Project Grace

LS3P: 7701-177600
ZIMMER DEVELOPMENT COMPANY
Grace Street
Wilmington, NC 28401



CURRENT ISSUE: 2022.05.25 OWNER REVIEW SET

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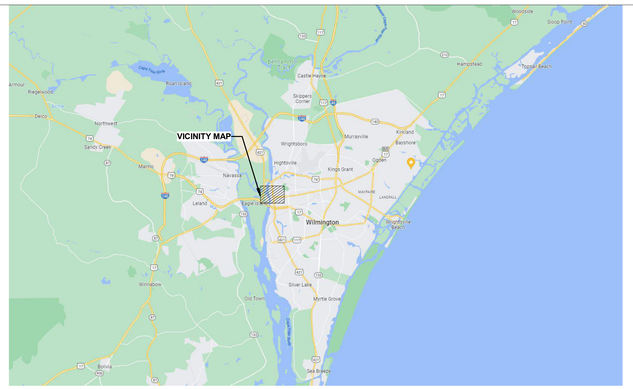
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS EXCEPT ARCH E SHEETS

PROJECT ABBREVIATIONS

A/C	AIR CONDITION(ING)
ADMIN	ADMINISTRATION
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIOVISUAL
BITUM	BITUMINOUS
BL	BUILDING LINE
BLDG	BUILDING
BN	BULL NOSE
BOS	BOTTOM OF STEEL
BOT	BOTTOM
CAB	CABINET
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLG HT	CEILING HEIGHT
CLO	CLOSET
CLR	CLEAR(ANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONT	CONTINUE, CONTINUOUS
CORR	CORRIDOR
CU FT	CUBIC FOOT
CU YD	CUBIC YARD
DEMO	DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIV	DIVISION
DS	DOWNSPOUT
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
ENCL	ENCLOSE(D)
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
F/F	FACE TO FACE
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF EL	FINISH FLOOR ELEVATION
FHC	FIRE HOSE CABINET
FIN FLR	FINISHED FLOOR
FLR	FLOOR, FILLER
FOC	FACE OF CURB
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF SLAB
FOW	FACE OF WALL
FT	FOOT, FEET
FTG	FOOTING
FURN	FURNISH, FURNITURE
GA	GAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTER
HC	HANDICAP
HD	HEAVY DUTY
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING, VENTILATION & AIR CONDITIONING
ID	INSIDE DIAMETER
INCL	INCLUDE(D), (ING)
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
JAN CLO	JANITOR CLOSET
KIT	KITCHEN
KO	KNOCKOUT
LAB	LABORATORY
LAM	LAMINATE
LAU	LAUNDRY
LAV	LAVATORY
LF	LINEAR FEET
LVR	LOUVER
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFG	MANUFACTURING
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MR	MOISTURE RESISTANT
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
N	NORTH
NIC	NOT IN CONTRACT
NOM	NOMINAL
NON COMB	NON-COMBUSTIBLE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
OPT	OPTION(AL)
PCF	POUNDS PER CUBIC FEET
PLAM	PLASTIC LAMINATE
PLF	POUNDS PER LINEAR FEET
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PREFAB	PREFABRICATED
PREFIN	PREFINISH
PRKG	PARKING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT, POST-TENSIONED, PRE-TREATED
PVC	POLYVINYL CHLORIDE (PLASTIC)
QTR	QUARTER
QTY	QUANTITY
R	RADIUS, RISER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFRIGERATOR, REFERENCE
REQD	REQUIRED
RL	ROOF LEADER
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
S	SOUTH
SC	SOLID CORE
SD	STORM DRAIN
SECT	SECTION
SF	SQUARE FEET
SIM	SIMILAR
SPEC	SPECIFICATION
SPKR	SPEAKER
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STOR	STORAGE
SUSP	SUSPENDED
SYS	SYSTEM
T	TREAD
TEL	TELEPHONE
TEMP	TEMPORARY
TFF	TOP OF FINISH FLOOR
THK	THICKNESS
THRU	THROUGH
TO	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE, CURB
TOF	TOP OF FOOTING
TOJ	TOP OF JOIST
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET
TOS	TOP OF SLAB
TOW	TOP OF WALL
TRTD	TREATED
TV	TELEVISION
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
W	WEST, WIDE
W/	WITH
W/O	WITHOUT
W/W	WALL TO WALL
WC	WATER CLOSET
WD	WOOD
WP	WORKING POINT, WATERPROOFING
WR	WATER REPELLENT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD

AREA MAP



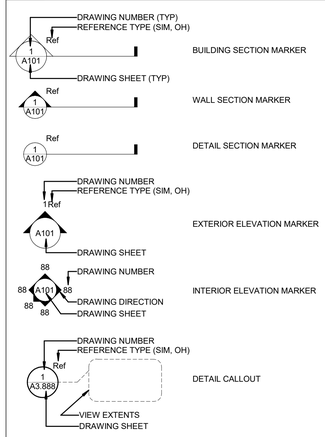
VICINITY MAP



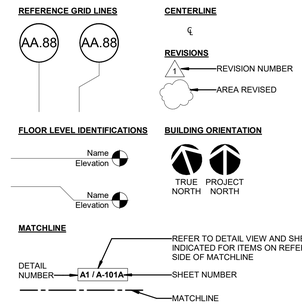
DRAWING TITLES



VIEW MARKERS



DRAWING SYMBOLS



PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



- SEE FILL PATTERN LEGEND FOR FIRE-RESISTANCE RATING
- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
- SEE PARTITION TAG AND SCHEDULE FOR COMPLETE PARTITION INFORMATION

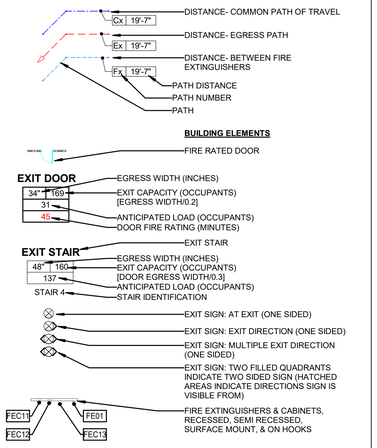
FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
- 1 HOUR-RATED PARTITION
- 2 HOUR-RATED PARTITION
- 3 HOUR-RATED PARTITION
- 4 HOUR-RATED PARTITION

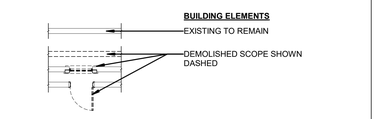
COLOR LEGEND

- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
- RATED **FIRE PARTITION** TO DECK
- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

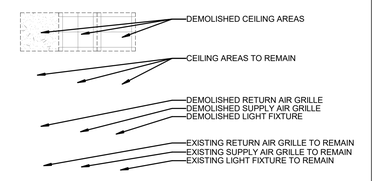
CODE COMPLIANCE LEGEND



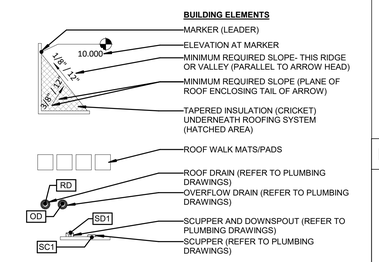
DEMOLITION GRAPHICS



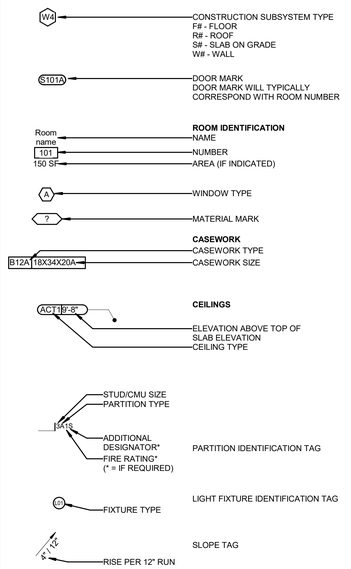
DEMOLITION RCP LEGEND



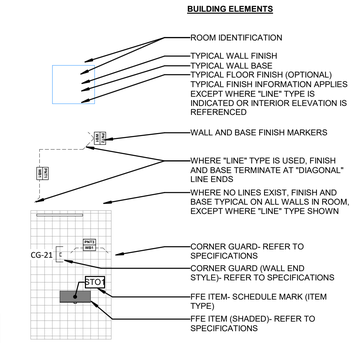
ROOF PLAN LEGEND



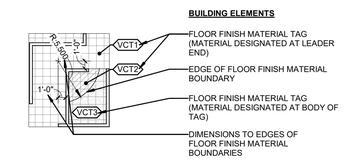
ITEM TAGS



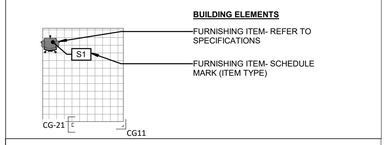
FINISH PLAN LEGEND



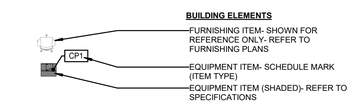
FLOOR PATTERN LEGEND



FURNITURE PLAN LEGEND



EQUIPMENT PLAN LEGEND



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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
DRAWING INFO - LEGENDS, GRAPHICS, ETC.

ORIG SUBMISSION: 2022.05.25

SHEET:
G-001

OWNER REVIEW SET

5/25/2022 5:06:16 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PLOT SIZE

SHEET INDEX

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G-200	LEVEL 2 - CODE PLAN	2022.05.25		
G-300	LEVEL 3 - CODE PLAN	2022.05.25		
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C-202	SITE PLAN BASEMENT LEVEL	2022.05.25		
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A-354	EXTERIOR ENVELOPE DETAILS	2022.05.25	A	2022.05.25
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ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
SHEET INDEX

ORIG SUBMISSION: 2022.05.25

SHEET:
G-002

OWNER REVIEW SET

5/25/2022 5:06:16 PM

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1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PLOT SHEETS. EXPANDING PLOT SIZE RESIZES

CODE SUMMARY

GENERAL INFORMATION:
PROJECT NAME: PROJECT GRACE
LOCATION: WILMINGTON, NORTH CAROLINA
RESPONDING FIRE DEPARTMENT: CITY OF WILMINGTON, NORTH CAROLINA
AUTHORITY HAVING JURISDICTION: CITY OF WILMINGTON, NORTH CAROLINA

PROJECT DESCRIPTION:
NEW BUILDING LOCATED IN DOWNTOWN WILMINGTON ALONG GRACE STREET, EXTENDING FROM N. 2ND STREET TO N. 3RD STREET. BUILDING WILL HAVE 3 STORIES AND WILL BE BUILT DIRECTLY ADJACENT TO AN EXISTING PARKING GARAGE. SEE "SPECIAL CONDITIONS" BELOW FOR MORE INFORMATION ON CONSTRUCTION TYPES AND SEPARATION BETWEEN THE NEW BUILDING AND EXISTING GARAGE.

APPLICABLE CODES:
THE CITY OF WILMINGTON ENFORCES THE 2018 NORTH CAROLINA STATE CODES, WHICH ARE AN AMENDED VERSION OF THE 2015 INTERNATIONAL CODE COUNCIL (ICC) "I-CODES." THE FOLLOWING CODES AND STANDARDS APPLY TO THIS PROJECT:
- 2018 NC STATE ADMINISTRATIVE CODE
- 2018 NC STATE BUILDING CODE: BUILDING CODE (NCBC) (2015 IBC WITH AMENDMENTS)
- 2018 NC STATE BUILDING CODE: EXISTING BUILDING CODE (2015 IEBC WITH AMENDMENTS)
- 2018 NC STATE BUILDING CODE: FIRE PREVENTION CODE (2015 IFC WITH AMENDMENTS)
- 2018 NC STATE ELECTRICAL CODE (NCEC) (2017 NEC WITH AMENDMENTS)
- 2015 INTERNATIONAL MECHANICAL CODE (WITH AMENDMENTS)
- 2015 INTERNATIONAL PLUMBING CODE (WITH AMENDMENTS)
- 2015 INTERNATIONAL FUEL GAS CODE (WITH AMENDMENTS)
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE (WITH AMENDMENTS)
- 2009 ICC A117.1, ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
- 2013 ASME A17.1, SAFETY CODE FOR ELEVATORS AND ESCALATORS
- NFPA STANDARDS:
  - 2013 NFPA 10, STANDARD FOR PORTABLE FIRE EXTINGUISHERS
  - 2013 NFPA 13, INSTALLATION OF SPRINKLER SYSTEMS
  - 2013 NFPA 14, INSTALLATION OF STANDPIPES, PRIVATE HYDRANTS AND HOSE SYSTEMS
  - 2013 NFPA 20, STANDARD FOR THE INSTALLATION OF STATIONARY PUMP FOR FIRE PROTECTION
  - 2014 NFPA 70, NATIONAL ELECTRICAL CODE
  - 2013 NFPA 72, NATIONAL FIRE ALARM CODE
  - 2013 NFPA 80, STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES
  - 2013 NFPA 110, STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS
  - 2013 NFPA 111, STANDARD ON STORED ELECTRICAL ENERGY EMERGENCY AND STANDBY POWER SYSTEMS

OCCUPANCY CLASSIFICATION:
GROUP A-3: LIBRARY, MUSEUM, ASSEMBLY AREAS WITH MORE THAN 49 OCCUPANTS OR LARGER THAN 749 SF
GROUP B: OFFICE AREAS, RESTROOMS, MECHANICAL/ELECTRICAL ROOMS, ASSEMBLY AREAS WITH LESS THAN 50 OCCUPANTS OR SMALLER THAN 750 SF
GROUP S-2: PARKING GARAGE (EXISTING)

CONSTRUCTION TYPE:
TYPE 1B, SPRINKLERED BUILDING (SEE "SPECIAL CONDITIONS" BELOW FOR MORE INFORMATION ON GARAGE CONSTRUCTION TYPE.)
BUILDING HEIGHT:
- ALLOWABLE: 180 FT
- ACTUAL: ~56 FT (NEW ADDITION) | ~93 FT (EXISTING GARAGE)

NUMBER OF STORIES:
- ALLOWABLE: 12 STORIES (NEW ADDITION) | 8 TIERS (EXISTING GARAGE)
- ACTUAL: 3 STORIES (NEW ADDITION) | 7 TIERS (EXISTING GARAGE)

FLOOR AREA:
- ALLOWABLE: UNLIMITED (NEW ADDITION) | 50,000 SF (EXSTING GARAGE)
- ACTUAL (LARGEST FLOOR): ~36,500 SF (NEW ADDITION) | ~37,500 SF (EXISTING GARAGE)

BUILDING AREA:
- ALLOWABLE: UNLIMITED
- ACTUAL: ~94,500 SF (NEW ADDITION)

STRUCTURAL FIRE RATINGS:

PRIMARY STRUCTURAL FRAME (E.G. COLUMNS, BEAMS):	2 HR
FLOOR ASSEMBLIES:	2 HR
ROOF ASSEMBLIES:	1 HR
INTERIOR BEARING WALLS:	2 HR
EXTERIOR BEARING WALLS:	2 HR
INTERIOR NONBEARING WALLS:	0 HR
EXTERIOR NONBEARING WALLS:	0 HR
EXTERIOR ROOF CANOPIES:	0 HR (NOT PART OF PRIMARY STRUCTURAL FRAME)

PASSIVE FIRE PROTECTION:

VERTICAL SHAFT ENCLOSURES:	2 HR
ELEVATOR HOISTWAYS:	2 HR
ELEVATOR MACHINE ROOMS:	2 HR
ENCLOSED EXIT STAIRS:	2 HR
CORRIDORS:	0 HR (SPRINKLERED BUILDING)
FIRE PUMP ROOM:	1 HR (NOT A HIGH-RISE)
FIRE COMMAND CENTER:	N/A (NOT REQUIRED; NOT A HIGH-RISE)
INCIDENTAL USE ROOMS (SPRINKLERED BUILDING):	
FURNACE ROOMS WITH EQUIPMENT OVER 400,000 BTU/HR INPUT:	1 HR OR 0 HR SMOKE PARTITION
BOILER ROOMS WITH EQUIPMENT OVER 15 PSI AND 10 HORSEPOWER:	1 HR OR 0 HR SMOKE PARTITION
LAUNDRY ROOMS OVER 100 SQUARE FEET:	1 HR OR 0 HR SMOKE PARTITION
WASTE COLLECTION (TRASH) ROOMS OVER 100 SQUARE FEET:	1 HR OR 0 HR SMOKE PARTITION
REFRIGERANT MACHINERY ROOMS:	1 HR OR 0 HR SMOKE PARTITION
BATTERY STORAGE ROOMS SERVING STANDBY POWER, EMERGENCY POWER, OR UNINTERRUPTABLE POWER SUPPLY SYSTEMS:	
FLOODED LEAD-ACID, NICKEL CADMIUM OR VRLA SYSTEMS OVER 50 GALLONS:	2 HR
LITHIUM-ION AND LITHIUM METAL POLYMER SYSTEMS OVER 1,000 POUNDS:	2 HR
10 KWH FOR OTHER BATTERY TECHNOLOGIES:	2 HR
ELECTRICAL ROOMS WITH:	
EQUIPMENT OVER 1,000 VOLTS:	3 HR WITH 1 HR DOORS
DRY-TYPE TRANSFORMERS OVER 112.5 KVA:	1 HR (0 HR IF NEC 450.21(B), EX. 1 OR 2 IS MET)
DRY-TYPE TRANSFORMERS OVER 35,000 VOLTS:	1 HR WITH 1 HR DOORS

ACTIVE LIFE SAFETY SYSTEMS:

AUTOMATIC SPRINKLER SYSTEM (NEW ADDITION):	REQUIRED / PROVIDED
AUTOMATIC SPRINKLER SYSTEM (EXISTING GARAGE):	TBD / TBD
STANDPIPE SYSTEM (NEW ADDITION):	REQUIRED (STORY >30' ABOVE GRADE) / PROVIDED (MANUAL WET PERMITTED)
STANDPIPE SYSTEM (EXISTING GARAGE):	REQUIRED / PROVIDED (EXISTING SYSTEM TYPE TO BE CONFIRMED, MANUAL WET OR DRY PERMITTED IF GARAGE IS "OPEN")
FIRE ALARM SYSTEM – MANUAL:	REQUIRED / PROVIDED (PULL STATIONS AT EXITS)
FIRE ALARM SYSTEM – AUTOMATIC:	REQUIRED / PROVIDED (SMOKE DETECTORS FOR HVAC SYSTEMS, ELEVATOR LOBBIES/CONTROL ROOMS, AND FIRE ALARM PANELS)
FIRE ALARM NOTIFICATION SYSTEM:	REQUIRED / PROVIDED (EMERGENCY VOICE ALARM COMMUNICATION – REQUIRED FOR HAVING MORE THAN 1,000 ASSEMBLY OCCUPANTS AND FOR REDUCED EXIT WIDTH FACTORS)
PORTABLE FIRE EXTINGUISHERS:	REQUIRED / PROVIDED (LOCATED PER NFPA 10)
SMOKE CONTROL:	NOT REQUIRED (NO ATRIUM EXISTS - SEE EXPLANATION BELOW) / NOT PROVIDED
GARAGE VENTILATION:	TBD / TBD

SPECIAL CONDITIONS:

1. MULTI-STORY CONNECTION FROM LEVEL 1 TO LEVEL 3
THE MULTI-STORY SPACES OF PROJECT GRACE ARE CLASSIFIED AS "TWO-STORY OPENING" PER NCBC SECTION 712.1.9 BETWEEN LEVEL 1 AND LEVEL 2 WITH PROTECTION IN PLACE AT ANY CONNECTION TO A 3RD STORY. SECTION 712.1.9 DOES NOT REQUIRE THIS PROTECTION TO BE A SHAFT ENCLOSURE, AS IT INTENTIONALLY DOES NOT REFERENCE SECTION 713 FOR THE CONSTRUCTION OF A SHAFT ENCLOSURE. SINCE SECTION 712.1 LISTS BOTH SHAFT ENCLOSURES (712.1.1) AND DRAFT CURTAINS & CLOSELY-SPACED SPRINKLERS (712.1.12 & 1019.3, ITEM 4) AS EQUAL FORMS OF PROTECTING A VERTICAL OPENING, THE USE OF DRAFT CURTAINS & CLOSELY-SPACED SPRINKLERS ARE PROPOSED AS A SUBSTITUTE FOR THE "CONSTRUCTION CONFORMING TO REQUIRED SHAFT ENCLOSURES" REQUIRED BY SECTION 712.1.9, ITEM 6. DRAFT CURTAINS & CLOSELY-SPACED SPRINKLERS WILL BE INSTALLED AT THE VERTICAL OPENING AROUND THE STAIRWAY CONNECTING LEVEL 2 AND LEVEL 3 IN ACCORDANCE WITH NFPA 13. THE VERTICAL OPENING IS LESS THAN TWO TIMES THE HORIZONTAL PROJECTED AREA OF THE STAIRWAY, AS REQUIRED BY SECTION 1019.3, ITEM 4.

2. OPENING BETWEEN SOUTHEAST ELEVATOR AND STAIR ENCLOSURE:
AN ELEVATOR SMOKE CURTAIN (SMOKE GUARD MODEL 200 OR EQUIVALENT) IS PROPOSED AS AN ALTERNATE MEANS & METHODS TO THE PRESCRIPTIVE REQUIREMENTS OF NCBC 1023.4, WHICH DOES NOT ALLOW AN ELEVATOR TO OPEN DIRECTLY INTO AN EXIT STAIRWAY. THIS CONDITION ONLY OCCURS AT ONE LOCATION, AS THE OTHER ELEVATOR DOORS OPEN INTO THE GARAGE. FOR THIS BUILDING, THE ELEVATOR OPENINGS (DOORS) ARE REQUIRED TO BE 90-MINUTE RATED BUT ARE NOT REQUIRED TO PROVIDE SMOKE AND DRAFT CONTROL. THE PROPOSED ELEVATOR SMOKE CURTAIN PROVIDES SMOKE AND DRAFT CONTROL IN ADDITION TO THE FIRE RATING PROVIDED BY THE DOORS. THE SMOKE CURTAIN IS CONSIDERED BY CODE TO BE EQUIVALENT TO A RATED ELEVATOR LOBBY OR HOISTWAY PRESSURIZATION SYSTEM. THE SMOKE CURTAIN WILL ALLOW FOR EGRESS, WILL BE PROVIDED WITH BATTERY BACKUP, AND WILL BE ACTIVATED BY A SMOKE DETECTOR LOCATED AT THE OPENING AS WELL AS BY THE HEAT DETECTORS LOCATED IN THE GARAGE THAT ARE REQUIRED FOR ELEVATOR RECALL.

3. SEPARATION BETWEEN EXISTING GARAGE AND NEW ADDITION:
A 3-HOUR FIRE BARRIER IS PROPOSED BETWEEN THE EXISTING GARAGE AND NEW ADDITION. THIS SEPARATION IS PROPOSED TO SEPARATE PORTIONS OF THE BUILDING THAT HAVE DIFFERENT CONSTRUCTION TYPES. THE CONSTRUCTION TYPE OF THE EXISTING GARAGE IS NOT LISTED ON THE EXISTING DRAWINGS. BASED ON SITE OBSERVATIONS AND AVAILABLE DRAWINGS, THE CONSTRUCTION TYPE APPEARS TO BE TYPE I-B. ALL BUILDING ELEMENTS ARE NONCOMBUSTIBLE. MOST BUILDING ELEMENTS INHERENTLY PROVIDE THE REQUIRED 2-HOUR RATING, BASED ON THICKNESS OF CONCRETE. HOWEVER, SOME BUILDING ELEMENTS THAT APPEAR TO BE PART OF THE STRUCTURAL SYSTEM MAY NOT BE PROPERLY PROTECTED TO PROVIDE THE REQUIRED 2-HOUR RATING (E.G. CONCRETE COVER OF REBAR, UNPROTECTED STEEL FLOOR SUPPORTS). THE CONSTRUCTION TYPE OF THE NEW ADDITION IS TYPE I-B AND WAS SELECTED TO COMPLY WITH THE ALLOWABLE HEIGHT AND AREA REQUIREMENTS FOR THE ENTIRE BUILDING (EXISTING GARAGE AND NEW ADDITION). THIS APPROACH IS CONSISTENT WITH NCBC SECTION 510.7, WHICH ALLOWS AN OPEN PARKING GARAGE TO HAVE A DIFFERENT CONSTRUCTION TYPE THAN THE REST OF THE BUILDING WITHOUT REQUIRING A FIRE WALL BETWEEN THE GARAGE AND ADJACENT OCCUPANCIES (NEW ADDITION). THIS PROVISION RECOGNIZES THE RELATIVELY LOW HAZARD OF AN OPEN GARAGE AND ALLOWS THE DESIGNER TO APPLY THE ALLOWABLE HEIGHT AND AREA PROVISIONS OF NCBC TABLE 406.5.4 FOR A NON-SPRINKLERED OPEN PARKING GARAGE. THIS APPROACH HAS THE FOLLOWING STIPULATIONS, IN WHICH THE PROPOSED CONSTRUCTION COMPLIES WITH:
1. OPEN PARKING GARAGE LOCATED BENEATH OCCUPANCY GROUPS A, I, B, M, R. THE PROPOSED GARAGE IS LOCATED ADJACENT TO OCCUPANCY GROUPS A AND B, BEING LOCATED ADJACENT RATHER THAN BELOW WOULD PROVIDE MORE STRUCTURAL INDEPENDENCE UNDER FIRE CONDITIONS, WHICH IS A PRIMARY REQUIREMENT FOR FIRE WALLS (SEE NCBC SECTION 706.2). THE PROPOSED OCCUPANCIES OF THE NEW ADDITION ARE GENERALLY LESS HAZARDOUS THAN THOSE THAT ARE PERMITTED.
2. THE ALLOWABLE HEIGHT AND AREA OF THE GARAGE MUST COMPLY WITH NCBC TABLE 406.5.4. TABLE 406.5.4 ALLOWS UP TO 8 TIERS AND 50,000 SQUARE FEET PER TIER FOR TYPE II-B. THE GARAGE HAS 7 TIERS AND APPROXIMATELY 37,500 SQUARE FEET PER TIER. ASSUMING TYPE II-B CONSTRUCTION IS CONSERVATIVE SINCE MOST OF THE CONSTRUCTION APPEARS TO COMPLY WITH TYPE I-B CONSTRUCTION.
3. THE ALLOWABLE HEIGHT AND AREA OF THE NEW ADDITION MUST COMPLY WITH NCBC CHAPTER 5. CHAPTER 5 ALLOWS UNLIMITED AREA, UNLIMITED NUMBER OF STORIES, AND 180 FEET. THE HEIGHT OF THE NEW ADDITION IS APPROXIMATELY 56 FEET AND THE HEIGHT OF THE GARAGE IS APPROXIMATELY 93 FEET, MEASURED TO THE TOP OF THE ELEVATOR MACHINE ROOM.
4. ANY STRUCTURAL ELEMENTS WITHIN THE GARAGE THAT SUPPORT THE NEW ADDITION MUST COMPLY WITH THE CONSTRUCTION TYPE OF THE NEW ADDITION. THE ONLY ELEMENTS OF THE GARAGE THAT MAY BE USED TO SUPPORT THE ADJACENT STRUCTURE IS THE 3-HOUR FIRE BARRIER SEPARATION WALL, WHICH PROVIDES MORE THAN THE 2-HOUR RATING REQUIRED FOR TYPE I-B CONSTRUCTION.
5. THE MEANS OF EGRESS FOR THE NEW ADDITION MUST COMPLY WITH NCBC CHAPTER 10, AND THE MEANS OF EGRESS FOR THE GARAGE MUST COMPLY WITH NCBC SECTION 406.5. BOTH MEANS OF EGRESS SYSTEMS WILL COMPLY.
6. A 2-HOUR FIRE BARRIER WITH SELF-CLOSING DOORS PER NCBC SECTION 716 MUST BE PROVIDED BETWEEN THE GARAGE AND THE NEW ADDITION. TO PROVIDE AN ADDITIONAL LEVEL OF SAFETY, A 3-HOUR FIRE BARRIER IS PROPOSED.

MEANS OF EGRESS:
OCCUPANT LOAD FACTORS:

ASSEMBLY – STANDING ROOM:	5 SF PER OCCUPANT, NET
ASSEMBLY – CONCENTRATED (ROWS OF CHAIRS, NO TABLES):	7 SF PER OCCUPANT, NET
ASSEMBLY – UNCONCENTRATED (TABLES AND CHAIRS, GENERAL):	15 SF PER OCCUPANT, NET
MUSEUM:	30 SF PER OCCUPANT, NET
LIBRARY – STACK AREA	100 SF PER OCCUPANT, GROSS
LIBRARY – READING ROOMS	50 SF PER OCCUPANT, NET
OFFICES:	150 SF PER OCCUPANT, GROSS
KITCHENS:	200 SF PER OCCUPANT, GROSS
STORAGE, MECHANICAL, ELECTRICAL ROOMS:	300 SF PER OCCUPANT, GROSS
EGRESS WIDTH FACTORS (SPRINKLERED BUILDING WITH VOICE FIRE ALARM SYSTEM):	
LEVEL PATHS, RAMPS, DOORS:	0.15 INCH PER OCCUPANT (80 OCCUPANTS PER FOOT)
STAIRWAYS:	0.20 INCH PER OCCUPANT (60 OCCUPANTS PER FOOT)
MINIMUM EGRESS WIDTH:	
STAIRWAYS, CORRIDORS, LEVEL PATHS:	36 INCHES (44 INCHES IF SERVING 50 OR MORE OCCUPANTS)
MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS:	
1-49 OCCUPANTS:	1 (2 IF COMMON PATH OF TRAVEL IS EXCEEDED)
50-499 OCCUPANTS:	2
500-999 OCCUPANTS:	3
1,000+ OCCUPANTS:	4
WHERE COMMON PATH OF TRAVEL IS EXCEEDED:	2
BOILER ROOMS OVER 500 SF WITH EQUIPMENT OVER 400,000 BTU INPUT:	2
STORAGE ROOMS OVER 29 OCCUPANTS:	2
MAXIMUM TRAVEL DISTANCE:	
A-3:	250 FT
B:	300 FT
S-2:	300 FT (NON-SPRINKLERED PARKING GARAGE)
MAXIMUM COMMON PATH OF TRAVEL:	
A-3:	75 FT
B:	100 FT
S-2:	75 FT (NON-SPRINKLERED PARKING GARAGE), 100 FT (IF GARAGE IS "OPEN")
MAXIMUM DEAD END CORRIDOR:	
A-3:	20 FT
B:	50 FT
S-2:	20 FT (NON-SPRINKLERED PARKING GARAGE)

PANIC HARDWARE REQUIRED ON ALL SWINGING EGRESS DOORS PROVIDED WITH A LATCH OR LOCK THAT SERVE ROOMS OR SPACES WITH 50 OR MORE OCCUPANTS AND LOCATED IN THE GROUP A-3 OCCUPANCY (NCBC 1010.1.10). PANIC HARDWARE REQUIRED ON ALL DOORS WITHIN 25 FEET OF THE WORKING SPACE FOR ELECTRICAL EQUIPMENT WHERE THE ELECTRICAL ROOM CONTAINS EQUIPMENT RATED 800 A OR MORE AND CONTAINS OVERCURRENT DEVICES, SWITCHING DEVICES, OR CONTROL DEVICES (NCEC 110.26(C)(3))

ACCESSIBILITY
ACCESSIBLE ROUTE REQUIRED TO ALL AREAS OF BUILDING, EXCEPT:
- RAISED AREAS FOR SECURITY OR LIFE SAFETY
- LIMITED ACCESS SPACES SUCH AS LADDERS, CATWALKS, CRAWL SPACES, AND NARROW PASSAGEWAYS
- MACHINERY SPACES
- PORTIONS OF EMPLOYEE WORK AREAS
- WALK-IN COOLERS AND FREEZERS

60 PERCENT OF PUBLIC ENTRANCES REQUIRED TO BE ACCESSIBLE
ELEMENTS REQUIRED TO BE ACCESSIBLE:
- 5 PERCENT OF AISLE SEATS WITH ARMRESTS ("DESIGNATED AISLE SEATS")
- 5 PERCENT OF DRINK RAIL SEATING POSITIONS
- 1 COUNTER AT EACH TYPE OF CONCESSION
- 5 PERCENT OF EACH TYPE OF LOCKER IN EACH CLUSTER
- EACH RESTROOM, WITH 5 PERCENT OF EACH TYPE OF FIXTURE, ELEMENT, CONTROL, AND DISPENSER
- 1 AMBULATORY STALL IN RESTROOMS WHERE COMBINATION OF WATER CLOSETS AND URINALS EXCEEDS 5
- 1 LAVATORY WITH ENHANCED REACH RANGES IN RESTROOMS WITH 6 OR MORE LAVATORIES
- 50 PERCENT OF DRINKING FOUNTAINS

MINIMUM NUMBER OF PLUMBING FIXTURES:
PLUMBING FIXTURES ARE REQUIRED BASED ON THE CALCULATED OCCUPANT LOAD FOR EACH OCCUPANCY, ASSUMING 50% MALE AND 50% FEMALE, BASED ON THE FOLLOWING FACTORS. RESTROOMS ARE REQUIRED TO BE LOCATED SUCH THAT OCCUPANTS DO NOT HAVE TO TRAVEL THROUGH KITCHENS, STORAGE ROOMS, OR CLOSETS IN ORDER TO REACH A REQUIRED PLUMBING FIXTURE (NCBC 2902.3.1). EMPLOYEE RESTROOMS ARE PERMITTED TO BE LOCATED IN EMPLOYEE OR PUBLIC AREAS; RESTROOMS LOCATED IN EMPLOYEE AREAS THAT CANNOT BE ACCESSED BY THE PUBLIC ARE NOT PERMITTED TO BE COUNTED TOWARDS THE REQUIRED PLUMBING FIXTURES CALCULATED FOR PUBLIC OCCUPANTS (NCBC 2902.3):

OCCUPANCY	MALE WATER CLOSETS	FEMALE WATER CLOSETS	MALE LAVATORIES	FEMALE LAVATORIES	DRINKING FOUNTAINS
A-3	1 PER 125 MALE OCCUPANTS	1 PER 65 FEMALE OCCUPANTS	1 PER 200 MALE OCCUPANTS	1 PER 200 FEMALE OCCUPANTS	1 PER 500 OCCUPANTS
B	1 PER 25 FOR FIRST 50 MALE OCCUPANTS 1 PER 50 FOR REMAINING MALE OCCUPANTS	1 PER 25 FOR FIRST 50 FEMALE OCCUPANTS 1 PER 50 FOR REMAINING FEMALE OCCUPANTS	1 PER 40 FOR FIRST 80 MALE OCCUPANTS 1 PER 80 FOR REMAINING MALE OCCUPANTS	1 PER 40 FOR FIRST 80 FEMALE OCCUPANTS 1 PER 80 FOR REMAINING FEMALE OCCUPANTS	1 PER 100 OCCUPANTS
S-2 (PARKING GARAGE)	NOT REQUIRED (NCBC 2902.3, EXCEPTION 1)				

Plumbing Fixture Calcs

Occupancy Group		A-3	B	Total	Fixtures Required for Building***	
Occupant Load		1,353	371	1,724		
Male Occupants		677	186	863		
Female Occupants		677	186	863		
Water Closets*	Male	5.42	4.72	10.14	11	Men's Water Closets (Toilets or Urinals**)
	Female	10.42	4.72	15.14	16	Women's Water Closets (Toilets)
Lavatories*	Male	3.39	3.33	6.71	7	Men's Lavatories (Hand Sinks)
	Female	3.39	3.33	6.71	7	Women's Lavatories (Hand Sinks)
Bathtubs or Showers		-	-	-	-	Bathtubs or Showers
Drinking Fountains		2.71	3.71	6.42	7	Drinking Fountains
Service Sinks		1.00	1.00	1.00	1	Service (Janitor's) Sinks

** Fixtures within unisex/family restrooms can be applied towards either men's or women's required fixtures*
*** In each restroom within an A occupancy, urinals can be substituted for up to 67% of the required water closets (50% for B occupancies)*
**** At least one of each type of fixture is required to be located within 500 feet and 1 story of all portions of the building*

NOTE:
EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMPLETING WORK. CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS.

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
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SHEET NAME:
NARRATIVE SHEET

ORIG SUBMISSION: 2022.05.25

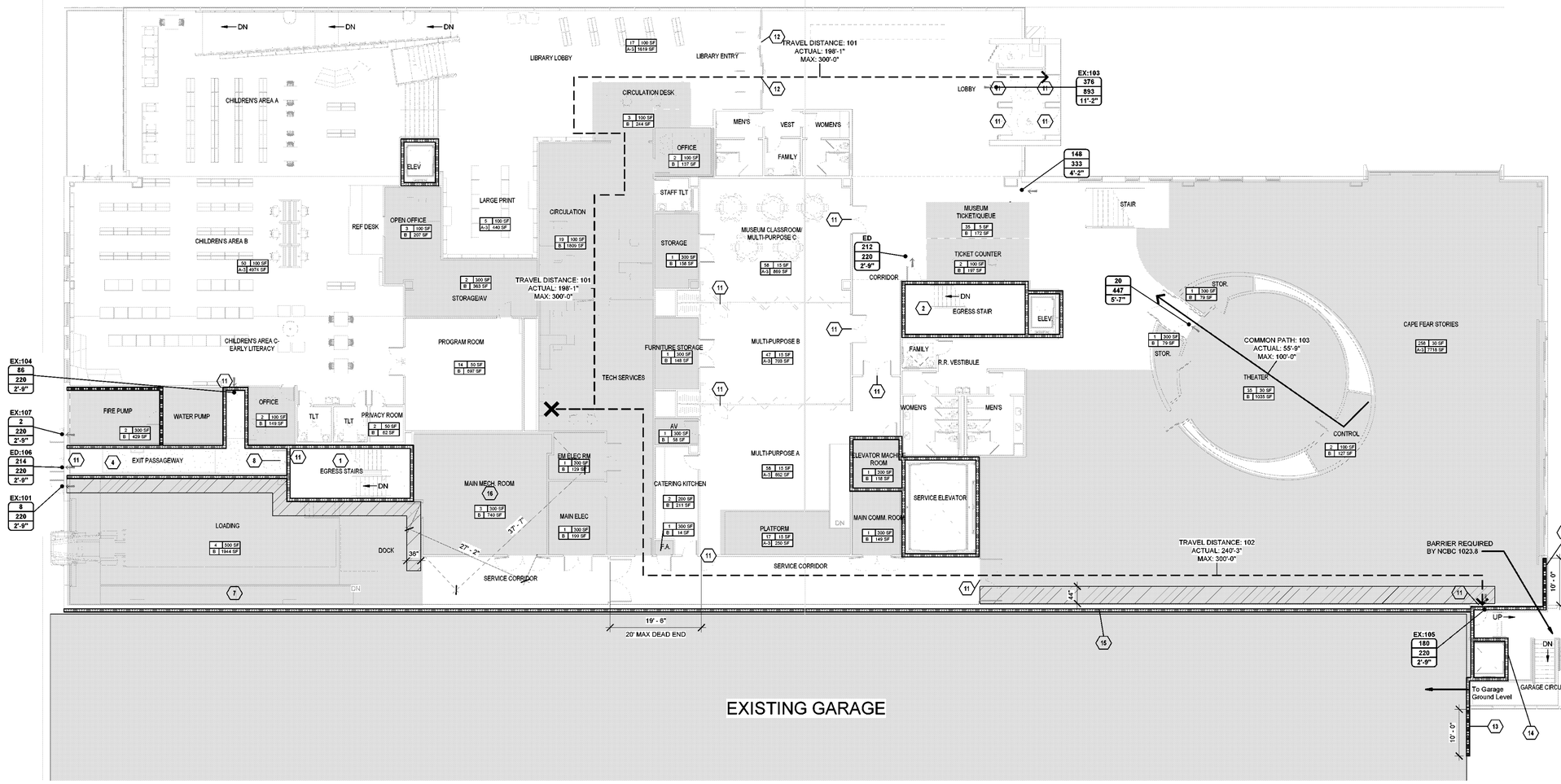
SHEET:
G-050

OWNER REVIEW SET

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E D C B A

1 2 3 4 5 6



1 LEVEL 1
3/32" = 1'-0"

LEGEND

AREA TAG

- Number of Calculated Occupants
- Occupant Load Factor (SQ.FT./Person)
- SQ.FT. of Space or Room
- Occupancy Group
- Fixed Seating
- Flow Occupants
- Direction of Occupant Flow
- Travel Distance
- Common Path of Travel
- 1 HR Fire Barrier
- 2 HR Fire Barrier
- 3 HR Fire Barrier
- Minimum Required Egress Width

EGRESS TAG

- Smoke Protected
- Egress Element Identifier
- Total Number of Occupants Exiting
- Capacity of Exit Element
- Egress Clear Width

EX = Exit
EA = Exit Access

LEVEL 1 OCCUPANT LOAD SUMMARY

Function	Area /Person	People
Assembly - Exhibit Gallery and Museum	30 SF	293
Assembly - Standing Space	5 SF	35
Assembly - Unconcentrated	15 SF	163
Business	100 SF	33
Kitchen, commercial	200 SF	2
Library - Reading room	50 SF	16
Library - Stack area	100 SF	72
Stage or platform	15 SF	17
Storage and Mechanical areas	300 SF	17
Warehouse	500 SF	4
Grand total		652

LEVEL 1 EXIT SCHEDULE

Elements		People Egressing	People per Foot	Clear Width	Exit Capacity
Desc	#				
EX	101	8	60	2'-9"	220
EX	103	376	80	11'-2"	893
EX	104	86	80	2'-9"	220
EX	105	180	80	2'-9"	220
EX	107	2	80	2'-9"	220
Grand total		652			1773

LEVEL 1 TRAVEL PATH SCHEDULE

PATH	ACTUAL TRAVEL DISTANCE	MAXIMUM TRAVEL DISTANCE
Travel Distance to an Exit		
101	198'-1"	300'-0"
102	240'-3"	300'-0"
Common Path of Travel		
103	55'-9"	100'-0"

KEYNOTES

1 INTERIOR EXIT STAIRWAY EGRESSES THROUGH EXIT PASSAGEWAY ON LEVEL 1 (NCBC 1023.1)
2 INTERIOR EXIT STAIRWAY EGRESSES THROUGH LEVEL 1 TO EXTERIOR EXIT DOOR THAT IS READILY VISIBLE FROM STAIRWAY DOOR (NCBC 1028.1, EXCEPTION 1)
4 EXIT PASSAGEWAY PROVIDED WITH 1-HOUR WALLS AND CEILING, WITH OPENINGS LIMITED TO THOSE NECESSARY FOR EXIT ACCESS FROM NORMALLY OCCUPIED SPACES AND PENETRATIONS RESTRICTED TO THOSE REQUIRED FOR AND SERVING THE EXIT PASSAGEWAY, AND PROVIDED WITH INDEPENDENT VENTILATION SYSTEM (NCBC 1024.3, 1024.6 & 1024.7)
8 2-HOUR FIRE BARRIER WITH 90-MINUTE DOOR REQUIRED BETWEEN STAIRWAY AND EXIT PASSAGEWAY; NO OTHER OPENINGS PERMITTED IN THIS FIRE BARRIER SEPARATING THE STAIRWAY FROM THE EXIT PASSAGEWAY. PENETRATIONS RESTRICTED TO THOSE REQUIRED FOR AND SERVING THE STAIRWAY OR EXIT PASSAGEWAY (NCBC 1023.3.1 & 1023.5)
9 1-HOUR FIRE-RESISTANCE RATED EXTERIOR WALL WITH 45-MINUTE OPENINGS, EXTENDING VERTICALLY FROM GROUND TO THE UNDERSIDE OF THE FLOOR/ROOF SHEATHING OF THE LEVEL 3 FLOOR/ROOF ASSEMBLY (NCBC 1023.7)
11 PANIC HARDWARE REQUIRED IF DOOR IS PROVIDED WITH LATCH OR LOCK (NCBC 1010.1.10)
12 HORIZONTAL SLIDING DOORS COMPLYING WITH NCBC 1010.1.4.3
13 1-HOUR FIRE-RESISTANCE RATED EXTERIOR WALL WITH 45-MINUTE OPENINGS, EXTENDING VERTICALLY FROM GROUND TO 10 FEET ABOVE THE HIGHEST LANDING OF THE STAIRWAY (NCBC 1023.7)
14 ELEVATOR SMOKE CURTAIN (SMOKE GUARD MODEL 200 OR EQUIVALENT) TO PROVIDE SEPARATION BETWEEN ELEVATOR AND INTERIOR EXIT STAIRWAY. REFER TO G000, "SPECIAL CONDITIONS" FOR MORE INFORMATION
15 3-HOUR FIRE BARRIER WITH 3-HOUR OPENINGS SEPARATING EXISING GARAGE FROM NEW ADDITION. EXISTING EXTERIOR WALL OF GARAGE PROVIDES MIMIMUM 4-HOUR RATING BASED ON 9-INCH CONCRETE THICKNESS PER NCBC TABLE 722.2.1.1. REFER TO G000, "SPECIAL CONDITIONS" FOR MORE INFORMATION.
16 INCIDENTAL USE ROOM, PROTECTED IN ACCORDANCE WITH NCBC 509.4

LEVEL 1 OCCUPANCY GROUP SUMMARY

Occupancy Group	People
A-3	510
B	142
Grand total	652

Function of Space

- Assembly - Exhibit Gallery and Museum
- Assembly - Standing Space
- Assembly - Unconcentrated
- Business
- Kitchen, commercial
- Library - Reading room
- Library - Stack area
- Stage or platform
- Storage and Mechanical areas
- Warehouse

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: LEVEL 1 - CODE PLAN

ORIG SUBMISSION: 2022.05.25

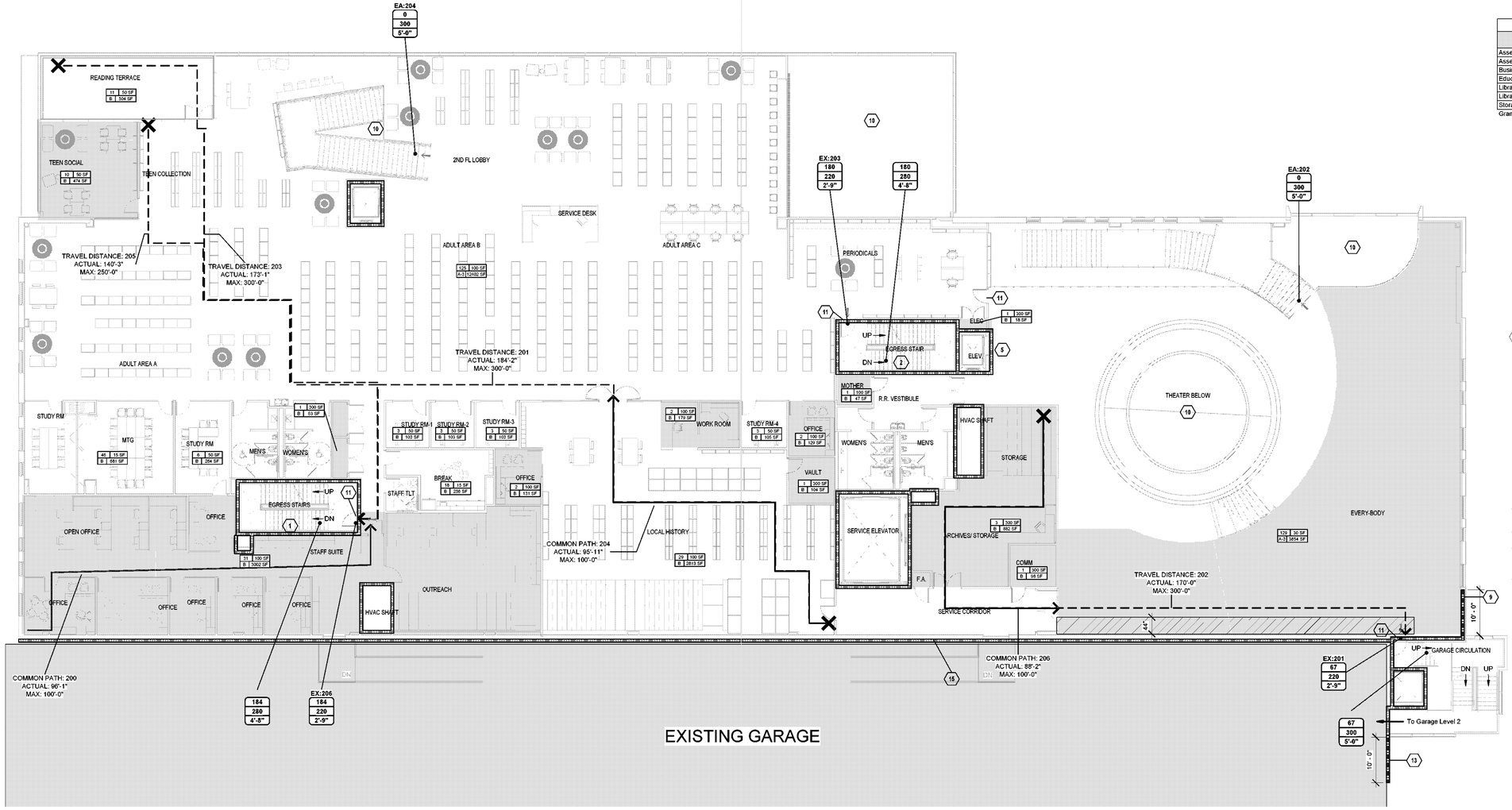
SHEET: **G-100**

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5/20/2022 4:03:04 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS OF ORIGINAL PAPER SIZE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E1 SHEETS. OPTIONAL PAPER SIZE



1 LEVEL 2
3/32" = 1'-0"

LEGEND

AREA TAG

- Number of Calculated Occupants
- Occupant Load Factor (SQ.FT./Person)
- SQ.FT. of Space or Room
- Occupancy Group
- Fixed Seating
- Flow Occupants
- Direction of Occupant Flow
- Travel Distance
- Common Path of Travel
- 1 HR Fire Barrier
- 2 HR Fire Barrier
- 3 HR Fire Barrier
- Minimum Required Egress Width

EGRESS TAG

- Smoke Protected
- Egress Element Identifier
- Total Number of Occupants Exiting
- Capacity of Exit Element
- Egress Clear Width

EX = Exit
EA = Exit Access

LEVEL 2 OCCUPANT SUMMARY

Function	Area /Person	People
Assembly - Exhibit Gallery and Museum	30 SF	129
Assembly - Unconcentrated	15 SF	64
Business	100 SF	38
Educational - Shop or Vocational	50 SF	10
Library - Reading room	50 SF	29
Library - Stack area	100 SF	154
Storage and Mechanical areas	300 SF	7
Grand total		431

LEVEL 2 EXIT SCHEDULE

Elements		People	People per	Clear	Exit
Desc	#	Egressing	Foot	Width	Capacity
EX	201	67	60	2'-9"	220
EA	202	0	60	5'-0"	300
EX	203	180	80	2'-9"	220
EA	204	0	60	5'-0"	300
EX	206	184	80	2'-9"	220
Grand total		431			1260

LEVEL 2 TRAVEL PATH SCHEDULE

PATH	ACTUAL TRAVEL DISTANCE	MAXIMUM TRAVEL DISTANCE
Travel Distance to an Exit		
201	184'-2"	300'-0"
202	170'-0"	300'-0"
203	173'-1"	300'-0"
205	140'-3"	250'-0"
Common Path of Travel		
200	96'-1"	100'-0"
204	95'-11"	100'-0"
206	88'-2"	100'-0"

KEYNOTES

1 INTERIOR EXIT STAIRWAY EGRESSES THROUGH EXIT PASSAGEWAY ON LEVEL 1 (NCBC 1023.1)
2 INTERIOR EXIT STAIRWAY EGRESSES THROUGH LEVEL 1 TO EXTERIOR EXIT DOOR THAT IS READILY VISIBLE FROM STAIRWAY DOOR (NCBC 1028.1, EXCEPTION 1)
5 PROVIDE THE FOLLOWING AT THE ELEVATOR LANDING: (1) TWO-WAY COMMUNICATION SYSTEM PROVIDING COMMUNICATION TO A LOCATION APPROVED BY THE FIRE DEPARTMENT PER NCBC 1009.8, (2) IF LOCATION IS NOT CONSTANTLY ATTENDED, PROVIDE TIMED AUTOMATIC DIAL-OUT CAPABILITY TO MONITORING LOCATION OR 9-1-1 PER NCBC 1009.8.1, (3) POSTED DIRECTIONS FOR USE OF SYSTEM PER NCBC 1009.8.2, AND (4) FLOOR PLAN SIGNAGE INDICATING LOCATION OF ALL EXITS FROM THIS STORY WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOWN AT EACH EXIT PER NCBC 1009.10.
9 1-HOUR FIRE-RESISTANCE RATED EXTERIOR WALL WITH 45-MINUTE OPENINGS, EXTENDING VERTICALLY FROM GROUND TO THE UNDERSIDE OF THE FLOOR/ROOF SHEATHING OF THE LEVEL 3 FLOOR/ROOF ASSEMBLY (NCBC 1023.7)
10 VERTICAL OPENING PROTECTED BY TWO-STORY OPENING PROVISION (NCBC 712.1.9) REFER TO G000,"SPECIAL CONDITIONS" FOR MORE INFORMATION.
11 PANIC HARDWARE REQUIRED IF DOOR IS PROVIDED WITH LATCH OR LOCK (NCBC 1010.1.10)
13 1-HOUR FIRE-RESISTANCE RATED EXTERIOR WALL WITH 45-MINUTE OPENINGS, EXTENDING VERTICALLY FROM GROUND TO 10 FEET ABOVE THE HIGHEST LANDING OF THE STAIRWAY (NCBC 1023.7)
15 3-HOUR FIRE BARRIER WITH 3-HOUR OPENINGS SEPARATING EXISING GARAGE FROM NEW ADDITION. EXISTING EXTERIOR WALL OF GARAGE PROVIDES MIMINIMUM 4-HOUR RATING BASED ON 8-INCH CONCRETE THICKNESS PER NCBC TABLE 722.2.1.1. REFER TO G000, "SPECIAL CONDITIONS" FOR MORE INFORMATION.

LEVEL 2 OCCUPANCY GROUP SUMMARY

Occupancy Group	People
A-3	254
B	177
Grand total	431

Function of Space

- Assembly - Exhibit Gallery and Museum
- Assembly - Unconcentrated
- Business
- Educational - Shop or Vocational
- Library - Reading room
- Library - Stack area
- Storage and Mechanical areas

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.5000 FAX 913.742.5001
WWW.HENDERSONENGINEERS.COM
2150005209
NC. CORPORATE NO. C-1492
EXPIRES 6/30/2022

Zimmer Development

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

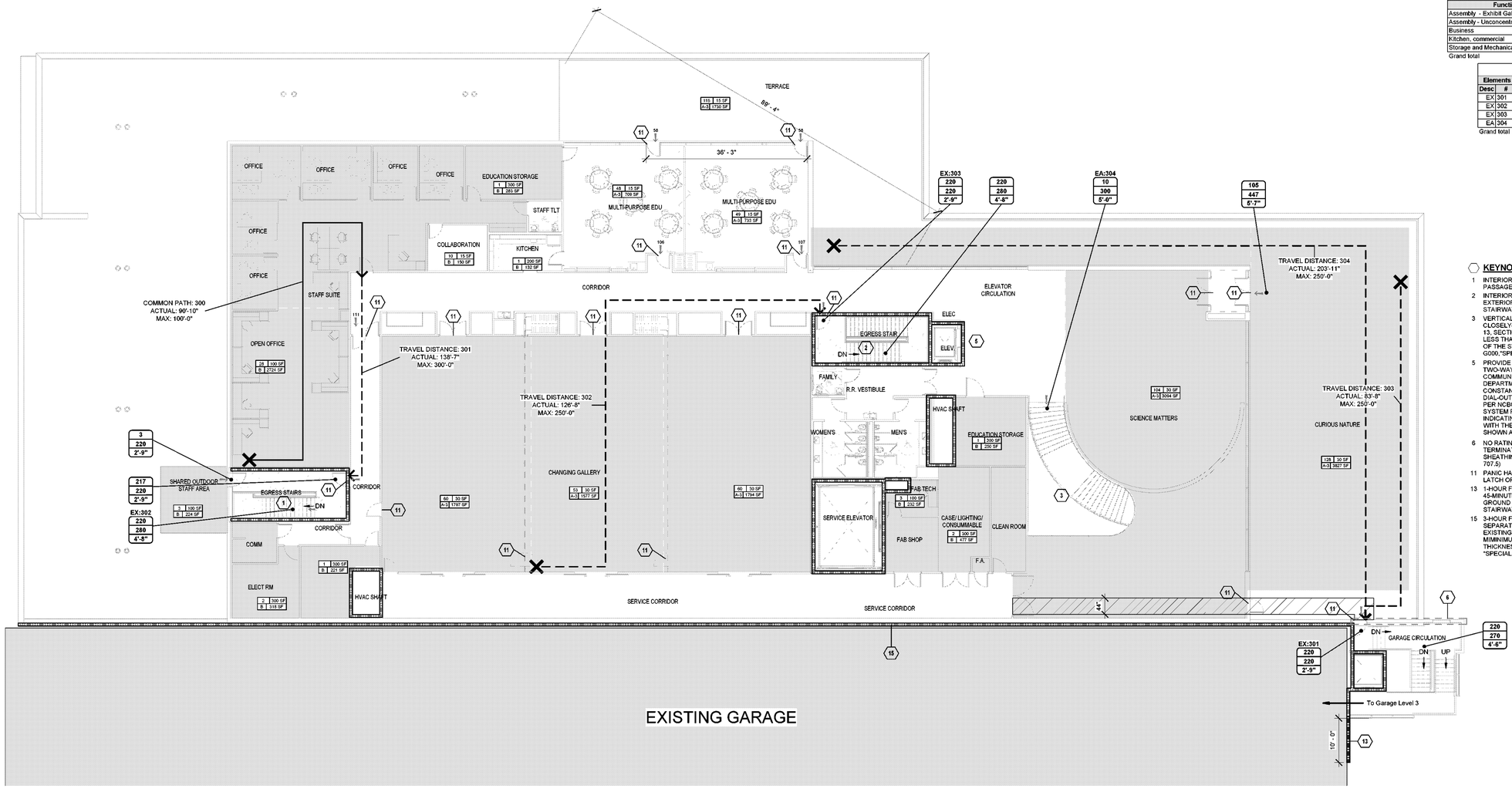
SHEET NAME:
LEVEL 2 - CODE PLAN

ORIG SUBMISSION: 2022.05.25

SHEET:
G-200

OWNER REVIEW SET

5/20/2022 4:03:10 PM



1 LEVEL 3
3/32" = 1'-0"

LEGEND

AREA TAG

- Number of Calculated Occupants
- Occupant Load Factor (SQ.FT./Person)
- SQ.FT. of Space or Room
- Occupancy Group
- Fixed Seating
- Flow Occupants
- Direction of Occupant Flow
- Travel Distance
- Common Path of Travel
- 1 HR Fire Barrier
- 2 HR Fire Barrier
- 3 HR Fire Barrier
- Minimum Required Egress Width

EGRESS TAG

- Smoke Protected
- Egress Element Identifier
- Total Number of Occupants Exiting
- Capacity of Exit Element
- Egress Clear Width

EX = Exit
EA = Exit Access

LEVEL 3 OCCUPANT SUMMARY

Function	Area /Person	People
Assembly - Exhibit Gallery and Museum	30 SF	405
Assembly - Unconcentrated	15 SF	223
Business	100 SF	34
Kitchen, commercial	200 SF	1
Storage and Mechanical areas	300 SF	7
Grand total		670

LEVEL 3 EXIT SCHEDULE

Elements		People Egressing	People per Foot	Clear Width	Exit Capacity
Desc	#				
EX	301	220	80	2'-9"	220
EX	302	220	60	4'-8"	280
EX	303	220	80	2'-9"	220
EA	304	10	60	5'-0"	300
Grand total		670			1020

LEVEL 3 TRAVEL PATH SCHEDULE

PATH	ACTUAL TRAVEL DISTANCE	MAXIMUM TRAVEL DISTANCE
Travel Distance to an Exit		
301	138'-7"	300'-0"
302	126'-8"	250'-0"
303	83'-8"	250'-0"
304	203'-11"	250'-0"
Common Path of Travel		
300	90'-10"	100'-0"

KEYNOTES

1 INTERIOR EXIT STAIRWAY EGRESSES THROUGH EXIT PASSAGEWAY ON LEVEL 1 (NCBC 1023.1)
2 INTERIOR EXIT STAIRWAY EGRESSES THROUGH LEVEL 1 TO EXTERIOR EXIT DOOR THAT IS READILY VISIBLE FROM STAIRWAY DOOR (NCBC 1028.1, EXCEPTION 1)
3 VERTICAL OPENING PROTECTED BY DRAFT CURTAINS AND CLOSELY-SPACED SPRINKLERS IN ACCORDANCE WITH NFPA 13, SECTION 8.15.4 (NCBC 712.1.12); VERTICAL OPENING IS LESS THAN TWO TIMES THE HORIZONTAL-PROJECTED AREA OF THE STAIRWAY (NCBC 1019.3, EXCEPTION 4). REFER TO G000,"SPECIAL CONDITIONS" FOR MORE INFORMATION.
5 PROVIDE THE FOLLOWING AT THE ELEVATOR LANDING: (1) TWO-WAY COMMUNICATION SYSTEM PROVIDING COMMUNICATION TO A LOCATION APPROVED BY THE FIRE DEPARTMENT PER NCBC 1009.8, (2) IF LOCATION IS NOT CONSTANTLY ATTENDED, PROVIDE TIMED AUTOMATIC DIAL-OUT CAPABILITY TO MONITORING LOCATION OR 9-1-1 PER NCBC 1009.8.1, (3) POSTED DIRECTIONS FOR USE OF SYSTEM PER NCBC 1009.8.2, AND (4) FLOOR PLAN SIGNAGE INDICATING LOCATION OF ALL EXITS FROM THIS STORY WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOWN AT EACH EXIT PER NCBC 1009.10.
6 NO RATING REQUIRED AS LONG AS FIRE BARRIER BELOW TERMINATES AT UNDERSIDE OF THE FLOOR/ROOF SHEATHING OF THIS LEVEL 3 FLOOR/ROOF ASSEMBLY (NCBC 707.5)
11 PANIC HARDWARE REQUIRED IF DOOR IS PROVIDED WITH LATCH OR LOCK (NCBC 1010.1.10)
13 1-HOUR FIRE-RESISTANCE RATED EXTERIOR WALL WITH 45-MINUTE OPENINGS, EXTENDING VERTICALLY FROM GROUND TO 10 FEET ABOVE THE HIGHEST LANDING OF THE STAIRWAY (NCBC 1023.7)
15 3-HOUR FIRE BARRIER WITH 3-HOUR OPENINGS SEPARATING EXISTING GARAGE FROM NEW ADDITION. EXISTING EXTERIOR WALL OF GARAGE PROVIDES MIMINUM 4-HOUR RATING BASED ON 8-INCH CONCRETE THICKNESS PER NCBC TABLE 722.2.1.1. REFER TO G000, "SPECIAL CONDITIONS" FOR MORE INFORMATION.

LEVEL 3 OCCUPANCY GROUP SUMMARY

Occupancy Group	People
A-3	618
B	52
Grand total	670

Function of Space

- Assembly - Exhibit Gallery and Museum
- Assembly - Unconcentrated
- Business
- Kitchen, commercial
- Storage and Mechanical areas

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
LEVEL 3 - CODE PLAN

ORIG SUBMISSION: 2022.05.25

SHEET:
G-300

OWNER REVIEW SET

5/20/2022 4:03:19 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ARCH E SHEETS ORIGINAL PLOT SIZE

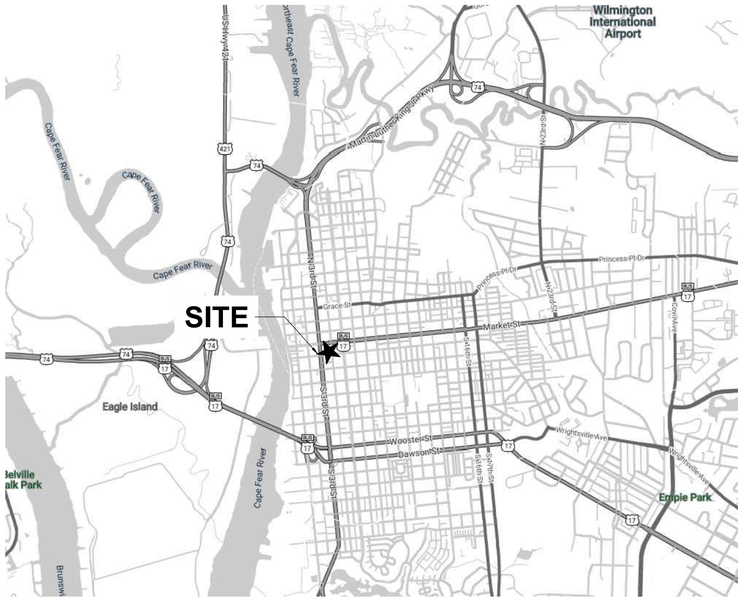
PROJECT GRACE

216 N 2ND ST
WILMINGTON, NORTH CAROLINA 28401

50% CONSTRUCTION DOCUMENT

ISSUED DATE: APRIL 08, 2022

Sheet List Table		
Sheet Number	Sheet Title	1st Submittal (2022.04.08)
C0.00	COVER SHEET	•
C0.10	GENERAL NOTES	•
C1.00	EXISTING CONDITIONS	•
L3.00	SITE PLAN	•
L3.90	SITE DETAILS I	•
L3.91	SITE DETAILS II	•
L3.92	SITE DETAILS III	•
L4.00	LAYOUT PLAN	•
L5.00	GRADING PLAN	•
L7.00	LANDSCAPE PLAN	•
L7.90	LANDSCAPE DETAILS	•
L7.91	LANDSCAPE DETAILS	•
L9.00	SITE FURNITURE PLAN	•
L9.90	SITE FURNITURE CUT SHEETS	•
SL0.00	LIGHTING PLAN	•
SL0.01	LIGHTING CUT SHEETS	•



VICINITY MAP

NORTH



CIVIL ENGINEERING - LANDSCAPE ARCHITECTURE - GEOMATICS - GEOTECHNICAL

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SUITE 1100
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T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21058

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TDUNCAN@STEWARTINC.COM

STEWART INC. - GEOMATICS
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DIRECTOR OF GEOMATICS
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910.790.9901 (T)
LMILLER@LS3P.COM

TYPICAL AREA
RESERVED FOR
SIGNATURE STAMP
DEPENDING ON THE
JURISDICTION

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101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21058

Client:
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101 N. 3RD STREET #500
WILMINGTON, NC 28401
PHONE # 910.790.9901

Consultants:

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

Vicinity map:



NORTH

Seal:
PRELIMINARY - DO NOT USE FOR CONSTRUCTION

SELECT LA SEAL

SELECT PE SEAL
USE DROP DOWN OPTION

Project:
PROJECT GRACE

Issued for:
50% CONSTRUCTION DOCUMENT

No.	Date	Description
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Title:
COVER SHEET

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --
C0.00

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GENERAL NOTES:

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE OFFICE OF STATE CONSTRUCTION, DEPARTMENT OF INSURANCE, NCDENR, AND ALL OTHER APPLICABLE LOCAL, STATE AND FEDERAL GUIDELINES. ALL UTILITY CONSTRUCTION SHALL COMPLY WITH APPLICABLE LOCAL JURISDICTIONAL STANDARDS AND SPECIFICATIONS.
2. EXISTING SURVEY INFORMATION INCLUDING TOPOGRAPHIC INFORMATION PROVIDED BY STEWART , UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL PROVIDE NOTICE OF EXCAVATION TO NOTIFICATION CENTER AND FACILITY OWNERS (PER NC STATUTE) NO LESS THAN 3 BUSINESS DAYS AND NO MORE THAN 12 WORKING DAYS PRIOR TO BEGINNING DEMOLITION, EXCAVATION OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS. NO EXCAVATION OR DEMOLITION SHALL BE STARTED WITHOUT ALL UTILITIES BEING LOCATED.
4. ALL SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
5. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COORDINATING PERMITS, INSPECTIONS, CERTIFICATIONS AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT.
7. THE CONTRACTOR SHALL MAINTAIN "AS-BUILT" DRAWINGS TO RECORD THE ACTUAL LOCATION OF ALL PIPING PRIOR TO CONCEALMENT, VALVE AND MANHOLE CHANGES, AND HARDSCAPE OR LANDSCAPE CHANGES. DRAWINGS SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE AT REGULAR INTERVALS, OR AS REQUESTED THROUGHOUT THE PROJECT FOR RECORD KEEPING.
8. IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THERE OF SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY LINES REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OF THE RELOCATION AND ASSOCIATED WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIALS AND RUBBISH CAUSED BY THE CONTRACTOR. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS.
11. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
12. ROADWAYS (TEMPORARY OR PERMANENT) MUST BE CAPABLE OF SUPPORTING FIRE FIGHTING APPARATUS (85,000 LBS) DURING ALL PHASES OF CONSTRUCTION ONCE VERTICAL CONSTRUCTION HAS BEGUN.

EXISTING CONDITION NOTES:

1. THIS SURVEY MAP IS INTENDED TO REPRESENT THE EXISTING CONDITIONS/TOPOGRAPHY ON A PORTION OF THE PROPERTY AND ALL ENCUMBRANCES UPON THE PROPERTY MAY NOT BE SHOWN.
2. HORIZONTAL DATUM IS NAD 83-2011 AND VERTICAL DATUM IS NAVD88.
3. THIS DRAWING DOES NOT CONFORM TO N.C. GS47-30 AND THEREFORE IS NOT FOR RECORDATION.
4. UTILITIES SHOWN HEREON ARE BASED ON ABOVE GROUND VISIBLE EVIDENCE AND UTILITY DESIGNATION / MARKING SERVICES PERFORMED BY STEWART INC, AND THE AVAILABLE RECORD INFORMATION. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION.

OR

5. SURVEY INFORMATION BASED ON FIELD SURVEY BY ____ COMPLETED ON ____.
6. TREES SHOWN HEREON MAY NOT REPRESENT ALL VEGETATION ON THE SUBJECT PROPERTY.
7. THE SUBJECT PROPERTY LIES IN ZONES X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE AND FUTURE CONDITIONS 1% ANNUAL CHANCE FLOODPLAIN), BASED ON THE FLOOD INSURANCE RATE MAP COMMUNITY MAP NUMBER 372017370J DATED MAY 2, 2006.
8. NO WETLANDS HAVE BEEN IDENTIFIED WITHIN THE PROJECT OR PARCEL SHOWN.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE CONCRETE (WHERE REQUIRED) TO THE FIRST COLD JOINT OR SAW CUT TO OBTAIN A CLEAN EDGE.
2. THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT (WHERE REQUIRED) TO OBTAIN A CLEAN EDGE.
3. CLEANOUTS AND WATER VALVES LOCATED IN AREAS OF DEMOLITION OR SUBSEQUENT CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND RAISED TO BE FLUSH WITH NEW GRADE.
4. ANY UTILITY SERVICES SHOWN TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY PROVIDER. CONTRACTOR IS RESPONSIBLE FOR APPROPRIATE SEQUENCING OF UTILITY DEMOLITION WITH THE RESPECTIVE UTILITY AGENCIES.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES PRIOR TO BEGINNING DEMOLITION OPERATIONS. NOTIFY "NORTH CAROLINA ONE CALL" (TELEPHONE 1-800-632-4949) AT LEAST 48 HOURS PRIOR TO START OF DEMOLITION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NORTH CAROLINA ONE CALL."
6. CLEAN SOILS SHALL BE UTILIZED FOR BACKFILL. COMPACTION OF THESE SOILS SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
7. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE REMOVED COMPLETELY, INCLUDING ALL SUBGRADE MATERIALS DIRECTLY ASSOCIATED WITH ITEMS TO BE REMOVED.
8. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE DISPOSED OF LEGALLY OFF-SITE UNLESS OTHERWISE NOTED ON THIS PLAN.
9. REFER TO LANDSCAPE AND EROSION CONTROL DRAWINGS FOR TREE PROTECTION PLAN AND REQUIREMENTS.
10. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL JURISDICTIONAL CODES OR REQUIREMENTS.
11. TREE PROTECTION FENCING SHALL BE IN PLACE PRIOR TO BEGINNING DEMOLITION
12. EROSION CONTROL PERMIT SHALL BE OBTAINED AND ONSITE PRIOR TO BEGINNING DEMOLITION.
13. ITEMS DESIGNATED TO BE SALVAGED AND/OR RE-USED SHALL BE REMOVED BY THE CONTRACTOR AND PROVIDED TO THE OWNER. COORDINATE STORAGE LOCATION WITH OWNER'S REPRESENTATIVE.
14. WHERE UTILITIES ("TO BE REMOVED") IMPACT THE FOOTPRINT OF THE NEW BUILDING, THE CONTRACTOR SHALL EXECUTE AND REMOVE AN ADDITIONAL 2 FEET OF SOILS TO EITHER SIDE OF THE PIPE, AND 1 FOOT BELOW. CLEAN SUITABLE SOIL SHALL BE UTILIZED FOR BACKFILL AND COMPACTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
15. DEMOLITION AND SUBSEQUENT CONSTRUCTION OF STORM DRAINAGE PIPING SHALL BE PERFORMED IN SUCH A MANNER THAT THE OLD PIPE AND STRUCTURES REMOVED DO NOT IMPACT DRAINAGE UPSTREAM OF THE SYSTEM. PROVISIONS SHALL BE MADE TO MAINTAIN STORM WATER DRAINAGE PATTERNS DURING CONSTRUCTION.
16. DEMOLITION AND SUBSEQUENT CONSTRUCTION OF UTILITIES (WATER, SEWER, ETC) SHALL BE PERFORMED IN SUCH A MANNER THAT THE OLD PIPE AND STRUCTURES REMOVED DO NOT IMPACT OR MINIMIZE SERVICE INTERRUPTION TO EXISTING FACILITIES TO REMAIN. PROVISIONS SHALL BE MADE TO MAINTAIN SERVICE DURING CONSTRUCTION.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DAMAGES TO THE EXISTING DRIVEWAY, PARKING LOT, SIDEWALK AND CURB AND GUTTER AS A RESULT OF CONSTRUCTION ACTIVITY AND TRAFFIC. CONTRACTOR SHALL MAINTAIN A PRE-CONSTRUCTION VIDEO OR PHOTO DOCUMENTATION TO SHOW NO DAMAGES OCCURRED.
18. ALL MATERIALS, FURNISHINGS, UTILITIES, AND PAVEMENT THAT ARE NOT SCHEDULED TO BE DEMOLISHED AND ARE DAMAGED BY THE CONTRACTOR AS A RESULT OF THE DEMOLITION OR CONSTRUCTION OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. WHERE UTILITIES ARE SHOWN TO BE "REMOVED", CONTRACTOR SHALL INCLUDE NECESSARY PLUG OR VALVES TO ENSURE UTILITY LINES TO REMAIN WILL CONTINUE TO BE IN SERVICE. COORDINATE NECESSARY SHUT DOWN AND REMOVAL WITH THE LOCAL JURISDICTION OR UTILITY OWNER.
20. CONTRACTOR SHALL PROVIDE PEDESTRIAN INGRESS / EGRESS TO ALL EXISTING BUILDINGS, PARKING LOTS, AND PATHS OF PEDESTRIAN TRAVEL THROUGHOUT THE CONSTRUCTION PERIOD

SITE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE CONSTRUCTION LAYDOWN AREA, PERIMETER FENCE, AND ASSOCIATED GATES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE REMOVAL OF THE CONSTRUCTION LAYDOWN AREA PERIMETER FENCE AND ASSOCIATED GATES AT THE COMPLETION OF THE PROJECT.
2. THE CONTRACTOR SHALL REFERENCE THE DESIGN PLANS FOR DIMENSIONS, JOINT LOCATIONS, AND INLAY SPECIFICATIONS NEAR BUILDINGS AND IN COURTYARDS. CONTRACTOR SHALL PROVIDE JOINTS IN WALKWAYS AND HARDSCAPE PER DETAILS OR AS INDICATED ON LANDSCAPE/HARDSCAPE PLAN SHEETS.

OR

THE CONTRACTOR SHALL REFERENCE THE ARCHITECTURAL PLANS FOR DIMENSIONS, JOINTS AND INLAY SPECIFICATIONS NEAR THE BUILDING AND COURTYARD. THE CONTRACTOR SHALL PROVIDE JOINTS IN WALKWAYS EVERY TEN (10) FEET MAXIMUM, OR AS INDICATED ON ARCHITECTURAL PLANS SHEETS.

3. ALL CONSTRUCTION TRAFFIC SHALL ENTER SITE FROM _____ UNLESS OTHERWISE APPROVED IN WRITING FROM THE OWNER'S REPRESENTATIVE FOR AN ALTERNATE POINT OF ACCESS.
4. REFER TO ARCHITECTURAL PLANS FOR BUILDING INFORMATION.
5. ALL DIMENSIONS ARE IN DECIMAL FEET TO OUTSIDE FACE OF BUILDINGS, TO CENTERLINES, AND/OR FACE OF CURB UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATES AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO ANY CONSTRUCTION.
7. ALL WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE FROM DRAWINGS.
8. ALL UTILITIES WITH SURFACE ACCESS SHALL BE LOCATED WITHIN THE PAVING PATTERN AND SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. REFER TO LAYOUT DRAWINGS.
9. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
10. ALIGN ALL JOINTS, CORNERS, AND EDGES AS SHOWN
11. CONTRACTOR SHALL REFER TO AND COORDINATE WITH ARCHITECTURAL, STRUCTURAL, AND MEP DRAWINGS AT ALL TIMES PRIOR TO AND DURING CONSTRUCTION.
12. ALL CURB TAPERS ARE SIX (6') FEET LONG UNLESS OTHERWISE SHOWN ON PLAN.
13. WHERE NEW SIDEWALK ADJOINS EXISTING WALK, PROVIDE EXPANSION JOINT BY DRILLING INTO THE FACE OF THE EXISTING WALK FOR PLACEMENT OF DOWELS. TIE NEW SIDEWALKS INTO NEAREST EXISTING PAVEMENT JOINT; MATCH WIDTH OF EXISTING WALKWAY.
14. WHERE SIDEWALK OR WALKWAYS ARE ADJACENT TO PARKING SPACES THE WALKWAY SHALL BE A MINIMUM 6.5' WIDE AS MEASURED FROM THE FACE OF CURB.
15. MAXIMUM RUNNING SLOPE FOR WALKING SURFACES CANNOT BE GREATER THAN 1:20 AND CROSS SLOPES CANNOT BE GREATER THAN 1:48. HANDICAP SPACES SURFACE SLOPES SHALL NOT EXCEED 1:48 IN ALL DIRECTIONS.
16. SIGHT TRIANGLES - NOTHING OVER 30" HIGH SHALL BE ALLOWED WITHIN THE SIGHT DISTANCE TRIANGLES.
17. THE SITE SHALL BE FULLY STABILIZED (90% COVERAGE) PRIOR TO ISSUANCE OF A BUILDING CERTIFICATE OF OCCUPANCY OR PROJECT APPROVAL
18. HANDICAP RAMPS SHALL BE INSTALLED PER LATEST EDITION OF THE NC BUILDING CODE AND ANSI 117.11 WITH DETECTABLE WARNING DOMES WITH A COLOR CONTRAST OF 70% MINIMUM. SEE DETAILS AND GRADING SPOT ELEVATIONS, IF THE EXISTING CONDITIONS PRECLUDE THE ABILITY TO PROVIDE A MAXIMUM SLOPE 1/12 FOR 6-FEET OR A MAXIMUM CROSS SLOPE OF 1:48 AND A 36" MINIMUM LANDING, THE CONTRACTOR SHALL NOTIFY ENGINEER OR OWNER REPRESENTATIVE PRIOR TO INSTALLATION.

OR

HANDICAP RAMPS SHALL BE INSTALLED PER THE PLANS AND SPECIFICATIONS AND THE NC BUILDING CODE. A MAXIMUM SLOPE OF 1/12 FOR 6-FEET AND A MAXIMUM CROSS SLOPE OF 1:48 SHALL BE PROVIDED. IF EXISTING CONDITIONS PRECLUDE THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION

19. THE TESTING AGENCY SHALL BE RESPONSIBLE FOR PROVIDING THE ASPHALT AND CONTRACTOR CERTIFICATION MEMO TO NCDOT FOR ALL ROADWAY IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY.

GRADING AND STORM DRAINAGE NOTES:

1. CONTRACTOR SHALL REPORT ANY GRADE DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
2. THE MAXIMUM SLOPE ALONG ANY HANDICAP ACCESSIBLE PATHWAY SHALL NOT EXCEED 5.0% AND SHALL NOT EXCEED A 2.0% CROSS SLOPE. HANDICAP RAMPS INDICATED ON PLANS SHALL BE A MAXIMUM OF 1/12 SLOPES WITH A MAXIMUM RISE OF 30" BETWEEN LANDINGS. NON-CURB CUT RAMPS SHALL HAVE HANDRAILS AND GUARDS PER DETAILS WITH 5' LANDINGS AT THE BOTTOM AND TOP OF RAMP.
3. ALL PROPOSED ELEVATIONS SHOWN ARE EDGE OF PAVEMENT ELEVATIONS UNLESS OTHERWISE SPECIFIED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL NEWLY CONSTRUCTED STORM DRAINAGE IMPROVEMENTS AND RECEIVING STORM DRAINAGE SYSTEMS REMAIN CLEAN OF SEDIMENT AND DEBRIS. PRIOR TO OWNER ACCEPTANCE OF SYSTEM, THE CONTRACTOR SHALL COORDINATE AND PROVIDE A VISUAL OBSERVATION VIDEO OF ALL STORM DRAINAGE IMPROVEMENTS 12" AND LARGER. THE VISUAL OBSERVATION SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE TWO (2) DVD COPIES OF THE ENTIRE DRAINAGE VISUAL OBSERVATION.
5. PRIOR TO ISSUANCE OF A BUILDING CERTIFICATE OF OCCUPANCY THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THE VIDEO INSPECTION OF THE STORM SEWER SYSTEM. (BOTH PUBLIC AND PRIVATE). THIS SUBMITTAL MAY NEED TO BE REVIEWED AND ACCEPTED BY THE LOCAL JURISDICTION PRIOR TO THE ISSUANCE OF THE BUILDING CO.
6. REFER TO THE EROSION CONTROL DETAILS SHEET FOR THE SEQUENCE OF CONSTRUCTION
7. INTERIM GRADING SHALL BE PROVIDED THAT ENSURES THE PROTECTION OF STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, AND WASHOUT.
8. INTERIM GRADING SHALL BE PROVIDED TO DIRECT WATER AWAY FROM BUILDINGS AND PREVENT PONDING.
9. TIE ROOF LEADERS WHERE POSSIBLE TO UNDERGROUND STORM SYSTEM. CONTRACTOR TO FIELD VERIFY LOCATE AND INSTALL WHERE POSSIBLE OR AS SHOWN ON PLANS. WHERE ROOF LEADERS DAYLIGHT AT GRADE A SPLASH BLOCK APPROVED BY THE OWNER'S REPRESENTATIVE SHALL BE INSTALLED.
10. MAXIMUM SLOPE ACROSS ANY HANDICAPPED PARKING SPACE AND AISLE SHALL NOT EXCEED 2% IN ANY DIRECTION.
11. PROPOSED CONTOURS ARE APPROXIMATE. SPOT ELEVATIONS AND ROADWAY PROFILES SHALL BE USED IN CASE OF DISCREPANCY.
12. PLACE BACKFILL AND FILL MATERIALS IN LAYER NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS. PLACE BACKFILL AND FILL MATERIALS EVENLY ON ALL SIDES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE. COMPACT SOIL TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL UP TO TWO FEET OF FINISHED GRADE. COMPACT SOIL TO NOT LESS THAN 98 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL FOR THE FINAL TWO FEET.
13. SITE GRADING IMMEDIATELY ADJACENT TO FOUNDATION OF BUILDING SHALL SLOPE NOT LESS THAN 1/20 AWAY FOR MINIMUM DISTANCE OF 10 FEET, ALTERNATIVE METHOD SHALL BE PROVIDED TO DIVERT WATER AWAY FROM FOUNDATION VIA SWALES SLOPED AT A MINIMUM OF 2% OR IMPERVIOUS SURFACES SLOPED AWAY A MINIMUM OF 2% AWAY FROM BUILDING.
14. CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF EXISTING MANHOLES, METERS, VALVES, ETC. AS REQUIRED TO MEET NEW FINISHED GRADES.
15. CONTRACTOR SHALL SLOPE GRADES TO ASSURE POSITIVE STORMWATER FLOW TO KEEP WATER FROM POOLING ALONG CURBS AND WALLS.
16. TOP OF WALL ELEVATIONS INDICATE THE ELEVATION AT THE TOP OF THE CAP, UNLESS OTHERWISE NOTED.
17. BOTTOM OF WALL ELEVATIONS INDICATE THE ELEVATION OF THE FINISHED GRADE.

MATERIALS AND FURNISHINGS NOTES:

1. ABBREVIATIONS FOR SPECIFIC HARDSCAPE MATERIALS AND FURNISHINGS ARE LISTED IN THE LEGEND AND ARE USED THROUGHOUT THE DRAWING SET'S HARDSCAPE & FURNISHINGS PLANS, PAVING PATTERN PLANS AND SITE DETAILS.
2. REFER TO RELATED SPECIFICATION SECTION FOR SPECIFIC SUBMITTALS OF PRODUCT DATA, SAMPLES, SHOP DRAWINGS, QUALITY ASSURANCE REQUIREMENTS, EXECUTION REQUIREMENTS, AND FOR FURTHER PRODUCT INFORMATION NOT INCLUDED IN THIS SCHEDULE
3. CONTRACTOR TO SUBMIT COLOR SAMPLES AND PROVIDE MOCK-UPS FOR ALL CAST IN PLACE CONCRETE FOR APPROVAL BY LANDSCAPE ARCHITECT.

PAVING PATTERN NOTES:

1. END ALL UNIT PAVING PATTERNS WITH A FULL OR HALF SIZE PAVER UNLESS OTHERWISE NOTED. USE OVERSIZE PAVERS WHERE PATTERN ENDS ON A UNIT SMALLER THAN HALF SIZE.
2. LAYOUT OF UNIT PAVING PATTERNS AND CONCRETE JOINTS AS INDICATED ON THIS PLAN. REFERENCE LAYOUT PLANS FOR FURTHER PAVING LAYOUT INFORMATION.
3. PAVERS ABUTTING TRUNCATED DOMES SHALL BE A CONTRASTING COLOR.
4. ALIGN ALL TRUNCATED DOME PAVER JOINTS WITH ABUTTING PAVER JOINTS.
5. PROVIDE CONTINUOUS EXPANSION JOINTS BETWEEN BACK OF CURB AND ADJOINING PAVEMENT.
6. PROVIDE CONTINUOUS EXPANSION JOINT BETWEEN ALL VERTICAL SURFACES AND ADJOINING PAVEMENT.
7. ALL DIMENSIONS MEASURED TO CENTERLINE OF JOINTS.
8. ALL WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE FROM DRAWINGS.
9. ALL ANGLES 90 DEGREES UNLESS OTHERWISE NOTED.
10. ALIGN ALL JOINTS, CORNERS AND EDGES AS SHOWN.
11. FINAL LAYOUTS TO BE APPROVED BY LANDSCAPE ARCHITECT.

SIGNAGE, STRIPING AND MARKING NOTES:

1. ALL INTERNAL SIGNAGE SHALL BE COORDINATED WITH OWNER FOR ACTUAL LOCATION AT TIME OF INSTALLATION. SIGNAGE LEADING ONTO PUBLIC THOROUGHFARE SHALL BE INSTALLED AT RIGHT OF WAY PER DOT STANDARDS
2. ALL PAVEMENT STRIPING (EXCEPT INDIVIDUAL PARKING BAY STRIPING) SHALL BE THERMOPLASTIC REFLECTIVE PAINT. MATERIALS AND DIMENSIONS SHALL CONFORM TO NCDOT STANDARDS AND SPECIFICATIONS. PARKING BAY STRIPING SHALL BE WHITE REFLECTIVE PAINT.
3. CROSSWALKS SHALL BE CONSTRUCTED OF THERMOPLASTIC MATERIALS AND CONSTRUCTED IN ACCORDANCE WITH STATE DOT SPECIFICATIONS. CONTRACTOR TO INSTALL CROSSWALKS IN SUCH A MANNER THAT CROSSWALKS ARE ALIGNED BETWEEN HANDICAP/WALKWAY ACCESS POINTS OR PERPENDICULAR TO THE ROADWAY / DRIVE LANE.
4. ADA SYMBOLS SHOWN THESE DRAWINGS ARE FOR LOCATION PURPOSES ONLY AND NOT INTENDED TO BE PAINTED. CONTRACTOR RESPONSIBLE FOR INSTALLING ALL REQUIRED ADA SIGNAGE

LANDSCAPE NOTES:

1. VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES OR INACCURACIES IN THE PLANS TO THE OWNER'S REPRESENTATIVE PRIOR TO PLANTING.
2. LANDSCAPE WORK SHALL INCLUDE THE FURNISHING, INSTALLATION, AND WARRANTY OF ALL PLANTING MATERIALS WITHIN THE PROJECT AREA.
3. THE LANDSCAPE CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL EXISTING AND NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION FOR PLANTING. DAMAGES TO UTILITIES CAUSED BY THE LANDSCAPE OPERATION SHALL BE CORRECTED BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.
4. LANDSCAPING SHALL REMAIN CLEAR FROM ANY FIRE HYDRANTS ON THE SITE.
5. ALL TREES TO BE A MINIMUM OF 2" IN CALIPER AND MUST MEET THE AMERICAN STANDARD FOR NURSERY STOCK.
6. TREE PROTECTION NOTE: TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY DEMOLITION, LAND DISTURBANCE OR ISSUANCE OF A GRADING PERMIT AND SHALL INCLUDE WARNING SIGNS POSTED IN BOTH ENGLISH AND SPANISH, AS FOLLOWS: "NO TRESPASSING/TREE PROTECTION AREA/PROHIBIDO ENTRAR / ZONA PROTECTORA PARA LOS ÁRBOLES."
7. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE LOWERING OF EXISTING GRADE AROUND A TREE OR STRIPPING OF TOPSOIL, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA.
8. ROOT ZONE PROTECTION AREA: VARIES BASED ON LOCAL JURISDICTION HAVING AUTHORITY. CONTRACTOR SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS. NO DISTURBANCE ALLOWED WITHIN THIS AREA. AREA MUST BE PROTECTED WITH BOTH TREE PROTECTION FENCING AND WARNING SIGNS.
9. SEED BED PREPARATION: ALL AREAS TO BE SEEDED ARE TO BE RECEIVE A MINIMUM OF 2" OF APPROVED TOPSOIL. ALL DEBRIS, ROCKS, ETC. LARGER THAN .5" ARE TO BE REMOVED. ALL LARGE CONCENTRATIONS OF GRAVEL & DEBRIS REGARDLESS OF SIZE ARE TO BE REMOVED PRIOR TO SEEDING OR PLANTING.
10. ALL PLANT BED AREAS ARE TO RECEIVE A MINIMUM OF 6" OF APPROVED TOPSOIL.
11. SOIL SHOULD BE TESTED AND AMENDED WITH LIME AND FERTILIZER FOR HARDWOOD TREES ACCORDING TO NCDA PROCEDURES. SCARIFY PLANT PIT WALLS. CONSULT LANDSCAPE ARCHITECT FOR ALTERNATE COMPLIANCE.
12. SHREDDED HARDWOOD MULCH 3" DEEP EXCEPT AT CROWN OF PLANT UNLESS OTHERWISE NOTED. FLARE AT CROWN SHOULD BE REVEALED. BACKFILL CONSISTS OF THOROUGHLY BROKEN UP NATIVE SOIL. TOTAL VOLUME OF BACKFILL SHOULD BE AMENDED WITH UP TO ONE THIRD PINE BARK MULCH. PIECES SHOULD BE NO LARGER THAN WHAT PASSES THROUGH A ONE INCH SCREEN. IF ADDITIONAL SOIL IS REQUIRED FOR BACKFILL DUE TO DETRIMENTAL SUBSOIL DRAINAGE CONDITIONS, USE SOIL SIMILAR TO EXISTING NATIVE SOIL. ADDITIONAL SOIL TO BE APPROVED BY LANDSCAPE ARCHITECT. MAXIMUM SAUCER HEIGHT IS 6 INCHES.
13. TOP OF ROOTBALL TO BE RAISED 2-3 INCHES ABOVE EXISTING GRADE.
14. FOR B&B PLANTS, NATURAL FIBER BURLAP SHOULD BE TURNED DOWN BY 1/3 TOTAL HEIGHT OF ROOT BALL. PLASTIC FIBER BURLAP AND WIRE BASKETS SHOULD BE REMOVED TO 2/3'S OF TOTAL HEIGHT OF ROOT BALL.
15. CONTRACTOR IS RESPONSIBLE FOR KEEPING THE TREE UPRIGHT AND PLUMB THROUGHOUT THE WARRANTY PERIOD. IF STABILIZATION IS NECESSARY SEE STAKING IN TREE DETAIL. ORANGE FLAGGING TAPE SHOULD BE ATTACHED TO SUPPORT WIRE. STAKING SHOULD BE REMOVED BY CONTRACTOR AT END OF ONE YEAR WARRANTY PERIOD OR AS DIRECTED BY GROUNDS MANAGEMENT.
16. USE STANDARD "GATOR" BAGS FOR WATERING TREES IN AREAS NOT UNDER IRRIGATION. INCORPORATE TERRA-SORB (OR EQUAL) AS PER MANUFACTURERS RECOMMENDATIONS, FOR AREAS NOT UNDER IRRIGATION.
17. USE "BIO-BARRIER" OR EQUIVALENT ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR TREES THAT WILL BE PLANTED WITHIN 10' OF PAVEMENT
18. LANDSCAPING/C.O. STANDARDS NOTE: ALL LANDSCAPING MUST BE IN PLACE PRIOR TO REQUEST FOR A CERTIFICATE OF COMPLIANCE.

TYPICAL AREA RESERVED FOR SIGNATURE STAMP DEPENDING ON THE JURISDICTION

STEWART
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
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LS3P
101 N. 3RD STREET #500
WILMINGTON, NC 28401
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Consultants:
NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
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CITY, STATE ZIPCODE
PHONE #

NAME
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CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

Vicinity map:



NORTH

Seal:

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

SELECT LA SEAL

SELECT PE SEAL
USE DROP DOWN OPTION

Project:

PROJECT GRACE

Issued for:

50% CONSTRUCTION DOCUMENT

No.	Date	Description
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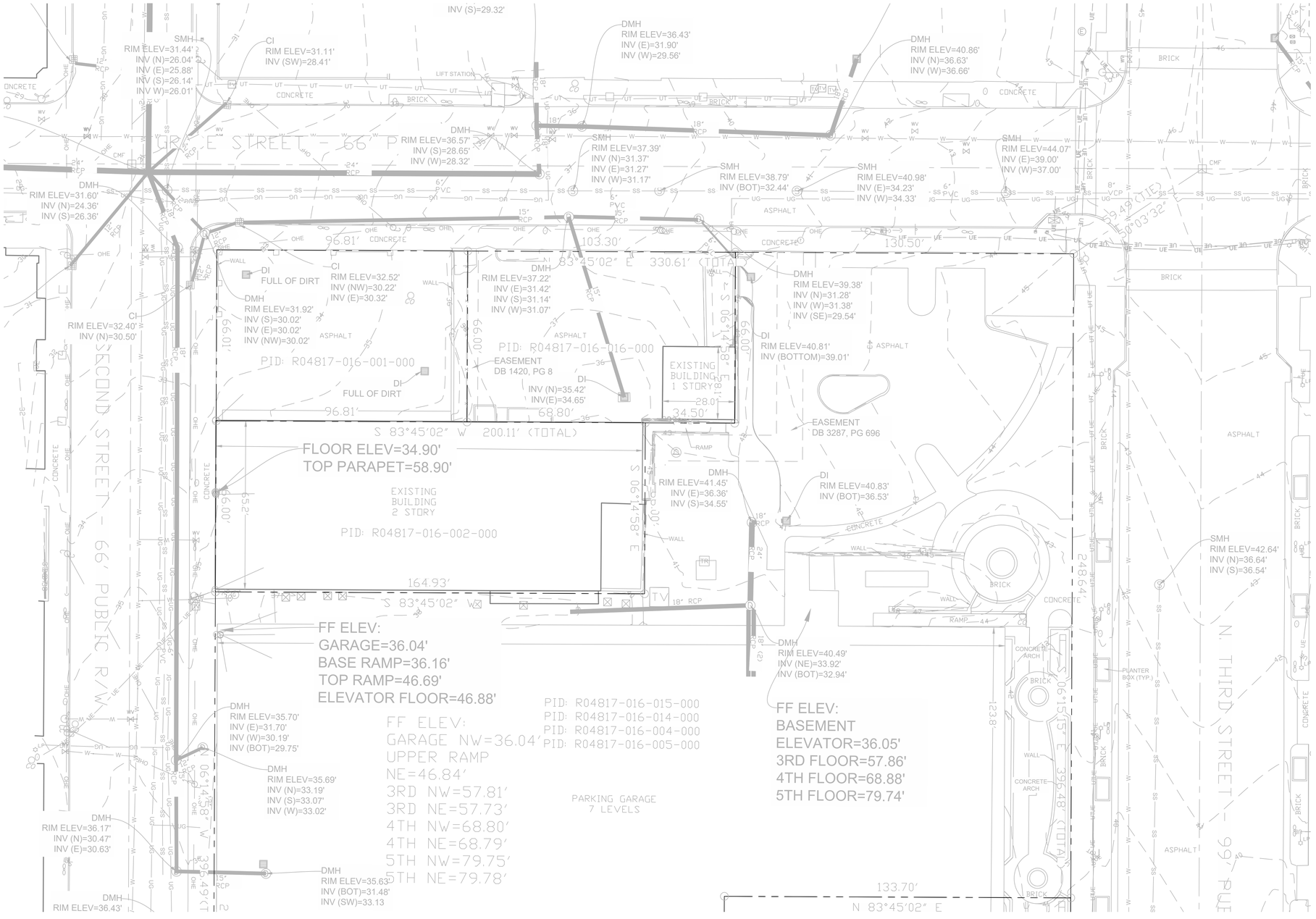
Title:

GENERAL NOTES

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --

C0.10

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SURVEY LEGEND:

SYMBOL	DESCRIPTION
△	SURVEY CONTROL POINT
EIP	EXISTING IRON PIPE
ECM	EXISTING CONCRETE MONUMENT
▲	COMPUTED POINT
D	STORM DRAIN MANHOLE
	STORM DRAIN CURB INLET
S	SANITARY SEWER MANHOLE
	SANITARY SEWER CLEANOUT
	SANITARY FORCEMAIN VALVE
	HYDRANT
WV	WATER VALVE
WM	WATER METER
W	WATER MANHOLE
W	WATER VAULT
W	WELL
GV	GAS VALVE
GM	GAS METER
T	TELEPHONE MANHOLE
TPED	TELEPHONE PEDESTAL
TV	TV MANHOLE
CATV	TV PEDESTAL
FOWP	FIBER OPTIC WITNESS POST
FO	FIBER OPTIC BOX
E	ELECTRIC MANHOLE
EM	ELECTRIC METER
EB	ELECTRIC BOX
	UTILITY POLE
	GUY POLE
	GUY WIRE
	LIGHT POLE
MH	MANHOLE
TS	TRAFFIC SIGNAL BOX
	TRAFFIC SIGNAL POST
MW	MONITORING WELL
BOR	BORING LOCATION
	BOLLARD
	SIGN
FF=267.18'	FINISHED FLOOR ELEVATION
	DECIDUOUS TREE
	EVERGREEN TREE
	BUSH
X	WIRE FENCE
O	CHAIN LINK FENCE
T	UNDERGROUND TELEPHONE LINE
FO	UNDERGROUND FIBER OPTIC LINE
G	UNDERGROUND GAS LINE
E	UNDERGROUND ELECTRIC LINE
W	UNDERGROUND WATER LINE
SS	SANITARY SEWER LINE
	STORM DRAIN LINE
OHW	OVERHEAD WIRES
U	UNIDENTIFIED LINE
	UNKNOWN DESTINATION
	CONCRETE SURFACE
DIP	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE PIPE
HDPE	HIGH-DENSITY POLYETHYLENE PIPE
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
CB	CATCH BASIN

TREE LEGEND:

IO	AMERICAN HOLLY
JV	EASTERN RED CEDAR
LI	CREPE MYRTLE
MG	SOUTHERN MAGNOLIA
PO	EASTERN SYCAMORE
PT	LOBLOLLY PINE
QR	RED OAK

EXAMPLE: 10QR = 10" RED OAK

NOTES:

1. SEE SHEET C0.10 FOR GENERAL AND EXISTING CONDITIONS NOTES.

TYPICAL AREA
RESERVED FOR
SIGNATURE STAMP
DEPENDING ON THE
JURISDICTION

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PHONE #

Vicinity map:



NORTH

Seal:

PRELIMINARY - DO NOT
USE FOR CONSTRUCTION

Scale:

0 10 20 40

SCALE: 1" = 20' NORTH

Project:

PROJECT GRACE

Issued for:

50% CONSTRUCTION
DOCUMENT

No.	Date	Description
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Title:

EXISTING CONDITIONS

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --

C1.00

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COORDINATION NOTES:

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ISSUED AND WITH THE CITY OF WILMINGTON, NEW HANOVER COUNTY, CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA), AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
4. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
5. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.

GENERAL NOTES:

1. TREE INVENTORY AND TOPOGRAPHIC SURVEY COMPLETED BY PARAMOUNTE ENGINEERING, INC. THE SURVEY SHALL BE FIELD VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE OWNER AND ENGINEER.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
4. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE USDOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 AN ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
10. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
11. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
12. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
13. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
14. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
15. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
16. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW, NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER, THE CITY OF WILMINGTON, NEW HANOVER COUNTY, OR CFPUA, RESPECTIVELY.
17. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL* TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NONSUBSCRIBING UTILITIES.
18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
19. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
20. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE REFLECTIVE MARKINGS AND SHALL CONFORM TO MUTCD. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
21. LANDSCAPE PLANTINGS AT ENTRANCE/ EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS PER LOCAL STANDARDS.
22. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.

TRAFFIC NOTES:

1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY(S) ARE TO BE THERMOPLASTIC & MEET CITY OF WILMINGTON AND/OR NCDOT STANDARDS.
2. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS NOT WITHIN THE PUBLIC RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
5. ANY OPEN CUTTING OF A CITY STREET REQUIRES A UTILITY CUT PERMIT. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES, AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
6. CONTACT TRAFFIC ENGINEERING, AT 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN. CALL TRAFFIC ENGINEERING FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
7. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND/OR CURBING SHALL BE REPLACED.
8. TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. THE EROSION CONTROL PLAN SHALL INCLUDE PROVISIONS FOR GROUNDCOVER ON ALL EXPOSED PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY. GROUND COVER SHALL BE PROVIDED ON ALL OTHER DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK (NO SEPARATE PAYMENT).
3. THE CONTRACTOR SHALL NOTIFY PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NEW HANOVER COUNTY FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.
7. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY EITHER THE REVIEWING AGENCY OR THE ENGINEER. (NO SEPARATE PAYMENT).
8. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
9. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SODDED OR SEEDED AS INDICATED AND STABILIZED.
10. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.
11. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
12. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. (NO SEPARATE PAYMENT). NCDENR'S FINAL APPROVAL IS REQUIRED.
13. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREA. (NO SEPARATE PAYMENT).
14. WHEN CROSSING CREEK OR DRAINAGE-WAY, THE DIVISION OF WATER QUALITY SHALL BE CONTACTED PRIOR TO DISTURBING A CREEK. THE CONTRACTOR SHALL INSTALL RIP-RAP WITH FABRIC ALONG DISTURBED BANKS AND CHANNEL AND RESTORE SLOPES TO ORIGINAL CONTOURS, BUT NOT STEEPER THAN 2:1 MAXIMUM. DISTURBED CREEK AREA SHALL BE STABILIZED IMMEDIATELY.

DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
7. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
8. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
9. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND REMOVE TREES SO THEY DO NOT FALL TOWARDS OVERHEAD ELECTRICITY.
11. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
12. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
13. EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
14. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS.

NEW HANOVER COUNTY LAND QUALITY STABILIZATION TIME FRAME NOTE:

DENUDED AREAS MUST BE STABILIZED WITHIN FIFTEEN (15) WORKING DAYS OF CEASE OF ANY PHASE OF ACTIVITY. ALL SLOPES MUST BE STABILIZED WITHIN TWENTY-ONE (21) CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY. THIS INCLUDES SLOPES, SWALES, CHANNELS AND STOCKPILES.

NPDES BUILDING WASTES HANDLING:

1. NO PAINT OR LIQUID WASTES IN STREAM OR STORM DRAINS.
2. DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
3. EARTHEN-MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
4. CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.

NPDES INSPECTIONS:

1. SAME WEEKLY INSPECTION REQUIREMENTS.
2. SAME RAIN GAUGE & INSPECTIONS AFTER 0.5" RAIN EVENT.
3. INSPECTIONS ARE ONLY REQUIRED DURING "NORMAL BUSINESS HOURS".
4. INSPECTION REPORTS MUST BE AVAILABLE ON-SITE DURING BUSINESS HOURS UNLESS A SITE-SPECIFIC EXEMPTION IS APPROVED.
5. RECORDS MUST BE KEPT FOR 3 YEARS AND AVAILABLE UPON REQUEST.
6. ELECTRONICALLY AVAILABLE RECORDS MAY BE SUBSTITUTED UNDER CERTAIN CONDITIONS.

NPDES SEDIMENT BASINS:

1. OUTLET STRUCTURES MUST WITHDRAW FROM BASIN SURFACE UNLESS DRAINAGE AREA IS LESS THAN 1 ACRE.
2. USE ONLY DWQ-APPROVED FLOCULANTS.

NPDES - SPECIFIC PLAN SHEETS NOTES:

1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.
2. THIS PAGE CAN BE APPROVED BY THE COUNTY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.
3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.
4. THE COUNTY IS NOT AUTHORIZED TO ENFORCE THE NPDES PORTION OF THIS PAGE OF THE PLANS AND THEY ARE NOT A PART OF THE APPROVED PLANS FOR THE PURPOSES OF ENFORCEMENT ACTION UNDER THE COUNTY CODE.

EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

NOTE: THESE EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES ARE INTENDED FOR EACH "PHASE" OF CONSTRUCTION. THE ORDER AND STEPS TAKEN MUST BE IMPLEMENTED AS EACH PART OF THE PROJECT IS DEVELOPED; WHETHER AS A WHOLE OR IN PHASES. ANY EROSION CONTROL DEVICES/MEASURES MUST REMAIN IN PLACE UNTIL THE ENTIRE DISTURBANCE IS STABILIZED AND ALL IMPROVEMENTS WITHIN THE DISTURBANCE LIMITS ARE COMPLETE.

1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S), ESTABLISH THE LIMITS OF DISTURBANCE, TREE PROTECTION FENCING, AND TEMPORARY SILT FENCE.
2. CLEAR AND REMOVE FROM SITE TREES AS DESIGNATED, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN THE DESIGNATED CLEARING LIMITS.
3. INSTALL REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLANS WITHIN THE AREA DISTURBED. ALL EROSION CONTROL MEASURES MUST BE INSTALLED BEFORE COMMENCING CONSTRUCTION.
4. PLANT GRASS OVER ALL GRADED AREAS WITHIN 14 WORKING DAYS OF CEASE OF ANY GRADING ACTIVITY.
5. IMMEDIATELY UPON THE INSTALLATION OF ANY STORM DRAINAGE CATCH BASIN, DROP INLET, ETC., THE CONTRACTOR SHALL INSTALL INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION CONTROL MEASURES.
7. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETE, THE CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL APPROVAL BY ENGINEER OR EROSION CONTROL INSPECTOR.
8. UPON RECEIVING FINAL APPROVAL, THE CONTRACTOR CAN REMOVE TEMPORARY EROSION CONTROL MEASURES.
9. THE CONTRACTOR SHALL CONTINUE TO WATER, FERTILIZE, MOW AND MAINTAIN GRASS & PLANTED AREAS UNTIL ALL CONSTRUCTION IS COMPLETE.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY 1/2-INCH OR GREATER RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. ANY SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE IMMEDIATELY REMOVED.
3. SEDIMENT FENCE / SEDIMENT FENCE OUTLETS - SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF-FILLED. THE SEDIMENT FENCE WILL BE BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL, AND SPACED 6 FEET WITH EXTRA STRENGTH FABRIC AND NO WIRE BACKING. STAKE SPACING CAN BE 8 FEET WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS (OR EXCELSIOR WATTLES) ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE THE ROCK OR WATTLE WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS, OR IS DAMAGED.
4. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS ON THESE PLANS AND CONTRACT SPECIFICATIONS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
5. INLET PROTECTION - SEDIMENT SHALL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL, BLOCK AND GRAVEL, OR ROCK-PIPE INLETS, WHEN IT REACHES HALF-FILLED. ROCK WILL BE CLEANED OR REPLACED WHEN NO LONGER DRAINS. SILT SACKS, BEAVER DAMS, SANDY SACKS, AND SOCKS NEED CHECKING EVERY WEEK AND AFTER RAIN.

PERMANENT SEEDING

GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
BERMUDA, HULLED BERMUDA, UNHULLED	10-20 35	MARCH - AUGUST SEPT. - FEB.	BY SOIL TEST
CENTIPEDE	10	MARCH - AUGUST	BY SOIL TEST (NO HIGH PH)
TALL FESCUE (COASTAL CULTIVAR RECOMMENDED)	50	MARCH - AUGUST	300 LB/AC 10-20-20 OR BY SOIL TEST
SLOPES >= 2:1 CENTIPEDE SERICEA LESPEDEZA	5 20	JAN - DEC	BY SOIL TEST

TEMPORARY SEEDING

GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
RYE GRAIN	50	OCT. - APR.	400 LBS/AC. 10-20-20
SWEET SUDAN GRASS	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
GERMAN or BROWNTOP MILLET	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
STRAW MULCH AS NEEDED	4,000		

STABILIZATION TIME FRAMES:
*IN THE EVENT THAT THE GOVERNING AGENCIES TIMEFRAME FOR STABILIZATION VARY, CONTRACTOR SHALL MEET THE MORE STRINGENT REQUIREMENT.

NC ACCESSIBILITY NOTES:

GENERAL NOTES:

1. SPECIAL ATTENTION SHALL BE GIVEN TO COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
2. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. PARAMOUNTE ENGINEERING HAS DEVELOPED THESE NOTES AND DETAILS TO ASSURE THAT CONTRACTORS ARE AWARE OF THE REQUIREMENTS AT THE POINT IN TIME WHEN THEY ARE BIDDING THE PROJECT. IN ADDITION, PARAMOUNTE ENGINEERING HAS MADE A POINT IN THESE NOTES AND DETAILS, AS WELL AS IN OUR DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1 AND APPLICABLE LOCAL LAWS & REGULATIONS. IF THESE SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK.
3. THE CONTRACTOR SHALL NOTIFY PARAMOUNTE ENGINEERING IMMEDIATELY OF ANY CONFLICT BETWEEN THESE NOTES AND DETAILS AND OTHER PROJECT DRAWINGS, WHETHER BY PARAMOUNTE ENGINEERING OR OTHERS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK FOR WHICH THE ALLEGED CONFLICT HAS BEEN DISCOVERED UNTIL SUCH ALLEGED CONFLICT HAS BEEN RESOLVED. NO CLAIM SHALL BE MADE BY THE CONTRACTOR FOR DELAY OR DAMAGES AS A RESULT OF RESOLUTION OF ANY SUCH CONFLICT(S).
4. THESE ACCESSIBILITY NOTES AND DETAILS ARE INTENDED TO DEPICT SLOPE AND DIMENSIONAL REQUIREMENTS ONLY. REFER TO SIDEWALK, CURBING, AND PAVEMENT DETAILS FOR ADDITIONAL INFORMATION.

ACCESSIBLE ROUTE NOTES:

1. AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES AND ACCESSIBLE PASSENGER LOADING ZONES; PUBLIC STREETS OR SIDEWALKS; AND PUBLIC TRANSPORTATION STOPS TO THE ACCESSIBLE BUILDING OR FACILITY ENTRANCE THEY SERVE.
2. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, ACCESSIBLE FACILITIES, ACCESSIBLE ELEMENTS, AND ACCESSIBLE SPACES THAT ARE ON THE SAME SITE.
3. WALKING SURFACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL HAVE A MAXIMUM RUNNING SLOPE OF 5.0% AND A MAXIMUM CROSS SLOPE OF 2.0%.
4. ANY WALKING SURFACE THAT IS PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5.0% IS A RAMP AND SHALL COMPLY WITH THE GUIDELINES FOR RAMPS OR CURB RAMPS.
5. TRANSITIONS BETWEEN RAMPS, WALKS, LANDINGS, GUTTERS OR STREETS SHALL BE FLUSHAND FREE OF ABRUPT VERTICAL CHANGES (1/4 INCH MAXIMUM VERTICAL CHANGE IN LEVEL PERMITTED).
6. FLOOR SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANT.
7. THE MINIMUM CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES SHALL BE FORTY-EIGHT (48) INCHES MINIMUM MEASURED BETWEEN HANDRAILS WHERE HANDRAILS ARE PROVIDED (NC BUILDING CODE 1104.1 & 1104.2).
8. WHERE AN ACCESSIBLE ROUTE MAKES A 180 DEGREE TURN AROUND AN OBJECT THAT IS LESS THAN FORTY-EIGHT (48) INCHES IN WIDTH, CLEAR WIDTH SHALL BE FORTY-TWO (42) INCHES MINIMUM APPROACHING THE TURN, FORTY-EIGHT (48) INCHES MINIMUM DURING THE TURN, AND FORTY-TWO (42) INCHES MINIMUM LEAVING THE TURN. THE CLEAR WIDTH APPROACHING AND LEAVING THE TURN MAY BE THIRTY-SIX (36) INCHES MINIMUM WHEN THE CLEAR WIDTH AT THE TURN IS SIXTY (60) INCHES MINIMUM. * SEE NOTE 7 ABOVE FOR NC CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES*
9. AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH LESS THAN SIXTY (60) INCHES SHALLPROVIDE PASSING SPACES AT INTERVALS OF TWO HUNDRED (200) FEET MAXIMUM. PASSING SPACES SHALL BE EITHER A SIXTY (60) INCH MINIMUM BY SIXTY (60) INCH MINIMUM SPACE; OR AN INTERSECTION OF TWO (2) WALKING SURFACES THAT PROVIDE A COMPLIANT T-SHAPED TURNING SPACE, PROVIDED THE BASE AND ARMS OF THE T-SHAPED SPACE EXTEND FORTY-EIGHT (48) INCHES MINIMUM BEYOND THE INTERSECTION.
10. DOORS, DOORWAYS AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLIN

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

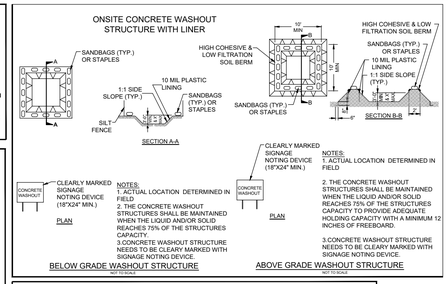
1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sediment deposition is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site

and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:

- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment(40 CFR 122.41(l)(7))	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

Know what's below. Call before you dig.

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:

ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

GENERAL NOTES

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

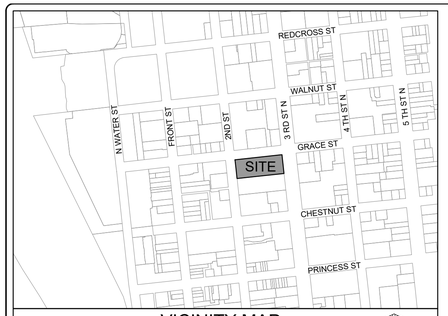
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
FINAL ASBUILT:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 04/04/22
SCALE: N.T.S.
DESIGNED: RPB
DRAWN: RPB
CHECKED: RPB

SEAL

C-101

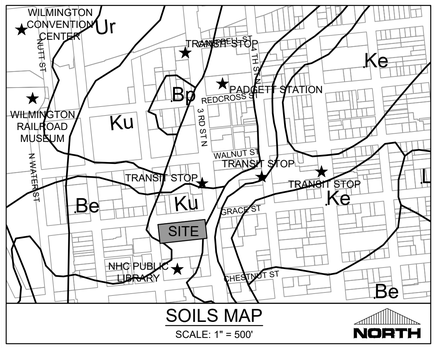
PEI JOB#: 21274.PE



VICINITY MAP

SCALE: 1" = 500'

NORTH



SOILS MAP

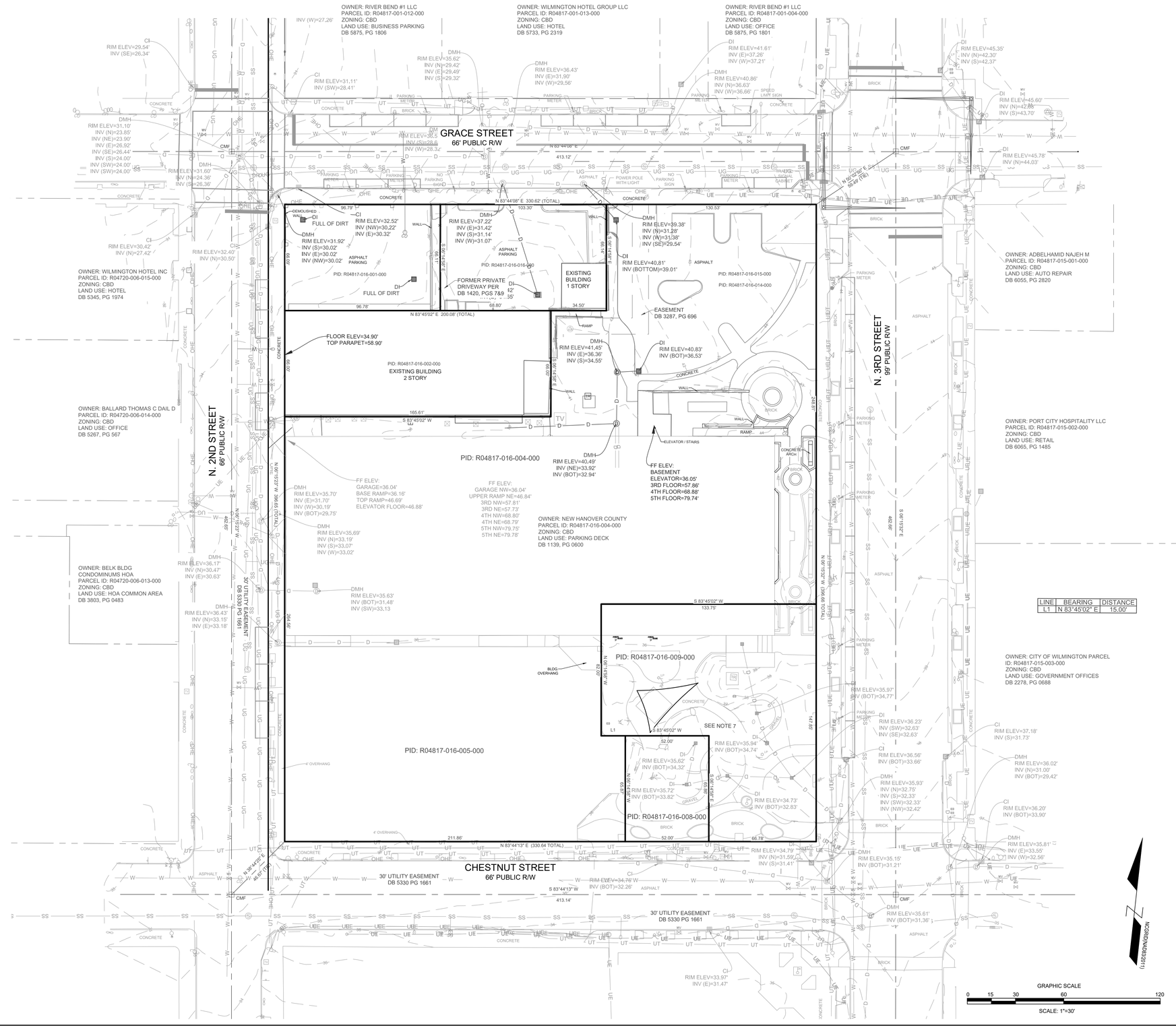
SCALE: 1" = 500'

NORTH

1. PREPARER OF THE PLAN:	PARAMOUNTE ENGINEERING, INC. 122 CINEMA DRIVE WILMINGTON, NC 28403
2. APPLICANT NAME:	ZIMMER DEVELOPMENT COMPANY 111 PRINCESS STREET WILMINGTON, NC 28401
3. SITE ADDRESS:	GRACE STREET WILMINGTON, NC 28401
4. PROPERTY OWNER:	NEW HANOVER COUNTY 230 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403
5. DEVELOPER:	SAME AS APPLICANT
6. PROPERTY BOUNDARY:	SEE PLAN
7. ZONING:	CBD (CENTRAL BUSINESS DISTRICT)
8. ADJACENT PROPERTY INFORMATION (OWNER AND ZONING):	SEE PLAN
9. VICINITY MAP:	SEE MAP ABOVE
10. TOPOGRAPHY:	SEE PLAN
11. 100 YEAR FLOOD PLAIN BOUNDARY:	THIS PARCEL IS LOCATED IN ZONE X – NOT A SPECIAL FLOOD HAZARD AREA – AS SHOWN ON FEMA FLOOD MAP NO. 3720311700L BEARING AN EFFECTIVE DATE OF 08/28/2018.
12. LOCATION OF EXISTING DITCHES, CREEKS, AND STREAMS:	SEE PLAN
13. SOILS:	KUREB - URBAN LAND COMPLEX (SEE SOILS MAP ABOVE)
14. CAMA AEC & ASSOCIATED SETBACKS:	N/A
15. CAMA LAND CLASSIFICATION:	URBAN
16. CONSERVATION RESOURCES:	N/A
17. LOCAL, STATE, OR FEDERAL HISTORIC OR ARCHAEOLOGICAL SITE:	BORST BUILDING (CONTRIBUTING STRUCTURE)
18. LOCATION OF CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS:	N/A
19. SQUARE FOOTAGE OF FORESTED AREA, HABITAT, AND DOMINANT SPECIES:	N/A
20. SECTION 404 WETLANDS AND SECTION 10 WATERS:	N/A
21. PROTECTED SPECIES OR HABITAT:	N/A
22. THOROUGHFARES, BIKE ROUTES, SIDEWALKS, TRANSIT FACILITIES (EXISTING):	SEE PLAN & VICINITY MAP

LAND CLEARING

PRIOR TO ANY LAND CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.



PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

Know what's below. Call before you dig.

REVISIONS:

CLIENT INFORMATION:

ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-4707 (O) (910) 791-4760 (F)
NC License #: C-2846

SITE INVENTORY PLAN

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

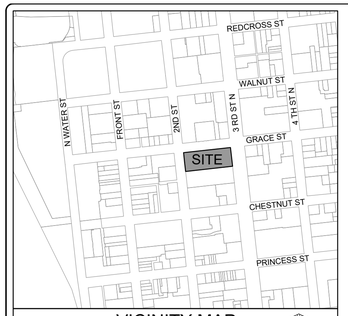
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
PERMITTING:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 09/2022
SCALE: 1" = 30'
DESIGNED: RPB
DRAWN: RPB
CHECKED: RPB

SEAL

C-200

PEI JOB#: 21274.PE



VICINITY MAP
SCALE: 1" = 500'
NORTH

811 Know what's below. Call before you dig.

DEMOLITION NOTES:

1.) CONTRACTOR SHALL REFER TO SHEET C-1.0 GENERAL NOTES FOR DEMOLITION NOTES.

2.) CONTRACTOR SHALL MAKE NO PAVEMENT CUTS INTO N. 3RD ST., GRACE ST., OR N. 2ND ST. WITHOUT THE WRITTEN PERMISSION OF THE CITY OF WILMINGTON.

3.) ALL UTILITIES SHALL BE ABANDONED AND/OR DEMOLISHED AND CAPPED PROPERLY IN ACCORDANCE WITH THE UTILITY OWNERS' RULES AND REGULATIONS.

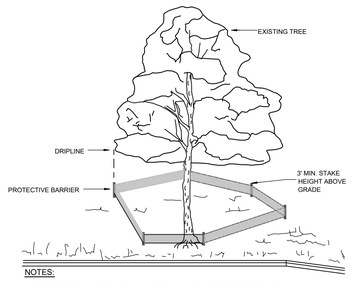
4.) CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY OWNERS/PROVIDERS FOR RELOCATION AND/OR DEMOLITION REQUIRED.

EX. VEGETATION NOTES:

1.) EXISTING TREES ON-SITE ARE TO REMAIN APART FROM TREES NOTED IN REMOVAL AND MITIGATION CHART PROVIDED ON C-2.0 SITE INVENTORY PLAN.

LAND CLEARING

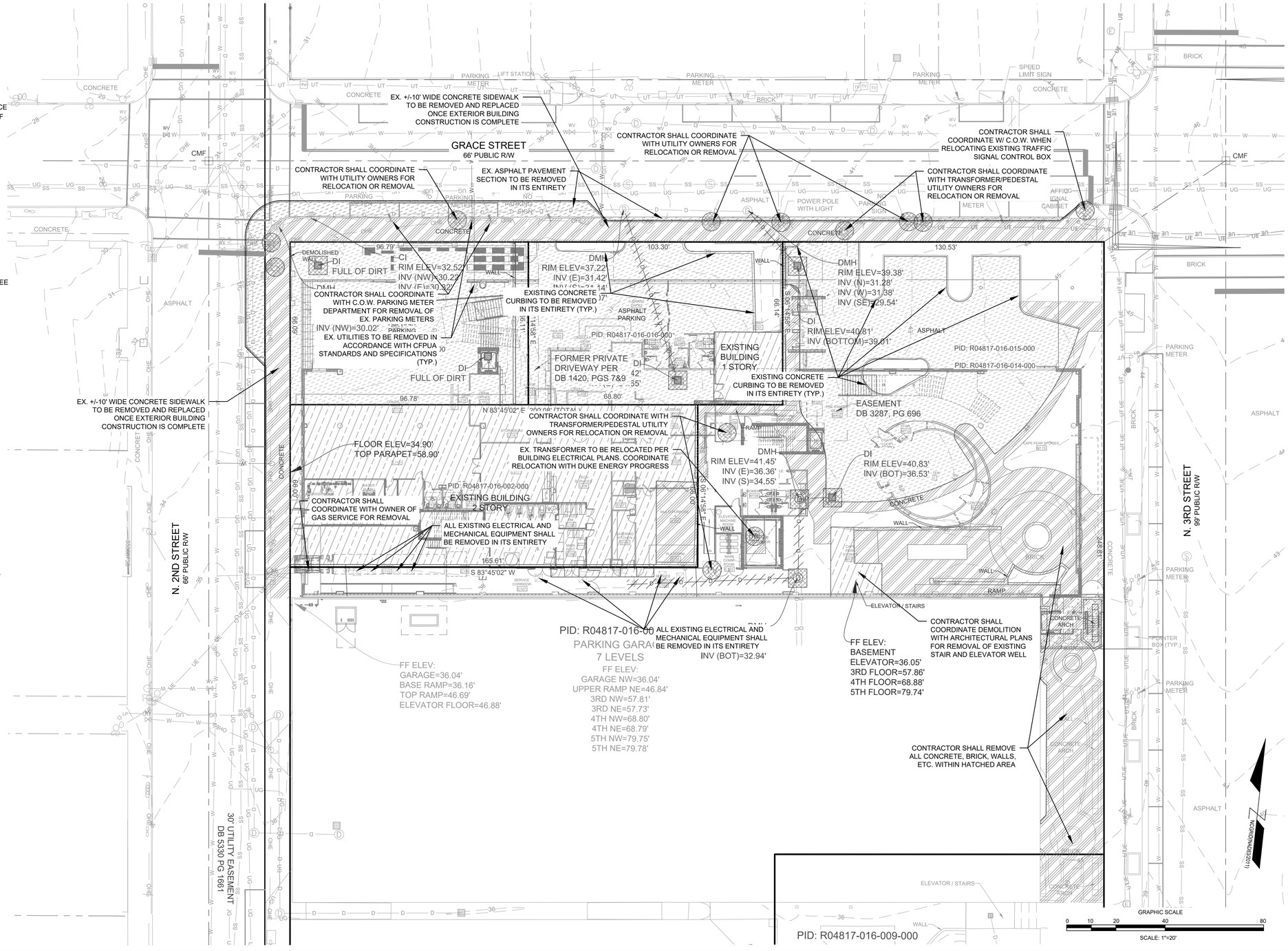
PRIOR TO ANY LAND CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.



NOTES:
- TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION
- INSTALLATION OF PROTECTION FENCING IS REQUIRED PRIOR TO LAND DISTURBING ACTIVITY AND IS TO BE MAINTAINED UNTIL AFTER FINAL SITE INSPECTION
- FENCING SHALL BE INSTALLED AT THE DRIPLINE OR AT THE BOUNDARY OF THE CRITICAL ROOT ZONE, WHICHEVER IS GREATER
  DRIP LINE - THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.
  CRITICAL ROOT ZONE - 1' RADIUS FROM THE TREE TRUNK PER 1" CALIPER

A METHOD OF TREE PROTECTION DURING CONSTRUCTI0N
NTS

SYMBOLS LEGEND	
	EXISTING CONCRETE TO BE REMOVED
	EXISTING ASPHALT TO BE REMOVED
	EXISTING UTILITY LINE TO BE REMOVED
	EXISTING STORM STRUCTURE TO BE REMOVED
	EXISTING TRANSFORMER/ SIGN/LIGHT/PEDESTAL/UTILITY POLE TO BE REMOVED
X	EXISTING FENCE TO BE REMOVED
	TREE PROTECTION FENCING
X	EXISTING TREE/SHRUBS TO BE REMOVED
	EXISTING BUILDING/STRUCTURE TO BE REMOVED
	EXISTING CURBING TO BE REMOVED



PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:
ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

DEMOLITION PLAN

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

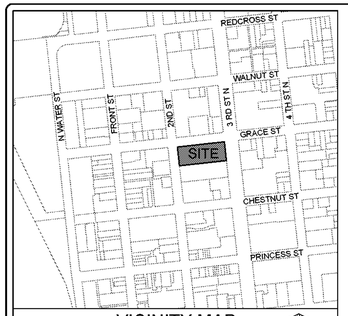
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
PHASE I DESIGN:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 06/07/22
SCALE: 1" = 20'
DESIGNED: RPB
DRAWN: RPB
CHECKED:

SEAL

C-201

PEI JOB#: 21274.PE



VICINITY MAP
SCALE: 1" = 500'
NORTH

WATER AND SEWER CAPACITY

ALL EXISTING WATER AND SEWER UTILITIES ARE OWNED BY CFPUA
SANITARY SEWER
PROPOSED
MULTI-FAMILY - ASSUMING 240 GPD/BED, UP TO (2) BEDS
PROPOSED - (56) 1 BDRM UNITS TOTAL
XX - 1 BDRM UNITS @ 240 GPD/UNIT = XX GPD
XX RETAIL SPACE @ 25 GAL/EMPLOYEE/SHIFT = XX GPD
TOTAL SEWER FLOW = XX GPD

WATER
PROPOSED - (XX) 1 BDRM UNITS AT 400 GPD/UNIT = XX GPD
XX RETAIL SPACE @ 25 GAL/PERSON/SHIFT = XX GPD
TOTAL WATER DEMAND = XX GPD

LAND CLEARING

PRIOR TO ANY LAND CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

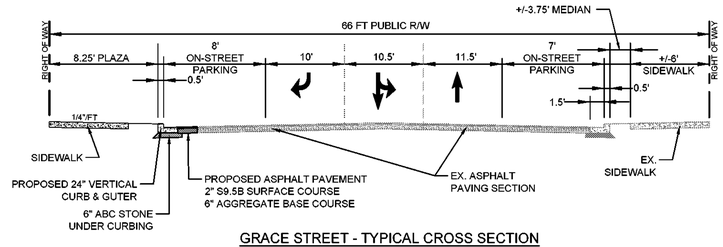
MISCELLANEOUS NOTES

1.) CONTACT TRAFFIC ENGINEERING AT 910-341-7888 48-HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.

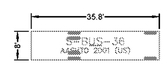
2.) IN ORDER TO MAINTAIN AN ACCEPTABLE AND SAFE LINE OF SIGHT FOR MOTOR VEHICLE DRIVERS, NO PARKING SPACES, FENCES, WALLS, POSTS, LIGHTS, SHRUBS, TREES OR OTHER TYPE OF OBSTRUCTIONS NOT SPECIFICALLY EXEMPTED SHALL BE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND ABOVE GROUND LEVEL AND TEN (10) FEET ABOVE GROUND LEVEL WITHIN THE TRIANGULAR SIGHT DISTANCE.

3.) STREET TREES MUST BE LOCATED A MINIMUM OF 15 FEET FROM STREETLIGHTS.

4.) ANY REQUIRED INSTALLATION OR RELOCATION OF TRAFFIC SIGNS/PAVEMENT MARKINGS IS THE RESPONSIBILITY OF THE PROJECT DEVELOPER. COORDINATE WITH CITY TRAFFIC SIGNS AND PAVEMENT MARKINGS MANAGER/SUPERVISOR PRIOR TO INSTALLATION/RELOCATION OF ANY TRAFFIC SIGNS OR MARKINGS IN EXISTING OR PROPOSED PUBLIC RIGHT OF WAY.



GRACE STREET - TYPICAL CROSS SECTION
W/ ON-STREET PARKING
NOT TO SCALE



STANDARD SCHOOL BUS DIMENSIONS
NOT TO SCALE

SITE DATA TABULATION

PROJECT NAME & ADDRESS:	PROJECT GRACE GRACE ST. WILMINGTON NC, 28401
PROPERTY OWNER:	NEW HANOVER COUNTY 230 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403
TAX PARCEL IDENTIFICATION #:	R04817-016-015-000, R04817-016-016-000, R04817-016-001-000, R04817-016-002-000, R04817-016-014-000
TOTAL SITE AREA:	1.10 ACRES (47,775 SF)
CURRENT ZONING:	CBD (CENTRAL BUSINESS DISTRICT)
CAMA LAND USE CLASSIFICATION:	URBAN

BUILDING DATA

NUMBER OF BUILDINGS:	1
MAXIMUM ALLOWABLE BUILDING HEIGHT:	132'
PROPOSED BUILDING HEIGHT:	56'
EXISTING LAND USE:	PARKING LOT, BUSINESS
PROPOSED LAND USE:	LIBRARY & MUSEUM
NUMBER OF STORIES:	3 STORIES
TOTAL BUILDING AREA:	PROPOSED: 94,173 SQ. FT.
SQUARE FEET PER FLOOR:	GROUND FLOOR: 36,583 SQ. FT. SECOND FLOOR: 34,987 SQ. FT. THIRD FLOOR: 22,603 SQ. FT.
BUILDING LOT COVERAGE:	37,380 SQ. FT. (78.2%)
PROPOSED BLDG. CONSTRUCTION:	TYPE IB

SETBACK STANDARDS

REQUIRED	
FRONT (MAXIMUM):	5'
SIDE STREET (MAXIMUM):	5'

PROPOSED	
N. 2ND STREET:	4.5'
GRACE STREET:	15.4' - 51.5'
N. 3RD STREET	0' - 9.2'

MAXIMUM SETBACKS MAY BE ADJUSTED IF A PEDESTRIAN-ORIENTED AREA IS PROVIDED ACCORDING TO SECTION 18-44 OF THE LDC.

THERE IS NO MINIMUM OR MAXIMUM REAR SETBACK WHEN NOT ADJACENT TO SINGLE-DWELLING RESIDENTIAL ZONING OR AN ALLEY.

FLOOD NOTE

THIS PARCEL IS LOCATED IN ZONE X – NOT A SPECIAL FLOOD HAZARD AREA – AS SHOWN ON FEMA FLOOD MAP NO. 3720311700L BEARING AN EFFECTIVE DATE OF 08/28/2018.

PARKING STANDARDS

NO MINIMUM PARKING REQUIRED FOR NON-RESIDENTIAL USES OR DEVELOPMENT WITHIN THE 1945 CORPORATE LIMITS.

DEVELOPMENTS IN THE CBD ARE EXEMPT FROM REQUIRED BICYCLE PARKING.

TRIP GENERATION

ITE CODE 590 (12 EMPLOYEES)

AM PEAK:	12 TRIPS
PM PEAK:	65 TRIPS
DAILY:	630 TRIPS

ZONING NOTE

THE SUBJECT PARCEL DOES NOT LIE WITHIN A SPECIAL OVERLAY DISTRICT.

SITE INFORMATION

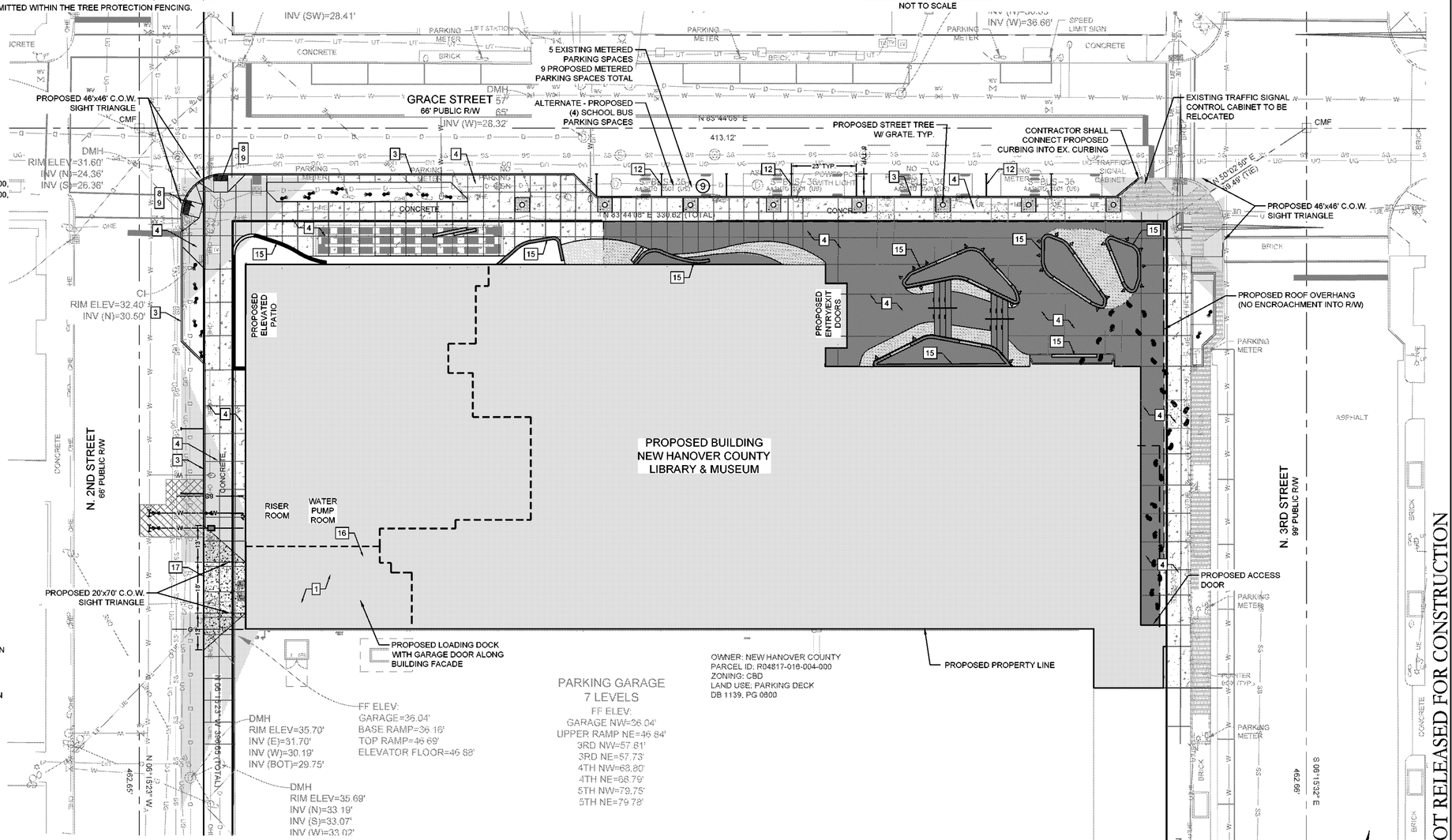
EXISTING IMPERVIOUS:	(38,150 SF)
EXISTING IMPERVIOUS TO REMAIN	0 SF
PROPOSED IMPERVIOUS AREA	
BUILDINGS	37,381 SF
BUILDING OVERHANG	7,835 SF
ON-SITE SIDEWALKS	3,060 SF
TOTAL PROPOSED IMP. AREA	48,276 SF (1.11 AC)

NET IMPERVIOUS AREA = PROPOSED - EXISTING = 10,126 SF

PROPOSED PERCENT IMPERVIOUS	48,276 SF / 47,775 SF = 101.05%
DISTURBED AREA:	58,869 SF

WASTE DISPOSAL

WASTE DISPOSAL WILL BE PROVIDED WITH A CENTRAL DUMPSTER LOCATION. THIS LOCATION HAS BEEN NOTED ON THE PLAN. ALL TRASH-HANDLING AND RELATED EQUIPMENT SHALL BE COMPLETELY ENCLOSED AND SCREENED WITH AN OPAQUE FENCE OR WALL. THE ENCLOSURE SHALL BE AT LEAST ONE (1) FOOT TALLER THAN THE HIGHEST POINT OF THE TRASH RECEPTACLE.



KEY NOTES:

1. HEAVY DUTY CONCRETE PAVEMENT SECTION: REFER TO CIVIL DETAILS
2. LIGHT DUTY ASPHALT PAVING: REFER TO CIVIL DETAILS
3. STANDARD C.O.W. 6" GRANITE CURB: REFER TO CIVIL DETAILS
4. CONCRETE SIDEWALK: REFER TO CIVIL DETAILS
5. HANDICAP PARKING SIGN: REFER TO CIVIL DETAILS
6. HANDICAP PARKING SYMBOL: REFER TO CIVIL DETAILS
7. HANDICAP ACCESS UNLOADING ZONE: SLOPE 2% MAX. EACH WAY (ADA COMPLIANT) AND STRIPE AS SHOWN.
8. HANDICAP RAMP: REFER TO CIVIL DETAILS
9. DETECTIBLE WARNING MAT: REFER TO CIVIL DETAILS
10. CONCRETE WHEEL STOP: 8"w x 4"h x 6'-0 LONG CONCRETE. ANCHOR TO PAVING WITH (2) 1'-6" LONG #4 REBAR. REFER TO DETAILS
11. BICYCLE RACK (5 BIKE MIN. PER RACK): CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL
12. STRIPING: PROVIDE 4" WIDE PARKING LOT STRIPING AS SHOWN. USE HIGHWAY MARKING PAINT - WHITE (2 COATS). REFER TO CIVIL DETAILS
13. TREE PROTECTION FENCING: REFER TO CIVIL DETAILS
14. CURB TERMINATION REFER TO CIVIL DETAILS
15. PROPOSED LOW LEVEL RETAINING WALL/SEATING SEE LANDSCAPE ARCHITETURE PLANS BY OTHERS
16. SOLID WASTE DISPOSAL AREA SEE ARCHITECTURAL PLANS FOR DETAILS
17. C.O.W. STANDARD COMMERCIAL DRIVEWAY APRON REFER TO CIVIL DETAILS
18. GENERATOR PAD REFER TO BUILDING ELECTRICAL PLANS
19. PROPOSED 10' TALL ORNAMENTAL METAL FENCE MATCH CITY BLOCK I ADJACENT FENCE. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW. REFER TO CIVIL DETAILS
20. PROPOSED SEGMENTAL RETAINING WALL REFER TO STRUCTURAL PLANS FOR DETAILS
21. PROPOSED ELECTRIC CAR CHARGING STATION REFER TO ELECTRICAL PLANS FOR DETAILS

LEGEND

- = EXISTING PROPERTY LINE
- = EXISTING WATER MAIN
- = EXISTING SANITARY SEWER MAIN
- = EXISTING OVERHEAD ELECTRIC
- = EXISTING LIGHT POLE
- = PROPOSED SANITARY SEWER SERVICE
- = PROPOSED WATER SERVICE
- = PROPOSED ORNAMENTAL FENCE
- = PROPOSED TREE PROTECTION FENCE
- = PROPOSED CONCRETE AREA
- = PROPOSED BUILDING AREA
- = PROPOSED 4" MAX. HEIGHT CURB WHERE CURB IS USED FOR WHEEL STOP

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

811 Know what's below. Call before you dig.

REVISIONS:

CLIENT INFORMATION:
ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

SITE PLAN
BASEMENT LEVEL
PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
PLANS:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 06/02/22
SCALE: 1" = 20'
DESIGNED: RPB
DRAWN: RPB
CHECKED: RPB

SEAL

C-202

PEI JOB#: 21274.PE



VICINITY MAP

SCALE: 1" = 500'

NORTH

GRADING NOTES:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE STOCKPILE LOCATIONS ON SITE IF NOT SPECIFIED. SEE GENERAL NOTES SHEET (C-1.0, TYP.) FOR GRADING, DRAINAGE, AND EROSION CONTROL SEQUENCE NOTES AND REQUIREMENTS. IN ADDITION, REFERENCE TECHNICAL SPECIFICATIONS AND DETAIL SHEETS FOR MORE INFORMATION.

2.) SEE GRADING AND DRAINAGE PLANS FOR FINISH GRADES AND STORM PIPE SCHEDULE.

3.) A GEOTECHNICAL ENGINEER OR INSPECTORS SHALL BE CONSULTED TO CONFIRM SUITABILITY OF SUBGRADE MATERIAL AND PROPER COMPACTION PER EARTHWORK SPECIFICATIONS IN FILL AREAS.

ASPHALT AREA NOTE:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND/OR TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND/OR TECHNICAL SPECIFICATIONS.

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- INLET PROTECTION
- LIMITS OF DISTURBANCE
- SILT FENCE
- TREE PROTECTION FENCING
- DRAINAGE FLOW PATH
- CB-202 — DRAINAGE INLET LABEL

CI
RIM ELEV=30.11'
INV (W)=27.26'

CI
RIM ELEV=31.11'
INV (SW)=28.41'

DMH
RIM ELEV=35.62'
INV (N)=29.42'
INV (E)=29.49'
INV (S)=29.32'

DMH
RIM ELEV=36.43'
INV (E)=31.90'
INV (W)=29.56'

DI
RIM ELEV=41.61'
INV (E)=37.26'
INV (W)=37.21'

DMH
RIM ELEV=40.86'
INV (N)=36.63'
INV (W)=36.66'

DMH
RIM ELEV=36.57'
INV (S)=28.65'
INV (W)=28.32'

GRACE STREET
66' PUBLIC R/W

PROPOSED LIMITS OF DISTURBANCE (LOD) AND SILT FENCE (TYP.).

PROPOSED LIMITS OF DISTURBANCE (LOD) 1.35 AC.

DMH
RIM ELEV=31.60'
INV (N)=24.36'
INV (S)=26.36'

PROPOSED INLET PROTECTION, TYP. SEE DETAIL.

PROPOSED TEMPORARY CONSTRUCTION ENTRANCE. SEE DETAILS

CI
RIM ELEV=32.40'
INV (N)=30.50'

PROPOSED SILT FENCE TO BE PLACED ALONG LOD, TYP. SEE DETAIL. SILT FENCE ON PLANS SHOWN OFFSET 0.5-FT FOR CLARITY.

FLOOR ELEV=34.90'
TOP PARAPET=58.90'

EXISTING BUILDING
1 STORY

EXISTING BUILDING
2 STORY

N. 2ND STREET
66' PUBLIC R/W

N. 3RD STREET
99' PUBLIC R/W

30' UTILITY EASEMENT
DB 5330 PG 1661

PARKING GARAGE
7 LEVELS

FF ELEV:
GARAGE NW=36.04'
UPPER RAMP NE=46.84'
3RD NW=57.81'
3RD NE=57.73'
4TH NW=68.80'
4TH NE=68.79'
5TH NW=79.75'
5TH NE=79.78'

FF ELEV:
GARAGE=36.04'
BASE RAMP=36.16'
TOP RAMP=46.69'
ELEVATOR FLOOR=46.88'

FF ELEV:
BASEMENT
ELEVATOR=36.05'
3RD FLOOR=57.86'
4TH FLOOR=68.88'
5TH FLOOR=79.74'

DMH
RIM ELEV=35.70'
INV (E)=31.70'
INV (W)=30.19'
INV (BOT)=29.75'

DMH
RIM ELEV=35.69'
INV (N)=33.19'
INV (S)=33.07'
INV (W)=33.02'

DMH
RIM ELEV=36.17'
INV (N)=30.47'
INV (E)=30.63'

DMH
RIM ELEV=35.63'
INV (BOT)=31.48'
INV (SW)=33.13

DMH
RIM ELEV=36.43'
INV (N)=33.15'
INV (E)=33.18'

GRAPHIC SCALE
0 10 20 40 80
SCALE: 1"=20'

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:

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111 PRINCESS STREET
WILMINGTON, NC 28401

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122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
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PH-1 EROSION CONTROL PLAN

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

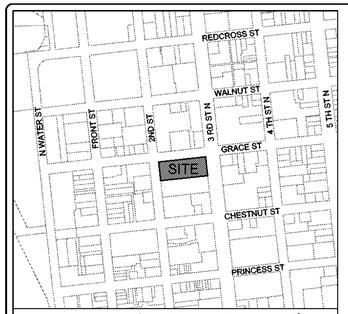
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
FINAL DESIGN:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 05/20/22
SCALE: 1" = 20'
DESIGNED: RPB
DRAWN: RPB
CHECKED: RPB

SEAL

C-300

PEI JOB#: 21274.PE



VICINITY MAP

SCALE: 1" = 500'

NORTH

ASPHALT AREA NOTE:

1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:

1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

STORMWATER NOTE:

1. THIS SITE IS UTILIZING AN UNDERGROUND INFILTRATION TRENCH SYSTEM TO TREAT THE WATER QUALITY VOLUME PER THE CITY OF WILMINGTON STORMWATER ORDINANCE. THE DESIGN ALSO APPLIES CREDIT FOR EXISTING IMPERVIOUS AREAS IN THE SITE THAT WILL BE DEMOLISHED.

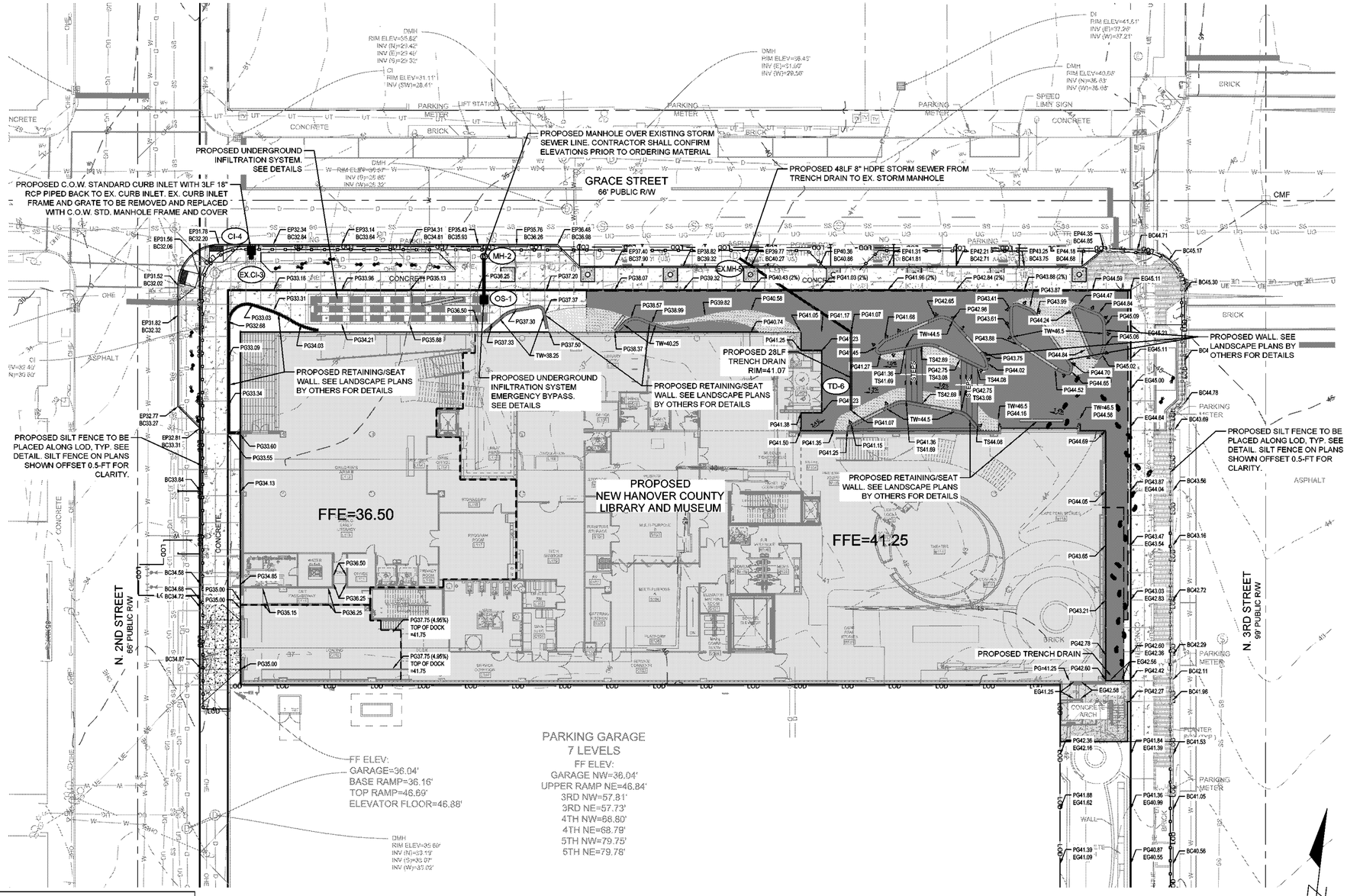
GENERAL NOTES:

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL STATE OF NC, CITY OF WILMINGTON, AND NEW HANOVER COUNTY STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL PLACE INLET PROTECTION AROUND ALL STORM DRAIN INLETS TO PROTECT THE SYSTEM FROM COLLECTING SEDIMENTATION DURING CONSTRUCTION. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL PAVING IS COMPLETE AND THE SITE IS STABILIZED.
3. CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE WITHIN ASPHALT OVERLAY AND NEW ASPHALT AREAS TO MATCH PROPOSED GRADES.
4. ALL PROPOSED SPOT ELEVATIONS SHOWN IN THE PARKING LOT ARE PROPOSED EDGE OF PAVEMENT OR FACE OF CURB @ GUTTER FOR CURB SECTIONS, UNLESS NOTED OTHERWISE.
5. ALL ROOF DRAINS SHALL BE CONNECTED TO UNDERGOUND COLLECTION SYSTEM.
6. ALL SIDEWALK CROSS SLOPES HAVE BEEN GRADED TO MEET ADA REGULATIONS. CONTRACTOR SHALL CONFIRM GRADES BEFORE PLACING PAVEMENT OR SIDEWALKS AND REPORT ANY DISCREPANCIES TO OWNER AND/OR ENGINEER.
7. THE CONTRACTOR SHALL USE EITHER RCP (CL. III) OR HDPE PIPE FOR THE STORM DRAINAGE SYSTEM. IF THE CONTRACTOR CHOOSES TO USE HDPE PIPE, IT SHALL BE ADS N-12 WT STORM PIPE OR APPROVED EQUAL AND SHALL BE INSTALLED TO MANUFACTURER SPECIFICATIONS. IN ADDITION, THE CONTRACTOR SHALL BE SURE TO PROVIDE CONCRETE COLLARS AROUND EACH F.E.S. TO PREVENT FLOATATION IF HDPE PIPE IS CHOSEN.
8. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR SITE CONSTRUCTION RECOMMENDATIONS AND WAS PREPARED BY ECS SOUTHEAST, LLP, ECS PROJECT #: 22:27791, AND DATED APRIL 29, 2019.

AS-BUILT STORMWATER NOTE [15A NCAC 02H.1044]:

1.) THE CONTRACTOR WILL EMPLOY A LAND SURVEYOR LICENSED IN THE STATE OF NORTH CAROLINA TO PROVIDE ACCURATE REPRODUCIBLE AS-BUILT DRAWINGS OF THE WET DETENTION BASIN, COLLECTION SYSTEM, AND IMPERVIOUS AREA ON THE SITE TO THE ENGINEER & OWNER UPON COMPLETION OF CONSTRUCTION. UPON CERTIFICATION BY THE ENGINEER AND VERIFICATION FROM THE OWNER ANY DISCREPANCIES WILL BE INDICATED, THEN THESE PLANS SHALL BE RETURNED TO THE CONTRACTOR FOR CORRECTION PRIOR TO FINAL PAYMENT AND FINAL INSPECTION.

STORM SCHEDULE



GRAPHIC SCALE

0 10 20 40 80

SCALE: 1" = 20'

LEGEND:

16	EXISTING CONTOUR
29	PROPOSED CONTOUR
EG 25.05	EXISTING SPOT ELEVATION
EP 25.05	PROPOSED EDGE OF PAVEMENT
CL 25.05	PROPOSED CENTERLINE OF SWALE
SW 25.05	PROPOSED SIDEWALK ELEVATION
PG 25.05	PROPOSED GRADE
TW 25.05	PROPOSED TOP OF WALL
TC 25.05	PROPOSED TOP OF CONCRETE
TS 25.05	TOP OF SLAB
	INLET PROTECTION
LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
TP	TREE PROTECTION FENCING
	DRAINAGE FLOW PATH
CB-202	DRAINAGE INLET LABEL

SPOT GRADE LEGEND:

CB = CATCH BASIN	HP = HIGH POINT ELEVATION
DCB = DOUBLE CATCH BASIN	LP = LOW POINT ELEVATION
CI = CURB INLET	TW = TOP OF WALK (SIDEWALK) ELEVATION
DI = DROP INLET	DG = DITCH GRADE ELEVATION
DDI = DOUBLE DROP INLET	CL = CENTERLINE
YI = YARD INLET	INV = INVERT
MH = STORM MANHOLE	FES = FLARED END SECTION
	TWL = TOP OF WALL ELEVATION
BC = TOP OF CURB ELEVATION	BWL = BOTTOM OF WALL ELEVATION
GC = GUTTER CURB (FLOW LINE) ELEVATION	(EG) = EXISTING GRADE
PG = PROPOSED GRADE (GROUND)	(XX) = EXISTING ELEVATIONS, TYP.
EP = EDGE OF PAVEMENT	
EC = EDGE OF CONCRETE	

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:

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WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC.
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(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

GRADING - DRAINAGE - PH-II
EROSION CONTROL PLAN

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
FOR REVIEW:
RELEASED FOR CONST:

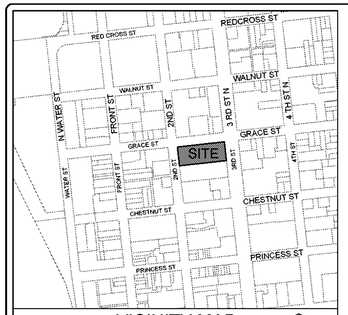
DRAWING INFORMATION

DATE:	05/20/22
SCALE:	1" = 20'
DESIGNED:	PPB
DRAWN:	PPB
CHECKED:	PPB

SEAL

C-301

PEI JOB#: 21274.PE



VICINITY MAP
SCALE: 1" = 500'

NORTH

SITE DATA TABULATION

PROJECT NAME & ADDRESS:	PROJECT GRACE GRACE ST. WILMINGTON NC, 28401
PROPERTY OWNER:	NEW HANOVER COUNTY 230 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403
TAX PARCEL IDENTIFICATION #:	R04817-016-015-000, R04817-016-016-000, R04817-016-001-000, R04817-016-002-000, R04817-016-014-000
TOTAL SITE AREA:	1.10 ACRES (47,775 SF)
CURRENT ZONING: CAMA LAND USE CLASSIFICATION:	CBD (CENTRAL BUSINESS DISTRICT) URBAN

UTILITY INFORMATION

CONTRACTOR SHALL INSTALL WATER AND SEWER SERVICES IN ACCORDANCE WITH CFPUA STANDARD DETAILS AND SPECIFICATIONS.

SANITARY SEWER

THIS PROJECT WILL CONNECT TO EXISTING 6" PVC SANITARY MAIN . THIS PROJECT IS CONSTRUCTING A 6" SANITARY SEWER SERVICE. ALL SANITARY SEWER ALLOCATION IS PROVIDED BY THE CFPUA.

WATER

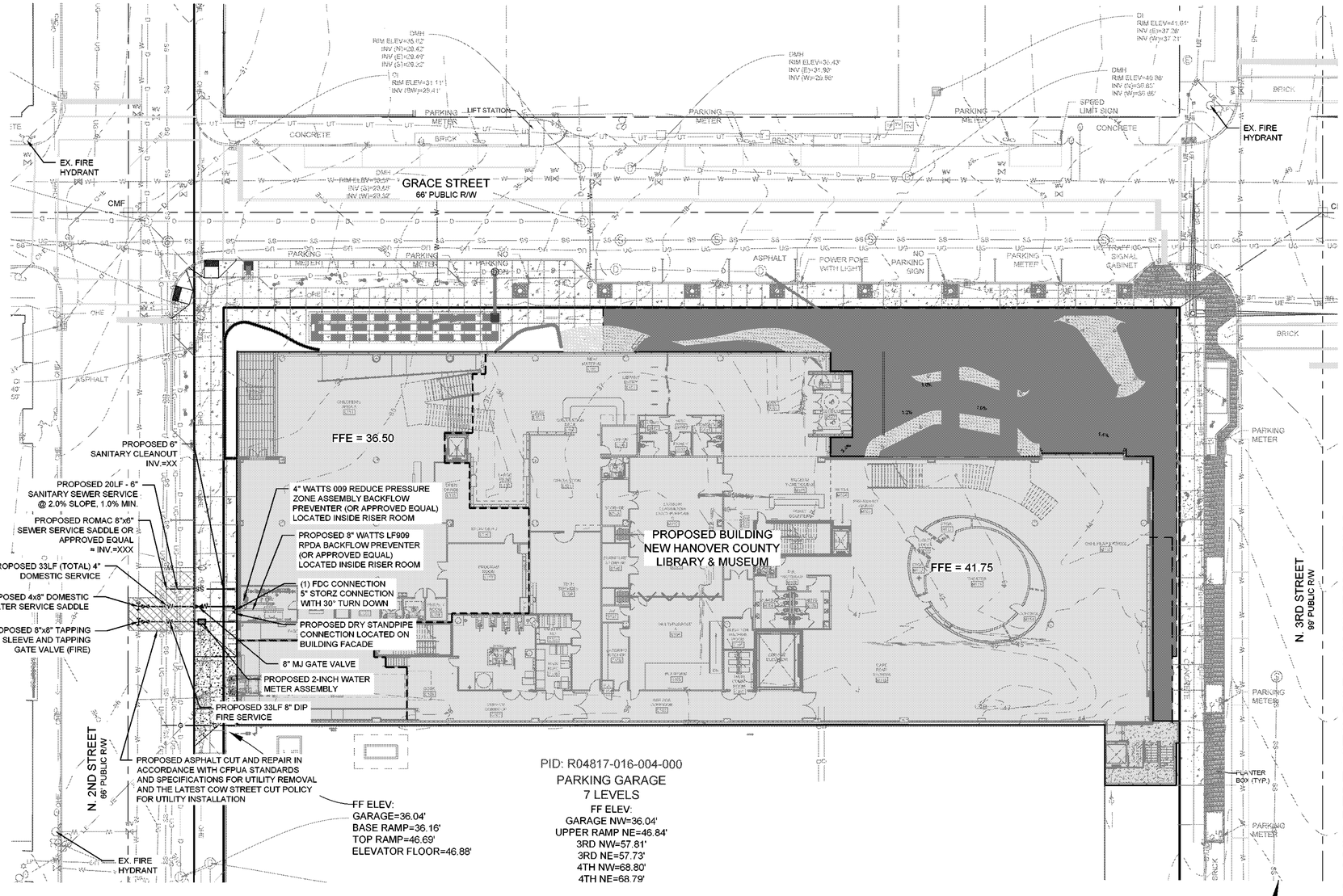
THIS PROJECT WILL CONNECT TO EXISTING 12" CI WATER LINE . THIS PROJECT IS CONSTRUCTING A 4-INCH DOMESTIC WATER SERVICE AND AN 8-INCH FIRE SERVICE. DOMESTIC WATER ALLOCATION PROVIDED BY CFPUA.

UTILITY NOTES: (NCAC 15A.02T.0305 / T15A.18C.0906)

1. WATER MAINS SHALL BE LAID SO AS TO PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET FROM SEWERS. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN CAN BE INSTALLED AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, EITHER IN A SEPARATE TRENCH, OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH.
2. WHEN CROSSING A WATER MAIN OVER A SEWER, THE WATER MAIN SHALL BE LAID AT LEAST 18 INCHES ABOVE THE SEWER. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH JOINTS THAT MEET WATER MAIN STANDARDS. THE DUCTILE IRON PIPE SHALL EXTEND 10 FEET ON EACH SIDE OF THE CROSSING WITH A SECTION OF WATER MAIN PIPE CENTERED ON THE CROSSING.
3. CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
4. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.
5. WHERE VERTICAL CLEARANCE IS LESS THAT 18" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.

FIRE & LIFE SAFETY NOTES:

1. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS WITHIN THE DEVELOPMENT AND PRIOR TO COMBUSTIBLE MATERIALS DELIVERED TO THE JOB SITE.
2. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
3. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION
4. THE MAIN BUILDING CONSTRUCTION TYPE IS V-A AND THE GATE HOUSE IS V-B. BOTH BUILDINGS MEET NFPA.
5. LANDSCAPING OR PARKING CAN NOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC.
6. HYDRANTS MUST BE WITHIN 150' OF THE FDC. THE FDC MUST BE WITHIN 40' OF THE FIRE APPARATUS PLACEMENT.
7. ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
8. PRIVATE UNDERGROUND FIRE LINES REQUIRE A SEPARATE UNDERGROUND FIRE LINE PERMIT FROM THE WILMINGTON FIRE NAD LIFE SAFETY DIVISION (910-343-0696).
9. ALL ISOLATION VALVES WITHIN THE "HOT BOX" SHALL BE ELECTRICALLY SUPERVISED. FIRE SPRINKLER AND ALARM CONTRACTORS/INSTALLERS SHALL COORDINATE TO RUN WIRING FOR TAMPER SWITCH.
10. ALL HYDRANTS TO BE INSTALLED PER CITY OF WILMINGTON ORDINANCES AND CFPUA STANDARDS.
11. CONTRACTOR SHALL SUBMIT A RADIO SIGNAL STRENGTH STUDY FOR ALL COMMERCIAL BUILDINGS THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE 2018 NC FIRE CODE.



EX. SERVICES NOTE:
ANY EXISTING SERVICES NOT USED WILL NEED TO BE PROPERLY ABANDONED IN ACCORDANCE WITH CFPUA STANDARDS AND SPECIFICATIONS

FIRE LINE NOTE:
SITE CONTRACTOR SHALL COORDINATE WITH FIRE SUPPRESSION DESIGN BUILD TO CONFIRM FIRE SERVICE SIZE PRIOR TO ORDERING ANY MATERIAL OR INSTALLATION. SITE CONTRACTOR SHALL INSTALL FIRE LINE INSIDE RISER ROOM AND TERMINATE 12" AFF.

811 Know what's below. Call before you dig.

GRAPHIC SCALE
0 10 20 40 80
SCALE: 1"=20'

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:
ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

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UTILITY PLAN

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

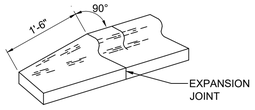
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
PLAN REVIEW:
RELEASED FOR CONST.:

DRAWING INFORMATION
DATE: 05/09/22
SCALE: 1" = 30'
DESIGNED: RPB
DRAWN: RPB
CHECKED: RPB

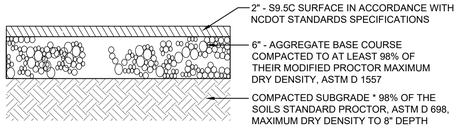
SEAL

C-400

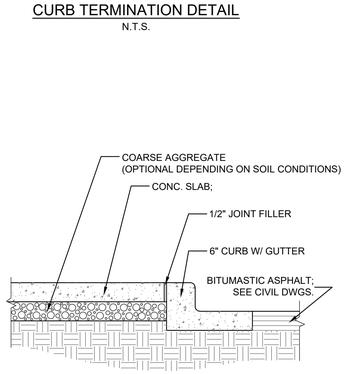
PEI JOB#: 21274.PE



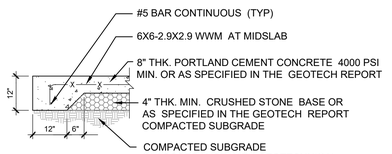
CURB TERMINATION DETAIL
N.T.S.



LIGHT DUTY PAVEMENT SECTION
N.T.S.

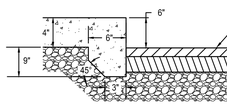


TYPICAL SIDEWALK @ CURB
N.T.S.

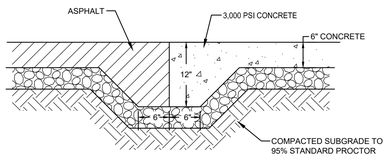


NOTES:
1. CONCRETE AREAS SHALL HAVE TOOLED JOINTS.

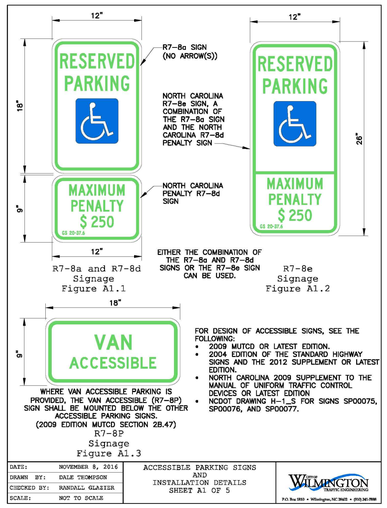
HEAVY DUTY CONCRETE PAVEMENT SECTION
N.T.S.



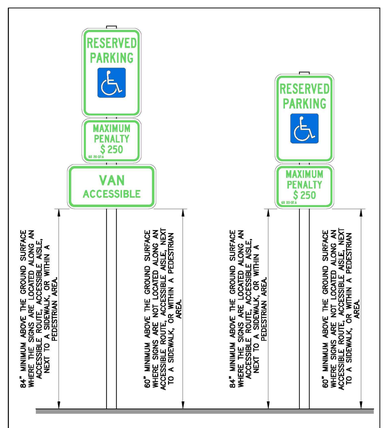
TURNDOWN SIDEWALK DETAIL
N.T.S.



ASPHALT TO CONCRETE PAVEMENT TRANSITION
N.T.S.

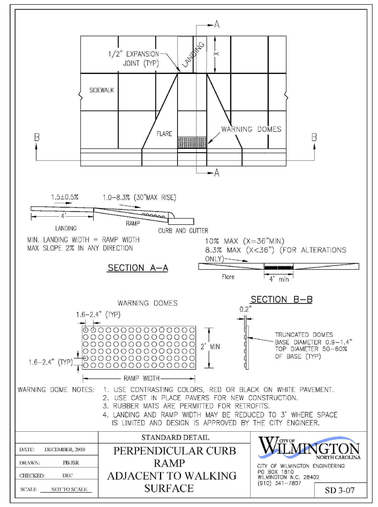


DATE: NOVEMBER 8, 2016	ACCESSIBLE PARKING SIGNS AND INSTALLATION DETAILS SHEET A1 OF 5	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: DALE THOMPSON		
CHECKED BY: RANDALL GLASSIER		
SCALE: NOT TO SCALE		P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7800



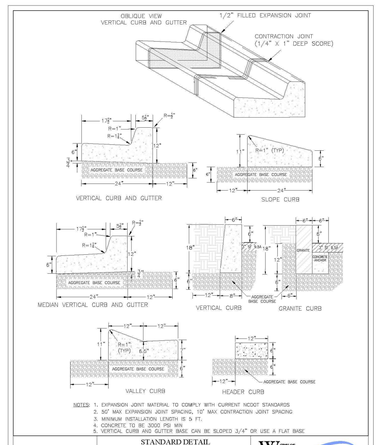
Signage Height
Figure A2.1

DATE: NOVEMBER 8, 2016	ACCESSIBLE PARKING SIGNS AND INSTALLATION DETAILS SHEET A2 OF 5	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: DALE THOMPSON		
CHECKED BY: RANDALL GLASSIER		
SCALE: NOT TO SCALE		P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7800



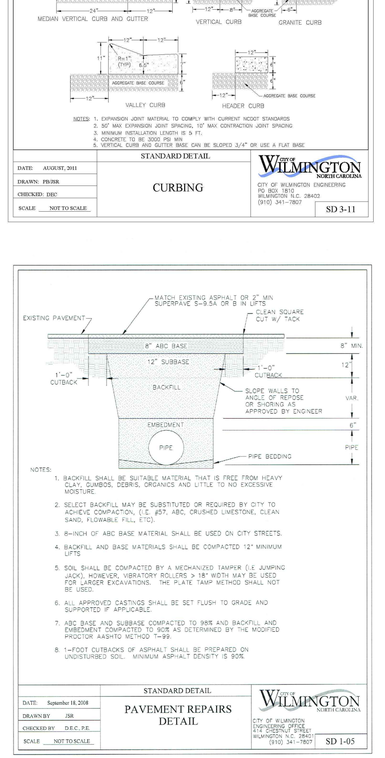
STANDARD DETAIL
PERPENDICULAR CURB RAMP ADJACENT TO WALKING SURFACE

DATE: DECEMBER, 2010	CITY OF WILMINGTON NORTH CAROLINA
DRAWN: PB/JSR	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
CHECKED: DEC	
SCALE: NOT TO SCALE	SD 3-07



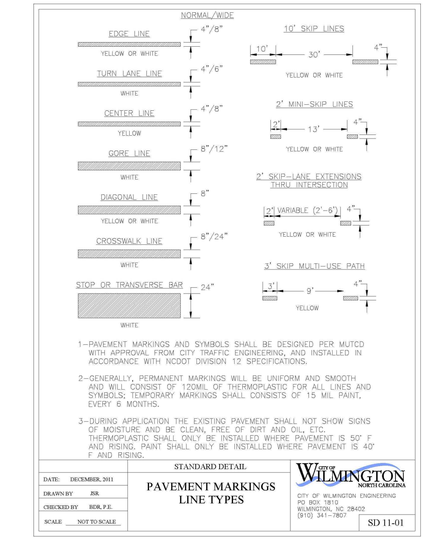
STANDARD DETAIL
CURBING

DATE: AUGUST, 2011	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: PB/JSR	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28403 (910) 341-7807
CHECKED: DEC	
SCALE: NOT TO SCALE	SD 3-11



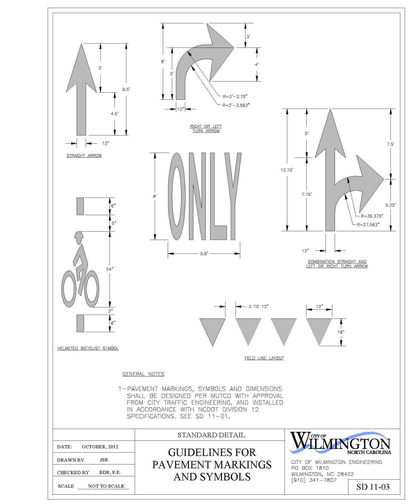
STANDARD DETAIL
PAVEMENT REPAIRS DETAIL

DATE: September 18, 2008	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: JSR	CITY OF WILMINGTON ENGINEERING 305 CHESTNUT STREET WILMINGTON, NC 28401 (910) 341-7807
CHECKED BY: D.E.C., P.E.	
SCALE: NOT TO SCALE	SD 1-05



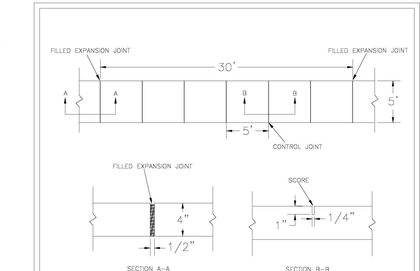
STANDARD DETAIL
PAVEMENT MARKINGS LINE TYPES

DATE: DECEMBER, 2011	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: JSR	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY: BDR, P.E.	
SCALE: NOT TO SCALE	SD 11-01



STANDARD DETAIL
GUIDELINES FOR PAVEMENT MARKINGS AND SYMBOLS

DATE: OCTOBER, 2012	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: JSR	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY: BDR, P.E.	
SCALE: NOT TO SCALE	SD 11-03



STANDARD DETAIL
SIDEWALK

DATE: OCTOBER, 2010	CITY OF WILMINGTON NORTH CAROLINA
DRAWN: PB/JSR	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, N.C. 28402 (910) 341-7807
CHECKED: DEC	
SCALE: NOT TO SCALE	SD 3-10

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:
ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

DETAILS

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

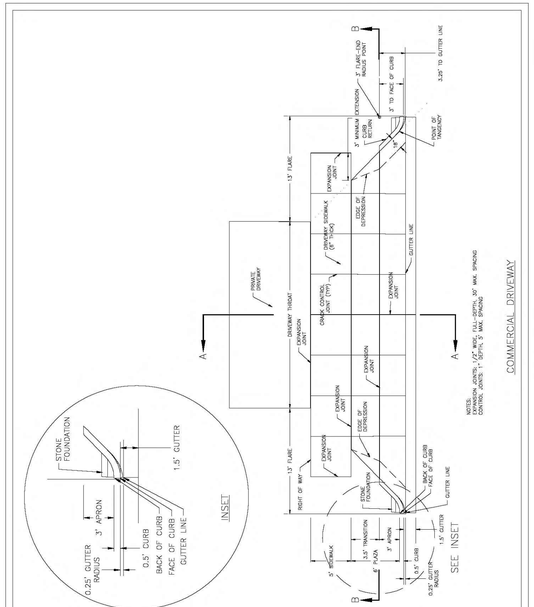
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
PLANS:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 05/07/20
SCALE: NA
DESIGNED: RPB
DRAWN: RPB
CHECKED: RPB

SEAL

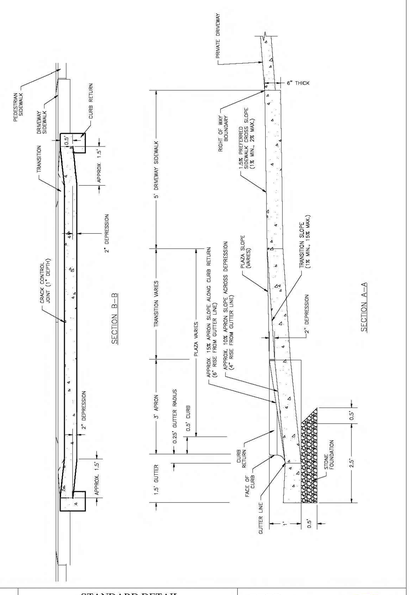
C-500

PEI JOB#: 21274.PE



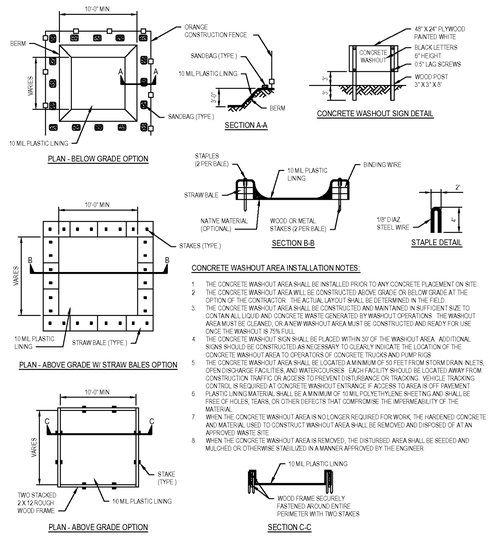
DATE: FEB. 14, 2017	STANDARD DETAIL
DRAWN BY JSR	COMMERCIAL DRIVEWAY PLAN (VERTICAL CURB)
CHECKED BY D.E.C., P.E.	1 of 2
SCALE NOT TO SCALE	SD 3-03.3

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341--7807



DATE: FEB. 14, 2017	STANDARD DETAIL
DRAWN BY JSR	COMMERCIAL DRIVEWAY SECTIONS (VERTICAL CURB)
CHECKED BY D.E.C., P.E.	2 of 2
SCALE NOT TO SCALE	SD 3-03.4

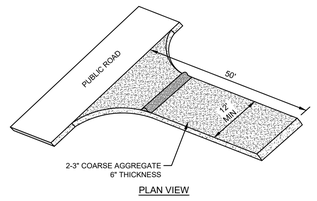
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341--7807



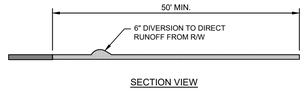
CONCRETE WASHOUT AREA INSTALLATION NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE
2. THE CONCRETE WASHOUT AREA WILL BE CONSTRUCTED ABOVE GRADE OR BELOW GRADE AT THE OPTION OF THE CONTRACTOR. THE ACTUAL LAYOUT SHALL BE DETERMINED IN THE FIELD.
3. THE CONCRETE WASHOUT AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. THE WASHOUT AREA MUST BE CLEANED, OR A NEW WASHOUT AREA MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
4. THE CONCRETE WASHOUT SIGN SHALL BE PLACED WITHIN 30' OF THE WASHOUT AREA. ADDITIONAL SIGNS SHOULD BE CONSTRUCTED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. THE CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 50 FEET FROM STORM DRAIN INLETS, OPEN DISCHARGE FACILITIES, AND WATERCOURSES. EACH FACILITY SHOULD BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS TO PREVENT DISTURBANCE OR TRACKING. VEHICLE TRACKING CONTROL IS REQUIRED AT CONCRETE WASHOUT ENTRANCE IF ACCESS TO AREA IS OFF PAVEMENT.
6. PLASTIC LINING MATERIAL SHALL BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
7. WHEN THE CONCRETE WASHOUT AREA IS NO LONGER REQUIRED FOR WORK, THE HARDENED CONCRETE AND MATERIAL USED TO CONSTRUCT WASHOUT AREA SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED WASTE SITE.
8. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE ENGINEER.

CONCRETE WASHOUT AREA



PLAN VIEW

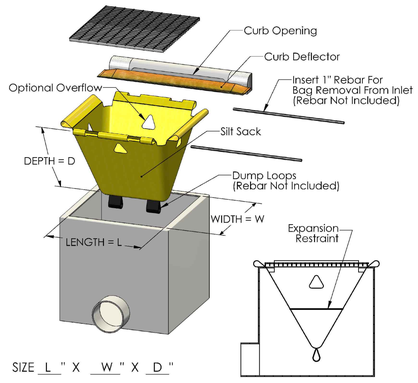


SECTION VIEW

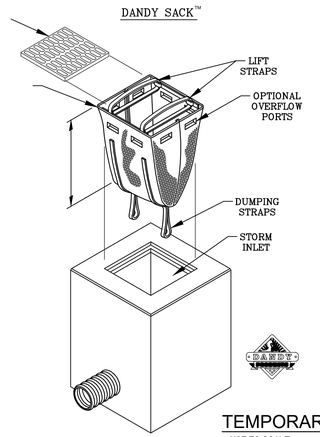
TEMPORARY CONSTRUCTION ENTRANCE

NOT TO SCALE

Silt Sack - Type B



SIZE L " X W " X D "



DANDY SACK™ SPECIFICATIONS

NOTE: THE DANDY SACK™ WILL BE **MANUFACTURED IN THE U.S.A.** FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m² (gal/min/ft²)	2852 (70)
Permittivity	ASTM D 4491	Sec⁻¹	0.90

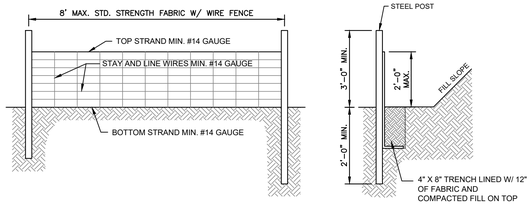
HI-FLOW DANDY SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m² (gal/min/ft²)	5907 (145)
Permittivity	ASTM D 4491	Sec⁻¹	2.1

*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

TEMPORARY DANDY SACK® INLET PROTECTION

NOT TO SCALE



NOTES:

1. WIRE FENCE (IF USED) SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.
2. SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFIN'S OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461 AND ALSO SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS ACCORDING TO ASTM D 4355.
3. SEE THE NC EROSION CONTROL MANUAL FOR SPECIFICATIONS INSTALLING SEDIMENT FENCE USING THE SLICING METHOD MACHINERY.

TEMPORARY SILT FENCE

NOT TO SCALE

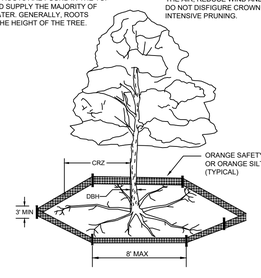
ACF ENVIRONMENTAL
2831 Cardwell Road
Richmond, VA 23234
WWW.ACFENVIRONMENTAL.COM

INLET PROTECTION DETAIL (CURB INLET)

NOT TO SCALE

NOTE:
THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.

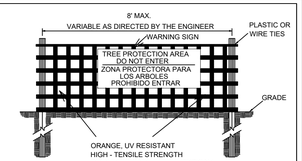
NOTE:
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.



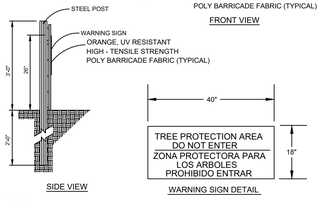
NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF $500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

DATE: JAN, 2015	STANDARD DETAIL
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION
CHECKED BY RDG, P.E.	SHEET 1 of 2
SCALE NOT TO SCALE	SD 15-09

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807



FRONT VIEW



SIDE VIEW

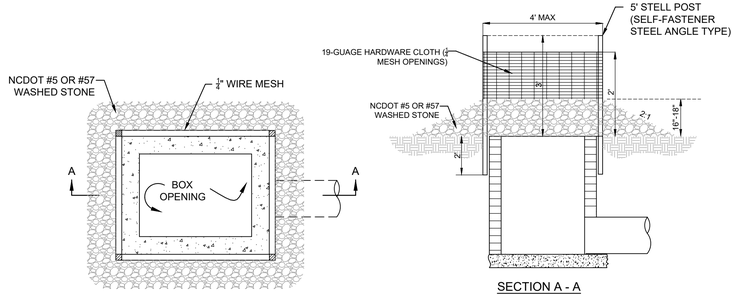
WARNING SIGN DETAIL

NOTES:

1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

DATE: JAN, 2015	STANDARD DETAIL
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION
CHECKED BY RDG, P.E.	SHEET 2 of 2
SCALE NOT TO SCALE	SD 15-09

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807



SECTION A - A

NOTE:
1. FOR CURB INLETS AND DROP INLETS

INLET PROTECTION

NOT TO SCALE

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:
ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

DETAILS

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

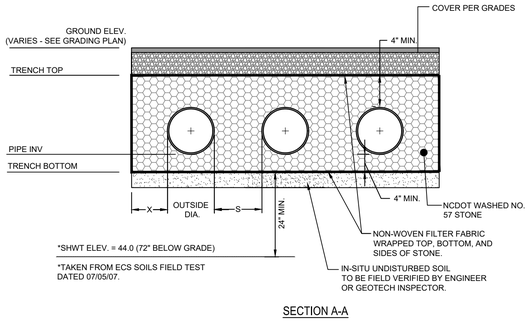
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
PLANS:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 05/07/22
SCALE: NA
DESIGNED: RPB
DRAWN: RPB
CHECKED:

SEAL

C-501

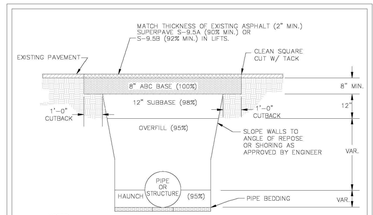
PEI JOB#: 21274.PE



*SHWT ELEV. = 44.0 (72" BELOW GRADE)

*TAKEN FROM ECS SOILS FIELD TEST DATED 07/05/07.

SECTION A-A

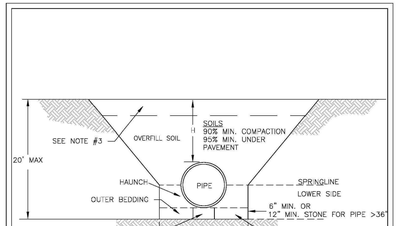


NOTES:

1. CONTRACTOR SHALL ENSURE BOTTOM OF TRENCH IS SUITABLE FOR INSTALLATION AND DOES NOT REQUIRE FOUNDATION CONDITIONING STONE.
2. FILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
3. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
4. SOIL SHALL BE INSTALLED IN 6"-8" LIFTS AND COMPACTED BY A MECHANIZED TAMPER (I.E JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
5. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
6. COMPACT MATERIALS TO MINIMUM % DENSITY SHOWN IN DIAGRAM AS DETERMINED BY THE STANDARD PROCTOR METHOD ASTM D-698-A FOR SOILS; AND ASTM D-698-C FOR ABC STONE; AND BY NUCLEAR GAUGE OR CORE SAMPLE FOR ASPHALT.
7. CUTBACKS OF ASPHALT SHALL BE PREPARED ON EDGE OF EXCAVATION OVER TOP OF UNDISTURBED SOIL.

STANDARD DETAIL	
DATE: MAY, 2013	PAVEMENT REPAIRS- UTILITY CUTS
DRAWN BY JSR	
CHECKED BY D.E.C., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING DIVISION 212 OPERATIONS CENTER DRIVE WILMINGTON N.C. 28412 (910) 341-7807 — SD 1-05

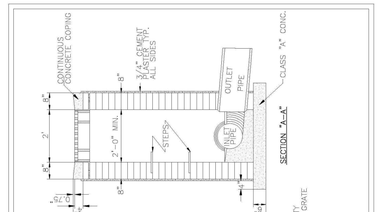


NOTES:

1. CONTRACTOR SHALL ENSURE BOTTOM OF TRENCH IS SUITABLE FOR PIPE INSTALLATION AND DOES NOT REQUIRE FOUNDATION CONDITIONING STONE.
2. CONTRACTOR TO INSTALL BEDDING AND PIPE BEFORE INSTALLING HAUNCH AND THEN OVERFILL. SOILS SHALL BE INSTALLED IN 6"-8" LIFTS AND COMPACTED TO MIN. % DENSITY AS DETERMINED BY THE STANDARD PROCTOR ASTM D-698-A METHOD.
3. WHERE IN PAVEMENT, CONTRACTOR SHALL ADHERE TO CITY STREET CUT POLICY AND SD 1-04 OR SD 1-05 FOR ROAD AND PAVEMENT REBUILD.
4. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMP (I.E. JUMPING JACK). HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
5. THIS DETAIL IS REPRESENTATIVE AND PIPE TRENCH DESIGN IS SUBJECT TO SPECIFIC SOIL CATEGORY (I, II, III), AND INSTALLATION TYPE (1, 2, 3, 4), AS DIRECTED BY THE ENGINEER AND SITE CONDITIONS.

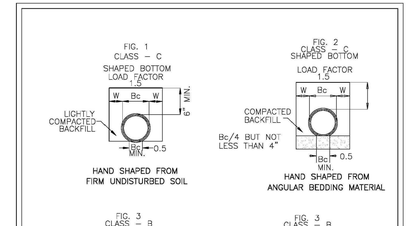
STANDARD DETAIL	
DATE: MAY, 2013	PIPE TRENCH TYPICAL
DRAWN: JSR	
CHECKED: BDR, P.E.	
SCALE: NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING DIVISION 212 OPERATIONS CENTER DRIVE WILMINGTON N.C. 28412 (910) 341-7807 — SD 1-07



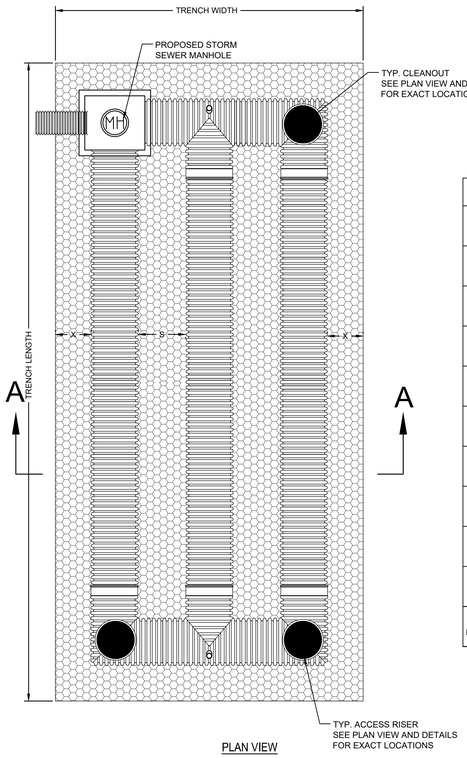
STANDARD DETAIL	
DATE: 2001	DROP INLET
DRAWN BY JSR	
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807 — SD 2-02



STANDARD DETAIL	
DATE: 2001	GUIDELINES FOR BEDDING DETAILS, STORM SEWER CLASSES (B & C)
DRAWN BY JSR/CMR	
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807 — SD 2-17



PLAN VIEW

INFILTRATION TRENCH SYSTEM TABLE	
DESIGN	INFILTRATION SYSTEM NO. 1
# OF RUNS	X @ X'
PIPE DIAMETER (IN)	X"
MIN. X (IN)	X"
MIN. S (IN)	X"
TRENCH WIDTH (FT)	X'
TRENCH LENGTH (FT)	X'
TRENCH BOTTOM ELEVATION	X
PIPE INVERT ELEVATION	X
TRENCH TOP ELEVATION	X
DROP INLET RIM ELEVATION	X

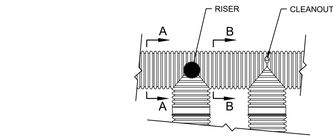
CONSTRUCTION NOTES:

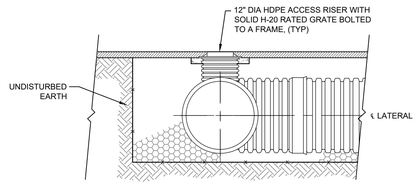
1. INFILTRATION TRENCH PIPE SHALL BE PERFORATED HDPE MEETING AASHTO CLASS 2, TYPE S PERFORATIONS. CONTRACTOR TO SUBMIT INFILTRATION TRENCH SHOP DRAWINGS FOR ENGINEER APPROVAL.
2. HDPE PIPE TO BE INSTALLED PER ASTM & MANUFACTURER'S RECOMMENDATIONS.
3. SEE TABLE FOR NUMBER OF PIPE RUNS AND DIMENSIONS.
4. IT IS IMPORTANT THAT FILL MATERIAL FOR THE INFILTRATION TRENCHES SHALL BE SAME MATERIAL AS EXISTING SOILS UNDERLYING THE TRENCH. BE SURE NOT TO COMPACT THE SAND UNDER THE TRENCH SO THAT PROPER INFILTRATION RATES CAN OCCUR BELOW THE TRENCHES.
5. THE PROPOSED INFILTRATION TRENCHES SHALL BEAR SOME SEDIMENT RUNOFF FROM THE SITE, BUT IT IS PRUDENT THAT SEDIMENT IS MINIMAL TO PROTECT THE FUNCTION OF THE INFILTRATION PIPES AND STONE. CONSIDER PAVING OR INSTALLING GRAVEL IMMEDIATELY UPON ROUGH GRADING FOR THE BUILDING PAD.
6. THE ENGINEER RESERVES THE RIGHT TO REQUIRE A POST-INSTALLATION INFILTRATION EVALUATION BASED ON RAINFALL OR OTHER WATER SOURCE TO ENSURE THE TRENCH IS INFILTRATING PROPERLY BEFORE THE TRENCHES ARE BACKFILLED AND COVERED.

AS-BUILT SURVEY NOTE [15A NCAC 02H.1044]:

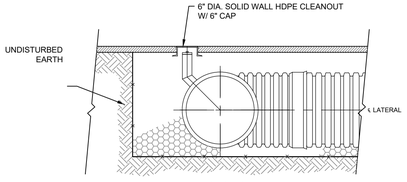
1. THE CONTRACTOR WILL EMPLOY A LAND SURVEYOR LICENSED IN THE STATE OF NORTH CAROLINA TO PROVIDE ACCURATE REPRODUCIBLE AS-BUILT DRAWINGS OF THE INFILTRATION TRENCH SYSTEM, COLLECTION SYSTEM, AND IMPERVIOUS AREA ON THE SITE TO THE ENGINEER & OWNER UPON COMPLETION OF CONSTRUCTION. UPON CERTIFICATION BY THE ENGINEER AND VERIFICATION FROM THE OWNER ANY DISCREPANCIES WILL BE INDICATED, THEN THESE PLANS SHALL BE RETURNED TO THE CONTRACTOR FOR CORRECTION PRIOR TO FINAL PAYMENT AND FINAL INSPECTION.

INFILTRATION TRENCH SYSTEM
NOT TO SCALE



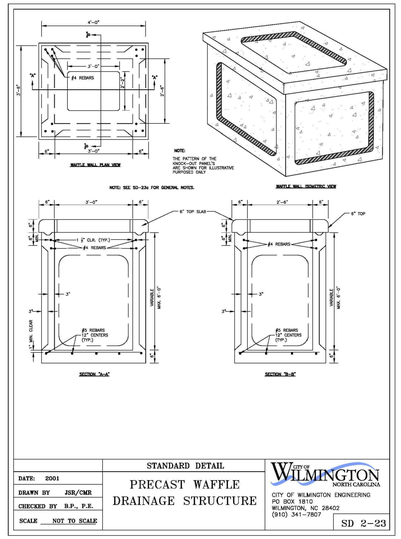


SECTION A-A



SECTION B-B

CLEANOUT/RISER ON INFILTRATION PIPE
NOT TO SCALE



STANDARD DETAIL	
DATE: 2001	PRECAST WAFFLE DRAINAGE STRUCTURE
DRAWN BY JSR/CMR	
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807 — SD 2-23

GENERAL NOTES:

* USE 4000 PSI CONCRETE, PROVIDE FOR H-20 TRAFFIC LOADING.
* PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FAVRIC CONFORMING TO ASTM A185.
* LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB FOR WAFFLE WALL STRUCTURE TO 6'-0".
* PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704
* SAW CUT, CORE DRILL OR FORM OPENINGS FOR PIPE TO PROVIDE REQUIRED SIZE AND LOCATION. ORIENT WAFFLE WALL STRUCTURES SO THAT PIPES ENTER THROUGH THE KNOCKOUT/WAFFLE PANELS ONLY. SEAL OPENINGS WITH HYDRAULIC CEMENT.
* ALL ELEMENTS PRECAST TO MEET ASTM C913.
* SET ON 6" WASHED STONE
* FRAME AND GRATE HEIGHT MAY BE ADJUSTED WITH BRICK.
* PROVIDE PRECAST STURCTURES OVER 4'-0" IN DEPTH WITH STEPS/LADDER INSTALLED IN ACCORDANCE WITH ASHA STANDARD 1910.27 AND AS FIELD CONDITIONS DICTATE.
* WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED,
* SEAL JOINTS WITH A FLEXIBLE BUTYL RUBBER BASE CONFORMING TO FEDERAL SPECIFICATION SS-S-21A, AASHTO M-198, TYPE B - BUTYL RUBBER.
* LIMIT MAXIMUM STRUCTURE SIZE TO INSIDE CLEAR DEMENSIONS OF 2'- 6" x 3' - 0".
* USE FRAME AND GRATE AS PER SD-19.
* GROUT INVERT TO PROVIDE SMOOTH FLOW

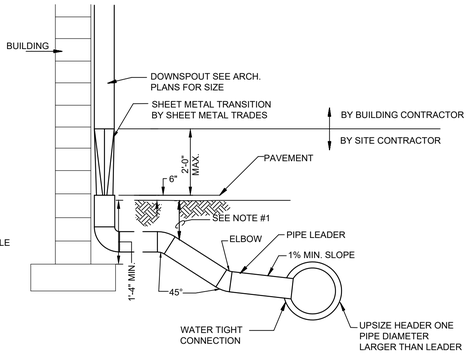
STANDARD DETAIL	
DATE: 2001	PRECAST WAFFLE DRAINAGE STRUCTURE GENERAL NOTES
DRAWN BY JSR/CMR	
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807 — SD 2-23a

Schedule	
Downspout	Leader Pipe
6"	8" Dia.
2" x 3"	6" Dia.
3" x 4"	8" Dia.
4" x 6"	12" Dia.
6" x 6"	12" Dia.
8" x 8"	12" Dia.
9" x 9"	15" Dia.
10" x 10"	15" Dia.
12" x 12"	18" Dia.

NOTES:

1) FOR ALL DEPTHS OF COVER LESS THAN TWO (2) FEET, PIPE MUST BE SCHEDULE 40 PVC. FOR DEPTHS OF COVER GREATER THAN TWO (2) FEET, FLEXIBLE PIPE MAY BE USED. REFER TO SPECIFICATIONS FOR ALLOWABLE PIPE TYPES.
2) THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITE WORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE CAP. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING DOWNSPOUT THROUGH CAP.
3) INSTALL PIPES CLEAR OF PORCHES, BOLLARDS, AND OTHER BUILDING APPURTENANCES.



DOWNSPOUT CONNECTION DETAIL
NOT TO SCALE

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:

ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

DETAILS

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

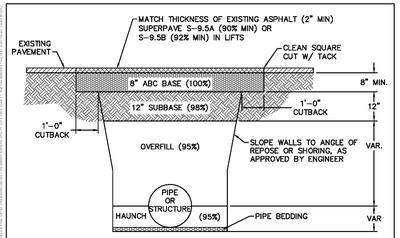
PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
PERMIT:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 05/07/22
SCALE: NA
DESIGNED: RPB
DRAWN: ESG
CHECKED: RPB

SEAL

C-502

PEI JOB#: 21274.PE

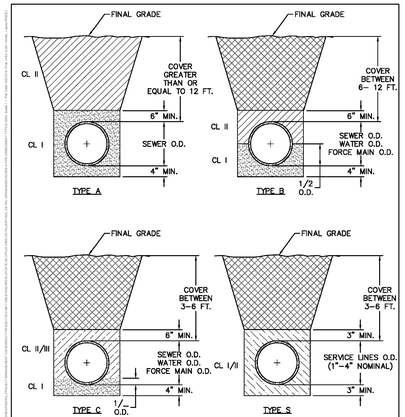


NOTES:

1. CONTRACTOR SHALL ENSURE BOTTOM OF TRENCH IS SUITABLE FOR INSTALLATION AND DOES NOT REQUIRE FOUNDATION CONDITIONING STONE.
2. FILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
3. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57 STONE, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
4. SOIL SHALL BE INSTALLED IN 6"–8" LIFTS AND COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK). HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
5. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
6. COMPACT MATERIALS TO MINIMUM % DENSITY SHOWN IN DIAGRAM AS DETERMINED BY THE STANDARD PROCTOR METHOD ASTM D–698–A FOR SOILS AND ASTM D–698–C FOR ABC STONE, AND BY NUCLEAR GAGE OR CORE SAMPLE FOR ASPHALT.
7. CUTBACKS OF ASPHALT SHALL BE PREPARED ON EDGE OF EXCAVATION OVER TOP OF UNDISTURBED SOIL.

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MINIMUM REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

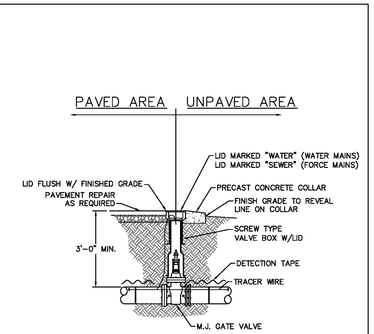
DETAIL: CITY OF WILMINGTON PAVEMENT REPAIRS-UTILITY CUTS	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-1
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



COMPACTION NOTES:

1. ALL ZONES: 95% STD EFFORT PER ASTM D698, EXCEPT AS STATED IN COMPACTION NOTE 2.
2. 12" SUBGRADE UNDER PAVEMENT: 98% STD EFFORT PER ASTM D698.

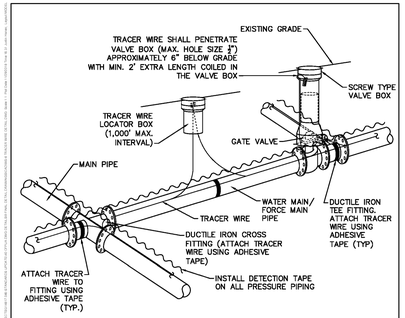
DETAIL: PIPE EMBEDMENT TYPES	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-4
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. TRACER WIRE SHALL PENETRATE VALVE BOX THROUGH DRILLED HOLE APPROX. 6" BELOW GRADE WITH MINIMUM 2–FEET EXTRA LENGTH COILED IN THE VALVE BOX. SEE WS–6.

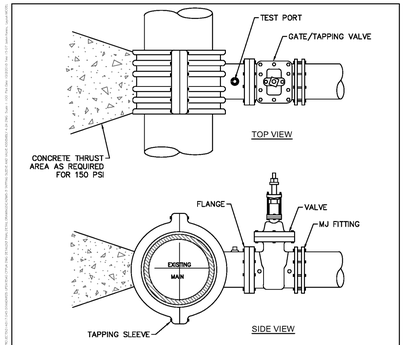
DETAIL: VALVE DETAIL	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-5
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION AND DIRECT BURY RATING.
2. WIRE SHALL BE STRAPPED TO ALL PVC PIPING WITH ADHESIVE TAPE AT 12 FOOT INTERVALS.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH ADHESIVE TAPE.
4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KITS.

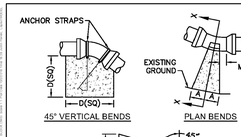
DETAIL: TRACER WIRE DETAIL	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-6
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. TEST PRESSURE SHALL NOT BE APPLIED FOR A MINIMUM OF 7 DAYS AFTER THRUST BLOCK PLACEMENT.
3. BRANCH SHALL NOT EQUAL RUN DIAMETER UNLESS APPROVED BY CFPUA ENGINEERING.
4. TAPPING SLEEVE & VALVE TO BE HYDROSTATICALLY TESTED AT 150 PSI FOR 15 MINUTES WITH ZERO PRESSURE LOSS.

DETAIL: TAPPING SLEEVE AND VALVE ASSEMBLY (4"-24")	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-9
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



SIZE	90° BENDS A	90° BENDS B	45° BENDS A	45° BENDS B	22–1/2° BENDS A	22–1/2° BENDS B	TEES/PLUGS A	TEES/PLUGS B	45° VERT. BENDS
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	22"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

NOTES:

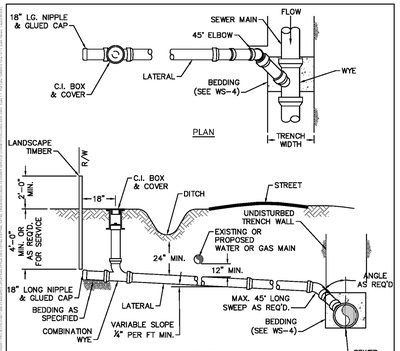
1. THRUST BLOCKING IS NOT PERMITTED EXCEPT IN SPECIAL INSTALLATIONS WHERE DESIGNED BY ENGINEER AND APPROVED BY CFPUA.
2. ALLOW 7–DAY MINIMUM CONCRETE CURE TIME BEFORE PLACING LOAD ON THRUST BLOCK
3. BASED ON 150 PSI TEST PRESSURE AND 2,000 PSF SOIL BEARING CAPACITY.
4. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
5. PIPE & FITTINGS TO BE WRAPPED IN 10 MIL PLASTIC PRIOR TO THRUST BLOCK BEING POURED.

DETAIL: THRUST BLOCK	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-13
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT–OF–WAY LINE. SEWER SERVICES IN CUL–DE–SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT–OF–WAY LINE.
3. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
7. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
8. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
9. UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
10. A MINIMUM OF 10' OF MAIN LINE SHALL BE REPLACED FOR NEW CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.

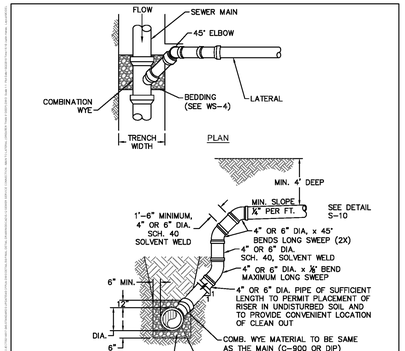
DETAIL: STANDARD NOTES (REQUIRED ON ALL PLAN AND PROFILE SHEETS)	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-14
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN. SEWER SERVICES IN CUL–DE–SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT–OF–WAY LINE.
2. ALL SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF DIP, WITH PROTECTIVE LINING.
3. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
4. MINIMUM 1'–6" NIPPLE SPACING BETWEEN FITTINGS.
5. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO MAIN.

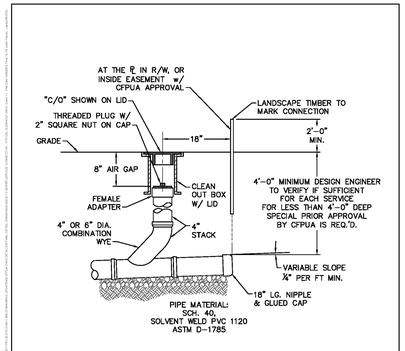
DETAIL: SEWER SERVICE CONNECTION - LONG-SIDE	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: S-10
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.
3. ALL SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF DIP, WITH PROTECTIVE LINING.
4. 1'–6" MINIMUM NIPPLE SPACING BETWEEN FITTINGS.

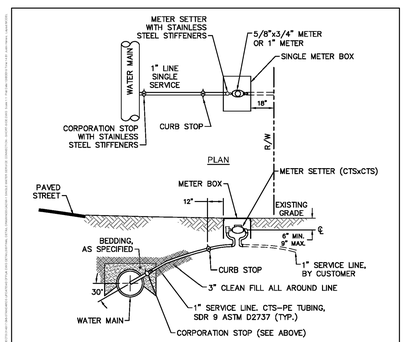
DETAIL: SEWER SERVICE CONNECTION - LATERAL (GREATER THAN 9' DEEP)	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: S-12
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.
2. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.

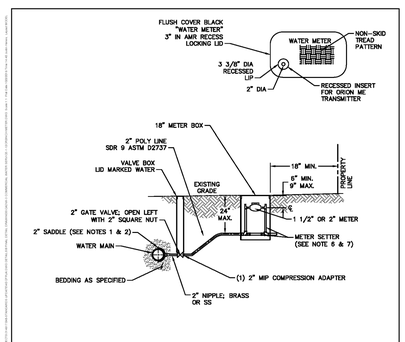
DETAIL: SEWER SERVICE CONNECTION - TYPICAL CLEAN-OUT	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: S-13
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY.
3. METER BOXES SUBJECT TO TRAFFIC LOADS SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS.
4. WATER SERVICE LINE SHALL TERMINATE 18" WITHIN RIGHT–OF–WAY LINE.
5. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
6. SERVICE PIPING AND METER SETTER TO BE CENTERED IN THE METER BOX.

DETAIL: SINGLE WATER SERVICE CONNECTION - TYPICAL SHORT-SIDE CONNECTION	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: W-1
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	



NOTES:

1. WATER SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE THE RIGHT–OF–WAY LINE.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY.
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS.
4. NON–TRAFFIC METER BOXES SHALL BE PER CFPUA STANDARD MATERIAL.
5. 1" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.
6. 1 1/2" METER – NL METER SETTER SHALL BE PER CFPUA STANDARD MATERIAL.
7. 2" METER – NL METER SETTER SHALL BE PER CFPUA STANDARD MATERIAL.
8. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNERS.
9. SERVICE PIPING AND METER SETTER TO BE CENTERED IN THE METER BOX.

DETAIL: COMMERCIAL WATER SERVICE - 1 1/2 OR 2-INCH METERS	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: W-3
SCALE: NOT TO SCALE / CFPUA REV. No: 1	CFPUA DETAIL DATE: 01/01/19	SHEET NO: -
	Stewardship. Sustainability. Service.	

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:

ZIMMER DEVELOPMENT COMPANY
111 PRINCESS STREET
WILMINGTON, NC 28401

PARAMOUNTE ENGINEERING, P.A.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

DETAILS

PROJECT GRACE
N. THIRD STREET
WILMINGTON, NC 28401

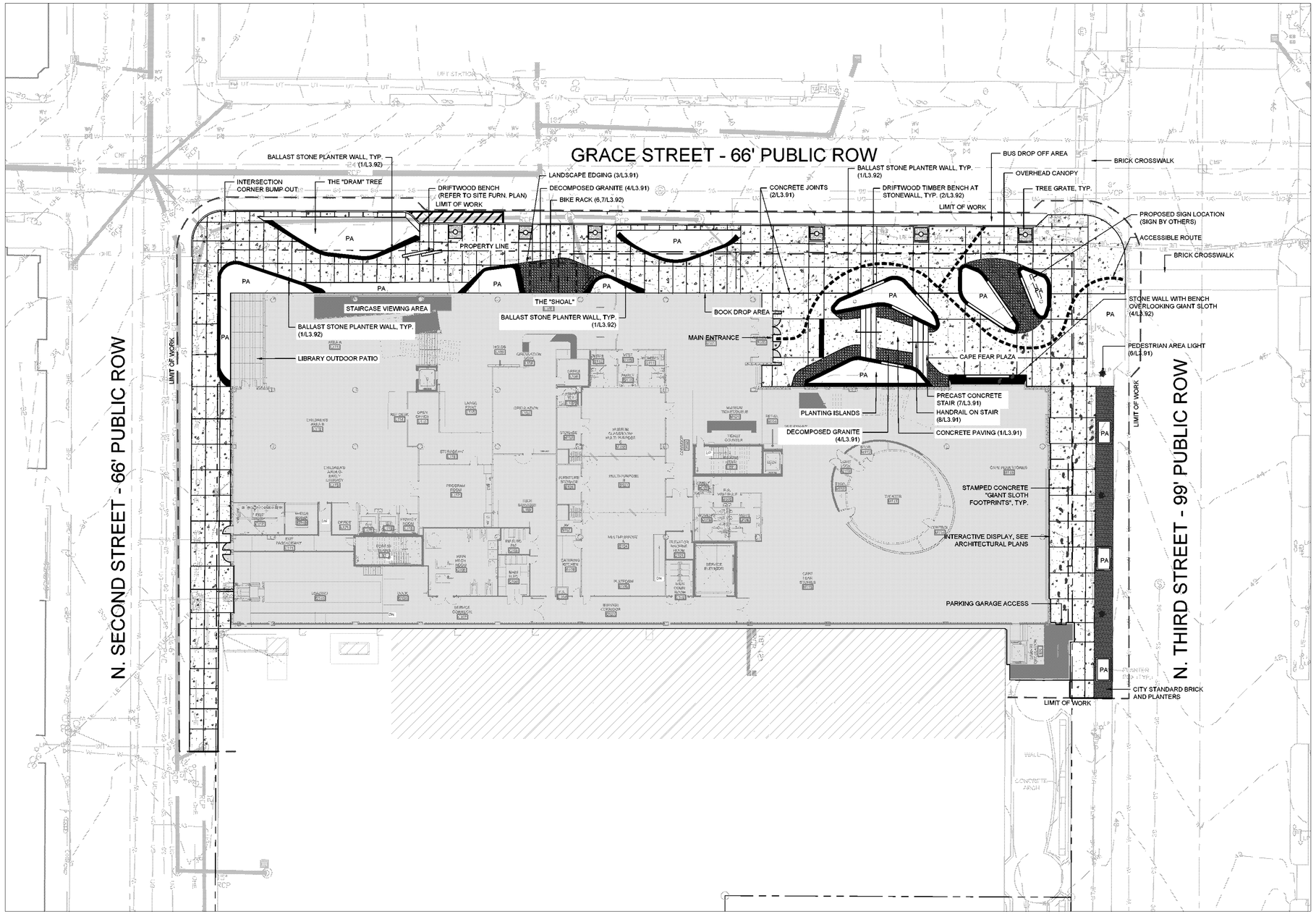
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CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
CFPUA SUBMITTAL:
RELEASED FOR CONST:

DRAWING INFORMATION
DATE: 05/20/22
SCALE: NA
DESIGNED: RPB
DRAWN: RPB
CHECKED: RPB

SEAL

C-503

PEI JOB#: 21274.PE



LINETYPE LEGEND:

SYMBOL	DESCRIPTION
	LIMITS OF DISTURBANCE
	PROPERTY LINE
	EASEMENT
	SETBACK
	ACCESSIBLE ROUTE

SITE LEGEND:

SYMBOL	DESCRIPTION
	PROPOSED BUILDING
	HEAVY DUTY ASPHALT
	LIGHT DUTY ASPHALT
	HEAVY DUTY CONCRETE
	LIGHT DUTY CONCRETE
	TRUNCATED DOME PAVING
	TRANSITION CURBS AT RAMPS
	DECOMPOSED GRANITE
PA	PLANTING AREA
	PEDESTRIAN AREA LIGHT
	BIKE RACK
	BALLAST PLANTER WALL
	DRIFTWOOD TIMBER BENCH
	TREE GRATE
	GIANT SLOTH FOOTPRINTS

NOTES:

1. SEE SHEET L0.10 FOR GENERAL AND SITE NOTES.

STEWART
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
FIRM LICENSE #: C-1051
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PROJECT #: L21058

Client:
LS3P
101 N. 3RD STREET #500
WILMINGTON, NC 28401
PHONE # 910.790.9901

Consultants:

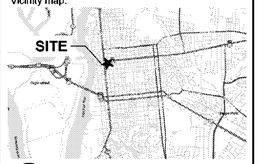
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CITY, STATE ZIPCODE
PHONE #

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CITY, STATE ZIPCODE
PHONE #

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ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

Vicinity map:



NORTH

Seal:
PRELIMINARY - DO NOT USE FOR CONSTRUCTION
SELECT PE SEAL
USE DROP DOWN OPTION

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SCALE: 1" = 20'
NORTH

Project:
PROJECT GRACE

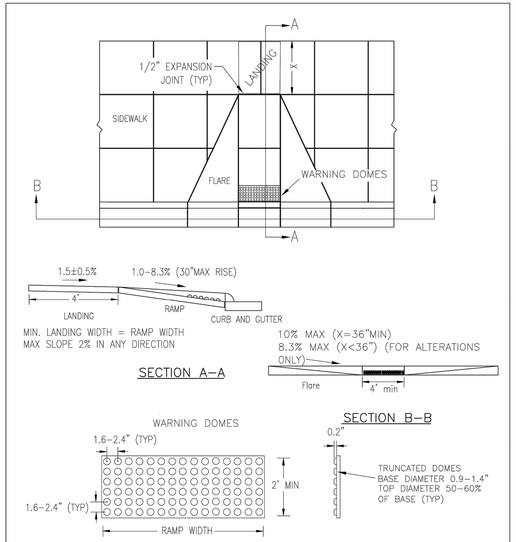
Issued for:
50% CONSTRUCTION DOCUMENT

No.	Date	Description
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Title:
SITE PLAN

Project number: L21058
Issued Date: 04.08.2022
Drawn by: --
Approved by: --
Sheet #: L3.00

L:\Projects\2021\L21058 - Project Grace\DWGS\8-Sheets\L21058-L3.00 Site Plan.dwg Apr 08, 2022 - 4:38pm



WARNING DOME NOTES:
1. USE CONTRASTING COLORS, RED OR BLACK ON WHITE PAVEMENT.
2. USE CAST IN PLACE PAVERS FOR NEW CONSTRUCTION.
3. RUBBER MATS ARE PERMITTED FOR RETROFITS.
4. LANDING AND RAMP WIDTH MAY BE REDUCED TO 3' WHERE SPACE IS LIMITED AND DESIGN IS APPROVED BY THE CITY ENGINEER.

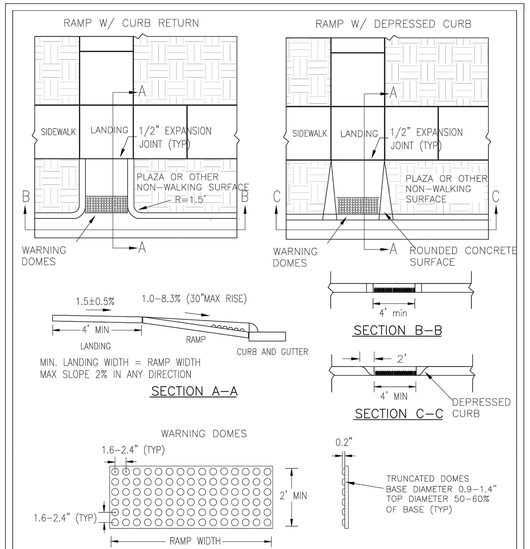
DATE:	DECEMBER, 2010
DRAWN:	PB/JSR
CHECKED:	DEC
SCALE	NOT TO SCALE

STANDARD DETAIL

PERPENDICULAR CURB RAMP ADJACENT TO WALKING SURFACE

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807

SD 3-07



WARNING DOME NOTES:
1. USE CONTRASTING COLORS, RED OR BLACK ON WHITE PAVEMENT.
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4. LANDING AND RAMP WIDTH MAY BE REDUCED TO 3' WHERE SPACE IS LIMITED AND DESIGN IS APPROVED BY THE CITY ENGINEER.

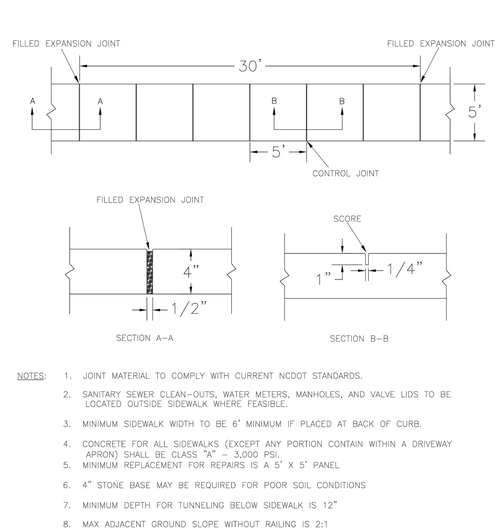
DATE:	DECEMBER, 2010
DRAWN:	PB/JSR
CHECKED:	DEC
SCALE	NOT TO SCALE

STANDARD DETAIL

PERPENDICULAR CURB RAMP ADJACENT TO PLAZA

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807

SD3-08



NOTES:
1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

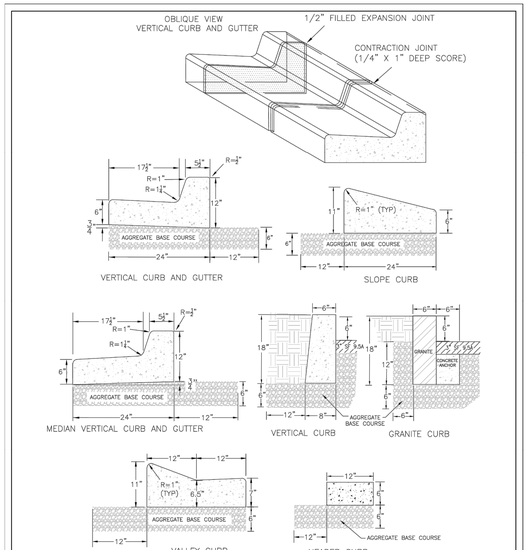
DATE:	OCTOBER, 2010
DRAWN:	PB/JSR
CHECKED:	DEC
SCALE	NOT TO SCALE

STANDARD DETAIL

SIDEWALK

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807

SD 3-10



NOTES:
1. EXPANSION JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS
2. 50' MAX EXPANSION JOINT SPACING, 10' MAX CONTRACTION JOINT SPACING
3. MINIMUM INSTALLATION LENGTH IS 5 FT.
4. CONCRETE TO BE 3000 PSI MIN
5. VERTICAL CURB AND GUTTER BASE CAN BE SLOPED 3/4" OR USE A FLAT BASE

DATE:	AUGUST, 2011
DRAWN:	PB/JSR
CHECKED:	DEC
SCALE	NOT TO SCALE

STANDARD DETAIL

CURBING

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807

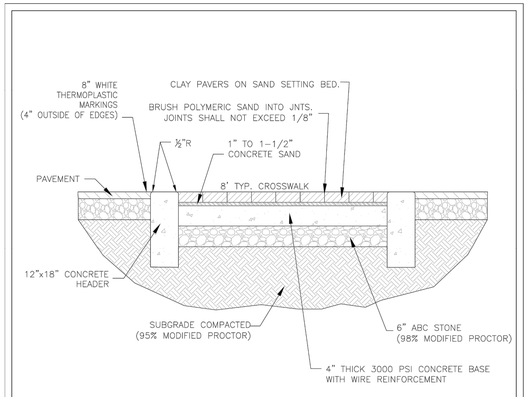
SD 3-11

1 CURB RAMP NTS

2 CURB RAMP ADJACENT TO PLAZA NTS

3 SIDEWALK NTS

4 CURBING NTS



1. BRICK TYPE, SIZE AND PATTERN SHALL BE COORDINATED WITH CITY OF WILMINGTON. TYPICAL BRICK PAVER 4"x8"x2-3/4" HERRINGBONE PATTERN. RUMBLED COURTYARD, FULL RANGE COLOR, BRICK BY PINE HALL.
2. PAVERS SHALL MEET OR EXCEED ASTM C1272 STANDARD SPECIFICATION FOR HEAVY VEHICULAR PAVING BRICK, TYPE "F".
3. CONCRETE HEADER TO BE 3000 PSI, BROOM FINISH, 1/2" RADIUS ON EDGES AND FLUSH WITH ASPHALT AND PAVERS. CONTROL JOINTS AT ±5' O.C. (EQUAL SPACING). CONCRETE TO BE POURED AFTER COMPACTION OF STONE SUB-BASE.
4. WELDED WIRE MESH REINFORCEMENT SHALL BE 6x6 WITH 4.0/4.0 AND FREE OF OIL, DIRT AND DEFECTS AND SHALL BE PROTECTED FROM DAMAGE. WIRE SPLICES SHALL OVERLAP 12 INCHES AND BE TIED TOGETHER AND SUPPORTED IN PLACE.

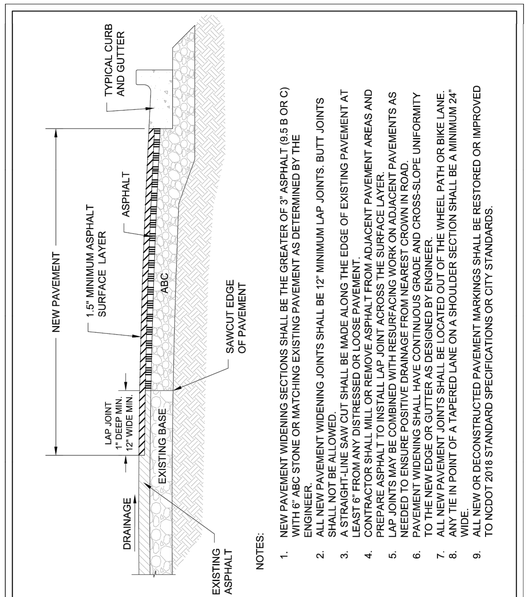
DATE:	NOVEMBER, 2011
DRAWN BY	JSR
CHECKED BY	B.D.R., P.E.
SCALE	NOT TO SCALE

STANDARD DETAIL

BRICK CROSSWALK

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807

SD 3-102



NOTES:
1. NEW PAVEMENT WIDENING SECTIONS SHALL BE THE GREATER OF 3" ASPHALT (9.5 B OR C) WITH 6" ABC STONE OR MATCHING EXISTING PAVEMENT AS DETERMINED BY THE ENGINEER
2. ALL NEW PAVEMENT WIDENING JOINTS SHALL BE 12' MINIMUM LAP JOINTS. BUTT JOINTS SHALL NOT BE ALLOWED.
3. A STRAIGHT-LINE SAW CUT SHALL BE MADE ALONG THE EDGE OF EXISTING PAVEMENT AT LEAST 6' FROM ANY DISTRESSED OR LOOSE PAVEMENT.
4. CONTRACTOR SHALL MILL OR REMOVE ASPHALT FROM ADJACENT PAVEMENT AREAS AND PREPARE ASPHALT TO INSTALL LAP JOINT ACROSS THE SURFACE LAYER.
5. LAP JOINTS MAY BE COMBINED WITH RESURFACING WORK ON ADJACENT PAVEMENTS AS NEEDED TO ENSURE POSITIVE DRAINAGE FROM NEAREST CROWN IN ROAD.
6. ROLLER MARKINGS SHALL BE CONTINUOUS AND CROSS-SLOPE UNIFORMITY TO THE NEW EDGE OR GUTTER AS DESIGNED BY ENGINEER.
7. ALL NEW PAVEMENT JOINTS SHALL BE LOCATED OUT OF THE WHEEL PATH OR BIKE LANE.
8. ANY TIE IN POINT OF A TAPERED LANE ON A SHOULDER SECTION SHALL BE A MINIMUM 24' WIDE.
9. ALL NEW OR DECONSTRUCTED PAVEMENT MARKINGS SHALL BE RESTORED OR IMPROVED TO NCDOT 2018 STANDARD SPECIFICATIONS OR CITY STANDARDS.

DATE:	JUNE 7, 2019
DRAWN BY	JSR
CHECKED BY	D.E.C., P.E.
SCALE	NOT TO SCALE

STANDARD DETAIL

PAVEMENT WIDENING

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807

SD 3-12

1. No plantings over thirty (30) inches in height allowed in vision clearance.
2. Protection from vehicular traffic provided around all landscaping with a minimum height of six (6) inches.
3. Owner is responsible for maintenance to ensure plant material lives and prospers.
4. Planting plans shall be approved by Landscape Designer prior to installation.
5. Landscaping shall be required at the ends of all parking rows.
6. A low buffer shall be required where parking is within fifty (50) feet of the Right-of-Way.
7. Landscaped islands shall be a minimun width of twelve (12) feet (back of curb to back of curb) and a minimum of two hundred and sixteen (216) square feet.
8. A minimum of fifteen (15) trees 2 inches or greater in diameter as measured 6 inches above ground per disturbed acre.
9. For recommended Plant List see "Landscape" T-10.4.

DATE:	APRIL, 2008
DRAWN BY	JSR
CHECKED BY	B.P., P.E.
SCALE	NOT TO SCALE

STANDARD DETAIL

LANDSCAPE NOTES

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807

SD 15-14

5 BRICK CROSSWALK NTS

6 PAVEMENT WIDENING NTS

7 LANDSCAPE NOTES NTS

STEWART
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21058

Client:
LS3P
101 N. 3RD STREET #500
WILMINGTON, NC 28401
PHONE # 910.790.9901

Consultants:
NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
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CITY, STATE ZIPCODE
PHONE #

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CITY, STATE ZIPCODE
PHONE #

Vicinity map:



Seal:

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

SELECT LA SEAL

Scale:

SCALE: AS NOTED

Project:

PROJECT GRACE

Issued for:

50% CONSTRUCTION DOCUMENT

No.	Date	Description
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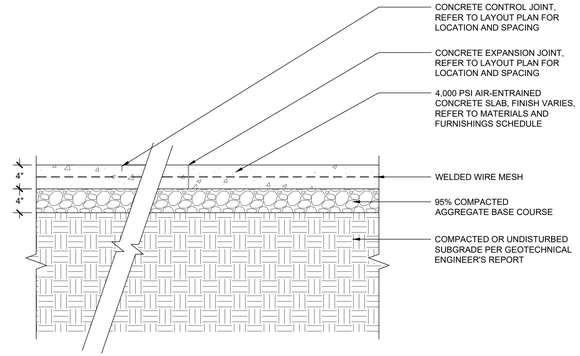
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SITE DETAILS I

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --

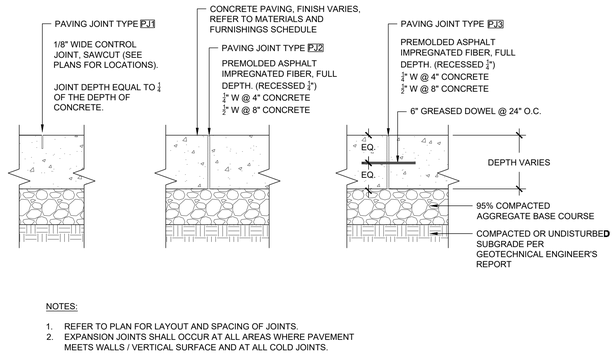
L3.90

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1 CONCRETE PAVING - PEDESTRIAN

SECTION — 1" = 1'-0"

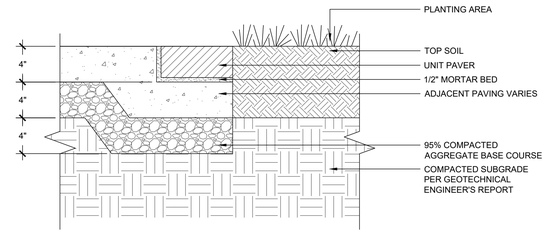


NOTES:

1. REFER TO PLAN FOR LAYOUT AND SPACING OF JOINTS.
2. EXPANSION JOINTS SHALL OCCUR AT ALL AREAS WHERE PAVEMENT MEETS WALLS / VERTICAL SURFACE AND AT ALL COLD JOINTS.

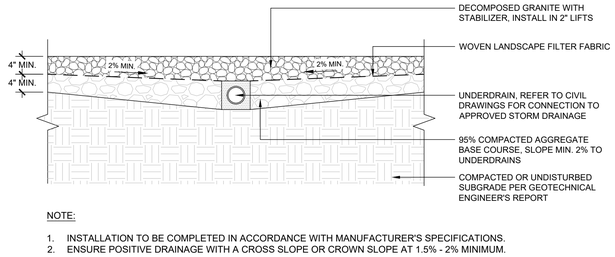
2 CONCRETE JOINTS

SECTION — 1 ½" = 1'-0"



3 UNIT PAVER BANDING

SECTION — 1 ½" = 1'-0"

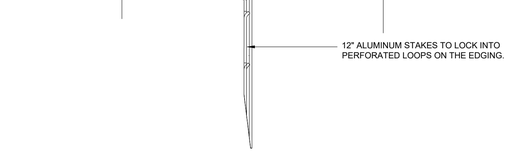


NOTE:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. ENSURE POSITIVE DRAINAGE WITH A CROSS SLOPE OR CROWN SLOPE AT 1.5% - 2% MINIMUM.

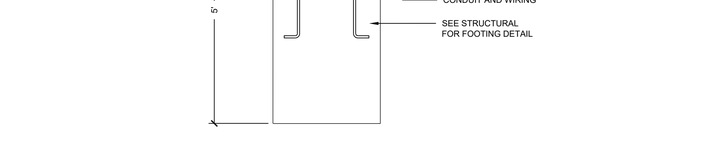
4 GRAVEL / STABILIZED AGGREGATE PAVING

SECTION — ¾" = 1'-0"



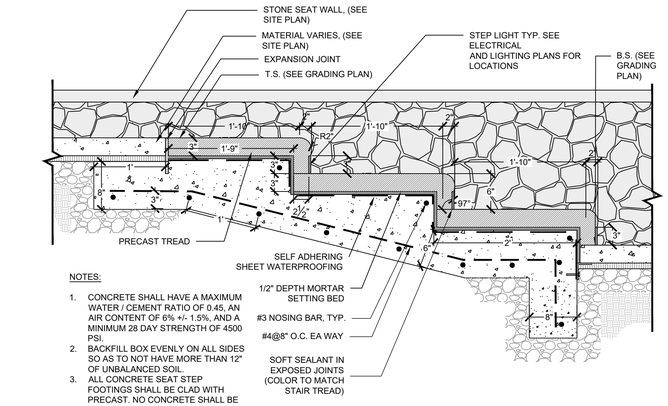
5 LANDSCAPE EDGING - METAL

SECTION — 3" = 1'-0"



6 POST LIGHT

SECTION — ¾" = 1'-0"

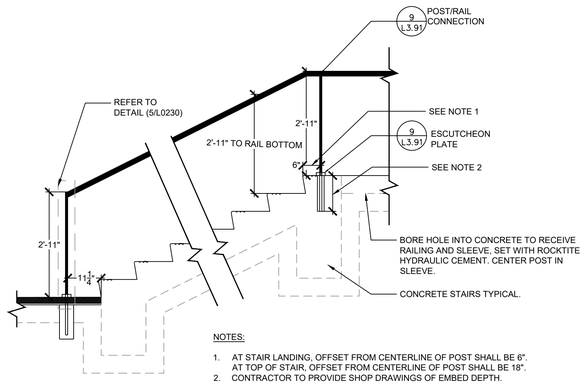


NOTES:

1. CONCRETE SHALL HAVE A MAXIMUM WATER / CEMENT RATIO OF 0.45, AN AIR CONTENT OF 6% +/- 1.5%, AND A MINIMUM 28 DAY STRENGTH OF 4500 PSI.
2. BACKFILL BOX EVENLY ON ALL SIDES SO AS TO NOT HAVE MORE THAN 12" OF UNBALANCED SOIL.
3. ALL CONCRETE SEAT STEP FOOTINGS SHALL BE CLAD WITH PRECAST. NO CONCRETE SHALL BE VISIBLE.

7 PRECAST STAIRS

SECTION — 1" = 1'-0"

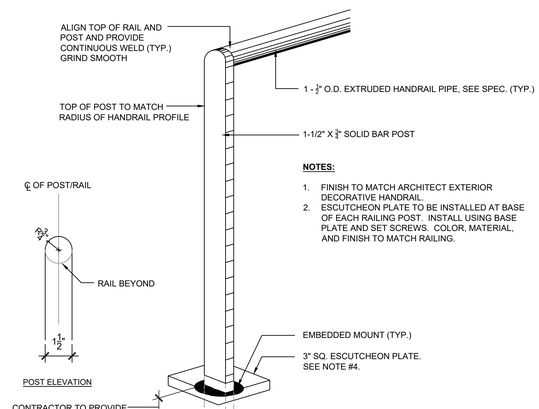


NOTES:

1. AT STAIR LANDING, OFFSET FROM CENTERLINE OF POST SHALL BE 6". AT TOP OF STAIR, OFFSET FROM CENTERLINE OF POST SHALL BE 18".
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF EMBED DEPTH.

8 HANDRAIL ON STAIRS

SECTION — ½" = 1'-0"



NOTES:

1. FINISH TO MATCH ARCHITECT EXTERIOR DECORATIVE HANDRAIL.
2. ESCUTCHEON PLATE TO BE INSTALLED AT BASE OF EACH RAILING POST. INSTALL USING BASE PLATE AND SET SCREWS. COLOR, MATERIAL, AND FINISH TO MATCH RAILING.

9 HANDRAIL POST

AXON — 3" = 1'-0"

STEWART
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21058

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LS3P
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Consultants:

NAME
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CITY, STATE ZIPCODE
PHONE #

Vicinity map:



Seal:

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

SELECT LA SEAL

Scale:

SCALE: AS NOTED

Project:

PROJECT GRACE

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50% CONSTRUCTION DOCUMENT

No.	Date	Description
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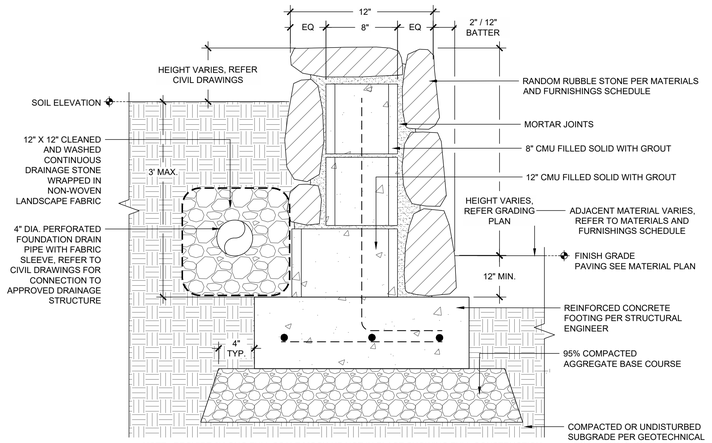
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SITE DETAILS II

Project number: L21058 Sheet #:
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Approved by: --

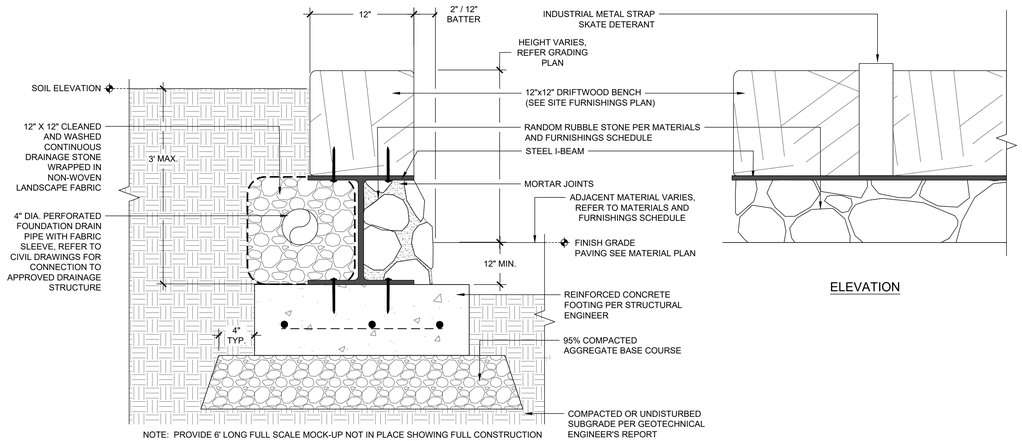
L3.91

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NOTE: PROVIDE 6' LONG FULL SCALE MOCK-UP NOT IN PLACE SHOWING FULL CONSTRUCTION (STONE LAYOUT, MORTAR JOINTS, ETC.) FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTING WALL. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

1 STONE PLANTER WALL
SECTION — 1 ½" = 1'-0"



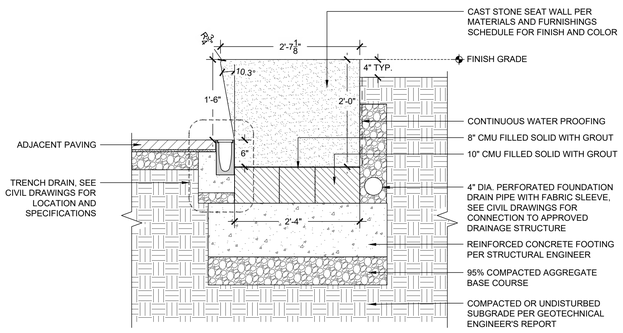
NOTE: PROVIDE 6' LONG FULL SCALE MOCK-UP NOT IN PLACE SHOWING FULL CONSTRUCTION (STONE LAYOUT, MORTAR JOINTS, ETC.) FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTING WALL. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

ELEVATION

2 TIMBER BENCH ON STONE WALL
SECTION — 1 ½" = 1'-0"

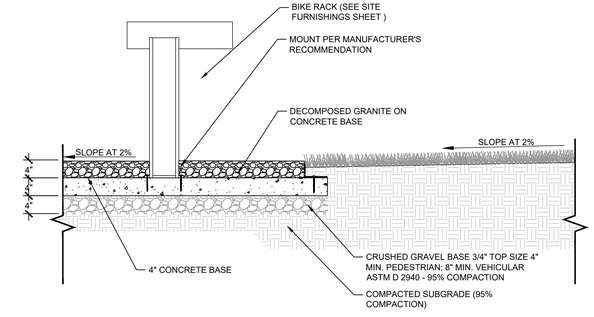
3 RESERVED
SECTION — 1 ½" = 1'-0"

STONE SEATWALL AT SLOTH WINDOW- TO BE MODIFIED

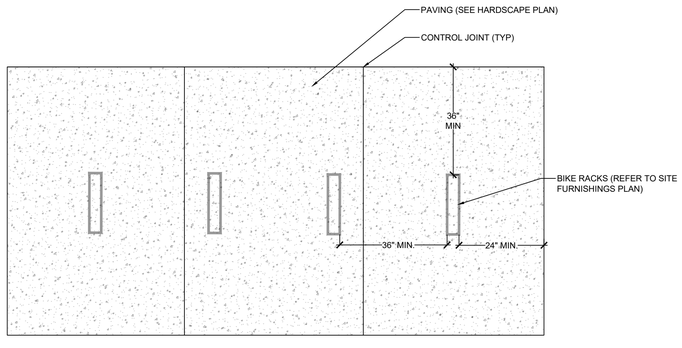


4 STONE SEATWALL
SECTION — ¾" = 1'-0"

5 STONE SEATWALL - TIMBER BENCH
SECTION — ¾" = 1'-0"



6 BIKE RACK
SECTION — ¾" = 1'-0"



7 BIKE RACK - LAYOUT
PLAN — ½" = 1'-0"

8 DETAIL NOT IN USE
SECTION — NTS

9 SEAT WALL
SECTION — NTS

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PROJECT #: L21058

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101 N. 3RD STREET #500
WILMINGTON, NC 28401
PHONE # 910.790.9901

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Vicinity map:



NORTH

Seal:
PRELIMINARY - DO NOT USE FOR CONSTRUCTION
SELECT LA SEAL

Scale:

SCALE: AS NOTED

Project:
PROJECT GRACE

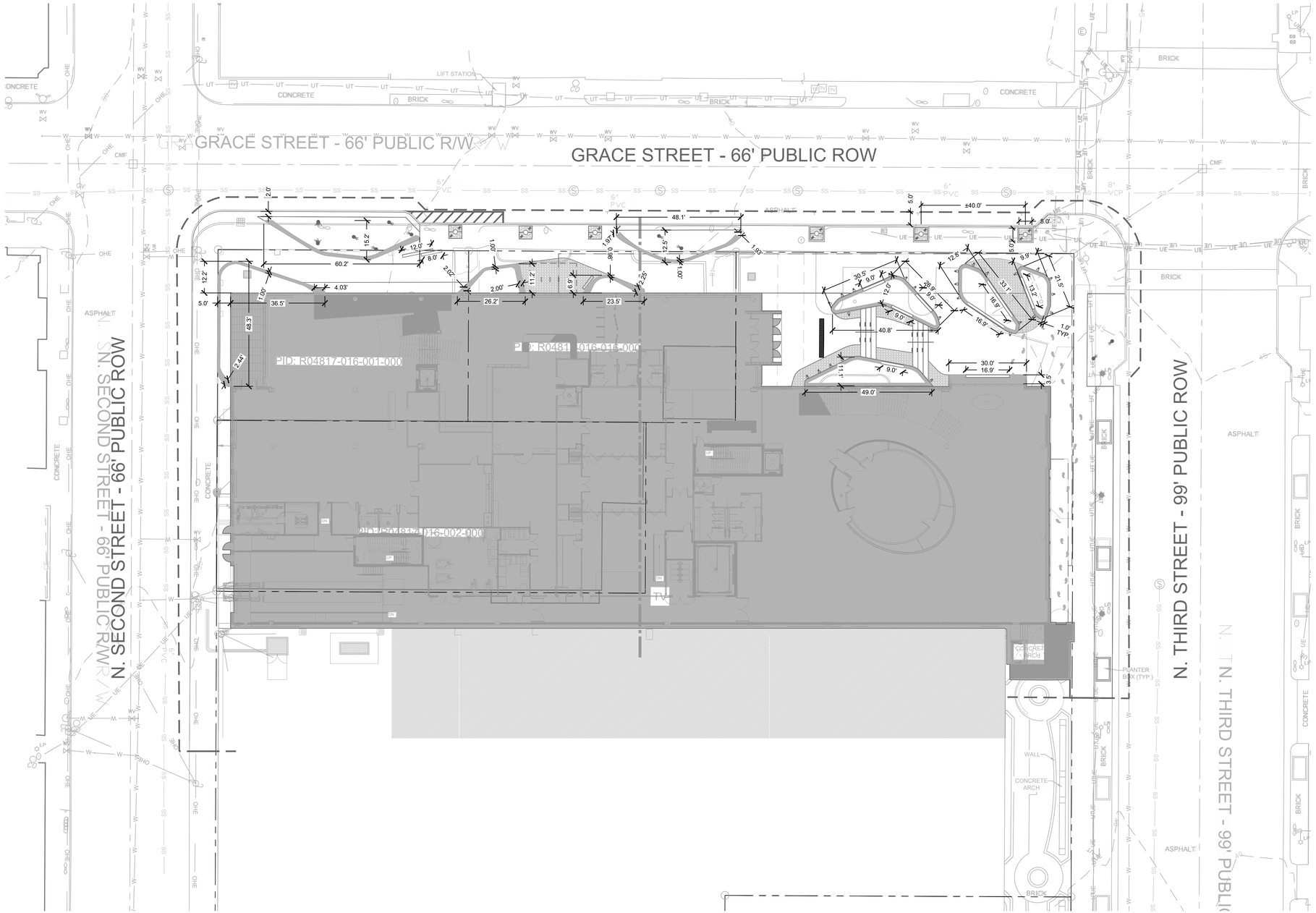
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No.	Date	Description
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Title:
SITE DETAILS III

Project number: L21058 Sheet #:
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L3.92

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LINETYPE LEGEND:

SYMBOL	DESCRIPTION
	LIMITS OF DISTURBANCE
	PROPERTY LINE
	EASEMENT
	SETBACK
BZ	RIPARIAN BUFFER (50')
TP	TREE PROTECTION FENCE
	ACCESSIBLE ROUTE

NOTES:

1. SEE SHEET L0.10 FOR GENERAL AND SITE NOTES.

TYPICAL AREA RESERVED FOR SIGNATURE STAMP DEPENDING ON THE JURISDICTION

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223 S. WEST ST., #1100
RALEIGH, NC 27603
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Consultants:
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ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

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CITY, STATE ZIPCODE
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PHONE #

Vicinity map:

NORTH

Seal:
PRELIMINARY - DO NOT USE FOR CONSTRUCTION
SELECT LA SEAL

Scale:
0 10 20 40
SCALE: 1" = 20'
NORTH

Project:
PROJECT GRACE

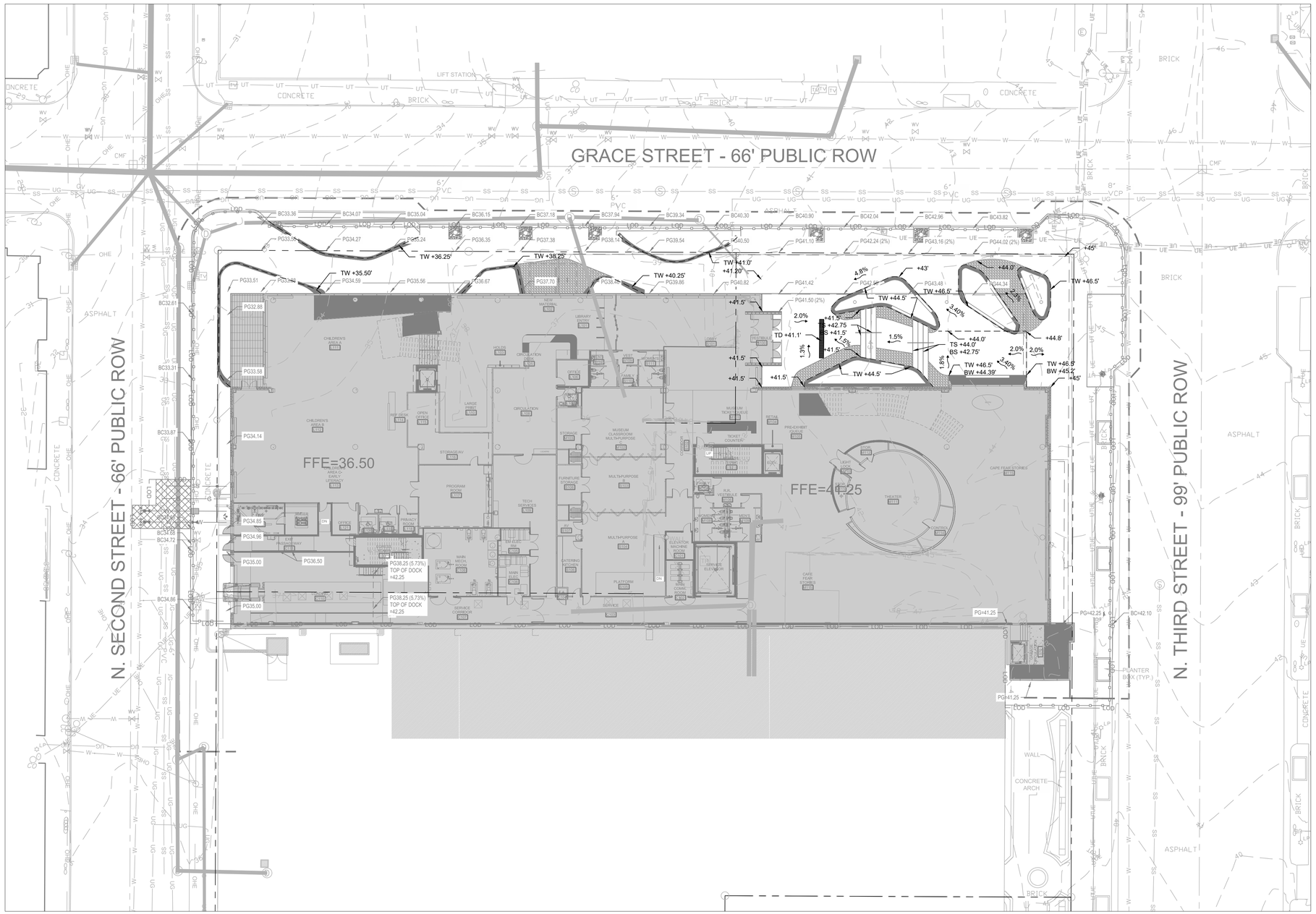
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Title:
LAYOUT PLAN

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --
L4.00

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LINETYPE LEGEND:

SYMBOL	DESCRIPTION
	LIMITS OF DISTURBANCE
	PROPERTY LINE
	EASEMENT
	SETBACK
BZ	RIPARIAN BUFFER (50')
TP	TREE PROTECTION FENCE
	ACCESSIBLE ROUTE

GRADING LEGEND:

SYMBOL	DESCRIPTION
	PROPOSED JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED AREA DRAIN
	RIPRAP DISSIPATOR
	FLOW DIRECTION
44.50	PROPOSED ELEVATION
TC 44.50 / BC 44.00	TOP/BOTTOM OF CURB
TW 46.00 / BW 44.00	TOP/BOTTOM OF WALL
	PROPOSED STORM DRAINAGE
200	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
200	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR

NOTES:

1. SEE SHEET C0.10 FOR GENERAL AND GRADING NOTES.

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Client:

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WILMINGTON, NC 28401
PHONE # 910.790.9901

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CITY, STATE ZIPCODE
PHONE #

Vicinity map:



NORTH

Seal:

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

SELECT PE SEAL
USE DROP DOWN OPTION

Scale:

0 10 20 40

SCALE: 1" = 20'

NORTH

Project:

PROJECT GRACE

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No.	Date	Description
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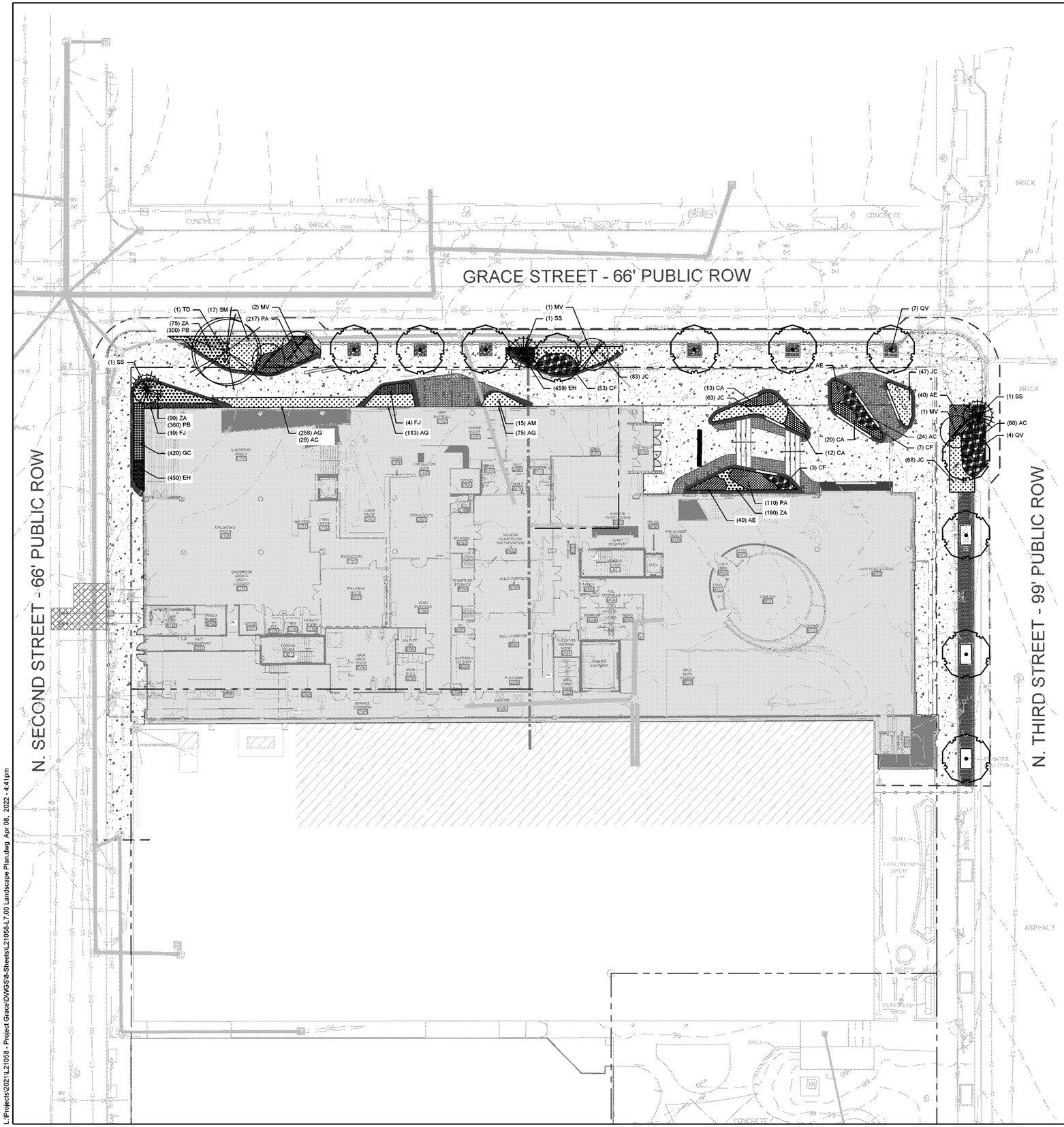
Title:

FINE GRADING PLAN

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --

L5.00

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LINETYPE LEGEND:

SYMBOL	DESCRIPTION
	LIMITS OF DISTURBANCE
	PROPERTY LINE
	EASEMENT
	SETBACK
BZ	RIPARIAN BUFFER (50')
TP	TREE PROTECTION FENCE
	ACCESSIBLE ROUTE

NOTES:

1. SEE SHEET C0.10 FOR GENERAL AND PLANTING NOTES.

PLANT SCHEDULE

Wilmington, NC
Date: 04.08.2022

Symbol	Quantity	Botanical Name	Common Name	Size	Caliper	Root	Spacing	Specifications
Trees								
TD		Taxodium distichum	Bald Cypress	30' ht.	8-10" Cal.	B&B	As shown	Strong central leader
MV		Magnolia virginiana	Sweetbay Magnolia	8' ht	2" Cal.	B&B	As shown	Strong central leader
SS		Stewartia spp.	Stewartia	6' ht.	Multi-stem	B&B	As shown	Multi-stem tree form with at least 3 to 5 leaders
QV		Quercus virginiana 'Qvtia'	Highrise Live Oak	10-12' ht.	3" Cal.	B&B	As shown	Strong central leader
Shrubs								
AE		Aspidistra elatior	Cast Iron Plant	24" ht., 24" w.		1 Gal.	As shown	
CF		Cyrtomium falcatum	Holly Fern	24" ht., 24" w.		1 Gal.	As shown	
FJ		Fatsia japonica	Fatsia	24" ht., 24" w.		1 Gal.	As shown	
PO		Podocarpus macrophyllus	Plum Yew	36" ht., 24" w.		1 Gal.	As shown	
PA		Polystichum acrostichoide	Christmas Fern	24" ht., 24" w.		1 Gal.	12" O.C.	
SM		Sabal minor	Dwarf Palmetto	24" ht., 24" w.		1 Gal.	As shown	
Grasses/Groundcover								
AA		Agapanthus africanus	African Lily	12" ht., 12" w.		4" POT	8" O.C.	
AC		Acanthus spp.	Acanthus			4" POT	24" O.C.	
AG		Acorus gramineus	Japanese Sweetflag	12" ht., 12" w.		4" POT	8" O.C.	
AM		Achillea millefolium	'Oertel's Rose'	18" ht., 18" w.		1 Gal.	18" O.C.	
CA		Carex spp.	Sedge Grass	24" ht., 12" w.		1 Gal.	24" O.C.	
EH		Endymion hispanica	Spanish Bluebell	24" ht., 12" w.		4" POT	4" O.C.	
GC		Gladioulus callianthus	Peacock Orchid	12" ht., 12" w.		4" POT	6" O.C.	
JC		Hakonechloa macra 'Aureola'	Japanese Forest Grass	12" ht., 24" w.		1 Gal.	18" O.C.	
ZA		Zantedeschia aethiopica	Calla Lily	24" ht., 12" w.		1 Gal.	6" O.C.	
PB			Perennial Bulbs	12" ht., 12" w.		4" POT	12-18" O.C.	
Mulch								
MULCH		Double Hammered Hardwood						3" Depth

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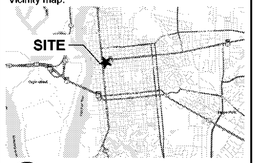
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PHONE #

Vicinity map:



NORTH

Seal:

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

SELECT LA SEAL

Scale:

0 10 20 40

SCALE: 1" = 20'

NORTH

Project:

PROJECT GRACE

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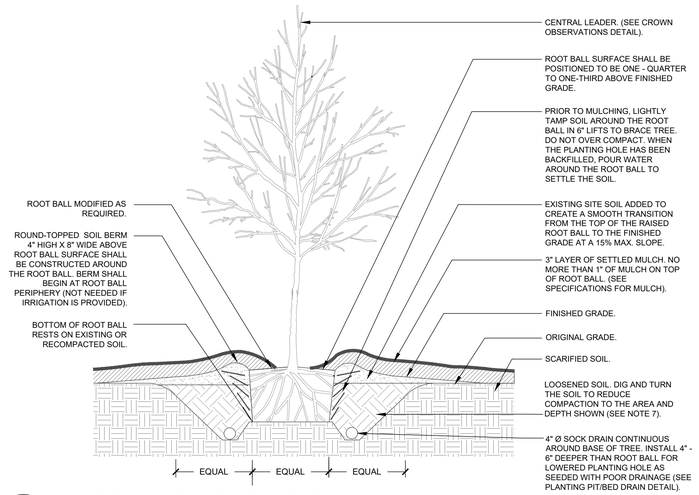
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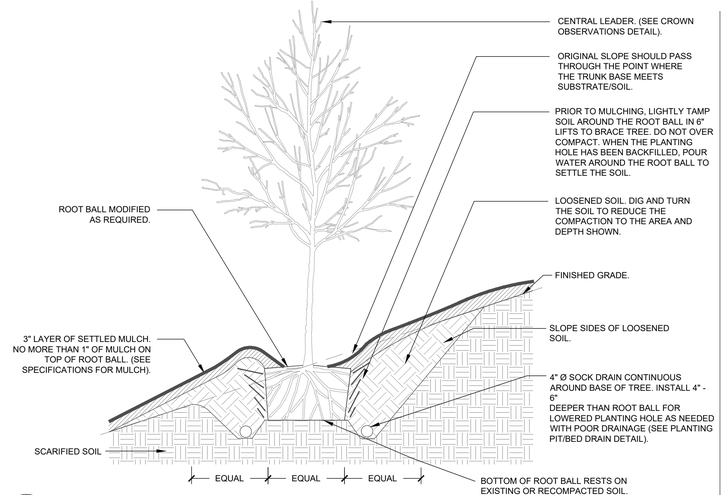
LANDSCAPE PLAN

Project number: L21058
Issued Date: 04.08.2022
Drawn by: --
Approved by: --
Sheet #: L7.00

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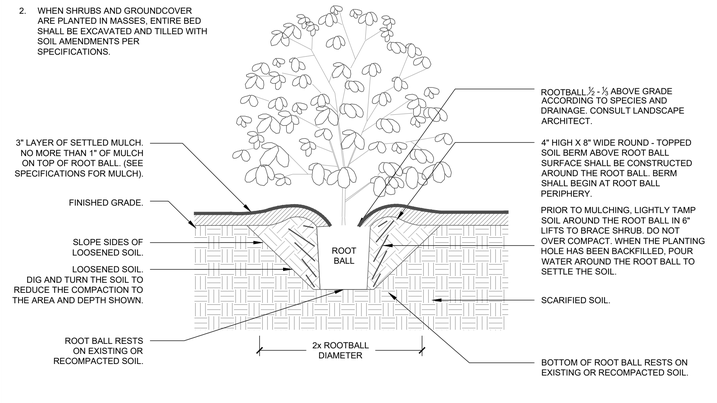
1 TREE STAKING - LODGE POLES NTS
SECTION



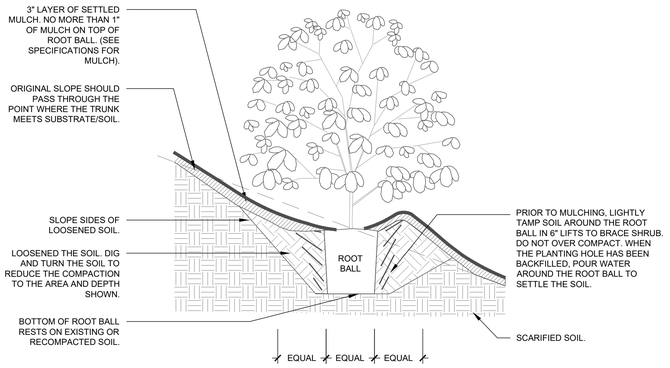
2 TREE STAKING - ON SLOPE - EXISTING IN-SITU SOIL NTS
SECTION

NOTES:

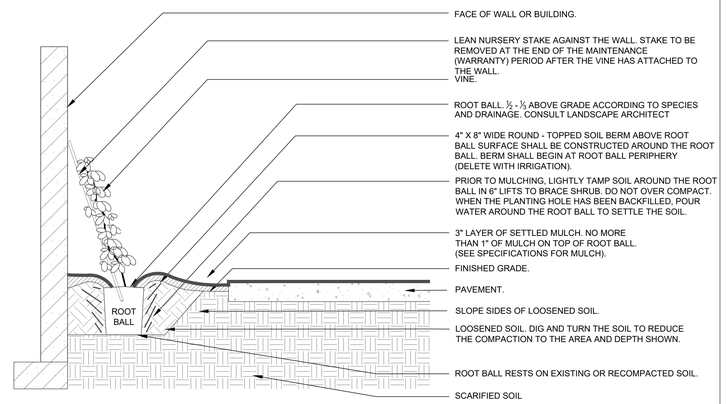
1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. WHEN SHRUBS AND GROUNDCOVER ARE PLANTED IN MASSES, ENTIRE BED SHALL BE EXCAVATED AND TILLED WITH SOIL AMENDMENTS PER SPECIFICATIONS.



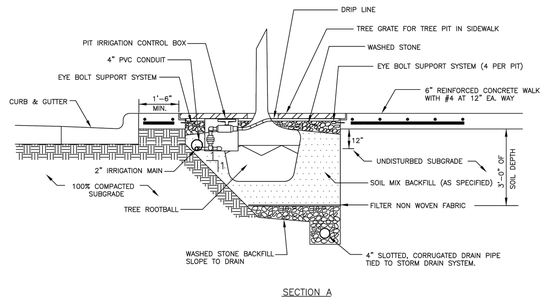
3 SHRUB - EXISTING IN-SITU SOIL NTS
SECTION



4 SHRUB ON SLOPE - EXISTING IN-SITU SOIL NTS
SECTION

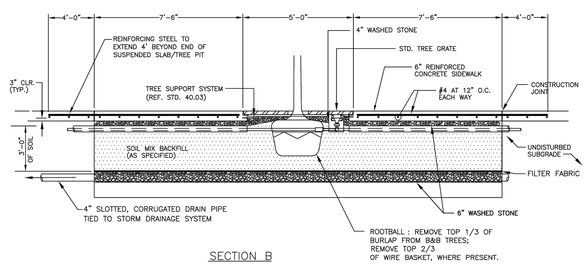


5 VINE - EXISTING IN-SITU SOIL NTS
SECTION



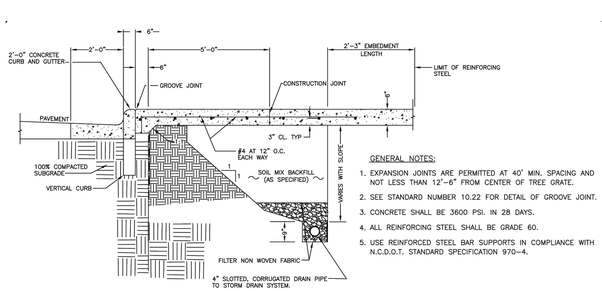
SECTION A

6 TREE PLANTING IN PIT NTS
SECTION



SECTION B

7 SUSPENDED SIDEWALK PLANTING NTS
SECTION



SECTION C

GENERAL NOTES:

1. EXPANSION JOINTS ARE PERMITTED AT 40' MIN. SPACING AND NOT LESS THAN 12'-6" FROM CENTER OF TREE GRATE.
2. SEE STANDARD NUMBER 10.22 FOR DETAIL OF GROOVE JOINT.
3. CONCRETE SHALL BE 3600 PSI. IN 28 DAYS.
4. ALL REINFORCING STEEL SHALL BE GRADE 60.
5. USE REINFORCED STEEL BAR SUPPORTS IN COMPLIANCE WITH N.C.D.O.T. STANDARD SPECIFICATION 970-4.

NOTE
A DRAINAGE SYSTEM IS REQUIRED AS SHOWN FOR ALL IRRIGATED PLANTING AREAS LOCATED ADJACENT TO STREET.

8 SUSPENDED SIDEWALK PLANTING NTS
SECTION

9 DET NAME HERE 3/8" = 1'-0"
PLAN

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Vicinity map:



NORTH

Seal:
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Scale:
SCALE: AS NOTED

Project:
PROJECT GRACE

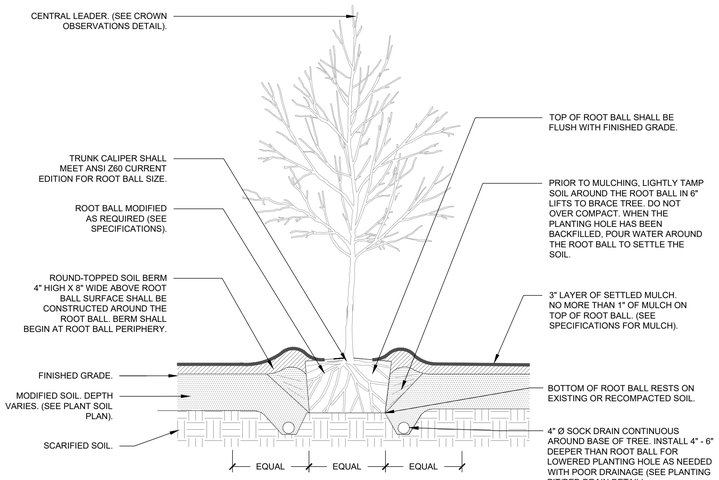
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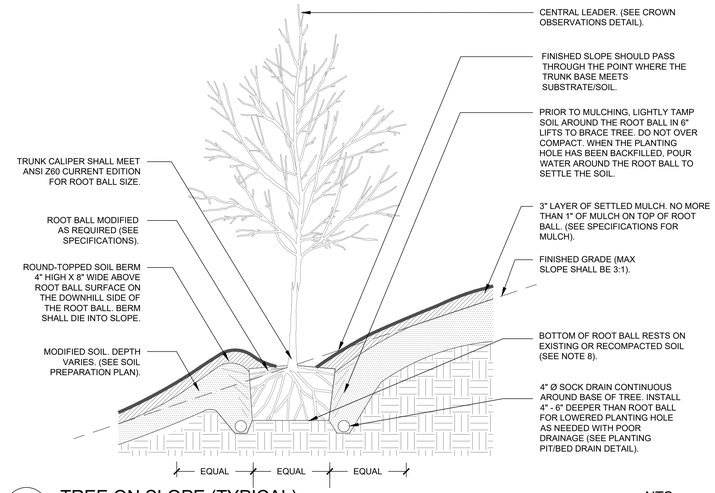
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Project number: L21058 Sheet #:
Issued Date: 04.08.2022
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Approved by: --
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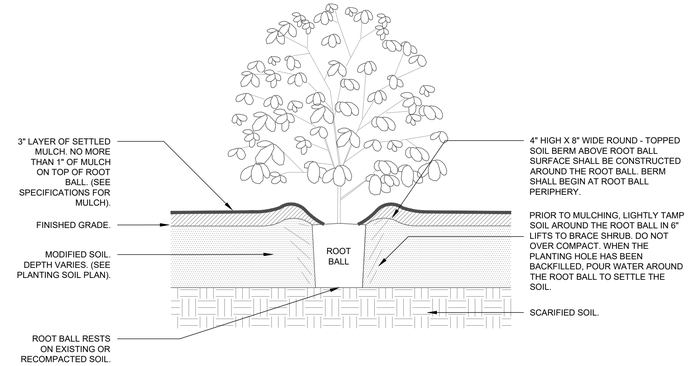
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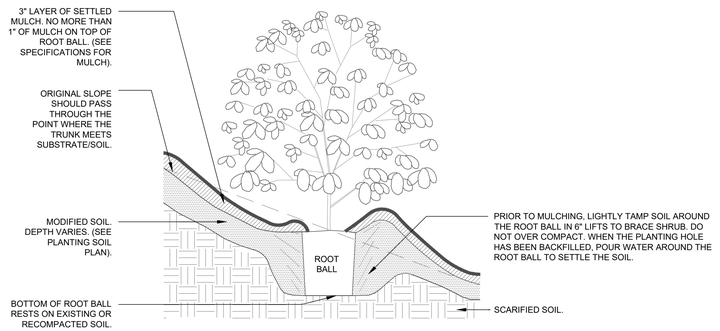
1 TREE (TYPICAL) — NTS
SECTION



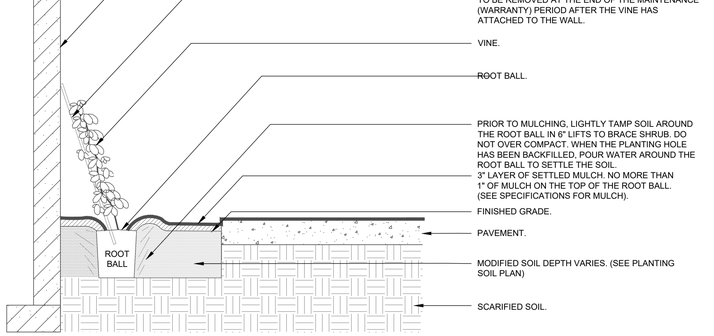
2 TREE ON SLOPE (TYPICAL) — NTS
SECTION



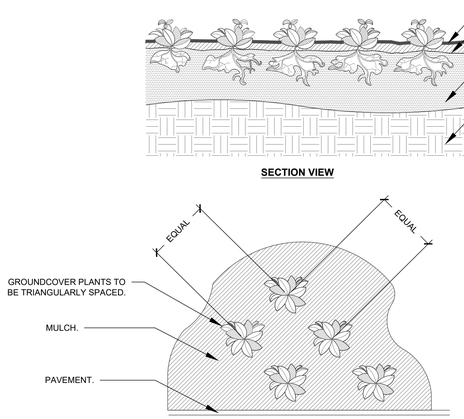
3 SHRUB (TYPICAL) — NTS
SECTION



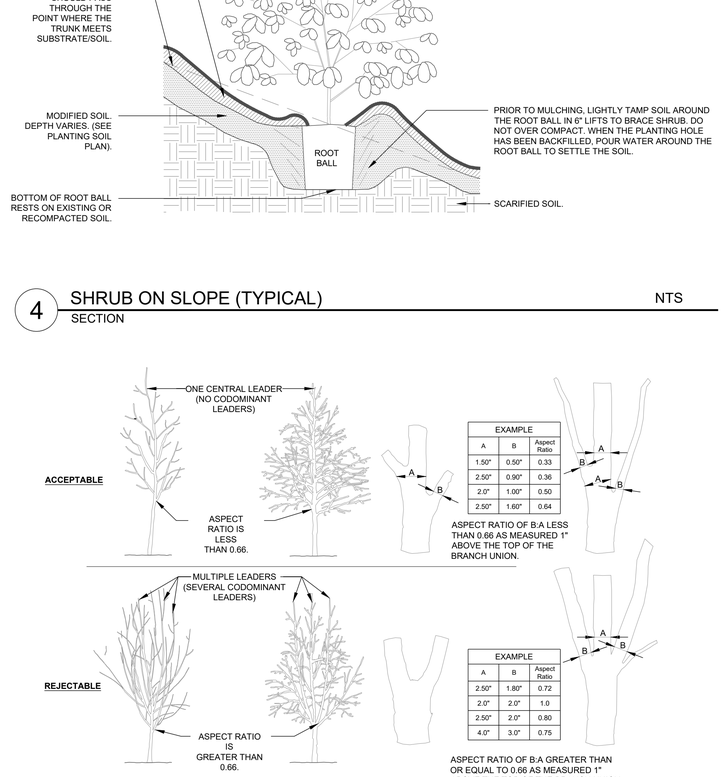
4 SHRUB ON SLOPE (TYPICAL) — NTS
SECTION



5 VINE (TYPICAL) — NTS
SECTION



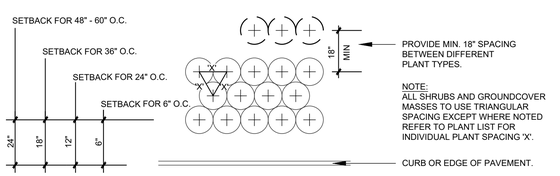
6 GROUNDCOVER PLANTING (TYPICAL) — NTS
PLAN



7 CROWN OBSERVATIONS - HIGH BRANCHED — NTS
SECTION

NOTES:

1. SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE AND SPACING DIMENSION.
2. SMALL ROOTS (¼" OR LESS) THAT GROW AROUND, UP OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE. HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING (SEE ROOT BALL SHAVING DETAIL).
3. SETTLE SOIL AROUND ROOT BALL OF EACH GROUNCOVER PRIOR TO MULCHING.
4. WHEN GROUNDCOVER PLANTINGS ARE USED IN MASSES, ENTIRE BED SHALL BE EXCAVATED AND TILLED WITH SOIL AMENDMENTS PER SPECIFICATIONS.
5. CONTRACTORS SHALL ASSURE PERCOLATION OF A ALL PLANTING PITS PRIOR TO INSTALLATION.



8 SHRUB AND GROUNDCOVER SPACING — NTS
PLAN

PLANTING NOTES:

1. DO NOT STAKE TREES EXCEPT WHERE SPECIFIED BY LANDSCAPE ARCHITECT. STAKING IS REQUIRED FOR TREES PLANTED ON SLOPES.
2. WHERE SEVERAL TREES WILL BE PLANTED CLOSE TOGETHER SUCH THAT THEY WILL LIKELY SHARE ROOT SPACE, TILL IN SOIL AMENDMENTS TO A DEPTH OF 4-6" OVER THE ENTIRE AREA.
3. FOR CONTAINER GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
4. FOR FIELD GROWN TREES, CUT BURLAP, ROPE AND WIRE BASKET AWAY FROM TOP AND SIDES OF ROOT BALL.
5. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
6. THE PLANTING PROCESS IS SIMILAR FOR DECIDUOUS AND EVERGREEN TREES.
7. DO NOT WRAP TRUNK; MARK NORTH SIDE OF TREE IN THE NURSERY AND LOCATE TO THE NORTH IN THE FIELD.
8. WIDTH OF PLANTING HOLE IS 3X ROOT BALL AT THE SURFACE, SLOPING TO 2X THE ROOT BALL DIAMETER AT THE DEPTH OF THE ROOT BALL.
9. BEFORE PLANTING, ADD 3-4" OF WELL COMPOSTED LEAVES, RECYCLED YARD WASTE OR OTHER COMPOST AND TILL INTO TOP 6" OF PREPARED SOIL. ADD COMPOST AT 20-35% BY VOLUME TO BACKFILL.
10. PERFORM PERCOLATION TEST FOR EACH TREE PIT TO CONFIRM THAT WATER DRAINS OUT OF THE SOIL. PROVIDE GRAVEL SUMP FILTER FABRIC & VENT PIPE IF DRAINAGE DOES NOT OCCUR WITHIN 24 HOURS. INCLUDE ALL SUMPS IN BASE BID. SHOULD SUMPS NOT BE NECESSARY AFTER PERCOLATION TEST, PROVIDE CHANGE ORDER DEDUCT TO OWNER.
11. IF PLANTING HOLES ARE DUG WITH A LARGE AUGER BREAKING DOWN THE SIDES WITH A SHOVEL CAN ELIMINATE GLAZING AND CREATE THE PREFERRED SLOPING SIDE.
12. TREES SHALL HAVE SINGLE LEADERS. TREES WITH 2 LEADERS WILL BE REJECTED.
13. DO NOT PLACE MULCH IN CONTACT WITH TRUNK.
14. PROVIDE GATOR BAGS FOR ALL TREES WHERE IRRIGATION IS NOT PROVIDED.

9 PLANTING NOTES

STEWART
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21058

Client:
LS3P
101 N. 3RD STREET #500
WILMINGTON, NC 28401
PHONE # 910.790.9901

Consultants:
NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

NAME
ADDRESS LINE 1
CITY, STATE ZIPCODE
PHONE #

Vicinity map:



NORTH

Seal:

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

SELECT LA SEAL

Scale:

SCALE: AS NOTED

Project:

PROJECT GRACE

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No.	Date	Description
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Title:

LANDSCAPE DETAILS

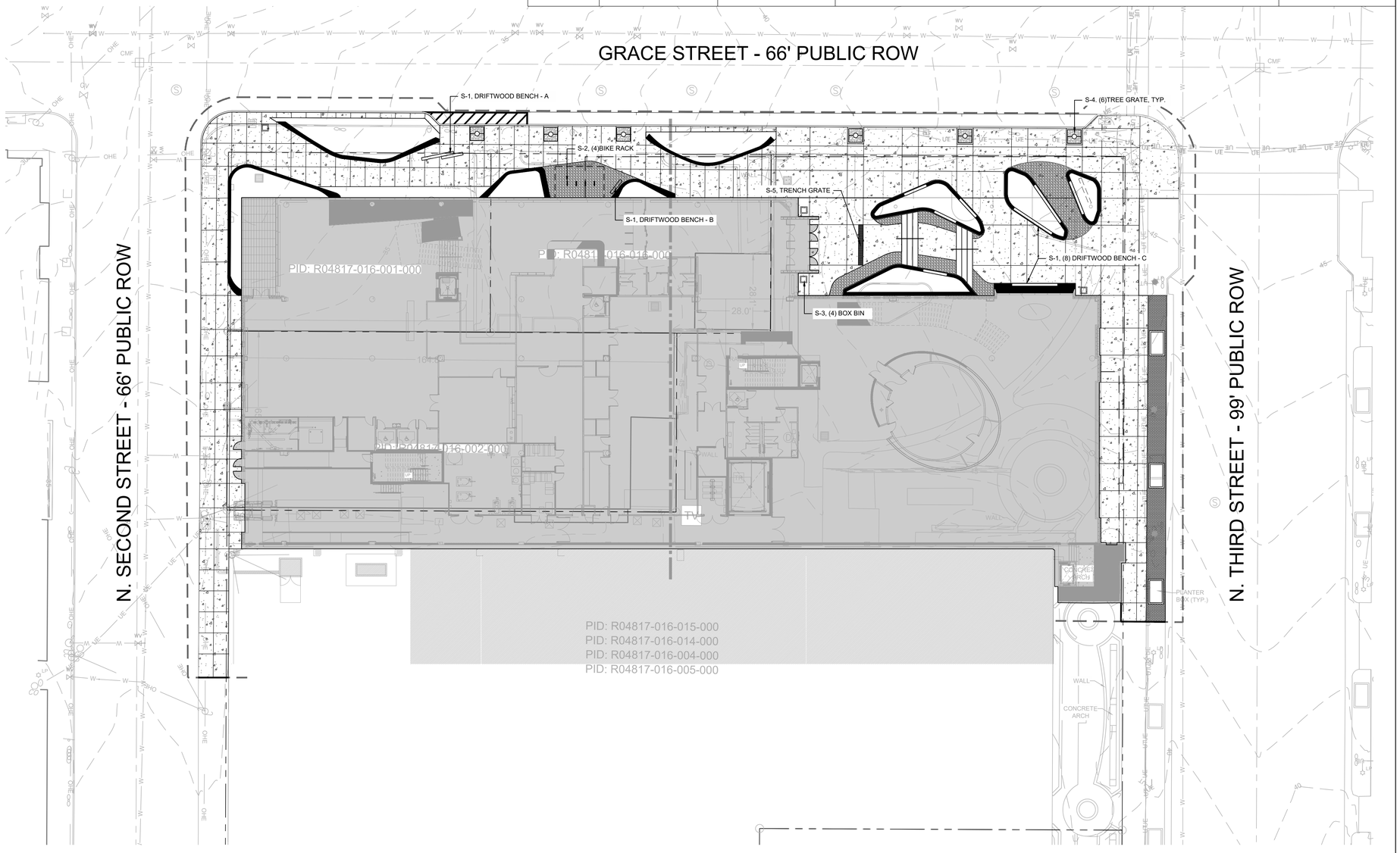
Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --

L7.91

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SITE FURNISHNGS SUMMARY CHART

ABBREVIATION	DETAIL	FURNISHING TYPE	DESCRIPTION	QUANTITY
S1	1/L9.10	BENCH	DRIFTER BENCH 12"x12" (LENGTH VARIES, SEE PLAN) (A) W/BACK & ARM REST - (B) NO BACK/ARM REST - (C) WALL MOUNT, MANUFACTURER: STREETLIFE	1 (A) 1 (B) 8 (C)
S2	2/L9.10	BIKE RACK	ROUGH & READY BIKE RACK, MANUFACTURER: STREETLIFE	4
S3	3/L9.10	LITTER RECEPTACLE	BOX BIN LITTER RECEPTACLE, MANUFACTURER: STREETLIFE	4
S4	4/L9.10	TREE GRATE	5'x5' TREE GRATE, CLOUD OF NUTS MANUFACTURER: STREETLIFE	6
S5	5/L9.10	TRENCH GRATE	20" WIDE TRENCH GRATE - CORTILE SYSTEM, MANUFACTURER: STREETLIFE	15 LF



LINETYPE LEGEND:

SYMBOL	DESCRIPTION
	LIMITS OF DISTURBANCE
	PROPERTY LINE
	EASEMENT
	SETBACK
BZ	RIPARIAN BUFFER (50')
TP	TREE PROTECTION FENCE
	ACCESSIBLE ROUTE

STEWART

PROJECT #: L21058



SELECT LA SEAL

Scale:

0 10 20 40

SCALE: 1" = 20'

NORTH

PROJECT GRACE

50% CONSTRUCTION DOCUMENT

SITE FURNITURE PLAN

L21058
04.08.2022
--
-- L9.00

TYPICAL AREA RESERVED FOR SIGNATURE STAMP DEPENDING ON THE JURISDICTION

L:\Projects\2021\L21058 - Project Grace\DWGS\8-Sheets\L21058-L9.00 Site Furniture.dwg Apr 08, 2022 - 4:41pm



DRIFTER BENCH - A



DRIFTER BENCH - B

DRIFTER BENCH - A, WITH BACK AND ARM REST
DRIFTER BENCH - B, ON GRADE (AS SHOWN)
DRIFTER BENCH - C, WALL MOUNT

BENCH

MODEL:	DRIFTER BENCH
SIZE:	12" x 12" x VARIES
FINISH:	UNTREATED WEATHERING STEEL
MANUFACTURER:	STREETLIFE
CONTACT:	WWW.STREETLIFE.NL/US

1 DRIFTWOOD BENCH — NTS





BIKE RACK

MODEL:	ROUGH & READY BIKE RACK
SIZE:	30" x 28"
FINISH:	UNTREATED WEATHERING STEEL
MANUFACTURER:	STREETLIFE
CONTACT:	WWW.STREETLIFE.NL/US

2 BIKE RACK — NTS



LITTER RECEPTACLE

MODEL:	BOX BIN
SIZE:	19" x 19" x 38"
PATTERN:	CASUAL DOTS
FINISH:	UNTREATED WEATHERING STEEL
MANUFACTURER:	STREETLIFE
CONTACT:	WWW.STREETLIFE.NL/US

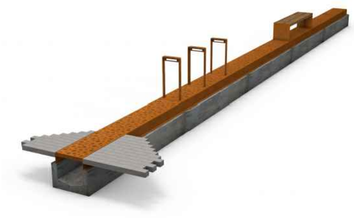
3 LITTER RECEPTACLE — NTS



TREE GRATE

MODEL:	CLOUD OF NUTS
SIZE:	59" x 59"
FINISH:	UNTREATED WEATHERING STEEL
MANUFACTURER:	STREETLIFE
CONTACT:	WWW.STREETLIFE.NL/US

4 TREE GRATE — NTS



TRENCH GRATE

MODEL:	CORTILE SYSTEM
SIZE:	6" WIDTH
FINISH:	UNTREATED WEATHERING STEEL
MANUFACTURER:	STREETLIFE
CONTACT:	WWW.STREETLIFE.NL/US

5 TRENCH GRATE — NTS

6 DETAIL NOT IN USE — NTS
SECTION

7 DETAIL NOT IN USE — NTS
SECTION

8 DETAIL NOT IN USE — NTS
SECTION

TYPICAL AREA RESERVED FOR SIGNATURE STAMP DEPENDING ON THE JURISDICTION

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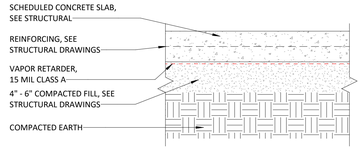
Title:
SITE FURNITURE CUT SHEETS

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --
L9.90

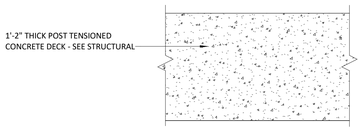
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT FULL SIZE PLOTS ON ANSI D PAPER SIZE

F01 CONCRETE SLAB ON GRADE

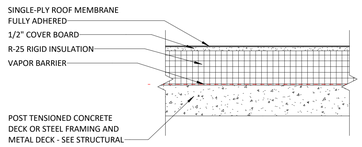


F02 POST TENSIONED CONCRETE DECK

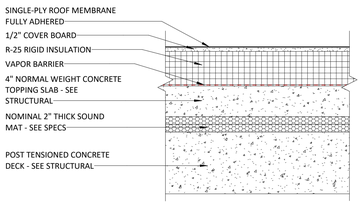


R01 CONCRETE WITH INSULATION AND MEMBRANE ROOF

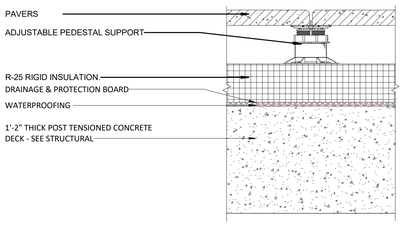
R01a PROVIDE ADDITIONAL RIGID INSULATION TO MATCH THICKNESS OF **R02**.



R02 STC RATED CONCRETE WITH INSULATION AND MEMBRANE ROOF

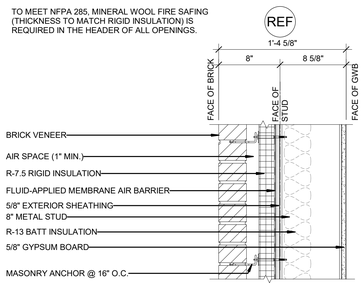


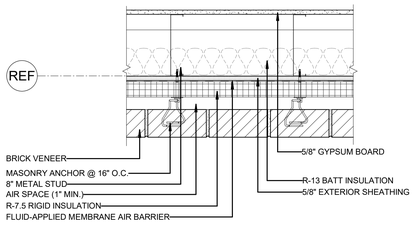
R03 PEDESTAL PAVER SYSTEM



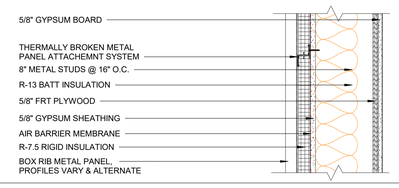
W01 BRICK VENEER / CI/ ON METAL STUD BACKUP WALL

TO MEET NFPA 285, MINERAL WOOL FIRE SAFING (THICKNESS TO MATCH RIGID INSULATION) IS REQUIRED IN THE HEADER OF ALL OPENINGS.

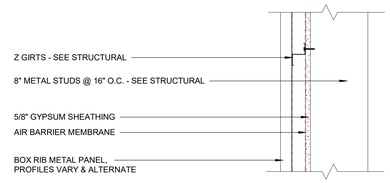




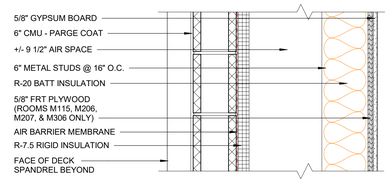
W02 METAL PANEL ON METAL STUDS



W02a METAL PANEL ON METAL STUDS - NO INSULATION



W03 PARKING DECK SEPARATION



ZIMMER DEVELOPMENT COMPANY

LS3P

101 NORTH THIRD STREET, SUITE 500
WILMINGTON, NORTH CAROLINA 28401
TEL. 910.790.9901 FAX. 910.790.3111
WWW.LS3P.COM

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
CONSTRUCTION SUBSYSTEMS

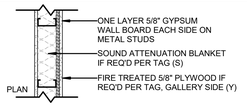
ORIG SUBMISSION: 2022.05.25

SHEET:
A-001

OWNER REVIEW SET

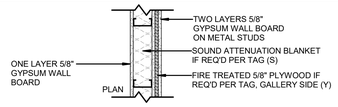
5/25/2022 5:16:49 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS EXCEPT ARCHITECTURAL SITE PLAN



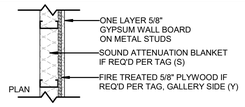
TAG	STUD SIZE	OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
3A	3-5/8"	4 1/4"				
3A	3-5/8"	4 7/8"				
3AD	3-5/8"	4 7/8"				
3ADY	3-5/8"	4 7/8"				
3AS	3-5/8"	4 7/8"				
3AY	3-5/8"	4 7/8"				
3A1	3-5/8"	4 7/8"	1	U419		
3A1Y	3-5/8"	4 7/8"	1	U419		
6A	6"	7 1/4"				
6AD	6"	7 1/4"				
6ADY	6"	7 1/4"				
6AY	6"	7 1/4"				

A METAL STUD - ONE LAYER
1" = 1'-0"



TAG	STUD SIZE	OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
3BD	3-5/8"	5 1/2"				
3BS	3-5/8"	5 1/2"				
3BYD	3-5/8"	6 1/8"				
6BD	6"	7 7/8"				

B METAL STUD - ONE/TWO LAYERS
1" = 1'-0"



TAG	STUD SIZE	OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
1F	1-5/8"	2 1/4"				
2F	2-1/2"	3 1/8"				
2FD	2-1/2"	3 1/8"				
2FDY	2-1/2"	3 1/8"				
2FY	2-1/2"	3 1/8"				
3F	3-5/8"	4 1/4"				
3FD	3-5/8"	4 1/4"				
3FDY	3-5/8"	4 1/4"				
3FS	3-5/8"	4 1/4"				
3FY	3-5/8"	4 1/4"				
4F	4"	4 5/8"				
6F	6"	6 5/8"				
6FD	6"	6 5/8"				
6FS	6"	6 5/8"				
6FY	6"	6 5/8"				

F METAL STUD FURRED - ONE LAYER
1" = 1'-0"

TAG		OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
8T	8"	8"				
8T2	8"	8"	2			
10T2	10"	10"	2			

T CAST-IN-PLACE CONCRETE
1" = 1'-0"

TAG	STUD SIZE	OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
3A2	3-5/8"	6 1/8"	2	U419		
6AZDY	6"	8 1/2"				

A METAL STUD - TWO LAYERS
1" = 1'-0"

TAG	STUD SIZE	OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
3C1S	3-5/8"	SEE PLAN	1	U420		
3CSYD	3-5/8"	SEE PLAN	0			

C METAL STUD CHASE - ONE LAYER
1" = 1'-0"

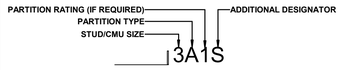
TAG	CH STUD SIZE	OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
4S2	4" CH	5 1/4"	2	U415		
6S2	6" CH	7 1/4"	2	U415		

S METAL STUD SHAFT - TWO LAYERS
1" = 1'-0"

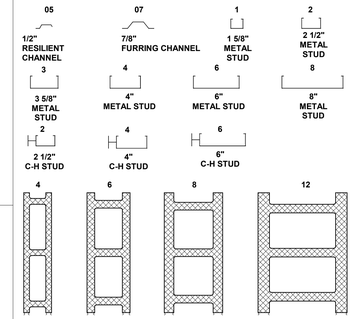
TAG	BLOCK SIZE	OVERALL THICK	RATING	UL ASSEMBLY	STC	HEAD DETAIL
8M	7-5/8"	7 5/8"	1			
8M	7-5/8"	7 5/8"	2			
8M	7-5/8"	7 5/8"				
8M1	7-5/8"	7 5/8"	1	722.3.2		

M CONCRETE MASONRY UNIT (CMU)
1" = 1'-0"

PARTITION TAG KEY



PARTITION MATERIAL & SIZE



PARTITION TYPES LEGEND *(DELETE NOT USED)*

A - METAL STUD BALANCED WALL
B - METAL STUD UNBALANCED WALL
C - METAL STUD CHASE WALL
D - METAL STUD SECURE WALL
E - METAL STUD SECURE RESILIENT WALL
F - METAL STUD FURRED WALL
J - METAL STUD RADIO FREQUENCY (RF) SHIELDING WALL
K - METAL STUD LEAD LINED TWO SIDES WALL
L - METAL STUD LEAD LINED ONE SIDE WALL
S - METAL STUD SHAFT WALL
R - METAL STUD RESILIENT SOUND WALL
M - CONCRETE MASONRY UNIT WALL
T - CONCRETE WALL

PARTITION FIRE RATING

30 - 30 MINUTES RATED FIRE PARTITION
1 - 1HR RATED FIRE BARRIER, UNLESS W/ DESIGNATOR "C,K,P"
2 - 2HR RATED FIRE BARRIER, UNLESS W/ DESIGNATOR "C,W"
3 - 3HR RATED FIRE WALL, UNLESS W/ DESIGNATOR "B"
4 - 4HR RATED FIRE WALL, UNLESS W/ DESIGNATOR "B"
5 - NOT RATED, SMOKE PARTITION

ADDITIONAL DESIGNATORS *(DELETE NOT USED)*

B - FIRE BARRIER
C - FIRE/SMOKE BARRIER
W - FIRE WALL
P - FIRE PARTITION
K - SMOKE BARRIER
D - NON-RATED EXTEND TO DECK ABOVE
J - IMPACT RESISTANT GWB PARTITION
S - SOUND ATTENUATION BLANKET IN STUD WALL OR ACOUSTIC FILL IN CMU WALL, PARTITION SHALL EXTEND TO ADJACENT WALLS AND DECK ABOVE, PROVIDE ACOUSTICAL SEALANT AT BOTTOM, TOP AND SIDES
G - FULLY GROUTED CMU
H - HALF WALL OR PARTIAL HEIGHT WALL
Y - FIRE TREATED 5/8" PLYWOOD BEHIND GYP, GALLERY FACE
Z - TWO LAYERS OF GWB ON EACH SIDE FOR SOUND, NON - RATED

PARTITION NOTES

1. **ALL NON-DESIGNATED PARTITIONS SHALL BE 3A**
2. **NON-RATED PARTITIONS, EXCEPT THOSE WITH "D" OR "S" DESIGNATOR, GWB SHALL EXTEND 6" ABOVE THE CEILING U.N.O.**
3. **NON-RATED SMOKE PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE.**
4. **FIRE RATED PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE, SEE UL DETAILS FOR ADDITIONAL REQUIREMENTS**
5. **TYPE "D,E,R,Q" PARTITIONS SHALL EXTEND TO ADJACENT WALLS AND STRUCTURE ABOVE, PROVIDE ACOUSTICAL SEALANT AT BOTTOM, TOP, AND SIDES**
6. **AT WET AREAS, PROVIDE MOISTURE RESISTANT GWB OR MOLD & MOISTURE RESISTANT GWB AT NON-RATED PARTITIONS. PROVIDE FIRE RATED MOISTURE RESISTANT GWB OR FIRE RATED MOLD & MOISTURE RESISTANT GWB AT RATED PARTITIONS.**
7. **ON PARTITIONS RECEIVING WALL TILE (REFER TO FINISH SCHEDULE) PROVIDE CEMENTITIOUS BACKER BOARD BEHIND PORTIONS OF PARTITION RECEIVING TILE ONLY.**

PARTITION TAG EXAMPLES

3A 3 5/8" METAL STUD, NON-RATED, GWB 6" ABOVE CLG
3AD 3 5/8" METAL STUD, NON-RATED, EXTEND TO DECK ABOVE
3AS 3 5/8" METAL STUD, NON-RATED W/ SOUND ATTENUATION
3A1K 3 5/8" METAL STUD, 1 HOUR RATED SMOKE BARRIER
3A1S 3 5/8" METAL STUD, 1 HOUR RATED FIRE BARRIER W/ SOUND ATTENUATION
3AZS 3 5/8" METAL STUD, NON-RATED, (2) LAYERS OF GWB EACH SIDE W/ SOUND ATTENUATION
3A3 3 5/8" METAL STUD, 3 HOUR RATED FIRE WALL
3A5 3 5/8" METAL STUD, NON RATED SMOKE PARTITION
4S2 4" C-H METAL STUD, 2 HOUR RATED FIRE BARRIER
6MS 6" NOM. CMU W/ ACOUSTIC FILL
8M 8" NOM. CMU, NON-RATED, MIN. COURSING ABOVE CLG
8M3 8" NOM. CMU, 3 HOUR RATED FIRE WALL
12MD 12" NOM. CMU, NON-RATED, EXTEND TO DECK ABOVE

ZIMMER DEVELOPMENT COMPANY
LS3P
101 NORTH THIRD STREET, SUITE 500
WILMINGTON, NORTH CAROLINA 28401
TEL. 910.790.9901 FAX. 910.790.3111
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NOT FOR CONSTRUCTION

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
PARTITION TYPES

ORIG SUBMISSION: 2022.05.25

SHEET:
A-003

OWNER REVIEW SET

5/25/2022 5:17:07 PM

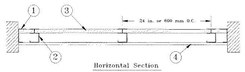
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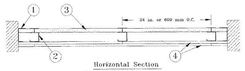
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PLOT SIZE

Design No. U415
December 22, 2020
Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

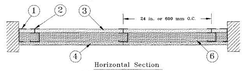
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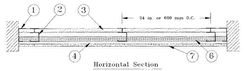
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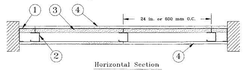
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System D — 2 Hr.



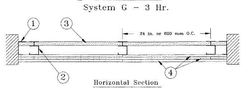
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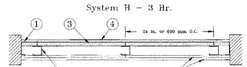
System F — 2 Hr.



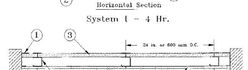
System G — 3 Hr.



System H — 3 Hr.



System I — 4 Hr.



1. Floor, Side and Ceiling Runners — "J" - shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG (min 20 MSG when item 4A, 4B, 4C, 4D or 7 are used) galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" - shaped studs (Item 2A) may be used as side runners in place of "J" - shaped runners.

2. Steel Studs — "C-H" - shaped studs, min 2-1/2 in. deep (min 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when Items 2D, 4A, 4B, 4C, 4D or 7 is used) galv steel. Cut to lengths 3/8 to 1/2 in. less than floor-to-ceiling height and spaced 24 in. or 600 mm OC (max 16 in. OC when Items 4A, 4B, 4C, or 4D are used).

2A. Steel Studs — (Not Shown) — "E" - shaped studs installed back to back in place of "C-H" - shaped studs (Item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to ceiling heights.

2B. Furring Channels — (Optional, Not Shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically only. . Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

2C. Furring Channels — For use with System I - "Hat" - shaped, 25 MSG galv steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type S pan head steel screws. Screws alternate from top flange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC.

2D. Steel Framing Members* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75)

2E. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. . Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Ea) to studs. Clips spaced 24 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

2F. Steel Framing Members* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 3.
b. Steel Framing Members* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC, GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
PLITEQ INC — Type GENIECLIP

2G. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 2Gb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Ga) to studs. Clips spaced 24 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

2H. Steel Framing Members* — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4.
b. Steel Framing Members* — Used to attach resilient channels (Item 2Ha) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

2I. Steel Framing Members* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 4.
b. Steel Framing Members* — Used to attach furring channels (Item 2Ia) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

3. Gypsum Board* — Gypsum liner panels, nom 1 in. thick, 24 in. or 600 mm (for metric spacing) wide. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C-H" studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.
CGC INC — Type SLX
UNITED STATES GYPSUM CO — Type SLX
USG BORAL DRYWALL SFZ LLC — Type SLX
USG MEXICO S A DE C V — Type SLX

4. Gypsum Board* —

System A — 1 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing.
CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRC, WRX, USGX. When ULIX is used insulation, Item 6, Batts and Blankets* is required and minimum stud depth is 4 in.
USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System B — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in.
CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR, or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System C — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per Items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per Item 6.
CGC INC — Types IP-X3 or ULTRACODE
UNITED STATES GYPSUM CO — Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC — Type ULTRACODE
USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

System D — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6.
CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.
USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System E — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.
CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX
USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers. Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered 24 in.
CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX
UNITED STATES GYPSUM CO — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX
USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System G — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. . Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.
CGC INC — Types C, IP-X2, IPC-AR, WRC
UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC
USG BORAL DRYWALL SFZ LLC — Type C
USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System H — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.
CGC INC — Types C, IP-X2, IPC-AR, WRC
UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC
USG BORAL DRYWALL SFZ LLC — Type C
USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System I — 4 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) wallboard with square or tapered edges. Total of four layers to be used. First and second (inner) layers applied vertically or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joints centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Third layer applied vertically over the furring channels (Item 2C) with a 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third layer, otherwise all joints staggered min 12 in.
CGC INC — Types IP-X3 or ULTRACODE
UNITED STATES GYPSUM CO — Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC — Type ULTRACODE
USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

4A. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9) or Lead Discs or Tabs (see Item 10).
RAY-BAR ENGINEERING CORP — Type RB-LBG

4B. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.
NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Type Nelco

4C. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9A) or Lead Discs (see Item 10A). Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip.
MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4D. Gypsum Board* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5. Joint Tape and Compound — (Not Shown)
Systems A, B, C, E, F, G, H, I
Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with joint compound.

6. Batts and Blankets* —
Systems A, B, E, F, G, H, I
(Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance.

System A With Type ULIX Gypsum Boards
Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

Systems C & D
Min 3 in. (System C) and min 1-1/2 in. (System D) thick mineral wool batts, friction fitted between the studs and floor and ceiling runners.
ROCKWOOL — Type AFB, min. density 1.8 pcf / 28.8 kg/m3
THERMAFIBER INC — Type SAFB, SAFB FF

7. Cementitious Backer Units* — (System D) — Nom 1/2 or 5/8 in. thick panels, square edge, attached to studs over gypsum wallboard with 1-5/8 in. long, Type S-12, corrosion resistant steel screws spaced 8 in. OC and staggered 8 in. from gypsum wall board screws. Joints covered with glass fiber mesh tape. Vertical joints staggered one stud cavity from gypsum wallboard joints. Horizontal joints staggered a min of 12 in. from the gypsum wallboard joints.
UNITED STATES GYPSUM CO — Type DCB

8. Laminating Adhesive* — (Optional, Not Shown) — Used to bond outer layer of Cementitious Backer Units (Item 7) to inner layers of Gypsum Board (Item 4) in System D. ANSI A136.1 Type 1 organic adhesive applied with 1/4 in. square notched trowel. See Adhesives (BYWR) in the Fire Resistance Directory or Adhesives (BJLZ) in the Building Materials Directory for names of Classified companies.

9. Lead Batten Strips — (Not Shown, For Use With Item 4A) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Required behind vertical joints.

9A. Lead Batten Strips — (Not Shown, for use with Item 4C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations.

10. Lead Discs or Tabs — (Not Shown, For Use With Item 4A) — Used in lieu of or in addition to the lead batten strips (Item 9) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

10A. Lead Discs — (Not Shown, for use with Item 4C) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

11. Lead Batten Strips — (Not Shown, For Use With Item 4B) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4B) and optional at remaining stud locations.

12. Lead Tabs — (Not Shown, For Use With Item 4B) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 4B) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2020-12-22

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NEW HANOVER COUNTY • NORTH CAROLINA • ESTABLISHED 1729

ZIMMER DEVELOPMENT COMPANY

LS3P

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WILMINGTON, NORTH CAROLINA 28401
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
UL ASSEMBLIES

ORIG SUBMISSION: 2022.05.25

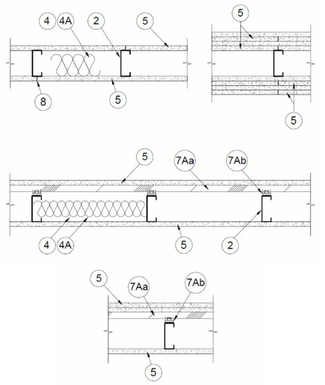
SHEET:
A-006

OWNER REVIEW SET

5/25/2022 5:17:08 PM

THE USE SHOWN ABOVE IS EXACTLY ONE OF THOSE LISTED IN THE REFERENCED DESIGN(S). PLEASE SELECT.

Design No. U419
December 10, 2020
Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 4 & 5 through 5K)
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. Floor and Ceiling Runners — (Not Shown) — For use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC max.

1A. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™ Track
CRACO MFG INC — SmartTrack25™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track
FUSION BUILDING PRODUCTS — Viper25™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper25™ Track

1B. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™ Track
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track
FUSION BUILDING PRODUCTS — Viper20™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track

1C. Framing Members* — Floor and Ceiling Runners — (Not Shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

1D. Floor and Ceiling Runners — (Not Shown) — For use with Item 2A — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.
1E. Framing Members* — Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1) — For use with Items 2E, 5F or 5G or 5I only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners spaced 24 in. OC. max.
CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD
DMFCWBS L L C — ProTRAK
MBA METAL FRAMING — ProSTUD
RAM SALES L L C — Ram ProTRAK
STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

1F. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2F, proprietary channel shaped runners, minimum width to accommodate stud size, with 1- 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
SUPER STUD BUILDING PRODUCTS — The Edge

1G. Framing Members* — Floor and Ceiling Runner — For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC max.
STUDCO BUILDING SYSTEMS — CROCSTUD Track

1H. Floor and Ceiling Runners — (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.018 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track VT100
FUSION BUILDING PRODUCTS — Viper20™ Track VT100
IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track VT100

1I. Framing Members* — Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1) — For use with Items 2H, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.
TELLING INDUSTRIES L L C — TRUE-TRACK™

1J. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2I, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

1K. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2J, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1L. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2N, proprietary channel shaped runners, 1-1/4 in. wide by min. 3-1/2 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
RESCUE METAL FRAMING, L L C — AlphaTRAK

1M. Framing Members* — Floor and Ceiling Runners — Not Shown — As an alternate to Item 1 — For use with Item 2O, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
RONDO BUILDING SERVICES PTY LTD — Rondo Wall Track

1N. Framing Members* — Floor and Ceiling Runners — Not Shown — As an alternate to Item 1 — For use with Item 2P, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
OEG BUILDING MATERIALS — OEG Track

1O. Framing Members* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2Q, proprietary channel shaped runners, min width to accommodate stud size, fabricated from min. 25 MSG (0.018 in. min. bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X Track

2. Steel Studs — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. Steel Studs — (As an alternate to Item 2, For use with Items 5B, 5E, 5H, 5J and 5K) — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2B. Framing Members* - Steel Studs — (As an alternate to Item 2, For use with Items 5C, 5I or 5K) — Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™
CRACO MFG INC — SmartStud25™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™
FUSION BUILDING PRODUCTS — Viper25™
IMPERIAL MANUFACTURING GROUP INC — Viper25™

2C. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™
FUSION BUILDING PRODUCTS — Viper20™
IMPERIAL MANUFACTURING GROUP INC — Viper20™

2D. Framing Members* — Steel Studs — In lieu of Item 2 — Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

2E. Framing Members* — Steel Studs — (Not Shown, As an alternate to Item 2) — For use with Items 5F or 5G or 5I or Type ULIX only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD
DMFCWBS L L C — ProSTUD
MBA METAL FRAMING — ProSTUD
RAM SALES L L C — Ram ProSTUD
STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

2F. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights.
SUPER STUD BUILDING PRODUCTS — The Edge

2G. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the assembly height.
STUDCO BUILDING SYSTEMS — CROCSTUD

2H. **Framing Members* — Steel Studs** — (Not Shown, As an alternate to Item 2) — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
TELLING INDUSTRIES L L C — TRUE-STUD™

2I. **Framing Members* — Steel Studs** —

2J. **Framing Members* — Metal Studs** — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights
OLMAR SUPPLY INC — PRIMESTUD

2K. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — StudRite™

2L. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
RESCUE METAL FRAMING, L L C — AlphaSTUD

2M. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item 1, channel shaped studs, min width as indicated under Item 5, galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
RONDO BUILDING SERVICES PTY LTD — Rondo Lipped Wall Stud

2N. **Framing Members* — Steel Studs** — As an alternate to Item 2 — proprietary channel shaped steel studs, min depth 3-1/2 in. and as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in length than assembly height.
OEG BUILDING MATERIALS — OEG Stud

2O. **Framing Members* — Steel Studs** — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
RONDO BUILDING SERVICES PTY LTD — Rondo Lipped Wall Stud

2P. **Framing Members* — Steel Studs** — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, min 25 MSG galv steel. Studs to be cut 3/8 to 3/4 in. less in length than assembly height. Spaced 24 in. OC max.
OEG BUILDING MATERIALS — OEG Stud

2Q. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1O, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X

3. **Wood Structural Panel Sheathing** — (Optional, For use with Item 5 Only) — (Not Shown) — 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, gypsum panels attached over OSB or plywood panels and fastener lengths for gypsum panels increased by min. 1/2 in.

4. **Batts and Blankets*** — (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5.

See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4A. **Batts and Blankets*** — (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance.

See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4B. **Batts and Blankets*** — For use with Item 5K. Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance.

See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

5. **Gypsum Board*** — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, in. Items 2,2C,2D,2F,2G,2O	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 4)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR; WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC; 3/4 in. thick Types IP-X3 or ULTRACODE
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Type C and 5/8 in. thick Type SCX
UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type SCX, SGX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE
USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC or; 3/4 in. thick Types IP-X3 or ULTRACODE

When Item 7B, **Steel Framing Members***, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6.

5A. **Gypsum Board*** — (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6.

CGC INC — Type SHX.
UNITED STATES GYPSUM CO — Type FRX-G, SHX.
USG MEXICO S A DE C V — Type SHX.

5B. **Gypsum Board*** — (Not Shown) — As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 in or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) — Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips (see Item 11) or Lead Discs (see Item 12) may be used to cover screw heads.

RAY-BAR ENGINEERING CORP — Type RB-LBG

5C. **Gypsum Board*** — (For Use With Item 2B) — Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section VI of Volume 1 in the Fire Resistive Directory.

CGC INC — Type SCX.
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX
UNITED STATES GYPSUM CO — Type SCX, SGX.
USG BORAL DRYWALL SFZ LLC — Type SCX
USG MEXICO S A DE C V — Type SCX

5D. **Gypsum Board*** — (As an alternate to Item 5) — 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.

CGC INC — Type USGX
UNITED STATES GYPSUM CO — Type USGX
USG BORAL DRYWALL SFZ LLC — Type USGX
USG MEXICO S A DE C V — Type USGX

5E. **Gypsum Board*** — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Nelco

5F. **Gypsum Board*** — (As an alternate to Item 5) — For use with Items 1E and 2E and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX
UNITED STATES GYPSUM CO — 5/8 in. thick Type SCX, SGX
USG BORAL DRYWALL SFZ LLC — 5/8 in. thick Type SCX, SGX

5G. **Gypsum Board*** — (As an alternate to Item 5) — For use with Items 1E and 2E only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, in. Items 2,2C,2D,2F,2G,2O	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 4)
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX. or; 3/4 in. thick Types IP-X3 or ULTRACODE
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Types C and 5/8 in. thick SCX
UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type SCX, SGX, SHX. IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-AR, ULIX; 3/4 in. thick Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE
USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE

5H. **Gypsum Board*** — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2A with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).

MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

5I. **Gypsum Board*** — (As an alternate to Item 5) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5.

CGC INC — Type ULX
UNITED STATES GYPSUM CO — Type ULX
USG MEXICO S A DE C V — Type ULX

5J. **Gypsum Board*** — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

6. **Fasteners** — (Not Shown) — For use with Items 2 and 2F - Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). **Single layer systems**: 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. **Two layer systems**: First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer.**Three-layer systems**: First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four layer systems**: First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

7. **Furring Channels** — (Optional, Not Shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 5A.

7A. **Framing Members*** — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. **Steel Framing Members*** — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

7B. **Framing Members*** — (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below:
a. **Furring Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A.
b. **Steel Framing Members*** — Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.
KINETICS NOISE CONTROL INC — Type Isomax

7C. **Framing Members*** — (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. **Steel Framing Members*** — Used to attach furring channels (Item 7Ca) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
PLITEQ INC — Type GENIECLIP

7D. **Steel Framing Members*** — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels** — Formed of No. 25 MSG galv steel, Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. **Steel Framing Members*** — Used to attach furring channels (Item 7Da) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

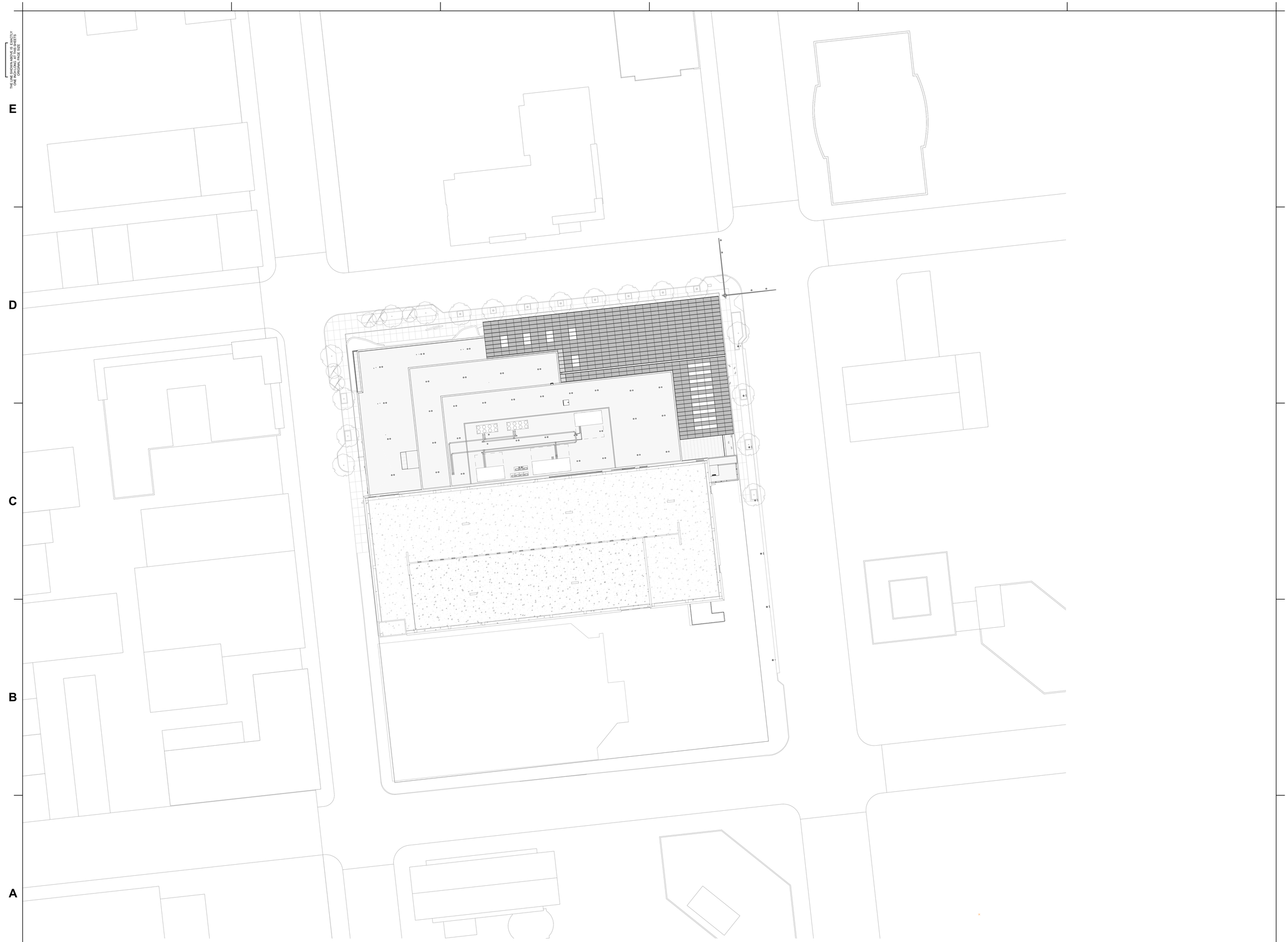
7E. **Steel Framing Members*** — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels** — Formed of No. 25 MSG galv steel, Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 7Eb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.
b. **Steel Framing Members*** — Used to attach furring channels (Item 7Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

7F. **Steel Framing Members*** — (Optional on one or both sides, not shown, for single or double layer systems) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5. Not for use with Item 5A and 5E.
b. **Steel Framing Members*** — Used to attach resilient channels (Item 7Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

8. **Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer face layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint compound may be omitted when gypsum panels are supplied with a square edge.

9. **Siding, Brick or Stucco** — (Optional, Not Shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



A1 ARCHITECTURAL SITE BUILDING PLAN - LEVEL 1

1" = 30'-0"

TRUE NORTH

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ZIMMER DEVELOPMENT COMPANY

LS3P

101 NORTH THIRD STREET, SUITE 500
WILMINGTON, NORTH CAROLINA 28401
TEL. 910.790.9901 FAX. 910.790.3111
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ARCHITECTURAL SITE PLAN

ORIG SUBMISSION: 2022.05.25

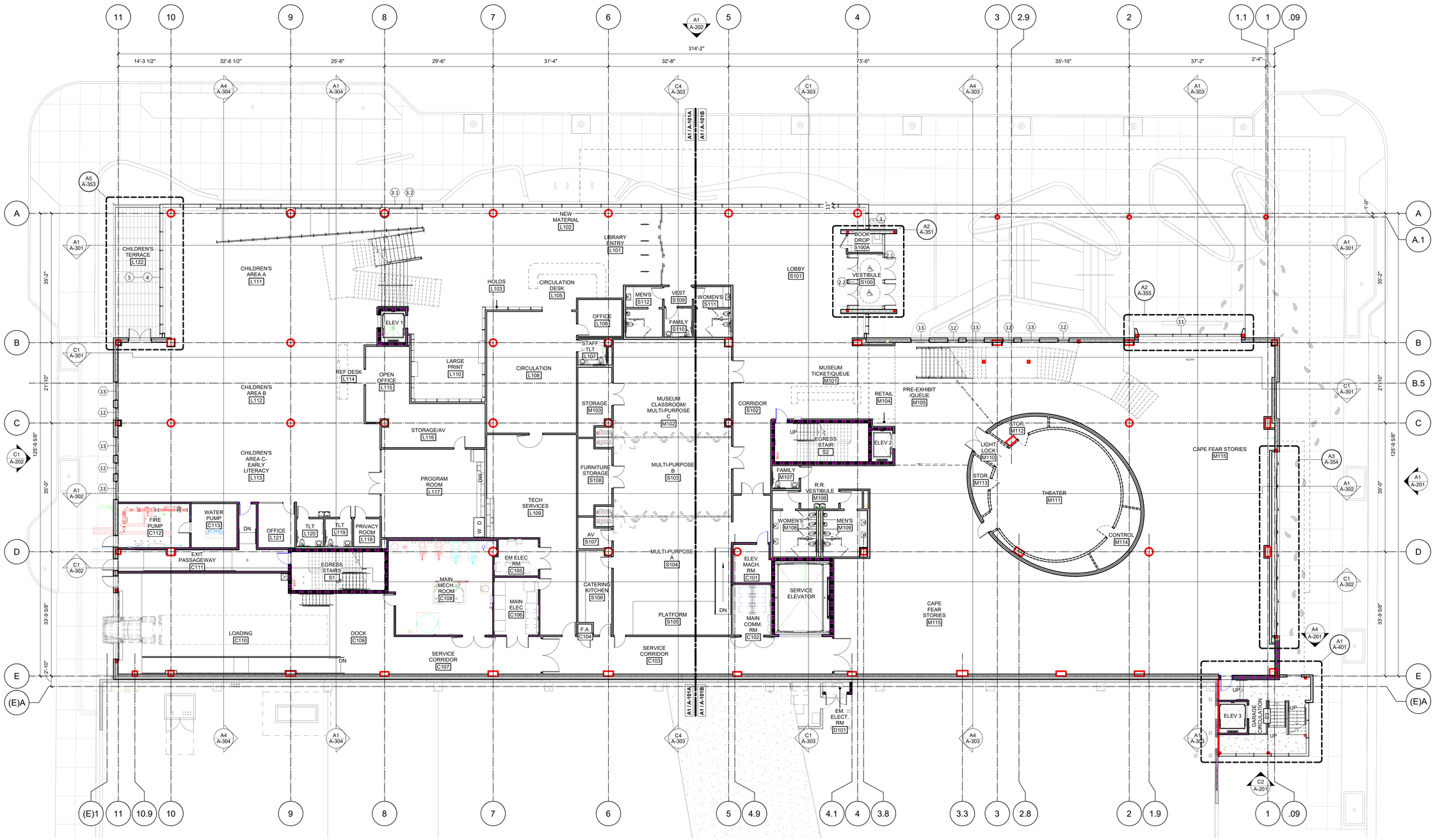
SHEET:
A-100

OWNER REVIEW SET

GENERAL SHEET NOTES

1. DIMENSIONS TO FACE OF PARTITIONS ARE TO FACE OF STUD. FINISHES DEPICTED IN FINISH PLANS AND ELEVATIONS ARE NOT SHOWN ON PARTIAL FLOOR PLANS. REFER TO ENLARGED PLANS, ELEVATIONS, AND DETAILS.
2. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
3. FIRE AND SOUND RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE, PIPING, DUCTWORK AND OTHER PENETRATIONS. ALL WORK IS TO BE BRACED TO STRUCTURE ABOVE.
4. WHERE PARTITIONS OF DIFFERENT FIRE RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL CONTINUE THROUGH. MAINTAIN PARTITION FIRE RATING BEHIND RECESSED FIRE EXTINGUISHER CABINETS.
5. SEE LIFE SAFETY PLANS FOR REQUIRED FIRE SEPARATION WALLS.
6. CONSTRUCTION SUBSYSTEMS ARE TAGGED ON OVERALL PLANS, SEE AREA PLANS FOR PARTITION TAGS. SEE SHEET A-002 FOR CONSRUCTION SUBSYSTEMS AND PARTITION SCHEDULE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE



A1 OVERALL FLOOR PLAN - LEVEL 1

3/32" = 1'-0"

5/25/2022 5:17:32 PM

NEW HANOVER COUNTY • NORTH CAROLINA • ESTABLISHED 1729

ZIMMER DEVELOPMENT COMPANY

LS3P

101 NORTH THIRD STREET, SUITE 500
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

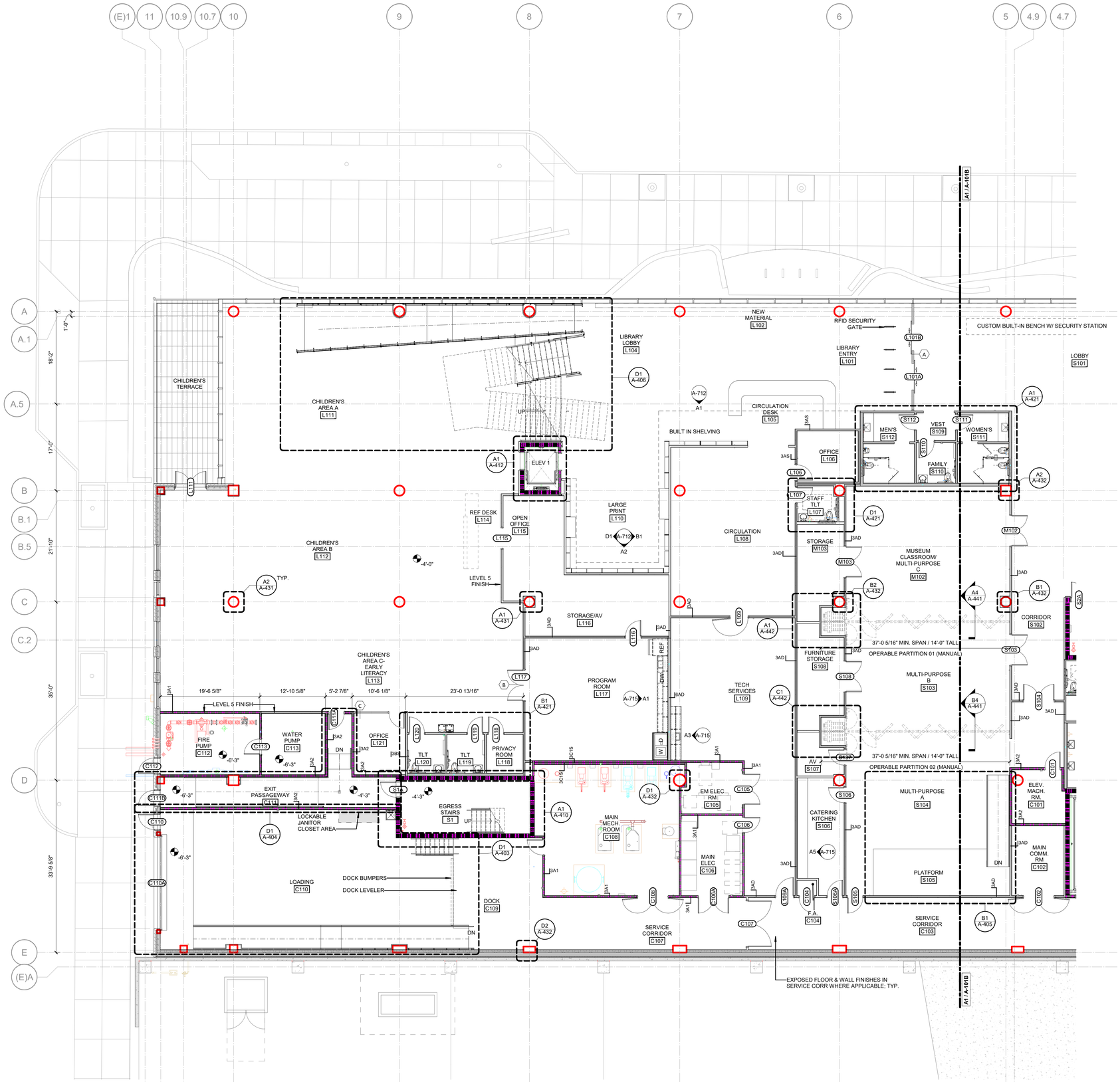
Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: FLOOR PLAN- LEVEL 1

ORIG SUBMISSION: 2022.05.25

SHEET: A-101

OWNER REVIEW SET



FLOOR PLAN SHEET NOTES

1. EXTERIOR DIMENSIONS AT MASONRY VENEER ARE COURSING, NOT ACTUAL AND ARE TO FACE OF MASONRY.
2. EXTERIOR DIMENSIONS AT STUCCO VENEER ARE TO FACE OF METAL STUD.
3. EXTERIOR DIMENSIONS AT PRECAST ARE TO FACE OF PRECAST
4. INTERIOR DIMENSIONS INDICATED ARE TO FACE OF STUD, FACE OF MASONRY AND CENTERLINES OF COLUMNS, UNO.
5. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
6. RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE. ALL PENETRATIONS AND TERMINAL JOINTS ARE TO BE INSTALLED AS SHOWN IN APPLICABLE UL JOINT OR PENETRATION DETAIL.
7. WHERE PARTITIONS OF DIFFERENT FIRE RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL CONTINUE THROUGH. MAINTAIN PARTITION FIRE RATING BEHIND RECESSED FIRE EXTINGUISHER CABINETS.
8. RATED WALLS INTERSECTING EXTERIOR WALLS SHALL EXTEND TO THE INSIDE FACE OF EXTERIOR SHEATHING.
9. INSTALL BLOCKING IN PARTITIONS FOR CASEWORK, WALL MOUNTED EQUIPMENT, TRIM, AND RELATED CONSTRUCTION.
10. SEE LIFE SAFETY PLANS FOR LOCATIONS OF FIRE RATED AND SMOKE WALLS
11. SEE SHEET A-001 FOR CONSTRUCTION SUBSYSTEMS (OR PARTITION SCHEDULE)
12. SEE SHEET A-422 FOR INTERIOR ELEVATIONS, ACCESSORY DESCRIPTIONS & MOUNTING HEIGHTS.
13. SEE SHEET A-421 FOR ENLARGED PLANS INDICATING ADDITIONAL DIMENSIONS AND PARTITION TYPES, ACCESSORIES AND MOUNTING HEIGHTS.
14. SEE SHEET A-801 FOR FINISH FLOORING, TRANSITIONS, PATTERNS AND WALL PROTECTION.
15. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
16. SEE BUILDING ELEVATION DRAWINGS FOR LOCATION OF EXTERIOR MASONRY CONTROL JOINTS.
17. FIELD VERIFY LOCATION OF INTERIOR WALL & CEILING CONTROL JOINTS REQUIRED IN THE SPECIFICATION WITH ARCHITECT PRIOR TO INSTALLATION.
18. WALLS, INCLUDING GYP. BD. AT PERIMETER OF ROOMS/SPACES WITHOUT CEILINGS, i.e. EXPOSED STRUCTURE, SHALL EXTEND TO STRUCTURE ABOVE.
19. AT ANY LOCATION WHERE AN INTERIOR WALL TERMINATES AT AN EXTERIOR STOREFRONT, INSTALL MULLION MATE AT INTERSECTION OF WALL AND STOREFRONT.
20. PARTITION TYPES ARE TAGGED ON AREA PLANS. SEE OVERALL PLANS FOR CONSTRUCTION SUBSYSTEMS. SEE SHEET A-003 FOR CONSTRUCTION SUBSYSTEMS AND PARTITION SCHEDULE.
21. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
22. **ASSUME ALL COLUMNS LOCATED WITHIN WALL FRAMING TO BE FURRED; COLUMN SIZE AND SHAPE = TBD**

PARTITION NOTES

1. ALL NON-DESIGNATED PARTITIONS SHALL BE 3A
2. WALLS CALLED OUT AS LEVEL 5 TO BE TRUE LEVEL 5 FINISH. ALL OTHER WALLS TO BE LEVEL 4 WITH LEVEL 5 SPRAY.
3. ABUSE RESISTANT GYPSUM BOARD SHALL BE INSTALLED IN ALL CORRIDORS FROM FLOOR TO 8'-0" AFF
4. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DUCTWORK PRIOR TO FABRICATION OF PARTITION WALL.
5. SHOULD CONDITIONS OCCUR WHERE A WALL IS UNABLE TO GO STRAIGHT UP TO STRUCTURE DUE TO PIPING, DUCTWORK, ETC., THE PARTITION (GYPSUM BOARD AND FRAMING) MAY JOG HORIZONTALLY ABOVE THE CEILING TO AVOID THE PROBLEM. RATE WALL INTEGRITY SHALL BE MAINTAINED.
6. NON-RATED PARTITIONS, EXCEPT THOSE WITH "D" OR "S" DESIGNATOR, GWB SHALL EXTEND 6" ABOVE THE CEILING U.N.O.
7. NON-RATED SMOKE PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE.
8. FIRE RATED PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE. SEE UL DETAILS FOR ADDITIONAL REQUIREMENTS
9. TYPE "D,E,R,Q" PARTITIONS SHALL EXTEND TO ADJACENT WALLS AND STRUCTURE ABOVE, PROVIDE ACOUSTICAL SEALANT AT BOTTOM, TOP, AND SIDES
10. WHERE STUDS EXTEND TO STRUCTURE AND GYPSUM WALLBOARD AND SOUND ATTENUATION BLANKETS EXTEND JUST ABOVE THE FINISH CEILING, CAP OFF PARTITION FINISHES WITH A RUNNER CHANNEL WHEN CEILING PLENUM IS USED AS A RETURN AIR PLENUM.
11. DIMENSIONAL CONFLICTS BETWEEN PARTITION TYPES AND THE ARCHITECTURAL FLOOR PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
12. AT WET AREAS, PROVIDE MOISTURE RESISTANT GWB OR MOLD & MOISTURE RESISTANT GWB AT NON-RATED PARTITIONS. PROVIDE FIRE RATED MOISTURE RESISTANT GWB OR FIRE RATED MOLD & MOISTURE RESISTANT GWB AT RATED PARTITIONS.
13. ON PARTITIONS RECEIVING WALL TILE (REFER TO FINISH SCHEDULE) PROVIDE CEMENTITIOUS BACKER BOARD BEHIND PORTIONS OF PARTITION RECEIVING TILE ONLY.
14. SEE LIFE SAFETY PLANS FOR LOCATIONS OF SMOKE BARRIERS, SMOKE PARTITIONS, AND FIRE-RATED PARTITIONS.
15. REFER TO UNDERWRITERS LABORATORIES, INC. FIRE RESISTANCE VOLUMES - CURRENT EDITION FOR SPECIFIC CONSTRUCTION REQUIREMENTS OF U.L. LISTED ASSEMBLIES FOR PENETRATIONS.
16. REFER TO DETAIL MECH. DWGS. FOR TYPICAL WALL FRAMING FOR FIRE DAMPERS IN RATED WALLS. COORDINATE EXACT FRAMING REQUIREMENTS WITH FIRE DAMPER MANUFACTURER. (COORDINTE ALL PARTITION CONSTRUCTION WITH MECHANICAL PRIME CONTRACTOR PRIOR TO COMMENCING PARTITION CONSTRUCTION.

PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



- SEE FILL PATTERN LEGEND FOR FIRE-RESISTANCE RATING
- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
- SEE PARTITION TAG AND SCHEDULE FOR COMPLETE PARTITION INFORMATION

FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
- 1 HOUR-RATED PARTITION
- 2 HOUR-RATED PARTITION
- 3 HOUR-RATED PARTITION
- 4 HOUR-RATED PARTITION

COLOR LEGEND

- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
- RATED **FIRE PARTITION** TO DECK
- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

A1 FLOOR PLAN - PARTIAL - LEVEL 1 - AREA A

1/8" = 1'-0"

ZIMMER DEVELOPMENT COMPANY

LS3P

101 NORTH THIRD STREET, SUITE 500
WILMINGTON, NORTH CAROLINA 28401
TEL. 910.790.9901 FAX. 910.790.3111
WWW.LS3P.COM

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

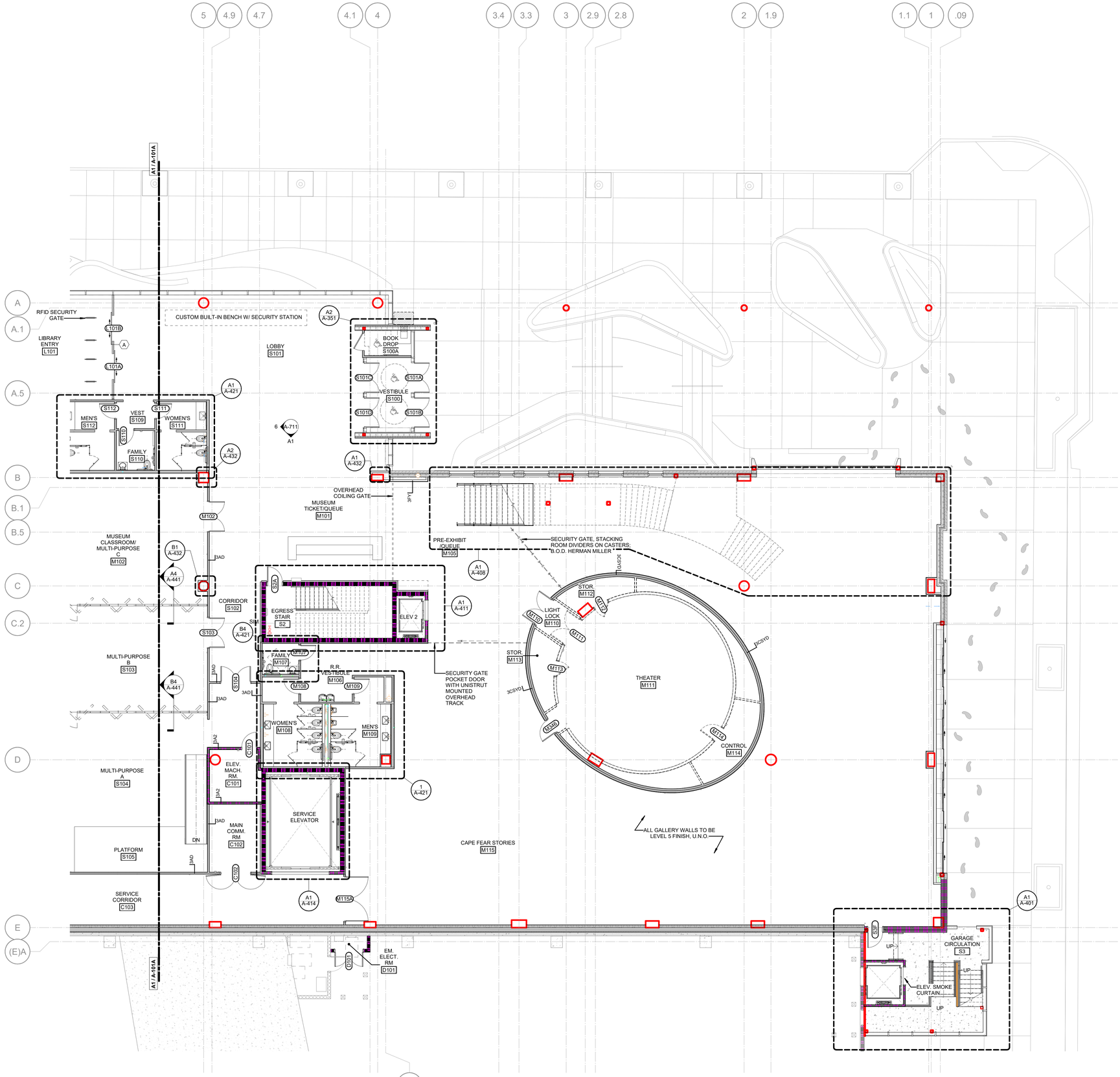
SHEET NAME:
FLOOR PLAN- LEVEL 1- AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
A-101A

OWNER REVIEW SET

5/25/2022 5:17:49 PM



A1 FLOOR PLAN - PARTIAL - LEVEL 1 - AREA B

1/8" = 1'-0"

FLOOR PLAN SHEET NOTES

1. EXTERIOR DIMENSIONS AT MASONRY VENEER ARE COURSING, NOT ACTUAL AND ARE TO FACE OF MASONRY.
2. EXTERIOR DIMENSIONS AT STUCCO VENEER ARE TO FACE OF METAL STUD.
3. EXTERIOR DIMENSIONS AT PRECAST ARE TO FACE OF PRECAST
4. INTERIOR DIMENSIONS INDICATED ARE TO FACE OF STUD, FACE OF MASONRY AND CENTERLINES OF COLUMNS, UNO.
5. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
6. RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE. ALL PENETRATIONS AND TERMINAL JOINTS ARE TO BE INSTALLED AS SHOWN IN APPLICABLE UL JOINT OR PENETRATION DETAIL.
7. WHERE PARTITIONS OF DIFFERENT FIRE RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL CONTINUE THROUGH. MAINTAIN PARTITION FIRE RATING BEHIND RECESSED FIRE EXTINGUISHER CABINETS.
8. RATED WALLS INTERSECTING EXTERIOR WALLS SHALL EXTEND TO THE INSIDE FACE OF EXTERIOR SHEATHING.
9. INSTALL BLOCKING IN PARTITIONS FOR CASEWORK, WALL MOUNTED EQUIPMENT, TRIM, AND RELATED CONSTRUCTION.
10. SEE LIFE SAFETY PLANS FOR LOCATIONS OF FIRE RATED AND SMOKE WALLS
11. SEE SHEET A-001 FOR CONSTRUCTION SUBSYSTEMS (OR PARTITION SCHEDULE)
12. SEE SHEET A-422 FOR INTERIOR ELEVATIONS, ACCESSORY DESCRIPTIONS & MOUNTING HEIGHTS.
13. SEE SHEET A-421 FOR ENLARGED PLANS INDICATING ADDITIONAL DIMENSIONS AND PARTITION TYPES, ACCESSORIES AND MOUNTING HEIGHTS.
14. SEE SHEET A-801 FOR FINISH FLOORING, TRANSITIONS, PATTERNS AND WALL PROTECTION.
15. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
16. SEE BUILDING ELEVATION DRAWINGS FOR LOCATION OF EXTERIOR MASONRY CONTROL JOINTS.
17. FIELD VERIFY LOCATION OF INTERIOR WALL & CEILING CONTROL JOINTS REQUIRED IN THE SPECIFICATION WITH ARCHITECT PRIOR TO INSTALLATION.
18. WALLS, INCLUDING GYP. BD. AT PERIMETER OF ROOMS/SPACES WITHOUT CEILINGS, i.e. EXPOSED STRUCTURE, SHALL EXTEND TO STRUCTURE ABOVE.
19. AT ANY LOCATION WHERE AN INTERIOR WALL TERMINATES AT AN EXTERIOR STOREFRONT, INSTALL MULLION MATE AT INTERSECTION OF WALL AND STOREFRONT.
20. PARTITION TYPES ARE TAGGED ON AREA PLANS. SEE OVERALL PLANS FOR CONSTRUCTION SUBSYSTEMS. SEE SHEET A-003 FOR CONSTRUCTION SUBSYSTEMS AND PARTITION SCHEDULE.
21. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
22. **ASSUME ALL COLUMNS LOCATED WITHIN WALL FRAMING TO BE FURRED; COLUMN SIZE AND SHAPE = TBD**

PARTITION NOTES

1. ALL NON-DESIGNATED PARTITIONS SHALL BE 3A
2. WALLS CALLED OUT AS LEVEL 5 TO BE TRUE LEVEL 5 FINISH. ALL OTHER WALLS TO BE LEVEL 4 WITH LEVEL 5 SPRAY.
3. ABUSE RESISTANT GYPSUM BOARD SHALL BE INSTALLED IN ALL CORRIDORS FROM FLOOR TO 8'-0" AFF
4. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DUCTWORK PRIOR TO FABRICATION OF PARTITION WALL.
5. SHOULD CONDITIONS OCCUR WHERE A WALL IS UNABLE TO GO STRAIGHT UP TO STRUCTURE DUE TO PIPING, DUCTWORK, ETC., THE PARTITION (GYPSUM BOARD AND FRAMING) MAY JOG HORIZONTALLY ABOVE THE CEILING TO AVOID THE PROBLEM. RATE WALL INTEGRITY SHALL BE MAINTAINED.
6. NON-RATED PARTITIONS, EXCEPT THOSE WITH "D" OR "S" DESIGNATOR, GWB SHALL EXTEND 6" ABOVE THE CEILING U.N.O.
7. NON-RATED SMOKE PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE.
8. FIRE RATED PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE. SEE UL DETAILS FOR ADDITIONAL REQUIREMENTS
9. TYPE "D,E,R,Q" PARTITIONS SHALL EXTEND TO ADJACENT WALLS AND STRUCTURE ABOVE, PROVIDE ACOUSTICAL SEALANT AT BOTTOM, TOP, AND SIDES
10. WHERE STUDS EXTEND TO STRUCTURE AND GYPSUM WALLBOARD AND SOUND ATTENUATION BLANKETS EXTEND JUST ABOVE THE FINISH CEILING, CAP OFF PARTITOIN FINISHES WITH A RUNNER CHANNEL WHEN CEILING PLENUM IS USED AS A RETURN AIR PLENUM.
11. DIMENSIONAL CONFLICTS BETWEEN PARTITION TYPES AND THE ARCHITECTURAL FLOOR PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
12. AT WET AREAS, PROVIDE MOISTURE RESISTANT GWB OR MOLD & MOISTURE RESISTANT GWB AT NON-RATED PARTITIONS. PROVIDE FIRE RATED MOISTURE RESISTANT GWB OR FIRE RATED MOLD & MOISTURE RESISTANT GWB AT RATED PARTITIONS.
13. ON PARTITIONS RECEIVING WALL TILE (REFER TO FINISH SCHEDULE) PROVIDE CEMENTITIOUS BACKER BOARD BEHIND PORTIONS OF PARTITION RECEIVING TILE ONLY.
14. SEE LIFE SAFETY PLANS FOR LOCATIONS OF SMOKE BARRIERS, SMOKE PARTITIONS, AND FIRE-RATED PARTITIONS.
15. REFER TO UNDERWRITERS LABORATORIES, INC. FIRE RESISTANCE VOLUMES - CURRENT EDITION FOR SPECIFIC CONSTRUCTION REQUIREMENTS OF U.L. LISTED ASSEMBLIES FOR PENETRATIONS.
16. REFER TO DETAIL MECH. DWGS. FOR TYPICAL WALL FRAMING FOR FIRE DAMPERS IN RATED WALLS. COORDINATE EXACT FRAMING REQUIREMENTS WITH FIRE DAMPER MANUFACTURER. (COORDINTE ALL PARTITION CONSTRUCTION WITH MECHANICAL PRIME CONTRACTOR PRIOR TO COMMENCING PARTITION CONSTRUCTION.

PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



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- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FLOOR PLAN- LEVEL 1- AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
A-101B

OWNER REVIEW SET

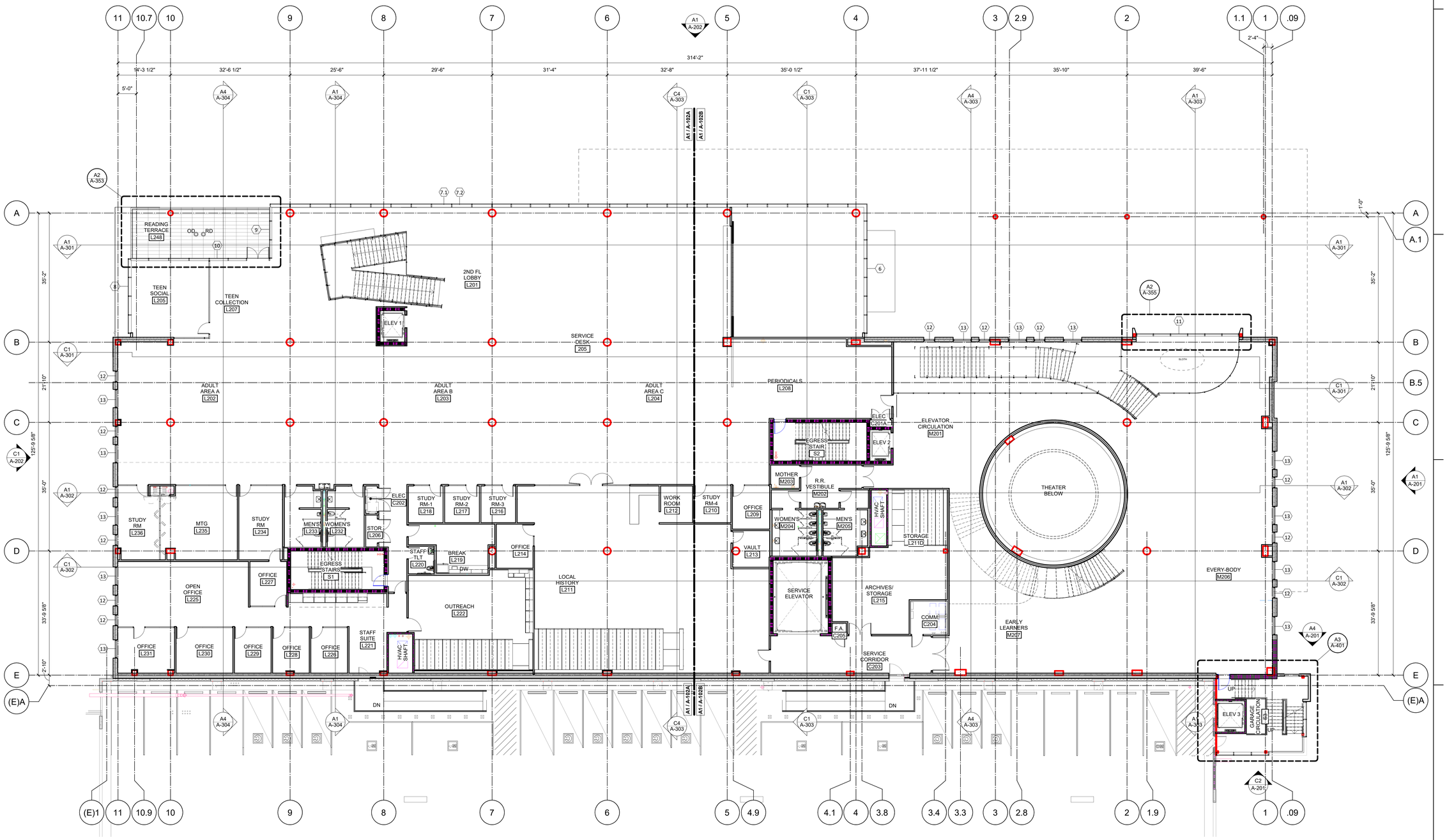
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PLOT SIZE

5/25/2022 5:17:57 PM

GENERAL SHEET NOTES

1. DIMENSIONS TO FACE OF PARTITIONS ARE TO FACE OF STUD. FINISHES DEPICTED IN FINISH PLANS AND ELEVATIONS ARE NOT SHOWN ON PARTIAL FLOOR PLANS. REFER TO ENLARGED PLANS, ELEVATIONS, AND DETAILS.
2. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
3. FIRE AND SOUND RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE, PIPING, DUCTWORK AND OTHER PENETRATIONS. ALL WORK IS TO BE BRACED TO STRUCTURE ABOVE.
4. WHERE PARTITIONS OF DIFFERENT FIRE RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL CONTINUE THROUGH. MAINTAIN PARTITION FIRE RATING BEHIND RECESSED FIRE EXTINGUISHER CABINETS.
5. SEE LIFE SAFETY PLANS FOR REQUIRED FIRE SEPARATION WALLS.
6. CONSTRUCTION SUBSYSTEMS ARE TAGGED ON OVERALL PLANS, SEE AREA PLANS FOR PARTITION TAGS. SEE SHEET A-002 FOR CONSRUCTION SUBSYSTEMS AND PARTITION SCHEDULE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



A1 OVERALL FLOOR PLAN - LEVEL 2

3/32" = 1'-0"

5/25/2022 5:18:11 PM

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LS3P

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: FLOOR PLAN- LEVEL 2

ORIG SUBMISSION: 2022.05.25

SHEET: **A-102**

OWNER REVIEW SET



FLOOR PLAN SHEET NOTES

1. EXTERIOR DIMENSIONS AT MASONRY VENEER ARE COURSING, NOT ACTUAL AND ARE TO FACE OF MASONRY.
2. EXTERIOR DIMENSIONS AT STUCCO VENEER ARE TO FACE OF METAL STUD.
3. EXTERIOR DIMENSIONS AT PRECAST ARE TO FACE OF PRECAST
4. INTERIOR DIMENSIONS INDICATED ARE TO FACE OF STUD, FACE OF MASONRY AND CENTERLINES OF COLUMNS, UNO.
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9. INSTALL BLOCKING IN PARTITIONS FOR CASEWORK, WALL MOUNTED EQUIPMENT, TRIM, AND RELATED CONSTRUCTION.
10. SEE LIFE SAFETY PLANS FOR LOCATIONS OF FIRE RATED AND SMOKE WALLS
11. SEE SHEET A-001 FOR CONSTRUCTION SUBSYSTEMS (OR PARTITION SCHEDULE)
12. SEE SHEET A-422 FOR INTERIOR ELEVATIONS, ACCESSORY DESCRIPTIONS & MOUNTING HEIGHTS.
13. SEE SHEET A-421 FOR ENLARGED PLANS INDICATING ADDITIONAL DIMENSIONS AND PARTITION TYPES, ACCESSORIES AND MOUNTING HEIGHTS.
14. SEE SHEET A-801 FOR FINISH FLOORING, TRANSITIONS, PATTERNS AND WALL PROTECTION.
15. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
16. SEE BUILDING ELEVATION DRAWINGS FOR LOCATION OF EXTERIOR MASONRY CONTROL JOINTS.
17. FIELD VERIFY LOCATION OF INTERIOR WALL & CEILING CONTROL JOINTS REQUIRED IN THE SPECIFICATION WITH ARCHITECT PRIOR TO INSTALLATION.
18. WALLS, INCLUDING GYP. BD. AT PERIMETER OF ROOMS/SPACES WITHOUT CEILINGS, i.e. EXPOSED STRUCTURE, SHALL EXTEND TO STRUCTURE ABOVE.
19. AT ANY LOCATION WHERE AN INTERIOR WALL TERMINATES AT AN EXTERIOR STOREFRONT, INSTALL MULLION MATE AT INTERSECTION OF WALL AND STOREFRONT.
20. PARTITION TYPES ARE TAGGED ON AREA PLANS. SEE OVERALL PLANS FOR CONSTRUCTION SUBSYSTEMS. SEE SHEET A-003 FOR CONSTRUCTION SUBSYSTEMS AND PARTITION SCHEDULE.
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22. **ASSUME ALL COLUMNS LOCATED WITHIN WALL FRAMING TO BE FURRED; COLUMN SIZE AND SHAPE = TBD**

PARTITION NOTES

1. ALL NON-DESIGNATED PARTITIONS SHALL BE 3A
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5. SHOULD CONDITIONS OCCUR WHERE A WALL IS UNABLE TO GO STRAIGHT UP TO STRUCTURE DUE TO PIPING, DUCTWORK, ETC., THE PARTITION (GYPSUM BOARD AND FRAMING) MAY JOG HORIZONTALLY ABOVE THE CEILING TO AVOID THE PROBLEM. RATE WALL INTEGRITY SHALL BE MAINTAINED.
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11. DIMENSIONAL CONFLICTS BETWEEN PARTITION TYPES AND THE ARCHITECTURAL FLOOR PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
12. AT WET AREAS, PROVIDE MOISTURE RESISTANT GWB OR MOLD & MOISTURE RESISTANT GWB AT NON-RATED PARTITIONS. PROVIDE FIRE RATED MOISTURE RESISTANT GWB OR FIRE RATED MOLD & MOISTURE RESISTANT GWB AT RATED PARTITIONS.
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PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



- SEE FILL PATTERN LEGEND FOR FIRE-RESISTANCE RATING
- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
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FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
- 1 HOUR-RATED PARTITION
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COLOR LEGEND

- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
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- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FLOOR PLAN- LEVEL 2- AREA A

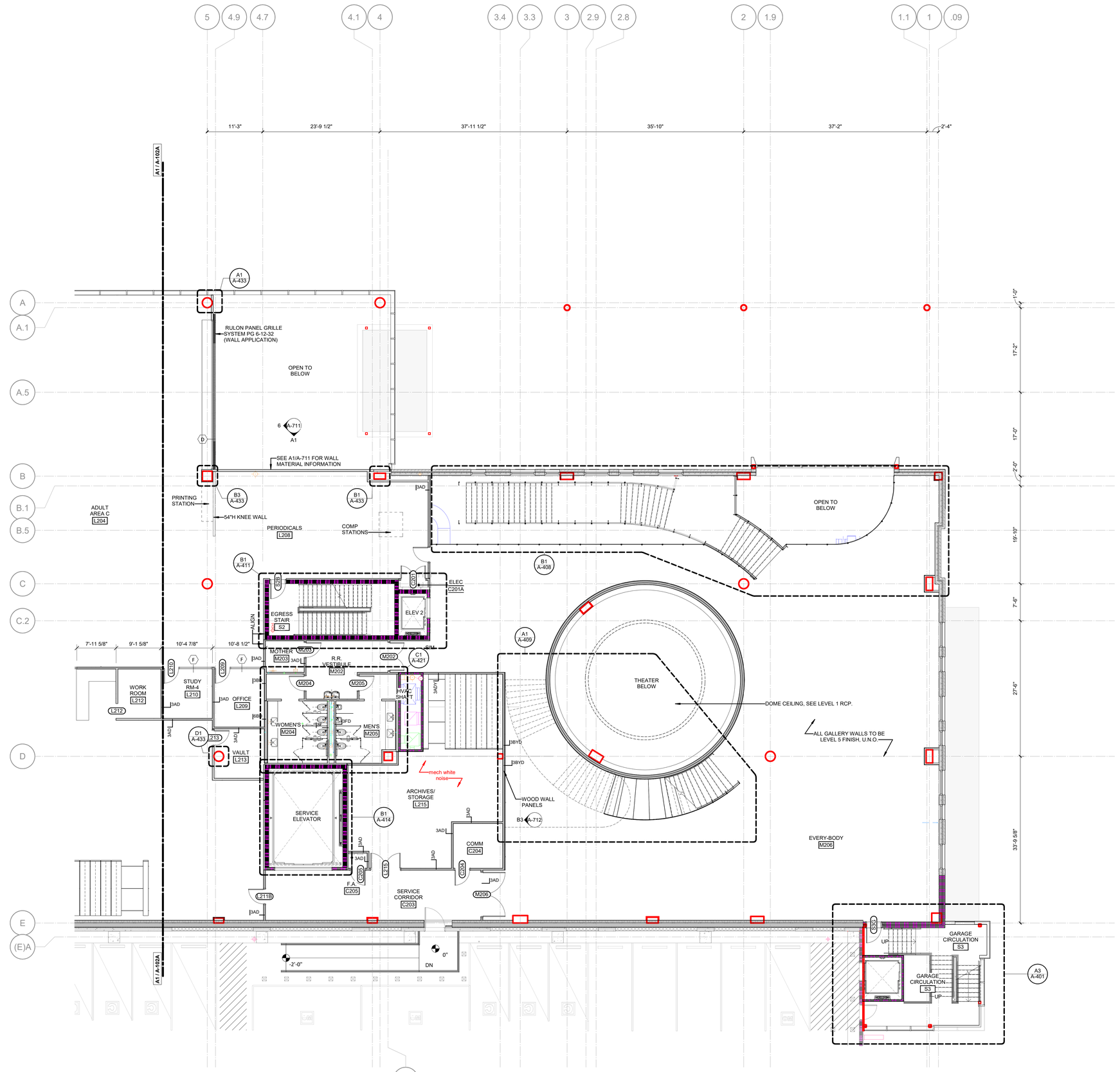
ORIG SUBMISSION: 2022.05.25

SHEET:
A-102A

OWNER REVIEW SET

A1 FLOOR PLAN - PARTIAL - LEVEL 2 - AREA A
1/8" = 1'-0"

5/25/2022 5:18:20 PM



A1 FLOOR PLAN - PARTIAL - LEVEL 2 - AREA B

1/8" = 1'-0"

FLOOR PLAN SHEET NOTES

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GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



- SEE FILL PATTERN LEGEND FOR FIRE-RESISTANCE RATING
- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
- SEE PARTITION TAG AND SCHEDULE FOR COMPLETE PARTITION INFORMATION

FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
- 1 HOUR-RATED PARTITION
- 2 HOUR-RATED PARTITION
- 3 HOUR-RATED PARTITION
- 4 HOUR-RATED PARTITION

COLOR LEGEND

- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
- RATED **FIRE PARTITION** TO DECK
- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

NEW HANOVER COUNTY • NORTH CAROLINA • ESTABLISHED 1729

ZIMMER DEVELOPMENT COMPANY

LS3P

101 NORTH THIRD STREET, SUITE 500
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FLOOR PLAN- LEVEL 2- AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
A-102B

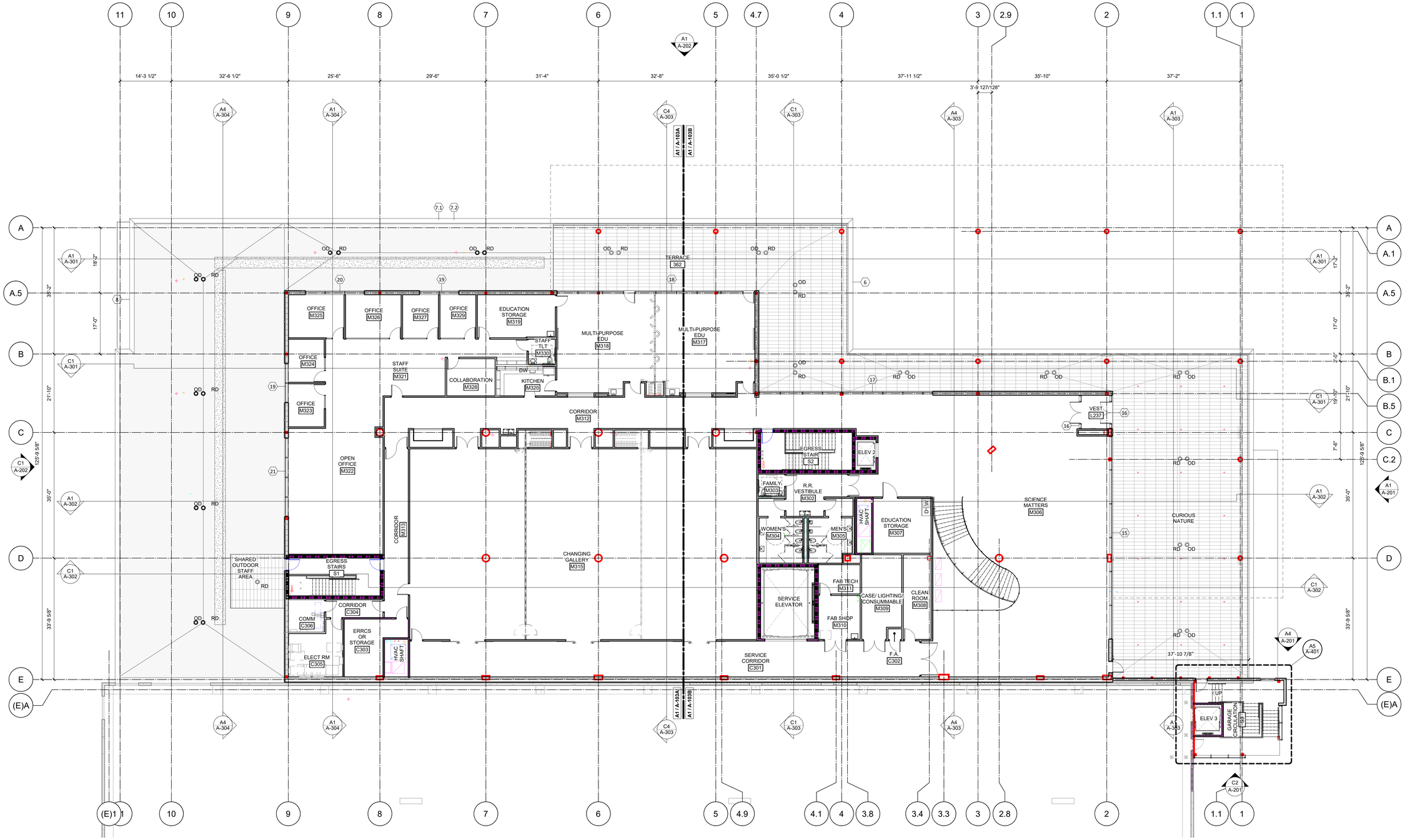
OWNER REVIEW SET

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GENERAL SHEET NOTES

1. DIMENSIONS TO FACE OF PARTITIONS ARE TO FACE OF STUD. FINISHES DEPICTED IN FINISH PLANS AND ELEVATIONS ARE NOT SHOWN ON PARTIAL FLOOR PLANS. REFER TO ENLARGED PLANS, ELEVATIONS, AND DETAILS.
2. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
3. FIRE AND SOUND RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE, PIPING, DUCTWORK AND OTHER PENETRATIONS. ALL WORK IS TO BE BRACED TO STRUCTURE ABOVE.
4. WHERE PARTITIONS OF DIFFERENT FIRE RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL CONTINUE THROUGH. MAINTAIN PARTITION FIRE RATING BEHIND RECESSED FIRE EXTINGUISHER CABINETS.
5. SEE LIFE SAFETY PLANS FOR REQUIRED FIRE SEPARATION WALLS.
6. CONSTRUCTION SUBSYSTEMS ARE TAGGED ON OVERALL PLANS, SEE AREA PLANS FOR PARTITION TAGS. SEE SHEET A-002 FOR CONSRUCTION SUBSYSTEMS AND PARTITION SCHEDULE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE



A1 OVERALL FLOOR PLAN - LEVEL 3

3/32" = 1'-0"

5/25/2022 5:18:41 PM

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FLOOR PLAN- LEVEL 3

ORIG SUBMISSION: 2022.05.25

SHEET:
A-103

OWNER REVIEW SET



A1 FLOOR PLAN - PARTIAL - LEVEL 3 - AREA A

1/8" = 1'-0"

FLOOR PLAN SHEET NOTES

1. EXTERIOR DIMENSIONS AT MASONRY VENEER ARE COURSING, NOT ACTUAL AND ARE TO FACE OF MASONRY.
2. EXTERIOR DIMENSIONS AT STUCCO VENEER ARE TO FACE OF METAL STUD.
3. EXTERIOR DIMENSIONS AT PRECAST ARE TO FACE OF PRECAST
4. INTERIOR DIMENSIONS INDICATED ARE TO FACE OF STUD, FACE OF MASONRY AND CENTERLINES OF COLUMNS, UNO.
5. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
6. RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE. ALL PENETRATIONS AND TERMINAL JOINTS ARE TO BE INSTALLED AS SHOWN IN APPLICABLE UL JOINT OR PENETRATION DETAIL.
7. WHERE PARTITIONS OF DIFFERENT FIRE RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL CONTINUE THROUGH. MAINTAIN PARTITION FIRE RATING BEHIND RECESSED FIRE EXTINGUISHER CABINETS.
8. RATED WALLS INTERSECTING EXTERIOR WALLS SHALL EXTEND TO THE INSIDE FACE OF EXTERIOR SHEATHING.
9. INSTALL BLOCKING IN PARTITIONS FOR CASEWORK, WALL MOUNTED EQUIPMENT, TRIM, AND RELATED CONSTRUCTION.
10. SEE LIFE SAFETY PLANS FOR LOCATIONS OF FIRE RATED AND SMOKE WALLS
11. SEE SHEET A-001 FOR CONSTRUCTION SUBSYSTEMS (OR PARTITION SCHEDULE)
12. SEE SHEET A-422 FOR INTERIOR ELEVATIONS, ACCESSORY DESCRIPTIONS & MOUNTING HEIGHTS.
13. SEE SHEET A-421 FOR ENLARGED PLANS INDICATING ADDITIONAL DIMENSIONS AND PARTITION TYPES, ACCESSORIES AND MOUNTING HEIGHTS.
14. SEE SHEET A-801 FOR FINISH FLOORING, TRANSITIONS, PATTERNS AND WALL PROTECTION.
15. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
16. SEE BUILDING ELEVATION DRAWINGS FOR LOCATION OF EXTERIOR MASONRY CONTROL JOINTS.
17. FIELD VERIFY LOCATION OF INTERIOR WALL & CEILING CONTROL JOINTS REQUIRED IN THE SPECIFICATION WITH ARCHITECT PRIOR TO INSTALLATION.
18. WALLS, INCLUDING GYP. BD. AT PERIMETER OF ROOMS/SPACES WITHOUT CEILINGS, i.e. EXPOSED STRUCTURE, SHALL EXTEND TO STRUCTURE ABOVE.
19. AT ANY LOCATION WHERE AN INTERIOR WALL TERMINATES AT AN EXTERIOR STOREFRONT, INSTALL MULLION MATE AT INTERSECTION OF WALL AND STOREFRONT.
20. PARTITION TYPES ARE TAGGED ON AREA PLANS. SEE OVERALL PLANS FOR CONSTRUCTION SUBSYSTEMS. SEE SHEET A-003 FOR CONSTRUCTION SUBSYSTEMS AND PARTITION SCHEDULE.
21. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
22. **ASSUME ALL COLUMNS LOCATED WITHIN WALL FRAMING TO BE FURRED; COLUMN SIZE AND SHAPE = TBD**

PARTITION NOTES

1. ALL NON-DESIGNATED PARTITIONS SHALL BE 3A
2. WALLS CALLED OUT AS LEVEL 5 TO BE TRUE LEVEL 5 FINISH. ALL OTHER WALLS TO BE LEVEL 4 WITH LEVEL 5 SPRAY.
3. ABUSE RESISTANT GYPSUM BOARD SHALL BE INSTALLED IN ALL CORRIDORS FROM FLOOR TO 8'-0" AFF
4. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DUCTWORK PRIOR TO FABRICATION OF PARTITION WALL.
5. SHOULD CONDITIONS OCCUR WHERE A WALL IS UNABLE TO GO STRAIGHT UP TO STRUCTURE DUE TO PIPING, DUCTWORK, ETC., THE PARTITION (GYPSUM BOARD AND FRAMING) MAY JOG HORIZONTALLY ABOVE THE CEILING TO AVOID THE PROBLEM. RATE WALL INTEGRITY SHALL BE MAINTAINED.
6. NON-RATED PARTITIONS, EXCEPT THOSE WITH "D" OR "S" DESIGNATOR, GWB SHALL EXTEND 6" ABOVE THE CEILING U.N.O.
7. NON-RATED SMOKE PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE.
8. FIRE RATED PARTITIONS SHALL EXTEND TO THE STRUCTURE ABOVE. SEE UL DETAILS FOR ADDITIONAL REQUIREMENTS
9. TYPE "D,E,R,Q" PARTITIONS SHALL EXTEND TO ADJACENT WALLS AND STRUCTURE ABOVE, PROVIDE ACOUSTICAL SEALANT AT BOTTOM, TOP, AND SIDES
10. WHERE STUDS EXTEND TO STRUCTURE AND GYPSUM WALLBOARD AND SOUND ATTENUATION BLANKETS EXTEND JUST ABOVE THE FINISH CEILING, CAP OFF PARTITION FINISHES WITH A RUNNER CHANNEL WHEN CEILING PLENUM IS USED AS A RETURN AIR PLENUM.
11. DIMENSIONAL CONFLICTS BETWEEN PARTITION TYPES AND THE ARCHITECTURAL FLOOR PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
12. AT WET AREAS, PROVIDE MOISTURE RESISTANT GWB OR MOLD & MOISTURE RESISTANT GWB AT NON-RATED PARTITIONS. PROVIDE FIRE RATED MOISTURE RESISTANT GWB OR FIRE RATED MOLD & MOISTURE RESISTANT GWB AT RATED PARTITIONS.
13. ON PARTITIONS RECEIVING WALL TILE (REFER TO FINISH SCHEDULE) PROVIDE CEMENTITIOUS BACKER BOARD BEHIND PORTIONS OF PARTITION RECEIVING TILE ONLY.
14. SEE LIFE SAFETY PLANS FOR LOCATIONS OF SMOKE BARRIERS, SMOKE PARTITIONS, AND FIRE-RATED PARTITIONS.
15. REFER TO UNDERWRITERS LABORATORIES, INC. FIRE RESISTANCE VOLUMES - CURRENT EDITION FOR SPECIFIC CONSTRUCTION REQUIREMENTS OF U.L. LISTED ASSEMBLIES FOR PENETRATIONS.
16. REFER TO DETAIL MECH. DWGS. FOR TYPICAL WALL FRAMING FOR FIRE DAMPERS IN RATED WALLS. COORDINATE EXACT FRAMING REQUIREMENTS WITH FIRE DAMPER MANUFACTURER. (COORDINTE ALL PARTITION CONSTRUCTION WITH MECHANICAL PRIME CONTRACTOR PRIOR TO COMMENCING PARTITION CONSTRUCTION.

PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



- SEE FILL PATTERN LEGEND FOR FIRE-RESISTANCE RATING
- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
- SEE PARTITION TAG AND SCHEDULE FOR COMPLETE PARTITION INFORMATION

FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
- 1 HOUR-RATED PARTITION
- 2 HOUR-RATED PARTITION
- 3 HOUR-RATED PARTITION
- 4 HOUR-RATED PARTITION

COLOR LEGEND

- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
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- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FLOOR PLAN- LEVEL 3- AREA A

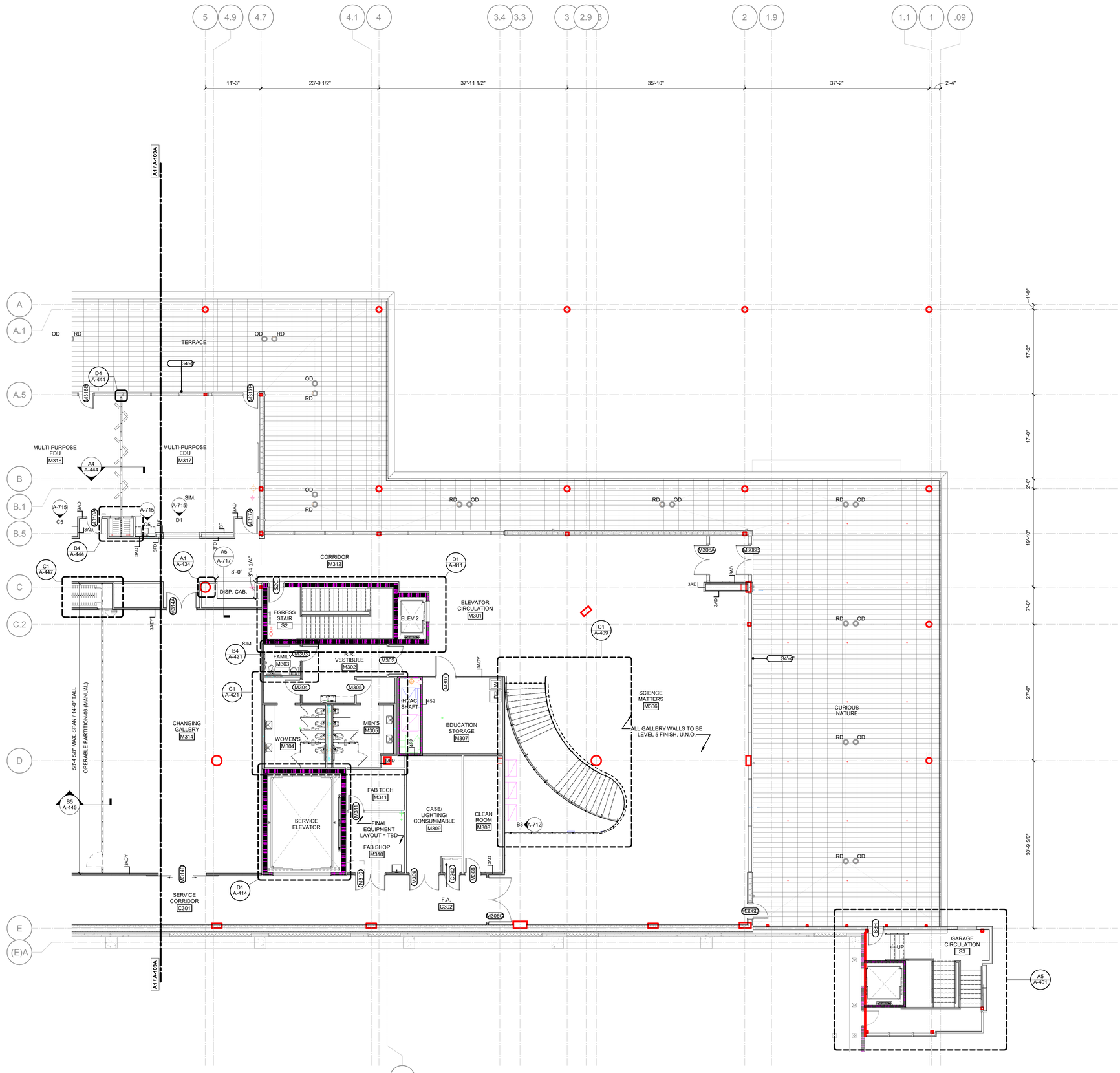
ORIG SUBMISSION: 2022.05.25

SHEET:
A-103A

OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT FULL SIZE ON ORIGINAL PLOT SET

5/25/2022 5:18:49 PM



A1 FLOOR PLAN - PARTIAL - LEVEL 3 - AREA B

1/8" = 1'-0"

FLOOR PLAN SHEET NOTES

1. EXTERIOR DIMENSIONS AT MASONRY VENEER ARE COURSING, NOT ACTUAL AND ARE TO FACE OF MASONRY.
2. EXTERIOR DIMENSIONS AT STUCCO VENEER ARE TO FACE OF METAL STUD.
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8. RATED WALLS INTERSECTING EXTERIOR WALLS SHALL EXTEND TO THE INSIDE FACE OF EXTERIOR SHEATHING.
9. INSTALL BLOCKING IN PARTITIONS FOR CASEWORK, WALL MOUNTED EQUIPMENT, TRIM, AND RELATED CONSTRUCTION.
10. SEE LIFE SAFETY PLANS FOR LOCATIONS OF FIRE RATED AND SMOKE WALLS
11. SEE SHEET A-001 FOR CONSTRUCTION SUBSYSTEMS (OR PARTITION SCHEDULE)
12. SEE SHEET A-422 FOR INTERIOR ELEVATIONS, ACCESSORY DESCRIPTIONS & MOUNTING HEIGHTS.
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PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



- SEE FILL PATTERN LEGEND FOR FIRE-RESISTANCE RATING.
- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
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FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
- 1 HOUR-RATED PARTITION
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- 4 HOUR-RATED PARTITION

COLOR LEGEND

- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
- RATED **FIRE PARTITION** TO DECK
- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FLOOR PLAN- LEVEL 3- AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
A-103B

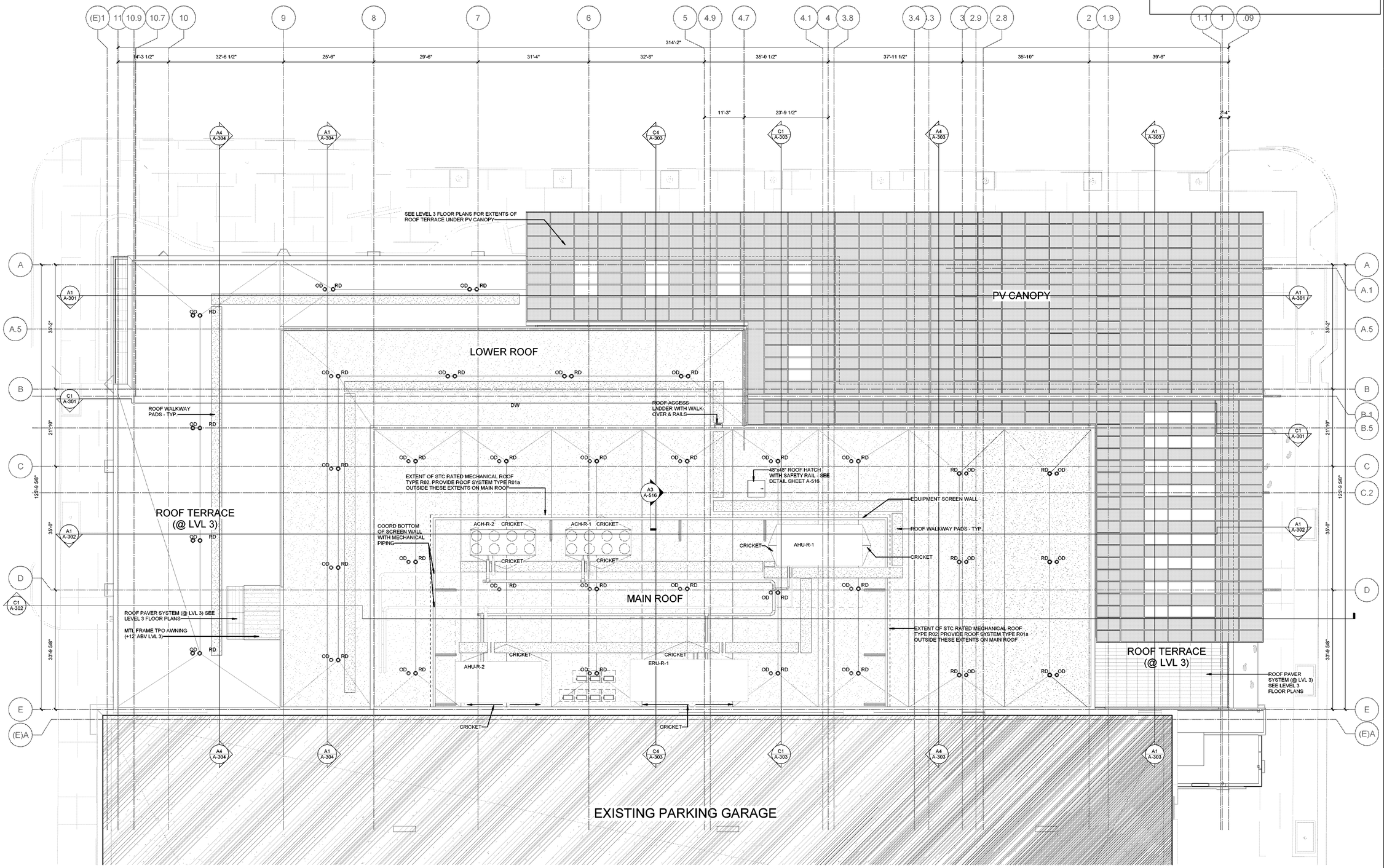
OWNER REVIEW SET

5/25/2022 5:19:00 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PLOT SIZE

ROOF PLAN SHEET NOTES

1. SEE G-001 FOR SHEET-SPECIFIC GRAPHICS & SYMBOLS.
2. LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT ARE APPROXIMATE. COORDINATE WITH STRUCTURAL, MECHANICAL PLAN AND EQUIPMENT SHOP DRAWINGS.
3. SEE PLUMBING DRAWINGS FOR VENTS THROUGH ROOF LOCATIONS.
4. SEE STRUCTURAL DRAWINGS FOR DESIGN LOAD REQUIREMENTS
5. ALL LOW SLOPED ROOFS TO BE MINIMUM 1/4" PER FOOT. ALL ROOF DRAINS TO BE INSTALLED IN 3'-0" X 3'-0" SUMP TYPICAL UNO.
6. PROVIDE CRICKETS AT ALL CURBS AND EQUIPMENT RAILS SET PERPENDICULAR TO ROOF SLOPE WHICH ARE GREATER THAN 24" WIDE.
7. SLOPE ALL COPINGS BACK TO ROOF UNO.
8. WOOD BLOCKING SHOWN IN ROOF DETAILING SHALL BE PRESERVATIVE TREATED. USE FASTENERS COMPATIBLE WITH PRESERVATIVE TREATED WOOD.
9. EXTEND ALL PENETRATIONS, CURBS, AND COMPONENTS A MINIMUM OF 8" ABOVE THE ROOF SURFACE. PROVIDE 12" CLEAR DISTANCE BETWEEN PENETRATIONS AND TO ANY VERTICAL SURFACE.
10. IF NOT DETAILED, APPLY MOST STRINGENT CONDITION OF NRCA AND SMACNA (CURRENT EDITIONS) STANDARDS FOR ROOF DETAIL CONDITIONS.
11. PROVIDE AND INSTALL A CONTROL JOINT IN ROOF ASSEMBLY AT ALL LOCATIONS WHERE METAL ROOF DECK CHANGES DIRECTION.



A1 OVERALL ROOF PLAN - OVERALL

3/32" = 1'-0"

5/25/2022 5:19:12 PM

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LS3P PROJECT: 7701-177600

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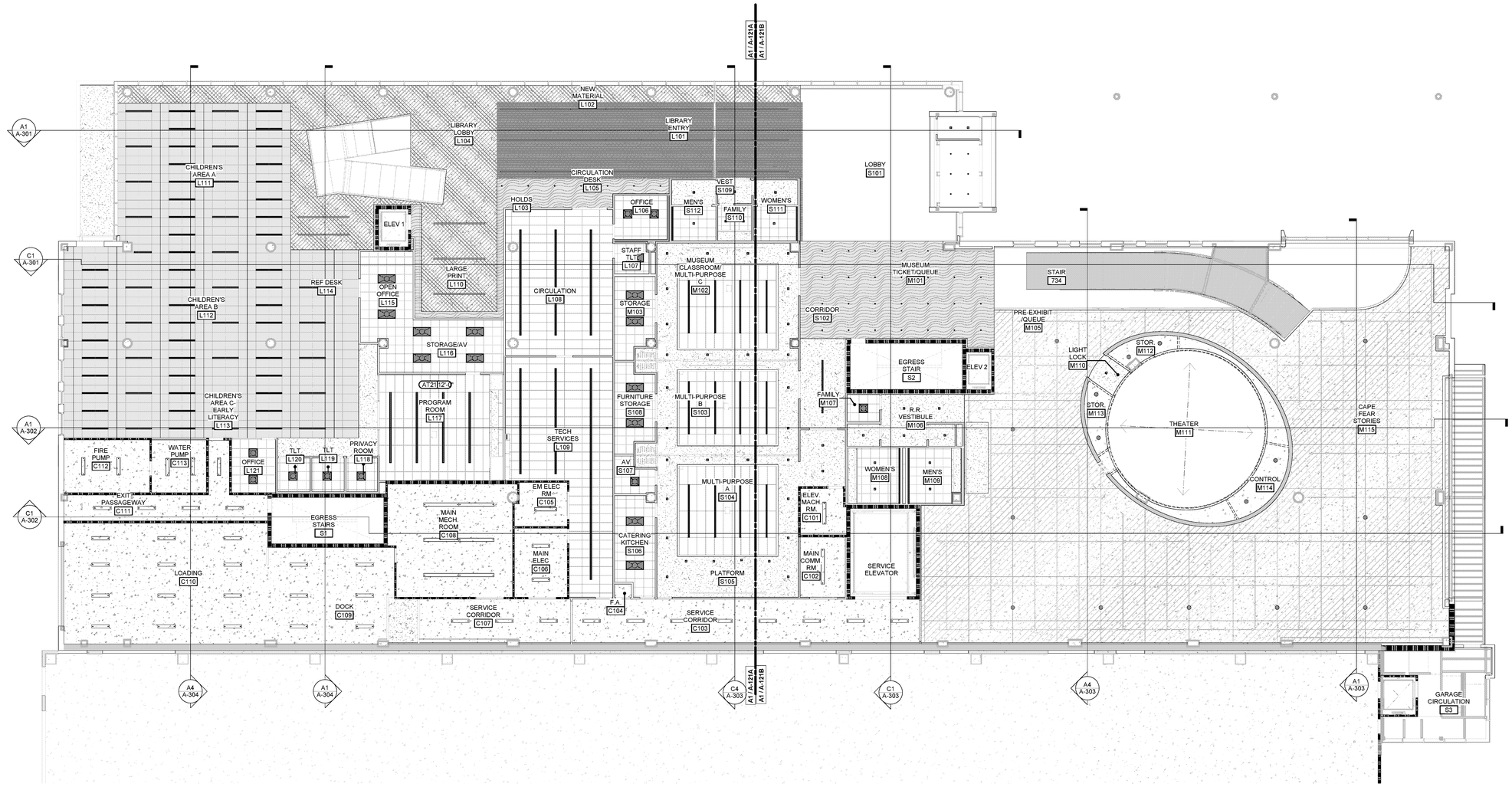
SHEET NAME: ROOF PLAN- OVERALL

ORIG SUBMISSION: 2022.05.25

SHEET: **A-104**

OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH WHEN PRINTED ON ORIGINAL PLATE SIZE



A1 OVERALL RCP-LEVEL 1

3/32" = 1'-0"

REFLECTED CEILING PLAN SHEET NOTES

1. PROVIDE SEISMIC RESTRAINT OF SUSPENDED CEILING SYSTEMS IN SITE CLASSIFICATIONS C, D, E & F.
2. INTERIOR DIMENSIONS INDICATED ARE TO FACE OF STUD, FACE OF MASONRY AND CENTERLINES OF COLUMNS, UNO.
3. CEILING GRIDS/TILES TO BE CENTERED IN ALL ROOMS UNLESS NOTED OTHERWISE. PARTIAL TILES AT ROOM PERIMETERS SHALL NOT BE LESS THAN 6" IN EITHER DIMENSION. OVERSIZED TILES SHALL BE INSTALLED WHERE TILES UNDER 6" OCCUR.
4. ALL CEILINGS TO BE**10'-0"**AFF, UNO. CEILING HEIGHTS SHOWN ON THE REFLECTED CEILING PLANS ARE NON-TYPICAL AND SPECIFIC TO THE AREA INDICATED. REFER TO INTERIOR ELEVATIONS FOR THE HEIGHTS OF SOFFITS ABOVE CASEWORK.
5. SEE ELECTRICAL, FIRE ALARM AND FIRE PROTECTION DRAWINGS FOR SPECIAL SYSTEMS, SMOKE DETECTORS, LIGHTING AND WALL MOUNTED FIXTURES NOT SHOWN ON THIS SHEET. COORDINATE LOCATIONS OF ALL FIXTURES NOT INDICATED WITH LAYOUT INDICATED ON THIS SHEET.
6. LIGHT FIXTURES AND MECHANICAL DIFFUSERS ARE SHOWN FOR POSITIONING IN FINISH CEILING SYSTEM. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR FIXTURE TYPES. MECHANICAL DIFFUSERS, WALL MOUNTED FIXTURES AND INSTALLATION OF FIXTURES IN SPACES WITHOUT CEILINGS. (LIGHTING AND HVAC DIFFUSERS ARE SHOWN FOR COORDINATION ONLY - SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION).
7. CENTER LIGHTS, DIFFUSERS, EXIT SIGNS, SMOKE DETECTORS, SPRINKLER HEADS, SPEAKERS, FIRE ALARM HORNS/STROBES & MISC DEVICES IN CEILING TILES WHERE THEY ARE LOCATED. ALIGN SIMILAR ITEMS ALONG A COMMON AXIS.
8. LOCATE MECHANICAL GRILLES AND DIFFUSERS SHOWN IN CORNERS OR NEAR WALL TO 12" OFF WALLS, UNO.
9. PROVIDE AND INSTALL CEILING ACCESS PANEL IN GYPSUM BOARD CEILINGS AT DEVICES REQUIRING ACCESS INCLUDING BUT NOT LIMITED TO BALANCING DAMPERS, SMOKE DETECTORS, VAV CONTROLS, PLUMBING VALVES, ELECTRICAL JUNCTION BOXES, ETC. MINIMIZE ACCESS DOORS WHERE POSSIBLE.
10. HEIGHT OF GYPSUM BOARD SOFFITS SHALL BE "1" BELOW HEIGHT OF ADJACENT CEILING(TYP) UNLESS NOTED OTHERWISE.
11. TOUCH-UP PAINT EXPOSED EDGES OF CUT ACOUSTICAL CEILING TILE TO MATCH SURFACE(TYP).
12. INDIVIDUAL TRADE COMPONENTS, INCLUDING BUT NOT LIMITED TO LIGHT FIXTURE WHIPS, FLEXIBLE FIRE PROTECTION PIPING, LOW VOLTAGE WIRING, ETC. SHALL NOT BE SUPPORTED BY ACOUSTICAL CEILING SYSTEM.

RCP LEGEND

MATERIAL PATTERNS

- GYPSUM BOARD
- **ACT-1** (ARMSTRONG OPTIMA 3254) 24"x24" ACOUSTIC CEILING TILE
- **ACT-2** (ARMSTRONG OPTIMA 3257) 24"x48" ACOUSTIC CEILING TILE
- **ACT-3** (ARMSTRONG OPTIMA 3261) 24"x72" ACOUSTIC CEILING TILE
- **ACT-4** (CERTAINTEED TECHSTYLE) 24"x24" & 24"x72" CUSTOME LAYOUT
- **LGC** (RULON PANEL GRILLE SYSTEM-PG 6-12-32) LINEAR GRILL CEILING
- WOLF GORDON- WOOD VENEER WALLCOVERING ON GYPSUM

REF: CEILING TAGS AND SPECIFICATIONS

- EXPOSED CEILING- PAINTED
- EXPOSED CEILING W/ K13 SPRAY
- EXPOSED CEILING

BUILDING ELEMENTS

10'-0" HEIGHT ABOVE FLOOR
RETURN AIR GRILLE (DIAGONAL HATCH)
SUPPLY AIR GRILLE (CROSSHATCH)

SYMBOL SHAPES WILL VARY

LIGHTING/ EQUIPMENT

- 2x2 LED RECESSED; FLUXWERX TRANSOM
- 2x4 LED RECESSED; FLUXWERX TRANSOM
- LINEAR LED RECESSED; 2" AXIS BEAM
- LINEAR LED PENDANT; 2" AXIS BEAM
- SUSPENDED LED; CORELITE R2L
- CON'T SUSPENDED LED; FLUXWERX FOLD
- 4" SQUARE RECESSED DOWNLIGHT
- 3" ROUND MINI LED DOWNLIGHT
- CON'T LED TRACK LIGHTING
- HIGH BAY FIXTURE ARIES LED UFO
- SPECIALTY FIXTURE TECH LIGHTING- CODA FIXTURE 39"H
- RPS: RECESSED CLG PROJECTOR SCREEN
- PROJ.: CLG PROJECTOR
- RECESSED UNISTRUT TRACK

ZIMMER DEVELOPMENT COMPANY

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101 NORTH THIRD STREET, SUITE 500
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
REFLECTED CEILING PLAN- LEVEL 1

ORIG SUBMISSION: 2022.05.25

SHEET:
A-121

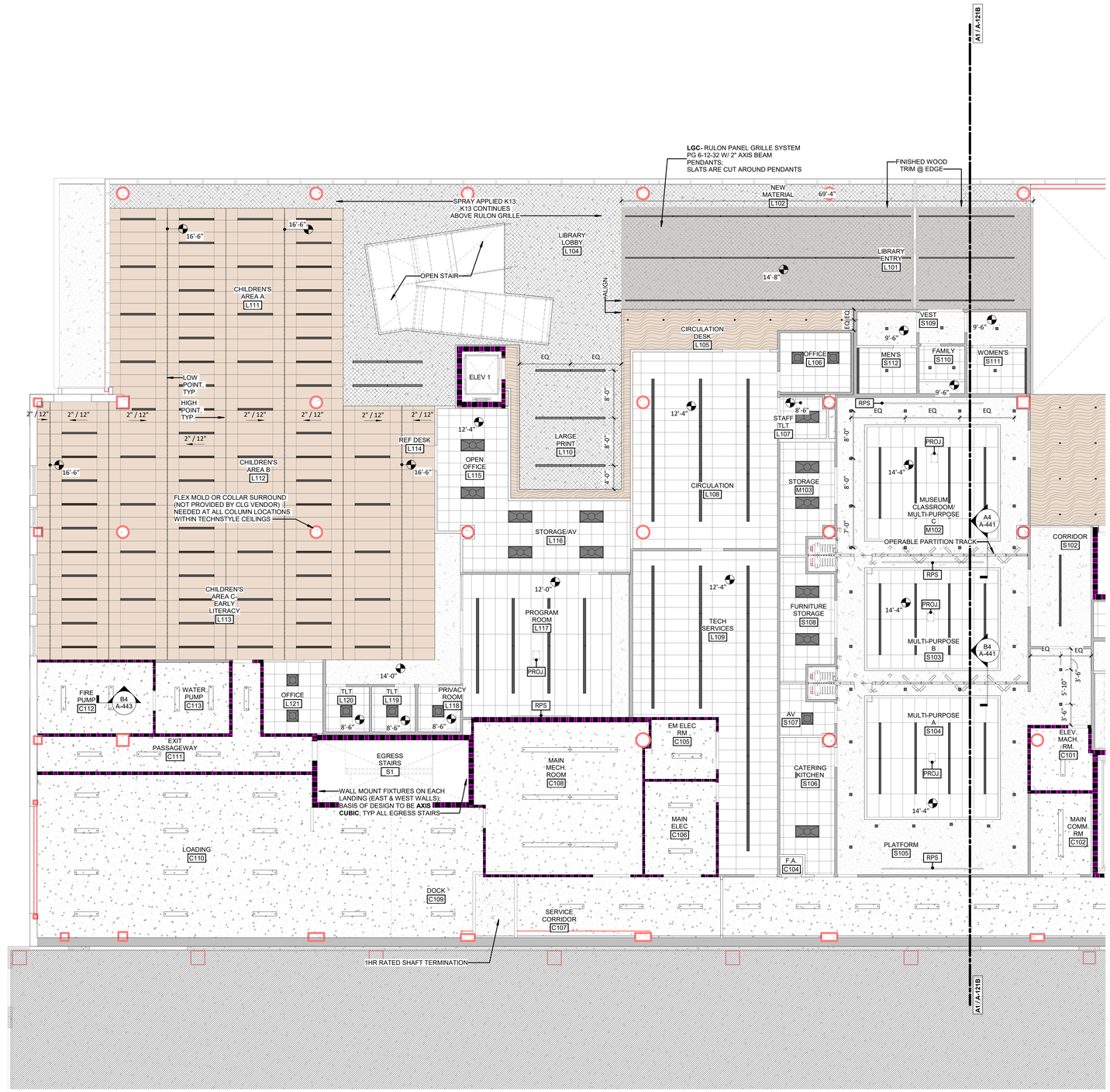
OWNER REVIEW SET

5/25/2022 5:19:35 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH WHEN PLOTTED ON ARCH D SHEETS
ORIGINAL PAGE SIZE



A1 RCP- PARTIAL- LEVEL 1 - AREA A
1/8" = 1'-0"

REFLECTED CEILING PLAN SHEET NOTES

1. PROVIDE SEISMIC RESTRAINT OF SUSPENDED CEILING SYSTEMS IN SITE CLASSIFICATIONS C, D, E & F.
2. INTERIOR DIMENSIONS INDICATED ARE TO FACE OF STUD, FACE OF MASONRY AND CENTERLINES OF COLUMNS, UNO.
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PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



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- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
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FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
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- 3 HOUR-RATED PARTITION
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COLOR LEGEND

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- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
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- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

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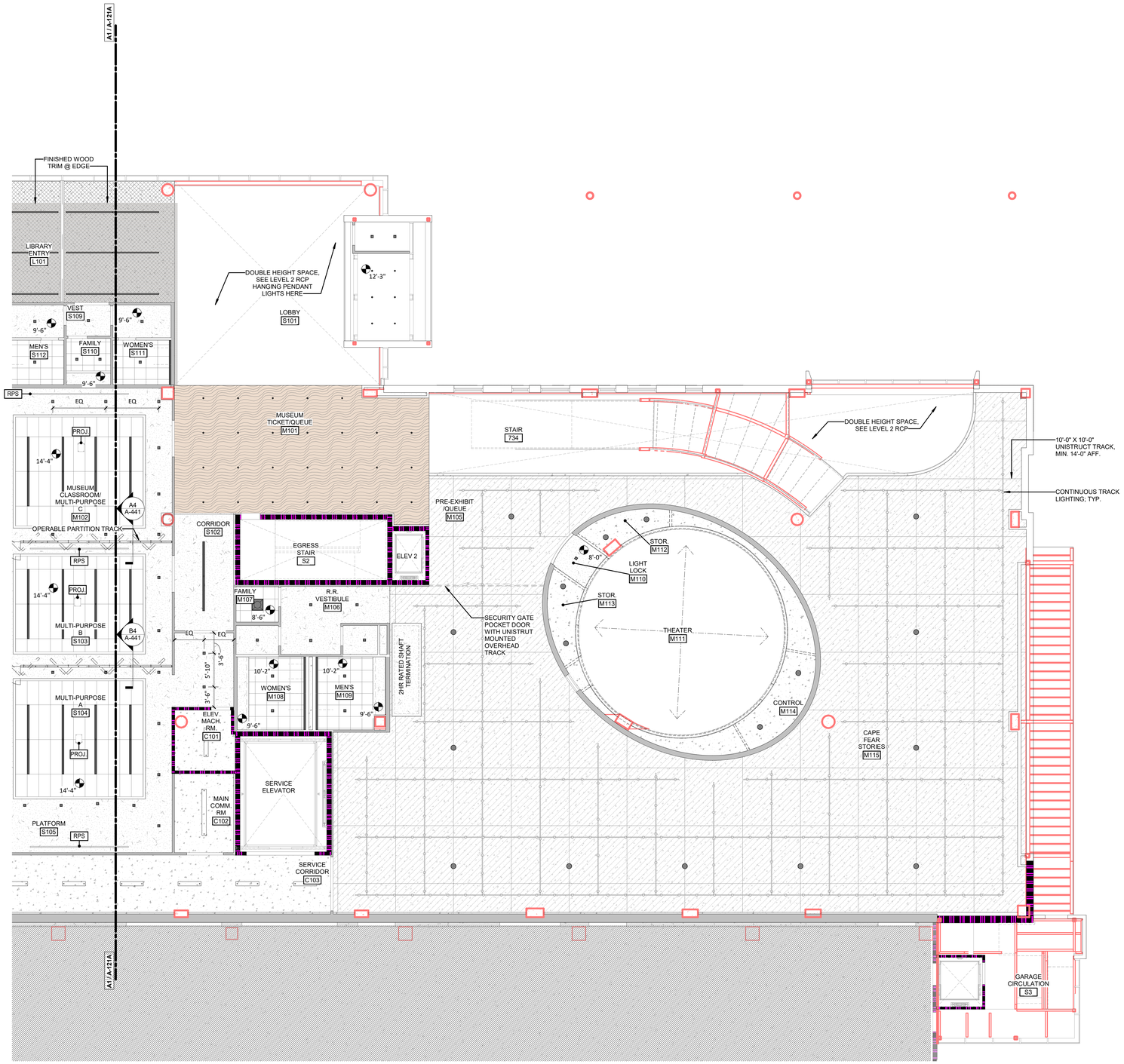
ORIG SUBMISSION: 2022.05.25

SHEET:
A-121A

OWNER REVIEW SET

5/25/2022 5:19:40 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



A1 RCP- PARTIAL- LEVEL 1 - AREA B

1/8" = 1'-0"

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
REFLECTED CEILING PLAN- LEVEL 1- AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
A-121B

OWNER REVIEW SET

5/25/2022 5:19:53 PM

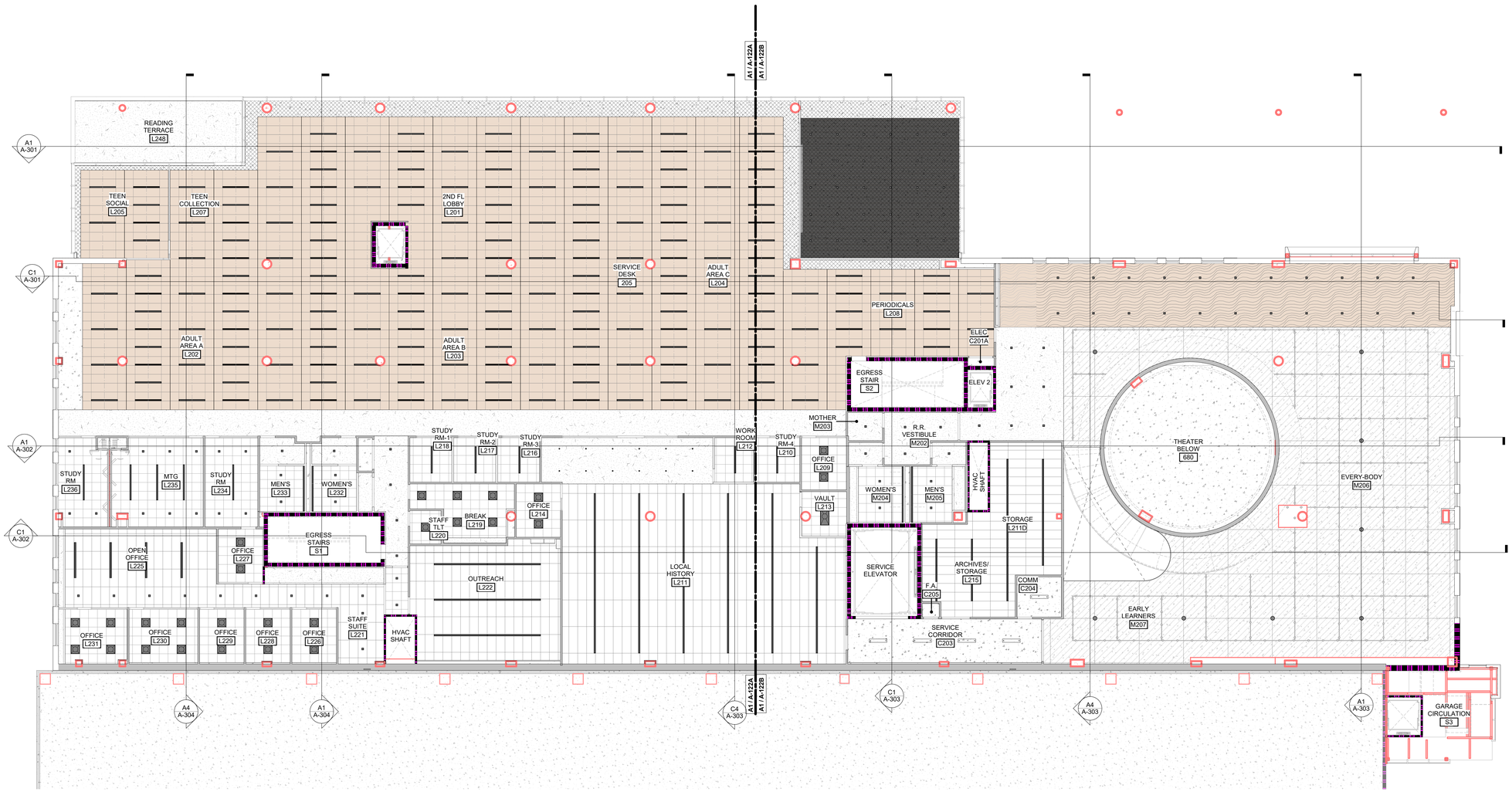
E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E1 SHEETS ORIGINAL PLOT SIZE

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A1 OVERALL RCP-LEVEL 2

3/32" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: REFLECTED CEILING PLAN- LEVEL 2

ORIG SUBMISSION: 2022.05.25

SHEET: A-122

OWNER REVIEW SET

5/25/2022 5:20:04 PM



REFLECTED CEILING PLAN SHEET NOTES

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

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SHEET NAME: REFLECTED CEILING PLAN- LEVEL 2- AREA A

ORIG SUBMISSION: 2022.05.25

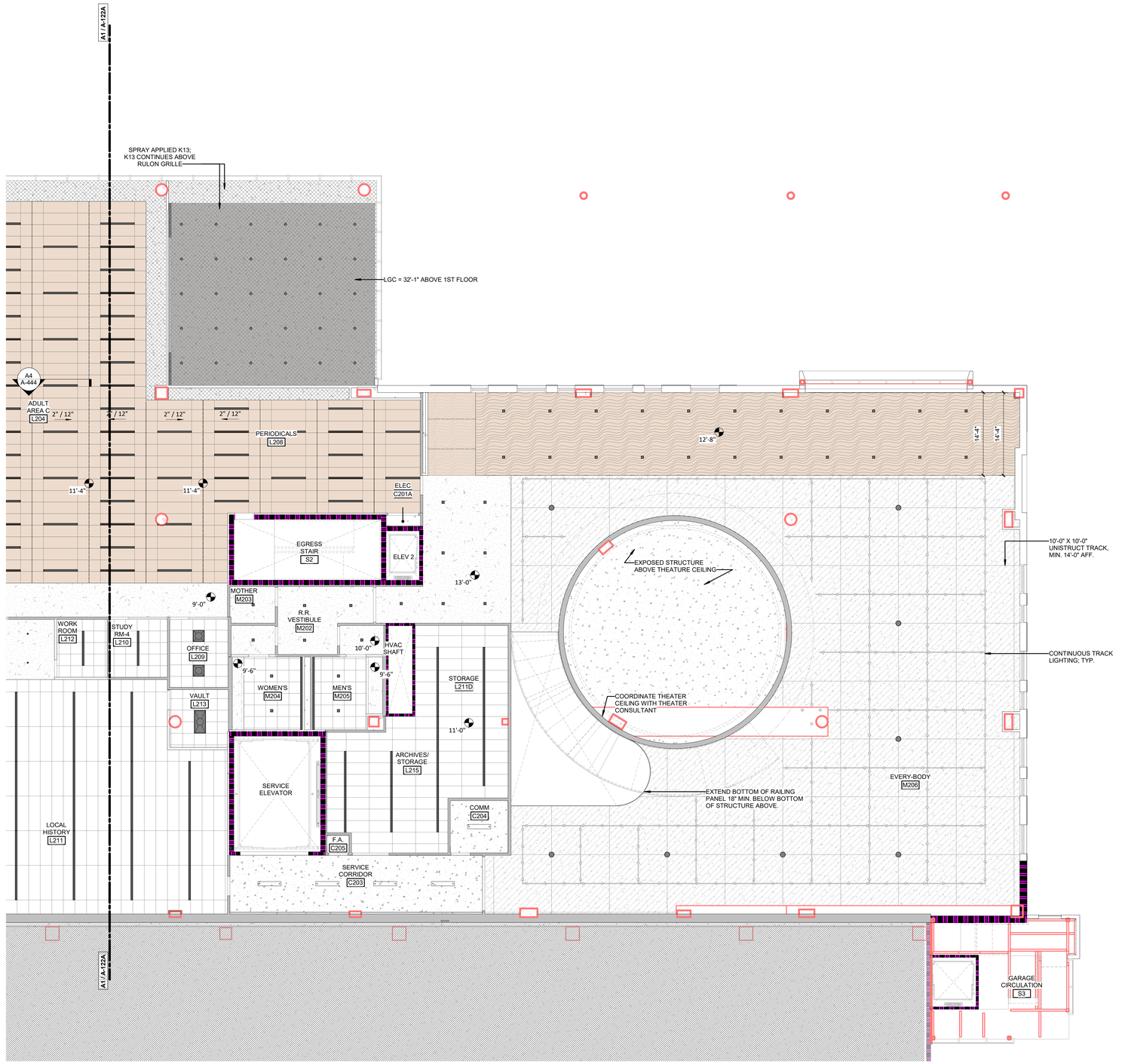
SHEET: **A-122A**

OWNER REVIEW SET

5/25/2022 5:20:09 PM

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



A1 RCP- PARTIAL- LEVEL 2 - AREA B

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TEL. 910.790.9901 FAX. 910.790.3111
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
REFLECTED CEILING PLAN- LEVEL 2- AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
A-122B

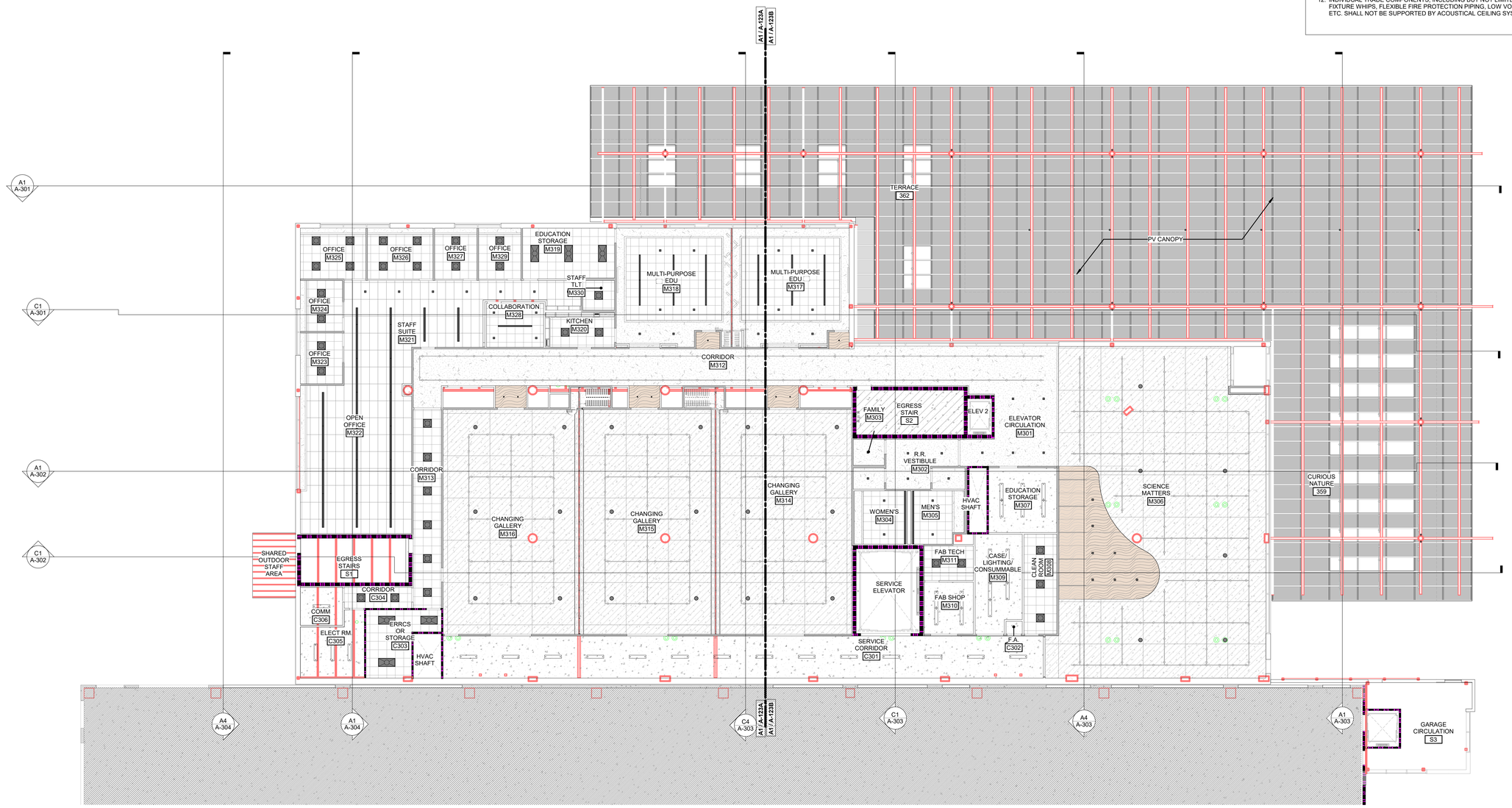
OWNER REVIEW SET

5/25/2022 5:20:18 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL ORIGINAL PLOT SETS

REFLECTED CEILING PLAN SHEET NOTES

1. PROVIDE SEISMIC RESTRAINT OF SUSPENDED CEILING SYSTEMS IN SITE CLASSIFICATIONS C, D, E & F.
2. INTERIOR DIMENSIONS INDICATED ARE TO FACE OF STUD, FACE OF MASONRY AND CENTERLINES OF COLUMNS, UNO.
3. CEILING GRIDS/TILES TO BE CENTERED IN ALL ROOMS UNLESS NOTED OTHERWISE. PARTIAL TILES AT ROOM PERIMETERS SHALL NOT BE LESS THAN 6" IN EITHER DIMENSION. OVERSIZED TILES SHALL BE INSTALLED WHERE TILES UNDER 6" OCCUR.
4. ALL CEILINGS TO BE 10'-0" AFF, UNO. CEILING HEIGHTS SHOWN ON THE REFLECTED CEILING PLANS ARE NON-TYPICAL AND SPECIFIC TO THE AREA INDICATED. REFER TO INTERIOR ELEVATIONS FOR THE HEIGHTS OF SOFFITS ABOVE CASEWORK.
5. SEE ELECTRICAL, FIRE ALARM AND FIRE PROTECTION DRAWINGS FOR SPECIAL SYSTEMS, SMOKE DETECTORS, LIGHTING AND WALL MOUNTED FIXTURES NOT SHOWN ON THIS SHEET. COORDINATE LOCATIONS OF ALL FIXTURES NOT INDICATED WITH LAYOUT INDICATED ON THIS SHEET.
6. LIGHT FIXTURES AND MECHANICAL DIFFUSERS ARE SHOWN FOR POSITIONING IN FINISH CEILING SYSTEM. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR FIXTURE TYPES, MECHANICAL DIFFUSERS, WALL MOUNTED FIXTURES AND INSTALLATION OF FIXTURES IN SPACES WITHOUT CEILINGS. (LIGHTING AND HVAC DIFFUSERS ARE SHOWN FOR COORDINATION ONLY - SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION).
7. CENTER LIGHTS, DIFFUSERS, EXIT SIGNS, SMOKE DETECTORS, SPRINKLER HEADS, SPEAKERS, FIRE ALARM HORNS/STROBES & MISC DEVICES IN CEILING TILES WHERE THEY ARE LOCATED. ALIGN SIMILAR ITEMS ALONG A COMMON AXIS.
8. LOCATE MECHANICAL GRILLES AND DIFFUSERS SHOWN IN CORNERS OR NEAR WALL TO 12" OFF WALLS, UNO.
9. PROVIDE AND INSTALL CEILING ACCESS PANEL IN GYPSUM BOARD CEILINGS AT DEVICES REQUIRING ACCESS INCLUDING BUT NOT LIMITED TO BALANCING DAMPERS, SMOKE DETECTORS, VAV CONTROLS, PLUMBING VALVES, ELECTRICAL JUNCTION BOXES, ETC. MINIMIZE ACCESS DOORS WHERE POSSIBLE.
10. HEIGHT OF GYPSUM BOARD SOFFITS SHALL BE "1" BELOW HEIGHT OF ADJACENT CEILING(TYP) UNLESS NOTED OTHERWISE.
11. TOUCH-UP PAINT EXPOSED EDGES OF CUT ACOUSTICAL CEILING TILE TO MATCH SURFACE(TYP).
12. INDIVIDUAL TRADE COMPONENTS, INCLUDING BUT NOT LIMITED TO LIGHT FIXTURE WHIPS, FLEXIBLE FIRE PROTECTION PIPING, LOW VOLTAGE WIRING, ETC. SHALL NOT BE SUPPORTED BY ACOUSTICAL CEILING SYSTEM.



A1 OVERALL RCP-LEVEL 3

3/32" = 1'-0"

ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: REFLECTED CEILING PLAN- LEVEL 3

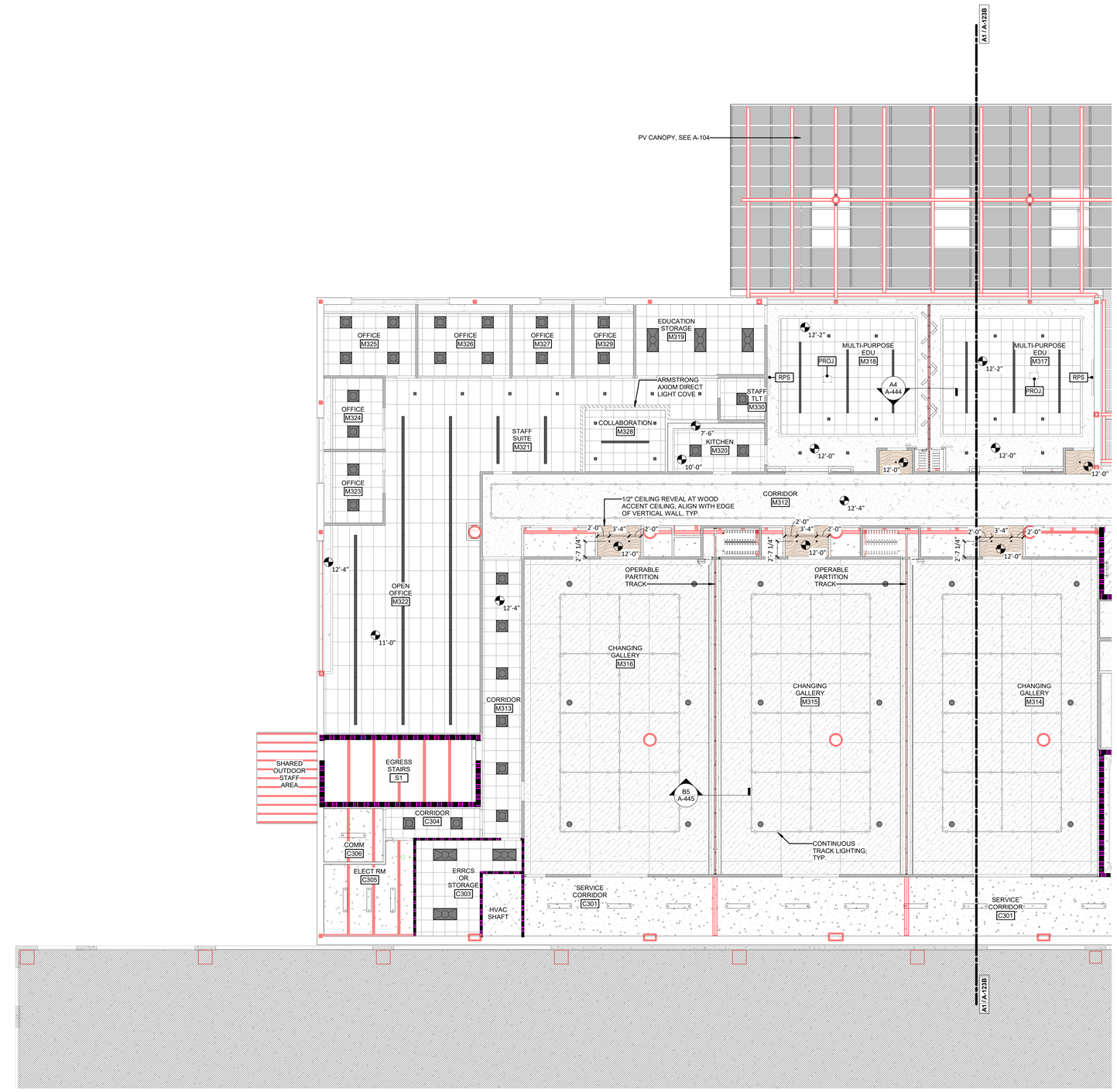
ORIG SUBMISSION: 2022.05.25

SHEET: A-123

OWNER REVIEW SET

5/25/2022 5:20:33 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT FULL SHEETS ORIGINAL PAGE SIZE



REFLECTED CEILING PLAN SHEET NOTES

1. PROVIDE SEISMIC RESTRAINT OF SUSPENDED CEILING SYSTEMS IN SITE CLASSIFICATIONS C, D, E & F.
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PARTITION GRAPHICS

GRAPHIC SAMPLE: 1 HOUR RATED CMU FIRE/SMOKE BARRIER:



- SEE FILL PATTERN LEGEND FOR FIRE-RESISTANCE RATING
- SEE COLOR LEGEND FOR HEIGHT CONDITION AND FIRE/SMOKE PROTECTION TYPE
- SEE PARTITION TAG AND SCHEDULE FOR COMPLETE PARTITION INFORMATION

FILL PATTERN LEGEND

- 30 MIN-RATED PARTITION
- 1 HOUR-RATED PARTITION
- 2 HOUR-RATED PARTITION
- 3 HOUR-RATED PARTITION
- 4 HOUR-RATED PARTITION

COLOR LEGEND

- NON-RATED PARTITION TO 6" ABOVE CEILING, U.N.O.
- NON-RATED PARTITION TO DECK
- NON-RATED **SMOKE PARTITION** TO DECK
- RATED **SMOKE BARRIER** TO DECK
- RATED **FIRE PARTITION** TO DECK
- RATED **FIRE/SMOKE BARRIER** TO DECK
- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

A1 **RCP- PARTIAL- LEVEL 3 - AREA A**
1/8" = 1'-0"

5/25/2022 5:20:43 PM

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

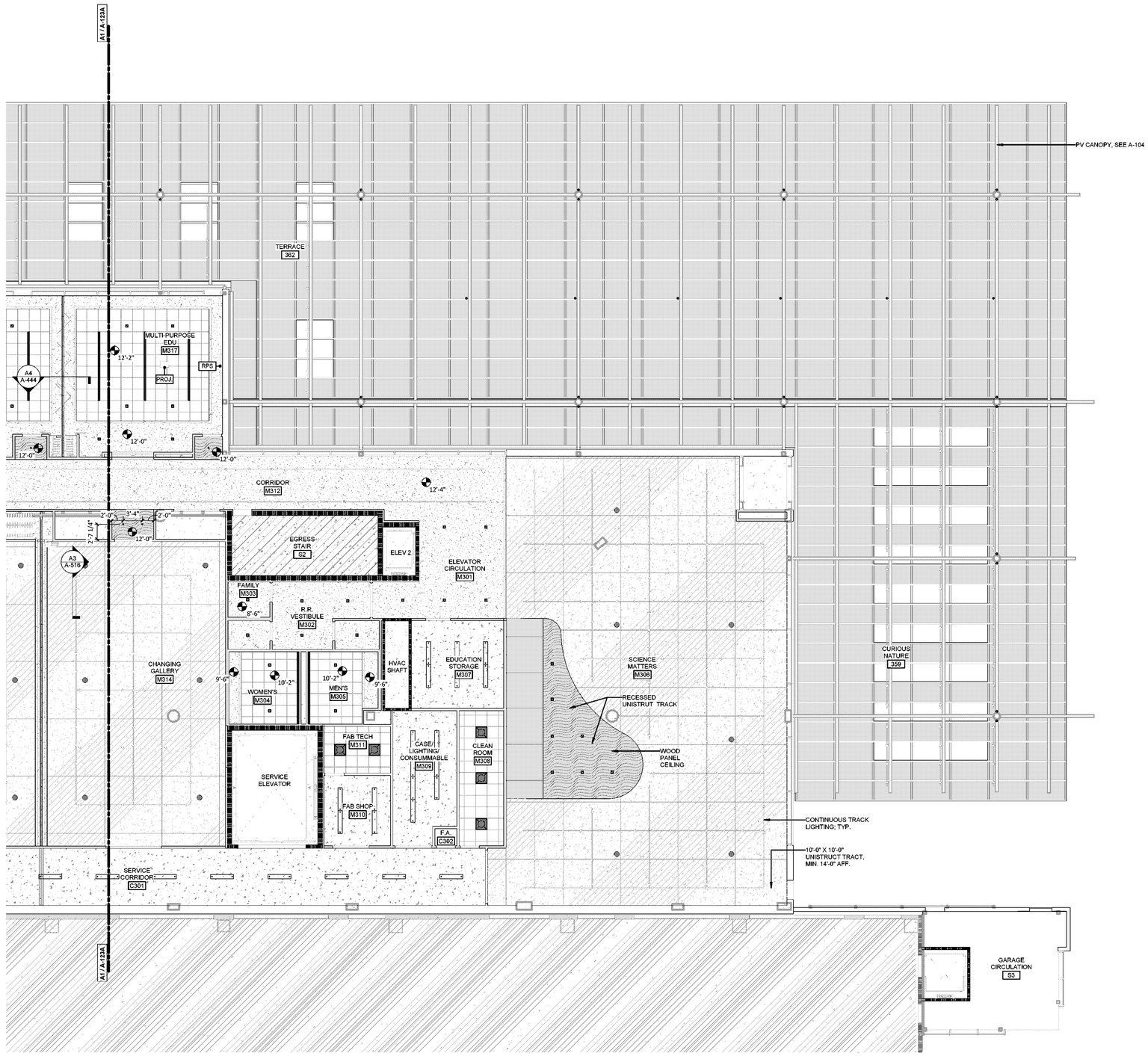
Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
REFLECTED CEILING PLAN- LEVEL 3- AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
A-123A

OWNER REVIEW SET



A1 RCP- PARTIAL- LEVEL 3 - AREA B

1/8" = 1'-0"

REFLECTED CEILING PLAN SHEET NOTES

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PARTITION GRAPHICS

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FILL PATTERN LEGEND

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- RATED **FIRE BARRIER** TO DECK
- RATED **FIRE WALL** TO DECK

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
REFLECTED CEILING PLAN- LEVEL 3- AREA B

ORIG SUBMISSION: 2022.05.25

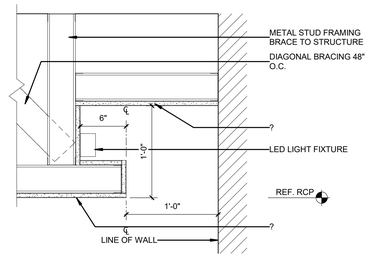
SHEET:
A-123B

OWNER REVIEW SET

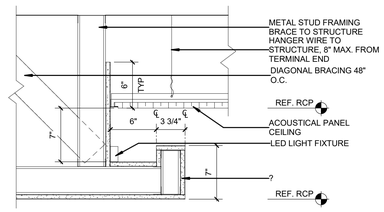
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG IF THE SHEET IS ORIGINAL PAPER SIZE

5/25/2022 5:20:58 PM

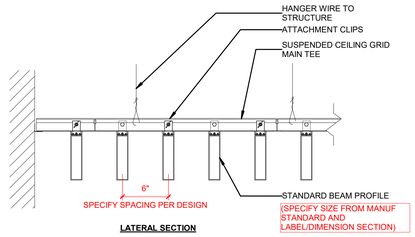
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PLOT SETS



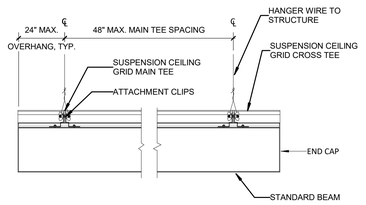
E1 COVE LIGHT-@ BACK OF WALL
1 1/2" = 1'-0"



E2 COVE LIGHT-HIGH ACT TO LOW GWB
1 1/2" = 1'-0"

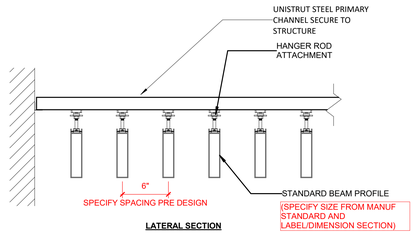


LATERAL SECTION

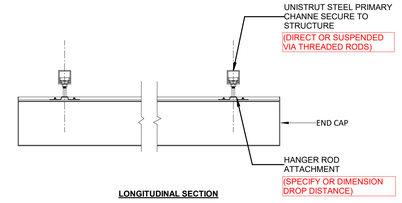


LONGITUDINAL SECTION

E4 HIGH PROFILE BLADE-SUSPENSION GRID-CLIP ATTACHMENT
1 1/2" = 1'-0"

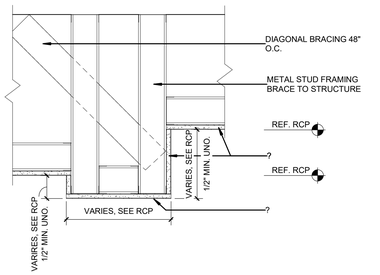


LATERAL SECTION

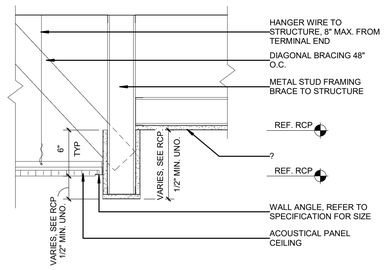


LONGITUDINAL SECTION

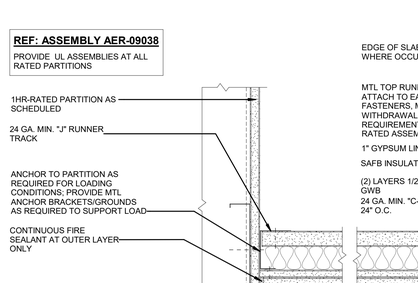
D4 HIGH PROFILE BLADE-UNISTRUT-THREADED ROD
1 1/2" = 1'-0"



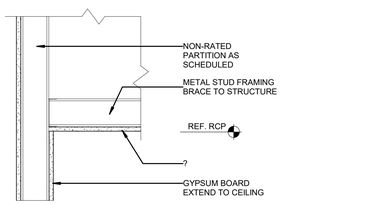
D1 BULKHEAD-GWB TO GWB (WIDE)
1 1/2" = 1'-0"



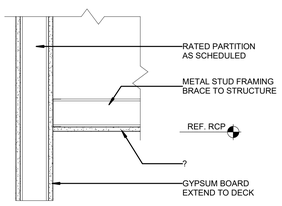
D2 BULKHEAD (NARROW)-GWB TO ACT
1 1/2" = 1'-0"



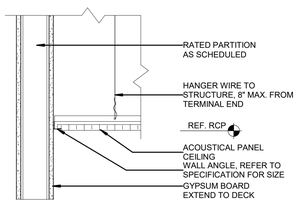
C4 PERIMETER-DUCT ENCLOSURE-1HR
3" = 1'-0"



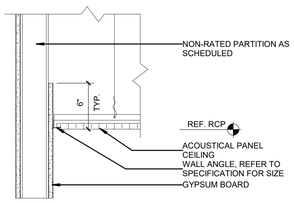
C1 PERIMETER-GWB TO WALL (NON-RATED)
1 1/2" = 1'-0"



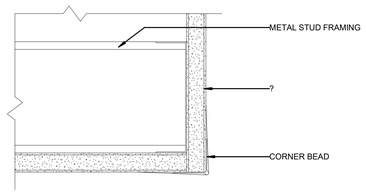
C2 PERIMETER-GWB TO WALL (RATED)
1 1/2" = 1'-0"



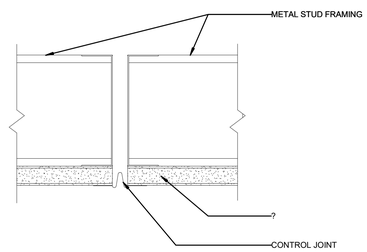
B1 PERIMETER-ACT TO WALL (RATED)
1 1/2" = 1'-0"



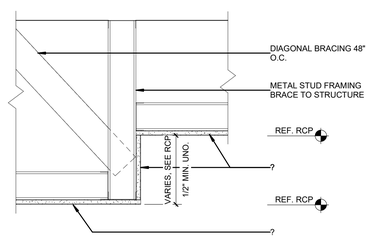
B2 PERIMETER-ACT TO WALL (NON-RATED)
1 1/2" = 1'-0"



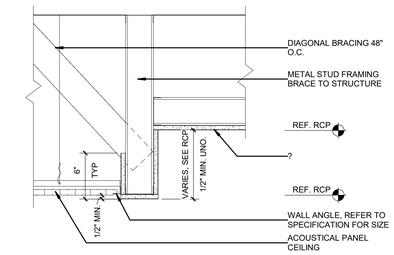
B4 CORNER JOINT-GWB TO GWB
6" = 1'-0"



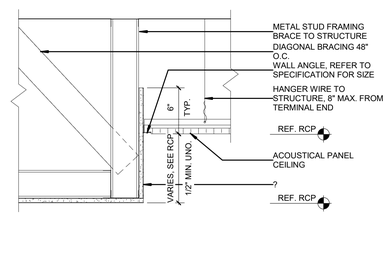
B5 CONTROL JOINT-GWB TO GWB
6" = 1'-0"



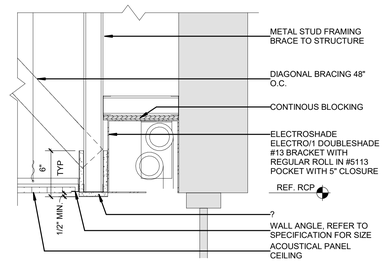
A1 TRANSITION-HIGH GWB TO LOW GWB
1 1/2" = 1'-0"



A2 TRANSITION-HIGH GWB TO LOW ACT
1 1/2" = 1'-0"



A4 TRANSITION-HIGH ACT TO LOW GWB
1 1/2" = 1'-0"



A5 PERIMETER-@ WINDOW ROLLER SHADE
1 1/2" = 1'-0"

5/25/2022 5:21:00 PM

1 2 3 4 5 6

ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
INTERIOR CEILING DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET: A-131

OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE

E

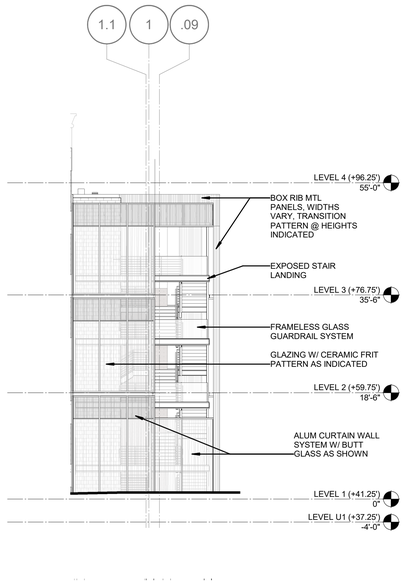
D

C

B

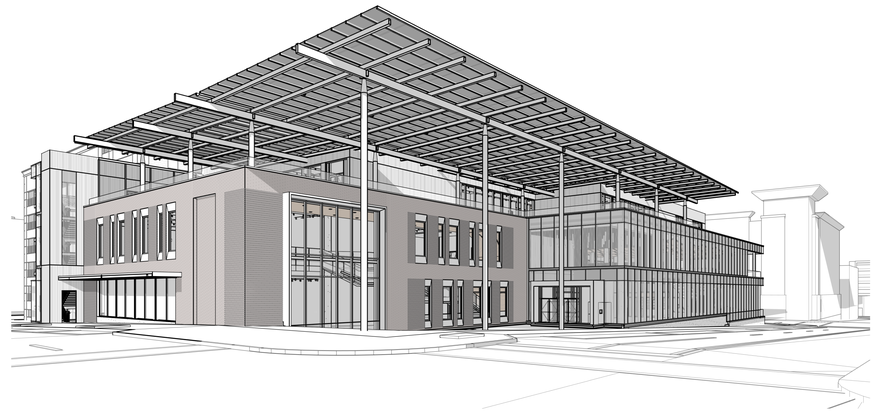
A

ⓝ ELEVATION NOTES BY NUMBER	
NUMBER	NOTE

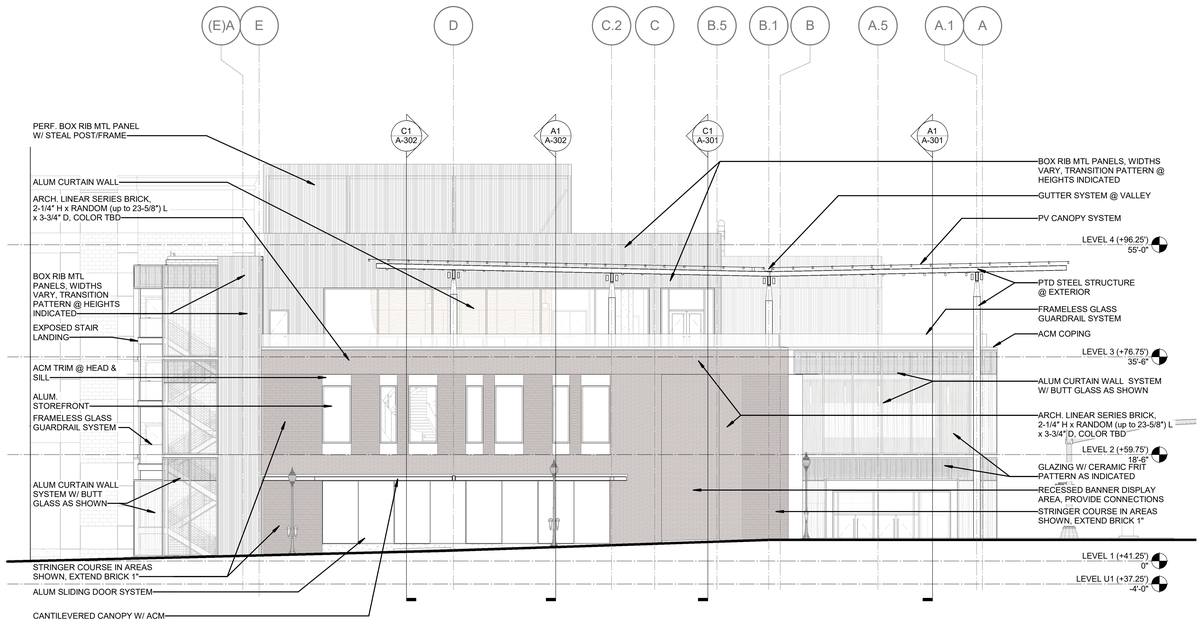


C2 ELEVATION- EXTERIOR- SOUTH (TOWER)

3/32" = 1'-0"

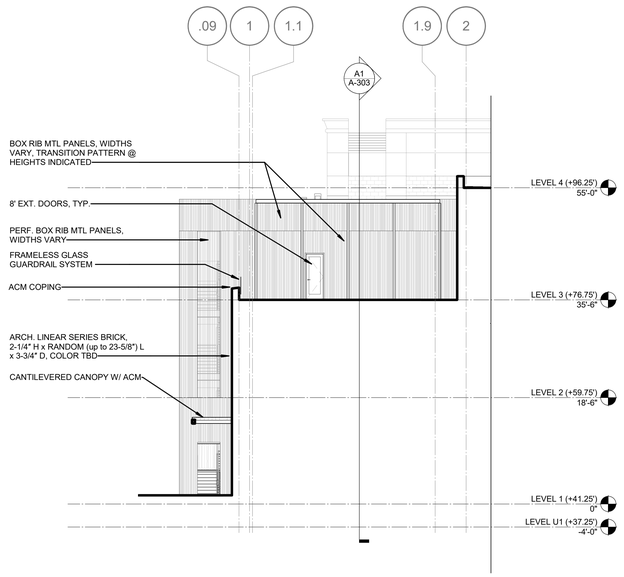


C4 EXTERIOR PERSPECTIVE - GRACE & 3RD ST



A1 ELEVATION- EXTERIOR- EAST

3/32" = 1'-0"



A4 ELEVATION- EXTERIOR- NORTH (TOWER)

3/32" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
EXTERIOR ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-201

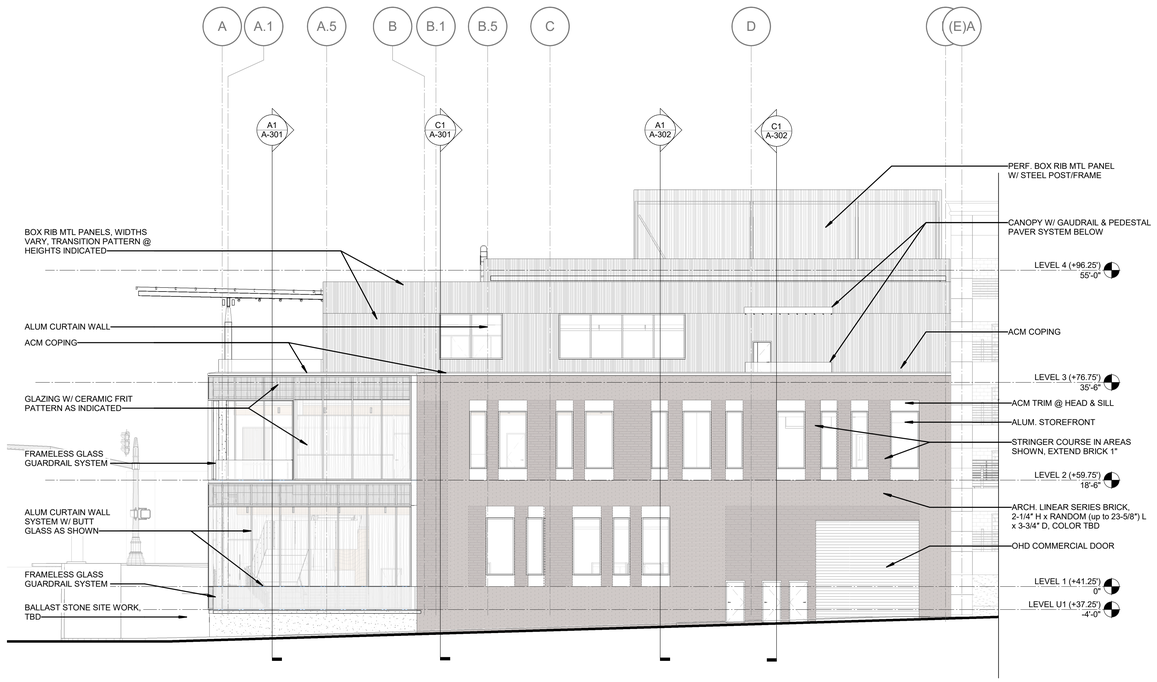
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5/25/2022 5:21:33 PM

1 2 3 4 5 6

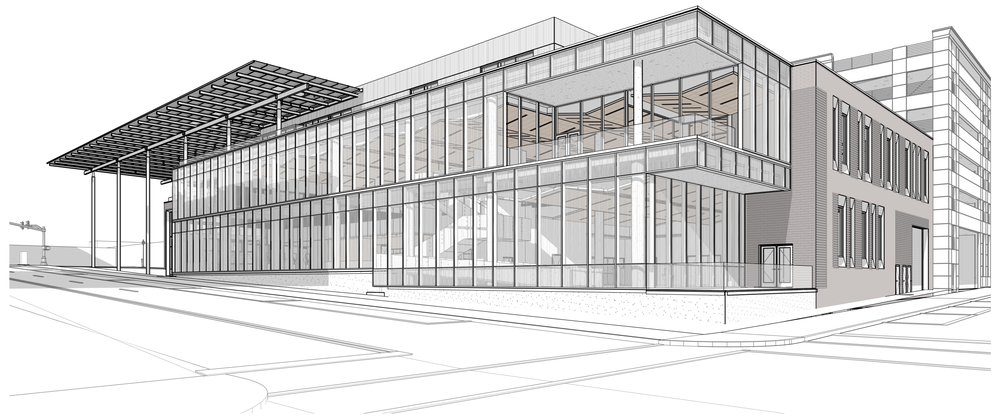
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE

N ELEVATION NOTES BY NUMBER	
NUMBER	NOTE

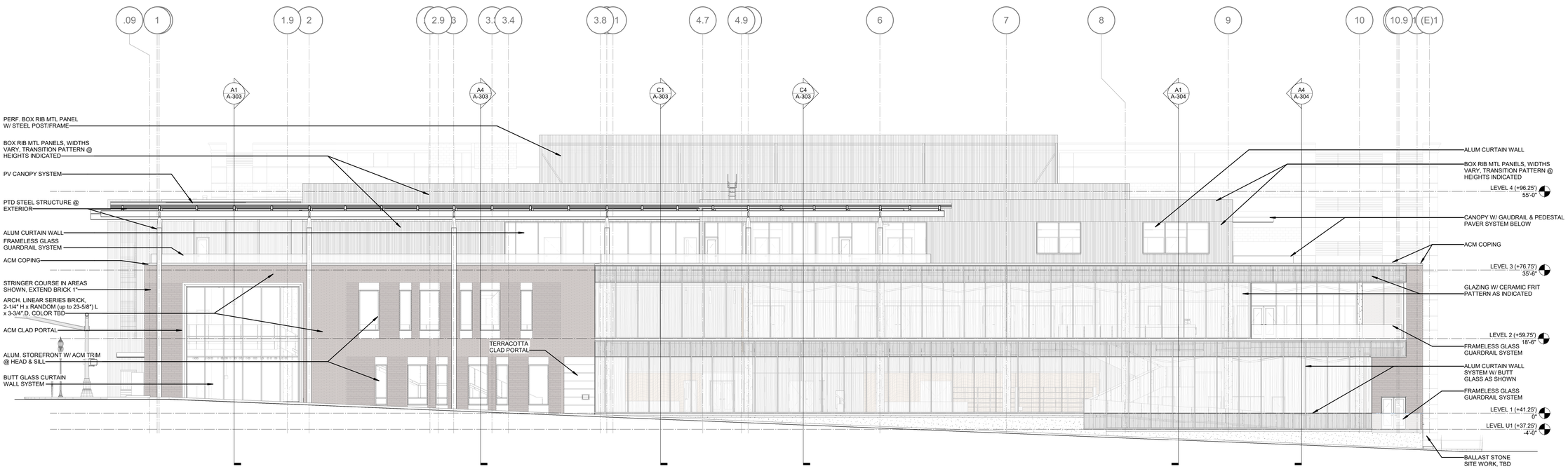


C1 ELEVATION- EXTERIOR- WEST

3/32" = 1'-0"



C4 EXTERIOR PERSPECTIVE - GRACE & 2ND ST



A1 ELEVATION- EXTERIOR- NORTH

3/32" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: EXTERIOR ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET: A-202

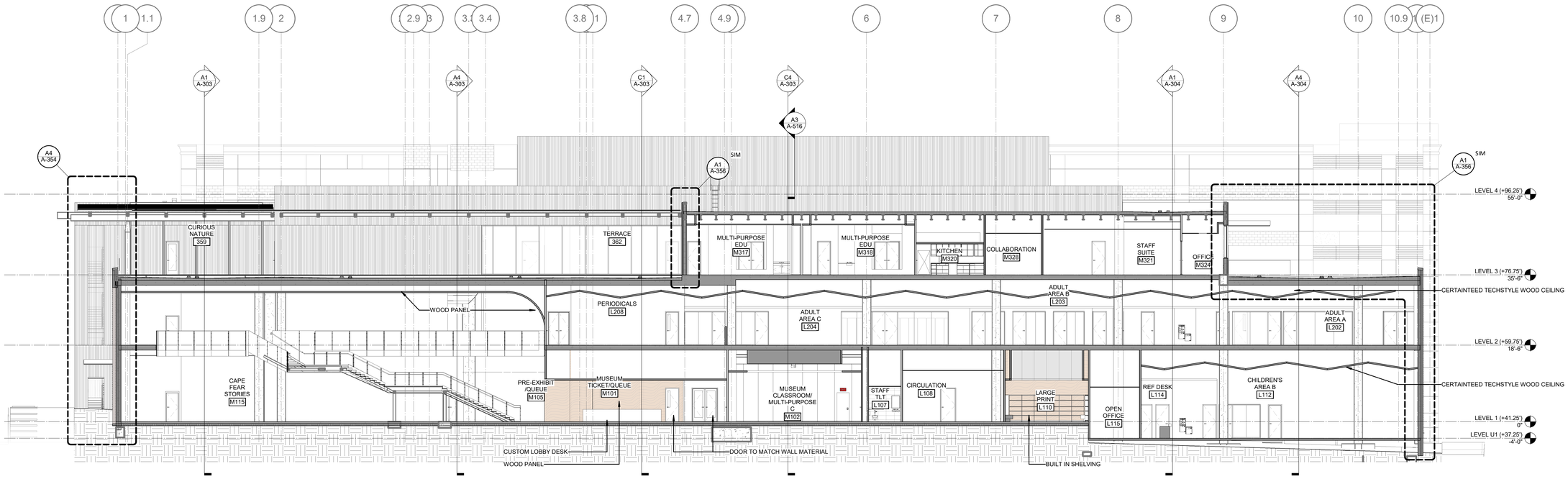
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E D C B A

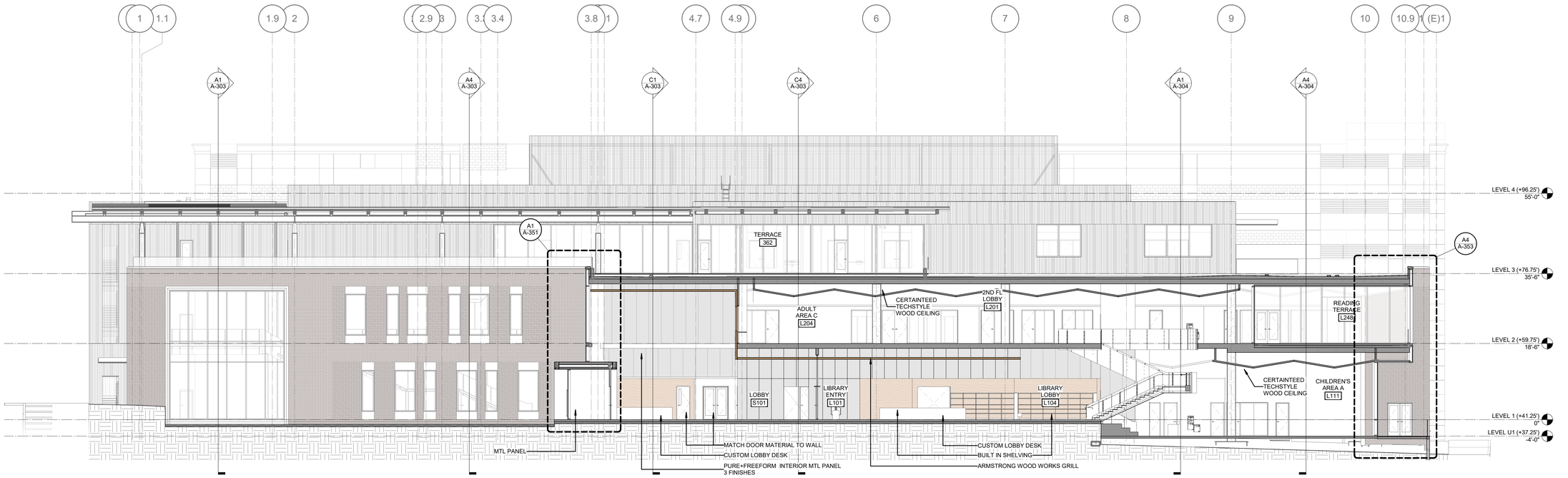
1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL ARCHITECTURAL PLOTTING PAPER SIZES



C1 BUILDING SECTION 2

3/32" = 1'-0"



A1 BUILDING SECTION 1

3/32" = 1'-0"

5/25/2022 5:22:57 PM

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

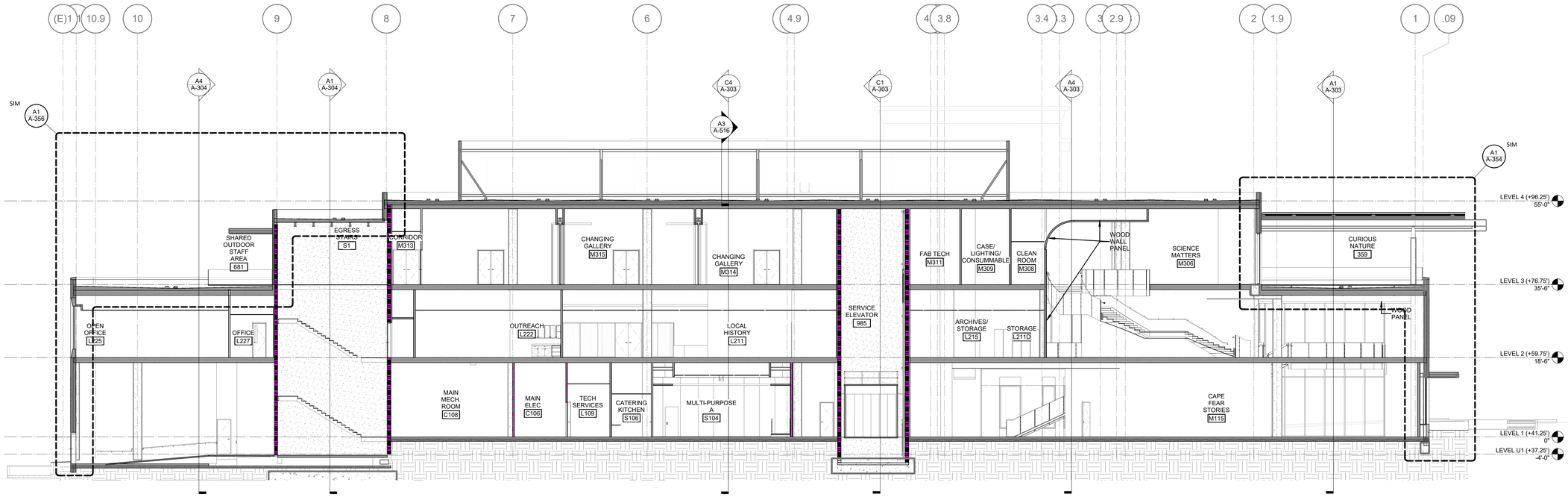
SHEET NAME:
BUILDING SECTIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-301

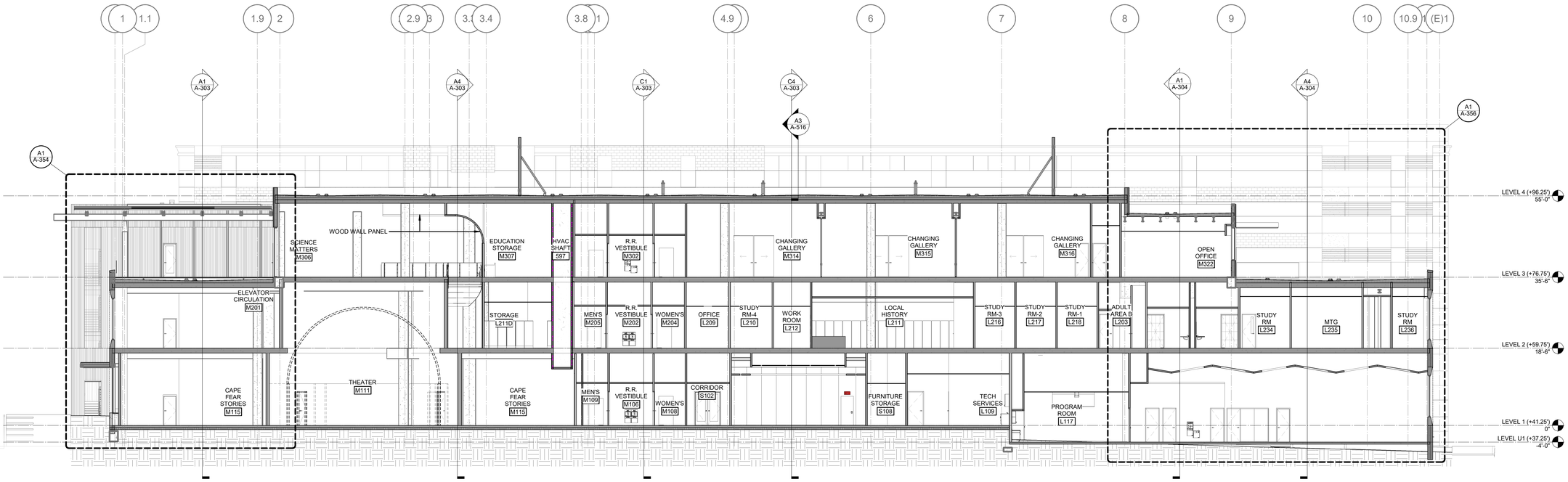
OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL ARCHITECTURAL PORTRAIT SIZE SHEETS



C1 BUILDING SECTION 4

3/32" = 1'-0"



A1 BUILDING SECTION 3

3/32" = 1'-0"

5/25/2022 5:23:25 PM

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

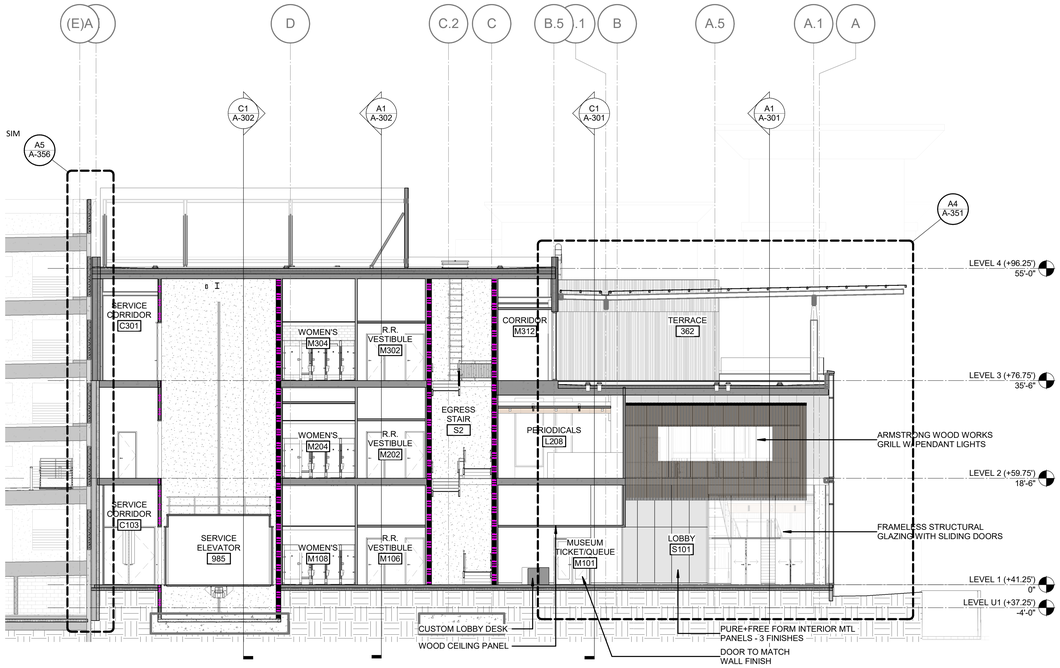
SHEET NAME:
BUILDING SECTIONS

ORIG SUBMISSION: 2022.05.25

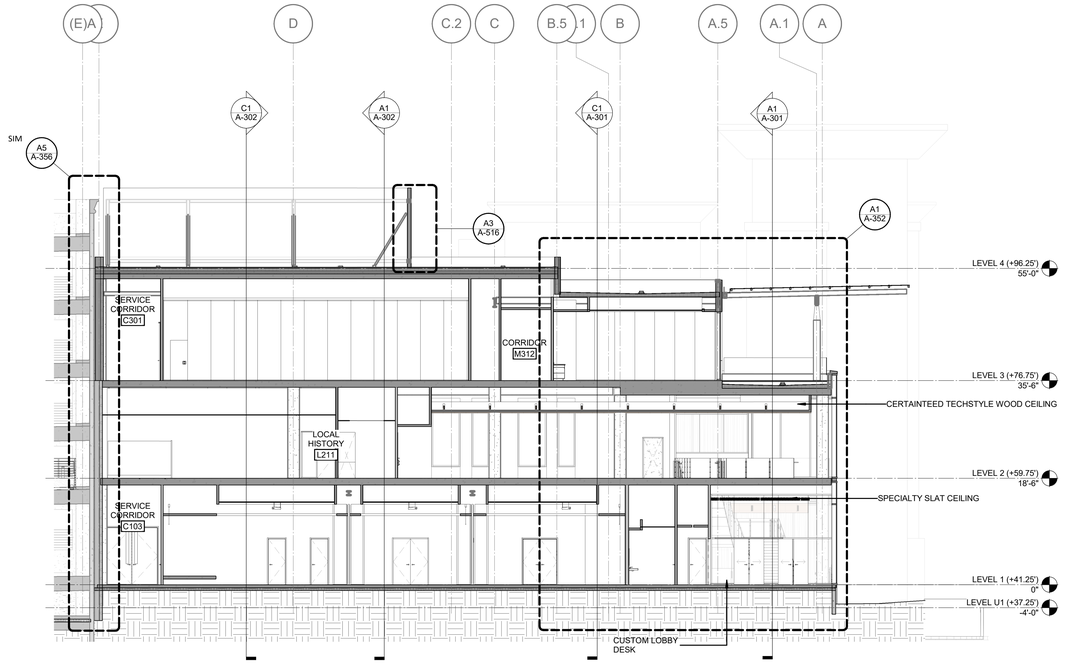
SHEET:
A-302

OWNER REVIEW SET

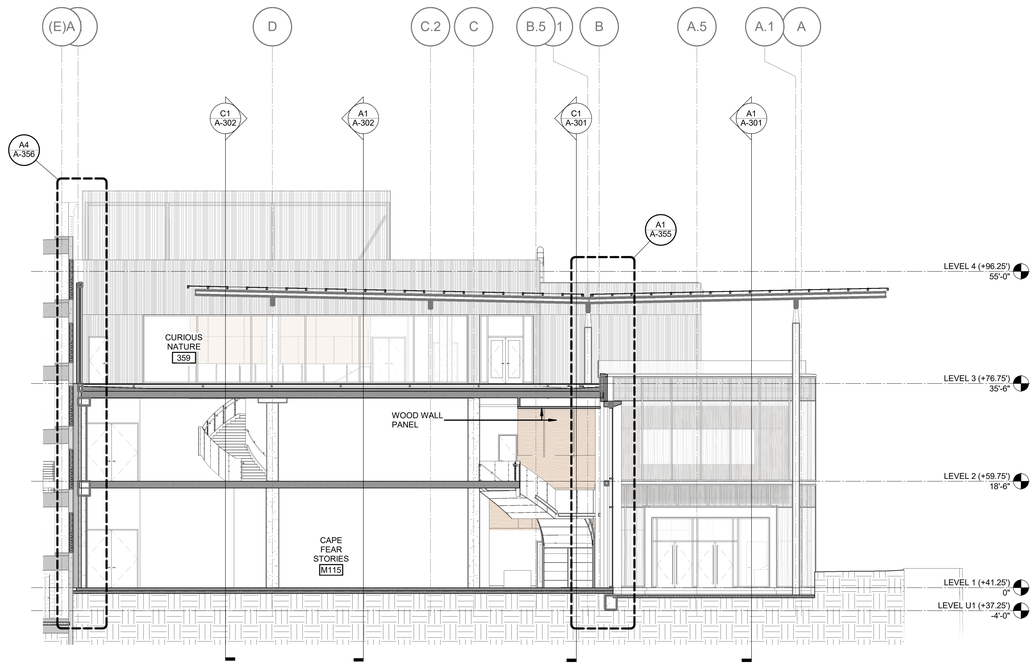
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL ORIGINAL PLOT SETS



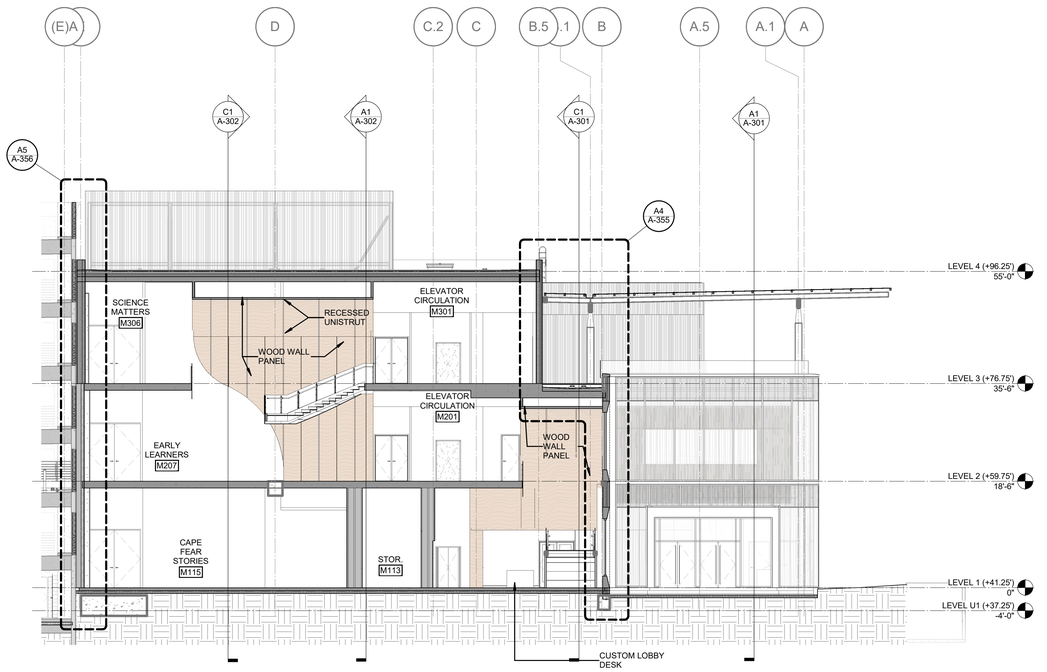
C1 **BUILDING SECTION 7**
3/32" = 1'-0"



C4 **BUILDING SECTION 8**
3/32" = 1'-0"



A1 **BUILDING SECTION 5**
3/32" = 1'-0"



A4 **BUILDING SECTION 6**
3/32" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
BUILDING SECTIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-303

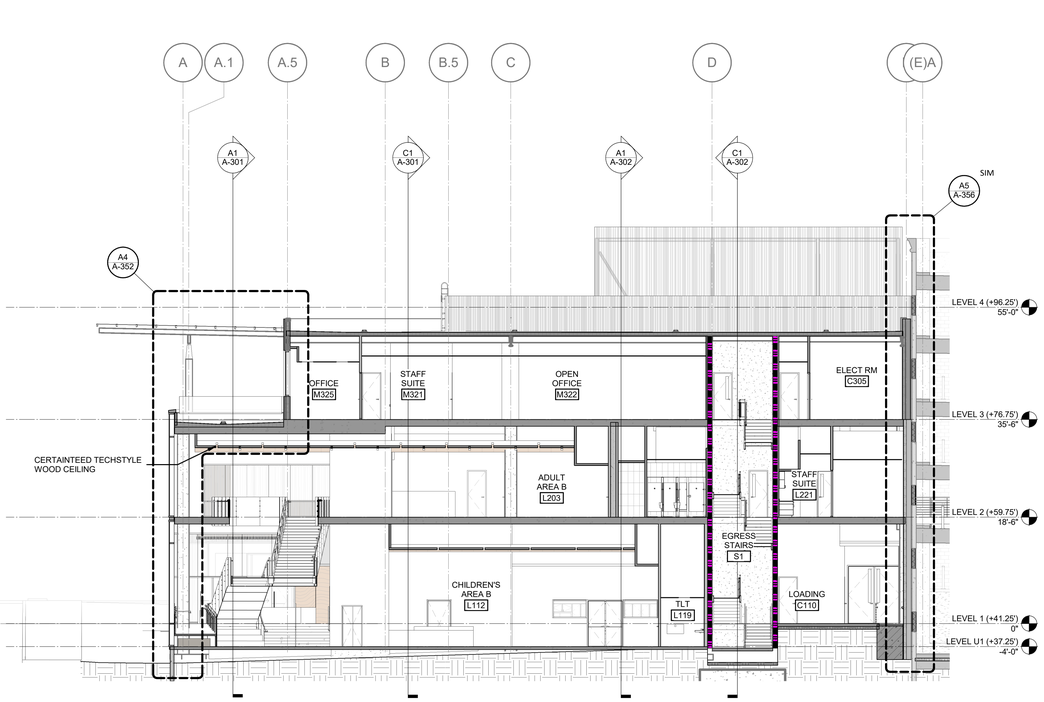
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E D C B A

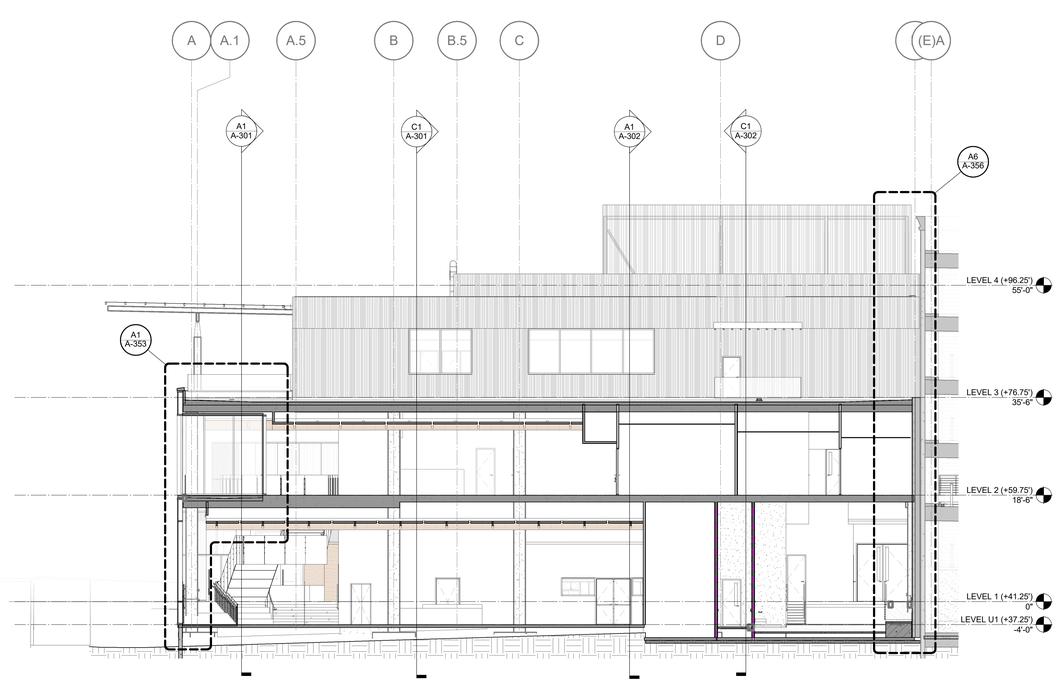
1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



A1 **BUILDING SECTION 9**

3/32" = 1'-0"



A4 **BUILDING SECTION 10**

3/32" = 1'-0"

1 2 3 4 5 6

5/25/2022 5:24:19 PM

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

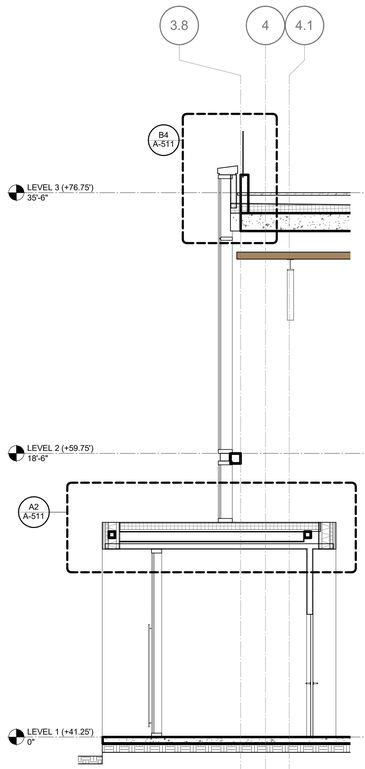
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BUILDING SECTIONS

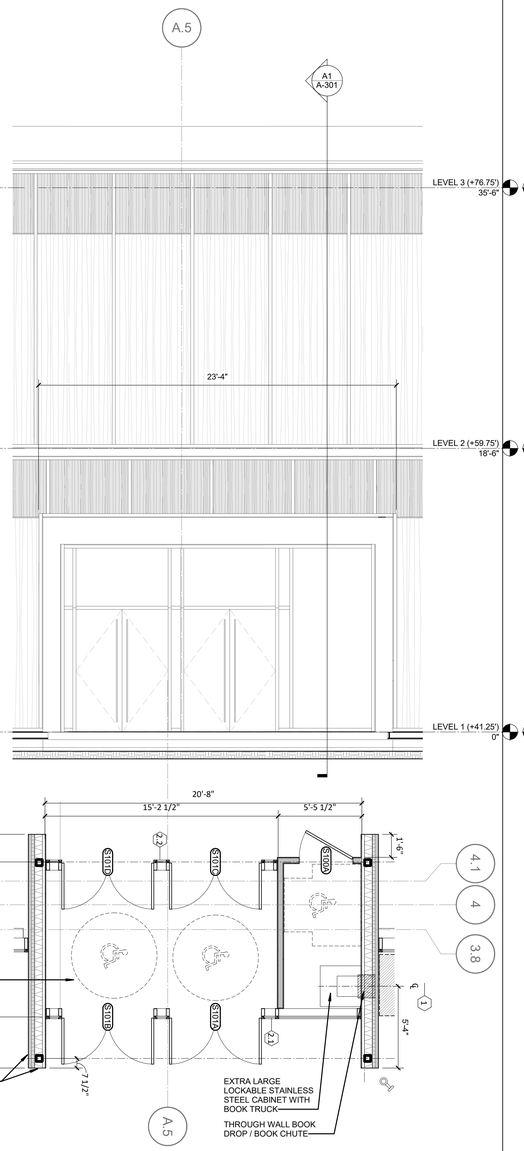
ORIG SUBMISSION: 2022.05.25

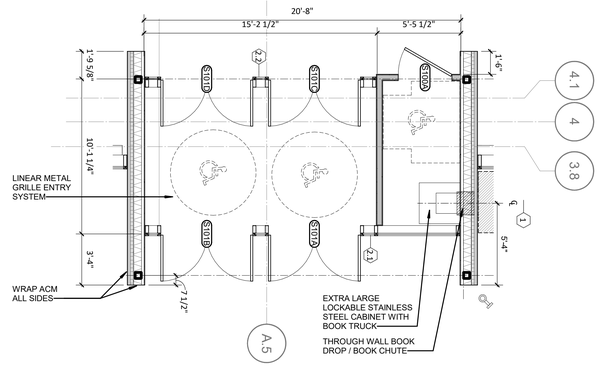
SHEET:
A-304

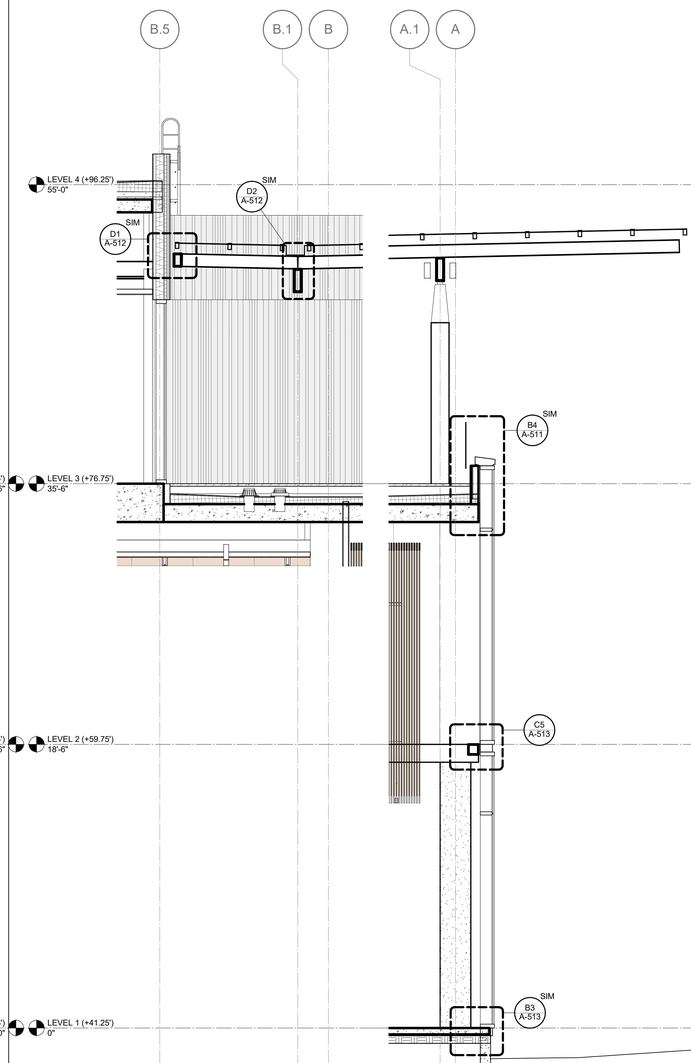
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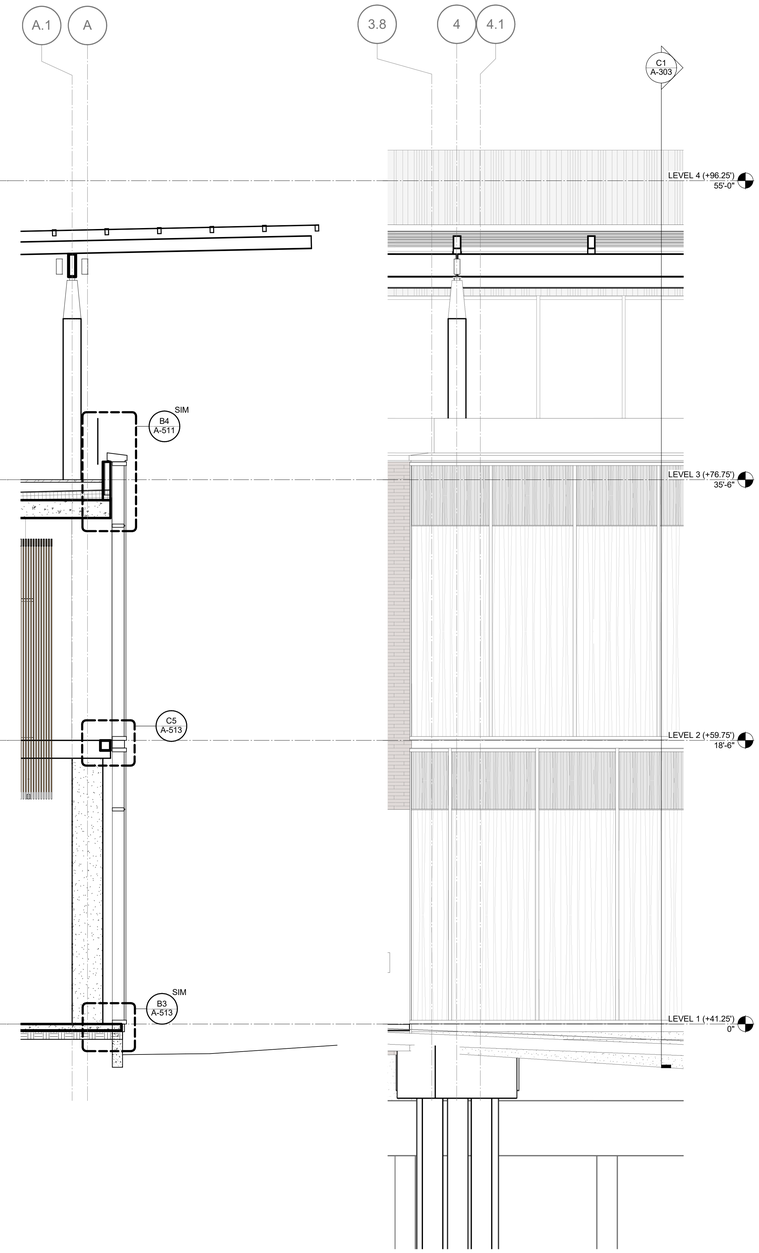
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E1 SHEETS ORIGINAL PAGE SIZE











A1 **EXT. ENVELOPE DETAILS - CW @ LOBBY (VESTIBULE)**
1/4" = 1'-0"

A4 **EXT. ENVELOPE DETAILS - CW @ LOBBY (BOOK DROP)**
1/4" = 1'-0"

5/25/2022 5:24:39 PM

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

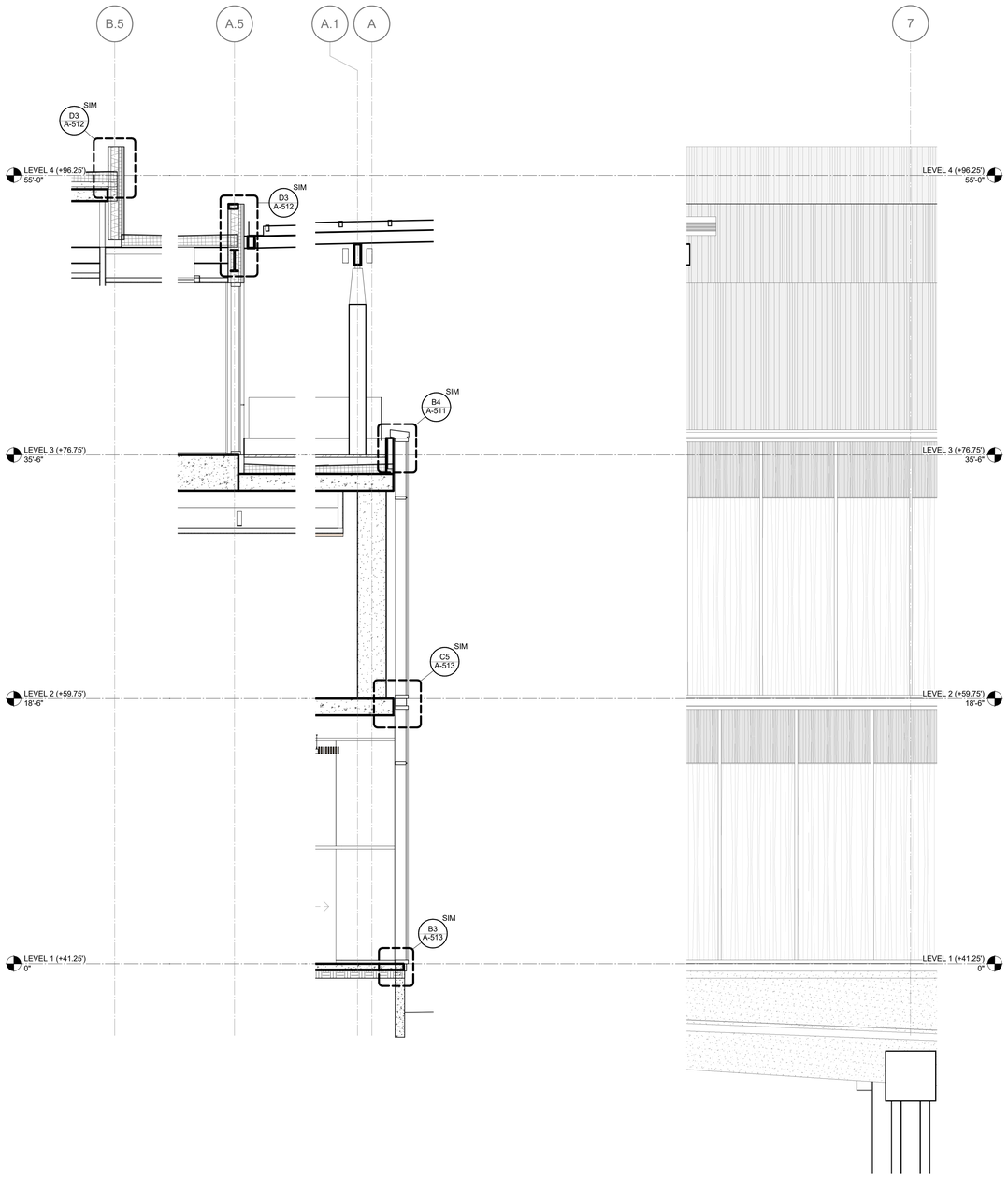
SHEET NAME:
EXTERIOR ENVELOPE DETAILS

ORIG SUBMISSION: 2022.05.25

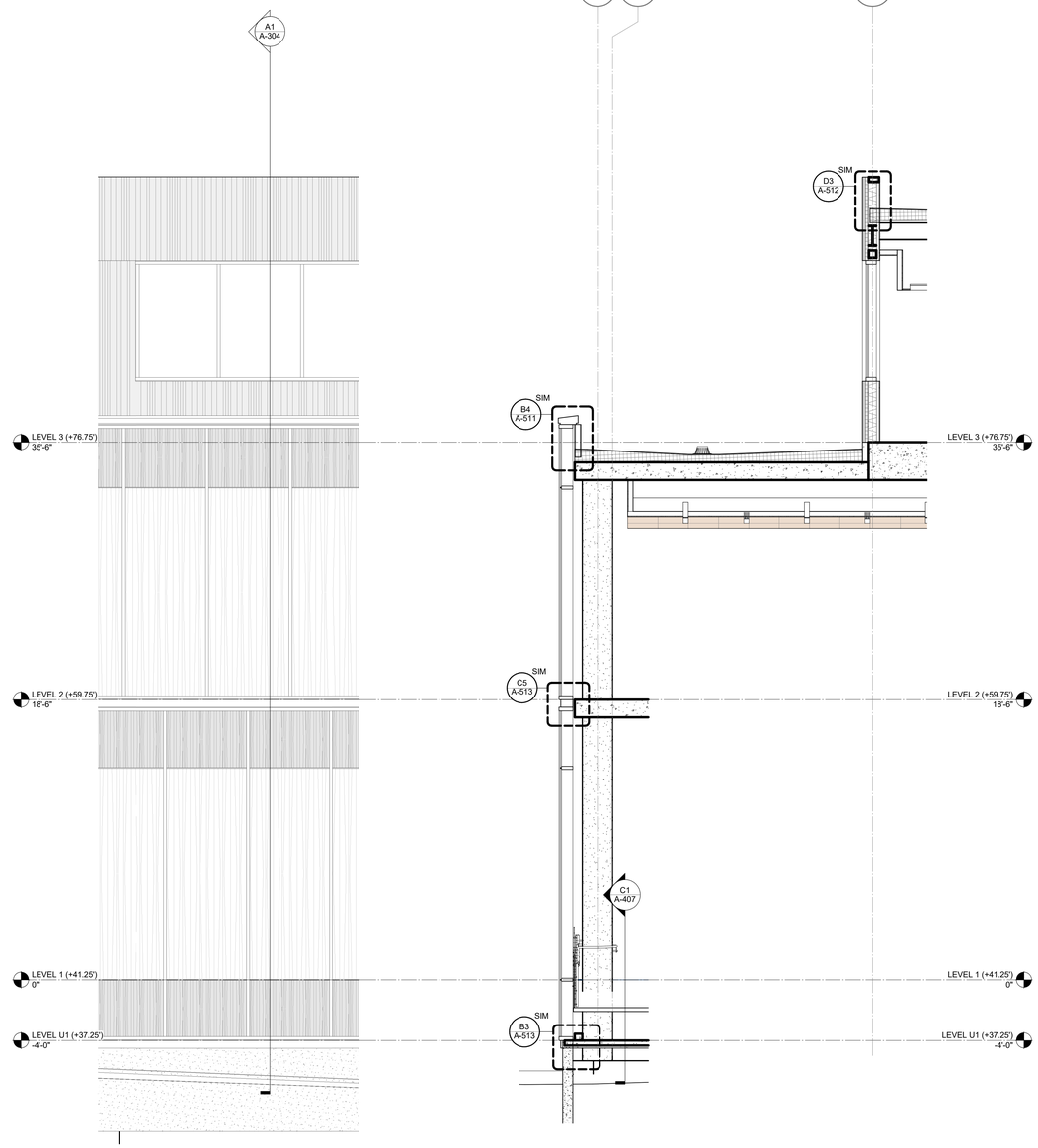
SHEET:
A-351

OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



A1 EXT. ENVELOPE DETAILS - CW @ LIBRARY (CIRCULATION)
1/4" = 1'-0"



A4 EXT. ENVELOPE DETAILS - CW @ LIBRARY (CHILDRENS)
1/4" = 1'-0"

5/25/2022 5:24:45 PM

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

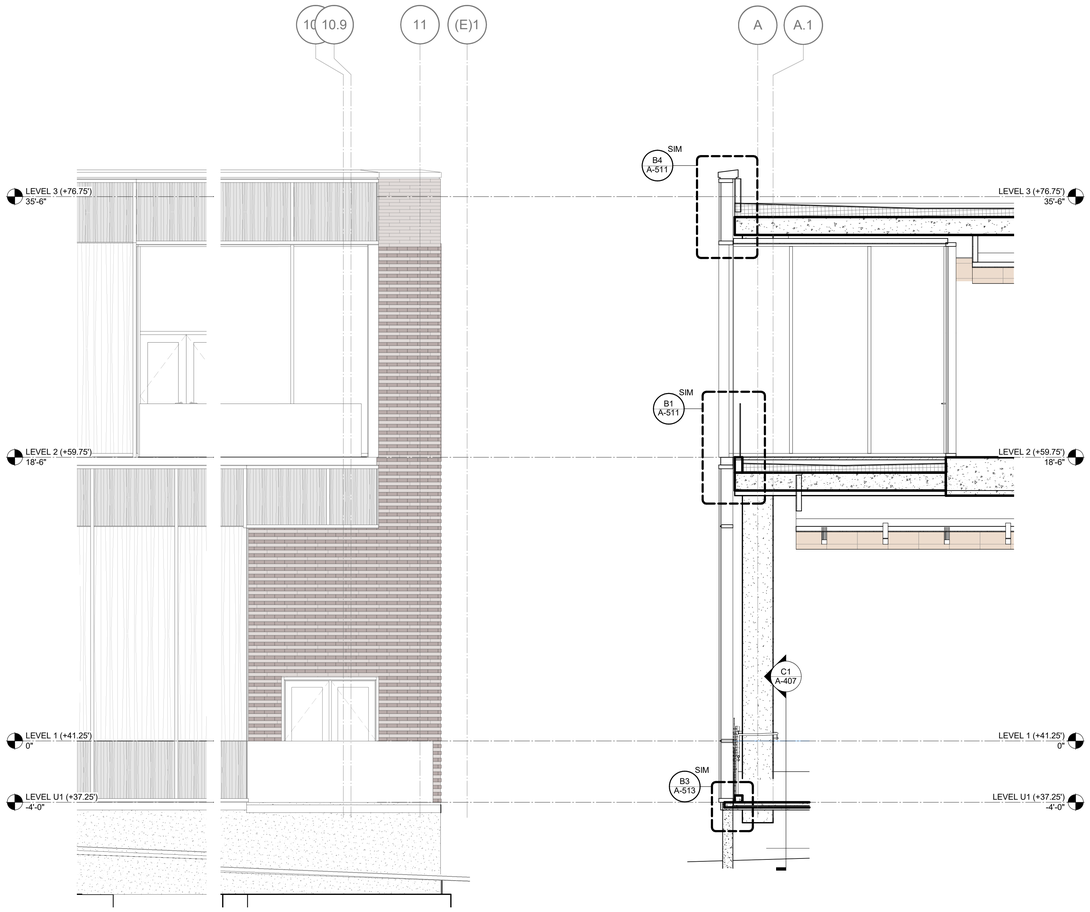
SHEET NAME:
EXTERIOR ENVELOPE DETAILS

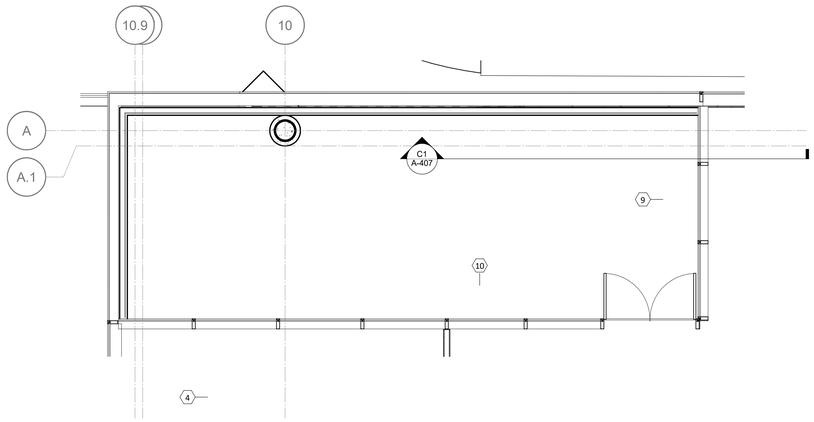
ORIG SUBMISSION: 2022.05.25

SHEET:
A-352

OWNER REVIEW SET

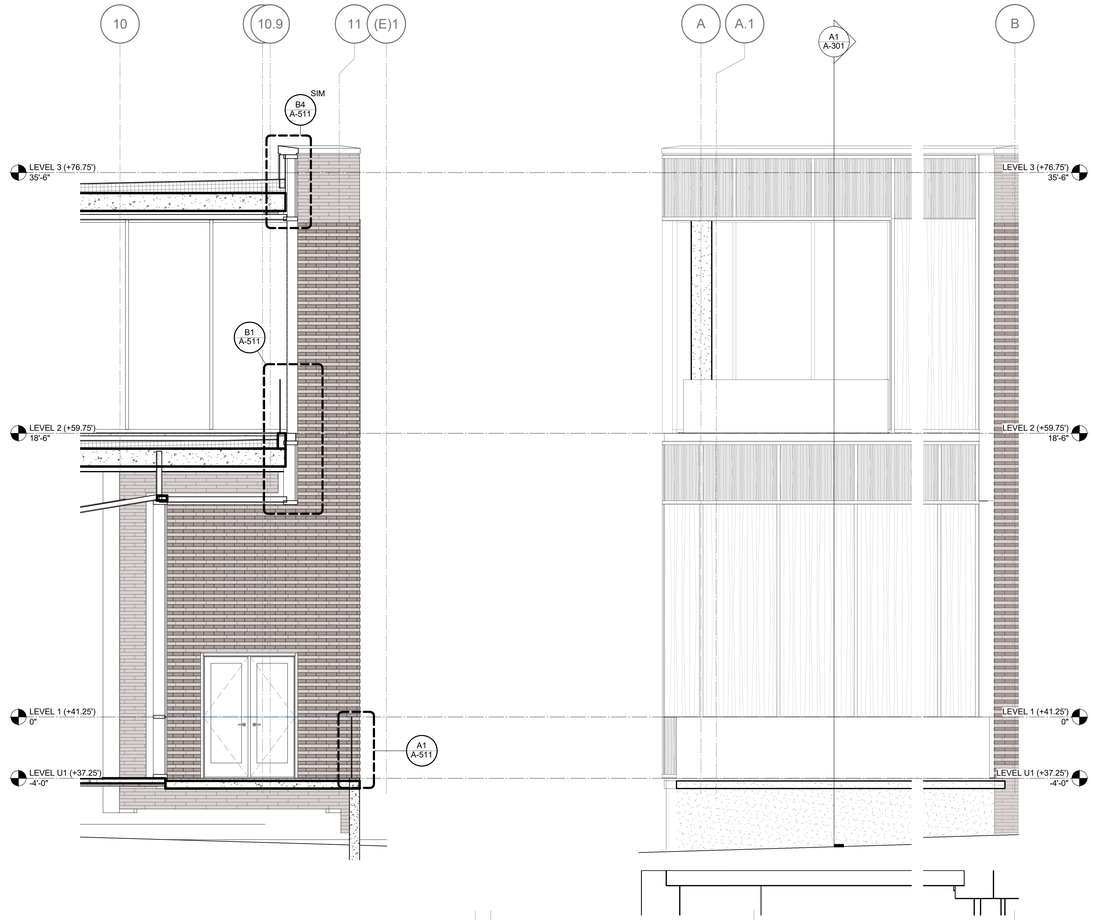
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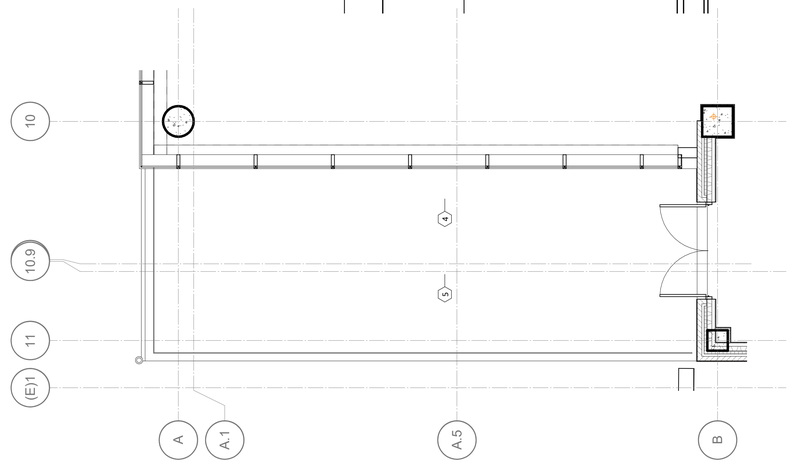




A1 EXT. ENVELOPE DETAILS - CW @ LIBRARY (ADULT TERRACE)

1/4" = 1'-0"





A4 EXT. ENVELOPE DETAILS - CW @ LIBRARY (CHILD TERRACE)

1/4" = 1'-0"

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
EXTERIOR ENVELOPE DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-353

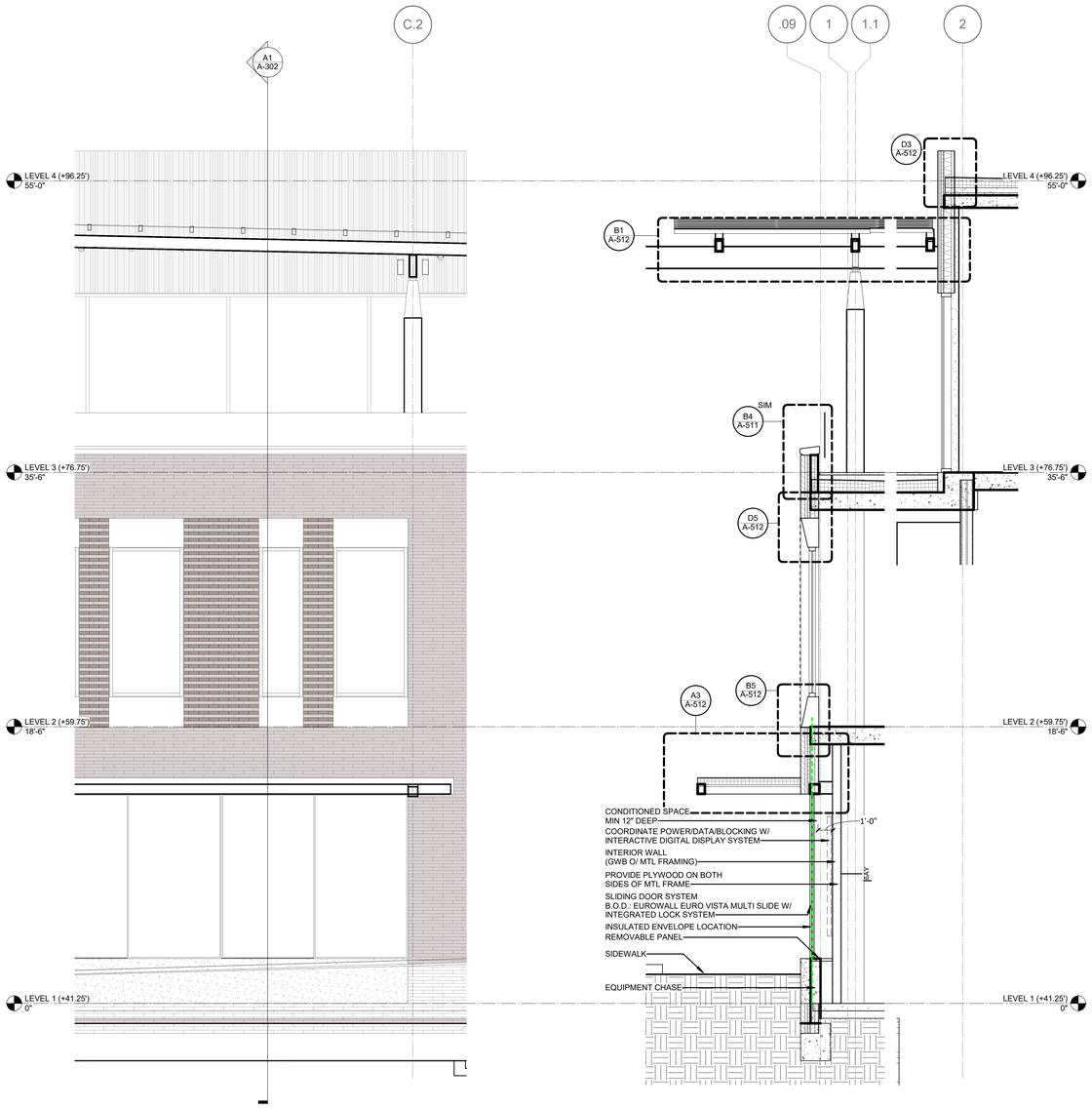
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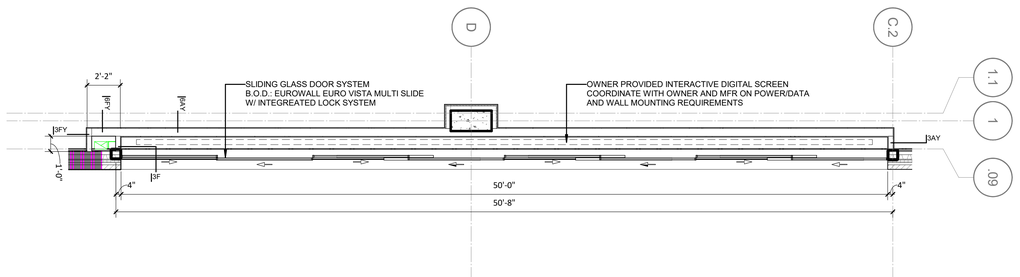
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E D C B A

1 2 3 4 5 6

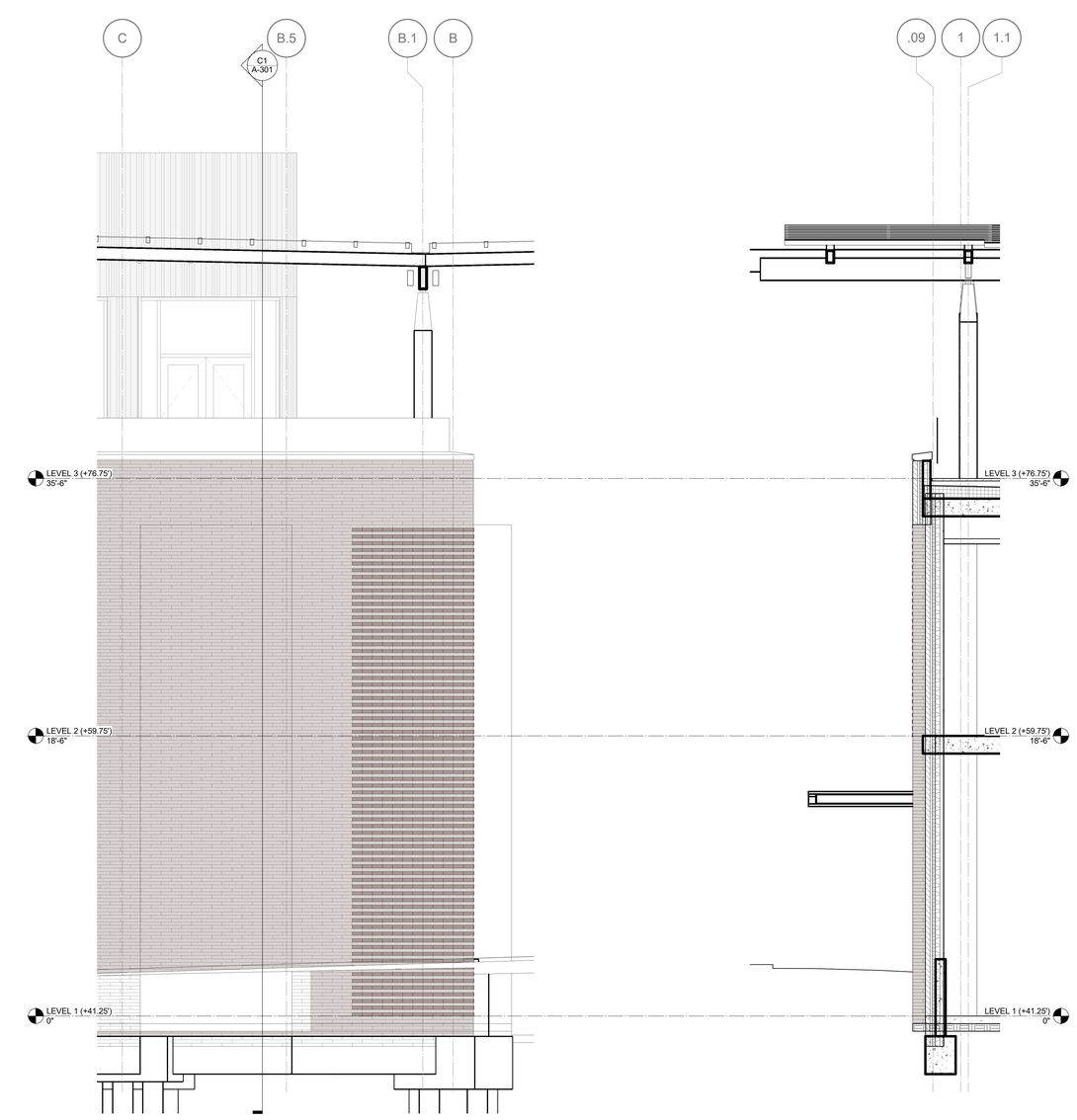
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE





A1 **EXT. ENVELOPE DETAILS - BV @ MUSEUM (DISPLAY WINDOW)**

1/4" = 1'-0"



A4 **EXT. ENVELOPE DETAILS - BV @ MUSEUM (VERTICAL BANNER)**

1/4" = 1'-0"

5/25/2022 5:25:18 PM

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

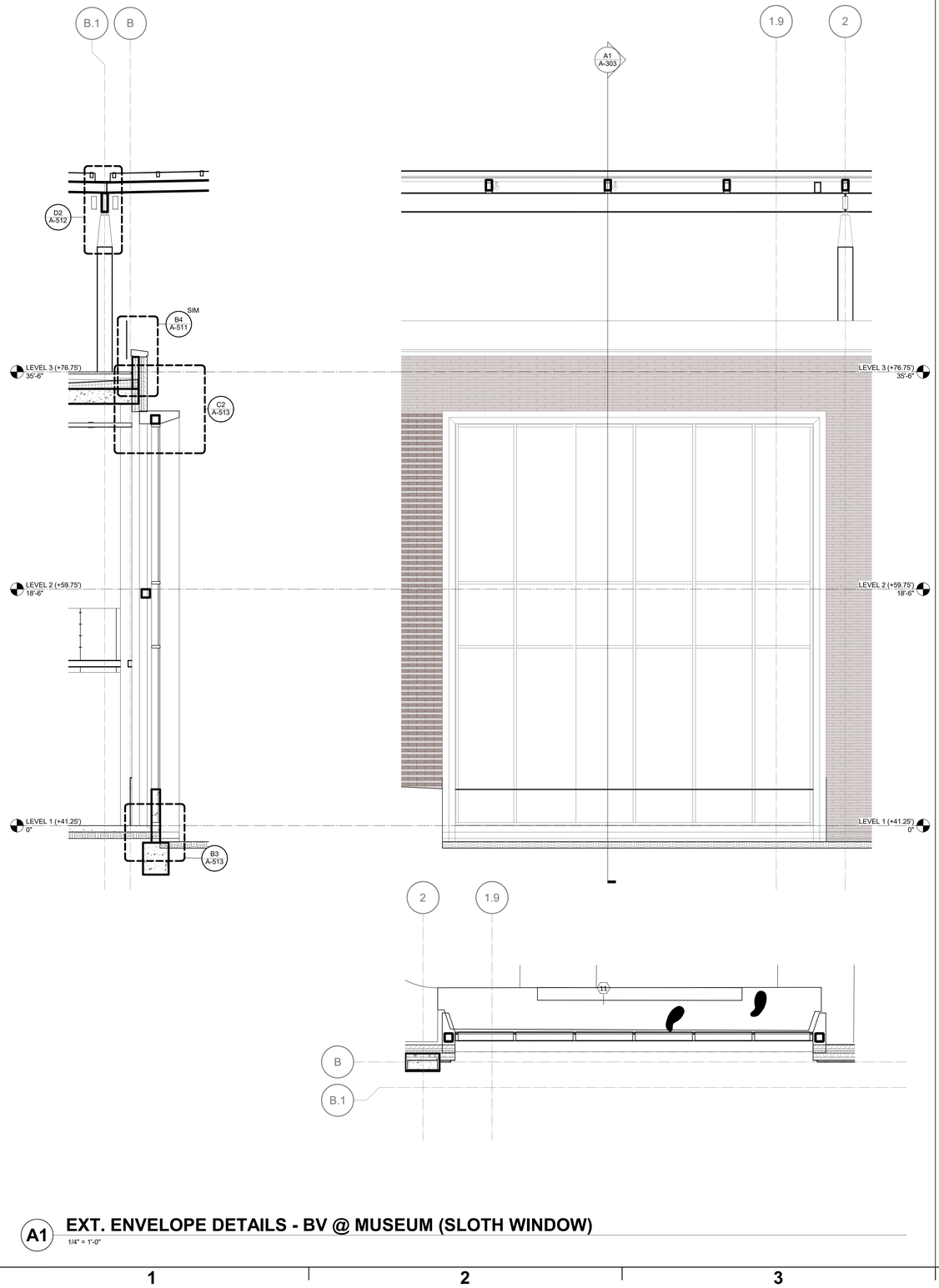
SHEET NAME:
EXTERIOR ENVELOPE DETAILS

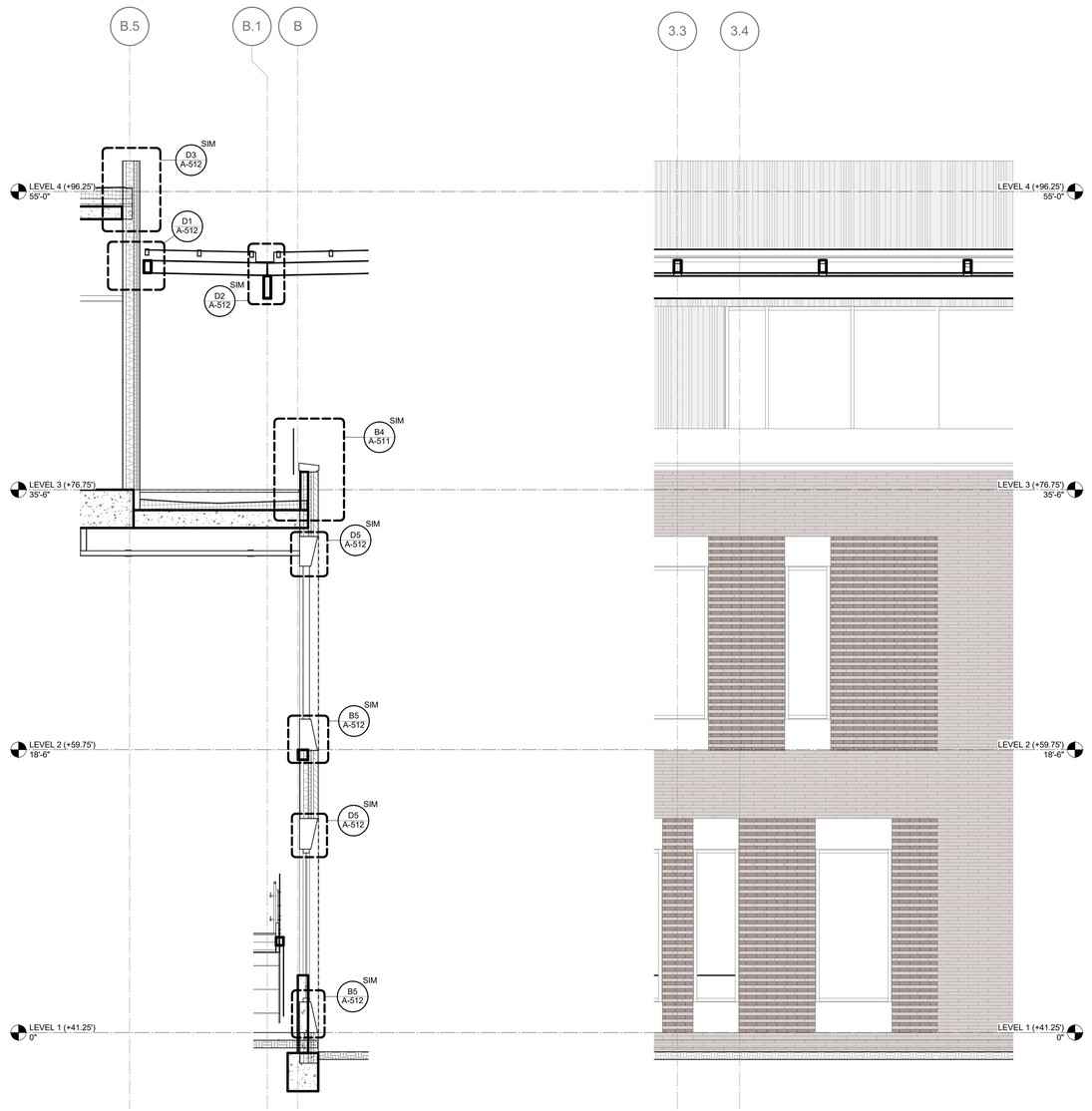
ORIG SUBMISSION: 2022.05.25

SHEET: A-354

OWNER REVIEW SET

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A1 EXT. ENVELOPE DETAILS - BV @ MUSEUM (SLOTH WINDOW)

1/4" = 1'-0"

A4 EXT. ENVELOPE DETAILS - BV @ MUSEUM (STAIRS)

1/4" = 1'-0"

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
EXTERIOR ENVELOPE DETAILS

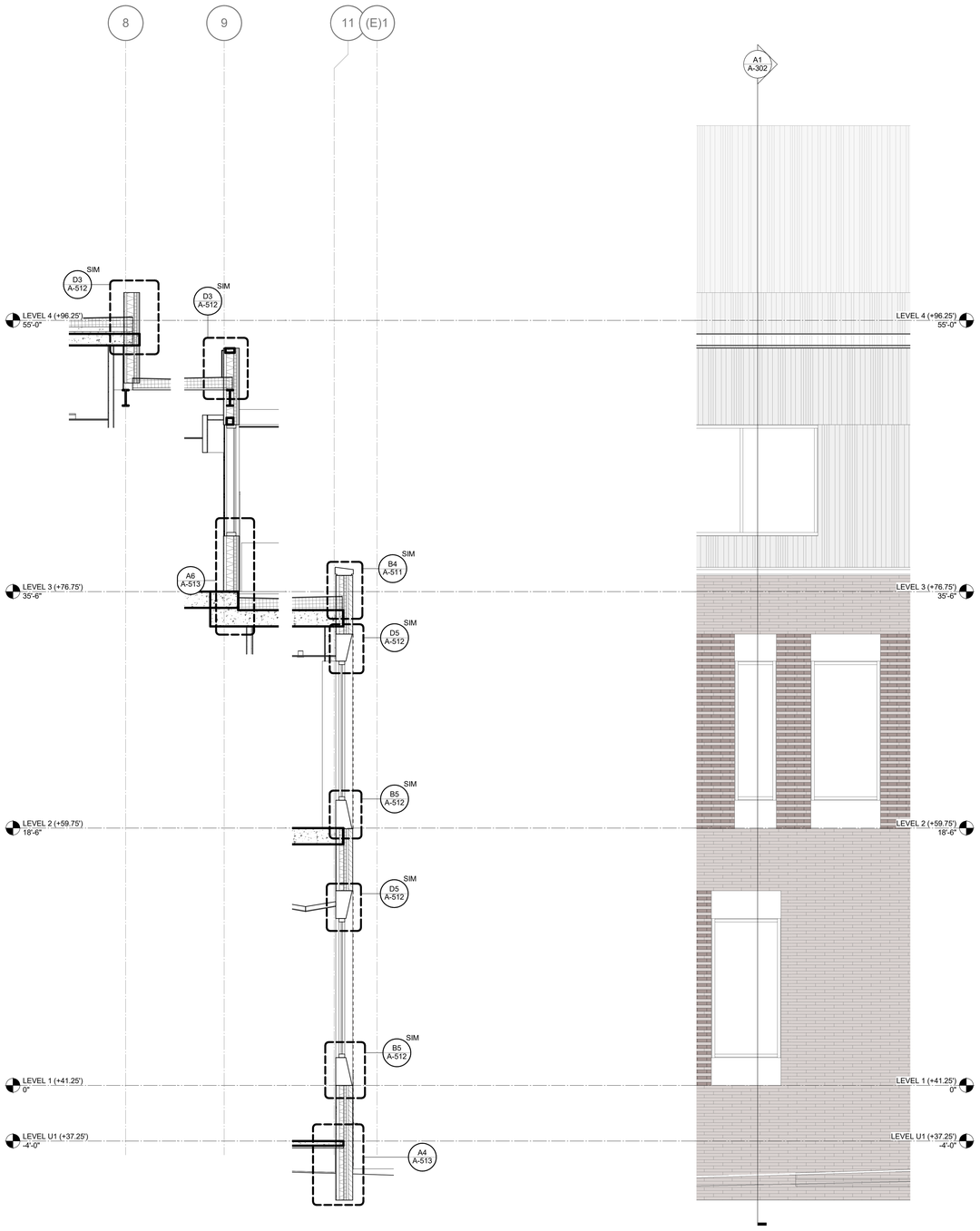
ORIG SUBMISSION: 2022.05.25

SHEET: A-355

OWNER REVIEW SET

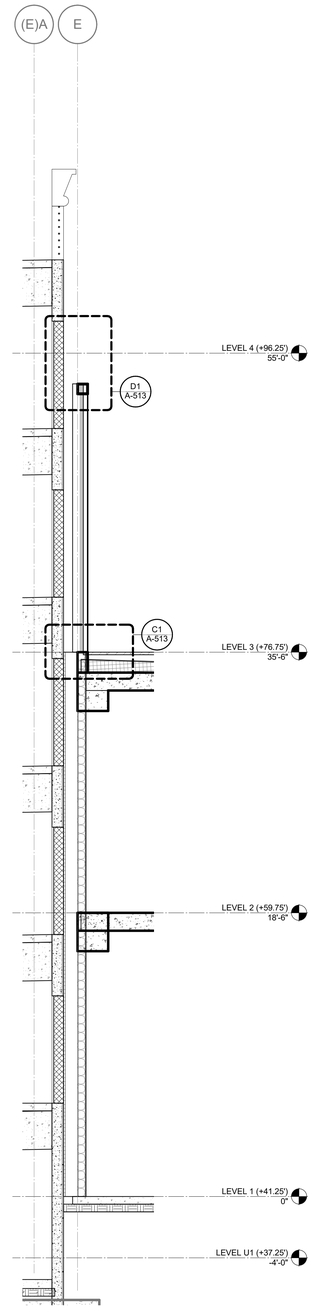
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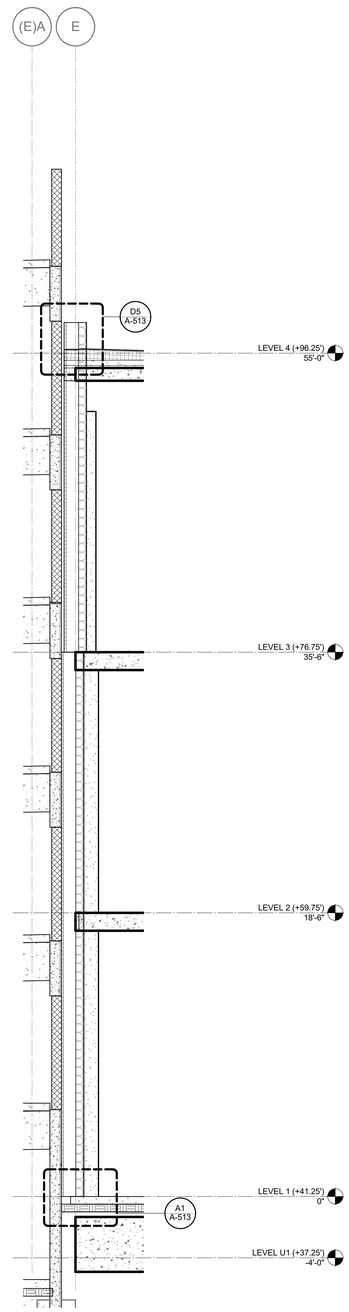
A1 EXT. ENVELOPE DETAILS - BV @ LIBRARY (CHILDRENS)

1/4" = 1'-0"



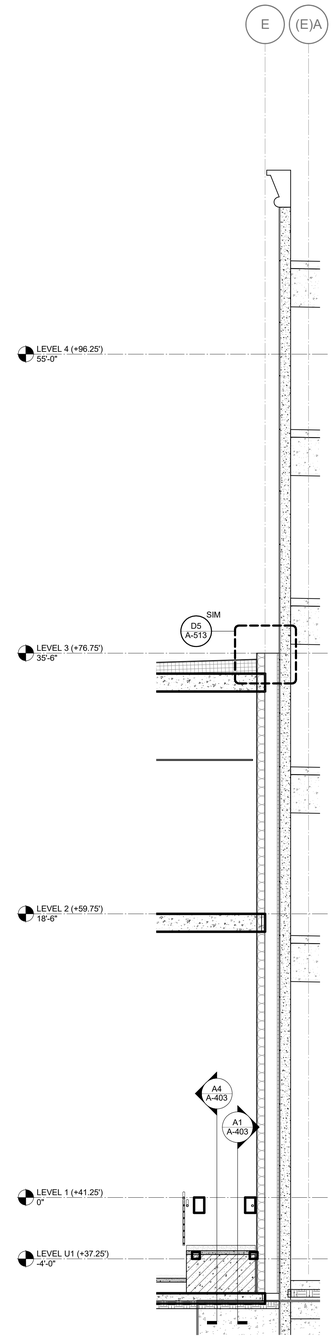
A4 WALL SECT. - GARAGE 1

1/4" = 1'-0"



A5 WALL SECT. - GARAGE 2

1/4" = 1'-0"



A6 WALL SECT. - GARAGE 3

1/4" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
EXTERIOR ENVELOPE DETAILS

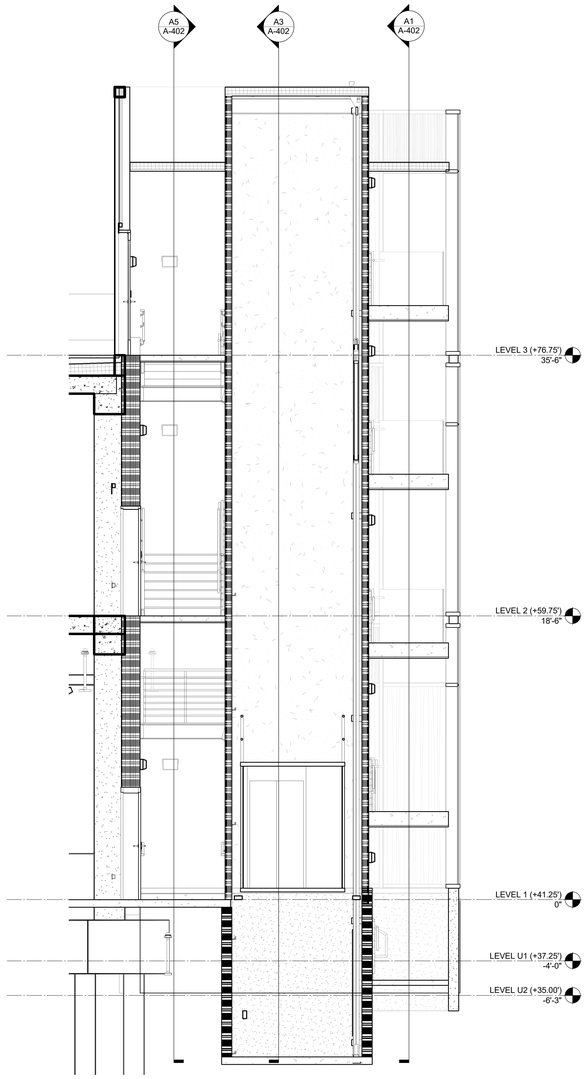
ORIG SUBMISSION: 2022.05.25

SHEET: A-356

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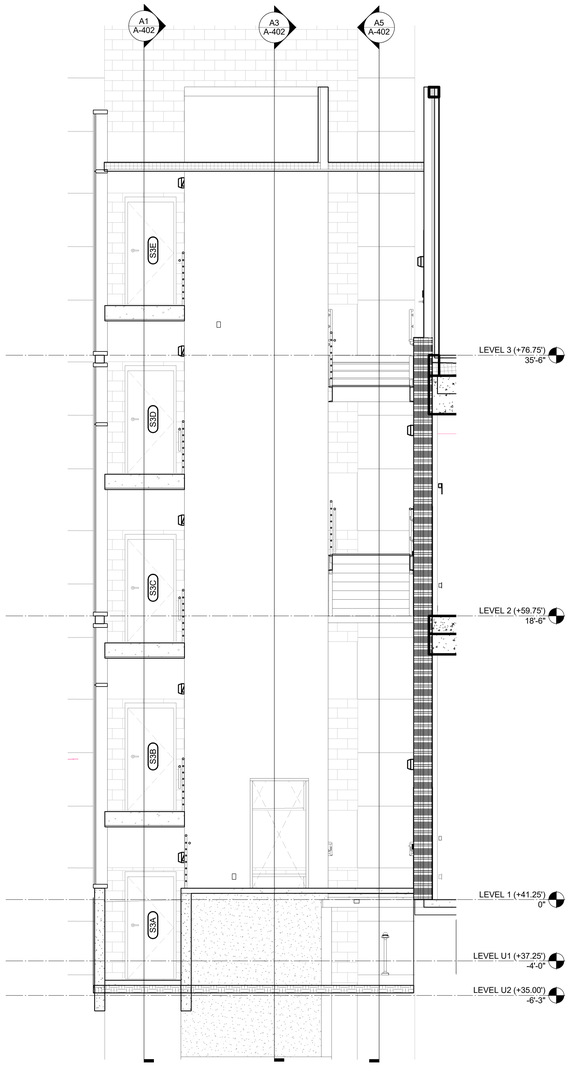
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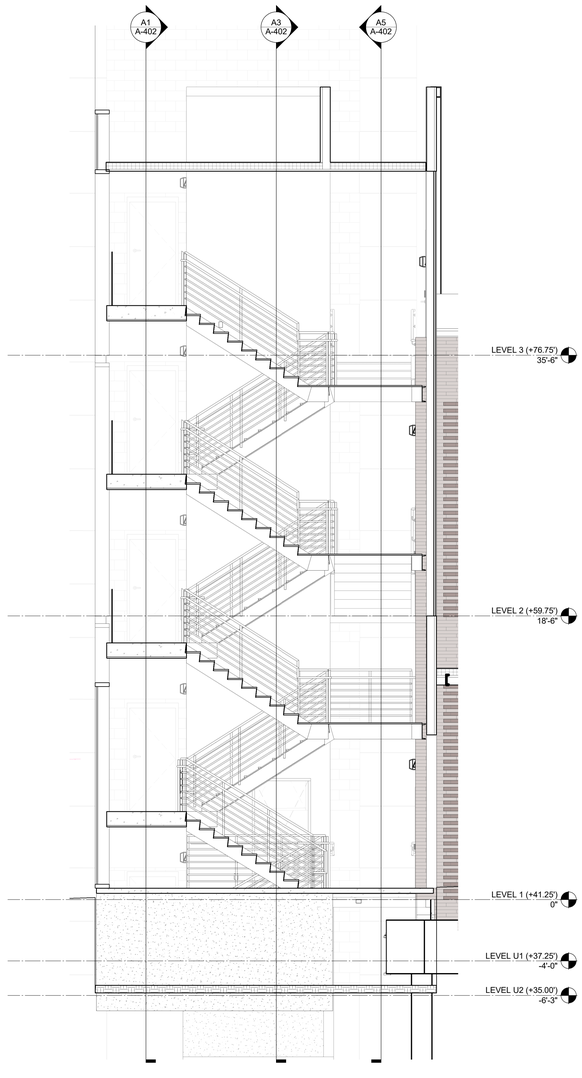
B1 SECTION - CIRCULATION - GARAGE STAIR TOWER 1

1/4" = 1'-0"



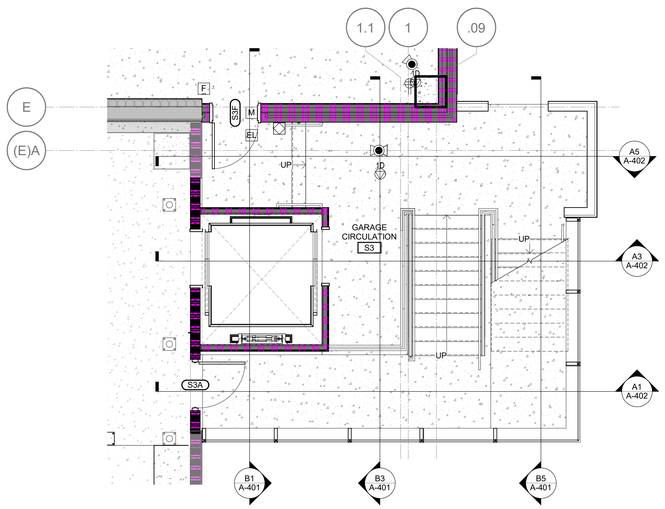
B3 SECTION - CIRCULATION - GARAGE STAIR TOWER 6

1/4" = 1'-0"



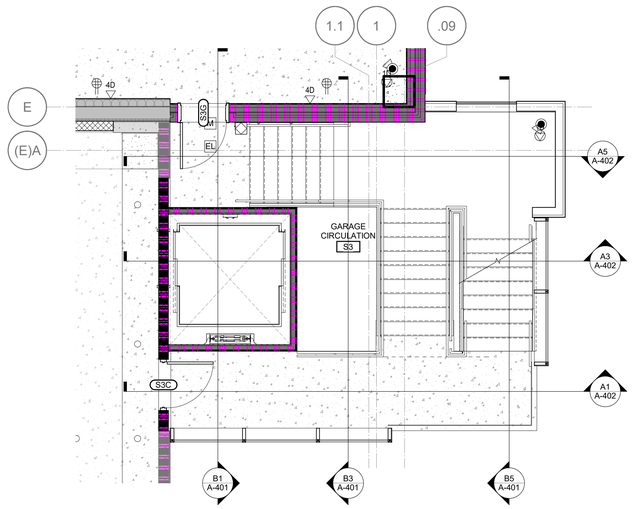
B5 SECTION - CIRCULATION - GARAGE STAIR TOWER 2

1/4" = 1'-0"



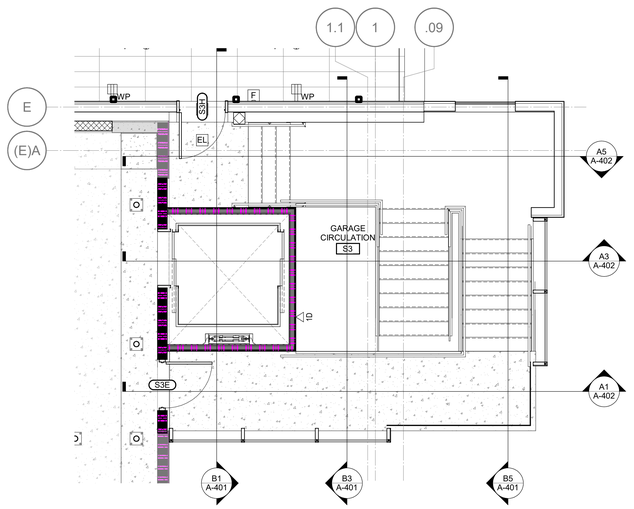
A1 ENLARGED STAIR PLAN - LEVEL 1 - GARAGE STAIR TOWER

1/4" = 1'-0"



A3 ENLARGED STAIR PLAN - LEVEL 2 - GARAGE STAIR TOWER

1/4" = 1'-0"



A5 ENLARGED STAIR PLAN - LEVEL 3 - GARAGE STAIR TOWER

1/4" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - GARAGE

ORIG SUBMISSION: 2022.05.25

SHEET: A-401

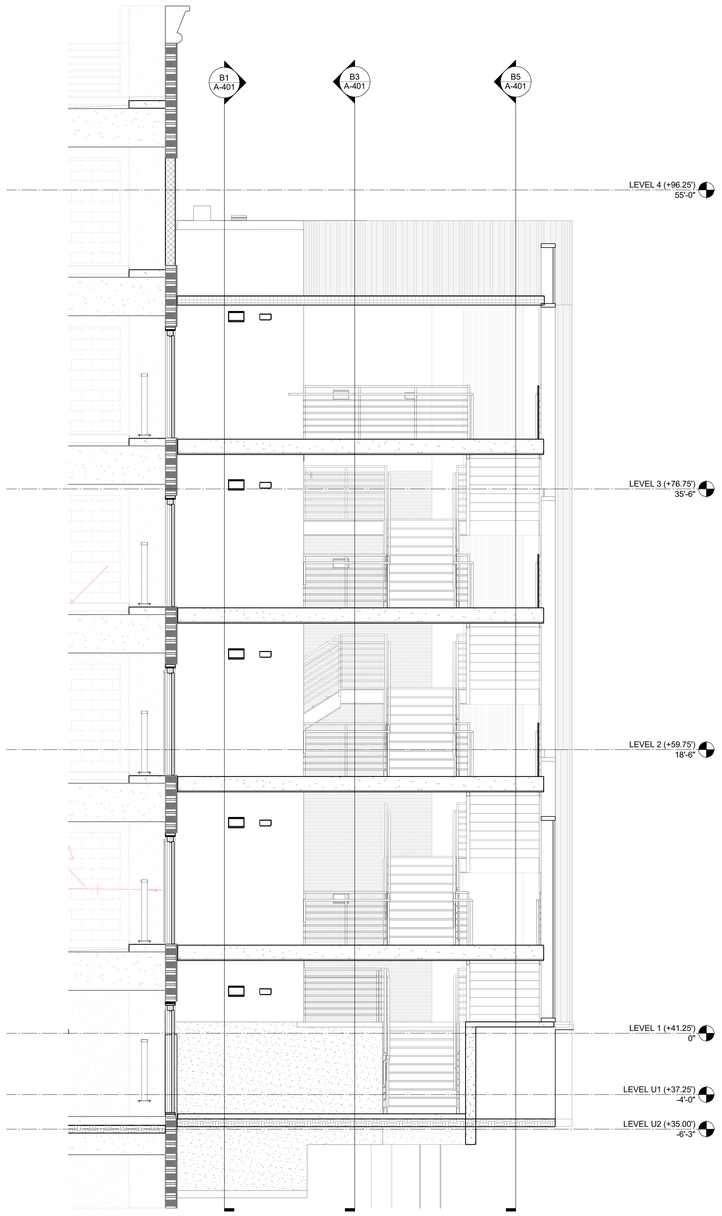
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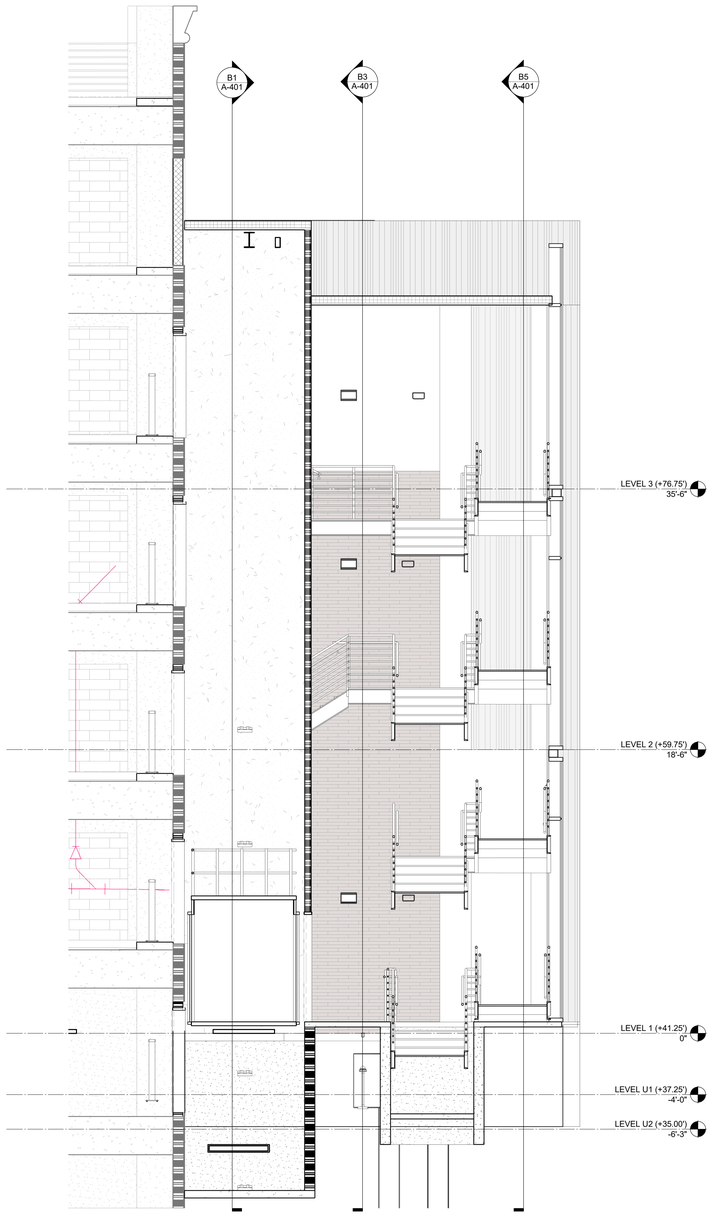
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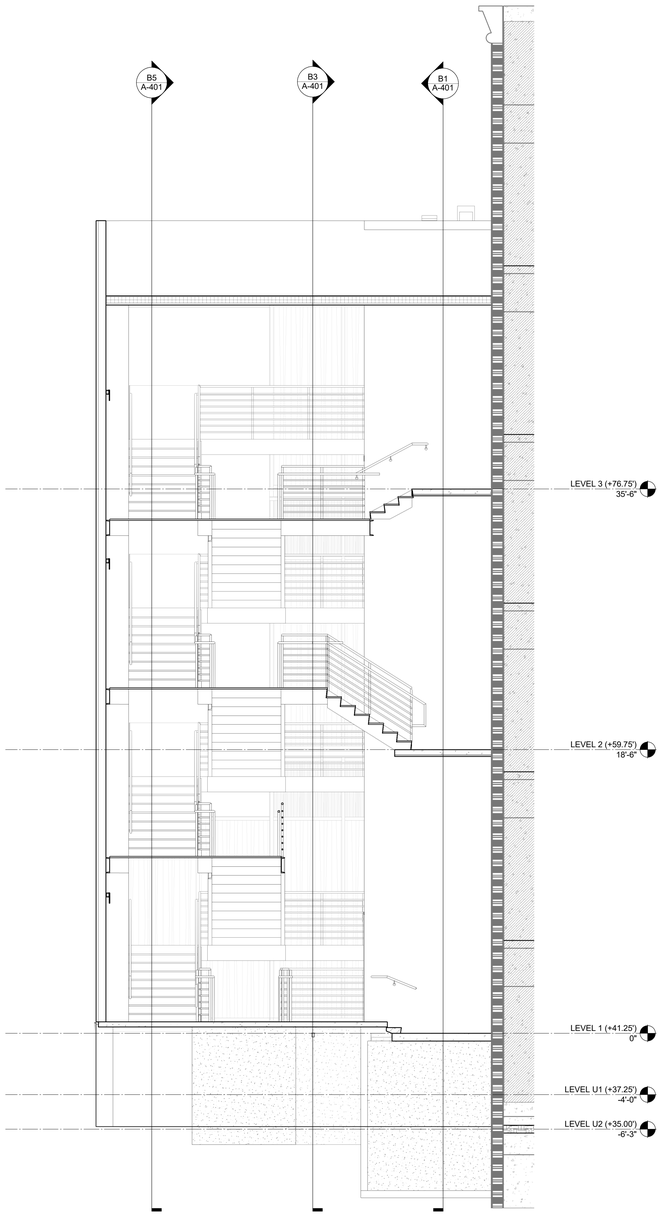
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAPER SIZE



A1 **SECTION - CIRCULATION - GARAGE STAIR TOWER 5**
1/4" = 1'-0"



A3 **SECTION - CIRCULATION - GARAGE STAIR TOWER 4**
1/4" = 1'-0"



A5 **SECTION - CIRCULATION - GARAGE STAIR TOWER 3**
1/4" = 1'-0"

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - GARAGE

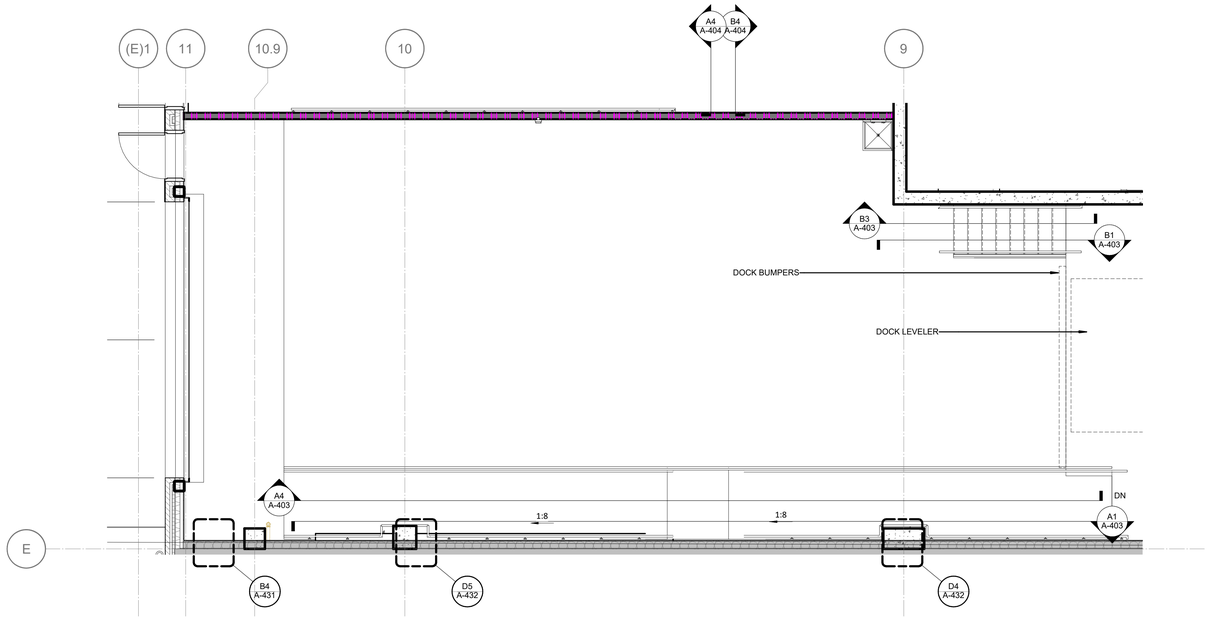
ORIG SUBMISSION: 2022.05.25

SHEET: A-402

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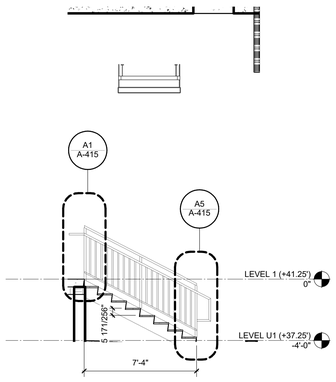
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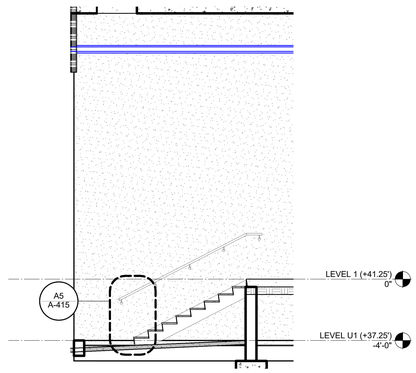
D1 ENLARGED STAIR PLAN - LEVEL 1 - LOADING DOCK

1/4" = 1'-0"



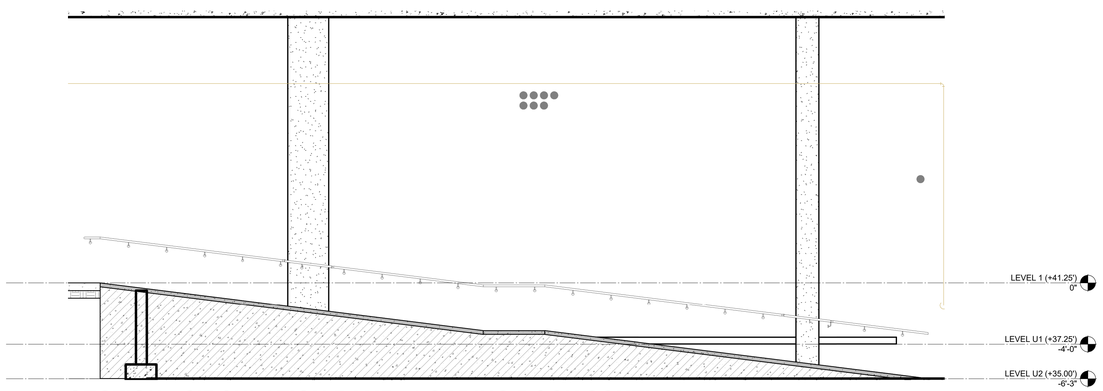
B1 SECTION - CIRCULATION STAIR - LOADING DOCK 1

1/4" = 1'-0"



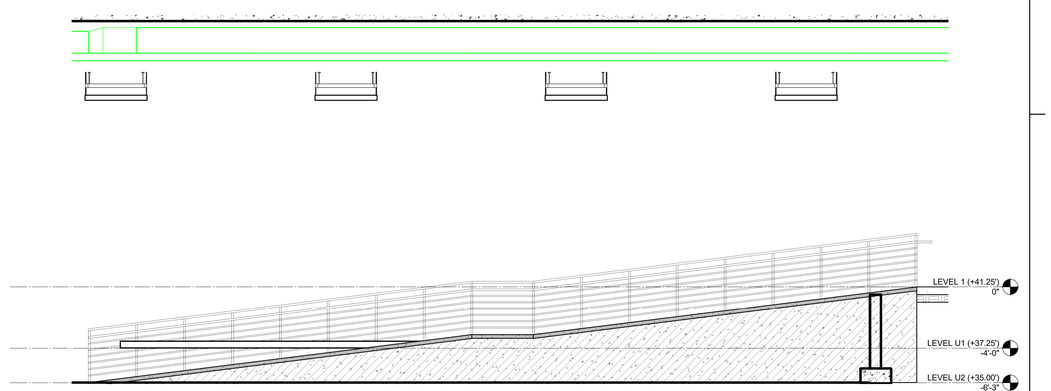
B3 SECTION - CIRCULATION STAIR - LOADING DOCK 2

1/4" = 1'-0"



A1 SECTION - CIRCULATION RAMP - LOADING DOCK SOUTH

1/4" = 1'-0"



A4 SECTION - CIRCULATION RAMP - LOADING DOCK NORTH

1/4" = 1'-0"

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - LOADING DOCK

ORIG SUBMISSION: 2022.05.25

SHEET: A-403

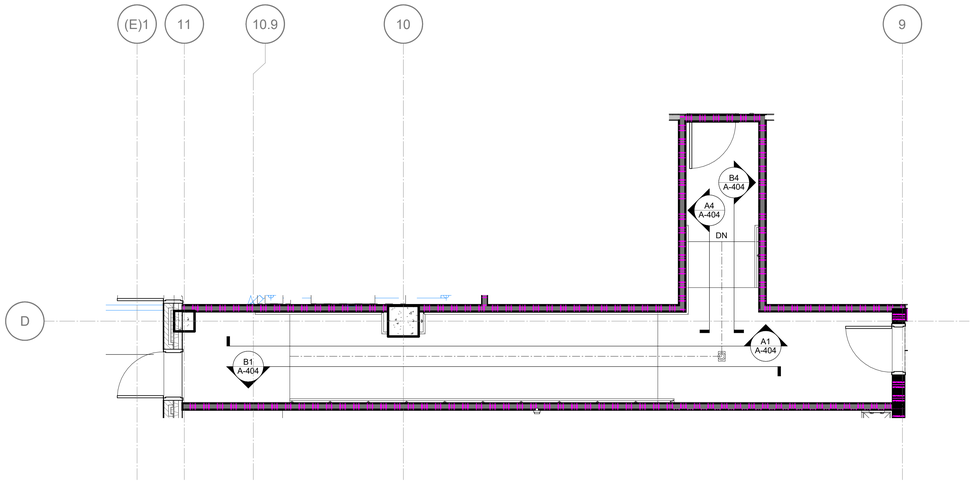
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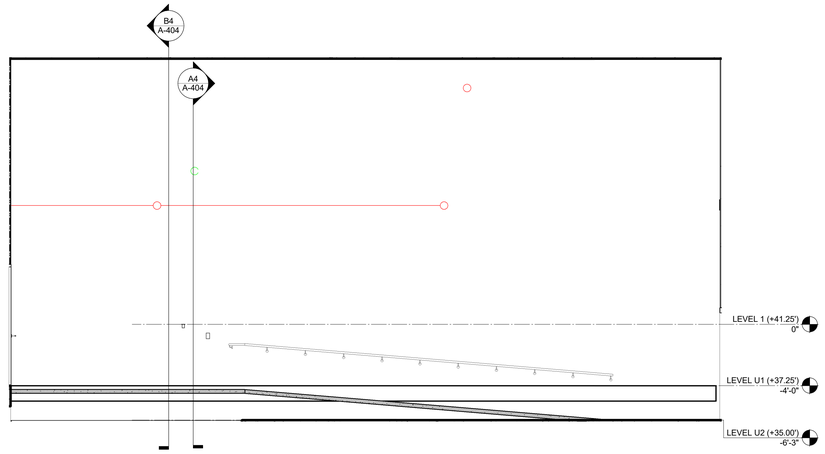
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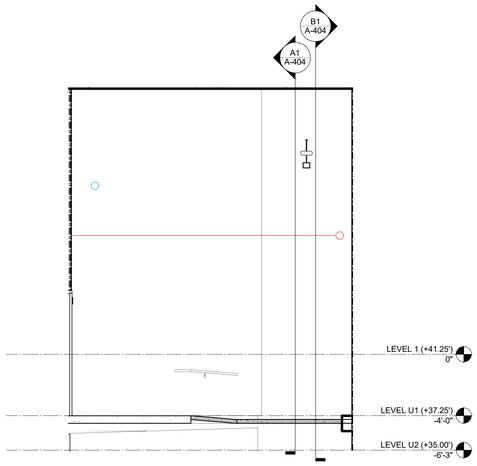
D1 ENLARGED RAMP PLAN - LEVEL U1 - FIRE EXIT

1/4" = 1'-0"



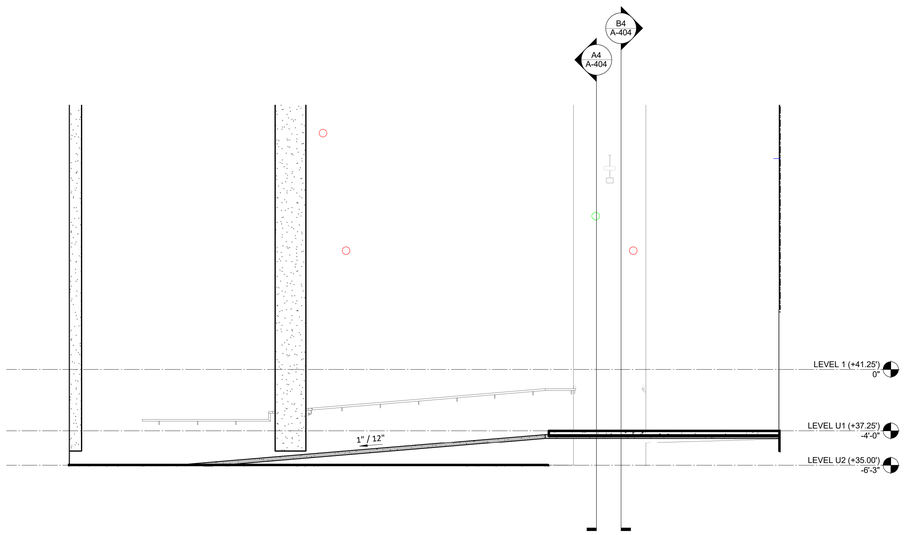
B1 SECTION - CIRCULATION RAMP - LVL U1 FIRE EXIT 2

1/4" = 1'-0"



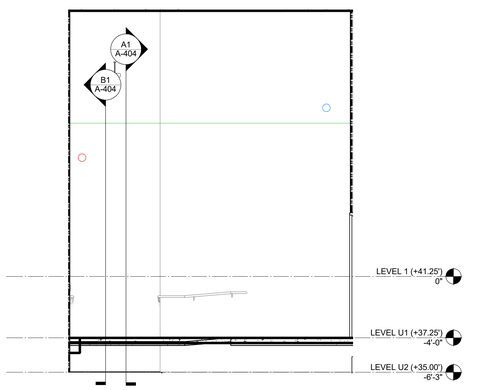
B4 SECTION - CIRCULATION RAMP - LVL U1 FIRE EXIT 4

1/4" = 1'-0"



A1 SECTION - CIRCULATION RAMP - LVL U1 FIRE EXIT 1

1/4" = 1'-0"



A4 SECTION - CIRCULATION RAMP - LVL U1 FIRE EXIT 3

1/4" = 1'-0"

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED RAMP - PLANS & SECTIONS - EXIT PASSAGEWAY

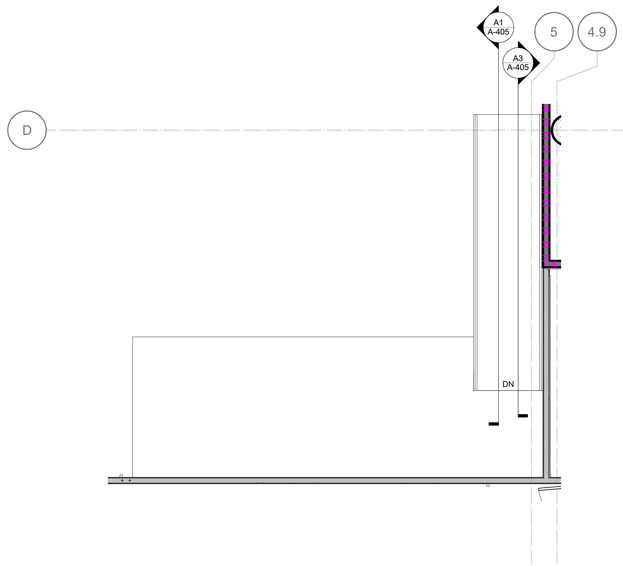
ORIG SUBMISSION: 2022.05.25

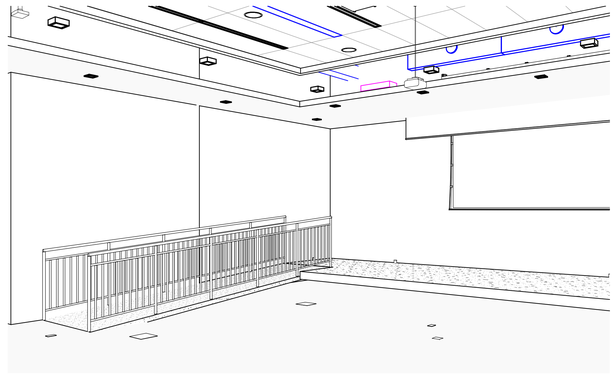
SHEET: A-404

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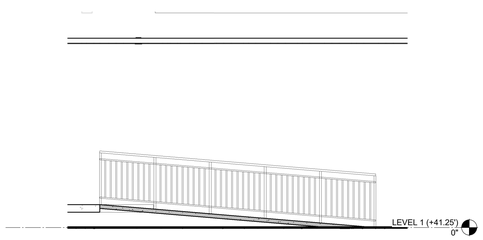
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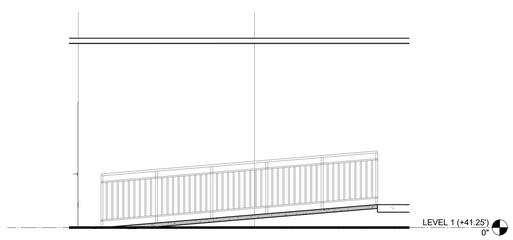
B1 ENLARGED RAMP PLAN - LEVEL 1 - MULTI-PURPOSE RAMP

1/4" = 1'-0"



A1 SECTION - CIRCULATION RAMP - MULTI-PURPOSE 1

1/4" = 1'-0"



A3 SECTION - CIRCULATION RAMP - MULTI-PURPOSE 2

1/4" = 1'-0"

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SHEET NAME:
ENLARGED RAMP - PLANS & SECTIONS - MULTI-PURPOSE

ORIG SUBMISSION: 2022.05.25

SHEET:
A-405

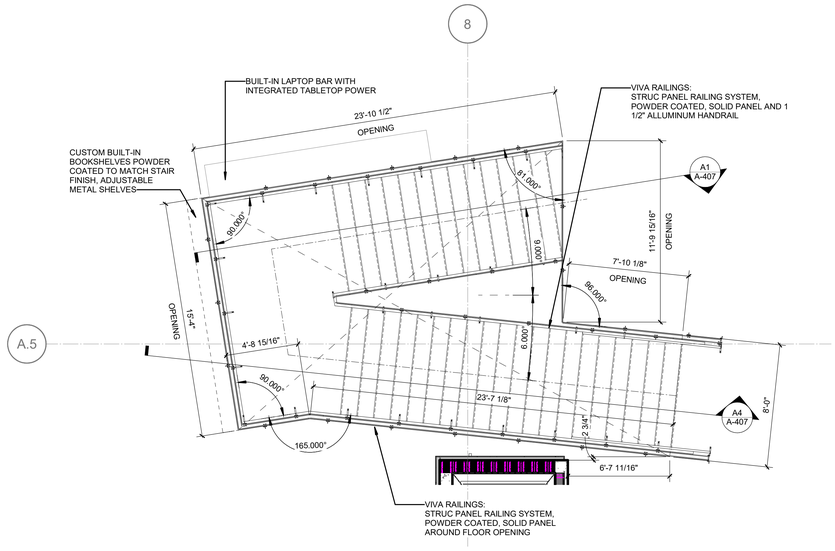
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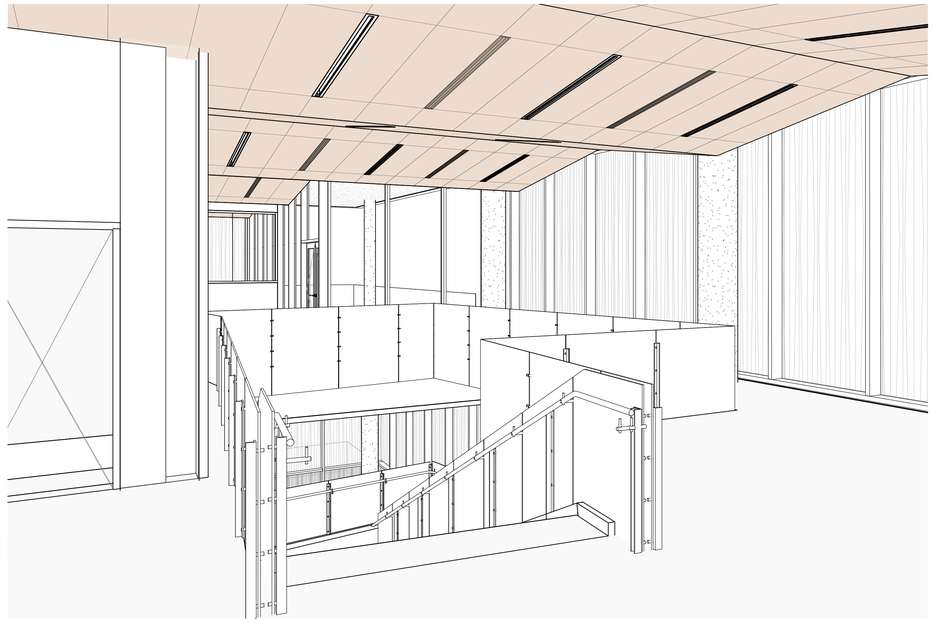
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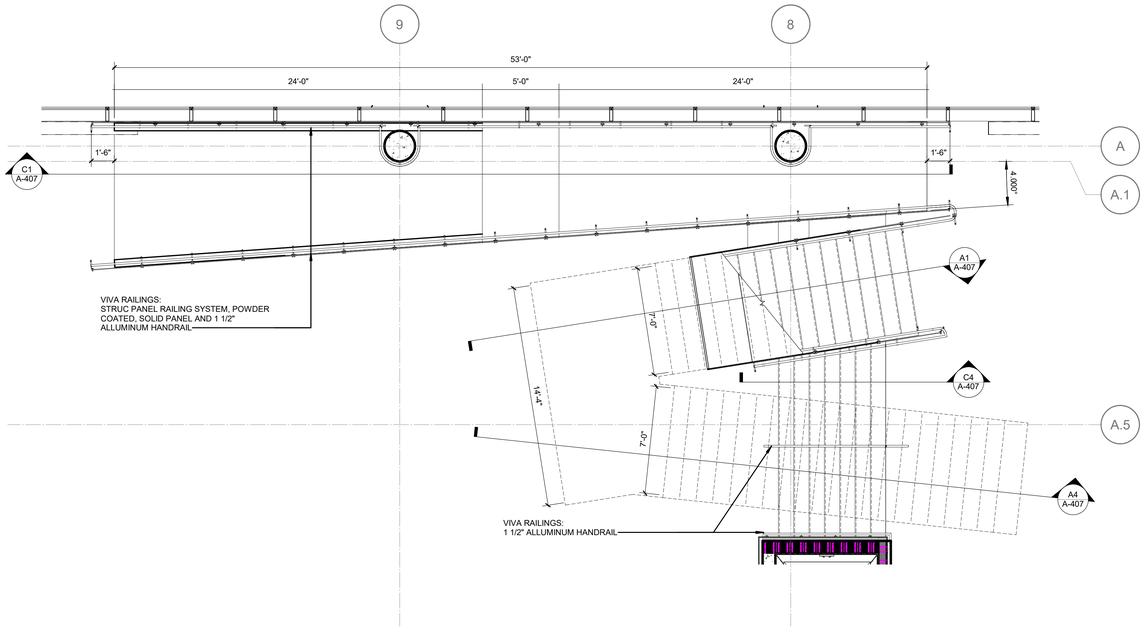
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C1 ENLARGED STAIR PLAN - LEVEL 2 - LIBARY STAIR

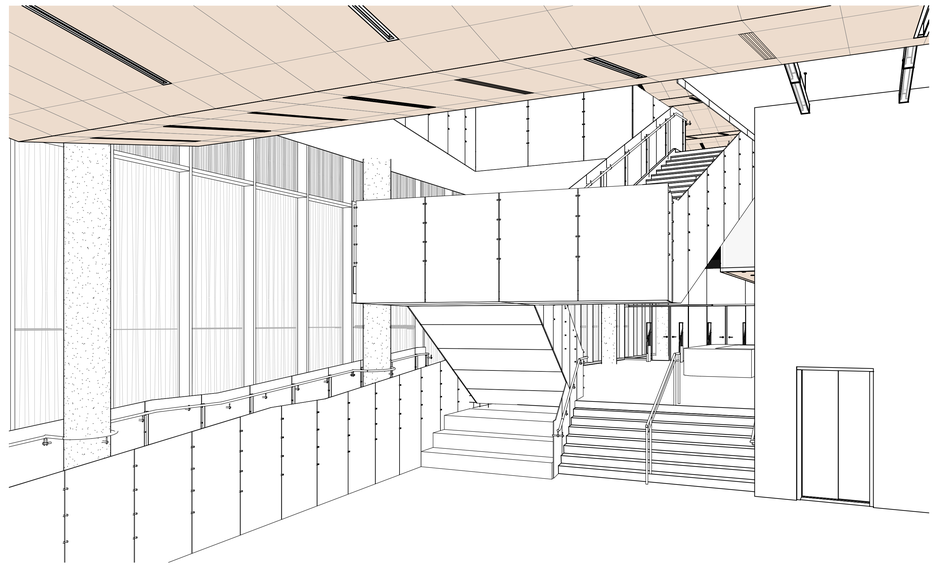
1/4" = 1'-0"





D1 ENLARGED STAIR PLAN - LEVEL 1 - LIBARY STAIR

1/4" = 1'-0"



5/25/2022 5:27:13 PM

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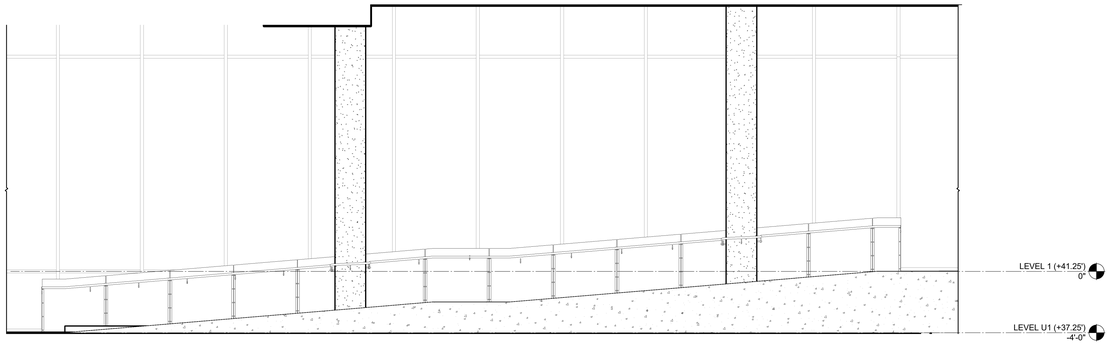
SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - LIBRARY

ORIG SUBMISSION: 2022.05.25

SHEET:
A-406

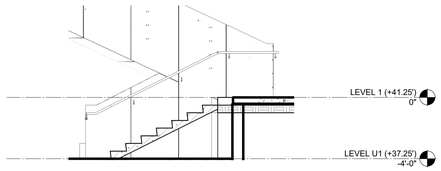
OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



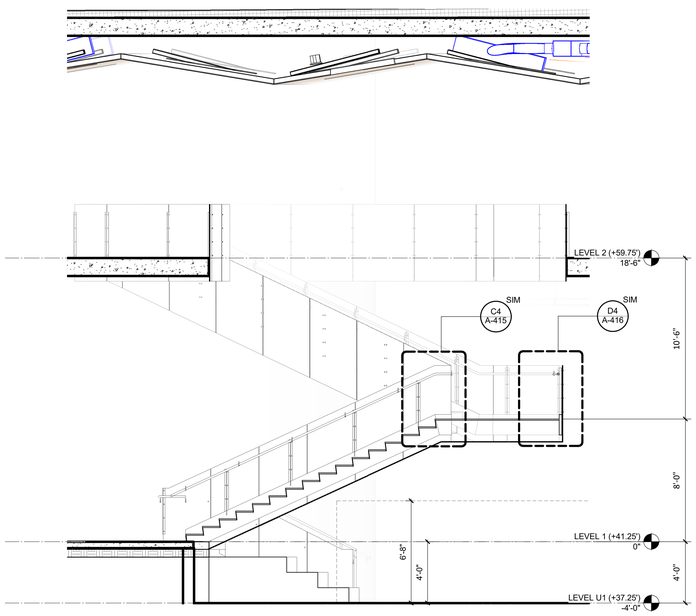
C1 SECTION - CIRCULATION RAMP - LIBRARY NORTH

1/4" = 1'-0"



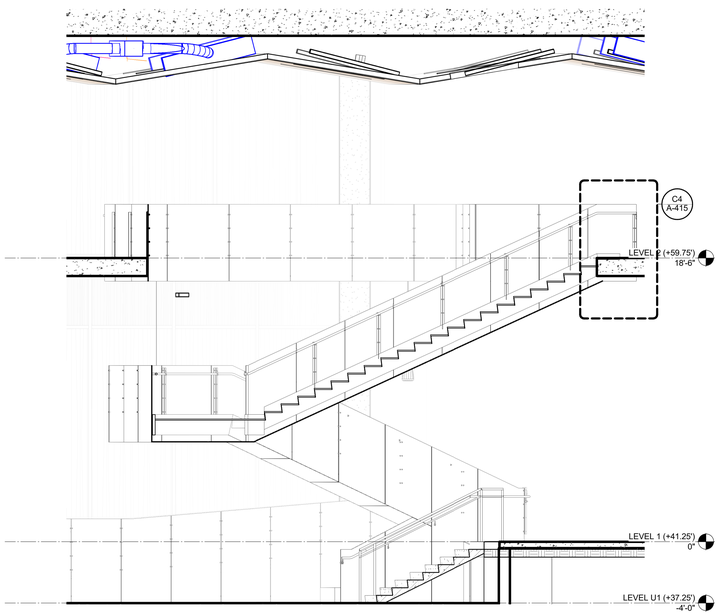
C4 SECTION - CIRCULATION STAIR - CHILDREN'S LIBRARY

1/4" = 1'-0"



A1 SECTION - CIRCULATION STAIR - MAIN LIBRARY - LEG 1 SOUTH

1/4" = 1'-0"



A4 SECTION - CIRCULATION STAIR - MAIN LIBRARY - LEG 2 NORTH

1/4" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - LIRBARY

ORIG SUBMISSION: 2022.05.25

SHEET:
A-407

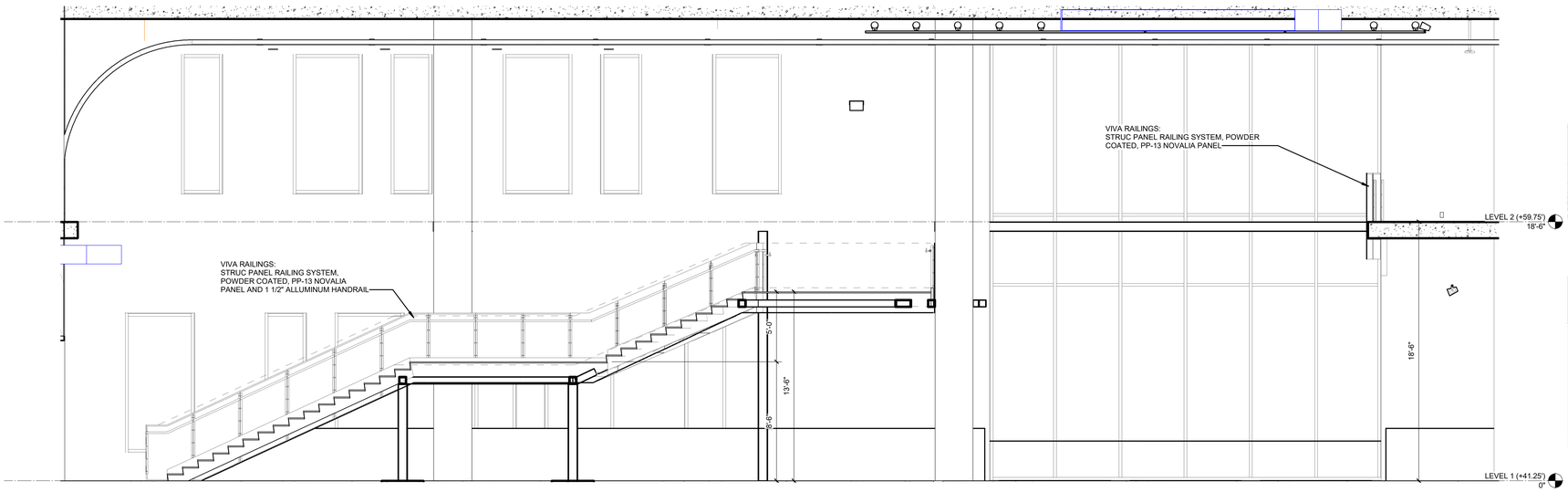
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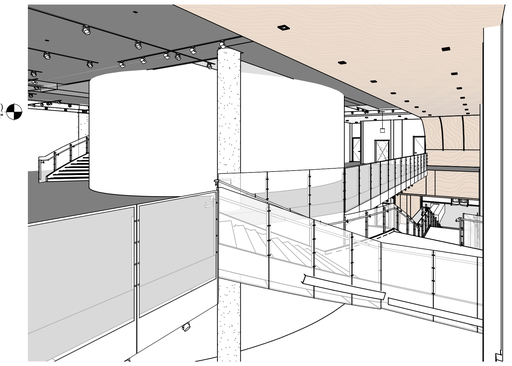
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E D C B A

1 2 3 4 5 6

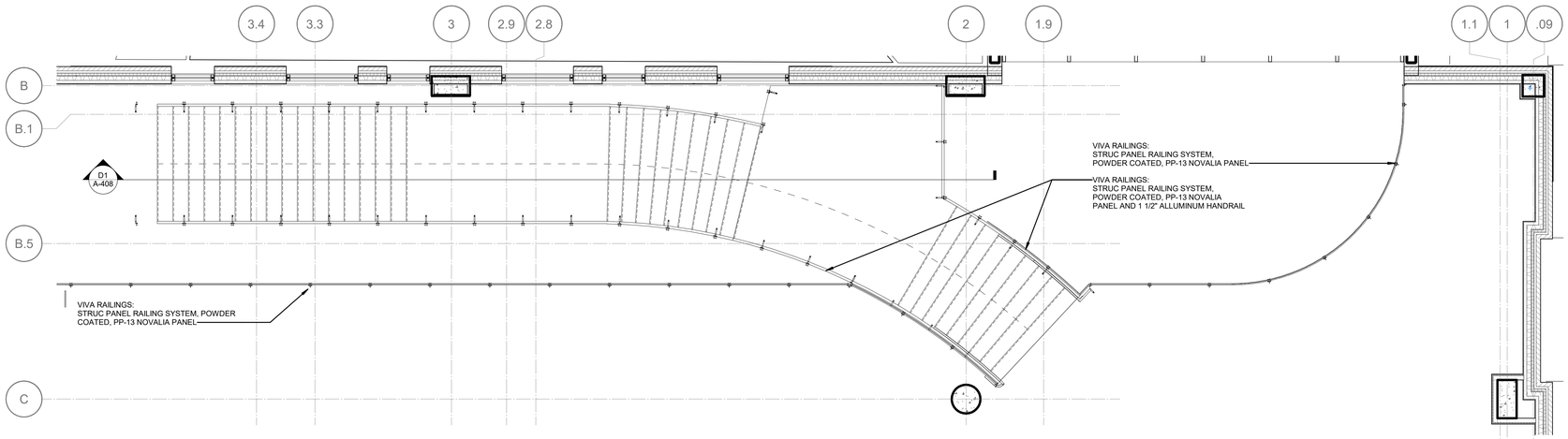
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PLOT SIZE





D1 SECTION - CIRCULATION STAIR - MUSEUM STAIR 1 - LEG 1 NORTH

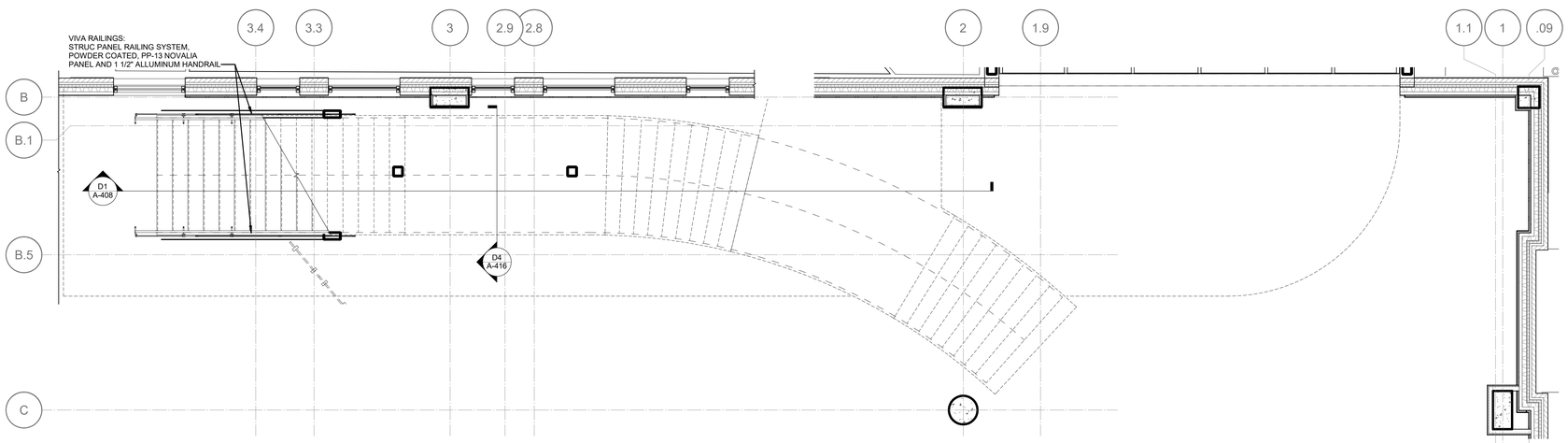
1/4" = 1'-0"





B1 ENLARGED STAIR PLAN - LEVEL 2 - MUSEUM STAIR 1

1/4" = 1'-0"





A1 ENLARGED STAIR PLAN - LEVEL 1 - MUSEUM STAIR 1

1/4" = 1'-0"

5/25/2022 5:27:59 PM

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

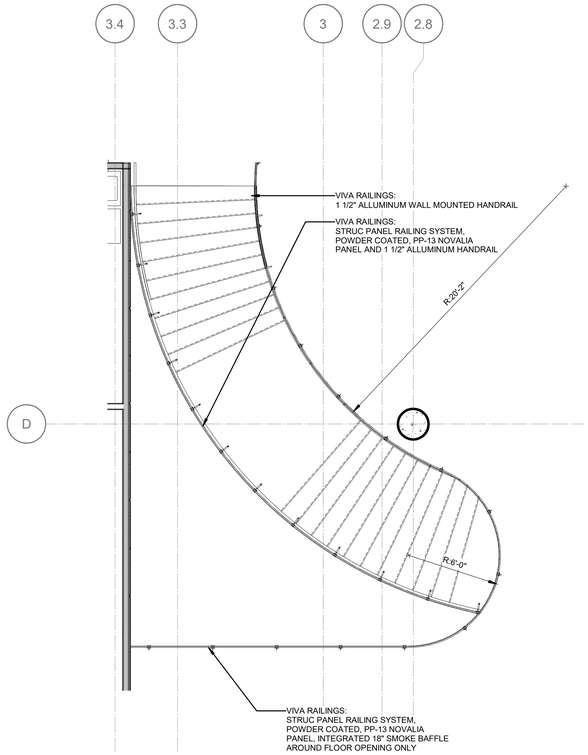
SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - MUSEUM 1

ORIG SUBMISSION: 2022.05.25

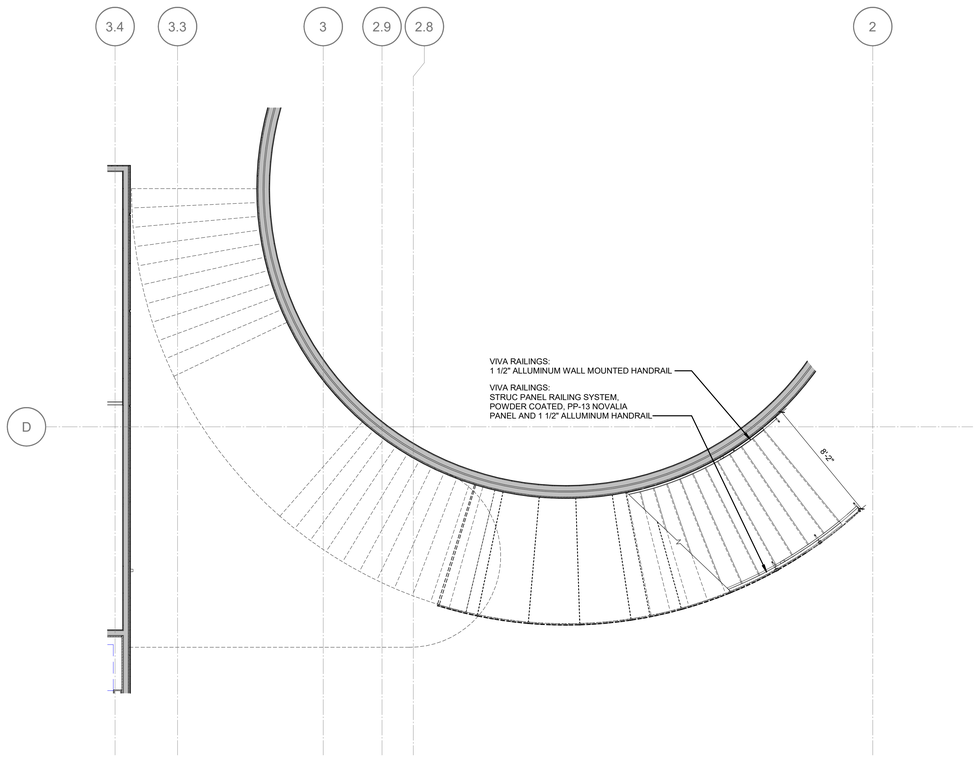
SHEET:
A-408

OWNER REVIEW SET

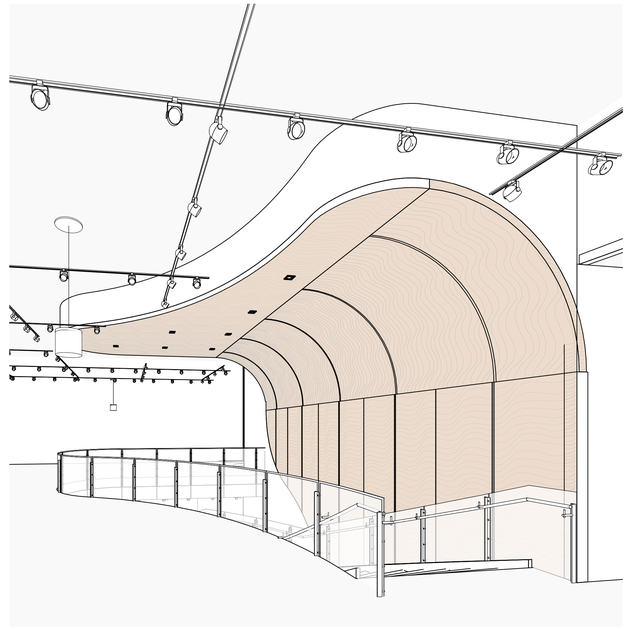
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL ORIGINAL PLOT SIZES

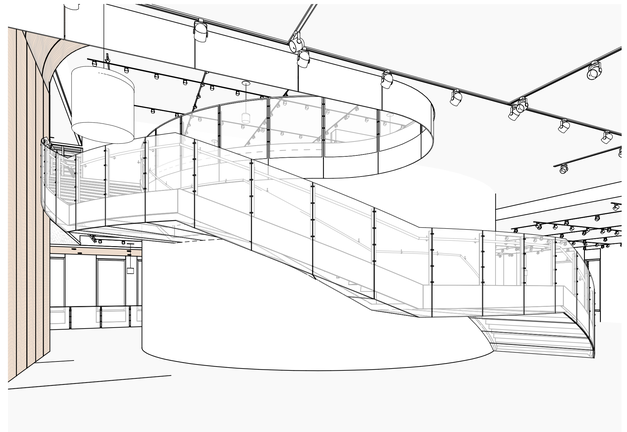


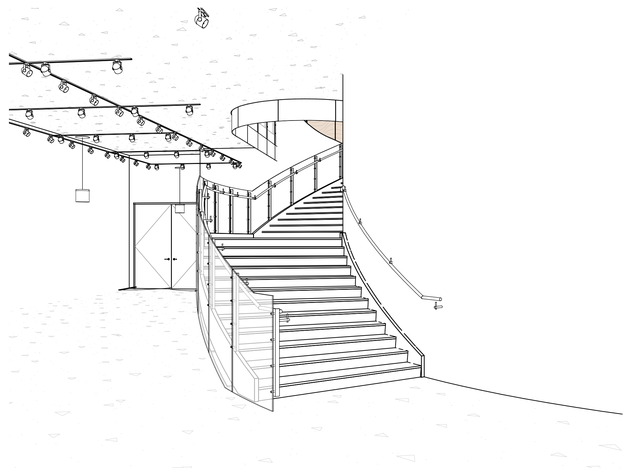
C1 **ENLARGED STAIR PLAN - LEVEL 3 - MUSEUM STAIR 2**
1/4" = 1'-0"



A1 **ENLARGED STAIR PLAN - LEVEL 2 - MUSEUM STAIR 2**
1/4" = 1'-0"







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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - MUSEUM 2

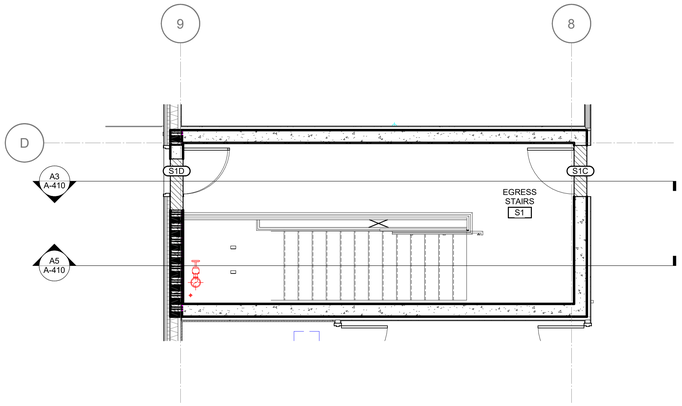
ORIG SUBMISSION: 2022.05.25

SHEET:
A-409

OWNER REVIEW SET

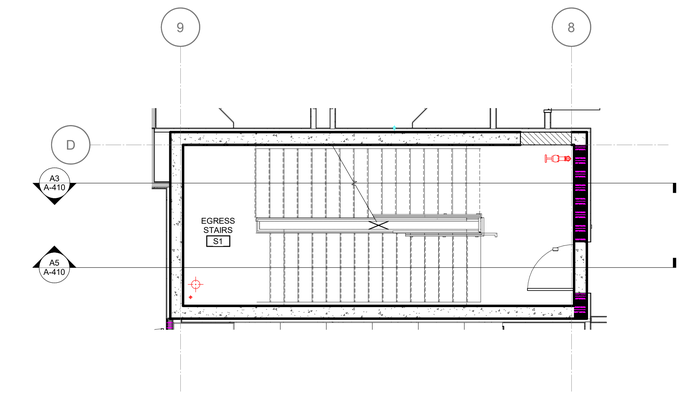
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE



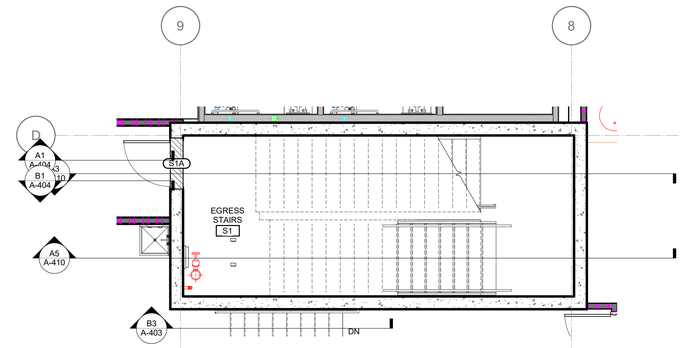
D1 ENLARGED STAIR PLAN - LEVEL 3 - EGRESS STAIR (WEST)

1/4" = 1'-0"



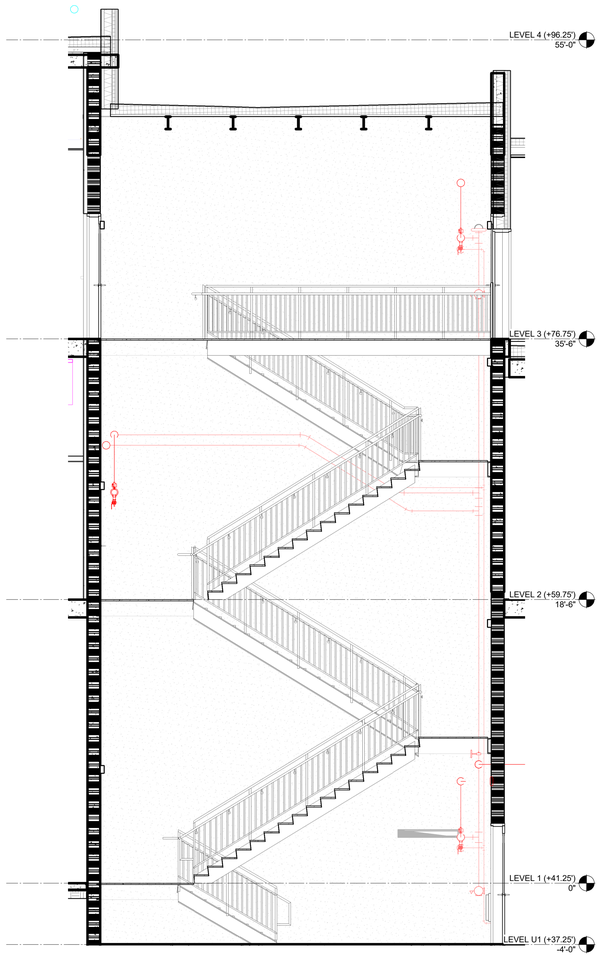
B1 ENLARGED STAIR PLAN - LEVEL 2 - EGRESS STAIR (WEST)

1/4" = 1'-0"



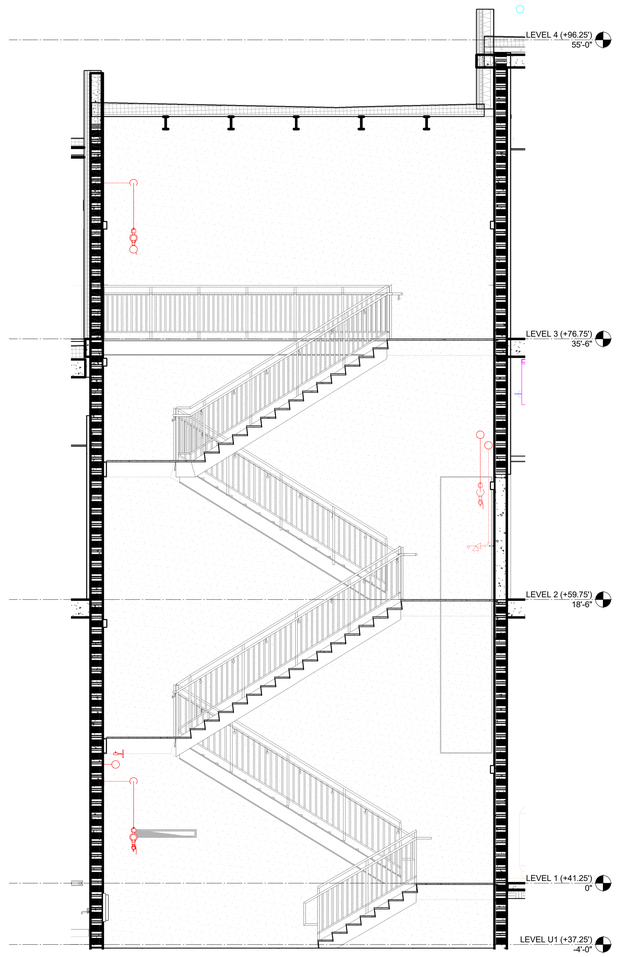
A1 ENLARGED STAIR PLAN - LEVEL 1 - EGRESS STAIR (WEST)

1/4" = 1'-0"



A3 SECTION - CIRCULATION STAIR - EGRESS STAIR (WEST) 1

1/4" = 1'-0"



A5 SECTION - CIRCULATION STAIR - EGRESS STAIR (WEST) 2

1/4" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - EGRESS 1

ORIG SUBMISSION: 2022.05.25

SHEET:
A-410

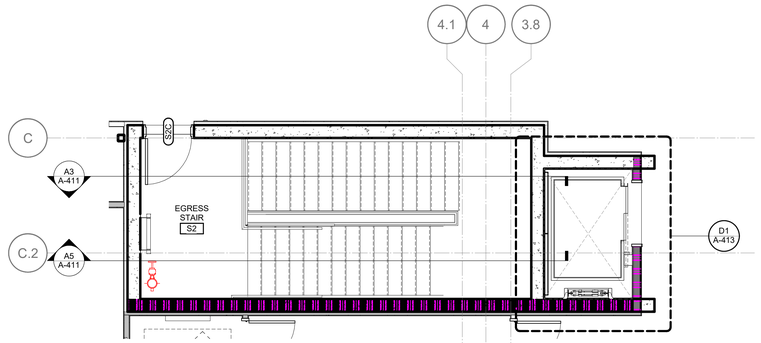
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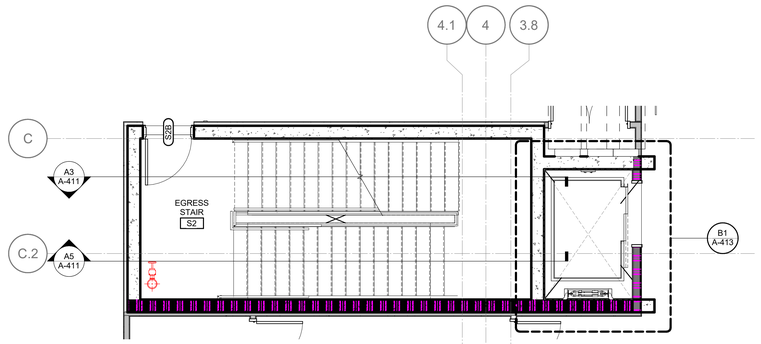
1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS EXCEPT ARCH E SHEETS



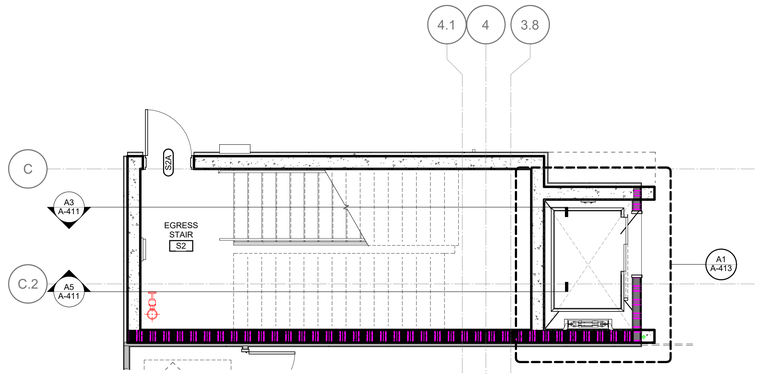
D1 ENLARGED STAIR PLAN - LEVEL 3 - EGRESS STAIR (EAST)

1/4" = 1'-0"



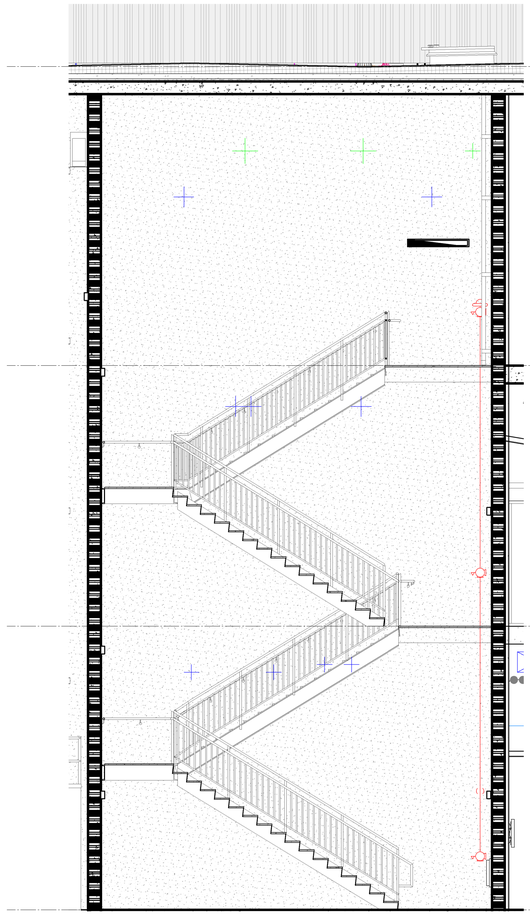
B1 ENLARGED STAIR PLAN - LEVEL 2 - EGRESS STAIR (EAST)

1/4" = 1'-0"



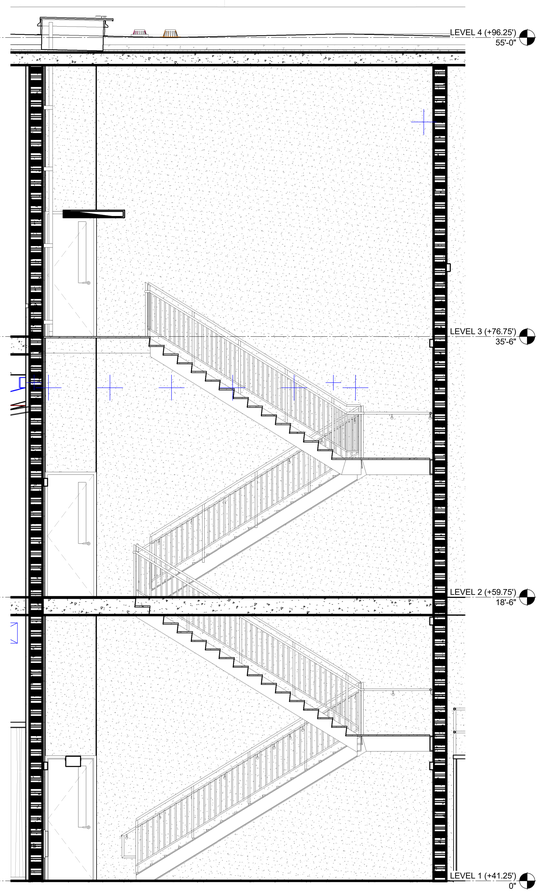
A1 ENLARGED STAIR PLAN - LEVEL 1 - EGRESS STAIR (EAST)

1/4" = 1'-0"



A3 SECTION - CIRCULATION - EGRESS STAIR (EAST) 1

1/4" = 1'-0"



A5 SECTION - CIRCULATION - EGRESS STAIR (EAST) 2

1/4" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - EGRESS 2

ORIG SUBMISSION: 2022.05.25

SHEET:
A-411

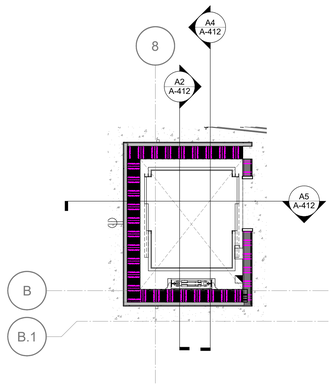
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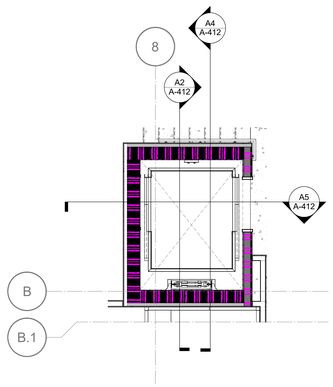
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAPER SIZE



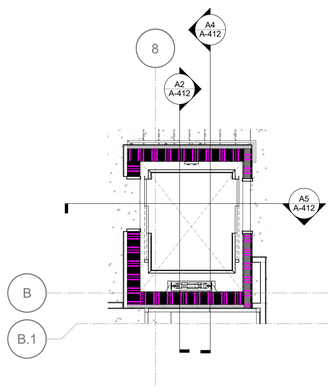
D1 ENLARGED ELEV. PLAN - LEVEL 2 - PASSENGER 1

1/4" = 1'-0"



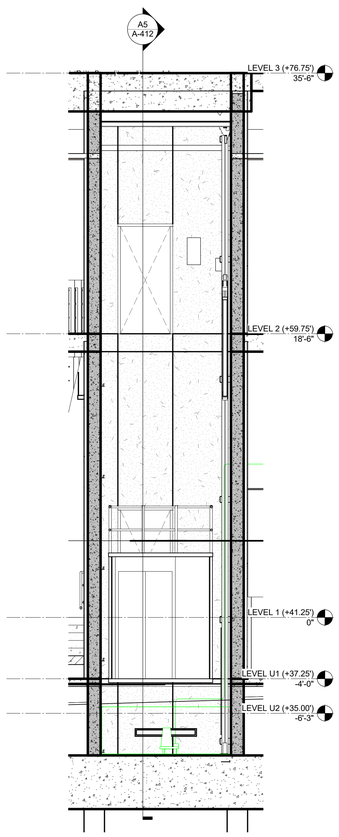
B1 ENLARGED ELEV. PLAN - LEVEL 1 - PASSENGER 1

1/4" = 1'-0"



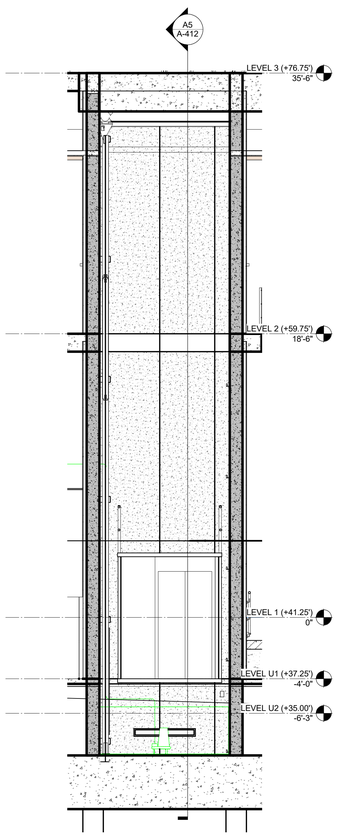
A1 ENLARGED ELEV. PLAN - LEVEL U1 - PASSENGER 1

1/4" = 1'-0"



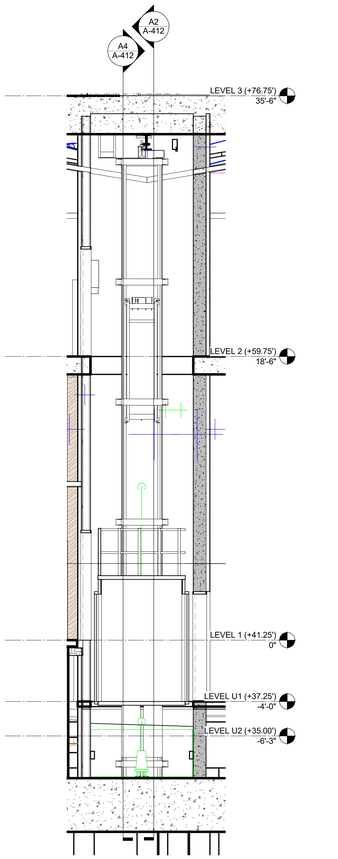
A2 SECTION - PASSENGER ELEV. 1 - VIEW 1

1/4" = 1'-0"



A4 SECTION - PASSENGER ELEV. 1 - VIEW 2

1/4" = 1'-0"



A5 SECTION - PASSENGER ELEV. 1 - VIEW 3

1/4" = 1'-0"

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Project Grace

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENL. ELEVATOR - PLANS & SECTIONS - PASSENGER 1

ORIG SUBMISSION: 2022.05.25

SHEET:
A-412

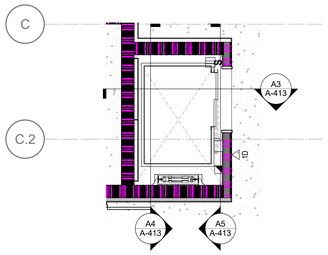
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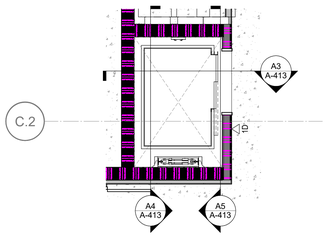
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



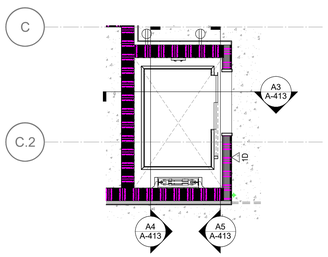
D1 ENLARGED ELEV. PLAN - LEVEL 3 - PASSENGER 2

1/4" = 1'-0"



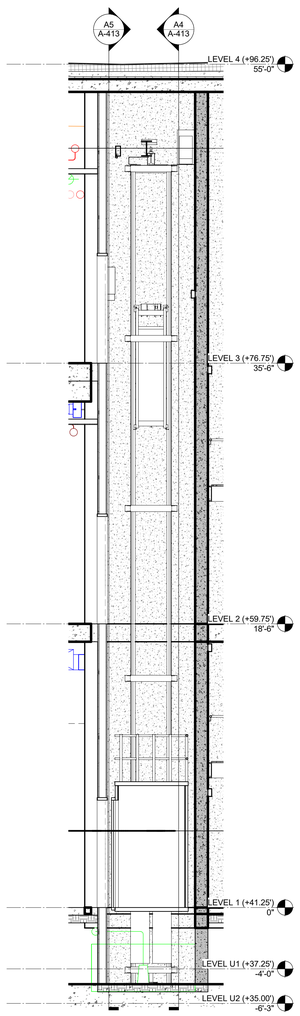
B1 ENLARGED ELEV. PLAN - LEVEL 2 - PASSENGER 2

1/4" = 1'-0"



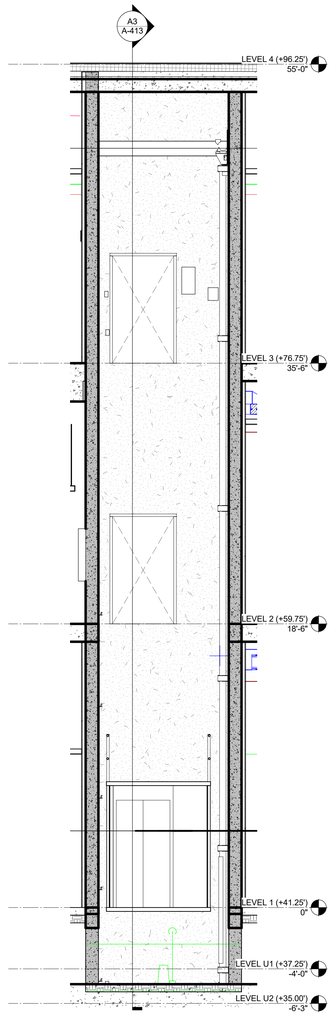
A1 ENLARGED ELEV. PLAN - LEVEL 1 - PASSENGER 2

1/4" = 1'-0"



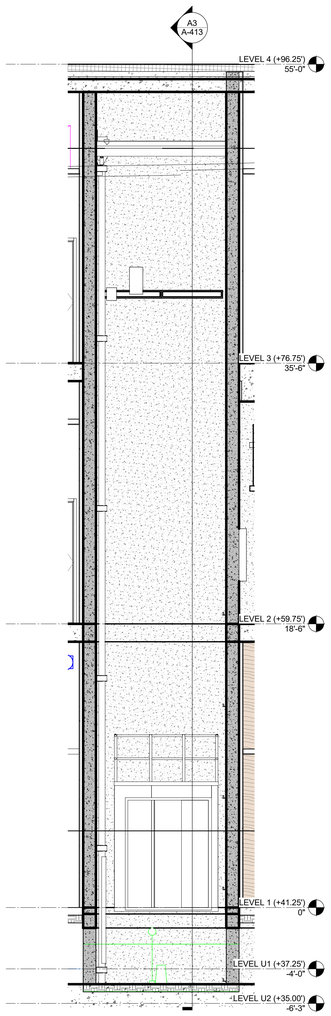
A3 SECTION - PASSENGER ELEV. 2 - VIEW 1

1/4" = 1'-0"



A4 SECTION - PASSENGER ELEV. 2 - VIEW 2

1/4" = 1'-0"



A5 SECTION - PASSENGER ELEV. 2 - VIEW 3

1/4" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENL. ELEVATOR - PLANS & SECTIONS - PASSENGER 2

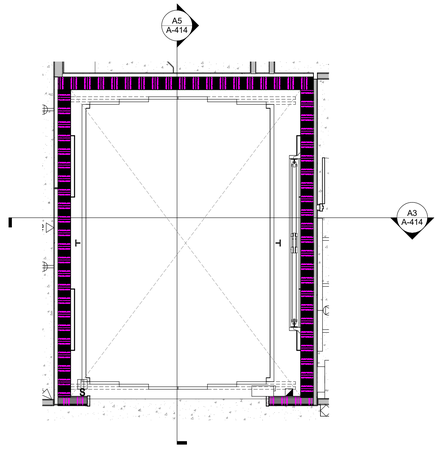
ORIG SUBMISSION: 2022.05.25

SHEET:
A-413

OWNER REVIEW SET

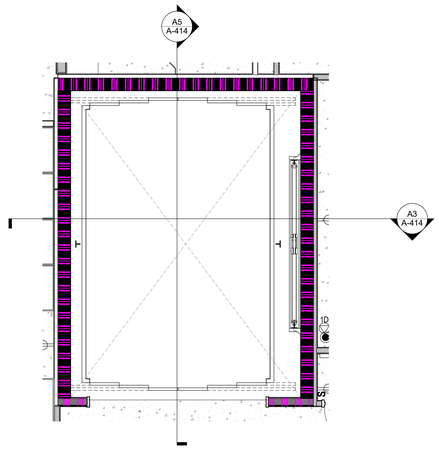
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



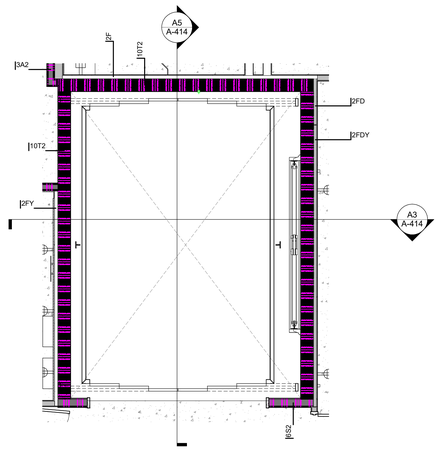
D1 ENLARGED ELEV. PLAN - LEVEL 3 - SERVICE ELEVATOR

1/4" = 1'-0"



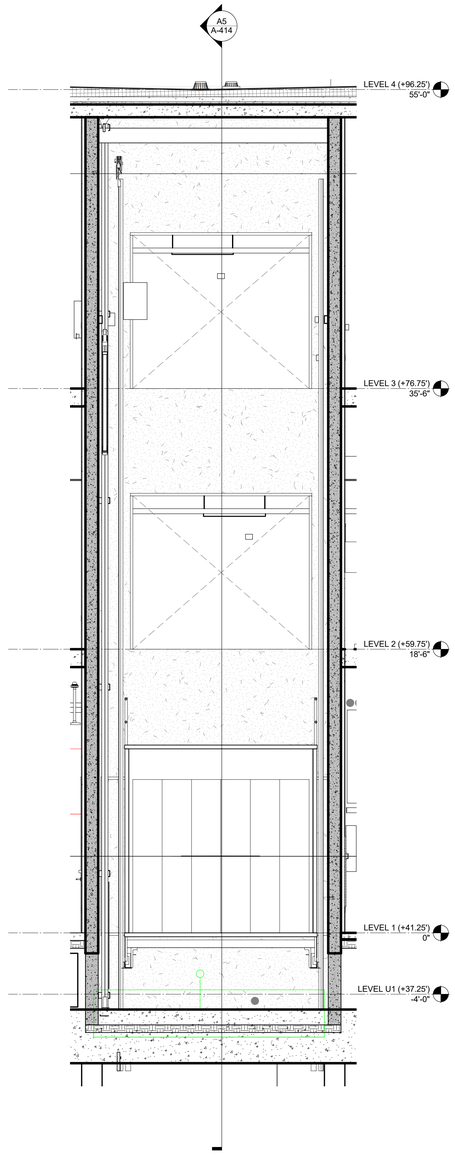
B1 ENLARGED ELEV. PLAN - LEVEL 2 - SERVICE ELEVATOR

1/4" = 1'-0"



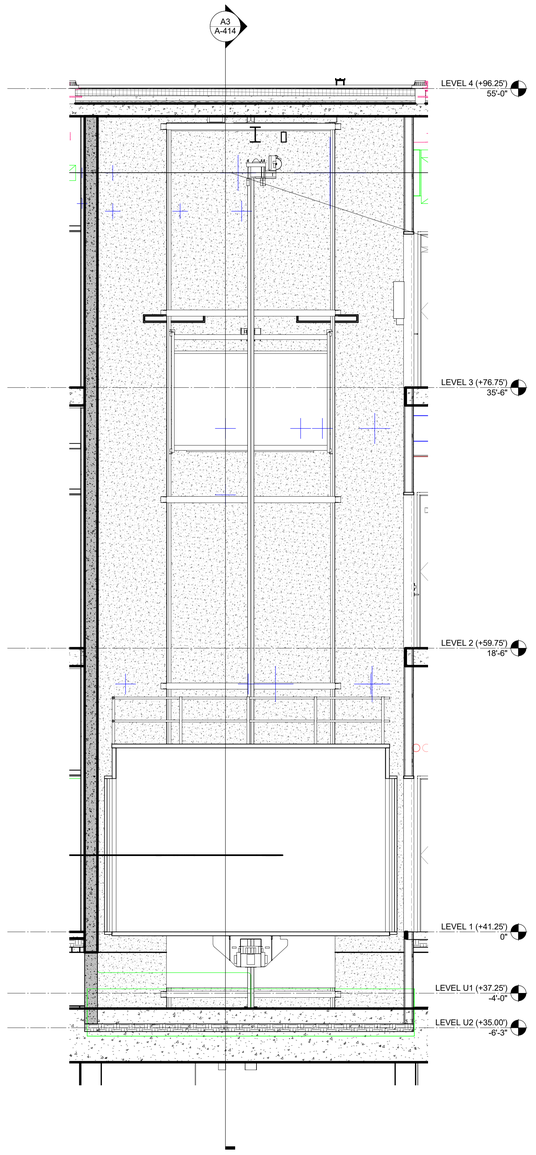
A1 ENLARGED ELEV. PLAN - LEVEL 1 - SERVICE ELEVATOR

1/4" = 1'-0"



A3 SECTION - SERVICE ELEVATOR - VIEW 1

1/4" = 1'-0"



A5 SECTION - SERVICE ELEVATOR - VIEW 2

1/4" = 1'-0"

ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENL. ELEVATOR - PLANS & SECTIONS - SERVICE

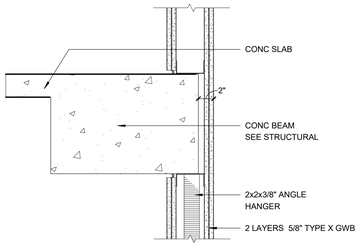
ORIG SUBMISSION: 2022.05.25

SHEET:
A-414

OWNER REVIEW SET

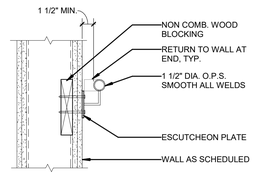
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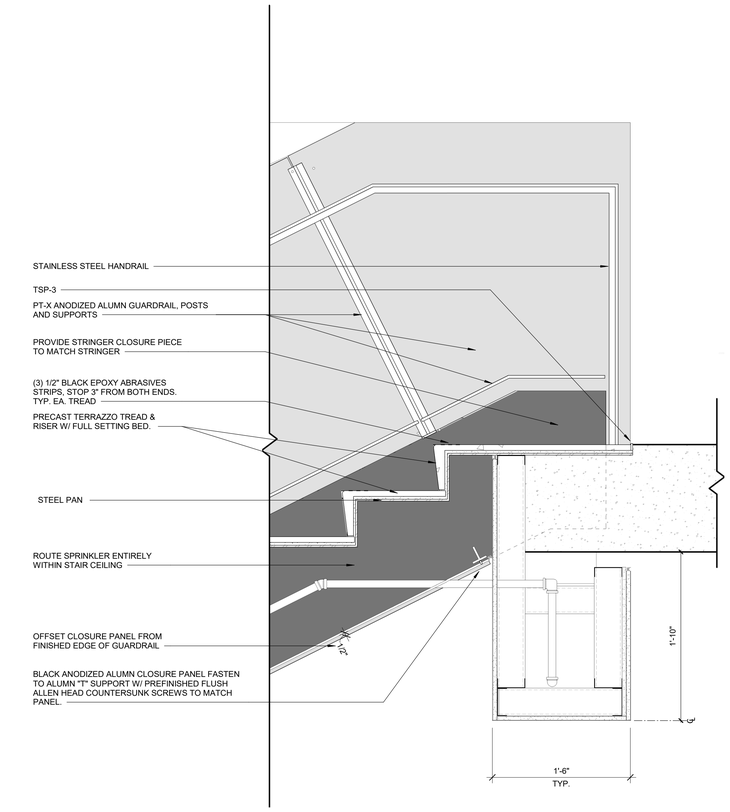
D1 SECTION - STAIR WALL-GWB @ SLAB EDGE

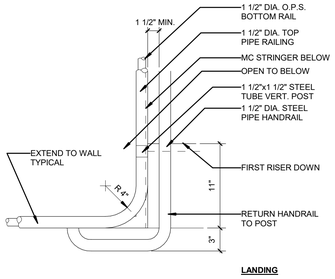
1 1/2" = 1'-0"



D2 SECTION - HANDRAIL TO GWB WALL

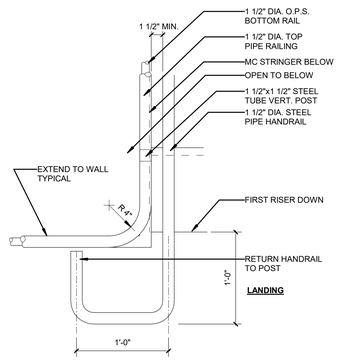
1 1/2" = 1'-0"





C1 PLAN - TOP LANDING - LAYOUT A

1 1/2" = 1'-0"

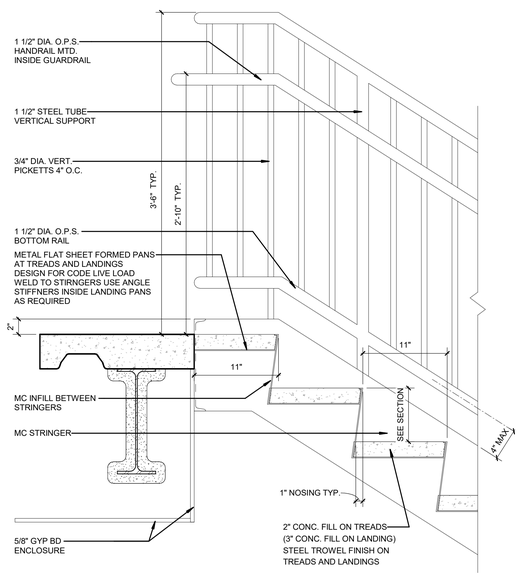


C2 PLAN - TOP LANDING - LAYOUT B

1 1/2" = 1'-0"

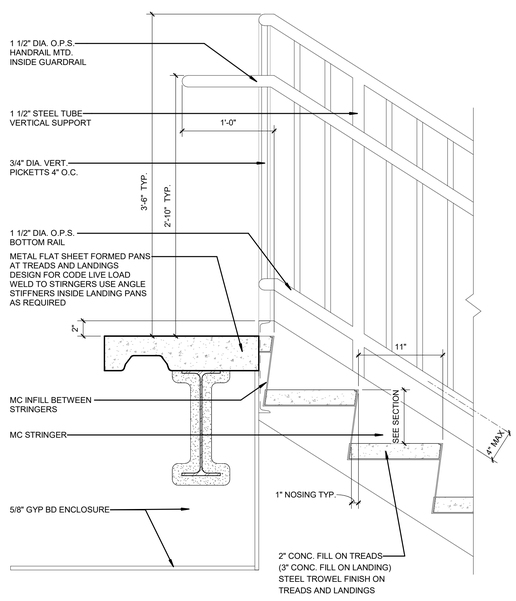
C4 SECTION - MONUMENTAL STAIR - TOP

1 1/2" = 1'-0"



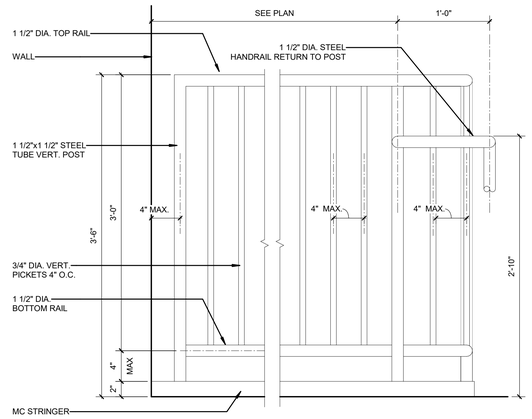
A1 SECTION - TOP LANDING - LAYOUT A

1 1/2" = 1'-0"



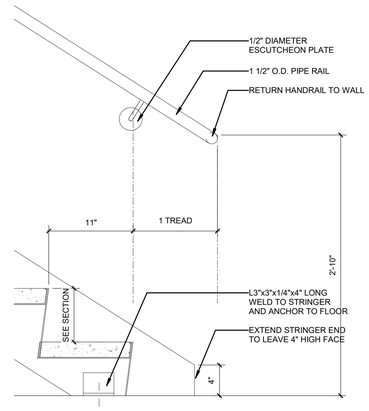
A2 SECTION - TOP LANDING - LAYOUT B

1 1/2" = 1'-0"



A4 ELEVATION - TOP LANDING - LAYOUT A OR B

1 1/2" = 1'-0"



A5 SECTION - BOTTOM LANDING

1 1/2" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
TYPICAL STAIR DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET: A-415

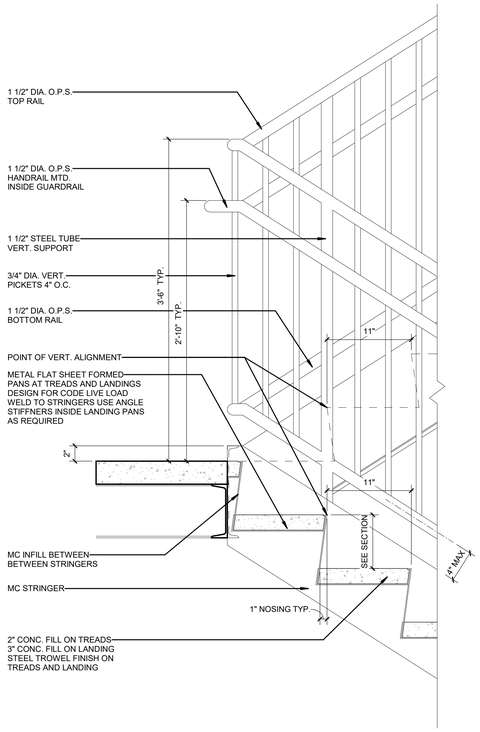
OWNER REVIEW SET

5/25/2022 5:29:54 PM

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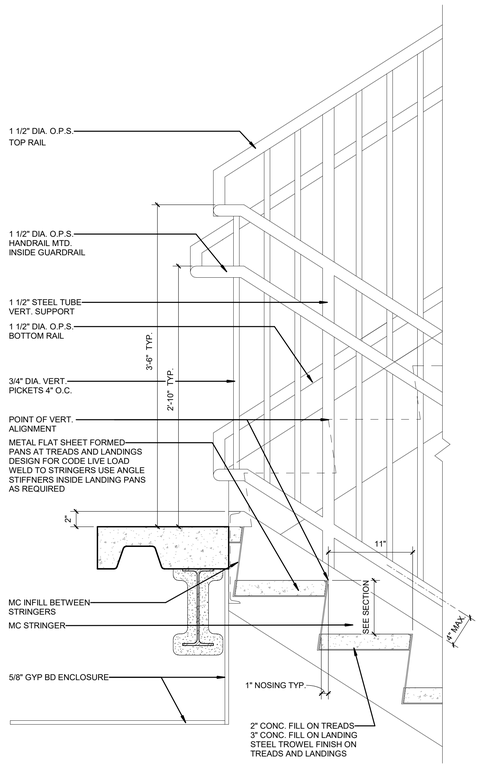
1 2 3 4 5 6

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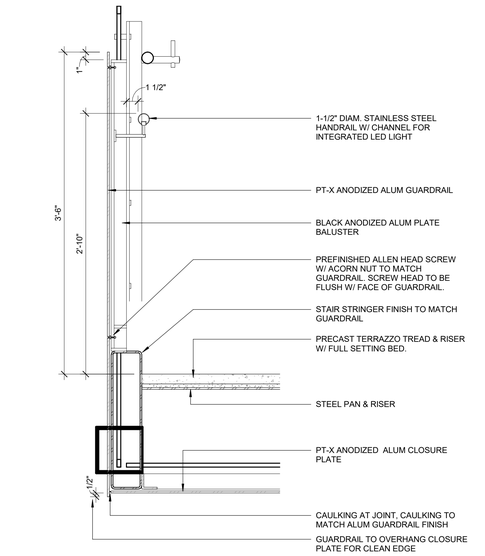
B1 SECTION - INTERMEDIATE LANDING - OFFSET FIRST TREAD

1 1/2" = 1'-0"



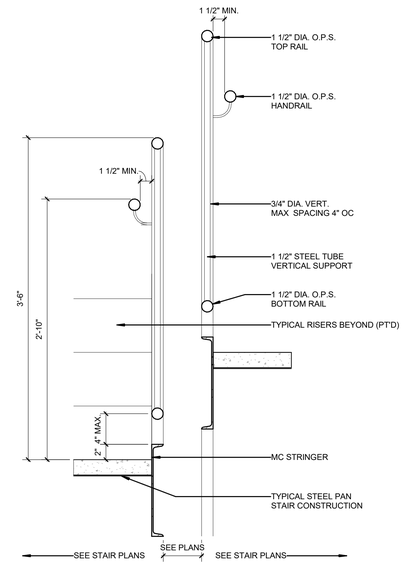
B2 SECTION - INTERMEDIATE LANDING - ALIGNED FIRST TREAD

1 1/2" = 1'-0"



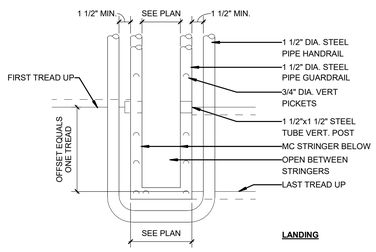
D4 SECTION - MONUMENTAL STAIR - LANDING

1 1/2" = 1'-0"



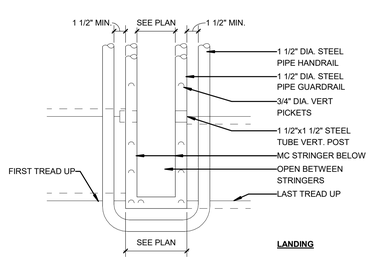
B4 SECTION - CLOSURE DETAIL

1 1/2" = 1'-0"



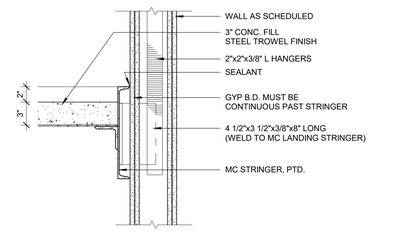
A1 PLAN - INTERMEDIATE LANDING - OFFSET FIRST TREAD

1 1/2" = 1'-0"



A2 PLAN - INTERMEDIATE LANDING - ALIGNED FIRST TREAD

1 1/2" = 1'-0"



A4 SECTION - STAIR WALL-GWB @ INTERMEDIATE LANDING

1 1/2" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
TYPICAL STAIR DETAILS

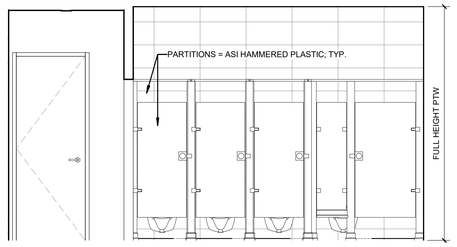
ORIG SUBMISSION: 2022.05.25

SHEET: A-416

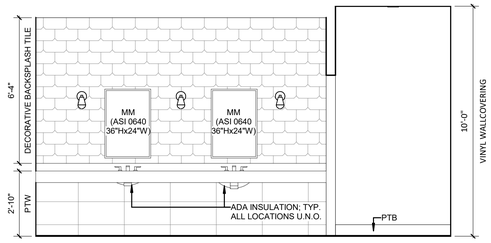
OWNER REVIEW SET

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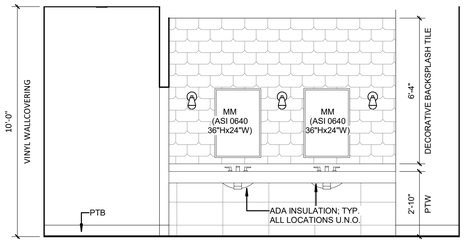
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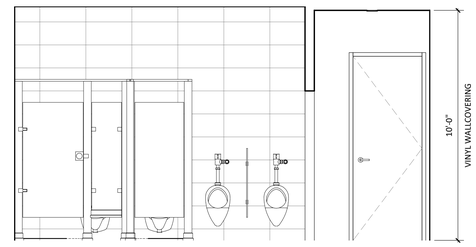
C3 INT. ELEV. - WOMEN'S TLT 108, 204,304 EAST
3/8" = 1'-0"



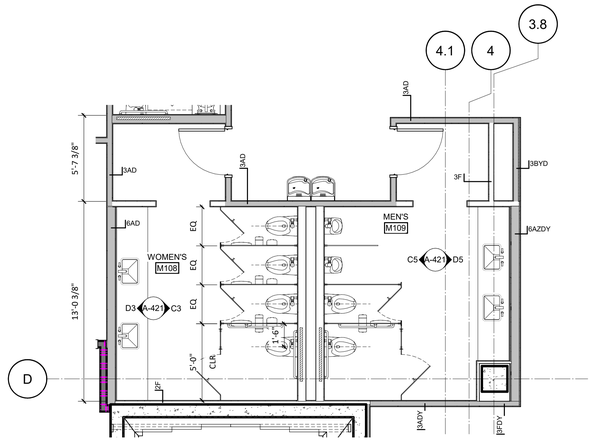
D3 INT. ELEV. - WOMEN'S TLT 108, 204,304 WEST
3/8" = 1'-0"



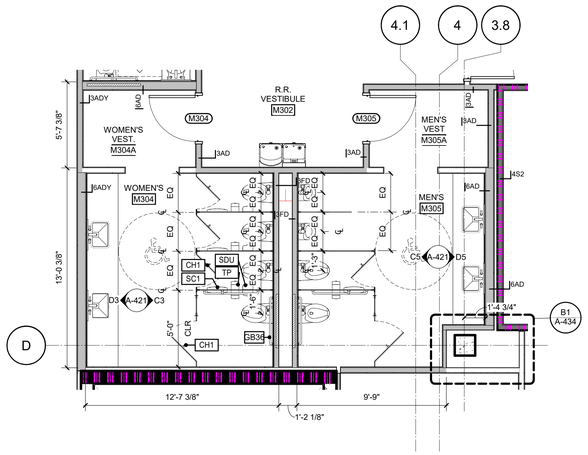
D5 INT. ELEV. - MEN'S TLT 109, 205, 305 EAST
3/8" = 1'-0"



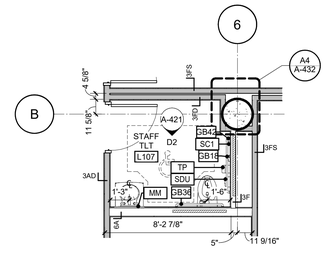
C5 INT. ELEV. - MEN'S TLT 109, 205, 305 WEST
3/8" = 1'-0"



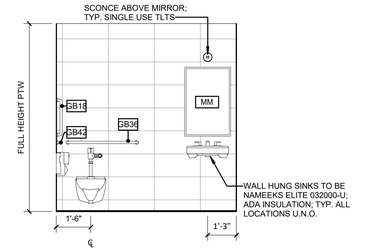
1 ENL. PLAN - WOMEN'S TLT 108 / MEN'S TLT 109
1/4" = 1'-0"



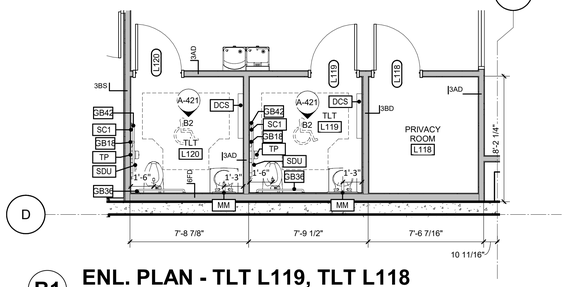
C1 ENL. PLAN - WOMEN'S TLT 204,304 / MEN'S TLT 205, 305
1/4" = 1'-0"



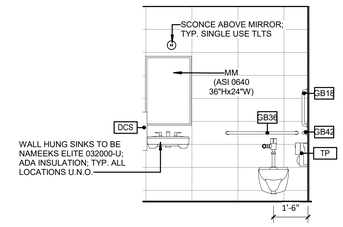
D1 ENL. PLAN - STAFF TLT L107
1/4" = 1'-0"



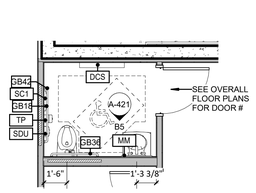
D2 INT. ELEV. - STAFF TLT L107 S
3/8" = 1'-0"



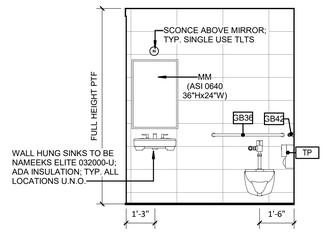
B1 ENL. PLAN - TLT L119, TLT L118
1/4" = 1'-0"



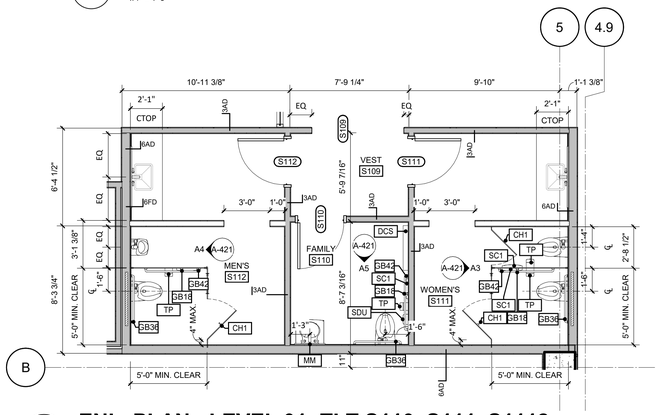
B2 INT. ELEV. - TLT L118, TLT L119 SOUTH
3/8" = 1'-0"



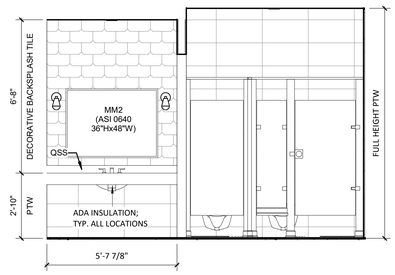
B4 ENL. PLAN - TLT 107 & 303
1/4" = 1'-0"



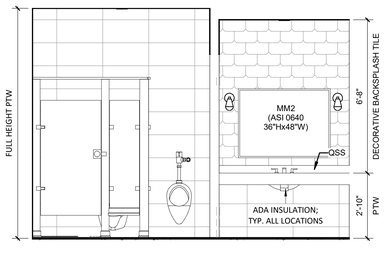
B5 INT. ELEV. - TLT 107 & 303 S
3/8" = 1'-0"



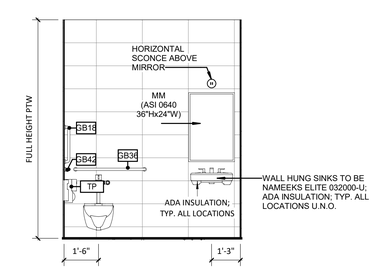
A1 ENL. PLAN - LEVEL 01- TLT S110, S111, S1112
1/4" = 1'-0"



A3 INT. ELEV. - WOMEN'S TLT S111 EAST
3/8" = 1'-0"



A4 INT. ELEV. - MEN'S TLT S112 WEST
3/8" = 1'-0"



A5 INT. ELEV. - FAMILY TLT S110 SOUTH
3/8" = 1'-0"

ZIMMER DEVELOPMENT COMPANY
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ENLARGED TOILETS - PLANS & ELEVATIONS

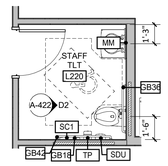
ORIG SUBMISSION: 2022.05.25

SHEET: A-421

OWNER REVIEW SET

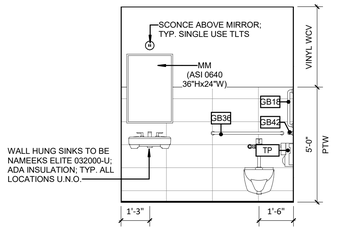
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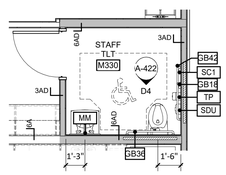
D1 ENL. PLAN - STAFF TLT L220

1/4" = 1'-0"



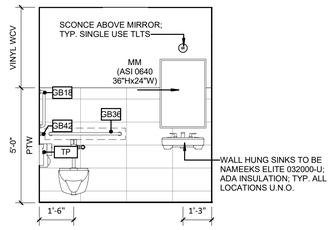
D2 INT. ELEV. - STAFF TLT L220 E

3/8" = 1'-0"



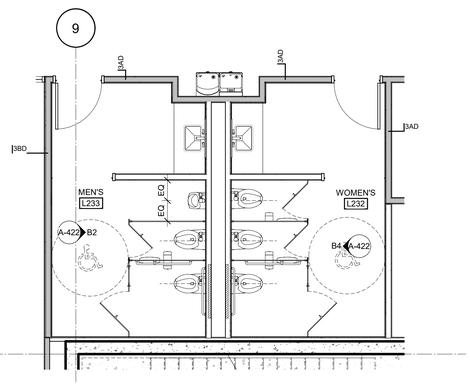
D3 ENL. PLAN - STAFF TLT M330

1/4" = 1'-0"



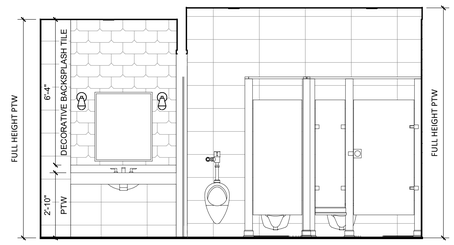
D4 INT. ELEV. - STAFF TLT M330 S

3/8" = 1'-0"



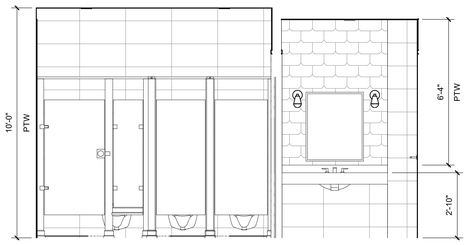
B1 ENL. PLAN - MEN'S TLT L233/ WOMEN'S TLT L232

1/4" = 1'-0"



B2 INT. ELEV. - MEN'S TLT L233 EAST

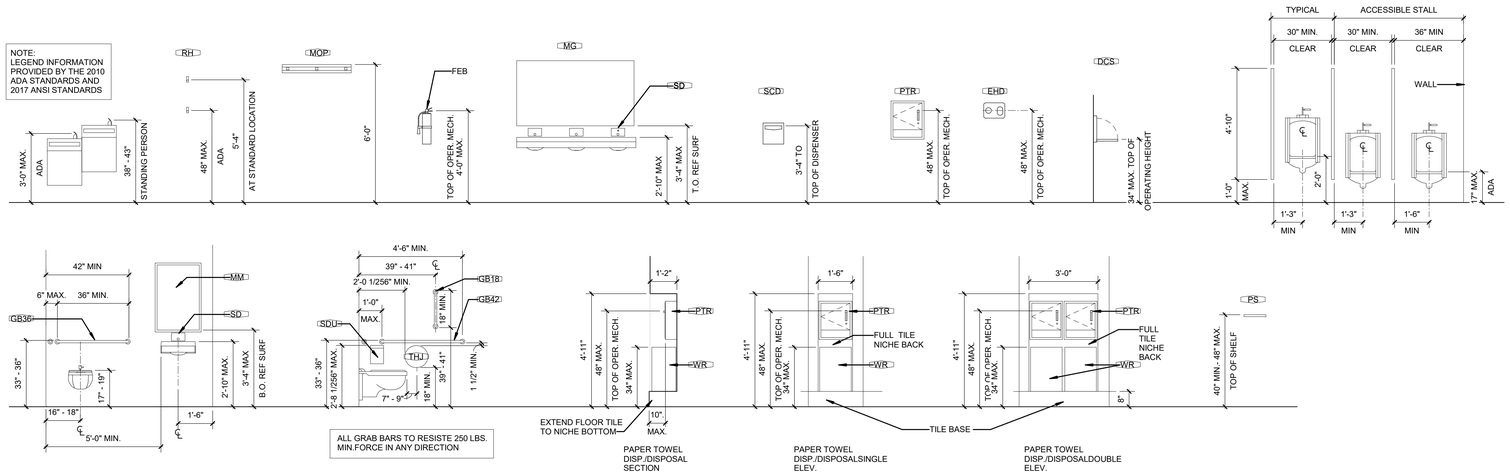
3/8" = 1'-0"



B4 INT. ELEV. - WOMEN'S TLT L232 WEST

3/8" = 1'-0"

TYPICAL MOUNTING HEIGHTS - RESTROOMS



5/25/2022 5:30:36 PM

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

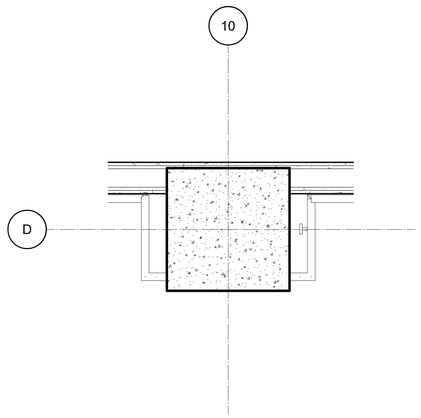
SHEET NAME:
ENLARGED TOILETS - PLANS & ELEVATIONS

ORIG SUBMISSION: 2022.05.25

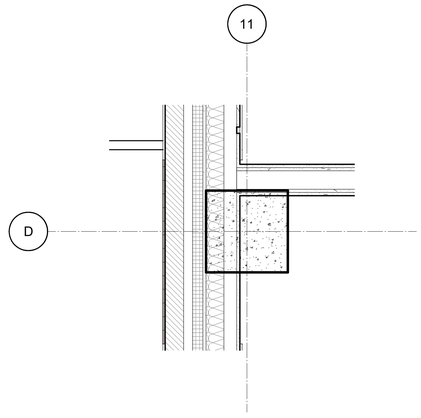
SHEET:
A-422

OWNER REVIEW SET

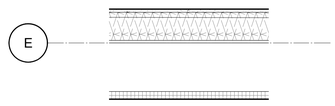
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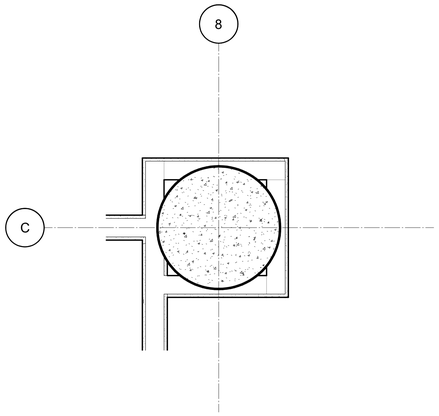
B1 **COLUMN DETAIL - LVL U1 - COLUMN D10**
1" = 1'-0"



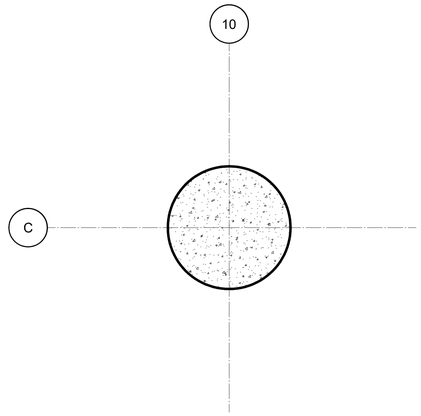
B2 **COLUMN DETAIL - LVL U1 - COLUMN D11**
1" = 1'-0"



B4 **COLUMN DETAIL - LVL U1 - COLUMN E11**
1" = 1'-0"



A1 **COLUMN DETAIL - LVL U1 - COLUMN C8**
1" = 1'-0"



A2 **COLUMN DETAIL - LVL U1 - COLUMN C10**
1" = 1'-0"

5/25/2022 5:30:40 PM

1 2 3 4 5 6

A B C D E

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

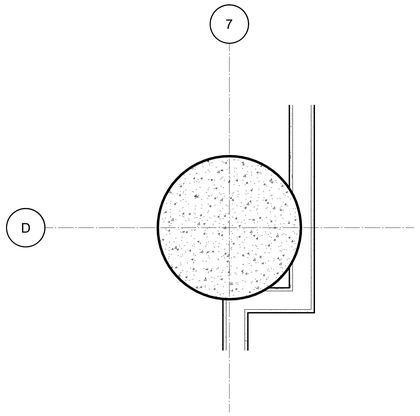
SHEET NAME:
INTERIOR PLAN DETAILS - TYP. COLUMNS

ORIG SUBMISSION: 2022.05.25

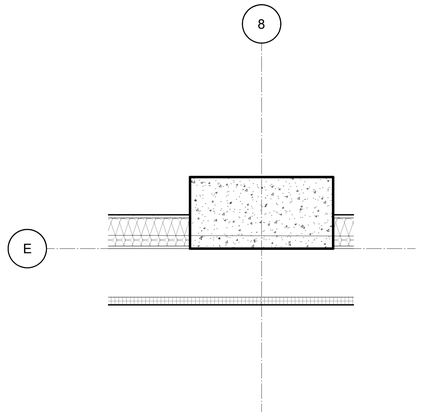
SHEET:
A-431

OWNER REVIEW SET

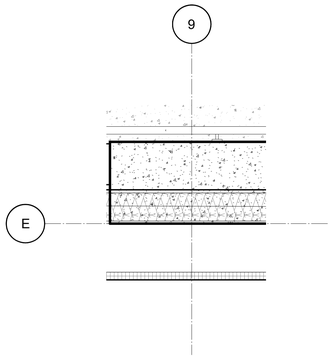
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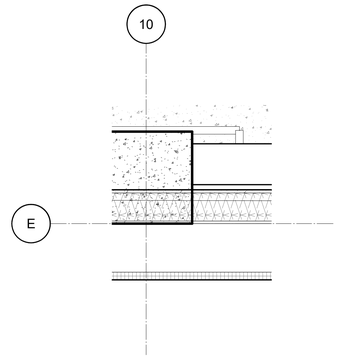
D1 COLUMN DETAIL - LVL 1 - COLUMN D7
1" = 1'-0"



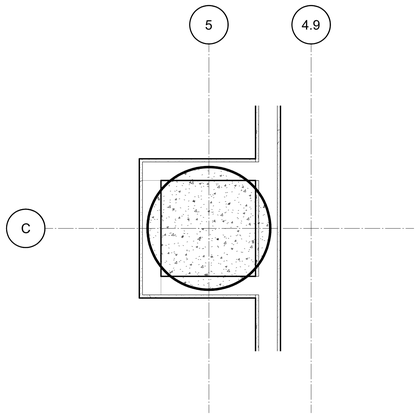
D2 COLUMN DETAIL - LVL 1 - COLUMN E8
1" = 1'-0"



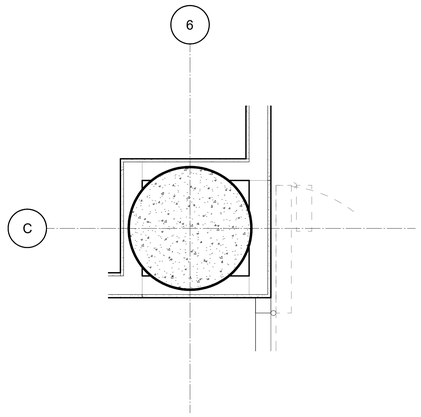
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1" = 1'-0"



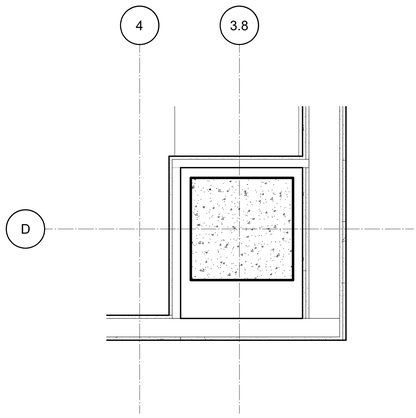
D5 COLUMN DETAIL - LVL 1 - COLUMN E10
1" = 1'-0"



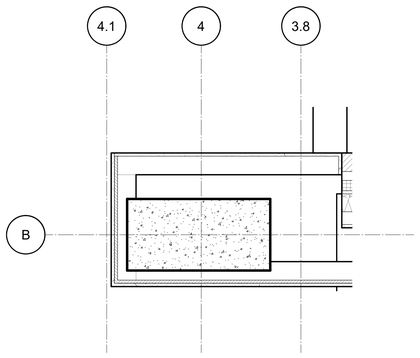
B1 COLUMN DETAIL - LVL 1 - COLUMN C5
1" = 1'-0"



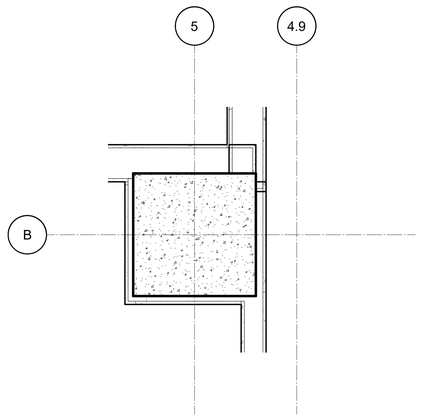
B2 COLUMN DETAIL - LVL 1 - COLUMN C6
1" = 1'-0"



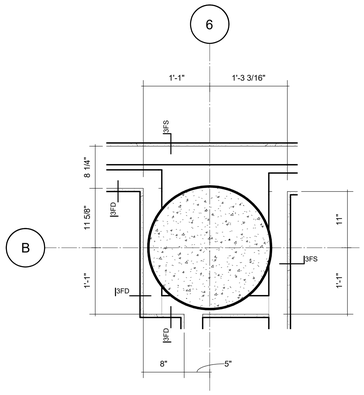
B4 COLUMN DETAIL - LVL 1 - COLUMN D3.9
1" = 1'-0"



A1 COLUMN DETAIL - LVL 1 - COLUMN B4
1" = 1'-0"



A2 COLUMN DETAIL - LVL U1 - COLUMN B5
1" = 1'-0"



A4 COLUMN DETAIL - LVL 1 - COLUMN B6
1" = 1'-0"

ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
INTERIOR PLAN DETAILS - TYP. COLUMNS

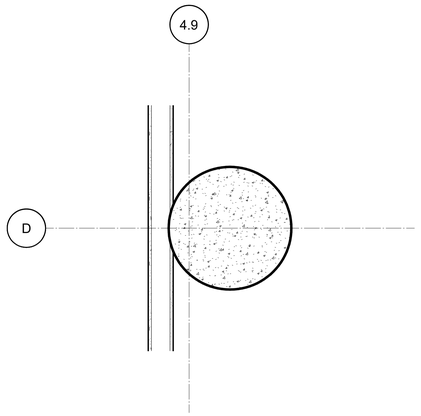
ORIG SUBMISSION: 2022.05.25

SHEET:
A-432

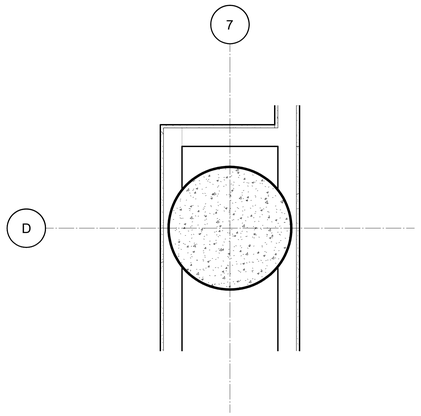
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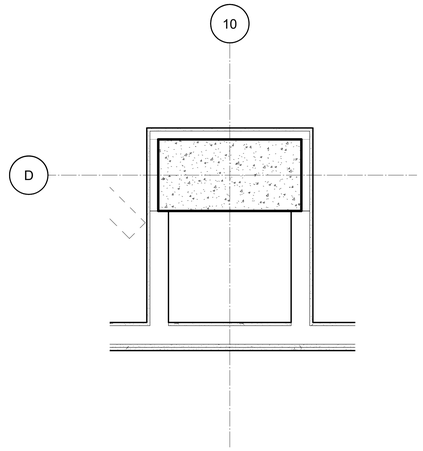
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E1 SHEETS ORIGINAL PAPER SIZE



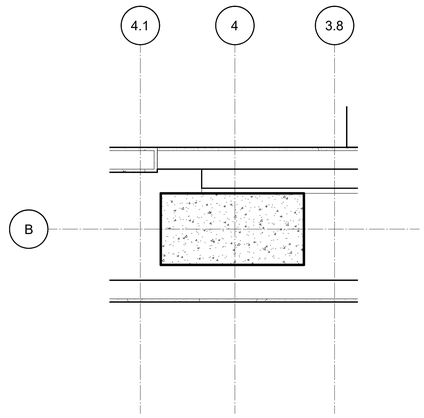
D1 COLUMN DETAIL - LVL 2 - COLUMN D5
1" = 1'-0"



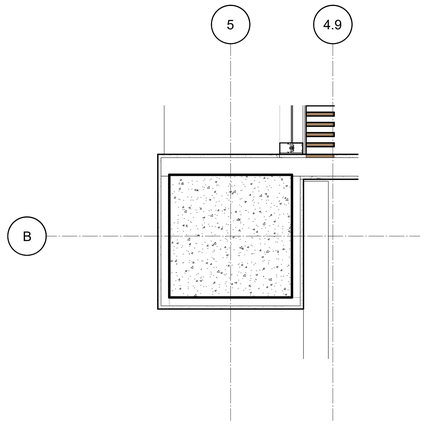
D3 COLUMN DETAIL - LVL 2 - COLUMN D7
1" = 1'-0"



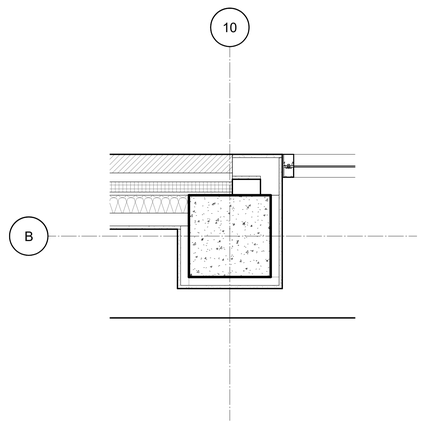
D4 COLUMN DETAIL - LVL 2 - COLUMN D10
1" = 1'-0"



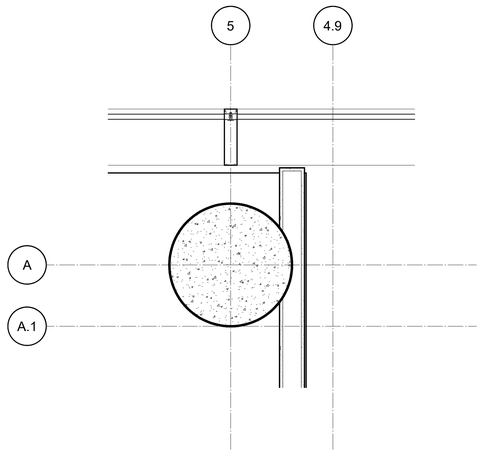
B1 COLUMN DETAIL - LVL 2 - COLUMN B4
1" = 1'-0"



B3 COLUMN DETAIL - LVL 2 - COLUMN B5
1" = 1'-0"



B4 COLUMN DETAIL - LVL 2 - COLUMN B10
1" = 1'-0"



A1 COLUMN DETAIL - LVL 2 - COLUMN A5
1" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
INTERIOR PLAN DETAILS - TYP. COLUMNS

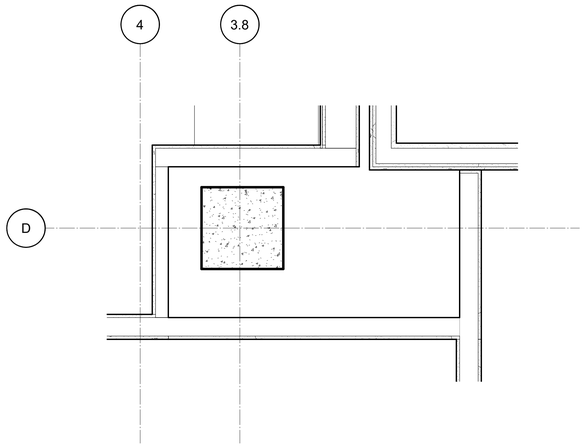
ORIG SUBMISSION: 2022.05.25

SHEET:
A-433

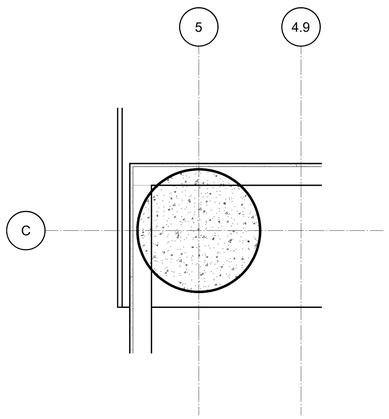
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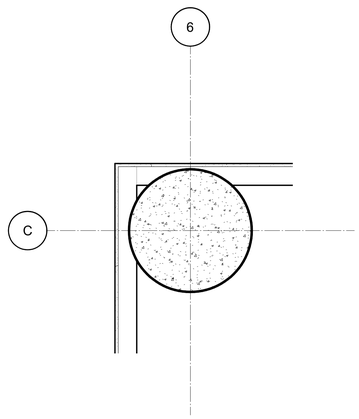
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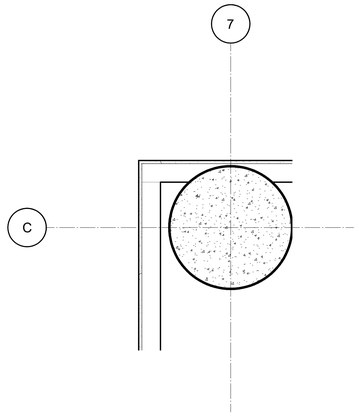
B1 **COLUMN DETAIL - LVL 3 - COLUMN D3.9**
1" = 1'-0"



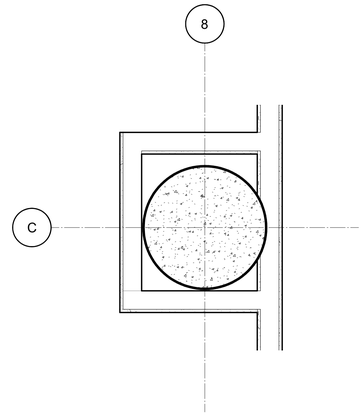
A1 **COLUMN DETAIL - LVL 3 - COLUMN C5**
1" = 1'-0"



A2 **COLUMN DETAIL - LVL 3 - COLUMN C6**
1" = 1'-0"



A4 **COLUMN DETAIL - LVL 3 - COLUMN C7**
1" = 1'-0"



A5 **COLUMN DETAIL - LVL 3 - COLUMN C8**
1" = 1'-0"

5/25/2022 5:31:05 PM

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

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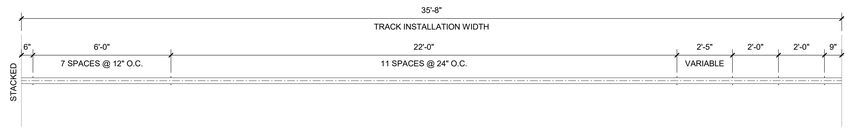
SHEET NAME:
INTERIOR PLAN DETAILS - TYP. COLUMNS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-434

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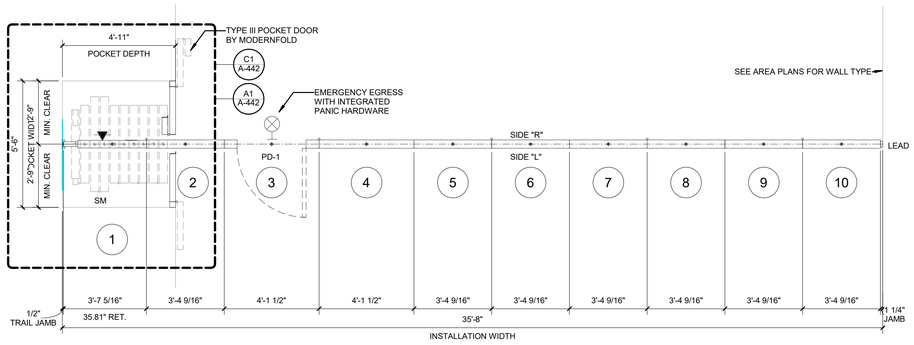
NOTES:
1. PUNCH OR DRILL .56" DIA. HOLES, 2.50" EACH SIDE OF CENTERLINE, 5.00" GAGE, AT ALL LOCATIONS. AS NOTED.
2. OMIT RODS AND NUTS

BRACKET REQUIREMENTS (EXCEPT AS NOTED):

BRACKETS IN STACK: DOUBLE
BRACKES IN RUN: HEAVY DUTY

E1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-01/OP-02 TRACK LAYOUT

3/8" = 1'-0"



BASIS OF DESIGN

MANUFACTURER:	MODERNFOLD
PRODUCT:	ACOUSTI-SEAL, ENCORE SERIES, PAIRED PANEL
BOTTOM SEALS:	SURESET MANUAL 2" (51MM)
PANEL ACCOUSTICAL RATING:	54 STC
PANEL FINISH:	TBD
PANEL COLOR:	TBD

ARCHITECT / GENERAL CONTRACTOR NOTES
1. MINIMUM DIMENSOINS PROVIODE FOR CLEARANCE FROM ALL ADJACENT CONSTRUCTION / FIXTURES FOR ADJUSTMENT, OPERATION, AND SAFETY.
2. GENERAL CONTRACTORS SHALL BE RESPONSIBLE FOR ALL STRUCTURAL SUPPORT, ADJOINING CONSTRUCTION AND TRIM.
3. WALL CONSTRUCTION AT JAMES MUST BE ADEQUATE FOR SECURING JAMBS, AND WITHSTANDING FOR EXERTED BY EXPANDABLE PANEL.
4. SM INDICATES SureSet MANUAL BOTTOM SEALS.
   ▼ INDICATES OPERABLE PANEL & BOTOOM SEAL OPERATOR HOLE.
5. HING POINTS ARE SHOWN FOR DIAGRAMMATIC PURPOSES ONLY.

PD1

3'-0" X 7'-0" PASS DOOR HAND PULL WITH ROLLER LATCH RECESSED MOUNTED CHEMICAL EXIT SIGN WITH RED FACE PLATE BRUSHED ALUMINUM FRAME CONCEALED DOOR CLOSER

D1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-01/OP-02

3/8" = 1'-0"

BASIS OF DESIGN

MANUFACTURER:	MODERNFOLD
PRODUCT:	ACOUSTI-SEAL, ENCORE SERIES, PAIRED PANEL
BOTTOM SEALS:	SURESET MANUAL 2" (51MM)
PANEL ACCOUSTICAL RATING:	54 STC
PANEL FINISH:	TBD
PANEL COLOR:	TBD

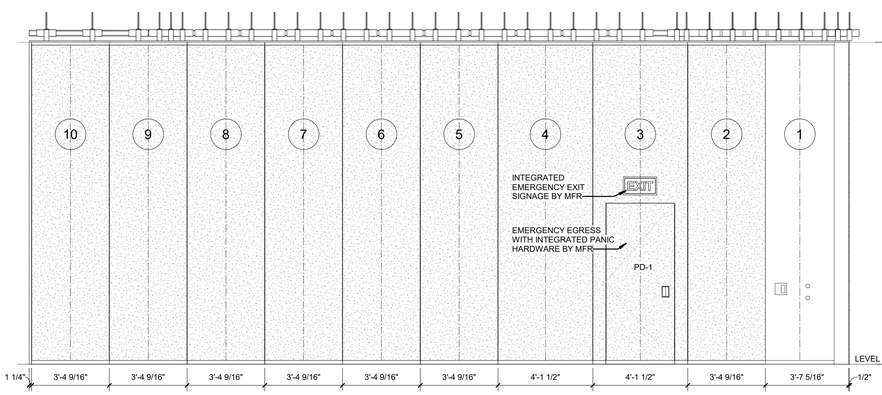
ARCHITECT / GENERAL CONTRACTOR NOTES
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2. GENERAL CONTRACTORS SHALL BE RESPONSIBLE FOR ALL STRUCTURAL SUPPORT, ADJOINING CONSTRUCTION AND TRIM.
3. WALL CONSTRUCTION AT JAMES MUST BE ADEQUATE FOR SECURING JAMBS, AND WITHSTANDING FOR EXERTED BY EXPANDABLE PANEL.
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   ▼ INDICATES OPERABLE PANEL & BOTTOM SEAL OPERATOR HOLE.
5. HINGE POINTS ARE SHOWN FOR DIAGRAMMATIC PURPOSES ONLY.

PD1

3'-0" X 7'-0" PASS DOOR HAND PULL WITH ROLLER LATCH RECESSED MOUNTED CHEMICAL EXIT SIGN WITH RED FACE PLATE BRUSHED ALUMINUM FRAME CONCEALED DOOR CLOSER

B2 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-01/OP-02 SIDE L

3/8" = 1'-0"



BASIS OF DESIGN

MANUFACTURER:	MODERNFOLD
PRODUCT:	ACOUSTI-SEAL, ENCORE SERIES, PAIRED PANEL
BOTTOM SEALS:	SURESET MANUAL 2" (51MM)
PANEL ACCOUSTICAL RATING:	54 STC
PANEL FINISH:	TBD
PANEL COLOR:	TBD

ARCHITECT / GENERAL CONTRACTOR NOTES
1. MINIMUM DIMENSIONS PROVIDE FOR CLEARANCE FROM ALL ADJACENT CONSTRUCTION / FIXTURES FOR ADJUSTMENT, OPERATION, AND SAFETY.
2. GENERAL CONTRACTORS SHALL BE RESPONSIBLE FOR ALL STRUCTURAL SUPPORT, ADJOINING CONSTRUCTION AND TRIM.
3. WALL CONSTRUCTION AT JAMES MUST BE ADEQUATE FOR SECURING JAMBS, AND WITHSTANDING FOR EXERTED BY EXPANDABLE PANEL.
4. SM INDICATES SureSet MANUAL BOTTOM SEALS.
   ▼ INDICATES OPERABLE PANEL & BOTTOM SEAL OPERATOR HOLE.
5. HINGE POINTS ARE SHOWN FOR DIAGRAMMATIC PURPOSES ONLY.

PD1

3'-0" X 7'-0" PASS DOOR HAND PULL WITH ROLLER LATCH RECESSED MOUNTED CHEMICAL EXIT SIGN WITH RED FACE PLATE BRUSHED ALUMINUM FRAME CONCEALED DOOR CLOSER

A1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-01/OP-02 SIDE R

3/8" = 1'-0"

B4 WALL SECTION - LVL 1 - OPERABLE PARTITION-02

3/8" = 1'-0"

A4 WALL SECTION - LVL 1 - OPERABLE PARTITION-01

3/8" = 1'-0"

ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
MISC. DETAILS - OPERABLE PARTITION OP-01/OP-02

ORIG SUBMISSION: 2022.05.25

SHEET: A-441

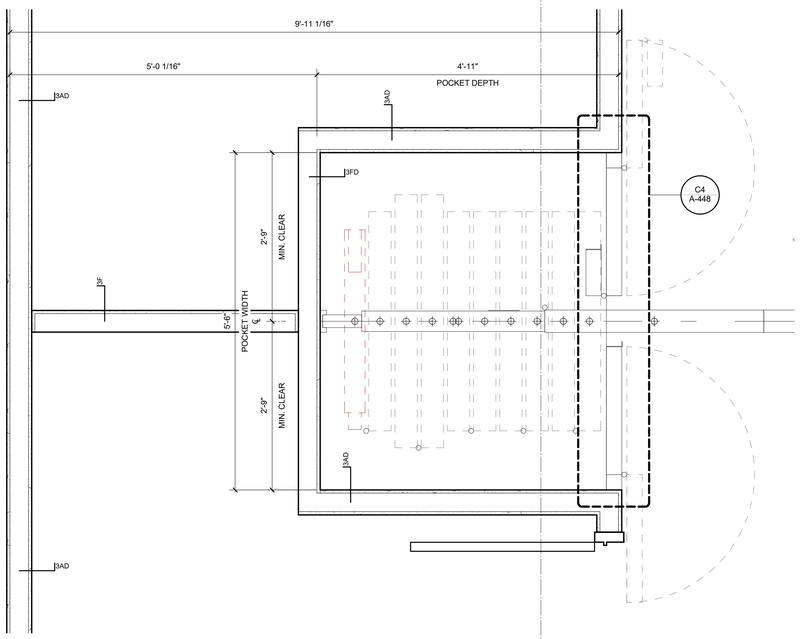
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E D C B A

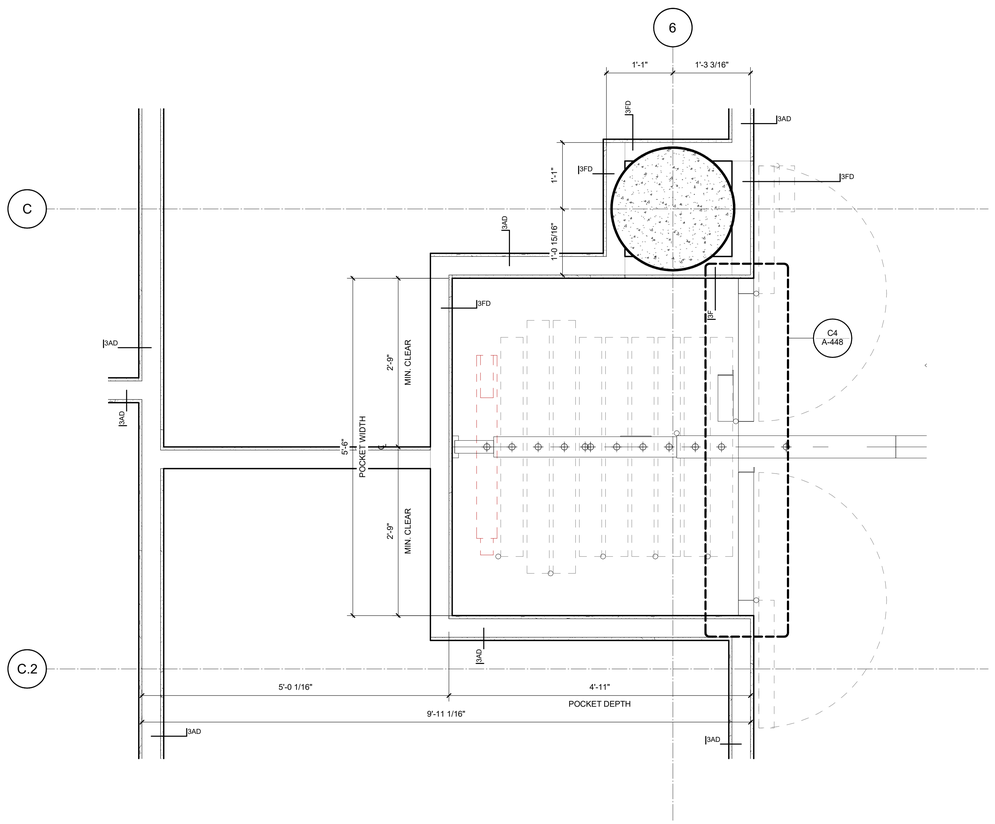
1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



C1 INTERIOR PLAN DETAIL - OPERABLE PARTITION 02 POCKET

1" = 1'-0"



A1 INTERIOR PLAN DETAIL - OPERABLE PARTITION 01 POCKET

1" = 1'-0"

5/25/2022 5:31:13 PM

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

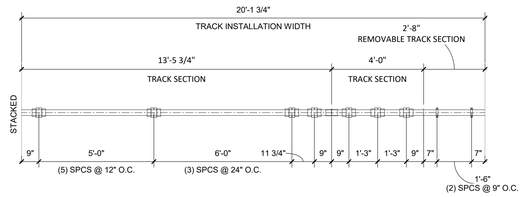
SHEET NAME:
MISC. DETAILS - OPERABLE PARTITION OP-01/OP-02

ORIG SUBMISSION: 2022.05.25

SHEET:
A-442

OWNER REVIEW SET

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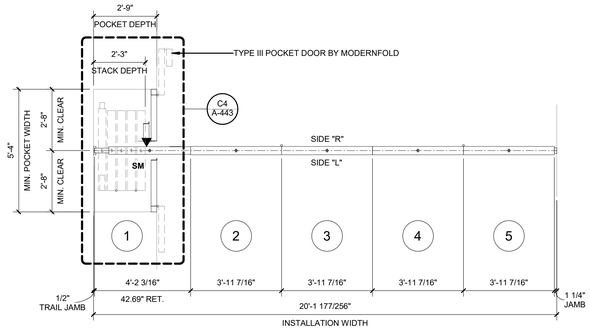
NOTES:
1. PUNCH OR DRILL .56" DIA. HOLES, 2.50" EACH SIDE OF CENTERLINE, 5.00" GAGE, AT ALL LOCATIONS. AS NOTED.
2. OMIT RODS AND NUTS

BRACKET REQUIREMENTS (EXCEPT AS NOTED):

BRACKETS IN STACK: DOUBLE
BRACKES IN RUN: HEAVY DUTY

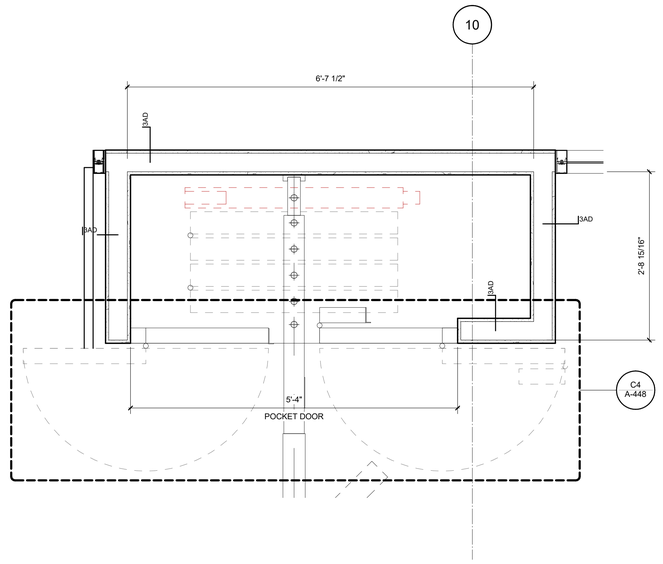
D1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-03 TRACK LAYOUT

3/8" = 1'-0"



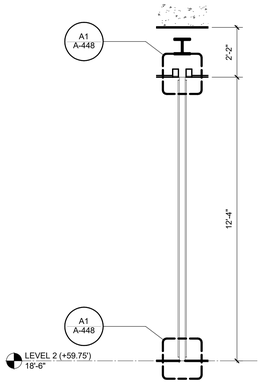
C1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-03

3/8" = 1'-0"



C4 INTERIOR PLAN DETAIL - OPERABLE PARTITION 03 POCKET

1" = 1'-0"

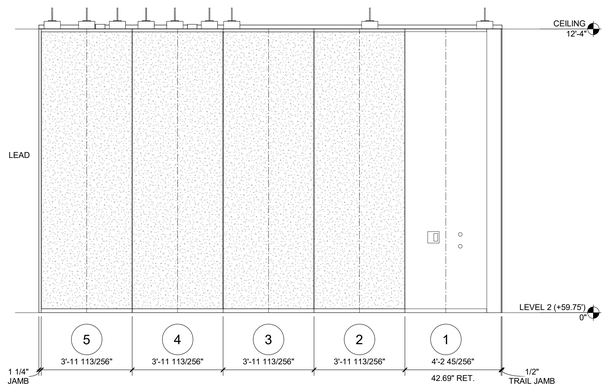


B1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-03 SIDE L

3/8" = 1'-0"

B4 WALL SECTION - LVL 2 - OPERABLE PARTITION-03

3/8" = 1'-0"



A1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-03 SIDE R

3/8" = 1'-0"

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
MISC. DETAILS - OPERABLE PARTITION OP-03

ORIG SUBMISSION: 2022.05.25

SHEET:
A-443

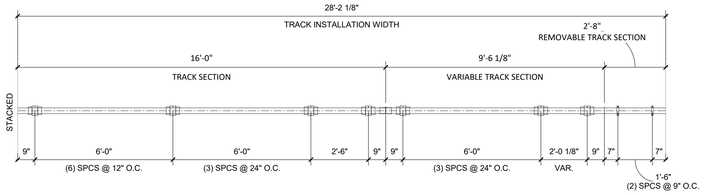
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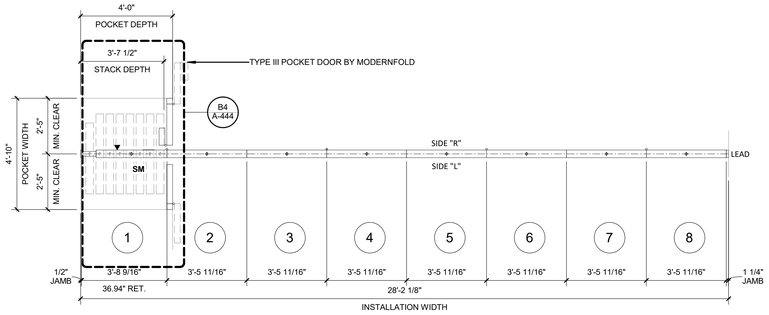
NOTES:
1. PUNCH OR DRILL .56" DIA. HOLES, 2.50" EACH SIDE OF CENTERLINE, 5.00" GAGE, AT ALL LOCATIONS. AS NOTED.
2. OMIT RODS AND NUTS

BRACKET REQUIREMENTS (EXCEPT AS NOTED):

BRACKETS IN STACK: DOUBLE
BRACKES IN RUN: HEAVY DUTY

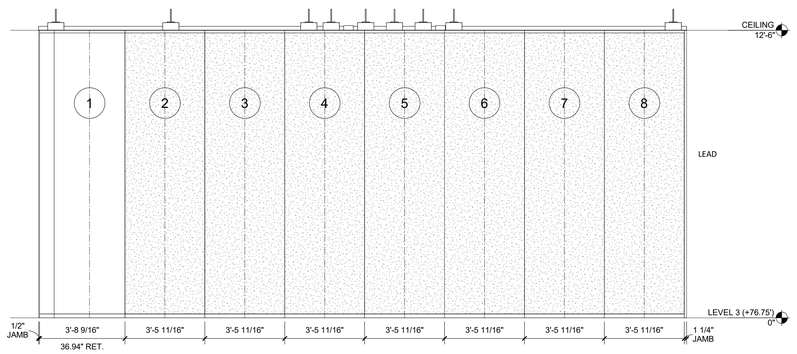
D1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-04 TRACK LAYOUT

3/8" = 1'-0"



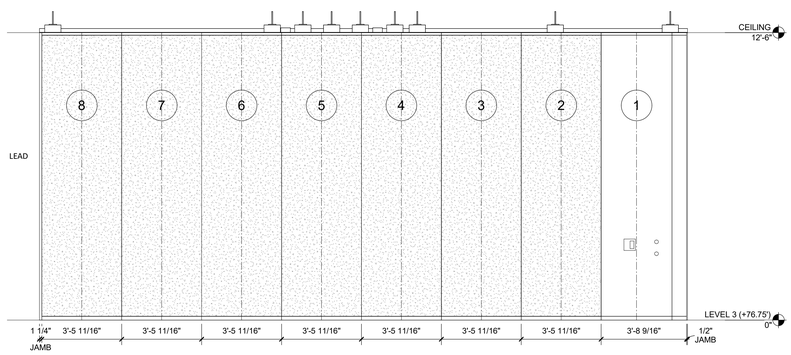
C1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-04

3/8" = 1'-0"



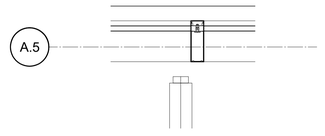
B1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-04 SIDE L

3/8" = 1'-0"



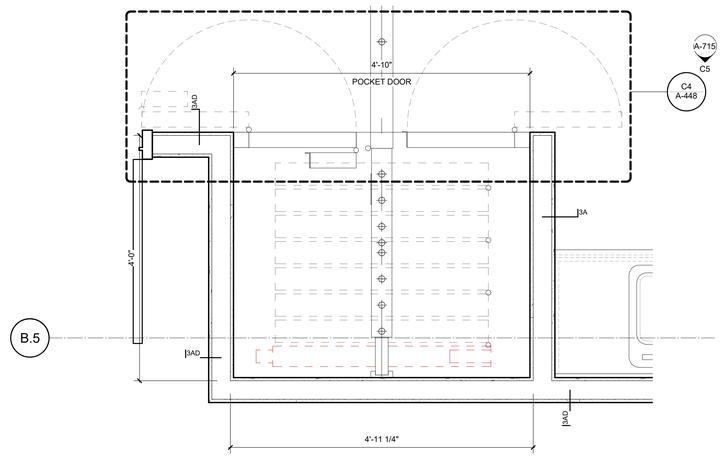
A1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-04 SIDE R

3/8" = 1'-0"



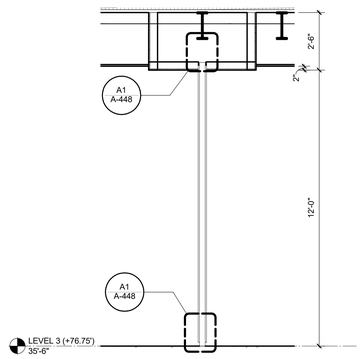
D4 INTERIOR PLAN DETAIL - OPERABLE PARTITION 04 END

1" = 1'-0"



B4 INTERIOR PLAN DETAIL - OPERABLE PARTITION 04 POCKET

1" = 1'-0"



A4 WALL SECTION - LVL 3 - OPERABLE PARTITION-04

3/8" = 1'-0"

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
MISC. DETAILS - OPERABLE PARTITION OP-04

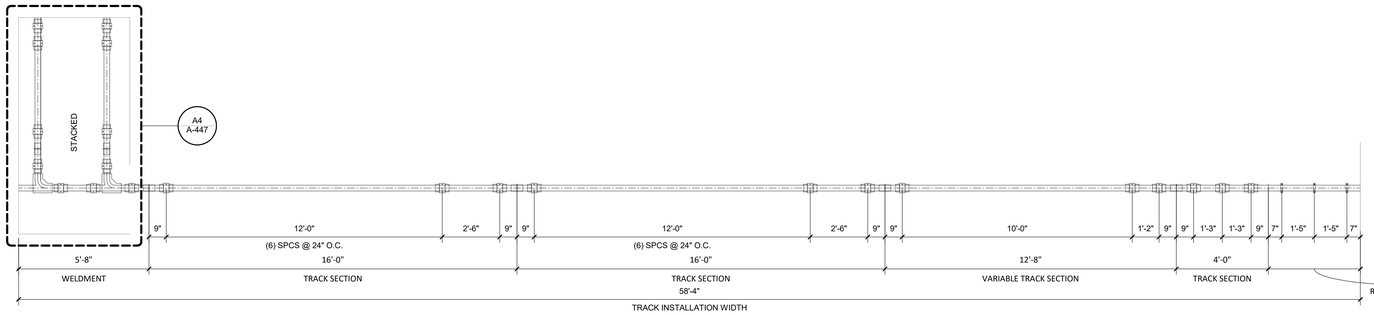
ORIG SUBMISSION: 2022.05.25

SHEET:
A-444

OWNER REVIEW SET

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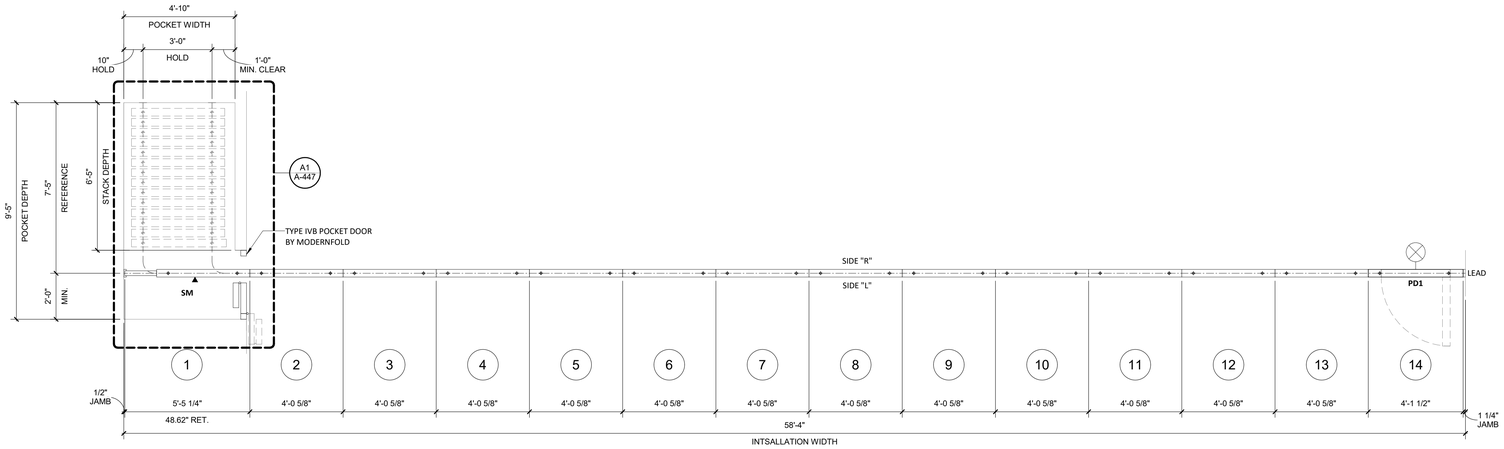
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2. OMIT RODS AND NUTS

BRACKETS (EXCEPT AS NOTED):

STANDARD BRACKETS
HEAVY DUTY BRACKETS
EXTRA LONG HEAVY DUTY BRACKETS
REMOVEABLE BRACKETS
SPLICE BRACKETS

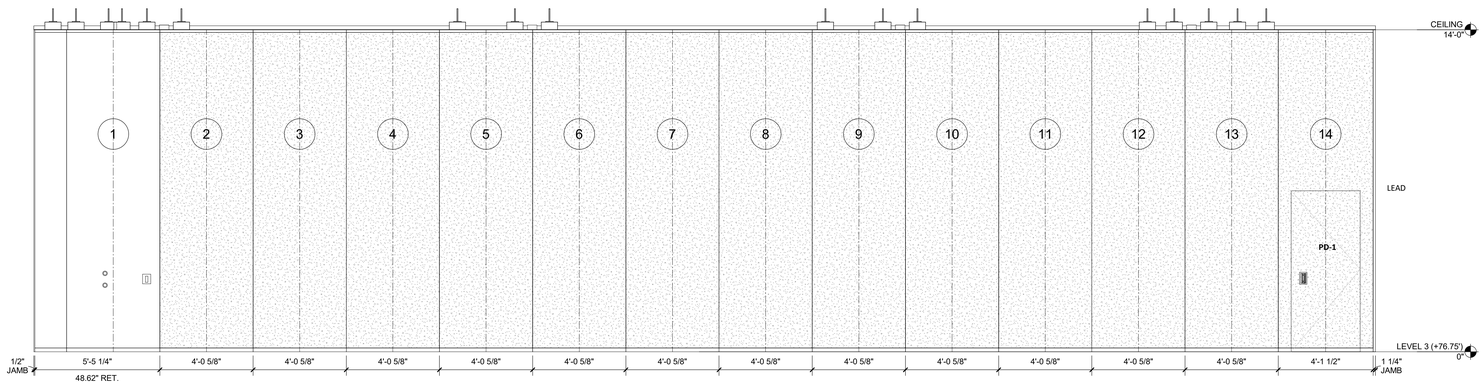
E1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-05 TRACK LAYOUT

3/8" = 1'-0"



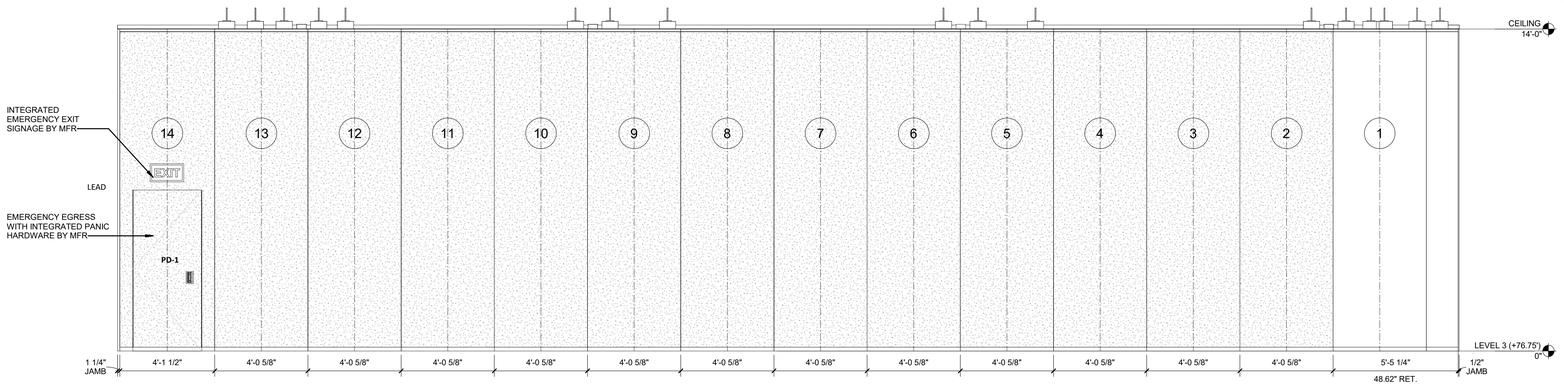
C1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-05

3/8" = 1'-0"



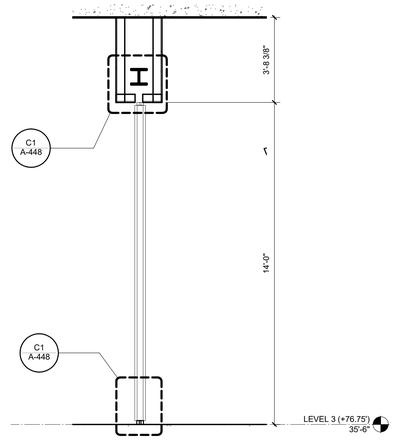
B1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-05 SIDE L

3/8" = 1'-0"



A1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-05 SIDE R

3/8" = 1'-0"



B5 WALL SECTION - LVL 3 - OPERABLE PARTITION-05 & 06

3/8" = 1'-0"

BASIS OF DESIGN

MANUFACTURER:	MODERNFOLD
PRODUCT:	ACOUSTI-SEAL, ENCORE SERIES, SINGLE PANEL
BOTTOM SEALS:	SURESET MANUAL 2" (51MM)
PANEL ACCOUSTICAL RATING:	54 STC
PANEL FINISH:	TBD
PANEL COLOR:	TBD

ARCHITECT / GENERAL CONTRACTOR NOTES

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PD1

3'-0" X 7'-0" PASS DOOR HAND PULL WITH ROLLER LATCH RECESSED MOUNTED CHEMICAL EXIT SIGN WITH RED FACE PLATE BRUSHED ALUMINUM FRAME CONCEALED DOOR CLOSER

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

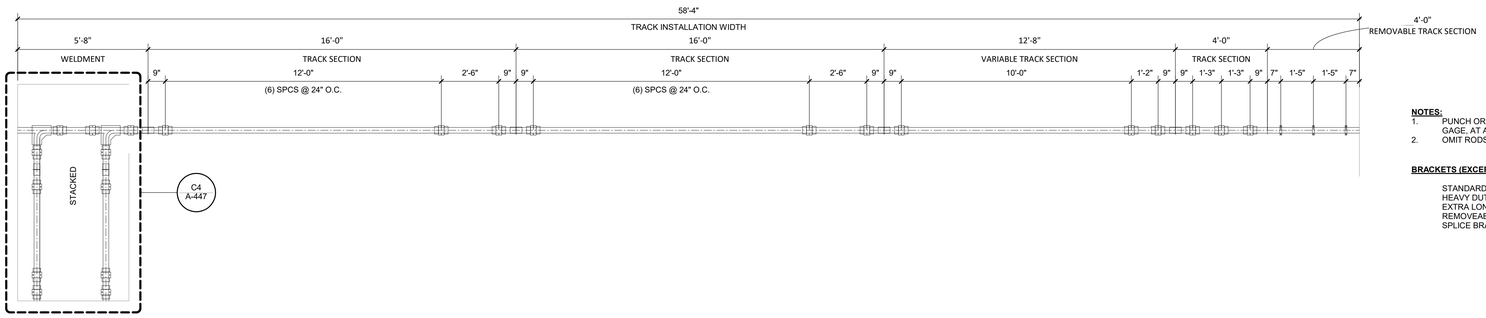
SHEET NAME:
MISC. DETAILS - OPERABLE PARTITION OP-05

ORIG SUBMISSION: 2022.05.25

SHEET:
A-445

OWNER REVIEW SET

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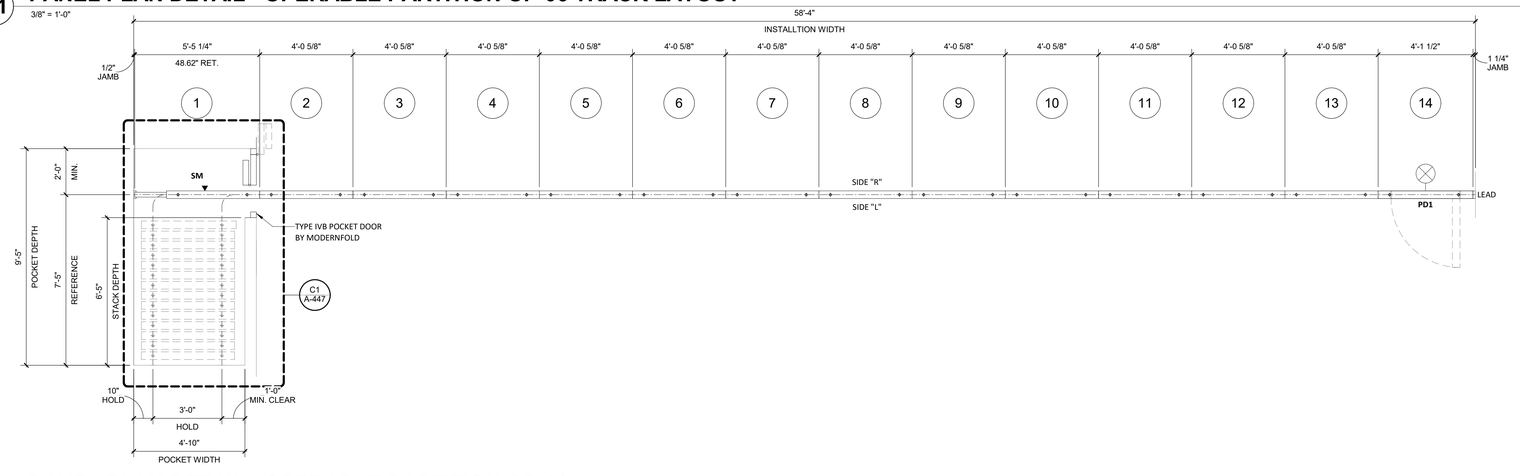
NOTES:
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2. OMIT RODS AND NUTS

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HEAVY DUTY BRACKETS
EXTRA LONG HEAVY DUTY BRACKETS
REMOVEABLE BRACKETS
SPLICE BRACKETS

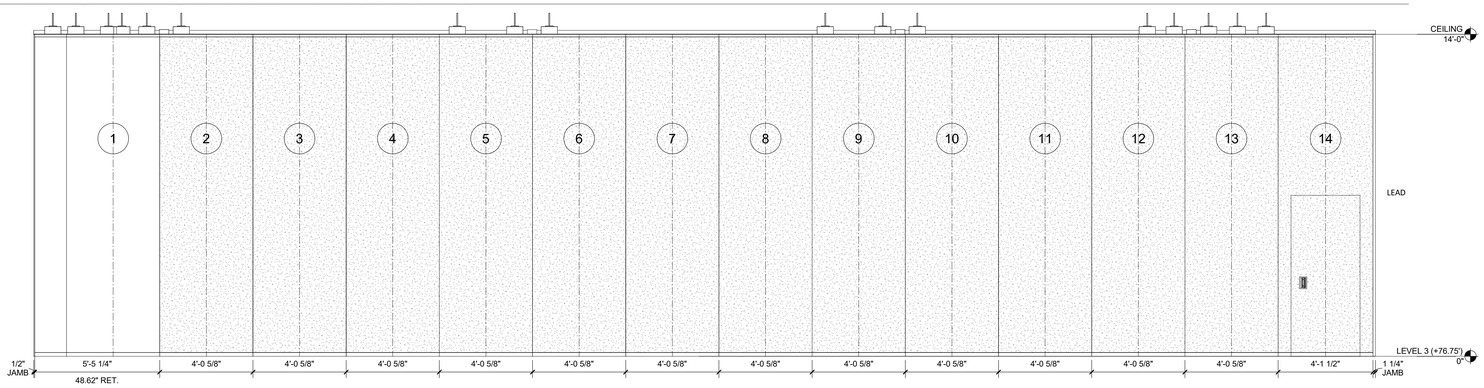
D1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-06 TRACK LAYOUT

3/8" = 1'-0"



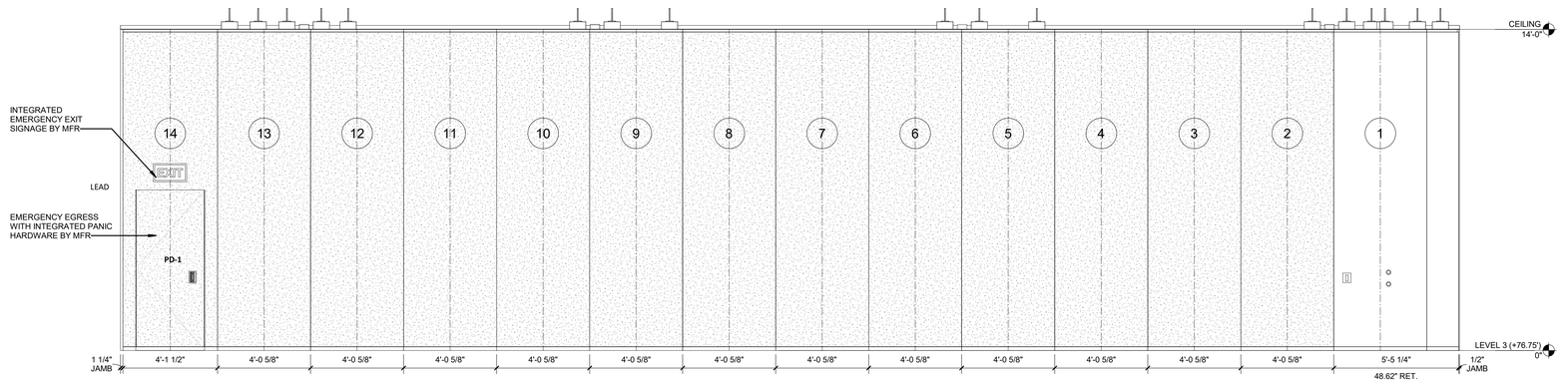
C1 PANEL PLAN DETAIL - OPERABLE PARTITION OP-06

3/8" = 1'-0"



B1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-06 SIDE L

3/8" = 1'-0"



BASIS OF DESIGN

MANUFACTURER:	MODERNFOLD
PRODUCT:	ACOUSTI-SEAL, ENCORE SERIES, SINGLE PANEL
BOTTOM SEALS:	SURESET MANUAL 2" (51MM)
PANEL ACCOUSTICAL RATING:	54 STC
PANEL FINISH:	TBD
PANEL COLOR:	TBD

ARCHITECT / GENERAL CONTRACTOR NOTES
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PD1

3'-0" X 7'-0" PASS DOOR HAND PULL WITH ROLLER LATCH RECESSED MOUNTED CHEMICAL EXIT SIGN WITH RED FACE PLATE BRUSHED ALUMINUM FRAME CONCEALED DOOR CLOSER

A1 PANEL ELEV. DETAIL - OPERABLE PARTITION OP-06 SIDE R

3/8" = 1'-0"

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
MISC. DETAILS - OPERABLE PARTITION OP-06

ORIG SUBMISSION: 2022.05.25

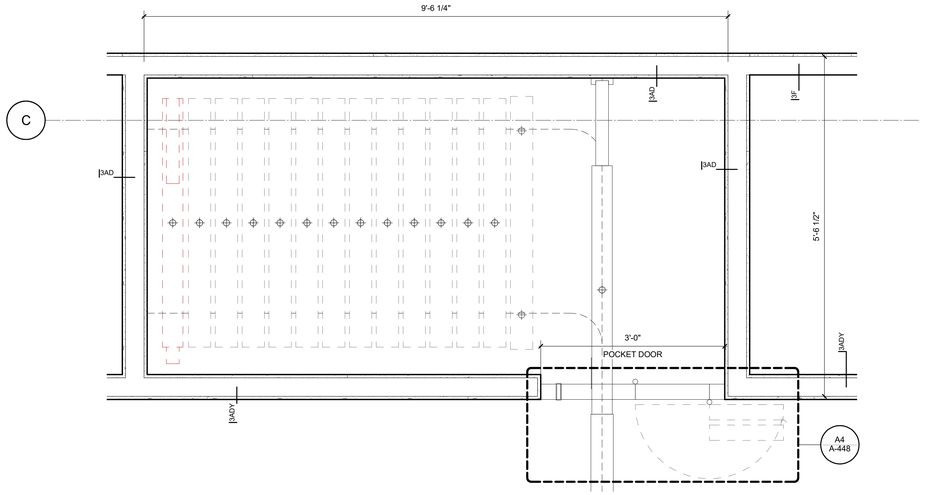
SHEET:
A-446

OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PLOT SIZE

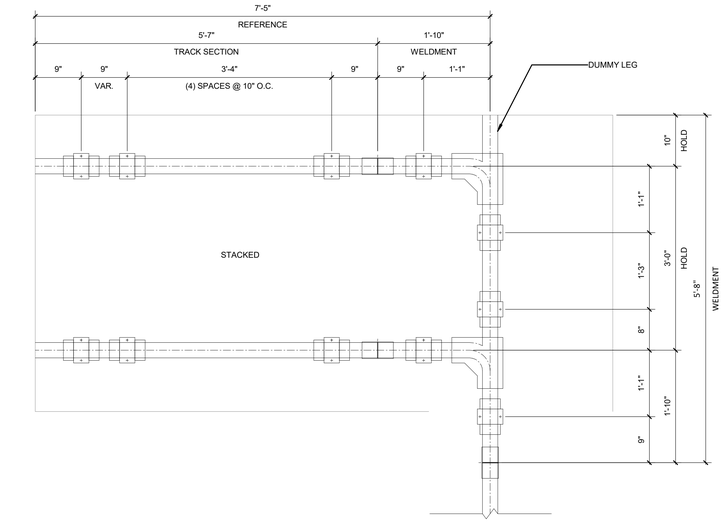
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



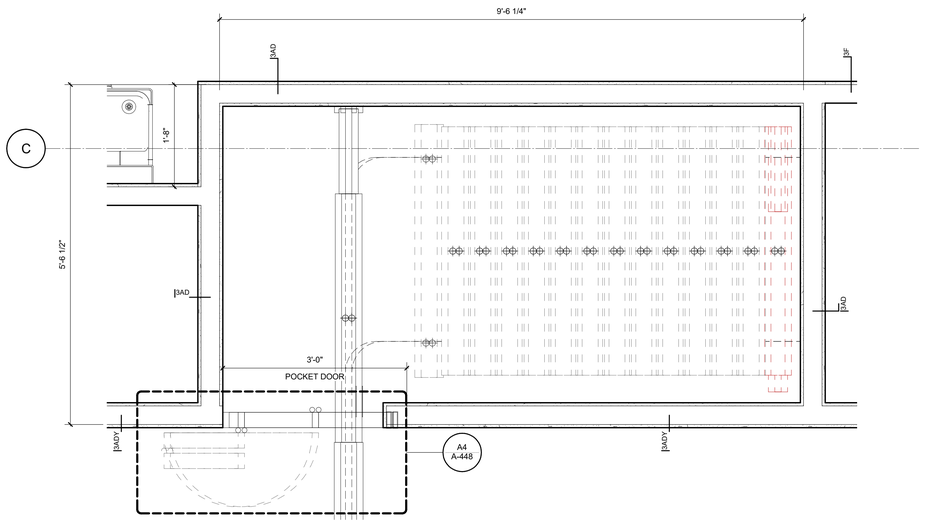
C1 INTERIOR PLAN DETAIL - OPERABLE PARTITION 06 POCKET

1" = 1'-0"



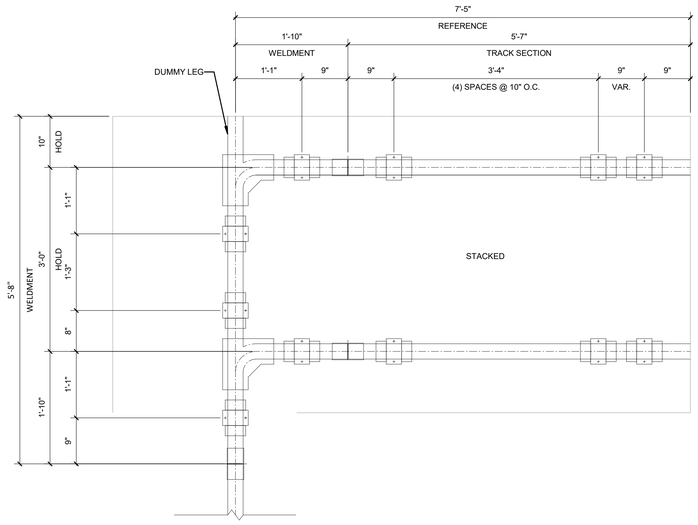
C4 PANEL PLAN DETAIL - OPERABLE PARTITION OP-06 WELDMENT

1" = 1'-0"



A1 INTERIOR PLAN DETAIL - OPERABLE PARTITION 05 POCKET

1" = 1'-0"



A4 PANEL PLAN DETAIL - OPERABLE PARTITION OP-05 WELDMENT

1" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

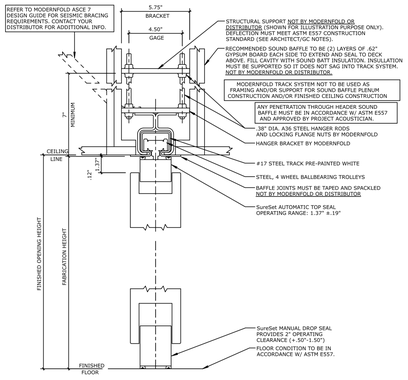
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MISC. DETAILS - OPERABLE PARTITION OP-05/OP-06

ORIG SUBMISSION: 2022.05.25

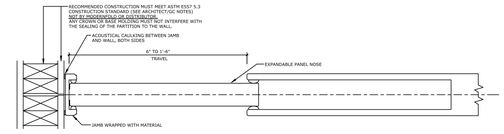
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OWNER REVIEW SET

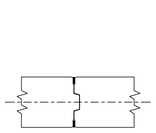
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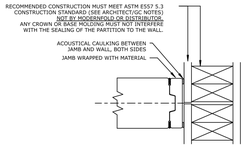
VERTICAL SECTION



18" EXPANDABLE PANEL W/ JAMB



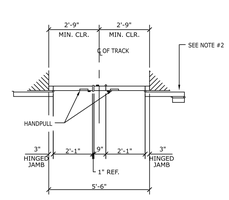
PANEL JOINT



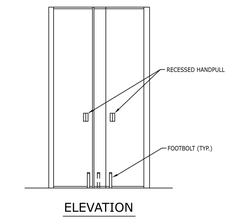
JAMB

ACOUSTI-SEAL ENCORE - SINGLE PANEL

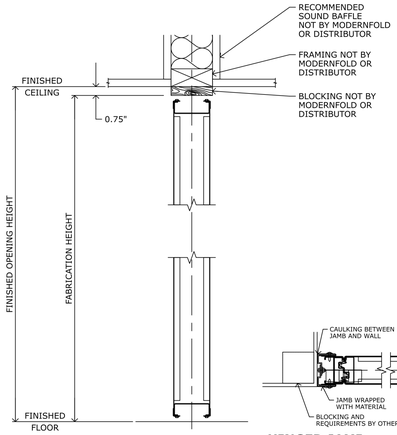
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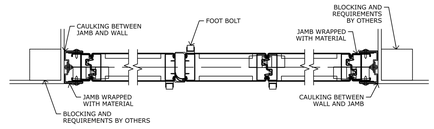


PLAN VIEW



ELEVATION





HINGED JAMB **HINGED CENTER PANEL** **HINGED JAMB**

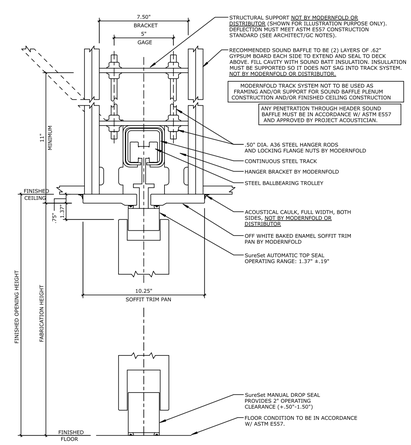
POCKET DOOR LEGACY - TYPE III

NOTES:
1. WALL CONSTRUCTION AT JAMBS MUST BE ADEQUATE FOR SECURING JAMBS AND/OR SUPPORT OF HINGED PANELS
2. WALLS MUST BE FREE OF OBSTRUCTIONS TO PERMIT DOORS TO SWING 180 DEGREES. TYPICAL BOTH DOORS
3. HING POINT IS SHOWN FOR DIAGRAMMATIC PURPOSE ONLY.

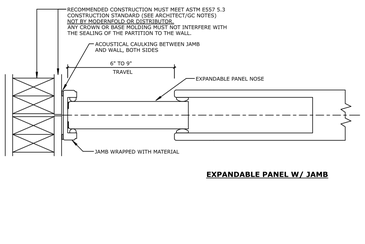
*BASIS OF DESIGN MANUFACTURER: MODERNFOLD

C1 PANEL TYP. DETAILS - OPERABLE PARTITION ACOUSTIC SEALS (SINGLE PANEL)

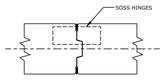
12" = 1'-0"



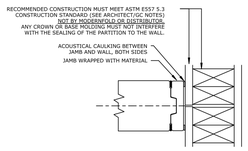
VERTICAL SECTION



EXPANDABLE PANEL W/ JAMB



SOSS HINGE PANEL JOINT



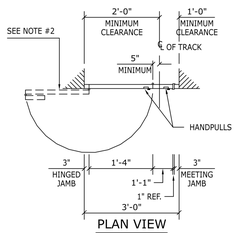
JAMB

ACOUSTI-SEAL ENCORE - PAIRED PANEL

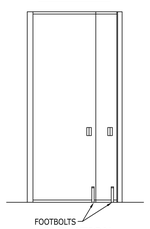
*BASIS OF DESIGN MANUFACTURER: MODERNFOLD

C4 PANEL TYP. DETAILS - OPERABLE PARTITION POCKET DOOR TYPE III

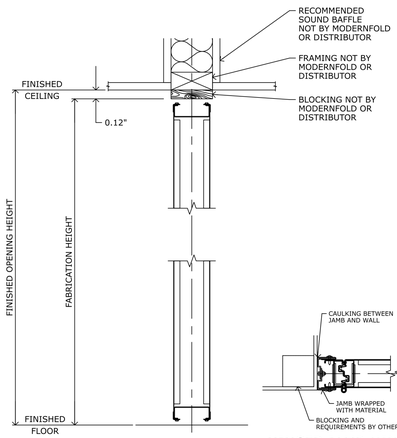
12" = 1'-0"

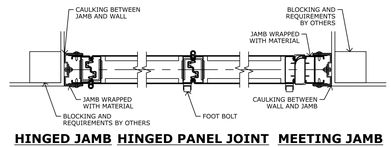


PLAN VIEW



ELEVATION





HINGED JAMB **HINGED PANEL JOINT** **MEETING JAMB**

POCKET DOOR LEGACY - TYPE IV B

NOTES:
1. WALL CONSTRUCTION AT JAMBS MUST BE ADEQUATE FOR SECURING JAMBS AND/OR SUPPORT OF HINGED PANELS
2. WALLS MUST BE FREE OF OBSTRUCTIONS TO PERMIT DOORS TO SWING 180 DEGREES. TYPICAL BOTH DOORS
3. HING POINT IS SHOWN FOR DIAGRAMMATIC PURPOSE ONLY.

*BASIS OF DESIGN MANUFACTURER: MODERNFOLD

A1 PANEL TYP. DETAILS - OPERABLE PARTITION ACOUSTIC SEALS (PAIRED PANEL)

12" = 1'-0"

A4 PANEL TYP. DETAILS - OPERABLE PARTITION POCKET DOOR TYPE IVB

12" = 1'-0"

5/25/2022 5:31:35 PM

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

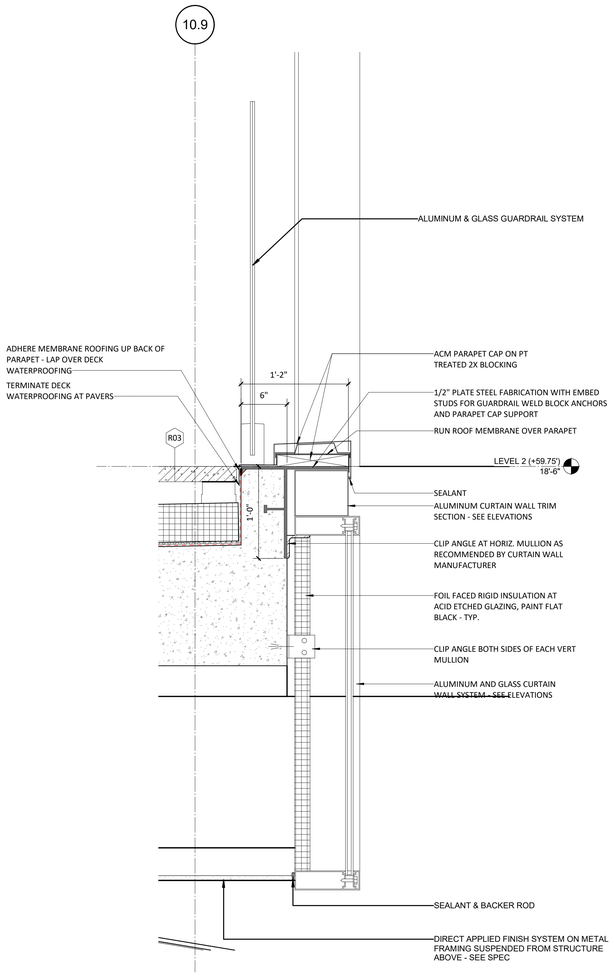
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ORIG SUBMISSION: 2022.05.25

SHEET:
A-448

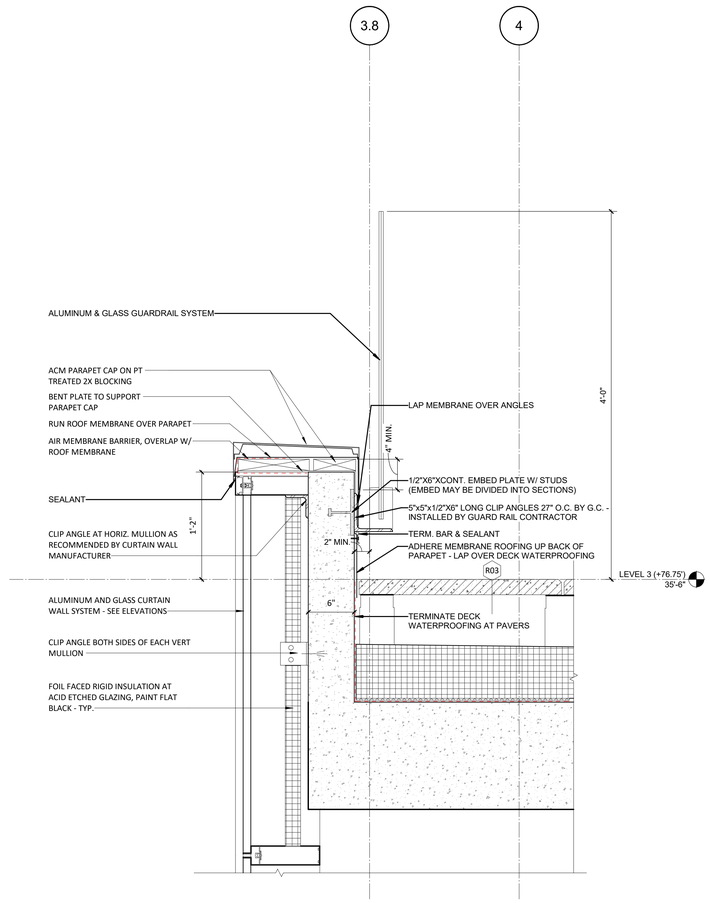
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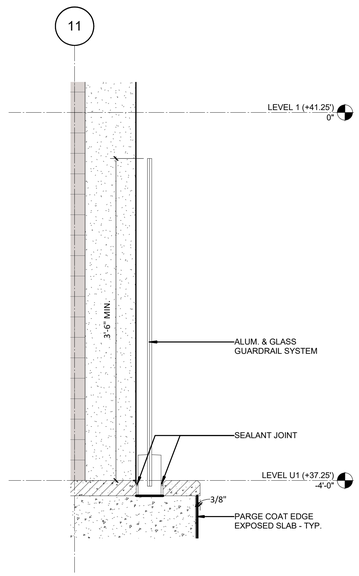
B1 SECT. DTL. - READING TERRACE L248

1 1/2" = 1'-0"



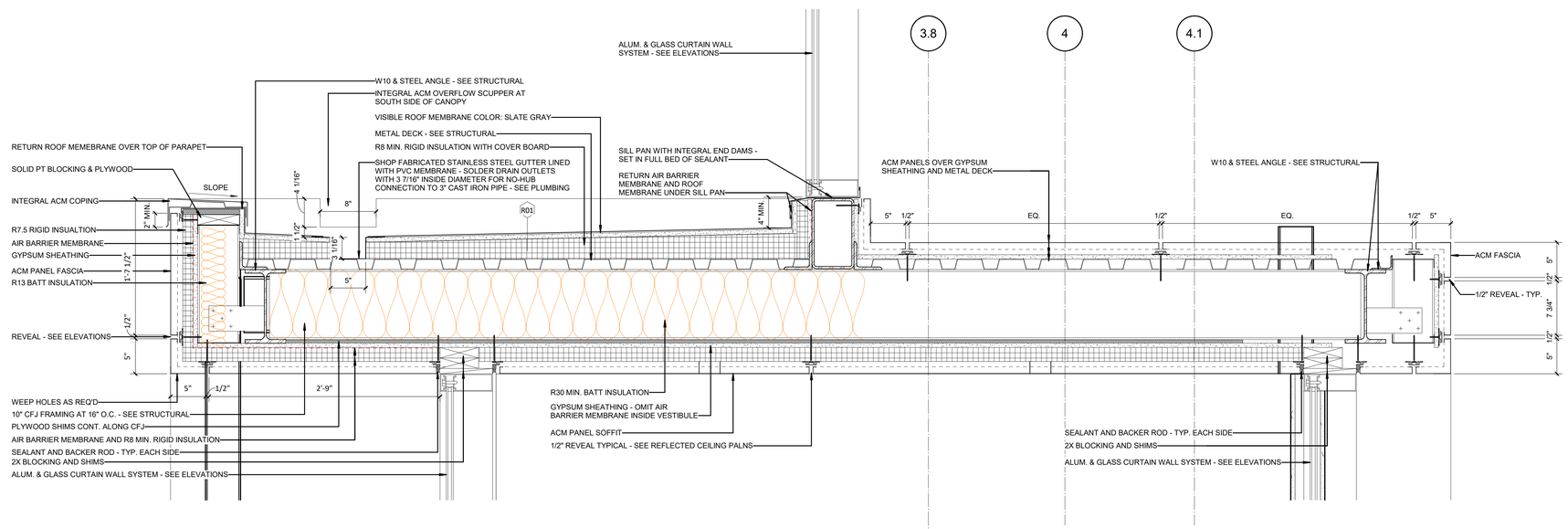
B4 SECT. DTL. - NORTH TERRACE PARAPET

1 1/2" = 1'-0"



A1 SECT. DTL. - CHILDERN'S TERRACE L122

1 1/2" = 1'-0"



A2 SECT. DTL. - LIBRARY VESTIBULE

1 1/2" = 1'-0"

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
EXTERIOR WALL SECTION DETAILS

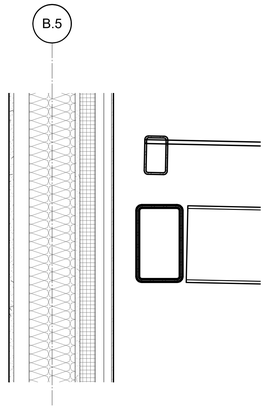
ORIG SUBMISSION: 2022.05.25

SHEET:
A-511

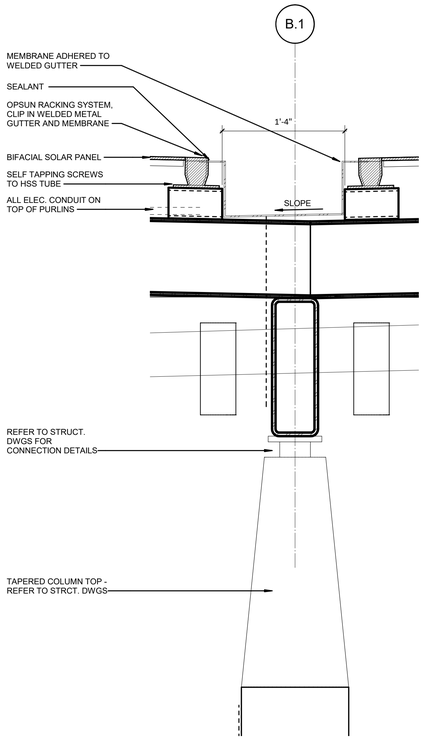
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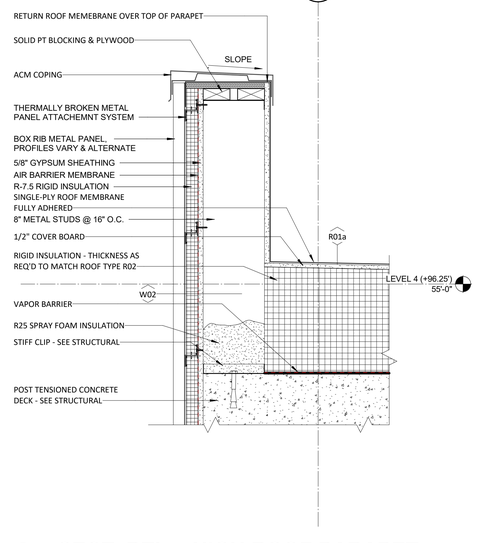
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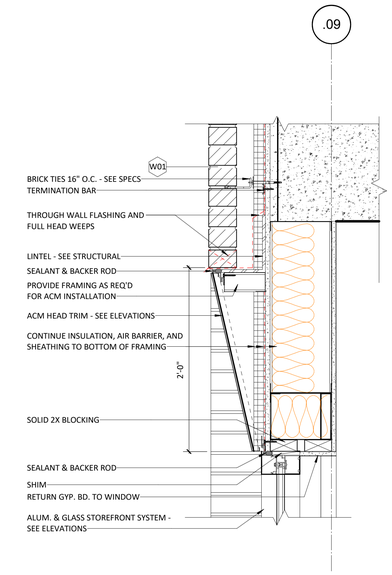
D1 SECT. DTL. - PV CANOPY AT EXT WALL
1 1/2" = 1'-0"



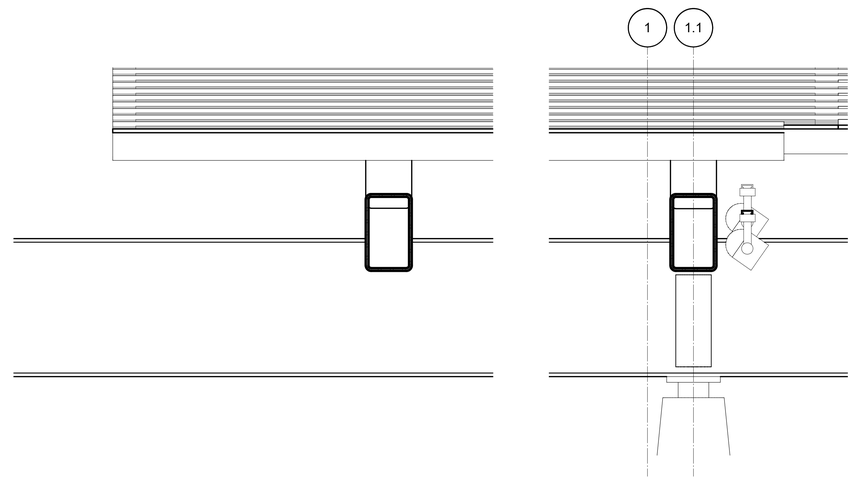
D2 SECT. DTL. - PV CANOPY GUTTER
1 1/2" = 1'-0"



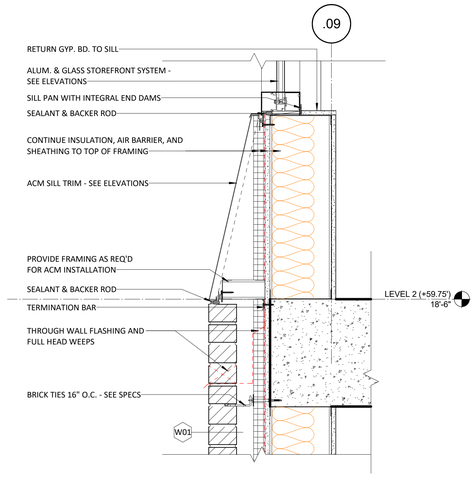
D3 SECT. DTL. - HIGH ROOF PARAPET
1 1/2" = 1'-0"



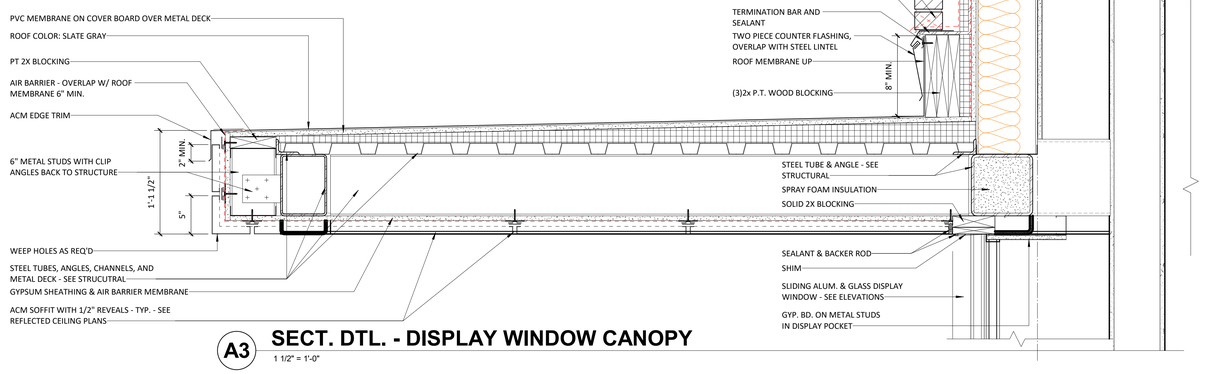
D5 SECT. DTL. - ACM WINDOW HEAD
1 1/2" = 1'-0"



B1 SECT. DTL. - PV CANOPY EAST
1 1/2" = 1'-0"



B5 SECT. DTL. - ACM WINDOW SILL
1 1/2" = 1'-0"



A3 SECT. DTL. - DISPLAY WINDOW CANOPY
1 1/2" = 1'-0"

5/25/2022 5:31:53 PM

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

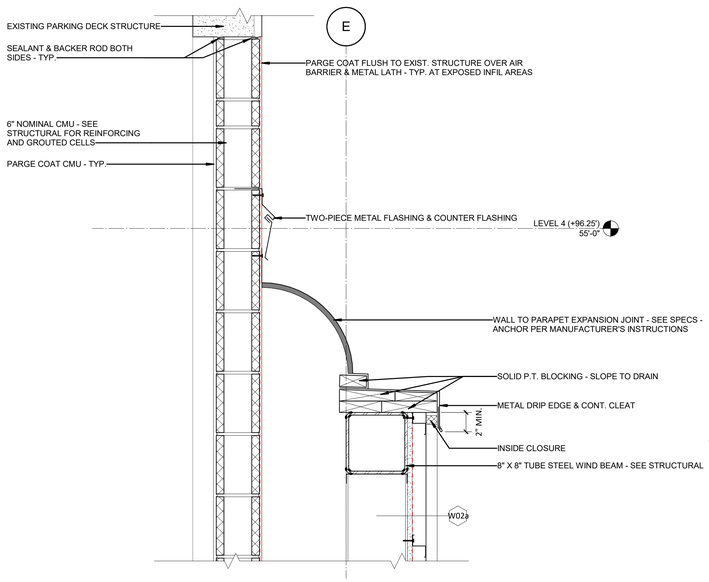
Δ	DATE	DESCRIPTION
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SHEET NAME:
EXTERIOR WALL SECTION DETAILS

ORIG SUBMISSION: 2022.05.25

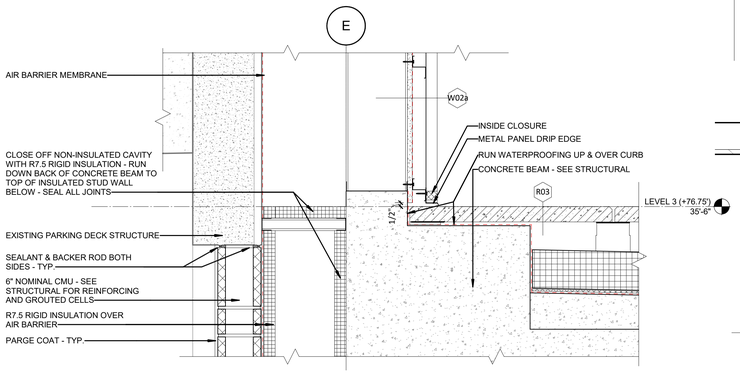
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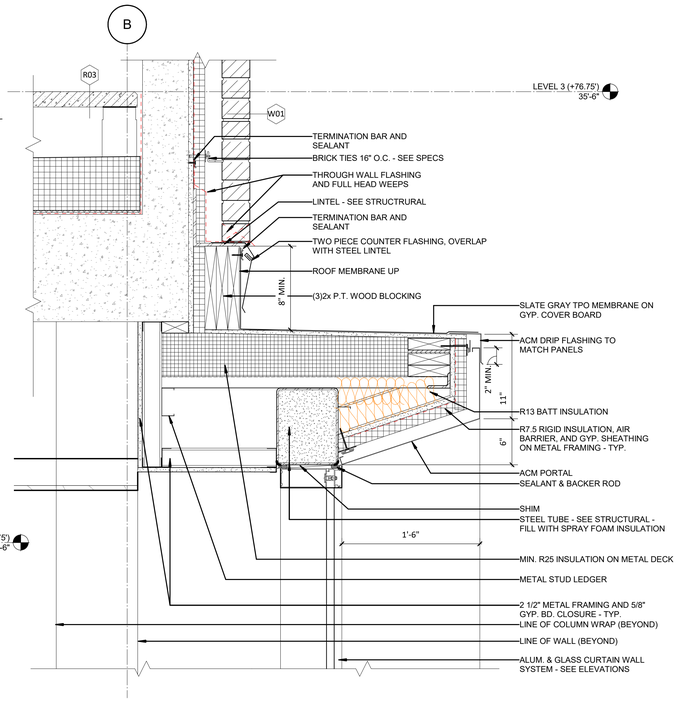
D1 SECT. DTL. - ROOF JOINT AT TERRACE/ PD

1 1/2" = 1'-0"



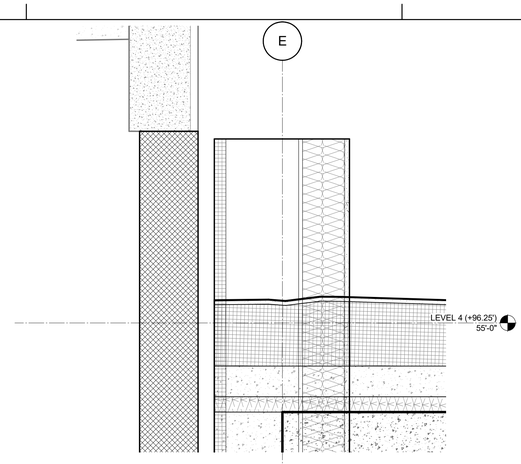
C1 SECT. DTL. - TERRACE AT PD WALL

1 1/2" = 1'-0"



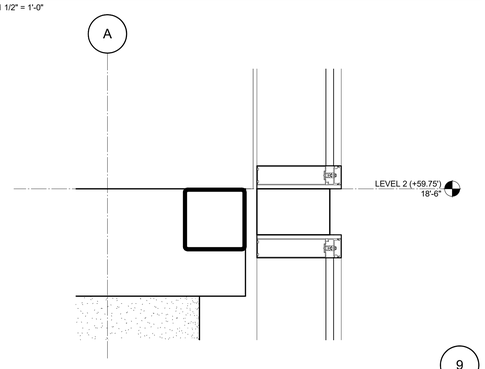
C2 SECT. DTL. - PORTAL HEAD

1 1/2" = 1'-0"



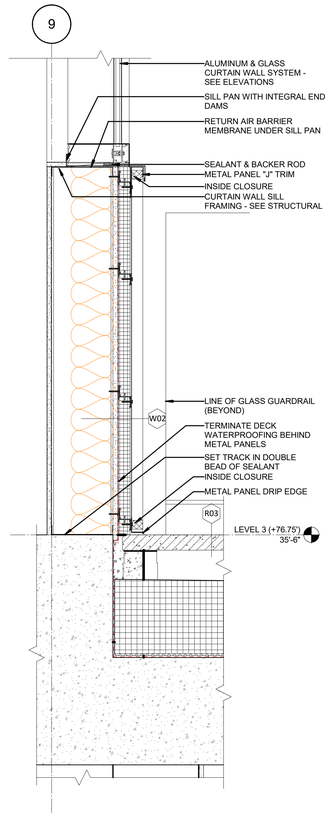
D5 SECT. DTL. - ROOF JOINT AT PD - TYP.

1 1/2" = 1'-0"



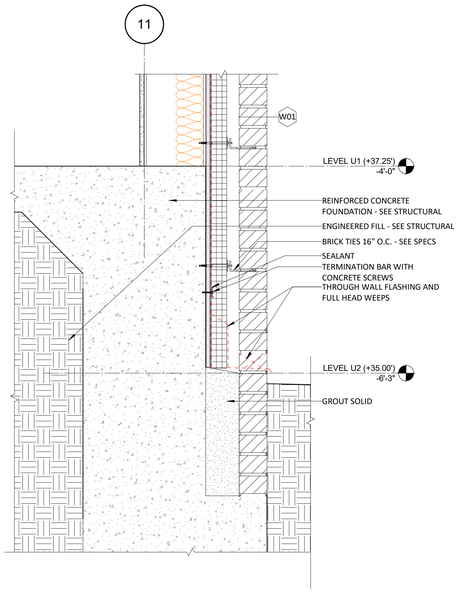
C5 SECT. DTL. - CW TRIM

1 1/2" = 1'-0"



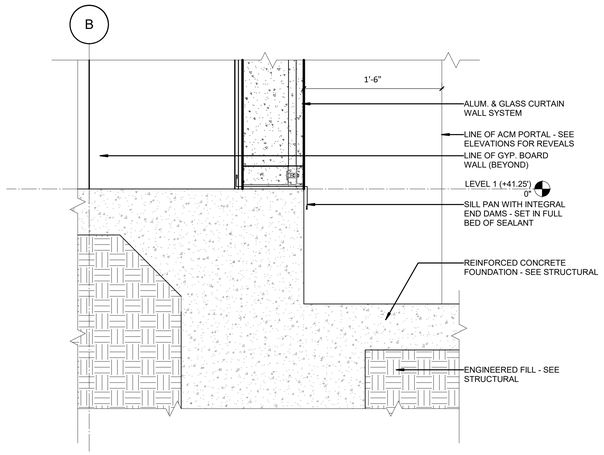
A6 SECT. DTL. - CURTAIN WALL SILL

1 1/2" = 1'-0"



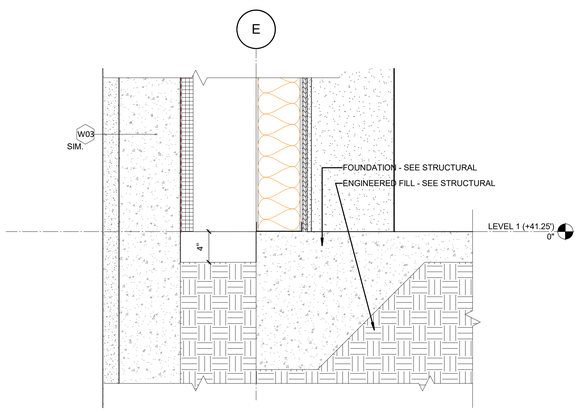
A4 SECT. DTL. - FOUNDATION LIBRARY WEST

1 1/2" = 1'-0"



B3 SECT. DTL. - CW FOUNDATION AT PORTAL

1 1/2" = 1'-0"



A1 SECT. DTL. - FOUNDATION - MUSEUM AT PD

1 1/2" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
EXTERIOR WALL SECTION DETAILS

ORIG SUBMISSION: 2022.05.25

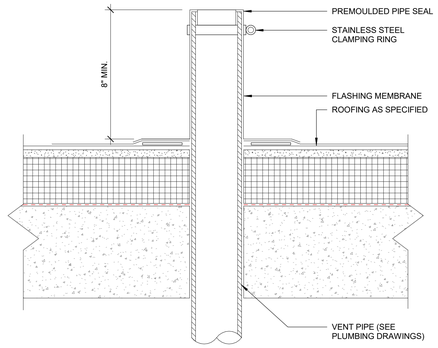
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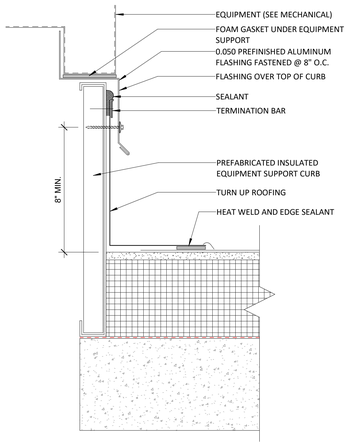
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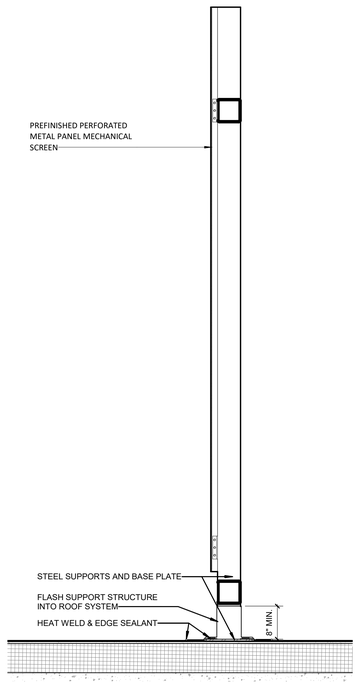
D3 ROOF PENETRATION

3" = 1'-0"



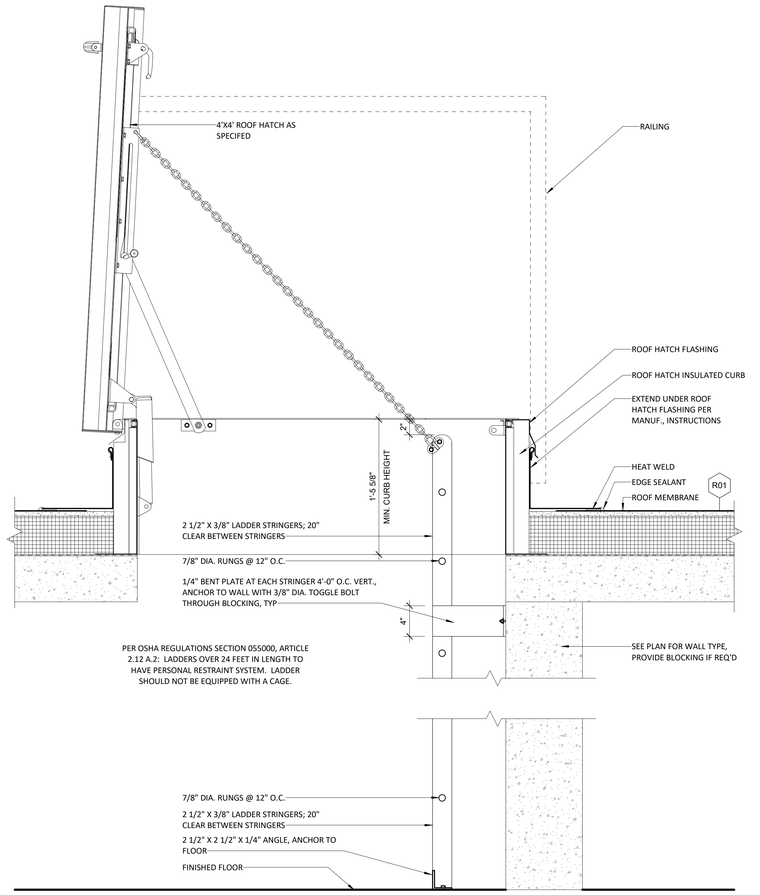
C3 ROOF DETAIL - ROOF CURB

3" = 1'-0"



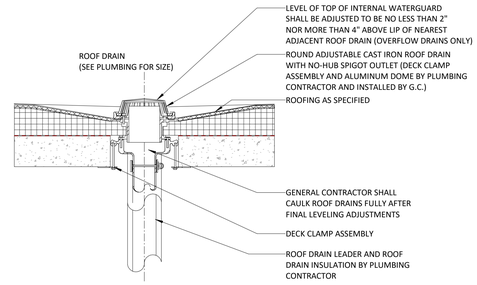
A3 ROOF MECH. SCREEN

3/4" = 1'-0"



C5 ROOF DETAIL - ROOF HATCH & LADDER - SIDE

1 1/2" = 1'-0"



B6 ROOF DETAIL - ROOF DRAIN & OVERFLOW

1" = 1'-0"

ZIMMER DEVELOPMENT COMPANY

LS3P

101 NORTH THIRD STREET, SUITE 500
WILMINGTON, NORTH CAROLINA 28401
TEL. 910.790.9901 FAX. 910.790.3111
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ROOF DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-516

OWNER REVIEW SET

5/25/2022 5:32:10 PM

E D C B A

1 2 3 4 5 6

ARCH- DOOR SCHEDULE

DOOR NUMBER	FIRE RTG (MIN)	DOOR PANELS: PANEL TYPE 1	PANEL TYPE 2	PANEL FINISH	PANEL DIMENSIONS: WIDTH PNL 1	WIDTH PNL 2	HEIGHT	DOOR FRAME: FRAME TYPE	FRAM FINISH	FACE DIMENSIONS: JAMB WIDTH	HEAD HEIGHT	HARDWARE COMMENTS	HDWE SET #	PANIC HDWE	SIGN TYPE
LEVEL U2 (+35.00')															
D101	45MIN	PNL-F-HM	PNL-F-HM		2'-10"	2'-10"	7'-0"	FRM-00HM1	PAINTED METAL	2"	4"	HARDWARE: TYPICAL LOCKSET			
LEVEL U1 (+37.25')															
C110	-	PNL-F-HM			3'-0"		7'-0"	FRM-00HM1	PAINTED METAL	2"	4"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
C110A	-	PNL-F1-STL			18'-0"		17'-9"	FRM-60STL	PAINTED METAL	2"	2"	HARDWARE: OVERHEADCOILING DOOR, TYPICAL LOCKSET			
C111A	90MIN	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
C111B	-	PNL-F-HM			3'-0"		7'-0"	FRM-00HM1	PAINTED METAL	2"	4"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
C112	-	PNL-F-HM			3'-0"		7'-0"	FRM-00HM1	PAINTED METAL	2"	4"	HARDWARE: CLOSER, TYPICAL LOCKSET			
C113	45MIN	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
L111	-	PNL-FG-AL	PNL-FG-AL		3'-0"	3'-0"	8'-0"	FRM-00AL1	CLEAR ANODIZED ALUMINUM	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L115	-	PNL-NP			4'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: DOOR OPENING			
L116	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
L117	-	PNL-D-HM	PNL-D-HM		3'-0"	3'-0"	8'-0"	FRM-00HM1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET, DUTCH HARDWARE			
L118	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L119	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L120	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
S1A	90MIN	PNL-N-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, CLOSER			
LEVEL 1 (+41.25')															
C101	90MIN	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C102	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C104	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C105	45MIN	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C106	45MIN	PNL-F-HM			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C106A	45MIN	PNL-F-HM	PNL-F-HM		3'-0"	3'-0"	8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C107	-	PNL-N-HM	PNL-N-HM		4'-6"	4'-6"	10'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, HOLD OPEN			
C108	45MIN	PNL-F-HM	PNL-F-HM		3'-0"	3'-0"	8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET			
C108A	45MIN	PNL-F-HM			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET			
L101A	-	PNL-F-GL	PNL-F-GL		2'-6"	2'-6"	8'-0"	FRM-52HM6(CW)	CLEAR ANODIZED ALUMINUM	0"	2"	HARDWARE: TYPICAL LOCKSET, AUTOMATIC SLIDING, EMERGENCY BREAKAWAY; BATTERY BACKUP			
L101B	-	PNL-F-GL	PNL-F-GL		2'-6"	2'-6"	8'-0"	FRM-52HM6(CW)	CLEAR ANODIZED ALUMINUM	0"	2"	HARDWARE: TYPICAL LOCKSET, AUTOMATIC SLIDING; BATTERY BACKUP			
L106	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB			
L107	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L108	-	PNL-NP			8'-0"		8'-0"	FRM-00AL1	---	0"	0"	HARDWARE: DOOR OPENING			
L109	-	PNL-F-WD			3'-6"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
L109A	-	PNL-F-WD			3'-6"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
M102	-	PNL-FG-WD	PNL-FG-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN			
M103	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
M107	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M108	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M109	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M110	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN; SOUND RATED DOOR (STC 50)			
M111	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN			
M112	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
M113	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
M114	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
M115A	-	PNL-F-HM	PNL-F-HM		4'-6"	4'-6"	10'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER; SOUND SEAL PACKAGE			
M346	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER; SOUND RATED DOOR (STC 50)			
S2A	90MIN	PNL-N-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
S3F	90MIN	PNL-F-HM			3'-0"		7'-0"	FRM-00HM1	PAINTED METAL	2"	4"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
S100A	-	PNL-F-WD			3'-6"		8'-0"	FRM-NF	---	0"	0"	HARDWARE: CONCEALED CLOSER, SPECIALTY LOCK; ACM FACED PANEL TO BE FLUSH WITH ADJACENT WALL			
S101A	-	PNL-F-GL	PNL-F-GL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER			
S101B	-	PNL-F-GL	PNL-F-GL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER, ADA PUSH BUTTON			
S101C	-	PNL-F-GL	PNL-F-GL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER			
S101D	-	PNL-F-GL	PNL-F-GL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER, ADA PUSH BUTTON			
S103	-	PNL-FG-WD	PNL-FG-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN			
S104	-	PNL-FG-WD	PNL-FG-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN			
S105	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
S106	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
S106A	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
S107	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
S108	-	PNL-F-HM	PNL-F-HM		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
S109	-	PNL-NP			6'-0"		8'-0"	FRM-00AL1	DARK BRONZE	0"	0"	HARDWARE: DOOR OPENING			
S110	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
S111	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
S111A	-	PNL-NP			3'-0"		8'-0"	FRM-00AL1	---	0"	0"	HARDWARE: DOOR OPENING			
S112	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
S112A	-	PNL-NP			3'-0"		8'-0"	FRM-00AL1	---	0"	0"	HARDWARE: DOOR OPENING			
LEVEL 2 (+59.75')															
C201	-	PNL-F-WD	PNL-F-WD		2'-6"	2'-6"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
C202A	-	PNL-F-WD	PNL-F-WD		3'-2"	3'-2"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
C204	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C205	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
L205	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L206	-	PNL-F-WD	PNL-F-WD		3'-2"	3'-2"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
L209	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L210	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L211A	-	PNL-F-GL	PNL-F-GL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L211B	-	PNL-F-HM			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: KEY FOB, CLOSER			
L212	-	PNL-NP			3'-0"		8'-0"	FRM-00AL1	---	0"	0"	HARDWARE: DOOR OPENING			
L213	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
L214	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: KEY FOB, CLOSER			
L215	-	PNL-F-HM	PNL-F-HM		3'-0"	3'-0"	8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L216	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L217	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L217B	-	PNL-NP			4'-0"		8'-0"	FRM-00AL1	---	2"	2"	HARDWARE: DOOR OPENING			
L218	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L218A	-	PNL-N-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, KEYFOB; SOUND RATED DOOR (STC 50)			
L218B	-	PNL-NP			4'-0"		8'-0"	FRM-00AL1	---	2"	2"	HARDWARE: DOOR OPENING			
L219	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
L220	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L221	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
L223	-	PNL-N-WD			3'-6"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L226	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L227	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L228	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L229	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L230	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L231	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L232	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L233	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
L234	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L235	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L236	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
L248	-	PNL-FG-AL	PNL-FG-AL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M202	-	PNL-F-WD	PNL-F-WD		2'-10"	2'-10"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, CLOSER, HOLD OPEN			
M203	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M204	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M205	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M206	-	PNL-F-HM	PNL-F-HM		4'-6"	4'-6"	10'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
S1B	90MIN	PNL-N-WD			3'-0"		8'-0"	FRM-00HM1	DARK BRONZE	2"	2"	HARDWARE: KEY FOB, CLOSER			
S2B	90MIN	PNL-N-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
S3G	90MIN	PNL-F-HM			3'-0"		7'-0"	FRM-00HM1	PAINTED METAL	2"	2"				

ARCH- DOOR SCHEDULE

DOOR NUMBER	FIRE RTG (MIN)	DOOR PANELS: PANEL TYPE 1	PANEL TYPE 2	PANEL FINISH	PANEL DIMENSIONS: WIDTH PNL 1	WIDTH PNL 2	HEIGHT	DOOR FRAME: FRAME TYPE	FRAM FINISH	FACE DIMENSIONS: JAMB WIDTH	HEAD HEIGHT	HARDWARE COMMENTS	HDWE SET #	PANIC HDWE	SIGN TYPE
LEVEL 3 (+76.75')															
C302	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C303	45MIN	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C304	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C305	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
C306	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
M302	-	PNL-F-WD	PNL-F-WD		2'-10"	2'-10"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, CLOSER, HOLD OPEN			
M303	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M304	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M305	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M306A	-	PNL-FG-AL	PNL-FG-AL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: PANIC HARDWARE, CLOSER, ADA PUSH BUTTON			
M306B	-	PNL-FG-AL	PNL-FG-AL		3'-0"	3'-0"	8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, ADA PUSH BUTTON			
M306C	-	PNL-F-HM	PNL-F-HM		4'-6"	4'-6"	10'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER, HOLD OPEN			
M306D	-	PNL-F-HM			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER			
M307	-	PNL-F-WD			4'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
M308	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
M309	-	PNL-F-HM	PNL-F-HM		3'-0"	3'-0"	8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
M310	-	PNL-F-HM	PNL-F-HM		3'-0"	3'-0"	8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
M311	-	PNL-F-HM			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: TYPICAL LOCKSET			
M312	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
M313	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-01HM4	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
M314A	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN			
M314B	-	PNL-F-WD	PNL-F-WD		5'-0"	5'-0"	10'-0"	FRM-52HM6	PAINTED METAL	2"	2"	HARDWARE: BARNDOOR			
M315A	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN			
M315B	-	PNL-F-WD	PNL-F-WD		5'-0"	5'-0"	10'-0"	FRM-52HM6	PAINTED METAL	2"	2"	HARDWARE: BARNDOOR			
M316A	-	PNL-F-WD	PNL-F-WD		3'-0"	3'-0"	8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, TYPICAL LOCKSET, CLOSER, HOLD OPEN			
M316B	-	PNL-F-WD	PNL-F-WD		5'-0"	5'-0"	10'-0"	FRM-52HM6	PAINTED METAL	2"	2"	HARDWARE: BARNDOOR			
M316C	-	PNL-F-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: KEY FOB, CLOSER			
M316D	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
M317A	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
M317B	-	PNL-FG-AL			3'-0"		8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M318A	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET, HOLD OPEN			
M318B	-	PNL-FG-AL			3'-0"		8'-0"	FRM-00AL(CW)	CLEAR ANODIZED ALUMINUM	0"	0"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M319A	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET			
M319B	-	PNL-N-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M320A	-	PNL-N-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M320B	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M323	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: TYPICAL LOCKSET			
M325	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: TYPICAL LOCKSET			
M326	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: TYPICAL LOCKSET			
M327	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: TYPICAL LOCKSET			
M328	-	PNL-FG-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: TYPICAL LOCKSET, HOLD OPEN			
M329	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: TYPICAL LOCKSET			
M330	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL1	DARK BRONZE	2"	2"	HARDWARE: CLOSER, TYPICAL LOCKSET			
M336	-	PNL-F-WD			3'-0"		8'-0"	FRM-00AL(CW)	DARK BRONZE	0"	0"	HARDWARE: TYPICAL LOCKSET			
S1C	90MIN	PNL-N-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
S1D	90MIN	PNL-N-HM			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
S2C	90MIN	PNL-N-WD			3'-0"		8'-0"	FRM-00HM1	PAINTED METAL	2"	2"	HARDWARE: PANIC HARDWARE, KEY FOB, CLOSER			
S3H		PNL-FG-AL			3'-0"		8'-0"	FRM-00AL1	<By Category>	2"	2"				

ZIMMER DEVELOPMENT COMPANY

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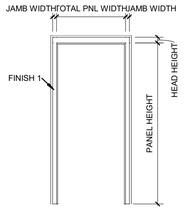
Project Grace

Grace Street
Wilmington, NC 28401

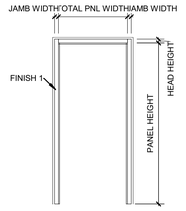
LS3P PROJECT: 7701-177600

| Δ | DATE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT FULL SIZE PLOTTING. PLOT SCALE.

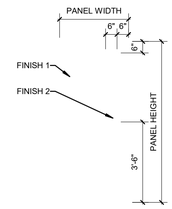


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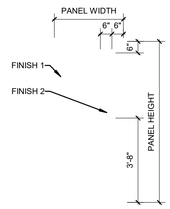


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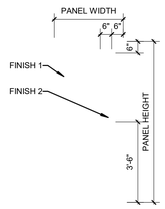
DOOR FRAME TYPES



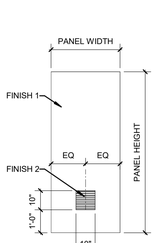
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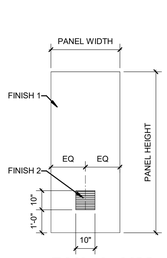
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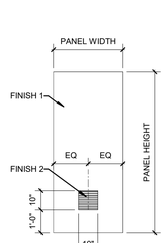
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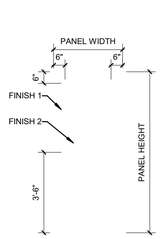
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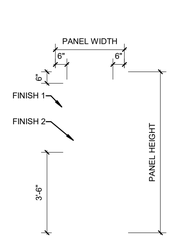
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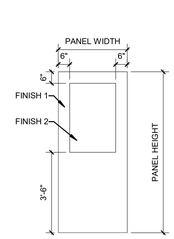
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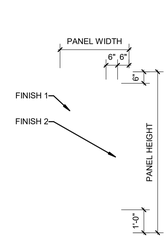
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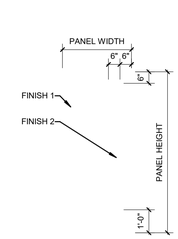
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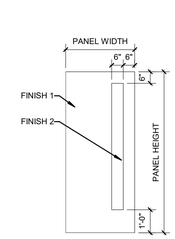
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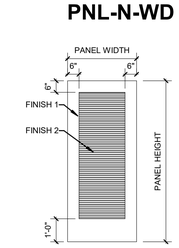
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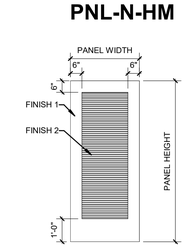
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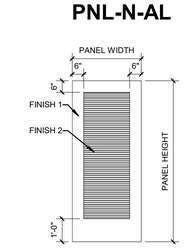
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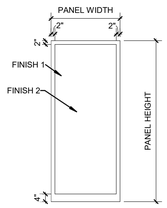
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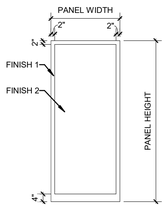
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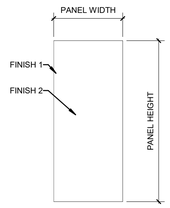
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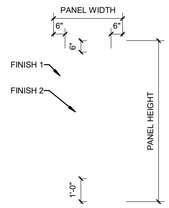
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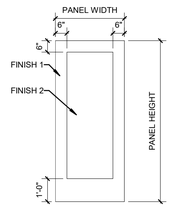
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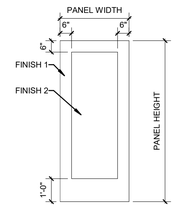
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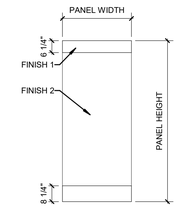
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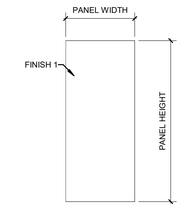
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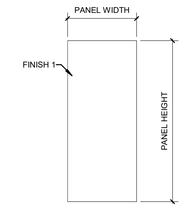
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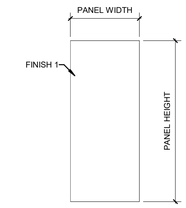
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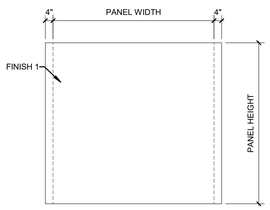
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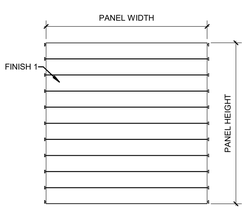
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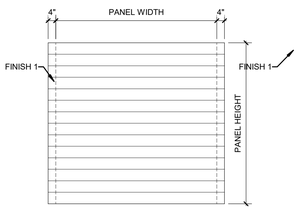
PNL-F-GL



PNL-F3-STL



PNL-F2-STL



PNL-F1-STL

DOOR PANEL TYPES

NEW HANOVER COUNTY • NORTH CAROLINA • ESTABLISHED 1729

ZIMMER DEVELOPMENT COMPANY

LS3P

101 NORTH THIRD STREET, SUITE 500
WILMINGTON, NORTH CAROLINA 28401
TEL. 910.790.9901 FAX. 910.790.3111
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
DOOR FRAME & PANEL TYPES

ORIG SUBMISSION: 2022.05.25

SHEET:
A-603

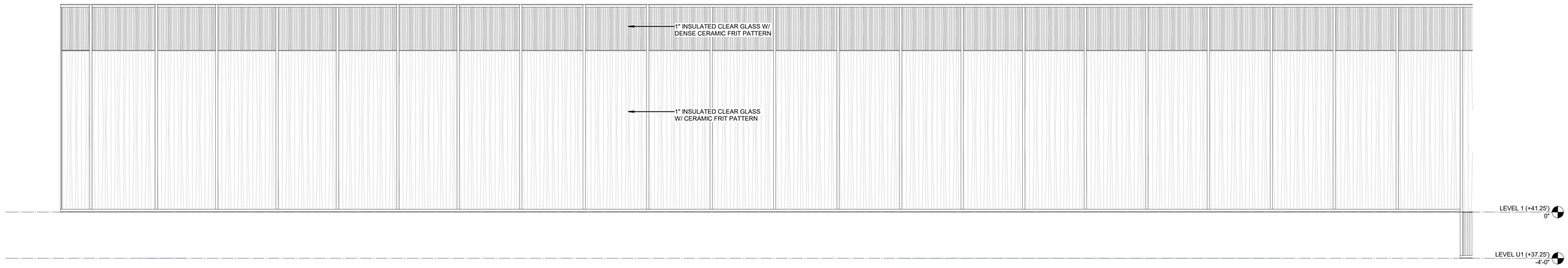
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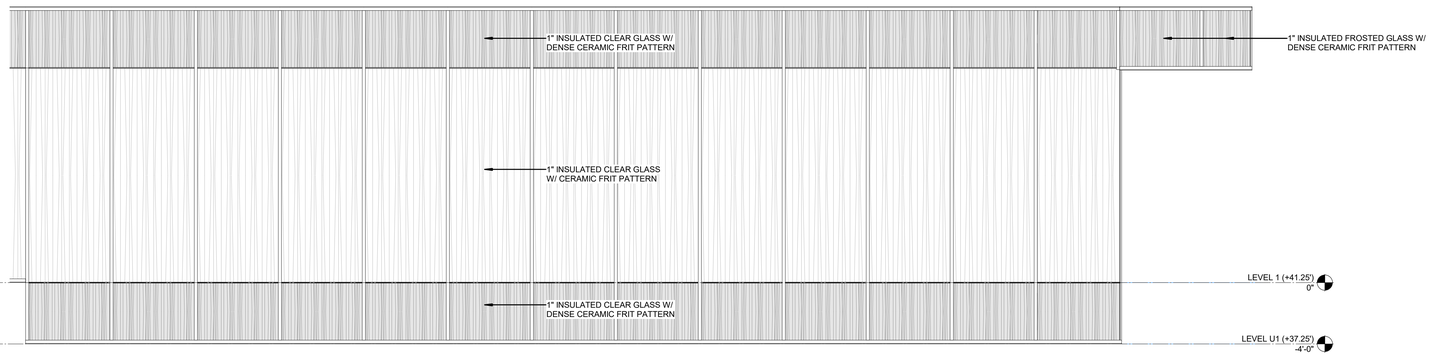
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A B C D E

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



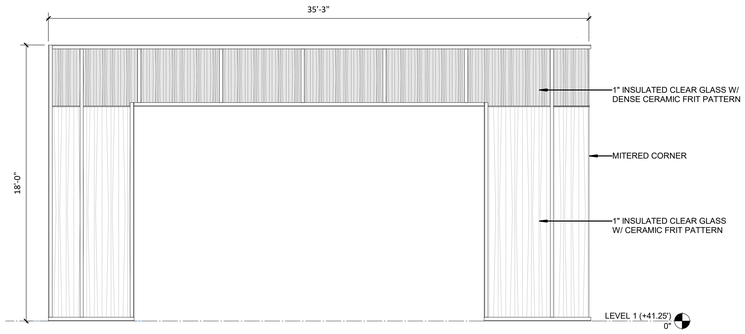
3.2 CW3.2
1/4" = 1'-0"



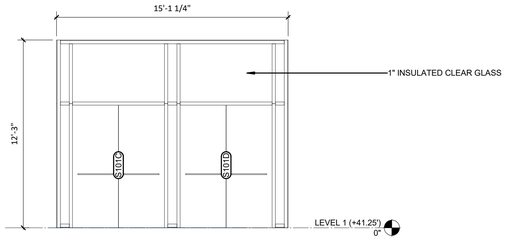
3.1 CW3.1
1/4" = 1'-0"



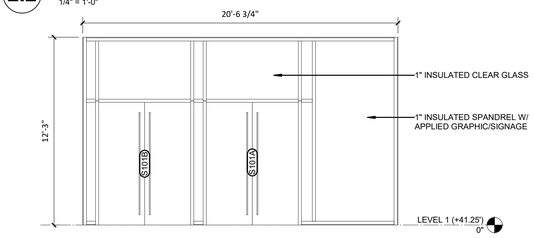
5 CW5
1/4" = 1'-0"



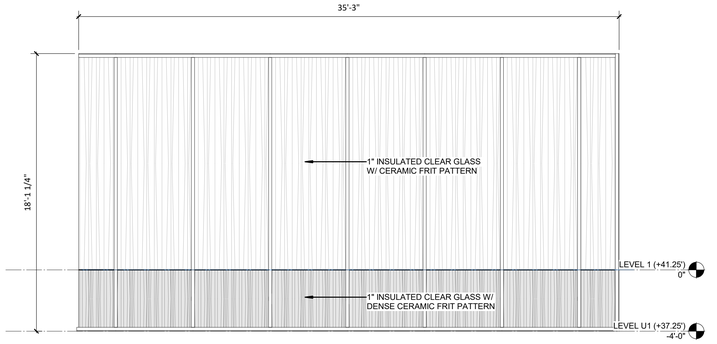
1 CW1
1/4" = 1'-0"



2.2 CW2.2
1/4" = 1'-0"



2.1 CW2.1
1/4" = 1'-0"



4 CW4
1/4" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
STOREFRONT / CURTAINWALL SCHEDULES

ORIG SUBMISSION: 2022.05.25

SHEET:
A-611

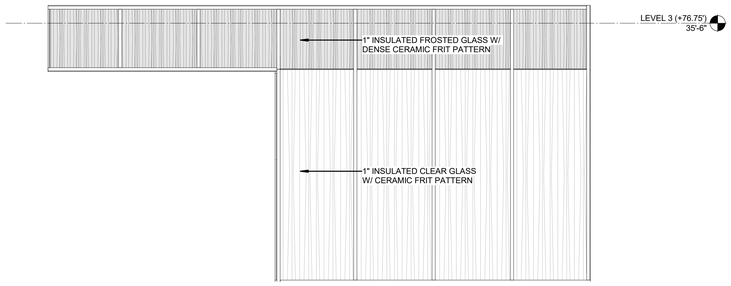
OWNER REVIEW SET

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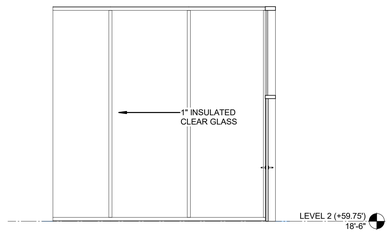
E D C B A

1 2 3 4 5 6

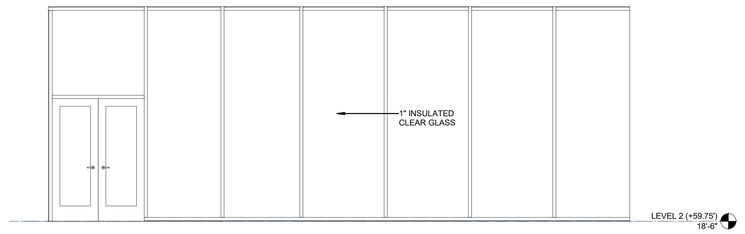
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



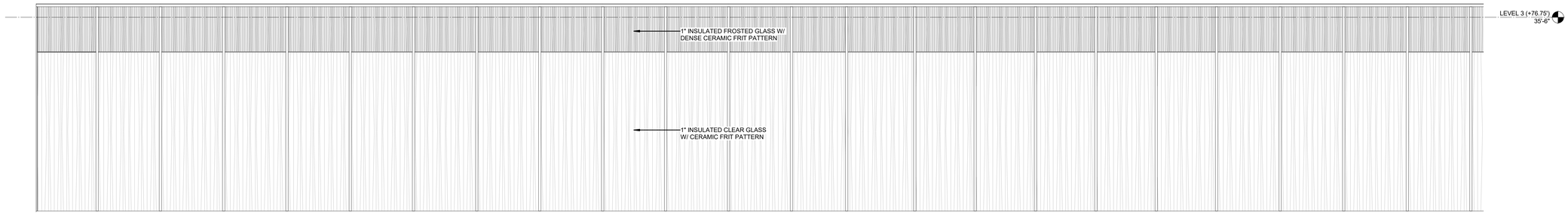
8 **CW8**
1/4" = 1'-0"



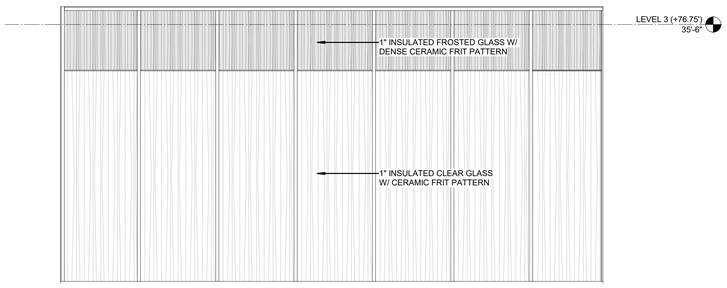
9 **CW9**
1/4" = 1'-0"



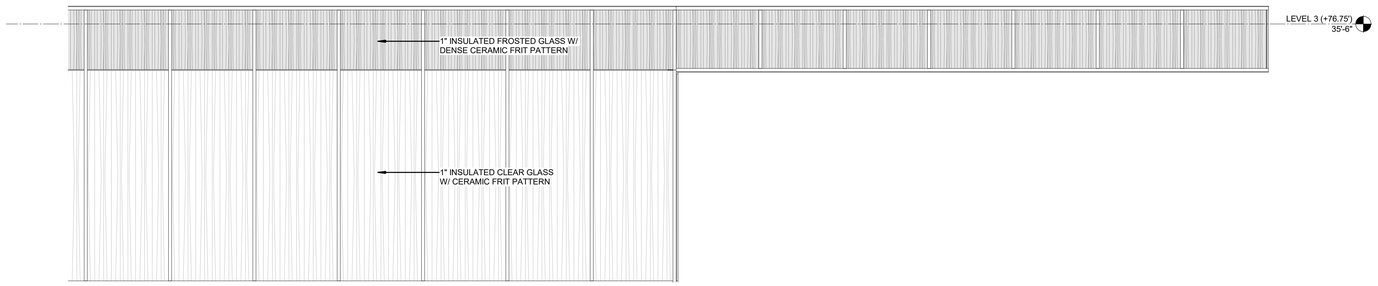
10 **CW10**
1/4" = 1'-0"



7.2 **CW7.2**
1/4" = 1'-0"



6 **CW6**
1/4" = 1'-0"



7.1 **CW7.1**
1/4" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
STOREFRONT / CURTAINWALL SCHEDULES

ORIG SUBMISSION: 2022.05.25

SHEET:
A-612

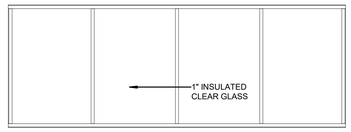
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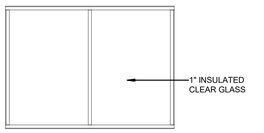
E D C B A

1 2 3 4 5 6

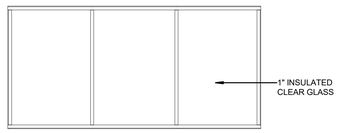
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



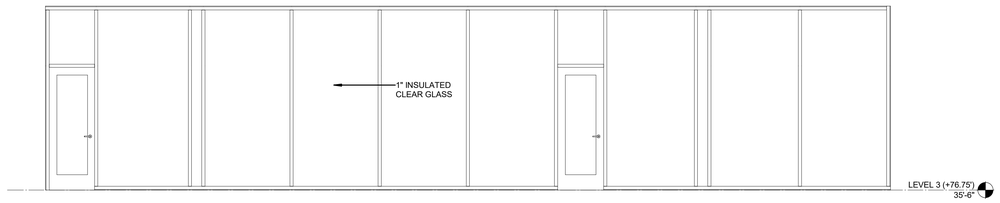
21 **CW21**
1/4" = 1'-0"



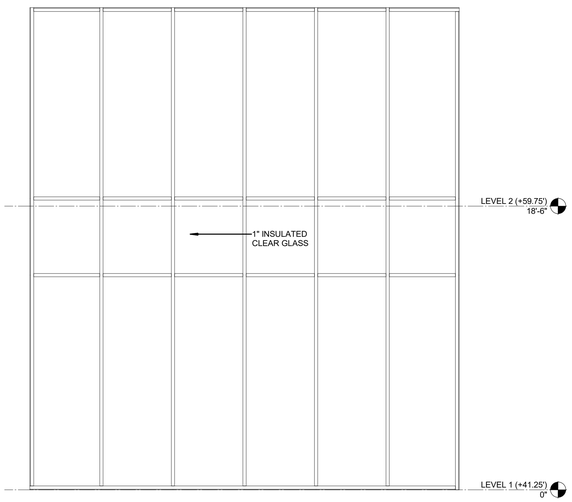
18 **CW18**
1/4" = 1'-0"



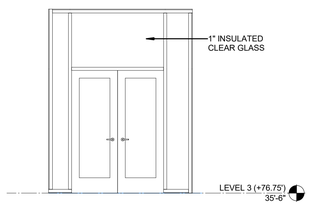
19 **CW19**
1/4" = 1'-0"



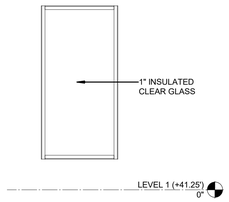
20 **CW20**
1/4" = 1'-0"



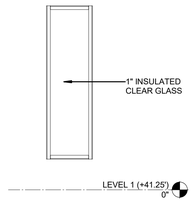
11 **CW11**
1/4" = 1'-0"



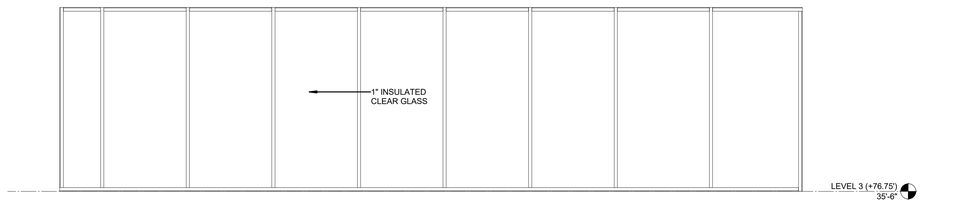
16 **CW16**
1/4" = 1'-0"



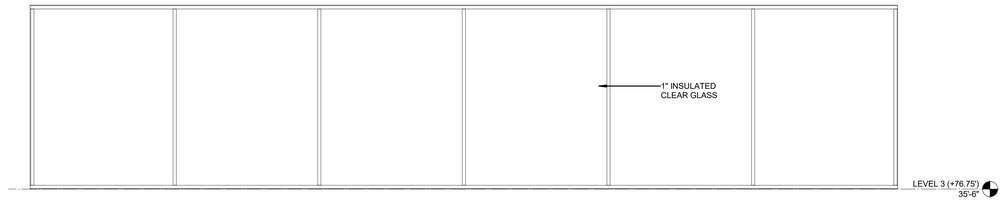
12 **CW12**
1/4" = 1'-0"



13 **CW13**
1/4" = 1'-0"



17 **CW17**
1/4" = 1'-0"



15 **CW15**
1/4" = 1'-0"

5/25/2022 5:32:46 PM

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
STOREFRONT / CURTAINWALL SCHEDULES

ORIG SUBMISSION: 2022.05.25

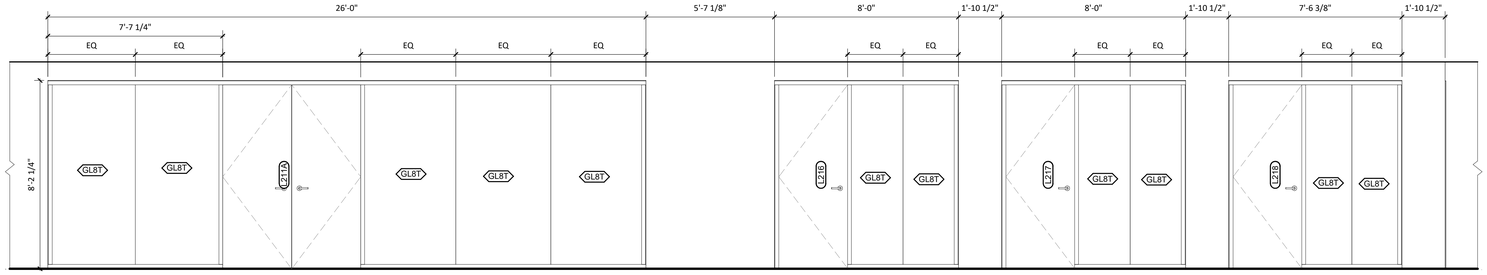
SHEET:
A-613

OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PLOT SIZE

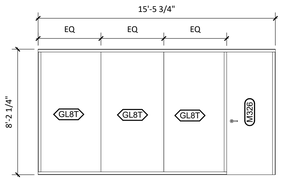
GLAZING TYPES LEGEND	
TYPE	DESCRIPTION
GL1	1" INSULATED GLAZING
GL3	1/4" NON-INSULATED GLAZING
GL8	1/2" NON-INSULATED GLAZING
GL8T	1/2" NON-INSULATED GLAZING - TEMPERED
GL72	

NOTE:
1. REF. FLOOR PLAN FOR DOOR NUMBERS U.N.O.
2. REF DOOR SCHEDULE FOR DOOR SIZE & MATERIAL
3. ALL INTERIOR STOREFRONT TO BE BUTT JOINTED UNLESS MULLION IS SHOWN OR U.N.O.



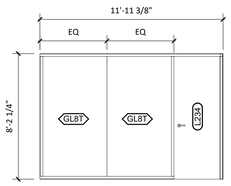
E1 INT. ELEV. - LOCAL HISTORY L211, STUDY RMS L216, L217, L218

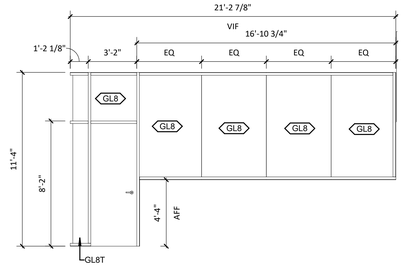
3/8" = 1'-0"

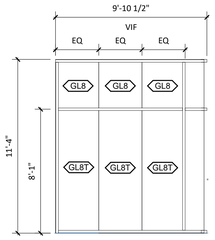


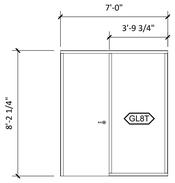
P INT. STOREFRONT - TYPE P

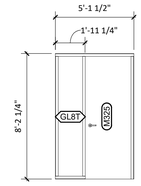
1/4" = 1'-0"











K INT. STOREFRONT - TYPE K

1/4" = 1'-0"

L INT. STOREFRONT - TYPE L

1/4" = 1'-0"

M INT. STOREFRONT - TYPE M

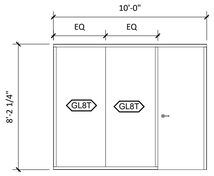
1/4" = 1'-0"

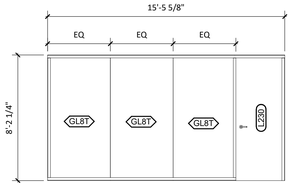
N INT. STOREFRONT - TYPE N

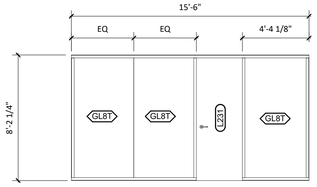
1/4" = 1'-0"

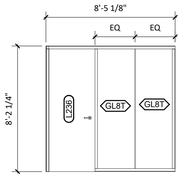
O INT. STOREFRONT - TYPE O

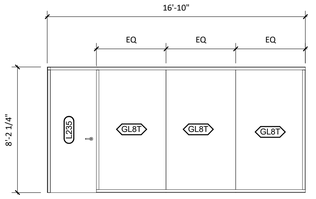
1/4" = 1'-0"











F INT. STOREFRONT - TYPE F

1/4" = 1'-0"

G INT. STOREFRONT - TYPE G

1/4" = 1'-0"

H INT. STOREFRONT - TYPE H

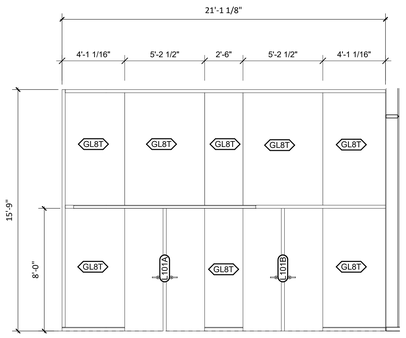
1/4" = 1'-0"

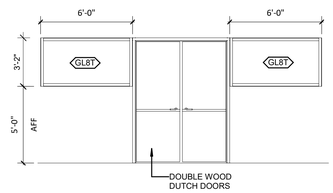
I INT. STOREFRONT - TYPE I

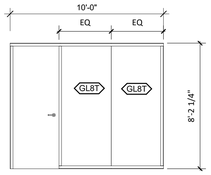
1/4" = 1'-0"

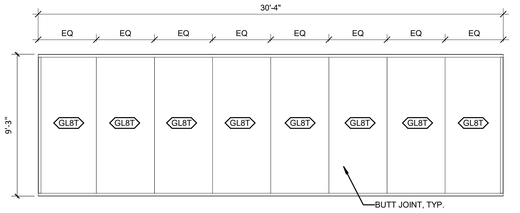
J INT. STOREFRONT - TYPE J

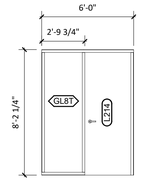
1/4" = 1'-0"











A INT. STOREFRONT - TYPE A

1/4" = 1'-0"

B INT. STOREFRONT - TYPE B

1/4" = 1'-0"

C INT. STOREFRONT - TYPE C

1/4" = 1'-0"

D INT. STOREFRONT - TYPE D

1/4" = 1'-0"

E INT. STOREFRONT - TYPE E

1/4" = 1'-0"

ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
INTERIOR STOREFRONT ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-710

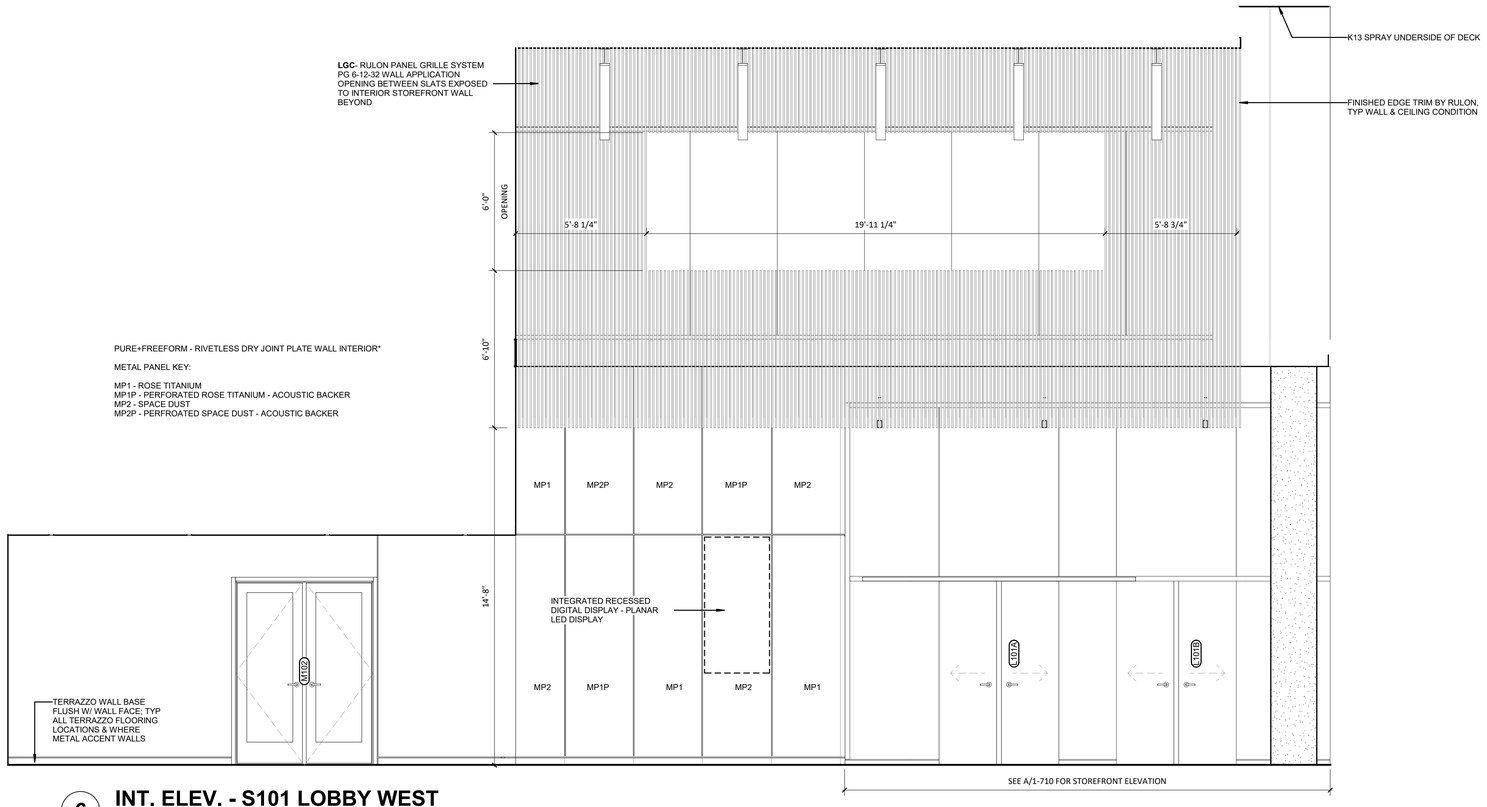
OWNER REVIEW SET

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E D C B A

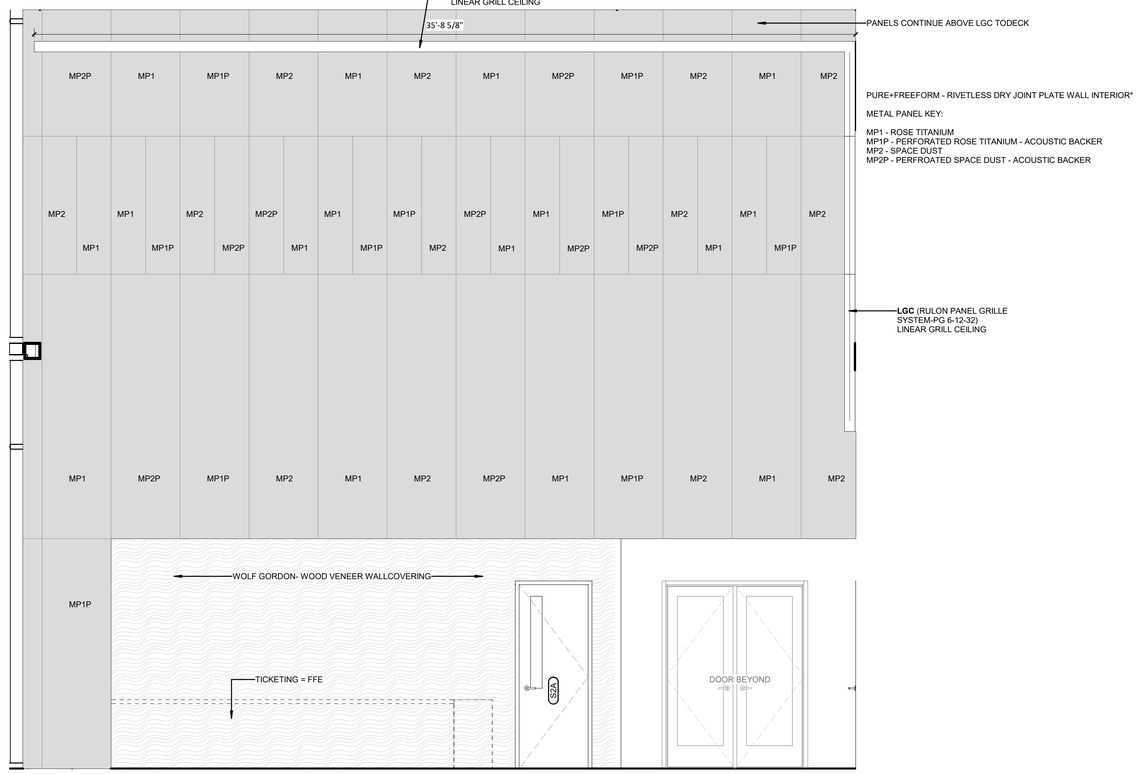
1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



6 INT. ELEV. - S101 LOBBY WEST

3/8" = 1'-0"



A1 INT. ELEV. - S101 LOBBY SOUTH

3/8" = 1'-0"

5/25/2022 5:33:01 PM

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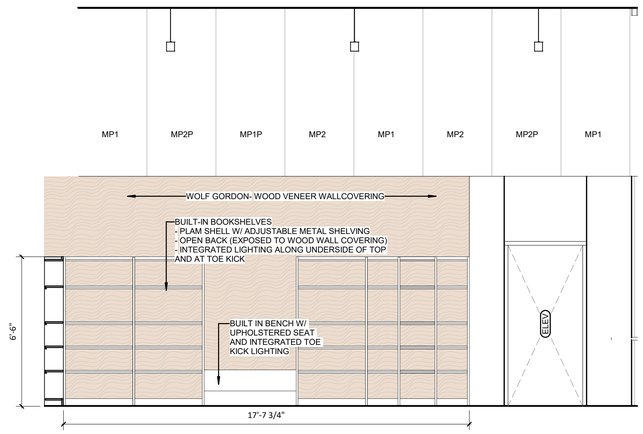
SHEET NAME:
INTERIOR ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
A-711

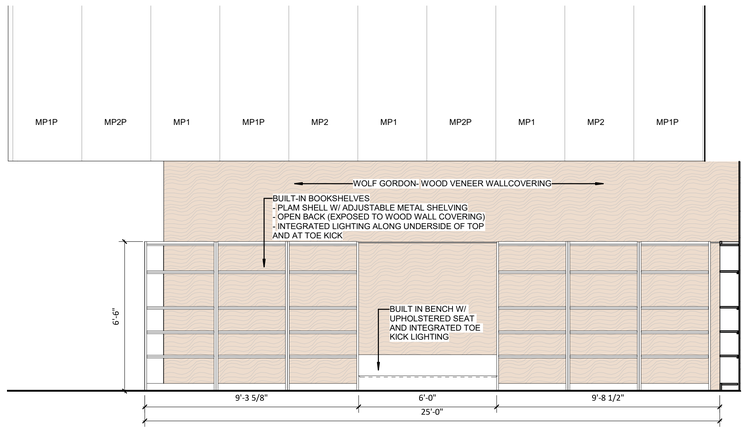
OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS EXCEPT 30X42.



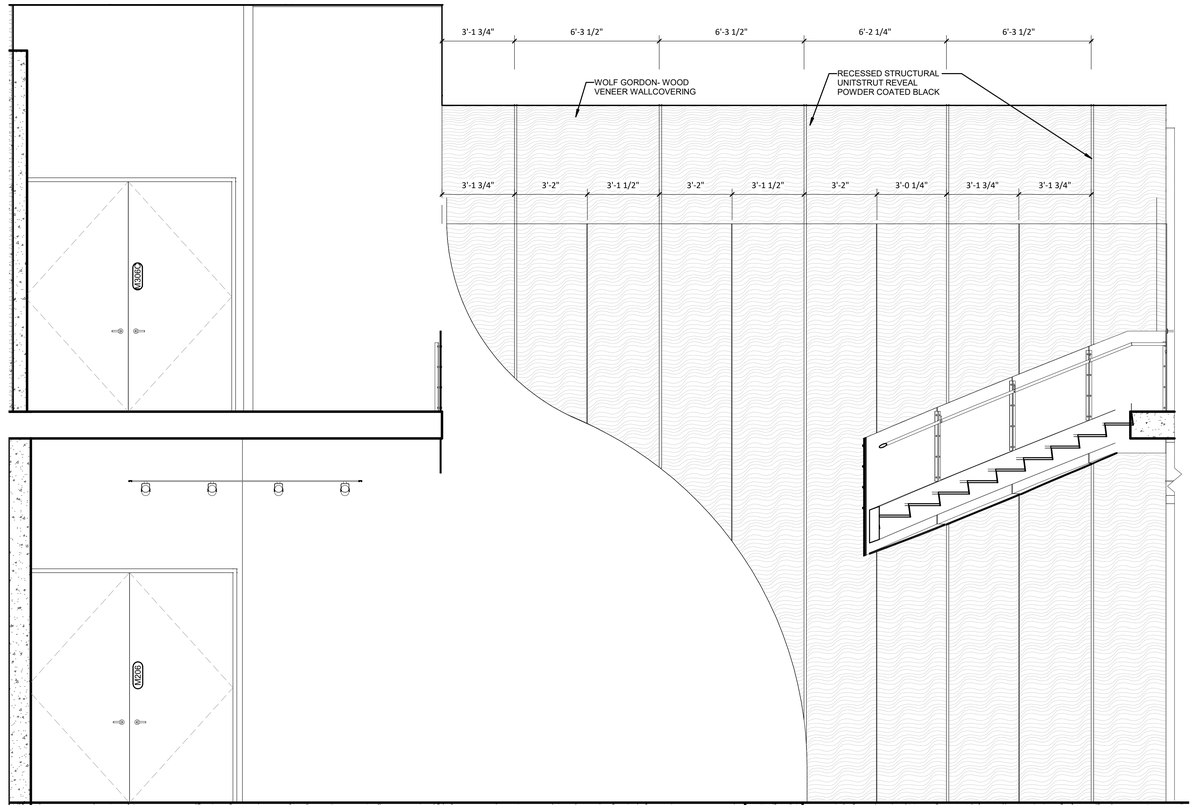
D1 INT. ELEV. - LARGE PRINT L110 WEST

3/8" = 1'-0"



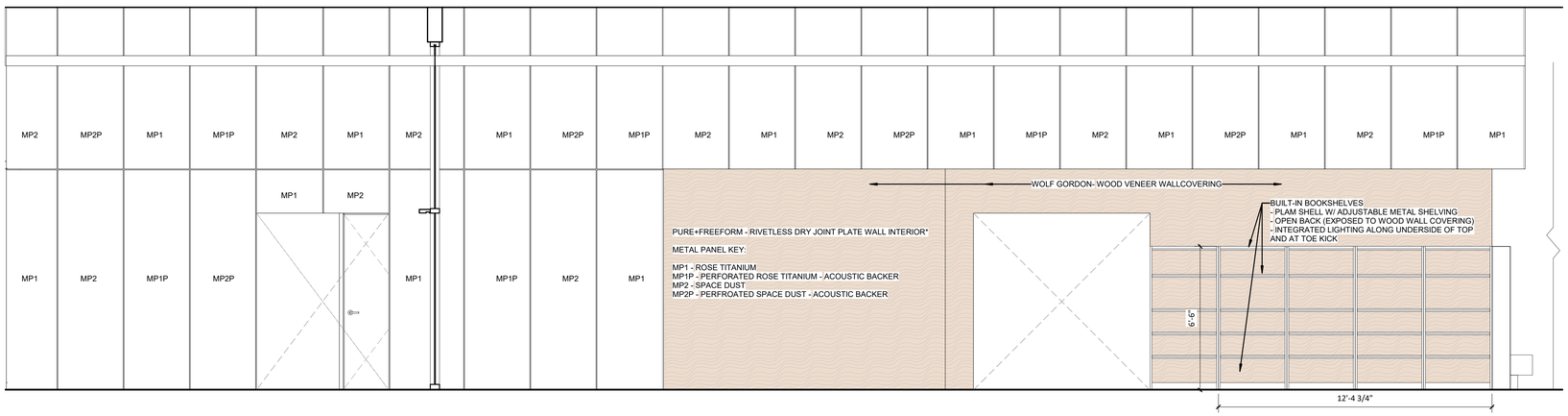
B1 INT. ELEV. - LARGE PRINT L110 EAST

3/8" = 1'-0"



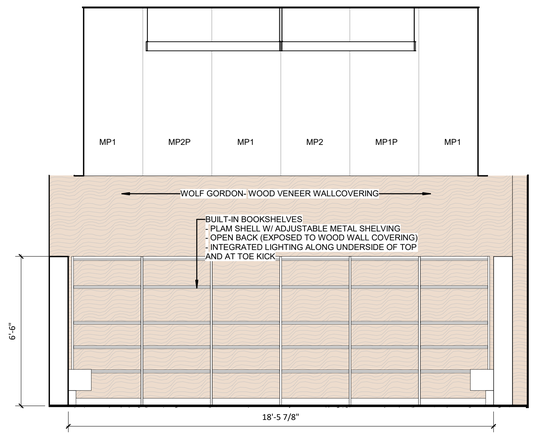
B3 INT. ELEV. - EVERY-BODY M206/ SCIENCE MATTERS M306 WEST

3/8" = 1'-0"



A1 INT. ELEV. - CIRCULATION L105 SOUTH

3/8" = 1'-0"



A2 INT. ELEV. - LARGE PRINT L110 SOUTH

3/8" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
INTERIOR ELEVATIONS

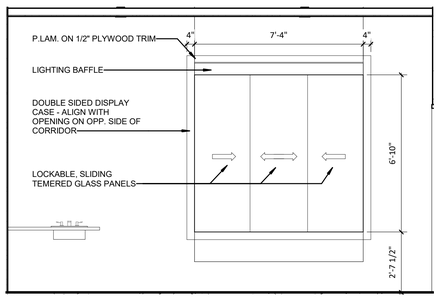
ORIG SUBMISSION: 2022.05.25

SHEET:
A-712

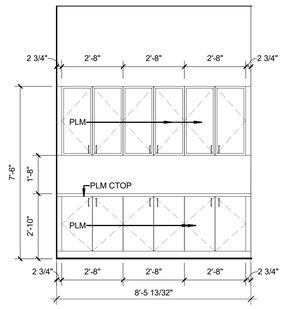
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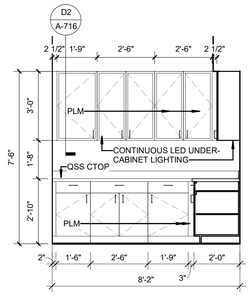
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



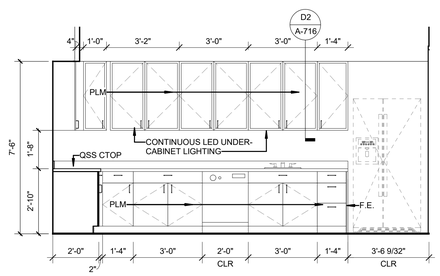
D1 INT. ELEV. - M317/M318 MULTI-PURPOSE
3/8" = 1'-0"



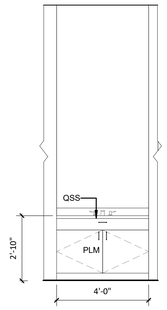
C1 INT. ELEV. - STAFF SUIT 321 NORTH
3/8" = 1'-0"



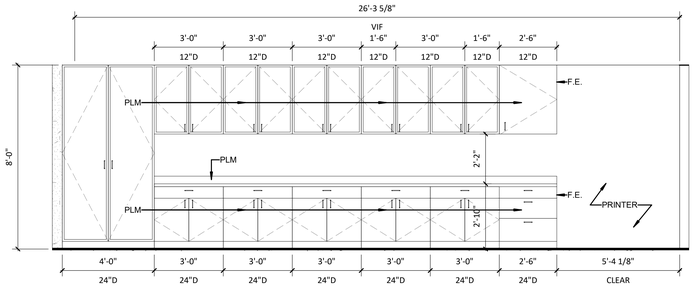
C2 INT. ELEV. - M320 KITCHEN WEST
3/8" = 1'-0"



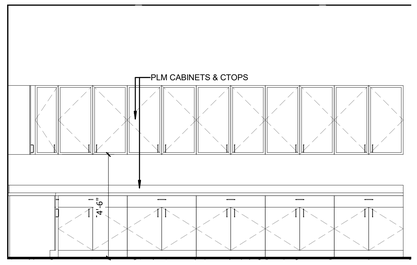
C3 INT. ELEV. - M320 KITCHEN NORTH
3/8" = 1'-0"



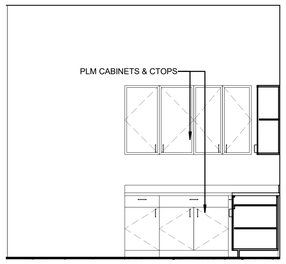
C5 INT. ELEV. - M317/ M318 MULTI-PURPOSE SOUTH
3/8" = 1'-0"



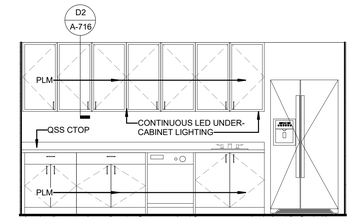
B1 INT. ELEV. - L221 LIBRARY STAFF SUITE NORTH
3/8" = 1'-0"



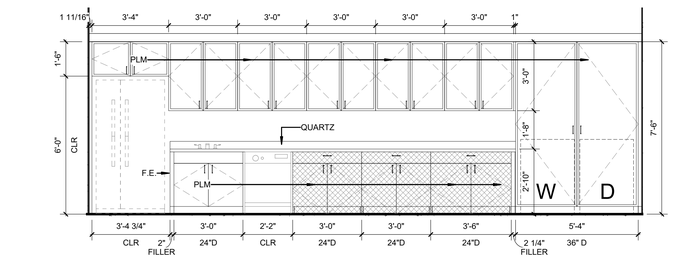
B2 INT ELEV. - L222 OUTREACH EAST
3/8" = 1'-0"



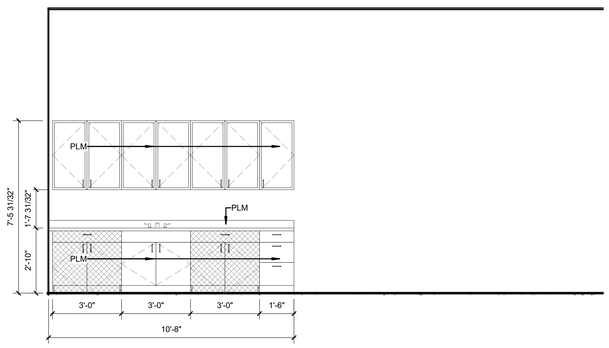
B4 INT ELEV. - L222 OUTREACH NORTH
3/8" = 1'-0"



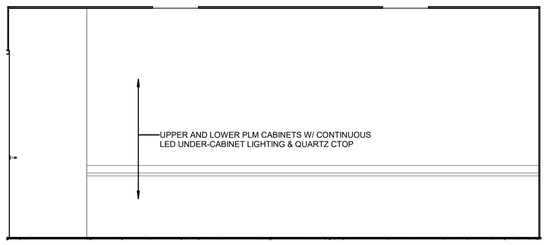
B5 INT. ELEV. - L219 BREAK RM
3/8" = 1'-0"



A1 INT. ELEV. - L117 PROGRAM ROOM EAST
3/8" = 1'-0"



A3 INT ELEV. - L109 TECH SERVICES WEST
3/8" = 1'-0"



A5 INT. ELEV. - S106 CATERING KITCHEN
3/8" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
INTERIOR MILLWORK ELEVATIONS

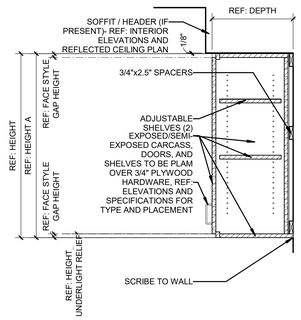
ORIG SUBMISSION: 2022.05.25

SHEET:
A-715

OWNER REVIEW SET

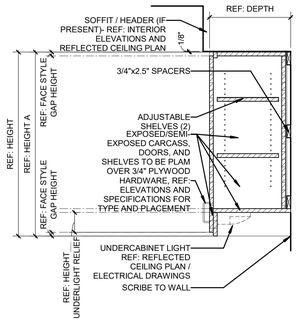
5/25/2022 5:33:28 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS EXCEPT: PLOT SIZE



U11, U12

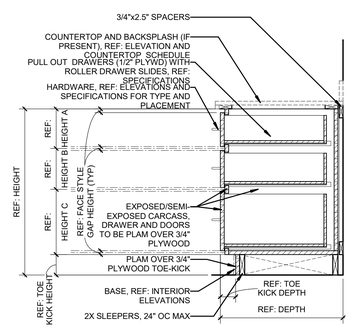
1" = 1'-0"



U21, U22

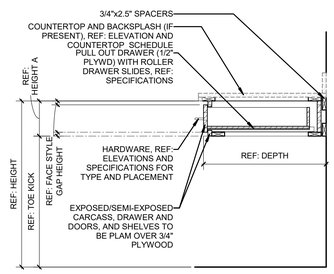
1" = 1'-0"

UPPER CABINETS



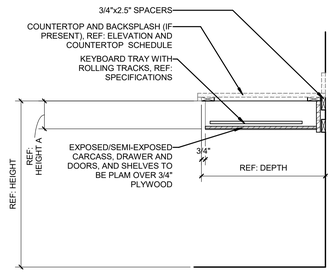
B43

1" = 1'-0"



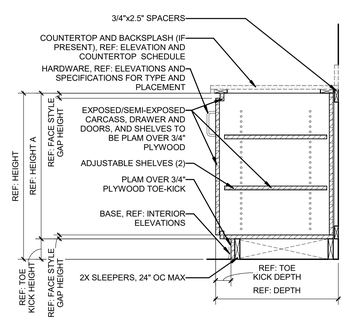
B71

1" = 1'-0"



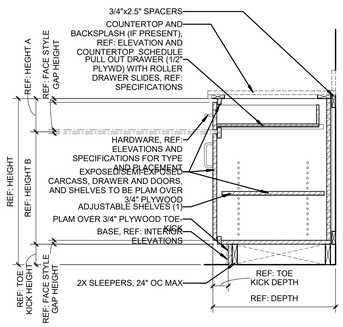
B71KT

1" = 1'-0"



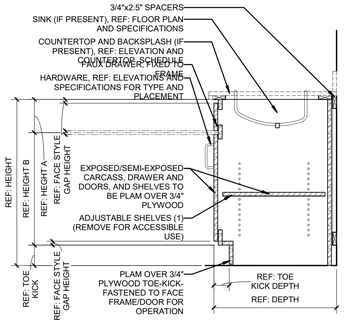
B11, B12

1" = 1'-0"



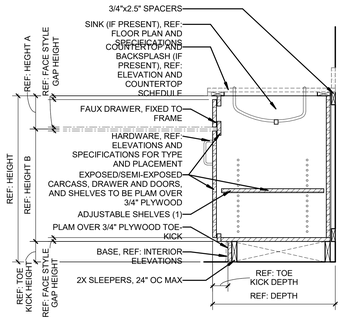
B21, B22, B23

1" = 1'-0"



B24HC

1" = 1'-0"



B24

1" = 1'-0"

BASE CABINETS

5/25/2022 5:33:30 PM

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Project Grace

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

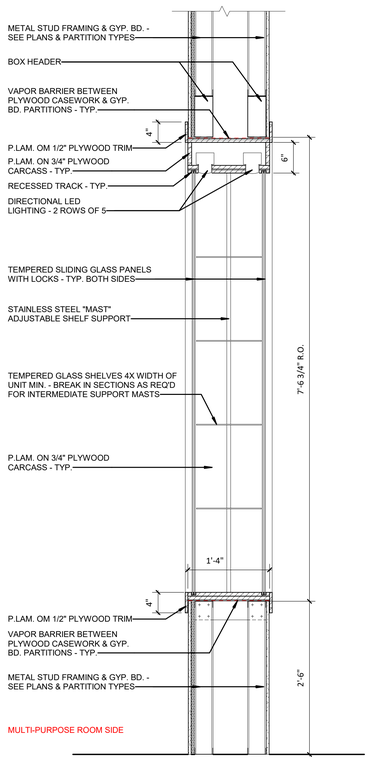
SHEET NAME:
INTERIOR SECTION DETAILS - TYP. MILLWORK

ORIG SUBMISSION: 2022.05.25

SHEET:
A-716

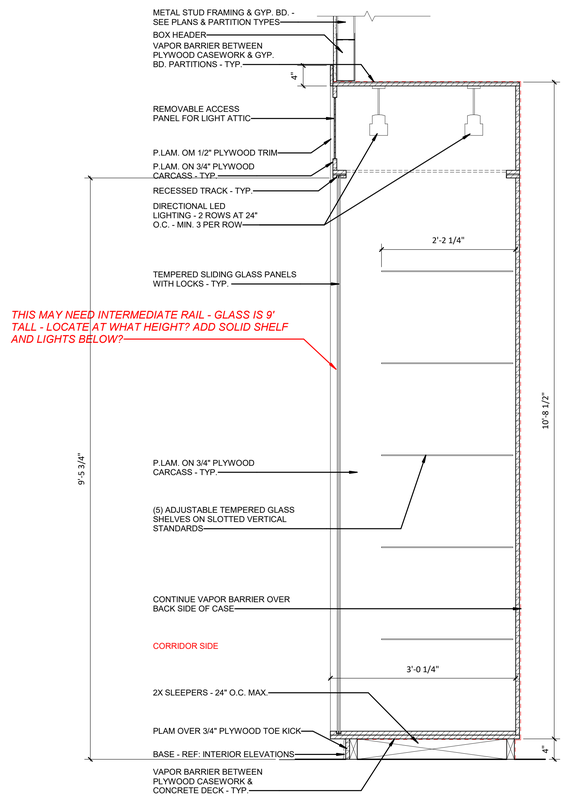
OWNER REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



A4 **DISPLAY CASE**

1" = 1'-0"



A5 **DISPLAY CASE**

1" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
INTERIOR SECTION DETAILS - SPECIALTY MILLWORK

ORIG SUBMISSION: 2022.05.25

SHEET:
A-717

OWNER REVIEW SET

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINALLY PLOTTED AT SIZE

E

D

C

B

A

1.0 CODES AND STANDARDS:

1.1 "2018 North Carolina State Building Code" and "International Building Code", 2015.

1.2 "Minimum Design Loads for Buildings and other Structures" SEI/ASCE 7-16.

1.3 "Building Code Requirements for Structural Concrete (ACI 318-14)" American Concrete Institute 2014.

1.4 "Manual of Standard Practice", Concrete Reinforcing Steel Institute, latest edition.

1.5 "Specification for Structural Steel Buildings (AISC 360-10)" American Institute of Steel Construction, 2011 - 14th Edition

1.6 "Structural Welding Code - Steel (AWS D1.1)" and "Structural Welding Code - Reinforcing Steel (AWS D1.4)", American Welding Society.

1.7 "Specification for the Design of Cold-Formed Steel Structural Members", American Iron and Steel Institute (AISI), S100-12.

1.8 "Building Code Requirements for Masonry Structures", ACI 530-13, ASCE 5-13, TMS 402-13.

1.9 "Standard Specifications for Joist Girders (JG-10)", "Standard Specifications for Open Web Steel Joists, K-Series (k-10)", "Standard Specifications for Long Span Steel Joist, LH Series and Deep Longspan Steel Joists, DLH Series (LH/DLH-1.1)", Steel Joist Institute

1.10 "Design Manual For Floor Decks and Roof Decks", Steel Deck Institute, latest edition.

2.0 DESIGN LOADS:
Project Located in: City of Wilmington, County of New Hanover, State of North Carolina.

2.1 Risk Category = III

2.2 Gravity Loads: (Reduced where allowed)

GRAVITY LIVE LOADS		
Location	Uniform (psf)	Concentrated (lbs) (Over 2.5"x2.5")
Roof Loads:		
Live Load	20	300
Floor Live Loads:		
Office	81	2000
Assembly	100	
Mechanical & Electrical Rooms	150	
Storage	125	
Stage Floors	150	
Reading Rooms	60	1000
Stack Rooms	150	1000
Corridors Above 1st Floor	80	1000
Museum Exhibit Areas	175	

2.3 Drifting Snow Loads per N.C. Building Code.

Pg = 10 psf
I = 1.1
Ce = 0.9
Ct = 1.0

2.4 Wind Loads per N.C. State Building Codes, 2018 edition (IBC 2015) & ASCE 7-16 (3-second gust)

Main Wind Force Resisting System:
Vult 154mph
Vasd 119.3mph
Exposure Category "C"

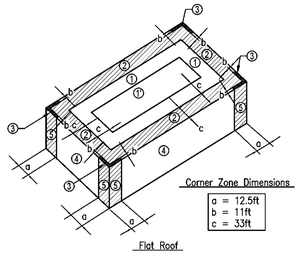
Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & -0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85

Calculated Wind Base Shear (Vult For MWFRS)
Vx = 613k Vy = 1278k

Components and Cladding:
Vult 154mph
Vasd 119.3mph
Exposure Category "C"

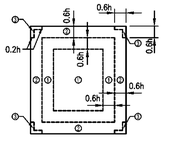
Components and Cladding Wind Pressure (psf)									
Walls	Area = 10ft²		Area = 20ft²		Area = 50ft²		Area = 100ft²		Area = 500ft²
Zone 4	69.2	-74.9	66.1	-71.9	61.9	-67.8	58.8	-64.7	58.8	-64.7
Zone 5	69.2	-92.5	66.1	-86.2	61.9	-78.0	58.8	-71.9	58.8	-71.9
Roof	Area = 10ft²		Area = 20ft²		Area = 50ft²		Area = 100ft²		Area = 500ft²
Zone 1	28.0	-110.2	26.3	-102.9	24.1	-93.3	22.3	-86.1	22.3	-86.1
Zone 1'	28.0	-63.3	26.3	-63.3	24.1	-63.3	22.3	-63.3	22.3	-63.3
Zone 2	28.0	-145.8	26.3	-135.8	24.1	-123.5	22.3	-114.3	22.3	-114.3
Zone 3	28.0	-198.0	26.3	-179.4	24.1	-154.7	22.3	-135.8	22.3	-135.8

Notes:
1. Areas noted are effective wind areas as per ASCE 7-16, 26.2 definitions.
2. See figures below for Zone locations.
3. Plus and minus signs signify pressures acting toward and away from surfaces, respectively.
4. Design pressures shown in table are strength design wind pressures. Allowable stress design wind pressures may be calculated by factoring the pressures by 0.6.
5. Design pressures for effective wind areas between those noted in schedule may be interpolated.
6. Tributary area = greater of LxW or Lx1/3.
7. Deflections may be calculated based on 42% of these loads.



Corner Zone Dimensions

a = 12.5ft
b = 11ft
c = 33ft



COMPONENT & CLADDING ROOF PRESSURES

Flat Roof
h = 55ft

2.5 Seismic Loads per 2018 North Carolina State Building Code (IBC 2015) & ASCE 7-16

Risk Category = III
Site class = "D" (Per Geotechnical Report)
Spectral Response Coefficients:
SS = 0.157g
S1 = 0.068g
SDS = 0.167g
SD1 = 0.11g
Cs = 0.0418

Seismic Design Category = "B"
Seismic Importance Factor = 1.25
Basic Seismic - Force - Resisting System
Building Frame System - Ordinary Reinforced Concrete Shear Walls

RX=RY=5.0, QX=QY=2.5, CDX=CDY=4.5
Design Base Shear Vx = k Wx = k
Building Height Limit = 160'
Analysis Procedure - 12.8.1 ASCE 7-16
Equivalent Lateral Force Procedure

2.6 Guardrail designed per North Carolina State Building Code, Section 1607.8

Guardrail:
Uniform load = 50 plf, any direction - per 1607.8.1
Concentrated load = 200 lbs, any direction - per 1607.8.1.1
Intermediate Rail: (all those except handrail) per 1607.8.1.2

2.7 Flood Loads:
Project is not located in a flood zone.

3.0 FOUNDATIONS:

3.1 Foundation design is based on geotechnical report #22.31167.A1 by ECS Southeast, LLP Wilmington, NC dated April 1, 2022. This report is available in the project manual. The recommendations contained in this report are herein made part of the requirements of these contract documents.

3.2 Foundation design is based on 16" diameter auger cast piles with an allowable compressive capacity of 90 tons, allowable uplift capacity of 17 tons and an allowable lateral capacity of 10 tons. The owner shall contract a Geotechnical Engineer to verify pile capacities and to set drilling criteria for installation. Pile load tests will be required as outlined in the Geotechnical Report. See sheet S-301 for Auger Cast Pile Specifications.

3.3 Top of footing (T/FTG) elevations are shown on the drawings or are to be determined by the Contractor in the field in accordance with the guidelines set forth in the drawings.

3.4 Bottom of exterior footings, grade beams and walls shall bear at a minimum depth of 1'-0" below final grade for frost protection.

3.5 Testing and Inspection:
a. All areas to have slabs on grade shall be proof rolled in accordance with and under observation of the Geotechnical Engineer and approved prior to preparation for concrete placement.
b. All foundation bearing strata shall be inspected and approved by the Geotechnical Engineer prior to any concrete placement.
c. Geotechnical Engineer shall be the sole judge as to suitability of all foundation and/or slab bearing strata.
d. Footing bearing elevations shall be adjusted in the field as required to meet the design bearing pressures by additional excavation or compaction and/or backfilling or by other means acceptable to the Geotechnical Engineer.

3.6 Undercutting to remove existing fill beneath footings and slab shall be performed at the direction of the Geotechnical Engineer.

3.7 Engineered Fill: All fill material shall be selected in accordance with the Geotechnical Report Material shall be a clean, low plastic soil with a plasticity index less than 30 (less than 15 is preferred), liquid limit less than 50, and unit weight of 120 pcf (+ 5 pcf)

3.8 Compaction: All fill shall be placed in loose lifts not exceeding 8 inches in thickness and compacted to a minimum of 96 percent Standard Proctor (ASTM D-698) except that the top 12 inches shall be compacted to a minimum of 98 percent Standard Proctor. Moisture shall be controlled to within 3 percent above or below optimum content.

3.9 Remove all topsoil and organic materials. The stripping should extend at least 10' beyond the proposed construction limits.

3.10 Contractor shall review all construction considerations as outlined in the Geotechnical report and bid accordingly.

4.0 CONCRETE:

4.1 Concrete Strength:
All concrete shall be in accordance with the American Concrete Institute (ACI) 301 and 318.

4.2 Concrete shall have a 28 day compressive strength and density as follows:
a. Footings, Pile Caps, Grade Beams, and Interior Slab-on-grade.....3,000psi, Density = ±145pcf
b. Elevated Slab, Columns and Walls.....5,000psi, Density = ±145pcf
c. Exterior Slab on Grade.....4,000psi, Density = ±145pcf
d. CMU Grout Fill.....3,000psi pea gravel mix Density = ±145pcf, Slump 8"-11" or grout per Structural Masonry Notes, this sheet.

4.3 Concrete Mix Designs:
a. Submittals: Submit written reports of each proposed concrete mix not less than 15 days prior to the start of work.
b. Mix designs, including water, cement ratios and slumps, shall be prepared in accordance with ACI 301-05, Section 4, Cement shall conform to ASTM C 150 Type 1 or at contractor's option, ASTM C 595 Type IP where fly ash is permitted. Normal weight aggregate shall conform to ASTM C 33 and light weight aggregate shall conform to ASTM C 330. No admixtures containing calcium chloride shall be permitted in any concrete.
c. Aggregate size shall be #67 stone for supported slabs or other formed concrete elements; #57 stone for slabs on grade and footings or other concrete elements formed from and poured against earth; #89 stone for masonry grout.
d. Water reducing admixture shall be used in all concrete.
e. Air entraining admixture in accordance with ACI 301 shall be used in all concrete exposed freezing and thawing during construction or service conditions.
f. Concrete subjected to freezing/thawing shall have a maximum water/cement ratio of 0.45 and shall contain the amount of air entraining agent specified in ACI 301-05 Section 4.

4.4 Curing:
See specifications for curing method options and apply within two (2) hours after completion of finishing to all concrete flatwork and walls, U.N.O., other than footings and grade beams.

4.5 Use a non-corrosive, non-chloride accelerating admixture in concrete exposed to temperatures below 40 degrees. Uniformly heat the water and aggregates to a temperature of not less than 50 degrees. Place and cure concrete in accordance with ACI 306.

4.6 When hot weather conditions exist, place and cure concrete in accordance with ACI 301. Cool ingredients before mixing to maintain concrete temp. at time of placement below 90 degrees.

4.7 Reinforcing in all abutting concrete, including footings shall be continuous through or around all corners or intersections. Dowels or splices shall be equal in size and spacing to the reinforcing in the abutting members.

4.8 Refer to architectural drawings for door and window openings, drips, reglets, washes, masonry anchors, brick ledge elevations, slab depressions and miscellaneous embedded plates, bolts, anchors, angles, etc.

4.9 Refer to plumbing, mechanical and electrical drawings for underfloor, perimeter and other drains and for sleeves, outlet boxes, conduit, anchors, etc. The various trades are responsible for their items.

4.10 Base plates, anchor rods, support angles and other steel exposed to earth or granular fill shall be covered with a minimum of 3" of concrete.

4.11 Fill slabs, not shown on the structural drawings, shall be reinforced with a minimum of 3.0 lbs/yd³ of synthetic macro-fibers - see plan notes, unless noted otherwise on other drawings.

alt 4.11 Fill slabs, not shown on the structural drawings and all exterior slabs to be broom finished, shall be reinforced with a minimum of 6 x 6 x W2.0 x W2.0 WWM unless noted otherwise on other drawings.

4.12 Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values equal to ⅔ of the overall flatness and levelness values.
b. The composite F(F) and F(L) numbers shall be measured and reported within 72 hours after completion of slab concrete finishing operations and before removal of any supporting shores.

4.13 Non-shrink grout shall be pre-mixed, non-corrosive, non-metallic, non-staining containing silica sands, Portland cement, shrinkage compensating and water reducing agents. Product shall only require the addition of water. Minimum compressive strength shall be 2500 psi after one day and 7000 psi after 28 days. Grout shall be free of gas producing or air releasing and oxidizing agents and contain no corrosive iron, aluminum or gypsum.

4.14 Provide concrete grout - not mortar - for reinforced masonry lintel and bond beams where indicated on drawing or as scheduled.

4.15 Tolerance for anchor rods and other embedded items shall be per the AISC Code of Standard Practice Section 7.5.

4.16 Unless otherwise shown in the architectural drawings, provide 3/4-inch chamfers at all column, wall, slab or beam edges that are exposed to view in the finished structure.

4.17 Concrete cover for cast-in-place concrete reinforcement:
Concrete cast against & permanently exposed to earth:.....3 inches
Concrete exposed to earth or weather:
No. 6 through No. 18 Bars:.....2 inches
No. 5 Bar and smaller:.....1½" inches
Concrete not exposed to weather or in contact with ground:
Slabs, Walls, Joists:
No. 11 Bar and smaller:.....¾" inches
Beams, Columns:
Primary Reinforcement, Ties, Stirrups:.....1½" inches

5.0 REINFORCING STEEL:

5.1 Reinforcing shall be domestic new billet steel conforming to ASTM A615, Grade 60 or 60S including stirrups and ties, except that reinforcing which is required to be welded shall conform to ASTM A706.

5.2 Field bending of concrete reinforcing steel is not permitted.

5.3 Welded wire mat and fabric shall conform to ASTM A184 and A185 respectively and shall be provided in flat sheets. Welded wire mat/fabric shall be lapped 0'-6" at all splices.

5.4 Bar Splices:

	f'c = 3,000psi		f'c = 4,000psi		f'c = 5,000psi	
Bar Size	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)
#3	17	22	15	19	13	17
#4	22	29	19	25	17	23
#5	28	36	24	31	22	28
#6	33	43	29	37	26	34
#7	48	63	42	54	38	49
#8	55	72	48	62	43	56

1. Values are based on normal weight concrete.
2. Ld = minimum embed of rebar
3. Class "B" lap splice refers to minimum distance bars must be lapped for a full tension splice.

6.0 UNBONDED SINGLE STRAND TENDONS (POST-TENSIONING CABLES)

6.1 Post-Tensioning supplier shall design all anchorage zones per the current ACI code guidelines. Post-Tensioning supplier shall work with Woods Engineering, PE on all value engineering items.

6.2 Prestressing steel used is unbonded single strand post-tensioning tendons shall conform to the requirements set forth in the Specifications for Unbonded Single Strand Tendons (Latest Edition) published by the Post-Tensioning Institute (PTI). Strands shall be per ASTM A 416/A 416M, Grade 270 - low relaxation type, 0.5" diameter, strand area is 0.153 sq. in.

6.3 Relaxation losses for low-relaxation material shall be based on relaxation tests of representative samples for a period of not less than 1000 h, tested at 68 F ± 3.5 F (20 C ± 2 C) and stressed initially to not less than 70% of specified minimum breaking strength of strand. Tests shall be in accordance with ASTM A 416/A 416M and ASTM E 328.

6.4 Each strand pack or coil shall be clearly identified as to grade, coil and heat number. Identification shall be included in the fabrication process documentation.

6.5 Material shall be packaged in a manner that prevents physical damage to the strand during transportation and protects the material from deleterious corrosion during transit and storage. Any damage to strand sheathing need to be repaired w/ approved tape before concrete placement.

6.6 The Contractor shall submit installation drawings to the Engineer of Record a minimum four (4) weeks prior to scheduled installation of the tendons. Installation drawings shall show the tendon layout, all anchorage locations, and tendon supports with all details necessary to ensure proper installation. The review of the installation drawings by the Engineer of Records is only for general compliance with the intend of the structural drawings and specifications. In addition the Contractor shall provide long term calculations and anticipated field elongations at stressing along with field procedure for measuring elongations. Installation plans and calculations shall be sealed by a qualified Professional Engineer registered in the state of Tennessee. Electronic PDF format submittals are acceptable as long as they are signed and sealed.

6.7 Prestressing tendons shall be firmly supported at intervals not exceeding 4 ft. Tendons shall be attached to the supporting chairs or reinforcement w/out damaging the sheathing. Placing tolerances shall be in accordance with this section and ACI 117 (Latest edition), whichever is the most restrictive, unless stated otherwise in the Project specifications.

6.8 Vertical tolerances for tendon location shall not be more than ± 1/4" for concrete members with thickness equal or less than 8"; ± 3/8" for concrete members with thickness larger than 8" but less than 2ft; and ± 1/2" for concrete members thicker than 2ft. Access shall be provided to stressing ends.

6.9 All dimensions showing the vertical location of the prestressing tendons are to the center of gravity of the tendons (CGS) unless noted otherwise.

6.10 Tendon placement shall be per this specification and as otherwise directed in the project Construction Documents. In two-way slab construction at least two (2) tendons shall be placed directly over the supporting columns (within the column cage) in each orthogonal direction per ACI 318 latest edition.

6.11 Lateral deviations in tendon location shall be permitted if necessary to avoid openings, ducts, chases, and inserts. Such deviations shall have a radius of curvature of not less than 480 strand diameters. As a minimum #3 hairpin reinforcement @ max. 12" o.c. shall be provided for all tighter lateral curvatures.

6.12 Opening, penetrations and insert locations shall be determined to the fullest extend possible prior to tendon layout and concrete placements. No changes shall be made in the field without prior written approval of the Engineer of Record. Core drilling is not allowed without prior written approval of the Engineer of Record.

6.13 Project is located in aggressive environment therefore post-tensioned system shall be of encapsulated type.

6.14 All exposed components shall be fully protected within 7 days after their exposure during installation. In corrosive environment this requirement shall be reduced to 1 day. Use temporary corrosion inhibitor on all exposed strand tails & anchors if tendons are not patched within 7 days of final stressing.

6.15 Post-tensioning system is designed and based on initial concrete strength at transfer (stressing) equal to 75% of the 28-day concrete strength for the slabs.

6.16 General stressing sequence for two-way slabs shall be as follows:
a. Stress first all continuous distributed (uniform) tendons
b. Stress second all continuous banded tendons
c. Stress added distributed (uniforms) tendons
d. Stress added banded tendons

6.17 Contractor shall furnish to Engineer of Record calibration charts for every jack/gage/pump set to be used on project for stressing prior to any post-tensioning operations. Each jack shall be used only with the gage and pump for which it was calibrated.

6.18 Elongation measurements shall be made at each stressing location and submitted to the Engineer of Record for approval within max. 7 days of stressing. Measured elongations shall be within ± 7% from calculated elongations as per ACI 318-08 section 18.20. Elongations at construction joint need to be approved by Engineer or Record before pouring the remaining slab. Discrepancies exceeding ± 7% shall be resolved by the post-tensioning installer/supplier to the satisfaction of the Engineer of Record.

6.19 Upon elongation approval Contractor shall cut all strand tails, seal and patch all anchors within 1 business day. If delay is envisioned weather protection shall be installed on all anchors of uncut tendons.

7.0 STRUCTURAL MASONRY:

7.1 All structural masonry shall conform to ACI 530 standards as appropriate to the material.

7.2 Concrete Masonry Units (CMU):
a. Units shall be lightweight cellular units conforming to ASTM C 90, Grade N-2. Concrete masonry net area unit strength shall be no less than 2,000psi in accordance with ASTM C 140, with a unit weight not exceeding 95 pcf.
b. Design compressive strength of CMU (fm) = 2,000psi.

7.3 Mortar shall conform to ASTM C 270. Mortar shall be type "S" and shall conform to the ASTM C270 proportion requirements.

7.4 Neither type "N" mortar nor masonry cement shall be used as part of the lateral force resisting system.

7.5 Grouting:
a. Grout shall conform to ASTM C476 as specified by proportion. Masonry grout shall conform to the ASTM proportion requirements for coarse grout with a slump of 8 to 11 inches. Contractor may substitute grout with pea gravel concrete masonry fill, see note 4.2 this sheet.
b. All bond beams shall be filled with grout and reinforced as indicated on the drawings (details or schedules). Mortar fill is not permitted.
c. All masonry wall cells or cavities indicated as reinforced shall be grouted for the full height of the wall, unless specifically noted otherwise on the drawings. Unreinforced walls indicated as grouted shall be grouted full height, unless specifically noted otherwise. Mortar fill is not permitted.
d. All masonry cells or cavities below grade shall be grouted solid unless specifically noted otherwise on the drawings. Mortar fill is not permitted.
e. Vertical grouting shall be low lift or high lift as follows:
(1) Low lift grouting shall be used for all cavity walls and may be used for all walls at the option of the Contractor. Lifts shall not exceed 4'-0" in height.
(2) High lift grouting is permissible only for filling of cellular masonry units and shall not exceed 12'-8" in height. Clean out holes shall be provided at the base of each grouted cell.
f. Grouting shall be stopped 1-1/2" below the top of a course to form a key at the joint.
g. Grouting of masonry beams or lintels shall be done in one continuous operation.
h. Consolidate pours with mechanical vibrator and reconsolidate by mechanical vibration after initial water loss and settlement has occured.
i. Mechanical vibrator shall be a low velocity vibrator with a ¾" head.

7.6 Masonry Reinforcing:
a. Foundation dowels may slope a maximum of 1:6 to align with wall cavities or vertical CMU cores. Greater slopes will require replacement of the foundation dowels.
b. Spliced reinforcing shall be lapped a length calculated per IBC 2107.5 OR 15" OR as shown on drawings, whichever is greatest. All splices shall be wired together.
c. Vertical reinforcing bars shall have a minimum clearance of ¼" from masonry and shall be held in position top and bottom and at intervals not exceeding 4'-0". Accessories for such support shall be used. Provide "AA Wire Products Company" (or approved equal) Rebar Positioner AA225 or AA239 for vertical bars and AA238 for horizontal bars or approved equal products from other suppliers.
d. Horizontal joint reinforcing shall be lapped no less than 6" all splices, including corners and tees where no control joint is used.
e. All horizontal joint reinforcing shall stop at control joints.
f. Horizontal reinforcing in bond beams shall be continuous through control joints.
g. All CMU walls shall have joint reinforcing @ 16"o.c. All joint reinforcing shall have (2) 9 gauge (0.148"ø or W1.7) side rods & cross rods @ 16"o.c.

7.7 Masonry contractor shall provide for and coordinate with other trades for placement of all items to be embedded or built into the masonry.

MINIMUM SPLICING LENGTH (Ld) FOR MASONRY	
BAR SIZE	SPLICE LENGTH
#3	16"
#4	22"
#5	26"
#6	43"
#7	60"

8.0 COLD-FORMED STEEL FRAMING:

8.1 All members shall be designed in accordance with the American Iron and Steel Institute (AISI) "Specifications for the Design of Cold-formed Steel Structural Members", Latest Edition.

8.2 All framing members shall be formed from corrosion-resistant steel corresponding to the requirements of ASTM A446, with a minimum yield strength of 33 ksi for joists and studs and 33 ksi for runners.

8.3 All members shown are standard designations of Steel Stud Manufacturers Association (SSMA)

8.4 Design of members indicated in structural drawings is based on minimum properties of products produced per SSMA standards of members specified. No substitution of materials is acceptable for use without prior approval of the structural engineer. Substitutions shall meet or exceed all properties produced per SSMA standards of members specified

8.5 All shop drawing submittals shall show layout, spacing, sizes, thicknesses and types of cold-formed metal framing, fabrication, and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details and attachment to adjoining work.

8.6 Shop drawings, design calculations and other structural data shall be prepared and sealed by a qualified engineer. The Structural Engineer shall be legally qualified to practice in the jurisdiction where the project is located and shall be experienced in providing engineering services of the kind indicated.

8.7 All framing components shall be cut squarely for attachment to perpendicular members or as required for an angular fit tight against abutting members. All load bearing stud/walls shall be factory assembled into panels with studs bearing squarely and fully in top and bottom tracks.

8.8 Fastening components shall be by self-drilling screws or by welding as defined below UNO on the drawings.

8.9 Screwed connections:
a. Screws shall be type S-12 or type S-4 for all framing members per manufacturer's recommendations.
b. A minimum of three (3) exposed threads shall penetrate through at joined materials.
c. Corrosion-resistant cadmium-plated screws shall be used for screws attaching metal lath, masonry ties, and other exterior materials.

8.10 Welded connections:
a. Gas metal arc welding (GMAW) shall be used for 20 ga. Or lighter members. AWSE-705-3, E-705-E, E-705-6 wire electrodes .030"-.035" diameter shall be used with carbon dioxide, argon-oxygen or argon-carbon dioxide shielding. Welding equipment 60-100 amperes at 25 volts using 220-volt 3-phase electric service.
b. Shielded metal arc welding (SMAW) shall be used for 18 ga" and heavier members. AWS E-6012, E-6013, or E-7014 electrodes of 3/32" or 1/8" diameter shall be used. Welding equipment heat setting shall be varied dependent on material thickness.
c. All welds shall be touched up with zinc rich paint, or paint similar to that used by the framing member manufacturer.

8.11 Alignment of studs (plumbness) and walls (straightness) shall be within 1/960 of their respective heights and lengths.

8.12 Studs shall be plumbed, aligned, and securely attached to top and bottom runners. Splices in studs are not permitted.

8.13 Where manufacturer's recommendations for erection, attachment, assembly, bracing, alignment, or other installation, or assembly requirements are more stringent than indicated in these drawings, the manufacturer's recommendations shall apply.

STEEL THICKNESS						
Gauge	Mils	Design Thickness		Minimum Thickness		Yield Strength
		Inches	mm	Inches	mm	ksi
20	33	0.0346	0.879	0.0329	0.836	33
18	43	0.0451	1.146	0.0428	1.087	33
16	54	0.0566	1.438	0.0538	1.367	50
14	68	0.0713	1.811	0.0677	1.720	50
12	97	0.1017	2.583	0.0966	2.454	50

9.0 STRUCTURAL STEEL:

9.1 All structural steel shall be of the grades indicated below, unless noted otherwise on plans or details.
Rolled shapes ASTM A992 Gr. 50
Steel pipe ASTM A53, Type E or S, Grade B, Fy-35ksi
Structural tubing ASTM A500, Grade B, Fy-46ksi
Plates and bars ASTM A36 U.N.O.
Anchor rods ASTM F1554, Grade 36 U.N.O.
Miscellaneous ASTM A36 U.N.O.

9.2 All structural steel shall be detailed, fabricated and erected in accordance with the AISC Code of Standard Practice. The fabricator is responsible for the design of connections not shown on the structural drawings. For the purpose of the connection design, the fabricator shall retain a professional engineer registered in the state where the project is located. The engineer shall seal and sign each shop drawing containing connection design. A note shall accompany the drawings stating that the seal is for "Connection Design Only".

9.3 Connection Design:
a. Generally, connections shown on the drawings are schematic and are intended to show the relationship of the members.
b. Connections shall be designed for one-half (1/2) the allowable uniform load on the member, as defined in Part 3, "Allowable Loads on Beams" tables in the AISC "Manual of Steel Construction", 14th Edition, See plan notes for design methodology and minimum reactions.

9.4 Bolted connections:
a. Bearing type connections shall be snug tight with A325N or A490N bolts, U.N.O. Oversized and long-slotted holes are NOT permitted U.N.O. At single shear plate connections, provide bearing type fasteners with horizontal short slotted holes. All bolts shall be snug tight. DO NOT over torque bolts.
b. Protruding bolt heads, shafts or nuts shall not extend nor prohibit the application of architectural finishes or placement of steel deck at its correct location and elevation.
c. Connection designer is responsible for verifying the axial capacity after a section is reduced for bolt holes. Member size may be increased or plates added to maintain required capacity.
d. Bolted connections shall be assembled and inspected in accordance with RCSC-2009 (Specification for Structural Joints Using High-Strength Bolts).

9.5 Welded connections:
a. All welding shall be in accordance with the "Structural Welding Code - Steel" (AWS D1.1) of the American Welding Society, Latest Edition.
b. Electrodes for welding shall comply with the requirements of Table 4.1.1 of the AWS code.
c. At Moment Connections and Braced Frames Provide filler Metal that has a minimum CVN Toughness of 20 ft-lbs at minus 20 degrees F, As determined by AWS classification or Manufacturer Certification.
d. Proof of welder certification shall be available at the job site during times of inspection.

9.6 Minimum plate thickness shall be 3/8" U.N.O.; minimum bolt diameter shall be 3/4-inch U.N.O.; minimum shop weld shall be 3/16" and minimum field weld shall be 1/4-inch U.N.O.

9.7 All re-entrant corners (such as copes and blocks) shall be cut and shaped notch free with a radius of at least 1/2-inch.

10.0 STEEL DECK:

10.1 Steel roof deck shall be galvanized, Type B, 1 1/2" deep, 20 gauge, U.N.O.

10.2 For steel roof deck spans, mechanically fasten side laps at mid-span using "Buildex", self-tapping TEKS No. 10 or larger machine screws or as noted on plan.
Provide additional sidelap fasteners where noted on plan.
Fasten roof deck to supporting members as noted on plan.

10.3 Do not hang pipes or ducts from steel roof deck. Fasten roof deck to supporting members as noted on plan.

10.4 COMPOSITE FLOOR DECK:

a. Deck shall be 2" - 20 gauge, galvanized, composite floor deck. Vulcraft 2VLI20 or approved equal.
b. Deck shall be galvanized per ASTM A924-94 (G60)
c. Fasten composite floor deck to supporting members by not less than 3/4-inch puddle welds or elongated welds of equal perimeter, spaced not more than 12" o.c. with a minimum 2 welds per unit at each support.

ZIMMER DEVELOPMENT COMPANY
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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
GENERAL NOTES

ORIG SUBMISSION: 2022.05.25

SHEET:
S-101

OWNER REVIEW SET

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11.0 POST-INSTALLED ANCHORS:

11.1 Except where indicated on the drawings, post-installed anchors shall consist of the following anchor types as provided by HILTI, Inc. Contact HILTI at (800) 879-8000 for product related questions.

Anchorage to Concrete
a. Adhesive anchors for cracked and uncracked concrete use:
1. HILTI HIT-HY 200 Safe Set System with HILTI HIT-Z Rod per ICC ESR-3187 (pending).
2. HILTI HIT-HY 200 Safe Set System with HILTI Hollow Drill Bit System with HAS-E threaded rod per ICC ESR-3187.
3. HILTI HIT-RE 500-SD Epoxy Adhesive Anchoring system with HAS-E threaded rod per ICC ESR-2322 for slow cure applications.

b. Medium duty mechanical anchors for cracked and uncracked concrete use:
1. HILTI KWIK HUS EZ and KWIK HUS EZ-I Screw Anchors per ICC ESR-3027
2. HILTI KWIK BOLT-TZ Expansion Anchors per ICC ESR-1917
3. HILTI KWIK Bolt 3 Expansion Anchors (uncracked concrete only) per ICC ESR-2302

c. Heavy duty mechanical anchors for cracked and uncracked concrete use:
1. HILTI HDA Undercut Anchors per ICC ESR 1546
2. HILTI HSL-3 Expansion Anchors per ICC ESR 1545

Rebar Doweling into Concrete
a. Adhesive anchors for cracked and uncracked concrete use:
1. HILTI HIT-HY 200 Safe Set System with HILTI Hollow Drill Bit System with continuously deformed rebar per ICC ESR-3187.
2. HILTI HIT-RE 500-SD Epoxy Adhesive Anchoring System with continuously deformed rebar per ICC ESR-2322.

Anchorage to Solid Grouted Masonry
a. Adhesive Anchors use:
1. HILTI HIT-HY 70 Masonry Adhesive Anchoring System (ICC pending).
2. Steel anchor element shall be HILTI HAS-E continuously threaded rod or continuously deformed steel rebar.
b. Mechanical Anchors use:
1. HILTI KWIK BOLT-3 Expansion Anchors per ICC ESR 1385.

Anchorage to Hollow/Multi-wythe Masonry
a. Adhesive Anchors use:
1. HILTI HIT-HY 70 Masonry Adhesive Anchoring System per ICC ESR-3342.
2. Steel anchor element shall be HILTI HAS-E continuously threaded rod or continuously deformed steel rebar.
3. The appropriate size screen tube shall be used per adhesive manufacturer's recommendation.

11.2 Anchor capacity used in design shall be based on the technical data published by HILTI or such other method as approved by the Structural Engineer of record. Substitution requests for alternate products must be approved in writing by the Structural Engineer of record prior to use. Contractor shall provide calculations demonstrating that the substituted product is capable of achieving the performance values of the specified product. Substitutions will be evaluated by their having and ICC ESR showing compliance with the relevant building code for seismic uses, load resistance, installation category, and availability of comprehensive installation instructions. Adhesive anchor evaluation will also consider creep, in-service temperature and installation temperature.

11.3 Install anchors per the manufacturer instructions, as included in the anchor packaging.

11.4 Overhead adhesive anchors must be installed using the HILTI PROFI System.

11.5 The contractor shall arrange an anchor manufacturer's representative to provide onsite installation training for all of their anchoring products specified. The Structural Engineer of record must receive documented confirmation that all of the contractor's personnel who install anchors are trained prior to the commencement of installing anchors.

11.6 Anchor capacity is dependant upon spacing between adjacent anchors and proximity of anchors to edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings.

11.7 Existing reinforcing bars in the concrete structure may conflict with specific anchor locations. Unless noted on the drawings that the bars can be cut, the contractor shall review the existing structural drawings and shall undertake to locate the position of the reinforcing bars at the locations of the concrete anchors, by HILTI FERROSCAN, GPR, X-ray, chipping or other means.

12.0 CONSTRUCTION AND SAFETY:

12.1 Woods Engineering P.A.'s responsibility is limited to the details and information shown on these drawings. It is the responsibility of the Contractor to provide adequate safety measures required by local codes as well as OSHA Standards for the Construction Industry.
This should include, but not be limited to the following:
Shoring to protect new as well as existing structures.
Necessary Scaffolding.
Material Handling Equipment.
Trench Boxing.

13.0 SPECIAL INSPECTIONS:

13.1 Refer to Specification Section 014533 for all Special Inspections requirements.

14.0 SHOP DRAWING SUBMITTAL:

14.1 See Project Manual

14.2 Contractor shall submit Electronic copies (PDF format) of each shop drawing for review. Shop drawings shall be reviewed by the Contractor prior to submission to the Engineer. The Contractor shall allow 10 working days for shop drawing approval.

15.0 SUPPLEMENTAL FRAMING:

15.1 Provide supplemental framing for the support of pipes, conduits, light fixtures, etc. Supplemental framing shall consist of slotted steel channels, steel angles, hanger rods, and appropriate hardware. Finish for framing and hardware shall be galvanized or rust-inhibiting acrylic enamel paint.

15.2 Slotted Steel Channels: For exterior use, hot-dipped galvanized finish. For interior use, manufacturer's standard finish.

15.3 Steel Angles: for exterior use, hot-dipped galvanized. For interior use, prime with rust-inhibitive primer and finish paint two coats of alkyd enamel.

15.4 Hanger Rods: Galvanized carbon steel threaded rods.

15.5 Fastening Hardware: Finish shall match connected parts.

ABBREVIATIONS

@	AT
&	AND
AB	ANCHOR BOLTS
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE
ARCH	ARCHITECTS – ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
B, BOTT	BOTTOM
BCX	BOTTOM CHORD EXTENSION
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BM	BEAM
BOS	BOTTOM OF STEEL
BRG	BEARING
BTWN	BETWEEN
CFS	COLD FORMED STEEL
CJ	CONTRACTION JOINT
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNITS
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
CONTR	CONTRACTOR
CSJ	COMPOSITE STEEL JOIST
CTRD	CENTERED
DBA	DEFORMED BAR ANCHOR
DD	DELEGATED DESIGN
DEFL	DEFLECTION
DEPR	DEPRESSION – DEPRESSED
DET	DETAIL
DIAG	DIAGONAL
ø	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
EA	EACH
ELEV	ELEVATION
EMBED	EMBEDDED – EMBEDMENT
ENG	ENGINEER
EOR	ENGINEER OF RECORD
EQ	EQUAL
EQUIP	EQUIPMENT
EF	EACH FACE
EJ	EXPANSION JOINT
EOD	EDGE OF DECK
EOM	EDGE OF MASONRY
EOS	EDGE OF SLAB
EOW	EDGE OF WALL
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FS	FAR SIDE
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GT	GIRDER TRUSS
HD	HEADED
HI	HIGH
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
HT	HIP TRUSS
IFM	INSIDE FACE OF MASONRY
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
JT	JOINT
K	KIP-S
KB	KICKER BRACE
KSI	KIPS PER SQUARE INCH
(L)	LONG SIDE REINFORCEMENT
LB	LONG BAR
LBS	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LO	LOW
LOC	LOCATION
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MC	MOMENT CONNECTION
MECH	MECHANICAL
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOW	MIDDLE OF WALL
MP	MASONRY PILASTER
d	NAILS – PENNY
No	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OFB	OUTSIDE FACE OF BRICK
OFM	OUTSIDE FACE OF MASONRY
OFS	OUTSIDE FACE OF STUD
OPNG	OPENING
OPP	OPPOSITE HAND
PEBS	PRE-ENGINEERED BUILDING SUPPLIER
PED	PEDESTAL
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PLF	POUNDS PER LINEAR FOOT
PT	PRESSURE TREATED
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
(S)	SHORT SIDE REINFORCEMENT
SB	SHORT BAR
SCHD	SCHEDULE
SF	STEP FOOTING
SIM	SIMILAR
SOG	SLAB ON GRADE
SPEC(S)	SPECIFICATION(S)
SPF	SPRUCE PINE FUR
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
STIRR	STIRRUP
STL	STEEL
STR	STRUCTURAL
SW	SHEAR WALL
SYP	SOUTHERN YELLOW PINE
T	TOP
TCX	TOP CHORD EXTENSION
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VB	VEHICLE BARRIER
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WITH
WWF	WELDED WIRE FABRIC

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
GENERAL NOTES

ORIG SUBMISSION: 2022.05.25

SHEET:
S-102

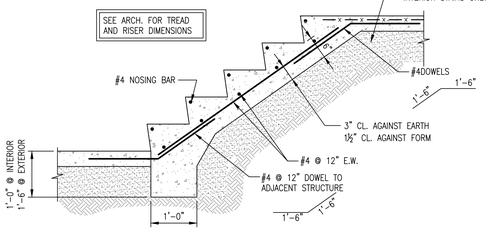
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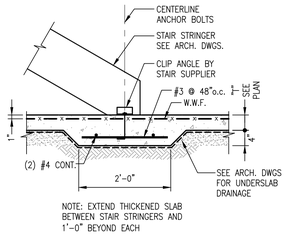
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1 2 3 4 5 6

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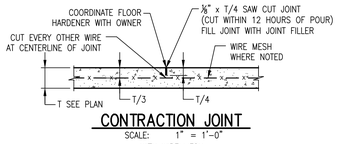


TYPICAL STAIR ON GRADE
SCALE: 3/4" = 1'-0"

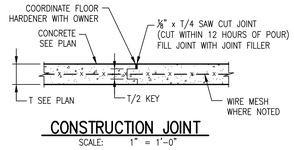


NOTE: EXTEND THICKENED SLAB BETWEEN STAIR STRINGERS AND 1'-0" BEYOND EACH

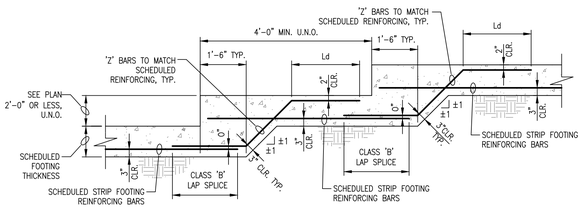
TYPICAL THICKENED SLAB @ BASE OF STAIRS
SCALE: 3/4" = 1'-0"



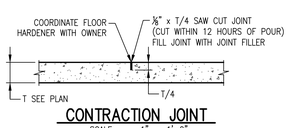
CONTRACTION JOINT
SCALE: 1" = 1'-0"
WITH WIRE MESH



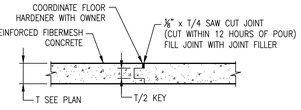
CONSTRUCTION JOINT
SCALE: 1" = 1'-0"
WITH WIRE MESH



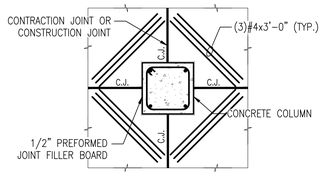
STEP FOOTING DETAIL
SCALE: 1/2" = 1'-0"



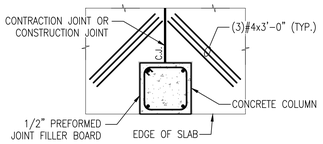
CONTRACTION JOINT
SCALE: 1" = 1'-0"
WITHOUT WIRE MESH



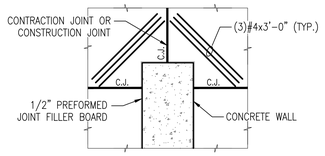
CONSTRUCTION JOINT
SCALE: 1" = 1'-0"
WITHOUT WIRE MESH



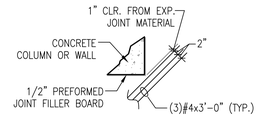
ISOLATION JOINT DETAIL
NOT TO SCALE



TYPICAL ISOLATION JOINT AT SLAB EDGE
NOT TO SCALE



ISOLATION JOINT DETAIL @ WALL
NOT TO SCALE



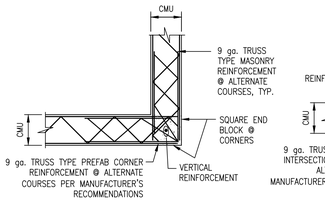
ISOLATION JOINT REBAR PLACEMENT
NOT TO SCALE

TYP. REBAR PLACEMENT AT ALL CONDITIONS PLACE REBAR 1" CLR. FROM TOP OF SLAB

STEEL LINTEL SCHEDULE

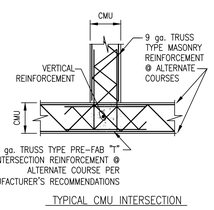
CLEAR OPENING	ONE ANGLE FOR EA 4"WYTHE	MIN BRG.	MAX. HEIGHT OF BRICK
0'-8" TO 6'-0"	⌊7" x 4" x ⅜" LLH	8"	9'-0"
6'-0" TO 8'-0"	6¾"x5"x5/16" BENT PLATE LLH	8"	9'-0"
8'-0" TO 10'-0"	7"x6¾"x5/16" BENT PLATE LLV	8"	9'-0"
10'-0" TO 12'-0"	9"x6¾"x5/16" BENT PLATE LLV	8"	9'-0"

NOTES:
1. WHERE LINTELS BEAR ON HOLLOW MASONRY UNITS FILL ALL CORES UNDER BEARING WITH GROUT FROM BOTTOM OF LINTEL TO 16" MINIMUM BELOW.
2. THESE LINTELS ARE NOT DESIGNED FOR MASONRY WALLS THAT CARRY FLOOR OR ROOF LOAD.
3. LINTELS ARE DESIGNED TO CARRY THE MAXIMUM HEIGHT OF BRICK LISTED IN SCHEDULE. IF STACKED BRICK HEIGHT EXCEEDS LISTED VALUE, THEN CONTACT STRUCTURAL ENGINEER FOR ALTERNATE DESIGN.
4. ALL STEEL LINTELS SHALL BE HOT DIP GALVANIZED AND PAINTED.
5. SEE DETAIL BELOW FOR REQUIREMENTS



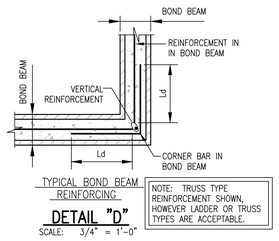
TYPICAL CMU CORNER

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



TYPICAL CMU INTERSECTION

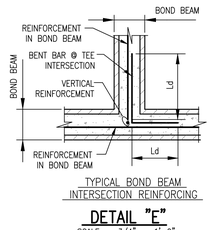
DETAIL "C"
SCALE: 3/4" = 1'-0"



TYPICAL BOND BEAM REINFORCING

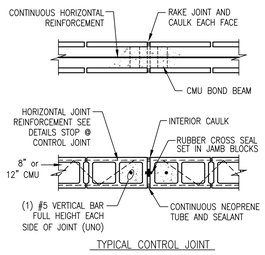
NOTE: TRUSS TYPE REINFORCEMENT SHOWN, HOWEVER LADDER OR TRUSS TYPES ARE ACCEPTABLE.

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



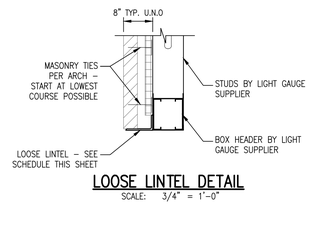
TYPICAL BOND BEAM INTERSECTION REINFORCING

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

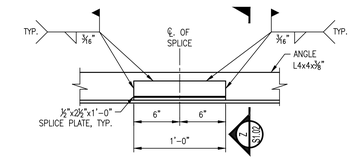


TYPICAL CONTROL JOINT

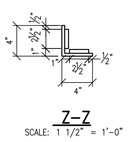
DETAIL "F"
SCALE: 3/4" = 1'-0"



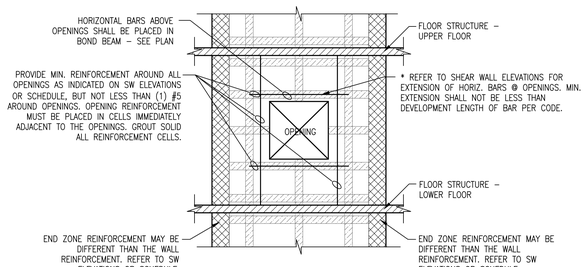
LOOSE LINTEL DETAIL
SCALE: 3/4" = 1'-0"



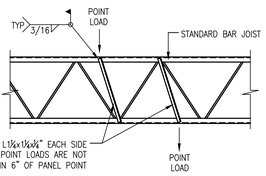
TYPICAL ANGLE SPLICE DETAIL
SCALE: 1 1/2" = 1'-0"



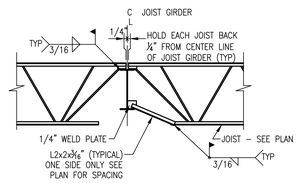
Z-Z
SCALE: 1 1/2" = 1'-0"



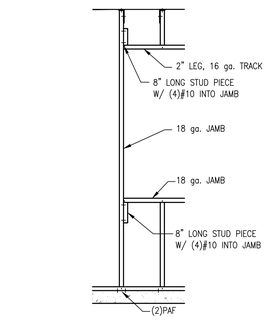
TYPICAL CMU OPENING ELEVATION
NOT TO SCALE



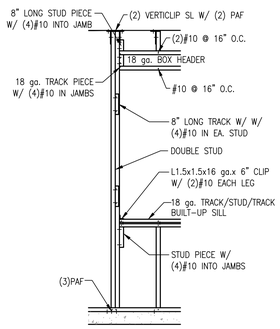
DETAIL OF TYPICAL JOIST REINFORCEMENT
NOT TO SCALE



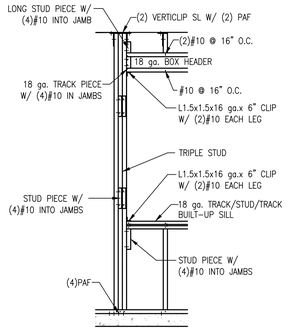
SECTION "A"
SCALE: 1/2" = 1'-0"
GIRDER BOTTOM FLANGE (BRACE TYP.)



TYPICAL EXTERIOR WALL FRAMING AT WINDOW OPENING UP TO 3'-4"
SCALE: 1/2" = 1'-0"



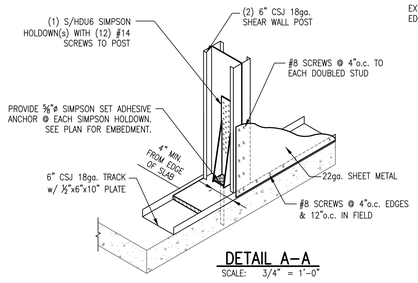
TYPICAL EXTERIOR WALL FRAMING AT WINDOW OPENING UP TO 6'-4"
SCALE: 1/2" = 1'-0"



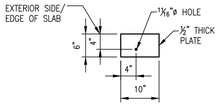
TYPICAL EXTERIOR WALL FRAMING AT WINDOW OPENING UP TO 8'-8"
SCALE: 1/2" = 1'-0"

TYPICAL LIGHT GAUGE CONSTRUCTION DETAILS FOR NON-LOAD BEARING EXTERIOR WALLS

NOTE: THESE DETAILS ARE GENERIC AND ARE FOR GENERAL INFORMATION AND BUDGET PRICING. ACTUAL DESIGN BY LIGHT GAUGE SUPPLIER AND ENGINEER.



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



TRACK PLATE DETAIL
SCALE: 3/4" = 1'-0"

ZIMMER DEVELOPMENT COMPANY
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Project Grace
Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

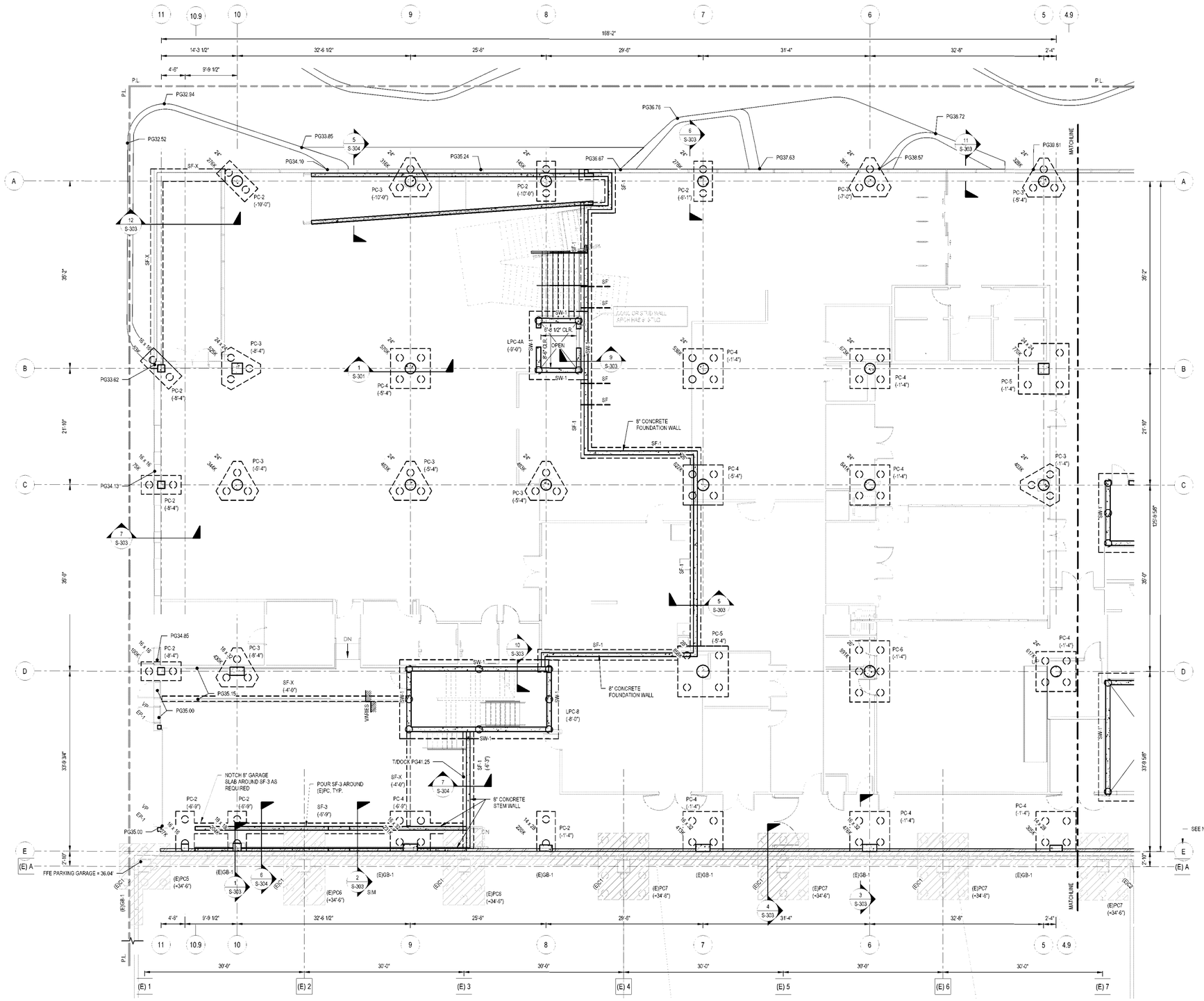
SHEET NAME:
TYPICAL DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
S-103

OWNER REVIEW SET

10/20/2021 8:48:37 AM



FOUNDATION PLAN - AREA A

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

PILE CAP (PC-x) SCHEDULE

MARK	# PILES	LENGTH x WIDTH x THICKNESS	REINFORCEMENT		COMMENTS
			TOP BARS	BOTTOM BARS	
PC-1					
PC-2	2	7'-6" x 3'-6" x TBD	TBD	TBD	SEE SHEET S-302
PC-3	3	10'-0 x 10'-0" x TBD	TBD	TBD	SEE SHEET S-302
PC-4	4	7'-5" x 7'-6" x TBD	TBD	TBD	SEE SHEET S-302
PC-5	5	9'-6" x 9'-6" x TBD	TBD	TBD	SEE SHEET S-302
PC-6	6	11'-6" x 7'-6" x TBD	TBD	TBD	SEE SHEET S-302

FLOOR ELEVATION TABLE

Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-6"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"

STRIP FOOTING (SF-x) SCHEDULE

MARK	WIDTH x THICKNESS x LENGTH	REINFORCEMENT		COMMENTS
		TOP BARS	BOTTOM BARS	
SF-1	2'-0" x 1'-0" x CONT.	TBD	TBD	
SF-3	2'-0" x 1'-0" x CONT.	TBD	TBD	
SF-X				

GRADE BEAM (GB-x) SCHEDULE

MARK	WIDTH x THICKNESS x LENGTH	LONGITUDINAL REINFORCEMENT	STIRRUPS	COMMENTS

FOUNDATION LEGEND

- SW — INDICATES 10" CONCRETE SHEAR WALLS SEE NOTES AND DETAILS ON S-10 & S-50 SHEETS
- S.F. — INDICATES STEP FOOTING - SEE S1.0 SHEETS FOR TYPICAL DETAILS
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS, SEE S1.0 SHEETS FOR TYPICAL DETAILS. SEE PLAN FOR LOCATIONS. MAXIMUM SPACING = 12' IN EACH DIRECTION
- SIZE XXX — INDICATES CONCRETE COLUMN - SEE SCHEDULE ON S-50 SHEETS SERVICE (ASD) MAX LOAD PER ASCE-7-16 LOAD COMBINATIONS
- SIZE PIPE — HSS STEEL COLUMN - SEE PLAN FOR SIZE AND LOCATION SEE S3.0 SERIES SHEETS FOR BASE PLATE DETAILS (BP-x)
- VP — HSS7X7X1/4 VENEER POST
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN U.N.O.
- (E) 0 — EXISTING PARKING DECK GRID LINE
- INDICATES 2" SLAB DEPRESSION COORDINATE EXACT LIMITS W/ ARCH. & PLUMBING DWGs & SEE S1.0 SHEETS FOR TYPICAL SLAB DEPRESSION DETAILS
- F.D. — FLOOR DRAIN - COORDINATE W/ PLUMBING DWGs
- P.L. — INDICATES PROPERTY LINE
- INDICATES MATCH LINE
- CONCRETE PILE CAP - SEE PLAN & SCHEDULE THIS SHEET. SEE DETAILS ON S3.02
- GB-X — CONCRETE GRADE BEAM SEE SCHEDULE THIS SHEET
- INDICATES GRAVITY PILES
- INDICATES UPLIFT PILES
- INV = X.XX — UNDERGROUND PLUMBING LINES - COORDINATE WITH PLUMBING DWGs
- E.J. — BUILDING EXPANSION JOINT LOCATION = SEE S1.0 SERIES SHEETS FOR TYPICAL DETAILS
- INDICATES GRAVITY SEWER LINES
- PG = X'-X" — INDICATES PROPOSED FINISHED GRADE ELEVATION (MSL) COORDINATE WITH CIVIL & ARCH PLANS

FOUNDATION PLAN NOTES:

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. DATUM ELEVATION = TOP OF SLAB ELEVATION = ASSUMED 0'-0" = 41.25' M.S.L. OTHER ELEVATIONS ARE NOTED AS (-OR +) FROM DATUM ELEVATION.
3. TOP OF PILE CAPS SHALL BE (-1'-4") FROM DATUM ELEVATION, U.N.O.
4. INTERIOR TROWEL FINISHED SLAB-ON-GRADE (THICKNESS SPECIFIED ON PLAN) 3000 psi CONCRETE REINFORCED WITH 3.0lbs/yd^3 OF SYNTHETIC MACRO-FIBERS (TUF-STRAND SF BY EUCLID, FIBER MAC SERIES BY BASF, OR FORTA-FERRO BY FORTA CORP, OR APPROVED EQUAL) ON 15 mil VAPOR RETARDER, ON 6" CLEAN SANDS WITH LESS THAN 20% FINES PASSING #100 SIEVE (SP.SW.SP.SM) OR APPROVED EQUAL ON WELL COMPACTED SUB GRADE. EXTERIOR AND BROOM FINISHED SLABS ON GRADE (THICKNESS SPECIFIED ON PLAN) 4,000 psi CONCRETE REINFORCED WITH WWF6X6XW2.9XW2.9 FLAT SHEETS ON 10 MIL VAPOR BARRIER ON 6" CLEAN SANDS ON COMPACTED SUB-GRADE.
5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
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7. DIMENSIONS ARE FROM EDGE OF SLAB (E.O.S.) AND OUTSIDE FACE OF STUD (O.F.S.) / CURTAINWALL (O.F.CW.) TO COLUMN CENTERLINE UNLESS NOTED OTHERWISE.
8. S.F. = STEP FOOTING, SEE TYPICAL DETAIL ON S-10 SHEETS, G.C. TO COORDINATE STEPS IN FOUNDATION FOR PLUMBING, ELECTRICAL AND MECHANICAL.
9. SEE S-60 SHEETS FOR CONCRETE COLUMN SCHEDULE.
10. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
11. GRID E DESIGNATES OUTSIDE FACE OF COLUMN AND SOUTH FACING EDGE OF SLAB.

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT FULL SHEETS. IF NOT, ADJUST ACCORDINGLY

5/25/2022 4:00:52 PM

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254 North Front Street Phone: 910.343.8007
Suite 201 Fax: 910.343.8068
Wilmington, N.C. 28401 www.woodseng.com

NOT FOR CONSTRUCTION

Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

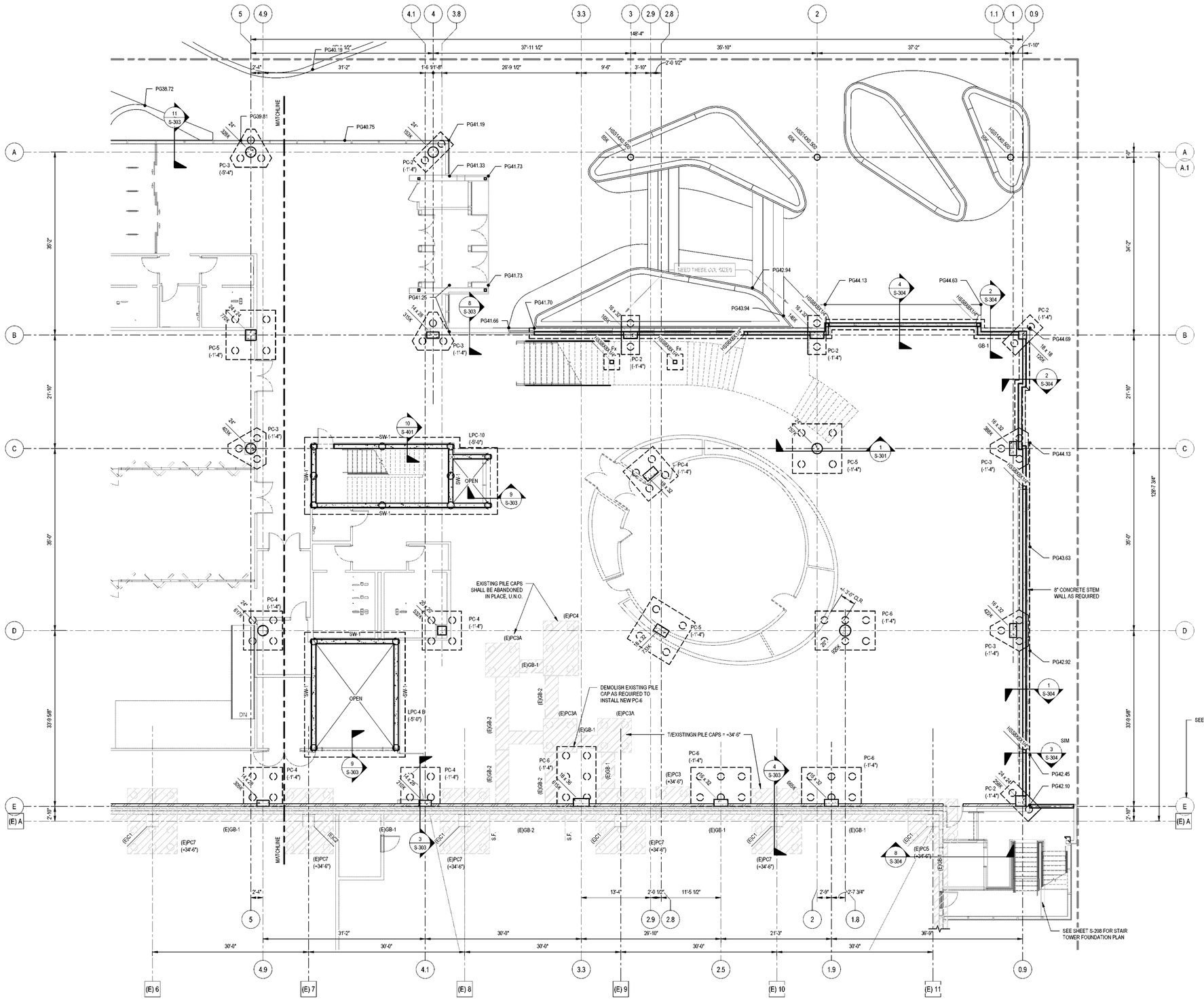
Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: FOUNDATION PLAN - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET: **S-200A**

OWNER REVIEW SET



FOUNDATION PLAN - AREA B

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

FOUNDATION LEGEND

- SW — INDICATES 10" CONCRETE SHEAR WALLS SEE NOTES AND DETAILS ON S-10 & S-50 SHEETS
- S.F. — INDICATES STEP FOOTING - SEE S1.0 SHEETS FOR TYPICAL DETAILS
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS, SEE S1.0 SHEETS FOR TYPICAL DETAILS. SEE PLAN FOR LOCATIONS. MAXIMUM SPACING = 12' IN EACH DIRECTION
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- INDICATES UPLIFT PILES
- INV = X.XX — UNDERGROUND PLUMBING LINES - COORDINATE WITH PLUMBING DWGs
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PILE CAP (PC-x) SCHEDULE

MARK	# PILES	LENGTH x WIDTH x THICKNESS	REINFORCEMENT		COMMENTS
			TOP BARS	BOTTOM BARS	
PC-1					
PC-2	2	7'-6" x 3'-6" x TBD	TBD	TBD	SEE SHEET S-302
PC-3	3	10'-0 x 10'-0" x TBD	TBD	TBD	SEE SHEET S-302
PC-4	4	7'-6" x 7'-6" x TBD	TBD	TBD	SEE SHEET S-302
PC-5	5	9'-6" x 9'-6" x TBD	TBD	TBD	SEE SHEET S-302
PC-6	6	11'-6" x 7'-6" x TBD	TBD	TBD	SEE SHEET S-302

FLOOR ELEVATION TABLE

Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-6"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"

STRIP FOOTING (SF-x) SCHEDULE

MARK	WIDTH x THICKNESS x LENGTH	REINFORCEMENT		COMMENTS
		TOP BARS	BOTTOM BARS	
SF-1	2'-0" x 1'-0" x CONT.	TBD	TBD	
SF-3	2'-0" x 1'-0" x CONT.	TBD	TBD	
SF-X				

GRADE BEAM (GB-x) SCHEDULE

MARK	WIDTH x THICKNESS x LENGTH	LONGITUDINAL REINFORCEMENT	STIRRUPS	COMMENTS

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WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

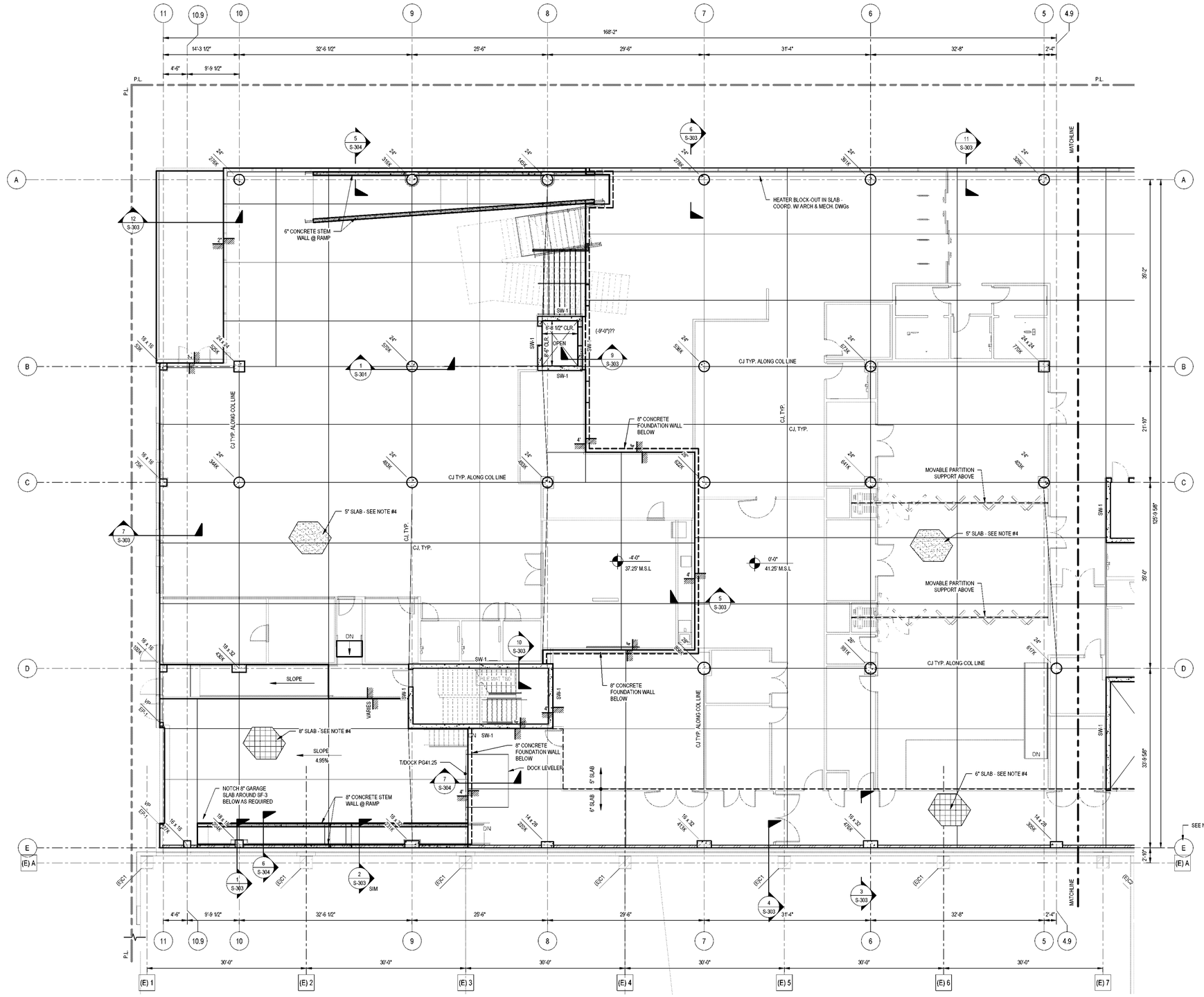
SHEET NAME: FOUNDATION PLAN - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET: **S-200B**

OWNER REVIEW SET

5/25/2022 4:02:56 PM



SLAB-ON-GRADE PLAN - AREA A

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

FLOOR ELEVATION TABLE	
Name	Elevation
BARGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-6"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"

FOUNDATION LEGEND

- SW — INDICATES 10" CONCRETE SHEAR WALLS SEE NOTES AND DETAILS ON S-10 & S-50 SHEETS
- S.F. — INDICATES STEP FOOTING - SEE S1.0 SHEETS FOR TYPICAL DETAILS
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS, SEE S1.0 SHEETS FOR TYPICAL DETAILS. SEE PLAN FOR LOCATIONS. MAXIMUM SPACING = 12' IN EACH DIRECTION
- SEE XXX — INDICATES CONCRETE COLUMN - SEE SCHEDULE ON S-60 SHEETS SERVICE (ASD) MAX LOAD PER ASCE-7-16 LOAD COMBINATIONS
- SEE XXX — HSS STEEL COLUMN - SEE PLAN FOR SIZE AND LOCATION SEE S3.0 SERIES SHEETS FOR BASE PLATE DETAILS (BP.x)
- VP — HSS7X7X1/4 VENEER POST
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN U.N.O.
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FOUNDATION PLAN NOTES:

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: SLAB ON GRADE PLAN - AREA A

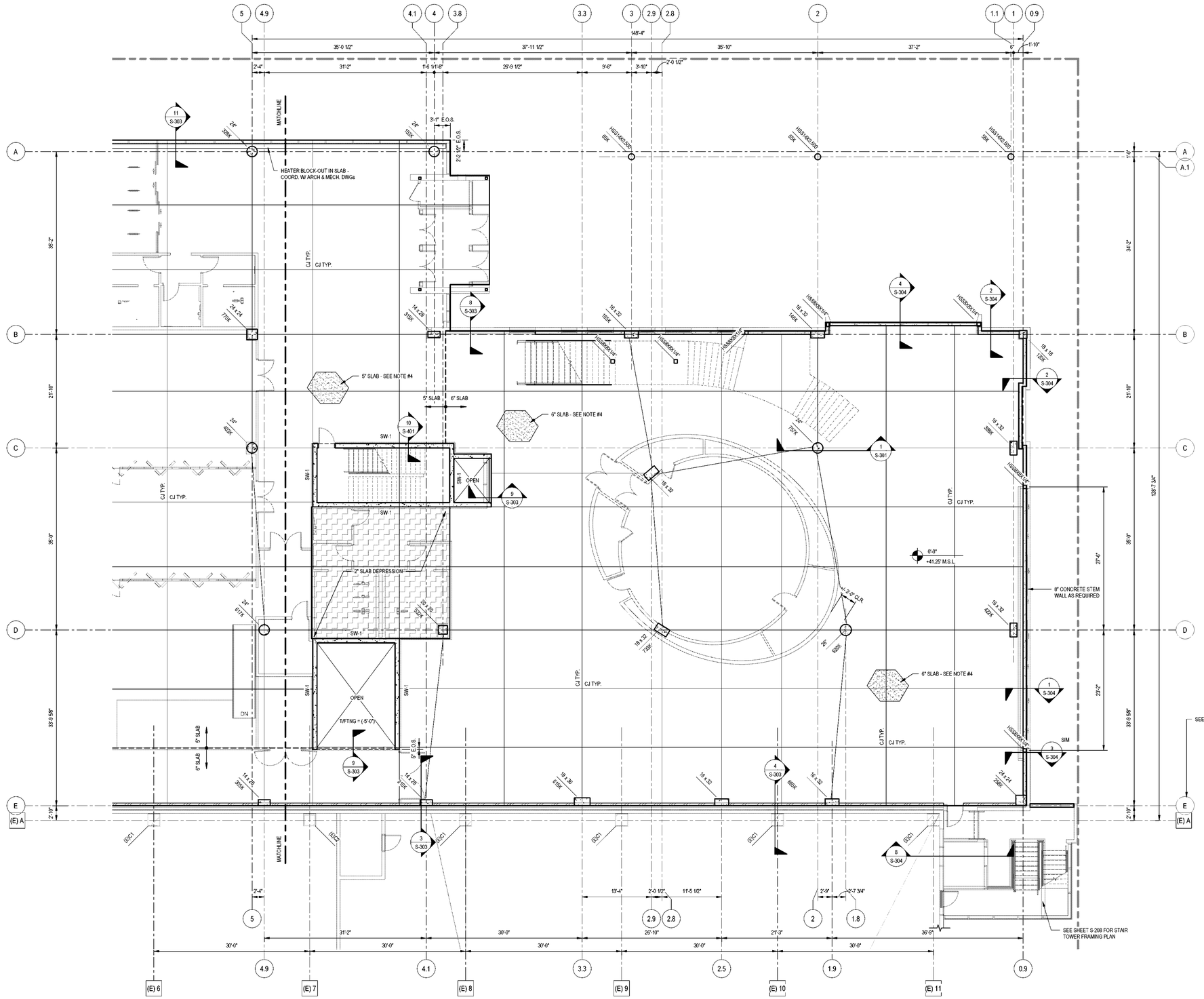
ORIG SUBMISSION: 2022.05.25

SHEET: **S-201A**

OWNER REVIEW SET

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5/25/2022 4:03:01 PM



SLAB-ON-GRADE PLAN - AREA B

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

FLOOR ELEVATION TABLE	
Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-0"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"

FOUNDATION PLAN NOTES:

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11. GRID E DESIGNATES OUTSIDE FACE OF COLUMN AND SOUTH FACING EDGE OF SLAB.

TRUE NORTH PROJECT NORTH

NEW HANOVER COUNTY NORTH CAROLINA ESTABLISHED 1729

ZIMMER DEVELOPMENT COMPANY

LS3P

205 1/2 KING STREET
CHARLESTON, SOUTH CAROLINA 29401
TEL. 843.722.4789 FAX. 843.577.4444
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WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NOT FOR CONSTRUCTION — NORTH CAROLINA — SEAL — 29401 — WOODS

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

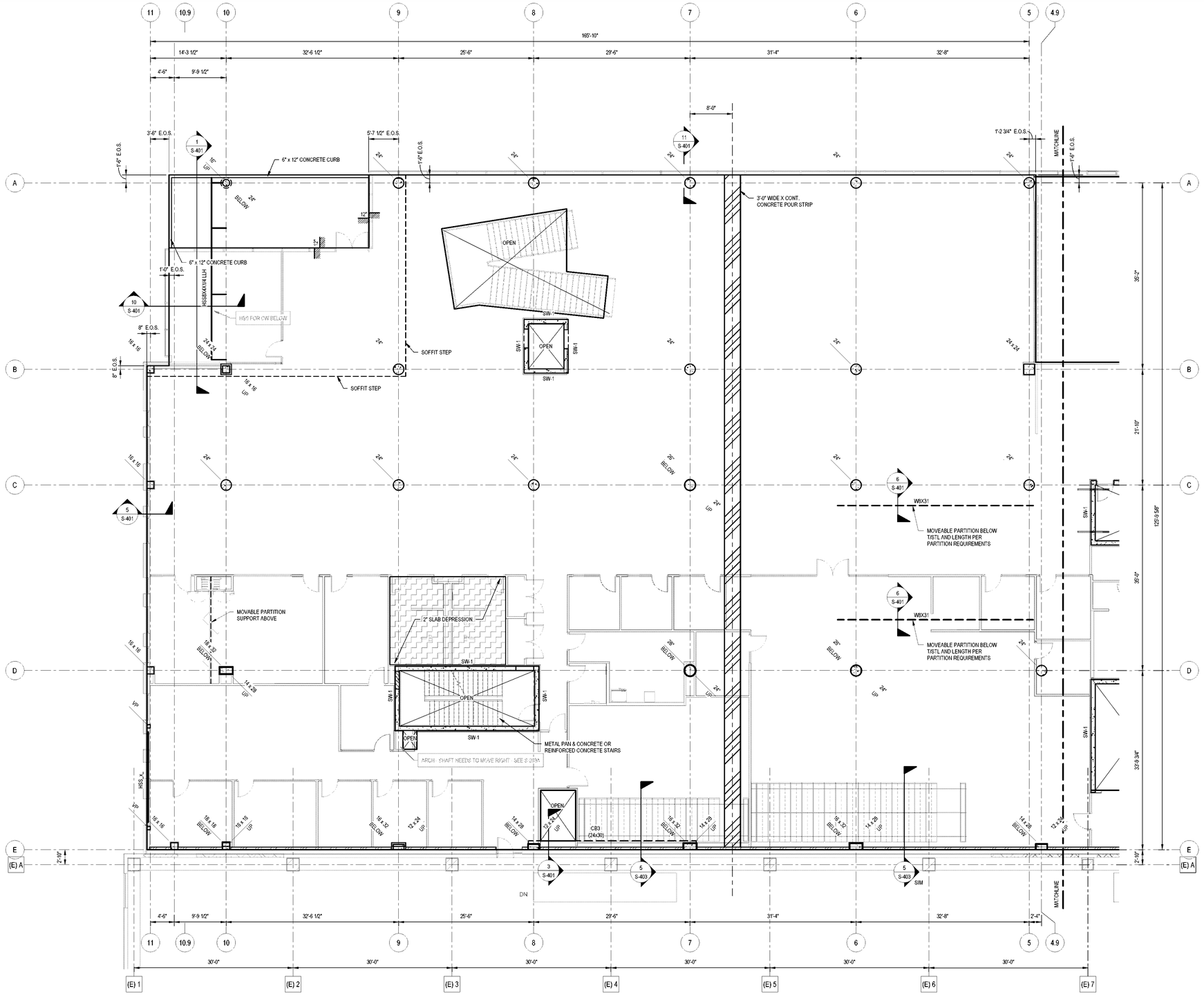
SHEET NAME: SLAB ON GRADE PLAN - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET: **S-201B**

OWNER REVIEW SET

5/25/2022 4:03:06 PM



SECOND FLOOR FRAMING PLAN - AREA A

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

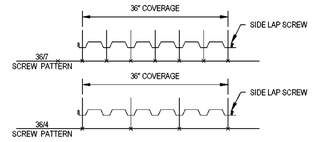
FLOOR ELEVATION TABLE	
Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-0"
LEVEL 2	18'-0"
LEVEL 1	0"
LEVEL U1	-4'-0"

FLOOR FRAMING LEGEND

- SW — INDICATES 10" CONCRETE SHEAR WALLS ABOVE - SEE NOTES AND DETAILS ON S-10 & S-50 SHEETS
- INDICATES 8" CMU WALL SEE PLAN FOR REQUIREMENTS
- INDICATES 6" METAL STUD WALL
- MHx — MASONRY HEADER SEE SCHEDULE THIS SHEET
- SIZE — INDICATES CONCRETE COLUMN - SEE SCHEDULE ON S-60 SHEETS
- SIZE — INDICATES CONCRETE COLUMN BELOW
- SIZE — INDICATES HSS POST - SEE PLAN
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN
- (E) 0 — EXISTING PARKING DECK GRID LINE
- CBx — CONCRETE BEAM - SEE S-60 SHEETS
- INDICATES 2" SLAB DEPRESSION COORDINATE EXACT LIMITS W/ ARCH. & PLUMBING DWGs & SEE S1.0 SHEETS FOR TYPICAL SLAB DEPRESSION DETAILS
- INDICATES CONCRETE POUR STRIP - SEE PLAN

FLOOR FRAMING PLAN NOTES

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. SEE FLOOR ELEVATION TABLE THIS SHEET FOR TYPICAL SLAB ELEVATIONS.
3. TYPICAL FLOOR SLAB SYSTEM IS 14" PT CONCRETE FLAT PLATE - SEE PT SHEETS FOR ADDITIONAL INFORMATION. FOR BUDGET PRICING ASSUME psf OF PT TENDONS & psf OF MILD REINFOCING
4. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
5. TYPICAL ROOF DECK IS 1 1/2" DEEP, 20 ga., GALVANIZED, TYPE 'B' METAL ROOF DECK.
6. METAL ROOF DECK SHALL BE ATTACHED TO SUPPORTING MEMBERS WITH HILTI X-HSN 24 FOR STEEL THICKNESS EQUAL TO OR LESS THAN 3/8" AND HILTI X-ENP 19 OTHERWISE IN A 36/4 PATTERN U.N.O. ON PLAN - EXCEPT WITHIN 7'-7" OF ROOF EDGE PROVIDE FASTENERS IN A 36/7 PATTERN. PROVIDE (1) HILTI SCC TEK SIDELAP SCREW PER SPAN, U.N.O. ON PLAN.



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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: SECOND FLOOR FRAMING PLAN - AREA A

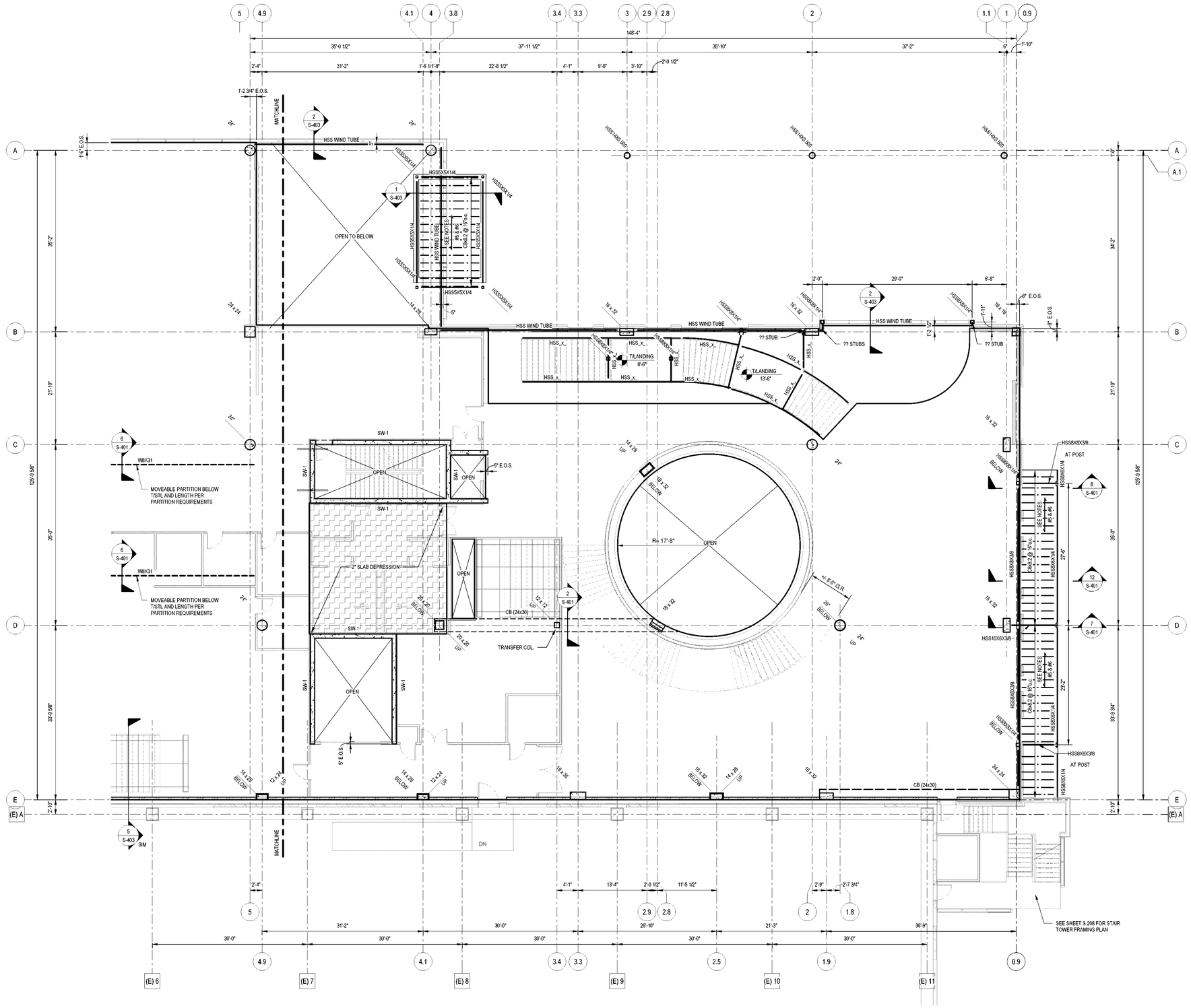
ORIG SUBMISSION: 2022.05.25

SHEET: S-202A

OWNER REVIEW SET

TRUE NORTH PROJECT NORTH

5/25/2022 4:03:12 PM

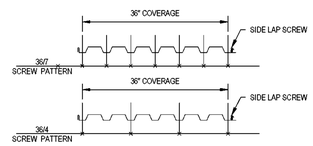


FLOOR FRAMING LEGEND

- SW — INDICATES 10" CONCRETE SHEAR WALLS ABOVE - SEE NOTES AND DETAILS ON S-10 & S-50 SHEETS
- INDICATES 8" CMU WALL SEE PLAN FOR REQUIREMENTS
- INDICATES 6" METAL STUD WALL
- MHx — MASONRY HEADER SEE SCHEDULE THIS SHEET
- SIZE — INDICATES CONCRETE COLUMN - SEE SCHEDULE ON S-60 SHEETS
- SIZE — INDICATES CONCRETE COLUMN BELOW
- SIZE — INDICATES HSS POST - SEE PLAN
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN
- (E) 0 — EXISTING PARKING DECK GRID LINE
- CBx — CONCRETE BEAM - SEE S-60 SHEETS
- INDICATES 2" SLAB DEPRESSION COORDINATE EXACT LIMITS W/ ARCH. & PLUMBING DWGs & SEE S1.0 SHEETS FOR TYPICAL SLAB DEPRESSION DETAILS
- INDICATES CONCRETE POUR STRIP - SEE PLAN

FLOOR FRAMING PLAN NOTES

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
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3. TYPICAL FLOOR SLAB SYSTEM IS 14" PT CONCRETE FLAT PLATE - SEE PT SHEETS FOR ADDITIONAL INFORMATION. FOR BUDGET PRICING ASSUME psf OF PT TENDONS & psf OF MILD REINFOCING
4. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
5. TYPICAL ROOF DECK IS 11/2" DEEP, 20 ga., GALVANIZED, TYPE 'B' METAL ROOF DECK.
6. METAL ROOF DECK SHALL BE ATTACHED TO SUPPORTING MEMBERS WITH HILTI X-HSN 24 FOR STEEL THICKNESS EQUAL TO OR LESS THAN 3/8" AND HILTI X-ENP 19 OTHERWISE IN A 36/4 PATTERN U.N.O. ON PLAN - EXCEPT WITHIN 7'-7" OF ROOF EDGE PROVIDE FASTENERS IN A 36/7 PATTERN. PROVIDE (1) HILTI SCC TEK SIDELAP SCREW PER SPAN, U.N.O. ON PLAN.



SECOND FLOOR FRAMING PLAN - AREA B

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

FLOOR ELEVATION TABLE	
Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-6"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: SECOND FLOOR FRAMING PLAN - AREA B

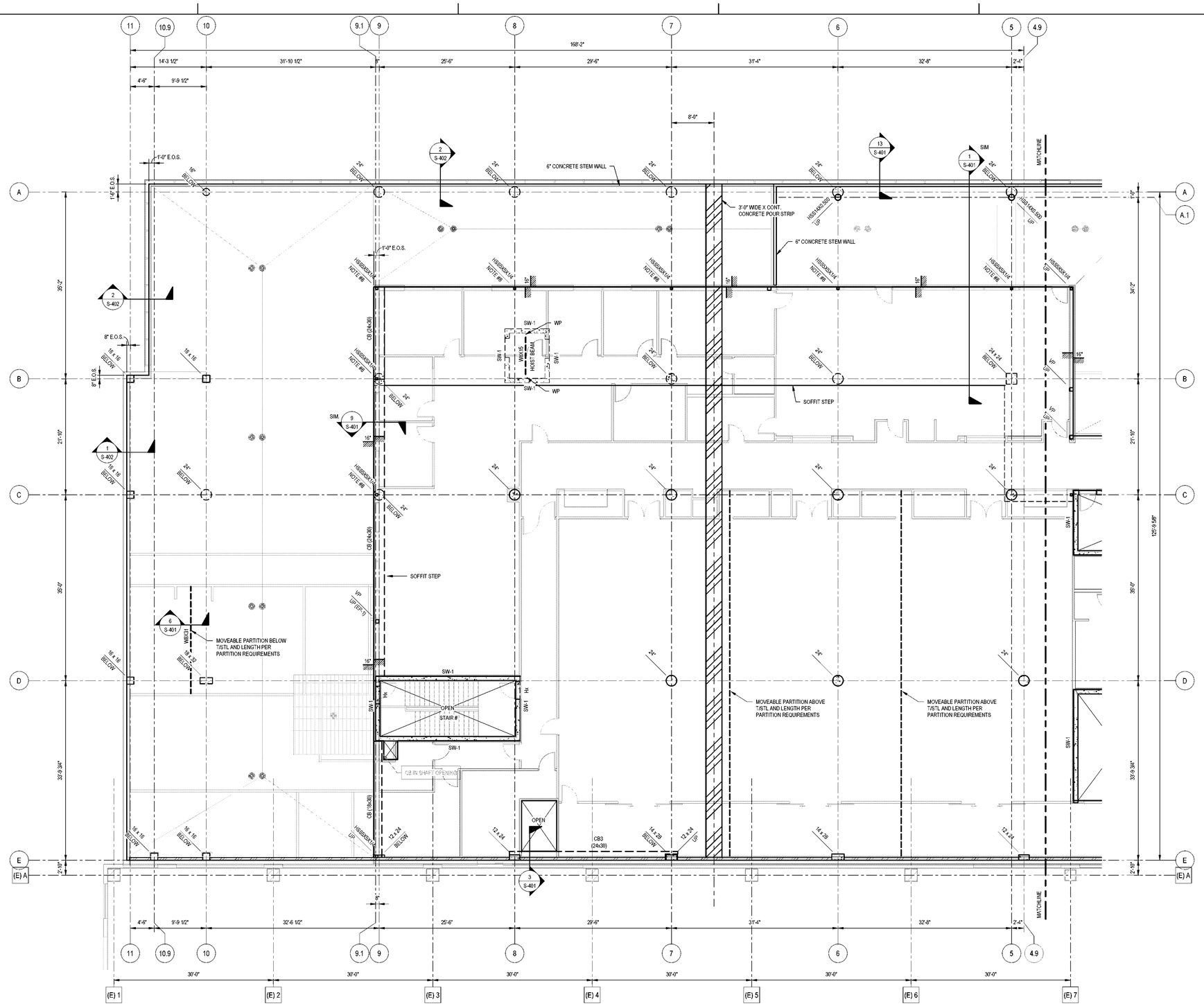
ORIG SUBMISSION: 2022.05.25

SHEET: S-202B

OWNER REVIEW SET

TRUE NORTH PROJECT NORTH

5/25/2022 4:03:18 PM



THIRD FLOOR FRAMING PLAN - AREA A

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

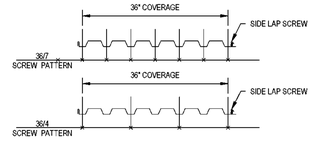
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LEVEL 3	35'-6"
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FLOOR FRAMING LEGEND

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FLOOR FRAMING PLAN NOTES

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: THIRD FLOOR FRAMING PLAN - AREA A

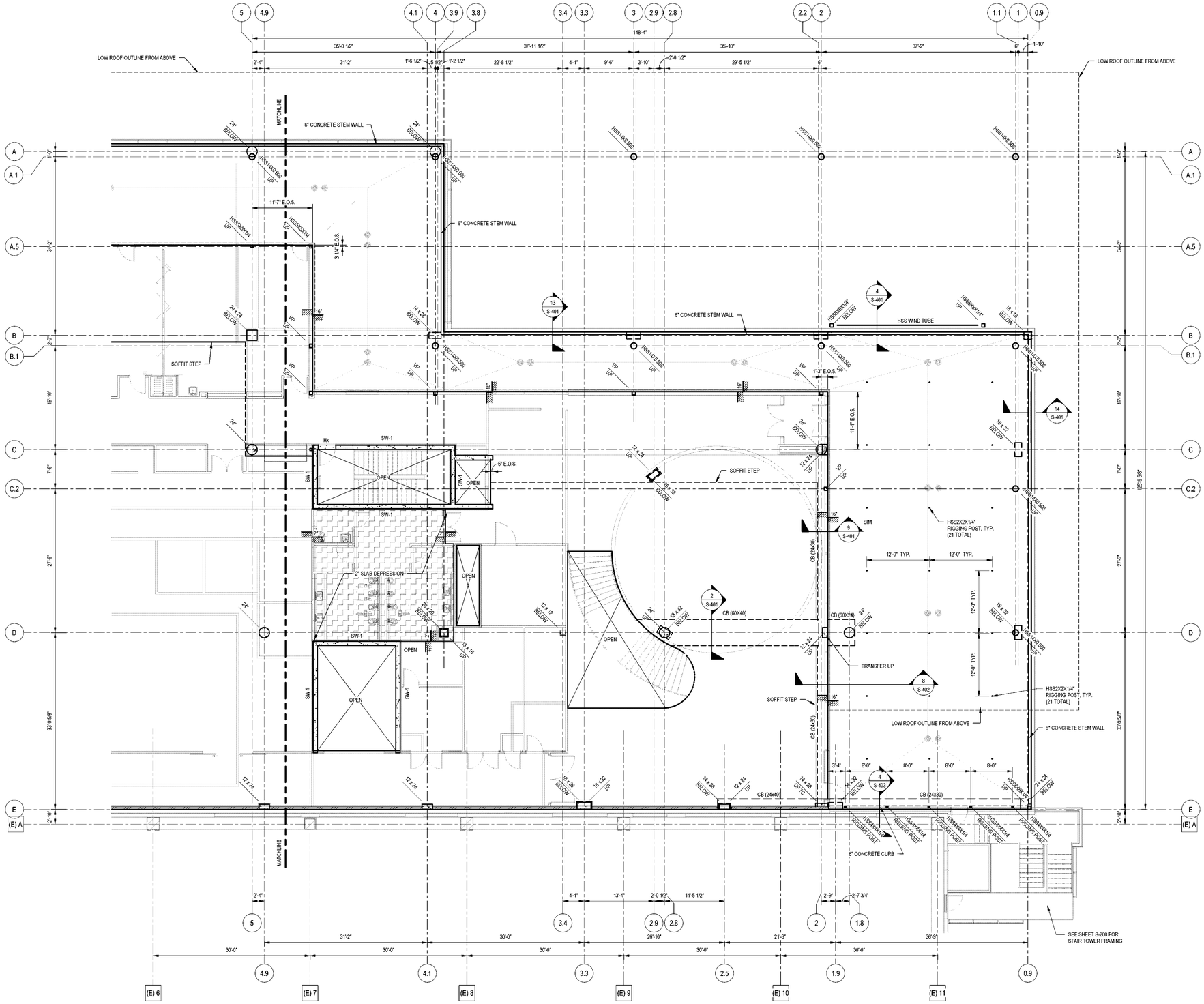
ORIG SUBMISSION: 2022.05.25

SHEET: **S-203A**

OWNER REVIEW SET

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5/25/2022 4:00:22 PM

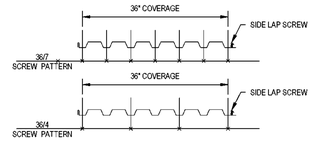


FLOOR FRAMING LEGEND

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THIRD FLOOR FRAMING PLAN - AREA B

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

FLOOR ELEVATION TABLE	
Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-6"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: THIRD FLOOR FRAMING PLAN - AREA B

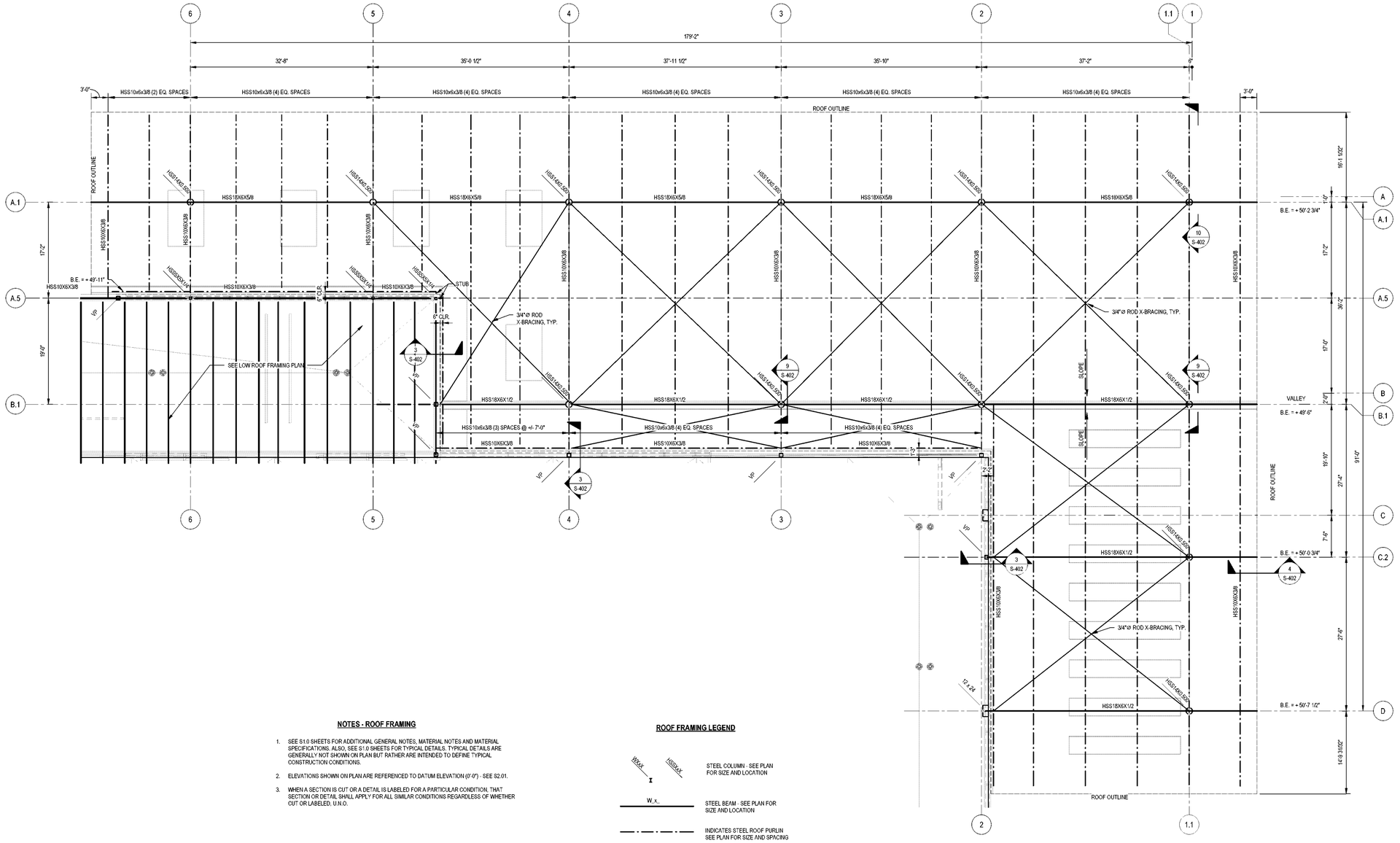
ORIG SUBMISSION: 2022.05.25

SHEET: **S-203B**

OWNER REVIEW SET

TRUE NORTH PROJECT NORTH

5/25/2022 4:03:27 PM



NOTES - ROOF FRAMING

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. ELEVATIONS SHOWN ON PLAN ARE REFERENCED TO DATUM ELEVATION (0'-0") - SEE S2.01.
3. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.

ROOF FRAMING LEGEND

- W.X.. / HSSXXX — STEEL COLUMN - SEE PLAN FOR SIZE AND LOCATION
- W.X.. — STEEL BEAM - SEE PLAN FOR SIZE AND LOCATION
- INDICATES STEEL ROOF PURLIN SEE PLAN FOR SIZE AND SPACING
- BFB — GIRDER BOTTOM FLANGE BRACING SEE SECTION ON S1.0 SHEETS
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN

CANOPY FRAMING PLAN

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

FLOOR ELEVATION TABLE

Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-6"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS. CONFIRM PLOT SIZE.

5/25/2022 4:03:28 PM

ZIMMER DEVELOPMENT COMPANY

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LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

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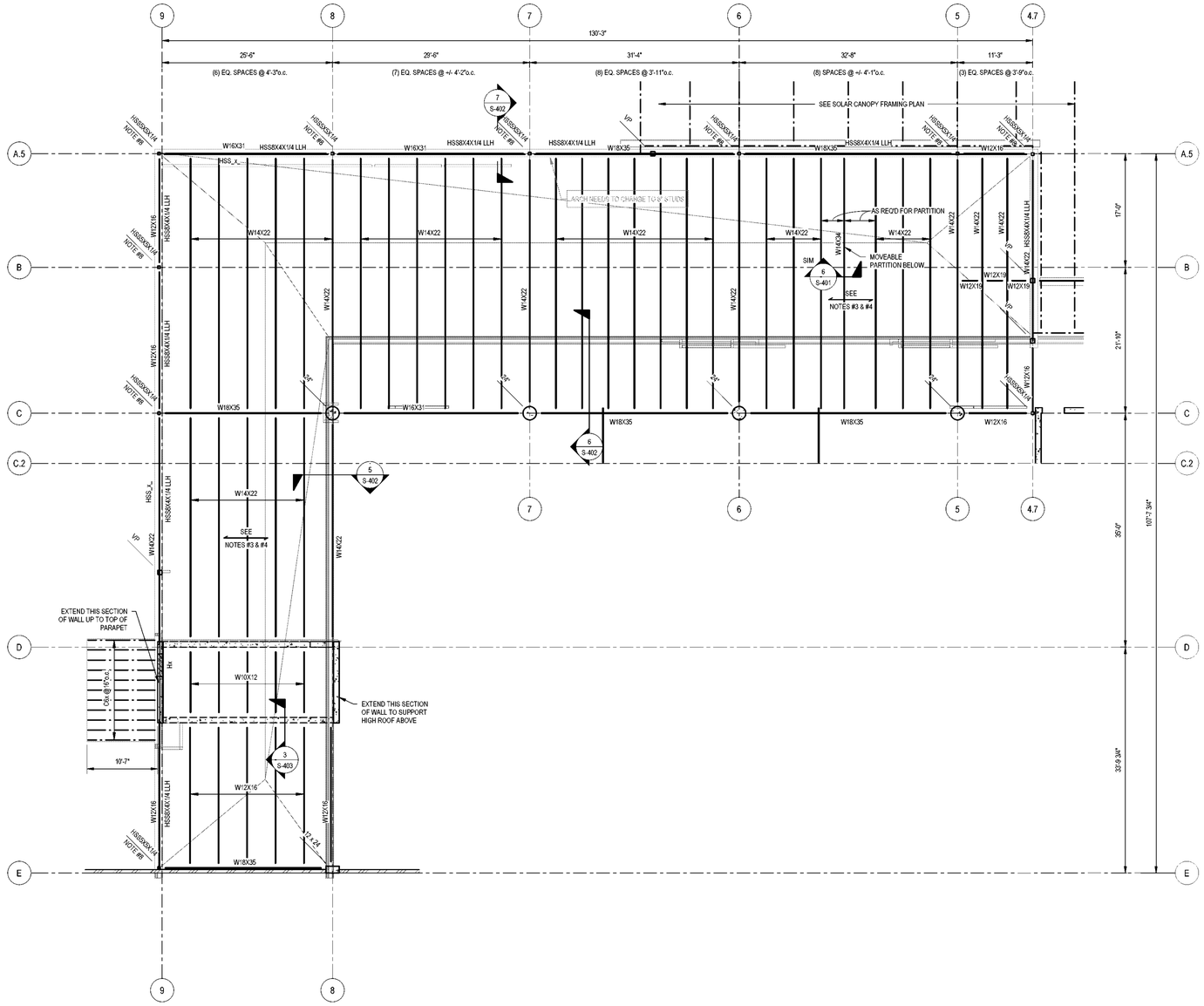
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CANOPY FRAMING PLAN

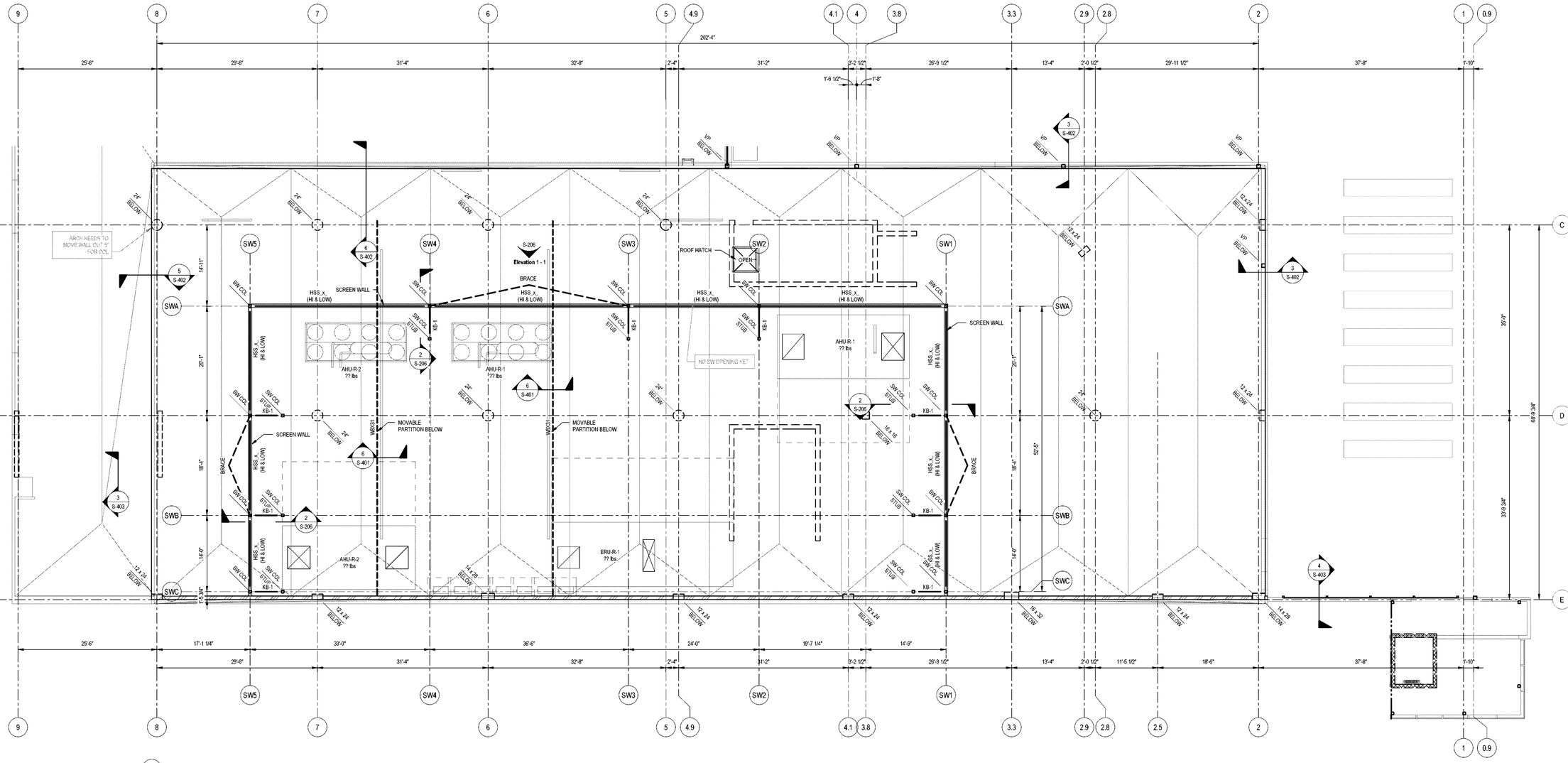
ORIG SUBMISSION: 2022.05.25

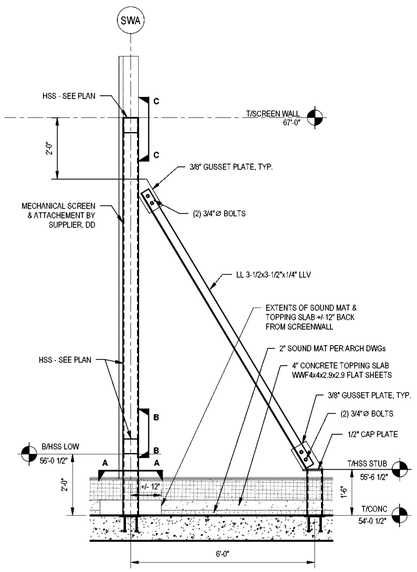
SHEET: S-204

OWNER REVIEW SET

TRUE NORTH PROJECT NORTH


130'-3"
25'-6"
29'-6"
31'-4"
32'-8"
11'-3"
(6) EQ. SPACES @ 4'-3"o.c.
(7) EQ. SPACES @ +/- 4'-2"o.c.
(8) EQ. SPACES @ 3'-11"o.c.
(8) SPACES @ +/- 4'-1"o.c.
(3) EQ. SPACES @ 3'-9"o.c.
SEE SOLAR CANOPY FRAMING PLAN
ARCH NEEDS TO CHANGE TO S1.1/DS
AS REQ'D FOR PARTITION
MOVEABLE PARTITION BELOW
SEE NOTES #3 & #4
EXTEND THIS SECTION OF WALL UP TO TOP OF PARAPET
EXTEND THIS SECTION OF WALL TO SUPPORT HIGH ROOF ABOVE
W16X31
W18X35
W14X22
W12X16
W12X19
W10X12
HSS8X4X1/4 LLH
HSS8X8X1/4
HSS_X_
W14X30
W12X16
W18X40
W12X22
W14X22
W18X35
W12X16
W12X19
W18X35
W18X35
W12X16
W14X22
W14X22
W10X12
W12X16
W12X16
W18X35
HSS8X4X1/4 LLH
HSS8X8X1/4
HSS_X_
HSS8X4X1/4 LLH
W14X22
W14X22
W14X22





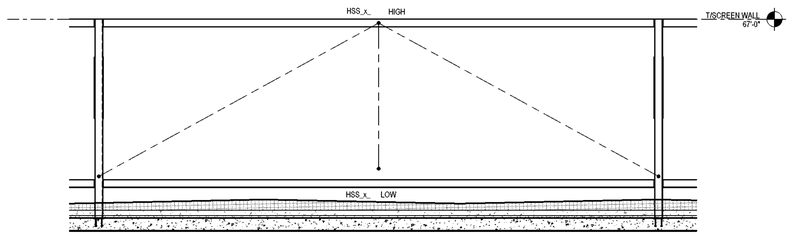
SECTION 2-2 SW KICKER

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

HIGH ROOF FRAMING PLAN

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

FLOOR ELEVATION TABLE	
Name	Elevation
B/HIGH ROOF	53'-2 1/2"
B/LOW ROOF	50'-0"
LEVEL 3	35'-6"
LEVEL 2	18'-6"
LEVEL 1	0"
LEVEL U1	-4'-0"



Elevation 1 - 1

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

CONCRETE ROOF FRAMING LEGEND

- KB-1 — INDICATES LL3-1/2"x3 1/2" x 1/4" LLV KICKER BRACE
- SWE — INDICATES HSS SCREEN WALL POST - SEE PLAN
- INDICATES CONCRETE WALLS BELOW
- SWE — INDICATES CONCRETE COLUMN BELOW - SEE SCHEDULE ON S-60 SHEETS
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN
- (E) 0 — EXISTING PARKING DECK GRID LINE
- CBx — CONCRETE BEAM - SEE S-60 SHEETS

CONCRETE ROOF FRAMING NOTES

1. SEE S-10 SHEETS FOR ADDITIONAL GENERAL NOTES, FOUNDATION NOTES, CONCRETE NOTES AND REINFORCING STEEL NOTES AND TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. TOP OF TYPICAL SLAB ELEVATION PER SCHEDULE THIS SHEET, OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
3. STRUCTURAL FLOOR SYSTEM IS A 10" THICK TWO-WAY CONCRETE FLAT PLATE (BANDED AND UNIFORM TENDON LAYOUT), TYPICAL U.N.O. SEE S7.0 SHEETS FOR TYPICAL POST- TENSIONING DETAILS. ANY REINFORCEMENT SHOWN ON TYP. DETAILS IS IN ADDITION TO THE REINF. SHOWN ON REBAR PLANS.
4. CONCRETE STRENGTH
   FLOOR
   f'ci = REQUIRED MINIMUM CONCRETE STRENGTH AT TIME OF STRESSING = 3750psi
   f'c = 28 DAY CONCRETE STRENGTH = 5000psi
   COLUMNS & SHEARWALLS
   f'c = 28 DAY CONCRETE STRENGTH = 5000psi.
5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS. *PLUMBING SLEEVES ARE **NOT** ALLOWED WITHIN 5'-0" OF COLUMNS.*
6. ALL POST INSTALLED ANCHORAGE TO HAVE A MAXIMUM EMBED OF 1" TO ENSURE TENDONS ARE NOT DAMAGED DURING INSTALLATION.
7. SR# INDICATES STUD RAIL TYPE, SEE S7.0 SHEETS FOR DETAILS.
8. DELAY POUR STIP TO BE LEFT OPENED FOR MIN 30 DAYS. AFTER ADJACANT SLABS ARE STRESSED CANTILEVERED SLAB EACH SIDE OF POUR STRIP DO NOT NEED TO BE SHORED AFTER STRESSING - JUST RESHORED SIMILER TO TYPICAL SLAB AREAS. INFILL CONCRETE FOR DELAY STRIPS TO BE 5,000psi NORMAL WEIGHT WITH SHRINKAGE COMPENSAING ADMIXTURE.

TRUE NORTH PROJECT NORTH

ZIMMER DEVELOPMENT COMPANY

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WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NOT FOR CONSTRUCTION SEAL 030182 NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER JAMES R. WOODS

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

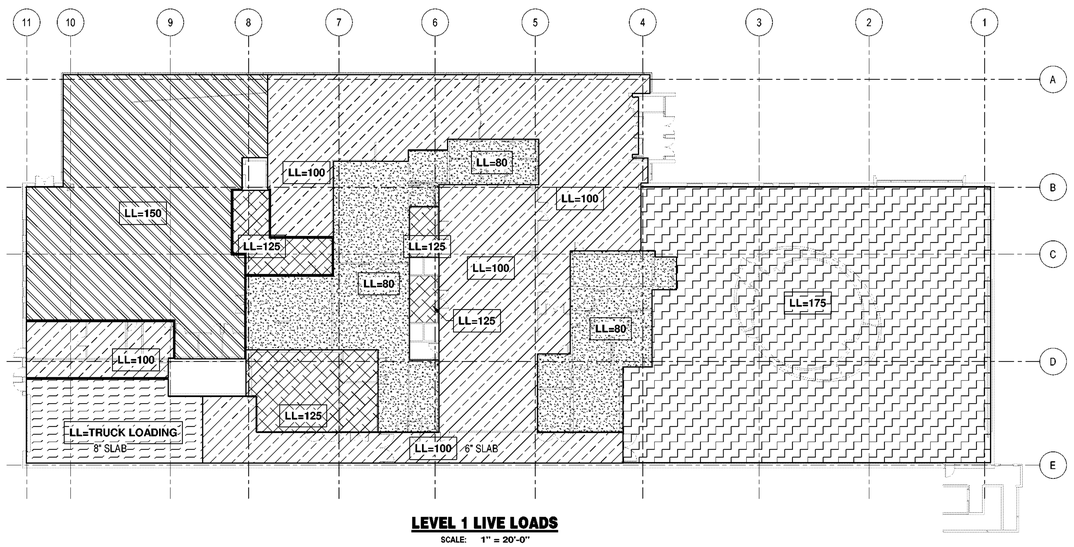
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ORIG SUBMISSION: 2022.05.25

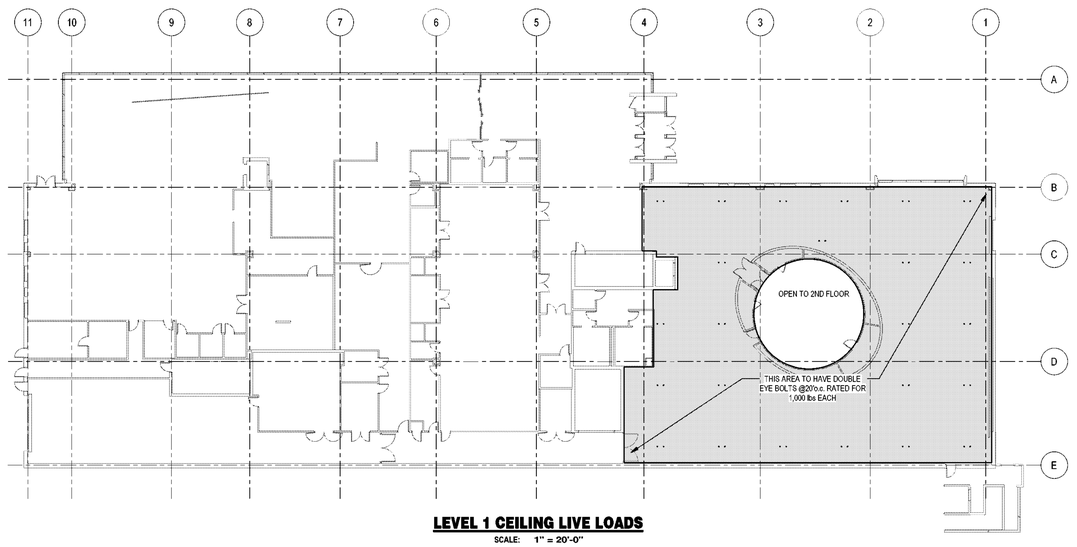
SHEET: **S-206**

OWNER REVIEW SET

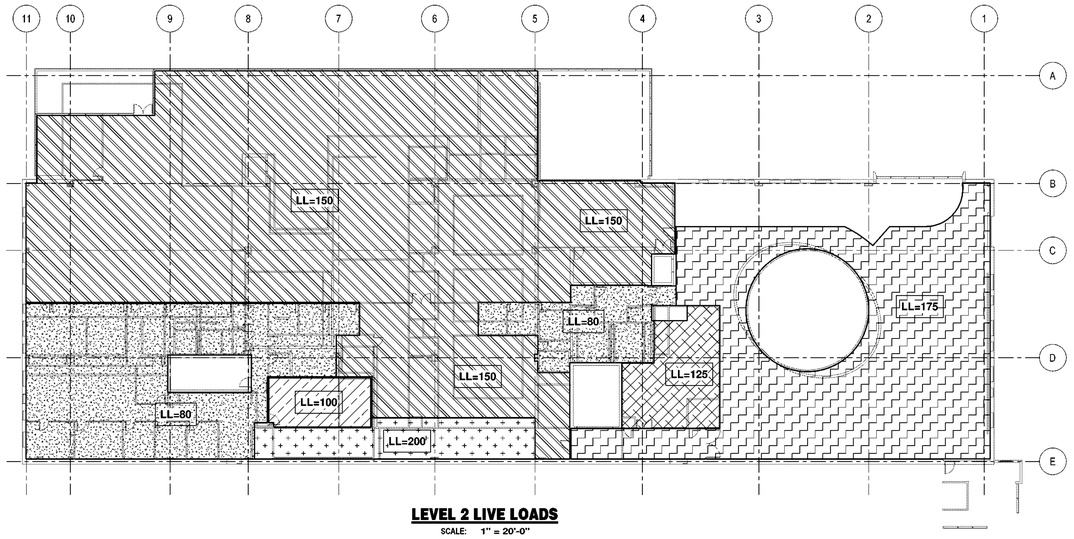
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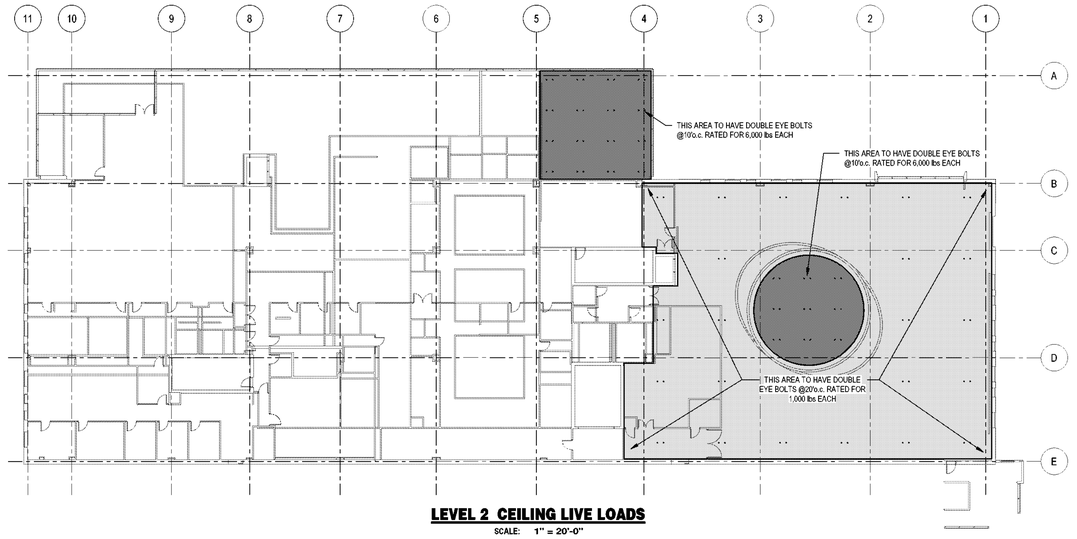
LEVEL 1 LIVE LOADS
SCALE: 1" = 20'-0"



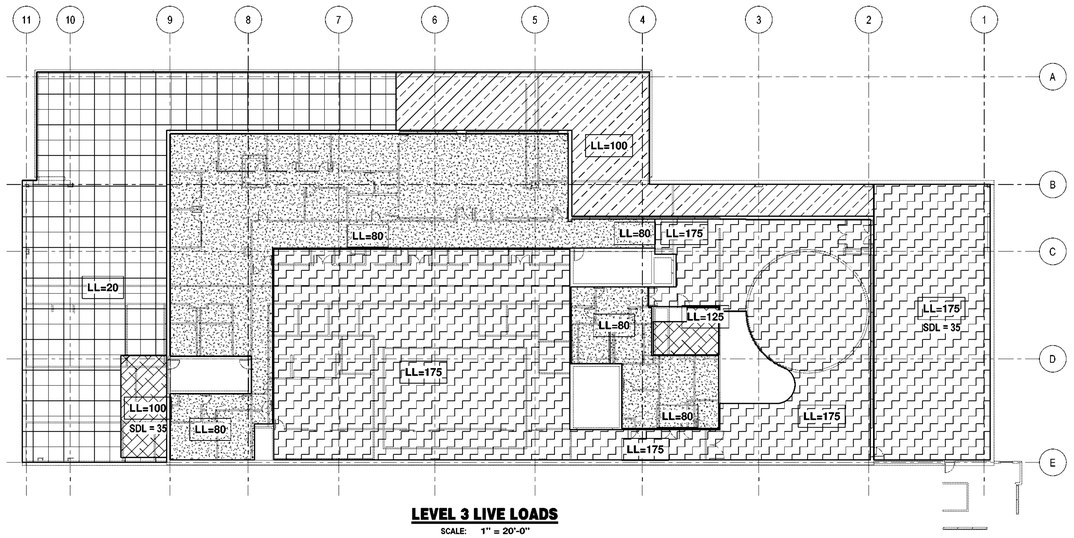
LEVEL 1 CEILING LIVE LOADS
SCALE: 1" = 20'-0"



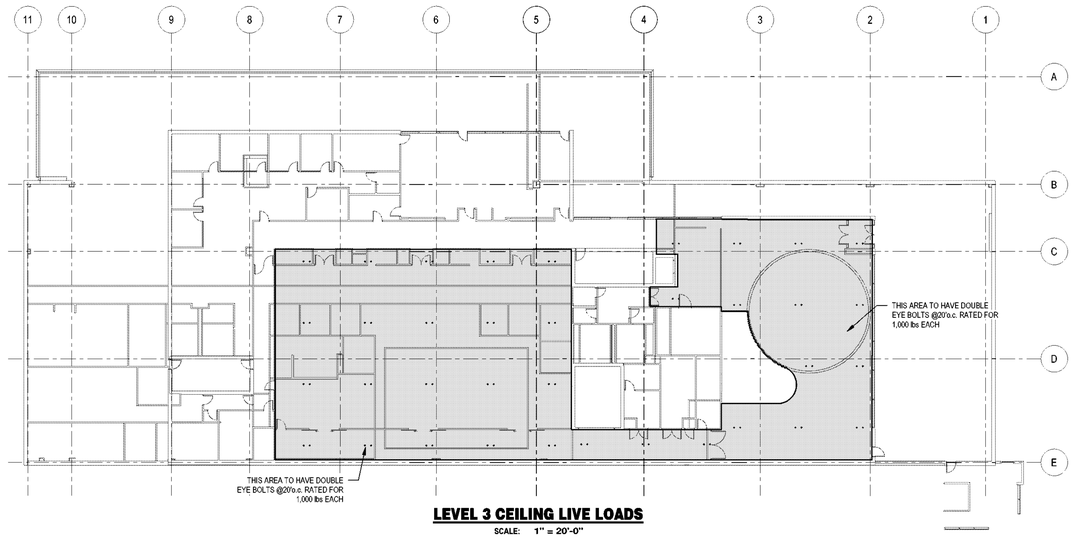
LEVEL 2 LIVE LOADS
SCALE: 1" = 20'-0"



LEVEL 2 CEILING LIVE LOADS
SCALE: 1" = 20'-0"



LEVEL 3 LIVE LOADS
SCALE: 1" = 20'-0"



LEVEL 3 CEILING LIVE LOADS
SCALE: 1" = 20'-0"

THIS LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS. CHOOSE PLOT SIZE ACCORDINGLY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

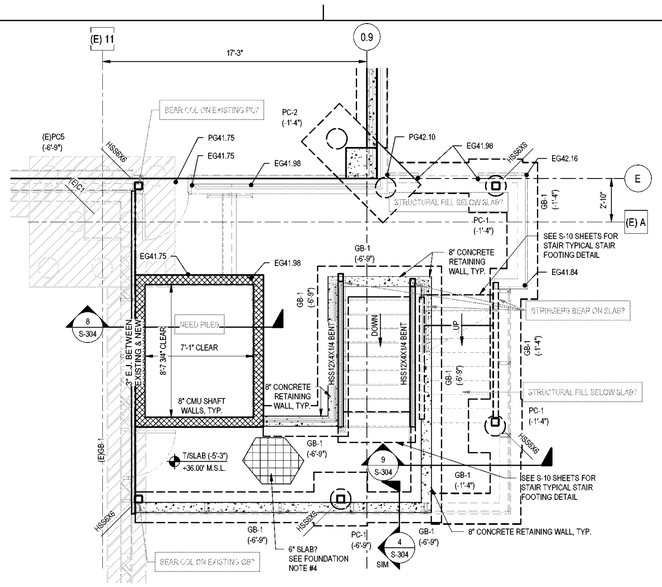
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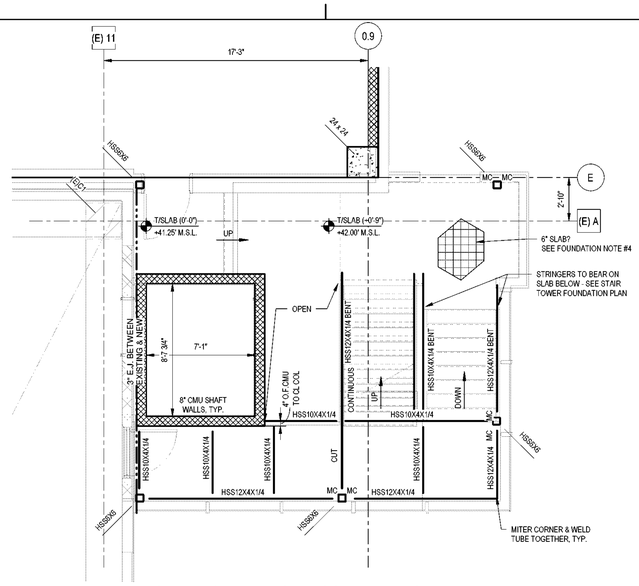
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LIVE LOAD PLANS

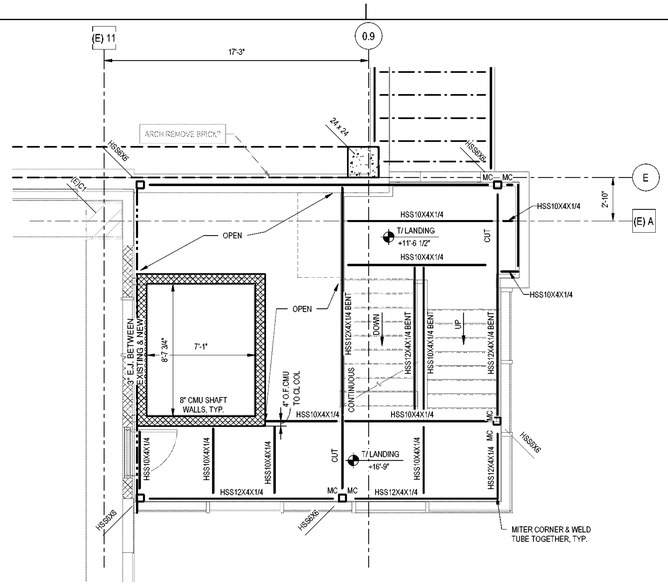
ORIG SUBMISSION: 2022.05.25

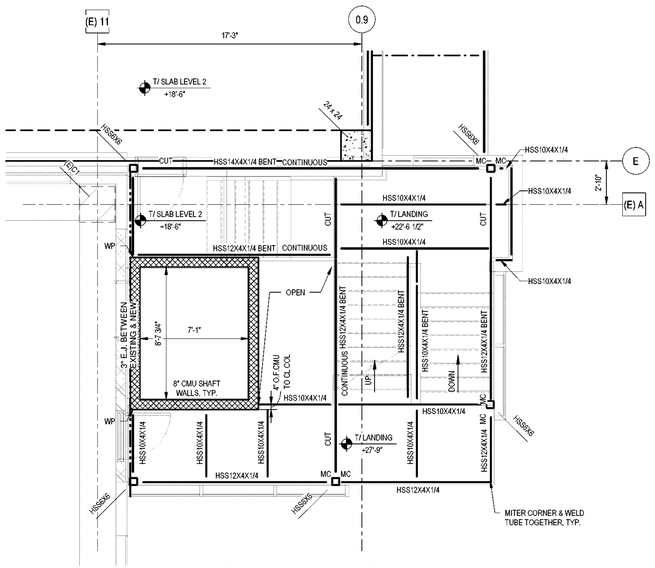
SHEET:
S-207

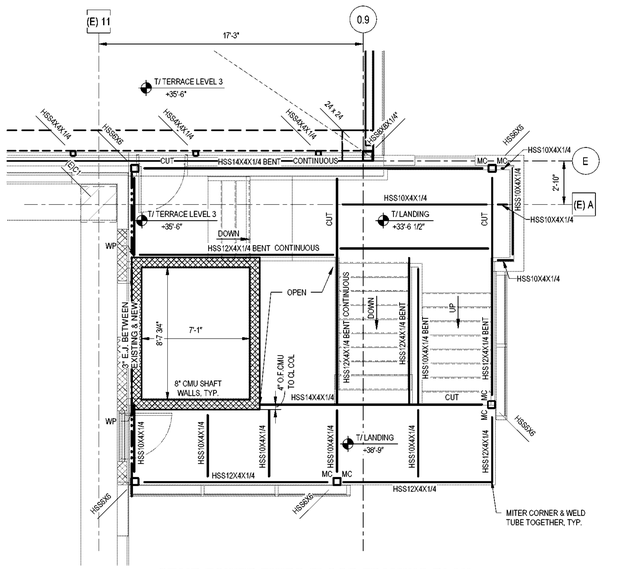
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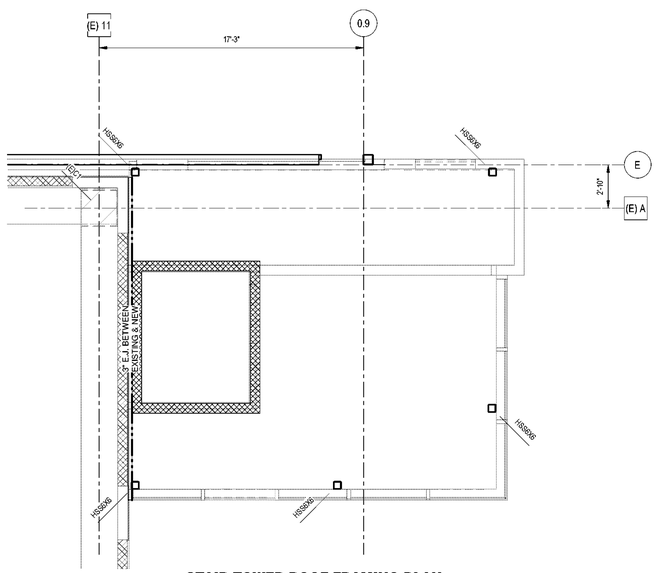












PLAN LEGEND

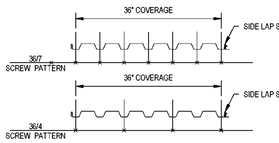
- INDICATES 8" CMU ELEVATOR SHAFT WALL W/ #? @?? o.c.
- INDICATES 8" CONCRETE RETAINING WALL W/ #? @?? o.c.
- S.F. — INDICATES STEP FOOTING - SEE S1.0 SHEETS FOR TYPICAL DETAILS
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS, SEE S1.0 SHEETS FOR TYPICAL DETAILS. SEE PLAN FOR LOCATIONS. MAXIMUM SPACING = 12' IN EACH DIRECTION
- SIZE — INDICATES CONCRETE COLUMN SEE SHEETS
- SIZE BP-x — HSS STEEL COLUMN - SEE PLAN FOR SIZE AND LOCATION SEE S3.0 SERIES SHEETS FOR BASE PLATE DETAILS (BP-x)
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN U.N.O.
- (E) 0 — EXISTING PARKING DECK GRID LINE
- W_x_ — STEEL BEAM - SEE PLAN FOR SIZE AND LOCATION
- INDICATES STEEL ROOF JOISTS SEE PLAN FOR SIZE AND SPACING
- E.J. — BUILDING EXPANSION JOINT LOCATION = SEE S1.0 SERIES SHEETS FOR TYPICAL DETAILS
- INDICATES GRAVITY SEWER LINES
- PG = X'.X" — INDICATES PROPOSED FINISHED GRADE ELEVATION (MSL) COORDINATE WITH CIVIL & ARCH PLANS
- INDICATES 2" SLAB DEPRESSION COORDINATE EXACT LIMITS W/ ARCH. & PLUMBING DWGs & SEE S1.0 SHEETS FOR TYPICAL SLAB DEPRESSION DETAILS
- F.D. — FLOOR DRAIN - COORDINATE W/ PLUMBING DWGs
- P.L. — INDICATES PROPERTY LINE
- CONCRETE PILE CAP - SEE PLAN & SCHEDULE THIS SHEET. SEE DETAILS ON S3.02
- GB-X — CONCRETE GRADE BEAM SEE SCHEDULE THIS SHEET
- INDICATES GRAVITY PILES
- INDICATES UPLIFT PILES
- INV = X.XX — UNDERGROUND PLUMBING LINES - COORDINATE WITH PLUMBING DWGs

FOUNDATION PLAN NOTES:

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. DATUM ELEVATION = TOP OF SLAB ELEVATION = ASSUMED 0'-0" = 41.25' M.S.L. OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
3. TOP OF PILE CAPS SHALL BE (-1'-4") FROM DATUM ELEVATION, U.N.O.
4. INTERIOR TROWEL FINISHED SLAB-ON-GRADE (THICKNESS SPECIFIED ON PLAN) 3000 psi CONCRETE REINFORCED WITH 3.0lb/yd^3 OF SYNTHETIC MACRO-FIBERS (TUF-STRAND SF BY EUCLID, FIBER MAC SERIES BY BASF, OR FORTA-FERRO BY FORTA CORP, OR APPROVED EQUAL) ON 15 mil VAPOR RETARDER, ON 6" CLEAN SANDS WITH LESS THAN 20% FINES PASSING #100 SIEVE (SP,SW,SP-SM) OR APPROVED EQUAL ON WELL COMPACTED SUB GRADE. EXTERIOR AND BROOM FINISHED SLABS ON GRADE (THICKNESS SPECIFIED ON PLAN) 4,000 psi CONCRETE REINFORCED WITH WWF6X6XW2.9XW2.9 FLAT SHEETS ON 10 MIL VAPOR BARRIER ON 6" CLEAN SANDS ON COMPACTED SUB-GRADE.
5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
6. RELOCATE ANY UTILITY LINES THAT CONFLICT WITH THE FOUNDATIONS OR DROP THE FOUNDATIONS TO AN ELEVATION BELOW THE PROPOSED UTILITIES. RELOCATE ANY GRAVITY FLOW LINES THAT CONFLICT WITH SPREAD FOOTINGS AS SHOWN ON STRUCTURAL FOUNDATION PLANS. IF A GRAVITY FLOW LINE TRAVELS UNDER A CONTINUOUS STRIP FOOTING EITHER:
   a. DROP THE FOOTING ELEVATION BELOW THE PROPOSED LINE.
   b. IF THE UTILITY LINE IS < 2'-0" BELOW THE STRIP FOOTING, THEN ENCASE THE LINE IN A STEEL PIPE 2" LARGER IN DIAMETER THAN THE LINE AND EXTEND THE PIPE 1'-0" PAST EACH SIDE OF THE CONCRETE FOOTING. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
   c. IF THE UTILITY LINE IS > 2'-0" BELOW BOTTOM OF FOOTING, THEN STEEL PIPE IS NOT REQUIRED. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
7. DIMENSIONS ARE FROM EDGE OF SLAB (E.O.S.) AND OUTSIDE FACE OF STUD (O.F.S.) / CURTAINWALL (O.F.CW.) TO COLUMN CENTERLINE UNLESS NOTED OTHERWISE.
8. S.F. = STEP FOOTING, SEE TYPICAL DETAIL ON S-10 SHEET'S. G.C. TO COORDINATE STEPS IN FOUNDATION FOR PLUMBING, ELECTRICAL AND MECHANICAL.
9. SEE S-60 SHEETS FOR CONCRETE COLUMN SCHEDULE.
10. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
11. GRID E DESIGNATES OUTSIDE FACE OF COLUMN AND SOUTH FACING EDGE OF SLAB.

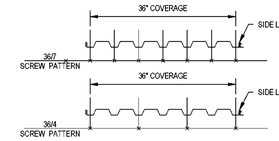
FLOOR FRAMING PLAN NOTES

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. SEE FLOOR ELEVATION TABLE THIS SHEET FOR TYPICAL SLAB ELEVATIONS.
3. TYPICAL FLOOR SLAB SYSTEM IS 14" PT CONCRETE FLAT PLATE - SEE PT SHEETS FOR ADDITIONAL INFORMATION. FOR BUDGET PRICING ASSUME psf OF PT TENDONS & psf OF MILD REINFOCING
4. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
5. TYPICAL ROOF DECK IS 1½" DEEP, 20 ga., GALVANIZED, TYPE 'B' METAL ROOF DECK.
6. METAL ROOF DECK SHALL BE ATTACHED TO SUPPORTING MEMBERS WITH HILTI X-HSN 24 FOR STEEL THICKNESS EQUAL TO OR LESS THAN 3/8" AND HILTI X ENP 19 OTHERWISE IN A 36/4 PATTERN U.N.O. ON PLAN - EXCEPT WITHIN 7'-7" OF ROOF EDGE PROVIDE FASTENERS IN A 36/7 PATTERN. PROVIDE (1) HILTI SCC TEK SIDELAP SCREW PER SPAN, U.N.O. ON PLAN.



NOTES - ROOF FRAMING

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. ELEVATIONS SHOWN ON PLAN ARE REFERENCED TO DATUM ELEVATION (0'-0") - SEE S2.01.
3. TYPICAL ROOF DECK IS 1½" DEEP, 20 ga., GALVANIZED, TYPE 'B' METAL ROOF DECK.
4. METAL ROOF DECK SHALL BE ATTACHED TO SUPPORTING MEMBERS WITH HILTI X-HSN 24 FOR STEEL THICKNESS EQUAL TO OR LESS THAN 3/8" AND HILTI X-ENP 19 OTHERWISE IN A 36/4 PATTERN U.N.O. ON PLAN - EXCEPT WITHIN 7'-7" OF ROOF EDGE PROVIDE FASTENERS IN A 36/7 PATTERN. PROVIDE (1) HILTI SCC TEK SIDELAP SCREW PER SPAN, U.N.O. ON PLAN.



4. ALL JOISTS SHALL BE DESIGNED FOR A NET UPLIFT PRESSURE OF ?? psf.
5. PROVIDE JOIST BRIDGING PER SJI RECOMMENDATIONS.
6. SEE S5.0 SHEETS FOR BRACE FRAME INFORMATION.
7. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
8. EXTEND COLUMN TO TOP OF PARAPET, TYP.

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: STAIR TOWER FRAMING PLANS, SECTIONS & DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET: **S-208**

OWNER REVIEW SET

5/25/2022 4:03:47 PM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS OTHERWISE ADJUST SCALE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE

SECTION – AUGER CAST DISPLACEMENT PILES

I. General

A. The Contractor shall furnish all labor, material, and incidental items necessary to completely install all piles shown on the drawings and as specified herein. He shall remove all excess pile materials from site.

B. Concrete in piles is specified under the Division Three Concrete.

C. Type of Pile: Provide 16" partially reinforced round auger cast piles – 90 ton compressive capacity, ?ton uplift and ? ton lateral as per Section 1810.3 of IBC 2003. and Geotechnical report No. 1061-13-426 by S&ME, INC., Wilmington, NC 28405.

II. Basis of Payment

A. The contract will be based on the assumption that all piles will be installed as detailed in Geotechnical Report No. 22:31167 by ECS Southeast, LLP Wilmington, NC 28405. and on foundation plan sheets. Site conditions may require deviations from the contract documents, therefore the Contractor shall submit units prices to the Owner prior to the start of work.

III. Qualification of Piling Contractor

A. The Contractor shall submit evidence of his experience and capability in pile construction.

B. The Contractor's record of the expeditious completion as well as the accurate installation of piling work will be of prime consideration in qualifying the Contractor for this project.

IV. Submittals

Before commencing work, the Piling Contractor shall submit to the Engineer for approval the following:

1. Sketch and/or description of the pile drilling and grout pumping equipment to be utilized.
2. Complete description of method of installation.
3. Mortar laboratory mix.

The mortar mix design should be performed utilizing local materials, or a break history of the proposed mix which utilizes local materials may be submitted for the Engineer's review. The submitted mixes shall incorporate sand of the same source and fineness modulus as that proposed for the production mix. The mortar mix design shall meet the requirement of ACI 318 Chapter 5.

4. Complete detail drawings clearly showing the designation of all piles and pile caps by an identifying system.

V. Subsurface Information

Logs of borings made on-site are printed in the Geotechnical Report, and the locations of the borings are also shown. The information shown in the boring logs is available to the Engineer from the Owner for design and estimating purposes. The Contractor, at his expense, may make additional investigations he feels are justified for bidding purposes.

VI. Excavation Prior to Pile Installation

1. The Contractor shall perform general excavation as required for adjustment of grade to the plan depth of the pile caps prior to the installation of piles.

2. The Contractor shall provide all necessary access, including access ramps, prior to the beginning of the installation of piles.

VII. Materials:

The Contractor shall submit to the Engineer for approval a description of the materials to be used and the proposed methods of operations.

A. Portland Cement – ASTM Type I or II.

B. Special Pozzolan:

The special pozzolan, when available, shall be an approved flyash or equal: a finely powdered siliceous material which possesses the property of combining with the lime liberate during the hydration of portland cement. The special pozzolan shall contribute markedly to the later-age strength of the cement base mortar.

C. Grouting Agent: The grouting agent shall affect the cement base mortar to reduce mixing water and eliminate setting shrinkage.

D. Water: Water for cement base mortar shall be fresh, clean and free from injurious amounts of sewage, oil, acid, alkali, silts, or organic matter.

E. Fine Aggregate: Sand shall meet the requirements of current ASTM Standards Designation C-33, except that the gradation shall be as herein specified. The sand shall be well graded from fine to coarse with a fineness modulus of 2.30 to 3.40.

VIII. Mixing and Pumping Mortar:

A. The quantity of water used shall be such as to produce a grout having a consistency of not less than 15 seconds when tested with a flow cone in accordance with the Corps of Engineers CRD C-79 (¼" orifice).

B. Only approved mixing and pumping equipment shall be used in preparing and handling the mortar. All materials shall be fed to the mixer accurately measured by weight, except water that may be measured by volume. The order of placing the materials shall be as follows: (1) water, (2) fluidifier, and (3) other solids in order of increasing particle size. The time of mixing shall be such as to produce a homogeneous mortar, whether mixed on the site or obtained from a ready mix plant.

C. The cement base non-shrinkage mortar shall consist of Portland Cement, a special pozzolan (when available), a grouting agent, sand, and water so proportioned and mixed as to produce a mortar capable of maintaining the solids in suspension without applicable water gain; which may be pumped without difficulty and which will penetrate and fill open voids in the adjacent soils. These materials shall be proportioned to produce a hardened mortar which will achieve the design strength of 5000 psi within 28 days.

D. A pressure gauge in good condition shall be located on the grout pump so the grouting pressure may be checked by the operator and Engineer's representative.

E. Grout Volume: The volume of grout per linear foot of pile shall be not less than the volume of grout per foot of test piles, but in no case less than 115 percent of the theoretical pile volume. All volume measurements shall be made in the presence of the Geotechnical Engineer or his representative. A minimum grout factor of 1.4 shall be used for estimating purposes. The Contractor shall provide grout unit rates for payment adjustments.

F. Grout Pump: Grout pump shall be a positive displacement pump of an approved design. The pump discharge capacity shall be calibrated in strokes per cubic foot or revolutions per cubic foot by a method approved by the Engineer. All oil or other rust inhibitors shall be removed from mixing drums and pressure grout pumps prior to mixing and pumping.

G. Hollow Shaft Auger: The minimum inside diameter of the hollow shaft of the auger flight shall be 2½ inches.

IX. Installation

A. The piling shall be the diameter and length shown on the drawings. Piles shall be located as shown on drawings or as otherwise directed by the Engineer. Piles shall be installed from the ground surface existing after general excavation work has been completed. The maximum variation of the center of any pile from the required location shall be 2 inches at the ground surface, and no pile shall be out of plumb more than 2 percent. Piles damaged, mislocated, or out of alignment beyond the maximum tolerance will be abandoned and additional piles shall be placed as directed at the expense of the contractor.

B. A continuous flight hollow shaft (minimum inside diameter of 2½ inches) auger shall be rotated into the underlying soil to pre-determined tip elevation or refusal, whichever occurs first. Leaving the auger in the hole and maintaining a slow positive rotation, begin injecting the specified mortar through the hollow shaft. Inject a sufficient quantity of grout to completely fill the augered hole, carefully coordinating

C. The rate of injection as the auger is being withdrawn. Rate of grout injection and rate of auger withdrawal from the soil shall be so coordinated as to maintain at all times a head of grout above auger tip which will, in turn, indicate the existence of a "removing pressure" on the bottom of the auger flight. Magnitude of this pressure and performance of other augering and grouting procedures, such as rate of augering, rate of grout injection, and control of grout return around the auger flight, are dependent on soil conditions and equipment capability and shall be subject to approval of the Engineer. The auger hoisting equipment shall be capable of withdrawing the auger smoothly and at a constant rate. If the auger jumps upward during withdrawal, the rate of withdrawal shall be decreased to prevent further jumping and then redrill pile a minimum of 5'-0" below last interrupted tip elevation. Material excavated by augering shall be disposed of by the Contractor outside the limits of right-of-way unless otherwise directed. No pile shall be left partially completed overnight but must be completely grouted and protected at the termination of each day's operation.

D. Protection of Piles: Provide a sequence of pile installation within pile groups such that the adjacent piles are not disturbed. Do not place piles within 6 pile diameters of adjacent piles or as soil conditions permit until initial set has occurred or 12 hours, whichever is greater. Initial set is that time period when the grouted pile changes from being a fluid. A physical check of the adjacent pile is the most accurate way of determining when initial set has occurred.

E. In the event non-augerable material is encountered, the obstruction shall be removed by the General Contractor and the pile completed or the short pile pumped and paid for as the job pile. An additional pile may be required at the engineer's direction and shall be paid for in accordance with the unit price for additional piles.

F. The ground surface at each pile location at the time of augering and grouting shall be at least 12 inches higher than the required pile cut-off elevation. Piles shall be constructed to top of ground and the mortar may be removed to the cut-off elevation prior to initial set. If hole will not stand open, the pile must be cut off after final set of mortar and the excavation for pile cap has been made.

G. Auger refusal shall be defined as an auger penetration rate of one (1) foot per minute or less.

H. Lines and Levels: The Contractor shall establish and locate all lines and levels and shall be responsible for the correct location of all piles. The Contractor shall determine and shall mark the cut-off elevation on each pile. Any adjustment in design of the building foundation, structure, or equipment made necessary by errors in location of piles or cut-offs shall be at the expense of the Contractor.

I. Casings: The contractor may use steel cylinder casings as a soil retention liner as soil warrants. Casings shall be approved by the Engineer and shall be left in place and filled with grout. Casings shall be of sufficient strength and rigidity to withstand all installation stresses, to prevent distortion caused by placing adjacent piles, and to prevent collapse due to soil or hydrostatic pressure. The casing shall be rotated by the auger drive unit or weighted or jetted to the required depth. If casing is used, it must have been used for test piles.

J. Inspection by the Contractor: During the pile operations and before the pile equipment is removed from the job site, the Contractor shall determine if all piles are installed as shown by plan location. Failure to do so may require the subsequent return of the pile construction equipment to the project site to install additional piles at no cost to the Owner.

X. Test Piles

1. Provide (2) Compression Static Load tests.
2. Provide (1) Tension Static Load test.
3. Provide (1) Lateral Static Load test.
4. See ECS Geotechnical Report, Section ??? for additional information.
5. Coordinate test program w/ ECS Southeast, LLP
6. Test Piles shall not be in production locations.

XI. Quality Control

During the course of work, the Owners' Geotechnical Engineer shall submit:

1. Calibration of pile installation equipment to accurately measure grout volumes and pressure prior to test pile installation. This calibration shall be expressed in cubic feet per pump stroke.

2. Documentation of amount of grout injected into the test pile by recording the number of pump strokes per lineal foot.

3. Results from static load tests in accordance with ASTM D-1143.

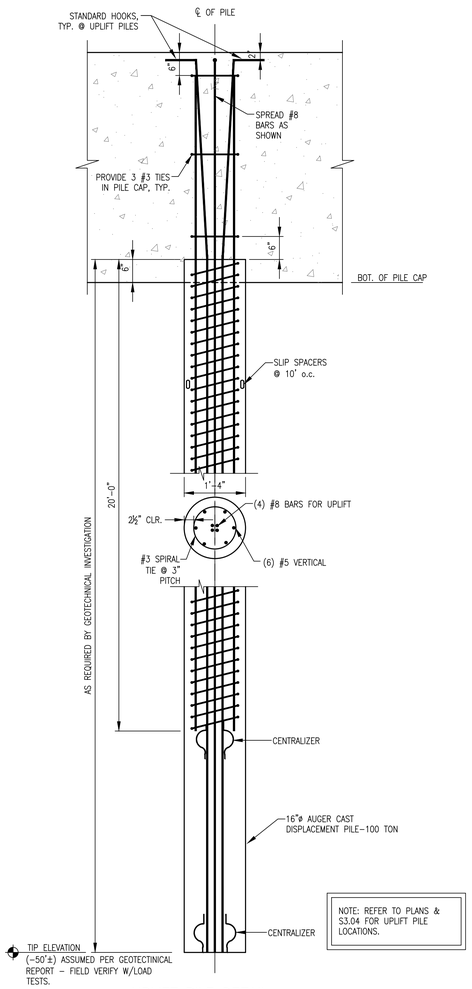
4. If the load test is successful, confirmation that each production pile is installed using the same procedure that installed the successful test pile.

5. Certification to the Code Official and Structural Engineer of Record by an engineer registered in the state the work is located that all pilings were installed in accordance with the approved design and tested installation procedure. The engineer shall be prepared to submit upon request a report showing the following minimum information:

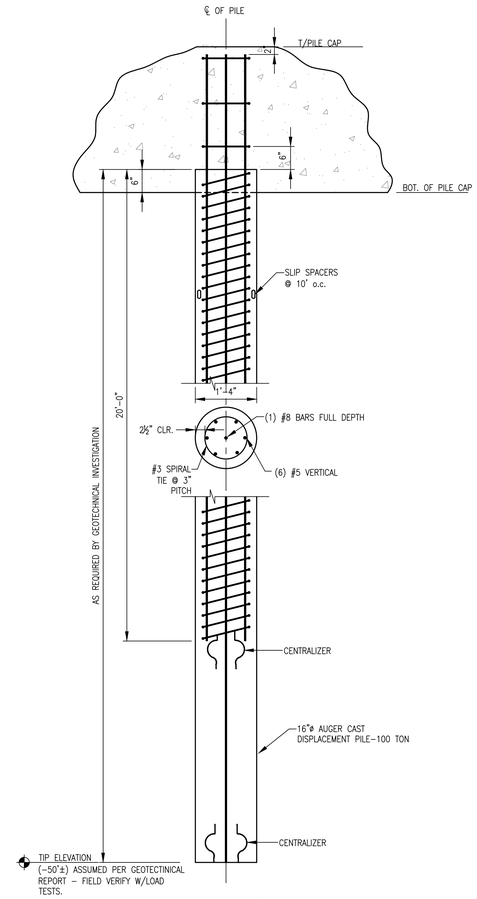
   a. Pile Identification
   b. Pile Length & As-Built location
   c. Date
   d. Rate of Auger Withdrawal (grouting time)
   e. Grout volume in cubic feet per lineal foot

The Owner will provide an Inspector on the site during the installation of the piles. The Inspector is to work under the direct supervision of the Geotechnical Engineer. The Inspector and Geotechnical Engineer shall submit documentation to the Owner showing that they have had "hands-on" experience with at least three successfully completed auger-cast-grout pile projects. The selection of the Inspector will be made by the Geotechnical Engineer. The charges made by the Inspector will be paid by the Owner. Piles shall not be installed without the approval of the Inspector. The Inspector will report to the Owner and Engineer on the installation in writing. The Inspector will keep a record of each pile constructed. The records shall give the section, length, location, type, total depth of penetration, and results of any tests.

Grout Test Specimens: Grout tests shall be conducted by the Owner's agent in accordance with ASTM C-109. Test specimens of grout shall be prepared by pouring grout into two-inch cube molds. Molds shall be provided with a top cover plate designed so as to restrain grout expansion and to permit escape of air and water. Not less than one set of cubes shall be collected during the placing of each group of 15 piles or fraction thereof. One set shall consist of nine cubes of which three cubes shall be tested at 7 days, three cubes at 28 days, and 3 cubes held in reserve. Any set of cubes of which the average test at 15 percent or more below the required strength shall be cause for rejection of the pile group.

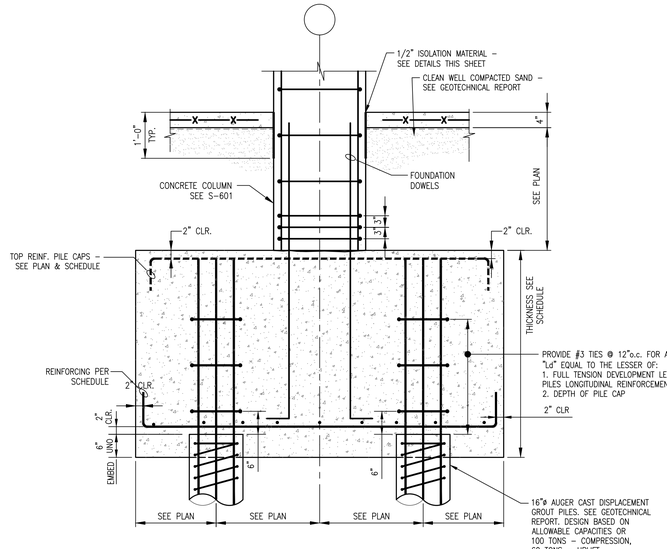


UPLIFT PILE DETAIL
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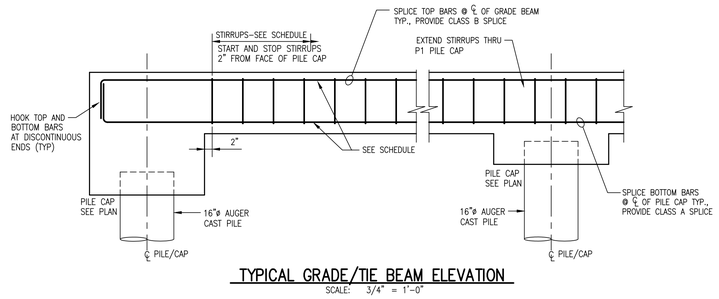


NON-UPLIFT PILE DETAIL
SCALE: 3/4" = 1'-0"

16"ø 90 TON AUGER CAST PILE DETAILS
SCALE: 3/4" = 1'-0"



TYPICAL PILE CAP SECTION 4-4
SCALE: 3/4" = 1'-0"



TYPICAL GRADE/TIE BEAM ELEVATION
SCALE: 3/4" = 1'-0"

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Project Grace
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Wilmington, NC 28401
LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

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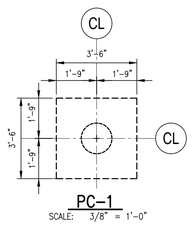
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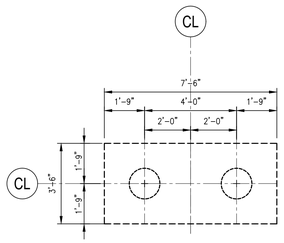
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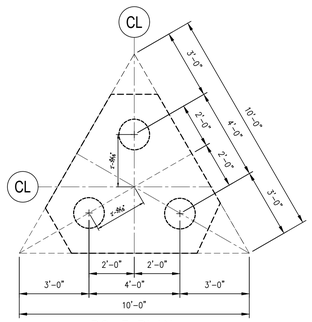
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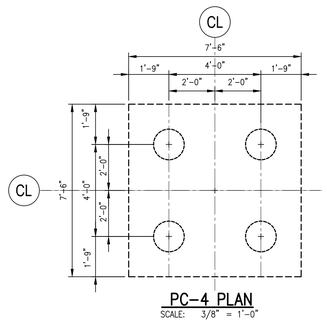
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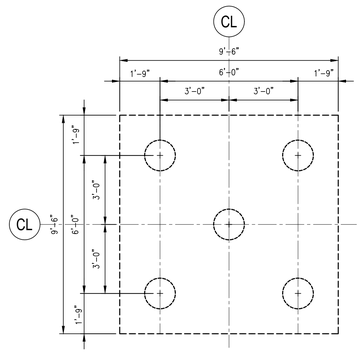
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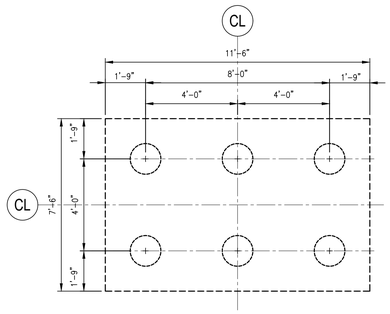
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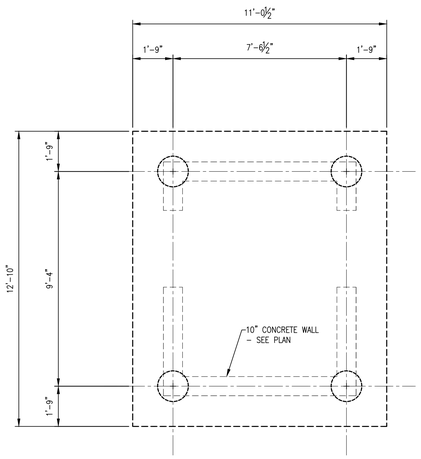
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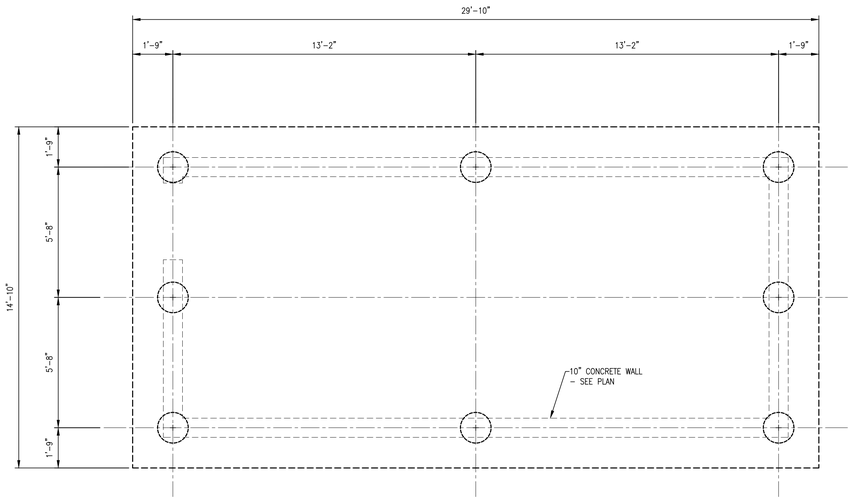
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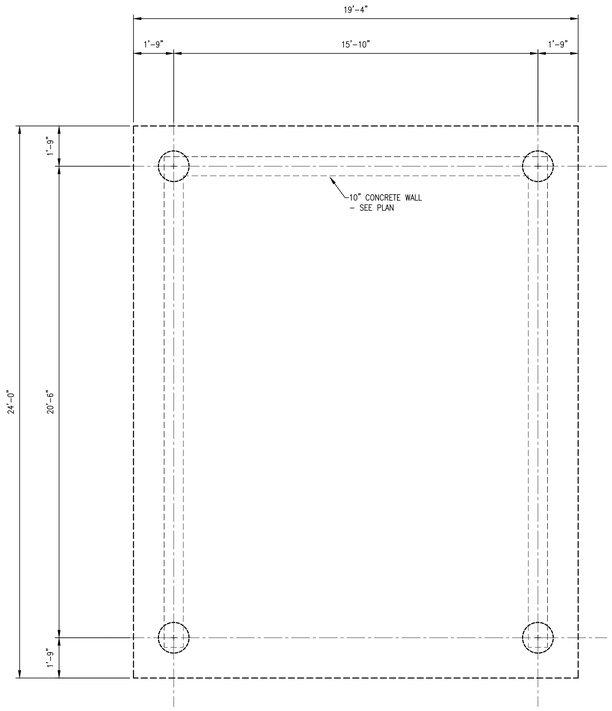
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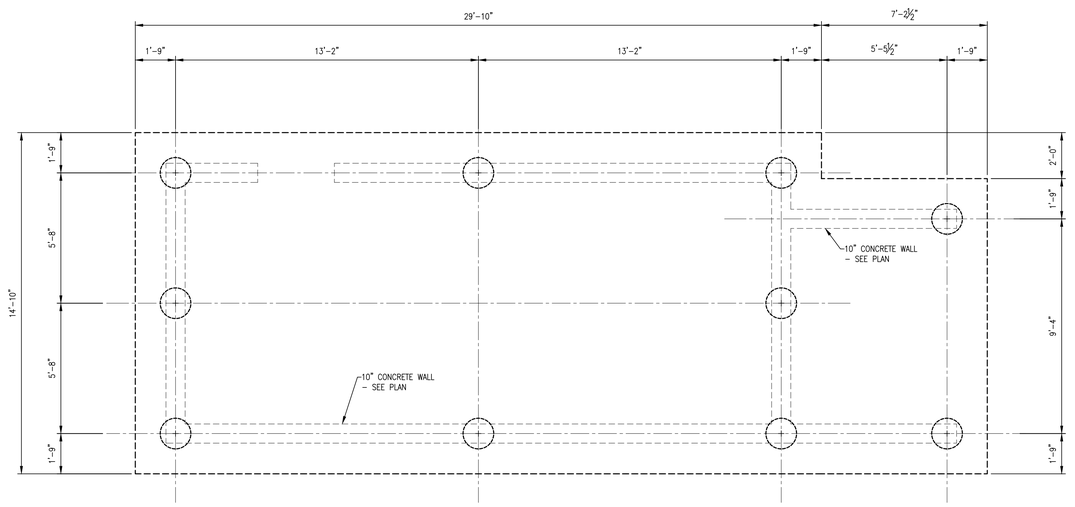
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LPC-8 PLAN
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LPC-4B PLAN
SCALE: 3/8" = 1'-0"



LPC-10 PLAN
SCALE: 3/8" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

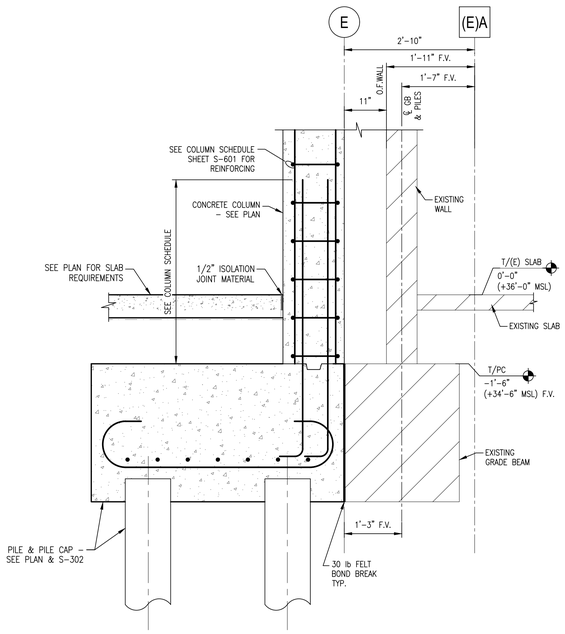
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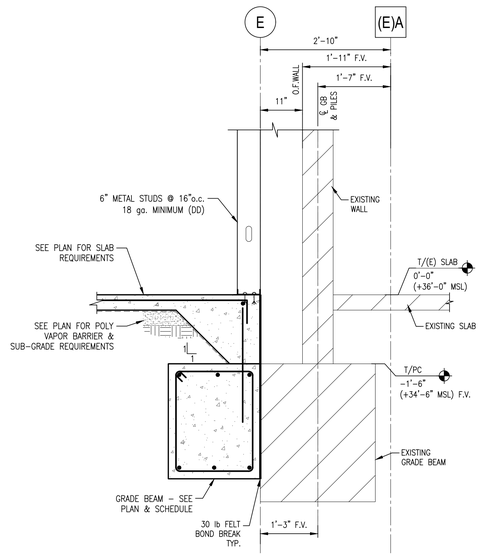
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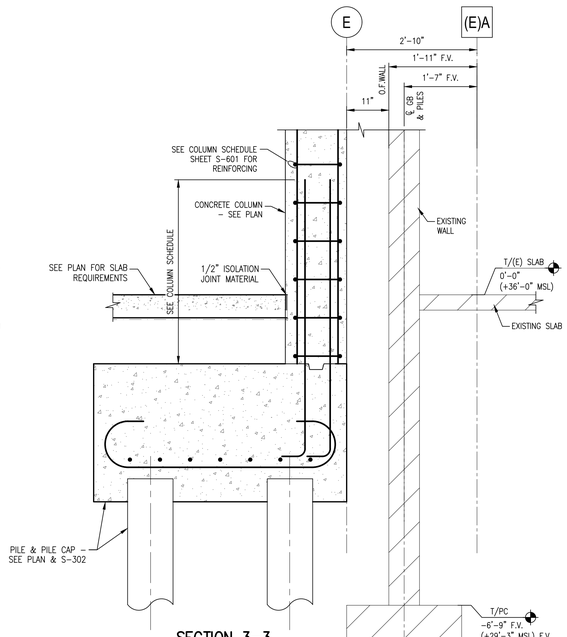
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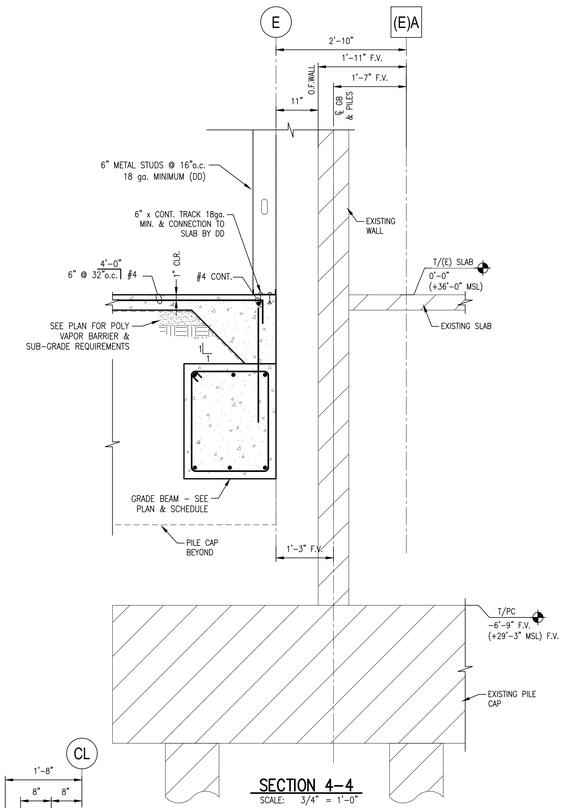
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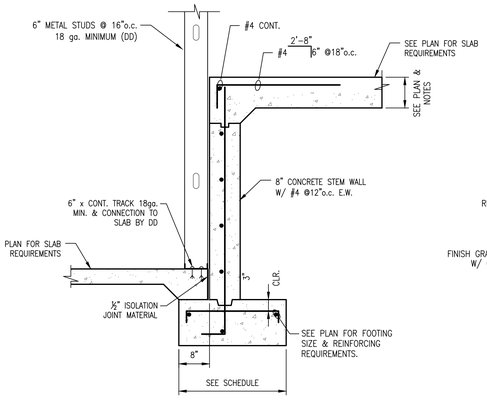
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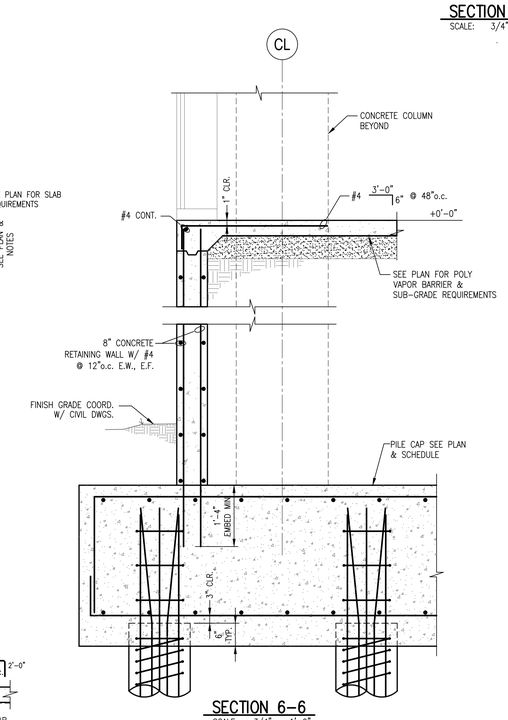
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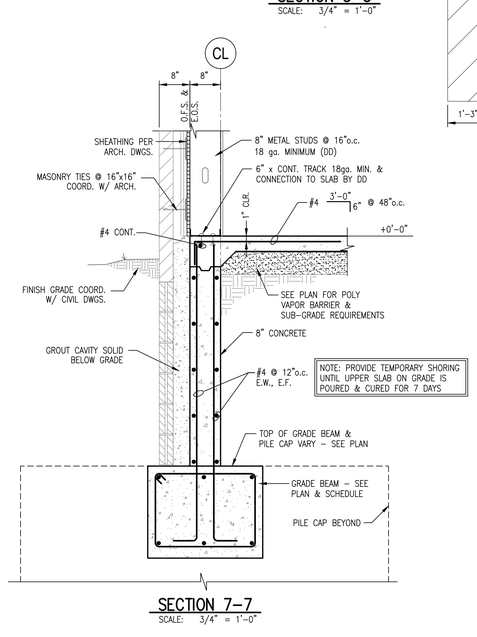
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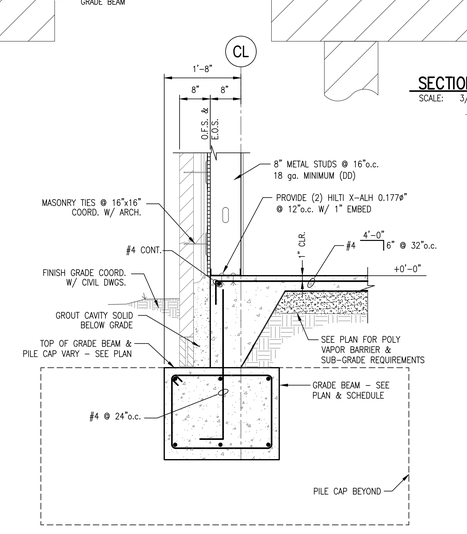
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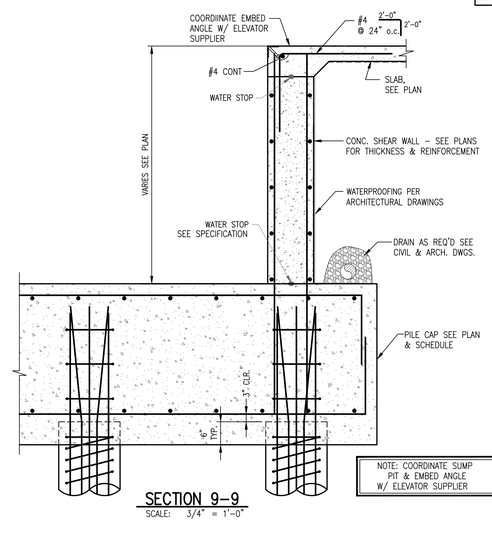
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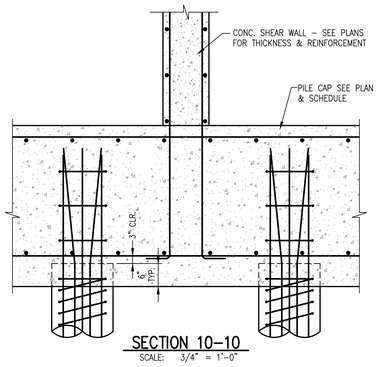
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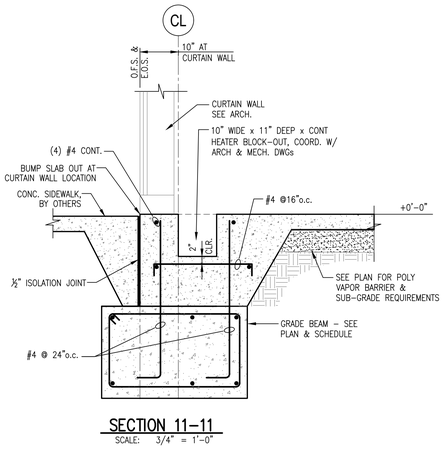
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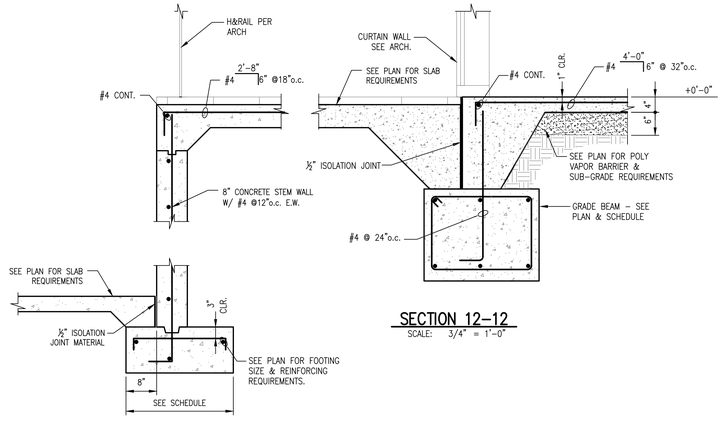
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SECTION 10–10
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SECTION 11–11
SCALE: 3/4" = 1'-0"



SECTION 12–12
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Project Grace

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LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

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FOUNDATION SECTIONS & DETAILS

ORIG SUBMISSION: 2022.05.25

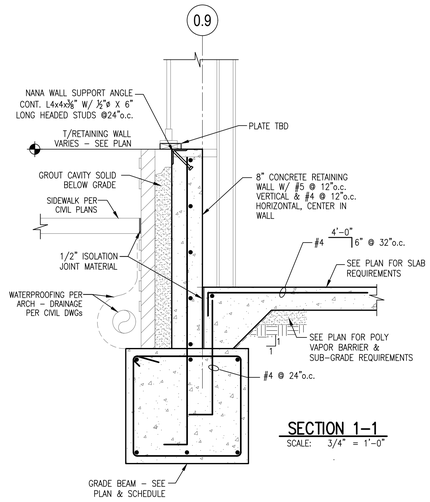
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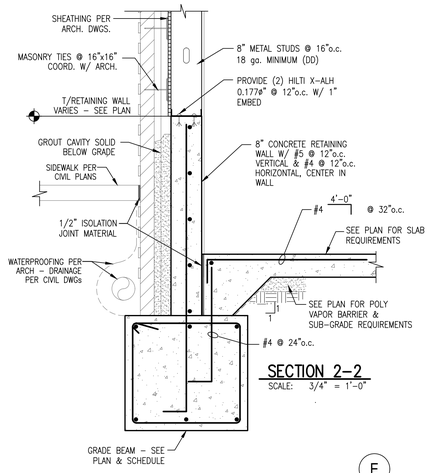
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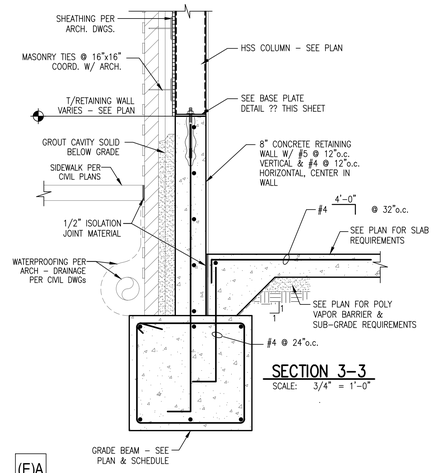
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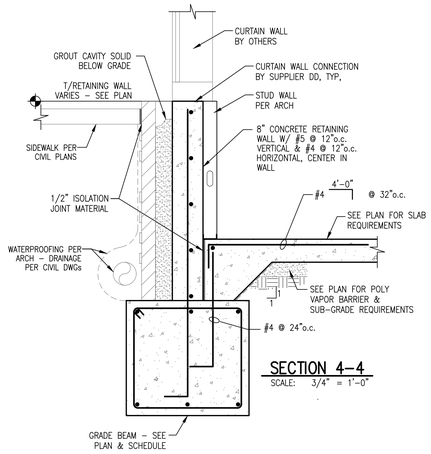
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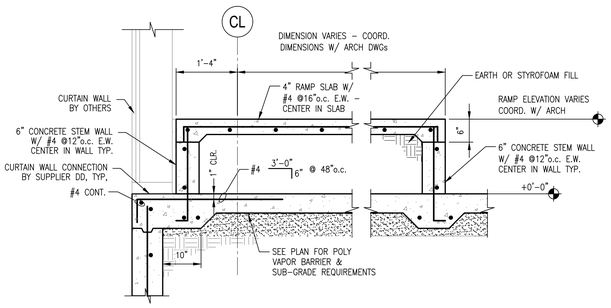
SECTION 2–2
SCALE: 3/4" = 1'–0"



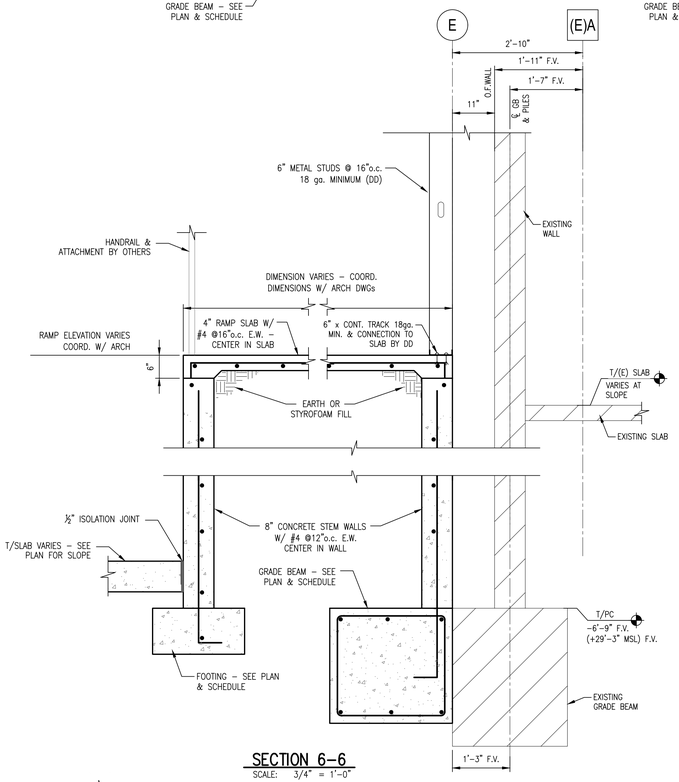
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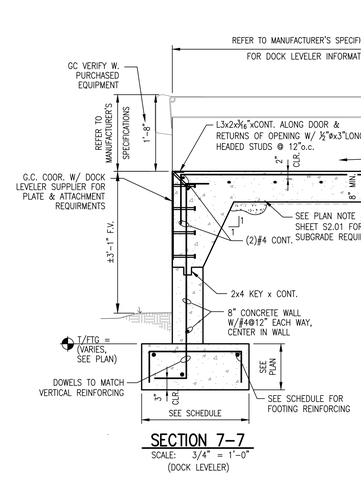
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SCALE: 3/4" = 1'–0"



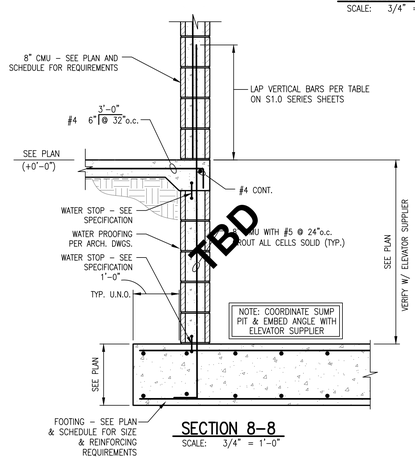
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SCALE: 3/4" = 1'–0"



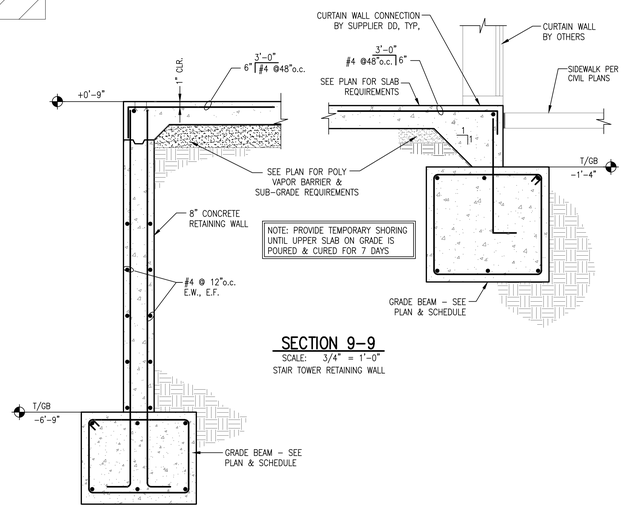
SECTION 6–6
SCALE: 3/4" = 1'–0"



SECTION 7–7
SCALE: 3/4" = 1'–0"
(DOCK LEVELER)



SECTION 8–8
SCALE: 3/4" = 1'–0"



SECTION 9–9
SCALE: 3/4" = 1'–0"
STAIR TOWER RETAINING WALL

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FOUNDATION SECTIONS & DETAILS

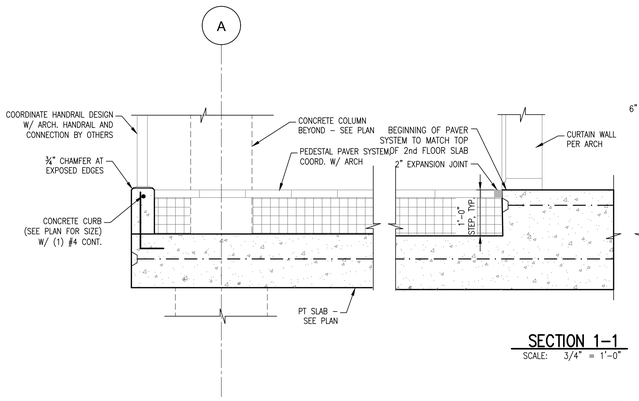
ORIG SUBMISSION: 2022.05.25

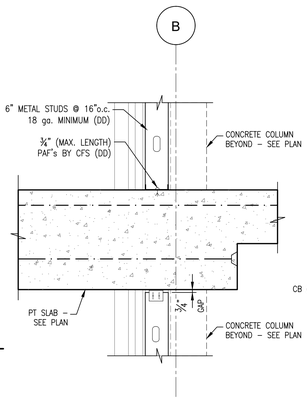
SHEET:
S-304

OWNER REVIEW SET

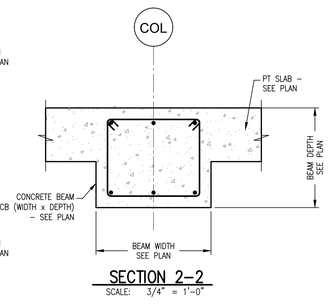
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A B C D E

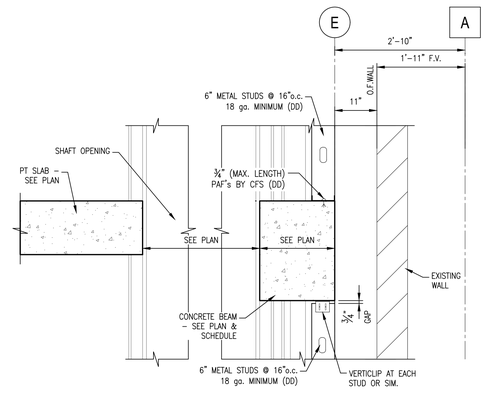




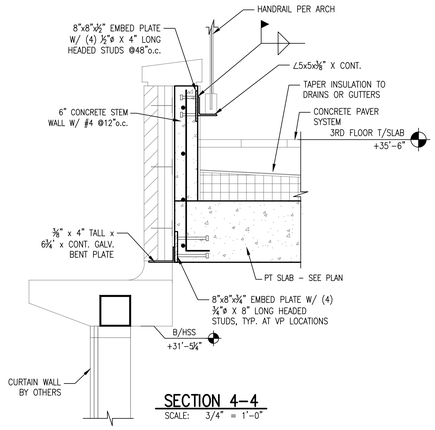
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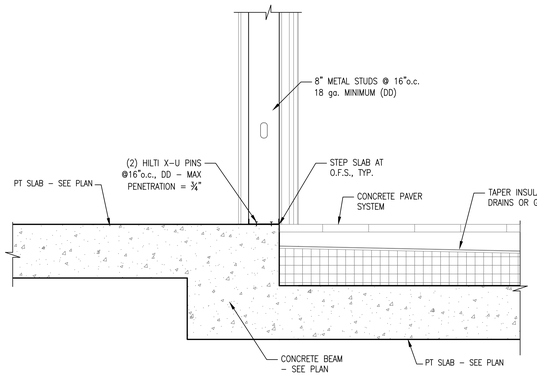
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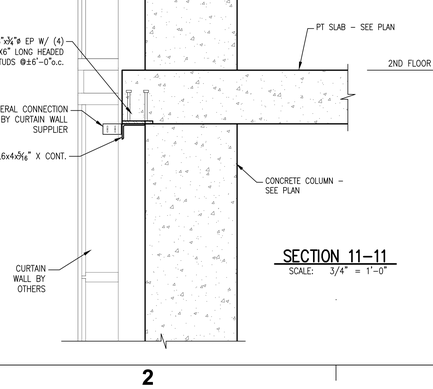
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SCALE: 3/4" = 1'-0"



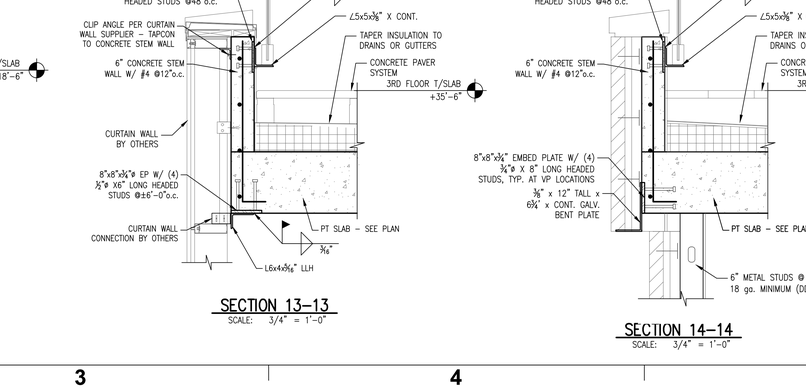
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SCALE: 3/4" = 1'-0"



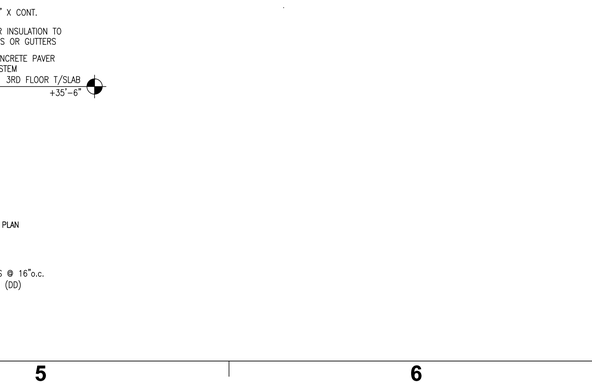
SECTION 5–5
SCALE: 3/4" = 1'-0"
EXTERIOR WALL @ 02 LEVEL



SECTION 6–6
SCALE: 3/4" = 1'-0"
TYPICAL @ OPERABLE PARTITION

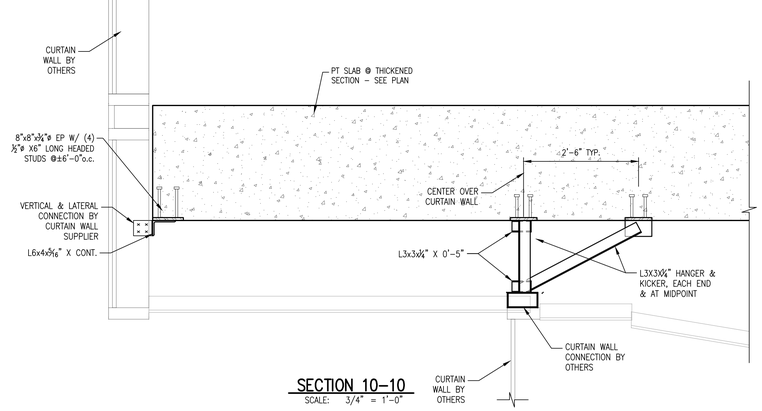


SECTION 7–7
SCALE: 3/4" = 1'-0"
CANOPY FRAMING ALONG GRID 0.9 @ CONC COL

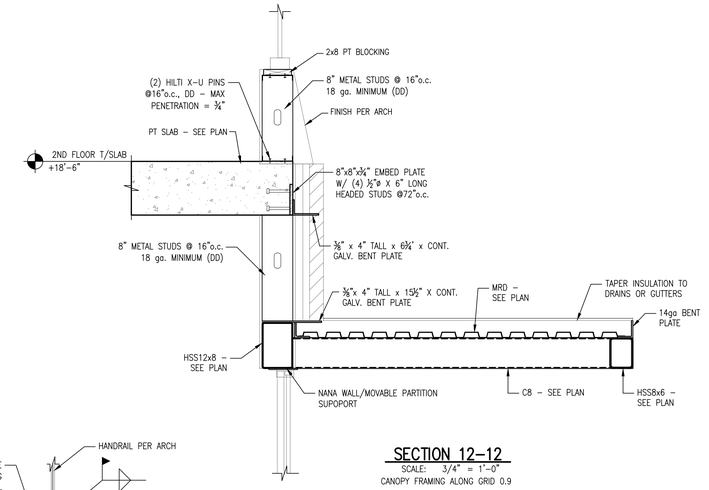


SECTION 8–8
SCALE: 3/4" = 1'-0"
CANOPY FRAMING ALONG GRID 0.9 @ VENEER POST

SECTION 9–9
SCALE: 3/4" = 1'-0"
THIRD FLOOR SLAB STEP AT GRID 2

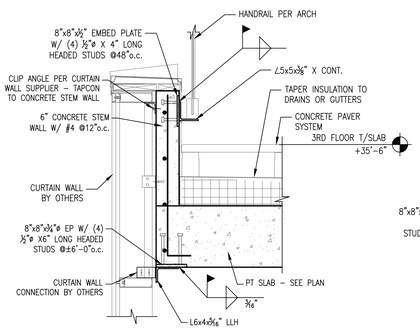


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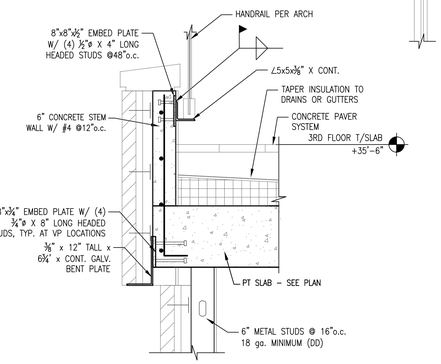


SECTION 12–12
SCALE: 3/4" = 1'-0"
CANOPY FRAMING ALONG GRID 0.9

SECTION 11–11
SCALE: 3/4" = 1'-0"



SECTION 13–13
SCALE: 3/4" = 1'-0"



SECTION 14–14
SCALE: 3/4" = 1'-0"

THE LINE BEHIND ABOVE IS EXACTLY ONE INCH WHEN PLOTTED ON 24x36 SHEETS ORIGINAL PAGE SIZE

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

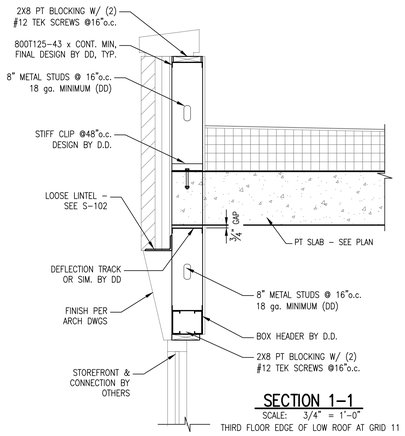
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FRAMING SECTIONS & DETAILS

ORIG SUBMISSION: 2022.05.25

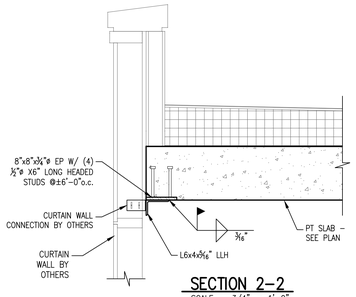
SHEET:
S-401

OWNER REVIEW SET

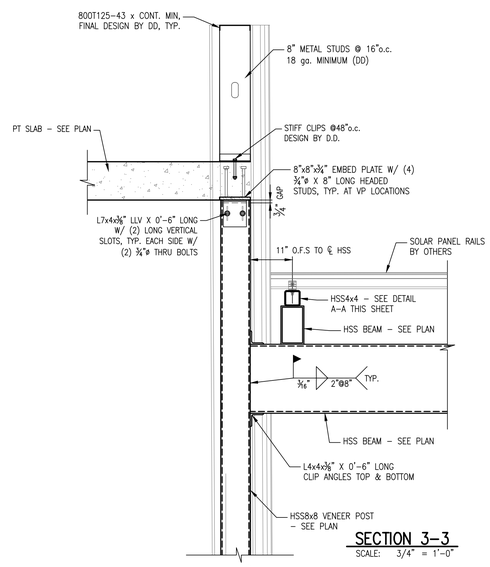
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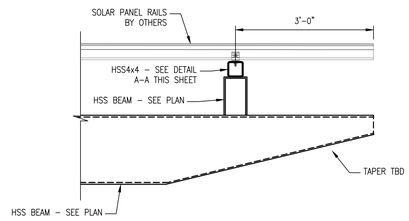
SECTION 1–1
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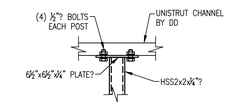
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SCALE: 3/4" = 1'-0"



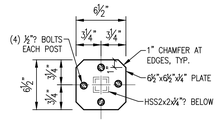
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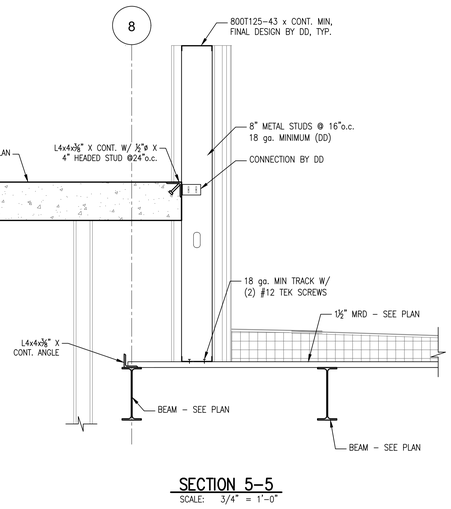
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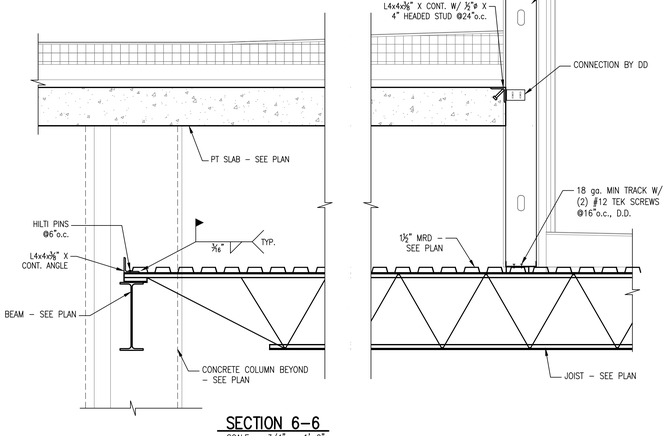
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SCALE: 1 1/2" = 1'-0"



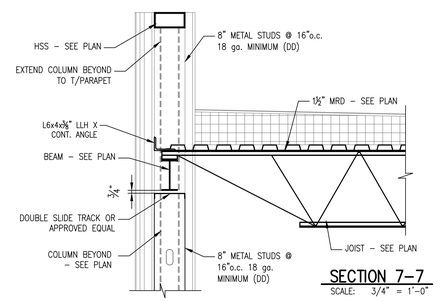
DETAIL B–B
SCALE: 1 1/2" = 1'-0"



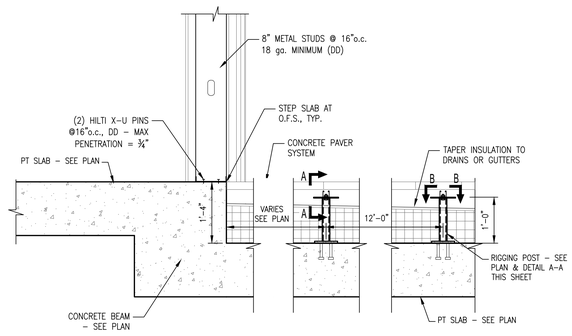
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SCALE: 3/4" = 1'-0"



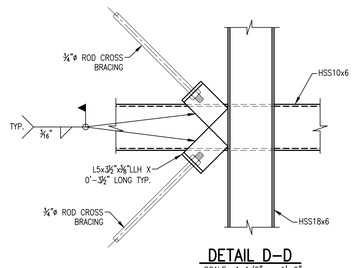
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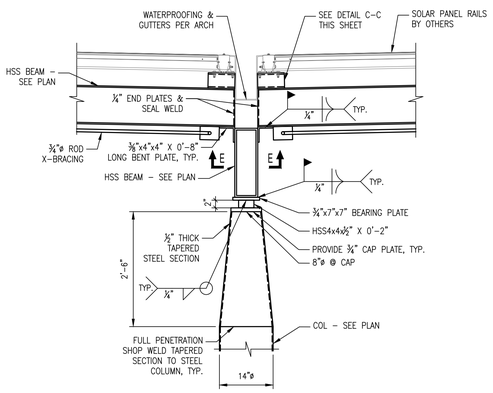
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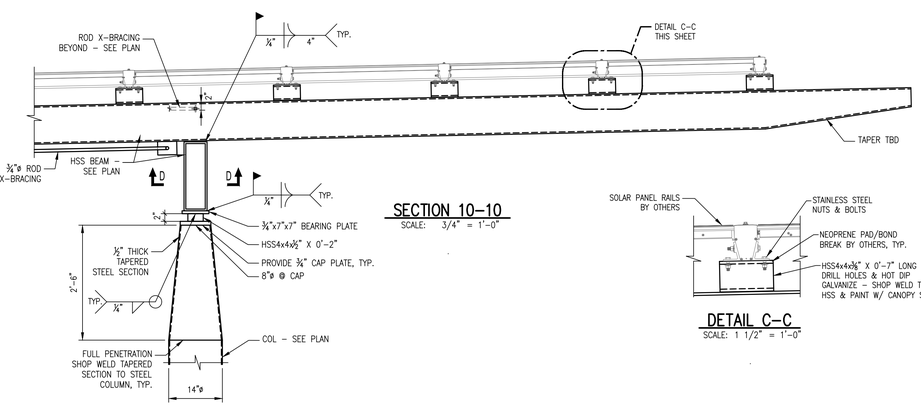
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SCALE: 3/4" = 1'-0"
THIRD FLOOR SLAB STEP RIGGING SYSTEM



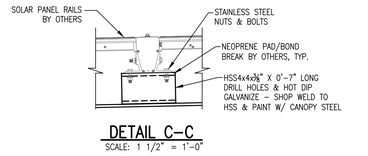
DETAIL D–D
SCALE: 1 1/2" = 1'-0"



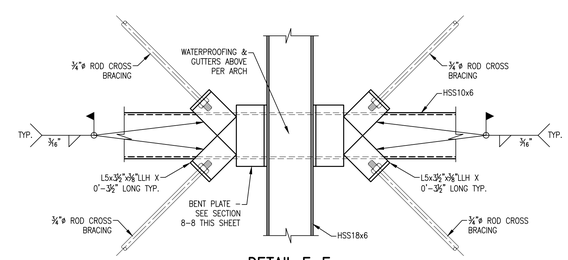
SECTION 9–9
SCALE: 3/4" = 1'-0"



SECTION 10–10
SCALE: 3/4" = 1'-0"



DETAIL C–C
SCALE: 1 1/2" = 1'-0"



DETAIL E–E
SCALE: 1 1/2" = 1'-0"

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FRAMING SECTIONS & DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
S-402

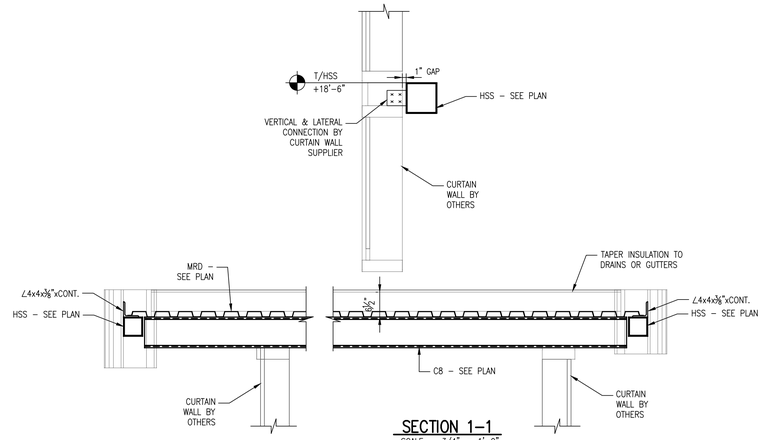
OWNER REVIEW SET

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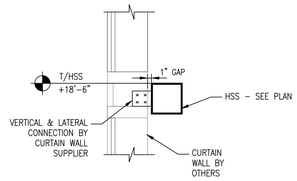
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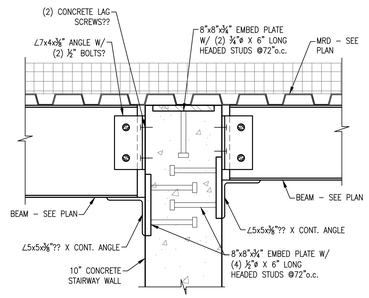
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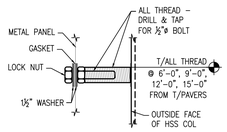
SECTION 1–1
SCALE: 3/4" = 1'–0"
VESTIBULE FRAMING



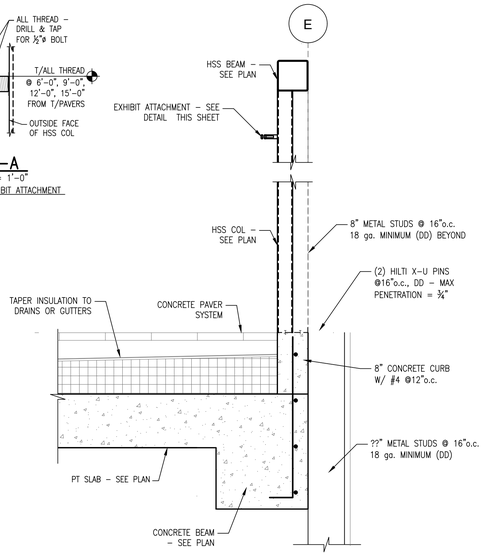
SECTION 2–2
SCALE: 3/4" = 1'–0"
TYP. INTERMEDIATE CURTAIN WALL TUBE



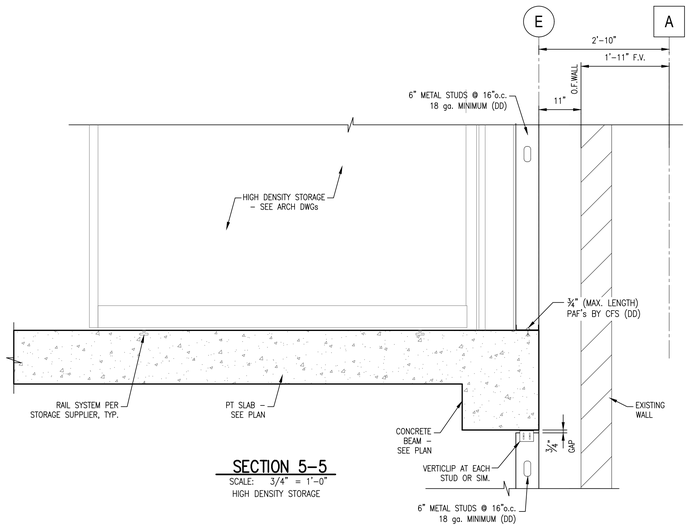
SECTION 3–3
SCALE: 1 1/2" = 1'–0"



DETAIL A–A
SCALE: 3" = 1'–0"
THIRD FLOOR TERRACE EXHIBIT ATTACHMENT



SECTION 4–4
SCALE: 3/4" = 1'–0"



SECTION 5–5
SCALE: 3/4" = 1'–0"
HIGH DENSITY STORAGE

ZIMMER DEVELOPMENT COMPANY

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600
WOODS PROJECT: 21-3351

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FRAMING SECTIONS & DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
S-403

OWNER REVIEW SET

10/20/2021 8:48:37 AM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAPER SIZE

A. DESCRIPTION/SCOPE OF WORK
1. GENERAL PROVISIONS AND OTHER FIRE ALARM RELATED SYSTEMS ARE SPECIFIED IN SPECIFICATION PACKAGE.
2. THESE NOTES COVER THE INTELLIGENT FIRE ALARM SYSTEM.
3. THESE NOTES COVER THE EMERGENCY RESPONDER RADIO COVERAGE SYSTEM INFRASTRUCTURE.

B. QUALITY ASSURANCE
1. FIRE ALARM SYSTEMS SHALL BE INSTALLED BY A COMPANY REGULARLY ENGAGED IN THE INSTALLATION OF FIRE ALARM AND EMERGENCY COMMUNICATION SYSTEMS AND WHICH HOLDS A CURRENT CONTRACTOR'S LICENSE FROM THE STATE OF NORTH CAROLINA. SUBMITTAL SHOP DRAWINGS SHALL BEAR THE COMPANIES REQUIRED LICENSE INFORMATION AND LICENSE NUMBER OF THE INSTALLING CONTRACTOR.
2. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED OR A NICET LEVEL III OR IV TECHNICIAN CERTIFIED IN FIRE ALARM SYSTEMS IN THE STATE OF NORTH CAROLINA. SUBMITTALS, DRAWINGS, AND CALCULATIONS SHALL BEAR THE STAMP OF THE SUPERVISING PROFESSIONAL ENGINEER & SIGNATURE OR NICET TECHNICIANS'S CERTIFICATION NUMBER, EXPIRATION DATE, NICET LEVEL, AND SIGNATURE.
3. MATERIALS AND EQUIPMENT USED FOR SIMILAR APPLICATIONS SHALL BE THE PRODUCTS OF ONE MANUFACTURER.
4. PRODUCTS AND COMPONENTS INSTALLED IN THE SYSTEM SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) OR APPROVED BY FACTORY MUTUAL ENGINEERING (FM).

C. BASIS OF DESIGN
1. SIGNALING LINE CIRCUITS (SLC) & NOTIFICATION APPLIANCE CIRCUIT (NAC) SHALL BE ARRANGED FOR CLASS B OPERATION IN ACCORDANCE WITH NFPA 72.
2. PROVIDE A DEDICATED SLC FOR EACH FLOOR OF THE BUILDING. CIRCUITS SHALL BE ARRANGED SO THAT THE CONNECTED LOAD ON ANY CIRCUIT DOES NOT EXCEED 75% OF THE RATED CAPACITY.
3. STROBE INTENSITIES SHALL BE SELECTED TO MEET THE REQUIREMENTS OF NFPA 72, TABLE 7.5.4.3.1(a), TABLE 7.5.4.3.1(b), AND FIGURE 7.5.4.3.1.
4. ALL STROBE LIGHTS IN THE BUILDING SHALL FLASH AT A SYNCHRONIZED RATE. THE SYNCHRONIZING MECHANISM MAY BE LOCATED WITHIN THE CONTROL PANEL OR WITHIN THE INDIVIDUAL LIGHTS.
5. PROVIDE A DEDICATED NOTIFICATION APPLIANCE CIRCUIT FOR THE EXTERIOR WATERFLOW ALARM BELL. BELL SHALL ONLY OPERATE ON ACTIVATION OF ANY WATERFLOW SWITCH IN THE BUILDING.
6. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS TO COORDINATE FINAL LOCATION OF CEILING MOUNTED FIRE ALARM DEVICES. WHERE VARIANCE IN QUANTITY OF DEVICES EXISTS BETWEEN ARCHITECTURAL AND FIRE ALARM DRAWINGS, THE FIRE ALARM DRAWINGS SHALL GOVERN.
7. REFER TO ARCHITECTURAL ELEVATIONS AND CASEWORK PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF WALL MOUNTED FIRE ALARM DEVICES. WHERE VARIANCE IN QUANTITY OF DEVICES EXISTS BETWEEN ARCHITECTURAL AND FIRE ALARM DRAWINGS, THE FIRE ALARM DRAWINGS SHALL GOVERN.
8. SMOKE DETECTORS SHALL BE LOCATED AT LEAST 3'-0" FROM ANY AIR MOVEMENT DEVICE, INCLUDING BUT NOT LIMITED TO SUPPLY DIFFUSERS, RETURN AND EXHAUST GRILLES.
9. PROVIDE A SURGE PROTECTIVE DEVICE ON ALL SIGNALING LINE OR NOTIFYING APPLIANCE CIRCUITS LEAVING THE BUILDING, ON POWER SUPPLIES, AND CONTROL UNITS.
10. VALVES SHALL BE MONITORED IN THE OPEN POSITION UNLESS NOTED OTHERWISE. VALVES INDICATED AS "NORMALLY CLOSED" SHALL BE MONITORED SUCH THAT A SUPERVISORY SIGNAL IS GENERATED WHEN THE VALVE IS NOT FULLY CLOSED.
11. ALL FIRE ALARM DEVICES LOCATED ON THE EXTERIOR SHALL BE WEATHERPROOF GASKET-BOX TYPE.
12. THE EXTERIOR OF ALL FIRE ALARM SYSTEM JUNCTION BOXES SHALL BE PAINTED RED.
13. ALL PENETRATIONS IN WALLS, CEILINGS, AND FLOORS SHALL BE SEALED TO THE FULL THICKNESS OF THE PENETRATION WITH SPECIFIED FIRE STOPPING MATERIAL.
14. LOCATE INTERFACE MODULES WITHIN 3'-0" OF DEVICE THAT IS CONTROLLED.
15. PROVIDE TWO FORMS OF DIAL OUT METHOD. SEE RISER DIAGRAM NOTES. PROVIDE NOTE ON RISER DIAGRAM OF SHOP DRAWINGS FOR FIRE ALARM DIAL OUT METHOD FOR COMPLIANCE.
16. TO AVOID DUST CONTAMINATION IN THE SMOKE DETECTORS, THE DETECTORS SHALL BE INSTALLED AT THE END OF CONSTRUCTION AT A TIME FIT FOR SCHEDULE AND INSTALLATION ACCESS. DETECTORS SHALL THEN BE COVERED WITH PLASTIC COVERS UNTIL THE CONSTRUCTION IS CONSIDERED COMPLETE.
17. ALL FIRE ALARM SYSTEM WIRING SHALL BE CLEARED FROM OPENS, SHORTS, AND GROUNDS.
18. WHERE CONDUCTORS ARE RUN IN CONDUIT, USE ONLY APPROVED CABLE WITHIN RACEWAYS, PIPES, OR CONDUITS. ALL SHIELDED WIRE SHALL BE CONTINUOUS THROUGHOUT CIRCUIT. ALL SHIELDS SHALL BE ISOLATED FROM THE GROUND WIRE. ALL SHIELDED WIRE SHALL TERMINATE AT THE FIRE ALARM CONTROL PANEL.
19. PATHWAYS SHALL BE A MINIMUM OF 3/4".
20. CONTROL EQUIPMENT WILL BE MODULAR IN CONSTRUCTION, UL LISTED, AND HOUSED IN A SURFACE-MOUNTED STEEL CABINET. OPERATING VOLTAGE WILL BE 24 V DC. STANDBY POWER WILL BE FURNISHED BY 24-HOURS OF STANDBY POWER AND 15 MINUTES OF ALARM POWER IN A SELF-CONTAINED EMERGENCY BATTERY POWER SUPPLY.

D. SHOP DRAWINGS & CALCULATIONS
1. SHOP DRAWING SUBMITTALS SHALL HAVE A WIRE TYPE LEGEND THAT INCLUDES SPECIFIC LINE TYPES CORRELATED WITH EACH SPECIFIC WIRE TYPE USED ON THE PROJECT. DRAWINGS MUST BE BLACK AND WHITE. COLOR DRAWINGS ARE NOT PERMITTED.
2. PROVIDE MINIMUM ONE MASTER CONTROL MODULE (AOM) TO UNLOCK ALL DOORS AND ONE MASTER CONTROL MODULE (AOM) TO RELEASE ALL DOOR HOLD OPENS.
3. PROVIDE AND INDICATE LOCATION OF ACCESS PANELS FOR DUCT DETECTORS AND EQUIPMENT ABOVE CEILING REQUIRING ACCESS AND MAINTENANCE IN HARD CEILINGS. PROVIDE LOCATION ON FIRE ALARM SHOP DRAWINGS WITH REMOTE LED ALARM AND KEY TEST SWITCHES.
4. SHOP DRAWINGS MUST INCLUDE CIRCUIT PATHWAYS AND IDENTIFY DEVICES WITH SPECIFIC IDENTIFICATION TAGS.
5. A RISER DIAGRAM SHALL BE INCLUDED AND HAVE ALL DEVICES IDENTIFIED WITH MATCHING FLOORPLAN TAGS.
6. CALCULATIONS MUST INCLUDE AMPLIFIER SIZING, VOLTAGE DROP, BATTERY CALCULATIONS.
7. PROVIDE SCHEDULES WITH SLC DEVICE ADDRESS, DEVICE TYPE LABEL, AND LOCATION/ROOM NAME FOR EACH SLC LOOP.
8. PROVIDE SCHEDULES WITH NAC VISUAL DEVICE ADDRESS, DEVICE TYPE LABEL, AND LOCATION/ROOM NAME FOR EACH NAC VISUAL CIRCUIT.
9. PROVIDE SCHEDULES WITH NAC SPEAKER DEVICE ADDRESS, DEVICE TYPE LABEL, AND LOCATION/ROOM NAME FOR EACH NAC SPEAKER CIRCUIT.
10. PROVIDE FIRE ALARM DEVICE WIRING DETAILS AND MOUNTING ELEVATIONS OF EQUIPMENT AND DEVICES.
11. PROVIDE CONTRACTOR CREATED FIRE ALARM MATRIX OF OPERATION SEQUENCE. DIRECT COPY OF ENGINEERS IS NOT ACCEPTABLE. INCLUDE ALL SPECIFIC MANUFACTURER CAPABILITIES.
12. PROVIDE AN ADDITIONAL CIRCUIT FOR THE THEATRE TO STOP THE SHOW. THIS WILL BE AN OPEN DRY CONTACT FROM THE ALARM SYSTEM THAT IS HELD CLOSED BY THE ALARM SYSTEM IN THE ABSENCE OF AN ALARM. THE BUILDING LIGHTING CONTROL SYSTEM SHOULD BE SET UP TO BRIGHTEN THE THEATRE LIGHTING, AND TURN OFF ALL AUDIO VISUAL AND PRESENT A SCREEN MESSAGE IN THE EVENT OF ALARM.

E. CODES
1. THIS SUBMITTAL SHALL FOLLOW THE INTERNATIONAL BUILDING CODE, INTERNATIONAL FIRE CODE, AND CONFORM TO THE FOLLOW STANDARDS: NFPA 70-2013, NFPA 72-2013, NFPA 90A-2013, NFPA 101-2013.

1 FIRE ALARM NOTES
NO SCALE

PANELS

FACP	FIRE ALARM CONTROL PANEL
DACT	DIGITAL COMMUNICATOR
FAD	FIRE ALARM DOCUMENT CABINET
CELL	CELLULAR DIALER
LOC	LOCAL OPERATING CONSOLE
FAA	FIRE ALARM ANNUNCIATOR
AOR	REMOTE CALL STATION
CDU	TWO-WAY COMMUNICATION COMMAND PANEL
ECB	EMERGENCY CALL BOX
ERRC	EMERGENCY RESPONDER RADIO COVERAGE PANEL
NAC	BOOSTER POWER SUPPLY
AUX	AUXILIARY POWER SUPPLY
FATC	FIRE ALARM TERMINAL CABINET

MONITORING & ACCESSORIES

ISO	ISOLATOR
SPD	SURGE PROTECTION DEVICE
EOL	END OF LINE RESISTOR
BATT	BATTERY
AIM	ADDRESSABLE INPUT MODULE
AOM	ADDRESSABLE OUTPUT MODULE
RTS	REMOTE LED ALARM AND KEY TEST SWITCH

ACRONYMS & DEFINITIONS

SLC	SIGNALING LINE CIRCUIT
VIS	STROBE CIRCUIT
AUD	SPEAKER CIRCUIT
WP	WEATHERPROOF
NC	NORMALLY CLOSED
CD	STROBE CANDELA RATING
W	SPEAKER WATT RATING

INITIATION

F	ADDRESSABLE DOUBLE ACTION, SINGLE PULL, PULL STATION
?	ADDRESSABLE SMOKE DETECTOR
?E	ADDRESSABLE SMOKE DETECTOR - ELEVATOR RECALL
	ADDRESSABLE CARBON MONOXIDE DETECTOR
	ADDRESSABLE HEAT DETECTOR
E	ADDRESSABLE HEAT DETECTOR - ELEVATOR POWER SHUNT TRIP
?XX	ADDRESSABLE DUCT SMOKE DETECTOR SA - SUPPLY AIR RA - RETURN AIR OA - OUTSIDE AIR EA - EXHAUST AIR
WF	WATERFLOW SWITCH (BY DIVISION 21)
VS	TAMPER SWITCH (BY DIVISION 21)

NOTIFICATION

SC	CEILING MOUNTED SPEAKER
S	WALL MOUNTED SPEAKER
	CEILING MOUNTED STROBE ONLY
	WALL MOUNTED STROBE ONLY
SC	CEILING MOUNTED SPEAKER STROBE
	WALL MOUNTED SPEAKER STROBE
V	ELECTRIC WATERFLOW ALARM BELL

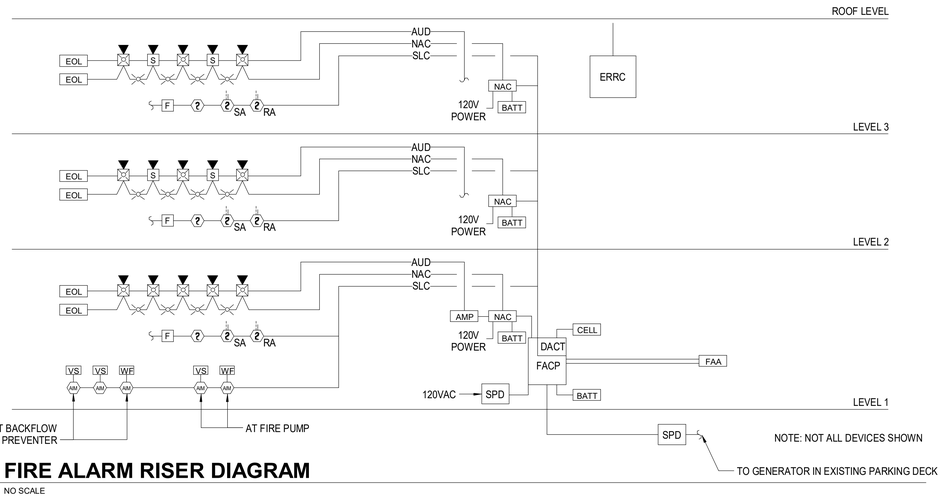
DEVICE TAG LEGEND EXAMPLE

- PANEL DESIGNATOR
  - F## = FACP NUMBER
  - N## = NAC EXTENDER NUMBER
  - SBP## = STROBE BOOSTER PANEL NUMBER
- CIRCUIT DESIGNATOR
  - M#: = IDNET LOOP NUMBER
  - S#: = SPEAKER CIRCUIT NUMBER
  - V#: = VISUAL CIRCUIT NUMBER
- DEVICE NUMBER
- BRANCH/ISOLATED LOOP

FA1:X - X - (EX:1)

CONTRACTOR SHALL PROVIDE OWN DEVICE TAG LEGEND ON SHOP DRAWINGS FOR REVIEW

2 FIRE ALARM LEGEND
NO SCALE



3 FIRE ALARM RISER DIAGRAM
NO SCALE

EMERGENCY RESPONDER RADIO COVERAGE

1. PROVIDE TESTING AT 3 PHASES OF CONSTRUCTION.
   A. BEFORE CONSTRUCTION
   B. DURING CONSTRUCTION
   C. AT SUBSTANTIAL COMPLETION

2. PROVIDE TESTING RESULTS AND RF PROPAGATION SIGNAL STRENGTH HEAT MAPS AT EACH PHASE OF TESTING TO DETERMINE IF SYSTEM IS REQUIRED. EACH FLOORPLAN SHALL BE DIVIDED INTO 20 EQUAL SQUARES.

3. SUBMIT ALL TESTING RESULTS IN SUBMITTAL FORM TO ENGINEER FOR REVIEW AND ACCEPTANCE.

EMERGENCY RESPONDER RADIO COVERAGE SYSTEM:

1. CONTRACTOR SHALL PROVIDE AN EMERGENCY RESPONDER RADIO COVERAGE SYSTEM (PUBLIC SAFETY DAS) AS DEFINED IN NFPA 72 AND IFC 2018 INSIDE THE BUILDING.
   A. SYSTEM SHALL BE CAPABLE OF REPEATING THE FIRST RESPONDER RADIO SIGNAL INSIDE THE BUILDING DURING EMERGENCIES AS DEFINED IN SPECIFICATION SECTION 28 34 00, EMERGENCY RESPONDER RADIO COVERAGE SYSTEM PROVIDING 99% SIGNAL COVERAGE IN THE CRITICAL BUILDING AREAS.
   B. SYSTEM SHALL SURVIVABLE AS DEFINED BY NFPA 72 AND 1221.
   C. CONTRACTOR SHALL COORDINATE THE PRELIMINARY DESIGN WITH THE AHJ, CITY OF WILMINGTON NC FIRE MARSHAL, AND OBTAIN WRITTEN APPROVAL PRIOR TO SYSTEM INSTALLATION.
   D. ALL PROPOSED PRODUCT DATA AND SYSTEM DESIGNS SHALL BE REVIEWED BY THE ARCHITECTURAL / ENGINEERING TEAMS PRIOR TO PROCUREMENT AND SYSTEM INSTALLATION.
2. BASE SYSTEM DESIGN AND INSTALLATION SHALL BE INFRASTRUCTURE ONLY SUPPORTING THE EMERGENCY RESPONDER RADIO COVERAGE SYSTEM.

WIRELESS LAN RF HEATMAPPING:

1. CONTRACTOR SHALL PROVIDE A POST CONSTRUCTION RF HEATMAP SURVEY OF THE WIRELESS LAN COVERAGE INSIDE THE BUILDING.
2. THE RF SURVEY SHALL BE PERFORMED TO VERIFY AND ENSURE A HIGH DENSITY WIRELESS LAN COVERAGE INSIDE THE BUILDING TO ALL AREAS, OCCUPANTS AND DEVICES AS REQUIRED BY THE LOCAL AHJ.
3. THE CONTRACTOR SHALL COORDINATE WITH OWNER TO ENSURE THAT A HIGH DENSITY WIRELESS COVERAGE IS PROVIDED INSIDE THE BUILDING.

COMPONENT/SYSTEM INPORTANCE FACTOR (Ip) SCHEDULE AND SEISMIC DESIGN INFORMATION	
Ip = 1.5	ALL POWER SYSTEMS
SEISMIC DESIGN INFORMATION	
1. SITE CLASSIFICATION = "D"	
2. RISK CATEGORY = III	
3. SEISMIC DESIGN CATEGORY = "B"	

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: FIRE ALARM GENERAL

ORIG SUBMISSION: 2022.05.25

SHEET: **FA-001**

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PROJECT GRACE
- AUTOMATIC AND MANUAL FIRE ALARM AND EMERGENCY COMMUNICATION SYSTEM

CONTRACTOR MUST SUBMIT A COMPREHENSIVE SEQUENCE OF OPERATIONS BASED ON MANUFACTURER CAPABILITY

SYSTEM OUTPUTS

	SYSTEM INPUTS		A: DISPLAY MESSAGE ON FACP AND REMOTE ANNUNCIATOR PANELS	B: ACTUATE AUDIBLE ALARM ON FACP AND REMOTE PANELS	C: RECORD EVENT HISTORY LOG	D: ACTUATE COMMON ALARM SIGNAL INDICATOR	E: ACTUATE AUDIBLE ALARM SIGNAL	F: ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	G: ACTUATE AUDIBLE SUPERVISORY SIGNAL	H: ACTUATE COMMON TROUBLE SIGNAL INDICATOR	I: ACTUATE AUDIBLE TROUBLE SIGNAL	J: ACTUATE VISUAL NOTIFICATION SIGNALS	K: ACTIVATE 3 TONE ALERT SIGNAL	L: ACTIVATE AUTOMATED PRE-PROGRAMMED NOTIFICATION SIGNALS	M: ACTIVATE LIVE VOICE MESSAGING & INTERRUPT FIRE ALARM NOTIF. AUDIBLE SIGNALS	N: TRANSMIT ALARM SIGNAL TO SUPERVISING STATION	O: TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	P: TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	Q: ACTUATE OUTSIDE ELECTRIC WATERFLOW BELL ALARM	R: UNLOCK DOOR HARDWARE	S: SHUNT TRIP ELEVATOR CONTROLLER POWER ON DELAY TO REACH LANDING	T: PRIMARY ELEVATOR RECALL	U: ALTERNATIVE ELEVATOR RECALL	V: ELEVATOR HAT FLASH, SHUNT TRIP	W: ELEVATOR HAT SOLID LIGHT - ELEVATOR RECALL	X: SHUTDOWN HVAC UNIT AND DAMPER	Y: SYSTEM RESETS TO NORMAL	Z: SILENCE AUDIBLE SIGNAL & TURN OFF VISIBLE SIGNAL	AA: SHUT DOWN AUXILIARY PUBLIC ADDRESS, MUSIC OR NOISE CANCELING SYSTEMS	BB: DEACTIVATE LIGHTING CONTROLS, ACTIVATE EMERGENCY LIGHTING	CC	DD	EE
ALARM	MANUAL PULL STATION	1	●	●	●	●	●						●	●			●				●											●			
	AREA-TYPE SMOKE DETECTOR	2	●	●	●	●	●						●	●			●				●											●			
	AREA-TYPE SMOKE DETECTOR - ELEVATOR SHAFT/MACHINE ROOM	3	●	●	●	●	●						●	●			●				●			●				●				●			
	AREA-TYPE SMOKE DETECTOR - PRIMARY FLOOR LOBBY	4	●	●	●	●	●						●	●			●				●				●			●				●			
	AREA-TYPE SMOKE DETECTOR - SECONDARY FLOOR LOBBY	5	●	●	●	●	●						●	●			●				●			●				●				●			
	WATER FLOW SWITCH - VANE TYPE	6	●	●	●	●	●						●	●			●			●	●											●			
	WATER FLOW SWITCH - PRESSURE TYPE	7	●	●	●	●	●						●	●			●			●	●											●			
	AREA-TYPE HEAT DETECTOR	8	●	●	●	●	●						●	●			●				●											●			
	AREA-TYPE HEAT DETECTOR - ELEVATOR SHAFT/MACHINE ROOM	9	●	●	●	●	●						●	●			●				●	●				●						●			
	FIRE PUMP RUNNING	10	●	●	●	●	●						●	●			●				●											●			
	AREA-TYPE CARBON MONOXIDE DETECTOR	11	●	●	●	●	●						●	●			●				●											●			
		12																																		
SUPERVISORY	DUCT SMOKE DETECTOR	13	●	●	●			●	●									●											●						
	TAMPER SWITCH ACTIVATION	14	●	●	●			●	●									●																	
	LOW AIR PRESSURE - DRY SYSTEM	15	●	●	●			●	●									●																	
	GENERATOR FAULT	16	●	●	●			●	●									●																	
	GENERATOR SWITCH IN NONAUTOMATIC POSITION	17	●	●	●			●	●									●																	
	GENERATOR RUNNING	18	●	●	●			●	●									●																	
	FIRE PUMP PHASE REVERSAL	19	●	●	●			●	●									●																	
	FIRE PUMP TRANSFER SWITCH ON EMERGENCY	20	●	●	●			●	●									●																	
	FIRE PUMP EMERGENCY ISO. SWITCH OPEN	21	●	●	●			●	●									●																	
	FIRE PUMP LOSS OF LINE POWER	22	●	●	●			●	●									●																	
	TWO WAY COMMUNICATION SYSTEM TROUBLE/FAULT	23	●	●	●			●	●									●																	
	TWO WAY COMMUNICATION SYSTEM LOSS OF POWER	24	●	●	●			●	●									●																	
	TWO WAY COMMUNICATION SYSTEM LOW BATTERY	25	●	●	●			●	●									●																	
	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM NORMAL AC POWER	26	●	●	●			●	●									●																	
	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM SIGNAL BOOSTER TROUBLE	27	●	●	●			●	●									●																	
	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM LOSS OF NORMAL AC POWER	28	●	●	●			●	●									●																	
	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM LOW BATTERY CAPACITY	29	●	●	●			●	●									●																	
	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM ANTENNA FAILURE	30	●	●	●			●	●									●																	
	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM CHARGER(S) FAILURE	31	●	●	●			●	●									●																	
		32																																		
TROUBLE	OPEN CIRCUIT	33	●	●	●					●	●								●																	
	CELLULAR DIALER	34	●	●	●					●	●								●																	
	SLC - WIRE SHORT	35	●	●	●					●	●								●																	
	NAC - WIRE SHORT	36	●	●	●					●	●								●																	
	FIRE ALARM 120VAC POWER FAILURE	37	●	●	●					●	●								●																	
	FIRE ALARM SYSTEM LOW BATTERY	38	●	●	●					●	●								●																	
	DACT FAILURE	39	●	●	●					●	●								●																	
		40																																		
		41																																		
SYSTEM FUNCTIONS	ALARM SIGNAL STOP/SILENCE	42	●		●																										●				
	SYSTEM RESET	43	●		●																											●			
	MANUAL PUSH BUTTON FOR PRE-PROGRAMMED AUTOMATED MESSAGE	44	●		●																												●		
	MICROPHONE ACTIVATION TO OPERATE LIVE VOICE MESSAGES AT FACP	45	●		●																												●		
	MICROPHONE ACTIVATION TO OPERATE LIVE VOICE MESSAGES AT LOC	46	●		●																												●		
	FIRE ALARM & EMERGENCY COMM. SYSTEM ALARM ACTIVE	47	●		●																												●		

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: FIRE ALARM SEQUENCE OF OPERATION MATRIX

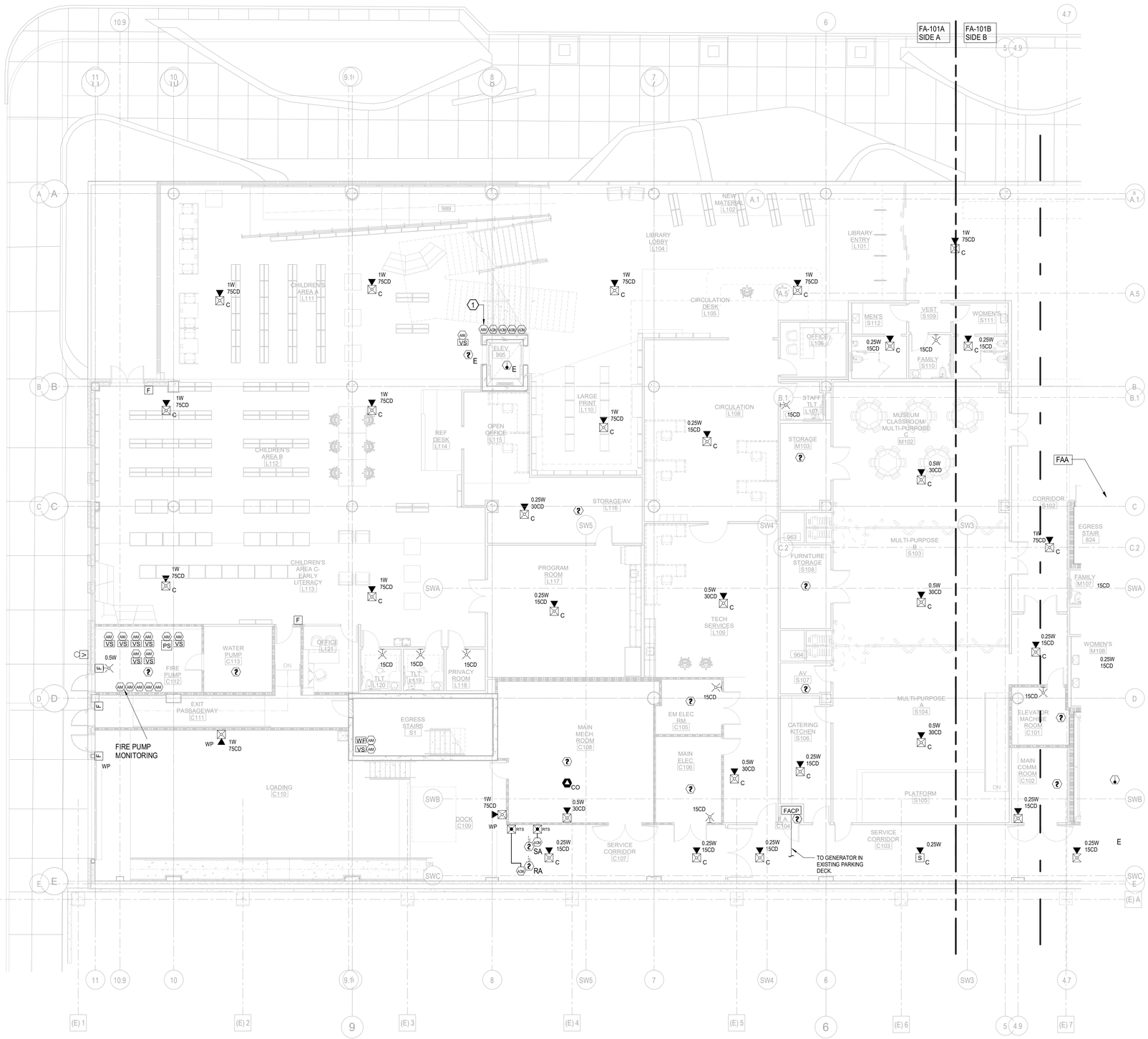
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1 FIRE ALARM LEVEL 1 - AREA A

1/8" = 1'-0"

SHEET KEYNOTES:

1. PROVIDE CONTROL FOR ELEVATOR RECALL (PRIMARY AND ALTERNATE), FLASH FIREHAT IN CAB, AND SHUNT TRIP POWER AND MONITOR SHUNT TRIP POWER. COORDINATE LOCATION WITH ELEVATOR CONTRACTOR.

GENERAL NOTES:

- FIELD COORDINATE FINAL LOCATION OF LIGHTING CONTROL PANEL, AND CONNECT FIRE ALARM TO DISENGAGE LIGHTING CONTROLS AND ACTIVATE ALL REQUIRED EGRESS LIGHTING.

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SHEET NAME:
FIRE ALARM LEVEL 1 - AREA A

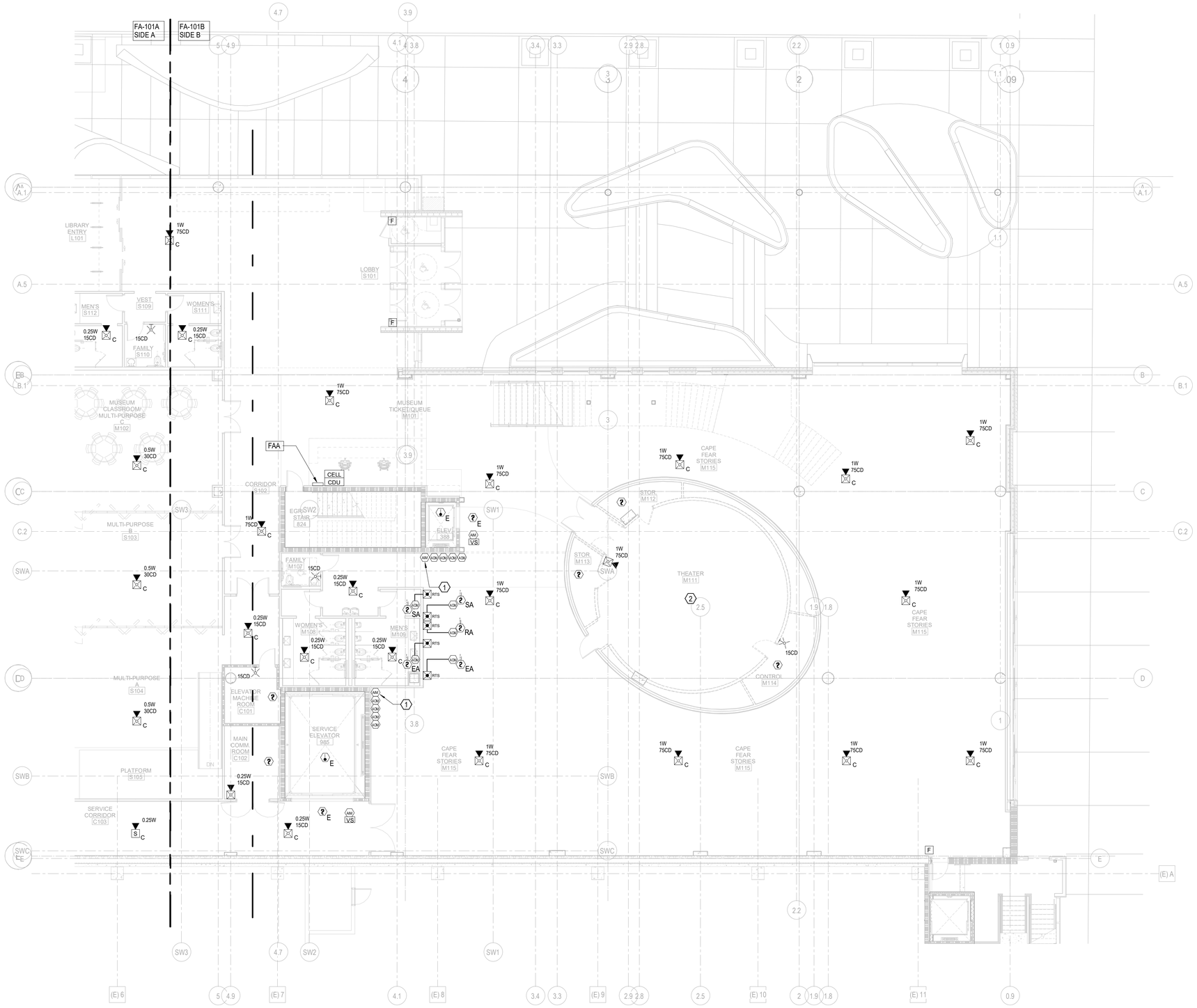
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SHEET:
FA-101A

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1 **FIRE ALARM LEVEL 1 - AREA B**
1/8" = 1'-0"

SHEET KEYNOTES:

1. PROVIDE CONTROL FOR ELEVATOR RECALL (PRIMARY AND ALTERNATE), FLASH FIREHAT IN CAB, AND SHUNT TRIP POWER AND MONITOR SHUNT TRIP POWER. COORDINATE LOCATION WITH ELEVATOR CONTRACTOR.
2. COORDINATE WITH THEATER CONTRACTOR ON FINAL LOCATION OF ALL FIRE ALARM DEVICES IN THE THEATER

GENERAL NOTES:

- FIELD COORDINATE FINAL LOCATION OF LIGHTING CONTROL PANEL, AND CONNECT FIRE ALARM TO DISENGAGE LIGHTING CONTROLS AND ACTIVATE ALL REQUIRED EGRESS LIGHTING.
- THEATER FIRE ALARM SYSTEM SHALL INCLUDE A CIRCUIT TO STOP THE SHOW IN THE THEATER INCLUDING ALL VISUAL AND AUDIO NOT RELATED TO THE FIRE ALARM SYSTEM.

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE ALARM LEVEL 1 - AREA B

ORIG SUBMISSION: 2022.05.25

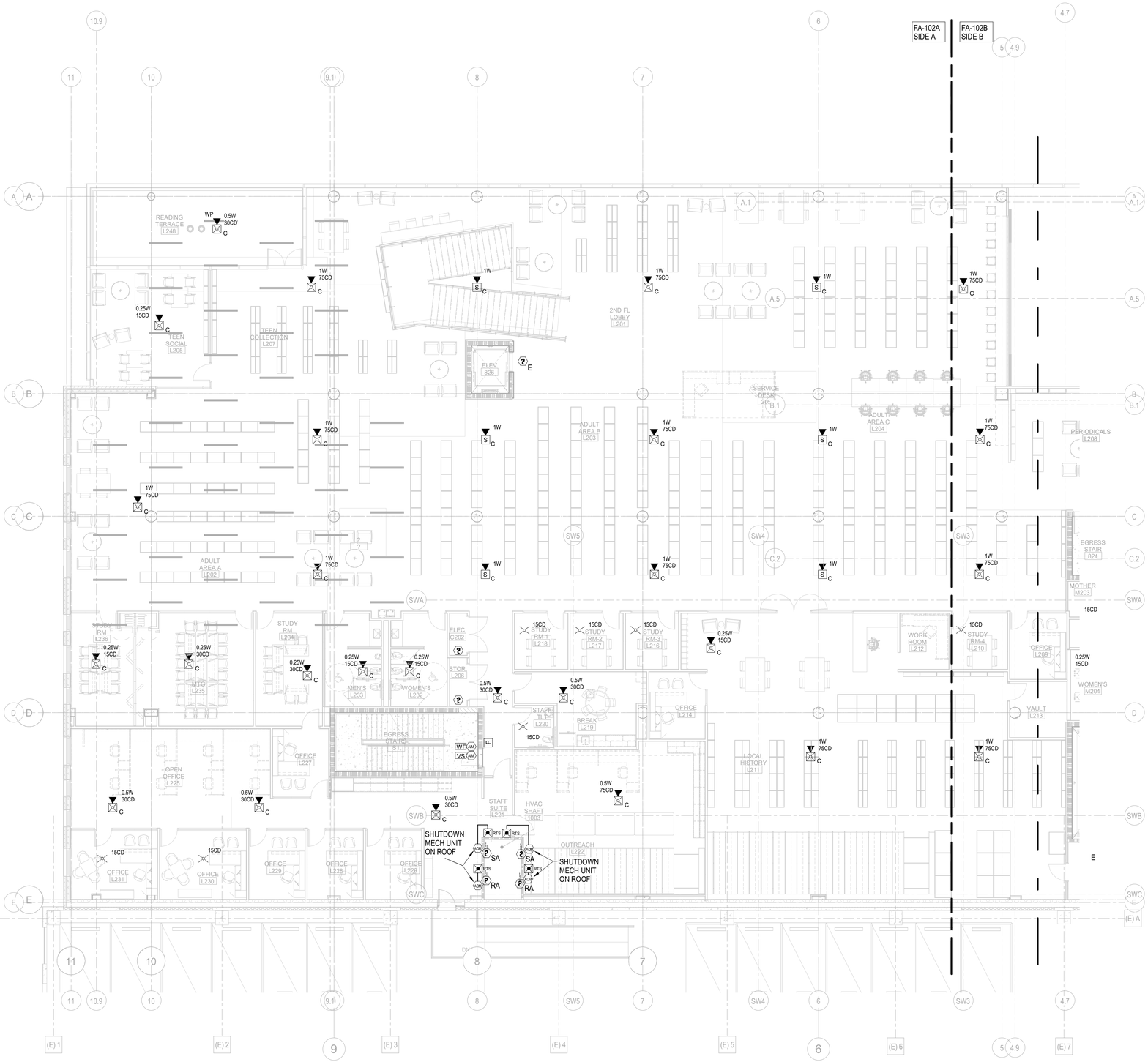
SHEET:
FA-101B
OWNERS REVIEW SET

5/20/2022 12:08:53 PM

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GENERAL NOTES:

- FIELD COORDINATE FINAL LOCATION OF LIGHTING CONTROL PANEL, AND CONNECT FIRE ALARM TO DISENGAGE LIGHTING CONTROLS AND ACTIVATE ALL REQUIRED EGRESS LIGHTING.



1 **FIRE ALARM LEVEL 2 - AREA A**
1/8" = 1'-0"

5/20/2022 12:09:01 PM

Zimmer Development

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LS3P PROJECT: 7701-177600

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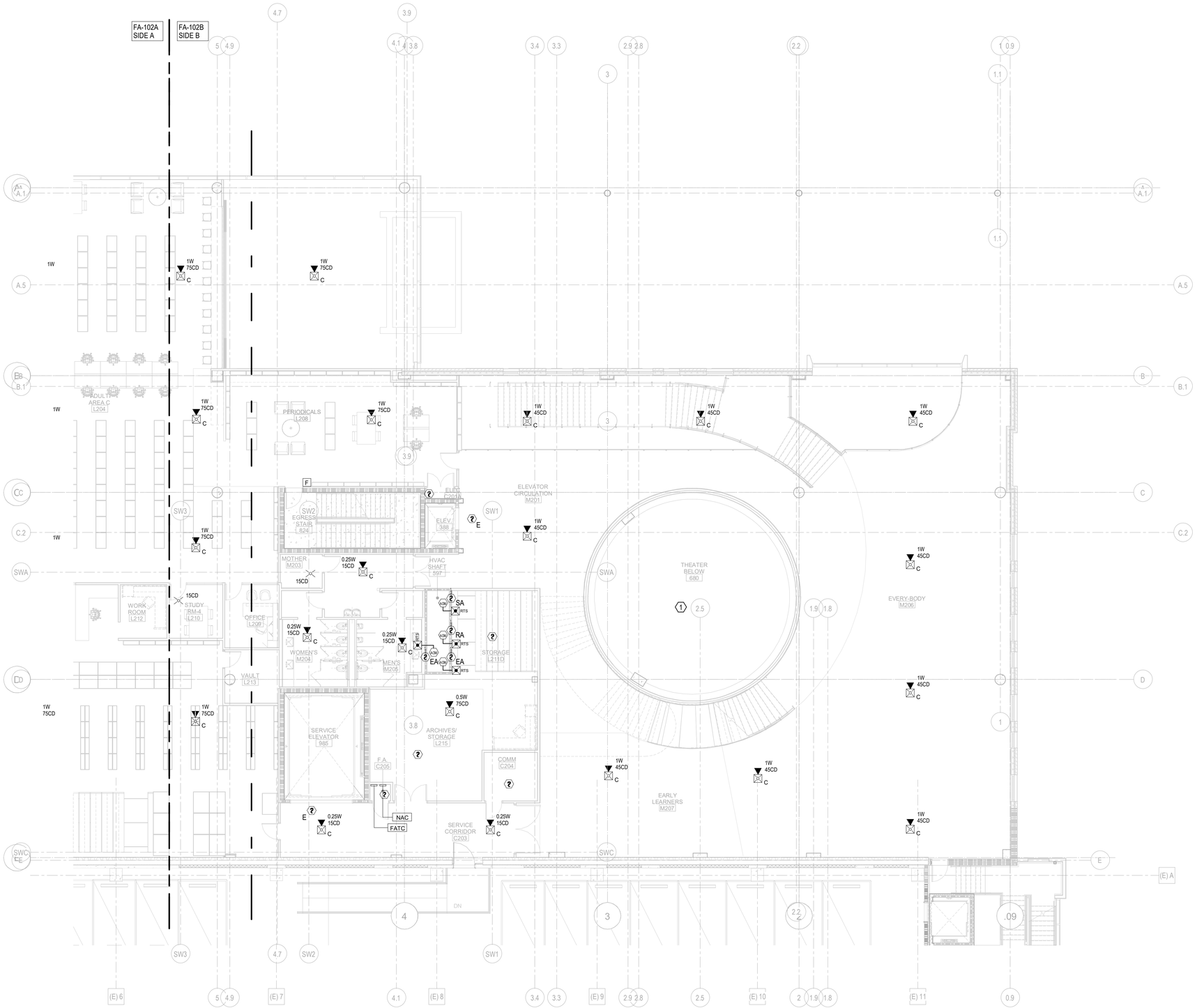
SHEET NAME:
FIRE ALARM LEVEL 2 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
FA-102A

OWNERS REVIEW SET

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SHEET KEYNOTES:

1. COORDINATE WITH THEATER CONTRACTOR ON FINAL LOCATION OF ALL FIRE ALARM DEVICES IN THE THEATER

GENERAL NOTES:

- FIELD COORDINATE FINAL LOCATION OF LIGHTING CONTROL PANEL, AND CONNECT FIRE ALARM TO DISENGAGE LIGHTING CONTROLS AND ACTIVATE ALL REQUIRED EGRESS LIGHTING.
- THEATER FIRE ALARM SYSTEM SHALL INCLUDE A CIRCUIT TO STOP THE SHOW IN THE THEATER INCLUDING ALL VISUAL AND AUDIO NOT RELATED TO THE FIRE ALARM SYSTEM.

1 FIRE ALARM LEVEL 2 - AREA B

1/8" = 1'-0"

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LS3P PROJECT: 7701-177600

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SHEET NAME:
FIRE ALARM LEVEL 2 - AREA B

ORIG SUBMISSION: 2022.05.25

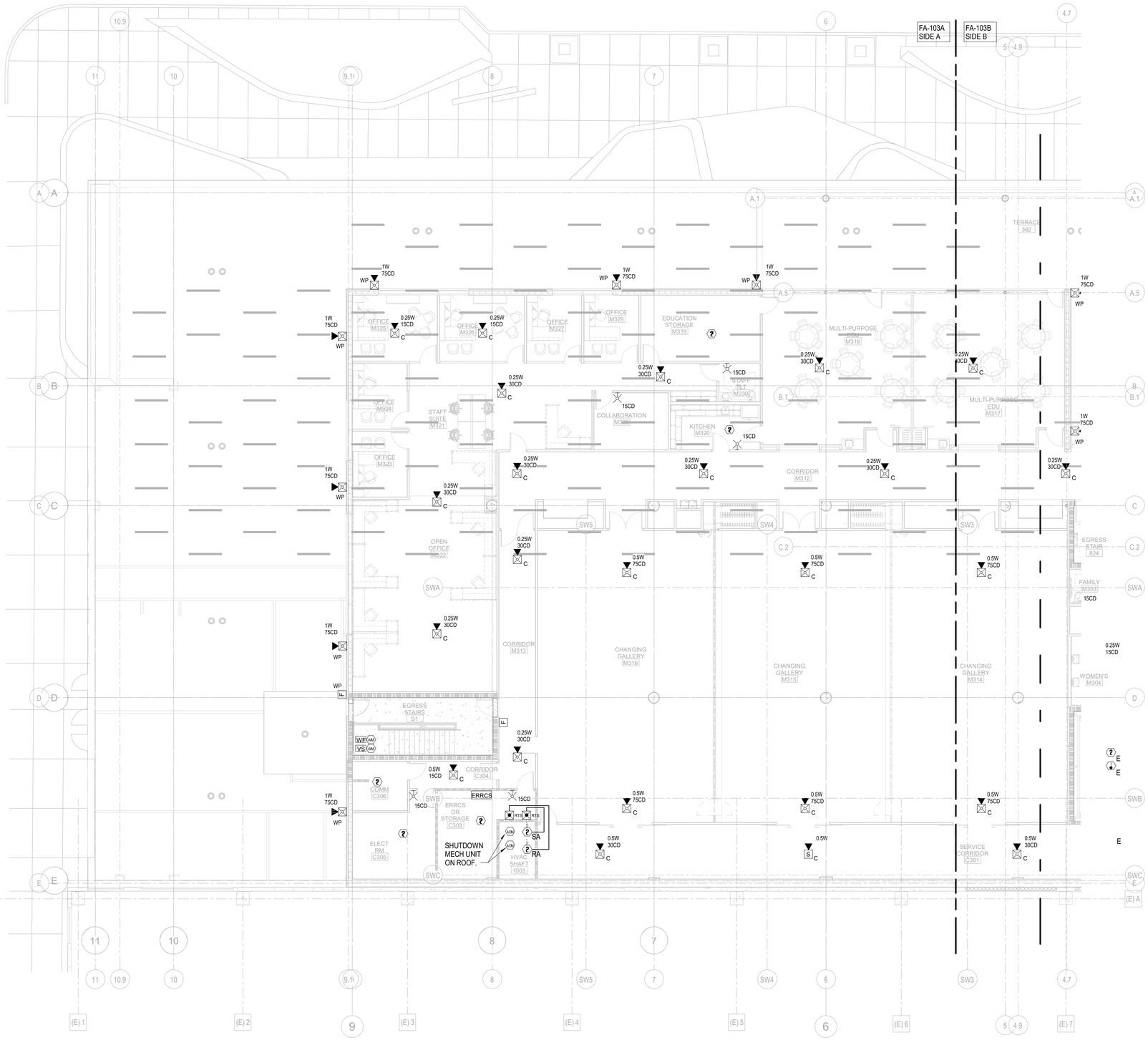
SHEET:
FA-102B

OWNERS REVIEW SET

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GENERAL NOTES:

- FIELD COORDINATE FINAL LOCATION OF LIGHTING CONTROL PANEL, AND CONNECT FIRE ALARM TO DISENGAGE LIGHTING CONTROLS AND ACTIVATE ALL REQUIRED EGRESS LIGHTING.



1 **FIRE ALARM LEVEL 3 - AREA A**
1/8" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE ALARM LEVEL 3 - AREA A

ORIG SUBMISSION: 2022.05.25

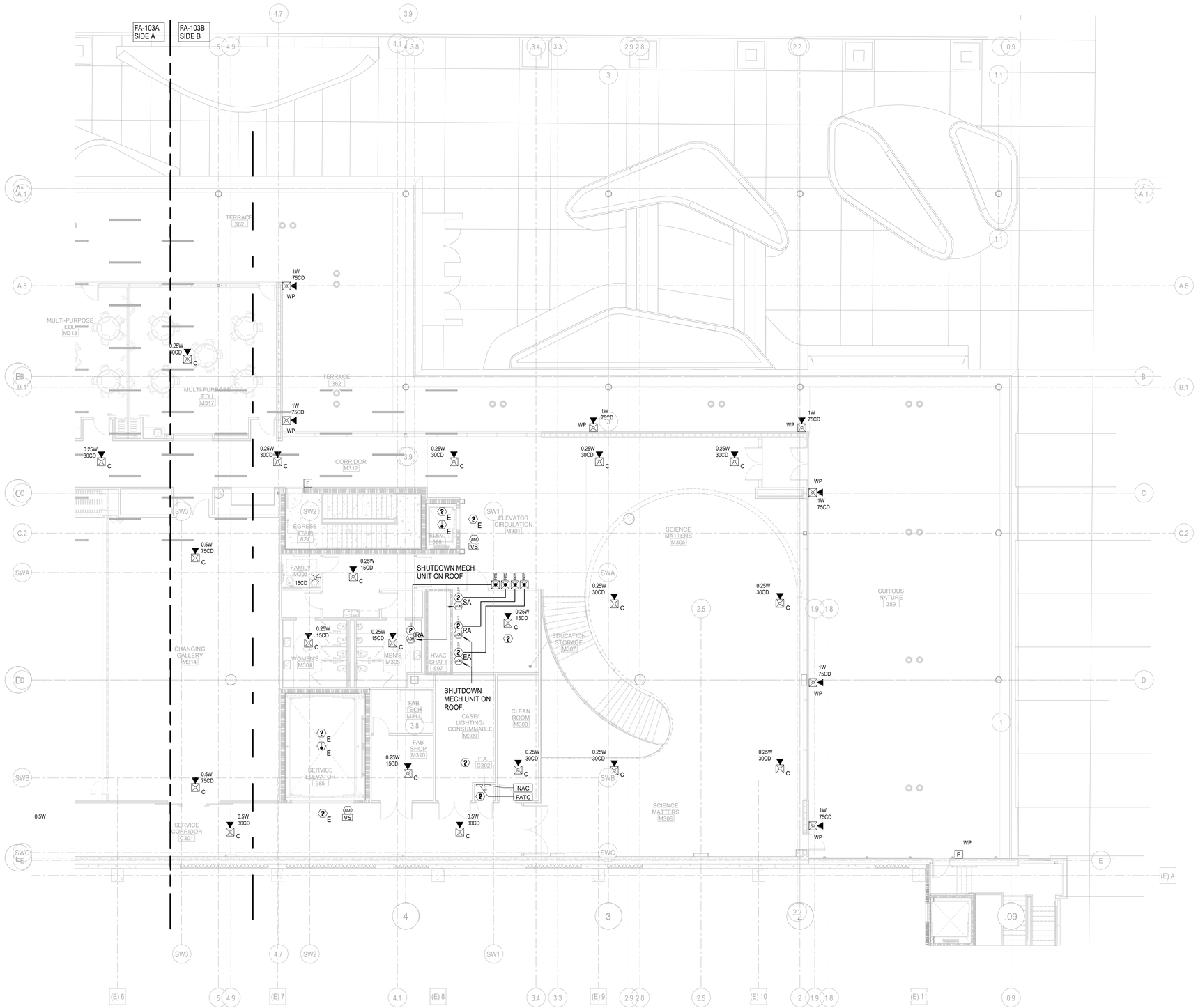
SHEET:
FA-103A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON FULL SHEETS ORIGINAL PAGE SIZE

GENERAL NOTES:

- FIELD COORDINATE FINAL LOCATION OF LIGHTING CONTROL PANEL, AND CONNECT FIRE ALARM TO DISENGAGE LIGHTING CONTROLS AND ACTIVATE ALL REQUIRED EGRESS LIGHTING.



1 **FIRE ALARM LEVEL 3 - AREA B**
1/8" = 1'-0"

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LS3P PROJECT: 7701-177600

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE ALARM LEVEL 3 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
FA-103B

OWNERS REVIEW SET

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FIRE PROTECTION DRAWING NOTES

PART 1: GENERAL

A. DESCRIPTION/SCOPE OF WORK
1. GENERAL PROVISIONS AND OTHER FIRE SUPPRESSION SYSTEMS ARE SPECIFIED IN SPECIFICATION PACKAGE.
2. THESE NOTES COVER THE WET FIRE SPRINKLER SYSTEM.
3. THESE NOTES COVER THE DRY FIRE SPRINKLER SYSTEM.
4. THESE NOTES COVER THE WET MANUAL CLASS 1 STANDPIPES.

B. QUALITY ASSURANCE
1. FIRE SUPPRESSION SYSTEMS SHALL BE INSTALLED BY A COMPANY REGULARLY ENGAGED IN THE INSTALLATION OF SPRINKLER SYSTEMS AND WHICH HOLDS A CURRENT SPRINKLER CONTRACTOR'S LICENSE FROM THE STATE OF NORTH CAROLINA. SUBMITTAL SHOP DRAWINGS SHALL BEAR THE STAMP AND LICENSE NUMBER OF THE INSTALLING CONTRACTOR.
2. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER OR NICET LEVEL III TECHNICIAN CERTIFIED IN FIRE PROTECTION ENGINEERING TECHNOLOGY WATER-BASED SYSTEMS LAYOUT IN THE STATE OF NORTH CAROLINA. SUBMITTALS, DRAWINGS, AND HYDRAULIC CALCULATIONS SHALL BEAR THE STAMP OF THE SUPERVISING PROFESSIONAL ENGINEER & NICET TECHNICIANS'S CERTIFICATION NUMBER.
3. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, MATERIALS SHALL BE NEW AND FREE FROM DEFECTS. SPRINKLER HEADS SHALL NEVER BE REUSED ONCE REMOVED FROM SYSTEM.
4. MATERIALS AND EQUIPMENT USED FOR SIMILAR APPLICATIONS SHALL BE THE PRODUCTS OF ONE MANUFACTURER.
5. PRODUCTS AND COMPONENTS INSTALLED IN THE SYSTEM SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL). OR APPROVED BY FACTORY MUTUAL ENGINEERING (FM).

C. BASIS OF DESIGN
1. OBTAIN A CURRENT TWO-HYDRANT FIRE HYDRANT FLOW TEST AT THE SITE. THE TEST SHALL BE MADE IN ACCORDANCE WITH NFPA 13 AND SHALL INDICATE NORMAL STATIC PRESSURE CONDITIONS, RESIDUAL PRESSURE, AND FLOW RATE. THE WATERFLOW TEST SHALL BE ADJUSTED DOWNWARD TO REFLECT ANY LOW PRESSURE CONDITION WITH A DURATION EXCEEDING 30 MINUTES DURING THE 24 HOUR PERIOD. PAY ALL CHARGES AND FEES ASSOCIATE WITH THE TESTS. IF THE ONE YEAR TEST LIMITATION EXCEEDS ONE YEAR BEFORE SPRINKLER CONTRACTOR IS ABLE TO SUBMIT TO AHJ FOR REVIEW, SPRINKLER CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CURRENT DATE STATUS OF THE TWO-HYDRANT TEST.
2. THE DESIGN OF THE FIRE SUPPRESSION SYSTEM SHALL BE BASED ON THE FOLLOWING WATERFLOW TEST CONDUCTED AT STATIC PRESSURE 58 PSIG, RESIDUAL PRESSURE 55 PSIG, AND FLOW 750 GPM.
3. HYDRAULIC CALCULATIONS SHALL INCLUDE A MINIMUM SAFETY FACTOR OF 10 PSIG OR 10%, WHICHEVER IS GREATER. ALL HYDRAULIC CALCULATIONS THAT ARE SUBMITTED WITH A SAFETY FACTOR OF 0 PSIG <10 PSIG, SHALL BE PROVIDED WITH NOTED RESPONSE OF WHY MINIMUM SAFETY FACTOR COULD NOT BE SATISFIED FOR ENGINEER REVIEW.

D. SHOP DRAWINGS & CALCULATIONS
1. THE CONTRACTOR SHALL DEVELOP COORDINATED INSTALLATION SHOP DRAWINGS AND HYDRAULIC CALCULATIONS INCLUDING THE FOLLOWING:
   A. SITE PLAN SHOWING LOCATIONS & TWO-HYDRANT FLOW TEST INFORMATION, UNDERGROUND WATER LINES WITH SIZES AND LENGTHS, AND RELATIVE HYDRANT ELEVATIONS BASED ON SITE FINISHED FLOOR ELEVATION (FFE). WITHOUT THIS INFORMATION, THE SUBMITTAL SHALL BE AUTOMATICALLY REJECTED FOR RESUBMIT.
   B. PIPING PLANS SHALL BE GENERATED BY A COMPUTER GENERATED DRAFTING PROGRAM WITH A MINIMUM 1/8" SCALE FLOORPLANS. ENLARGED PLANS OF CONGESTED AREAS SHALL BE MINIMUM 1/4" SCALE. PLANS SHALL HAVE PIPING LEGENDS AND BLACK & WHITE. DRAFTING PRACTICES SHALL FOLLOW COLORBLIND DRAFTING STANDARDS.
   C. PIPING PLANS SHALL SHOW CORRECTLY ELEVATED SECTION VIEWS THAT MATCH THE HYDRAULIC CALCULATIONS ELEVATIONS, PIPE ELEVATION TAGS, PIPE DIAMETER SIZES, CENTER TO CENTER PIPE CUT LENGTHS, PIPE OFFSETS, HANGER LOCATIONS AND TYPES, SEISMIC RESTRAINTS LOCATIONS & TYPES, SEISMIC ZONE OF INFLUENCE, CALCULATION REMOTE DESIGN AREAS, AND HYDRAULIC CALCULATION REFERENCE POINT/NODES. SECTIONS VIEWS OR 3D RENDERINGS REQUIRED BUT NOT LIMITED TO SHALL BE RISER ROOMS, FIRE PUMP ROOMS, STANDPIPES.
   D. HYDRAULIC REFERENCE NODES SHALL BE IN NUMERICAL ORDER FROM SOURCE. KEY EQUIPMENT AND FEATURES SHALL BE LABELED IN A MANOR TO IDENTIFY WITHIN HYDRAULIC CALCULATIONS. E.X. SOURCE - SRC, BASE OF RISER - BOR-#, BACKFLOW PREVENTER - BPF-#, CHECK VALVE - CKV-#, BUTTERFLY VALVE - BFV-#, LOW SUCTION CONTROL VALVE - LSC-#, FIRE PUMP - FP-#, FIRE PUMP INLET- FP-I, FIRE PUMP OUTLET - FP-O, SPRINKLER HEAD - SP-#, FIRE HOSE VALVE - FHV-#, PRESSURE REDUCING VALVE - PRV-#.
   E. HYDRAULIC CALCULATIONS SHALL BE PERFORMED BY A COMPUTER CALCULATION PROGRAM SPECIFICALLY DESIGNED FOR THE ANALYSIS OF FIRE SPRINKLER SYSTEMS. CALCULATIONS SHALL USE THE AREA/DENSITY METHOD DESCRIBED IN NFPA 13.
   F. SYSTEM DESIGN DENSITIES AND REMOTE AREA OF SPRINKLER OPERATION SHALL BE AS INDICATED ON THE DRAWINGS.
   G. A SPRINKLER HEAD SYMBOL LEGEND SHALL BE PROVIDED WITH K-FACTOR, ORIFICE SIZE, SIN MODEL NUMBER, AND QUANTITY ON PAGE. A TOTAL QUANTITY OF EACH SPRINKLER HEAD SHALL BE INDICATED ON TITLE BLOCK PAGE WITH WRENCH NUMBER PART NUMBERS AND QUANTITIES PER NFPA 13, 6.2.9. STOCK OF SPARE SPRINKLERS. THE HEAD CABINET QUANTITY SHALL BE NOTED ON SHOP DRAWINGS FOR REVIEW.
   H. SUBMITTAL PACKAGE SHALL BE APPROVED BY ENGINEER OF RECORD BEFORE CONTRACTOR IS PERMITTED TO SUBMIT FOR AHJ APPROVAL PER THE INTERNATIONAL BUILDING CODE DEFERRED SUBMITTAL PROCESS - 107.3.4.1.
   I. ALL REDUCTIONS IN DESIGN AREAS FOR QUICK RESPONSE OR OTHER NFPA 13 APPROVED METHODS SHALL BE INDICATED WITH A NOTE AND PROVIDED WITH THE MATHEMATIC PROCESS FOR REVIEW.

E. CODES
1. THIS SUBMITTAL SHALL FOLLOW THE INTERNATIONAL BUILDING CODE AND INTERNATIONAL FIRE CODE
2. CONFORM TO THE FOLLOW STANDARDS: NFPA 13-2013, NFPA 24-2013, NFPA 70-2013, NFPA 72-2013, NFPA 101-2013,

F. SUBMITTAL REQUIREMENTS
- DEFERRED SUBMITTAL PROCESS IBC 107.3.4.1
- SCOPE OF WORK DESCRIPTION
- STANDPIPE INFORMATION
- SPRINKLER SYSTEM INFORMATION
- SPRINKLER HEAD INFORMATION
- PIPE SCHEDULE & TYPE, COUNTRY OF ORIGIN
- FITTINGS MATERIALS & SCHEDULE RATING
- COORDINATION DRAWINGS
- FIRE DEPARTMENT CONNECTION
- FIRE WATER SERVICE ENTRANCE
- WATER SUPPLY INFORMATION
- SPRINKLER SYSTEM DESIGN CRITERIA
- INSURANCE PROVIDER REQUIREMENTS
- SEISMIC LEGEND, LOCATION, MATERIALS & CALCULATIONS
- ELEVATOR COVERAGE REQUIREMENTS
- STANDARD LISTED FIRE PROTECTION VALVES
- DRAINAGE PIPING SIZE AND LOCATIONS
- PENETRATION DETAILS
- ACCESS PANEL LOCATIONS
- INSPECTOR'S TEST LOCATION AND DETAIL
- AUXILIARY DRAINS
- AUTOMATIC AIR VENTS ASSEMBLIES
- HANGERS & HANGING ASSEMBLIES
- BUILDING CONSTRUCTION METHOD
- BRAIDED FLEX DROPS AND LISTED CEILING ATTACHMENT ASSEMBLY

1 FIRE PROTECTION DRAWING NOTES
NO SCALE

HYDRANT FLOW CHEAT SHEET 21274.PE

DATE: 12/1/21 TIME: 10:30AM INSPECTOR: DAVID COLE, LEVAR LEA - CFPM, STEVE COLEMAN - CONFED

LOCATION OF HYDRANT: PROJECT GRACE FLOW AND - INT. OF BAGSTAND N. SECOND STATIC/RESIDUAL - INT. OF CASSIMIR & N. THIRD

BILLING COMPANY NAME: _____

BILLING COMPANY ADDRESS: _____

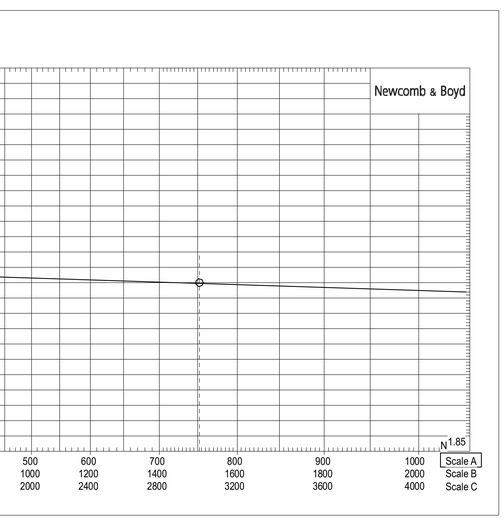
STATIC PRESSURE 58 PSI — 29.83 x C x D² x √PITOT PSI

RESIDUAL PRESSURE 55 PSI — C= Coefficient of .8 or .7

PITOT PRESSURE #1 20 PSI — D= Diameter of discharge 2.5

PITOT PRESSURE #2 _____ PSI

GPM 750.4



2 WATER SUPPLY GRAPH
NO SCALE

COMPONENT/SYSTEM INPORTANCE FACTOR (Ip) SCHEDULE AND SEISMIC DESIGN INFORMATION	
Ip = 1.5	

SEISMIC DESIGN INFORMATION

1. SITE CLASSIFICATION = "D"
2. RISK CATEGORY = III
3. SEISMIC DESIGN CATEGORY = "B"

APPLICABLE CODE INFORMATION

CODES AND STANDARDS:
- BUILDING CODE: [ENTER BUILDING CODE]
- MECHANICAL CODE: [ENTER MECHANICAL CODE]
- PLUMBING CODE: [ENTER PLUMBING CODE]
- ELECTRICAL CODE: [ENTER ELECTRICAL CODE]
- FIRE CODE: INTERNATIONAL FIRE CODE 2015 ED
- ENERGY CODE: [ENTER ENERGY CODE]
- ACCESSIBILITY: [ENTER ACCESSIBILITY CODE]

OCCUPANCY USE GROUP
- [ENTER OCCUPANCY USE GROUP, PER ARCHITECT]

CONSTRUCTION CLASSIFICATIONS:
- [ENTER CONSTRUCTION CLASSIFICATION, PER ARCHITECT]

SPRINKLER SYSTEM:
- NFPA 13, 2013ED

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: FIRE PROTECTION GENERAL

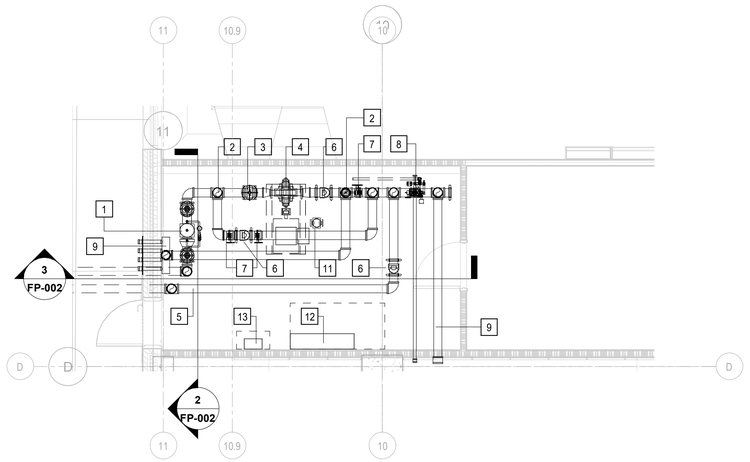
ORIG SUBMISSION: 2022.05.25

SHEET: **FP-000**

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1 FIRE PROTECTION FIRE SERVICE SERVICE ROOM ENLARGED PLAN

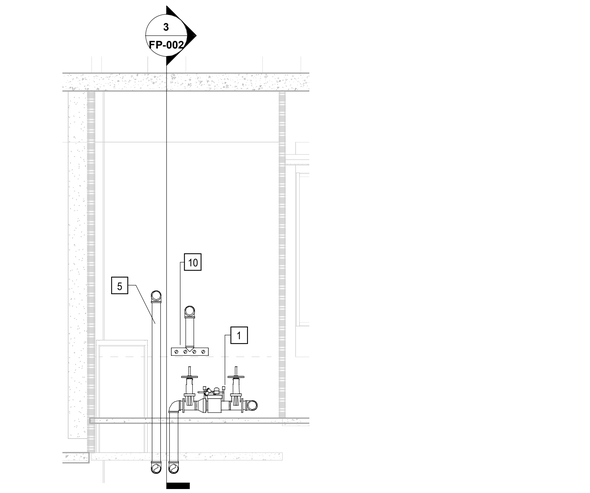
1/4" = 1'-0"

FIRE PUMP LEGEND

1. 6" BACKFLOW PREVENTER WITH FLANGED CONTROL VALVES AND TAMPERS
2. FIRE PUMP BY-PASS
3. 6" FLANGED OS&Y CONTROL VALVE WITH TAMPER
4. FIRE PUMP, 750GPM
5. 6" PIPE TO REMOTE FDC
6. 6" CHECK VALVE
7. 6" CONTROL VALVE WITH TAMPER
8. 2½" DRY PIPE VALVE
9. 6" SUPPLY TO SYSTEM STANDPIPES
10. FIRE PUMP TEST HEADER WITH (3) 2½" HOSE VALVES. TEST HEADER WILL BE USED FOR BACK FLOW TESTING
11. JOCKEY PUMP
12. FIRE PUMP CONTROLLER
13. JOCKEY PUMP CONTROLLER

FIRE PROTECTION LINE-TYPE LEGEND

- THIS AREA IS CLASSIFIED AS ORDINARY HAZARD
- SPRINKLER PIPING BURIED
- SPRINKLER PIPING ABOVE GROUND



2 FIRE PROTECTION FIRE SERVICE SECTION VIEW

1/4" = 1'-0"

NOTES:
1. COAT TIE RODS, FLANGES AND BOLTS WITH 2 COATS OF TAR AFTER ASSEMBLY.
2. COAT GALVANIZED PIPE WITH TAR AND WRAP WITH PLASTIC TAPE PRIOR TO INSTALLATION OF PIPE SLEEVE.

4 FIRE PROTECTION UNDERGROUND SERVICE DETAIL

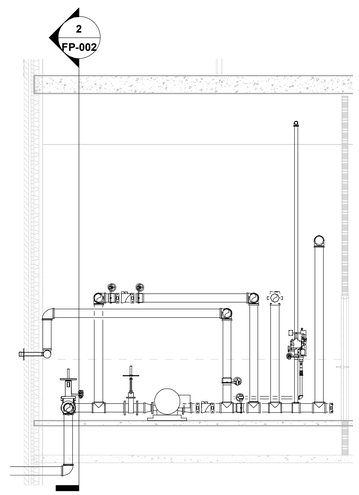
NO SCALE

NOTES:

1. MOUNT SPOOL PIECE ON THE WALL ADJACENT TO THE TEST CONNECTION.

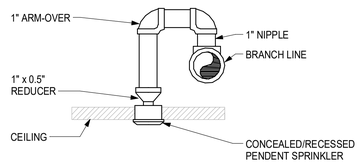
6 FIRE PROTECTION INSPECTORS TEST DETAIL

NO SCALE



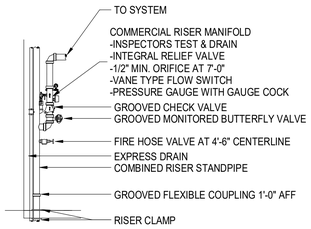
3 FIRE PROTECTION FIRE SERVICE SECTION VIEW1

1/4" = 1'-0"



5 FIRE PROTECTION PENDENT SPRINKLER DETAIL

NO SCALE



NOTES:
1. WHERE THE STATIC PRESSURE AT A 2.5 IN. HOSE CONNECTION EXCEEDS 175 PSI, AN APPROVED PRESSURE REGULATING DEVICE SHALL BE PROVIDED TO LIMIT STATIC & RESIDUAL PRESSURES AT THE OUTLET OF THE HOSE CONNECTION TO 170 PSI MAX.
2. A PRESSURE REDUCING VALVE IS REQUIRED ON A FLOOR CONTROL ASSEMBLY IF STATIC PRESSURE EXCEEDS 175 PSI AT THE OUTLET OF THE ASSEMBLY.
3. MECHANICAL TEES ARE NOT PERMITTED.

7 FLOOR CONTROL ASSEMBLY1

1/4" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE PROTECTION DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
FP-002

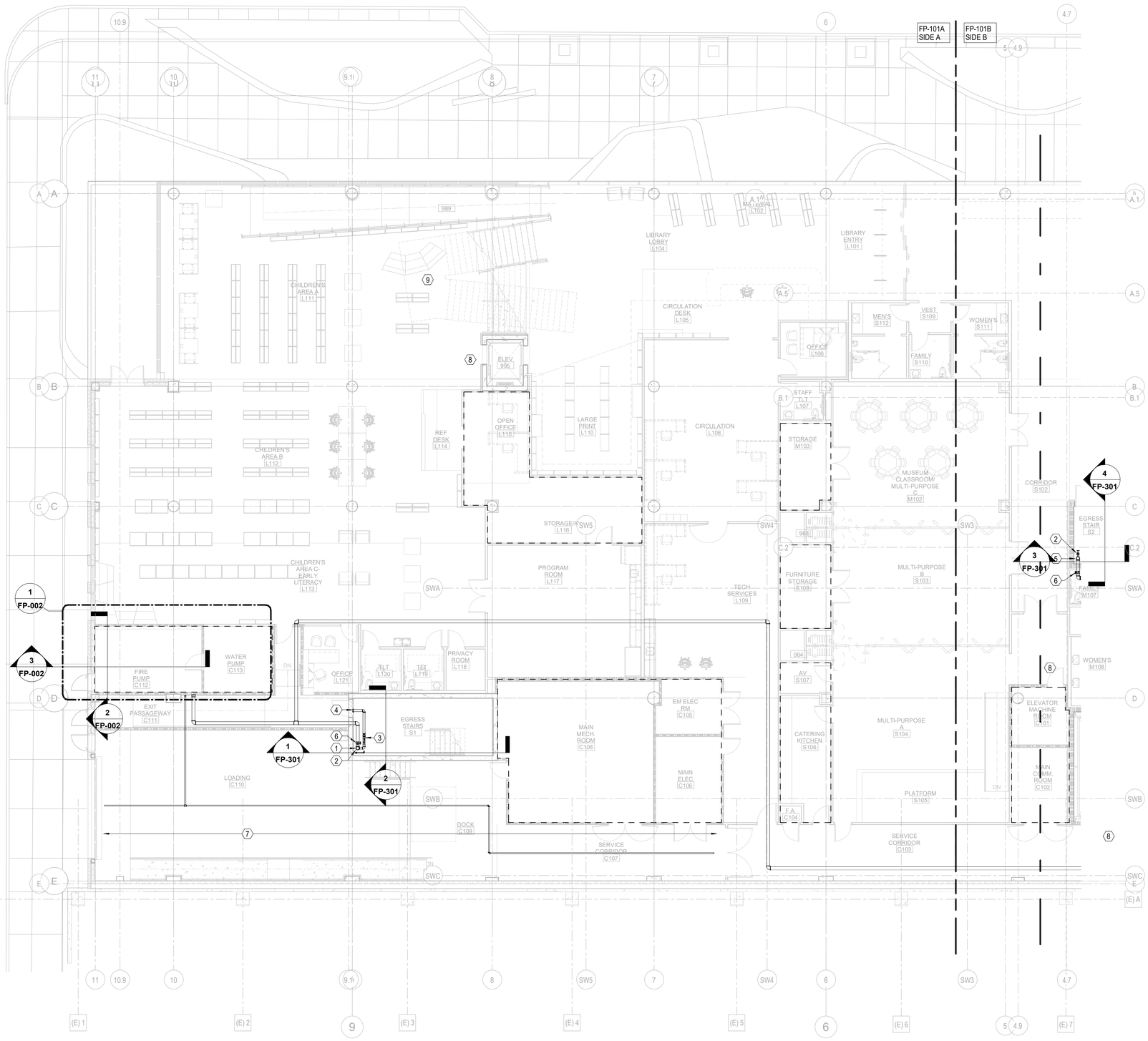
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E D C B A

1 2 3 4 5 6

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FIRE PROTECTION LEVEL 1 - AREA A

1/8" = 1'-0"

SHEET KEYNOTES:

1. 6" STANDPIPE RISER & 2" SPRINKLER DRAIN RISER.
2. 2 1/2" FIRE HOSE CONNECTION.
3. 4" SPRINKLER ZONE CONTROL ASSEMBLY.
4. 4" SPRINKLER MAIN TO WET SPRINKLER SYSTEM.
5. 6" STANDPIPE.
6. 6" CONTROL VALVE WITH TAMPER FOR STANDPIPE ISOLATION.
7. PROVIDE A DRY PIPE SPRINKLER SYSTEM FOR THE LOADING DOCK.
8. PROVIDE A MONITORED BALL VALVE WITH INTEGRAL TAMPER SWITCH ABOVE CEILING FOR PIPING TO BOTTOM OF SHAFT SPRINKLERS AND ELEVATOR MACHINE ROOM SPRINKLERS.
9. PROVIDE SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13 8.6.5.3.3

GENERAL NOTES:

- FIRE HOSE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 7.3.1.1.
- SPRINKLERS WILL BE REQUIRED TO BE SPACED NO MORE THAN 6' AROUND VERTICAL OPENING PER NFPA 13, 8.15.4.1

FIRE PROTECTIOIN LINE-TYPE LEGEND

- THIS AREA IS CLASSIFILED AS ORDINARY HAZARD
- SPRINKLER PIPING BURIED
- SPRINKLER PIPING ABOVE GROUND

Zimmer Development

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE PROTECTION LEVEL 1 - AREA A

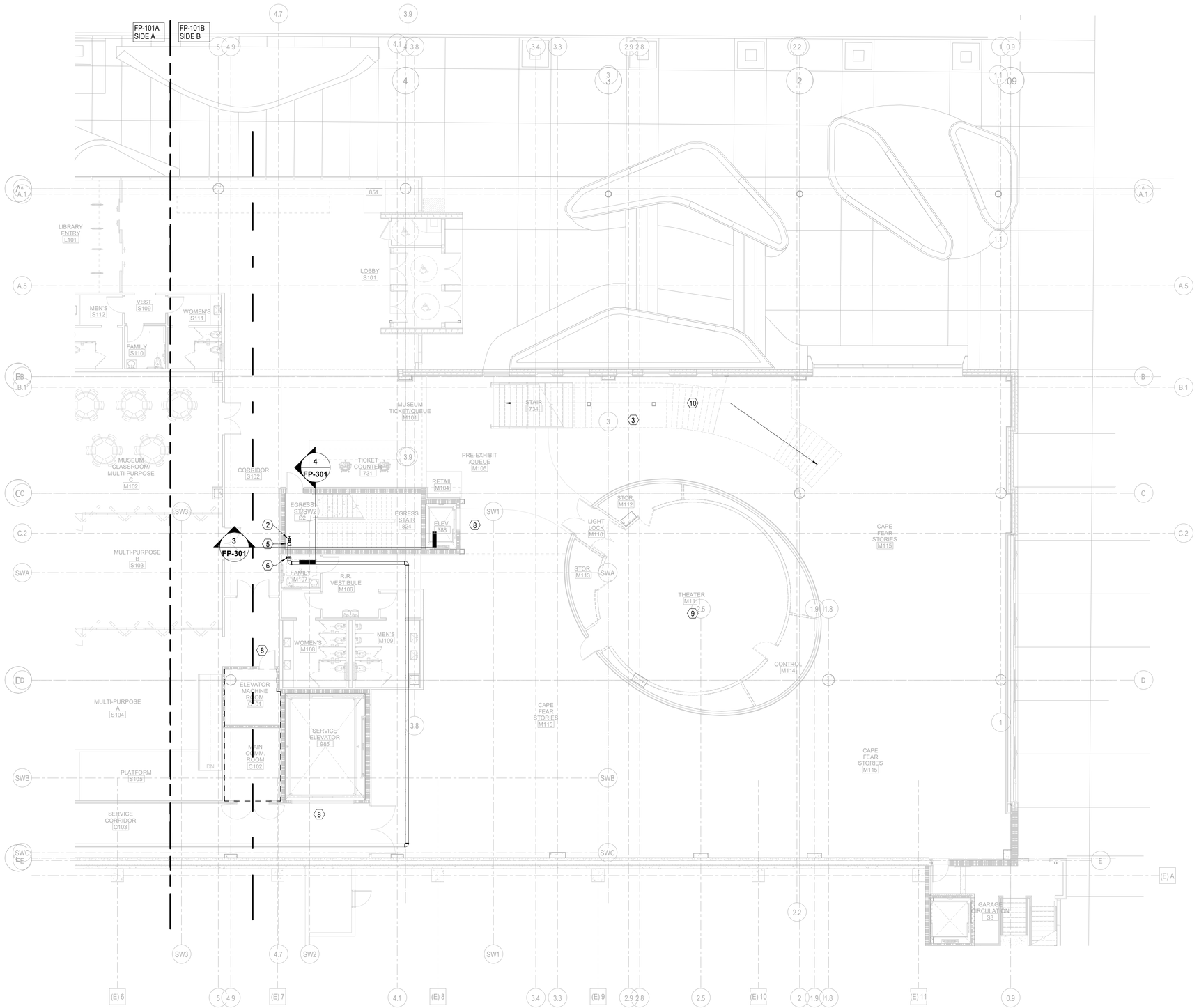
ORIG SUBMISSION: 2022.05.25

SHEET:
FP-101A

OWNERS REVIEW SET

5/20/2022 12:09:26 PM

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1 FIRE PROTECTION LEVEL 1 - AREA B

1/8" = 1'-0"

SHEET KEYNOTES:

2. 2 1/2" FIRE HOSE CONNECTION.
3. PROVIDE SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13 8.6.5.3.3
5. 6" STANDPIPE.
6. 6" CONTROL VALVE WITH TAMPER FOR STANDPIPE ISOLATION.
8. PROVIDE A MONITORED BALL VALVE WITH INTEGRAL TAMPER SWITCH ABOVE CEILING FOR PIPING TO BOTTOM OF SHAFT SPRINKLERS AND ELEVATOR MACHINE ROOM SPRINKLERS
9. THEATER SHALL NOT HAVE A SPRINKLER COMING THROUGH THE DOME. THEATER CONTRACTOR SHALL BE CONSULTED ON FINALIZED SUPPRESSION LAYOUT.
10. SPRINKLERS WILL BE REQUIRED TO BE SPACED NO MORE THAN 6' AROUND VERTICAL OPENING PER NFPA 13, 8.15.4.1

GENERAL NOTES:

- FIRE HOSE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 7.3.1.1.

FIRE PROTECTION LINE-TYPE LEGEND

- THIS AREA IS CLASSIFIED AS ORDINARY HAZARD
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- SPRINKLER PIPING ABOVE GROUND

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE PROTECTION LEVEL 1 - AREA B

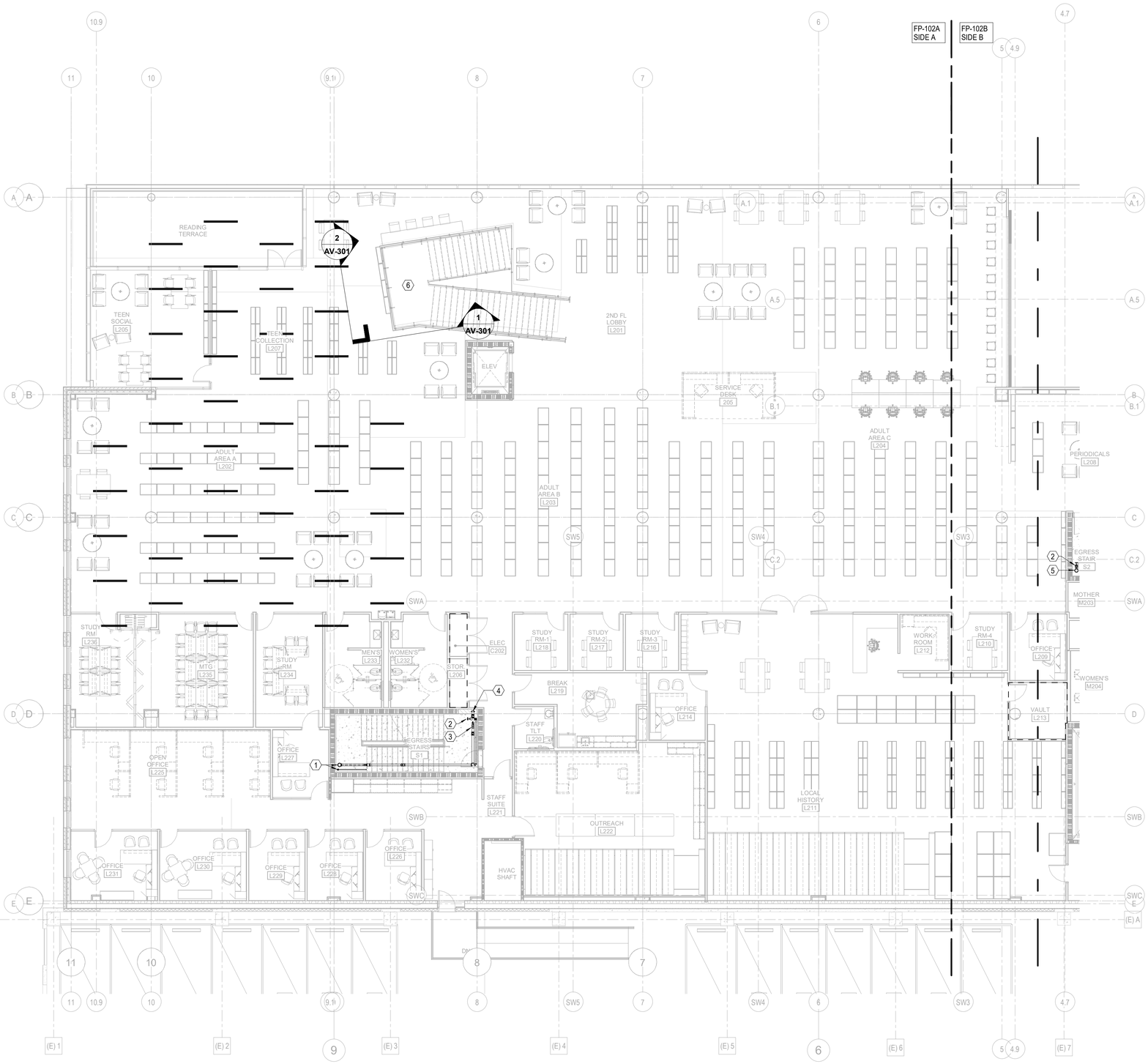
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FP-101B

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FIRE PROTECTION LINE-TYPE LEGEND

- THIS AREA IS CLASSIFIED AS ORDINARY HAZARD
- SPRINKLER PIPING BURIED
- SPRINKLER PIPING ABOVE GROUND

(#) SHEET KEYNOTES:

1. 6" STANDPIPE RISER & 2" SPRINKLER DRAIN RISER.
2. 2 1/2" FIRE HOSE CONNECTION.
3. 4" SPRINKLER ZONE CONTROL ASSEMBLY.
4. 4" SPRINKLER MAIN TO WET SPRINKLER SYSTEM
5. 6" STANDPIPE.
6. PROVIDE SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13 8.6.5.3.3

(#) GENERAL NOTES:

- FIRE HOSE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 7.3.1.1.
- SPRINKLERS WILL BE REQUIRED TO BE SPACED NO MORE THAN 6' AROUND VERTICAL OPENING PER NFPA 13, 8.15.4.1

1 FIRE PROTECTION LEVEL 2 - AREA A
1/8" = 1'-0"

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SHEET NAME:
FIRE PROTECTION LEVEL 2 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
FP-102A

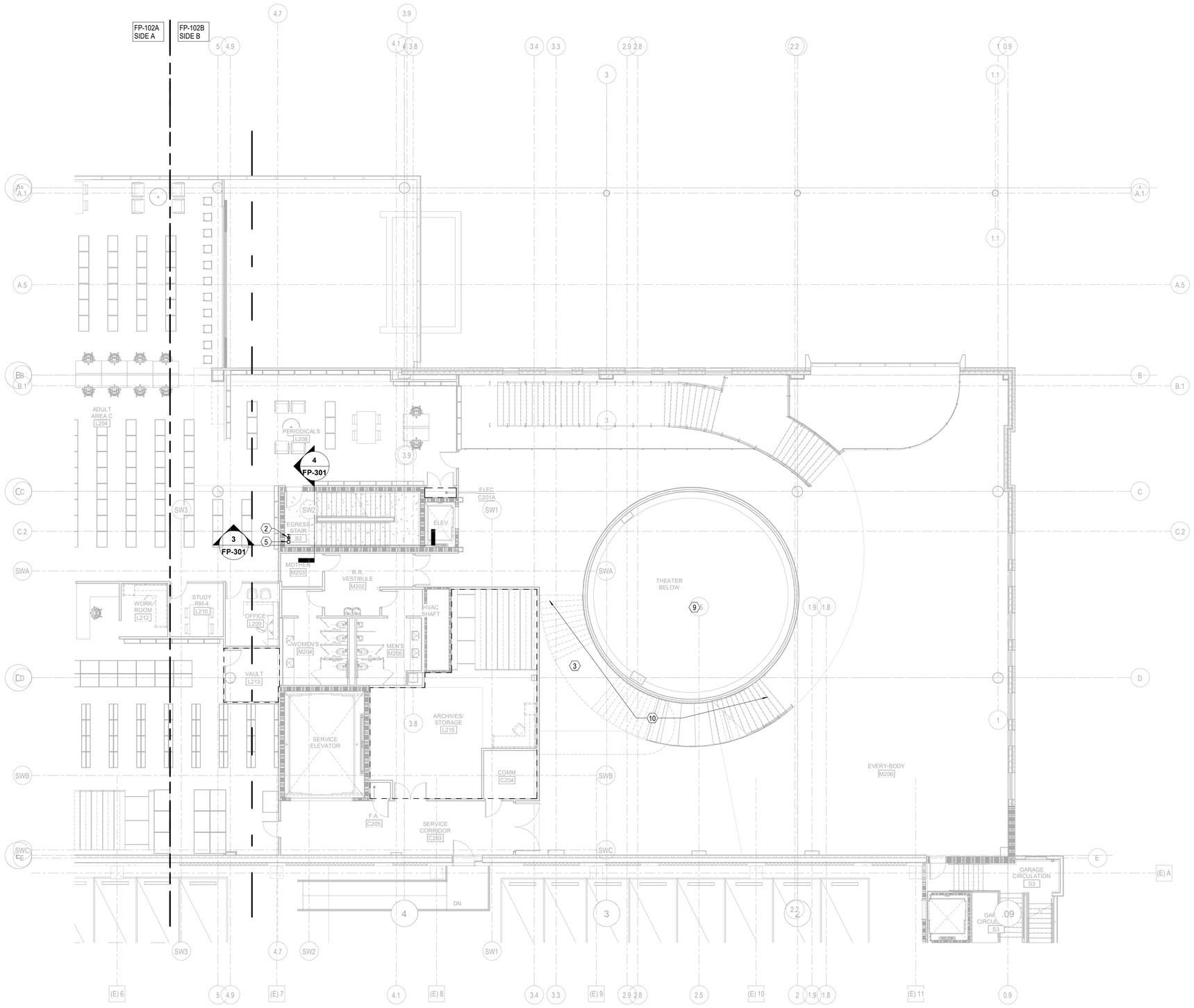
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FP-102A SIDE A

FP-102B SIDE B



1 **FIRE PROTECTION LEVEL 2 - AREA B**
1/8" = 1'-0"

SHEET KEYNOTES:

2. 2 1/2" FIRE HOSE CONNECTION.
3. PROVIDE SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13 8.6.5.3.3
5. 6" STANDPIPE.
9. THEATER SHALL NOT HAVE A SPRINKLER COMING THROUGH THE DOME. THEATER CONTRACTOR SHALL BE CONSULTED ON FINALIZED SUPPRESSION LAYOUT.
10. SPRINKLERS WILL BE REQUIRED TO BE SPACED NO MORE THAN 6' AROUND VERTICAL OPENING PER NFPA 13, 8.15.4.1

GENERAL NOTES:

- FIRE HOSE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 7.3.1.1.

FIRE PROTECTION LINE-TYPE LEGEND

- THIS AREA IS CLASSIFIED AS ORDINARY HAZARD
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- SPRINKLER PIPING ABOVE GROUND

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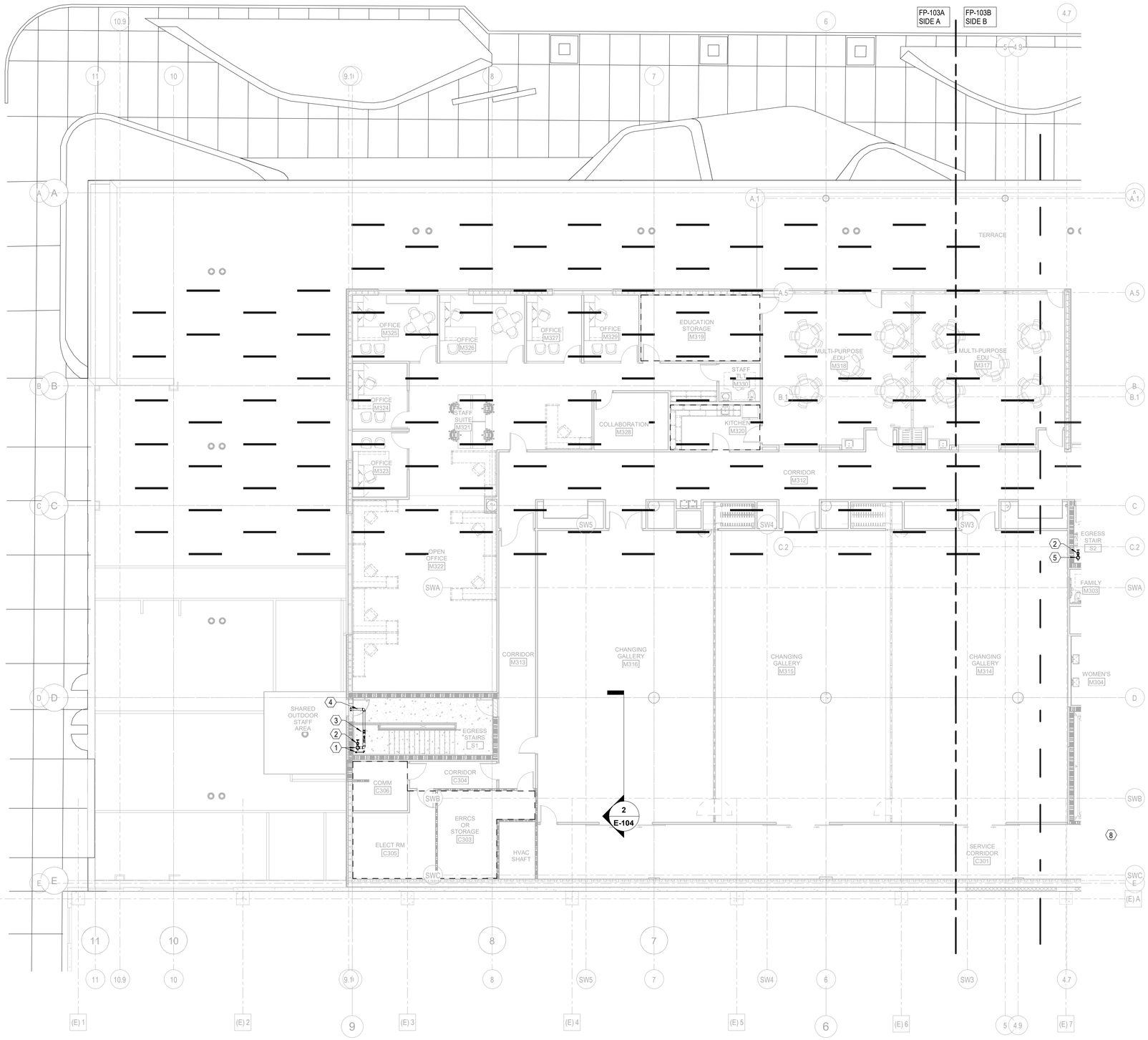
SHEET NAME:
FIRE PROTECTION LEVEL 2 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
FP-102B
OWNERS REVIEW SET

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FIRE PROTECTION LINE-TYPE LEGEND

- THIS AREA IS CLASSIFIED AS ORDINARY HAZARD
- SPRINKLER PIPING BURIED
- SPRINKLER PIPING ABOVE GROUND

(#) *SHEET KEYNOTES:*

1. 6" STANDPIPE RISER & 2" SPRINKLER DRAIN RISER.
2. 2 1/2" FIRE HOSE CONNECTION.
3. 4" SPRINKLER ZONE CONTROL ASSEMBLY.
4. 4" SPRINKLER MAIN TO WET SPRINKLER SYSTEM.
5. 6" STANDPIPE.

[#] *GENERAL NOTES:*

- FIRE HOSE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 7.3.1.1.
- SPRINKLERS WILL BE REQUIRED TO BE SPACED NO MORE THAN 6' AROUND VERTICAL OPENING PER NFPA 13, 8.15.4.1

1 FIRE PROTECTION LEVEL 3 - AREA A
1/8" = 1'-0"

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SHEET NAME:
FIRE PROTECTION LEVEL 3 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
FP-103A

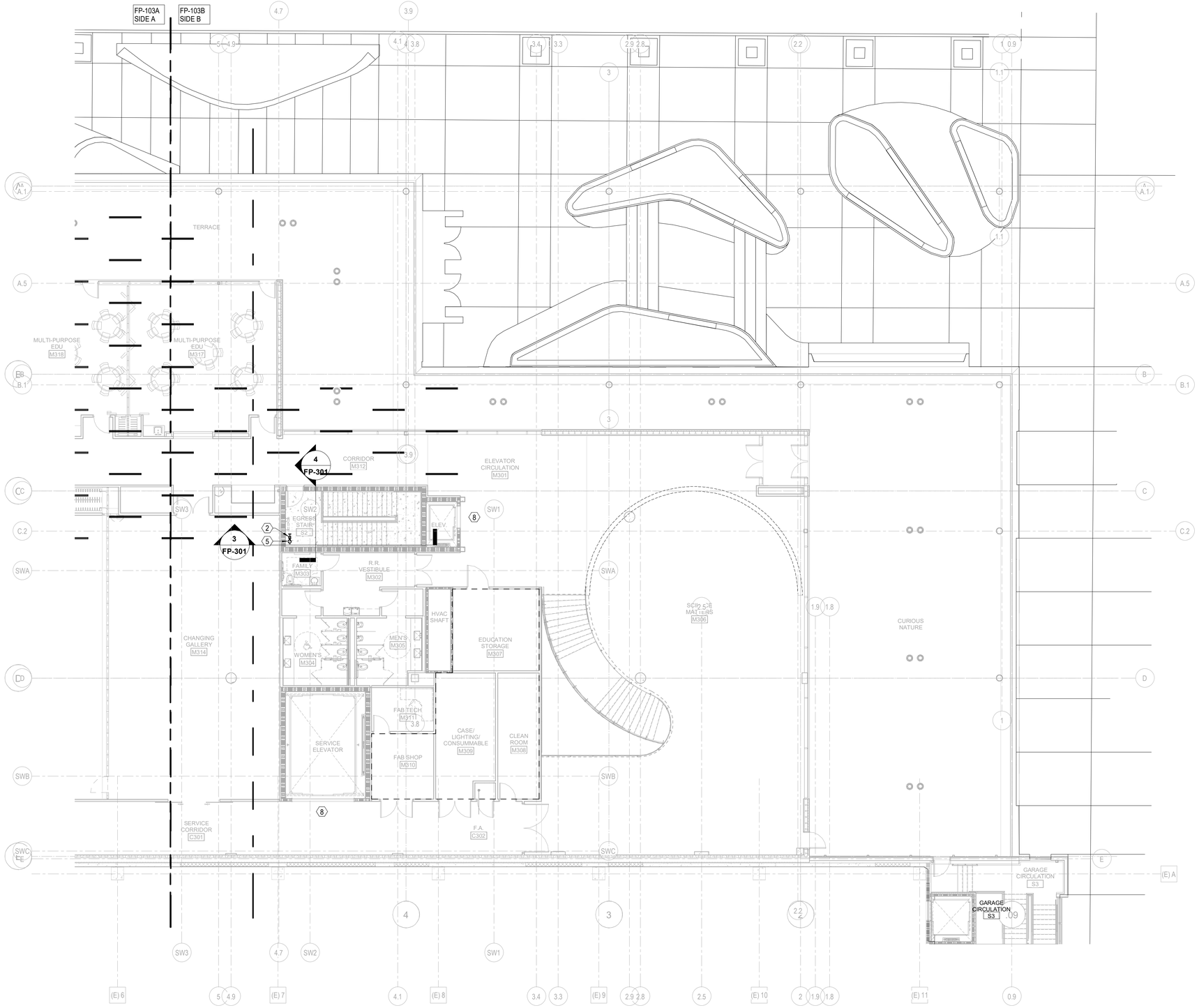
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FP-103A SIDE A

FP-103B SIDE B



1 FIRE PROTECTION LEVEL 3 - AREA B

1/8" = 1'-0"

SHEET KEYNOTES:

2. 2 1/2" FIRE HOSE CONNECTION.
5. 6" STANDPIPE.
8. PROVIDE A MONITORED BALL VALVE WITH INTEGRAL TAMPER SWITCH ABOVE CEILING FOR PIPING TO TOP OF SHAFT SPRINKLERS.

GENERAL NOTES:

- FIRE HOSE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 7.3.1.1.
- SPRINKLERS WILL BE REQUIRED TO BE SPACED NO MORE THAN 6' AROUND VERTICAL OPENING PER NFPA 13, 8.15.4.1

FIRE PROTECTION LINE-TYPE LEGEND

- THIS AREA IS CLASSIFIED AS ORDINARY HAZARD
- SPRINKLER PIPING BURIED
- SPRINKLER PIPING ABOVE GROUND

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LS3P PROJECT: 7701-177600

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE PROTECTION LEVEL 3 - AREA B

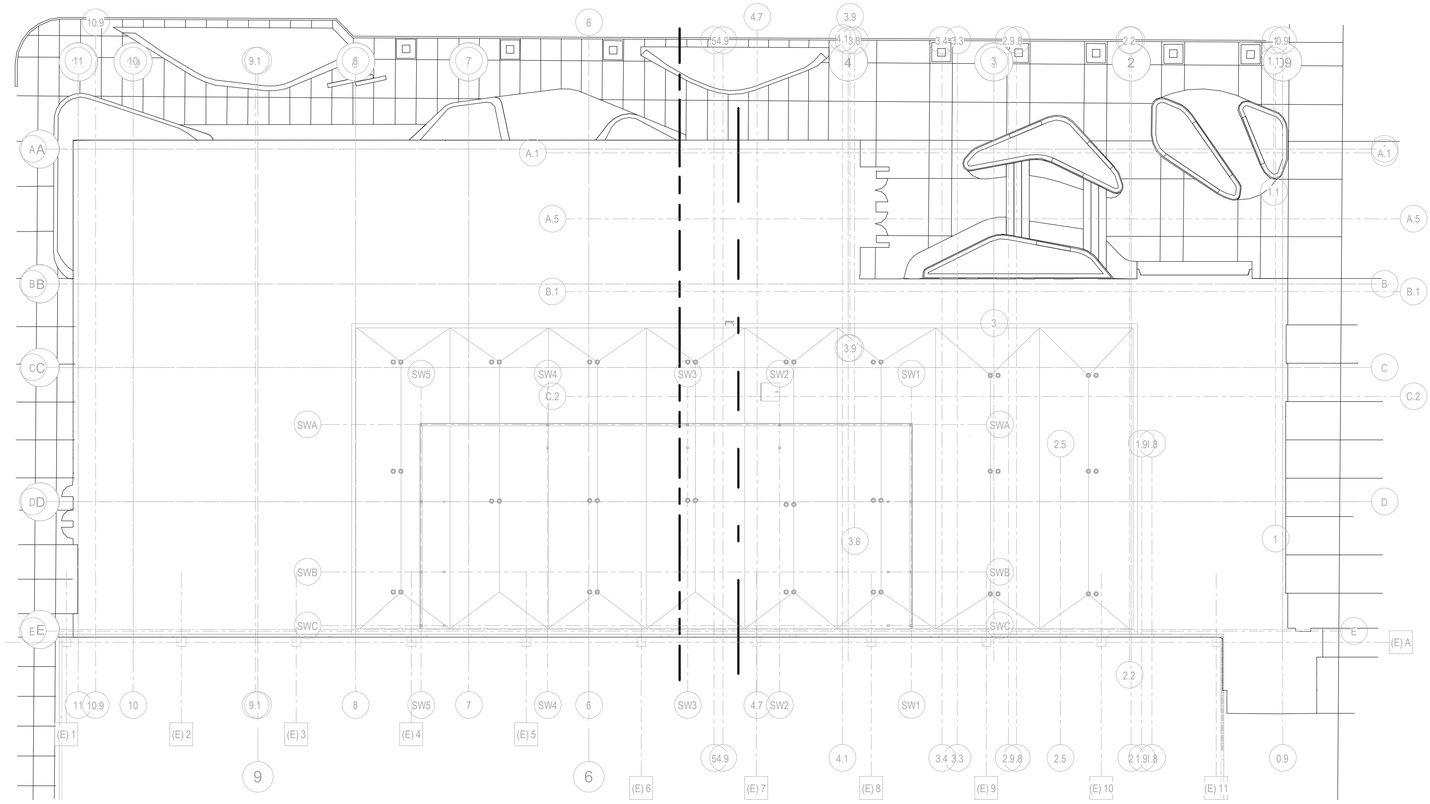
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SHEET:
FP-103B

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1 FIRE PROTECTION OVERALL ROOF

1/16" = 1'-0"

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE PROTECTION OVERALL ROOF

ORIG SUBMISSION: 2022.05.25

SHEET:
FP-104

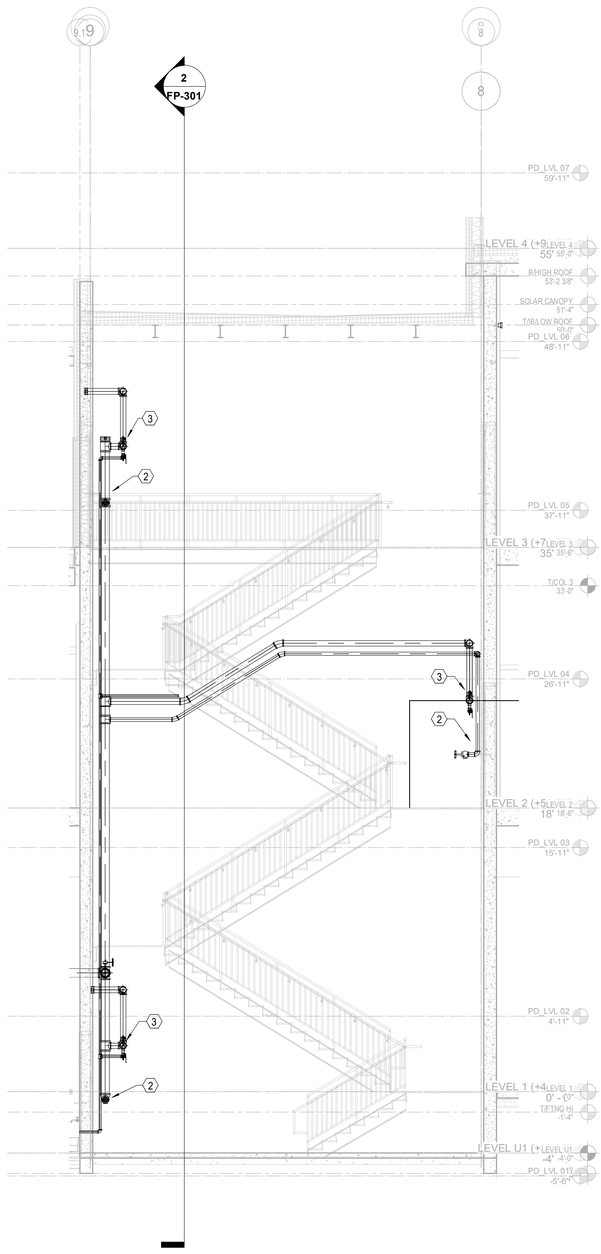
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FIRE PROTECTION KEY NOTES:

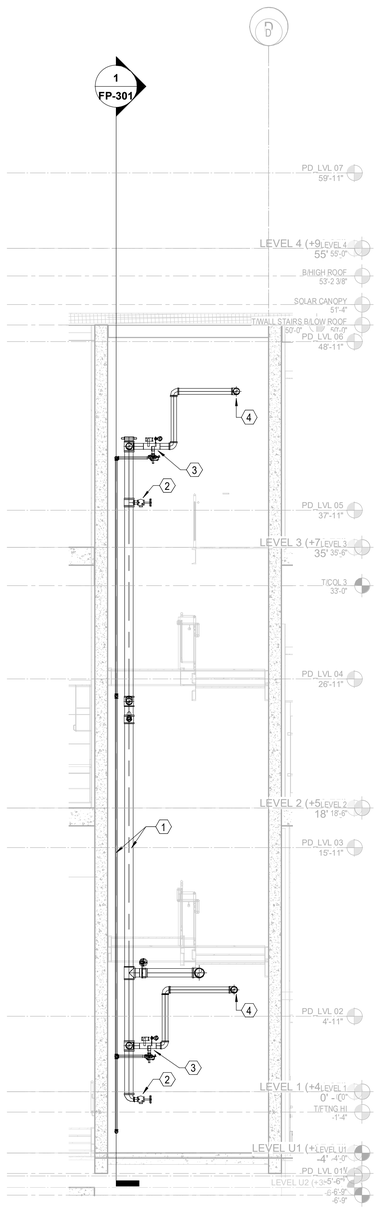
1. 6" STANDPIPE RISER & 2" SPRINKLER DRAIN RISER
2. 2 1/2" FIRE HOSE CONNECTION
3. 4" SPRINKLER ZONE CONTROL ASSEMBLY
4. 4" SPRINKLER MAIN TO WET SPRINKLER SYSTEM

NOTE: FIRE HOSE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 7.3.1.1



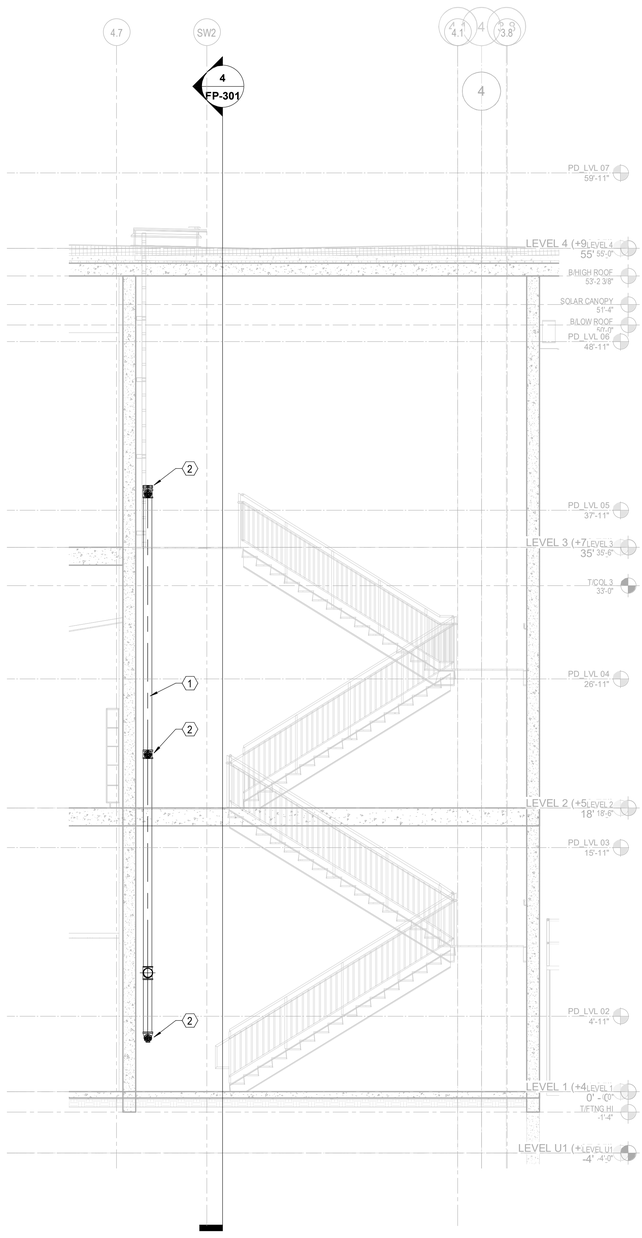
1 FIRE PROTECTION STAIR 1 SECTION

1/4" = 1'-0"



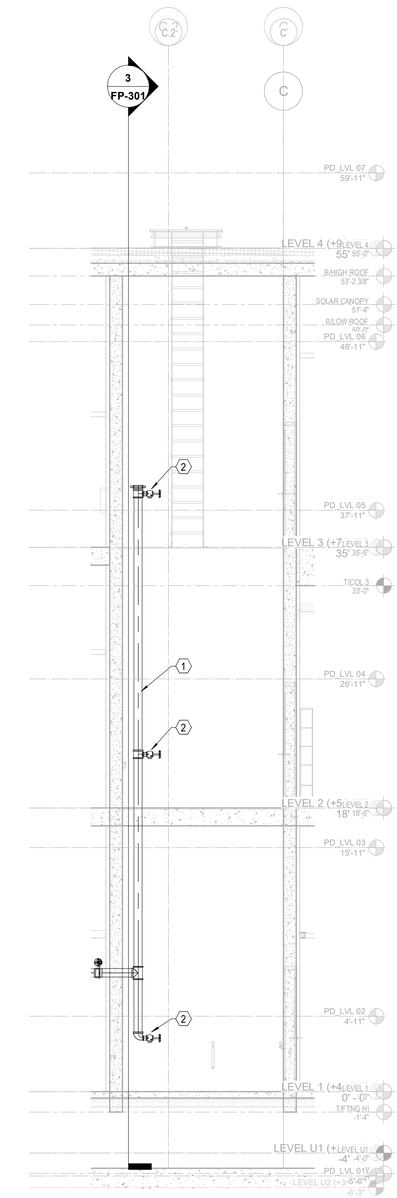
2 FIRE PROTECTION STAIR 1 CROSS SECTION

1/4" = 1'-0"



3 FIRE PROTECTION STAIR 2 SECTION

1/4" = 1'-0"



4 FIRE PROTECTION STAIR 2 CROSS SECTION

1/4" = 1'-0"

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
FIRE PROTECTION RISER DIAGRAM

ORIG SUBMISSION: 2022.05.25

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FP-301

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PLUMBING LEGEND

SYMBOLS

	SOIL (S) OR WASTE (W) ABOVE FLOOR OR GRADE
	SOIL (S) OR WASTE (W) BELOW FLOOR OR GRADE
	VENT (V)
RW	RAINWATER (RW) ABOVE FLOOR OR GRADE
RW	RAINWATER (RW) BELOW FLOOR OR GRADE
ORW	OVERFLOW RAINWATER (ORW) ABOVE FLOOR OR GRADE
ORW	OVERFLOW RAINWATER (ORW) BELOW FLOOR OR GRADE
	COLD WATER (CW)
	HOT WATER (HW)
	HOT WATER CIRCULATING (HWC)
T	TRAP PRIMER (T)
G	NATURAL GAS (G)

	DRAIN
	ROOF DRAIN (RD)
	FLOOR CLEANOUT (FCO)
	GROUND CLEANOUT (GCO)
	CLEANOUT (CO)
	STRAINER
	UNION OR FLANGE
	HOSE BIB
	WALL HYDRANT
	PRESSURE REDUCING VALVE
	CHECK VALVE
	GLOBE VALVE
	AUTOMATIC OR MANUAL FLOW CONTROL FITTING
	BALANCING VALVE
	GAS PRESSURE REGULATOR
	GAS VALVE
	GATE VALVE OR BUTTERFLY VALVE
	GATE VALVE IN VERTICAL RISE
	BALL VALVE
	BALL VALVE IN VERTICAL RISE
	MIXING VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	PRESSURE RELIEF VALVE
	VACUUM BREAKER
	VACUUM RELIEF VALVE
	THERMOMETER
	PRESSURE GAUGE
	WATER HAMMER ARRESTER
△	TRAP PRIMER
△○	TRAP PRIMER WITH DISTRIBUTION UNIT
FBA-X	FLOW BALANCING ASSEMBLY
F	FLOW METER
M / M	WATER METER
	BACKFLOW PREVENTER
	PUMP

ABBREVIATIONS

AAP	AREA ALARM PANEL (MEDICAL GAS)
ABV	ABOVE
AFF/AFG/ARF	ABOVE FINISHED FLOOR/GRADE/RAISED FLOOR
AP	ACCESS PANEL
AR	ACID-RESISTING
ARCH	ARCHITECT/ARCHITECTURAL
ARCO	ACID-RESISTING CLEANOUT
AS	ALLOY STEEL
ATTP (#)	AUTOMATIC TRAP PRIMER PANEL (# INDICATES THE NUMBER OF OUTLETS)
BEL	BELOW
BF	BELOW FLOOR
CB	CATCH BASIN
CI	CURB INLET
CLG	CEILING
COL	COLUMN
CONC	CONCRETE
CONN	CONNECT/CONNECTION
CONT	CONTINUATION/CONTINUOUS
CSS	CLINICAL SERVICE SINK
CTE	CONNECT TO EXISTING
DI	DROPPED INLET
DN	DOWN
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
ELE	ELEVATOR
ELEC	ELECTRICAL/ELECTRIC
EWC	ELECTRIC WATER COOLER
EX	EXISTING
EXP	EXPOSED
FA	FRESH AIR
FD	FLOOR DRAIN
FDN	FOUNDATION
FS	FLOOR SINK
FTG	FOOTING
GR	GRADE
HC	HANDICAPPED
HD	HUB DRAIN
IE	INVERT ELEVATION
IM	ICE MACHINE/ICE MAKER
LAV	LAVATORY
MAP	MASTER ALARM PANEL (MEDICAL GAS)
MECH	MECHANICAL
MH	MANHOLE
PDI	PLUMBING AND DRAINAGE INSTITUTE
PL	PLANTER
PS	PIPE STAND SUPPORT
RD	ROOF DRAIN
REL	RELOCATE
REM	REMOVE
SD	SHOWER DRAIN
SEC	SECURITY
SHR	SHOWER
SHT	SHEET
SM	SHEET METAL
SPEC	SPECIFICATION
SS	SERVICE SINK
SSTL	STAINLESS STEEL
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TP	TRAP PRIMER
TR	THROUGH ROOF
TS	TIGHT TO STRUCTURE
UC	UNDERCOUNTER
UG	UNDERGROUND
UR	URINAL
VB	VACUUM BREAKER
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WG	WATER GAUGE
WM	WASHING MACHINE

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SHEET NAME:
PLUMBING LEGEND AND GENERAL NOTES

ORIG SUBMISSION: 2022.05.25

SHEET:
P-001

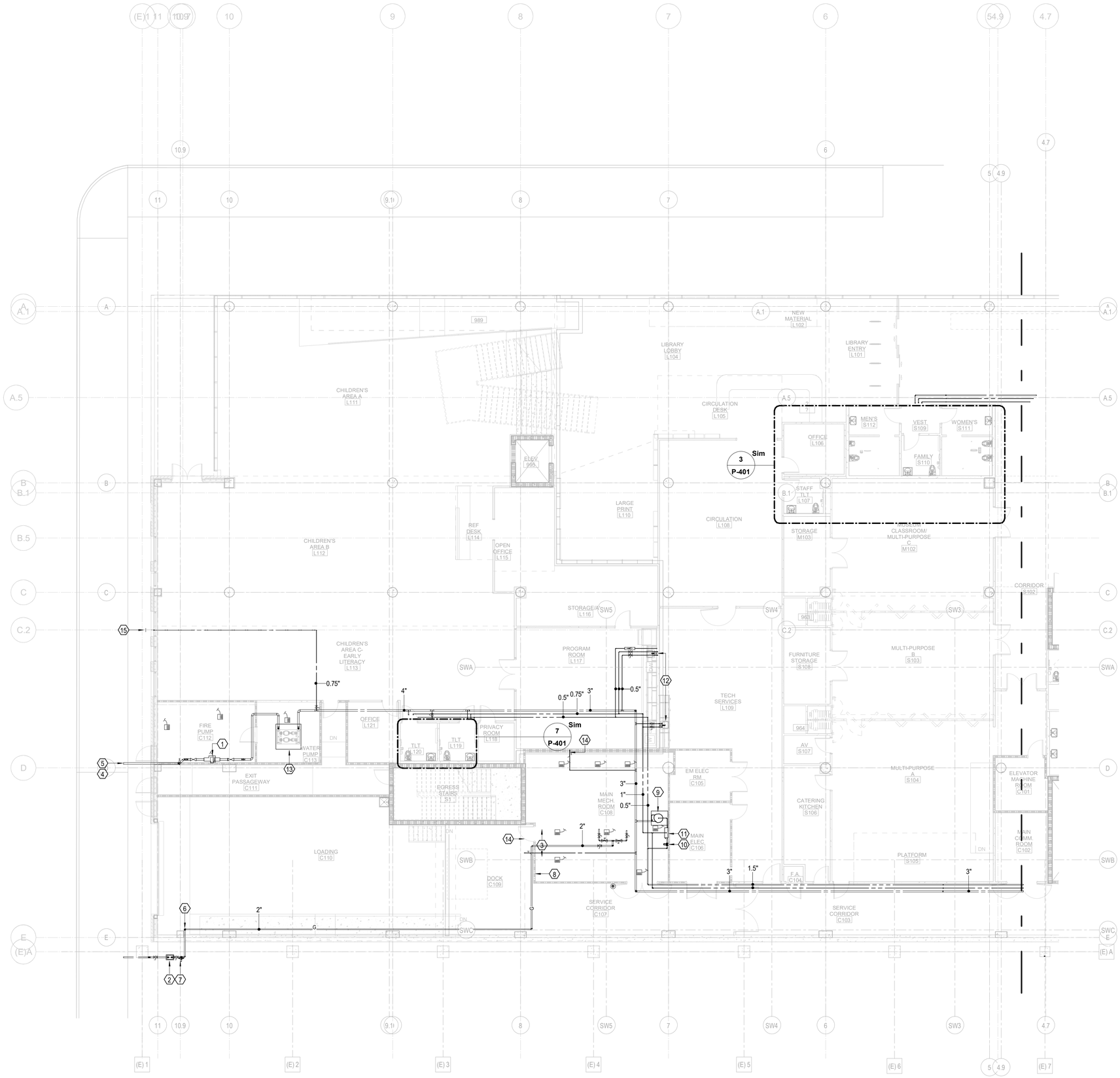
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E D C B A

1 2 3 4 5 6

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KEYED NOTES THIS SHEET:

1. DUPLEX RPZ TYPE BACKFLOW PREVENTERS. INSTALL BACKFLOW PREVENTERS VERTICALLY ALIGNED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. NATURAL GAS METER TO BE LOCATED AND SIZED BY UTILITY. PROVIDE NATURAL GAS AT 2 PSI MIN.
3. SEE P-701 FOR NATURAL GAS INLET INVERT ELEVATION
4. SEE P-701 FOR DOMESTIC WATER INLET INVERT ELEVATION
5. 4" COLD WATER IN FROM CIVIL. INVERT ELEVATION -3.0' BELOW FINISHED GRADE.
6. 2" GAS RISE
7. GPR-1-1
8. GPR-1-2
9. WH-1-1
10. RCP-1-1
11. MV-1-1
12. F6A
13. WBP-1-1
14. HOSE BIB
15. FREEZE PROTECTED WALL HYDRANT

1 PLUMBING PRESSURE LEVEL 1 - AREA A

1/8" = 1'-0"

5/20/2022 4:09:25 PM

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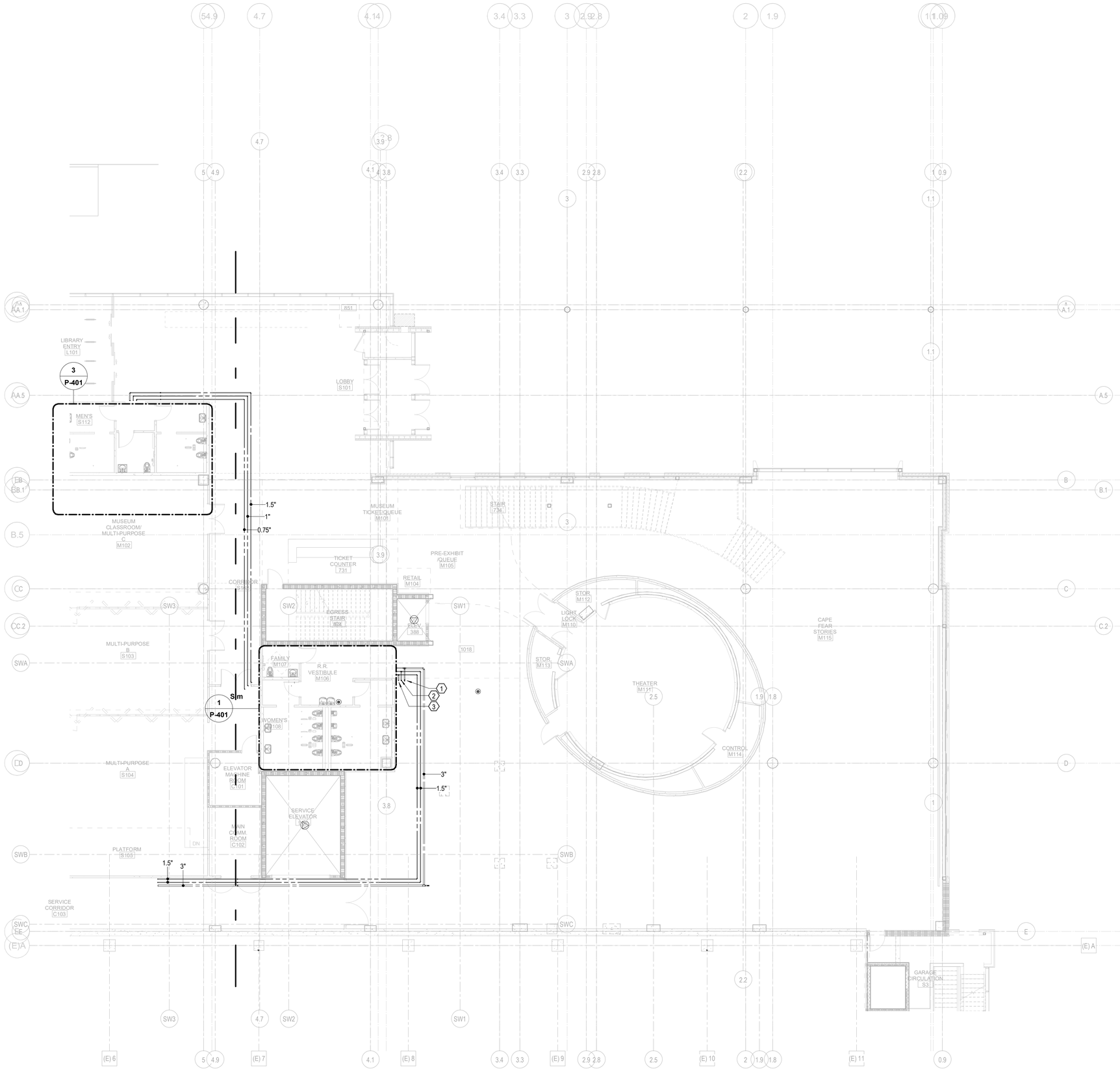
SHEET NAME:
PLUMBING PRESSURE LEVEL 1 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
P-101A

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1 **PLUMBING PRESSURE LEVEL 1 - AREA B**

1/8" = 1'-0"

KEYED NOTES THIS SHEET:

1. 2.5" DOMESTIC COLD WATER UP
2. 1.25" DOMESTIC HOT WATER UP
3. 0.75" HOT WATER RECIRCULATION UP

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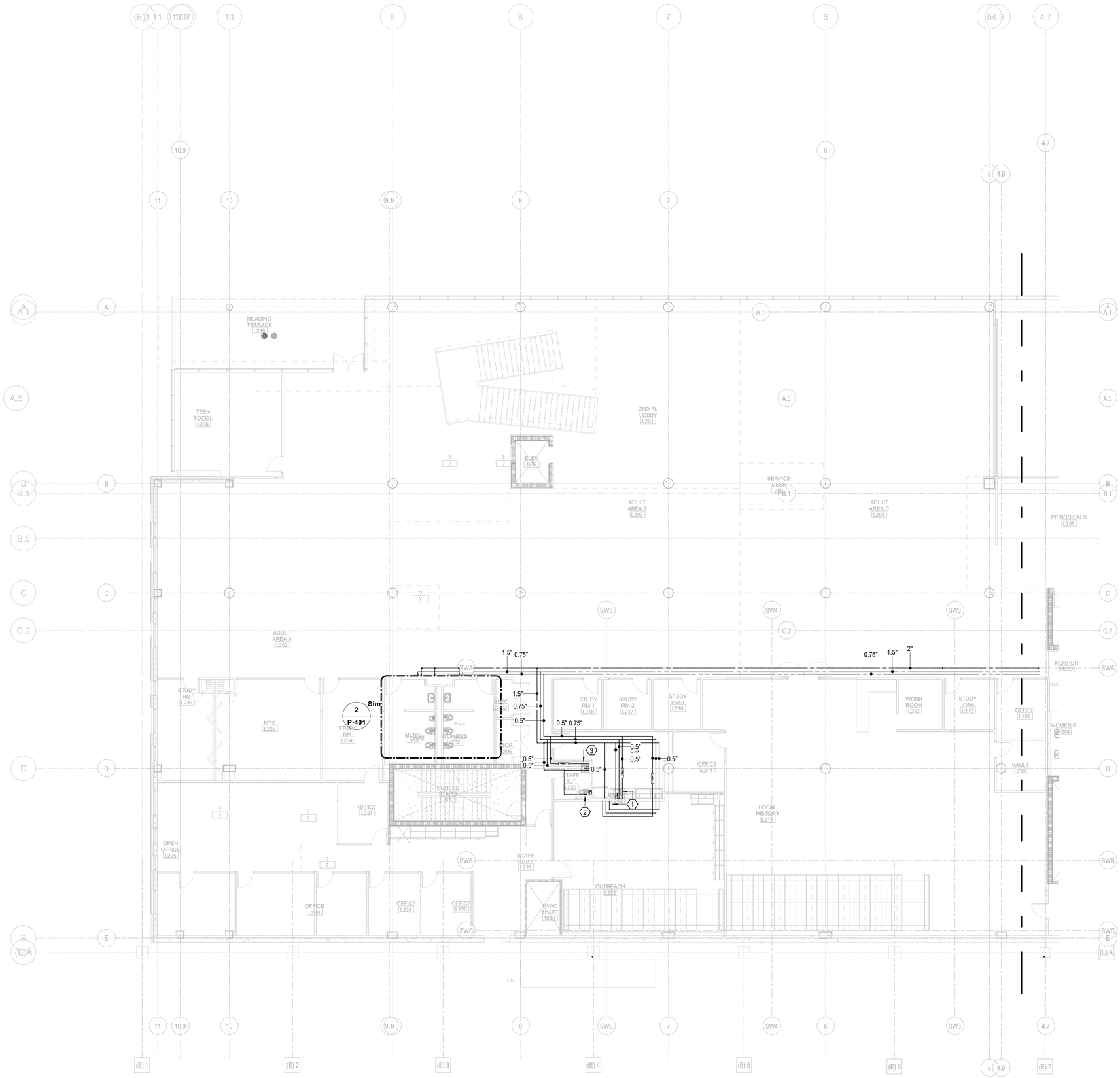
SHEET NAME:
PLUMBING PRESSURE LEVEL 1 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
P-101B

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KEYED NOTES THIS SHEET:

1. F6A
2. F1B
3. F2B

1 PLUMBING PRESSURE LEVEL 2 - AREA A

1/8" = 1'-0"

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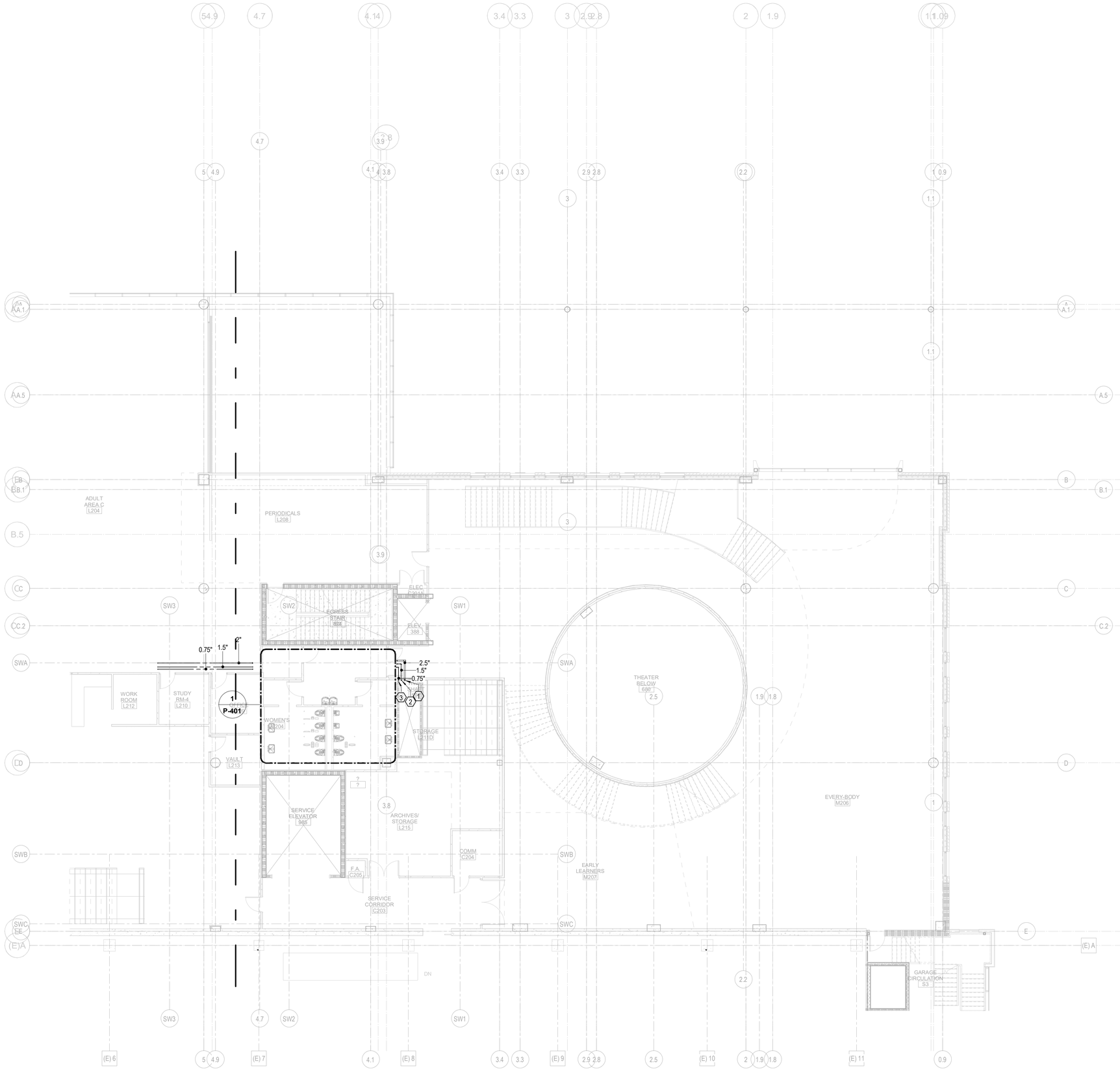
SHEET NAME:
PLUMBING PRESSURE LEVEL 2 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
P-102A

OWNERS REVIEW SET

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KEYED NOTES THIS SHEET:

1. 2.5" DOMESTIC COLD WATER UP
2. 1.5" DOMESTIC HOT WATER UP
3. 0.75" HOT WATER RECIRCULATION UP

1 PLUMBING PRESSURE LEVEL 2 - AREA B

1/8" = 1'-0"

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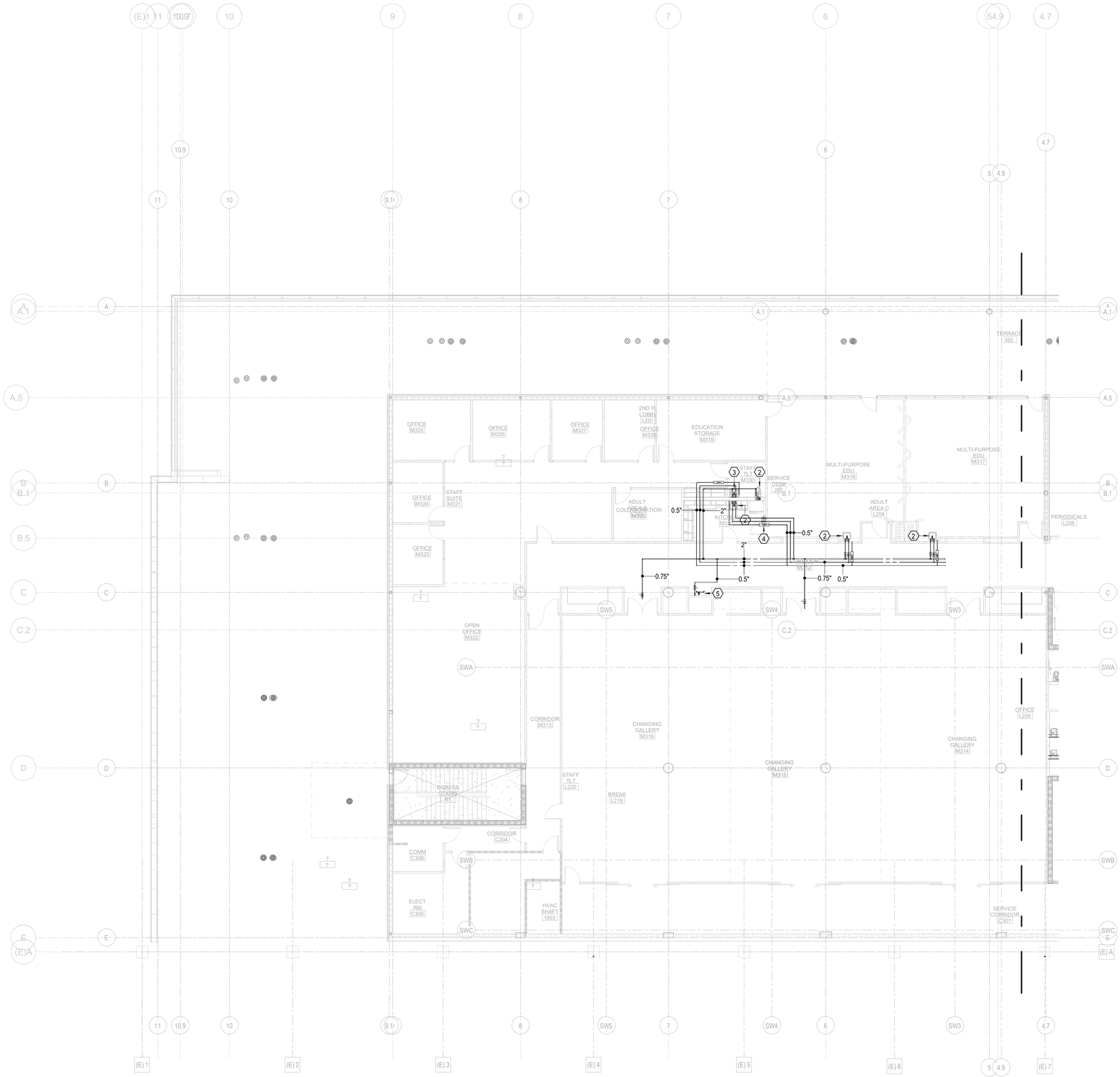
SHEET NAME:
PLUMBING PRESSURE LEVEL 2 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
P-102B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



KEYED NOTES THIS SHEET:

1. F6A
2. F1B
3. F2B
4. 0.5 GPM FLOW BALANCING ASSEMBLY (TYPICAL)
5. F4

1 PLUMBING PRESSURE LEVEL 3 - AREA A

1/8" = 1'-0"

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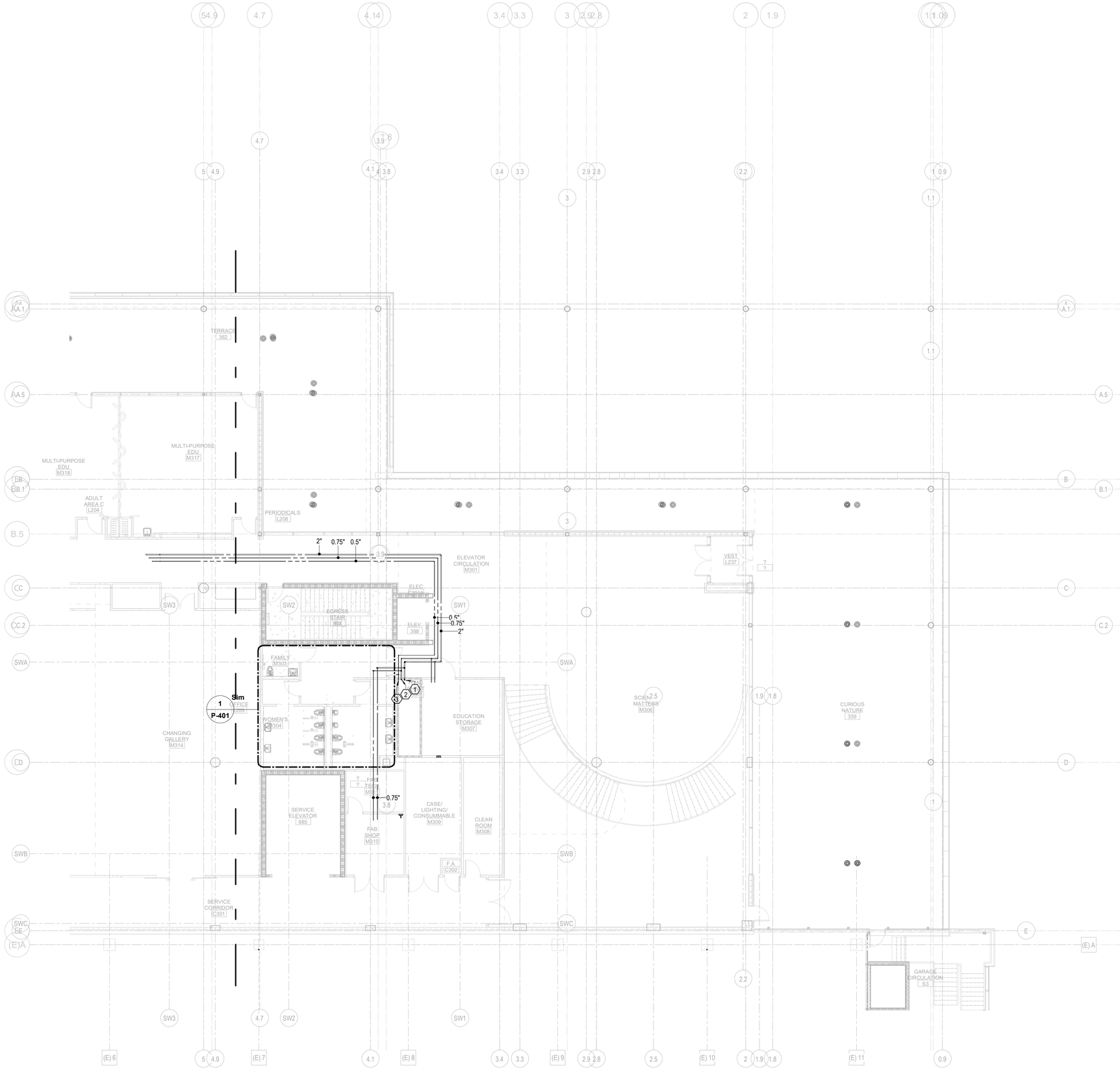
SHEET NAME:
PLUMBING PRESSURE LEVEL 3 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
P-103A

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KEYED NOTES THIS SHEET:

1. 2.5" DOMESTIC COLD WATER UP
2. 1.25" DOMESTIC HOT WATER UP
3. 0.75" HOT WATER RECIRCULATION UP
4. 2.5" COLD WATER DOWN

1 PLUMBING PRESSURE LEVEL 3 - AREA B

1/8" = 1'-0"

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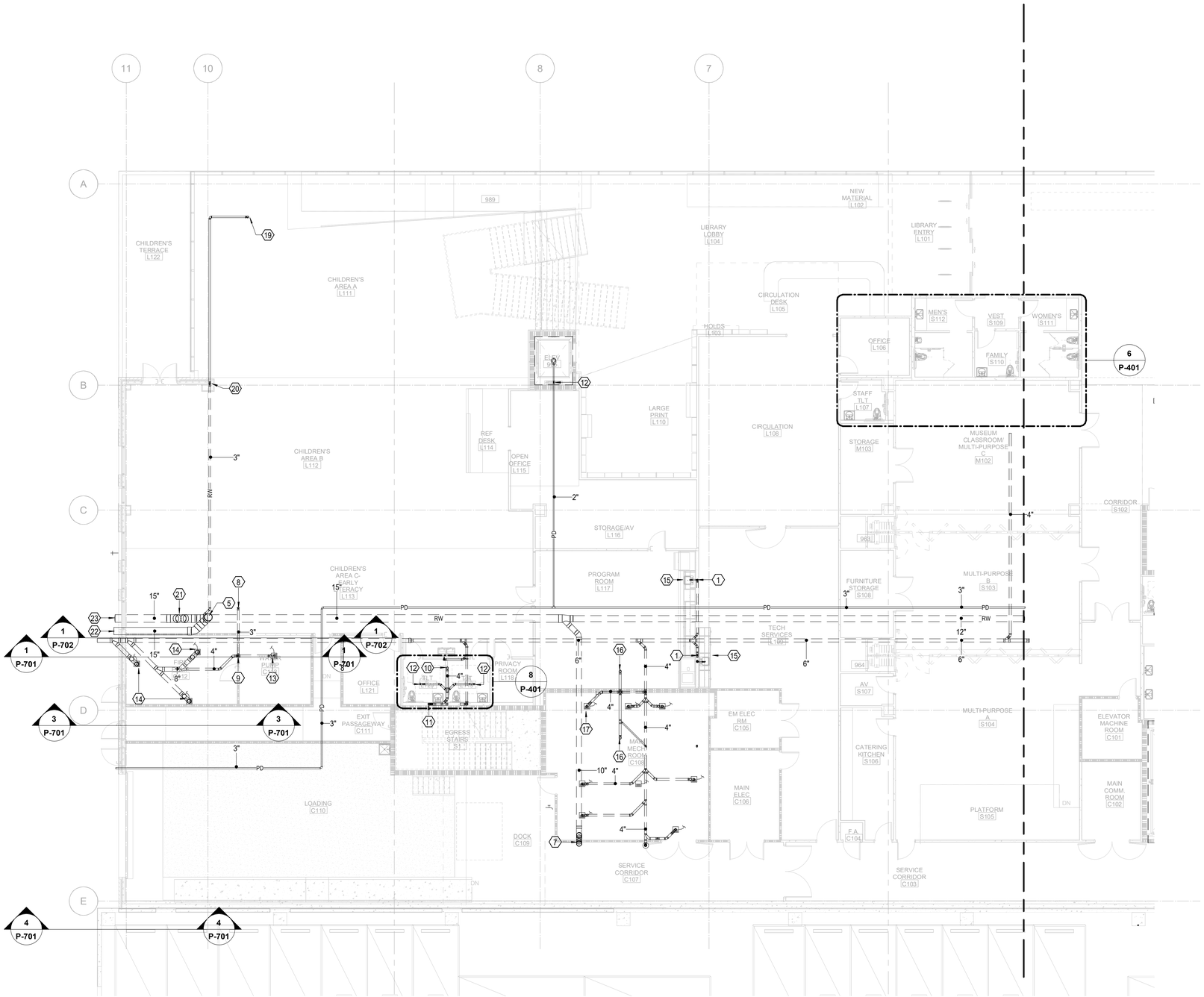
SHEET NAME:
PLUMBING PRESSURE LEVEL 3 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
P-103B

OWNERS REVIEW SET

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KEYED NOTES THIS SHEET:

1. 2" VENT UP, 3" WASTE DOWN
2. 2" VENT UP, 4" WASTE DOWN
4. 10" OVER FLOW RAIN WATER UP
5. 15" OVER FLOW RAIN WATER UP
6. 6" OVERFLOW RAIN WATER UP
7. 10" RAIN WATER UP, DOWN
8. 3" VENT UP
9. 2" VENT DOWN
10. 4" WASTE UP
11. 4"WASTE DOWN
12. 3"WASTE UP
13. 4" D2B
14. 8" D2B
15. F2A
16. 4" WASTE UP
17. 4" D2B (TYPICAL)
18. CLEAN OUT
19. 3" RAINWATER UP TO TERRACE DRAIN
20. 3" RAINWATER DOWN
21. 45 DEGREE OFFSET DOWN
22. 15" OVERFLOW RAINWATER DAYLIGHT 18' 2" AFF
23. 15" RAINWATER EXIT TO CIVILTE 6' 9" BFF

1 PLUMBING WASTE LEVEL 1 - AREA A

1/8" = 1'-0"

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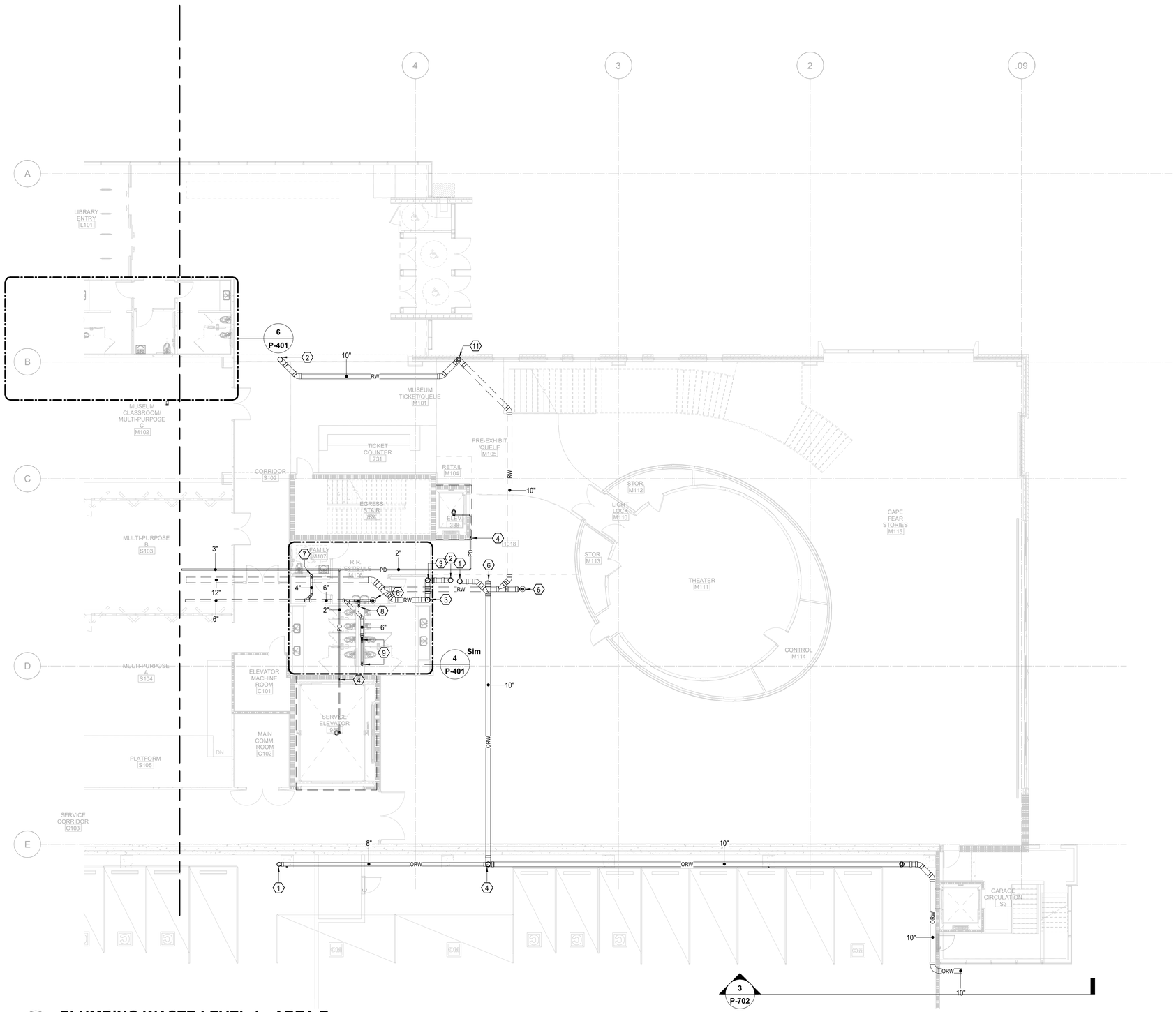
SHEET NAME:
PLUMBING WASTE LEVEL 1 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
P-201A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ANSI A SIZE SHEETS ORIGINAL PAGE SIZE



KEYED NOTES THIS SHEET:

1. 8" OVER FLOW RAIN WATER UP
2. 10" RAIN WATER UP
3. 10" RAIN WATER DOWN
4. 10" OVERFLOW RAIN WATER UP
5. 2" SUMP PUMP DISCHARGE UP.
6. CLEAN OUT
7. 4" WASTE STACK VENT UP/DOWN
8. 3" WASTE STACK VENT UP/DOWN
9. 4" WASTE UP/DOWN
10. 6" RAINWATER UP
11. 6" RAINWATER UP, 10" RAINWATER DOWN

1 PLUMBING WASTE LEVEL 1 - AREA B

1/8" = 1'-0"

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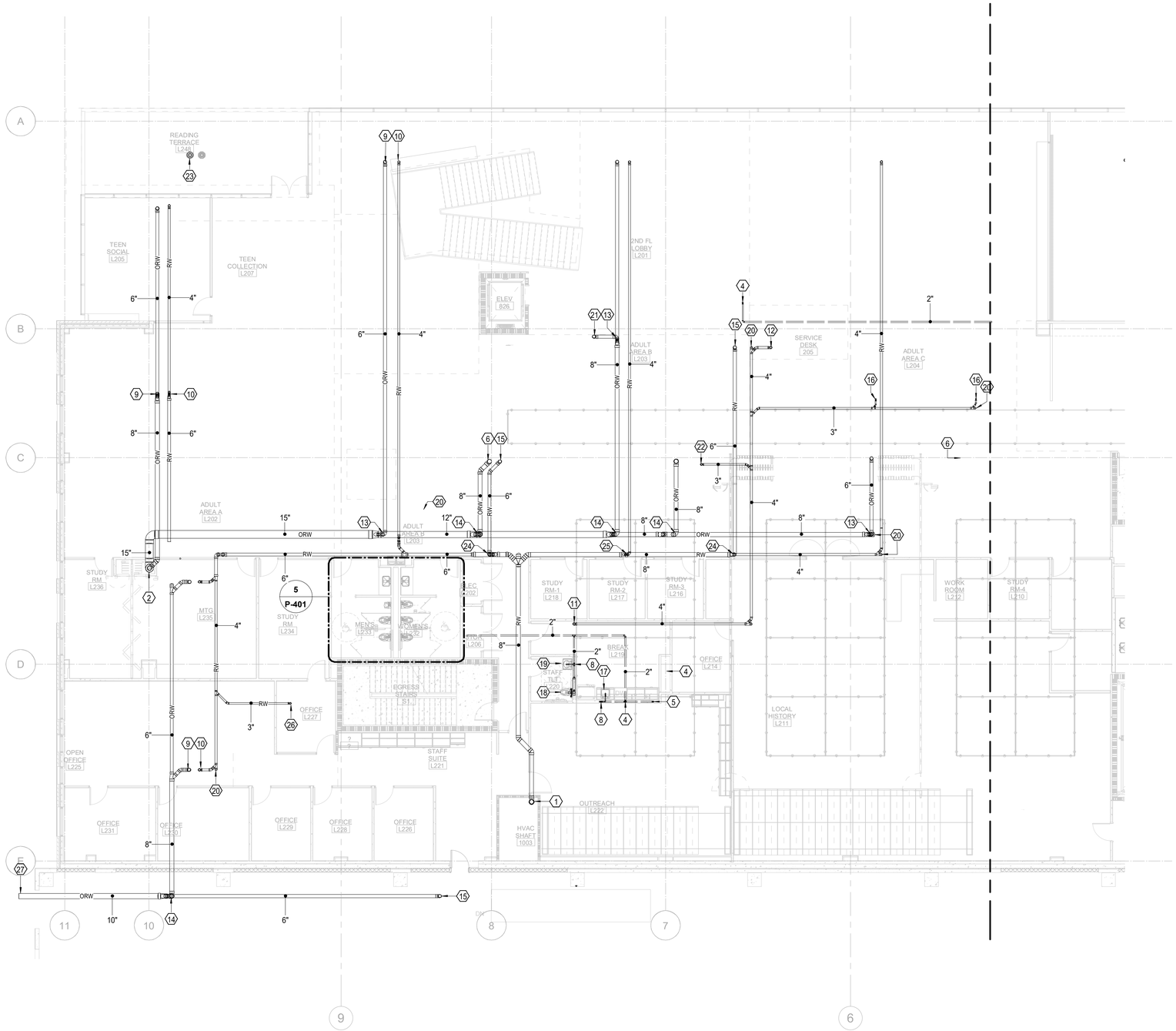
SHEET NAME:
PLUMBING WASTE LEVEL 1 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
P-201B

OWNERS REVIEW SET

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KEYED NOTES THIS SHEET:

1. 10" RAINWATER UP
2. 15" ORW DOWN, 8" ORW UP
3. 10" OVERFLOW RAIN WATER DOWN
4. 2" VENT UP
5. 2" VENT DOWN
6. 8" OVERFLOW RAIN WATER UP
7. 2" VENT UP, 3 " WASTE DOWN
8. 2" VENT UP, 2" WASTE DOWN
9. 6" OVERFLOW RW UP TO 6" D3A (TYPICAL)
10. 4" RW UP TO 4" D3B (TYPICAL)
11. 4" WASTE DOWN
12. 4" WASTE UP
13. 6" OVERFLOW RAIN WATER DOWN
14. 8" OVERFLOW RAIN WATER DOWN
15. 6" RAIN WATER UP
16. 2" WASTE UP
17. F6A
18. F1B
19. F2B
20. CLEAN OUT
21. 6" OVERFLOW RAINWATER UP
22. 3" WASTE UP
23. 3" D3A
24. 6" RAINWATER DOWN
25. 4" RAINWATER DOWN
26. 3" RW UP TO 3" D3A
27. 10" ORW DAYLIGHT I.E. 26' 8" ABOVE LEVEL 1 FINISHED FLOOR

1 PLUMBING WASTE LEVEL 2 - AREA A

1/8" = 1'-0"

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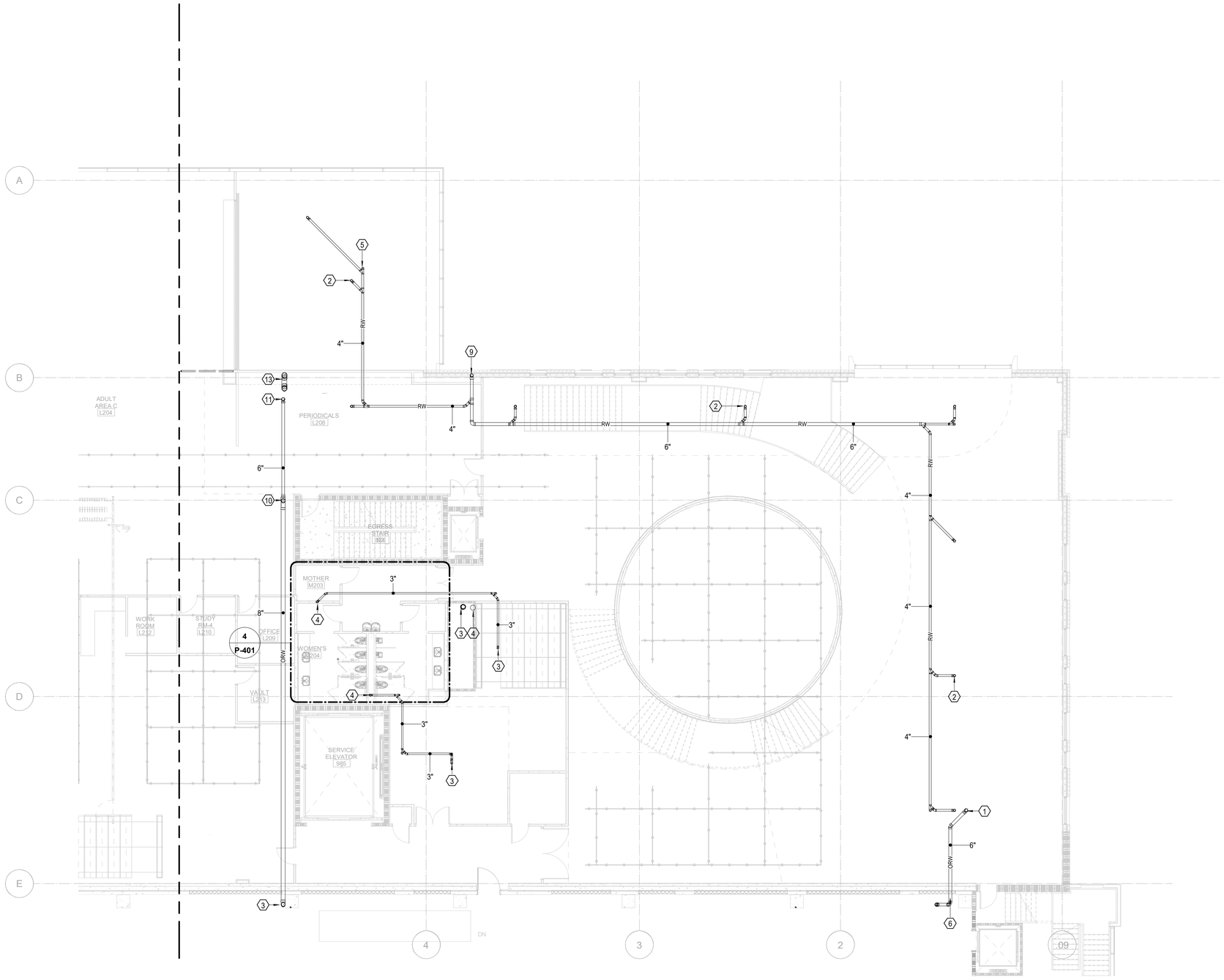
SHEET NAME:
PLUMBING WASTE LEVEL 2 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
P-202A

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KEYED NOTES THIS SHEET:

1. 6" OVER FLOW RAIN WATER UP TO D3B (TYPICAL)
2. 4" RAIN WATER UP TO 4" D3A (TYPICAL)
3. 10" RAIN WATER DOWN
4. 10" OVER FLOW RAIN WATER DOWN
5. CLEAN OUT
6. 6" OVERFLOW RAIN WATER DOWN
7. 3" WASTE UP
8. 3" WASTE DOWN
9. 6" RAIN WATER DOWN
10. 6" OVERFLOW RAIN WATER UP
11. 8" OVERFLOW RAIN WATER UP
12. 8" OVERFLOW RAIN WATER DOWN
13. 10" RAIN WATER UP/DOWN

1 PLUMBING WASTE LEVEL 2 - AREA B

1/8" = 1'-0"

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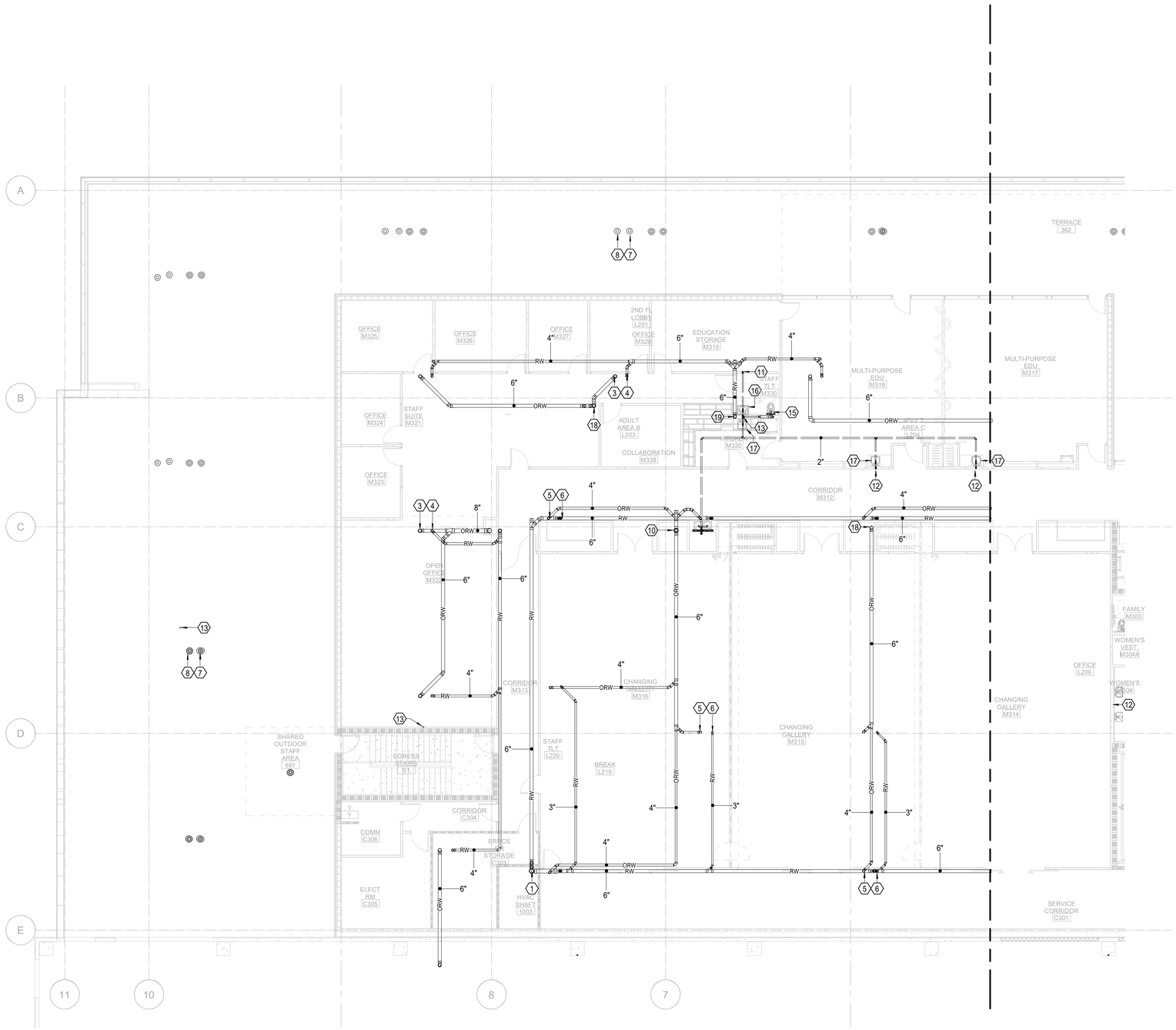
SHEET NAME:
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ORIG SUBMISSION: 2022.05.25

SHEET:
P-202B

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KEYED NOTES THIS SHEET:

1. 8" RAIN WATER DOWN
2. 6" RAIN WATER DOWN
3. 6" OVER FLOW RAIN WATER UP 6" D3B
4. 4" RAIN WATER UP TO 4" D3A
5. 4" OVER FLOW RAIN WATER UP TO 4" D3A (TYPICAL)
6. 3" RAIN WATER UP TO ROOF DRAIN (TYPICAL)
7. 4" D3A (TYPICAL)
8. 6" D3B (TYPICAL)
9. 6" RAIN WATER UP TO GUTTER (TYPICAL)
10. 8" OVER FLOW RAIN WATER DOWN
11. 2" VENT DOWN
12. 2" VENT UP, 2" WASTE DOWN
13. 2" VENT THROUGH ROOF
14. CLEAN OUT
15. F1B
16. F2B
17. F6A
18. 6" OVERFLOW RAIN WATER DOWN
19. 6" RAIN WATER DOWN

1 PLUMBING WASTE LEVEL 3 - AREA A

1/8" = 1'-0"

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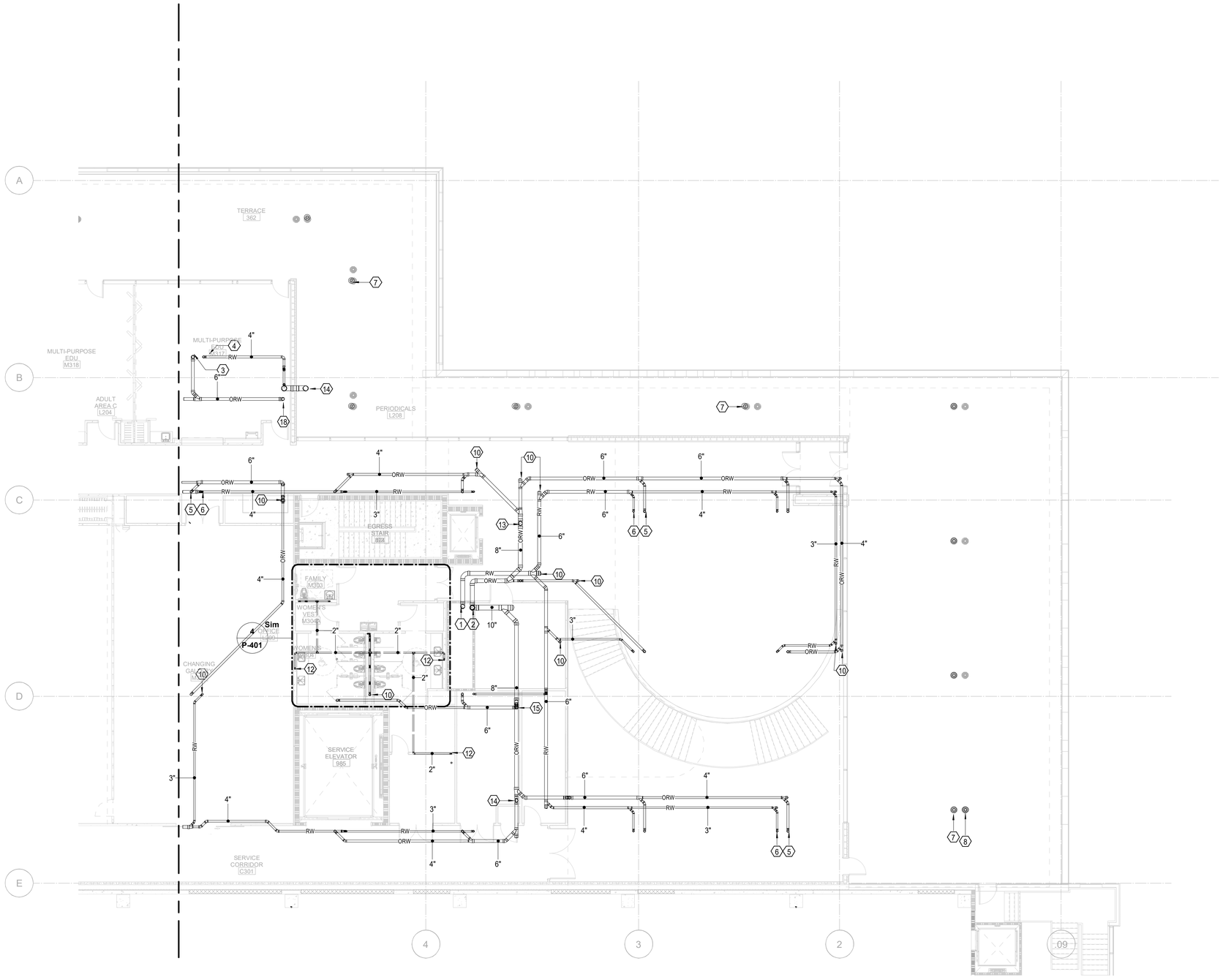
SHEET NAME:
PLUMBING WASTE LEVEL 3 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
P-203A

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KEYED NOTES THIS SHEET:

1. 8" RAIN WATER DOWN
2. 10" OVER FLOW RAIN WATER DOWN
3. 6" OVER FLOW RAIN WATER UP TO ROOF DRAIN
4. 4" RAIN WATER UP TO ROOF DRAIN
5. 4" OVER FLOW RAIN WATER UP TO ROOF DRAIN (TYPICAL)
6. 3" RAIN WATER UP TO ROOF DRAIN (TYPICAL)
7. 4" D3A (TYPICAL)
8. 6" D3B (TYPICAL)
9. 6" RAIN WATER UP TO GUTTER (TYPICAL)
10. CLEAN OUT
11. 3" VENT THROUGH ROOF
12. 2" VENT DOWN
13. 90 DEGREE OFFSET DOWN
14. 10' RAIN WATER UP TO ROOF PV CANOPY GUTTER
15. 6" OVERFLOW RAIN WATER DOWN

1 PLUMBING WASTE LEVEL 3 - AREA B

1/8" = 1'-0"

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N&B PROJECT: 21N185
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

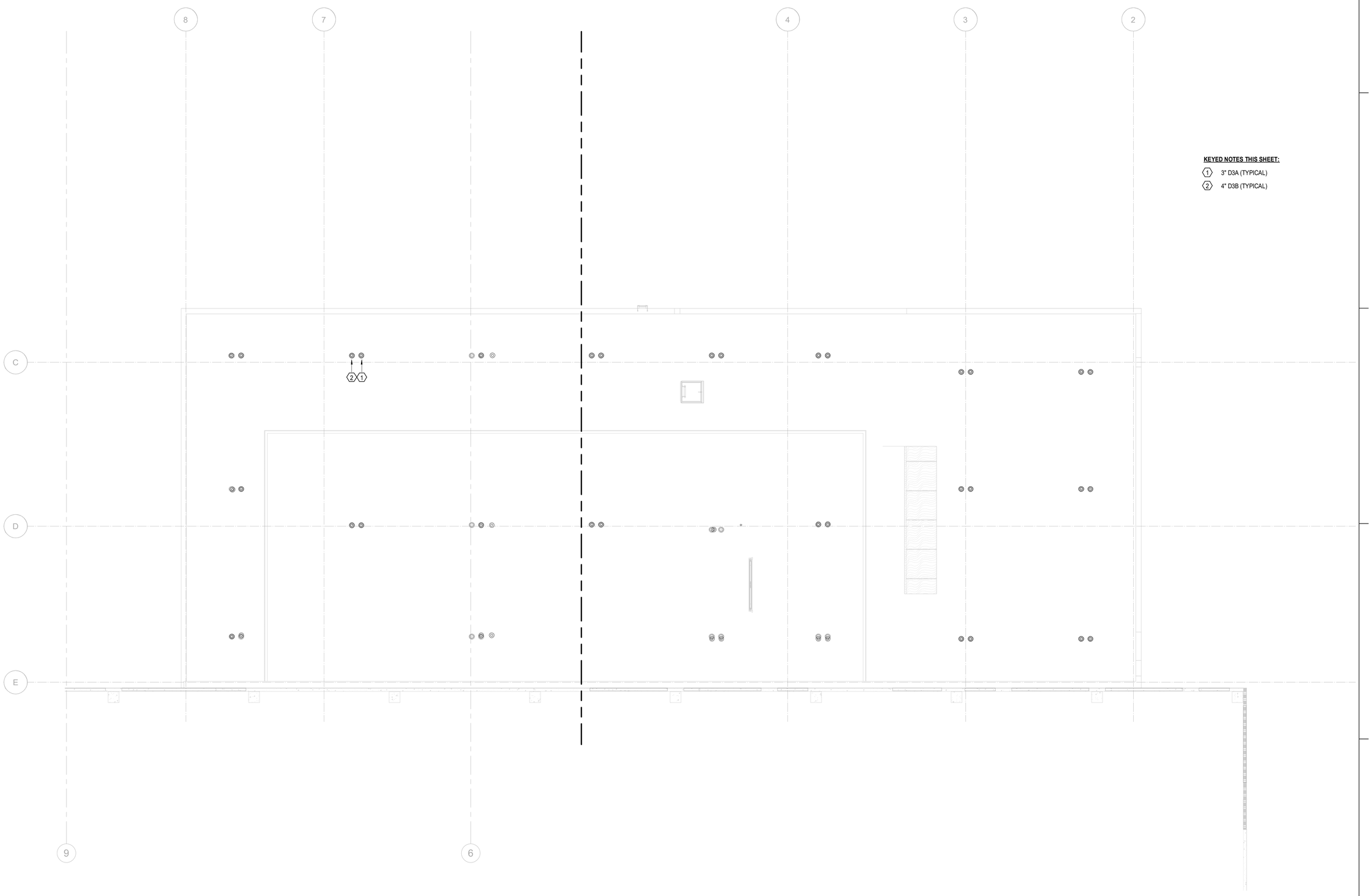
SHEET NAME:
PLUMBING WASTE LEVEL 3 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
P-203B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



KEYED NOTES THIS SHEET:

1. 3" D3A (TYPICAL)
2. 4" D3B (TYPICAL)

1 PLUMBING WASTE OVERALL ROOF

1/8" = 1'-0"

5/20/2022 4:10:14 PM

1 2 3 4 5 6

A B C D E

Zimmer Development

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Wilmington, NC 28401

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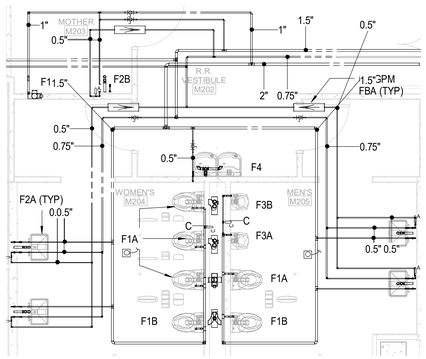
SHEET NAME:
PLUMBING WASTE OVERALL ROOF

ORIG SUBMISSION: 2022.05.25

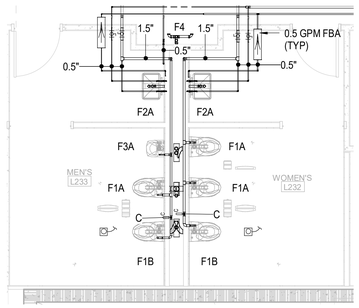
SHEET:
P-204

OWNERS REVIEW SET

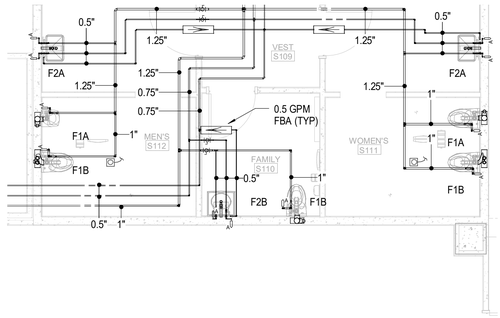
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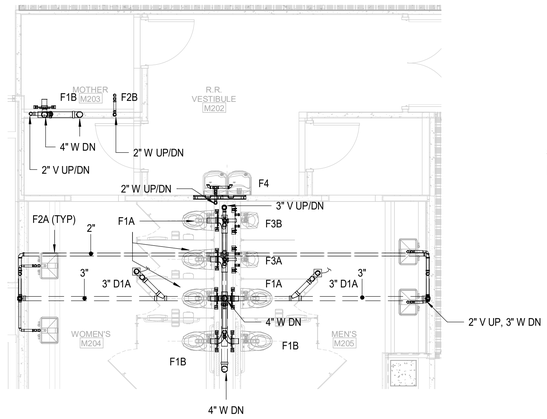
1 CORE GROUP BATHROOMS TYPICAL - PRESSURE
1/4" = 1'-0"



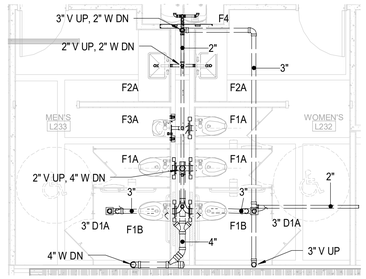
2 WEST GROUP BATHROOM LEVEL 2 - PRESSURE
1/4" = 1'-0"



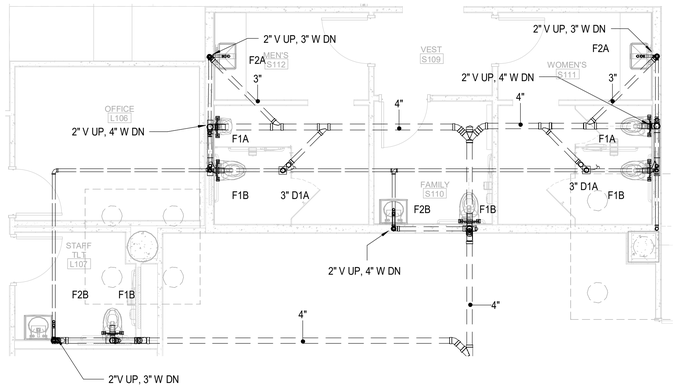
3 NORTH BATHROOM GROUP LEVEL 1 - PRESSURE
1/4" = 1'-0"



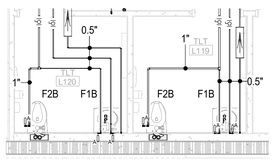
4 CORE GROUP BATHROOM TYPICAL - WASTE
1/4" = 1'-0"



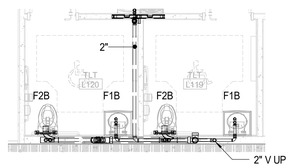
5 WEST GROUP BATHROOM LEVEL 2 - WASTE
1/4" = 1'-0"



6 NORTH BATHROOM GROUP LEVEL 1 - WASTE
1/4" = 1'-0"



7 WEST BATHROOM GROUP LEVEL 1 - PRESSURE
1/4" = 1'-0"



8 WEST BATHROOM GROUP LEVEL 1 - WASTE
1/4" = 1'-0"

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: PLUMBING PART PLANS

ORIG SUBMISSION: 2022.05.25

SHEET: P-401

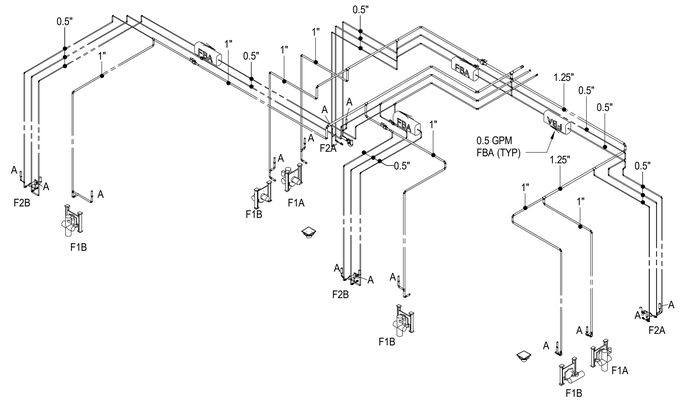
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5/20/2022 4:10:20 PM

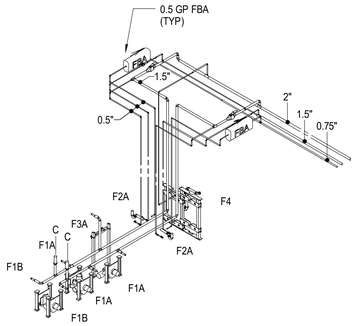
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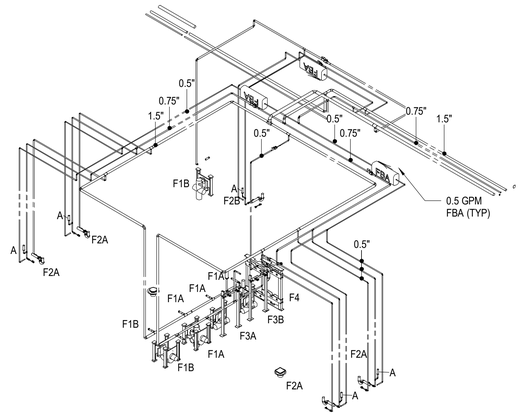
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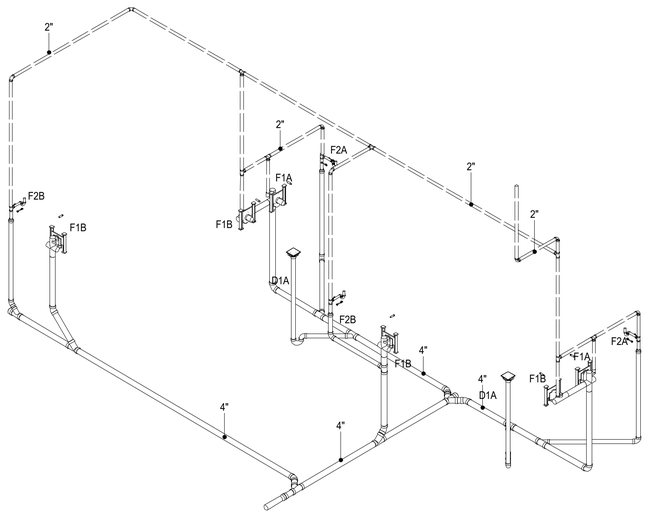
1 NORTH BATHROOM GROUP RISER LEVEL 1 - PRESSURE



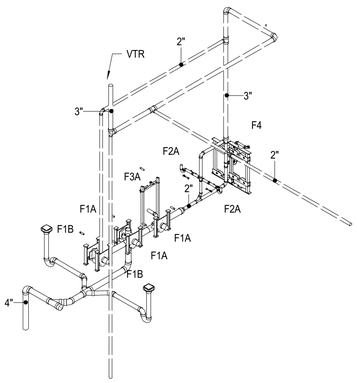
2 WEST GROUP BATHROOM RISER LEVEL 2 - PRESSURE



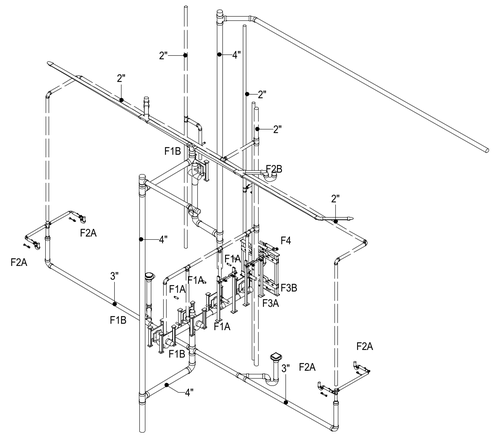
3 CORE GROUP BATHROOM TYPICAL RISER - PRESSURE



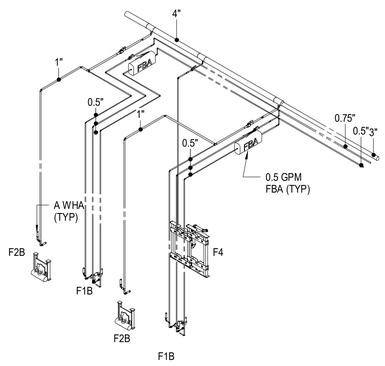
4 NORTH BATHROOM GROUP RISER LEVEL 1 - WASTE



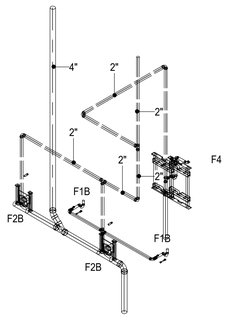
5 WEST GROUP BATHROOM RISER LEVEL 2 - WASTE



6 CORE GROUP BATHROOM TYPICAL RISER -WASTE



7 WEST BATHROOM GROUP RISER LEVEL 1 - PRESSURE



8 WEST BATHROOM GROUP RISER LEVEL 1 - WASTE

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
PLUMBING RISER DIAGRAMS

ORIG SUBMISSION: 2022.05.25

SHEET:
P-402

OWNERS REVIEW SET

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WATER PRESSURE BOOSTER SYSTEM SCHEDULE

NO.	GPM		SUCTION PRESSURE, PSI (NOTE 3)	TOTAL DYNAMIC HEAD, FT. WG	MINIMUM MOTOR HP		VIBRATION ISOLATION			NOTES
	PUMP 1	PUMP 2			PUMP 1	PUMP 2	TYPE	MIN. STATIC DEFLECTION, IN.	INERTIA BASE	
WPB-1-1	119	119	33	85	3	3	NA	NA	NO	2, 4

NOTES:

1. NOMINAL MOTOR RPM SHALL BE 3500.
2. REFER TO ELECTRICAL DRAWINGS FOR EQUIPMENT ELECTRICAL CHARACTERISTICS.
3. SUPPLY SIDE LOSSES HAVE BEEN ACCOUNTED FOR IN SUCTION PRESSURE.
4. PUMP SHALL BE SUPPLIED WITH VIBRATION ISOLATION PADS BY THE MANUFACTURER.
5. SET DISCHARGE PRESSURE OF WPB-1-1 AT 70 PSI.

SUMP PUMP SCHEDULE

NO.	SERVICE (NOTE 1)	TYPE (NOTE 2)	GPM (NOTE 3)	TOTAL DYNAMIC HEAD, FT. WG	MINIMUM MOTOR HP	PIT DIMENSIONS		NOTES
						SIZE	DEPTH	
SP-1-1	SU	S - I	50	35	1.0	10' x 7'	5'	3
SP-1-2	SU	S - I	50	39	1.0	22' x 15'	6'	3
SP-1-3	SU	S - I	50	40	1.0	9' x 7'	5'	3

NOTES:

1. SERVICE:
   SU SUMP
2. TYPE:
   S SIMPLEX I INTERIOR
3. REFER TO ELECTRICAL DRAWING FOR EQUIPMENT ELECTRICAL CHARACTERISTICS.

PLUMBING FIXTURE SCHEDULE

NO.	FIXTURE TYPE	PIPING CONNECTION SIZE			
		HW	CW	S OR W	TW
F1A	WATER CLOSET WALL TYPE, (FLUSH VALVE)	-	1"	4"	-
F1B	WATER CLOSET WALL TYPE, (FLUSH VALVE), ADA USABLE	-	1"	4"	-
F2A	LAVATORY COUNTER MOUNTED, ADA USABLE	0.5"	0.5"	1.25"	-
F2B	LAVATORY WALL MOUNTED, ADA USABLE	0.5"	0.5"	1.25"	-
F2C	LAVATORY COUNTER MOUNTED, STAINLESS STEEL, ADA USABLE	0.5"	0.5"	1.25"	-
F3A	URINAL WALL TYPE	-	0.75"	2"	-
F3B	URINAL WALL TYPE, ADA USABLE	-	0.75"	2"	-
F4	WATER FOUNTAIN, BI-LEVEL, BOTTLE FILLER, ADA USABLE	-	0.5"	1.25"	-
F6A	SINGLE BOWL, SS SINK, COUNTER MOUNTED, UNDERMOUNT, ADA USABLE	0.5"	0.5"	1.5"	-

DRAIN SCHEDULE

NO.	TYPE (NOTE 1)	GENERAL LOCATION	NOTES
D1A	F	FINISHED AREA	
D1B	F	JANITOR	
D2A	F	MECHANICAL ROOM	
D2B	FS	MECHANICAL ROOM	
D2C	FS	SP DISCHARGE	
D3A	R	ROOF	
D3B	R	ROOF	

NOTES: (D-DRAIN)

1. TYPE:
   F FLOOR DRAIN
   FS FLOOR SINK
   R ROOF DRAIN
   P PARKING DRAIN
   T TRENCH DRAIN

WATER HEATER SCHEDULE

NO.	SERVICE	TYPE (NOTE 1)	ENERGY SOURCE		STORAGE CAPACITY, GAL	RECOVERY CAPACITY, GPH (NOTE 3)	NOTES
			SOURCE (NOTE 2)	DEMAND			
WH-1-1	DOMESTIC	S	E	SEE ELECTRICAL	250	220	3,4,5

NOTES: (WH-WATER HEATER)

1. TYPE:
   S STORAGE
2. SOURCE:
   E ELECTRIC
3. BASED ON 100°F DIFFERENTIAL BETWEEN INLET AND OUTLET WATER TEMPERATURES.
4. REFER TO THE ELECTRICAL DRAWINGS FOR EQUIPMENT CONTROL POWER CIRCUITS.
5. WATER DISCHARGE SET POINT SHALL BE 140°F.

HOT WATER CIRCULATING PUMP SCHEDULE

NO.	SERVICE	GPM	TOTAL DYNAMIC HEAD, FT. WG	MINIMUM MOTOR HP	VIBRATION ISOLATION		NOTES
					TYPE	MIN. STATIC DEFLECTION, IN.	
RCP-1-1	DOMESTIC	12.5	27	1/3	IL	0.25	2

NOTES:

1. REFER TO THE ELECTRICAL DRAWINGS FOR EQUIPMENT ELECTRICAL CHARACTERISTICS.
2. PROVIDE FLEXIBLE METAL HOSE. BRONZE INNER CORRUGATE HOSE AND OUTER WOVEN BRAID SHEATH. CONNECTORS SHALL MEET FDA AND NSF LEAD FREE REQUIREMENTS. PRESSURE RATED FOR 150 PSI (MIN.)

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
PLUMBING SCHEDULES

ORIG SUBMISSION: 2022.05.25

SHEET:
P-501

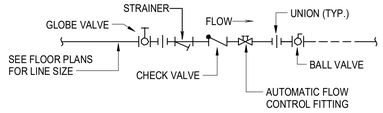
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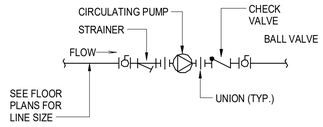
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE



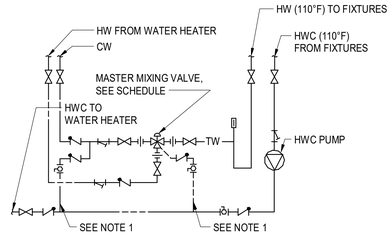
NOTES:
1. VALVES AND ACCESSORIES SHALL BE LINE SIZE.
2. SEE FLOW BALANCING ASSEMBLY SCHEDULE FOR FLOW RATES.
3. INSTALL INSULATION UP TIGHT TO VALVES ON EACH SIDE OF THE ASSEMBLY.
4. INSTALL AUTOMATIC TIMER TO DISARM PUMP WHEN SYSTEM IS NOT IN USE.

1 AUTOMATIC FLOW BALANCING ASSEMBLY
NO SCALE



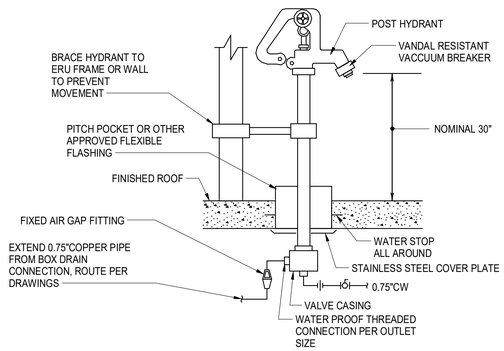
NOTES:
1. VALVES AND ACCESSORIES SHALL BE LINE SIZE.
2. SEE FLOW BALANCING ASSEMBLY SCHEDULE FOR FLOW RATES.
3. INSTALL INSULATION UP TIGHT TO VALVES ON EACH SIDE OF THE ASSEMBLY

4 CIRCULATING PUMP ASSEMBLY
NO SCALE

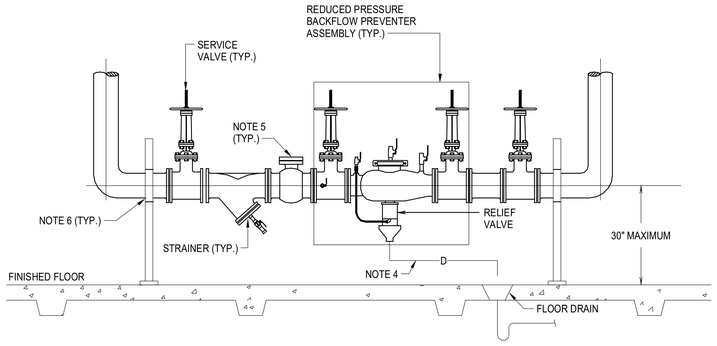


NOTES:
1. HWC CONNECTION LOCATION VARIES DEPENDING ON MIXING VALVE MANUFACTURER. CONNECT HWC TO MIXING VALVE AS SHOWN IN MANUFACTURER'S PUBLISHED INSTALLATION DETAILS.

8 MASTER MIXING VALVE
NO SCALE

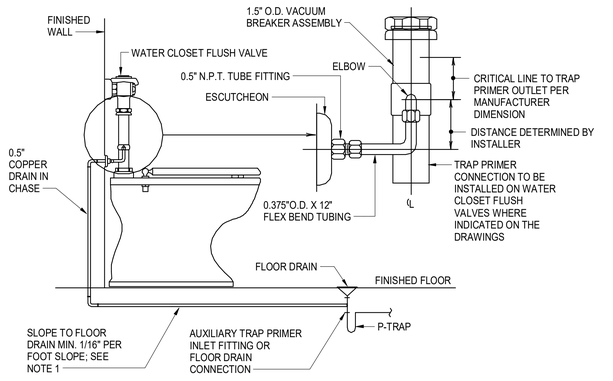


10 ROOF HYDRANTS
NO SCALE



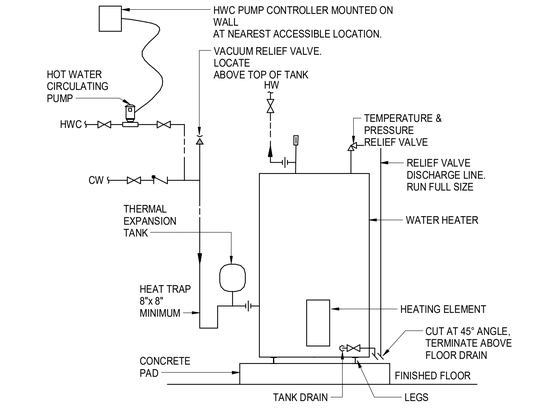
NOTES:
1. SEE PLAN FOR BACKFLOW PREVENTERS.
2. PROVIDE BLOWDOWN BALL VALVE AND CAP ON EACH STRAINER.
3. PROVIDE INTEGRAL BODY UNIONS OR FLANGED END ADAPTERS.
4. EXTEND DRAIN FULL SIZE AND DISCHARGE OVER FLOOR DRAIN. SEE FLOOR PLANS FOR EXACT LOCATIONS OF FLOOR DRAINS.
5. AUXILIARY RESILIENT SOFT SEAT CHECK VALVE ON BFP ENTRANCE. FOR CHECK VALVES 2.5" AND LARGER, USE DOUBLE DOOR TYPE WITH EPDM SEAT.
6. INSTALL DIELECTRIC FITTINGS AND/OR PIPE SURROUNDS THROUGHOUT THE ASSEMBLY WHERE DISSIMILAR METALS WOULD MAKE CONTACT.
7. PROVIDE 1-5/8" X 3-1/4" X 12 GAUGE GALVANIZED STEEL CHANNELS AND STRAP TYPE PIPE CLAMPS AND SPRING NUTS TO CLAMP PIPING TO CHANNELS. ISOLATE CHANNELS FROM COPPER PIPE WITH RUBBER PIPE SURROUNDS. FOR BACKFLOW PREVENTERS INSTALLED AGAINST WALLS, SECURE CHANNELS TO FLOOR AND WALL. FOR BACKFLOW PREVENTERS INSTALLED AWAY FROM WALLS, SECURE CHANNELS TO FLOOR.

2 BACKFLOW PREVENTER ASSEMBLY
NO SCALE



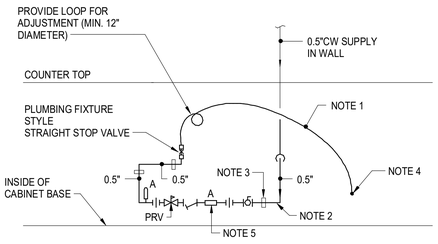
NOTES:
1. POCKETS, UPWARD TURNS AND/OR TRAPS IN THE GRAVITY LINE SHALL NOT BE PERMITTED.
2. TRAP PRIMER PIPING FOR FLOOR DRAINS THAT HAVE THE TRAP PRIMER CONNECTION ON THE DRAIN BODY SHALL BE RUN IN FLOOR FILL. PROVIDE CONTINUOUS POLYETHYLENE SLEEVE WHERE PIPING RUNS IN FLOOR FILL.

5 FLUSH VALVE TRAP PRIMER
NO SCALE



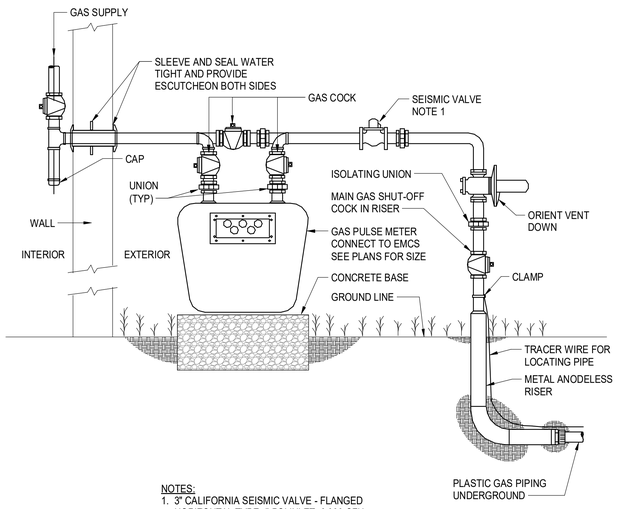
NOTES
1. DETAIL APPLIES TO WATER HEATER WH-1. SEE WATER HEATER, CIRCULATING PUMP, & EXPANSION TANK SCHEDULES FOR SIZES OF EQUIPMENT.

9 ELECTRIC WATER HEATER
NO SCALE



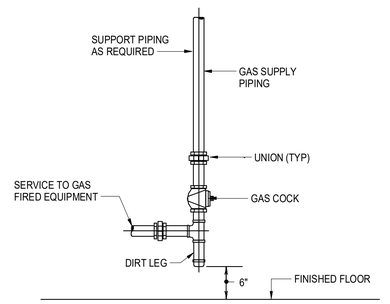
NOTES:
1. SOFT COPPER TUBING SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
2. INSTALL ASSEMBLY AS CLOSE AS POSSIBLE TO BOTTOM OF CABINET AND ALONG BACK WALL.
3. AFFIX BRACKET ASSEMBLY TO WALL OF CABINET AS REQUIRED TO SUPPORT ALL PIPING & VALVES AND PREVENT MOVEMENT.
4. CONNECT TO ICE MAKER PER MANUFACTURERS REQUIREMENTS.
5. DOUBLE-CHECK, ATMOSPHERIC TYPE BACKFLOW PREVENTER. MANUFACTURER: WATTS SD-3 OR WILKINS 740.

3 COFFEE & ICE MAKER PIPING DIAGRAM
NO SCALE



NOTES:
1. 3" CALIFORNIA SEISMIC VALVE - FLANGED HORIZONTAL TYPE, 5 PSI INLET, 6,000 CFH CAPACITY, PSI PRESSURE DROP, MODEL 315F.
2. ANY AND ALL SERVICE PIPING AND REGULATORS AT THE BUILDING WHEN REDUCED TO THREADED SIZES SHALL BE PROVIDED WITH A UNION FOR EASY REMOVAL.

6 NATURAL GAS SERVICE ENTRANCE
NO SCALE



7 NATURAL GAS DROP TERMINATION
NO SCALE

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
PLUMBING DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
P-601

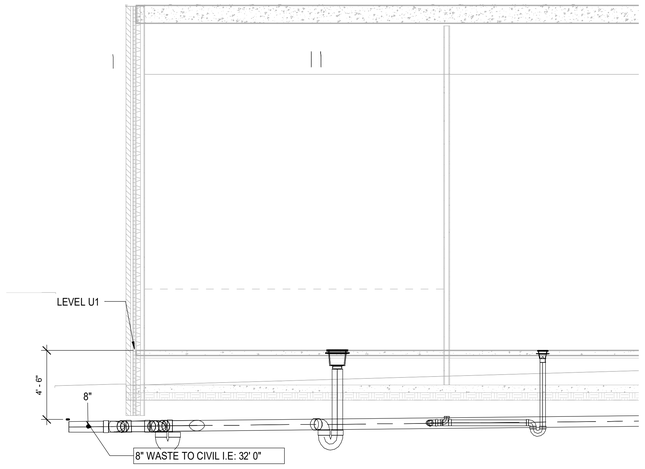
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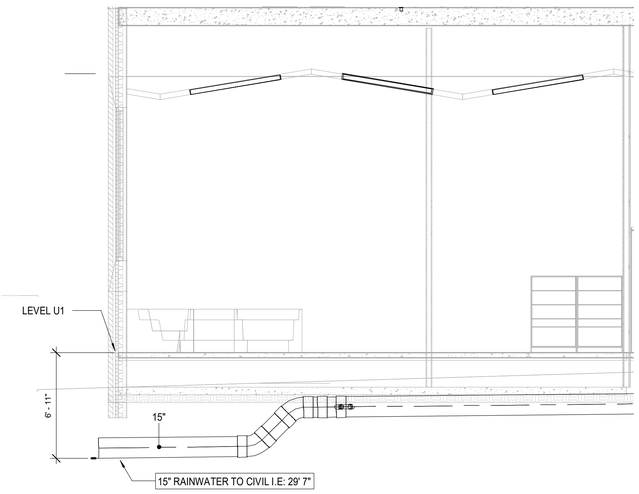
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON FULL SHEETS ORIGINAL PAGE SIZE



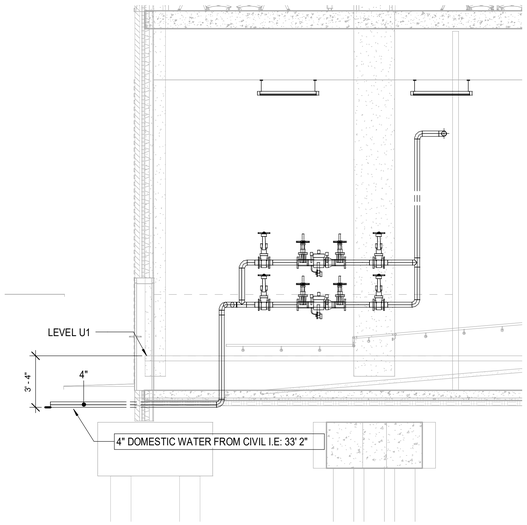
1 SANITARY SEWER EXIT SECTION

1/4" = 1'-0"



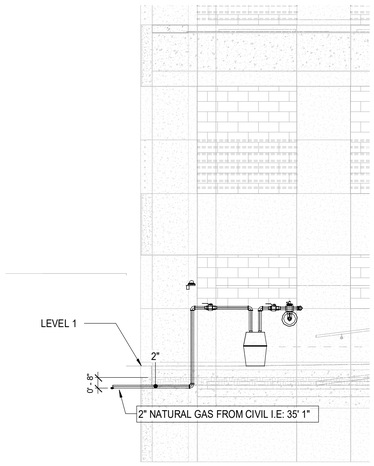
2 STORM WATER EXIT SECTION

1/4" = 1'-0"



3 DOMESTIC WATER INLET SECTION

1/4" = 1'-0"



4 NATURAL GAS INLET SECTION

1/4" = 1'-0"

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Grace Street
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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
PLUMBING UTILITY INVERT ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
P-701

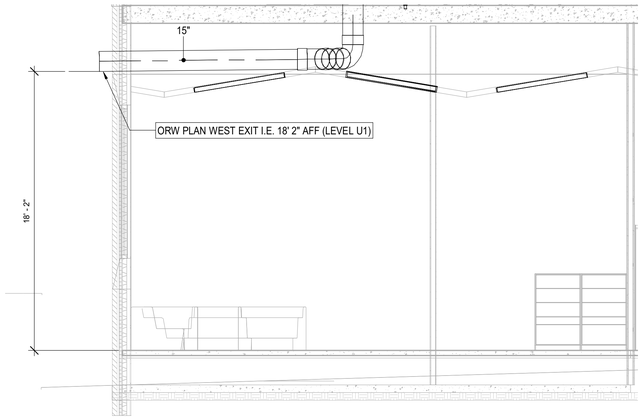
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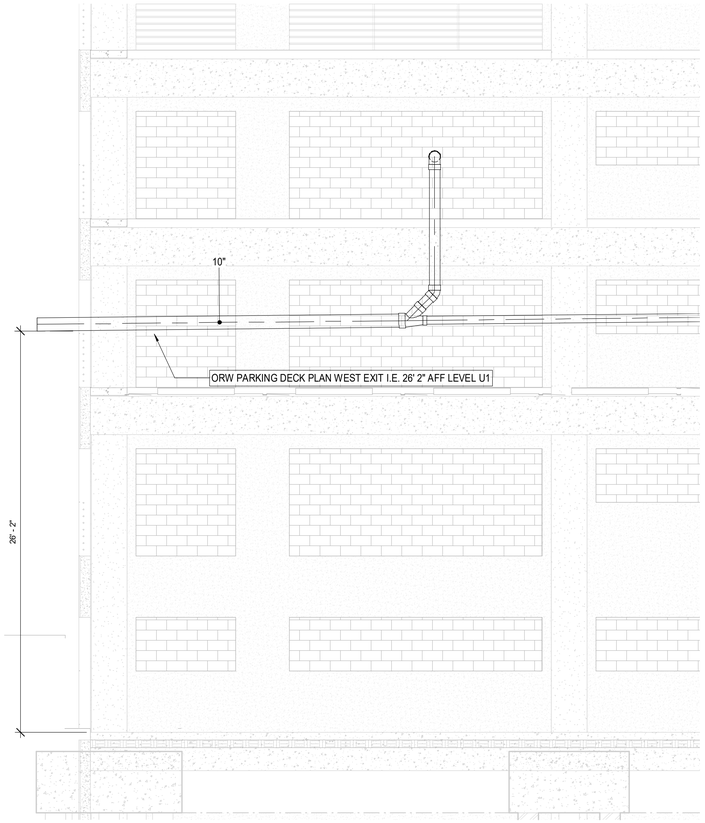
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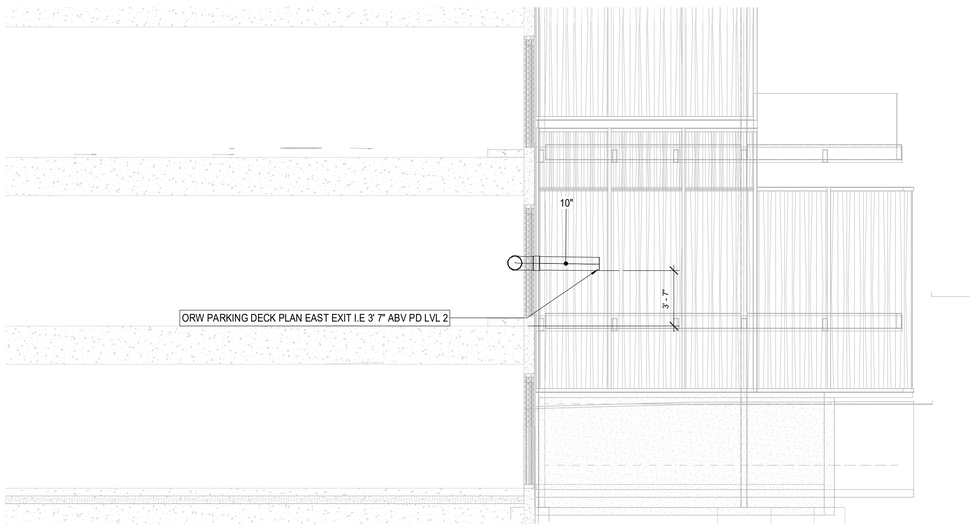
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



1 OVERFLOW RAIN WATER LOCATION 1
1/4" = 1'-0"



2 OVERFLOW RAIN WATER EXIT LOCATION 2
1/4" = 1'-0"



3 OVERFLOW RAIN WATER LOCATION 2
1/4" = 1'-0"

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME: OVERFLOW RAINWATER DISCHARGE POINTS

ORIG SUBMISSION: 2022.05.25

SHEET: P-702

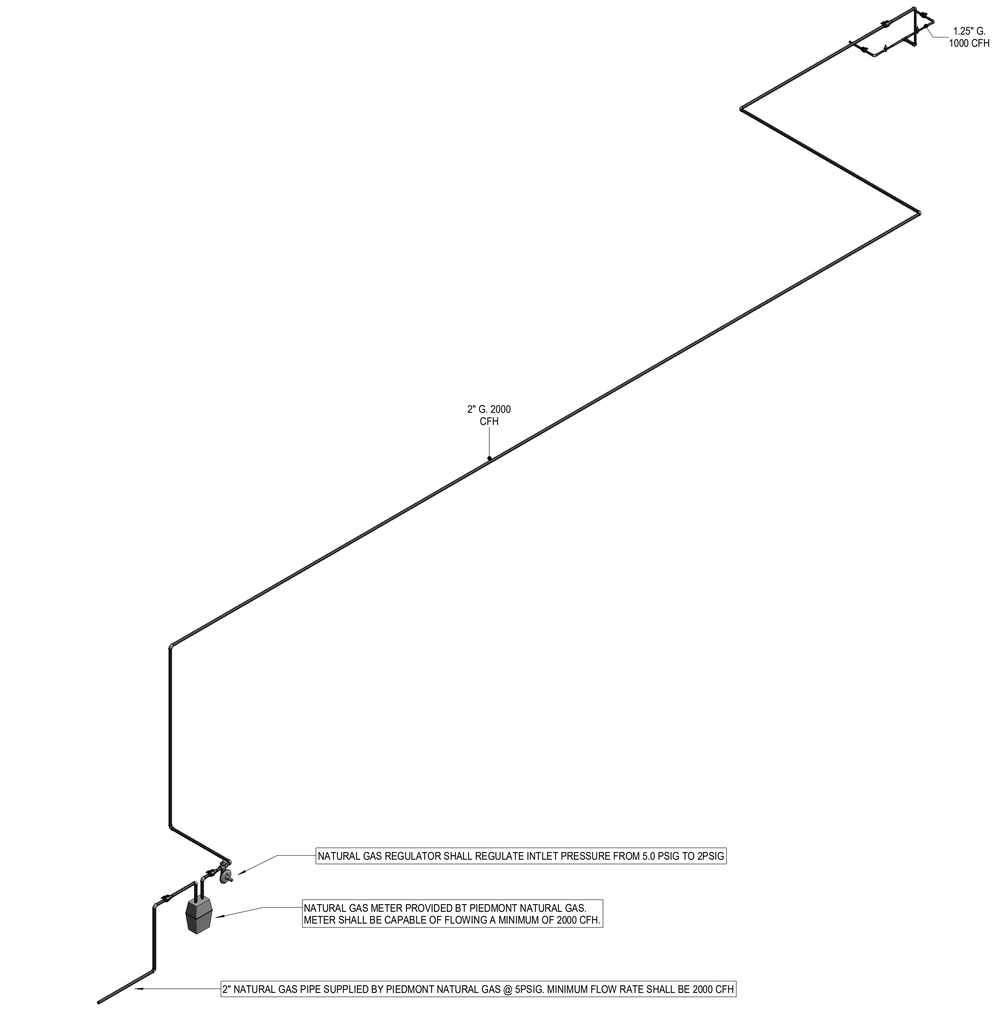
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1 2 3 4 5 6

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1 NATURAL GAS RISER DIAGRAM

GENERAL NOTES:
1. NATURAL GAS METER AND UPSTREAM PIPING FROM UTILITY MAIN SHALL BE PROVIDED BY PIEDMONT NATURAL GAS.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DOWNSTREAM PIPING AND COORDINATION WITH SURROUNDING ELECTRICAL EQUIPMENT IN THE AREA.

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
NATURAL GAS RISER DIAGRAM

ORIG SUBMISSION: 2022.05.25

SHEET:
P-801

OWNERS REVIEW SET

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ABBREVIATIONS

ABV	ABOVE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
ARF	ABOVE RAISED FLOOR
AFG	ABOVE FINISHED GRADE
AMS	AIRFLOW MEASURING SYSTEM
AP	ACCESS PANEL
APR	AIR PRESSURE
APD	AIR PRESSURE DROP
ARCH	ARCHITECT/ARCHITECTURAL
BSL	BIOSAFETY LEVEL
BEL	BELOW
BF	BELOW FLOOR
BM	BEAM
BOD	BOTTOM OF DUCT
BCS	BUILDING CONTROL SYSTEM
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
COL	COLUMN
CONN	CONNECT/CONNECTION
CONT	CONTINUATION/CONTINUOUS
CTE	CONNECT TO EXISTING
DB	DRY BULB
DN	DOWN
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ELEC	ELECTRICAL/ELECTRIC
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXP	EXPOSED
ETO	ETHYLENE OXIDE
FC	FLEXIBLE CONNECTION
FL	FLOOR
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
GPM	GALLONS PER MINUTE
GR	GRADE
HPD	HIGH PRESSURE DRIP ASSEMBLY
HT	HOT TAP
LAT	LEAVING AIR TEMPERATURE
LS	LINE STOP
LWT	LEAVING WATER TEMPERATURE
MPD	MEDIUM PRESSURE DRIP ASSEMBLY
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
OBD	OPPOSED-BLADE DAMPER
OC	ON CENTER
PS	PIPE STAND SUPPORT
PRV	PRESSURE REDUCING VALVE
RA	RETURN AIR
REL	RELOCATE
REM	REMOVE
SA	SOUND ATTENUATOR
SDA	STEAM DRIP ASSEMBLY
SPEC	SPECIFICATION
TEMP	TEMPERATURE
TS	TIGHT TO STRUCTURE
TYP	TYPICAL
UG	UNDERGROUND
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB
WG	WATER GAUGE
WPD	WATER PRESSURE DROP

DUCTWORK AND AIR DISTRIBUTION

- 20X20 — DUCT (FIRST DIMENSION IS SIDE SHOWN IN INCHES)
- DUCT LINING (1" THICK UNLESS 2" NOTED)
- SUPPLY AIR DUCT SECTION
- RETURN OR OUTSIDE AIR DUCT SECTION
- EXHAUST AIR DUCT SECTION
- TRANSITION
- PRESS-ON COLLAR FITTING WITH ROUND FLEXIBLE DUCT AND DAMPER
- PRESS-ON COLLAR FITTING WITH ROUND RIGID DUCT AND DAMPER
- 90° BRANCH TAKEOFF
- RADIUS BRANCH TAKEOFF
- SP — STATIC PRESSURE SENSOR SENSING LOCATION
- RECTANGULAR OR FLAT OVAL DUCTWORK WITH CONICAL TAP AND FLAT OVAL OR ROUND BRANCH DUCT
- TRANSITION FROM RECTANGULAR TO ROUND DUCTWORK
- FS — MANUAL DAMPER (MD), BACKDRAFT DAMPER (BD), LOW LEAKAGE MANUAL DAMPER (LMD), OR CONTROL DAMPER (CD)
- MANUAL DAMPER
- FS — FIRE DAMPER (FD), 3 HOUR FIRE DAMPER (FD3), SMOKE DAMPER (SD), OR COMBINATION FIRE/SMOKE DAMPER (FS), HORIZONTAL POSITION. H DENOTES 286°F FUSIBLE LINKS.
- TURNING VANES
- 12X12 S-100 — SIDEWALL SUPPLY GRILLE OR REGISTER WITH SIZE, TYPE, AND CFM
- 12X12 R-100 — SIDEWALL RETURN OR EXHAUST GRILLE OR REGISTER WITH SIZE, TYPE, AND CFM
- 18X18 R-600 — CEILING RETURN OR EXHAUST GRILLE OR REGISTER WITH SIZE, TYPE, AND CFM
- 12"Ø S-600 — RIGID DUCT AND CEILING SUPPLY DIFFUSER WITH ROUND NECK SIZE, TYPE, AND CFM
- 12"Ø S-600 — FLEXIBLE DUCT AND CEILING SUPPLY DIFFUSER WITH ROUND NECK SIZE, TYPE, AND CFM
- A-B-C 330 — FLEXIBLE DUCT AND LINEAR DIFFUSER WITH LENGTH, TYPE, AND CFM. (A-SIZE; B-TYPE; C- ACTIVE LENGTH)
- 7"Ø S-LA 180 — RIGID DUCT AND 24" x 48" LAMINAR FLOW DIFFUSER WITH ROUND NECK SIZE AND CFM
- 7"Ø S-LA 180 — FLEXIBLE DUCT AND 24" x 48" LAMINAR FLOW DIFFUSER WITH ROUND NECK SIZE AND CFM
- AD — ACCESS DOOR, OPENING OUTWARD
- AD — ACCESS DOOR, OPENING INWARD
- 24" x 24" CEILING RETURN GRILLE (R-EG UNLESS NOTED OTHERWISE)
- TERMINAL UNIT WITH ELECTRIC REHEAT

PIPING AND VALVES

- PIPE CAP
- CLEANOUT (CO) IN DRAIN LINE
- DIRECTION OF FLOW
- ELBOW - 45°
- ELBOW - 90°
- ELBOW - TURNED DOWN
- ELBOW - TURNED UP
- FLEXIBLE CONNECTOR - PIPING
- STRAINER
- B — STRAINER (BASKET TYPE)
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- TEE
- TEE OUTLET DOWN
- TEE OUTLET UP
- UNION OR FLANGE
- STEAM TRAP (SEE SPECIFICATIONS FOR TYPE AND USE)
- STEAM DRIP ASSEMBLY
- BALL OR BUTTERFLY VALVE (SEE SPECIFICATIONS FOR USE)
- CHECK VALVE
- V — VACUUM BREAKER
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- GATE VALVE
- GLOBE VALVE, STRAIGHT
- WATER PRESSURE REDUCING VALVE
- RELIEF VALVE
- S — SOLENOID VALVE
- BALANCING VALVE
- UNDERGROUND VALVE (TYPE AS SHOWN) WITH VALVE BOX
- M, F — FLOW CONTROL VALVE (M-MANUAL TYPE; A-AUTOMATIC TYPE)
- T — FLOW METER (A-ANNULAR TYPE; T-TURBINE TYPE; V-VENTURI TYPE)
- M, V — AIR VENT (M-MANUAL TYPE; A-AUTOMATIC TYPE; T-THERMOSTATIC TYPE)
- THERMOMETER
- PRESSURE GAUGE
- TEMPERATURE AND PRESSURE TEST PORT; PETE'S PLUG
- THERMOMETER TEST WELL

HYDRONIC PIPING

- CHS — CHILLED WATER SUPPLY
- CHR — CHILLED WATER RETURN
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN
- D — DRAIN
- R — REFRIGERANT

GENERAL NOTE

THIS IS A STANDARD LEGEND SHEET. ABBREVIATIONS AND SYMBOLS MAY APPEAR ON THIS SHEET THAT ARE NOT USED IN THE CONSTRUCTION DOCUMENTS.

CONTROLS AND SENSORS

- T — THERMOSTAT
- O — OXYGEN SENSOR
- T — TEMPERATURE SENSOR
- R — REFRIGERANT LEAK SENSOR
- N — NIGHT SETBACK THERMOSTAT
- H — HUMIDISTAT
- H — HUMIDITY SENSOR
- C — CARBON MONOXIDE SENSOR
- N — NITROGEN DIOXIDE SENSOR
- G — GASOLINE VAPOR SENSOR
- FL — FLOAT SWITCH
- E — EMERGENCY FAN SHUTDOWN STATION
- EO — EMERGENCY OIL FLOW SHUTDOWN STATION
- EB — EMERGENCY BOILER SHUTDOWN STATION
- EH — HAZARDOUS STORAGE VENTILATION SYSTEM EMERGENCY SHUTDOWN STATION
- ER — REFRIGERANT PLANT EMERGENCY CONTROLS
- DP — DIFFERENTIAL PRESSURE SENSOR SENSING LOCATION
- S — OCCUPIED/UNOCCUPIED SWITCH
- M — MANUAL PUSH BUTTON
- NETWORK — BACNET NETWORK CONNECTION
- FA — SIGNAL FROM FIRE ALARM SYSTEM
- CONSTANT SPEED DRIVE
- VFD — VARIABLE FREQUENCY DRIVE
- FACP — FIRE ALARM CONTROL PANEL
- TWO-WAY CONTROL VALVE
- LOUVER
- HUMIDIFIER
- C2 — CARBON DIOXIDE SENSOR
- DP — DIFFERENTIAL PRESSURE SENSOR SENSING LOCATION
- ES — END SWITCH
- FA — FIRE ALARM RELAY (BY DIVISION 28)
- HL — HUMIDITY HIGH LIMIT SENSOR
- LL — HUMIDITY LOW LIMIT SENSOR
- FACP, SD — DUCT SMOKE DETECTOR BY FA
- F — FLOW METER
- A — ALARM
- T — AVERAGING TYPE THERMOSTAT
- DP — DIFFERENTIAL PRESSURE SENSOR
- CT — CURRENT TRANSDUCER
- VS — VIBRATION SWITCH
- AM — AMPERAGE METER
- S — STARTER
- DM — DEMAND LIGHT
- DP — DIFFERENTIAL PRESSURE
- CS — CONDENSATE SENSOR
- LCD — LAB CONTROL DISPLAY
- PI — POSITION INDICATOR
- HPL — HIGH PRESSURE LIMIT
- O — OXYGEN SENSOR
- E — EMERGENCU FAM SHUTDOWN STATION
- EB — EMERGENCY BOILER SHUTDOWN STATION
- SD — SMOKE DETECTOR
- SCC — SPACE CONDITION CONTROLLER
- M — MANUAL PUSH BUTTON
- HS — HIGH STATIC SHUTDOWN

APPLICABLE CODE INFORMATION

CODES AND STANDARDS:
- BUILDING CODE: [ENTER BUILDING CODE]
- MECHANICAL CODE: [ENTER MECHANICAL CODE]
- PLUMBING CODE: [ENTER PLUMBING CODE]
- ELECTRICAL CODE: [ENTER ELECTRICAL CODE]
- FIRE CODE: INTERNATIONAL FIRE CODE 2015 ED
- ENERGY CODE: [ENTER ENERGY CODE]
- ACCESSIBILITY: [ENTER ACCESSIBILITY CODE]

OCCUPANCY USE GROUP
- [ENTER OCCUPANCY USE GROUP, PER ARCHITECT]

CONSTRUCTION CLASSIFICATIONS:
- [ENTER CONSTRUCTION CLASSIFICATION, PER ARCHITECT]

SPRINKLER SYSTEM:
- NFPA 13, 2013ED

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC LEGEND, ABBREVIATIONS AND GENERAL NOTES

ORIG SUBMISSION: 2022.05.25

SHEET:
M-001

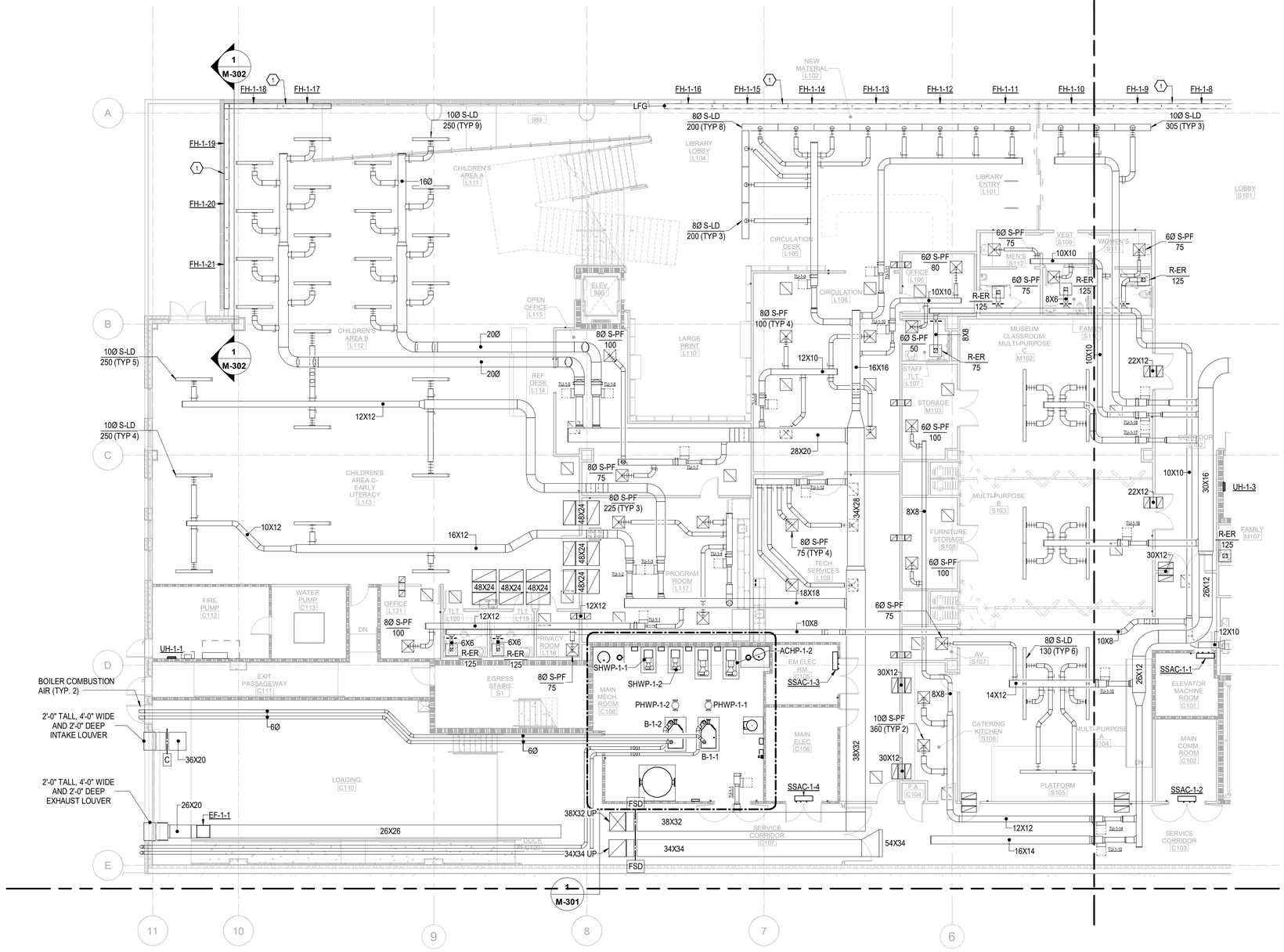
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E D C B A

1 2 3 4 5 6

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KEY NOTES:

1. CONTINUOUS LINEAR FLOOR GRILLE ABOVE RECESSED ELECTRIC BASEBOARD HEATER. PROVIDE CONTINUOUS SECTION, PROVIDE MITERED CORNER, AND VERIFY ALL DIMENSIONS IN FIELD.

1 HVAC DUCTWORK LEVEL 1 - AREA A
1/8" = 1'-0"

5/20/2022 1:40:07 PM

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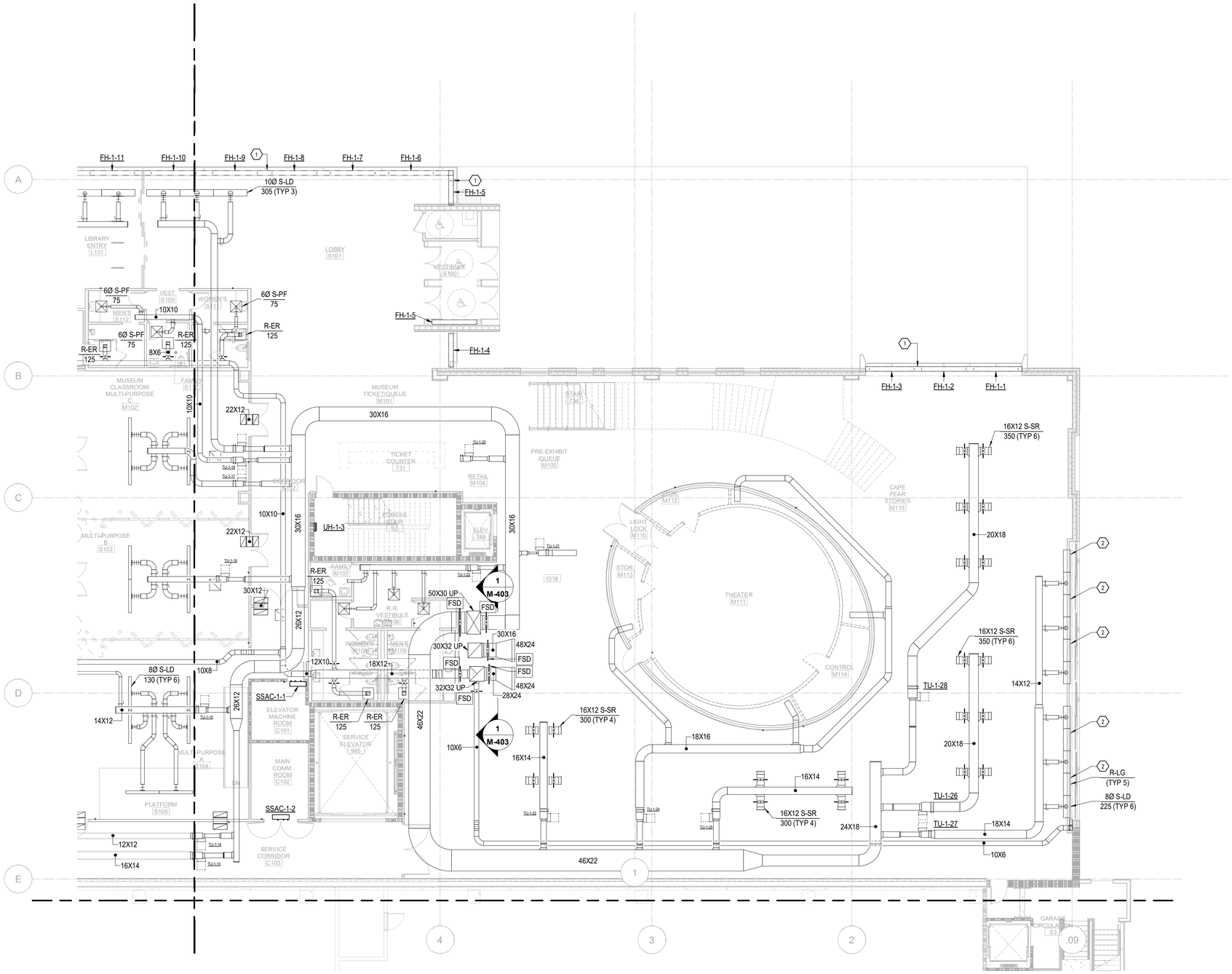
SHEET NAME:
HVAC DUCTWORK LEVEL 1 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
M-101A

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KEY NOTES:

1. CONTINUOUS LINEAR FLOOR GRILLE ABOVE RECESSED ELECTRIC BASEBOARD HEATER. PROVIDE CONTINUOUS SECTION, PROVIDE MITERED CORNER, AND VERIFY ALL DIMENSIONS IN FIELD.
2. LINEAR RETURN WITH PLENUM SERVING DISPLAY.

1 HVAC DUCTWORK LEVEL 1 - AREA B

1/8" = 1'-0"

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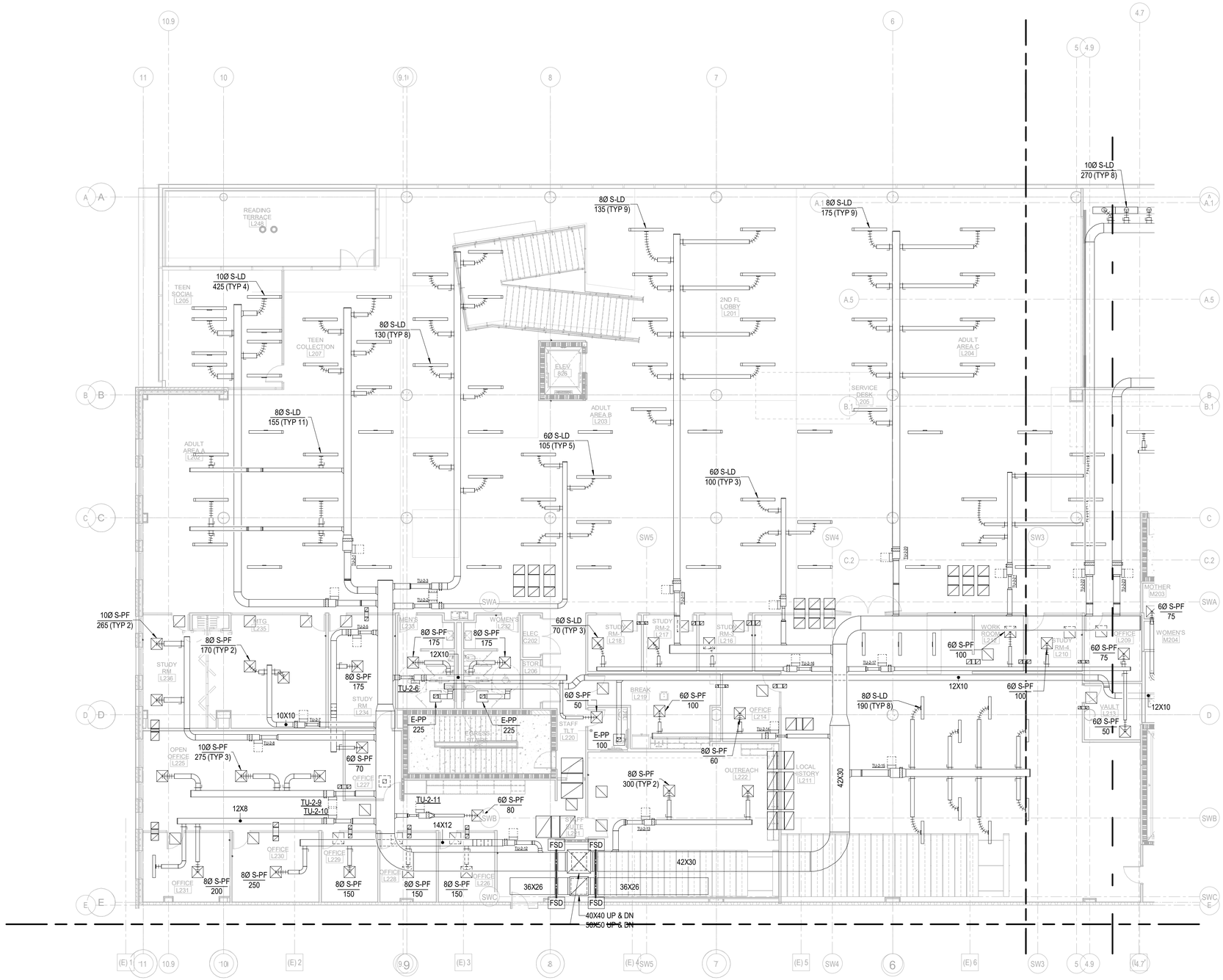
SHEET NAME:
HVAC DUCTWORK LEVEL 1 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
M-101B

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1 HVAC DUCTWORK LEVEL 2 - AREA A

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T 919 783-7812
Contact: Brandon R. Nevin
N&B PROJECT: 21N185
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

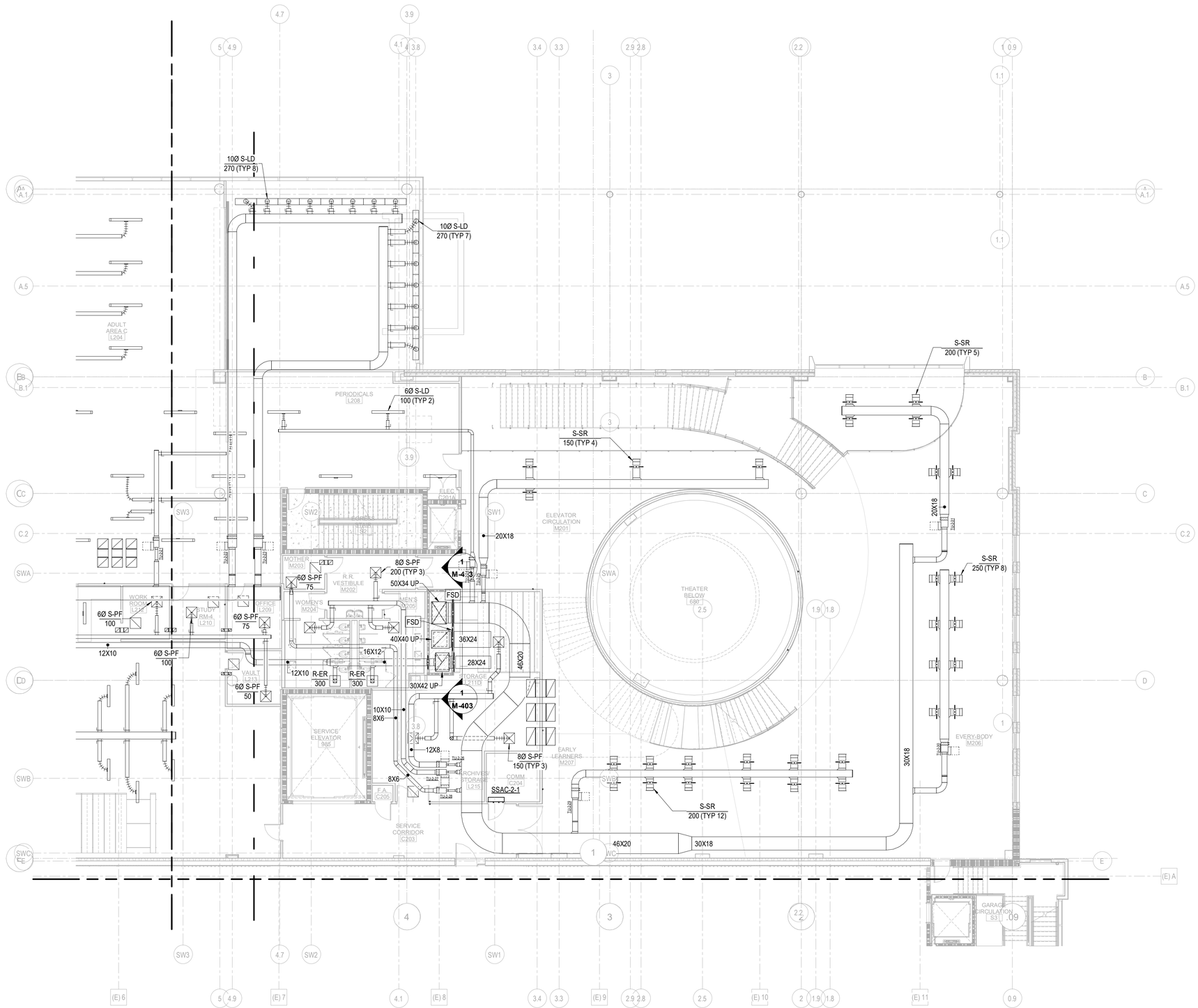
SHEET NAME:
HVAC DUCTWORK LEVEL 2 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
M-102A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ALL ORIGINAL PLOT SHEETS
ORIGINAL PLOT SIZE



1 HVAC DUCTWORK LEVEL 2 - AREA B

1/8" = 1'-0"

5/20/2022 1:40:21 PM

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

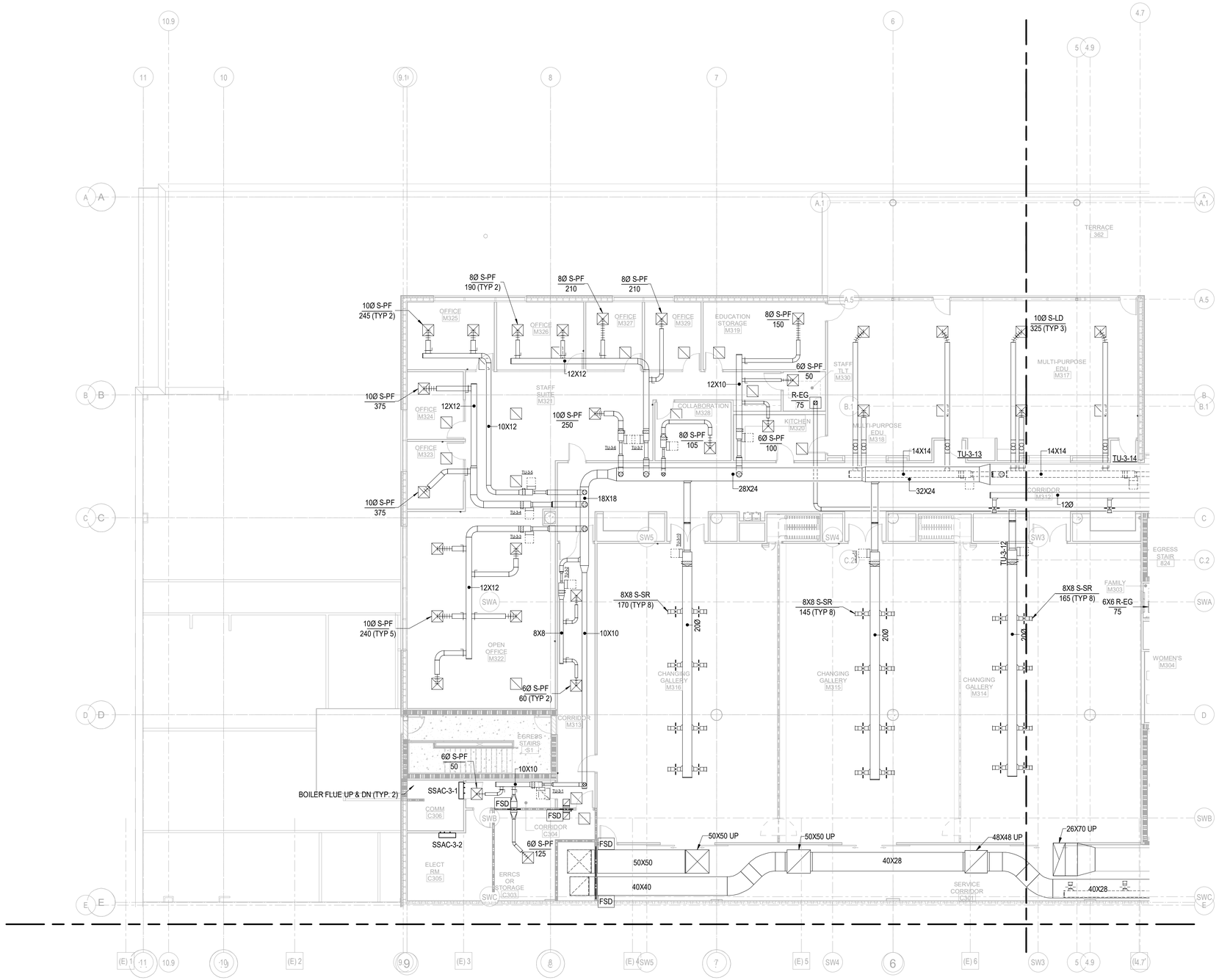
SHEET NAME:
HVAC DUCTWORK LEVEL 2 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
M-102B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



1 HVAC DUCTWORK LEVEL 3 - AREA A

1/8" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

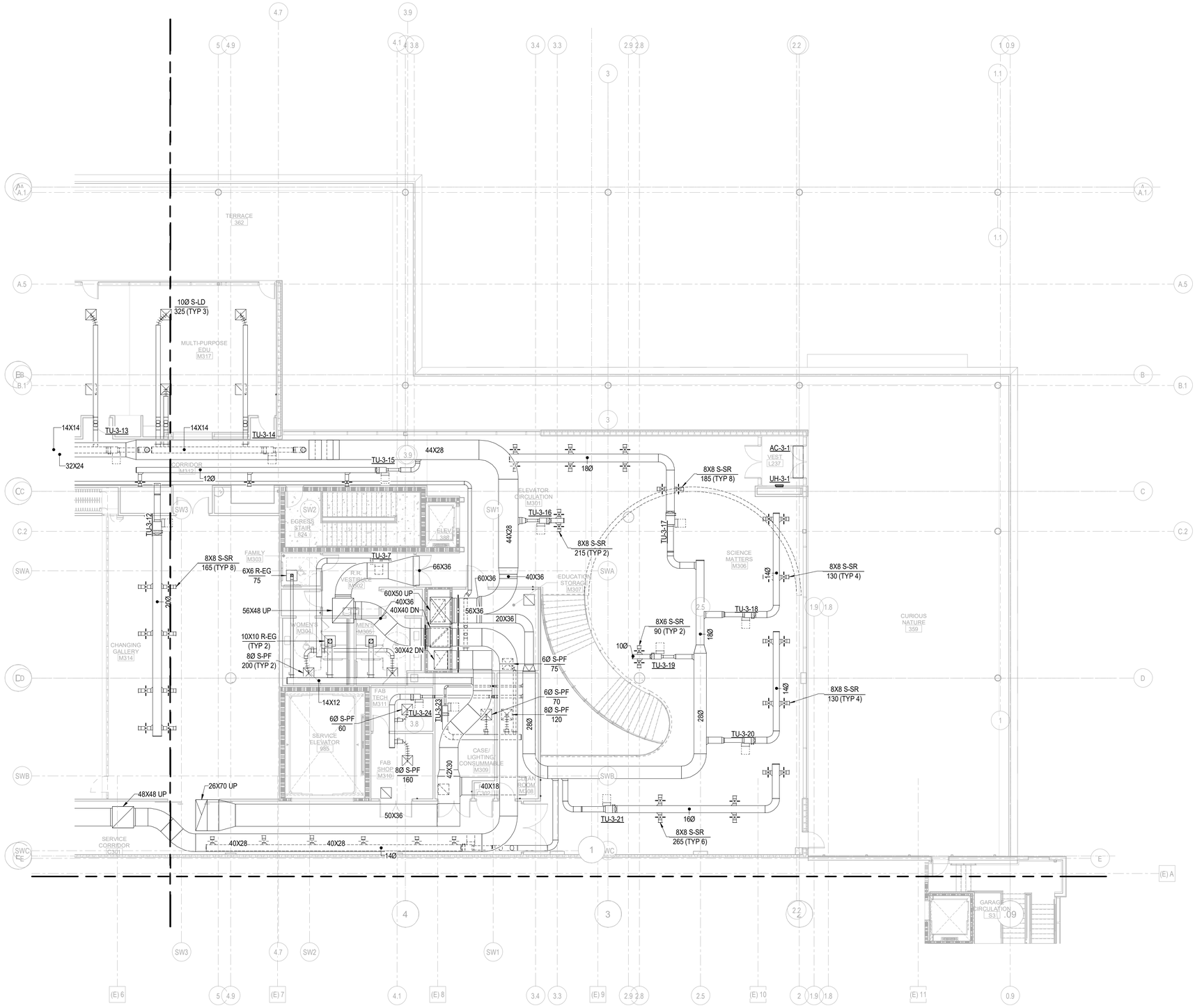
SHEET NAME:
HVAC DUCTWORK
LEVEL 3 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
M-103A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ANSI D SIZE SHEETS ORIGINAL PAGE SIZE



1 **HVAC DUCTWORK LEVEL 3 - AREA B**

1/8" = 1'-0"

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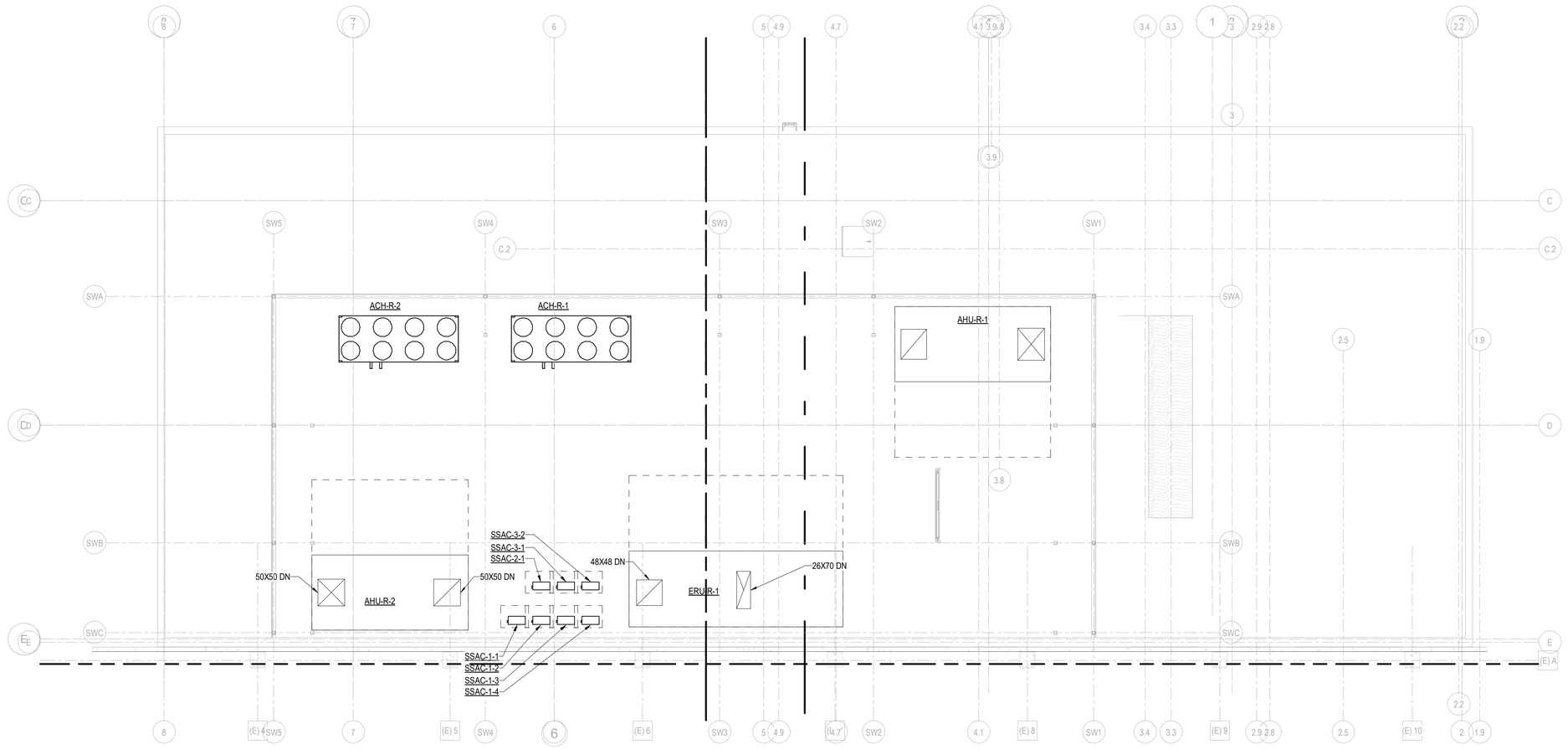
SHEET NAME:
HVAC DUCTWORK
LEVEL 3 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
M-103B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ANSI D SHEETS ORIGINAL PAGE SIZE



1 HVAC DUCTWORK OVERALL ROOF

1/8" = 1'-0"

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A	2022.05.25	OWNER REVIEW SET

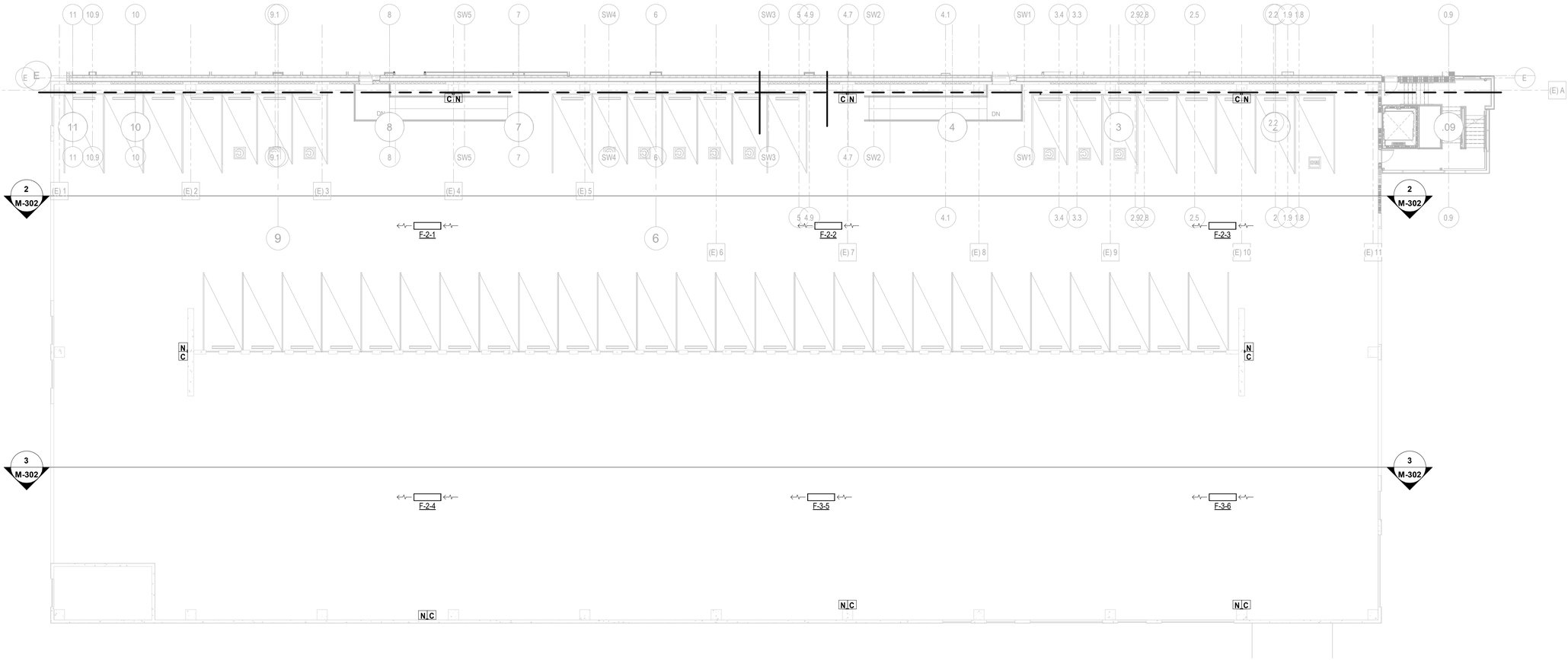
SHEET NAME:
HVAC DUCTWORK OVERALL ROOF

ORIG SUBMISSION: 2022.05.25

SHEET:
M-104

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI A SHEETS ORIGINAL PAGE SIZE



1 HVAC PARKING DECK LEVEL 2 (TYPICAL)

3/32" = 1'-0"

5/20/2022 1:40:33 PM

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC PARKING DECK LEVEL 2

ORIG SUBMISSION: 2022.05.25

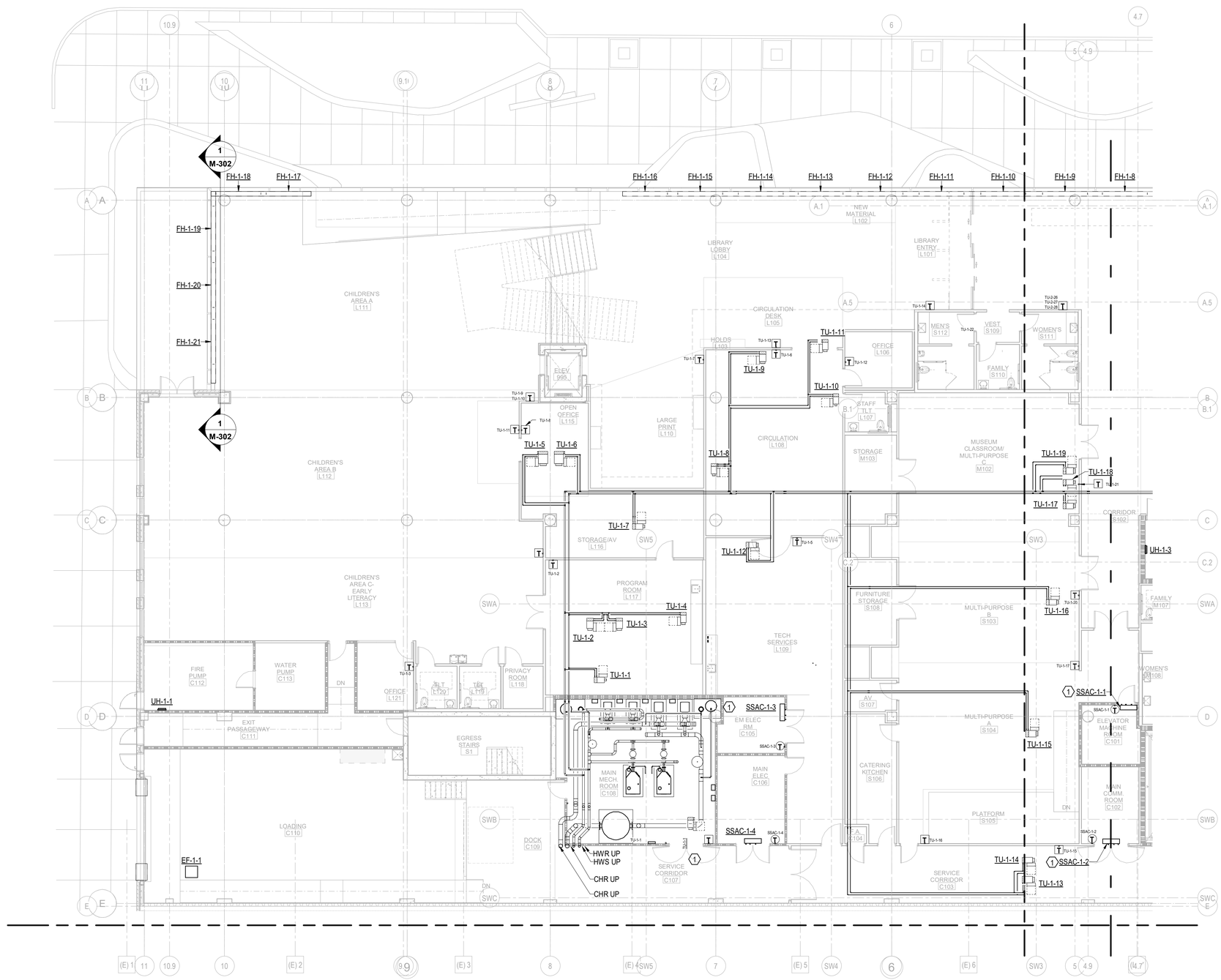
SHEET:
M-105

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE

KEY NOTES:

1. ROUTE CONDENSATE TO FLOOR DRAIN IN MAIN MECH. ROOM (C108).



1 HVAC PIPING LEVEL 1 - AREA A

1/8" = 1'-0"

5/20/2022 1:40:39 PM

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC PIPING
LEVEL 1 - AREA A

ORIG SUBMISSION: 2022.05.25

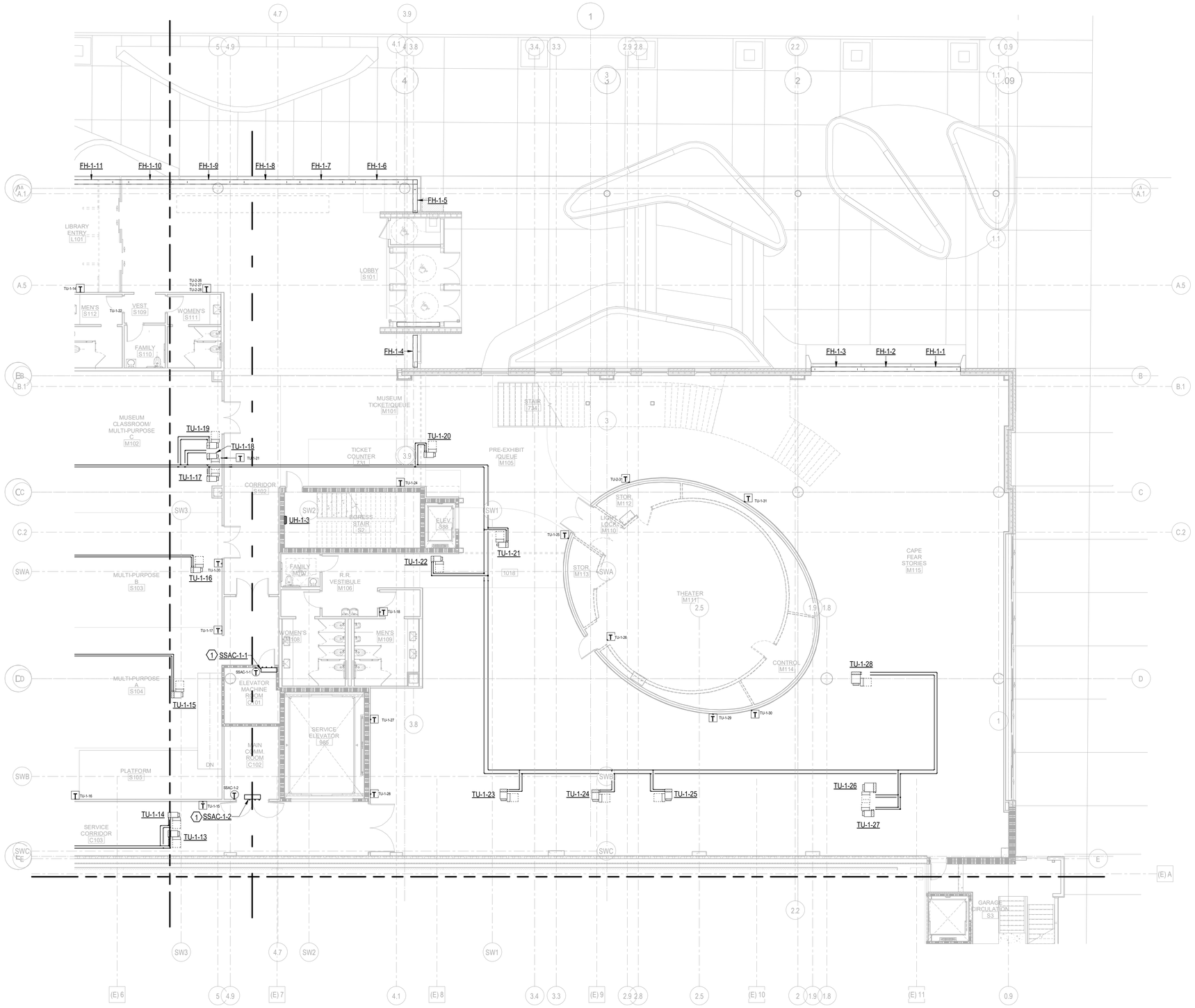
SHEET:
M-201A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ALL SHEETS ORIGINAL PAGE SIZE

KEY NOTES:

1. ROUTE CONDENSATE TO FLOOR DRAIN IN MAIN MECH. ROOM (C108).



1 HVAC PIPING LEVEL 1 - AREA B

1/8" = 1'-0"

5/20/2022 1:40:43 PM

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

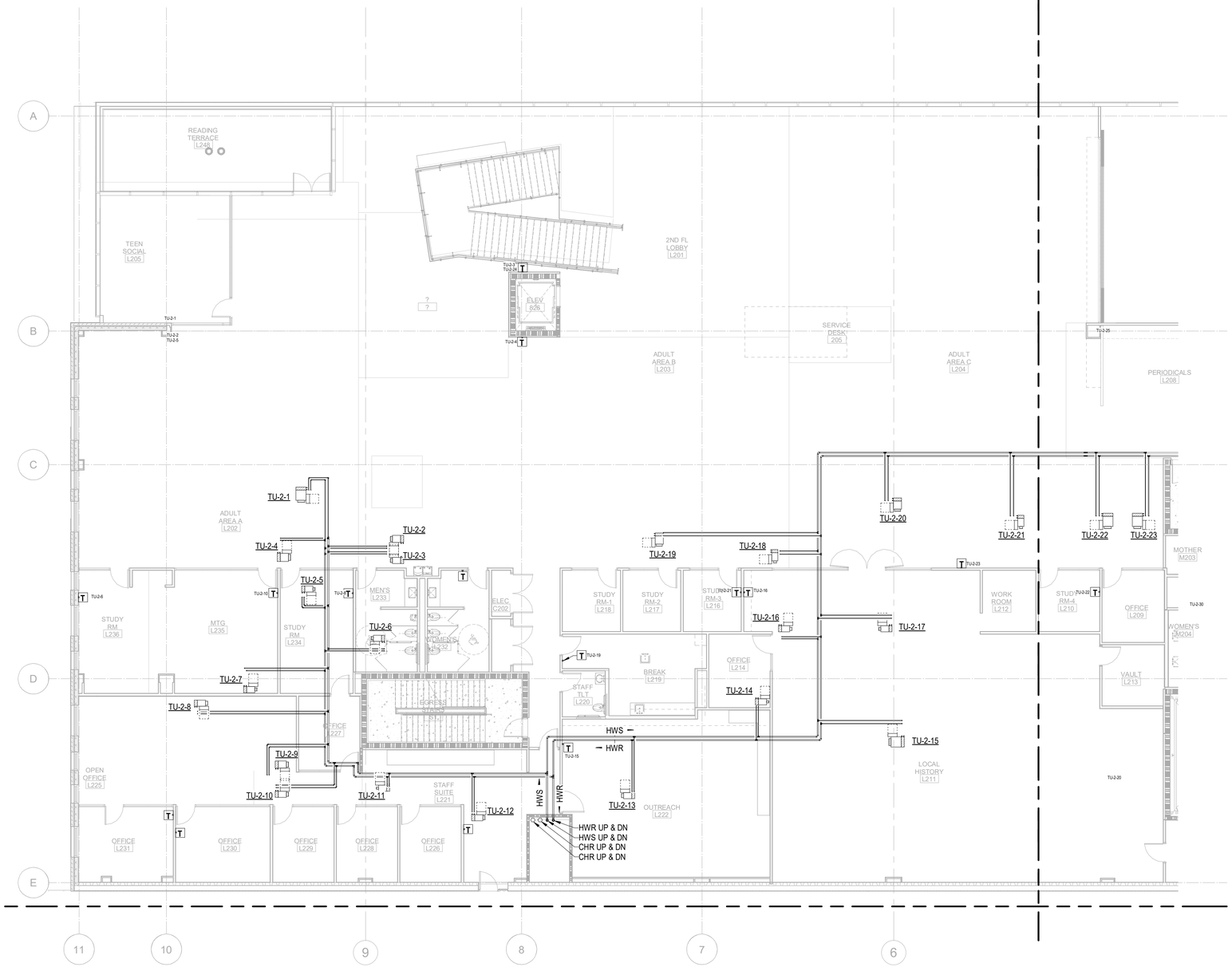
SHEET NAME:
HVAC PIPING
LEVEL 1 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
M-201B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI A SHEETS ORIGINAL PAGE SIZE



1 HVAC PIPING LEVEL 2 - AREA A

1/8" = 1'-0"

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

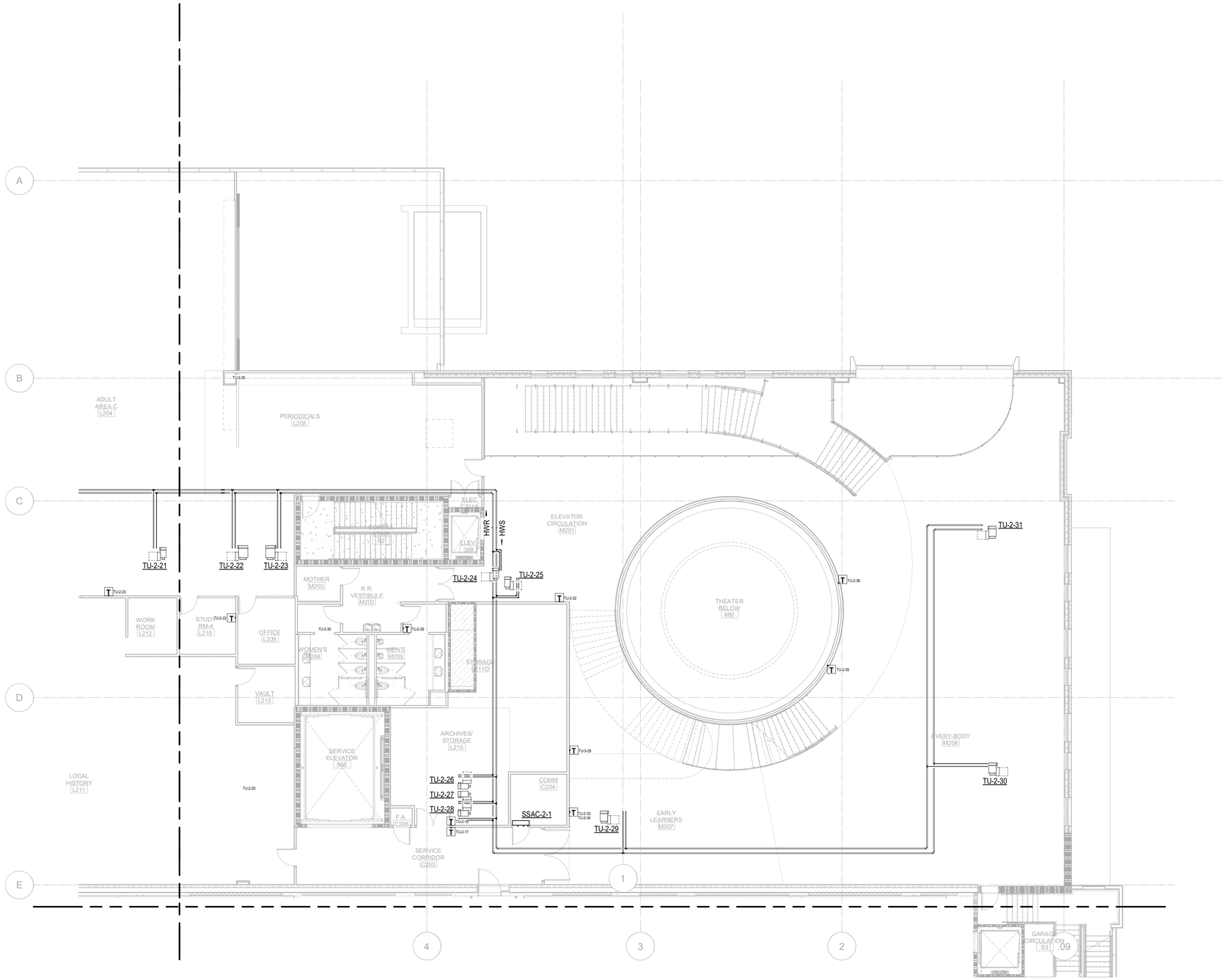
SHEET NAME:
HVAC PIPING
LEVEL 2 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
M-202A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI SHEETS ORIGINAL PAGE SIZE



1 HVAC PIPING LEVEL 2 - AREA B

1/8" = 1'-0"

5/20/2022 1:40:54 PM

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A	2022.05.25	OWNER REVIEW SET

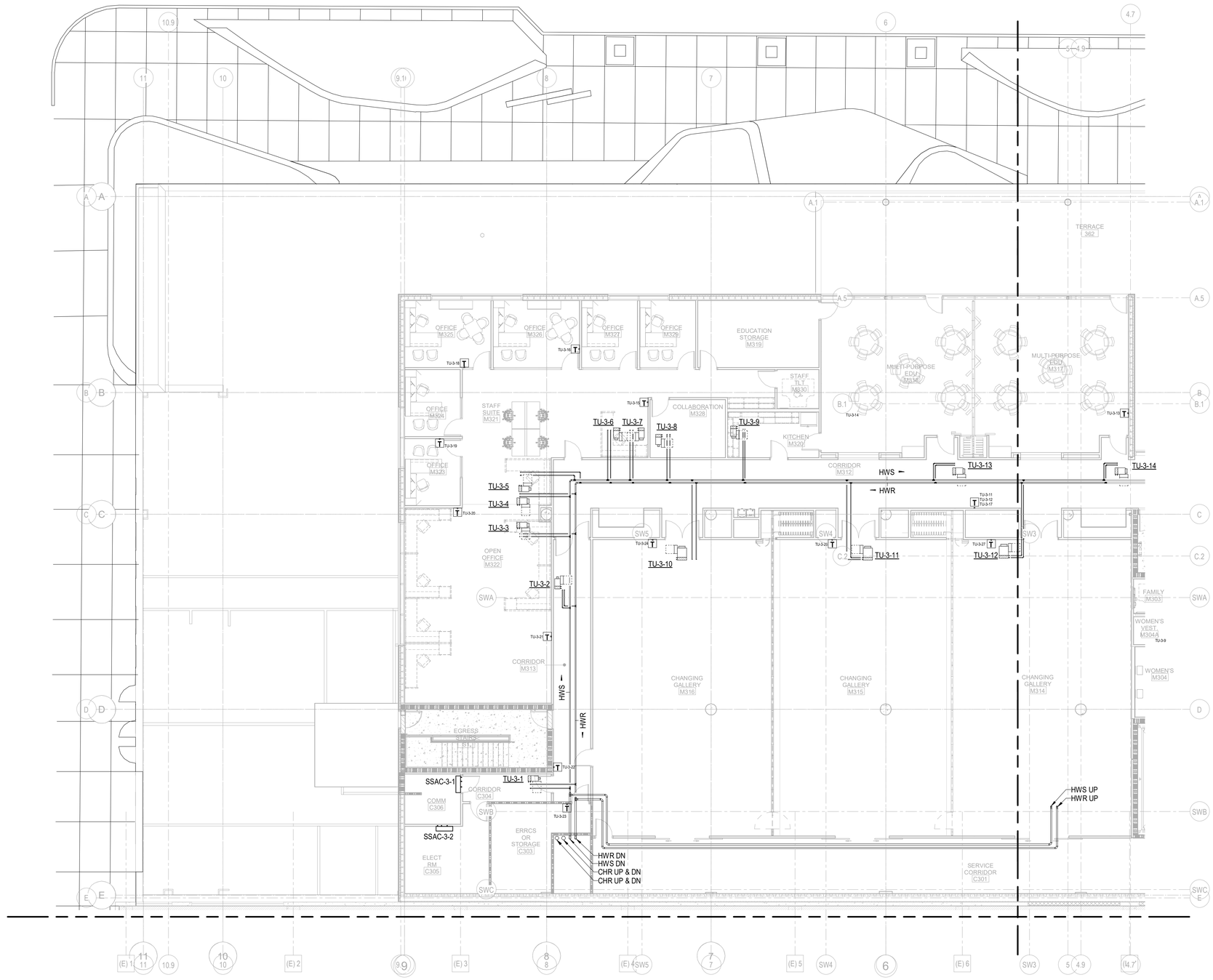
SHEET NAME:
HVAC PIPING
LEVEL 2 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
M-202B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ALL SHEETS ORIGINAL PAGE SIZE



1 HVAC PIPING LEVEL 3 - AREA A

1/8" = 1'-0"

5/20/2022 1:40:58 PM

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Δ	DATE	DESCRIPTION
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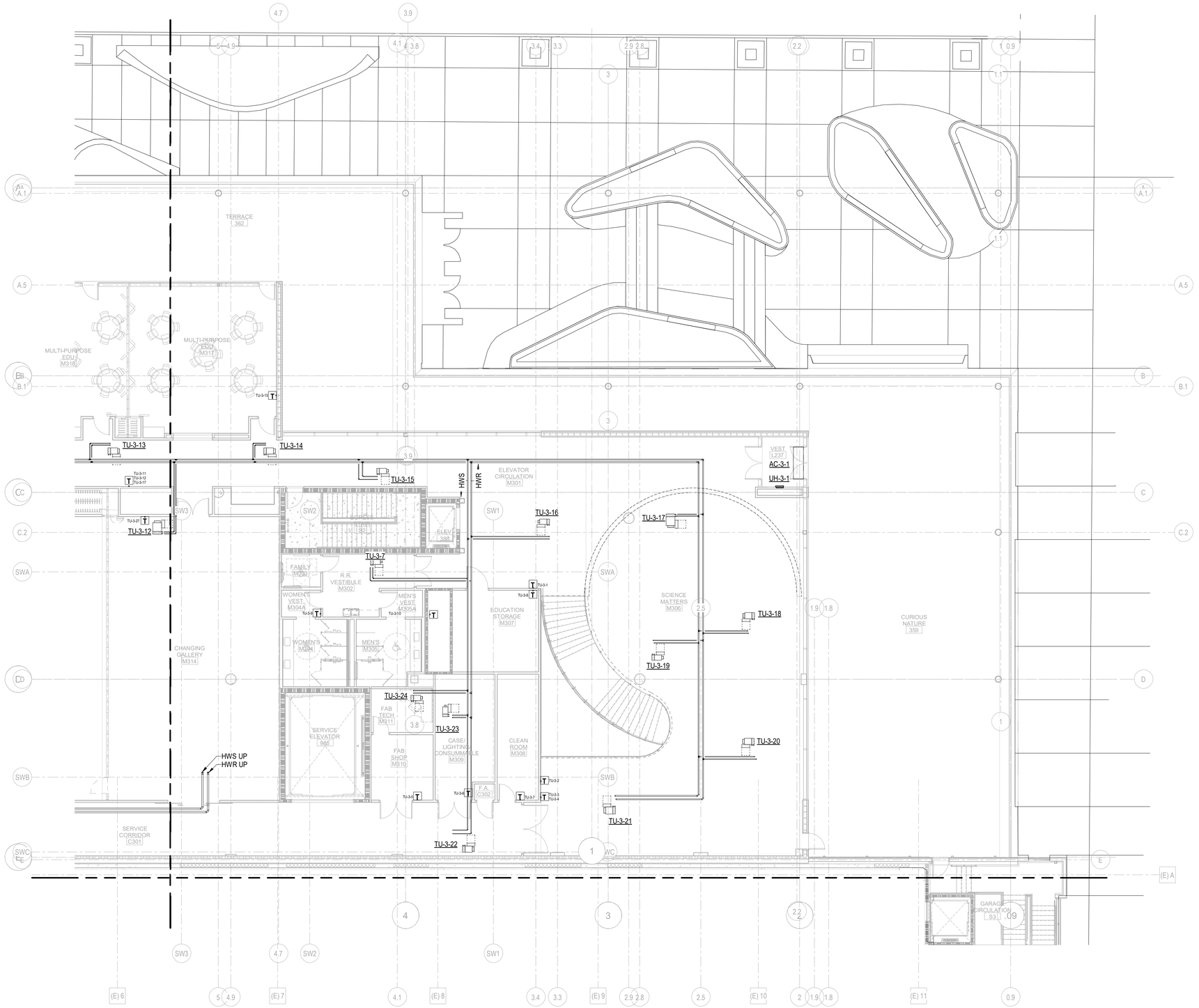
SHEET NAME:
HVAC PIPING
LEVEL 3 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
M-203A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI B SHEETS ORIGINAL PAGE SIZE



1 HVAC PIPING LEVEL 3 - AREA B

1/8" = 1'-0"

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LS3P PROJECT: 7701-177600

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A	2022.05.25	OWNER REVIEW SET

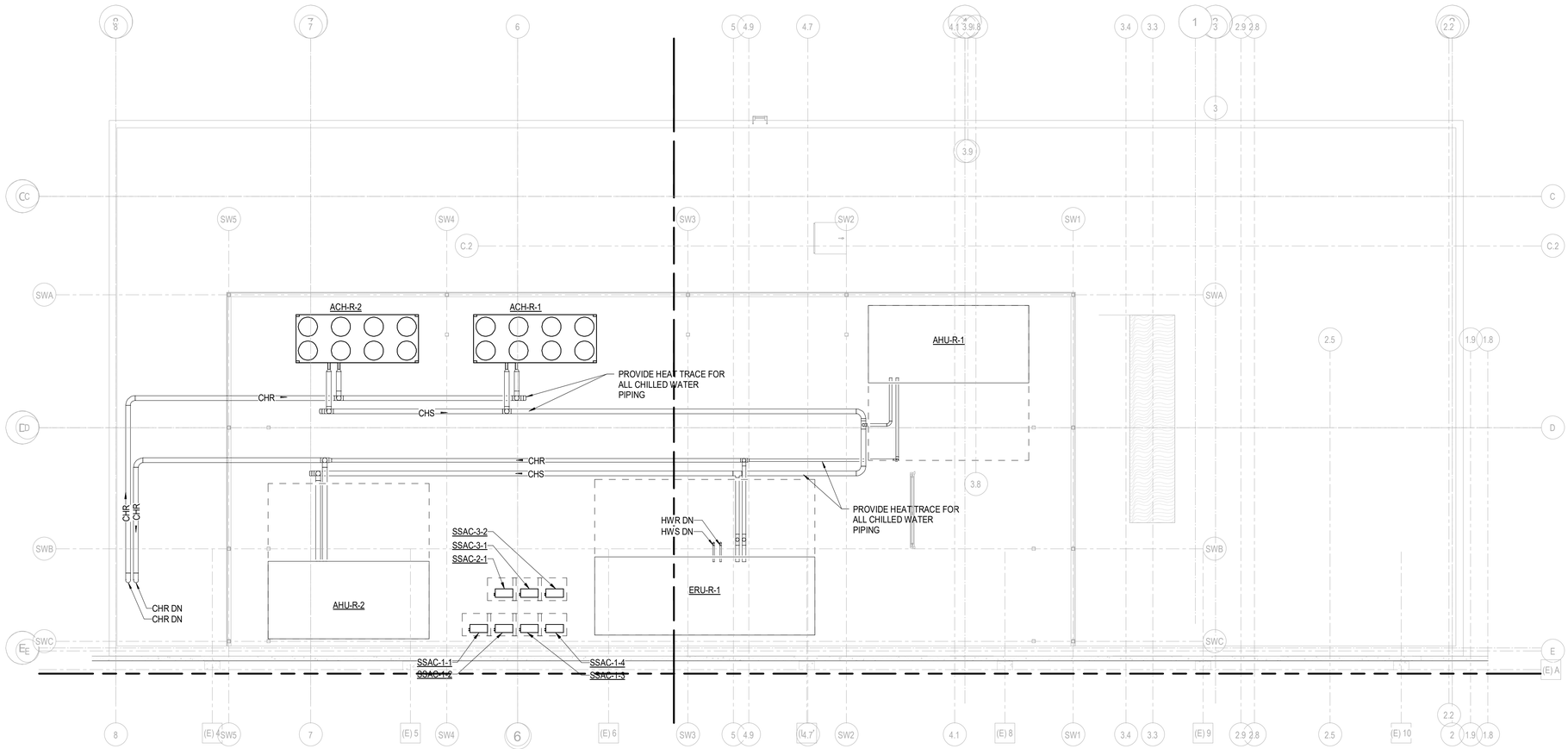
SHEET NAME:
HVAC PIPING
LEVEL 3 - AREA B

ORIG SUBMISSION: 2022.05.25

SHEET:
M-203B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI A SHEETS ORIGINAL PAGE SIZE



1 HVAC PIPING OVERALL ROOF

1/8" = 1'-0"

5/20/2022 1:41:04 PM

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LS3P PROJECT: 7701-177600

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A	2022.05.25	OWNER REVIEW SET

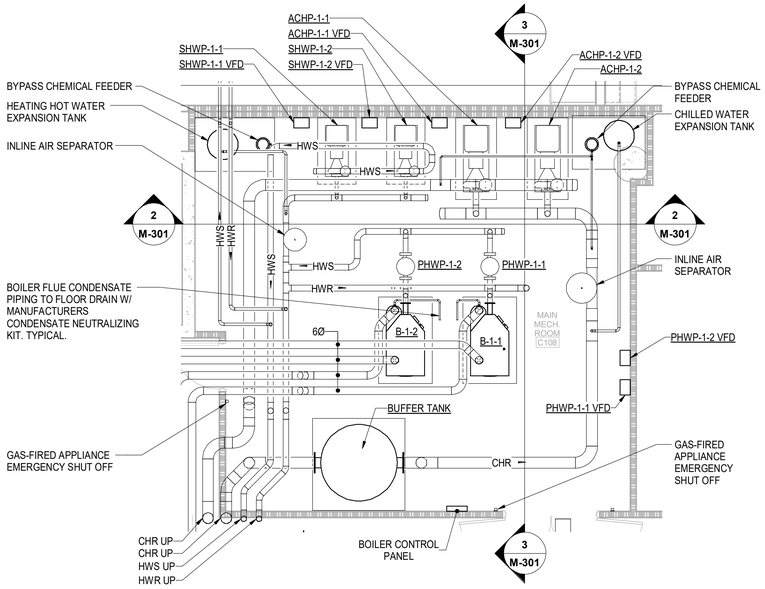
SHEET NAME:
HVAC PIPING OVERALL ROOF

ORIG SUBMISSION: 2022.05.25

SHEET:
M-204

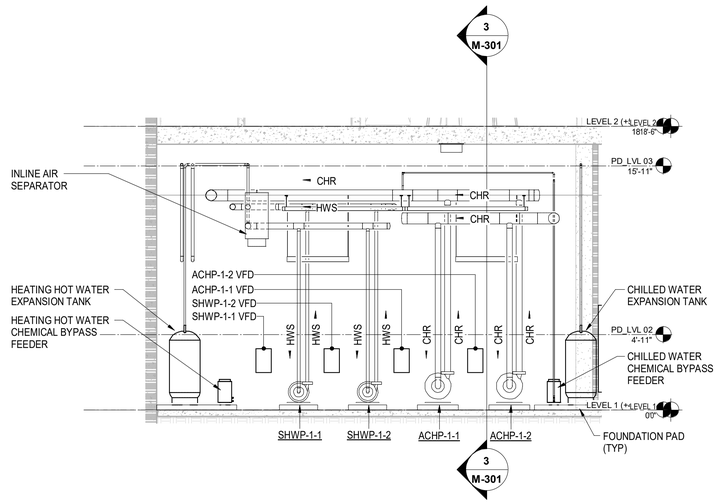
OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ORIGINAL SHEETS
ORIGINAL PAGE SIZE



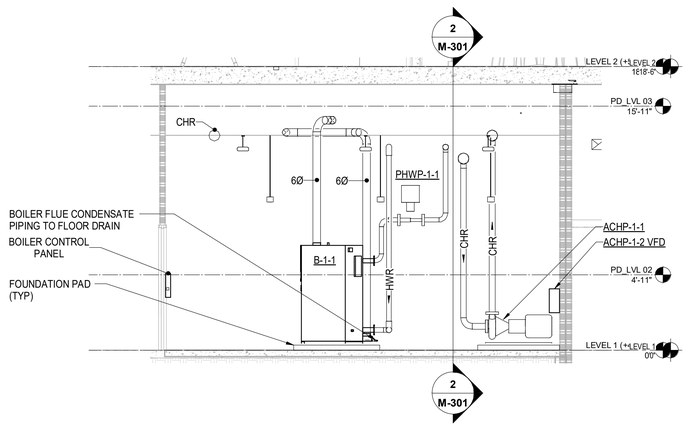
1 HVAC PART PLAN - MAIN MECHANICAL ROOM

1/4" = 1'-0"



2 HVAC PART PLAN - MAIN MECHANICAL ROOM NORTH SECTION

1/4" = 1'-0"



3 HVAC PART PLAN - MAIN MECHANICAL ROOM WEST SECTION

1/4" = 1'-0"

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC PART PLAN - MAIN MECHANICAL ROOM

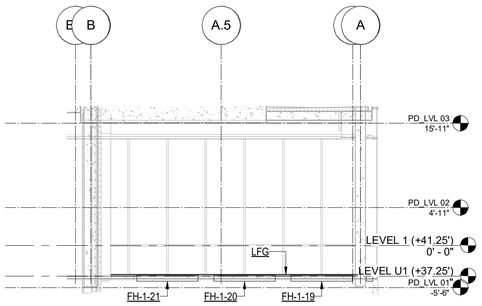
ORIG SUBMISSION: 2022.05.25

SHEET:
M-301

OWNERS REVIEW SET

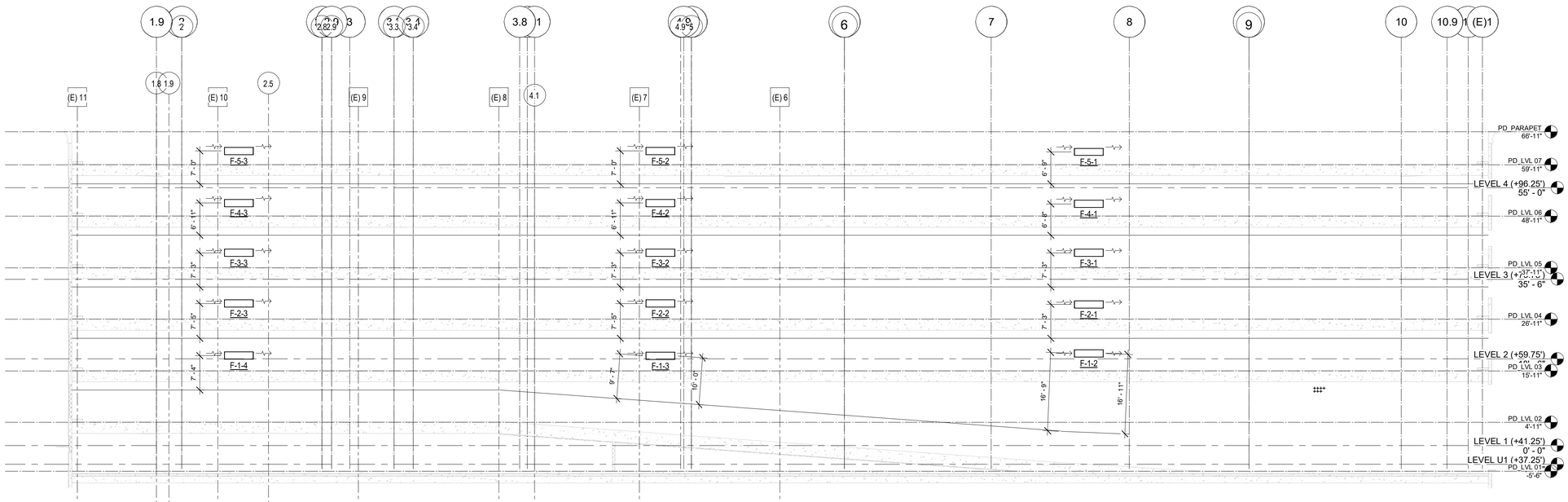
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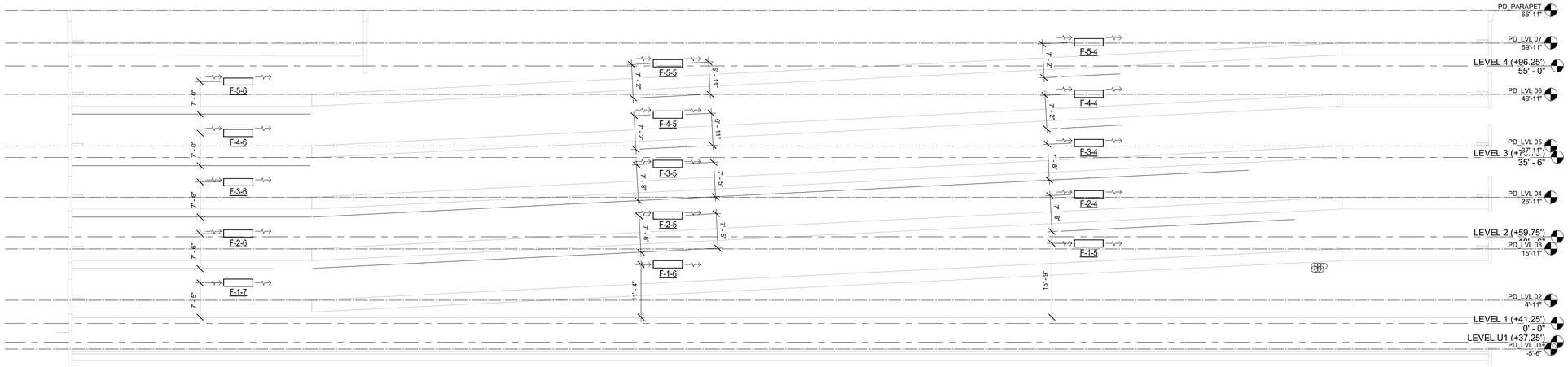
1 TYPICAL ELEVATION OF RECCESSED FLOOR HEATERS

1/8" = 1'-0"



2 PARKING DECK SECTION - NORTH RAMPS

3/32" = 1'-0"



3 PARKING DECK SECTION - SOUTH RAMPS

3/32" = 1'-0"

5/20/2022 1:41:11 PM

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205 1/2 KING STREET
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Contact: Brandon R. Nevin
N&B PROJECT: 21N185
Firm License No. F-0312

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

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A	2022.05.25	OWNER REVIEW SET

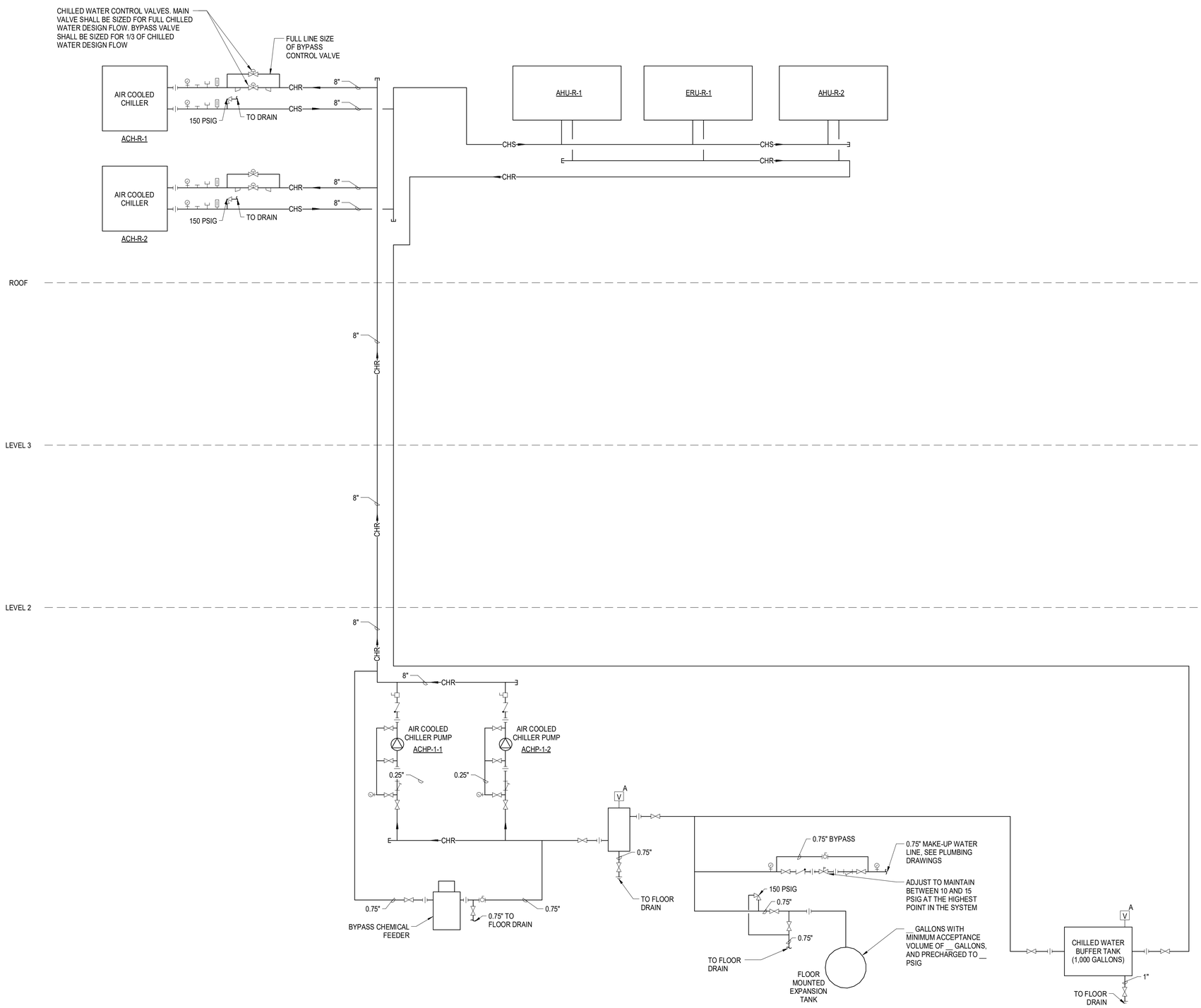
SHEET NAME:
HVAC PART PLAN - ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
M-302

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI A SHEETS ORIGINAL PAGE SIZE



1 **HVAC CHILLED WATER FLOW SCHEMATIC**
NO SCALE

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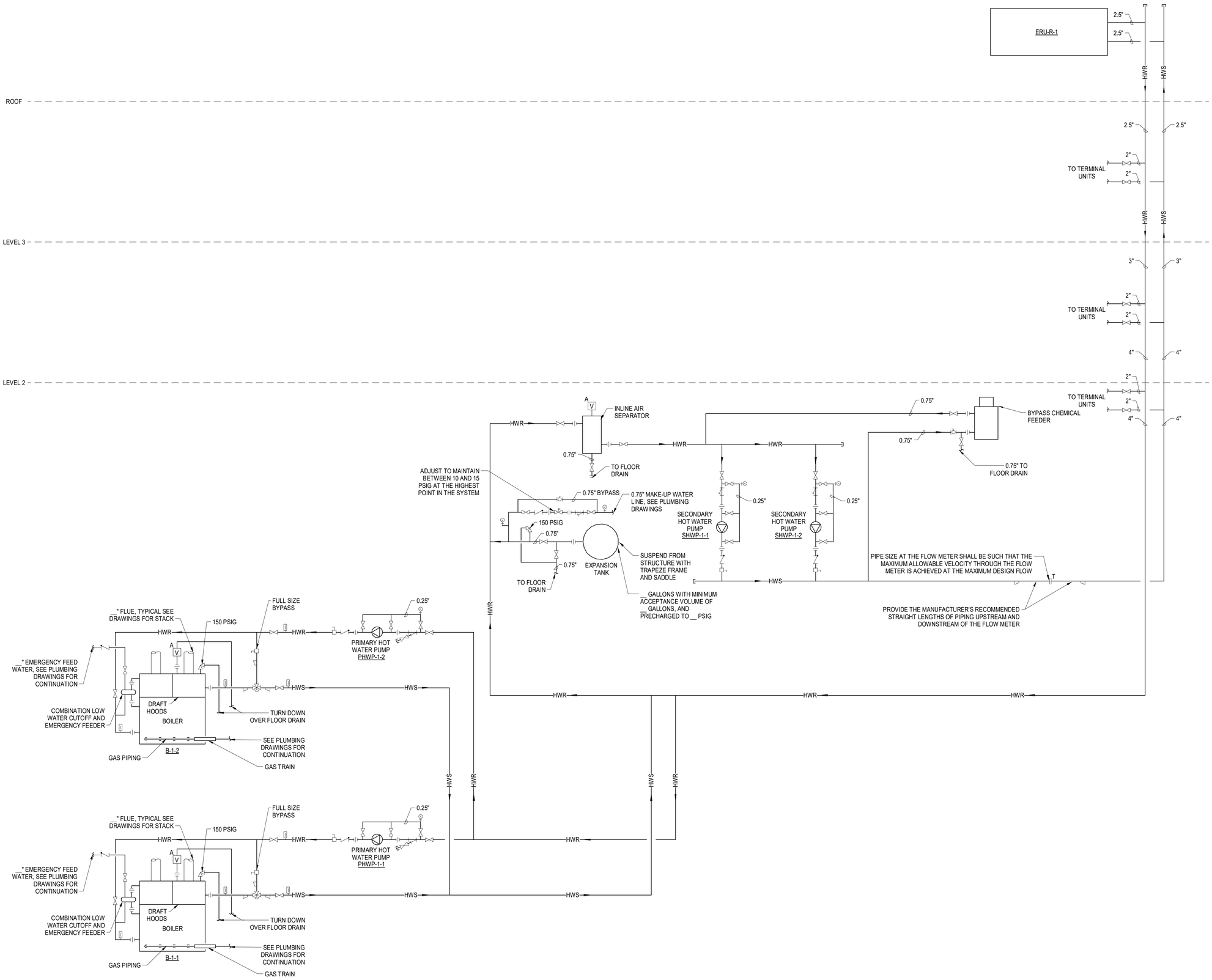
SHEET NAME:
HVAC CHILLED WATER FLOW SCHEMATIC

ORIG SUBMISSION: 2022.05.25

SHEET:
M-401

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1 HVAC HOT WATER FLOW SCHEMATIC

NO SCALE

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Wilmington, NC 28401

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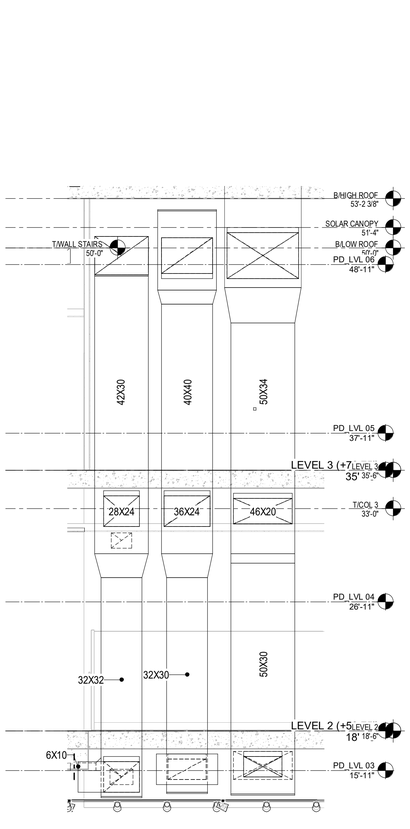
SHEET NAME:
HVAC HOT WATER FLOW SCHEMATIC

ORIG SUBMISSION: 2022.05.25

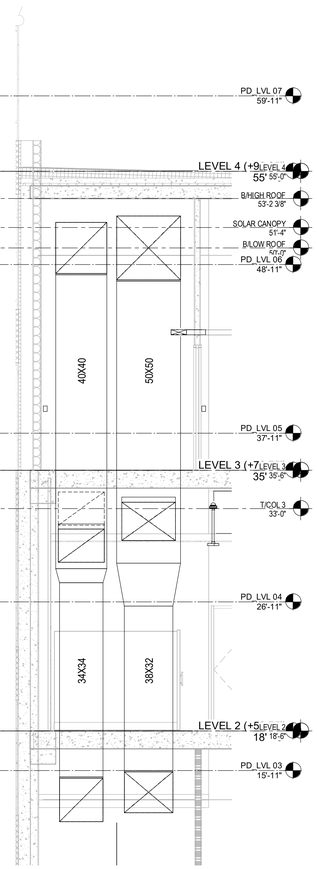
SHEET:
M-402

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



1 **AHU-R-1 HVAC RISER**
1/4" = 1'-0"



2 **AHU-R-2 HVAC RISER**
1/4" = 1'-0"

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC RISER DIAGRAM

ORIG SUBMISSION: 2022.05.25

SHEET:
M-403

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E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ORIGINAL PLOT SHEETS. CHECK ORIGINAL PLOT SIZE.

ENERGY RECOVERY UNIT SCHEDULE

NO.	OUTSIDE AIR SUPPLY SIDE																					TOILET EXHAUST SIDE									VIBRATION ISOLATION		NOTES
	SUPPLY FAN (NOTE 14)						ENERGY RECOVERY WHEEL (NOTE 4)					COOLING COIL (NOTE 12)						HOT WATER HEATING COIL (NOTE 12)					EXHAUST FAN (NOTE 14)						ENERGY RECOVERY WHEEL (NOTE 9)				
	CFM (NOTE 13)	MAXIMUM RPM	FAN TYPE (NOTE 1)	ESP, IN. WG (NOTE 2)	MOTOR MINIMUM HP	MOTOR MAXIMUM BRAKE HP	CFM	TOTAL ENERGY EFFECTIVENESS	EAT °F DB	EAT °F WB	LAT °F DB	LAT °F WB	CFM (NOTE 5)	CHILLED WATER GPM (NOTE 8)	EAT °F DB	EAT °F WB	LAT °F DB	LAT °F WB	CONTROL VALVE TYPE (NOTE 7)	CFM (NOTE 10)	HOT WATER GPM (NOTE 11)	EAT °F	LAT °F	CONTROL VALVE TYPE (NOTE 7)	CFM (NOTE 13)	MAXIMUM RPM	FAN TYPE (NOTE 1)	ESP, IN. WG (NOTE 8)	MOTOR MINIMUM HP	MOTOR MAXIMUM BRAKE HP	CFM	EAT °F DB	EAT °F WB	TYPE	MIN. STATIC DEFLECTION IN.	
ERU-R-1	20,000	1,800	P-AF	3.0	(2) 25	40	20,000	68.2%	95.0	77.0	80.5	68.3	20,000	158	80.5	68.3	52.0	52.0	2	20,000	66	48.6	55.0	2	17,000	1,800	P-AF	2.75	(2) 15	20.6	17,000	75.0	64.0	SC	1.5	

NOTES:

1. FAN TYPE:
   FAN: C CENTRIFUGAL; WHEEL: AF AIRFOIL
2. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE UNIT CASING, OR ENERGY RECOVERY WHEELS, BUT DOES INCLUDE FILTERS.
3. FILTER TYPE:
   P PLEATED
4. OUTSIDE AIR SUPPLY SIDE OF ENERGY RECOVERY WHEELS SHALL HAVE MAXIMUM 1.0" WG APD.
5. MAXIMUM 450 FPM COIL FACE VELOCITY AND MAXIMUM __" WG APD.
6. CHILLED WATER BASED ON 44°F EWT, 54°F LWT AND MAXIMUM 18' WPD.
7. CONTROL VALVE TYPE:
   2 2-WAY
8. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE UNIT CASING, OR ENERGY RECOVERY WHEELS, BUT DOES INCLUDE FILTERS.
9. EXHAUST SIDE OF ENERGY RECOVERY WHEELS SHALL HAVE MAXIMUM __" WG APD.
10. MAXIMUM __" WG APD.
11. HOT WATER BASED ON 100°F EWT, 130°F LWT AND MAXIMUM 6' WPD.
12. PROVIDE COOLING AND HEATING COIL CONNECTIONS THROUGH SIDE OF UNIT.
13. CFM DOES NOT INCLUDE PURGE FOR WHEEL.
14. PROVIDE VARIABLE FREQUENCY DRIVE.
15. REFER TO ELECTRICAL DRAWINGS FOR THE EQUIPMENT ELECTRICAL CHARACTERISTICS.

BOILER SCHEDULE

NO.	TYPE (NOTE 1)	OUTPUT, MBH	OPERATING PRESSURE, PSIG	MINIMUM EFFICIENCY, % (NOTE 3)	HOT WATER EWT °F	HOT WATER LWT °F	HOT WATER GPM	FUEL	NOTES
B-1-1	C-H	1,000	125	96	110	140	67	NATURAL GAS	3
B-1-2	C-H	1,000	125	96	110	140	67	NATURAL GAS	3

NOTES:

1. TYPE:
   C CONDENSING - H HOT WATER
2. PER THE TEST PROCEDURES AND CONDITIONS REQUIRED IN THE NORTH CAROLINA ENERGY CONSERVATION CODE-2018
3. REFER TO THE ELECTRICAL DRAWINGS FOR THE EQUIPMENT ELECTRICAL CHARACTERISTICS.

AIR HANDLING UNIT SCHEDULE

NO.	AREA SERVED (NOTE 1)	TYPE (NOTE 2)	FAN CFM	FAN MAXIMUM RPM	FAN TYPE (NOTE 3)	FAN ESP, IN. WG (NOTE 4)	FAN MOTOR MINIMUM HP	FAN MOTOR MAXIMUM BRAKE HP	COOLING COIL MINIMUM OA CFM	COOLING COIL CFM (NOTE 5)	COOLING COIL MAXIMUM CHILLED WATER GPM (NOTE 6)	COOLING COIL EAT °F DB	COOLING COIL EAT °F WB	COOLING COIL LAT °F DB	COOLING COIL LAT °F WB	CONTROL VALVE TYPE (NOTE 7)	HUMIDIFIER TYPE (NOTE 8)	HUMIDIFIER CAPACITY LB/H (NOTES 9)	HUMIDIFIER PIPE RUNOUT SIZES, IN LPS	HUMIDIFIER PIPE RUNOUT SIZES, IN LPC	VIBRATION ISOLATION TYPE	VIBRATION ISOLATION MIN. STATIC DEFLECTION, IN.	NOTES
AHU-R-1	MUSEUM	DT-HZ-VV	37,500	1,800	P-AF	3.0	(4) 25	21.5	9,900	37,500	136	66.5	60.0	52.0	52.0	2	A	110			SC	1.5	10, 11
AHU-R-2	LIBRARY	DT-HZ-VV	35,000	1,800	P-AF	3.0	(4) 25	21.5	10,100	35,000	103	68.2	59.6	52.0	52.0	2	A	215			SC	1.5	10, 11

NOTES:

1. DESIGN CONDITIONS:

	SUMMER	WINTER
OUTSIDE	93.3°F DB, 78.5°F WB	23.2°F
LIBRARY	75°F DB, 50% RH	70°F
GALLERIES	72°F DB, 55% RH	70°F
OFFICES	75°F DB, 50% RH	70°F
ELECTRICAL ROOMS	80°F DB	50°F
MECHANICAL SPACES	80°F DB	50°F
COMMUNICATION ROOMS	78°F DB	70°F
ELEVATOR MACHINE ROOMS	80°F DB	50°F

2. TYPE:
   DT DRAW-THROUGH
   VV VARIABLE VOLUME
   HZ HORIZONTAL
3. FAN TYPE:
   FAN: P PLENUM; WHEEL: AF AIRFOIL
4. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE UNIT CASING, PLENUMS, DIFFUSER SECTION, OR UNIT MOUNTED HEATING AND COOLING COILS, BUT DOES INCLUDE FILTERS.
5. MAXIMUM FOR VARIABLE VOLUME UNITS: 550 FPM COIL FACE VELOCITY, 1.7" WG APD.
6. CHILLED WATER BASED ON 44°F EWT AND MAXIMUM 18' WPD.
7. CONTROL VALVE TYPE:
   2 2-WAY
8. TYPE:
   A ELECTRIC
9. HUMIDIFIER SELECTION SHALL PROVIDE COMPLETE ABSORPTION OF STEAM INTO THE AIR-STREAM PRIOR TO CONTACT WITH DONSTREAM COMPONENTS.
10. PROVIDE VARIABLE FREQUENCY DRIVE.
11. REFER TO THE ELECTRICAL DRAWINGS FOR EQUIPMENT ELECTRICAL CHARACTERISTICS.

AIR-COOLED CHILLER SCHEDULE

NO.	CAPACITY, TONS (NOTES 1 & 2)	MAXIMUM POWER INPUT kW AT FULL LOAD	MINIMUM EER	MINIMUM IPLV	EVAPORATOR EWT °F	EVAPORATOR LWT °F	EVAPORATOR GPM	EVAPORATOR MAXIMUM PRESS. DROP, FT. WG	NOTES	VIBRATION ISOLATION TYPE	VIBRATION ISOLATION MINIMUM STATIC DEFLECTION, IN.	VIBRATION ISOLATION BASE
ACH-R-1	150	149	11.6	19.3	54	44	360	16	3	LS	2.5	N
ACH-R-2	150	149	11.6	19.3	54	44	360	16	3	LS	2.5	N

NOTES:

1. CAPACITY BASED ON 95°F AMBIENT TEMPERATURE.
2. PROVIDE LOW AMBIENT OPERATION DOWN TO 30°F.
3. REFER TO THE ELECTRICAL DRAWINGS FOR EQUIPMENT ELECTRICAL CHARACTERISTICS.

PUMP SCHEDULE

NO.	SERVICE	TYPE (NOTE 1)	GPM	TOTAL DYNAMIC HEAD, FT. WG	MINIMUM EFFICIENCY, %	RPM	MOTOR MINIMUM HP	MOTOR MAXIMUM BRAKE HP	VIBRATION ISOLATION TYPE	VIBRATION ISOLATION MINIMUM STATIC DEFLECTION, IN.	VIBRATION ISOLATION INERTIA BASE	NOTES
ACHP-1-1	CHILLED WATER	E	360	100	77	1800	20	16.4	FS	0.75	Y	2, 3
ACHP-1-2	CHILLED WATER	E	360	100	77	1800	20	16.4	FS	0.75	Y	2, 3
PHWP-1-1	PRIMARY HEATING WATER	I	67	50	76	1800	5	4.0	SH	0.75	N	3
PHWP-1-2	PRIMARY HEATING WATER	I	67	50	76	1800	5	4.0	SH	0.75	N	3
SHWP-1-1	SECONDARY HEATING WATER	E	67	100	72	1800	10	9.6	FS	0.75	Y	2, 3
SHWP-1-2	SECONDARY HEATING WATER	E	67	100	72	1800	10	9.6	FS	0.75	Y	2, 3

NOTES:

1. TYPE:
   I INLINE
   E END-SUCTION
2. PROVIDE VARIABLE FREQUENCY DRIVE.
3. REFER TO THE ELECTRICAL DRAWINGS FOR THE EQUIPMENT ELECTRICAL CHARACTERISTICS.

FLOOR HEATER SCHEDULE

NO.	TYPE (NOTE 1)	MINIMUM ACTIVE LENGTH (FT.)	MINIMUM CAPACITY (kW)	NOTES
FH-1-1	W	8	2	3
FH-1-2	W	8	2	3
FH-1-3	W	8	2	3
FH-1-4	W	6	1.5	3
FH-1-5	W	4	1	3
FH-1-5	W	8	2	3
FH-1-6	W	8	2	3
FH-1-7	W	8	2	3
FH-1-8	W	8	2	3
FH-1-9	W	8	2	3
FH-1-10	W	8	2	3
FH-1-11	W	8	2	3
FH-1-12	W	8	2	3
FH-1-13	W	8	2	3
FH-1-14	W	8	2	3
FH-1-15	W	8	2	3
FH-1-16	W	8	2	3
FH-1-17	W	8	2	3
FH-1-18	W	8	2	3
FH-1-19	W	8	2	3
FH-1-20	W	8	2	3
FH-1-21	W	8	2	3

NOTES:

1. TYPE:
   W RECESSED FLOOR HEATER
2. PROVIDE WITH INTEGRAL DISCONNECT
3. REFER TO THE ELECTRICAL DRAWINGS FOR THE EQUIPMENT ELECTRICAL CHARACTERISTICS.

DUCTLESS SPLIT SYSTEM SCHEDULE

NO.	AREA SERVED	TYPE (NOTE 2)	INDOOR UNIT NOMINAL CFM (NOTE 3)	COOLING (NOTE 4) SENSIBLE CAPACITY, MBH	COOLING (NOTE 4) TOTAL CAPACITY, MBH	COOLING (NOTE 4) MINIMUM EER	NOTES
SSAC-1-1	ELEVATOR MACHINE ROOM	AC	600	19	22	13.4	4, 5
SSAC-1-2	MAIN COMM. ROOM	AC	600	19	22	13.4	4, 5
SSAC-1-3	EM ELEC RM	AC	600	19	22	13.4	4, 5
SSAC-1-4	MAIN ELEC	AC	600	19	22	13.4	4, 5
SSAC-2-1	LEVEL 2 COMM	AC	600	19	22	13.4	4, 5
SSAC-3-1	LEVEL 3 COMM	AC	600	19	22	13.4	4, 5
SSAC-3-2	LEVEL 3 ELEC RM	AC	600	19	22	13.4	4, 5

NOTES:

1. DESIGN CONDITIONS:

	SUMMER
OUTSIDE	93.7°F DB, 76.3°F WB
ELECTRICAL ROOMS	80°F DB
MECHANICAL SPACES	80°F DB
ELEVATOR MACHINE ROOMS	80°F DB

2. TYPE:
   AC COOLING ONLY
3. INDOOR UNIT CFM BASED ON MEDIUM FAN SPEED.
4. INTEGRAL CONDENSATE PUMP.
5. REFER TO THE ELECTRICAL DRAWINGS FOR EQUIPMENT ELECTRICAL CHARACTERISTICS.

FAN SCHEDULE

NO.	AREA SERVED	TYPE (NOTES 1 & 2)	CFM	STATIC PRESSURE, IN.WG	MAXIMUM RPM	MOTOR MINIMUM HP	MOTOR MAXIMUM BRAKE HP	DRIVE (NOTE 2)	VIBRATION ISOLATION TYPE	VIBRATION ISOLATION MINIMUM STATIC DEFLECTION, IN.	VIBRATION ISOLATION BASE	NOTES
EF-1-1	LOADING DOCK	I	1,400	0.25	950	1	0.2	D	FS	0.75	N	3, 4
F-1-2	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-1-3	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-1-4	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-1-5	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-1-6	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-1-7	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-2-1	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-2-2	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-2-3	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-2-4	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-2-5	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-2-6	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-3-1	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-3-2	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-3-3	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-3-4	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-3-5	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-3-6	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-4-1	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-4-2	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-4-3	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-4-4	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-4-5	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-4-6	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-5-1	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-5-2	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-5-3	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-5-4	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-5-5	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4
F-5-6	PARKING DECK	A	4,700	0.25	1,800	3	2.9	D				3, 4

NOTES:

1. TYPE:
   I INLINE
   A AXIAL
2. DRIVE:
   D DIRECT
3. PROVIDE VARIABLE FREQUENCY DRIVE.
4. REFER TO THE ELECTRICAL DRAWINGS FOR THE EQUIPMENT ELECTRICAL CHARACTERISTICS.

UNIT HEATER SCHEDULE

NO.	AREA SERVED	TYPE (NOTE 1)	CAPACITY, kW (NOTE 2)	NOMINAL CFM	NOTES
UH-1-1	FIRE PUMP	W	2	150	3
UH-1-2	STAIR S2	W	1.5	100	3
UH-1-3	STAIR S1	W	1.5	100	3
UH-3-1	VESTIBULE L237	W	1.5	100	3

NOTES:

1. TYPE:
   W WALL
2. BASED ON 60°F EAT.
3. REFER TO THE ELECTRICAL DRAWINGS FOR EQUIPMENT ELECTRICAL CHARACTERISTICS.

AIR CURTAIN SCHEDULE

NO.	AREA SERVED	NORMAL CFM	MINIMUM MOTOR HP	MOUNTING HEIGHT (FT)	UNIT WIDTH (FT)	NOTES
AC-3-1	VESTIBULE L237	2,252	1 @ 1/5	8	6	1, 2

NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR THE EQUIPMENT ELECTRICAL CHARACTERISTICS.
2. PROVIDE CONTACTOR SWITCH AT EXTERIOR DOOR THAT SHALL ENERGIZE AIR CURTAIN FAN WHEN OPEN.

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Zimmer Development

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC SCHEDULES

ORIG SUBMISSION: 2022.05.25

SHEET:
M-501

OWNERS REVIEW SET

E D C B A

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE

TERMINAL UNIT SCHEDULE LEVEL 1

NO.	TYPE (NOTE 1)	PRIMARY CFM			FAN CFM	HOT WATER COIL			ELECTRIC HEATING COIL		SOUND POWER LEVEL, dB (NOTE 4)					
											OCTAVE BAND					
											CASING RADIATED			DISCHARGE		
		MAXIMUM COOLING	MAXIMUM HEATING	MINIMUM		CAPACITY MBH (NOTE 2)	GPM (NOTE 3)	PIPE RUNOUT SIZES, IN.	CAPACITY kW (NOTE 2)	NO. OF STEPS	2	3	4	2	3	4
TU-1-1																
TU-1-1																
TU-1-2																
TU-1-3																
TU-1-4																
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TU-1-27																
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TERMINAL UNIT SCHEDULE LEVEL 2

NO.	TYPE (NOTE 1)	PRIMARY CFM			FAN CFM	HOT WATER COIL			ELECTRIC HEATING COIL		SOUND POWER LEVEL, dB (NOTE 4)					
											OCTAVE BAND					
											CASING RADIATED			DISCHARGE		
		MAXIMUM COOLING	MAXIMUM HEATING	MINIMUM		CAPACITY MBH (NOTE 2)	GPM (NOTE 3)	PIPE RUNOUT SIZES, IN.	CAPACITY kW (NOTE 2)	NO. OF STEPS	2	3	4	2	3	4
TU-2-1																
TU-2-2																
TU-2-3																
TU-2-4																
TU-2-5																
TU-2-6																
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TU-2-30																
TU-2-31																

TERMINAL UNIT SCHEDULE LEVEL 3

NO.	TYPE (NOTE 1)	PRIMARY CFM			FAN CFM	HOT WATER COIL			ELECTRIC HEATING COIL		SOUND POWER LEVEL, dB (NOTE 4)					
											OCTAVE BAND					
											CASING RADIATED			DISCHARGE		
		MAXIMUM COOLING	MAXIMUM HEATING	MINIMUM		CAPACITY MBH (NOTE 2)	GPM (NOTE 3)	PIPE RUNOUT SIZES, IN.	CAPACITY kW (NOTE 2)	NO. OF STEPS	2	3	4	2	3	4
TU-3-1																
TU-3-2																
TU-3-3																
TU-3-4																
TU-3-5																
TU-3-6																
TU-3-7																
TU-3-7																
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TU-3-18																
TU-3-20																
TU-3-21																
TU-3-22																
TU-3-23																
TU-3-24																

NOTES:

1. TYPE:
   VV VARIABLE VOLUME - R REHEAT
2. CAPACITY BASED ON 55°F EAT FOR VV-R AND CV-R UNITS, AND 66°F EAT FOR FPS AND FPP UNITS.
3. SEE SPECIFICATIONS FOR AHRI TESTING/CERTIFICATION REQUIREMENTS AND SUPPLEMENTAL SOUND ATTENUATION REQUIREMENTS. FOR TERMINAL UNITS WHERE THE SOUND POWER LEVEL FIELDS OF THE SCHEDULE ABOVE ARE LEFT BLANK, THE MAXIMUM ALLOWABLE SOUND POWER LEVELS IN dB @ 10 pW, SHALL BE OF THE FOLLOWING LEVELS:

	OCTAVE BAND		
	2	3	4
CASING RADIATED, LESS THAN 400 CFM	58	58	54
CASING RADIATED, 400 CFM TO 700 CFM	62	62	58
CASING RADIATED, 700 CFM OR MORE	64	64	59
DISCHARGE, LESS THAN 400 CFM	62	59	61
DISCHARGE, 400 CFM TO 700 CFM	70	67	64
DISCHARGE, 700 CFM OR MORE	70	68	68

   LEVELS BASED ON MAXIMUM PRIMARY CFM AND MINIMUM DIFFERENTIAL STATIC PRESSURE OF 1" WG FOR VV AND CV UNITS, AND FAN CFM FOR FPS AND FPP UNITS.
4. DIFFERENTIAL STATIC PRESSURE DROP ACROSS COMPLETE ASSEMBLY, INCLUDING HEATING COIL, FOR ALL UNITS SHALL NOT EXCEED 0.3" WG APD.
5. SELECT FAN-POWERED UNITS FOR SCHEDULED CAPACITY AT MEDIUM SPEED AND 0.25" WG EXTERNAL STATIC PRESSURE.
6. REFER TO THE ELECTRICAL DRAWINGS FOR THE EQUIPMENT ELECTRICAL CHARACTERISTICS.
7. THE DRAWINGS INDICATE THE DESIGN INTENT TO PROVIDE ACCESS TO HEATING COILS, CONTROL PANELS, AND ACCESS DOORS. IF TERMINAL UNITS PROVIDED ARE CONFIGURED DIFFERENTLY, THE ACCESS REQUIREMENTS SHALL BE ADJUSTED IN THE FIELD.
8. INCLUDE NH ISOLATORS (0.25 IN. MINIMUM STATIC DEFLECTION) FOR ALL TERMINAL UNITS LOCATED WITHIN GALLERY SPACES.

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC SCHEDULES

ORIG SUBMISSION: 2022.05.25

SHEET:
M-502

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AIR DISTRIBUTION SCHEDULE

PRODUCT SPECIFICATIONS:

1. ACTION SUBMITTALS - PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
   a. DATA SHEET: INDICATE MATERIALS OF CONSTRUCTION, FINISH, AND MOUNTING DETAILS; AND PERFORMANCE DATA INCLUDING THROW AND DROP, STATIC-PRESSURE DROP, AND NOISE RATINGS.
2. SELECTION OF GRILLES, REGISTERS AND DIFFUSERS SHALL BE BASED ON AIR INTRODUCED AT A 20°F TEMPERATURE DIFFERENTIAL.
3. GRILLES AND REGISTERS WITH BORDERS SHALL HAVE FELT OR RUBBER GASKETS CEMENTED TO THE BACK FACE AND HOLDING SCREWS NOT OVER 18" ON CENTER AROUND THE PERIMETER.
4. WALL-MOUNTED GRILLES AND REGISTERS LOCATED LESS THAN 7' ABOVE FINISHED FLOOR SHALL BE HEAVY DUTY, IMPACT-RESISTANT TYPE.
5. DIFFUSERS IN LAY-IN CEILINGS SHALL LAY IN A NOMINAL 24" X 24" GRID OPENING AND SHALL BE FURNISHED WITHOUT EXPOSED FLANGES.
6. INTERNAL PARTS OF DIFFUSERS SHALL BE DESIGNED SO THEY CAN BE ADJUSTED, REMOVED, AND ASSEMBLED WITHOUT SPECIAL TOOLS.
7. DIFFUSERS SHALL HAVE ROUND NECKS OR SHALL BE PROVIDED WITH SQUARE-TO-ROUND COLLARS WHERE CONNECTED TO ROUND OR FLEXIBLE DUCT.
8. FINISHES, UNLESS OTHERWISE SPECIFIED HEREIN:
   a. STEEL GRILLES AND REGISTERS: WHITE BAKED ENAMEL.
   b. DIFFUSER FACES AND FRAMES: BAKED ENAMEL, COLOR SELECTED BY ARCHITECT.
   c. DIFFUSERS INTERIOR: SAME AS FACE AND FRAME.
   e. T-BAR SLOT DIFFUSERS: BAKED ENAMEL, COLOR SELECTED BY ARCHITECT, INTERIOR - FLAT BLACK.
9. GRILLES, REGISTERS AND DIFFUSERS SHALL BE PROVIDED WITH FRAMES, BORDERS, AND MOUNTING ATTACHMENTS FOR INSTALLATION IN THE ACTUAL WALL, SOFFIT, AND CEILING CONSTRUCTION IN WHICH INSTALLED.
10. WALL RETURN AND RELIEF GRILLES INSTALLED ABOVE EYE LEVEL SHALL BE INSTALLED WITH BLADES ANGLED SO THE INSIDE OF THE DUCT OR THE ADJACENT SPACE WILL NOT BE VISIBLE THROUGH THE GRILLES.
11. EXAMINATION
   a. EXAMINE AREAS WHERE DIFFUSERS ARE INSTALLED FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF EQUIPMENT.
   b. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
12. INSTALLATION
   a. INSTALL DIFFUSERS LEVEL AND PLUMB.
   b. OUTLETS AND INLETS: DRAWINGS INDICATE GENERAL ARRANGEMENT OF DUCTS, FITTINGS, AND ACCESSORIES. AIR OUTLET AND INLET LOCATIONS HAVE BEEN INDICATED TO ACHIEVE DESIGN REQUIREMENTS FOR AIR VOLUME, NOISE CRITERIA, AIRFLOW PATTERN, THROW, AND PRESSURE DROP. MAKE FINAL LOCATIONS WHERE INDICATED, AS MUCH AS PRACTICAL. FOR UNITS INSTALLED IN LAY-IN CEILING PANELS, LOCATE UNITS IN THE CENTER OF PANEL. WHERE ARCHITECTURAL FEATURES OR OTHER ITEMS CONFLICT WITH INSTALLATION, NOTIFY ARCHITECT AND ENGINEER. FOR A DETERMINATION OF FINAL LOCATION.
   c. INSTALL DIFFUSERS WITH AIRTIGHT CONNECTIONS TO DUCTS AND TO ALLOW SERVICE AND MAINTENANCE OF DAMPERS, AIR EXTRACTORS, AND FIRE DAMPERS.
   d. INSTALL REGISTERS AND GRILLES WITH AIRTIGHT CONNECTIONS TO DUCTS AND TO ALLOW SERVICE AND MAINTENANCE OF DAMPERS, AIR EXTRACTORS, AND FIRE DAMPERS.
13. AFTER INSTALLATION, ADJUST DIFFUSERS TO AIR PATTERNS INDICATED, OR AS DIRECTED, BEFORE STARTING AIR BALANCING.

TYPE	CHARACTERISTICS					MANUFACTURER	DESCRIPTION
S-PF	SIZE 24"X24" 12"X12"	--- --- ---	--- --- ---	--- --- ---	--- --- ---	NOTE 1	SQUARE PLATE FACE DIFFUSER TYPE WITH SINGLE SQUARE AIR DIFFUSION PANEL. DIFFUSERS SHALL HAVE AN 18" X 18" STEEL FACE PANEL MOUNTED ON AN AERODYNAMICALLY SHAPED, ONE-PIECE, SEAMLESS 24" X 24" BACKPAN. EXPOSED SURFACES OF FACE PANELS SHALL BE SMOOTH, FLAT, AND FREE OF VISIBLE FASTENERS.
S-LF	---	---	---	---	---	NOTE 1	SQUARE LOUVERED FACE DIFFUSER TYPE, 24" X 24" FACE, WITH MITERED CORNERS[, AND HORIZONTAL/VERTICAL PATTERN ADJUSTMENT DEVICE].
S-SG	---	---	---	---	---	NOTE 1	SIDEWALL SUPPLY GRILLE, DOUBLE-DEFLECTION TYPE WITH VERTICAL FRONT BLADES AND HORIZONTAL REAR BLADES.
S-LB S-LB-1 S-LB-2	BAR THICKNESS ON CENTER 0.250" 0.250"	BAR SPACING 0.50" 0.50"	DEFLECTION 15° 15°	MEMBER SPACING ON CENTER 9" 9"	WIDTH 10" 10"	NOTE 1	LINEAR BAR DIFFUSER, EXTRUDED ALUMINUM, CONTINUOUS MULTIPLE-BAR FOR FLOOR INSTALLATION. WHERE INDICATED ON THE DRAWINGS. BARS SHALL BE 0.25" THICK, 15° DEFLECTION, 0.25" ON CENTER; SUPPORT MEMBERS SHALL NOT EXCEED 18" ON CENTER.AND WIDTH SHALL BE 10". DIFFUSERS SHALL BE CONTINUOUS WHERE INDICATED ON THE DRAWINGS. PROVIDE BLANK-OFF SECTIONS, MITERED CORNERS, AND VERTICAL PATTERN CONTROL DAMPERS. FINISH AS DIRECTED BY ARCHITECT. A. FLOOR DIFFUSERS SHALL HAVE PERMANENT FINISH DESIGNED FOR HEAVY DUTY TRAFFIC. PROVIDE HEAVY DUTY FRAME FOR FLUSH FLOOR MOUNTING WITH VERTICAL EDGE TO ABUT CARPET.
S-LD S-LD-1	NUMBER OF SLOTS 2	SLOT WIDTH 0.5"	---	---	---	NOTE 1	LINEAR DIFFUSER, EXTRUDED ALUMINUM TYPE, WITH 1" WIDE SLOTS WITH INTEGRAL VOLUME CONTROL AND PATTERN ADJUSTMENT AND CONCEALED MOUNTING FRAME. FINISH IN BAKED ENAMEL WITH WHITE FACE, AND INTERIOR COMPONENTS VISIBLE AFTER INSTALLATION FINISHED FLAT BLACK.
R-RP	---	---	---	---	---	NOTE 1	PERFORATED PLATE GRILLE.
R-SG	---	---	---	---	---	NOTE 1	SIDEWALL GRILLE, SINGLE-DEFLECTION, 35° FIXED POSITION, 0.5" ON CENTER, HORIZONTAL BLADES.
R-EG	---	---	---	---	---	NOTE 1	EGGCRATE GRILLE, 0.5" X 0.5" X 0.5" FABRICATED ALUMINUM EGGCRATE. [WHERE INDICATED ON THE DRAWINGS, PROVIDE HINGED CORES OR SEPARATE HINGED MOUNTING FRAMES.]
R-SR	---	---	---	---	---	NOTE 1	SIDEWALL REGISTER, SINGLE-DEFLECTION, 35° FIXED POSITION, 0.5" ON CENTER, HORIZONTAL BLADES WITH OPPOSED-BLADE VOLUME DAMPER.
R-ER	---	---	---	---	---	NOTE 1	EGGCRATE REGISTER, 0.5" X 0.5" X 0.5" FABRICATED ALUMINUM EGGCRATE WITH OPPOSED-BLADE VOLUME DAMPER.

NOTES:
1. MANUFACTURER: ANEMOSTAT, CARNES, KRUEGER, METAL*AIRE, NAILOR, E.H. PRICE, TITUS, OR TUTTLE & BAILEY.

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HVAC SCHEDULES

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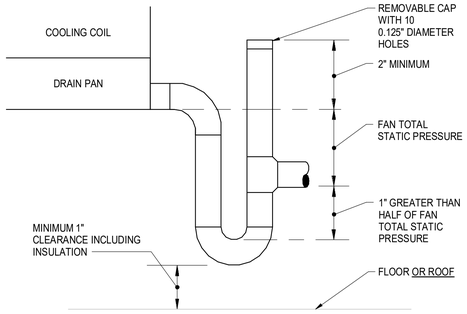
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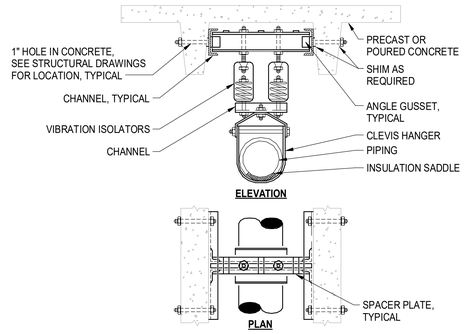
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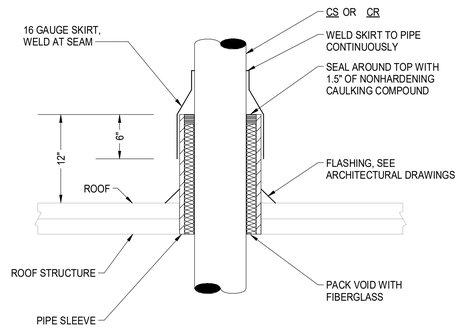
NOTES:
1. PIPING SHALL BE FULL SIZE OF DRAIN CONNECTION.
2. EXTEND DRAIN PIPING AS INDICATED ON THE DRAWINGS OR TO THE NEAREST INDIRECT WASTE RECEPTOR FLOOR DRAIN OR ROOF RECEPTOR ADJACENT TO EQUIPMENT.
3. WHERE SUPPORTED, ISOLATE DRAIN PIPING FROM CLAMPS WITH TYPE PI ISOLATORS.

1 CONDENSATE DRAIN FOR DRAW THROUGH COOLING COILS
NO SCALE

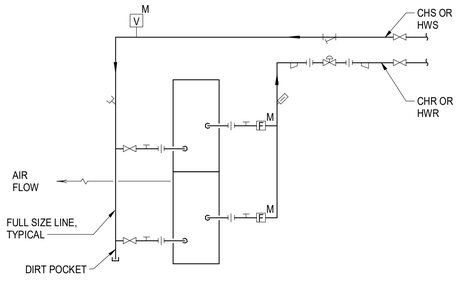


NOTES:
1. SIZE STRUCTURAL MEMBERS FOR THE LOAD TO BE SUPPORTED, WITH A MINIMUM 2:1 SAFETY FACTOR.
2. PAINT ENTIRE ASSEMBLY AS SPECIFIED.
3. ANGLE AND PLATE CONNECTIONS SHALL BE MADE WITH CONTINUOUS WELDS.
4. SEE SPECIFICATIONS FOR VIBRATION ISOLATION REQUIREMENTS.

2 PIPING SUPPORTS
NO SCALE

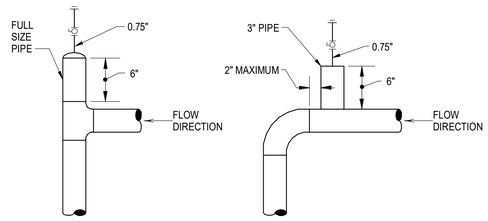


3 PIPING ROOF PENETRATIONS
NO SCALE



NOTES:
1. COIL CONNECTIONS SHALL BE ARRANGED TO ACCOMMODATE COIL PULL AND TO ISOLATE COIL PIPING FROM SYSTEM.
2. PROVIDE MEANS OF DRAINING AND VENTING EACH COIL.
3. DELETE INDIVIDUAL COIL ISOLATION VALVES IN SINGLE COIL APPLICATIONS.

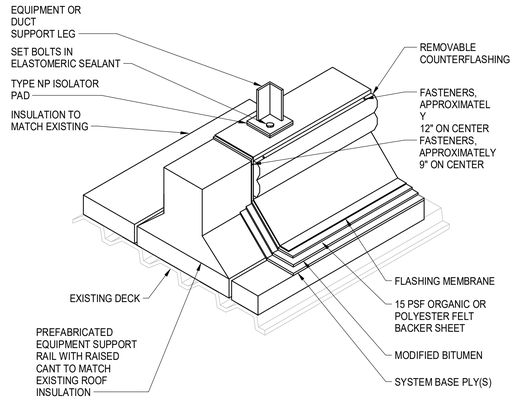
4 WATER COILS WITH 2-WAY VALVES IN AHUs
NO SCALE



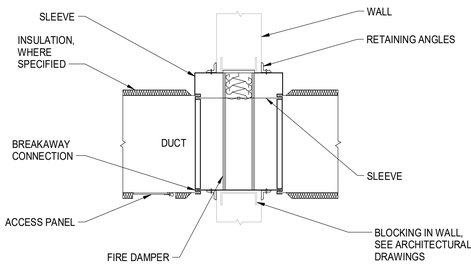
FOR PIPING 2.5" AND SMALLER

FOR PIPING 3" AND LARGER

5 MANUAL AIR VENTS
NO SCALE

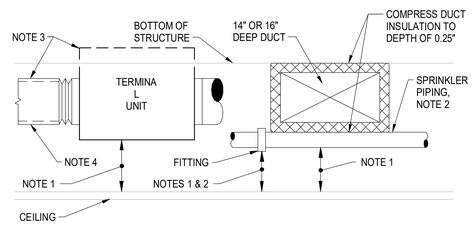


6 EQUIPMENT SUPPORT RAILS
NO SCALE



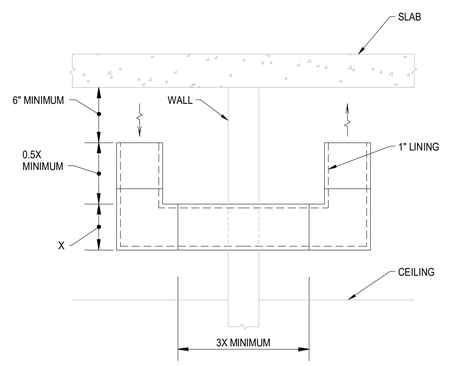
NOTES:
1. INSTALL DAMPERS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. TAPE INSULATION TO DUCT AT BREAKAWAY CONNECTIONS. BREAKAWAY CONNECTIONS AND RETAINING ANGLES SHALL BE VISIBLE.
3. TYPE B FIRE DAMPER SHOWN. INSTALLATION SIMILAR FOR TYPE A AND TYPE C DAMPERS.
4. INSTALLATION SIMILAR FOR COMBINATION FIRE/SMOKE DAMPERS.
5. SEAL BREAKAWAY CONNECTIONS.
6. LOCATE ACCESS PANEL ON SIDE OF WALL WITH NO CEILING, OR OVER CORRIDOR CEILING, WHERE APPLICABLE.

7 DUCT WALL PENETRATIONS WITH FIRE DAMPER
NO SCALE



NOTES:
1. MAINTAIN MINIMUM 7" HIGH CLEARANCE FROM BOTTOM OF CEILING FOR LUMINAIRES.
2. DO NOT LOCATE SPRINKLER PIPE FITTINGS UNDER DUCTWORK. DUCTWORK FLANGES, OR TERMINAL UNITS UNLESS 7" CLEARANCE CAN BE MAINTAINED.
3. OFFSET TERMINAL UNITS AND CONNECTING DUCTWORK UP INTO STRUCTURE OR BETWEEN JOISTS TO MAINTAIN 7" CLEARANCE WHERE UNITS HAVE A DEPTH GREATER THAN 16".
4. OFFSET DUCTWORK AND RUNOUTS TO PASS BETWEEN LUMINAIRES TALLER THAN 6.75".
5. OFFSET PIPING, DUCTWORK AND EQUIPMENT TO ACCOMMODATE CEILING COVES AND FRAMING.

8 DUCTWORK INSTALLATION AND COORDINATION
NO SCALE



NOTES:
1. SEAL WALL PENETRATION AIRTIGHT.
2. DUCTS SHALL BE MINIMUM 22 GAUGE SHEET METAL.
3. SEE FLOOR PLANS FOR DUCT SIZES.

9 TRANSFER DUCTS
NO SCALE

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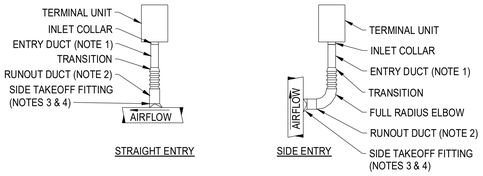
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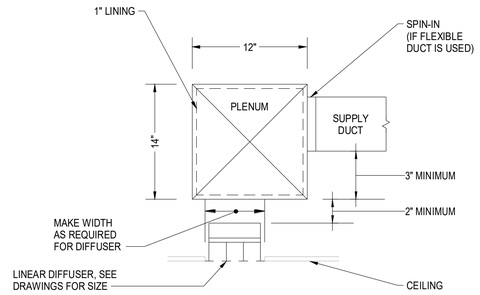


NOTES:
1. ENTRY DUCT SHALL MATCH INLET COLLAR SIZE, BE INDEPENDENTLY SUPPORTED FROM THE TERMINAL UNIT, AND HAVE A TOTAL LENGTH THAT IS 3 TIMES THE DIAMETER OR WIDTH OF THE INLET COLLAR SIZE.
2. THE RUNOUT FROM THE PRIMARY DUCT TO THE ENTRY DUCT, INCLUDING THE FLEXIBLE DUCT, SHALL BE SIZED AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INLET COLLAR AND ENTRY DUCT SIZES	RUNOUT FROM PRIMARY TO ENTRY DUCT
4"ø	8"ø
5"ø	8"ø
6"ø	10"ø
7"ø	12"ø
8"ø	12"ø
9"ø	14"ø
10"ø	14"ø
12"ø	16"ø
14"ø	18"ø
16"ø	20"ø
24"X16"	AS INDICATED ON PLANS

3. FOR ROUND TAKEOFF CONNECTIONS TO ROUND OR FLAT OVAL PRIMARY SUPPLY DUCTS,PROVIDE A CONICAL TAP IN LIEU OF A SIDE TAKEOFF FITTING.
4. FOR AIR HANDLING SYSTEMS WHERE THE PRIMARY SUPPLY DUCT DISTRIBUTION IS PROVIDE A CONICAL TAP IN LIEU OF A SIDE TAKEOFF FITTING. FITTINGS SHALL BE CONCENTRIC TYPE.

1 TERMINAL UNIT INLET
NO SCALE



NOTES:
1. NECK AND PLENUM LENGTH SHALL BE DETERMINED BY ACTIVE DIFFUSER LENGTH.
2. DIFFUSER MOUNTING FRAME SHALL BE DETERMINED BY CEILING CONSTRUCTION AND MOUNTING CONDITIONS. SEE ARCHITECTURAL DRAWINGS.
3. TRANSITION AND/OR ADJUST PLENUM DIMENSIONS TO COORDINATE WITH STRUCTURE OR OTHER UTILITIES.
4. SEE DRAWINGS FOR SPECIAL PLENUM SIZES.

2 LINEAR DIFFUSERS
NO SCALE

Zimmer Development

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
M-602

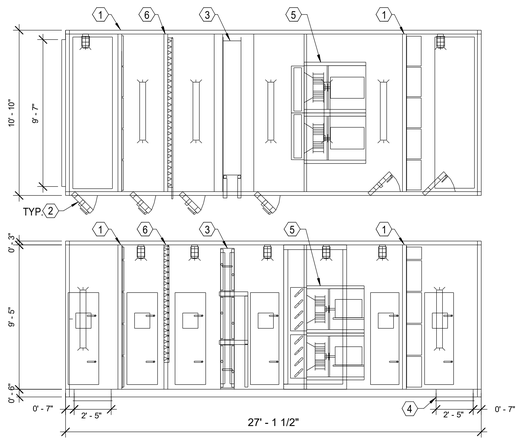
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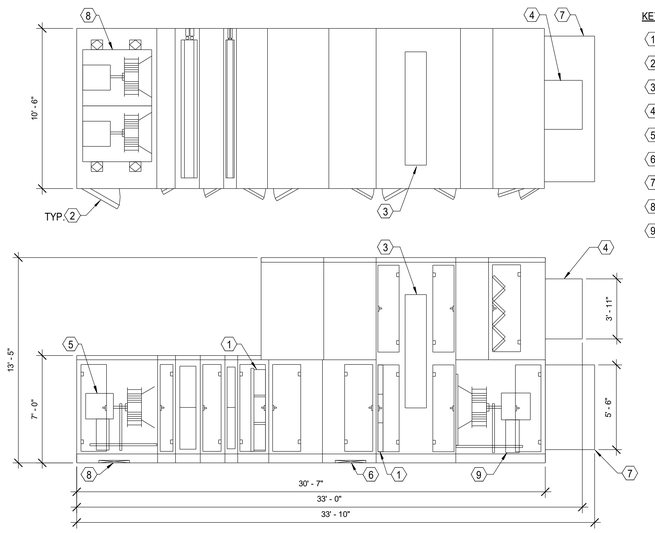


KEYNOTES:

1. FILTER BANK
2. ACCESS DOOR
3. CHILLED WATER COIL
4. SUPPLY AIR OPENING
5. SUPPLY FAN ARRAY
6. HUMIDIFIER

1 AIR HANDLING UNIT DETAIL (AHU-2-1 & AHU-2-2)

1/4" = 1'-0"



KEYNOTES:

1. FILTER BANK
2. ACCESS DOOR
3. ENERGY WHEEL
4. SUPPLY AIR INLET
5. SUPPLY AIR OUTLET
6. EXHASUT AIR INLET
7. EXHAUST AIR OUTLET
8. SUPPLY FAN ARRAY
9. EXHASUT FAN ARRAY

2 ERU DETAIL

1/4" = 1'-0"

Zimmer Development

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
M-603

OWNERS REVIEW SET

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HVAC CONTROLS LEGEND

BCS	SIGNAL TO BCS
BCS	SIGNAL FROM BCS
NETWORK	BACNET NETWORK CONNECTION
FA	SIGNAL FROM FIRE ALARM SYSTEM
	CONSTANT SPEED DRIVE
VFD	VARIABLE FREQUENCY DRIVE
FACP	FIRE ALARM CONTROL PANEL
	FILTER
C / C	COOLING COIL
H / C	HEATING COIL
	CONTROL DAMPER
	CENTRIFUGAL FAN
NO	TWO-WAY CONTROL VALVE
	LOUVER
	PUMP
	TERMINAL UNIT
T	ROOM TEMPERATURE SENSOR
T	ROOM THERMOSTAT
C	CARBON DIOXIDE SENSOR
O	OCCUPANCY SENSOR
CR	CURRENT SENSING RELAY
DP	DIFFERENTIAL PRESSURE SENSOR SENSING LOCATION
ES	END SWITCH
FA	FIRE ALARM RELAY (BY DIVISION 28)
H	ROOM HUMIDITY SENSOR
H	ROOM HUMIDISTAT
HL	HIGH LIMIT SWITCH
LL	LOW LIMIT SWITCH
FACP / SD	DUCT SMOKE DETECTOR BY FA
	LOCAL INTERLOCK WIRING
T	DUCT OR PIPE TEMPERATURE SENSOR
H	DUCT HUMIDITY SENSOR
F	FLOW METER
A	ALARM
T	AVERAGING TEMPERATURE SENSOR
T	AVERAGING TYPE THERMOSTAT
FZ	LOW LIMIT SAFETY THERMOSTAT (FREEZE STAT)
SP	STATIC PRESSURE SENSOR
PS	DIFFERENTIAL PRESSURE SWITCH
DP	DIFFERENTIAL PRESSURE SENSOR
CT	CURRENT TRANSDUCER
S	STARTER
	DIRECTION OF AIRFLOW
	DIRECTION OF WATERFLOW
DP	DIFFERENTIAL PRESSURE
CS	CONDENSATE SENSOR
E	EMERGENCY FAN SHUTDOWN STATION
M	MANUAL PUSH BUTTON
HS	HIGH STATIC SHUTDOWN

ABBREVIATIONS

AP	AIR PRESSURE
APD	AIR PRESSURE DROP
ARCH	ARCHITECT/ARCHITECTURAL
CFM	CUBIC FEET PER MINUTE
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
DB	DRY BULB
BCS	BUILDING CONTROL SYSTEM
DN	DOWN
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
GPM	GALLONS PER MINUTE
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
PRV	PRESSURE REDUCING VALVE
SA	SOUND ATTENTUATOR
TEMP	TEMPERATURE
TYP	TYPICAL
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB
WG	WATER GAUGE
WPD	WATER PRESSURE DROP

AUTOMATIC TEMPERATURE CONTROLS GENERAL NOTES

GENERAL

1. DESCRIPTION
   A. GENERAL PROVISIONS AND HVAC SYSTEMS ARE SPECIFIED IN OTHER SECTIONS OF DIVISION 23.
   B. THIS SECTION COVERS AUTOMATIC TEMPERATURE CONTROL SYSTEMS AND EQUIPMENT. AUTOMATIC TEMPERATURE CONTROL SYSTEMS INCLUDE THE BUILDING CONTROL SYSTEM (BCS), FACILITY MANAGEMENT CONTROL SYSTEM (FMCS) AND OTHER ANCILLARY SYSTEMS SPECIFIED HEREIN.
   C. THIS SECTION INCLUDES RESPONSIBILITIES AND OBLIGATIONS IN SUPPORT OF THE PERFORMANCE VERIFICATION SPECIFIED IN SECTION 23 00 90, HVAC PERFORMANCE VERIFICATION AND COMMISSIONING SPECIFIED IN SECTION 230800 COMMISSIONING OF HVAC.
   D. THE BCS INCLUDES THE NETWORK OF INTEROPERABLE, STAND-ALONE DIGITAL CONTROLLERS COMMUNICATING VIA NETWORK DEVICES.
2. RELATED WORK
   A. THE INSTALLATION OF MOTOR STARTERS THAT ARE NOT FACTORY-INSTALLED, THERMAL OVERLOAD SWITCHES, AND POWER WIRING TO MOTORS, STARTERS, THERMAL OVERLOAD SWITCHES, ELECTRIC HUMIDIFIERS, AND CONTACTORS, IS SPECIFIED IN ANOTHER DIVISION. THIS SECTION INCLUDES THE FURNISHING AND INSTALLATION OF CONTROLS AND WIRING FOR AUTOMATIC CONTROLS, ELECTRIC DAMPER AND VALVE ACTUATORS AND MOTORS, TERMINAL UNIT CONTROLLERS, INTERLOCKS, STARTING CIRCUITS, AND 120 V AND LOW VOLTAGE POWER WIRING TO POWER CONSUMING CONTROL DEVICES
   B. AREA SMOKE DETECTORS ARE PROVIDED, INSTALLED AND WIRED UNDER DIVISION 28. DUCT SMOKE DETECTORS SHALL BE INSTALLED UNDER DIVISION 23, BUT FURNISHED AND WIRED INTO THE FIRE ALARM SYSTEM UNDER DIVISION 28. THIS SECTION INCLUDES WIRING FIRE ALARM SIGNAL RELAYS, PROVIDED AND INSTALLED UNDER ANOTHER DIVISION, TO THE AUTOMATIC TEMPERATURE CONTROL SYSTEMS.
   C. THE MONITORING AND DATA LOGGING CAPABILITIES OF THE BCS SHALL BE AVAILABLE FOR USE IN THE COMMISSIONING PROCESS.
3. QUALITY ASSURANCE
   A. WITHIN 30 DAYS AFTER NOTICE TO PROCEED, SUBMIT RESUMES FOR THE PROJECT MANAGER, APPLICATION ENGINEER AND FIELD SUPERVISOR ASSIGNED TO THE PROJECT. THE OWNER AND ENGINEER RESERVE THE RIGHT TO EXCLUDE PROPOSED STAFF NOT HAVING THE EXPERIENCE DEEMED SUFFICIENT FOR THE PROJECT. THE PROPOSED STAFF SHALL HAVE THE FOLLOWING MINIMUM EXPERIENCE LEVELS:
      1. PROJECT MANAGER: 5 YEARS EXPERIENCE, AND TWO PROJECTS OF SIMILAR SIZE AND TYPE.
      2. APPLICATION ENGINEER: 7 YEARS EXPERIENCE, AND BE MANUFACTURER-CERTIFIED FOR THE SYSTEM BEING PROVIDED.
      3. FIELD SUPERVISOR: 5 YEARS EXPERIENCE, AND BE MANUFACTURER-CERTIFIED FOR THE SYSTEM BEING PROVIDED.
   B. INSTALLATION SHALL BE BY TECHNICIANS TRAINED BY THE CONTROL MANUFACTURER.

4. SUBMITTALS

   A. SUBMIT A SINGLE COMPREHENSIVE SUBMITTAL PACKAGE INCLUDING THE FOLLOWING ITEMS. AT THE CONTRACTOR'S OPTION, CONTROL VALVES AND CONTROL DAMPERS MAY BE SUBMITTED IN A SEPARATE SUBMITTAL IN ADVANCE OF THE OTHER ITEMS TO MAINTAIN PROJECT SCHEDULE.

      1. BCS DATA: INCLUDING CONTROL MANUFACTURER'S DATA SHEETS ON BCS CONTROLLERS, NACS, WORKSTATIONS, SENSORS, METERS, RELAYS, ACTUATORS, MOTORS, TERMINAL UNIT CONTROLLERS, PROTECTION DEVICES, AND OTHER DEVICES SPECIFIED HEREIN. INCLUDE DATA ON SOFTWARE.

      2. NETWORK DATA: INCLUDING SWITCHES, CONVERTERS, ROUTERS, BROADCAST MANAGEMENT DEVICES AND CABLING, AS NECESSARY.

      3. GRAPHICS: INCLUDE ILLUSTRATIONS OF PROPOSED GRAPHICS DISPLAYS, INCLUDING A FLOWCHART OR SITE MAP INDICATING SYSTEM NAVIGATION LINKS.

      4. DIAGRAMS: SEPARATE FIELD WIRING DIAGRAMS FOR EACH SYSTEM, INCLUDING MOTOR STARTING AND INTERLOCK WIRING, LADDER DIAGRAMS, CONTROL WIRING, INTERIOR ELECTRICAL CIRCUITS OF CONTROL INSTRUMENTS WITH TERMINAL AND CONTROL DEVICE DESIGNATIONS, ACTUATORS AND MOTORS, COLORS OF WIRES, LOCATIONS OF INSTRUMENTS AND REMOTE ELEMENTS, INTERFACES WITH COMMUNICATIONS EQUIPMENT PROVIDED WITH EQUIPMENT SPECIFIED IN OTHER SECTIONS, AND NORMAL POSITION OF RELAYS. EACH DIAGRAM SHALL HAVE TERMINALS LABELED AS THEY WILL BE MARKED ON THE INSTALLED EQUIPMENT.

      5. SYSTEM ARCHITECTURE: PROVIDE A DRAWING OF THE PROPOSED SYSTEM ARCHITECTURE SHOWING CONFIGURATION AND LOCATIONS FOR BCS CONTROLLERS, TERMINAL UNIT CONTROLLERS, SYSTEM SERVERS, CONTROL WIRING FOR EACH DEVICE, AND HARDWARE AND WIRING FOR CONNECTIONS. INDICATE THE SPARE CAPACITY AND BACNET INSTANCE NUMBER OR NETWORK ADDRESS FOR EACH DEVICE. INCLUDE NETWORKING HARDWARE SUCH AS SWITCHES, CONVERTERS, ROUTERS, AND BROADCAST MANAGEMENT DEVICES, AND INDICATE IP ADDRESSES. PROVIDE DIAGRAMS OF THE PROPOSED CONTROL POWER INFRASTRUCTURE, INCLUDING THE DESIGNATION OF THE ELECTRICAL PANELBOARDS THAT WILL BE UTILIZED TO PROVIDE CONTROL POWER, THE QUANTITY, CONFIGURATION, SIZE, AND LOCATION OF CONTROLS SYSTEM TRANSFORMERS, AND THE DISTRIBUTION WIRING TO POWER CONSUMING CONTROL DEVICES. PROVIDE FLOOR PLANS LOCATING EQUIPMENT COORDINATED WITH THE WORK OF OTHER TRADES.

      6. UNINTERRUPTIBLE POWER SUPPLIES: PROVIDE WIRING DIAGRAMS AND SIZING CALCULATIONS FOR UNINTERRUPTIBLE POWER SUPPLIES.

      7. SEQUENCES OF OPERATION: COMPLETE DETAILED SEQUENCES OF OPERATION, INCLUDING A NARRATIVE OF THE SYSTEM OPERATION AND INTERACTIONS AND INTERLOCKS WITH OTHER SYSTEMS, NOTATIONS INDICATING WHETHER INTERLOCK OR INTERACTION IS ACCOMPLISHED THROUGH SOFTWARE OR HARD WIRED CONNECTIONS, DETAILED DELINEATION OF CONTROL BETWEEN PACKAGED CONTROLS AND THE BCS, AND SEQUENCES OF OPERATION FOR PACKAGED CONTROLLED EQUIPMENT THAT INTERFACES WITH THE BCS.

      8. SYSTEM IMPLEMENTATION REQUIREMENTS: NETWORK, WORKSTATION, AND WEB BROWSER REQUIREMENTS FOR BCS FUNCTIONALITY ON THE OWNER'S SYSTEMS. INDICATE OPERATING SYSTEM AND JAVA REQUIREMENTS FOR COMPATIBILITY.

5. PROJECT CONDITIONS
   A. VISIT THE PROJECT BEFORE PREPARING A BID. ATTENTION IS CALLED TO THE FACT THAT THIS PROJECT INVOLVES MODIFICATION AND REWORKING OF AN EXISTING TEMPERATURE CONTROL SYSTEM. EXCEPT AS SPECIFIED HEREIN OR INDICATED OTHERWISE ON THE DRAWINGS, EXISTING CONTROL EQUIPMENT, WHERE APPLICABLE, MAY BE REUSED AFTER REPAIRING TO PLACE IN FIRST-CLASS OPERATING CONDITION. REUSED INSTRUMENTS SHALL BEAR THE SAME WARRANTY AS NEW INSTRUMENTS. WHERE NEW CONTROLLERS ARE PROVIDED, EXISTING PANELS AND DEVICES SHALL BE DISCONNECTED AND REMOVED, AND EXISTING CONDUIT, WIRING, PIPING, TUBING, EQUIPMENT, AND DEVICES THAT ARE NOT REUSED AS PART OF THE RENOVATED CONTROL SYSTEM SHALL BE REMOVED.
   B. ADVISE, IN WRITING, OF ANY MALFUNCTIONS OR INOPERATIVE CONTROL APPARATUS OR INSTRUMENTS THAT BECOME APPARENT DURING THE COURSE OF THE WORK IN PORTIONS OF THE TEMPERATURE CONTROL SYSTEM THAT ARE NOT DIRECTLY AFFECTED BY THIS PROJECT.

PRODUCTS

1. ACCEPTABLE MANUFACTURERS
   A. AUTOMATED LOGIC WEBCTLR, DELTA CONTROLS ENTELIWEB, JOHNSON CONTROLS METASYS, SCHNEIDER ELECTRIC ECOSTRUXURE, OR SIEMENS APOGEE-DESIGO CC.
2. SYSTEM ARCHITECTURE
   A. PROVIDE A COMPLETE PEER-TO-PEER NETWORKED, STAND-ALONE, DISTRIBUTED BCS TO PERFORM THE CONTROLS FUNCTIONS AND MONITOR THE POINTS SPECIFIED HEREIN AND ON THE DRAWINGS. THE BCS SHALL BE ENGINEERED AND EQUIPMENT SELECTED BY THE MANUFACTURER AS REQUIRED TO MEET THE PERFORMANCE SPECIFIED HEREIN. THE BCS SHALL BE COMPRISED OF A NETWORK OF INTEROPERABLE, STAND-ALONE DIGITAL CONTROLLERS COMMUNICATING VIA THE LONWORKS OR BACNET COMMUNICATION PROTOCOLS WITH ONE OR MULTIPLE NACS. LOWER LEVEL NETWORKS UTILIZING BACNET OVER MS/TP SHALL ONLY SERVE TERMINAL UNITS. THE FMCS SHALL INTERFACE WITH THE ELECTRIC AND ELECTRONIC SYSTEMS TO PROVIDE CONTROL OUTPUTS AND MONITORING INPUTS TO THE FMCS AS SPECIFIED HEREIN AND AS INDICATED ON THE DRAWINGS. COMPLETE ELECTRIC CONTROL SYSTEMS SHALL BE PROVIDED TO PERFORM SEQUENCES NOT INDICATED TO BE PERFORMED BY THE FMCS. THE BCSS SHALL INTERFACE WITH THE ELECTRIC AND ELECTRONIC SYSTEMS TO PROVIDE CONTROL OUTPUTS AND MONITORING INPUTS TO THE BCSS AS SPECIFIED HEREIN AND AS INDICATED ON THE DRAWINGS. PROVIDE COMMUNICATIONS MEDIA, CONNECTORS, REPEATERS, BRIDGES, SWITCHES, AND ROUTERS NECESSARY TO PROVIDE A FULLY FUNCTIONAL BCS NETWORK. COMPLETE ELECTRIC CONTROL SYSTEMS SHALL BE PROVIDED TO PERFORM SEQUENCES NOT INDICATED TO BE PERFORMED BY THE BCSS. THE LOCATION AND QUANTITY OF BCS CONTROLLERS SHALL BE AS DETERMINED BY THE BCS MANUFACTURER EXCEPT THAT, AS A MINIMUM, A SEPARATE STAND-ALONE CONTROLLER SHALL BE PROVIDED FOR EACH REFRIGERATION PLANT, HEATING PLANT, AIR HANDLING UNIT OVER 3 HP, AND AS INDICATED ON THE DRAWINGS. SENSORS AND CONTROL POINTS FOR EACH SYSTEM SHALL BE CONNECTED TO ITS ASSOCIATED STAND-ALONE CONTROLLER. EACH BCS CONTROLLER SHALL BE DESIGNED TO ALLOW FOR THE FUTURE ADDITION OF AT LEAST 20% OF THE NUMBER OF CONNECTED INPUT/OUTPUT POINTS; IT IS ACCEPTABLE TO ACHIEVE THE 20% SPARE CAPACITY WITH 10% SPARE ON THE BCS CONTROLLER WITH CAPABILITY OF ADDING INPUT/OUTPUT EXPANSION MODULES WITH AN ADDITIONAL 10%. BCS CONTROLLER SPARE CAPACITY SHALL APPLY TO BOTH ANALOG AND DIGITAL CONTROL POINTS. THE BCS AND FMCS, INCLUDING THE SYSTEM SERVERS, THE NETWORK COMPONENTS, AND NETWORK AREA CONTROLLERS (NACS), SHALL BE DESIGNED TO ALLOW FOR THE FUTURE ADDITION OF AT LEAST 100% OF THE NUMBER OF CONTROL OBJECTS CONNECTED TO THE COMPONENTS OR SYSTEMS. AN ALARM CONDITION SHALL BE REPORTED TO THE APPROPRIATE OPERATOR DEVICE NO MORE THAN 10 SECONDS FOLLOWING THE OCCURRENCE OF THAT CONDITION. SENSOR AND CONTROL VALUES DISPLAYED TO THE OPERATOR IN GRAPHICS DISPLAYS SHALL BE DYNAMICALLY UPDATED WITHIN 10 SECONDS OF SIGNIFICANT CHANGE OF VALUE, WITH A TYPICAL RESPONSE TIME OF 1 SECOND OR LESS.
   B. LOWER LEVEL NETWORKS SERVING TERMINAL UNITS, SUCH AS BACNET OVER MS/TP, SHALL BE CONNECTED TO THE ASSOCIATED AIR HANDLING UNIT CONTROLLER. WHEN MULTIPLE LOWER LEVEL NETWORKS ARE REQUIRED FOR A SINGLE AIR HANDLING UNIT, THOSE NETWORKS SHALL BE DIVIDED IN AN ORDERLY METHOD, SUCH AS BY FLOOR OR WING. REMOTE SENSORS SHALL BE WIRED TO THE CONTROLLER ASSOCIATED WITH THAT SENSOR, UNLESS SPECIFIED OTHERWISE.
   C. THE FOLLOWING FUNCTIONS SHALL BE PERFORMED AT THE SERVER OR NAC:
      1. ALARM MONITORING AND ROUTING.
         a. CONTROLLER AND NETWORK FAILURES SHALL BE TREATED AS ALARMS AND ANNUNCIATED.

1. CONTROLLERS
   A. NETWORK AREA CONTROLLERS (NACS):
      1. THE CONTRACTOR SHALL SUPPLY ONE OR MORE NACS. THE QUANTITY AND LOCATION OF NACS IS DEPENDENT ON THE TYPE AND QUANTITY OF CONTROL POINTS AND DEVICES, AND THE FUNCTIONALITY SPECIFIED HEREIN, AND SHALL BE DETERMINED BY THE CONTRACTOR.
      2. NACS SHALL PROVIDE THE INTERFACE BETWEEN THE BUILDING'S COMMUNICATIONS SYSTEM AND THE BCS CONTROL DEVICES, AND PROVIDE GLOBAL SUPERVISORY CONTROL FUNCTIONS OVER THE CONTROL DEVICES CONNECTED TO EACH NAC. IT SHALL BE CAPABLE OF EXECUTING APPLICATION CONTROL PROGRAMS. IT SHALL PERFORM THE FOLLOWING FUNCTIONS:
         a. INTEGRATION OF LONWORKS AND BACNET CONTROLLER DATA.
         b. NETWORK MANAGEMENT FUNCTIONS FOR CONTROL DEVICES.
      3. NACS SHALL HAVE THE FOLLOWING HARDWARE FEATURES AS A MINIMUM:
         a. TWO ETHERNET PORTS - 10/100 MBPS.
         b. ONE LONWORKS INTERFACE PORT - 78KB FTT-10A.
         c. TWO RS-485 PORTS.
         d. BATTERY BACK-UP AND FLASH MEMORY FOR LONG TERM DATA BACKUP, WITH MINIMUM 1 GIGABYTE STORAGE CAPACITY.
      4. LOCAL UPS BATTERY BACKUP SHALL BE INSTALLED WITHIN NAC ENCLOSURE.

      5) NACS SHALL BE CAPABLE OF OPERATING UNDER A TEMPERATURE RANGE BETWEEN 32°F TO 122°F AND A HUMIDITY RANGE BETWEEN 5% TO 95% RH, NON-CONDENSING, AND OF BEING STORED UNDER A TEMPERATURE RANGE BETWEEN 0°F AND 158°F.
      6) NACS SHALL PROVIDE MULTIPLE USER ACCESS TO THE SYSTEM AND SUPPORT FOR ODBC OR SQL. A DATABASE RESIDENT ON THE NACS SHALL BE AN ODBC-COMPLIANT DATABASE OR SHALL PROVIDE AN ODBC DATA ACCESS MECHANISM TO READ AND WRITE DATA STORED WITHIN IT.
      7) ALARM NOTIFICATIONS AND ACTIONS:
         a. NACS SHALL PROVIDE ALARM RECOGNITION, STORAGE, ROUTING, MANAGEMENT, AND ANALYSIS TO SUPPLEMENT DISTRIBUTED CAPABILITIES OF EQUIPMENT OR APPLICATION SPECIFIC CONTROLLERS.
         b. NACS SHALL BE ABLE TO ROUTE ANY ALARM CONDITION TO ANY DEFINED USER LOCATION WHETHER CONNECTED TO A LOCAL NETWORK, OR REMOTE VIA DIAL-UP TELEPHONE CONNECTION OR WIDE-AREA NETWORK.
   A. BCS CONTROLLERS: FIELD PROGRAMMABLE, MICROPROCESSOR-BASED TYPE INCORPORATING DIRECT DIGITAL CONTROL AND ENERGY MANAGEMENT FUNCTIONS. EACH BCS CONTROLLER SHALL PERFORM ITS ASSIGNED CONTROL AND ENERGY MANAGEMENT FUNCTIONS AS A STAND-ALONE UNIT AND SHALL COMPLY WITH FCC PART 15, SUBPART B 2019. PROVIDE A COMMUNICATION INTERFACE FOR COMMUNICATION WITH THE BCS. CONTROLS SHALL BE PERFORMED IN A DIGITAL MANNER USING THE DIGITAL SIGNAL FROM THE MICROPROCESSOR BASED CONTROLLER, CONVERTED THROUGH ELECTRONIC CIRCUITRY FOR MODULATION OF ACTUATORS. EACH BCS CONTROLLER SHALL BE EXPANDABLE BY ADDING ADDITIONAL INPUT/OUTPUT MODULES THAT OPERATE THROUGH THE PROCESSOR OF THE BCS CONTROLLER. THE MASTER PROCESSOR IN THE BCS CONTROLLER SHALL BE ABLE TO MANAGE REMOTE FIELD INTERFACE UNITS THEREBY EXPANDING ITS CONTROL LOOP AND ENERGY MANAGEMENT POINT CAPACITY. EACH BCS CONTROLLER INCLUDING ASSOCIATED INPUT/OUTPUT MODULES SHALL HAVE A MINIMUM OF 10% SPARE INPUT AND OUTPUT POINTS OF EACH TYPE INSTALLED. THE BCS CONTROLLER SHALL BE SUPPLIED WITH A MINIMUM OF 8 HOURS OF BATTERY BACK-UP FOR THE CLOCK OPERATION AND MEMORY RETENTION WITH AN AUTOMATIC BATTERY CHARGER. PROVIDE INTERFACE FOR VALVE AND DAMPER ACTUATORS. BCS CONTROLLER HARDWARE SHALL PROVIDE RELAY OR SOLID STATE ISOLATION ON EACH CONTACT INPUT CIRCUIT AND EACH OUTPUT CIRCUIT TO PREVENT HIGH VOLTAGE SURGES FROM ENTERING THE LOGIC CIRCUITS.
      1. PROVIDE MANUAL HAND-OFF-AUTOMATIC (HOA) OVERRIDE SWITCHES AND MEANS FOR MANUALLY ADJUSTING THE ANALOG OUTPUT OF OUTPUTS CONNECTED TO EACH BCS CONTROLLER. HOA SWITCHES AND MANUAL ADJUSTMENTS SHALL BE EITHER OF A KEY OPERATED DESIGN WITH SWITCHES KEYED ALIKE AND UTILIZING THE SAME KEYING SYSTEM USED FOR OTHER OUTPUTS, OR OTHERWISE PROTECTED FROM UNAUTHORIZED ACCESS BY A KEY LOCKED ENCLOSURE.
      2. BCS CONTROLLERS SHALL BE ARRANGED AND INSTALLED TO ALLOW CONTROLLERS TO SHARE GLOBAL DATA. THIS GLOBAL DATA SHALL INCLUDE, BUT NOT BE LIMITED TO: TIME-OF-DAY, OUTSIDE AIR TEMPERATURE AND HUMIDITY, AND ELECTRICAL METER AND DEMAND INFORMATION. IF BCS CONTROLLERS ARE NOT CONFIGURED IN A COMMUNICATION NETWORK TO SHARE THIS DATA, THEN EACH BCS CONTROLLER SHALL BE PROVIDED WITH SENSOR INPUTS TO IMPLEMENT SEQUENCES INDICATED ON THE DRAWINGS WHEN OPERATING IN A STAND-ALONE MODE.
   B. TERMINAL UNIT CONTROLLERS:
      1. CONTROL OF TERMINAL UNITS SHALL BE ACCOMPLISHED BY MICROPROCESSOR-BASED STAND-ALONE TERMINAL UNIT CONTROLLERS UTILIZING DIRECT DIGITAL CONTROL. AN INDIVIDUAL TERMINAL UNIT CONTROLLER SHALL BE PROVIDED FOR EACH TERMINAL UNIT AND SHALL INTERFACE TO THE BCS. TERMINAL UNIT CONTROLLER COMPONENTS SHALL BE FURNISHED TO THE TERMINAL UNIT MANUFACTURER FOR FACTORY MOUNTING AND CALIBRATION. TERMINAL UNIT CONTROLLER POWER SHALL BE 24 V AC. EACH TERMINAL UNIT CONTROLLER SHALL CONTAIN RESIDENT PROGRAMS WHICH ARE FIELD-SELECTABLE FOR A SPECIFIC APPLICATION. RESIDENT PROGRAMS SHALL BE CONTAINED IN NONVOLATILE MEMORY USING EEPROM, EPROM, OR RAM. SYSTEMS THAT EMPLOY VOLATILE (RAM) MEMORY SHALL PROVIDE 72 HOUR BATTERY BACK-UP FOR EACH TERMINAL UNIT CONTROLLER. TEMPERATURE SETPOINTS FOR HEATING AND COOLING AND NIGHT SETBACK SHALL BE INDEPENDENT OF EACH OTHER AND SHALL PROVIDE A ZERO ENERGY BAND BETWEEN HEATING AND COOLING MODES.
      2. EACH TERMINAL UNIT CONTROLLER SHALL BE ACCESSIBLE FOR PURPOSES OF CONTROL PARAMETER AND SETPOINT ADJUSTMENT AND MONITORING FROM THE BCS. AN OPERATOR'S TERMINAL CONNECTED TO ANY BCS CONTROLLER ON THE NETWORK SHALL HAVE ACCESS TO ALL TERMINAL UNIT CONTROLLERS.
2. MATERIALS
   A. ALL ACTUATORS SHALL BE 24V UNLESS OTHERWISE NOTED.
   B. THERMOSTATS: LINE VOLTAGE TYPE AND SHALL HAVE ADJUSTABLE THROTTLING RANGE WITH AN ACCURACY OF ±1.0°F. ROOM TYPE SHALL HAVE COVER WITH THERMOMETER, AND ACCESSIBLE CONCEALED MEANS OF ADJUSTMENT. REMOTE ELEMENT TYPE SHALL HAVE ACCESSIBLE ADJUSTMENT KNOB. PROVIDE SEPARABLE WELLS FOR ELEMENTS IN LIQUIDS AND EXTENDED NECKS FOR WELLS IN INSULATED PIPE.
      1. LOW LIMIT SAFETIES: ELEMENTS SHALL RESPOND TO THE LOWEST TEMPERATURE TO WHICH ANY 12" SEGMENT IS EXPOSED, MINIMUM LENGTH 8'.
      2. AVERAGING TYPE: FOR USE IN COIL DISCHARGE AND MIXED AIR LOCATIONS.
      3. THERMOSTATS SHALL NOT CONTAIN MERCURY.
   C. OCCUPIED/UNOCCUPIED SWITCHES: STAINLESS STEEL COVERPLATES WITH RED PILOT LIGHT. COVERPLATES SHALL BE ENGRAVED WITH "OCCUPIED/UNOCCUPIED". PILOT LIGHT SHALL BE ON WHENEVER SWITCH IS IN THE OCCUPIED POSITION.
   D. MANUAL PUSH BUTTONS: FLUSH-MOUNTED, IN NEMA 1 ENCLOSURE WITH PILOT LIGHT.
   E. PANELS: SURFACE TYPE CABINET WITH HINGED FRONT PANEL AND CYLINDER LOCK. PANELS SHALL UTILIZE ONE MASTER KEY.
   F. EMERGENCY FAN SHUTDOWN STATIONS: NORMALLY CLOSED TOGGLE SWITCHES MOUNTED ON A PANEL WITH A LOCKED, TRANSPARENT FRONT COVER. PANEL SHALL SHOW A SYSTEM SCHEMATIC SHOWING EACH AREA, AND HAVE ENGRAVED LABELS FOR EACH SWITCH. SUBMIT DETAILED SHOP DRAWING OF PANEL AND LABELS FOR APPROVAL.
   G. EMERGENCY BOILER SHUTDOWN STATIONS: ALUMINUM, BREAK-GLASS SWITCH, FLUSH-MOUNTED, UL LISTED, WITH COVERPLATE MARKING "TO STOP BOILERS".
   H. THERMOWELLS: MONEL, BRASS, OR COPPER FOR USE IN WATER PIPING AND STAINLESS STEEL FOR OTHER APPLICATIONS. THERMOWELLS SHALL HAVE THREADED PLUG AND CHAIN, RETAINING NUT, AND LAGGING NECK TO CLEAR INSULATION. INSIDE DIAMETER OF INSERTION NECK SHALL ACCOMMODATE THE ELEMENT BEING INSTALLED.
   I. TIME SWITCHES: 7 DAY ELECTRONIC PROGRAMMABLE MICROPROCESSOR TYPE, WITH A TEMPORARY OVERRIDE FEATURE FOR OVER CALLING THE OFF POSITION AND OPERATING THE SYSTEM WITHOUT RESETTING THE PROGRAM, AND A 48 HOUR BATTERY POWERED CARRYOVER FOR LOSS OF POWER.
3. AUXILIARY EQUIPMENT
   J. UNINTERRUPTIBLE POWER SUPPLY (UPS): PROVIDE A SELF-CONTAINED UPS DESIGNED FOR INSTALLATION AND OPERATION AT EACH BCS CONTROLLER SIZED FOR AT LEAST 125% OF THE PEAK DEMAND, AND TO PROVIDE A MINIMUM OF 15 MINUTES OF FULL OPERATION OF THE CONTROLLER AND INPUT/OUTPUT EXPANSION MODULES CONNECTED TO THAT CONTROLLER. EQUIPMENT CONNECTED TO THE UPS SHALL NOT BE AFFECTED IN ANY MANNER BY A POWER OUTAGE OF A DURATION LESS THAN THE RATED CAPACITY OF THE UPS. EACH UPS SHALL BE WIRED SUCH THAT PRIMARY POWER TO THE CONTROLLER WILL BE MAINTAINED UPON FAILURE OF THE UPS, INCLUDING EITHER A RELAY SWITCH UPSTREAM OF THE UPS OR TWO UPSS IN PARALLEL. UPS SHALL BE COMPLETE WITH NECESSARY POWER SUPPLIES, TRANSFORMERS, BATTERIES, AND ACCESSORIES AND SHALL INCLUDE VISUAL INDICATION OF NORMAL POWER OPERATION, UPS OPERATION, ABNORMAL OPERATION AND VISUAL AND AUDIBLE INDICATION OF LOW BATTERY POWER.

EXECUTION

1. GENERAL
   A. WHERE CONTROL DEVICES ARE INSTALLED ON INSULATED PIPING OR DUCTWORK, PROVIDE STANDOFF BRACKETS OR THERMOWELLS SIZED TO CLEAR INSULATION THICKNESS. PROVIDE EXTENDED SENSING ELEMENTS, ACTUATOR LINKAGES, AND OTHER ACCESSORIES AS REQUIRED.
2. COMMISSIONING SUPPORT REQUIREMENTS
   A. PREPARE A WRITTEN PLAN INDICATING IN A STEP-BY-STEP MANNER THE PROCEDURES THAT WILL BE FOLLOWED TO TEST, CHECK-OUT, AND ADJUST THE CONTROL SYSTEM PRIOR TO BEGINNING FUNCTIONAL TESTING. KEEP THE COMMISSIONING AUTHORITY INFORMED OF PROGRESS WITH THE PROJECT AND OF CHANGES TO THE PROPOSED INSTALLATION. PROGRAMMING AND TEST PLAN, AT MINIMUM, THE PLAN SHALL INCLUDE FOR EACH TYPE OF EQUIPMENT CONTROLLED BY THE AUTOMATIC CONTROLS:
      1. STEP-BY-STEP PROCEDURES FOR TESTING EACH TYPE CONTROLLER AFTER INSTALLATION, INCLUDING:
         a. PROCESS OF VERIFYING PROPER HARDWARE AND WIRING INSTALLATION.
         b. PROCESS OF DOWNLOADING PROGRAMS TO LOAD CONTROLLERS AND VERIFYING THAT THEY ARE ADDRESSED CORRECTLY.
      2. PROCESS OF VERIFYING PROPER HARDWARE AND WIRING INSTALLATION.
      3. PROCESS OF PERFORMING OPERATIONAL CHECKS OF EACH CONTROLLED COMPONENT.
      4. PLAN AND PROCESS FOR CALIBRATING VALVE AND DAMPER ACTUATORS AND SENSORS.
      5. A DESCRIPTION OF THE EXPECTED FIELD ADJUSTMENTS FOR TRANSMITTERS, CONTROLLERS AND CONTROL ACTUATORS SHOULD CONTROL RESPONSES FALL OUTSIDE OF EXPECTED VALUES.
      6. A COPY OF THE LOG AND FIELD CHECK-OUT SHEETS THAT WILL DOCUMENT THE PROCESS. THIS LOG SHALL INCLUDE A PLACE FOR INITIAL AND FINAL VALUES READ DURING CALIBRATION OF EACH POINT AND CLEARLY INDICATE WHEN A SENSOR OR CONTROLLER HAS PASSED AND IS OPERATING WITHIN THE CONTRACT PARAMETERS. NOTIFICATION OF ANY EQUIPMENT FAILURES SHALL BE DOCUMENTED.
      7. A DESCRIPTION OF THE INSTRUMENTATION REQUIRED FOR TESTING, INCLUDING A CERTIFICATION OF CALIBRATION FOR EACH TEST INSTRUMENT.
      8. IDENTIFY WHICH TESTS AND SYSTEMS SHOULD BE COMPLETED PRIOR TO USING THE CONTROL SYSTEM FOR TEST, ADJUSTMENT, AND BALANCE WORK.

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC CONTROLS LEGEND & GENERAL NOTES

ORIG SUBMISSION: 2022.05.25

SHEET:
M-701

OWNERS REVIEW SET

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B. PROVIDE THE COMMISSIONING AUTHORITY COMPLETE SYSTEM LOGIC DIAGRAMS, DESCRIBING THE PROPOSED SYSTEM PROGRAMMING, WITH PROGRAMMED ATTRIBUTES SHOWN. THESE DIAGRAMS SHALL BE UPDATED WITH FIELD MODIFICATIONS FROM THE START-UP, CHECK-OUT, AND PREFUNCTIONAL TESTING PRIOR TO THE BEGINNING OF THE FUNCTIONAL TESTING OF THE BCS. PROVIDE A COPY OF EACH PROPOSED GRAPHICAL INTERFACE SCREEN WITH INTERFACE POINTS SHOWN FOR THE ENTIRE SYSTEM.
C. PREFUNCTIONAL TESTS: VERIFY AND DOCUMENT THE PROPER INSTALLATION, ADDRESSING, CALIBRATION, PROGRAMMING, OPERATION, AND FAILURE MODE OF BCS CONTROL POINTS, SEQUENCES, AND EQUIPMENT. PROVIDE A SIGNED AND DATED CERTIFICATION TO THE COMMISSIONING AUTHORITY AND OWNER UPON COMPLETION OF THE CHECK-OUT OF EACH CONTROLLED DEVICE, EQUIPMENT, AND SYSTEM THAT INSTALLATION, SET-UP, ADJUSTMENT, CALIBRATION, AND SYSTEM PROGRAMMING IS COMPLETE AS SPECIFIED HEREIN AND AS INDICATED ON THE DRAWINGS, EXCEPT FUNCTIONAL TESTING. COMPLETED PREFUNCTIONAL DOCUMENTATION OF THE SYSTEM VERIFICATION SHALL BE SUBMITTED TO THE COMMISSIONING AUTHORITY FOR REVIEW AND APPROVAL PRIOR TO THE FUNCTIONAL TESTING OF THE BCS OR ITS BEING USED IN THE TESTING OF OTHER EQUIPMENT OR SYSTEMS, OR OTHER PURPOSES. COPIES OF FINAL FIELD CHECK-OUT SHEETS AND TREND LOGS SHALL BE PROVIDED TO THE COMMISSIONING AUTHORITY FOR INCLUSION IN THE COMMISSIONING REPORT.
D. FUNCTIONAL TESTS: CONDUCT AND DOCUMENT A FUNCTIONAL TEST OF THE COMPLETE INSTALLED BCS, AS DEFINED IN SECTION 23 00 90, PERFORMANCE VERIFICATION. FUNCTIONAL TESTING OF THE BCS MAY BE CONDUCTED IN PHASES OR SECTIONS, AS DEFINED BY THE REQUIREMENTS OF THE FUNCTIONAL TEST, OR AS APPROVED BY THE COMMISSIONING AUTHORITY. THE BCS, OR APPLICABLE PORTIONS OF THE SYSTEM, SHALL HAVE COMPLETED FUNCTIONAL TESTING AND BE APPROVED BY THE COMMISSIONING AUTHORITY BEFORE BEING USED FOR OTHER PURPOSES, SUCH AS TEST AND BALANCE MEASUREMENTS, OR IN SUPPORT OF THE FUNCTIONAL TESTING OF OTHER SYSTEMS.
   1. ASSIST IN THE FUNCTIONAL TESTING OF EQUIPMENT AND SYSTEMS BY IMPLEMENTING TREND LOGS AND EQUIPMENT MONITORING AS SPECIFIED HEREIN AND AS REQUIRED BY SECTION 23 00 90, HVAC PERFORMANCE VERIFICATION.
E. MEET WITH THE TESTING, ADJUSTING, AND BALANCING CONTRACTOR PRIOR TO BEGINNING THE TEST, ADJUSTMENT, AND BALANCE PROCESS AND REVIEW THE TEST, ADJUSTING, AND BALANCING PLAN TO DETERMINE THE CAPABILITIES AND REQUIREMENTS OF THE CONTROL SYSTEM IN COMPLETING THE TESTING, ADJUSTING, AND BALANCING PROCESS. PROVIDE THE TESTING, ADJUSTING, AND BALANCING CONTRACTOR ANY NEEDED UNIQUE INSTRUMENTS FOR SETTING TERMINAL UNITS AND INSTRUCT THE TESTING, ADJUSTING, AND BALANCING CONTRACTOR PERSONNEL IN THEIR USE. ASSIST AND COOPERATE WITH THE TESTING, ADJUSTING, AND BALANCING CONTRACTOR BY PROVIDING A QUALIFIED TECHNICIAN TO OPERATE THE CONTROLS AS REQUIRED TO ASSIST THE TESTING, ADJUSTING, AND BALANCING CONTRACTOR IN PERFORMING HIS WORK, OR ALTERNATIVELY, PROVIDE SUFFICIENT TRAINING FOR THE TESTING, ADJUSTING, AND BALANCING CONTRACTOR TO OPERATE THE SYSTEM WITHOUT ASSISTANCE. VERIFY THE PROPER OPERATION OF AFFECTED CONTROLS AT THE COMPLETION OF THE TEST, ADJUSTMENT, AND BALANCE PROCEDURE.
F. SEASONAL ADJUSTMENT:
   1. ASSIST THE COMMISSIONING AUTHORITY WITH THE SEASONAL ADJUSTMENT PROCESS. DURING THIS EFFORT, THE COMMISSIONING AUTHORITY WILL:
      a. CHECK AND VERIFY THE CALIBRATION OF TEMPERATURE CONTROL DEVICES AND THERMOSTATS. TEST AND VERIFY CONTROL SEQUENCES FOR PROPER OPERATION FOR THE SEASON.
      b. WHERE DEFICIENT OPERATION OR DEFECTIVE EQUIPMENT IS DISCOVERED, PROVIDE CORRECTIVE MEASURES AS REQUIRED BY THE WARRANTY PROVISIONS SPECIFIED HEREIN.

1. BCS
   A. BCS FAILURE MODE:
      1. BCS CONTROLS AND INTERFACES SHALL BE ARRANGED SO THAT EQUIPMENT CONTROLLED BY THE BCS OPERATES AS INDICATED ON THE I/O SUMMARIES ON FAILURE OF THE BCS CONTROLLER FOR ANY REASON, INCLUDING LOGIC POWER SUPPLY FAILURE, CPU LOCK-UP, OR INTERPOSING RELAY FAILURE. SAFETY AND OPERATIONAL INTERLOCKS SHALL REMAIN IN EFFECT.
   B. CONTROL SEQUENCES FOR FIRE ALARM SYSTEM SIGNAL RESPONSES SHALL BE INDEPENDENT OF THE BCS CONTROLLER AND ITS OUTPUTS.
   C. TRANSIENT SURGE SUPPRESSORS: INSTALL ON LOW VOLTAGE SIGNAL OR COMMUNICATIONS CONDUCTORS ENTERING THE BUILDING FROM EXTERIOR LOCATIONS, INCLUDING THOSE CONDUCTORS FROM DEVICES MOUNTED ON THE EXTERIOR OF THE BUILDING. IN ADDITION, PROVIDE AC VOLTAGE POWER TRANSIENT SUPPRESSORS FOR BCS EQUIPMENT POWER SUPPLIES.
   D. BCS SENSORS:
      1. HYDROGEN SENSORS: INSTALL IN AN ACCESSIBLE LOCATION AT THE HIGHEST POINT OF THE ROOM.
      2. LIQUID TEMPERATURE SENSORS: FILL SENSOR WELLS WITH THERMALLY CONDUCTIVE MATERIAL TO ASSURE ACCURATE READINGS.
      3. CURRENT SENSING RELAYS: FAN AND PUMP STATUS SHALL BE SENSED BY A CURRENT SENSING RELAY WIRED ON THE LOAD SIDE OF EACH FAN AND PUMP. FOR CONSTANT SPEED FANS AND PUMPS, THE CURRENT SENSING RELAY TRIP SETPOINT SHALL BE SET AT THE MOTOR'S NORMAL OPERATING SPEED. FOR VARIABLE SPEED FANS AND PUMPS, THE CURRENT SENSING RELAY TRIP SETPOINT SHALL BE SET FOR THE LOWEST OPERATING SPEED, AS DETERMINED BY THE COMMISSIONING PROCESS (TYPICALLY 20%).
      4. PROPER CALIBRATION OF SENSORS SHALL BE DEMONSTRATED AND DOCUMENTED AS PART OF THE COMMISSIONING PROCESS.
      5. SENSOR CALIBRATION: CALIBRATION OF SENSORS SHALL BE INCLUDED AS PART OF THE PREFUNCTIONAL CHECKLISTS ACCORDING TO THE FOLLOWING PROCEDURES:
         a. GENERAL: VERIFY THAT SENSORS WITH SHIELDED CABLE ARE GROUNDED ONLY AT ONE END.
         b. SENSORS WITHOUT EXTERNAL TRANSMITTERS: TAKE A READING WITH A CALIBRATED TEST INSTRUMENT WITHIN 6" OF THE SENSOR INSTALLATION AND VERIFY THE SENSOR READING IS WITHIN THE SPECIFIED TOLERANCE. IF NOT, INSTALL OFFSET, CALIBRATE, OR REPLACE SENSOR TO OBTAIN REQUIRED ACCURACY.
         c. SENSORS WITH EXTERNAL TRANSMITTERS: DISCONNECT SENSOR FROM TRANSMITTER INPUT AND CONNECT A SIGNAL GENERATOR IN PLACE OF SENSOR. USING MANUFACTURER'S DATA, SIMULATE MINIMUM MEASURED VALUE. ADJUST TRANSMITTER POTENTIOMETER ZERO UNTIL MINIMUM SIGNAL IS READ. REPEAT FOR THE MAXIMUM MEASURED VALUE AND ADJUST TRANSMITTER UNTIL MAXIMUM SIGNAL IS READ. RECONNECT SENSOR. MAKE A READING WITH A CALIBRATED TEST INSTRUMENT WITHIN 6" OF THE SENSOR INSTALLATION. VERIFY THAT THE SENSOR READING IS WITHIN THE SPECIFIED TOLERANCE. IF NOT, REPEAT PROCESS UNTIL SPECIFIED ACCURACY IS ACHIEVED, OR REPLACE THE SENSOR AND REPEAT PROCESS.
         d. PAIRED SENSORS: FOR SENSOR PAIRS THAT ARE USED TO DETERMINE A TEMPERATURE OR PRESSURE DIFFERENCE, CALIBRATE BOTH SENSORS TO A COMMON MEASUREMENT AND VERIFY THEY ARE READING WITHIN ±0.25ºF FOR TEMPERATURE AND WITHIN A TOLERANCE EQUAL TO ±2% OF THE SENSOR READING FOR PRESSURE.
E. BCS START-UP AND CHECK-OUT:
   1. PROVIDE THE SERVICES OF CONTROL TECHNICIANS AT START-UP TO CHECK-OUT THE SYSTEM, VERIFY AND CALIBRATE SENSORS AND OUTPUTS, INPUT DATA SUPPLIED BY THE OWNER, AND PLACE THE SYSTEM IN OPERATION. VERIFY PROPER OPERATION OF EACH ITEM IN THE SEQUENCES OF OPERATION, INCLUDING HARDWARE AND SOFTWARE.
   2. CHECK-OUT EACH SYSTEM FOR CONTROL FUNCTION THROUGH THE ENTIRE SEQUENCE. CHECK ACTUATOR TRAVEL ON DAMPERS AND VALVES FOR ACTION AND EXTENT. VERIFY THAT CONTROL DAMPERS AND VALVES OPEN AND CLOSE COMPLETELY. CHECK CALIBRATION OF INSTRUMENTS. CALCULATE AND VERIFY INSTRUMENT SETPOINTS.
   3. CALIBRATION AND TESTING: CALIBRATE SENSORS AND MONITORING INPUTS AND VERIFY PROPER OPERATION OF OUTPUTS BEFORE THE SYSTEM IS PLACED ON-LINE. CHECK EACH POINT WITHIN THE SYSTEM BY MAKING A COMPARISON BETWEEN THE OPERATOR CONSOLE AND FIELD DEVICE. BCS CONTROL LOOPS, FAILURE MODES, INTERLOCKS, SEQUENCES, ENERGY MANAGEMENT PROGRAMS, AND ALARMS SHALL BE DEBUGGED, TESTED, AND STABLE OPERATION VERIFIED. CONTROL LOOP PARAMETERS AND TUNING CONSTANTS SHALL BE ADJUSTED TO PRODUCE ACCURATE, STABLE CONTROL SYSTEM OPERATION. PROVIDE WRITTEN DOCUMENTATION OF SYSTEM CALIBRATION AND CERTIFICATION THAT THE INSTALLED COMPLETE SYSTEM HAS BEEN CALIBRATED, VERIFIED, AND IS READY TO BEGIN TESTING.
F. BCS ACCEPTANCE CONDITIONS:
   1. ACCEPTANCE TEST: CONDUCT FINAL ACCEPTANCE TEST, WITH THE OWNER ON SITE, ON THE COMPLETE AND TOTAL INSTALLED AND OPERATIONAL SYSTEM TO DEMONSTRATE THAT IT IS FUNCTIONING IN ACCORDANCE WITH REQUIREMENTS SPECIFIED HEREIN. DEMONSTRATE THE CORRECT OPERATION OF MONITORED AND CONTROLLED POINTS AS WELL AS THE OPERATION AND CAPABILITIES OF SEQUENCES, REPORTS, SPECIALIZED CONTROL ALGORITHMS, DIAGNOSTICS, AND SOFTWARE.
   2. SYSTEM SHALL DEMONSTRATE THE FOLLOWING MINIMUM ACCEPTABLE LEVELS OF PERFORMANCE, WITHIN THE PHYSICAL LIMITATIONS OF THE CONTROLLED EQUIPMENT:
      a. CONTROL LOOPS SHALL MAINTAIN STABLE, NONHUNTING, NONOSCILLATING CONTROL, WITH MINIMUM OVERSHOOT IN RESPONSE TO TRANSIENT AND UPSET CONDITIONS.
      b. SPACE AND AIR TEMPERATURES SHALL BE MAINTAINED WITHIN ±1ºF OF SETPOINT.
      c. HUMIDITY SHALL BE MAINTAINED WITHIN ±5% RH OF SETPOINT.
      d. CHILLED AND HOT WATER SYSTEM TEMPERATURES SHALL BE MAINTAINED WITHIN ±0.5ºF OF SETPOINT.
      e. DUCT STATIC PRESSURES SHALL BE MAINTAINED WITHIN ±0.05" WG OF SETPOINT.
      f. HYDRONIC SYSTEM PRESSURES SHALL BE MAINTAINED WITHIN ±2 PSIG OF SETPOINT.
      g. AIR AND WATER QUANTITIES SHALL BE MAINTAINED WITHIN ±5% OF SETPOINT.
   3. FINAL SYSTEM ACCEPTANCE WILL BE BASED UPON THE COMPLETION OF THE FOLLOWING ITEMS:
      a. COMPLETION OF THE INSTALLATION OF HARDWARE AND SOFTWARE ITEMS. DEMONSTRATE COMPLETE OPERATION OF THE SYSTEM, INCLUDING HARDWARE AND SOFTWARE, WITH NO FAILURES DURING A 10 CONSECUTIVE DAY PERIOD. OBTAIN RECEIPT FROM THE OWNER ACKNOWLEDGING NO FAILURES WITHIN THE TEST PERIOD. SUBMIT A DAILY LOG DOCUMENTING FAILURES.
      b. SATISFACTORY COMPLETION OF FUNCTIONAL PERFORMANCE TESTING.
      c. SATISFACTORY COMPLETION OF THE RECORD DRAWINGS, AND OPERATING AND MAINTENANCE MANUALS.
      d. SATISFACTORY COMPLETION OF TRAINING PROGRAMS.
   4. UPON FINAL ACCEPTANCE, THE WARRANTY PERIOD SHALL BEGIN.
G. BCS TRAINING:
   1. PROVIDE THE COMMISSIONING AUTHORITY WITH A TRAINING PLAN FOR REVIEW 4 WEEKS BEFORE THE PLANNED TRAINING.
   2. PROVIDE DESIGNATED OWNER PERSONNEL TRAINING ON THE CONTROL SYSTEM. THE INTENT IS TO CLEARLY AND COMPLETELY INSTRUCT THE OWNER ON THE CAPABILITIES OF THE CONTROL SYSTEM.
   3. THE TRAINING SHALL BE TAILORED TO THE NEEDS AND SKILL-LEVEL OF THE TRAINEES.
   4. THE TRAINERS SHALL BE KNOWLEDGEABLE ON THE SYSTEM AND ITS USE IN BUILDINGS. THE OWNER SHALL APPROVE THE INSTRUCTOR PRIOR TO SCHEDULING THE TRAINING.
   5. THE STANDARD OPERATING MANUAL FOR THE SYSTEM AND ANY SPECIAL TRAINING MANUALS SHALL BE PROVIDED FOR EACH TRAINEE, WITH A COPY INCLUDED IN EACH COPY OF THE OPERATION AND MAINTENANCE MANUAL. IN ADDITION, COPIES OF THE SYSTEM TECHNICAL MANUAL SHALL BE DEMONSTRATED DURING TRAINING AND A COPY INCLUDED IN EACH COPY OF THE OPERATION AND MAINTENANCE MANUALS. MANUALS SHALL INCLUDE DETAILED DESCRIPTION OF THE SUBJECT MATTER FOR EACH SESSION. THE MANUALS SHALL COVER CONTROL SEQUENCES AND HAVE A DEFINITIONS SECTION THAT FULLY DESCRIBES RELEVANT WORDS USED IN THE MANUALS AND IN SOFTWARE DISPLAYS.
   6. COPIES OF AUDIO-VISUAL MATERIALS USED IN THE TRAINING PROGRAM SHALL BE DELIVERED TO THE OWNER.
   7. PROVIDE FORMAL TRAINING SESSIONS, EACH SESSION SHALL BE CONDUCTED BY FACTORY-TRAINED PERSONNEL:
      a. TRAINING I: THE FIRST TRAINING SESSION SHALL CONSIST OF 24 HOURS OF ACTUAL TRAINING. THIS TRAINING MAY BE HELD ON-SITE OR IN THE SUPPLIER'S FACILITY. IF HELD OFF-SITE, THE TRAINING MAY OCCUR PRIOR TO FINAL COMPLETION OF THE SYSTEM INSTALLATION. PROVIDE MATERIALS AND TRAINING FOR UP TO 6 PERSONS TO BE DESIGNATED BY THE OWNER. UPON COMPLETION, EACH STUDENT, USING APPROPRIATE DOCUMENTATION, SHOULD BE ABLE TO PERFORM ELEMENTARY OPERATIONS AND DESCRIBE GENERAL HARDWARE ARCHITECTURE AND FUNCTIONALITY OF THE SYSTEM.
      b. TRAINING II: BUILDING SYSTEMS: THE SECOND SESSION SHALL BE HELD ON-SITE FOR A PERIOD OF 24 HOURS OF ACTUAL HANDS-ON TRAINING AFTER THE COMPLETION OF SYSTEM COMMISSIONING. PROVIDE MATERIALS AND TRAINING FOR UP TO 6 PERSONS TO BE DESIGNATED BY THE OWNER. SESSION SHALL INCLUDE INSTRUCTION ON:
         1. SPECIFIC HARDWARE CONFIGURATION OF INSTALLED SYSTEMS IN THIS BUILDING AND SPECIFIC INSTRUCTION FOR OPERATING THE INSTALLED SYSTEM, INCLUDING HVAC SYSTEMS, LIGHTING CONTROLS, AND AN INTERFACE WITH SECURITY AND COMMUNICATION SYSTEMS.
         2. SECURITY LEVELS, ALARMS, SYSTEM START-UP, SHUT-DOWN, POWER OUTAGE, AND RESTART ROUTINES, CHANGING SETPOINTS, AND ALARMS AND OTHER TYPICAL CHANGED PARAMETERS, OVERRIDES, FREEZE PROTECTION, MANUAL OPERATION OF EQUIPMENT, OPTIONAL CONTROL STRATEGIES THAT CAN BE CONSIDERED, ENERGY SAVINGS STRATEGIES AND SETPOINTS THAT IF CHANGED WILL ADVERSELY AFFECT ENERGY CONSUMPTION, ENERGY ACCOUNTING, AND PROCEDURES FOR OBTAINING VENDOR ASSISTANCE.
         3. TRENDING AND MONITORING FEATURES (VALUES, CHANGE OF STATE, AND TOTALIZATION), INCLUDING SETTING UP, EXECUTING, DOWNLOADING, VIEWING BOTH TABULAR AND GRAPHICALLY AND PRINTING TRENDS. TRAINEES SHALL ACTUALLY SET-UP TRENDS IN THE PRESENCE OF THE TRAINER.
         4. EVERY SCREEN SHALL BE COMPLETELY DISCUSSED, ALLOWING TIME FOR QUESTIONS.
         5. USE OF KEYPAD OR PLUG-IN LAPTOP COMPUTER AT THE ZONE LEVEL.
         6. USE OF REMOTE ACCESS TO THE SYSTEM VIA TELEPHONE LINES OR NETWORKS.
         7. SETTING UP AND CHANGING A TERMINAL UNIT CONTROLLER.
      c. TRAINING III: THE THIRD TRAINING SESSION SHALL BE CONDUCTED ON-SITE 6 MONTHS AFTER OCCUPANCY AND CONSIST OF 24 HOURS OF TRAINING. PROVIDE MATERIALS AND TRAINING FOR UP TO 6 PERSONS TO BE DESIGNATED BY THE OWNER. THE SESSION SHALL BE STRUCTURED TO ADDRESS SPECIFIC TOPICS THAT TRAINEES NEED TO DISCUSS AND TO ANSWER QUESTIONS CONCERNING OPERATION OF THE SYSTEM.
      d. SUPERVISORY TRAINING: PROVIDE A SEPARATE TRAINING COURSE FOR SUPERVISORY PERSONNEL. THIS TRAINING SHALL BRIEFLY COVER THE MATERIAL OF THE OPERATOR TRAINING SESSION BUT SHALL ADDRESS THE MORE ADVANCED FEATURES OF THE SYSTEM WITH EMPHASIS ON THE ENERGY CONSERVATION STRATEGIES AND REPORTING CAPABILITIES OF THE SYSTEM AND HOW TO IMPLEMENT THEM. THE TRAINING SESSION SHALL BE CONDUCTED BY FACTORY-TRAINED PERSONNEL AND SHALL BE A MINIMUM OF TWO 8 HOUR DAYS, FOR A TOTAL OF 16 TRAINING HOURS. PROVIDE MATERIALS AND TRAINING FOR UP TO 6 PERSONS TO BE DESIGNATED BY THE OWNER.
   7. IN ADDITION TO THE SPECIFIED BCS TRAINING, PROVIDE TECHNICALLY COMPETENT TECHNICIANS TO ATTEND TRAINING SESSIONS FOR SYSTEMS AND EQUIPMENT THAT ARE MONITORED OR OTHERWISE INTERFACED WITH THE BCS, TO DISCUSS THE INTERACTION OF THE CONTROL SYSTEM TO THE EQUIPMENT BEING DISCUSSED.

3. THERMOSTATS
   A. MOUNT SPACE HUMIDITY SENSORS, HUMIDISTATS, SPACE CO_2 SENSORS, SPACE TEMPERATURE SENSORS, AND THERMOSTATS AT 48" ABOVE THE FLOOR.
      1. ALIGN HORIZONTALLY WITH ADJACENT LIGHT SWITCHES.
      2. FINAL LOCATIONS SHALL BE ACCESSIBLE AND SHALL BE COORDINATED WITH THE FURNITURE LAYOUT AND ARCHITECTURAL LAYOUT.
      3. MORE THAN 2 SENSORS IN A SINGLE LOCATION SHALL BE INSTALLED WITH A COMMON FACEPLATE TO MINIMIZE WALL SPACE.
   B. REMOTE ELEMENT TYPE: MOUNT ON A VIBRATION FREE SURFACE 5' ABOVE THE FLOOR, UNLESS SPECIFIED HEREIN TO BE MOUNTED ON A CONTROL PANEL. PROVIDE 1 LINEAR FOOT OF ELEMENT TO SENSE THE TEMPERATURE OF EACH FT² OF THE COIL FACE. INSTALL IN A SERPENTINE ARRANGEMENT ACROSS THE ENTIRE FACE OF THE COIL.
   C. AVERAGING AND LOW LIMIT SAFETY TYPE ELEMENTS: INSTALL IN A HORIZONTAL SINE CURVE MANNER TO SENSE TEMPERATURES ACROSS THE ENTIRE FACE OF THE COIL, AND SUPPORT INDEPENDENTLY FROM THE COIL BY STAINLESS STEEL BANDS OR MULTIBULB HOLDERS. PROVIDE 1 LINEAR FOOT OF ELEMENT FOR EACH FT² OF COIL AREA. PROVIDE 0.5" METALLIC RACEWAY OR 0.375" HARD COPPER RAILS FOR SUPPORT OF ELEMENTS, BOTH TOP AND BOTTOM, FOR PLENUM OR DUCT WIDTH GREATER THAN 36".
   D. UNDER WINDOW FAN-COIL UNIT THERMOSTATS: MOUNT SO THAT ADJUSTING KNOB IS ACCESSIBLE THROUGH ACCESS PANEL.
   E. PROVIDE GUARDS ON THERMOSTATS AND SPACE TEMPERATURE SENSORS IN STORAGE ROOMS AND EQUIPMENT ROOMS.
   F. PROVIDE INSULATED BASES FOR THERMOSTATS AND TEMPERATURE SENSORS INSTALLED ON EXTERIOR WALLS OR WALLS TO UNCONDITIONED SPACES.
4. SENSOR PIPING
   A. TUBING SHALL BE CONCEALED EXCEPT IN MECHANICAL ROOMS.
   B. FASTEN TUBING WITH CLIPS AT REGULAR INTERVALS AND RUN PARALLEL TO BUILDING LINES. ATTACH CONCEALED TUBING ABOVE SUSPENDED CEILINGS TO STRUCTURE OR DUCTWORK SUPPORTS.
   C. COPPER BENDS SHALL BE TOOL MADE. PROVIDE UNIONS AT FINAL CONNECTIONS TO APPARATUS. PROVIDE SEPARATION BETWEEN DISSIMILAR METALS.
   D. NONMETALLIC TUBING RUN IN MECHANICAL ROOMS AND CONCEALED IN INACCESSIBLE LOCATIONS SHALL BE RUN IN METALLIC RACEWAYS. MAKE CONNECTIONS TO HOT EQUIPMENT WITH COPPER TUBING.
   E. TUBING INSTALLED INSIDE CONTROL PANELS AND EQUIPMENT ENCLOSURES, AND ABOVE CEILINGS SHALL BE TIED AND SUPPORTED.
   F. PROVIDE SLEEVES WHERE TUBING PASSES THROUGH CONCRETE OR MASONRY.
   G. TEST TUBING AT 30 PSIG FOR PRESSURE LOSS OF NOT MORE THAN 1 PSIG IN 1 HOUR.
   H. OTHER JOINTS SHALL BE BRAZED USING A BCUP5 BRAZING ALLOY WITH SOLIDUS ABOVE 1,100°F AND LIQUIDUS BELOW 1,500°F. BRAZING FLUX SHALL BE USED ON COPPER-TO-BRASS JOINTS ONLY.
   I. PRIOR TO FINAL CONNECTION TO DEVICES TUBING SHALL BE FLUSHED CLEAN AND DRY AND TESTED AT THREE TIMES THE OPERATING PRESSURE FOR NOT LESS THAN 30 MINUTES WITH NO LOSS OF PRESSURE.
   J. TUBING PASSING THROUGH CONCRETE OR MASONRY SHALL BE SLEEVED AND PROTECTED FROM ABRASION AND ELECTROLYTIC ACTION.
   K. TUBING SERVING OTHER FUNCTIONS SHALL BE ISOLATED FROM TUBING SERVING SMOKE CONTROL SYSTEMS BY AUTOMATIC ISOLATION VALVES OR SHALL BE AN INDEPENDENT SYSTEM.
5. PANELS
   A. PROVIDE A PANEL FOR EACH BCS CONTROLLER OR EACH SYSTEM NOT CONTROLLED BY THE BCS.
   B. MOUNT THE FOLLOWING ITEMS IN THE PANELS UNLESS OTHERWISE SPECIFIED HEREIN:
      1. BCS CONTROLLERS.
      2. RELAYS.
      3. SWITCHES.
      4. 120 V DUPLEX CONVENIENCE OUTLET WIRED FROM THE SAME CIRCUIT AS THE BCS CONTROLLER.
      5. WIRING AND CONTROLS.
      6. TERMINAL BLOCKS.
   C. WIRE CONTROLLERS, RELAYS, SWITCHES, AND CONTROLS IN THE CONTROL PANEL TO A TERMINAL BLOCK. LINE VOLTAGE AND LOW VOLTAGE SHALL BE SEPARATED ON DIFFERENT TERMINAL BLOCKS WITH LABELS INDICATING VOLTAGE. EACH SENSOR OR OTHER ELECTRICAL DEVICE SHALL BE WIRED BACK TO THE TERMINAL BLOCK IN THE CONTROL PANEL. DEVICES IN SERIES SHALL BE INDIVIDUALLY TERMINATED AT THE TERMINAL BLOCK, SUCH THAT EACH SIDE OF EACH DEVICE IS AVAILABLE AT THE CONTROL PANEL FOR TROUBLESHOOTING. IN ADDITION TO NUMBER MARKINGS ON EACH CONDUCTOR, CONDUCTOR COLOR SHALL BE THE SAME THROUGHOUT EACH WIRING RUN. WIRING SHALL BE NEATLY TIED AND ROUTED IN THE CONTROL PANEL. SHIELDED WIRING SHALL BE TERMINATED NEATLY, WITH HEAT SHRINK TUBING PLACED OVER THE BARE END OF THE SHIELD. GROUND CONDUCTORS OVER 4" LONG SHALL BE INSULATED WITH TUBING.
   D. PROVIDE 6" X 6"TROUGH THE WIDTH OF THE CONTROL PANEL, MINIMUM 24" IN LENGTH, ABOVE THE CONTROL PANEL TO PROVIDE AN ENTRANCE FOR CABLING AND TUBING INTO THE PANEL, WITH 50% SPARE NIPPLE CAPACITY.
   E. PROVIDE 120 V POWER WIRING FOR CONTROL POWER IN THE TOP RIGHT CORNER OF EACH PANEL, WITH DISCONNECTS, POWER SUPPLIES, AND TRANSFORMERS ASSOCIATED WITH THE PANEL ALSO LOCATED IN THE TOP RIGHT CORNER.
   F. EACH ITEM IN THE PANEL SHALL BE LABELED AND THE PANEL LABELED AS TO THE SYSTEM OR EQUIPMENT SERVED.
   G. PANELS SHALL BE LOCATED TO AVOID CONFLICTS WITH DUCTWORK, PIPING, EQUIPMENT, THE WORK OF OTHER TRADES, AND BUILDING CONDITIONS. PANEL LOCATIONS INDICATED ON THE DRAWINGS SHALL BE COORDINATED PRIOR TO INSTALLATION AND ADJUSTED TO AVOID CONFLICTS.
6. STATIC PRESSURE SENSORS
   A. INSTALL SENSORS IN THE ASSOCIATED AIR HANDLING UNIT CONTROL PANEL AND USE EXTENDED SENSING LINES. PROVIDE TAPS FOR CALIBRATION PURPOSES.
7. HYDRONIC PRESSURE SENSORS
   A. INSTALL SENSORS ADJACENT TO MEASUREMENT POINTS. WITH SENSING LINES EXTENDED TO ACCESSIBLE LOCATIONS. PROVIDE TEST PORTS EQUIPPED WITH SCHRADER VALVES IN EACH SENSING LINE FOR CALIBRATION PURPOSES.
8. THERMOMETERS
   A. PROVIDE AT EACH REMOTE TEMPERATURE SENSOR AND ELEMENT LOCATION. DO NOT DUPLICATE THERMOMETERS SPECIFIED IN SECTION 23 10 00, PIPING, VALVES AND ACCESSORIES.
   B. MOUNT THERMOMETERS IN PIPING, DUCTS, AND EQUIPMENT IN POSITIONS ADJUSTED TO BE ACCESSIBLE FOR READING. USE ANGLE AND ADJUSTABLE TYPES WHERE STRAIGHT TYPE WOULD NOT BE READABLE.
   C. FILL THERMOMETER WELLS WITH THERMALLY CONDUCTIVE MATERIAL.
9. CONTROL DAMPERS
   A. FOR OUTDOOR AIR DAMPER ASSEMBLIES, STAGE THE OPENING OF EACH SECTION TO PREVENT STRATIFICATION AND POOR MIXING OF OUTSIDE AND RETURN AIR.
10. WIRING
   A. MATERIALS AND INSTALLATION OF WIRING AND ELECTRICAL DEVICES SHALL BE IN ACCORDANCE WITH DIVISION 26.
   B. EXPOSED CONTROL AND SENSOR WIRING SHALL BE INSTALLED IN CONDUITS AND SHALL BE SEPARATE FROM POWER WIRING. PLENUM RATED CABLE MAY BE USED IN CONCEALED SPACES IF RUN PARALLEL TO STRUCTURAL GRID AND SUPPORTED BY CABLE TRAYS OR TIE WRAPS, AND IDENTIFIED IN A MANNER CONSISTENT WITH THE DOCUMENTATION OF THE SYSTEM EVERY 30'. CONDUITS TO DEVICES IN FINISHED SPACES SHALL BE CONCEALED.
   C. PROVIDE TRANSFORMERS OR FILTERS FOR OPERATION OF AUTOMATIC TEMPERATURE CONTROLS FROM BUILDING POWER CIRCUITS. EACH BCS CONTROLLER SHALL BE SERVED BY A DEDICATED TRANSFORMER, AND NO MORE THAN 10 TERMINAL UNIT CONTROLLERS SHALL BE SERVED BY A SINGLE TRANSFORMER.
   D. PROVIDE RELAYS, TRANSFORMERS, FUSES AND INTERLOCK WIRING AS REQUIRED TO ACCOMPLISH THE SEQUENCES INDICATED ON THE DRAWINGS.
   E. WIRING FOR EMERGENCY FAN SHUTDOWN STATIONS SHALL BE SEPARATE FROM CONTROL AND SENSOR WIRING AND DEVICES.
   F. SEE DIVISION 26 FOR SPARE BRANCH CIRCUIT BREAKERS FOR CONTROL POWER IN 120 V/208 V ELECTRICAL PANELBOARDS. PROVIDE POWER WIRING FROM ELECTRICAL BRANCH PANELBOARDS THROUGH CONTROL POWER TRANSFORMERS TO BCS CONTROLLERS, TERMINAL UNIT CONTROLLERS, SMOKE DAMPERS, FLOW MEASURING DEVICES, AND OTHER POWER CONSUMING CONTROL DEVICES.
   G. PROVIDE DATA OUTLETS AND ASSOCIATED LOW VOLTAGE CABLING FOR EACH BCS CONTROLLER AS REQUIRED. SEE DIVISION 27 FOR COMMUNICATIONS CABLING AND OUTLET REQUIREMENTS. COORDINATE THE INSTALLATION OF NEW DATA OUTLETS WITH THE OWNER'S INFORMATION TECHNOLOGY STAFF.
   H. POWER FOR TERMINAL UNIT CONTROLLERS AND SMOKE DAMPERS SHALL BE DISTRIBUTED AT 24 V.
   I. BRANCH CIRCUIT WIRING AND CONDUIT FURNISHED UNDER THIS SECTION FOR CONTROL EQUIPMENT POWER SHALL BE SEPARATE FROM OTHER POWER WIRING. NO MORE THAN 2 BCS CONTROLLER INSTALLATIONS SHALL OPERATE FROM A SINGLE 120 V BRANCH CIRCUIT.
   J. LOW VOLTAGE CONTROL AND SENSOR WIRING SHALL BE CONTINUOUS WITHOUT SPLICING.

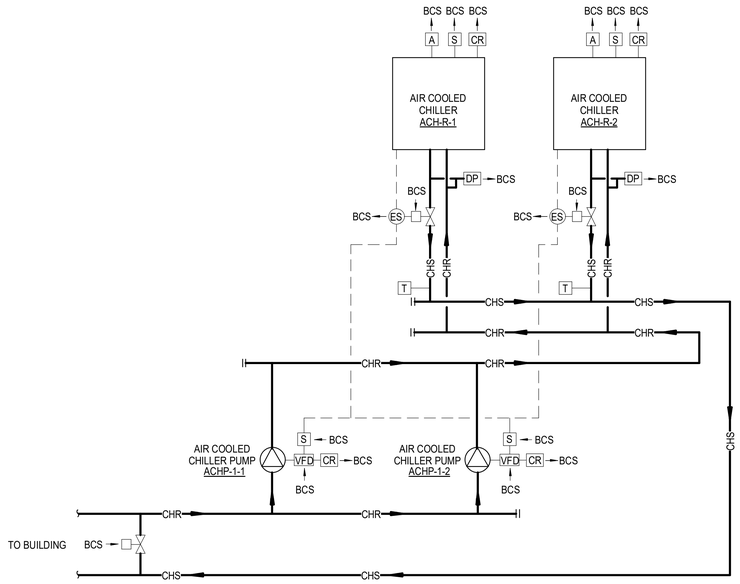
SEQUENCE NOTES
1. SEQUENCE OF OPERATIONS ARE AS INDICATED ON THE DRAWINGS.
2. VARIABLE SPEED CONTROLS:
   A. VARIABLE FREQUENCY DRIVES SHALL START AT LOW SPEED. WHEN 2 OR MORE VARIABLE SPEED FANS OPERATE IN PARALLEL, THEIR SPEEDS SHALL BE SYNCHRONIZED AND CONTROLLED FROM A COMMON SIGNAL.
   B. WHEN VARIABLE SPEED PUMPS OPERATE IN PARALLEL WITH CONSTANT SPEED PUMPS, THE BCS CONTROLLER SYSTEM SHALL OPERATE AND MAINTAIN THE VARIABLE SPEED PUMPS AT FULL SPEED WHENEVER A CONSTANT SPEED PUMP IS IN OPERATION.
   C. VARIABLE FREQUENCY DRIVES SHALL NOT OPERATE BELOW THE MINIMUM SPEED SET ON ITS CONTROL PANEL. MINIMUM SPEED SETTING SHALL BE DETERMINED DURING SYSTEM COMMISSIONING AND SHALL NOT BE LOWER THAN THE MOTOR MANUFACTURER'S RECOMMENDATION.
   D. EQUIPMENT SAFETIES SHALL BE WIRED INTO VARIABLE FREQUENCY DRIVE CONTROL CIRCUITS.
3. INDICATION OF EQUIPMENT OPERATING STATUS AND ACTUATION OF CONTROL SEQUENCES SHALL BE ACCOMPLISHED BY CURRENT SENSING RELAYS UNLESS OTHERWISE INDICATED IN THE I/O SUMMARIES.
1. UPON POWER FAILURE AND RESTORATION, SYSTEMS SHALL AUTOMATICALLY RESTART AND RETURN TO THEIR NORMAL MODE OF OPERATION. ADJUSTABLE TIME DELAYS SHALL BE PROVIDED TO SEQUENTIALLY STAGE STARTING OF EQUIPMENT WITH MOTORS GREATER THAN 5 HP OR ELECTRIC HEATING LOADS GREATER THAN 4 kW.
2. HAND-OFF-AUTOMATIC AND CONTROLLER-OFF-BYPASS SWITCHES:
   A. SAFETY DEVICES, INCLUDING FIRE ALARM SYSTEM RELAYS AND EMERGENCY FAN SHUTDOWN STATIONS, SHALL BE WIRED IN SERIES WITH THE MOTOR CONTROLLER HOLDING COIL CIRCUIT AND SHALL BE ACTIVE IN THE HAND AND AUTOMATIC POSITIONS.
   B. INTERLOCKING WITH OTHER FANS, EQUIPMENT, OR SYSTEMS OTHER THAN THOSE REQUIRED FOR THE OPER

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PAGE SIZE

BCS CONTROLLER INPUT/OUTPUT SUMMARY CHILLED WATER SYSTEM

	OUTPUTS						INPUTS									SOFTWARE												
	DIGITAL			ANALOG			DIGITAL					ANALOG				ALARM		BCS	ENERGY MGMT.									
	SYSTEM GRAPHIC DISPLAY	START/STOP	ENABLE/DISABLE	OPEN/CLOSE	SETPOINT ADJUST	BCS CONTROL	CURRENT SENSING RELAY	DIFFERENTIAL PRESSURE SWITCH	AUXILIARY CONTACT	ALARM CONTACT	PULSE CONTACT	POSITION FEEDBACK	TEMPERATURE	RELATIVE HUMIDITY	FLOW	DIFFERENTIAL PRESSURE	% FULL LOAD AMPS	STATUS/INTERLOCK	HIGH/LOW LIMIT	RUN TIME TOTALIZATION	VIBRATION	PROPORTIONAL	PROPORTIONAL + INTEGRAL	SCHEDULED START/STOP	OPTIMUM START STOP	DAY/NIGHT SETBACK	DEMAND LIMIT CYCLE	RESET OPTIMIZATION	ECONOMIZER	FAILURE MODE (SEE NOTES 1 AND 2)	NOTES
CHILLERS ACHR-1, ACH-R-2	●																													3
ENABLE/DISABLE																													O	4
STATUS																			●											4
MASTER ALARM																														4
ELECTRIC POWER DEMAND LIMIT																														4
CHILLED WATER SETPOINT																														4
CURRENT LIMIT SETPOINT																														4
RUNNING AMPERES																														4
ISOLATION VALVE				●								●																	O	
DIFFERENTIAL PRESSURE								●																						
PUMPS ACHP-1-1, ACHP-1-2	●																													6
START/STOP		●																											O	
STATUS							●													●										
VFD SPEED					●																		●						O	5
MISCELLANEOUS	●																													
SYSTEM CHILLED WATER DIFFERENTIAL PRESSURE															●				●											7
SYSTEM CHILLED WATER BYPASS CONTROL VALVE					●																		●						C	
SYSTEM CHILLED WATER SUPPLY TEMPERATURE													●						●											
SYSTEM CHILLED WATER RETURN TEMPERATURE													●						●											

NOTES:
1. FAILURE MODE: O - ON OR OPEN, C - OFF OR CLOSE, L - LAST COMMAND
2. BCS CONTROLS AND INTERFACES SHALL BE ARRANGED SO THAT EQUIPMENT CONTROLLED BY THE BCS OPERATES AS INDICATED ON FAILURE OF THE BCS CONTROLLER FOR ANY REASON, INCLUDING LOGIC POWER SUPPLY FAILURE, CPU LOCK-UP, OR INTERPOSING RELAY FAILURE. SAFETY AND OPERATIONAL INTERLOCKS SHALL REMAIN IN EFFECT.
3. PROVIDE IDENTICAL CONTROL POINTS AND FUNCTIONS FOR ALL CHILLERS.
4. POINT PROVIDED TO BCS THROUGH CHILLER COMMUNICATION INTERFACE.
5. VFD SHALL FAIL TO 50% SPEED.
6. PROVIDE IDENTICAL CONTROL POINTS AND FUNCTIONS FOR ALL PUMPS.
7. DIFFERENTIAL PRESSURE SENSOR IS LOCATED ON LEVEL 1 CUP.



1 CONTROL SCHEMATIC FOR CHILLED WATER SYSTEM

NO SCALE

SEQUENCE OF OPERATION

THE CONTROLS FOR THE CHILLED WATER SYSTEM SHALL FUNCTION AS FOLLOWS:

1. **CHILLER ENABLE:** AFTER INTERNAL CHILLER SAFETIES ARE SATISFIED, THE CHILLER START SEQUENCE SHALL BE INITIATED. THE BCS CONTROLLER SHALL ENABLE THE LEAD CHILLER UPON A RISE IN OUTSIDE AIR TEMPERATURE ABOVE SETPOINT OR WHEN ANY AIR HANDLING UNIT IS OPERATING WITH CHILLED WATER VALVE OPEN.

2. **LEAVING CHILLED WATER TEMPERATURE SETPOINT:** THE CHILLER SHALL OPERATE UNDER INTERNAL CONTROLS TO MAINTAIN 42°F LEAVING CHILLED WATER TEMPERATURE.

3. **PUMP ENABLE:** WHEN A CHILLER IS ENABLED, THE BCS CONTROLLER SHALL START A CHILLED WATER PUMP. UPON PROOF OF PUMP OPERATION, THE BCS CONTROLLER SHALL OPEN THE 2-POSITION EVAPORATOR ISOLATION VALVE IN THE CHILLER DISCHARGE.

4. **EVAPORATOR ISOLATION VALVE ALARM:** THE BCS CONTROLLER SHALL ANNUNCIATE AN ALARM CONDITION AND STOP A CHILLED WATER PUMP WHENEVER THE EVAPORATOR ISOLATION VALVE ENDSWITCH HAS NOT PROVEN THE VALVE OPEN AND THE NEWLY STARTED PUMP HAS BEEN OPERATING FOR 3 MINUTES (ADJUSTABLE).

5. **EQUIPMENT RUNTIME TOTALIZATION:** THE BCS CONTROLLER SHALL TOTALIZE RUNTIME FOR CHILLERS AND PUMPS AND SHALL START OR ENABLE AND STOP OR DISABLE EQUIPMENT IN A MANNER THAT EQUALIZES EQUIPMENT RUNTIME. THE BCS CONTROLLER SHALL, AT AN OPERATOR DEFINED INTERVAL INITIALLY SET TO MONTHLY, OR UPON OPERATOR REQUEST, EVALUATE THE LEAD EQUIPMENT SELECTIONS AND RESELECT SO AS TO EQUALIZE RUNTIME. WHEN EQUIPMENT IS ROTATED, THE NEWLY STARTED EQUIPMENT SHALL START AND BE PROVEN OPERATING FOR 1 MINUTE PRIOR TO THE OPERATING EQUIPMENT BEING STOPPED.

6. **ADDITIONAL CHILLER ENABLE:** THE BCS CONTROLLER SHALL ENABLE AN ADDITIONAL CHILLER WHENEVER THE RUNNING AMPERES OF THE ACTIVE CHILLERS EXCEEDS 95% OF THE FULL LOAD AMPERES OR CHILLER LEAVING WATER TEMPERATURE EXCEEDS THE SETPOINT FOR A PERIOD OF 15 MINUTES.

7. **CHILLER DISABLE:** WHENEVER TWO CHILLERS ARE OPERATING AND THE RUNNING AMPERES OF EACH CHILLER IS BELOW 40% OF THE FULL LOAD AMPERES FOR A PERIOD OF 15 MINUTES, THE BCS CONTROLLER SHALL DISABLE ONE CHILLER.

8. **CHILLER EVAPORATOR DIFFERENTIAL PRESSURE CONTROL:** THE BCS CONTROLLER SHALL MODULATE THE CHILLED WATER BYPASS CONTROL VALVE TO MAINTAIN A DIFFERENTIAL PRESSURE ACROSS EACH ACTIVE CHILLER EVAPORATOR AT A SETPOINT EQUIVALENT TO THE MINIMUM CHILLER EVAPORATOR FLOW RATE INDICATED ON THE DRAWINGS. WHENEVER EACH DIFFERENTIAL PRESSURE EXCEEDS SETPOINT, THE CHILLED WATER BYPASS CONTROL VALVE SHALL BE CLOSED. COORDINATE WITH THE CHILLER MANUFACTURER.

9. **LEAVING WATER TEMPERATURE RESET:** THE LEAVING CHILLED WATER TEMPERATURE SETPOINT SHALL BE RESET BY A COMMON SIGNAL TO ACTIVE CHILLERS FROM THE BCS CONTROLLER. RESET THE TEMPERATURE BETWEEN 42°F AND 45°F BASED ON EVAPORATOR ISOLATION VALVE POSITION. RESET TEMPERATURE UPWARD AND DOWNWARD IN 0.5°F INCREMENTS EVERY 30 MINUTES SUCH THAT THE CRITICAL EVAPORATOR ISOLATION VALVE IS NO MORE THAN 90% OPEN.

10. **CHILLER LEAVING WATER TEMPERATURE ALARM:** THE BCS CONTROLLER SHALL ANNUNCIATE AN ALARM CONDITION AT THE BCS CENTRAL STATION WHENEVER A CHILLER IS ENABLED AND CHILLER LEAVING WATER TEMPERATURE EXCEEDS 50°F FOR A PERIOD OF 15 MINUTES.

11. **SOFTWARE AND HARDWARE FOR CHILLER RUNNING AMPERES:** THE BCS MANUFACTURER SHALL BE RESPONSIBLE FOR PROVIDING SOFTWARE AND HARDWARE TO OBTAIN RUNNING AMPERES FROM THE CHILLER CONTROL PANEL.COORDINATE WITH THE CHILLER MANUFACTURER.

12. **EQUIPMENT FAILURE ALARM:** IF AN ENABLED OR STARTED PIECE OF EQUIPMENT DOES NOT PROVE OPERATING AFTER A 15 SECOND TIME PERIOD, OR PROOF IS LOST WHILE OPERATING, AN ALARM SIGNAL SHALL BE INITIATED AT THE BCS CENTRAL STATION AND AN EQUIVALENT PIECE OF EQUIPMENT SHALL BE STARTED OR ENABLED. CHILLERS AND PUMPS SHALL BE SEQUENCED INDEPENDENTLY. UPON PROOF OF OPERATION OF THE NEWLY STARTED OR ENABLED PIECE OF EQUIPMENT, THE ALARMED EQUIPMENT SHALL BE STOPPED OR DISABLED. THE ALARM MESSAGE SHALL REMAIN UNTIL MANUALLY RESET AT THE BCS CENTRAL STATION.

13. **CHILLER CONTROLS APPROVAL:** CHILLER CONTROLS SHALL BE APPROVED IN WRITING BY THE CHILLER MANUFACTURER BY NOTATION ON THE CONTROL SHOP DRAWINGS.

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC CONTROLS CHILLED WATER SYSTEM

ORIG SUBMISSION: 2022.05.25

SHEET:
M-703

OWNERS REVIEW SET

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BCS CONTROLLER INPUT/OUTPUT SUMMARY HEATING WATER SYSTEM

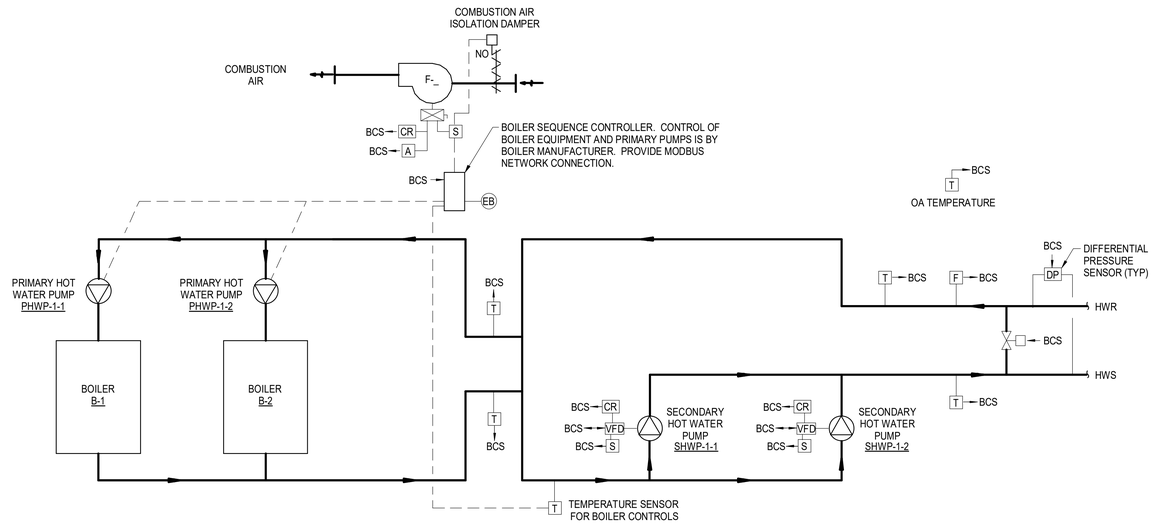
	OUTPUTS								INPUTS									SOFTWARE												
	DIGITAL				ANALOG				DIGITAL				ANALOG					ALARM		BCS		ENERGY MGMT.								
	SYSTEM GRAPHIC DISPLAY	START/STOP	ENABLE/DISABLE	OPEN/CLOSE	SETPOINT ADJUST	BCS CONTROL			CURRENT SENSING RELAY	DIFFERENTIAL PRESSURE SWITCH	AUXILIARY CONTACT	ALARM CONTACT	PULSE CONTACT	TEMPERATURE	RELATIVE HUMIDITY	PRESSURE	FLOW	CARBON DIOXIDE	STATUS/INTERLOCK	HIGH/LOW LIMIT	RUN TIME TOTALIZATION	PROPORTIONAL	PROPORTIONAL + INTEGRAL	SCHEDULED START/STOP	OPTIMUM START/STOP	DEMAND LIMIT CYCLE	ENERGY USE TOTALIZATION	TRENDING AND ARCHIVING	CALCULATED VALUE			FAILURE MODE (SEE NOTE 1)	NOTES
PRIMARY HEATING WATER PUMPS PHWP-1-1, PHWP-1-2, PHWP-1-3	●																													
PUMP START / STOP		●																●											O	3
PUMP STATUS									●																	●	●			3
SECONDARY HEATING WATER PUMPS SHWP-1-1, SHWP-1-2	●																													
PUMP START / STOP		●																●											O	
PUMP STATUS									●																	●	●			
PUMP VFD CONTROL						●															●									
HW BYPASS CONTROL VALVE						●															●								L	
SYSTEM DIFFERENTIAL PRESSURE	●															●			●								●			
HEATING WATER SUPPLY TEMPERATURE	●													●					●								●			
HEATING WATER RETURN TEMPERATURE	●													●					●								●			
OUTSIDE AIR TEMPERATURE														●																2
BOILER ENTERING TEMPERATURE														●					●								●			
BOILER LEAVING WATER TEMPERATURE														●					●								●			
BOILER SEQUENCE CONTROLLER			●																											
COMBUSTION AIR FAN F-																													O	
FAN STATUS	●								●										●								●			3
COMBUSTION AIR ISOLATION DAMPER				●																										3

NOTES:
1. FAILURE MODE
   O - ON OR OPEN
   C - OFF OR CLOSE
   L - LAST COMMAND
2. LOCATE OUTSIDE AIR TEMPERATURE SENSOR ON A NORTH FACING WALL OUT OF DIRECT SUNLIGHT.
3. CONTROLLED BY BOILER SEQUENCE CONTROLLER.

SEQUENCE OF OPERATION:

THE CONTROLS FOR THE BOILER PLANT SHALL FUNCTION AS FOLLOWS:

1. **SYSTEM START-UP**: THE BCS CONTROLLER SHALL ENABLE THE BOILER SEQUENCE CONTROLLER PANEL AND START THE LEAD SECONDARY HOT WATER PUMP WHENEVER OUTSIDE AIR TEMPERATURE IS BELOW 50°F (ADJUSTABLE) FOR 15 MINUTES.
2. **BOILER SEQUENCE CONTROLLER**: THE BOILER SEQUENCE CONTROLLER PANEL SHALL START AND STOP THE BOILER SYSTEM, INCLUDING PRIMARY PUMPS, AND BUILDING HOT WATER SUPPLY TEMPERATURE.
3. **SECONDARY HOT WATER PUMP CONTROL**: SECONDARY HOT WATER PUMPS SHALL BE CONTROLLED FROM A COMMON SIGNAL AND OPERATE AT THE SAME SPEED. THE BCS CONTROLLER SHALL STOP ONE SECONDARY PUMP WHENEVER THE SECONDARY SYSTEM FLOW RATE AS MEASURED BY A FLOW METER IS LESS THAN ___ GPM FOR A PERIOD OF 30 MINUTES.
4. **SYSTEM PRESSURE SETPOINT**: THE BCS CONTROLLER SHALL MODULATE THE SPEED OF ACTIVE SECONDARY HOT WATER PUMPS TO MAINTAIN THE SYSTEM DIFFERENTIAL PRESSURE SETPOINT AT THE SENSOR LOCATION INDICATED ON THE DRAWINGS.
5. **LOW WATER TEMPERATURE ALARM**: THE BCS CONTROLLER SHALL ANNUNCIATE AN ALARM CONDITION AT THE BCS CENTRAL STATION WHENEVER BUILDING HOT WATER SUPPLY TEMPERATURE IS BELOW 120°F AND THE BOILER SEQUENCE CONTROLLER HAS BEEN ENABLED FOR A PERIOD OF 15 MINUTES.
6. **SECONDARY HOT WATER PUMP FAILURE ALARM**: UPON LOSS OF PROOF OF OPERATION FROM BOTH SECONDARY HOT WATER PUMPS WITH THE BOILER SEQUENCE CONTROLLER ENABLED FOR 5 MINUTES, THE BCS CONTROLLER SHALL ANNUNCIATE AN ALARM CONDITION AT THE BCS CENTRAL STATION.
7. **BOILER SHUT DOWN**: EMERGENCY BOILER SHUT DOWN STATION SHALL DEACTIVATE THE BOILER.
8. **BOILER CONTROLS APPROVAL**: BOILER CONTROLS SHALL BE APPROVED BY THE BOILER MANUFACTURER IN WRITING, BY NOTATION ON THE CONTROL SHOP DRAWINGS.
9. **BOILER COMBUSTION AIR START/STOP**: FAN SHALL BE INTERLOCKED WITH BOILER SEQUENCE CONTROLLER. WHEN CONTROLLER IS ENABLED, FAN SHALL START AND ISOLATION DAMPERS ASSOCIATED WITH FAN SHALL BE HARDWIRE INTERLOCKED TO OPEN. WHEN CONTROLLER IS DISABLED, FAN SHALL STOP AND ISOLATION DAMPERS SHALL CLOSE.
10. **BOILER COMBUSTION AIR FAN ALARM**: AN ALARM SHALL BE GENERATED AT THE BCS CENTRAL STATION IF BOILER SEQUENCE CONTROLLER IS ENABLED AND COMBUSTION AIR FAN STATUS IS NOT PROVEN OR HAS BEEN LOST.



1 CONTROL SCHEMATIC FOR HOT WATER SYSTEM

NO SCALE

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC CONTROLS HOT WATER SYSTEM

ORIG SUBMISSION: 2022.05.25

SHEET:
M-704

OWNERS REVIEW SET

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BCS CONTROLLER INPUT/OUTPUT SUMMARY ERU

| | OUTPUTS | | | | | | | | INPUTS | | | | | | | | | | SOFTWARE | | | | | | | | | |

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BCS CONTROLLER INPUT/OUTPUT SUMMARY AIR HANDLING UNIT

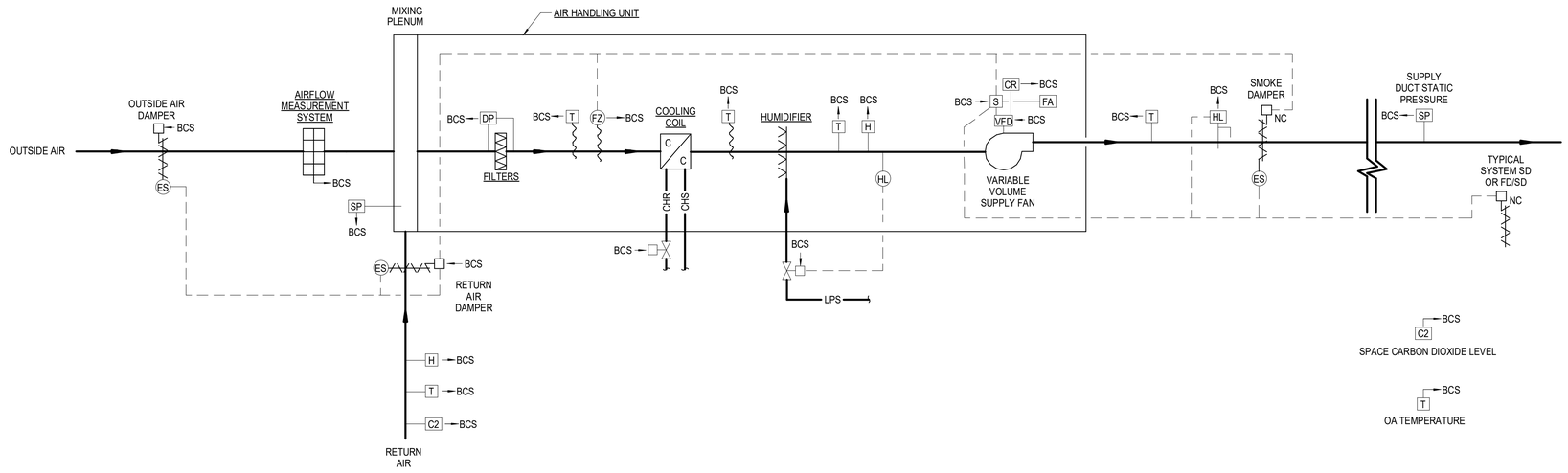
	OUTPUTS						INPUTS									SOFTWARE												
	DIGITAL			ANALOG			DIGITAL						ANALOG			ALARM			BCS	ENERGY MGMT.								
	SYSTEM GRAPHIC DISPLAY	START/STOP	ENABLED/DISABLE OPEN/CLOSE	SETPOINT ADJUST	BCS CONTROL		CURRENT SENSING RELAY	DIFFERENTIAL PRESSURE SWITCH	AUXILIARY CONTACT	ALARM CONTACT	PULSE CONTACT	POSITION FEEDBACK	TEMPERATURE	RELATIVE HUMIDITY	FLOW	PRESSURE	CARBON DIOXIDE LEVEL	STATUS/INTERLOCK	HIGH/LOW LIMIT	RUN TIME TOTALIZATION	PROPORTIONAL	PROPORTIONAL + INTEGRAL	SCHEDULED START/STOP	OPTIMUM START STOP	DAY/NIGHT SETBACK	DEMAND LIMIT CYCLE	RESET OPTIMIZATION	ECONOMIZER	CALCULATED POINTS	FAILURE MODE (SEE NOTES 1 AND 2)	NOTES
AIR HANDLING UNIT	●																													
OUTSIDE AIR DAMPER			●																										O	
OUTSIDE AIR FLOW														●															O	
RETURN AIR DAMPER					●																	●							O	
CHILLED WATER CONTROL VALVE					●																	●							O	
COOLING COIL HUMIDITY														●																
COOLING COIL LEAVING AIR TEMPERATURE													●					●												
SUPPLY FAN START/STOP		●																											O	3
SUPPLY FAN VFD SPEED					●																	●								
SUPPLY FAN STATUS							●											●		●										
FREEZESTAT									●																					
DUCT HIGH PRESSURE SAFETY									●						●				●											
FILTER DIFFERENTIAL PRESSURE															●				●											
SPACE CARBON DIOXIDE LEVEL																●			●											
SPACE TEMPERATURE													●						●											
RETURN AIR CARBON DIOXIDE LEVEL																●			●											
RETURN AIR SPACE TEMPERATURE													●						●											
RETURN AIR RELATIVE HUMIDITY														●					●											

NOTES:
1. FAILURE MODE: O - ON OR OPEN, C - OFF OR CLOSE, L - LAST COMMAND
2. BCS CONTROLS AND INTERFACES SHALL BE ARRANGED SO THAT EQUIPMENT CONTROLLED BY THE BCS OPERATES AS INDICATED ON FAILURE OF THE BCS CONTROLLER FOR ANY REASON, INCLUDING LOGIC POWER SUPPLY FAILURE, CPU LOCK-UP, OR INTERPOSING RELAY FAILURE. SAFETY AND OPERATIONAL INTERLOCKS SHALL REMAIN IN EFFECT.
3. FAN SHALL FAIL TO 50% SPEED.

SEQUENCE OF OPERATION:

THE CONTROLS FOR SYSTEM AHU-1-1, AHU-2-1, AHU-R-1 SHALL FUNCTION AS FOLLOWS:

1. **SYSTEM START-STOP:** THE SYSTEM SHALL BE AUTOMATICALLY STARTED AND STOPPED BY THE BCS CONTROLLER WHENEVER THE STARTER 'HAND-OFF-AUTOMATIC' SWITCH IS IN THE AUTOMATIC POSITION, AND MANUALLY STARTED AND STOPPED BY THE HAND POSITION.
2. **DAMPER POSITIONS:** PRIOR TO FAN STARTING, THE RETURN AIR DAMPER AND ALL SMOKE AND COMBINATION FIRE AND SMOKE DAMPERS ASSOCIATED WITH THE SYSTEM SHALL OPEN PRIOR TO FAN STARTING. THE FOLLOWING DAMPERS SHALL BE PROVEN OPEN: RETURN AIR DAMPER AND THE OUTSIDE AIR DAMPER.
3. **MORNING WARM-UP MODE:** ON MORNING WARM-UP MODE, THE SYSTEM SHALL RUN, THE OUTSIDE AIR AND CHILLED WATER VALVE SHALL BE CLOSED, AND SUPPLY TERMINAL UNITS SHALL BE FULLY OPEN UNTIL RETURN AIR SPACE TEMPERATURE RISES ABOVE A WARM-UP MODE SETPOINT OF 70°F (ADJUSTABLE). THE OUTSIDE AIR DAMPER SHALL OPEN UPON COMPLETION OF THE MORNING WARM-UP MODE.
4. **DEMAND CONTROLLED VENTILATION:** MODULATE THE RETURN AIR DAMPER TO ADJUST THE OUTSIDE AIRFLOW MEASURED BY THE AIRFLOW MEASUREMENT SYSTEM BETWEEN ITS MINIMUM AND MAXIMUM IN 5% INCREMENTS EVERY 15 MINUTES TO MAINTAIN A MAXIMUM CARBON DIOXIDE CONCENTRATION OF 1000 PPM IN RETURN AIR AND ALL SPACES WITH CARBON DIOXIDE SENSORS.
5. **ROOM THERMOSTAT CONTROL:** MODULATE THE CHILLED WATER TO MAINTAIN SPACE TEMPERATURE SETPOINT.
6. **HUMIDIFIER CONTROL:** MODULATE THE HUMIDIFIER STEAM VALVE TO MAINTAIN SUPPLY AIR RELATIVE HUMIDITY SETPOINT OF __%. A HIGH HUMIDITY SAFETY SHALL CLOSE THE VALVE IF THE HUMIDITY EXCEEDS 95% RH. CONTROL VALVE SHALL BE INTERLOCKED TO OPERATE ONLY WHEN THE COOLING COIL CONTROL VALVE IS CLOSED.
7. **FREEZE PROTECTION:** A SEPARATE LOW LIMIT SAFETY SENSING AIR ENTERING THE COOLING COIL, SET AT 32ºF ADJUSTABLE, SHALL STOP THE FAN, CLOSE THE OUTSIDE AIR DAMPER, AND OPEN THE CHILLED WATER VALVE.
8. **HIGH PRESSURE SAFETY**: A HIGH PRESSURE SAFETY SENSING DISCHARGE STATIC PRESSURE SET AT 20% LESS THAN DUCT PRESSURE RATING SHALL STOP THE FAN.
9. **NIGHT SETBACK MODE OVERRIDE**: A DROP IN SPACE TEMPERATURE BELOW NIGHT SETBACK SETPOINT OF 65°F (ADJUSTABLE) SHALL OVERRIDE THE SUPPLY FAN INTERLOCK AND ALLOW THE SYSTEM TO OPERATE UNDER NORMAL CONTROL UNTIL SPACE TEMPERATURE RISES ABOVE NIGHT SETBACK SETPOINT. OUTSIDE AIR DAMPER SHALL REMAIN CLOSED DURING THIS MODE.
10. **SHUTDOWN**: ON POWER INTERRUPTION OR FAN SHUTDOWN, THE OUTSIDE AIR, SMOKE AND RETURN DAMPERS AND CHILLED WATER VALVES SHALL CLOSE.
11. **FIRE ALARM SYSTEM RELAY**: ON ACTIVATION OF THE FIRE ALARM SYSTEM RELAY, THE SYSTEM SHALL SHUT DOWN.



1 **CONTROL SCHEMATIC FOR AHU**
NO SCALE

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
HVAC CONTROLS AHU

ORIG SUBMISSION: 2022.05.25

SHEET:
M-706
OWNERS REVIEW SET

5/20/2022 1:41:47 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT FULL SHEETS ORIGINAL PAPER SIZE

BCS CONTROLLER INPUT/OUTPUT SUMMARY UTILITY METERING AND MISCELLANEOUS

| | OUTPUTS | | | | | | | | INPUTS | | | | | | | | | | | | SOFTWARE | | | | | | | | | | | |

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE

UNDERGROUND DUCTS & CABLES

SYMBOL	DESCRIPTION (ITEMS SHOWN DASHED ARE EXISTING)
MH	MANHOLE OR HANDHOLE
UP	PRIMARY (UP - UNDERGROUND, OP - OVERHEAD)
US	SECONDARY (US - UNDERGROUND, OS - OVERHEAD)
UC	COMMUNICATIONS (UC - UNDERGROUND, OC - OVERHEAD)
PP	POWER POLE

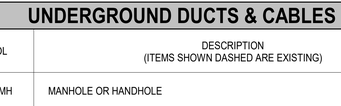
ELECTRICAL EQUIPMENT

SYMBOL	DESCRIPTION (ITEMS SHOWN DASHED ARE EXISTING)
	BRANCH PANELBOARD - WALL-MOUNTED:
	SURFACE-MOUNTED, FLUSH (RECESSED)-MOUNTED
	DISTRIBUTION PANELBOARD - FLOOR-MOUNTED
	PAD-MOUNT TRANSFORMER SHOWN WITH CONCRETE PAD AND WORKING CLEARANCE
	MISCELLANEOUS SITE EQUIPMENT, AS IDENTIFIED SHOWN WITH CONCRETE PAD
T	DRY-TYPE TRANSFORMER
#	MOTOR, NUMERAL INDICATES HP
	MOTOR CONTROLLER
	COMBINATION MOTOR CONTROLLER/DISCONNECT
S M	MOTOR STARTER, MANUAL WITH THERMAL OVERLOAD
	DISCONNECT SWITCH, SIZE/POLES/FUSE/ENCLOSURE TYPE IF OTHER THAN NEMA 1
	INDIVIDUAL CIRCUIT BREAKER, TRIP/POLES
OR	GROUNDING ELECTRODE

MECHANICAL CONNECTIONS

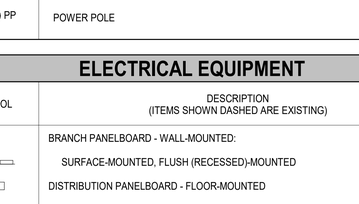
MECHANICAL EQUIPMENT IS DENOTED WITH SYMBOLS WHICH REPRESENT THE ACTUAL EQUIPMENT.

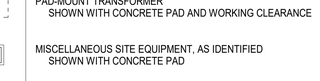
SYMBOLS INDICATED WITH AN UNDERLINED TAG ARE MECHANICAL EQUIPMENT WHICH REQUIRE AN ELECTRICAL CONNECTION. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO:



REFER TO BUILDING-SPECIFIC MECHANICAL EQUIPMENT CONNECTION SCHEDULE AND REFER TO ONE-LINES, SWITCHBOARD SCHEDULES, OR PANELBOARD SCHEDULES FOR CIRCUIT INFORMATION.

CIRCUITING



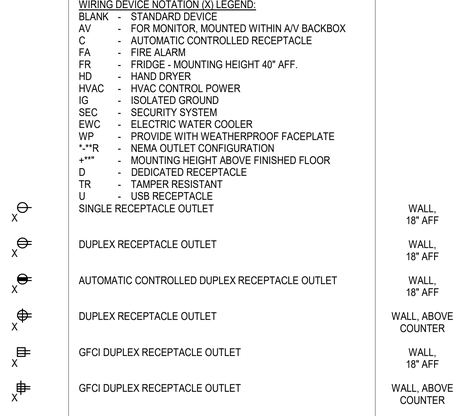


DENOTES PANELBOARD FROM WHICH CIRCUITS WITHIN DESIGNATED AREA SHALL BE SERVED, OR DENOTES SPECIFIC CIRCUIT FROM WHICH CONNECTIONS SHALL BE MADE, UON. SEE PANELBOARD SCHEDULES FOR CIRCUITING REQUIREMENTS, THE MAXIMUM NUMBER OF BRANCH CIRCUIT PHASE CONDUCTORS INSTALLED IN SINGLE CONDUIT SHALL NOT EXCEED THREE (3), UON.

WIRING DEVICES

SYMBOL	DESCRIPTION (ITEMS SHOWN DASHED ARE EXISTING)	MOUNTING HEIGHT, AFF, UON.
	WIRING DEVICE NOTATION (X) LEGEND: BLANK - STANDARD DEVICE AV - FOR MONITOR, MOUNTED WITHIN A/V BACKBOX C - AUTOMATIC CONTROLLED RECEPTACLE FA - FIRE ALARM FR - FRIDGE - MOUNTING HEIGHT 40" AFF. HD - HAND DRYER HVAC - HVAC CONTROL POWER IG - ISOLATED GROUND SEC - SECURITY SYSTEM EWC - ELECTRIC WATER COOLER WP - PROVIDE WITH WEATHERPROOF FACEPLATE *-**R - NEMA OUTLET CONFIGURATION +*** - MOUNTING HEIGHT ABOVE FINISHED FLOOR D - DEDICATED RECEPTACLE TR - TAMPER RESISTANT U - USB RECEPTACLE	
X	SINGLE RECEPTACLE OUTLET	WALL, 18" AFF
X	DUPLEX RECEPTACLE OUTLET	WALL, 18" AFF
X	AUTOMATIC CONTROLLED DUPLEX RECEPTACLE OUTLET	WALL, 18" AFF
X	DUPLEX RECEPTACLE OUTLET	WALL, ABOVE COUNTER
X	GFCI DUPLEX RECEPTACLE OUTLET	WALL, 18" AFF
X	GFCI DUPLEX RECEPTACLE OUTLET	WALL, ABOVE COUNTER
X	DOUBLE DUPLEX RECEPTACLE OUTLET	WALL, 18" AFF
X	DOUBLE DUPLEX RECEPTACLE OUTLET	WALL, ABOVE COUNTER
X	DUPLEX RECEPTACLE	FLUSH CEILING-MOUNTED
X	POKE THRU FLOOR BOX WITH DATA (T)/ FLOOR BOX WITHOUT DATA (P), PROVIDE (2) DUPLEX RECEPTACLES AND (1) QUAD USB OUTLET COORDINATE WITH LV DRAWINGS. A-6AT	FLUSH FLOOR-MOUNTED
X	SPECIAL OUTLET, TYPE AS NOTED	WALL, 18" AFF
X	JUNCTION BOX M - MODULAR FURNITURE CONNECTION	WALL, 18" AFF
X	JUNCTION BOX	ABOVE CEILING
#	JUNCTION BOX FOR SYSTEMS FURNITURE. NUMBER ADJACENT TO BOX INDICATES NUMBER OF WORKSTATIONS FED BY JUNCTION BOX.	WALL, 18" AFF

TYPICAL MOUNTING HEIGHTS



LEGEND: (WHERE DEVICES OCCUR)
- CR - CARD READER (ROUGH-IN OR DIV. 28)
- D - DATA/TELEPHONE DEVICE (ROUGH-IN OR DIV. 27)
- FA - FIRE ALARM DEVICE (DIV. 28)
- R - POWER RECEPTACLE (NOTE 2)
- SW - LIGHTING CONTROL DEVICE (NOTE 3)
- T - THERMOSTAT (DIV. 23)

NOTES:
1. OPERABLE PART OF DEVICE SHALL NOT EXCEED ADA HEIGHT REQUIREMENT.
2. DUPLEX OR QUAD AS INDICATED ON THE FLOOR PLANS.
3. SEE FLOOR PLANS FOR SPECIFIC NUMBER OF GANGS.
4. 6"-10" DISTANCE BETWEEN DEVICES.
5. 3"-8" MAX FROM DOOR FRAME TO DEVICE.
6. CIRCUITS SERVING UNDER CABINET LIGHTING SHALL BE CONCEALED BEHIND UPPER MILLWORK.
7. INDICATES DEVICES ALIGNED VERTICALLY WITH EACH OTHER.
8. ADA HEIGHT REQUIREMENT FOR ABOVE COUNTER DEVICES SHALL BE DETERMINED BY OBSTRUCTED AND/OR UNOBSTRUCTED FORWARD AND SIDE REACH REQUIREMENTS BASED ON ARCHITECTURAL MILLWORK DIMENSIONS.

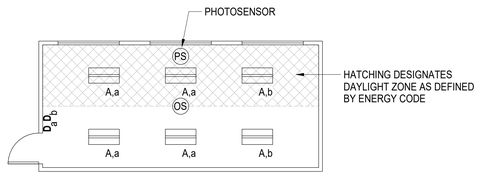
LUMINAIRES

SYMBOL	DESCRIPTION (ITEMS SHOWN DASHED ARE EXISTING)	MOUNTING
	LETTER(S) ADJACENT TO SYMBOLS INDICATE LUMINAIRE TYPE, AS LISTED ON LUMINAIRE SCHEDULE. SEE LUMINAIRE SCHEDULE FOR SPECIFICS RELATED TO EACH TYPE.	
	2' X 2', 2' X 4', AND 1' X 4'. LINES INDICATE DIRECTION OF BASKET WHEN APPLICABLE. NORMAL, EMERGENCY	RECESSED- OR SURFACE-MOUNTED
	NARROW, LINEAR LUMINAIRE. LENGTH PER FLOOR PLANS. NORMAL, EMERGENCY	RECESSED- OR SURFACE-MOUNTED
	WALLWASH DOWNLIGHT ROUND, SQUARE APERTURE.	RECESSED
	DOWNLIGHT, ROUND, SQUARE APERTURE. NORMAL, EMERGENCY	RECESSED
	MONO-POINT PENDANT WITH ROUND APERTURE. NORMAL, EMERGENCY	SURFACE
	WALL-MOUNTED LUMINAIRE. NORMAL, EMERGENCY	WALL-MOUNTED
	WALL-MOUNTED LINEAR LUMINAIRE. NORMAL, EMERGENCY	WALL-MOUNTED
	INDUSTRIAL STRIP TYPE, LENGTH PER FLOOR PLANS. NORMAL, EMERGENCY	PENDANT
	EXIT LIGHT. DARKENED SECTIONS INDICATE FACES; ARROWS AS INDICATED.	WALL- OR CEILING-MOUNTED PER DRAWINGS
	BATTERY-POWERED EMERGENCY LIGHT.	WALL-MOUNTED 7'-6" TO BOTTOM OF LUMINAIRE

LIGHTING CONTROL DEVICES

SYMBOL	DESCRIPTION (ITEMS SHOWN DASHED ARE EXISTING)	MOUNTING HEIGHT, AFF, UON.
S_{OS} D_{LV}	SWITCH OR DIMMER , TYPE DESIGNATED: BLANK - SINGLE-POLE, SINGLE-THROW 3 - 3-WAY, SINGLE-POLE, DOUBLE-THROW 4 - 4-WAY, DOUBLE-POLE, DOUBLE-THROW P - PILOT LIGHT H - LIGHTED HANDLE S - PROJECTION SCREEN CONTROL LO - NETWORKED LOVAL OVERRIDE LV - LOW VOLTAGE (0-10 VOLT) OS - OCCUPANCY SENSOR TYPE VS - VACANCY SENSOR TYPE DT - DIGITAL TIME SWITCH TS - ASTRONOMICAL TIME SWITCH WP - WEATHERPROOF, SINGLE-POLE, SINGLE-THROW SS - WINDOW SHADE CONTROL	WALL, COORD WITH ARCH
MCS RS	NETWORKED LIGHTING CONTROL STATION, DESIGNATION INDICATED: MCS - MASTER CONTROL STATION RS - REMOTE CONTROL STATION	WALL, COORD WITH ARCH
OS	CEILING-MOUNTED LIGHTING CONTROL DEVICE, DESIGNATION INDICATED: OS - OCCUPANCY SENSOR VS - VACANCY SENSOR PS - PHOTOSENSOR PC - PHOTOCELL	CEILING
	CORNER-MOUNTED (WALL OR CEILING) LIGHTING CONTROL DEVICE.	WALL, 8'-0" AFF
ER X	EMERGENCY LIGHTING CONTROL RELAY, SEE DETAIL 2/E-601	

DAYLIGHT-RESPONSIVE CONTROLS



1. REQUIREMENTS FOR DAYLIGHT-RESPONSIVE CONTROLS SHALL BE AS DETERMINED BY THE APPLICABLE ENERGY CODE.
2. LUMINAIRES WITHIN HATCHED DAYLIGHT ZONE SHALL BE DIMMED BY THE PHOTOSENSOR WITHIN THE RESPECTIVE DAYLIGHT ZONE. EXACT PLACEMENT OF PHOTOSENSOR SHALL BE DETERMINED BY MANUFACTURER REQUIREMENTS.
3. WHEN MULTIPLE CONTROL ZONES (CONTROL ZONES a, b, ETC.) ARE INCLUDED WITHIN ONE DAYLIGHT ZONE, THE LIGHTING CONTROL MANUFACTURER SHALL PROVIDE ALL NECESSARY COMPONENTS FOR THE INDIVIDUAL CONTROL ZONES TO BE CONTROLLED VIA LOCAL SPACE CONTROLS WHILE BEING DIMMED BY THE PHOTOSENSOR.

APPLICABLE CODE INFORMATION

CODES AND STANDARDS:
- BUILDING CODE: [ENTER BUILDING CODE]
- MECHANICAL CODE: [ENTER MECHANICAL CODE]
- PLUMBING CODE: [ENTER PLUMBING CODE]
- ELECTRICAL CODE: [ENTER ELECTRICAL CODE]
- FIRE CODE: INTERNATIONAL FIRE CODE 2015 ED
- ENERGY CODE: [ENTER ENERGY CODE]
- ACCESSIBILITY: [ENTER ACCESSIBILITY CODE]

OCCUPANCY USE GROUP
- [ENTER OCCUPANCY USE GROUP, PER ARCHITECT]

CONSTRUCTION CLASSIFICATIONS:
- [ENTER CONSTRUCTION CLASSIFICATION, PER ARCHITECT]

SPRINKLER SYSTEM:
- NFPA 13, 2013ED

ABBREVIATIONS

A	AMPERES	HP	HORSEPOWER
ABV	ABOVE	IG	ISOLATED GROUND
AFF/AFG	ABOVE FINISHED FLOOR/GRADE	IMC	INTERMEDIATE METAL CONDUIT
AC	ALTERNATING CURRENT	JB	JUNCTION BOX
AFCI	ARC FAULT CIRCUIT INTERRUPTER	K	CAP EXISTING OUTLET
AHU	AIR HANDLING UNIT	kcmil	THOUSAND CIRCULAR MILLS
AIC	AVAILABLE INTERRUPTING CAPACITY	KVA	KILOVOLTAMEPERES
AL	ALUMINUM	KW	KILOWATT
ARCH	ARCHITECT/ARCHITECTURAL	LCM	LIGHTING CONTROL MODULE
ATS	AUTOMATIC TRANSFER SWITCH	LED	LIGHT-EMITTING DIODE
A/V	AUDIO/VISUAL	LMNR	LUMINAIRE
BAS	BUILDING AUTOMATION SYSTEM	LSIG	LONG-TIME/SHORT-TIME/ INSTANTANEOUS/GROUND-FAULT
BEL	BELOW		
BF	BELOW FLOOR	LTG	LIGHTING
BFC	BELOW FINISHED CEILING	LV	LOW VOLTAGE
BM	BEAM	MC	METAL-CLAD CABLE
C	CONDUIT	MCB	MAIN CIRCUIT BREAKER
CB	CIRCUIT BREAKER	MCC	MOTOR CONTROL CENTER
CIS	CENTRAL INVERTER SYSTEM	MECH	MECHANICAL
CKT	CIRCUIT	MLO	MAIN LUGS ONLY
CLG	CEILING	NC	NORMALLY CLOSED
COL	COLUMN	NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
COMM	COMMUNICATION		
CONN	CONNECT/CONNECTION	NF	NON-FUSIBLE
CONT	CONTINUATION/CONTINUOUS	NO	NORMALLY OPEN
CR	CARD READER	OAH	OVERALL HEIGHT
CTE	CONNECT TO EXISTING	OC	ON CENTER
CU	CONDENSING UNIT	OCP	OVERCURRENT PROTECTION
DC	DIRECT CURRENT	OS	OCCUPANCY SENSOR
DISC	DISCONNECT	PC	PHOTOCELL
DOAS	DEDICATED OUTSIDE AIR SYSTEM	PH OR Ø	PHASE
DN	DOWN	PIR	PASSIVE INFRARED
DS	DAYLIGHT SENSOR	PL	PILOT LIGHT
DT	DUAL TECHNOLOGY	PNL	PANEL
EC	EMPTY CONDUIT OR ELECTRICAL CONTRACTOR	PS	PHOTOSENSOR
		PT	POKE-THRU FITTING
ELEC	ELECTRICAL	PV	PHOTO-VOLTAIC
ELEV	ELEVATOR	PVC	POLYVINYL CHLORIDE CONDUIT
EMT	ELECTRICAL METALLIC TUBING	RC	REMOTE CONTROL
ENT	ELECTRICAL NONMETALLIC TUBING	RCPT	RECEPTACLE
EPM	ELECTRONIC POWER MONITOR	REL	RELOCATE
EPSS	EMERGENCY POWER SUPPLY SYSTEM	REM	REMOVE
ERU	ENERGY RECOVERY UNIT	RPM	ROTATIONS PER MINUTE
EV	ELECTRIC VEHICLE	SC	SPLIT CIRCUIT
EWC	ELECTRIC WATER COOLER	SCCR	SHORT CIRCUIT CURRENT RATING
EX	EXISTING	SEC	SECURITY
EXP	EXPOSED	SPEC	SPECIFICATION
F	FUSED	SPDT	SINGLE-POLE DOUBLE-THROW
F*	FUSED PER MANUFACTURER'S REQUIREMENTS	ST	SHUNT STRIP
		SW	SWITCH
FA	FIRE ALARM	SWBD	SWITCHBOARD
FACP	FIRE ALARM CONTROL PANEL	SWGR	SWITCHGEAR
FB	FLOOR BOX	TELE	TELEPHONE
FCU	FAN COIL UNIT	TS	TIME SWITCH
FL	FLOOR	TYP	TYPICAL
FLA	FULL LOAD AMPS	UG	UNDERGROUND
Hz	HERTZ	UH	UNIT HEATER
G	GROUND	UON	UNLESS OTHERWISE NOTED
GC	GENERAL CONTRACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY SYSTEM
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	US	ULTRASONIC
GFP	GROUND FAULT PROTECTION SYSTEM FOR EQUIPMENT	V	VOLTAGE
		VFD	VARIABLE FREQUENCY DRIVE
GR	GRADE	VS	VACANCY SENSOR
GRC	RIGID METAL CONDUIT	WH	WATER HEATER
GRS	GALVANIZED RIGID STEEL CONDUIT	WP	WEATHER PROOF
HOA	HAND-OFF-AUTOMATIC	XFMR	TRANSFORMER

AUTOMATIC RECEPTACLE CONTROL

1. ALL CONTROLLED RECEPTACLES SHALL BE PERMENANTLY MARKED TO VISUALLY DIFFERENTIATE THEM FROM UNCONTROLLED RECEPTACLES ARE ARE TO BE UNIFORMLY DISTRIBUTED THROUGOUT THE SPACE. PLUG-IN DEVICES SHALL NOT COMPLY WITH THIS REQUIREMENT.
2. AT LEAST 50% OF ALL 125 V, 15 AND 20 A RECEPTACLES IN ALL PRIVATE OFFICES, CONFERENCE ROOMS, ROOMS USED PRIMARILY FOR PRINTING AND/OR COPYING FUNCTIONS, BREAK ROOMS, CLASSROOMS, AND INDIVIDUAL WORKSTATIONS:
   A. AUTOMATIC RECEPTACLES SHALL BE CONTROLLED BY SPACE LIGHTING OCCUPANCY SENSORS VIA ROOM CONTROLLER.
3. AT LEAST 25% OF BRANCH CIRCUIT FEEDERS INSTALLED MODULAR FURNITURE SHALL BE CONTROLLED.
4. RECEPTACLES FOR THE FOLLOWING SHALL NOT REQUIRE AN AUTOMATIC CONTROL DEVICE:
   A. RECEPTACLES SPECIFICALLY DESIGNED FOR EQUIPMENT REQUIRING CONTINUOUS OPERATION (24 HOURS/DAY, 365 DAYS/YEAR).
   B. SPACES WHERE AN AUTOMATIC CONTROL WOULD ENDANGER THE SAFETY OR SECURITY OF THE ROOM OR BUILDING OCCUPANTS.
5. RECEEPTACLES INDICATED AS CONTROLLED SHALL HAVE 50% OF THE RECEPTACLE CONTROLLED. FOR EACH DUPLEX TO BE CONTROLLED, (1) OF THE (2) OUTLETS SHALL BE CONTROLLED.

DISCLAIMER

SYMBOLS, ABBREVIATIONS, AND OTHER INFORMATION DEPICTED ON THIS SHEET ARE FOR INFORMATION ONLY AND SHALL NOT CONSTITUTE A CHECKLIST FOR SCOPE INCLUDED IN THIS CONTRACT. ITEMS SHOWN ON THIS SHEET MAY NOT APPEAR AGAIN IN THE ELECTRICAL SERIES.

Zimmer Development

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL LEGENDS, SYMBOLS AND ABBREVIATIONS

ORIG SUBMISSION: 2022.05.25

SHEET: E-001

OWNERS REVIEW SET

5/20/2022 12:50:44 PM

E D C B A

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE

ELECTRICAL PROJECT NOTES

ELECTRICAL DESIGN COORDINATION

1. THE POWER RATINGS OF MECHANICAL, PLUMBING, AND FIRE SUPPRESSION SYSTEM MOTORS AND EQUIPMENT, AND THE CHARACTERISTICS OF ELECTRICAL SYSTEMS SERVING THEM, AS SPECIFIED IN OTHER DIVISIONS, HAVE BEEN ESTABLISHED AS MINIMUMS WHICH WILL ALLOW THAT EQUIPMENT TO SATISFACTORILY FUNCTION WHILE PRODUCING THE CAPACITIES INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN. THESE POWER RATINGS INCLUDE A SAFETY FACTOR DEEMED APPROPRIATE TO ACCOMMODATE COMMON DIFFERENCES BETWEEN DESIGN PARAMETERS AND FIELD CONSTRUCTION PRACTICES.
2. REASONABLE EFFORTS HAVE BEEN MADE TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT SPECIFIED IN OTHER DIVISIONS WITH THE ELECTRICAL SYSTEMS SERVING THAT EQUIPMENT. DIFFERENCES AMONG MANUFACTURERS OF EQUIPMENT MAKE IT IMPOSSIBLE TO PRODUCE A SINGLE ELECTRICAL DESIGN WHICH WILL SATISFY THE VARYING ELECTRICAL REQUIREMENTS OF THOSE MANUFACTURERS.
3. THE CONTRACTOR SHALL COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT ACTUALLY FURNISHED ON THIS PROJECT AND PROVIDE THE ELECTRICAL SYSTEMS REQUIRED BY THAT EQUIPMENT. THIS COORDINATION EFFORT SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF EITHER THE EQUIPMENT OR THE ELECTRICAL SYSTEMS SERVING THAT EQUIPMENT. ELECTRICAL SYSTEM REVISIONS REQUIRED TO COORDINATE WITH THE EQUIPMENT ACTUALLY FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

SPACE CONDITIONS

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND, UNLESS EXPLICITLY DIMENSIONED, INDICATE APPROPRIATE LOCATIONS OF FIXTURES, APPARATUS, EQUIPMENT AND RACEWAYS. CHANGES IN THE LOCATION, AND OFFSETS, OF SAME TO ACCOMMODATE BUILDING CONDITIONS AND COORDINATION WITH THE WORK OF OTHER TRADES, SHALL BE MADE DURING THE PREPARATION OF COORDINATION DRAWINGS AND PRIOR TO INITIAL INSTALLATION, WITHOUT ADDITIONAL COST TO THE OWNER.
2. LOCATIONS OF MOTORS, STARTERS, EQUIPMENT AND APPARATUS (IF INDICATED) ARE APPROXIMATE; CONNECTIONS SHALL BE MADE TO SUCH EQUIPMENT AS ACTUALLY INSTALLED.
3. INSTALL SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, AND MOTOR CONTROL CENTERS, SUCH THAT NO PIPING, DUCTWORK OR MECHANICAL EQUIPMENT IS INSTALLED IN THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT FROM FLOOR TO STRUCTURE ABOVE. IN ADDITION, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, VARIABLE FREQUENCY DRIVES, TRANSFORMERS, AND STARTERS SHALL BE INSTALLED SUCH THAT THE WORKING SPACE IN FRONT, REAR AND/OR SIDE (WHERE REAR AND/OR SIDE ACCESS IS REQUIRED TO WORK ON EQUIPMENT) IS CLEAR OF PIPING, DUCTWORK, OR MECHANICAL EQUIPMENT. DIMENSIONS OF THE WORKING SPACE SHALL BE A MINIMUM DEPTH OF 42" HORIZONTALLY, THE WIDTH OF THE EQUIPMENT OR 30", WHICHEVER IS GREATER, AND THE HEIGHT OF THE EQUIPMENT OR 78", WHICHEVER IS GREATER. MINIMUM DEPTH SHALL BE INCREASED TO 60" FOR EQUIPMENT RATED OVER 600 V.

SHORT CIRCUIT AND OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY

1. SUBMIT A SHORT CIRCUIT AND OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY PREPARED IN ACCORDANCE WITH IEEE 242-2001 AND IEEE 399-1997 BY THE SWITCHGEAR SWITCHBOARD MANUFACTURER AT THE TIME OF FINAL SUBMITTAL OF THE SWITCHGEAR SWITCHBOARD SUBMITTALS.
2. STUDIES SHALL BE PREPARED UNDER THE SUPERVISION AND APPROVAL OF A LICENSED PROFESSIONAL ELECTRICAL ENGINEER SKILLED IN PERFORMING AND INTERPRETING POWER SYSTEM STUDIES.
3. DO NOT RELEASE THE SWITCHGEAR SWITCHBOARD FOR CONSTRUCTION UNTIL THE STUDIES ARE SUBMITTED AND APPROVED.
4. SUBMIT CONCURRENTLY WITH THE OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY AN ARC FLASH EVALUATION STUDY PREPARED IN ACCORDANCE WITH NFPA 70E AND IEEE 1584, BY THE SWITCHBOARD MANUFACTURER. THE STUDY SHALL DETERMINE THE FLASH PROTECTION BOUNDARY AND PERSONAL PROTECTIVE EQUIPMENT REQUIRED FOR PERSONNEL WITHIN THE FLASH PROTECTION BOUNDARY AND SHALL INCLUDE THE CREATION OF ARC FLASH HAZARD WARNING LABELS. THE STUDY RESULTS SHALL BE SUMMARIZED IN A FINAL REPORT AND INCLUDED WITH THE SHORT CIRCUIT AND OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY.
5. DO NOT ENERGIZE ELECTRICAL EQUIPMENT UNTIL THE STUDY IS SUBMITTED AND APPROVED AND THE ARC FLASH LABELS ARE AFFIXED ON THE EQUIPMENT.

PROTECTION OF EQUIPMENT AND MATERIALS DURING CONSTRUCTION

1. PROVIDE PROTECTIVE COVERS, SKIDS, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE OR DETERIORATION DURING CONSTRUCTION.
2. STORE EQUIPMENT AND MATERIAL UNDER COVER, AND OFF THE GROUND OR FLOORS EXPOSED TO RAIN.
3. FOR OUTDOOR STORAGE, PROTECTIVE COVERS OF 10 MIL THICK BLACK SHEET PLASTIC SHALL BE FITTED OVER EQUIPMENT AND MATERIALS. COVERS SHALL BE REINFORCED TO WITHSTAND WIND AND PRECIPITATION. SET EQUIPMENT AND MATERIAL ON SKIDS OR PLATFORMS OF HEIGHT TO AVOID DAMAGE OR DETERIORATION FROM SPATTERING AND GROUND WATER.
4. PROVIDE DUST AND DEBRIS PROTECTION FOR MOTORS, FIXTURES, AND EQUIPMENT OPERATED DURING CONSTRUCTION.

RACEWAYS

1. INSTALL CONDUCTORS IN RACEWAYS, UNLESS OTHERWISE SPECIFIED HEREIN.
2. RACEWAYS SHALL BE CONCEALED UNLESS OTHERWISE NOTED. RACEWAYS IN MECHANICAL AND ELECTRICAL ROOMS SHALL BE EXPOSED.
3. MODIFY RACEWAY LOCATIONS AND PROVIDE OFFSETS TO ACCOMMODATE BUILDING CONDITIONS, AND TO COORDINATE WITH THE WORK OF OTHER TRADES, INCLUDING EQUIPMENT, PIPING, AND DUCTWORK. COORDINATE PRIOR TO INITIAL INSTALLATION, WITHOUT ADDITIONAL COST TO THE OWNER. OFFSETS IN CONDUIT ARE NOT INDICATED ON THE FLOOR PLANS AND SHALL BE FURNISHED.
4. UNLESS OTHERWISE INDICATED ON THE FLOOR PLANS, ROUTE RACEWAYS TIGHT TO THE UNDERSIDE OF THE STRUCTURE AND ABOVE CEILINGS. OFFSET RACEWAYS BELOW OBSTRUCTIONS.
5. WHERE RACEWAYS MUST PASS THROUGH STRUCTURAL MEMBERS, OBTAIN APPROVAL FROM THE ARCHITECT ENGINEER REGARDING LOCATION AND SIZE OF OPENINGS PRIOR TO DRILLING.
6. RACEWAY PENETRATIONS THROUGH THE ROOF SHALL BE MADE WITH PREFABRICATED FITTINGS. COORDINATE WITH THE ROOF SYSTEM MANUFACTURER.
7. OPEN ENDS OF RACEWAYS SHALL BE TAPED OR CAPPED AFTER INSTALLATION TO PREVENT ENTRY OF DIRT AND DEBRIS DURING CONSTRUCTION. RACEWAYS SHALL BE BLOWN-OUT AND SWABBED CLEAR OF WATER AND TRASH PRIOR TO PULLING WIRE.
8. EXPOSED THREADS OR FIELD-CUT EDGES OF CONDUITS SHALL BE IMMEDIATELY COATED WITH A GALVANIZING COMPOUND AFTER INSTALLATION.
9. EXCEPT WHERE SPECIFIC INSTRUCTIONS ARE INCLUDED HEREIN, INSTALL AND CONNECT EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS AND RECOMMENDATIONS.
10. SUPPORT INDIVIDUAL RUNS OF CONDUIT WITH STRAPS, CLAMPS, OR HANGARS.
11. RACEWAYS SHALL NOT BE SUPPORTED FROM CEILING SUSPENSION SYSTEMS.
12. SUPPORT RACEWAYS SECURED TO SURFACES EXPOSED TO WATER OR SPRAY, BY STRAPS OR HANGERS, UTILIZING CLAMP BACKS OR SPACERS MADE FOR THE PURPOSE WHICH HOLD CONDUIT OFF SURFACE.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS

1. INSTALL IN EACH RACEWAY A MINIMUM OF 3 #12 AWG CONDUCTORS, INCLUDING GROUND CONDUCTORS, UNLESS OTHERWISE SPECIFIED HEREIN OR INDICATED.
2. NO MORE THAN THREE BRANCH CIRCUIT HOMERUNS SHALL BE INSTALLED IN A CONDUIT. UPSIZE BRANCH CIRCUIT FEEDER AS SHOWN:

20 A, 120V BRANCH CIRCUIT CONDUCTOR SIZE REQUIREMENTS	
CIRCUIT LENGTH (FT)	CONDUCTOR SIZE
< 75	12
75 TO 190	10
190 TO 280	8
280 TO 450	6

20 A, 277V BRANCH CIRCUIT CONDUCTOR SIZE REQUIREMENTS	
CIRCUIT LENGTH (FT)	CONDUCTOR SIZE
< 150	12
150 TO 320	10
320 TO 500	8
500 TO 780	6

WHERE #6 AND LARGER CONDUCTORS ARE REQUIRED TO BE USED, ENSURE THAT THE PANELBOARD HAS ADEQUATELY SIZE LUGS FOR CONNECTION. FOR ANY CIRCUIT, THE CONDUCTOR MAY BE REDUCED TO #10 FOR NO MORE THAN 2' AT ONE END OF THE RUN, OR 1' AT EACH END.

3. CONDUCTORS IN PANELBOARDS, SWITCHBOARDS, AND CONTROL CABINETS SHALL BE GROUPED AND LACED WITH NYLON TIE STRAPS.
4. SINGLE-PHASE LINE-TO-NEUTRAL BRANCH CIRCUITS SHALL BE PROVIDED A SEPARATE DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT. MULTIWIRE BRANCH CIRCUITS WITH SHARED OR COMMON NEUTRALS ARE NOT ACCEPTABLE, UNLESS SPECIFIC TO LOAD REQUIREMENTS.
5. TERMINATION OF MORE THAN ONE (1) CONDUCTOR IN A SINGLE TERMINAL IS NOT ACCEPTABLE EXCEPT WHERE THE TERMINAL IS APPROVED BY THE MANUFACTURER FOR SUCH APPLICATION.
6. SWITCH LEGS SHALL BE COLOR-CODED THE SAME AS PHASE CONDUCTORS.
7. INSTALL RISER CLAMPS FOR VERTICAL CONDUITS AS REQUIRED BY CODES.

METAL-CLAD CABLE

1. METAL-CLAD CABLE SHALL BE USED FOR:
   a. BRANCH CIRCUIT WIRING BETWEEN WIRING DEVICES AND BETWEEN LUMINAIRES THAT ARE DOWNSTREAM (AWAY FROM THE BRANCH CIRCUIT PANEL) OF A JUNCTION BOX LOCATED NOT MORE THAN 10' (OF CIRCUIT LENGTH) UPSTREAM (TOWARD THE BRANCH CIRCUIT PANEL) OF THE FIRST WIRING DEVICE OR LUMINAIRE ON THAT CIRCUIT. RACEWAYS EXTENDED FROM THE FUNCTION BOX TO THE BRANCH CIRCUIT PANEL SHALL COMMA WITH THE REQUIREMENTS OF SECTION 260533, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS.
2. METAL-CLAD CABLE SHALL NOT BE USED FOR EXPOSED INSTALLATIONS IN MECHANICAL, ELECTRICAL, OR TELECOM ROOMS.
3. METAL-CLAD CABLES MAY BE BUNDLED TOGETHER PER THE FOLLOWING:
   a. BRANCH CIRCUIT CABLES WITH NOT MORE THAN THREE #12 AWG CURRENT- CARRYING CONDUCTORS MAY BE BUNDLED TOGETHER PROVIDED THAT THE TOTAL NUMBER OF CURRENT-CARRYING CONDUCTORS IN EACH BUNDLE DOES NOT EXCEED 20. BUNDLES MUST BE PROPERLY SPACED PER NEC REQUIREMENTS.
   b. BRANCH CIRCUIT CABLES WITH NOT MORE THAN THREE #10 AWG CURRENT-CARRYING CONDUCTORS MAY BE BUNDLED TOGETHER PROVIDED THAT A 60 PERCENT ADJUSTMENT FACTOR HAS BEEN APPLIED, PER NEC REQUIREMENTS.
   c. FEEDER CIRCUIT CABLES WITH #8 OR # 10 AWG CURRENT-CARRYING CONDUCTORS MAY BE BUNDLED TOGETHER PROVIDED THAT A 60 PERCENT ADJUSTMENT FACTOR HAS BEEN APPLIED, PER NEC REQUIREMENTS.
   d. METAL-CLAD CABLES WITH CURRENT-CARRYING CONDUCTORS LARGER THAN #8 AWG SHALL NOT BE BUNDLED.
   e. METAL-CLAD CABLES WITH DIFFERENTLY SIZED CURRENT-CARRYING CONDUCTORS SHALL NOT BE BUNDLED TOGETHER.
4. METAL-CLAD CABLE SHALL NOT BE USED FOR EXPOSED EXTERIOR INSTALLATIONS.
5. METAL-CLAD CABLE SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO THE BUILDING WALLS; NO DIAGONAL RUNS SHALL BE PERMITTED.
6. WHERE MULTIPLE METAL-CLAD CABLES ARE GROUPED IN A RUN, RACK TOGETHER NEATLY WITH BOTH STRAIGHT RUNS AND BENDS PARALLEL AND UNIFORMLY SPACED.
7. METAL-CLAD CABLES SHALL BE SECURELY FASTENED IN PLACE AT INTERVALS OF NOT MORE THAN SIX (6) FEET, WITH SUITABLE CLAMPS OR FASTENERS OR APPROVED TYPE, AND ALL VERTICAL CONDUITS SHALL BE PROPERLY SUPPORTED TO PRESENT A MECHANICALLY RIGID AND SECURE INSTALLATION.
8. METAL-CLAD CABLES INSTALLED PARALLEL TO FRAMING MEMBERS, SUCH AS STUDS, JOIST, OR RAFTERS, SHALL BE SUPPORTED SO THAT THE NEAREST OUTSIDE SURFACE OF THE CABLE IS NOT LESS THAN 1-1/4 INCHES FROM THE NEAREST EDGE OF THE FRAMING MEMBER. WHERE THIS DISTANCE CANNOT BE MAINTAINED, THE CABLE SHALL BE PROTECTED BY A STEEL PLATE, SLEEVE, OR EQUIVALENT THAT IS AT LEAST 1/16-INCH THICK.
9. MAINTAIN A CLEARANCE OF AT LEAST 6 INCHES FROM HOT WATER AND OTHER HIGH TEMPERATURE PIPES AND TELECOMMUNICATIONS CONDUITS, AND AT LEAST 12 INCHES FROM UNSHIELDED TWISTED-PAIR TELECOMMUNICATIONS CABLES.
10. METAL-CLAD CABLE SHALL NOT BE FASTENED TO OTHER CONDUITS OR PIPES OR INSTALLED SO AS TO PREVENT THE READY REMOVAL OF OTHER PIPES OR DUCTS FOR REPAIRS.
11. INDIVIDUAL METAL-CLAD CABLES HUNG FROM ROOF STRUCTURE OR STRUCTURAL CEILING SHALL BE SUPPORTED BY SPLIT-RING HANGERS AND WROUGHT-IRON HANGER RODS. WHERE THREE (3) OR MORE METAL-CLAD CABLES ARE SUSPENDED FROM THE CEILING IN PARALLEL RUNS, USE STEEL CHANNELS, KINDORF, UNISTRUT OR EQUAL, HUNG FROM 1/2-INCH RODS TO SUPPORT THE CONDUITS. THE CONDUIT ON THESE CHANNELS SHALL BE HELD IN PLACE WITH METAL-CLAD CABLE CLAMPS DESIGNED FOR THE CHANNEL THAT IS USED.
12. METAL-CLAD CABLE SHALL BE SUPPORTED IMMEDIATELY ON EACH SIDE OF A BEND AND NOT MORE THAN ONE (1) FOOT FROM AN ENCLOSURE WHERE A RUN OF METAL-CLAD CABLE ENDS.
13. THE ARRANGEMENT OF METAL-CLAD CABLES AND FASTENING METHODS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER. SECURELY SUPPORT ALL METAL-CLAD CABLE WITH CABLE HANGERS, INDIVIDUAL SPRING STEEL SUPPORT CLIPS, STEEL TRAPEZE HANGERS, THREADED RODS OR DEDICATED NO. 8 AWG DROP WIRES. CABLE SUPPORTS SHALL BE FASTENED TO CONCRETE SLABS, BEAMS, JOISTS, OR OTHER STRUCTURAL MEMBERS OF THE BUILDING. DO NOT SUPPORT METAL-CLAD CABLE ON HUNG CEILINGS OR ON CEILING SUPPORT WIRES.
14. THE USE OF NYLON CABLE TIES TO SUPPORT METAL-CLAD CABLE IS PROHIBITED.

BOXES

1. WHERE BOXES MUST BE INSTALLED WITH A SHARED VERTICAL WALL CHANNEL, PROVIDE FIRESTOP PUTTY PAD AROUND OUTLET BOX.
2. INSTALL BOXES LEVEL, PLUMB, AND SQUARE TO THE STRUCTURE.
3. PROVIDE KNOCKOUT CLOSURES TO CAP UNUSED OPEN KNOCKOUT HOLES.
4. THE APPROXIMATE LOCATIONS OF OUTLETS ARE INDICATED. THE EXACT LOCATIONS SHALL BE DETERMINED AT THE BUILDING.
5. OUTLET BOXES FOR FLUSH-MOUNTED DEVICES THAT ARE NOT PROVIDED WITH PLASTER RINGS OR TILE COVERS SHALL BE SET SO THAT THE FACE OF THE OUTLET BOX IS RECESSED 0.125" INTO THE FINISHED WALL.
6. OUTLET BOXES FOR FLUSH-MOUNTED DEVICES PROVIDED WITH PLASTER RING OR TILE COVERS SHALL BE SET SO THAT THE FACE OF THE PLASTER RING/TILE COVER IS RECESSED 0.125" INTO THE FINISHED WALL.
7. INSTALL OUTLET BOXES IN ONE VERTICAL LINE WHERE SHOWN INDICATED ADJACENT BUT AT DIFFERENT MOUNTING HEIGHTS.

FLOOR BOXES

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF FLOOR BOXES.
2. INSTALL FLOOR BOXES ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
3. COMPLETE FLOOR BOX INSTALLATION, EXCEPT FOR FINAL HEIGHT ADJUSTMENT, BEFORE CONCRETE POUR.

POKE-THRU FITTINGS

1. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. INSTALL DEVICES AND MAKE CONNECTIONS IN THE SERVICE FITTINGS.
3. PROVIDE WIRING BELOW THE SLAB AND MAKE CONNECTIONS. EXTEND WIRING TO FURNITURE AND EQUIPMENT THROUGH FITTINGS AND CONNECT TO FURNITURE OR EQUIPMENT WITH LIQUIDTIGHT FLEXIBLE CONDUIT. PROVIDE ADDITIONAL FITTINGS AS RECOMMENDED BY THE FURNITURE OR EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS.

WIRING DEVICES

1. INSTALL DEVICES FLUSH IN THE WALL ON WHICH THEY ARE LOCATED WHEN SERVED BY CONCEALED CONDUIT. WHERE NECESSARY TO CONCEAL CONDUIT OR FLUSH MOUNT DEVICE BOXES, MASONRY OR PLASTER SHALL BE CHANNELED AND PATCHED.
2. INSTALL DEVICE FACEPLATES AND ADJUST OUTLETS TO ACHIEVE A FLUSH FIT WITH NO GAPS.

CONNECTIONS TO MOTORS AND EQUIPMENT

1. PROVIDE POWER WIRING TO EQUIPMENT REQUIRING ELECTRICAL POWER SPECIFIED IN ALL DIVISIONS. POWER WIRING IS DEFINED AS WIRING IN THE ELECTRICAL CIRCUIT BETWEEN THE SOURCE OF POWER AND THE CURRENT CONSUMING DEVICE, AND INCLUDES THE MOUNTING AND INSTALLATION OF STARTERS, VARIABLE FREQUENCY DRIVES AND ASSOCIATED DV/DT OUTPUT FILTERS, AND OTHER CONTROL DEVICES AND INTERLOCK CONTACTS CONTROLLING LOADS FOR WHICH NO MAGNETIC STARTER OR CONTACTOR IS PROVIDED.
2. PROVIDE CONTROL WIRING TO EQUIPMENT REQUIRING ELECTRICAL CONTROL SPECIFIED IN ALL DIVISIONS. REFER TO DIVISIONS 21, 22, AND 23 FOR CONTROL WIRING PROVIDED UNDER EACH DIVISION.
3. MAKE FINAL CONNECTIONS TO EQUIPMENT SUCH THAT LOADS ARE BALANCED ACROSS PHASES IN BRANCH CIRCUITS, FEEDERS, AND PANELBOARDS. WHERE MULTIPLE UNITS ARE CONNECTED TO THE SAME BRANCH CIRCUIT OR FEEDER, PACKAGED EQUIPMENT INCORPORATING BOTH SINGLE PHASE AND THREE PHASE LOADS SHALL BE CONNECTED SUCH THAT THE SINGLE-PHASE LOADS ARE BALANCED AS CLOSELY AS POSSIBLE ACROSS THE PHASES OF THE THREE-PHASE BRANCH CIRCUIT OR FEEDER SERVING THE EQUIPMENT.

ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1. WHEN INDICATED, INSTALL DISCONNECTS WHERE INDICATED. WHERE NOT INDICATED, INSTALL DISCONNECTS AS REQUIRED BY MANUFACTURER'S WRITTEN INSTRUCTIONS OR AT INSTALLER'S DISCRETION. INSTALL IN ACCESSIBLE LOCATIONS AND PER THE REQUIREMENTS OF THE NEC.
2. INSTALL DISCONNECTS AS NEAR AS PRACTICABLE TO THE LOAD CONTROLLED.
3. INSTALL COMBINATION DISCONNECT-MOTOR STARTERS AND VARIABLE FREQUENCY MOTOR CONTROLLERS, FURNISHED UNDER EITHER THIS OR OTHER DIVISIONS.
4. PROVIDE CONTROL WIRING AND RACEWAYS FOR ELECTRICAL INTERLOCKS BETWEEN ELEVATOR DRIVES AND MOTOR DISCONNECTS.
5. PROVIDE CONTROL WIRING AND RACEWAYS FOR ELECTRICAL INTERLOCKS BETWEEN DRIVES AND VARIABLE FREQUENCY MOTOR DISCONNECT SWITCHES.
6. WHEN USED FOR BRANCH CIRCUIT PROTECTION, DISCONNECTS SHALL BE LOCATED AS NEAR AS PRACTICABLE TO THE SUPPLY END OF THE CONDUCTORS BEING PROTECTED.
7. DISCONNECTS USED WITH MOTOR-DRIVEN APPLIANCES, OR MOTORS AND CONTROLLERS SHALL BE LOCATED WITHIN SIGHT OF CONTROLLER, UNLESS INDICATED.

HANGERS AND SUPPORTS

1. BEAM CLAMPS MAY BE USED FOR SUPPORT OF RACEWAYS, ENCLOSURES, PANELBOARDS OR EQUIPMENT WHERE ATTACHED TO OR FROM FIXED STEEL SUPPORTS OR STRUCTURES. BEAM CLAMPS FASTENED TO STEEL SUPPORTS NOT HORIZONTAL OR VERTICAL SHALL BE PROVIDED WITH A SWING CONNECTOR. BEAM CLAMPS FASTENED TO STRUCTURES IN A HORIZONTAL POSITION (WHERE BOLT IS HORIZONTAL) SHALL NOT BE USED FOR SUPPORT OF EQUIPMENT EXCEEDING 10 POUNDS.
2. HANGERS AND SUPPORTS SHALL NOT BE WELDED TO STEEL STRUCTURES.
3. NYLON "ZIP" TIES ARE NOT ACCEPTABLE SUPPORTING MEANS.

WOOD BACKBOARDS

1. INSTALL WOOD BACKBOARDS WHERE 2 OR MORE DISCONNECT SWITCHES, INDIVIDUAL CIRCUIT BREAKERS, OR EQUIPMENT ARE INSTALLED, AND OTHERWISE WHERE INDICATED.
2. ANCHOR WOOD BACKBOARDS TO WALLS WITH LAG BOLTS ON WOOD, TOGGLE BOLTS ON DRYWALL OR HOLLOW MASONRY, AND LEAD ANCHORS ON SOLID MASONRY OR CONCRETE.
3. PAINT BACKBOARDS WITH 2 COATS OF FIRE-INHIBITING GRAY ENAMEL ON BOTH SIDES AND ALL 4 EDGES BEFORE INSTALLATION OF EQUIPMENT.
4. COORDINATE SIZE OF BACKBOARDS FOR OTHER EQUIPMENT WITH EQUIPMENT MOUNTED THEREON.

GENERATOR SETS

1. INSTALL TWO (2) REMOTE ALARM ANNUNCIATORS AND TWO (2) TRANSFER SWITCH REMOTE ANNUNCIATOR WHERE INDICATED ON THE FLOOR PLANS, PROVIDE INTERCONNECTING WIRING AND CONDUIT.
2. INSTALL REMOTE EMERGENCY MANUAL-STOP PUSHBUTTON(S) WHERE SHOWN ON THE FLOOR PLANS. PROVIDE A LABEL ON THE PUSHBUTTON STATION ENCLOSURE, STATING "EMERGENCY GENERATOR STOP PUSHBUTTON". REFER TO SPECIFICATIONS FOR LABEL TYPE. PROVIDE ASSOCIATED RACEWAYS AND CONTROL WIRING TO GENERATOR CONTROLLER.
3. FILL COOLING SYSTEMS WITH ETHYLENE-GLYCOL-BASED COOLING SOLUTION, PRIOR TO START UP. REFER TO GENERATOR SPECIFICATIONS FOR SOLUTION REQUIREMENTS.

TRANSFER SWITCHES

1. PROVIDE COMMUNICATION MODULES AND CONTROL WIRING FROM TRANSFER SWITCHES TO TRANSFER SWITCH ANNUNCIATOR PANELS. TRANSFER SWITCH ANNUNCIATOR PANEL SHALL BE POWERED BY GENERATOR BATTERY POWER SUPPLY.
2. PROVIDE CONTROL WIRING FROM TRANSFER SWITCHES TO ENGINE-GENERATOR SET CONTROLS FOR AUTOMATIC START-STOP CONTROL. KEEP CONTROL WIRING ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND RACEWAYS.
3. PROVIDE CONTROL WIRING FROM GENERATOR CONTROLLER TO EACH GROUP OF ELEVATOR CONTROLLERS FOR TRANSFER SWITCH POSITION AND LOAD DISCONNECT CONTROL.
4. PROVIDE TRANSFER SWITCHES WITH INTERFACES AS REQUIRED TO CONNECT ALL REMOTE ALARM ANNUNCIATOR AND TRANSFER SWITCH REMOTE ANNUNCIATOR SIGNALS TO BUILDING CONTROL OR AUTOMATION SYSTEM. COORDINATE WITH BUILDING CONTROL OR AUTOMATION SYSTEM. PROVIDE RACEWAYS AND CONDUCTORS AS REQUIRED TO COMPLETE SUCH CONNECTIONS.
5. PROVIDE TRANSFER SWITCHES WITH INTERFACES AND CONTACTS AS REQUIRED TO SIGNAL GENERATOR RUNNING, FAULT, AND GENERATOR NONAUTOMATIC POSITION NOTIFICATION TO FIRE ALARM SYSTEM. PROVIDE RACEWAYS AND CONDUCTORS AS REQUIRED TO COMPLETE SUCH CONNECTIONS.

SERVICE ENTRANCE

1. PLAN WITH THE UTILITY FOR INSTALLATION OF THE SERVICE TRANSFORMERS AND THE PRIMARY SERVICES. FURNISH THE UTILITY ADVANCE NOTICE OF THE REQUIRED SERVICE DATE TO PERMIT THE SERVICE INSTALLATION TO BE COMPLETE AND READY WHEN NEEDED.
2. FURNISH AND INSTALL THE SECONDARY SERVICES AS INDICATED. COORDINATE THE TERMINATION OF THE SECONDARY SERVICE CONDUCTORS WITHIN THE TRANSFORMER VAULT WITH THE UTILITY REQUIREMENTS.

SWITCHBOARDS

1. CABLE INSTALLED IN SWITCHBOARDS SHALL BE NEATLY PLACED AND SUPPORTED VERTICALLY AND HORIZONTALLY WITH RIGID INSULATING MATERIAL. PROVIDE MAIN AND LOAD FEEDER CABLE LASHING FROM THE POINT WHERE THE FEEDERS ENTER THE SWITCHBOARD TO THE POINT WHERE CABLES LACE INTO TERMINALS, IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR THE SHORT CIRCUIT BRACING LEVEL SPECIFIED HEREIN.
2. INSTALL LASHING PER MANUFACTURER'S INSTRUCTIONS, IN EACH VERTICAL SECTION.
3. VERTICAL CABLE RUNS IN REAR COMPARTMENTS OF SWITCHBOARDS SHALL BE MADE ON INSULATED RACKS ON THE SIDES OF THE CUBICLE TURNING OUT HORIZONTALLY ON THE SAME LEVEL AS THE LOAD SIDE STUDS. MAXIMUM LENGTH OF UNSUPPORTED CABLE SHALL BE 18".
4. PROVIDE CONDUIT AND NETWORK CABLES FOR CONNECTION OF POWER MONITORS TO A DATA OUTLET LOCATED IN THE ELECTRICAL ROOM. SEE FLOOR PLANS FOR MORE INFORMATION.

GROUNDING

1. BOND GROUND CONDUCTORS TOGETHER AND TO ENCLOSURES USING GROUNDING LUGS AT ORIGIN OF CIRCUITS, AT INTERMEDIATE PULL BOXES, INDIVIDUAL CIRCUIT BREAKERS, DISCONNECT SWITCHES, AND TO PANELBOARDS OR EQUIPMENT AT TERMINATIONS.
2. CONNECT GROUNDING CONDUCTORS TO GROUNDING BUSSES PROVIDED IN EQUIPMENT.
3. PROVIDE BOLTS, NUTS, LOCK WASHERS, FLAT WASHERS, AND BELLEVILLE WASHERS (FOR DISSIMILAR METALS) OF SILICON BRONZE OR TYPE 316 STAINLESS STEEL AS RECOMMENDED BY THE MANUFACTURER. TIGHTEN CONNECTIONS TO MANUFACTURER'S RECOMMENDED TORQUE VALUES.

LOW-VOLTAGE DISTRIBUTION TRANSFORMERS

1. GROUND SECONDARY NEUTRAL CONDUCTOR ACCORDING TO WIRING DIAGRAM INCLUDED HEREIN.

MULTI-WIRE BRANCH CIRCUITS

1. GROUP CONDUCTORS OF MULTI-WIRE BRANCH CIRCUITS WITHIN PANELBOARDS.
2. INSTALL HANDLE TIES ON INDIVIDUAL SINGLE-POLE CIRCUIT BREAKERS SERVING MULTIWIRE BRANCH CIRCUITS.

FUSES AND CIRCUIT BREAKERS

1. INSTALL OVERCURRENT PROTECTIVE DEVICES AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. PROVIDE FUSES IN FUSIBLE SWITCHES SERVING PACKAGED AIR CONDITIONING UNITS, ELEVATORS, ESCALATORS AND MOVING WALKWAYS, IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS AND NAMEPLATE REQUIREMENTS.
3. FASTEN CIRCUIT BREAKERS WITHOUT CAUSING MECHANICAL STRESSES, TWISTING OR MISALIGNMENT BEING EXERTED BY CLAMPS, SUPPORTS, OR CABLING.
4. INSTALL FUSES IN CIRCUIT BREAKERS WITH FUSE PROTECTION.
5. PROVIDE 3 SPARE FUSES OF EACH SIZE, UL CLASS, AND VOLTAGE RATING AND TURN OVER TO THE OWNER. OBTAIN A RECEIPT FOR SAME.

LUMINAIRES

1. INSTALLED BUILDING-MOUNTED EXTERIOR LUMINAIRES AFTER THE BUILDING EXTERIOR HAS BEEN RINSED OF ANY CORROSIVE CLEANING MATERIALS.
2. STEM CONNECTIONS TO OUTLET BOXES SHALL BE MADE WITH SWIVEL ALIGNER BOX COVERS. STEMS AND RODS NOT CONNECTED INTO A RACEWAY SYSTEM SHALL BE SUPPORTED WITH NONRIGID CONNECTION POINTS TO ALLOW THE STEM OR ROD TO HANG VERTICALLY.
3. PROVIDE FINAL LUMINAIRE ADJUSTMENTS OF ADJUSTABLE LUMINAIRES UNDER SUPERVISION OF THE ARCHITECT. ADJUSTMENTS SHALL BE CARRIED OUT BEFORE THE FINAL SITE VISIT, UNLESS INDICATED BY THE ARCHITECT. PROVIDE PERSONNEL AND EQUIPMENT FOR THIS TASK. ADJUSTMENTS SHALL BE AS DIRECTED BY THE ARCHITECT. WHEN AIMING AND ADJUSTING IS COMPLETED, LOCKING SET SCREWS AND NUTS AND BOLTS SHALL BE TIGHTENED SECURELY.
4. FOCUS LUMINAIRES DURING THE NORMAL WORKING DAY; HOWEVER, WHERE DAYLIGHT INTERFERES WITH ILLUMINATION LEVELS, AIMING SHALL BE ACCOMPLISHED AT NIGHT, AT NO ADDITIONAL COST TO THE OWNER.
5. LUMINAIRE ADJUSTMENTS SHALL BE REVIEWED AND APPROVED BY THE ARCHITECT PRIOR TO OCCUPANCY BY THE OWNER.

LIGHTING CONTROL DEVICES

1. INSTALL WALL-MOUNTED DEVICES FLUSH IN THE WALL ON WHICH THEY ARE LOCATED, WHEN SERVED BY CONCEALED CONDUIT. WHERE NECESSARY TO CONCEAL THE CONDUIT OR FLUSH MOUNT THE DEVICE BOX, MASONRY OR PLASTER SHALL BE CHANNELED AND PATCHED.
2. WALL-MOUNTED DEVICES SHALL BE SURFACE-MOUNTED WHERE THEIR CON

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PLOT SIZE

ELECTRICAL SCHEDULES

SEISMIC AND WIND LOAD DESIGN REQUIREMENTS FOR ELECTRICAL SYSTEMS

A. EQUIPMENT, APPLIANCES AND SUPPORTS (INCLUDING ROOF CURBS AND ROOF RAILS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. WHERE SEISMIC RESTRAINT IS REQUIRED, THE MORE DEMANDING FORCE OF WIND AND SEISMIC MUST BE USED. SEE SEISMIC INFORMATION CONTAINED IN THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY AND ADDITIONAL SUPPORTING INFORMATION.

B. SEE COMPONENT/SYSTEM SCHEDULE BELOW FOR SPECIFIC COMPONENT IMPORTANCE FACTOR DESIGNATIONS AND SEISMIC DESIGN CRITERIA.

C. USE SEISMIC DESIGN CATEGORY TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT/SYSTEM.

D. FOR ALL COMPONENTS/SYSTEMS REQUIRING *SEISMIC AND/OR WIND* RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED (CALCULATIONS AND INSTALLATION DETAILS) AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER (SEISMIC AND/OR STRUCTURAL ENGINEER) WITH AT LEAST FIVE YEARS OF SEISMIC DESIGN EXPERIENCE, LICENSED IN THE STATE OF THE JOB LOCATION. ALL RESTRAINING DEVICES SHALL HAVE A PREAPPROVAL NUMBER FROM CALIFORNIA OSHPD OR SOME OTHER RECOGNIZED GOVERNMENT AGENCY SHOWING MAXIMUM RESTRAINT RATINGS.

E. WHERE SEISMIC RESTRAINT IS REQUIRED, FOUNDATION PADS NEEDED FOR INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED AND STAMPED BY THE SEISMIC ENGINEER. DO NOT POUR ANY FOUNDATION PADS PRIOR TO THE RECEIPT OF AN APPROVED SEISMIC SUBMITTAL FROM THE ENGINEER OF RECORD. ALL FOUNDATION PADS DESIGNED AS EXPANSIONS TO EXISTING PADS OR INSTALLED ON TOP OF EXISTING CONCRETE FLOOR SYSTEMS SHALL BE DOWELED INTO THE EXISTING SYSTEMS.

F. SEISMIC RESTRAINTS FOR CONDUIT, CABLE TRAY AND BUS DUCT MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS PER THE SEISMIC ENGINEER.

G. AFTER INSTALLATION, MANUFACTURER'S TRAINED REPRESENTATIVE SHALL VERIFY THAT SEISMIC AND WIND RESTRAINTS ARE INSTALLED AND OPERATING PROPERLY AND SHALL SUBMIT A CERTIFICATE SO STATING.

H. REFER TO ASCE 7-10 FOR SEISMIC INSTALLATION GUIDELINES.

J. CABLE RESTRAINTS SHALL BE INSTALLED SLIGHTLY SLACK SUCH THAT THEY DO NOT SHORT CIRCUIT VIBRATION ISOLATORS DURING NORMAL OPERATION. RIGID, BRACKET SWAY BRACES SHALL NOT BE UTILIZED UNLESS PROPERLY COORDINATED WITH VIBRATION ISOLATORS TO AVOID SHORT CIRCUITING.

K PROVIDE WIND RESTRAINTS FOR ALL EXTERIOR EQUIPMENT. SEE STRUCTURAL DOCUMENTS FOR WIND CRITERIA.

COMPONENT/SYSTEM IMPORTANCE FACTOR (Ip) SCHEDULE AND SEISMIC DESIGN INFORMATION

Ip = 1.0	NORMAL POWER SYSTEMS
Ip = 1.5	EMERGENCY POWER SYSTEMS AND COMPONENTS AS DESCRIBED IN THE ASCE 7 EDITION REQUIRED BY THE AHJ

SEISMIC DESIGN INFORMATION:

1. SITE CLASSIFICATION = D
2. RISK CATEGORY = III
3. SEISMIC DESIGN CATEGORY = B
4. SHORT PERIOD DESIGN SPECTRAL ACCELERATION (SD1) = 0.11
5. LONG PERIOD DESIGN SPECTRAL ACCELERATION (SDS) = 0.167

ELECTRICAL ENERGY CODE COMPLIANCE

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES AND ENERGY CODE COMPLIANCE

ORIG SUBMISSION: 2022.05.25

SHEET:
E-003

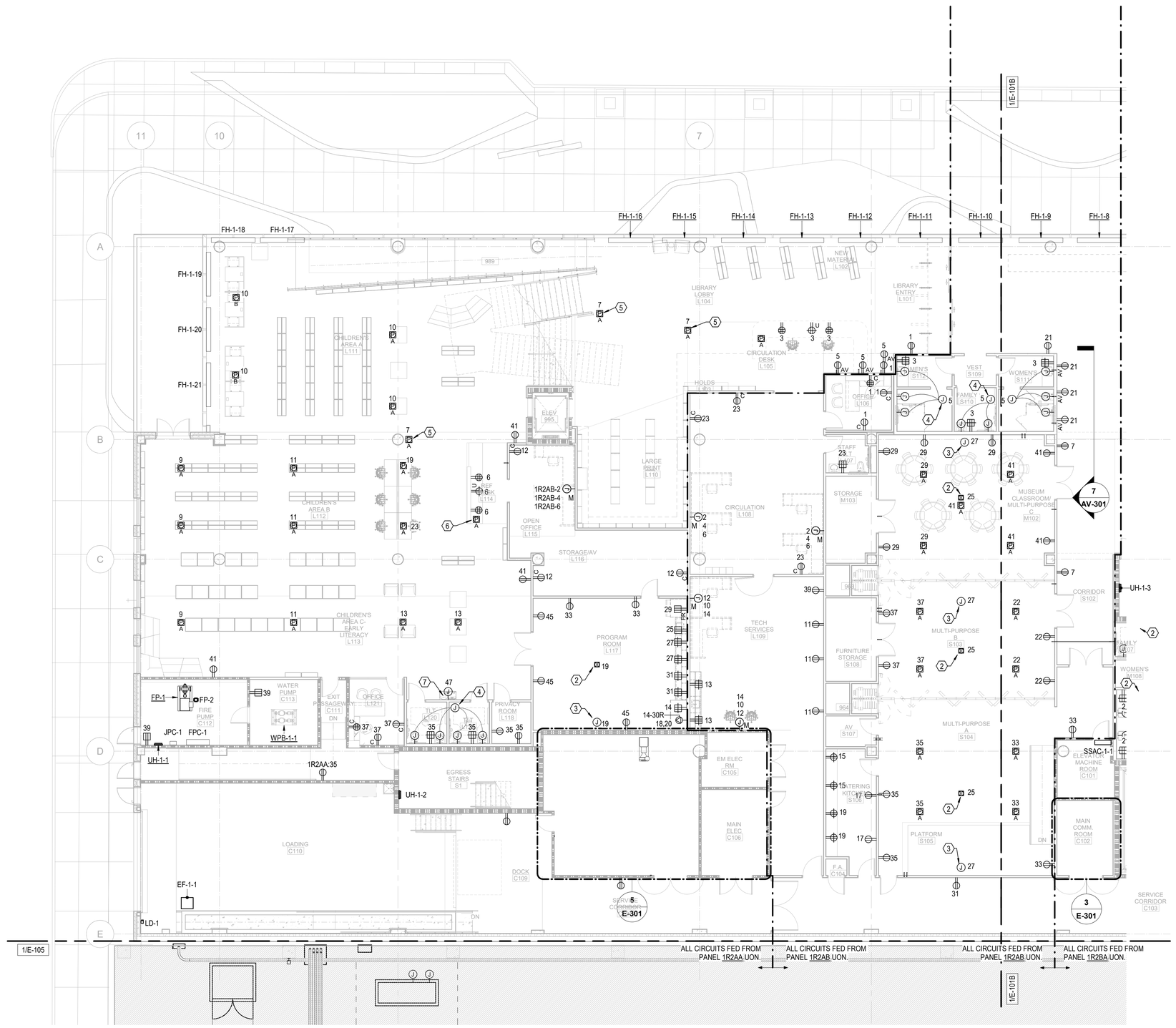
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KEYED NOTES

1. RECESSED JUNCTION BOX FOR DIGITAL SIGNAGE. SEE ARCHITECTURAL SHEETS FOR EXACT MOUNTING HEIGHT AND LOCATION, INSTALL PER MANUFACTURER'S REQUIREMENTS.
2. ABOVE CEILING POWER CONNECTION TO PROJECTOR. CONNECT PER MANUFACTURER'S REQUIREMENTS. COORDINATE WITH AV SHEETS FOR EXACT LOCATION.
3. ABOVE CEILING CONNECTION TO PROJECTOR SCREEN. CONNECT PER MANUFACTURE'S INSTRUCTION. COORDINATE WITH AV SHEETS FOR EXACT LOCATION.
4. CIRCUIT TO SERVE POWERED TOILET AND SINK PLUMBING FIXTURES. PROVIDE EMPTY JUNCTION BOX WITH 0.5" CONDUIT AT EACH FIXTURE LOCATION AND CONDUIT STUBBED TO ACCESSIBLE CEILING. MAKE FINAL CONNECTION TO FIXTURE CONTROLLER MANUFACTURER'S REQUIREMENTS.
5. CONNECT TO SELF CHECKOUT DEVICE. COORDINATE EXACT LOCATION WITH ARCHITECTURAL SHEETS. CONNECT PER MANUFACTURER'S REQUIREMENTS.
6. ROUTE FEEDERS AND CONDUIT UNDERGROUND TO FLOORBOX UNDER DESK FOR ELECTRICAL FIXTURES.
7. ELECTRICAL CONNECTION TO WATER COOLER, INSTALL PER MANUFACTURER'S REQUIREMENTS.
8. ELECTRICAL CONNECTION TO ROLL-UP DOOR. INSTALL PER MANUFACTURER'S REQUIREMENTS.

GENERAL NOTES

1. PROVIDE 120V POWER FROM CIRCUIT: L1R1:1 TO HVAC TERMINAL UNITS (TU-X-X). CONNECT PER MANUFACTURER'S REQUIREMENTS SEE MECHANICAL PLANS FOR LOCATIONS.
2. CONNECTIONS TO MODULAR FURNITURE SHALL BE COORDINATED PRIOR TO ROUGH-IN TO PROPER LOCATION. COORDINATE EXACT LOCATION WITH MANUFACTURER'S REQUIREMENTS. RECEPTACLES POWERED BY MODULAR FURNITURE IN OFFICES AND MEETIND ROOMS SHALL BE 50% CONTROLLED VIA LIGHTING CONTROLS IN THE SPACE.

1 ELECTRICAL POWER LEVEL 1 - AREA A

1/8" = 1'-0"

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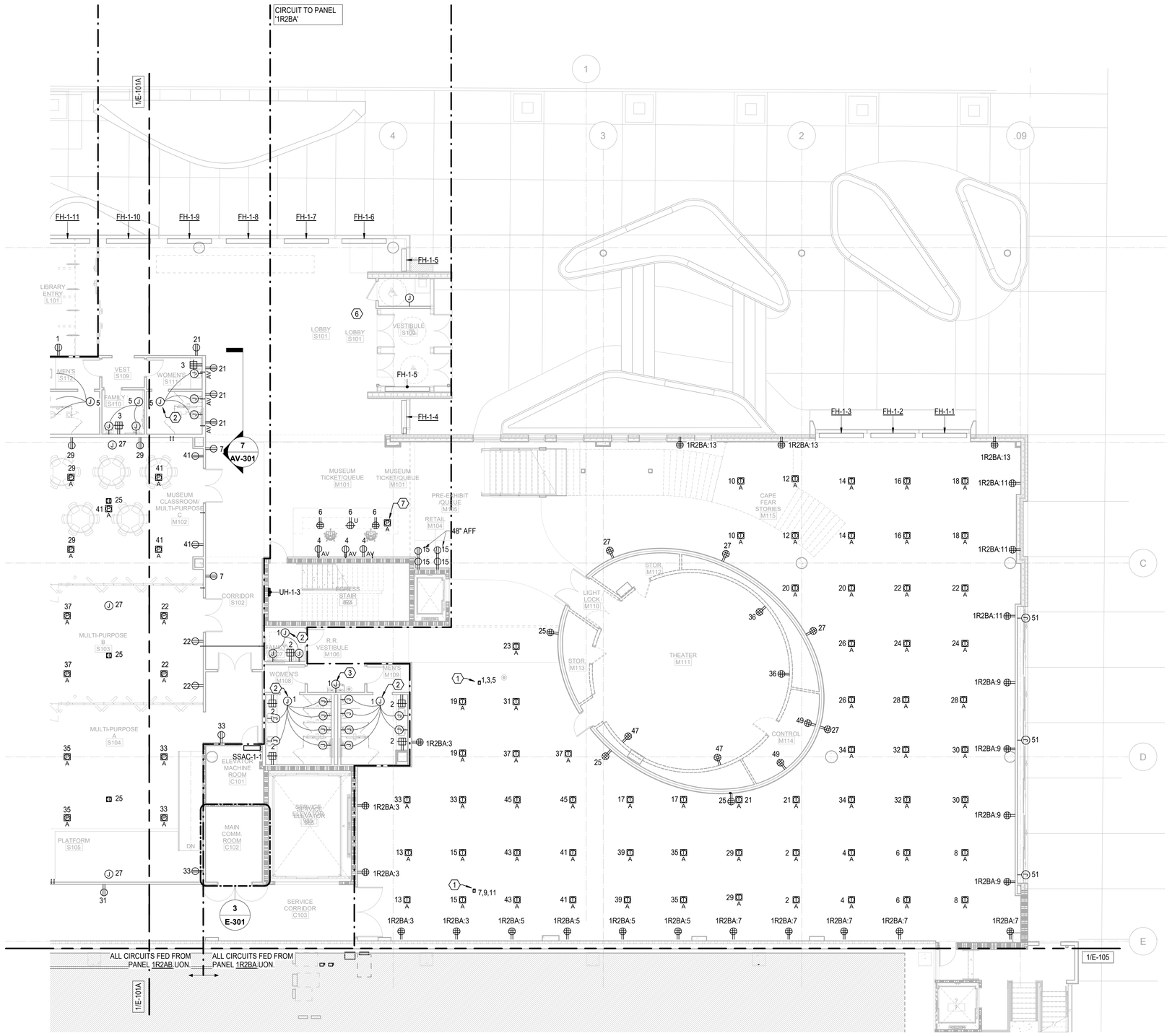
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KEYED NOTES

1. 30A/3PH DISCONNECT IN CEILING FOR FUTURE CONNECTIONS.
2. CIRCUIT TO SERVE POWERED TOILET AND SINK PLUMBING FIXTURES. PROVIDE EMPTY JUNCTION BOX WITH 0.5" CONDUIT AT EACH FIXTURE LOCATION AND CONDUIT STUBBED TO ACCESSIBLE CEILING. MAKE FINAL CONNECTION TO FIXTURE CONTROLLER MANUFACTURER'S REQUIREMENTS.
3. ELECTRICAL CONNECTION TO WATER COOLER, INSTALL PER MANUFACTURER'S REQUIREMENTS.
4. ELECTRICAL CONNECTION FOR DIGITAL SIGNAGE, SEE ARCHITECTURAL SHEETS FOR EXACT MOUNTING HEIGHT AND LOCATION, INSTALL PER MANUFACTURER'S REQUIREMENTS.
5. ELECTRICAL CONNECTION FOR PROJECTOR, INSTALL PER MANUFACTURER'S REQUIREMENTS.
6. ELECTRICAL CONNECTION FOR AUTOMATIC DOOR ACCESS. SEE ARCHITECTURAL SHEETS EXACT LOCATION AND INSTALLATION REQUIREMENTS.
7. ROUTE FEEDERS AND CONDUIT UNDERGROUND TO FLOORBOX UNDER DESK FOR ELECTRICAL FIXTRURES.

GENERAL NOTES

1. PROVIDE 120V POWER FROM CIRCUIT: L1R1:1 TO HVAC TERMINAL UNITS (TU-X-X). CONNECT PER MANUFACTURER'S REQUIREMENTS.

1 ELECTRICAL POWER LEVEL 1 - AREA B

1/8" = 1'-0"

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ELECTRICAL POWER LEVEL 1 - AREA B

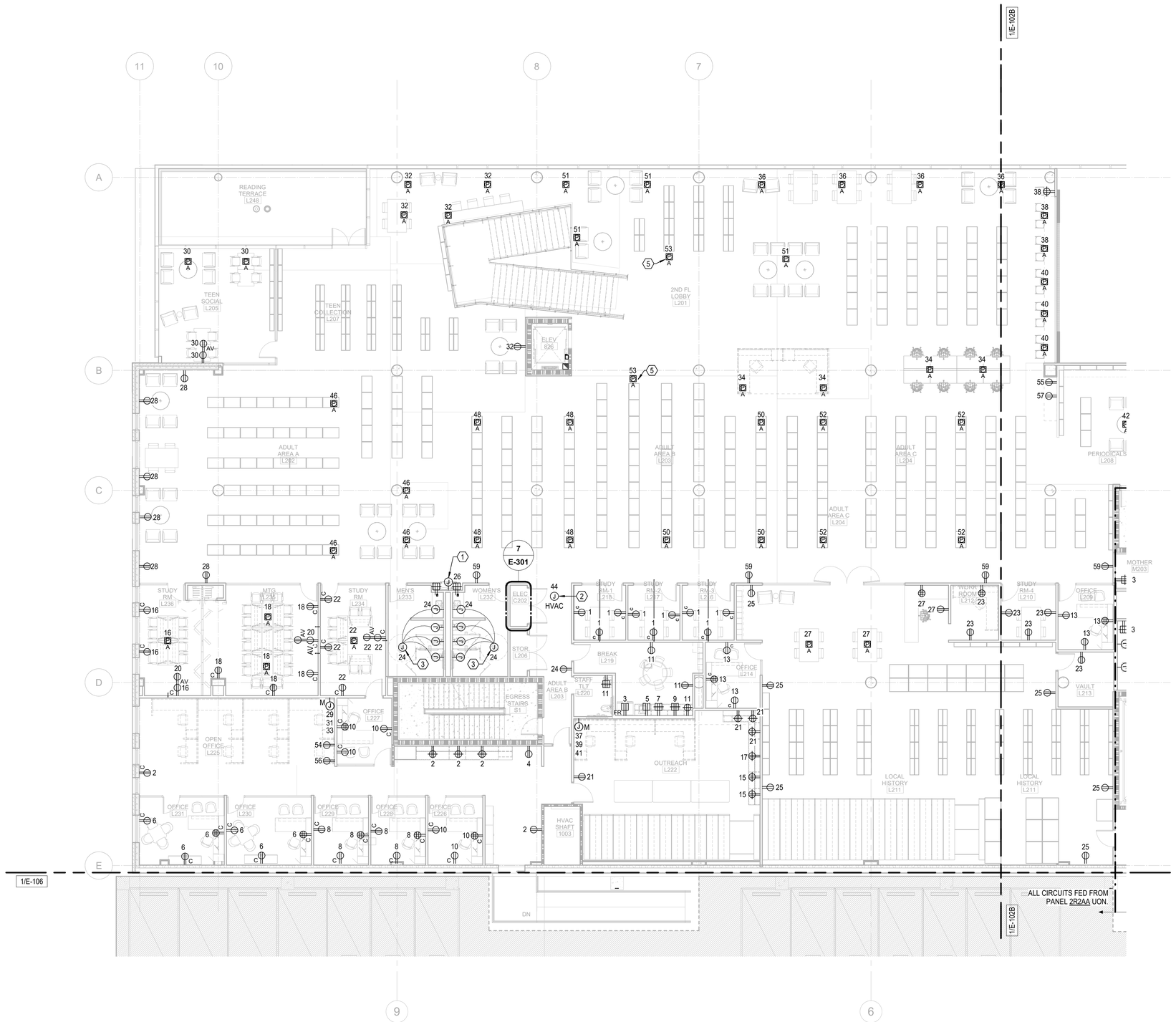
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SHEET:
E-101B

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KEYED NOTES

1. MAKE FINAL CONNECTION TO ELECTRICAL WATER COOLER PER MANUFACTURER'S REQUIREMENTS. OUTLET SHALL BE LOCATED BEHIND WATER COOLER SHROUD OUT OF PLAIN VIEW.
2. 120 V, 20 A CIRCUIT FOR HVAC CONTROL POWER. COORDINATE LOCATION OF POWER CONNECTION WITH HVAC CONTROLS INSTALLER.
3. CIRCUIT TO SERVE POWERED TOILET AND SINK PLUMBING FIXTURES. PROVIDE EMPTY JUNCTION BOX WITH 0.5" CONDUIT AT EACH FIXTURE LOCATION AND CONDUIT STUBBED TO ACCESSIBLE CEILING. MAKE FINAL CONNECTION TO FIXTURE CONTROLLER MANUFACTURER'S REQUIREMENTS.
4. CONDUIT RISER ROUTE TO ELEC ROOM C305.
5. CONNECT TO SELF CHECKOUT DEVICE. COORDINATE EXACT LOCATION WITH ARCHITECTURAL SHEETS. CONNECT PER MANUFACTURER'S REQUIREMENTS.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. CONNECTIONS TO MODULAR FURNITURE SHALL BE COORDINATED PRIOR TO ROUGH-IN TO PROPER LOCATION. COORDINATE EXACT LOCATION WITH MANUFACTURER'S REQUIREMENTS. RECEPTACLES POWERED BY MODULAR FURNITURE IN OFFICES AND MEETIND ROOMS SHALL BE 50% CONTROLLED VIA LIGHTING CONTROLS IN THE SPACE.

1 ELECTRICAL POWER LEVEL 2 - AREA A

1/8" = 1'-0"

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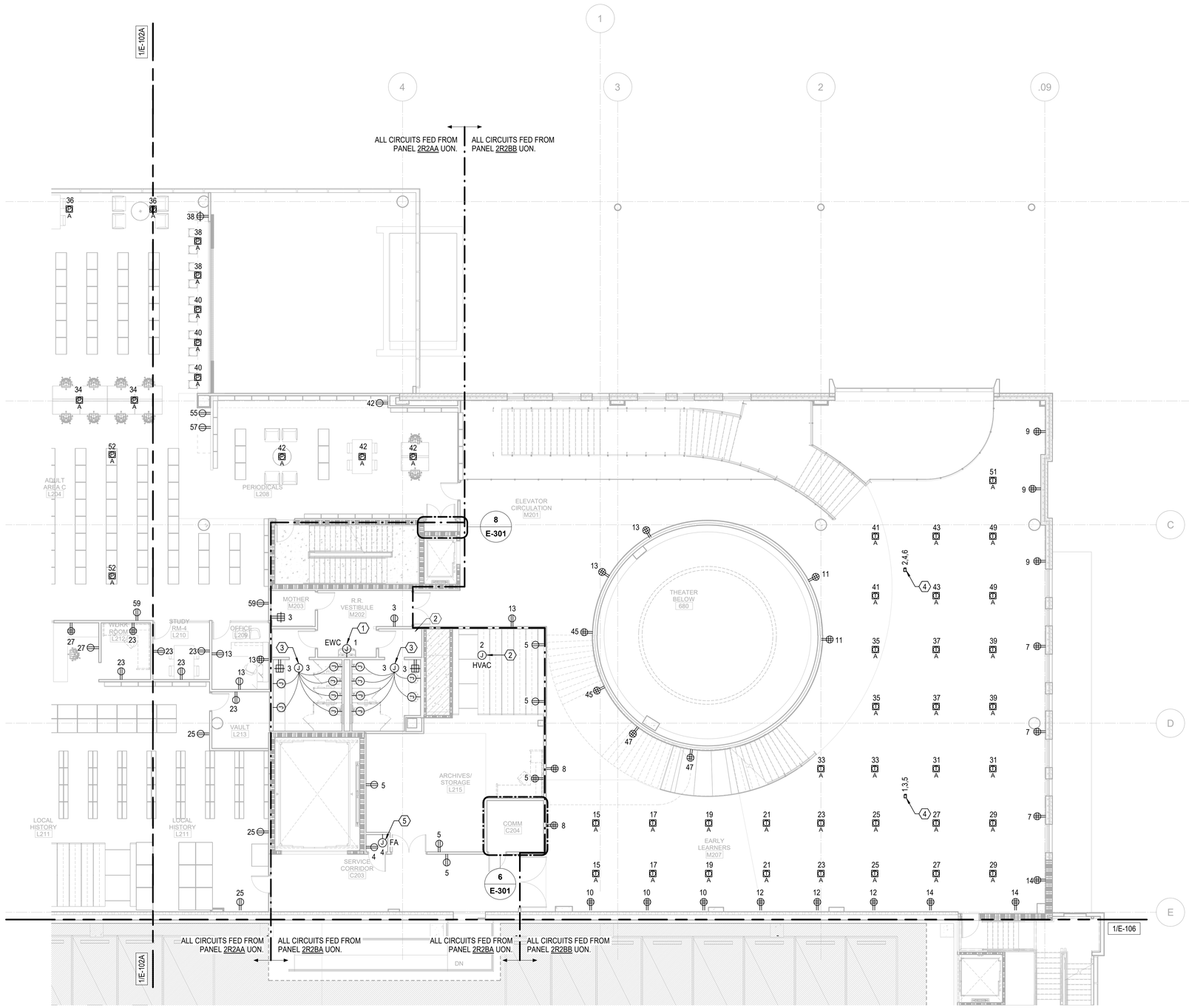
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SHEET: **E-102A**

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KEYED NOTES

1. MAKE FINAL CONNECTION TO ELECTRICAL WATER COOLER PER MANUFACTURER'S REQUIREMENTS. OUTLET SHALL BE LOCATED BEHIND WATER COOLER SHROUD OUT OF PLAIN VIEW.
2. 120 V, 20 A CIRCUIT FOR HVAC CONTROL POWER. COORDINATE LOCATION OF POWER CONNECTION WITH HVAC CONTROLS INSTALLER.
3. CIRCUIT TO SERVE POWERED TOILET AND SINK PLUMBING FIXTURES. PROVIDE EMPTY JUNCTION BOX WITH 0.5" CONDUIT AT EACH FIXTURE LOCATION AND CONDUIT STUBBED TO ACCESSIBLE CEILING. MAKE FINAL CONNECTION TO FIXTURE CONTROLLER MANUFACTURER'S REQUIREMENTS.
4. 30/3/NF DISCONNECT SWITCH MOUNTED 16'-0" ABOVE FINISHED FLOOR FOR FUTURE MUSEUM EXHIBITS.
5. 120 V, 20 A CIRCUIT FOR FIRE ALARM POWER. COORDINATE LOCATION OF POWER CONNECTION WITH FIRE ALARM INSTALLER.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.

1 ELECTRICAL POWER LEVEL 2 - AREA B

1/8" = 1'-0"

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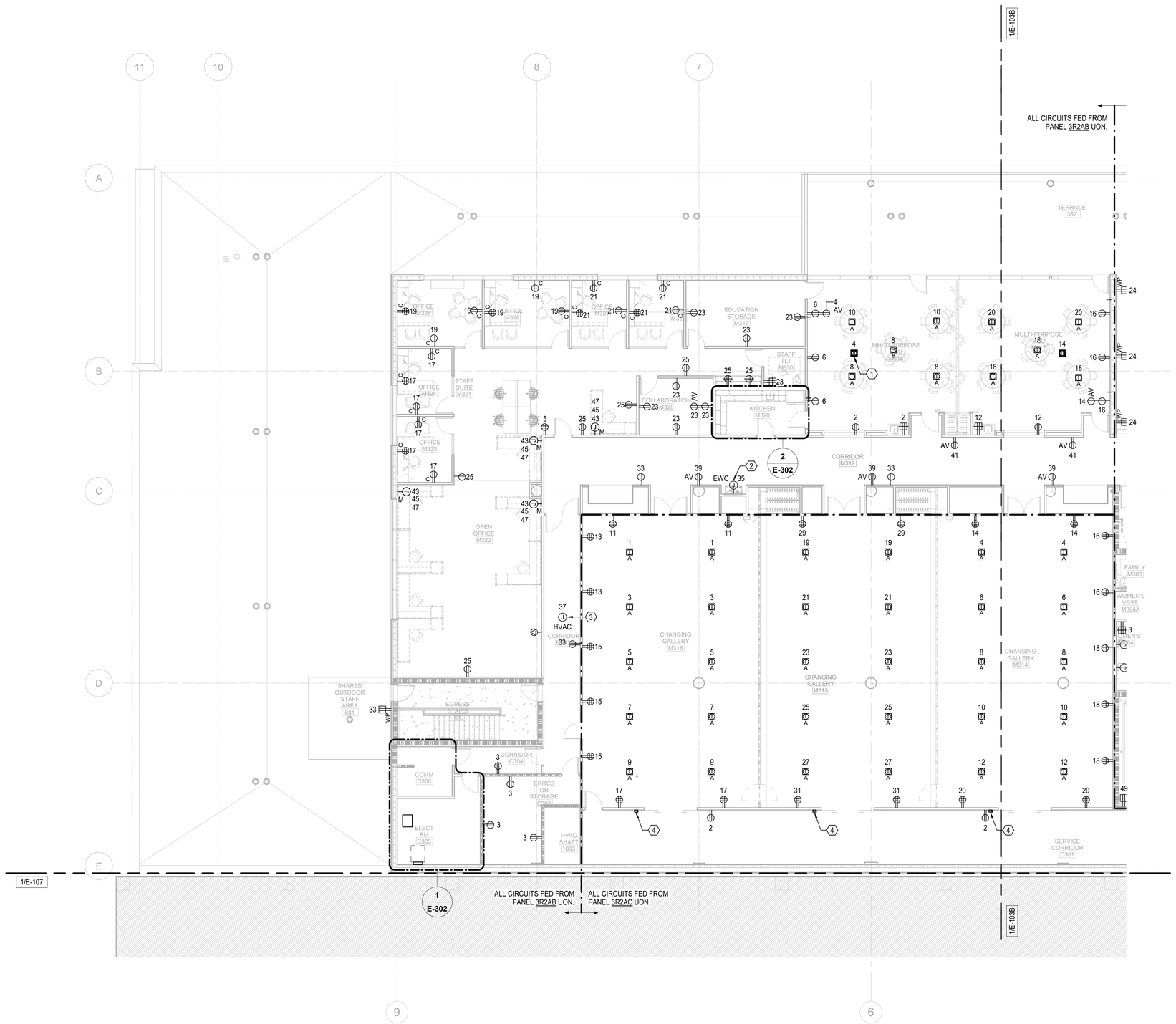
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KEYED NOTES

1. FLUSHED CEILING-MOUNTED RECEPTACLE FOR PROJECTOR. COORDINATE FINAL LOCATION WITH AV INSTALLER. PROVIDE ADDITIONAL SLACK WITHIN WHIP TO ALLOW RECEPTACLE TO SHIFT ONE CEILING TILE IN EVERY DIRECTION.
2. MAKE FINAL CONNECTION TO ELECTRICAL WATER COOLER PER MANUFACTURER'S REQUIREMENTS. OUTLET SHALL BE LOCATED BEHIND WATER COOLER SHROUD OUT OF PLAIN VIEW.
3. 120 V, 20 A CIRCUIT FOR HVAC CONTROL POWER. COORDINATE LOCATION OF POWER CONNECTION WITH HVAC CONTROLS INSTALLER.
4. 30/1/NF DISCONNECT SWITCH TO SERVE ROLL-UP DOOR. SEE DETAIL _/E-60 _ FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. CONNECTIONS TO MODULAR FURNITURE SHALL BE COORDINATED PRIOR TO ROUGH-IN TO PROPER LOCATION. COORDINATE EXACT LOCATION WITH MANUFACTURER'S REQUIREMENTS. RECEPTACLES POWERED BY MODULAR FURNITURE IN OFFICES AND MEETIND ROOMS SHALL BE 50% CONTROLLED VIA LIGHTING CONTROLS IN THE SPACE.

1 ELECTRICAL POWER LEVEL 3 - AREA A

1/8" = 1'-0"

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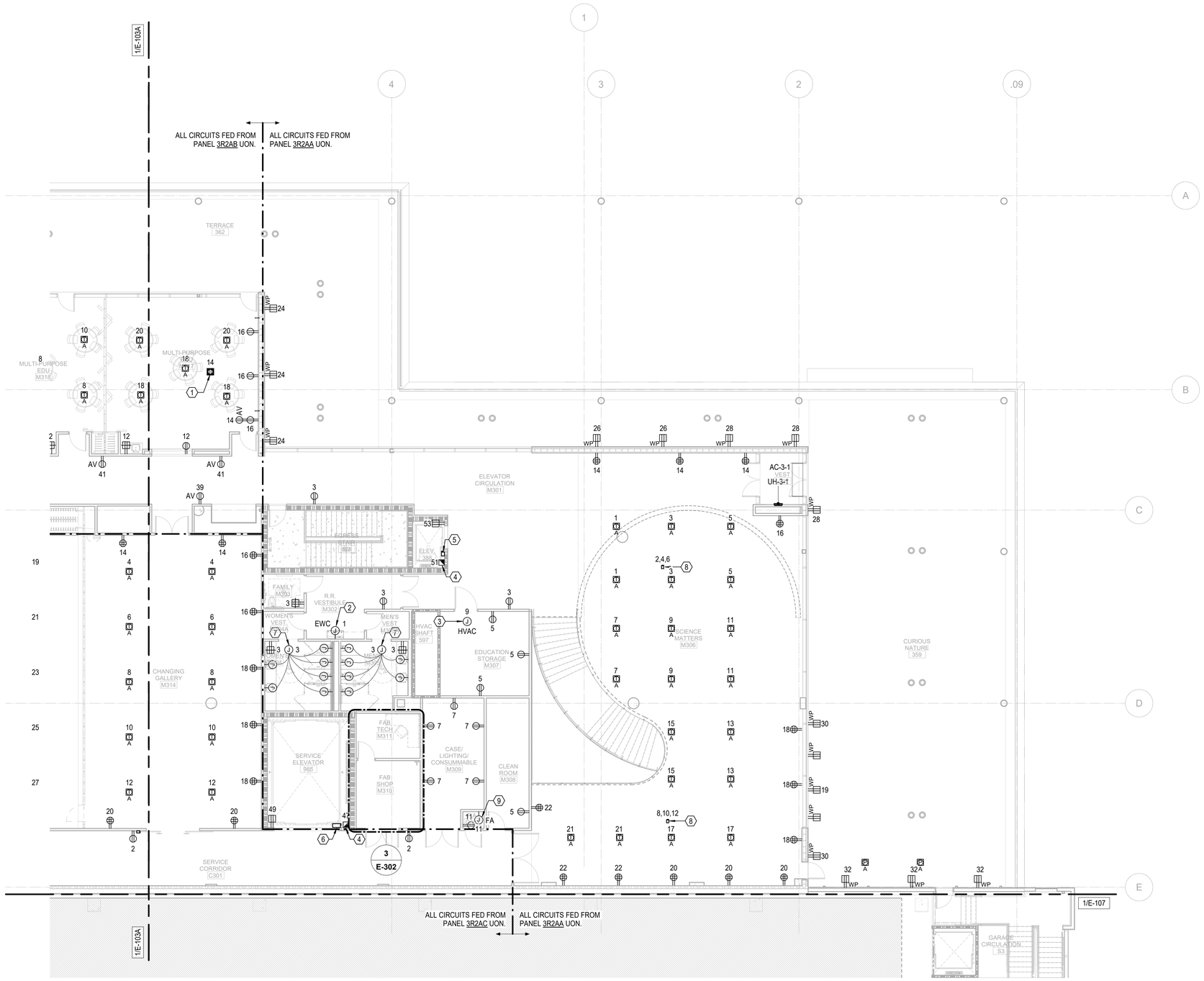
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1 ELECTRICAL POWER LEVEL 3 - AREA B

1/8" = 1'-0"

KEYED NOTES

1. FLUSHED CEILING-MOUNTED RECEPTACLE FOR PROJECTOR. COORDINATE FINAL LOCATION WITH AV INSTALLER. PROVIDE ADDITIONAL SLACK WITHIN WHIP TO ALLOW RECEPTACLE TO SHIFT ONE CEILING TILE IN EVERY DIRECTION.
2. MAKE FINAL CONNECTION TO ELECTRICAL WATER COOLER PER MANUFACTURER'S REQUIREMENTS. OUTLET SHALL BE LOCATED BEHIND WATER COOLER SHROUD OUT OF PLAIN VIEW.
3. 120 V, 20 A CIRCUIT FOR HVAC CONTROL POWER. COORDINATE LOCATION OF POWER CONNECTION WITH HVAC CONTROLS INSTALLER.
4. 120 V, 20 A INDIVIDUALLY MOUNTED CIRCUIT BREAKER FOR ELEVATOR LIGHTING AND CONTROLS WITH PROVISIONS TO LOCK CIRCUIT BREAKER IN THE OPEN POSITION. COORDINATE LOCATION OF EQUIPMENT WITHIN ELEVATOR SHAFT WITH ELEVATOR INSTALLER.
5. ___/3/F* FUSIBLE DISCONNECT SWITCH TO SERVE ELEVATOR EQUIPMENT. COORDINATE FINAL FUSE SIZE WITH MANUFACTURER'S REQUIREMENTS. COORDINATE LOCATION OF EQUIPMENT WITHIN ELEVATOR SHAFT WITH ELEVATOR INSTALLER.
6. ___/3/F* FUSIBLE DISCONNECT SWITCH TO SERVE ELEVATOR EQUIPMENT. COORDINATE FINAL FUSE SIZE WITH MANUFACTURER'S REQUIREMENTS. COORDINATE LOCATION OF EQUIPMENT WITHIN ELEVATOR SHAFT WITH ELEVATOR INSTALLER.
7. CIRCUIT TO SERVE POWERED TOILET AND SINK PLUMBING FIXTURES. PROVIDE EMPTY JUNCTION BOX WITH 0.5" CONDUIT AT EACH FIXTURE LOCATION AND CONDUIT STUBBED TO ACCESSIBLE CEILING. MAKE FINAL CONNECTION TO FIXTURE CONTROLLER MANUFACTURER'S REQUIREMENTS.
8. 30/3/NF DISCONNECT SWITCH MOUNTED 16'-0" ABOVE FINISHED FLOOR FOR FUTURE MUSEUM EXHIBITS.
9. 120 V, 20 A CIRCUIT FOR FIRE ALARM POWER. COORDINATE LOCATION OF POWER CONNECTION WITH FIRE ALARM INSTALLER.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.

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ELECTRICAL POWER LEVEL 3 - AREA B

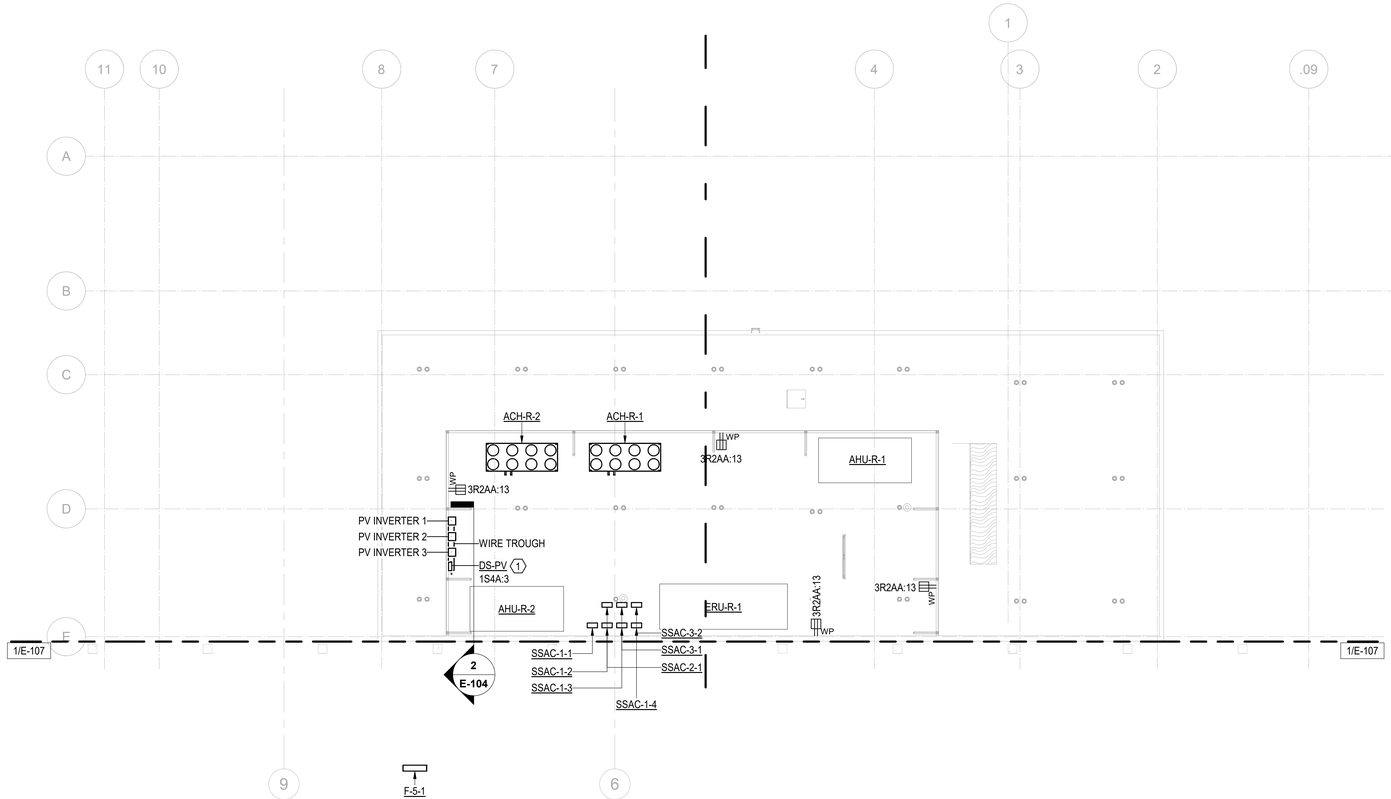
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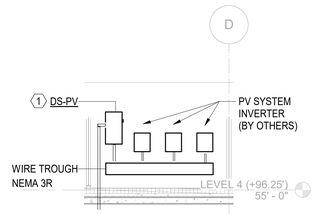
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1 ELECTRICAL POWER OVERALL ROOF

1/16" = 1'-0"



2 ELECTRICAL SECTION - PV SYSTEM

1/8" = 1'-0"

KEYED NOTES

1. PROVIDE PERMENANT LABEL ON DISCONNECT SWITCH STATING 'PV SYSTEM DISCONNECT'. SEE DRAWING E-401 FOR ADDITIONAL CIRCUITING INFORMATION.

LIGHTNING PROTECTION SYSTEM NOTES

1. LIGHTNING PROTECTION SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH THE APPLICABLE VERSION OF NFPA 780 AND UL 96A.
2. CONDUCTORS SHALL INTERCONNECT AIR TERMINALS AND FORM A TWO-WAY PATH FROM EACH POINT, HORIZONTALLY OR DOWNWARD, TO CONNECTIONS WITH GROUND TERMINALS.
3. LIGHTNING PROTECTION CONDUCTORS SHALL BE FASTENED NO MORE THAN 36" OC.
4. NO BEND OF CONDUCTOR SHALL FORM A FINAL INCLUDED ANGLE OF LESS THAN 90° OR HAVE A RADIUS OF BEND LESS THAN 8". ANY RISE IN A HORIZONTAL CONDUCTOR RUN SHALL NOT EXCEED 6".
5. AIR TERMINALS SHALL BE PLACED 20' OC MAXIMUM AROUND ROOF PERIMETER OR RIDGE AND WITHIN 2' OF OUTSIDE EDGE AND SHALL PROJECT A MINIMUM OF 10" ABOVE THE AREA PROTECTED.
6. SECONDARY METAL BODIES (OF INDUCTANCE) LOCATED ABOUT THE ROOF (FLASHINGS, GRAVEL STOPS, ROOF DRAINS, SOIL PIPE VENTS, LOUVERS, DOOR FRAMES, ETC) WITHIN 6' OF THE MAIN CONDUCTOR OR BONDED BODY SHALL BE INTERCONNECTED WITH SECONDARY BONDING CONDUCTORS.
7. BIMETAL CONNECTORS SHALL BE USED WHERE DISSIMILAR METALS COME IN CONTACT WITH EACH OTHER. COPPER LIGHTNING PROTECTION MATERIALS SHALL NOT BE INSTALLED ON ALUMINUM SURFACES NOR SHALL ALUMINUM BE INSTALLED ON COPPER SURFACES.
8. CONNECTIONS TO GROUND RODS SHALL BE MADE NO LESS THAN 2' BELOW GRADE AND 2' FROM FOUNDATION.
9. THE LIGHTNING PROTECTION SYSTEM SHALL BE INSTALLED IN A NEAT AND INCONSPICUOUS MANNER. LIGHTNING PROTECTION SYSTEM SHALL BE CONCEALED WHENEVER POSSIBLE.
10. ELECTRIC AND TELEPHONE SERVICE ENTRANCE GROUNDS SHALL BE INTERCONNECTED TO THE LIGHTNING PROTECTION SYSTEM GROUND.
11. CONNECTIONS OF UNDERGROUND METAL PIPING SYSTEMS TO THE LIGHTNING PROTECTION SYSTEM GROUND SHALL BE MADE AT THEIR SERVICE ENTRANCE TO STRUCTURE.
12. ADHESIVE FIXTURES SHALL BE SET WITH AN ADHESIVE COMPOUND COMPATIBLE WITH THE ROOFING MATERIALS. ADHESIVE SHALL BE APPROVED IN ADVANCE BY ROOFING CONTRACTOR.
13. SEAL ENDS OF CONDUITS MOISTURETIGHT WITH DUCT SEAL OR LEAD WEDGES UNLESS OTHERWISE INDICATED.
14. SHOP DRAWINGS FOR LIGHTNING PROTECTION SYSTEM SHALL BE PRODUCED BY A MEMBER OF THE LIGHTNING PROTECTION INSTITUTE.
15. LIGHTNING PROTECTION SYSTEM SHALL BE UL CERTIFIED AND LABELED. SHOP DRAWING SHALL INCLUDE A STATEMENT THAT SYSTEM WILL BE PROVIDED WITH UL CERTIFICATION.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. PROVIDE LIGHTNING PROTECTION SYSTEM PER NFPA 780 AND UL 96A.

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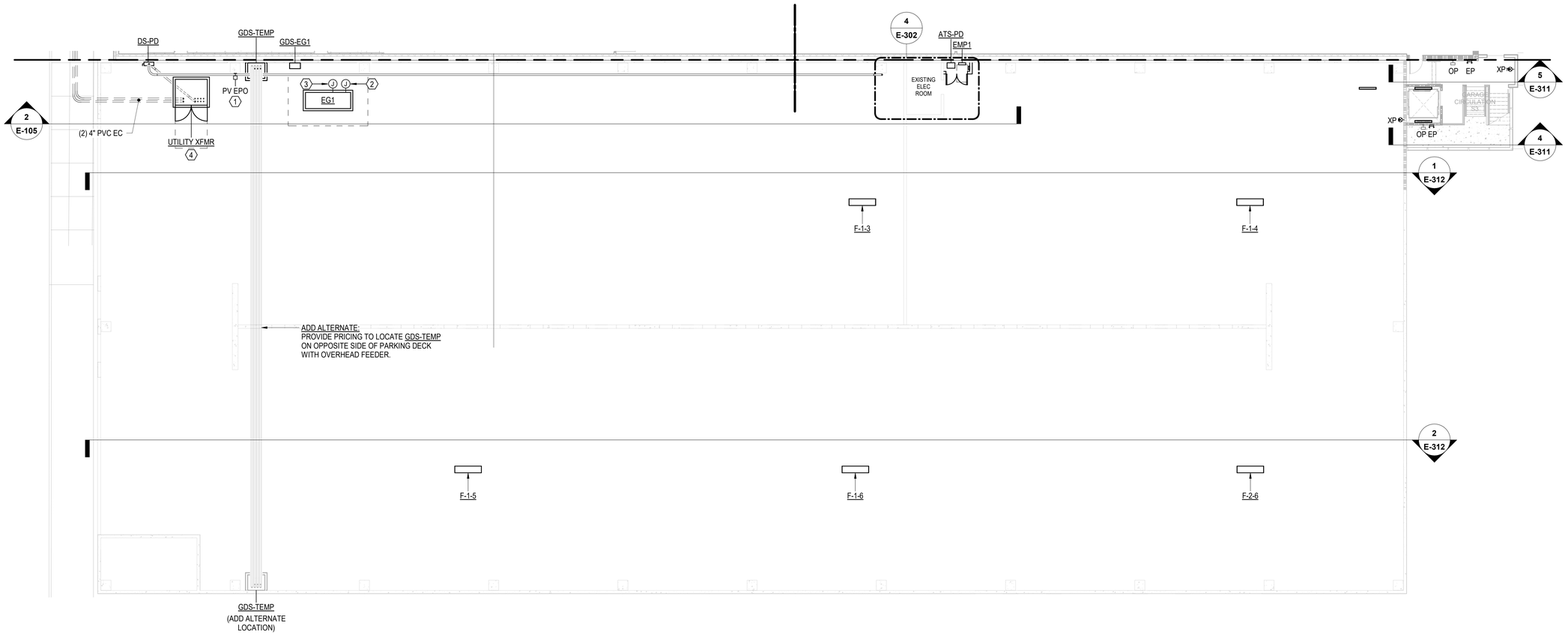
ORIG SUBMISSION: 2022.05.25

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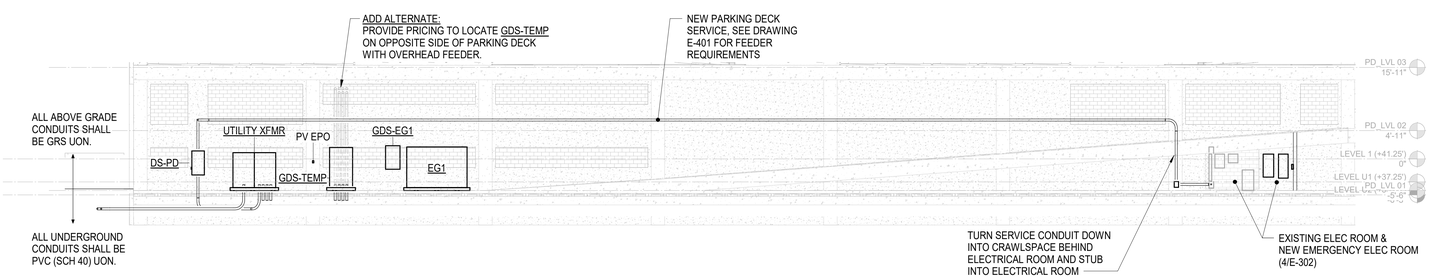
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1 ELECTRICAL PARKING DECK LEVEL 1

3/32" = 1'-0"



2 ELECTRICAL SECTION - PARKING DECK LEVEL 1

3/32" = 1'-0"

KEYED NOTES

1. MUSHROOM EPO BUTTON FOR PV SYSTEM INSTALLED WITHIN LOCKABLE, WEATHERPROOF ENCLOSURE. EPO SHALL SHUT DOWN PV INVERTERS LOCATED ON PROJECT GRACE ROOF VIA SHUNT TRIP CIRCUIT BREAKER IN SWITCHBOARD '1S4A'. DUKE ENERGY TO PROVIDE LOCK.
2. PROVIDE 120 V CIRCUIT FOR ENGINE GENERATOR BATTERY CHARGER.
3. PROVIDE 208 V, 1-PHASE CIRCUIT FOR GENERATOR JACKET WATER HEATER.
4. SEE DRAWING 1/E-602 FOR UTILITY TRANSFORMER PAD DETAIL.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.

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SHEET NAME: ELECTRICAL PARKING DECK LEVEL 1

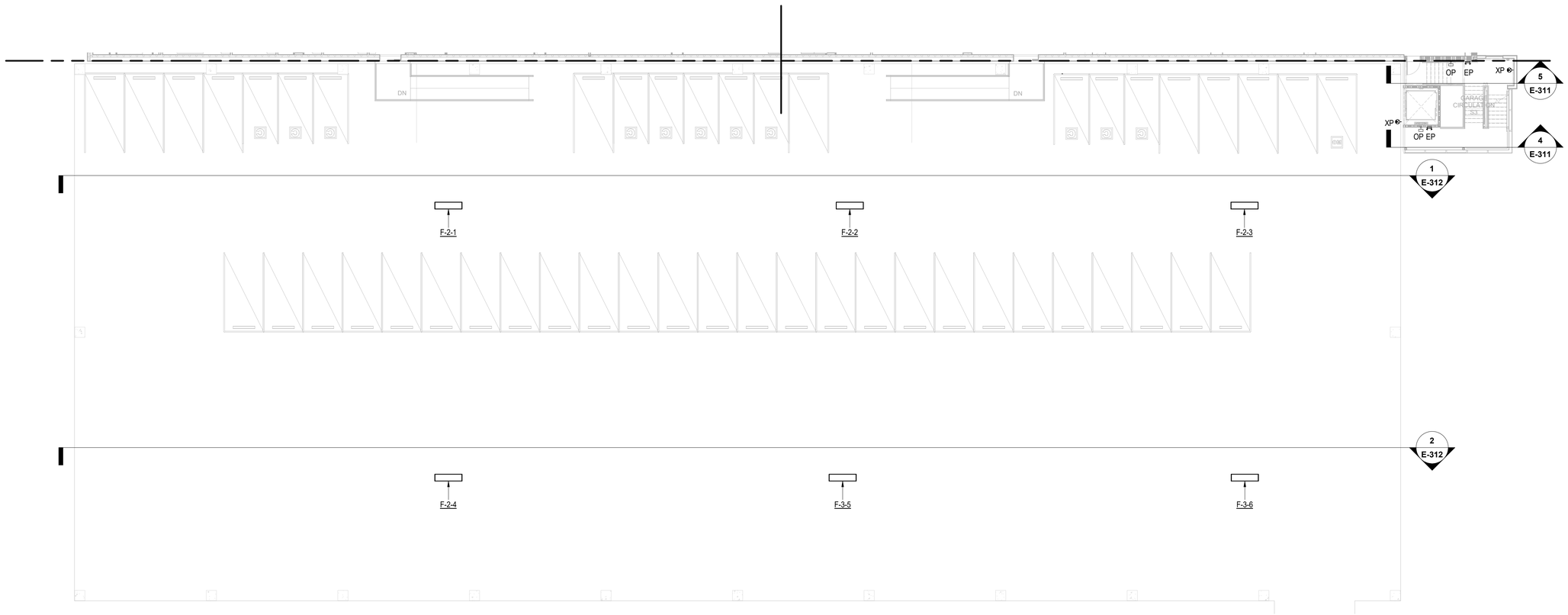
ORIG SUBMISSION: 2022.05.25

SHEET: E-105

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1 ELECTRICAL PARKING DECK LEVEL 2

3/32" = 1'-0"

KEYED NOTES

1. XXX

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.

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SHEET NAME: ELECTRICAL PARKING DECK LEVEL 2

ORIG SUBMISSION: 2022.05.25

SHEET: E-106

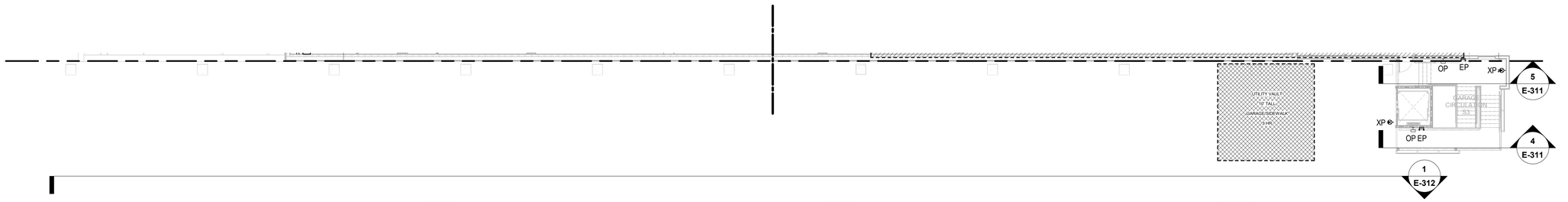
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E D C B A

1 2 3 4 5 6

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1 ELECTRICAL PARKING DECK LEVEL 3

3/32" = 1'-0"

KEYED NOTES

1. XXX

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.

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SHEET NAME: ELECTRICAL PARKING DECK LEVEL 3

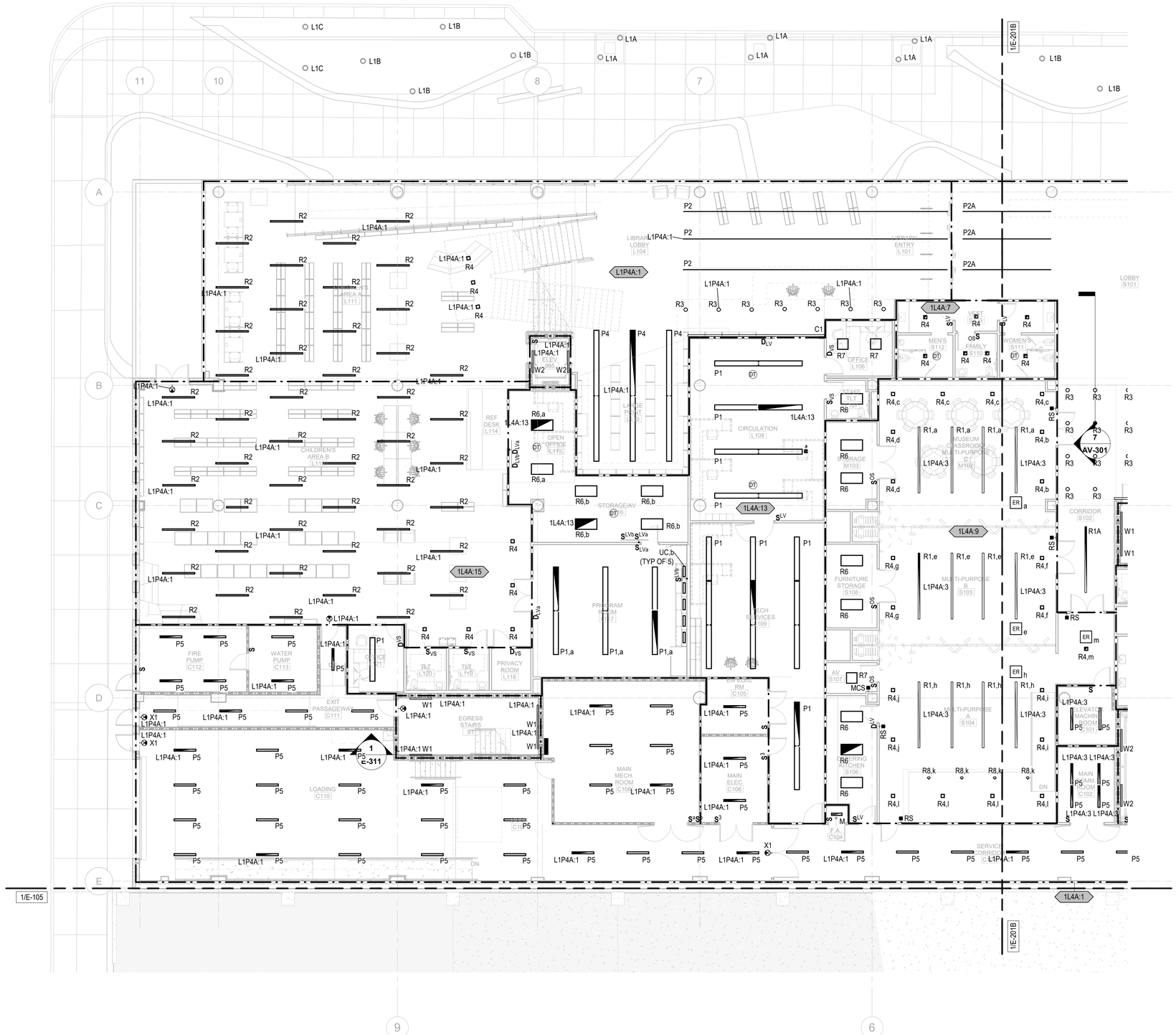
ORIG SUBMISSION: 2022.05.25

SHEET: E-107

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KEYED NOTES

1. XXX

GENERAL NOTES

1. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.
2. ALL EXIT SIGNS ARE TYPE 'X' UNLESS OTHERWISE NOTED. ALL EXIT SIGNS SHALL BE ON UNSWITCHED LEG OF CIRCUIT.

1 ELECTRICAL LIGHTING LEVEL 1 - AREA A

1/8" = 1'-0"

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Δ	DATE	DESCRIPTION
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SHEET NAME: ELECTRICAL LIGHTING LEVEL 1 - AREA A

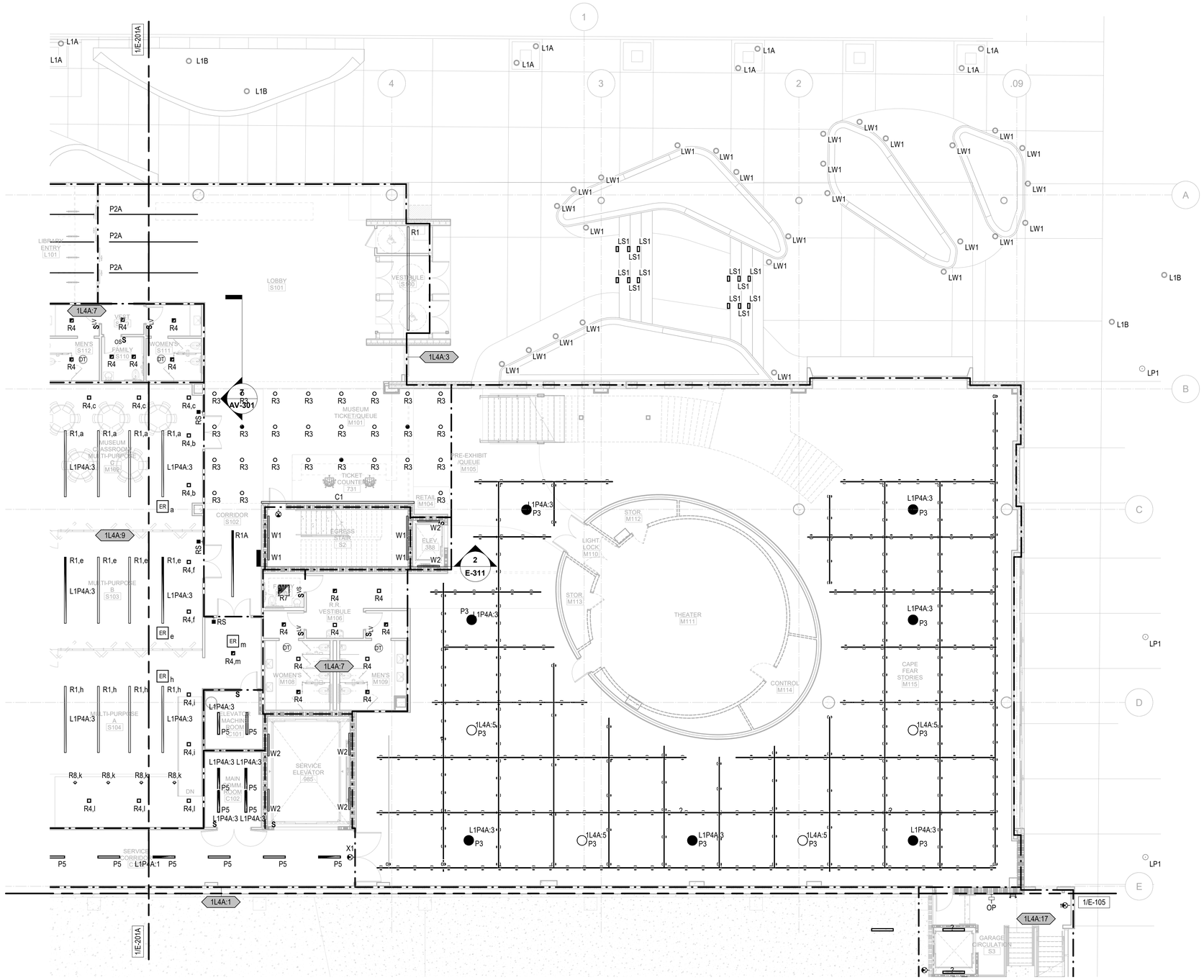
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SHEET: **E-201A**

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1 ELECTRICAL LIGHTING LEVEL 1 - AREA B

1/8" = 1'-0"

KEYED NOTES

1. ELECTRICAL CONNECTION FOR FUTURE TRACK LIGHTING. INSTALL 13'-6" AFF.

   NOTE: CURRENT LIMITING FEED FOR TRACK SYSTEM REQUIRED FOR NEC COMPLIANCE. DESIGN INTENDED FOR MAXIMUM 277/1P 12A CURRENT TRACK LIMITER PER CIRCUIT.

2. XXX

GENERAL NOTES

1. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.

2. ALL EXIT SIGNS ARE TYPE 'X' UNLESS OTHERWISE NOTED. ALL EXIT SIGNS SHALL BE ON UNSWITCHED LEG OF CIRCUIT.

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SHEET NAME:
ELECTRICAL LIGHTING LEVEL 1 - AREA B

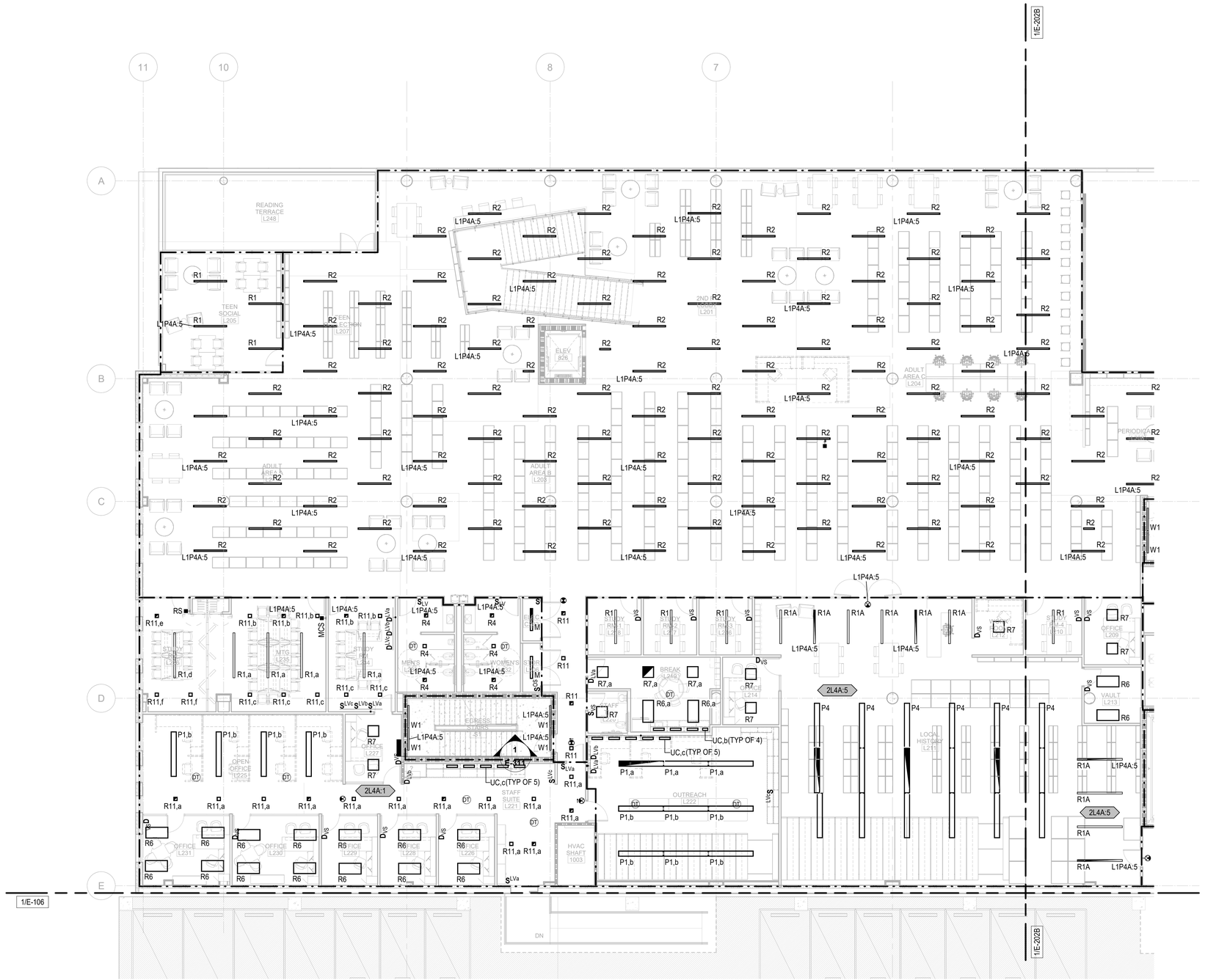
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SHEET:
E-201B

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1 ELECTRICAL LIGHTING LEVEL 2 - AREA A

1/8" = 1'-0"

KEYED NOTES

1. XXX

GENERAL NOTES

1. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.
2. ALL EXIT SIGNS ARE TYPE 'X' UNLESS OTHERWISE NOTED. ALL EXIT SIGNS SHALL BE ON UNSWITCHED LEG OF CIRCUIT.
3. EMERGENCY AND EGRESS LUMINIARES ON THIS PLAN SHALL BE DESIGNATED TO CIRCUIT 'L1P4A:5' UNLESS OTHERWISE NOTED.

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SHEET NAME: ELECTRICAL LIGHTING LEVEL 2 - AREA A

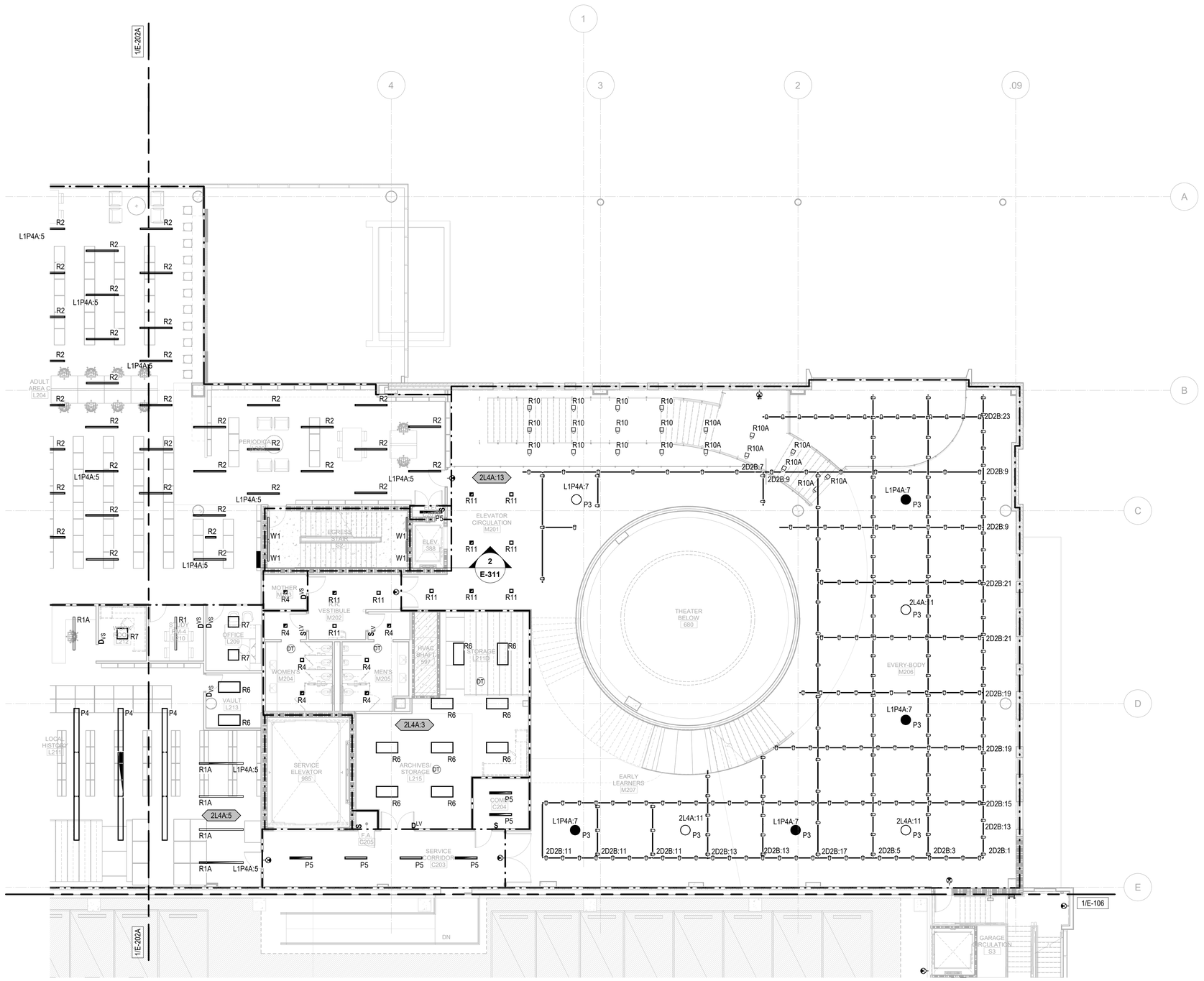
ORIG SUBMISSION: 2022.05.25

SHEET: **E-202A**

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1 ELECTRICAL LIGHTING LEVEL 2 - AREA B

1/8" = 1'-0"

KEYED NOTES

1. TBD

GENERAL NOTES

1. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.
2. ALL EXIT SIGNS ARE TYPE 'X' UNLESS OTHERWISE NOTED. ALL EXIT SIGNS SHALL BE ON UNSWITCHED LEG OF CIRCUIT.
3. EMERGENCY AND EGRESS LUMINIARES ON THIS PLAN SHALL BE DESIGNATED TO CIRCUIT 'L1P4A:7' UNLESS OTHERWISE NOTED.
4.

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ELECTRICAL LIGHTING LEVEL 2 - AREA B

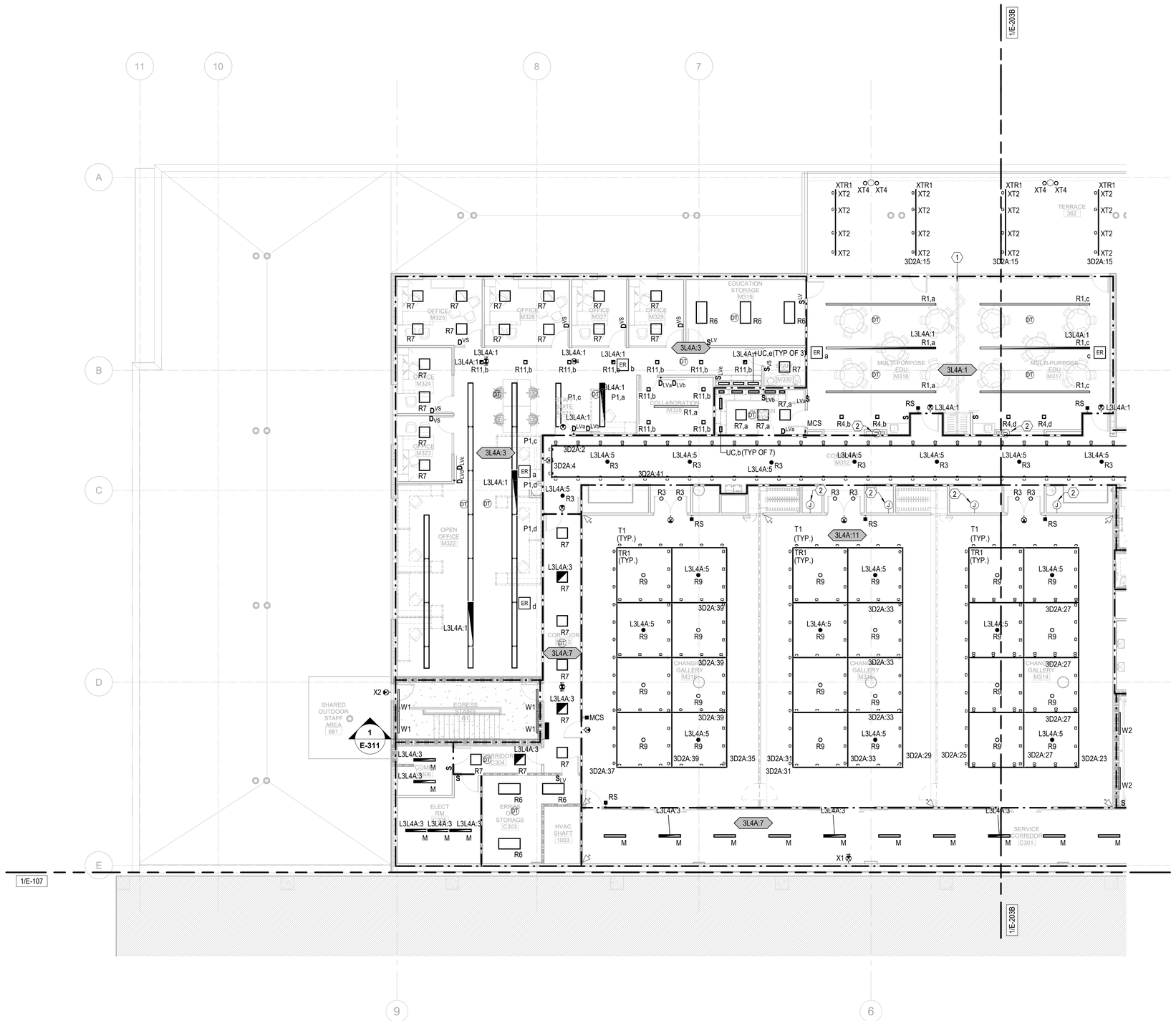
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E-202B

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1 ELECTRICAL LIGHTING LEVEL 3 - AREA A

1/8" = 1'-0"

KEYED NOTES

1. PROVIDE PARTITION CONTROL SENSOR. SEE DRAWING E-502 FOR ADDITIONAL LIGHTING CONTROL SYSTEM INFORMATION.
2. ELECTRICAL CONNECTION TO DISPLAY LIGHTING, COORDINATE WITH FRAMEWORK FOR EXACT LOCATION.

GENERAL NOTES

1. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.
2. ALL EXIT SIGNS ARE TYPE 'X' UNLESS OTHERWISE NOTED. ALL EXIT SIGNS SHALL BE ON UNSWITCHED LEG OF CIRCUIT.

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SHEET NAME: ELECTRICAL LIGHTING LEVEL 3 - AREA A

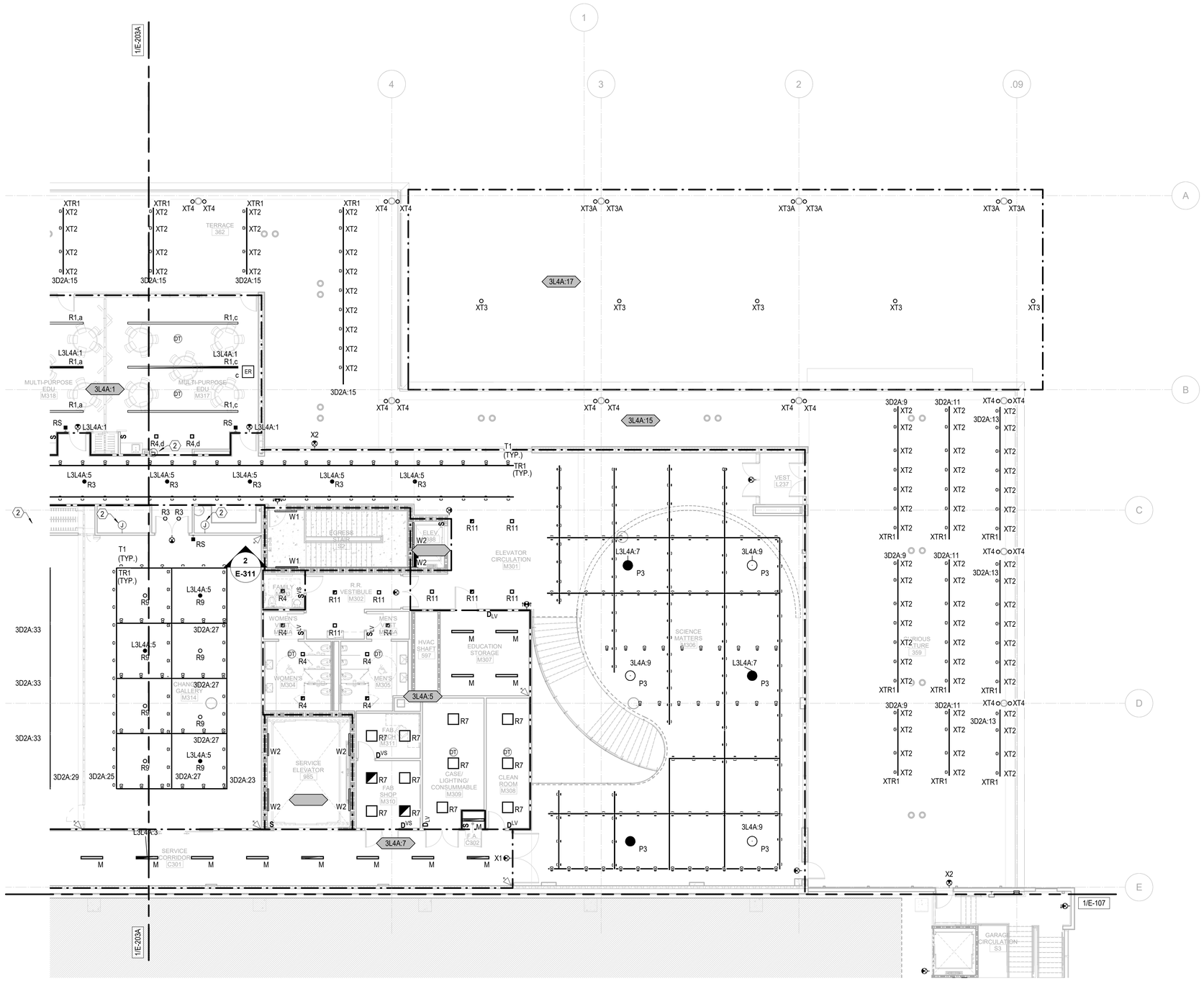
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KEYED NOTES

1. XXX

GENERAL NOTES

1. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.
2. ALL EXIT SIGNS ARE TYPE 'X' UNLESS OTHERWISE NOTED. ALL EXIT SIGNS SHALL BE ON UNSWITCHED LEG OF CIRCUIT.
3. EXTERIOR LIGHTING CONDUIT RUNS ON THE TERRACE SHALL UTILIZE THE TERRACE STRUCTURE HSS4 MOUNTING TUBES THROUGHOUT THE TERRACE CANOPY.

1 **ELECTRICAL LIGHTING LEVEL 3 - AREA B**
1/8" = 1'-0"

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SHEET NAME:
ELECTRICAL LIGHTING LEVEL 3 - AREA B

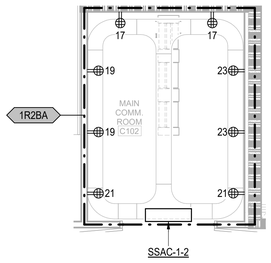
ORIG SUBMISSION: 2022.05.25

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E-203B

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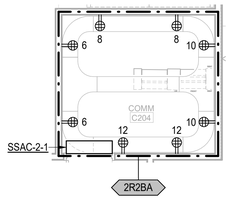
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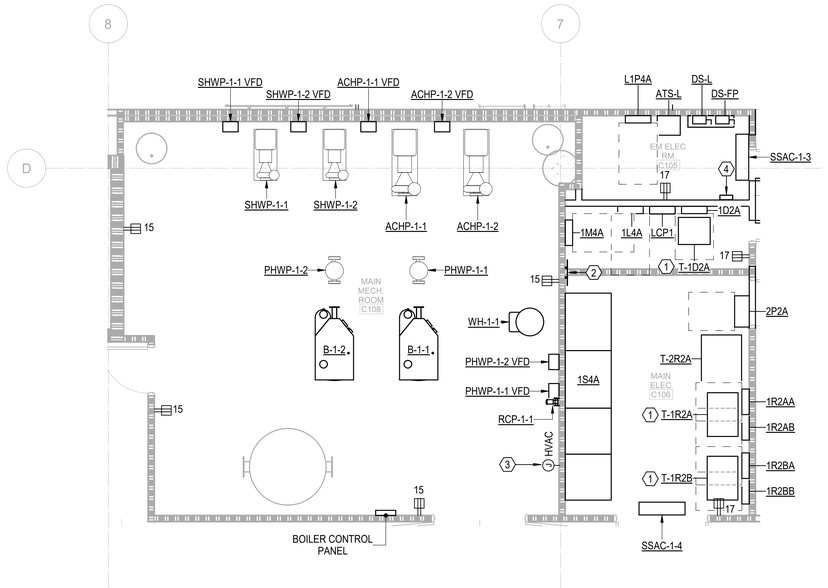
3 ELECTRICAL PART PLAN - LEVEL 1 - MAIN COMM

1/4" = 1'-0"



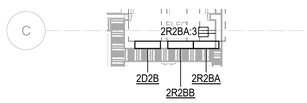
6 ELECTRICAL PART PLAN - LEVEL 2 - COMM

1/4" = 1'-0"



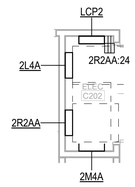
5 ELECTRICAL PART PLAN - LEVEL 1 - MAIN ELEC, EM ELEC, MAIN MECH

1/4" = 1'-0"



8 ELECTRICAL PART PLAN - LEVEL 2 - AREA B - ELEC

1/4" = 1'-0"



7 ELECTRICAL PART PLAN - LEVEL 2 - AREA A - ELEC

1/4" = 1'-0"

KEYED NOTES

1. SUSPEND TRANSFORMER ABOVE PANELBOARD, SEE DETAIL 10/E-601 FOR ADDITIONAL INFORMATION.
2. ELECTRICAL GROUND BUS, SEE DRAWING E-___ FOR ADDITIONAL INFORMATION.
3. 120 V, 20 A CIRCUIT FOR HVAC CONTROL POWER. COORDINATE LOCATION OF POWER CONNECTION WITH HVAC CONTROLS INSTALLER.
4. ENGINEER-GENERATOR 'EG1' REMOTE ANNUNCIATOR PANEL. EXTEND (1) 1" EMPTY CONDUIT FROM PANEL TO GENERATOR.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.

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SHEET NAME: ELECTRICAL PART PLANS

ORIG SUBMISSION: 2022.05.25

SHEET: E-301

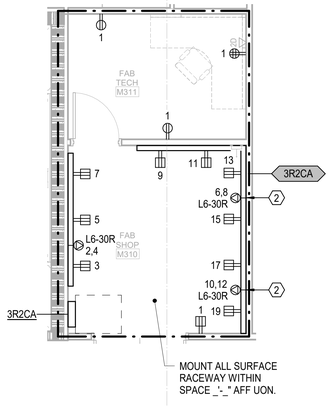
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E D C B A

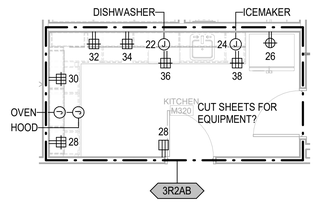
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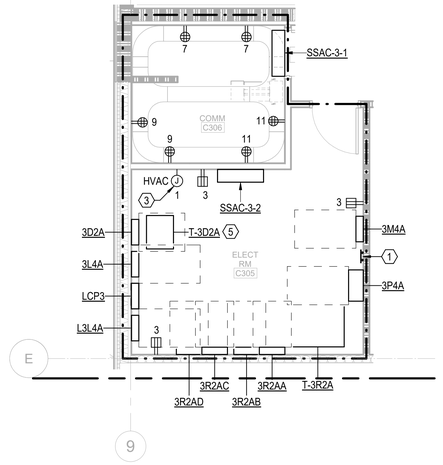
3 ELECTRICAL PART PLAN - LEVEL 3 - FAB SHOP

1/4" = 1'-0"



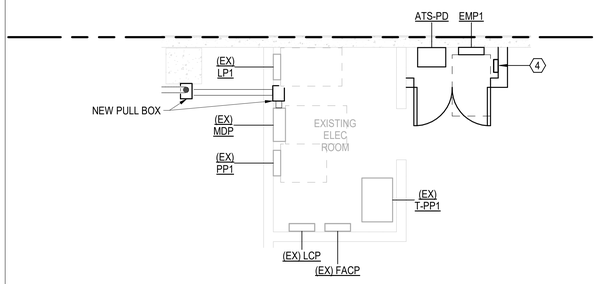
2 ELECTRICAL PART PLAN - LEVEL 3 - KITCHEN

1/4" = 1'-0"



1 ELECTRICAL PART PLAN - LEVEL 3 - ELEC, COMM

1/4" = 1'-0"



4 ELECTRICAL PART PLAN - PARKING DECK - ELEC

1/4" = 1'-0"

KEYED NOTES

1. ELECTRICAL GROUND BUS, SEE DRAWING E-___ FOR ADDITIONAL INFORMATION.
2. RECEPTACLE MOUNTED 3" ABOVE SURFACE MOUNTED RACEWAY.
3. 120 V, 20 A CIRCUIT FOR HVAC CONTROL POWER. COORDINATE LOCATION OF POWER CONNECTION WITH HVAC CONTROLS INSTALLER.
4. 'EG1' REMOTE ANNUNCIATOR PANEL. EXTEND 1" EMPTY CONDUIT TO ENGINE-GENERATOR 'EG1'.
5. SUSPEND TRANSFORMER ABOVE PANELBOARD, SEE DETAIL 10/E-601 FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.

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SHEET NAME:
ELECTRICAL PART PLANS

ORIG SUBMISSION: 2022.05.25

SHEET:
E-302

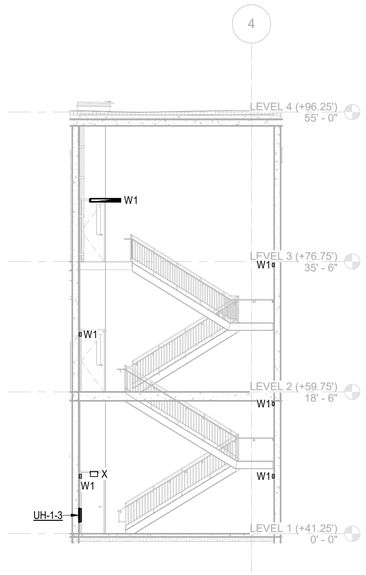
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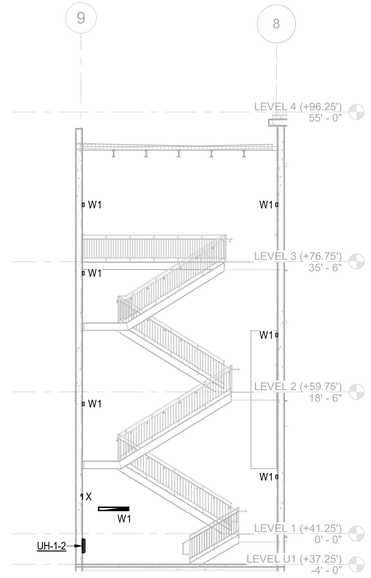
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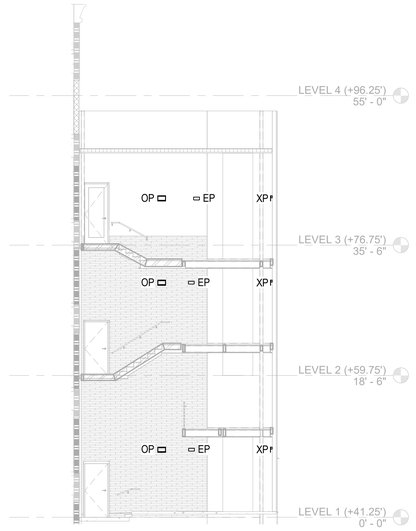
2 ELECTRICAL SECTION - EGRESS STAIR S2

1/8" = 1'-0"



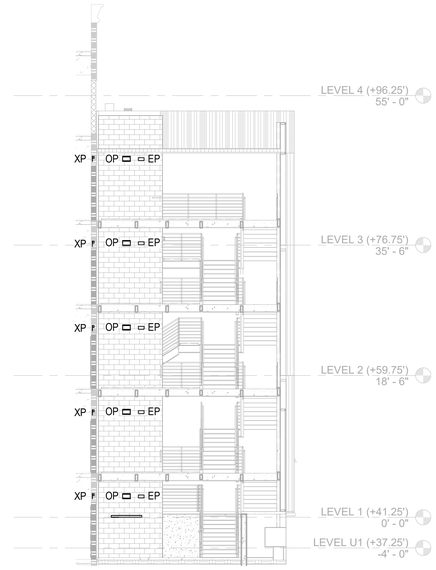
1 ELECTRICAL SECTION - EGRESS STAIR S1

1/8" = 1'-0"



5 ELECTRICAL SECTION - GARAGE CIRCULATION 2

1/8" = 1'-0"



4 ELECTRICAL SECTION - GARAGE CIRCULATION 1

1/8" = 1'-0"

KEYED NOTES

1. XXX

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. SEE DRAWING E-501 FOR LUMINAIRE SCHEDULE AND E-502 FOR ELECTRICAL LIGHTING CONTROL SEQUENCE OF OPERATIONS.

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: ELECTRICAL SECTIONS

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SHEET: E-311

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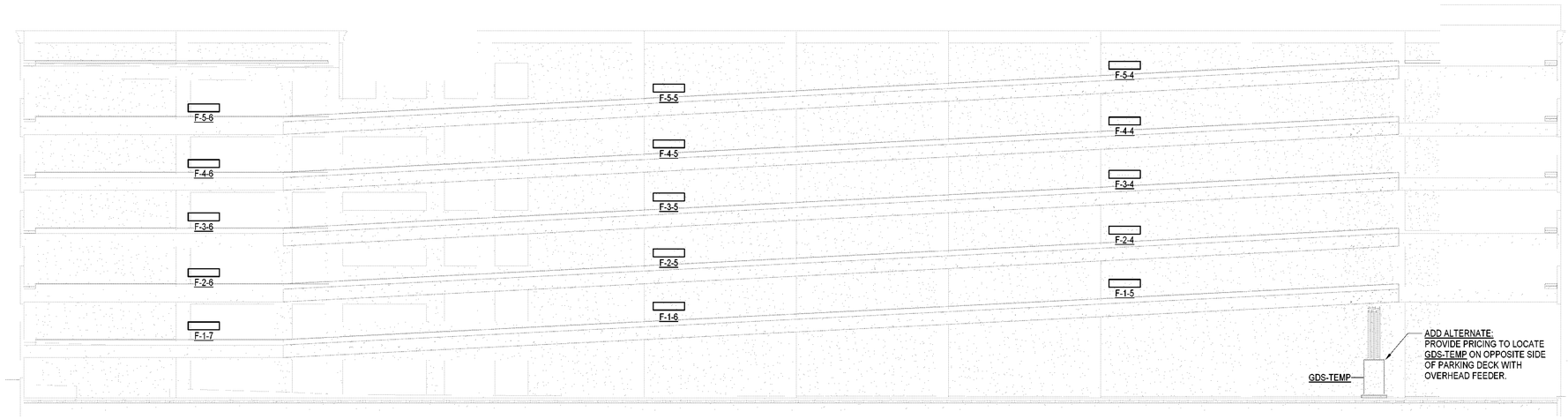
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1 ELECTRICAL SECTION - PARKING DECK NORTH RAMP

3/32" = 1'-0"



2 ELECTRICAL SECTION - PARKING DECK SOUTH RAMP

3/32" = 1'-0"

5/20/2022 12:54:08 PM

KEYED NOTES

1. XXX

GENERAL NOTES

1. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: ELECTRICAL SECTIONS

ORIG SUBMISSION: 2022.05.25

SHEET: E-312

OWNERS REVIEW SET

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ELECTRICAL RISER DIAGRAM LEGEND

SYMBOL	DESCRIPTION (ITEMS SHOWN DASHED ARE EXISTING)	SYMBOL	DESCRIPTION (ITEMS SHOWN DASHED ARE EXISTING)
	DISTRIBUTION EQUIPMENT (WITH HOUSEKEEPING PAD WHEN REQUIRED) SWITCHBOARD DISTRIBUTION OR BRANCH PANELBOARD	HP	MOTOR LOAD (HP AS INDICATED OR SEE MECHANICAL EQUIPMENT CONNECTION SCHEDULE FOR ADDITIONAL INFORMATION)
			FUSIBLE DISCONNECT SWITCH (SIZE/FPOLES/FUSE/ENCLOSURE TYPE IF OTHER THAN NEMA 1)
	TRANSFORMER (WITH HOUSEKEEPING PAD WHEN REQUIRED)		CIRCUIT BREAKER
			GROUNDING ELECTRODE
	ENGINE-GENERATOR SET WITH UNIT-MOUNTED CIRCUIT BREAKERS (SEE ENGINE-GENERATOR SET SCHEDULE FOR ADDITIONAL INFORMATION)	M	ELECTRONIC POWER MONITOR (INTEGRAL UON)
		S	SURGE PROTECTION DEVICE (INTEGRAL UON)
	AUTOMATIC TRANSFER SWITCH (SEE AUTOMATIC TRANSFER SWITCH SCHEDULE FOR ADDITIONAL INFORMATION)	CP	EQUIPMENT CONTROL PANEL (INTEGRAL UON)
		K	MANUAL KIRK KEY CIRCUIT BREAKER INTERLOCK
		100N	FEEDER MARK (SEE FEEDER SCHEDULE FOR ADDITIONAL INFORMATION)

EQUIPMENT NAMING SCHEME

DS - L 2 H 2 AA

PANEL SEQUENCE: (A, B, C, BA, BB, BC...)

EQUIPMENT VOLTAGE:

- 4 - 480/277 V
- 2 - 208/120 V

EQUIPMENT TYPE:

- D - DIMMING PANEL
- E - ELEVATOR PANEL
- H - MECHANICAL PANEL
- L - LIGHTING PANEL
- P - DISTRIBTUTION PANEL
- R - RECEPTACLE PANEL
- S - SERVICE SWITCHBOARD

FLOOR:

- 1 - LEVEL 1
- 2 - LEVEL 2
- 3 - LEVEL 3

POWER SOURCE:

- (BLANK) - NORMAL POWER
- E - LEGALLY REQUIRED POWER (NEC ARTICLE 701)
- L - LIFE SAFETY POWER (NEC ARTICLE 700)
- O - OPTIONAL STANDBY POWER (NEC ARTICLE 702)

EQUIPMENT DESIGNATION:

- ATS - AUTOMATIC TRANSFER SWITCH
- CB - CIRCUIT BREAKER
- CIS - CENTRAL INVERTER SYSTEM
- DS - DISCONNECT SWITCH
- EG - ENGINE-GENERATOR SET
- GDS - GENERATOR DOCKING STATION
- LCP - LIGHTING CONTROL PANEL
- T - DRY-TYPE TRANSFORMER

FEEDER SCHEDULE

FEEDER MARK	COPPER CONDUCTORS AND CONDUIT SIZE	ALUMINUM CONDUCTORS AND CONDUIT SIZE
50	3 #6 AND 1 #8 G ~ 1.25" C	---
60	3 #4 AND 1 #8 G ~ 1.25" C	---
60N	4 #4 AND 1 #8 G ~ 1.25" C	---
60S	3 #4 ~ 1.25" C	---
60FP	6 #4 AND 1 #8 G ~ 1.25" C	---
70	3 #4 AND 1 #8 G ~ 1.25" C	---
100	3 #2 AND 1 #8 G ~ 1.5" C	
100N	4 #2 AND 1 #8 G ~ 1.5" C	4 #1/0 AND 1 #6 G ~ 1.5" C
100X	4 #1 AND 1 #6 G ~ 1.5" C	
125	3 #1/0 AND 1 #6 G ~ 2" C	
150	3 #2/0 AND 1 #6 G ~ 2" C	
150N	4 #2/0 AND 1 #6 G ~ 2" C	4 #4/0 AND 1 #4 G ~ 2" C
150X	4 #2/0 AND 1 #4 G ~ 2" C	
200N	4 #3/0 AND 1 #6 G ~ 2" C	
225	3 #4/0 AND 1 #4 G ~ 2.5" C	
225X	4 #4/0 AND 1 #2 G ~ 2.5" C	4-300 kcmil AND 1 #2 G ~ 2.5" C
250	3-250 kcmil AND 1 #4 G ~ 2.5" C	3-350 kcmil AND 1 #2 G ~ 2.5" C
300N	4-300 kcmil AND 1 #4 G ~ 3" C	4-500 kcmil AND 1 #2 G ~ 3" C
400N	4-500 kcmil AND 1 #3 G ~ 3.5" C	2 SETS (4-250 kcmil AND 1 #1 G ~ 2.5" C)
400X	2 SETS (4 #3/0 AND 1 #1/0 G ~ 2.5" C)	
400S	2 SETS (4 #3/0 ~ 2.5" C)	
600N	2 SETS (4-350 kcmil AND 1 #2/0 G ~ 3" C)	2 SETS (4-500 kcmil AND 1 #4/0 G ~ 3.5" C)
2000N	7 SETS (4-350 kcmil AND 1 #3/0 G ~ 3" C)	
2000S	7 SETS (4-350 kcmil ~ 3" C)	

NOTE:
1. ALUMINUM CONDUCTORS SHALL NOT BE USED FOR CONNECTION TO EQUIPMENT WHERE LISTING OR MANUFACTURER'S INSTRUCTIONS PROHIBIT THE USE OF ALUMINUM CONDUCTORS.

KEYED NOTES

1. XXX

ENGINE-GENERATOR SET SCHEDULE

DESIGNATION	KW	KVA	MAX. START. KVA	MAX. VOLTAGE DIP	VOLTAGE	POWER FACTOR	Hz	RPM	UNIT-MOUNTED CIRCUIT BREAKERS (NOTE 4)	NOTES
EG1	100.0	125.0			480Y/277	0.8	60	1800	/3 - 90/3 - FIRE PUMP	2,3,5

NOTES:
1. RATING SHALL APPLY AT SITE CONDITIONS OF 36' ABOVE SEA LEVEL AND 89° AMBIENT AIR TEMPERATURE (EXCLUDING ENGINE RADIATION EFFECTS).
2. ENGINE-GENERATOR SHALL BE RATED FOR STANDBY SERVICE, 3Ø, 4-WIRE, WYE CONNECTED.
3. UNIT-MOUNTED CIRCUIT BREAKER(S) AND ENCLOSURE SHALL BE RATED SUITABLE FOR SERVICE ENTRANCE USE.
4. PROVIDE UNIT-MOUNTED CIRCUIT BREAKER(S) WITH ADJUSTABLE LSI SETTINGS.
5. ENERGY SOURCE SHALL BE DIESEL FUEL.

AUTOMATIC TRANSFER SWITCH SCHEDULE

DESIGNATION	AMPERES	VOLTAGE	POLES	WITHSTAND RATING	LOAD PRIORITY	BYPASS ISOLATION	CLOSED TRANSITION	NOTES
ATS-L	100	480	3	0	0	No	No	
ATS-PD	260	480	3	0	0	No	No	

NOTES:
1. LOAD PRIORITY ORDER IS 0 (HIGHEST) TO 2 (LOWEST).

DRY-TYPE TRANSFORMER SCHEDULE

DESIGNATION	RATING	VOLTAGE		TEMP RISE	GROUNDING ELECTRODE	NOTES
		PRIMARY	SECONDARY			
T-1D2A	30 kVA	480 V	208Y/120 V	115 °C	#6	
T-1R2A	75 kVA	480 V	208Y/120 V	115 °C	#2	
T-1R2B	75 kVA	480 V	208Y/120 V	115 °C	#2	
T-2R2A	112.5 kVA	480 V	208Y/120 V	115 °C	#1/0	
T-3D2A	45 kVA	480 V	208Y/120 V	115 °C	#4	
T-3R2A	150 kVA	480 V	208Y/120 V	115 °C	#2/0	

NOTES:
1. SEE DETAIL 9/E-601 FOR DRY-TYPE TRANSFORMER GROUNDING DETAIL.
2. GROUNDING ELECTRODE CONDUCTOR SHALL BE INSTALLED IN RACEWAY, MINIMUM GROUNDING ELECTRODE CONDUCTOR SIZE PER NEC.

GENERAL NOTES

1. SEE DRAWING E-401 FOR EQUIPMENT NAMING SCHEME, FEEDER SCHEDULE, DRY-TYPE TRANSFORMER SCHEDULE, ENGIN-GENERATOR SET SCHEDULE, AND TRANSFER SWITCH SCHEDULE.
2. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
3. EMERGENCY AND LEGALLY REQUIRED OVERCURRENT PROTECTIVE DEVICES SHALL BE SELECTIVELY COORDINATED TO 0.01 SECONDS WITH ALL SUPPLY SIDE OVERCURRENT PROTECTIVE DEVICES AS REQUIRED BY NC ELECTRICAL CODE ARTICLES 700 AND 701.

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL RISER DIAGRAM

ORIG SUBMISSION: 2022.05.25

SHEET:
E-401

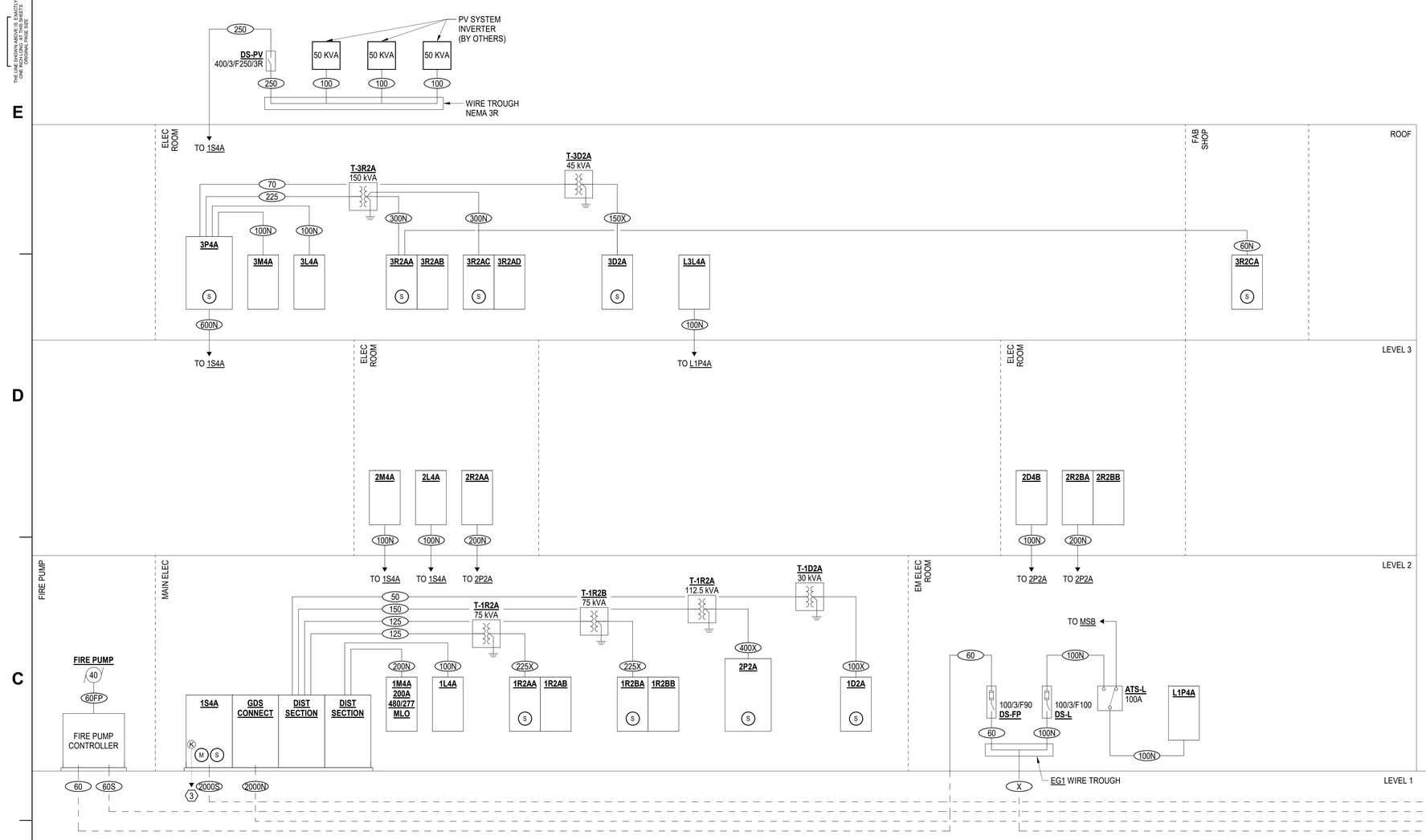
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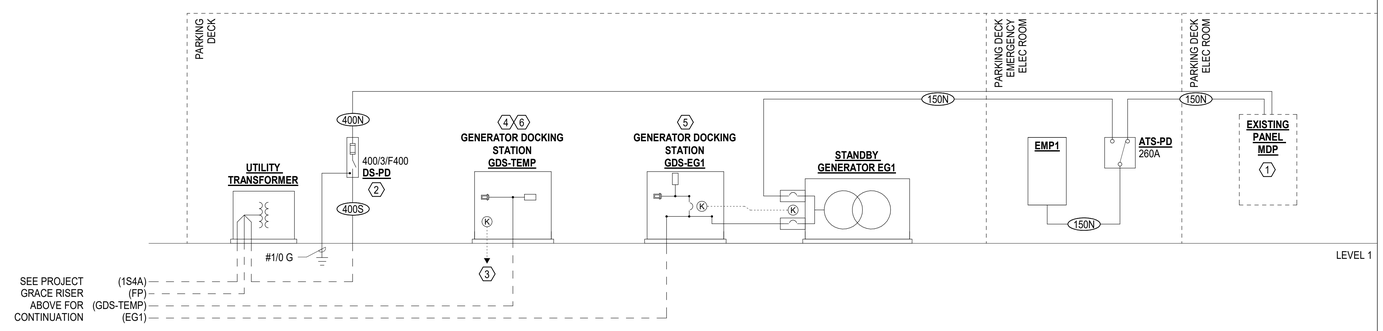
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PROJECT GRACE RISER DIAGRAM



EXISTING PARKING DECK RISER DIAGRAM

KEYED NOTES

1. PARKING DECK SERVICE FEEDER BACK TO EXISTING UTILITY TRANSFORMER TO BE REMOVED AND CONDUITS SEALED. NEW SERVICE FEEDER TO BE INSTALLED AND CONNECTED TO EXISTING SERVICE PANELBOARD 'MDP'. CUTOVER TO NEW SERVICE TO BE COORDINATED WITH OWNER TO PROVIDE MINIMAL DOWNTIME TO PARKING DECK ELECTRICAL SERVICE.
2. PROVIDE 400/3/F400/3R PARKING DECK SERVICE DISCONNECT SWITCH 'DS-PD'. SWITCH SHALL BE SERVICE ENTRANCE RATED.
3. PROVIDE 1" CONDUIT FROM 'GDS-TEMP' TO '1S4A' MCB FOR KIRK KEY INTERLOCK WIRING.
4. 2000 A GENERATOR DOCKING STATION 'GDS-TEMP'.

   BASIS OF DESIGN: TRYSTAR GDS-2
5. ___ A GENERATOR DOCKING STATION 'GDS-EG1'.

   BASIS OF DESIGN: TRYSTAR DBDS-2
6. SEE DRAWING E-105 FOR ADD ALTERNATE TO LOCATE 'GDS-TEMP' TO OPPOSITE SIDE OF PARKING DECK.

GENERAL NOTES

1. SEE DRAWING E-401 FOR EQUIPMENT NAMING SCHEME, FEEDER SCHEDULE, DRY-TYPE TRANSFORMER SCHEDULE, ENGIN-GENERATOR SET SCHEDULE, AND TRANSFER SWITCH SCHEDULE.
2. SEE DRAWING E-511 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
3. EMERGENCY AND LEGALLY REQUIRED OVERCURRENT PROTECTIVE DEVICES SHALL BE SELECTIVELY COORDINATED TO 0.01 SECONDS WITH ALL SUPPLY SIDE OVERCURRENT PROTECTIVE DEVICES AS REQUIRED BY NC ELECTRICAL CODE ARTICLES 700 AND 701.

1 **ELECTRICAL RISER DIAGRAM**
NO SCALE

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME: ELECTRICAL RISER DIAGRAM

ORIG SUBMISSION: 2022.05.25

SHEET: E-402

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LUMINAIRE SCHEDULE

TYPE	MANUFACTURER	MODEL	ACCEPTED ALTERNATE PER SPECIFICATION	SOURCE INFORMATION				ELECTRICAL INFORMATION				MOUNTING	DESCRIPTION
				TYPE	LUMEN OUTPUT	COLOR TEMP (K)	MIN CRI	VOLTAGE	LOAD (W)	LOAD (W/FT)	POWER SOURCE		
C1	LUMENWERX	UBIPERD-D-MWPL-SW-80-350-35-LENGTH-UNV-D1-1C-MOUNTING-W		LED	350/FT	3500	80	UNV		2.8	0-10V DIMMING	RECESSED, CEILING	RECESSED LINIEAR PERIMETER LED, NOMINAL 3.5" APERTURE WITH MATTE WHITE PARABOLIC LOUVER, DEEP REGRESS. MAX RECESS DEPTH 8 3/4"
EP	SURE-LITES	AP-2SQ-LED VANDAL SHIELD - VS1WP	APPROVED EQUAL	LED		-	-	UNV	1.8	-	-	SURFACE, WALL (7'-6" AFF UON)	EMERENCY BATTERY PACK LUMINAIRE WITH WHITE THERMOPLASTIC HOUSING, SEALED MAINTENANCE- FREE BATTERY PACK FOR 90 MIN OPERATION, AND TWO SIDE-MOUNTED HEADS. LUMINAIRE SHALL COMPLY WITH NFPA 101 AND UL 924. UL LISTED FOR DAMP LOCATIONS. PROVIDE WITH WEATHER RESISTANT VANDAL SHIELD.
L1A	BK LIGHTING	DS LED XXX NSP A9 BZW	APPROVED EQUAL	LED									COORDINATE WITH LANDSCAPE SHEETS FOR FIXTURE SPECIFICATION
L1B	BK LIGHTING	DS LED XXX MFL A9 BZW	APPROVED EQUAL	LED									COORDINATE WITH LANDSCAPE SHEETS FOR FIXTURE SPECIFICATION
L1C	BK LIGHTING	DS LED XXX WFL A9 BZW	APPROVED EQUAL	LED									COORDINATE WITH LANDSCAPE SHEETS FOR FIXTURE SPECIFICATION
LP1	DUKE ENERGY	ACORN LED BLACK	APPROVED EQUAL	LED									COORDINATE WITH LANDSCAPE SHEETS FOR FIXTURE SPECIFICATION
LS1	WAC	W-LED100F C BK	APPROVED EQUAL	LED									COORDINATE WITH LANDSCAPE SHEETS FOR FIXTURE SPECIFICATION
LW1	BK LIGHITNG	S MD LED XXX S BZW	APPROVED EQUAL	LED									COORDINATE WITH LANDSCAPE SHEETS FOR FIXTURE SPECIFICATION
M	METALUX	4SLSTP4035DD-UNV	APPROVED EQUAL	LED	2' - 2671 4' - 4766	3500	80	UNV	2' - 23.0 4' - 41.0	-	0-10V DIMMING (10%)	CHAIN HANGERS, OR SURFACE (9'-0" AFF UON)	LED STRIP LUMINAIRE WITH FROSTED DIFFUSER AND WHITE FINISH. LENGTH AS INDICATED ON THE DRAWINGS.
OP	FAIL-SAFE	TR-E-11-LD4-__W-35-OPL-__-UNV-ED-D1-OS-EL5W/ CSTG-VRSD	APPROVED EQUAL	LED	725	3500	70	UNV	20.0	-	ELECTRONIC DRIVER	SURFACE, WALL (7'-6" AFF UON)	11" ROUND EXTERIOR LUMINAIRE WITH DIE-CAST ALUMINUM HOUSING, HIGH ABUSE POLYCARBONATE LENS, INTERNAL OCCUPANCY SENSOR, TAMPER-PROOF SCREW HEADS, AND ___ FINISH. UL LISTED FOR WET LOCATIONS. PROVIDE WITH INTEGRAL MAINTENANCE- FREE BATTERY PACK.
P1	LEDALITE	7806-L-B-E-Q-G-08-7-D-E-FINISH-MOUNTING-24		LED	850/FT	3500	80	UNV		7.1	0-10V DIMMING	SURFACE, PENDANT	
P2	VODE	707-Z2-S-4'-48-CC-0-IP-AE-2-0-Z-LO-35-S5-0-BL-0		LED	231/FT	3500	80	UNV		3.8	0-10V DIMMING	SURFACE, PENDANT	PENDANT MOUNTED LINEAR LED, 1.38" W X 4' L X 1.42" H, HIGH-IMPACT EXTRUDED ACRYLIC GLASS LENS. FIXTURE TO BE FLUSH WITH BOTTOM OF SLATS. BLACK FINISH.
P2A	VODE	707-Z2-S-4'-48-CC-0-IP-AE-2-0-Z-SO-35-S5-0-BL-0		LED	461/FT	3500	80	UNV		6.6	0-10V DIMMING	SURFACE, PENDANT	SAME AS TYPE 'P2' EXCEPT LUMEN OUTPUT AND WATTAGE.
P3	HOLOPHANE	PHZ 12000LM WDA 277 35K 70 CRI PM		LED	12000	3500	80	277	81.0		ELECTRONIC DRIVER	PENDANT	PENDANT HIGH BAY, WIDE DISTRIBUTION, ACRYLIC LENS
P4	AXIS	TB4DILED-400-750-80-35-SL-BW-LENGTH-FINISH-UNV-DP-MOUNTING	PRUDENTIAL, FOCAL POINT	LED	400/FT INDIRECT 750/FT DIRECT	3500	80	UNV		10.45	0-10V DIMMING TO 1%	SURFACE, PENDANT	DIRECT/INDIRECT LED PENDANT, NOMINAL 4" W X 4 7/8" H X LENGTH AS SHOWN ON PLANS, SURROUNDLITE INDIRECT OPTICS AND BATWING DIRECT OPTICS. FINISH AND MOUNTING PER ARCHITECT.
P5	LITHONIA	CLX L48 5000 LM SEF WDL MVOLT GZ10 35K 80CRI	METALUX	LED	5000	3500	80	UNV	35	--	0-10V DIMMING	SURFACE, PENDANT	INDOOR 4' LED LINEAR, ACRYLIC WIDE DIFUSER LENS. MOUNTED WITH AIRCRAFT CABLE WITH FEED. SUSPENDED 9" FROM CEILING
R1	AXIS	BBRLED-500-80-35-BW-LENGTH-W-UNV-DP-1-MOUNTING	PRUDENTIAL, FOCAL POINT	LED	500/FT	3500	80	UNV		4.6	0-10V DIMMING	RECESSED, CEILING	RECESSED LINEAR LED, NOMINAL 4" APERTURE WITH FLUSH BATWING DISTRIBUTION. MAX RECESS DEPTH 3 13/16"
R1A	AXIS	BBRLED-400-80-35-BW-LENGTH-W-UNV-DP-1-MOUNTING	PRUDENTIAL, FOCAL POINT	LED	400/FT	3500	80	UNV		3.6	0-10V DIMMING	RECESSED, CEILING	SAME AS TYPE 'R1' EXCEPT LUMEN OUTPUT AND WATTAGE.
R2	AXIS	BBRLED-750-80-35-BW-LENGTH-W-UNV-DP-1-MOUNTING	PRUDENTIAL, FOCAL POINT	LED	750/FT	3500	80	UNV		7	0-10V DIMMING TO 1%	RECESSED, CEILING	RECESSED LINEAR LED, NOMINAL 4" APERTURE WITH FLUSH BATWING DISTRIBUTION. MAX RECESS DEPTH 3 15/16"
R3	USAI	B3RCM-09X3-35KS-30-S-AC-AC-NC1-UNV-D6E	ACULUX, ELEMENT	LED	750	3500	80	UNV	9.0		0-10V DIMMING	RECESSED, CEILING	RECESSED LED DOWNLIGHT, NOMINAL 3" APERTURE WITH REGRESSED 30 DEGREE BEAM AND SOLITE LENS. MAX RECESS DEPTH 5 1/2"
R4	GOTHAM	ICO4SQ-35/15-AR-LD-40D-277-GZ10	USAI, FOCAL POINT	LED	1500	3500	80	277	15.1		0-10V DIMMING	RECESSED, CEILING	RECESSED LED SQUARE DOWNLIGHT, NOMINAL 4" APERTURE WITH 40 DEGREE BEAM, CLEAR MATTE DIFFUSE REFELCTOR AND FINISH.
R6	FLUXWERX	TRANSOM 24		LED	4400	3500	80	UNV	38.0		0-10V DIMMING	RECESSED, CEILING	2X4 RECESSED LED FIXTURE, INTEGRAL 0-10V DIMMING DRIVER TO 10%.
R7	FLUXWERX	TRANSOM 22		LED	4000	3500	80	UNV	38.0		0-10V DIMMING	RECESSED, CEILING	2X2 RECESSED LED FIXTURE, INTEGRAL 0-10V DIMMING DRIVER TO 10%
R8	USAI	B4SAF-25-24C3-30KH-R40-S-WH-WH-NC-UNV-D6E	ACULUX, FOCAL POINT	LED	1800	3000	90	UNV	24.0		0-10V DIMMING	RECESSED, CEILING	RECESSED SQUARE ADJUSTABLE LED, NOMINAL 4" APERTURE WITH 40 DEGREE BEAM, 0-40 DEGREE VERTICAL TILT, WHITE FINISH.
R9	USAI	B4RDF-36E-35KS-90-S-AC-AC-NC-UNV-D6E	GOTHAM	LED	3450	3500	80	UNV	36		0-10V DIMMING	RECESSED, CEILING	RECESSED LED DOWNLIGHT, NOMINAL 4" APERTURE WITH 90 DEGREE BEAM AND SOLITE LENS, CLEAR MATTE ANODIZED REFLECTOR AND TRIM . MAX RECESS DEPTH 6 7/8"
R10	USAI	B4SAM-25-24C3-35KS-R50-S-BZ-BZ-NC-UNV-D6E	ACULUX, FOCAL POINT	LED	1800	3500	80	UNV	24		0-10V DIMMING	RECESSED, CEILING	RECESSED MILLWORK ADJUSTABLE LED DOWNLIGHT, NOMINAL 4" APERTURE WITH 50 DEGREE BEAM AND SOLITE LENS, 362 DEGREE HORIZONTAL ROTATION AND 0-40 DEGREE VERTICAL TILT. MAX RECESS DEPTH 6 7/8"
R10A	USAI	B4SAM-25-16C3-35KS-R50-S-BZ-BZ-NC-UNV-D6E	ACULUX, FOCAL POINT	LED	1300	3500	80	UNV	16		0-10V DIMMING	RECESSED, CEILING	SAME AS TYPE 'R10' EXCEPT LUMEN OUTPUT AND WATTAGE.
R11	USAI	B4SDF-12C3-35KS-50-S-AC-AC-FT-UNV-D6E	ACULUX, ELEMENT	LED	1125	3500	80	UNV	12		0-10V DIMMING	RECESSED, CEILING	RECESSED LED SQUARE DOWNLIGHT, NOMINAL 4" APERTURE WITH 50 DEGREE BEAM AND SOLITE LENS, CLEAR MATTE ANODIZED FINISH AND TRIM.
T1	LSI	SSL230-NBX-00-120-B	NO KNOWN EQUAL	LED PAR LAMP	NA	3000	90	120	75 MAX		DIMMING	TRACK MOUNTED	TRACK MOUNTED LED FOR PAR30 LAMPING, 6 5/16" L X 4 13/16" DIAMTER, BLACK FINISH.
TR1	LS1	31210. 31220. 31230	NO KNOWN EQUAL	NA	NA	NA	NA	120				SURFACE, CEILING	SURFACE MOUNTED SINGLE CIRCUIT TRACK. PROVIDE ALL PARTS NECESSARY FOR A COMPLETE AND WORKING SYSTEM. TRACK SHALL BE SUPPLIED WITH 12A CURRENT LIMITER FOR EVERY CIRCUIT CONNECTION.
UC	LITHONIA	RAZ-(12IN OR 24IN)-30K-90CRI-RAZTRANS24 MVOLT	APPROVED EQUAL	LED	1' - 434 2' - 958	3000	90	UNV	1' - 10.0 2' - 18.3	-	ELECTRONIC DRIVER	SURFACE, UNDERCABINET	UNDERCABINET LUMINAIRE WITH BRUSHED ALUMINUM FINISH. PROVIDE ALL PARTS NECESSARY FOR A COMPLETE AND WORKING SYSTEM. LENGTH AS INDICATED ON THE DRAWINGS.
W1	LITHONIA	WL4-40L-EZ1-LP835-N100-NESPDT7-DIM50	APPROVED EQUAL	LED	4000	3500	80	UNV	39.5	-	0-10V DIMMING (1%)	SURFACE, WALL (7'-6" AFF UON)	
W2	LITHONIA	FEM-L48-4000LM-LPPFL-WD-MVOLT-GZ10-40K-80CRI	APPROVED EQUAL	LED	4000	4000	80	UNV	23.8	-	0-10V DIMMING	SURFACE, WALL	4' VAPORTIGHT LUMINAIRE WITH IMPACT-RESISTANT THERMOPLASTIC BODY, LOW-PROVIDE FROSTED POLYCARBONATE LENS, WIDE DISTRIBUTION, AND UL LISTED FOR WET LOCATIONS.
X	LITHONIA	LRP-_-RMR-_-120/227	APPROVED EQUAL	LED	-	-	-	UNV	3.4	-	-	RECESSED, WALL OR CEILING PER DRAWINGS	EDGE LIT ACRYLIC PANEL EXIT SIGN WITH SINGLE- OR DOUBLE-FACE AS INDICATED ON THE DRAWINGS, RED LETTERS, AND MIRROR BACKGROUND, UNIVERSAL ARROWS, AND UNIVERSAL MOUNTING. LUMINAIRE SHALL COMPLY WITH NFPA 101 AND UL 924. VISIBLE LED LAMPS ARE NOT ACCEPTABLE.
X1	LITHONIA	LQC-_-R	APPROVED EQUAL	LED	-	-	-	UNV	0.7	-	-	RECESSED, WALL OR CEILING PER DRAWINGS	DIE CAST ALUMINUM EXIT SIGN WITH SINGLE- OR DOUBLE-FACE AS INDICATED ON THE DRAWINGS, RED LETTERS, BLACK HOUSING FINISH, AND BRUSHED ALUMINUM STENCIL FACE, UNIVERSAL ARROWS, AND UNIVERSAL MOUNTING. LUMINAIRE SHALL COMPLY WITH NFPA 101 AND UL 924. VISIBLE LED LAMPS ARE NOT ACCEPTABLE.
X2	LITHONIA	WLTE-W-_-R	APPROVED EQUAL	LED	-	-	-	UNV	2.7	-	-	RECESSED, WALL OR CEILING PER DRAWINGS	EXTERIOR THERMOPLASTIC EXIT SIGN WITH SINGLE- OR DOUBLE-FACE AS INDICATED ON THE DRAWINGS, RED LETTERS, WHITE HOUSING FINISH, UNIVERSAL ARROWS, AND UNIVERSAL MOUNTING. LUMINAIRE SHALL COMPLY WITH NFPA 101 AND UL 924. VISIBLE LED LAMPS ARE NOT ACCEPTABLE. UL LISTED FOR WET LOCATIONS.
XP	SURE-LITES	UX7-_-SD	APPROVED EQUAL	LED	-	-	-	UNV	1.6	-	-	RECESSED, WALL OR CEILING PER DRAWINGS	DIE CAST ALUMINUM, VANDAL RESISTANT EXIT SIGN WITH SINGLE- OR DOUBLE-FACE AS INDICATED ON THE DRAWINGS, RED LETTERS, SILVER HOUSING FINISH, UNIVERSAL ARROWS, AND UNIVERSAL MOUNTING. LUMINAIRE SHALL COMPLY WITH NFPA 101 AND UL 924. VISIBLE LED LAMPS ARE NOT ACCEPTABLE. UL LISTED FOR WET LOCATIONS. PROVIDE INTEGRAL MAINTENANCE-FREE BATTERY PACK AND SELF-DIAGNOSTICS.
XT2	PURE EDGE	TX12-MICRO-FINISH	NO KNOWN EQUAL	MR16-12V-8W-BEAM-30KWD-SL	450	3000	90	120	8		ELV OR MLV DIMMING	TRACK MOUNTED	TRACK MOUNTED LUMINAIRE FOR MR16 LAMP, 2.35" DIAMETER AND 3.52" L, FINISH PER ARCHITECT AND WET LOCATION LISTED.
XT3	LUMENPULSE	LBM-VOLTAGE-30K-NF-FINISH-DIM-SY-UL-XX-XX	NO KNOWN EQUAL	LED	2334	3000	80		28		0-10V DIMMING	SURFACE	SURFACE MOUNTED LED, 8 3/8" DIAMETER X 4 13/16" D X 10 11/16" L, 20 DEGREE BEAM. UL LISTED FOR WET LOCATION.
XT3A	LUMENPULSE	LBM-VOLTAGE-30K-NS-FINISH-DIM-SY-UL-XX-XX	NO KNOWN EQUAL	LED	2467	3000	80		28		0-10V DIMMING	SURFACE	SURFACE MOUNTED LED, 8 3/8" DIAMETER X 4 13/16" D X 10 11/16" L, 10 DEGREE BEAM. UL LISTED FOR WET LOCATION.
XT4	LUMENPULSE	LBS-VOLTAGE-30K-NF-FINISH-DIM-UL-XX-XX	NO KNOWN EQUAL	LED	1125	3000	80		12.5		0-10V DIMMING	SURFACE	SURFACE MOUNTED LED, 5 7/16" DIAMETER X 4 5/8" D X 8 3/8" L, 10 DEGREE BEAM. UL LISTED FOR WET LOCATION.
XTR1	PURE EDGE	TX12-SQ-LENGTH-FINISH	NO KNOWN EQUAL	NA	NA	NA	NA	120	NA			SURFACE, CEILING	SURFACE MOUNTED SINGLE CIRCUIT TRACK. PROVIDE ALL PARTS NECESSARY FOR A COMPLETE AND WORKING SYSTEM. FINISH PER ARCHITECT AND WET LOCATION LISTED.

LUMINAIRE SCHEDULE NOTES

GENERAL:

1. EQUIPMENT AND MATERIALS, EXCEPT AS OTHERWISE SPECIFIED HEREIN, SHALL BE NEW AND SHALL BE OF THE CUSTOMARY STANDARD AND QUALITY FURNISHED BY THE DESIGNATED MANUFACTURER FOR THAT CATALOG NUMBER.
2. MATERIALS AND EQUIPMENT SHALL BE UL LISTED, SHALL MEET UL REQUIREMENTS, AND SHALL BEAR THE UL LABEL WHEREVER STANDARDS HAVE BEEN ESTABLISHED AND LABEL SERVICE IS REGULARLY FURNISHED BY UL.
3. CONTRACTOR SHALL VERIFY CEILING TRIM COMPATIBILITY OF LUMINAIRES, LUMINAIRE LOCATIONS, RECESS DEPTHS, AND FINAL VOLTAGES PRIOR TO ORDERING LUMINAIRES.
4. CONTRACTOR SHALL PROVIDE APPROVED FIRE RATED ENCLOSURES FOR ALL LUMINAIRES LOCATED IN A FIRE RATED CEILING.
5. CONTRACTOR TO PRICE AS SPECIFIED AND MUST PROVIDE "CONTRACTOR NET" UNIT PRICING FOR EACH SPECIFIED FIXTURE. UNIT PRICING SHALL BE FOR EQUIPMENT ONLY AND NOT INCLUDE INSTALLATION OR MISCELLANEOUS ELECTRICAL COSTS. THE UNIT PRICING SHALL BE GUARANTEED FOR THE PROJECT AND VALID FOR ADDITIONS AND DELETIONS THROUGHOUT THE DURATION OF THE PROJECT. FAILURE TO PROVIDE THIS COST BREAKDOWN, WILL RESULT IN THE DESIGN TEAM UNABLE TO ASSESS OR REVIEW COSTS AND/OR COST REDUCTION OPPORTUNITIES.
6. CONTRACTOR SHALL PROVIDE SEPARATE PRICING FOR LIGHTING AND LIGHTING CONTROLS.

DEFINITIONS:

1. SUBSTITUTIONS: CHANGES IN PRODUCTS, MATERIALS, AND OR/EQUIPMENT REQUIRED BY THE CONTRACT DOCUMENTS PROPOSED BY THE CONTRACTOR DURING BIDDING OR AFTER AWARD OF THE CONTRACT.
2. SHOP DRAWINGS: DETAILED CONSTRUCTION AND FABRICATION DRAWINGS PRODUCED BY THE LUMINAIRE MANUFACTURER, THAT SHOW THE PROPOSED MATERIALS, SHAPE, DIMENSIONS AND ASSEMBLY OF THE PARTS AND HOW THE UNIT WILL BE INSTALLED. THIS INCLUDES EXACT DIMENSIONS OF COMPLETE LUMINAIRE LENGTHS, PLACEMENT AND INSTALLATION INFORMATION, FEED LOCATIONS, OR DRIVER INFORMATION, FINISH AND MATERIALS INFORMATION AND DETAILS. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AFTER THE ACCEPTANCE OF SPECIFICATION CUTSHEETS IN A SUBMITTAL FORMAT.

SUBMITTALS:

1. SUBMITTALS SHALL INCLUDE ALL SPECIFIED LUMINAIRES INDICATED ON THE LUMINAIRE SCHEDULE.
2. SUBMITTALS SHALL BE PREPARED IN A LINE-BY-LINE FORMAT CORRESPONDING TO THE SPECIFICATIONS AND SHALL INDICATE COMPLIANCE WITH EACH REQUIREMENT SPECIFIED HEREIN ON THE LUMINAIRE SCHEDULE AND INDICATED ON THE LIGHTING DRAWINGS.
3. REQUIRED SUBMITTALS ARE AS FOLLOWS:
   - A. LUMINAIRES
   - B. DRIVERS
   - C. LIGHTING CONTROL SYSTEM
   - D. LOW VOLTAGE TRANSFORMERS
4. SUBMITTALS SHALL INCLUDE THE FOLLOWING INFORMATION:
   - A. MANUFACTURER'S DATA
     - a. NAME OF MANUFACTURER.
     - b. COMPLETE CATALOG NUMBER FOR THE SPECIFIED PRODUCT.
     - c. PHOTOMETRIC DATA FROM AN INDEPENDENT TESTING LABORATORY, IF APPLICABLE.
     - d. CUT-SHEETS OF SPECIFIED PRODUCT AND SPECIFIED ACCESSORIES SUCH AS LOUVERS, LENSES, SHADES, CONTROL STATIONS, ETC. WITH DIMENSIONS CLEARLY INDICATED.
     - e. DETAILED SHOP DRAWINGS BY THE MANUFACTURER FOR EACH CUSTOM OR NON-STANDARD LUMINAIRE INDICATING FINISHED DIMENSIONS, MATERIALS, FINISHES, ETC.
5. PROJECT DATA:
   - A. NAME OF PROJECT
   - B. LOCATION OF PROJECT

SUBSTITUTIONS/VALUE ENGINEERING:

1. THE LIGHTING DESIGN FOR THIS PROJECT WAS BASED UPON LIGHTING EQUIPMENT TYPES AND MANUFACTURERS SPECIFIED. IF SUBSTITUTION OF LIGHTING EQUIPMENT OR MATERIALS IS DESIRED, PROVIDE A SUBSTITUTION REQUEST SUBMITTAL AS DEFINED HEREIN. FAILURE TO SUBMIT WITHIN THE PROPOSED DEADLINE CONSTITUTES A GUARANTEE THAT THE SPECIFIED FIXTURES WILL BE SUPPLIED. SUBMITTING FIXTURES NOT MEETING THESE REQUIREMENTS WILL BE REJECTED AND THE CONTRACTOR MUST PROVIDE THE SPECIFIED FIXTURES WITH NO INCREASE IN COST.
2. SUBSTITUTION REQUEST SUBMITTAL REQUIREMENTS:
   - A. MUST BE RECEIVED BY THE ENGINEER FOR APPROVAL 14 DAYS PRIOR TO BID DATE. FAILURE TO SUBMIT WITHIN THAT DEADLINE CONSTITUTES A GUARANTEE THAT SPECIFIED FIXTURES WILL BE SUPPLIED.
   - B. SUBMIT AT LEAST 3 COPIES OF THE SUBSTITUTION REQUEST SUBMITTAL AND PROVIDE THE FOLLOWING FOR BOTH THE SPECIFIED PRODUCT AND THE PROPOSED SUBSTITUTION PRODUCT:
     - a. MANUFACTURER'S DATA AS DEFINED IN SUBMITTAL SECTION.
     - b. PROJECT DATA AS DEFINED IN SUBMITTAL SECTION.
     - c. IF REQUESTED BY THE ENGINEER, A NON-RETURNABLE, OPERATING SAMPLE OF PROPOSED SUBSTITUTION. NO PAYMENT SHALL BE REQUIRED FOR SAMPLES. SAMPLES SHALL BE SUPPLIED WITH STANDARD CORD AND PLUG FOR 120 VOLT OPERATION.
3. PROVIDE A DETAILED COMPARISON OF SIGNIFICANT QUALITIES OF THE PROPOSED SUBSTITUTION WITH THOSE OF THE SPECIFIED PRODUCT. SIGNIFICANT QUALITIES MAY INCLUDE ELEMENTS SUCH AS PHOTOMETRY, HOUSING DIMENSIONS, MATERIAL COMPOSITION AND FINISH, AND VISUAL APPEARANCE.
4. CONTRACTOR MUST PROVIDE LIGHTING CALCULATIONS FOR THE SPACES BEING CONSIDERED, DEMONSTRATING THAT THE PROPOSED FIXTURE(S) MEET(S) OR EXCEEDS THAT OF THE SPECIFIED PRODUCT(S). CONTRACTOR MUST ALSO INCLUDE COMPARISON SUMMARIES OF THE LIGHT LEVELS FOR THOSE SPACES.
5. PROVIDE A STATEMENT INDICATING THE SUBSTITUTION/VALUE ENGINEERED EFFECT ON THE CONTRACTOR'S CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT APPROVAL OF THE SUBSTITUTION. INDICATE THE EFFECT OF THE PROPOSED SUBSTITUTION ON OVERALL CONTRACT TIME.
6. PROVIDE THE CONTRACTOR'S CERTIFICATION THAT THE PROPOSED SUBSTITUTION CONFORMS TO THE REQUIREMENTS IN THE CONTRACT DOCUMENTS IN EVERY RESPECT AND IS APPROPRIATE FOR THE APPLICATIONS INDICATED.
7. PROVIDE THE CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME THAT MAY SUBSEQUENTLY BECOME NECESSARY BECAUSE OF THE FAILURE OF THE SUBSTITUTION/VALUE ENGINEERED PRODUCT TO PERFORM ADEQUATELY.
8. PROVIDE "CONTRACTOR NET" UNIT PRICING FOR THE SPECIFIED LUMINAIRE AND THE PROPOSED SUBSTITUTION/VALUE ENGINEERED FIXTURE. CONTRACTOR MUST ALSO SHOW HOW THE EQUIPMENT SAVINGS AND INSTALL SAVINGS ARE DERIVED.
9. MODIFICATIONS REQUIRED TO ANY BUILDING EQUIPMENT OR SYSTEM DUE TO THE SUBSTITUTION OF A LUMINAIRE TYPE SHALL BE DESIGNED AND CONSTRUCTED AT THE CONTRACTOR'S EXPENSE.

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - LUMINAIRE

ORIG SUBMISSION: 2022.05.25

SHEET:
E-501

OWNERS REVIEW SET

5/20/2022 12:54:25 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PAGE SIZE

MECHANICAL EQUIPMENT CONNECTION SCHEDULE - PROJECT GRACE

DESIGNATION	FLA	KW	HP	VOLTAGE	# OF POLES	FEEDER	PANEL	CIRCUIT	DISCONNECT (NOTE 1)	NOTES
AIR COOLED CHILLERS										
ACH-R-1	245	-	-	480 V	3	3-400 kcmil & 1#3 G - 3"	1S4A	5	VFD	4
ACH-R-2	245	-	-	480 V	3	3-400 kcmil & 1#3 G - 3"	1S4A	6	VFD	4
AIR CURTAIN										
AC-3-1	2.2			277 V	1	2#12 & 1#12 G - 0.5"	3M4A	1	30/2/NF	
AIR HANDLER UNITS										
AHU-R-1	80	-	-	480 V	3	3 #2 & 1 #8G ~ 1.5" C	1S4A	13	100/3/NF/3R	
AHU-R-1 (LTG & RCPT)	5.0	-	-	120 V	1	2 #12 & 1 #12G ~ 0.5" C	3R2AA	48	30/2/NF/3R	2
AHU-R-1 (UV LIGHTS)	6.5	-	-	120 V	1	2 #12 & 1 #12G ~ 0.5" C	3R2AA	46	30/2/NF/3R	2
AHU-R-2	80	-	-	480 V	3	3 #2 & 1 #8G ~ 1.5" C	1S4A	12	100/3/NF/3R	
AHU-R-2 (LTG & RCPT)	5.0	-	-	120 V	1	2 #12 & 1 #12G ~ 0.5" C	3R2AA	44	30/2/NF/3R	2
AHU-R-2 (UV LIGHTS)	6.5	-	-	120 V	1	2#12 & 1#12 G - 0.5"	3R2AA	42	30/2/NF/3R	2
BOILERS										
B-1-1	13	-	-	120 V	1	2 #12 & 1 #12G ~ 0.5" C	1R2AA	2	30/2/NF	2
B-1-2	13	-	-	120 V	1	2 #12 & 1 #12G ~ 0.5" C	1R2AA	4	30/2/NF	2
DUCTLESS SPLIT SYSTEMS										
SSAC-1-1	14.0	-	-	208 V	2	2#12 & 1#12 G - 0.5" C	3R2AA	15,17	30/2/NF/3R	2,5
SSAC-1-2	14.0	-	-	208 V	2	2#12 & 1#12 G - 0.5" C	3R2AA	19,21	30/2/NF/3R	2,5
SSAC-1-3	14.0	-	-	208 V	2	2#12 & 1#12 G - 0.5" C	3R2AA	23,25	30/2/NF/3R	2,5
SSAC-1-4	14.0	-	-	208 V	2	2#12 & 1#12 G - 0.5" C	3R2AA	27,29	30/2/NF/3R	2,5
SSAC-2-1	14.0	-	-	208 V	2	2#12 & 1#12 G - 0.5" C	3R2AA	31,33	30/2/NF/3R	2,5
SSAC-3-1	14.0	-	-	208 V	2	2#12 & 1#12 G - 0.5"	3R2AA	35,37	30/2/NF/3R	2,5
SSAC-3-2	14.0	-	-	208 V	2	2#12 & 1#12 G - 0.5" C	3R2AA	39,41	30/2/NF/3R	2,5
ENERGY RECOVERY UNITS										
ERU-R-1 (EXHAUST)	31.68			480 V	3		1S4A	7		
ERU-R-1 (LTG & RCPT)	5.0	-	-	120 V	1	2#12 & 1#12 G - 0.5"	3R2AA	40	30/2/NF/3R	2
ERU-R-1 (SUPPLY)	32.56	-	-	480 V	3		1S4A	8		
ERU-R-1 (WHEEL)	-	-	1.5	208 V	2	3#12 & #12 G - 0.75"	3R2AB	51,53	30/2/NF/3R	2,3
FANS										
EF-1-1	-	-	1/3	480 V	3	3#12 & #12 G - 0.75"	1M4A	14,16,18	30/3/NF	2
FINNED TUBE RADIATORS										
FH-1-1	-	2.1	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	1	-	4
FH-1-2	-	2.1	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	1	-	4
FH-1-3	-	3.0	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	1	-	4
FH-1-4	-	3.0	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	1	-	4
FH-1-5	-	3.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	3	-	4
FH-1-6	-	3.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	3	-	4
FH-1-7	-	3.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	3	-	4
FH-1-8	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	3	-	4
FH-1-9	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	3	-	4
FH-1-10	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	3	-	4
FH-1-11	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	5	-	4
FH-1-12	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	5	-	4
FH-1-13	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	5	-	4
FH-1-14	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	5	-	4
FH-1-15	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	5	-	4
FH-1-16	-	2.0	-	277 V	1	2 #4 & 1 #8G ~ 1.25" C	1M4A	5	-	4
FH-1-17	-	2.0	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	7	-	4
FH-1-18	-	2.0	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	7	-	4
FH-1-19	-	2.0	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	7	-	4
FH-1-20	-	2.0	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	7	-	4
FH-1-21	-	2.0	-	277 V	1	2 #6 & 1 #10G ~ 1" C	1M4A	7	-	4
LOADING DOOR										
LD-1	-	-	2	480 V	3	3#12 & #12 G - 0.75"	1M4A	20,22,24	30/3/NF	2
PUMPS										
ACHP1-2	-	-	20	480 V	3	3#8 & 1#10 G - 1"	1M4A	15,17,19	VFD	2,3
ACHP-1-1	-	-	20	480 V	3	3#8 & 1#10 G - 1"	1M4A	9,11,13	VFD	2,3
FP-2	-	--	-	0 V	1	2#12 & 1#12 G - 0.5"			-	4
PHWP-1-1	-	-	5	480 V	3	3#12 & #12 G - 0.75"	1M4A	27,29,31	VFD	2,3
PHWP-1-2	-	-	5	480 V	3	3#12 & #12 G - 0.75"	1M4A	21,23,25	VFD	2,3
SHWP-1-1	-	-	15	480 V	3	3#8 & 1#10 G - 1"	1M4A	33,35,37	VFD	2,3
SHWP-1-2	-	-	15	480 V	3	3#8 & 1#10 G - 1"	1M4A	2,4,6	VFD	2,3
WPB-1-1	10	--	-	480 V	3	2#12 & 1#12 G - 0.5"	1M4A	8,10,12	-	4
UNIT HEATERS										
UH-1-1	-	2.0	-	208 V	2	2#12 & 1#12 G - 0.5"	1R2AB	18,20	-	4
UH-1-2	-	1.5	-	208 V	2	2#12 & 1#12 G - 0.5"	1R2AB	24,26	-	4
UH-1-3	-	1.5	-	208 V	2	2#12 & 1#12 G - 0.5"			-	4
UH-3-1				208 V	2		3R2AC	43,45		
WATER HEATERS										
WH-1-1		54	-	480 V	3		1M4A	26,28,30		

MECHANICAL EQUIPMENT CONNECTION SCHEDULE - PARKING DECK

DESIGNATION	FLA	KW	HP	VOLTAGE	# OF POLES	FEEDER	PANEL	CIRCUIT	DISCONNECT (NOTE 1)	NOTES
FANS										
F-1-2	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	1,3,5	30/3/NF/3R	2
F-1-3	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	1,3,5	30/3/NF/3R	2
F-1-4	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	1,3,5	30/3/NF/3R	2
F-1-5	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	1,3,5	30/3/NF/3R	2
F-1-6	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	1,3,5	30/3/NF/3R	2
F-1-7	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	1,3,5	30/3/NF/3R	2
F-2-1	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	7,9,11	30/3/NF/3R	2
F-2-2	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	7,9,11	30/3/NF/3R	2
F-2-3	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	7,9,11	30/3/NF/3R	2
F-2-4	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	7,9,11	30/3/NF/3R	2
F-2-5	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	7,9,11	30/3/NF/3R	2
F-2-6	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	7,9,11	30/3/NF/3R	2
F-3-1	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	13,15,17	30/3/NF/3R	2
F-3-2	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	13,15,17	30/3/NF/3R	2
F-3-3	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	13,15,17	30/3/NF/3R	2
F-3-4	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	13,15,17	30/3/NF/3R	2
F-3-5	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	13,15,17	30/3/NF/3R	2
F-3-6	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	13,15,17	30/3/NF/3R	2
F-4-1	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	2,4,6	30/3/NF/3R	2
F-4-2	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	2,4,6	30/3/NF/3R	2
F-4-3	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	2,4,6	30/3/NF/3R	2
F-4-4	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	2,4,6	30/3/NF/3R	2
F-4-5	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	2,4,6	30/3/NF/3R	2
F-4-6	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	2,4,6	30/3/NF/3R	2
F-5-1	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	8,10,12	30/3/NF/3R	2
F-5-2	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	8,10,12	30/3/NF/3R	2
F-5-3	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	8,10,12	30/3/NF/3R	2
F-5-4	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	8,10,12	30/3/NF/3R	2
F-5-5	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	8,10,12	30/3/NF/3R	2
F-5-6	-	-	1.5	480 V	3	3 #12 & 1 #12 G - 0.75"C	EMP1	8,10,12	30/3/NF/3R	2

SCHEDULE NOTES

1. IF EQUIPMENT IS PROVIDED WITH INTEGRAL DISCONNECT SWITCH, AN ADDITIONAL DISCONNECT SWITCH SHALL NOT BE REQUIRED EXCEPT FOR EXTERIOR LOCATIONS WHERE VFD/STARTER IS LOCATED OUT OF SIGHT OF EQUIPMENT, THEN PROVIDE DISCONNECT SWITCH AS NOTED.
2. LOCATE DISCONNECT SWITCH OR VFD IN ACCESSIBLE LOCATION WITHIN SIGHT OF EQUIPMENT PER NEC REQUIREMENTS.
3. CIRCUIT EQUIPMENT THRU VFD/STARTER. SEE MECHANICAL DRAWINGS FOR VFD/STARTER LOCATION.
4. DISCONNECT SWITCH AND/OR CONTROLLER INTEGRAL TO EQUIPMENT.
5. SPLIT SYSTEM INDOOR UNIT IS POWERED BY OUTDOOR UNIT. LOW VOLTAGE POWER WIRING BETWEEN INDOOR AND OUTDOOR UNIT TO BE INSTALLED BY MECHANICAL CONTRACTOR.
6. PROVIDE PROVISIONS TO LOCK DISCONNECT SWITCH SERVING EQUIPMENT IN ELEVATOR MACHINE ROOM IN THE OPEN POSITION.
7. PROVIDE PROVISIONS FOR LOCKING ON CIRCUIT BREAKER TO SERVE AS DISCONNECTING MEANS PER NEC 422.31. PROVIDE LABEL ON EQUIPMENT STATING THE FOLLOWING (SPECIFIC PANEL NAME AND CIRCUIT NUMBER FOR RESPECTIVE EQUIPMENT SHALL BE INPUT ON THE LABEL):

   CIRCUIT __ IN PANEL _____ SHALL BE LOCKED IN THE OFF POSITION WHEN PERFORMING MAINTENANCE.

8. CIRCUIT EQUIPMENT THRU JOCKEY PUMP CONTROLLER.

GENERAL NOTES

1. ALL DISCONNECT SWITCHES, ENCLOSED CIRCUIT BREAKERS, STARTERS, CONTACTORS, AND CONTROL PANELS FURNISHED WITH MECHANICAL AND PLUMBING EQUIPMENT SHALL BE RATED AND LISTED FOR THE AVAILABLE SHORT CIRCUIT FAULT CURRENT CALCULATED UNDER THE ELECTRICAL SUB-CONTRACT.

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: ELECTRICAL SCHEDULES - MECHANICAL EQUIPMENT

ORIG SUBMISSION: 2022.05.25

SHEET: **E-511**

OWNERS REVIEW SET

5/20/2022 12:54:30 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE

DISTRIBUTION PANELBOARD "1S4A" SCHEDULE

VOLTAGE: 480/277 Wye
PHASES: 3
WIRE: 4
FED FROM:
LOCATION: MAIN ELEC C106

BUS RATING: 2000 A
MAIN TYPE: 2000A/3P MCB
SCCR:

MOUNTING: FLOOR
ENCLOSURE: TYPE 1
SURGE PROTECTION: Yes
POWER MONITOR: Yes

CKT	LOAD DESCRIPTION	FRAME	TRIP	POLES	LOAD	WIRE & CONDUIT	REMARKS
1	PANEL 2M4A	100 A	100 A	3	0.0	SEE DRAWING E-402	
2	PANEL 2L4A	100 A	100 A	3	11.5	SEE DRAWING E-402	
3	DS-PV	250 A	250 A	3	0.0	3#2 & 1#8 G - 1.5"	SHUNT TRIP
4	PANEL 3P4A	600 A	600 A	3	139.6	SEE DRAWING E-402	
5	ACH-R-1	400 A	350 A	3	220.0	SEE DRAWING E-511	
6	ACH-R-2	400 A	350 A	3	220.0	SEE DRAWING E-511	
7	ERU-R-1 (EXHAUST)	400 A	1 A	3	26.5	SEE DRAWING E-511	
8	ERU-R-1 (SUPPLY)	400 A	1 A	3	27.1	SEE DRAWING E-511	
9	PANEL 2P2A VIA T-2P2A	250 A	175 A	3	0.0	SEE DRAWING E-402	
10	PANEL 1M4A	250 A	200 A	3	195.5	SEE DRAWING E-511	
11	DIMMER 1D2A VIA T-1D2A	100 A	50 A	3	0.0	SEE DRAWING E-511	
12	AHU-R-2	250 A	125 A	3	83.1	SEE DRAWING E-511	
13	AHU-R-1	250 A	125 A	3	83.1	SEE DRAWING E-511	
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
				TOTAL CONNECTED (KVA):	1006.4		
				TOTAL CONNECTED (A):	1210.5		
				TOTAL CALCULATED (KVA):	993.5		
				TOTAL CALCULATED (A):	1194.9		

NOTES:

ELECTRICAL EQUIPMENT SCHEDULE

DESIGNATION	VOLTAGE	PHASE	NO. OF WIRES	BUS RATING	MAIN TYPE	NO. OF POLES	SECTION NUMBER	FED FROM	TOTAL DEMAND	LUGS		SHORT CIRCUIT CURRENT		POWER MONITOR	SURGE PROTECTIVE DEVICE	ENCLOSURE	MOUNTING
										SUB-FEED	FEED-THRU	AVAILABLE	RATING				
LEVEL 1 (+41.25')																	
		Not Computed	Not Computed						Not Computed					Yes	Yes		
		3	4						0.0 A					Yes	Yes		
	480Y/277	3	4	2000 A	2000A/3P MCB				0.0 A					Yes	Yes	TYPE 1	FLOOR
1D2A	208Y/120	3	4	100 A	100A/3P MCB	42		T-1D2A	0.0 A					Yes	Yes	TYPE 1	SURFACE
1L4A	480Y/277	3	4	100 A	MLO	42	1		9.6 A	No	No			No	No	TYPE 1	SURFACE
1M4A	480Y/277	3	4	400 A	400A/3P MCB	42	1	1S4A	235.1 A					No	No	TYPE 1	SURFACE
1R2AA	208Y/120	3	4	225 A	225A/3P MCB	42	1		102.4 A	No	Yes			No	Yes	TYPE 1	SURFACE
1R2AB	208Y/120	3	4	225 A	MLO	42	2	1R2AA	65.6 A	No	No			No	No	TYPE 1	SURFACE
1R2BA	208Y/120	3	4	225 A	225A/3P MCB	42	1		145.3 A	No	Yes			No	Yes	TYPE 1	SURFACE
1R2BB	208Y/120	3	4	225 A	MLO	60	2	1R2BA	121.1 A	No	No			No	No	TYPE 1	SURFACE
1S4A	480Y/277	3	4	2000 A	2000A/3P MCB				1194.9 A	No	No			Yes	Yes	TYPE 1	FLOOR
2P2A	208Y/120	3	4	400 A	400A/3P MCB	16	1	3R2AC	186.1 A	No	No			No	Yes	TYPE 1	SURFACE
EMP1		3	4	225 A	MLO	30	1	(EX) MDP	89.9 A	No	No			Yes	Yes	TYPE 1	SURFACE
L1P4A	480Y/277	3	4	100 A	MLO	30	1		11.0 A	No	Yes			No	No	TYPE 1	SURFACE
LEVEL 2 (+59.75')																	
2D2B	208Y/120	3	4	100 A	MLO	42	1	2P2A	24.0 A	No	No		10,000	No	No	TYPE 1	SURFACE
2L4A	480Y/277	3	4	100 A	MLO	30	1	1S4A	13.8 A	No	No			No	No	TYPE 1	SURFACE
2M4A	480Y/277	3	4	100 A	MLO	30	1	1S4A	0.0 A	No	No			No	No	TYPE 1	SURFACE
2R2AA	208Y/120	3	4	225 A	MLO	60	1	2P2A	91.8 A	No	No		10,000	No	No	TYPE 1	SURFACE
2R2BA	208Y/120	3	4	225 A	MLO	42	1	2P2A	84.2 A	No	Yes		10,000	No	No	TYPE 1	SURFACE
2R2BB	208Y/120	3	4	225 A	MLO	60	2	2R2BA	70.9 A	No	No		10,000	No	No	TYPE 1	SURFACE
LEVEL 3 (+76.75')																	
3D2A	208Y/120	3	4	225 A	150A/3P MCB	42	1	T-3D2A	79.9 A				10,000	No	No	TYPE 1	SURFACE
3L4A	480Y/277	3	4	100 A	MLO	30	1	3P4A	7.1 A	No	No			No	No	TYPE 1	SURFACE
3M4A	480Y/277	3	4	100 A	MLO	42	1	3P4A	0.8 A	No	No			No	No	TYPE 1	SURFACE
3P4A	480Y/277	3	4	600 A	600A/3P MCB	72	1	1S4A	152.4 A	No	No			No	Yes	TYPE 1	SURFACE
3R2AA	208Y/120	3	4	400 A	300A/3P MCB	60	1	T-3R2A	186.3 A	No	Yes		10,000	No	Yes	TYPE 1	SURFACE
3R2AB	208Y/120	3	4	400 A	MLO	60	2	3R2AA	73.7 A	No	No		10,000	No	No	TYPE 1	SURFACE
3R2AC	208Y/120	3	4	400 A	300A/3P MCB	60	1		227.5 A	No	Yes		10,000	No	Yes	TYPE 1	SURFACE
3R2AD	208Y/120	3	4	400 A	MLO	60	2	3R2AC	21.0 A	No	No		10,000	No	No	TYPE 1	SURFACE
3R2CA	208Y/120	3	4	100 A	60A/3P MCB	30	1	3R2AA	8.5 A	No	No		10,000	No	No	TYPE 1	SURFACE
L3L4A	480Y/277	3	4	100 A	MLO	30	1	L1P4A	2.3 A	No	No			No	No	TYPE 1	SURFACE

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - PANELBOARD AND EQUIPMENT

ORIG SUBMISSION: 2022.05.25

SHEET: E-521

OWNERS REVIEW SET

5/20/2022 12:54:31 PM

1S4A | ELECTRICAL EQUIPMENT SCHEDULE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE

PANELBOARD "1R2AA" SCHEDULE

VOLTAGE: 120/208 Wye | **BUS RATING:** 225 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** 225A/3P MCB | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 1
FED FROM: | **FEED-THRU LUGS:** YES | **SURGE PROTECTION:** Yes
LOCATION: MAIN ELEC C106 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
REC. - LOBBY ENTRY	2 #12 & 1 #12G ~ 0.5"	20 1	1	0.4 1.6			2	1 20	NOTE 1	B-1-1
REC. - LIBRARY RECEP.	2 #12 & 1 #12G ~ 0.5"	20 1	3		0.9 1.6		4	1 20	NOTE 1	B-1-2
DIGITAL SIGNAGE	2 #12 & 1 #12G ~ 0.5"	20 1	5			0.5 0.9	6	1 20	2 #12 & 1 #12G ~ 0.5"	REC. - REF DESK (L114)
FB - SELF CHECKOUT	2 #12 & 1 #12G ~ 0.5"	20 1	7	1.1 0.4			8	1 20	2 #12 & 1 #12G ~ 0.5"	RECEPTACLE SERVICE...
FB - CHILD AREA B		20 1	9		1.1 1.4		10	1 20	2 #12 & 1 #12G ~ 0.5"	REC. - FLR BOX CHLD AREA
FB - CHILD AREA B		20 1	11			1.1 0.5	12	1 20	2 #12 & 1 #12G ~ 0.5"	RECEPTACLE
FB - CHILD AREA C		20 1	13	0.7 1.0			14	1 20	2 #12 & 1 #12G ~ 0.5"	REC. - PROGRAM RM WSH
REC. - MAIN MECH		20 1	15		0.7		16			
REC. - ELEC		20 1	17			0.5 0.8	18	2 30	2 #10 & 1 #10 ~ 0.75"	REC. - PROGRAM RM DRY
REC. - FLR BOX CHLD AREA	2 #12 & 1 #12G ~ 0.5"	20 1	19	0.4 0.8			20	-- --	--	--
HVAC CONTROL		20 1	21		0.5		22			
REC. - FLR BOX CHLD AREA	2 #12 & 1 #12G ~ 0.5"	20 1	23			0.4	24			
REC. - PROGRAM RM DSH	2 #12 & 1 #12G ~ 0.5"	20 1	25	0.8 0.0			26	1 20	--	SPARE
REC. - PROGRAM RM C	2 #12 & 1 #12G ~ 0.5"	20 1	27		0.4 0.0		28	1 20	--	SPARE
(GF)REC. - REFRIGERATOR	2 #12 & 1 #12G ~ 0.5"	20 1	29			1.0 0.0	30	1 20	--	SPARE
REC. - PROGRAM RM - C	2 #12 & 1 #12G ~ 0.5"	20 1	31	0.4 0.0			32	1 20	--	SPARE
REC. - PROGRAM RM	2 #12 & 1 #12G ~ 0.5"	20 1	33		0.7 0.0		34	1 20	--	SPARE
REC. - PRVY RM/ EXIT WAY	2 #12 & 1 #12G ~ 0.5"	20 1	35			0.9 0.0	36	1 20	--	SPARE
REC. - OFFICE (L121)	2 #12 & 1 #12G ~ 0.5"	20 1	37	0.7 0.0			38	1 20	--	SPARE
RECEPTACLE	2 #12 & 1 #12G ~ 0.5"	20 1	39		0.4 0.0		40	1 20	--	SPARE
REC. - FLR BOX CHLD AREA	2 #12 & 1 #12G ~ 0.5"	20 1	41			0.5 0.0	42	1 20	--	SPARE
PHASE TOTALS (THIS SECTION):		**TOTAL (KVA):**		8.1	7.6	7.2			**PANEL LOADS (ALL SECTIONS):**	
		TOTAL (A):		67.9	64.3	59.6				
PHASE TOTALS (FEED-THRU LUGS):		**TOTAL (KVA):**		7.5	8.3	9.8			**TOTAL CONNECTED (KVA):** 48.5	
		TOTAL (A):		62.4	70.2	83.0			**TOTAL CONNECTED (A):** 134.6	
PHASE TOTALS (ALL SECTIONS):		**TOTAL (KVA):**		15.6	15.9	17.0			**TOTAL CALCULATED (KVA):** 36.9	
		TOTAL (A):		129.7	133.3	142.0			**TOTAL CALCULATED (A):** 102.4	

NOTES:
1. SEE ELECTRICAL EQUIPMENT CONNECTION SCHEDULE FOR FEEDER INFORMATION.
2. (GF) INDICATES GROUND FAULT CIRCUIT INTERUPTER CIRCUIT BREAKER.

PANELBOARD "1L4A" SCHEDULE

VOLTAGE: 480/277 Wye | **BUS RATING:** 100 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** MLO | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 1
FED FROM: | **FEED-THRU LUGS:** NO | **SURGE PROTECTION:** No
LOCATION: EM ELEC RM C105 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
LIGHTING ROOM C103,...	2 #12 & 1 #12G ~ 0.5"	20 1	1	1.2			2			
LTG. - LOBBY	2 #12 & 1 #12G ~ 0.5"	20 1	3		0.7		4			
LIGHTING ROOM 92, M105	2 #12 & 1 #12G ~ 0.5"	20 1	5			0.3	6			
LTG. - RESTROOMS	2 #12 & 1 #12G ~ 0.5"	20 1	7	0.2			8			
LTG. - MULTI-PURPOSE	2 #12 & 1 #12G ~ 0.5"	20 1	9		1.5		10			
LTG. - LIBRARY FLOOR 1	2 #12 & 1 #12G ~ 0.5"	20 1	11			1.2	12			
LTG. - LIB OFFICES	2 #12 & 1 #12G ~ 0.5"	20 1	13	1.6			14			
LTG. - LIBRARY FLOOR 1	2 #12 & 1 #12G ~ 0.5"	20 1	15		1.1		16			
LIGHTING GARAGE...		20 1	17			0.0	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			
PHASE TOTALS:		**TOTAL (KVA):**		3.1	3.3	1.6			**PANEL LOADS:**	
		TOTAL (A):		12.0	12.7	5.7				
									TOTAL CONNECTED (KVA): 7.9	
									TOTAL CONNECTED (A): 9.6	
									TOTAL CALCULATED (KVA): 7.9	
									TOTAL CALCULATED (A): 9.6	

NOTES:

PANELBOARD "1M4A" SCHEDULE

VOLTAGE: 480/277 Wye | **BUS RATING:** 400 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** 400A/3P MCB | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 1
FED FROM: 1S4A | **FEED-THRU LUGS:** YES | **SURGE PROTECTION:** No
LOCATION: EM ELEC RM C105 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
FH-1-1 THRU FH-1-4	NOTE 1	50 1	1	10.2 5.8			2	3 50	NOTE 1	SHWP-1-2
FH-1-5, THRU FH-1-10	NOTE 1	70 1	3		15.0 5.8		4	-- --	--	--
FH-1-11 THRU FH-1-16	NOTE 1	60 1	5			12.0 5.8	6	-- --	--	--
FH-1-17 THRU FH-1-21	NOTE 1	50 1	7	10.0 0.7			8	3 30	NOTE 1	WPB-1-1
ACHP-1-1	NOTE 1	50 3	9		7.5 0.7		10	-- --	--	--
--	--	-- --	11			7.5 0.7	12	-- --	--	--
--	--	-- --	13	7.5 0.0			14	3 20	NOTE 1	EF-1-1
ACHP-1-2	NOTE 1	50 3	15		7.5 0.0		16	-- --	--	--
--	--	-- --	17			7.5 0.0	18	-- --	--	--
--	--	-- --	19	7.5 0.0			20	3 20	NOTE 1	LD-1
PHWP-1-2	NOTE 1	20 3	21		2.1 0.0		22	-- --	--	--
--	--	-- --	23			2.1 0.0	24	-- --	--	--
--	--	-- --	25	2.1 18.0			26	3 20	SEE DRAWING E-511	WH-1-1
ACHP-1-2	NOTE 1	20 3	27		2.1 18.0		28	-- --	--	--
--	--	-- --	29			2.1 18.0	30	-- --	--	--
--	--	-- --	31	2.1			32			
SHWP-1-1	NOTE 1	50 3	33		5.8		34			
--	--	-- --	35			5.8	36			
--	--	-- --	37	5.8			38			
			39				40			
			41				42			
PHASE TOTALS:		**TOTAL (KVA):**		69.6	64.4	61.4			**PANEL LOADS:**	
		TOTAL (A):		253.0	234.3	221.8				
									TOTAL CONNECTED (KVA): 195.5	
									TOTAL CONNECTED (A): 235.1	
									TOTAL CALCULATED (KVA): 195.5	
									TOTAL CALCULATED (A): 235.1	

NOTES:
SEE ELECTRICAL CONNECTION SCHEDULE ON SHEET E-511 FOR FEEDER INFORMATION.

PANELBOARD "1R2BB" SCHEDULE

VOLTAGE: 120/208 Wye | **BUS RATING:** 225 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** MLO | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 2
FED FROM: 1R2BA | **FEED-THRU LUGS:** NO | **SURGE PROTECTION:** No
LOCATION: MAIN ELEC C106 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
1ST FLR EXHIBIT PWR	4#10 & 1#10G - 0.75" C	30 3	1	1.7 1.6			2	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
--	--	-- --	3		1.7 1.6		4	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
--	--	-- --	5			1.7 1.6	6	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
1ST FLR EXHIBIT PWR	4#10 & 1#10G - 0.75" C	30 3	7	1.7 1.6			8	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
--	--	-- --	9		1.7 1.6		10	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
--	--	-- --	11			1.7 1.6	12	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	13	1.6 1.6			14	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	15		1.6 1.6		16	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	17			1.6 1.6	18	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	19	1.6 1.6			20	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	21		1.6 1.6		22	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	23			0.8 1.6	24	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR	2#12 & 1#12 ~ 0.75"C	20 1	25	1.1 1.6			26	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR	2#12 & 1#12 ~ 0.75"C	20 1	27		1.4 1.6		28	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	29			1.6 1.6	30	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	31	0.8 1.6			32	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	33		1.6 1.6		34	1 20	2#12 & 1#12 ~ 0.75"C	REC. - CAPE FEAR FLR
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	35			1.6 0.7	36	1 20	2#12 & 1#12 ~ 0.75"C	REC. - THEATER
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	37	1.6			38			
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	39		1.6		40			
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	41			1.6	42			
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	43	1.6			44			
REC. - CAPE FEAR FLR	2#12 & 1#12 ~ 0.75"C	20 1	45		1.6		46			
REC. - THEATER	2#12 & 1#12 ~ 0.75"C	20 1	47			0.7	48			
REC. - THEATER	2#12 & 1#12 ~ 0.75"C	20 1	49	0.7			50			
EXTERIOR DISPLAY	2#12 & 1#12 ~ 0.75"C	20 1	51		1.5		52			
			53				54			
			55				56			
			57				58			
			59				60			
PHASE TOTALS:		**TOTAL (KVA):**		21.9	23.9	20.0			**PANEL LOADS:**	
		TOTAL (A):		185.3	201.5	166.4				
									TOTAL CONNECTED (KVA): 65.8	
									TOTAL CONNECTED (A): 182.6	
									TOTAL CALCULATED (KVA): 43.6	
									TOTAL CALCULATED (A): 121.1	

NOTES:

PANELBOARD "1R2BA" SCHEDULE

VOLTAGE: 120/208 Wye | **BUS RATING:** 225 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** 225A/3P MCB | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 1
FED FROM: | **FEED-THRU LUGS:** YES | **SURGE PROTECTION:** Yes
LOCATION: MAIN ELEC C106 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
1ST FLR RESTROOMS	2#12 & 1 #12G ~ 0.5	20 1	1	1.4 0.9			2	1 20	2#12 & 1 #12G ~ 0.5	REC. - RESTROOMS
REC. - MUSEUM WALL	2#12 & 1 #12G ~ 0.5	20 1	3		1.8 0.5		4	1 20	2#12 & 1 #12G ~ 0.5	REC. - MUS TICKET -TV
REC. - MUSEUM WALL	2#12 & 1 #12G ~ 0.5	20 1	5			1.4 0.9	6	1 20	2#12 & 1 #12G ~ 0.5	REC. - MUS TICKET
REC. - MUSEUM WALL	2#12 & 1 #12G ~ 0.5	20 1	7	1.8			8			
REC. - MUSEUM WALL	2#12 & 1 #12G ~ 0.5	20 1	9		1.4		10			
REC. - MUSEUM WALL	2#12 & 1 #12G ~ 0.5	20 1	11			1.1	12			
REC. - MUSEUM WALL	2#12 & 1 #12G ~ 0.5	20 1	13	1.1			14			
REC. - RETAIL	2#12 & 1 #12G ~ 0.5	20 1	15		0.7		16			
REC. - MAIN COMM	2#12 & 1 #12G ~ 0.5	20 1	17			0.7	18			
REC. - MAIN COMM	2#12 & 1 #12G ~ 0.5	20 1	19	0.7			20			
REC. - MAIN COMM	2#12 & 1 #12G ~ 0.5	20 1	21		0.7		22			
REC. - MAIN COMM	2#12 & 1 #12G ~ 0.5	20 1	23			0.7	24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
PHASE TOTALS (THIS SECTION):		**TOTAL (KVA):**		5.9	5.2	4.9			**PANEL LOADS (ALL SECTIONS):**	
		TOTAL (A):		49.6	44.0	40.5				
PHASE TOTALS (FEED-THRU LUGS):		**TOTAL (KVA):**		21.9	23.9	20.0			**TOTAL CONNECTED (KVA):** 81.8	
		TOTAL (A):		185.3	201.5	166.4			**TOTAL CONNECTED (A):** 226.9	
PHASE TOTALS (ALL SECTIONS):		**TOTAL (KVA):**		27.8	29.1	24.8			**TOTAL CALCULATED (KVA):** 52.3	
		TOTAL (A):		235.8	246.3	206.9			**TOTAL CALCULATED (A):** 145.3	

NOTES:

PANELBOARD "1R2AB" SCHEDULE

VOLTAGE: 120/208 Wye | **BUS RATING:** 225 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** MLO | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 2
FED FROM: 1R2AA | **FEED-THRU LUGS:** NO | **SURGE PROTECTION:** No
LOCATION: MAIN ELEC C106 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
REC. - OFFICE (L106)	2 #12 & 1 #12G ~ 0.5"	20 1	1	0.7 1.1			2	1 20	6#12 & 2#12G ~ 1" C	(L)(L115)(L108) SYS FURN
REC. - TLT	2 #12 & 1 #12G ~ 0.5"	20 1	3		0.5 1.1		4	1 20	--	(L)(L115)(L108) SYS FURN
RR CONTROLS	2 #12 & 1 #12G ~ 0.5"	20 1	5			0.9 1.1	6	1 20	--	(L)(L115)(L108) SYS FURN
REC. - COR (S102)	2 #12 & 1 #12G ~ 0.5"	20 1	7	0.4 0.0			8	1 20	--	SPARE
REC. - TECH SERV. (L109)	2 #12 & 1 #12G ~ 0.5"	20 1	9		0.7 1.0		10	1 20	6#12 & 2#12G ~ 1" C	(L)(L09) SYS FURN
REC. - TECH SERV. (L109)	2 #12 & 1 #12G ~ 0.5"	20 1	11			0.5 1.0	12	1 20	--	(L)(L09) SYS FURN
REC. - TECH SERV. (L109)	2 #12 & 1 #12G ~ 0.5"	20 1	13	0.4 1.0			14	1 20	--	(L)(L09) SYS FURN
REC. - CATERING KITCHEN	2 #12 & 1 #12G ~ 0.5"	20 1	15		0.4 0.0		16	1 20	--	SPARE
REC. - CATERING KITCHEN	2 #12 & 1 #12G ~ 0.5"	20 1	17			0.4 1.0	18	2 20	SEE DRAWING E-511	UH-1-1
REC. - CATERING KITCHEN	2 #12 & 1 #12G ~ 0.5"	20 1	19	0.4 1.0			20	-- --	--	--
REC. - LOBBY DISPLAY	2 #12 & 1 #12G ~ 0.5"	20 1	21		0.7 1.1		22	1 20		
REC. - CIRCULATION	2 #12 & 1 #12G ~ 0.5"	20 1	23			0.7 0.3	24	2 20	SEE DRAWING E-511	HEATING EGRESS STAIRS...
REC. - MULTI- PROJCTR	2 #12 & 1 #12G ~ 0.5"	20 1	25	1.1 0.3			26	-- --	--	--
MULTI PURP - PROJ SCRN	2 #12 & 1 #12G ~ 0.5"	20 1	27		0.9		28			
REC. - MULTIPURPOSE A	2 #12 & 1 #12G ~ 0.5"	20 1	29			1.4	30			
REC. - SVC CORR	2 #12 & 1 #12G ~ 0.5"	20 1	31	0.2			32			
REC. - MULTIPURPOSE A	2 #12 & 1 #12G ~ 0.5"	20 1	33		1.1		34			
REC. - MULTIPURPOSE A	2 #12 & 1 #12G ~ 0.5"	20 1	35			1.1	36			
		20 1	37	1.1			38			
REC. - TECH SERV. PRINTER		20 1	39		0.8		40			
		20 1	41			1.4	42			
PHASE TOTALS:		**TOTAL (KVA):**		7.5	8.3	9.8			**PANEL LOADS:**	
		TOTAL (A):		62.4	70.2	83.0				
									TOTAL CONNECTED (KVA): 25.6	
									TOTAL CONNECTED (A): 71.1	
									TOTAL CALCULATED (KVA): 23.7	
									TOTAL CALCULATED (A): 65.6	

NOTES:

Zimmer Development

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - PANELBOARDS - LEVEL 1

ORIG SUBMISSION: 2022.05.25

SHEET: E-522

OWNERS REVIEW SET

12RAA	1L4A	1M4A
1R2BB	1R2BA	1R2AB

5/20/2022 12:54:34 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PAGE SIZE

PANELBOARD "L1P4A" SCHEDULE

VOLTAGE: 480/277 Wye
PHASES: 3
WIRE: 4
FED FROM:
LOCATION: EM ELEC RM C105

BUS RATING: 100 A
MAIN TYPE: MLO
SCCR:
FEED-THRU LUGS: YES

MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
LTG. 1ST FLR LIBRARY MAIN	2#12 & 1#12G ~ 0.5"C	20	1	1	2.2						2				
LTG. - 1ST FLR MUSEUM	2#12 & 1#12G ~ 0.5"C	20	1	3			2.0				4				
LTG. - 2ND FLR LIBRARY	2#12 & 1#12G ~ 0.5"C	20	1	5					2.1		6				
LTG. - EM FLR 2 MU	2#12 & 1#12G ~ 0.5"C	20	1	7	1.0						8				
				9							10				
				11							12				
				13							14				
				15							16				
				17							18				
				19							20				
				21							22				
				23							24				
SPACE	--	--	--	25	0.0	0.0					26	--	--	--	SPACE
SPACE	--	--	--	27			0.0	0.0			28	--	--	--	SPACE
SPACE	--	--	--	29					0.0	0.0	30	--	--	--	SPACE
PHASE TOTALS (THIS SECTION):			**TOTAL (KVA):**		3.1		2.0		2.1		**PANEL LOADS (ALL SECTIONS):**				
			TOTAL (A):		11.3		7.3		7.6						
PHASE TOTALS (FEED-THRU LUGS):			**TOTAL (KVA):**		1.2		0.4		0.2		**TOTAL CONNECTED (KVA):** 9.1				
			TOTAL (A):		4.6		1.7		0.7		**TOTAL CONNECTED (A):** 11.0				
PHASE TOTALS (ALL SECTIONS):			**TOTAL (KVA):**		4.4		2.5		2.3		**TOTAL CALCULATED (KVA):** 9.1				
			TOTAL (A):		15.8		9.0		8.3		**TOTAL CALCULATED (A):** 11.0				

NOTES:

DISTRIBUTION PANELBOARD "2P2A" SCHEDULE

VOLTAGE: 120/208 Wye
PHASES: 3
WIRE: 4
FED FROM: 3R2AC
LOCATION: MAIN ELEC C106

BUS RATING: 400 A
MAIN TYPE: 400A/3P MCB
SCCR:

MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SURGE PROTECTION: Yes
POWER MONITOR: No

CKT	LOAD DESCRIPTION	FRAME	TRIP	POLES	LOAD	WIRE & CONDUIT	REMARKS
1	PANEL 2R2AA	250	200	3	49.8	SEE DRAWING E-402	
2	PANEL 2R2BA	250	200	3	38.5	SEE DRAWING E-402	
3	SPARE	--	200	1	0.0	--	
4	DIMMER 2D2B	100	100	3	8.6	SEE DRAWING E-402	
5	SPARE	--	100	3	0.0	--	
6	SPACE	--	--	--	0.0	--	--
7	SPACE	--	--	--	0.0	--	--
8	SPACE	--	--	--	0.0	--	--
				TOTAL CONNECTED (KVA):	96.9		
				TOTAL CONNECTED (A):	269.0		
				TOTAL CALCULATED (KVA):	67.1		
				TOTAL CALCULATED (A):	186.1		

NOTES:

Zimmer Development

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - PANELBOARDS - LEVEL 1

ORIG SUBMISSION: 2022.05.25

SHEET: E-523

OWNERS REVIEW SET

---	---	2P2A
---	---	---

5/20/2022 12:54:40 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D DRAWING SHEETS. ORIGINAL PAGE SIZE

PANELBOARD "2R2AA" SCHEDULE

VOLTAGE: 120/208 Wye
PHASES: 3
WIRE: 4
FED FROM: 2P2A
LOCATION: ELEC C202
BUS RATING: 225 A
MAIN TYPE: MLO
SCCR: 10,000
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
REC-MP	2#12 & 1#12G ~ 0.5" C	20	1	1	1.6	0.9					2	1	20	2#12 & 1#12G ~ 0.5" C	REC. - STAFF SUITE
(GF) REC. - BRK RM FRIDGE	2#12 & 1#12G ~ 0.5" C	20	1	3			1.0	0.2			4	1	20	2#12 & 1#12G ~ 0.5" C	REC. - COPIER
REC. - BRK RM DSH WSHR	2#12 & 1#12G ~ 0.5" C	20	1	5					0.8	1.4	6	1	20	2#12 & 1#12G ~ 0.5" C	REC. - OFFICE
REC. - BRK RM	2#12 & 1#12G ~ 0.5" C	20	1	7	0.2	1.4					8	1	20	2#12 & 1#12G ~ 0.5" C	REC. - OFFICE
REC. - BRK RM	2#12 & 1#12G ~ 0.5" C	20	1	9			0.2	1.4			10	1	20	2#12 & 1#12G ~ 0.5" C	REC. - OFFICE
REC. - BRK RM/TLT	2#12 & 1#12G ~ 0.5" C	20	1	11					0.7	0.0	12	1	20	--	SPARE
REC-OFFICE	2#12 & 1#12G ~ 0.5" C	20	1	13	1.4	0.0					14	1	20	--	SPARE
REC - OUTREACH	2#12 & 1#12G ~ 0.5" C	20	1	15			0.4	0.9			16	1	20	2#12 & 1#12G ~ 0.5" C	REC. - FB-STUDY
REC - OUTREACH	2#12 & 1#12G ~ 0.5" C	20	1	17					0.2	1.4	18	1	20	2#12 & 1#12G ~ 0.5" C	REC. - FB-MTG
PRGRM RM - PROJ./ SCRN	2#12 & 1#12G ~ 0.5" C	20	1	19	0.7	0.4					20	1	20	2#12 & 1#12G ~ 0.5" C	REC. - STUDY/MTG MTR
REC. - OUTREACH	2#12 & 1#12G ~ 0.5" C	20	1	21			1.3	1.3			22	1	20	2#12 & 1#12G ~ 0.5" C	REC. FB-STUDY
REC. - WORK.MP,VAULT	2#12 & 1#12G ~ 0.5" C	20	1	23					1.3	0.9	24	1	20	2#12 & 1#12G ~ 0.5" C	REC. - TLT,ELEC,CORR
REC. - HISTORY	2#12 & 1#12G ~ 0.5" C	20	1	25	1.1	1.0					26	1	20	2#12 & 1#12G ~ 0.5" C	(GF) WATER COOLER
REC. - FB-HISTORY	2#12 & 1#12G ~ 0.5" C	20	1	27			1.3	1.1			28	1	20	2#12 & 1#12G ~ 0.5" C	REC. - ADULT
(L)(L225) SYS FURNITURE	6#12 & 2#12G ~ 1" C	20	1	29					0.5	1.1	30	1	20	2#12 & 1#12G ~ 0.5" C	REC. - FB-TEEN SOCIAL
(L)(L225) SYS FURNITURE	--	20	1	31	0.5	1.6					32	1	20	2#12 & 1#12G ~ 0.5" C	REC. - LOBBY COL
(L)(L225) SYS FURNITURE	--	20	1	33			0.5	1.4			34	1	20	2#12 & 1#12G ~ 0.5" C	FB - SERVICE DESK
SPARE	--	20	1	35					0.0	1.4	36	1	20	2#12 & 1#12G ~ 0.5" C	FB - LOBBY
(L)(L222) SYS FURNITURE	6#12 & 2#12G ~ 1" C	20	1	37	0.5	0.9					38	1	20	2#12 & 1#12G ~ 0.5" C	REC. - LOBBY COUNTER
(L)(L222) SYS FURNITURE	--	20	1	39			0.5	1.1			40	1	20	2#12 & 1#12G ~ 0.5" C	REC. - LOBBY COUNTER
(L)(L222) SYS FURNITURE	--	20	1	41					0.5	1.3	42	1	20	2#12 & 1#12G ~ 0.5" C	REC. - FB - PERIODICALS
SPARE	--	20	1	43	0.0	0.5					44	1	20	2#12 & 1#12G ~ 0.5" C	HVAC CONTROL
REC. - PROGRAM RM	2#12 & 1#12G ~ 0.5" C	20	1	45			0.5	1.4			46	1	20	2#12 & 1#12G ~ 0.5" C	FB - ADULT AREA A
(GF) WATER COOLER	2#12 & 1#12G ~ 0.5" C	20	1	47					0.5	1.4	48	1	20	2#12 & 1#12G ~ 0.5" C	FB - ADULT AREA B
TLT CONTROLS	2#12 & 1#12G ~ 0.5" C	20	1	49	0.5	1.1					50	1	20	2#12 & 1#12G ~ 0.5" C	FB - ADULT AREA B
FB - 2ND FLR LOBBY	2#12 & 1#12G ~ 0.5" C	20	1	51			1.4	1.4			52	1	20	2#12 & 1#12G ~ 0.5" C	FB - ADULT AREA C
FB - 2ND FLR LOBBY	2#12 & 1#12G ~ 0.5" C	20	1	53					0.7	0.8	54	1	20	2#12 & 1#12G ~ 0.5" C	REC. - OFFICE PRINTER
REC. - AAC PRINTER	2#12 & 1#12G ~ 0.5" C	20	1	55	0.8	0.8					56	1	20	2#12 & 1#12G ~ 0.5" C	REC. - OFFICE PRINTER
REC. - AAC PRINTER	2#12 & 1#12G ~ 0.5" C	20	1	57			0.8				58				
REC. - AAC (L204)	2#12 & 1#12G ~ 0.5" C	20	1	59					0.7		60				
PHASE TOTALS:		**TOTAL (KVA):**			15.9		18.2		15.7		**PANEL LOADS:**				
		TOTAL (A):			132.5		151.7		131.0						
											TOTAL CONNECTED (KVA): 49.8				
											TOTAL CONNECTED (A): 138.2				
											TOTAL CALCULATED (KVA): 33.1				
											TOTAL CALCULATED (A): 91.8				

NOTES:
1. PROVIDE FULLY RATED CIRCUIT BREAKER SCCR AND BUS BRACING RMS SYMMETRICAL.
2.(L) INDICATES (3) BREAKER HANDLES FEEDING SYSTEM FURNITURE SHALL BE INTERLOCKED TO OPERATE AS ONE.

PANELBOARD "2L4A" SCHEDULE

VOLTAGE: 480/277 Wye
PHASES: 3
WIRE: 4
FED FROM: 1S4A
LOCATION: ELEC C202
BUS RATING: 100 A
MAIN TYPE: MLO
SCCR:
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
LTG-STAFF,MTG,RR	2#12 & 1#12G ~ 0.5"	20	1	1	1.8						2				
LTG-ARCHIVE,RR	2#12 & 1#12G ~ 0.5"	20	1	3			0.5				4				
LTG-OUTR,BREAK,HIST	2#12 & 1#12G ~ 0.5"	20	1	5					2.7		6				
LTG. - ADULT SECTION	2#12 & 1#12G ~ 0.5"	20	1	7	1.6						8				
LTG. - ADULT SECTION	2#12 & 1#12G ~ 0.5"	20	1	9			2.7				10				
LTG. - MU CLEAN LIGHTS	2#12 & 1#12G ~ 0.5"	20	1	11					0.2		12				
LTG. - ELEV CIRC	2#12 & 1#12G ~ 0.5"	20	1	13	1.9						14				
				15							16				
				17							18				
SPACE	--	--	--	19	0.0	0.0					20	--	--	--	SPACE
SPACE	--	--	--	21			0.0	0.0			22	--	--	--	SPACE
SPACE	--	--	--	23					0.0	0.0	24	--	--	--	SPACE
SPACE	--	--	--	25	0.0	0.0					26	--	--	--	SPACE
SPACE	--	--	--	27			0.0	0.0			28	--	--	--	SPACE
SPACE	--	--	--	29					0.0	0.0	30	--	--	--	SPACE
PHASE TOTALS:		**TOTAL (KVA):**			5.4		3.2		2.9		**PANEL LOADS:**				
		TOTAL (A):			19.6		11.8		10.5						
											TOTAL CONNECTED (KVA): 11.5				
											TOTAL CONNECTED (A): 13.8				
											TOTAL CALCULATED (KVA): 11.5				
											TOTAL CALCULATED (A): 13.8				

NOTES:

PANELBOARD "2M4A" SCHEDULE

VOLTAGE: 480/277 Wye
PHASES: 3
WIRE: 4
FED FROM: 1S4A
LOCATION: ELEC C202
BUS RATING: 100 A
MAIN TYPE: MLO
SCCR:
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
				1							2				
				3							4				
				5							6				
				7							8				
				9							10				
				11							12				
				13							14				
				15							16				
				17							18				
				19							20				
				21							22				
				23							24				
				25							26				
				27							28				
				29							30				
PHASE TOTALS:		**TOTAL (KVA):**			0.0		0.0		0.0		**PANEL LOADS:**				
		TOTAL (A):			0.0		0.0		0.0						
											TOTAL CONNECTED (KVA): 0.0				
											TOTAL CONNECTED (A): 0.0				
											TOTAL CALCULATED (KVA): 0.0				
											TOTAL CALCULATED (A): 0.0				

NOTES:

PANELBOARD "2R2BB" SCHEDULE

VOLTAGE: 120/208 Wye
PHASES: 3
WIRE: 4
FED FROM: 2R2BA
LOCATION: ELEC C201A
BUS RATING: 225 A
MAIN TYPE: MLO
SCCR: 10,000
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 2
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
30/3 MUSEUM DISC	4#10 & 1#10 G - 0.75"	30	3	1	1.7	1.7					2	3	30	4#10 & 1#10 G - 0.75"	30/3 MUSEUM DISC
--	--	--	--	3			1.7	1.7			4	--	--	--	--
--	--	--	--	5					1.7	1.7	6	--	--	--	--
REC-MUSEUM (WALL)	2#10 & 1#10 G - 0.75"	20	1	7	1.1	0.7					8	1	20	2#10 & 1#10 G - 0.75"	REC-MUSEUM (WALL)
REC-MUSEUM (WALL)	2#10 & 1#10 G - 0.75"	20	1	9			1.1	1.1			10	1	20	2#10 & 1#10 G - 0.75"	REC-MUSEUM (WALL)
REC-MUSEUM (WALL)	2#10 & 1#10 G - 0.75"	20	1	11					0.7	1.1	12	1	20	2#10 & 1#10 G - 0.75"	REC-MUSEUM (WALL)
REC-MUSEUM (WALL)	2#10 & 1#10 G - 0.75"	20	1	13	0.9	1.1					14	1	20	2#10 & 1#10 G - 0.75"	REC-MUSEUM (WALL)
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	15			0.7				16				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	17					0.7		18				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	19	0.7						20				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	21			0.7				22				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	23					0.7		24				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	25	0.7						26				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	27			0.7				28				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	29					0.7		30				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	31	0.7						32				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	33			0.7				34				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	35					0.7		36				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	37	0.7						38				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	39			0.7				40				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	41					0.7		42				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	43	0.7						44				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	45			0.7				46				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	47					0.7		48				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	49	0.7						50				
FB - EARLY LEARNERS	2#12 & 1#10G ~ 0.5"	20	1	51			0.4				52				
				53						0.0	54	1	20	--	SPARE
				55		0.0					56	1	20	--	SPARE
				57				0.0			58	1	20	--	SPARE
				59						0.0	60	1	20	--	SPARE
PHASE TOTALS:		**TOTAL (KVA):**			11.4		10.2		9.5		**PANEL LOADS:**				
		TOTAL (A):			96.2		85.7		78.8						
											TOTAL CONNECTED (KVA): 31.1				
											TOTAL CONNECTED (A): 86.2				
											TOTAL CALCULATED (KVA): 25.5				
											TOTAL CALCULATED (A): 70.9				

NOTES:

PANELBOARD "2R2BA" SCHEDULE

VOLTAGE: 120/208 Wye
PHASES: 3
WIRE: 4
FED FROM: 2P2A
LOCATION: ELEC C201A
BUS RATING: 225 A
MAIN TYPE: MLO
SCCR: 10,000
FEED-THRU LUGS: YES
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
(GF) WATER COOLER	2#12 & 1#12G ~ 0.5" C	20	1	1	1.0	0.5					2	1	20	2#12 & 1#12G ~ 0.5" C	HVAC CONTROLS
REC. - TLT,MOTHER,ELEC	2#12 & 1#12G ~ 0.5" C	20	1	3			1.1	0.7			4	1	20	2#12 & 1#12G ~ 0.5" C	FIRE ALARM
REC. - ARCHIVES/STOR	2#12 & 1#12G ~ 0.5" C	20	1	5					1.3	0.7	6	1	20	2#12 & 1#12G ~ 0.5" C	REC-COMM
				7		0.7					8	1	20	2#12 & 1#12G ~ 0.5" C	REC-COMM
				9				0.7			10	1	20	2#12 & 1#12G ~ 0.5" C	REC-COMM
				11						0.7	12	1	20	2#12 & 1#12G ~ 0.5" C	REC-COMM
				13							14				
				15							16				
				17							18				
				19							20				
				21							22				
				23							24				
				25							26				
				27							28				
				29							30				
SPARE	--	20	1	31	0.0	0.0					32	1	20	--	SPARE
SPARE	--	20	1	33			0.0	0.0			34	1	20	--	SPARE
SPARE	--	20	1	35					0.0	0.0	36	1	20	--	SPARE
SPARE	--	20	1	37	0.0	0.0					38	1	20	--	SPARE
SPARE	--	20	1	39			0.0	0.0			40	1	20	--	SPARE
SPARE	--	20	1	41					0.0	0.0	42	1	20	--	SPARE
PHASE TOTALS (THIS SECTION):		**TOTAL (KVA):**			2.2		2.5		2.7		**PANEL LOADS (ALL SECTIONS):**				
		TOTAL (A):			18.5		21.2		22.9						
PHASE TOTALS (FEED-THRU LUGS):		**TOTAL (KVA):**			11.4		10.2		9.5		**TOTAL CONNECTED (KVA):** 38.5				
		TOTAL (A):			96.2		85.7		78.8		**TOTAL CONNECTED (A):** 106.8				
PHASE TOTALS (ALL SECTIONS):		**TOTAL (KVA):**			13.7		12.7		12.2		**TOTAL CALCULATED (KVA):** 30.3				
		TOTAL (A):			114.4		106.3		101.3		**TOTAL CALCULATED (A):** 84.2				

NOTES:

Zimmer Development

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - PANELBOARDS - LEVEL 2

ORIG SUBMISSION: 2022.05.25

SHEET: E-524

OWNERS REVIEW SET

2R2AA	2L4A	2M4A
---	2R2BB	2R2BA

5/20/2022 12:54:45 PM

E D C B A

1 2 3 4 5 6

THE LINE BROWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E1 SHEETS ORIGINAL PAGE SIZE

PANELBOARD "3L4A" SCHEDULE

VOLTAGE: 480/277 Wye | **BUS RATING:** 100 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** MLO | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 1
FED FROM: 3P4A | **FEED-THRU LUGS:** NO | **SURGE PROTECTION:** No
LOCATION: ELECT RM C305 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
LTG-MULTI,KITCHEN	2#12 & 1#12G ~ 0.5"	20 1	1	1.1			2			
LTG-STAFF	2#12 & 1#12G ~ 0.5"	20 1	3		2.1		4			
LTG-RR,STOR,FAB,CLEAN	2#12 & 1#12G ~ 0.5"	20 1	5			0.7	6			
LTG. - ELEC/CORR	2#12 & 1#12G ~ 0.5"	20 1	7	0.7			8			
LTG. - MUSEUM	2#12 & 1#12G ~ 0.5"	20 1	9		0.2		10			
LTG. - CHANGING GALLERY	2#12 & 1#12G ~ 0.5"	20 1	11			0.8	12			
			13				14			
LTG. - TERRACE COLUMN		20 1	15		0.2		16			
LTG. - EXTERIOR		20 1	17			0.1	18			
SPACE	--	-- --	19	0.0	0.0		20	-- --	--	SPACE
SPACE	--	-- --	21		0.0	0.0	22	-- --	--	SPACE
SPACE	--	-- --	23			0.0	24	-- --	--	SPACE
SPACE	--	-- --	25	0.0	0.0		26	-- --	--	SPACE
SPACE	--	-- --	27		0.0	0.0	28	-- --	--	SPACE
SPACE	--	-- --	29			0.0	30	-- --	--	SPACE
PHASE TOTALS:		**TOTAL (KVA):**		1.8	2.5	1.6	**PANEL LOADS:**			
		TOTAL (A):		6.6	9.2	5.8				
							TOTAL CONNECTED (KVA): 5.9			
							TOTAL CONNECTED (A): 7.1			
							TOTAL CALCULATED (KVA): 5.9			
							TOTAL CALCULATED (A): 7.1			

NOTES:

PANELBOARD "3M4A" SCHEDULE

VOLTAGE: 480/277 Wye | **BUS RATING:** 100 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** MLO | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SECTIONS:** 1
FED FROM: 3P4A | **FEED-THRU LUGS:** NO | **SURGE PROTECTION:** No
LOCATION: ELECT RM C305 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
AC-3-1	SEE DRAWING E-511	20 1	1	0.7			2			
			3				4			
			5				6			
			7				8			
			9				10			
			11				12			
			13				14			
			15				16			
			17				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			
PHASE TOTALS:		**TOTAL (KVA):**		0.7	0.0	0.0	**PANEL LOADS:**			
		TOTAL (A):		2.5	0.0	0.0				
							TOTAL CONNECTED (KVA): 0.7			
							TOTAL CONNECTED (A): 0.8			
							TOTAL CALCULATED (KVA): 0.7			
							TOTAL CALCULATED (A): 0.8			

NOTES:

DISTRIBUTION PANELBOARD "3P4A" SCHEDULE

VOLTAGE: 480/277 Wye | **BUS RATING:** 600 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** 600A/3P MCB | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** | **SURGE PROTECTION:** Yes
FED FROM: 1S4A | **POWER MONITOR:** No
LOCATION: ELECT RM C305

CKT	LOAD DESCRIPTION	FRAME	TRIP	POLES	LOAD	WIRE & CONDUIT	REMARKS
1	PANEL 3R2AA VIA T-3R2A	250 A	225 A	3	80.0	SEE DRAWING E-402	
2	SPARE	--	225 A	3	0.0	--	
3	PANEL 3L4A	100 A	100 A	3	5.9	SEE DRAWING E-402	
4	PANEL 3M4A	100 A	100 A	3	0.7	SEE DRAWING E-402	
5	SPARE	--	100 A	3	0.0	--	
6	DIMMER 3D2A VA T-3D2A	100 A	70 A	3	28.8	SEE DRAWING E-402	
7	SPARE	--	70 A	3	0.0	--	
8	ELEVATOR (MUSEUM)	1 A	1 A	3	24.2		SHUNT TRIP
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
			TOTAL CONNECTED (KVA):		139.6		
			TOTAL CONNECTED (A):		167.9		
			TOTAL CALCULATED (KVA):		126.7		
			TOTAL CALCULATED (A):		152.4		

NOTES:

PANELBOARD "3R2AC" SCHEDULE

VOLTAGE: 120/208 Wye | **BUS RATING:** 400 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** 300A/3P MCB | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** 10,000 | **SECTIONS:** 1
FED FROM: | **FEED-THRU LUGS:** YES | **SURGE PROTECTION:** Yes
LOCATION: ELECT RM C305 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	1	0.7 0.5			2	1 20	2#12 & 1#12 G - 0.5"	REC-SERV CORR
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	3		0.7 0.7		4	1 20	2#10 & 1#10 G - 0.75"	FB-GALLERY
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	5			0.7 0.7	6	1 20	2#10 & 1#10 G - 0.75"	FB-GALLERY
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	7	0.7 0.7			8	1 20	2#10 & 1#10 G - 0.75"	FB-GALLERY
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	9		0.7 0.7		10	1 20	2#10 & 1#10 G - 0.75"	FB-GALLERY
REC-GALLERY	2#10 & 1#10 G - 0.75"	20 1	11			0.7 0.7	12	1 20	2#10 & 1#10 G - 0.75"	FB-GALLERY
REC-GALLERY	2#10 & 1#10 G - 0.75"	20 1	13	0.7 0.7			14	1 20	2#10 & 1#10 G - 0.75"	REC-GALLERY
REC-GALLERY	2#10 & 1#10 G - 0.75"	20 1	15		1.1 0.7		16	1 20	2#10 & 1#10 G - 0.75"	REC-GALLERY
REC-GALLERY	2#10 & 1#10 G - 0.75"	20 1	17			0.7 1.1	18	1 20	2#10 & 1#10 G - 0.75"	REC-GALLERY
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	19	0.7 0.7			20	1 20	2#10 & 1#10 G - 0.75"	REC-GALLERY
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	21		0.7		22			
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	23			0.7	24			
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	25	0.7			26			
FB-GALLERY	2#10 & 1#10 G - 0.75"	20 1	27		0.7		28			
REC-GALLERY	2#10 & 1#10 G - 0.75"	20 1	29			0.7	30			
REC-GALLERY	2#10 & 1#10 G - 0.75"	20 1	31	0.7			32			
			33				34			
			35				36			
2P2A	SEE DRAWING E-402	20 3	37	32.4			38			
--	--	-- --	39		33.7		40			
--	--	-- --	41			30.8	42			
UH-3-1	SEE DRAWING E-511	20 2	43	0.8			44			
--	--	-- --	45		0.8		46			
			47				48			
			49				50			
			51				52			
			53				54			
			55				56			
			57				58			
			59				60			
PHASE TOTALS (THIS SECTION):		**TOTAL (KVA):**		40.2	40.6	36.9	**PANEL LOADS (ALL SECTIONS):**			
		TOTAL (A):		339.1	342.6	307.3				
PHASE TOTALS (FEED-THRU LUGS):		**TOTAL (KVA):**		2.5	2.9	2.2	**TOTAL CONNECTED (KVA):** 125.2			
		TOTAL (A):		21.5	24.5	18.0	**TOTAL CONNECTED (A):** 347.6			
PHASE TOTALS (ALL SECTIONS):		**TOTAL (KVA):**		42.7	43.5	39.0	**TOTAL CALCULATED (KVA):** 82.0			
		TOTAL (A):		360.6	367.1	325.3	**TOTAL CALCULATED (A):** 227.5			

NOTES:

PANELBOARD "3R2AB" SCHEDULE

VOLTAGE: 120/208 Wye | **BUS RATING:** 400 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** MLO | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** 10,000 | **SECTIONS:** 2
FED FROM: 3R2AA | **FEED-THRU LUGS:** NO | **SURGE PROTECTION:** No
LOCATION: ELECT RM C305 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
HVAC CONTROLS	2#12 & 1#12G ~ 0.5"	20 1	1	0.5 0.4			2	1 20	2#12 & 1#12G ~ 0.5"	REC-MULTI-PURPOSE
REC-ELEC	2#12 & 1#12G ~ 0.5"	20 1	3		1.3 0.5		4	1 20	2#12 & 1#12G ~ 0.5"	REC-MULTI-PURPOSE
REC. - STAFF SUITE	2#12 & 1#12G ~ 0.5"	20 1	5			0.4 0.5	6	1 20	2#12 & 1#12G ~ 0.5"	REC-MULTI-PURPOSE
REC-COMM	2#12 & 1#12G ~ 0.5"	20 1	7	0.7 1.1			8	1 20	2#12 & 1#12G ~ 0.5"	FB-MULTIPURPOSE
REC-COMM	2#12 & 1#12G ~ 0.5"	20 1	9		0.7 0.7		10	1 20	2#12 & 1#12G ~ 0.5"	FB-MULTIPURPOSE
REC-COMM	2#12 & 1#12G ~ 0.5"	20 1	11			0.7 0.4	12	1 20	2#12 & 1#12G ~ 0.5"	REC-MULTI-PURPOSE
SPARE	--	20 1	13	0.0 0.5			14	1 20	2#12 & 1#12G ~ 0.5"	REC-MULTI-PURPOSE
SPARE	--	20 1	15		0.0 0.5		16	1 20	2#12 & 1#12G ~ 0.5"	REC-MULTI-PURPOSE
REC-OFFICE	2#12 & 1#12G ~ 0.5"	20 1	17			1.4 1.1	18	1 20	2#12 & 1#12G ~ 0.5"	FB-MULTIPURPOSE
REC-OFFICE	2#12 & 1#12G ~ 0.5"	20 1	19	1.4 0.7			20	1 20	2#12 & 1#12G ~ 0.5"	FB-MULTIPURPOSE
REC-OFFICE	2#12 & 1#12G ~ 0.5"	20 1	21		1.4 0.5		22	1 20	2#12 & 1#12G ~ 0.5"	(GF) DISHWASHER
REC-COLLAB,STOR,TLT	2#12 & 1#12G ~ 0.5"	20 1	23			1.6 0.5	24	1 20	2#12 & 1#12G ~ 0.5"	(GF) ICEMAKER
REC-STAFF SUITE	2#12 & 1#12G ~ 0.5"	20 1	25	1.3 0.2			26	1 20	2#12 & 1#12G ~ 0.5"	(GF) REFRIGERATOR
SPARE	--	20 1	27		0.0 0.4		28	1 20	2#12 & 1#12G ~ 0.5"	REC-KITCHEN
SPARE	--	20 1	29			0.0 0.2	30	1 20	2#12 & 1#12G ~ 0.5"	REC-KITCHEN
SPARE	--	20 1	31	0.0 0.2			32	1 20	2#12 & 1#12G ~ 0.5"	REC-KITCHEN
REC-CORR,EXT	2#12 & 1#12G ~ 0.5"	20 1	33		0.7 0.2		34	1 20	2#12 & 1#12G ~ 0.5"	REC-KITCHEN
(GF) WATER COOLER	2#12 & 1#12G ~ 0.5"	20 1	35			1.0 0.2	36	1 20	2#12 & 1#12G ~ 0.5"	REC-KITCHEN
HVAC CONTROLS	2#12 & 1#12G ~ 0.5"	20 1	37	0.5 0.2			38	1 20	2#12 & 1#12G ~ 0.5"	REC-KITCHEN
REC-GALLERY MONITOR	2#12 & 1#12G ~ 0.5"	20 1	39		0.5		40			
REC-MULTI MONITOR	2#12 & 1#12G ~ 0.5"	20 1	41			0.4	42			
(L)OFFICE (M322) SYS FURN	6#12 & 2#12G ~ 0.75"	20 1	43	1.2			44			
(L)OFFICE (M322) SYS FURN	--	20 1	45		1.2		46			
(L)OFFICE (M322) SYS FURN	--	20 1	47			1.2	48			
SPARE	--	20 1	49	0.0 0.0			50	1 20	--	SPARE
ERU-R-1 ERW	SEE DRAWING E-511	20 2	51		2.2 0.0		52	1 20	--	SPARE
--	--	-- --	53			2.2 0.0	54	1 20	--	SPARE
			55	0.0			56	1 20	--	SPARE
			57		0.0		58	1 20	--	SPARE
			59			0.0	60	1 20	--	SPARE
PHASE TOTALS (THIS SECTION):		**TOTAL (KVA):**		8.9	10.9	11.7	**PANEL LOADS (ALL SECTIONS):**			
		TOTAL (A):		73.8	93.3	100.1				
PHASE TOTALS (FEED-THRU LUGS):		**TOTAL (KVA):**		0.0	0.0	0.0	**TOTAL CONNECTED (KVA):** 31.4			
		TOTAL (A):		0.0	0.0	0.0	**TOTAL CONNECTED (A):** 87.3			
PHASE TOTALS (ALL SECTIONS):		**TOTAL (KVA):**		8.9	10.9	11.7	**TOTAL CALCULATED (KVA):** 26.5			
		TOTAL (A):		73.8	93.3	100.1	**TOTAL CALCULATED (A):** 73.7			

NOTES:
1. (GF) INDICATES GROUND FAULT CIRCUIT INTERUPTER CIRCUIT BREAKER.
2.(L) INDICATES (3) BREAKER HANDLES FEEDING SYSTEM FURNITURE SHALL BE INTERLOCKED TO OPERATE AS ONE.

PANELBOARD "3R2AA" SCHEDULE

VOLTAGE: 120/208 Wye | **BUS RATING:** 400 A | **MOUNTING:** SURFACE
PHASES: 3 | **MAIN TYPE:** 300A/3P MCB | **ENCLOSURE:** TYPE 1
WIRE: 4 | **SCCR:** 10,000 | **SECTIONS:** 1
FED FROM: T-3R2A | **FEED-THRU LUGS:** YES | **SURGE PROTECTION:** Yes
LOCATION: ELECT RM C305 | **POWER MONITOR:** No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
(GF) WATER COOLER	2 #12 & 1 #12G ~ 0.5"	20 1	1	1.0 1.7			2	3 30	3 #10 & 1 #10G ~ 0.75"	30/3 MUSEUM DISC
REC-TLT	2 #12 & 1 #12G ~ 0.5"	20 1	3		1.3 1.7		4	-- --	--	--
REC-ED STOR,CLEAN	2 #12 & 1 #12G ~ 0.5"	20 1	5			0.7 1.7	6	-- --	--	--
REC-CASE/LTG/CONSUM	2 #12 & 1 #12G ~ 0.5"	20 1	7	0.9 1.7			8	3 30	3 #10 & 1 #10G ~ 0.75"	30/3 MUSEUM DISC
HVAC CONTROLS	2 #12 & 1 #12G ~ 0.5"	20 1	9		0.5 1.7		10	-- --	--	--
FIRE ALARM	2 #12 & 1 #12G ~ 0.5"	20 1	11			0.7 1.7	12	-- --	--	--
REC-ROOF	2 #12 & 1 #12G ~ 0.5"	20 1	13	0.7 1.1			14	1 20	2 #12 & 1 #12G ~ 0.5"	REC-MUSEUM (WALL)
SSAC-1-1	SEE DRAWING E-511	20 2	15		1.2 0.4		16	1 20	2 #12 & 1 #12G ~ 0.5"	REC-MUSEUM (WALL)
--	--	-- --	17			1.2 1.1	18	1 20	2 #12 & 1 #12G ~ 0.5"	REC-MUSEUM (WALL)
SSAC-1-2	SEE DRAWING E-511	20 2	19	1.2 1.1			20	1 20	2 #12 & 1 #12G ~ 0.5"	REC-MUSEUM (WALL)
--	--	-- --	21		1.2 1.1		22	1 20	2 #12 & 1 #12G ~ 0.5"	REC-MUSEUM (WALL)
SSAC-1-3	SEE DRAWING E-511	20 2	23			1.2 0.5	24	1 20	2 #12 & 1 #12G ~ 0.5"	REC-TERRACE
--	--	-- --	25	1.2 0.4			26	1 20	2 #12 & 1 #12G ~ 0.5"	REC-TERRACE
SSAC-1-4	SEE DRAWING E-511	20 2	27		1.2 0.5		28	1 20	2 #12 & 1 #12G ~ 0.5"	REC-TERRACE
--	--	-- --	29			1.2 0.5	30	1 20	2 #12 & 1 #12G ~ 0.5"	REC-TERRACE
SSAC-2-1	SEE DRAWING E-511	20 2	31	1.2 0.5			32	1 20	2 #12 & 1 #12G ~ 0.5"	REC-TERRACE
--	--	-- --	33		1.2		34			
SSAC-3-1	SEE DRAWING E-511	20 2	35			1.2	36			
--	--	-- --	37	1.2			38			
SSAC-3-2	SEE DRAWING E-511	20 2	39		1.2 0.6		40	1 20	SEE DRAWING E-511	ERU-R-1 (REC & LTS)
--	--	-- --	41			1.2 0.8	42	1 20	SEE DRAWING E-511	AHU-R-2 (UV LTS)
			43		0.6		44	1 20	SEE DRAWING E-511	AHU-R-2 (REC & LTS)
			45			0.8	46	1 20	SEE DRAWING E-511	AHU-R-1 (UV LTS)
SERV ELEV CONTROLS	2 #12 & 1 #12G ~ 0.5"	20 1	47			1.0 0.6	48	1 20	SEE DRAWING E-511	AHU-R-1 (REC & LTS)
SERV ELEV SHAFT	2 #12 & 1 #12G ~ 0.5"	20 1	49	0.2			50			
ELEV CONTROLS	2 #12 & 1 #12G ~ 0.5"	20 1	51		1.0		52			
ELEV SHAFT	2 #12 & 1 #12G ~ 0.5"	20 1	53			0.2	54			
			55		1.6		56	3 60	SEE DRAWING E-401	PANEL 3R2CA
			57			0.7	58	-- --	--	--
			59			0.7	60	-- --	--	--
PHASE TOTALS (THIS SECTION):		**TOTAL (KVA):**		16.2	16.2	16.2	**PANEL LOADS (ALL SECTIONS):**			
		TOTAL (A):		135.1	135.0	134.8				
PHASE TOTALS (FEED-THRU LUGS):		**TOTAL (KVA):**		8.9	10.9	11.7	**TOTAL CONNECTED (KVA):** 80.0			
		TOTAL (A):		73.8	93.3	100.1	**TOTAL CONNECTED (A):** 222.1			
PHASE TOTALS (ALL SECTIONS):		**TOTAL (KVA):**		25.1	27.1	27.9	**TOTAL CALCULATED (KVA):** 67.1			
		TOTAL (A):		208.9	228.2	234.8	**TOTAL CALCULATED (A):** 186.3			

NOTES:
1. (GF) INDICATES GROUND FAULT CIRCUIT INTERUPTER CIRCUIT BREAKER.

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - PANELBOARDS - LEVEL 3

ORIG SUBMISSION: 2022.05.25

SHEET: E-525

OWNERS REVIEW SET

3L4A	3M4A	3P4A
3R2AC	3R2AB	3R2AA

5/20/2022 12:54:51 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PLOT SIZE

PANELBOARD "3R2CA" SCHEDULE

VOLTAGE: 120/208 Wye
PHASES: 3
WIRE: 4
FED FROM: 3R2AA
LOCATION: FAB SHOP M310
BUS RATING: 100 A
MAIN TYPE: 60A/3P MCB
SCCR: 10,000
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
REC.- FAB TECH	2#12 & 1#12G ~ 0.5"	20 1	1	0.9 0.1			2	2 30	2#10 & 1#10 G ~ 0.75"	L6-30R
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	3		0.2 0.1		4	-- --	--	--
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	5			0.2 0.1	6	2 30	2#10 & 1#10 G ~ 0.75"	L6-30R
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	7	0.2 0.1			8	-- --	--	--
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	9		0.2 0.1		10	2 30	2#10 & 1#10 G ~ 0.75"	L6-30R
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	11			0.2 0.1	12	-- --	--	--
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	13	0.2 0.0			14	1 20	--	SPARE
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	15		0.2 0.0		16	1 20	--	SPARE
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	17			0.2 0.0	18	1 20	--	SPARE
REC. - RACEWAY	2#12 & 1#12G ~ 0.5"	20 1	19	0.2 0.0			20	1 20	--	SPARE
SPARE	--	20 1	21		0.0 0.0		22	1 20	--	SPARE
SPARE	--	20 1	23			0.0 0.0	24	1 20	--	SPARE
SPACE	--	-- --	25	0.0 0.0			26	-- --	--	SPACE
SPACE	--	-- --	27		0.0 0.0		28	-- --	--	SPACE
SPACE	--	-- --	29			0.0 0.0	30	-- --	--	SPACE
PHASE TOTALS:		**TOTAL (KVA):**		1.6	0.7	0.7	**PANEL LOADS:**			
		TOTAL (A):		13.5	6.0	6.0	**TOTAL CONNECTED (KVA):** 3.1			
							TOTAL CONNECTED (A): 8.5			
							TOTAL CALCULATED (KVA): 3.1			
							TOTAL CALCULATED (A): 8.5			

NOTES:

PANELBOARD "3R2AD" SCHEDULE

VOLTAGE: 120/208 Wye
PHASES: 3
WIRE: 4
FED FROM: 3R2AC
LOCATION: ELECT RM C305
BUS RATING: 400 A
MAIN TYPE: MLO
SCCR: 10,000
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 2
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
FLR BX - SCIENCE MAT	2#12 & 1#12G ~ 0.5"	20 1	1	0.7			2			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	3		0.7		4			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	5			0.7	6			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	7	0.7			8			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	9		0.7		10			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	11			0.7	12			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	13	0.7			14			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	15		0.7		16			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	17			0.7	18			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	19	0.4			20			
FB - SCIENCE MATTERS	2#12 & 1#12G ~ 0.5"	20 1	21		0.7		22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
			43				44			
			45				46			
			47				48			
			49				50			
			51				52			
			53				54			
			55				56			
			57				58			
			59				60			
PHASE TOTALS:		**TOTAL (KVA):**		2.5	2.9	2.2	**PANEL LOADS:**			
		TOTAL (A):		21.5	24.5	18.0	**TOTAL CONNECTED (KVA):** 7.6			
							TOTAL CONNECTED (A): 21.0			
							TOTAL CALCULATED (KVA): 7.6			
							TOTAL CALCULATED (A): 21.0			

NOTES:

PANELBOARD "2D2B" SCHEDULE

VOLTS: 120/208 Wye
PHASES: 3
WIRE: 4
BUS: 100 A
MAIN: MLO
SCCR: 10,000
MOUNTING: SURFACE
SECTIONS: 1
LOCATION: ELEC C201A

NOTES:

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP / POLES	CKT #	A	B	C	CKT #	CB TRIP / POLES	WIRE & CONDUIT	LOAD DESCRIPTION
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	1	0.0			2			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	3		0.0		4			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	5			0.0	6			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	7	1.4			8			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	9		0.0		10			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	11			2.9	12			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	13	0.0			14			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	15		0.0		16			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	17			0.0	18			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	19	1.4			20			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	21		2.9		22			
LTG. - ME TRACK	2#12 & 1#12G ~ 0.5°C	20 A 1	23			0.0	24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
PHASE TOTALS:				2.9 kVA	2.9 kVA	2.9 kVA				
CONNECTED LOAD:				24.0 A	8.6 kVA					
CALCULATED LOAD:				24.0 A	8.6 kVA					

PANELBOARD "L3L4A" SCHEDULE

VOLTAGE: 480/277 Wye
PHASES: 3
WIRE: 4
FED FROM: L1P4A
LOCATION: ELECT RM C305
BUS RATING: 100 A
MAIN TYPE: MLO
SCCR:
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: No
POWER MONITOR: No

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES	CKT	A	B	C	CKT	CB TRIP/ POLES	WIRE & CONDUIT	LOAD DESCRIPTION
LTG. - EM ADMIN	2#12 & 1#12G ~ 0.5"	20 1	1	0.7			2			
LTG. - EM ELEC/ CORR	2#12 & 1#12G ~ 0.5"	20 1	3		0.4		4			
LTG. - EM C GALLERY	2#12 & 1#12G ~ 0.5"	20 1	5			0.2	6			
LTG. - EM MUSUEM	2#12 & 1#12G ~ 0.5"	20 1	7	0.6			8			
			9				10			
			11				12			
SPARE	--	20 1	13	0.0 0.0			14	1 20	--	SPARE
SPARE	--	20 1	15		0.0 0.0		16	1 20	--	SPARE
SPARE	--	20 1	17			0.0 0.0	18	1 20	--	SPARE
SPACE	--	-- --	19	0.0 0.0			20	-- --	--	SPACE
SPACE	--	-- --	21		0.0 0.0		22	-- --	--	SPACE
SPACE	--	-- --	23			0.0 0.0	24	-- --	--	SPACE
SPACE	--	-- --	25	0.0 0.0			26	-- --	--	SPACE
SPACE	--	-- --	27		0.0 0.0		28	-- --	--	SPACE
SPACE	--	-- --	29			0.0 0.0	30	-- --	--	SPACE
PHASE TOTALS:		**TOTAL (KVA):**		1.2	0.4	0.2	**PANEL LOADS:**			
		TOTAL (A):		4.6	1.7	0.7	**TOTAL CONNECTED (KVA):** 1.9			
							TOTAL CONNECTED (A): 2.3			
							TOTAL CALCULATED (KVA): 1.9			
							TOTAL CALCULATED (A): 2.3			

NOTES:

---	3R2CA	3R2AD
---	---	L3L4A

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - PANELBOARDS - LEVEL 3

ORIG SUBMISSION: 2022.05.25

SHEET:
E-526

OWNERS REVIEW SET

5/30/2022 12:54:55 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE

PANELBOARD "EMP1" SCHEDULE

VOLTAGE: 480/277 Wye
PHASES: 3
WIRE: 4
FED FROM: (EX) MDP
LOCATION:
BUS RATING: 225 A
MAIN TYPE: MLO
SCCR:
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
SECTIONS: 1
SURGE PROTECTION: Yes
POWER MONITOR: Yes

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
F-1-2,3,4,5,7	SEE DRAWING E-511	25	3	1	5.0	5.0					2	3	25	SEE DRAWING E-511	F-4-1,2,3,4,5,6
--	--	--	--	3			5.0	5.0			4	--	--	--	--
--	--	--	--	5					5.0	5.0	6	--	--	--	--
F-2-1,2,3,4,5,6	SEE DRAWING E-511	25	3	7	5.0	5.0					8	3	25	SEE DRAWING E-511	F-5-1,2,3,4,5,6
--	--	--	--	9			5.0	5.0			10	--	--	--	--
--	--	--	--	11					5.0	5.0	12	--	--	--	--
F-3-1,2,3,4,5,6	SEE DRAWING E-511	25	3	13	5.0	0.0					14	1	20	--	SPARE
--	--	--	--	15			5.0	0.0			16	1	20	--	SPARE
--	--	--	--	17					5.0	0.0	18	1	20	--	SPARE
SPARE	--	25	3	19	0.0	0.0					20	1	20	--	SPARE
--	--	--	--	21			0.0	0.0			22	1	20	--	SPARE
--	--	--	--	23					0.0	0.0	24	1	20	--	SPARE
SPACE	--	--	--	25	0.0	0.0					26	--	--	--	SPACE
SPACE	--	--	--	27			0.0	0.0			28	--	--	--	SPACE
SPACE	--	--	--	29					0.0	0.0	30	--	--	--	SPACE
	PHASE TOTALS:		**TOTAL (KVA):**		24.9		24.9		24.9					**PANEL LOADS:**	
			TOTAL (A):		89.9		89.9		89.9						
														TOTAL CONNECTED (KVA):	74.7
														TOTAL CONNECTED (A):	89.9
														TOTAL CALCULATED (KVA):	74.7
														TOTAL CALCULATED (A):	89.9

NOTES:

PANELBOARD "(EX) MDP" SCHEDULE

VOLTAGE: 480/277 Wye
PHASES: 3
WIRE: 4
FED FROM: UTILITY XFMR
LOCATION:
BUS RATING: 400 A
MAIN TYPE: 400A/3P MCB
SCCR: 35,000
FEED-THRU LUGS: NO
MOUNTING: SURFACE
ENCLOSURE: Type 1
SECTIONS: 1
SURGE PROTECTION: Yes
POWER MONITOR: Yes

LOAD DESCRIPTION	WIRE & CONDUIT	CB TRIP/ POLES		CKT	A		B		C		CKT	CB TRIP/ POLES		WIRE & CONDUIT	LOAD DESCRIPTION
(EX) PANEL LP1	EXISTING	100	3	1	6.6	0.0					2	3	100	EXISTING	(EX) ELEV 1
--	--	--	--	3			6.2	0.0			4	--	--	--	--
--	--	--	--	5					7.0	0.0	6	--	--	--	--
(EX) PANEL PP1 VIA T-PP1	EXISTING	100	3	7	0.0	0.0					8	3	100	EXISTING	(EX) ELEV 2
--	--	--	--	9			0.0	0.0			10	--	--	--	--
--	--	--	--	11					0.0	0.0	12	--	--	--	--
PANEL EMP1 (NOTE 1)	SEE DRAWING E-402	150	3	13	24.9	0.0					14	3	40	--	SPARE
--	--	--	--	15			24.9	0.0			16	--	--	--	--
--	--	--	--	17					24.9	0.0	18	--	--	--	--
SPARE	--	100	3	19	0.0	0.0					20	3	100	--	SPARE
--	--	--	--	21			0.0	0.0			22	--	--	--	--
--	--	--	--	23					0.0	0.0	24	--	--	--	--
	PHASE TOTALS:		**TOTAL (KVA):**		31.5		31.1		31.9					**PANEL LOADS:**	
			TOTAL (A):		113.8		112.3		115.4						
														TOTAL CONNECTED (KVA):	94.5
														TOTAL CONNECTED (A):	113.6
														TOTAL CALCULATED (KVA):	94.5
														TOTAL CALCULATED (A):	113.6

NOTES:
1. REPLACE EXISTING SPARE CIRCUIT BREAKER WITH NEW CIRCUIT BREAKER AS INDICATED. NEW CIRCUIT BREAKER SHALL MATCH MANUFACTURER AND SCCR RATING OF EXISTING CIRCUIT BREAKER.

Zimmer Development

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N&B PROJECT: 21N185
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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL SCHEDULES - PANELBOARDS - PARKING DECK

ORIG SUBMISSION: 2022.05.25

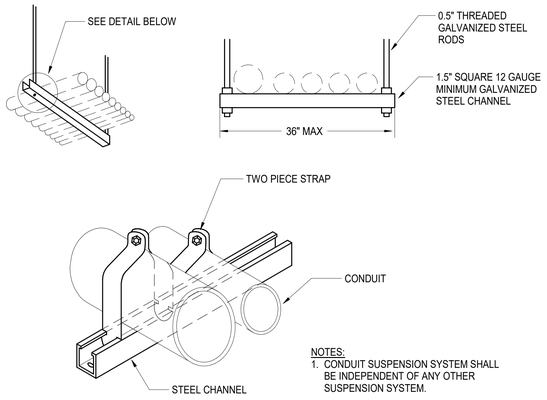
SHEET: E-527

OWNERS REVIEW SET

---	EMP1	(EX) MDP
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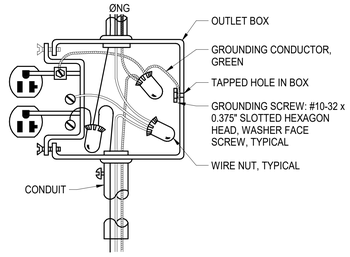
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE



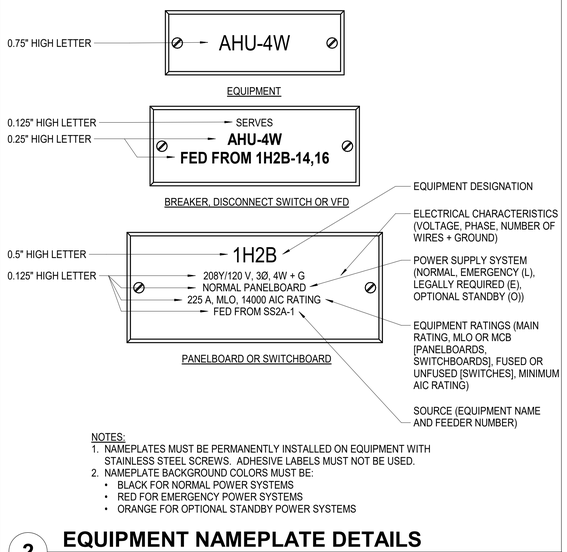
NOTES:
1. CONDUIT SUSPENSION SYSTEM SHALL BE INDEPENDENT OF ANY OTHER SUSPENSION SYSTEM.

4 CONDUIT HANGER DETAIL
NO SCALE



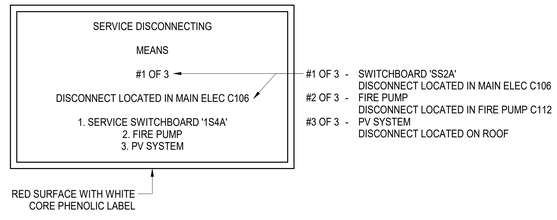
NOTES:
1. GROUNDING CONDUCTOR SHALL BE CONTINUOUS SO THAT REMOVAL OF DEVICE WILL NOT INTERFERE WITH CONDUCTOR CONTINUITY.

3 RECEPTACLE WIRING
NO SCALE



NOTES:
1. NAMEPLATES MUST BE PERMANENTLY INSTALLED ON EQUIPMENT WITH STAINLESS STEEL SCREWS. ADHESIVE LABELS MUST NOT BE USED.
2. NAMEPLATE BACKGROUND COLORS MUST BE:
   - BLACK FOR NORMAL POWER SYSTEMS
   - RED FOR EMERGENCY POWER SYSTEMS
   - ORANGE FOR OPTIONAL STANDBY POWER SYSTEMS

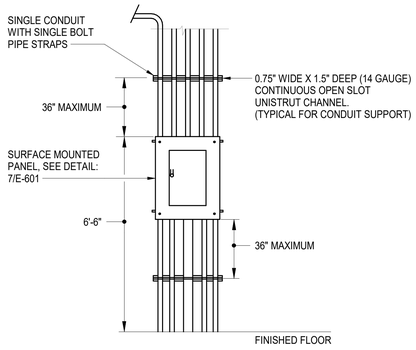
2 EQUIPMENT NAMEPLATE DETAILS
NO SCALE



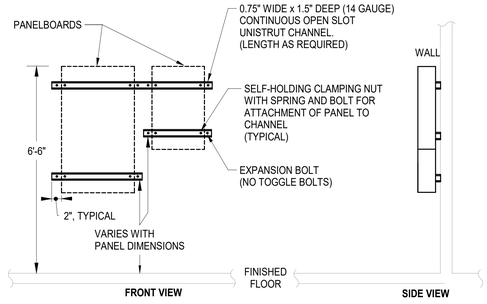
NOTE:
1. PROVIDE SIGN AT FOLLOWING LOCATIONS:

   A. SERVICE SWITCHBOARD '1S4A'
   B. FIRE PUMP CONTROLLER
   C. PV SYSTEM DISCONNECT 'DS-PV'

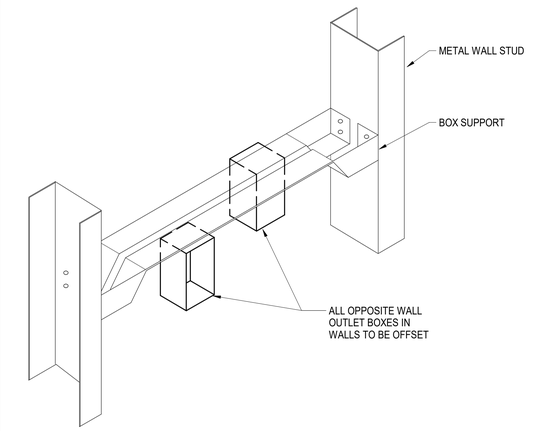
1 SERVICE ENTRANCE NAMEPLATE DETAIL
NO SCALE



8 CONDUIT SUPPORT FOR WALL-MOUNTED PANELS
NO SCALE



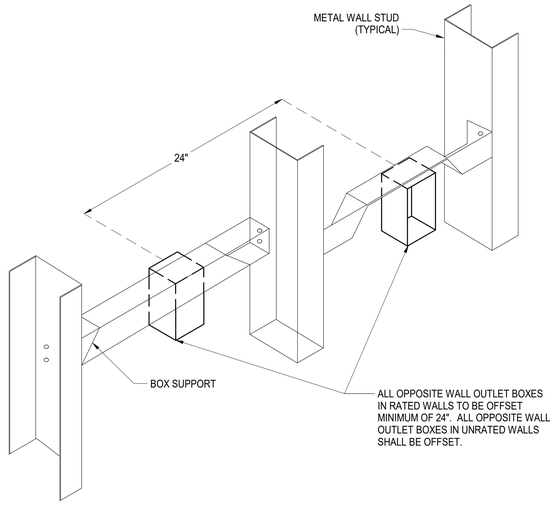
7 WALL-MOUNTED PANELBOARD MOUNTING
NO SCALE



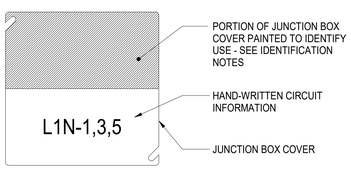
NOTES:
1. IF CONDITION OCCURS IN FIRE RATED WALL, THE BACKS AND SIDES OF OUTLET BOXES ON EACH SIDE OF THE WALL SHALL BE COVERED WITH A MOLDABLE PUTTY SHEET CAULK.

MANUFACTURER: 3M MOLDABLE FIRE STOP PUTTY PADS

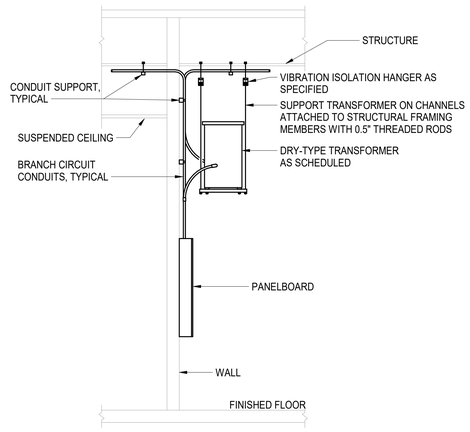
6 UNRATED WALL OUTLET BOX DETAIL
NO SCALE



5 RATED WALL OUTLET BOX DETAIL
NO SCALE



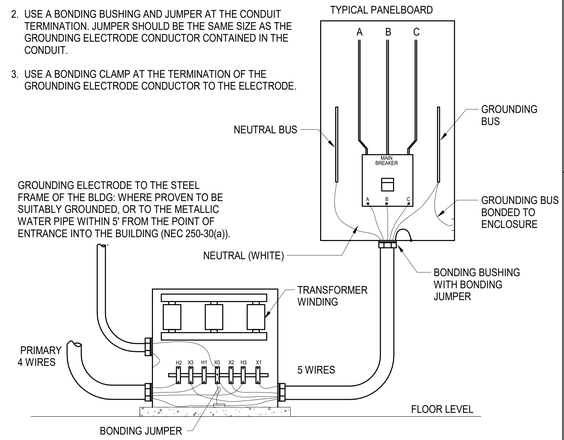
11 JUNCTION BOX COVER IDENTIFICATION DETAIL
NO SCALE



NOTES:
1. PROVIDE ROD STIFFENER ON EACH THREADED ROD AND LATERAL SUPPORT AT EACH CORNER FOR SEISMIC RESTRAINT.

10 SUSPENDED DRY-TYPE TRANSFORMERS
NO SCALE

NOTES:
1. TRANSFORMER BONDING STRAP. IF NOT PROVIDED BY THE TRANSFORMER MANUFACTURER SHALL BE SIZED THE SAME SIZE AS THE MAIN BONDING JUMPER. (PER NEC 250-66)
2. USE A BONDING BUSHING AND JUMPER AT THE CONDUIT TERMINATION. JUMPER SHOULD BE THE SAME SIZE AS THE GROUNDING ELECTRODE CONDUCTOR CONTAINED IN THE CONDUIT.
3. USE A BONDING CLAMP AT THE TERMINATION OF THE GROUNDING ELECTRODE CONDUCTOR TO THE ELECTRODE.



9 DRY-TYPE TRANSFORMER GROUNDING DETAIL
NO SCALE

Zimmer Development

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME: ELECTRICAL DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET: **E-601**

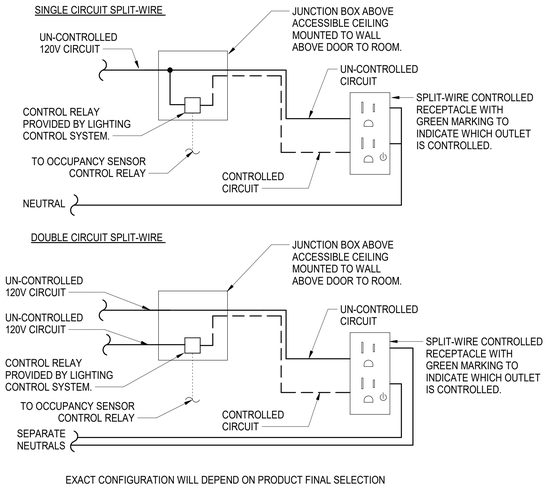
OWNERS REVIEW SET

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E D C B A

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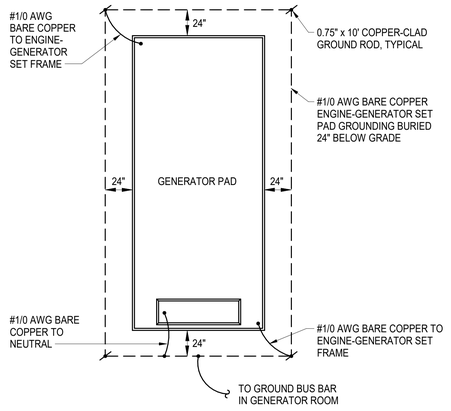
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE



EXACT CONFIGURATION WILL DEPEND ON PRODUCT FINAL SELECTION

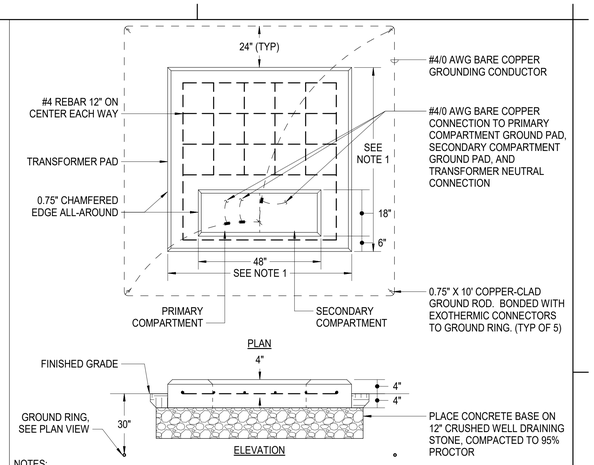
3 SPLIT-WIRE RECEPTACLE CIRCUITING

NOT TO SCALE



2 ENGINE-GENERATOR SET GROUNDING

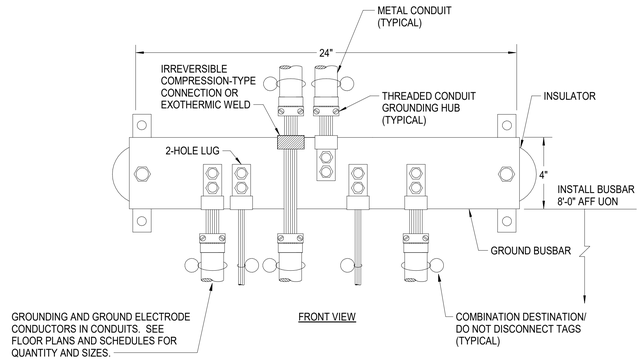
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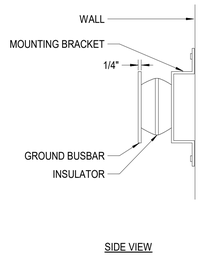
NOTES:
1. COORDINATE DIMENSION WITH TRANSFORMER TO BE PROVIDED BY UTILITY.
2. SERVICE CONDUITS SHALL BE LOCATED IN EXTREME RIGHT SIDE OF SECONDARY COMPARTMENT.
3. PRIMARY CONDUITS SHALL BE EXTENDED BEYOND EDGE OF PAD IN DIRECTION OF INCOMING PRIMARY CABLES.
4. PAD SHALL HAVE MINIMUM CLEARANCE OF 10' FROM ALL BUILDINGS. MINIMUM CLEARANCE OF 3' SHALL BE MAINTAINED FROM ALL OBSTRUCTIONS.
5. PROVIDE GROUNDING CONNECTIONS TO PRIMARY CABLE SHIELDING AND TO PRIMARY ELBOW CONNECTORS.

1 UTILITY TRANSFORMER PAD DETAIL

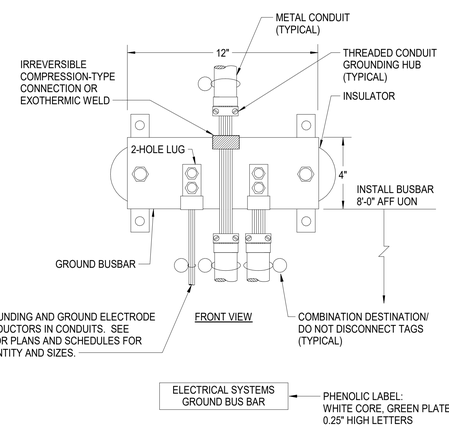
NO SCALE



MAIN ELECTRICAL SYSTEMS GROUND BUSBAR - TYPE 'A'



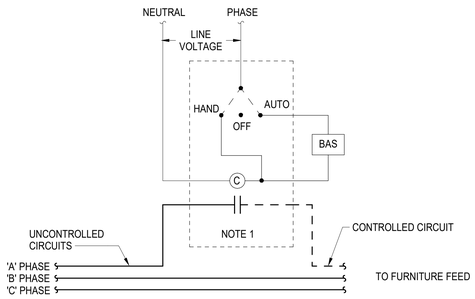
NOTES:
1. PROVIDE PERMANENT LABELING AT EACH GROUND CONNECTION AT THE MAIN GROUNDING BUS TO IDENTIFY EMERGENCY AND NORMAL SOURCES CONNECTED AT THAT LOCATION.



GROUND BUSBAR TYPE 'B'

4 GROUND BUSBAR DETAIL - TYPE 'A' AND 'B'

NO SCALE



NOTES:
1. 8-POLE LIGHTING CONTACTOR FOR AUTOMATIC RECEPTACLE CONTROL LOCATED IN ELECTRICAL ROOM(S).
2. CONTACTOR SHALL BE CONTROLLED BY BAS TIMECLOCK.

5 FURNITURE AUTOMATIC RECEPTACLE CONTROL CIRCUITING

NOT TO SCALE

Zimmer Development

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Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
ELECTRICAL DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
E-602

OWNERS REVIEW SET

5/20/2022 12:55:11 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PAGE SIZE

AUDIO VISUAL INFRASTRUCTURE SYMBOLS LEGEND

DRAWING SYMBOL	NAME	BACKBOX SIZE	MOUNTING HEIGHT AFF	CONDUIT SIZE (AV)	DATA DROPS PROVIDED BY TELECOM	POWER PROVIDED BY EC	DETAIL (SHEET / DETAIL)	NOTES
YY AXX	XX-INCH FLAT PANEL DISPLAY BACKBOX	CHIEF PAC501	YY" AFF TO CENTER	(1) - 1.25"	1	DUPLEX	AVI7XX / X	PROVIDE POWER AND DATA TERMINATED WITHIN BACK BOX. STUB AV CONDUIT TO ABOVE CEILING IN SAME ROOM AS EQUIPMENT. PROVIDE IN-WALL PLYWOOD OR METAL BLOCKING TO SUPPORT WEIGHT OF DISPLAY AND EQUIPMENT. SEE DETAIL X ON AVI7.XX FOR BLOCKING REQUIREMENTS. DISPLAY AND MOUNT TO BE PROVIDED UNDER THE AV CONTRACT. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
YY BXX	XX-INCH FLAT PANEL DISPLAY BACKBOX	CHIEF PAC501	YY" AFF TO CENTER	(1) - 1.25"	1	DUPLEX	AVI7XX / X	PROVIDE POWER AND DATA TERMINATED WITHIN BACK BOX. STUB AV CONDUIT TO ABOVE CEILING IN SAME ROOM AS EQUIPMENT. PROVIDE IN-WALL PLYWOOD OR METAL BLOCKING TO SUPPORT WEIGHT OF DISPLAY AND EQUIPMENT. SEE DETAIL X ON AVI7.XX FOR BLOCKING REQUIREMENTS. DISPLAY AND MOUNT TO BE PROVIDED UNDER THE AV CONTRACT. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
YY CXX	XX-INCH FLAT PANEL DISPLAY BACKBOX	14.5" X14.5"	YY" AFF TO CENTER	(1) - 1.25"	1	DUPLEX	AVI7XX / X	PROVIDE POWER AND DATA TERMINATED WITHIN BACK BOX. STUB AV CONDUIT TO ABOVE CEILING IN SAME ROOM AS EQUIPMENT. PROVIDE IN-WALL PLYWOOD OR METAL BLOCKING TO SUPPORT WEIGHT OF DISPLAY AND EQUIPMENT. SEE DETAIL X ON AVI7.XX FOR BLOCKING REQUIREMENTS. DISPLAY AND MOUNT TO BE PROVIDED UNDER THE AV CONTRACT. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
YY CXX	XX-INCH FLAT PANEL CEILING MOUNTED DISPLAY	SEE ENLARGED PLANS	YY" AFF TO CENTER	(1) - 1.25"	1	DUPLEX	AVI7XX / X	PROVIDE POWER AND DATA TERMINATED WITHIN BACK BOX. STUB AV CONDUIT TO ABOVE CEILING IN SAME ROOM AS EQUIPMENT. PROVIDE IN-WALL PLYWOOD OR METAL BLOCKING TO SUPPORT WEIGHT OF DISPLAY AND EQUIPMENT. SEE DETAIL X ON AVI7.XX FOR BLOCKING REQUIREMENTS. DISPLAY AND MOUNT TO BE PROVIDED UNDER THE AV CONTRACT. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
DS	DIGITAL SIGNAGE	CHIEF PAC526	YY" AFF TO CENTER		2	DUPLEX	AVI7XX / X	PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. PROVIDE PLYWOOD BLOCKING BETWEEN STUDS. SEE DETAIL ___ ON SHEET ___ FOR ADDITIONAL INFORMATION.
WP1	WALL PLATE TYPE 1	1G	18" UON	1.25"	2	DUPLEX	AVI7XX / X	PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. PROVIDE POWER AND DATA CONNECTIONS WITHIN 1 STUD FRAME OR 6" FROM THE AV WALL PLATE. SEE DETAIL X ON SHEET AVI7.XX FOR ADDITIONAL INFORMATION. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
WP2	WALL PLATE TYPE 2	2G	18" UON	1.25"	2	DUPLEX	AVI7XX / X	PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. PROVIDE POWER AND DATA CONNECTIONS WITHIN 1 STUD FRAME OR 6" FROM THE AV WALL PLATE. SEE DETAIL X ON SHEET AVI7.XX FOR ADDITIONAL INFORMATION. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
WP4	WALL PLATE TYPE 3	4G	18" UON	1.25"	2	DUPLEX	AVI7XX / X	PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. PROVIDE POWER AND DATA CONNECTIONS WITHIN 1 STUD FRAME OR 6" FROM THE AV WALL PLATE. SEE DETAIL X ON SHEET AVI7.XX FOR ADDITIONAL INFORMATION. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
C	PTZ CAMERA	2G	SEE ELEVATION	1"				STUB CONDUIT TO NEAREST ACCESSIBLE CEILING IN SAME ROOM AS EQUIPMENT. COORDINATE PRECISE MOUNTING HEIGHT WITH AV CONTRACTOR. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR.
CP	WALL MOUNTED CONTROL PANEL	2G	48"	0.75"	1			STUB CONDUIT TO NEAREST ACCESSIBLE CEILING, UON. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
SP	SCHEDULING PANEL	2G	48"	0.75"	1			STUB CONDUIT TO NEAREST ACCESSIBLE CEILING, UON. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR
SC	PROJECTOR SCREEN CONTROL PANEL	1G	48"	0.75"	1			STUB CONDUIT TO NEAREST ACCESSIBLE CEILING IN SAME ROOM AS EQUIPMENT. ENSURE PATHWAY TO ASSOCIATED PROJECTION SCREEN. BACK BOX PROVIDED BY ELECTRICAL CONTRACTOR.
M	CEILING SUSPENDED MICROPHONE		CEILING					J-HOOKED AS NEEDED IN ACT CEILINGS OR RUN TIGHT TO DECK IN OPEN TO STRUCTURE CEILINGS WITH COLOR MATCHING CABLE.
PS	CEILING SUSPENDED PENDANT SPEAKER	2G	CEILING	0.75"			AVI7XX / X	J-HOOKED AS NEEDED IN ACT CEILINGS OR RUN TIGHT TO DECK IN OPEN TO STRUCTURE CEILINGS WITH COLOR MATCHING CABLE.
S	CEILING MOUNTED SPEAKER		CEILING	0.75"				J-HOOKED AS NEEDED IN ACT CEILINGS OR RUN TIGHT TO DECK IN OPEN TO STRUCTURE CEILINGS WITH COLOR MATCHING CABLE.
S	WALL MOUNTED SPEAKER	1G	SEE ELEVATION	0.75"				PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. COORDINATE FINAL LOCATION WITH ARCHITECTUAL DRAWINGS.
OC	OCCUPANCY SENSOR		CEILING					J-HOOKED AS NEEDED IN ACT CEILINGS OR RUN TIGHT TO DECK IN OPEN TO STRUCTURE CEILINGS WITH COLOR MATCHING CABLE.
	AV CREDENZA	4G	18"	(4)-2"	4	DEDICATED 20A		PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING.
	FLOORSTANDING AV RACK	4G	18"	(4)-2"	10	DEDICATED 20A		PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. ENSURE CABLE PATHWAY TO ANY ASSOCIATED AV ENABLED SPACE.
PT 1	AV/TELECOM SHARED FLOORBOX TYPE 1	8AT	FLOOR	1.25"	2	15A	AVI7XX / X	PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. COORDINATE COLOR WITH ARCHITECT.
FB 2	AV/TELECOM SHARED FLOORBOX TYPE 2	FSR-600P	FLOOR	1.25"	2	15A	AVI7XX / X	PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. COORDINATE COLOR WITH ARCHITECT.
	PROJECTOR		CEILING			15A	AVI7XX / X	ELECTRICAL CONTRACTOR TO STAGE POWER AND COORDINATE TERMINATION INTO PROJECTOR ENCLOSURE WITH AV CONTRACTOR. CONDUIT SHALL ROUTE TO THE AV RACK ASSOCIATED FOR THIS SPACE. FOR ACCESSIBLE CEILINGS, PROVIDE CONDUIT PATHWAY TO EACH ACCESSIBLE CEILING AREA WITH AV EQUIPMENT. CABLING WITHIN ACCESSIBLE CEILINGS MAY BE ROUTED WITH J-HOOKS.
	PROJECTOR LIFT		CEILING			15A	AVI7XX / X	ELECTRICAL CONTRACTOR TO STAGE POWER AND COORDINATE TERMINATION INTO PROJECTOR ENCLOSURE WITH AV CONTRACTOR. CONDUIT SHALL ROUTE TO THE AV RACK ASSOCIATED FOR THIS SPACE. FOR ACCESSIBLE CEILINGS, PROVIDE CONDUIT PATHWAY TO EACH ACCESSIBLE CEILING AREA WITH AV EQUIPMENT. CABLING WITHIN ACCESSIBLE CEILINGS MAY BE ROUTED WITH J-HOOKS.
	MOTORIZED PROJECTION SCREEN		CEILING	0.75"		HARDWIRED	AVI7XX / X	PROVIDE CONDUIT TO NEAREST ACCESSIBLE CEILING. ELECTRICAL CONTRACTOR TO STAGE POWER AND COORDINATE TERMINATION INTO SCREEN WITH AV CONTRACTOR. COORDINATE FINAL LOCATION WITH ARCHITECTUAL DRAWINGS.

SCOPE GUIDANCE AND GENERAL NOTES (APPLIES TO ALL SHEETS)

1. COORDINATE ALL POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
2. COORDINATE ALL DATA REQUIREMENTS WITH TELECOM CONTRACTOR.
3. COORDINATE ALL FURNITURE CUTOUTS WITH FURNITURE PROVIDER.
4. AV CONDUIT SHOWN IN LEGEND IS FOR AV CABLING ONLY. CONDUITS REQUIRED FOR POWER AND DATA ARE SPECIFIED ON THE POWER AND DATA DRAWINGS, RESPECTIVELY. NO AV CABLING SHALL SHARE A CONDUIT WITH TELECOM OR POWER.
5. FINAL HEIGHT AND MOUNTING LOCATIONS SHALL BE COORDINATED WITH THE ARCHITECTUAL ELEVATIONS.
6. FIELD VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION OF EQUIPMENT.
7. INFRASTRUCTURE FOR AV SHALL ADHERE TO DIVISION 16 AND DIVISION 27 SPECIFICATIONS.
8. PROVIDE SEPARATE RACEWAY PATH FOR MICROPHONE LEVEL AUDIO SIGNALS.
9. ROUTING OF CONDUIT SHOWN FOR DESIGN INTENT ONLY. COORDINATE EXACT ROUTE BASED ON FIELD CONDITIONS.
10. REAM AND BUSH ALL CONDUIT ENDS.
11. PROVIDE BLANK PLATES FOR BOXES LEFT OR DENOTED AS "BLANK" FOR FUTURE INSTALLATIONS.
12. ALL UTP CABLING SHALL BE PLENUM RATED, UON.
13. CEILING SPEAKERS ARE SHOWN FOR ZONING, CONDUIT SIZING, AND ROUTING ONLY. REFERENCE ARCHITECTURAL RCP FOR EXACT CEILING SPEAKER LOCATIONS.
14. ALL CATEGORY CABLING FOR AV USE SHALL BE TERMINATED BY THE AV CONTRACTOR INTO JACKS. ALL PATCH CABLES PROVIDED BY THE AV CONTRACTOR SHALL BE PREFABRICATED. NO SHIELDED RJ45 PLUGS SHALL BE FIELD TERMINATED ON THIS PROJECT.
15. USE VELCRO STRAPS FOR ALL CABLE MANAGEMENT APPLICATIONS. TIE WRAPS ARE PROHIBITED.
16. ALL CONDUITS TO NEAREST ACCESSIBLE CEILING SHALL BE STUBBED UP INTO THE SAME ROOM UON ON THE PLANS.
17. CABLES ROUTED ON J-HOOKS SHALL BE PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL ELEMENTS AND SHALL BE KEPT IN A NEAT BUNDLE. RUNNING CABLE DIAGONALLY ACROSS ANY SPACE INCLUDING AREAS CONCEALED ABOVE ACCESSIBLE CEILINGS SHALL NOT BE PERMITTED.
18. ELECTRICAL SCOPE:
    THE INFRASTRUCTURE PORTION OF THESE DOCUMENTS SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
    - 18.1. GROUNDING BUS AND GROUND BARS
    - 18.2. EMPTY CONDUIT WITH PULL-WIRE
    - 18.3. SLEEVES THROUGH WALL PARTITIONS
    - 18.4. JUNCTION BOXES AND BACK BOXES
    - 18.5 FLOOR BOXES
    - 18.6 POWER OUTLETS
    - 18.7 DISPLAY BACK BOXES
19. STRUCTURED CABLING SCOPE:
    THE DATA/TELECOM CABLING PORTION OF THESE DOCUMENTS SHALL BE PROVIDED AND INSTALLED BY THE COMMUNICATIONS CABLING CONTRACTOR AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
    - 19.1. ALL DATA CABLING FROM IDF/MDF NETWORK PATCH PANELS TO FACEPLATES OR TERMINATION BLOCKS
    - 19.2. TERMINATIONS OF DATA CONNECTORS, JACKS, AND FACEPLATES
20. AUDIO VISUAL SCOPE:
    THE AUDIO VISUAL PORTION OF THIS PROJECT SHALL BE PROVIDED AND INSTALLED BY THE AUDIO VISUAL CONTRACTOR SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
    - 20.1. DISPLAY DEVICES SUCH AS FLAT PANEL TVS, PROJECTORS, AND SCREENS.
    - 20.2. AUDIOVISUAL EQUIPMENT, SUCH AS AV RACKS, TRANSMITTERS, RECEIVERS, AND CONTROLLERS.
    - 20.3. PROPRIETARY AV CABLING, SUCH AS HDbT, HDMI, SPEAKER WIRES, AND CONTROL CABLES.
    - 20.4. PROPRIETARY AV STORAGE AND MOUNTING DEVICES, SUCH AS PROJECTOR ENCLOSURES AND DISPLAY MOUNTS.

ABBREVIATIONS

ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
ARF	ABOVE RAISED FLOOR
AFC	ABOVE FINISHED CEILING
BFC	BELOW FINISHED CEILING
ARCH	ARCHITECT/ARCHITECTUAL
BEL	BELOW
C	CONDUIT
CCA	CEILING CONNECTOR ASSEMBLY
CLG	CEILING
COL	COLUMN
CONN	CONNECT/CONNECTION
CONT	CONTINUATION/CONTINOUS
DN	DOWN
EC	EMPTY CONDUIT
FL	FLOOR
FBO	FINISHED BY OTHER
FCA	FLOOR CONNECTOR ASSEMBLY
LAN	LOCAL AREA NETWORK
N/A	NOT APPLICABLE
N/I	NOT ISSUED
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
OFE	OWNER FURNISHED EQUIPMENT
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
SCRN	PROJECTOR SCREEN
SPEC	SPECIFICATIONS
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
WCA	WALL CONNECTOR ASSEMBLY
NC	NORMALLY CLOSED CONTACT CLOSURE
NO	NORMALLY OPEN CONTACT CLOSURE
CC	CENTER CONTACT

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LS3P PROJECT: 7701-177600

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SHEET NAME:
AUDIO VISUAL LEGEND

ORIG SUBMISSION: 2022.05.25

SHEET:
AV-001

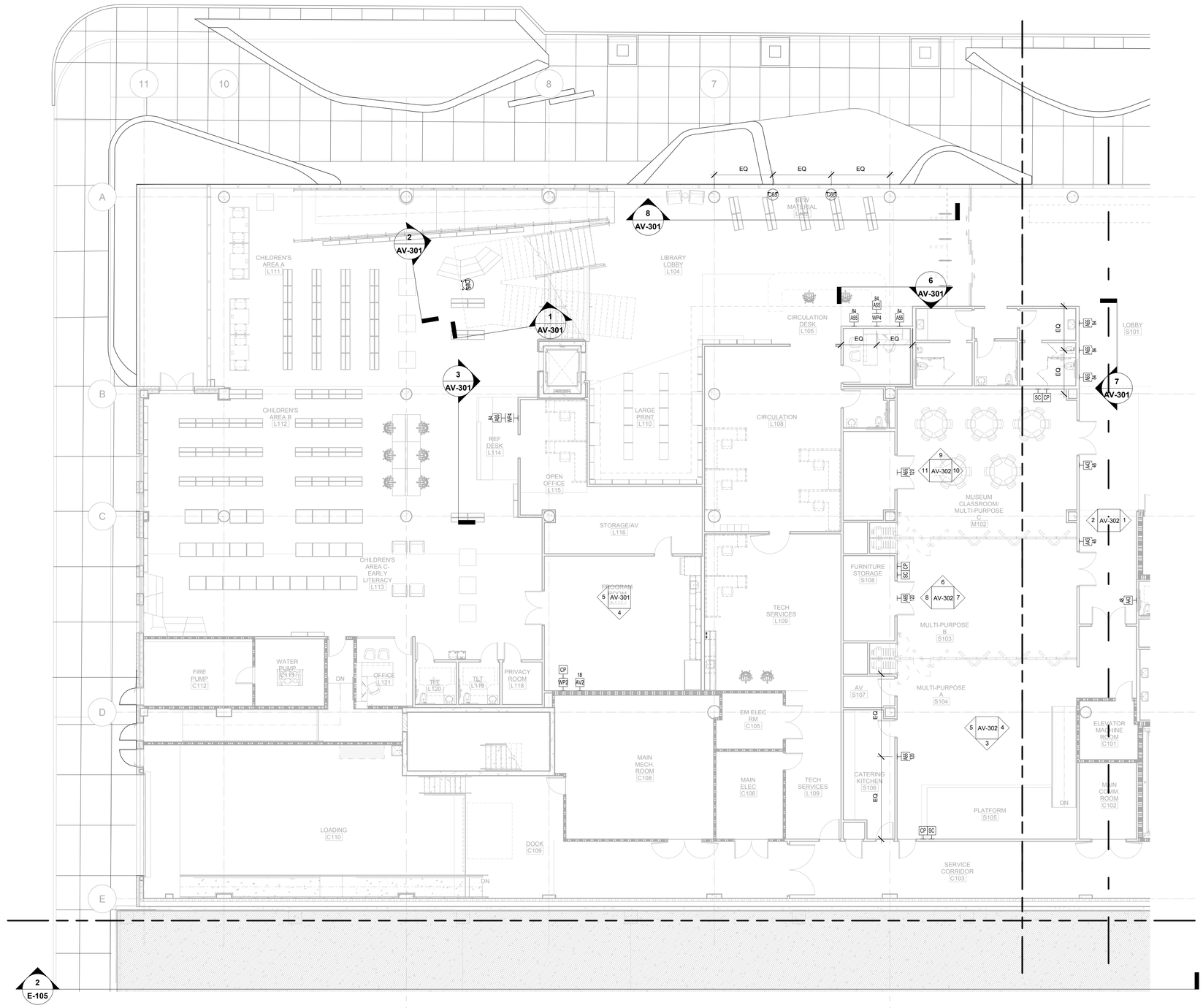
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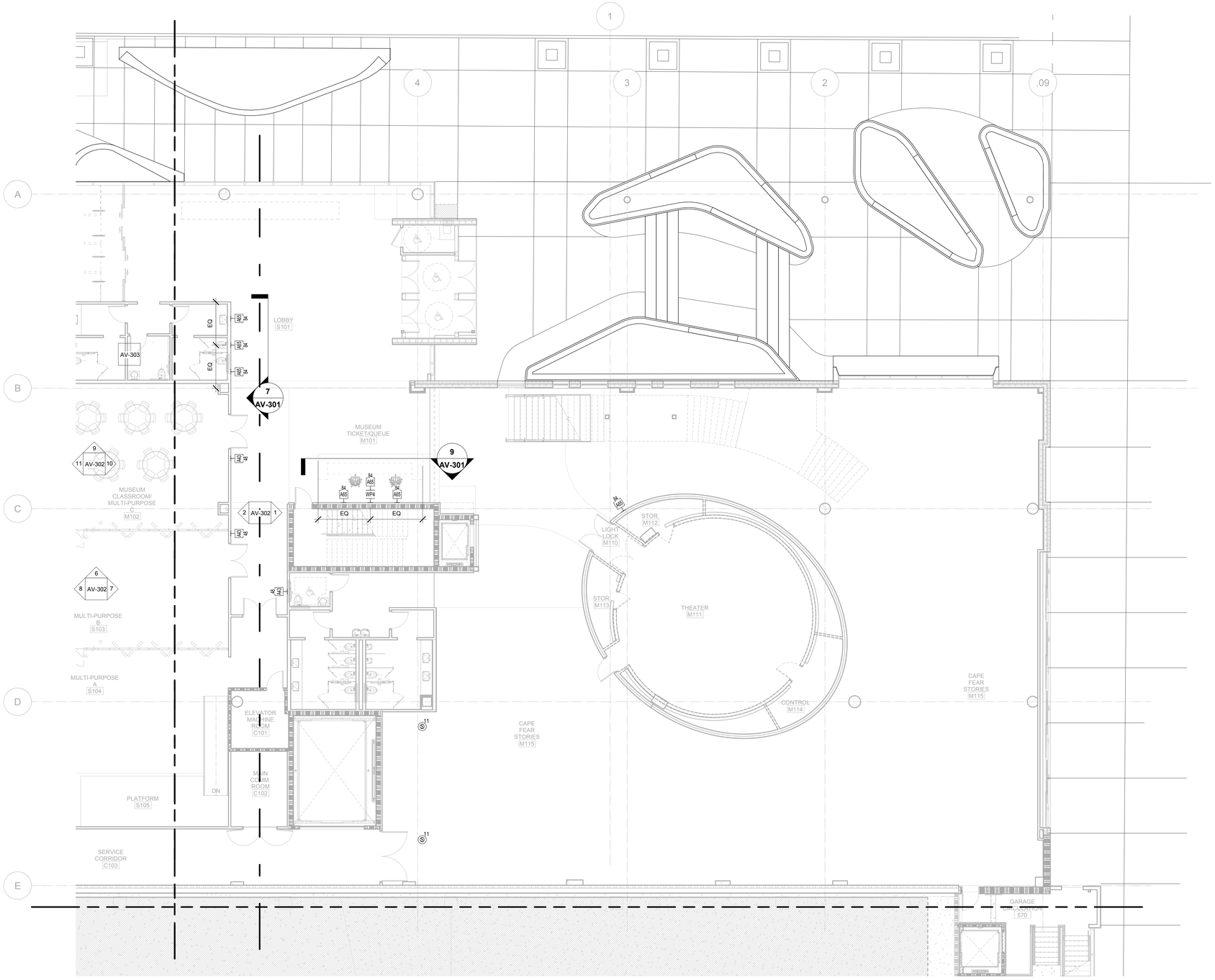
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LEVEL 1 - AREA A

ORIG SUBMISSION: 2022.05.25

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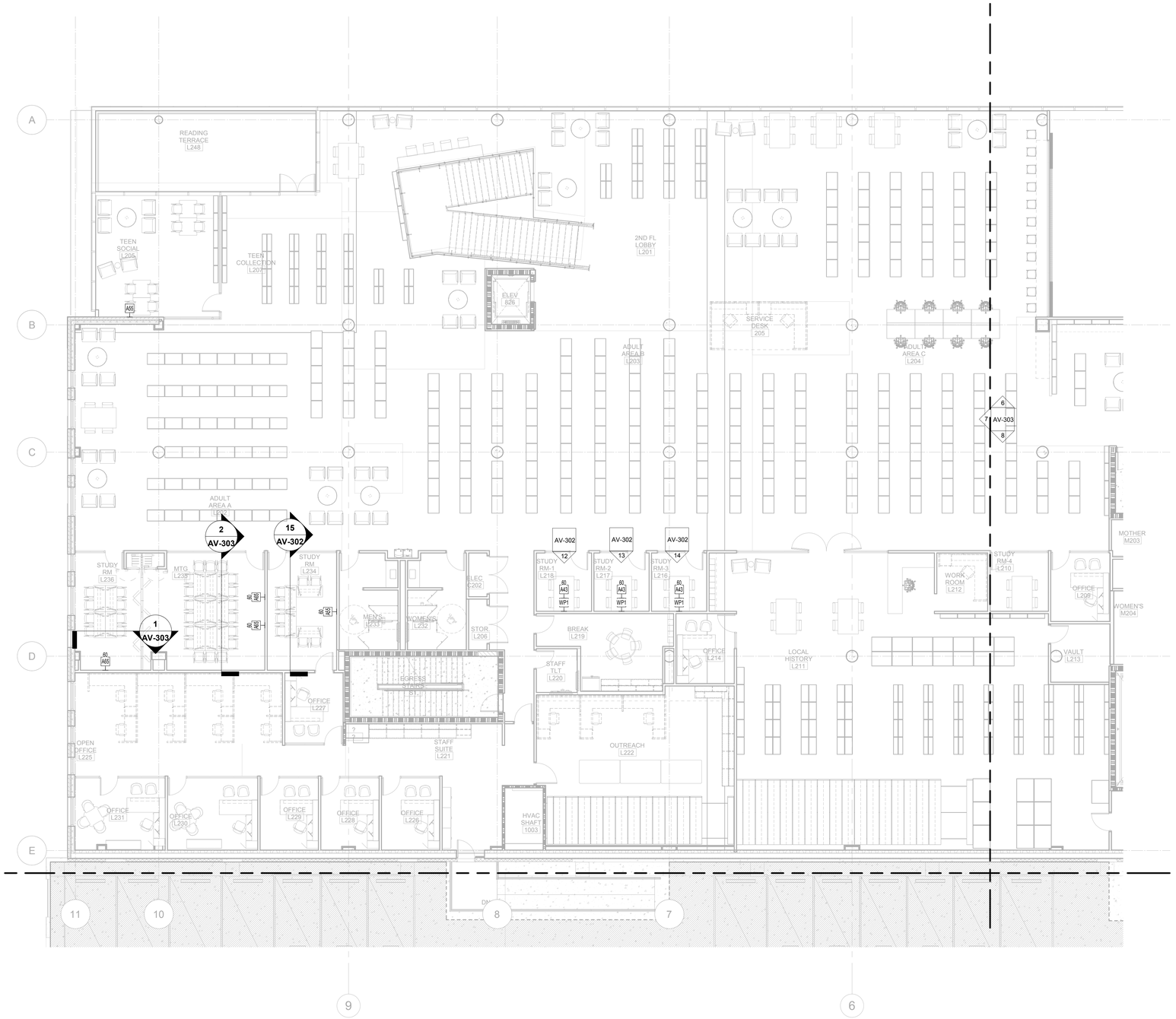
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LEVEL 1 - AREA B

ORIG SUBMISSION: 2022.05.25

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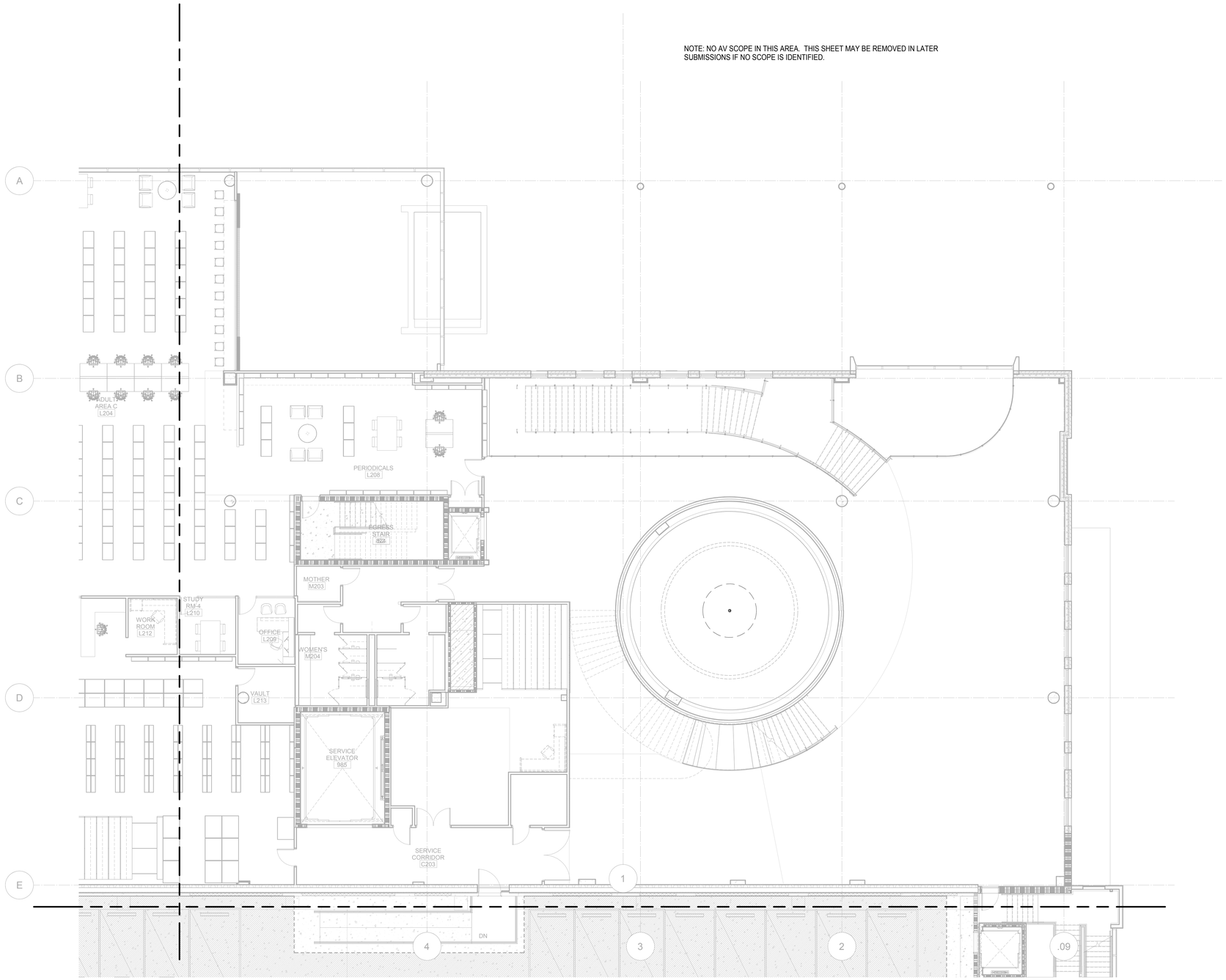
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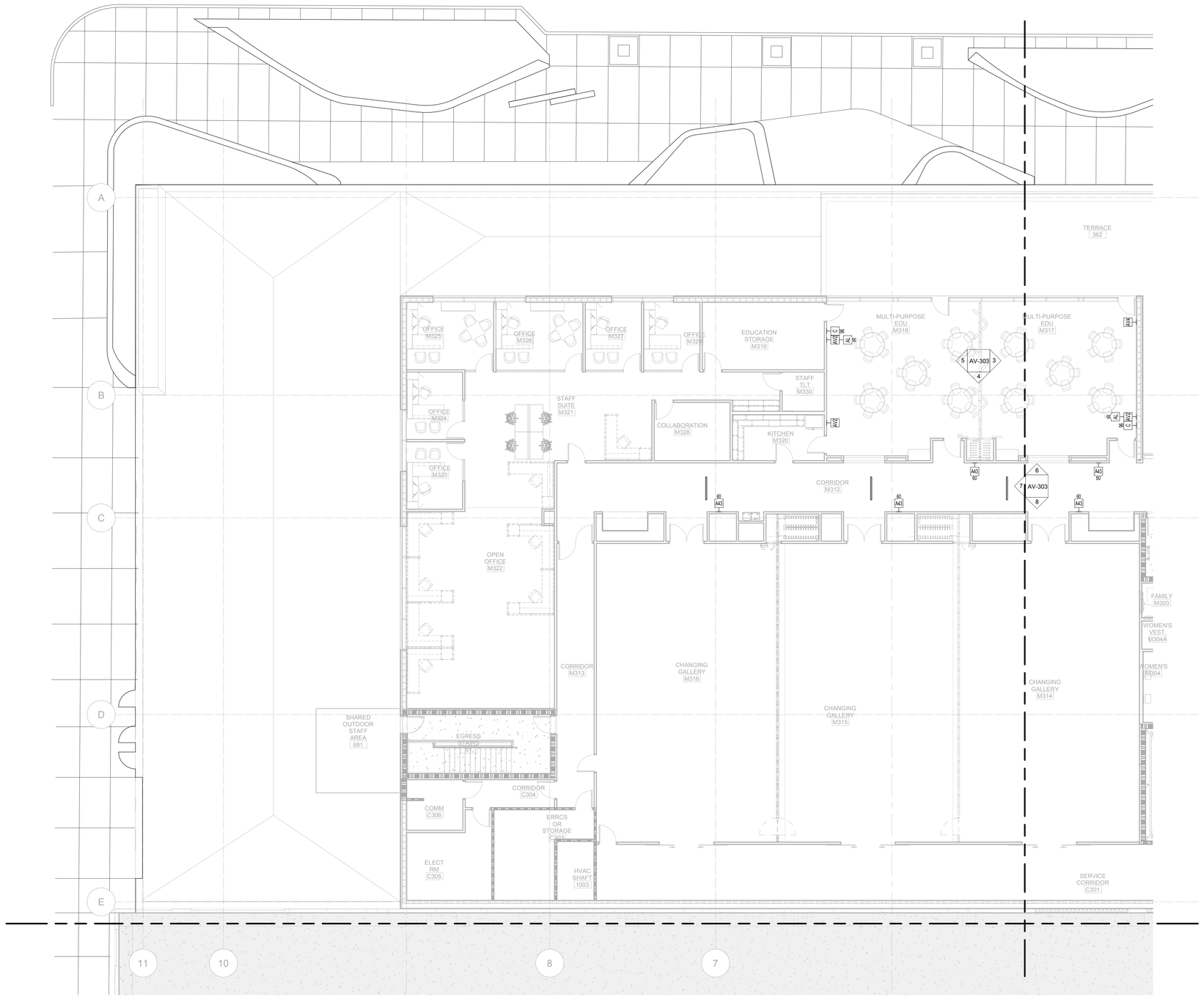
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LEVEL 2 - AREA B

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AV-102B

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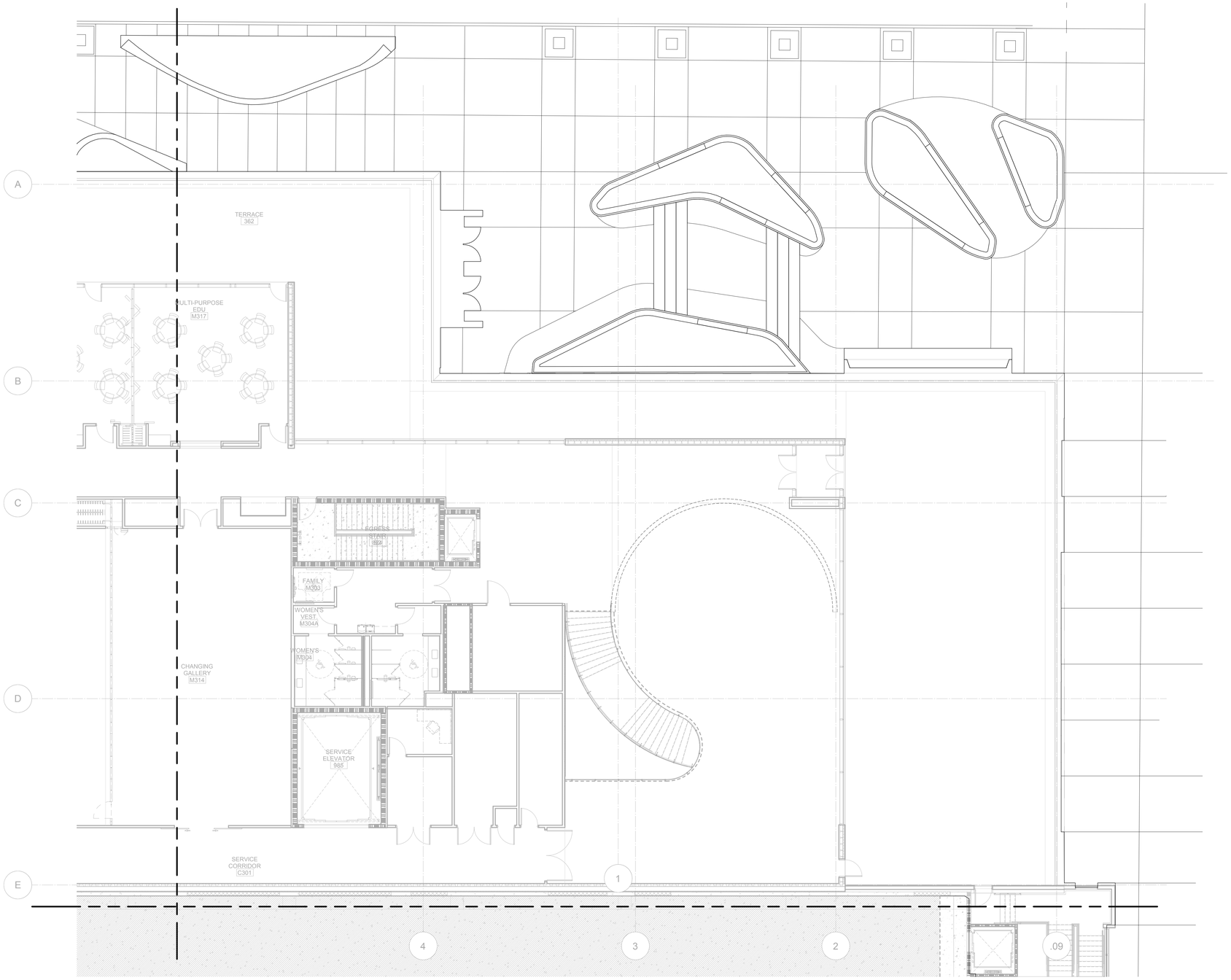
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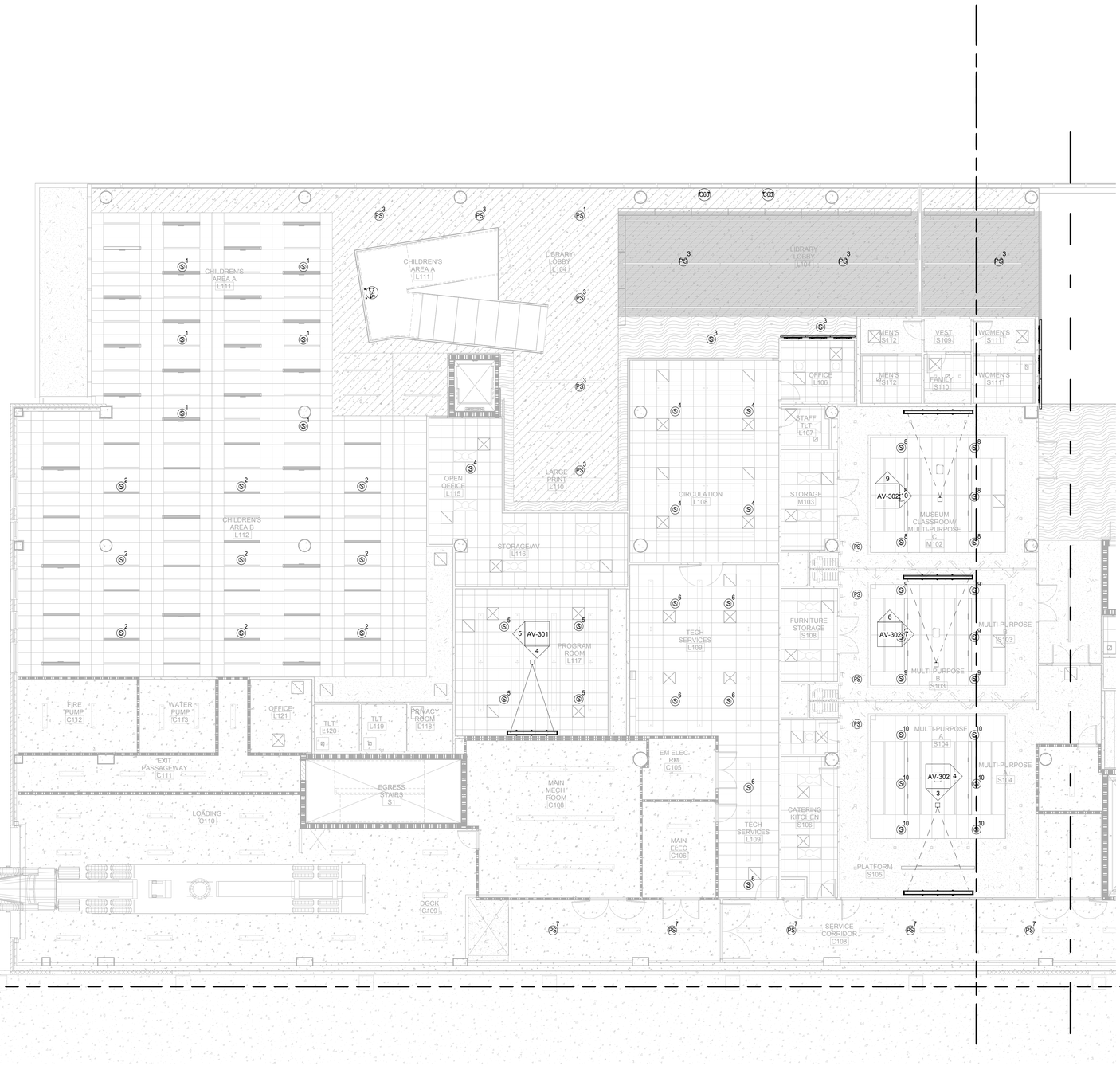
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LEVEL 3 - AREA B

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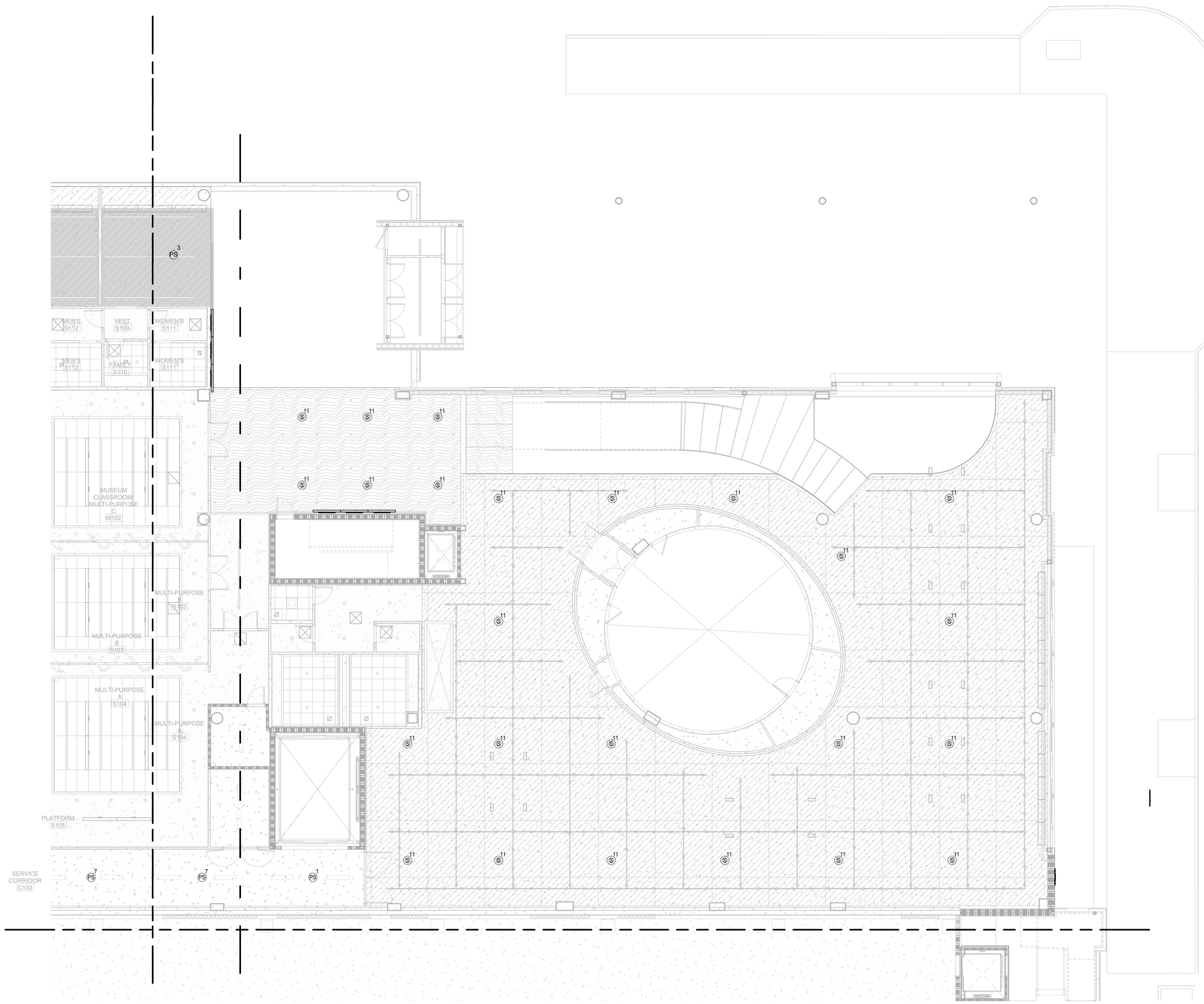
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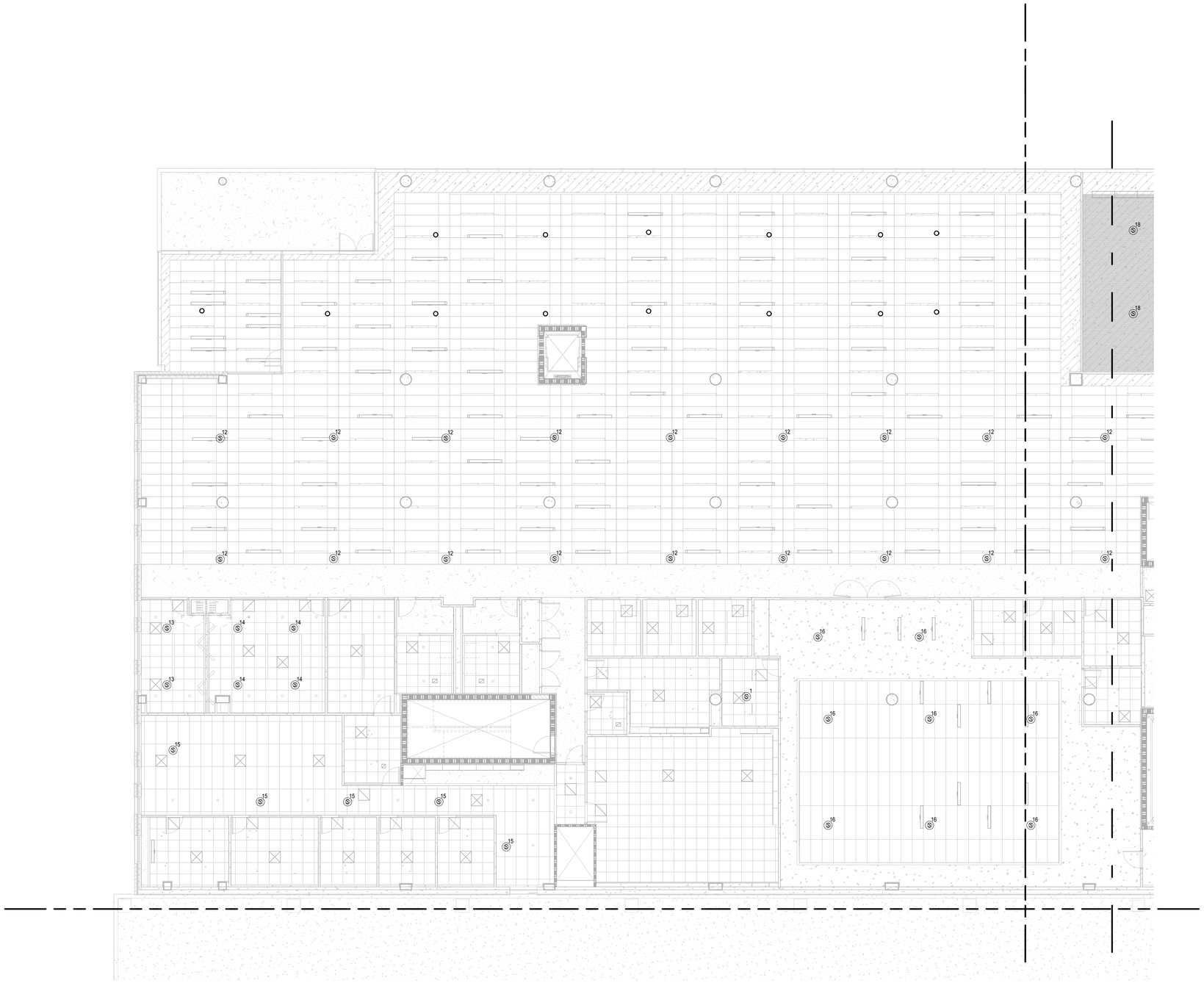
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AUDIO VISUAL LEVEL 1 - AREA B - RCP

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SHEET:
AV-201B

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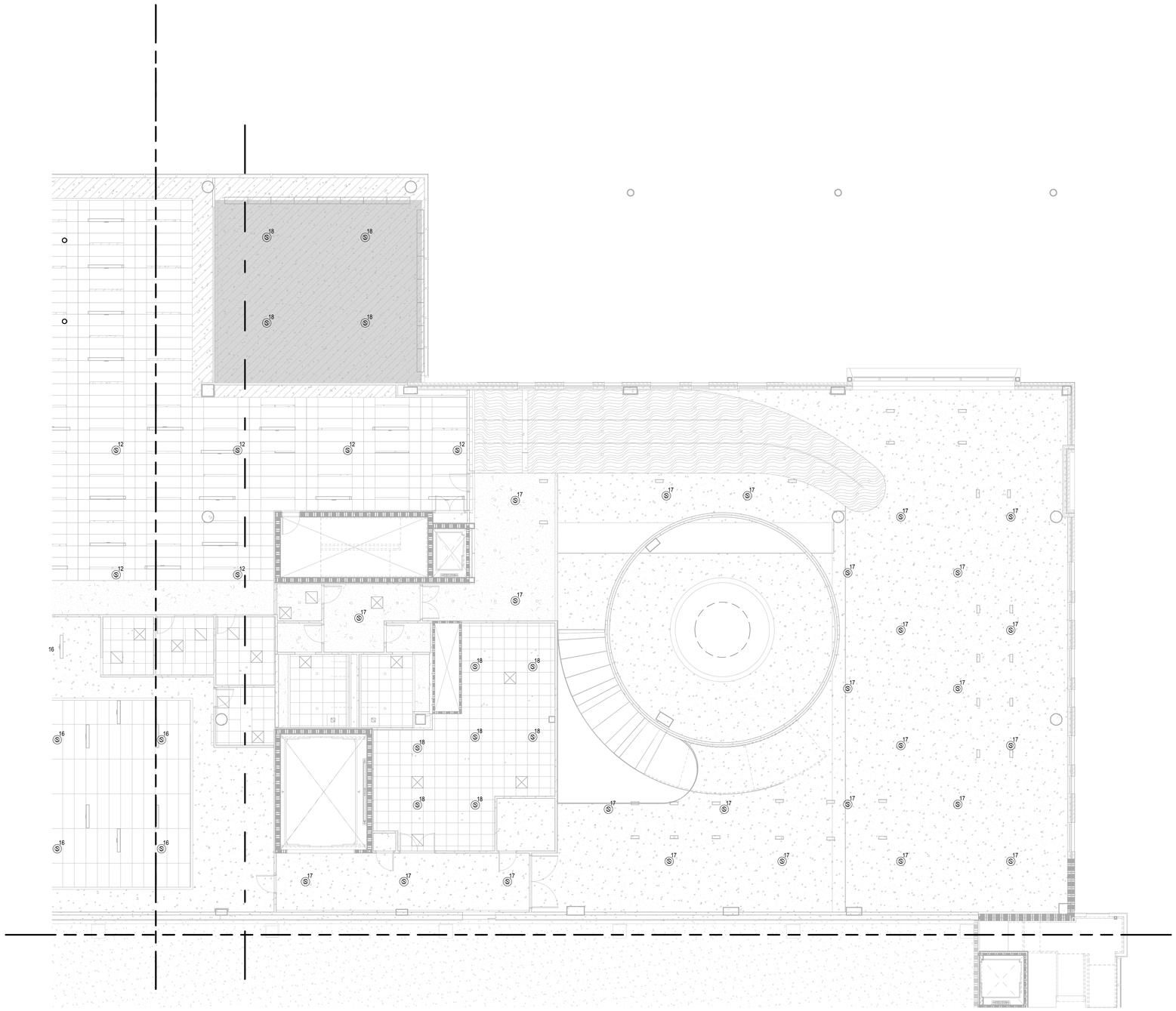
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AUDIO VISUAL LEVEL 2 - AREA A - RCP

ORIG SUBMISSION: 2022.05.25

SHEET:
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Contact: Brandon R. Nevin
N&B PROJECT: 21N185
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

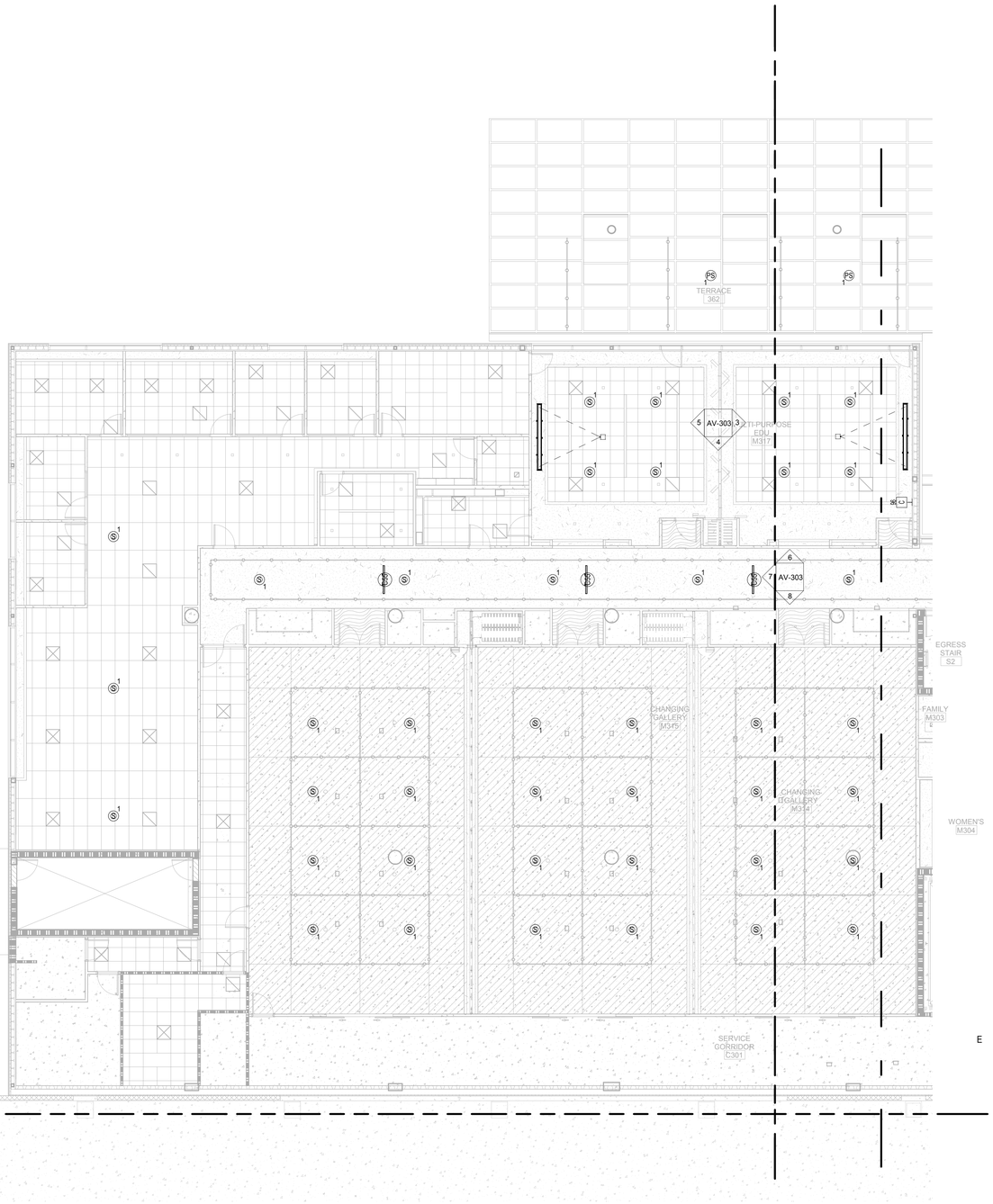
SHEET NAME:
AUDIO VISUAL LEVEL 2 - AREA B - RCP

ORIG SUBMISSION: 2022.05.25

SHEET:
AV-202B

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ANSI D SHEETS ORIGINAL PAGE SIZE



1 AUDIO VISUAL LEVEL 3 - RCP - AREA A

1/8" = 1'-0"

5/20/2022 2:30:53 PM

Zimmer
Development

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

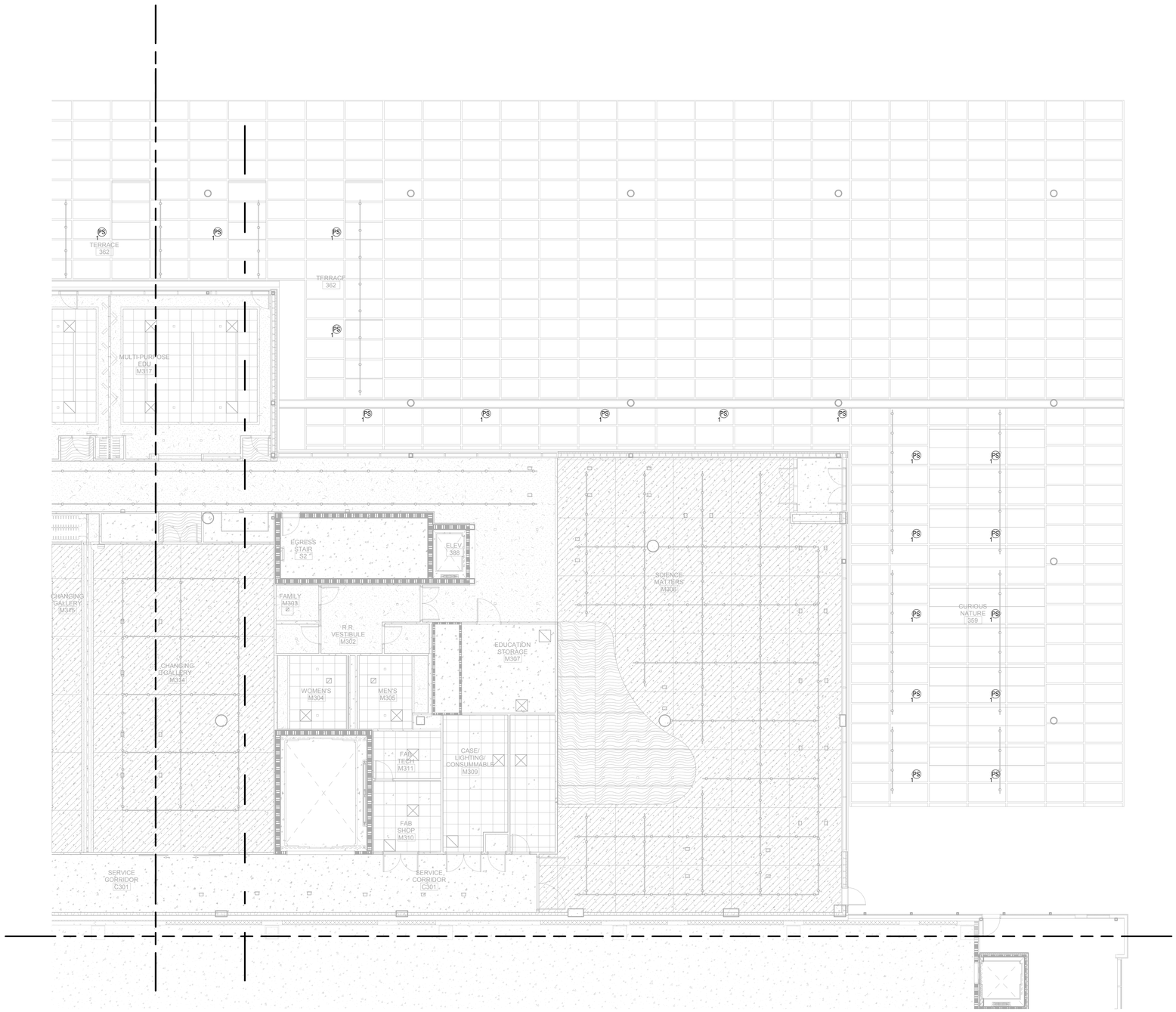
SHEET NAME:
AUDIO VISUAL LEVEL 3 - AREA A - RCP

ORIG SUBMISSION: 2022.05.25

SHEET:
AV-203A

OWNERS REVIEW SET

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PAGE SIZE



1 **AUDIO VISUAL LEVEL 3 - RCP - AREA B**

1/8" = 1'-0"

5/20/2022 2:31:06 PM

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Project Grace

Grace Street
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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
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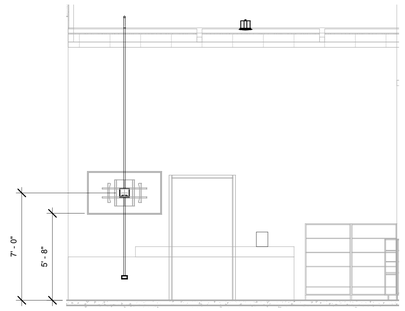
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AUDIO VISUAL LEVEL 3 - AREA B - RCP

ORIG SUBMISSION: 2022.05.25

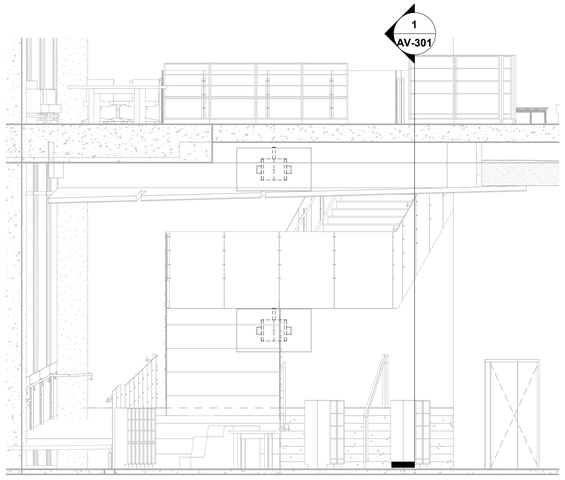
SHEET:
AV-203B

OWNERS REVIEW SET

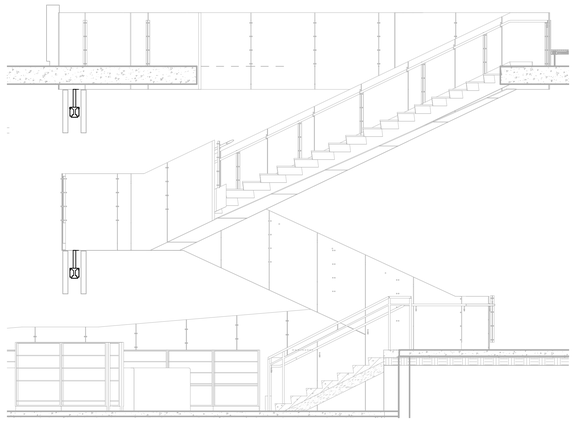
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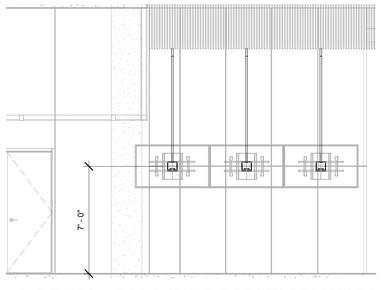
3 AV - REF DESK - L114 ELEVATION
1/4" = 1'-0"



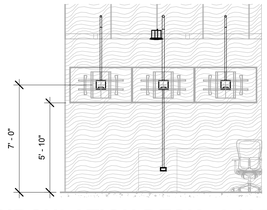
2 AV - STAIR SIGNAGE CROSS SECTION
1/4" = 1'-0"



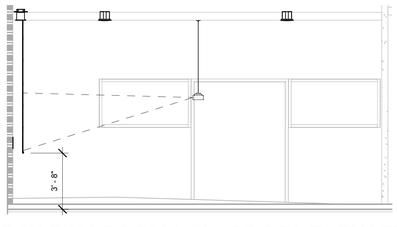
1 AV - STAIR SIGNAGE ELEVATION FROM CHILDRENS AREA
1/4" = 1'-0"



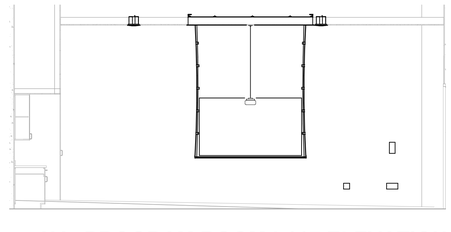
7 AV - LOBBY - S101 INFORMATION WALL
1/4" = 1'-0"



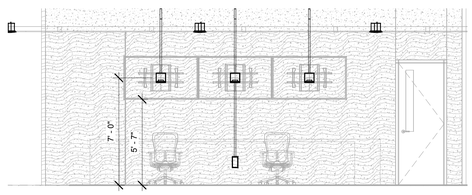
6 AV - CIRCULATION DESK - L105 ELEVATION
1/4" = 1'-0"



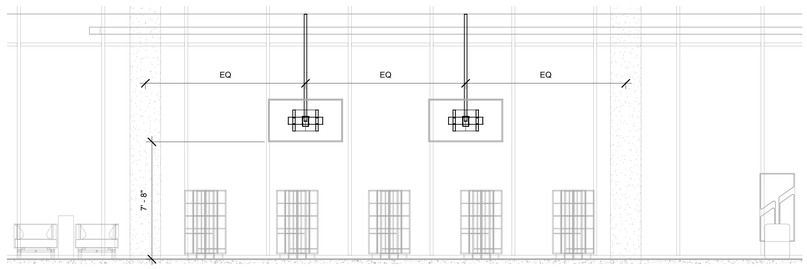
5 AV - PROGRAM ROOM L117 CROSS ELEVATION
1/4" = 1'-0"



4 AV - PROGRAM ROOM L117 ELEVATION
1/4" = 1'-0"



9 AV - MUSEUM TICKET M101 SIGNAGE ELEVATION
1/4" = 1'-0"



8 AV - NEW MATERIAL - L102 ELEVATION
1/4" = 1'-0"

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
AUDIO VISUAL ELEVATIONS

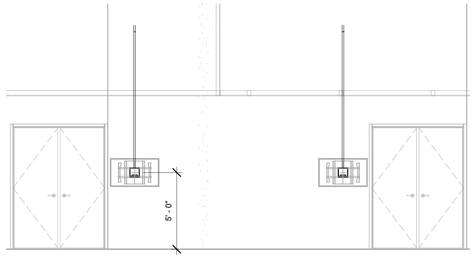
ORIG SUBMISSION: 2022.05.25

SHEET:
AV-301

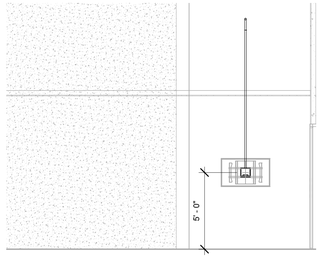
OWNERS REVIEW SET

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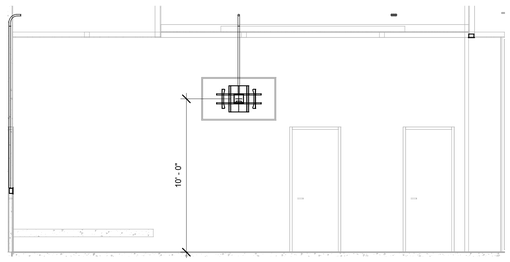
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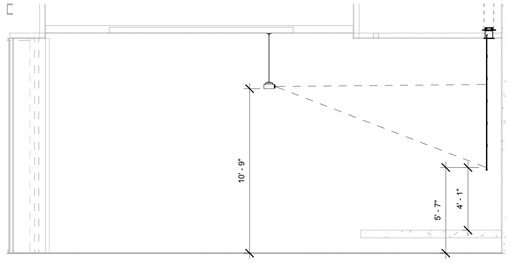
2 AV - MPR B AND C ROOM SIGNAGE
1/4" = 1'-0"



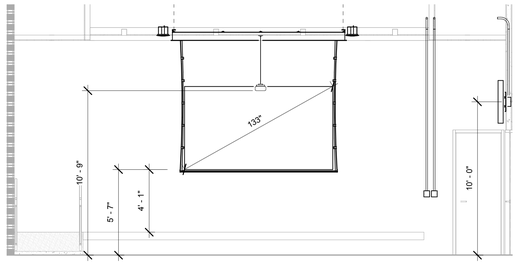
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1/4" = 1'-0"



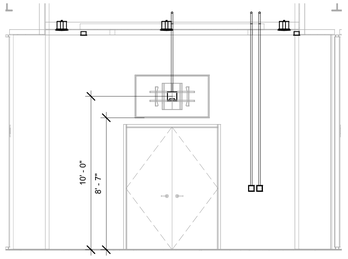
5 TYPICAL MULTIPURPOSE ROOM PLAN WEST WALL
1/4" = 1'-0"



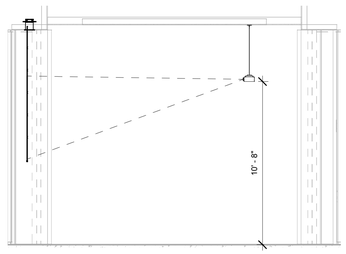
4 TYPICAL MULTIPURPOSE ROOM PROJECTOR THROW
1/4" = 1'-0"



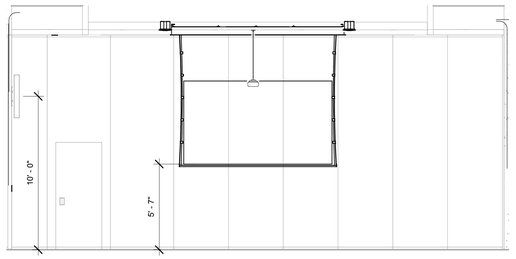
3 TYPICAL MULTIPURPOSE ROOM PROJECTION SCREEN
1/4" = 1'-0"



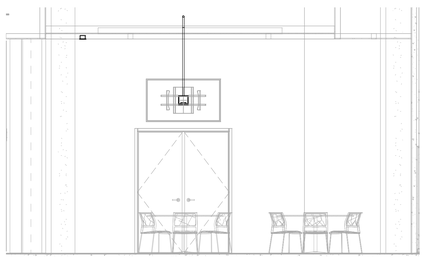
8 AV - MPR B S103 WALL DISPLAY ELEVATION
1/4" = 1'-0"



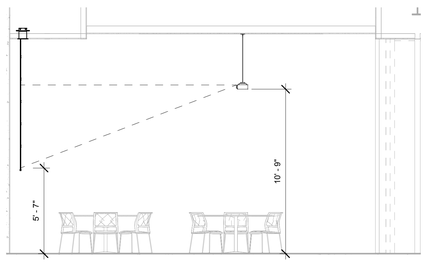
7 AV - MPR B S103 PROJECTOR CROSS SECTION
1/4" = 1'-0"



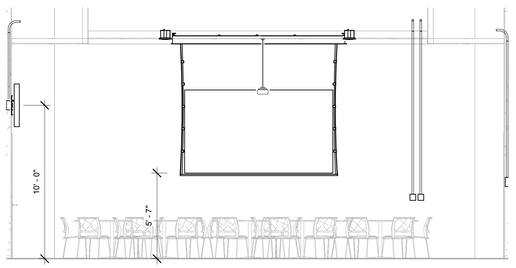
6 AV - MPR B S103 PROJECTOR SCREEN ELEVATION
1/4" = 1'-0"



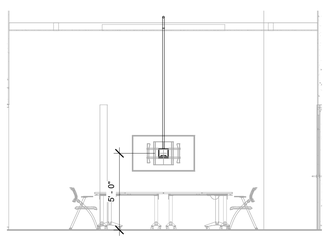
11 AV - MPR C M102 WALL DISPLAY ELEVATION
1/4" = 1'-0"



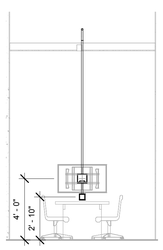
10 AV - MPR C M102 PROJECTOR CROSS SECTION
1/4" = 1'-0"



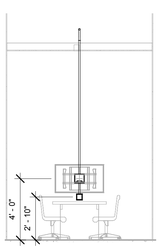
9 AV - MPR C M102 PROJECTOR SCREEN ELEVATION
1/4" = 1'-0"



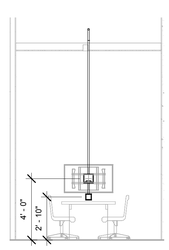
15 AV - STUDY RM L234 ELEVATION
1/4" = 1'-0"



14 AV - STUDY ROOM-3 L216 ELEVATION
1/4" = 1'-0"



13 AV - STUDY ROOM-2 L217 ELEVATION
1/4" = 1'-0"



12 AV - STUDY ROOM-1 L218 ELEVATION
1/4" = 1'-0"

Zimmer Development

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
AUDIO VISUAL ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
AV-302

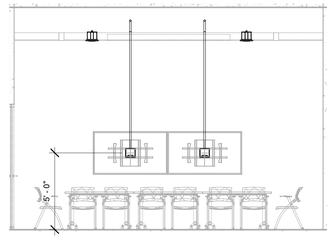
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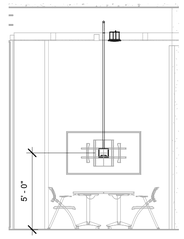
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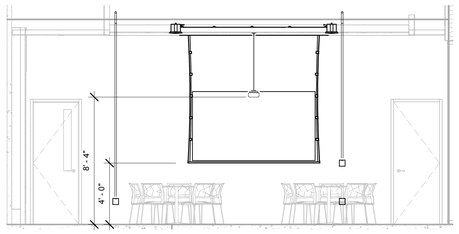
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PAGE SIZE



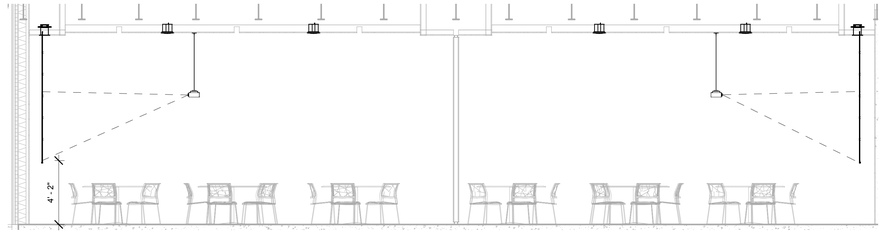
2 AV - MTG L235 ELEVATION
1/4" = 1'-0"



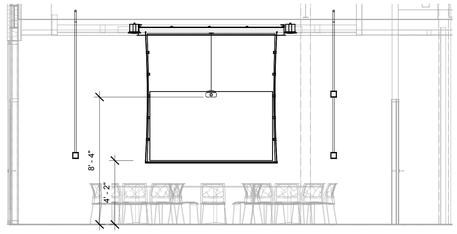
1 AV - STUDY RM L236 ELEVATION
1/4" = 1'-0"



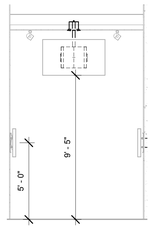
5 AV - MPR EDU M318 ELEVATION
1/4" = 1'-0"



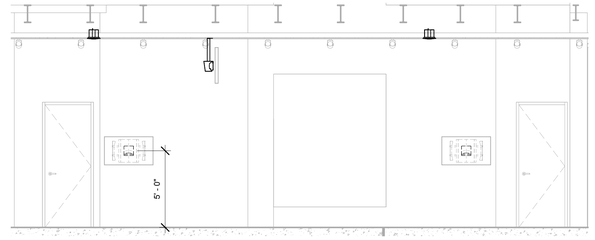
4 AV - MPR EDU M312/8 CROSS SECTION
1/4" = 1'-0"



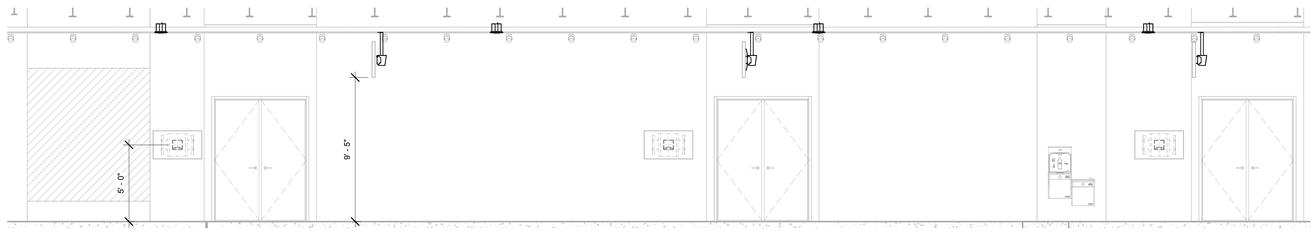
3 AV - MPR EDU M317 ELEVATION
1/4" = 1'-0"



7 AV - MPR EDU HALLWAY ELEVATION
1/4" = 1'-0"



6 AV - MPR EDU HALLWAY SIGNAGE
1/4" = 1'-0"



8 AV - CHANGING GALLARY HALLWAY ELEVATION
1/4" = 1'-0"

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Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
AUDIO VISUAL ELEVATIONS

ORIG SUBMISSION: 2022.05.25

SHEET:
AV-303
OWNERS REVIEW SET

5/20/2022 2:31:41 PM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PLOT SIZE

SECURITY SCOPE GUIDANCE NOTES

1. THE SECURITY SYSTEMS CONTRACTOR (DIVISION 28) SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR (DIVISION 26) TO ENSURE THAT CONDUIT AND BACK BOX PROVISIONS ARE APPROPRIATE FOR THE SECURITY DEVICES INDICATED ON THE PLANS. SECURITY PATHWAYS (CONDUITS, BACK BOXES, ETC.) ARE PROVIDED UNDER SECTION 280528, PATHWAYS FOR ELECTRONIC SECURITY.
2. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH NFPA 70, THE NATIONAL ELECTRIC CODE, 2020 AND ALL OTHER LOCAL CODES.
3. NETWORK DATA DROPS PER SECTION 271000, STRUCTURED CABLING. NETWORK (CATEGORY 6A) CABLING FOR SECURITY NETWORKED DEVICES ARE PROVIDED UNDER DIVISION 27. SECURITY DEVICES THAT REQUIRE NETWORK DATA DROPS ARE SHOWN ON THE TELECOM FLOOR PLANS FOR CLARITY.
4. THE SECURITY SYSTEMS CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND PROVIDE ADDITIONAL EQUIPMENT AS REQUIRED TO ENSURE THE SYSTEM IS INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
5. THE SECURITY SYSTEMS CONTRACTOR SHALL PERFORM AN RF FIELD STUDY TO VERIFY THE WIRELESS CARD READER PIM LOCATIONS SHOWN ON THE CONTRACT DOCUMENTS ARE ADEQUATE FOR THE WIRELESS CARD READER CONTROLLED DOORS.

SECURITY GENERAL NOTES

1. SECURITY CABLING SHALL BE INSTALLED IN CONDUIT IN WALLS AND CEILINGS WHERE ROUTED THROUGH NON-RESTRICTED (PUBLIC SPACE). WHERE ROUTED THROUGH ACCESSIBLE CEILINGS IN RESTRICTED SPACE SECURITY CABLES MAY BE SUPPORTED BY J-HOOKS SPACED NO MORE THAN 5' APART OR BY CABLE TRAY. WHERE CABLES PASS THROUGH SPACES WITH EXPOSED CEILING OR ABOVE INACCESSIBLE CEILING, INSTALL CABLES IN CONDUIT. PROVIDE CONDUIT SLEEVES THROUGH ALL WALL PENETRATIONS AND FIRESTOP AS REQUIRED FOR PARTITION TYPE. RESTRICTED SPACE IS THAT SPACE THAT CANNOT BE ENTERED WITHOUT PASSING THROUGH A CARD READER CONTROLLED DOOR.
2. CABLING INSTALLED ON J-HOOKS, AND CONDUIT RUNS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL ELEMENTS. RUNNING CABLING OR CONDUIT DIAGONALLY ACROSS ANY SPACE, INCLUDING AREAS CONCEALED ABOVE FINISHED CEILING, SHALL NOT BE PERMITTED. ROUTE CABLING ON J-HOOKS OR IN TELECOM CABLE RUNWAY IN A NEAT BUNDLE HELD TOGETHER WITH PLENUM RATED VELCRO FASTENERS.
3. ALL CONDUIT, WIRING, AND ASSOCIATED JUNCTION BOXES SHALL BE CONCEALED WITHIN WALLS, FLOORS, OR CEILINGS UNLESS OTHERWISE NOTED. PROVIDE PULL STRING SECURED ON BOTH SIDES IN ALL CONDUIT DURING ROUGH-IN.
4. ALL CONDUIT PENETRATIONS THRU FIRE RATED OR SMOKE PARTITIONS SHALL BE SEALED AND FIRESTOPPED PER THE ARCHITECT'S SPECIFICATIONS ADDRESSING FIRESTOPPING SECTION 078413, PENETRATION FIRESTOPPING LIST SECTION NUMBER AND NAME.
5. HOMERUNS FOR MULTIPLE LIKE DEVICES CAN BE COMBINED INTO A SINGLE CONDUIT AS LONG AS THE OVERALL CAPACITY OF THE HOMERUN IS EQUAL TO OR LARGER THAN THE CAPACITY (AREA) OF THE INDIVIDUAL CONDUITS IT INCORPORATES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE THE CONDUIT CAPACITY REQUIRED TO INCLUDE CABLING FROM MULTIPLE DOORS, CAMERAS, OR INTERCOMS TO ENSURE THAT THE NEC REQUIRED FILL IS NOT EXCEEDED.
6. EXACT LOCATION, MOUNTING HEIGHT AND TYPE OF TERMINATION FROM JUNCTION BOX, STUB-UPS, ETC. SHALL BE DETERMINED FROM ARCHITECTURAL DRAWINGS, SHOP DRAWINGS, EQUIPMENT CUTSHEETS OR DETAILS BEFORE CONDUIT ROUGH-IN. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
7. BACK BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED, AND WHERE REQUIRED, COMPLY WITH THE ABAAG HEIGHT SPECIFICATIONS. VERIFY ALL MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS.
8. JUNCTION BOXES SHALL BE INSTALLED AT LOGICAL, ACCESSIBLE LOCATIONS WITH NO MORE THAN 50 FEET BETWEEN EACH INDOOR JUNCTION BOX AND 100 FEET OUTDOORS AND NO MORE THAN 180 DEGREES OF BENDS BETWEEN PULL BOXES DURING INSTALLATIONS.
9. ALL CUTTING AND PATCHING SHALL BE PERFORMED IN A WORKMAN LIKE MANNER ACCEPTABLE TO THE ARCHITECT.
10. ALL CONDUIT PENETRATING A WALL SHALL BE CAULKED ON BOTH SIDES WITH RESILIENT NON-HARDENING SEALANT.
11. WALL MOUNTED SECURITY EQUIPMENT (SUCH AS SECURITY CAMERAS) SHALL BE MOUNTED IN SUCH A MANNER THAT THEY DO NOT CROSS JOINTS OR SPAN AREAS WHERE THERE IS A MATERIAL TRANSITION.
12. SECURITY EQUIPMENT MOUNTED TO THE EXTERIOR OF THE BUILDING SHALL BE PROVIDED WITH DRIP LOOPS, SEALS, ETC. AS REQUIRED TO PREVENT SEEPAGE OF WATER OR MOISTURE INTO THE BUILDING.
13. DETAILS ARE DIAGRAMMATIC AND SHALL NOT BE USED TO DETERMINE EQUIPMENT LOCATIONS. FLOOR PLANS INDICATE EQUIPMENT LOCATIONS COORDINATE WITH ARCHITECTURAL AND INTERIOR DRAWINGS PRIOR TO FINAL EQUIPMENT ROUGH-IN AND INSTALLATION.
14. REFERENCE EQUIPMENT DETAILS AND SYSTEM FUNCTIONAL DIAGRAM FOR ADDITIONAL INFORMATION. NEITHER DETAILS NOR DIAGRAMS SHALL BE USED TO DETERMINE DEVICE QUANTITIES. DEVICE LOCATIONS AND QUANTITIES ARE INDICATED ON THE FLOOR PLANS.
15. REFERENCE FLOOR PLANS FOR SECURITY NETWORK SWITCH LOCATIONS AND SECURITY ENCLOSURE LOCATIONS. REFERENCE SECURITY DEVICE TAGS FOR DEVICE DESIGNATION.
16. ALL DEVICES AND EQUIPMENT SHOWN SHALL BE NEW EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.

ABBREVIATIONS:

1G - SINGLE GANG
2G - DOUBLE GANG
3G - TRIPLE GANG (NONGANGABLE
ABA - ARCHITECTURAL BARRIERS ACT OF 1968
ABAAG - ABA ACCESSIBILITY GUIDELINES
ACAMS - ACCESS CONTROL AND ALARM MONITORING SYSTEM
ACS - ACCESS CONTROL SYSTEM
ACU - ACCESS CONTROL UNIT
ADA - AMERICANS WITH DISABILITIES ACT
AFC/AFF/AFG/ARF - ABOVE FINISHED CEILING/FLOOR/GRADE/RAISED FLOOR
ARCH - ARCHITECT/ARCHITECTURAL
BCKBD - BACKBOARD
BFC - BELOW FINISHED CEILING
CDT - CONDUIT
CONN - CONNECTION
CKT - CIRCUIT
CLG - CEILING
EC - ELECTRICAL CONTRACTOR
EMT - ELECTRICAL METALLIC TUBING
EQUIP - EQUIPMENT
EXIST - EXISTING
FOC - FIBER/FIBER OPTIC CABLING
FA - FIRE ALARM
G - GROUND
IDC - INSTALLATION DISPLACEMENT CONNECTOR
IDS - INTRUSION DETECTION SYSTEM
JB - JUNCTION BOX
LAN - LOCAL AREA NETWORK
MM - MULTI-MODE
MP - MEGAPIXEL
MTD - MOUNTED
MTG - MOUNTING
N/A - NOT APPLICABLE
NEC - NATIONAL ELECTRIC CODE
NIC - NOT IN CONTRACT
NTS - NOT TO SCALE
OC - ON CENTER
OFCI - OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI - OWNER FURNISHED, OWNER INSTALLED
OSP - OUTSIDE PLANT
PNL - PANEL
PTZ - PAN/TILT/ZOOM
RR - RISER RATED
RTE - REQUEST-TO-EXIT
SEC - SECURITY ENCLOSURES
SM - SINGLE MODE
SPEC - SPECIFICATION
SW - SWITCH
TGB - TELECOM GROUND BUSBAR
TMGB - TELECOM MAIN GROUND BUSBAR
WP - WEATHERPROOF
UON - UNLESS OTHERWISE NOTED
VMS - VIDEO MANAGEMENT SYSTEM
VSS - VIDEO SURVEILLANCE SYSTEM
XFMR - TRANSFORMER
1G - SINGLE GANG
2G - DOUBLE GANG
3G - TRIPLE GANG (NON-GANGABLE)

SECURITY DEVICE TAGS:

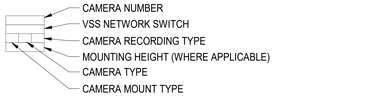
GENERAL NOTES:

1. TAG BORDERS MAY NOT BE SHOWN ON FLOOR PLANS.

ACCESS CONTROL SYSTEM:

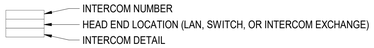


VIDEO SURVEILLANCE SYSTEM:



SEE CAMERA SCHEDUES AND DETAILS ON SHEET _____

SECURITY COMMUNICATIONS SYSTEM:



SECURITY SYMBOL LEGEND

ACCESS CONTROL SYSTEM: (PROVIDED UNDER DIVISION 28 SPECIFICATIONS):

- ACCESS CONTROL CARD READER
- ACCESS CONTROL KEYPAD READER
- M — MAGNETIC CONTACT
- MD — CEILING MOUNTED 360 DEGREE MOTION DETECTOR
- LOCAL DOOR ALARM SOUNDER
- DR — REMOTE DOOR RELEASE
- LD — LOCK DOWN BUTTON
- D — DURESS PUSH-FOR-HELP BUTTON
- PB — TURNSTILE PUSH BUTTON RELEASE
- CH — DOOR CHIME (POTTER CM4-L OR APPROVED EQUAL)
- J — 4" JUNCTION BOX WITH COVER AND TAMPER RESISTANT SCREWS
- T — TAMPER SWITCH
- RX — REQUEST-TO-EXIT MOTION DETECTOR.
- REQUEST-TO-EXIT PUSHBUTTON.
- EMERGENCY DOOR RELEASE PUSH BUTTON
- DJB — 8"x8"x4" DOOR JUNCTION BOX WITH COVER AND TAMPER RESISTANT SCREWS
- SEC-"X" — SECURITY ENCLOSURES (ACCESS CONTROL PANELS, AND DOOR LOCKING HARDWARE POWER SUPPLIES, ETC.). "X" INDICATES ENCLOSURE DESIGNATOR. SEE FLOOR PLANS FOR PANEL DESIGNATOR.
- AED — AUTOMATIC ELECTRONIC DEFIBRILATOR CONNECTION TO ACS

ACCESS CONTROL SYSTEM (PROVIDED UNDER DIVISION 8 SPECIFICATIONS):

- EL — ELECTRIC MORTISE LOCK WITH INTEGRAL REQUEST-TO-EXIT SWITCH
- ML — MAGNETIC LOCK DOOR HARDWARE
- WL — WIRELESS LOCKING HARDWARE
- ES — ELECTRIC STRIKE LOCKING HARDWARE
- ED — ELECTRIC EXIT DEVICE LOCK WITH INTEGRAL REQUEST-TO-EXIT SWITCH
- CB — MECHANICAL EXIT DEVICE WITH INTEGRAL REQUEST-TO-EXIT SWITCH
- DE — DELAYED EGRESS EXIT DEVICE
- PT — ELECTRIC POWER TRANSFER
- PS — LOCAL DOOR HARDWARE POWER SUPPLY FOR ELECTRIC LATCH RETRACTION TYPE LOCKING HARDWARE
- DO — ADA DOOR OPERATOR
- DA — ADA DOOR OPERATOR ACTUATOR BUTTON
- SDI — AUTOMATIC SLIDING DOOR INTERFACE TO ACCESS CONTROL SYSTEM (INTERFACE TO INCLUDE DOOR POSITION SWITCH, REQUEST-TO-EXIT MOTION DETECTOR, AND DOOR OPERATOR)

VIDEO SURVEILLANCE SYSTEM:

- FIXED IP CAMERA
- FIXED MULTI-SENSOR IP CAMERA - 2HEADS
- FIXED MULTI-SENSOR IP CAMERA - 3HEADS
- FIXED MULTI-SENSOR IP CAMERA - 4HEADS
- PAN-TILT-ZOOM DOME IP CAMERA
- 360 DEGREE DOME IP CAMERA
- POE — MIDSPAN POE INJECTOR
- NVR — VSS NETWORK VIDEO RECORDER
- LAN — VMS NETWORK SWITCH
- FTX — FIBER OPTIC MEDIA CONVERTER
- VWS — VIDEO SURVEILLANCE SYSTEM WORKSTATION

SECURITY COMMUNICATION SYSTEM:

- INTERCOM SUBSTATION (AUDIO ONLY)
- INTERCOM SUBSTATION (AUDIO & VIDEO)
- WALL MOUNTED EMERGENCY CALL STATION WITH AUXILIARY BLUE LIGHT
- FREE STANDING EMERGENCY CALL STATION PEDESTAL WITH AUXILIARY BLUE LIGHT
- ICM — INTERCOM MASTER STATION (AUDIO ONLY)
- VIM — INTERCOM MASTER STATION (VIDEO AND AUDIO)
- SWS — SECURITY OPERATOR WORKSTATION

MISCELLANEOUS SECURITY SYSTEMS EQUIPMENT:

- AWS — ACCESS CONTROL SYSTEM WORKSTATION
- UPS — UNINTERUPTABLE POWER SUPPLY
- PIM — PANEL INTERFACE MODULE FOR WIRELESS DOOR LOCK
- DB — DOOR BELL PUSH BUTTON
- MD — WALL MOUNTED MOTION DETECTOR

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SC-001

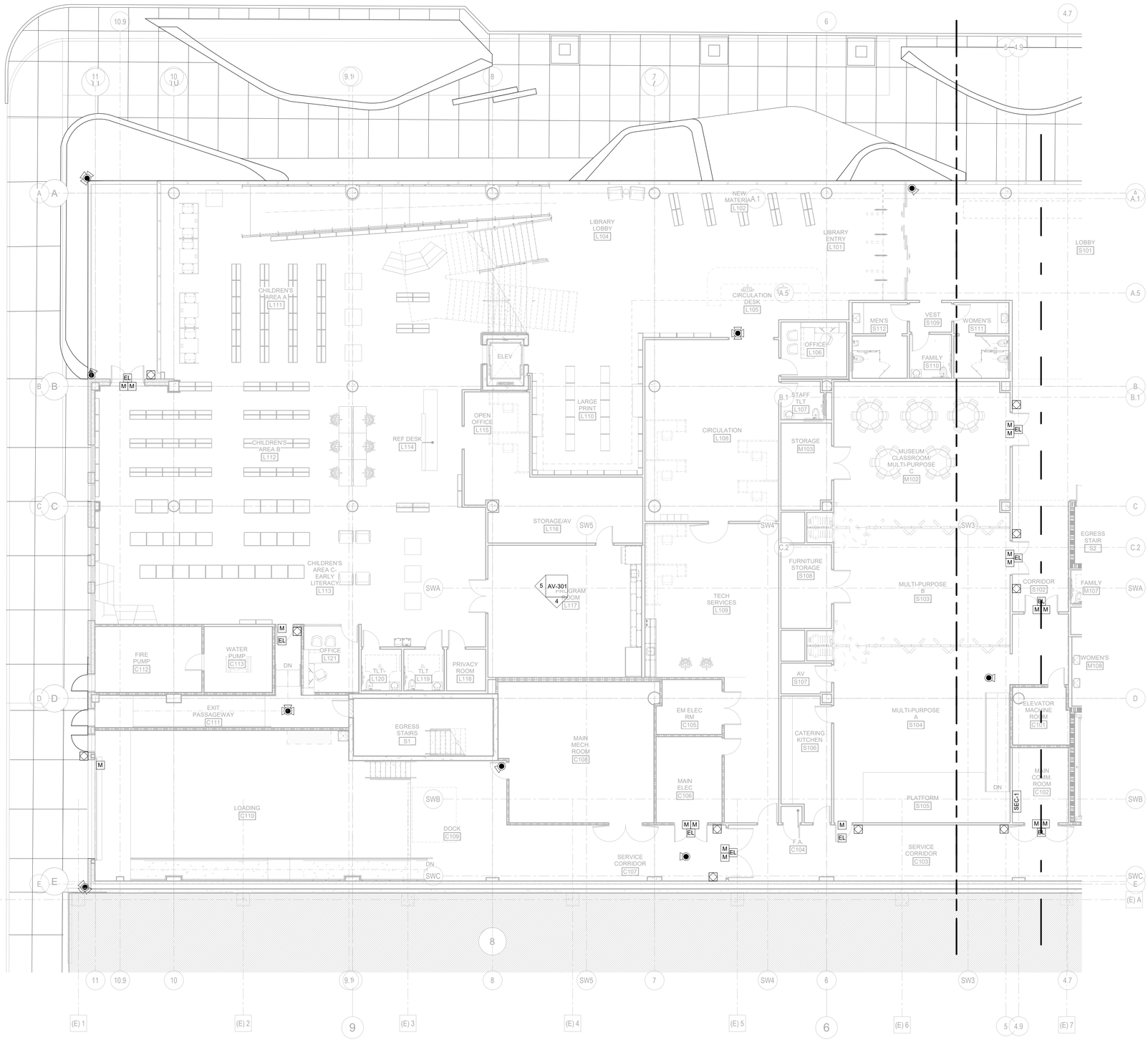
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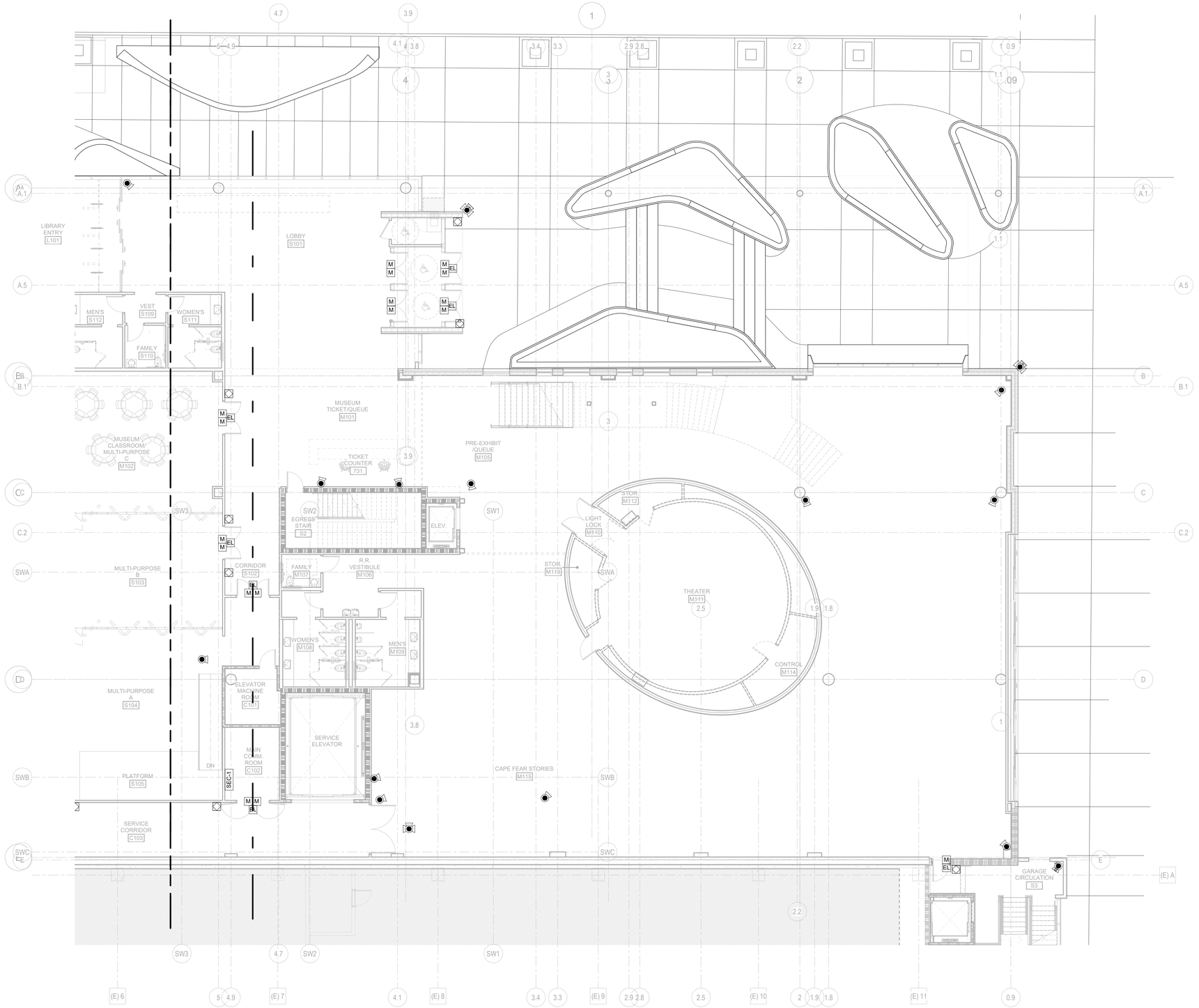
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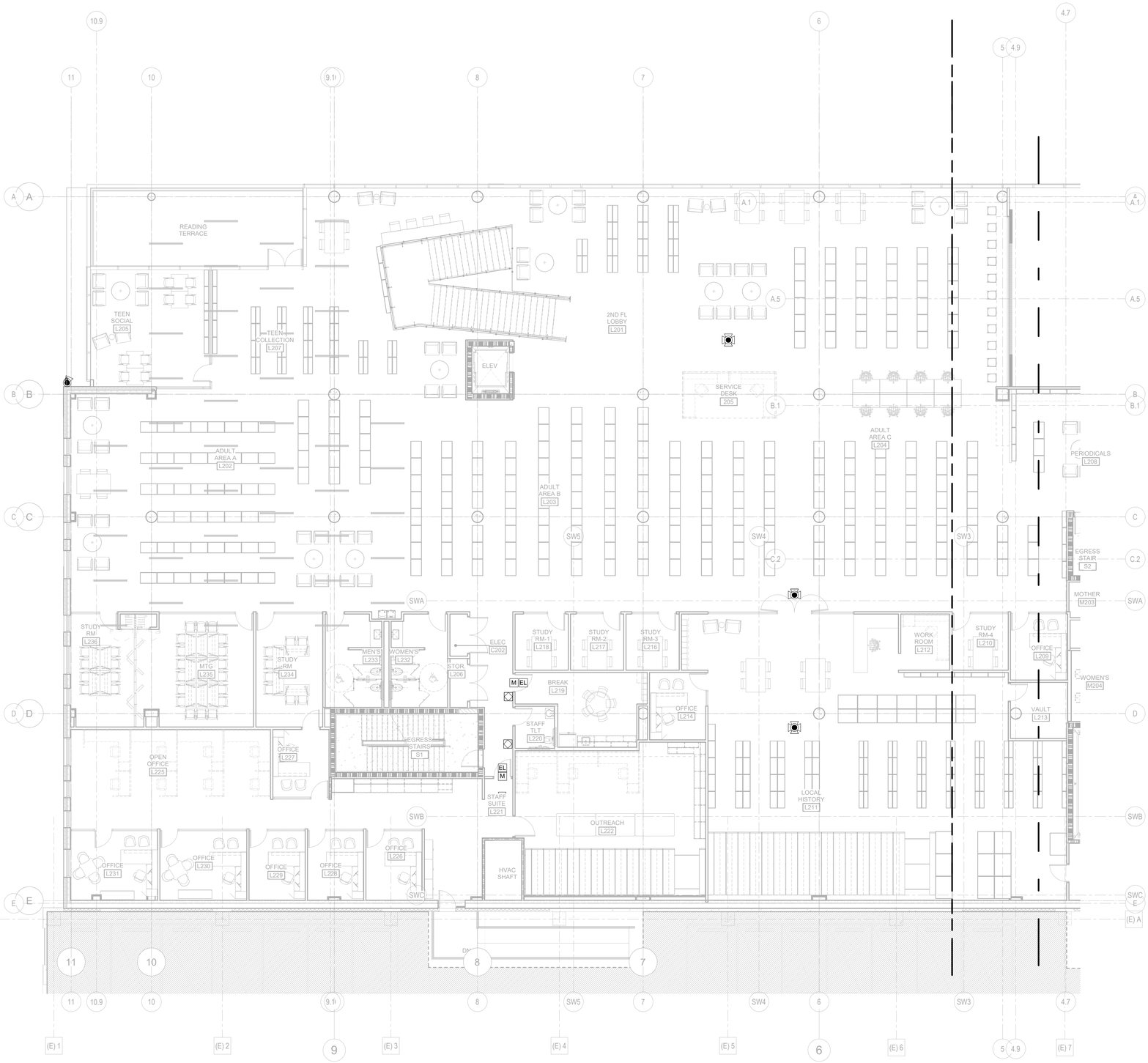
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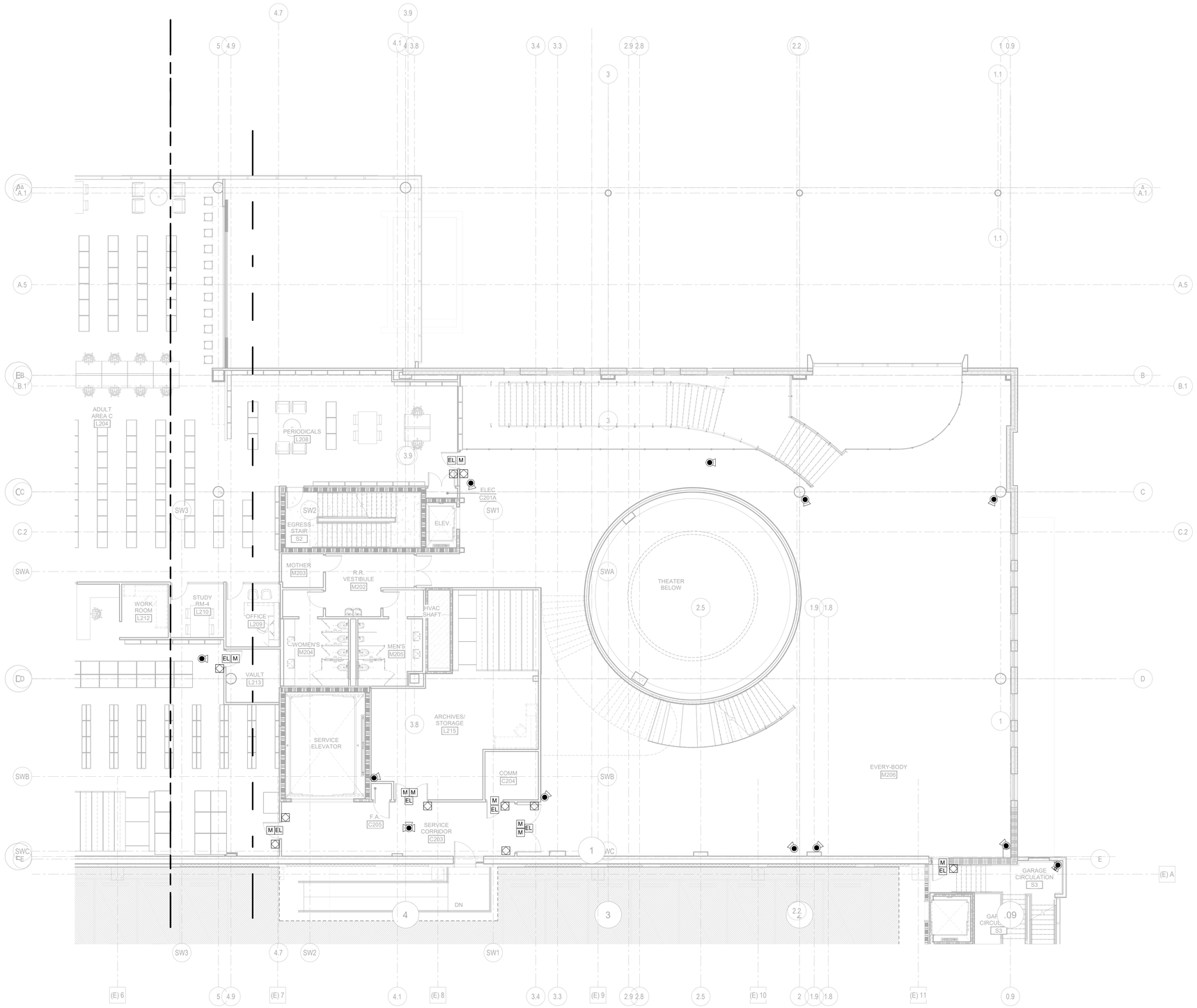
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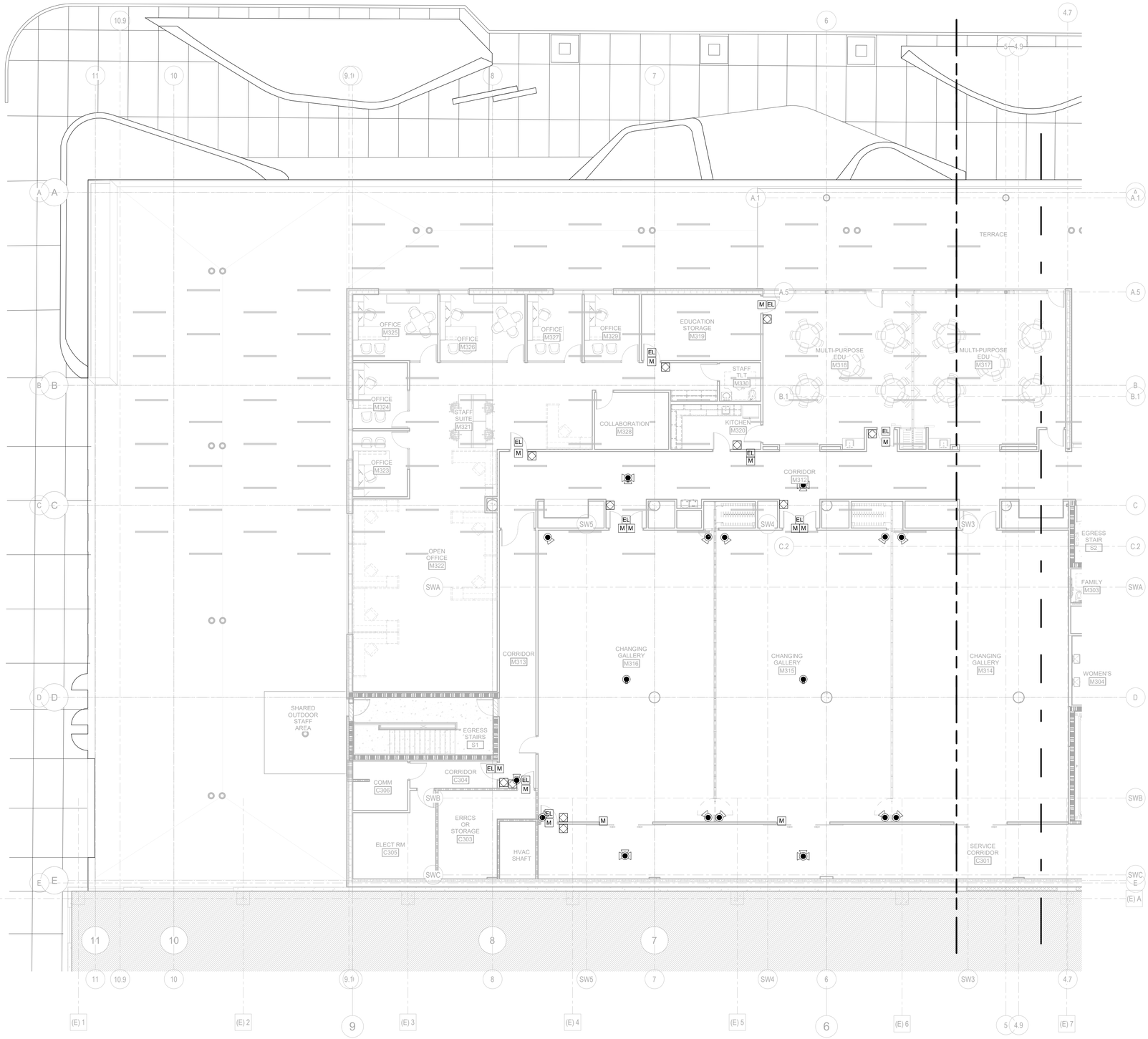
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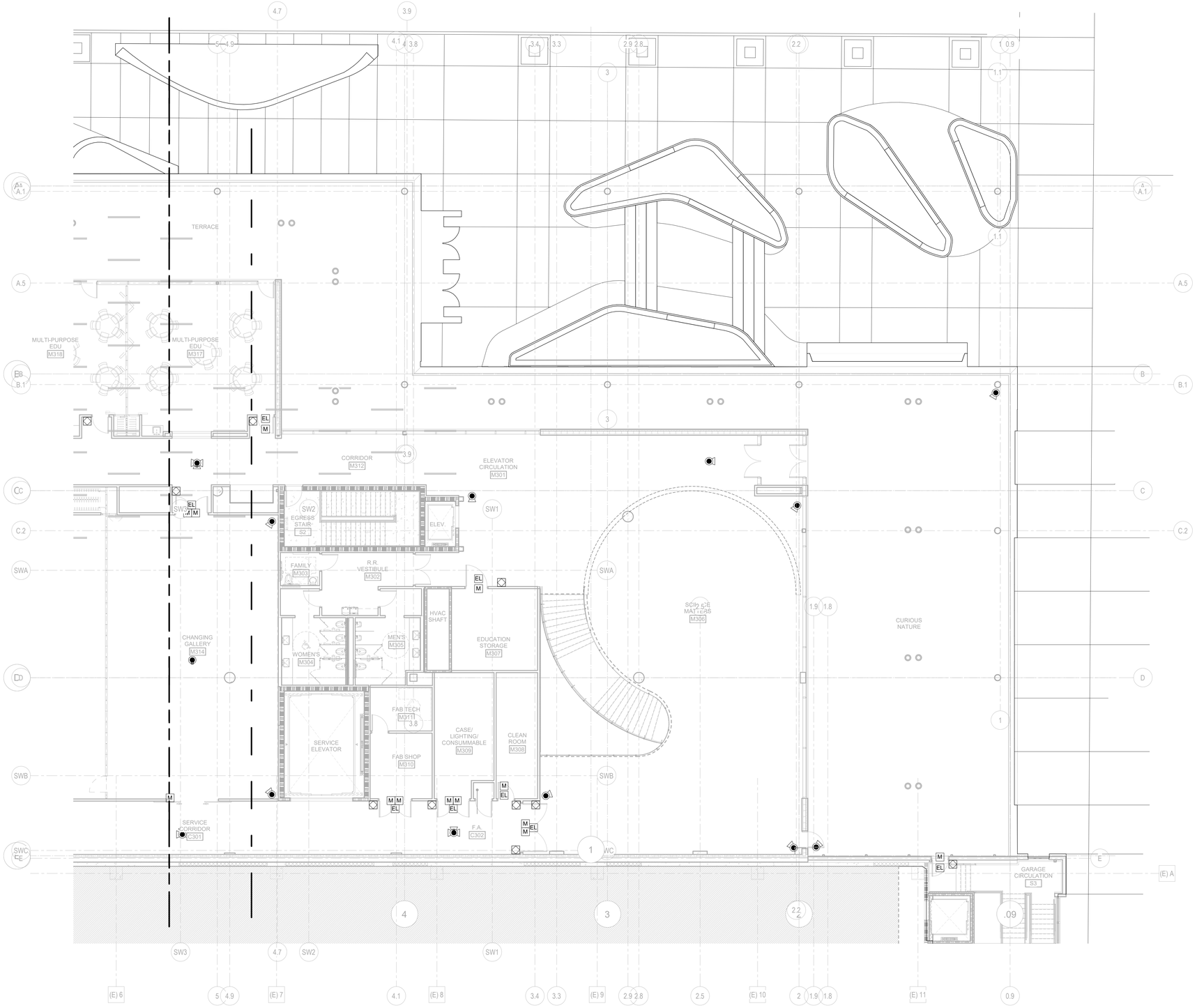
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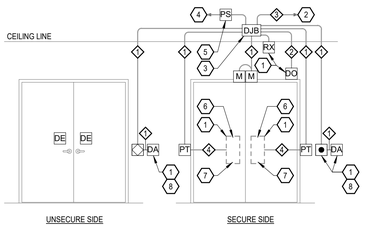
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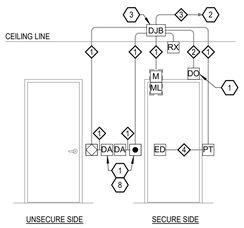
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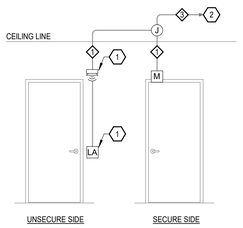
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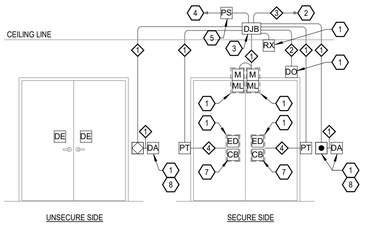
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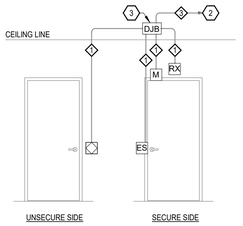
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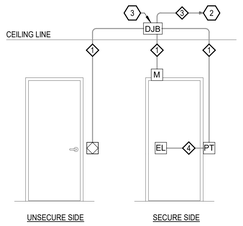
1 DOOR TYPE S1
NTS



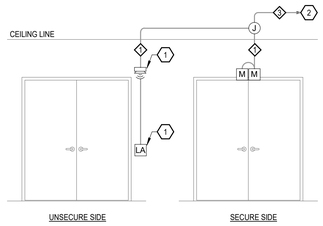
12 DOOR TYPE D5
NTS



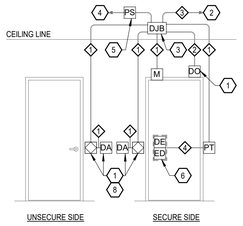
7 DOOR TYPE S8
NTS



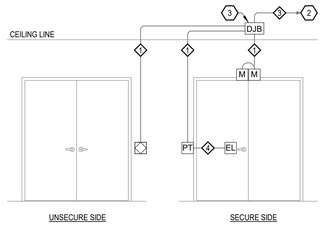
2 DOOR TYPE S2
NTS



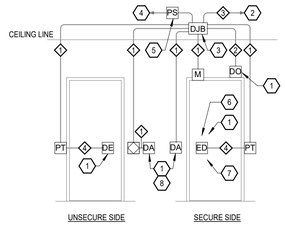
8 DOOR TYPE D1
NTS



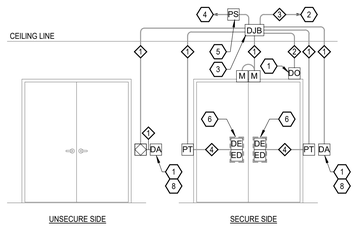
3 DOOR TYPE S3
NTS



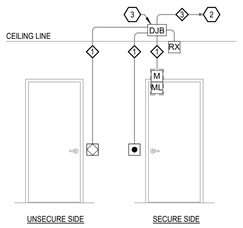
9 DOOR TYPE D2
NTS



4 DOOR TYPE S5
NTS



10 DOOR TYPE D3
NTS



5 DOOR TYPE S6
NTS

GENERAL NOTES (THIS SHEET ONLY):

1. REFERENCE FLOOR PLANS FOR SECURITY ENCLOSURE DESIGNATION FOR EACH DOOR.
2. COORDINATE DOOR ROUGH-IN AND WIRING REQUIREMENTS WITH THE FINAL DOOR SCHEDULE AND DOOR HARDWARE SPECIFICATIONS.
3. UNLESS OTHERWISE NOTED, DOOR LOCKS SHALL BE POWERED BY THE LOCKING HARDWARE POWER SUPPLIES LOCATED WITH THE SECURITY ENCLOSURES. EACH DOOR LOCK SHALL BE CONNECTED TO AN INDIVIDUALLY FUSED CLASS 2 RATED POWER CONNECTION AT THE SOURCE. DO NOT DOUBLE LUG.
4. SIZE POWER CONDUCTORS BETWEEN THE DOOR LOCKING HARDWARE POWER SUPPLIES AND THE LOCK SUCH THAT THE VOLTAGE LOSS DOES NOT EXCEED 10%.
5. CONFIGURE LOCK POWER SUPPLIES TO RELEASE DOORS THAT ARE LOCKED IN THE DIRECTION OF EGRESS UPON FIRE ALARM OR POWER FAILURE. COORDINATE WITH FIRE ALARM DRAWINGS.

CONDUIT TAG LEGEND (THIS SHEET ONLY):

1. 0.5" 0.75" CONDUIT
2. 0.75" CONDUIT
3. 1" CONDUIT
4. WIRING THROUGH DOOR

KEY NOTES (THIS SHEET ONLY):

1. PROVIDE ONLY AT LOCATIONS WHERE INDICATED ON FLOOR PLANS. COORDINATE WITH FINAL DOOR HARDWARE SCHEDULE AND HARDWARE CONTRACTOR.
2. SEE SECURITY GENERAL NOTES FOR CONDUIT AND CABLING REQUIREMENTS. ROUTE CABLES TO DESIGNATED SECURITY ENCLOSURES.
3. 8"X8"X4" DOOR JUNCTION BOX. MOUNT ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR. FOR DOORS WITH FINISHED CEILINGS ON SECURE SIDE MOUNT IN NEAREST ACCESSIBLE CEILING SPACE.
4. 120VAC BY ELECTRICAL CONTRACTOR. REFERENCE ELECTRICAL DRAWINGS.
5. EXIT DEVICE POWER SUPPLY PROVIDED UNDER DIVISION 8 SPECIFICATIONS. COORDINATE WITH THE FINAL DOOR HARDWARE SCHEDULE FOR LOCATIONS WHERE REQUIRED.
6. COORDINATE EXIT DEVICE TYPE WITH FINAL DOOR HARDWARE SCHEDULE AND DOOR HARDWARE CONTRACTOR. DOORS EQUIPPED WITH ELECTRIC LATCH RETRACTION TYPE LOCKING HARDWARE SHALL BE POWERED BY STANDALONE POWER SUPPLIES LOCATED AT EACH DOOR PROVIDED UNDER DIVISION 8 SPECIFICATIONS. ELECTRIC LATCH RETRACTION TYPE EXIT DEVICES WITH LOW CURRENT DRAW OR ELECTRIC TRIM SHALL BE POWERED FROM THE DOOR LOCKING HARDWARE POWER SUPPLY AT THE SECURITY ENCLOSURES.
7. MECHANICAL EXIT DEVICE WITH RTE SWITCH. CONFIGURE ACCESS CONTROL SYSTEM TO BYPASS DELAYED EGRESS SYSTEM ON VALID CARD READ AND ALLOW ACCESS BY RELEASING EXIT DEVICE.
8. CONFIGURE DOOR EXTERIOR ADA DOOR ACTUATORS TO BE ACTIVE WHEN THE DOOR IS UNLOCKED BY THE ACCESS CONTROL SYSTEM. CONNECT INTERIOR DOOR ACTUATOR IN ADDITION TO DOOR OPERATOR TO THE ACCESS CONTROL SYSTEM REQUEST TO EXIT INPUT TO BYPASS DOOR ALARM ON OPERATOR ASSISTED EXIT.

   WIRELESS LOCK - DOOR SHALL BE PREPPED BY DOOR MANUFACTURER.
9. SEE SECURITY GENERAL NOTES FOR CONDUIT AND CABLING REQUIREMENTS.
10. ROUTE CABLES TO DESIGNATED S-LAN SWITCH.

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N&B PROJECT: 21N185
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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
SECURITY DOOR DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
SC-501

OWNERS REVIEW SET

5/20/2022 11:58:13 AM

E D C B A

1 2 3 4 5 6

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS ORIGINAL PAGE SIZE

CAMERA TYPE SCHEDULE										
CAMERA TYPE	HOUSING STYLE	FIXED / PTZ / PANORAMIC	ENCLOSURE RATING	SENSOR TYPE	RESOLUTION PIXELS (MP)	HORIZONTAL FIELD OF VIEW	POWER TYPE		POWER CONSUMPTION (W)	
							W/O IR	W IR	W/O IR	W IR
1A	MINI-DOME	FIXED	INDOOR	SINGLE	1.0	30° - 90°	POE	POE	11	12.95
1B	MINI-DOME	FIXED	OUTDOOR	SINGLE	1.0	--	POE	POE	11	12.95
2A	MINI-DOME	FIXED	INDOOR	SINGLE	2.0	--	POE	POE	11	12.95
2B	MINI-DOME	FIXED	OUTDOOR	SINGLE	2.0	--	POE	POE	11	12.95
3A	MINI-DOME	FIXED	INDOOR	SINGLE	3.0	--	POE	POE	11	12.95
3B	MINI-DOME	FIXED	OUTDOOR	SINGLE	3.0	--	POE	POE	11	12.95
4A	MINI-DOME	FIXED	INDOOR	SINGLE	4.0	--	POE	POE	11	12.95
4B	MINI-DOME	FIXED	OUTDOOR	SINGLE	4.0	--	POE	POE	11	12.95
5A	MINI-DOME	FIXED	INDOOR	SINGLE	5.0	--	POE	POE	11	12.95
5B	MINI-DOME	FIXED	OUTDOOR	SINGLE	5.0	--	POE	POE	11	12.95
6A	MINI-DOME	PANORAMIC	INDOOR	SINGLE	6.0	360°	POE	--	12.95	--
6B	MINI-DOME	PANORAMIC	OUTDOOR	SINGLE	6.0	360°	POE	--	12.95	--
8A	DOME	FIXED	INDOOR	SINGLE	8.0	--	POE	POE	11	12.95
8B	DOME	FIXED	OUTDOOR	SINGLE	8.0	--	POE	POE	11	12.95
9A	DOME	FIXED	INDOOR	MULTI-SENSOR	3 X 3.0	180°	POE+	POE++	25.5	51
9B	DOME	FIXED	OUTDOOR	MULTI-SENSOR	3 X 3.0	180°	POE+	POE++	25.5	51
9C	DOME	FIXED	INDOOR	MULTI-SENSOR	3 X 3.0	270°	POE+	POE++	25.5	51
9D	DOME	FIXED	OUTDOOR	MULTI-SENSOR	3 X 3.0	270°	POE+	POE++	25.5	51
12A	DOME	FIXED	INDOOR	MULTI-SENSOR	4 X 3.0	360°	POE+	POE++	25.5	51
12B	DOME	FIXED	OUTDOOR	MULTI-SENSOR	4 X 3.0	360°	POE+	POE++	25.5	51
12C	DOME	PANORAMIC	INDOOR	SINGLE	12	360°	POE	--	12.95	--
12D	DOME	PANORAMIC	OUTDOOR	SINGLE	12	360°	POE	--	12.95	--
15A	DOME	FIXED	INDOOR	MULTI-SENSOR	3 X 5.0	180°	POE+	POE++	25.5	51
15B	DOME	FIXED	OUTDOOR	MULTI-SENSOR	3 X 5.0	180°	POE+	POE++	25.5	51
15C	DOME	FIXED	INDOOR	MULTI-SENSOR	3 X 5.0	270°	POE+	POE++	25.5	51
15D	DOME	FIXED	OUTDOOR	MULTI-SENSOR	3 X 5.0	270°	POE+	POE++	25.5	51
PA	DOME	PTZ	INDOOR	SINGLE	2.0	--	POE+	POE++	25.5	51
PB	DOME	PTZ	OUTDOOR	SINGLE	2.0	--	POE+	POE++	25.5	51

GENERAL NOTES (THIS DETAIL ONLY):

1. NOT ALL CAMERA TYPES ARE USED. REFERENCE CAMERA IDENTIFICATION TAGS ON THE FLOOR PLANS FOR REQUIREMENTS FOR EACH CAMERA.
2. CAMERA TYPE INCLUDES CAMERA TYPE SPECIFIED AS THE NUMERICAL PART OF THE TWO LETTER CODE, AND THE ENCLOSURE RATING TYPE SPECIFIED AS THE ALPHABETICAL PART OF THE TWO LETTER CODE. "A" REPRESENTS INDOOR TYPE CAMERA, "B" REPRESENTS OUTDOOR TYPE CAMERA. REFERENCE SPECIFICATIONS FOR REQUIREMENTS.

CAMERA RECORDING TYPE SCHEDULE							
RECORDING PROFILE	FPS	QUALITY	COMPRESSION	RETENTION (DAYS)	HOURS	MOTION OR CONTINUOUS	MOTION %
1	15	HIGH	H.264	30	24	MOTION	10
2	15	HIGH	H.264	30	24	MOTION	20
3	15	HIGH	H.264	30	24	MOTION	30
4	15	HIGH	H.264	30	24	MOTION	40
5	15	HIGH	H.264	30	24	MOTION	50

GENERAL NOTES (THIS DETAIL ONLY):

1. NOT ALL RECORDING TYPES ARE USED. COORDINATE FINAL PROGRAMMING REQUIREMENTS WITH OWNER.

GENERAL NOTES (THIS DETAIL ONLY):

1. THE VIDEO ARCHIVAL SYSTEM SHALL INCLUDE SUFFICIENT NETWORK VIDEO RECORDERS (NVRS) OR SERVERS AND VIDEO STORAGE MEDIA TO RECORD OR ARCHIVE VIDEO FROM EACH CAMERA UNDER THE FOLLOWING PARAMETERS:

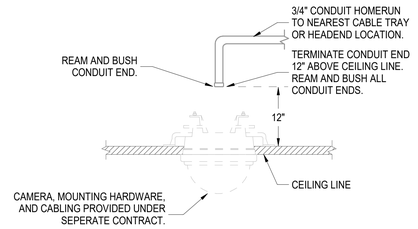
A. HIGHEST SUPPORTED CAMERA RESOLUTION.
B. HIGHEST QUALITY LEVEL.
C. FOR [30] [60] [90] <INSERT NUMBER> DAYS [, WITH NO VIDEO AGING EMPLOYED].
D. [ON MOTION] [ON A CONTINUOUS BASIS] [AS INDICATED ON THE DRAWINGS].
E. PROVIDE [5%] [10%] [25%] SPARE CAPACITY.

2. SERVERS SHALL BE CONFIGURED FOR NO MORE THAN 75% UTILIZATION OF TOTAL RECORDING AND PLAYBACK BANDWIDTH OR PROCESSING CAPACITY SUPPORTED

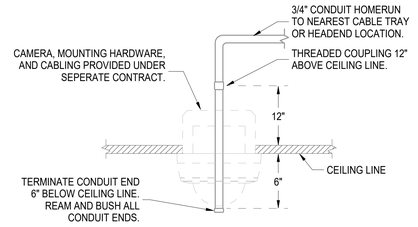
CAMERA MOUNTING TYPE SCHEDULE				
MOUNT TYPE	DETAIL	SHEET	MOUNTING HEIGHT	NOTES
CF	CF	SC###	CEILING	UNLESS OTHERWISE NOTED ON FLOOR PLANS OR CAMERA TAG
CS	CS	SC###	CEILING	--
CP	CP	SC###	SEE NOTE	MOUNT THE SAME HEIGHT AFF AS OTHER CEILING MOUNTED DEVICES
CT	CT	SC###	SEE NOTE	MOUNT THE SAME HEIGHT AFF AS OTHER CEILING MOUNTED DEVICES
CB	CB	SC###	CEILING	--
CC	CC	SC###	SEE NOTE	MOUNT IN CORNER OF CEILING AND WALL
WS	WS	SC###	9'-0" AFF	UNLESS OTHERWISE NOTED ON FLOOR PLANS OR CAMERA TAG
WP	WP	SC###	9'-0" AFF	UNLESS OTHERWISE NOTED ON FLOOR PLANS OR CAMERA TAG
WB	WB	SC###	9'-0" AFF	UNLESS OTHERWISE NOTED ON FLOOR PLANS OR CAMERA TAG
WC	WC	SC###	CORNER	UNLESS OTHERWISE NOTED ON FLOOR PLANS
RP	RP	SC###	PARAPET	EXTEND CAMERA OVER THE SIDE OF THE BUILDING
EL	EL	SC###	ELEVATOR	UNLESS OTHERWISE NOTED ON FLOOR PLANS
P	P	SC###	SEE PLANS	UNLESS OTHERWISE NOTED ON FLOOR PLANS
P	P	SC###	SEE PLANS	UNLESS OTHERWISE NOTED ON FLOOR PLANS
P	P	SC###	SEE PLANS	UNLESS OTHERWISE NOTED ON FLOOR PLANS
BP	BP	SC###	CEILING	MOUNT BELOW BEAM TO PROVIDE UNOBSTRUCTED TARGET AREA

GENERAL NOTES (THIS DETAIL ONLY):

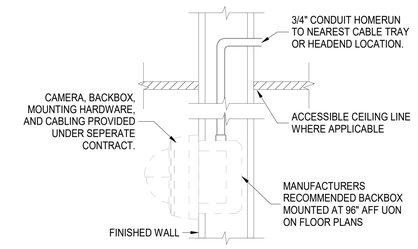
1. NOT ALL MOUNT TYPES ARE USED. REFERENCE CAMERA IDENTIFICATION TAGS ON THE FLOOR PLANS FOR REQUIREMENTS FOR EACH CAMERA.
2. COORDINATE ALL FINAL CAMERA LOCATIONS, VIEWS AND FINAL PROGRAMMING REQUIREMENTS WITH OWNER.



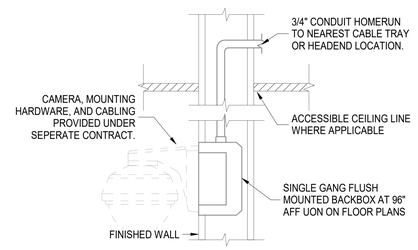
1 CAMERA INFRASTRUCTURE MOUNT TYPE 1
NTS



2 CAMERA INFRASTRUCTURE MOUNT TYPE 2
NTS



3 CAMERA INFRASTRUCTURE MOUNT TYPE 3
NTS



4 CAMERA INFRASTRUCTURE MOUNT TYPE 4
NTS

GENERAL NOTES (THIS SHEET ONLY):

1. REFER TO SECURITY LEGEND, ROUGH-IN, AND CABLING REQUIREMENTS MATRIX ON THE SECURITY LEGEND SHEET FOR ADDITIONAL INFORMATION THAT MAY NOT BE LISTED ON THE DETAILS.

CONDUIT TAG LEGEND (THIS SHEET ONLY):

◇1 0.5" CONDUIT
◇2 0.75" CONDUIT
◇3 1" CONDUIT
◇4 0.75" FLEX CONDUIT

KEYED NOTES (THIS SHEET ONLY):

1. REFER TO CABLING TYPE REQUIREMENTS PER THE LEGEND, ROUGH-IN, AND CABLING REQUIREMENTS MATRIX ON THE SECURITY LEGEND SHEET. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION REGARDING CABLE ROUTING.
2. PROVIDE CONNECTOR WITH BUSHING.
3. ACCESSIBLE CEILING LINE, STRUCTURE, OR FINISHED WALL WHERE APPLICABLE.
4. DOME CAMERA AND HOUSING.
5. BULLET CAMERA AND HOUSING.
6. IDC - TYPE FIELD TERMINATED RJ-45 MALE PLUG.
7. PROVIDE BACKBOX, CAMERA MOUNT, AND TRIM RING ACCESSORIES PER MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE OCTAGONAL BACKBOX AND CAMERA MOUNT ACCESSORIES PER MANUFACTURER'S RECOMMENDATIONS.
9. PIPE, POLE, OR THREADED ROD CUT TO LENGTH AS REQUIRED TO MOUNT CAMERA AT HEIGHT REQUIRED TO PROVIDE CLEAR VIEW AREA INDICATED ON THE DRAWINGS. CAMERAS SHALL BE MOUNTED THE SAME HEIGHT AFF AS OTHER CEILING MOUNTED ELEMENTS.
10. PROVIDE WEATHER/SUN SHIELD AT OUTDOOR LOCATIONS.
11. SHORT WALL MOUNT ACCESSORY.

E1. NETWORK DATA PATCH CABLE BETWEEN CAMERA IDC FIELD TERMINATED PLUG AND POE ETHERNET EXTENDER.
E2. CAMERA SIGNAL TRANSMITTED OVER TWISTED PAIR CABLE IN ELEVATOR TRAVEL CABLE BUNDLE.
E3. PoE ETHERNET EXTENDER. LOCATE ON TOP OF ELEVATOR CAB OR IN ACCESSIBLE CEILING OF CAB. COORDINATE WITH ELEVATOR CONTRACTOR.
E4. CORNER MOUNT CAMERA AND HOUSING IN ELEVATOR CAB.

R1. PARAPET MOUNT ARM. PROVIDE SIZE AND MOUNT SUCH TO ALLOW CLEAR VIEW FROM CAMERA OVER PARAPET AND ALLOW CAMERA TO SWING BACK OVER ROOF FOR SERVICE.
R2. PROVIDE 12"X12"X4" NEMA 4 RATED JUNCTION BOX FOR FIBER OPTIC TRANSMISSION EQUIPMENT AND POWER SUPPLIES.
R3. 120V AC (PROVIDED UNDER DIVISION 26).
R4. SEAL PENETRATION PERMANENTLY WATERTIGHT WITH COMPATIBLE ROOFING COMPOUND. PROVIDE ROOF CONDUIT PENETRATION FLASHING IN ACCORDANCE WITH ROOFING SUPPLIERS RECOMMENDATIONS.

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
SECURITY CAMERA DETAILS

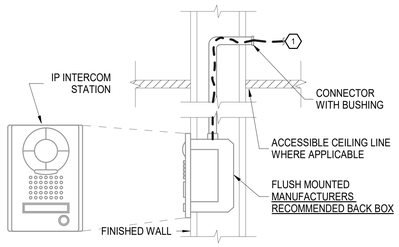
ORIG SUBMISSION: 2022.05.25

SHEET:
SC-502

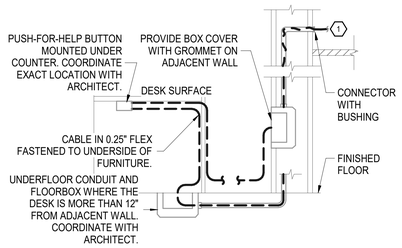
OWNERS REVIEW SET

5/20/2022 11:58:20 AM

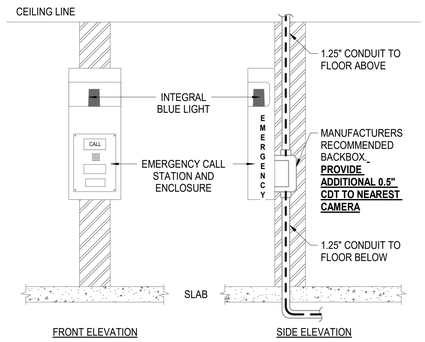
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE



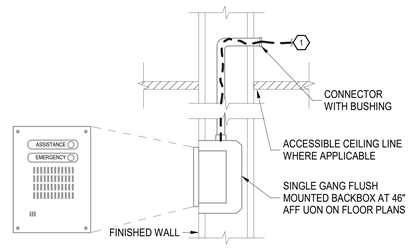
8 WALL MOUNTED INTERCOM
NTS



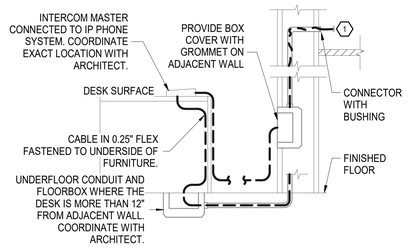
9 DESK MOUNTED DURESS BUTTON
NTS



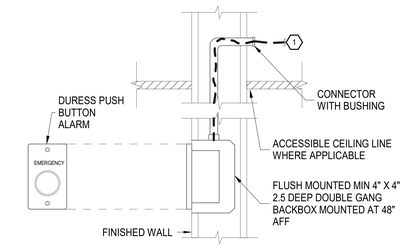
4 WALL MOUNTED EMERGENCY CALL STATION
1/8" = 1'-0"



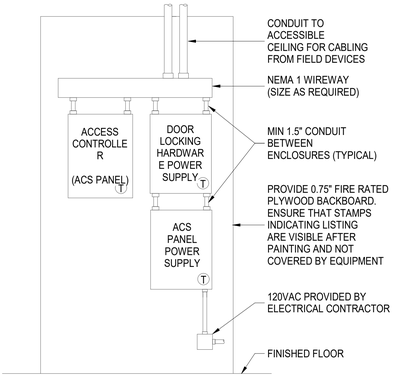
5 WALL MOUNTED CALL STATION
NTS



6 INTERCOM MASTER STATION
NTS



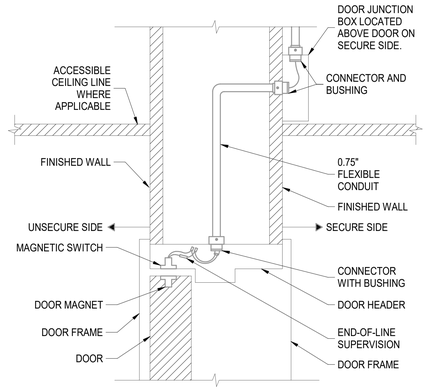
7 WALL MOUNTED DURESS ALARM
NTS



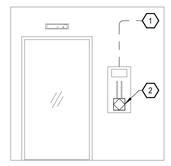
GENERAL NOTES (THIS DETAIL ONLY):

1. DETAIL INDICATES GENERIC LAYOUT AND EQUIPMENT QUANTITIES. COORDINATE WITH ACTUAL TYPE OF EQUIPMENT PROVIDED AND FIELD CONDITIONS.
2. CONFIGURE ACS PANEL TO MONITOR AC POWER FAILURE AND LOW BATTERY CONDITION OF EACH POWER SUPPLY.

1 TYPICAL SECURITY ENCLOSURES ELEVATION
NTS



2 TYPICAL RECESSED MAGNETIC SWITCH
NTS



GENERAL NOTES (THIS DETAIL ONLY):

1. CONNECT AND PROGRAM ACAMS TO ELEVATOR CONTROL INTERFACE ALLOW ACCESS TO CALL BUTTONS TO FLOORS THE CARD HOLDER HAS ACCESS TO ONLY. COORDINATE WITH ELEVATOR CONTROLS CONTRACTOR.

KEY NOTES (THIS DETAIL ONLY):

1 ROUTE CABLING TO MACHINE ROOM ACU VIA ELEVATOR TRAVEL CABLES. COORDINATE REQUIREMENTS WITH ELEVATOR CONTRACTOR.

2 PROVIDE CARD READER INSIDE ELEVATOR.

3 TYPICAL ACCESS CONTROLLED ELEVATOR
NTS

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
SECURITY DEVICE DETAILS

ORIG SUBMISSION: 2022.05.25

SHEET:
SC-503

OWNERS REVIEW SET

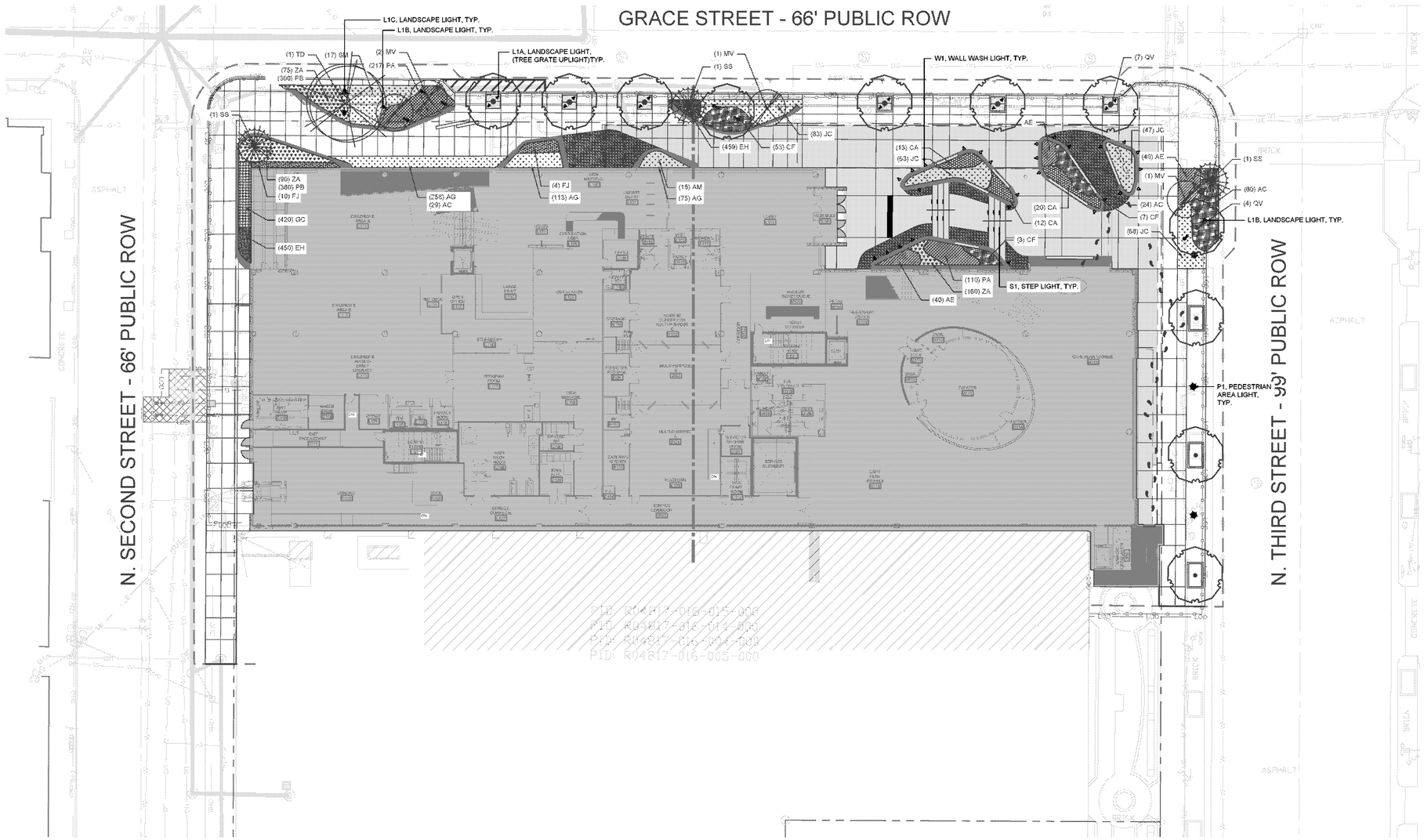
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LEGEND

- L1A - LANDSCAPE LIGHT -NARROW BEAM
- L1B - LANDSCAPE LIGHT -MED. BEAM
- L1C - LANDSCAPE LIGHT -WIDE BEAM
- L1TS - LANDSCAPE LIGHT -MED BEAM TREE STRAP
- P1 - PEDESTRIAN AREA STREET LIGHT
- S1 - STEP LIGHT
- T1 - TREE GRATE LIGHT
- W1 - WALL WASH LIGHT
- EXISTING STREET LIGHT
- LIMIT OF DISTURBANCE

LIGHTING SUMMARY CHART

ABBREVIATION	DETAIL	LIGHTING TYPE	DESCRIPTION	QUANTITY
L1 (A, B, C, TS)	5/SL0.01	LANDSCAPE LIGHTING	DELTA STAR, A-NARROW BEAM B-MED.BEAM C-WIDE BEAM, TS-TREE STRAP COLOR: BLACK WRINKLE MANU: B+K LIGHTING	A(8), B(20) C(6), TS(7)
P1	1/SL0.01	PEDESTRIAN AREA STREET LIGHT	CITY STANDARD, DUKE ENERGY, ACORN LED, BLACK FINISH, 12' POLE HEIGHT	3
S1	2/SL0.01	STEP LIGHT	WL-LED100, STEP MOUNTED LIGHT, MANU: WAC LIGHTING	12
T1	4/SL0.01	TREE GRATE LIGHT	MANUFACTURER: IRONSMITH , MODEL: TGL , FINISH: CORTEN STEEL	12
W1	3/SL0.01	WALL WASH LIGHT	MANUFACTURER: B+K LIGHTING , MODEL: MINI DRIVESTAR	27



STEWART
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CHARLOTTE, NC 28202
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www.stewartinc.com
PROJECT #: L21058

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CITY, STATE ZIPCODE
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Vicinity map:
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NORTH

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Scale:
SCALE: AS NOTED

Project:
PROJECT GRACE

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TYPICAL AREA RESERVED FOR SIGNATURE STAMP DEPENDING ON THE JURISDICTION

Title:
LIGHTING PLAN

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --
SL0.00

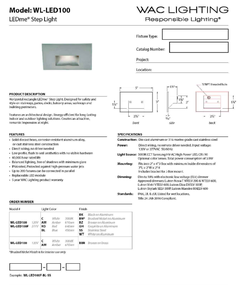
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PEDESTRIAN STREET LIGHT

MODEL:	ACORN LED
STYLE:	POLE 'F'
COLOR:	BLACK
MANUFACTURER:	DUKE ENERGY
CONTACT:	800.653.5307

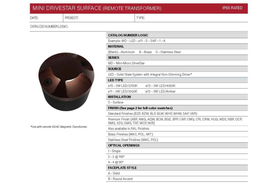
1 PEDESTRIAN STREET LIGHT NTS



STEP LIGHT

MODEL:	WLED 100, STEP MOUNTED LIGHT
SIZE:	3" x 5"
COLOR:	TBD
MANUFACTURER:	WAC LIGHTING
CONTACT:	800.526.2588

2 STEP LIGHT NTS



LED, SURFACE MOUNTED LIGHT

MODEL:	MINI DRIVESTAR
MANUFACTURER:	B+K LIGHTING
CONTACT:	V3 LIGHTING 704.620.4554

3 WALL WASH LIGHT NTS



TREE GRATE LIGHT

MODEL:	TGL
FINISH:	CORTEN STEEL
MANUFACTURER:	IRONSMITH
CONTACT:	800.338.4766

4 TREE GRATE LIGHT NTS



LANDSCAPE LIGHT

MODEL:	DELTA STAR
L1 - A - SPOT LIGHT	
L1 - B - MED. SPOT	
L1 - C - WIDE SPOT	
COLOR:	TBD
MANUFACTURER:	B+K LIGHTING
CONTACT:	V3 LIGHTING 704.620.4554

5 LANDSCAPE LIGHT NTS

6 DETAIL NOT IN USE NTS
SECTION

7 DETAIL NOT IN USE NTS
SECTION

8 DETAIL NOT IN USE NTS
SECTION

TYPICAL AREA RESERVED FOR SIGNATURE STAMP DEPENDING ON THE JURISDICTION

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No.	Date	Description
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Title:
LIGHTING CUT SHEETS

Project number: L21058 Sheet #:
Issued Date: 04.08.2022
Drawn by: --
Approved by: --
SL0.01

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OUTLET ROUGH-IN AND CABLING REQUIREMENT MATRIX

DRAWING SYMBOL	NAME	BACKBOX SIZE	MOUNTING HEIGHT AFF	CONDUIT SIZE	FACEPLATE TYPE	TERMINATION	PORT TYPE QUANTITIES			CABLING TYPE	CABLING COLOR	JACK COLOR	NOTES
							VOICE	DATA	COAX				
#D	UNIVERSAL DATA OUTLET	2G	18"	1"	SINGLE GANG 4-PORT	RJ-45		#		CAT 6	BLUE	BLUE	# INDICATED ON FLOOR PLANS REPRESENTS QUANTITY OF DATA CABLE DROPS REQUIRED
#D	UNIVERSAL DATA OUTLET - ABOVE COUNTER	2G	SEE NOTE	1"	SINGLE GANG 4-PORT	RJ-45		#		CAT 6	BLUE	BLUE	MOUNT AT 8"-12" ABOVE COUNTER TOP. COORDINATE WITH ELECTRICAL. # INDICATED ON FLOOR PLANS REPRESENTS QUANTITY OF DATA CABLE DROPS REQUIRED.
W	STANDARD WALL PHONE OUTLET	1G	48"	1"	SINGLE GANG 1-PORT	RJ-45	1			CAT 6	BLUE	BLUE	
TV	TV OUTLET	NA	RAE	1"	SINGLE GANG 6-PORT	RJ-45/F-TYPE		1	1	CAT 6	BLUE	BLUE	
BAS	BUILDING AUTOMATION DATA OUTLET	2G	18"	1"	SINGLE GANG 4-PORT	RJ-45		2		CAT 6	BLUE	BLUE	
FA	FIRE ALARM DATA OUTLET	2G	NA	1"	NA	RJ-45	2			CAT 6	BLUE	BLUE	(1) DUPLEX SURFACE MOUNT BOX IN THE FIRE ALARM PANEL. COORDINATE MOUNTING HEIGHT WITH FIRE ALRM PANEL HEIGHT.
EC	ELEVATOR CONTROLS OUTLET	2G	NA	1"	SINGLE GANG 4-PORT	RJ-45		2		CAT 6	BLUE	BLUE	DATA FOR ELEVATOR CONTROL PANEL. COORDINATE FINAL LOCATION WITH ELEVATOR CONTROL PANEL.
AP	UNIVERSAL DATA OUTLET FOR WIRELESS ACCESS POINT	NA	NA	1"	2-PORT BISCUIT BOX	RJ-45		2		CAT 6A	BLUE	BLUE	SEE DETAIL ___ FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH VENDOR/OWNER PRIOR TO INSTALLATION.
DS	DIGITAL SIGNAGE OUTLET	1G	60"	1"	SINGLE GANG 4-PORT	RJ-45		1		CAT 6	BLUE	BLUE	
DP	AV DISPLAY OUTLET	1G	60"	1"	SINGLE GANG 4-PORT	RJ-45		1		CAT 6	BLUE	BLUE	
PT	POKE THRU	NA	FLOOR	1.25"	8-PORT ADAPTER	RJ-45				CAT 6	BLUE	BLUE	SEE DETAIL ON SHEET ____ FOR MORE INFORMATION.
FB	FLOOR BOX WITH UNIVERSAL DATA OUTLET	NA	FLOOR	1.25"	4-PORT INSERT	RJ-45				CAT 6	BLUE	BLUE	SEE DETAIL ON SHEET ____ FOR MORE INFORMATION.
#D	UTILITY CEILING PANEL DATA OUTLET	2G	CEILING	1"	SINGLE GANG 4-PORT	RJ-45		#		CAT 6	BLUE	BLUE	RECESS TELECOM OUTLET IN CEILING UTILITY PANEL. # INDICATES QUANTITY OF DATA DROPS.
PRJ	CEILING MOUNTED DATA FOR PROJECTOR	2G	CEILING	1.5"	NA	RJ-45		1		CAT 6	BLUE	BLUE	
AP	UNIVERSAL DATA OUTLET FOR WIRELESS ACCESS POINT	NA	CEILING	1"	2-PORT BISCUIT BOX	RJ-45		2		CAT 6A	BLUE	BLUE	SEE DETAIL ___ FOR MORE INFORMATION. ACCESS POINT TO BE PROVIDED BY OWNER. COORDINATE EXACT LOCATION WITH VENDOR/OWNER PRIOR TO INSTALLATION.
	MODULAR FURNITURE OUTLET(S)	NA	SEE NOTE	NA	2-PORT INSERT	RJ-45		1		CAT 6	BLUE	BLUE	COORDINATE WITH FURNITURE MANUFACTURER PRIOR TO INSTALLATION. PROVIDE A 1.25" FLEX CONDUIT BETWEEN FURNITURE AND WALL.
J	WALL FED MODULAR FURNITURE OUTLET(S)	NA	SEE NOTE	1.25"	2-PORT INSERT	RJ-45		1		CAT 6	BLUE	BLUE	COORDINATE WITH FURNITURE MANUFACTURER PRIOR TO INSTALLATION. PROVIDE A 1.25" FLEX CONDUIT BETWEEN FURNITURE AND WALL.
J	WALL FED CASEWORK FURNITURE OUTLET(S)	NA	SEE NOTE	1.25"	SINGLE GANG 4-PORT	RJ-45		1		CAT 6	BLUE	BLUE	COORDINATE WITH FURNITURE MANUFACTURER PRIOR TO INSTALLATION. STUB UP CONDUIT INTO CASEWORK FURNITURE FOR CABLE ROUTING.
	FLOOR FED MODULAR FURNITURE OUTLET(S)	NA	SEE NOTE	1.25"	2-PORT INSERT	RJ-45		1		CAT 6	BLUE	BLUE	COORDINATE WITH FURNITURE MANUFACTURER PRIOR TO INSTALLATION. PROVIDE A 1.25" FLEX CONDUIT BETWEEN FURNITURE AND FLOOR BOX.
	FLOOR FED CASEWORK FURNITURE OUTLET(S)	NA	SEE NOTE	1.25"	SINGLE GANG 4-PORT	RJ-45		1		CAT 6	BLUE	BLUE	COORDINATE WITH FURNITURE MANUFACTURER PRIOR TO INSTALLATION. STUB UP CONDUIT INTO CASEWORK FURNITURE FOR CABLE ROUTING.
#D	DUAL CHANNEL RACEWAY OUTLET	2G	NA	1.25"	2-PORT INSERT	RJ-45		#D		CAT 6	BLUE	BLUE	COORDINATE WITH FURNITURE MANUFACTURER PRIOR TO INSTALLATION.

GENERAL NOTES

1. ALL INFORMATION IS TYPICAL AS INDICATED IN THIS MATRIX UNLESS OTHERWISE NOTED ELSEWHERE.
2. ALL OUTLETS SHALL BE LOCATED ADJACENT TO POWER RECEPTACLES WHERE APPLICABLE.
3. FINAL HEIGHT AND MOUNTING LOCATIONS SHALL BE COORDINATED WITH THE ARCHITECTURAL ELEVATIONS.
4. ALL OUTLET CONDUITS SHALL BE ROUTED TO THE NEAREST ACCESSIBLE CEILING SPACE IN THE CORRIDOR, UON.
5. PROVIDE BLANK MODULES FOR ALL UNUSED PORTS.
6. REAM AND BUSH ALL CONDUIT ENDS.
7. PROVIDE SINGLE GANG PLASTER RING FOR DOUBLE GANG BOXES WITH SINGLE GANG FACEPLATES.
8. PROVIDE DOUBLE GANG PLASTER RING FOR DOUBLE GANG BOXES WITH DOUBLE GANG FACEPLATES.
9. REFER TO FACEPLATE DETAILS FOR OUTLET PORT CONFIGURATION

LOW VOLTAGE SYMBOLS LEGEND

LADDER TYPE TELECOMMUNICATIONS RUNWAY (SIZE AS NOTED ON ENLARGED PLANS)

BASKET-TYPE CABLE TRAY.

J-HOOK DIAGRAMMATIC CABLING PATHWAY. J-HOOKS SHALL BE INSTALLED EVERY 5FT MINIMUM.

2-POST TELECOMMUNICATIONS RACK WITH REQUIRED CLEARANCES.

4-POST TELECOMMUNICATIONS RACK.

TELECOMMUNICATIONS SERVER RACK.

DOUBLE SIDED VERTICAL CABLE MANAGER. SIZE INDICATED ON FLOOR PLANS.

TELECOMMUNICATIONS GROUND BUS BAR.

FLOOR OUTLET, REFER TO ROUGH IN MATRIX FOR ADDITIONAL INFORMATION.

WALL OUTLET, REFER TO ROUGH IN MATRIX FOR ADDITIONAL INFORMATION.

CEILING OUTLET, REFER TO ROUGH IN MATRIX FOR ADDITIONAL INFORMATION.

STANDARD ABBREVIATIONS

AFC/AFF/AFG/ARF - ABOVE FINISHED CEILING/FLOOR/GRADE/RAISED FLOOR
AP - ACCESS POINT
ARCH - ARCHITECT/ARCHITECTURAL
BCKBD - BACKBOARD
BFC - BELOW FINISHED CEILING
C - CONDUIT
CONN - CONNECTION
CKT - CIRCUIT
CLG - CEILING
EC - ELECTRICAL CONTRACTOR
EMT - ELECTRICAL METALLIC TUBING
EQUIP - EQUIPMENT
EXIST - EXISTING
F - FIBER
FA - FIRE ALARM
FOC - FIBER OPTIC CABLING
G - GROUND
HC - HORIZONTAL CROSS-CONNECT
IDC - INSTALLATION DISPLACEMENT CONNECTOR
IDS - INTRUSION DETECTION SYSTEM
JB - JUNCTION BOX
MM - MULTI-MODE
MTD - MOUNTED
NIC - NOT IN CONTRACT
NTS - NOT TO SCALE
OC - ON CENTER
OFCI - OWNER FURNISHED, CONTRACTOR INSTALLED
OSP - OUTSIDE PLANT
PNL - PANEL
PR - PAIR
SPEC - SPECIFICATION
RR - RISER RATED
SM - SINGLE MODE
ST - STRAND
SW - SWITCH
TGB - TELECOM GROUNDING BUS BAR
TMGB - TELECOM MAIN GROUNDING BUS BAR
WP - WEATHERPROOF
UON - UNLESS OTHERWISE NOTED
XFMR - TRANSFORMER

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SHEET NAME:
TELECOM LEGEND AND NOTES

ORIG SUBMISSION: 2022.05.25

SHEET:
T-001

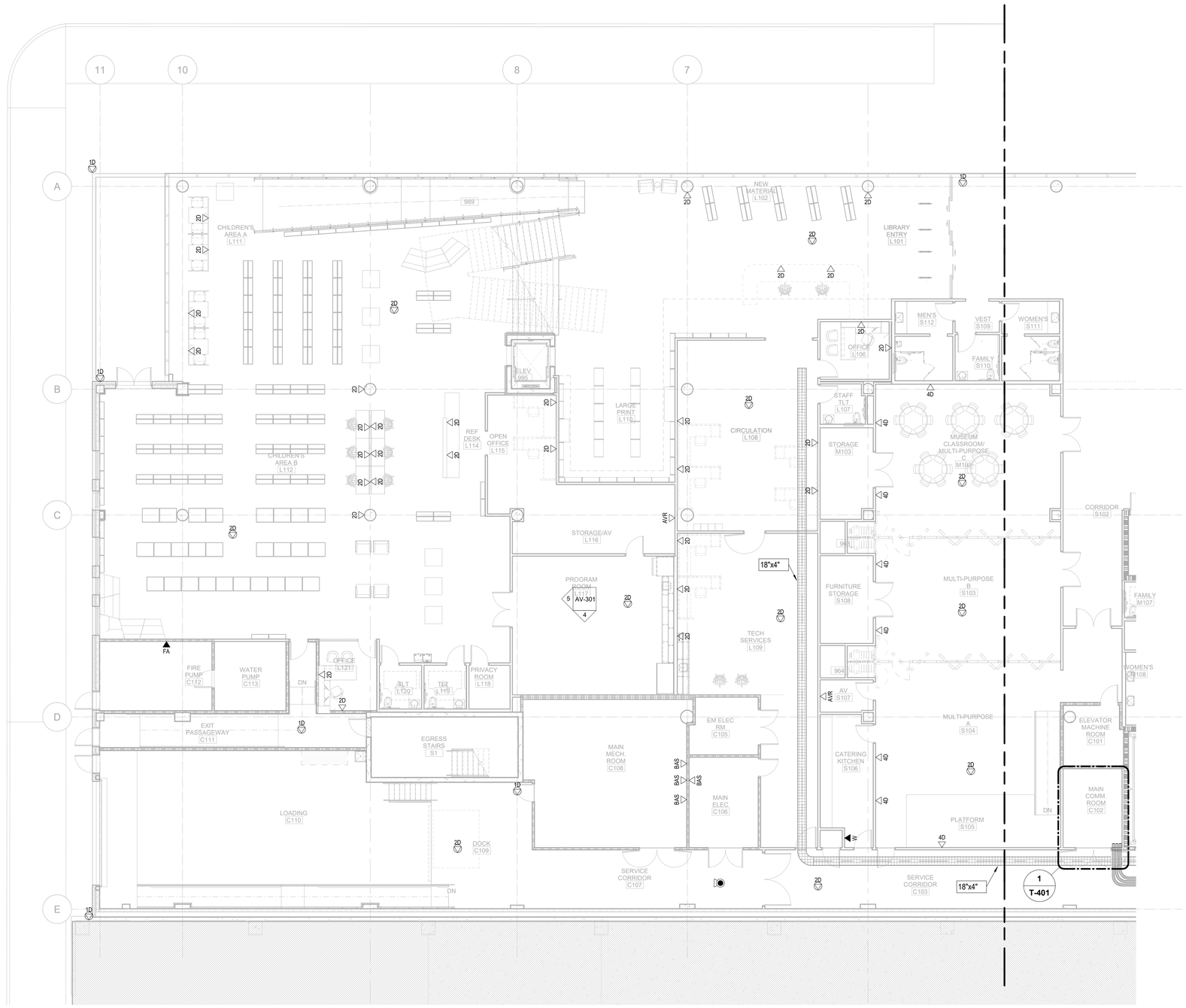
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2. ALL CONDUITS SHALL BE ROUTED TIGHT TO STRUCTURE ABOVE UON ON THE PLANS.
3. PROPERLY SEAL AND FIRESTOP ALL PENETRATIONS. CONTRACTOR SHALL INSTALL THE APPROPRIATE FIRESTOP ASSEMBLY IN ORDER TO MAINTAIN THE FIRE BARRIERS AND WALL RATINGS.

KEYED NOTES (THIS SHEET ONLY): (#)

1. COORDINATE ALL FLOOR BOX LOCATIONS WITH DIVISION 26 LOCATIONS.

1 TELECOM LEVEL 1 - AREA A

1/8" = 1'-0"

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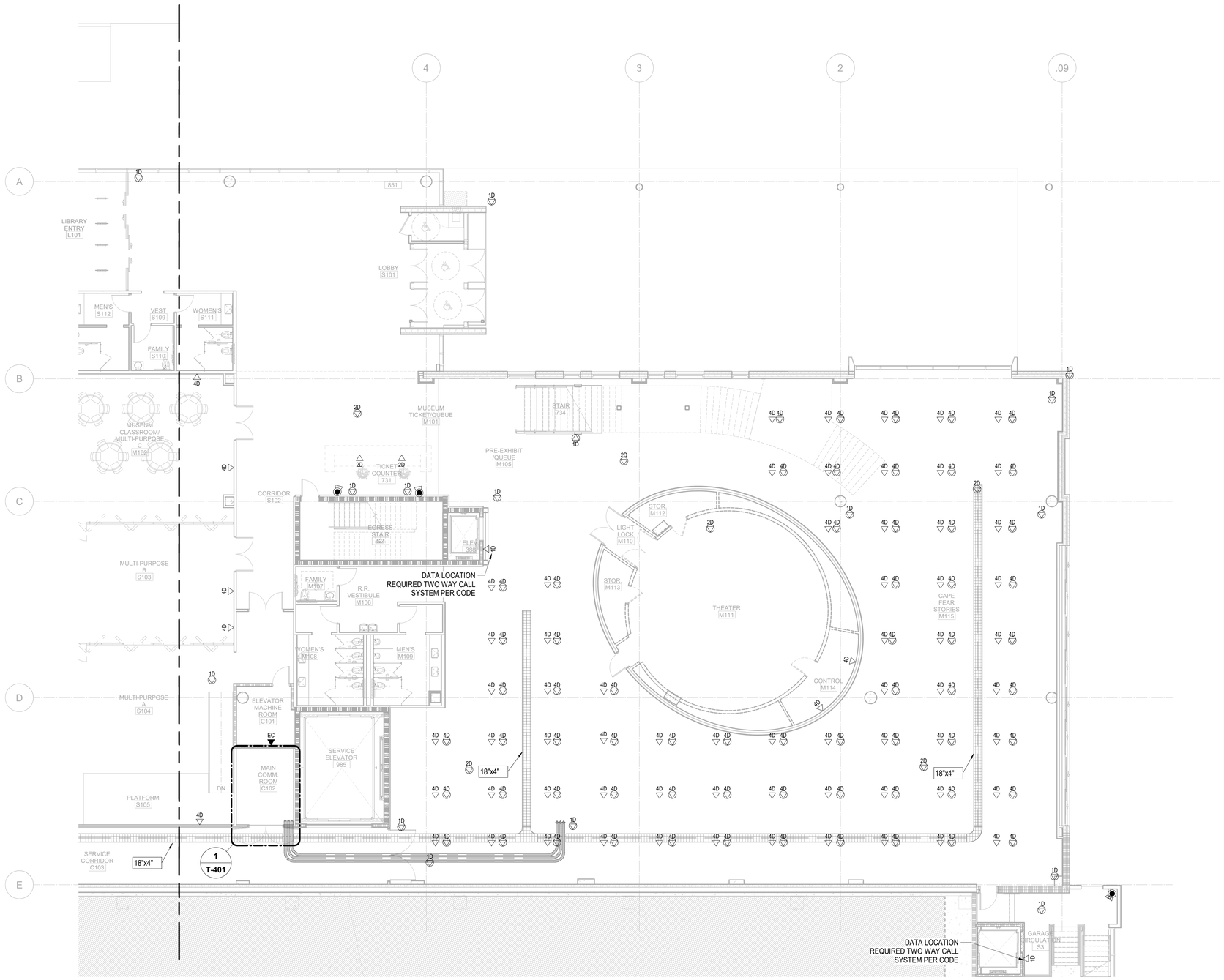
SHEET NAME:
TELECOM LEVEL 1 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET:
T-101A

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1 TELECOM LEVEL 1 - AREA B

1/8" = 1'-0"

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KEYED NOTES (THIS SHEET ONLY): (#)

1. COORDINATE ALL FLOOR BOX LOCATIONS WITH DIVISION 26 LOCATIONS.

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KEYED NOTES (THIS SHEET ONLY): (#)

1. COORDINATE ALL FLOOR BOX LOCATIONS WITH DIVISION 26 LOCATIONS.

1 TELECOM LEVEL 2 - AREA A

1/8" = 1'-0"

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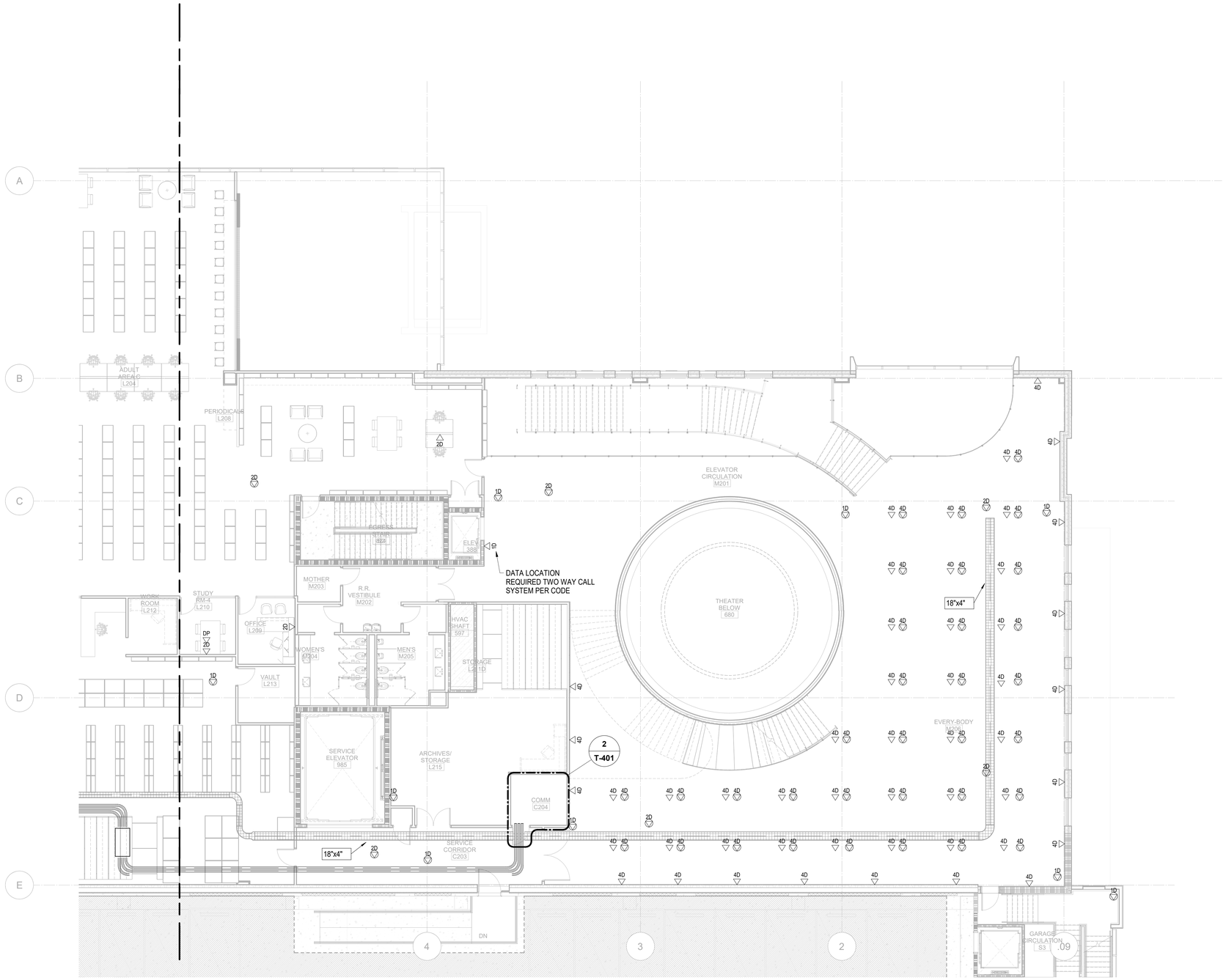
SHEET NAME: TELECOM LEVEL 2 - AREA A

ORIG SUBMISSION: 2022.05.25

SHEET: T-102A

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1 **TELECOM LEVEL 2 - AREA B**
1/8" = 1'-0"

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KEYED NOTES (THIS SHEET ONLY): (#)

1. COORDINATE ALL FLOOR BOX LOCATIONS WITH DIVISION 26 LOCATIONS.

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Project Grace

Grace Street
Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
TELECOM LEVEL 2 - AREA B

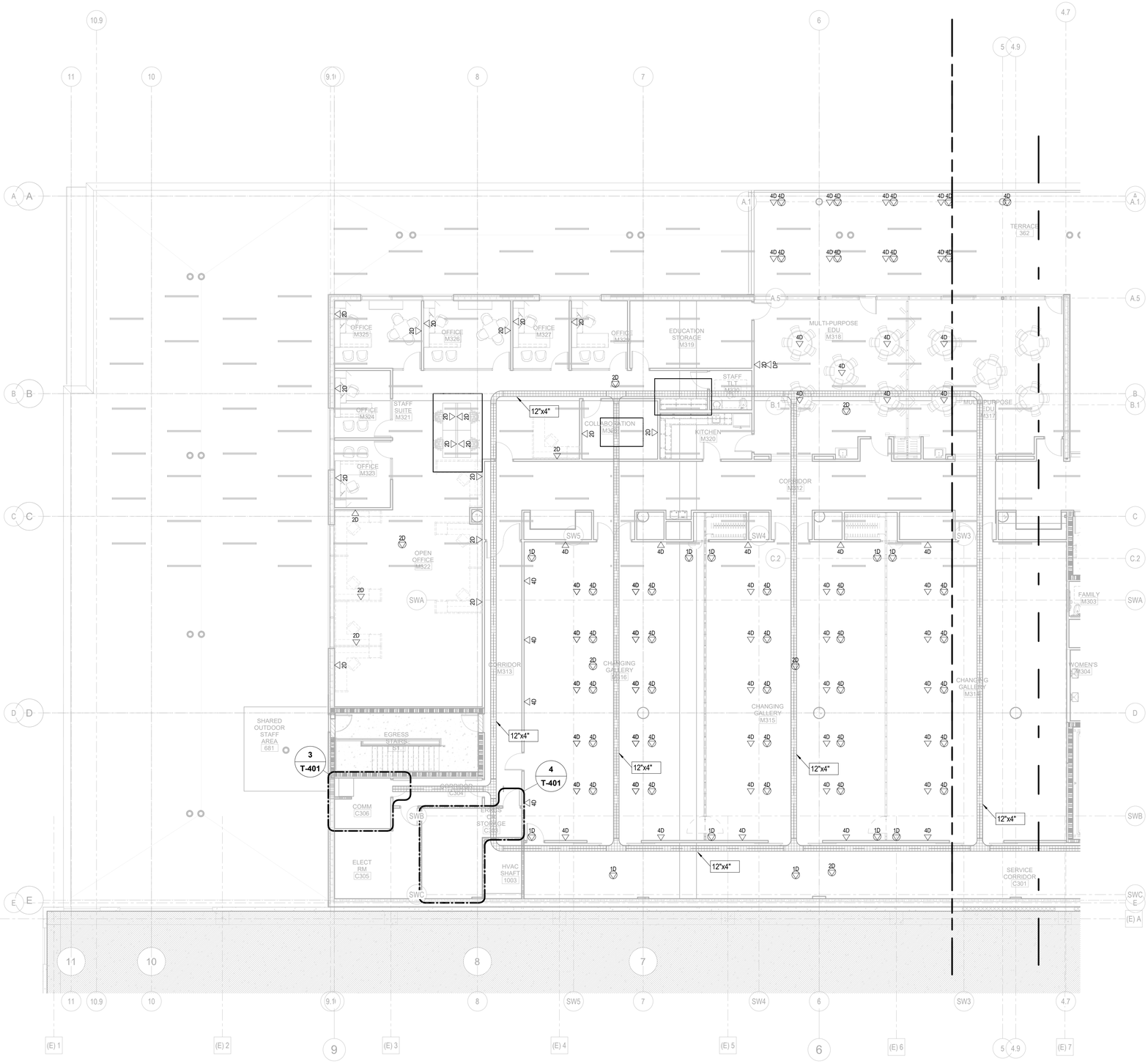
ORIG SUBMISSION: 2022.05.25

SHEET:
T-102B

OWNERS REVIEW SET

5/20/2022 11:57:34 AM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE



1 **TELECOM LEVEL 3 - AREA A**
1/8" = 1'-0"

GENERAL NOTES (THIS SHEET ONLY):

1. DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE AND SHALL BE USED AS SUCH. EXACT LOCATIONS AND CONDITIONS OF TELECOM DEVICES AND ASSOCIATED INFRASTRUCTURE SHALL BE FIELD COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.
2. ALL CONDUITS SHALL BE ROUTED TIGHT TO STRUCTURE ABOVE UON ON THE PLANS.
3. PROPERLY SEAL AND FIRESTOP ALL PENETRATIONS. CONTRACTOR SHALL INSTALL THE APPROPRIATE FIRESTOP ASSEMBLY IN ORDER TO MAINTAIN THE FIRE BARRIERS AND WALL RATINGS.

KEYED NOTES (THIS SHEET ONLY): (#)

1. COORDINATE ALL FLOOR BOX LOCATIONS WITH DIVISION 26 LOCATIONS.

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N&B PROJECT: 21N185
Firm License No. F-0312

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TELECOM LEVEL 3 - AREA A

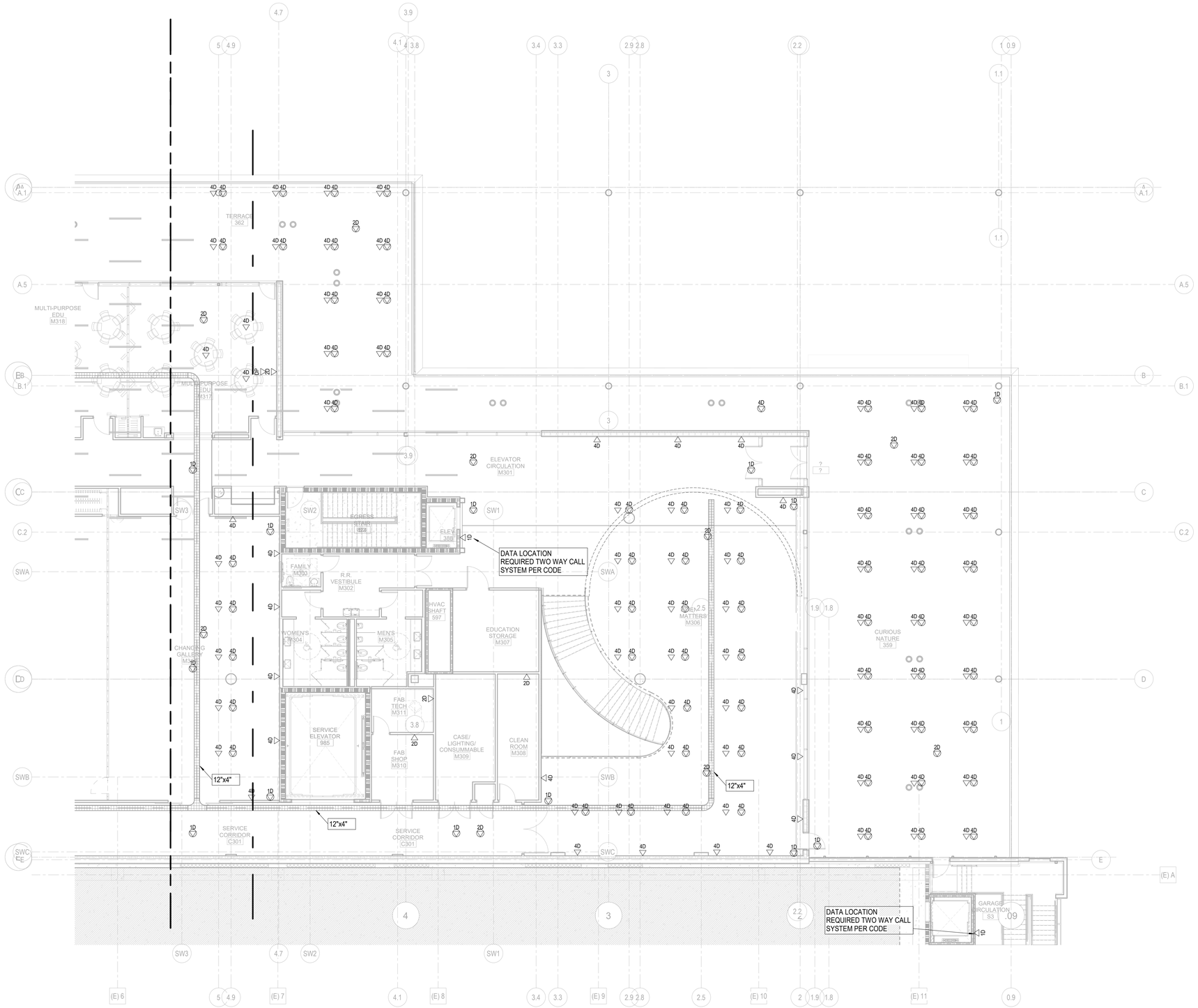
ORIG SUBMISSION: 2022.05.25

SHEET:
T-103A

OWNERS REVIEW SET

5/20/2022 11:57:47 AM

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TELECOM LEVEL 3 - AREA B

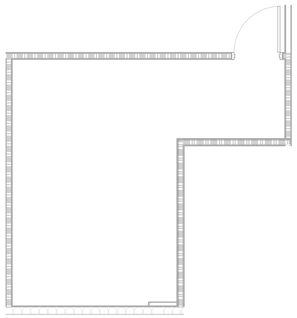
ORIG SUBMISSION: 2022.05.25

SHEET:
T-103B

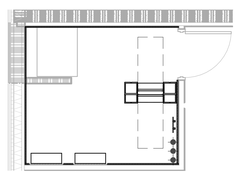
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5/20/2022 11:57:58 AM

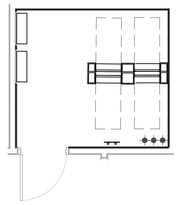
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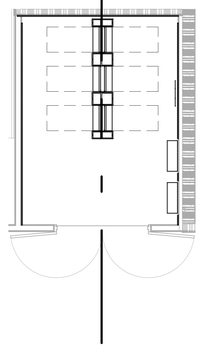
4 ERRCS ROOM C303 - BELOW 7'6"
1/4" = 1'-0"



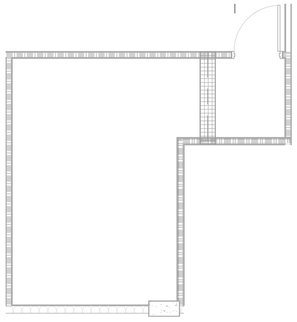
3 TELECOM ROOM C302 - BELOW 7'6"
1/4" = 1'-0"



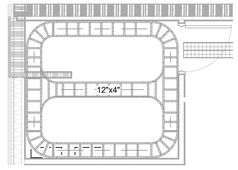
2 TELECOM ROOM C204 - BELOW 7'6"
1/4" = 1'-0"



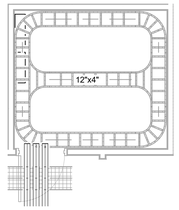
1 TELECOM ROOM C102 - BELOW 7'6"
1/4" = 1'-0"



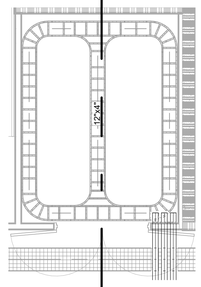
4A ERRCS ROOM C303 - ABOVE 7'6"
1/4" = 1'-0"



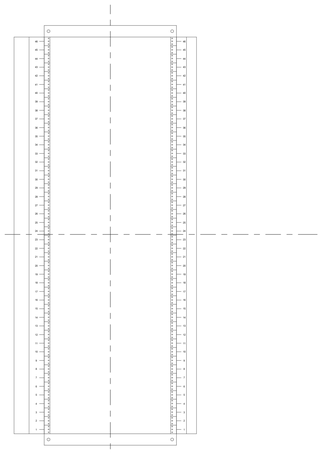
3A TELECOM ROOM C306 - ABOVE 7'6"
1/4" = 1'-0"



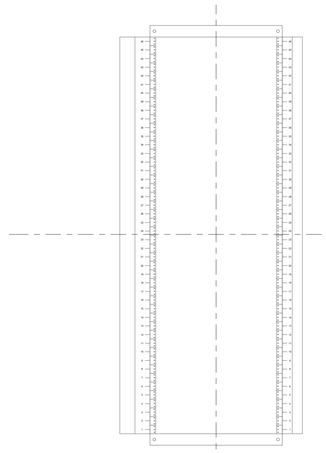
2A TELECOM ROOM C204 - ABOVE 7'6"
1/4" = 1'-0"



1A TELECOM ROOM C102 - ABOVE 7'6"
1/4" = 1'-0"



2B TELECOM ROOM 647 - RACK ELEVATION
NTS



1B TELECOM ROOM 647 - RACK ELEVATION
NTS

GENERAL NOTES (THIS SHEET ONLY):

1. ADHERE TO NEW HANOVER COUNTY NEW BUILDING CONSTRUCTION STANDARDS. DEVIATIONS FROM THE STANDARD SHALL NOT BE PERMITTED WITHOUT APPROVAL FROM THE OWNER.
2. TELECOM ROOM ENLARGED PLANS REPRESENT PROPOSED EQUIPMENT LAYOUT. FINAL LAYOUT TO BE COORDINATED WITH THE OWNERS IT DEPARTMENT PRIOR TO FINAL INSTALLATION.
3. COORDINATE ELECTRICAL RECEPTACLE LOCATIONS WITH FINAL TELECOM EQUIPMENT LOCATIONS.
4. REFER TO CONDUIT RISER DIAGRAM FOR BACKBONE CONDUIT REQUIREMENTS BETWEEN FLOORS AND FOR UTILIZATION OF INDIVIDUAL VERTICAL CONDUITS AND SLEEVES.
5. TELECOM ROOM LAYOUTS ARE SUBJECT TO CHANGE BASED ON FEEDBACK FROM THE OWNERS IT REPRESENTATIVE AND SERVICE PROVIDER. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ANY CHANGES IN THE DESIGN DICTATED BY THE SERVICE PROVIDER AND RESOLVING THE ISSUE WITH THE DESIGN TEAM VIA THE RFI PROCESS.
6. TELECOM PLYWOOD BACKBOARD SHALL BE 3/4" AC GRADE VOID FREE PLYWOOD PAINTED WITH TWO COATS OF LIGHT COLOR FIRE RESISTANT PAINT. IF PLYWOOD IS ALSO FIRE RESISTANT, THE FIRE RATING STAMP SHALL NOT BE PAINTED OVER. MOUNT PLYWOOD AT 1' AFF WITH C-SIDE TO FACE WALL.
7. INSTALL LADDER TYPE CABLE RUNWAY AND ASSOCIATED FITTINGS, BENDS, AND TRANSITIONS FOR SUPPORT AND DISTRIBUTION OF HORIZONTAL AND BACKBONE CABLING IN EACH TELECOM ROOM. THE LAYOUT OF CABLE TRAY IN THE TELECOM ROOMS IS INTENTED TO SHOW DESIGN INTENT AND IS SUBJECT TO CHANGE BASED ON SITE CONDITIONS. MODIFICATIONS TO THE LAYOUT SHALL BE COORDINATED WITH THE DESIGN TEAM.

KEYED NOTES (THIS SHEET ONLY): (#)

1. 0.75" PLYWOOD BACKBOARD - 96"W FROM 6" AFF TO 8'6" AFF. PROVIDE ON ALL WALLS OF THE TELECOM ROOM.
2. 7'H, 19"W 2-POST RACK.
3. 7'H, 19"W 4-POST EQUIPMENT RACK.
4. 6" W VERTICAL CABLE MANAGER. PROVIDE AT EACH END OF THE ROW OF RACKS.
5. 10"W VERTICAL CABLE MANAGER. PROVIDE BETWEEN ADJACENT RACKS.
6. TELECOM GROUNDING BUSBAR (TGB). SEE CONDUIT AND GROUNDING RISER DIAGRAM FOR ADDITIONAL INFORMATION.
7. (4) - 4" SCHEDULE 40 PVC SERVICE ENTRANCE CONDUITS. SEE SITE PLAN AND RISER DIAGRAM FOR ADDITIONAL INFORMATION.
8. (4) - 4" SLEEVES FOR HORIZONTAL CABLING TO CORRIDOR CABLE TRAY SYSTEM.
9. (4) - 4" CONDUIT SLEEVES TO THE LEVEL ABOVE OR BELOW.
10. VERTICALLY MOUNTED SECTION OF LADDER TYPE CABLE RUNWAY. IF NO SIZE IS INDICATED, LADDER TRAY SHALL BE EQUIVALENT OF THE CROSS-SECTIONAL WIDTH OF THE CONDUIT SLEEVES. EXAMPLE: PROVIDE 16"W SECTION OF LADDER TRAY FOR (4) - 4" CONDUITS.
11. OVERHEAD LADDER TYPE CABLE RUNWAY. SIZE AS INDICATED ON THE ENLARGED PLANS.
12. FURNISH AND INSTALL D-RINGS AS REQUIRED TO NEATLY ROUTE CABLES FROM VERTICAL SLEEVES TO TELECOM ENCLOSURES.
13. SPACE RESERVED FOR WALL MOUNTED TELECOM EQUIPMENT AND ENCLOSURES.
14. SPACE RESERVED FOR SECURITY ACCESS CONTROL ENCLOSURES AND POWER SUPPLIES.
15. SPACE RESERVED FOR ELECTRICAL EQUIPMENT.

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A	2022.05.25	OWNER REVIEW SET

SHEET NAME:
TELECOM ENLARGED PLANS

ORIG SUBMISSION: 2022.05.25

SHEET:
T-401

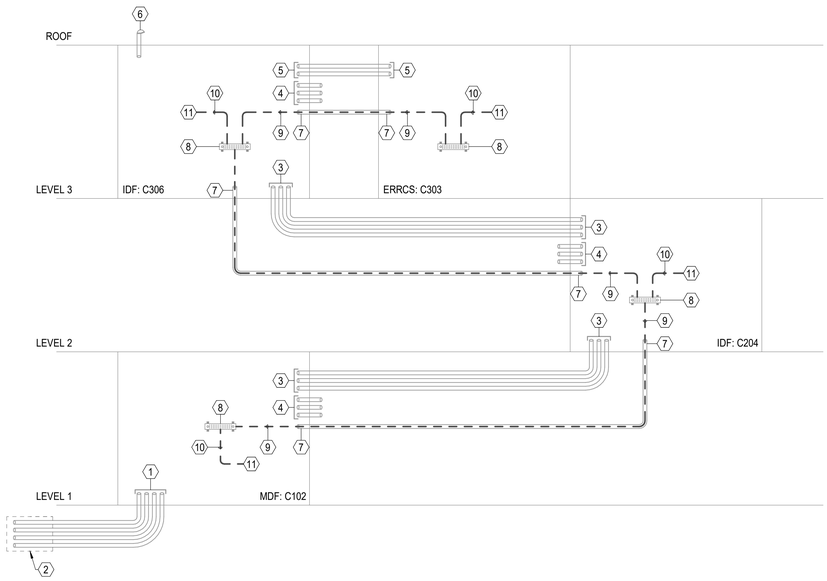
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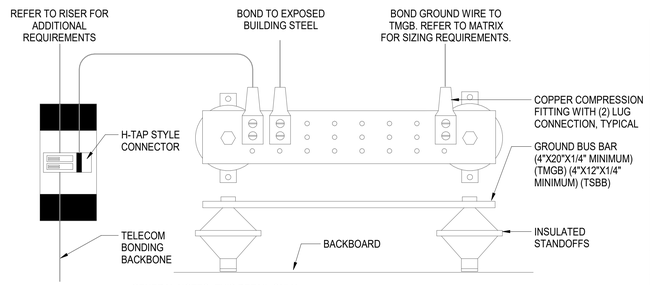
1 2 3 4 5 6

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1 TELECOM RISER - CONDUIT AND GROUNDING

NO SCALE



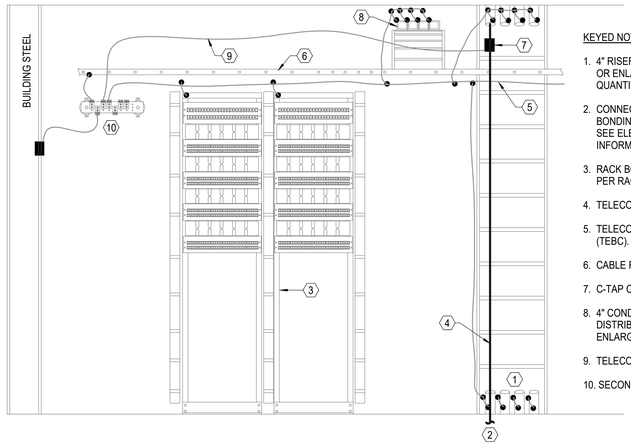
GROUND WIRE LENGTH (LINEAR FT.)	SIZE (AWG)
LESS THAN 13	6 (0.162")
14 TO 20	4 (0.232")
21 TO 26	3 (0.260")
27 TO 33	2 (0.292")
34 TO 41	1 (0.332")
42 TO 52	1/0 (0.373")
53 TO 66	2/0 (0.419")
67 TO 84	3/0 (0.470")
85 TO 105	4/0 (0.528")
106 TO 125	250 kcmil (0.575")
126 TO 150	300 kcmil (0.630")
151 TO 175	350 kcmil (0.681")
176 TO 250	500 kcmil (0.813")
251 TO 300	600 kcmil (0.893")
GREATER THAN 301	750 kcmil (0.998")

GENERAL NOTES (THIS DETAIL ONLY):

1. PROVIDE (1) GROUND BUS BAR PER TELECOM ROOM.
2. BOND SECONDARY BONDING BUS BAR (SBB) TO THE MAIN GROUND BUS BAR (TMGB) WITH A GROUND WIRE, SIZED FROM CHART.
3. BOND MAIN GROUND BUS BAR TO MAIN ELECTRICAL GROUND (MDG).
4. BOND GROUND WIRES TO BUS BAR WITH TERMINAL BLOCKS.
5. BOND EACH GROUND BUS BAR TO BUILDING STEEL.
6. MAINTAIN MINIMUM BENDING RADIUS IN ROUTING BONDING CONDUCTORS.
7. BONDING CONDUCTORS SHOULD NOT BE SPLICED AT 90 DEGREE BENDS.
8. MOUNT TELECOM GROUND BUS BAR 6" BELOW CABLE RUNWAY IN EACH TELECOM ROOM.
9. INSTALL EACH CONDUCTOR IN SEPARATE CONDUITS.
10. PROVIDE GREEN SHEATHED BONDING CONDUCTORS.

2 GROUND BUS BAR

NO SCALE



KEYED NOTES (THIS DETAIL ONLY): (#)

1. 4" RISER CONDUITS (REFER TO FLOOR PLANS OR ENLARGED PLANS FOR ACTUAL QUANTITIES).
2. CONNECT TBB TO ELECTRICAL PRIMARY BONDING BUSBAR WITH IRREVERSIBLE BOND. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
3. RACK BONDING BUSBAR (RBB). PROVIDE ONE PER RACK AND BOND ACCORDINGLY.
4. TELECOM BONDING BACKBONE (TBB).
5. TELECOM EQUIPMENT BONDING CONDUCTOR (TEBC).
6. CABLE RUNWAY.
7. C-TAP CONNECTION TO TBB.
8. 4" CONDUIT SLEEVES FOR HORIZONTAL DISTRIBUTION (REFER TO FLOOR PLANS OR ENLARGED PLANS FOR ACTUAL QUANTITIES).
9. TELECOM BONDING CONDUCTOR (TBC).
10. SECONDARY BONDING BUSBAR (SBB).

3 COMM ROOM GROUNDING REQUIREMENTS

NO SCALE

GENERAL NOTES (THIS SHEET ONLY):

1. CONDUIT PATHWAYS SHOWN ON THE RISER DIAGRAMS ARE DIAGRAMMATIC IN NATURE AND SHALL BE USED AS SUCH. EXACT LOCATIONS AND CONDITIONS OF TELECOM DEVICES AND ASSOCIATED INFRASTRUCTURE SHALL BE FIELD COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.
2. PROPERLY SEAL AND FIRESTOP ALL CONDUIT SLEEVES AND PENETRATIONS.
3. FURNISH AND INSTALL PLASTIC BUSHINGS ON ENDS OF ALL CONDUITS AND SLEEVES. PROVIDE PULL STRING IN ALL CONDUITS.
4. ALL CONDUIT PATHWAYS SHALL BE BONDED ON EACH END TO THE NEAREST TELECOM GROUND BAR. SEE GROUNDING DETAILS ON THE TELECOM DETAILS SHEET FOR ADDITIONAL INFORMATION.
5. TMGB SHALL BE 4"X20" UNLESS OTHERWISE NOTED.
6. TGB SHALL BE 4"X12" UNLESS OTHERWISE NOTED.
7. SEE GROUNDING DETAILS FOR ADDITIONAL REQUIREMENTS NOT SHOWN ON THE GROUNDING RISER DIAGRAM.
8. AT ALL VERTICAL SLEEVE LOCATIONS, FURNISH AND INSTALL 12"W CABLE RUNWAY MOUNTED VERTICALLY TO ALLOW FOR PROPER SUPPORT OF CABLES.

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SHEET NAME:
TELECOM RISER DIAGRAM

ORIG SUBMISSION: 2022.05.25

SHEET:
T-501

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