

**ELECTRICAL NOTES**

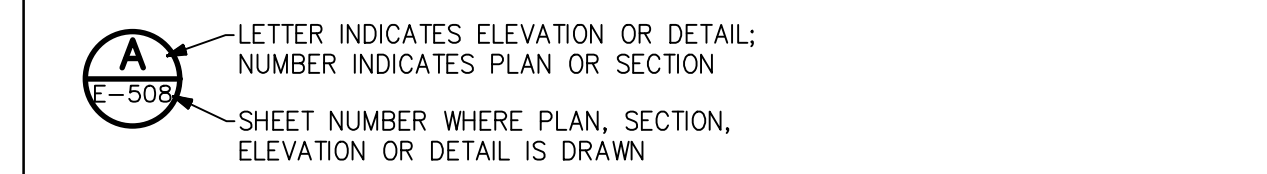
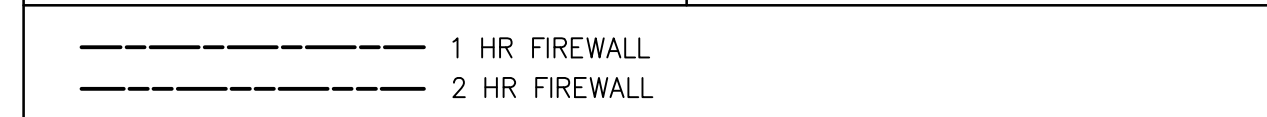
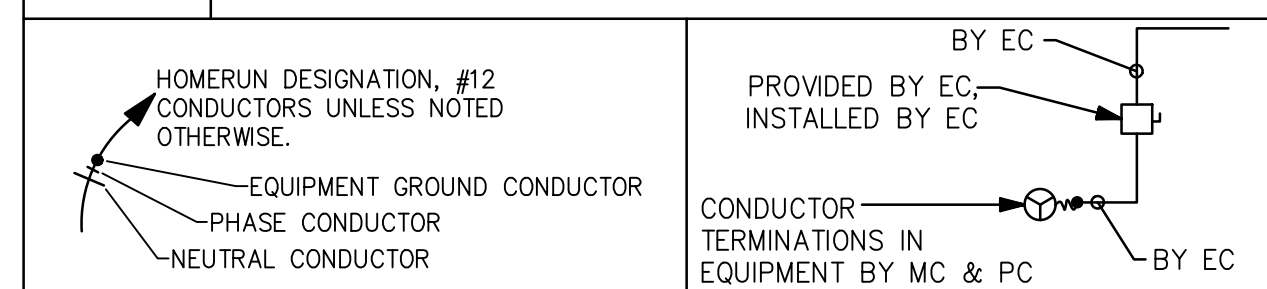
- ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- PERMITS FOR ELECTRICAL WORK SHALL BE OBTAINED BY AND PAID BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL PAY FOR ANY ADDITIONAL FEES FOR INSPECTIONS, TESTS, AND OTHER SERVICES AS REQUIRED FOR THE COMPLETION OF THE WORK.
- THE ELECTRICAL CONTRACTOR AND ANY OF HIS SUBCONTRACTORS SHALL VISIT THE PROJECT SITE TO WITNESS EXISTING CONDITIONS AND BECOME FAMILIAR WITH THE SCOPE OF THE WORK REQUIRED PRIOR TO SUBMITTING PROPOSALS. WORK REQUIRED BY EXISTING JOB CONDITIONS NOT INDICATED ON DRAWINGS SHALL BE INCLUDED IN EACH PROPOSAL.
- THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO RESULT IN THE PRODUCTION OF A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, AND OTHER SERVICES AS NECESSARY TO COMPLETE THE WORK.
- DISCREPANCIES IN THE DRAWINGS AND SPECIFICATIONS THAT WILL AFFECT THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, ENGINEER, AND/OR OWNER PRIOR TO SUBMITTING PROPOSALS.
- UNLESS NOTED OTHERWISE, ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND INCLUDE A 3RD PARTY LABEL (I.E.: UL, CSA, ETL, ETC.) LISTING APPROVAL FOR ITS INSTALLED APPLICATION.
- REVIEW PLANS OF OTHER TRADES FOR COORDINATION OF WORK AND FOR RELATED AND ADJOINING WORK.
- REVIEW COMPLETE PLAN SET FOR CONSTRUCTION TYPE, FINISHES, HEADROOM, ROOF FINISHES, CEILING, ETC. REVIEW COMPLETE PLAN SET FOR PROJECT PHASING AND STAGING. REVIEW COMPLETE PLAN SET FOR WORK COVERED BY ALTERNATE BID ITEMS.
- COORDINATE DEVICE AND EQUIPMENT MOUNTING HEIGHTS WITH OTHER DISCIPLINE DRAWINGS, CASEWORK DETAILS & SUBMITTALS, EQUIPMENT DETAILS & SUBMITTALS, ETC.
- PENETRATIONS OF FIRE-RATED WALLS, FLOORS, CEILING, AND PARTITIONS SHALL BE FIRE STOPPED IN ACCORDANCE WITH REQUIREMENTS OF THE STATE BUILDING CODE. COORDINATE WORK TO INSURE THAT FIRE STOPPING IS COMPLETED.
- PENETRATIONS OF SMOKE PARTITIONS SHALL BE SEALED IN ACCORDANCE WITH REQUIREMENTS OF THE STATE BUILDING CODE. COORDINATE WORK TO INSURE THAT SMOKE PARTITION SEALING IS COMPLETED.
- PENETRATIONS OF EXTERIOR BUILDING WALLS, FLOORS, OR ROOFS SHALL BE SEALED WATER-TIGHT. INTERIORS OF RACEWAY PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE SEALED WITH NON-HARDENING ELECTRICAL PUTTY.
- CUTTING AND PATCHING TO INSTALL DEVICES AND EQUIPMENT SHALL BE PERFORMED WITH FINISHES RESTORED TO THEIR ORIGINAL CONDITION. SUCH WORK SHALL BE COMPLETED TO A DEGREE THAT IS ACCEPTABLE TO THE ARCHITECT, ENGINEER, AND/OR OWNER.
- COORDINATE PRECISE LOCATION OF HVAC EQUIPMENT WITH THE MECHANICAL CONTRACTOR.
- FOR HVAC EQUIPMENT, VERIFY CIRCUIT BREAKER RATINGS, FUSE RATINGS, AND WIRE SIZES. IF RATINGS DIFFER FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR DIRECTION. PROVIDE OVERCURRENT PROTECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURER NAMEPLATE DATA. IF THE EQUIPMENT LISTING LABEL REQUIRES FUSED PROTECTION, ENSURE THAT FUSES IN A FUSED DISCONNECT SWITCH AT THE EQUIPMENT ARE SIZED AS INDICATED ON THE EQUIPMENT LABEL.
- VERIFY PROPER SIZING OF OVERLOAD DEVICES IN STARTERS BASED ON EQUIPMENT NAMEPLATE DATA.
- IF HORSEPOWER OR LOAD RATINGS OF EQUIPMENT DIFFER FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR DIRECTION.
- PROVIDE NATIONAL ELECTRICAL CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES.
- RECEPTACLE, SWITCH, DATA/TELEPHONE OUTLETS SHALL BE FLUSH MOUNTED IN FINISHED SPACES UNLESS OTHERWISE NOTED.
- WHERE INSTALLED IN PLENUM SPACES, CABLES SHALL BE PLENUM-RATED OR INSTALLED IN METAL RACEWAY.
- PRIOR TO ORDERING LIGHT FIXTURES, CONTRACTOR SHALL VERIFY TYPE OF CEILING OR WALL BY REVIEW OF ARCHITECTURAL FINISH SCHEDULES AND PROVIDE SUITABLE TRIM AND APPURTENANCES TO MOUNT FIXTURES IN TYPE OF CEILING OR WALL INDICATED.
- RECESSED LIGHT FIXTURES INSTALLED IN CEILINGS HAVING INSULATION INSTALLED OVER CEILING AND FIXTURES (AS INDICATED IN ARCHITECTURAL PLANS, OR FOUND AS EXISTING CONDITIONS) SHALL BE U.L. RATED FOR DIRECT CONTACT WITH INSULATION.
- RECESSED LIGHT FIXTURES INSTALLED IN FIRE RATED CEILING SHALL BE U.L. RATED FOR USE IN FIRE RATED CEILING OR SHALL BE INSTALLED WITH "TENTING" IN ACCORDANCE WITH RATING REQUIREMENTS OF THE CEILING ASSEMBLY.
- EXIT AND EMERGENCY LIGHTS SHALL BE CONNECTED TO THE NEAREST UNSWITCHED CIRCUIT THAT SERVES LIGHT FIXTURES WITHIN THE SAME SPACE.
- NO MOUNTING HARDWARE SHALL BE ATTACHED TO ROOF DECKS. ATTACHMENTS SHALL BE MADE TO THE ROOF SUPPORTING STRUCTURE.
- WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; PROTECT AND MAINTAIN IN OPERATION EXISTING LIFE SAFETY SYSTEMS, PUBLIC ADDRESS SYSTEMS, ELECTRICAL SYSTEMS, ETC. IF SHUTDOWNS ARE REQUIRED, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR COORDINATION WELL IN ADVANCE OF ANY SYSTEM SHUTDOWN. WHERE AN OUTAGE OF EXTENDED DURATION IS NOT ACCEPTABLE TO THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
- WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; WORK MAY BE REQUIRED TO BE PERFORMED WHILE REMAINING OCCUPIED BY OWNER STAFF. WORK SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION TO THE OWNER.
- WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; EXISTING ABANDONED CIRCUITS USED TO CONNECT NEW LOADS IN THE SAME AREA SHALL BE CLEARLY IDENTIFIED ON AS-BUILT MARK-UP DRAWINGS WITH REGARD TO PANEL-CIRCUIT AND CIRCUITRY ROUTING CONFIGURATION.
- ABANDONED CIRCUITRY (RACEWAY & CONDUCTORS) SHALL BE REMOVED IN ITS ENTIRETY FROM ITS SOURCE. ABANDONED LOW VOLTAGE CABLING SHALL BE REMOVED IN ITS ENTIRETY UNLESS OTHERWISE NOTED.
- PANEL BUS MATERIAL: COPPER.
- SHARED NEUTRAL CONDUCTORS SHALL NOT BE USED UNLESS SPECIFICALLY INDICATED SO ON HOMERUN CIRCUITRY DESIGNATIONS.
- PANEL BREAKER CONFIGURATIONS SHALL BE INSTALLED AS INDICATED ON THE PANEL SCHEDULES OR AS NOTED. BREAKER POSITION REVISIONS WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING BY THE ENGINEER.
- LOAD CIRCUITS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS. CIRCUITRY REVISIONS WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING BY THE ENGINEER.

**ABBREVIATIONS**

ADA	AMERICAN DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLER UNIT
SCAHU	AMPS INTERRUPTING CAPABILITY BLOWER COIL AIR HANDLER UNIT BREAKER
BKR	BREAKER
C	CONDUIT
C/B	CIRCUIT BREAKER
CF	CLOSED CIRCUIT TELEVISION
CLG	CEILING
CK	CIRCUIT
COMB	COMBINATION
COMM	COMMUNICATIONS
COMP	COMPRESSOR
CU	COPPER
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
ENC	ENCLOSED
EXSTG	EXISTING
FACP	FIRE ALARM CONTROL PANEL
FAFU	FIRE ALARM CONTROL UNIT
FMC	FLEXIBLE METALLIC CONDUIT
PH	EQUIPMENT GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
HPF	HIGH POWER FACTOR
HP	HEAT PUMP
HP	HORSEPOWER
IMC	INTERMEDIATE METAL CONDUIT
K	KILO (THOUSAND)
LED	LIGHT EMITTING DIODE
LFG	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LIC	LIGHTING
LTS	LIGHTS
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCP	MOTOR CONTROL PANEL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MLO	MAIN LUG ONLY
MSB	MAIN SWITCHBOARD
N/A	NOT APPLICABLE
NEMA	NATIONAL ELECTRICAL CODE
NEC	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
NTS	NOT TO SCALE
PH	PHASE OR POLE
PC	PLUMBING CONTRACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PVC	POLYVINYL CHLORIDE
REC	RECEPTACLE
RECPT	RECEPTACLE
REQ.	REQUIRED
RGC	RIGID GALVANIZED CONDUIT
RGS	RIGID GALVANIZED STEEL
S.S.	STAINLESS STEEL
SYS	SYSTEM
S/N	SOLID NEUTRAL
TEL	TELEPHONE
TSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UO	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UNO	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLTS-AMPS
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
W	WIRE
W/P	WITH WEATHERPROOF TRANSFORMER
XFMR	TRANSFORMER

**MISC. ELECTRICAL SYMBOL LEGEND**

	ENCLOSED CIRCUIT BREAKER, NEMA 1 (UNO), AMPERAGE AS INDICATED OR BASED ON SUPPLY CIRCUIT RATING.
	EQUIPMENT CONNECTION
	SAFETY SWITCH DISCONNECT, HEAVY-DUTY, NON-FUSED, NEMA 1 INSIDE, NEMA 3R OUTSIDE (UNO), AMPERAGE AS INDICATED OR BASED ON SUPPLY CIRCUIT BREAKER RATING.
	SAFETY SWITCH DISCONNECT, HEAVY-DUTY, FUSED AT NAMEPLATE RATING OF EQUIPMENT SERVED, NEMA 1 INSIDE, NEMA 3R OUTSIDE (UNO), AMPERAGE AS INDICATED OR BASED ON SUPPLY CIRCUIT BREAKER RATING.
	MANUAL MOTOR STARTER, SIZED IN ACCORDANCE WITH NAMEPLATE RATING OF EQUIPMENT SERVED
	PANELBOARD, SEE PANEL SCHEDULE
	TRANSFORMER, DRY TYPE, RATINGS INDICATED. PROVIDE 4" CONCRETE HOUSE KEEPING PAD IF A FLOOR MOUNTED UNIT IS PROVIDED.
	GROUND ROD, 3/4" X 10' COPPER CLAD, WHERE TWO RODS ARE INDICATED, SPACE A MINIMUM OF 20' APART.
	DOOR OPERATOR PUSHBUTTON STATION.



**RECEPTACLE & OUTLET LEGEND**

SYMBOL	NEMA	VOLTS	DESCRIPTION
	5-20R	120V 1P 2W	DUPLX FOR CONDENSATE PUMP; COORDINATE LOCATION W/ MECH CONTRACTOR
	5-20R	120V 1P 2W	DUPLX, MTD 6" ABOVE COUNTER HEIGHT UNO
	5-20R	120V 1P 2W	DUPLX GFCI, MTD 6" ABOVE COUNTER HEIGHT UNO
		120V 1P 2W	J-BOX ABOVE CLG LEVEL FOR DDC OR MECHANICAL CONTROL POWER SOURCE
	5-20R	120V 1P 2W	DUPLX, MTD 18" AFF UNO
	5-20R	120V 1P 2W	DUPLX, MTD TO CEILING STRUCTURE FOR CATWALK MAINTENANCE.
	5-20R	120V 1P 2W	DUPLX GFCI, MTD 18" AFG UNO; LISTED WEATHER-RESISTANT TYPE; PROVIDE CAST ALUMINUM WEATHERPROOF IN-USE COVER WITH CAST ALUMINUM FD WEATHERPROOF BOX
	FCPS	120V 1P 2W	POWER FOR FIRE ALARM SYSTEM FIELD CHARGING POWER SUPPLY
	5-20R	120V 1P 2W	DUPLX; MTD IN POKE-THRU ASSEMBLY; SEE AUX SYS PLANS FOR SHARED ASSEMBLY; 6" POKE-THRU WITH 3-GANG CAPACITY; COVER FINISH SELECTION BY ARCHITECT.
	5-20R	120V 1P 2W	QUAD; MTD IN POKE-THRU ASSEMBLY; SEE AUX SYS PLANS FOR SHARED ASSEMBLY; 6" POKE-THRU WITH 3-GANG CAPACITY; COVER FINISH SELECTION BY ARCHITECT.
	5-20R	120V 1P 2W	DUPLX FOR MICROWAVE; PROVIDE GFCI CIRCUIT BREAKER, VERIFY INSTALLATION LOCATION AND MOUNT 6" ABOVE COUNTER HEIGHT FOR COUNTERTOP UNIT -OR- MOUNT FLUSH IN BACK OF UPPER CABINET FOR SUSPENDED MICROWAVE
	5-20R	120V 1P 2W	DUPLX FOR REFRIGERATOR; MOUNT 48" AFF UNO. SUPPLY FROM GFCI TYPE C/B.
	5-20R	120V 1P 2W	DUPLX GFCI, MTD 18" ABOVE ROOF LEVEL (UNO) FOR EQUIPMENT MAINTENANCE USE; LISTED WEATHER-RESISTANT TYPE; PROVIDE CAST ALUMINUM WEATHERPROOF IN-USE COVER WITH CAST ALUMINUM FD WEATHERPROOF BOX
	L5-30R/W	120V 1P 2W	MTD 18" AFG UNO; LISTED WEATHER-RESISTANT TYPE; PROVIDE CAST ALUMINUM WEATHERPROOF IN-USE COVER WITH CAST ALUMINUM FD WEATHERPROOF BOX.
	L6-30R/W	208V 2P 2W	MTD 18" AFG UNO; LISTED WEATHER-RESISTANT TYPE; PROVIDE CAST ALUMINUM WEATHERPROOF IN-USE COVER WITH CAST ALUMINUM FD WEATHERPROOF BOX.
	L5-30R	208V 2P 2W	DATA ROOM RECEPTACLE. MOUNT AT TOP OF RACK.
	TWH	277V 1P 2W	POWER FOR TANKLESS WATER HEATER. SUPPLY THROUGH ADJACENT TOGGLE SWITCH WITH COVER SUITABLE FOR PADLOCKING (SEE DETAIL).
	5-20R	120V 1P 2W	DUPLX, LOCATED BEHIND TV MOUNT IN RECESSED LCD OUTLET BOX (COORDINATE SPECIFIC LOCATION WITH OWNER/ARCHITECT). SEE POWER PLANS FOR SHARED BOX WITH DATA OUTLET. DESIGN BASIS ARLINGTON #TVBS613 WITH COVER. SEE DETAIL N/E-501. SEE DETAIL O/E-502 FOR MOUNTING LOCATION.

**PA & SECURITY LEGEND**

SYMBOL	DESCRIPTION	MOUNTING	NOTES
	SECURITY CAMERA, FIXED, WIDE FIELD OF VIEW	CEILING	4" SQUARE BOX RECESSED; STUB 3/4"C TO INDICATED LOCATION OR NEAREST ACCESSIBLE CEILING SPACE; CAT 6 CABLE; SEE PLANS FOR CABLE TERMINATION LOCATION.
	360 DEGREE SECURITY CAMERA	CEILING	CAT 6 CABLE; SEE PLANS FOR CABLE TERMINATION LOCATION.
	SECURITY CAMERA, PAN-TILT-ZOOM	WALL; MTD 12" BELOW ROOF	4" SQUARE BOX RECESSED. GOOSENECK BRACKET; STUB 3/4"C TO INDICATED LOCATION OR NEAREST ACCESSIBLE CEILING SPACE; CAT 6 CABLE; SEE PLANS FOR CABLE TERMINATION LOCATION.
	CARD READER		4" SQUARE BOX RECESSED. 3/4"C AND CABLE TO ROOM "BUILDING MANAGEMENT A11."
	CARD READER FOR BHS	COORDINATE EXACT LOCATION WITH BHS VENDOR	4" SQUARE BOX RECESSED. COORDINATE MOUNTING WHERE INDICATED AT BHS MCPS. MOUNT BHS BRACKET WHERE INDICATED AT BHS CONVEYORS. INSTALL 3/4"C AND CABLE TO ROOM "BUILDING MANAGEMENT A11."
	DRY CONTACTS		CONVEYOR FIRE DOOR POSITION MONITORING (OPEN & CLOSED) THROUGH BHS CONTROL PANEL 3/4"C AND CABLE (#414,#14G) BACK TO BUILDING MANAGEMENT A111.
	EXISTING MOTION DETECTOR TO BE REMOVED	CEILING	
	PA SPEAKER	CEILING	
	PA SPEAKER	WALL	

**SWITCH LEGEND**

SYMBOL	DESCRIPTION	NOTES
	DIMMER SWITCH	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
	DIMMER SWITCH FOR 3-WAY CONTROL	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
	4-WAY SWITCH	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
	LOW VOLTAGE SWITCH; MTD 42" AFF UNO	CONNECT VIA LOW VOLTAGE BUS TO LIGHTING CONTROL SYSTEM; VERIFY CABLE REQUIREMENTS WITH VENDOR; SEE PLAN NOTES FOR CONTROL INFO.
	OCCUPANCY SENSOR WALL SWITCH, DIMMER	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
	OCCUPANCY SENSOR WALL SWITCH, SINGLE CKT, DUAL TECHNOLOGY	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
	OCCUPANCY SENSOR, DUAL TECHNOLOGY; CEILING MTD	INCORPORATE POWER PACKS FOR CIRCUITRY SWITCHING; SEE WIRING DIAGRAMS
	PHOTOCCELL, INTERIOR FOR DAYLIGHTING CONTROL; SURFACE MOUNT TO CEILING.	CONFIRM EXACT LOCATION WITH LIGHTING CONTROLS VENDOR.
	TOGGLE SWITCH, SINGLE POLE; 120/277V, 20A	MTD 42" AFF UNO
	LEVEL CONTROL FOR SPEAKER VOLUME CONTROL	MTD 42" AFF UNO
	3-WAY SWITCH; 120/277V, 20A	MTD 42" AFF UNO

**FIRE ALARM LEGEND**

SYMBOL	DESCRIPTION	MOUNTING
	SPEAKER/STROBE, 15 CANDELA	CEILING
	SPEAKER/STROBE, 30 CANDELA	CEILING
	SPEAKER/STROBE, 75 CANDELA	CEILING
	CONTROL / RELAY MODULE	
	CONTROL / RELAY MODULE FOR FIRE DOOR ACTIVATOR	
	EXISTING FIRE ALARM TERMINAL CABINET	WALL
	FLOW SWITCH	
	MONITOR MODULE FOR FLOW SWITCH	
	MONITOR MODULE FOR TAMPER SWITCH	
	PULL STATION	WALL
	EXISTING REMOTE ANNUNCIATOR	WALL
	EXISTING SMOKE DETECTOR TO BE REMOVED	CEILING
	SPEAKER/STROBE, 15 CANDELA	WALL
	SPEAKER/STROBE, 95 CANDELA	WALL
	TAMPER SWITCH	

**DATA & TELEPHONE OUTLET LEGEND**

SYMBOL	DESCRIPTION	PROVIDED BY: CONTRACTOR
	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 4" SQUARE, DEEP BOX; STUB 1"C TO 6" ABOVE CEILING. INSTALL (2) CAT 6 CABLES TO COMM. 180
	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 4" SQUARE, DEEP BOX; STUB 1"C TO 6" ABOVE CEILING. INSTALL (2) CAT 6A & (1) CAT 5 CABLES TO TELECOM 188
	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 4" SQUARE, DEEP BOX; STUB 1"C TO 6" ABOVE CEILING. INSTALL (2) CAT 6 CABLES TO BUILDING MANAGEMENT A111
	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 4" SQUARE, DEEP BOX; STUB 1"C TO 6" ABOVE CEILING. INSTALL (2) CAT 6 CABLES TO TSA IT/DATA ROOM "STORAGE 168" CEILING ON TICKET LEVEL
	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 4" SQUARE, DEEP BOX; STUB 1"C TO 6" ABOVE CEILING. INSTALL CABLES TO STORAGE/IT 196; (2) BLUE CAT 6 DATA & (1) YELLOW CAT 6 VOICE.
	TV OUTLET	WALL, LOCATED BEHIND TV MOUNT IN RECESSED LCD OUTLET BOX (COORDINATE SPECIFIC LOCATION AND MOUNTING HEIGHT WITH OWNER/ARCHITECT). SEE POWER PLANS FOR SHARED BOX WITH DATA OUTLET. DESIGN BASIS ARLINGTON #TVBS613 WITH COVER. STUB (2) 1"C TO 6" ABOVE ACCESSIBLE CEILING. INSTALL (1) CAT 6 CABLE TO IT ROOM IN ONE CONDUIT.
	DATA / TELEPHONE OUTLET	FLOOR AT COUNTER; 1 1/4"C TO COMM. 180; MTD IN POKE-THRU ASSEMBLY; SEE POWER PLANS FOR SHARED ASSEMBLY. INSTALL (4) CAT 6A CABLES TO COMM. 180.
	DATA / TELEPHONE OUTLET	FLOOR AT KIOSK; 1"C TO COMM. 180; MTD IN POKE-THRU ASSEMBLY; SEE POWER PLANS FOR SHARED ASSEMBLY. INSTALL (2) CAT 6 CABLES TO COMM. 180.
	DATA / TELEPHONE OUTLET	FLOOR AT COUNTER; 1 1/4"C TO TELECOM 188; MTD IN POKE-THRU ASSEMBLY; SEE POWER PLANS FOR SHARED ASSEMBLY. INSTALL (4) CAT 6A CABLES & (1) CAT 5 CABLE TO TELECOM 188.
	DATA / TELEPHONE OUTLET	FLOOR AT KIOSK; 1"C TO TELECOM 188; MTD IN POKE-THRU ASSEMBLY; SEE POWER PLANS FOR SHARED ASSEMBLY. INSTALL (2) CAT 6A CABLES TO TELECOM 188.
	DATA / TELEPHONE OUTLET	FLOOR; MTD IN POKE-THRU ASSEMBLY; SEE POWER PLANS FOR SHARED ASSEMBLY. CONFIGURE FOR FUTURE USE.
	DATA / TELEPHONE OUTLET	FLOOR AT COUNTER; 1 1/4"C TO STORAGE/IT 196; MTD IN POKE-THRU ASSEMBLY; SEE POWER PLANS FOR SHARED ASSEMBLY. INSTALL CABLES TO IT/STORAGE 196; (4) BLUE CAT 6 DATA & (1) YELLOW CAT 6 VOICE.
	DATA / TELEPHONE OUTLET	FLOOR AT KIOSK; 1"C TO STORAGE/IT 196; MTD IN POKE-THRU ASSEMBLY; SEE POWER PLANS FOR SHARED ASSEMBLY. INSTALL CABLES TO IT/STORAGE 196; (2) BLUE CAT 6 DATA
	DATA OUTLET FOR ACCESS POINT	4" SQUARE BOX MOUNTED 24" ABOVE CEILING. INSTALL (1) CAT 6A CABLE TO ROOM "BUILDING MANAGEMENT A11." MOUNT OWNER PROVIDED EQUIPMENT AT CEILING OR WALL MOUNTED IF INDICATED. PROVIDE PATCH CORD FROM OUTLET TO EQUIPMENT.
	CABLE TV OUTLET TO BE REMOVED	
	EQUIPMENT RACK, 19" X 7"	
	TELEPHONE OUTLET	WALL, 42" AFF UNO; 4" SQUARE, DEEP BOX. STUB 3/4"C TO LADDER RACK ABOVE. INSTALL YELLOW CAT 6 CABLE TO EQUIPMENT RACK.

**ELECTRICAL SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE**

METHOD OF COMPLIANCE	ENERGY CODE:	<input checked="" type="checkbox"/> PRESCRIPTIVE	<input type="checkbox"/> PERFORMANCE
	-ASHRAE 90.1:	<input type="checkbox"/> PRESCRIPTIVE	<input type="checkbox"/> PERFORMANCE
ADDITIONAL METHOD OF COMPLIANCE:			
<input type="checkbox"/> 506.2.1	More Efficient Mechanical Equipment		
<input type="checkbox"/> 506.2.2	Reduced Lighting Power Density		
<input type="checkbox"/> 506.2.3	Energy Recovery Ventilation System		
<input type="checkbox"/> 506.2.4	Higher Efficiency Service Water Heating		
<input type="checkbox"/> 506.2.5	On-Site Supply of Renewable Energy		
<input type="checkbox"/> 506.2.6	Automatic Ductlighting Control Systems		

LIGHTING SCHEDULE	Lamp Type Required in Fixtures	SEE LIGHT FIXTURE / LUMINAIRE SCHEDULE
	Number of Lamps in Fixtures	
	Number of Ballasts Used in Fixtures	
	Total Wattage per Fixture	

TOTAL WATTAGE SPECIFIED VERSUS ALLOWED	Interior Specified: 17613 Watts	Exterior Specified: 760 Watts
	Interior Allowed: 18366 Watts	Exterior Allowed: 1041 Watts

**DESIGNER STATEMENT**

To the best of my knowledge and belief, the design of this building complies with the electrical systems and equipment requirements of the North Carolina State Building Code, Section 505 of the North Carolina Energy Conservation Code.

SIGNED: *Mark A. Ciarracca*  
 NAME: Mark A. Ciarracca, P.E.  
 TITLE: Engineer

**SHEET LIST**

E-001	ELECTRICAL NOTES, LEGENDS, SCHEDULES
E-011	ELECTRICAL FIRST LEVEL DEMOLITION PLAN
E-012	ELECTRICAL SECOND LEVEL DEMOLITION PLAN
E-101	ELECTRICAL PARTIAL FIRST LEVEL POWER PLAN
E-102	ELECTRICAL PARTIAL FIRST LEVEL POWER PLAN
E-103	ELECTRICAL SECOND LEVEL POWER PLAN
E-104	ELECTRICAL ROOF PLAN
E-111	ELECTRICAL FIRST LEVEL LIGHTING PLAN
E-112	ELECTRICAL SECOND LEVEL LIGHTING PLAN
E-121	ELECTRICAL FIRST LEVEL AUXILIARY SYSTEMS PLAN
E-122	ELECTRICAL SECOND LEVEL AUXILIARY SYSTEMS PLAN
E-123	ELECTRICAL AUXILIARY SYSTEMS SITE PLAN
E-501	ELECTRICAL DETAILS
E-502	ELECTRICAL DETAILS
E-601	ELECTRICAL LUMINAIRE SCHEDULE
E-602	ELECTRICAL PANEL SCHEDULES
E-701	ELECTRICAL RISERS



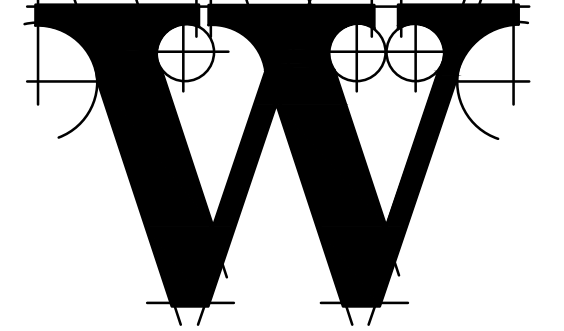
**TERMINAL IMPROVEMENTS CONTRACT 2**

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 WILMINGTON, NC 28405

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 WILMINGTON, NC 28405  
 (910) 783-5350 FIRM NO.: C-0713

CONSULTING ARCHITECT

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 101 NORTH THIRD STREET, SUITE 500  
 WILMINGTON, NC 2840

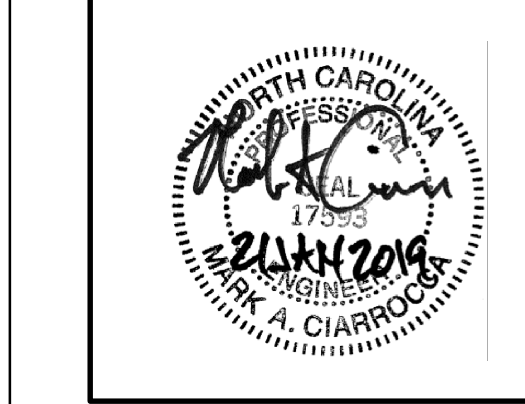




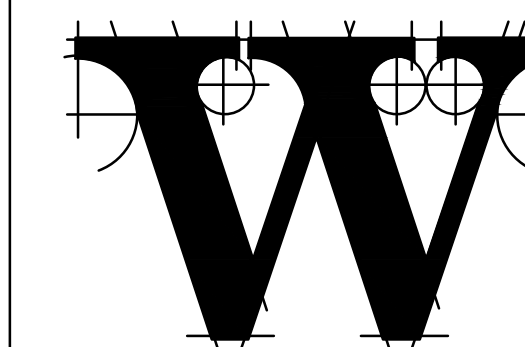
# TERMINAL IMPROVEMENTS CONTRACT 2

WILMINGTON INTERNATIONAL AIRPORT  
1740 AIRPORT BOULEVARD, SUITE 12  
WILMINGTON, NC 28405

**CHEATHAM & ASSOCIATES, P.A.**  
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NC LICENSE# C-1073  
JOB # 17.86



ARCHITECT



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BAGGAGE HANDLING CONSULTANTS  
**BNP ASSOCIATES**  
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(203) 792-3000

SPECIALTY LIGHTING CONSULTANT  
**HARTRANFT LIGHTING DESIGN**  
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CHARLOTTE, NC 28204  
(240) 731-1058

### REVISIONS

ADDENDUM 3 01/22/2019

DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:

## ELECTRICAL SECOND LEVEL DEMOLITION PLAN

SHEET NUMBER:

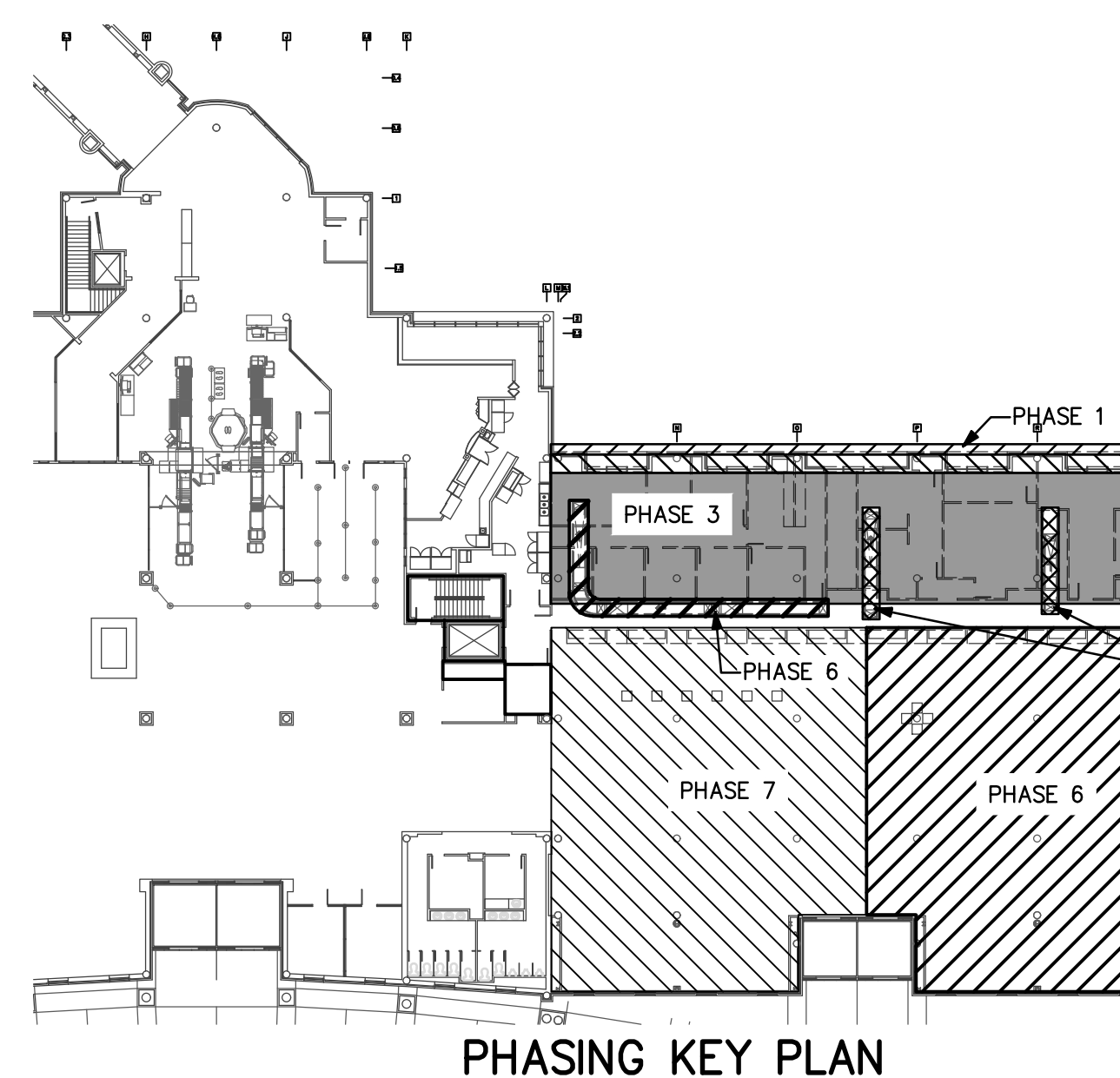
# E-012

### DEMOLITION NOTES

- ALL LIGHT FIXTURES AND ELECTRICAL DEVICES SHOWN ARE TO BE REMOVED UNLESS NOTED OTHERWISE.
- FIELD INVESTIGATE THE EXTENT OF ELECTRICAL WORK REQUIRED TO SUPPORT THE DEMOLITION ACTIVITIES.
- THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE EXISTING DEVICES, FIXTURES, CIRCUITRY, ETC. TO ACCOMMODATE THE DEMOLITION ACTIVITIES.
- ABANDONED CIRCUITRY SHALL BE REMOVED BACK TO ITS SOURCE.
- EXISTING CIRCUITRY THAT SUPPLIES DEVICES, FIXTURES, ETC. TO REMAIN SHALL BE REWORKED AND EXTENDED AS REQUIRED TO MAINTAIN OPERATION OF THOSE DEVICES AND FIXTURES.
- ABANDONED AUXILIARY SYSTEMS CABLING SHALL BE REMOVED BACK TO ITS SOURCE.
- FIELD INVESTIGATE EXISTING HOMERUN CIRCUITRY SUPPLYING LIGHT FIXTURES WITH THE INTENT OF REUSING HOMERUNS FOR NEW LIGHTING.
- FOR EXISTING LIGHTING CIRCUIT HOMERUNS, PROVIDE JUNCTION BOX LOCATIONS ON AS-BUILT MARK-UPS WITH PANEL CIRCUIT ID'S.
- EXISTING ELECTRICAL DEVICES TO REMAIN SHALL BE PROTECTED AND TEMPORARILY SUPPORTED DURING DEMOLITION PHASE.

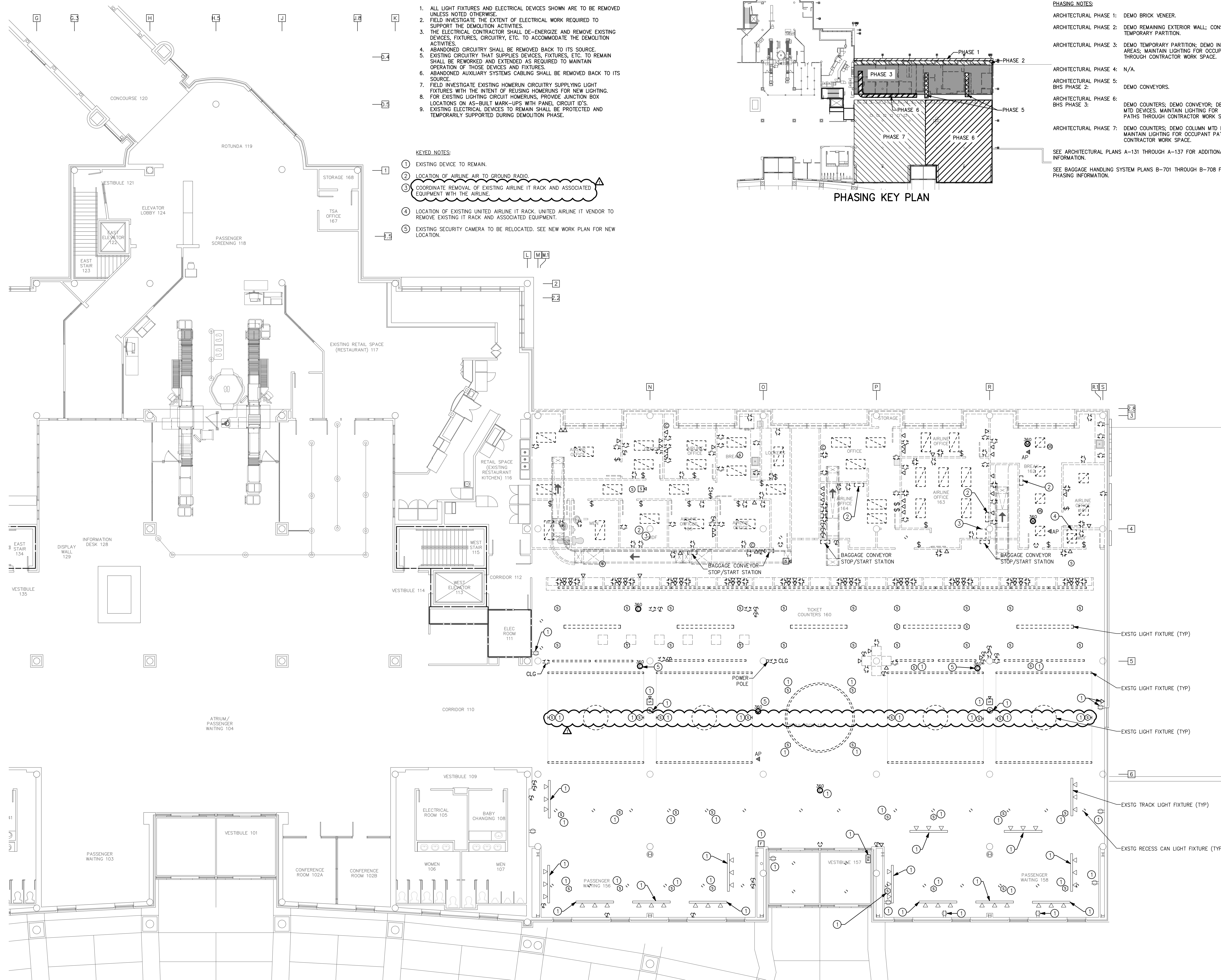
### KEYED NOTES

- EXISTING DEVICE TO REMAIN.
- LOCATION OF AIRLINE AIR TO GROUND RADIO.
- COORDINATE REMOVAL OF EXISTING AIRLINE IT RACK AND ASSOCIATED EQUIPMENT WITH THE AIRLINE.
- LOCATION OF EXISTING UNITED AIRLINE IT RACK, UNITED AIRLINE IT VENDOR TO REMOVE EXISTING IT RACK AND ASSOCIATED EQUIPMENT.
- EXISTING SECURITY CAMERA TO BE RELOCATED. SEE NEW WORK PLAN FOR NEW LOCATION.



### PHASING NOTES

- ARCHITECTURAL PHASE 1: DEMO BRICK VENEER.
  - ARCHITECTURAL PHASE 2: DEMO REMAINING EXTERIOR WALL; CONSTRUCT TEMPORARY PARTITION.
  - ARCHITECTURAL PHASE 3: DEMO TEMPORARY PARTITION; DEMO INTERIOR OFFICE AREAS; MAINTAIN LIGHTING FOR OCCUPANT PATHS THROUGH CONTRACTOR WORK SPACE.
  - ARCHITECTURAL PHASE 4: N/A.
  - ARCHITECTURAL PHASE 5: DEMO CONVEYORS.
  - ARCHITECTURAL PHASE 6: DEMO COUNTERS; DEMO CONVEYOR; DEMO COLUMN MTD DEVICES. MAINTAIN LIGHTING FOR OCCUPANT PATHS THROUGH CONTRACTOR WORK SPACE.
  - ARCHITECTURAL PHASE 7: DEMO COUNTERS; DEMO COLUMN MTD DEVICES. MAINTAIN LIGHTING FOR OCCUPANT PATHS THROUGH CONTRACTOR WORK SPACE.
- SEE ARCHITECTURAL PLANS A-131 THROUGH A-137 FOR ADDITIONAL PHASING INFORMATION.  
SEE BAGGAGE HANDLING SYSTEM PLANS B-701 THROUGH B-708 FOR ADDITIONAL PHASING INFORMATION.



**ELECTRICAL SECOND LEVEL DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"

GRAPHIC SCALE: 1" = 1'-0"  
0 2 4 8 16



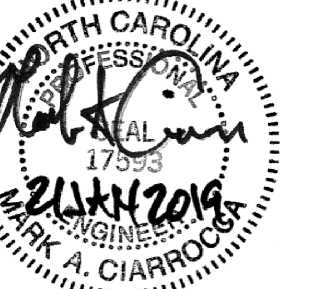




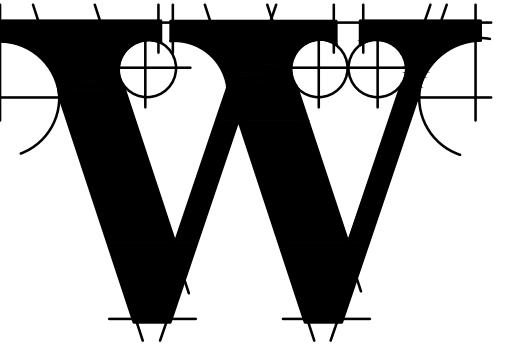
# TERMINAL IMPROVEMENTS CONTRACT 2

WILMINGTON INTERNATIONAL AIRPORT  
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ARCHITECT



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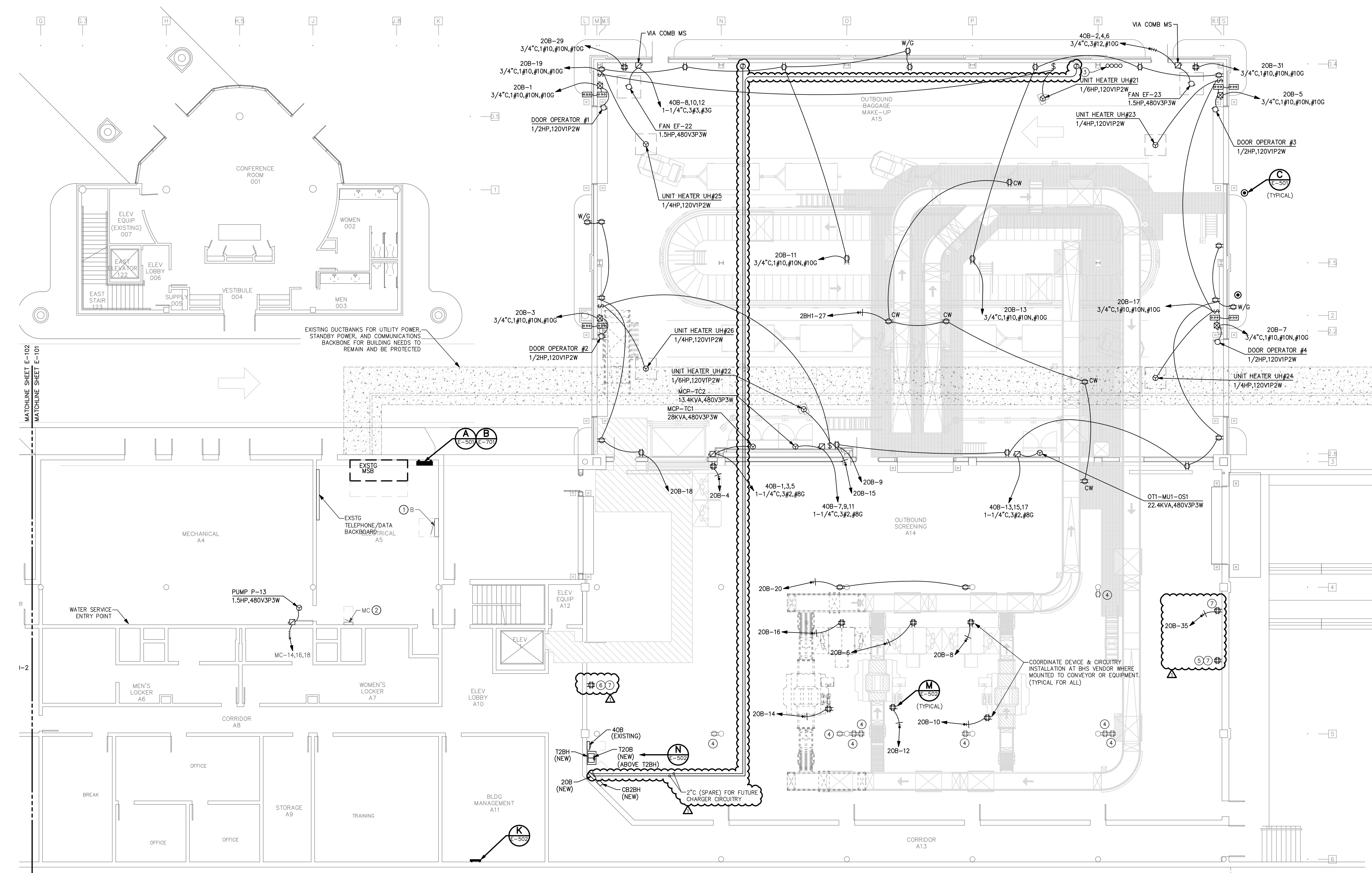
CONSULTING ARCHITECT  
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(910) 790-9901

STRUCTURAL ENGINEER  
**STEWART**  
101 N. TRYON ST., SUITE 1400  
CHARLOTTE, NC 28202  
(704) 909-3523 FIRM NO.: C-1051

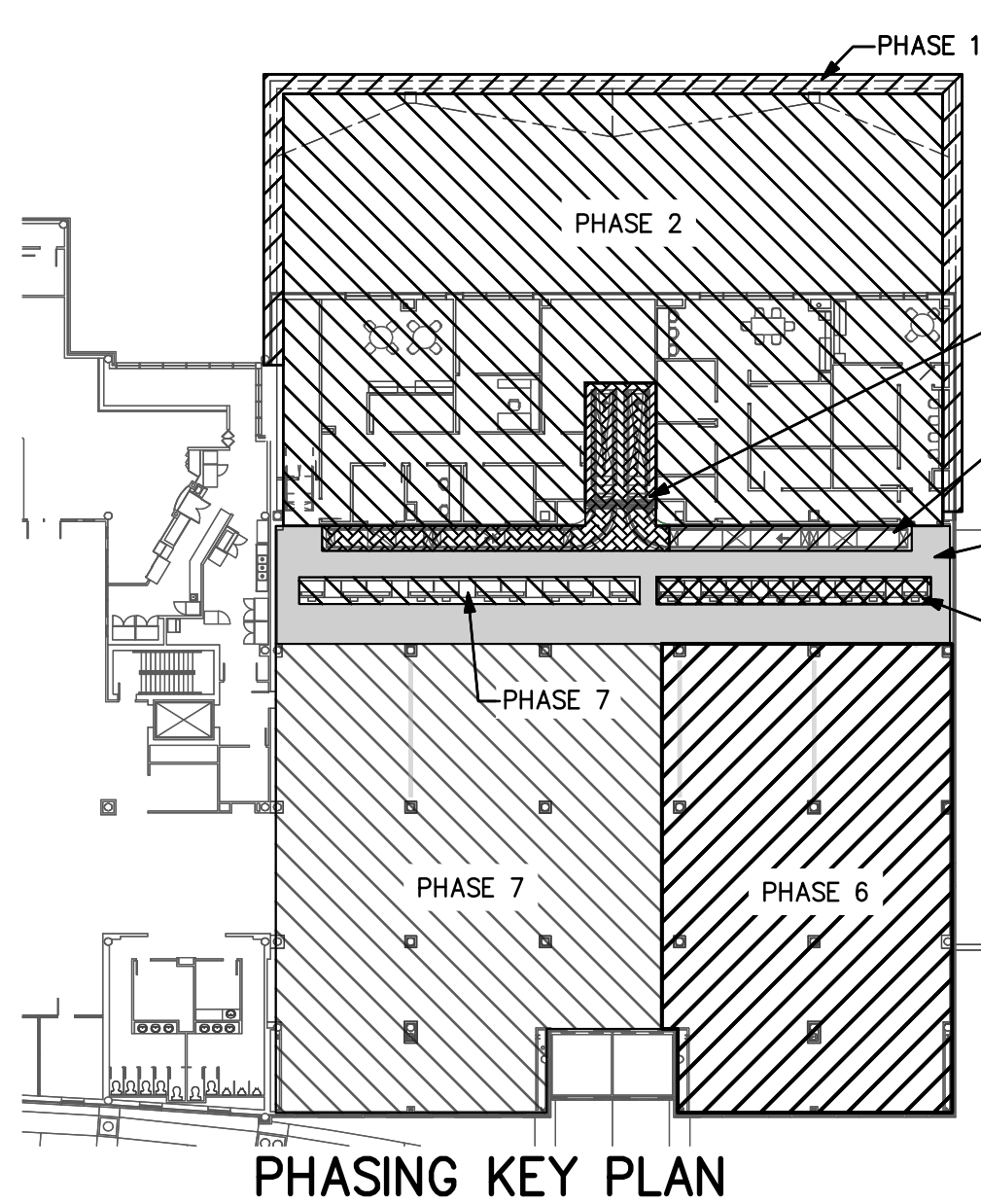
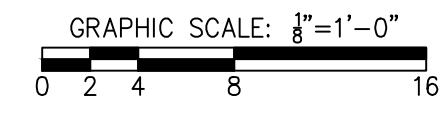
P, M & E ENGINEER  
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**HARTRANFT LIGHTING DESIGN**  
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CHARLOTTE, NC 28204  
(240) 731-1058



**1 ELECTRICAL FIRST LEVEL POWER PLAN**  
SCALE: 1/8" = 1'-0"



- PHASING NOTES:**
- PHASE 1: CONSTRUCTION NEW SHELL.
  - PHASE 2: INTERIOR UPFIT.
  - BHS PHASE 2: INSTALL CONVEYOR.
  - PHASE 3: N/A.
  - PHASE 4: INSTALL NEW CEILING.
  - BHS PHASE 3: INSTALL CONVEYORS.
  - PHASE 5: INSTALL NEW COUNTERS.
  - PHASE 6: INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
  - PHASE 7: INSTALL NEW COUNTERS; INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
- SEE ARCHITECTURAL PLANS A-131 THROUGH A-137 FOR ADDITIONAL PHASING INFORMATION.
- SEE BAGGAGE HANDLING SYSTEM PLANS B-701 THROUGH B-708 FOR ADDITIONAL PHASING INFORMATION.

- KEYED NOTES:**
- EXISTING PANEL B, SQUARE-D HOW TYPE, UTILIZE SPARE 200A/3P CIRCUIT BREAKER IN POSITIONS 32,34,36 FOR NEW PANEL "4B" FEEDER.
  - EXISTING PANEL MC, GE "A" SERIES TYPE, PROVIDE (1) 15A/3P (25KAIC) CIRCUIT BREAKER IN POSITIONS 14,16,18 (PUMP P-13).
  - SPARE DUCTBANK CONDUIT STUB-UP LOCATION. REFERENCE CIVIL DRAWING #C-402. 4"-4"C.
  - EXISTING DEVICE.
  - REPLACE EXISTING SURFACE MOUNTED BOX & DUPLEX RECEPTACLE WITH BOX & QUAD RECEPTACLE.
  - REMOVE EXISTING FLUSH MOUNTED DUPLEX RECEPTACLE. MODIFY WITH BOX EXTENSION AND SURFACE MOUNTED BOX WITH QUAD RECEPTACLE.
  - INSTALL RECEPTACLES PRIOR TO CONSTRUCTION OF NEW ADDITION.

**REVISIONS**

ADDENDUM 3	01/22/2019
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DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:  
**ELECTRICAL PARTIAL FIRST LEVEL POWER PLAN**  
SHEET NUMBER:  
**E-101**

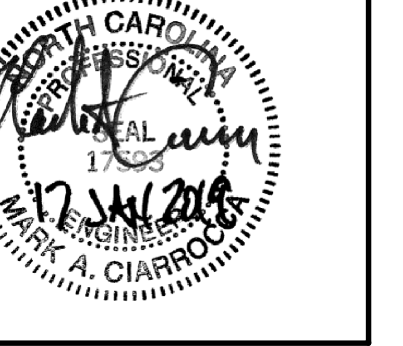




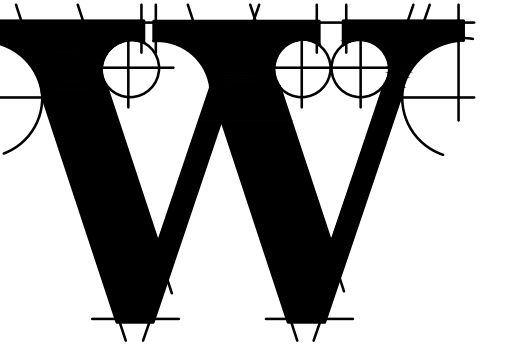
# TERMINAL IMPROVEMENTS CONTRACT 2

WILMINGTON INTERNATIONAL AIRPORT  
1740 AIRPORT BOULEVARD, SUITE 12  
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ARCHITECT



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STRUCTURAL ENGINEER

**STEWART**

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(704) 909-3523 FIRM NO.: C-1051

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**CHEATHAM & ASSOC.**

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BAGGAGE HANDLING CONSULTANTS

**BNP ASSOCIATES**

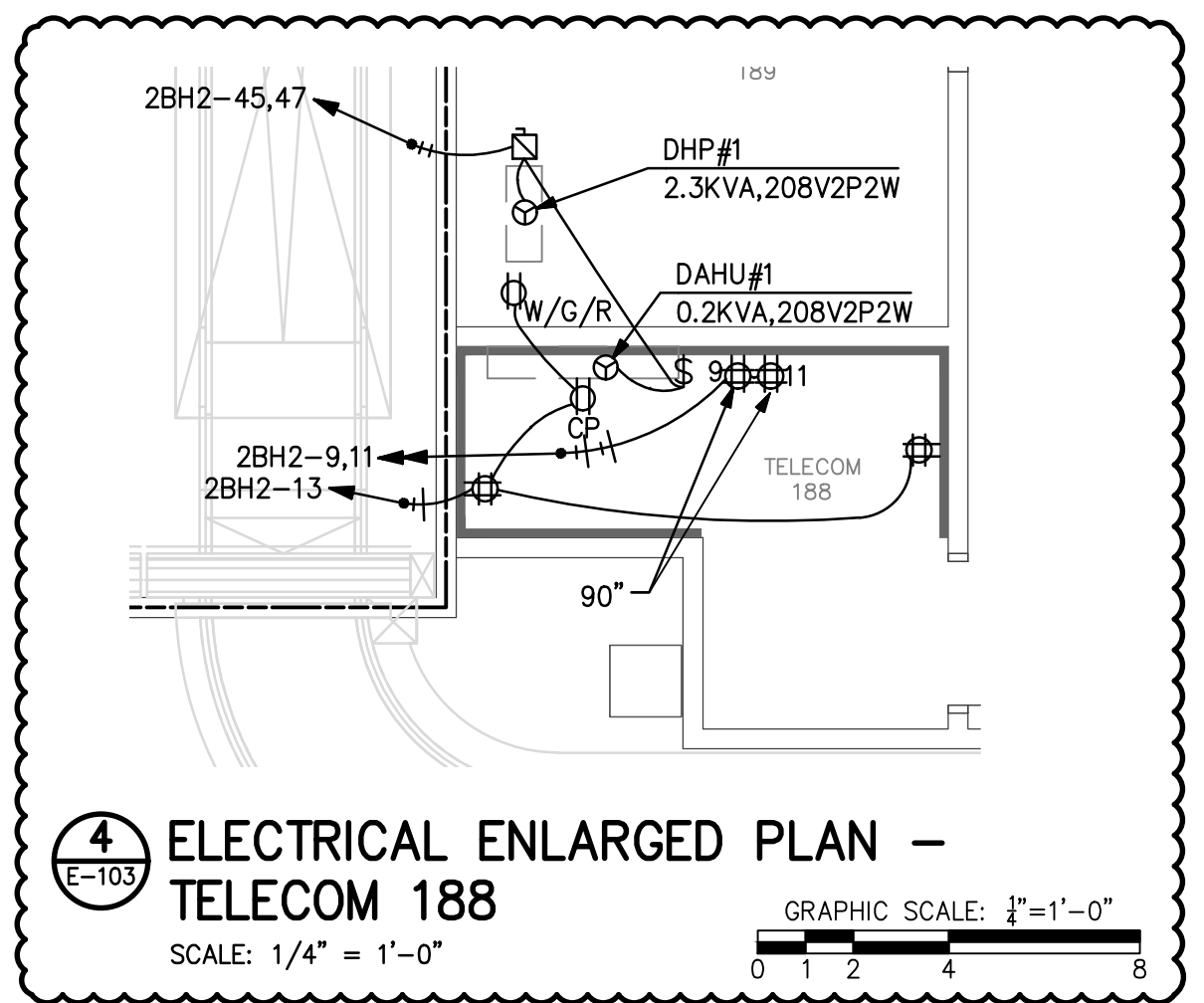
1891 POST ROAD  
FAIRFIELD, CT 06824  
(203) 792-3000

SPECIALTY LIGHTING CONSULTANT

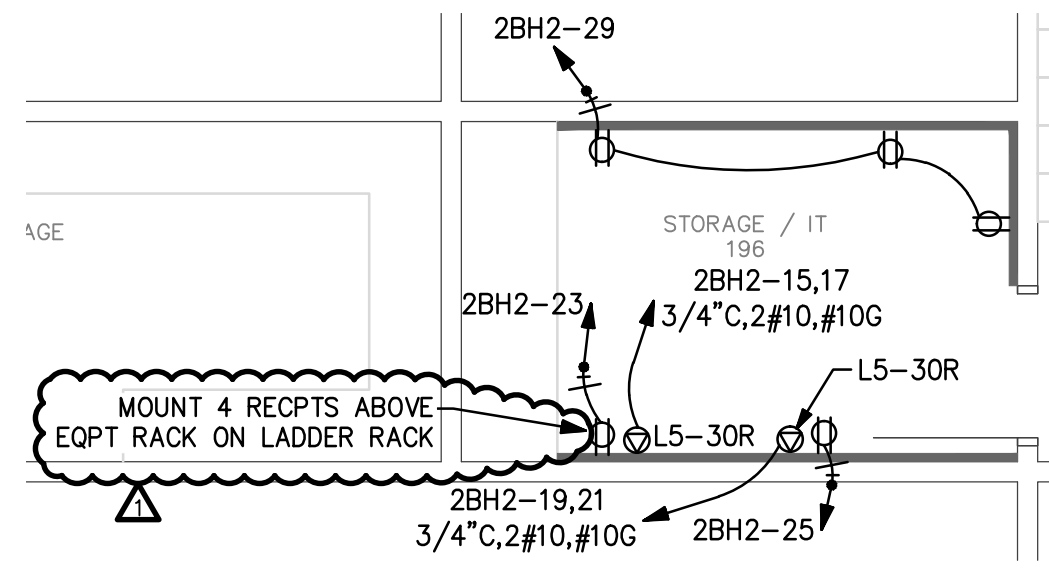
**HARTRANFT LIGHTING DESIGN**

401 HAWTHORNE LANE, SUITE 110-269  
CHARLOTTE, NC 28204  
(240) 731-1058

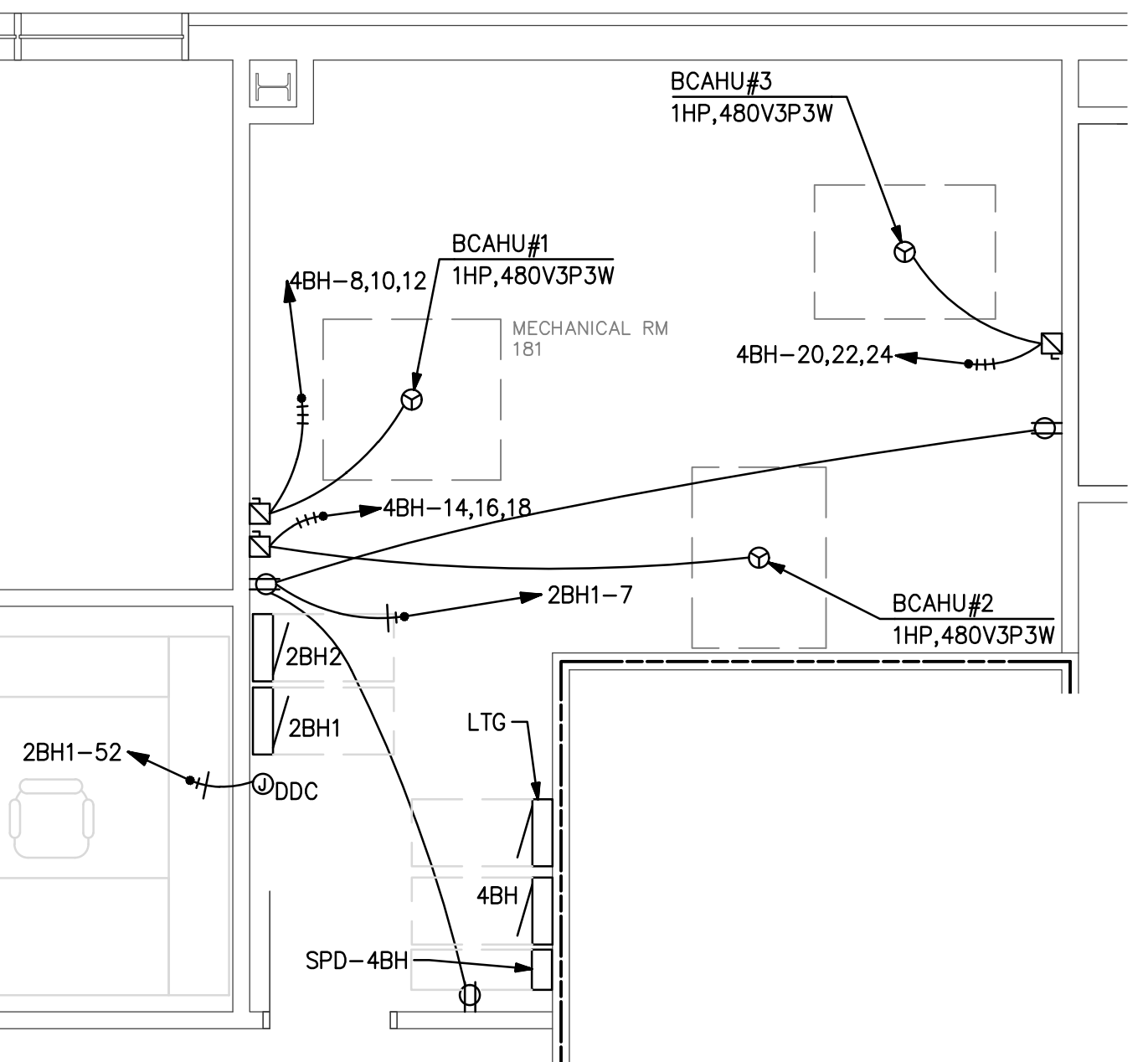
KEYED NOTES:  
① EXISTING DEVICE



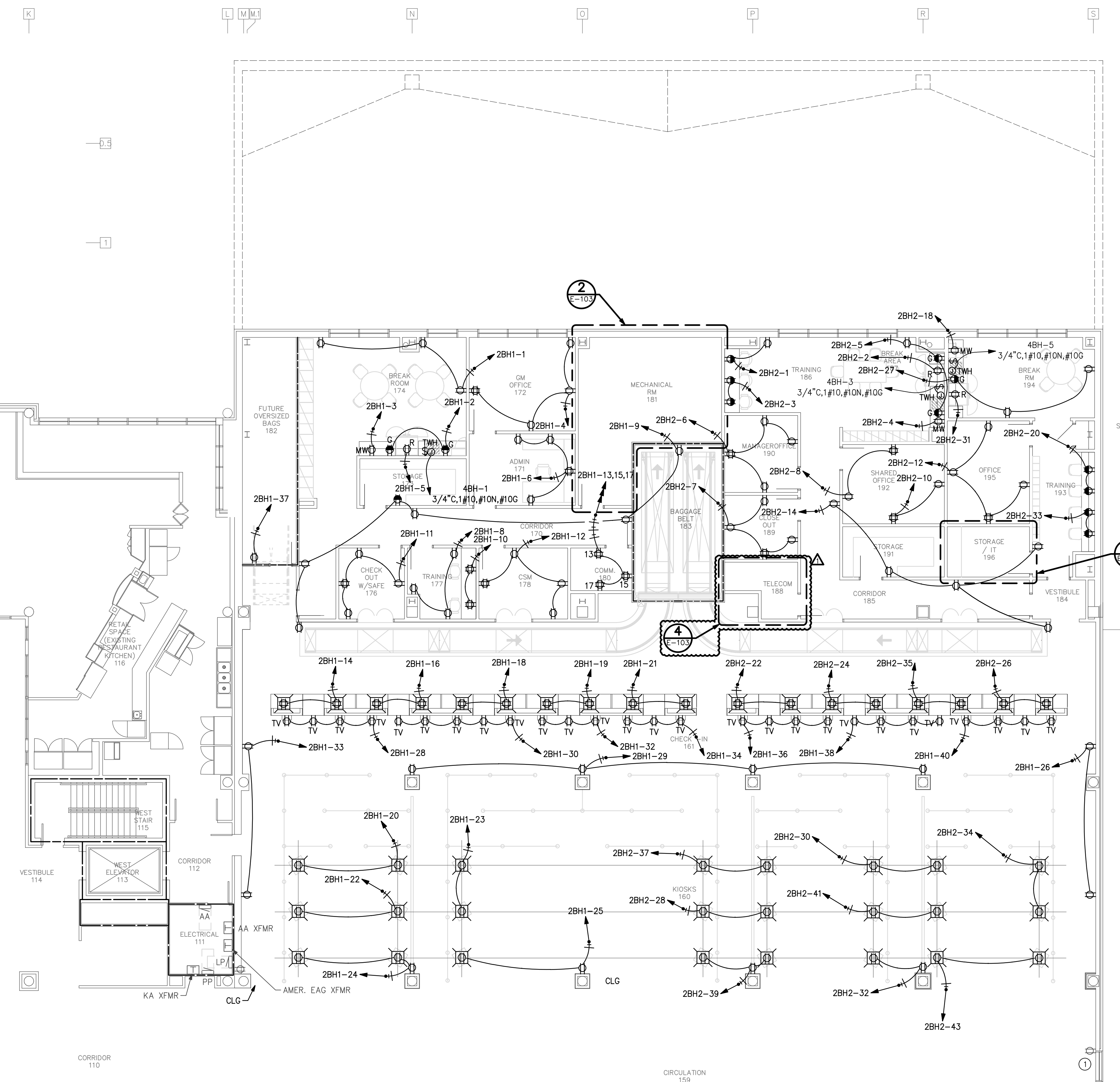
**4 ELECTRICAL ENLARGED PLAN - TELECOM 188**  
SCALE: 1/4" = 1'-0"  
GRAPHIC SCALE: 1" = 1'-0"



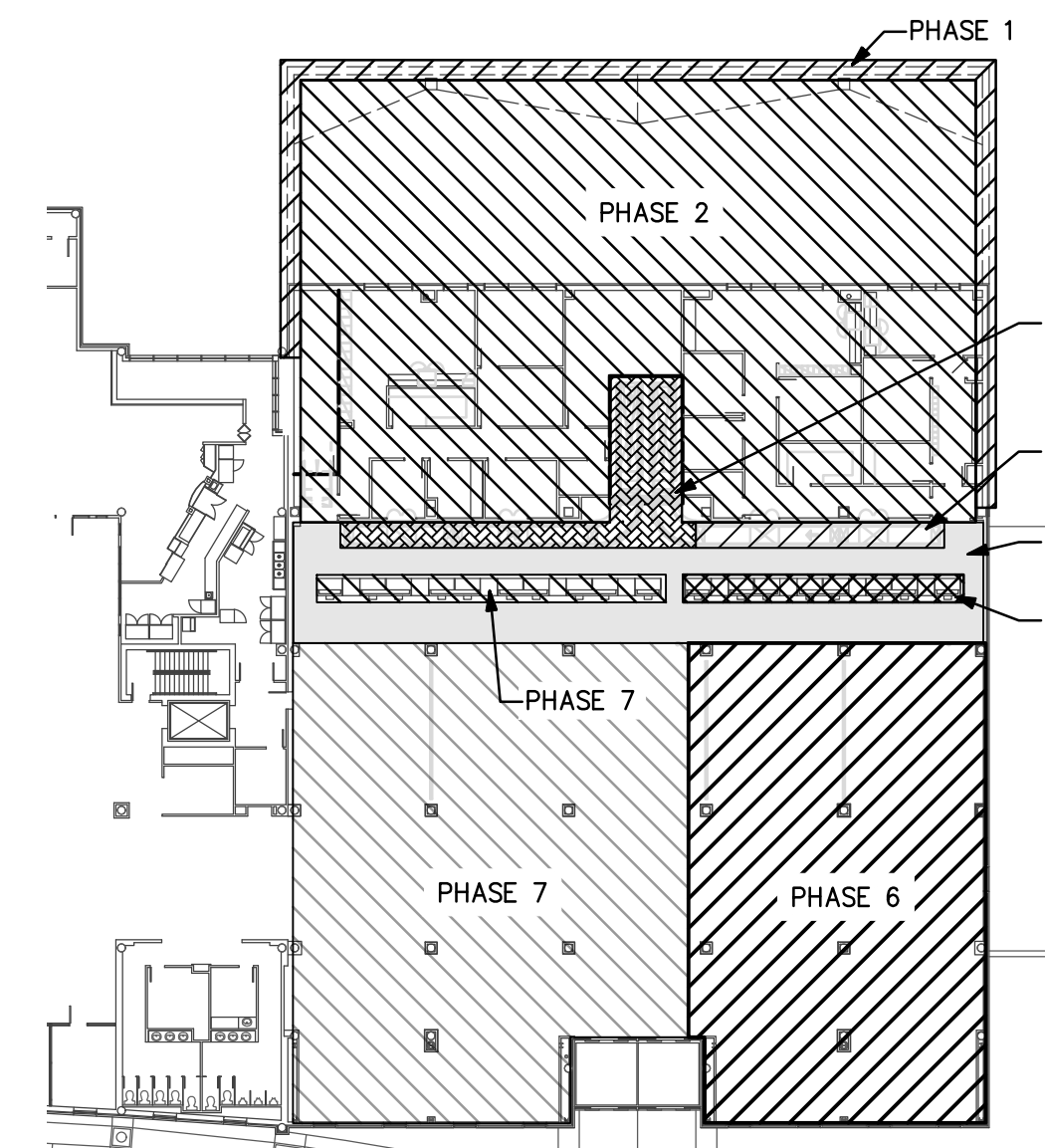
**3 ELECTRICAL ENLARGED PLAN - STORAGE/IT 196**  
SCALE: 1/4" = 1'-0"  
GRAPHIC SCALE: 1" = 1'-0"



**2 ELECTRICAL ENLARGED PLAN - MECHANICAL RM 181**  
SCALE: 1/4" = 1'-0"  
GRAPHIC SCALE: 1" = 1'-0"



**1 ELECTRICAL SECOND LEVEL POWER PLAN**  
SCALE: 1/8" = 1'-0"  
GRAPHIC SCALE: 1" = 1'-0"



- PHASING NOTES:**
- PHASE 1: CONSTRUCTION NEW SHELL
  - PHASE 2: INTERIOR UPFIT.
  - BHS PHASE 2: INSTALL CONVEYOR.
  - PHASE 3: N/A.
  - PHASE 4: INSTALL NEW CEILING.
  - BHS PHASE 3: INSTALL CONVEYORS.
  - PHASE 5: INSTALL NEW COUNTERS.
  - PHASE 6: INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
  - PHASE 7: INSTALL NEW COUNTERS; INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
- SEE ARCHITECTURAL PLANS A-131 THROUGH A-137 FOR ADDITIONAL PHASING INFORMATION.
- SEE BAGGAGE HANDLING SYSTEM PLANS B-701 THROUGH B-708 FOR ADDITIONAL PHASING INFORMATION.

PHASING KEY PLAN

**REVISIONS**

ADDENDUM 3	01/22/2019
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DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:

## ELECTRICAL SECOND LEVEL POWER PLAN

SHEET NUMBER:  
**E-103**





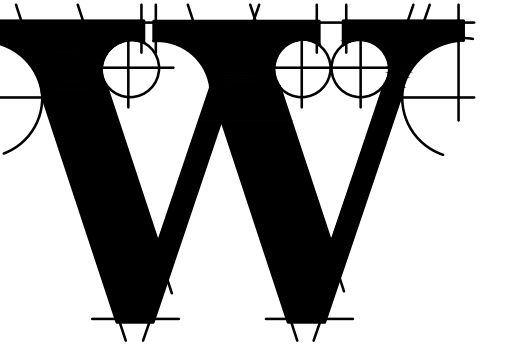
# TERMINAL IMPROVEMENTS CONTRACT 2

WILMINGTON INTERNATIONAL AIRPORT  
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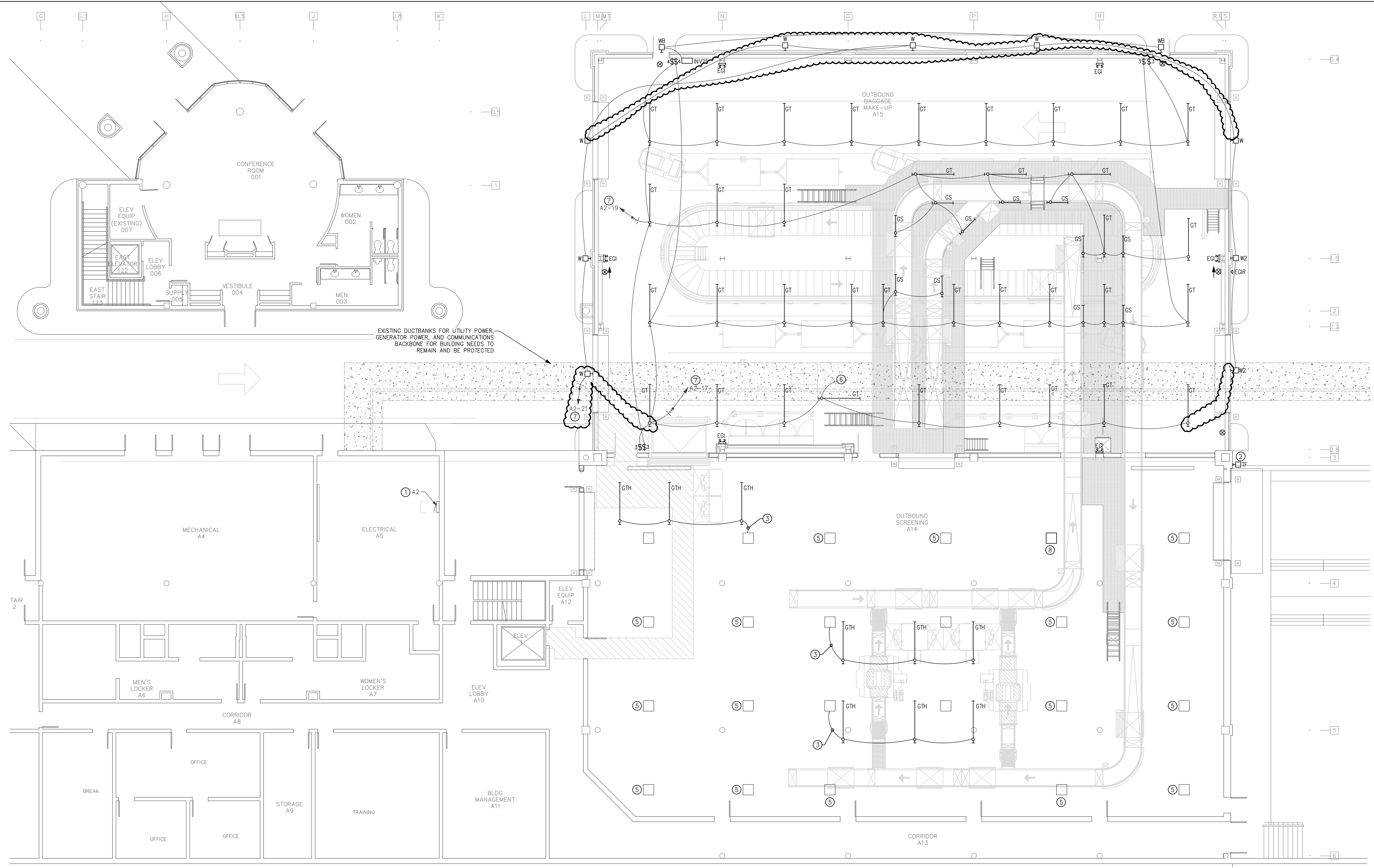
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STRUCTURAL ENGINEER  
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SPECIALTY LIGHTING CONSULTANT  
**HARTRANFT LIGHTING DESIGN**  
401 HAWTHORNE LANE, SUITE 110-269  
CHARLOTTE, NC 28204  
(240) 731-1058

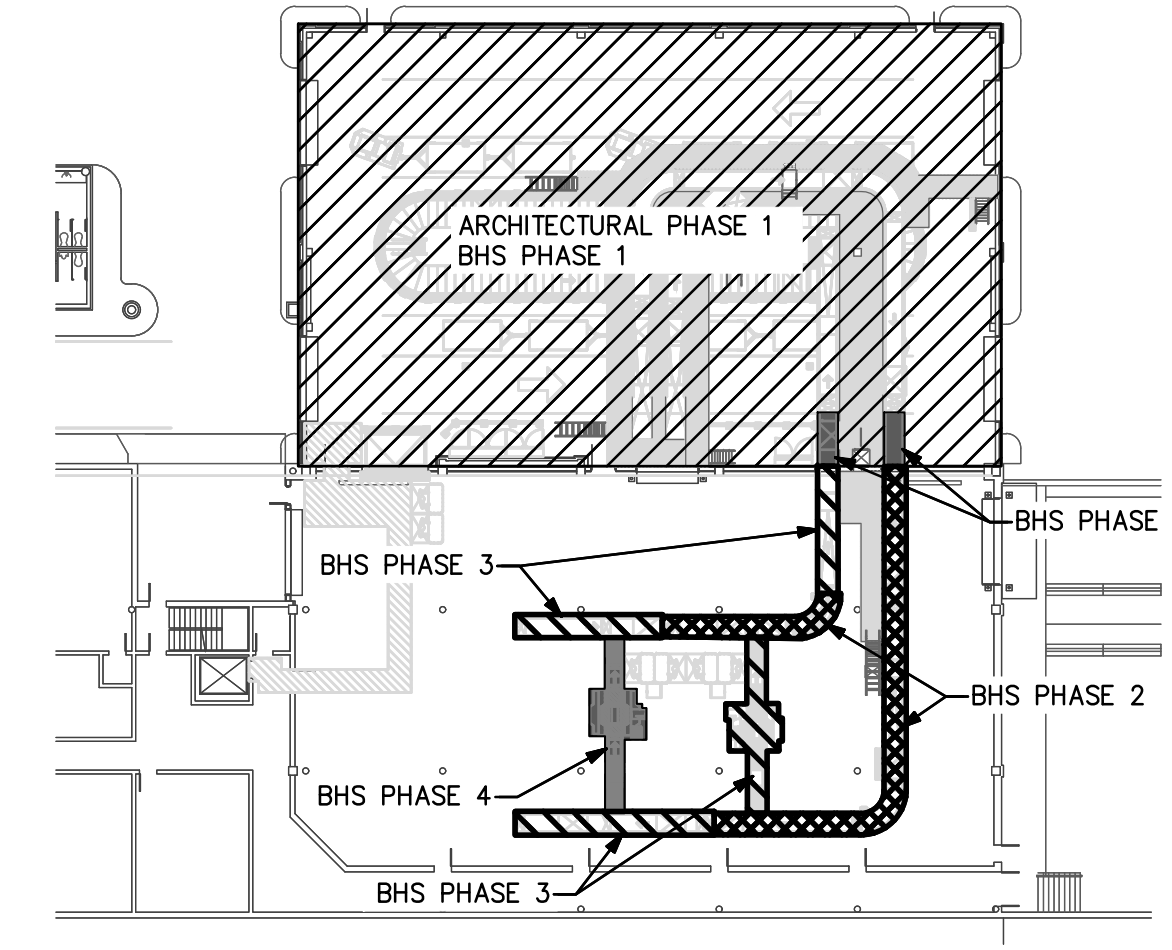


EXISTING DUCTBANKS FOR UTILITY POWER, GENERATOR POWER, AND COMMUNICATIONS BACKBONE FOR BUILDING NEEDS TO REMAIN AND BE PROTECTED

## 1 ELECTRICAL FIRST LEVEL LIGHTING PLAN

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

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



**PHASING NOTES**  
ARCHITECTURAL PHASE 1: CONSTRUCT ADDITION.  
BHS PHASE 1: INSTALL EQUIPMENT.  
BHS PHASE 2: INSTALL EQUIPMENT.  
BHS PHASE 3: INSTALL EQUIPMENT.  
BHS PHASE 4: INSTALL EQUIPMENT.  
SEE ARCHITECTURAL PLANS A-131 THROUGH A-137 FOR ADDITIONAL PHASING INFORMATION.  
SEE BAGGAGE HANDLING SYSTEM PLANS B-701 THROUGH B-708 FOR ADDITIONAL PHASING INFORMATION.

**KEYED NOTES**  
1 EXISTING PANEL A2, SQUARE-D HCN TYPE. UTILIZE EXISTING SPARE BREAKERS FOR LIGHTING CIRCUITS INDICATED ON PLAN.  
2 TEMPORARY FLOOD LIGHT. INSTALL LIGHT FIXTURE TYPE TF PRIOR TO CONSTRUCTION OF NEW ADDITION. CONNECT TO EXISTING CANOPY CIRCUITRY SERVING AREA. AFTER CONSTRUCTION OF NEW ADDITION, REMOVE LIGHT FIXTURE TYPE TF AND TURN OVER TO OWNER.  
3 EXTEND NEW LIGHTING CIRCUITRY FROM EXISTING LIGHTING CIRCUIT PREVIOUSLY SERVING AREA. CONTRACTOR TO INDICATE ON AS-BUILTS PANEL AND CIRCUIT NUMBER DEVICE IS FED FROM.  
4 BOTTOM OF FIXTURE SHALL BE LEVEL WITH BOTTOM OF CATWALK. CONTRACTOR TO PENDANT MOUNT FIXTURE BETWEEN CATWALK AND CONVEYOR SYSTEM.  
5 EXISTING LIGHT FIXTURE.  
6 UP TO SECOND LEVEL.  
7 TO BE CONTROLLED THROUGH EXISTING GE LIGHTING CONTROL PANEL CATALOG #RCOV48SHL LOCATED NEXT TO PANEL A2. CONTRACTOR TO PROVIDE NEW RELAY.  
8 NEW LOCATION OF RELOCATED LIGHT FIXTURE.

PHASING KEY PLAN

REVISIONS  
ADDENDUM 3 A0-3 01/22/2019

DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:

## ELECTRICAL FIRST LEVEL LIGHTING PLAN

SHEET NUMBER:  
**E-111**





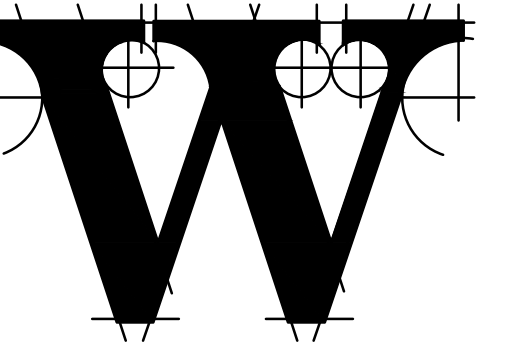
# TERMINAL IMPROVEMENTS CONTRACT 2

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### REVISIONS

ADDENDUM 3 A0-3 01/22/2019

DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:

## ELECTRICAL SECOND LEVEL LIGHTING PLAN

SHEET NUMBER:

# E-112

### NOTES:

1. LIGHTING FIXTURE SELECTION, LAYOUT, AND DIMMER SCHEDULE WERE PERFORMED BY HARTRANFT LIGHTING DESIGN. INCLUSION HERE IS NOT INTENDED TO REPRESENT THAT THE FIXTURE SELECTION, LAYOUT, AND DIMMER SCHEDULE IS THE WORK PRODUCT OF CHEATHAM & ASSOCIATES, P.A.
2. NUMBER NEXT TO LIGHT FIXTURE INDICATES DIMMER SCHEDULED ZONE.

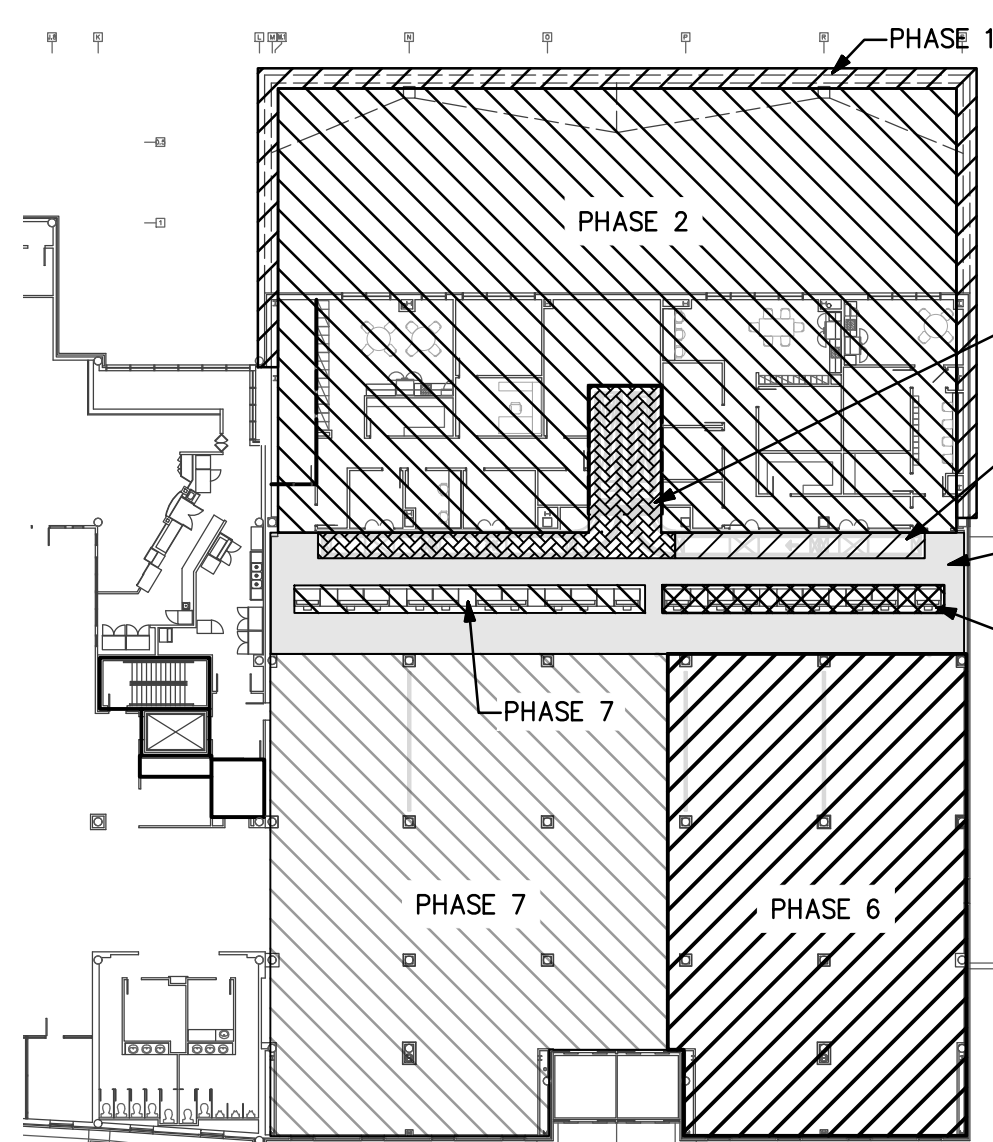
### KEYED NOTES:

- 1 EXISTING LIGHT FIXTURE TO REMAIN.
- 2 FED FROM CIRCUIT A2-17 BELOW.
- 3 4 BUTTON LOW VOLTAGE SWITCH TOGGLE ALL LIGHTS ON/OFF
  - NORMAL SCHEDULE
  - SPARE
  - SPARE
- 4 LOCATION OF IPLAYER

HARTRANFT LIGHTING DESIGN		DIMMER SCHEDULE		(SEE SEPARATE DIMMER SPECIFICATIONS)		Revision		
PROJECT:	WILMINGTON TERMINAL EXPANSION 1A	PROJECT #:				10222/2018		
ZONE:		REVISION:						
ZONE NO.	FIXTURE	DESCRIPTION	WATTS	UNITS	QTY.	CONTROL & LOAD TYPE	CONTROL TYPE	TOTAL
<b>FRONT OF HOUSE (TICKETING AREA, CIRCULATION AND ENTRY)</b>								
1A, 1B	HB	TUNABLE WHITE DOWNLIGHT	18	EACH	18	0-10V, 2 Channel per zone	TIMELOCK AND PHOTOSENSOR	324.0
2A, 2B	HB	TUNABLE WHITE DOWNLIGHT	18	EACH	12	0-10V, 2 Channel per zone	TIMELOCK AND PHOTOSENSOR	216.0
3	HN	CURVABLE FOR EXISTING COVE	6.6	LFT	45.53	0-10V	TIMELOCK	300.5
4	HE	CUSTOM RING FIXTURES	456	EACH	4	0-10V	TIMELOCK	1824.0
5	HA	LO SLOT FIXTURE	6	LFT	327	0-10V	TIMELOCK	1962.0
6	HA	LO SLOT FIXTURE	6	EACH	243	0-10V	TIMELOCK	1458.0
7A, 7B	HB	TUNABLE WHITE DOWNLIGHT	18	EACH	15	0-10V, 2 Channel per zone	TIMELOCK	270.0
8	HC	ACCENT DOWNLIGHTS ON SLOPED CEILING	20	EACH	10	0-10V	TIMELOCK	200.0
<b>DMX</b>								
CHANNELS 1-4	HG	RGW CURVED COVE	8	LFT	123.0	DMX	IPLAYER LINKED WITH TIME CLOCK	984.0
CHANNELS 5-8	HM	RGBW EXTRUSION IN MILLWORK DETAIL OF TICKETING COUNTER	8	LFT	TBD	DMX	IPLAYER LINKED WITH TIME CLOCK	8.0
CHANNELS 9-24	HF	RGBW EXTRUSION IN RECTANGULAR COVE	8	LFT	322.0	DMX	IPLAYER LINKED WITH TIME CLOCK	2576.0

LIGHTING CONTROL PANEL/KEYPAD - CRESTON, ETC. OR EQUAL AND COLOR KINETICS IPLAYERS, DIMMING CONTROLS SHALL LINK TO BUILDING MANAGEMENT SYSTEM AND SHALL BE BACNET COMPATIBLE IF NECESSARY.

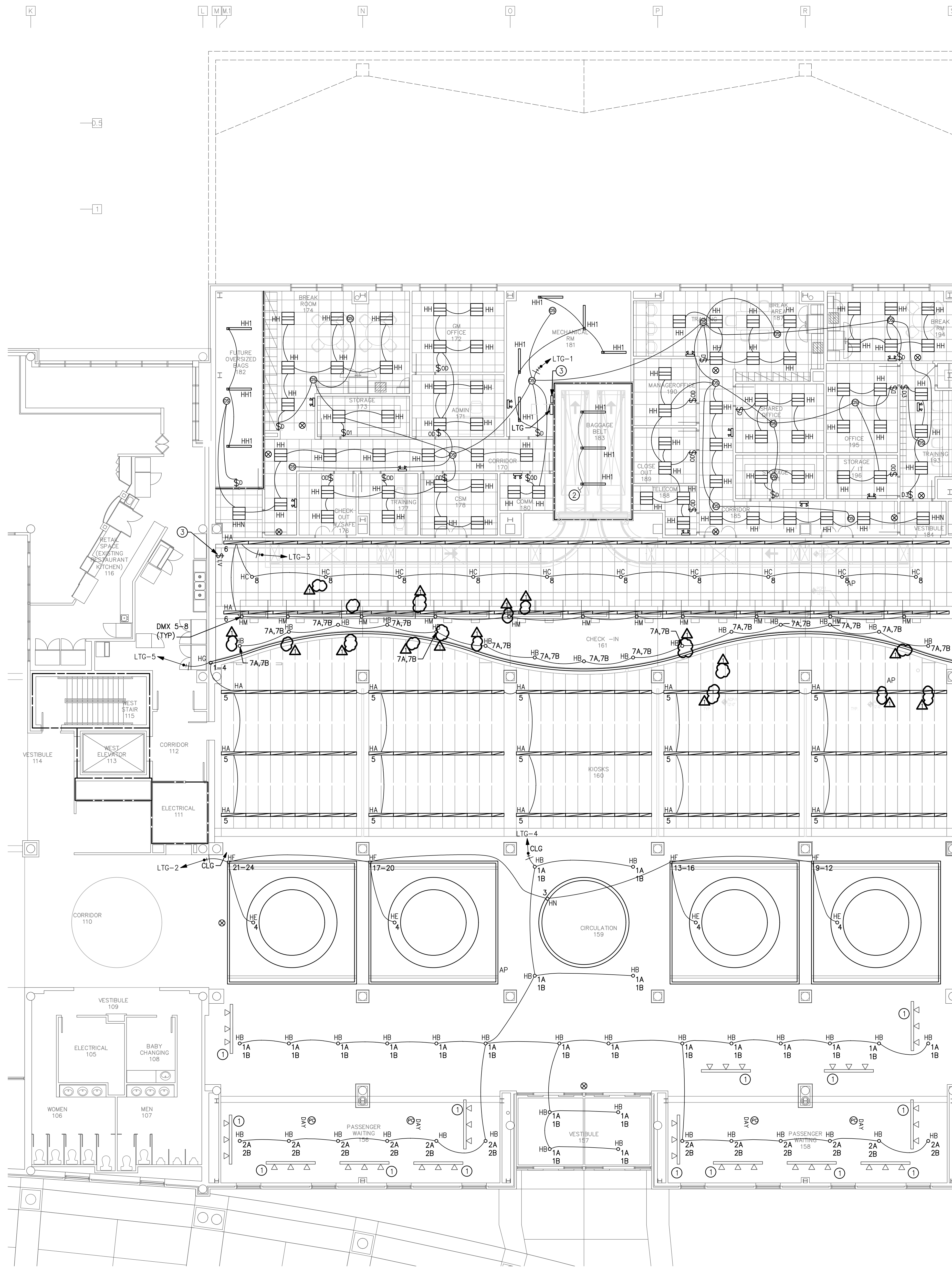
### DIMMER SCHEDULE



PHASING KEY PLAN

### PHASING NOTES:

- PHASE 1: CONSTRUCTION NEW SHELL
  - PHASE 2: INTERIOR UPFIT.
  - BHS PHASE 2: INSTALL CONVEYOR.
  - BHS PHASE 2: INSTALL CONVEYORS.
  - PHASE 3: N/A.
  - PHASE 4: INSTALL NEW CEILING.
  - BHS PHASE 3: INSTALL CONVEYORS.
  - PHASE 5: INSTALL NEW COUNTERS.
  - PHASE 6: INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
  - PHASE 7: INSTALL NEW COUNTERS; INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
- SEE ARCHITECTURAL PLANS A-131 THROUGH A-137 FOR ADDITIONAL PHASING INFORMATION.
- SEE BAGGAGE HANDLING SYSTEM PLANS B-701 THROUGH B-708 FOR ADDITIONAL PHASING INFORMATION.



ELECTRICAL SECOND LEVEL LIGHTING PLAN  
SCALE: 1/8" = 1'-0"

GRAPHIC SCALE: 1" = 1'-0"  
0 2 4 8 16  
TRUE NORTH





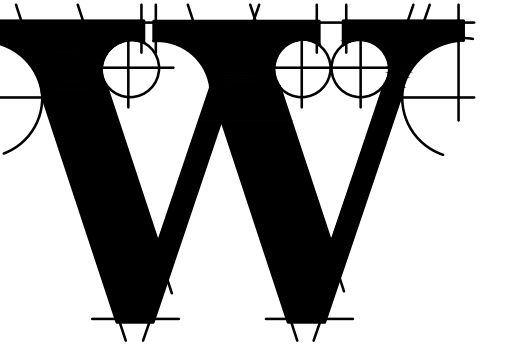
# TERMINAL IMPROVEMENTS CONTRACT 2

WILMINGTON INTERNATIONAL AIRPORT  
1740 AIRPORT BOULEVARD, SUITE 12  
WILMINGTON, NC 28405

**CHEATHAM & ASSOCIATES, P.A.**  
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NC LICENSE# C-1073  
JOB # 17.86



ARCHITECT



**THE WILSON GROUP**

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(704) 351-9747

PROJECT MANAGER & CIVIL ENGINEER

**TALBERT & BRIGHT**

4810 SHELLEY DRIVE  
WILMINGTON, NC 28405  
(910) 783-5350 FIRM NO.: C-0713

CONSULTING ARCHITECT

**LS3P**

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WILMINGTON, NC 28401  
(910) 790-9901

STRUCTURAL ENGINEER

**STEWART**

101 N. TRYON ST., SUITE 1400  
CHARLOTTE, NC 28202  
(704) 909-3523 FIRM NO.: C-1051

P, M & E ENGINEER

**CHEATHAM & ASSOC.**

3412 ENTERPRISE DRIVE  
WILMINGTON, NC 28405  
(910) 452-4210

BAGGAGE HANDLING CONSULTANTS

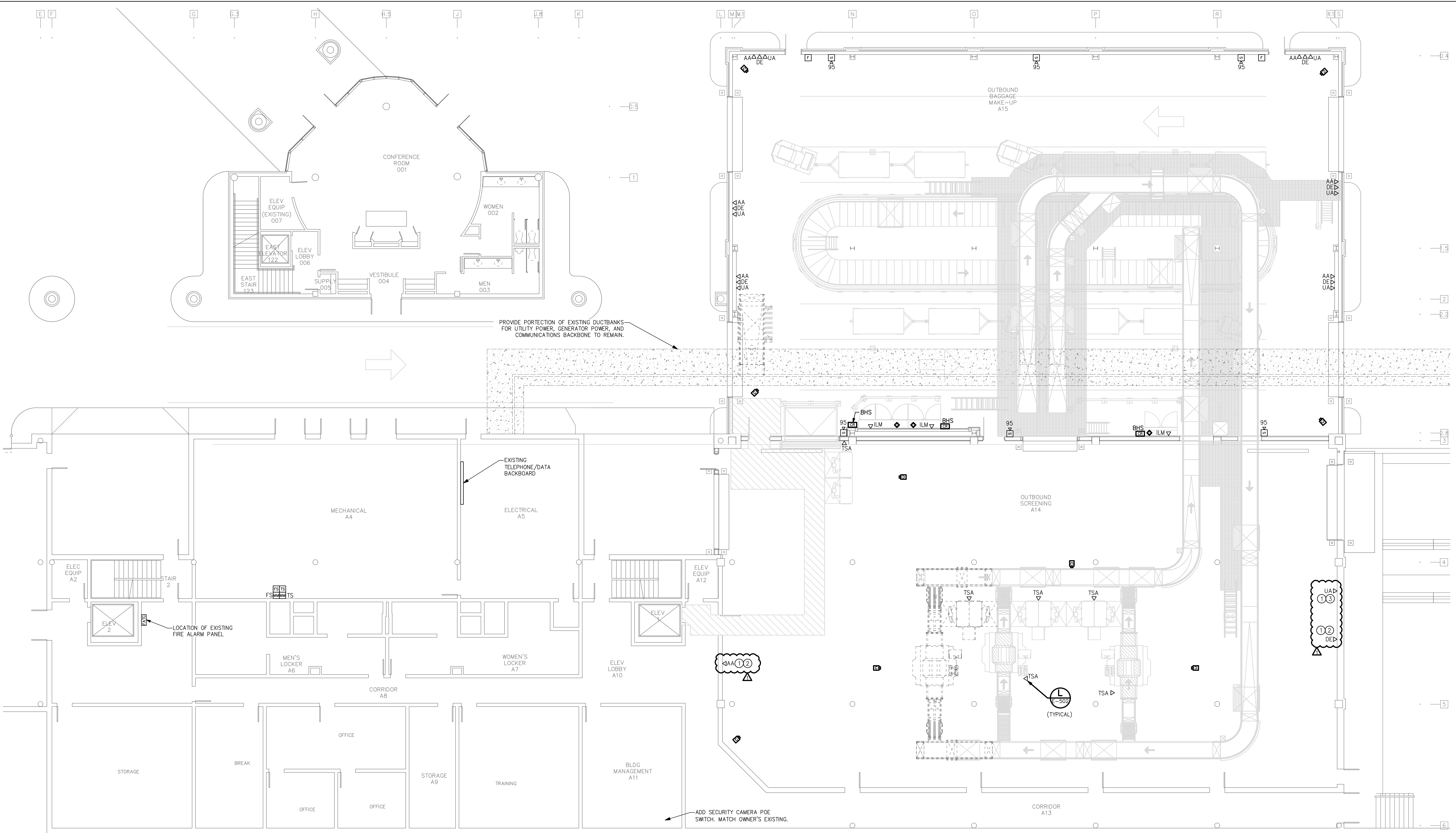
**BNP ASSOCIATES**

1861 POST ROAD  
FAIRFIELD, CT 06824  
(203) 792-3000

SPECIALTY LIGHTING CONSULTANT

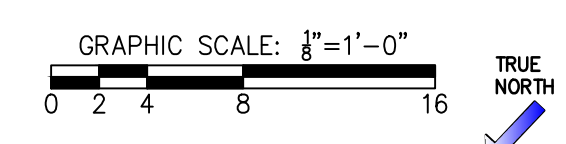
**HARTRANFT LIGHTING DESIGN**

401 HAWTHORNE LANE, SUITE 110-269  
CHARLOTTE, NC 28204  
(240) 731-1058



## 1 ELECTRICAL FIRST LEVEL AUXILIARY SYSTEMS PLAN

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



NOTES:  
1. RAMP LEVEL SECURITY CAMERA CABLING SHALL TERMINATE IN BUILDING MANAGEMENT A111.

### REVISIONS

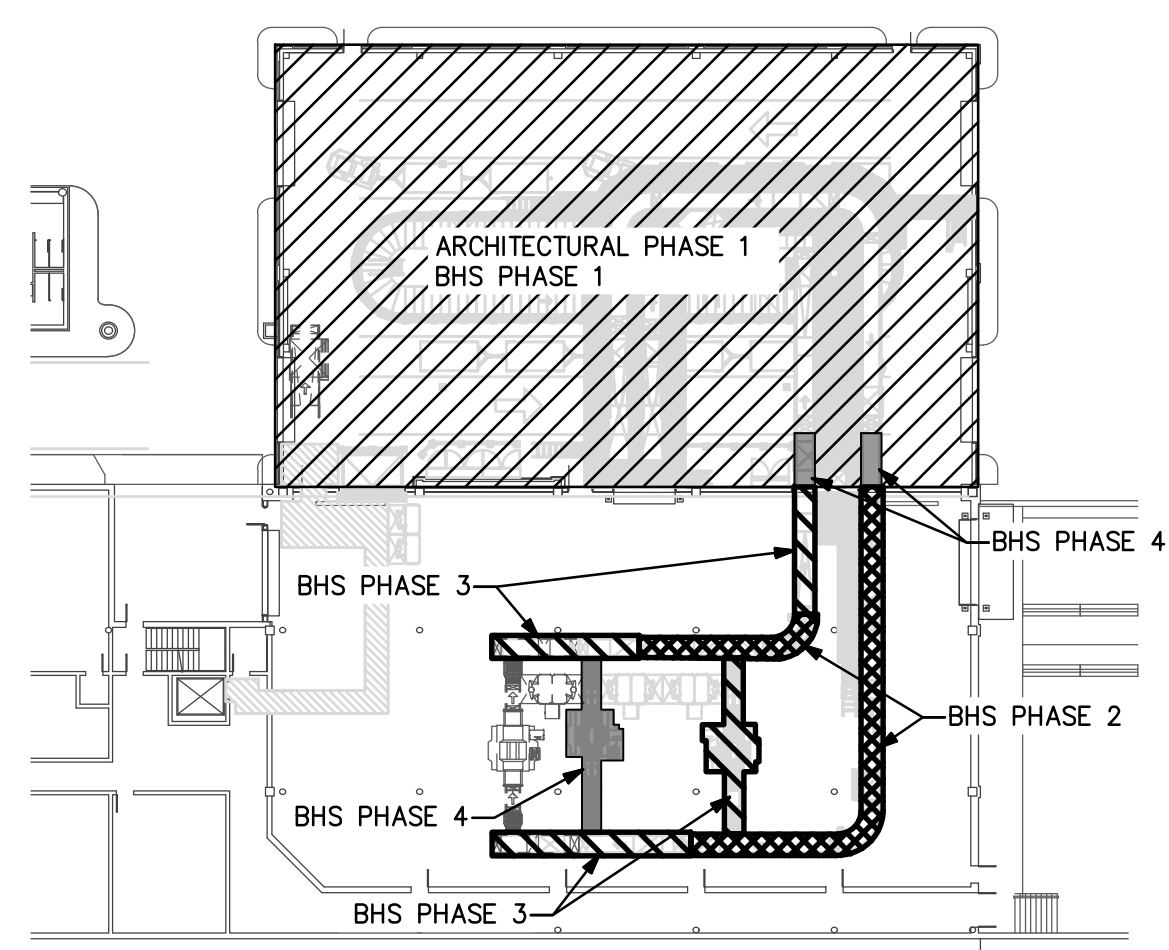
1	ADDENDUM AD-03 1/22/19
2	
3	
4	
5	
6	
7	
8	
9	
10	

DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:

## ELECTRICAL FIRST LEVEL AUXILIARY SYSTEMS PLAN

SHEET NUMBER:

# E-121



PHASING KEY PLAN

**PHASING NOTES:**

ARCHITECTURAL PHASE 1: CONSTRUCT ADDITION.  
BHS PHASE 1: INSTALL EQUIPMENT.  
BHS PHASE 2: INSTALL EQUIPMENT.  
BHS PHASE 3: INSTALL EQUIPMENT.  
BHS PHASE 4: INSTALL EQUIPMENT.

SEE ARCHITECTURAL PLANS A-131 THROUGH A-137 FOR ADDITIONAL PHASING INFORMATION.  
SEE BAGGAGE HANDLING SYSTEM PLANS B-701 THROUGH B-708 FOR ADDITIONAL PHASING INFORMATION.

**KEYED NOTES:**

1. INSTALL OUTLET PRIOR TO CONSTRUCTION OF NEW ADDITION.  
2. CABLES ARE TO BE INSTALLED TO THE EXISTING AMERICAN AIRLINES COMMUNICATIONS RACK LOCATED ON TICKET LEVEL. SEE DRAWING E-012, MDF ROOM, NEAR COLUMN N-4. CABLES ARE NOT TO BE INSTALLED TO THE NEW ROOM.  
3. CABLES ARE TO BE INSTALLED TO THE EXISTING DELTA AIRLINES COMMUNICATIONS CABINET LOCATED ON TICKET LEVEL. SEE DRAWING E-012, AIRLINE OFFICE 163, NEAR COLUMN R-4. CABLES ARE NOT TO BE INSTALLED TO THE NEW ROOM.  
4. CABLES ARE TO BE INSTALLED TO THE EXISTING UNITED AIRLINES COMMUNICATIONS CABINET LOCATED ON TICKET LEVEL. SEE DRAWING E-012, MDF ROOM, NEAR COLUMN S-4. CABLES ARE NOT TO BE INSTALLED TO THE NEW ROOM.

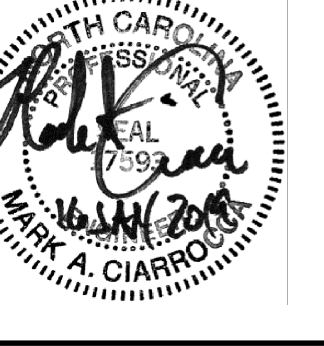




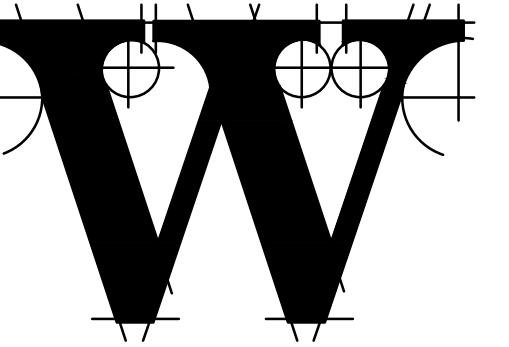
# TERMINAL IMPROVEMENTS CONTRACT 2

WILMINGTON INTERNATIONAL AIRPORT  
1740 AIRPORT BOULEVARD, SUITE 12  
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SPECIALTY LIGHTING CONSULTANT  
**HARTRANFT LIGHTING DESIGN**  
401 HAWTHORNE LANE, SUITE 110-269  
CHARLOTTE, NC 28204  
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### REVISIONS

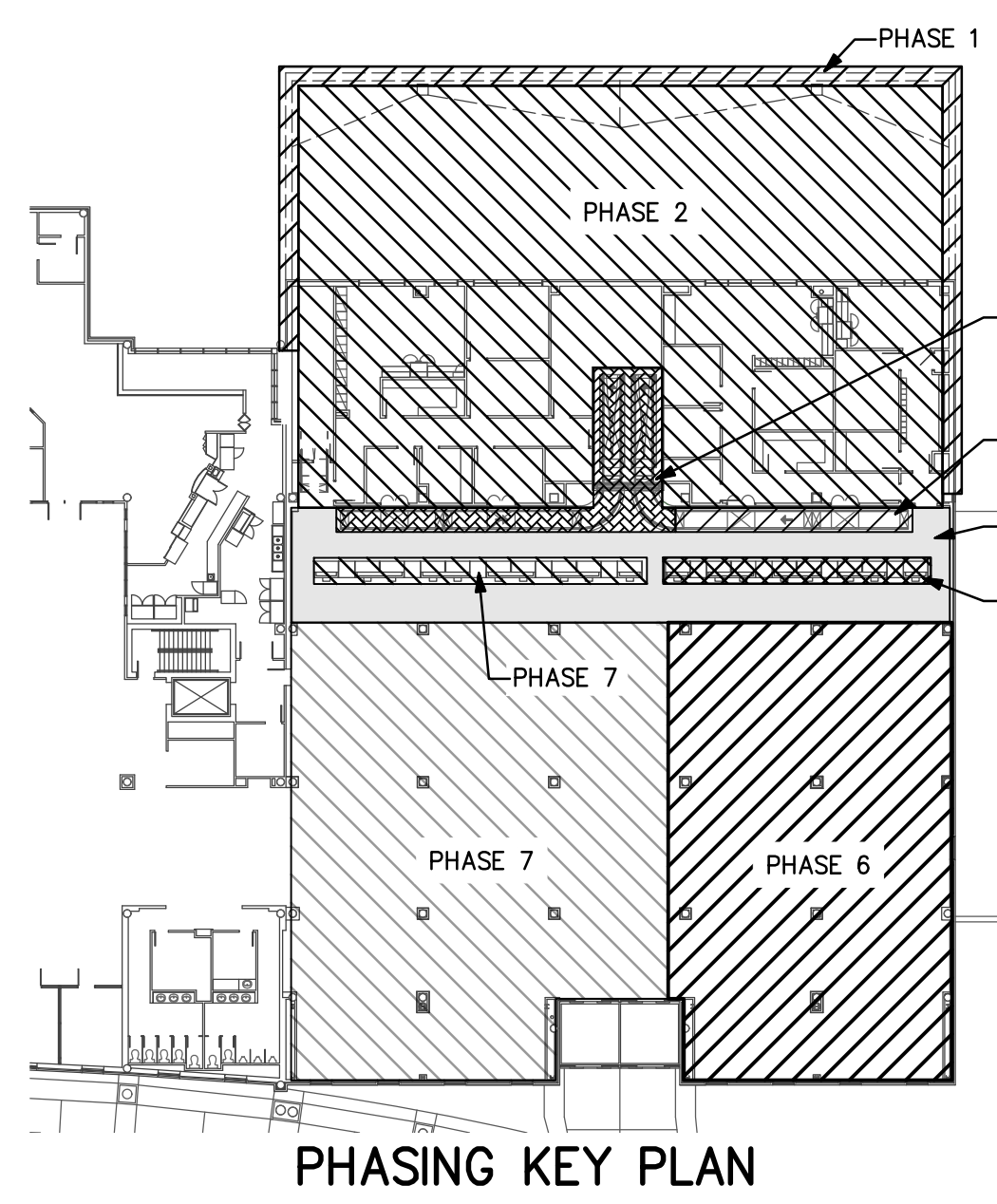
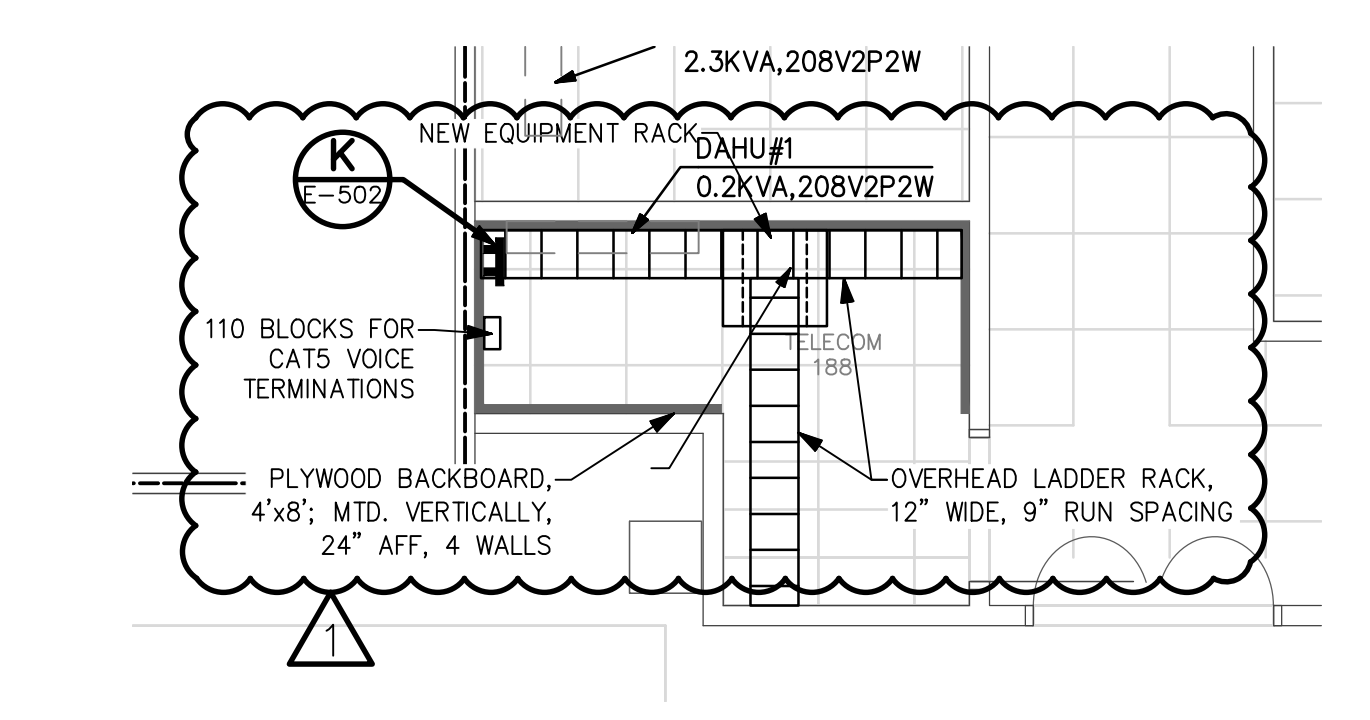
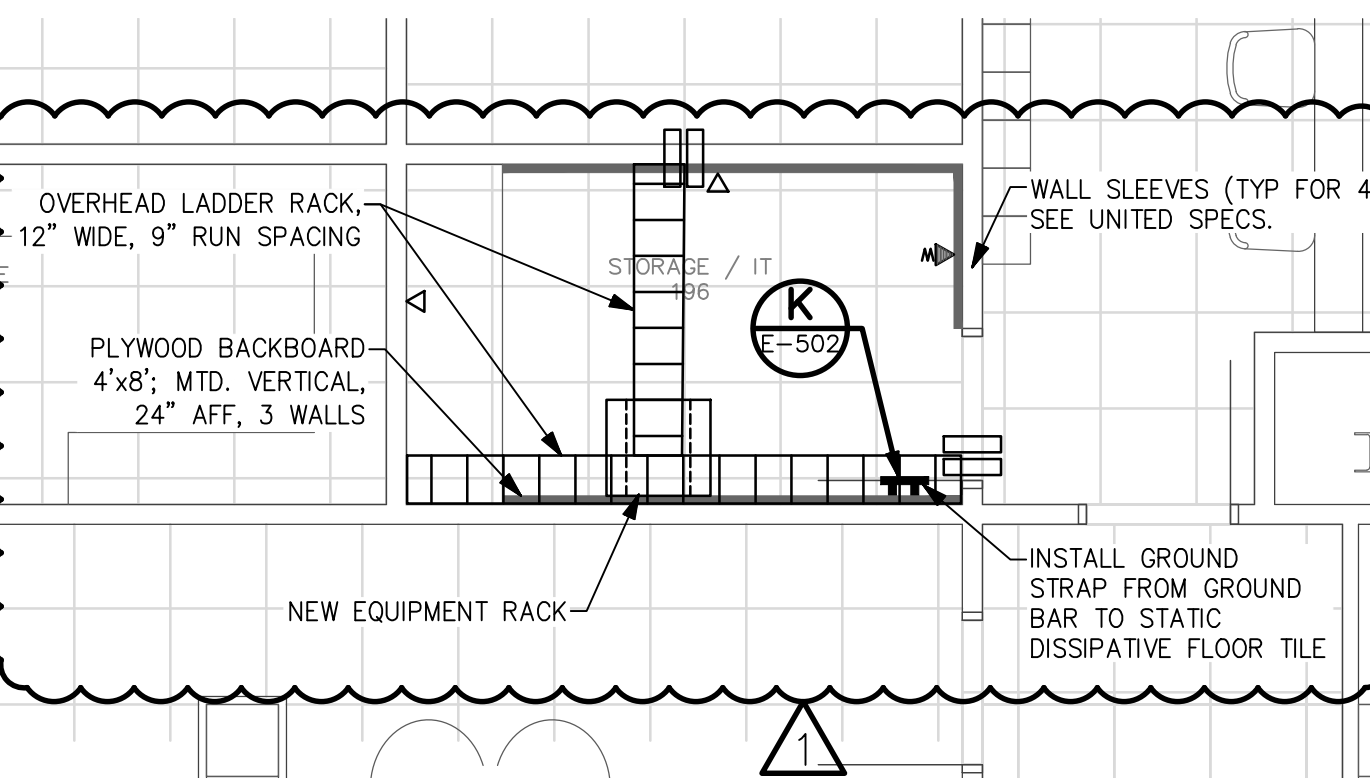
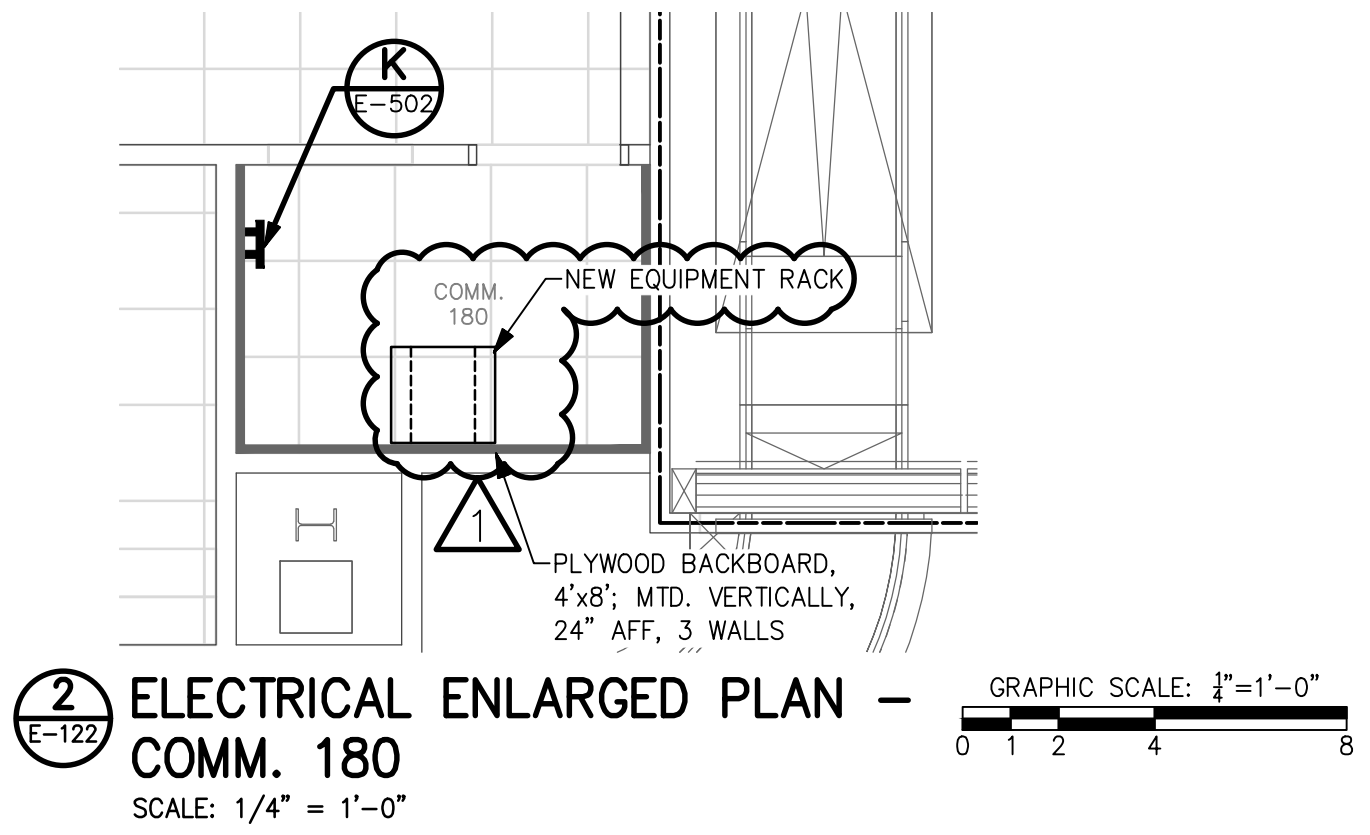
ADDENDUM 3 01/22/2019

DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:

## ELECTRICAL SECOND LEVEL AUXILIARY SYSTEMS PLAN

SHEET NUMBER:

# E-122

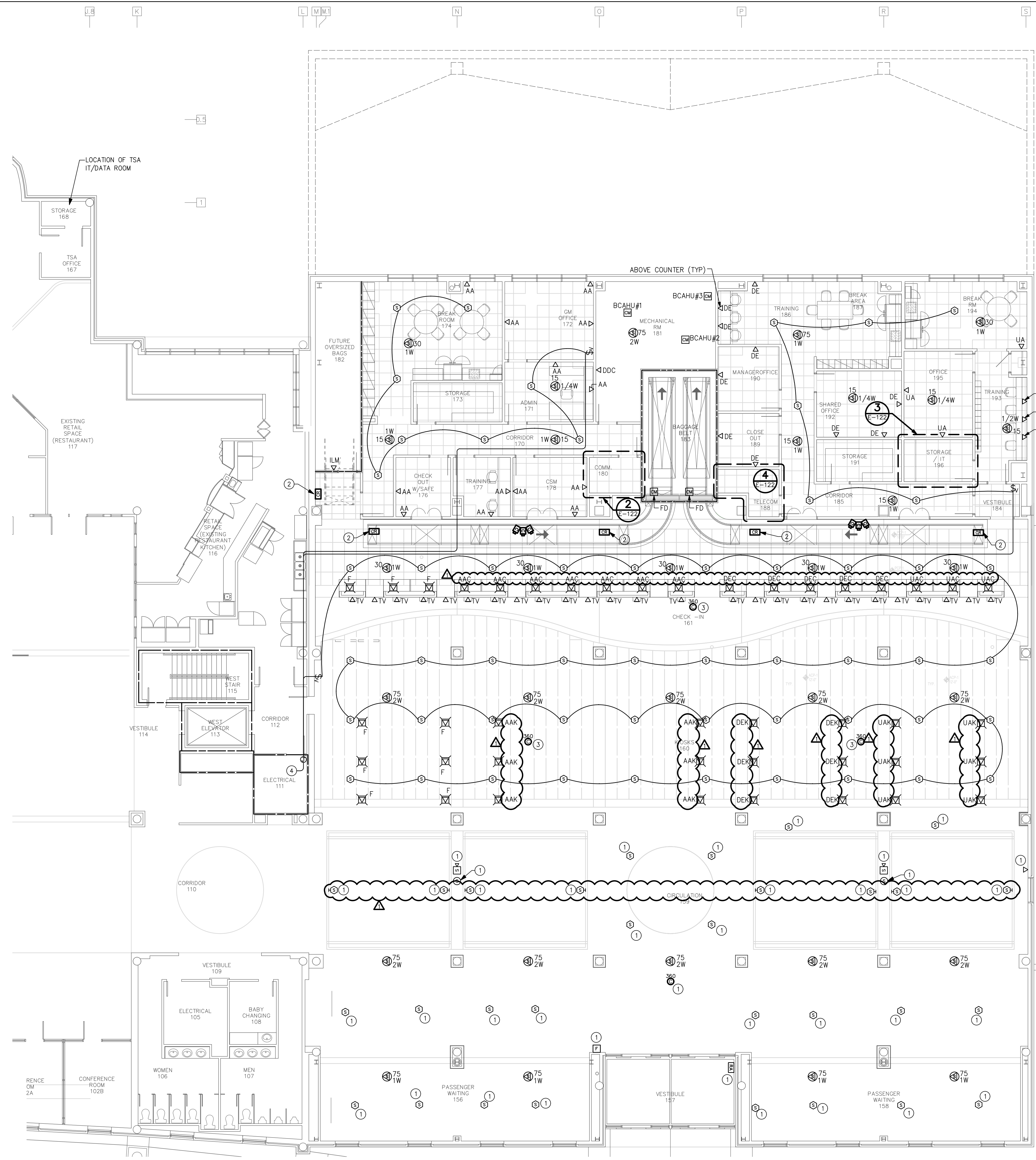


- PHASING NOTES:**
- PHASE 1: CONSTRUCTION NEW SHELL
  - PHASE 2: INTERIOR UPFIT.
  - BHS PHASE 2: INSTALL CONVEYOR.
  - PHASE 3: N/A.
  - PHASE 4: INSTALL NEW CEILING.
  - BHS PHASE 3: INSTALL CONVEYORS.
  - PHASE 5: INSTALL NEW COUNTERS.
  - PHASE 6: INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
  - PHASE 7: INSTALL NEW COUNTERS; INSTALL KIOSKS; EXSTG AREA RENOVATIONS.
- SEE ARCHITECTURAL PLANS A-131 THROUGH A-137 FOR ADDITIONAL PHASING INFORMATION.
- SEE BAGGAGE HANDLING SYSTEM PLANS B-701 THROUGH B-708 FOR ADDITIONAL PHASING INFORMATION.

- KEYED NOTES:**
- 1 EXISTING DEVICE TO REMAIN.
  - 2 CARD READER FOR BHS CONVEYOR CONTROL.
  - 3 RELOCATED SECURITY CAMERA:
    - WHERE EXISTING CABLES ARE LONG ENOUGH TO REACH NEW LOCATION, REWORK CABLE TO THAT LOCATION.
    - IF EXISTING CABLE IS TOO SHORT TO REACH NEW LOCATION, INSTALL NEW CABLE TO BUILDING MANAGEMENT A11.
  - 4 HOME RUN TO AUDIO EQUIPMENT BELOW ON RAMP LEVEL ROOM BUILDING MANAGEMENT A11

**NOTES:**

- 1. TICKET LEVEL SECURITY CAMERA CABLING SHALL TERMINATE IN ELECTRICAL 111.







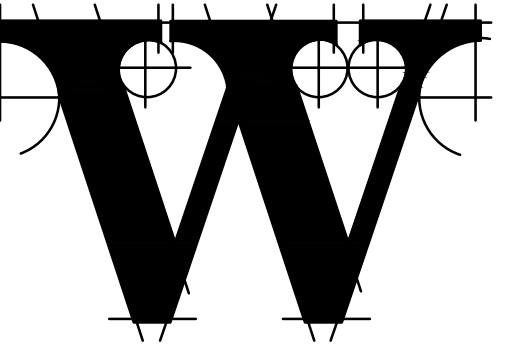
# TERMINAL IMPROVEMENTS CONTRACT 2

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(240) 731-1058

REVISIONS  
ADDENDUM 3 01/22/2019

DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-000  
SHEET TITLE:

## ELECTRICAL PANEL SCHEDULES

SHEET NUMBER:  
**E-602**

### 4BH NEW PANEL

ROOM: MECHANICAL RM 181 VOLTS: 480Y/277V 3P 4W AIC: 22,000  
MOUNTING: SURFACE BUS AMPS: 250 MAIN BKR: 250  
FED FROM: B NEUTRAL: 100% LUGS: STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	25/1	TANKLESS WATER HEATER	5.54			2	30/3	SPD-4BH	0		
3	25/1	TANKLESS WATER HEATER	5.54	5.54		4			0	0	0
5	25/1	TANKLESS WATER HEATER		5.54	5.54	6					
7	20/1	SPARE	0	0		8	20/3	BCAHU#1	0.582	0.582	0.582
9	20/1	SPARE			0	10					
11	20/1	SPARE			0	12					
13	20/1	SPARE	0	0		14	20/3	BCAHU#2	0.582	0.582	0.582
15	20/1	SPARE			0	16					
17	125/3	PANEL LTG		3.27	5.94	18					
19						20	20/3	BCAHU#3	0.582	0.582	0.582
21				3.13		22			0.582	0.582	0.582
23	20/1	SPARE			0	24					
25	20/1	SPARE			0	26	20/1	SPARE	0	0	0
27	20/1	SPARE			0	28	20/1	SPARE	0	0	0
29	20/1	SPARE			0	30	20/1	SPARE	0	0	0
31	20/1	SPARE			0	32	20/1	SPARE	0	0	0
33	20/1	SPARE			0	34	20/1	SPARE	0	0	0
35	20/1	SPARE			0	36	20/1	SPARE	0	0	0
37	20/1	SPARE			0	38	20/1	SPARE	0	0	0
39	20/1	SPARE			0	40	20/1	SPARE	0	0	0
41	20/1	SPARE			0	42	20/1	SPARE	0	0	0
43	20/1	SPARE			0	44	20/1	SPARE	0	0	0
45	20/1	SPARE			0	46	20/1	SPARE	0	0	0
47	20/1	SPARE			0	48	20/1	SPARE	0	0	0
49	125/3	XFMR T2BH	19.9			50	20/1	SPARE	0	0	0
51				21.3		52	20/1	SPARE	0	0	0
53						54	20/1	SPARE	0	0	0

TOTAL CONNECTED KVA BY PHASE 30.4 31.7 35.3  
TOTAL CONNECTED AMPS BY PHASE 110 114 127

CONN KVA		CALC KVA		%		CONN KVA		CALC KVA		%	
LIGHTING	12.3	15.4	(125%)	CONTINUOUS	0	0	(125%)				
LARGEST MOTOR	3	3.75	(125%)	HEATING	0	0	(N/A)				
OTHER MOTORS	5.54	5.54	(100%)	COOLING	0	0	(N/A)				
RECEPTACLES	43.7	26.9	(50%>10)	NONCONTINUOUS	29.8	29.8	(100%)				
KITCHEN EQUIP	3	2.7	(90%)	DIVERSE	0	0	(N/A)				
				METERED DEMAND	0	0	(125%)				
TOTAL KVA	97.4	84.1									
BALANCED 3-PHASE AMPS	101										

### LTG

ROOM: MECHANICAL RM 181 VOLTS: 480Y/277V 3P 4W AIC: 22,000  
MOUNTING: SURFACE BUS AMPS: 125 MAIN BKR: MLO  
FED FROM: 4BH NEUTRAL: 100% LUGS: STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	20/1	EGRESS, EXIT, LTG	2.39	2.52		2	20/1	EXIT, LTG	3.55	0.751	0
3	20/1	LTG			3.13	4	20/1	EXIT, LTG			
5	20/1	LTG				6	20/1	SPARE			
7	20/1	SPARE	0	0		8	20/1	SPARE	0	0	0
9	20/1	SPARE			0	10	20/1	SPARE	0	0	0
11	20/1	SPARE			0	12	20/1	SPARE	0	0	0
13	20/1	SPARE			0	14	20/1	SPARE	0	0	0
15	20/1	SPARE			0	16	20/1	SPARE	0	0	0
17	20/1	SPARE			0	18	20/1	SPARE	0	0	0
19	20/1	SPARE			0	20	20/1	SPARE	0	0	0
21	20/1	SPARE			0	22	20/1	SPARE	0	0	0
23	20/1	SPARE			0	24	20/1	SPARE	0	0	0
25	20/1	SPARE			0	26	20/1	SPARE	0	0	0
27	20/1	SPARE			0	28	20/1	SPARE	0	0	0
29	20/1	SPARE			0	30	20/1	SPARE	0	0	0
31	20/1	SPARE			0	32	20/1	SPARE	0	0	0
33	20/1	SPARE			0	34	20/1	SPARE	0	0	0
35	20/1	SPARE			0	36	20/1	SPARE	0	0	0
37	20/1	SPARE			0	38	20/1	SPARE	0	0	0
39	20/1	SPARE			0	40	20/1	SPARE	0	0	0
41	20/1	SPARE			0	42	20/1	SPARE	0	0	0

TOTAL CONNECTED KVA BY PHASE 5.94 3.27 3.13  
TOTAL CONNECTED AMPS BY PHASE 21.5 11.8 11.3

CONN KVA		CALC KVA		%		CONN KVA		CALC KVA		%	
LIGHTING	12.3	15.4	(125%)	CONTINUOUS	0	0	(125%)				
LARGEST MOTOR	0	0	(N/A)	HEATING	0	0	(N/A)				
OTHER MOTORS	0	0	(100%)	COOLING	0	0	(N/A)				
RECEPTACLES	0	0	(50%>10)	NONCONTINUOUS	0	0	(100%)				
KITCHEN EQUIP	0	0	(N/A)	DIVERSE	0	0	(N/A)				
				METERED DEMAND	0	0	(125%)				
TOTAL KVA	12.3	15.4									
BALANCED 3-PHASE AMPS	18.6										

### 40B (EXISTING PANEL)

ROOM: OUTBOUND BAGGAGE A14 VOLTS: 480V 3P 3W AIC: 18,000  
MOUNTING: SURFACE BUS AMPS: 225 MAIN BKR: MLO  
FED FROM: B NEUTRAL: NONE LUGS: STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	100/3	MCP-TC1	9.33			2	20/3	FAN EF-23	0.831		
3			9.33	9.33		4			0.831	0.831	0.831
5				9.33		6					
7	100/3	MCP-TC2	4.47	4.47		8	20/3	FAN EF-22	0.831	0.831	0.831
9				4.47	4.47	10					
11						12					
13	100/3	OTI-MU1-OS1	7.47	7.47		14	-/3	SPACE	0	0	0
15				7.47		16					
17	-/3	SPACE	0	0		18	-/3	SPACE	0	0	0
19						20	-/3	SPACE	0	0	0
21				0		22			0	0	0
23	-/3	SPACE	0	0		24	-/3	SPACE	0	0	0
25						26			0	0	0
27				0		28			0	0	0
29				0	0	30			0	0	0
31	-/3	SPACE	0	0		32	-/3	SPACE	0	0	0
33				0		34			0	0	0
35				0	0	36			0	0	0
37	125/3	(*) XFMR T20B	8.58	9.13		38	-/3	SPACE	0	0	0
39						40			0	0	0
41				8.67		42			0	0	0

TOTAL CONNECTED KVA BY PHASE 31.5 32.1 31.6  
TOTAL CONNECTED AMPS BY PHASE 105 116 114

CONN KVA		CALC KVA		%		CONN KVA		CALC KVA		%	
LIGHTING	0	0	(125%)	CONTINUOUS	0	0	(125%)				
LARGEST MOTOR	2.49	3.12	(125%)	HEATING	0	0	(N/A)				
OTHER MOTORS	74.8	74.8	(100%)	COOLING	0	0	(N/A)				
RECEPTACLES	9.16	9.16	(50%>10)	NONCONTINUOUS	8.68	8.68	(100%)				
KITCHEN EQUIP	0	0	(N/A)	DIVERSE	0	0	(N/A)				
				METERED DEMAND	0	0	(125%)				
TOTAL KVA	95.2	95.8									
BALANCED 3-PHASE AMPS	115										

(\*) NEW CIRCUIT BREAKER

### 2BH2 NEW PANEL

ROOM: MECHANICAL RM 181 VOLTS: 208Y/120V 3P 4W AIC: 22,000  
MOUNTING: SURFACE BUS AMPS: 225 MAIN BKR: MLO  
FED FROM: 2BH1 NEUTRAL: 100% LUGS: STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	20/1	REC	0.36			2	20/1	(*) REC-REFRIGERATOR			
3	20/1	REC	0.36	0.36		4	20/1	(*) REC-MICROWAVE	1	1	0.9
5	20/1	REC		0.54		6	20/1	REC			
7	20/1	REC	0.9	0.36		8	20/1	REC	0.54	0.54	0.9
9	20/1	REC			0.36	10	20/1	REC			
11	20/1	REC				12	20/1	REC	0.9		0.9
13	20/1	REC REC-COND. PUMP, REC-ROOF	1			14	20/1	REC			
15	25/2	REC-DATA		2.5		16	20/1	SPARE			
17				2.5	18	20/1	REC-MICROWAVE			1	
19	25/2	REC-DATA		2.5	20	20/1	REC	0.36	0.72		
21				2.5	22	20/1	REC-FLOOR		0.72		
23	20/1	REC		0.18	24	20/1	REC-FLOOR		0.72	0.72	
25	20/1	REC	0.18		26	20/1	REC-FLOOR	0.72			
27	20/1	REC		0.54	28	20/1	REC-FLOOR		0.36	0.36	
29	20/1	REC		0.54	30	20/1	REC-FLOOR		0.36	0.36	
31	20/1	(*) REC-REFRIGERATOR	1		32	20/1	REC REC-FLOOR	0.36			
33	20/1	REC		0.36	34	20/1	REC-FLOOR		0.36	0	
35	20/1	REC-FLOOR		0.72	36	20/1	SPARE			0	
37	20/1	REC-FLOOR	0.36		38	20/1	SPARE			0	
39	20/1	REC REC-FLOOR		0.54	40	20/1	SPARE			0	
41	20/1	REC-FLOOR	0.36		42	20/1	SPARE			0	
43				0.36	44	20/1	SPARE			0	
45				1.25	46	20/1	SPARE			0	
47					48	20/1	SPARE			0	
49				0	50	20/1	SPARE			0	





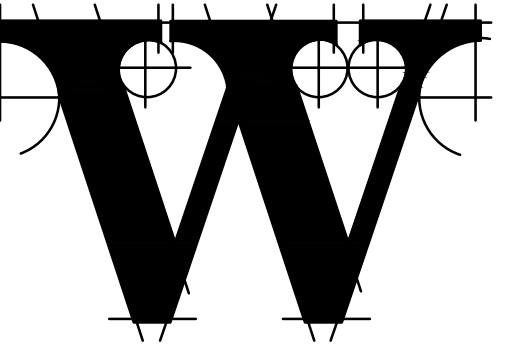
# TERMINAL IMPROVEMENTS CONTRACT 2

WILMINGTON INTERNATIONAL AIRPORT  
1740 AIRPORT BOULEVARD, SUITE 12  
WILMINGTON, NC 28405

**CHEATHAM & ASSOCIATES, P.A.**  
CONSULTING ENGINEERS  
3412 ENTERPRISE DRIVE  
WILMINGTON, NORTH CAROLINA  
910 452-4210  
FAX (910) 452-4211  
OFFICE@CHEATHAMPA.COM  
WWW.CHEATHAMPA.COM  
LIC. NO. C-1073  
JOB # 17.86



ARCHITECT



**THE WILSON GROUP**  
P O BOX 5510  
CHARLOTTE, NC 28299  
(704) 331-9747

PROJECT MANAGER & CIVIL ENGINEER  
**TALBERT & BRIGHT**  
4810 SHELLEY DRIVE  
WILMINGTON, NC 28405  
(910) 783-5350 FIRM NO.: C-0713

CONSULTING ARCHITECT  
**LS3P**  
101 NORTH THIRD STREET, SUITE 500  
WILMINGTON, NC 28401  
(910) 790-9901

STRUCTURAL ENGINEER  
**STEWART**  
101 N. TRYON ST., SUITE 1400  
CHARLOTTE, NC 28202  
(704) 909-3523 FIRM NO.: C-1051

P, M & E ENGINEER  
**CHEATHAM & ASSOC.**  
3412 ENTERPRISE DRIVE  
WILMINGTON, NC 28405  
(910) 452-4210

BAGGAGE HANDLING CONSULTANTS  
**BNP ASSOCIATES**  
1861 POST ROAD  
FAIRFIELD, CT 06824  
(203) 792-3000

SPECIALTY LIGHTING CONSULTANT  
**HARTRANFT LIGHTING DESIGN**  
401 HAWTHORNE LANE, SUITE 110-269  
CHARLOTTE, NC 28204  
(240) 731-1058

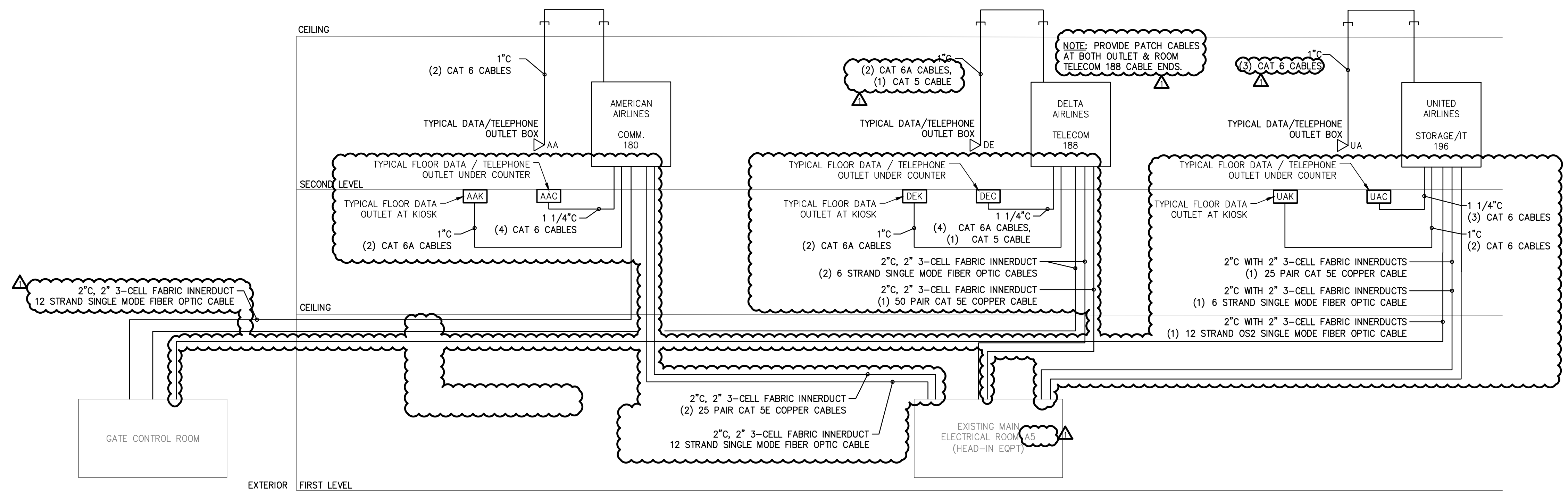
REVISIONS

Δ	ADDENDUM 3	01/22/2019
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DATE: NOVEMBER 30, 2018  
PROJECT NO.: 9202-008  
SHEET TITLE:

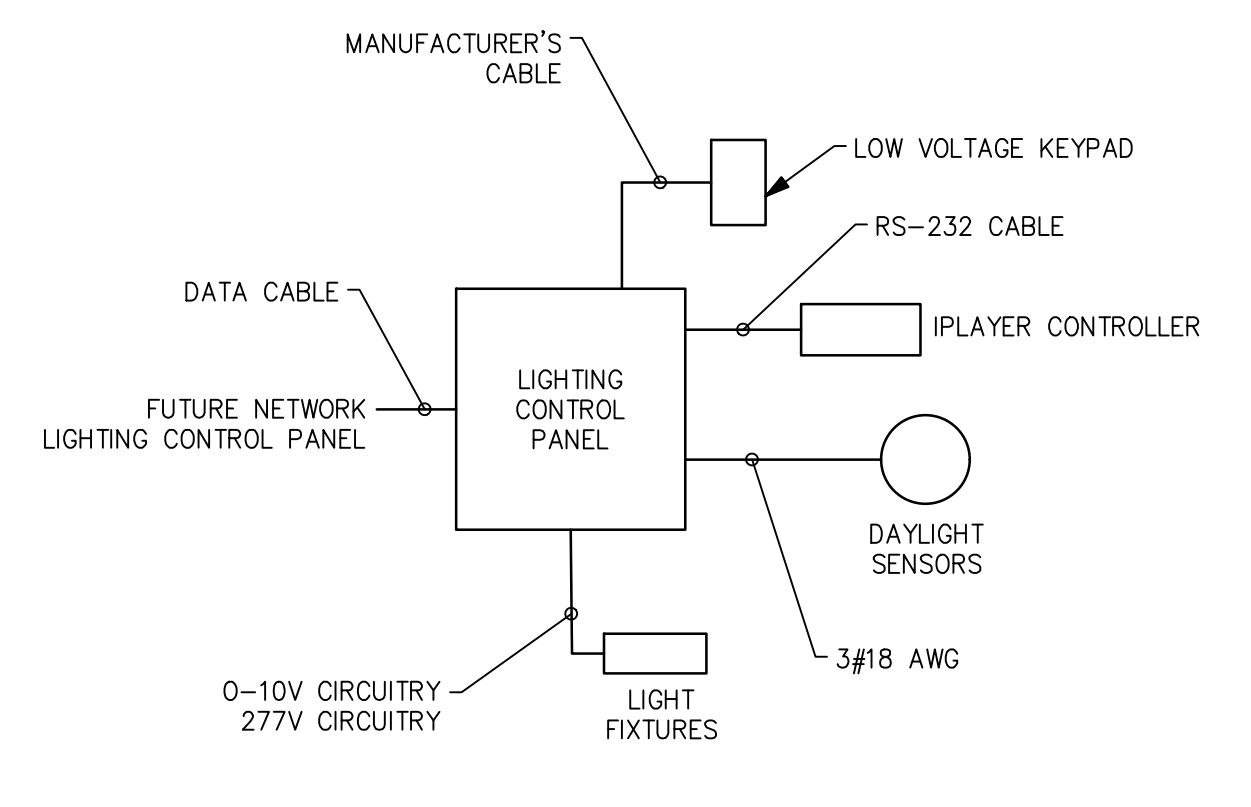
## ELECTRICAL RISERS

SHEET NUMBER:  
**E-701**

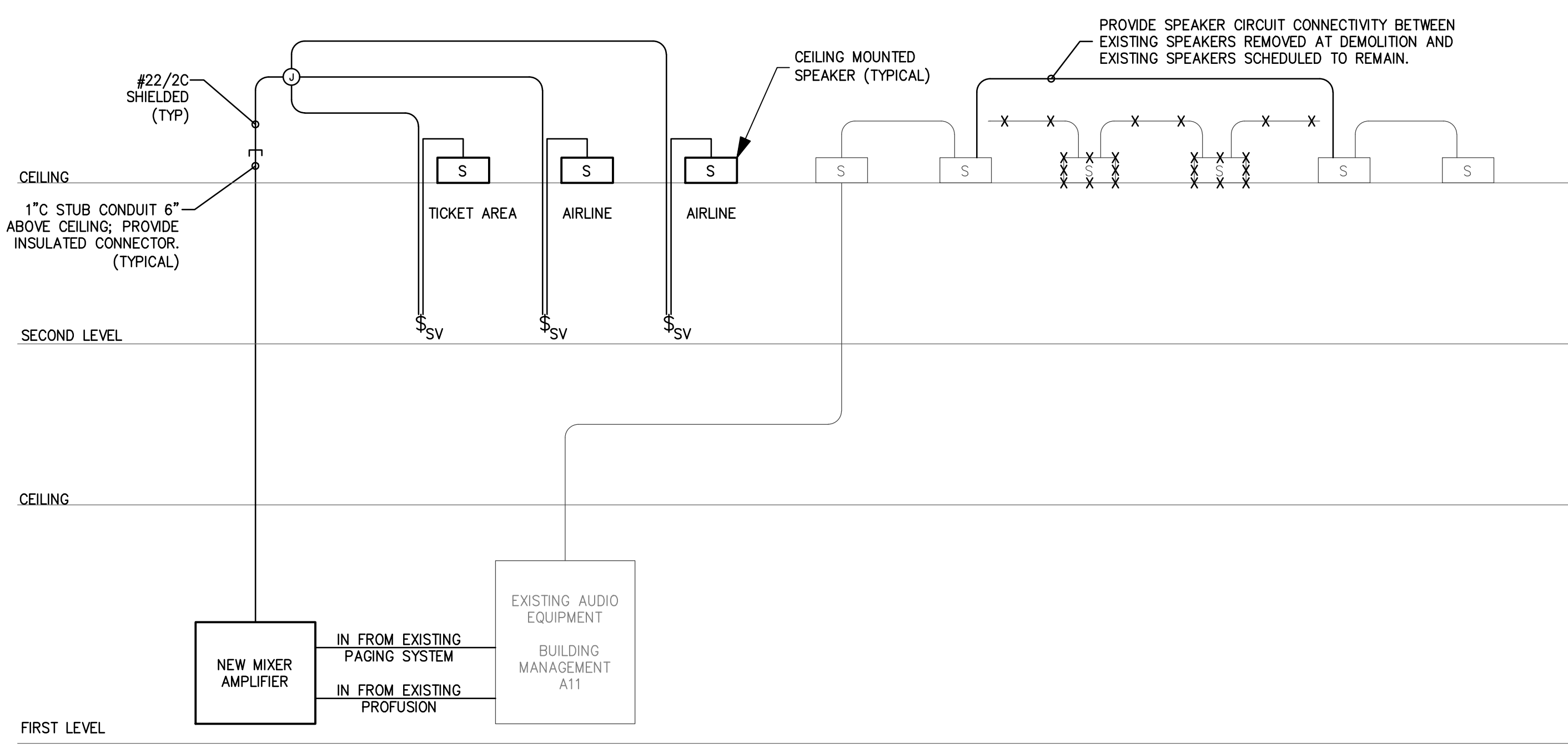


**E TELEPHONE/DATA SYSTEMS RISER DIAGRAM**  
NO SCALE

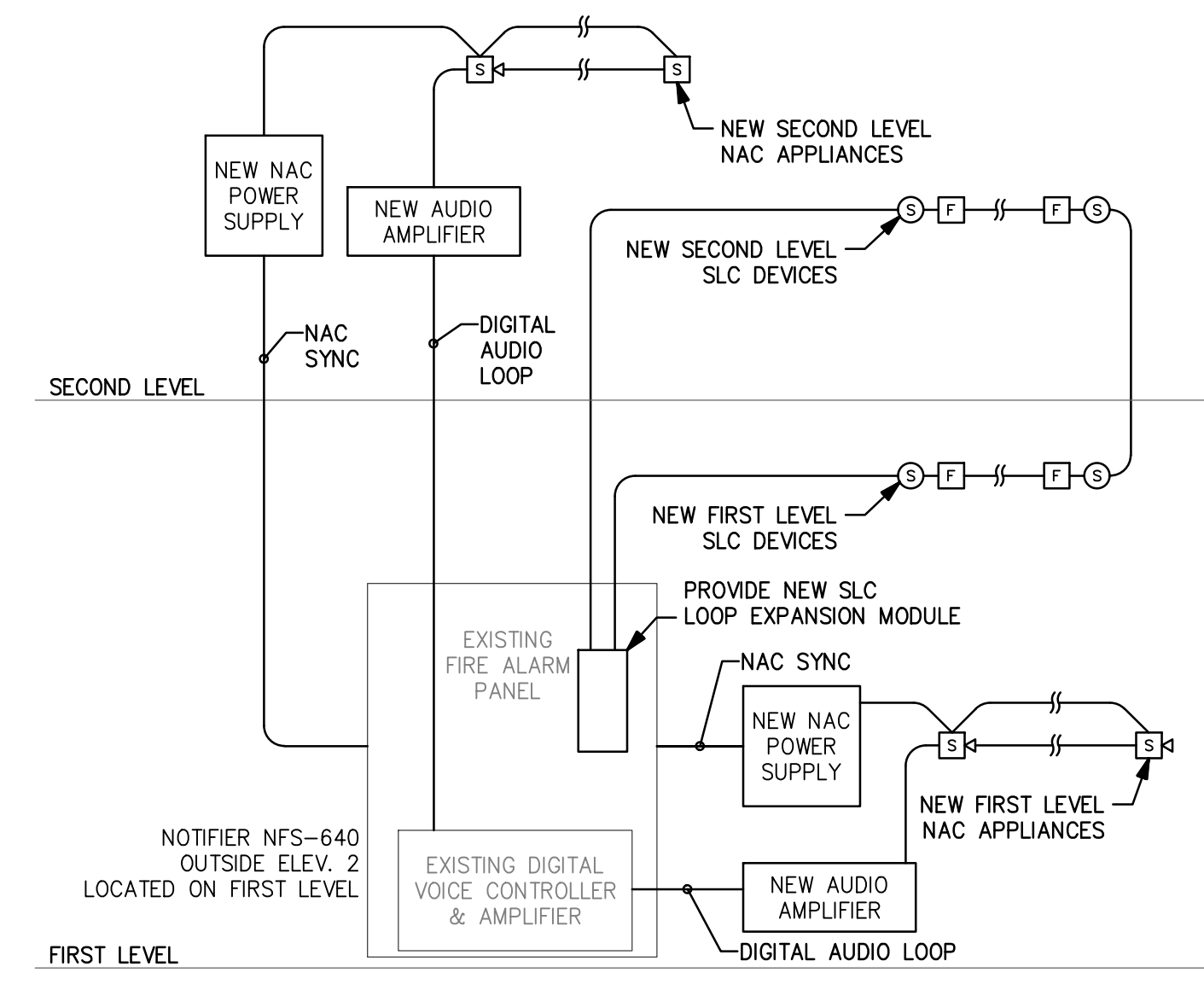
NOTE:  
1. LIGHTING CONTROL RISER WAS CREATED BY HARTRANFT LIGHTING DESIGN. INCLUSION HERE IS NOT INTENDED TO REPRESENT THE WORK PRODUCT OF CHEATHAM & ASSOCIATES, P.A.



**F TICKETING LIGHTING CONTROL RISER**  
SCALE: NO SCALE

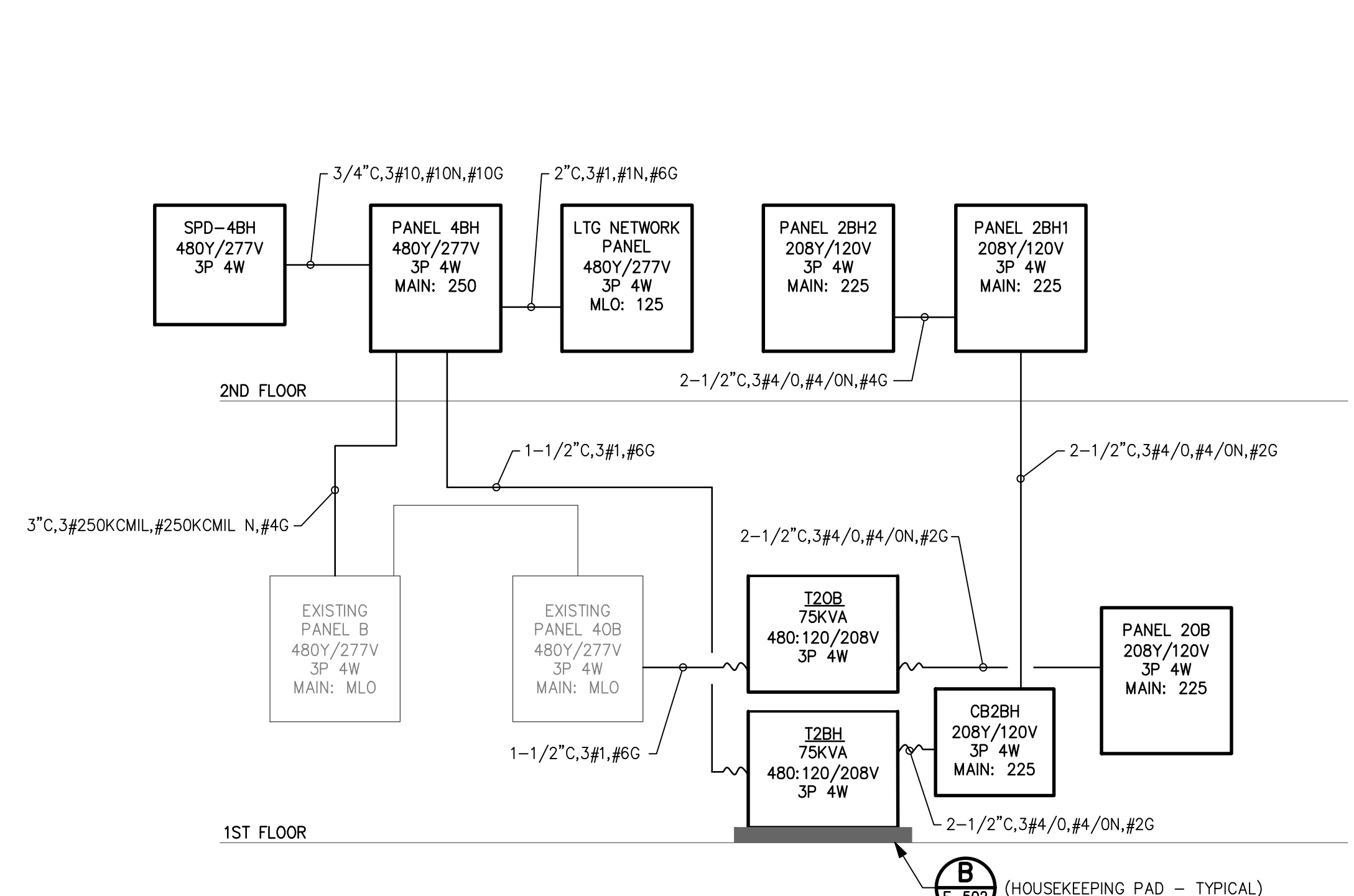


**C PA SYSTEM RISER DIAGRAM**  
SCALE: N/A

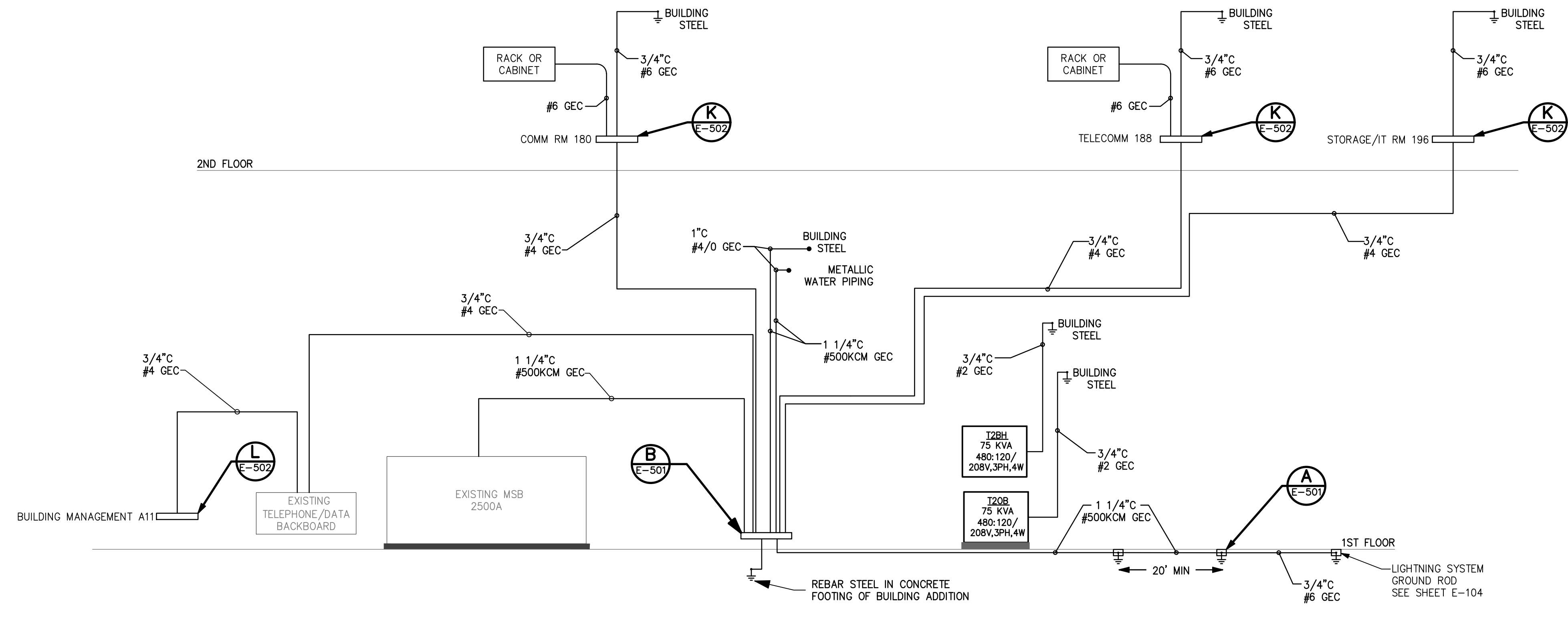


**D FIRE ALARM SYSTEM RISER DIAGRAM**  
NO SCALE

SYSTEM INPUTS	FACP ANNUNCIATION				NOTIFICATION				CONTROL				
	A	B	C	D	E	F	G	H	I	J	K	L	M
1. MANUAL PULL STATIONS	X	X	X	X	X	X	X	X	X	X	X	X	X
2. SMOKE/HEAT DETECTORS	X	X	X	X	X	X	X	X	X	X	X	X	X
3. OPEN CIRCUIT					X	X	X						
4. GROUND FAULT					X	X	X						
5. NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X	X						



**A ELECTRICAL POWER RISER DIAGRAM**  
SCALE: N/A



**B ELECTRICAL GROUNDING SYSTEM RISER**  
SCALE: N/A