NUMBER:	**2003-0070-006**

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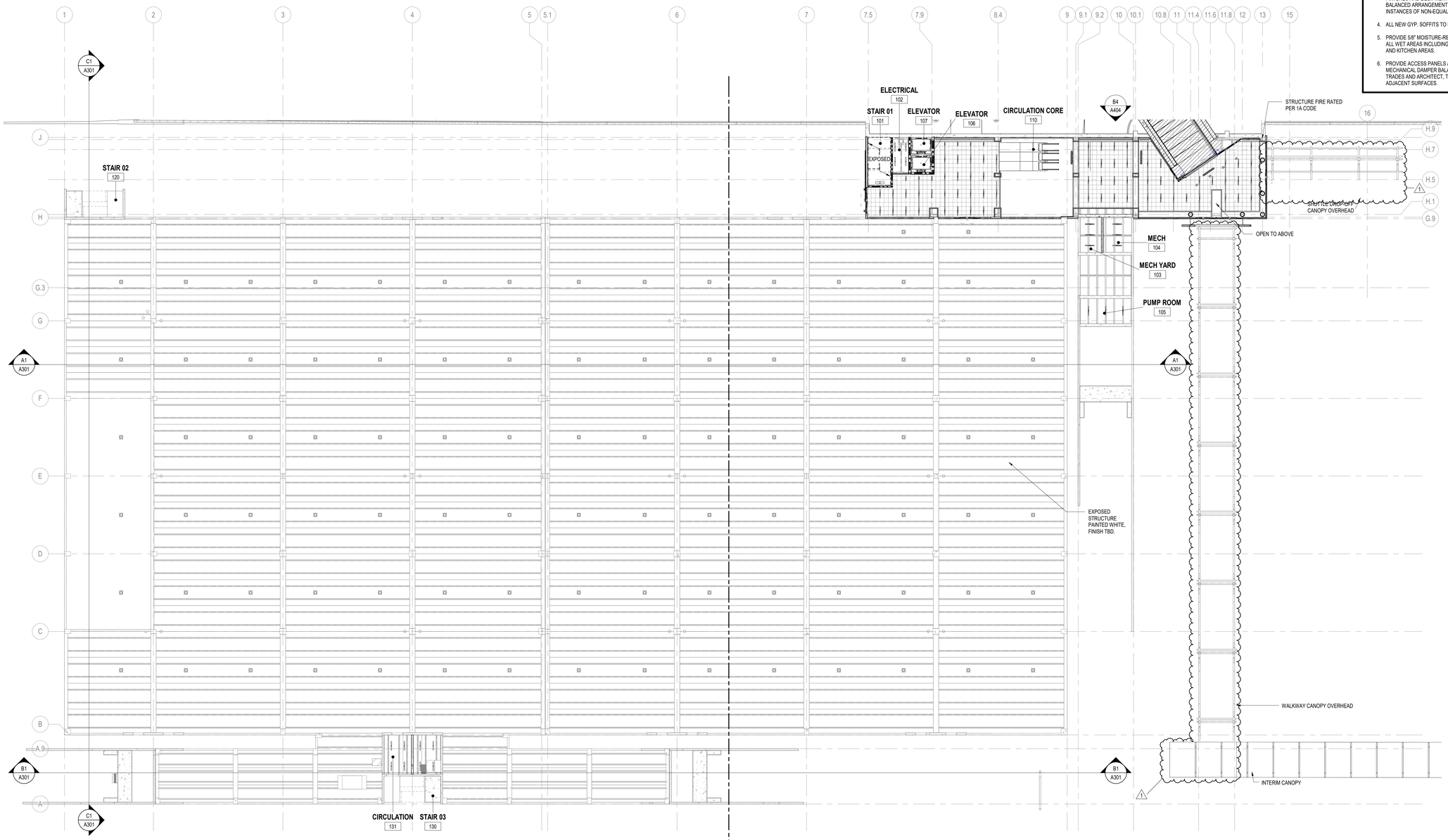
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SECOND FLOOR DRAINAGE PLAN

SHEET ID:
A112

PROJECT STATUS:
100% BID SET

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PN

N

A1 GROUND FLOOR REFLECTED CEILING PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

CEILING PLAN LEGEND & SHEET NOTES

REFER TO VOLUME 2 PACKAGE

CEILING TYPES LEGEND

	ACT1	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
	ACT2	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
	GWB1	5/8" GWB ON METAL FRAMING
	EXP	EXPOSED TO ABOVE

FIXTURE LEGEND

- 14" x 11" FLUORESCENT LIGHT FIXTURE
- DOWNLIGHT RECESSED CAN LIGHT FIXTURE
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- 4" x 4' RECESSED LINEAR LIGHT FIXTURE

GENERAL SHEET NOTES

1. DEVICES HAVE BEEN SHOWN FOR COORDINATION PURPOSES. SEE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR ITEMS NOT SHOWN ON REFLECTED CEILING PLANS. CONTACT THE ARCHITECT IF ANY CONFLICTS OCCUR.
2. ALL CEILING MOUNTED DEVICES MUST BE CENTERED IN BOTH DIRECTIONS IN ACOUSTICAL CEILING PANELS U.N.O.
3. CENTER SPRINKLER HEADS IN ACOUSTICAL CEILING PANELS WHERE THEY OCCUR. COORDINATE THE LOCATION OF THE SPRINKLER HEADS WITH OTHER CEILING FIXTURES AND EQUIPMENT IN ALL CEILINGS. ENSURE THAT A SYMMETRICAL AND BALANCED ARRANGEMENT IS INSTALLED. CONTRACTING OFFICER IS TO REVIEW INSTANCES OF NON-EQUAL SPACING PRIOR TO INSTALLATION.
4. ALL NEW GYP. SOFFITS TO BE 5/8" TYPE "X" GYP, U.N.O.
5. PROVIDE 5/8" MOISTURE-RESISTANT GWB FOR CEILINGS IN LIEU OF TYPICAL GWB AT ALL WET AREAS INCLUDING, BUT NOT LIMITED TO RESTROOMS, JANITOR CLOSETS AND KITCHEN AREAS.
6. PROVIDE ACCESS PANELS AS REQUIRED FOR ACCESS TO PLUMBING VALUES AND MECHANICAL DAMPER BALANCE CONTROLS. COORDINATE ALL LOCATIONS WITH TRADES AND ARCHITECT, TYP. ALL ACCESS PANELS TO BE PAINTED TO MATCH ADJACENT SURFACES.

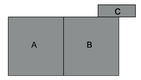
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F-0493 * C-28

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN



REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:

OVERALL GROUND FLOOR REFLECTED CEILING PLAN

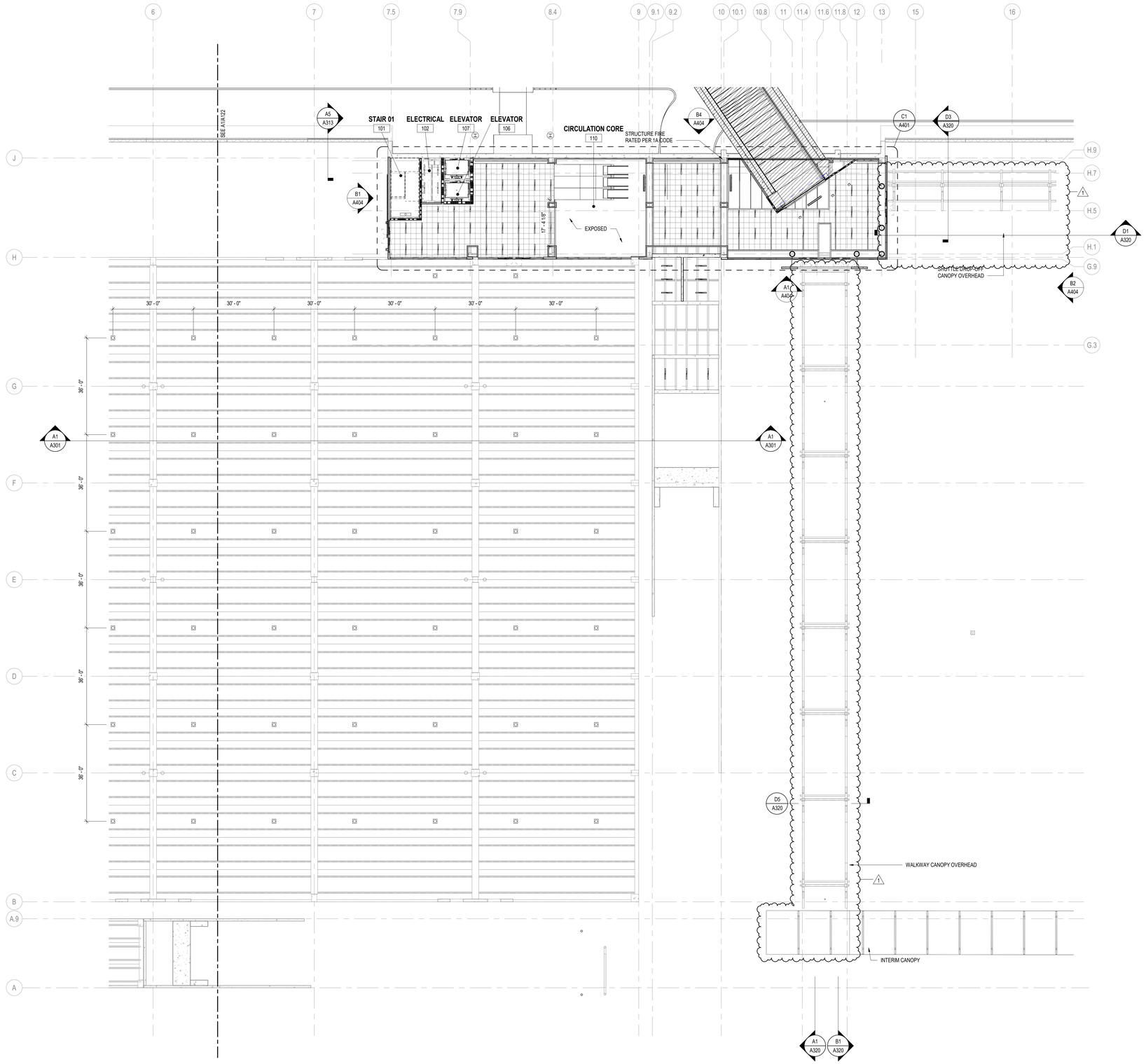
SHEET ID:

A121

PROJECT STATUS:
100% BID SET

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A1 GROUND FLOOR REFLECTED CEILING PLAN - AREA B

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

16 0 16 32

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

CEILING PLAN LEGEND & SHEET NOTES

REFER TO VOLUME 2 PACKAGE

CEILING TYPES LEGEND

ACT1	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
ACT2	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
GWB1	5/8" GWB ON METAL FRAMING
EXP	EXPOSED TO ABOVE

FIXTURE LEGEND

- 14" x 11" FLUORESCENT LIGHT FIXTURE
- DOWNLIGHT RECESSED CAN LIGHT FIXTURE
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- 4" x 4' RECESSED LINEAR LIGHT FIXTURE

GENERAL SHEET NOTES

1. DEVICES HAVE BEEN SHOWN FOR COORDINATION PURPOSES. SEE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR ITEMS NOT SHOWN ON REFLECTED CEILING PLANS. CONTACT THE ARCHITECT IF ANY CONFLICTS OCCUR.
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4. ALL NEW GYP. SOFFITS TO BE 5/8" TYPE "X" GYP, U.N.O.
5. PROVIDE 5/8" MOISTURE-RESISTANT GWB FOR CEILINGS IN LIEU OF TYPICAL GWB AT ALL WET AREAS INCLUDING, BUT NOT LIMITED TO RESTROOMS, JANITOR CLOSETS AND KITCHEN AREAS.
6. PROVIDE ACCESS PANELS AS REQUIRED FOR ACCESS TO PLUMBING VALUES AND MECHANICAL DAMPER BALANCE CONTROLS. COORDINATE ALL LOCATIONS WITH TRADES AND ARCHITECT, TYP. ALL ACCESS PANELS TO BE PAINTED TO MATCH ADJACENT SURFACES.

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG
PROJECT NUMBER:	2003-0070-006

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SHEET TITLE:

PARTIAL GROUND FLOOR REFLECTED CEILING PLAN - AREA B

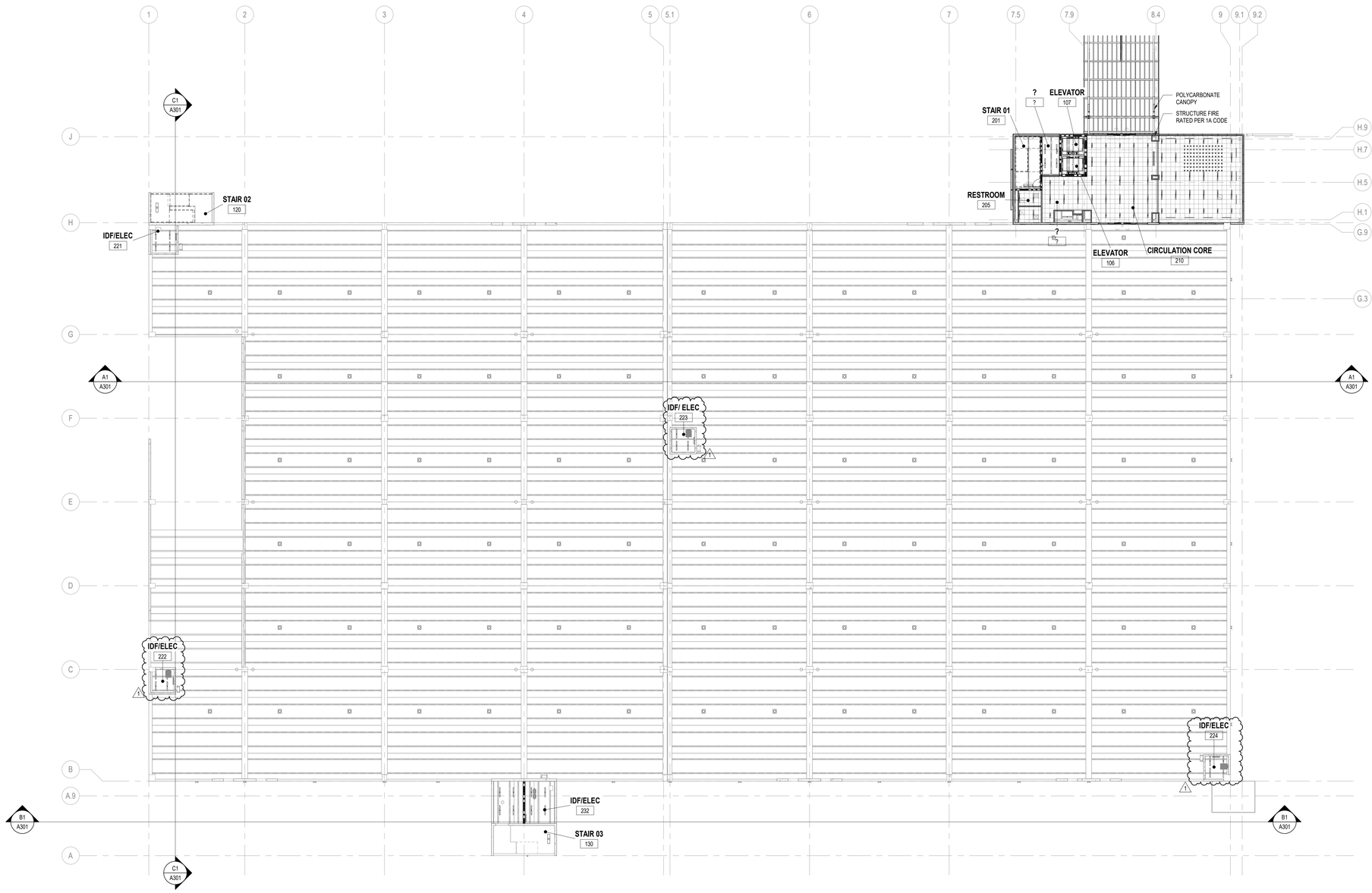
SHEET ID:

A123

PROJECT STATUS:
100% BID SET

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PN

N

A1 SECOND LEVEL REFLECTED CEILING PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

CEILING PLAN LEGEND & SHEET NOTES

REFER TO VOLUME 2 PACKAGE

CEILING TYPES LEGEND

ACT1	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
ACT2	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
GWB1	5/8" GWB ON METAL FRAMING
EXP	EXPOSED TO ABOVE

FIXTURE LEGEND

- 14" x 11" FLUORESCENT LIGHT FIXTURE
- DOWNLIGHT RECESSED CAN LIGHT FIXTURE
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- 4" x 4' RECESSED LINEAR LIGHT FIXTURE

GENERAL SHEET NOTES

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:

OVERALL SECOND FLOOR REFLECTED CEILING PLAN

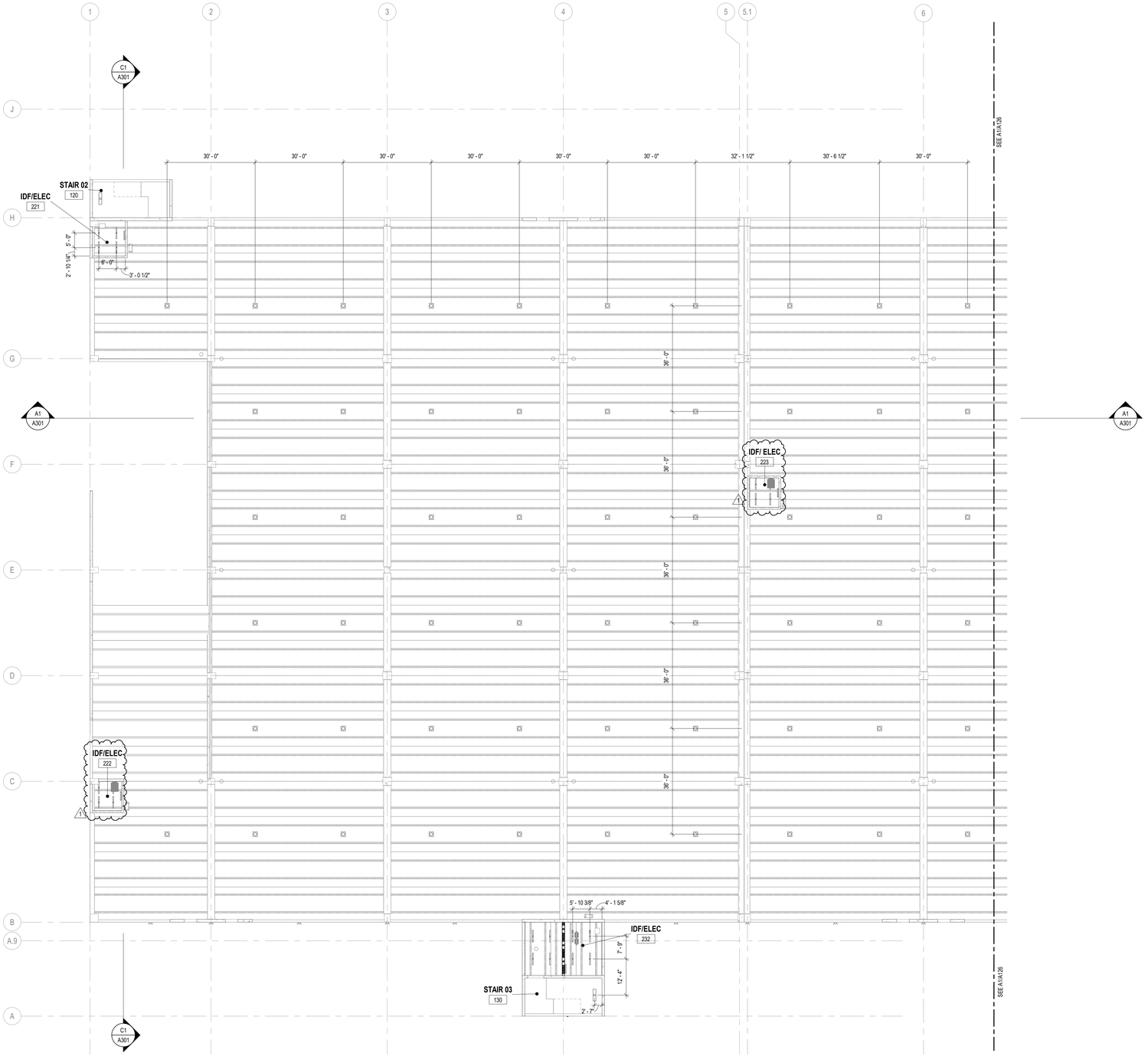
SHEET ID:

A124

PROJECT STATUS:
100% BID SET

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PN

N

A1 SECOND LEVEL REFLECTED CEILING PLAN - AREA A

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

16 0 16 32

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

CEILING PLAN LEGEND & SHEET NOTES

REFER TO VOLUME 2 PACKAGE

CEILING TYPES LEGEND

	ACT1	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
	ACT2	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
	GWB1	5/8" GWB ON METAL FRAMING
	EXP	EXPOSED TO ABOVE

FIXTURE LEGEND

- 14" x 11" FLUORESCENT LIGHT FIXTURE
- DOWNLIGHT RECESSED CAN LIGHT FIXTURE
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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG
PROJECT NUMBER:	2003-0070-006

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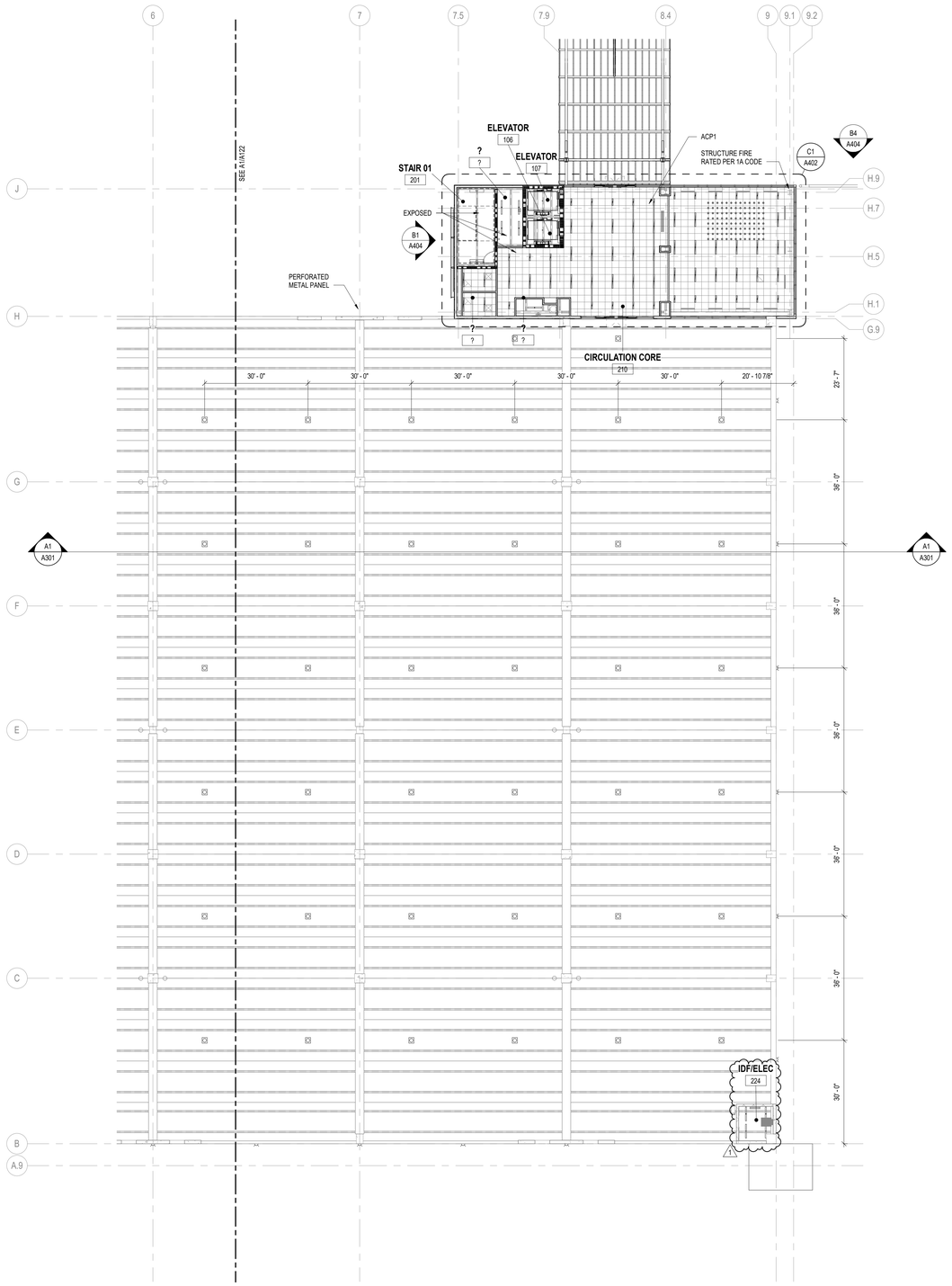
SHEET TITLE:
PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA A

SHEET ID:
A125

PROJECT STATUS:
100% BID SET

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PN
N

A1 SECOND LEVEL REFLECTED CEILING PLAN - AREA B AND AREA C

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

16 0 16 32

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

CEILING PLAN LEGEND & SHEET NOTES

REFER TO VOLUME 2 PACKAGE

CEILING TYPES LEGEND

ACT1	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
ACT2	2' x 2' SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
GWB1	5/8" GWB ON METAL FRAMING
EXP	EXPOSED TO ABOVE

FIXTURE LEGEND

- 14" x 11" FLUORESCENT LIGHT FIXTURE
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- CEILING MOUNTED EXIT SIGN
- 4" x 4' RECESSED LINEAR LIGHT FIXTURE

GENERAL SHEET NOTES

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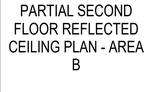
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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN



REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:

PARTIAL SECOND FLOOR REFLECTED CEILING PLAN - AREA B

SHEET ID:

A126

PROJECT STATUS:
100% BID SET

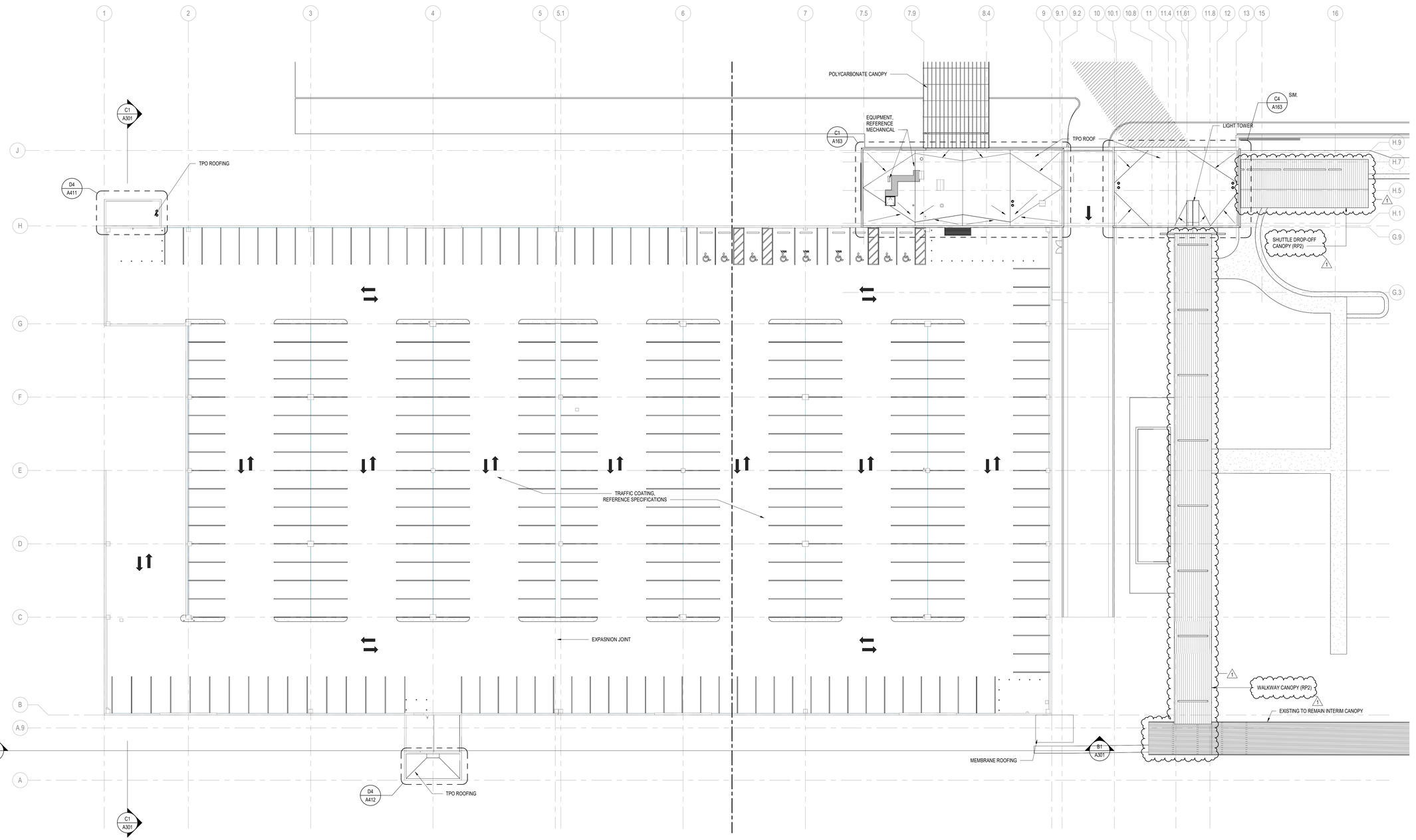
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GENERAL ROOF NOTES

1. ALL ROOF PENETRATIONS REQUIRED FOR INSTALLATION OF MECHANICAL UNITS, EQUIPMENT CURBS, VENTS, ETC. MUST BE DONE PER MANUFACTURER'S RECOMMENDATIONS TO ENSURE ALL WARRANTIES ARE MAINTAINED. PROVIDE FLASHING, COUNTERFLASHING, SEALANT, ETC. AS REQUIRED TO PROVIDE WATERPROOF CONDITION, TYPICAL AT ALL ROOF PENETRATIONS.

REFER TO VOLUME 2 PACKAGE



A1 OVERALL ROOF PLAN

SCALE: 1" = 20'-0"

20 0 20 40

SCALE: 1" = 20'-0"

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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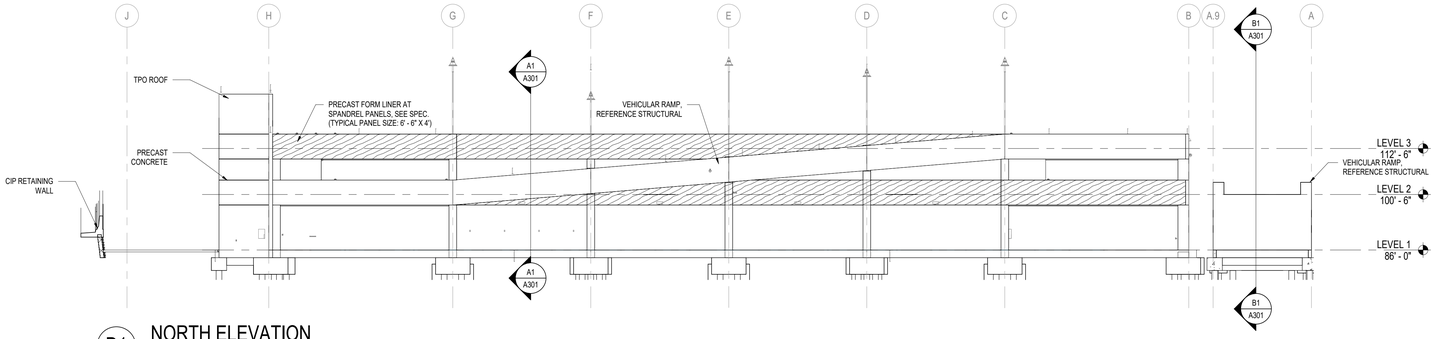
SHEET TITLE:
OVERALL ROOF PLAN

SHEET ID:
A161

PROJECT STATUS:
100% BID SET

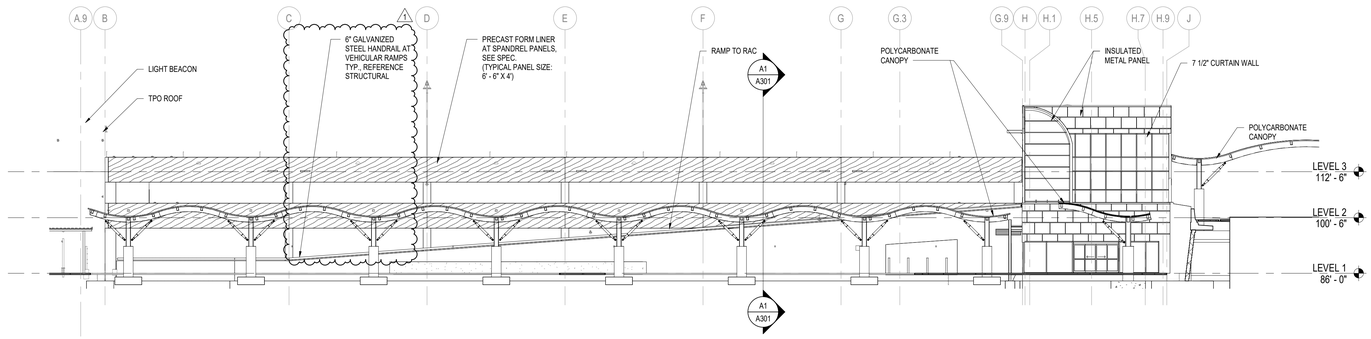
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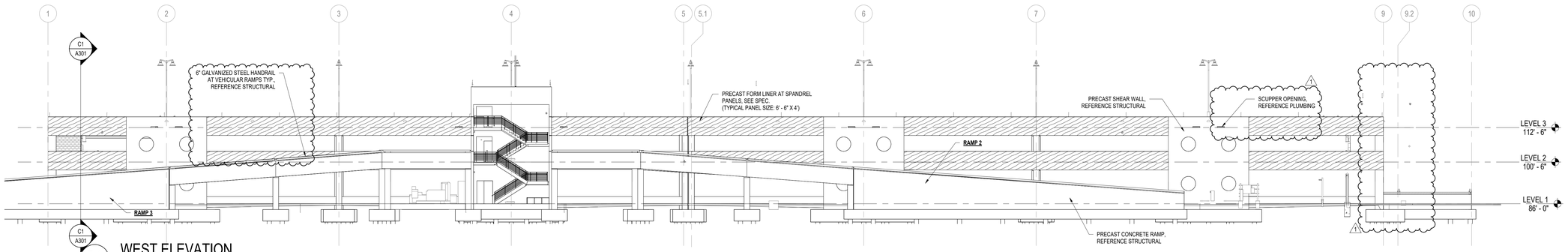
D1 NORTH ELEVATION

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



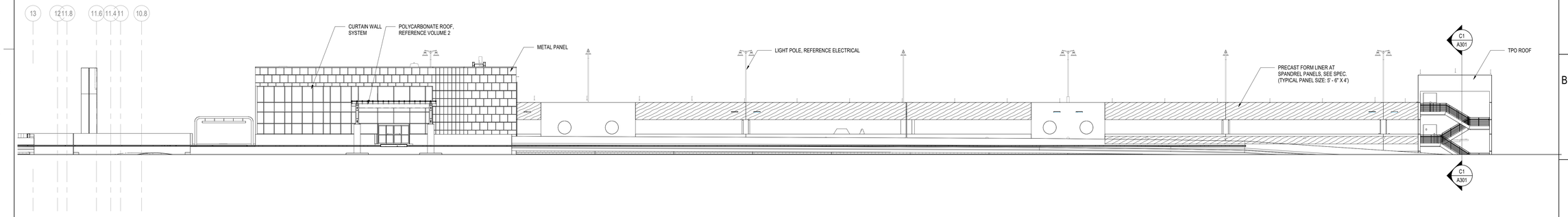
C1 SOUTH ELEVATION

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



B1 WEST ELEVATION

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



A1 EAST ELEVATION

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

16 0 16 32

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

GENERAL NOTES

1. DO NOT SCALE DIMENSIONS FROM DRAWINGS - THE CONTRACTOR MUST REQUEST NECESSARY DIMENSIONS NOT SHOWN ON THE DRAWINGS FROM THE ARCHITECT.
2. ALL DIMENSIONS ARE TO BE FIELD VERIFIED. IF ANY DEVIATIONS OR DISCREPANCIES OCCUR, CONTACT THE ARCHITECT FOR VERIFICATION PRIOR TO PROCEEDING WITH THE WORK.
3. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE OF THE STATE OF NORTH CAROLINA.
4. THE DIMENSIONS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS.
5. THE CONTRACTOR WILL FIELD VERIFY DIMENSIONS AND REPORT IN WRITING ANY CONFLICTS PRIOR TO FABRICATION.
6. PROTECT THE TRANSITION STRIPS WHEN GRINDING TERRAZZO TO POLISH FINISH WITH PROTECTION TAPE.
7. SEE ELECTRICAL PLANS FOR OPERATIONAL LAYOUT. CONTRACTOR SHALL VERIFY AND COORDINATE WITH OWNER'S VENDOR FOR CORRECT PLACEMENT OF HARDWARE PRIOR TO FABRICATION.
8. EXISTING AND FUTURE UNDERLAY LINEWORK FOR REFERENCE PURPOSES ONLY. ANY CIVIL RELATED WORK, SEE CIVIL PACKAGE FOR DETAILS.
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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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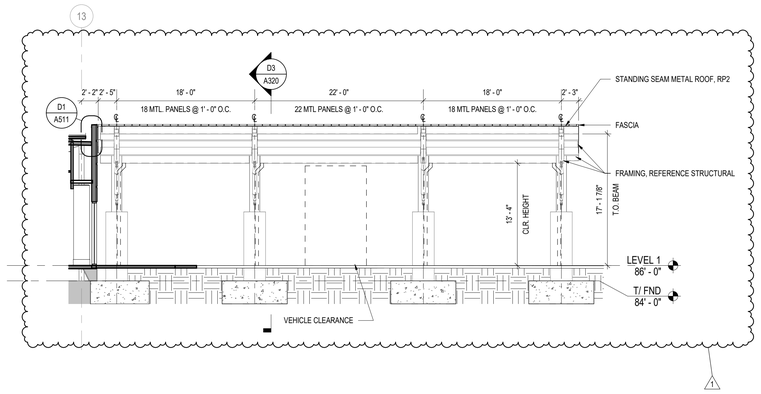
SHEET TITLE:
BUILDING ELEVATIONS

SHEET ID:
A201

PROJECT STATUS:
100% BID SET

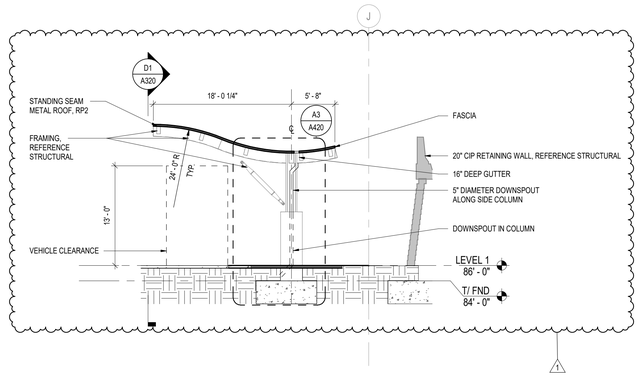
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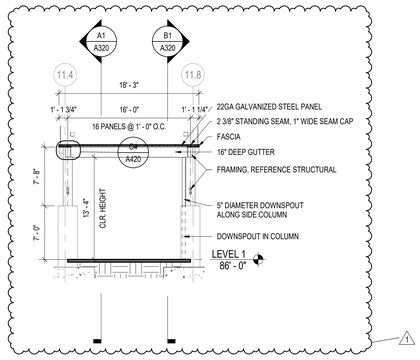
D1 SHUTTLE DROP OFF CANOPY LONGITUDINAL SECTION

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



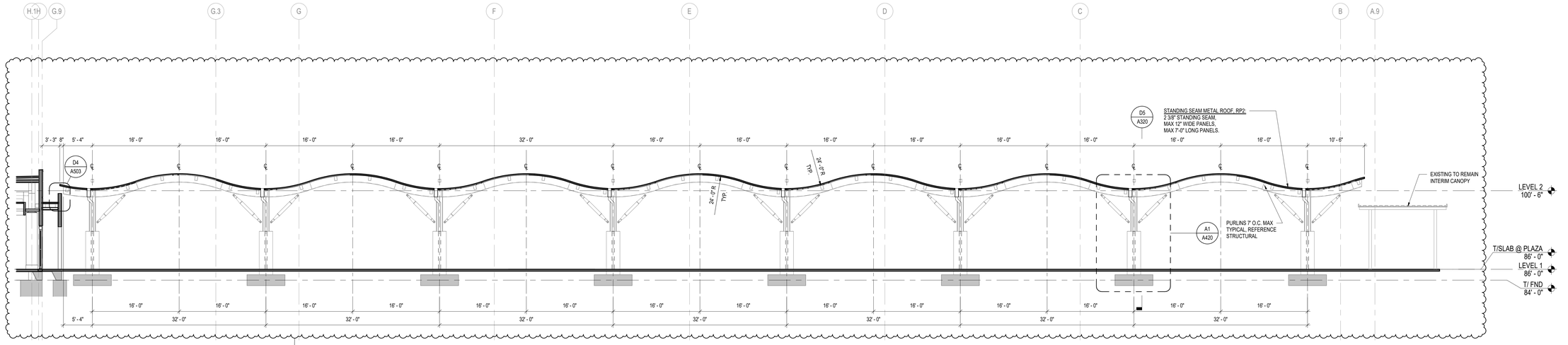
D3 SHUTTLE DROP OFF CANOPY TRANSVERSE SECTION

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



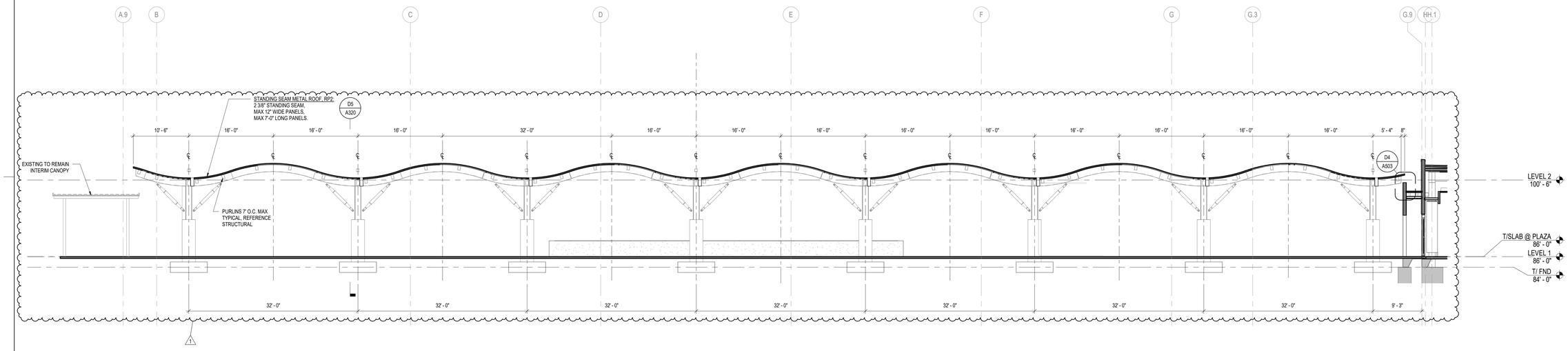
D5 PLAZA WALKWAY CANOPY SECTION 03

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



B1 PLAZA WALKWAY CANOPY SECTION 02

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



A1 PLAZA WALKWAY CANOPY SECTION 01

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

8 0 8 16

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

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ILM

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DATE ISSUED: 03/14/2025
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DRAWN BY: TP
DESIGNED BY: FG
PROJECT NUMBER: 2003-0070-006

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SHEET TITLE:
CANOPY SECTIONS

SHEET ID:
A320

PROJECT STATUS:
100% BID SET

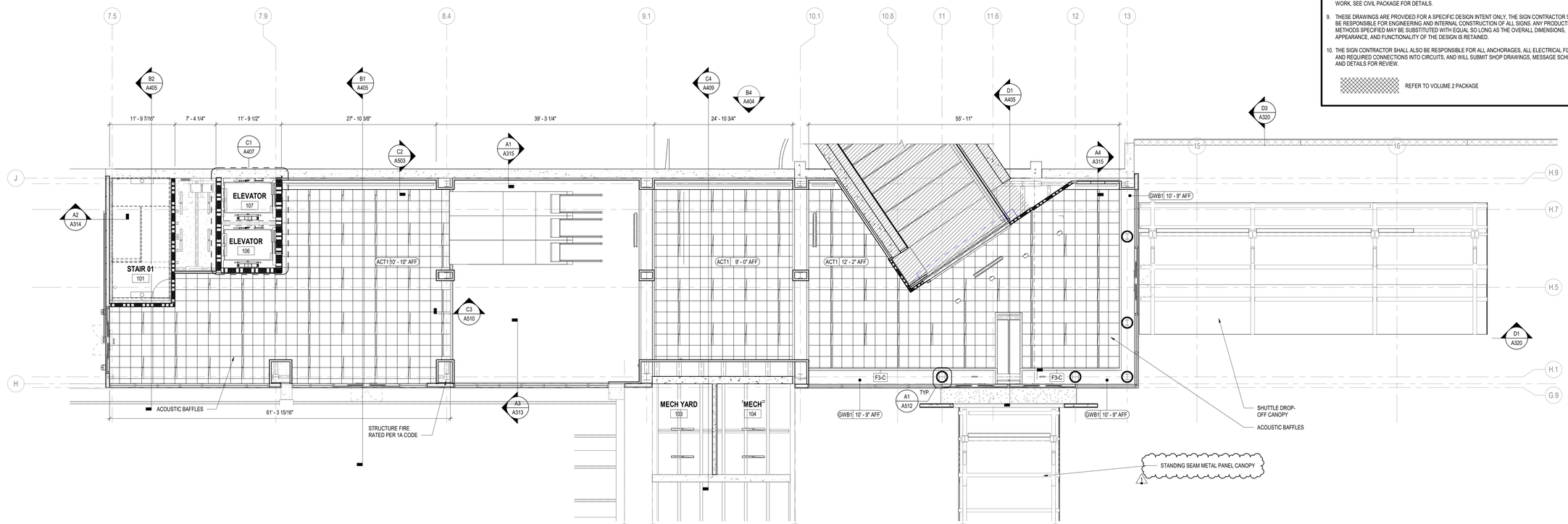
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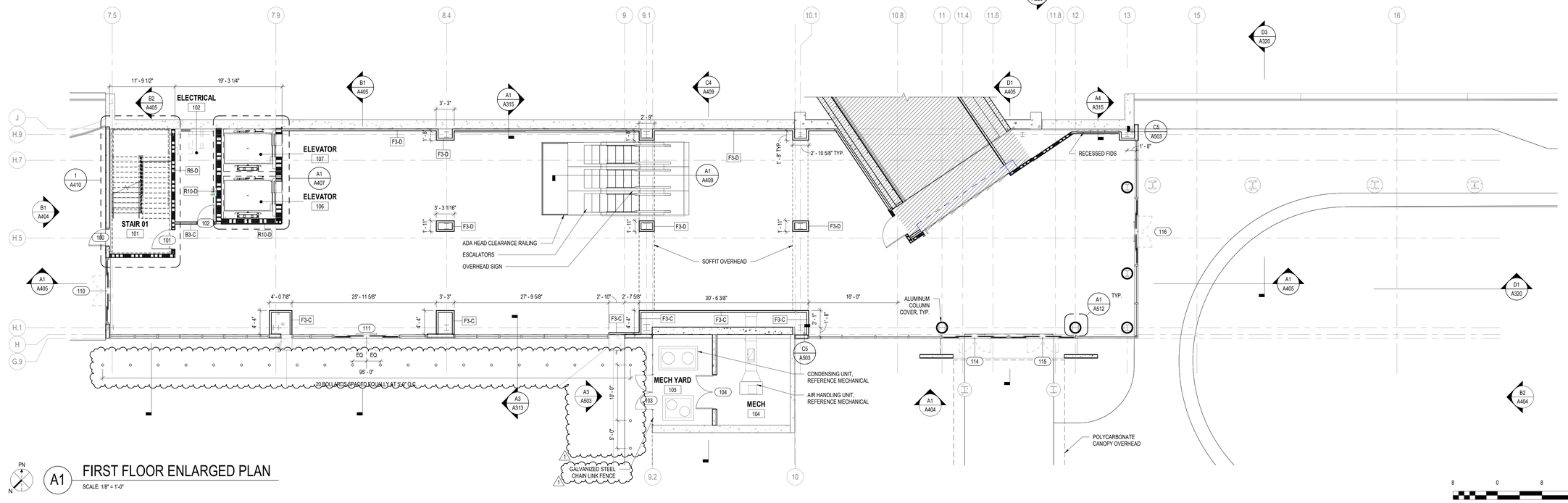
REFER TO VOLUME 2 PACKAGE



PN

C1 FIRST FLOOR ENLARGED REFLECTED CEILING PLAN

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



PN

A1 FIRST FLOOR ENLARGED PLAN

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

8 0 8 16

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

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ILM

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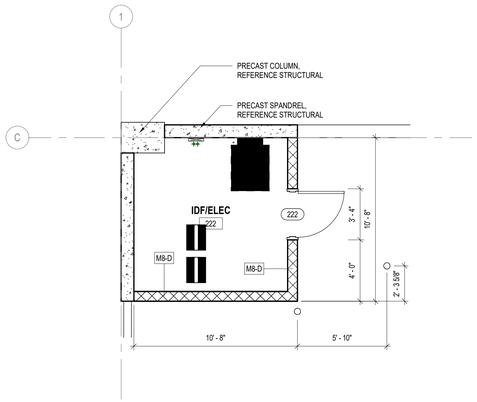
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CIRCULATION CORE FIRST FLOOR ENLARGED PLAN AND REFLECTED CEILING PLAN

SHEET ID:
A401

PROJECT STATUS:
100% BID SET

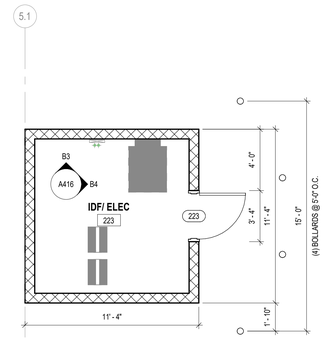
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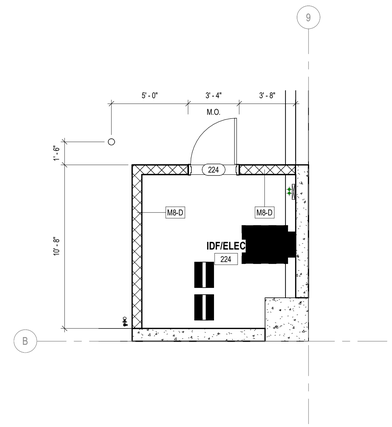
D1 MDF 222 ENLARGED PLAN

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



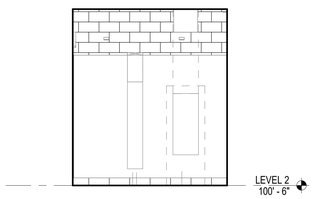
D3 MDF 223 ENLARGED PLAN

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



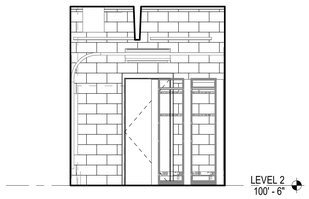
D4 MDF 224 ENLARGED PLAN

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



B3 MDF TYPICAL SIDE/REAR INTERIOR ELEVATION

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



B4 MDF TYPICAL ENTRY INTERIOR ELEVATION

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

2 0 2 4

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

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ILM

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DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
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SHEET TITLE:

ENLARGED GARAGE PLANS AND INTERIOR ELEVATIONS

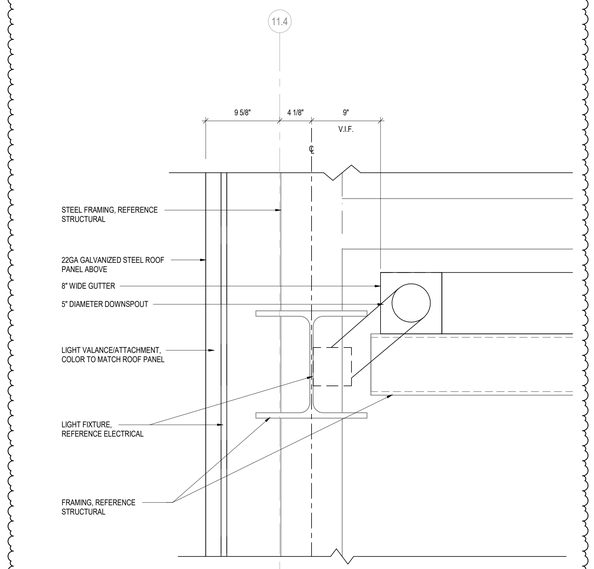
SHEET ID:

A416

PROJECT STATUS:
100% BID SET

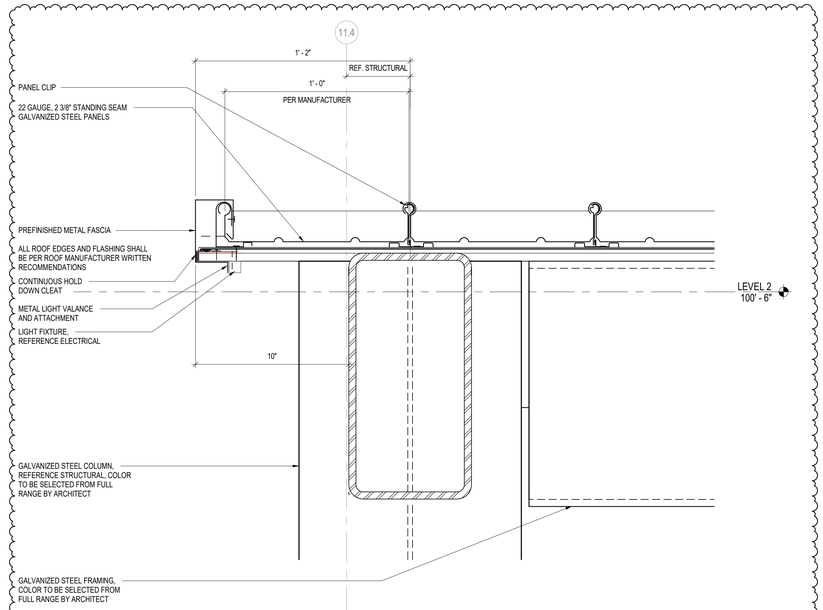
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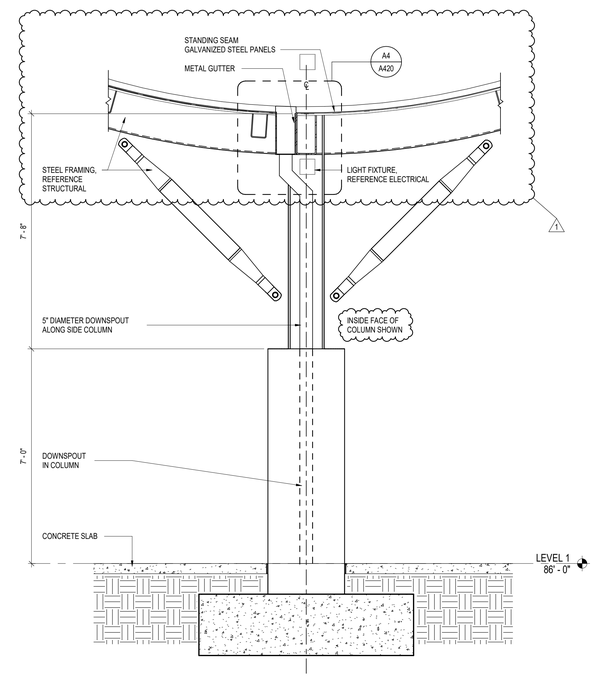
1 WALKWAY CANOPY COLUMN RCP PLAN

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



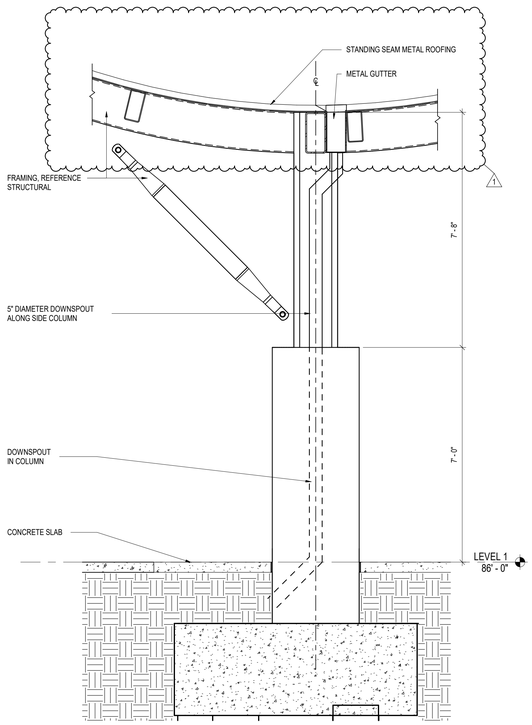
C4 WALKWAY CANOPY EDGE DETAIL

SCALE: 3" = 1'-0"



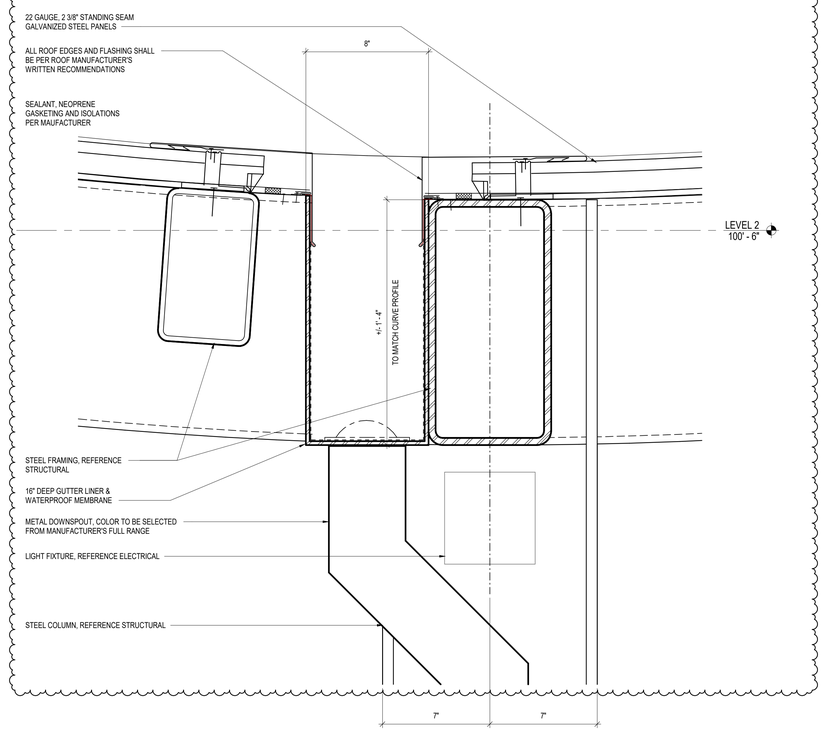
A1 ENLARGED WALKWAY CANOPY COLUMN SECTION

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



A3 ENLARGED SHUTTLE DROP OFF CANOPY COLUMN SECTION

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



A4 WALKWAY CANOPY SECTION DETAIL - METAL PANEL AT DOWNSPOUT

SCALE: 3" = 1'-0"

1 0 1

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

2 0 2 4

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

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ILM

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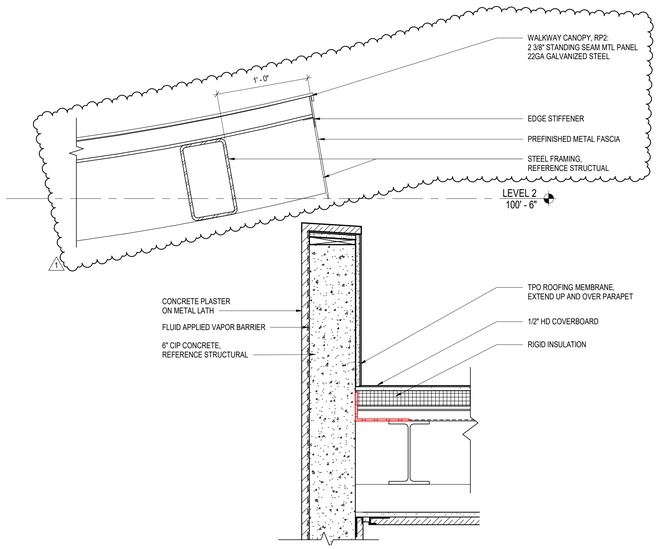
SHEET TITLE:
ENLARGED CANOPY SECTIONS AND DETAILS

SHEET ID:
A420

PROJECT STATUS:
100% BID SET

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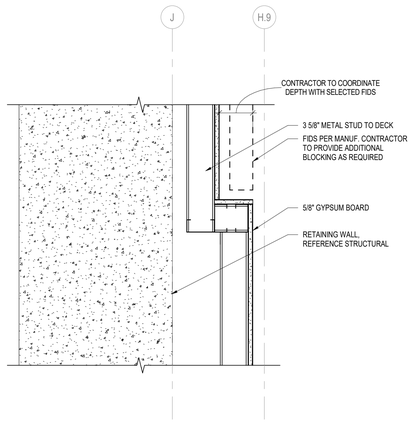
D4 ACRYLIC PANEL AT PORTAL ENTRY

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

GENERAL NOTES

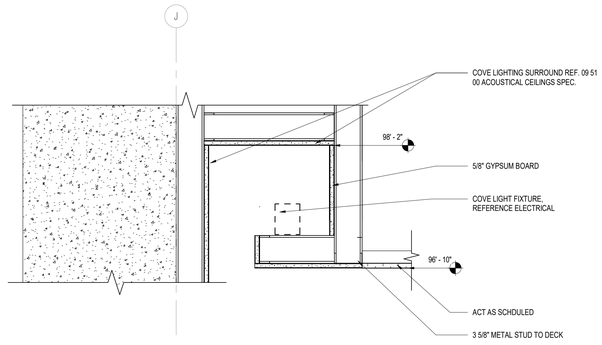
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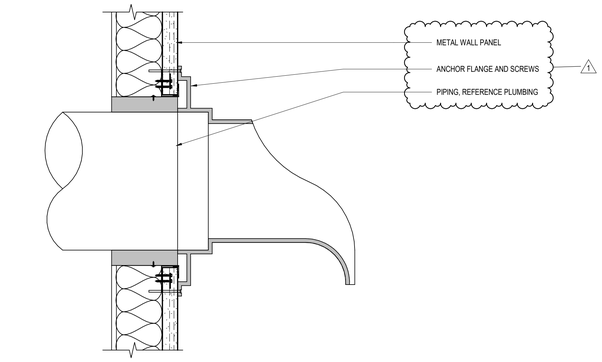
C1 FIDS RECESS DETAIL

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



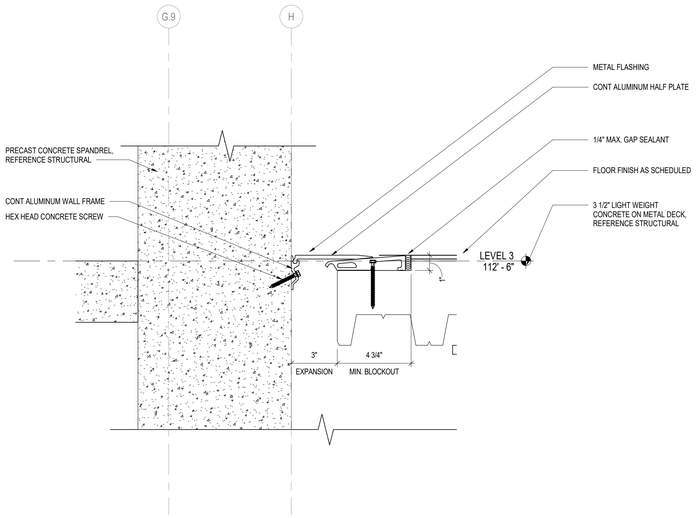
C2 LIGHT COVE SECTION DETAIL

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



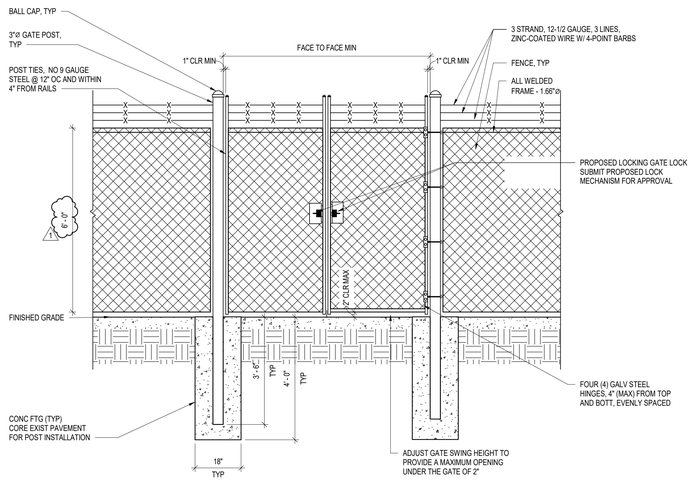
C5 SHEEP TONGUE DRAIN

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



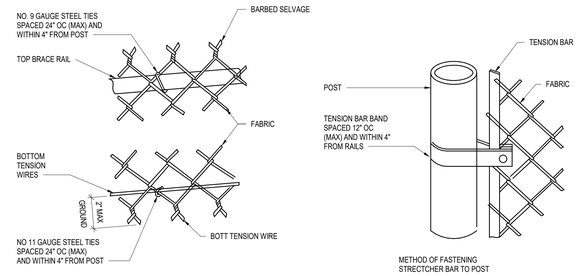
A1 EXPANSION JOINT AT PRECAST SPANDREL PANEL

SCALE: 3" = 1'-0"



A3 ACCESS GATE

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



A5 FENCE CONNECTIONS

SCALE: 3" = 1'-0"

2 0 2 4
SCALE: 1/2" = 1'-0"

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

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

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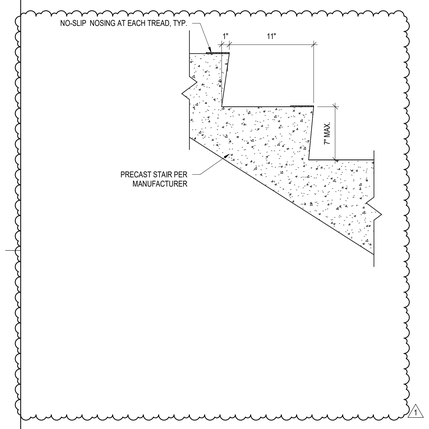
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SECTION DETAILS

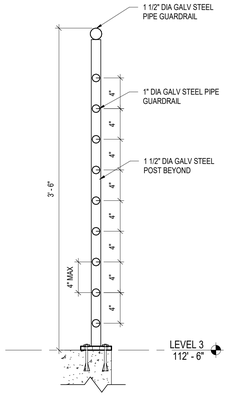
SHEET ID:
A503

PROJECT STATUS:
100% BID SET

4/11/2025 5:49:09 PM Autodesk Docs://1003007/0004_ILM TO4 Rdwy Int Improv Design/2003007/0006_ILM_TO6_Parking Garage and Shuttle Plaza_A_R24.rvt

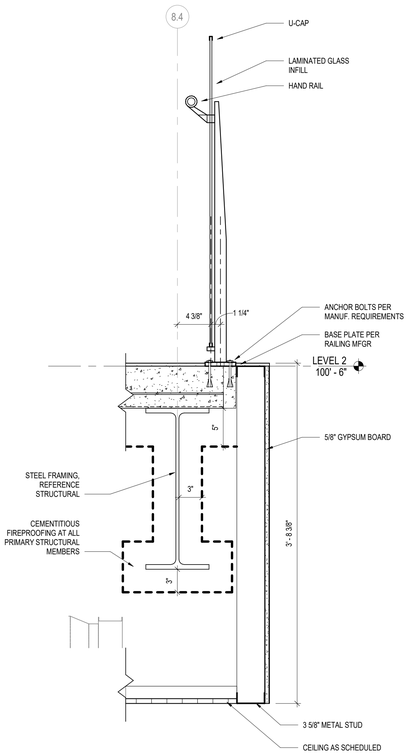
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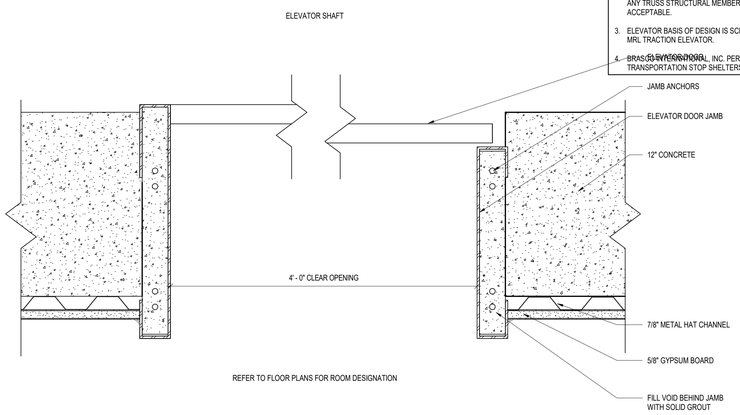
D2 STAIR RAILING DETAIL

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



C3 GLASS RAILING AND SOFFIT DETAIL

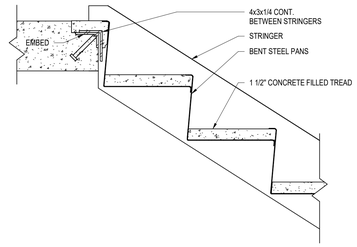
SCALE: 1 1/2" = 1'-0"



D4 ELEVATOR DOOR JAMB DETAIL

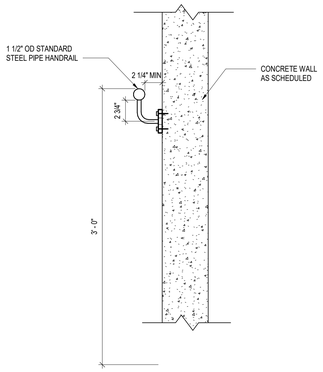
SCALE: 3" = 1'-0"

GENERAL NOTES
1. ESCALATOR BASIS OF DESIGN IS SCHINDLER 9300 ADVANCED EDITION TYPE 10 30"-M ESCALATOR.
2. ALLOW CLADDING TO BE EASILY ATTACHED TO TRUSS EXTERIOR AT ESCALATORS. MATERIAL SUCH AS CLADDING CARRIED BY THE TRUSS MUST NOT EXCEED 10 LBS/FT². ATTACHMENT SHOULD BE TO THE FACTORY PROVIDED CLADDING BRACKETS OR BY CLAMPS ONLY. WELDING OR DRILLING INTO ANY TRUSS STRUCTURAL MEMBER IS NOT ACCEPTABLE.
3. ELEVATOR BASIS OF DESIGN IS SCHINDLER 3300 XL MRL TRACTION ELEVATOR.
4. BRASS SYSTEMS CANADA, INC. PER TSP 10 73 43 TRANSPORTATION STOP SHELTERS.



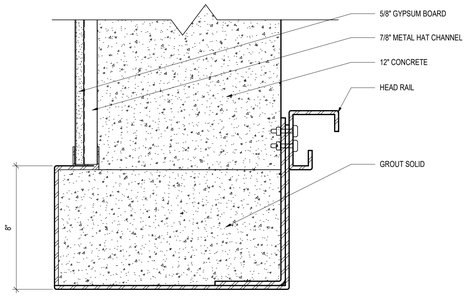
C1 SECTION @ T.O. STAIRS

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



C2 HANDRAIL DETAIL

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

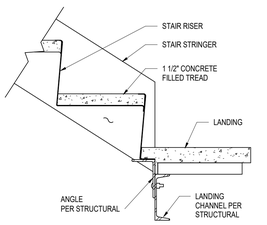


B3 ELEVATOR DOOR HEAD DETAIL

SCALE: 3" = 1'-0"

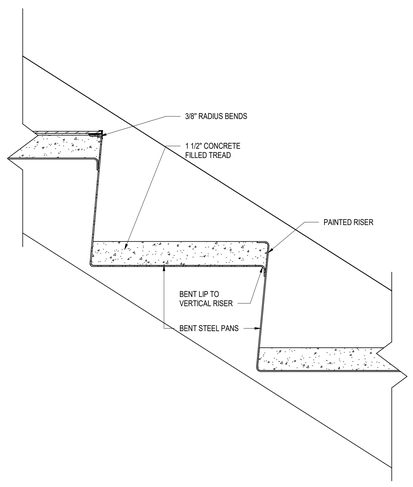
A4 ELEVATOR PIT DETAIL

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



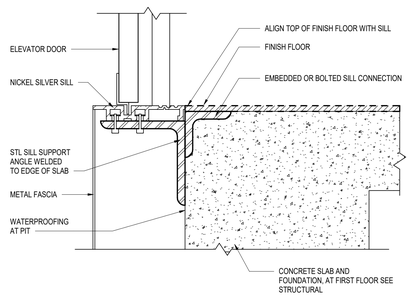
B1 SECTION @ LANDING

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



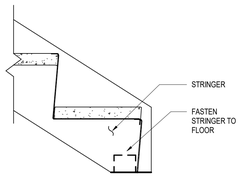
A2 STAIR NOSING TYP @ STEEL PAN STAIR

SCALE: 3" = 1'-0"



A3 ELEVATOR SILL DETAIL

SCALE: 3" = 1'-0"



A1 SECTION AT B.O. STAIR

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

0 1

SCALE: 3" = 1'-0"

1 0 1

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

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
STAIR, ELEVATOR AND RAILING DETAILS

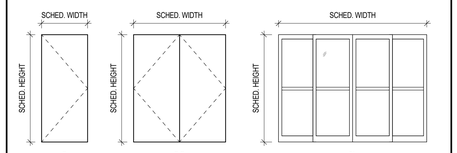
SHEET ID:
A510

PROJECT STATUS:
100% BID SET

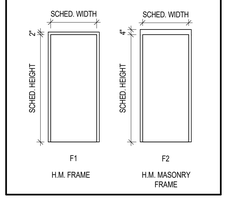
4/11/2025 5:49:12 PM Autodesk Docs://1003007/0004_ILM TO4 Rdwy Inf Improv Design/2003007006_ILM_TO6_Parking Garage and Shuttle Plaza_A_R24.rvt

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DOOR TYPES LEGEND



FRAME TYPES LEGEND



DOOR SCHEDULE

DOOR NO.	ROOM NAME	DOOR INFORMATION						FRAME INFORMATION					FIRE RATING	HARDWARE SET	ACCESS CONTROL	COMMENTS
		DOOR DIMENSIONS			MATERIALS			FRAME		DETAILS						
		WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	TYPE	MATERIAL	HEAD	JAMB	SILL				
LEVEL 1																
100	STAIR 01	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A3/A602	A4/A602	B1/A813		4		
101	STAIR 01	3' - 6"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A3/A602	A4/A602	C4/A602	2 HR	4		
102	ELECTRICAL	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	C2/A602	C3/A602	B1/A813		19	YES	LOCK
103	MECH YARD	6' - 1 1/2"	5' - 9 1/2"													LOCK, CHAIN LINK FENCE GATE
104	MECH	6' - 0"	7' - 0"	1 3/4"	F-P	HM	PAINT	F1	HM	B3/A601	B4/A602	C4/A602		8		LOCK
105	PUMP ROOM	6' - 0"	7' - 0"	1 3/4"	F-P	HM	PAINT	F1	HM	B3/A601	B4/A602	C4/A602		8		LOCK
110	CIRCULATION CORE	11' - 7"	7' - 8"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR
111	CIRCULATION CORE	12' - 0"	7' - 10 1/2"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR
114	CIRCULATION CORE	12' - 0"	7' - 8"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR
115	CIRCULATION CORE	12' - 0"	7' - 8"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR
116	CIRCULATION CORE	12' - 0"	7' - 11"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR
132		6' - 0"	7' - 0"	1 3/4"	F-P	HM	PAINT	F1	HM	A3/A602	A4/A602	C4/A602		13		LOCK
LEVEL 2																
201	STAIR 01	3' - 6"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A3/A602	A4/A602	B1/A813	2 HR	4		
202	STORAGE	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	C2/A602	C3/A602	B1/A813		13	YES	LOCK
204	RESTROOM	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	C2/A602	C3/A602	E1/A813		11		
205	RESTROOM	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	C2/A602	C3/A602	E1/A813		11		
215	CIRCULATION CORE	12' - 0"	7' - 8"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR
216	CIRCULATION CORE	12' - 0"	7' - 8"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR
218		3' - 0"	7' - 0"	1 3/4"	F											
221	IDF/ELEC	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A1/A602	A2/A602	C4/A602		19	YES	LOCK
222	IDF/ELEC	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A1/A602	A2/A602	C4/A602		19	YES	LOCK
223	IDF/ ELEC	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A1/A602	A2/A602	C4/A602		19	YES	LOCK
224	IDF/ELEC	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F2	HM	A1/A602	A2/A602	C4/A602		19	YES	LOCK
232	IDF/ELEC	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A3/A602	A4/A602	C4/A602	2 HR	13	YES	LOCK
LEVEL 3																
301	STAIR 01	3' - 6"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	A3/A602	A4/A602	B1/A813	2 HR	4		
302	STORAGE	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	C2/A602	C3/A602	B1/A813		13	YES	LOCK
305	MECH	6' - 0"	7' - 0"	1 3/4"	F-P	HM	PAINT	F2	HM	C2/A602	C3/A602	B1/A813		8		LOCK
306	MECH	3' - 0"	7' - 0"	1 3/4"	F	HM	PAINT	F1	HM	C2/A602	C3/A602	C4/A602		13		LOCK
316	CIRCULATION CORE	12' - 0"	7' - 8"		SL	GLASS	ALUM	SL1	ALUM	D1/A602	D2/A602	D3/A602				AUTOMATIC SLIDING DOOR

DOOR AND FRAME GENERAL NOTES

1. PROVIDE CAULK / SEALANT ON BOTH SIDES OF FRAMES, TYPICAL.
2. PROVIDE TEMPERED GLAZING AT ALL STOREFRONT DOORS, AT NEW GLAZING WITHIN 24" HORIZONTALLY FROM A DOOR, WHERE NEW GLAZING LITE IS WITHIN 18" A.F.F.
3. FIELD VERIFY ALL CONDITIONS PRIOR TO ORDERING DOORS, HARDWARE, OR ACCESS CONTROLS, TYPICAL.
4. COORDINATE THRESHOLDS WITH NEW / EXISTING FLOOR FINISHES
5. NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN DOOR SCHEDULE AND PLAN AND/OR EXISTING CONDITIONS.
6. ENTIRE DOOR ASSEMBLIES TO MAINTAIN RATINGS AS SCHEDULED AND SHOWN ON THE LIFE SAFETY SHEETS. PROVIDE HARDWARE FOR RATED ASSEMBLIES TO MEET ALL APPLICABLE CODES TO INCLUDE BUT NOT LIMITED TO CLOSERS, PANIC DEVICES, CAULK / SEALANT, SWEEPS, SMOKE SEALS, ETC.
7. SET ALL THRESHOLDS IN EXTERIOR DOORS IN FULL BED OF SEALANT.
8. ALL EXTERIOR DOORS TO MEET WATER TIGHT CONDITION INCLUDING ALL WATERPROOF THRESHOLDS. BUMPER SEALS REQUIRED AT ALL EXTERIOR DOORS U.N.O.
9. SEE DOOR HARDWARE SPECIFICATION FOR DOOR HARDWARE.
10. COORDINATE ALL DOOR HARDWARE WITH ACCESS CONTROL AND FIRE ALARM SYSTEM AS REQUIRED.

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: SG
DRAWN BY: KS
DESIGNED BY: FG
PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
DOOR SCHEDULE, DOOR TYPES, AND NOTES

SHEET ID:
A601

PROJECT STATUS:
100% BID SET

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ROOM SCHEDULE

ROOM NO.	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH	CEILING FINISH	REMARKS
101	STAIR 01	SC1	B2	P1	EXPOSED	
102	ELECTRICAL	SC1	B2	P1	EXPOSED	
103	MECH YARD	UC	-	-	EXPOSED	
104	MECH	UC	-	P1	EXPOSED	
105	PUMP ROOM	UC	-	P1	EXPOSED	
106	ELEVATOR	-	-	-	EXPOSED	
107	ELEVATOR	-	-	-	ACP1	
110	CIRCULATION CORE	TERR,WOM	B3	P1	ACT1,GWB1	
120	STAIR 02	-	-	-	EXPOSED	
130	STAIR 03	-	-	-	EXPOSED	
131	CIRCULATION	TZ1	B2	P1	ACP1	
201	STAIR 01	SC1	B2	P1	EXPOSED	
202	JANITOR	SC1	B2	P1	EXPOSED	
204	RESTROOM	TERR	B1	T3	ACT1	
205	<varies>	TERR	B1	T3	ACT1	
207	STORAGE					
210	CIRCULATION CORE	TERR,WOM	B3	P1	GWB1	
221	IDF/ELEC	SC	-	P1	EXPOSED	
222	IDF/ELEC	SC	-	P1	EXPOSED	
223	IDF/ ELEC	SC	-	P1	EXPOSED	
224	IDF/ELEC	SC	-	P1	EXPOSED	
232	IDF/ELEC	SC	-	P1	EXPOSED	
301	STAIR 01	SC1	B2	P1	EXPOSED	
302	STORAGE	SC1	B2	P1	EXPOSED	
305	MECH	SC1	B2	P1	EXPOSED	
306	STORAGE	SC1	B2	P1	EXPOSED	
310	CIRCULATION CORE	TERR,WOM	B3	P1	GWB1	

FF&E LEGEND

TAG	IMAGE	DESCRIPTION	MANUFACTURER	POWER REQUIREMENT	COUNT
B-1		AND BENCH 133x65x47	VONDOM	YES	11
B-2		AND 218x185x234	VONDOM	YES	1

FINISH LEGEND

Material Type	Location	MATERIAL	DESCRIPTION	MANUFACTURER	SPECIFICATION	SIZE	REMARKS
EXTERIOR							
CEILINGS							
CEILINGS	EXTERIOR	PCP1	POLYCARBONATE PANEL - CANOPY	3FORM	KODA XT, EXTRUDED, COLORS: LOGO BLUE 02, LOGO BLUE 01, FOUNTAIN, CORNFLOWER		
FLOORING							
FLOORING	EXTERIOR	PV1	PAVER	HANOVER	PREST PAVER, MATRIX #M1914, FINISH #13, SRI 51		
FLOORING	EXTERIOR	PV2	PAVER	HANOVER	PREST PAVER, MATRIX #M1810, FINISH: TUDOR, SRI 40		
FLOORING	EXTERIOR	PV3	PAVER	HANOVER	PREST PAVER, MATRIX #M1537, FINISH: TUDOR, SQUARE EDGE		
METAL PANELS							
METAL PANELS	EXTERIOR	IMP1	INSULATED METAL PANEL - CENTER ATRIUM EXTENSION	KINGSPAN	QUADCORE B DESIGNWALL 2000, COLOR: REGAL BLUE	2" THICK	
METAL PANELS	EXTERIOR	IMP2	INSULATED METAL PANEL - GENERAL, GARAGE	KINGSPAN	QUADCORE B DESIGNWALL 2000, COLOR: REGAL WHITE	2" THICK	
METAL PANELS	EXTERIOR	RP1	ROOFING PANEL AT CORE'S	BERRIDGE	CAL-CR, SHASTA WHITE, MR06, CORE LOCK ZEE CAP	PBD	
METAL PANELS	EXTERIOR	RP2	ROOFING PANEL AT PLAZA CANOPIES	IMETCO	MODEL: S312, CURVED PANELS AT 24' RADIUS, MATERIAL: 22GUAGE GALVANIZED STEEL	12" x 84" X 2 3/8"	CONTACT: MARK GAYLOR, 301-573-1149, MGAYLOR@IMETCO.COM
PAINT							
PAINT	EXTERIOR	EP1	EXTERIOR PAINT - STEEL BOLLARD	SHERWIN WILLIAMS	COLOR: SAFETY BLACK, REFER TO CIVIL DRAWINGS FOR MORE INFORMATION		CONTACT: JOY BABUR, 407-694-7994, JOY.L.BABUR@SHERWIN.COM
PAINT	EXTERIOR	EP2	EXTERIOR PAINT - CURB	SHERWIN WILLIAMS			
PAINT	EXTERIOR	EP3	EXTERIOR PAINT - DOOR	SHERWIN WILLIAMS			
STONE PANELS							
STONE PANELS	EXTERIOR	SP1	TABBY STONE PANEL - TERMINAL FACADE	TBD	COLOR TYPE: TABBY OYSTER SHELL, COLOR: LIGHT CREAM	TBD	
WALL							
WALL	EXTERIOR	CW1	CURTAIN WALL	KAWNEER	1600 WALL SYSTEM1 CURTAIN WALL, FINISH: ANODIZED ALUMINUM	6" X 2.5"	
WALL	EXTERIOR	CW2	CURTAIN WALL	KAWNEER	1600 WALL SYSTEM1 CURTAIN WALL, FINISH: ANODIZED ALUMINUM	7 1/2"	
WALL	EXTERIOR	GL1	STOREFRONT GLAZING SYSTEM				
INTERIOR							
CASEWORK							
CASEWORK	INTERIOR	PL1	PLASTIC LAMINATE - RESTROOM APRONS	WILSONART	COLOR: SATIN STAINLESS 4830-18, FINISH: LINEARITY, INSTALL PATTERN: HORIZONTALLY IN ALL INSTANCES, SHOW INSTALLATION DIRECTION IN SHOP DRAWINGS	4' X 8'	CONTACT: CATHY GRIMM, 813-682-9624, CATHY.GRIMM@WILSONART.COM
CASEWORK	INTERIOR	SS1	QUARTZ (RENTAL IN BASE BID, TICKETING - ALTERNATE)	CAMBRIA	COLLECTION: LUXURY SERIES, STYLE: PORTRUSH, THICKNESS: 3CM, EDGE PROFILE: EASED EDGE		CONTACT: TANYA BARKER, 407.490.2099, TANYA.BARKER@CAMBRIAUSA.COM
CASEWORK	INTERIOR	SS2	QUARTZ (RESTROOMS)	COSENTINO	STYLE: ETERNAL CALACATTA GOLD, FINISH: POLISHED, THICKNESS: 3CM - PRICE GROUP 2	128.74" x 62.60" x 3 CM THICK	CONTACT: NICOLE WATSON, 859-638-2928, NICOLET@COSENTINO.COM
CASEWORK	INTERIOR	SS3	QUARTZ - WINDOW SILLS	HANSTONE	COLOR: AURORA SNOW - CL101, EDGE PROFILE: EASED EDGE	1/2" THICK	
CEILINGS							
CEILINGS	INTERIOR	ACT1	ACOUSTICAL CEILING TILE - GENERAL	ARMSTRONG	ULTIMA LAY IN, PRODUCT #1910, SIZE: 2' X 2' TILE, WHITE GRID, PRELUDE XL 15/16" EXPOSED TEE. 6" AXIOM TRIM AXIOM.	2' X 2' X 7/8"	CONTACT: BILL MENDEK, 904-652-6921,WJMENDEK@ARMSTRONGCEILINGS.COM
CEILINGS	INTERIOR	ACT4	ACOUSTICAL CEILING TILE - (ESCALATORS)	ARKTURA	SURFACE TEXTURE: MIRROR - SMOOTH, COMPOSITION: 20-GAUGE 304 STAINLESS STEEL, COLOR: STAINLESS, SIZE: APPROXIMATELY: 2' x 6', TEXTURE: RIPPLE, CONSTRUCTION: DOUBLE RETURN FLANGES BE REQUIRED ON ALL 4 SIDES, SUSPENSION SYSTEM: TORSION SPRING CEILING PANELS, PRELUDE XL 12' WITH 2' CROSS TEE SLOTTED	2' X 6'	CONTACT: STEVEN RANTA, 310-291-8096, STEVEN.RANTA@ARKTURA.COM
CEILINGS	INTERIOR	GWB/P5	GYPSUM WALL BOARD - PAINTED, RESTROOMS, LOCKER ROOM	SHERWIN WILLIAMS	COLOR: PURE WHITE SW 7005, EG-SHEL		CONTACT: FRED LAURO, 727-735-1643, FREDERICK.M.LAURO@SHERWIN.COM
FLOORING							
FLOORING	INTERIOR	SC1	SEALED CONCRETE (MECH/STORAGE)	PACHYDERM/KEY RESIN	SEALER: KEY 804		CONTACT: BRIAN WOLFE, 813-464-15150, BWOLFE@PMCTAMPA.COM
FLOORING	INTERIOR	TER-1	TERRAZZO - DARK BLUE	TERROXY RESIN SYSTEMS	TM#24-3193, EPOXY COLOR: BLUE ENTRY #5978, GRIT: 200, FILLER: CLEAR GLASS FINES, SEALER: WB ACRYLIC, CHIPS: 80% - SIZE:1 MIDNIGHT BLUE GLASS, 20% - SIZE: 2 - SO CAL ONE SIDED MIRROR	3/8" THICK	CONTACT: BRAD HEDGES, 770-325-0725, BRAD@SCIGA.COM
FLOORING	INTERIOR	TER-2	TERRAZZO - LIGHT BLUE	TERROXY RESIN SYSTEMS	TM# 24-3168, EPOXY COLOR: SW BLUE CHIP #6063, GRIT: 200, FILLER: ATF-20, SEALER: WB ACRYLIC, CHIPS: 30% - SIZE: 2- CLASSIC MOP, 30%- SIZE: 2 - CRYSTAL GLASS, 20%: SIZE 2 - SO-CAL ONE SIDED MIRROR, 20% - SIZE: 2 - GA WHITE	3/8" THICK	CONTACT: BRAD HEDGES, 770-325-0725, BRAD@SCIGA.COM
FLOORING	INTERIOR	TER-3	TERRAZZO - GENERAL, RESTROOMS	TERROXY RESIN SYSTEMS	TM#23-3185, EPOXY COLOR: PURE WHITE #4427, GRIT: 200, FILLER: ATF-20, SEALER: WB ACRYLIC, CHIPS: 30% - SIZE: 2 - CLASSIC MOP, 30% - SIZE: 2 - CRYSTAL GLASS, 20% SIZE: 2- PACIFIC ONE SIDED MIRROR, 20% - SIZE 2: GA WHITE	3/8" THICK	CONTACT: BRAD HEDGES, 770-325-0725, BRAD@SCIGA.COM
FLOORING	INTERIOR	TER-4	TERRAZZO - SAND	TERROXY RESIN SYSTEMS	TM# 24-3186, EPOXY COLOR: URBAN PUTTY #4539, GRIT: 200, FILLER: ATF-20, SEALER: WB ACRYLIC, CHIPS: 30%-SIZE: 2- CLASSIC MOP, 30%- SIZE: 2- CRYSTAL GLASS, 20% -SIZE-2- PACIFIC ONE SIDED MIRROR, 20% - SIZE-2 - GA WHITE, WITH STARFISH ALUMINUM INLAY AS SPECIFIED, WITH LED MOTION ACTIVATED FOOTPRINTS AS SPECIFIED, REFER TO FINISH PLANS.	3/8" THICK	CONTACT: BRAD HEDGES, 770-325-0725, BRAD@SCIGA.COM
FLOORING	INTERIOR	TER-5	TERRAZZO - DIVIDER STRIPS	TERROXY RESIN SYSTEMS	L BRACKET, ALUMINUM	1/8" X 3/8" H	CONTACT: BRAD HEDGES, 770-325-0725, BRAD@SCIGA.COM
FLOORING	INTERIOR	TERR	TERRAZZO - MATCH EXISTING - TICKETING LEVEL	TERROXY RESIN SYSTEMS	TM#24-3194, EPOXY COLOR: #2001 WHITE, GRIT: 200, ATF-20, SEALER: WB ACRYLIC, CHIPS: 70%- SIZE 1- PURE WHITE, 30% - SIZE 2: PURE WHITE	3/8" THICK	CONTACT: BRAD HEDGES, 770-325-0725, BRAD@SCIGA.COM
FLOORING	INTERIOR	VCT2	VINYL, COMPOSITION TILE - STATIC DISSIPATIVE (ELECTRICAL, COMM, IT ROOM)	ARMSTRONG FLOORING	COLLECTION: EXCELON SDT, COLOR: FOSSIL GRAY, ITEM NUMBER: 51956, USE WITH S-202 SDT ADHESIVE, AND S-392 STATIC DISSIPATIVE POLISH, COORDINATE WITH ELECTRICAL TO MEET MANUFACTURER GROUNDING REQUIREMENTS.	12" X 12" X 1/8"	CONTACT: CATHLEEN CLARKE, 904-294-3424, CATHLEEN.CLARKE@AHFPRODUCTS.COM
FLOORING	INTERIOR	WOM1	WALK OFF MAT	MILLIKEN	OBEX BAR CUTX, COLLECTION: GRAIN, COLOR: TAUPE GRX174-133, DYE: PRINTWORKS PRECISION DYE, INSTALLATION METHOD: PLANK HORIZONTAL ASHLAR	25 CM X 1M X.50" THICK	CONTACT: HANK ISRAEL, 954-290-8169, HANK.ISRAEL@MILLIKEN.COM
GROUT							
GROUT	INTERIOR	G-1	GROUT 1/8" JOINTS	MAPEI	KERAPOXY CQ, COLOR: ALABASTER 01, USE WITH ALL TILE UNLES NOTED OTHERWISE	1/8"	CONTACT: JEFF BLUMBERG, 954-304-0878, JBLUMBERG@MAPEI.COM
METAL PANELS							
METAL PANELS	INTERIOR	MP1	METAL COLUMN WRAP	MOZ	LASER CUT, PATTERN: FALLS, TOP OF LASER CUT PATTERN 8' AFF, COLOR: SILVER METALLIC, RGBW LED BACKLIT, RECESSED BASE INSET 1" AND 9" H BRUSHED STAINLESS. COORDINATE WITH ELECTRICAL, PROVIDE SHOP DRAWING PRIOR TO ORDERING.	4' X 10' X 1/8" THICK	CONTACT: JAMIE SANDFORD, 720.654.3380, JAMIE@MOZDESIGNS.COM
METAL PANELS	INTERIOR	MP2	METAL LAMINATE ACCENT BAND (TICKETING, RENTAL CAR, GATE COUNTER VERTICALS)	MOZ	STYLE: GRADIENT, COLOR: AURORA COBALT GRADIENT TO TURQUOISE. .040 ALUMINUM,FINISH: COARSE, INCLUDE 1" DIAMETER STANDOFF, CYLINDER CAP 1/4", SUBMIT SAMPLE FOR APPROVAL.	4' X 10'	CONTACT: JAMIE SANDFORD, -654-3380, JAMIE@MOZDESIGNS.COM
SPECIALTY							
SPECIALTY	INTERIOR	P6	PAINT - STRUCTURAL COLUMNS	SHERWIN WILLIAMS	FIRETEX FX6010 THREE-COMPONENT INTUMESCENT COATING, TOPCOAT: BONDPLEX WATERBASED ACRYLIC, COLOR: WHITE ALUMINUM, LOCATION: EXPOSED STEEL COLUMNS, TOP COAT WHEN EXPOSED IN PUBLIC SPACES		CONTACT: FRED LAURO, 727-735-1643, FREDERICK.M.LAURO@SHERWIN.COM
STAIRS							
STAIRS	INTERIOR	STR1	STAIR TREAD (BOWSTRING & FIS)				
STAIRS	INTERIOR	STR2	STAIR NOSING				
TOILET PARTITIONS							
TOILET PARTITIONS	INTERIOR	TP1	TOILET PARTITIONS	WILSONART	REFER TO TOILET ACCESSORY SCHEDULES		
TRANSITIONS							
TRANSITIONS	INTERIOR	TR1	TRANSITION - CARPET TO SEALED CONCRETE	SCHLUTER	RENO T, CONT. ALUMINUM TRANSITION PROFILE		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
TRANSITIONS	INTERIOR	TR2	TRANSITION - TERRAZZO TO SEALED CONCRETE	SCHLUTER	RENO RAMP K, COLOR: SATIN ANODIZED ALUMINUM, COORDINATE WITH TERRAZZO THICKNESS		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
TRANSITIONS	INTERIOR	TR3	TRANSITION - TERRAZZO TO CARPET	SCHLUTER	SCHLUTER DECO OR APPROVAL EQUAL, TYP.		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
TRANSITIONS	INTERIOR	TR4	TRANSITION - TERRAZZO TO WALK OFF MAT	SCHLUTER	RENO T, CONT. ALUMINUM TRANSITION PROFILE		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
TRANSITIONS	INTERIOR	TR5	TRANSITION - WALL TILE EDGE	SCHLUTER	STYLE: ROUNDED OUTSIDE CORNER, ITEM: RONDEC R0100AE, 100 (3/8"), FINISH: BRUSHED STAINLESS, AT ALL OUTSIDE CORNERS		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
TRANSITIONS	INTERIOR	TR6	TRANSITION - TERRAZZO TO TERRAZZO	SCHLUTER	RENO T, CONT. ALUMINUM TRANSITION PROFILE		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
TRANSITIONS	INTERIOR	TR7	TRANSITION - TERRAZZO TO STAINED CONCRETE	SCHLUTER	RENO RAMP K, COLOR: SATIN ANODIZED ALUMINUM, COORDINATE WITH TERRAZZO THICKNESS, PROTECT TRANSITION DURING POLISHING OF TERRAZZO		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
TRANSITIONS	INTERIOR	TR9	TRANSITION - EXPANSION JOINT	INPRO	304 SERIES-RECESSED MOUNT; JOINT OPENING: 3"; FLOOR THICKNESS: 3/8"; INSTALL CONDITION: FLOOR TO WALL		CONTACT: MATT LONG, 407-795-0794, MLONG@SCHLUTER.COM
WALL							
WALL	INTERIOR	AP1	ACRYLIC PANEL	SENSITILE	LUMINA, PATTERN: RANDOM, LIGHT POINT DENSITY: STANDARD (MEDIUM), GRAIN WIDTH: 3/8", CORE THICKNESS: 3/4", CLADDING THICKNESS: 1/8", CLADDING FINISH: FROSTED- CLEAR - CLEAR MIRROR - WHITE PROTECT, INTERLAYER: BLUE GRADIENT, LIGHT EMISSION: FACE ONLY, LED COLORS: RG	4' W, 1-1/16" THICK	CONTACT: MOLLY GREEN, 313-872-6314 EXT. 106, ESTIMATING@SENSITILE.COM, SUBMIT SAMPLE FOR APPROVAL
WALL	INTERIOR	AP2	ACRYLIC PANEL	SENSITILE	LUMINA, PATTERN: RANDOM, LIGHT POINT DENSITY: STANDARD (MEDIUM), GRAIN WIDTH: 3/8", CORE THICKNESS: 3/4", CLADDING THICKNESS: 1/8", CLADDING FINISH: FROSTED- CLEAR - CLEAR MIRROR - WHITE PROTECT, INTERLAYER: BLUE GRADIENT, LIGHT EMISSION: FACE ONLY, LED COLORS: RG	VARYING STANDARD SIZE, REFER TO RCP	CONTACT: MOLLY GREEN, 313-872-6314 EXT. 106, ESTIMATING@SENSITILE.COM, SUBMIT SAMPLE FOR APPROVAL
WALL	INTERIOR	AP3	ACRYLIC PANEL	SENSITILE	LUMINA, PATTERN: RANDOM, LIGHT POINT DENSITY: STANDARD (MEDIUM), GRAIN WIDTH: 3/8", CORE THICKNESS: 3/4", CLADDING THICKNESS: 1/8", CLADDING FINISH: FROSTED- CLEAR - CLEAR MIRROR - WHITE PROTECT, INTERLAYER: BLUE GRADIENT, LIGHT EMISSION: FACE ONLY, LED COLORS: RG	VARYING STANDARD SIZE, REFER TO RCP	CONTACT: MOLLY GREEN, 313-872-6314 EXT. 106, ESTIMATING@SENSITILE.COM, SUBMIT SAMPLE FOR APPROVAL
WALL	INTERIOR	AP4	ACRYLIC PANEL	SENSITILE	LUMINA, PATTERN: RANDOM, LIGHT POINT DENSITY: STANDARD (MEDIUM), GRAIN WIDTH: 3/8", CORE THICKNESS: 3/4", CLADDING THICKNESS: 1/8", CLADDING FINISH: FROSTED- CLEAR - CLEAR MIRROR - WHITE PROTECT, INTERLAYER: BLUE GRADIENT, LIGHT EMISSION: FACE ONLY, LED COLORS: RG	1' W, 1-1/16" THICK	CONTACT: MOLLY GREEN, 313-872-6314 EXT. 106, ESTIMATING@SENSITILE.COM, SUBMIT SAMPLE FOR APPROVAL
WALL	INTERIOR	CC1	COLUMN COVERS - (SSCP, NON SPECIALTY)	ARMSTRONG	PLASTERFORM COLUMN COVERS, 2'-4" DIA, VERTICAL BUTT JOINT, CONFIRM COLUMN DIMENSION DUE TO VARIED SIZES.		
WALL	INTERIOR	CG1	CORNER GUARD - GENERAL OUTSIDE WALLS	ACROVYN	WIDTH: 1" 1/2 LEGS X HEIGHT: 8'-0", GAUGE: 16, FLAT-HEAD COUNTERSUNK SCREWS THROUGH FACTORY DRILLED MOUNTING HOLES AND ADHESIVE, STAINLESS STEEL 304,	GAUGE: 14, LEG LENGTH: 1/2"	CONTACT: CLYDE COPELAND, 813-831-3344, CCOPELAND@CAS-CORP.COM
WALL	INTERIOR	P1	PAINT - GENERAL	SHERWIN WILLIAMS	PROMAR 200 HP LG, B41-1900 SERIES, COLOR: SW 7008 ALABASTER, FINISH: EG-SHEL		CONTACT: FRED LAURO, 727-735-1643, FREDERICK.M.LAURO@SHERWIN.COM
WALL	INTERIOR	P2	PAINT - DOORS/FRAMES	SHERWIN WILLIAMS	PRO IND WB ALKYD URETHANE LS, B53-2250 SERIES, EG-SHEL, COLOR: SW 6002 ESSENTIAL GRAY, FINISH: SEMI-GLOSS		CONTACT: FRED LAURO, 727-735-1643, FREDERICK.M.LAURO@SHERWIN.COM
WALL	INTERIOR	P3	PAINT - ACCENT	SHERWIN WILLIAMS	PROMART 200HP LG, B41-1900 SERIES, COLOR: SW 6958 DYNAMIC BLUE, EG-SHEL		CONTACT: FRED LAURO, 727-735-1643, FREDERICK.M.LAURO@SHERWIN.COM
WALL	INTERIOR	P5	PAINT - GWB CEILING/SOFFITS (STERILE CORRIDOR/PBB)	SHERWIN WILLIAMS	PRO IND MULTI-SURFACE ACRYLIC B66-1560 SERIES, COLOR: SW 7007 CEILING BRIGHT WHITE, FINISH: EG-SHEL		CONTACT: FRED LAURO, 727-735-1643, FREDERICK.M.LAURO@SHERWIN.COM
WALL	INTERIOR	T1	STONE TILE (CONNECTOR)	STONESOURCE	SEASTONE STARFISH FOSSIL IMPRESSION, SQUARE EDGE MEDALLION TILE IN BEIGE, MATERIAL: COMPRESSED STONE, DESIGN: FOSSILIZED, SHADE VARIATION: V2, POLISH FINISH: HONED, INSTALL PATTERN: STRAIGHT STACKED, GROUT JOINT: 1/16", CAN BE DRY CUT	6" X 6" X 1" THICK	CONTACT: KIMBERLY BEYERLEIN, 813-714-4603, KBEYERLEIN@STONESOURCE.COM
WALL	INTERIOR	T3	TILE - PORCELAIN - RESTROOMS	DALTILE	STYLE: IRONCRAFT, COLOR: PHOSPHOR WHITE IC11	12" X 24"	CONTACT: LORI SCHWARTZ, 407.716.6447, LORI.SCHWRATZ@DALTILE.COM
WALL	INTERIOR	WP2	WALL PANEL - ELEVATOR PANELS - INTERIOR CAB	FORMS + SURFACES	LEVEL4-105A GARAGE. PANEL FINISHES: CUSTOM GRADIENCE, STAINLESS STEEL WITH SANDSTONE FINISH NO PATTERN CERAMILOC+, BASE IN FUSED WHITE GOLD SANDSTONE FINISH NO PATTERN CERAMILOC+, ALUMINUYM CLEAR ANODIZED REVEALS, ROUND STIPPLED STAINLESS STEEL HANDRAILS, STAINLESS STEEL SATIN CRASH RAIL, FUSED WHITE GOLD SANDSTONE LED PERIMETER CEILING. SEE DIAGRAM FOR COORDINATION. COORDINATE WITH MANUFACTURER FOR DETAIL DRAWINGS AND PANEL LOCATIONS. CONTROLLER AND DRIVERS FOR CEILING LIGHT AND BACK PANEL LIGHT INCLUDED IN PANEL AS ONE SYSTEM. COORDINATE WITH ELECTGRICAL FOR CIRCUITING REQUIREMENTS. FOR ELEVATOR CAB INTERIORS REFER TO ELEVATOR FINISH DETAILS SHEET.		CONTACT: COREY BREWER, 407.949.2923, COREY.BREWER@FORM-SURFACES.COM
WALL BASE							
WALL BASE	INTERIOR	B1	9" TERRAZZO BASE	TERROXY RESIN SYSTEMS	STRAIGHT PROFILE, MATCH TZ-1 FORMULA	6" H	CONTACT: BRAD HEDGES, 770-325-0725, BRAD@SCIGA.COM
WALL BASE	INTERIOR	B2	4" (FOR CARPET AND RESILIENT FLOORING)	FLEXCO	4" HEIGHT, ROLLED GOOD, USE PREFORMED CORNERS, COLOR: BLACK DAHLIA, PRODUCT: WALLFLOWERS	4"	CONTACT: NADINE PHILLIPS, 607-745-3780, NADINE@CFDFLOORING.COM
WALL BASE	INTERIOR	B3	WOOD BASE	INPRO	MATCH EXISTING - REFER TO VOLUME I A811		

FINISH PLAN LEGEND & SHEET NOTES

GENERAL SHEET NOTES

1. REFER TO TOILET ACCESSORIES SCHEDULE FOR TOILET PARTITION FINISH
2. GC SHALL PROVIDE MOCK UPS FOR COLUMNS, RESTROOM VANITIES WITH FAUCETS AND SOAP DISPENSERS. TEST FOR WATER PRESSURE OUTPUT AND CONFIRM PRESSURE MEETS OWNERS APPROVAL.
3. LOCATIONS LISTED ON FINISH LEGEND ARE APPROXIMATE LOCATIONS AND ARE NOT LIMITED TO THOSE AREAS LISTED. REFER TO ALL DRAWINGS FOR ADDITIONAL INFORMATION.

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F-0493 * C-28

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	SG
DRAWN BY:	KS
DESIGNED BY:	FG

PROJECT NUMBER:
2003-0070-006
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SHEET TITLE:
ROOM FINISH SCHEDULE, LEGEND AND NOTES

SHEET ID:
A621

PROJECT STATUS:
100% BID SET

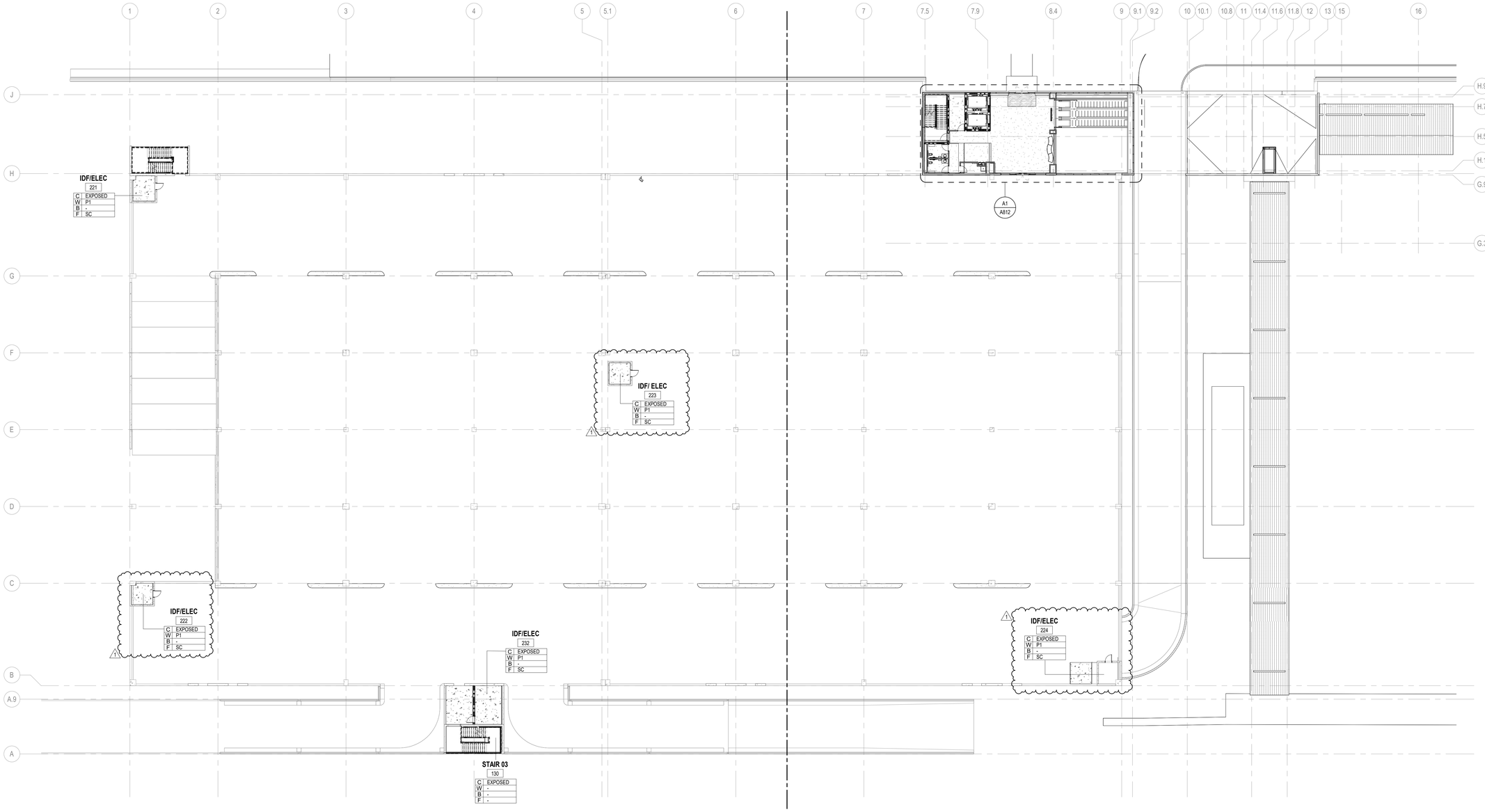
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FINISH PLAN LEGEND & SHEET NOTES

FLOORING TYPES LEGEND

- TERR: TERRAZO TO MATCH EXISTING
- SC1: SEALED CONCRETE
- WOM: WALK OFF MAT
- UC: UNFINISHED CONCRETE
- REFER TO VOLUME 2 PACKAGE



1 OVERALL SECOND LEVEL INTERIOR FINISH PLAN

SCALE: 1" = 20'-0"

16 0 16 32

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

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WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	04/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JB
DRAWN BY:	KS
DESIGNED BY:	RS&H
PROJECT NUMBER:	**2003-0070-006**

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SHEET TITLE:

OVERALL SECOND FLOOR INTERIOR FINISH PLAN

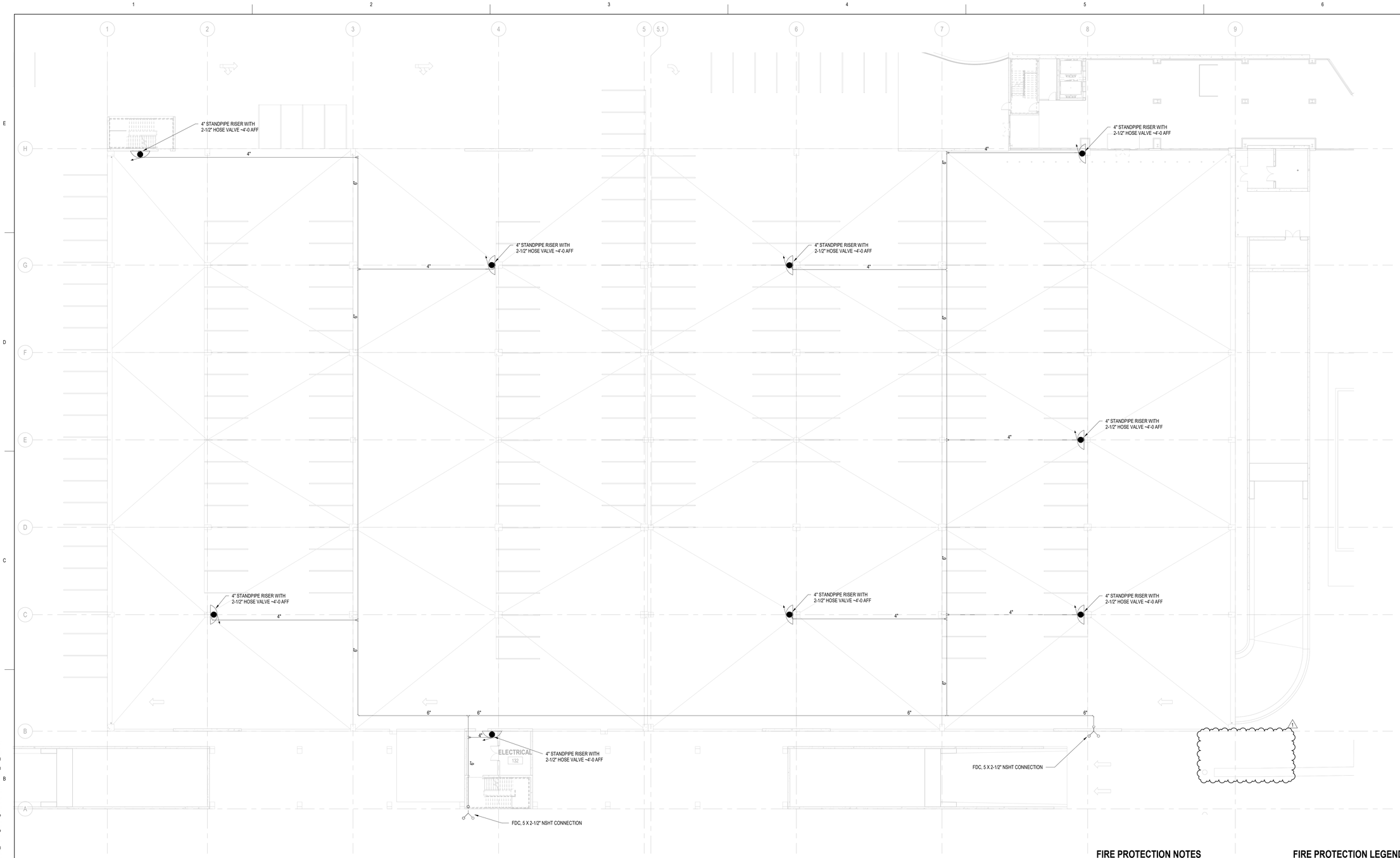
SHEET ID:

A802

PROJECT STATUS:
100% BID SET

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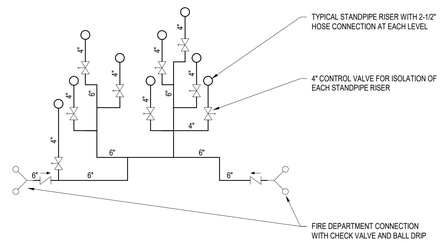
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PN

A1 LEVEL 1 FIRE PROTECTION PLAN

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



2 FIRE PROTECTION SYSTEM SCHEMATIC

SCALE: N.T.S.

FIRE PROTECTION NOTES

1. SUBMIT WORKING DRAWINGS TO THE FIRE MARSHAL FOR APPROVAL FOR THE MANUAL DRY STANDPIPE SYSTEM.
2. PROVIDE DESIGN AND ALL NECESSARY COMPONENTS TO PROVIDE FOR A COMPLETE AND OPERATIONAL SYSTEM IN ACCORDANCE WITH THE 2024 NORTH CAROLINA STATE BUILDING AND FIRE CODES, NFPA 14 (2019), AND LOCAL REQUIREMENTS. HOSE STATIONS SHALL BE PROVIDED SUCH THAT ALL AREAS OF THE PARKING GARAGE MAY BE REACHED WITH A 30 FOOT HOSE STREAM AND 100 FEET OF HOSE.
3. ALL PIPING MUST BE ASTM A53, A135 OR A795 GALVANIZED STEEL PIPE. PROVIDE SCHEDULE 40 PIPE FOR THREADED, WELDED AND GROOVED FITTINGS. SCHEDULE 10 PIPE MAY BE USED FOR WELDED AND ROLLED GROOVE FITTINGS. PROVIDE GALVANIZED FITTINGS AND SUPPORTS.
4. ALL PIPING MUST BE DESIGNED AND INSTALLED WITH SLOPE TO DRAIN IN ACCORDANCE WITH NFPA 14. PROVIDE AUXILIARY DRAIN AT ALL LOW POINTS WHERE PIPING CANNOT DRAIN TO EITHER A FIRE DEPARTMENT CONNECTION OR A RISER WITH A DRAIN. PROVIDE LOW POINTS DRAINS AS NECESSARY TO MAINTAIN MINIMUM CLEARANCES. PROVIDE DRAINS AT THE BOTTOM OF ALL STANDPIPE RISERS.
5. PROVIDE A CHECK VALVE AT EACH FIRE DEPARTMENT CONNECTION. FIRE DEPARTMENT CONNECTION TYPE MUST BE PROVIDED AS REQUIRED BY THE LOCAL RESPONDING FIRE DEPARTMENT.
6. PROVIDE 2-1/2" HOSE VALVE CONNECTIONS AT EACH LEVEL. PROVIDE STANDPIPES AS INDICATED ON THE DRAWINGS.
7. PROVIDE HANGERS AND SUPPORTS IN ACCORDANCE WITH NFPA 14.
8. COORDINATE LOCATION OF ALL PIPING AND EQUIPMENT WITH OTHER TRADES. INSTALL HIGH POINT OF PIPING TIGHT TO THE UNDERSIDE OF THE STRUCTURE; PROVIDE A MINIMUM VERTICAL CLEARANCE OF 10'-0" IN THE FIRST FLOOR OF THE GARAGE (8'-4" MINIMUM CLEARANCE ON THE SECOND LEVEL). PIPING MUST NOT BE INSTALLED ABOVE ELECTRICAL EQUIPMENT.

FIRE PROTECTION LEGEND

FIRE PROTECTION PIPING

2-1/2" HOSE VALVE

FIRE DEPARTMENT CONNECTION

16 0 16 32

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

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	02/14/2025
REVIEWED BY:	SWD
DRAWN BY:	SVL
DESIGNED BY:	SVL
PROJECT NUMBER:	

2003-0070-006

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SHEET TITLE:

LEVEL 1 FIRE PROTECTION PLAN

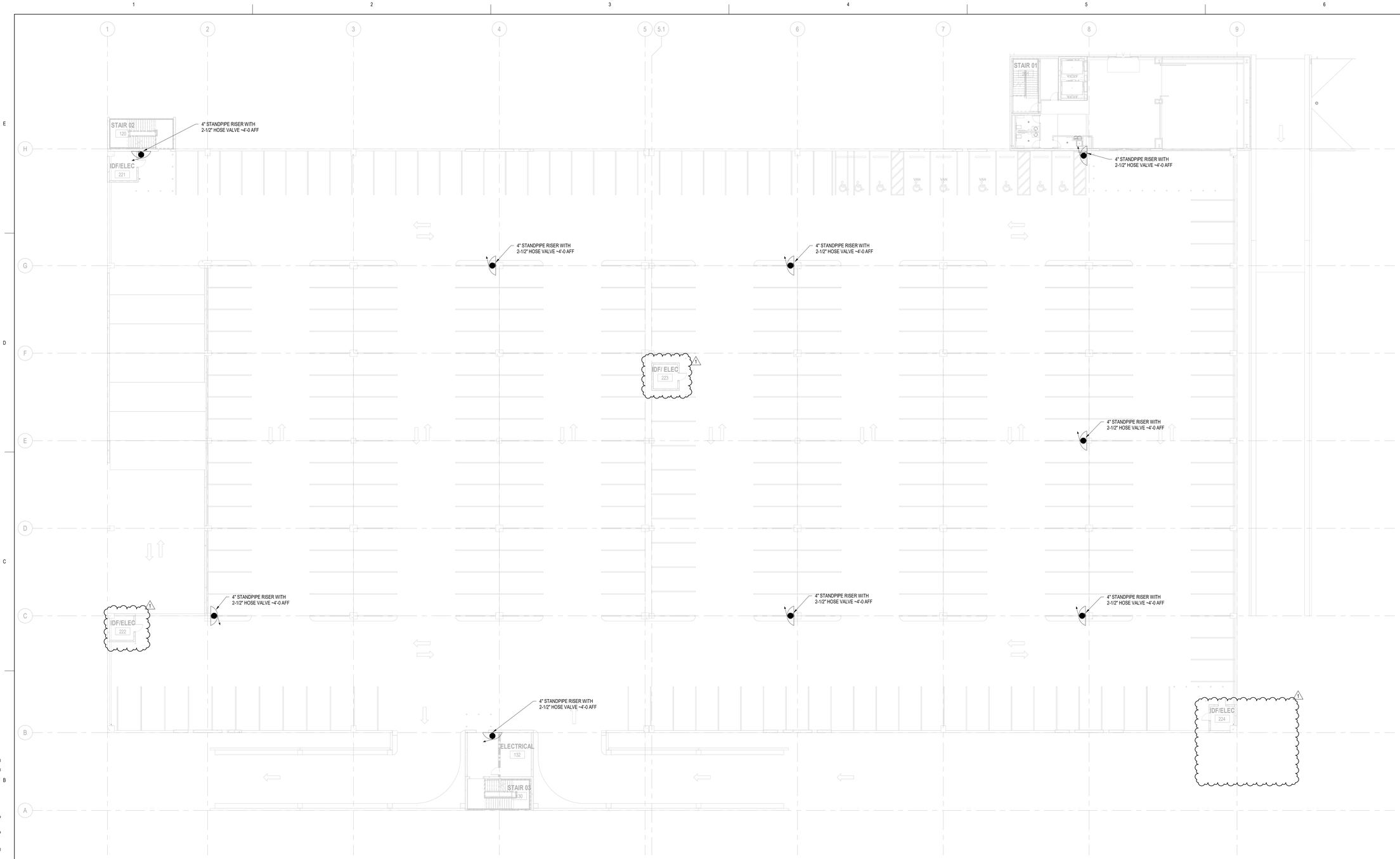
SHEET ID:

FX101

PROJECT STATUS:
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PN

N

A1 LEVEL 2 FIRE PROTECTION PLAN

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

16 0 16 32

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

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	02/14/2025
REVIEWED BY:	SWD
DRAWN BY:	SVL
DESIGNED BY:	SVL

PROJECT NUMBER:
2003-0070-006

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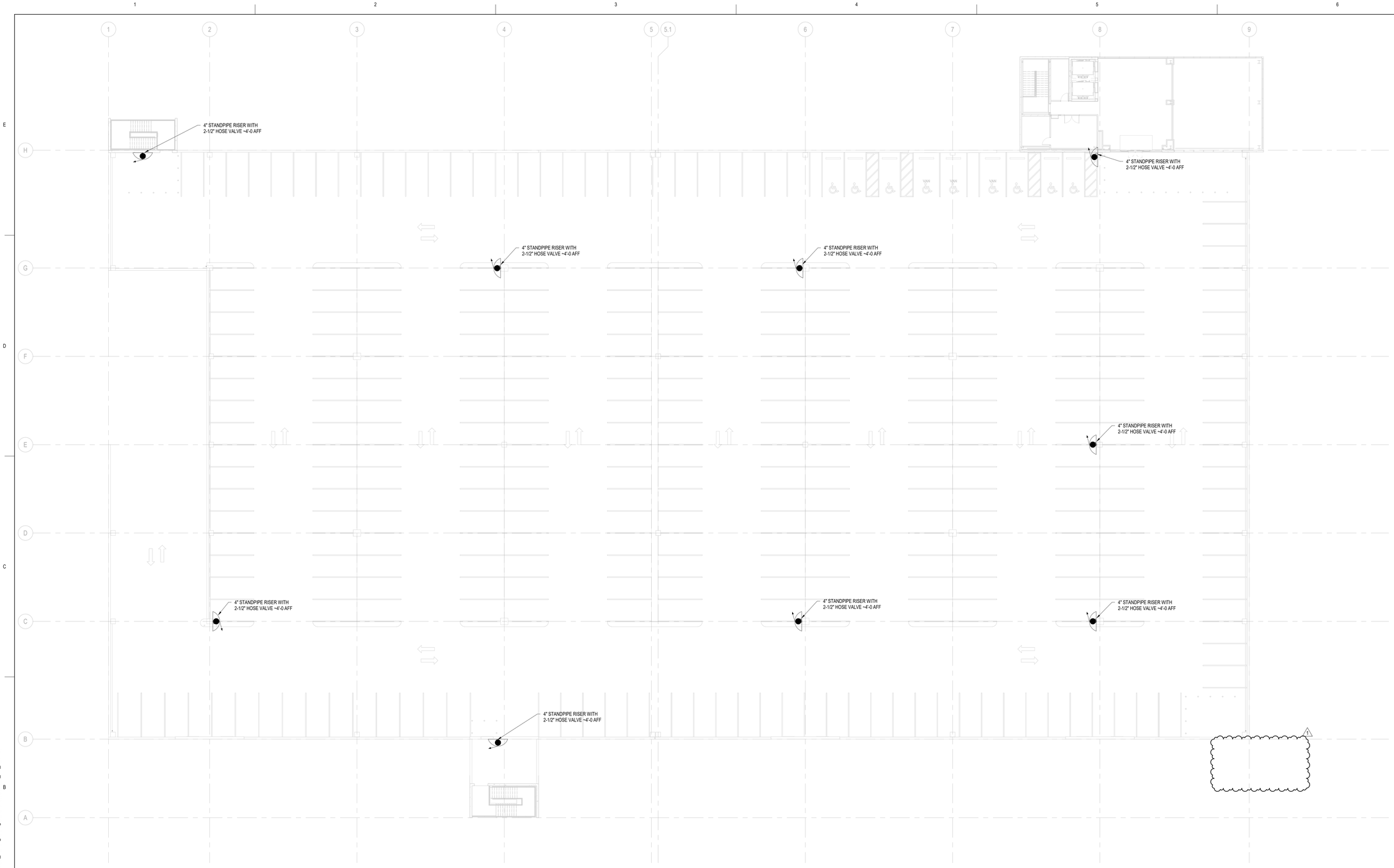
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LEVEL 2 FIRE PROTECTION PLAN

SHEET ID:
FX102

PROJECT STATUS:
100% BID SET

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A1 LEVEL 3 FIRE PROTECTION PLAN

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

16 0 16 32

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

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 02/14/2025
REVIEWED BY: SWD
DRAWN BY: SVL
DESIGNED BY: SVL
PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
LEVEL 3 FIRE PROTECTION PLAN

SHEET ID:
FX103

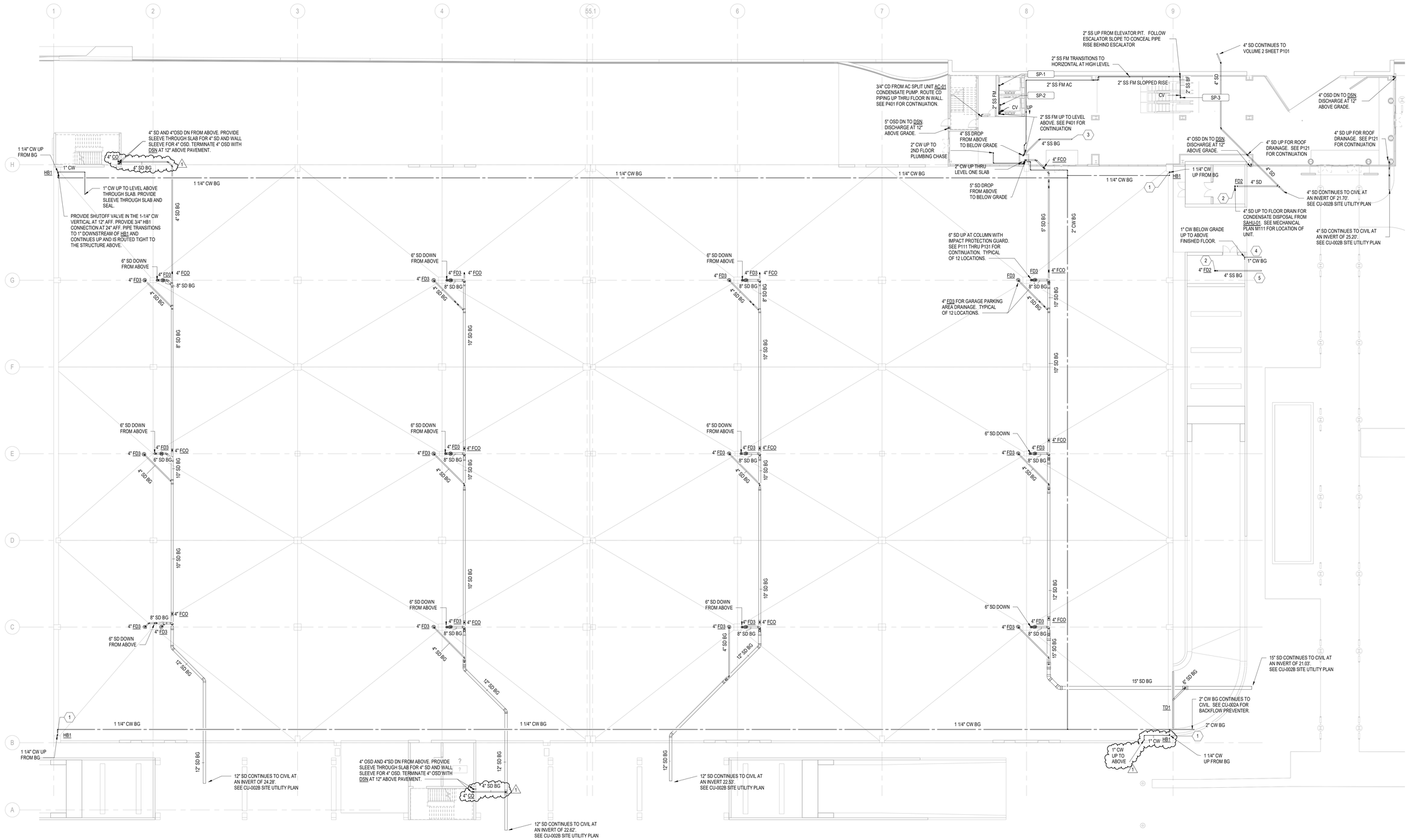
PROJECT STATUS:
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4/8/2025 11:23:32 AM Autodesk Docs://1003007/0004_ILM TO4 Rdwy Intl Improv Design/2003007/0006_ILM_TO6_Parking Garage and Shuttle Plaza_FP_R24.rvt

KEYED NOTES

1. PROVIDE SHUTOFF VALVE IN 1¼" CW PRIOR TO HB1 CONNECTION ON THIS LEVEL AT MINIMUM OF 12" A.F.F.. 1" CW CONTINUES TO LEVEL ABOVE THROUGH SLAB. PROVIDE SLEEVE THROUGH SLAB AND SEAL.
2. PROVIDE JR SMITH MODEL 701 ROUND COMPRESSION TYPE SEAL BACKWATER VALVE OR EQUIVALENT IN VERTICAL PIPE DOWNSTREAM OF FLOOR DRAIN.
3. 4" SS BG CONTINUES TO CIVIL. SEE CU-002B FOR CONTINUATION.
4. 1" CW BELOW GRADE UP TO ABOVE FINISHED FLOOR INSIDE PUMP ROOM FOR FOUNTAIN EQUIPMENT AND ACCESSORIES. SEE CIVIL SHEET CU-102A FOR CONTINUATION.
5. SEE CIVIL SHEET CU-102B FOR CONTINUATION OF 4" SS BELOW GRADE.



PN

1 OVERALL FIRST LEVEL PLUMBING PLAN

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

16 0 16 32

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

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KEY PLAN

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REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	KMN
DRAWN BY:	MA
DESIGNED BY:	RSS
PROJECT NUMBER:	**2003-0070-006**

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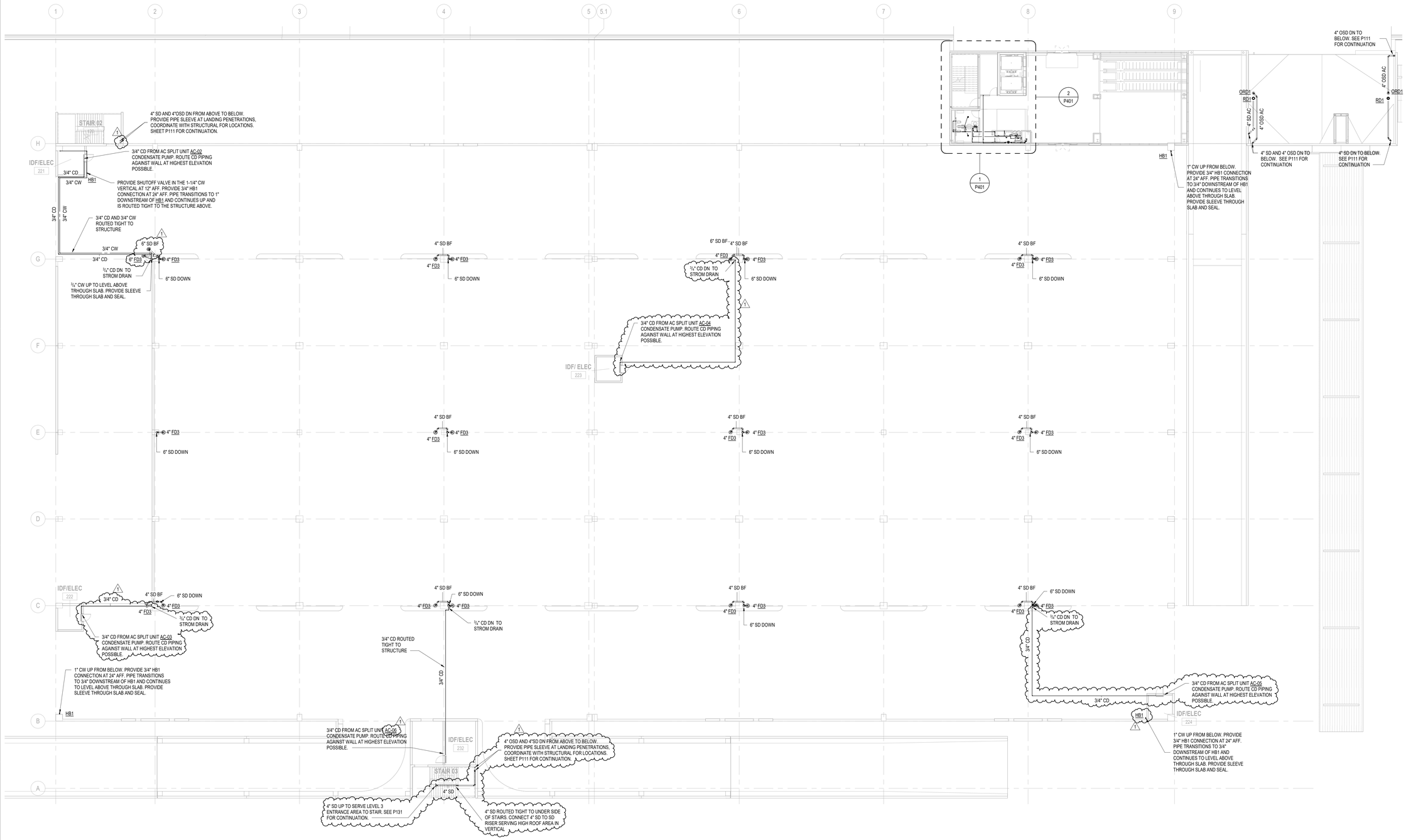
SHEET TITLE:
OVERALL FIRST LEVEL PLUMBING PLAN

SHEET ID:
P111

PROJECT STATUS:
100% BID SET

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PN
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1 OVERALL SECOND LEVEL PLUMBING PLAN

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

16 0 16 32

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

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ILM

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KEY PLAN

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REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	KMN
DRAWN BY:	MA
DESIGNED BY:	RSS

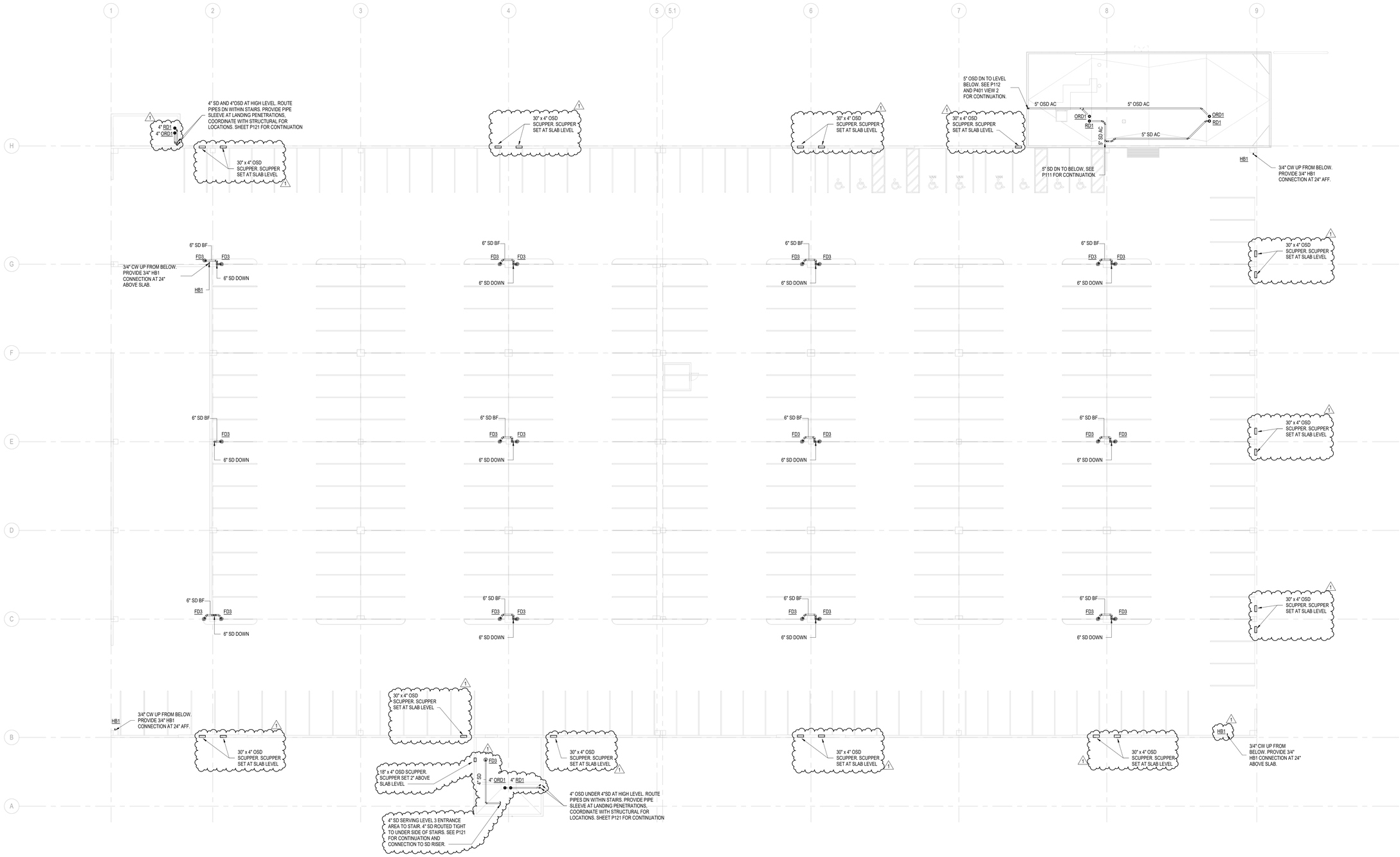
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SHEET TITLE:
OVERALL SECOND LEVEL PLUMBING PLAN

SHEET ID:
P121

PROJECT STATUS:
100% BID SET



PN

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1 OVERALL THIRD LEVEL PLUMBING PLAN

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

8 0 8 16

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

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PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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KEY PLAN

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REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: KMN
DRAWN BY: MA
DESIGNED BY: RSS
PROJECT NUMBER:
2003-0070-006

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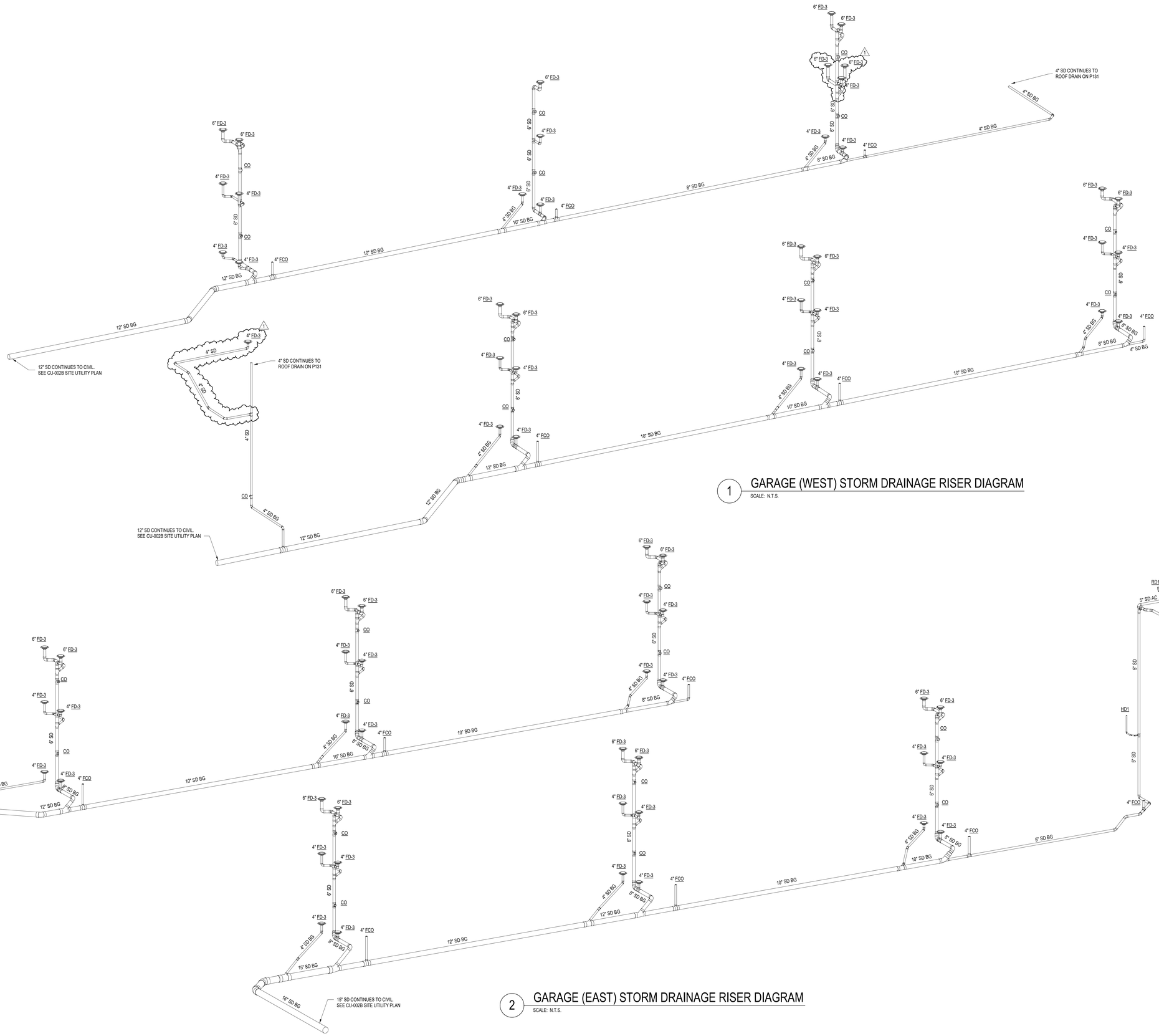
SHEET TITLE:
OVERALL THIRD LEVEL PLUMBING PLAN

SHEET ID:
P131

PROJECT STATUS:
100% BID SET

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1 GARAGE (WEST) STORM DRAINAGE RISER DIAGRAM

SCALE: N.T.S.

2 GARAGE (EAST) STORM DRAINAGE RISER DIAGRAM

SCALE: N.T.S.

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ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

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NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: KMN
DRAWN BY: MA
DESIGNED BY: RSS
PROJECT NUMBER: 2003-0070-006

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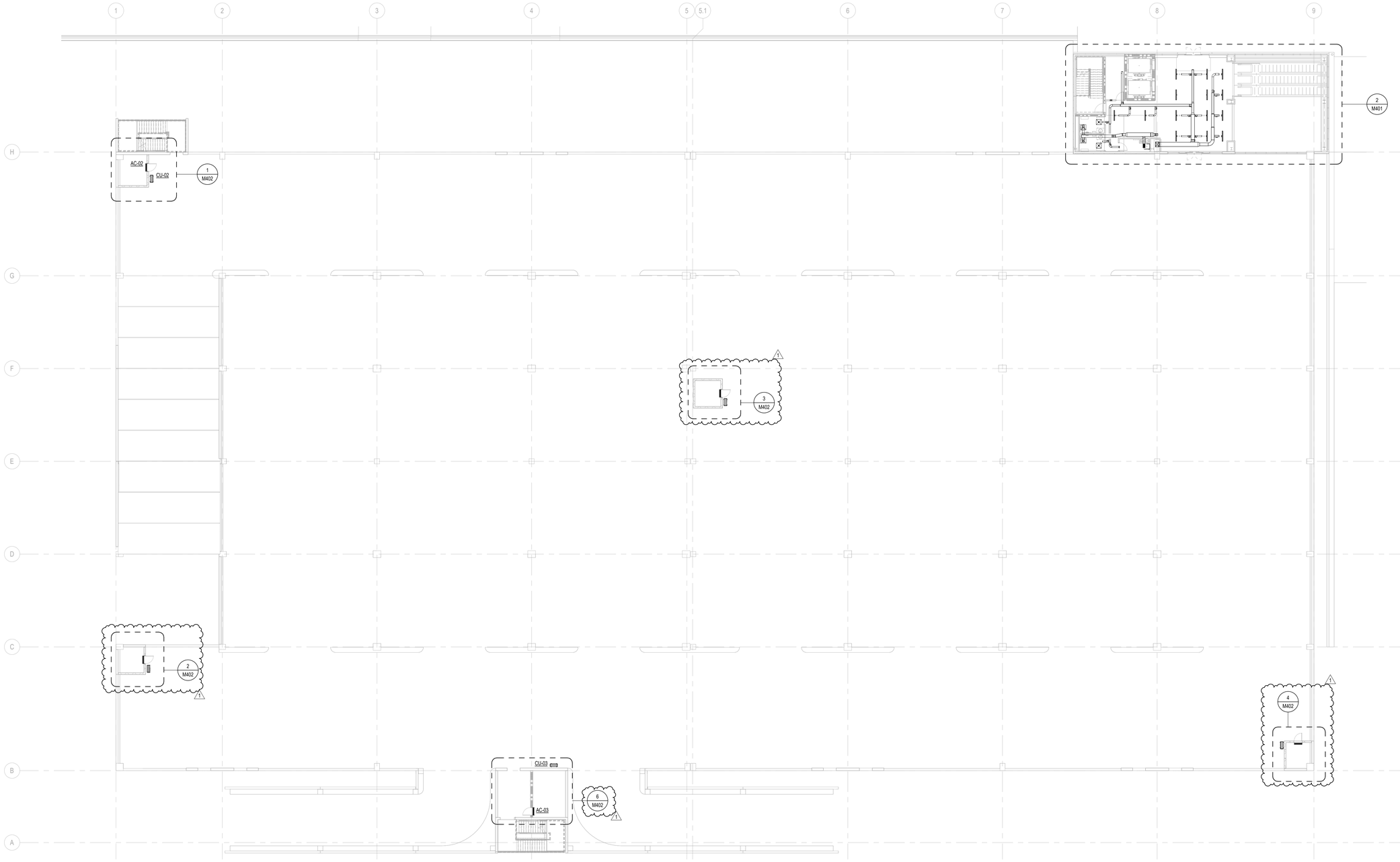
SHEET TITLE:
PLUMBING GARAGE STORM DRAINAGE RISER DIAGRAMS

SHEET ID:
P701

PROJECT STATUS:
100% BID SET

4/10/2025 3:01:51 PM Autodesk Docs://10030070004_ILM TOH Rdwy Intl Improv Design/2003007006_ILM_TO6_Parking Garage and Shuttle Plaza_MP_R24.rvt

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PN

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1 OVERALL SECOND LEVEL HVAC PLAN

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

16 0 16 32

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

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KEY PLAN

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NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
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DRAWN BY:	MA
DESIGNED BY:	RSS

PROJECT NUMBER:
2003-0070-006

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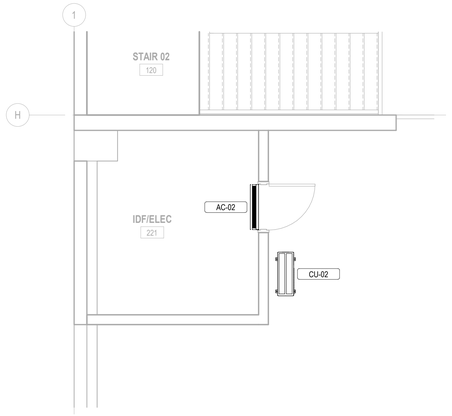
SHEET TITLE:
OVERALL SECOND LEVEL HVAC PLAN

SHEET ID:
M121

PROJECT STATUS:
100% BID SET

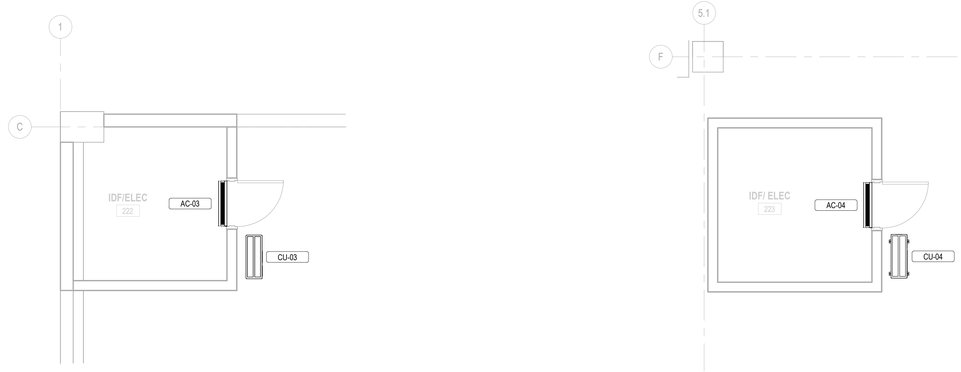
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1 LEVEL 2 GARAGE ROOM 221 ENLARED HVAC PLAN

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

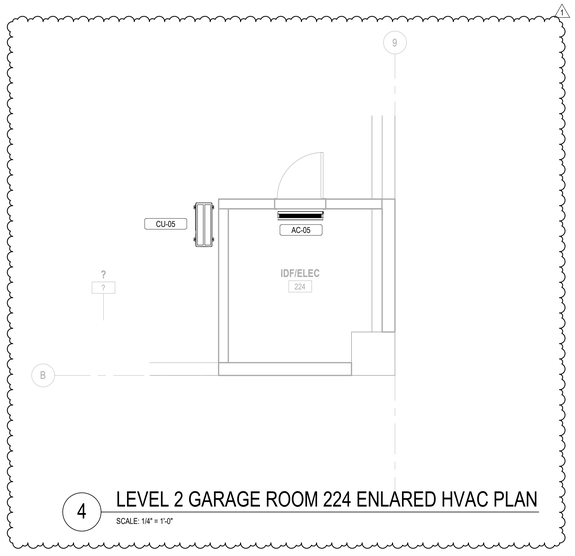


2 LEVEL 2 GARAGE ROOM 222 ENLARGED HVAC PLAN

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

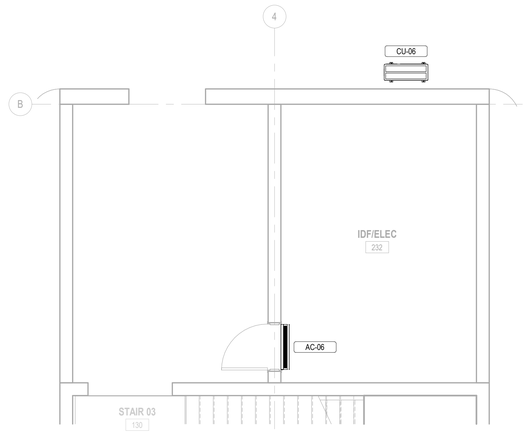
3 LEVEL 2 GARAGE ROOM 223 ENLARGED HVAC PLAN

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



4 LEVEL 2 GARAGE ROOM 224 ENLARED HVAC PLAN

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



6 LEVEL 2 GARAGE ROOM 232 ENLARED HVAC PLAN

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

4 0 4 8

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

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	KMN
DRAWN BY:	MA
DESIGNED BY:	RSS

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
HVAC ENLARGED PLANS - ELECT/IDF ROOMS

SHEET ID:
M402

PROJECT STATUS:
100% BID SET

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COMM ROOM SPLIT SYSTEM UNIT SCHEDULE

INDOOR UNIT DATA						
MARK	AC-01	AC-02 (1)	AC-03 (1)	AC-04	AC-05	AC-06 (1)
LOCATION	ELECTRICAL ROOM 102	IDF/ELECTRICAL 221	IDF/ELECTRICAL 222	IDF/ELECTRICAL 223	IDF/ELECTRICAL 224	IDF/ELECTRICAL 232
MANUFACTURER	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI
MODEL	TPKA0A0121LA10A	TPKA0A0121LA10A	TPKA0A0121LA10A	TPKA0A0121LA10A	TPKA0A0121LA10A	TPKA0A0121LA10A
COOLING DATA						
MAXIMUM CAPACITY (BTU/HR)	12,000	12,000	12,000	12,000	12,000	12,000
SENSIBLE CAPACITY (BTU/HR)	10,560	10,560	10,560	10,560	10,560	10,560
AIRFLOW MAXIMUM (CFM)	385	385	385	385	385	385
RATED ENTERING AIR TEMP. (DB / WB °F)	80/67	80/67	80/67	80/67	80/67	80/67
FAN POWER (W)	56	56	56	56	56	56
INDOOR UNIT ELECTRICAL DATA						
VOLTAGE / PHASE / HZ	208 / 1 / 60	208/230 / 1 / 60	208/230 / 1 / 60	208/230 / 1 / 60	208/230 / 1 / 60	208/230 / 1 / 60
FLA / MCA	0.19 / 1.0	0.19 / 1.0	0.19 / 1.0	0.19 / 1.0	0.19 / 1.0	0.19 / 1.0
OUTDOOR UNIT DATA						
MARK	CU-01	CU-02	CU-03	CU-04	CU-05	CU-06
MOUNTING STYLE						ZF
REFRIGERANT	R410A	R410A	R410A	R410A	R410A	R410A
VOLTAGE/PHASE/HZ	208 / 1 / 60	208 / 1 / 60	208 / 1 / 60	208 / 1 / 60	208 / 1 / 60	208 / 1 / 60
FLA / MCA / MOCP	0.5 / 11 / 28	0.5 / 11 / 28	0.5 / 11 / 28	0.5 / 11 / 28	0.5 / 11 / 28	0.5 / 11 / 28
MANUFACTURER	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI
MODEL	TRUYA012KA70NA	TRUYA012KA70NA	TRUYA012KA70NA	TRUYA012KA70NA	TRUYA012KA70NA	TRUYA012KA70NA
EER / SEER	13.3 / 21.3	13.3 / 21.3	13.3 / 21.3	13.3 / 21.3	13.3 / 21.3	13.3 / 21.3
NOTES	1-6	1-6	1-6	1-6	1-6	1-6

NOTES:

1. PROVIDE PROGRAMMABLE FACTORY MOUNTED HARD WIRED THERMOSTAT WITH TOUCHSCREEN AND HUMIDITY CONTROL.
2. PROVIDE FACTORY DISCONNECTS FOR CONDENSING UNIT AND INDOOR UNIT.
3. PROVIDE WITH BLUE DIAMOND (ADVANCED) MINI CONDENSATE PUMP WITH RESERVOIR (208 V, OPTION X87-721). UNIT MARK CD-1. PROVIDE RESERVOIR WITH LEVEL SENSOR FLOW SWITCH TO SHUT UNIT DOWN IF CONDENSATE RISES ABOVE SET LIMITS.
4. CONDENSING UNITS SHALL BE GROUND MOUNTED ON AN EQUIPMENT PAD.
5. PROVIDE MANUFACTURERS RECOMMENDED PIPING BETWEEN INDOOR AND OUTDOOR UNIT. PIPING TO BE INSULATED WITH FIRERETARDANT ARMAFLEX THAT COMPLIES WITH 2024 NORTH CAROLINA MECHANICAL AND ENERGY CODES.
6. PROVIDE FACTORY INSTALLED BACNET COMMUNICATIONS CARD FOR INTEGRATION OF UNIT FOR MONITORING VIA EXISTING TERMINAL WIDE BAS.

AIR DISTRIBUTION DEVICE SCHEDULE

MARK	DESCRIPTION	FACE SIZE, W X H (IN.)	MANUFACTURER	MODEL	NOTES
A	ARCHITECTURAL SQUARE PANEL SUPPLY REGISTER	24 X 24	PRICE	SPD	1,2
B	SINGLE DEFLECTION SIDEWALL REGISTER	SEE PLANS	PRICE	600	2,3,5
C	4' 0" LINEAR SLOT SUPPLY DIFFUSER - SLOT QTY: 1, SLOT WIDTH: 1"	-	PRICE	SDS	2,4,5,7,9
D	4' 0" LINEAR SLOT SUPPLY DIFFUSER - SLOT QTY: 1, SLOT WIDTH: 1-1/2"	-	PRICE	SDS	2,4,5,6,7
E	4' 0" LINEAR SLOT SUPPLY DIFFUSER - SLOT QTY 1, SLOT WIDTH: 1"	-	PRICE	SDS	2,4,5,7,8
F	PERFORATED RETURN/EXHAUST GRILLE	SEE PLANS	PRICE	10	2,3,5
G	ALUMINUM TRANSFER GRILLE	SEE PLANS	PRICE	ATG	2,5

NOTES:

1. PROVIDE DEVICE FOR FOUR WAY THROW UNLESS NOTED OTHERWISE, THEN PROVIDE DIRECTIONAL BLOW CLIPS AS NECESSARY.
2. UNIT SHALL BE OF ALUMINUM CONSTRUCTION.
3. PROVIDE INTEGRAL OPPOSED BLADE DAMPER FOR DUCT MOUNTED APPLICATIONS FOR BALANCING.
4. PROVIDE PRICE SDS MOUNTING STYLE SUITABLE FOR APPLICATION.
5. PROVIDE BORDER TYPE SUITABLE FOR INDIVIDUAL LOCATIONS.
6. AIR TERMINAL TO BE SINGLE DIRECTION HORIZONTAL THROW PATTERN IN DIRECTION SHOWN ON PLAN.
7. PROVIDE AND INSTALL 4' 0" SDB PLENUM (OR APPROVED EQUAL) WITH CONNECTION SIZE INDICATED ON PLANS.
8. UNIT TO BE SINGLE DIRECTION VERTICAL DOWN THROW PATTERN.
9. UNIT TO BE DOUBLE DIRECTION HORIZONTAL THROW PATTERN.

EXHAUST FAN SCHEDULE

MARK	EF-01
FAN TYPE	DOWNBLAST
MANUFACTURER	GREENHECK
MODEL	G-095-VG
AIRFLOW (CFM)	500
ESP (IN. W.G.)	0.65
RPM	1626
MOTOR POWER (HP)	1/6
VOLTAGE / PHASE / HZ	208 / 1 / 60
WEIGHT (LBS)	45
NOTES	1 - 5

NOTES:

1. FACTORY MOUNTED NEC COMPLIANT DISCONNECT
2. BACKDRAFT DAMPER
3. SOLID STATE SPEED CONTROL
4. DIRECT DRIVE
5. THERMAL OVERLOAD MOTOR

VAV AHU SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

INDOOR UNIT DATA		
INDOOR UNIT MARK	SAHU-01	SAHU-02
INDOOR UNIT LOCATION	MECHANICAL 104	MECHANICAL 304
INDOOR UNIT MANUFACTURER	TRANE	TRANE
INDOOR UNIT MODEL	ODYSSEY - TWE072K4B	ODYSSEY - TWE180K4B
COOLING DATA		
TOTAL NOMINAL CAPACITY (BTU/HR)	72,000	180,000
SUPPLY AIRFLOW (CFM)	2,400	5,830
MINIMUM OUTSIDE AIRFLOW (CFM)	260	450
COOLING ENTERING MIXED AIR TEMP. (DB °F)	75.3	75.5
LEAVING AIR TEMP. DB/WB (°F)	55.0 / 54.5	55.0 / 54.5
ESP (IN. W.G.)	0.75	1.2
HEATING DATA		
TOTAL GROSS CAPACITY @ 22°F AMBIENT AND 70°F SPACE TEMP (BTU/HR)	44,500	114,200
ELECTRICAL DATA		
FAN MOTOR (HP)	2	5
INDOOR UNIT VOLTAGE/PHASE/HZ	460 / 3 / 60	460 / 3 / 60
INDOOR UNIT UNIT FLA	3.3	7.1
MCA / MOCP	5 / 15	9 / 15
OUTDOOR UNIT DATA		
OUTDOOR UNIT MARK	SCU-01	SCU-02
OUTDOOR UNIT LOCATION	MECHANICAL YARD 103	MECHANICAL YARD 103
REFRIGERANT	R-454B	R-454B
OUTDOOR UNIT VOLTAGE/PHASE/HZ	460 / 3 / 60	460 / 3 / 60
MCA / MOCP	17 / 20	33 / 40
OUTDOOR UNIT MANUFACTURER	TRANE	TRANE
OUTDOOR UNIT MODEL	ODYSSEY - TWA072K4D	ODYSSEY - TWA180K4D
EER / IEER	11.2 / 14.1	10.8 / 13.5
NOTES	1-10	1-9

NOTES:

1. PROVIDE PROGRAMMABLE FACTORY MOUNTED WIRELESS THERMOSTAT WITH TOUCHSCREEN AND HUMIDITY CONTROL. INTEGRATE WITH BAS.
2. PROVIDE UNIT WITH INTEGRAL FLOW SWITCH TO SHUT UNIT DOWN IF CONDENSATE RISES ABOVE SET LIMITS
3. PROVIDE FACTORY DISCONNECTS FOR CONDENSING UNIT AND INDOOR UNIT
4. CONDENSING UNITS SHALL BE MOUNTED ON CONCRETE HOUSEKEEPING PAD SUITABLE FOR OUTDOOR CONDITIONS.
5. UNIT TO HAVE 100% ECONOMIZER MODE. SEE CONTROLS SCHEMATIC ON M701 FOR MORE INFORMATION.
6. PROVIDE MANUFACTURERS RECOMMENDED PIPING BETWEEN INDOOR AND OUTDOOR UNIT. PIPING TO BE INSULATED WITH FIRE RETARDANT ARMAFLEX THAT COMPLIE WITH 2024 NC MECHANICAL AND ENERGY CODES
7. PROVIDE BACNET COMMUNICATION INTERFACE FOR CONNECTION TO EXISTING TERMINAL BUILDING AUTOMATION SYSTEM FOR CONTROL AND MONITORING.
8. PROVIDE UNIT WITH 2 INCH MERV 13 FILTERS AND RUBBER ISOLATORS
9. UNIT TO HAVE FACTORY INSTALLED REFRIGERANT LEAK DETECTION SYSTEM.
10. FILTER RACK FOR UNIT SHALL BE FIELD CONVERTED TO ALLOW FOR USE OF 2 INCH DEEP PANEL FILTERS PER MANUFACTURER CUTSHEET.

EXTERIOR LOUVER SCHEDULE

MARK	LV-01	LV-02	LV-03	LV-04
AIRFLOW (MIN / MAX CFM)	260 / 2400	450 / 5830	150 / 150	150 / 150
INTAKE OR EXHAUST	INTAKE	INTAKE	INTAKE / EXHAUST	INTAKE / EXHAUST
OVERALL DIMENSIONS (WxH, IN.)	78" x 18"	120" X 24"	26" X 14"	26" X 14"
MAX. PRESSURE DROP (IN. W.G.)	0.10	0.10	0.01	0.01
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL	EHH-501	EHH-501	EHH-501	EHH-501
NOTES	1 - 4	1 - 4	1 - 5	1 - 5

NOTES:

1. WIND-DRIVEN LOUVER CONSTRUCTED OF HEAVY GAUGE ALUMINUM WITH BIRDSCREEN, EXTENDED SILL, AND KYNAR FINISH IN ARCH SELECTED COLOR.
2. DRAINABLE STATIONARY 5" DEEP LOUVER CONSTRUCTED OF 16ga. GALVANIZED STEEL. 50% FREE AREA, WITH INTEGRAL BIRD SCREEN AND WATER STOP.
3. PERFORMANCE OF LOUVER SHALL BE CERTIFIED BY AMCA PUBLICATION 500L, 550 AND 540.
4. PROVIDE CORROSIVE RESISTANT COATING IN ARCHITECTURAL APPROVED COLOR.
5. LOUVER TO BE USED FOR NATURAL CROSSFLOW VENTILATION AND AIRFLOW (MIN. / MAX.) WAS USED FOR SIZING PURPOSES ONLY.

ROOF VENT SCHEDULE

MARK	GV-01	GV-02	GV-03
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
MODEL	FGR-20X36	FGR-26X46	FGR-24X24
AIRFLOW (CFM)	1000	5525	2,400
THROAT SIZE, W X H (IN.)	20 X 36	26 X 46	24 X 24
THROAT AREA (FT*2)	5	8	4
MAX. PRESSURE DROP (IN. W.G.)	0.01	0.075	0.065

NOTES:

1. PROVIDE ROOF VENT CONSTRUCTED OF HEAVY GAUGE ALUMINUM WITH BIRD/INSECT SCREEN.
2. ROOF CURB OF SUFFICIENT HEIGHT TO PROVIDE A MINIMUM OF 10" FROM FINISHED ROOF SURFACE TO AIR INLET.

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F-0493 * C-28

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: KMN
DRAWN BY: MA
DESIGNED BY: RSS
PROJECT NUMBER:
2003-0070-006
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SEAL:
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SHEET TITLE:
MECHANICAL SCHEDULES

SHEET ID:
M601

PROJECT STATUS:
100% BID SET

4/10/2025 3:01:53 PM Autodesk Docs://I003007006_ILM TO4 Rdwy Int Improv Design/2003007006_ILM_TO6_Parking Garage and Shuttle Plaza_MP_R24.rvt

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GENERAL NOTES

A. THIS DRAWING IS INTENDED TO SHOW THE GENERAL ARRANGEMENT OF A LIGHTNING PROTECTION SYSTEM FOR THIS BUILDING. THESE DRAWINGS DO NOT SHOW COMPLETE DETAIL AND BONDING REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SYSTEM INSTALLED IN ACCORDANCE WITH APPROVED LIGHTNING PROTECTION SYSTEM SHOP DRAWING AND A UL LIGHTNING PROTECTION INSPECTION CERTIFICATE CERTIFIED TO UL 96A.

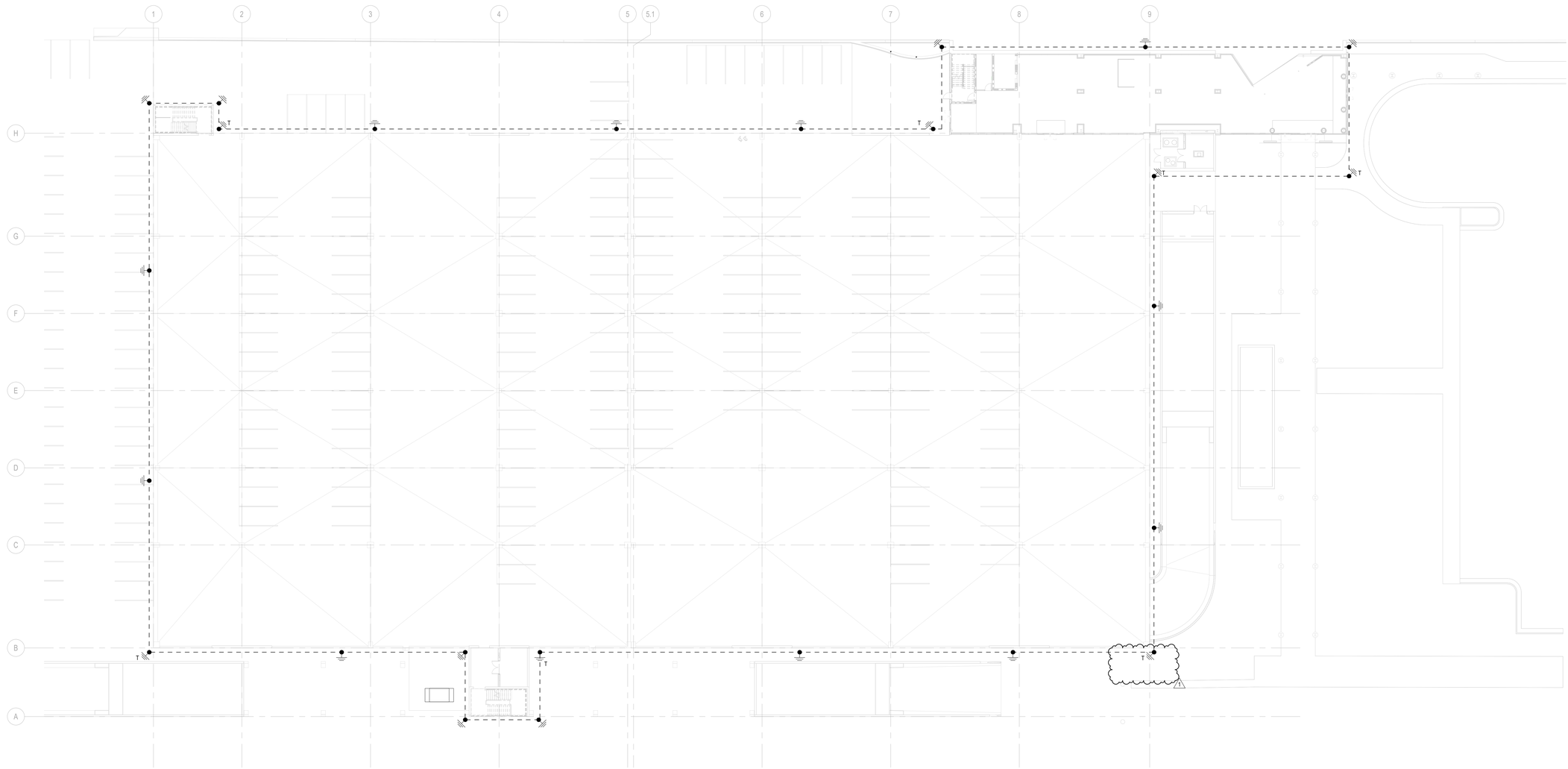
B. GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" BELOW GRADE AND 2'-0" FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE EARTH A MINIMUM OF 10'-0".

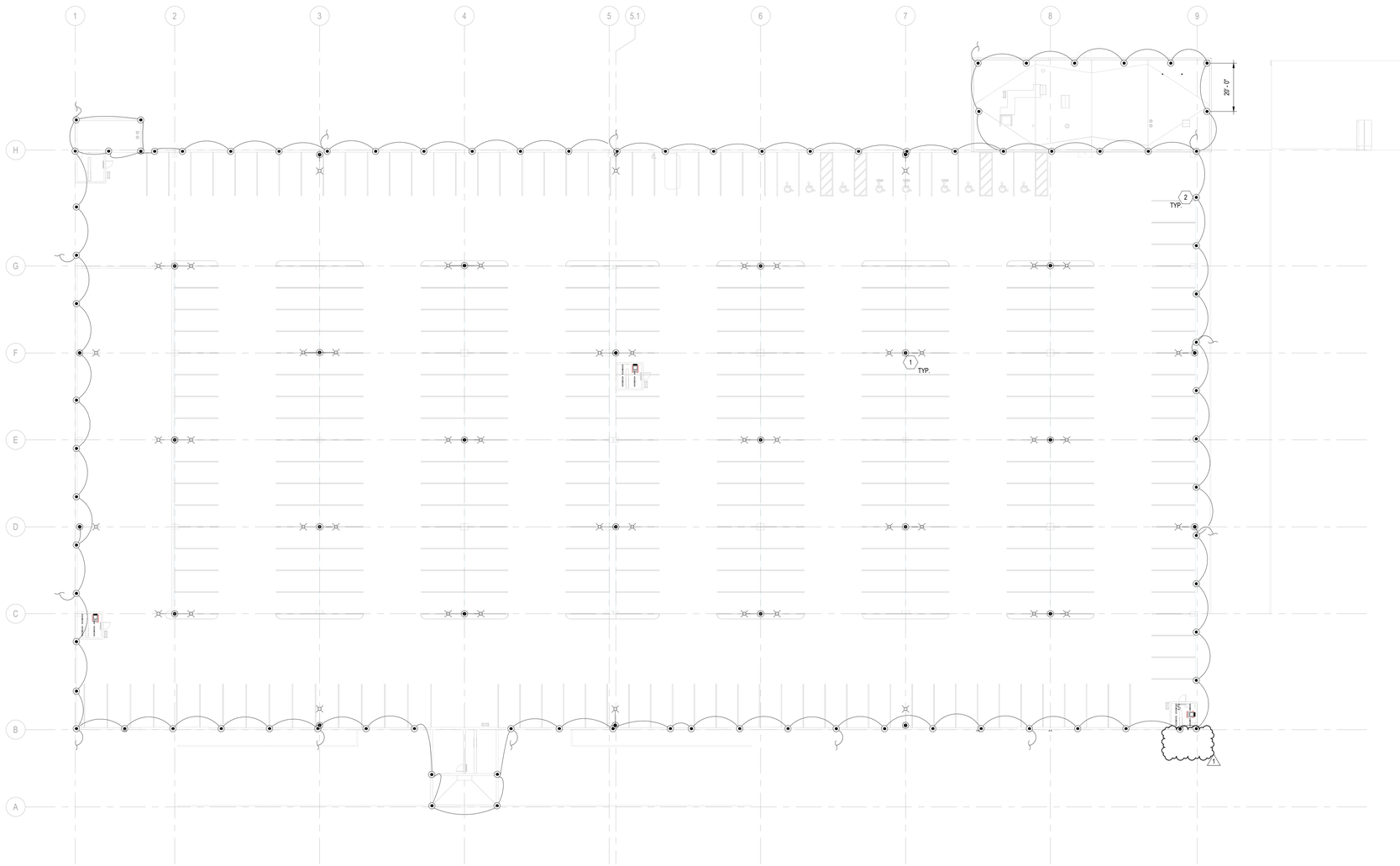
C. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODES.

D. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELECOMMUNICATIONS, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.

E. "AS-BUILT" DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.

F. COMPLETED INSTALLATION AS SHOWN SHALL BEAR U.L. MASTER LABEL. TO BE SECURED BY SYSTEM INSTALLER PER UL96A.


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GENERAL NOTES

A. THIS DRAWING IS INTENDED TO SHOW THE GENERAL ARRANGEMENT OF A LIGHTNING PROTECTION SYSTEM FOR THIS BUILDING. THESE DRAWINGS DO NOT SHOW COMPLETE DETAIL AND BONDING REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SYSTEM INSTALLED IN ACCORDANCE WITH APPROVED LIGHTNING PROTECTION SYSTEM SHOP DRAWING AND A UL LIGHTNING PROTECTION INSPECTION CERTIFICATE CERTIFIED TO UL 96A.

B. ALL LIGHTNING PROTECTION SYSTEM COMPONENTS (AIR TERMINALS, CONDUCTORS ETC.) SHALL BE COMPATIBLE WITH ROOF MATERIALS.

C. LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO INSURE THAT ALL POINTS ARE WITHIN 2'-0" OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, AND RIDGE ENDS, AND THAT MAXIMUM SPACING DOES NOT EXCEED 20'-0", AND THAT MINIMUM PROJECTION ABOVE OBJECT PROTECTED IS 10" (POINTS PROJECTING 24" MAY BE SPACED AT 25' MAX.).

D. MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR AND INSURE THAT ALL BENDS HAVE AT LEAST AN 8" RADIUS AND DO NOT EXCEED 90°.

E. ATTACH ALL EXPOSED ROOF, DOWN LEAD AND BONDING CABLES AT 3'-0" ON CENTER MAXIMUM. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.

F. GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" BELOW GRADE AND 2'-0" FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE EARTH A MINIMUM OF 10'-0".

G. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODES.

H. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELECOMMUNICATIONS, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.

I. "AS-BUILT" DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.

J. ALL MATERIAL TO BE UNDERWRITER'S LABORATORIES APPROVED WITH LABELS ON CONDUCTORS AT 10'-0" INTERVALS AND LABELS ON ALL AIR TERMINALS.

K. COMPLETED INSTALLATION AS SHOWN SHALL BEAR U.L. MASTER LABEL. TO BE SECURED BY SYSTEM INSTALLER PER UL96A.

L. ON HINGED EXHAUST FAN HOODS, CONDUCTORS SHALL BE ROUTED NEXT TO HINGES TO ALLOW OPENING OF EXHAUST HOODS WITHOUT REMOVING LIGHTNING PROTECTION CONDUCTORS. ON EXHAUST FAN HOODS THAT ARE REMOVABLE FOR ACCESS TO MOTORS, ROUTE CONDUCTORS SO AS TO ALLOW REMOVAL.

M. CABLE, BONDING PLATES AND AIR TERMINALS SHALL BE ARRANGED SO THAT COVERS AND ACCESS TO EQUIPMENT WILL NOT BE RESTRICTED. COORDINATE WITH EQUIPMENT MANUFACTURER'S INSTALLATION DRAWINGS.

N. BOND ALL VENTS, DRAINS, PIPING AND METAL COMPONENTS TO THE LIGHTNING PROTECTION SYSTEM.

O. BIMETALLIC FITTINGS SHALL BE USED FOR THE CONNECTION OF ALUMINUM ROOF CONDUCTORS TO COPPER DOWN CONDUCTORS AND WHEN JOINING METALS THAT ARE NOT GALVANICALLY COMPATIBLE.

KEYNOTES

1 POLE MOUNTED AIR TERMINAL, ROUTE DOWN CONDUCTOR ON THE OUTSIDE OF THE POLE THROUGH THE POLEBASE TO THE LEVEL BELOW ROUTE ALL DOWN CONDUCTORS TO BURIED GROUND LOOP.

2 COORDINATE AIR TERMINAL MOUNTING WITH TOP RAILING, COORDINATE ROUTING OF BONDING AND DOWN CONDUCTORS IN THE FIELD.

PN

N

A1 LIGHTNING PROTECTION PLAN

SCALE: 3/64" = 1'-0"

16 0 16 32 48

SCALE: 3/64" = 1'-0"

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: BWG
DESIGNED BY: CRD
PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
LIGHTNING PROTECTION PLAN

SHEET ID:
EG131

PROJECT STATUS:
100% BID SET

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GENERAL NOTES

A. REFER TO SHEET EL601 FOR THE LIGHTING FIXTURE SCHEDULE

B. ALL EXTERIOR LUMINAIRES CONTROLLED VIA PHOTOCELL VIA LIGHTING SYSTEM CONTROL.

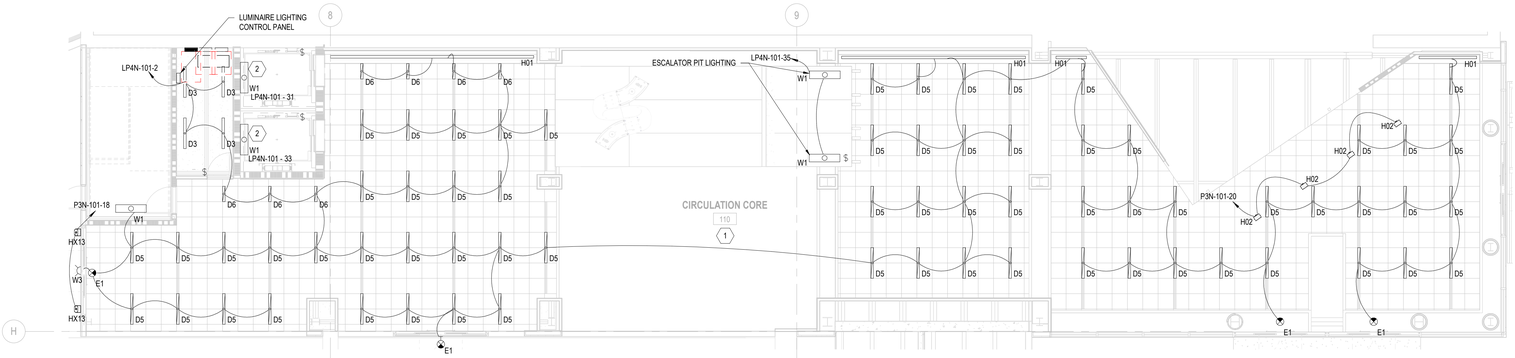
C. NEW LUMINAIRES WITH "HX" OR "HXDX" DESIGNATIONS ARE BEING DESIGNED BY HARTRANFT LIGHTING DESIGN. SEE HARTRANFT PROVIDED LUMINAIRE SCHEDULES ON SHEETS EL601 AND EL601

D. LUMINAIRES WITH RGBW CAPABILITIES ARE TO BE CONTROLLED VIA DMX LIGHTING CONTROL SYSTEM. LOCATED IN ELECTRICAL ROOM 102. SEE LUMINAIRE SCHEDULES ON SHEET EL601 AND EL602 LUMINAIRES CONTROLLED VIA DMX LIGHTING CONTROL SYSTEM.

KEYNOTES

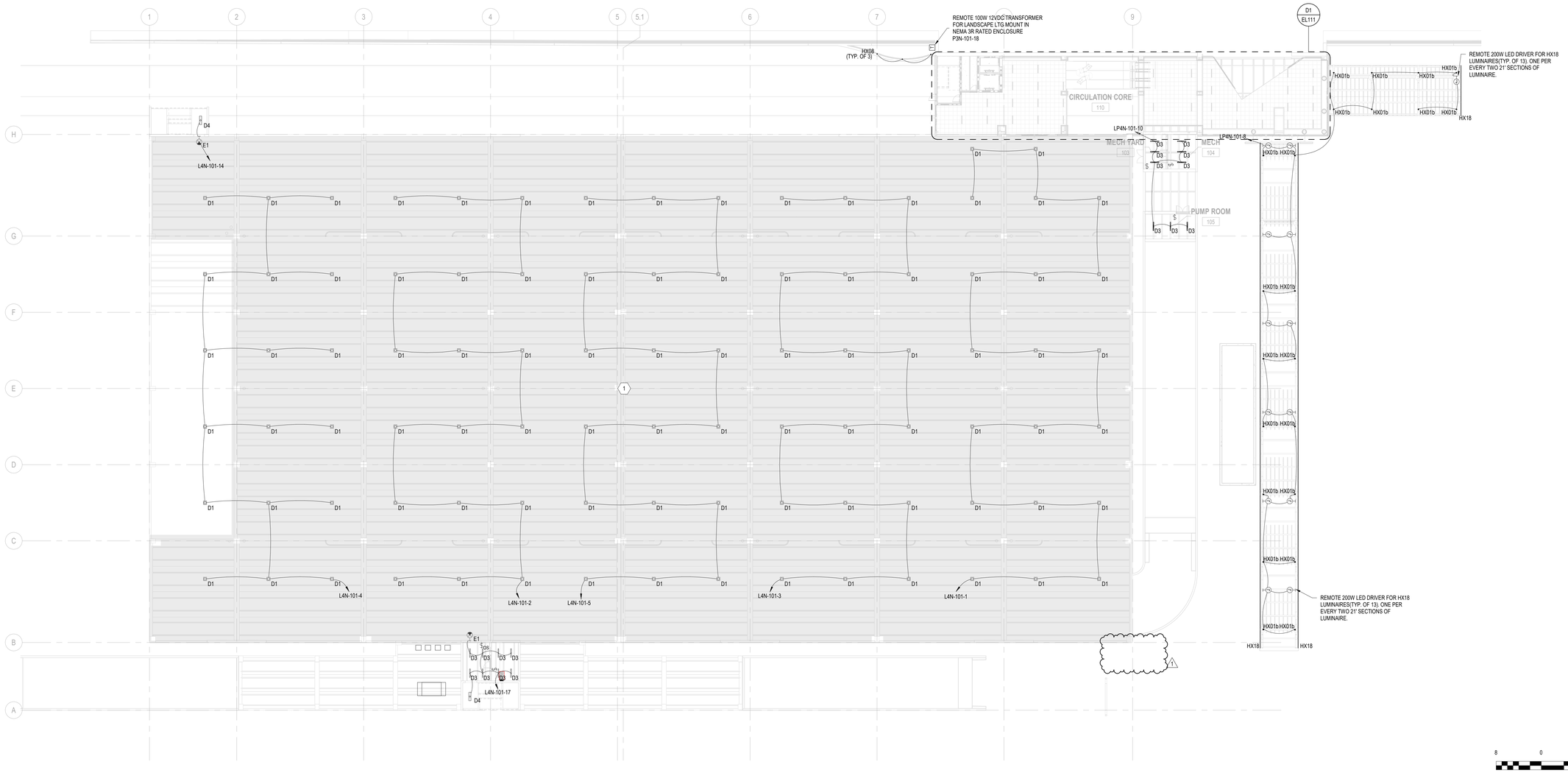
1 LUMINAIRES SHALL BE CONTROLLED BY LUMINAIRE LIGHTING CONTROLLER AND PROGRAMMED TIME SCHEDULE, TYPICAL FOR ALL AREAS WITHOUT LOCAL CONTROL.

2 ELEVATOR PIT LIGHTING. COORDINATE MOUNTING WITH ELEVATOR EQUIPMENT LOCATION. PIT LIGHTING AND LIGHTING CONTROLS TO COMPLY WITH ASME 17.1.



D1 FIRST FLOOR ELECTRICAL LIGHTING PLAN - VERTICAL CORE

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



A1 FIRST FLOOR ELECTRICAL LIGHTING PLAN

SCALE: 3/64" = 1'-0"

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

SCALE: 3/64" = 1'-0"

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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REVISIONS

NO.	DESCRIPTION	DATE
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DATE ISSUED:	03/14/2025
REVIEWED BY:	RS&H
DRAWN BY:	BWG
DESIGNED BY:	CRD

PROJECT NUMBER:
2003-0070-006

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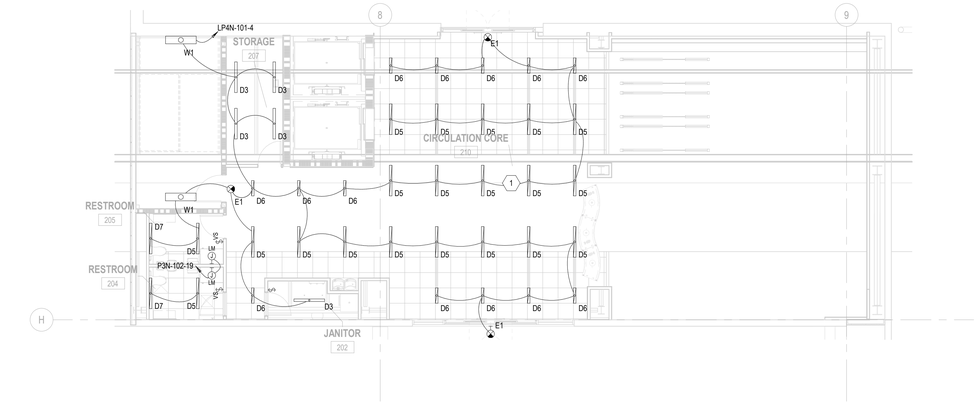
SHEET TITLE:
FIRST FLOOR ELECTRICAL LIGHTING PLAN

SHEET ID:
EL111

PROJECT STATUS:
100% BID SET

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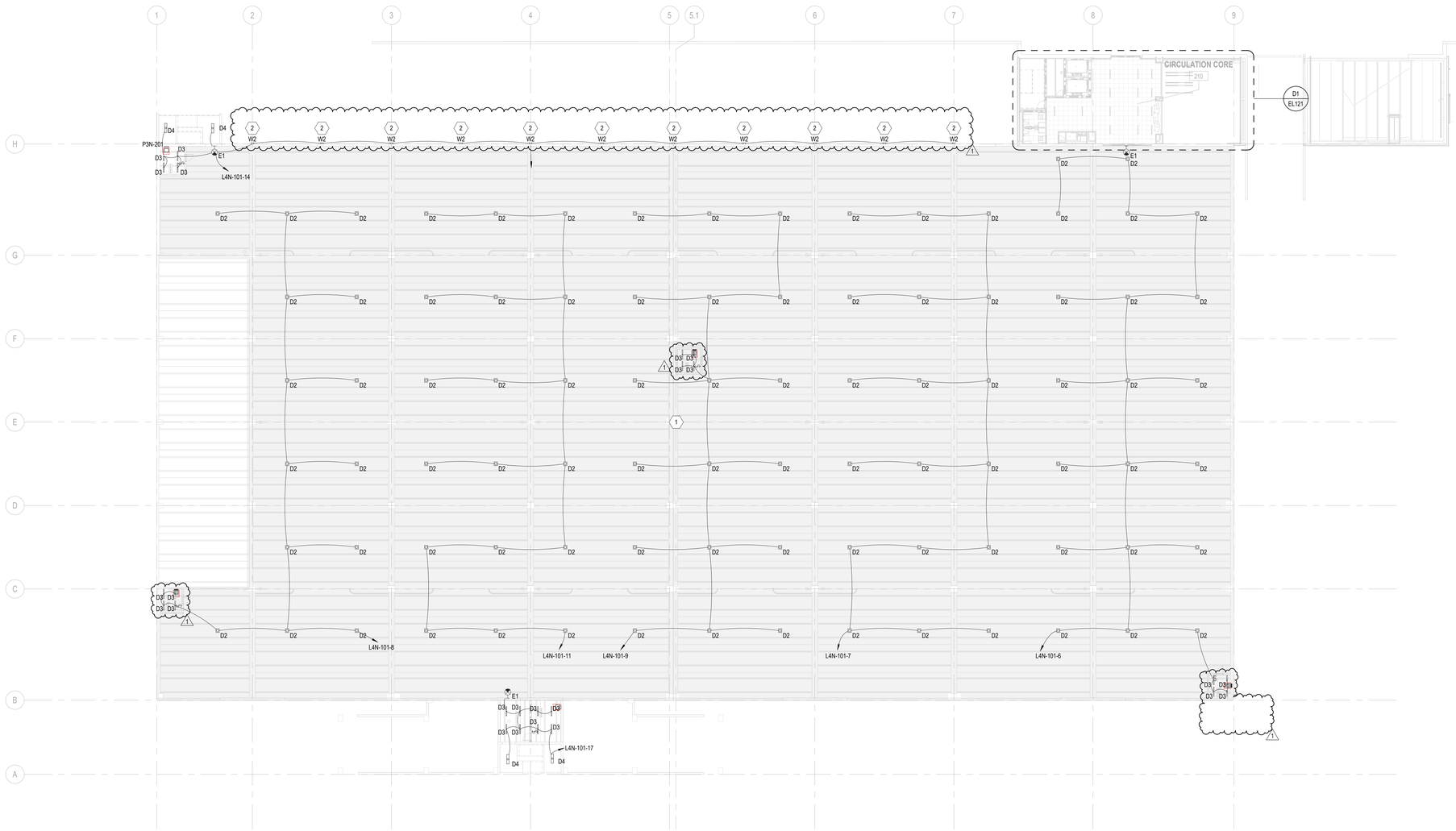
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D1

SECOND FLOOR ELECTRICAL LIGHTING PLAN - VERTICAL CORE

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



PN

N

A1

SECOND FLOOR ELECTRICAL LIGHTING PLAN

SCALE: 3/64" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET EL601 FOR THE LIGHTING FIXTURE SCHEDULE

B. ALL EXTERIOR LUMINAIRES CONTROLLED VIA PHOTOCELL VIA LIGHTING SYSTEM CONTROL.

C. NEW LUMINAIRES WITH "H0X" OR "HX0X" DESIGNATIONS ARE BEING DESIGNED BY HARTRANFT LIGHTING DESIGN. SEE HARTRANFT PROVIDED LUMINAIRE SCHEDULES ON SHEETS EL601 AND EL601

D. LUMINAIRES WITH RGBW CAPABILITIES ARE TO BE CONTROLLED VIA DMX LIGHTING CONTROL SYSTEM. LOCATED IN ELECTRICAL ROOM 102. SEE LUMINAIRE SCHEDULES ON SHEET EL601 AND EL602 LUMINAIRES CONTROLLED VIA DMX LIGHTING CONTROL SYSTEM.

KEYNOTES

1 LUMINAIRES SHALL BE CONTROLLED BY LUMINAIRE LIGHTING CONTROLLER AND PROGRAMMED TIME SCHEDULE. TYPICAL FOR ALL AREAS WITHOUT LOCAL CONTROL.

2 LUMINAIRE TO BE MOUNTED TO THE EXTERIOR SURFACE OF THE GARAGE 2' AFF OF 2ND LEVEL.

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

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DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: BWG
DESIGNED BY: CRD
PROJECT NUMBER: 2003-0070-006

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SHEET TITLE:
SECOND FLOOR ELECTRICAL LIGHTING PLAN

SHEET ID:
EL121

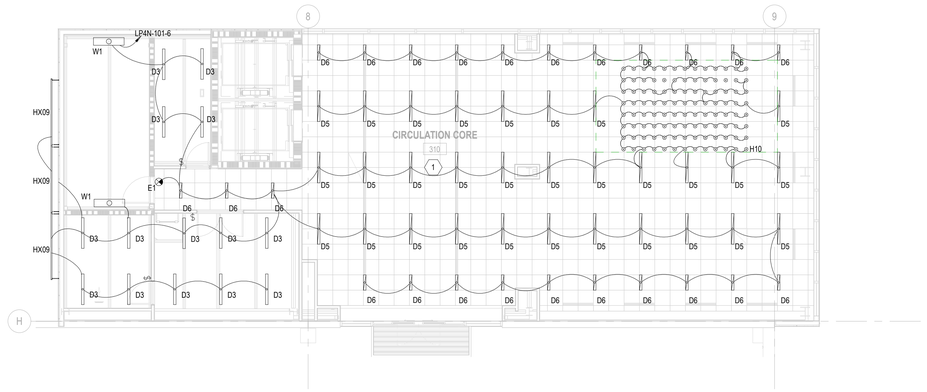
PROJECT STATUS:
100% BID SET

8 0 8 16
SCALE: 1/8" = 1'-0"

16 0 16 32 48
SCALE: 3/64" = 1'-0"

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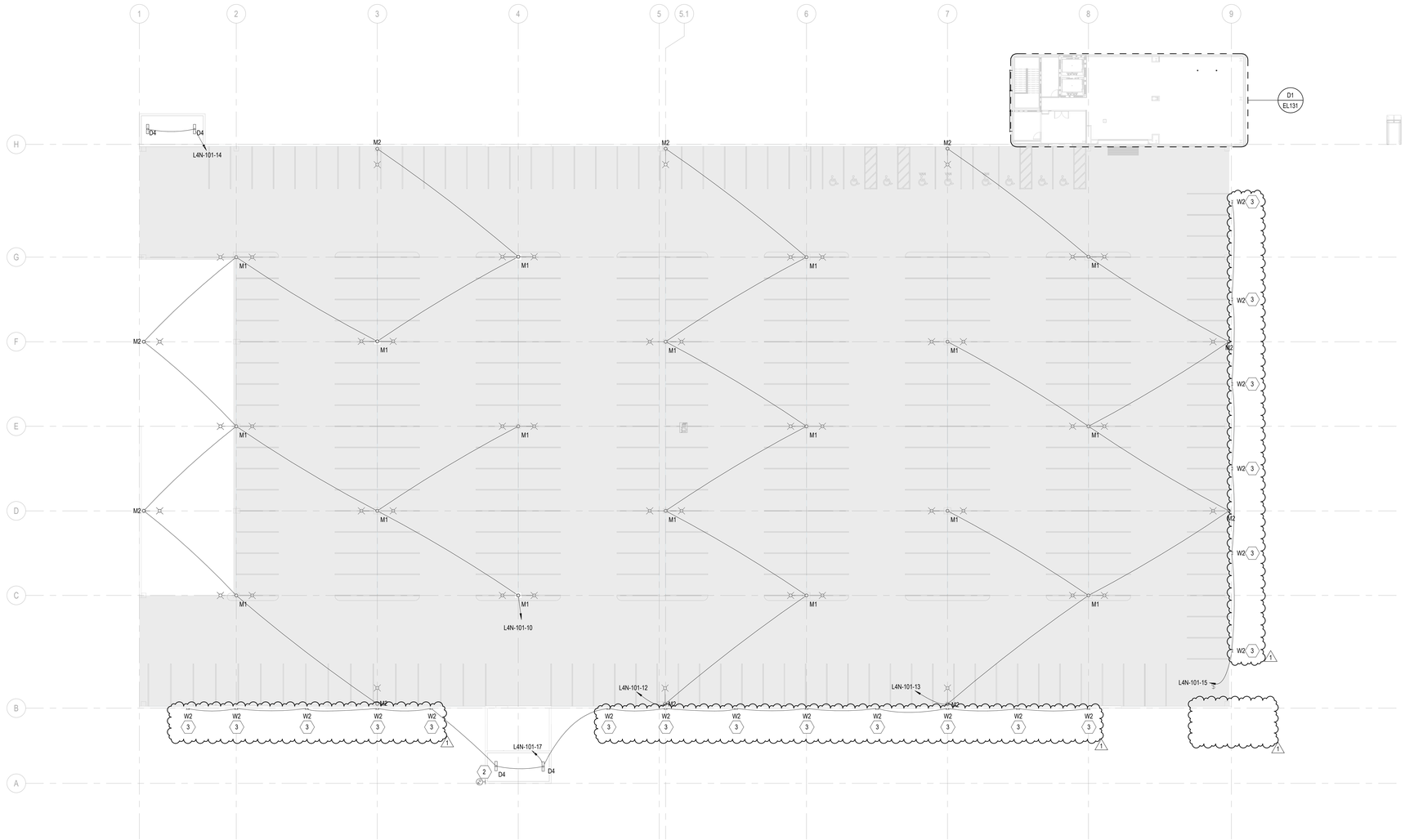
PN

N

D1

ROOF LEVEL VERTICAL CORE RCP

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



PN

N

A1

ROOF ELECTRICAL LIGHTING PLAN

SCALE: 3/64" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET EL601 FOR THE LIGHTING FIXTURE SCHEDULE

B. ALL EXTERIOR LUMINAIRES CONTROLLED VIA PHOTOCELL VIA LIGHTING SYSTEM CONTROL.

C. NEW LUMINAIRES WITH "HOX" OR "HXOX" DESIGNATIONS ARE BEING DESIGNED BY HARTRANFT LIGHTING DESIGN. SEE HARTRANFT PROVIDED LUMINAIRE SCHEDULES ON SHEETS EL601 AND EL601

D. LUMINAIRES WITH RGBW CAPABILITIES ARE TO BE CONTROLLED VIA DMX LIGHTING CONTROL SYSTEM. LOCATED IN ELECTRICAL ROOM 102. SEE LUMINAIRE SCHEDULES ON SHEET EL601 AND EL602 LUMINAIRES CONTROLLED VIA DMX LIGHTING CONTROL SYSTEM.

KEYNOTES

1 LUMINAIRES SHALL BE CONTROLLED BY LUMINAIRE LIGHTING CONTROLLER AND PROGRAMMED TIME SCHEDULE, TYPICAL FOR ALL AREAS WITHOUT LOCAL CONTROL.

2 PROVIDE PHOTOCELL AND MOUNT AT ROOF LEVEL FACING NORTH FOR CONTROL OF EXTERIOR LIGHTING.

3 LUMINAIRE TO BE MOUNTED TO THE EXTERIOR SURFACE OF THE GARAGE 2' AFF OF ROOF LEVEL.

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PROJECT TITLE:

ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

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REVISIONS

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DATE ISSUED:	03/14/2025
REVIEWED BY:	RS&H
DRAWN BY:	BWG
DESIGNED BY:	CRD

PROJECT NUMBER:

2003-0070-006

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SHEET TITLE:

THIRD FLOOR ELECTRICAL LIGHTING PLAN

SHEET ID:

EL131

PROJECT STATUS:

100% BID SET

8 0 8 16
SCALE: 1/8" = 1'-0"

16 0 16 32 48
SCALE: 3/64" = 1'-0"

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GENERAL NOTES

A. ALL FEEDER SIZES ARE INDICATED ON EP601 OR ON PANEL SCHEDULES.

B. SEATING OUTLETS MUST BE TR TYPE OUTLETS PER NFPA 70.

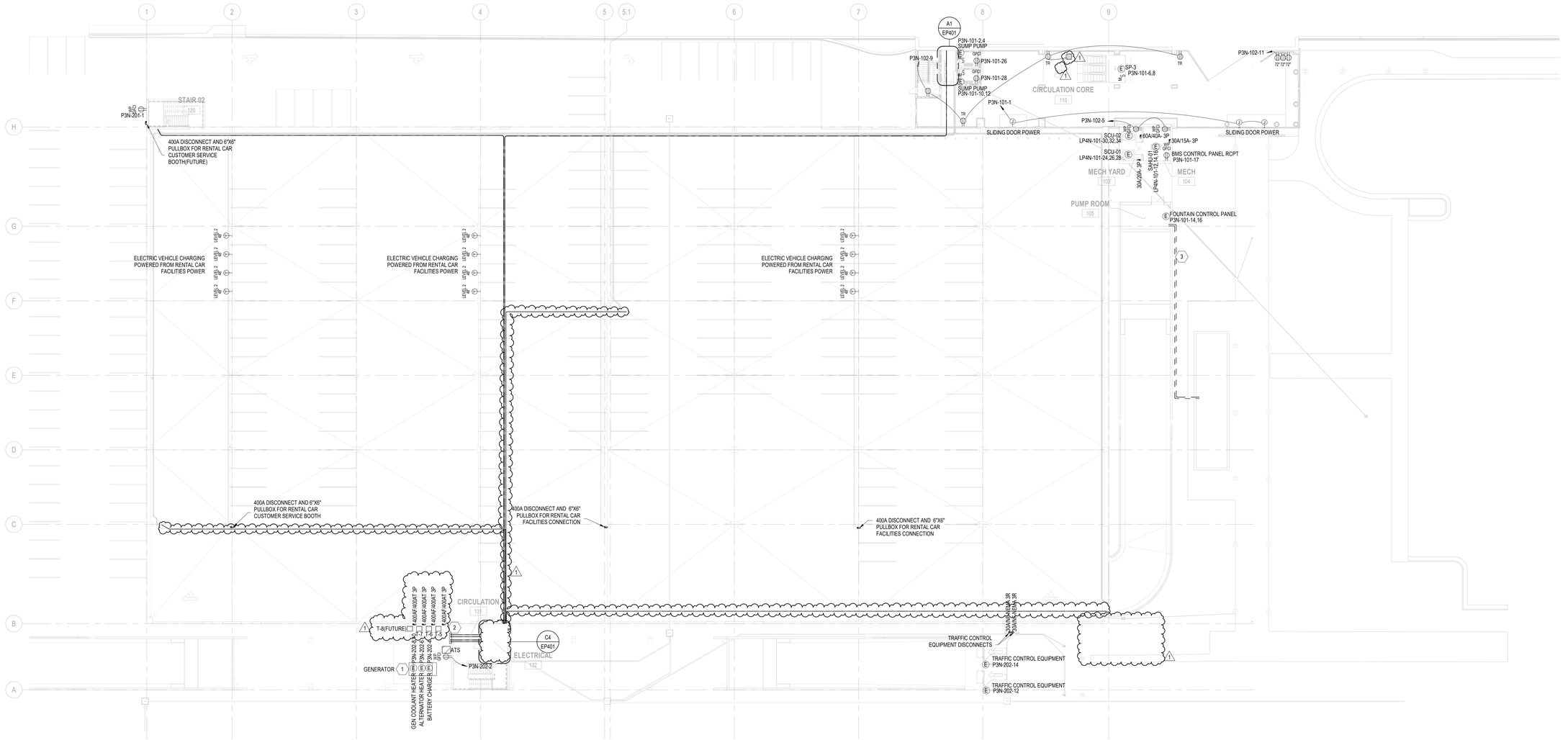
C. ALL CONDUIT ROUTING SHOWN IS APPROXIMATE. COORDINATE EXACT ROUTING WITH OTHER DISCIPLINES IN THE FIELD. SEE SHEET EP601 FOR CONDUIT SIZING.

KEYNOTES

1 PROVIDE 500KW DIESEL GENERATOR, WITH LEVEL 2 SOUNDS ATTENUATED ENCLOUSURE, AND A BELLY TANK SIZED FOR 24HR RUNTIME AT 80% LOAD. EXHAUST TO BE DIRECTED TO THE EXTERIOR OF THE GARAGE.

2 5'x1'x1' WALL MOUNTED PULL BOX MOUNTED 3' AFG. CONDUIT FROM SWITCHBOARD TO PULLBOX TO BE ROUTED OVERHEAD. CONDUITS FROM PULLBOX TO TRANSFORMERS ARE TO BE ROUTED BELOW GRADE. COUNDUIT ROUTING SHOWN IS APPROXIMATE COORDINATE EXACT ROUTING IN THE FIELD.

3 2- MIN. 1" CONDUITS FOR FOUNTAIN LIGHTING AND CONTROLS. COORDINATE REQUIREMENTS WITH MANUFACTURER.



PN

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A1 FIRST FLOOR POWER PLAN

SCALE: 3/64" = 1'-0"

8 0 8 16

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

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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REVISIONS

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1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	RS&H
DRAWN BY:	BWG
DESIGNED BY:	CRD

PROJECT NUMBER:
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SHEET TITLE:
FIRST FLOOR ELECTRICAL POWER PLAN

SHEET ID:
EP111

PROJECT STATUS:
100% BID SET

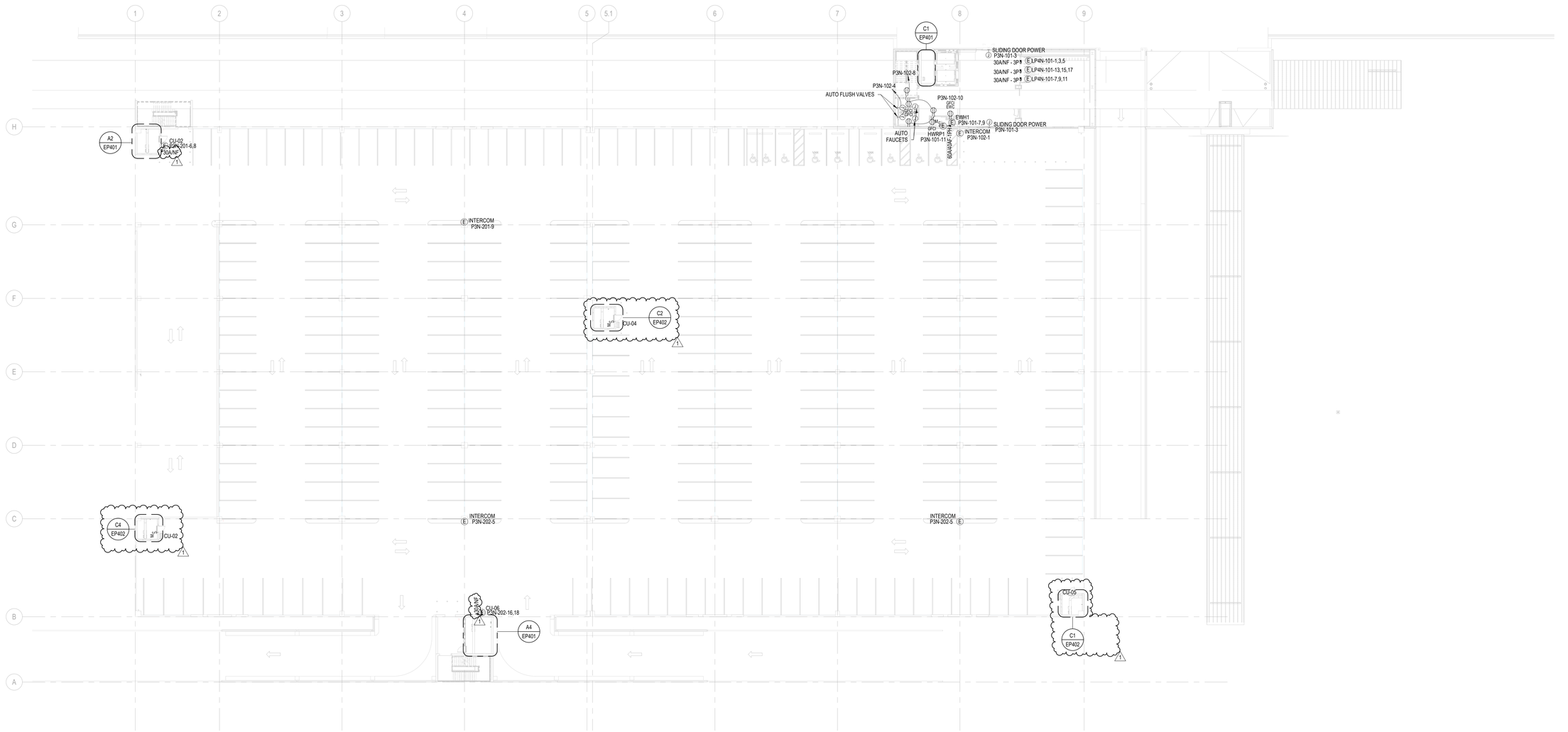
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GENERAL NOTES

A. ALL FEEDER SIZES ARE INDICATED ON EP601 OR ON PANEL SCHEDULES.

B. SEATING OUTLETS MUST BE TR TYPE OUTLETS PER NFPA 70.

C. ALL CONDUIT ROUTING SHOWN IS APPROXIMATE. COORDINATE EXACT ROUTING WITH OTHER DISCIPLINES IN THE FIELD. SEE SHEET EP601 FOR CONDUIT SIZING.



PN

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A1 SECOND FLOOR ELECTRICAL POWER PLAN

SCALE: 3/64" = 1'-0"

16 0 16 32 48

SCALE: 3/64" = 1'-0"

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DATE ISSUED:	03/14/2025
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DRAWN BY:	BWG
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PROJECT NUMBER:
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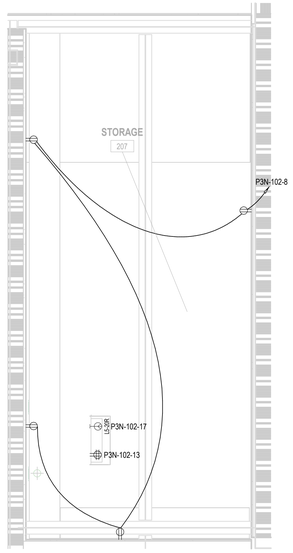
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SHEET TITLE:
SECOND FLOOR ELECTRICAL POWER PLAN

SHEET ID:
EP121

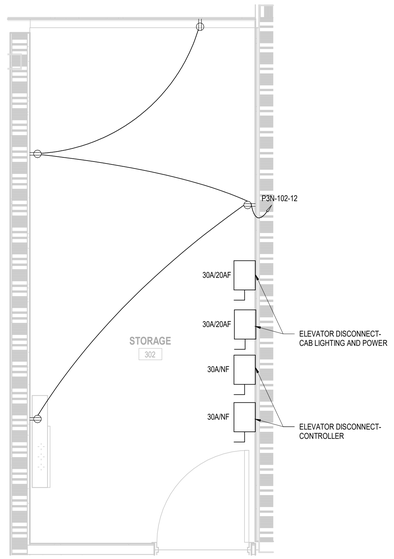
PROJECT STATUS:
100% BID SET

4/10/2025 9:39:50 AM Autodesk Docs://1003007004_ILM TO4 Rdwy Intl Improv Design/2003007006_ILM_TO6_Parking Garage and Shuttle Plaza_E_R24.rvt



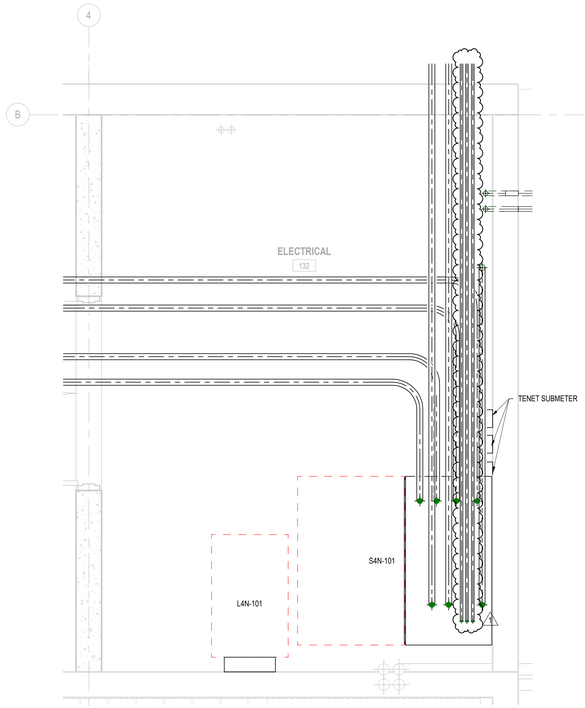
PN N C1 ENLARGED JANITOR CLOSET 202

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



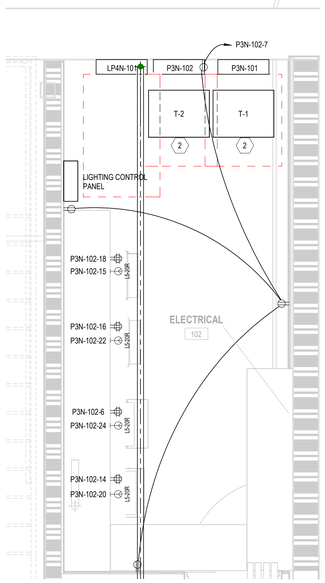
PN N C2 ENLARGED STORAGE 302

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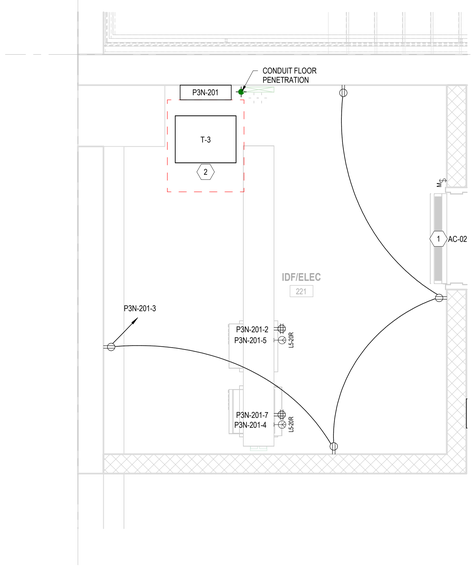
PN N C4 ENLARGED ELECTRICAL 132

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



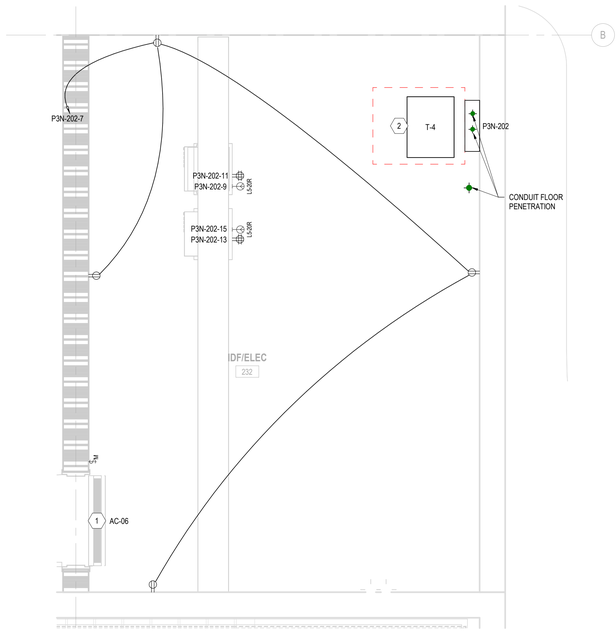
PN N A1 ENLARGED ELECTRICAL ROOM 102

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



PN N A2 ENLARGED IDF/ ELECTRICAL ROOM 221

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



PN N A4 ENLARGED IDF/ELECTRICAL ROOM 232

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

KEYNOTES

1 INDOOR UNIT POWER FEED FROM OUTDOOR UNIT. FURNISH AND INSTALL TOGGLE SWITCH TO DISCONNECT ALL UNGROUNDED CONDUCTORS TO INDOOR UNIT.

2 TRANSFORMER SUSPENDED FROM STRUCTURE. SEE C1 ON SHEET EP502 FOR MOUNTING DETAIL.

2 0 2 4

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

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: BWG
DESIGNED BY: CRD
PROJECT NUMBER:
2003-0070-006

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SEAL:

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SHEET TITLE:
ENLARGED ELECTRICAL PLANS

SHEET ID:
EP401

PROJECT STATUS:
100% BID SET

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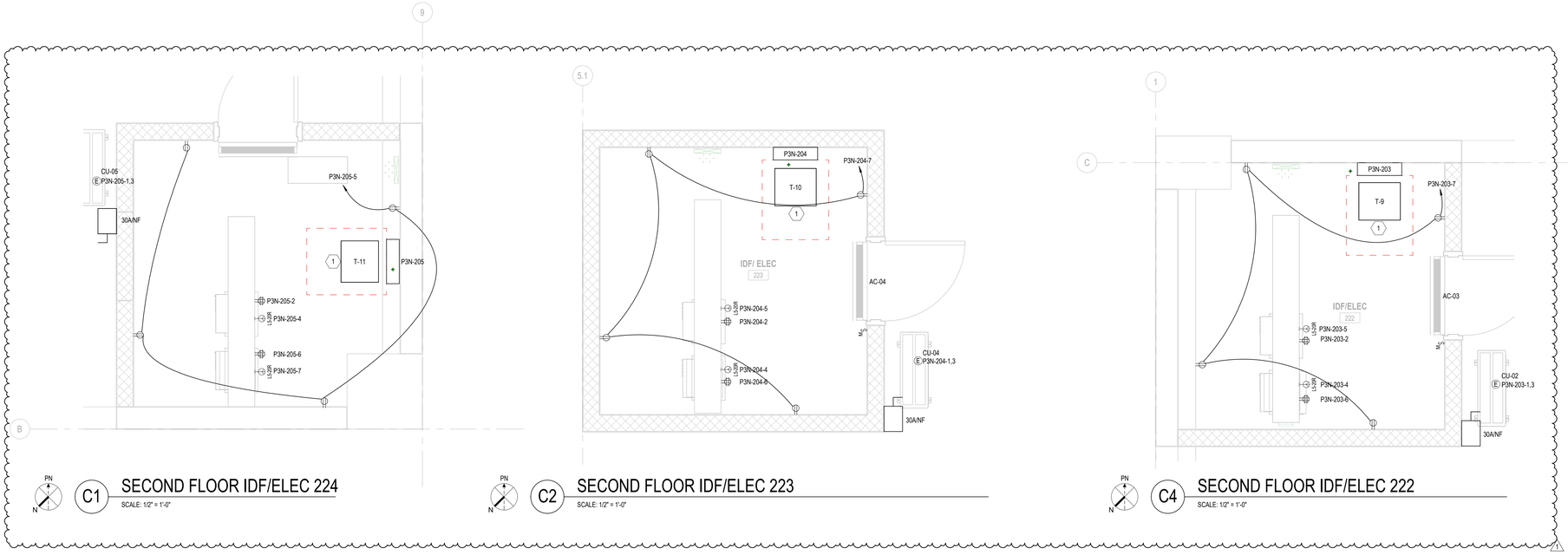
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GENERAL NOTES

A. ROUTE NEW CONDUIT FOR SHUTTLE STOP POWER BELOW GRADE TO NEW POWER HANDHOLE SEE SHEET E-306 IN VOL. 3 FOR LOCATION. CIRCUIT TO EXISTING SPARE BREAKERS IN EXISTING MPZM1 SHEET E-303 IN VOL. 3 FOR PANEL SCHEDULE. PROVIDE PHOTOCELL AND LIGHTING CONTACTOR, MOUNT TO MPZM1 MOUNTING STRUCTURE.

KEYNOTES

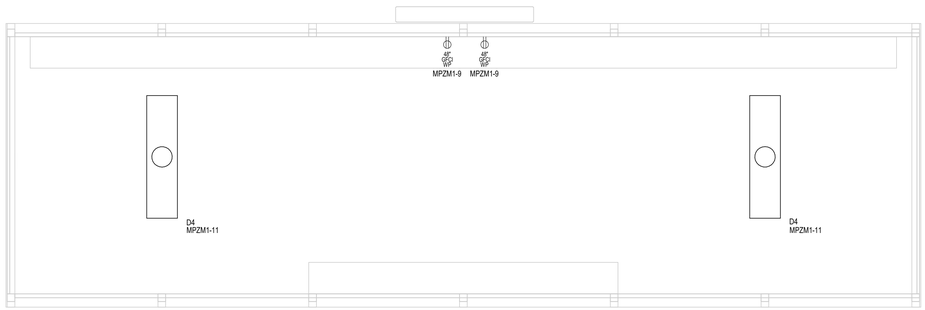
1 TRANSORFMER SUSPENDED FROM STRUCTURE, SEE C1 ON SHEET EP502 FOR MOUNTING DETAIL.



C1 SECOND FLOOR IDF/ELEC 224
SCALE: 1/2" = 1'-0"

C2 SECOND FLOOR IDF/ELEC 223
SCALE: 1/2" = 1'-0"

C4 SECOND FLOOR IDF/ELEC 222
SCALE: 1/2" = 1'-0"



SECURITY POLE
MPZM1-11 E

X1
MPZM1-11

X1
MPZM1-11

A1 SHUTTLE SHELTER ELECTRICAL PLAN
SCALE: 1/2" = 1'-0"

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

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F-0493 * C-28

Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: BWG
DESIGNED BY: CRD
PROJECT NUMBER:
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SEAL:
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SHEET TITLE:
ENLARGED ELECTRICAL PLANS

SHEET ID:
EP402

PROJECT STATUS:
100% BID SET

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LUMINAIRE SCHEDULE - CONSTRUCTION DOCUMENTATION

REVISION: REV.# NO. MM DD YYYY

PROJECT: ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS

DATE: 03 12 2025

SPECIFICATION NOTES FOLLOW THIS SCHEDULE AND ARE INCORPORATED HEREIN

LUMINAIRE TYPE	IMAGE	DESCRIPTION	LAMPING	MANUFACTURER and SERIES	CATALOG NUMBER	POWER SUPPLY/ CONTROL PROTOCOL	SYSTEM WATTS (W)	VOLTAGE(V)	DEPTH	MOUNTING	LOCATION	NOTES
EXTERIOR LIGHTING												
HX01		CYLINDER DOWNLIGHT TYPE IV DISTRIBUTION	3000K LED 2407 LUMENS 90 CRI	LUMINIS SYRIOS PRO	SYP600-L1L25-LD5-30K-MVOLT-SWK-SP-FINISH TBD-MG	INTEGRAL 0-10V DIMMING TO 1%	19	MVOLT	13"	SURFACE / BACKBOX	DRIVE CANOPY	OPERATING TEMP OF -22 DEGREE TO 113 DEGREE F BACKBOX WITH CONDUIT PUNCHOUTS MARINE GRADE FINISH
HX01a		CYLINDER DOWNLIGHT TYPE IV DISTRIBUTION	3000K LED LUMENS 90 CRI	LUMINIS SYRIOS PRO	SYP600-L1 MODIFIED 3000 LM OUTPUT-LD5-30K-MVOLT-SWK-SP-FINISH TBD-MG	INTEGRAL 0-10V DIMMING TO 1%	19	MVOLT	13"	SURFACE / BACKBOX	CANOPY PEDESTRIAN WALKWAY CANOPY	OPERATING TEMP OF -22 DEGREE TO 113 DEGREE F BACKBOX WITH CONDUIT PUNCHOUTS MARINE GRADE FINISH
HX01b		CYLINDER DOWNLIGHT TYPE III DISTRIBUTION	3000K LED LUMENS 90 CRI	LUMINIS SYRIOS PRO	SYP600-L1L25-LD3-30K-MVOLT-SWK-SP-FINISH TBD-MG	INTEGRAL 0-10V DIMMING TO 1%	19	MVOLT	13"	SURFACE / BACKBOX	PEDESTRIAN WALKWAY CANOPY	OPERATING TEMP OF -22 DEGREE TO 113 DEGREE F BACKBOX WITH CONDUIT PUNCHOUTS MARINE GRADE FINISH
HX02		4' LINEAR DIRECT VIEW ACCENT	RGBW LED 462 LUMENS - FULL ON	COLOR KINETICS VAYA TUBE, G2	316-100029-01	DMX	13.6	24DC	2.61"	SURFACE	DRIVE CANOPY PERLINS	EC TO PROVIDE ALL FEEDS, CONNECTORS, CAPS ETC TO FORM A COMPLETE WORKING SYSTEM
HX02a		1' LINEAR DIRECT VIEW ACCENT	RGBW LED 462 LUMENS - FULL ON	COLOR KINETICS VAYA TUBE, G2	316-100029-00	DMX	3.4	24DC	2.61"	SURFACE	DRIVE CANOPY PERLINS	EC TO PROVIDE ALL FEEDS, CONNECTORS, CAPS ETC TO FORM A COMPLETE WORKING SYSTEM
HX03		CYLINDER DOWNLIGHT TYPE III DISTRIBUTION	RGBW UPLIGHT 3000K LED DOWNLIGHT 2403 LUMENS DOWNLIGHT 349 LUMENS UPLIGHT 90 CRI	LUMINIS SYRIOS PRO	SYP600-L1L25-LD3-30K-MVOLT-SWK-SP-FINISH TBD-MG	INTEGRAL 0-10V DIMMING TO 1%	19	MVOLT	13"	SURFACE	DRIVE CANOPY OUTERMOST GIRDERS	OPERATING TEMP OF -22 DEGREE TO 113 DEGREE F BACKBOX WITH CONDUIT PUNCHOUTS MARINE GRADE FINISH
HX04		CANOPY DOWNLIGHT	3000K LED 1436 LUMENS 80 CRI	LUMINIS OCCULUS	OC750-L1L15-FLD-30K-MVOLT-DR10-SL-GL-CUSTOM COLOR TBD-MG	REMOTE 0-10V DIMMING	14	MVOLT	5.83"	RECESSED	TERMINAL ENTRIES	REQUIRES 7" CLEAR PLENUM IP66
HX05		INGRADE UPLIGHT	3000K LED 1453 LUMENS 80 CRI	HYDREL TIERRA	IGF6-SS-LED-P1-80CRI-30K-MVOLT-7 DEGREE-0T-SLCSR-CONDUIT ENTRIES TBD-IHL-ZT-FINISH TBD	INTEGRAL 0-10V DIMMING TO 1%	24	MVOLT	10.5"	INGRADE	TERMINAL ENTRY	INTERNAL HONEYCOMB LOUVER FOR GLARE CONTROL AIMING ADJUSTMENT 0 TO 20 DEGRESS
HX05a		FLAG POLE INGRADE UPLIGHT	3000K LED 4205 LUMENS 80 CRI	HYDREL M9700C	M9720C-DOOR MATERIAL TBD-P2-30K-MVOLT-NSP-FLC2DSR-CONDUIT ENTRIES TBD-GS-LDIM-FINISH TBD + ZINC UNDERCOAT	INTEGRAL 0-10V DIMMING TO 10%	35	MVOLT	16"	INGRADE	FLAG POLES	DOUBLE LENS, OPTICAL AND MECHANICAL AIMING SLIP RESISTANT LENS GLARE SHIELD
HX06					NOT USED							
HX07					NOT USED							
HX08		LANDSCAPE ACCENT	3000K LED 674 LUMENS 90 CRI	HYDREL ASPEN LED	ASPEN-A-P1-90CRI-30K-12-45DEG-WSL-350R-STK-IHL-C3-FINIS H + Z9- / REMOTE TRANSFORMER	REMOTE 12V TRANSFORMER	8	12	8.65"	STAKE	LANDSCAPE	WATERSHED LENS HONEYCOMB LOUVER 45 DEGREE CUT EXTERNAL CAP 350 DEGREE ROTATIONAL KNUCKLE
HX09		ARM MOUNTED SIGN LIGHTER	3000K LED 674 LUMENS 90 CRI	ELLIPTIPAR STYLE S175	S-175-H-8'-H-FINISH-M-V0-0-935-EL / HUBS AS REQUIRED-CANTILEVER HANGER WITH 24" ARM	ELDOLED 0-10V DIMMING TO 1%	13 PER FOOT	MVOLT	4" NOMINAL	SURFACE	GARAGE	FINISH PER ARCHITECT AIMING LOCKS WITH SET SCREWS FIELD SERVICABLE LIGHT ENGINE
HX10					NOT USED							
HX11					NOT USED							
HX12					NOT USED							
HX13		LED PROJECTOR	5500K LED 3000 LUMENS	ROSCO X-EFFECTS LED PROJECTOR	XFXLED-X-EFFEXTS-90-C (LENS TBD ACCESSORY TBD--S-F) 296000005101 / CUSTOM COLOR TBD	ONBOARD DIMMING AND SPEED CONTROLS	90	100-240 VAC		WALL MOUNT	GARAGE LOBBY	WEIGHT: 9 POUNDS PROVIDE BRACING AS REQUIRED FOR WALL MOUNTING
HX14					NOT USED							
HX14a					NOT USED							
HX15					NOT USED							
HX16					NOT USED							
HX17		RGBW TREE UPLIGHT	RGBW LED 1645 LUMENS FULL ON	COLOR KINETICS BURST POWERCORE	423-000030-FINISH TBD / FULL GLARE SHIELD / (1) LENS TO BE DETERMINED	DMX	31.3	MVOLT	10.75"	STAKE	PALM TREES DRIVE APPROACH	8 DEGREE BEAM ANGLE NATIVE FULL GLARE SHIELD...
HX18		RGBW FLEXIBLE DIRECT VIEW	RGBW LED	KELVIX SIGNWAVE 5	SWSS-LENGTH PER PLAN-RGBW-FEED POINT TBD-FEED LENGTH TBD-IP68 / END CAPS AS REQUIRED / SW-E-CH-AL-FLX-1M	DMX	4.6 PER FOOT	24V DC	1.12"	SURFACE	PEDESTRIAN WALKWAY CANOPY	POWER FEED EVERY 21 FEET FLEXIBLE ALUMINUM CHANNEL

SPECIFICATION NOTES (MUST BE INCLUDED ON DRAWINGS WITH LUMINAIRE SCHEDULE):

1 ELECTRICAL ENGINEER TO SPECIFY AND CONFIRM ALL VOLTAGES AND PROPERLY SIZE ALL REMOTE POWER SUPPLIES

2 CONTRACTOR SHALL PROVIDE LUMINAIRES AND LIGHTING EQUIPMENT THAT MEETS PERFORMANCE, AESTHETICS, AND MATERIAL AS NOTED IN THE WRITTEN LUMINAIRE SPECIFICATION. ALTERNATES OR SUBSTITUTIONS ARE NOT PERMITTED WITHOUT REVIEW AND APPROVAL BY THE LIGHTING DESIGNER. CONTRACTOR TO COORDINATE LEAD TIMES, DEPOSIT REQUIREMENTS, SHOP DRAWING DEVELOPMENT AND SUBMITTAL, ETC. TO ASSURE TIMELY DELIVERY IN ACCORDANCE WITH OVERALL PROJECT SCHEDULE. ALL PROPOSED SUBSTITUTIONS MUST BE SUBMITTED NO LESS THAN FOURTEEN (14) DAYS PRIOR TO THE BID DUE DATE. FAILURE TO SUBMIT PROPOSED SUBSTITUTIONS WITHIN THAT DEADLINE CONSTITUTES A GUARANTEE THAT THE SPECIFIED PRODUCTS WILL BE SUPPLIED.

3 INSTALLING CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL WIRING SCHEMES AND OTHER INSTALLATION DETAILS WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.

4 SUBSTANTIAL COMPLETION IN THIS CONTEXT REFERS TO COMPLETELY INSTALLED AND OPERATIONAL LIGHTING AND LIGHTING CONTROL SYSTEMS. CONTRACTOR SHALL VERIFY THE CORRECT INSTALLATION AND DIMMING OPERATION OF ALL LUMINAIRES, SENSORS, AND OF THE CONTROL SYSTEM AS AWHOLE PRIOR TO REQUESTING THE LIGHTING DESIGNER'S ATTENDANCE AT ANY FOCUSSING OR LEVEL SETTING SESSIONS. IN THE EVENT THAT THE LIGHTING CONTROL ZONES OR OTHER OPERATIONAL CHARACTERISTICS OF THE COMPLETED SYSTEM ARE NOT FULLY READY AT THE TIME OF THE FIRST FOCUSSING APPOINTMENT, THE LIGHTING DESIGNER SHALL BE ENTITLED TO REQUEST FEES FOR ADDITIONAL SERVICES FROM THE CONTRACTOR WHICH SHALL NOT BE PASSED ON TO THE CLIENT.

5 CATALOGUE OR SERIES NUMBERS ARE INTENDED TO PROVIDE ASSISTANCE IN ESTABLISHING IDENTIFICATION OF MANUFACTURER'S MODEL, SERIES, OR LUMINAIRE STYLE, AND MAY NOT BE COMPLETE AND SHALL NEVER BE USED TO ORDER LUMINAIRES. MANUFACTURER'S CATALOG NUMBERS ARE SUBJECT TO CHANGE AND ANY DISCREPANCIES BETWEEN THE CATALOG NUMBER, LUMINAIRE DESCRIPTION, REMARKS, LAMP AND SUPPLY VOLTAGE, AND ARCHITECTURAL DRAWINGS MUST BE BROUGHT TO THE ATTENTION TO THE LIGHTING DESIGNER PRIOR TO THE RELEASE OF A PURCHASE ORDER.

6 CATALOGUE CUTS, WHEN INCLUDED, ARE FOR GENERAL ASSISTANCE AND IMAGE REFERENCE ONLY AND ARE NOT A PART OF THESE SPECIFICATIONS. MANUFACTURER'S CATALOG CUTS ARE SUBJECT TO CHANGE AND CURRENT CATALOG CUTS FROM THE MANUFACTURER ARE REQUIRED TO BE SUBMITTED DURING SHOP DRAWING REVIEW FOR APPROVAL....

7 AUXILIARY EMERGENCY EQUIPMENT OPTIONS MUST BE DETERMINED, VERIFIED, AND APPROVED BY THE ELECTRICAL ENGINEER.

8 "CONTINUOUS", WHEN NOTED, REQUIRES BUTTED END TO END LAYOUTS WITH NO GAPS BETWEEN LUMINAIRE HOUSINGS. NOTE MINIMUM OR MAXIMUM GAPS OR LAYOUT WHEN PROVIDED.

9 "FLANGELESS" OR "TRIMLESS" OR "FLUSH", WHEN NOTED, REQUIRES CONTRACTOR TO REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR PLASTER FRAME. PROPER ALIGNMENT OF BOTTOM OF APERTURE THROAT WITH FACE OF FINISHED CEILING IS CRITICAL FOR INSTALLATION; CONTRACTOR TO COORDINATE.

10 "REMOTE DRIVERS" OR "ACCESSIBLE" WHEN NOTED REQUIRES CONTRACTOR TO COORDINATE WITH BOTH THE ARCHITECT AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS TO LOCATE A SUITABLE LOCATION REMOVED FROM THE LUMINAIRE ITSELF FOR THE DRIVER/POWER SUPPLY. SAID LOCATION SHALL BE CONCEALED FROM GERENAL VIEW, WELL VENTILATED, SECURE AND REACHABLE BY NO MORE THAN A 10' LADDER PLACED SECURELY, ON FLAT GROUND.

A. ELECTRICAL CONTRACTOR TO COORDINATE MOUNTING DETAILS AND ELECTRICAL CONNECTIONS, ADVISE MANUFACTURER OF LEAD LENGTHS, AND VERIFY THAT INSTALLATION COMPLIES WITH NATIONAL AND LOCAL CODES, AND PROVIDE FUSE FOR SECONDARY WIRING, WHEN REQUIRED.

B. LUMINAIRE MANUFACTURER TO DETERMINE REQUIRED WIRE SIZE BETWEEN LUMINAIRES AND DRIVERS, LENGTH OF RUNS, OR QUANTITY OF LUMINAIRES PER CIRCUIT, AND TO ASSURE THAT VOLTAGE DROP DOES NOT EXCEED 5% - VERIFICATION OF VOLTAGE DROP MUST BE CONDUCTED ON SITE BY THE ELECTRICAL CONTRACTOR USING A "TRUE RMS" VOLTMETER TO MEASURE THE SECONDARY VOLTAGE.

11 "ALLOWANCES", WHEN NOTED, ARE TO BE IN U.S. DOLLARS AND COVER THE COST, TO THE OWNER, OF THE LIGHTING LUMINAIRES, LAMPS, AND ACCESSORIES AS NOTED. AN ALLOWANCE DOES NOT INCLUDE LAMPS, DELIVERY TO THE SITE, HANDLING, INSTALLATION OR CONTRACTOR'S OVERHEAD OR MARK-UP. CONTRACTOR MUST PROVIDE UNIT PRICING TO THE ARCHITECT- FOR EACH LUMINAIRE TYPE COMPLETE WITH ALL ACCESSORIES AND LAMP.

12 SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND LIGHTING CONSULTANT FOR REVIEW AND APPROVAL IN ACCORDANCE WITH ARCHITECT'S GENERAL TERMS AND CONDITIONS. DO NOT OBTAIN LUMINAIRES WITHOUT APPROVAL.

A. SHOP DRAWINGS FOR ALL LIGHTING EQUIPMENT SHALL INCLUDE DETAILS AND CUTS OF EACH LUMINAIRE TYPE, AND SHALL INCLUDE INFORMATION ON LIGHT SOURCE, HOUSING SIZE AND MATERIAL, DRIVER TYPE (WHERE APPLICABLE), LENSES, BAFFLES, FINISHES, AND MEANS AND METHODS OF ATTACHMENT AND SUPPORT, JOINING, AND ELECTRICAL CONNECTION.

B. IN ADDITION, SHOP DRAWINGS FOR CONTINUOUS OR CUSTOM LENGTH LIGHTING EQUIPMENT REQUIRE FIELD DIMENSIONS, AND SHOP DRAWINGS SHALL INCLUDE FIELD DIMENSIONS AND LAYOUTS.

13 CONTROL SAMPLES WHEN REQUESTED, SUBMIT AT LEAST 1 WORKING SAMPLE OF EACH LUMINAIRE TYPE SPECIFIED FOR USE AS A CONTROL SAMPLE TO VERIFY COLOR FIDELITY AND COMPATABILITY WITH CONTROL SYSTEM. CONTROL SAMPLES SHALL BE PROVIDED DURING SHOP DRAWING SUBMITAL PROCESS AND SHALL BE OF THE SAME BIN/PRODUCTION RUN AS THE LUMINAIRES ULTIMATELY SUPPLIED FOR THE PROJECT AS A WHOLE. AFTER APPROVAL, CONTROL SAMPLES MAY BE INSTALLED AS PART OF THE OVERALL LUMINAIRE COUNT, OR MAY SERVE AS A PORTION OF THE ATTIC STOCK REQUIRED FOR THE PROJECT. LUMINAIRES SPECIFIED AS PART OF A SERIES (HA, HA-1, E.G.) MAY BE REPRESENTED BY A SINGLE SAMPLE, BUT ADDITIONAL UNITS MAY STILL BE REQUIRED AS ATTIC STOCK.

14 "FOCUSING REQUIRED", WHEN NOTED, REQUIRES CONTRACTOR TO PROVIDE ALLOWANCE FOR LABOR, SCAFFOLDING, AND TOOLS TO ADJUST, AIM, OR INSTALL LUMINAIRES AND ACCESSORIES PER THE LIGHTING CONSULTANT'S DIRECTION DURING EVENING HOURS (IF REQUIRED). FOCUSING CAN ONLY OCCUR AFTER INSTALLATION AND CONFIRMED OPERATION OF ALL LUMINAIRES, AND AFTER THE CONTRACTOR HAS VERIFIED INSTALLATION AND CONFIRMED OPERATION OF CONTROL SYSTEMS. SPECIFIC ARCHITECTURAL ORNAMENT OR ART INTENDED TO BE ILLUMINATED MUST BE IN PLACE PRIOR TO FOCUS SESSION.

A. WHEN KNOWN INITIAL AIMING ANGLES ARE DEFINED ABOVE, LUMINAIRES MAY BE "PRE-AIMED" AS INDICATED. HOWEVER, THESE "INITIAL" AIMING ANGLES WILL BE VERIFIED IN THE FIELD BY THE LIGHTING DESIGNER AND MAY REQUIRE ADDITIONAL RE-AIMING FOR FINAL FOCUSING.

B. DURING FINAL FOCUSING THE LIGHTING DESIGNER WILL PROVIDE AIMING DIRECTION, INSTRUCTION, AND DEFINE AIMING ANGLES FOR TYPICAL LUMINAIRES SO THE CONTRACTOR MAY COMPLETE THE FOCUSING DURING DAYTIME HOURS. THE CONTRACTOR IS TO LOCK BUT NOT OVER-TIGHTEN ALL LUMINAIRES SO THAT LAMPHOLDERS WILL NOT MOVE DURING SUBSEQUENT RELAMPING.

15 "CUSTOM COLOR", WHEN NOTED, REQUIRES THE CONTRACTOR TO COORDINATE AND PROVIDE SPECIAL COLORS. CONTRACTOR TO VERIFY ALL OCCURRENCES WITH THE ARCHITECT, AND NOTE LUMINAIRE TYPES MAY BE INSTALLED AT DIFFERENT ARCHITECTURAL CEILING OR WALL FINISHES, THUS SEPARATE COLORS FOR EACH MATERIAL MAY BE REQUIRED. INCLUDE WITHIN COST ADDITIONAL SET-UP CHARGES FOR "CUSTOM COLORS".

16 ATTIC STOCK: CONTRACTOR TO INCLUDE COST OF 20% ATTIC STOCK IN BID FOR THE FOLLOWING TYPES OF LUMINAIRES, ACCESSORIES, AND COMPONENTS: LINEAR LUMINAIRE TYPES IN QUANTITIES AND LENGTHS AS REPRESENTED IN THE DRAWINGS, LENSES, REMOVABLE LUMINAIRE TRIMS, DRIVERS, BOTH REMOTE AND INTEGRAL, HOUSINGS, WHERE LUMINAIRE AND HOUSING ARE SEPARATE ENTITIES, CUSTOMIZED COMPONENTS INCLUDING HOUSINGS WITH CUSTOMIZED FINISHES (ARMS, MOUNTING BRACKETS, ETC.). LUMINAIRE TYPES WHICH ARE SUPPLIED ON SPOOLS, REQUIRE ONE ADDITIONAL FULL SPOOL.

17 CONTROL SYSTEM: CONTRACTOR TO PROVIDE PERSONNEL AND EQUIPMENT AS REQUIRED BY LIGHTING CONTROL SYSTEM MANUFACTURER FOR SYSTEM START-UP, LEVEL SET, AND COMMISSIONING. UNDER NO CIRCUMSTANCES SHALL CONTRACTOR EXCLUDE THE COST OF FACTORY START-UP AND TRAINING VISITS FROM THEIR BID IF SUCH SERVICES ARE REQUIRED BY CONTROL SYSTEM MANUFACTURER. CONTRACTOR TO NOTE THAT CONTROL SYSTEM MANUFACTURER MAY HAVE SPECIFIC TIME-LINES AND/OR REQUIRED, PHASED, SITE VISITS DURING THE INSTALLATION OF THE SYSTEM AND TO COORDINATE SAME WITH PROJECT SCHEDULE AND LEAD TIME.
A. AS NOTED IN #4 ABOVE, ALL DIMMING, SENSOR OPERATION, AND CONTROL ZONE GROUPINGS SHALL BE TESTED AND OPERATIONAL PRIOR TO COMMENCING ANY START-UP ACTIVITIES.

18 A CONTROL SYSTEMS INTEGRATOR IS REQUIRED FOR THIS PROJECT. GENERAL CONTRACTOR, OR THEIR ELECTRICAL SUB TO CONTRACT WITH A QUALIFIED LIGHTING CONTROL SYSTEMS INTEGRATOR TO ENSURE THAT THE CONTROL INTENT SPECIFIED ELSEWHERE CAN BE ACHEIVED AND THAT THE LUMINAIRES CONTROLED VIA DMX-512A AND THOSE CONTROLED BY OTHER PROTOCOLS CAN BE OPERATED SIMALTANEOUSLY AND WITHOUT VISIBLE LAGS....

19 LED REPLACEMENT LAMPS: WHERE NOTED REQUIRES DISTRIBUTOR TO COORDINATE AND PROVIDE APPROPRIATE LED REPLACEMENT LAMPS FOR LUMINAIRES WITH SCREW BASE SOCKETS. TAKE CARE TO ASSURE THAT ALL REPLACEMENT LAMPS, REGARDLESS OF BASE ARE CONSISTENT IN COLOR APPEARANCE AND WILL DIM WITH SPECIFIED SYSTEM. ALL NON-SHIELDED LAMPS SHALL HAVE FILAMENT STYLE LIGHT ELEMENT. PROVIDE A FULL SUITE OF LAMPS FOR LIGHTING DESIGNER'S APPROVAL WITH SUBMISSION. PROVIDE A COMPLETE LIST OF ALL LAMPS WHICH WILL BE FURNISHED ON THE PROJECT. THIS LIST SHALL BE ORGANIZED ALPHABETICALLY BY LUMINAIRE TYPE INDICATED ON THE LUMINAIRE SCHEDULE, AND INCLUDE THE MANUFACTURER AND EXACT MODEL ORDERING CODE OF EACH LAMP.

20 CUSTOM OR CUSTOMIZED LUMINAIRE: WHERE NOTED REFERS TO EITHER A LUMINAIRE DESIGNED FOR THIS SPECIFIC PROJECT ONLY, OR MAY REFER TO A SPECIFIC ELEMENT OF THE LUMINAIRE THAT IS BEING CHANGED FOR USE WITHIN THIS PROJECT. IN EITHER CASE, BIDDERS ARE ENCOURAGED TO COMMUNICATE WITH MANUFACTURERS WHERE NOTED DURING THE PREPARATION OF BIDS AND TO REFER ANY QUESTIONS TO THE DESIGN TEAM IN THE FORM OF RFI'S. REQUESTS FOR CHANGE ORDERS THAT COULD HAVE BEEN RESOLVED IN ADVANCE, BASED ON THE INFORMATION PROVIDED AND A STANDARD RFI WILL NOT BE HONORED OR REFERRED TO THE CLIENT. IN INSTANCES WHERE THE LUMINAIRE IS DESCRIBED AS IN DEVELOPMENT WITH THE SELECTED MANUFACTURER, CONFIRM THAT PROVIDED PRICE IS SUFFICIENT TO INCLUDE ADJUSTMENTS TO THE OVERALL SIZE, FINISH, MATERIALS, ETC. DURING THE SUBMISSION PROCESS.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	RS&H
DRAWN BY:	BWG
DESIGNED BY:	CRD

PROJECT NUMBER:
2003-0070-006

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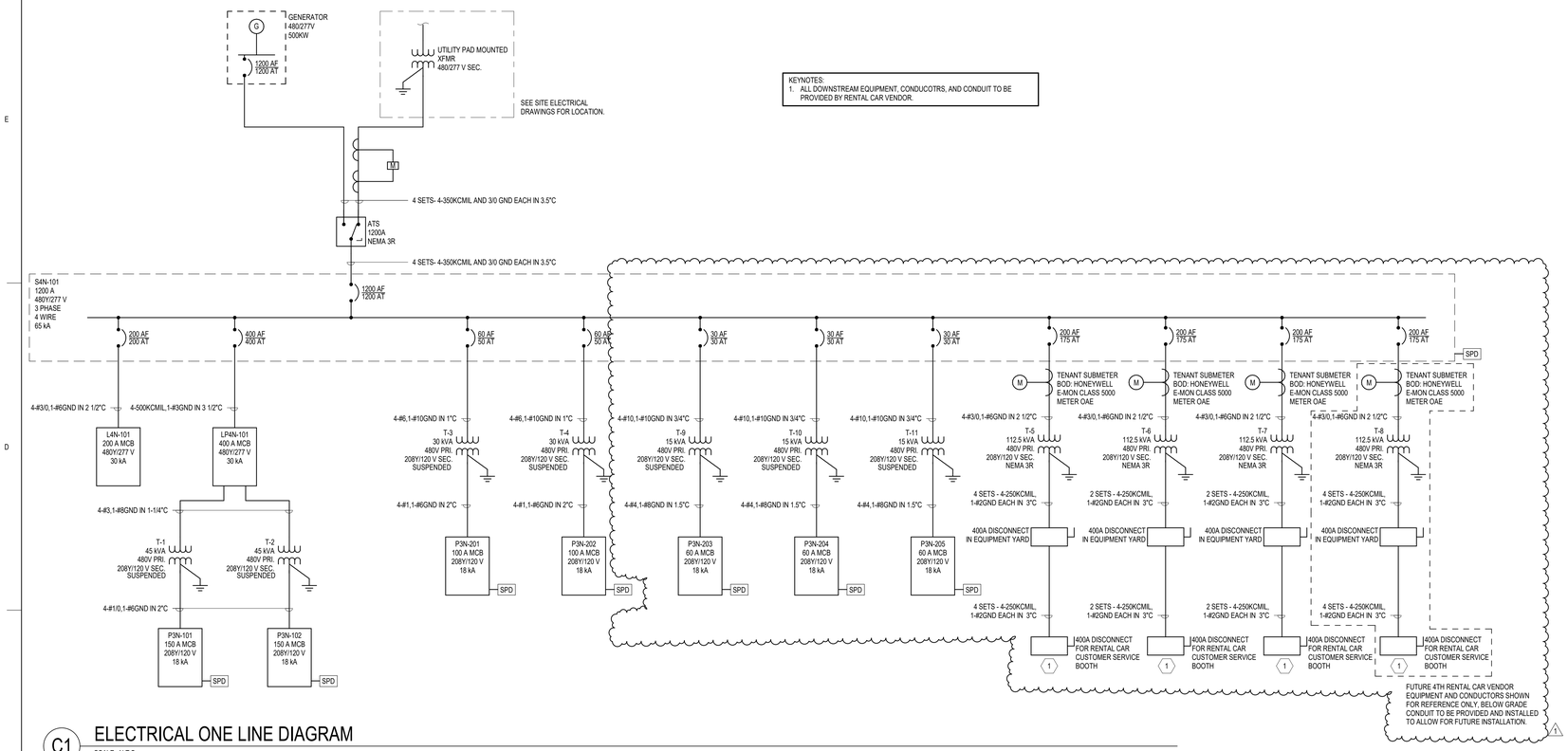
SHEET TITLE:
EXTERIOR LUMINAIRE SCHEDULE

SHEET ID:
EL602

PROJECT STATUS:
100% BID SET

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C1 ELECTRICAL ONE LINE DIAGRAM

SCALE: N.T.S.

FEEDER SCHEDULE

BREAKER TRIP (AMPS)	TYPE	CONDUCTOR SETS	CONDUCTOR QUANTITY	CONDUCTOR GAUGE	MIN. GEC (SE) MIN. EGC (ΔY)	MINIMUM CONDUIT SIZE
30	Δ	1	3	#10	#10	3/4"
	Y		4			
40	Δ	1	3	#8	#10	3/4"
	Y		4			1"
50	Δ	1	3	#6	#10	1"
	Y		4			
60	Δ	1	3	#6	#10	1"
	Y		4			
70	Δ	1	3	#4	#8	1 1/4"
	Y		4			
90	Δ	1	3	#3	#8	1 1/4"
	Y		4			
100	SE	1	4	#2	#1/0	1 1/4"
	Δ		3		#8	
	Y		4			
110	Δ	1	3	#2	#6	1 1/4"
	Y		4			1 1/2"
125	SE	1	4	#1	#6	1 1/2"
	Δ		3		#6	
	Y		4			2"
150	SE	1	4	#1/0	#6	2"
	Δ		3		#6	
	Y		4			
175	Δ	1	3	#2/0	#6	2"
	Y		4			
200	SE	1	4	#3/0	#4	2"
	Δ		3		#6	
	Y		4			2 1/2"
225	SE	1	4	#4/0	#2	2 1/2"
	Δ		3		#4	
	Y		4			
250	Δ	1	3	250 KCMIL	#4	2 1/2"
	Y		4			3"
300	Δ	1	3	300 KCMIL	#4	3"
	Y		4			
350	Δ	1	3	350 KCMIL	#3	3"
	Y		4			
400	SE	1	4	500 KCMIL	#1/0	3 1/2"
	Δ		3		#3	
	Y		4			
500	Δ	2	3	#4/0	#2	EACH SET IN 2 1/2"
	Y		4			
600	SE	2	4	300 KCMIL	#1/0	EACH SET IN 3"
	Δ		3		#1	
	Y		4			
800	SE	2	4	500 KCMIL	#2/0	EACH SET IN 3 1/2"
	Δ		3		#1/0	
	Y		4			
1000	SE	4	4	250 KCMIL	#2/0	EACH SET IN 2 1/2"
	Δ		3			
	Y		4			
1200	SE	4	4	350 KCMIL	#3/0	EACH SET IN 3"
	Δ		3			
	Y		4			
1600	SE	4	4	600 KCMIL	#3/0	EACH SET IN 4"
	Δ		3		#4/0	
	Y		4			
2000	SE	5	4	600 KCMIL	#3/0	EACH SET IN 4"
	Δ		3		250 KCMIL	
	Y		4			
2500	SE	6	4	600 KCMIL	#3/0	EACH SET IN 4"
	Δ		3		350 KCMIL	
	Y		4			
3000	SE	8	4	500 KCMIL	#3/0	EACH SET IN 4"
	Δ		3		400 KCMIL	
	Y		4			
G	REFER TO "GROUNDING RISER DETAIL" FOR CONDUCTOR SIZE.					
T	REFER TO "TRANSFORMER SCHEDULE" FOR CONDUCTOR SIZE.					
U	REFER TO "ELECTRICAL UTILITY MATRIX" FOR ADDITIONAL INFORMATION.					

GENERAL NOTES:
1. ALL FEEDER TYPES SCHEDULED MAY NOT APPLY TO THIS PROJECT.
2. MAXIMUM 2% VOLTAGE DROP FOR FEEDERS; 3% VOLTAGE DROP FOR BRANCH CIRCUITS.
3. ADJUST CONDUCTOR & GEC SIZE FOR LONG RUNS AND TEMPERATURE ABOVE DESIGN AMBIENT TEMPERATURE.
4. CONDUIT SIZING IS BASED ON CONDUCTORS WITH THHW INSULATION.

BRANCH CIRCUIT SCHEDULE

BREAKER TRIP (AMPS)	COPPER WIRE (75°C)	MAXIMUM DISTANCE (FEET) 1Ø 120 V	1Ø 277 V	3Ø 208 V	3Ø 480 V
15	12	75'	173'	150'	346'
20	12	56'	130'	113'	260'
	10	94'	216'	187'	443'
	8	147'	340'	295'	681'
30	10	62'	144'	125'	289'
	8	96'	222'	192'	444'
35	8	82'	190'	165'	381'
	6	131'	303'	263'	605'
40	8	72'	166'	144'	333'
	6	115'	265'	230'	530'
45	6	102'	235'	204'	471'
	4	161'	372'	323'	745'
50	6	92'	212'	184'	424'
	4	145'	335'	291'	670'
60	6	76'	176'	152'	353'
	4	121'	280'	243'	559'
70	4	KEYNOTE 1		208'	479'
	3			257'	594'
80	4	KEYNOTE 1		182'	421'
	3			225'	520'
90	3	KEYNOTE 1		200'	462'
	2			250'	578'
100	3	KEYNOTE 1		180'	415'
	2			225'	520'

GENERAL NOTES:
1. SEE DRAWINGS FOR WIRE SIZING WHEN DISTANCE EXCEEDS VALUES SHOWN.
2. DISTANCE IS WIRE LENGTH TO FIRST OUTLET/DEVICE/EQUIPMENT FROM OVERCURRENT PROTECTION.
3. PROVIDE CONDUIT SIZE PER NEC.
4. BASIS OF VOLTAGE DROP CALCULATIONS IS 3% DROP, 80% CIRCUIT LOAD, THHN &THWN, 100% POWER FACTOR, BALANCED LOAD, NEGLIGIBLE REACTANCE, AND 6 OR LESS CURRENT-CARRYING CONDUCTORS IN RACEWAY.

KEYNOTE:
1. SEE DRAWINGS FOR WIRE SIZING.

TRANSFORMER SCHEDULE

XFMR SIZE (KVA)	PRIMARY VOLTS	PHASE	BREAKER TRIP (AMPS)	CONDUCTOR SETS	CONDUCTOR QUANTITY	CONDUCTOR GUAGE	GROUND GUAGE	CONDUIT SIZE	GROUNDING ELECTRODE CONDUCTOR	SECONDARY VOLTS	PHASE	BREAKER TRIP (AMPS)	CONDUCTOR SETS	CONDUCTOR QUANTITY	CONDUCTOR GUAGE	GROUND GUAGE	CONDUIT SIZE
15	480	3	30	1	3	#10	#10	3/4"	#8	208	3	60	1	4	#4	#8	1 1/4"
30	480	3	60	1	3	#6	#10	1"	#8	208	3	100	1	4	#1	#6	2"
45	480	3	90	1	3	#3	#8	1 1/4"	#8	208	3	150	1	4	#1/0	#6	2"
75	480	3	150	1	3	#1/0	#6	2"	#6	208	3	225	1	4	#4/0	#2	2 1/2"
112.5	480	3	200	1	3	#3/0	#6	2"	#4	208	3	400	2	4	#3/0	#2	EACH SET IN 2 1/2"
150	480	3	300	1	3	300 KCMIL	#4	2 1/2"	#2	208	3	600	2	4	350 KCMIL	#2/0	EACH SET IN 3"
225	480	3	400	1	3	500 KCMIL	#3	3"	#1/0	208	3	800	2	4	600 KCMIL	#3/0	EACH SET IN 4"
300	480	3	600	2	3	300 KCMIL	#1	EACH SET IN 2 1/2"	#2	208	3	1200	4	4	350 KCMIL	#4/0	EACH SET IN 3"
500	480	3	1000	4	3	250 KCMIL	#2/0	EACH SET IN 2 1/2"	#2	208	3	2000	5	4	600 KCMIL	400 KCMIL	EACH SET IN 4"
750	480	3	1600	4	3	600 KCMIL	#4/0	EACH SET IN 3 1/2"	#1/0	208	3	3000	8	4	500 KCMIL	500 KCMIL	EACH SET IN 3 1/2"

GENERAL NOTES:
A. GROUNDING ELECTRODE CONDUCTOR SIZE IS PER NEC TABLE 250.66.
B. PRIMARY GROUND (EQUIPMENT GROUND) CONDUCTOR SIZE IS PER NEC TABLE 250.122.
C. SECONDARY GROUND (SUPPLY SIDE BONDING JUMPER) CONDUCTOR SIZE IS PER NEC 250.102(C)(1). SECONDARY GROUND CONDUCTOR SIZE ASSUMES A SINGLE CONDUCTOR FOR SINGLE OR PARALLEL SETS, MULTIPLE SECONDARY GROUND CONDUCTORS ARE ACCEPTABLE AND SHALL BE SIZED PER NEC TABLE 250.102.
D. CONTRACTOR SHALL INCREASE FEEDER SIZES WHEN THEY ARE LONGER THEN 165' FOR 208 V AND 185' FOR 480 V.
E. CONDUCTORS FEEDING K-RATED TRANSFORMERS REQUIRE 200% NEUTRAL CONDUCTORS WITH CONDUIT SIZED PER NEC.
F. ALL CONDUCTOR SIZES ARE BASED ON COPPER.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: BWG
DESIGNED BY: CRD
PROJECT NUMBER: 2003-0070-006

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SHEET TITLE:
ELECTRICAL ONE LINE DIAGRAM

SHEET ID:
EP601

PROJECT STATUS:
100% BID SET

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480Y/277 VAC | SWITCHBOARD S4N-101 | 1200 A BUS W/ 1200 A
3 PHASE4 WIRE | LOCATION ELECTRICAL 132 | 65 kA SCCR

CKT NO	BREAKER FRAME	BREAKER TRIP / POLE	LOAD CLASS & LOCATION	ID	NOTES	A	B	C
1	200 A	200 A 3	L4N-101			14862 VA	13226 VA	11528 VA
2	400 A	400 A 3	LP4N-101			59935 VA	58475 VA	51841 VA
3	60 A	60 A 3	T-3			2178 VA	2820 VA	3098 VA
4	60 A	60 A 3	T-4			5311 VA	7886 VA	4458 VA
5	200 A	200 A 3	T-5			30743 VA	30743 VA	30743 VA
6	200 A	200 A 3	T-6			30743 VA	30743 VA	30743 VA
7	200 A	200 A 3	T-7			30743 VA	30743 VA	30743 VA
8	200 A	200 A 3	T-8(FUTURE)			30743 VA	30743 VA	30743 VA
9	30 A	30 A 3	T-11			3418 VA	2918 VA	1220 VA
10	30 A	30 A 3	T-10			2218 VA	2918 VA	2420 VA
11	30 A	30 A 3	T-9			2218 VA	2918 VA	2420 VA
12								
13								
14								
15								
16								
17								
18	30 A	30 A 3	SPD			0 VA	0 VA	0 VA
					CONNECTED LOAD:	213112 VA	214132 VA	199957 VA

Load Classification	Connected Load	Demand Factor	Esitmated Demand
MOTR	81743 VA	105.6%	86302 VA
HVAC	54943 VA	100.0%	54943 VA
EQUIPMENT	421827 VA	100.0%	421827 VA
HEAT	6000 VA	100.0%	6000 VA
LITE	49428 VA	100.0%	49428 VA
RCPT	13260 VA	87.7%	11630 VA

Panel Totals
Total Conn. Load: 627201 VA
Total Est. Demand: 639129 VA
Total Conn. Current: 754.4 A
Total Est. Demand Current: 757.9 A

GENERAL NOTES:

NOTES:

Branch Panel: L4N-101

Location: ELECTRICAL 132 | **Volts:** 480Y/277 VAC | **A.I.C. Rating:** 30kA
Supply From: S4N-101 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 200 A
Enclosure: NEMA 1

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A	B	C	Notes	Poles	Trip	Circuit Description	CKT
1	1ST FLOOR LTG	20 A	1		4.28 kVA	3.85 kVA			1	20 A	1ST FLOOR LTG	2
3	1ST FLOOR LTG	20 A	1			3.85 kVA	3.85 kVA		1	20 A	1ST FLOOR LTG	4
5	1ST FLOOR LTG	20 A	1				3.85 kVA	2.27 kVA	1	20 A	2ND FLOOR LTG	6
7	2ND FLOOR LTG	20 A	1		1.91 kVA	1.64 kVA			1	20 A	2ND FLOOR LTG	8
9	2ND FLOOR LTG	20 A	1			2.06 kVA	3.00 kVA		1	20 A	ROOF LTG	10
11	2ND FLOOR LTG	20 A	1				1.91 kVA	1.80 kVA	1	20 A	ROOF LTG	12
13	ROOF LTG	20 A	1		2.10 kVA	1.09 kVA			1	20 A	NW STAIR LIGHTING	14
15	RENTAL CAR RAMP LIGHTING	20 A	1			0.46 kVA						16
17	SOUTH CENTER STAIR LTG	20 A	1				1.70 kVA					18
19												20
21												22
23												24
25												26
27												28
29												30
31												32
33												34
35												36
37												38
39												40
41												42
	Total Load:				14862 VA	13226 VA	11528 VA					
	Total...				54.6 A	48.7 A	41.6 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
LITE	39615 VA	100.0%	39615 VA	
				Total Conn. Load: 39615 VA
				Total Est. Demand: 39615 VA
				Total Conn.: 47.6 A
				Total Est. Demand: 47.6 A

Branch Panel: LP4N-101

Location: ELECTRICAL 102 | **Volts:** 480Y/277 VAC | **A.I.C. Rating:** 30kA
Supply From: S4N-101 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 400 A
Enclosure: NEMA 1

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A	B	C	Notes	Poles	Trip	Circuit Description	CKT
1					3.88 kVA	1.72 kVA			1	20 A	VERTICAL CORE LTG 1ST FLR	2
3	ESCALATOR	30 A	3			3.88 kVA	0.69 kVA		1	20 A	VERTICAL CORE LTG 2ND...	4
5							3.88 kVA	2.47 kVA	1	20 A	VERTICAL CORE LTG 3RD...	6
7					3.88 kVA	3.01 kVA			1	20 A	CANOPY LIGHTING	8
9	ESCALATOR	30 A	3			3.88 kVA	0.34 kVA		1	20 A	LITE ROOM 103, 104, 105	10
11							3.88 kVA	1.11 kVA				12
13					3.88 kVA	1.11 kVA			3	15 A	SAHU-01	14
15	ESCALATOR	30 A	3			3.88 kVA	1.11 kVA					16
17							3.88 kVA	2.00 kVA				18
19					6.08 kVA	2.00 kVA			3	15 A	SAHU-02	20
21	ELEVATOR	30 A	3			6.08 kVA	2.00 kVA					22
23							6.08 kVA	3.77 kVA				24
25					6.08 kVA	3.77 kVA			3	20 A	SCU-01	26
27	ELEVATOR	30 A	3			6.08 kVA	3.77 kVA					28
29							6.08 kVA	7.32 kVA				30
31	ELEVATOR PIT LTG	20 A	1		0.02 kVA	7.32 kVA			3	40 A	SCU-02	32
33	ELEVATOR PIT LTG	20 A	1			0.02 kVA	7.32 kVA					34
35	ESCALATOR PIT LIGHTING	20 A	1				0.03 kVA					36
37												38
39												40
41												42
43						6.44 kVA						44
45							6.98 kVA		3	70 A	T-2(45KVA	46
47								7.18 kVA				48
49					10.76 kVA	0.00 kVA						50
51	T-1(45KVA)	70 A	3				12.46 kVA	0.00 kVA	3	20 A	SPD	52
53								4.18 kVA 0.00 kVA				54
	Total Load:				59935 VA	58475 VA	51841 VA					
	Total...				220.1 A	214.8 A	187.2 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
EQUIPMENT	19516 VA	100.0%	19516 VA	
LITE	9812 VA	100.0%	9812 VA	**Total Conn. Load:** 170251 VA
HVAC	44959 VA	100.0%	44959 VA	**Total Est. Demand:** 174809 VA
HEAT	6000 VA	100.0%	6000 VA	**Total Conn.:** 204.8 A
MOTR	81743 VA	105.6%	86302 VA	**Total Est. Demand:** 210.3 A
RCPT	8220 VA	100.0%	8220 VA	

Branch Panel: P3N-101

Location: ELECTRICAL 102 | **Volts:** 208Y/120 VAC | **A.I.C. Rating:** 18kA
Supply From: T-1 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 150 A
Enclosure: NEMA1

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A	B	C	Notes	Poles	Trip	Circuit Description	CKT
1	SLIDING DOOR POWER 1ST	20 A	1		1.80 kVA	0.92 kVA			2	20 A	SUMP PUMP	2
3	SLIDING DOOR POWER 2ND	20 A	1				1.20 kVA 0.92 kVA					4
5	SLIDING DOOR POWER 3RD	20 A	1				0.60 kVA	0.00 kVA	2	20 A	SUMP PUMP	6
7	EHW-1	40 A	2		3.00 kVA	0.00 kVA						8
9						3.00 kVA	0.92 kVA		2	20 A	SUMP PUMP	10
11	HWRP1	20 A	1				0.04 kVA	0.92 kVA				12
13	CU-01	30 A	2		1.00 kVA	3.33 kVA			2	45 A	FOUNTAIN CONTROL PANEL	14
15						1.00 kVA	3.33 kVA					16
17	BMS RCPT	20 A	1				0.18 kVA	0.51 kVA	1	20 A	LANDSCAPE LTG	18
19	BMS RCPT	20 A	1		0.18 kVA	0.36 kVA			1	20 A	TUNNEL PROJECTORS	20
21	EF-01	20 A	2			0.20 kVA	1.73 kVA		1	20 A	CAB LTG AND POWER	22
23							0.20 kVA	1.73 kVA	1	20 A	CAB LTG AND POWER	24
25						0.18 kVA			1	20 A	ELEVATOR PIT RCPT	26
27							0.18 kVA		1	20 A	ELEVATOR PIT RCPT	28
29												30
31												32
33												34
35												36
37												38
39												40
41												42
43												44
45	SPARE	20 A	1			0.00 kVA	0.00 kVA		1	20 A	SPARE	46
47	SPARE	20 A	1				0.00 kVA	0.00 kVA	1	20 A	SPARE	48
49	SPARE	20 A	1		0.00 kVA	0.00 kVA						50
51	SPARE	20 A	1			0.00 kVA	0.00 kVA		3	20 A	SPD	52
53	SPARE	20 A	1				0.00 kVA	0.00 kVA				54
	Total Load:				10762 VA	12462 VA	4178 VA					
	Total...				98.1 A	112.3 A	34.8 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
EQUIPMENT	7056 VA	100.0%	7056 VA	
LITE	873 VA	100.0%	873 VA	**Total Conn. Load:** 27402 VA
HVAC	2392 VA	100.0%	2392 VA	**Total Est. Demand:** 29066 VA
HEAT	6000 VA	100.0%	6000 VA	**Total Conn.:** 76.1 A
MOTR	10361 VA	116.1%	12025 VA	**Total Est. Demand:** 80.7 A
RCPT	720 VA	100.0%	720 VA	

Branch Panel: P3N-102

Location: ELECTRICAL 102 | **Volts:** 208Y/120 VAC | **A.I.C. Rating:** 18kA
Supply From: T-2 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 150 A
Enclosure: NEMA1

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A	B	C	Notes	Poles	Trip	Circuit Description	CKT
1	INTERCOM	20 A	1		0.18 kVA	0.36 kVA			1	20 A	ROOFTOP RCPT	2
3	INTERCOM	20 A	1			0.18 kVA	0.56 kVA		1	20 A	AUTO PLUMBING FIXTURES	4
5	RCPT MECH YARD	20 A	1				0.36 kVA	0.50 kVA	1	20 A	COMM EQUIPMENT	6
7	RCPT ELEC. RM 102	20 A	1		0.72 kVA	1.62 kVA			1	20 A	RCPT RM 202	8
9	RCPT CIRCULATION CORE	20 A	1			0.90 kVA	1.00 kVA		1	20 A	EWC	10
11	FIDS MONITORS	20 A	1				0.54 kVA	1.44 kVA	1	20 A	RCPT 3RD FLR	12
13	COMM EQUIPMENT	20 A	1		0.50 kVA	0.50 kVA			1	20 A	COMM EQUIPMENT	14
15	COMM EQUIPMENT	20 A	1			1.92 kVA	0.50 kVA		1	20 A	COMM EQUIPMENT	16
17	COMM EQUIPMENT	20 A	1				1.92 kVA	0.50 kVA	1	20 A	COMM EQUIPMENT	18
19	BACKLIT MIRRORS	20 A	1		0.64 kVA	1.92 kVA			1	20 A	COMM EQUIPMENT	20
21							1.92 kVA		1	20 A	COMM EQUIPMENT	22
23								1.92 kVA	1	20 A	COMM EQUIPMENT	24
25												26
27												28
29												30
31												32
33												34
35												36
37												38
39												40
41												42
43												44
45							0.00 kVA		1	20 A	SPARE	46
47	SPARE	20 A	1				0.00 kVA	0.00 kVA	1	20 A	SPARE	48
49	SPARE	20 A	1		0.00 kVA	0.00 kVA						50
51	SPARE	20 A	1			0.00 kVA	0.00 kVA		3	20 A	SPD	52
53	SPARE	20 A	1				0.00 kVA	0.00 kVA				54
	Total Load:				6441 VA	6980 VA	7180 VA					
	Total...				53.7 A	58.9 A	60.5 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
EQUIPMENT	12460 VA	100.0%	12460 VA	
LITE	641 VA	100.0%	641 VA	**Total Conn. Load:** 20601 VA
RCPT	7500 VA	100.0%	7500 VA	**Total Est. Demand:** 20601 VA
				Total Conn.: 57.2 A
				Total Est. Demand: 57.2 A

Branch Panel: P3N-201

Location: IDF/ELEC 221 | **Volts:** 208Y/120 VAC | **A.I.C. Rating:** 18kA
Supply From: T-3 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: NEMA 1

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A	B	C	Notes	Poles	Trip	Circuit Description	CKT
1	EXT RCPT	20 A	1		0.18 kVA	0.50 kVA			1	20 A	COMM EQUIPMENT	2
3	RCPT IDF/ELECTRICAL 221	20 A	1			0.72 kVA	1.92 kVA		1	20 A	COMM EQUIPMENT	4
5	COMM EQUIPMENT	20 A	1				1.92 kVA	1.00 kVA	2	20 A	CU-02	6
7	COMM EQUIPMENT	20 A	1		0.50 kVA	1.00 kVA						8
9	INTERCOM	20 A	1			0.18 kVA						10
11	INTERCOM	20 A	1				0.18 kVA					12
13												14
15												16
17												18
19												20
21												22
23												24
25												26
27												28
29												30
31												32
33	SPARE	20 A	1			0.00 kVA	0.00 kVA		1	20 A	SPARE	34
35	SPARE	20 A	1				0.00 kVA	0.00 kVA	1	20 A	SPARE	36
37	SPARE	20 A	1		0.00 kVA	0.00 kVA						38
39	SPARE	20 A	1			0.00 kVA	0.00 kVA		3	20 A	SPD	40
41	SPARE	20 A	1				0.00 kVA	0.00 kVA				42
	Total Load:				2178 VA	2820 VA	3098 VA					
	Total...				18.2 A	24.3 A	26.6 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
EQUIPMENT	4840 VA	100.0%	4840 VA	
HVAC	1997 VA	100.0%	1997 VA	**Total Conn. Load:** 8097 VA
RCPT	1260 VA	100.0%	1260 VA	**Total Est. Demand:** 8097 VA
				Total Conn.: 22.5 A
				Total Est. Demand: 22.5 A

Branch Panel: P3N-202

Location: IDF/ELEC 232 | **Volts:** 208Y/120 VAC | **A.I.C. Rating:** 18kA
Supply From: T-4 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: NEMA 1

Notes:
2#4, 1-#6GND IN 1-1/2"C

CKT	Circuit Description	Trip	Poles	Notes	A	B	C	Notes	Poles	Trip	Circuit Description	CKT
1	INTERCOM	20 A	1		0.18 kVA	0.18 kVA			1	20 A	EXT RCPT	2
3	INTERCOM	20 A	1			0.18 kVA	1.54 kVA		1	20 A	GEN. BATTERY CHARGER	4
5	INTERCOM	20 A	1				0.36 kVA	0.20 kVA	1	20 A	GEN ALT HEATER	6
7	RCPT IDF/ELEC 232	20 A	1		0.72 kVA	1.33 kVA			2	20 A	GENERATOR COOLANT HEATER	8
9	COMM EQUIPMENT	20 A	1			1.92 kVA	1.33 kVA					10
11	COMM EQUIPMENT	20 A	1				0.50 kVA	2.40 kVA	1	1	30 A ENTRY TRAFFIC CTRL ARM	12
13	COMM EQUIPMENT	20 A	1		0.50 kVA	2.40 kVA			1	1	30 A ENTRY TRAFFIC CTRL ARM	14
15	COMM EQUIPMENT	20 A	1			1.92 kVA	1.00 kVA		2	20 A	CU-03	16
17								1.00 kVA				18
19												20
21												22
23												24
25												26
27												28
29												30
31												32
33							0.00 kVA		1	20 A	SPARE	34
35	SPARE	20 A	1					0.00 kVA 0.00 kVA	1	20 A	SPARE	36
37	SPARE	20 A	1		0.00 kVA	0.00 kVA						38
39	SPARE	20 A	1			0.00 kVA	0.00 kVA		3	20 A	SPD	40
41	SPARE	20 A	1				0.00 kVA	0.00 kVA				42
	Total Load:				5311 VA	7886 VA	4458 VA					
	Total...				45.4 A	66.8 A	37.2 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
EQUIPMENT	14038 VA	100.0%	14038 VA	
HVAC	1997 VA	100.0%	1997 VA	**Total Conn. Load:** 17655 VA
RCPT	1620 VA	100.0%	1620 VA	**Total Est. Demand:** 17655 VA
				Total Conn.: 49 A
				Total Est. Demand: 49 A

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F-0493 * C-28

Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: BWG
DESIGNED BY: CRD
PROJECT NUMBER: 2003-0070-006

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SEAL:
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SHEET TITLE:
ELECTRICAL POWER PANEL SCHEDULES

SHEET ID:
EP602

PROJECT STATUS:
100% BID SET

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Branch Panel: P3N-203

Location: IDF/ELEC 222
Supply From: T-9
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208Y/120 VAC
Phases: 3
Wires: 4

A.I.C. Rating: 18
Mains Type: MCB
Mains Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A		B		C		Notes	Poles	Trip	Circuit Description	CKT
1					1.00 kVA	0.50 kVA						1	20 A	COMM EQUIPMENT	2
3	CU-02	20 A	2				1.00 kVA	1.92 kVA				1	20 A	COMM EQUIPMENT	4
5	COMM EQUIPMENT	20 A	1						1.92 kVA	0.50 kVA		1	20 A	COMM EQUIPMENT	6
7	RCPT	20 A	1		0.72 kVA										8
9															10
11															12
13															14
15															16
17															18
19															20
21															22
23															24
25															26
27															28
29															30
		Total Load:			2218 VA		2918 VA		2420 VA						
		Total...			18.5 A		24.6 A		20.4 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
EQUIPMENT	4840 VA	100.0%	4840 VA		
HVAC	1997 VA	100.0%	1997 VA	**Total Conn. Load:**	7557 VA
RCPT	720 VA	100.0%	720 VA	**Total Est. Demand:**	7557 VA
				Total Conn.:	21 A
				Total Est. Demand:	21 A

Branch Panel: P3N-204

Location: IDF/ ELEC 223
Supply From: T-10
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208Y/120 VAC
Phases: 3
Wires: 4

A.I.C. Rating: 18
Mains Type: MCB
Mains Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A		B		C		Notes	Poles	Trip	Circuit Description	CKT
1					1.00 kVA	0.50 kVA						1	20 A	EQUIPMENT	2
3	CU-04	20 A	2				1.00 kVA	1.92 kVA				1	20 A	EQUIPMENT	4
5	EQUIPMENT	20 A	1						1.92 kVA	0.50 kVA		1	20 A	EQUIPMENT	6
7	RCPT	20 A	1		0.72 kVA										8
9															10
11															12
13															14
15															16
17															18
19															20
21															22
23															24
25															26
27															28
29															30
		Total Load:			2218 VA		2918 VA		2420 VA						
		Total...			18.5 A		24.6 A		20.4 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
EQUIPMENT	4840 VA	100.0%	4840 VA		
HVAC	1997 VA	100.0%	1997 VA	**Total Conn. Load:**	7557 VA
RCPT	720 VA	100.0%	720 VA	**Total Est. Demand:**	7557 VA
				Total Conn.:	21 A
				Total Est. Demand:	21 A

Branch Panel: P3N-205

Location:
Supply From: T-11
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208Y/120 VAC
Phases: 3
Wires: 4

A.I.C. Rating: 18
Mains Type: MCB
Mains Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Poles	Notes	A		B		C		Notes	Poles	Trip	Circuit Description	CKT
1					1.00 kVA	0.50 kVA						1	20 A	COMM EQUIPMENT	2
3	CU-05	20 A	2				1.00 kVA	1.92 kVA				1	20 A	COMM EQUIPMENT	4
5	RCPT	20 A	1						0.72 kVA	0.50 kVA		1	20 A	COMM EQUIPMENT	6
7	COMM EQUIPMENT	20 A	1		1.92 kVA										8
9															10
11															12
13															14
15															16
17															18
19															20
21															22
23															24
25															26
27															28
29															30
		Total Load:			3418 VA		2918 VA		1220 VA						
		Total...			30.7 A		26.5 A		10.2 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
EQUIPMENT	4840 VA	100.0%	4840 VA		
HVAC	1997 VA	100.0%	1997 VA	**Total Conn. Load:**	7557 VA
RCPT	720 VA	100.0%	720 VA	**Total Est. Demand:**	7557 VA
				Total Conn.:	21 A
				Total Est. Demand:	21 A

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: RS&H
DRAWN BY: BWG
DESIGNED BY: CRD
PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
ELECTRICAL POWER PANEL SCHEDULES

SHEET ID:
EP603
1

PROJECT STATUS:
100% BID SET

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TELECOMMUNICATIONS ABBREVIATIONS

AC	ABOVE COUNTER
ACS	ACCESS CONTROL SYSTEM
ACT	ACOUSTIC CEILING TILE
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AI	AUDIO INTERFACE
AL	ALUMINUM
AMS	ACCESS MANAGEMENT SYSTEM
AP	ACCESS PANEL
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
BDCT	BUILDING DESIGN AND CONSTRUCTION TEAM
BHS	BAGGAGE HANDLING SYSTEM
BID	BAGGAGE INFORMATION DISPLAY
BLS	BOTTLED LIQUIDS SCANNER
BMS	BALANCED MAGNETIC SWITCH
C	CONDUIT
CAT6	CATEGORY 6 ETHERNET CABLE
CATV	CABLE TELEVISION
CBP	CUSTOMS AND BORDER PROTECTION
CCP	CONCRETE CAMERA POLE
CE	COMMUNICATIONS ENCLOSURE
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CNTRL	CONTROLLER
CO	CONDUIT ONLY
COMM	COMMUNICATION
COPP	COPPER PATCH PANEL
CR	CARD READER
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER
DAS	DISTRIBUTED ANTENNA SYSTEM
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DDC	DIRECT DIGITAL CONTROL
DH	DOOR HOLDER
DIV	DIVISION
DWG	DRAWING
E	EXISTING
EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRIC/ELECTRICAL
EM	EMERGENCY
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
EMI	ELECTROMAGNETIC INTERFERENCE
EOR	ENGINEER OF RECORD
EQ	EQUAL
ETD	EXPLOSIVE TRACE DETECTION
F/P	FAX / PRINTER
FID	FLIGHT INFORMATION DISPLAY
FLR	FLOOR
FO	FIBER OPTIC
FOPP	FIBER OPTIC PATCH PANEL
FS	FLOW SWITCH
G	GROUND
GC	GENERAL CONTRACTOR
GFGI	GOVERNMENT FURNISHED GOVERNMENT INSTALLED
GPR	GROUND PENETRATING RADAR
GRS	GALVANIZED RIGID STEEL
HDMI	HIGH DEFINITION MULTIMEDIA INTERFACE
HMI	HUMAN MACHINE INTERFACE
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
IC	INTERCOM
IDF	INTERMEDIATE DISTRIBUTION FRAME
IDS	INTRUSION DETECTION SYSTEM
IMC	INTERMEDIATE METAL CONDUIT
IP	INTERNET PROTOCOL
ISP	INTERNET SERVICE PROVIDER
ITC	INTERCOM TERMINAL CABINET
J	JUNCTION
JB	JUNCTION BOX
KAIC	(THOUSAND) AMPERE INTERRUPTING CAPACITY
Kcmil	THOUSANDS OF CIRCULAR MILS
KO	KNOCK OUT
LAN	LOCAL AREA NETWORK
LBS	LOAD BREAK SWITCH
LCD	LIQUID CRYSTAL DISPLAY
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MIC	MICROPHONE
MM	MULTI-MODE
MTD	MOUNTED
MUFID	MULTI-USER FLIGHT INFORMATION DISPLAY
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NWSW	NETWORK SWITCH
OAE	OR APPROVED EQUAL
OC	ON CENTER
OH	OVERHEAD
OSR	ONLINE SCREEN RESOLUTION
PNEU	PNEUMATIC
PNL	PANEL
POE	POWER OVER ETHERNET
POS	POINT OF SALE
PP	POWER PANEL
PRCS	PARKING REVENUE CONTROL SYSTEM
PTZ	PAN-TILT-ZOOM
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RBB	RACK BONDING BUSBAR
REX	REQUEST TO EXIT
RF	RADIO FREQUENCY
RM	ROOM
RS	RIGID STEEL
SCR	SCREEN ROOM
SEC	SECURITY
SIDA	SECURITY IDENTIFICATION DISPLAY AREA
SIM	SIMILAR
SM	SINGLE MODE
SPD	SURGE PROTECTIVE DEVICE
STS	STATIC TRANSFER SWITCH
SYM	SYMMETRICAL
TB	TELEPHONE BACKBOARD
TBD	TO BE DETERMINED
TDC	TRAVEL DOCUMENT CHECKER
TEL	TELEPHONE
TGB	TELECOMMUNICATIONS GROUNDING BUS BAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUS BAR
TSA	TRANSPORTATION SECURITY ADMINISTRATION
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UGC	UNDERGROUND COMMUNICATIONS
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UT	UTILITY
UTP	UNSHIELDED TWISTED PAIR
UTR	UP THROUGH ROOF
VMS	VIDEO MANAGEMENT SYSTEM
VoIP	VOICE OVER IP TELEPHONY
WAP	WIRELESS ACCESS POINT
WP	WEATHER PROOF
WR	WEATHER-RESISTANT
Z	ZONE

TELECOMMUNICATIONS SYMBOLS

MOUNTING HEIGHT ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED. "AC" INDICATES HEIGHT OF 6" ABOVE COUNTER.

COMMUNICATIONS OUTLET -TWO (2) CAT 6 RJ45 JACKS (BLUE) WITH BLUE CAT 6. REFER TO DETAIL 6 ON SHEET T501.

VOICE/DATA OUTLET, ONE (1) CAT 6 RJ45 JACK (WHITE) WITH BLUE CAT 6 AND TWO (2) CAT 6 RJ45 JACKS (BLUE) WITH BLUE CAT 6. REFER TO DETAIL 3 ON SHEET T501.

VIDEO INTERCOM OUTLET, SURFACE MOUNTED -TWO (2) CAT 6 RJ45 JACKS (BLUE) WITH BLUE CAT 6. REFER TO DETAIL 6 ON SHEET T501.

WALL MOUNTED VOICE OUTLET, ONE (1) WHITE JACK WITH ONE (1) BLUE CAT 6. REFER TO DETAIL 4 ON SHEET T501.

SECURITY CAMERA DATA. MOUNTING AS NOTED IN CAMERA SCHEDULE -TWO (2) CAT 6 RJ45 PLUGS/JACKS (GRAY) WITH GRAY CAT 6. REFER TO SECURITY CAMERA SCHEDULE FOR ADDITIONAL INFORMATION.

WIRELESS ACCESS POINT - PROVIDE (2) CAT 6 COMMUNICATIONS JACKS (BLUE) WITH BLUE CAT 6.

COMMUNICATIONS JUNCTION BOX (6" X 6" X 4" UON.)

COMMUNICATIONS HAND HOLE, REFER TO DETAIL 3 ON SHEET T504.

COMMUNICATIONS HAND HOLE, REFER TO DETAIL 4 ON SHEET T504.

COMMUNICATIONS CABLE TRAY, REFER TO PLANS FOR DIMENSIONS AND MOUNTING HEIGHT.

2-POST EQUIPMENT RACK

CABLE LEGEND & COLOR SCHEMES

CABLE LEGEND

ID	DESCRIPTION	DEVICE
A	9-22 AWG SHIELDED	CARD READER
B	4-22 AWG UNSHIELDED	MISC. INPUT (DPS/REX/TD)
C	4-14 AWG UNSHIELDED	ANNUNCIATOR (HORN/STROBE)
D	2-14 AWG UNSHIELDED	MISC. OUTPUT (LOCK) LENGTH < 100'
	2-12 AWG UNSHIELDED	MISC. OUTPUT (LOCK) LENGTH < 200'
E	CATEGORY 6 UTP	ETHERNET (VOICE/DATA/VIDEO)
E1	GEL FILLED CATEGORY 6 UTP	ETHERNET (VOICE/DATA/VIDEO) -I/O WET LOCATIONS
E2	GEL FILLED CATEGORY 6 STP	ETHERNET (VOICE/DATA/VIDEO) -I/O WET LOCATIONS
F	2-18 AWG UNSHIELDED	FIRE ALARM RELAY AND MISC. I/O
G	8-22 AWG UNSHIELDED	GATE OPERATOR I/O
K	KEYBOARD/VIDEO/MOUSE	KVM SWITCH CONTROL CABLE
S	2-12 AWG UNSHIELDED	UNSHIELDED SPEAKER CABLE
T	RG-6/U COAX	COAX CABLE TELEVISION
V	22 AWG UTP	VOLUME CONTROL
X	SINGLE-MODE FIBER	FIBER OPTIC PATCH CABLE

GENERAL NOTES

1. REFER TO CONSTRUCTION MANUAL OR SPECIFICATIONS FOR MATERIALS TO BE INCORPORATED.
2. FIELD VERIFY ALL NEW DEVICE AND EQUIPMENT LOCATIONS PRIOR TO THE START OF INSTALLATION. ANY CONFLICTS MUST BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4". ALL CONDUITS MUST BE EMT. EXCEPTIONS INCLUDE:
   A. GRS FOR EXTERIOR AREAS
   B. RS FOR AREAS ACCESSIBLE TO THE PUBLIC
   C. PVC FOR BURIED OR CAST-IN-PLACE CONDUITS
   D. FLEXIBLE CONDUIT FOR CONCEALED DROPS TO DEVICES AND WHERE APPROVED BY THE OWNER.
4. CONDUIT MUST NOT EXCEED 40% FILL FACTOR. INSTALLATION OF CONDUIT AND WIRING MUST BE IN COMPLIANCE WITH NATIONAL ELECTRICAL CODE (NEC). ALL WIRING MUST BE HOMERUN, UNLESS OTHERWISE NOTED. ANY SPLICES MUST BE APPROVED BY THE DESIGNER.
5. CONTRACTOR SHALL COORDINATE THE ROUTING AND LOCATION OF NEW COMMUNICATIONS CONDUITS WITH THE ELECTRICAL CONTRACTOR AND OTHER TRADES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT LINE VOLTAGE (120V AND ABOVE) POWER CONDUCTORS ARE NOT ROUTED WITHIN 12 INCHES OF COMMUNICATIONS WIRING.
7. ALL CONDUCTORS MUST BE COLOR CODED AND TAGGED AS DESCRIBED IN THE WRITTEN SPECIFICATIONS AND APPROVED BY THE OWNER.
8. COORDINATE WORK WITH OTHER TRADES AND CONFIRM FINAL MOUNTING LOCATION FOR NEW AND RELOCATED EQUIPMENT WITH THE OWNER PRIOR TO INSTALLATION.
9. CONTRACTOR MUST FOLLOW MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES FOR ALL EQUIPMENT. UNLESS OTHERWISE NOTED, ALL MATERIALS SHALL BE NEW AND UNUSED.
10. ALL RACEWAY, CONDUIT AND JUNCTION BOXES SHALL BE NEW AND INSTALLED WITH PULL STRING. REUSE OF EXISTING CONDUITS MUST BE APPROVED BY THE OWNER. WHEN INSTALLING CABLING IN EXISTING CABLE TRAY, CONTRACTOR MUST TAKE CARE NOT TO DISTURB OR DAMAGE EXISTING CABLING.
11. PROVIDE CONDUIT SLEEVES FOR ALL PENETRATIONS, WHETHER SHOWN ON DRAWING OR NOT. PROVIDE INSULATING BUSHINGS ON BOTH ENDS OF ALL CONDUIT SLEEVING.
12. CONDUITS PENETRATING FIRE RATED WALLS OR FLOORS MUST USE APPROVED U.L. DEVICES IN ORDER TO MAINTAIN FIRE RATING OF THE WALL OR FLOOR.
13. ALL DATA CABLING FOR SECURITY MUST BE INSTALLED IN DEDICATED CONDUIT.
14. MAINTAIN MINIMUM BENDING RADII FOR ALL CABLES ACCORDING TO THE CABLE MANUFACTURER AND PER BICSI AND TIA STANDARDS.
15. ALL WIRING, CABLING AND CONDUCTORS SHALL BE NEW UNLESS REUSE OF EXISTING IS APPROVED BY THE OWNER.
16. ALL WORK SHALL BE CLOSELY COORDINATED WITH THE OWNER. ANY WORK AFFECTING TENANTS MUST BE SCHEDULED IN ADVANCE AND PRE-APPROVED BY THE OWNER.
17. ALL COMMUNICATIONS OUTLET BOXES SHALL BE MIN. 4" WIDE BY 4" HIGH BY 3.15" DEEP WITH SINGLE GANG MUD RING FOR CAT 6 CABLES. AV OUTLET BOXES (OTHER THAN THAT BEHIND THE TV, VIDEO WALL DISPLAYS) MUST BE 3.15-INCH DEEP 5-INCH SQUARE BOX.
18. TELE/DATA CONDUITS ARE TO BE LONG RADIUS TYPE AND SHALL CONTAIN PULL STRINGS. PROVIDE PLATES FOR ALL OUTLETS. CAT 6 CABLES SHALL BE PLENUM RATED. "LB" TYPE FITTING MUST NOT BE USED.
19. IF EXISTING EQUIPMENT MUST BE DECOMMISSIONED, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO PROPERLY SHUT DOWN EQUIPMENT PRIOR TO DISCONNECTING. CONTRACTOR SHALL PROPERLY STORE EQUIPMENT ON SITE AT AN AREA DESIGNATED BY THE OWNER UNTIL THE EQUIPMENT IS REINSTALLED OR CONVEYED TO THE OWNER UPON COMPLETION OF THE PROJECT.
20. CONTRACTOR TO COORDINATE WITH THE OWNER FOR TIMING AND SCHEDULE FOR MOVING OWNER PROVIDED EQUIPMENT AND INSTALLATION LOCATION.
21. WHERE "ROUGH-IN" IS REQUIRED, PROVIDE BACK BOX, COVER PLATE, CONDUIT, JUNCTION BOXES, ANCILLARY HARDWARE, AND RACEWAY BACK TO THE COMM ROOM.

COMM SHEET INDEX

SHEET NUMBER	SHEET NAME
T001	COMMUNICATIONS GENERAL NOTES, SYMBOLS AND ABBREVIATIONS
T100	COMMUNICATIONS SITE PLAN
T101	OVERALL COMMUNICATIONS PLAN - GROUND LEVEL
T102	OVERALL COMMUNICATIONS PLAN - 2ND LEVEL
T103	OVERALL COMMUNICATIONS PLAN - 3RD LEVEL
T401	ENLARGED COMMUNICATIONS PLANS
T402	ENLARGED COMMUNICATIONS PLANS
T403	ENLARGED COMMUNICATIONS PLANS
T404	ENLARGED COMMUNICATIONS PLANS
T405	ENLARGED COMMUNICATIONS PLANS
T406	ENLARGED COMMUNICATIONS PLANS
T407	ENLARGED COMMUNICATIONS PLANS
T408	ENLARGED COMMUNICATIONS PLANS
T501	COMMUNICATIONS DETAILS
T502	COMMUNICATIONS DETAILS
T503	COMMUNICATIONS DETAILS
T504	COMMUNICATIONS DETAILS
T701	COMMUNICATIONS BLOCK DIAGRAM
T702	COMMUNICATIONS BACKBONE DIAGRAM
T703	COMMUNICATIONS RISER DIAGRAMS
T704	COMMUNICATIONS INTERCONNECT DIAGRAMS

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: JAP
DRAWN BY: RJF
DESIGNED BY: RJF
PROJECT NUMBER:
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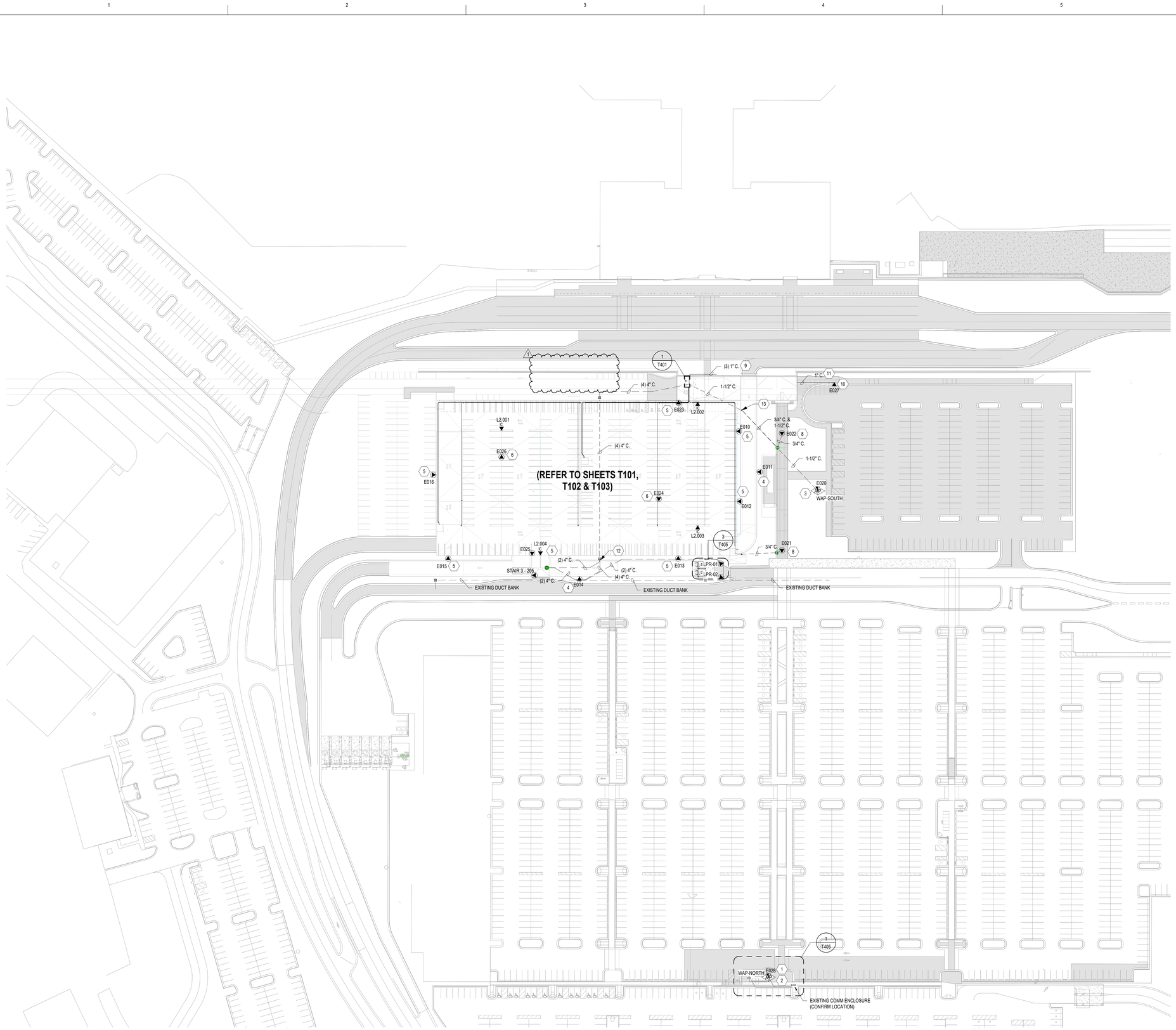
SHEET TITLE:
COMMUNICATIONS GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

SHEET ID:
T001

PROJECT STATUS:
100% BID SET

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PN

1 COMMUNICATIONS SITE PLAN

SCALE: 1" = 60'-0"

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

NOTES:

1. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW UNLESS OTHERWISE NOTED.
2. BURIED CONDUIT AND BACKBONE FIBER BETWEEN TERMINAL BUILDING MANAGEMENT ROOM AND COMM ENCLOSURE/IDF ROOM SHALL BE PROVIDED BY ELECTRICAL. REFER TO ELECTRICAL SHEETS E20x FOR NEW CONDUIT AND FIBER.
3. CONTRACTOR SHALL PROVIDE A COMPLETE RACEWAY SYSTEM BETWEEN FIELD DEVICES AND COMMUNICATIONS ROOMS. PROVIDE ALL CONDUITS, JUNCTION BOXES, STRAPPING, ETC. AS REQUIRED UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL COORDINATE CAMERA MOUNTING LOCATIONS WITH THE DIV 28 SECURITY CONTRACTOR PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL COORDINATE RACEWAY ROUTING WITH ELECTRICAL AND OTHER TRADES AS REQUIRED PRIOR TO INSTALLATION.

KEY NOTES:

1. PROVIDE STRUCTURAL FOOTING AS REQUIRED BY SECURITY POLE MANUFACTURER. REFER TO DETAIL 3 ON SHEET T504 FOR ADDITIOINAL IINFORMATION. COORDINATE WITH THE CIVIL CONTRACTOR.
2. PROVIDE NEW SECURITY POLE. CONFIGURE POLE WITH SECURITY CAMERA, WI-FI, HORN, LIGHT, INTERCOM, ETC., MATCHING THOSE DEPLOYED ELSEWHERE DURING PREVIOUS PHASE OF WORK.
3. REINSTALL TEMPORARY SECURITY POLE PREVIOUSLY INSTALLED AT THE TEMPORARY CURBSIDE. RECONFIGURE POLE WITH ALL MODULES (SECURITY CAMERA, WI-FI, HORN, LIGHT, ETC.) TO MATCH THOSE DEPLOYED ELSEWHERE DURING PREVIOUS PHASE OF WORK. PROVIDE A COMPLETE RACEWAY SYSTEM BETWEEN THE EXISTING BUS SHELTER COMM ENCLOSURE AND THE SECURITY POLE AND BUS SHELTER OUTDOOR DISPLAY. PROVIDE ALL CONDUIT FOR FIELD DEVICES, JUNCTION BOXES, STRAPPING, ETC. AS REQUIRED UNLESS OTHERWISE NOTED. COORDINATE INSTALLATION OF SECURITY DEVICES WITH THE DIV 28 CONTRACTOR. REFER TO DETAILS 1 AND 2 ON SHEET T504 FOR ADDITIONAL INFORMATION.
4. PROVIDE NEW EXTERIOR WALL-MOUNT CAMERA ON GARAGE RAMP.
5. PROVIDE NEW EXTERIOR WALL-MOUNT CAMERA ON EXTERIOR WALL OF GARAGE.
6. PROVIDE NEW EXTERIOR POLE MOUNT CAMERA ON LIGHT POLE.
7. PROVIDE NEW EXTERIOR WALL-MOUNT CAMERA.
8. PROVIDE NEW EXTERIOR CEILING MOUNT CAMERA.
9. PROVIDE THREE ONE (1) 1" C. AND TWO (1) 1-1/4" C. STUB OUTS FOR SECURITY AND PAGING CONDUITS TO BE PROVIDED IN VOLUME II. REFER TO VOLUME II SHEET T108, COORDINATE WITH THE COMMUNICATIONS CONTRACTOR.
10. PROVIDE DATA OUTLET IN CANOPY FOR OUTDOOR DISPLAY. COORDINATE OUTLET LOCATION WITH DIV 26 AND THE ARCHITECT.
11. PROVIDE 1" CONDUIT ROUTED TO COMM ROOM WITH TWO (2) CAT6 CABLES FOR OUTDOOR DISPLAY. CONDUIT ROUTING SHALL BE DETERMINED ACCORDING TO FIELD CONDITIONS AND SUBMITTED FOR APPROVAL. COORDINATE ROUTING WITH THE DIV 26 ELECTRICAL CONTRACTOR.
12. PROVIDE 36" X 36" PULL BOX. REFER TO DETAIL 4 ON SHEET T504.
13. PROVIDE 10" X 15" HAND HOLE IN MECHANICAL YARD UNDER RAMP. REFER TO DETAIL 3 ON SHEET T504.

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ILM

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ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

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KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
COMMUNICATIONS SITE PLAN

SHEET ID:
T100

PROJECT STATUS:
100% BID SET

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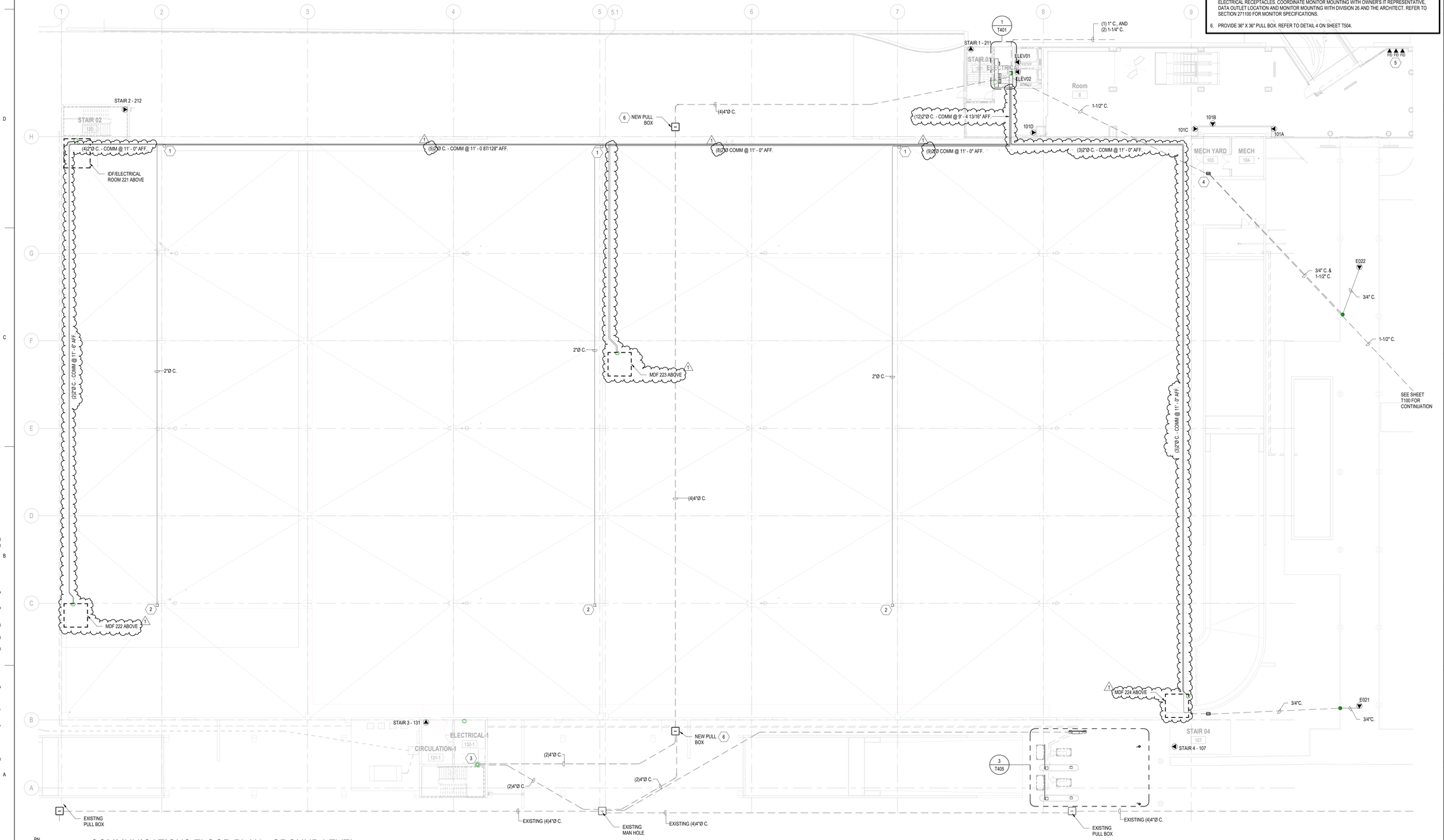
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NOTES:

1. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW UNLESS OTHERWISE NOTED.
2. BURIED CONDUIT AND BACKBONE FIBER BETWEEN TERMINAL BUILDING MANAGEMENT ROOM AND COMM ENCLOSURE/IDF ROOM SHALL BE PROVIDED BY ELECTRICAL. REFER TO ELECTRICAL SHEETS E20x FOR NEW CONDUIT AND FIBER.
3. CONTRACTOR SHALL PROVIDE A COMPLETE RACEWAY SYSTEM BETWEEN FIELD DEVICES AND COMMUNICATIONS ROOMS. PROVIDE ALL CONDUITS, JUNCTION BOXES, STRAPPING, ETC. AS REQUIRED UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL COORDINATE CAMERA MOUNTING LOCATIONS WITH THE DIV 28 SECURITY CONTRACTOR PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL COORDINATE RACEWAY ROUTING WITH ELECTRICAL AND OTHER TRADES AS REQUIRED PRIOR TO INSTALLATION.

KEY NOTES:

1. COORDINATE DATA CONNECTION REQUIREMENTS FOR RENTAL CAR CUSTOMER SERVICE BOOTH WITH RENTAL CAR IT REPRESENTATIVE. COORDINATE WITH CONDUIT ROUTING WITH DIVISION 26.
2. COORDINATE DATA CONNECTION REQUIREMENTS FOR RENTAL CAR EXIT BOOTH WITH RENTAL CAR IT REPRESENTATIVE. COORDINATE CONDUIT ROUTING WITH DIVISION 26.
3. ROUTE UNDERGROUND CONDUITS THROUGH STORAGE ROOM TO COMM ROOM ABOVE.
4. PROVIDE 10" X 15" HAND HOLE IN MECHANICAL YARD UNDER RAMP. REFER TO DETAIL 3 ON SHEET T504.
5. PROVIDE THREE (3) WALL-MOUNTED FIDS MONITORS AND DATA OUTLETS COLLOCATED WITH ELECTRICAL RECEPTACLES. COORDINATE MONITOR MOUNTING WITH OWNER'S IT REPRESENTATIVE. DATA OUTLET LOCATION AND MONITOR MOUNTING WITH DIVISION 26 AND THE ARCHITECT. REFER TO SECTION 271100 FOR MONITOR SPECIFICATIONS.
6. PROVIDE 36" X 36" PULL BOX. REFER TO DETAIL 4 ON SHEET T504.



PN
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1 COMMUNICATIONS FLOOR PLAN - GROUND LEVEL

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

16 0 16 32

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

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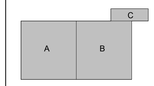
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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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KEY PLAN



REVISIONS

NO.	DESCRIPTION	DATE
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DATE ISSUED:	03/14/2025
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DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	

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SHEET TITLE:

OVERALL COMMUNICATIONS PLAN - GROUND LEVEL

SHEET ID:

T101

PROJECT STATUS:
100% BID SET

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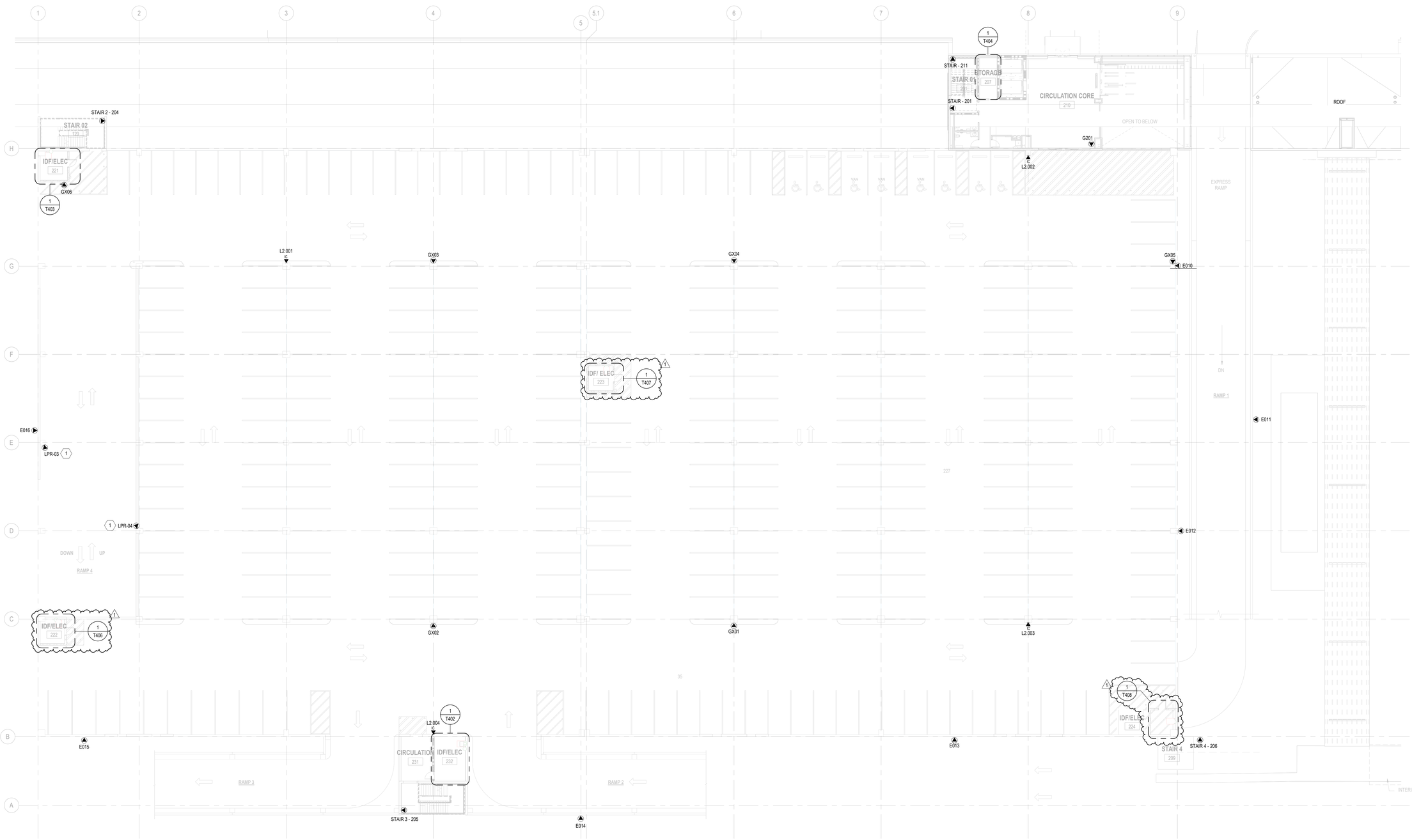
4/10/2025 11:06:59 AM Autodesk Docs://1003007/0004_ILM TO4 Rdwy Int Improv Design/2003007/0006_ILM_T06_Parking Garage and Shuttle Plaza_T_R24.rvt

NOTES:

1. THE EQUIPMENT LAYOUT AND CONDUIT ROUTING AS SHOWN IS FOR BIDDING PURPOSES ONLY. THE LAYOUT SHOWN IS SCHEMATIC AND IS BASED ON INFORMATION PROVIDED TO THE DESIGN TEAM BY THE PRCS VENDOR. ACTUAL CONDUIT ROUTING SHALL BE DETERMINED BY THE CONTRACTOR AS COORDINATED WITH FIELD CONDITIONS AND OTHER TRADES AND SUBMITTED TO THE DESIGN TEAM FOR APPROVAL.
2. COORDINATE ALL CONDUIT ROUTING WITH THE CIVIL, ELECTRICAL CONTRACTORS AND PRCS INSTALLER, REFER TO ELECTRICAL SHEET E312 AND THE RISER DIAGRAMS ON SHEET T703 FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL COORDINATE ACTUAL EQUIPMENT LOCATION AND CONDUIT REQUIREMENTS WITH THE CIVIL CONTRACTOR AND PRCS INSTALLER VENDOR PRIOR TO CONSTRUCTION.
3. ALL WORK SHALL BE COORDINATED WITH ELECTRICAL AND OTHER TRADES, AND APPROVED BY THE OWNER AND THE PARKING CONTROL INSTALLER.
4. MOUNTING LOCATIONS FOR JUNCTION BOXES AND HAND HOLES SHALL BE COORDINATED WITH OTHER TRADES AND SUBMITTED TO THE OWNER FOR APPROVAL.

KEY NOTES:

1. PROVIDE WEATHERPROOF JUNCTION BOX AND 1" CONDUIT WITH SPD, AND CAT6 CABLE TO IDF/ELEC. ROOM 221 FOR LPR CAMERA BY PRCS VENDOR. COORDINATE INSTALLATION WITH THE PRCS INSTALLER.



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1 COMMUNICATIONS FLOOR PLAN - LEVEL 2

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

16 0 16 32

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

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	**2003-0070-006**

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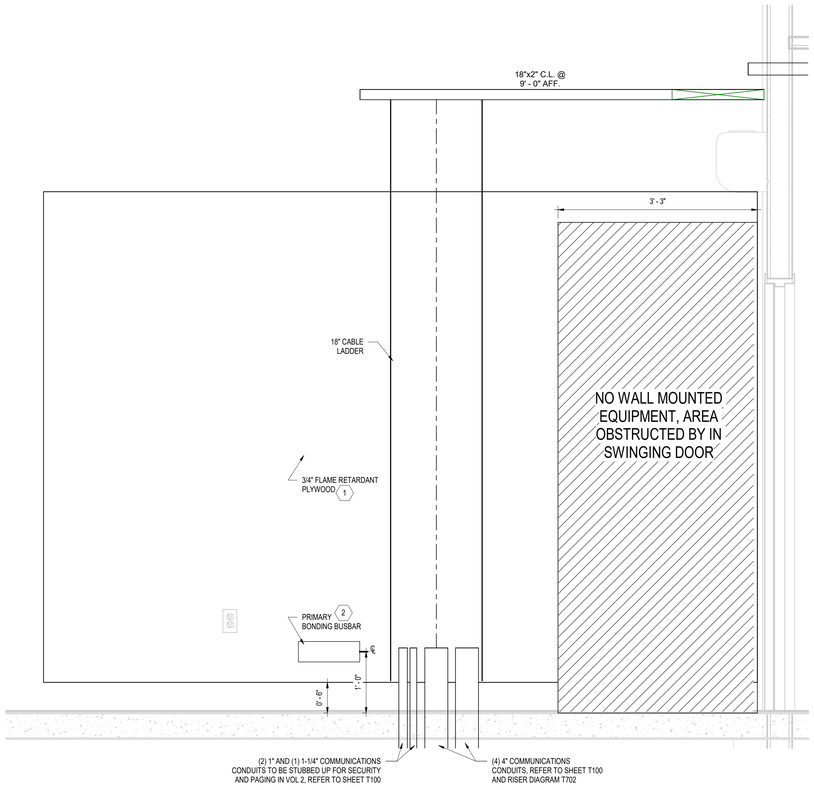
SHEET TITLE:

OVERALL COMMUNICATIONS PLAN - 2ND LEVEL

SHEET ID:

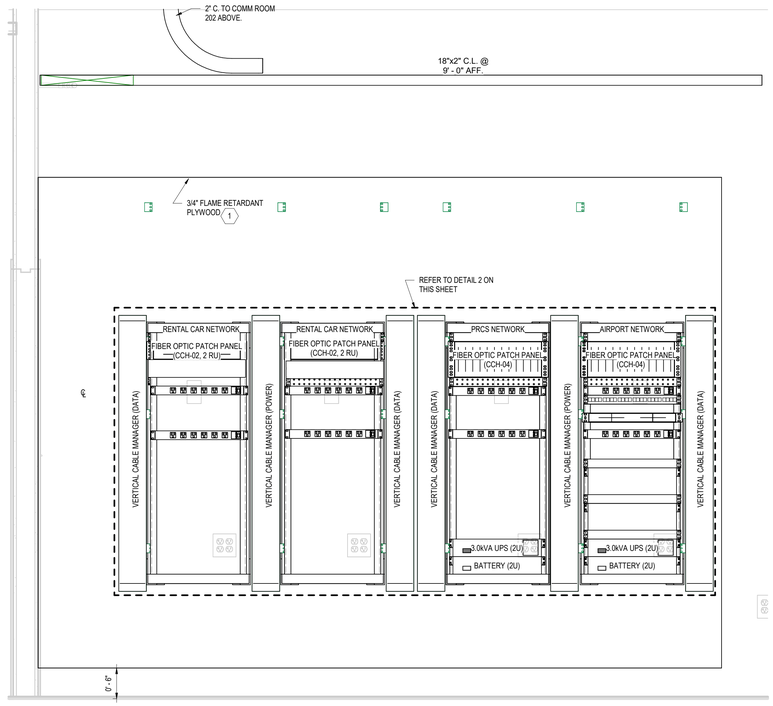
T102

PROJECT STATUS:
100% BID SET



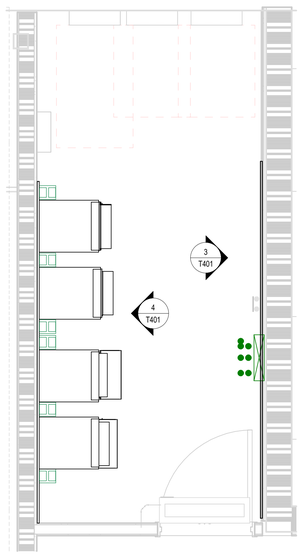
3 PARTIAL WEST WALL ELEVATION - ELECTRIC ROOM 102

SCALE: 1" = 1'-0"



4 PARTIAL EAST WALL ELEVATION - ELECTRIC ROOM 102

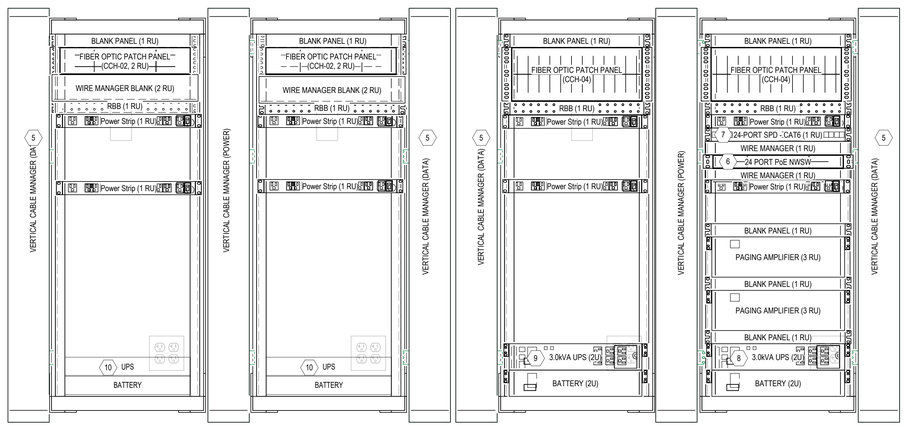
SCALE: 1" = 1'-0"



PN
N

1 ENLARGED PLAN - ELECTRIC ROOM 102

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



2 RACK ELEVATION - ELECTRIC ROOM 102

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

NOTES:

1. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW AND PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
2. REFER TO COMMUNICATIONS INTERCONNECT AND RISER DIAGRAMS ON SHEETS T702 AND T703 FOR CABLE AND CONDUIT REQUIREMENTS.
3. CONTRACTOR SHALL COORDINATE WORK WITH THE ELECTRICAL CONTRACTOR AND OTHER TRADES AS REQUIRED.
4. NETWORK SWITCHES SHALL BE PROVIDED BY THE OWNER AND INSTALLED BY THE CONTRACTOR, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
5. CONDUIT (C) AND CABLE LADDER (C.L.) ROUTING SHOWN IS SCHEMATIC IN NATURE. ACTUAL ROUTING SHALL BE DETERMINED ACCORDING TO FIELD CONDITIONS AND AS COORDINATED WITH OTHER TRADES.
6. APPROVED UL DEVICES SHALL BE USED TO SEAL PENETRATIONS THROUGH FIRE RATED WALLS.

KEY NOTES:

1. PROVIDE 3/4" FLAME RETARDANT PLYWOOD MOUNTED TO CONCRETE WALLS USING ANCHORS. PAINT WITH TWO COATS OF WHITE FLAME RETARDANT ENAMEL ON ALL SIX (6) SIDES. MASK UL LABELS FOR AHJ INSPECTION AFTER INSTALLATION.
2. PROVIDE PRIMARY BONDING BUSBAR, REFER TO DETAIL 7 ON SHEET T501.
3. WALL-MOUNTED ENCLOSURE FOR SECURITY EQUIPMENT SHALL BE PROVIDED BY THE DIVISION 28 CONTRACTOR, COORDINATE INSTALLATION WITH THE SECURITY INSTALLER.
4. PROVIDE FOUR (4) WALL-MOUNTED RACKS FOR AIRPORT, PARKING CONTROL, AND RENTAL CAR NETWORKS, REFER TO DETAIL 2 FOR ADDITIONAL INFORMATION.
5. PROVIDE VERTICAL CABLE MANAGER MOUNTED TO WALL BETWEEN RACKS, BUNDLE CABLE TO C.L. ABOVE.
6. NETWORK SWITCH PROVIDED BY THE OWNER AND INSTALLED BY THE CONTRACTOR, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
7. PROVIDE RACK-MOUNTED SPD FOR SURVEILLANCE CAMERAS, REFER TO DETAIL 5 ON SHEET T503 FOR ADDITIONAL INFORMATION.
8. PROVIDE RACK MOUNTED UPS, CONTRACTOR SHALL COORDINATE RECEPTACLE REQUIREMENTS WITH DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CIRCUITS PROVIDED BY DIV. 26. REFER TO DETAIL 1 ON SHEET T503 FOR ADDITIONAL INFORMATION.
9. PROVIDE RACK MOUNTED UPS, CONTRACTOR SHALL COORDINATE RECEPTACLE REQUIREMENTS WITH DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CIRCUITS PROVIDED BY DIV. 26. REFER TO DETAIL 2 ON SHEET T503 FOR ADDITIONAL INFORMATION.
10. MAKE PROVISIONS FOR RACK MOUNTED UPS, CONTRACTOR SHALL COORDINATE RECEPTACLE REQUIREMENTS WITH DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CIRCUITS PROVIDED BY DIV. 26. REFER TO DETAIL 3 ON SHEET T503 FOR ADDITIONAL INFORMATION.

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ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: JAP
DRAWN BY: RJF
DESIGNED BY: RJF
PROJECT NUMBER:
2003-0070-006
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SHEET TITLE:
ENLARGED COMMUNICATIONS PLANS

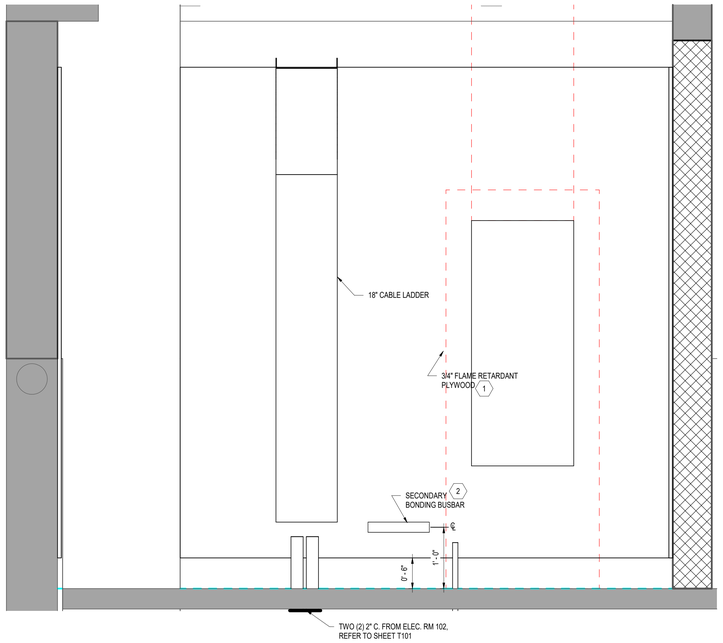
SHEET ID:
T401

PROJECT STATUS:
100% BID SET

1 0 1
SCALE: 1 1/2"= 1'-0"
1 0 1 2
SCALE: 1" = 1'-0"
2 0 2 4
SCALE: 1/2" = 1'-0"

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4 EAST WALL ELEVATION - IDF 222

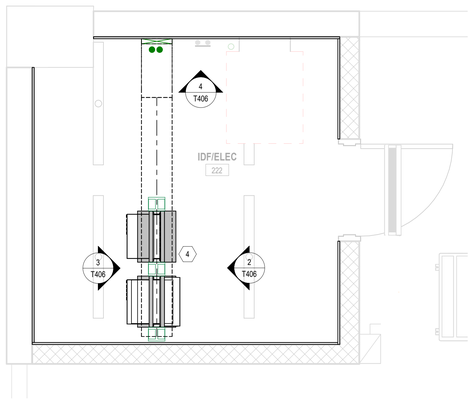
SCALE: 1" = 1'-0"

NOTES:

1. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW AND PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
2. REFER TO COMMUNICATIONS INTERCONNECT AND RISER DIAGRAMS ON SHEETS T702 AND T703 FOR CABLE AND CONDUIT REQUIREMENTS.
3. CONTRACTOR SHALL COORDINATE WORK WITH THE ELECTRICAL CONTRACTOR AND OTHER TRADES AS REQUIRED.
4. NETWORK SWITCHES SHALL BE PROVIDED BY THE OWNER AND INSTALLED BY THE CONTRACTOR, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
5. CONDUIT (C) AND CABLE LADDER (C.L.) ROUTING SHOWN IS SCHEMATIC IN NATURE. ACTUAL ROUTING SHALL BE DETERMINED ACCORDING TO FIELD CONDITIONS AND AS COORDINATED WITH OTHER TRADES.
6. APPROVED UL DEVICES SHALL BE USED TO SEAL PENETRATIONS THROUGH FIRE RATED WALLS.

KEY NOTES:

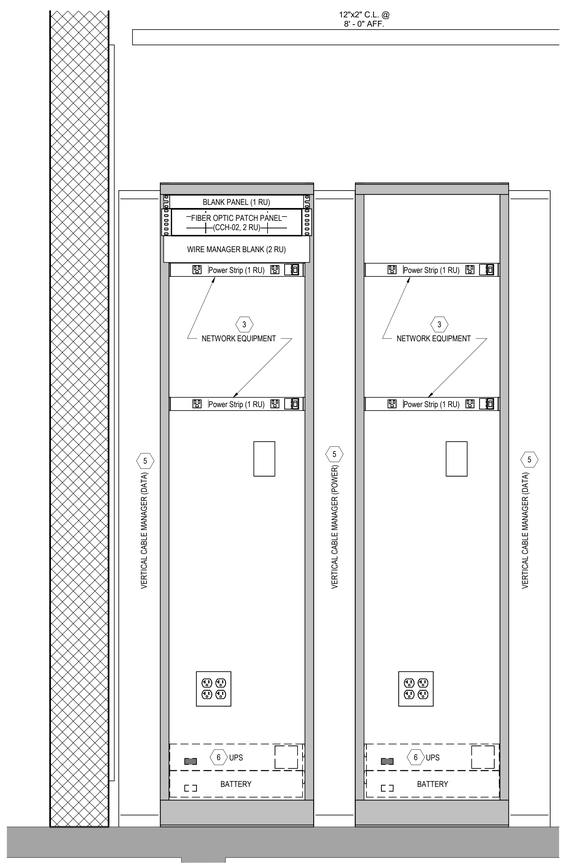
1. PROVIDE 3/4" FLAME RETARDANT PLYWOOD MOUNTED TO CONCRETE WALLS USING ANCHORS. PAINT WITH TWO COATS OF WHITE FLAME RETARDANT ENAMEL ON ALL SIX (6) SIDES. MASK UL LABELS FOR AHJ INSPECTION AFTER INSTALLATION.
2. PROVIDE SECONDARY BONDING BUSBAR, REFER TO DETAIL 8 ON SHEET T501.
3. NETWORK EQUIPMENT (SWITCH(ES), MEDIA CONVERTERS, ETC.) PROVIDEDAND INSTALLED BY THE PARKING CONTROL VENDORS, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
4. PROVIDE TWO (2) FLOOR MOUNTED TWO POST RACKS FOR AIRPORT, AND PARKING CONTROL NETWORKS, REFER TO DETAIL 2 FOR ADDITIONAL INFORMATION.
5. PROVIDE VERTICAL CABLE MANAGER BETWEEN RACKS.
6. MAKE PROVISIONS FOR RACK MOUNTED UPS. CONTRACTOR SHALL COORDINATE RECEPTACLE REQUIREMENTS WITH DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CIRCUITS PROVIDED BY DIV. 26. REFER TO DETAIL 3 ON SHEET T503 FOR ADDITIONAL INFORMATION.



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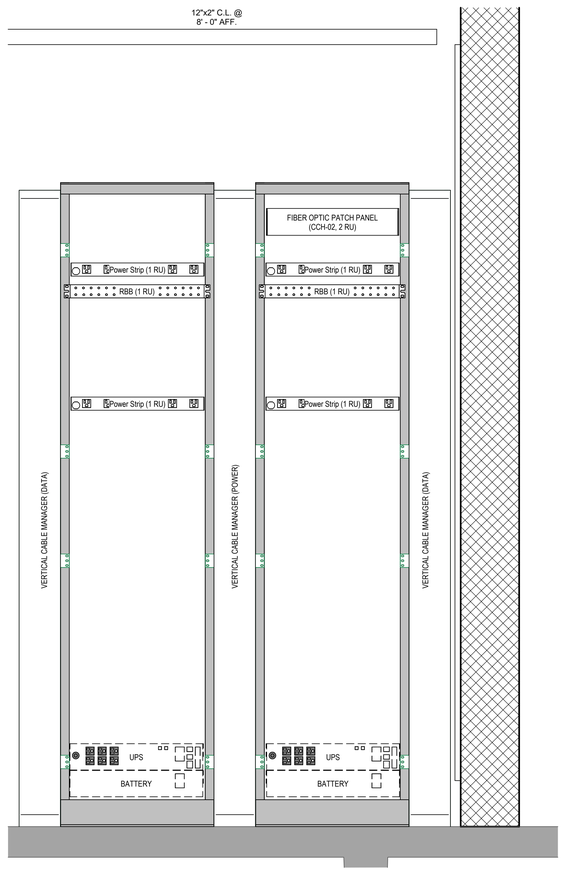
1 ENLARGED PLAN - IDF 222

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



2 IDF 222 - FRONT RACK ELEVATION

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



3 IDF 222 - REAR RACK ELEVATION

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

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

SCALE: 1" = 1'-0"

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

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: JAP
DRAWN BY: RJF
DESIGNED BY: RJF
PROJECT NUMBER:
2003-0070-006

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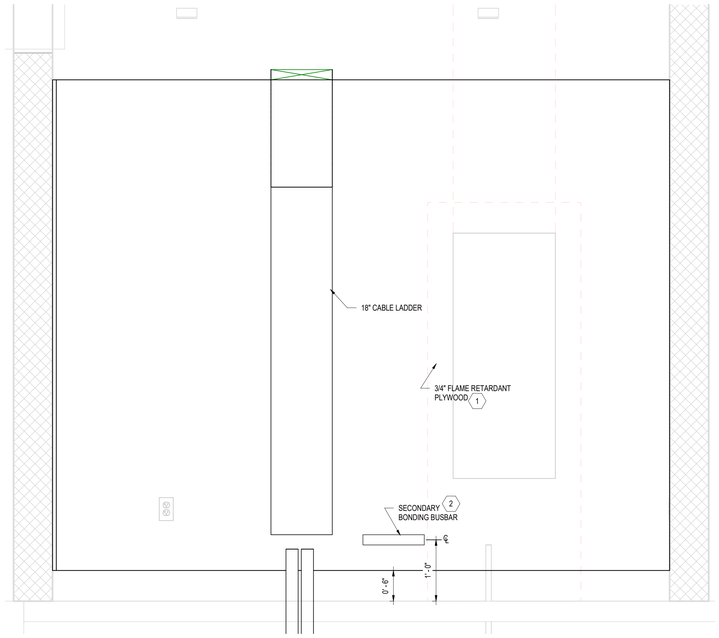
SHEET TITLE:
ENLARGED COMMUNICATIONS PLANS

SHEET ID:
T406

PROJECT STATUS:
100% BID SET

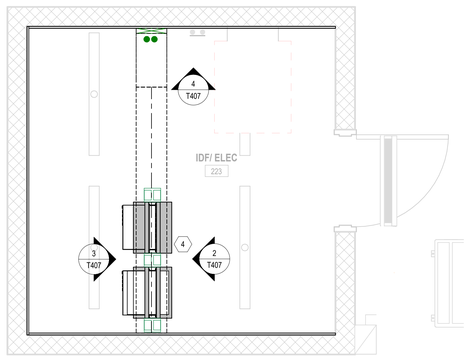
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4 EAST WALL ELEVATION - IDF 223

SCALE: 1" = 1'-0"



1 ENLARGED PLAN - IDF 223

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

2 IDF 223 - FRONT RACK ELEVATION

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

3 IDF 223 - REAR RACK ELEVATION

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

NOTES:

1. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW AND PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
2. REFER TO COMMUNICATIONS INTERCONNECT AND RISER DIAGRAMS ON SHEETS T702 AND T703 FOR CABLE AND CONDUIT REQUIREMENTS.
3. CONTRACTOR SHALL COORDINATE WORK WITH THE ELECTRICAL CONTRACTOR AND OTHER TRADES AS REQUIRED.
4. NETWORK SWITCHES SHALL BE PROVIDED BY THE OWNER AND INSTALLED BY THE CONTRACTOR, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
5. CONDUIT (C) AND CABLE LADDER (C.L.) ROUTING SHOWN IS SCHEMATIC IN NATURE. ACTUAL ROUTING SHALL BE DETERMINED ACCORDING TO FIELD CONDITIONS AND AS COORDINATED WITH OTHER TRADES.
6. APPROVED UL DEVICES SHALL BE USED TO SEAL PENETRATIONS THROUGH FIRE RATED WALLS.

KEY NOTES:

1. PROVIDE 3/4" FLAME RETARDANT PLYWOOD MOUNTED TO CONCRETE WALLS USING ANCHORS. PAINT WITH TWO COATS OF WHITE FLAME RETARDANT ENAMEL ON ALL SIX (6) SIDES. MASK UL LABELS FOR AHJ INSPECTION AFTER INSTALLATION.
2. PROVIDE SECONDARY BONDING BUSBAR, REFER TO DETAIL 8 ON SHEET T501.
3. NETWORK EQUIPMENT (SWITCH(ES), MEDIA CONVERTERS, ETC.) PROVIDEDAND INSTALLED BY THE PARKING CONTROL VENDORS, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
4. PROVIDE TWO (2) FLOOR MOUNTED TWO POST RACKS FOR AIRPORT, AND PARKING CONTROL NETWORKS, REFER TO DETAIL 2 FOR ADDITIONAL INFORMATION.
5. PROVIDE VERTICAL CABLE MANAGER BETWEEN RACKS.
6. MAKE PROVISIONS FOR RACK MOUNTED UPS. CONTRACTOR SHALL COORDINATE RECEPTACLE REQUIREMENTS WITH DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CIRCUITS PROVIDED BY DIV. 26. REFER TO DETAIL 3 ON SHEET T503 FOR ADDITIONAL INFORMATION.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	**2003-0070-006**

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SHEET TITLE:
ENLARGED COMMUNICATIONS PLANS

SHEET ID:
T407

PROJECT STATUS:
100% BID SET

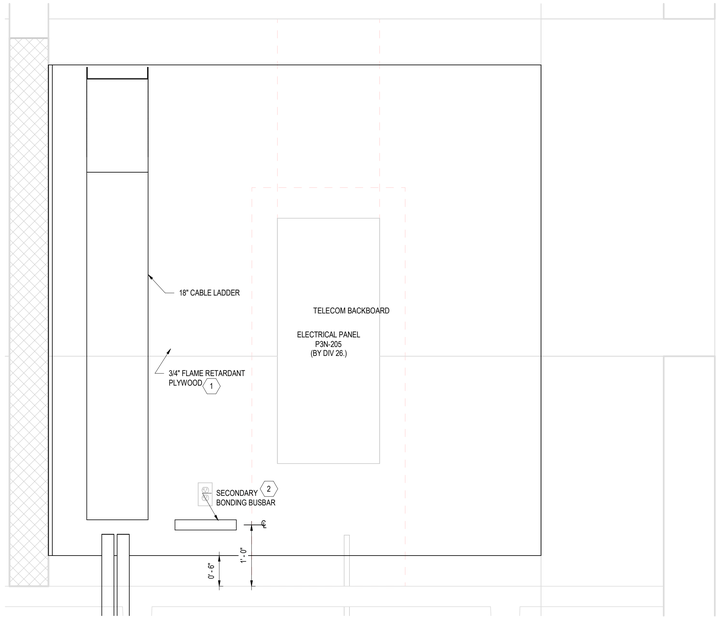
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SCALE: 1" = 1'-0"

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

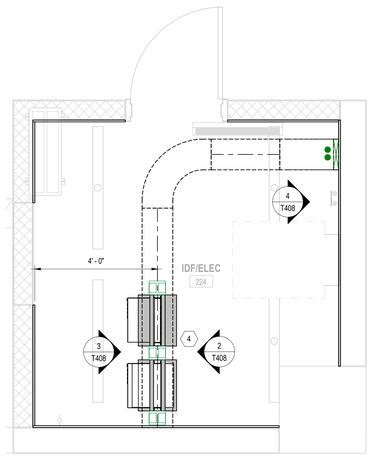
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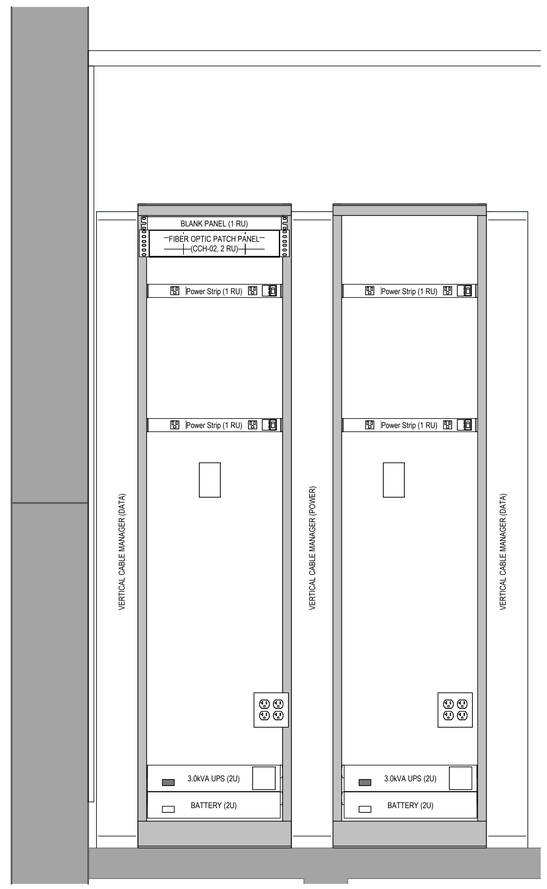
4 SOUTH WALL ELEVATION - IDF 224

SCALE: 1" = 1'-0"



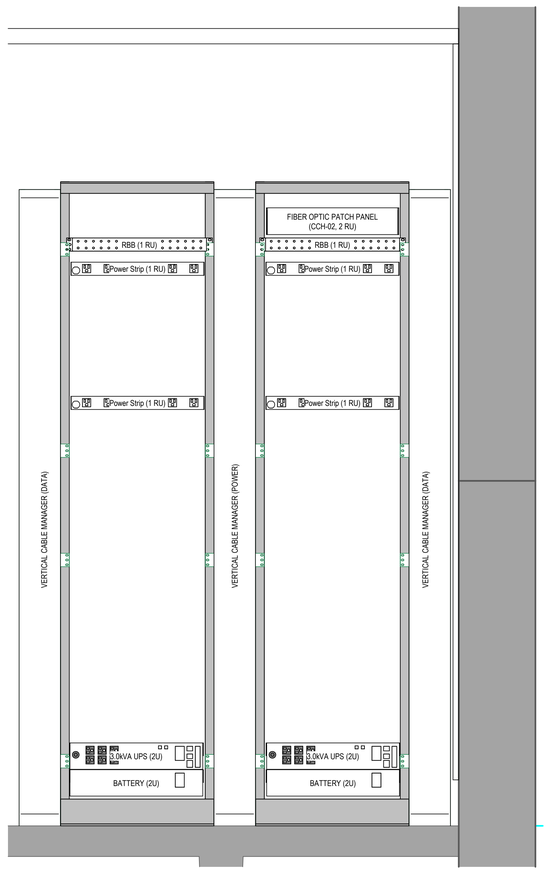
1 ENLARGED PLAN - IDF 224

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



2 IDF 224 - FRONT RACK ELEVATION

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



3 IDF 224 - REAR RACK ELEVATION

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

PN

NOTES:

1. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW AND PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
2. REFER TO COMMUNICATIONS INTERCONNECT AND RISER DIAGRAMS ON SHEETS T702 AND T703 FOR CABLE AND CONDUIT REQUIREMENTS.
3. CONTRACTOR SHALL COORDINATE WORK WITH THE ELECTRICAL CONTRACTOR AND OTHER TRADES AS REQUIRED.
4. NETWORK SWITCHES SHALL BE PROVIDED BY THE OWNER AND INSTALLED BY THE CONTRACTOR, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
5. CONDUIT (C) AND CABLE LADDER (C.L.) ROUTING SHOWN IS SCHEMATIC IN NATURE. ACTUAL ROUTING SHALL BE DETERMINED ACCORDING TO FIELD CONDITIONS AND AS COORDINATED WITH OTHER TRADES.
6. APPROVED UL DEVICES SHALL BE USED TO SEAL PENETRATIONS THROUGH FIRE RATED WALLS.

KEY NOTES: ⬡

1. PROVIDE 3/4" FLAME RETARDANT PLYWOOD MOUNTED TO CONCRETE WALLS USING ANCHORS. PAINT WITH TWO COATS OF WHITE FLAME RETARDANT ENAMEL ON ALL SIX (6) SIDES. MASK UL LABELS FOR AHJ INSPECTION AFTER INSTALLATION.
2. PROVIDE SECONDARY BONDING BUSBAR, REFER TO DETAIL 8 ON SHEET T501.
3. NETWORK EQUIPMENT (SWITCH(ES), MEDIA CONVERTERS, ETC.) PROVIDEDAND INSTALLED BY THE PARKING CONTROL VENDORS, COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
4. PROVIDE TWO (2) FLOOR MOUNTED TWO POST RACKS FOR AIRPORT, AND PARKING CONTROL NETWORKS, REFER TO DETAIL 2 FOR ADDITIONAL INFORMATION.
5. PROVIDE VERTICAL CABLE MANAGER BETWEEN RACKS.
6. MAKE PROVISIONS FOR RACK MOUNTED UPS. CONTRACTOR SHALL COORDINATE RECEPTACLE REQUIREMENTS WITH DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CIRCUITS PROVIDED BY DIV. 26. REFER TO DETAIL 3 ON SHEET T503 FOR ADDITIONAL INFORMATION.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: JAP
DRAWN BY: RJF
DESIGNED BY: RJF
PROJECT NUMBER:
2003-0070-006

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SEAL:

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SHEET TITLE:
ENLARGED COMMUNICATIONS PLANS

SHEET ID:
1
T408

PROJECT STATUS:
100% BID SET

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

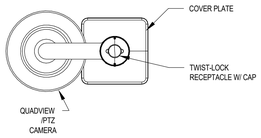
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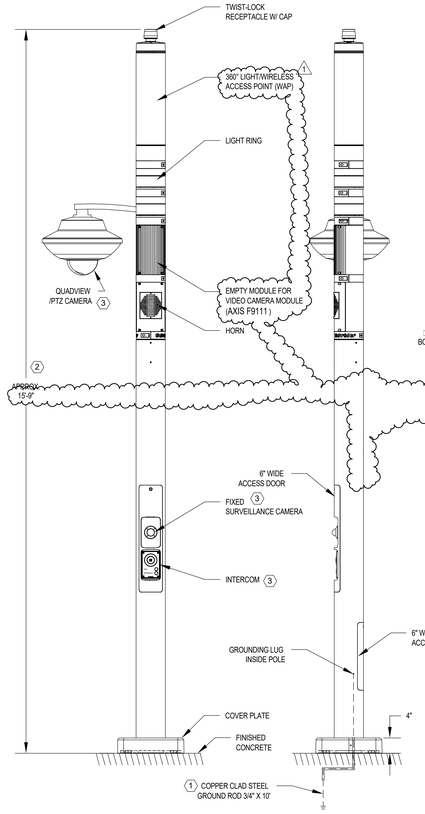
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WIRELESS ACCESS POINT (WAP) SCHEDULE

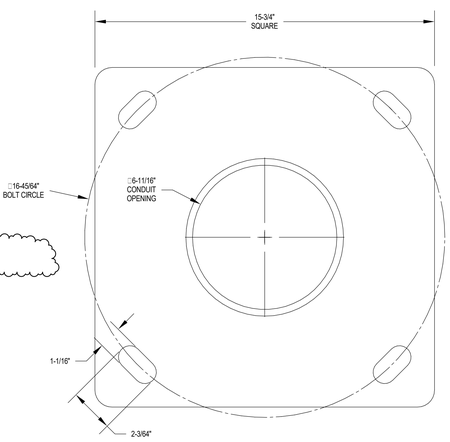
ID NUMBER	IDF ROOM	CABLE TYPE	CABLE COLOR	CABLE DESCRIPTION	DETAIL	DESCRIPTION
WAP-NORTH	COMM ENCLOSURE	CAT6	BLUE	(1) CAT6 WITH MALE RJ45 CONNECTOR	1/T505	PROVIDE UBIQUITI MODEL U6-MESH OUTDOOR ACCESS POINT INTEGRATED INTO SECURITY POLE MODULE. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO CONFIRM MODEL OF WAP TO BE PROVIDED PRIOR TO ORDERING. COORDINATE ORDERING/INSTALLATION REQUIREMENTS WITH THE POLE MANUFACTURER.
WAP-SOUTH	ELEC 102	CAT6	BLUE	(1) CAT6 WITH MALE RJ45 CONNECTOR	1/T505	PROVIDE UBIQUITI MODEL U6-MESH OUTDOOR ACCESS POINT INTEGRATED INTO SECURITY POLE MODULE. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO CONFIRM MODEL OF WAP TO BE PROVIDED PRIOR TO ORDERING. COORDINATE ORDERING/INSTALLATION REQUIREMENTS WITH THE POLE MANUFACTURER.





1 SECURITY POLE DETAIL - TYPICAL

SCALE: N.T.S.

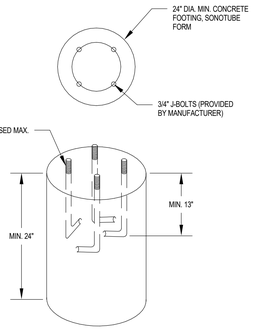


BASIS OF DESIGN: THE BASIS OF DESIGN AS SHOWN IS SHUFFLE SECURITY POLE MANUFACTURED BY SCHREDER CORPORATION. PROVIDE SECURITY POLE WITH THE FOLLOWING MODULES AND FEATURES: INTEGRATED VIDEO INTERCOM, ALARM HORN, WIRELESS ACCESS POINT, QUAD (360°) VIEW CAMERA, LIGHT RING AND 360° LIGHT. COORDINATE ALL FEATURES AND FINISHES WITH THE OWNER. INTEGRATE INTERCOM WITH UNITS INSTALLED DURING PREVIOUS PHASE OF WORK.

BASE PLATE DETAIL



ANCHORING HARDWARE INCLUDED:
(4) 3/4"-10 x 17" x 3" J HOOKS, GALVANIZED
(8) 3/4"-10 HEX NUTS, GALVANIZED
(8) 2" O.D. WASHERS, GALVANIZED

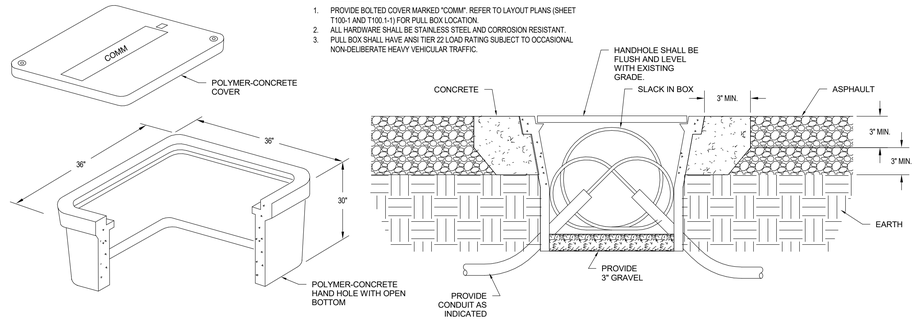


NOTE: DIMENSIONS ARE PROVIDED FOR CONTRACTOR INFORMATION ONLY. CONTRACTOR SHALL CONFIRM ACTUAL DIMENSIONS BASED ON APPROVED SUBMITTALS.

2 SECURITY POLE FOOTING - TYPICAL

SCALE: N.T.S.

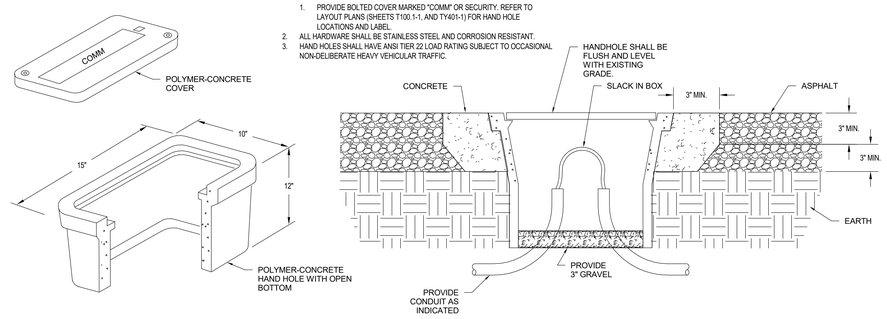
NOTES:
1. PROVIDE BOLTED COVER MARKED "COMM". REFER TO LAYOUT PLANS (SHEET T100-1 AND T100.1-1) FOR PULL BOX LOCATION.
2. ALL HARDWARE SHALL BE STAINLESS STEEL AND CORROSION RESISTANT.
3. PULL BOX SHALL HAVE ANSI TIER 22 LOAD RATING SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC.



4 TELECOM PULL BOX

SCALE: N.T.S.

NOTES:
1. PROVIDE BOLTED COVER MARKED "COMM" OR SECURITY. REFER TO LAYOUT PLANS (SHEETS T100.1-1, AND TY401-1) FOR HAND HOLE LOCATIONS AND LABEL.
2. ALL HARDWARE SHALL BE STAINLESS STEEL AND CORROSION RESISTANT.
3. HAND HOLES SHALL HAVE ANSI TIER 22 LOAD RATING SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC.



3 TELECOM HAND HOLE

SCALE: N.T.S.

NOTES:

1. THESE DETAILS ARE SCHEMATIC IN NATURE AND MAY NOT SHOW ALL EQUIPMENT OR CONNECTIONS REQUIRED. THEY ARE INTENDED TO ILLUSTRATE TYPICAL EQUIPMENT LAYOUTS.
2. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW UNLESS OTHERWISE NOTED.
3. REFER TO COMMUNICATIONS INTERCONNECT AND RISER DIAGRAMS ON SHEET T702 AND T703 FOR ADDITIONAL INFORMATION.
4. DIMENSIONS PROVIDED ARE FOR CONTRACTOR INFORMATION ONLY, VERIFY ALL DIMENSIONS IN THE FIELD.

KEY NOTES:

1. PROVIDE GROUNDING AS REQUIRED SO THAT THE IMPEDANCE TO GROUND OF EACH GROUND ROD DOES NOT EXCEED 25 OHMS PRIOR TO ESTABLISHING CONNECTIONS TO OTHER GROUND ELECTRODES. THE FALL-OF-POTENTIAL GROUND IMPEDANCE TEST SHALL BE USED, AS DESCRIBED BY AMERICAN NATIONAL STANDARDS INSTITUTE/INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (ANSI/IEEE) STANDARD 81, TO VERIFY THIS REQUIREMENT.
2. FINAL OVERALL HEIGHT IS DEPENDENT UPON SELECTION OF COMPONENTS BY THE OWNER AND MAY VARY WITH THE APPROVED CONFIGURATION.
3. COORDINATE EXACT MANUFACTURER/MODEL TO BE PROVIDED WITH THE POLE WITH DIVISION 28 CONTRACTOR.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	2003-0070-006

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SEAL:
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SHEET TITLE:
COMMUNICATIONS DETAILS

SHEET ID:
T504

PROJECT STATUS:
100% BID SET

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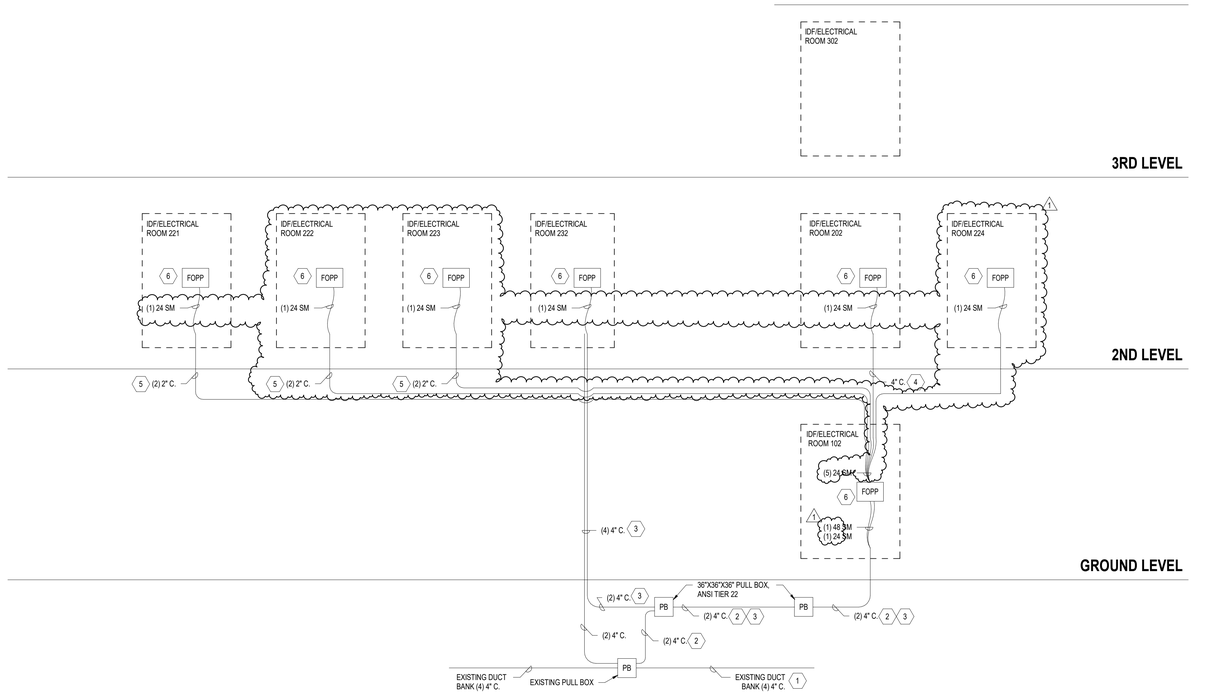
4/10/2025 11:07:47 AM Autodesk Docs://1003007004_ILM TO4 Rdwy Inf Improv Design/2003007006_ILM_TO6_Parking Garage and Shuttle Plaza_T_R24.rvt

NOTES:

1. THIS DIAGRAM IS SCHEMATIC IN NATURE AND MAY NOT SHOW ALL CONDUIT, RACEWAY, JUNCTION BOXES, ELBOWS, BENDS OR TURNS REQUIRED. CONTRACTOR SHALL PROVIDE A COMPLETE RACEWAY SYSTEM AS REQUIRED.
2. ALL CONDUITS, JUNCTION BOXES, PULL BOXES, AND HAND HOLES SHALL BE PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL COORDINATE CONDUIT ROUTING WITH CIVIL AND ELECTRICAL ACCORDING TO FIELD CONDITIONS AND SUBMIT FOR APROVAL PRIOR TO INSTALLATION.
4. PROVIDE THREE CELL FABRIC INNER DUCT THROUGH ALL NEW COMMUNICATIONS CONDUITS SHOWN.

KEY NOTES: ⬡

1. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION OF 48-STRAND FIBER OPTIC CABLE FROM TERMINAL ROUTED TO ELECTRIC ROOM 102 THROUGH EXISTING AIRPORT DUCT BANK.
2. COORDINATE WITH ELECTRICAL CONTRACTOR FOR THE INSTALLATION OF 48-STRAND FIBER OPTIC CABLE FROM TERMIAL ROUTED TO ELECTRIC ROOM 102 THROUGH NEW 4" C.
3. PROVIDE 48-STRAND FIBER OPTIC CABLE FROM ELECTRIC ROOM 102 TO ELECTRIC ROOM 232 THROUGH NEW 4" C.
4. PROVIDE 24-STRAND FIBER OPTIC CABLE FROM ELECTRIC ROOM 102 TO ELECTRIC ROOM 202 THROUGH NEW 4" C.
5. PROVIDE 24-STRAND FIBER OPTIC CABLE FROM ELECTRIC ROOM 102 TO ELECTRIC ROOM 221 THROUGH NEW 2" C.
6. PROVIDE RACK MOUNTED FIBER OPTIC PATCH PANEL FOR TERMIANTION OF NEW CABLES. PROVIDE LV CONNECTORS AND BLANK PANELS FOR ALL UNUSED PORTS. TEST ALL TERMINATED CABLES AND SUBMIT RESULTS TO THE OWNER'S REPRESENTATIVE FOR REVIEW.



1 COMMUNICATIONS BACKBONE RISER DIAGRAM

SCALE: N.T.S.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	**2003-0070-006**

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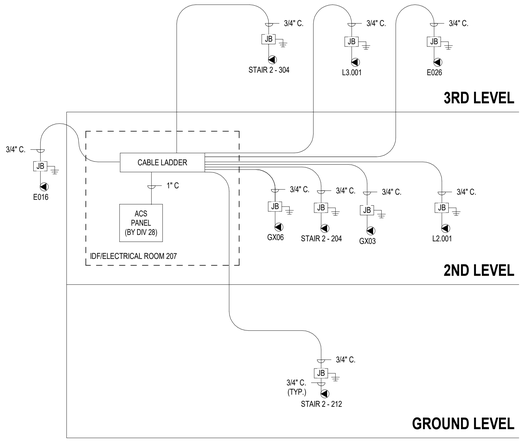
SHEET TITLE:
COMMUNICATIONS BACKBONE DIAGRAM

SHEET ID:
T702

PROJECT STATUS:
100% BID SET

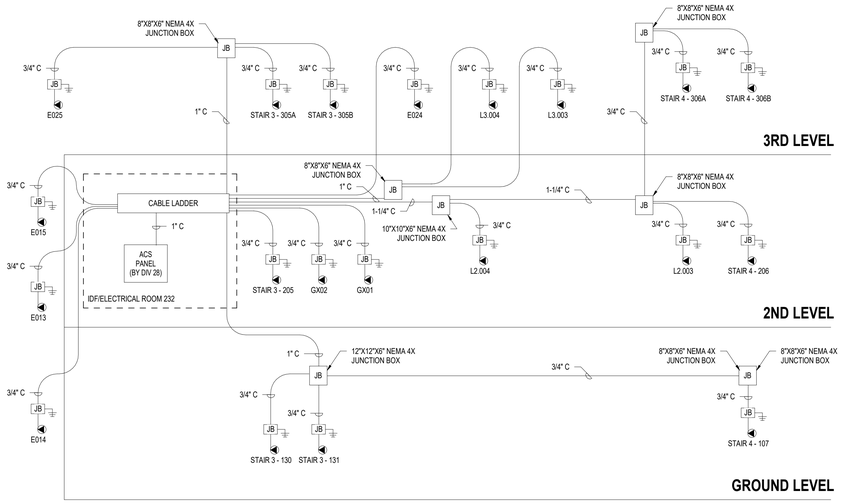
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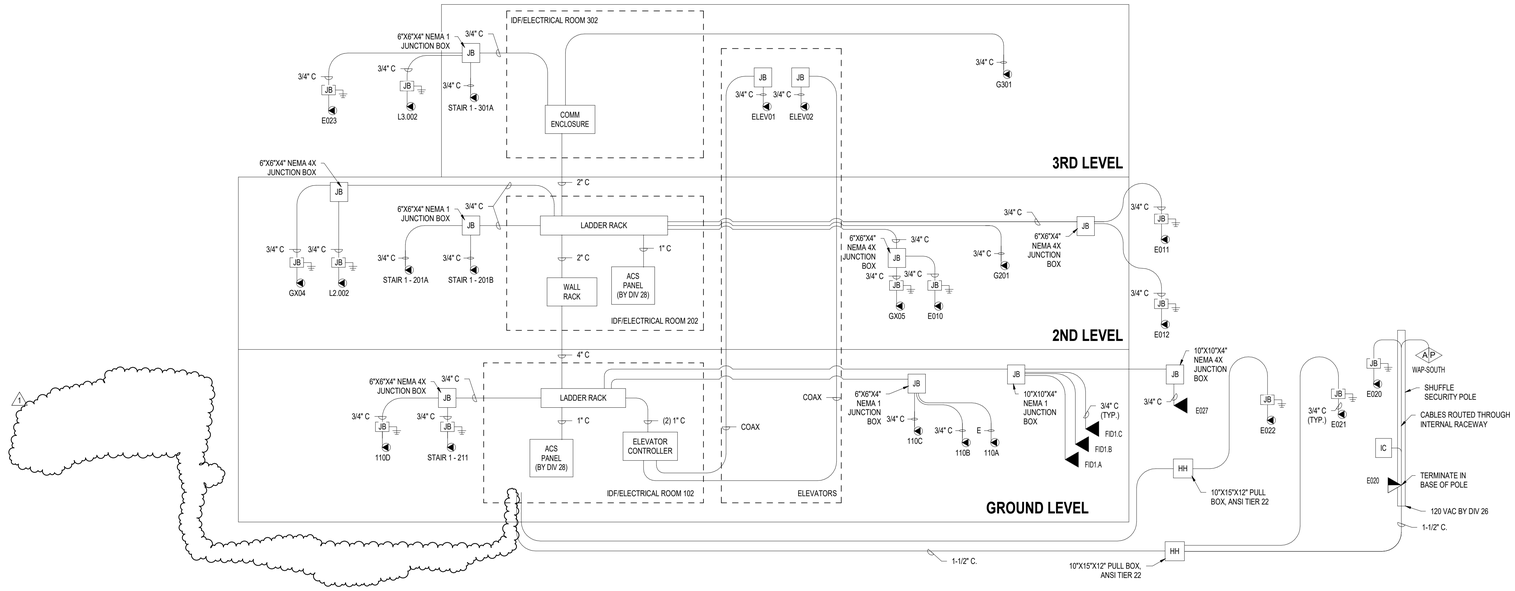
3 IDF 221 COMM RISER DIAGRAM

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



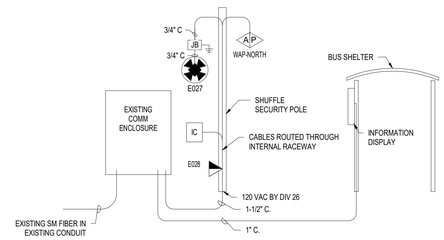
4 IDF 232 COMM RISER DIAGRAM

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



1 IDF 102 COMM RISER DIAGRAM

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



2 NORTH BUS SHELTER RISER DIAGRAM

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

NOTES:

1. THIS DIAGRAM IS SCHEMATIC IN NATURE AND MAY NOT SHOW ALL CONDUIT, RACEWAY, JUNCTION BOXES, ELBOWS, BENDS OR TURNS REQUIRED. CONTRACTOR SHALL PROVIDE A COMPLETE RACEWAY SYSTEM AS REQUIRED.
2. ALL CONDUITS, JUNCTION BOXES, AND HAND HOLES SHALL BE PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. COORDINATE ALL FINAL CAMERA, AND WAP LOCATIONS WITH THE OWNER PRIOR TO INSTALLATION.
4. COORDINATE RACEWAY ROUTING WITH ELECTRICAL AND OTHER TRADES AS REQUIRED PRIOR TO INSTALLATION.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: JAP
DRAWN BY: RJF
DESIGNED BY: RJF
PROJECT NUMBER: 2003-0070-006

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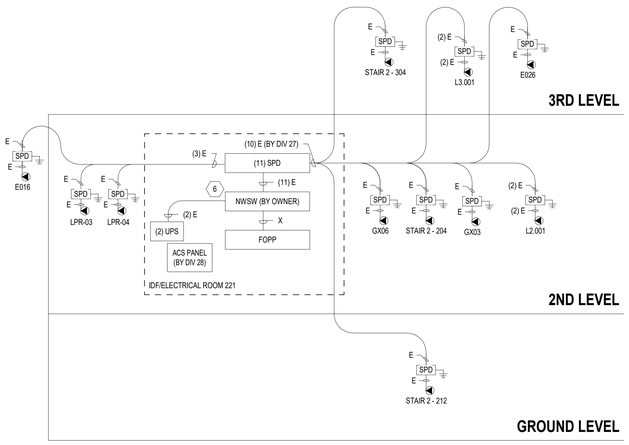
SHEET TITLE:
COMMUNICATIONS RISER DIAGRAMS

SHEET ID:
T703

PROJECT STATUS:
100% BID SET

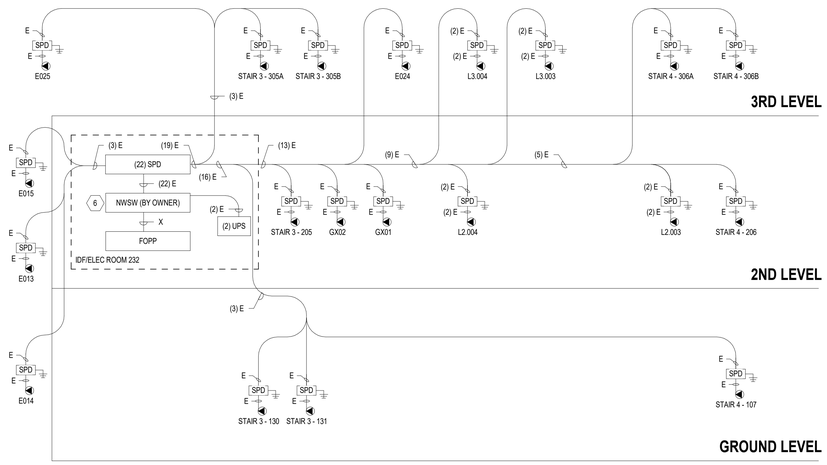
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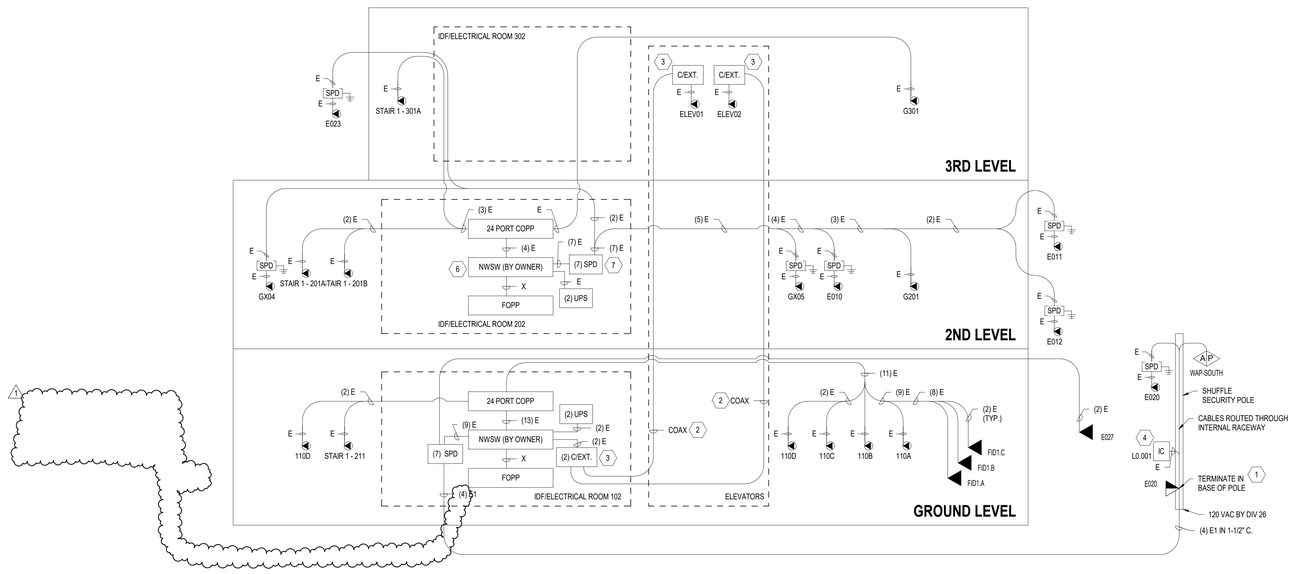
3 IDF 221 COMM INTERCONNECT DIAGRAM

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



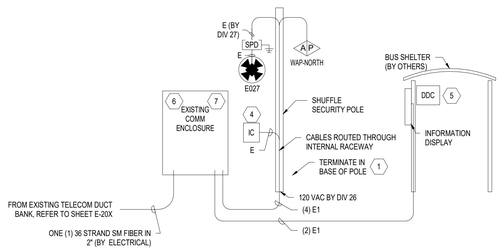
4 IDF 232 COMM INTERCONNECT DIAGRAM

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



1 IDF 102 COMM INTERCONNECT DIAGRAM

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



2 NORTH BUS SHELTER COMM INTERCONNECT DIAGRAM

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

NOTES:

1. THIS DIAGRAM IS SCHEMATIC IN NATURE AND MAY NOT SHOW ALL EQUIPMENT OR CONNECTIONS REQUIRED. CONTRACTOR SHALL PROVIDE A COMPLETE AND WORKING SYSTEM AS SHOWN IN THE DRAWINGS AND DESCRIBED IN THE WRITTEN SPECIFICATIONS.
2. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW AND PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. REFER TO RISER DIAGRAMS FOR ADDITIONAL INFORMATION.
4. REFER TO THE SITE PLAN AND FLOOR PLANS FOR TERMINATION LOCATIONS.
5. CONTRACTOR SHALL COORDINATE THE TERMINATION OF FIBER OPTIC CABLES WITH THE OWNER. REFER TO COMMUNICATIONS SITE PLAN FOR ROUTING OF NEW AND EXISTING DUCT BANK.
6. ALL NETWORK SWITCHES SHALL BE FURNISHED BY THE OWNER AND INSTALLED BY THE CONTRACTOR. COORDINATE WORK WITH THE OWNER'S IT REPRESENTATIVE.
7. COORDINATE ALL FINAL CAMERA, AND WAP LOCATIONS WITH THE OWNER PRIOR TO INSTALLATION.

KEY NOTES: ⬡

1. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR TERMINATION AND GROUNDING REQUIREMENTS. COORDINATE ALL WORK WITH THE ELECTRICAL AND CIVIL CONTRACTORS.
2. ELEVATOR CAB VIDEO SIGNALS SHALL BE TRANSMITTED OVER COAX CABLES WITHIN ELEVATOR TRAVELING CABLE, COORDINATE WITH ELEVATOR INSTALLER.
3. PROVIDE ETHERNET OVER COAX EXTENDER KIT, REFER TO WRITTEN SPECIFICATIONS.
4. IP ADDRESSABLE EMERGENCY (BLUE LIGHT) INTERCOM STATIONS SHALL BE MOUNTED TO SECURITY POLES. INTERCOM STATIONS SHALL BE PROGRAMMED TO CALL THE AIRPORT COMM CENTER.
5. INFORMATION DISPLAYS SHALL BE CONTROLLED VIA IP ADDRESSABLE DIGITAL DISPLAY CONTROLLERS (IDDC) COLOCATED WITH EACH DISPLAY. IDDCS AND ASSOCIATED CABLING SHALL BE LOCATED IN A SECURE LOCATION AWAY FROM PUBLIC ACCESS.
6. NETWORK DEVICE(S) (ETHERNET SWITCHE, MEDIA CONVERTERS) SHALL BE OWNER FURNISHED AND CONTRACTOR INSTALLED. CONTRACTOR SHALL COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.
7. PROVIDE PANEL MOUNT SURGE PROTECTION DEVICE IN EXISTING COOM ENCLOSURE, REFER TO DETAIL 4 ON SHEET T503.

CABLE LEGEND

ID	DESCRIPTION	DEVICE
A	9-22 AWG SHIELDED	CARD READER
B	4-22 AWG UNSHIELDED	MISC. INPUT (DPS/REX/TD)
C	4-14 AWG UNSHIELDED	ANNUNCIATOR (HORN/STROBE)
D	2-14 AWG UNSHIELDED	MISC. OUTPUT (LOCK) LENGTH < 100'
D	2-12 AWG UNSHIELDED	MISC. OUTPUT (LOCK) LENGTH < 200'
E	CATEGORY 6 UTP	ETHERNET (VOICE/DATA/VIDEO)
E1	GEL FILLED CATEGORY 6 UTP	ETHERNET (VOICE/DATA/VIDEO) - U/G WET LOCATIONS
E2	GEL FILLED CATEGORY 6 STP	ETHERNET (VOICE/DATA/VIDEO) - U/G WET LOCATIONS
F	2-18 AWG UNSHIELDED	FIRE ALARM RELAY AND MISC. I/O
G	8-22 AWG UNSHIELDED	GATE OPERATOR I/O
K	KEYBOARD/VIDEO/MOUSE	KVM SWITCH CONTROL CABLE
S	2-12 AWG UNSHIELDED	UNSHIELDED SPEAKER CABLE
T	RG-6/U COAX	COAX CABLE TELEVISION
V	22 AWG UTP	VOLUME CONTROL
X	SINGLE-MODE FIBER	FIBER OPTIC PATCH CABLE

SHUTTLE BUS TRACKING:

1. SHUTTLE BUS TRACKING SYSTEM SHALL BE AN EXTENSION OF THE SOLUTION PROVIDED DURING THE PREVIOUS PHASE OF WORK. CONTRACTOR SHALL PROVIDE ADDITIONAL HARDWARE AS REQUIRED TO ADD ADDITIONAL MONITORS ADDED DURING THIS PHASE.
2. CONFIGURE MONITOR TO MATCH THOSE DEPLOYED DURING PREVIOUS PHASE OF WORK TO DISPLAY SHUTTLE ARRIVAL INFORMATION. CONTRACTOR SHALL ASSIST THE OWNER WITH ACCOUNT/LOGIN TO MANAGE THE SYSTEM FROM AN EXISTING AIRPORT WORKSTATION.
4. CONTRACTOR'S PROPOSAL SHALL INCLUDE ALL HARDWARE, LICENSES, AND STARTUP COSTS FOR THE FIRST YEAR'S OPERATION (THROUGH THE WARRANTY PERIOD) AND ONGOING ANNUAL COST IN INCREMENTS OF 1 YEAR, 3 YEARS, AND 5 YEARS.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	2003-0070-006

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SHEET TITLE:
COMMUNICATIONS INTERCONNECT DIAGRAMS

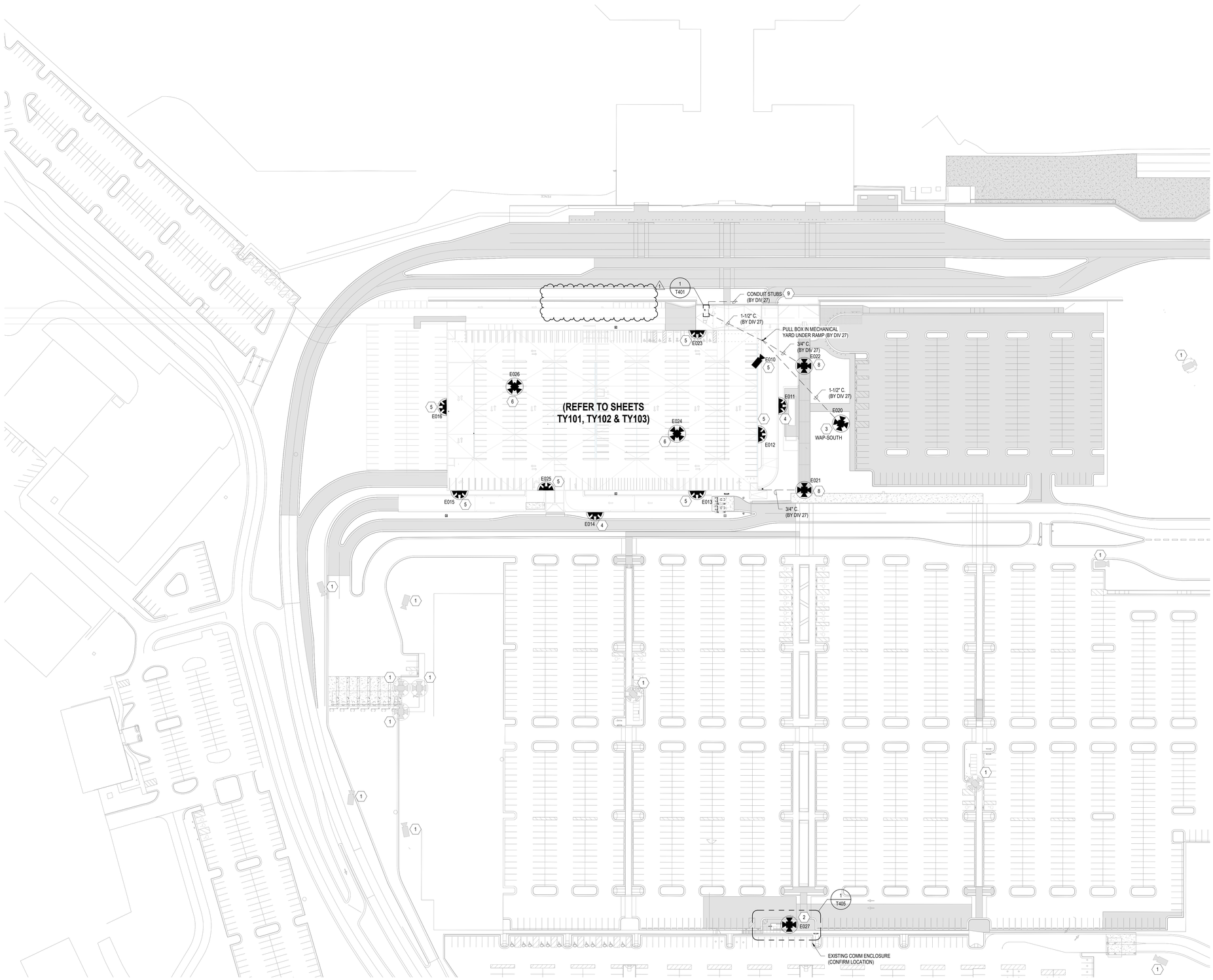
SHEET ID:
T704

PROJECT STATUS:
100% BID SET

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SENSITIVE SECURITY INFORMATION



PN

1 SECURITY SITE PLAN

SCALE: 1" = 60'-0"

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

NOTES:

1. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW UNLESS OTHERWISE NOTED.
2. BURIED CONDUIT AND BACKBONE FIBER BETWEEN TERMINAL BUILDING MANAGEMENT ROOM AND COMM ENCLOSURE/IDF ROOM SHALL BE PROVIDED BY ELECTRICAL. REFER TO ELECTRICAL SHEETS E20x FOR NEW CONDUIT AND FIBER.
3. RACEWAY SYSTEM BETWEEN COMM ROOM AND SECURITY CAMERA/POLE SHALL BE COMPLETED BY THE DIV 27 CONTRACTOR. SECURITY CONTRACTOR SHALL PROVIDE ALL CONDUIT FOR FIELD DEVICES (SECURITY CAMERA/POLE), JUNCTION BOXES, STRAPPING, ETC. AS REQUIRED UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL COORDINATE FINAL CAMERA MOUNTING LOCATIONS AND FIELDS OF VIEW WITH THE OWNER PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL COORDINATE RACEWAY ROUTING WITH ELECTRICAL AND OTHER TRADES AS REQUIRED PRIOR TO INSTALLATION.
6. REFER TO CAMERA SCHEDULE ON SHEET TY601 FOR BASIS OF DESIGN CAMERA MODELS AND ADDITIONAL INFORMATION. CONDUIT AND DATA CABLE TO COMMUNICATIONS SHALL BE PROVIDED BY THE DIV 27 CONTRACTOR, REFER TO INTERCONNECT AND RISER DIAGRAMS ON SHEET TY02 FOR ADDITIONAL INFORMATION.

KEY NOTES:

1. EXISTING CAMERA INSTALLED DURING PREVIOUS PHASE OF WORK, SHOWN FOR CONTRACTOR REFERENCE ONLY.
2. NEW SECURITY POLE BY DIVISION 27. CONFIGURE POLE WITH DEVICE (SECURITY CAMERA, WI-FI, HORN, LIGHT, INTERCOM, ETC.) MATCHING THOSE DEPLOYED ELSEWHERE DURING PREVIOUS PHASE OF WORK. RACEWAY SYSTEM BETWEEN EXISTING BUS SHELTER COMM ENCLOSURE AND SECURITY POLE SHALL BE COMPLETED BY THE DIV 27 CONTRACTOR. SECURITY CONTRACTOR SHALL PROVIDE ALL CONDUIT FOR FIELD DEVICES (SECURITY POLE), JUNCTION BOXES, STRAPPING, ETC. AS REQUIRED UNLESS OTHERWISE NOTED.
3. DIVISION 27 TO REINSTALL TEMPORARY SECURITY POLE PREVIOUSLY INSTALLED AT THE TEMPORARY CURBSIDE. RECONFIGURE POLE WITH ALL MODULES AND DEVICES (SECURITY CAMERA, WI-FI, HORN, LIGHT, ETC.) TO MATCH THOSE DEPLOYED ELSEWHERE DURING PREVIOUS PHASE OF WORK.
4. PROVIDE NEW EXTERIOR WALL-MOUNT CAMERA ON GARAGE RAMP. REFER TO CAMERA SCHEDULE ON SHEET TY601 AND COMMUNICATIONS INTERCONNECT DIAGRAMS ON SHEET TY702 FOR ADDITIONAL INFORMATION.
5. PROVIDE NEW EXTERIOR WALL-MOUNT CAMERA ON EXTERIOR WALL OF GARAGE. REFER TO CAMERA SCHEDULE ON SHEET TY601 AND INTERCONNECT DIAGRAMS ON SHEET TY702 FOR ADDITIONAL INFORMATION.
6. PROVIDE NEW EXTERIOR POLE MOUNT CAMERA ON LIGHT POLE. REFER TO CAMERA SCHEDULE ON SHEET TY601 AND INTERCONNECT DIAGRAMS ON SHEET TY702 FOR ADDITIONAL INFORMATION.
7. PROVIDE NEW EXTERIOR WALL-MOUNT CAMERA. REFER TO CAMERA SCHEDULE ON SHEET TY601 AND INTERCONNECT DIAGRAMS ON SHEET TY702 FOR ADDITIONAL INFORMATION.
8. PROVIDE NEW EXTERIOR CEILING MOUNT CAMERA. REFER TO CAMERA SCHEDULE ON SHEET TY601 AND INTERCONNECT DIAGRAMS ON SHEET TY702 FOR ADDITIONAL INFORMATION.
9. CONDUIT STUB OUTS FOR SECURITY AND PAGING FROM COMMERCIAL CURB COLUMN IN VOLUME II. REFER TO VOLUME II SHEET T108, COORDINATE WITH THE COMMUNICATIONS CONTRACTOR.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

KEY PLAN

C
A B

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	

2003-0070-006

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SHEET TITLE:
SECURITY SITE PLAN

SHEET ID:
TY100

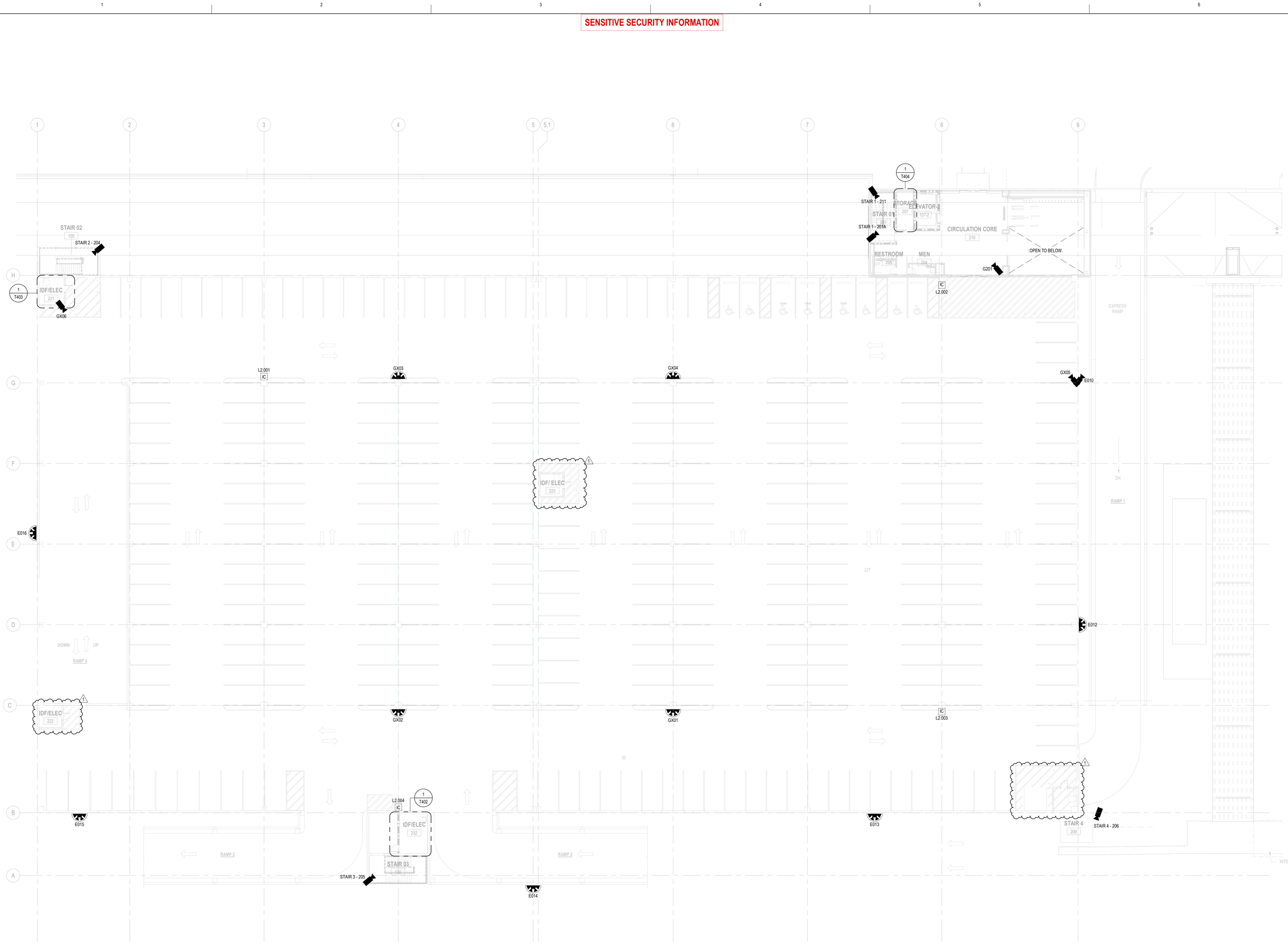
PROJECT STATUS:
100% BID SET

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SENSITIVE SECURITY INFORMATION



PN

N

1 SECURITY FLOOR PLAN - LEVEL 2

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

16 0 16 32

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

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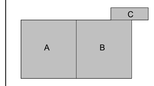
Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
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WILMINGTON, NC 28405

KEY PLAN



REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF

PROJECT NUMBER:
2003-0070-006

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SHEET TITLE:
OVERALL SECURITY PLAN - 2ND LEVEL

SHEET ID:
TY102

PROJECT STATUS:
100% BID SET

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SENSITIVE SECURITY INFORMATION

SURVEILLANCE CAMERA SCHEDULE

CAMERA NO.	MANUFACTURER & MODEL	DESCRIPTION	LENS	SHEET NO.	LOCATION	MOUNTING HEIGHT	MOUNT	HOUSING	MOUNTING DETAIL	EQUIPMENT ROOM
110A	AXIS P3268-LV	8 MP FIXED	4.3 - 8.6 mm	TY101	CIRCULATION CORE	10'-0"	WALL	INTERIOR	1/TY501	IDF/ELEC 102
110B	AXIS P3268-LV	8 MP FIXED	4.3 - 8.6 mm	TY101	CIRCULATION CORE	10'-0"	WALL	INTERIOR	1/TY501	IDF/ELEC 102
110C	AXIS P3268-LV	8 MP FIXED	4.3 - 8.6 mm	TY101	CIRCULATION CORE	10'-0"	WALL	INTERIOR	1/TY501	IDF/ELEC 102
110D	AXIS P3268-LV	8 MP FIXED	4.3 - 8.6 mm	TY101	STAIR 1 - 1ST LEVEL	10'-0"	WALL	INTERIOR	1/TY501	IDF/ELEC 102
E010	AXIS-P3268-LVE	8 MP FIXED	4.3-8.6 mm	TY100/TY102	WESTSIDE EXTERIOR - 2ND LEVEL	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 202
E011	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100/TY101	WESTSIDE ENTRANCE RAMP	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 102
E012	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100/TY102	WESTSIDE EXTERIOR - 2ND LEVEL	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 102
E013	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100	NORTH EXTERIOR - 2ND LEVEL	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 232
E014	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100/TY102	NORTHSIDE ENTRANCE RAMP	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 232
E015	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100/TY102	NORTH EXTERIOR - 2ND LEVEL	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 232
E016	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100/TY102	EASTSIDE EXTERIOR - 2ND LEVEL	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 221
E020	AXIS P3737-PLE	20 MP - (4) 5 MP FIXED	3.2-8.1 mm	TY100	NORTH BUS SHELTER - SECURITY POLE	10'-0"	POLE	EXTERIOR	1/TY504	IDF/ELEC 102
E021	AXIS P3737-PLE	20 MP - (4) 5 MP FIXED	3.18-8.12 mm	TY100/TY101	WALKWAY CANOPY	10'-0"	CEILING	EXTERIOR	10/TY501	IDF/ELEC 102
E022	AXIS P3737-PLE	20 MP - (4) 5 MP FIXED	3.18-8.12 mm	TY100/TY101	WALKWAY CANOPY	10'-0"	CEILING	EXTERIOR	10/TY501	IDF/ELEC 102
E023	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100/TY103	GARAGE PARKING DECK LEVEL 3	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 202
E024	AXIS P3737-PLE	20 MP - (4) 5 MP FIXED	3.2-8.1 mm	TY100/TY103	GARAGE PARKING DECK LEVEL 3	10'-0"	POLE	EXTERIOR	4/TY501	IDF/ELEC 232
E025	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY100/TY103	GARAGE PARKING DECK LEVEL 3	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 232
E026	AXIS P3737-PLE	20 MP - (4) 5 MP FIXED	3.2-8.1 mm	TY100/TY103	GARAGE PARKING DECK LEVEL 3	10'-0"	POLE	EXTERIOR	4/TY501	IDF/ELEC 221
E027	AXIS P3737-PLE	20 MP - (4) 5 MP FIXED	3.2-8.1 mm	TY100	SOUTH BUS SHELTER - SECURITY POLE	10'-0"	POLE	EXTERIOR	1/TY504	EX COMM ENCL
ELEV01	AXIS M3086-V	4 MP FIXED	2.4mm	TY101	ELEVATOR CAB	8'-0"	CEILING	INTERIOR	6/TY501	IDF/ELEC 102
ELEV02	AXIS M3086-V	4 MP FIXED	2.4mm	TY101	ELEVATOR CAB	8'-0"	CEILING	INTERIOR	6/TY501	IDF/ELEC 102
G201	AXIS P3268-LV	8 MP FIXED	4.3-8.6 mm	TY102	ELEVATOR LOBBY	10'-0"	CEILING	INTERIOR	2/TY501	IDF/ELEC 202
C301	AXIS P3268-LV	8 MP FIXED	4.3-8.6 mm	TY103	ELEVATOR LOBBY	10'-0"	CEILING	INTERIOR	2/TY501	IDF/ELEC 202
GX01	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY102	GARAGE PARKING DECK LEVEL 2	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 232
GX02	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY102	GARAGE PARKING DECK LEVEL 2	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 232
GX03	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY102	GARAGE PARKING DECK LEVEL 2	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 221
GX04	AXIS Q3819-PVE	14 MP - (4) 5 MP FIXED	(4) 5.89 mm	TY102	GARAGE PARKING DECK LEVEL 2	10'-0"	WALL	EXTERIOR	9/TY501	IDF/ELEC 202
GX05	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY102	GARAGE PARKING DECK LEVEL 2	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 202
GX06	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY102	GARAGE PARKING DECK LEVEL 2	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 221
L0.001	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY100	GARAGE WALKWAY PLAZA	4'-6"	POLE	EXTERIOR	1/T504	IDF/ELEC 102
L0.002	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY102	NORTH BUS SHELTER - SECURITY POLE	4'-6"	POLE	EXTERIOR	1/T504	EX COMM ENCL
L2.001	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY102	GARAGE PARKING DECK LEVEL 2	4'-6"	WALL	EXTERIOR	7/TY501	IDF/ELEC 221
L2.002	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY102	GARAGE PARKING DECK LEVEL 2	4'-6"	WALL	EXTERIOR	7/TY501	IDF/ELEC 202
L2.003	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY102	GARAGE PARKING DECK LEVEL 2	4'-6"	WALL	EXTERIOR	7/TY501	IDF/ELEC 232
L2.004	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY102	GARAGE PARKING DECK LEVEL 2	4'-6"	WALL	EXTERIOR	7/TY501	IDF/ELEC 232
L3.001	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY103	GARAGE PARKING DECK LEVEL 3	4'-6"	POLE	EXTERIOR	8/TY501	IDF/ELEC 221
L3.002	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY103	GARAGE PARKING DECK LEVEL 3	4'-6"	WALL	EXTERIOR	7/TY501	IDF/ELEC 202
L3.003	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY103	GARAGE PARKING DECK LEVEL 3	4'-6"	POLE	EXTERIOR	8/TY501	IDF/ELEC 232
L3.004	AXIS F4105-SLRE	2 MP FIXED	2.8 mm	TY103	GARAGE PARKING DECK LEVEL 3	4'-6"	WALL	EXTERIOR	7/TY501	IDF/ELEC 232
STAIR 1 - 201A	AXIS P3268-LV	8 MP FIXED	4.3 - 8.6 mm	TY102	STAIR 1 - 2ND LEVEL	10'-0"	WALL	INTERIOR	1/TY501	IDF/ELEC 202
STAIR 1 - 201B	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY103	STAIR 1 - 2ND LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 202
STAIR 1 - 211	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY102	STAIR 1 - 1ST LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 202
STAIR 1 - 301A	AXIS P3268-LV	8 MP FIXED	4.3 - 8.6 mm	TY103	STAIR 1 - 3RD LEVEL	10'-0"	WALL	INTERIOR	1/TY501	IDF/ELEC 202
STAIR 2 - 204	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY102	STAIR 2 - 2ND LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 221
STAIR 2 - 212	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY101	STAIR 2 - 1ST LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 221
STAIR 2 - 304	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY103	STAIR 2 - 3RD LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 221
STAIR 3 - 130	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY101	STAIR 4 - 2ND LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 232
STAIR 3 - 131	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY101	STAIR 3 - 1ST LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 232
STAIR 3 - 205	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY102	STAIR 3 - 2ND LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 232
STAIR 3 - 305A	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY103	STAIR 3 - 3RD LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 232
STAIR 3 - 305B	AXIS P3268-LV	8 MP FIXED	4.3-8.6 mm	TY103	STAIR 3 - 3RD LEVEL	10'-0"	CEILING	INTERIOR	2/TY501	IDF/ELEC 232
STAIR 4 - 107	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY101	STAIR 4 - 1ST LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 232
STAIR 4 - 206	AXIS-P3268-LVE	8 MP FIXED	4.3 - 8.6 mm	TY102	STAIR 4 - 2ND LEVEL	10'-0"	WALL	EXTERIOR	12/TY501	IDF/ELEC 232
STAIR 4 - 306A	AXIS P3268-LVE	8 MP FIXED	4.3-8.6 mm	TY103	STAIR 4 - 3RD LEVEL	10'-0"	CEILING	EXTERIOR	11/TY501	IDF/ELEC 232
STAIR 4 - 306B	AXIS P3268-LVE	8 MP FIXED	4.3-8.6 mm	TY103	STAIR 4 - 3RD LEVEL	10'-0"	CEILING	EXTERIOR	11/TY501	IDF/ELEC 232

NOTES:

1. CAMERA NUMBERS LISTED HEREIN INDICATE CAMERA DESIGNATIONS AS SHOWN ON THE COMMUNICATIONS AND SECURITY FLOOR PLANS. FINAL CAMERA NUMBERS FOR SYSTEM CONFIGURATION AND PROGRAMMING TO BE DETERMINED BY AIRPORT SECURITY.
2. REFER TO SHEET T501 FOR TYPICAL CAMERA MOUNTING DETAILS.
3. FINAL CAMERA LOCATIONS, FIELDS OF VIEW, MOUNTING HARDWARE, AND HOUSINGS TO BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
4. ALL CAMERA PRESET POSITIONS AND AUTOMATIC CUE-UP UPON DESIGNATED EVENTS TO BE REVIEWED AND APPROVED BY AIRPORT SECURITY DURING SYSTEM PROGRAMMING PRIOR TO FINAL ACCEPTANCE.
5. FINAL CAMERA MODELS AND LENS FOCAL LENGTHS TO BE FIELD VERIFIED BY THE CONTRACTOR AND REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: JAP
DRAWN BY: RJF
DESIGNED BY: RJF
PROJECT NUMBER:
2003-0070-006
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SHEET TITLE:
SECURITY SCHEDULE

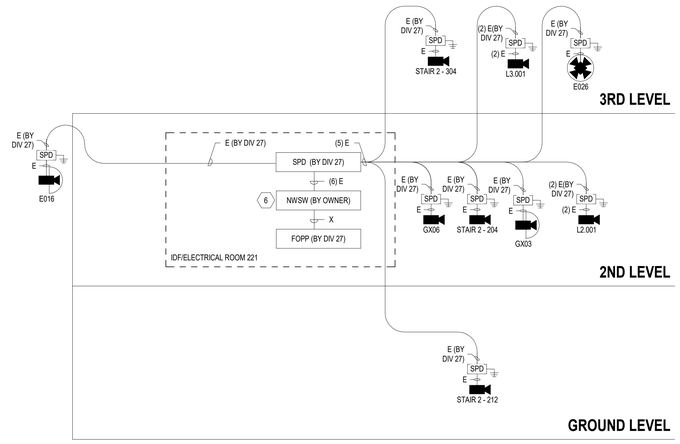
SHEET ID:
TY601

PROJECT STATUS:
100% BID SET

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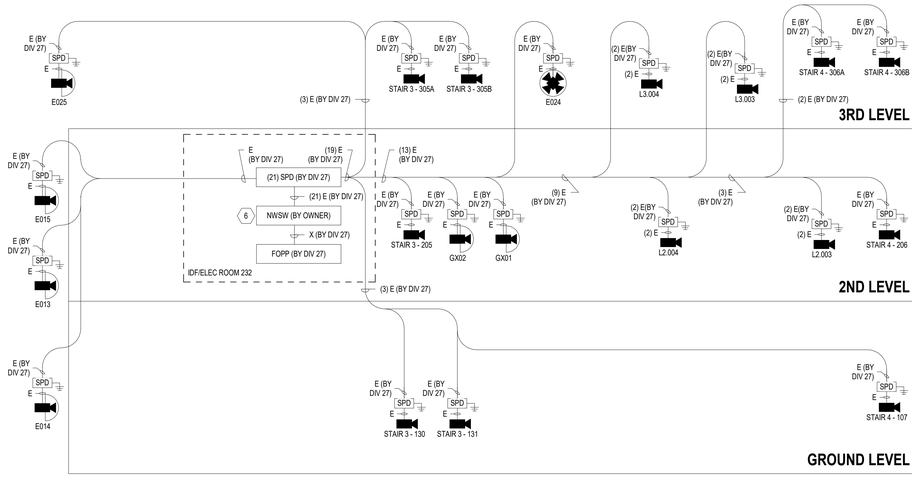
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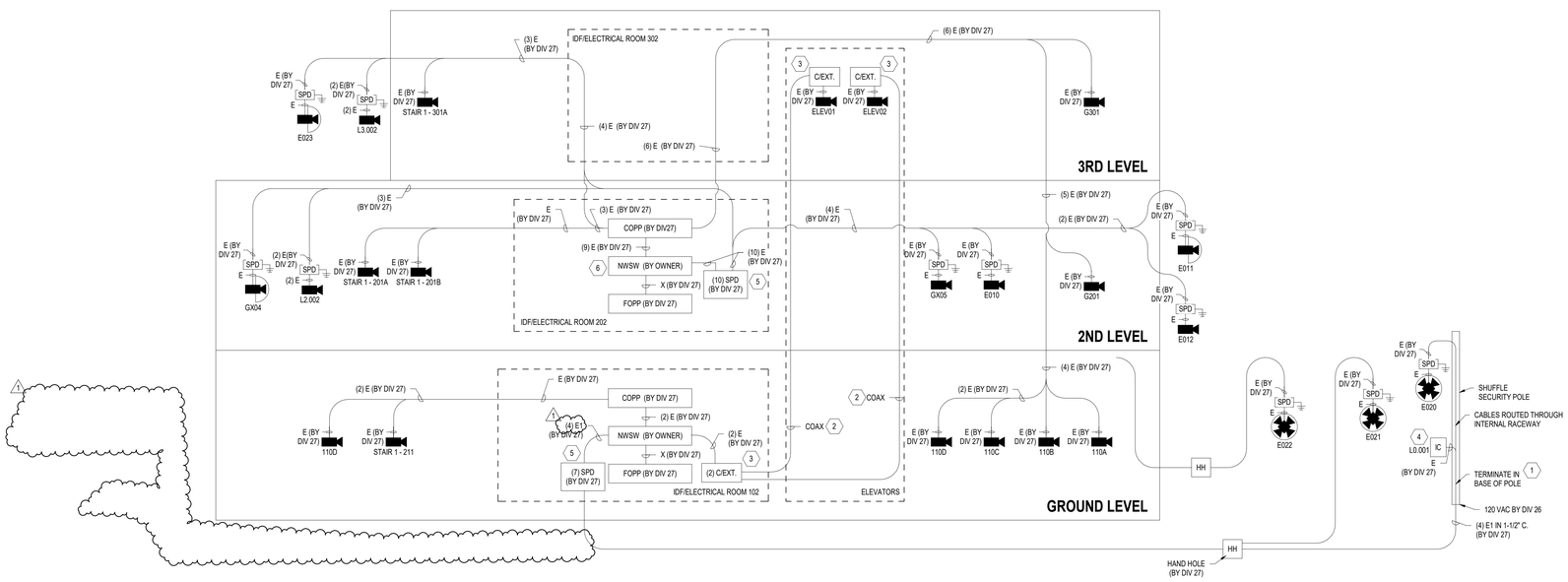
3 IDF 221 SECURITY INTERCONNECT DIAGRAM

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



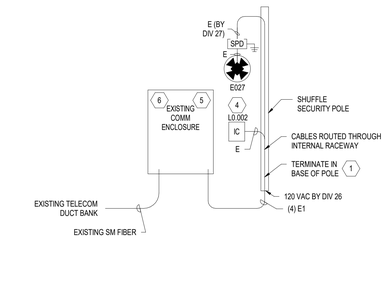
4 IDF 232 SECURITY INTERCONNECT DIAGRAM

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



1 IDF 102 SECURITY INTERCONNECT DIAGRAM

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



2 NORTH BUS SHELTER INTERCONNECT DIAGRAM

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

NOTES:

1. THIS DIAGRAM IS SCHEMATIC IN NATURE AND MAY NOT SHOW ALL EQUIPMENT OR CONNECTIONS REQUIRED. CONTRACTOR SHALL PROVIDE A COMPLETE AND WORKING SYSTEM AS SHOWN IN THE DRAWINGS AND DESCRIBED IN THE WRITTEN SPECIFICATIONS.
2. ALL EQUIPMENT, DEVICES AND CABLING SHALL BE NEW AND PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. REFER TO RISER DIAGRAMS FOR ADDITIONAL INFORMATION.
4. REFER TO THE SITE PLAN AND FLOOR PLANS FOR TERMINATION LOCATIONS.
5. REFER TO T SERIES PLANS DATA CABLES AND CONDUITS PROVIDED BY THE COMMUNICATIONS (DIV 27) CONTRACTOR. COORDINATE CAMERA OUTLET INSTALLATION WITH THE COMMUNICATIONS CONTRACTOR.
6. ALL NETWORK SWITCHES SHALL BE FURNISHED BY THE OWNER AND INSTALLED BY THE CONTRACTOR. COORDINATE WORK WITH THE OWNER'S IT REPRESENTATIVE.
7. COORDINATE ALL FINAL CAMERA LOCATIONS WITH THE OWNER PRIOR TO INSTALLATION.

KEY NOTES: ⬡

1. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR TERMINATION AND GROUNDING REQUIREMENTS. COORDINATE ALL WORK WITH THE ELECTRICAL AND CIVIL CONTRACTORS.
2. ELEVATOR CAB VIDEO SIGNALS SHALL BE TRANSMITTED OVER COAX CABLES WITHIN ELEVATOR TRAVELING CABLE. COORDINATE WITH ELEVATOR INSTALLER.
3. PROVIDE ETHERNET OVER COAX EXTENDER KIT, REFER TO WRITTEN SPECIFICATIONS.
4. IP ADDRESSABLE EMERGENCY (BLUE LIGHT) INTERCOM STATIONS SHALL BE MOUNTED TO SECURITY POLES. INTERCOM STATIONS SHALL BE PROGRAMMED TO CALL THE AIRPORT COMM CENTER.
5. PANEL MOUNT SURGE PROTECTION DEVICE IN EXISTING COMM ENCLOSURE SHALL BE PROVIDED BY DIV 27. REFER TO DETAIL 4 ON SHEET T503.
6. NETWORK DEVICE(S) (ETHERNET SWITCH, MEDIA CONVERTERS) SHALL BE OWNER FURNISHED AND CONTRACTOR INSTALLED. CONTRACTOR SHALL COORDINATE WITH THE OWNER'S IT REPRESENTATIVE.

CABLE LEGEND

ID	DESCRIPTION	DEVICE
A	9-22 AWG SHIELDED	CARD READER
B	4-22 AWG UNSHIELDED	MISC. INPUT (DPS/REX/TD)
C	4-14 AWG UNSHIELDED	ANNUNCIATOR (HORN/STROBE)
D	2-14 AWG UNSHIELDED	MISC. OUTPUT (LOCK) LENGTH < 100'
D	2-12 AWG UNSHIELDED	MISC. OUTPUT (LOCK) LENGTH < 200'
E	CATEGORY 6 UTP	ETHERNET (VOICE/DATA/VIDEO)
E1	GEL FILLED CATEGORY 6 UTP	ETHERNET (VOICE/DATA/VIDEO) - U/G WET LOCATIONS
E2	GEL FILLED CATEGORY 6 STP	ETHERNET (VOICE/DATA/VIDEO) - U/G WET LOCATIONS
F	2-18 AWG UNSHIELDED	FIRE ALARM RELAY AND MISC. I/O
G	8-22 AWG UNSHIELDED	GATE OPERATOR I/O
K	KEYBOARD/VIDEO/MOUSE	KVM SWITCH CONTROL CABLE
S	2-12 AWG UNSHIELDED	UNSHIELDED SPEAKER CABLE
T	RG-6/U COAX	COAX CABLE TELEVISION
V	22 AWG UTP	VOLUME CONTROL
X	SINGLE-MODE FIBER	FIBER OPTIC PATCH CABLE

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Hartranft Lighting Design

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED:	03/14/2025
REVIEWED BY:	JAP
DRAWN BY:	RJF
DESIGNED BY:	RJF
PROJECT NUMBER:	**2003-0070-006**

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SHEET TITLE:
SECUTITY INTERCONNECT DIAGRAMS

SHEET ID:
TY702

PROJECT STATUS:
100% BID SET

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LEGEND

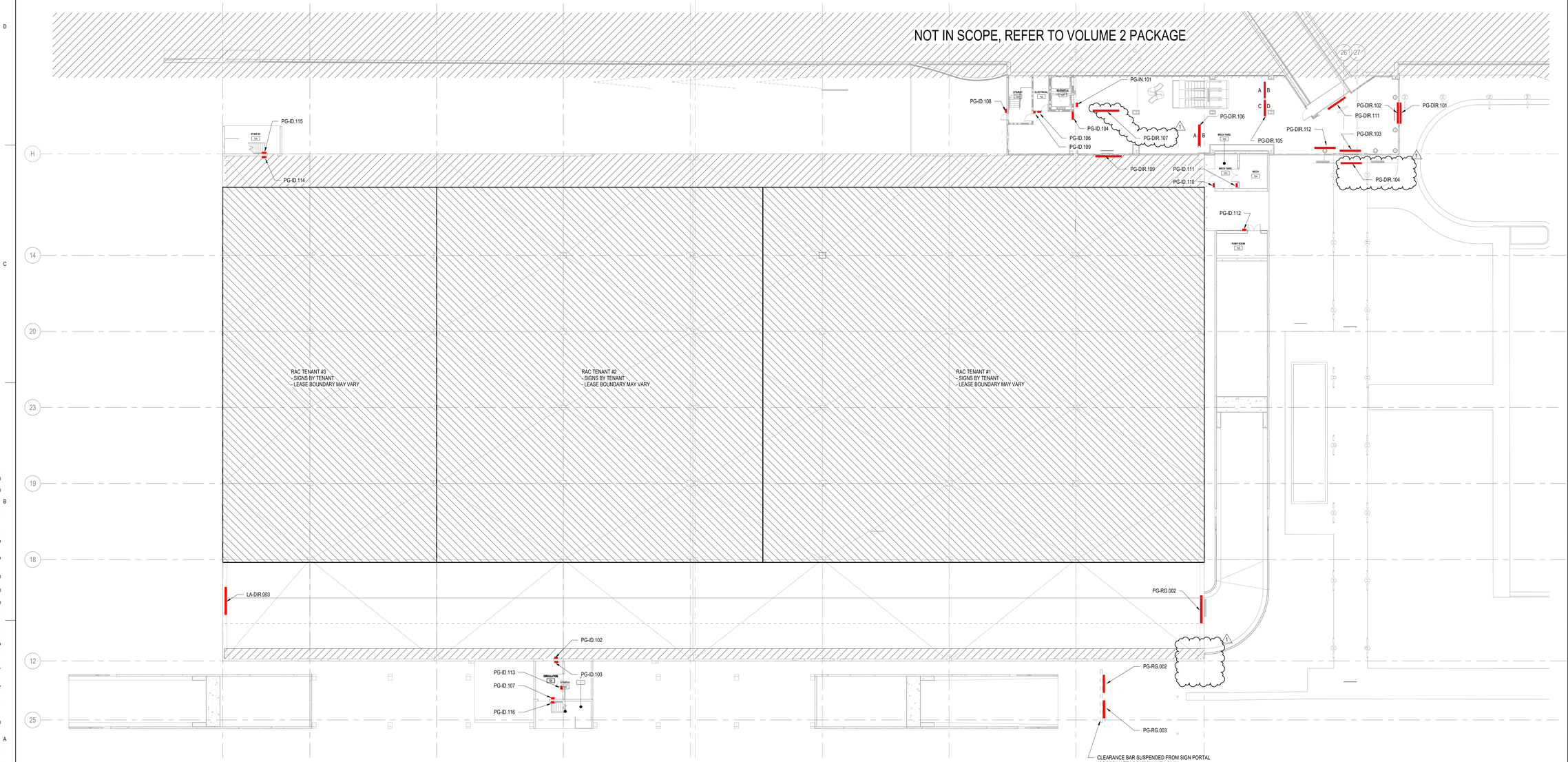
- EXISTING OR PREVIOUS PHASE SIGN TO REMAIN UNMODIFIED
- NEW SIGN LOCATION
- NOT IN CONTRACT
- BID ALTERNATE #1
- BID ALTERNATE #2

A | B A / B

C / A | B / D

MULTI-FACE SIGNS USE A LETTER DESIGNATION FOR EACH SIGN FACE

NOTE: ALL EXISTING SIGNAGE WITHIN DEMOLITION AREA FOR EACH PHASE TO BE REMOVED, REFER TO DEMOLITION DRAWINGS FOR PHASE BOUNDARY



PN / N

A1 OVERALL GROUND FLOOR SIGN LOCATION PLAN - ALT 2

SCALE: 1" = 20'-0"

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DATE ISSUED:	03/14/2025
REVIEWED BY:	JH
DRAWN BY:	AS
DESIGNED BY:	JH

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SHEET TITLE:
OVERALL GROUND FLOOR GARAGE SIGN LOCATION PLAN

SHEET ID:
GR101

PROJECT STATUS:
100% BID SET

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LEGEND

- EXISTING OR PREVIOUS PHASE SIGN TO REMAIN UNMODIFIED
- NEW SIGN LOCATION
- NOT IN CONTRACT
- BID ALTERNATE #1
- BID ALTERNATE #2

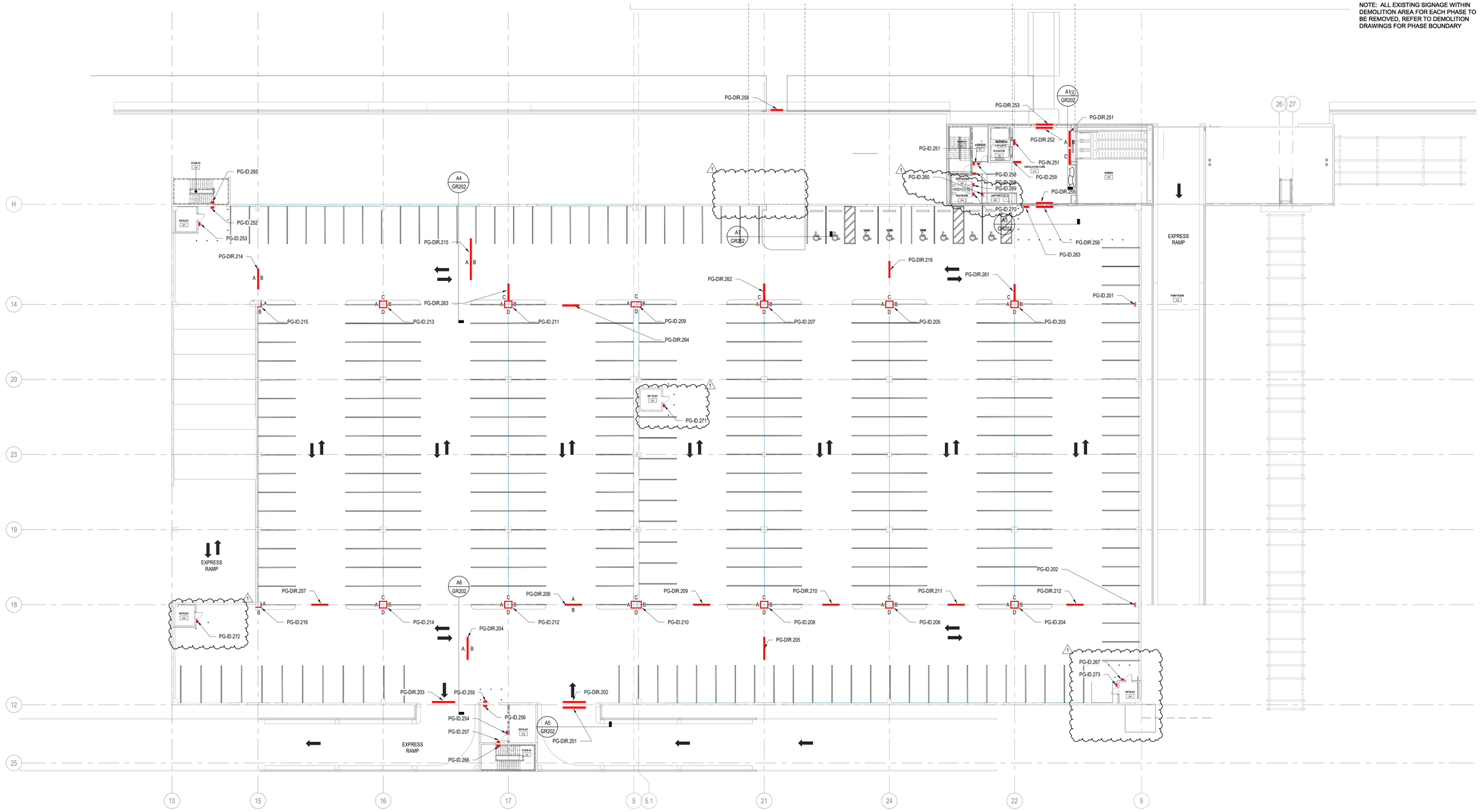
A | B

A / B

C / A / B / D

MULTI-FACE SIGNS USE A LETTER DESIGNATION FOR EACH SIGN FACE

NOTE: ALL EXISTING SIGNAGE WITHIN DEMOLITION AREA FOR EACH PHASE TO BE REMOVED, REFER TO DEMOLITION DRAWINGS FOR PHASE BOUNDARY



PN

N

A1 OVERALL SECOND SIGN LOCATION PLAN

SCALE: 1" = 20'-0"

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REVISIONS

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REVIEWED BY:	JH
DRAWN BY:	AS
DESIGNED BY:	JH
PROJECT NUMBER:	2003-0070-004

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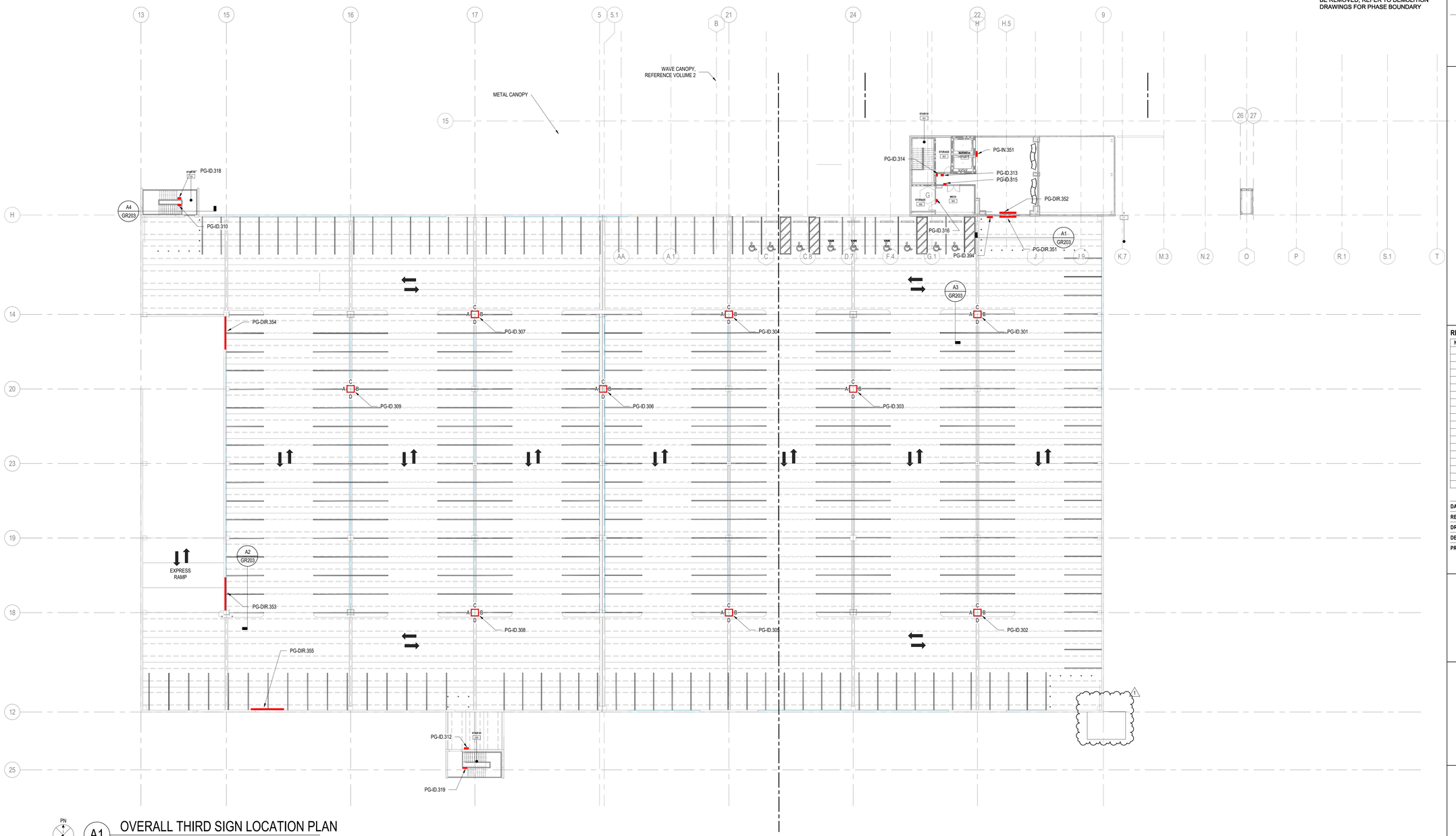
SHEET TITLE:
OVERALL SECOND FLOOR SIGN LOCATION PLAN

SHEET ID:
GR121

PROJECT STATUS:
100% BID SET

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A1 OVERALL THIRD SIGN LOCATION PLAN

SCALE: 1" = 20'-0"

LEGEND

- EXISTING OR PREVIOUS PHASE SIGN TO REMAIN UNMODIFIED
- NEW SIGN LOCATION
- NOT IN CONTRACT
- BID ALTERNATE #1
- BID ALTERNATE #2
- A | B
- A / B
- C / A B D / D — MULTI-FACE SIGNS USE A LETTER DESIGNATION FOR EACH SIGN FACE

NOTE: ALL EXISTING SIGNAGE WITHIN DEMOLITION AREA FOR EACH PHASE TO BE REMOVED, REFER TO DEMOLITION DRAWINGS FOR PHASE BOUNDARY

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ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

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DRAWN BY:	AS
DESIGNED BY:	JH

PROJECT NUMBER:
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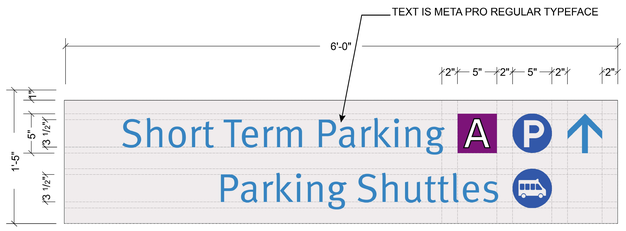
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OVERALL THIRD FLOOR SIGN LOCATION PLAN

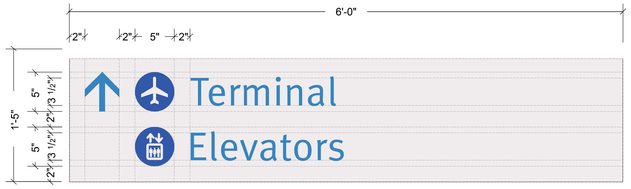
SHEET ID:
GR131

PROJECT STATUS:
100% BID SET

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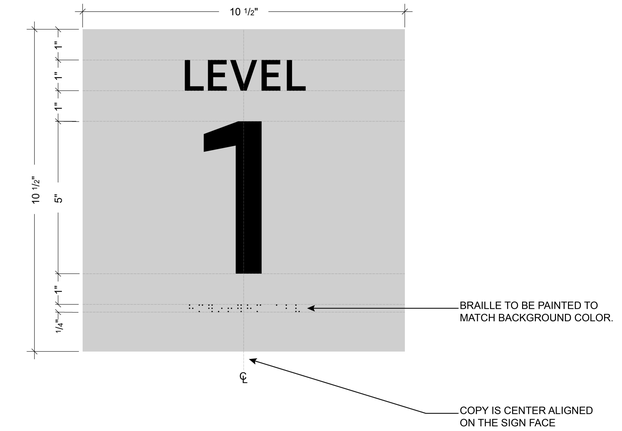
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A1 GRAPHIC LAYOUTS - SIGN TYPE N2

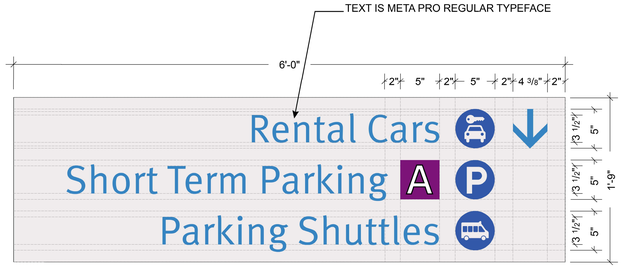
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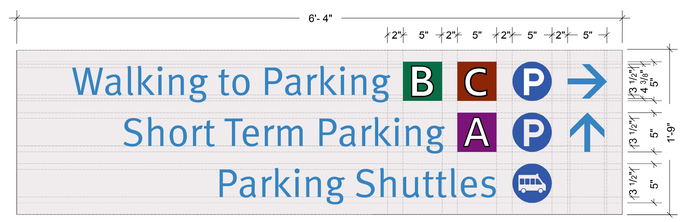


A2 GRAPHIC LAYOUT - SIGN TYPE S3 - WALL MOUNTED STAIR LEVEL PLAQUE

SCALE: 6" = 1'-0"

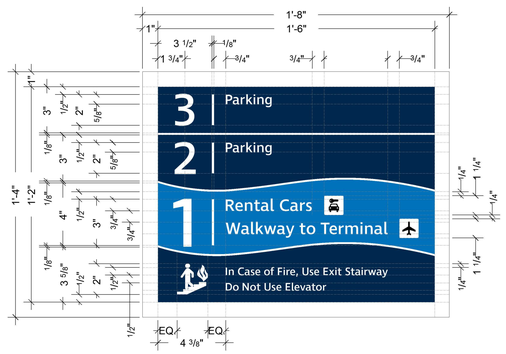






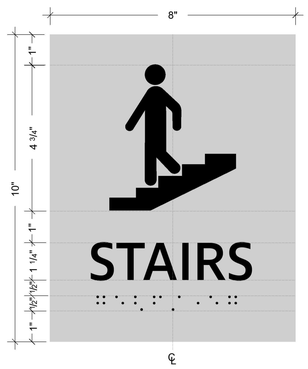
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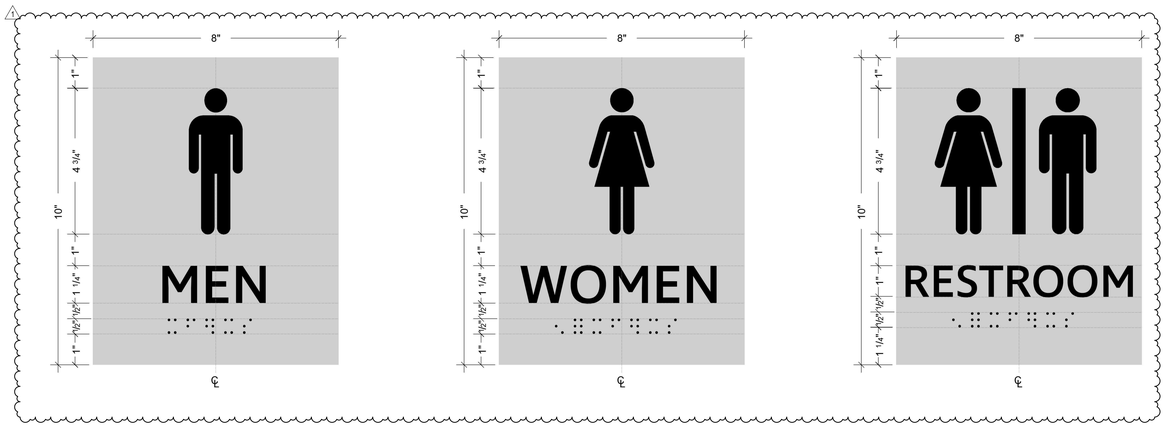
SCALE: 1 1/2" = 1'-0"



A4 GRAPHIC LAYOUT - SIGN TYPE R

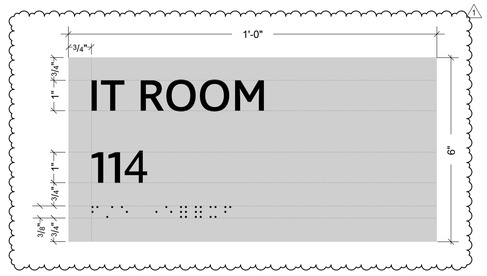
SCALE: 3" = 1'-0"





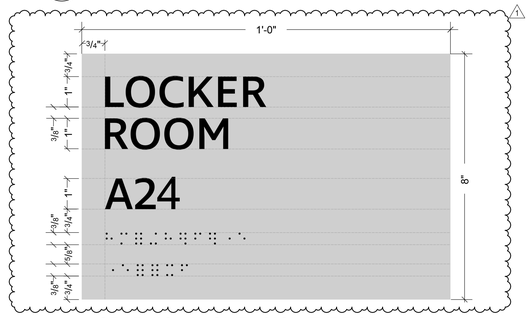
A5 GRAPHIC LAYOUT - SIGN TYPE S1

SCALE: 6" = 1'-0"



A6 GRAPHIC LAYOUT -SIGN TYPE S2-1

SCALE: 6" = 1'-0"



A7 GRAPHIC LAYOUT - SIGN TYPE S2-2

SCALE: 6" = 1'-0"

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Apple Designs

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
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DATE ISSUED:	03/14/2025
REVIEWED BY:	JH
DRAWN BY:	JK
DESIGNED BY:	JK
PROJECT NUMBER:	2003-0070-004

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SEAL:
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SHEET TITLE:
PROGRAM SIGNAGE GRAPHIC LAYOUTS

SHEET ID:
GR603

PROJECT STATUS:
100% BID SET

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LA-RG.201

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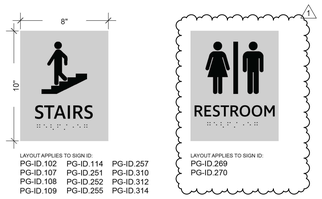
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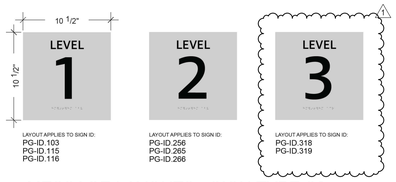


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PG-ID.109 PG-ID.255 PG-ID.314

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A3 MESSAGE LAYOUTS - SIGN TYPE S1

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



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PG-ID.116

LAYOUT APPLIES TO SIGN ID:
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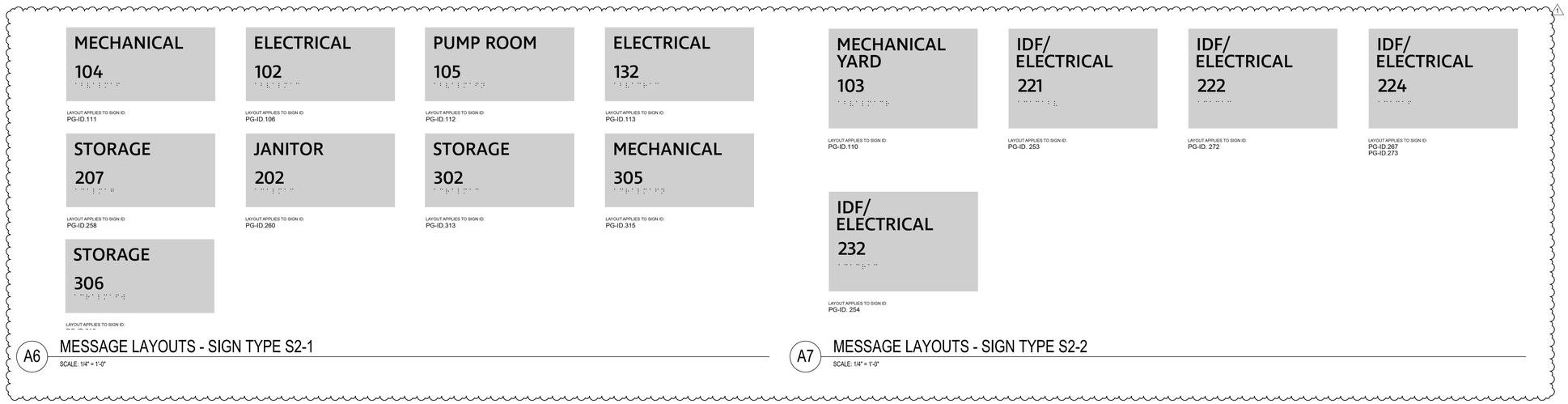
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A5 MESSAGE LAYOUTS - SIGN TYPE T

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



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PG-ID.273

LAYOUT APPLIES TO SIGN ID:
PG-ID.258

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PG-ID.260

LAYOUT APPLIES TO SIGN ID:
PG-ID.313

LAYOUT APPLIES TO SIGN ID:
PG-ID.315

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A6 MESSAGE LAYOUTS - SIGN TYPE S2-1

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

A7 MESSAGE LAYOUTS - SIGN TYPE S2-2

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

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Apple Designs

ILM

PROJECT TITLE:
ILM AIRPORT BOULEVARD AND PARKING IMPROVEMENTS - PHASE II

PROJECT ADDRESS:
1740 AIRPORT BLVD.
WILMINGTON, NC 28405

REVISIONS

NO.	DESCRIPTION	DATE
1	Addendum 1	4/10/2025

DATE ISSUED: 03/14/2025
REVIEWED BY: JH
DRAWN BY: JF
DESIGNED BY: JF
PROJECT NUMBER:
2003-0070-004

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100% Bid Set Submittal - Addendum 1
Date: 4-10-2025

Project: ILM Airport Boulevard – Parking Improvements Program
Phase 2 – Volume 1

RS&H Project No.: 2003-0070-006

Revised Contract Documents. See the itemized list below.

Contract Drawings

G003 – APPENDIX B
REVISE update to Appendix B

G101 – PROJECT INFORMATION, BUILDING CODE ANALYSIS, AND LIFE SAFETY PLANS
REMOVE North-east stair removed from project
REVISE Building Code Analysis
REVISE Travel egress paths

G102 – PROJECT INFORMATION, BUILDING CODE ANALYSIS, AND LIFE SAFETY PLANS
REMOVE North-east stair removed from project
REVISE Building Code Analysis
REVISE Travel egress paths

G103 – PROJECT INFORMATION, BUILDING CODE ANALYSIS, AND LIFE SAFETY PLANS
REMOVE North-east stair removed from project
REVISE Building Code Analysis
REVISE Travel egress paths

S001 – GENERAL STRUCTURAL NOTES
REVISE pile tip elevation note to be based on Reference Elevation 86′-0″.

S011 – OVERALL FOUNDATION PLAN
REMOVE Stair 04 in SW corner of garage.
REVISE foundations at Grids B-9 and C-9 to receive future crossover column.

S013 – FOUNDATION PLAN – AREA B
REMOVE Stair 04 in SW corner of garage.
REVISE foundations at Grids B-9 and C-9 to receive future crossover column.
ADD missing PCC column call out.

S101 – OVERALL SLAB ON GRADE PLAN

REMOVE Stair 04 in SW corner of garage.

S103 – SLAB ON GRADE PLAN – AREA B

REMOVE Stair 04 in SW corner of garage.

S121 – OVERALL LEVEL 2 FRAMING PLAN

REMOVE Stair 04 in SW corner of garage.
REVISE precast column at Grid B-9 and extended spandrel to corner.

S122 – LEVEL 2 FRAMING PLAN – AREA A

ADD CMU IDF Rooms per RAC request.

S123 – LEVEL 2 FRAMING PLAN – AREA B

REMOVE Stair 04 in SW corner of garage.
REVISE precast column at Grid B-9 and extended spandrel to corner.
ADD CMU IDF Room per RAC request.
ADD slope call out to Ramp 1

S131 – OVERALL LEVEL 3 FRAMING PLAN

REMOVE Stair 04 in SW corner of garage.
REVISE precast column at Grid B-9 and extended spandrel to corner.

S133 – LEVEL 3 FRAMING PLAN – AREA B

REMOVE Stair 04 in SW corner of garage.
REVISE precast column at Grid B-9 and extended spandrel to corner.

S141 – CIRCULATION CORE FOUNDATION AND SLAB ON GRADE PLANS

ADD HSS post and section callouts for Overhead Door Jambs
ADD Circulation Core Slab on Grade Sheet Note #8

S142 - CIRCULATION CORE 2ND, 3RD, AND ROOF FRAMING PLANS

REVISE edge of deck at Stair 01 on 2nd and 3rd Floor Framing Plans.
ADD Section callout for HSS posts at Overhead Door Jambs

S151 – CANOPY DESIGN CRITERIA, DROP-OFF CANOPY PLANS

ADD/REVISE Roof Framing to accommodate metal roof deck

S156 – WALKWAY CANOPY FRAMING PLAN

ADD/REVISE Roof Framing to accommodate metal roof deck

S302 – LOW ROOF AND LIGHT TOWER SETIONS AND DETAILS

ADD Section A2 and B2 for HSS post at Overhead Door

S351 – OVERALL CANOPY SECTIONS

REVISE Dimensions and show additional steel members to accommodate metal roof deck

S355 – CANOPY FRAMING SECTIONS

REVISE Detail D3

S400 – STAIR 04 PLANS

REMOVE sheet from set.

S401 – STAIR 04 SECTIONS AND DETAILS

REMOVE sheet from set.

S601 - ACIP PILE AND PILE CAP SCHEDULE AND DETAILS

REMOVE PC-9SP from schedule.

A101 – OVERALL GROUND FLOOR PLAN

ADDED New IDF/ELECTRICAL ROOMS
REMOVED Stair and extended precast form liner panels to corner.

A103 – PARTIAL GROUND FLOOR PLAN - AREA B

ADDED Bollards and associated notes.

A104 – OVERALL SECOND FLOOR PLAN

ADDED IDF/ELECTRICAL ROOMS into garage infrastructure for rental car
REMOVED Stair
REVISED Canopy to standing seam metal panel

A105– PARTIAL SECOND FLOOR PLAN - AREA A

ADDED IDF/ELECTRICAL ROOMS into garage infrastructure for rental car
REVISED location of walls
ADDED bollards and associated notes.

A106– PARTIAL SECOND FLOOR PLAN - AREA B

ADDED IDF/ELECTRICAL ROOMS into garage infrastructure for rental car
ADDED bollards and associated notes.
REVISED Canopy to standing seam metal panel

A107 – OVERALL THIRD LEVEL PLAN

ADDED bollards and associated notes.

A112– SECOND FLOOR DRAINAGE PLAN

REVISED Canopy to standing seam metal panel

A121 – OVERALL GROUND FLOOR REFLECTED CEILING PLAN

REVISED Canopy to standing seam metal panel

A123 – PARTIAL GROUND FLOOR REFLECTED CEILING PLAN

REVISED Canopy to standing seam metal panel

A124 – OVERALL SECOND FLOOR REFLECTED CEILING PLAN

ADDED IDF/ELECTRICAL ROOMS into garage infrastructure for rental car

A125 – PARTIAL SECOND FLOOR REFLECTED CEILING PLAN – AREA A

ADDED IDF/ELECTRICAL ROOMS into garage infrastructure for rental car

A126 – PARTIAL SECOND FLOOR REFLECTED CEILING PLAN – AREA B

ADDED New IDF/ELECTRICAL Rooms

A161 – OVERALL ROOF PLAN

REVISED Canopy to standing seam metal panel

A201 – BUILDING ELEVATIONS

REMOVED stair and extended precast form liner panels to corner
ADDED note to reference plumbing for scupper information
ADDED note for galvanized steel rail - RFI 014

A320 – CANOPIES SECTIONS

REVISED Canopy to standing seam metal panel

A401 – CIRCULATION CORE FIRST FLOOR ENLARGED PLAN AND REFLECTED CEILING PLAN

ADDED bollards and associated notes.
ADDED Reference to access gate elevation
ADDED note for galvanized steel fence - RFI 003
REVISED Canopy to standing seam metal panel

A413 – GARAGE EGRESS STAIR ENLARGED PLANS AND ELEVATIONS

REMOVED Stair
REVISED Sheet name to correspond with updates

A416 – ENLARGED GARAGE PLANS AND INTERIOR ELEVATIONS

ADDED sheet for new IDF enlarged plans and interior elevations

A420 – ENLARGED CANOPY SECTIONS AND DETAILS

ADDED bollards and associated notes.

A503 – SECTION DETAILS

REVISED Updated height of fence - RFI 003
REVISED Canopy to standing seam metal panel

A510 – STAIR

ADDED stair detail to reflect precast stair condition

A601 – DOOR SCHEDULE

ADDED doors to schedule for new IDF/ELECTRICAL Rooms

A621 – ROOM FINISH SCHEDULE

ADDED IDF/ELECTRICAL Rooms to schedule

ADDED standing seam metal panel roofing product to finish legend

A802 – OVERALL SECOND FLOOR INTERIOR FINISH PLAN

ADDED New IDF/ELECTRICAL Rooms

FX101 – LEVEL 1 FIRE PROTECTION PLAN

REMOVE Stair 4 in SW corner of garage

FX102 – LEVEL 2 FIRE PROTECTION PLAN

REMOVE Stair 4 in SW corner of garage

ADD IDF/ELEC Room 222 per RAC request

ADD IDF/ELEC Room 223 per RAC request

ADD IDF/ELEC Room 224 per RAC request

FX103 – LEVEL 3 FIRE PROTECTION PLAN

REMOVE Stair 4 in SW corner of garage

P111 – OVERALL FIRST LEVEL PLUMBING PLAN

REVISE primary and secondary storm piping location for egress stairs.

REVISE 1" domestic cold water piping location to accommodate location of IDF/ELEC 224 on second level.

P121 – OVERALL SECOND LEVEL PLUMBING PLAN

REVISE primary and secondary storm piping location for egress stairs.

ADDED condensate drainage piping for additional mechanical AC split units serving IT/ELEC rooms.

ADDED additional storm drain to bottom of Level 3/Level 2 ramp to account for ramp drainage.

REVISE location of hose bibb adjacent IDF/ELEC 224.

P131 – OVERALL THIRD LEVEL PLUMBING PLAN

REVISE primary and secondary storm piping location for egress stairs.

ADDED overflow/secondary scuppers to perimeter walls for overflow storm drainage.

ADDED primary storm drain and drainage piping and overflow/secondary scupper to roof area leading into Stair 3 adjacent intersection of grid B4.
REVISE 3/4" domestic cold water piping location and hose bibb to accommodate location of IDF/ELEC 224 on second level.

P701 – PLUMBING GARAGE STORM DRAINAGE RISER DIAGRAMS

REVISE primary storm drainage riser to reflect plan updates.

M121 – OVERALL SECOND LEVEL HVAC PLAN

ADDED additional AC split systems to serve new IT/ELEC rooms.

M402 – HVAC ENLARGED PLANS – ELEC/IDF ROOMS

REVISE sheet title
ADDED enlarged views to show additional locations for new split AC units serving the new IT/ELEC rooms.

M601 – HVAC ENLARGED PLANS – ELEC/IDF ROOMS

REVISE equipment schedule to include room name changes and additional AC split system serving the new IT/ELEC rooms.

EG111 – FIRST FLOOR ELECTRICAL GROUNDING PLAN

DELETED Grounding ring around SW Stair that was removed.

EG131 – LIGHTNING PROTECTION PLAN

DELETED LPS air terminals and conductors around SW Stair that was removed.

EL111 – FIRST FLOOR LIGHTING PLAN

DELETED SW Stair Lighting.

EL121 – SECOND FLOOR LIGHTING PLAN

DELETED SW Stair Lighting.
ADD Lighting in new IDF Rooms.
ADD Wall mounted lighting on North face of the garage.

EL131 – THIRD FLOOR LIGHTING PLAN

DELETED SW Stair Lighting.
ADD AND ADJUSTED SPACING OF Wall mounted lighting on South and East faces of the garage

EP111 – FIRST FLOOR POWER PLAN

DELETED SW Stair Receptacle
ADD Conduit routing for new panelboards on the second level
ADD Disconnect switches for transformers located ext. on grade

RELOCATED In Grade receptacle for furniture.

EP121 – SECOND FLOOR POWER PLAN

DELETED SW Stair.
ADD Callouts for Enlarged plans of new IDF Rooms.
ADD Tags for Disconnect Switch Sizes.

EP401 – ENLARGED ELECTRICAL POWER PLANS

ADD Conduits to new IDF room panel boards

EP402 – ENLARGED ELECTRICAL POWER PLANS

ADD Enlarged views of new IDF rooms
REVISED General Sheet Notes

EL602 – EXTERIOR LUMINAIRE SCHEDULE

DELETED HX11 & HX12 from luminaire schedule.

EP601 – ELECTRICAL ONE LINE DIAGRAM

REVISED One Line Diagram

EP602 – ELECTRICAL POWER PANEL SCHEDULES

REVISED Loads on Panel Schedules

EP603 – ELECTRICAL POWER PANEL SCHEDULES

ADD New Sheet with New IDF Room Panel Schedules.

T001 – COMMUNICATIONS GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

UPDATED sheet index.

T100 – COMMUNICATIONS SITE PLAN

DELETED data outlets for surveillance cameras from walkway ramp.

T101 – COMMUNICATIONS PLAN – GROUND LEVEL

ADDED communications conduit for IDF/ELEC Rooms 222, 223 and 224 per RAC request.

T102 – COMMUNICATIONS PLAN – 2ND LEVEL

ADD IDF/ELEC Room 222 per RAC request
ADD IDF/ELEC Room 223 per RAC request
ADD IDF/ELEC Room 224 per RAC request

T401 – ENLARGED COMMUNICATIONS PLANS

UPDATED PRCS UPS to provisions only.

T406 – ENLARGED COMMUNICATIONS PLANS

NEW SHEET IDF/ELEC Room 222.

T407 – ENLARGED COMMUNICATIONS PLANS
NEW SHEET IDF/ELEC Room 223.

T408 – ENLARGED COMMUNICATIONS PLANS
NEW SHEET IDF/ELEC Room 224.

T504 – COMMUNICATIONS DETAILS
UPDATED Shuffle pole detail per manufacturer's standard options.

T702 – COMMUNICATIONS BACKBONE DIAGRAM
ADDED conduit and fiber to IDF/ELEC Rooms 222, 223 and 224.

T703 – COMMUNICATIONS RISER DIAGRAM
DELETED conduit and pull box to surveillance cameras from walkway ramp.

T704 – COMMUNICATIONS INTERCONNECT DIAGRAM
DELETED cat 6 cables to surveillance cameras from walkway ramp.

TY100 – COMMUNICATIONS SITE PLAN
DELETED surveillance cameras from the walkway ramp.

TY102 – OVERALL SECURITY PLAN – 2ND LEVEL
ADD IDF/ELEC Room 222 per RAC request
ADD IDF/ELEC Room 223 per RAC request
ADD IDF/ELEC Room 224 per RAC request

TY601 – SECURITY SCHEDULE
DELETED surveillance cameras from the walkway ramp.

TY702 – SECURITY INTERCONNECT DIAGRAMS
DELETED surveillance cameras from the walkway ramp.

Specifications

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REVISED. Specification 05 73 13 Glazing Decorative Metal Railing and specification 07 42 13.33 Metal Composite Material Wall Panels added to Table of Contents.
21 10 00 – Sprinkler and Standpipe Systems
REPLACE specification in its entirety.
05 73 13 – Glazed Decorative Metal Railings
ADDED specification.
07 42 13.23 – Metal Composite Material Wall Panels
ADDED specification.

END OF NARRATIVE

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Not used.

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Not used.

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Not used.

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Not used.

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Appendix C – Construction Safety and Phase Plan
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See Volume 3 for: Appendix E – Bid Form

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SECTION 05 73 13 - GLAZED DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Interior post-supported railings with glass-infill panels.

B. Related Requirements:

   1. Section 05 51 13 "Metal Pan Stairs" for steel tube railings associated with metal pan stairs.

1.3 DEFINITIONS

A. Railings: Guards, handrails, and similar devices used for protection of occupants at open-sided floor and exterior deck areas and for pedestrian guidance and support, visual separation, or wall protection.

1.4 COORDINATION AND SCHEDULING

A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver items to Project site in time for installation.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.6 ACTION SUBMITTALS

A. Product Data:

1. Metal railings assembled from standard components.
2. Glass products.
3. Anchoring cement.

B. Shop Drawings: Include plans, elevations, sections, and attachment details.

C. Samples for Initial Selection: For products involving selection of color, texture, or design.

D. Samples for Verification: For each type of exposed finish required.

1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters.
2. Base channel.
3. Each type of glass and glass edge required.
4. Fittings and brackets.
5. Assembled Samples of railing systems, made from full-size components, including top rail, post, handrail, glass-infill panels. Show method of finishing members at intersections. Samples need not be full height.

E. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For professional engineer or testing agency.

B. Product Test Reports: For tests performed by a qualified testing agency, in accordance with ASTM E894, ASTM E935, ASTM E2353, and ASTM E2358.

C. Evaluation Reports: From ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

1. For glazed decorative metal railings.
2. For post-installed anchors.

D. Preconstruction test reports.

1.8 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Build mockups for each form and finish of glass-infill panel railing consisting of two posts, top rail, handrail, glass-infill panel, and anchorage system components that are full height and are not less than 24 inches in length.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.10 WARRANTY

A. Manufacturer's Special Warranty for Laminated Glass: Glazed decorative metal railing manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. C.R. Laurence Co., Inc.; CRH Americas, Inc.
2. Greco; CSW Industrials Inc.
3. Julius Blum & Co., Inc.
4. Livers Bronze Co. **(Basis of Design)**
5. Morse Industries.
6. TACO Metals Inc.
7. Tuttle, a Dant Clayton Division.
8. Wagner Companies (The); R&B Wagner, Inc.

B. Source Limitations for Laminated Glass: Obtain from single source from single manufacturer.

C. Source Limitations for Decorative Metal Railing Components: Obtain from single source from single manufacturer for each component and installation method.

D. Product Options: Information on Drawings and in the Specifications establishes requirements for railing system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.

1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design glazed decorative metal railings, including attachment to building construction.

B. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:
1. Stainless Steel: 60 percent of minimum yield strength.
2. Steel: 72 percent of minimum yield strength.
3. Glass: 25 percent of mean modulus of rupture (50 percent probability of breakage), as listed in "Mechanical Properties" in AAMA CW-12, "Structural Properties of Glass."

C. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails and Top Rails of Guards:

a. Uniform load of 50 lbf/ft. applied in any direction.
b. Concentrated load of 200 lbf applied in any direction.
c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Glass-Infill Panels:

a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft..
b. Infill load and other loads need not be assumed to act concurrently.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.3 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.

2.4 STAINLESS STEEL

A. Tubing: ASTM A554, Grade MT 304.

B. Pipe: ASTM A312/A312M, Grade TP 304.

C. Castings: ASTM A743/A743M, Grade CF 8 or Grade CF 20.

D. Sheet, Strip, Plate, and Flat Bar: ASTM A666 or ASTM A240/A240M, Type 304.

E. Bars and Shapes: ASTM A276, Type 304.

2.5 GLASS AND GLAZING PRODUCTS, GENERAL

A. Glazing Publications: Comply with written instructions of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.

B. Safety Glazing: Glazing shall comply with 16 CFR 1201, Category II.

C. Safety Glazing Labeling: Permanently mark glass with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

D. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear), Class 1 and low-iron clear, or Class 2 (tinted) as indicated, Quality-Q3.

E. Glazing Gaskets for Glass-Infill Panels: Glazing gaskets and related accessories as recommended or supplied by railing manufacturer for installing glass-infill panels in post-supported railings.

2.6 GLASS HANDRAILS AND GUARDS

A. Tempered Glass Handrails and Guards: Provide products that have been tested for surface and edge compression in accordance with ASTM C1048 and for impact strength in accordance with 16 CFR 1201 for Category II materials.

1. Glass Color: **See Finish Legend**.
2. Thickness for Glass-Infill Panels: As required by structural loads, but not less than 6.0 mm.

B. Laminated Glass Handrails and Guards: ASTM C1172, Type II with two plies of glass bonded together by an interlayer.

1. Construction: Laminate glass with polyvinyl butyral interlayer orionoplast polymer interlayer to comply with interlayer manufacturer's written instructions.
2. Interlayer Thickness: 0.030 inch.
3. Kind: LT (laminated tempered).
4. Glass Color: To match Tempered Glass.

2.7 FASTENERS

A. Fastener Materials: Unless otherwise indicated, provide the following:
1. Stainless Steel Components: Type 304 stainless steel fasteners.
2. Dissimilar Metals: Type 304 stainless steel fasteners.

B. Fasteners for Anchoring to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

C. Provide concealed fasteners for interconnecting railing components and for attaching railings to other work unless exposed fasteners are unavoidable or exposed fasteners are the standard fastening method for railings indicated.

1. Provide tamper-resistant flat-head machine screws for exposed fasteners unless otherwise indicated.

D. Post-Installed Anchors: Fastener systems with working capacity greater than or equal to design load, in accordance with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193 or ICC-ES AC308.

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941/ASTM F1941M, Class Fe/Zn 5, unless otherwise indicated.
2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless steel bolts, ASTM F593, and nuts; ASTM F594.

2.8 MISCELLANEOUS MATERIALS

A. Handrail Brackets: Cast stainless steel, center of rail from face of structural glass balusters.

B. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

C. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.

2.9 FABRICATION OF METAL RAILINGS

A. Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate. Locate weep holes in inconspicuous locations.

F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

G. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.

H. Form changes in direction as follows:
   1. By flush bends or by inserting prefabricated flush-elbow fittings.
   2. By bending to smallest radius that will not result in distortion of railing member.

I. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

J. Close exposed ends of hollow railing members with prefabricated end fittings.

K. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, handrail brackets, miscellaneous fittings, and anchors to interconnect railing members to other work where indicated.

   1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers, or other means to transfer loads through wall finishes to structural supports and to prevent bracket or fitting rotation and crushing of substrate.

L. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

M. For railing posts set in concrete, provide stainless steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with metal plate forming bottom closure.

2.10 FABRICATION OF GLASS PANELS AND BALUSTERS

A. Fabricate glass to sizes and shapes required; provide for proper edge clearance and bite on glazing panels.

B. Glass-Infill Panels: Provide tempered or laminated, tempered glass-infill panels.

   1. Edge Finish: Clean-cut or flat-grind edges to produce smooth, square edges with slight chamfers at junctions of edges and faces.

2.11 METAL FINISH REQUIREMENTS, GENERAL

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipment.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.12 STAINLESS STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

1. Run grain of directional finishes with long dimension of each piece.
2. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

C. Stainless Steel Tubing Finishes:

1. 180-Grit Polished Finish: Uniform, directionally textured finish.

D. Stainless Steel Sheet, Strip, Plate, and Bar Finishes:

1. Directional Satin Finish: ASTM A480/A480M, No. 4.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with Drawings and manufacturer's written instructions for installing glazed decorative metal railings, accessories, and other components.

B. Perform cutting, drilling, and fitting required for installing metal railings.

1. Fit exposed connections together to form tight, hairline joints.
2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
4. Do not weld, cut, or abrade surfaces of metal railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
5. Set posts plumb within a tolerance of 1/16 inch in 3 feet.

6. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

D. Adjust railings before anchoring to ensure matching alignment at abutting joints.

E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 METAL RAILING CONNECTIONS

A. Nonwelded Connections:

1. Use mechanical or adhesive joints for permanently connecting railing components.
2. Use wood blocks and padding to prevent damage to railing members and fittings.
3. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.

3.3 METAL ANCHORING POSTS

A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted in sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.

B. Cover anchorage joint with flange of same metal as post, attached to post with setscrews.

C. Anchor posts to metal surfaces with flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:
1. For stainless steel railings, weld flanges to posts and bolt to metal-supporting surfaces.

3.4 CLEANING

A. Clean aluminum and stainless steel by washing thoroughly with water and soap, rinsing with clean water, and wiping dry.

B. Clean and polish glass as recommended in writing by manufacturer. Wash both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion.

3.5 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

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SECTION 074 113.16 - STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Standing-seam metal roof panels.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, metal panel Installer, metal panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal panels, including installers of roof accessories and roof-mounted equipment.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to metal panel installation, including manufacturer's written instructions.
4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review structural loading limitations of deck, purlins and rafters during and after roofing.
6. Review flashings, special details, drainage, penetrations, equipment curbs, and condition of other construction that affect metal panels.
7. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
8. Review temporary protection requirements for metal panel systems during and after installation.
9. Review procedures for repair of metal panels damaged after installation.

10. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

C. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes.

1. Include similar Samples of trim and accessories involving color selection.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.

1. Metal Panels: 12 inches (305 mm) long by actual panel width. Include clips, fasteners, closures, and other metal panel accessories.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Field quality-control reports.

D. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panels to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
   1. Build mockups for typical roof area only, including attachments, underlayment and accessories.
      a. Size: [12 feet (3.5 m) long by 6 feet (1.75 m)].
      b. Each type of exposed seam and seam termination.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
   3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on metal panels during installation.

E. Copper Panels: Wear gloves when handling to prevent fingerprints and soiling of surface.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.10 COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

B. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.11 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including rupturing, cracking, or puncturing.
b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 year fluoropolymer finish, 10 year siliconized polyester finish from date of Substantial Completion.

C. Special Weathertightness Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Energy Performance: Provide roof panels that are listed on the EPA/DOE's ENERGY STAR "Roof Product List" for steep-slope roof products.

B. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Drawings.
3. Deflection Limits: For wind loads, no greater than 1/180 As indicated on Drawings, of the span.

4. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).

C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E1646 or ASTM E331 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).

D. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E2140.

E. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

1. Uplift Rating: UL 90.

F. FM Global Listing: Provide metal roof panels and component materials that comply with requirements in FM Global 4471 as part of a panel roofing system and that are listed in FM Global's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A-[60] [75] [90] [105] [120] <Insert number>.
2. Hail Resistance: [MH] [SH].

G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 STANDING-SEAM METAL ROOF PANELS

A. Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.

1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1514.
2. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1637.

B. Vertical-Rib, Snap-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and intermediate stiffening ribs symmetrically spaced between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and snapping panels together.

C.

1. Carlisle Corporation
2. Mueller, Inc.
3. McElroy Metal
4. MBCI

5. Aluminum Sheet: Coil-coated sheet, ASTM B209 (ASTM B209M), alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

    a. Thickness: 0.040 inch (1.02 mm).
    b. Surface: Smooth, flat finish.
    c. Exterior Finish: Three-coat fluoropolymer, FEVE fluoropolymer, Siliconized polyester, Clear anodized.
    d. Color: As selected by Architect from manufacturer's full range] <Insert color>.

6. Clips: One-piece fixed, Two-piece floating to accommodate thermal movement.

    a. Material: 0.028-inch- (0.71-mm-), 0.064-inch- (1.63-mm-) nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.
    b. Material: 0.0250-inch- (0.635-mm-), 0.0625-inch- (1.587-mm-) thick, stainless steel sheet.

7. Panel Coverage: 12 to 24 inches.
8. Panel Height: 2.5 inches.

D. Trapezoidal-Rib, Snap-Joint, Standing-Seam Metal Roof Panels: Formed with raised trapezoidal ribs at panel edges and intermediate stiffening ribs symmetrically spaced, a flat pan between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and snapping panels together.

E.

1. Carlisle Corporation
2. Mueller, Inc.
3. McElroy Metal
4. MBCI

5. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A653/A653M, G90 (Z275) coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A792/A792M, Class AZ50 (Class AZM150) coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

   a. Nominal Thickness: 0.040 inch (1.02 mm).
   b. Exterior Finish: Three-coat fluoropolymer, FEVE fluoropolymer.
   c. Color: As selected by Architect from manufacturer's full range.

6. Aluminum Sheet: Coil-coated sheet, ASTM B209 (ASTM B209M), alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

   a. Thickness: [0.032 inch (0.81 mm)] [0.040 inch (1.02 mm)].
   b. Surface: [Smooth, flat] [Embossed] finish.
   c. Exterior Finish: [Two-coat fluoropolymer] [Three-coat fluoropolymer] [Mica fluoropolymer] [Metallic fluoropolymer] [FEVE fluoropolymer] [Siliconized polyester] [Clear anodized] [Color anodized] <Insert finish>.
   d. Color: [As indicated by manufacturer's designations] [Match Architect's samples] [As selected by Architect from manufacturer's full range] <Insert color>.

7. Stainless Steel Sheet: ASTM A240/A240M, [Type 304] [Type 316], fully annealed.

   a. Nominal Thickness: [0.0188 inch (0.477 mm)] [0.0250 inch (0.635 mm)] [0.0313 inch (0.795 mm)] [0.0375 inch (0.952 mm)] [0.050 inch (1.270 mm)].
   b. Exterior Finish: [ASTM A480/A480M No. 4] [ASTM A480/A480M No. 2B] <Insert finish>.

8. Clips: [One-piece fixed] [Two-piece floating] to accommodate thermal movement.

a. Material: 0.064-inch- (1.63-mm-) nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.
b. Material: [0.0250-inch- (0.635-mm-)] [0.0625-inch- (1.587-mm-)] thick, stainless steel sheet.

9. Panel Coverage: 24 inches (610 mm).
10. Panel Height: 3 inches (76 mm).

a. Material: 0.064-inch- (1.63-mm-) nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.
b. Material: 0.0625-inch- (1.587-mm-) thick, stainless steel sheet.

11. Joint Type: As standard with manufacturer.
12. Panel Coverage: 24 inches (610 mm).
13. Panel Height: 3.0 inches (76 mm).

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils (0.76 mm) thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: Stable after testing at 240 deg F (116 deg C); ASTM D1970.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F (29 deg C); ASTM D1970.
3. <Double click here to find, evaluate, and insert list of manufacturers and products.>

B. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

2.4 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C645; cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A792/A792M, Class AZ50 (Class AZM150) coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fascia, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Gutters: Formed from same material as roof panels, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- (2400-mm-) long sections, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Furnish gutter supports spaced a maximum of 36 inches (914 mm) o.c., fabricated from same metal as gutters. Provide wire ball strainers of compatible metal at outlets. Finish gutters to match metal roof panels, roof fascia and rake trim.

E. Downspouts: Formed from same material as roof panels. Fabricate in 10-foot- (3-m-) long sections, complete with formed elbows and offsets, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Finish downspouts to match gutters.

F. Roof Curbs: Fabricated from same material as roof panels, 0.048-inch (1.2-mm) nominal thickness; with bottom of skirt profiled to match roof panel profiles and with welded top box and integral full-length cricket. Fabricate curb subframing of 0.060-inch- (1.52-mm-) nominal thickness, angle-, C-, or Z-shaped steel sheet. Fabricate curb and subframing to withstand indicated loads of size and height indicated. Finish roof curbs to match metal roof panels.

1. Insulate roof curb with 1-inch- (25-mm-) thick, rigid insulation.

G. Panel Fasteners: Self-tapping screws designed to withstand design loads.

H. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.5 FABRICATION

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

C. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
4. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

    a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application, but not less than thickness of metal being secured.

2.6 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Steel Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
2. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
3. Mica Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
4. Metallic Fluoropolymer: AAMA 621. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
5. FEVE Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether (FEVE) resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
6. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
7. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

D. Aluminum Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare,

pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.

2. Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
3. Mica Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
4. Metallic Fluoropolymer: AAMA 2605. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
5. FEVE Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether (FEVE) resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
6. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
7. Exposed Anodized Finish:

    a. Clear Anodic Finish: AAMA 611, [AA-M12C22A41, Class I, 0.018 mm] [AA-M12C22A31, Class II, 0.010 mm] or thicker.
    b. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

E. Stainless Steel Panels and Accessories:

1. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
2. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

    a. Run grain of directional finishes with long dimension of each piece.
    b. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
    c. Directional Satin Finish: ASTM A480/A480M No. 4.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.

    a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.3 INSTALLATION OF UNDERLAYMENT

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated on Drawings, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Extend underlayment into gutter trough. Roll laps with roller. Cover underlayment within 14 days.

1. Apply over the entire roof surface.

B. Felt Underlayment: Apply at locations indicated [below] [on Drawings], in shingle fashion to shed water, and with lapped joints of not less than 2 inches (50 mm).

C. Slip Sheet: Apply slip sheet over underlayment before installing metal roof panels.

D. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 076200 "Sheet Metal Flashing and Trim."

3.4 INSTALLATION OF STANDING SEAM METAL ROOF PANELS

A. Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Steel Panels: Use stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.
2. Aluminum Panels: Use aluminum or stainless steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.
3. Copper Panels: Use copper, stainless steel, or hardware-bronze fasteners.
4. Stainless Steel Panels: Use stainless steel fasteners.

C. Anchor Clips: Anchor metal roof panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions.

D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

E. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.
2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.
4. Watertight Installation:

    a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommend in writing by manufacturer as needed to make panels watertight.
    b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
    c. At panel splices, nest panels with minimum 6-inch (152-mm) end lap, sealed with sealant and fastened together by interlocking clamping plates.

F. Clipless Metal Panel Installation: Fasten metal panels to supports with screw fasteners at each lapped joint at location and spacing recommended by manufacturer.

G. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal roof panel manufacturers; or, if not indicated, types recommended by metal roof panel manufacturer.

H. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (610 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form

expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

I. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than 36 inches (914 mm) o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

J. Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 60 inches (1524 mm) o.c. in between

1. Provide elbows at base of downspouts to direct water away from building.

K. Roof Curbs: Install flashing around bases where they meet metal roof panels.

L. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by manufacturer.

3.5 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal panel units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect metal roof panel installation, including accessories. Report results in writing.

B. Remove and replace applications of metal roof panels where tests and inspections indicate that they do not comply with specified requirements.

C. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

D. Prepare test and inspection reports.

3.7 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On

completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 41 13.16

SECTION 07 42 13.23 - METAL COMPOSITE MATERIAL WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal composite material (MCM) panels (referred to as ACM (Aluminum Composite Material) on Drawings)

1.2 DEFINITIONS

A. DBVC: Drained and back-ventilated cavity rainscreen system designed to drain and dry water entering cavity through drainage channels, weeps, and air ventilation.

B. MCM/: Metal composite material; cladding material formed by joining two thin metal skins to polyethylene or fire-retardant core and bonded under precise temperature, pressure, and tension.

C. PER: Pressure-equalized rainscreen system designed for no water intrusion, with equal pressure within air cavity and outside cladding barrier.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, MCM system Installer, MCM system manufacturer's representative, and installers whose work interfaces with or affects MCM panels, including installers of doors, windows, and louvers.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to MCM system installation, including manufacturer's written instructions.
4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affect MCM system.
6. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.

7. Review temporary protection requirements for system assembly during and after installation.
8. Review procedures for repair of panels damaged after installation.
9. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 ACTION SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel, system, and accessory.

1. Metal composite material (MCM) panels.

B. Shop Drawings:

1. Include fabrication and installation layouts of MCM system; details of edge conditions, joints, panel profiles, corners, anchorages, attachment assembly, trim, flashings, closures, accessories, and special details.
2. Accessories: Include details of flashing, trim, and anchorage, at a scale of not less than 1-1/2 inches per 12 inches.
3. Provide signed and sealed drawings, by a qualified design professional in Project jurisdiction, of MCM system showing compliance with performance requirements and design criteria identified for this Project.

C. Samples for Initial Selection: For each type of MCM panel indicated, with factory-applied color finishes.

1. Size: Manufacturers' standard size.
2. Include Samples of trim and accessories involving color selection.

D. Samples for Verification: For each type of MCM panel and MCM system required, with factory-applied color finishes.

1. MCM Panel: Two samples, Manufacturers' standard size.

E. Delegated Design Submittals: For MCM system, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Test and Evaluation Reports:

1. Product Test Reports: For each MCM system, for tests performed by qualified testing agency.
    a. MCM Panel Manufacturer's Material Test Reports: Certified test reports showing compliance with specific performance or third-party listing documenting compliance in accordance with the IBC.
    b. Fabricator's MCM System Test Reports: Certified test reports showing system compliance with specific performance or third-party listing documenting compliance in accordance with the IBC.
        1) Dry or Wet Seal System: Tested to AAMA 501.1.
2. Preconstruction Test Reports: For MCM system.

B. Field Quality-Control Submittals:

1. Field quality-control reports.

C. Qualification Statements: For manufacturer, fabricator and Installer.

D. Delegated design engineer qualifications.

E. Sample warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For MCM panels.

B. Warranty Documentation:

1. Manufacturers' special warranties.
2. Installer's special warranties.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 years' experience.

B. Fabricator Qualifications: Approved by MCM panel manufacturer.

C. Installer Qualifications: Fabricator of MCM system or Entity that employs installers and supervisors who are trained and approved by MCM system manufacturer.

D. Delegated Design Engineer Qualifications: A professional engineer who is legally qualified to practice in state where Project is located and who is experienced in providing engineering services of the type indicated.

E. Testing Agency Qualifications: An agency acceptable to authorities having jurisdiction.

1.8 MOCKUPS

A. Build mockups to set quality standards for fabrication and installation and for preconstruction testing.

1. Build mockup(approximately 900 sq. ft.- location to be determined), including corner, soffits, copping, supports, attachments, and accessories.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations by Change Order.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on field mockups.

1. Area and location TBD.
2. Provide test specimens and assemblies representative of proposed materials and construction.
3. Build laboratory mockups at testing agency facility; use personnel, materials, and methods of construction that will be used at Project site.
4. Notify Architect seven days in advance of dates and times when laboratory mockups will be tested.

B. Preconstruction Testing: Performed by a qualified testing agency on manufacturer's standard assemblies.

1. Water-Spray Test: Conduct water-spray test of mockup of MCM system, testing for water penetration in accordance with AAMA 501.2.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, MCM panels, and other manufactured items so as not to be damaged or deformed. Package MCM panels for protection during transportation and handling.

B. Unload, store, and erect MCM panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack MCM panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store MCM panels to ensure dryness, with

positive slope for drainage of water. Do not store MCM panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on MCM panels during installation.

E. Copper Panels: Wear gloves when handling to prevent fingerprints and soiling of surface.

1.11 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of MCM panels to be performed in accordance with manufacturers' written instructions and warranty requirements.

1.12 COORDINATION

A. Coordinate MCM panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.13 WARRANTY

A. Panel Integrity Warranty: Manufacturer agrees to repair or replace components of MCM panels that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Structural failures including rupturing, cracking, or puncturing.
   b. Deterioration of metals and other materials beyond normal weathering.
2. Warranty Period: Five years from date of Substantial Completion.

B. Panel Finish Warranty: Manufacturer agrees to repair finish or replace MCM panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
   a. Color fading more than 5 Hunter units when tested in accordance with ASTM D2244.
   b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
   c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.

C. MCM System Warranty: System manufacturer's standard form in which manufacturer agrees to repair or replace components of MCM systems that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design MCM system.

B. Structural Performance: MCM systems to withstand the effects of the following loads, based on testing in accordance with ASTM E330/E330M:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Drawings.
3. Deflection Limits: For wind loads, no greater than 1/180 of the span.

C. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested in accordance with ASTM E283/E283M at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft..

D. Water Penetration under Static Pressure: No water penetration when tested in accordance with ASTM E331 at the following test-pressure difference:

1. Test-Pressure Difference: 2.86 lbf/sq. ft..

E. Water Penetration under Dynamic Pressure: No water penetration when tested in accordance with AAMA 501.1 at the following test pressure:

1. Test Pressure: 6.24 psf.

F. Pressure Cycling: Provide PER system with a pass rating in accordance with AAMA 508.

1. Lag between the cavity and the cyclic wind pressure to not exceed 0.08 seconds.
2. Maximum differential between the cavity and the cyclic wind pressure to not exceed 50 percent of the maximum test pressure.

G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F (100 deg C), material surfaces.

H. Fire-Resistance Ratings: Comply with ASTM E119 or UL 263; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from listings of another qualified testing agency.

I. Fire Propagation Characteristics: MCM system passes NFPA 285 testing.

2.2 METAL COMPOSITE MATERIAL (MCM) WALL PANELS

A. Metal Composite Material (MCM) Wall Panels: Provide MCM panels fabricated from two metal facings bonded to a solid, extruded thermoplastic core.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. ARCONIC ARCHITECTURAL PRODUCTS, LLC (Reynobond-Basis of Design)
   b. ALPOLIC Materials; Mitsubishi Chemical Composites.
   c. ALUCOBOND; 3A Composites USA, Inc.
   d. Alcotex Inc.
   e. Alucoil North America.
2. Core: FR.
3. Panel Thickness: 0.157 inch.
4. Bond Strength: 22.5 in-lb/in. when tested for bond integrity in accordance with ASTM D1781.
5. Fire Performance: Flame-spread index less than 25 and smoke-developed index less than 450, in accordance with ASTM E84 or UL 723.

B. MCM Panel Materials:

1. Aluminum-Faced Panels: ASTM B209/B209M alloy as standard with manufacturer, temper as required to suit finish and forming operations 3003, H14 with 0.032-inch-thick, aluminum sheet facings.
   a. Exterior Finish: Two-coat fluoropolymer.
      1) Color: See Drawing sheet for colors selection.

2.3 METAL COMPOSITE MATERIAL (MCM) SYSTEM

A. Dry-Seal Barrier MCM System: Provide factory-formed and -assembled, MCM panels formed into profile for dry-seal barrier system installation. Include attachment assembly components**, panel stiffeners**, and accessories required for weathertight system.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. ARCONIC ARCHITECTURAL PRODUCTS, LLC (Reynobond-Basis of Design)
   b. ALPOLIC Materials; Mitsubishi Chemical Composites.
   c. ALUCOBOND; 3A Composites USA, Inc.
   d. Alcotex Inc.
   e. Alucoil North America.
   f. Guernsey Architectural Solutions, Inc.

B. System Panel Depth: 2-1/4 inches (57 mm) or as indicated on drawings.

C. Attachment Assembly Components: Manufacturer's standard formed from extruded aluminum.

D. Labeling: Comply with labeling requirement of applicable building code.

2.4 ACCESSORIES

A. Metal Subframing and Furring: ASTM C955 cold-formed, metallic-coated steel sheet ASTM A653/A653M, G90 (Z275) hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of MCM system.

B. System Accessories: Provide components required for a complete, weathertight wall system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of MCM panels unless otherwise indicated.

C. Flashing and Trim: Provide flashing and trim formed from same material as MCM panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent MCM panels.

D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Use gasketed or approved coated fasteners between dissimilar metals.

1. Aluminum Panels: Use aluminum or stainless steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.
2. Copper Panels: Use copper, stainless steel, or hardware-bronze fasteners.
3. Steel, Titanium, or Zinc Panels: Use stainless steel fasteners.
4. Provide exposed fasteners with heads matching color of MCM panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

E. Panel Sealants: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in MCM panels and remain weathertight; and as recommended in writing by MCM system manufacturer.

2.5 FABRICATION

A. Fabricate and finish MCM panels at the factory, by panel manufacturer's standard procedures and processes, as necessary to fulfill indicated panel performance requirements demonstrated by laboratory testing.

B. Shop-fabricate MCM systems and accessories by fabricator's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with requirements of MCM panel manufacturer, of indicated system profiles, and with dimensional and structural requirements.

1. Fabricate panels to dimensions indicated on Drawings based on an assumed design temperature of 70 deg F. Allow for ambient temperature range at time of fabrication.
2. Formed MCM panel lines, breaks, and angles to be sharp and straight, with surfaces free from warp or buckle.
3. Fabricate panels with sharply cut edges and no displacement of face sheet or protrusion of core.
4. Fabricated Panel Tolerances: Shop-fabricate panels to sizes and joint configurations indicated on Drawings.
   a. Width: Plus or minus 0.079 inch at 70 deg F.
   b. Length: Plus or minus 0.079 inch at 70 deg F.
   c. Squareness: Plus or minus 0.079 inch at 70 deg F.
5. Attach routed-and-returned panel flanges to perimeter extrusions or panel clips with manufacturer's standard fasteners or structural silicone adhesive.

C. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams.
4. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal manufacturer.
    a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal manufacturer for application, but not less than thickness of metal being secured.

2.6 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Coil-Coated Metal Finish:

1. PVDF Fluoropolymer: AAMA 2605, two-coat fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, MCM system supports, and other conditions affecting performance of the Work.

1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by MCM system manufacturer.
2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by MCM system manufacturer.
    a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and assemblies penetrating MCM system to verify actual locations of penetrations relative to seam locations of MCM panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF MCM SYSTEM

A. General: Install MCM system in accordance with system manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to supports unless otherwise indicated. Anchor MCM system securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving MCM system.
2. Flash and seal MCM system at perimeter of all openings. Fasten with self-tapping screws.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as MCM system work proceeds.
6. Align bottoms of MCM panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
7. Provide weathertight escutcheons for all items penetrating system.
8. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by MCM system manufacturer.
9. Attach MCM panels to supports at locations, spacings, and with fasteners recommended by manufacturer to meet listed performance requirements.

B. Attachment Assembly, General: Install attachment assembly required to support MCM panels and to provide a complete weathertight wall system, including tracks, drainage channels, anchor channels, perimeter extrusions, and panel clips.

1. Install subframing, furring, and other panel support members and anchorages in accordance with ASTM C955.

2. Install support system at locations, at spacings, and with fasteners recommended by MCM system manufacturer to meet listed performance requirements.

C. Dry-Seal MCM System: Attach MCM panels by interlocking panel **clips** into **tracks**, **channels**, **in a sequential series**.

1. Seal horizontal and vertical joints between adjacent MCM panels with manufacturer's standard gaskets.

D. Install panels to allow individual panels to "free float" and be installed and removed without disturbing adjacent panels.

E. Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install accessory components required for a complete MCM system assembly including trim, copings, corners, seam covers, flashings, fillers, closure strips, and similar items. Provide types indicated by MCM system manufacturer.

F. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

1. Install exposed flashing and trim that is without buckling and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install trim to fit substrates and to result in waterproof performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

3.3 INSTALLATION TOLERANCES

A. Shim and align MCM panels within installed tolerance of 1/4 inch in 20 ft., non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.4 FIELD QUALITY CONTROL

A. Water-Spray Test: After installation, test area of assembly as directed by Architect for water penetration in accordance with AAMA 501.2.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect completed MCM system installation, including accessories.

C. MCM system will be considered defective if it does not pass test and inspections.

D. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

E. Prepare test and inspection reports.

3.5 CLEANING

A. Remove temporary protective coverings and strippable films as MCM panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, clean finished surfaces as recommended by MCM panel manufacturer. Maintain in a clean condition during construction.

B. After installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

3.6 PROTECTION

A. Replace MCM panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

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SECTION 21 10 00 - SPRINKLER AND STANDPIPE SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Pipes, fittings, and specialties.
2. Specialty valves.
3. Pressure gages.
4. Fire Department Connections.
5. Hose Connections
6. Seismic Restraints.
7. General Duty Valves.
8. Escutcheons.
9. Sleeves.

1.3 DEFINITIONS

A. Standard-Pressure Piping: system piping designed to operate at working pressure of 175-psig maximum.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include rated capacities, operating characteristics, and furnished specialties and accessories.

B. Shop Drawings: For standpipe systems.

1. Include plans, elevations, sections, and attachment details.

C. Delegated-Design Submittal: For standpipe systems indicated to comply with requirements and design criteria.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Provide combined coordination drawings using input from installers of the other building services in accordance with the Division 23 requirements.

B. Qualification Data: For qualified Installer and Designer.

C. Approved Standpipe Drawings: Working plans, prepared according to NFPA 13 and NFPA 14, that have been approved by authorities having jurisdiction, including hydraulic calculations if applicable.

D. Welding certificates.

E. Seismic Restraint Calculations

F. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13 and NFPA 14. Include "Contractor's Material and Test Certificate for Aboveground Piping."

G. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For standpipe systems and specialties to include in emergency, operation, and maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer's responsibilities include designing, fabricating, and installing standpipe systems.

    a. Designer Responsibility: Preparation of working plans, calculations, and field test reports by a qualified designer meeting the minimum state requirements.

B. Welding Qualifications: Qualify procedures and operators according to 2010 ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTIONS

A. Manual Dry-Type, Class I Standpipe System: Includes NPS 2-1/2 hose connections. Does not have permanent water supply. Piping is dry. Water must be pumped into standpipes to satisfy demand.

2.2 PERFORMANCE REQUIREMENTS

A. Standpipe system equipment, specialties, accessories, installation, and testing shall comply with NFPA 13 and NFPA 14.

B. Standard-Pressure Piping System Component: All system components shall be listed for 175-psig minimum working pressure.

C. Design: provide working drawings meeting the requirements of NFPA 13. The drawings shall be developed from the contract drawings and specifications. Provide general configuration, routing, and sizing as indicated and shall be coordinated with all trades and building components. Pipe sizes shall not be reduced from those indicated.

1. Standpipe system design shall be approved by authorities having jurisdiction.

D. Seismic Performance: Piping shall withstand the effects of earthquake motions determined according to NFPA 13 and NFPA 14. Refer to structural for design criteria for seismic systems. All components shall be designed and installed per NFPA 14 and/or their listing.

E. Manufacturers: Subject to compliance with requirements, provide products that are listed and/or approved for use in fire protection systems.

2.3 STEEL PIPE AND FITTINGS

A. Schedule 40, Black-Steel Pipe: ASTM A 53, A 135, or A 795, with wall thickness not less than Schedule 40. Pipe ends may be factory or field formed to match joining method. Joints shall be threaded, welded, or grooved.

B. Schedule 10, Black-Steel Pipe: ASTM A 135 or A 795, with wall thickness not less than Schedule 10 for welded and rolled-groove fittings only. Schedule 10 piping shall only be used on wet-pipe systems and piping upstream of the dry-pipe valve.

C. Black-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53, standard-weight, seamless steel pipe with threaded ends.

D. Uncoated- Steel Couplings: ASTM A 865, threaded.

E. Uncoated, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.

F. Malleable- or Ductile-Iron Unions: UL 860.

G. Cast-Iron Flanges: ASME 16.1, Class 125.

H. Steel Flanges and Flanged Fittings: ASME B16.5, Class 150.

1. Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, 1/8 inch thick, ASME B16.21, nonmetallic and asbestos free or EPDM rubber gasket.

a. Class 125 and Class 250, Cast-Iron, Flat-Face Flanges: Full-face gaskets.
b. Class 150 and Class 300, Ductile-Iron or -Steel, Raised-Face Flanges: Ring-type gaskets.

2. Metal, Pipe-Flange Bolts and Nuts: Carbon steel unless otherwise indicated.

I. Steel Welding Fittings: ASTM A 234 and ASME B16.9.

1. Welding Filler Metals: Comply with AWS D10.12M/D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

J. Grooved-Joint, Steel-Pipe Appurtenances:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Anvil International, Inc.
b. Tyco Fire & Building Products LP.
c. Victaulic Company

2. Painted Grooved-End Fittings for Steel Piping: ASTM A 47, malleable-iron casting or ASTM A 536, ductile-iron casting, with dimensions matching steel pipe.
3. Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213 rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, EPDM-rubber gasket, and bolts and nuts.

2.4 VALVES

A. Listed in UL's "Fire Protection Equipment Directory" and FM Global's "Approval Guide."

B. Body Material: Cast or ductile iron, unless otherwise indicated.

C. Size: Same as connected piping.

D. End Connections: Flanged, threaded or grooved.

E. Check Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Clow Valve Company; a division of McWane, Inc.
   b. Globe Fire Sprinkler Corporation.
   c. Kennedy Valve; a division of McWane, Inc.
   d. Milwaukee Valve Company.
   e. NIBCO INC.
   f. Tyco Fire & Building Products LP.
   g. Victaulic Company.
   h. Viking Corporation.
2. Standard: UL 312.
3. Type: Swing Check.

F. OS&Y GATE VALVES

1. Standard: UL 262 and FM Global standard for fire-service water control valves (OS&Y-type gate valves).
2. Body and Bonnet Material: Cast or ductile iron.
3. Wedge: Cast or ductile iron, or bronze with elastomeric coating.
4. Wedge Seat: Cast or ductile iron, or bronze with elastomeric coating.
5. Stem: Brass or bronze.
6. Packing: Non-asbestos PTFE.

G. General Duty Valves:
1. UL Listed: Valves shall be listed in UL's "Online Certifications Directory" under the headings listed below and shall bear UL mark:
   a. Main Level: HAMV - Fire Main Equipment.
      1) Level 1: HLOT - Valves.
         a) Level 3: HMER - Check Valves.
         b) Level 3: HMRZ - Gate Valves.
   b. Main Level: VDGT - Sprinkler System & Water Spray System Devices.
      1) Level 1: VQGU - Valves, Trim and Drain.
2. FM Global Approved: Valves shall be listed in its "Approval Guide," under the headings listed below:
   a. Automated Sprinkler Systems:
      1) Valves.
         a) Gate valves.
         b) Check valves.
      2) Miscellaneous valves.
3. Source Limitations for Valves: Obtain valves for each valve type from single manufacturer.
4. ASME Compliance:

a. ASME B16.1 for flanges on iron valves.
b. ASME B1.20.1 for threads for threaded-end valves.
c. ASME B31.9 for building services piping valves.

5. AWWA Compliance: Comply with AWWA C606 for grooved-end connections.
6. NFPA Compliance: Comply with NFPA 24 for valves.
7. Valve Actuator Types:
   a. Handwheel: For other than quarter-turn trim and drain valves.
   b. Handlever: For quarter-turn trim and drain valves NPS 2 and smaller.

2.5 TRIM AND DRAIN VALVES

A. Ball Valves:
   1. Description:
      a. Body Design: Two piece.
      b. Body Material: Forged brass or bronze.
      c. Port size: Full or standard.
      d. Seats: PTFE.
      e. Stem: Bronze or stainless steel.
      f. Ball: Chrome-plated brass.
      g. Actuator: Handlever.

B. Angle Valves:
   1. Description:
      a. Body Material: Brass or bronze.
      b. Ends: Threaded.
      c. Stem: Bronze.
      d. Disc: Bronze.
      e. Packing: Asbestos free.
      f. Handwheel: Malleable iron, bronze, or aluminum.

C. Globe Valves:
   1. Description:
      a. Body Material: Bronze with integral seat and screw-in bonnet.
      b. Ends: Threaded.
      c. Stem: Bronze.
      d. Disc Holder and Nut: Bronze.
      e. Disc Seat: Nitrile.
      f. Packing: Asbestos free.
      g. Handwheel: Malleable iron, bronze, or aluminum.

2.6 HOSE CONNECTIONS

A. Nonadjustable-Valve Hose Connections:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Elkhart Brass Mfg. Co.
   b. Fire-End & Croker Corp.
   c. Guardian Fire Equipment
   d. Kennedy Valve Co.
   e. Kidde Fire Fighting
   f. Mueller Co
   g. Nibco Inc.
   h. Potter-Roemer LLC
   i. Type Fire & Building Products
   j. Viking Corp.
2. Standard: UL 668 hose valve for connecting fire hose.
3. Pressure Rating: 175 psig minimum.
4. Material: Brass or bronze.
5. Size: NPS 2-1/2, as indicated.
6. Inlet: Female pipe threads.
7. Outlet: Male hose threads with lugged cap, gasket, and chain. Include hose valve threads according to NFPA 1963 and matching local fire-department threads.
8. Pattern: Angle or gate.
9. Finish: Rough brass or bronze.

2.7 EXPOSED-TYPE FIRE DEPARTMENT CONNECTION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following, except where otherwise indicated:
   a. Elkhart Brass Mfg. Co.
   b. Guardian Fire Equipment.
   c. Tyco Fire & Building Products LP.
   d. Viking Corporation.

B. Standard: UL 405.

C. Type: Exposed, projecting, for wall mounting.

D. Pressure Rating: 175 psig minimum.

E. Body Material: Corrosion-resistant metal.

F. Inlets: Brass with threads according to NFPA 1963 and matching local fire-department sizes and threads. Include extension pipe nipples, brass lugged swivel connections, and check devices or clappers.

G. Caps: Brass, lugged type, with gasket and chain.

H. Escutcheon Plate: Round, brass, wall type.

I. Outlet: Back, with pipe threads.

J. Number of Inlets: Two.

K. Escutcheon Plate Marking: Similar to "STANDPIPE."

L. Finish: Polished chrome plated.

M. Outlet Size: NPS 6.

2.8 ESCUTCHEONS

A. Split-Casting Brass Type: With polished, chrome-plated (where exposed) and rough-brass finish and with concealed hinge and setscrew.

2.9 SLEEVES

A. Cast-Iron Wall Pipes: Cast or fabricated of cast or ductile iron and equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

B. Galvanized-Steel Wall Pipes: ASTM A53, Schedule 40, with plain ends and welded steel collar; zinc coated.

2.10 PRESSURE GAGES

A. Standard: UL 393.

B. Dial Size: 3-1/2- to 4-1/2-inch diameter.

C. Pressure Gage Range: 0- to 250-psig.

D. Label: Include "WATER" or “AIR/WATER” label on dial face.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for hose connections to verify actual locations of piping connections before installation.

B. Examine walls and partitions for suitable thickness and other conditions where hose connections are to be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected

3.2 PIPING INSTALLATION

A. Locations and Arrangements: Drawing plans and diagrams indicate general location and arrangement of piping. Install piping as indicated.
   1. Coordinate layout and installation of sprinklers with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.

B. Piping Standard: Comply with the NFPA 14 requirements for installation of standpipe piping.

C. Dry-Pipe System Piping: slope all piping to a low point drain or back to a standpipe riser with a drain.

D. Install seismic restraints on piping. Comply with NFPA 13 requirements for seismic-restraint device materials and installation.

E. Use listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.

F. Install unions adjacent to each valve in pipes NPS 2 and smaller.

G. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.

H. Install piping with drains as required for complete system drainage.

I. Install automatic (ball drip) drain valve at each check valve for fire-department connection, to drain piping between fire-department connection and check valve.

J. Install hangers and supports for piping according to NFPA 14. Comply with requirements for hanger materials in NFPA 13.

K. Install pressure gages on riser or feed main and at top of each standpipe. Include pressure gages with connection not less than NPS 1/4 and with soft-metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal, and install where they are not subject to freezing.

L. Pressurize and check dry-type standpipe system piping.

M. Ground piping as required by NFPA 70.

N. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves.

O. Install sleeve seals for piping penetrations of concrete walls and slabs.

P. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons.

Q. Drain dry-type standpipe system piping.

3.3 JOINT CONSTRUCTION

A. Install couplings, flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.

B. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.

C. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

D. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.

E. Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.

F. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.

G. Welded Joints: Construct joints according to AWS D10.12M/D10.12, using qualified processes and welding operators according to "Quality Assurance" Article.

1. Shop weld pipe joints where welded piping is indicated. Do not use welded joints for galvanized-steel pipe.

H. Steel-Piping, Cut-Grooved Joints: Cut square-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe joints.

I. Steel-Piping, Roll-Grooved Joints: Roll rounded-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe grooved joints.

J. Dissimilar-Material Piping Joints: Make joints using adapters compatible with materials of both piping systems.

3.4 HOSE-CONNECTION INSTALLATION

A. Install hose connections attached to standpipes.

B. Install freestanding hose connections for access and minimum passage restriction.

C. Install NPS 2-1/2 hose connections with quick-disconnect NPS 2-1/2 by NPS 1-1/2 reducer adapter.

3.5 VALVE AND SPECIALTIES INSTALLATION

A. Install listed fire-protection valves, trim and drain valves according to NFPA 13 and NFPA 14 and authorities having jurisdiction.

3.6 IDENTIFICATION

A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 14.

3.7 FIRE DEPARTMENT CONNECTION INSTALLATION

A. Install wall-type fire-department connections.

B. Install automatic (ball-drip) drain valve at each check valve for fire-department connection.

3.8 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Leak Test: After installation, charge systems and test for leaks. Repair leaks and retest until no leaks exist.
2. Flush, test, and inspect systems according to NFPA 14 "Systems Acceptance" Chapter.
3. Verify that equipment hose threads are same as local fire department equipment.

B. Piping system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.9 CLEANING

A. Clean dirt and debris from all piping and valves.

END OF SECTION 21 10 00