



Celebrating 32 Years of Quality, Design & Excellent Client Service

1306 Rio Grande Blvd. NW, Albuquerque, NM 87104 • 505.255.6400 Voice • 505.268.6954 Fax
www.nca-architects.com info@nca-architects.com

ARCHITECTS • PLANNERS • AIA

ADDENDUM # 2

DATE: 10/14/2021

ARCHITECT

NCA Architects
1306 Rio Grande Blvd NW
Albuquerque, NM 87104

PROJECT

Curry County Courthouse Addition and Renovations
700 N. Main Street
Clovis, NM 88101

OWNER

Curry County, NM
417 Gidding St., Suite #100
Clovis, NM 88101

This addendum forms a part of the Contract Documents and modifies the original drawings dated September 03, 2021 and the specifications dated September 07, 2021. Acknowledge receipt of this addendum in the space provided in the Bid Form. Failure to do so may subject the bidder to disqualification.

A. GENERAL

1. The deadline for the last day to issue RFP Addendums has been extended and the new deadline is October 18, 2021.
2. 'Cornerstone' is an approved substitution for security items in this project.

B. DRAWINGS

3. SHEET A-122
 - a. Revised light fixtures in PUBLIC LOBBY 101, SECURITY 102 and HALL 104. See attached Sheet A-122.
4. SHEET M-002
 - a. Addition of Branch Selector Box Schedule. See attached Sheet M-002.
5. SHEET MD-100
 - a. Remove louvers on west side of main building.
 - b. Relocate existing duct based on As-Built drawings received.
 - c. See attached Sheet MD-100.
6. SHEET M-100
 - a. Relocate louvers to west side of building for existing mechanical equipment.
 - b. Relocate existing duct based on As-Built drawings received.
 - c. Thermostats to be hard wired.
 - d. See attached Sheet M-100.
7. SHEET M-101
 - a. Thermostats to be hard wired.
 - b. See attached Sheet M-101.



Celebrating 32 Years of Quality, Design & Excellent Client Service

1306 Rio Grande Blvd. NW, Albuquerque, NM 87104 • 505.255.6400 Voice • 505.268.6954 Fax
www.nca-architects.com info@nca-architects.com

ARCHITECTS • PLANNERS • AIA

8. SHEET M-200
 - a. Added condensate piping to new BS box.
 - b. Refrigerant sensors added.
 - c. See attached Sheet M-200.

9. SHEET M-201
 - a. Added condensate piping to new BS box.
 - b. Refrigerant sensors added.
 - c. See attached Sheet M-201.

10. SHEET M-302
 - a. Controls Clarification.
 - b. See attached Sheet M-302.

11. SHEET M-401
 - a. Replacement of two branch selector boxes.
 - b. See attached Sheet M-401.

12. SHEET E-001
 - a. Light Fixture Schedule revisions.
 - b. See attached Sheet E-001.

13. SHEET EL-122
 - a. Revise lighting layout and fixtures in addition portion of the project.
 - b. See attached Sheet EL-122.

14. SHEET E-401
 - a. Change the rating of the New SEG in A1 New Work Site Plan from 175kW to 230kW. Refer to the Specifications Section 26 - 3216 for the Standby Engine Generator Requirements.

C. SPECIFICATIONS

15. SECTION 07-2100 PRE-APPLIED SHEET MEMBRANE WATERPROOFING
 - a. See attached for specification section 07-1324.
SECTION 31-2200 GRADING
 - a. See attached for specification section 31-2200.

16. SECTION 31-2316 EXCAVATION
 - b. See attached for specification section 31-2316.

17. SECTION 31-2316-13 TRENCHING
 - c. See attached for specification section 31-2316-13.

18. SECTION 31-2323 FILL



Celebrating 32 Years of Quality, Design & Excellent Client Service

1306 Rio Grande Blvd. NW, Albuquerque, NM 87104 • 505.255.6400 Voice • 505.268.6954 Fax
www.nca-architects.com info@nca-architects.com

ARCHITECTS • PLANNERS • AIA

- d. See attached for specification section 31-2323.

- 19. SECTION 32-1216 ASPHALT PAVING
 - e. See attached for specification section 32-1216.

- 20. SECTION 32-1313 CONCRETE PAVING
 - f. See attached for specification section 32-1313.

- 21. SECTION 33-1116 SITE WATER UTILITY DISTRIBUTION PIPING
 - g. See attached for specification section 33-1116.

END OF ADDENDUM



Celebrating 32 Years of Quality, Design & Excellent Client Service

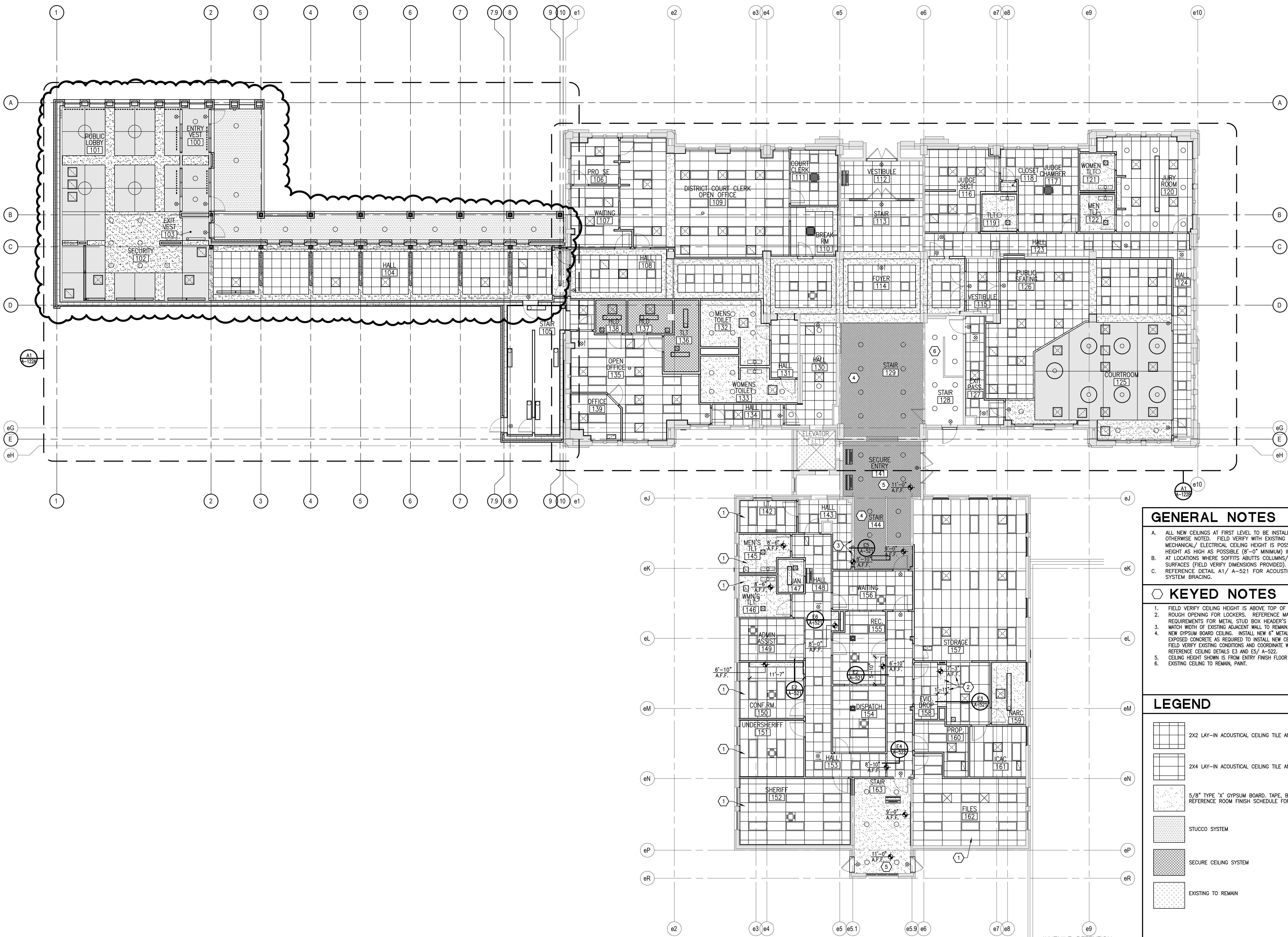
1306 Rio Grande Blvd. NW, Albuquerque, NM 87104 • 505.255.6400 Voice • 505.268.6954 Fax
www.nca-architects.com info@nca-architects.com

ARCHITECTS • PLANNERS • AIA

QUESTIONS:

- **Can the bidding requirements for the (5) additional copies and (1) electronic copy be revised to be due 24 hours after the bid deadline?**
 - **No. One (1) original, five (5) copies and one (1) electronic copy on a USB “memory stick” shall be submitted by the proposal due date of October 26, 2021 at 2:00 p.m. Mountain Time**
- **For the past performance requirements, can the time frame be extended to prior to 2015?**
 - **Yes. Contractors can provide past performance on projects since 2010.**
- **For the past performance examples requirement, can the requirement be changed to “additions and remodeling of Courthouses or similar Judicial Facilities?**
 - **Yes. Contractors may provide experience and past performance on additions and remodeling Courthouses or similar Judicial facilities for item ii of the past performance criteria.**
- **Can the requirement for similar past performance of \$5 million or more be reduced to a small project value or eliminated all together?**
 - **Contractors may provide experience of the General Contractor on additions and remodeling Courthouses or judicial facilities of two million or more. The five-million-dollar requirement shall remain the same for past performance criteria i. “Provide experience of the General Contractor on additions and remodeling buildings of 5 million dollars or more to include:”**
- **Can the bid be submitted electronically instead of in person at Curry County?**
 - **No. The County requires one (1) original, five (5) copies and one (1) electronic copy on a USB “memory stick” to be submitted no later than October 26, 2021 at 2:00 p.m. Mountain Time at the Curry County Administration Office, located at 417 Gidding Street, Suite 100, Clovis, NM 88101.**
- **Can the bid be turned in at the Architect’s office in Albuquerque by the required bid date and time instead of Curry County?**
 - **No. The County must verify proposals were submitted within the requirements of the RFP and by the specified deadline. Proposal also need to be submitted to Curry County for distribution to the local members of the evaluation committee.**

DATE	DESCRIPTION
10/12/21	ADDENDA 02
MK	DATE DESCRIPTION
DRAWN BY: NCA	CHECKED BY: RC
PROJECT NUMBER: A20.05	
DATE: SEPTEMBER 03, 2021	
SHEET TITLE:	



GENERAL NOTES

- A. ALL NEW CEILINGS AT FIRST LEVEL TO BE INSTALLED AT 9'-0" AFF UNLESS OTHERWISE NOTED. FIELD VERIFY WITH EXISTING AND NEW STRUCTURE AND MECHANICAL/ ELECTRICAL CEILING HEIGHT IS POSSIBLE. MAKE CEILING HEIGHT AS HIGH AS POSSIBLE (8'-0" MINIMUM) IF 9'-0" IS NOT POSSIBLE.
- B. AT LOCATIONS WHERE SOFFITS ABUTS COLUMNS/ FURR-OUTS, ALIGN SURFACES (FIELD VERIFY DIMENSIONS PROVIDED).
- C. REFERENCE DETAIL A1/ A-521 FOR ACOUSTICAL LAY-IN CEILING SYSTEM BRACING.

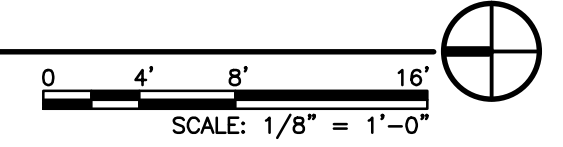
KEYED NOTES

1. FIELD VERIFY CEILING HEIGHT IS ABOVE TOP OF ROOM WINDOW HEAD.
2. ROUGH OPENING FOR LOCKERS. REFERENCE MANUFACTURER'S REQUIREMENTS FOR METAL STUD BOX HEADER'S HEIGHT AND WIDTH.
3. MATCH WIDTH OF EXISTING ADJACENT WALL TO REMAIN.
4. NEW GYPSUM BOARD CEILING. INSTALL NEW 6" METAL STUDS AT 16" AT ALL EXPOSED CONCRETE AS REQUIRED TO INSTALL NEW CEILING RECESSED LIGHTING. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH NEW LIGHTING. REFERENCE CEILING DETAILS E3 AND E5/ A-522.
5. CEILING HEIGHT SHOWN IS FROM ENTRY FINISH FLOOR LEVEL.
6. EXISTING CEILING TO REMAIN, PAINT.

LEGEND

	2X2 LAY-IN ACOUSTICAL CEILING TILE AND GRID
	2X4 LAY-IN ACOUSTICAL CEILING TILE AND GRID
	5/8" TYPE 'X' GYPSUM BOARD, TAPE, BED, TEXTURE, PAINT REFERENCE ROOM FINISH SCHEDULE FOR DIAMOND FINISH
	STUCCO SYSTEM
	SECURE CEILING SYSTEM
	EXISTING TO REMAIN

A1 OVERALL FIRST LEVEL REFLECTED CEILING PLAN



NEW INDOOR UNIT SCHEDULES

Table with columns: Equipment Name, Manufacturer, Model Code, Connected Equipment, Product Description, Refrigerant, Rated Performance (Cooling, Heating), Correction Capacity Value in Design Condition, Fan, Electricity Characteristic, Product Weight, Refrigerant Pipe, Local Controller, Note.

NOTES:

- 1. Selection Based On Equipment Manufactured By Samsung.
2. See outdoor condensing unit schedule for details regarding connection capacity, outdoor conditions and other factors associated with corrected capacities.
3. Indoor (air handling) unit(s) and outdoor (condensing) unit(s) shall be of the same manufacturer and shall be certified for use with each other.
4. Size refrigerant lines in accordance with manufacturer design software after estimated line lengths that are provided and included in the report.
5. Mechanical contractor shall size refrigerant lines per manufacturer's recommendations based on actual routing of refrigerant lines.
6. Corrected capacities are based on the entering air conditions as noted in the above table.
7. Unit must be capable of delivering an air current that is under 0.15 m/s. Air velocity that is below 0.15 m/s is considered "still air" as defined by ASHRAE 55-2013.
8. Local zone controllers are noted above in the "Local Controller" column.
9. The indoor unit shall include a factory installed condensate pump.
10. The system shall connect to Samsung central control solutions.
11. Static pressure indicated above is the external static pressure which excludes filter pressure drop.
12. Airflow is based on standard external static pressure rating.
13. Indoor unit shall be capable of supply air temperature control and come with a SAT sensor.
14. Note indoor unit serial numbers on plans during install for future reference during commissioning. For heat recovery systems, also note which port(s) each indoor is connected to.

NEW OUTDOOR UNIT SCHEDULES

Table with columns: Equipment Name, Manufacturer, Model Code, Product Description, Refrigerant, Rated Performance (Ton, Cooling, Heating), Correction Capacity Value in Design Condition, Fan, Electricity Characteristic, Product Weight, Refrigerant Pipe, Note.

NOTES:

- 1. Selection Based On Equipment Manufactured By Samsung.
2. Certified in accordance with the AHRI Variable Refrigerant Flow Multi-Split Air-Conditioners and Heat Pump (VRF) Certification Program which is based on the latest edition of AHRI Standard 1230.
3. Corrected capacities are based on the entering air conditions as noted in the above table along with pipe length and vertical separation.
4. System must be capable of simultaneous heating and cooling.
5. Refer to the manufacturer's engineering technical data book for sound rating details.
6. Size refrigerant lines in accordance with manufacturer design software after estimated line lengths are provided and included in the report.
7. Modular system condensing unit tee's shall be provided by the VRF manufacturer.
8. Before piping modular condensing units, review anticipated pipe lengths between modules to verify if a vertical trap is required.
9. Air source condensing units shall have rated capacity data from -13°F - 120°F (-25°C - 48.9°C).
10. Provide dedicated 16/2 stranded, shielded communication wire between condensing unit, indoor unit(s), and heat recovery Mode Control Unit(s) (MCU).
11. Provide dedicated 16/2 stranded, shielded communication wire between the MAIN condensing unit and SUB condensing unit(s).
12. Condensing units shall have dual compressors and be capable of isolating a failed compressor and have partial load operation for a given amount of run hours.
13. Air source condensing units shall be capable of up to 0.31" ESP on fan discharge for ducting purposes.
14. Note outdoor unit serial numbers on plans during install for future reference during commissioning.
15. The system shall connect to Samsung central control solutions.
16. The condensing unit shall feature Intelligent Defrost logic with accumulated learning to monitor outdoor unit temperature, air resistance across the condenser coil, and other points to only perform defrost cycles when necessary. The Intelligent Defrost logic does not have a maximum fixed time duration between defrost cycles, which extends heating period duration and reduces total defrost cycles.

ENERGY RECOVERY VENTILATOR SCHEDULE

Table with columns: Model Information, Fan Data, Energy Recovery Data (Summer/Cooling, Winter/Heating), Unit Information (Filters).

NEW AND EXISTING BRANCH SELECTOR BOX SCHEDULE

Table with columns: Equipment Name, Manufacturer, Model Code, Rated Capacity, # of Ports, Voltage, MCA, MOC, Dimensions W x H x D.

REPLACEMENT

REPLACEMENT



1306 RIO GRANDE BLVD NW ALBUQUERQUE, NM 87104 505-255-6400 505-268-6954 FAX WWW.NCA-ARCHITECTS.COM

ARCHITECT

CONSULTANT



09/03/21

PROJECT TITLE

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS

CLOVIS NEW MEXICO

REVISIONS:

1 10/08/21 MECH ADDENDUM

DRAWN BY: CHECKED BY:

MTD PS

PROJECT NUMBER:

A20.05

DATE:

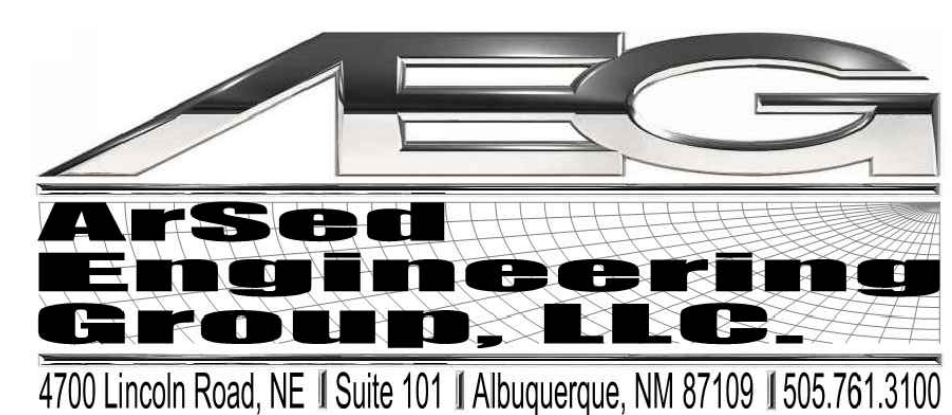
09.03.21

SHEET TITLE:

MECHANICAL SCHEDULES

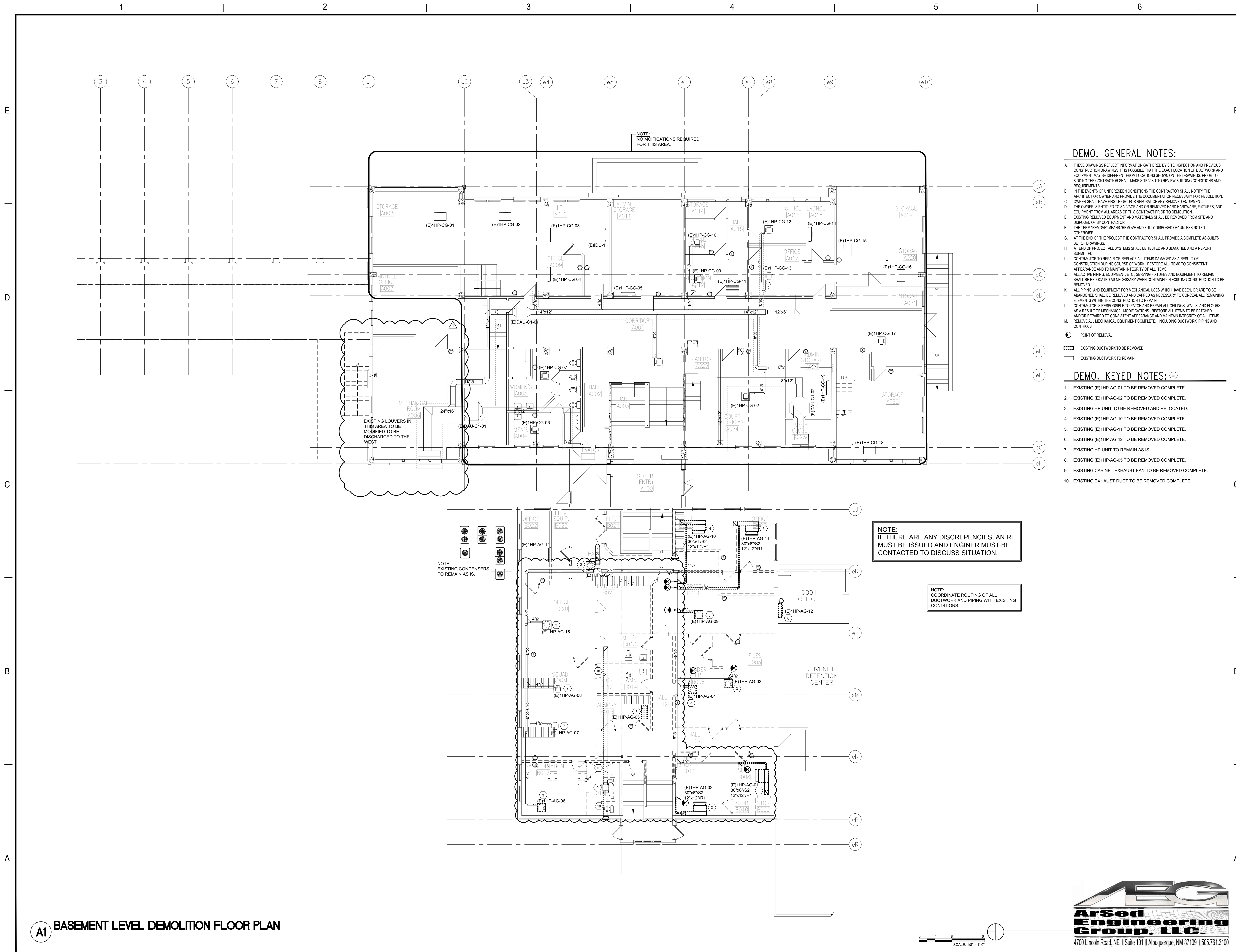
SHEET NO:

M-002

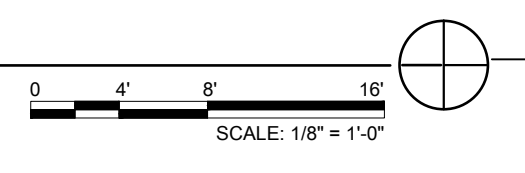


4700 Lincoln Road, NE | Suite 101 | Albuquerque, NM 87109 | 505.761.3100

XXXXXXXX



A1 BASEMENT LEVEL DEMOLITION FLOOR PLAN



NCA
ARCHITECTS - PLANNERS - AIA

1306 RIO GRANDE BLVD NW
ALBUQUERQUE, NM 87104
505-255-6400 505-268-6954 FAX
WWW.NCA-ARCHITECTS.COM

ARCHITECT

CONSULTANT



PROJECT TITLE
CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS

CLOVIS
NEW MEXICO

REVISIONS:

1	10/08/21	MECH ADDENDUM

DRAWN BY: CHECKED BY:
TW RC

PROJECT NUMBER:
A20.05

DATE:
09.03.21

SHEET TITLE:
BASEMENT LEVEL MECHANICAL DEMOLITION FLOOR PLAN

SHEET NO:
MD-100

DEMO. GENERAL NOTES:

- A. THESE DRAWINGS REFLECT INFORMATION GATHERED BY SITE INSPECTION AND PREVIOUS CONSTRUCTION DRAWINGS. IT IS POSSIBLE THAT THE EXACT LOCATION OF DUCTWORK AND EQUIPMENT MAY BE DIFFERENT FROM LOCATIONS SHOWN ON THE DRAWINGS. PRIOR TO BIDDING THE CONTRACTOR SHALL MAKE SITE VISIT TO REVIEW BUILDING CONDITIONS AND REQUIREMENTS.
 - B. IN THE EVENT OF UNPREDICTED CONDITIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OR OWNER AND PROVIDE THE DOCUMENTATION NECESSARY FOR RESOLUTION.
 - C. OWNER SHALL HAVE FIRST RIGHT FOR REFUSAL OF ANY REMOVED EQUIPMENT.
 - D. THE OWNER IS ENTITLED TO SALVAGE AND OR REMOVE HARDWARE, FIXTURES, AND EQUIPMENT FROM ALL AREAS OF THIS CONTRACT PRIOR TO DEMOLITION.
 - E. EXISTING REMOVED EQUIPMENT AND MATERIALS SHALL BE REMOVED FROM SITE AND DISPOSED OF BY CONTRACTOR.
 - F. THE TERM "REMOVE" MEANS "REMOVE AND FULLY DISPOSED OF" UNLESS NOTED OTHERWISE.
 - G. AT THE END OF THE PROJECT THE CONTRACTOR SHALL PROVIDE A COMPLETE AS-BUILT SET OF DRAWINGS.
 - H. AT END OF PROJECT ALL SYSTEMS SHALL BE TESTED AND BLENCHED AND A REPORT SUBMITTED.
 - I. CONTRACTOR TO REPAIR OR REPLACE ALL ITEMS DAMAGED AS A RESULT OF CONSTRUCTION DURING COURSE OF WORK. RESTORE ALL ITEMS TO CONSISTENT APPEARANCE AND TO MAINTAIN INTEGRITY OF ALL ITEMS.
 - J. ALL ACTIVE PIPING, EQUIPMENT, ETC., SERVING FIXTURES AND EQUIPMENT TO REMAIN SHALL BE RELOCATED AS NECESSARY WHEN CONTAINED IN EXISTING CONSTRUCTION TO BE REMOVED.
 - K. ALL PIPING AND EQUIPMENT FOR MECHANICAL USES WHICH HAVE BEEN, OR ARE TO BE ABANDONED SHALL BE REMOVED AND CAPPED AS NECESSARY TO CONVEAL ALL REMAINING ELEMENTS WITHIN THE CONSTRUCTION TO REMAIN.
 - L. CONTRACTOR IS RESPONSIBLE TO PATCH AND REPAIR ALL CEILINGS, WALLS, AND FLOORS AS A RESULT OF MECHANICAL MODIFICATIONS. RESTORE ALL ITEMS TO BE PATCHED AND/OR REPAIRED TO CONSISTENT APPEARANCE AND MAINTAIN INTEGRITY OF ALL ITEMS.
 - M. REMOVE ALL MECHANICAL EQUIPMENT COMPLETE, INCLUDING DUCTWORK, PIPING AND CONTROLS.
- POINT OF REMOVAL
--- EXISTING DUCTWORK TO BE REMOVED
--- EXISTING DUCTWORK TO REMAIN

DEMO. KEYED NOTES:

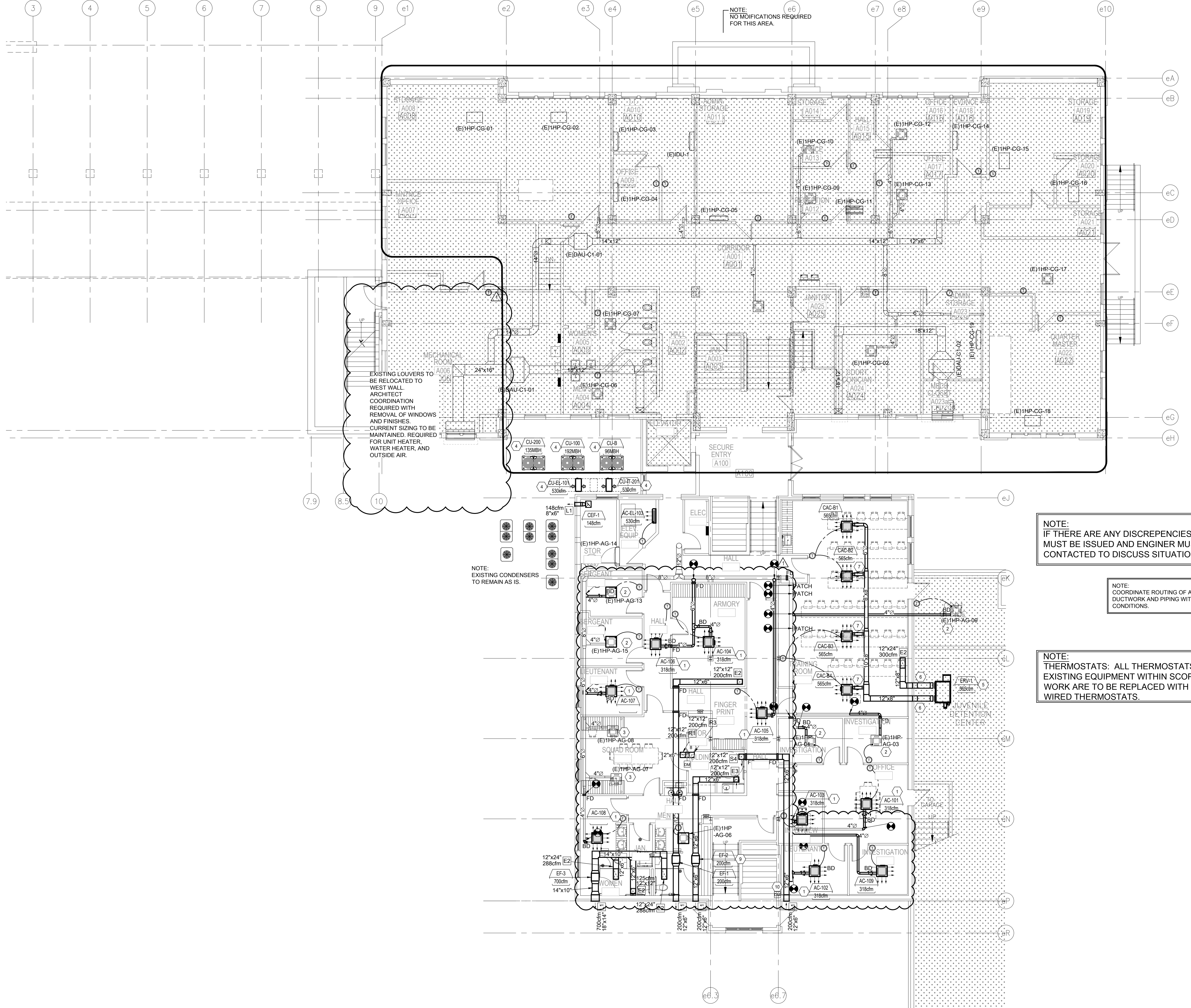
- 1. EXISTING (E)1HP-AG-01 TO BE REMOVED COMPLETE.
- 2. EXISTING (E)1HP-AG-02 TO BE REMOVED COMPLETE.
- 3. EXISTING HP UNIT TO BE REMOVED AND RELOCATED.
- 4. EXISTING (E)1HP-AG-10 TO BE REMOVED COMPLETE.
- 5. EXISTING (E)1HP-AG-11 TO BE REMOVED COMPLETE.
- 6. EXISTING (E)1HP-AG-12 TO BE REMOVED COMPLETE.
- 7. EXISTING HP UNIT TO REMAIN AS IS.
- 8. EXISTING (E)1HP-AG-05 TO BE REMOVED COMPLETE.
- 9. EXISTING CABINET EXHAUST FAN TO BE REMOVED COMPLETE.
- 10. EXISTING EXHAUST DUCT TO BE REMOVED COMPLETE.

NOTE:
IF THERE ARE ANY DISCREPANCIES, AN RFI
MUST BE ISSUED AND ENGINEER MUST BE
CONTACTED TO DISCUSS SITUATION.

NOTE:
COORDINATE ROUTING OF ALL
DUCTWORK AND PIPING WITH EXISTING
CONDITIONS.

NOTE:
EXISTING CONDENSERS
TO REMAIN AS IS.

NOTE:
NO MODIFICATIONS REQUIRED
FOR THIS AREA.



NEW GENERAL NOTES:

- A. THESE DRAWINGS REFLECT INFORMATION GATHERED BY SITE INSPECTION AND PREVIOUS CONSTRUCTION DRAWINGS. IT IS POSSIBLE THAT THE EXACT LOCATION OF DUCTWORK AND EQUIPMENT MAY BE DIFFERENT FROM LOCATIONS SHOWN ON THE DRAWINGS. PRIOR TO BIDDING THE CONTRACTOR SHALL MAKE SITE VISIT TO REVIEW BUILDING CONDITIONS AND REQUIREMENTS.
- B. COORDINATE THE LOCATION OF ROOF PENETRATIONS WITH ROOF STRUCTURE.
- C. ALL ROOF PENETRATION SHALL BE FLASHED AND COUNTER FLASHED AS REQUIRED TO BE WATER TIGHT.
- D. FRAME EACH ROOF OPENING WITH WELDED ANGLE IRON FRAME.
- E. VERIFY EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION. DUCT CONNECTIONS SHALL BE MADE AS REQUIRED.
- F. GAUGE OF DUCT WORK SHALL BE PER SMACNA'S RECOMMENDATIONS.
- G. MOUNT TESTS AT 4' ABOVE FINISH FLOOR LEVEL.
- H. WIRING OF SMOKE DETECTORS BY ELECTRICAL CONTRACTOR.
- I. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- J. ALL EXPOSED DUCTWORK TO BE PAINT GRIP STEEL. COLOR TO BE SPECIFIED BY ARCHITECT.
- K. ALL MATERIALS IN PLENUM SHALL HAVE A FLAME-SPREAD INDEX OF LESS THAN 25 AND SMOKE-DEVELOPED RATING INDEX LESS THAN 50. THEREFOR, PLENUM IS RATED TO ALLOW FOR PLENUM RETURN AIR FLOW IN COMPLIANCE WITH 602.2.

- POINT OF CONNECTION, NEW TO EXISTING.
- EXISTING DUCTWORK TO REMAIN.
- NEW DUCTWORK.

NEW KEYED NOTES: #

- 1. APPROXIMATE LOCATION OF NEW CEILING CASSETTE. UNIT TO BE SET LEVEL AND INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
- 2. NEW LOCATION OF RELOCATED EXISTING HP UNIT.
- 3. EXISTING HP UNIT TO REMAIN AS IS.
- 4. APPROXIMATE LOCATION OF NEW CONDENSER LOCATED ON GRADE. UNIT TO BE SET LEVEL AND INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS. PROVIDE 6" THICK CONCRETE PAD WITH FOOT PRINT 6" GREATER THAN EQUIPMENT.
- 5. APPROXIMATE LOCATION OF ERV LOCATED ON ROOF. UNIT TO BE SET LEVEL AND INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS. PROVIDE FACTORY FURNISHED EQUIPMENT PLATFORM.
- 6. ROUTE SUPPLY AND EXHAUST DUCT TO WALL AND RISE EXPOSED UP TO CEILING SPACE AND INTER BUILDING AT CEILING SPACE. PENETRATION TO BE SEALED WATER TIGHT. FLASH AND COUNTER FLASH. PROVIDE 2" INSULATION WITH 28 GAUGE GALVANIZED STEEL OR EQUIVALENT GAUGE ALUMINUM SHEETING.
- 7. PROVIDE 6" BRANCH DUCT TO CASSETTE WITH MANUAL LOCKING DAMPER SET AT 75cm.
- 8. PROVIDE TRANSFER AIR BETWEEN ADJACENT SPACE TO THE HOLDING CELL. PROVIDE SECURITY GRILLE IN HOLDING CELL. TRANSITION DUCT BETWEEN GRILLES TO BE 12"Ø. PROVIDE 120 VOLT, MOTORIZED DAMPER, NORMALLY OPEN (N.O.) IF FIRE ALARM IS ACTIVATED, TRANSFER SUPPLY AIR INTO HOLDING CELL TO BE CLOSED. DAMPER SEQUENCE IS ACTIVATED FROM SMOKE DETECTOR IN HOLDING CELL.
- 9. EXHAUST FAN UTILIZED FOR SMOKE REMOVAL UPON IF FIRE ALARM ACTIVATED. EXHAUST FAN TO REMAIN IN ON POSITION 100% OF THE TIME.
- 10. PROVIDE SUPPLY AIR SUPPLY FROM NORMALLY CLOSED (N.C.) 120 VOLT MOTORIZED DAMPER. PROVIDE SECURITY GRILLE IN HOLDING CELL. IF FIRE ALARM IS ACTIVATED, SUPPLY AIR FROM OUTSIDE AIR LOUVER TO BE OPENED. DAMPER SEQUENCE IS ACTIVATED FROM SMOKE DETECTOR IN HOLDING CELL.

NOTE: IF THERE ARE ANY DISCREPANCIES, AN RFI MUST BE ISSUED AND ENGINEER MUST BE CONTACTED TO DISCUSS SITUATION.

NOTE: COORDINATE ROUTING OF ALL DUCTWORK AND PIPING WITH EXISTING CONDITIONS.

NOTE: THERMOSTATS: ALL THERMOSTATS FOR EXISTING EQUIPMENT WITHIN SCOPE OF WORK ARE TO BE REPLACED WITH HARD WIRED THERMOSTATS.



1306 RIO GRANDE BLVD NW
ALBUQUERQUE, NM 87104
505-255-6400 505-268-6954 FAX
WWW.NCA-ARCHITECTS.COM

ARCHITECT

CONSULTANT



PROJECT TITLE

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS

CLOVIS
NEW MEXICO

REVISIONS:

NO.	DATE	DESCRIPTION
1	10/08/21	MECH ADDENDUM

DRAWN BY: TW CHECKED BY: RC

PROJECT NUMBER: A20.05

DATE: 09.03.21

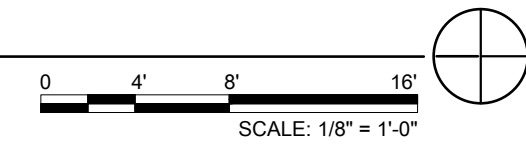
SHEET TITLE:

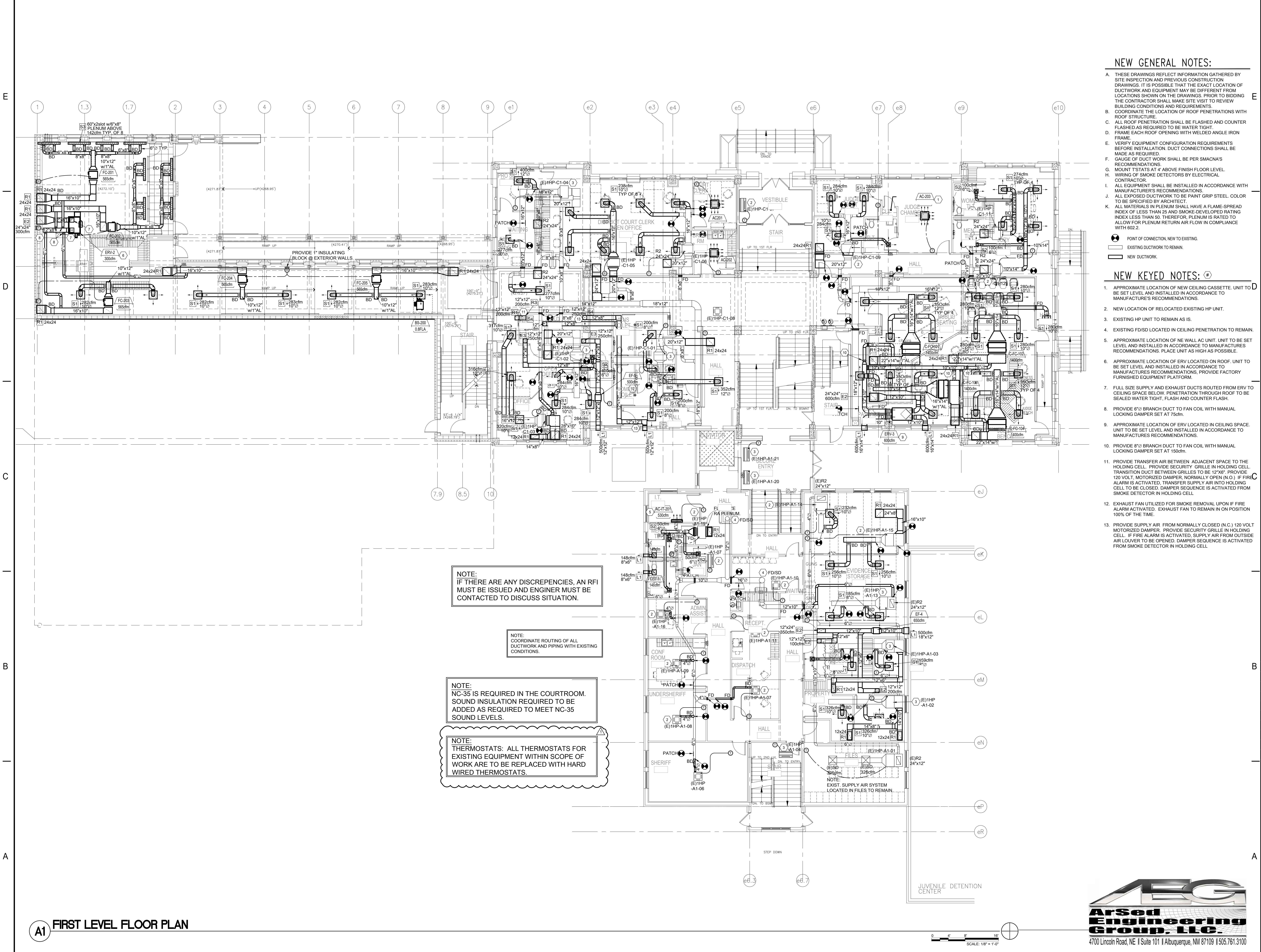
BASEMENT LEVEL MECHANICAL FLOOR PLAN

SHEET NO:

M-100

A1 BASEMENT LEVEL FLOOR PLAN





NEW GENERAL NOTES:

- A. THESE DRAWINGS REFLECT INFORMATION GATHERED BY SITE INSPECTION AND PREVIOUS CONSTRUCTION DRAWINGS. IT IS POSSIBLE THAT THE EXACT LOCATION OF DUCTWORK AND EQUIPMENT MAY BE DIFFERENT FROM LOCATIONS SHOWN ON THE DRAWINGS. PRIOR TO BIDDING THE CONTRACTOR SHALL MAKE SITE VISIT TO REVIEW BUILDING CONDITIONS AND REQUIREMENTS.
- B. COORDINATE THE LOCATION OF ROOF PENETRATIONS WITH ROOF STRUCTURE.
- C. ALL ROOF PENETRATION SHALL BE FLASHED AND COUNTER FLASHED AS REQUIRED TO BE WATER TIGHT.
- D. FRAME EACH ROOF OPENING WITH WELDED ANGLE IRON FRAME.
- E. VERIFY EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION. DUCT CONNECTIONS SHALL BE MADE AS REQUIRED.
- F. GAUGE OF DUCT WORK SHALL BE PER SMACNA'S RECOMMENDATIONS.
- G. MOUNT T'STATS AT 4' ABOVE FINISH FLOOR LEVEL.
- H. WIRING OF SMOKE DETECTORS BY ELECTRICAL CONTRACTOR.
- I. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- J. ALL EXPOSED DUCTWORK TO BE PAINT GRIP STEEL. COLOR TO BE SPECIFIED BY ARCHITECT.
- K. ALL MATERIALS IN PLENUM SHALL HAVE A FLAME-SPREAD INDEX OF LESS THAN 25 AND SMOKE DEVELOPED RATING INDEX LESS THAN 50. THEREFORE, PLENUM IS RATED TO ALLOW FOR PLENUM RETURN AIR FLOW IN COMPLIANCE WITH 902.2.

- POINT OF CONNECTION, NEW TO EXISTING
- EXISTING DUCTWORK TO REMAIN
- ▭ NEW DUCTWORK

NEW KEYED NOTES:

- 1. APPROXIMATE LOCATION OF NEW CEILING CASSETTE. UNIT TO BE SET LEVEL AND INSTALLED IN ACCORDANCE TO MANUFACTURERS RECOMMENDATIONS.
- 2. NEW LOCATION OF RELOCATED EXISTING HP UNIT.
- 3. EXISTING HP UNIT TO REMAIN AS IS.
- 4. EXISTING FD/SD LOCATED IN CEILING PENETRATION TO REMAIN.
- 5. APPROXIMATE LOCATION OF NEW WALL AC UNIT. UNIT TO BE SET LEVEL AND INSTALLED IN ACCORDANCE TO MANUFACTURERS RECOMMENDATIONS. PLACE UNIT AS HIGH AS POSSIBLE.
- 6. APPROXIMATE LOCATION OF ERV LOCATED ON ROOF. UNIT TO BE SET LEVEL AND INSTALLED IN ACCORDANCE TO MANUFACTURERS RECOMMENDATIONS. PROVIDE FACTORY FURNISHED EQUIPMENT PLATFORM.
- 7. FULL SIZE SUPPLY AND EXHAUST DUCTS ROUTED FROM ERV TO CEILING SPACE BELOW. PENETRATION THROUGH ROOF TO BE SEALED WATER TIGHT. FLASH AND COUNTER FLASH.
- 8. PROVIDE 6"Ø BRANCH DUCT TO FAN COIL WITH MANUAL LOCKING DAMPER SET AT 75dm.
- 9. APPROXIMATE LOCATION OF ERV LOCATED IN CEILING SPACE. UNIT TO BE SET LEVEL AND INSTALLED IN ACCORDANCE TO MANUFACTURERS RECOMMENDATIONS.
- 10. PROVIDE 6"Ø BRANCH DUCT TO FAN COIL WITH MANUAL LOCKING DAMPER SET AT 150dm.
- 11. PROVIDE TRANSFER AIR BETWEEN ADJACENT SPACE TO THE HOLDING CELL. PROVIDE SECURITY GRILLE IN HOLDING CELL. TRANSITION DUCT BETWEEN GRILLES TO BE 12"x6". PROVIDE 120 VOLT, MOTORIZED DAMPER, NORMALLY OPEN (N.O.) IF FIRE ALARM IS ACTIVATED. TRANSFER SUPPLY AIR INTO HOLDING CELL TO BE CLOSED. DAMPER SEQUENCE IS ACTIVATED FROM SMOKE DETECTOR IN HOLDING CELL.
- 12. EXHAUST FAN UTILIZED FOR SMOKE REMOVAL UPON IF FIRE ALARM ACTIVATED. EXHAUST FAN TO REMAIN IN ON POSITION 100% OF THE TIME.
- 13. PROVIDE SUPPLY AIR FROM NORMALLY CLOSED (N.C.) 120 VOLT MOTORIZED DAMPER. PROVIDE SECURITY GRILLE IN HOLDING CELL. IF FIRE ALARM IS ACTIVATED, SUPPLY AIR FROM OUTSIDE AIR LOUVER TO BE OPENED. DAMPER SEQUENCE IS ACTIVATED FROM SMOKE DETECTOR IN HOLDING CELL.

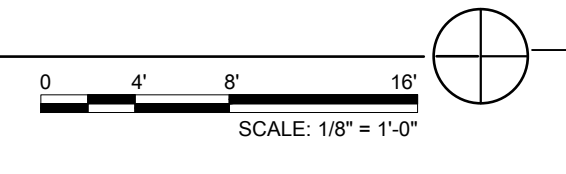
NOTE:
IF THERE ARE ANY DISCREPANCIES, AN RFI MUST BE ISSUED AND ENGINEER MUST BE CONTACTED TO DISCUSS SITUATION.

NOTE:
COORDINATE ROUTING OF ALL DUCTWORK AND PIPING WITH EXISTING CONDITIONS.

NOTE:
NC-35 IS REQUIRED IN THE COURTROOM. SOUND INSULATION REQUIRED TO BE ADDED AS REQUIRED TO MEET NC-35 SOUND LEVELS.

NOTE:
THERMOSTATS: ALL THERMOSTATS FOR EXISTING EQUIPMENT WITHIN SCOPE OF WORK ARE TO BE REPLACED WITH HARD WIRED THERMOSTATS.

A1 FIRST LEVEL FLOOR PLAN



1306 RIO GRANDE BLVD NW
ALBUQUERQUE, NM 87104
505-255-6400 505-268-6954 FAX
WWW.NCA-ARCHITECTS.COM

ARCHITECT

CONSULTANT



PROJECT TITLE
CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS

CLOVIS
NEW MEXICO

REVISIONS:

NO.	DATE	DESCRIPTION
1	10/08/21	MECH ADDENDUM

DRAWN BY: TW CHECKED BY: RC

PROJECT NUMBER: A20.05

DATE: 09.03.21

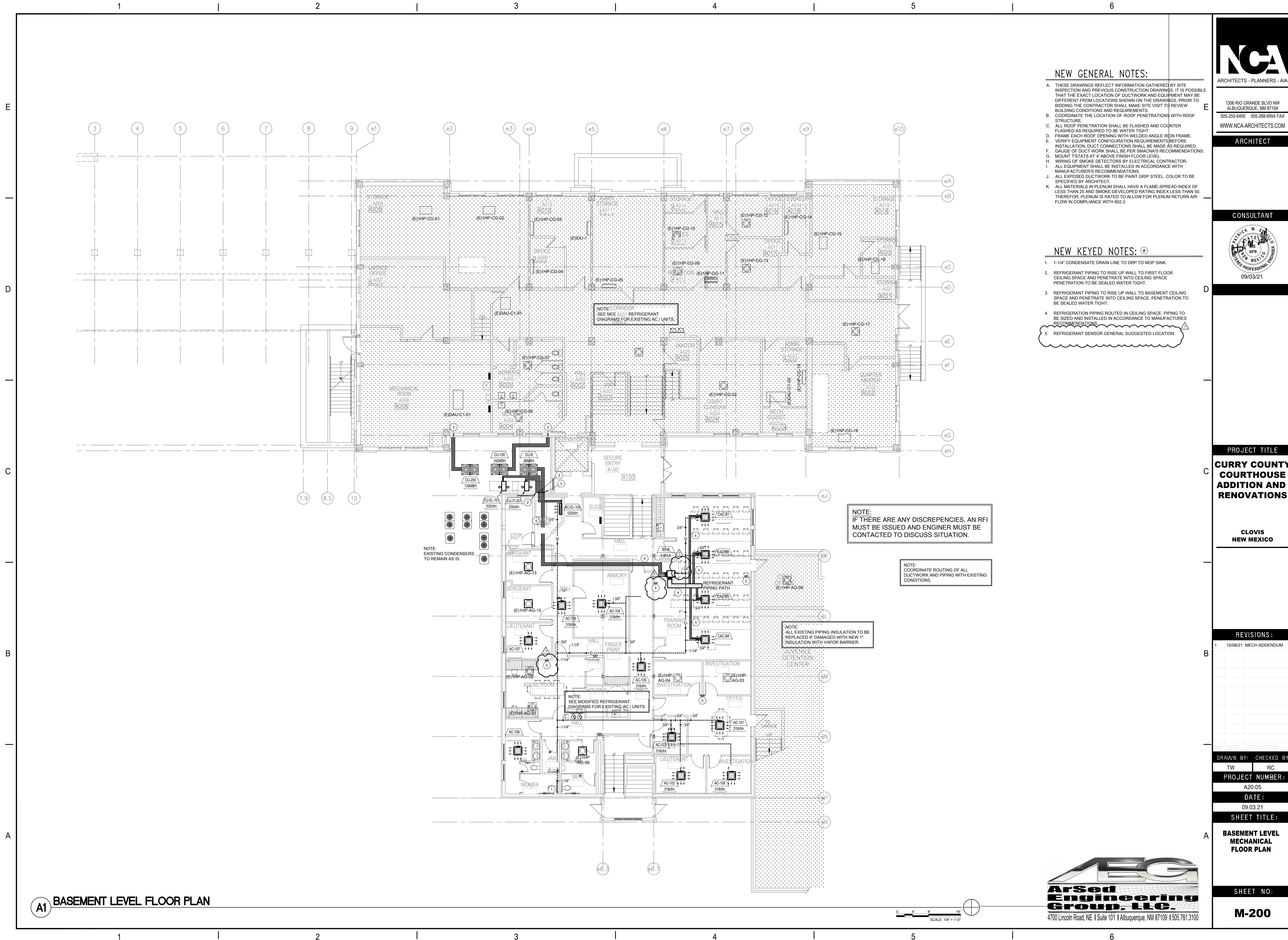
SHEET TITLE:

FIRST LEVEL MECHANICAL FLOOR PLAN

SHEET NO:

M-101





NEW GENERAL NOTES:

- THESE DRAWINGS REFLECT INFORMATION GATHERED BY SITE INSPECTION AND PREVIOUS CONSTRUCTION DRAWINGS. IT IS POSSIBLE THAT THE EXACT LOCATION OF DUCTWORK AND EQUIPMENT MAY BE DIFFERENT FROM LOCATIONS SHOWN ON THE DRAWINGS. PRIOR TO BIDDING THE CONTRACTOR SHALL MAKE SITE VISIT TO REVIEW BUILDING CONDITIONS AND REQUIREMENTS.
- COORDINATE THE LOCATION OF ROOF PENETRATIONS WITH ROOF STRUCTURE.
- ALL ROOF PENETRATION SHALL BE FLASHED AND COUNTER FLASHED AS REQUIRED TO BE WATER TIGHT.
- FRAME EACH ROOF OPENING WITH WELDED ANGLE IRON FRAME.
- VERIFY EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION. DUCT CONNECTIONS SHALL BE MADE AS REQUIRED.
- GAUGE OF DUCT WORK SHALL BE PER SMACNA'S RECOMMENDATIONS.
- MOUNT T'STATS AT 4' ABOVE FINISH FLOOR LEVEL.
- WIRING OF SMOKE DETECTORS BY ELECTRICAL CONTRACTOR.
- ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ALL EXPOSED DUCTWORK TO BE PAINT GRIP STEEL. COLOR TO BE SPECIFIED BY ARCHITECT.
- ALL MATERIALS IN PLENUM SHALL HAVE A FLAME-SPREAD INDEX OF LESS THAN 25 AND SMOKE-DEVELOPED RATING INDEX LESS THAN 50. THEREFOR, PLENUM IS RATED TO ALLOW FOR PLENUM RETURN AIR FLOW IN COMPLIANCE WITH 902.2.

NEW KEYED NOTES:

- 1-1/4" CONDENSATE DRAIN LINE TO DRP TO MOP SINK.
- REFRIGERANT PIPING TO RISE UP WALL TO FIRST FLOOR CEILING SPACE AND PENETRATE INTO CEILING SPACE. PENETRATION TO BE SEALED WATER TIGHT.
- REFRIGERANT PIPING TO RISE UP WALL TO BASEMENT CEILING SPACE AND PENETRATE INTO CEILING SPACE. PENETRATION TO BE SEALED WATER TIGHT.
- REFRIGERATION PIPING ROUTED IN CEILING SPACE. PIPING TO BE SIZED AND INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
- REFRIGERANT SENSOR GENERAL SUGGESTED LOCATION

NOTE:
IF THERE ARE ANY DISCREPANCIES, AN RFI MUST BE ISSUED AND ENGINEER MUST BE CONTACTED TO DISCUSS SITUATION.

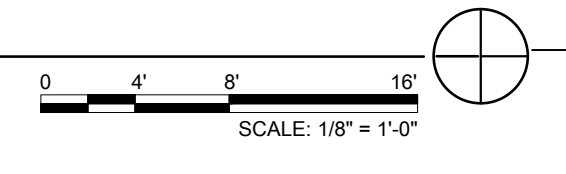
NOTE:
COORDINATE ROUTING OF ALL DUCTWORK AND PIPING WITH EXISTING CONDITIONS.

NOTE:
ALL EXISTING PIPING INSULATION TO BE REPLACED IF DAMAGED WITH NEW 1" INSULATION WITH VAPOR BARRIER.

NOTE:
EXISTING CONDENSERS TO REMAIN AS IS.

NOTE:
SEE MODIFIED REFRIGERANT DIAGRAMS FOR EXISTING AC / UNITS.

A1 BASEMENT LEVEL FLOOR PLAN



Armed Engineering Group, LLC.
4700 Lincoln Road, NE | Suite 101 | Albuquerque, NM 87109 | 505.761.3100



1306 RIO GRANDE BLVD NW
ALBUQUERQUE, NM 87104
505-255-6400 505-268-6954 FAX
WWW.NCA-ARCHITECTS.COM

ARCHITECT

CONSULTANT



PROJECT TITLE
CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS

CLOVIS
NEW MEXICO

REVISIONS:

NO.	DATE	DESCRIPTION
1	10/08/21	MECH ADDENDUM

DRAWN BY: TW CHECKED BY: RC

PROJECT NUMBER: A20.05

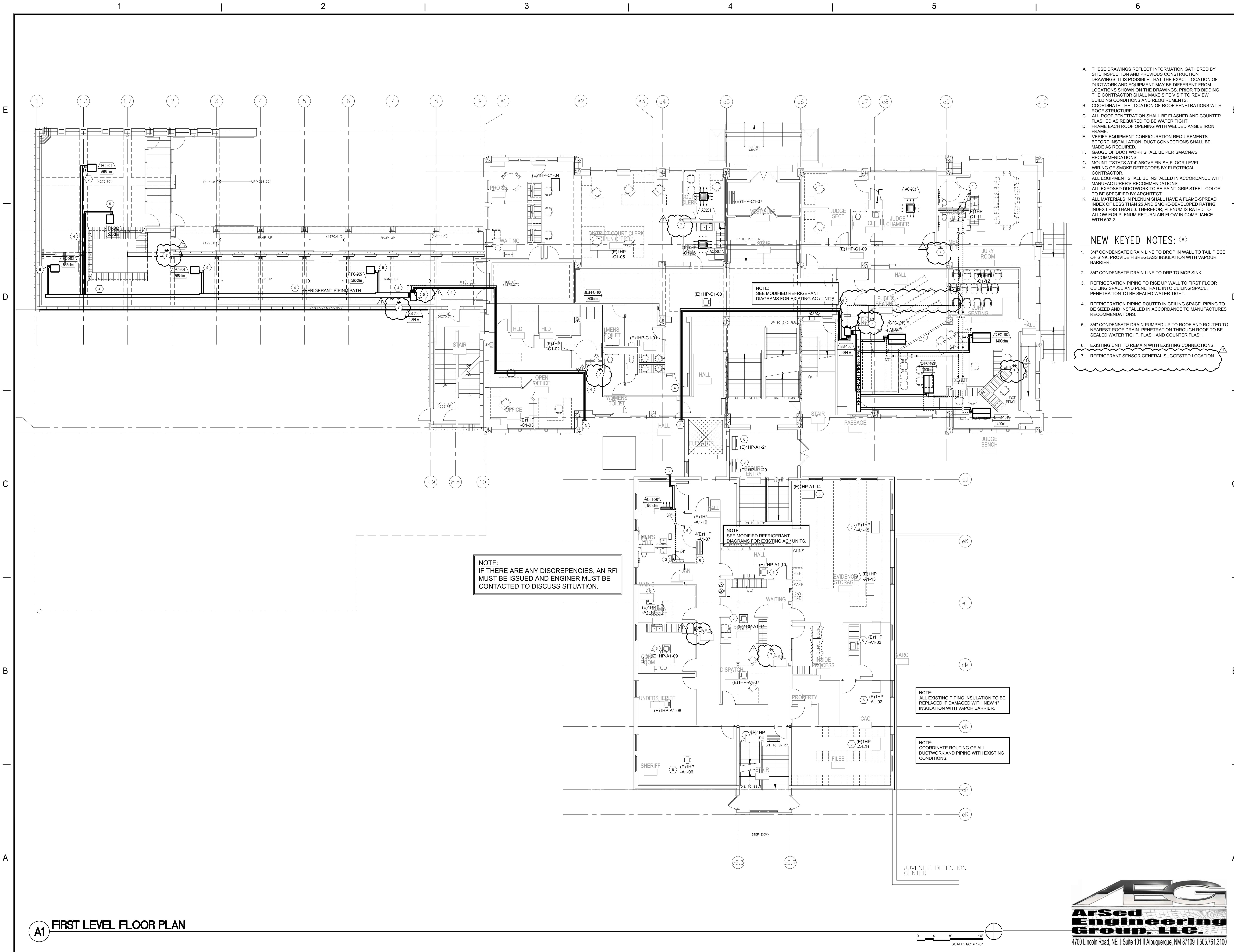
DATE: 09.03.21

SHEET TITLE:

BASEMENT LEVEL MECHANICAL FLOOR PLAN

SHEET NO:

M-200



- A. THESE DRAWINGS REFLECT INFORMATION GATHERED BY SITE INSPECTION AND PREVIOUS CONSTRUCTION DRAWINGS. IT IS POSSIBLE THAT THE EXACT LOCATION OF DUCTWORK AND EQUIPMENT MAY BE DIFFERENT FROM LOCATIONS SHOWN ON THE DRAWINGS. PRIOR TO BIDDING THE CONTRACTOR SHALL MAKE SITE VISIT TO REVIEW BUILDING CONDITIONS AND REQUIREMENTS.
- B. COORDINATE THE LOCATION OF ROOF PENETRATIONS WITH ROOF STRUCTURE.
- C. ALL ROOF PENETRATIONS SHALL BE FLASHED AND COUNTER FLASHED AS REQUIRED TO BE WATER TIGHT.
- D. FRAME EACH ROOF OPENING WITH WELDED ANGLE IRON FRAME.
- E. VERIFY EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION. DUCT CONNECTIONS SHALL BE MADE AS REQUIRED.
- F. GAUGE OF DUCT WORK SHALL BE PER SMACNA'S RECOMMENDATIONS.
- G. MOUNT TESTATS AT 4" ABOVE FINISH FLOOR LEVEL.
- H. WIRING OF SMOKE DETECTORS BY ELECTRICAL CONTRACTOR.
- I. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- J. ALL EXPOSED DUCTWORK TO BE PAINT GRIP STEEL COLOR TO BE SPECIFIED BY ARCHITECT.
- K. ALL MATERIALS IN PLENUM SHALL HAVE A FLAME-SPREAD INDEX OF LESS THAN 25 AND SMOKE-DEVELOPED RATING INDEX LESS THAN 50. THEREFOR, PLENUM IS RATED TO ALLOW FOR PLENUM RETURN AIR FLOW IN COMPLIANCE WITH 602.2.

- NEW KEYED NOTES:**
1. 3/4" CONDENSATE DRAIN LINE TO DROP IN WALL TO TAIL PIECE OF SINK. PROVIDE FIBREGLASS INSULATION WITH VAPOUR BARRIER.
 2. 3/4" CONDENSATE DRAIN LINE TO DROP TO MOP SINK.
 3. REFRIGERATION PIPING TO RISE UP WALL TO FIRST FLOOR CEILING SPACE AND PENETRATE INTO CEILING SPACE. PENETRATION TO BE SEALED WATER TIGHT.
 4. REFRIGERATION PIPING ROUTED IN CEILING SPACE. PIPING TO BE SIZED AND INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
 5. 3/4" CONDENSATE DRAIN PUMPED UP TO ROOF AND ROUTED TO NEAREST ROOF DRAIN. PENETRATION THROUGH ROOF TO BE SEALED WATER TIGHT, FLASH AND COUNTER FLASH.
 6. EXISTING UNIT TO REMAIN WITH EXISTING CONNECTIONS.
 7. REFRIGERANT SENSOR GENERAL SUGGESTED LOCATION

NOTE:
IF THERE ARE ANY DISCREPANCIES, AN RFI
MUST BE ISSUED AND ENGINEER MUST BE
CONTACTED TO DISCUSS SITUATION.

NOTE:
ALL EXISTING PIPING INSULATION TO BE
REPLACED IF DAMAGED WITH NEW 1"
INSULATION WITH VAPOUR BARRIER.

NOTE:
COORDINATE ROUTING OF ALL
DUCTWORK AND PIPING WITH EXISTING
CONDITIONS.



1306 RIO GRANDE BLVD NW
ALBUQUERQUE, NM 87104
505-255-6400 505-268-6954 FAX
WWW.NCA-ARCHITECTS.COM

ARCHITECT

CONSULTANT



PROJECT TITLE
**CURRY COUNTY
COURTHOUSE
ADDITION AND
RENOVATIONS**

CLOVIS
NEW MEXICO

REVISIONS:

NO.	DATE	DESCRIPTION
1	10/08/21	MECH ADDENDUM

DRAWN BY: TW CHECKED BY: RC

PROJECT NUMBER:
A20.05

DATE:
09.03.21

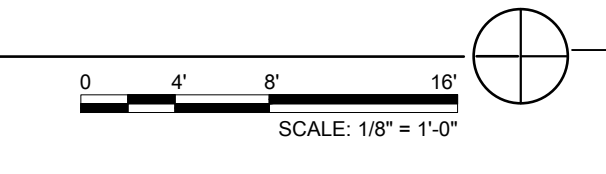
SHEET TITLE:

**FIRST LEVEL
MECHANICAL
FLOOR PLAN**

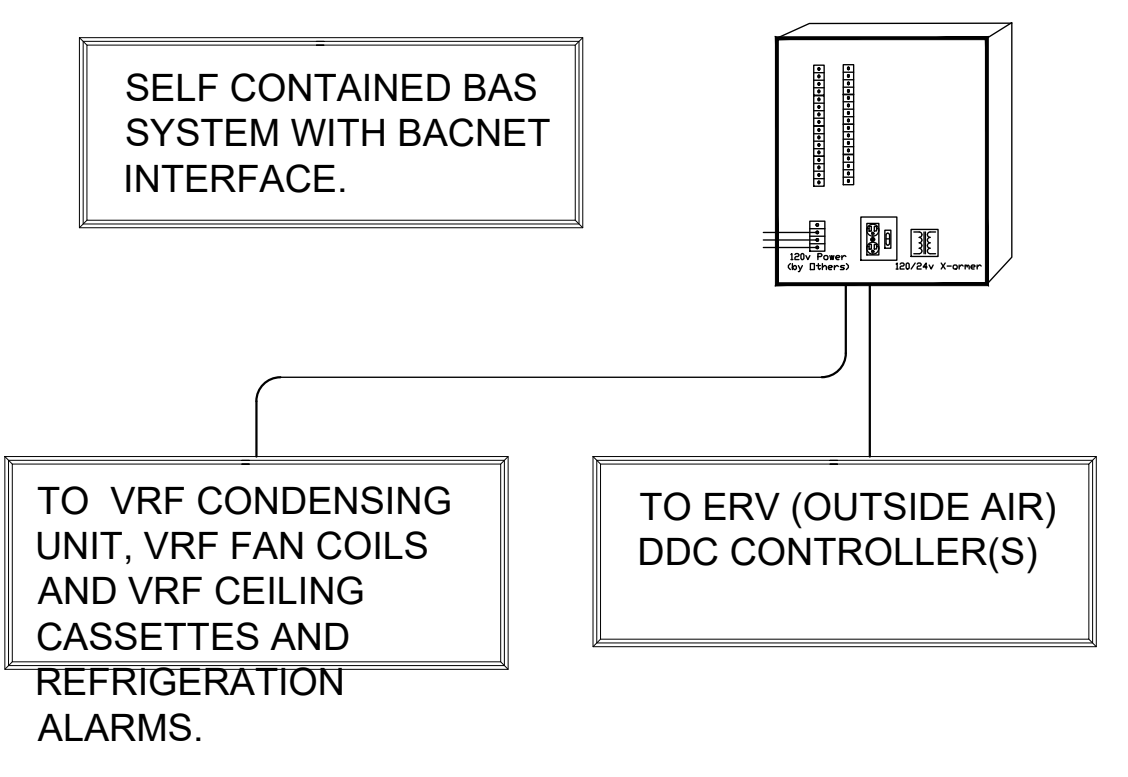
SHEET NO.:

M-201

A1 FIRST LEVEL FLOOR PLAN



NO.	DATE	DESCRIPTION
1	10/06/21	MECH ADDENDUM



DDC CONTROLS NETWORK SCHEMATIC

SEQUENCE OF OPERATIONS

- ENERGY RECOVERY UNIT**
- DURING THE OCCUPIED MODE, THE SUPPLY & EXHAUST FAN SHALL BE ENABLED ON.
 - DURING THE OCCUPIED MODE, THE UNIT SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR INTAKE DAMPER AND EXHAUST AIR DAMPER SHALL OPEN. PROVIDE AND HARDWIRE AN END SWITCH TO ENSURE THE AIR DAMPERS ARE FULLY OPEN PRIOR TO THE STARTING OF THE FAN. DUCT FLOW SWITCH SHALL OPEN AND ENERGIZE DUCT HEATER. DUCT HEATER SHALL MAINTAIN 65 DEG F SUPPLY AIR TEMPERATURE. FIELD ADJUSTABLE.
 - DURING THE UNOCCUPIED MODE, THE SUPPLY FAN SHALL STOP. THE HEAT WHEEL SHALL STOP. AIR DAMPERS SHALL BE FULLY CLOSED. FLOW SWITCH SHALL DE-ENERGIZE DUCT HEATER.

SAMSUNG CONTROLS

The existing control system for the installed system is a BACnet network system with a TRANE interface system.

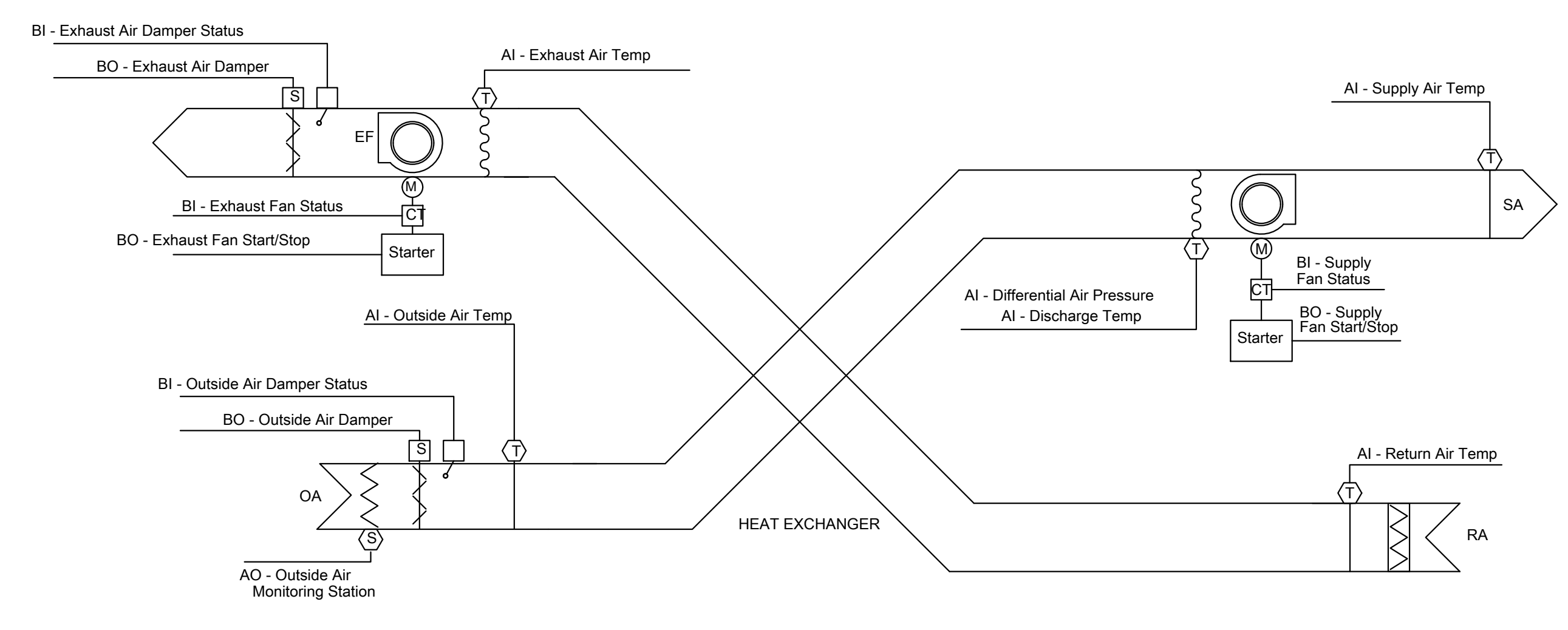
Removals

All Trane controls for the remaining mechanical equipment located in the Annex Basement, Annex First Floor, and Main Building shall be removed complete. The Trane front end controls, including graphics shall be modified to reflect the removal of the control systems and associated data base. The existing TRANE system shall remain operational for these areas. The TRANE control system is a proprietary system and can only be modified by TRANE. All work on the Trane system shall be coordinated with Trane.

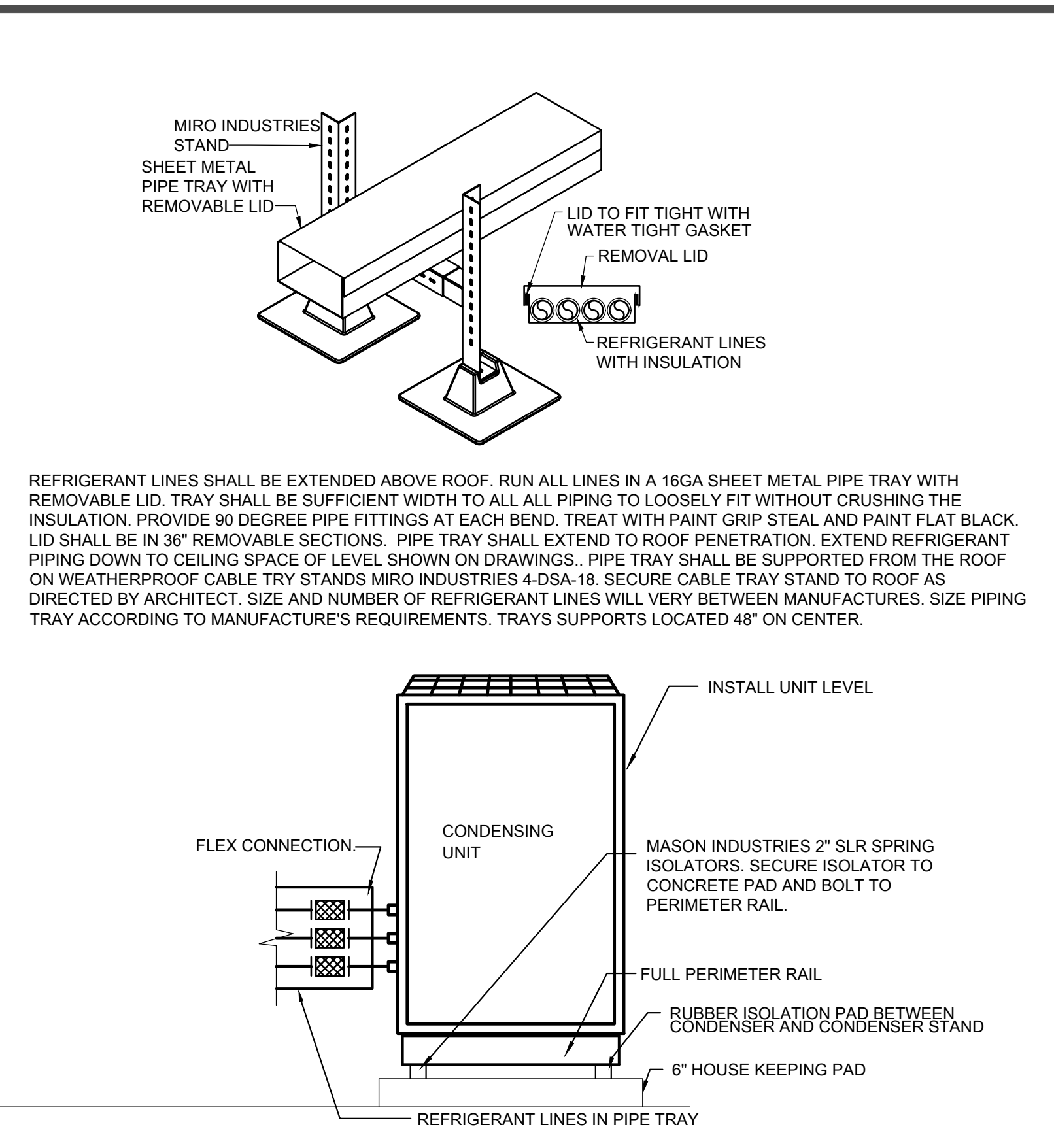
Renovated Controls - General

- The renovated system shall be a SAMSUNG S-NET 3 system to control the renovated mechanical system with a BACnet interface for connection to other control system. The BACnet interface shall be an Intesis AC interface, BACnet IP-MSTP interface. The S-NET 3 system shall be a fully integrated OC management software system. Contractor shall furnish a DELL XPS 13, 17-1185G7 processor, Windows 10 PRO, 16 GB memory, 512 GB solid state drive and INTEL Iris Xe graphics. SAMSUNG shall provide control and monitoring, error operating history, scheduling, and security. System shall control all new SAMSUNG units, new ERV systems and all existing VRF units/systems serving the Annex Basement and First Floor and the first floor of the main building. Existing Trane Control graphics and data base shall be transferred to the new computer.
- Controls (including control boards) for the existing VRF system terminal units and condensing units for the Annex Basement and Annex First Floor and the First Floor of the Main Building shall be replaced with Samsung controls. All existing terminal thermostats, both wired and wireless, shall be replaced with hard wired thermostats. Exposed wiring shall be concealed with wire mold.
- Controls for new Samsung VRF systems shall be Samsung.
- Provide 8-hours of training for the Owner and detailed control operational manual with documented data base.

Each refrigeration system shall be an ENVIRONMENTAL SYSTEM Model IR-SNIF-1,2,3 (Single Zone) Refrigeration Loss Monitor, complying with ASHRAE 15. Each system shall be provided with two sensors with visual alarms and BACnet interface to SAMSUNG control system, 120v, 1 ph.

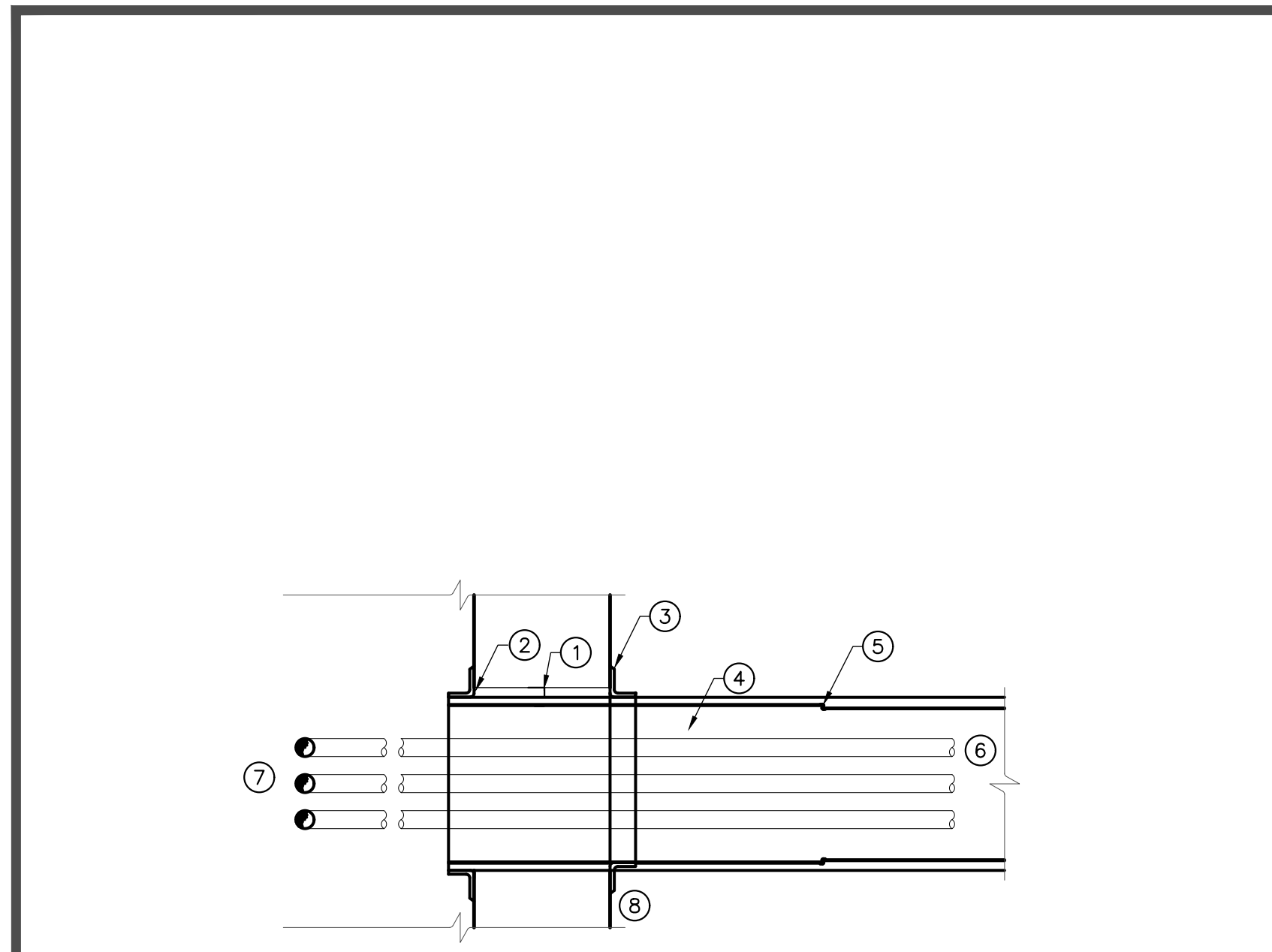


MUA (ERV) SYSTEM CONTROL SCHEMATIC



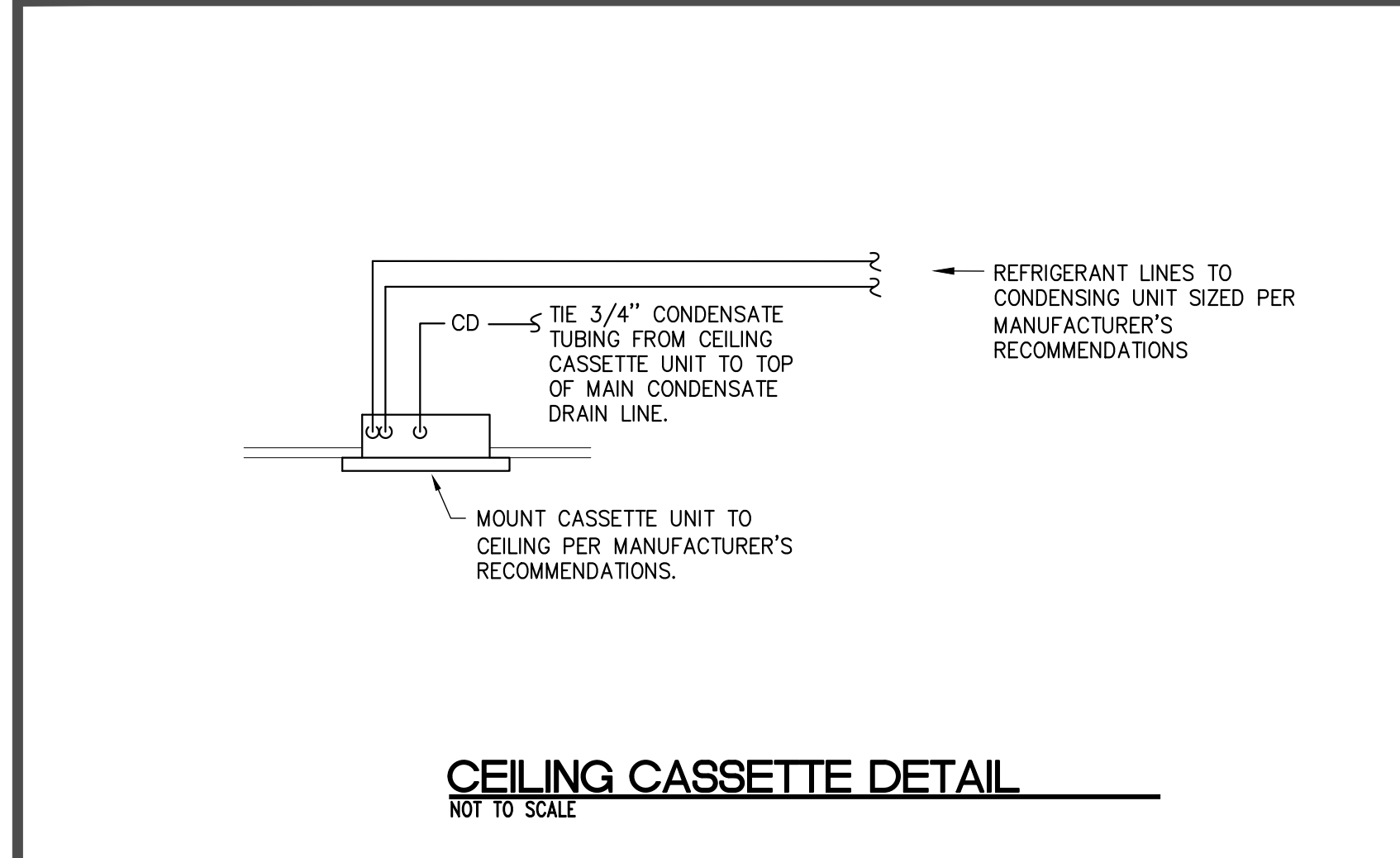
CONDENSING UNIT AND REFRIGERANT PIPING DETAIL

NOT TO SCALE



REFRIGERANT TRAY THRU WALL DETAIL

NOT TO SCALE



CEILING CASSETTE DETAIL

NOT TO SCALE

E

D

C

B

A

E

D

C

B

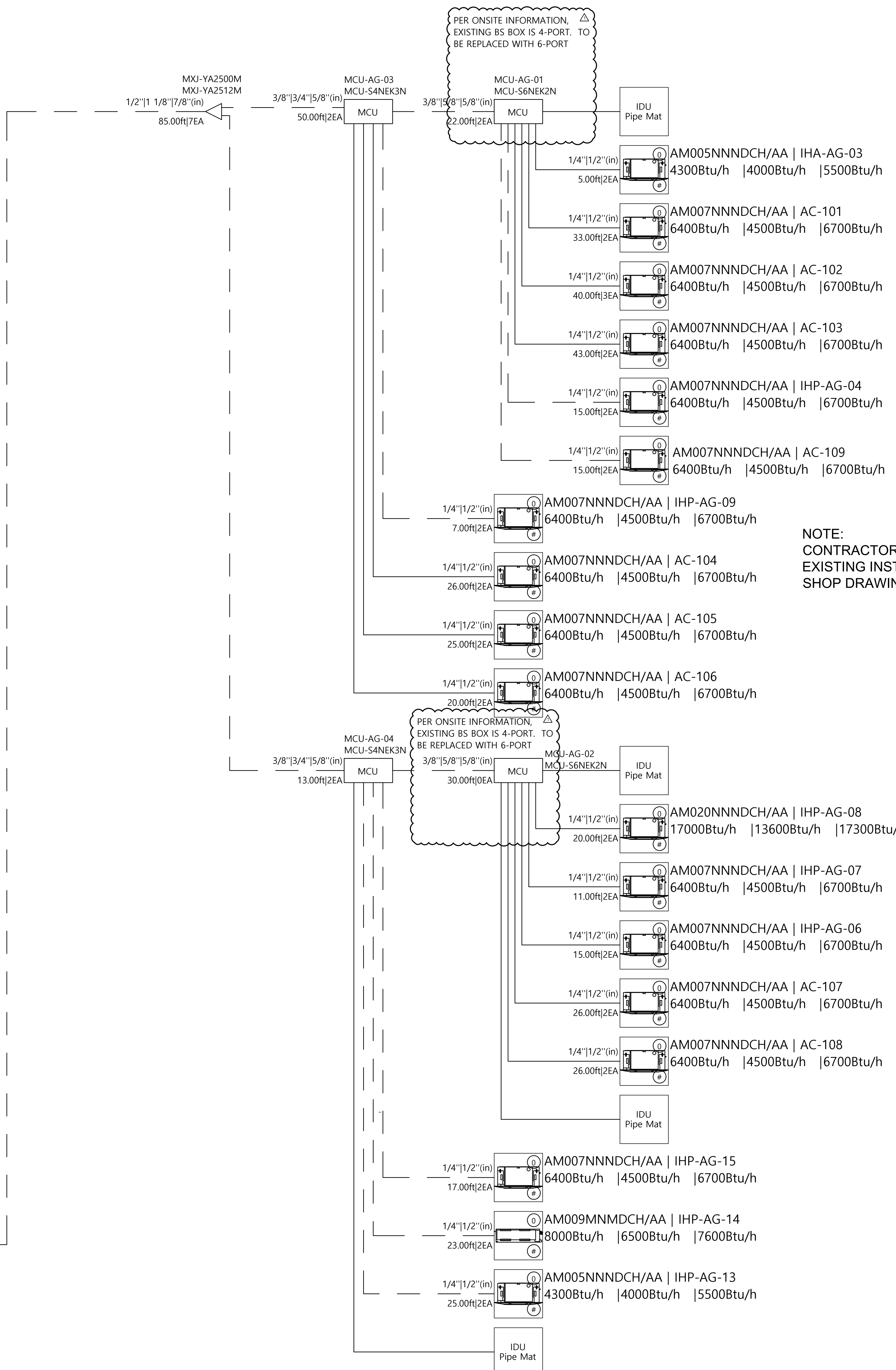
A

EXISTING PIPING INDICATED WITH DASH LINE

NEW PIPING INDICATED WITH NON-DASHED LINE

MODIFIED ANNEX BASEMENT PIPING DIAGRAM (OLD+NEW)

Existing OHP-AG-17
AM120FXVAJR2AA
116800Btu/h | 122500Btu/h



NOTE:
CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING INSTALLED PIPING. SUBMIT COMPLETE SHOP DRAWINGS FOR ALL PIPING SYSTEMS.



1306 RIO GRANDE BLVD NW
ALBUQUERQUE, NM 87104
505-255-6400 505-268-6954 FAX
WWW.NCA-ARCHITECTS.COM

ARCHITECT

CONSULTANT



PROJECT TITLE

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS

CLOVIS NEW MEXICO

REVISIONS:

NO.	DATE	DESCRIPTION
1	10/08/21	MECH ADDENDUM

DRAWN BY: MTD CHECKED BY: PS

PROJECT NUMBER: A20.05

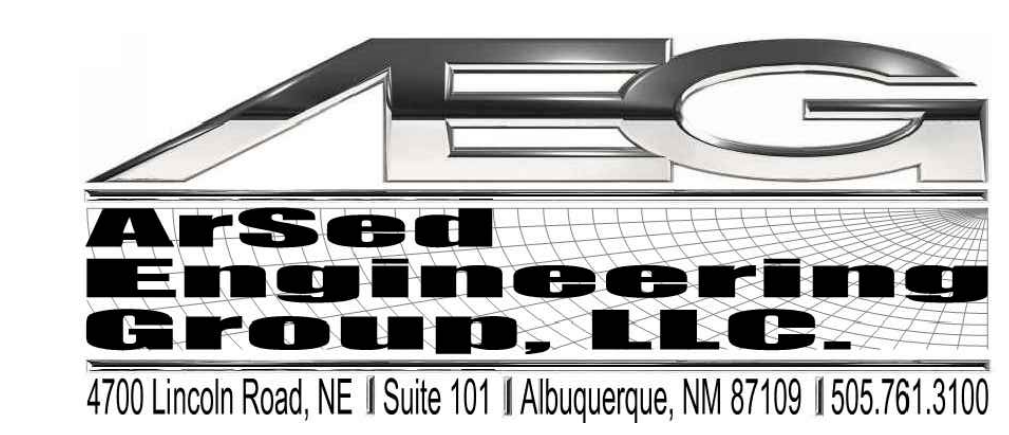
DATE: 09.03.21

SHEET TITLE:

MECHANICAL PIPING DIAGRAMS

SHEET NO:

M-401



FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION/ LOCATION	LAMPS			MOUNTING INSTRUCTIONS	REMARKS
				TYPE	WATTS	LUMENS		
A	METALUX	#24EN-LD2-45-UNV L840-CD-1	2X4 LED TROFFER	LED	38	4748	RECESSED	
B	METALUX	#22EN-LD2-34-UNV L840-CD-1	2X2 LED TROFFER	LED	28.5	3540	RECESSED	
C	METALUX	#4NLW4040C	4' LED SURFACE WRAP	LED	38	4617	SURFACE	
D	SHAPER	#605-49-W-L840-GRM 2VTB	4' LED VANITY LIGHT	LED	28	4000	WALL ABOVE MIRROR	
F	SPI LIGHTING	#L81W-120/277V-4000K SEC-BAL	4' DIAMETER LED RINGS LIGHT	LED	81	4798	SURFACE	
H	ZUMTOBEL	#ONDA2X-PG-A-OL- HE-K930-D1-DU-	DIRECT- INDIRECT	LED	215	21,737	PENDANT	
K	NEORAY	#S12-DR-1-40-ETG-16' 1-U-LUE-1-W	16' LED LINEAR	LED	112	10,432	RECESSED	
L	METALUX	#4RBG6-SL1-L8SCT3- SWPD1-U	4' LED LINEAR	LED	23.6	2,579	RECESSED	
M	SORELITE	#DWI-WA-40L-80CRI-40 -1D-UNV-STD-WAA-EL1 4W-DC-W-WM-4FT	4' LED WALL MOUNTED	LED	31.8	3,952	WALL MOUNTED	
N	SELUX	#M100-1C40-930-LW-MO UNTING-06FT-NOMINAL -U-DIM	8' LED LINEAR	LED	41.1	3,646	RECESSED	
P	SELUX	#L60-1C25-930-LW-MTG -R18-WH-VOLT-DIM-1V90	9' WALL TO CEILING	LED	144.7	4,746	RECESSED	
R	SELUX	#M100-1C40-930-LW -MOUNTING-04FT-	4' LED LINEAR	LED	23.6	2,579	RECESSED	
S	HALO	#HC620D010-HM612830 -61WDH-	DOWNLIGHT	LED	21	1000	RECESSED	
X-C	SURE-LITES	#ECHX-2-RT-DA	EXIT LIGHT AC ONLY DOUBLE FACE	----	----	----	CEILING	
EXIT	SURE-LITES	#ELX6-1-R-W	EXIT LIGHT AC ONLY	----	----	----	WALL	

SYMBOL LEGEND

	CEILING OR WALL BRACKET FIXTURE. SEE FIXTURE SCHEDULE.
	FLUORESCENT OUTLET AND FIXTURE. SEE FIXTURE SCHEDULE.
	POLE MOUNTED FIXTURE. SEE FIXTURE SCHEDULE.
	EXIT LIGHT. ARROWS INDICATE DIRECTIONAL ARROW ON FIXTURE.
	EMERGENCY EGRESS LIGHTING FIXTURE WITH BATTERY PACK. SEE LIGHTING FIXTURE SCHEDULE, MH- 7'- 6" TO BOTTOM
	EXIT LIGHTING FIXTURE AC ONLY. SEE LIGHTING FIXTURE SCHEDULE, MH- ABOVE DOOR EXIT.
	PUSH BUTTON SWITCH
	TIMECLOCK
	LIGHTING CONTACTOR
	PHOTO CELL
	SINGLE POLE WALL SWITCH, UP +48"
	THERMAL O.L. SWITCH
	PILOT LIGHT SWITCH
	DIMMER SWITCH. SEE PLANS AND SPECS FOR CHARACTERISTICS
	KEYED SWITCH, UP +48". SEE PLANS
	THREE WAY SWITCH, UP +48" TO CENTER.
	MOMENTARY CONTACT SWITCH 1/2T, 3 POSITIONS.
	DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE, UP +18" UNLESS OTHERWISE INDICATED.
	DUPLEX RECEPTACLE, ON EMERGENCY CIRCUIT. PROVIDE RED RECEPTACLE AND COVER PLATE.
	SINGLE OUTLET, 20 AMP, 125 VAC, 2-POLE, 3-WIRE, GROUNDING, WITH STAINLESS STEEL COVER PLATE. NEMA CONFIG. 5-20R.
	FOURPLEX CONVENIENCE OUTLET, GROUNDING TYPE, UP +18" UNLESS OTHERWISE INDICATED.
	SPECIAL PURPOSE OUTLET. SEE PLANS FOR RATINGS
	250V 2P-4W SPECIAL PURPOSE GROUNDING OUTLET. AMPERAGE AS INDICATED.
	JUNCTION BOX FLUSH IN WALL WITH CONNECTION TO EQUIPMENT. J-BOX ABOVE LAY-IN CEILING W/ FLEX CONDUIT TO LAY-IN FIXTURES
	PLUGMOLD WITH RECEPTACLES. 12" O.C. SEE PLANS
	TELEPHONE OUTLET, UP +18" UNLESS OTHERWISE INDICATED.
	COMBINATION DATA/VOICE, TWO GANG BOX MOUNTED 18" AFF OR COUNTER TOP OR AS NOTED. PROVIDE 3/4" EMPTY CONDUIT WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING SPACE. DATA/VOICE CABLING AND DEVICE BY CONTRACTOR.
	TELEVISION OUTLET MOUNTED ON WALL. SEE PLANS
	TELEPHONE CONDUIT TO BACKBOARD, 1" MIN. WITH PULL WIRE.
	COMPUTER CONDUIT, 1" MIN. WITH PULL WIRE.
	TELEVISION CONDUIT, 1" MIN. WITH PULL WIRE.
	FIRE ALARM PULL STATION UP +48" SEE SPECS AND PLANS
	FIRE ALARM STROBE UP +80". SEE SPECS AND PLANS
	FIRE ALARM HORN/STROBE UP +80" SEE SPECS AND PLANS
	FIRE ALARM SMOKE DETECTOR. COMINATION IONIZATION/PHOTOELECTRIC
	FIRE ALARM DUCT DETECTOR.
	FIRE ALARM HEAT DETECTOR.
	FIRE ALARM CONDUIT REFER TO SPECIFICATIONS 16721 AND #1 FOR SIGNAL
	PAC/CALL SWITCH OR HAND SET 48" UNLESS OTHER WISE NOTED
	PUSH BUTTON. SEE PLANS FOR TYPE. UP 44" UNLESS OTHERWISE NOTED.
	THERMOSTAT, UP 48" UNLESS OTHERWISE INDICATED.
	CLOCK AND CLOCK OUTLET. SEE PLANS
	CLOCK/SPEAKER COMBO. COORDINATE LOCATION WITH ARCHITECTURAL ELEVATIONS ABOVE WRITING BOARD
	MOTION DETECTOR PASSIVE INFRARED +48" TYPICAL. 34°C WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING SPACE.
	MAGNETIC DOOR SWITCH. FIRE ALARM SYSTEM. SEE PLANS AND SPECS.
	DISCONNECT SWITCH. SIZE AND POLES FOR LOAD CONNECTED NEMA 3R
	SPECIAL SYSTEMS CABINET W/ HINGED DOOR AND KEYED LOCK
	SURFACE MOUNTED PANEL. SEE PANEL SCHEDULE FOR CHARACTERISTICS.
	FLUSH MOUNTED PANEL. SEE PANEL SCHEDULE FOR CHARACTERISTICS.
	PAD MOUNTED TRANSFORMER
	WALL MOUNTED TRANSFORMER
	GROUND
	GROUND ROD
	LIGHTING ARRESTOR
	MOTOR CONNECTION, FRACTIONAL H.P. (LESS THAN 1/3 HP)
	MOTOR CONNECTION WITH HP INDICATED.
	CEILING MOUNTED OCCUPANCY SENSOR
	SWITCH MOUNTED OCCUPANCY SENSOR
	BRANCH CIRCUIT IN WALLS OR CEILING WITH CONDUCTORS INDICATED. (NEUTRAL, HOT, SWITCHED, AND GROUNDING CONDUCTOR LEFT TO RIGHT RESPECTIVELY)
	BRANCH CIRCUIT IN WALLS OR UNDER FLOOR, CONDUCTORS INDICATED.
	HOME RUN TO PANEL WITH BRANCH CIRCUIT NUMBERS INDICATED.
	KEYED NOTE SYMBOL
	MECHANICAL EQUIPMENT SYMBOL

ELECTRICAL GENERAL NOTES

- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND PROVIDING ALL WORK INDICATED BY THESE DRAWINGS. THIS CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT SUPPLIES AND MATERIALS IN ADDITION TO PERFORMING ALL OPERATIONS INCLUDING CUTTING, CHANNELING AND UNDERGROUND TRENCHING, BACKFILL AND TAMPERING NECESSARY FOR THE INSTALLATION OF COMPLETE POWER, LIGHTING, OR OTHER LIGHTING SYSTEMS AS SHOWN.
- PERFORM ALL ELECTRICAL WORK IN NEAT WORKMANLIKE MANNER IN FULL COMPLIANCE WITH ALL APPLICABLE, ADOPTED, CODES; INCLUDING BUT NOT LIMITED TO THE NATIONAL ELECTRICAL CODE (NEC), IBC, NFPA, AND ADA. ALL LOCAL AND STATE REQUIREMENTS WILL BE OBSERVED DURING THE PERFORMANCE OF THIS WORK.
- SHOULD THE CONTRACTOR DETECT DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND ANY ASSOCIATED LEGAL OR SAFETY REQUIREMENTS HE SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING. ONCE NOTIFIED THE ENGINEER SHALL MODIFY THE CONTRACT DOCUMENTS ACCORDINGLY. IF THE CONTRACTOR PROCEEDS WITH ANY WORK WHICH IS IN VARIANCE OF KNOWN LEGAL OR SAFETY REQUIREMENTS, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THIS WORK AND SHALL PROMPTLY CORRECT THE WORK, WHEN NOTIFIED WITHOUT ADDITIONAL COST TO THE OWNER. FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING. NO CLAIM FOR ADDITIONAL COST OR TIME EXTENSION WILL BE ALLOWED WITHOUT PROPER NOTICE PLUS PRIOR DETERMINATION OF TIME AND COST TO THE OWNER.
- AFTER COMPLETION OF THE INSTALLATION, THE ENTIRE SYSTEM SHALL BE THOROUGHLY CLEANED, REMOVE ALL FOREIGN MATTER, PAINT, OR DIRT/GREASE, UNNEEDED LABELS OR STICKERS FROM FIXTURES AND EQUIPMENT, REMOVE ALL RUBBISH AND DEBRIS ACCUMULATED DURING INSTALLATION FOR THE PREMISES.
- ALL PHASES OF THE ELECTRICAL WORK SHALL BE COORDINATED WITH THE ARCHITECT AND GENERAL CONTRACTOR. WORK SHALL BE PERFORMED TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO THE OWNER.
- CONTRACTOR SHALL RECEIVE, FROM SYSTEM SUPPLIERS, ALL WIRING DIAGRAMS FOR ALL EQUIPMENT, PRIOR TO ANY ROUGH-IN. TO ASSURE THAT PROPER ELECTRICAL CHARACTERISTICS ARE PROVIDED, ANY INCORRECT WIRING OR DEVICES INSTALLED BY ELECTRICAL CONTRACTOR WITHOUT THE WIRING DIAGRAM SHALL BE CORRECTED AT ELECTRICAL CONTRACTOR'S EXPENSE.
- ELECTRICAL CONTRACTOR SHALL VERIFY ELECTRICAL DEVICE LOCATIONS WITH ARCHITECTURAL CASE WORK DETAILS PRIOR TO ANY ROUGH-IN.
- ELECTRICAL CONTRACTOR SHALL VERIFY FINAL LOCATIONS OF ALL SINKS WITH THE PLUMBING CONTRACTOR PRIOR TO ROUGH-IN. ANY ELECTRICAL DEVICES LOCATED ABOVE COUNTER AND BEHIND FINAL SINK LOCATIONS SHALL BE SHIFTED A MINIMUM OF 8" TO EITHER SIDE OF SINK. ANY ELECTRICAL DEVICES LEFT BEHIND SINK AT THE TIME OF FINAL ELECTRICAL WALK THROUGH SHALL BE RELOCATED AT ELECTRICAL CONTRACTOR'S EXPENSE.
- PRIOR TO INSTALLATION, THE OWNER RESERVES THE RIGHT TO RELOCATE ANY ELECTRICAL DEVICE, UP TO A DISTANCE OF 12" WITHOUT ADDITIONAL CHARGE.
- THE EXACT LOCATION OF ALL SYSTEMS AND EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH OTHER TRADES PRIOR TO ANY INSTALLATION, WHERE EXACT LOCATIONS ARE NECESSARY, THEY ARE DIMENSIONED ON THESE DRAWINGS. WHERE THERE IS A QUESTION OF ADEQUATE CLEARANCE OR COORDINATION BETWEEN TRADES, THIS CONTRACTOR SHALL PREPARE AS BUILT DRAWINGS FOR ENGINEERS REVIEW.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 VOLTS TYPE THHN/THWN, INSULATION, UNLESS OTHERWISE INDICATED MINIMUM WIRE SIZE SHALL BE #12 AWG AND STRANDED FOR #10 AWG OR LARGER. ALL WIRING SHALL BE RUN IN CONDUIT INCLUDING LOW VOLTAGE AND CONTROL WIRING, UNLESS OTHERWISE NOTED.
- GENERALLY, CONDUIT SHALL BE EMT, 1/2" INCH MINIMUM, WHERE REQUIRED TO PROTECT FROM PHYSICAL DAMAGE, CONDUIT SHALL BE RIGID OR IMC TYPE. RUN CONDUIT CONCEALED UNLESS OTHERWISE SHOWN ON THE DRAWINGS. USE FLEXIBLE METALLIC CONDUIT OR SURFACE MOUNTED RACEWAY ONLY WHERE INDICATED. PROVIDE EXPANSION FITTINGS FOR CONDUIT CROSSING EXPANSION JOINTS.
- SUPPORT ALL CONDUIT INDEPENDENTLY FROM THE BUILDING STRUCTURE. DO NOT SUPPORT FROM VENTILATION DUCTS, MECHANICAL PIPING, SUSPENDED CEILING GRIDS, OR THEIR HANGERS. USE ONLY ACCEPTABLE METHODS OF SUPPORT.

ELECTRICAL GENERAL NOTES

- TERMINATING AND SPLICING: ALL #10 GA AND SMALLER JOINTS AND SPLICES IN BRANCH CIRCUIT WIRING SHALL BE MADE WITH AN APPROVED, SOLDERLESS TOOL. APPLICATION OR TWIST ON CONNECTORS: #6 GA AND LARGER WITH HIGH COMPRESSION BARREL SPLICES WITH SHRINK WRAP AND MANUFACTURERS COMPATIBLE CONNECTORS IN OUTLETS, AND SIMILAR LOCATIONS, AND NOTE ALLOWED IN RACEWAYS.
- EMT CONDUIT FITTINGS: IN DRY LOCATIONS ALL EMT COUPLERS AND CONNECTORS SHALL BE STEEL SET SCREW TYPE OR "REGAL". DIE CAST SET SCREW COUPLINGS AND CONNECTORS, DIE CAST FITTINGS SHALL NOT BE USED ON THIS PROJECT. DAMPWET LOCATIONS USE STEEL COMPRESSION GLAND TYPE COUPLER AND CONNECTIONS.
- SURFACE RACEWAY: ALL CONDUIT TO BE CONCEALED, WHEREVER CONCEALED CONDUIT IN FINISHED AREAS IS NOT POSSIBLE, ELECTRICAL CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAYS EQUAL TO WIREMOLD. RUN SURFACE RACEWAYS IN CORNER OF WALL AND CEILING. ALL RACEWAYS THAT ARE EXPOSED SHALL BE APPROVED BY ARCHITECT PRIOR TO ROUGH-IN.
- TYPE NM (ROMEX CABLE) NMC&MC CABLE WILL NOT BE ALLOWED ON THIS PROJECT.
- IN ADDITION TO RACEWAY BONDING REQUIRED BY CODE AND OUTLET BOX BONDING JUMPERS, CONTRACTOR SHALL INSTALL A GREEN EQUIPMENT GROUND CONDUCTOR FOR EACH BRANCH CIRCUIT.
- MAINTAIN A MINIMUM OF 24 INCH SEPARATION BETWEEN POWER CONDUITS AND SIGNAL CONDUITS. ROUTE CONDUITS SO AS NOT CROSS EACH OTHER.
- PROVIDE WIRING DEVICES RATED FOR THE GIVEN APPLICATION AS REQUIRED BY CODE. SPECIAL DEVICES SHALL BE PROVIDED AS INDICATED.
- INSTALL EXTERIOR PHASING IN CONDUIT. UTILIZE WEATHERPROOF FITTINGS AND WEATHERPROOF BOXES/COVERS.
- SIZE ALL BOXES AND ENCLOSURES PER THE NATIONAL ELECTRICAL CODE. WORKING SPACE FOR ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE ARTICLE 110.
- PROVIDE A 30 AMP, 120 VOLT, GFCI PROTECTED RECEPTACLE WITH CAST BOX AND WEATHERPROOF COVERPLATE, MOUNTED ONTO A THREADED IMC CONDUIT WITHIN TWENTY-FIVE (25) FEET OF EACH ROOFTOP MECHANICAL UNIT.
- BRANCH CIRCUITS: UTILIZE #10 CONDUCTORS ON ALL RUNS OVER 100'-0"
- MULTIPLE PHASE HOME RUNS MAY SHARE A COMMON NEUTRAL EXCEPT WHEN A DIMMER/DIMMING SYSTEM IS USED, AND WHEN DEDICATED COMPUTER/EQUIPMENT CONNECTIONS ARE REQUIRED. VERIFY WITH ENGINEER PRIOR TO ROUGH-IN.
- SHORT CIRCUIT RATING OF PANELBOARDS AND OVER-CURRENT PROTECTION TO BE COORDINATED WITH UPSTREAM OVER-CURRENT PROTECTION AND AVAILABLE SCA. PROPERLY IDENTIFY ALL PANELBOARDS WITH A LAMINATE LABEL AND TYPE WRITE ALL PANEL SCHEDULES. INSTALL PANELBOARDS AS INDICATED ON DRAWINGS AND SCHEDULES. PROVIDE CIRCUIT BREAKERS AS REQUIRED. USE "MAG" BREAKERS FOR HEATING/AIR CONDITIONING LOADS, PROVIDE GROUND-FAULT CIRCUIT-INTERRUPTER BREAKERS AS REQUIRED.
- THE FIRE ALARM SYSTEM SHALL BE APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO ROUGH-IN. ANY MODIFICATIONS OR ADDITIONS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S BASE BID.
- PHASE PROTECTION: ALL NEW MOTORS 1HP AND ABOVE USING 3 PHASE POWER AND ALL 3 PHASE AIR CONDITIONING UNITS SHALL HAVE PROTECTION FOR PHASE REVERSAL. LOSS OF PHASE UNBALANCE OF 10% OR GREATER ON ANY ONE PHASE. MANUFACTURED BY CUTLER HAMMER D60 OR EQUAL.
- EXTEND ALL CONDUIT AND CONDUCTORS, INSTALL ELECTRICAL EQUIPMENT AS NECESSARY, AND MAKE ALL FINAL CONNECTIONS TO MECHANICAL AND OWNER FURNISHED EQUIPMENT. LEAVE ALL EQUIPMENT IN OPERABLE CONDITION WITH APPROPRIATE OVERLOAD AND SERVICE DISCONNECT PROTECTION AS REQUIRED BY THE APPLICABLE CODES. FOLLOW MANUFACTURERS INSTALLATION GUIDELINES, WHERE APPLICABLE.
- THE ELECTRICAL CONTRACTOR MUST COORDINATE WITH THE MECHANICAL/PLUMBING-CONTROLS CONTRACTOR TO INSURE THAT ALL REQUIRED COMPONENTS OF CONTROL WORK ARE INCLUDED AND FULLY UNDERSTOOD. NO ADDITIONAL COST SHALL ACCRUE TO THE OWNER AS A RESULT OF LACK OF SUCH COORDINATION.



1306 RIO GRANDE BLVD NW
ALBUQUERQUE, NM 87104
505-255-6400 505-268-6954 FAX
WWW.NCA-ARCHITECTS.COM



PROJECT TITLE
**CURRY COUNTY
COURTHOUSE
ADDITION AND
RENOVATIONS**

CLOVIS
NEW MEXICO

REVISIONS:

10/07/2021	REV 1
08/30/21	PERMIT SET
04/26/21	95% CDS

MK DATE DESCRIPTION

DRAWN BY: CHECKED BY:

ACE FJT

PROJECT NUMBER:
A20.05

DATE:
10-04-2021

SHEET TITLE:
PROJECT GENERAL
NOTES, SYMBOL
LEGEND & FIXTURE
SCHEDULE

SHEET NO:
E-001

NO.	DATE	DESCRIPTION
1	10/07/2021	REV 1

08/30/21	PERMIT SET
04/26/21	95% CDS

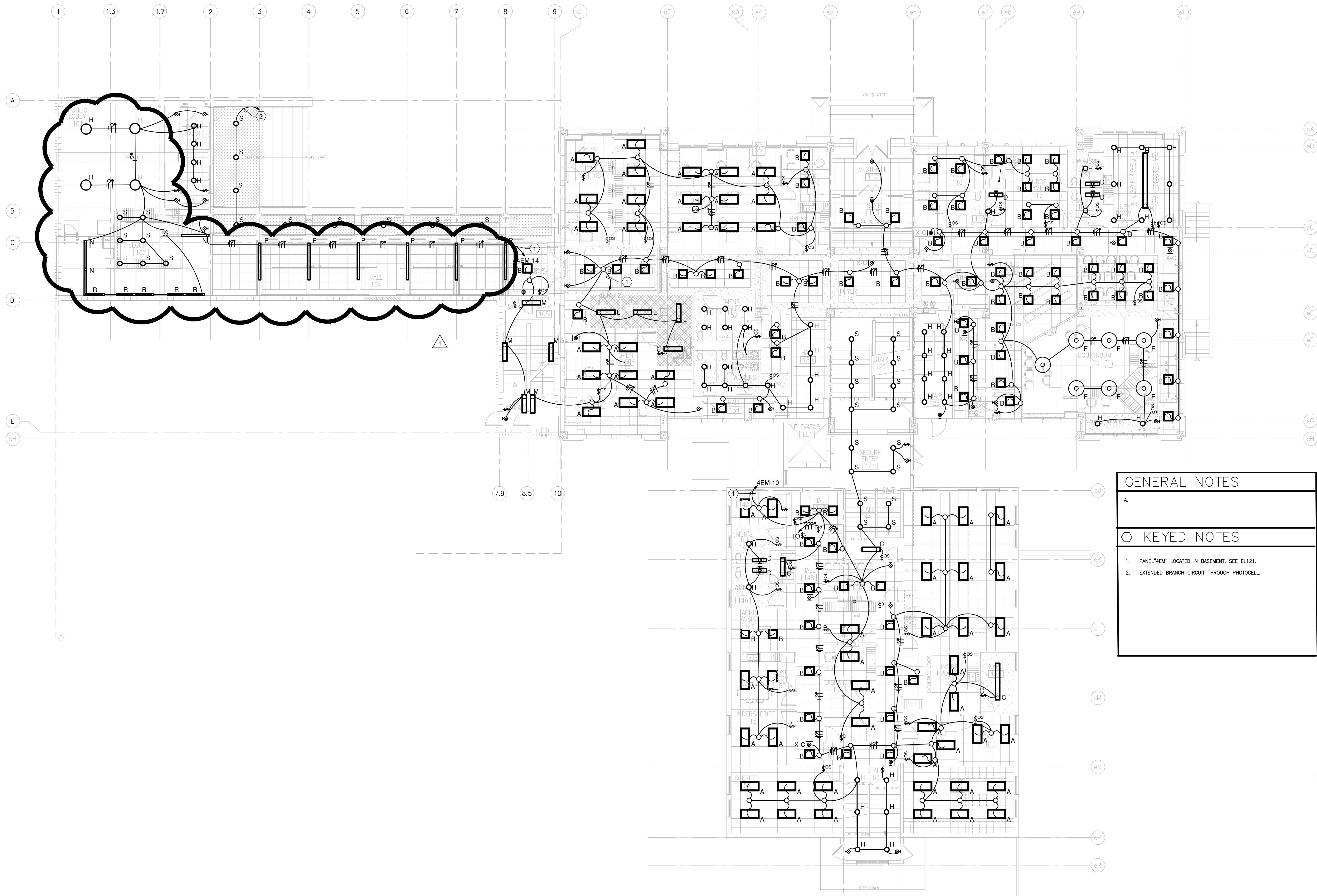
DRAWN BY:	CHECKED BY:
ACE	FJT

PROJECT NUMBER:	A20.05
DATE:	10-04-2021

SHEET TITLE:	FIRST LEVEL LIGHTING PLAN
--------------	--

SHEET NO.:	EL-122
------------	---------------

SHEET NO.:	EL-122
------------	---------------



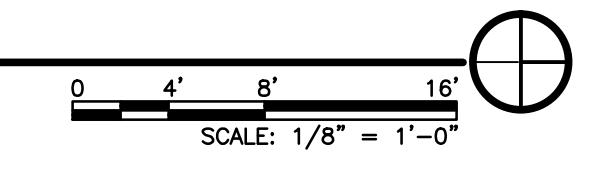
GENERAL NOTES

A.

KEYED NOTES

- PANEL "EM" LOCATED IN BASEMENT. SEE EL121.
- EXTENDED BRANCH CIRCUIT THROUGH PHOTOCELL.

A1 FIRST LEVEL LIGHTING PLAN – NEW ENTRY AND RENOVATION



ADDENDA NO. 02
SECTION 07-2100
PRE-APPLIED SHEET MEMBRANE WATERPROOFING

PART 1 — GENERAL

1.01 SUMMARY

- A. The Work of this Section includes, but is not limited to, pre-applied sheet membrane waterproofing that forms an integral bond to poured concrete for the following applications:
 - 1. Vertical Applications: Membrane applied against soil retention system prior to placement of concrete foundation walls;
 - 2. Horizontal Applications: Membrane applied on prepared subbase prior to placement of concrete slabs.
- B. Related sections include, but are not limited to, the following:
 - 1. Section 031000 – Concrete Forming
 - 2. Section 312000 – Earth Moving
 - 3. Section 031500 – Concrete Accessories
 - 1. Section 032000 – Concrete Reinforcing
 - 2. Section 033000 – Cast-In-Place Concrete

NOTE TO SPECIFIER: For vertical applications, coordinate with concrete formwork section to require one-sided wall forming system to minimize punctures to the sheet membrane waterproofing during formwork installation.

1.02 SUBMITTALS

- A. Submit manufacturer's product data, installation instructions, and membrane samples for approval.

1.03 REFERENCE STANDARDS

- A. The following standards and publications are applicable to the extent referenced in the text.
- B. American Society for Testing and Materials (ASTM):
 - C 836 Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
 - D 412 Standard Test Methods for Rubber Properties in Tension
 - D 570 Standard Test Method for Water Absorption of Plastics
 - D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
 - D 1876 Standard Test Method for Peel Release of Adhesives (T-Peel)
 - D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
 - D 3767 Standard Practice for Rubber - Measurements of Dimensions
 - D 5385 Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes
 - E 96 Standard Test Methods for Water Vapor Transmission of Materials
 - E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

1.04 QUALITY ASSURANCE

- A. Manufacturer: Sheet membrane waterproofing system shall be manufactured and marketed by a firm with a minimum of 20 years experience in the production and sales of sheet membrane waterproofing. Manufacturers proposed for use but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past five (5) years.
- B. Installer: A firm which has at least three (3) years experience in work of the type required by this section.
- C. Materials: For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.
- D. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.
- E. Schedule Coordination: Schedule work such that membrane will not be left exposed to weather for longer than recommended by the manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's instructions. Protect from damage from weather, excessive temperature and construction operations. Remove and dispose of damaged material in accordance with applicable regulations.

1.06 PROJECT CONDITIONS

- A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials used. Proceed with installation only when the substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

1.07 WARRANTY

- A. Sheet Membrane Waterproofing: Provide written five year material warranty issued by the membrane manufacturer upon completion of work.

PART 2 — PRODUCTS

2.01 MATERIALS

- A. Pre-applied Integrally Bonded Sheet Waterproofing Membrane: PREPRUFE® 250 Membrane by GCP Applied Technologies ("GCP"), a 0.8 mm (0.030 in.) nominal thickness composite sheet membrane comprising 0.5 mm (0.020 in.) of high density polyethylene film, and layers of specially formulated synthetic adhesive. The membrane shall form an integral and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete. Provide membrane with the following physical properties:

NOTE TO SPECIFIER: PREPRUFE® 250 Membrane can be installed at temperatures 25°F (-4°C) and above. For temperatures 25°F (-4°C) to 50°F (10°C), the use of PREPRUFE® LT Tape is required at all side laps when using PREPRUFE® 250 Membrane.

PHYSICAL PROPERTIES FOR PREPRUFE® 250 MEMBRANE:

Property	Test Method	Typical Value
Color		White
Thickness	ASTM D 3767	0.8 mm (0.030 in.) nominal
Lateral Water Migration Resistance	ASTM D 5385 ¹	Pass at 71 m (231 ft.) of hydrostatic head pressure
Low Temperature Flexibility	ASTM D 1970	Unaffected at -10°F (-23°C)
Elongation	ASTM D 412 ²	300%
Crack Cycling at -23°C (-9.4°F), 100 Cycles	ASTM C 836 ⁵	Unaffected, Pass
Tensile Strength, film	ASTM D 412	27.6 MPa (4,000 lbs./in. ²)
Peel Adhesion to Concrete	ASTM D 903 ³	700 N/m (4.0 lbs./in.)
Resistance to Hydrostatic Head	ASTM D 5385 ⁶	180ft. (55m)
Lap Adhesion	ASTM D 1876 ⁴	700 N/m (4.0 lbs./in.)
Puncture Resistance	ASTM E 154	600N (135 lbs.)
Permeance	ASTM E 96 Method B	<0.1 perms ((5.74 ng/(Pa x s x m ²)))
Water Absorption	ASTM D 570	0.5%

Footnotes:

- Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the blind side waterproofing membrane. A hydrostatic head pressure of 71 m (231 ft) of water is the limit of the apparatus.*
- Elongation of membrane is run at a rate of 50 mm (2 in.) per minute at room temperature.*
- Concrete is cast against the protective coating surface of the membrane and allowed to cure (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm (2 in.) per minute at room temperature.*
- The test is conducted 15 minutes after the lap is formed at a rate of 50 mm (2 in.) per minute at room temperature.*
- Test conducted at -23°C (-9.4°F)*
- Hydrostatic head tests are performed by casting concrete against the membrane with a lap. Before the concrete sets a 3 mm (0.125 in.) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to a head of 71 m (231 ft) of water which is the limit of the apparatus.*
 - Waterstop: ADCOR® hydrophilic waterstop by GCP Applied Technologies for non-moving concrete construction joints. See gcpat.com.
 - Preformed Soil Retention Wall Tieback Cover: PREPRUFE® Tieback Cover by GCP Applied Technologies as a prefabricated detail for soil retention wall tiebacks.
 - Tape for covering cut edges, roll ends, penetrations and detailing: PREPRUFE® Tape LT (for temperatures between 25°F (-4°C) and 86°F (30°C)) and PREPRUFE® Tape HC (for use in Hot Climates, minimum 50°F (10°C)).
 - Miscellaneous Materials: accessories specified or acceptable to manufacturer of pre-applied waterproofing membrane.

PART 3 — EXECUTION

3.01 EXECUTION

- A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the Contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 SUBSTRATE PREPARATION

- A. It is essential to create a sound and solid substrate to eliminate movement during the concrete pour. Substrates must be regular and smooth with no gaps or voids greater than 12 mm (0.5 in.). Grout around all penetrations such as utility conduits, etc. for stability.
 1. Horizontal Surfaces - The substrate must be free of loose aggregate and sharp protrusions. Avoid curved or rounded substrates. When installing over earth or crushed stone, ensure substrate is well compacted to avoid displacement of substrate due to traffic or concrete pour. The surface does not need to be dry, but standing water must be removed.
 2. Vertical Surfaces - Use concrete, plywood, insulation, or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 0.5 in. (12 mm) out of alignment.

3.03 INSTALLATION, HORIZONTAL APPLICATIONS

- A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:
 1. Place the PREPRUFE® 250 Membrane HDPE film side to the substrate with the clear plastic release liner facing towards the concrete pour. End laps should be staggered to avoid a build-up of layers.
 2. Leave the plastic release liner in position until overlap procedure is completed.
 3. Accurately position succeeding sheets to overlap the previous sheet 3 in. (75 mm) along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry, and free from contamination before attempting to overlap.
 4. Peel back the plastic release liner from between the overlaps as the two layers are bonded together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller.
 5. Completely remove the plastic liner to expose the protective coating. Any initial tack will quickly dissolve.

3.04 INSTALLATION, VERTICAL APPLICATIONS

- A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:
 1. Where desired mechanically fasten the PREPRUFE® 250 Membrane vertically using fasteners appropriate to the substrate with the clear plastic release liner facing towards the concrete pour. The membrane may be installed in any convenient length.
 2. All mechanical fastening shall be through the selvedge using a small and low profile head fastener so that the membrane lays flat and allows firmly rolled overlaps.
 3. Immediately remove the plastic release liner.
 4. Ensure the underside of the succeeding sheet is clean, dry, and free from contamination before attempting to overlap.
 5. After placement roll firmly to ensure a watertight seal.
 6. Overlap all roll ends and cut edges by a minimum 3 in. (75 mm) and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary.
 7. Allow to dry and apply PREPRUFE® Tape LT (or HC in hot climates) centered over the lap edges and roll firmly.
 8. Immediately remove printed plastic release liner from the tape.

3.05 WATERSTOP INSTALLATION

- A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:
 1. Secure ADCOR® hydrophilic waterstop using masonry nails 1½ in. - 2 in. (40 mm – 50 mm) long with a washer ¾ in. (20 mm) in diameter. Hilti EM6-20-12 FP8 shot fired fixings with ¼ in. (6 mm) nuts and ¾ in. (20 mm) diameter washers may also be used. Fixings should be spaced at a maximum of 12 in. (300 mm) centers with a minimum spacing that ensures proper contact to substrate.
 2. On irregular concrete faces, or on vertical surfaces, apply a ½ in. (12 mm) bead of ADCOR® Adhesive as bedding for ADCOR® hydrophilic waterstop.
 3. ADCOR® hydrophilic waterstop joints should overlap a minimum of 4 in. (100 mm), ensuring full contact between jointed pieces.

3.06 PROTECTION

- A. Protect membrane in accordance with manufacturer's recommendations until placement of concrete. Inspect for damage just prior to placement of concrete and make repairs in accordance with manufacturer's recommendations.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

SECTION 31 22 00 | GRADING

PART1 GENERAL

1.01 SECTION INCLUDES

- A. Removal **and storage** of topsoil.
- 8. Rough grading the site **for site structures, building pads, and parking areas.**
- C. **Replacement of topsoil and finish grading.**

1.02 RELATED REQUIREMENTS

- A. Section **3110 00- Site Clearing.**
- 8. Section **31 23 16 - Excavation.**
- C. Section **31 23 16.13 - Trenching: Trenching and backfilling for utilities.**
- D. Section **31 23 23 - Fill: Filling and compaction.**

1.03 SUBMITTALS

- A. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

1.04 QUALITY ASSURANCE

- A. Perform Work in accordance with **City of Clovis Standard Specification for Roadway and Parking Lot Construction.**
 - 1. Maintain **one copy** on site.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Top soil excavated on site and local borrow material.
 - 1. Graded.
 - 2. Free of roots, rocks larger than **1/2 inch** subsoil, debris, large weeds, and foreign matter.
- 8. Other Fill Materials: See Section **31 23 23.**

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- 8. Stake and flag locations of known utilities.
- C. **Locate, identify, and protect** from damage above and below grade utilities.
- D. Protect site features to remain, including but not limited to **bench marks and survey control points from damage by grading equipment and vehicular traffic.**

3.03 ROUGH GRADING

- A. Remove topsoil from entire site, **without mixing with foreign materials.**
- 8. Do not remove topsoil when wet.
- C. Remove subsoil from **areas to be further excavated.**
- D. Do not remove wet subsoil **unless it is subsequently processed to obtain optimum moisture content.**
- E. See Section **31 23 23** for filling procedures.
- G. **Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key fill material to slope for firm bearing.**

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

3.04 SOIL REMOVAL AND STOCKPILING

- A Stockpile top soil to be re-used on site; remove remainder from site.
- B. Stockpiles: Use areas designated on site; pile depth not to exceed **8 feet protect from erosion.**

3.05 FINISH GRADING

- A Before Finish Grading:
 - 1. Verify building and trench backfilling have been inspected.
 - 2. Verify subgrade has been contoured and compacted.
- B. Remove debris, roots, branches, stones, in excess of **1/2 inch in size. Remove soil contaminated with petroleum products.**
- C. Where topsoil is to be placed, scarify surface to depth of **3 inches.**
- D. In areas where vehicles or equipment have compacted soil, scarify surface to depth of **inches.**
- E. Place topsoil in areas indicated.
- F. Place topsoil thickness **as indicated.**
- G. Place topsoil during dry weather.
- H. Remove roots, weeds, rocks, and foreign material while spreading.
- I. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

3.06 FIELD QUALITY CONTROL

- A See Section **31 23 23 for compaction density testing.**

3.07 CLEANING

- A Remove unused stockpiled **topsoil. Grade stockpile area to prevent standing water.**
- B. Leave site clean and raked, ready to receive landscaping.

END OF SECTION

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

SECTION 31 23 16 | EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavating for building volume below grade, footings, pile caps, slabs-on-grade, paving, site structures, and utilities within the building, and general sitework.
- B. Trenching for utilities outside the building to utility main connections.

1.02 RELATED REQUIREMENT

- A. Section **31 23 03** Fill materials, filling, and compacting.

1.03 PROJECT CONDITIONS

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.

PART 3 EXECUTION

2.01 EXAMINATION

- A. Verify that survey bench mark and intended elevation for the work are as indicated.

2.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. See Section **31 23 23** for additional requirements.
- C. Locate, identify, and protect utilities that remain and protect from damage.
- D. Notify utility company to remove and relocate utilities.
- E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, curbs, and from excavating equipment and vehicular traffic.
- F. Protect plants, lawns, and other features to remain.

2.03 EXCAVATING

- A. Excavate to accommodate new structures and construction operations.
- B. Notify the Owner of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Preparation for Piling Work: Excavate to working elevations.
- D. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- E. Do not interfere with 45 degree bearing splay of foundations.
- F. Cut utility trenches wide enough to allow inspection of installed utilities.
- G. Hand trim excavations. Remove loose matter.
- H. Remove lumped subsoil, boulders, and rock up to $\frac{1}{3}$ cu yd measured by volume.
- I. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 31 23 23.
- J. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- K. Remove excavated material that is unsuitable for re-use from site.
- L. Stockpile excavated material to be re-used in area designated on site in accordance with Section 31 22 00.
- M. Remove excess excavated material from site.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

2.04 FIELD QUALITY CONTROL

- A. Inspection and testing will be performed as directed by the Owner.
- B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at the expense of the Contractor.

2.05 PROTECTION

- A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain solid stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

END OF SECTION

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

SECTION 31 23 16.13 | TRENCHING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Backfilling and compacting for utilities outside the building **to utility main connections.**

1.02 RELATED REQUIREMENTS

- A. Section **31 22 00** – **Grading; Site grading.**
- B. Section **31 23 16** – **Excavation; Building and foundation excavating.**
- C. Section **31 23 23** – **Fill; Backfilling at building and foundations.**

1.03 DEFINITIONS

- A. Finish Grade Elevations: Indicated on drawings.
- B. Subgrade Elevations: Indicated on drawings.

1.04 REFERENCES – City of Clovis Standard Specifications for Roadway and Parking Lot Construction

- A. AASHTO T 180 – Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials; **2010.**
- B. ASTM C136 – Standard Test Method for Sieve Analysis for Fine and Coarse Aggregates; **2006.**
- C. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN m/m³)); **2007.**
- D. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; **2007.**
- E. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); **2009.**
- F. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); **2010.**
- G. ASTM D3017 – Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); **2005.**
- H. ASTM D4318 – Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; **2010.**
- I. ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); **2010.**

1.05 SUBMITTALS

- A. Materials Sources: Submit name of imported materials source.
- B. Fill Composition Test Reports: Results of laboratory tests on **proposed and actual materials used.**
- C. Compaction Density Test Reports.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

1.06 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where **indicated by the Owner**.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. General Fill - **Subsoil excavated on-site, Imported borrow, Local borrow**.
- B. Structural Fill - **Subsoil excavated on-site, Imported borrow, Local borrow**.
- C. Concrete for Fill: Lean concrete.
- D. Granular Fill – **Gravel, Angular crushed, natural, washed, stone, free of shale, clay, friable material and debris**.
- E. Sand – **Natural river or bank sand, washed, free of silt, clay, loam, friable or soluble materials, and organic matter**.
- F. Topsoil – **Topsoil excavated on-site, local borrow**.

2.02 SOURCE QUALITY CONTROL

- A. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance **before delivery to site**.
- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. **Locate, identify, and protect utilities that remain and protect from damage**.
- C. Notify **utility company** to remove **and relocate** utilities.
- D. Protect **bench marks, survey control points, existing structures, fences, sidewalks, paving, curbs** from excavating equipment and vehicular traffic.

3.03 TRENCHING

- A. Notify **the Owner** of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- B. Slope banks of excavations deeper than **4 feet** to angle of repose or less until shored.
- C. Do not interfere with **45** degree bearing splay of foundations.
- D. Cut trenches wide enough to allow inspection of installed utilities.
- E. Hand trim excavations. Remove loose matter.
- F. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.
- G. Remove excavated material that is unsuitable for re-use from site.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

- H. Stockpile excavated material to be re-used in area designated on site **in accordance with Section 31 22 00.**
- I. Remove **excess** excavated material from site.

3.04 PREPARATION FOR UTILITY PLACEMENT

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with **general fill.**
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.05 BACKFILLING

- A. Backfill to contours and elevations indicated using unfrozen materials.
- B. Fill up to **subgrade elevations unless otherwise indicated.**
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding **6 inches compacted depth.**
- G. Soil Fill: Place and compact material in equal continuous layers not exceeding **8 inches compacted depth.**
- H. Slope grade away from building minimum **2 inches in 10 ft, unless noted otherwise.** Make gradual grade changes. Blend slope into level areas.
- I. Correct areas that are over-excavated.
 - 1. Other areas: Use **general fill**, flush to required elevation, compacted to minimum **97** percent of maximum dry density.
- J. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under **paving and similar construction, or 100 percent of maximum dry density.** (ASTM D698)
 - 2. At **slabs on grade 95 percent of maximum dry density.** (ASTM D1557)
- K. Reshape and re-compact fills subjected to vehicular traffic.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

3.06 BEDDING AND FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.
- B. **Utility Piping, Conduits, Duct Bank:**
 - 1. Bedding: Use **granular fill, general fill.**
 - 2. Cover with **general fill.**
 - 3. Fill up to **subgrade elevation, finish grade elevation.**
 - 4. Compact in maximum **8 inch** lifts to **95 percent of maximum dry density.**
- C. At **Pipe Culverts:**
 - 1. Bedding: Use **granular fill, general fill, structural fill, sand.**
 - 2. Cover with **general fill.**
 - 3. Fill up to **subgrade elevation, finish grade elevation.**
 - 4. Compact in maximum **8 inch** lifts to **95 percent of maximum dry density.**
- D. At **French Drains:**
 - 1. Use **granular fill.**
 - 2. Fill up to **8 inches** below finish grade.
 - 3. Compact to **95 percent of maximum dry density.**

3.07 FIELD QUALITY CONTROL

- A. **Compaction density testing will be performed on compacted fill in accordance with ASTM D6938.**
- B. **Results will be evaluated** in relation to compaction curve determined by testing un-compacted material in accordance with **ASTM D698 ("standard Proctor"), ASTM D1557 ("modified Proctor").**
- C. If tests indicate work does not meet specified requirements, **remove work, replace and retest.**

3.08 CLEANING

- A. Leave unused materials in a neat, compact stockpile.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

SECTION 31 23 23 | FILL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Filling, backfilling, and compacting for building volume below grade, footings, slabs-on-grade, paving, site structures, and utilities within the building.
- B. Backfilling and compacting for utilities outside the building to utility main connections.
- C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.02 DEFINITIONS

- A. Satisfactory Materials: Materials classified in accordance with ASTM D2487 as SW, SP, SM, SC, SW-SM, SW-SC, SP-SM, SP-SC, SC-SM, GW, GP, GM, GC, GW-GM, GW-GC, GP-GM and GP-GC and free of roots and other organic matter, trash, debris, frozen materials and stones larger than 3-inches in any dimension for select fill or 6 inches in any dimension for common fill, and as further defined in the project Geotechnical report, can be considered satisfactory.
- B. Unsatisfactory Materials: Materials that are not in accordance with the requirements for satisfactory materials are unsatisfactory. In addition, materials, which include man-made fills, refuse or stabilized backfills from previous construction are unsatisfactory.
- C. Sub-excavation: Excavation of existing materials to specified depths or elevations below the bottom footings or foundations for the purpose of removing unsound or undesirable soil materials for replacement with select fill or other specified fill material.
- D. Compaction: Degree of compaction is a percentage of maximum density obtained by the test procedure described in ASTM D1557 and is abbreviated in this section as a percent of laboratory maximum density.
- E. Proof rolling: Compaction method using a 10 ton steel or pneumatic wheeled roller to locate and identify weak or compressible zones in exposed sub-grade soils. For this specification proof rolling will include a minimum of ten (10) passes with an approved roller and must be observed and approved by the presence of the Project Engineer.

1.03 REFERENCE STANDARDS

- A. American National Standards Institute (ANSI)/American Society for Testing and Materials (ASTM).
 - 1. ANSI/ASTM C136 – Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 2. ANSI/ASTM D1557 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 10 lb (4.54 Kg) Rammer and 18 inch (457mm) Drop.
 - 3. ASTM D 2487 – Classifications of Soils for Engineering Purposes (Unified Soil Classification System).
 - 4. ASTM D2922 – Test Methods for Density of Soil-Aggregate Mixtures in Place by Nuclear Methods (Shallow Depth).
 - 5. ASTM D3017 – Test Methods for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
 - 6. ASTM D4318 – Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

1.04 SUBMITTALS

- A. Submit and obtain approval prior to beginning earthwork operations:
 - 1. Name and location of source(s) proposed for imported soils and aggregate materials.
 - 2. Certified test reports and analysis from identified proposed source, certifying that the soils and aggregate materials proposed for use on the project conform to the specified requirements.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

3. Imported materials to be supplied from the same source throughout the work. Change of source will require submittal of certified test reports as per 2. above, for the proposed soil materials and the Engineer's approval.

B. During earthwork operations:

1. Certified test reports and analysis for all tests conducted in accordance with 3.05, Field Quality Control, this Section.

C. 15 days prior to Final Acceptance:

1. Accurately record, on a set of the construction plans, actual locations of all existing improvements, monuments and improvements remaining as well as any changes to locations, numbers, etc to the new improvements, structures, etc. as may have been approved during construction.
2. Actual locations to be shown with horizontal dimensions, elevations, inverts and slope gradients.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. Select Granular Material

1. General Requirements:

Select granular material consist of materials classified as GW, GP, SW, SP, by ASTM D2487. The liquid limit of such material must not exceed 35 percent when tested in accordance with ASTM D4318. The plasticity index must not be a greater than 12 percent when tested in accordance with ASTM D4318, and not more than 35 percent by weight may be finer than No. 200 sieve when tested in accordance with ASTM D1140.

2. Non-expansive Fill:

Non-expansive fill shall consist of satisfactory materials free from rocks greater than 1" in diameter in any direction. The liquid limit of such material shall not exceed 35 percent and the plasticity index shall not be greater than 12 percent or less than 4 percent when tested in accordance with ASTM D4318. The sodium sulfate content shall not exceed 0.2 percent by dry weight of soil and soil solubility shall be less than 1.5 percent. The select fill shall be placed in 8" loose to 6" maximum compacted lifts with each lift tested and accepted prior to placement of the next lift. The select fill should be moisture conditioned to +/- 2% of optimum moisture then compacted to a minimum of 95% of maximum dry density as determined by a Modified Proctor (ASTM D1557).

3. CAPILLARY WATER BARRIER

Provide capillary water barrier of clean, poorly graded crushed rock or crushed gravel placed beneath a building slab with a vapor barrier to cut off the capillary flow of pore water to the area immediately below. Gradation of capillary water barrier shall meet gradation requirements of ASTM C33 coarse aggregate Size 67.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the Work are as indicated.
- B. Identify required lines, levels, contours, and datum locations.
- C. Verify sub-drainage, damp-proofing, or waterproofing installation has been inspected.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

3.02 PREPARATION

- A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill material as approved by the Engineer.
- C. Compact subgrade to density as specified in the project plans and specifications.
- D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.
- E. Identify required lines, levels, contours, and datum.
- F. Notify public utility authorities in accordance with City regulations and coordinate verification of existing utilities locations. Contractor shall remain responsible for the location and work in and around any utilities.
- G. Confirm, stake and flag locations of known utilities.
- H. Coordinate with utility companies, the removal or relocation of utility lines or facilities designated to be relocated on the drawings.
- I. Protect above the below grade utilities designated to remain or any other utilities within the site.
- J. Protect plants and other features designated to remain as part of final landscaping.
- K. Protect benchmarks, existing structures, fences, paving, and curbs and other improvements on the site and along the access route, designated to remain, from excavating equipment and vehicular traffic.
- L. The Contractor shall remain responsible for any damage to existing structural improvements within the site or adjoining properties that may be affected by the Contractor's operation. The Contractor shall hold harmless, the Owner and Engineer from any damage or injury caused by the Contractor's operations.

3.03 FILLING

- A. Fill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade, finish grade elevations unless otherwise indicated.
- C. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth
- D. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- E. Slope grade away from building as shown on the Project site grading plan, unless noted otherwise. Make gradual changes. Blend slope into level areas.
- F. Remove all roots, brush, heavy sods, heavy growth of grass, decayed vegetable matter, rubbish, and other unsatisfactory materials from areas to receive fill materials.
- G. Existing slopes greater than four horizontal to one vertical which are to receive fill shall be plowed, stepped or broken up in such manner that the fill material will bond with the existing surface.
 - 1. Prepared surfaces that are to receive fill shall be scarified, wetted or dried, as required, to obtain specified moisture content and compacted to 95% of maximum density.
- H. Fills and embankments shall be constructed in the locations and to lines and grades indicated. Completed fill will conform to shapes indicated by plan and typical sections and contours. Make grade changes gradual. Blend slope into level areas.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

- I. Place fill materials in continuous horizontal layers of 8 inch (6-inch, where hand held compaction equipment is to be used for compaction) loose depth for the full width of the cross section and compacted to 95% of maximum density or to the density shown on the plans.
- J. Maintain moisture content to within plus or minus 2 percent of optimum moisture content as determined from laboratory tests of the fill materials.
- K. Do not backfill over porous, wet, frozen or spongy subgrade surface.
- L. Use placement methods that will not disturb or damage existing structures or other work.
 - 1. Backfill adjacent to structures shall be placed and uniformly compacted in such manner as to prevent wedging action or eccentric loading upon or against the structures.
- M. Finished graded surfaces of all areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded.
 - 1. Slope grade away from buildings at minimum slope of ¼-inch per foot (2%) for minimum of 10-feet unless noted otherwise.
- N. Remove surplus fill materials and unacceptable materials from the site and dispose of at acceptable disposal sites.
- O. Over-excavation beyond the limits and depths required by the Contract Documents shall be replaced to the specified lines and grades at no additional cost to the Owner with select fill or lean concrete or other material approved, in writing, by the Engineer.

3.04 TOLERANCES

- A. Top Surface of General Filling: Plus or minus 0.10 foot from required elevations.
- B. Top Surface of Filling Under Paved Areas, 0.10 foot Plus or minus 1 inch from required elevations.

3.05 FIELD QUALITY CONTROL

- A. Inspection and testing will be performed as directed by the Project Engineer.
- B. If tests indicated Work does not meet specified requirements, remove Work, replace and retest at the expense of the Contractor.

3.06 CLEANING

- A. Leave unused materials in a neat, compact stockpile.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

SECTION 32 12 16 | ASPHALT PAVING

PART1 GENERAL

1.01 SECTION INCLUDES

- A. Aggregate base course.
- B. Single course bituminous concrete paving.
- C. Double course bituminous concrete paving.
- D. Surface sealer.

1.02 REFERENCE STANDARDS

- A. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types; The Asphalt, Institute:1994.
- B. ASTM D2172 - Standard Specification for Quantitative Extraction of Bitumen from Bituminous Paving Mixture.
- C. ASTM D2041 - Standard Specification for Theoretical Maximum Specific Gravity for Bituminous Paving Mixture:2003.
- D. ASTM D5444 - Standard Specifications for Mechanical size analysis of Extracted Aggregate
- E. ASTM D6926 - Standard Practice for Preparation of Bituminous Specimens using Marshall Apparatus; **2010**

1.03 QUALITY ASSURANCE

- A. The owner will accept the constructed product based on the Engineers inspection and on Laboratory testing for conformance with the design specifications.
- B. Mixing Plant: Conform to State of Texas State Department of Transportation Standard Specifications for Highway and Bridge Construction.
- C. Obtain materials from same source throughout.

1.04 FIELD CONDITIONS

- A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F or surface is wet or frozen.
- B. Place bitumen mixture when temperature is not more than 15 degrees F below bitumen supplier's bill of lading and not more than maximum specified temperature.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

PART 2 PRODUCTS

2.01 MATERIALS

All materials shall be tested in accordance with applicable AASHTO methods or other test procedures designated by the OWNER. All questions arising as to interpretation of test procedures shall be decided by the OWNER. Material that is improperly graded or segregated, or fails to meet the requirements herein provided, shall be corrected or removed and disposed of immediately as directed by the Engineer, at the Contractor's expense.

- A. Type I. Each fraction of Type I PMBP coarse aggregate shall have a percent wear of forty (40) or less at 500 revolutions when tested in accordance with AASHTO T 96 and the coarse aggregate shall have a soundness loss of fifteen (15) or less when tested in accordance with AASHTO T 104 using magnesium sulfate solution and a test duration of five (5) cycles. All material passing the No. 40 sieve shall be non-plastic. The amount of crushing shall be regulated so that at least seventy five percent (75%), by dry weight, of the plus No. 4 sieve material shall have a minimum of two (2) fractured faces. The combined aggregate shall have a minimum sandequivalent of forty five (45).
- B. Fractured Faces. A face will be counted as fractured whenever one-half ($\frac{1}{2}$) or more of the surface, when viewed normal to the face, is fractured.

2.02 Production.

When producing aggregates for PMBP natural fines shall be removed by screening and stockpiled separately. The Contractor shall use as a minimum, the U.S. No. 4 sieves for this screening operation. The contractor may use a larger screen if needed to properly control the crushing and screening operation. The aggregate retained on the scoping screen sieve shall then be crushed, separated and stockpiled as specified herein. Crushing operations shall be regulated in a manner that produces material within the specified gradation band.

When producing aggregates for PMBP the crushed material shall be separated into at least two (2) stockpiles of fine and coarse aggregates.

The coarse aggregate shall have not more than four percent (4%) passing the U.S. No. 10 sieve. In the case of a wet pit, when screening becomes difficult, the Engineer may authorize the coarse aggregate passing the U.S. No. 10 sieve *to* be increased to a maximum often percent (10%). The fine aggregate shall have no more than five percent (5%) of the material retained on the separating screen. The Separating screen shall be that screen where separation between coarse and fine aggregate occurs depending on the material.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT CLOVIS, NEW MEXICO

2.03 Combining.

When the crushed materials from the stockpiles are combined, the product of such combination shall meet the gradation requirements. In order to meet the specified mix design criteria, blending sand may be added up to a maximum of twenty percent (20%). The actual percentage will be determined based on tests performed by the Contractor. The Contractor shall furnish blending sand from what-ever source necessary to meet mix design gradation requirements.

2.04 Acceptance of Aggregate.

The liquid limit, sand equivalent and fractured face count of PMBP aggregate will be determined from representative samples taken after the aggregate materials have been blended and prior to mixing with bituminous material. The test results from these samples will be the basis for acceptance of such aggregate. The Engineer may sample and test the aggregate at any time during production or stockpiling.

The mix design proposal shall contain, as a minimum, the following:

1. The name and address of the testing organization and the person responsible for the testing.
2. The specific location(s) of the source(s) of aggregate and blending sand.
3. The supplier, refinery and type of asphalt cement, and the source and type of mineral filler and the percentage of each to be used.
4. The mineral aggregate gradation in each stockpile.
5. The proposed mix design gradation.
6. The results of all testing, determinations, etc. such as: Specific gravity of each component, water absorption, sand equivalent, loss on abrasion (LA wear), soundness loss, fractured faces, immersion compression results, Marshall Stability and flow, asphalt absorption, percent air voids, voids in mineral aggregate, and bulk density.

2.05 Mix Temperature Requirements.

The temperature of the bituminous mixture at discharge from the mixer shall not exceed 300°F and shall not be less than 250°F. When polymer modified asphalts are used the maximum temperature shall not exceed 350°F. The mixing temperature shall be as directed by the Engineer, and the temperature shall be maintained within a range of plus or minus twenty degrees (20°)F.

**CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO**

2.06 Haul Equipment.

Trucks used for hauling bituminous mixtures shall have tight, clean, smooth metal beds which have been thinly coated with a minimum amount of commercial agent to prevent the mixture from adhering to the bed. If diesel fuel is used it shall be applied to the truck bed with a fine spray fogging device with the truck bed in the maximum raised position and allowed to drain before the bed is lowered. There shall be no puddles of diesel fuel or material from the previous load allowed in the truck bed. Bituminous material placed in truck beds with puddle or draining diesel fuel shall be wasted at the Contractor's expense.

Each truck shall have a cover of canvas or other suitable material of sufficient size to protect the mixture from the weather to be used as directed by the Engineer.

2.07 Pavers.

Pavers shall be self-contained, self-propelled units, provided with an activated screed or a strike-off assembly, heated if necessary, and capable of spreading and finishing courses of PMBP material to the widths and thickness as specified in the contract.

Pavers shall be operated at a speed no greater than three (3) MPH. Materials introduced in front of the screed shall maintain a consistent depth to avoid variation in pressure on the screed. The auger box shall be maintained at 1/3 to 2/3 full.

Pavers shall be equipped with a receiving hopper sufficient capacity to effect a uniform spreading operation. The hopper shall be equipped with a distribution system capable of maintaining a uniform amount of mixture in front of the screed.

The paver shall be capable of being operated at forward speeds consistent with satisfactory laying of the mixture. The screed shall be adjustable or both height and crown and shall be equipped with a controlled heating device.

The screed or strike-off assembly shall produce a finished surface of an even and uniform texture for the full width being paved without tearing, shoving or gouging the mixture. Screeds shall include any strike-off device operated by tamping or vibrating action.

The bituminous paver shall be equipped with an automatic leveling device controlled from an external guide. The initial pass for each course shall be made using a paver equipped with a forty (40) foot minimum external reference, except that this requirement will not apply when PMBP is placed adjacent to Portland cement concrete pavement or when short lengths of PMBP placement is required. Subsequent passes and passes adjacent to PCCP shall utilize a matching device of one (1) foot minimum length riding on the adjacent lay.

**CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO**

2.08 Compaction Equipment.

Equipment proposed for use in the compaction of PMBP shall be approved by the Engineer prior to use. All rollers shall be self-propelled, in good condition and capable of reversing without backlash. One (1) roller shall be either a steel wheel vibratory roller weighting a minimum of six (6) tons or a smooth faced wheel roller of two (2) axle or three (3) axle tandem design weighting a minimum of ten (10) tons. The other roller shall be a self-propelled pneumatic tired roller so constructed that the average ground contact pressure may be varied between forty (40) and ninety (90) pounds per square inch.

2.09 Placement Operations.

The asphalt concrete mixture shall be placed on the approved surface, spread and struck off to the grade and elevation established. It shall be spread and compacted in layers as shown on the plans or as directed by the Engineer. Bituminous pavers shall be used to distribute the mixture either over the entire width or over such partial width as may be practicable.

The subgrade, base course or BTB upon which the PMBP is to be placed shall be cleaned of all loose material or other deleterious materials prior to placement of the PMBP. These surfaces shall be free of frozen material and the moisture and density requirements of the applicable Section shall be met prior to placement of the new PMBP.

On areas there irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the mixture shall be dumped, spread and leveled to give the required compacted thickness.

2.10 Temperature & Weather Limitations.

PMBP shall not be placed on wet or frozen surfaces; when the ambient temperature is below forty five degrees (45°F); when the chill factor is below thirty five degrees (35°F); or when weather conditions otherwise prevent the proper handling and finishing of the PMBP.

2.11 Placement Temperature.

The Engineer will determine a minimum placement temperature within a range from 220°F to 300°F. When polymer modified asphalts are used the maximum temperature shall be 350°F. The established placement temperature, which is measured immediately behind the laydown machine, shall not vary more than plus or minus twenty degrees (20°F) from that established by the Engineer.

2.12 Compaction.

Immediately after the bituminous mixture has been spread, struck-off and surface irregularities adjusted, it shall be thoroughly and uniformly compacted.

The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction while the mixture is in a workable condition. The sequence of rolling operations and the selection of roller types shall provide the specified pavement density. Rolling operations shall not disturb the typical section placed by the paver.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

Rollers shall be operated at speeds less than three (3) MPH and slow enough to minimize the displacement of the bituminous mixture. The use of equipment which results in excessive crushing of aggregates will not be permitted. At least two (2) rollers shall be used for compaction. Both steel faced and pneumatic rollers are required. If the pneumatic roller leaves marks that require a final rolling, additional passes with a static wheel roller will be required to remove the marks.

Any displacement occurring as a result of the reversing of direction of a roller, or from other causes, shall be corrected immediately by the use of rakes and addition of fresh bituminous mixture when required. Care shall be exercised in rolling not to displace the line and grade of the edges of the bituminous mixture. To prevent adhesion of the mixture to the rollers, the wheels shall be kept properly moistened with water or water mixed with very small quantities of detergent or other approved material. Excess liquid will not be permitted. Diesel fuel or other petroleum diluents are not acceptable.

Along forms, curbs, headers, walls and other places not accessible to the rollers, the mixture shall be thoroughly compacted with hot hand tampers, smoothing irons or with mechanical tampers. On depressed areas, a trench roller or cleated compression strips under the roller may be used to transmit compression to the depressed area.

Mixtures which become loose, broken, mixed with dirt, segregated or are defective shall be removed replaced with fresh hot bituminous mixture, and compacted to conform with the surrounding area, at the Contractor's expense. Areas showing excess or deficiency of bituminous material shall be corrected immediately as directed by the Project Manager.

2.13 FIELD QUALITY CONTROL

- A Provide field inspection and testing. Take samples and perform tests in accordance with **quality control requirements to be established by Owner.**

2.14 PROTECTION

- A Immediately after placement, protect pavement form mechanical injury for **one day or until surface temperature is less than 140 degrees F.**

END OF SECTION

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

SECTION 32 13 13 | CONCRETE PAVING

PART1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete sidewalks, stair steps, curbs, gutters, parking areas, and valley curbs.

1.02 REFERENCE STANDARDS

- A. City of Littlefield Standard Specifications for Roadway and Parking Lot Construction
- B. ACI 2211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and **Mass** Concrete; American Concrete Institute International:1991 (Reapproved 2002).
- C. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; **2000**.
- D. ACI 305R - Hot Weather Concreting; American Concrete Institute International; **2010**.
- E. ACI 306R - Cold Weather Concreting; American Concrete Institute International; **2010**.
- F. ASTM C33 - Standard Specification for Concrete Aggregates; **2011**.
- G. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; **2010**.
- H. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; **2011**
- I. ASTM C150 - Standard Specification for Portland Cement; **2011**
- J. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; **2010b** .
- K. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete; **2010a**.
- L. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; **2007**.
- M. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; **2010a**.
- N. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; **2008**.
- O. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (non-extruding and Resilient Bituminous Types); **2004a (Reapproved 2008)**.

1.03 SUBMITTALS

- A. Product Data: Provide data on concrete mix designs proposed for usage on this Project Site Mix designs are to be approved by the Engineers prior to usage.
- B. Design Data: Contractor Is advised to review the Project plans for pavement thickness, design strengths, and typical details.

PART 2 PRODUCTS

2.01 PAVING ASSEMBLIES

- A. Comply with applicable requirements of City of Clovis Standard Specifications for Roadway and Parking Lot Construction.
- B. Design paving for parking and light duty commercial vehicles.
- C. Concrete Sidewalks: **3,000 psi 28 day concrete, 4 inches thick 5%-7% air entrainment, 4" maximum slump.**
- D. Parking Area Pavement: **4,000 psi 28 day concrete, 6 inches 5%-7% air entrainment, 1"-3" slump.**

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

2.02 FORM MATERIALS

- A. Form Materials Conform to ACI 301.
- B. Wood or Steel form material profiled to suit conditions.
- C. Join Filler: Preformed non-extruding bituminous type (ASTM D1751).
 - 1. Thickness: ½ inch.

2.03 CONCRETE MATERIALS

- A. Obtain cementitious materials from same source throughout.
- 8. Cement: ASTM C150 **Normal Type 1-11 L. A.**
- C. Fine and Coarse Mix Aggregates: ASTM C33 Maximum aggregate size#57.
- D. Fly Ash: ASTM C618, Class **C or F.**
- E. Water: Clean, and not detrimental to concrete.
- F. Fiber Reinforcement: Alkali-resistant glass fibers; Synthetic fibers shown to have long-term resistance to deterioration when in contact with alkalis and moisture.
- G. Air Entrainment Admixture: ASTM C260.
- H. Chemical Admixtures: ASTM C494/C494M, Type A - Water Reducing

2.04 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- 8. Concrete Strength: Establish required average strength for **each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.**
 - 1. For trial mixtures method, employ independent testing agency acceptable to **the Owner for preparing and reporting proposed mix designs.**
- C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer
- D. Fiber Reinforcement: Add to mix at rate of **1.5 pounds per cubic yard, or as recommended by manufacturer for specific project conditions.**
- E. Concrete Properties:
 - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at **28 days.**
 - 2. Fly Ash Content: Maximum 20% of cementitious materials by weight.
 - 3. Cement Content: Minimum 517 lb per cubic yard.
 - 4. Water-Cement Ratio: Maximum **0.45 percent by weight.**
 - 5. Total Air Content: **5%-7% determined in accordance with ASTM C173/C173M.**
 - 6. Maximum Slump: **4 inches.**
 - 7. Maximum Aggregate Size: **#57.**

2.05 MIXING

- A. Transit **Mixers:** Comply with **ASTM C94/C94M.**

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify compacted **subgrade is acceptable and ready to support paving and imposed loads.**
- B. Verify gradients and elevations of base are correct.

3.02 PREPARATION

- A. Moisten-subgrade to minimize absorption of water from fresh concrete.
- B. Coat surfaces of catch **basin frames with oil to prevent bond with concrete pavement.**
- C. Notify **the Owner minimum 24 hours prior to commencement of concrete operations.**

3.03 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.04 COLD AND HOT WEATHER CONCRETING

- A. Follow recommendations of ACI 305R when concreting during hot weather.
- B. Follow recommendations of ACI 306R when concreting during cold weather.
- C. Do not place concrete when base surface temperature is less than **40 degrees F, or surface is wet or frozen.**

3.05 PLACING CONCRETE

- A. Coordinate installation of snow melting components.
- B. Place concrete **in accordance with ACI 304R.**
- C. Place concrete continuously over the full width of the panel and between predetermined construction joints. **Do not break or interrupt successive pours such that cold joints occur.**

3.06 JOINTS

- A. Align curb, gutter, and sidewalk joints.
- B. Place **3/8 inch** wide **expansion** joints at **60 foot intervals and to separate paving from vertical surfaces and other components.**
 - 1. Form joints with joint filler extending from bottom of pavement to within **1/2 inch** of finished surface. All expansion joints in the concrete pavement, curb and gutter, and sidewalks are to be sealed.
- C. Provide a **complete jointing plan to the Owner for approval prior to concrete placement.**
- D. Provide keyed joints as indicated.
- E. Saw cut contraction joints **3/16 inch** wide at optimum time after finishing. **Cut 1/3 into depth of slab. For concrete curb and gutter contraction joints should be placed at 15 feet to 20 feet intervals. For concrete sidewalks, the contraction joints should be placed at five (5) foot intervals.**

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

3.07 FINISHING

- A. Parking Area Paving: **Light broom, texture perpendicular to pavement direction.**
- 8.** Sidewalk Paving: **Light broom, texture perpendicular to direction of travel.**
- C. Curbs and Gutters: **Light broom, texture parallel to pavement direction.**
- D. Inclined Vehicular Ramps: **Broomed perpendicular to slope.**
- E. Place **curing compound** on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.08 FIELD QUALITY CONTROL

- 1. Submit proposed mix design of each class of concrete to the Owner for review prior to commencement of concrete operations.
- 2. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.

3.09 PROTECTION

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
- 8.** Do not permit **vehicular traffic over pavement for 7 days minimum after finishing.**

END OF SECTION

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

SECTION 33 11 16 | SITE WATER UTILITY DISTRIBUTION PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pipe and fittings for site water lines including domestic water lines and fire water lines.
- B. Valves and Fire hydrants.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 – Cast-in-Place Concrete: Concrete for thrust restraints.
- B. Section 31 23 16 – Excavation: Excavating of trenches.
- C. Section 31 23 16.13 – Trenching: Excavating, bedding, and backfilling.
- D. Section 31 23 23 - Fill: Bedding and backfilling.

1.03 REFERENCES

- A. ASME B16.18 – Cast Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2005) (ANSI B16.19).
- B. ASM B16.22 – Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2005).
- C. ASTM B88 – Standard Specification for Seamless Copper Water Tube; 2009.
- D. ASTM D1785 – Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, 120; 2006.
- E. ASTM D2241 – Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe ASTM D1784-C900.
- F. ASTM D2466 – Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40; 2006.
- G. ASTM D2855 – Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings; 1996 (Reapproved 2010).
- H. ASTM D3035 – Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter; 2010.
- I. ASTM D3139 – Standard Specification for Joints for Plastic Pressure Pipes using Flexible Elastomeric Seals; 1998 (Reapproved 2005).
- J. AWS A5.8/A5.8M – Specification for Filler Metals for Brazing and Braze Welding; American Welding Society; 2004 and errata.
- K. AWWA C104/A21.4 – Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water; American Water Works Association; 2003 (ANSI/AWWA C104/A21.4).
- L. AWWA C105/A21.5 – Polyethylene Encasement for Ductile-Iron Pipe Systems; American Water Works Association; 2005 (ANSI/AWWA C105/A21.5).
- M. AWWA C111/A21.11 – Rubber-Gasket Joints for Ductile-Iron Pipe and Fittings; American Water Works Association; 2007 (ANSI/AWWA C111/A21.11).
- N. AWWA C151/A21.51 – Ductile-Iron Pipe, Centrifugally Cast, for Water; American Water Works Association; 2009 (ANSI/AWWA C151/A2151).
- O. AWWA C500 – Metal-Seated Gate Valves for Water Supply Service; American Water Works Association; 2009.
- P. AWWA C502 – Dry Barrel Fire Hydrants; American Water Works Association; 2005 (ANSI AWWA C502/C502a).
- Q. AWWA C504 – Rubber Seated Butterfly Valves; American Water Works Association; 2006.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

- R. AWWA C508 – Swing-Check Valves for Waterworks Service, 2in. (50 mm) Through 24 in. (600 mm) NPS; American Water Works Association; **2009 (ANSI/AWWA C508)**.
- S. AWWA C509 – Resilient-Seated Gate Valves for Water Supply Service; American Water Works Association; **2009 (ANSI/AWWA C509)**.
- T. AWWA C600 – Installation of Ductile-Iron Water Mains and Their Appurtenances; American Water Works Association; **2010 (ANSI/AWWA C600)**.
- U. AWWA C606 – Grooved and Shouldered Joints; American Water Works Association; **2006**.
- V. AWWA C900 – Polyvinyl Chloride (VC) Pressure Pipe, 4 in. through 12 in. (100mm through 300mm), for Water Service; American Water Works Association; **2008**.
- W. AWWA C901 – Polyethylene (PE) Pressure Pipe and Tubing, ½ in. (13mm) Through 3 in. (76mm), for Water Distribution; American Water Works Association; **2008**.
- X. UL 246 – Hydrants for Fire-Protection Service; Underwriters Laboratories Inc.; **Current Edition Including All Revisions**.

1.04 SUBMITTALS

- A. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.
- B. Manufacturer's Certificate: Certify that **products meet or exceed specified requirements**.
- C. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with **City of Clovis standard installation requirements**.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store valves in shipping containers with labeling in place.

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

PART 2 PRODUCTS

2.01 WATER PIPE

- A. Ductile Iron Pipe: AWWA C151:
 - 1. Fittings: **Ductile iron, standard thickness.**
 - 2. Joints: AWWA C111, rubber gasket with rods.
 - 3. Jackets: **AWWA C105 polyethylene jacket.**
- B. Copper Tubing: ASTM B88, Type K, annealed:
 - 1. Fittings ASME B 16.18, cast copper, or ASME 16.22, wrought copper.
 - 2. Joints: Compression connection or AWS A5.8, BCuP silver braze.
- C. PVC Pipe: **ASTM D1785, Schedule 40.**
 - 1. Fittings: ASTM C2466, PVD.
 - 2. Joints: ASTM D2855, solvent weld.
- D. PVC Pipe: AWWA C900 Class **100.**
 - 1. Fittings AWWA C111, cast iron.
 - 2. Joints ASTM D3139 compression gasket ring.
- E. Polyethylene Pipe: **ASTM D3035, for 45 psig pressure rating.**
 - 1. Fittings: AWWA C901, molded **or fabricated.**
 - 2. Joints: **Fusion Joints.**
- F. Polyethylene Pipe: AWWA C901
 - 1. Fittings AWWA C901, molded **or fabricated.**
 - 2. Joints: **Compression.**
- G. Trace Wire: Magnetic detectable conductor, **clear plastic covering, imprinted with "Water Service" in large letters.**

2.02 VALVES

- A. Valves: Manufacturer's name and pressure rating marked on valve body.
- B. Gate Valves Up to **3 inches:**
 - 1. Brass or Bronze body, non-rising stem, inside screw, single wedge or disc, **compression ends, with control rod, post indicator, valve key and extension box.**
- C. Gate Valves **3 inches and Over:**
 - 1. AWWA C500, iron body, bronze trim, non-rising stem with square nut, single wedge, **flanged ends, control rod, post indicator, valve key, and extension box.**
 - 2. AWWA C509, iron body, bronze trim, non-rising stem with square nut, single wedge, resilient seat, **flanged ends, control rod, post indicator, or valve key, and extension box.**
- D. Ball Valves Up to **2 inches:**
 - 1. Brass body, Teflon coated brass ball, rubber seats and stem seals, Tee stem-predrilled for control rod, **AWWA inlet end, compression outlet with electrical ground connector, with control rod, valve key, and extension box.**
- E. Swing Check Valves From **2 inches to 24 inches:**
 - 1. AWWA C508, iron body, bronze trim, **45 degree swing disc, renewable disc and seat, flanged ends.**
- F. Butterfly Valves From 2 inches to 24 inches:
 - 1. AWWA C504, iron body, bronze disc, resilient replaceable seat, water or lug ends, **ten position lever handle.**

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

2.03 HYDRANTS

- A. Hydrants: Type as required by utility company. (City of Clovis)
- B. Hydrant Extensions: Fabricate in multiples of **6 inches with rod and coupling to increase barrel length.**
- C. Hose and Streamer Connection: Match sizes with utility company, two hose nozzles, **one pumper nozzle.**
- D. Finish: **Primer and two coats of enamel in color required by utility company.**

2.04 BEDDING AND COVER MATERIALS

- A. Bedding: As specified in **Section 31 23 16.13.**
- B. Cover: As specified in **Section 31 23 16.13.**

2.05 ACCESSORIES

- A. Concrete for Thrust Restraints: Concrete type specified in Section **03 30 00.**
- B. Backflow Prevention and Water Meter: Type as required by the City of Portales, Refer to Project plans sheet C300.
- C. Manhole and Cover: Refer to Section **33 02 13.**

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that building service connection and municipal utility water main size, location, and invert are as indicated.

3.02 PREPARATION

- A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare pipe connection to equipment with flanges or unions.

3.03 TRENCHING

- A. See the **sections on excavation and fill; section on trenching for additional requirements.**
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- C. Form and place concrete for pipe thrust restraints at each change of pipe direction. Place concrete to permit full access to pipe and pipe accessories.
- D. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.04 INSTALLATION – PIPE

- A. Maintain separation of water main from **sewer piping in accordance with municipal code.**
- B. Group piping with other site piping work whenever practical.
- C. Establish elevations of buried piping to ensure not less than **3-4 ft of cover.**
- D. Install pipe to indicated elevation to within tolerance of **5/8 inches.**
- E. Install ductile iron piping and fittings to AWWA C600.
- F. Install grooved and shouldered pipe joints to AWWA C606.
- G. Route pipe in straight line.
- H. Install pipe to allow for expansion and contraction without stressing pipe or joints.
- I. Install access fittings to permit disinfection of water system performed under Section **33 13 00.**
- J. Slope water pipe and position drains at low points.
- K. Install trace wire **6 inches above top of pipe, coordinate with Section 31 23 16.13.**

CURRY COUNTY COURTHOUSE ADDITION AND RENOVATIONS PROJECT
CLOVIS, NEW MEXICO

3.05 INSTALLATION – VALVES AND HYDRANTS

- A. Set valves on solid bearing.
- B. Center and plumb valve box over valve. Set box cover flush with finished grade.
- C. Set hydrants plumb; locate pumper nozzle perpendicular to and facing roadway.
- D. Set hydrants to grade, with nozzles at least **20 inches** above ground.
- E. Locate control valve **4 inches** away from hydrant.
- F. Provide a drainage pit **36 inches** square by **24 inches** deep filled with **2 inches** washed gravel. Encase elbow of hydrant in gravel to **6 inches** above drain opening. Do not connect drain opening to sewer.
- G. Paint hydrants in accordance with EPCOR Water Company requirements.

3.06 SERVICE CONNECTIONS

- A. Provide water service **to utility company requirements with reduced pressure backflow preventer and water meter with by-pass valves and sand strainer.**
- B. Provide sleeve in **retaining wall** for service main. Support with reinforced concrete bridge. **Calk enlarged sleeve watertight.**
- C. Anchor service main to interior surface of **foundation wall.**
- D. Provide **18 gage** galvanized sheet metal sleeve surrounding service main to **6 inches** above floor and **6 feet** minimum below grade. Size for **2 inches** minimum of glass fiber insulation stuffing.

3.07 FIELD QUALITY CONTROL

- A. Perform field inspection **and testing** in accordance with **City of Clovis standard installation requirements.**
- B. Pressure test water piping to **100** psi.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to **the owner.**

END OF SECTION