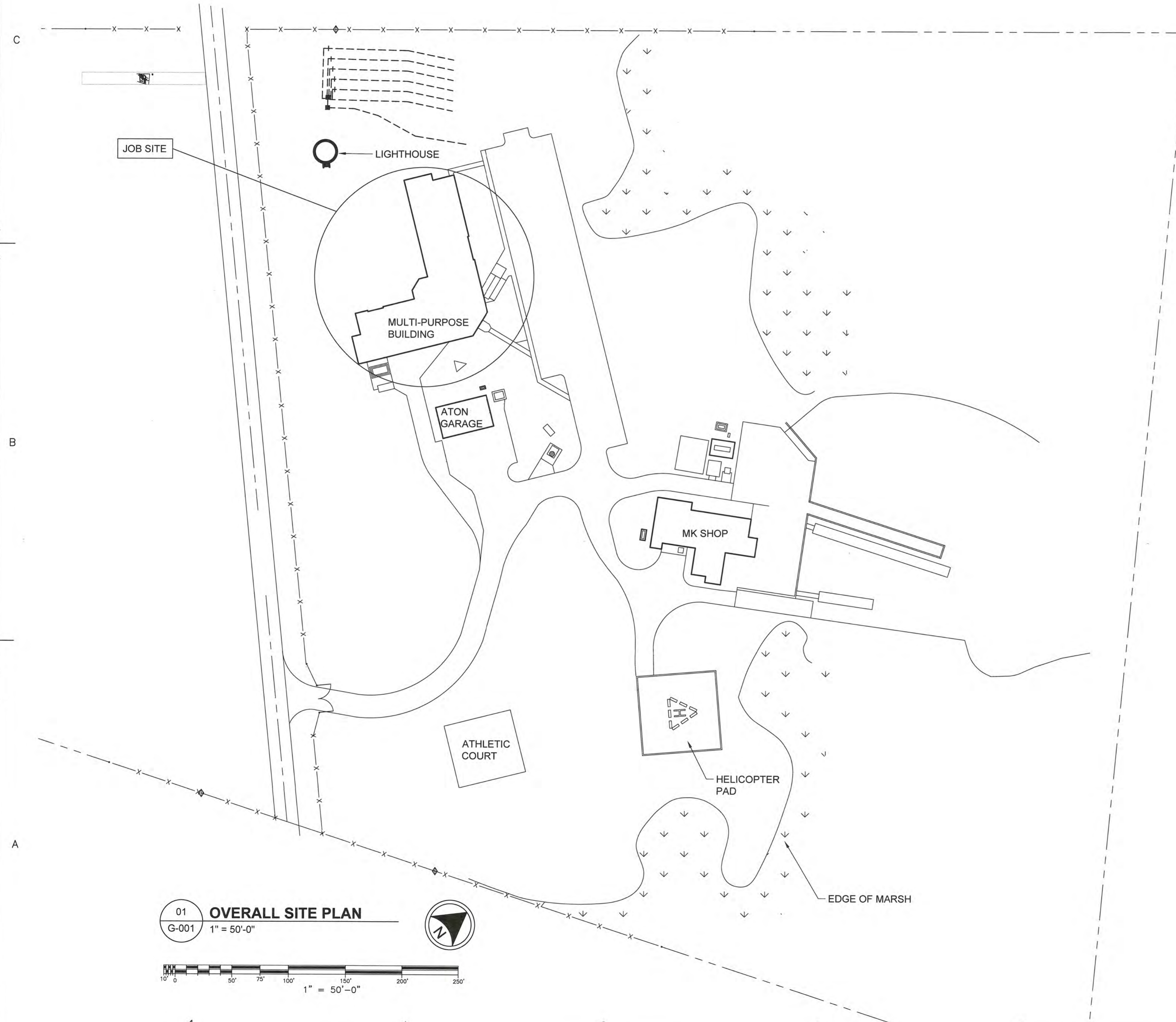


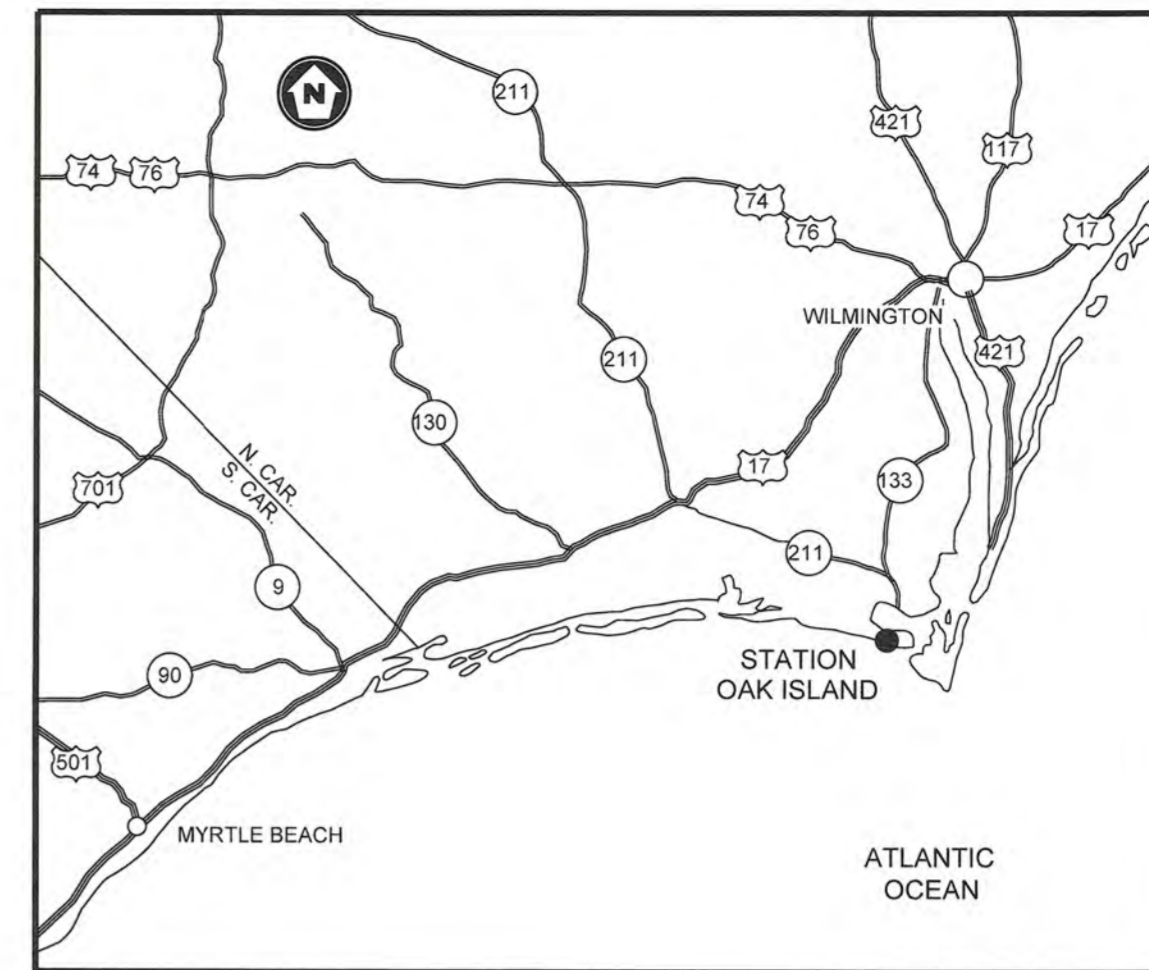
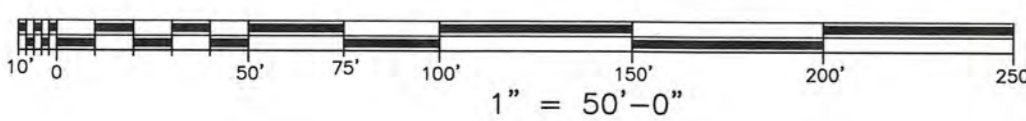
REPAIR HVAC SYSTEM

CG STATION OAK ISLAND

OAK ISLAND, NC



01 OVERALL SITE PLAN
G-001 1" = 50'-0"



02 VICINITY MAP
G-001 NTS

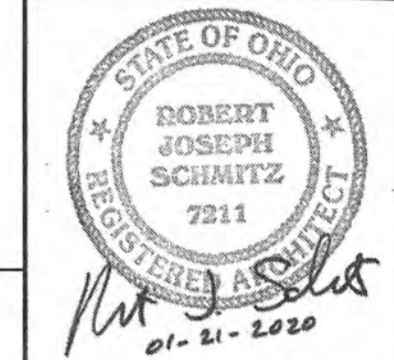
DRAWING INDEX	
SHEET	TITLE
1	G-001 - OVERALL SITE PLAN
2	VF100 - EXISTING CONDITIONS
3	CD100 - SITE DEMOLITION PLAN
4	CS100 - SITE PLAN
5	S-101 - FRAMING PLAN AND DETAILS
6	A-101 - FIRST FL. ARCHITECTURAL RCP
7	A-102 - SECOND FL. ARCHITECTURAL PLAN
8	A-501 - ARCHITECTURAL DETAILS
9	M-001 - GENERAL NOTES
10	MD101 - FIRST FL. HVAC DEMO. PLAN
11	MD102 - SECOND FL. HVAC DEMO. PLAN
12	MD103 - ATTIC HVAC DEMO. PLAN
13	MD104 - FIRST FL. PIPING DEMO. PLAN
14	MD105 - SECOND FL. PIPING DEMO. PLAN
15	MD106 - ATTIC PIPING DEMO. PLAN
16	M-101 - FIRST FLOOR HVAC PLAN
17	M-102 - SECOND FLOOR HVAC PLAN
18	M-103 - ATTIC HVAC PLAN
19	M-104 - FIRST FLOOR PIPING PLAN
20	M-105 - SECOND FLOOR PIPING PLAN
21	M-106 - ATTIC PIPING PLAN
22	M-601 - SCHEDULES
23	E-001 - GENERAL NOTES
24	ED101 - FIRST FLOOR DEMO. POWER PLAN
25	ED102 - SECOND FLR. DEMO. POWER PLAN
26	E-101 - FIRST FLOOR POWER PLAN
27	E-102 - SECOND FLOOR POWER PLAN
28	E-601 - SCHEDULES
29	E-801 - RISER DIAGRAM

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04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560G001.dwg
DESIGNED BY: D. WILSON
DRAWN BY: D. WILSON
EDITED BY: D. WILSON
CHECKED BY: L. ZUCH

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
GENERAL
OVERALL SITE PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: C. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR
APPROVING OFFICER
01/21/20
DATE

PROJECT NUMBER: 12190963
DRAWING NUMBER: 8560-D

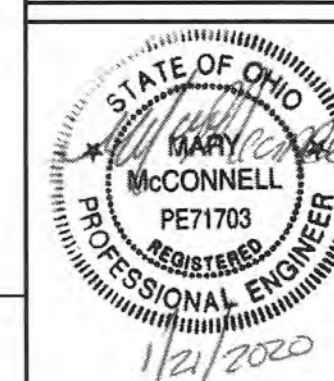
DISCIPLINE/SHT NO: G-001
SHEET 1 OF 29

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03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560VF100.dwg
DESIGNED BY: A. KRAMER
DRAWN BY: A. KRAMER
EDITED BY: A. KRAMER
CHECKED BY: M. MCCONNELL

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
CIVIL
EXISTING CONDITIONS

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
--------------------------------------	------------------

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO VF100	SHEET 2 OF 29

GENERAL NOTES

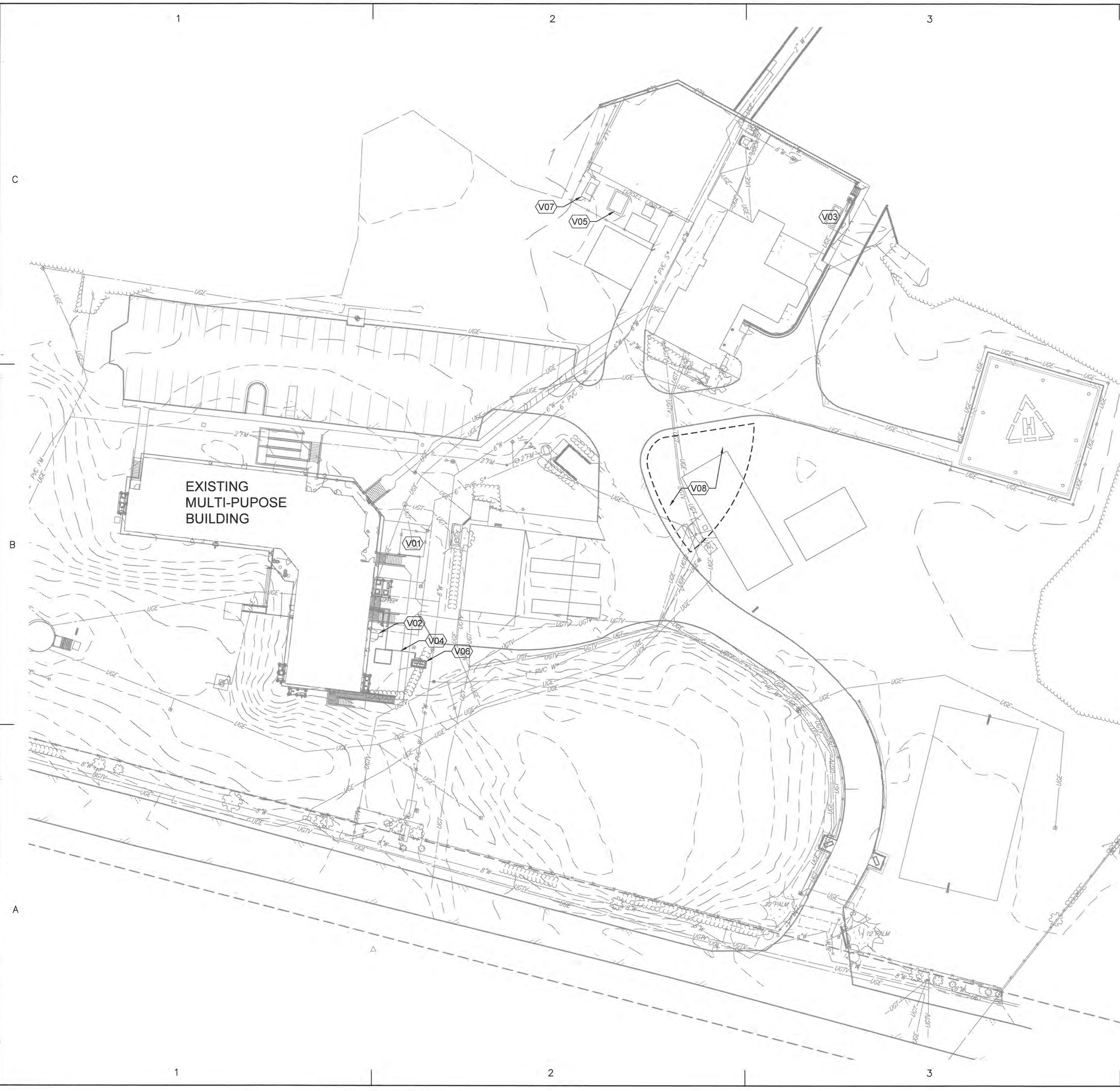
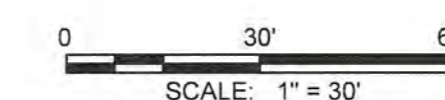
A ALL EXISTING UTILITIES SHOWN ARE BASED UPON SURVEY FIELD OBSERVATIONS AND AVAILABLE UTILITY RECORDS. CONTRACTOR TO FIELD VERIFY ALL UTILITIES AND NOTIFY CONTRACTING OFFICER REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

DRAWING NOTES

- V01 EXISTING ANTENNA TOWER
- V02 EXISTING GREASE INTERCEPTOR
- V03 EXISTING 3K/1K GALLON DIESEL/GASOLINE COMBO TANK
- V04 EXISTING GASOLINE FUEL LINE TO BUILDING
- V05 EXISTING USED OIL TANK
- V06 EXISTING GASOLINE TANK
- V07 EXISTING WASTE WATER TANK
- V08 CONTRACTOR LAYDOWN AREA

EXISTING LEGEND & ABBREVIATIONS:

- | | |
|--------|---|
| BE | BRICK EDGER |
| COM | COMMUNICATION |
| CONC. | CONCRETE |
| ED | ELECTRICAL BOX |
| ELEC. | ELECTRIC |
| FH | FIRE HYDRANT |
| FL | FLOOD LIGHT |
| FIN FL | FINISHED FLOOR |
| LP | LIGHT POLE |
| LT | LANDSCAPING TIMBERS |
| SCO | SANITARY CLEAN OUT |
| TB | TELEPHONE BOX |
| T.B.M. | TEMPORARY BENCH MARK |
| TRANSF | TRANSFORMER |
| W | WITH |
| WM | WATER METER |
| | POST BUMPER |
| | FIRE HYDRANT |
| | WATER VALVE |
| | HEDGE |
| E | OVERHEAD ELECTRIC |
| T | OVERHEAD TELEPHONE |
| TV | OVERHEAD TELEVISION |
| E/T | OVERHEAD ELECTRIC & TELEPHONE |
| E/TV | OVERHEAD ELECTRIC & TELEVISION |
| T/TV | OVERHEAD TELEPHONE & TELEVISION |
| E/T/TV | OVERHEAD ELECTRIC, TELEPHONE AND TELEVISION |
| G | UNDERGROUND GAS |
| UFO | UNDERGROUND FIBER OPTIC |
| UGE | UNDERGROUND ELECTRIC |
| UGT | UNDERGROUND TELEPHONE |
| UGTV | UNDERGROUND TELEVISION |
| 16"W | 16" WATER |
| 12"S | 12" SANITARY SEWER |





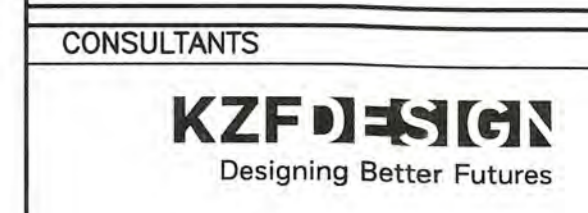
GENERAL NOTES

- A THE CONTRACTOR SHALL BE REQUIRED TO SEED ALL LOCATIONS WHERE HARD SURFACES ARE BEING PERMANENTLY REMOVED AS WELL AS RE-ESTABLISH THE LAWN IN ALL UNPAVED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. SEE SPECIFICATIONS FOR SEEDING.
- B EACH EXISTING BUILDING UTILITY MUST REMAIN IN SERVICE UNTIL EACH RESPECTIVE NEW UTILITY IS IN SERVICE.
- C PROTECT UTILITIES TO REMAIN IN SERVICE DURING SITE DEMOLITION AND ONGOING CONSTRUCTION OPERATIONS.
- D DEMOLISH ALL EXISTING IMPROVEMENTS, PAVEMENT, CURBING, AND ABOVE GROUND STRUCTURES IN ACCORDANCE WITH LOCAL REGULATIONS WITHIN THE LIMITS OF PROPOSED CONSTRUCTION UNLESS OTHERWISE NOTED.
- E ALL EXISTING UTILITIES SHOWN ARE BASED UPON SURVEY FIELD OBSERVATIONS AND AVAILABLE UTILITY RECORDS. CONTRACTOR TO FIELD VERIFY ALL UTILITIES AND NOTIFY CONTRACTING OFFICER REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- F A CLEAN SAW CUT SHALL BE PROVIDED IN THE AREA WHERE PROPOSED PAVEMENT, SIDEWALK, OR CURB MEETS EXISTING. ALL CONCRETE SHALL BE SAWCUT AND REMOVED TO THE NEAREST JOINT AT THE LOCATIONS SHOWN ON THE DRAWINGS.

DRAWING NOTES

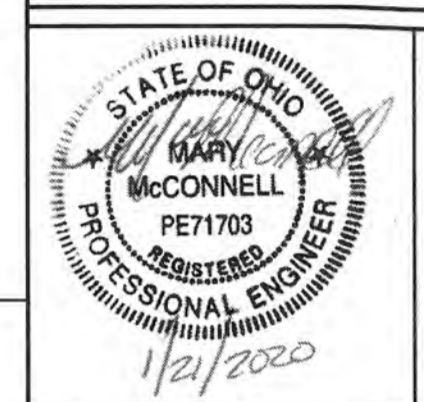
- D01 SEE MECHANICAL FOR EQUIPMENT REMOVAL

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02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560CD100.dwg
DESIGNED BY: A. KRAMER
DRAWN BY: A. KRAMER
EDITED BY: A. KRAMER
CHECKED BY: M. MCCONNELL

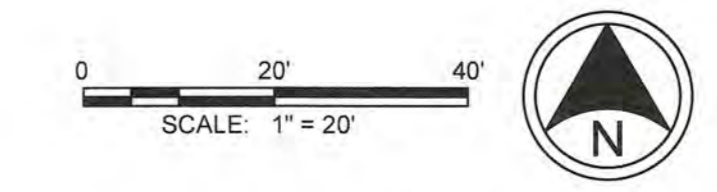
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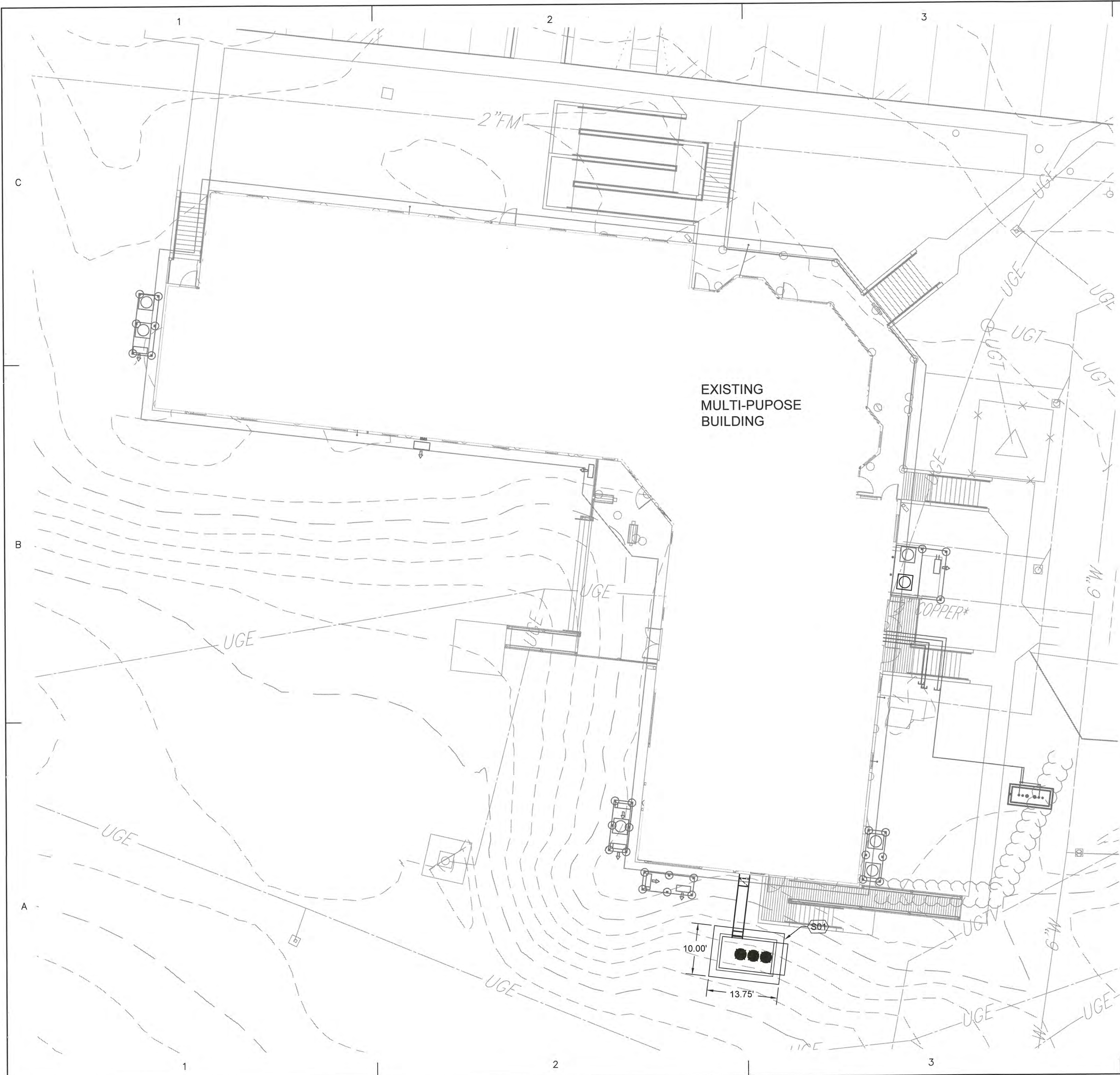
SHEET TITLE

REPAIR HVAC SYSTEM
CG STATION OAK ISLAND NC
OAK ISLAND MULTI-PURPOSE BUILDING
CIVIL
SITE DEMOLITION PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. B. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
J. M. HALL, CDR APPROVING OFFICER		01/21/20 DATE

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 3 OF 29
CD100	





GENERAL NOTES

A ALL EXISTING UTILITIES SHOWN ARE BASED UPON SURVEY FIELD OBSERVATIONS AND AVAILABLE UTILITY RECORDS. CONTRACTOR TO FIELD VERIFY ALL UTILITIES AND NOTIFY CONTRACTING OFFICER REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

DRAWING NOTES

S01 NEW CONCRETE FOUNDATION PAD, SEE STRUCTURAL FOR FOUNDATION DETAIL AND EQUIPMENT SUPPORT, SEE MECHANICAL FOR EQUIPMENT

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01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560CS100.dwg
DESIGNED BY: A. KRAMER
DRAWN BY: A. KRAMER
EDITED BY: A. KRAMER
CHECKED BY: M. MCCONNELL

SCALE: AS SHOWN PLOT SCALE: 1:1

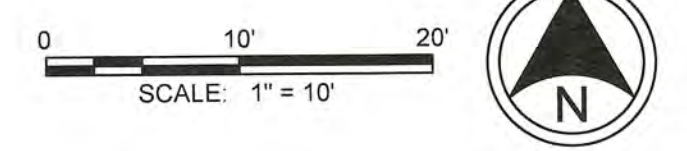
SHEET TITLE

REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
CIVIL
SITE PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR
APPROVING OFFICER
01/21/20
DATE

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO CS100	SHEET 4 OF 29

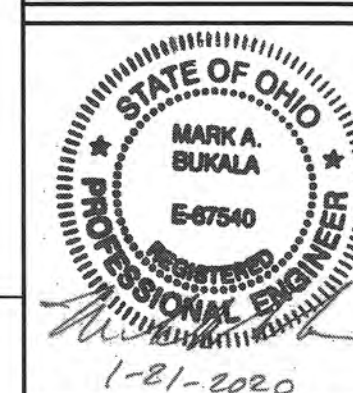


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02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C850S101.dwg
DESIGNED BY: M. BUKALA
DRAWN BY: K. OVERWEIN
EDITED BY: K. OVERWEIN
CHECKED BY: M. BUKALA

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

**REPAIR HVAC SYSTEM
CG STATION OAK ISLAND NC
OAK ISLAND NC
MULTI-PURPOSE BUILDING
STRUCTURAL
FRAMING PLAN AND DETAILS**

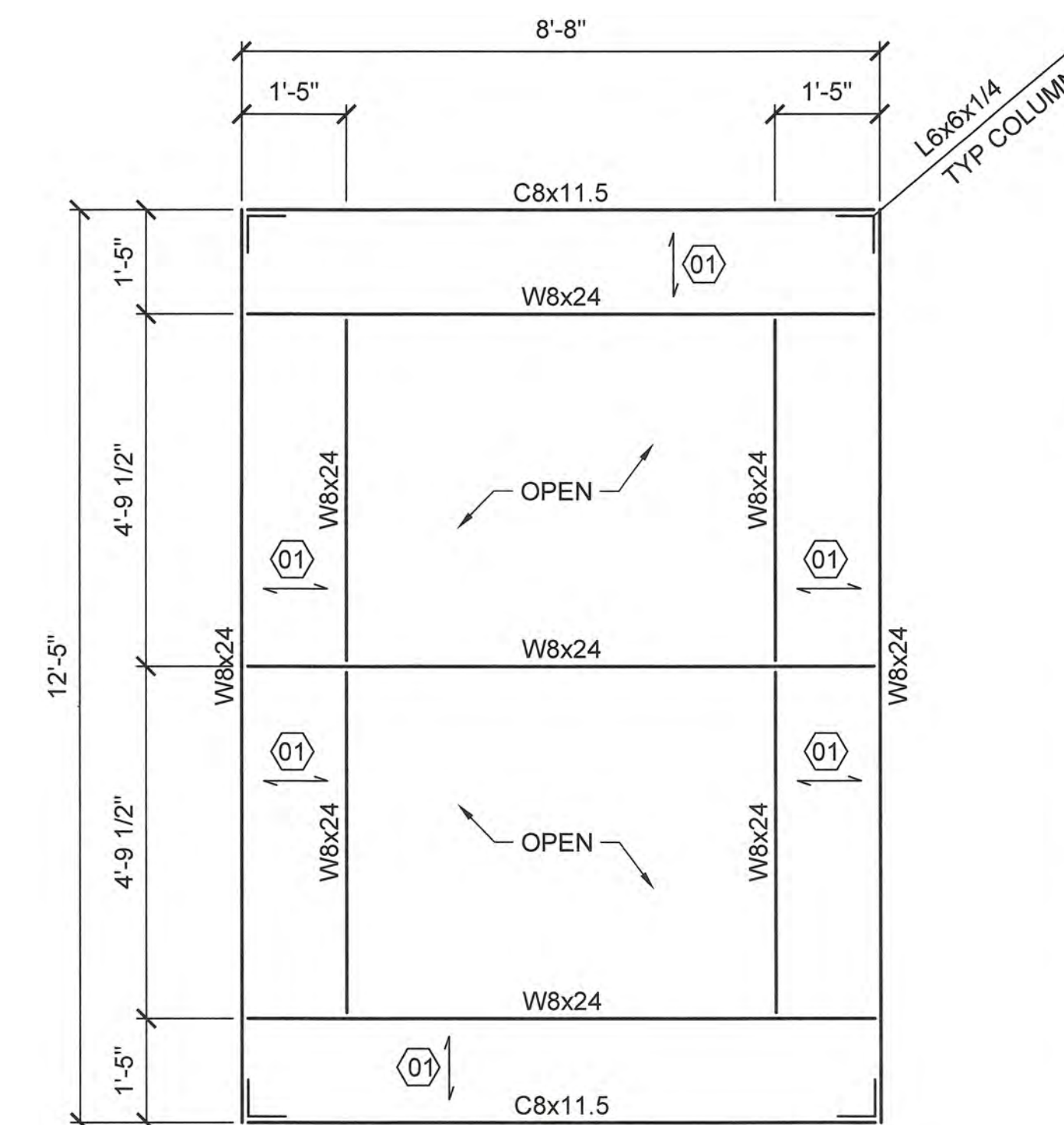
REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. FRANKAR	REVIEWED BY: C. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR
APPROVING OFFICER

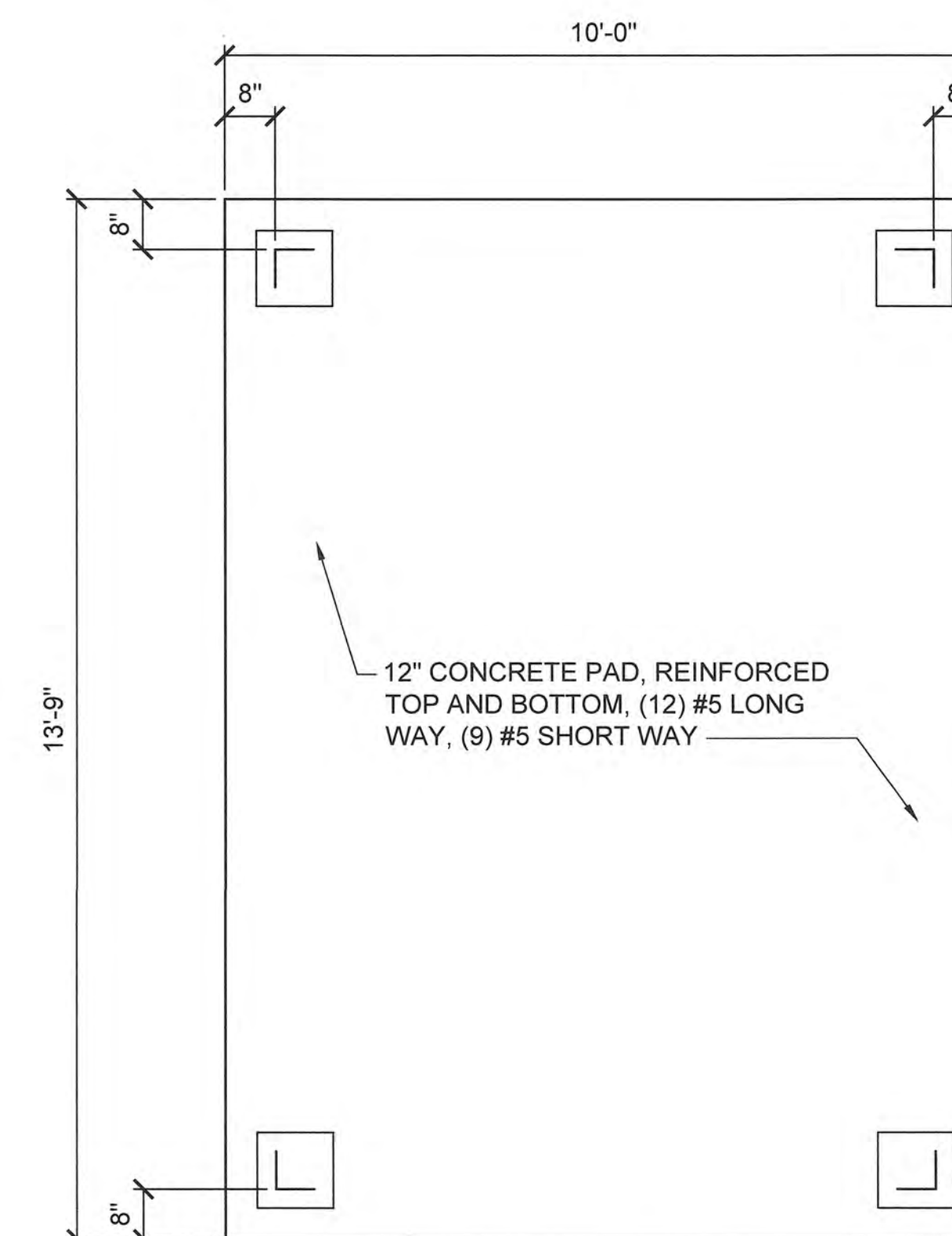
01/21/20
DATE

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D

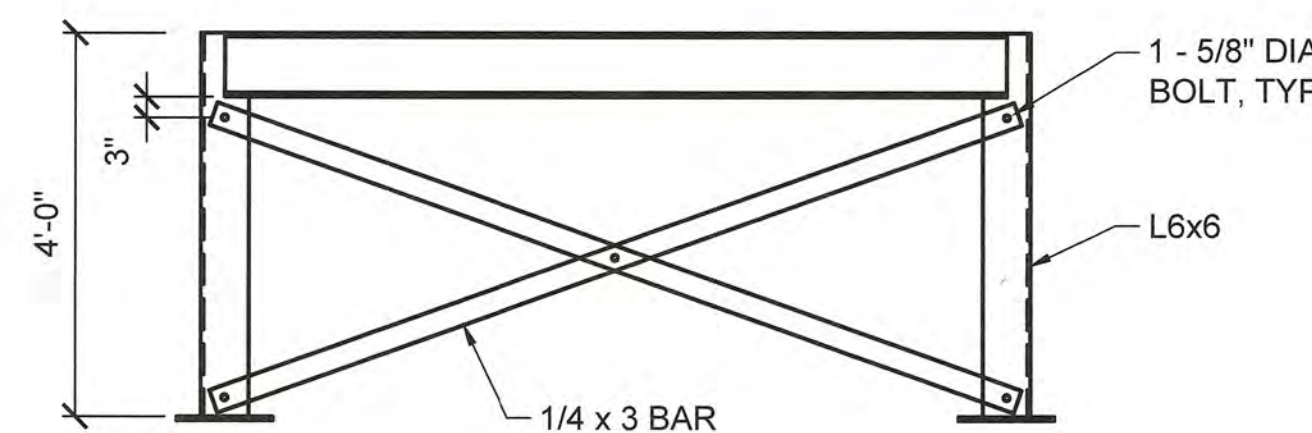
DISCIPLINE/SHT NO
S-101 SHEET 5 OF 29



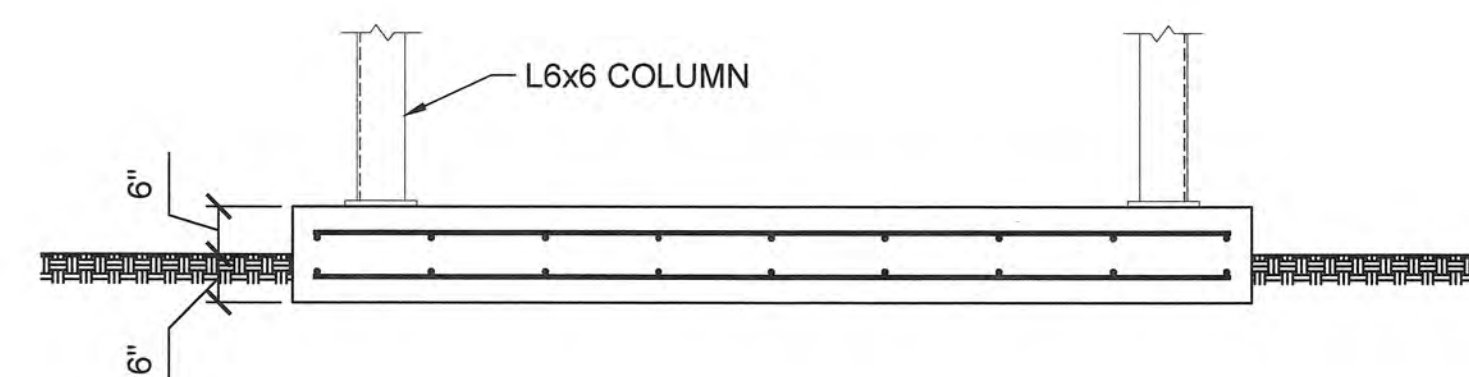
02 FRAMING PLAN
S-101 1/2" = 1'-0"



01 FOUNDATION PLAN
S-101 1/2" = 1'-0"



04 FRAMING ELEVATION, TYPICAL 4 SIDES
S-101 1/2" = 1'-0"



03 FOUNDATION SECTION
S-101 1/2" = 1'-0"

DRAWING NOTES

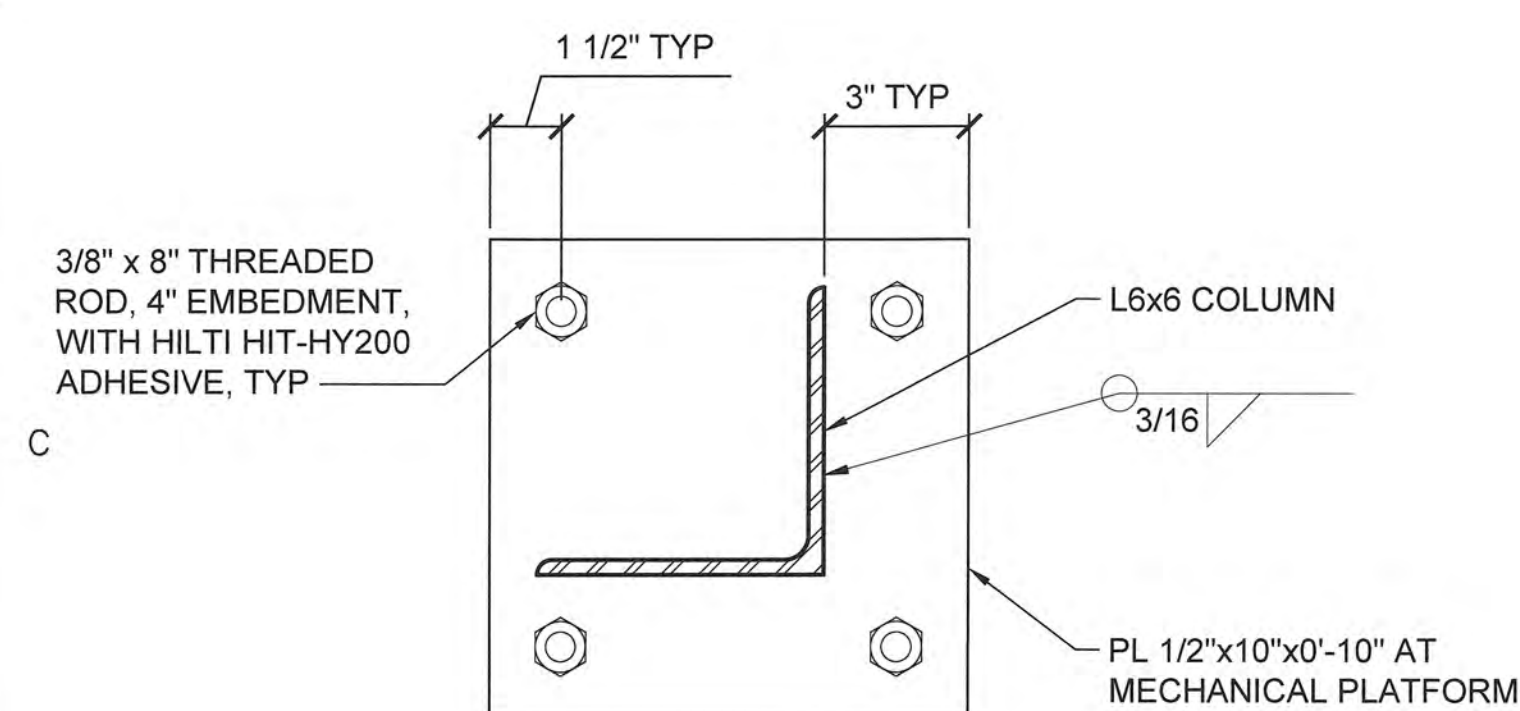
01 BAR GRATING

GENERAL NOTES

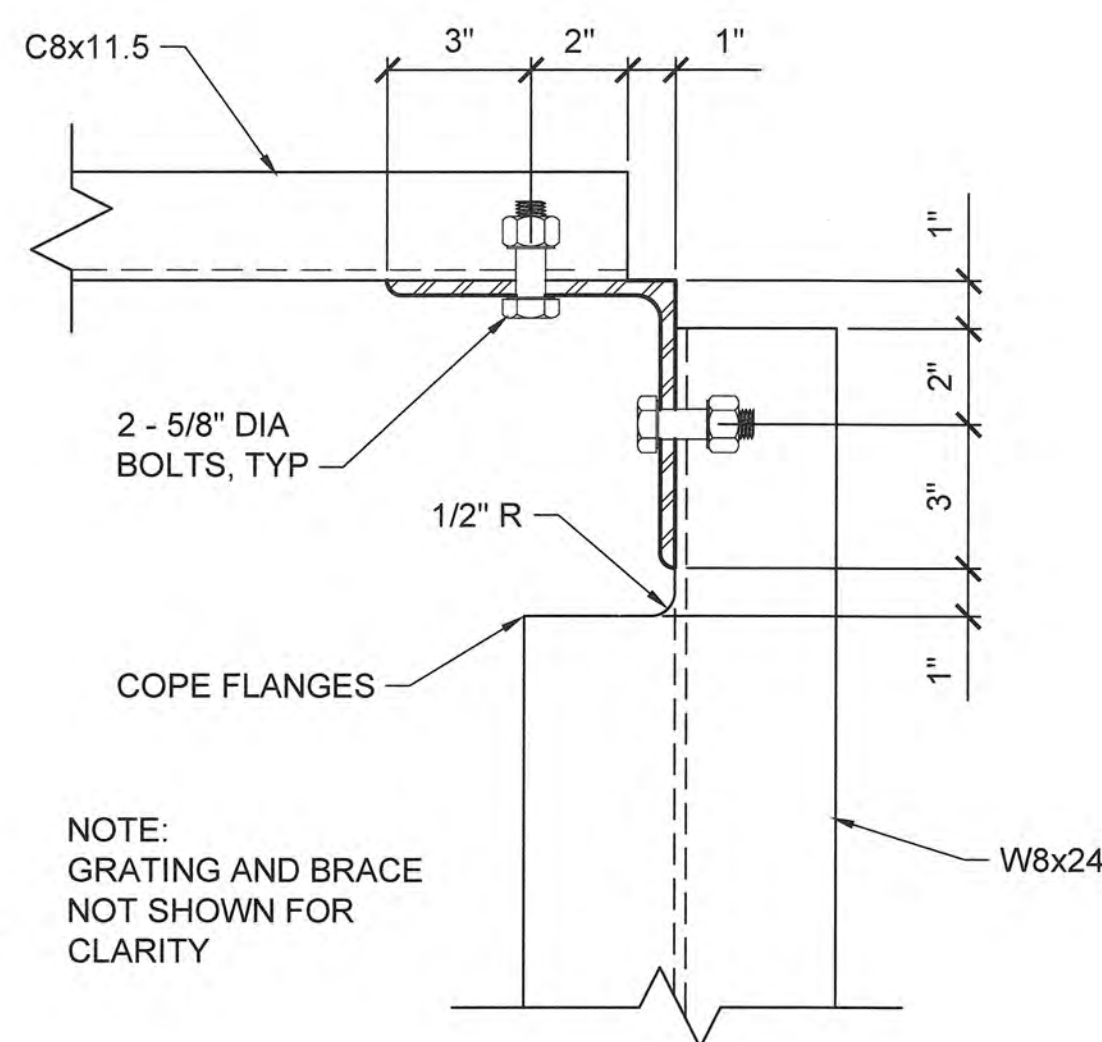
- ALL STEEL SHALL BE HOT-DIP GALVANIZED.
- THE CONTRACTOR SHALL CONDUCT ALL OPERATIONS IN STRICT ACCORDANCE WITH THE SAFETY REQUIREMENTS IMPOSED BY THE OWNER AND OSHA. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS GOVERNING THIS WORK. THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE OWNER'S PROPERTY AND DISCARD ACCORDING TO LOCAL REGULATIONS.
- THIS STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER IT IS FULLY COMPLETED. HOWEVER, THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE THE ERECTION PROCEDURES AND SEQUENCES REQUIRED TO ENSURE STABILITY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING CONSTRUCTION. ANY TEMPORARY BRACING, CONNECTIONS, GUYS, OR TIE-DOWNS THAT MAY BE NECESSARY DURING ERECTION ARE NOT SHOWN ON STRUCTURAL DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT, AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. THIS CONSTRUCTION STABILITY REQUIREMENT APPLIES CONTINUOUSLY AND IS NOT LIMITED TO NORMAL WORKING HOURS.

ADHESIVE FASTENERS

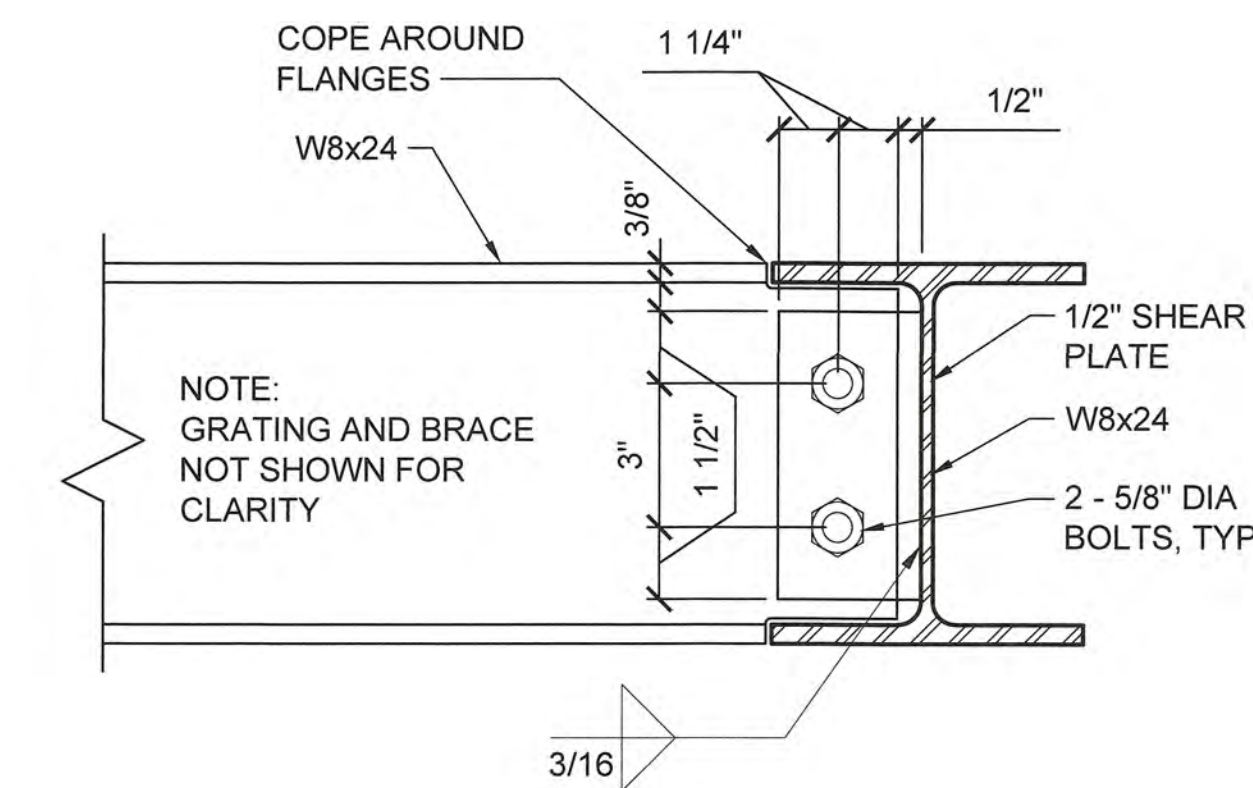
- THREADED RODS SHALL BE ASTM A36. SIZES AND EMBEDMENT AS INDICATED ON THE DRAWINGS.
- CONTRACTOR SHALL VERIFY THAT THE SHELF LIFE OF THE ADHESIVE HAS NOT BEEN EXCEEDED ON THE DATE OF INSTALLATION.



07 BASE PLATE DETAIL
S-101 NTS



06 BEAM-COLUMN CONNECTION
S-101 3" = 1'-0"



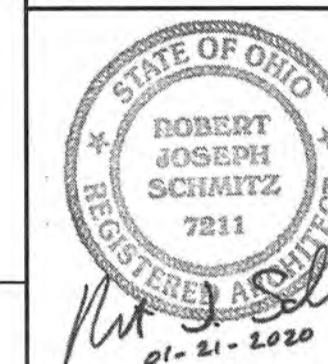
05 BEAM-BEAM CONNECTION
S-101 3" = 1'-0"

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02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
 CAD FILE NAME: C8560A101.dwg
 DESIGNED BY: D. WILSON
 DRAWN BY: D. WILSON
 EDITED BY: D. WILSON
 CHECKED BY: L. ZUCH

SCALE: AS SHOWN PLOT SCALE: 1:1

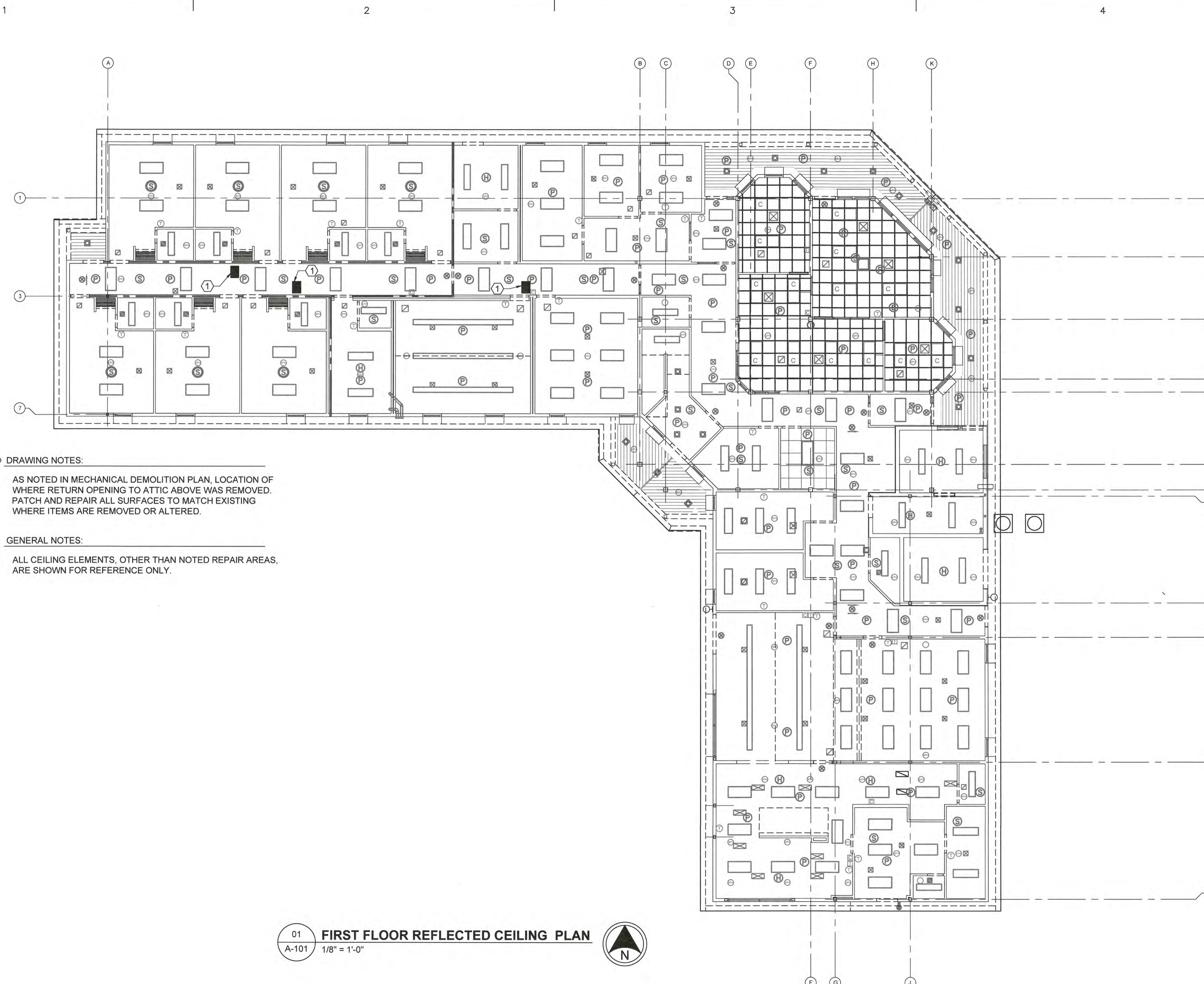
SHEET TITLE

REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 ARCHITECTURAL
 FIRST FLOOR RCP

REVIEWED BY: M.S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G.P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
--------------------------------------	------------------

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 6 OF 29
A-101	



DRAWING NOTES:

- AS NOTED IN MECHANICAL DEMOLITION PLAN, LOCATION OF WHERE RETURN OPENING TO ATTIC ABOVE WAS REMOVED. PATCH AND REPAIR ALL SURFACES TO MATCH EXISTING WHERE ITEMS ARE REMOVED OR ALTERED.

GENERAL NOTES:

- ALL CEILING ELEMENTS, OTHER THAN NOTED REPAIR AREAS, ARE SHOWN FOR REFERENCE ONLY.

01 FIRST FLOOR REFLECTED CEILING PLAN
 A-101 1/8" = 1'-0"





ISSUE		
MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
 CAD FILE NAME: C8560A102.dwg
 DESIGNED BY: D. WILSON
 DRAWN BY: D. WILSON
 EDITED BY: D. WILSON
 CHECKED BY: L. ZUCH

SCALE: AS SHOWN PLOT SCALE: 1:1

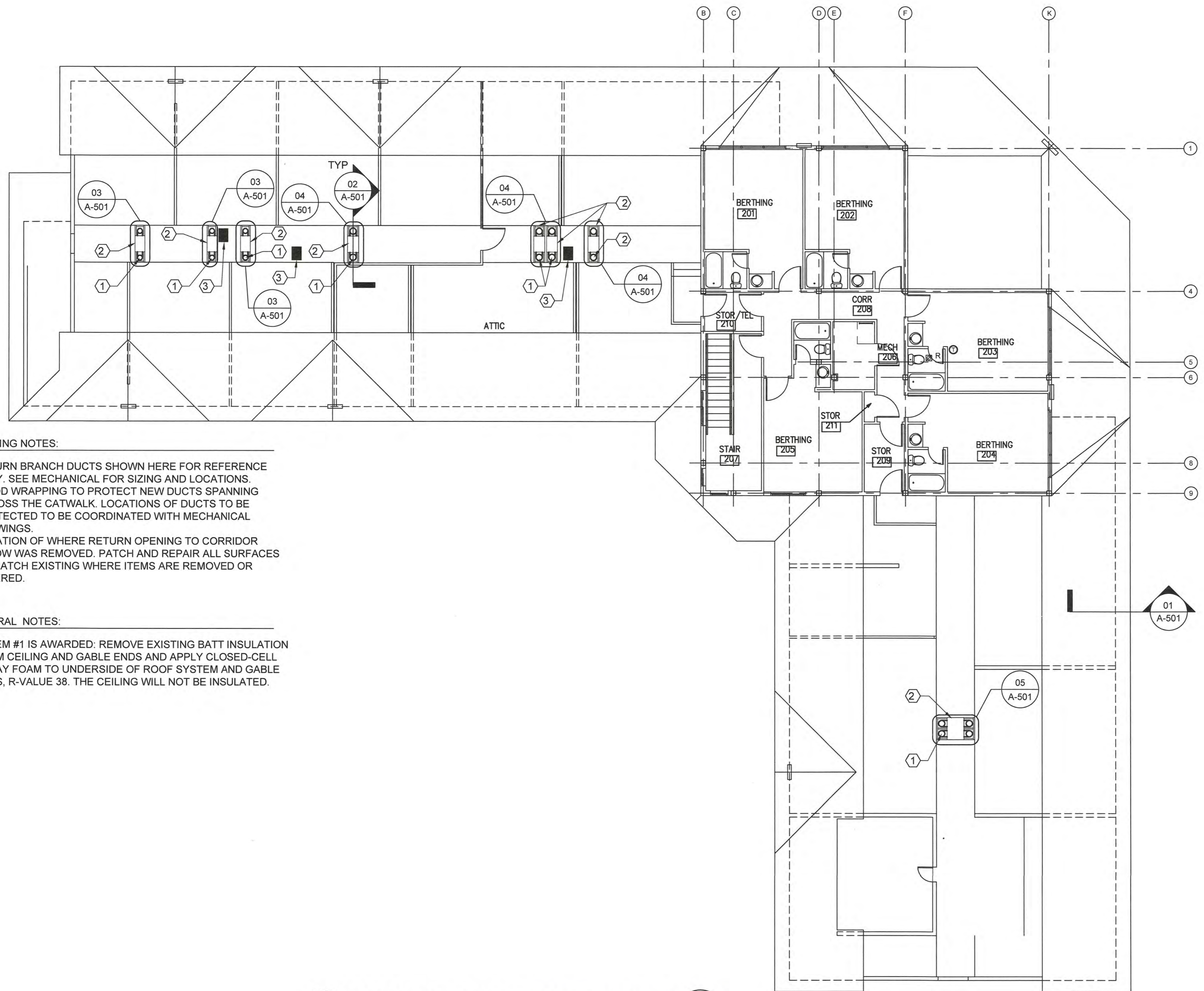
SHEET TITLE
REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 ARCHITECTURAL
SECOND FLOOR PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. FRANKER	REVIEWED BY: G. F. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
--------------------------------------	------------------

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
-----------------------------------	---------------------------------

DISCIPLINE/SHT NO A-102	SHEET 7 OF 29
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- DRAWING NOTES:**
- RETURN BRANCH DUCTS SHOWN HERE FOR REFERENCE ONLY. SEE MECHANICAL FOR SIZING AND LOCATIONS.
 - WOOD WRAPPING TO PROTECT NEW DUCTS SPANNING ACROSS THE CATWALK. LOCATIONS OF DUCTS TO BE PROTECTED TO BE COORDINATED WITH MECHANICAL DRAWINGS.
 - LOCATION OF WHERE RETURN OPENING TO CORRIDOR BELOW WAS REMOVED. PATCH AND REPAIR ALL SURFACES TO MATCH EXISTING WHERE ITEMS ARE REMOVED OR ALTERED.

- GENERAL NOTES:**
- IF ITEM #1 IS AWARDED: REMOVE EXISTING BATT INSULATION FROM CEILING AND GABLE ENDS AND APPLY CLOSED-CELL SPRAY FOAM TO UNDERSIDE OF ROOF SYSTEM AND GABLE ENDS, R-VALUE 38. THE CEILING WILL NOT BE INSULATED.

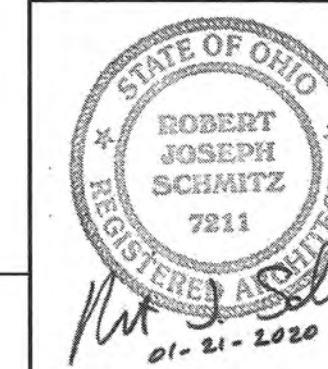
01
A-102 **SECOND FLOOR ARCHITECTURAL PLAN**
 1/8" = 1'-0"

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02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
 CAD FILE NAME: C8560A501.dwg
 DESIGNED BY: D. WILSON
 DRAWN BY: D. WILSON
 EDITED BY: D. WILSON
 CHECKED BY: L. ZUCH

SCALE: AS SHOWN PLOT SCALE: 1:1

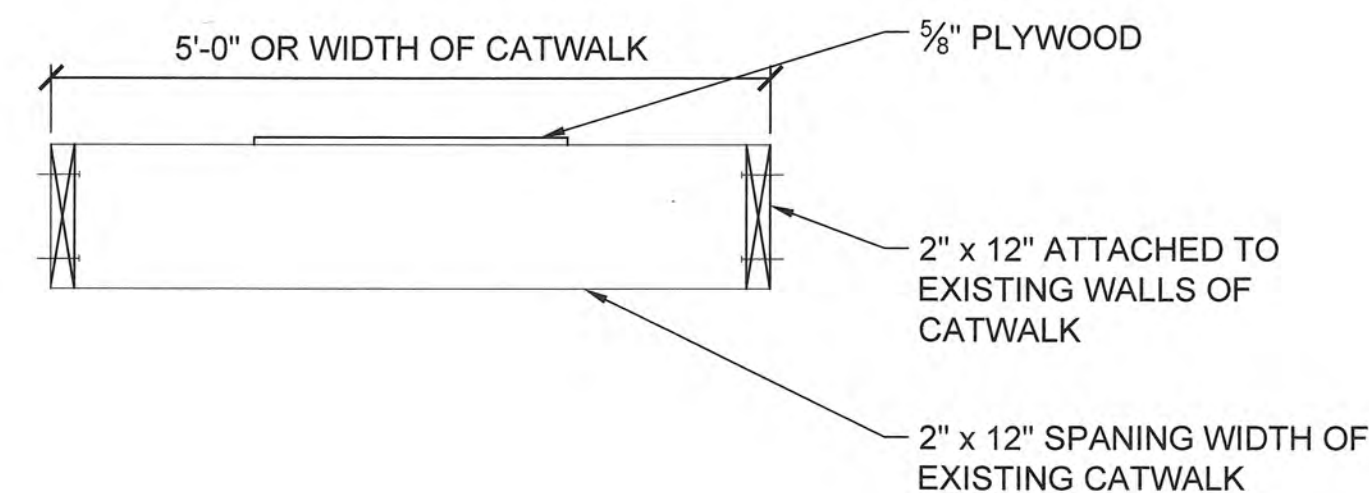
SHEET TITLE

**REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 ARCHITECTURAL
 DETAILS**

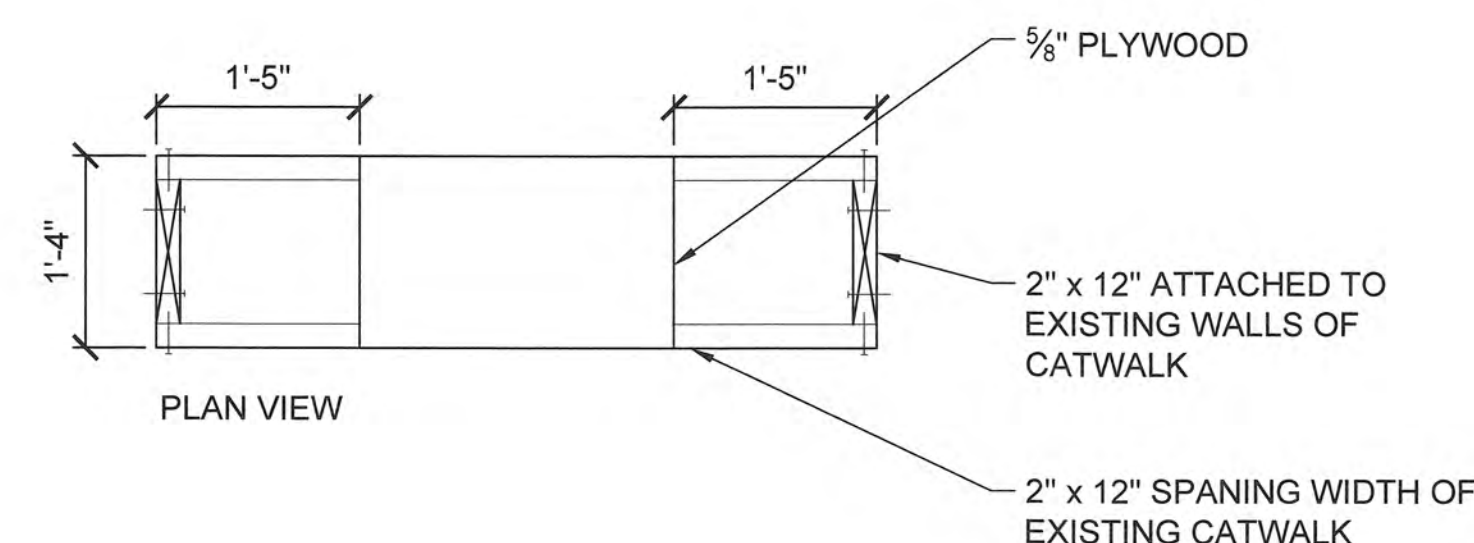
REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
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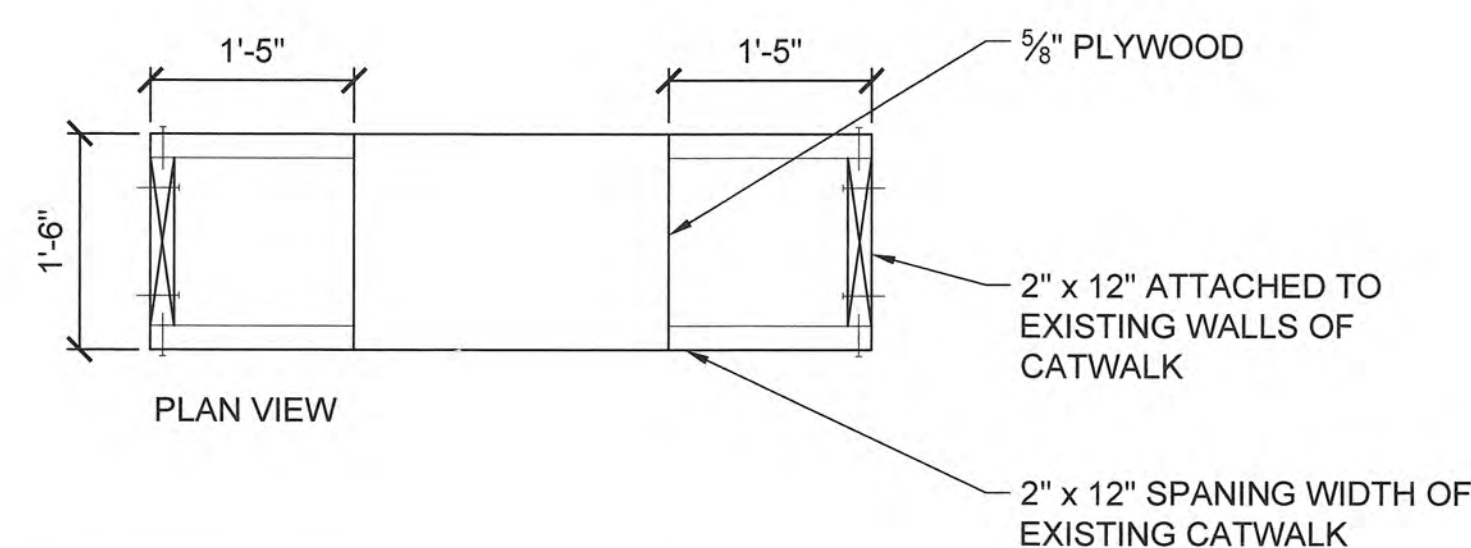
PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO A-501	SHEET 8 OF 29



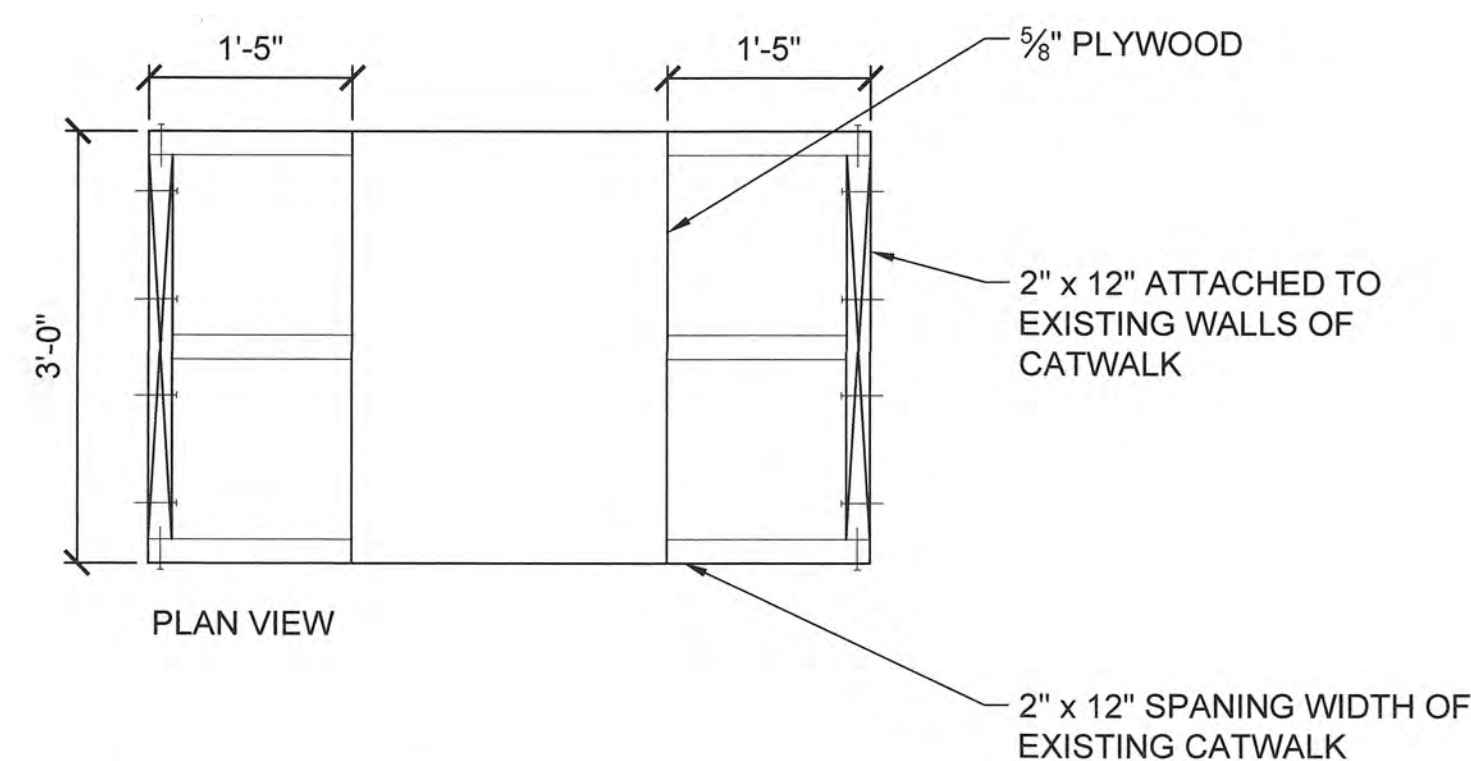
02 **DUCT PROTECTION SECTION**
 A-501 3/4" = 1'-0"



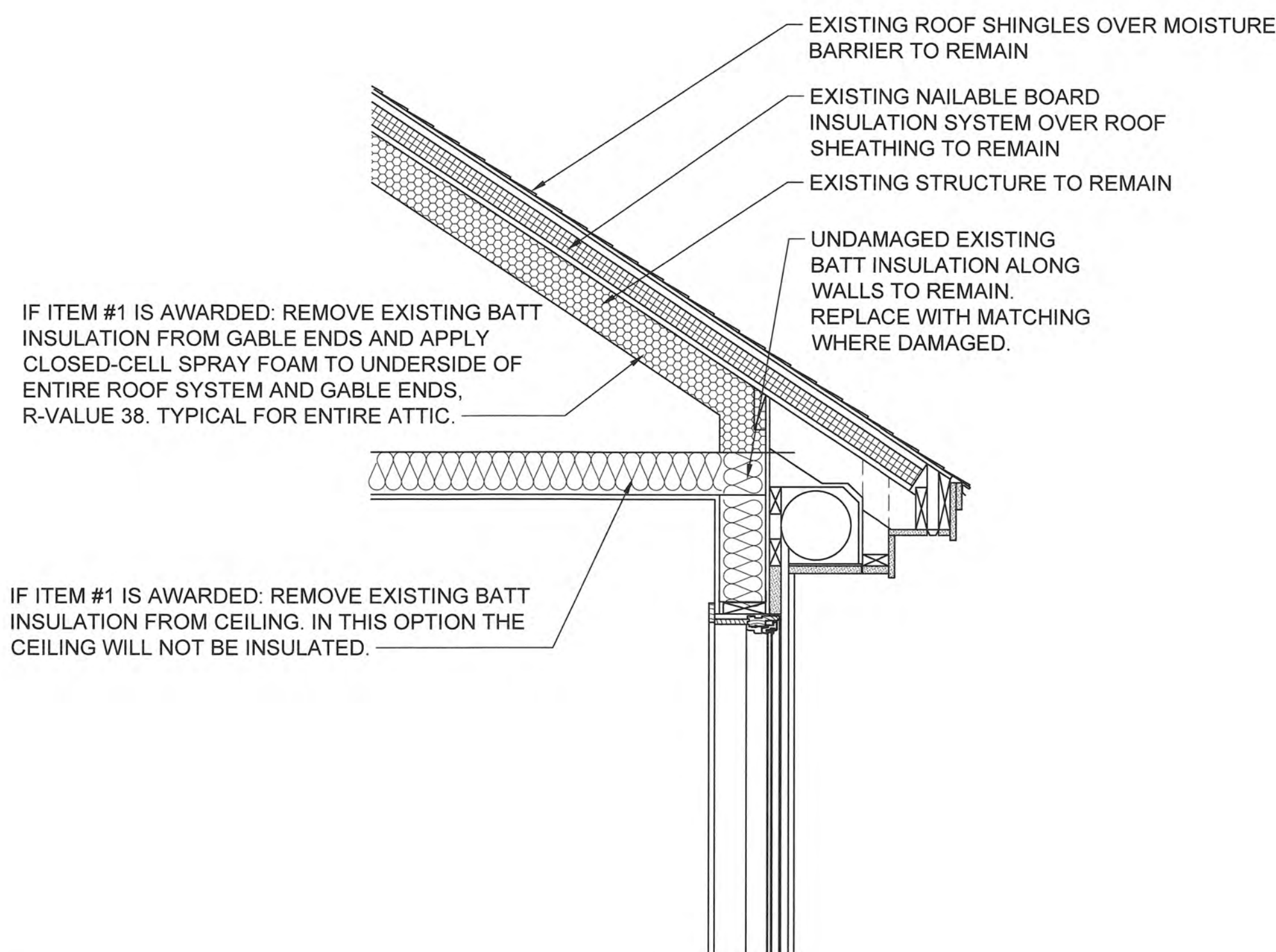
03 **DUCT PROTECTION FOR 8" ROUND PLAN**
 A-501 3/4" = 1'-0"



04 **DUCT PROTECTION FOR 10" ROUND PLAN**
 A-501 3/4" = 1'-0"



05 **DUCT PROTECTION FOR TWO 10" ROUNDS PLAN**
 A-501 3/4" = 1'-0"







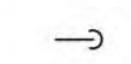
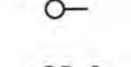
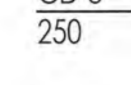
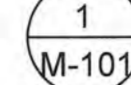



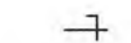


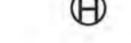






01 **ROOF SECTION**
 A-501 3/4" = 1'-0"

ABBREVIATIONS

AAD	AUTOMATIC AIR DAMPER
AC	AIR CONDITIONING OR HEAT PUMP UNIT
ACU	AIR CONDITIONING OR HEAT PUMP UNIT
A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BAS	BUILDING AUTOMATION SYSTEM
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
COP	COEFFICIENT OF PERFORMANCE
CU	CONDENSING UNIT, OUTDOOR PORTION OF HEAT PUMP
db or DB	DECIBELS
dBA	DECIBELS "A" RATED
DEG	DEGREE
DN	DOWN
DOAS	DEDICATED OUTDOOR AIR SYSTEM
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EER	ENERGY EFFICIENCY RATIO
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ELEC	ELECTRIC
F	FAHRENHEIT
FD	FIRE DAMPER
FT WC	FEET OF WATER COLUMN
HP ****	HEAT PUMP
hp or HP ****	HORSEPOWER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ
IN	INCHES
in. wg or "WC	INCHES OF WATER GAUGE
lb	POUNDS
IPLV	INTEGRATED PART LOAD VALUE
KW	KILOWATT
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LB/HR	POUND PER HOUR
LwA	SOUND POWER LEVEL "A" RATED
MA	MAKE-UP AIR
MAU	MAKE-UP AIR UNIT
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MOCP OR MOP	MAXIMUM OVER CURRENT PROTECTION
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTDOOR AIR
ODP	OPEN DRIP PROOF
P/T PLUG	PRESSURE / TEMPERATURE PLUG
PH	PHASE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RG	RETURN GRILLE
RD	ROUND
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
SR	SUPPLY REGISTER
T	THERMOSTAT OR TEMPERATURE SENSOR
TYP	TYPICAL
UH	UNIT HEATER
V	VOLTAGE
W/	WITH
X-LINE	ACROSS THE LINE STARTER
Δ	DELTA

NOTE
**** INDICATES MULTIPLE ABBREVIATIONS REFER TO THE DRAWINGS FOR EXACT MEANING.

LEGEND

	FLEXIBLE DUCT
	CEILING RETURN REGISTER
	CEILING DIFFUSER (SUPPLY)
	CEILING EXHAUST REGISTER
	PIPE OR DUCT DOWN
	PIPE OR DUCT UP
	DIFFUSER/ REGISTER CALL OUT: MARK / AIR FLOW IN CFM
	DETAIL REFERENCE BUBBLE
	EXISTING WORK TO REMAIN
	DEMOLITION WORK (ON DEMO DRAWINGS)
	NEW WORK
	BALANCE DAMPER IN DUCT
	POINT OF NEW WORK CONNECTION
	TEMPERTURE SENSOR OR THERMOSTAT
	HUMIDITY SENSOR
	DRAWING NOTE SYMBOL
	FUEL OIL PIPE
	SANITARY SEWER PIPE
	REFRIGERANT SUCTION PIPE
	REFRIGERANT LIQUID PIPE
	CONDENSATE DRAIN PIPE

GENERAL NOTES - HVAC

- A. DUCTWORK SHALL BE GALVANIZED SHEET METAL. CONSTRUCTED AND INSTALLED AS RECOMMENDED IN SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS. LATEST EDITION, ASHRAE AND U.L. 181 STANDARDS.
- B. ALL DUCTWORK SHALL BE SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON THE CEILING TILES OR CEILING STRUCTURE.
- C. WORK AND EQUIPMENT SHALL CONFORM WITH THE REQUIREMENTS OF THE LATEST INTERNATIONAL MECHANICAL CODE, ASHRAE 90.1, NFPA 90A, 54, AND 101 AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- D. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS AND SHALL FURNISH EQUIPMENT WIRED FOR THE VOLTAGES SHOWN THEREIN.
- E. STARTERS, TRANSFORMERS, CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- F. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- G. ALL REQUIRED CONTROL WIRING NOT SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK. WIRING IN HVAC PLENUM SPACES SHALL BE INSTALLED ACCORDING TO CODE REQUIREMENTS. ALL EXPOSED CONTROL WIRING SHALL BE INSTALLED IN MINIMUM 1/2" CONDUIT. REMOVE EXISTING CONTROLS AND CONDUIT WHERE EQUIPMENT GETS NEW CONTROLS. PROVIDE RELAYS IN METAL UTILITY BOX.
- H. PROVIDE ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER WITH DISCONNECT SWITCHES AT EACH PIECE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) AND EQUIPMENT CHARACTERISTICS WITH ELECTRICAL DRAWINGS.
- I. LOCATIONS OF GRILLES, REGISTERS AND DIFFUSERS SHOWN ON THE DRAWINGS ARE APPROXIMATE. COORDINATE EXACT LOCATIONS WITH LIGHTS, CEILING GRID, STRUCTURE, ETC.
- J. PROTECT ALL EXISTING CONTENTS OF THE SPACES AT ALL TIMES DURING CONSTRUCTION.
- K. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.
- L. DUCTWORK DIMENSIONS SHOWN ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS.
- M. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AFFECTING THIS SCOPE OF WORK PRIOR TO SUBMITTING BID. EXISTING HVAC EQUIPMENT AND ASSOCIATED DUCTWORK AND AIR DISTRIBUTION DEVICES THAT ARE NOT INDICATED TO BE REUSED SHALL BE REMOVED FROM SITE AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- N. ANY EXISTING WALL, FLOOR, ROOF OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THE MECHANICAL WORK SHALL BE REPAIRED TO MATCH NEW AND/OR EXISTING CONDITIONS. WHERE MECHANICAL EQUIPMENT IS REMOVED, REMOVE ASSOCIATED PIPING, CONTROL WIRING, ROOF CURB, EQUIPMENT PAD AND REPAIR ADJACENT SURFACES TO MATCH NEW AND/OR EXISTING CONDITIONS.
- O. THE BUILDING WILL REMAIN OCCUPIED DURING CONSTRUCTION.
- P. CONTROLS LOCATED ON SOLID ENVELOPE WALLS SHALL BE SURFACE MOUNTED AND CONDUIT SHALL BE IN DECORATIVE EXPOSED CONDUIT.
- Q. MAKE DUCT ELBOWS WITH CENTERLINE R/D = 1.5. WHERE SQUARE ELBOWS ARE SHOWN ON THE DRAWINGS, PROVIDE TURNING VANES IN ELBOW.
- R. PROVIDE TEST ADJUST AND BALANCE (TAB) FOR ACU-1, 2, 3, 4, 5, 6, 12 AND THE ASSOCIATED SUPPLY AND RETURN AIR DEVICES. ADJUST FAN DIP SWITCHES IN ACU'S TO COMPENSATE FOR ADDITIONAL RETURN DUCT STATIC PRESSURE. PROVIDE TAB FOR DOAS-1. PROVIDE TAB FOR (4) TOILET ROOM EXHAUST FANS AND THE ASSOCIATED EXHAUST AIR DEVICES. PROVIDE TAB FOR THE KITCHEN HOOD SUPPLY AND EXHAUST FANS.
- S. PROVIDE COMMISSIONING FOR DOAS-1.

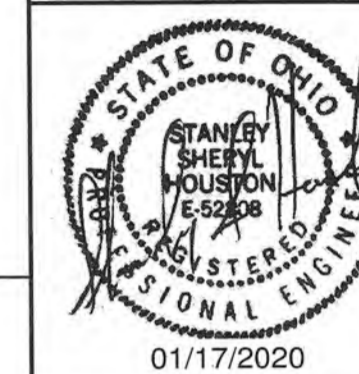
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ISSUE		
MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560M001.dwg
DESIGNED BY: S. HOUSTON
DRAWN BY: S. HOUSTON
EDITED BY: S. HOUSTON
CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
**REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
MECHANICAL
GENERAL NOTES**

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR	01/21/20
APPROVING OFFICER	DATE

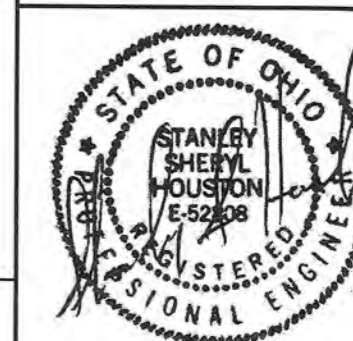
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12190963	8560-D
DISCIPLINE/SHT NO	
M-001	SHEET 9 OF 29

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MARK	DATE	DESCRIPTION
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02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

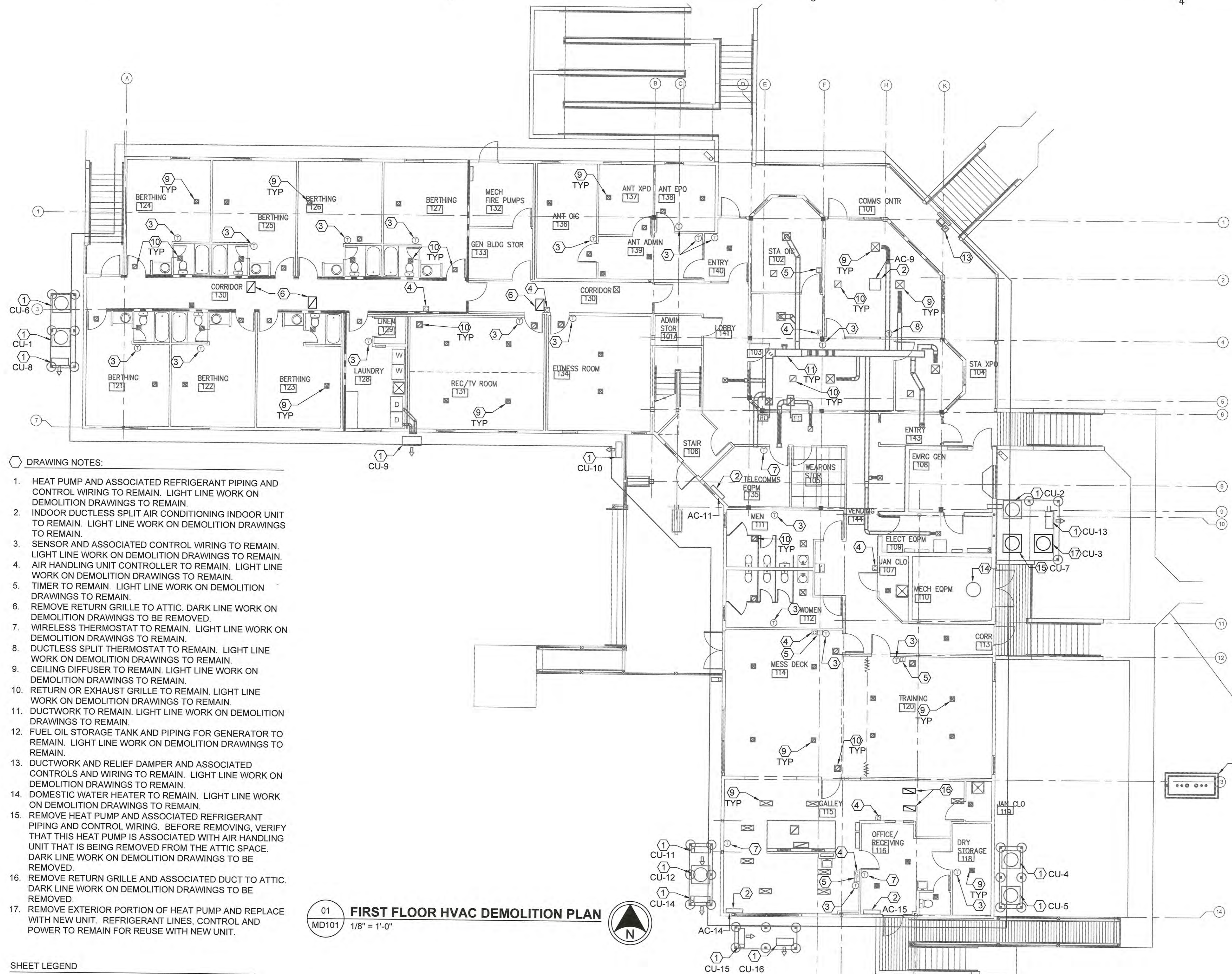
A/E PROJECT NO:
CAD FILE NAME: C8560MD101.dwg
DESIGNED BY: S. HOUSTON
DRAWN BY: S. HOUSTON
EDITED BY: S. HOUSTON
CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
**REPAIR HVAC SYSTEM
CG STATION OAK ISLAND NC
MULTI-PURPOSE BUILDING
MECHANICAL
FIRST FL. HVAC DEMO. PLAN**

REVIEWED BY: M. CAPLES
REVIEWED BY: B. VRANKAR
REVIEWED BY: G. F. LODGE
PROJECT ENG. BRANCH CHIEF TECH. DIRECTOR
J. M. HALL, CDR
APPROVING OFFICER
01/21/20
DATE

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 10 OF 29
MD101	



DRAWING NOTES:

- HEAT PUMP AND ASSOCIATED REFRIGERANT PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- SENSOR AND ASSOCIATED CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- AIR HANDLING UNIT CONTROLLER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- TIMER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE RETURN GRILLE TO ATTIC. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- WIRELESS THERMOSTAT TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- DUCTLESS SPLIT THERMOSTAT TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- CEILING DIFFUSER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- RETURN OR EXHAUST GRILLE TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- DUCTWORK TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- FUEL OIL STORAGE TANK AND PIPING FOR GENERATOR TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- DUCTWORK AND RELIEF DAMPER AND ASSOCIATED CONTROLS AND WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- DOMESTIC WATER HEATER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE HEAT PUMP AND ASSOCIATED REFRIGERANT PIPING AND CONTROL WIRING. BEFORE REMOVING, VERIFY THAT THIS HEAT PUMP IS ASSOCIATED WITH AIR HANDLING UNIT THAT IS BEING REMOVED FROM THE ATTIC SPACE. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- REMOVE RETURN GRILLE AND ASSOCIATED DUCT TO ATTIC. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- REMOVE EXTERIOR PORTION OF HEAT PUMP AND REPLACE WITH NEW UNIT. REFRIGERANT LINES, CONTROL AND POWER TO REMAIN FOR REUSE WITH NEW UNIT.

01 **FIRST FLOOR HVAC DEMOLITION PLAN**
MD101 1/8" = 1'-0"



SHEET LEGEND

EXISTING WORK TO REMAIN
DEMOLITION WORK (ON DEMO DRAWINGS)

1

2

3

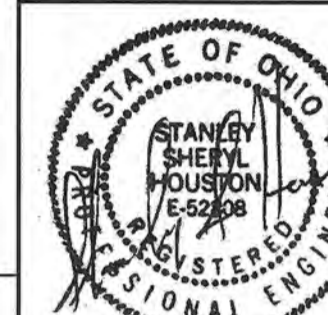
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02	12/05/19	95% SUBMITTAL
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A/E PROJECT NO:

CAD FILE NAME: C8560MD102.dwg
 DESIGNED BY: S. HOUSTON
 DRAWN BY: S. HOUSTON
 EDITED BY: S. HOUSTON
 CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

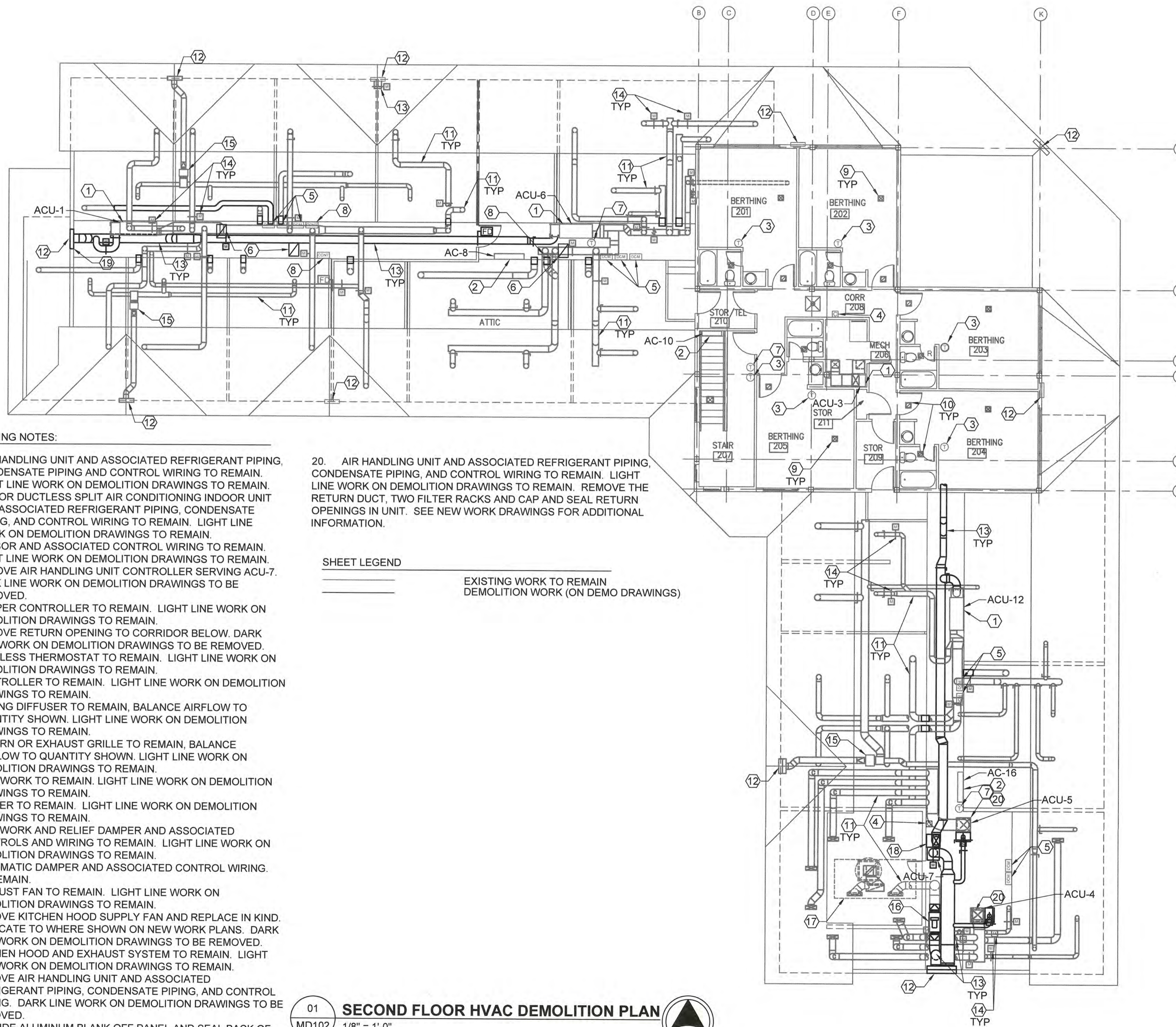
SHEET TITLE

REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND NC
 OAK ISLAND
 MULTI-PURPOSE BUILDING
 MECHANICAL
SECOND FL. HVAC DEMO. PLAN

REVIEWED BY: M. S. CAPLES
 REVIEWED BY: B. VRANKAR
 REVIEWED BY: G. E. LODGE
 PROJECT ENG. BRANCH CHIEF TECH. DIRECTOR

J. M. HALL, CDR
 APPROVING OFFICER
 DATE: 01/21/20

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 11 OF 29
MD102	



DRAWING NOTES:

- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- SENSOR AND ASSOCIATED CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE AIR HANDLING UNIT CONTROLLER SERVING ACU-7. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- DAMPER CONTROLLER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE RETURN OPENING TO CORRIDOR BELOW. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- WIRELESS THERMOSTAT TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- CONTROLLER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- CEILING DIFFUSER TO REMAIN, BALANCE AIRFLOW TO QUANTITY SHOWN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- RETURN OR EXHAUST GRILLE TO REMAIN, BALANCE AIRFLOW TO QUANTITY SHOWN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- DUCTWORK TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- LOUVER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- DUCTWORK AND RELIEF DAMPER AND ASSOCIATED CONTROLS AND WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- AUTOMATIC DAMPER AND ASSOCIATED CONTROL WIRING TO REMAIN.
- EXHAUST FAN TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE KITCHEN HOOD SUPPLY FAN AND REPLACE IN KIND. RELOCATE TO WHERE SHOWN ON NEW WORK PLANS. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- KITCHEN HOOD AND EXHAUST SYSTEM TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- PROVIDE ALUMINUM BLANK OFF PANEL AND SEAL BACK OF LOUVER WATER TIGHT, INSULATE PANEL WITH RIGID DUCT INSULATION

- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN. REMOVE THE RETURN DUCT, TWO FILTER RACKS AND CAP AND SEAL RETURN OPENINGS IN UNIT. SEE NEW WORK DRAWINGS FOR ADDITIONAL INFORMATION.

SHEET LEGEND

————— EXISTING WORK TO REMAIN
 - - - - - DEMOLITION WORK (ON DEMO DRAWINGS)

01 SECOND FLOOR HVAC DEMOLITION PLAN
 MD102 1/8" = 1'-0"

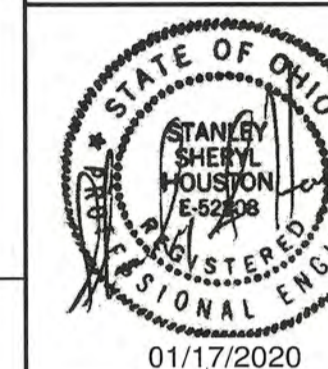


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 CAD FILE NAME: C8560MD103.dwg
 DESIGNED BY: S. HOUSTON
 DRAWN BY: S. HOUSTON
 EDITED BY: S. HOUSTON
 CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 MECHANICAL
ATTIC HVAC DEMO. PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
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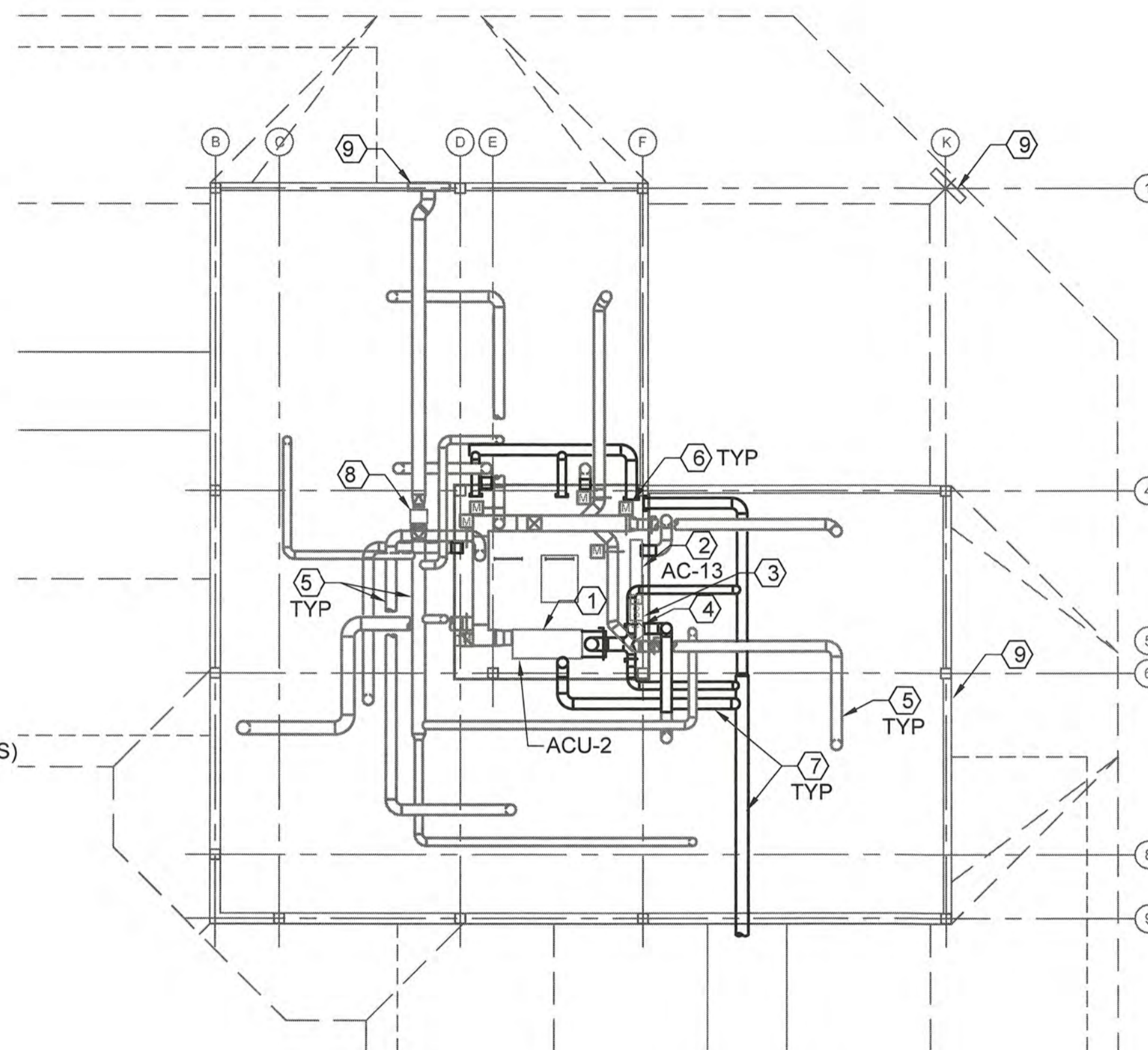
PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 12 OF 29
MD103	

DRAWING NOTES:

- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- DAMPER CONTROLLER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- WIRELESS THERMOSTAT TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- EXISTING DUCTWORK TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- AUTOMATIC DAMPER AND ASSOCIATED CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE OUTDOOR AIR DUCT. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- EXHAUST FAN TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- LOUVER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.

SHEET LEGEND

————— EXISTING WORK TO REMAIN
 - - - - - DEMOLITION WORK (ON DEMO DRAWINGS)



01 ATTIC HVAC DEMOLITION PLAN
 MD103 1/8" = 1'-0"

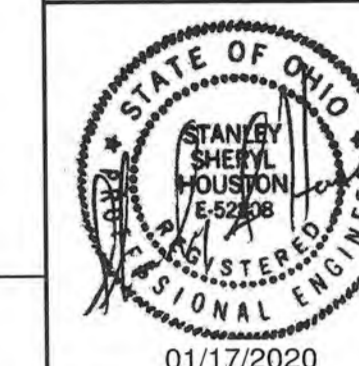


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MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:		
CAD FILE NAME: C8560MD104.dwg		
DESIGNED BY:	S. HOUSTON	
DRAWN BY:	S. HOUSTON	
EDITED BY:	S. HOUSTON	
CHECKED BY:	J. NADER	

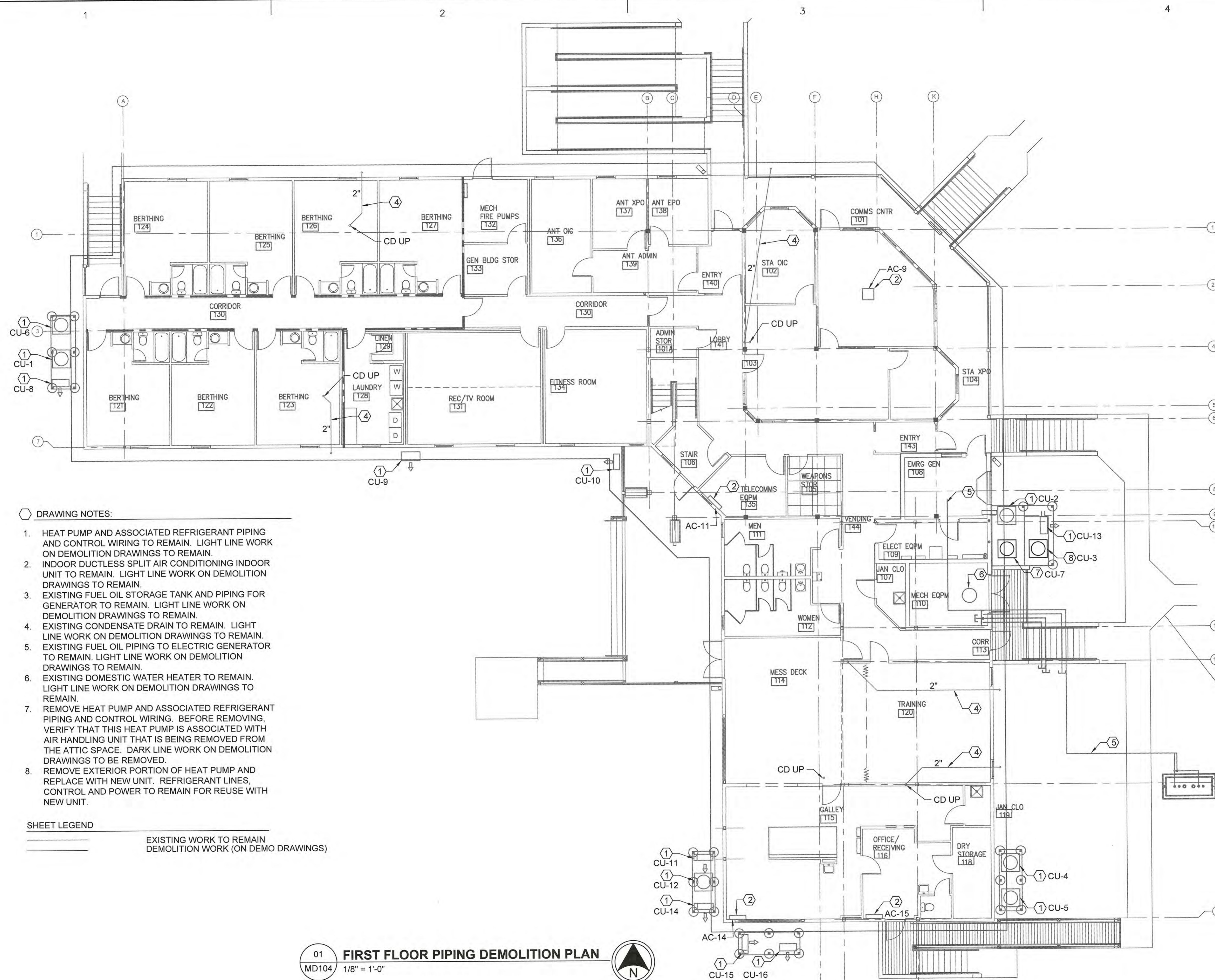
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SHEET TITLE
**REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 MECHANICAL
 FIRST FL. PIPING DEMO. PLAN**

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. R. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR
 APPROVING OFFICER
 DATE: 01/21/20

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 13 OF 29
MD104	



DRAWING NOTES:

- HEAT PUMP AND ASSOCIATED REFRIGERANT PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- EXISTING FUEL OIL STORAGE TANK AND PIPING FOR GENERATOR TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- EXISTING CONDENSATE DRAIN TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- EXISTING FUEL OIL PIPING TO ELECTRIC GENERATOR TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- EXISTING DOMESTIC WATER HEATER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE HEAT PUMP AND ASSOCIATED REFRIGERANT PIPING AND CONTROL WIRING. BEFORE REMOVING, VERIFY THAT THIS HEAT PUMP IS ASSOCIATED WITH AIR HANDLING UNIT THAT IS BEING REMOVED FROM THE ATTIC SPACE. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.
- REMOVE EXTERIOR PORTION OF HEAT PUMP AND REPLACE WITH NEW UNIT. REFRIGERANT LINES, CONTROL AND POWER TO REMAIN FOR REUSE WITH NEW UNIT.

SHEET LEGEND

EXISTING WORK TO REMAIN
 DEMOLITION WORK (ON DEMO DRAWINGS)

01 FIRST FLOOR PIPING DEMOLITION PLAN
 MD104 1/8" = 1'-0"

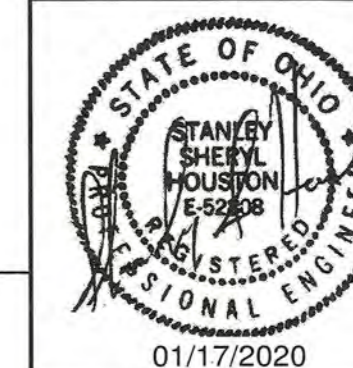


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ISSUE		
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04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
 CAD FILE NAME: CB560MD105.dwg
 DESIGNED BY: S. HOUSTON
 DRAWN BY: S. HOUSTON
 EDITED BY: S. HOUSTON
 CHECKED BY: J. NADER

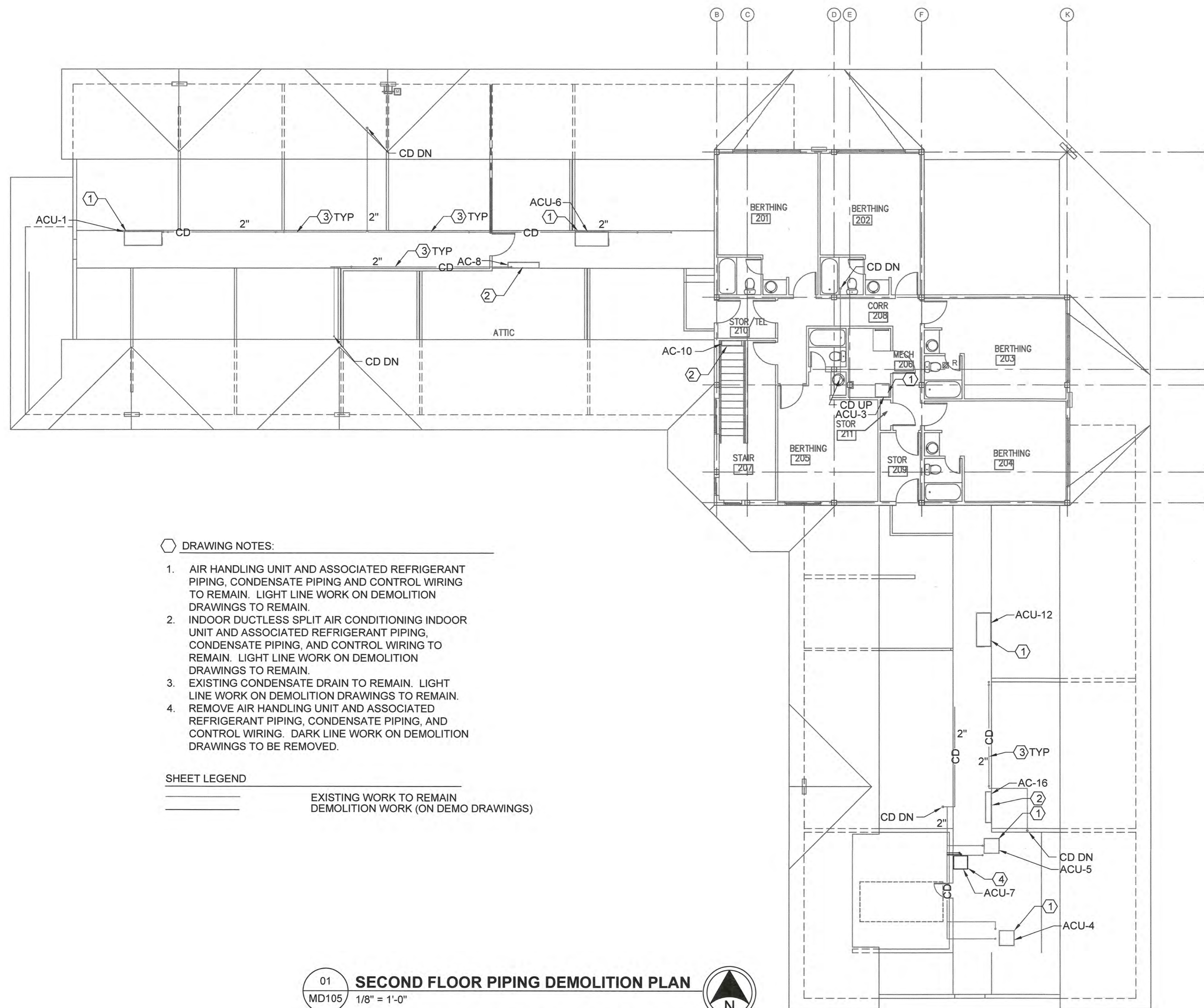
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SHEET TITLE
**REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 MECHANICAL
 SECOND FL. PIPING DEMO. PLAN**

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. FRANKAR	REVIEWED BY: G. F. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
--------------------------------------	------------------

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO MD105	SHEET 14 OF 29



DRAWING NOTES:

- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- EXISTING CONDENSATE DRAIN TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- REMOVE AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING. DARK LINE WORK ON DEMOLITION DRAWINGS TO BE REMOVED.

SHEET LEGEND

EXISTING WORK TO REMAIN
 DEMOLITION WORK (ON DEMO DRAWINGS)

01 **SECOND FLOOR PIPING DEMOLITION PLAN**
 MD105 1/8" = 1'-0"

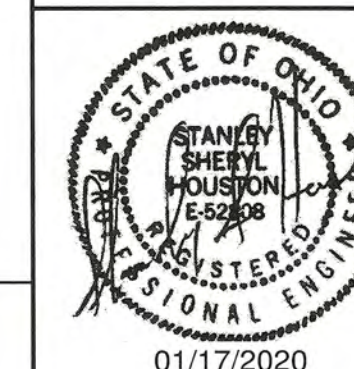


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01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560MD106.dwg
DESIGNED BY: S. HOUSTON
DRAWN BY: S. HOUSTON
EDITED BY: S. HOUSTON
CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
**REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
MECHANICAL
ATTIC PIPING DEMO. PLAN**

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. WRANKAR	REVIEWED BY: G. E. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
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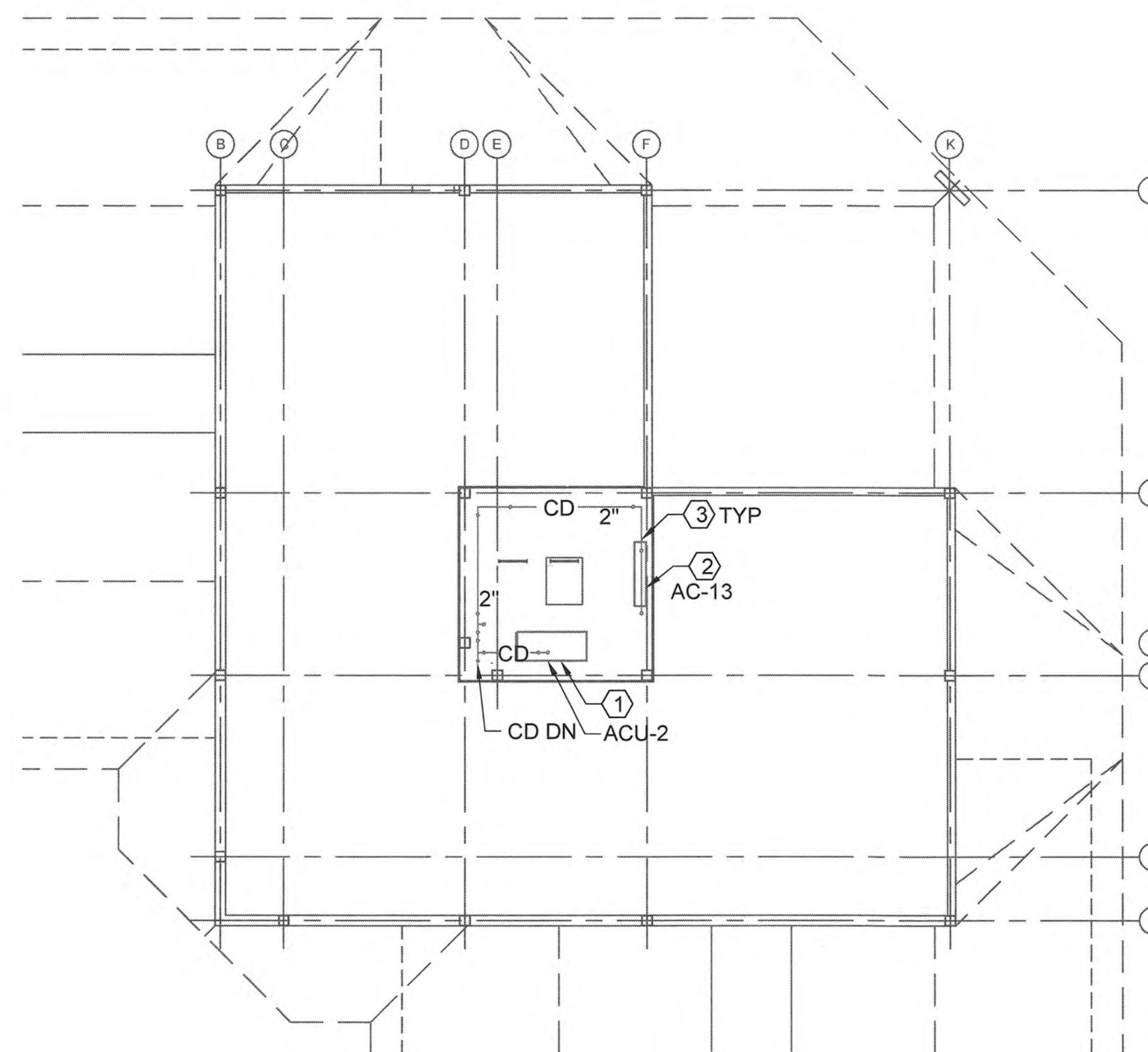
PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO MD106	SHEET 15 OF 29

DRAWING NOTES:

- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- EXISTING CONDENSATE DRAIN TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.

SHEET LEGEND

————— EXISTING WORK TO REMAIN
- - - - - DEMOLITION WORK (ON DEMO DRAWINGS)



01
MD106 ATTIC PIPING DEMOLITION PLAN
1/8" = 1'-0"

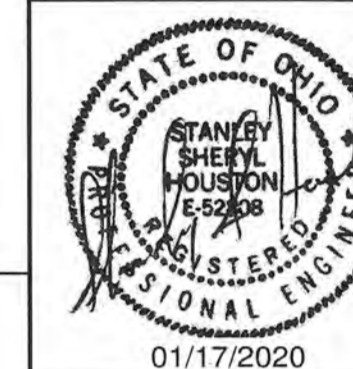


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A/E PROJECT NO:
 CAD FILE NAME: CB560M101.dwg
 DESIGNED BY: S. HOUSTON
 DRAWN BY: S. HOUSTON
 EDITED BY: S. HOUSTON
 CHECKED BY: J. NADER

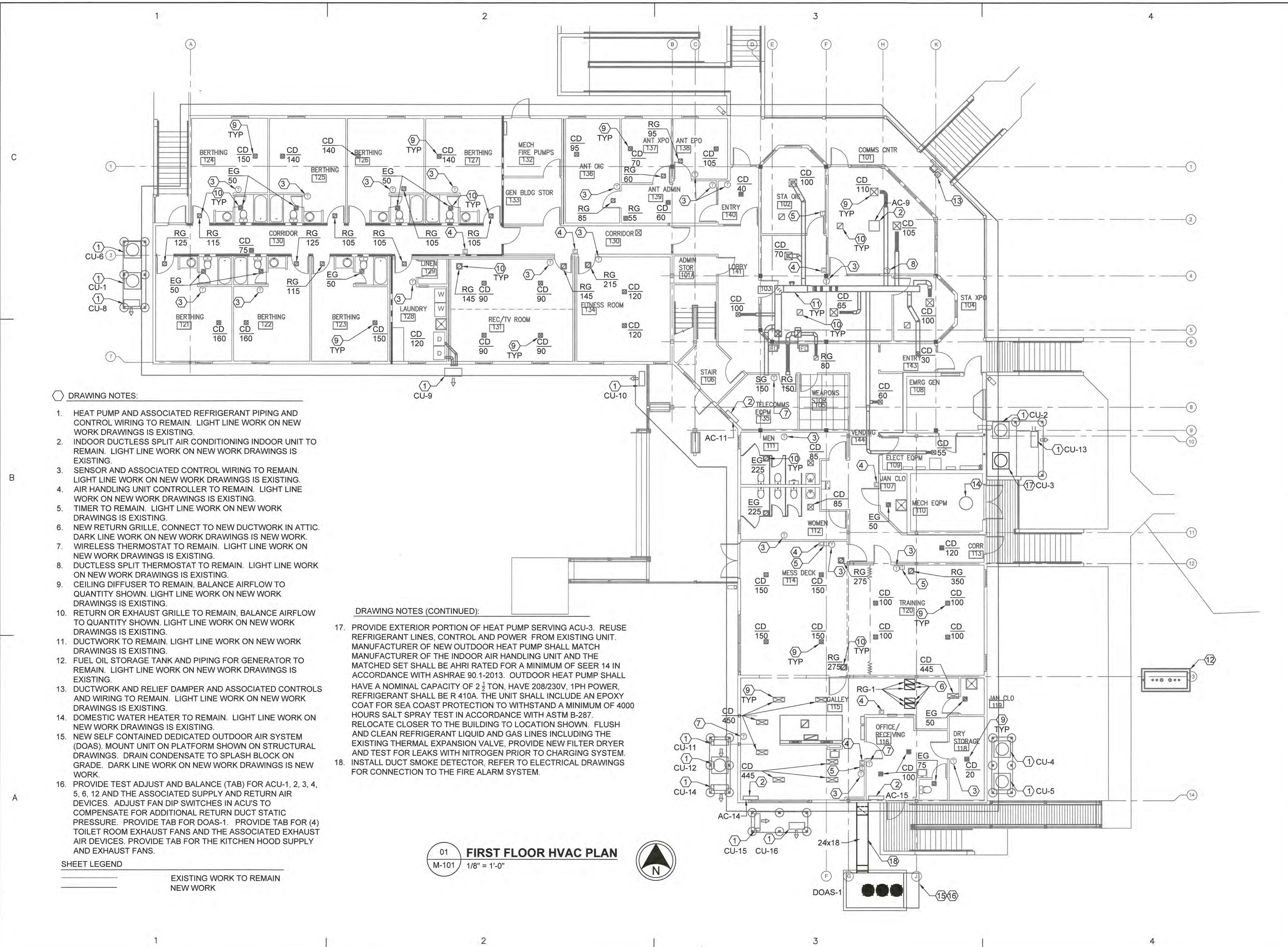
SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
 OAK ISLAND NC
MULTI-PURPOSE BUILDING
 MECHANICAL
FIRST FLOOR HVAC PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR
 APPROVING OFFICER
 DATE: 01/21/20

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO M-101	SHEET 16 OF 29



DRAWING NOTES:

- HEAT PUMP AND ASSOCIATED REFRIGERANT PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- SENSOR AND ASSOCIATED CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- AIR HANDLING UNIT CONTROLLER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- TIMER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- NEW RETURN GRILLE, CONNECT TO NEW DUCTWORK IN ATTIC. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
- WIRELESS THERMOSTAT TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- DUCTLESS SPLIT THERMOSTAT TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- CEILING DIFFUSER TO REMAIN, BALANCE AIRFLOW TO QUANTITY SHOWN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- RETURN OR EXHAUST GRILLE TO REMAIN, BALANCE AIRFLOW TO QUANTITY SHOWN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- DUCTWORK TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- FUEL OIL STORAGE TANK AND PIPING FOR GENERATOR TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- DUCTWORK AND RELIEF DAMPER AND ASSOCIATED CONTROLS AND WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- DOMESTIC WATER HEATER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- NEW SELF CONTAINED DEDICATED OUTDOOR AIR SYSTEM (DOAS). MOUNT UNIT ON PLATFORM SHOWN ON STRUCTURAL DRAWINGS. DRAIN CONDENSATE TO SPLASH BLOCK ON GRADE. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
- PROVIDE TEST ADJUST AND BALANCE (TAB) FOR ACU-1, 2, 3, 4, 5, 6, 12 AND THE ASSOCIATED SUPPLY AND RETURN AIR DEVICES. ADJUST FAN DIP SWITCHES IN ACU'S TO COMPENSATE FOR ADDITIONAL RETURN DUCT STATIC PRESSURE. PROVIDE TAB FOR DOAS-1. PROVIDE TAB FOR (4) TOILET ROOM EXHAUST FANS AND THE ASSOCIATED EXHAUST AIR DEVICES. PROVIDE TAB FOR THE KITCHEN HOOD SUPPLY AND EXHAUST FANS.

DRAWING NOTES (CONTINUED):

- PROVIDE EXTERIOR PORTION OF HEAT PUMP SERVING ACU-3. REUSE REFRIGERANT LINES, CONTROL AND POWER FROM EXISTING UNIT. MANUFACTURER OF NEW OUTDOOR HEAT PUMP SHALL MATCH MANUFACTURER OF THE INDOOR AIR HANDLING UNIT AND THE MATCHED SET SHALL BE AHRI RATED FOR A MINIMUM OF SEER 14 IN ACCORDANCE WITH ASHRAE 90.1-2013. OUTDOOR HEAT PUMP SHALL HAVE A NOMINAL CAPACITY OF 2 1/2 TON, HAVE 208/230V, 1PH POWER, REFRIGERANT SHALL BE R 410A. THE UNIT SHALL INCLUDE AN EPOXY COAT FOR SEA COAST PROTECTION TO WITHSTAND A MINIMUM OF 4000 HOURS SALT SPRAY TEST IN ACCORDANCE WITH ASTM B-287. RELOCATE CLOSER TO THE BUILDING TO LOCATION SHOWN. FLUSH AND CLEAN REFRIGERANT LIQUID AND GAS LINES INCLUDING THE EXISTING THERMAL EXPANSION VALVE, PROVIDE NEW FILTER DRYER AND TEST FOR LEAKS WITH NITROGEN PRIOR TO CHARGING SYSTEM.
- INSTALL DUCT SMOKE DETECTOR, REFER TO ELECTRICAL DRAWINGS FOR CONNECTION TO THE FIRE ALARM SYSTEM.

SHEET LEGEND
 EXISTING WORK TO REMAIN
 NEW WORK

01 **FIRST FLOOR HVAC PLAN**
 M-101 1/8" = 1'-0"



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02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
 CAD FILE NAME: C8560M102.dwg
 DESIGNED BY: S. HOUSTON
 DRAWN BY: S. HOUSTON
 EDITED BY: S. HOUSTON
 CHECKED BY: J. NADER

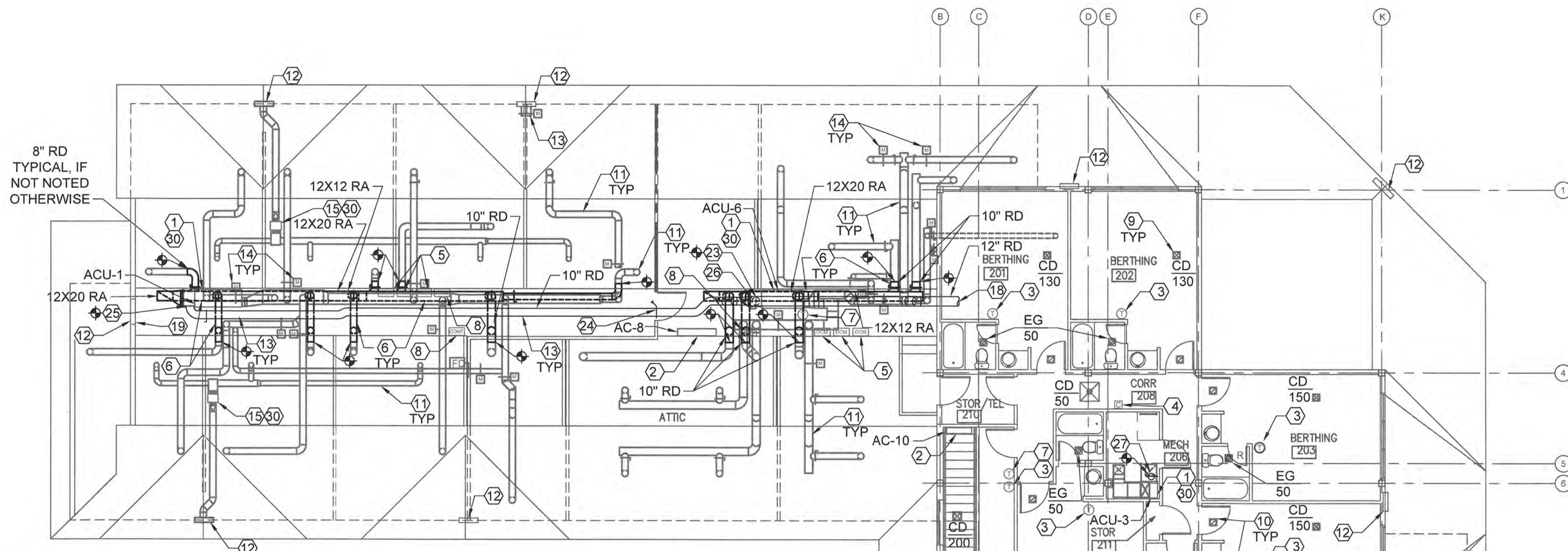
SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
 REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 MECHANICAL
 SECOND FLOOR HVAC PLAN

REVIEWED BY: M. CAPLES	REVIEWED BY: B. FRANKAR	REVIEWED BY: C. B. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
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PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO M-102	SHEET 17 OF 29



DRAWING NOTES:

- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- SENSOR AND ASSOCIATED CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- AIR HANDLING UNIT CONTROLLER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- DAMPER CONTROLLER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- NEW RETURN DUCT, ROUTE BOTTOM AT 24" ABOVE FINISHED FLOOR. CONNECT EXISTING RETURN DUCTS INTO MAIN WITH 45 DEGREE BOOT AND BALANCING DAMPER. ROUTE RETURN BRANCH DUCTS FROM SOUTH SIDE OF CORRIDOR AT FLOOR LEVEL AND CONNECT TO BOTTOM OF MAIN RETURN DUCT. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
- WIRELESS THERMOSTAT TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- CONTROLLER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- CEILING DIFFUSER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- RETURN OR EXHAUST GRILLE TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- DUCTWORK TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- LOUVER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- NEW OUTDOOR AIR DUCT. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
- AUTOMATIC DAMPER AND ASSOCIATED CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- EXHAUST FAN TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- NEW KITCHEN HOOD SUPPLY FAN. RELOCATE SO FAN INTAKE SLOPES TO LOUVER, PROVIDE A MINIMUM OF 12" DEEP PLENUM ON BACK OF LOUVER AND SLOPE TO DRAIN OUT LOUVER. STORM WATER CURRENTLY DRAINS INTO FAN. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
- KITCHEN HOOD AND EXHAUST SYSTEM TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- SEE DRAWING M-103 FOR CONTINUATION.
- PROVIDE ALUMINUM BLANK OFF PANEL AND SEAL BACK OF LOUVER WATER TIGHT, INSULATE PANEL WITH RIGID DUCT INSULATION
- OUTDOOR AIR DUCT, SEE M-101 FOR CONTINUATION.
- BALANCE OUTDOOR AIR TO 730 CFM, PROVIDE NEW 12" ROUND OUTDOOR AIR DUCT WITH AUTOMATIC DAMPER, BALANCE FROM 730 CFM MAX WHEN KITCHEN HOOD EXHAUST FAN IS ON TO 210 CFM MIN WHEN KITCHEN HOOD EXHAUST FAN IS OFF. INTERLOCK THE DAMPER IN THE KITCHEN HOOD CONTROL PANEL. MODIFY THE AHU RETURN DUCT TO ACCEPT THE NEW 12" OUTDOOR AIR DUCT AND FILTER RACK. INSULATE THE RETURN DUCT AND OUTDOOR AIR DUCT.
- BALANCE TO 390 CFM, MODIFY THE AHU RETURN DUCT TO ACCEPT THE NEW 10" OUTDOOR AIR DUCT. INSULATE THE RETURN DUCT AND OUTDOOR AIR DUCT.
- BALANCE TO 265 CFM, MODIFY THE AHU RETURN DUCT TO ACCEPT THE NEW 10" OUTDOOR AIR DUCT. INSULATE THE RETURN DUCT AND OUTDOOR AIR DUCT.
- NEW FIRE DAMPER.
- BALANCE TO 335 CFM, MODIFY THE AHU RETURN DUCT TO ACCEPT THE NEW 10" OUTDOOR AIR DUCT. INSULATE THE RETURN DUCT AND OUTDOOR AIR DUCT.
- PROVIDE 45 DEGREE TAP FOR RECTANGULAR AND ROUND TAPS, TYPICAL.
- 8" RD OA DUCT UP, BALANCE TO 160 CFM, MODIFY THE AHU RETURN DUCT TO ACCEPT THE NEW 8" OUTDOOR AIR DUCT. INSULATE THE RETURN DUCT AND OUTDOOR AIR DUCT.
- NEW 24X24X2 HORIZONTAL FILTER RACK. TRANSITION DUCT FROM (2) RETURN REGISTERS IN GALLEY TO FILTER RACK, TRANSITION FROM TOP OF FILTER RACK TO 12" x 22" RETURN DUCT WITH FITTING CONSTRUCTED WITH 30 DEGREE TAPERS. PROVIDE MERV 13 FILTER. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
- NEW RETURN DUCT, ROUTE BOTTOM AT 24" ABOVE FINISHED FLOOR. CONNECT EXISTING RETURN DUCTS INTO MAIN WITH 45 DEGREE BOOT AND BALANCING DAMPER. ROUTE RETURN BRANCH DUCTS FROM WEST SIDE OF CORRIDOR AT FLOOR LEVEL AND CONNECT TO BOTTOM OF MAIN RETURN DUCT.
- PROVIDE TEST ADJUST AND BALANCE (TAB) FOR ACU-1, 2, 3, 4, 5, 6, 12 AND THE ASSOCIATED SUPPLY AND RETURN AIR DEVICES. ADJUST FAN DIP SWITCHES IN ACU'S TO COMPENSATE FOR ADDITIONAL RETURN DUCT STATIC PRESSURE. PROVIDE TAB FOR DOAS-1. PROVIDE TAB FOR (4) TOILET ROOM EXHAUST FANS AND THE ASSOCIATED EXHAUST AIR DEVICES. PROVIDE TAB FOR THE KITCHEN HOOD SUPPLY AND EXHAUST FANS.
- PROVIDE SMOKE DETECTOR, REFER TO ELECTRICAL DRAWINGS FOR CONNECTION TO THE FIRE ALARM SYSTEM. SMOKE DETECTOR SHALL DIRECTLY SHUT DOWN DOAS-1 WHEN SMOKE IS DETECTED.

SHEET LEGEND
 EXISTING WORK TO REMAIN
 NEW WORK

01 **SECOND FLOOR HVAC PLAN**
 M-102 1/8" = 1'-0"

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A/E PROJECT NO:
CAD FILE NAME: C8560M103.dwg
DESIGNED BY: S. HOUSTON
DRAWN BY: S. HOUSTON
EDITED BY: S. HOUSTON
CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
MECHANICAL
ATTIC HVAC PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. FRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
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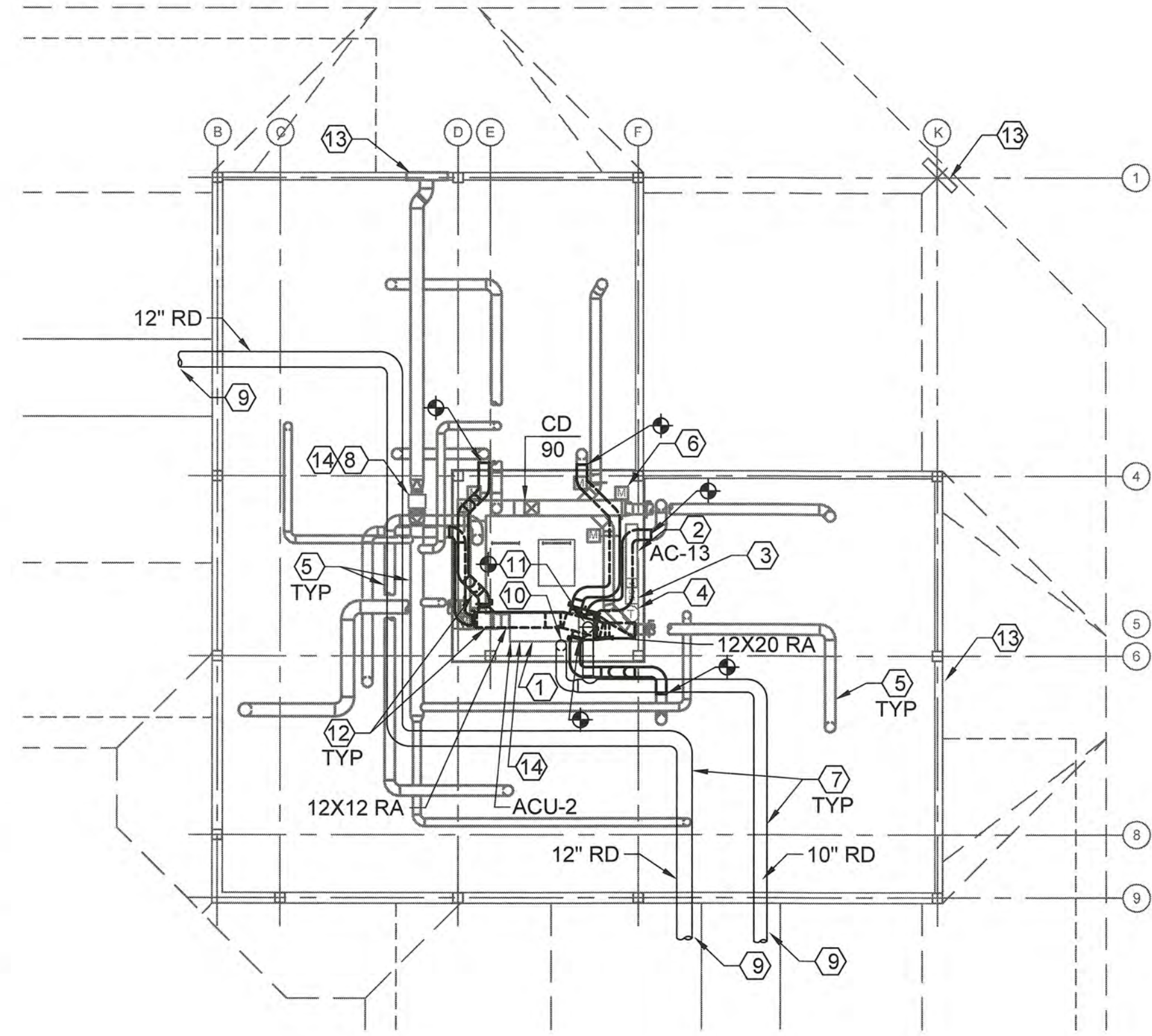
PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
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DISCIPLINE/SHT NO M-103	SHEET 18 OF 29
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DRAWING NOTES:

- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING, AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- DAMPER CONTROLLER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- WIRELESS THERMOSTAT TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- EXISTING DUCTWORK TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- AUTOMATIC DAMPER AND ASSOCIATED CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- NEW OUTDOOR AIR DUCT. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
- EXHAUST FAN TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
- SEE DRAWING M-102 FOR CONTINUATION.
- 8" RD OA DUCT DN TO ACU-3, BALANCE TO 160 CFM.
- 8" RD OA DUCT UP, BALANCE TO 190 CFM. MODIFY THE AHU RETURN DUCT TO ACCEPT THE NEW 8" OUTDOOR AIR DUCT. INSULATE THE RETURN DUCT AND OUTDOOR AIR DUCT.
- NEW RETURN DUCT, ROUTE BELOW EXISTING ACU. CONNECT EXISTING RETURN DUCTS INTO MAIN WITH 45 DEGREE BOOT AND BALANCING DAMPER.
- LOUVER TO REMAIN. LIGHT LINE WORK ON DEMOLITION DRAWINGS TO REMAIN.
- PROVIDE TEST ADJUST AND BALANCE (TAB) FOR ACU-1, 2, 3, 4, 5, 6, 12 AND THE ASSOCIATED SUPPLY AND RETURN AIR DEVICES. ADJUST FAN DIP SWITCHES IN ACU'S TO COMPENSATE FOR ADDITIONAL RETURN DUCT STATIC PRESSURE. PROVIDE TAB FOR DOAS-1. PROVIDE TAB FOR (4) TOILET ROOM EXHAUST FANS AND THE ASSOCIATED EXHAUST AIR DEVICES. PROVIDE TAB FOR THE KITCHEN HOOD SUPPLY AND EXHAUST FANS.

SHEET LEGEND
 EXISTING WORK TO REMAIN
 NEW WORK



01 ATTIC HVAC PLAN
M-103 1/8" = 1'-0"



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 EDITED BY: S. HOUSTON
 CHECKED BY: J. NADER

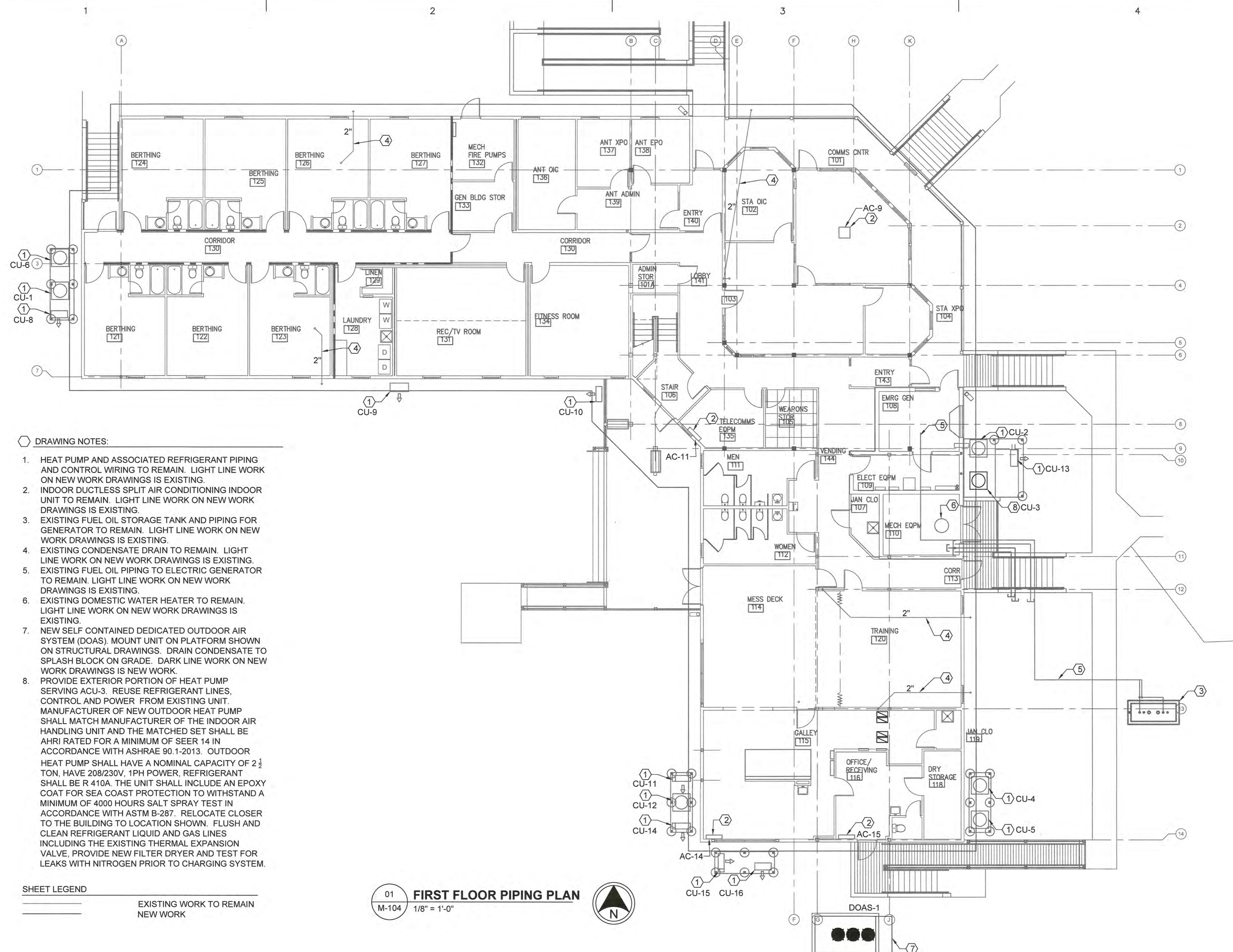
SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
 OAK ISLAND NC
MULTI-PURPOSE BUILDING
 MECHANICAL
FIRST FLOOR PIPING PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. WANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
--------------------------------------	------------------

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 19 OF 29
M-104	



- DRAWING NOTES:**
- HEAT PUMP AND ASSOCIATED REFRIGERANT PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - EXISTING FUEL OIL STORAGE TANK AND PIPING FOR GENERATOR TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - EXISTING CONDENSATE DRAIN TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - EXISTING FUEL OIL PIPING TO ELECTRIC GENERATOR TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - EXISTING DOMESTIC WATER HEATER TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - NEW SELF CONTAINED DEDICATED OUTDOOR AIR SYSTEM (DOAS), MOUNT UNIT ON PLATFORM SHOWN ON STRUCTURAL DRAWINGS. DRAIN CONDENSATE TO SPLASH BLOCK ON GRADE. DARK LINE WORK ON NEW WORK DRAWINGS IS NEW WORK.
 - PROVIDE EXTERIOR PORTION OF HEAT PUMP SERVING ACU-3. REUSE REFRIGERANT LINES, CONTROL AND POWER FROM EXISTING UNIT. MANUFACTURER OF NEW OUTDOOR HEAT PUMP SHALL MATCH MANUFACTURER OF THE INDOOR AIR HANDLING UNIT AND THE MATCHED SET SHALL BE AHRI RATED FOR A MINIMUM OF SEER 14 IN ACCORDANCE WITH ASHRAE 90.1-2013. OUTDOOR HEAT PUMP SHALL HAVE A NOMINAL CAPACITY OF 2 1/2 TON, HAVE 208/230V, 1PH POWER, REFRIGERANT SHALL BE R 410A. THE UNIT SHALL INCLUDE AN EPOXY COAT FOR SEA COAST PROTECTION TO WITHSTAND A MINIMUM OF 4000 HOURS SALT SPRAY TEST IN ACCORDANCE WITH ASTM B-287. RELOCATE CLOSER TO THE BUILDING TO LOCATION SHOWN. FLUSH AND CLEAN REFRIGERANT LIQUID AND GAS LINES INCLUDING THE EXISTING THERMAL EXPANSION VALVE, PROVIDE NEW FILTER DRYER AND TEST FOR LEAKS WITH NITROGEN PRIOR TO CHARGING SYSTEM.

SHEET LEGEND

— EXISTING WORK TO REMAIN
 — NEW WORK

01 **FIRST FLOOR PIPING PLAN**
 M-104 1/8" = 1'-0"

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USCG. CEU CLEVELAND
 1240 EAST 9TH STREET
 CLEVELAND, OH 44199-2060

MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
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A/E PROJECT NO:
 CAD FILE NAME: C8560M106.dwg
 DESIGNED BY: S. HOUSTON
 DRAWN BY: S. HOUSTON
 EDITED BY: S. HOUSTON
 CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
 OAK ISLAND NC
MULTI-PURPOSE BUILDING
 MECHANICAL
ATTIC PIPING PLAN

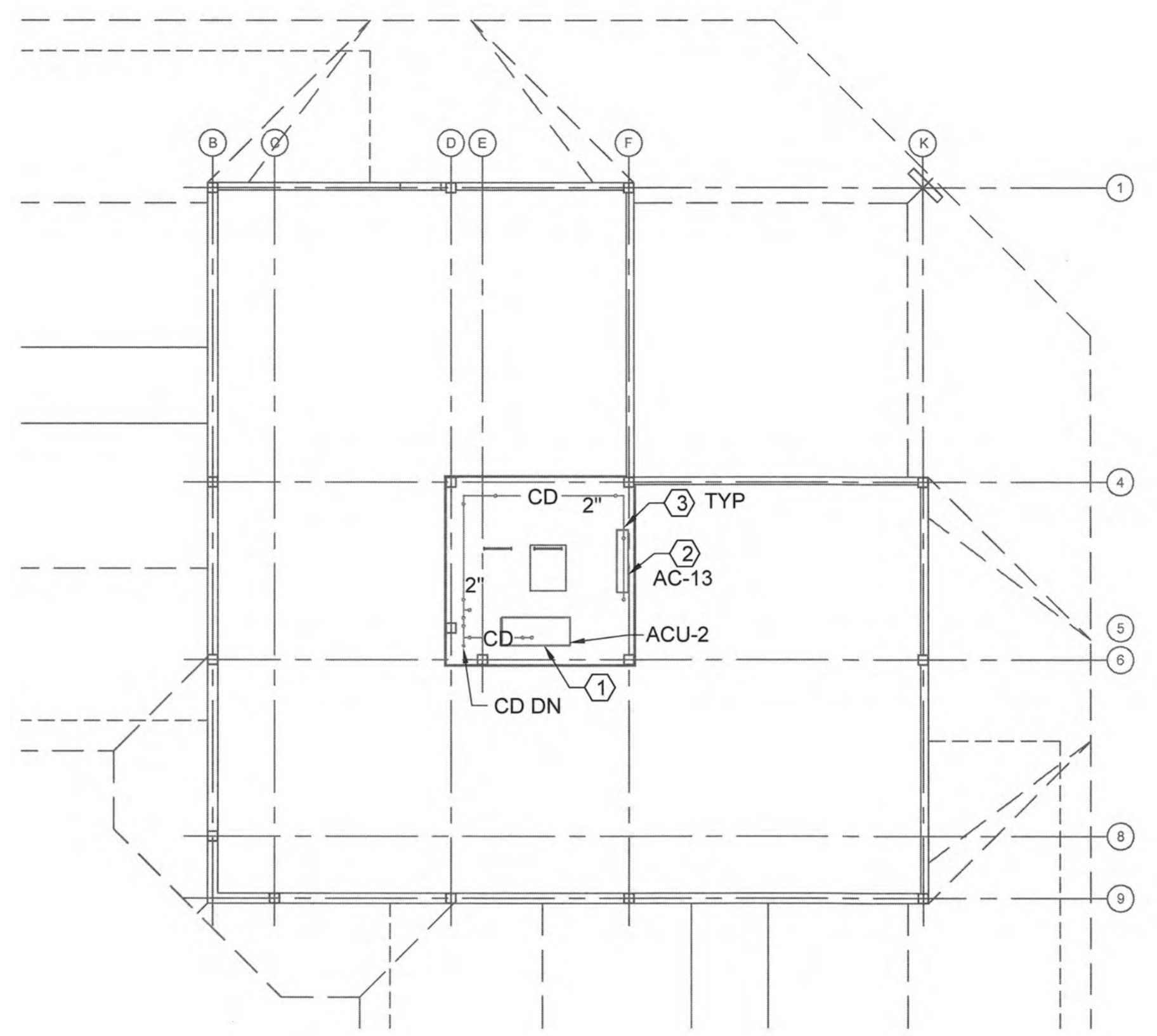
REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
J. M. HALL, CDR APPROVING OFFICER		01/21/20 DATE

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 21 OF 29
M-106	

- DRAWING NOTES:**
- AIR HANDLING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - INDOOR DUCTLESS SPLIT AIR CONDITIONING INDOOR UNIT AND ASSOCIATED REFRIGERANT PIPING, CONDENSATE PIPING AND CONTROL WIRING TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.
 - EXISTING CONDENSATE DRAIN TO REMAIN. LIGHT LINE WORK ON NEW WORK DRAWINGS IS EXISTING.

SHEET LEGEND

————— EXISTING WORK TO REMAIN
 ————— NEW WORK



01 **ATTIC HVAC PLAN**
 M-106 1/8" = 1'-0"



AIR HANDLING UNIT SCHEDULE																
UNIT					SUPPLY FAN				MOTOR INFORMATION				HEATING			
MARK	WEIGHT	V/HZ/PH	MCA	MOP	STANDARD AIR FLOW	EXTERNAL SP	TOTAL SP	OPERATING POWER	SIZE	ENCLOSURE	MOTOR RPM	STARTER TYPE	TYPE	HEATING CAPACITY	ENTERING AIR TEMPERATURE	LEAVING AIR TEMPERATURE
DOAS-1	3000 lb	208/60/3	151.3	175	2800 CFM	1.75 IN WG	2.08 IN WG	1.83 HP	4.0 HP	NEMA PREMIUM ODP	1750	VFD	HEAT PUMP	253.5 MBH	27.6F	109.4F

AIR HANDLING UNIT SCHEDULE (CONTINUED)																	
MARK	COOLING TYPE	TOTAL ENERGY	SENSIBLE ENERGY	ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	SOUND								REMARKS	
								OUTLET SOUND POWER BY OCTAVE BAND (DUCTED DISCHARGE)									
								HZ	62.5	125	250	500	1000	2000	4000	8000	
DOAS-1	DIRECT EXPANSION	259.9 MBH	116.1 MBH	91.0 F	79.3 F	54.0 F	53.3 F	db	54.9	79.6	88.9	91.8	90.9	87.5	81.1	73.1	NOTE 1, 2, 3, 4

NOTE 1: UNIT; INCLUDING MOTOR, SHALL MEET REQUIREMENT OF ASHRAE 90.1.
 NOTE 2: UNIT SHALL INCLUDE STAND ALONE CONTROLS FOR HEATING, COOLING AND HUMIDITY CONTROL BASED ON AMBIENT AIR CONDITIONS AND MAINTAINING A MAX COOLING COIL DEW POINT OF 54F FOR HUMIDITY CONTROL, DX COOLING AND HEATING, HOT GAS REHEAT FOR HUMIDITY CONTROL, 40KW ELECTRIC REHEAT FOR DEFROST CYCLE SAFETY, COMPLETE STAINLESS STEEL LINING, SEA COAST COATING ON EXTERIOR AND INTERNAL COILS AND CASING, STAINLESS STEEL DRAIN PAN AND MERV 8 AND MERV 13 FILTERS. UNIT AIR FLOW SHALL ADJUST TO 1760 CFM WHEN EXHAUST HOOD IS OFF, PROVIDE UNIT WITH RELAY AND CONTACTS TO CONNECT TO EXISTING KITCHEN HOOD CONTROLS. PROVIDE BACNET CARD FOR FUTURE REMOTE MONITORING CAPABILITY. PROVIDE FUSED DISCONNECT.
 NOTE 3: SUPPLY FAN EXTERNAL STATIC PRESSURE INCLUDES 0.9 IN WC FOR DIRTY FILTER PRESSURE DROP, INCLUDE PRESSURE DROP FOR CLEAN FILTERS IN UNITS INTERNAL PRESSURE DROP.
 NOTE 4: PROVIDE SOUND BLANKET TO REDUCE RADIATED NOISE TO 92.9 dBA SOUND POWER AT THE UNIT.

FAN SCHEDULE									
MARK	WEIGHT	V/HZ/PH	STANDARD AIR FLOW	EXTERNAL SP	FAN RPM	OPERATING POWER	SIZE	MOTOR RPM	REMARKS
SF-1	220 LB	208/60/3	1650 CFM	0.5 in. wg	1833	0.435 HP	1/2 HP	1725	NOTE 1, 2

NOTE 1: PROVIDE WITH NEMA-1 DISCONNECT SWITCH, LOW LEAK DAMPER, INSULATED CONSTRUCTION, 2" WASHABLE INLET FILTER, HANGING CRADLE, SPEED CONTROL AND ALUMINUM LOW LEAK AUTOMATIC INTAKE DAMPER, INTERLOCK DAMPER TO OPEN WHEN FAN STARTS, DAMPER SHALL BE FULL SIZE OF INLET FILTER.
 NOTE 2: UNIT; INCLUDING MOTOR, SHALL MEET REQUIREMENT OF ASHRAE 90.1.

GRILLE, REGISTER AND DIFFUSER SCHEDULE						
MARK	TYPE	INLET SIZE (INCHES)	MODULE SIZE (INCHES)	DESIGN AIRFLOW (CFM)	FINISH	REMARKS
RG-1	EGG CRATE, ALUMINUM, SURFACE MOUNT	22x11	24x12	1000	WHITE	NOTE 1

NOTE 1: INSTALL BETWEEN BOTTOM CORD OF TRUSS TO ALLOW DUCTING INTO ATTIC.

HEAT PUMP OUTDOOR UNIT SCHEDULE										
MARK	COMPRESSOR TYPE	POWER V/HZ/PH	COOLING CAPACITY	HEATING CAPACITY @ 17F	COOLING EFFICIENCY (SEER)	HEATING EFFICIENCY (COP @ 47F)	OUTDOOR UNIT MCA	OUTDOOR UNIT MOCp	REFRIGERANT	REMARKS
CU-3	SCROLL	208/60/1	28.8 MBH	17.5 MBH	14.5	3.9	17.0	25	R-410a	NOTE 1,2,3

NOTE 1: SELECT UNIT AT AHRI RATED CONDITIONS: COOLING (INDOOR/OUTDOOR) 80F DB, 67F WB / 95F DB, 75F WB. HEATING @17F (INDOOR/OUTDOOR) 70F DB, 60F WB / 17F DB, 15F WB.
 NOTE 2: UNIT; INCLUDING MOTOR, SHALL MEET REQUIREMENT OF ASHRAE 90.1.
 NOTE 3: PROVIDE EXTERIOR PORTION OF HEAT PUMP SERVING ACU-3. MANUFACTURER OF NEW OUTDOOR HEAT PUMP SHALL MATCH MANUFACTURER OF THE INDOOR AIR HANDLING UNIT AND THE MATCHED SET SHALL BE AHRI RATED FOR A MINIMUM OF SEER 14 IN ACCORDANCE WITH ASHRAE 90.1-2013. THE UNIT SHALL INCLUDE A EPOXY COAT FOR SEA COAST PROTECTION TO WITHSTAND A MINIMUM OF 4000 HOURS SALT SPRAY TEST IN ACCORDANCE WITH ASTM B-287. UNIT SHALL INCLUDE A ANTI-SHORT CYCLE TIMER AND SEACOAST KIT.

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01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560M601.dwg
DESIGNED BY: S. HOUSTON
DRAWN BY: S. HOUSTON
EDITED BY: S. HOUSTON
CHECKED BY: J. NADER

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

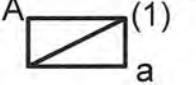

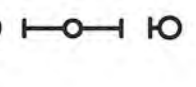

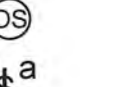

REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
MECHANICAL
SCHEDULES

REVIEWED BY: M. S. CAPLES
REVIEWED BY: B. FRANKAR
REVIEWED BY: C. P. LODGE
PROJECT ENG. | BRANCH CHIEF | TECH. DIRECTOR

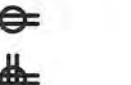


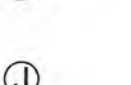

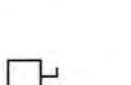
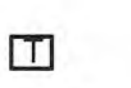
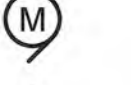
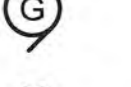

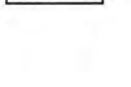


J. M. HALL, CDR
APPROVING OFFICER
01/21/20
DATE

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 22 OF 29
M-601	


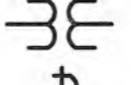
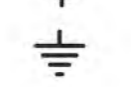
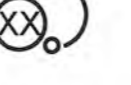
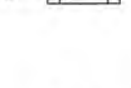
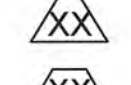
LIGHTING

-  (1)
FLUORESCENT FIXTURE, A = TYPE, (1) = CIRCUIT NUMBER, a = SWITCH LEG SEE FIXTURE SCHEDULE FOR DETAILS (TYPICAL ALL FIXTURE SYMBOLS)
 -  N.L.
FIXTURE ON EMERGENCY CIRCUIT (N.L. = NIGHT LIGHT)
 - 
ANY OTHER LIGHTING FIXTURE, DESIGNATIONS THE SAME AS ABOVE FOOT INDICATES WALL MOUNT, ARROW INDICATES AIMING DIRECTION, SHADING INDICATES ON EMERGENCY CIRCUIT
 - 
EXIT LIGHT FIXTURE, SHADED QUADRANT INDICATES LETTERED FACE. ARROW INDICATES DIRECTION, DESIGNATION THE SAME AS ABOVE
 - 
CEILING MOUNTED OCCUPANCY SENSOR
 -  a
SWITCH (a = SWITCH LEG.)
- NOTE:
THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE VARIOUS TYPES OF SWITCHES
(NO SUBSCRIPT) SINGLE POLE
OS OCCUPANCY SENSOR
WP WEATHER PROOF


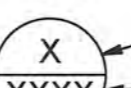
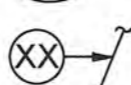

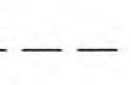
POWER

- 
DUPLEX RECEPTACLE, GROUNDING
- 
DOUBLE DUPLEX RECEPTACLE, GROUNDING
- 
EXISTING GFI RECEPTACLE
- 
CEILING MOUNTED RECEPTACLE INDICATED BY CIRCLE BORDER
- 
SPECIAL PURPOSE DIRECT CONNECTION
- 
JUNCTION BOX, 4 INCHES SQUARE, UNLESS OTHERWISE NOTED (P=POWER, T=TELE, D=DATA)
- 
PANELBOARD, BRANCH CIRCUIT, FLUSH OR SURFACE MOUNTED
- 
SAFETY SWITCH, NOT FUSED UNLESS OTHERWISE SHOWN F - INDICATES FUSED, CB - INDICATES CIRCUIT BREAKER
- 
TRANSFORMER
- 
MOTOR
- 
GENERATOR
-  M
MOTOR STARTER SWITCH
-  SPD
SURGE PROTECTION DEVICE


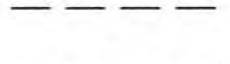
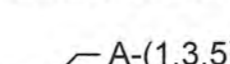


ONE LINE AND WIRING DIAGRAM

- 
POWER PANEL
N = NAME
V = VOLTAGE
F = FRAME SIZE (AMPS)
B = BREAKER TYPE/RATING (AMPS)
- 
POTENTIAL TRANSFORMER
- 
CURRENT TRANSFORMER
- 
GROUND
- 
CIRCUIT BREAKER
XX = BREAKER DESIGNATION
- 
FUSIBLE SWITCH

MISCELLANEOUS SYMBOLS

-  XX
REVISION NUMBER
-  XX
DRAWING NOTE NUMBER
-  X
X = DETAIL NUMBER
-  XXXX
XXXX = DRAWING ON WHICH DETAIL IS SHOWN
-  XX
MAJOR FEEDER (XX = FEEDER NO.) REFER TO ELECTRICAL SCHEDULE

CIRCUIT DESIGNATIONS

-  ---
CONDUIT CONCEALED IN WALL OR CEILING
-  - - -
CONDUIT EXPOSED
-  - - - -
CONDUIT IN OR BELOW SLAB OR GRADE
-  A-(1,3,5)
HOME RUN (A = PANEL) (: 1, 3, 5, = CIRCUIT NUMBER)
-  #10
CONDUIT FILL (#10 = WIRE SIZE) (NO HASH MARKS = #12 PHASE, NEUTRAL & EQUIP. GRD)

GENERAL NOTES - DEMOLITION

- A CONDUITS AND CONDUCTORS ROUTED ABOVE GRADE SHALL BE COMPLETELY REMOVED. CONDUIT ROUTED IN SLAB NOT BEING REUSED SHALL BE CUT AND SEALED FLUSH WITH THE SLAB. BOXES INSTALLED IN SLAB SHALL BE REMOVED FROM THE SLAB. SLAB SHALL BE REPAIRED SUCH THAT THE AREA WHERE THE BOXES WERE DEMOLISHED IS FLUSH WITH THE ADJACENT SLAB.
- B COORDINATE WITH THE GENERAL CONTRACTOR REGARDING ALL REMOVAL WORK. THE DEMOLITION CONTRACTOR SHALL REMOVE EXISTING WORK WHICH IS ASSOCIATED WITH HIS TRADE.
- C UPON COMPLETION OF DEMOLITION WORK NO UNUSED CONDUIT OR STUB SHALL EXTEND THRU FLOOR, WALLS OR CEILINGS. ABANDONED CONDUIT WHERE REMAINING IN PLACE SHALL HAVE ANY UNUSED WIRING REMOVED. ALL ACCESSIBLE UNUSED CONDUIT SHALL BE REMOVED.
- D MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL NOT BE REUSED IN THE SCOPE OF THIS PROJECT.
- E REFER TO MECHANICAL AND PLUMBING DRAWINGS WHICH IDENTIFY HVAC AND PLUMBING EQUIPMENT BEING REMOVED. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ASSOCIATED ELECTRICAL SERVICE.

**GENERAL NOTES - NEW WORK
(APPLIES TO ALL 'E' SERIES SHEETS)**

- A ALL INTERIOR CIRCUITS SHALL BE ROUTED OVERHEAD UNLESS NOTED OTHERWISE.
- B ALL WORK AND EQUIPMENT SHALL CONFORM WITH THE REQUIREMENTS OF THE STATE BUILDING CODE, THE NATIONAL ELECTRICAL CODE (NEC), UFC AND ALL LOCAL CODES.
- C CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, ETC. TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE OWNER.
- D FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE SHOWN TO SCALE WHEREVER POSSIBLE.
- E ALL EQUIPMENT SHALL BE INSTALLED TO MAINTAIN ALL CODE, MANUFACTURER AND MAINTENANCE CLEARANCES. VERIFY SPECIFIC LOCATION AND ORIENTATION OF EACH DEVICE AND PIECE OF EQUIPMENT WITH THE OWNER/DESIGN TEAM PRIOR TO INSTALLATION.
- F CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS AND INSPECTIONS.
- G CONDUIT SHALL BE PROPERLY SUPPORTED BY THE BUILDING STRUCTURE.
- H FURNISH ALL MATERIALS, EQUIPMENT, AND INSTRUMENTS NECESSARY TO CONDUCT ALL TESTING OF ELECTRICAL SYSTEMS IN ACCORDANCE WITH THE ELECTRIC CODE REGULATIONS.
- I ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AT THE SITE AFFECTING THIS SCOPE OF WORK PRIOR TO PERFORMING WORK.
- J THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF ALL CONDUIT WITH THE WORK OF ALL OTHER TRADES TO AVOID CONFLICTS.
- K PROVIDE DEDICATED NEUTRAL WIRE FOR EACH BRANCH CIRCUIT.
- L PROVIDE FIRE STOPPING FOR CONDUITS AND ELECTRICAL EQUIPMENT FOR FLOOR SLABS, WALLS AND CEILINGS TO MAINTAIN FIRE RATING.
- M LIMIT VOLTAGE DROP TO 3% FOR FEEDERS AND 5% FOR BRANCH CIRCUITS.
- N PROVIDE FEEDERS AND BRANCH CIRCUITS WHICH HAVE AN AMPACITY EQUAL TO OR GREATER THAN THE CIRCUIT OVERCURRENT PROTECTIVE DEVICE RATING.
- O 120/208V BRANCH CIRCUITS 100' OR GREATER IN CONDUCTOR LENGTH SHALL BE #10 AWG, UNLESS OTHERWISE NOTED.
- P NOT ALL CONDUIT AND WIRING CONNECTIONS TO FIRE/SMOKE DAMPER RELAYS, AND DDC CONTROLS HAVE BEEN SHOWN. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED J-BOXES AND CONDUCTORS REQUIRED TO ENERGIZE MECHANICAL DEVICES PER SPACE. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL RACEWAY SYSTEMS AND POWER DEVICES FOR ALL MECHANICAL SYSTEMS AS INDICATED ON DRAWINGS. REFER TO SPECIFICATION SECTION IN DIVISION 23.09.00 INSTRUMENTATION AND CONTROLS FOR HVAC FOR POWER CONNECTIONS TO MECHANICAL CONTROLS. COORDINATE WITH DIVISION 23 FOR ADDITIONAL INFORMATION.
- Q CONTRACTOR SHALL NOT SUPPORT ELECTRIC CONDUIT DIRECTLY TO ROOF DECK.
- R REFER TO MECHANICAL EQUIPMENT SCHEDULES ON SHEETS E-602 FOR ADDITIONAL ELECTRICAL REQUIREMENTS FOR HVAC AND PLUMBING EQUIPMENT.
- S ALL WIRING SHALL BE IN METALLIC RACEWAYS. MINIMUM SIZE CONDUIT SHALL BE 3/4".
- T ALL WIRING SHALL BE COPPER. MINIMUM WIRE SIZE SHALL BE #12 AWG., THHN/THWN INSULATED.

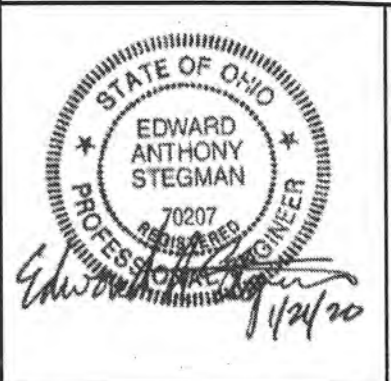
NOTE: THIS LEGEND IS COMPOSED OF STANDARD SYMBOLS AND APPLIES TO THIS SET OF DRAWINGS TO THE EXTENT APPLICABLE.

CONSULTANTS

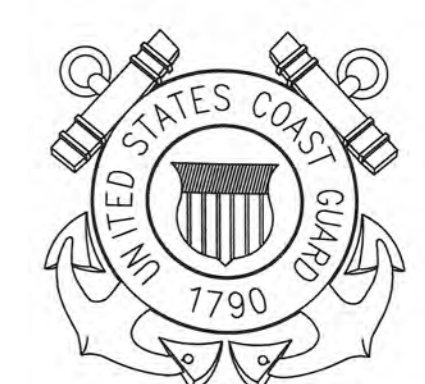


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ISSUE		
MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: CB560E001.dwg
DESIGNED BY: E. STEGMAN
DRAWN BY: D. EDWARDS
EDITED BY: D. EDWARDS
CHECKED BY: E. STEGMAN

SCALE: AS SHOWN PLOT SCALE: 1:1

**REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
ELECTRICAL
GENERAL NOTES**

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. E. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR
APPROVING OFFICER
01/21/20
DATE

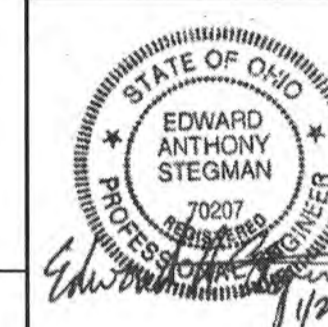
PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO E-001	SHEET 23 OF 29

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 700 Broadway Street
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main 513.621.6211
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 1240 EAST 9TH STREET
 CLEVELAND, OH 44199-2060

ISSUE		
MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
 CAD FILE NAME: C8560ED101.dwg
 DESIGNED BY: E. STEGMAN
 DRAWN BY: D. EDWARDS
 EDITED BY: D. EDWARDS
 CHECKED BY: E. STEGMAN

SCALE: AS SHOWN PLOT SCALE: 1:1

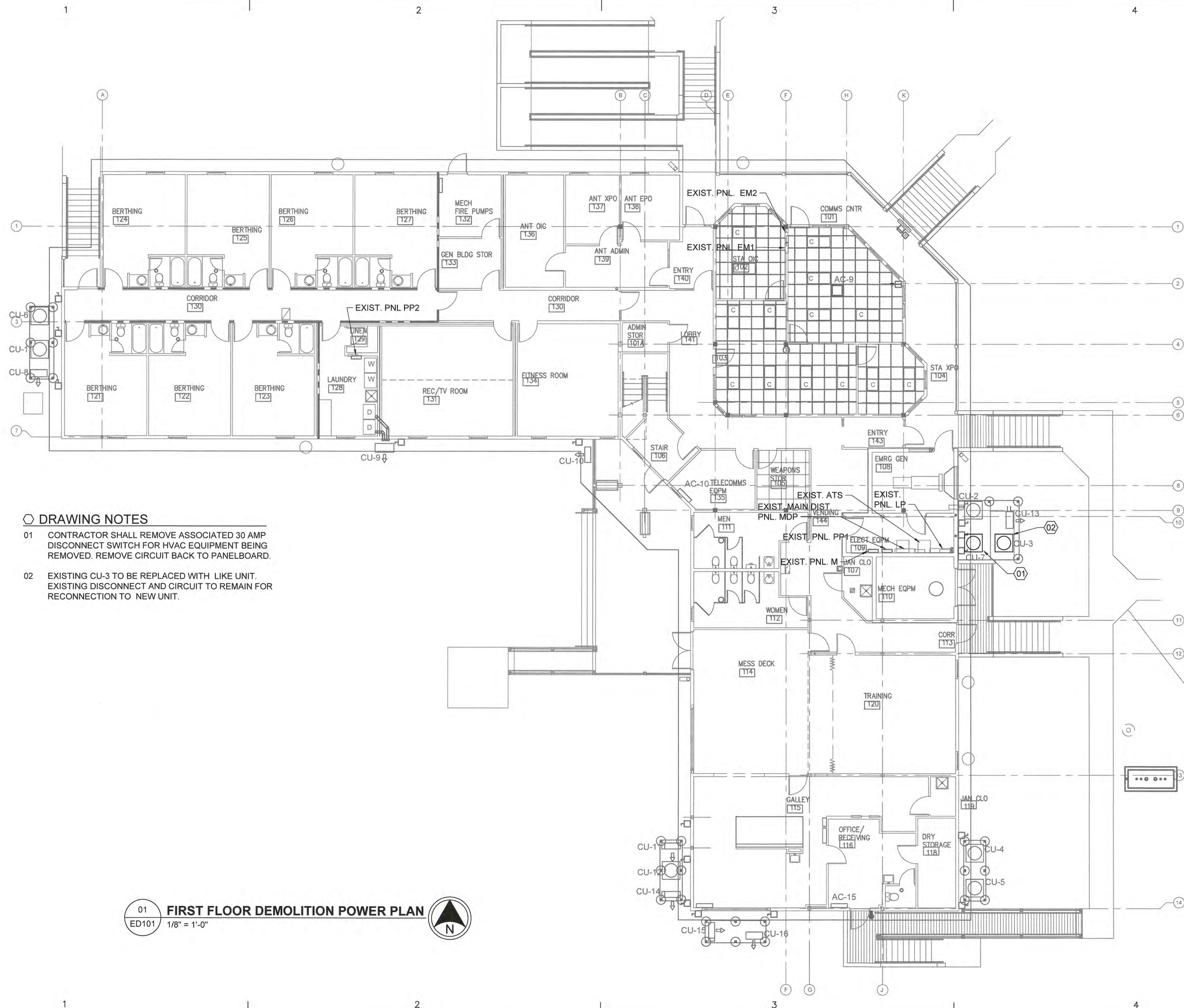
SHEET TITLE

**REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND NC
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 ELECTRICAL
 FIRST FLOOR DEMO. POWER PLAN**

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENGR.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
--------------------------------------	------------------

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO ED101	SHEET 24 OF 29



DRAWING NOTES

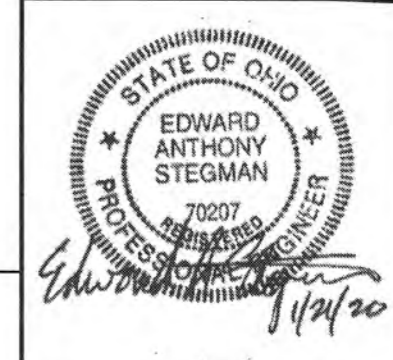
- 01 CONTRACTOR SHALL REMOVE ASSOCIATED 30 AMP DISCONNECT SWITCH FOR HVAC EQUIPMENT BEING REMOVED. REMOVE CIRCUIT BACK TO PANELBOARD.
- 02 EXISTING CU-3 TO BE REPLACED WITH LIKE UNIT. EXISTING DISCONNECT AND CIRCUIT TO REMAIN FOR RECONNECTION TO NEW UNIT.

01 ED101 **FIRST FLOOR DEMOLITION POWER PLAN** 1/8" = 1'-0"

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MARK	DATE	DESCRIPTION
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03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

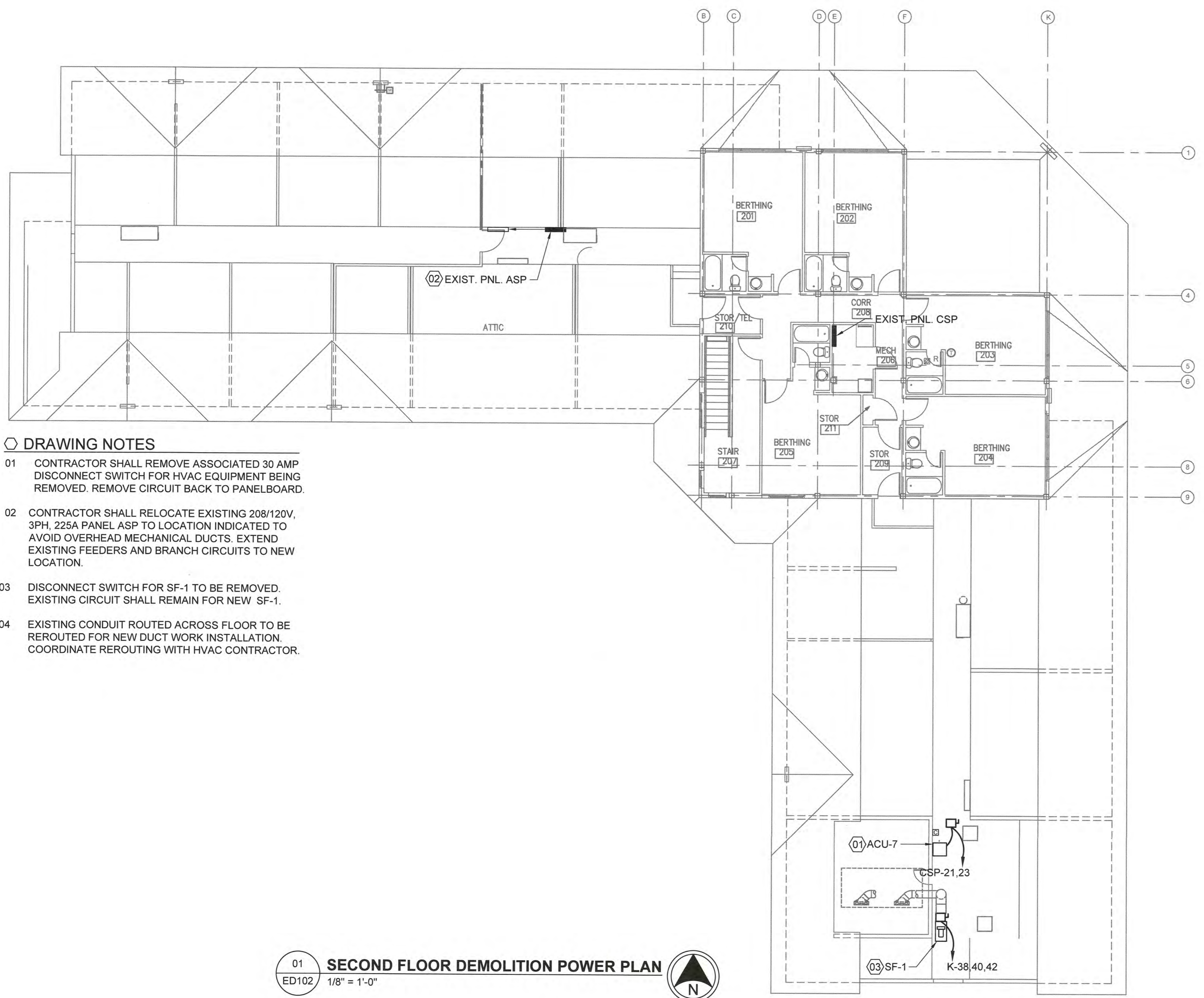
A/E PROJECT NO:
 CAD FILE NAME: C8560ED102.dwg
 DESIGNED BY: E. STEGMAN
 DRAWN BY: D. EDWARDS
 EDITED BY: D. EDWARDS
 CHECKED BY: E. STEGMAN

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
 REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND
 OAK ISLAND NC
 MULTI-PURPOSE BUILDING
 ELECTRICAL
 SECOND FLR. DEMO.POWER PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
J. M. HALL, CDR APPROVING OFFICER		01/21/20 DATE

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO ED102	SHEET 25 OF 29



DRAWING NOTES

- 01 CONTRACTOR SHALL REMOVE ASSOCIATED 30 AMP DISCONNECT SWITCH FOR HVAC EQUIPMENT BEING REMOVED. REMOVE CIRCUIT BACK TO PANELBOARD.
- 02 CONTRACTOR SHALL RELOCATE EXISTING 208/120V, 3PH, 225A PANEL ASP TO LOCATION INDICATED TO AVOID OVERHEAD MECHANICAL DUCTS. EXTEND EXISTING FEEDERS AND BRANCH CIRCUITS TO NEW LOCATION.
- 03 DISCONNECT SWITCH FOR SF-1 TO BE REMOVED. EXISTING CIRCUIT SHALL REMAIN FOR NEW SF-1.
- 04 EXISTING CONDUIT ROUTED ACROSS FLOOR TO BE REROUTED FOR NEW DUCT WORK INSTALLATION. COORDINATE REROUTING WITH HVAC CONTRACTOR.

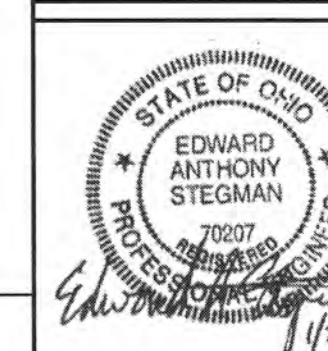
01 ED102 SECOND FLOOR DEMOLITION POWER PLAN
 1/8" = 1'-0"

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MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560E101.dwg
DESIGNED BY: E. STEGMAN
DRAWN BY: D. EDWARDS
EDITED BY: D. EDWARDS
CHECKED BY: E. STEGMAN

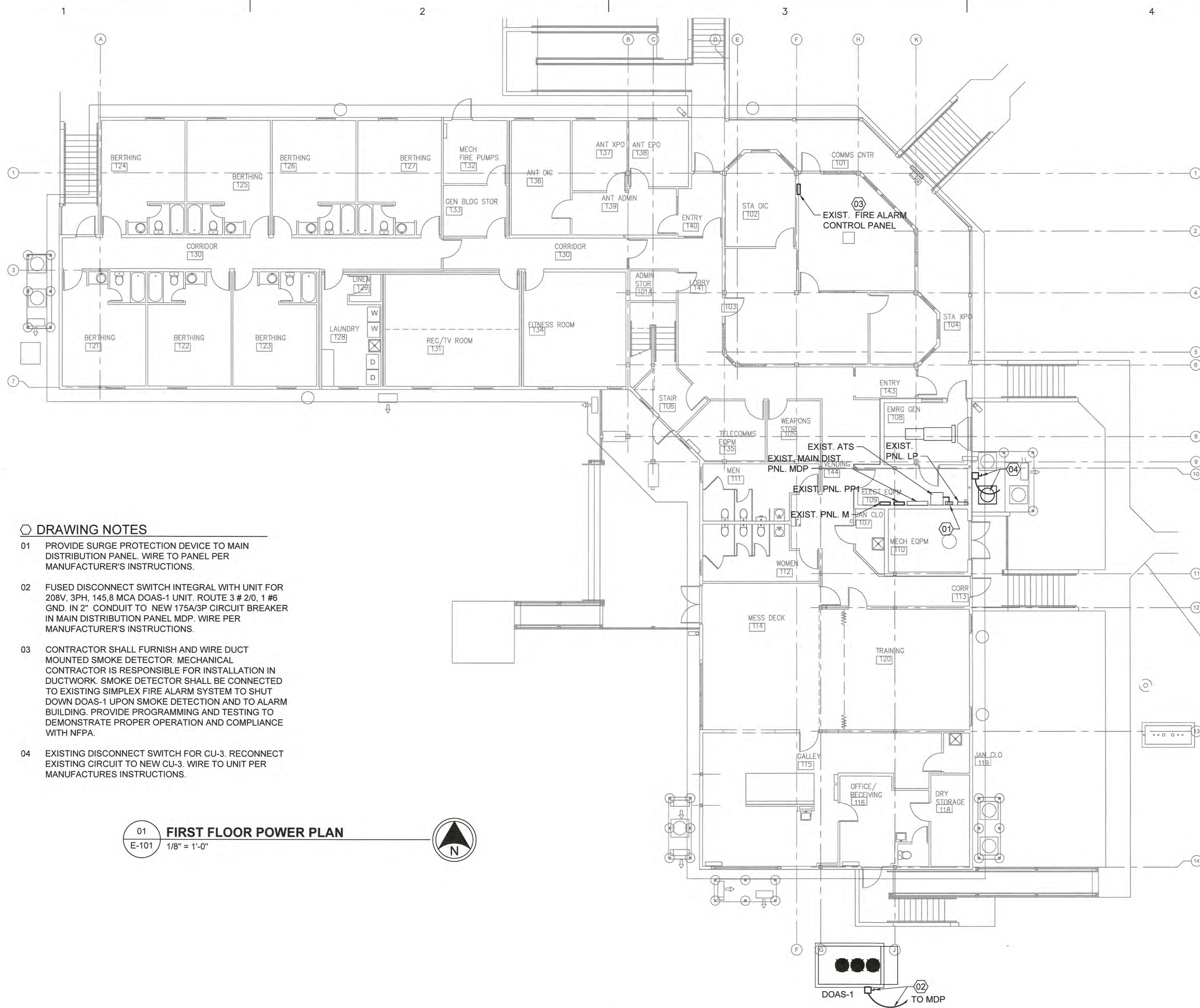
SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
**REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
ELECTRICAL
FIRST FLOOR POWER PLAN**

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. FRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
--------------------------------------	------------------

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO E-101	SHEET 26 OF 29



DRAWING NOTES

- 01 PROVIDE SURGE PROTECTION DEVICE TO MAIN DISTRIBUTION PANEL. WIRE TO PANEL PER MANUFACTURER'S INSTRUCTIONS.
- 02 FUSED DISCONNECT SWITCH INTEGRAL WITH UNIT FOR 208V, 3PH, 145.8 MCA DOAS-1 UNIT. ROUTE 3 # 2/0, 1 #6 GND. IN 2" CONDUIT TO NEW 175A/3P CIRCUIT BREAKER IN MAIN DISTRIBUTION PANEL MDP. WIRE PER MANUFACTURER'S INSTRUCTIONS.
- 03 CONTRACTOR SHALL FURNISH AND WIRE DUCT MOUNTED SMOKE DETECTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLATION IN DUCTWORK. SMOKE DETECTOR SHALL BE CONNECTED TO EXISTING SIMPLEX FIRE ALARM SYSTEM TO SHUT DOWN DOAS-1 UPON SMOKE DETECTION AND TO ALARM BUILDING. PROVIDE PROGRAMMING AND TESTING TO DEMONSTRATE PROPER OPERATION AND COMPLIANCE WITH NFPA.
- 04 EXISTING DISCONNECT SWITCH FOR CU-3. RECONNECT EXISTING CIRCUIT TO NEW CU-3. WIRE TO UNIT PER MANUFACTURER'S INSTRUCTIONS.

01 **FIRST FLOOR POWER PLAN**
E-101 1/8" = 1'-0"



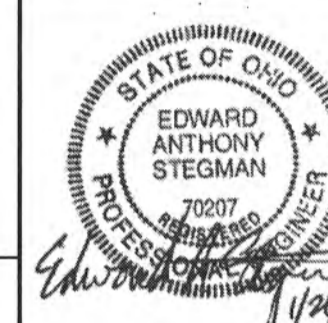
U.S.C.G. CEU
 CLEVELAND, OHIO
 (216) 902-6200

CONSULTANTS

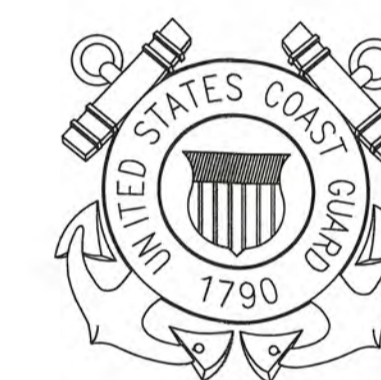


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04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
 CAD FILE NAME: C8560E102.dwg
 DESIGNED BY: E. STEGMAN
 DRAWN BY: D. EDWARDS
 EDITED BY: D. EDWARDS
 CHECKED BY: E. STEGMAN

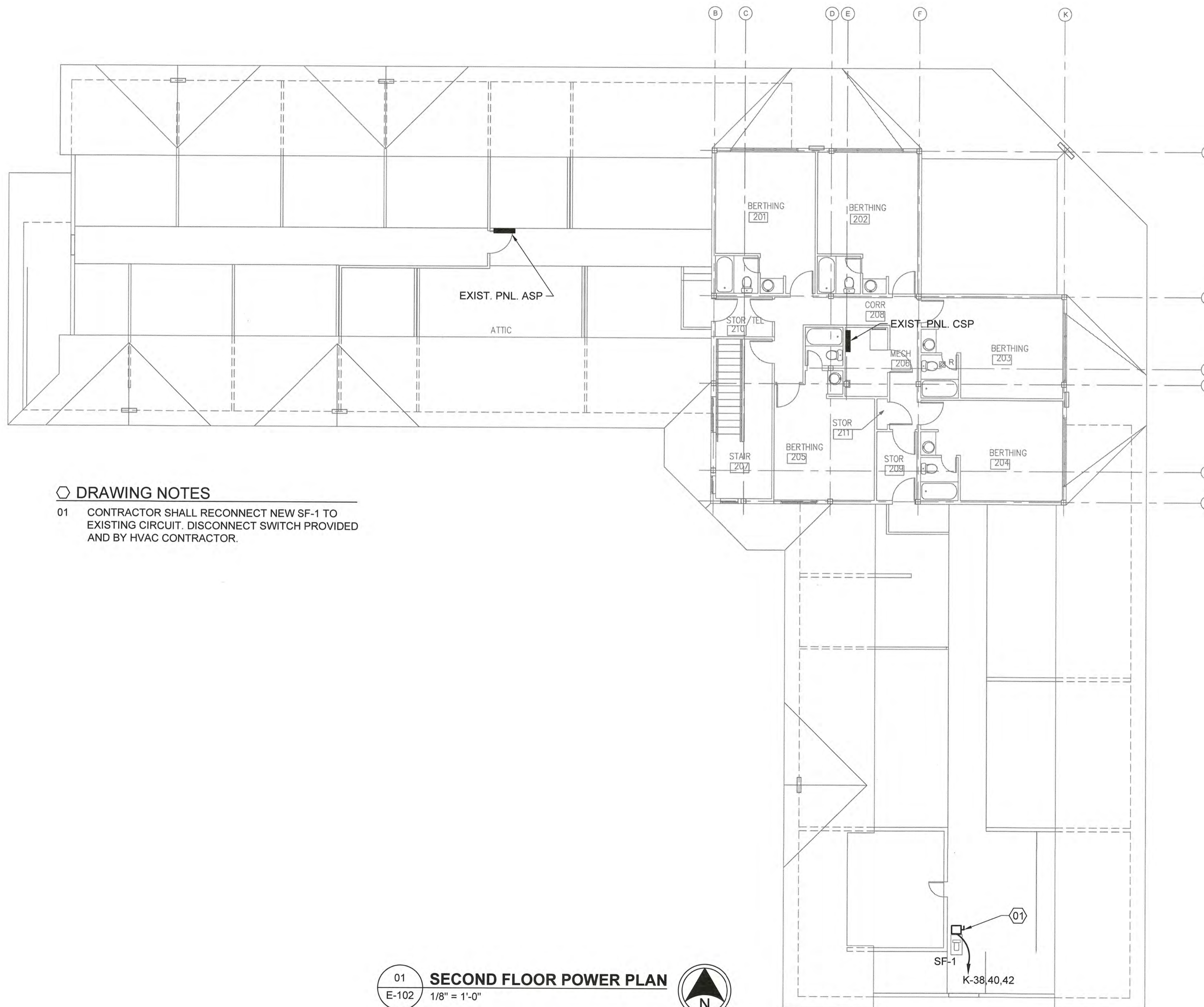
SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
REPAIR HVAC SYSTEM
 CG STATION OAK ISLAND NC
 OAK ISLAND
 MULTI-PURPOSE BUILDING
 ELECTRICAL
SECOND FLOOR POWER PLAN

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR
 APPROVING OFFICER
 DATE: 01/21/20

PROJECT NUMBER 12190963	DRAWING NUMBER 8560-D
DISCIPLINE/SHT NO E-102	SHEET 27 OF 29



DRAWING NOTES

- 01 CONTRACTOR SHALL RECONNECT NEW SF-1 TO EXISTING CIRCUIT. DISCONNECT SWITCH PROVIDED AND BY HVAC CONTRACTOR.

01
 E-102
SECOND FLOOR POWER PLAN
 1/8" = 1'-0"



PANEL: MDP (EXISTING)										
MOUNTING:		LUGS:		PHASE		WIRE		WIRE		
SURFACE <input checked="" type="checkbox"/> FLUSH <input type="checkbox"/>		BOTTOM <input checked="" type="checkbox"/> TOP <input type="checkbox"/>		A B C		3 4		4 4		
200% NEUTRAL <input type="checkbox"/>		FEED THRU LUGS <input type="checkbox"/>		A B C		1200 MAIN CKT BREAKER		22,000A		
CKT. NO.	AMP.	LOAD SERVED	KVA / PHASE			PHASE			AMP.	CKT. NO.
1	200/3	MK SHOP-HVAC-ENG. SHOP	0.00			X			225/3	2
3				0.00			X			4
5					0.00			X		6
7	400/3	PANEL "K"	0.00			X			200/3	8
9				0.00			X			10
11					0.00			X		12
13	175	NEW DOAS-1	52.50			X			225/3	14
15				0.00			X			16
17					0.00			X		18
19	60/3	NEW SPD	0.00			X			225/3	20
21				0.00			X			22
23					0.00			X		24
25	60/3	HOT WATER HEATER	0.00			X			225/3	26
27				0.00			X			28
29					0.00			X		30
31	225/3	CUPOLA SUB PANEL "CSP"	0.00			X			200/3	32
33				0.00			X			34
35					0.00			X		36
37	225/3	ATTIC SUP PANEL "ASP"	0.00			X			100/3	38
39				0.00			X			40
41					0.00			X		42
SUB-TOTAL KVA			52.50	0.00	0.00	0.00	0.00	0.00		

EXISTING 1200 AMP ELECTRICAL LOAD CHANGE SUMMARY	
DESCRIPTION	VALUES
Peak Demand over 12 months period per Utility Company BEMC. Peak demand occurred during January 2019.	139.2 kW
Convert kW to amps including power factor to 208v, 3p	387 amps
Per NEC 220.87 - Existing Service (apply 25% to demand)	x 1.25
Existing Load plus demand equal amps at 208v, 3p	484 amps
Demolition of existing equipment	0
New equipment add to this service	145.8 amps
Difference in demolition to new loads (Increase)	145.8 amps
Total Amps increased to (demand, NEC, revised equipment)	630 amps

PANEL CONNECTED LOAD	CONN KVA	NEC DEMAND FACTOR	DEM LOAD KVA
LIGHTING	0.00	100%	0.00
CONTINUOUS EQUIP.	0.00	125%	0.00
NON-CONT. EQUIP.	52.50	100%	52.50
RECEPTACLES- - 10 KVA	0.00	100%	0.00
RECEPT. -OVER 10 KVA	0.00	50%	0.00
52.50 TOTAL KVA			52.50
145.7 TOTAL AMPS			145.73

SUB-TOTAL KVA		TOTAL KVA OF ALL PHASES		AMPERES , CONNECTED	
0.00	0.00	0.00	0.00	145.73	

MECHANICAL/ ELECTRICAL COORDINATION SCHEDULE

PROJECT No. 0600.05										PREPARED BY: KZF DESIGN													
PROJECT TITLE: REPAIR HVAC SYSTEM CG STSTION OAK ISLAND										DATE: 12-04-2019													
SEE MECHANICAL AND/ OR ARCHITECTURAL PLANS FOR EXACT EQUIPMENT LOCATIONS																							
EQUIPMENT				CONTROLLER				INTERLOCK				DISCONNECT AT EQUIP.				POWER CONNECTION				REMARKS			
NAME/DESIGN	LOCAT	LOAD	UNIT	VOLT	PHASE	LOCAT	FB	IB	TYPE	SIZE	COVER	IF ANY	LOCAT	FB	IB	TYPE	SIZE	WIRE	GND	CONDUIT	PANEL	CB	
DOAS-1	OUTSIDE	145.8	MCA	208	3	NU	HC	HC	PACK				NU	HC	HC	F	200/175/3	3 #2/0	1 #6	2"	MDP	175/3	DISC. SWITCH PROVIDED BY HVAC CONTRACTOR
SF-1	ATTIC	1/2	HP	208	3	NU	HC	HC					NU	HC	HC	F	30/15/3						DISC. SWITCH PROVIDED BY HVAC CONTRACTOR
ABBREVIATIONS											SPECIFIC NOTES:												
BI : BUILT IN CC : CONTROL CONTRACTOR COMB : COMBINATION STARTER WITH DISCONNECT DDC : DIRECT DIGITAL CONTROL SYSTEM BY HC. EC : ELECTRICAL CONTRACTOR EL RM : ELECTRICAL ROOM EXP : EXPLOSION PROOF F : FUSED FB : FURNISHED BY HC : HVAC CONTRACTOR HIP : HUMAN INTERFACE PANEL HR : HORSEPOWER RATED TOGGLE SWITCH NF : NON-FUSED											IB : INSTALLED BY MAN : MANUAL MER : MECHANICAL ROOM NU : NEAR UNIT OIP : OPERATOR INTERFACE PANEL PACK : PACKAGED ITEM, SUPPLIED WITH EQUIPMENT OR CONTROLLER SFP : SEE FLOOR PLAN S/S/S/PL : STOP/START/HOA SELECTOR SWITCH WITH RED START AND GREEN STOP LIGHTS T/PL : TOGGLE SWITCH WITH PILOT LIGHT VFD : VERIABLE FREQUENCY DRIVE. WP : WEATHER PROOF												
											SF-1 SHALL BE RECONNECTED TO EXISTING CIRCUIT.												

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CLEVELAND, OH 44199-2060

MARK	DATE	DESCRIPTION
04	01/21/20	FINAL SUBMITTAL
03	01/07/20	100% SUBMITTAL
02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560E601.dwg
DESIGNED BY: E. STEGMAN
DRAWN BY: D. EDWARDS
EDITED BY: D. EDWARDS
CHECKED BY: E. STEGMAN

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
ELECTRICAL
SCHEDULES

REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. FRANKAR	REVIEWED BY: G. F. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
J. M. HALL, CDR APPROVING OFFICER		01/21/20 DATE

PROJECT NUMBER	DRAWING NUMBER
12190963	8560-D
DISCIPLINE/SHT NO	SHEET 28 OF 29
E-601	

DRAWING NOTES

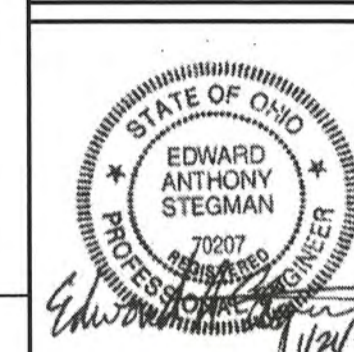
- 01 PROVIDE NEW 60A/3P CIRCUIT BREAKER IN EXISTING SPACE. MATCH EXISTING SQUARE D CIRCUIT BREAKERS.
- 02 PROVIDE NEW 200A/3P CIRCUIT BREAKER IN EXISTING SPACE. MATCH EXISTING SQUARE D CIRCUIT BREAKERS.

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02	12/05/19	95% SUBMITTAL
01	10/29/19	35% SUBMITTAL

A/E PROJECT NO:
CAD FILE NAME: C8560E801.dwg
DESIGNED BY: E. STEGMAN
DRAWN BY: D. EDWARDS
EDITED BY: D. EDWARDS
CHECKED BY: E. STEGMAN

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

**REPAIR HVAC SYSTEM
CG STATION OAK ISLAND
OAK ISLAND NC
MULTI-PURPOSE BUILDING
ELECTRICAL
RISER DIAGRAM**

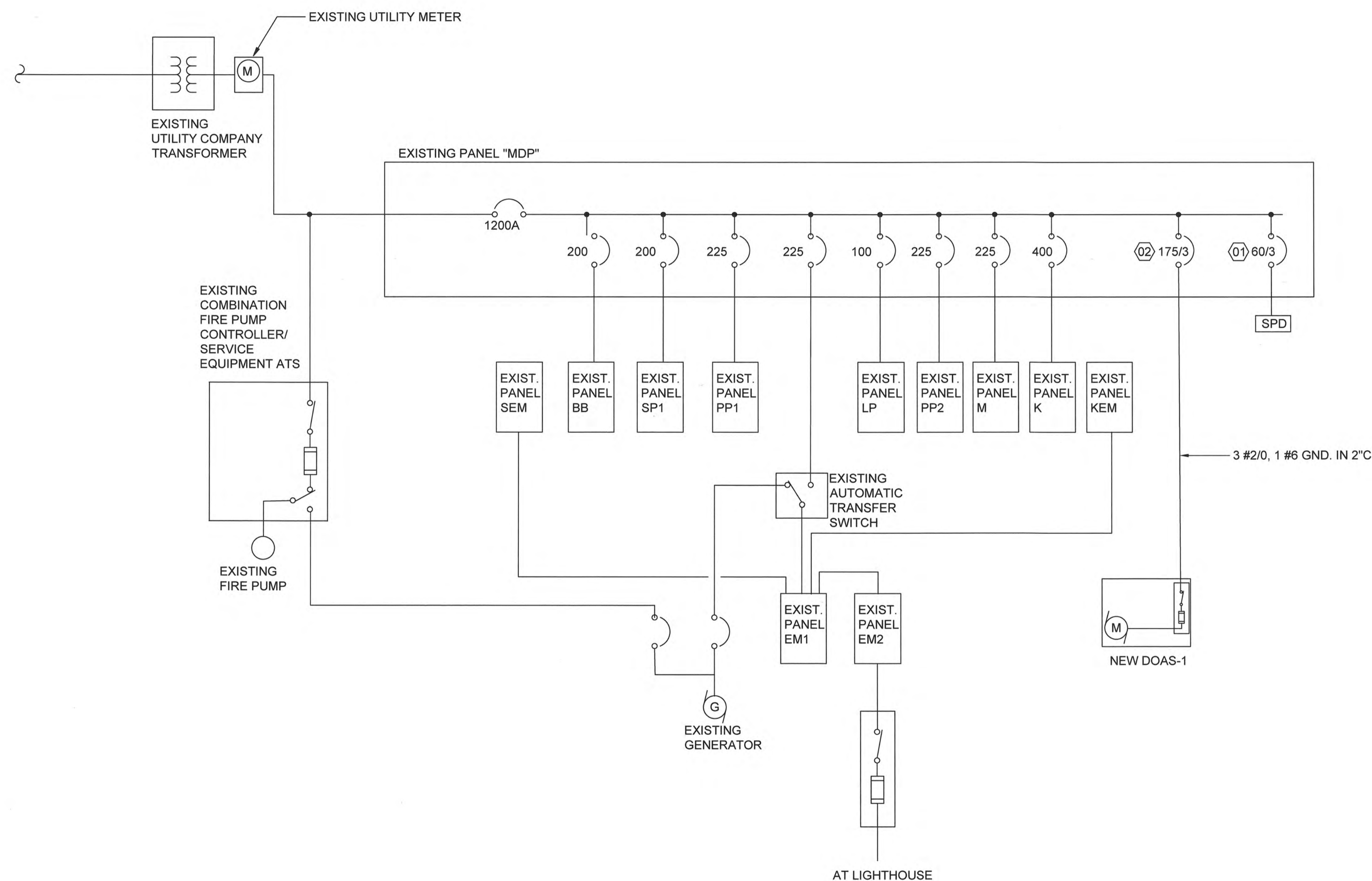
REVIEWED BY: M. S. CAPLES	REVIEWED BY: B. VRANKAR	REVIEWED BY: G. P. LODGE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

J. M. HALL, CDR APPROVING OFFICER	01/21/20 DATE
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PROJECT NUMBER	DRAWING NUMBER
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12190963	8560-D
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DISCIPLINE/SHT NO E-801	SHEET 29 OF 29
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01 **EXISTING SINGLE LINE DIAGRAM**
E-801 NTS