

ADDENDUM 2

ADDENDUM DATE: January 19th, 2021

PROJECT: Orange County Facility Renovations
Orange County Justice Facility First Floor Alterations,
Criminal Justice Resource Department Renovation,
Court Street Annex Renovation,
Health Department Waiting Room and Office Renovation,
Whitted Building Window Replacement.

OWNER: Orange County
131 West Margaret Lane
Hillsborough NC, 27278

ARCHITECT: Smith Sinnett Architecture, P.A.
4600 Lake Boone Trail, Suite 205
Raleigh, North Carolina 27607



BIDS DUE: **Thursday January 28th, 2021 at 3:00 p.m.**
Orange County Office
405 Meadowlands Drive,
Hillsborough, NC 27278

This Addendum shall be included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

General

1. A mandatory PreBid meeting was held on Tuesday, January 12th at 10am. As the meeting was mandatory, the bidder list is now closed to those in attendance. An agenda from the meeting and attendance list is posted in the following location: <https://smithsinnett.com/bid/orange-county-nc-facility-renovations/> . An updated bidder list has also been posted.
2. The last day for questions and Requests for Product Substitutions is Thursday January 21st.
3. HVAC and Fire Alarm Monitoring for each facility is as follows:
 - Justice Facility-
HVAC- Siemens controls
Fire - Blue ridge monitoring
 - Court Street Annex-
HVAC- Siemens controls
Fire- N/A. No fire or intruder alarm
 - Whitted Building-
HVAC- Siemens controls
Fire- Blue Ridge monitoring

4. It is the intent that the five projects will be run simultaneously. At this time, priority is not set and will depend on the most efficient execution. Again, the spaces will be operational and during construction, and flexibility is anticipated and expected.
5. The Contractor's Safety Record Information form 007220 and E-verify Addidavit 007230 need to be completed and included with bid proposals.
6. As mentioned in the pre-bid conference, the Court Street Annex work area will require asbestos abatement. This work is to be provided by the contractor. An Asbestos Design Report is attached.
7. All permit and review fees are the responsibility of the contractor.

Substitution Requests:

1. 12 59 00 System Furniture - National Office is to be considered an equal product manufacturer.

Specifications

1. Added Spec Section 024210_Asbestos Abatement and Lead Survey Report
2. Revision - Section 08 51 13 – Aluminum Windows
 - a. REVISE paragraph 2.2 A to read as follows:
"A. Basis of Design: TRACO TR-9100 or comparable product by one of the following."
 - b. REVISE paragraph 2.2 C to read as follows:
"C. Insulating-Glass Units: ASTM E2190. Refer to Section 08 80 00 – Glazing – 1 inch insulated unit with Between the Glass Muntins"
 - c. REVISE paragraph 2.3 a to read as follows:
"A. Head and Jamb Receptors (Subframes) with thermally broken subsills and end dams. Include manufacturer extended aluminum sill covers to cap exterior brick"
3. Clarification - Division 12 - Refer to Whitted Window Replacement drawings for extent of the blinds. All new windows are to receive louver blinds(12 21 13) in the base bid. All new windows will receive roller shades (12 24 13) per Alternate E-1. Refer to 01 23 00.
4. Clarification – Section 00 72 00 –
 - a. 13.1.1 - The Contract time shall commence on a date to be specified in a written Notice to Proceed from the Architect. Substantial Completion shall be 180 calendar days from Notice to Proceed. Final Completion shall occur on or before Thirty (30) calendar days from Substantial Completion.
 - b. 13.18.1 - The Contractor and the Contractor's surety's shall be liable for and shall pay the Owner the sum of Five Hundred Dollars (\$500.00), herein stipulated as liquidated damages, for each calendar day of delay until the Work is substantially complete.

Drawings

1. Electrical Drawings – General Revision for all renovation sites - **Scope of Data Work** will now include only junction boxes and conduit/bushing/pull string for receptacles in newly constructed walls as described in the documents. **Scope of Data Work** will no longer include wiring, devices, or cover plates. Demolition of existing data and surface-mounted data raceway shall be the responsibility of the owner's third party professional as well as new data devices, plates, surface-mounted data raceway and cable. The General Contractor is responsible for coordinating schedule with the owner's data contractor.
2. Revised Justice Facility E0-01– Adjustment made to proposed Courtroom Lighting

End of Addendum 2

Attached:

1. Orange County Justice Facility First Floor Alterations – E0-00, E0-01, E0-02
2. Criminal Justice Resource Department Renovation – E0-01, E0-02
3. Court Street Annex Renovation - E0-01
4. Health Department Waiting Room and Office Renovation – E0-01, E0-02
5. Asbestos Abatement Design Document – Court Street Annex

ABBREVIATIONS	
ABBREVIATION	DEFINITION
A	AMPS, AMPERE, AMPERAGE
AC	ABOVE COUNTER
A/C	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CURRENT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
ATSC	AUTOMATIC TRANSFER SWITCH CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BFC	BELOW FINISHED CEILING
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COPPER
D	DIMMING OR DIMMER
DB	DISTRIBUTION BOARD
DC	DIRECT CURRENT
DL	DAY-LIGHTING
DISC	DISCONNECT SWITCH
E	EMERGENCY
ECB	ENCLOSED CIRCUIT BREAKER
EW	ELECTRIC WATER COOLER
EX	EXISTING
FUT	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FDR	FEEDER
GAA	GENERATOR ALARM ANNUNCIATOR
GAP	GENERATOR ALARM PANEL
GEN	GENERATOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT EQUIPMENT PROTECTION
GND	GROUND FAULT PROTECTION
GRS	GALVANIZED RIGID STEEL
HH	HAND HOLE
HOA	HAND-OFF AUTOMATIC
HP	HORSEPOWER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPS
KW	KILOWATT
KWH	KILOWATT HOURS
LC	LIGHTING CONTACTOR
LS	LOUD SPEAKER
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT PROTECTION
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
MH	MAN HOLE
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
N or NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
O/H	OVER HEAD
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX
PC	PHOTOCELL
PH	PHASE POTENTIAL TRANSFORMER
PT	POTENTIAL TRANSFORMER
RC	RECEPTACLE CONTACTOR
RSC	RIGID STEEL CONDUIT
SEC	SECURITY
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TEMP	TEMPORARY
TGB	TECHNOLOGY GROUND BAR
TGBM	TECHNOLOGY MAIN GROUND BAR
TB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
U/C	UNDER COUNTER
U/G	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS' LABORATORIES
UN	UNLESS OTHERWISE NOTED
UNON	UNINTERRUPTIBLE POWER SUPPLY
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS, VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
WG	WIRE GUARD
WP	WEATHERPROOF
XFR	TRANSFER
XFMR	TRANSFORMER

GENERAL NOTES

- ALL FUSES, DISCONNECT SWITCHES, AND BREAKER SIZES SHOWN FOR MECHANICAL EQUIPMENT SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.
- ALL WORK AND MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH STATE, LOCAL AND NATIONAL CODES AND ORDINANCES.
- USE OF THE CONDUIT SYSTEM FOR EQUIPMENT GROUNDING SHALL NOT BE ACCEPTABLE. A SEPARATE GREEN GROUND WIRE SHALL BE RUN WITH THE CIRCUIT CONDUCTORS IN EACH CONDUIT.
- EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. SUPPORT DEVICES SHOULD BE INSTALLED PRIOR TO INSTALLATION OF THE SUB-CEILING.
- THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. COORDINATE ALL WORK WITH THE CASEWORK DETAILS. DO NOT SCALE THESE DRAWINGS.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
- IN ALL AREAS WHERE FIRE RATED WALLS, FLOORS AND CEILINGS ARE INSTALLED, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIAL SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION. SEE FIRE-STOP SYSTEM DETAILS.
- THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE ARCHITECT AND OWNER, PRIOR TO INSTALLATION, FOR USE WITH THE ACTUAL EQUIPMENT, CASEWORK AND MILLWORK TO BE FURNISHED.
- THE MECHANICAL CONTRACTOR SHALL FURNISH ALL DISCONNECTS, SWITCHES, STARTERS, OR VFDs ASSOCIATED WITH MECHANICAL EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL DISCONNECTS, SWITCHES, STARTERS, OR VFDs. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LINE SIDE CONDUCTORS AND RACEWAY. MECHANICAL CONTRACTOR SHALL PROVIDE ALL LOAD SIDE CONDUCTORS AND RACEWAY. REFER TO DETAIL THIS SHEET. COORDINATE CLOSELY.
- WHERE ELECTRICAL CONDUIT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED, INTERNALLY AND EXTERNALLY, WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED SEALING METHODS.
- THE ELECTRICAL CONTRACTOR SHALL PATCH ANY WALL, CEILING, OR FLOOR OPENINGS AND PENETRATIONS RESULTING FROM NEW WORK IN THE EXISTING BUILDINGS.
- ALL ROOF PENETRATIONS SHALL BE PROPERLY SEALED SO THAT ROOF WARRANTY IS MAINTAINED. COORDINATE WITH ROOF INSTALLER.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL HIS OWN SUPPORT DEVICES. ALL LOCATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER PRIME CONTRACTORS PRIOR TO INSTALLATION. SUPPORT DEVICES NEED TO BE INSTALLED BEFORE SHEET ROCK SUB CEILING IS INSTALLED.
- THE ELECTRICAL CONTRACTOR SHALL ARRANGE ELECTRICAL INSPECTIONS IN ADVANCE MONDAY THROUGH FRIDAY.
- CONDUCTORS FOR BRANCH CIRCUITS SHALL BE SIZED TO PREVENT VOLTAGE DROP EXCEEDING 3% AT THE FARTHEST OUTLET OF POWER, HEATING AND LIGHTING LOADS, OR ANY COMBINATION OF SUCH LOADS. THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET SHALL NOT EXCEED 5%.
 - 15.1. WHERE THE CONDUCTOR LENGTH FROM THE PANEL TO THE FIRST OUTLET ON A 120V CIRCUIT EXCEEDS 50'-0" THE BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL NOT BE SMALLER THAN #10AWG. INCREASE THE BRANCH CIRCUIT CONDUCTOR SIZE AN ADDITIONAL WIRE SIZE FOR EACH ADDITIONAL 125' FOR THE ENTIRE CIRCUIT. THE GROUND CONDUCTOR SIZE SHALL BE INCREASED PROPORTIONALLY TO THE INCREASED PHASE CONDUCTORS AS PER NEC 2017 250.122(B).

DEMOLITION NOTES

- UNLESS NOTED OTHERWISE, EXISTING PANELS ARE SHOWN FOR REFERENCE ONLY AND SHALL REMAIN. REFER TO POWER RISER FOR WHICH PANELS ARE TO BE REPLACED, RELOCATED, OR ELEVATED IN PLACE.
- ANY ITEMS REMOVED SHALL BE OFFERED TO THE OWNER. THE OWNER MAY RETAIN ANY ITEM REMOVED. ANY ITEM THAT THE OWNER DOES NOT RETAIN BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY HOLES IN REMAINING WALLS RESULTING FROM THE REMOVAL OR ELEVATION OF ELECTRICAL PANELS/DEVICES.
- THE CONTRACTOR SHALL MAINTAIN ALL CIRCUIT CONTINUITY TO ALL REMAINING CIRCUITS IN AREAS WHERE PART, BUT NOT ALL, OF THE CIRCUIT IS BEING REMOVED. IF EXISTING CIRCUIT IS NOTED TO BE REMOVED THAT SUPPORTS OTHER EXISTING DEVICES IT SHALL BE REMOVED AS MUCH AS POSSIBLE TO SERVE THE EXISTING DEVICES.
- THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE PRIOR TO THE BID TO DETERMINE FIELD CONDITIONS AND TO FIELD VERIFY THE EXTENT OF THE DEMOLITION WORK.
- WHERE CONDUITS ARE CONCEALED IN EXISTING WALLS OR FLOORS NOT SUBJECT TO REMOVAL, THE CONTRACTOR MAY ABANDON THE CONDUIT BUT SHALL REMOVE ALL EQUIPMENT AND WIRING. PROVIDE BLANK STAINLESS STEEL FACEPLATES TO COVER EMPTY JUNCTION BOXES.
- UPDATE PANEL SCHEDULES TO REFLECT NEW AND CHANGED LOAD. ALL PANEL SCHEDULES SHALL BE COMPUTER GENERATED.
- ALL DEVICES SHOWN DASHED ON DEMOLITION PLANS SHALL BE REMOVED, UNLESS OTHERWISE NOTED.
- EXISTING FIRE ALARM SYSTEM SHALL BE MAINTAINED OPERABLE DURING DEMOLITION. CONTRACTOR TO TEMP EXISTING DEVICES TO ALLOW DEMOLITION OF EXISTING CONDUIT AND WIRING.

ELECTRICAL SYSTEM AND EQUIPMENT
 METHOD OF COMPLIANCE:
 ENERGY CODE: PRESCRIPTIVE PERFORMANCE _____
 ASHRAE 90.1: PRESCRIPTIVE _____ PERFORMANCE _____

LIGHTING SCHEDULE
 Lamp type required in fixture - See Fixture Schedule.
 Total wattage per fixture - Varies - See Fixture Schedule
 Total interior wattage specified versus allowed: N/A watts versus N/A watts (Space by Space)
 Total exterior wattage specified versus allowed: N/A watts versus N/A watts

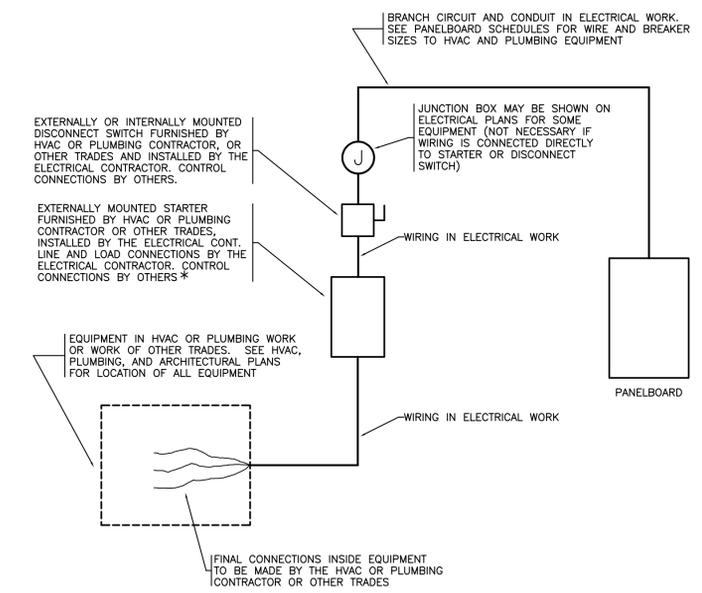
ADDITIONAL PRESCRIPTIVE COMPLIANCE
 406.2 More Efficient HVAC Performance
 406.3 Reduced Lighting Power Density
 406.4 Enhanced Lighting Controls
 406.5 Provisions for Dedicated Outdoor Air System
 406.6 Provision of Dedicated Outdoor HVAC Air System
 406.7 High Efficiency Service Water Heating

DESIGNER STATEMENT:
 To the best of my knowledge and belief, the design of this building complies with the electrical system and equipment requirements of the 2018 North Carolina State Building Code, Energy Conservation Code.
 4,000 WATTS OF LIGHTING WAS REMOVED, 2,448 WATTS WAS ADDED. NET REDUCTION OF 1,552 WATTS.

SYMBOL LEGEND

SYMBOL	DESCRIPTION	REMARKS
	LED LIGHT FIXTURE	SEE FIXTURE SCHEDULE
	LED EMERGENCY LIGHT	SEE FIXTURE SCHEDULE
	LED COMBINATION EXIT/EMERGENCY LIGHT	SEE FIXTURE SCHEDULE
	SINGLE POLE TOGGLE SWITCH - AT +48" ABOVE FINISHED FLOOR TO TOP OF OUTLET, UNLESS OTHERWISE NOTED.	
	CEILING MOUNT DUAL-TECHNOLOGY SENSOR - TIME DELAYS OF NO LESS THAN 15 MINUTES. COVERAGE 2000 SQ FT, PROVIDE WITH UNIVERSAL VOLTAGE POWER PACK.	HUBBELL OMNIDT2000 OR EQUAL BY WATTSTOPPER OR LEVITON
	FIRE ALARM CONTROL PANEL	

SHEET INDEX - ELECTRICAL	
Sheet Number	Sheet Name
EO-00	ELECTRICAL LEAD SHEET
EO-01	ELECTRICAL POWER DEMOLITION AND NEW WORK PLAN
EO-02	ELECTRICAL LIGHTING DEMOLITION AND NEW WORK PLAN



* A COMBINATION STARTER SHALL BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER, WHERE AVAILABLE.

TYPICAL EQUIPMENT CONNECTIONS

ORANGE COUNTY - JUSTICE FACILITY FIXTURE SCHEDULE

SYMBOL	SIZE / MOUNTING	VOLT	ACCEPTABLE MANUFACTURERS	MANUFACTURER AND MODEL NO.	DESCRIPTION	LAMP	WATTS
A	RECESSED	120/277	PHILLIPS LITHONIA COLUMBIA	HE WILLIAMS 8DR-L60-835-DIM-UNV-OW-SPC	8.5" RECESSED LED CAN, 22 GUAGE DIE-FORMED C.R.S. HOUSING/REFLECTOR, POST FABRICATED COATED WHITE POLYESTER, 3500K, 0-10V DIMMING DRIVER, 80 CRI, OPEN REFLECTOR, MEDIUM DISTRIBUTION/35 DEGREE, CLEAR SEMI-SPECULAR ANODIZE TRIM/REFLECTOR	LED 3500K 6,518 LUMEN	108
B	RECESSED	120/277	PHILLIPS LITHONIA COLUMBIA	HE WILLIAMS 8DR-L40-835-DIM-UNV-OW-SPC	8.5" RECESSED LED CAN, 22 GUAGE DIE-FORMED C.R.S. HOUSING/REFLECTOR, POST FABRICATED COATED WHITE POLYESTER, 3500K, 0-10V DIMMING DRIVER, 80 CRI, OPEN REFLECTOR, MEDIUM DISTRIBUTION/35 DEGREE, CLEAR SEMI-SPECULAR ANODIZE TRIM/REFLECTOR	LED 3500K 4,301 LUMEN	72
EX	SURFACE	120	NA	EXISTING EXT	EXISTING EXT LIGHT REMOVED FROM ABOVE DOOR SHOWN IN NEW LOCATION.		

* ALL INDOOR LIGHT FIXTURES ARE TO BE RATED FOR 2.5KA SURGE PROTECTION MINIMUM.
 ** ARCHITECT TO APPROVE ALL FINISHES AND COLORS PRIOR TO RELEASE OF ORDER.



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1/19/21

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CONSTRUCTION DOCUMENTS

ORANGE COUNTY, NC - FACILITY RENOVATIONS
 JUSTICE FACILITY - FIRST FLOOR ALTERATIONS

133 Mayo St. Hillsborough, NC 27278

ID	DATE	DESCRIPTION
Δ	1/19/21	ADDENDUM #2
	12/14/20	CD

DRAWN BY: WCM
 CHECKED BY: KMH

ELECTRICAL LEAD SHEET

2020046 14 DEC 2020

E0-00

1/19/21	ADDENDUM #2	
12/14/20	CD	
ID	DATE	DESCRIPTION

DRAWN BY: WCM
CHECKED BY: KMH
**POWER & LIGHTING
NEW WORK PLAN**

ESTATE DIVISION KEYNOTES BASE:

1. NEW WORK STATIONS ARE TO BE INSTALLED AS INDICATED, NO ELECTRICAL WORK IS NEEDED AS POWER AND DATA ARE EXISTING AT EACH LOCATION.
2. EXTEND EXISTING SWITCH WIRING FROM PREVIOUS LOCATION TO NEW DOOR LOCATION INDICATED. REUSE EXISTING DEVICES AND COVER PLATES THAT WERE REMOVED IN KEYNOTE #1 IF THE DEVICES AND COVER PLATES ARE IN GOOD WORKING ORDER. IF THEY ARE NOT IN GOOD CONDITION REPLACE AS NEEDED. THE SWITCHES ARE TO OPERATE AND CONTROL THE LIGHTS AS IN THE PREVIOUS LOCATION.
3. REINSTALL EXIT LIGHT REMOVED, RECONNECT TO LIGHTING CIRCUIT THAT SERVES THIS AREA.

ESTATE DIVISION KEYNOTES ALTERNATE #1:

4. ADD NEW RECEPTACLES IN NEW WALL LOCATIONS AS INDICATED. PROVIDE A NEW SINGLE POLE BREAKER IN NEAREST AVAILABLE ELECTRICAL PANEL TO PROVIDE POWER TO THE NEW RECEPTACLES. UPDATE PANEL SCHEDULE AS REQUIRED.
5. ADD NEW LIGHT SWITCHES IN OFFICES AS INDICATED CONNECT TO THE EXISTING LIGHT CIRCUIT.
6. PROVIDE 3/4" EMT TO CEILING SPACE WITH BUSHING AND PULL STRING. WIRING AND EQUIPMENT WILL BE PROVIDED AND INSTALLED BY THE COUNTY.

CLERKS OFFICE KEYNOTES:

1. REINSTALL PREVIOUSLY REMOVED RECESSED CAN LIGHTS. PROVIDE ONE NEW RECESSED CAN LIGHT TO MATCH EXISTING CAN LIGHTS. REINSTALLED LIGHTS AND NEW LIGHT TO EXISTING LIGHTING CIRCUIT AND CONTROLS.

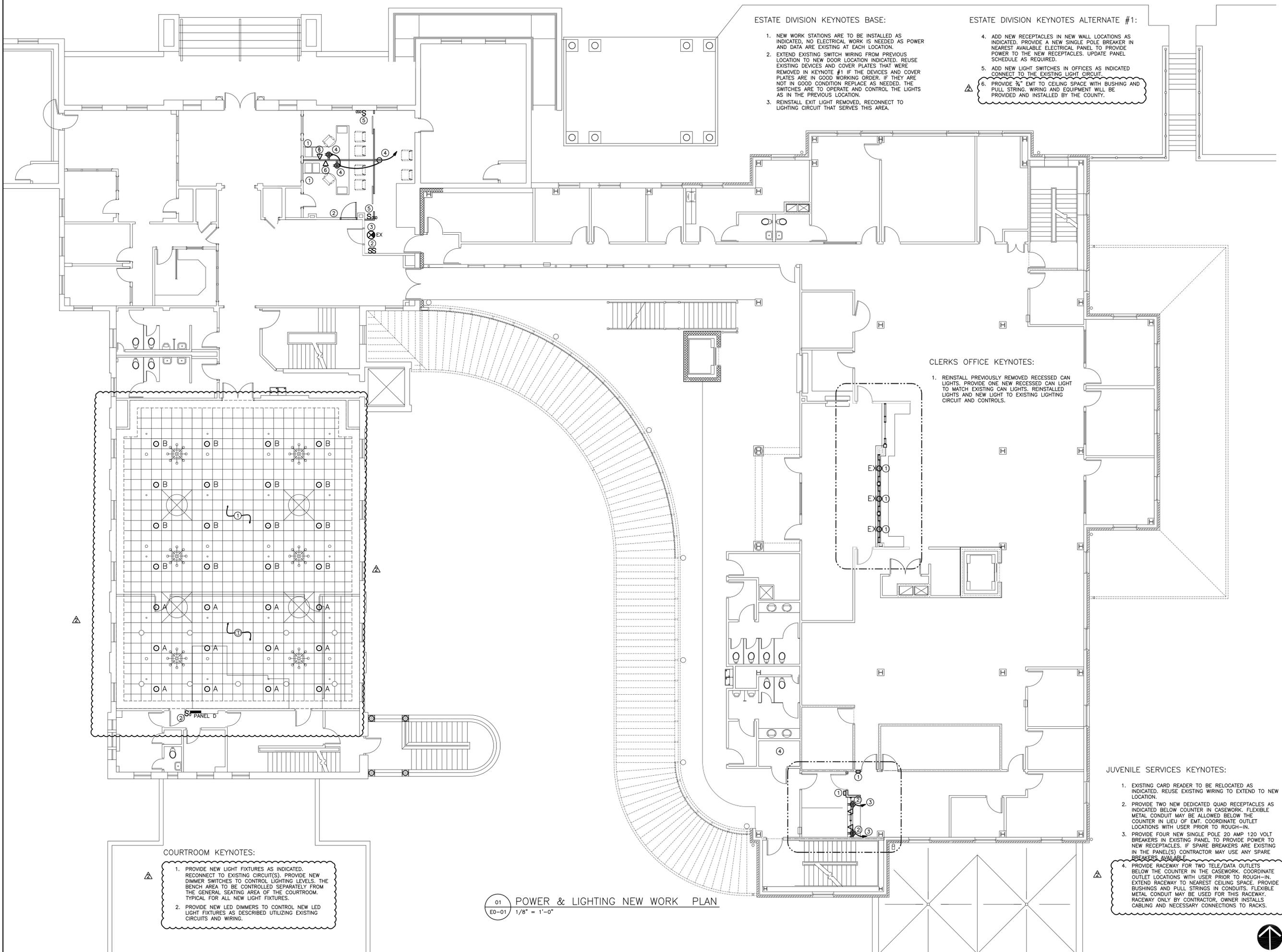
JUVENILE SERVICES KEYNOTES:

1. EXISTING CARD READER TO BE RELOCATED AS INDICATED. REUSE EXISTING WIRING TO EXTEND TO NEW LOCATION.
2. PROVIDE TWO NEW DEDICATED QUAD RECEPTACLES AS INDICATED BELOW COUNTER IN CASEWORK. FLEXIBLE METAL CONDUIT MAY BE ALLOWED BELOW THE COUNTER IN LIEU OF EMT. COORDINATE OUTLET LOCATIONS WITH USER PRIOR TO ROUGH-IN.
3. PROVIDE FOUR NEW SINGLE POLE 20 AMP 120 VOLT BREAKERS IN EXISTING PANEL TO PROVIDE POWER TO NEW RECEPTACLES. IF SPARE BREAKERS ARE EXISTING IN THE PANEL(S) CONTRACTOR MAY USE ANY SPARE BREAKERS AVAILABLE.
4. PROVIDE RACEWAY FOR TWO TELE/DATA OUTLETS BELOW THE COUNTER IN THE CASEWORK. COORDINATE OUTLET LOCATIONS WITH USER PRIOR TO ROUGH-IN. EXTEND RACEWAY TO NEAREST CEILING SPACE. PROVIDE BUSHINGS AND PULL STRINGS IN CONDUITS. FLEXIBLE METAL CONDUIT MAY BE USED FOR THIS RACEWAY. RACEWAY ONLY BY CONTRACTOR, OWNER INSTALLS CABLING AND NECESSARY CONNECTIONS TO RACKS.

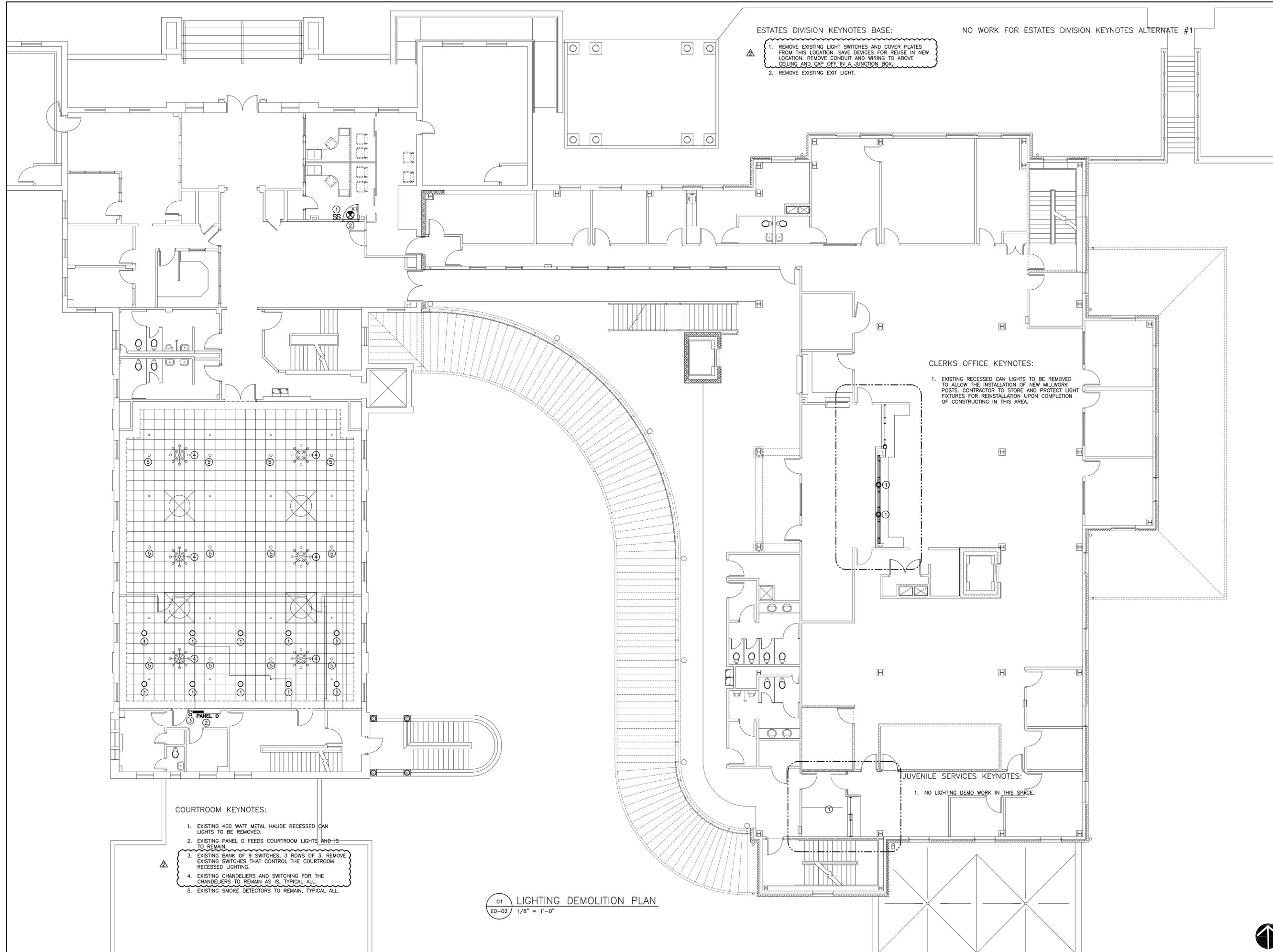
COURTROOM KEYNOTES:

1. PROVIDE NEW LIGHT FIXTURES AS INDICATED. RECONNECT TO EXISTING CIRCUIT(S). PROVIDE NEW DIMMER SWITCHES TO CONTROL LIGHTING LEVELS. THE BENCH AREA TO BE CONTROLLED SEPARATELY FROM THE GENERAL SEATING AREA OF THE COURTROOM. TYPICAL FOR ALL NEW LIGHT FIXTURES.
2. PROVIDE NEW LED DIMMERS TO CONTROL NEW LED LIGHT FIXTURES AS DESCRIBED UTILIZING EXISTING CIRCUITS AND WIRING.

01 POWER & LIGHTING NEW WORK PLAN
E0-01 1/8" = 1'-0"



Project #: 2020046
 Sheet: E0-01
 Printed: January 19, 2021 @ 1:14 PM



ESTATES DIVISION KEYNOTES BASE:

1. REMOVE EXISTING LIGHT SWITCHES AND COVER PLATES FROM THIS LOCATION. SAVE DEVICES FOR REUSE IN NEW LOCATION. REMOVE CONDUIT AND WIRING TO ABOVE CEILING AND CAP OFF IN A JUNCTION BOX.
2. REMOVE EXISTING EXIT LIGHT.

NO WORK FOR ESTATES DIVISION KEYNOTES ALTERNATE #1

CLERKS OFFICE KEYNOTES:

1. EXISTING RECESSED CAN LIGHTS TO BE REMOVED TO ALLOW THE INSTALLATION OF NEW MILLWORK POSTS. CONTRACTOR TO STORE AND PROTECT LIGHT FIXTURES FOR REINSTALLATION UPON COMPLETION OF CONSTRUCTING IN THIS AREA.

JUVENILE SERVICES KEYNOTES:

1. NO LIGHTING DEMO WORK IN THIS SPACE.

COURTROOM KEYNOTES:

1. EXISTING 400 WATT METAL HALIDE RECESSED CAN LIGHTS TO BE REMOVED.
2. EXISTING PANEL D FEEDS COURTROOM LIGHTS AND IS TO REMAIN.
3. EXISTING BANK OF 9 SWITCHES, 3 ROWS OF 3, REMOVE EXISTING SWITCHES THAT CONTROL THE COURTROOM RECESSED LIGHTING.
4. EXISTING CHANDELIERS AND SWITCHING FOR THE CHANDELIERS TO REMAIN AS IS, TYPICAL ALL.
5. EXISTING SMOKE DETECTORS TO REMAIN, TYPICAL ALL.

PANEL D

01 LIGHTING DEMOLITION PLAN
E0-02 1/8" = 1'-0"



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JUSTICE FACILITY - FIRST FLOOR ALTERATIONS

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1/19/21	ADDENDUM #2	
12/14/20	CD	

DRAWN BY: WCM
CHECKED BY: KMH

LIGHTING DEMOLITION PLAN

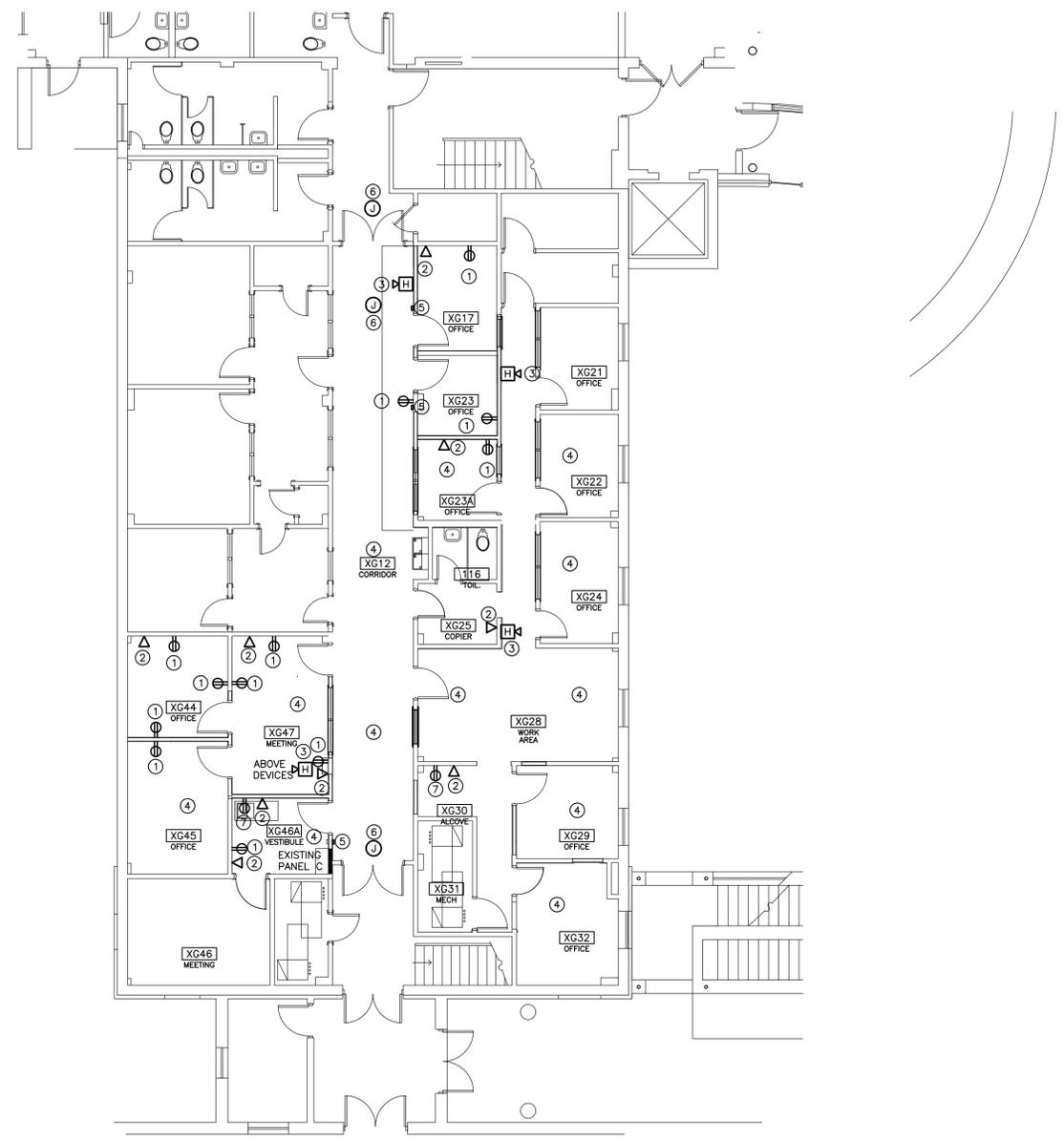
2020046 14 DEC 2020

E0-02

Project #: 2020046
Sheet: E0-02
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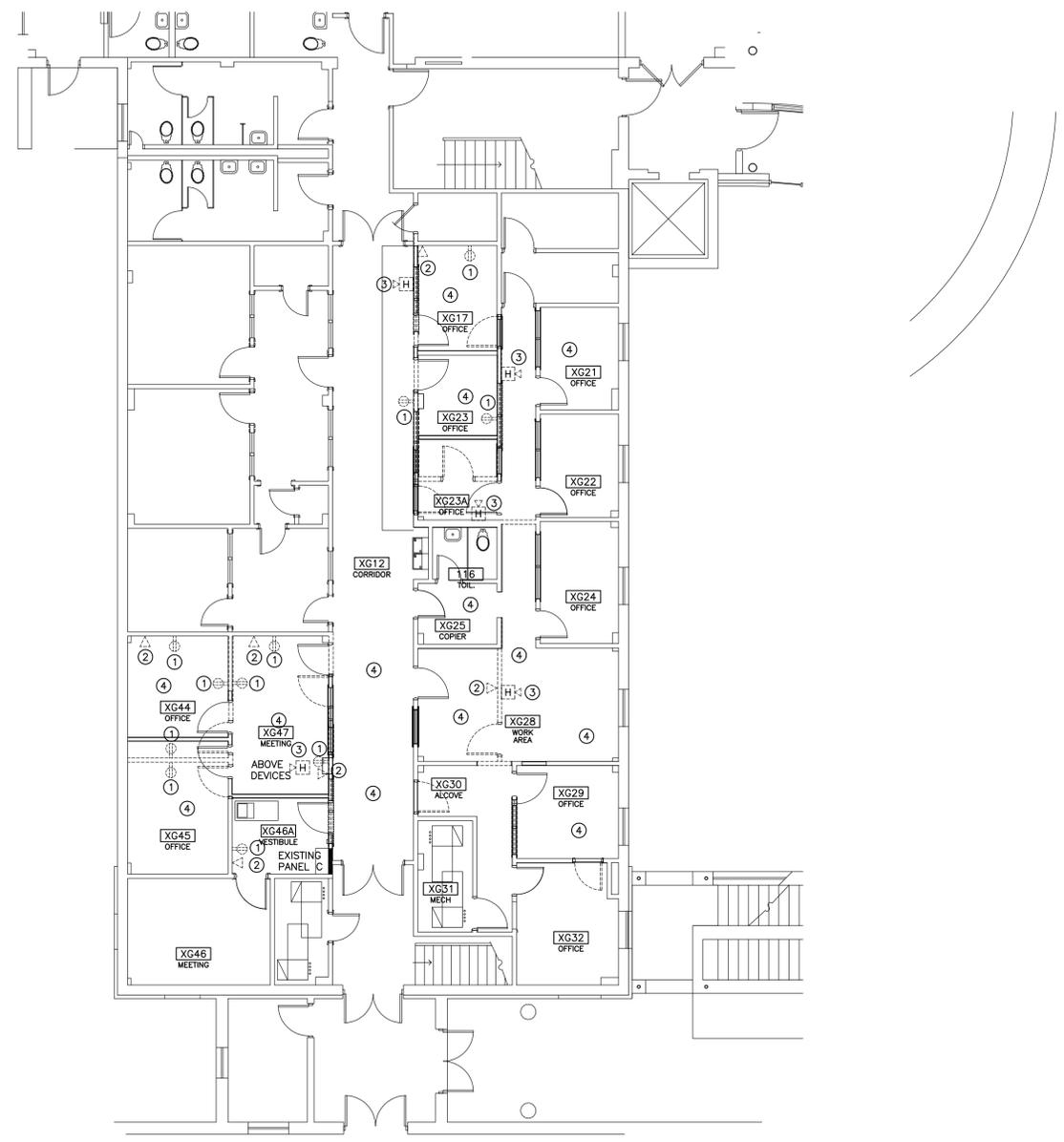
THIS DRAWING IS FORWARDED TO BE PRINTED ON A 24" X 36" SHEET



01 NEW POWER AND FIRE ALARM PLAN
E0-01 1/8" = 1'-0"

NEW WORK KEYNOTES:

1. INSTALL NEW RECEPTACLES AND COVER PLATES IN ORIGINAL LOCATIONS AS INDICATED.
2. INSTALL TELE/DATA OUTLETS AS INDICATED. PROVIDE JUNCTION BOX WITH 3/4" EMT TO CEILING SPACE. OWNER TO INSTALL ALL CABLING, RACEWAY ONLY BY CONTRACTOR.
3. REINSTALL FIRE ALARM DEVICES REMOVED OR RELOCATED AS INDICATED.
4. RECONNECT EXISTING POWER CIRCUITS THAT MAY HAVE BEEN INTERRUPTED DURING DEMOLITION.
5. PROVIDE JUNCTION BOX WITH 3/4" EMT TO CEILING SPACE FOR CARD READER.
6. INSTALL JUNCTION BOX WITH 1" CONDUIT WITH BUSHINGS AND PULL STRING STUBBED TO CEILING SPACE FOR CAMERAS. ALL EQUIPMENT AND WIRING BY OWNER.
7. INSTALL DEDICATED CIRCUIT FOR PRINTER, CONNECT TO SPARE CIRCUIT IN PANEL C.



01 DEMOLITION POWER AND FIRE ALARM PLAN
E0-01 1/8" = 1'-0"

DEMOLITION KEYNOTES:

1. EXISTING RECEPTACLES AND FACE PLATES TO BE REMOVED.
2. EXISTING TELE/DATA OUTLETS FACE PLATES INDICATED TO BE REMOVED.
3. EXISTING FIRE ALARM DEVICES TO BE REMOVED/RELOCATED.
4. REMOVE EXISTING SURFACE MOUNTED RACEWAY THROUGHOUT THE SPACE.

ORANGE COUNTY, NC
CRIMINAL JUSTICE RESOURCE DEPARTMENT
RENOVATION
106 EAST MARGARET LANE HILLSBOROUGH, NC 27278

ID	DATE	DESCRIPTION
Δ	1/19/21	ADDENDUM #2
	12/14/20	CD

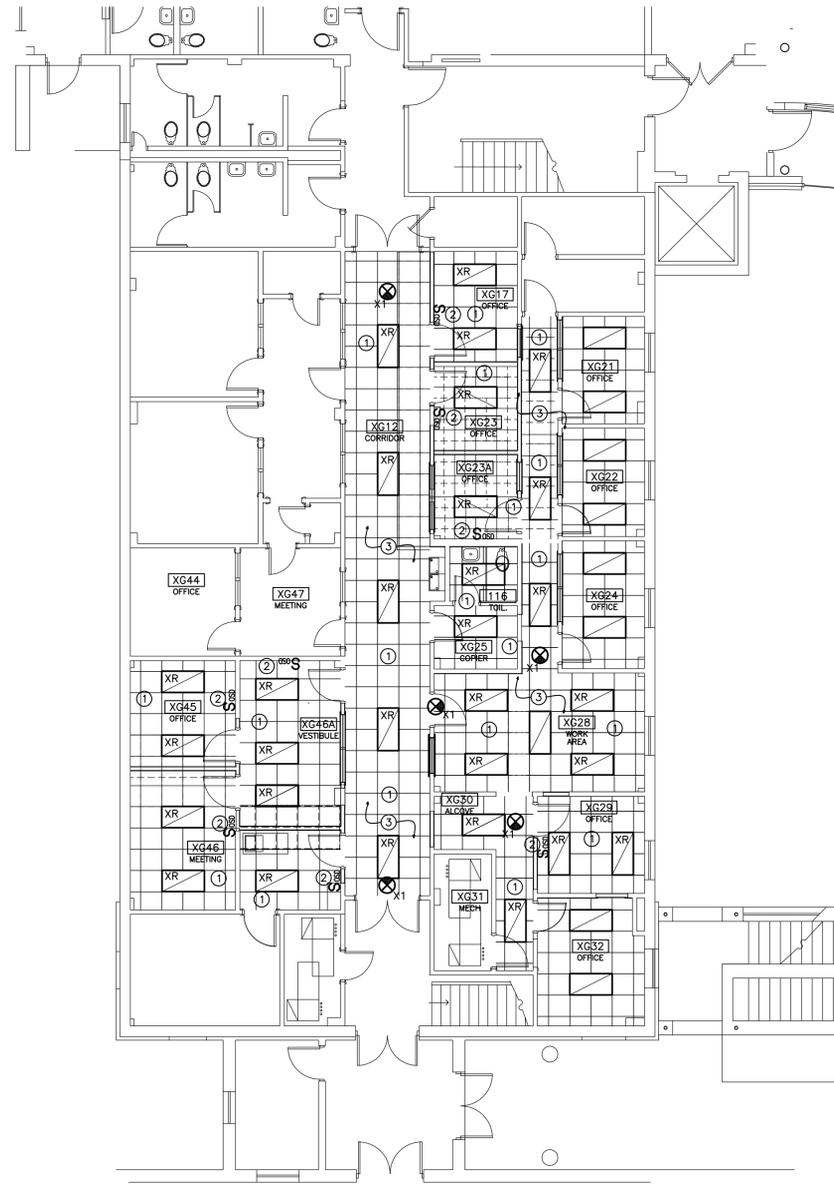
DRAWN BY: WCM
CHECKED BY: KMH
POWER
DEMOLITION PLAN
NEW WORK PLAN

2020047 14 DEC 2020

E0-01

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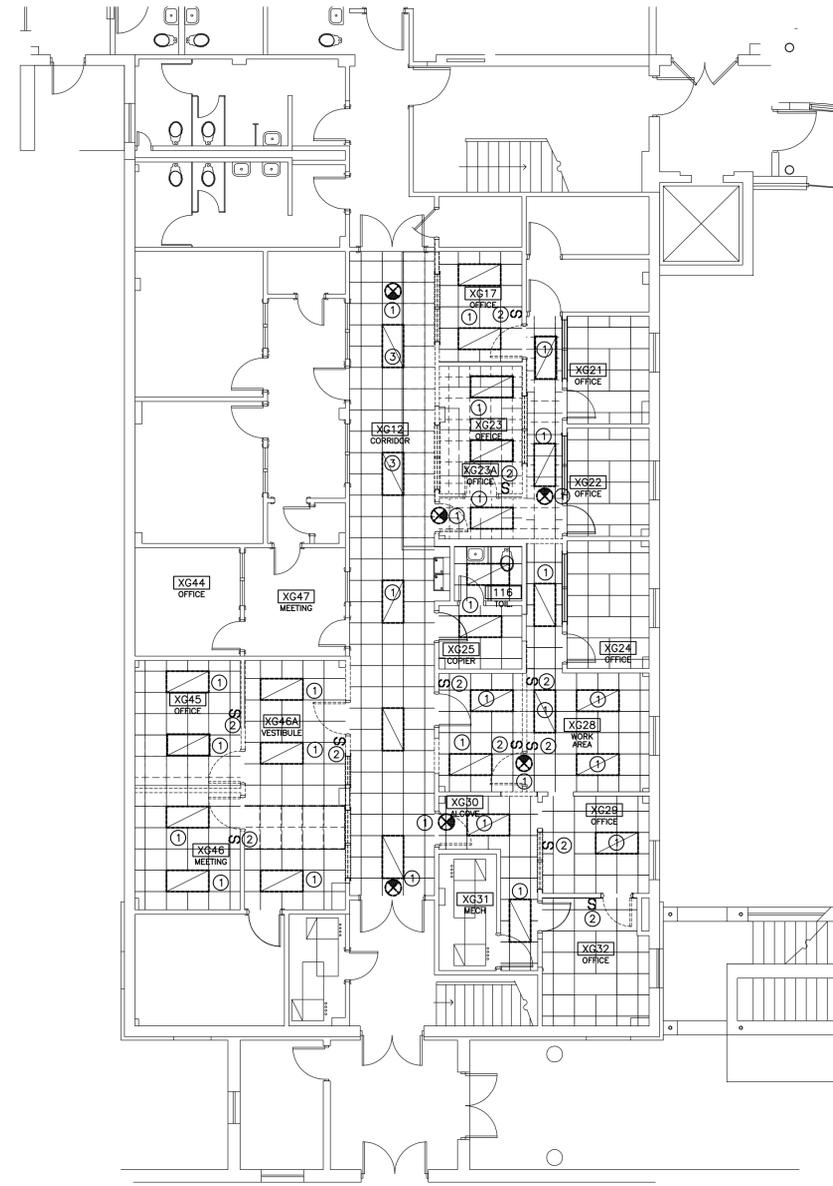
THIS DRAWING IS FORWARDED TO BE PRINTED ON A 24" X 36" SHEET



01 NEW LIGHTING PLAN
E0-02 1/8" = 1'-0"

NEW WORK KEYNOTES:

1. INSTALL LIGHT FIXTURES IN NEW LOCATIONS AS INDICATED. RECONNECT TO EXISTING LIGHTING CIRCUITS. TYPICAL ALL.
2. INSTALL NEW LIGHT SWITCHES AND COVER PLATES AS INDICATED. RECONNECT TO EXISTING LIGHTING CIRCUITS. TYPICAL ALL.
3. RECONNECT ANY CIRCUITS INTERRUPTED DURING DEMOLITION THROUGHOUT THE SPACE.



01 DEMOLITION PLAN
E0-02 1/8" = 1'-0"

DEMOLITION KEYNOTES:

1. EXISTING LIGHT FIXTURES TO BE REMOVED. CONTRACTOR IS TO STORE AND PROTECT EXISTING LIGHT FIXTURES THAT ARE TO BE REMOVED FOR REUSE IN NEW LOCATIONS.
2. EXISTING LIGHT SWITCHES AND COVER PLATES ARE TO BE REMOVED.
3. EXISTING LIGHT FIXTURES MAY NEED TO BE TIED UP OR REMOVED FOR CEILING REWORKING IN THIS AREA. MOVE OR RELOCATE FIXTURES AS NEEDED. COORDINATE WITH CEILING CONTRACTOR.

ORANGE COUNTY, NC
CRIMINAL JUSTICE RESOURCE DEPARTMENT
RENOVATION
106 EAST MARGARET LANE HILLSBOROUGH, NC 27278

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ID DATE DESCRIPTION

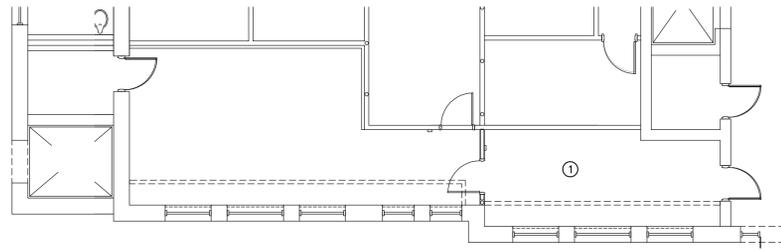
DRAWN BY: WCM
CHECKED BY: KMH

LIGHTING
DEMOLITION PLAN
NEW WORK PLAN

2020047 14 DEC 2020

E0-02

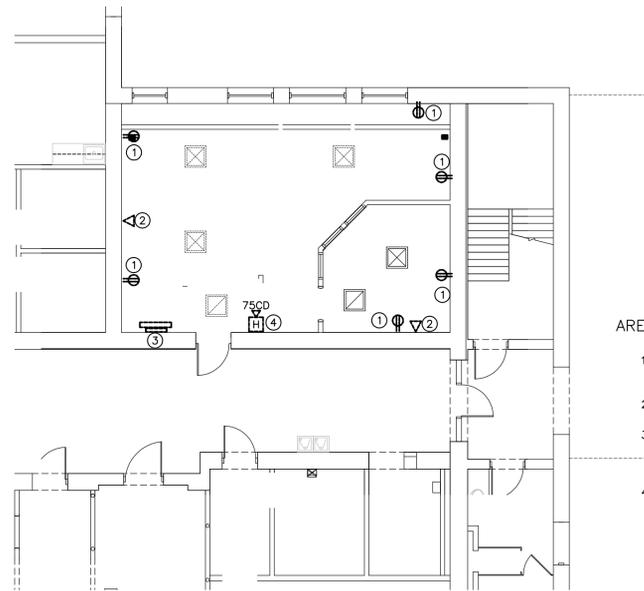




03 DEMOLITION POWER & FIRE ALARM PLAN - AREA 2
EO-01 1/8" = 1'-0"

AREA 1 POWER DEMOLITION KEYNOTES:

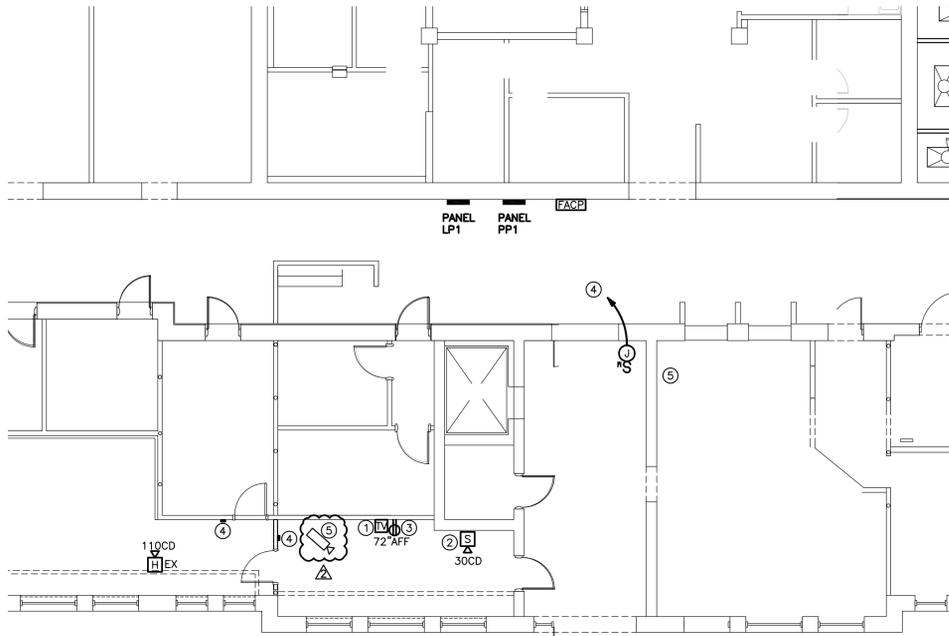
1. NO POWER OR FIRE ALARM DEMOLITION THIS AREA.



01 DEMOLITION POWER & FIRE ALARM PLAN - WORK AREA 1
EO-01 1/8" = 1'-0"

AREA 1 POWER DEMOLITION KEYNOTES:

1. EXISTING RECEPTACLES TO BE REMOVED, LEAVING EXISTING WIRING IN PLACE FOR REUSE AND CONNECTION TO NEW DEVICES.
2. EXISTING TELE/DATA OUTLETS WIRING TO REMAIN. REMOVE EXISTING FACE PLATES.
3. EXISTING MONITORS TO BE REMOVED AND RELOCATED TO THE NEW WAITING ROOM. COORDINATE WITH OWNER LOCATION(S) FOR THE MONITORS TO BE PLACED BEFORE ROUGH-IN.
4. EXISTING HORN/STROBE DEVICE IS TO BE REMOVED. CONTRACTOR TO STORE AND PROTECT THE DEVICE DURING CONSTRUCTION FOR REINSTALLATION ONCE CONSTRUCTION IS COMPLETED.



04 NEW WORK POWER PLAN - AREA 2
EO-01 1/8" = 1'-0"

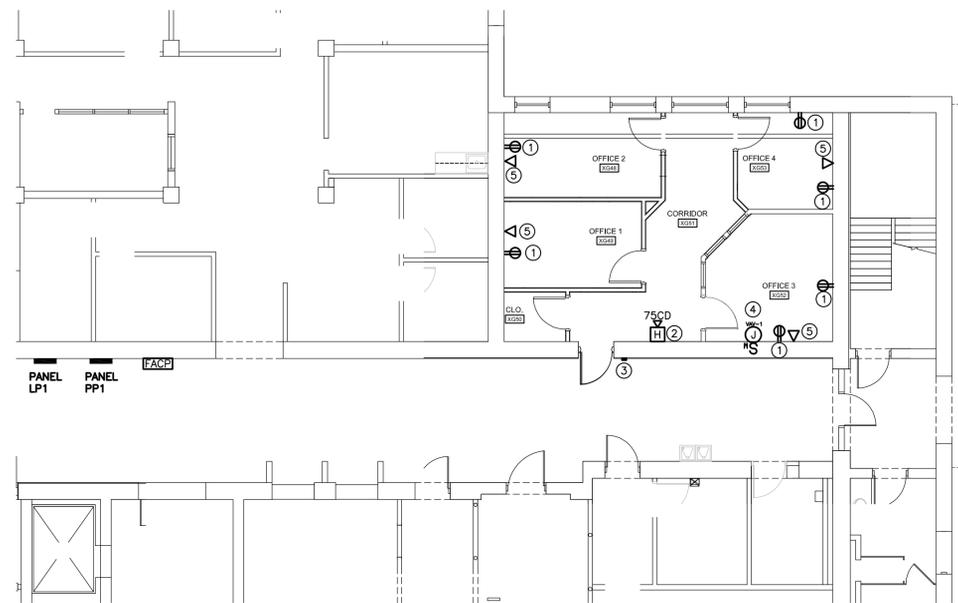
AREA 2 NEW WORK KEYNOTES - BASE:

1. INSTALL NEW RECEPTACLES IN EXISTING LOCATIONS. REUSE EXISTING WIRING AND CONNECT TO NEW DEVICES. PROVIDE NEW COVER PLATES.
2. INSTALL NEW STROBE FIRE ALARM DEVICE AS INDICATED. EXTEND NEW WIRING IN CONDUIT TO NEAREST DEVICE AND CONNECT TO THE FIRE ALARM SYSTEM. PROVIDE REACCEPTANCE TESTING TO INSURE DEVICE IS WORKING PROPERLY.
3. INSTALL RELOCATED MONITOR AS DIRECTED BY THE OWNER.

4. PROVIDE 3/4" CONDUIT WITH PULL STRING STUBBED UP TO CEILING SPACE FOR CARD READER. READER PROVIDED AND INSTALLED BY OWNER, CONDUIT ONLY BY ELECTRICAL CONTRACTOR.
5. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL 3/4" CONDUIT IN ACCESSIBLE CEILING SPACE WITH BUSHING AND PULL STRING TO NEW CAMERA LOCATIONS. WIRING AND CAMERA INSTALLATION BY OWNER.

AREA 2 NEW WORK KEYNOTES - ALTERNATE #1:

4. PROVIDE 120 VOLT CIRCUIT FOR AUTOMATIC DOOR OPENER. EQUIPMENT FURNISHED BY OWNER, WIRED BY ELECTRICAL CONTRACTOR. WIRING INCLUDES POWER AND CONTROLS AS NEEDED. COORDINATE WITH OWNER, DOOR INSTALLER, AND EQUIPMENT PROVIDER. INSTALL NEW SINGLE POLE 20 AMP BREAKER IN EXISTING PANEL PP1 IN SPACE AVAILABLE. PROVIDE MOTOR RATED SWITCH TO BE USED AS A DISCONNECT.
5. COORDINATE DOOR RELEASE LOCATION WITH OWNER.



02 NEW WORK POWER PLAN - AREA 1
EO-01 1/8" = 1'-0"

AREA 1 NEW WORK POWER KEYNOTES:

1. INSTALL NEW RECEPTACLES IN EXISTING LOCATIONS. REUSE EXISTING WIRING AND CONNECT TO NEW DEVICES. PROVIDE NEW COVER PLATES.
2. REINSTALL HORN/STROBE FIRE ALARM DEVICE AS INDICATED. REUSE EXISTING WIRING. PROVIDE REACCEPTANCE TESTING TO INSURE DEVICE IS WORKING PROPERLY.
3. PROVIDE 3/4" CONDUIT PULL STRING STUBBED UP WITH TO CEILING SPACE FOR CARD READER. READER PROVIDED AND INSTALLED BY OWNER.
4. CONNECT NEW VAV-1 TO EXISTING RECEPTACLE CIRCUIT. PROVIDE MOTOR RATED SWITCH FOR A DISCONNECTING MEANS.
5. INSTALL NEW FACEPLATES FOR EXISTING TELE/DATA OUTLETS.

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ORANGE COUNTY
HEALTH DEPARTMENT
WAITING ROOM AND OFFICES
WHITTIED BUILDING
300 WEST TRYON STREET
HILLSBOROUGH, NC 27278

1/19/21 ADDENDUM #2

12/14/20 CD

ID DATE DESCRIPTION

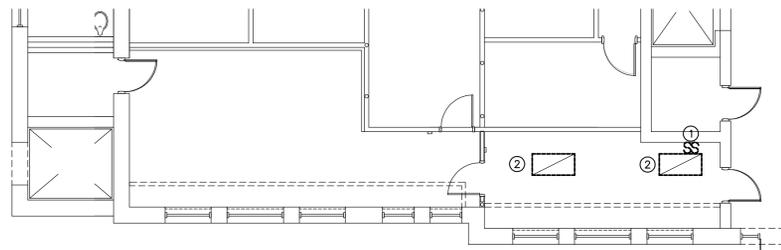
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ELECTRICAL POWER
DEMOLITION PLAN
NEW WORK PLAN

2020049 14 DEC 2020

E0-01

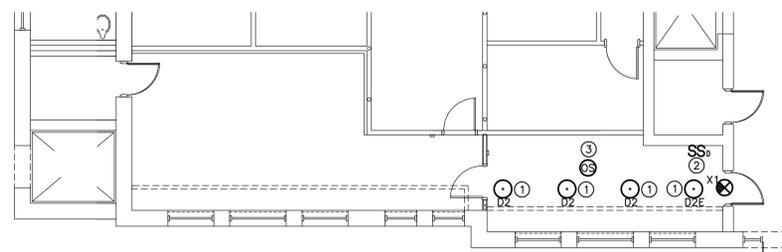




03 DEMOLITION LIGHTING PLAN - AREA 2
E0-01 1/8" = 1'-0"

AREA 2 DEMOLITION LIGHTING KEYNOTES:

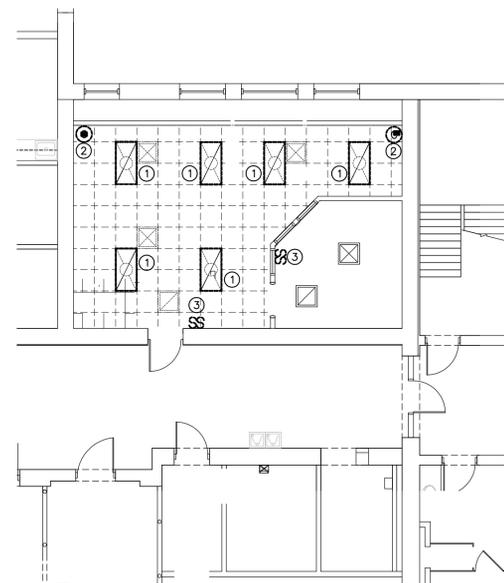
- EXISTING LIGHT SWITCHES TO BE REMOVED. LEAVE EXISTING WIRING IN PLACE FOR REUSE AND CONNECTION TO NEW DEVICES.
- REMOVE EXISTING LIGHT FIXTURES FOR CEILING DEMOLITION. CONTRACTOR IS TO STORE AND PROTECT EXISTING LIGHT FIXTURES AS THEY ARE TO BE REUSED IN NEW CEILING GRID.



04 NEW WORK LIGHTING PLAN - AREA 2
E0-01 1/8" = 1'-0"

AREA 2 NEW LIGHTING KEYNOTES:

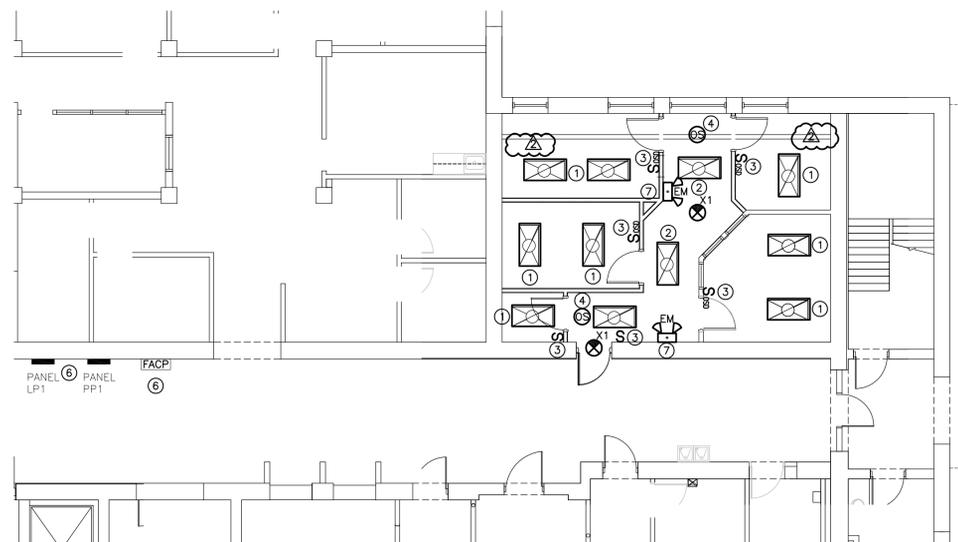
- INSTALL NEW RECESSED CAN LIGHTS IN LOCATIONS INDICATED. CONNECT TO EXISTING LIGHTING CIRCUIT.
- INSTALL NEW LIGHT SWITCHES AS SHOWN. THE LEFT SWITCH IS TO CONTROL THE EXISTING LIGHT FIXTURES IN THE ROOM BEYOND THE DOOR WITH CARD ACCESS CONTROL. THE RIGHT SWITCH (DIMMER) IS TO CONTROL THE NEW LED RECESSED CAN LIGHTS IN THE WAITING ROOM.
- INSTALL NEW OCCUPANCY SENSOR AS INDICATED TO CONTROL THE LIGHTING IN THE WAITING ROOM.



01 DEMOLITION LIGHTING PLAN - WORK AREA 1
E0-01 1/8" = 1'-0"

AREA 1 DEMOLITION KEYNOTES:

- REMOVE EXISTING LIGHT FIXTURES FOR CEILING DEMOLITION. CONTRACTOR IS TO STORE AND PROTECT EXISTING LIGHT FIXTURES AS THEY ARE TO BE REUSED IN NEW CEILING GRID.
- REMOVE EXISTING CAMERAS, WIRING AND CONDUIT FROM THIS LOCATION. TURN CAMERAS OVER TO THE COUNTY DURING CONSTRUCTION. CAMERA REINSTALLATION AND TERMINATIONS IN THE SECURITY CABINET TO BE BY THE COUNTY. CONDUIT ONLY BY ELECTRICAL CONTRACTOR.
- REMOVE EXISTING LIGHT SWITCHES.



02 NEW WORK LIGHTING PLAN - AREA 1
E0-01 1/8" = 1'-0"

AREA 1 NEW LIGHTING KEYNOTES:

- INSTALL EXISTING LIGHTING FIXTURES IN NEW LOCATIONS AS INDICATED.
- CONTRACTOR TO PROVIDE TWO NEW LIGHT FIXTURES TO MATCH EXISTING 4 LAMP T8 18 CELL PARABOLIC FIXTURES.
- ADD NEW LIGHT SWITCHES AS INDICATED.
- INSTALL OCCUPANCY SENSORS AS INDICATED.
- NOT USED.
- EXISTING LOCATION OF FIRE ALARM PANEL AND EXISTING ELECTRICAL PANELS.
- INSTALL NEW EMERGENCY LIGHTS AS INDICATED. CONNECT TO THE LIGHTING CIRCUIT THAT SERVES THE AREA.

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LIGHTING
DEMOLITION PLAN
NEW WORK PLAN

2020049 14 DEC 2020



E0-02

ASBESTOS SPECIFICATION

Orange County Court Street Annex Building
Second Floor
109 Court Street
Hillsborough, North Carolina 27278



Prepared For:

Ms. Angel Barnes
Orange County Asset Management Services
300 West Tryon Street
Building B, 3rd, Floor Office 10
Hillsborough, North Carolina 27278

Project Designers:

A handwritten signature in blue ink, appearing to read 'Ryan C. Abrahamson', is positioned above a horizontal line.

Ryan C. Abrahamson
Project Manager
NC Inspector No. 12691

Principal Review:

A handwritten signature in blue ink, appearing to read 'Lindsey B. Lucas', is enclosed in a thin black rectangular box and positioned above a horizontal line.

Lindsey B. Lucas, REM
NC Project Designer No. 40513
ECS Southeast, LLP

ECS Project No. 49-12854-A
January 18, 2021

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APPENDIXES

- Appendix A – Pre-work Asbestos Inspection Checklist
- Appendix B – Decontamination Area Arrangement
- Appendix C – Asbestos Design Licenses
- Appendix D – Asbestos Assessment Report, ECS Project No. 49-12854

SUMMARY OF ASBESTOS-CONTAINING MATERIALS

The subject site is located at 109 Court Street in Hillsborough, North Carolina. For this report, the subject property refers to the approximate 4,200 square foot second floor office area currently scheduled for renovation. The area being renovated consists of carpet and vinyl composite tile (VCT) floors; plaster, wood panel, and concrete masonry unit (CMU) block walls; and ceiling tile and plaster ceilings. The Office Building is approximately 13,000 square feet in size. An asbestos survey was conducted by ECS and detailed in the *Limited Asbestos Assessment* report conducted in December of 2020 (ECS Report 49-12854). The report is attached in the appendix of this project design.

Please note that this asbestos specification is based on the asbestos-containing materials (ACMs) outlined in this report; the site visit was performed by ECS representative, Mr. Tyler Watkins. Suspect asbestos containing materials (ACM) that were not sampled during this initial assessment will not be part of this asbestos abatement design and must be presumed to contain asbestos or tested prior to disturbance. Additional asbestos discovered will be added as an addendum to this specification if found.

Asbestos-containing Materials

Based on the report provided by ECS, the following Asbestos Containing Materials (ACMs) were identified:

- 9"x9" brown, beige streak vinyl composite tile (VCT) & associated mastic (20 square feet (SF));
- 9"x9" tan VCT and associated mastic (3,000 SF); and,
- Positive mastic beneath negative 12"x12" white, blue streak VCT (100 SF).

SECTION 01043

PROJECT COORDINATION

1.02 PERSONNEL

A. Supervisor

1. Supervisors shall be accredited by the North Carolina Health Hazards Control Unit (HHCU).
2. Supervisors on the project shall have two years experience in the administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc.
3. One supervisor shall be provided for every 10 workers inside the containment. A minimum of one supervisor shall be provided per project.
4. The contractor shall have at least one employee on the job site in either a foreman or supervisor's position who is bilingual in the appropriate languages when employing workers who do not speak fluent English.
5. A minimum of one supervisor per company shall have attended a 24-hour respiratory protection course.

B. Worker

1. Workers shall be accredited by the HHCU.

C. Competent Person

1. A competent person, as defined in the OSHA asbestos standard 29 CFR 1926.1101, employed by the contractor must be outside the work area at all times to monitor activity, ensure containment security, provide information to visitors, and provide access to the work area.

D. Employees

1. The contractor is responsible for the behavior of workers within his employment. If at any time during the contracted work, any of his employees are judged to exhibit behavior unfitting for the area or judged to be a nuisance by the owner or designer, the contractor shall remove them immediately from the project.
2. The contractor shall be responsible for compliance with the following concerning employee behavior:

- a. Under no circumstances are alcohol, drugs or any other type of controlled substances permitted on the project site.
 - b. Workers are restricted to the construction project site only.
 - c. Vehicles must be parked in areas prearranged with the owner.
 - d. All workers must conform to the following basic dress code when in public areas of the project confines: long pants, shirts, no tank tops, no shorts, no bare backs.
 - e. The contractor is responsible for disposal of all trash brought on the project site by his employees, including drink cans, bottles or other food containers and wrappers.
3. Failure to adhere to these rules could result in criminal prosecution and/or removal from the project site.

1.03 PRE-JOB SUBMITTALS

- A. The asbestos contractor must submit a complete set of pre-job submittals to the designer as soon as possible prior to start of work. Work is prohibited until submittal package has been reviewed and approved by designer. A copy of the approved submittals shall be kept in a three-ring binder (project log) by the contractor at the project site in the clean room or in the on-site office of the contractor.
1. Notifications: Provide copies of Asbestos Permit Application and Notification for Demolition/Renovation (DEHNR 3768), which provide written notice to all required agencies, including North Carolina HHCUC. Provide notification letters to local EMS, fire and police departments.
 2. Employee List: Provide copies of lists of supervisors and workers, along with their accreditation and Social Security numbers, to be utilized on the project.
 3. Permits: Provide copies of approval of a waste disposal site in compliance with 40 CFR 61.154.
 4. Medical: Copies of asbestos training certification forms, medical monitoring records and respirator training documentation of all employees working on the project. Include individually signed and notarized forms by each worker to be utilized on the project documenting that each is actively involved in a company employee medical surveillance program.
 5. Respirator Training: Copies of most recent fit testing records, individually signed for each worker to be utilized on the project.
 6. Project Schedule: Time schedule for the project, outlining the proposed start, setup, clearances, etc. for the various phases of the project.

7. Initial Exposure Assessment: As required by the OSHA construction asbestos standard 29 CFR 1926.1101.
8. Any other programs or training as outlined by the OSHA and EPA standards.

1.04 POST-JOB SUBMITTALS

- A. Submit a complete set of post-job submittals to the designer following the final completion of the work. Requests for final payment will not be approved until the submittal package has been reviewed and approved by the owner/designer.
 1. Affidavits: Contractor's affidavit of payment of debts and claims, affidavit of release of liens, and consent of Surety Company to final payment.
 2. Manifest: North Carolina Asbestos Waste Shipment Record (DEHNR 3787) receipt from landfill operator which acknowledges the contractor's delivery(s) of waste material. Include date, quantity of material delivered and signature of authorized representative of landfill. Also, include name of waste transporter.
 3. Daily Log: A copy of all daily logs showing the following: name, date, entering and leaving time, company or agency represented, reason for entry for all persons entering the work area, employee's daily air monitoring data as required by the OSHA standard and written comments by inspectors, industrial hygienists, designers and visitors.
 4. Medical: Copies of asbestos training certification forms, medical monitoring records and respirator training documentation of all employees hired that worked during the project.

1.05 SPECIAL REPORTS

- A. General: Except as otherwise indicated, submit special reports to designer within one day of occurrence requiring special report, with copies to others affected by occurrence. Also keep a copy in the project logbook.
- B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report to the designer immediately, listing chain of events, persons participating, response by contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise designer in advance at earliest possible date.
- C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document date and actions; comply with industry standards for reporting accidents. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.06 CONTINGENCY PLAN

- A. Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, negative pressure system failure, supplied air system failure (if applicable), evacuation of injured persons for both life threatening and non-life threatening, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency. Keep these plans in the on-site office.

- B. Post outside/in clean room of Personnel Decontamination Unit:
 - 1. Telephone numbers and locations of emergency services including but not limited to, fire, ambulance, doctor, hospital, police, Power Company, Telephone Company and the North Carolina HHCU.
 - 2. A copy of Safety Data Sheets (SDS) for any chemicals used during the asbestos project.
 - 3. The contractor shall post asbestos signs in each appropriate language as per the OSHA 29 CFR 1926.1101 standard.

SECTION 01092

CODES AND REGULATIONS

1.01 REFERENCE SPECIFICATIONS

The contractor shall assume full responsibility and liability for compliance with all applicable federal, state and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site.

Unless modified by these project specifications, all specifications for stripping, removal, repair and disposal work shall conform to the following specifications and standards, as applicable, as if completely reproduced herein.

- A. The following regulations published by the Environmental Protection Agency (EPA):
 - 1. "National Emissions Standards for Hazardous Air Pollutants Asbestos," 40 CFR Part 61, Subpart M.
 - 2. "General Provisions," 40 CFR Part 61, Subpart A.
 - 3. "Guidance for Controlling Asbestos-Containing Materials in Buildings" June 1985. (EPA # 560/5-85-024).
 - 4. "Asbestos-Containing Materials in Schools," 40 CFR Part 763, Subpart E including appendices.

- B. The following regulations published by the U.S. Department of Labor, OSHA:
 - 1. "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules," Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations.
 - 2. "Respiratory Protection," Title 29, Part 1910, Section 134 of the Code of Federal Regulations.
 - 3. Construction Industry, Title 29, Part 1926, of the Code of Federal Regulations.
 - 4. "Access to Employee Exposure and Medical Records," Title 29, Part 1910, Section 20 of the Code of Federal Regulations.
 - 5. "Hazard Communication," Title 29, Part 1926, Section 59 of the Code of Federal Regulations.
 - 6. "Specifications for Accident Prevention Signs and Tags," Title 29, Part 1910, Section 145 of the Code of Federal Regulations.

- C. The following regulations published by North Carolina state agencies:
1. North Carolina Asbestos Hazard Management Program Rules as adopted by 15A NCAC 19C .0600.
 2. "North Carolina Occupational Safety and Health Standards for the Construction Industry," 29 CFR Part 1926 as adopted by T13 NCAC 07F .0201, and shipyard T13:07F.0500.
 3. North Carolina General Statutes, Chapter 95, 97, 130.
- D. The following documents published by the American National Standards Institute:
1. "Fundamentals Governing the Design and Operation of Local Exhaust Systems," Z9.2-1979.
 2. "American National Standard for Respiratory Protection Respiratory Use - Physical Qualifications for Personnel," Z88.6-1984.
 3. "Practices for Respiratory Protection," Z88.2-1992.

1.02 NOTICES

- A. The contractor shall notify the following offices in writing within the time frame specified by the NESHAP regulations prior to beginning any asbestos removal operations.
1. State Agencies

Health Hazards Control Unit
NCDHHS-Division of Public Health

FOR US MAIL DELIVERY:
1912 Mail Service Center
Raleigh, NC 27699-1912

FOR EXPRESS DELIVERY SERVICES OTHER THAN US MAIL:
5505 Six Forks Road, 2nd Floor, Room D-1
Raleigh, NC 27609
Telephone: (919) 707-5950

N.C. Department of Labor
Division of Occupational Safety and Health
1101 Mail Service Center
Raleigh, NC 27699-1101
Telephone: 1-800-LABOR-NC or (919) 807-2900
Fax: (919) 807-2856

2. Emergency Departments

Notify the local emergency medical services, police and fire departments in writing of the type and scope of work being performed and request these departments make an inspection prior to beginning the work.

3. Licenses

Maintain current licenses for contractor and accreditation for workers and supervisors as required by applicable State or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

SECTION 01410

AIR MONITORING - INDUSTRIAL HYGIENE FIRM

1.01 GENERAL

- A. The owner shall be responsible for the coordination and contracting of an industrial hygiene firm. Services of the industrial hygiene firm will be paid by the owner.
- B. The contractor shall provide power, electrical cords, GFI's, etc. for the air monitor.
- C. Air monitoring shall be done under the direct supervision of a North Carolina accredited supervising air monitor (SAM), except for sampling performed by the contractor to satisfy OSHA requirements.
- D. The SAM shall be accredited per the Asbestos Hazard Management Program rules.
- E. The air monitor shall be accredited as per the Asbestos Hazard Management Program rules and work under the direct supervision of a SAM.
- F. The SAM representing each firm shall have taken a 24-hour respiratory protection course that is NIOSH, AIHA or HHCU recognized.
- G. The industrial hygiene firm shall submit copies of their accreditations and documentation on respiratory protection training to the designer prior to the award of the contract.
- H. If specific project activities are assigned to an air monitor, the SAM is expected to be in direct control and responsible for industrial hygiene work completed on the project. The SAM shall approve all air monitoring results performed by the air monitor.
- I. Employees of the HHCU shall have right of entry into the project. The HHCU's SAM shall have final authority over the industrial hygiene firm on the project.

1.02 DESCRIPTION OF WORK

- A. The industrial hygiene firm shall offer expertise to the designer and contractor, but is not directly responsible for the performance of the job.
- B. At the job site, the industrial hygiene firm is expected to observe, be aware, and comment on general work site conditions and activities as they relate to the specifications and profession of industrial hygiene, and make recommendations in writing to the designer and contractor.
- C. The industrial hygiene firm is responsible for overseeing the protection of the environment from contamination, protection of persons in adjacent areas, and assurance that the areas are acceptable for occupancy.

- D. The industrial hygiene firm has the authority to direct the contractor relative to safety and environmental concerns. This includes stopping the work if necessary. All directions and comments made by the industrial hygiene firm to the contractor shall be written with a copy to the designer.
- E. The SAM shall review and make comments to the designer on the submittals listed in Section 01043.
- F. The SAM shall approve any change in contractor's respiratory protection. This includes a review of the historical data.
- G. The industrial hygiene firm is to conform to the contractor's schedule and shall respond to necessary changes, provided an advance notice is given as outlined in Section 01043.
- H. The industrial hygiene firm's project monitor shall furnish designer and contractor with a mobile phone number where he can be reached quickly at all times.

1.03 AIR MONITORING

- A. First day air sampling followed by periodic monitoring is recommended for this project in order to document and observe the asbestos abatement work.

Ambient Air Monitoring: The purpose of ambient air monitoring by the industrial hygiene firm will be to detect discrepancies in the work area isolation such as:

1. Contamination of the building outside of the work area with airborne asbestos fibers.
 2. Failure of filtration or rupture in the negative pressure system.
 3. Confirm the work practices established by the contractor and respiratory protection provided for employees are adequate.
- B. Work Area Airborne Fiber Levels: The owner's industrial hygiene firm will monitor airborne fiber levels in the work area. The purpose of this air monitoring will be to detect airborne fiber levels which may challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.
 - C. Work Area Clearance: To determine if the elevated airborne fiber levels encountered during abatement operations have been reduced to an acceptable level, the industrial hygiene firm will sample and analyze air per Section 01714.
 - D. In accordance with AHMB Program Rules, the SAM shall develop an Abatement Project Monitoring Plan which complies with EPA and OSHA analytical criteria and will provide a valid representation of airborne fiber concentrations both inside and outside the work area. This program is not intended to satisfy the contractor's requirement for sampling

under the OSHA regulation. All personnel and area sampling conducted by the industrial hygiene firm shall be personally observed. Air sampling pumps shall not be left unattended for extended periods of time.

1. The SAM shall submit a written project monitoring plan to the designer with a copy to the contractor. The following information shall be required for the submittal.
 - a. The name, address and telephone number of the industrial hygiene firm.
 - b. The name, address, telephone number and NIOSH's PAT designation and proficiency data for the laboratory analyzing the air samples. Analysis of all samples collected shall be by a laboratory currently proficient in NIOSH's "Proficiency Analytical Testing Program for Laboratory Quality Control" for asbestos. The acceptable sampling and analysis method is NIOSH 7400, latest revision.
 - c. Persons performing Phase Contrast Microscopy (PCM) analysis at the asbestos removal location shall be proficient in the American Industrial Hygiene Association's Asbestos Analyst Registry Program [AAR].
 - d. A proposed air sampling strategy which shall include: a projected number of air samples, locations, the types of air samples to be collected (personal, area, ambient), how the air samples are to be collected (TWA, ceiling, other), the equipment to be used (pumps, calibration equipment, filters, other), and how the samples will be transported to the laboratory.
 - i. Personal air samples will be collected in such a manner as to comply with OSHA collection and analytical regulations and to provide a valid representation of airborne fiber levels. The samples collected by the industrial hygiene firm on personnel do not satisfy the contractor's responsibility under OSHA.
 - ii. Final area air sampling will comply with all State and Federal requirements in measuring airborne asbestos following an abatement action.
 - iii. Air samples will be analyzed, and results made available as per the AHMB Program Rules. Copies of all air sampling results shall be signed by the SAM and a copy posted at the job site. These copies shall include the following: sample number, sample location, activity represented by sample, flow rate, sample time, comments and sample results. A statement will be included on each submission that the requirements of this contract have been met as they apply to the activities of the SAM.

- iv. If TWA samples are being collected by the contractor for the purpose of reducing respiratory protection requirements, the industrial hygiene firm shall directly observe the conditions and work practices represented by each sample and make appropriate notes in the bound book on site. The SAM shall review all TWA air sampling results which are used for reducing respiratory protection requirements before accepting the results.

- E. Supplemental air monitoring may be conducted inside and outside the work area by the HHCU. This supplemental sampling does not fulfill air monitoring responsibilities required by OSHA, EPA, or this contract.

- F. For this project, due to potential dust and fiber levels from outside the work area, prevalent air samples will be conducted prior to the asbestos contractors' arrival to the site.

SECTION 01503

TEMPORARY FACILITIES

1.01 GENERAL

- A. Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.
- B. Use qualified tradesmen for installation of temporary services and facilities. Locate, modify, and extend temporary services and facilities where they will serve the project adequately and result in minimum interference with the performance of the work.
- C. In occupied buildings, the owner's maintenance personnel shall lock and tag out all electrical and HVAC equipment in the asbestos abatement area. The contractor shall verify that the power and HVAC have been locked and tagged out prior to beginning work.
- D. In unoccupied buildings, the contractor is responsible for the lock and tag out of all power sources and HVAC equipment.
- E. The owner shall move all furniture, books, computers, records, equipment, etc. prior to the contractor's arrival date as specified.

1.02 WATER SERVICE

- A. Owner shall supply a source of water. Contractor bears all expense of heating and getting water to the work and decontamination areas.
- B. Supply hot and cold water to the decontamination unit in accordance with Section 01563. Hot water shall be supplied at a minimum temperature of 100 degrees Fahrenheit.
- C. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment.

1.03 ELECTRICAL SERVICE

- A. General: Comply with applicable NEMA, NEC and UL standards and governing state and local regulations for materials and layout of temporary electric service.
- B. Ground Fault Protection: Provide receptacle outlets equipped with ground fault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.
- C. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period.

- D. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.
- E. Provide services of an electrician, on a standby basis, to service electrical needs during the abatement process.
- F. Provide additional power service and distribution service, consisting of individual dedicated 15-amp 120-volt circuits to electrical drops with receptacle outlets equipped with ground fault interrupt protection, color coded for the exclusive use of the industrial hygiene firm.

1.04 FIRST AID

- A. A minimum of one first aid kit shall be in the clean room. Additional first aid kits as the contractor feels is adequate or is required by law shall be located throughout the work area.

1.05 FIRE EXTINGUISHERS

- A. Comply with the applicable recommendations of NFPA Standard 10 - "Standard for Portable Fire Extinguishers." Locate fire extinguishers where they are most convenient and effective for their intended purpose but provide not less than one extinguisher in each work area equipment room and one in the clean room of the personnel decontamination unit.

1.06 TOILET FACILITIES

- A. Portable toilets for use by the abatement contractor are the responsibility of the contractor.

1.07 PARKING

- A. Park only in areas designated by the owner.

1.08 BUILDING SECURITY

- A. Maintain personnel on-site at all times any portion of the work areas are open or not properly secured. Secure work areas completely at the end of each day.

SECTION 01513

NEGATIVE PRESSURE SYSTEM

1.01 GENERAL

- A. A negative pressure system shall be used. The negative pressure system requirements are as follows.
- B. High efficiency particulate air (HEPA) filter exhaust systems equipped with new HEPA filters for each project shall be used. Exhaust equipment and systems shall comply with ANSI Z9.2-79 and used according to manufacturer's recommendations.
- C. A system of HEPA-equipped air filtration devices shall be configured so that a pressure differential is established between the work area and the surrounding area (-0.02 to -0.04" water column). A continuous chart-recorded manometer shall be used to confirm this condition.
- D. Additional air filtration devices shall be provided inside the work area for emergency standby as well as for circulation of dead air spaces.
- E. The pressure differential is maintained at all times after preparation is complete and until the final visual inspection and air tests confirm the area is clean and acceptable for occupancy and the designer confirms verbally with written follow-up to discontinue the use of the negative pressure system.
- F. Air shall be exhausted outside the buildings. Any variations must be approved by the HHCU.
- G. The contractor shall check daily for leaks and log his checks in the bound logbook. This includes checks internal to air-moving devices.
- H. There shall be a minimum of four air changes per hour in any containment.

SECTION 01526

WORK AREA PREPARATION

1.01 GENERAL

- A. Before work begins in an area, a decontamination unit must be in operation as outlined in Section 01563.
- B. Decontamination units shall be placed in areas designated by owner.
- C. Install critical barriers.
- D. Temporary facilities shall be addressed as outlined in Section 01503.
- E. The contractor shall set up work areas and decontamination units as described. Variations must be approved by ECS' project designer. The decontamination units shall consist of a change room, shower room and equipment room as described in Section 01563.
- F. Post OSHA DANGER signs meeting the specifications of OSHA 29 CFR 1926.1101 at any location and approaches to the regulated area where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the regulated area to permit any personnel to read the sign and take the necessary measures to avoid exposure. Additional signs will be posted following construction of the regulated area enclosure.

1.02 FULL CONTAINMENT (CATEGORY I Friable Removal) – Floor Tile and Mastic

- A. The contractor shall wet clean and/or HEPA vacuum all items and equipment in the work area suspected of being contaminated with asbestos, but not in direct contact with the asbestos material and either secures these items in place with 6-mil (minimum) polyethylene plastic sheeting (poly) or has them removed from the work area.
- B. Critical Barriers: The contractor shall thoroughly seal the work area for the duration of the work by sealing off individual openings and fixtures in the work area, including, but not limited to, heating and ventilation ducts, doorways, corridors, windows, and skylights, with poly securely in place. If the contractor is using sealant materials to fill in small holes or cracks, the material shall have appropriate fire ratings.
- C. Light fixtures shall be cleaned (using HEPA-vacuums and wet techniques).
- D. Poly shall be installed in such a manner that they may be removed independently of each other and the critical barriers.
- E. Entrances and exits from the work area will have triple barriers of poly so that the work area is always closed off by one barrier when workers enter or exit.

- F. Contractor shall install a negative pressure system as outlined by section 01513.
- G. No water or ACBM may be left standing on the floor at the end of the workday.
- H. The contractor shall establish and mark emergency and fire exit from the work area. Emergency procedures shall have priority over established decontamination entry and exit procedures. Audible and visible fire and emergency evacuation alarms shall be installed to be heard and seen throughout the entire work area.
- I. Integrity of these seals shall be regularly checked and maintained by the contractor.
- J. After work area preparation, the contractor shall notify the air monitor verbally with written follow-up that he is ready for a pre-work inspection.

SECTION 01560

WORKER PROTECTION

1.01 GENERAL

- A. Provide worker protection as required by OSHA, state, and local standards applicable to the work. Contractor is solely responsible for enforcing worker protection requirements at least equal to those specified in this Section.
- B. Each time the work area is entered the contractor shall require all persons to remove all street clothes in the changing room of the personnel decontamination unit and put-on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put-on work boots.
- C. Workers shall not eat, drink, smoke, chew gum or chew tobacco in the work area, the equipment room, the load out area, or the clean room.

1.02 WORKER TRAINING

- A. Train all workers in accordance with 29 CFR 1926 and North Carolina state regulations regarding the dangers inherent in handling asbestos, breathing asbestos dust, proper work procedures and personal and area protective measures.

1.03 MEDICAL EXAMINATIONS

- A. Provide medical examinations for all workers. Examination shall as a minimum, meet OSHA requirements as set forth in 29 CFR 1926 and N.C. Workmen's Compensation Act Dusty Trades Examination Record (DEHNR Form 2796).

1.04 PROTECTIVE CLOTHING

- A. Provide disposable full-body coveralls and disposable head covers and require that they be worn by all workers in the work area. Provide enough for all required changes, for all workers in the work area.
- B. Boots: Provide work boots with non-skid soles and, where required by OSHA, foot protection for all workers.
- C. Gloves: Provide work gloves to all workers and require that they be worn at the appropriate times. Do not remove gloves from work area. Dispose of work gloves as asbestos-contaminated waste at the completion of the project.

1.05 ADDITIONAL PROTECTIVE EQUIPMENT

- A. Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the contractor for the owner, the designer, Industrial hygiene firm and other authorized representatives who may inspect the job site.
- B. Scaffolding used during asbestos removal will comply with appropriate OSHA regulations.
- C. Gloves, hardhats, safety glasses - provide appropriate safety equipment to all workers.

1.06 DECONTAMINATION PROCEDURES

- A. Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area:
 - 1. Remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.
 - 2. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 - a. Thoroughly wet body including hair and face.
 - b. With respirator still in place thoroughly wash body, hair, respirator face piece, and all exterior parts of the respirator.
 - c. Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breathe.
 - d. Carefully wash face piece of respirator inside and out.
 - e. Shower completely with soap and water; rinse thoroughly.
 - f. Rinse shower room walls and floor prior to exit.
 - g. Proceed from shower to changing (clean) room and change into street clothes or new disposable work items.
 - 3. After showering, each employee shall inspect, clean, and repair his respirator as needed. The respirator shall be dried, placed in a suitable storage bag, and properly stored.

SECTION 01562

RESPIRATORY PROTECTION

1.01 DESCRIPTION OF WORK

- A. Instruct and train each worker involved in asbestos abatement in proper respirator use and require that each worker always wear a respirator, properly fitted on the face, in the work area from the start of any operation which may cause airborne asbestos fibers until the work area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the workplace or as required for other toxic or oxygen-deficient situations encountered.

1.02 GENERAL

- A. Provide workers with personally issued and marked respiratory equipment approved by NIOSH and MSHA and suitable for the asbestos exposure level in the work areas according to OSHA Standard 29 CFR 1926.1101 and other possible contaminants employees might be exposed to during the project.
- B. Provide respiratory protection from the time the first operation involved in the project requires contact with asbestos-containing materials (including construction of decontamination units, construction of airtight barriers/barricades, and placing of plastic sheeting on walls) until acceptance of final air clearance test results by the industrial hygiene firm.
- C. The minimum respiratory protection for the project during gross removal of friable materials shall be powered air purifying respirators (PAPR).
- D. Half-face respirators with replaceable HEPA filters can be used for non-friable removal.
- E. Respirator fit testing shall be performed as a minimum at the beginning of the project, at any change in respiratory protection equipment, and at any time during the project if requested by the employee or SAM. Fit testing is to be performed by one of the methods listed in the 29 CFR 1926.1101, Appendix C.
- F. Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.
- G. The contractor may submit a new exposure assessment (as per 29 CFR 1926.1101) to the SAM with a request to downgrade to less protective respirators. The SAM will make a recommendation to the designer, who will issue a decision in writing to the contractor approving or denying his request. If the contractor disagrees with the decision, then the representative air sampling data may be reviewed by the HHCU for a final decision.

SECTION 01563

DECONTAMINATION UNITS

1.01 DESCRIPTION OF WORK

- A. For friable asbestos removal, provide separate personnel and equipment/loadout decontamination facilities. Require that the personnel decontamination unit be the only means of ingress and egress for the work area. Require that all materials exit the work area through the equipment/loadout decontamination unit. Contractor shall comply with 29 CFR 1926.1101, specifically paragraph (j) Hygiene facilities and practices for employees.

1.02 GENERAL

Provide separate personnel decontamination units and equipment/loadout decontamination units when practical.

- A. Personnel Decontamination Unit
 1. Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, changing room, shower room, equipment room. Each shall be separated by a minimum of three curtain doorways. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit. If both male and female crew members will be working inside of the containment, start times and end times of shifts should be staggered to allow proper privacy of individuals present.
 2. Provide temporary lighting within decontamination units as necessary to reach an adequate lighting level.
 3. Maintain floor of changing room to be always dry and clean. Do not allow the overflow water from the shower to escape the shower room.
 4. Damp wipe all surfaces twice after each shift change with a disinfectant solution.
 5. Provide hot and cold water, drainage and standard fixtures including an elevated shower head as necessary for a complete and operable shower. A water hose and bucket are not considered an acceptable shower.
 6. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.
 7. Pump shower wastewater to drain. Provide 20 micron and 5-micron wastewater filters in line to drain. Change filters daily or more often if necessary.

8. If the decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 3/8-inch plywood "ceiling" with two layers of polyethylene sheeting covering the top of the "ceiling."
9. Visual Barrier: Where the decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque plastic sheeting so that worker privacy is maintained, and work procedures are not visible to building occupants. Where the area adjacent to the decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs, max. 16 inches on center, covered with minimum 3/8-inch plywood.

B. Equipment Decontamination Units:

1. Provide an equipment decontamination unit consisting of a serial arrangement of rooms, clean room, holding area, and washroom, each room separated by a minimum of three curtain doorways, for removal of equipment and material from work area. Do not allow personnel to enter or exit work area through equipment decontamination unit.
2. Washroom: Provide washroom for cleaning of bagged or drummed asbestos-containing waste materials passed from the work area.
3. Holding Area: Provide holding area as a drop location for sealed drums and bagged asbestos-containing materials passed from the washroom.
4. Clean Room: Provide clean room to isolate the holding area from the building exterior or occupied areas.
5. Equipment or Material: Obtain all equipment or material from the work area through the equipment decontamination unit according to the following procedure:
 - a. When passing contaminated equipment, sealed plastic bags, drums, or containers into the washroom, close all doorways of the equipment decontamination unit, other than the doorway between the work area and the washroom. Keep all outside personnel clear of the equipment decontamination unit.
 - b. Once inside the washroom, wet-clean the bags and/or equipment.
 - c. When cleaning is complete, insert bagged material into a clean bag/drum during the pass between the washroom and holding area. Close all doorways except the doorway between the washroom and holding area.

- d. Workers from the building exterior enter the clean room then the holding area to remove decontaminated equipment and/or containers for disposal. Require these workers to wear full protective clothing and respiratory protection as described in Section 01562.

C. Decontamination Unit Contamination:

1. If the air quality in the decontamination unit exceeds 0.01 fibers per cubic centimeter analyzed by PCM or its integrity is diminished through use as determined by the designer or industrial hygiene firm, no employee shall use the unit until corrective steps are taken and approved by the designer and industrial hygiene firm.

SECTION 01711

PROJECT DECONTAMINATION

1.01 GENERAL

- A. Carry out a first cleaning of all surfaces of the work area including plastic sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping and/or a high efficiency particulate air (HEPA) filter vacuum until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces. Do not perform dry-dusting or dry-sweeping.
- B. Equipment shall be cleaned, and all contaminated materials removed before removing polyethylene from the walls and floors.
- C. The contractor shall replace all prefilters and clean the inside and outside of the HEPA exhaust units.
- D. After polyethylene sheets have been removed from floors (when present), but are remaining on all windows, doors and the critical components, the contractor shall clean all surfaces in the work area, including ducts, electrical conduits, steel beams, roof deck, etc., with amended water and/or HEPA-filtered vacuum.
- E. After cleaning the work area, the contractor shall allow the area to thoroughly dry and then wet-clean and/or HEPA vacuum all surfaces in work area again.
- F. At the completion of the cleaning operation, the contractor's supervisor shall perform a complete visual inspection of the work area to ensure that the work area is dust-free and fiber-free. If the supervisor believes he is ready for a final project decontamination inspection, he shall notify the designer.
- G. The designer shall contact the industrial hygiene firm and advise the firm of the final project decontamination inspection requested by the contractor.
- H. Final project decontamination inspection includes the visual inspection and air monitoring clearance.
- I. Visual inspection for acceptance shall be performed after all areas are dry.
- J. The industrial hygiene firm shall perform the final visual inspection and conduct the final air clearance. Any discrepancies found shall be documented in the form of a punch list.
- K. Final air sampling shall not commence until the visual inspection is completed and passed.

- L. If the industrial hygiene firm finds that the work area has not been adequately decontaminated, cleaning and/or air monitoring shall be repeated at the contractor's expense, including additional industrial hygiene fees, until the work area is in compliance.
- M. After the work area is found to be in compliance, all entrances and exits shall be unsealed and the plastic sheeting, tape and any other trash and debris shall be disposed of in sealable plastic bags (6 mil minimum) and disposed of as outlined in Section 02084.
- N. All HEPA unit intakes and exhausts shall be wrapped with six mil polyethylene before leaving the work area.
- O. After the industrial hygiene firm has approved the final project decontamination and the contractor has completed the tear down for occupancy by others, the designer shall perform the project final inspection as outlined in the general conditions.
- P. Residual asbestos that may be present after removing critical barriers, which in the designer's judgment should have been cleaned during the precleaning phase prior to installing critical barriers, shall be cleaned, and cleared at the contractor's expense.
- Q. There shall be appropriate seals totally enclosing the inspection area to keep it separate from clean areas or other areas where abatement is or will be in progress. Once an area has been accepted and passed air tests, loss of the critical barrier integrity or escape of asbestos into an already clean area shall void previous acceptance and tests. Additional visual and final air clearance sampling shall be required at the contractor's expense.

SECTION 01714

WORK AREA CLEARANCE

1.01 GENERAL

- A. Notification and scheduling of the final inspection during the project is the responsibility of the contractor.

1.02 FINAL CLEARANCE TESTING

- A. After the second cleaning operation and after the area is completely dry, the following procedure test shall be performed:
 - 1. A final visual inspection shall be conducted by the industrial hygiene firm. The inspection shall be conducted following the guidelines set forth in the American Society for Testing and Materials, Standard Practices for Visual Inspection of Asbestos Abatement Projects, Designation: E1368.90. If the work area is found visibly clean, air samples will be collected by the industrial hygiene firm.
 - 2. During the air testing, the accredited air monitor shall cause disruptive air currents as described in the EPA-AHERA regulations (40 CFR Part 763, Subpart E, Appendix A).
 - 3. Transmission Electron Microscopy (TEM) clearance will be run in work areas disturbing greater than 3,000 SF or 1,500 LF of friable material. Five (5) TEM air samples will be required for clearance of each containment following a visual clearance of each work area where containments have been erected. Five (5) samples will be collected in the containment and be submitted to the laboratory for analysis. If the arithmetic mean of the five samples collected from the inside of the containment is less than 70 structures/square millimeter, the area passes clearance.
 - 4. The industrial hygiene firm shall immediately report the final air sampling clearance results to the designer.
 - 5. The use of the negative pressure system may be discontinued after the industrial hygiene firm instructs the contractor that he has passed the final project decontamination inspection.

SECTION 02080

ASBESTOS REMOVAL

1.01 GENERAL

- A. Prior to starting asbestos removal, the contractor's equipment, work area and decontamination units will be inspected and approved by the air monitor.
- B. Loose asbestos material removed in the work area shall be adequately wet with a surfactant, bagged, sealed, and labeled properly before personnel breaks or end of shift. The surfactant to be utilized with asbestos-containing materials shall consist of soapy water mixed in a proportion of two (2) fluid ounces of liquid soap to five (5) gallons of water. An asbestos removal encapsulant may be utilized as a substitute for surfactant use to control airborne fibers.
- C. Plastic sheeting, tape, cleaning material, clothing and other disposable material or items used in the work area shall be packed into sealable plastic bags (6-mil minimum) and treated as contaminated material.
- D. Material shall be double-bagged in 6-mil (minimum) polyethylene bags.
- E. Excess water (except shower water) shall be combined with removed material or other absorptive material and properly disposed of as per EPA regulations. Contractor shall not place water in storm drains, onto lawns, or into ditches, creeks, streams, rivers, or oceans.
- F. If the regulated area barrier is breached in any manner that could allow the passage of asbestos fibers or debris, the Competent Person shall immediately stop work, continue wetting and proceed to extend the regulated area to enclose the affected area as per procedures described in this specification. If the affected area cannot be enclosed, decontamination measures and cleanup shall start immediately. All personnel shall be isolated from the affected area until decontamination/cleanup is completed as verified by visual inspection and air monitoring. Air monitoring at completion must indicate background levels
- G. The abatement contractor shall provide power, electrical cords, ground fault circuit interrupters (GFCI's), etc. for the air monitor, when air clearances are performed.
- H. If the Owner or their field representative presents a written Stop Asbestos Removal Order, the Abatement Contractor/Personnel shall immediately stop all asbestos removal and adequately wet exposed ACM. The Contractor shall not resume any asbestos removal activity until authorized to do so by Owner. A stop asbestos removal order may be issued at any time the Owner determines abatement conditions/activities are not within specification requirements. Work stoppage will continue until conditions have been corrected to the satisfaction of Owner. Standby time and costs for corrective actions will be borne by the Abatement Contractor, including the industrial hygienist's time. The occurrence of any of the following events shall be reported immediately by

the Abatement Contractor in writing to the Owner and shall require the Contractor to immediately stop asbestos removal activities and initiate fiber reduction activities:

1. ≥ 0.01 f/cc outside regulated area
2. Breach/break in regulated area barrier(s)
3. Serious injury/death within regulated area
4. Fire/safety emergency within the regulated area
5. Respiratory protection system failure
6. Power failure
7. Excessive airborne fibers (>0.5 f/cc) in the regulated area when wet methods are being used

1.02 SCHEDULE

- A. The schedule is to be determined.

1.03 SCOPE OF WORK

- A. The ACM to be removed is identified in the Summary of ACM in the first section of this specification and in the attached assessment report. The quantities and locations of ACM as indicated, and the extent of the work are estimates which are limited by the physical constraints of the buildings. Accordingly, minor variations ($\pm 10\%$) in quantities of ACM within the regulated areas are considered as having no impact on contract price and time requirements of this contract. Where additional work is required beyond the above variation, the contract time and price will be adjusted under provisions of the applicable clause in the contract. Additional or reduced abatement work beyond the variations will be basis for adjusting the contract price.
- B. Interior work areas will be cleared with TEM air sampling; all work areas will be cleared visually.

1.04 ASBESTOS REMOVAL – Friable

- A. **Flooring materials – Floor Tile (ACM 9”x 9” brown, beige streak and associated mastic, 9”x9” tan and associated mastic, mastic underneath non-ACM 12” white with blue streak floor tile)**
 1. Establish a control area as outlined within Section 10-01526 and 10-01563 of this specification.
 2. When removing asbestos-containing mastic from the floor surface, the Contractor shall use a mastic removal product that meets the following criteria:

- a. The product shall not create a hazardous waste as a byproduct.
 - b. The product shall be "low to no odor." Carbon filters may be needed on the negative air machines to reduce odors.
 - c. The product shall not contain any carcinogenic or chlorinated hydrocarbons.
3. Place all waste material into properly labeled 6 mil polyethylene bags and seal with duct tape. Seal clean bag within a clean contaminant bag.
4. Carpeting (if present) contaminated with remnants of tile or mastic should be disposed of as asbestos containing materials.
5. When the Contractor is collecting the asbestos solution, the Contractor shall add cat litter, oil-sorb or equivalent so that no free-standing liquid will be left in the asbestos bag.
6. Work area will be cleared with TEM air sampling.

SECTION 02084

DISPOSAL OF WASTE MATERIAL

1.01 GENERAL

- A. All asbestos materials and miscellaneous contaminated debris shall be properly sealed and protected, and the loadout vehicle/dumpster shall be locked and covered, while located on the facility site and then transported to a predesignated disposal site in accordance with 40 CFR 61.150 and DOT 49 CFR Parts 100-399.
- B. An enclosed vehicle will be used to haul waste material to the disposal site. No rental vehicles or trailers shall be used. Vehicle selection, vehicle covers, and work practices shall assure that no asbestos becomes airborne during the loading, transport and unloading activity, and that material is placed in the waste site without breaking any seals.
- C. Waste disposal polyethylene bags (6 mil) and containers, non-porous (steel/plastic) drums or equivalent, with labels, appropriate for storing asbestos waste during transportation to the disposal site shall be used. In addition to the OSHA labeling requirements, all containers shall be labeled with the name of the waste generator and the location at which the waste was generated.
- D. The contractor shall transport the containers and bags of waste material to the approved waste disposal site. The sealed plastic bags shall be placed into the burial site unless the bags have been broken or damaged. Upon the landfill's approval damaged bags shall be left in the non-porous containers and the entire contaminated package shall be buried. Uncontaminated containers may be reused.
- E. Workers loading and unloading the asbestos will wear respirators and disposable clothing when handling material. Asbestos warning signs shall be posted during loading and unloading of asbestos waste.
- F. The contractor shall use the HHCU's Waste Shipment Record for disposal records as per 40 CFR 61.150 and distribute a copy of all waste shipment records to the designer after the completion of the project.

APPENDIX A

PREWORK ASBESTOS INSPECTION CHECKLIST

Name of State Facility: _____

Project Name: _____

Project ID Number: _____

Date of Inspection: _____ Pass: _____ Fail: _____

A. DOCUMENTS	YES	NO
1) Asbestos Removal Permit/NESHAP Notification	_____	_____
2) Accreditation Documents for Workers & Supervisors	_____	_____
3) Asbestos Plans and Specifications	_____	_____
4) Air Monitoring Data	_____	_____
5) Waste Shipment Records	_____	_____
6) Sign-in Sheets and Bound Book for Comments	_____	_____
7) Calibration Record for Grade "D" Air	_____	_____
8) Items listed in Section 01043 of Specification	_____	_____
B. PPE SUPPLIES		
1) Tyvek Clothing	_____	_____
2) Rubber Boots	_____	_____
3) Respirators with HEPA Filters	_____	_____
C. CLEAN ROOM		
1) Entry Curtains	_____	_____
2) Emergency Phone Numbers Posted	_____	_____
3) First Aid Kit	_____	_____
4) Asbestos Signs	_____	_____
5) Decontamination Procedures Posted	_____	_____
6) Fire Extinguisher	_____	_____
D. SHOWER ROOM		
1) Polyethylene Curtains	_____	_____
2) Hot/Cold Water & Operational	_____	_____
3) Soap & Towels	_____	_____
4) Wastewater Filter Pump Operational	_____	_____
5) Extra Five Micron Size Filters	_____	_____

6) Filtered Wastewater to Sanitary Sewer _____

E. WORK AREA **YES** **NO**

- 1) Removable Items Out of Area _____
- 2) Non-removable Items Protected _____
- 3) Critical Barriers Installed _____
- 4) Polyethylene Curtains _____
- 5) Polyethylene on Walls/Floors as Specified _____
- 6) HVAC off _____
- 7) Air Filtration Devices in Place and Operational _____
- 8) Air Exhausted to Outside _____
- 9) Electricity Locked and Tagged Out _____
- 10) Temporary Power Installed with GFCI _____
- 11) Fire Extinguishers _____
- 12) Emergency and Fire Exits Marked _____
- 13) Audible Alarms Operational _____
- 14) Toilet Available _____

F. EQUIPMENT

- 1) Safety Equipment _____
- 2) HEPA Vacuums _____
- 3) Waste Disposal Bags _____
- 4) Airless Sprayer with Water Source _____
- 5) Cleaning Equipment _____
- 6) Glove Bags _____
- 7) Emergency Power Generator (if required) _____
- 8) Temporary Lighting _____

G. OTHER

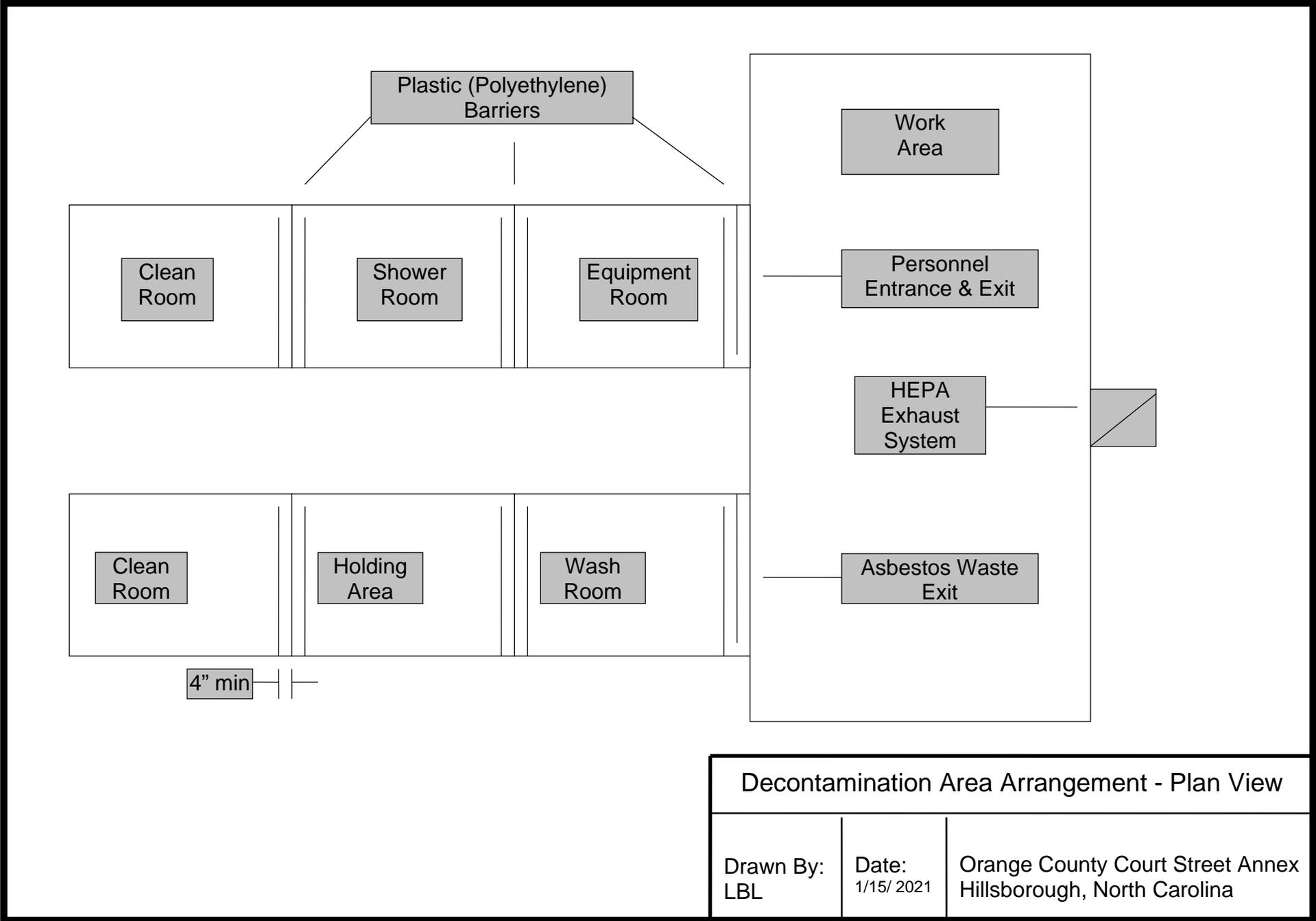
- 1) _____
- 2) _____
- 3) _____
- 4) _____

Asbestos Design Consultant

Date

Asbestos Contractor's Representative

Date



Decontamination Area Arrangement - Plan View		
Drawn By: LBL	Date: 1/15/2021	Orange County Court Street Annex Hillsborough, North Carolina