DANE COUNTY
PUBLIC SAFETY
COMMUNICATIONS CENTER
INFRASTRUCTURE UPGRADES

1st Floor, City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

Dane County Bid No. 109055 | Bid Documents | November 30, 2009

ARCHITECT
VENTURE ARCHITECTS
205 West Highland Avenue
Milwaukee, Wisconsin 53203
Phone (414) 271–3359

HVAC
HENNEMAN ENGINEERING INC.
1232 Fourier Drive, Suite 101
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ELECTRICAL / TELECOMMUNICATIONS
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PLUMBING / FIRE PROTECTION
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ARCHITECTURAL DRAWINGS

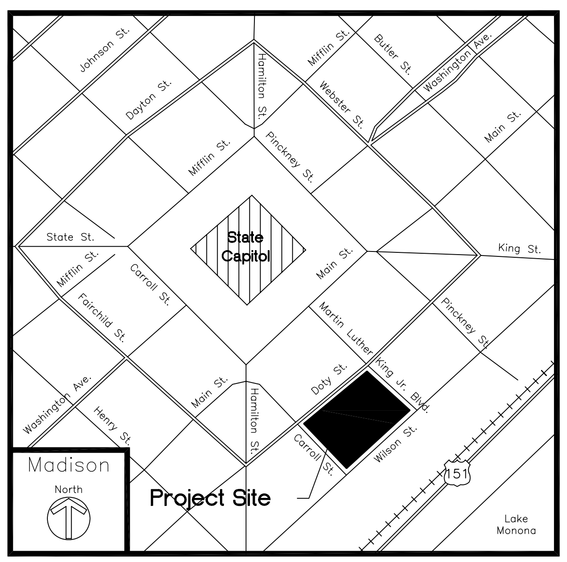
HVAC DRAWINGS

ELECTRICAL DRAWINGS

PLUMBING/FIRE PROTECTION DRAWINGS

SHEET INDEX

AREA LOCATION MAP



SITE LOCATION MAP

VENTURE
PROJECT NO. 208006.00

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
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/Venture/Architects

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COUNTY BID # 109055
VA PROJECT # 208006

Sheet Name
TITLE SHEET

Sheet No.
T1.0

CODE REVIEW INFORMATION

CONSTRUCTION DOCUMENTS PREPARED USING THE WISCONSIN ENROLLED COMMERCIAL BUILDING CODE 2006.

CHAPTER 3 – USE AND OCCUPANCY CLASSIFICATION

OCCUPANCY CLASSIFICATION (SECTION 304)– FIRST FLOOR (UNCHANGED)
REMODELED AREAS
BUSINESS – B

UNREMODELED AREAS
BUSINESS – B

EXISTING BUILDING IS MIXED USE (BUSINESS, ASSEMBLY, DETENTION, AND STORAGE)
EXISTING BUILDING IS FULLY SPRINKLERED

CHAPTER 5 – GENERAL BUILDING HEIGHTS AND AREAS

ALLOWABLE HEIGHT AND BUILDING AREAS (TABLE 503)–
TYPE IA CONSTRUCTION AND GROUP A–3, B AND I–3 = UNLIMITED HEIGHT, AREAS AND STORIES.

CHAPTER 6 – TYPES OF CONSTRUCTION

CONSTRUCTION CLASSIFICATIONS (SECTION 602.2)–
EXISTING BUILDING CONSTRUCTION TYPE–
TYPE IA – ACCORDING TO INFORMATION PROVIDED BY THE OWNER PREVIOUS ANALYSIS OF EXISTING BUILDING ELEMENTS.

TYPE I AND TYPE II CONSTRUCTION ARE THOSE TYPES OF CONSTRUCTION IN WHICH THE BUILDING ELEMENTS LISTED IN TABLE 601 ARE OF NONCOMBUSTIBLE MATERIALS.

FIRE–RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601)–

BUILDING ELEMENTS	REQUIRED RATING	EXISTING RATING
STRUCTURAL FRAME		
INCLUDING COLUMNS, GIRDERS, TRUSSES	3 HOURS	4 HOURS*
BEARING WALLS		
EXTERIOR	3 HOURS	N/A*
INTERIOR	3 HOURS	3 HOURS*
NONBEARING WALLS AND PARTITIONS		
EXTERIOR	SEE TABLE 602	0 HOURS*
INTERIOR	0 HOURS	0 HOURS*
FLOOR CONSTRUCTION		
INCLUDING SUPPORTING BEAMS AND JOISTS	2 HOURS	3 HOURS*
ROOF CONSTRUCTION		
INCLUDING SUPPORTING BEAMS AND JOISTS	1 1/2 HOURS	2 HOURS*

*INFORMATION FROM THE OWNER FROM PREVIOUS ANALYSIS OF BUILDING ELEMENTS

CHAPTER 8 – INTERIOR FINISHES

INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY (TABLE 803.5)–

GROUP	EXIT ENCLOSURE AND EXIT PASSAGEWAYS	CORRIDORS	ROOMS AND ENCLOSED SPACES
B	CLASS B	CLASS C	CLASS C

CHAPTER 9 – FIRE PROTECTION SYSTEMS

THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH THE SECTION 903.3.1.1.

CHAPTER 10 – MEANS OF EGRESS

OCCUPANT LOAD AS DETERMINED BY TABLE 1004.1.1
OCCUPANT LOAD OF REMODELED SPACE 10,100 G.S.F. (B OCCUPANCY)–

OFFICES – 8,207 SQ.FT./100 SQ.FT. PER PERSON–	82	PERSONS
MECHANICAL/STORAGE – 1,723 SQ.FT./300 SQ.FT. PER PERSON–	6	PERSONS
LOCKERS – 170 SQ.FT./50 SQ.FT. PER PERSON–	4	PERSONS
TOTAL OCCUPANT LOAD OF REMODELED AREA–	92	PERSONS

OCCUPANT LOAD OF UNREMODELED SPACE (B OCCUPANCY)– UNCHANGED

EGRESS WIDTH PER OCCUPANT SERVED (TABLE 1005.1)–
SPRINKLERED BUILDINGS–
STAIR EGRESS WIDTH (0.2 INCHES PER OCCUPANT)–

REMODELED SPACES–

BUSINESS– 92 X 0.2 = 18.4 INCHES

UNREMODELED SPACES– UNCHANGED

OTHER EGRESS COMPONENTS WIDTH (0.15 INCHES PER OCCUPANT)–

REMODELED SPACES–

BUSINESS– 92 X 0.15 = 13.8 INCHES

UNREMODELED SPACES– UNCHANGED

ACCESSIBLE MEANS OF EGRESS (SECTION 1007.1)–
ACCESSIBLE SPACES SHALL BE PROVIDED WITH NOT LESS THAN ONE ACCESSIBLE MEANS OF EGRESS. WHERE MORE THAN ONE MEANS OF EGRESS IS REQUIRED FROM ANY ACCESSIBLE SPACE, EACH ACCESSIBLE PORTION OF THE SPACE SHALL BE SERVED BY NOT LESS THAN TWO ACCESSIBLE MEANS OF EGRESS.
EXCEPTION: ACCESSIBLE MEANS OF EGRESS ARE NOT REQUIRED IN ALTERATIONS TO EXISTING BUILDINGS.

EXIT ACCESS DOORS = 3 EXIT ACCESS DOORS OUT OF THE COMMUNICATIONS CENTER.

SIZE OF DOORS (SECTION 1008.1.1)–
MINIMUM WIDTH OF EACH DOOR OPENING = 32"

DOOR SWING (SECTION 1008.1.2)–
DOORS SHALL SWING IN THE DIRECTION OF EGRESS TRAVEL WHERE SERVING AN OCCUPANT LOAD OF 50 OR MORE PERSONS OR A HIGH–HAZARD OCCUPANCY.

RAMP SLOPE (SECTION 1010.2)–
RAMP SLOPE USED AS PART OF A MEANS OF EGRESS SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN ONE UNIT IN 12 UNITS HORIZONTAL (8% SLOPE).

RAMP WIDTH (SECTION 1010.5.1)–
MINIMUM WIDTH OF A MEANS OF EGRESS RAMP SHALL NOT BE LESS THAN THAT REQUIRED FOR CORRIDORS BY SECTION 1017.2. THE CLEAR WIDTH OF A RAMP AND THE CLEAR WIDTH BETWEEN HANDRAILS, IF PROVIDED, SHALL BE 36 INCHES MINIMUM.

LANDINGS (SECTION 1010.6)–
RAMPS SHALL HAVE LANDINGS AT THE BOTTOM AND TOP OF EACH RAMP, POINTS OF TURNING, ENTRANCE, EXITS AND AT DOORS.

LANDING LENGTH (SECTION 1010.6.3)–
THE LANDING LENGTH SHALL BE 60 INCHES MINIMUM.

HANDRAILS (SECTION 1010.8)–
RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL HAVE HANDRAILS ON BOTH SIDES.

HANDRAIL HEIGHT (SECTION 1012.2)–
HANDRAIL HEIGHT, MEASURED ABOVE FINISH SURFACE OF RAMP SLOPE SHALL BE UNIFORM, NOT LESS THAN 34 INCHES AND NOT MORE THAN 38 INCHES.

HANDRAIL EXTENSIONS (SECTION 1012.5)–
HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE WALKING SURFACE OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT RAMP RUN. AT RAMPS WHERE HANDRAILS ARE NOT CONTINUOUS BETWEEN RUNS, THE HANDRAIL SHALL EXTEND HORIZONTALLY ABOVE THE LANDING 12 INCHES MINIMUM BEYOND THE TOP AND BOTTOM RAMPS.

MULTIPLE TENANTS (SECTION 1014.2.1)–
WHERE MORE THAN ONE TENANT OCCUPIES ANY ONE FLOOR OF A BUILDING OR STRUCTURE, EACH TENANT SPACE, DWELLING UNIT, AND SLEEPING UNIT SHALL BE PROVIDED WITH ACCESS TO THE REQUIRED EXITS WITHOUT PASSING THROUGH ADJACENT TENANT SPACES, DWELLING UNITS, AND SLEEPING UNITS.

COMMON PATH OF EGRESS TRAVEL (SECTION 1014.3)–
THE LENGTH OF A COMMON PATH OF EGRESS TRAVEL IN GROUP B OCCUPANCIES SHALL NOT BE MORE THAN 100 FEET, PROVIDED THAT THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1.

EXIT AND EXIT ACCESS DOORWAYS (SECTION 1015.1)–
TWO EXITS OR EXIT ACCESS DOORWAYS FROM ANY SPACE SHALL BE PROVIDED PER TABLE 1015.1: SPACES WITH MORE THAN OCCUPANT LOAD OF 49 REQUIRE TWO MEANS OF EGRESS.

EXIT ACCESS TRAVEL DISTANCE (TABLE 1016.1)–
MAXIMUM EXIT ACCESS TRAVEL IS 300 FEET FOR B OCCUPANCY.

CORRIDOR WIDTH (SECTION 1017.2)–
THE MINIMUM CORRIDOR WIDTH SHALL BE AS DETERMINED IN SECTION 1005.1, BUT NOT LESS THAN 44 INCHES.

DEAD ENDS (SECTION 1017.3)–
IN OCCUPANCIES IN GROUP B WHERE THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1, THE LENGTH OF DEAD–END CORRIDORS SHALL NOT EXCEED 50 FEET.

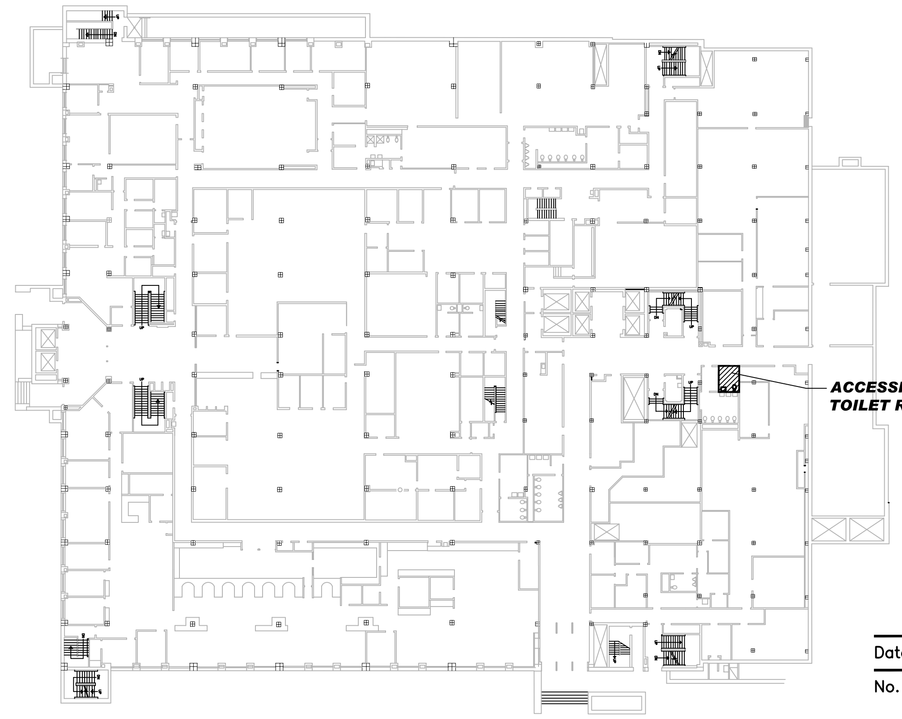
CHAPTER 11 – ACCESSIBILITY

A UNISEX TOILET ROOM IS PROVIDED ON THE GROUND FLOOR OF THIS BUILDIING TO MEET TOILET ROOM ACCESSIBILITY LOCATION REQUIREMENTS PER 1109.2.1.4. SEE GROUND FLOOR PLAN 2/A1.1

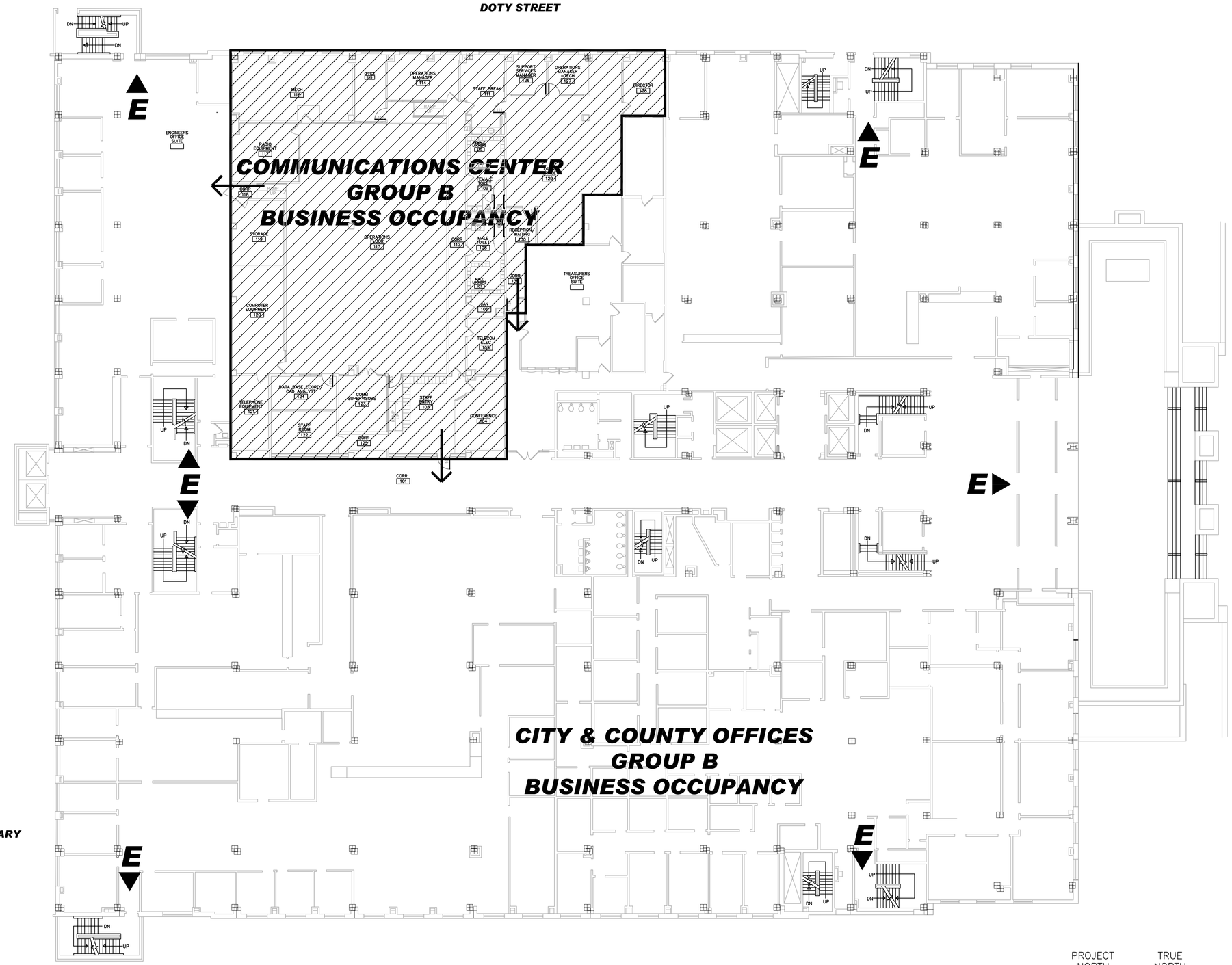
CHAPTER 29 – PLUMBING SYSTEMS

MINIMUM NUIMBER OF PLUMBING FIXTURES (TABLE 2902.1)
WATER CLOSETS = 1 PER 25 FOR FIRST 50 AND 1 PER 50 BEYOND (4 EXISTING FIXTURES ARE PROVIDED WITHIN COMMUNICATIONS CENTER)
LAVATORIES = 1 PER 40 FOR FIRST 80 AND 1 PER 80 BEYOND (2 EXISTING LAVATORIES ARE PROVIDED WITHIN COMMUNICATIONS CENTER)
DRINKING FOUNTAINS = 1 PER 100 (1 EXISTING DRINKING FOUNTAIN IS PROVIDED)

ADDITIONAL TOILET ROOMS EXIST ON THE FIRST FLOOR FOR THE BALANCE OF THIS FLOOR AS WELL AS UNISEX TOILET ROOM ON THE GROUND FLOOR AS NOTES ABOVE.



2 GROUND FLOOR PLAN
1/32" = 1'–0"



EXIT ACCESS

E EXIT

PROJECT BOUNDARY

NOTE:
SEE FLOOR PLANS FOR FIRE EXTINGUISHER LOCATIONS

1 FIRST FLOOR PLAN
1/16" = 1'–0"

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Reference Diagram

Reference Plan

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/VentureArchitects

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COUNTY BID # 109055

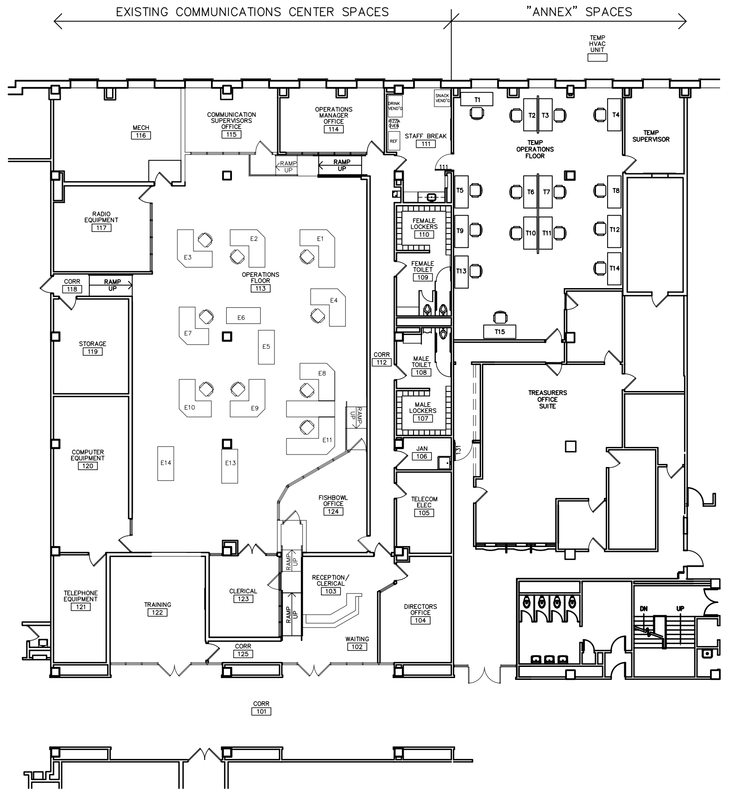
VA PROJECT # 208006

Sheet Name
CODE REVIEW SHEET

PROJECT NORTH

TRUE NORTH

Sheet No.
A1.1



PHASE 1 DIAGRAM

CONSTRUCTION PHASE 1 NOTES:

A. EXISTING COMM CENTER TO REMAIN COMPLETELY OPERATIONAL DURING PHASE 1 CONSTRUCTION

B. DEMO PORTION OF EXISTING CORRIDOR OUTSIDE OF THE "ANNEX" AND RELOCATE PORTION OF EXISTING ACOUSTICAL WALL PANELS TO "ANNEX" TEMP OPERATIONS FLOOR

C. INSTALL NEW DOOR 111 IN BREAKROOM. INSTALL NEW DOOR 131 AND SMALL WALL INCLUDING TEMPORARY ELECTRIC STRIKE, CARD READER, PUSHBUTTON RELEASE, INTERCOM AND CAMERA TO ANNEX

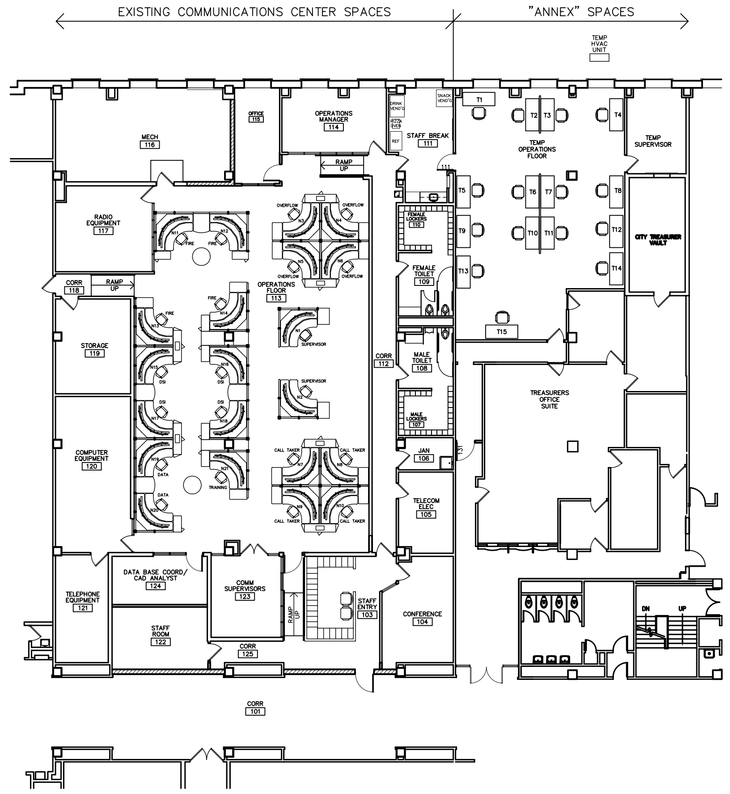
D. INSTALL TEMPORARY ELECTRIC POWER, PHONE & DATA TO 15 TEMPORARY WORKSTATIONS AND TEMPORARY SUPERVISOR OFFICE IN "ANNEX" SPACE

E. INSTALL TEMPORARY HVAC INCLUDING EXTERIOR TEMPORARY AHU & FENCE ENCLOSURE

F. TEMPORARY WORKSTATIONS, FURNITURE AND EQUIPMENT TO BE INSTALLED IN "ANNEX" BY OWNERS VENDORS

G. OWNER TO TEST AND MOVE COMMUNICATIONS OPERATIONS INTO TEMPORARY OPERATIONS FLOOR IN "ANNEX"

H. CLOSE THE 2 DOORS LEADING FROM ANNEX AREA INTO TREASURERS SUITE SECURELY BY COVERING ENTIRELY WITH PLYWOOD ON ANNEX SIDE



PHASE 2 DIAGRAM

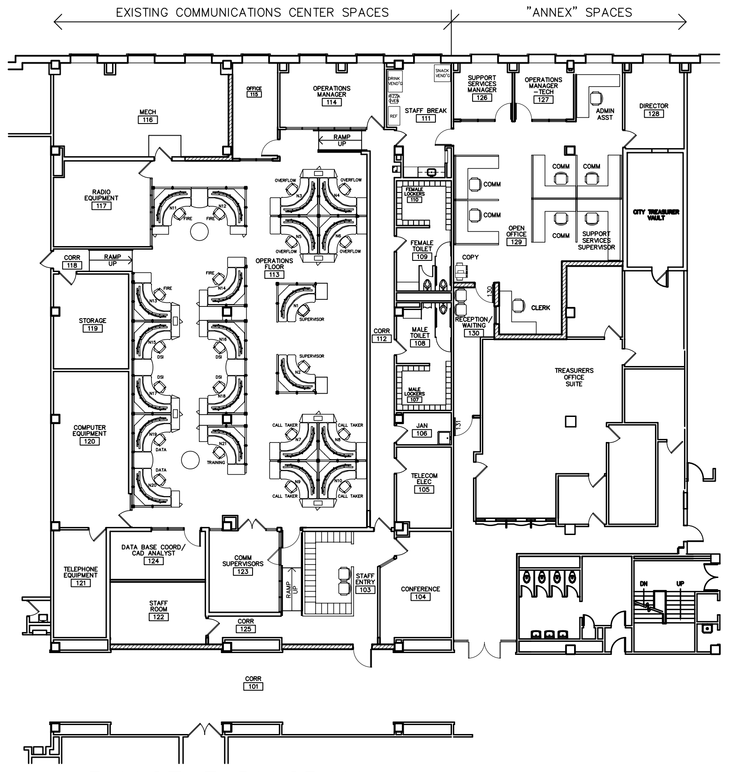
CONSTRUCTION PHASE 2 NOTES:

A. REMODEL ALL EXISTING COMM CENTER SPACES PER CONSTRUCTION DOCUMENTS

B. PROVIDE ACCESS FOR BREAK ROOM, TOILET ROOMS, STORAGE AND DISPATCH EQUIPMENT ROOMS TO COMMUNICATIONS STAFF DURING CONSTRUCTION AS NEEDED

C. 21 NEW WORKSTATIONS, FURNITURE & EQUIPMENT TO BE INSTALLED IN REMODELED EXISTING COMM CENTER SPACES BY OWNERS VENDORS

D. OWNER TO TEST AND MOVE COMMUNICATIONS OPERATIONS AND STAFF INTO THE REMODELED SPACES



PHASE 3 DIAGRAM

CONSTRUCTION PHASE 3 NOTES:

A. ALL TEMPORARY WORKSTATIONS, FURNITURE AND EQUIPMENT TO BE REMOVED FROM "ANNEX" SPACES BY OWNERS VENDORS

B. REMODEL ALL "ANNEX" AREA SPACES PER CONSTRUCTION DOCUMENTS

C. RELOCATE CAMERA, INTERCOM AND CARD READER FROM DOOR 131 TO 130. RELOCATE PUSHBUTTON RELEASE TO CLERK DESK ADN DISABLE ELECTRIC STRIKE IN DOOR 131

D. REMOVE TEMPORARY HVAC

E. COMPLETE ALL REMAINING REMODELING WORK

F. FURNITURE AND EQUIPMENT TO BE INSTALLED IN "ANNEX" SPACES BY OWNERS VENDORS

G. OWNER TO FULLY OCCUPY FINISHED PROJECT

GENERAL PHASING NOTES:

A. MAINTAIN CODE COMPLIANT EXITING DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION.

B. THE COMMUNICATIONS CENTER IS TO REMAIN FULLY OPERATIONAL THROUGHOUT THE CONSTRUCTION PROCESS 24 HOURS PER DAY / 7 DAYS PER WEEK AND MAINTAIN A MINIMUM OF 13 FULLY FUNCTIONAL WORKSTATIONS PLUS 2 OVERFLOW WORKSTATIONS FUNCTIONAL WITHOUT RADIO.

C. THE JUVENILE DETENTION CENTER ABOVE ON 2ND FLOOR IS ALSO TO REMAIN OPERATIONAL 24/7. ADJACENT DEPARTMENTS MAIN BUSINESS HOURS ARE 8:00AM – 4:30PM MONDAY THROUGH FRIDAY

D. CONTRACTOR IS TO SCHEDULE AND COORDINATE ALL WORK WITH OWNER. NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR AFTER HOURS WORK. SEE PROJECT MANUAL "BASIC REQUIREMENTS" SECTION FOR ADDITIONAL INFORMATION

E. PHASING DIAGRAMS ARE INTENDED TO INFORM THE CONTRACTORS OF THE OWNERS SPACE AND OPERATIONAL NEEDS IN ORDER TO MAINTAIN FULL COMMUNICATIONS CENTER OPERATIONS AT ALL TIMES.

F. PHASING DIAGRAMS ARE INTENDED TO BE A GENERAL GUIDE AND ARE NOT INTENDED TO DIRECT THE CONTRACTORS MEANS AND METHODS OF CONSTRUCTION.

G. PHASING DIAGRAMS ARE NOT ALL INCLUSIVE OF EVERY ASPECT OF THE WORK. ALL COORDINATION OF TRADES REMAINS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

H. CONTRACTOR TO SCHEDULE AND COORDINATE WITH THE OWNER ALL WORK ASSOCIATED WITH EQUIPMENT AND WORKSTATION INSTALLATION AND REMOVAL AS WELL AS ALL PERSONNEL MOVES.

I. CONTRACTOR TO DEVELOP A WRITTEN AND GRAPHIC INTERIM LIFE SAFETY PLAN FOR EACH PHASE AND OBTAIN APPROVAL OF PLAN FROM THE OWNER AND LOCAL AUTHORITY HAVING JURISDICATION PRIOR TO STARTING WORK.

J. CONTRACTOR TO DEVELOP AN INDOOR AIRE QUALITY CONTROL PLAN FOR EACH PHASE OF WORK AND OBTAIN OWNER APPROVAL PER SMACNA IAQ GUIDELINES FOR OCCUPIED BUILDINGS UNDER CONSTRUCTION 2007 EDITION

PHASING DIAGRAM KEY:

EXISTING WORKSTATION

TEMPORARY WORKSTATION

NEW WORKSTATION

PROJECT NORTH

TRUE NORTH

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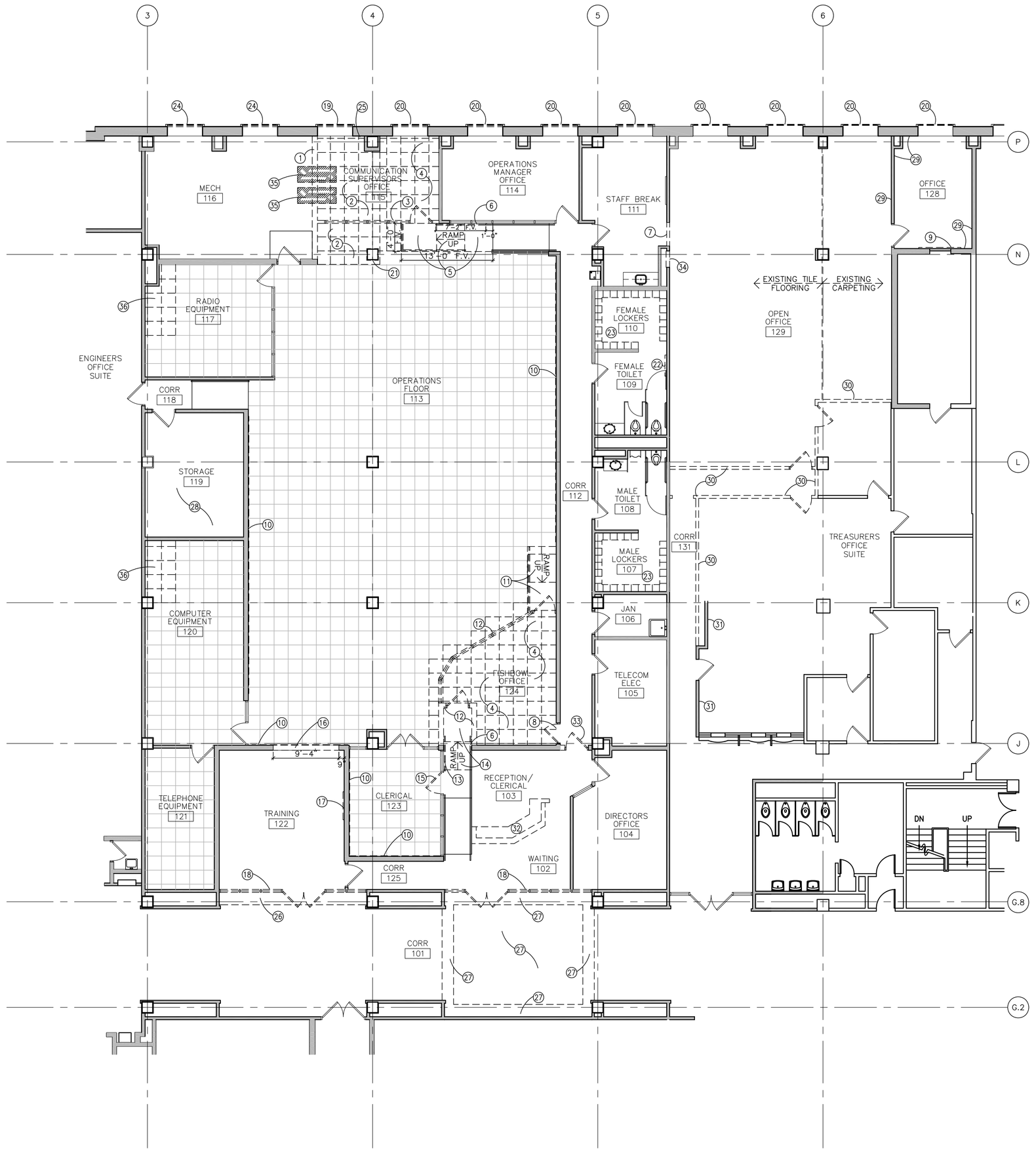
Sheet Name
PHASING DIAGRAMS

Sheet No.
A1.2



1 DEMOLITION PLAN
1/8" = 1'-0"

GENERAL DEMOLITION NOTES:

A. DASHED LINES INDICATE ITEMS TO BE REMOVED.

B. ALL WALLS TO BE REMOVED ARE TO BE REMOVED COMPLETELY UP TO STRUCTURE U.N.O.

C. ALL ITEMS CALLED FOR TO BE REMOVED ARE THE PROPERTY OF THE CONTRACTOR REMOVING SAME AND ARE TO BE REMOVED COMPLETELY FROM PROJECT U.N.O.

D. MAINTAIN CODE COMPLIANT EXITING DURING DEMOLITION AND CONSTRUCTION PHASES. MAINTAIN FIRE PROTECTION COVERAGE DURING CONSTRUCTION PER CITY OF MADISON FIRE DEPT. REQUIREMENTS

E. REMOVE EXISTING WALL SURFACES AS REQUIRED FOR INSTALLATION OF BLOCKING TO SUPPORT NEW CONSTRUCTION. SUCH BLOCKING WILL BE REQUIRED IN ALL EXISTING NON-MASONRY WALLS. SEE OTHER DRAWINGS FOR LOCATIONS OF WALL MOUNTED ITEMS.

F. REMOVE ALL EXISTING WALL MOUNTED ITEMS WHERE THEY CONFLICT WITH NEW WALL MOUNTED ITEMS. ALL ITEMS REMOVED ARE TO BE SALVAGED AND TURNED OVER TO OWNER UNLESS NOTED OTHERWISE.

G. REFER TO PLUMBING, FP, HVAC, ELECTRICAL AMD TELECOM DRWGS & SPECS FOR ADDITIONAL DEMOLITION AND PATCHING WORK REQUIRED.

H. DRAWINGS INDICATE GENERAL EXISTING LAYOUT OF DEMOLITION WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXTENT OF DEMOLITION ACTIVITIES REQUIRED TO FACILITATE CONSTRUCTION INDICATED FOR THIS PROJECT.

I. PATCH ALL WALLS, FLOORS AND CEILINGS DISTURBED BY DEMOLITION AND/OR CONSTRUCTION ACTIVITIES TO MATCH EXISTING ADJACENT SUBSTRATES AND FINISH MATERIALS.

J. ALL REMOVED DOOR HARDWARE TO BE TURNED OVER TO THE OWNER

K. OWNER RESERVES THE RIGHT TO TAKE POSSESSION OF ANY ITEM REMOVED DURING DEMOLITION EVEN IF NOT SPECIFICALLY NOTED TO BE TURNED OVER TO OWNER. CONTACT OWNER PRIOR TO ANY REMOVAL.

L. REFER TO PHASING DIAGRAMS FOR PHASING AND SCHEDULING OF ALL WORK INCLUDING DEMOLITION

M. REMOVE ALL EXISTING CARPETING FROM ROOMS:
- 102
- 103
- 104
- 112
- 113
- 114
- 115
- 118
- 122
- 123
- 124
- 125
- 128
- 129

N. AFTER CARPET REMOVAL, REMOVE ANY LOOSE, BUCKLED OR DAMAGES FLOOR TILE. EXISTING FLOOR TILE MAY REMAIN IN PLACE WHERE TIGHT TO FLOOR.

O. REMOVE ALL EXISTING BASEBOARD FROM ROOMS:
- 102
- 103
- 104
- 111
- 112
- 113
- 114
- 115
- 118
- 122
- 123
- 124
- 125
- 128
- 129
- 131

P. REMOVE LAY-IN & METAL CEILINGS ENTIRELY INCLUDING TILE, GRID AND ALL SUPPORTING ELEMENTS FROM ROOMS:
- 102
- 103
- 104
- 111
- 112
- 113
- 114
- 115
- 118
- 122
- 123
- 124
- 125
- 128
- 129
- 131

Q. REMOVE LAY-IN CEILING TILE AND METAL GRID IN ROOMS 117, 120 & 121. SAVE AND REINSTALL METAL GRID AND INSTALL NEW CEILING TILE IN THESE ROOMS

R. SEE ELECTRICAL & TELECOM DRWGS FOR ADDITIONAL ACCESS FLOOR PANELS TO BE REMOVED AT EXISTING FLOOR BOXES AND FLOOR POWER/DATA OUTLETS

S. BUILDING WILL BE OCCUPIED IN AREAS OUTSIDE THE CONSTRUCTION WORK LIMITS. COMM CENTER IS TO REMAIN FULLY OPERATIONAL THROUGHOUT THE DEMOLITION AND CONSTRUCTION PROCESS 24 HRS PER DAY / 7 DAYS PER WEEK. THE JUVENILE DETENTION CENTER ABOVE ON 2ND FLOOR IS TO REMAIN OPERATIONAL 24/7. ADJACENT DEPARTMENTS MAIN BUSINESS HOURS ARE 8:00AM – 4:30PM MONDAY THRU FRIDAY. CONTRACTOR IS TO WORK WITH OWNER TO MINIMIZE DISTURBANCES AND SHEDULE "NOISY" WORK TIMES AS ACCEPTABLE. NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR AFTER HOURS WORK. SEE PROJECT MANUAL "BASIC REQUIREMENTS FOR ADD'L INFORMATION

T. DUST & DIRT FROM DEMOLITION & CONSTRUCTION TO BE CONTROLLED. SEE SELECTIVE DEMOLITION, INDOOR AIR QUALITY CONTROL & INTERIM LIFE SAFETY PLAN SPECIFICATIONS

KEYED DEMOLITION NOTES:

1. REMOVE WALL ENTIRELY FOR EXPANSION OF MECH 116
2. REMOVE ACCESS FLOORING SYSTEM AS REQUIRED FOR EXPANSION OF MECHANICAL 116. STORE PANELS FOR REUSE IN AREAS AS NEEDED
3. REMOVE WALL, DOOR, FRAME AND SIDELITE FOR EXPANSION OF MECH 116 & FOR NEW WALL, DOOR & FRAME FOR OFFICE 115
4. ACCESS FLOORING IN THESE ROOMS TO BE REMOVED FOR REPLACEMENT WITH NEW ACCESS FLOORING AT 8" HEIGHT TO ALIGN WITH ADJACENT FLOORS. STORE PANELS FOR REUSE IN AREAS AS NEEDED.
5. REMOVE WOOD RAMP, TOP LANDING, BOTTOM LANDING AND METAL RAILINGS ENTIRELY
6. REMOVE PORTION OF HANDRAIL – SEE DETAILS 5&6 OR 7/A5.1 FOR EXTENT AND MODIFICATIONS TO HANDRAIL
7. REMOVE PORTION OF WALL FOR NEW DOOR AND FRAME
8. REMOVE DOOR & FRAME FOR NEW INFILL WALL
9. REMOVE MARKERBOARD AND TURN OVER TO OWNER
10. REMOVE ALL ACOUSTIC WALL PANELS INCLUDING ALL FASTENERS. SAVE FOR REINSTALLATION IN TEMPORARY OPERATIONS FLOOR – SEE PHASING DIAGRAMS
11. REMOVE WOOD RAMP, LANDING AND METAL RAILINGS ENTIRELY
12. REMOVE WALL, DOOR & FRAME & SIDELIGHTS ENTIRELY FOR EXPANSION OF OPERATIONS FLOOR 113
13. REMOVE HANDRAIL ENTIRELY
14. REMOVE CONCRETE RAMP & TOP LANDING, INCLUDING PORTION OF STEEL PLATE EDGING, FOR EXPANSION OF OPERATIONS FLOOR 113 AND EXTENTION OF TOP LANDING TO NEW DOOR
15. REMOVE DOOR, HARDWARE AND PORTION OF FRAME FOR BORROWED LITE INFILL
16. REMOVE PORTION OF WALL FOR NEW DOOR, FRAME AND SIDELITE
17. REMOVE MARKERBOARD FOR REINSTALLATION AS DIRECTED BY OWNER
18. REMOVE STAINELESS STEEL BORROWED LITE FRAMES AND DOORS AND BASE COMPLETELY UP TO STRUCTURE INCLUDING SUPPORTING STRUCTURE
19. REMOVE EXISTING WINDOW FRAME, GLAZING, AND MARBLE STOOL ENTIRELY FOR NEW LOUVER – SEE HVAC FOR LOUVER & SHEET A4.1 FOR DETAILS
20. REMOVE EXISTING WINDOW INCLUDING INTERIOR STORM AND MARBLE WINDOW STOOL FOR NEW WINDOW INSTALLATION – SEE SHEET A4.1 FOR DETAILS
21. REMOVE GYP BD AND FURRING FROM COLUMN
22. REMOVE EXISTING COAT RACK TO BE RELOCATED. SEE ARCHITECTURAL FLOOR PLANS FOR NEW LOCATION
23. REMOVE ALL EXISTING LOCKERS FOR REPLACEMENT WITH NEW LOCKERS. CONCRETE LOCKER BASE AND CERAMIC TILE WALL BASE TO REMAIN
24. REMOVE EXISTING LOUVER ENTIRELY FOR NEW LOUVER – SEE HVAC FOR LOUVERS & SHEET A4.1 FOR DETAILS
25. REMOVE ALL DRYWALL AND FURRING FROM PORTION OF EXISTING OFFICE THAT IS TO BECOME PART OF EXPANDED MECH ROOM 116
26. REMOVE PORTION OF PLASTER/GYP BD CEILING FOR NEW WALL CONSTRUCTION
27. REMOVE ENTIRELY METAL CEILING TILE AND PLASTER CEILING AT RAISED SECTION OF CEILING INCLUDING ALL SUPPORTING STRUCTURE
28. REMOVE EXISTING GYP BD CEILING AND ALL SUPPORTING STRUCTURE FROM ROOM 119
29. REMOVE EXISTING WOOD CHAIR RAIL FROM ALL WALLS FOR PATCHING WITH PLASTER AND PAINTING TO MATCH
30. REMOVE WALLS, DOOR AND FRAMES ENTIRELY
31. NEW WALLS TO BE CONSTRUCTED BY THE TREASURERS REMODELING PROJECT
32. REMOVE EXISTING MILLWORK COUNTER ENTIRELY
33. REMOVE EXISTING DOOR, FRAME AND PORTION OF WALL FOR NEW DOOR, FRAME AND PORTION OF WALL
34. REMOVE VACANT FIRE HOSE CABINET FOR WALL INFILL
35. REMOVE PORTION OF CONCRETE ROOF SLAB AND LIGHTWEIGHT CONCRETE TOPPING FOR NEW DUCT PENETRATION. SAW CUT AT TOP EDGE OF CONCRETE JOISTS. DO NOT CUT INTO OR REMOVE CONCRETE JOISTS OR BRIDGING. DO NOT ALLOW CONCRETE TO FALL ONTO FLOOR BELOW. COORDINATE LOCATION AND SIZE OF OPENINGS WITH HVAC CONTRACTOR. REMOVE PORTION OF MEMBRANE ROOFING SYSTEM AS REQUIRED TO FLASH IN NEW INTAKE HOOD CURB.
36. REMOVE PORTION OF ACCESS FLOORING FOR REPLACEMENT WITH NEW ACCESS FLOORING SUPPORTING ENW UPS UNITS. STORE PANELS FOR REUSE IN OTHER AREAS AS NEEDED.

PROJECT NORTH

TRUE NORTH

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
City County Building
210 Martin Luther
King Jr. Blvd.
Madison, Wisconsin

/VentureArchitects

Venture Architects
205 W. Highland
Milwaukee, WI 53203
Telephone 414-271-3359

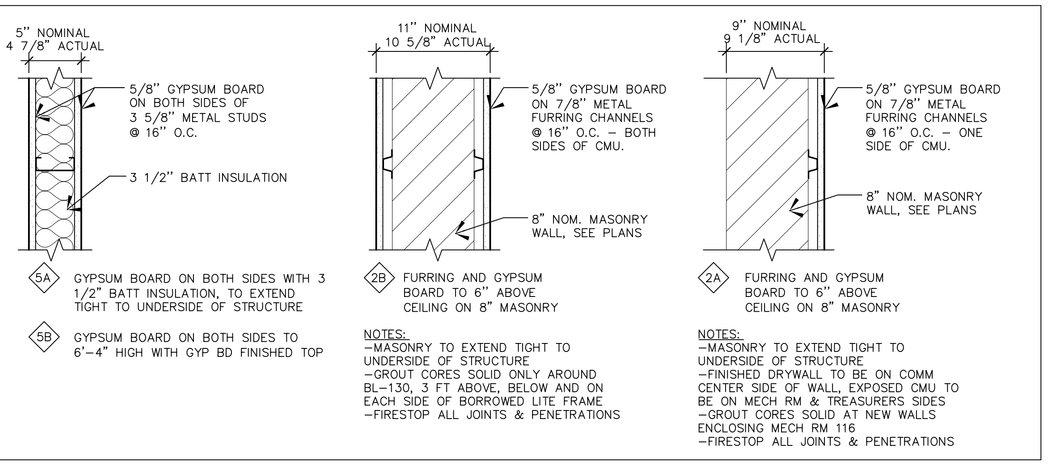
COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
DEMOLITION PLAN

Sheet No.
AD2.1

WALL TYPES



FLOOR PLAN LEGEND:

- NEW DOOR AND FRAME (SEE DOOR SCHEDULE)
- EXISTING DOOR AND FRAME TO REMAIN
- NEW CMU PARTITION
- NEW STUD AND GYPSUM BOARD PARTITION
- EXISTING BUILDING CONSTRUCTION TO REMAIN
- CONSTRUCTION WORK LIMITS
- NEW ACCESS FLOORING TO ALIGN WITH ADJACENT FLOORS

GENERAL FLOOR PLAN NOTES:

A. DIMENSIONS ARE TO FINISHED FACE OF WALL (NOMINAL WALL DIMENSIONS).

B. MAINTAIN CODE COMPLIANT EXITING DURING DEMOLITION AND CONSTRUCTION PHASES

C. REFER TO PHASING DIAGRAMS FOR PHASING AND SCHEDULING OF ALL WORK INCLUDING DEMOLITION

D. SEE THIS SHEET FOR WALL TYPES

E. FILL AND LEVEL ALL EXISTING FLOORS (EXCLUDING ACCESS FLOORING) PRIOR TO NEW CARPET INSTALLATION. PROVIDE ALLOWANCE IN BID FOR FILLING 1,500 S.F. OF FLOOR AREA

F. PATCH ALL EXISTING WALLS TO REMAIN WITH MATERIAL TO MATCH SURROUNDING WALL. PATCH TO BE FLUSH WITH SURROUNDING.

G. PROTECT EXISTING FLOORING WHERE SHOWN TO REMAIN AS FINISHED FLOORING.

H. SEE DRAWING A4.1 FOR MASONRY LINTELS ABOVE NEW DOOR OPENINGS IN CMU WALLS

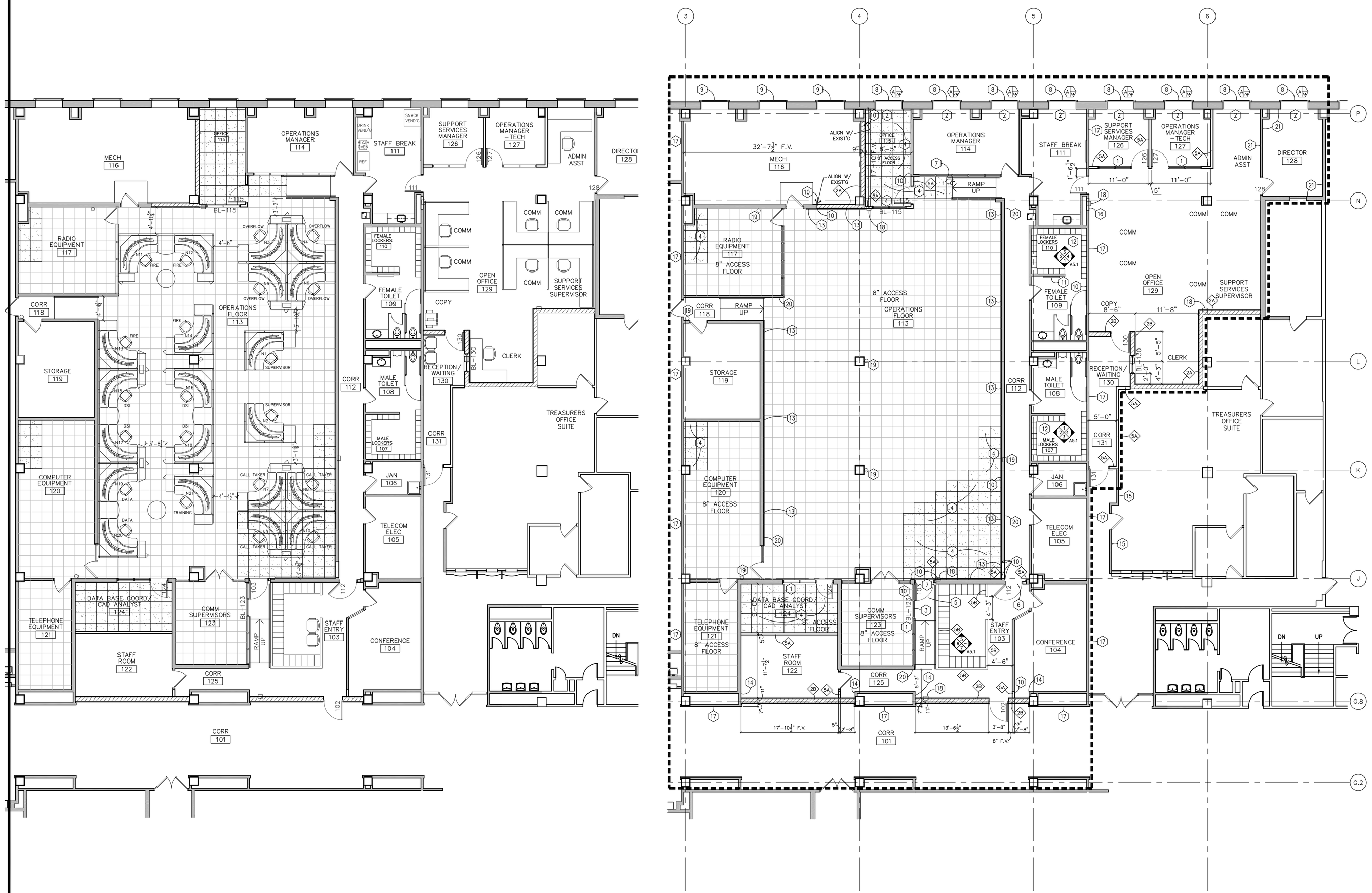
I. ALL FURNITURE IS TO BE PROVIDED AND INSTALLED BY OWNERS VENDORS. WORKSTATION/FURNITURE PLAN IS SHOWN FOR COORDINATION PURPOSES

J. REMOVE EXISTING ACCESS FLOOR PANELS WHERE POWER & DATA BOXES ARE REMOVED OR ABANDONED AND REPLACE WITH EXISTING FLOOR PANELS REMOVED ELSEWHERE. SEE ELEC & TELECOM DRWGS FOR REMOVED AND NEW FLOOR BOXES TO BE CUT INTO ACCESS FLOORING PANELS

K. SEE HVAC PLANS FOR RELOCATED CENTRAL VACUUM UNIT. VACUUM INTAKE PORTS TO REMAIN AS IS.

KEYED FLOOR PLAN NOTES:

1. BLINDS ON SIDE LITE ON SIDE INDICATED
2. BLINDS ON EXTERIOR WINDOWS
3. INFILL EXISTING DOOR OPENING WITH BORROWED LITE PER ELEVATION AND DETAILS
4. INSTALL NEW ACCESS FLOORING SYSTEM AT 8" AFF TO ALIGN WITH ADJACENT FLOORING
5. INSTALL NEW CONCRETE LANDING TO ALIGN WITH ADJACENT FLOORS
6. NEW WALL INFILL ABOVE NEW DOOR FRAME
7. MODIFY EXISTING HANDRAIL PER DETAILS 5&6 OR 7/A5.1.
8. INSTALL NEW WINDOW IN EXISTING OPENING – SEE DETAILS
9. INSTALL NEW LOUVER IN EXISTING OPENING – SEE DETAILS & HVAC DRAWINGS.
10. PATCH AND MATCH EXISTING FINISHES. SEE ROOM FINISH SCHEDULE FOR NEW FINISHES.
11. RELOCATED EXISTING COAT RACK.
12. NEW HALF HEIGHT LOCKERS. SEE INTERIOR ELEVATIONS.
13. NEW ACOUSTICAL WALL PANELS FROM CEILING TO TOP OF BASEBOARD. SEE ROOM FINISH SCHEDULE. SEE MECHANICAL, ELECTRICAL, AND TELECOMMUNICATIONS DRAWINGS FOR AREAS NOT REQUIRING WALL PANELS, PERTAINING TO LOUVERS AND PANELS.
14. LAMINATE ⅝" GYP BD TO SUBSTRATE FOR CONTINUOUS GYP BD WALL FINISH
15. WALLS CONSTRUCTED BY THE TREASURERS REMODELING PROJECT
16. INFILL WALL OPENING WITH METAL STUDS LATHE & PLASTER TO MATCH ADJACENT SURFACES
17. FILL ANY EXISTING OPENINGS IN EXISTING WALLS ABOVE CEILINGS UP TIGHT TO STRUCTURE ALONG COLUMN LINES 3, 5.3 & G.8, FIRESTOP ALL JOINTS AND PENETRATIONS
18. NEW FIRE EXTINGUISHER CABINET AND FIRE EXTINGUISHER
19. EXISTING FIRE EXTINGUISHER TO REMAIN
20. EXISTING CENTRAL VACUUM INTAKE PORT TO REMAIN AS IS
21. WHERE CHAIR RAIL HAS BEEN REMOVED, FILL & PATCH WITH PLASTER TO MATCH ADJACENT SURFACES



2 WORKSTATION / FURNITURE PLAN
1/8" = 1'–0"

1 FLOOR PLAN
1/8" = 1'–0"

PROJECT NORTH

TRUE NORTH

Date of Issue	11/30/09
No. Description	Date

Reference Diagram

Reference Plan

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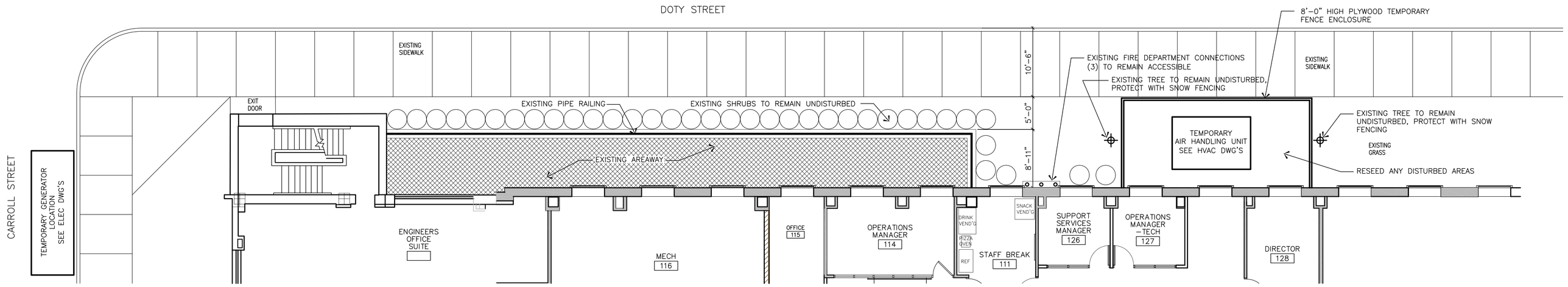
COUNTY BID # 109055

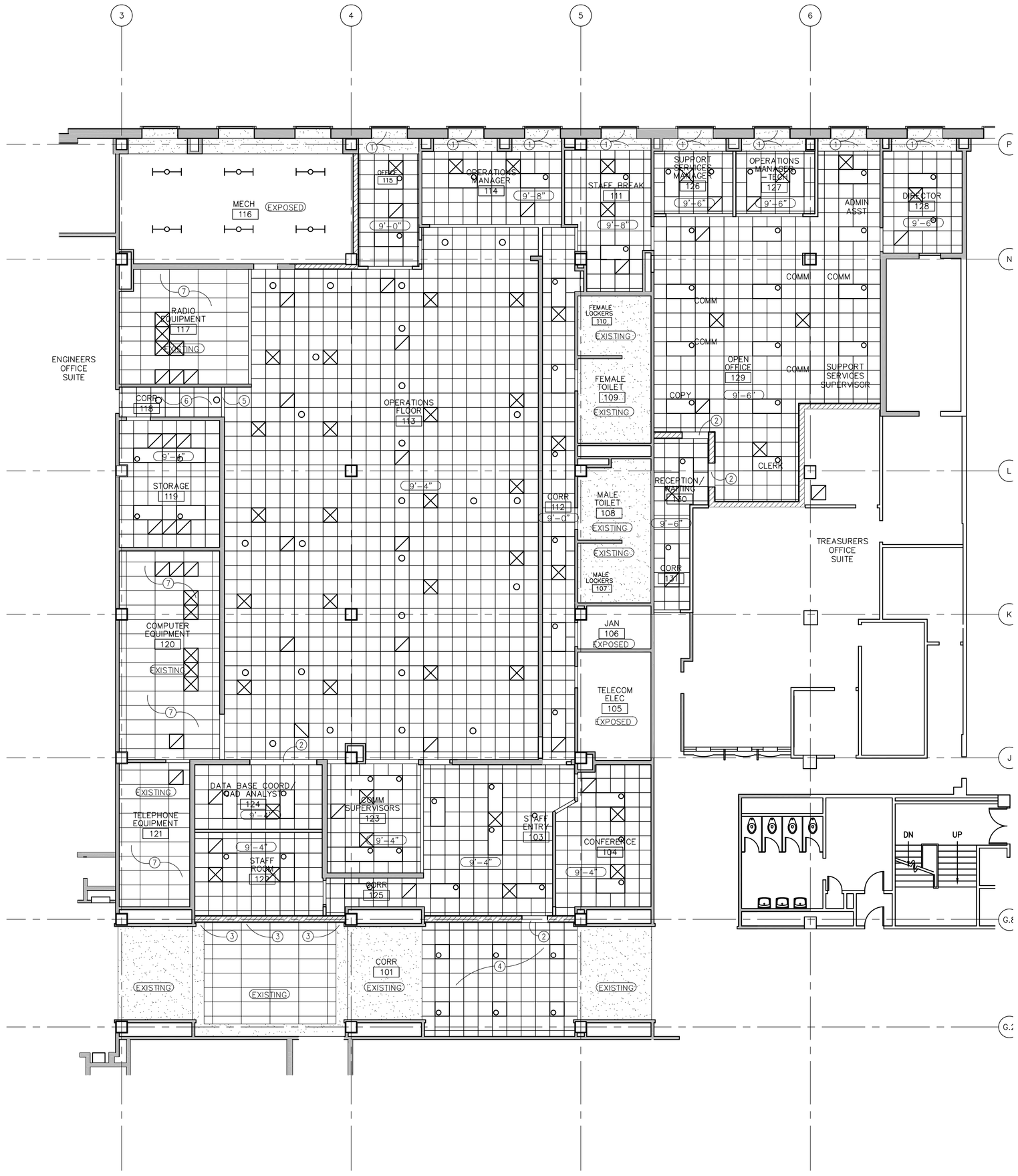
VA PROJECT # 208006

Sheet Name
FLOOR PLAN

Sheet No.
A2.1



2 EXTERIOR TEMPORARY SERVICES PLAN
1/8" = 1'-0"



1 REFLECTED CEILING PLAN
1/8" = 1'-0"

CEILING PLAN LEGEND:

- EXPOSED STRUCTURE
- GYPSUM BOARD CEILING SEE ROOM FINISH SCHEDULE FOR NEW FINISHES
- NEW 2X2 ACOUSTICAL LAY-IN CEILING SEE ROOM FINISH SCHEDULE
- 2X4 ACOUSTICAL LAY-IN CEILING - SEE KEYED NOTES
- 9'-0" CEILING HEIGHT A.F.F.
- 2X4 RECESSED LIGHT FIXTURE
- 2X2 RECESSED LIGHT FIXTURE
- SUSPENDED / SURFACE MTD. LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- HVAC SUPPLY GRILLE
- HVAC RETURN GRILLE

GENERAL CEILING PLAN NOTES:

A. REFER TO M E P FP DRAWINGS FOR ALL M E P FP INFORMATION

B. REFER TO PHASING DIAGRAMS FOR PHASING AND SCHEDULING OF ALL WORK

C. PATCH ALL EXISTING GYP BD CEILINGS TO REMAIN TO MATCH EXISTING SURROUNDING CEILING FINISH.

D. REPLACE ANY DAMAGED CEILING TILE IN AREAS WHERE LAY-IN CEILINGS ARE TO REMAIN

KEYED CEILING PLAN NOTES:

1. REPLACE OR PATCH EXISTING PLASTER / GYP BD AND FINISH AS REQUIRED TO MEET & MATCH ADJACENT CEILINGS
2. SEE LINTEL SCHEDULE ON SHEET A4.1 FOR MASONRY LINTELS AT NEW DOOR OPENINGS
3. REPLACE OR MODIFY EXISTING LAY IN CEILINGS & PLASTER SOFFIT AND FINISH AS REQUIRED TO MEET NEW WALLS AND MATCH EXISTING ADJACENT CEILINGS
4. ALIGN NEW ACOUSTICAL LAY IN CEILING TILE WITH EXISTING ADJACENT PLASTER CEILINGS
5. PROVIDE NEW GYP BD SOFFIT AT CEILING ELEVATION CHANGE
6. NEW CEILING HEIGHT TO BE COORDINATED WITH DUCTWORK INSTALLATION
7. REINSTALL EXISTING CEILING GRID & INSTALL NEW 2X4 CEILING TILE

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

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COUNTY BID # 109055

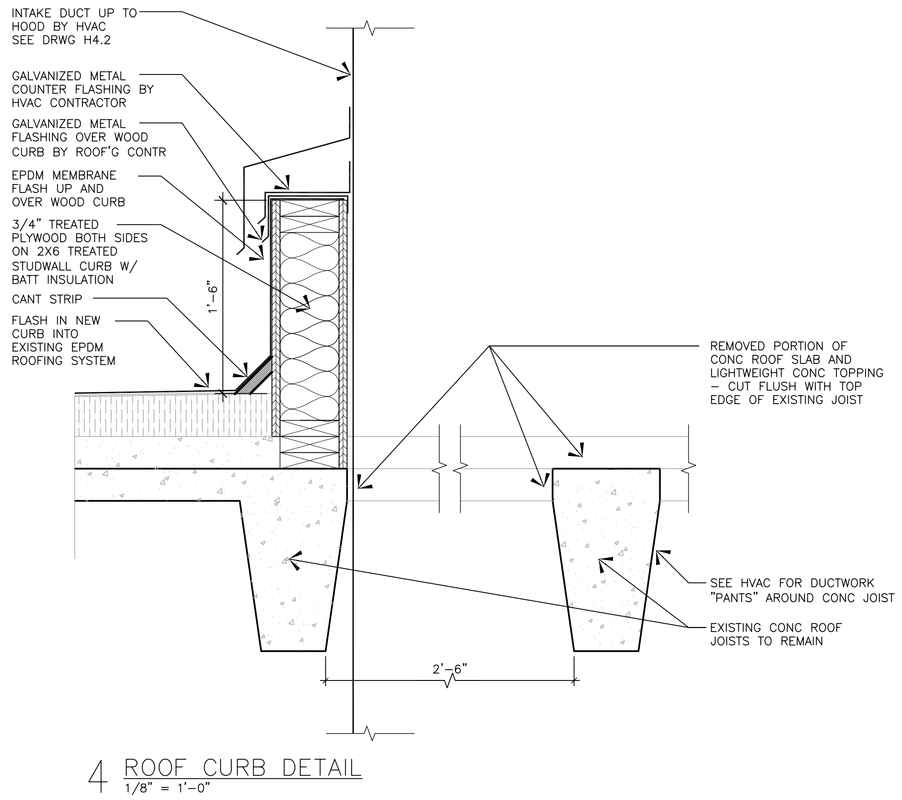
VA PROJECT # 208006

Sheet Name
REFLECTED CEILING PLAN EXTERIOR TEMP SERVICES

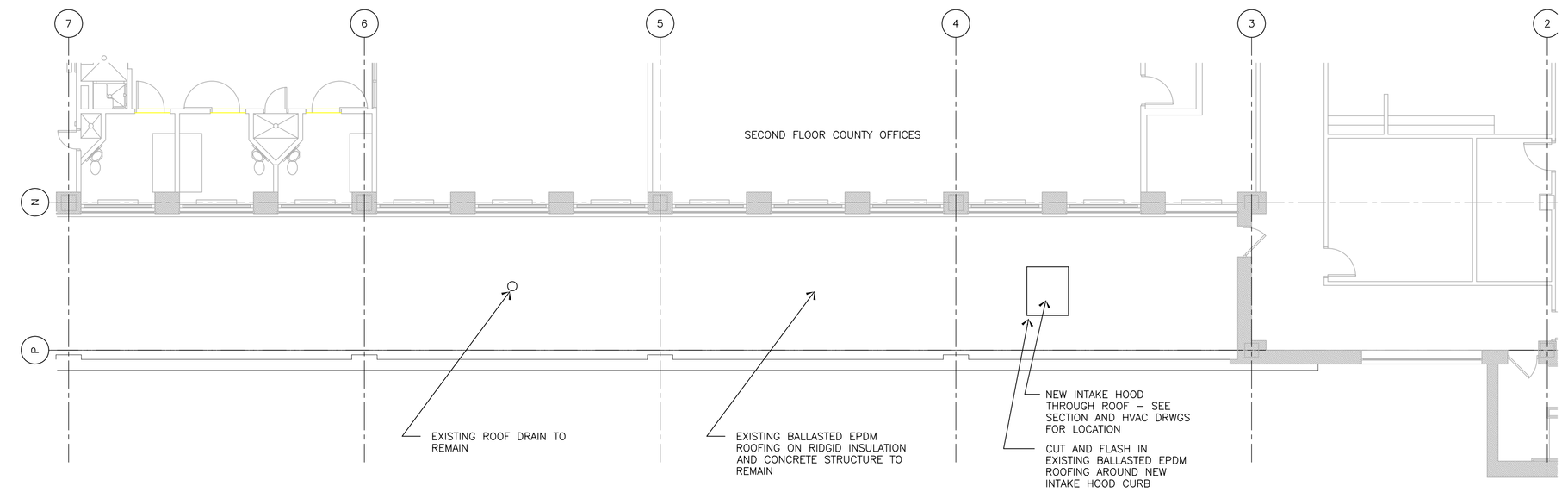
Sheet No.
A2.2

PROJECT NORTH

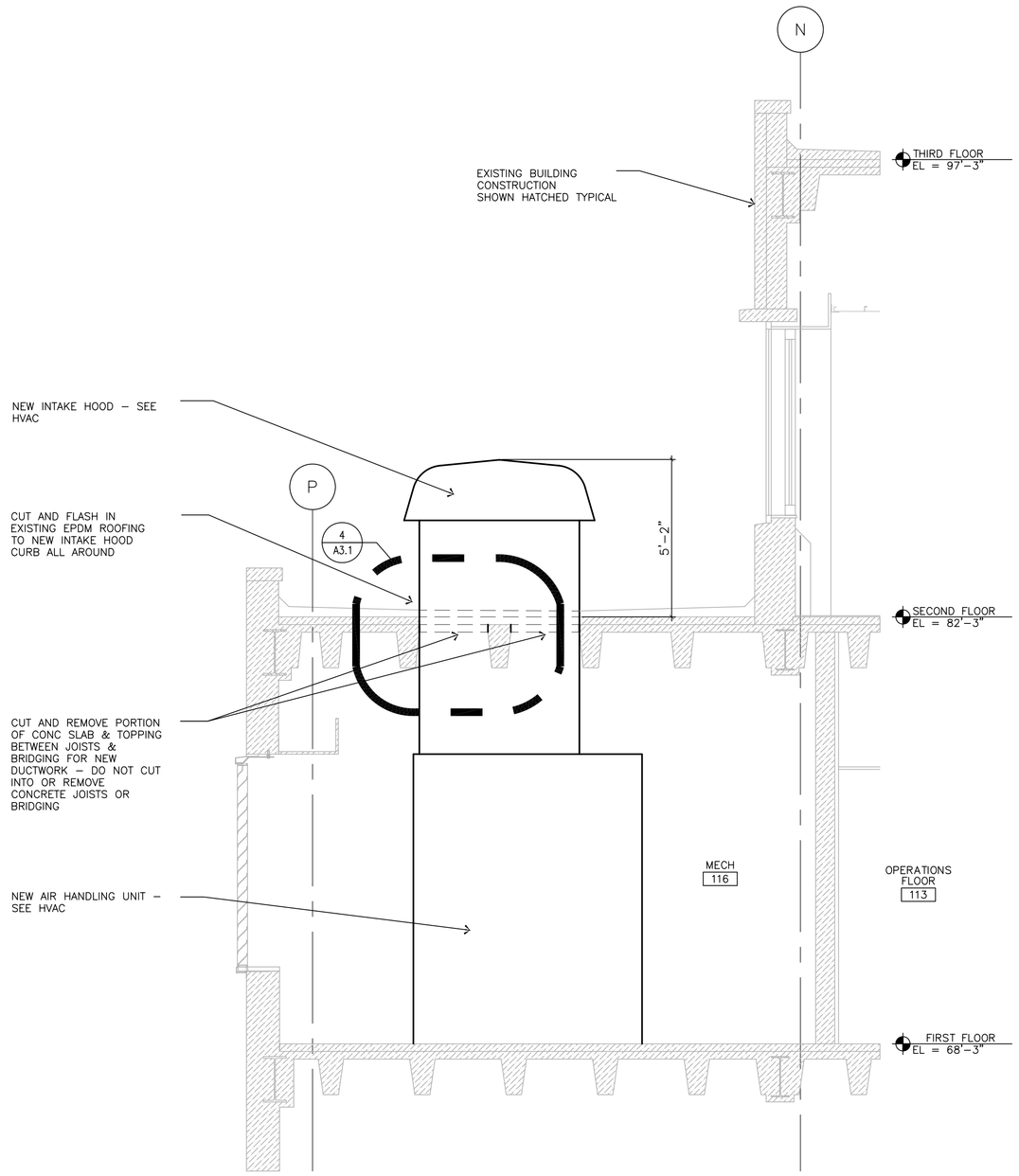
TRUE NORTH



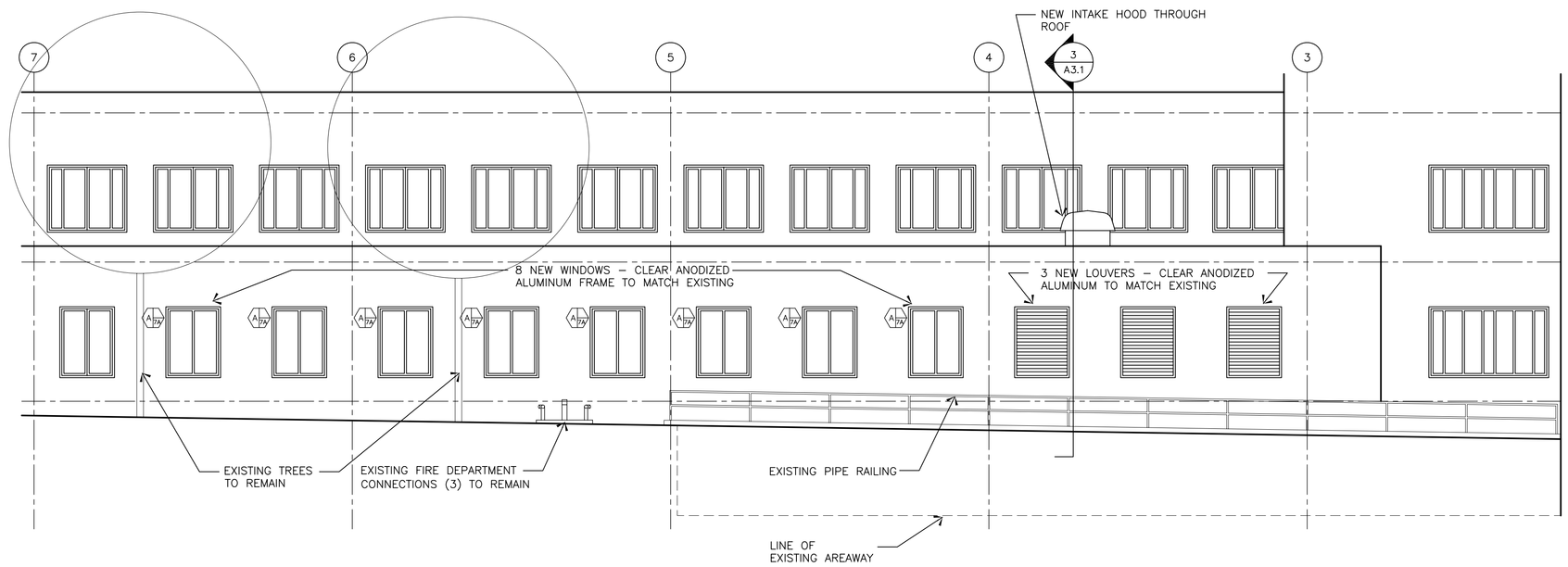
4 ROOF CURB DETAIL
1/8" = 1'-0"



2 PARTIAL ROOF PLAN
1/8" = 1'-0"



3 SECTION THROUGH MECH ROOM
3/8" = 1'-0"



1 PARTIAL NORTH EXTERIOR ELEVATION WITH NEW OPENINGS
1/8" = 1'-0"

Date of Issue 11/30/0

No. Description Da

Reference Diagram

Reference Plan

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Public Safety
Communications
Center Infrastructu
Upgrades

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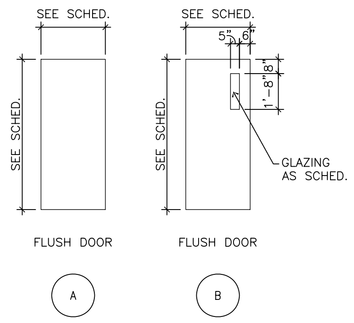
COUNTY BID # 109055

VA PROJECT # 208006

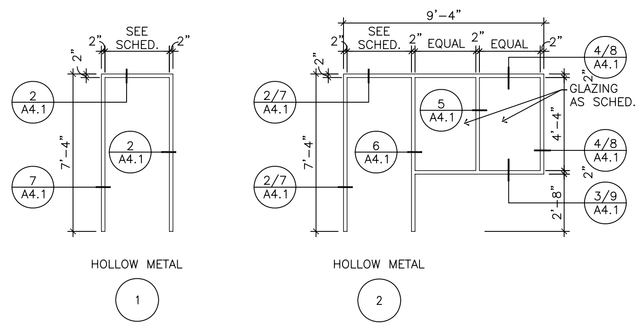
Sheet Name
ROOF PLAN, ELEVATION + SECTION

Sheet No.
A3.1

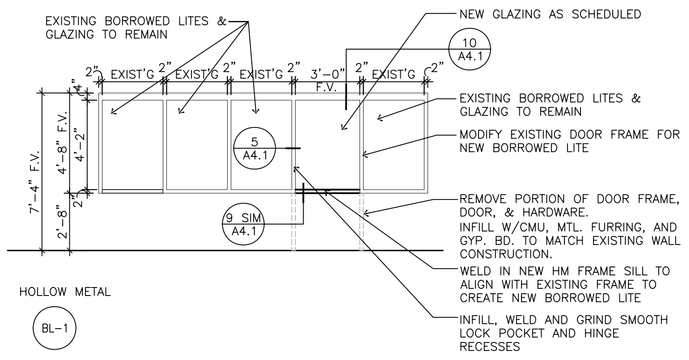
DOOR TYPES

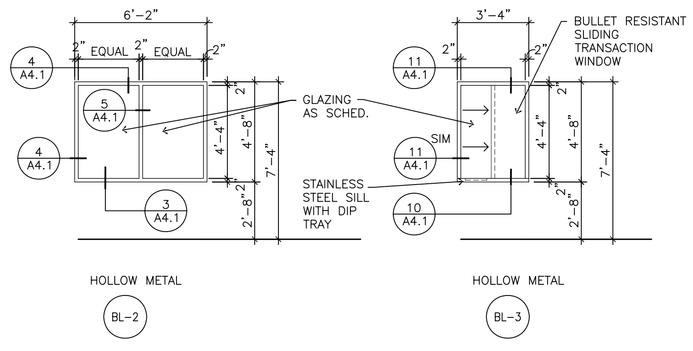


DOOR FRAME TYPES

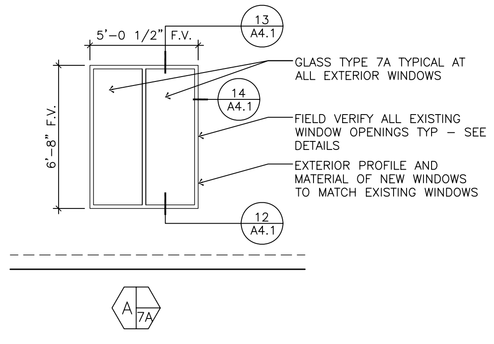


BORROWED LITE TYPES





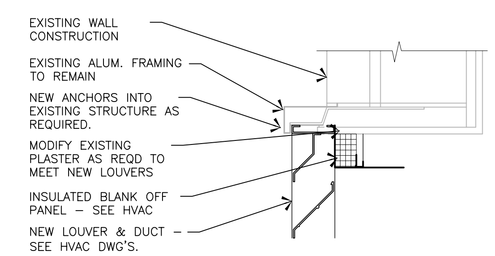
WINDOW TYPES



MASONRY LINTEL SCHEDULE

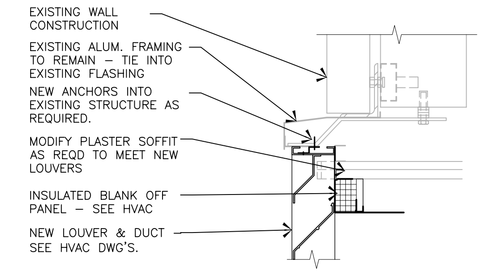
WALL THICKNESS	OPENING WIDTH	SECTION
8"	TO 6'–6"	8" (2) – #5 REBAR
8"	TO 9'–4"	8" W8 X 15 STEEL LINTEL WITH 5/16" BOTTOM PLATE

NOTES:
1. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL
2. COORDINATE BOTTOM OF LINTEL WITH DOOR FRAMES
3. PROVIDE 5/16" BOTTOM PLATE AT STEEL LINTELS. WIDTH OF PLATE = NOMINAL MASONRY THICKNESS MINUS 1 INCH

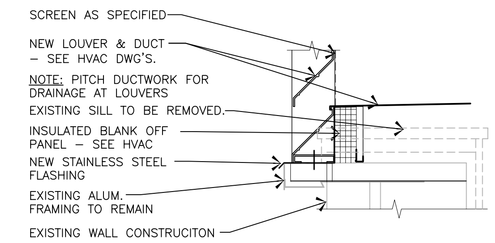


17 JAMB DETAIL @ LOUVER
1 1/2" = 1'–0"

NOTE: FIELD VERIFY EXISTING DIMENSIONS & ANCHORING CONDITIONS AT ALL WINDOW & LOUVER OPENINGS

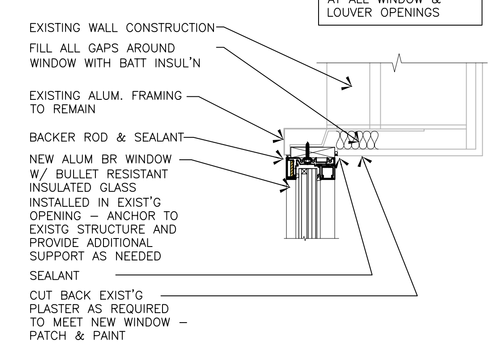


16 HEAD DETAIL @ LOUVER
1 1/2" = 1'–0"

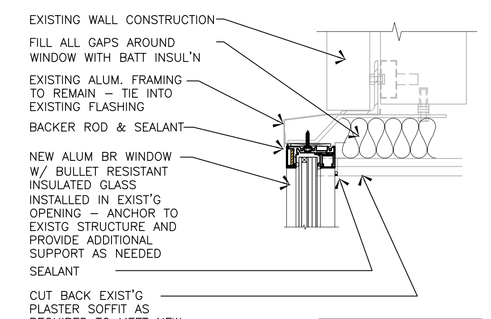


15 SILL DETAIL @ LOUVER
1 1/2" = 1'–0"

NOTE: FIELD VERIFY EXISTING DIMENSIONS & ANCHORING CONDITIONS AT ALL WINDOW & LOUVER OPENINGS

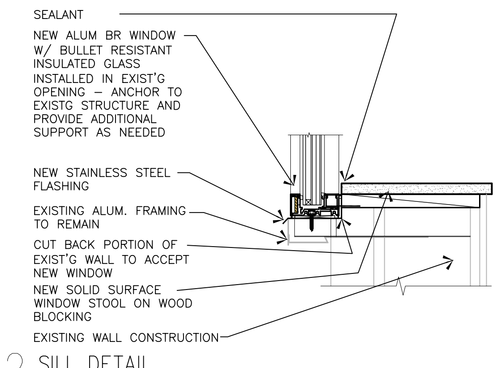


14 JAMB DETAIL
1 1/2" = 1'–0"

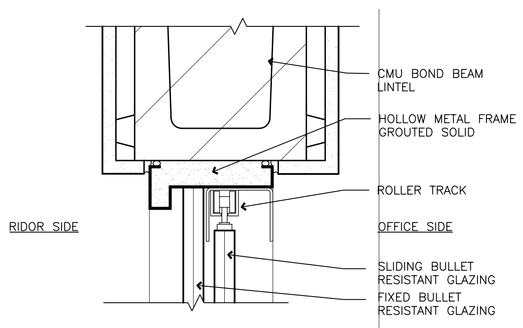


13 HEAD DETAIL
1 1/2" = 1'–0"

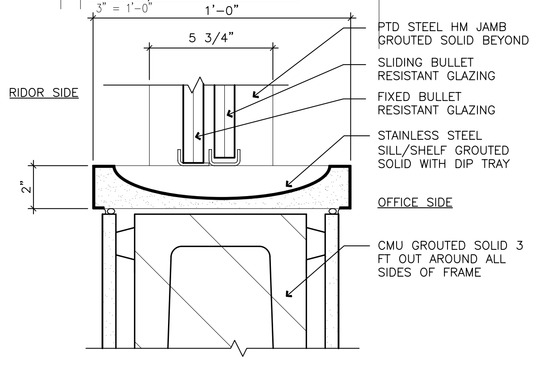
NOTE: FIELD VERIFY EXISTING DIMENSIONS & ANCHORING CONDITIONS AT ALL WINDOW & LOUVER OPENINGS



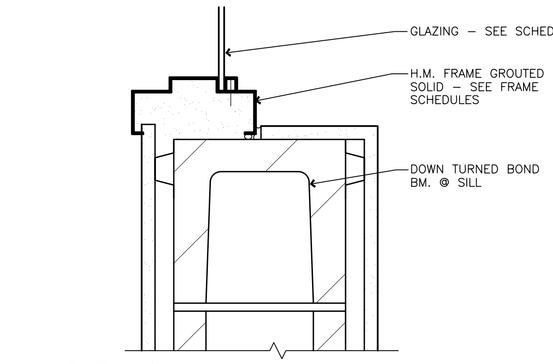
12 SILL DETAIL
1 1/2" = 1'–0"



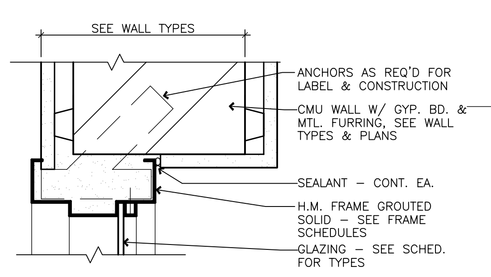
11 HEAD/JAMB DETAIL
3" = 1'–0"



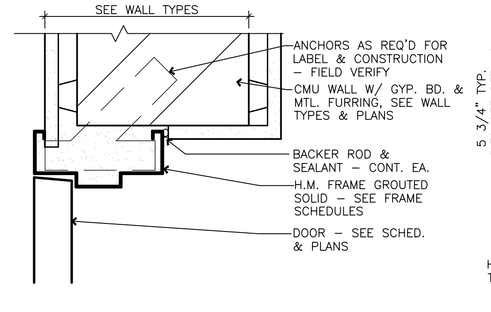
10 SILL DETAIL
3" = 1'–0"



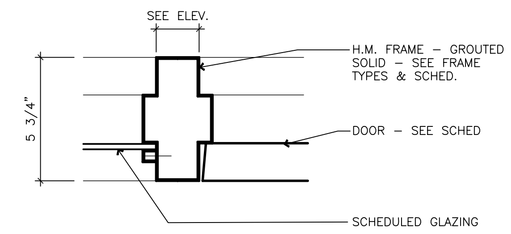
9 SILL DETAIL
3" = 1'–0"



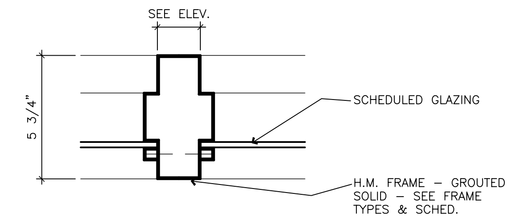
8 JAMB DETAIL (HEAD SIM.)
3" = 1'–0"



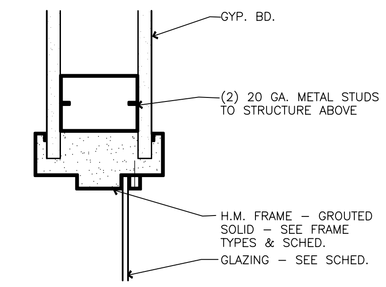
7 JAMB DETAIL (HEAD SIM.)
3" = 1'–0"



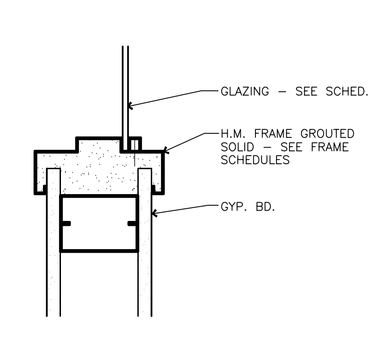
6 JAMB DETAIL
3" = 1'–0"



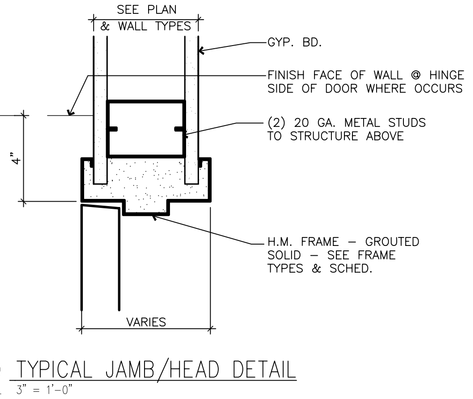
5 MULLION DETAIL
3" = 1'–0"



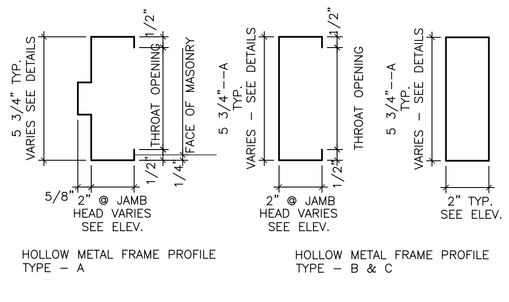
4 JAMB/HEAD DETAIL
3" = 1'–0"



3 SILL DETAIL
3" = 1'–0"



2 TYPICAL JAMB/HEAD DETAIL
3" = 1'–0"



1 H.M. FRAME PROFILES
3" = 1'–0"

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Reference Plan

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COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
DOORS, FRAMES, WINDOWS + DETAILS

Sheet No.
A4.1

DOOR SCHEDULE

	Opening Number	DOOR Type	Width	Height	Mat'l	Glass Type	FRAME Type	Mat'l	Glass Type	Label	Door Pos Ind	Elec Lock	Hardware Set	Function	Remarks
	102	A	3'-4"	7'-2"	HM	–	1	HM	–	1 HR	Y	Y	3	D	CARD READER, ELECTRIC STRIKE PUSH BUTTON RELEASE
	103	A	3'-4"	7'-2"	WD	–	1	HM	–	–	–	–	4	AB	
	111	A	3'-0"	7'-2"	WD	–	1	HM	–	1 HR	–	–	5	R	
	112	B	3'-0"	7'-2"	WD	3A	1	HM	–	–	–	–	5	R	
	115	A	3'-0"	7'-2"	WD	–	1	HM	–	–	–	–	1	AB	
	124	A	3'-0"	7'-2"	WD	–	2	HM	3A	–	–	–	1	AB	
	126	A	3'-0"	7'-2"	WD	–	2	HM	3A	–	–	–	1	AB	
	127	A	3'-0"	7'-2"	WD	–	2	HM	3A	–	–	–	1	AB	
	128	EXISTG	EXISTG	EXISTG	EXISTG	–	EXISTG	HM	–	–	–	–	2	AB	NEW LOCKSET IN EXISTING DOOR
	130	A	3'-0"	7'-2"	HM	–	1	HM	–	–	Y	Y	3	D	CARD READER, ELECTRIC STRIKE PUSH BUTTON RELEASE
	131	A	3'-0"	7'-2"	HM	–	1	HM	–	–	Y	Y	3	R	CARD READER, ELECTRIC STRIKE PUSH BUTTON RELEASE

NOTE: For door grilles and undercuts see HVAC drawings. Architect is not responsible for quantities.

NOTE: DOOR 131 ELECTRIC STRIKE, CARD READER, CAMERA, INTERCOM & PUSH BUTTON RELEASE ARE TO FUNCTION DURING PHASE 2. AS PART OF PHASE 3, CARD READER, INTERCOM AND CAMERA ARE TO BE RELOCATED TO DOOR 130. PUSHBUTTON RELEASE IS TO BE RELOCATED TO CLERICAL RECEPTION DESK & ELECTRIC STRIKE IN DOOR 131 IS TO BE DISABLED. SEE PHASING DIAGRAMS SHEET A1.2

BORROWED LITE SCHEDULE

Opening Number	FRAME Type	Width	Height	Mat'l	Glass Type	Label	Remarks
BL-123	BL-1	3'-0" FV	4'-8" FV	HM	3A	--	SEE FRAME ELEVATION
BL-115	BL-2	6'-2"	4'-8"	HM	3A	--	SEE FRAME ELEVATION
BL-130	BL-3	3'-4"	4'-8"	HM	7B	--	SEE FRAME ELEVATION

GLASS TYPES

3A 1/4" clear, tempered

7A clear, bullet resistant (UL level 2), insulated, low E

7B clear, bullet resistant (UL level 2)

ROOM FINISH SCHEDULE

	ROOM #	ROOM NAME	FLOOR	BASE	NORTH WALL	EAST WALL	SOUTH WALL	WEST WALL	CEILING MAT'L	COUNTERTOPS CABINETRY	MISCELLANEOUS	REMARKS
	101	CORRIDOR	EXIST	GPB	GPB	EXIST	EXIST	EXIST	ACT-1			SEE PLANS FOR EXTENT OF NEW WALLS & CEILINGS
				VCB-2	P-6				GPB/P-5			
	102	NOT USED										
	103	STAFF ENTRY	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1	MILLWORK "CUBBIES" PL-1		LOW PARTITION P-2
			CPT-2	VCB-1	P-2	P-2	P-2	P-2				
	104	CONFERENCE	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-3	P-2	P-2	P-2				
	105	TELECOM ELEC.	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST			
	106	JANITOR	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST			
	107	MALE LOCKERS	EXIST	EXIST	GPB	GPB	GPB	GPB	EXIST		NEW LOCKERS SEE ELEVS	NEW CERAMIC BASE AT NEW LOCKERS TO MATCH EXISTG
					P-6	P-6	P-6	P-6				
	108	MALE TOILET	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST			
	109	FEMALE TOILET	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST			
	110	FEMALE LOCKERS	EXIST	EXIST	GPB	GPB	GPB	GPB	EXIST		NEW LOCKERS SEE ELEVS	NEW CERAMIC BASE AT NEW LOCKERS TO MATCH EXISTG
					P-6	P-6	P-6	P-6				
	111	STAFF BREAK	EXIST	EXIST	GPB	GPB	GPB	GPB	ACT-1			
					P-2	P-2	P-2	P-2				
	112	CORRIDOR	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-2	VCB-1	P-2	P-2	P-2	P-2				
	113	OPERATIONS FLOOR	AFP	GPB	GPB	GPB	GPB	GPB	ACT-2		PARTIAL NEW AFP	SEE PLANS FOR EXTENT OF ACOUSTICAL WALL PANELS
			CPT-2	VCB-1	P-2/AWP	P-2/AWP	P-2/AWP	P-2/AWP	-2/AWP			
	114	OPERATIONS MANAGER	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-3	P-2	P-2				
	115	OFFICE	AFP	GPB	GPB	GPB	GPB	GPB	ACT-1		ALL NEW AFP	
			CPT-1	VCB-1	P-2	P-2	P-3	P-2				
	116	MECHANICAL	EXIST	EXIST	EXIST	CMU	EX/CMU	EXIST	EXP			
	117	RADIO EQUIPMENT	AFP	EXIST	EXIST	EXIST	EXIST	EXIST	ACT-3		NEW AFP AT UPS UNITS	NEW CEILING TILE IN EXISTING GRID
			EXIST									
	118	CORRIDOR	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-2	VCB-1	P-2	P-2	P-2	P-2				
	119	STORAGE	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	ACT-1			
	120	COMPUTER EQUIPMENT	AFP	EXIST	EXIST	EXIST	EXIST	EXIST	ACT-3		NEW AFP AT UPS UNITS	NEW CEILING TILE IN EXISTING GRID
			EXIST									
	121	TELEPHONE EQUIPMENT	AFP	EXIST	EXIST	EXIST	EXIST	EXIST	ACT-3			NEW CEILING TILE IN EXISTING GRID
			EXIST									
	122	STAFF ROOM	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-2	VCB-1	P-2	P-2	P-3	P-2				
	123	COMM. SUPERVISORS	AFP	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-3	P-2	P-2				
	124	DATA BASE COORD/ CAD ANALYST	AFP	GPB	GPB	GPB	GPB	GPB	ACT-1		ALL NEW AFP	
			CPT-1	VCB-1	P-2	P-3	P-2	P-2				
	125	CORRIDOR	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-2	VCB-1	P-2	P-2	P-2	P-2				
	126	SUPPORT SERVICES MANAGER	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-3	P-2	P-2				
	127	OPERATIONS MANAGER	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-2	P-2	P-3				
	128	DIRECTOR	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-2	P-3	P-2				
	129	OPEN OFFICE	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-3	P-2	P-2				
	130	RECEPTION/ WAITING	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-3	P-2	P-2				
	131	CORRIDOR	CONC	GPB	GPB	GPB	GPB	GPB	ACT-1			
			CPT-1	VCB-1	P-2	P-2	P-2	P-2				

COLOR & MATERIALS CODE

ACT-1 ACOUSTICAL CEILING TILE
ARMSTRONG
CIRRUS
ANGLED TEGULAR
ITEM #: 584
SIZE: 2' X 2' X 3/4"
15/16" PRELUDE GRID
(WHITE)

ACT-2 ACOUSTICAL CEILING TILE
ARMSTRONG
OPTIMA OPEN PLAN
VECTOR
ITEM #: 3900
SIZE: 2' X 2' X 7/8"
15/16" PRELUDE GRID
(WHITE)

ACT-3 ACOUSTICAL CEILING TILE
ARMSTRONG
CIRRUS
ANGLED TEGULAR
ITEM #: 535
SIZE: 2' X 4' X 3/4"
15/16" PRELUDE GRID
(WHITE)

AFP ACCESS FLOOR PANEL
SEE SPECIFICATION

AWP ACOUSTICAL WALL PANEL
CONWED DESIGNSCAPE
RESPOND ACT ACOUSTICAL PANELS
THICKNESS: 1-1/2"
FABRIC: GUILFORD OF MAINE
STYLE: FR701 2100
COLOR: 394 OPAL
EDGE: SQUARE @ ADJACENT PANELS,
RADIUS @ EXPOSED EDGES
MOUNTING: Z-CLIP
(NEUTRAL)

CPT-1 CARPET
INTERFACE FLOR
STYLE: CUBIC 1380102500
COLOR: 4857 FUNCTIONAL
SIZE: 50CM X 50CM
INSTALLATION: NON-DIRECTIONAL
(GREY MULTI)

CPT-2 CARPET
INTERFACE FLOR
STYLE: CUBIC 1380102500
COLOR: 6383 BALANCE
SIZE: 50CM X 50CM
INSTALLATION: NON-DIRECTIONAL
(BLUE MULTI)

HMB-1 HORIZONTAL METAL BLINDS
HUNTER DOUGLAS CONTRACT
1" ALUMINUM SLAT
DUST SHIELD FINISH
COLOR: 820 UMBER
(DK NEUTRAL)

P-1 PAINT
BENJAMIN MOORE
COLOR: DECORATORS WHITE
FINISH: FLAT
(WHITE)

P-2 PAINT
BENJAMIN MOORE
COLOR: 1465 NIMBUS
FINISH: SATIN
(LT NEUTRAL)

P-3 PAINT
SHERWIN WILLIAMS
COLOR: SW6521 NOTABLE HUE
FINISH: SATIN
(BLUE)

P-4 PAINT
BENJAMIN MOORE
COLOR: 1469 EAGLE ROCK
FINISH: SEMI-GLOSS
(MED NEUTRAL)

P-5 PAINT
COLOR: TO MATCH EXISTING
FINISH: TO MATCH EXISTING

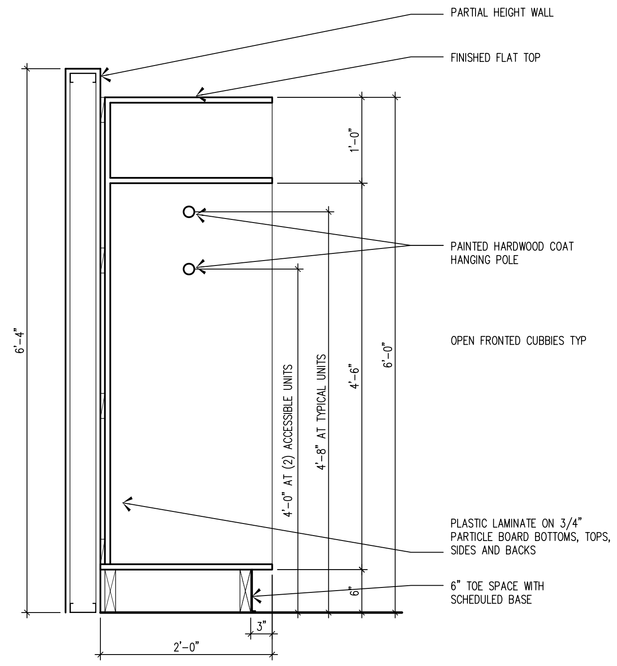
P-6 PAINT
COLOR: TO MATCH EXISTING
FINISH: TO MATCH EXISTING

PL-1 PLASTIC LAMINATE
WILSONART
CANYON ZEPHYR
4842-60
(MED NEUTRAL)

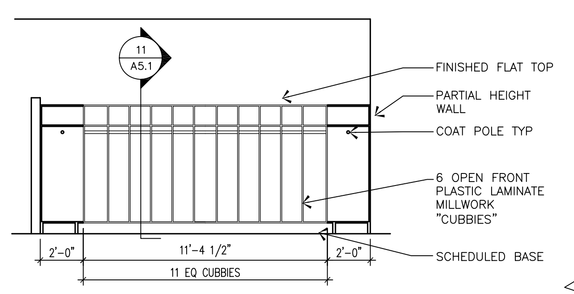
SSM-1 SOLID SURFACE MATERIAL
DUPONT
CORIAN
COLOR: ECLIPSE
(LT NEUTRAL)

VCB-1 VINYL COVE BASE
JOHNSONITE
COLOR: 32 PEBBLE
6" HIGH COVE BASE
(NEUTRAL)

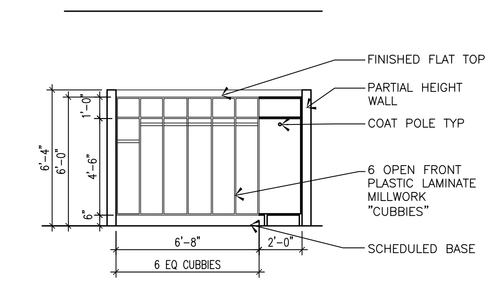
VCB-2 VINYL COVE BASE
JOHNSONITE
COLOR: 40 BLACK
6" HIGH COVE BASE
(BLACK)



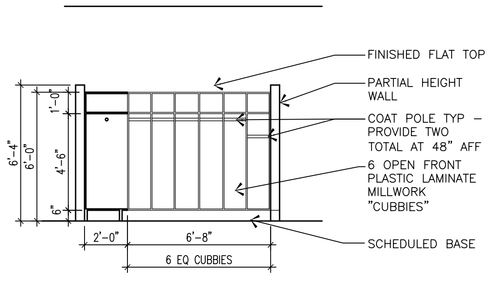
11 MILLWORK CUBBIES SECTION
1" = 1'-0"



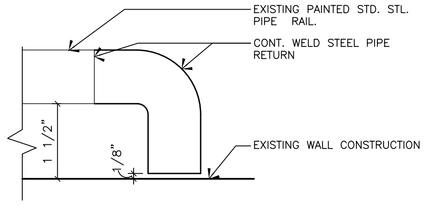
10 INT. ELEVATION @ STAFF ENTRY
1/4" = 1'-0"



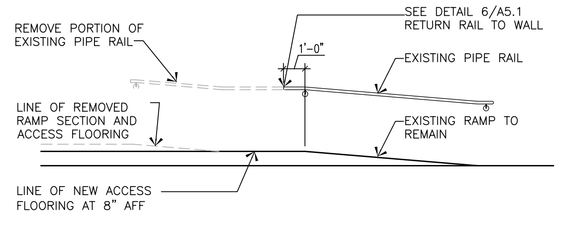
9 INT. ELEVATION @ STAFF ENTRY
1/4" = 1'-0"



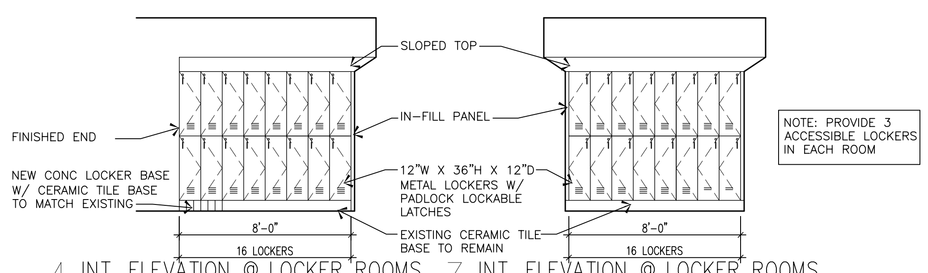
8 INT. ELEVATION @ STAFF ENTRY
1/4" = 1'-0"



6 EXISTING HANDRAIL MODIFICATION – RM 113
6" = 1'-0"

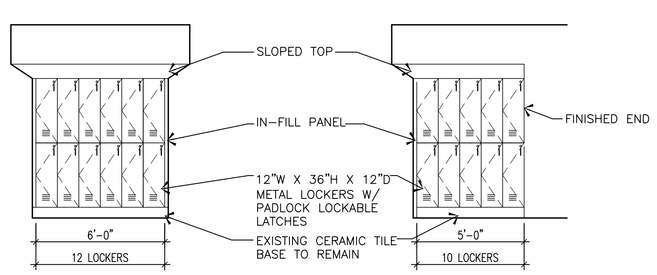


5 EXISTING HANDRAIL MODIFICATION – RM 113
1/4" = 1'-0"



4 INT. ELEVATION @ LOCKER ROOMS (MIRRORED @ FEMALE LOCKERS #110)
1/4" = 1'-0"

3 INT. ELEVATION @ LOCKER ROOMS (MIRRORED @ FEMALE LOCKERS #110)
1/4" = 1'-0"



2 INT. ELEVATION @ LOCKER ROOMS (MIRRORED @ FEMALE LOCKERS #110)
1/4" = 1'-0"

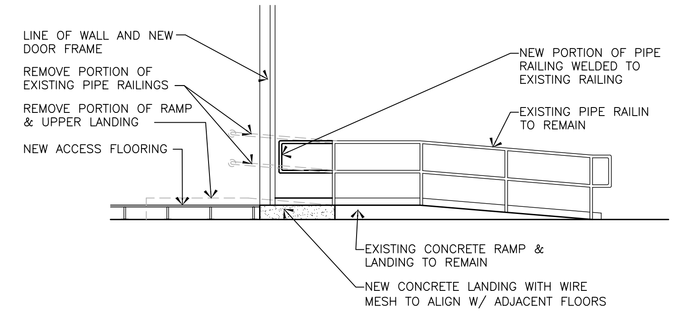
1 INT. ELEVATION @ LOCKER ROOMS (MIRRORED @ FEMALE LOCKERS #110)
1/4" = 1'-0"

GENERAL NOTES:

1. SUBMIT 8" X 10" SAMPLES OF ALL FINISHES FOR ARCHITECT'S APPROVAL PRIOR TO ORDERING MATERIAL.
2. VERIFY ALL STOPPING AND STARTING POINTS FOR COLORS AND FINISHES WITH THE ARCHITECT BEFORE WORK PROCEEDS.
3. ALL GRILLS, FIRE EXTINGUISHERS, LOUVERS, VENTS, ETC. SHALL BE PAINTED TO MATCH WALL COLOR OR CEILING ON WHICH THEY OCCUR.
4. ALL NEW WOOD DOORS SHALL MATCH SPECIES AND FINISH OF EXISTING WOOD DOORS.
5. SEE PLANS FOR LOCATIONS OF NEW BLINDS AT EXTERIOR WINDOWS AND BORROWED LITES.
6. PATCH & PAINT ALL EXISTING GYP BD CEILINGS AND SOFFITS TO REMAIN TO MATCH EXISTING IN ANY DISTURBED AREAS.
7. WINDOW SILLS SHALL BE SSM-1.

PAINTING NOTES:

1. ALL HOLLOW METAL FRAMES, HOLLOW METAL DOORS, HANDRAILS & GUARDRAILS SHALL BE PAINTED P-4.
2. ALL COLUMNS SHALL BE PAINTED TO MATCH ADJACENT WALLS UNLESS OTHERWISE NOTED.
3. SEE ROOM FINISH SCHEDULE FOR ACCENT WALL PAINT COLOR LOCATIONS.



7 EXISTING HANDRAIL MODIFICATION – RM 103
1/4" = 1'-0"

No.	Description	Date
	Date of Issue	11/30/09

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
City County Building
210 Martin Luther
King Jr. Blvd.
Madison, Wisconsin

VentureArchitects

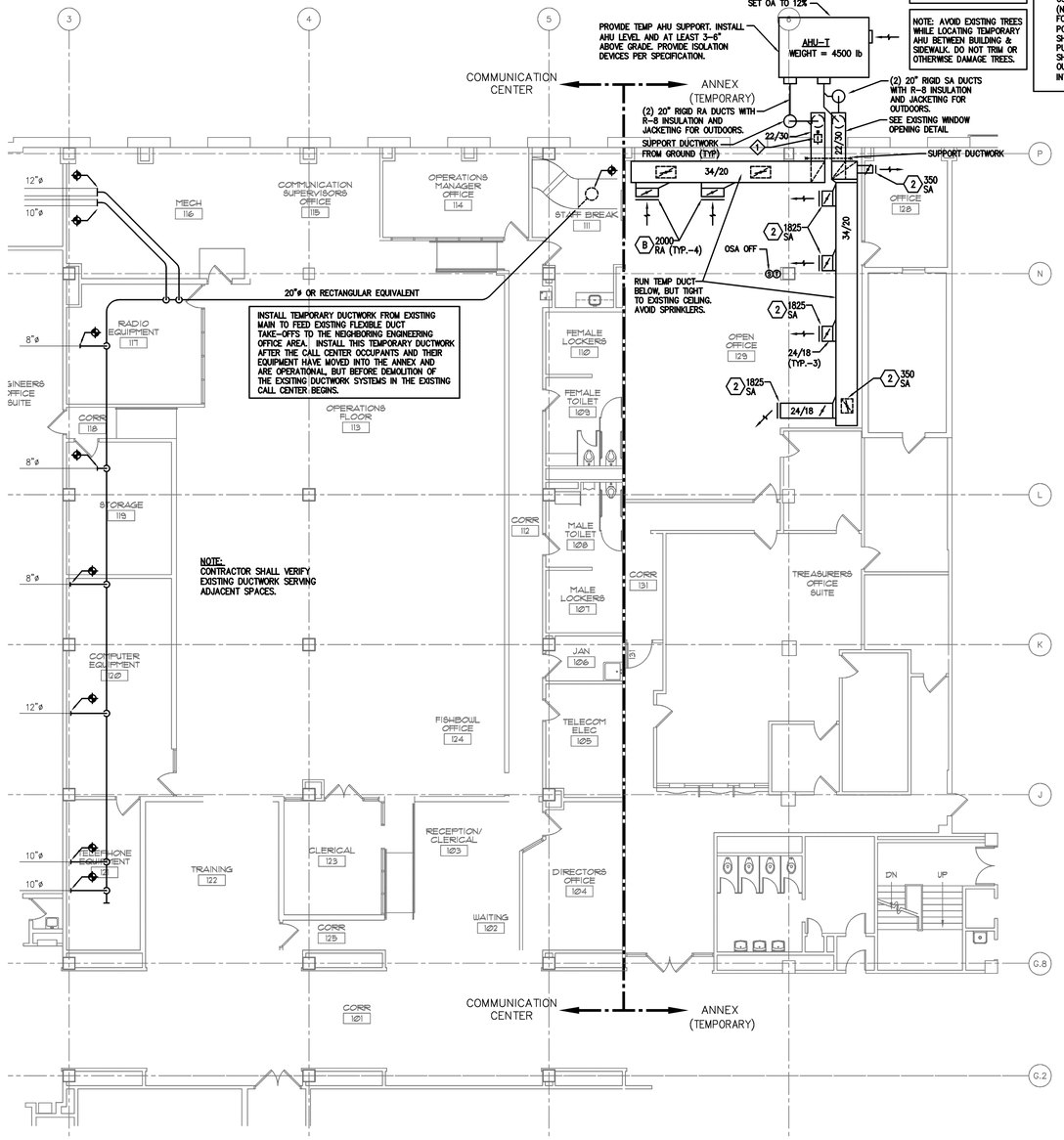
Venture Architects
205 W. Highland
Milwaukee, WI 53203
Telephone 414-271-3359

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
SCHEDULES AND INTERIOR ELEVATIONS

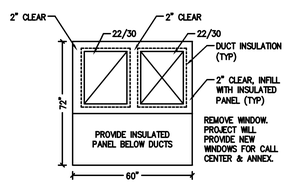
Sheet No.
A5.1



A HT1.1 HVAC TEMPORARY PLAN – DUCTWORK

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

12"0 1' 5' 10' 20'



B HT1.1 EXISTING WINDOW OPENING DETAIL

NO SCALE

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

Henneman Engineering Inc.
Madison:
1232 Fourier Drive, Suite 101
Madison, Wisconsin 53717-1960
T 608.833.7000
F 608.833.6996
Email: info@henneman.com
Website: http://www.henneman.com

HEI JOB NO. 09-8082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

1st Floor
City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

VentureArchitects

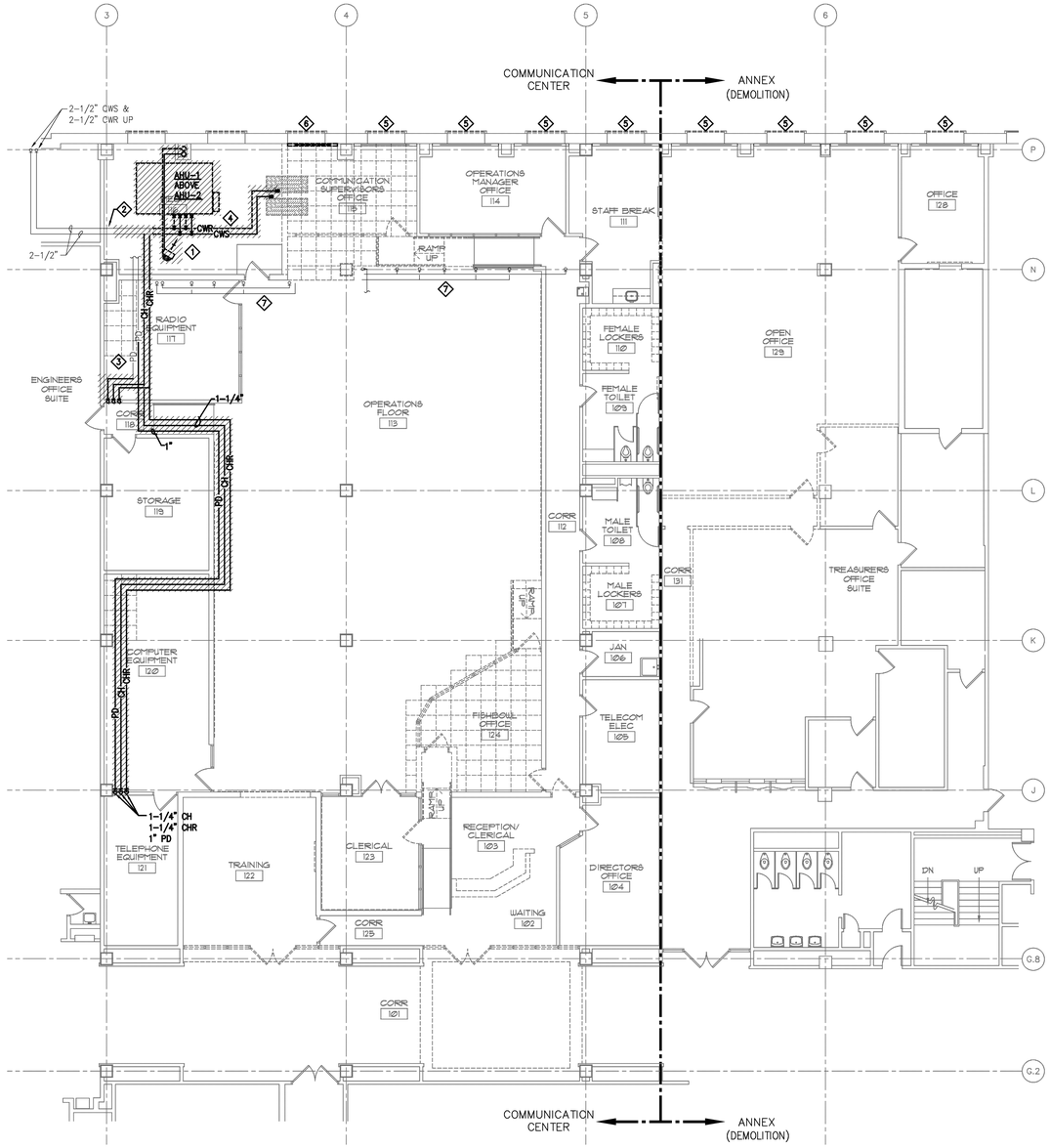
Venture Architects
345 N Highland
Milwaukee, WI 53203
Telephone 414-271-3595

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC TEMPORARY PLAN

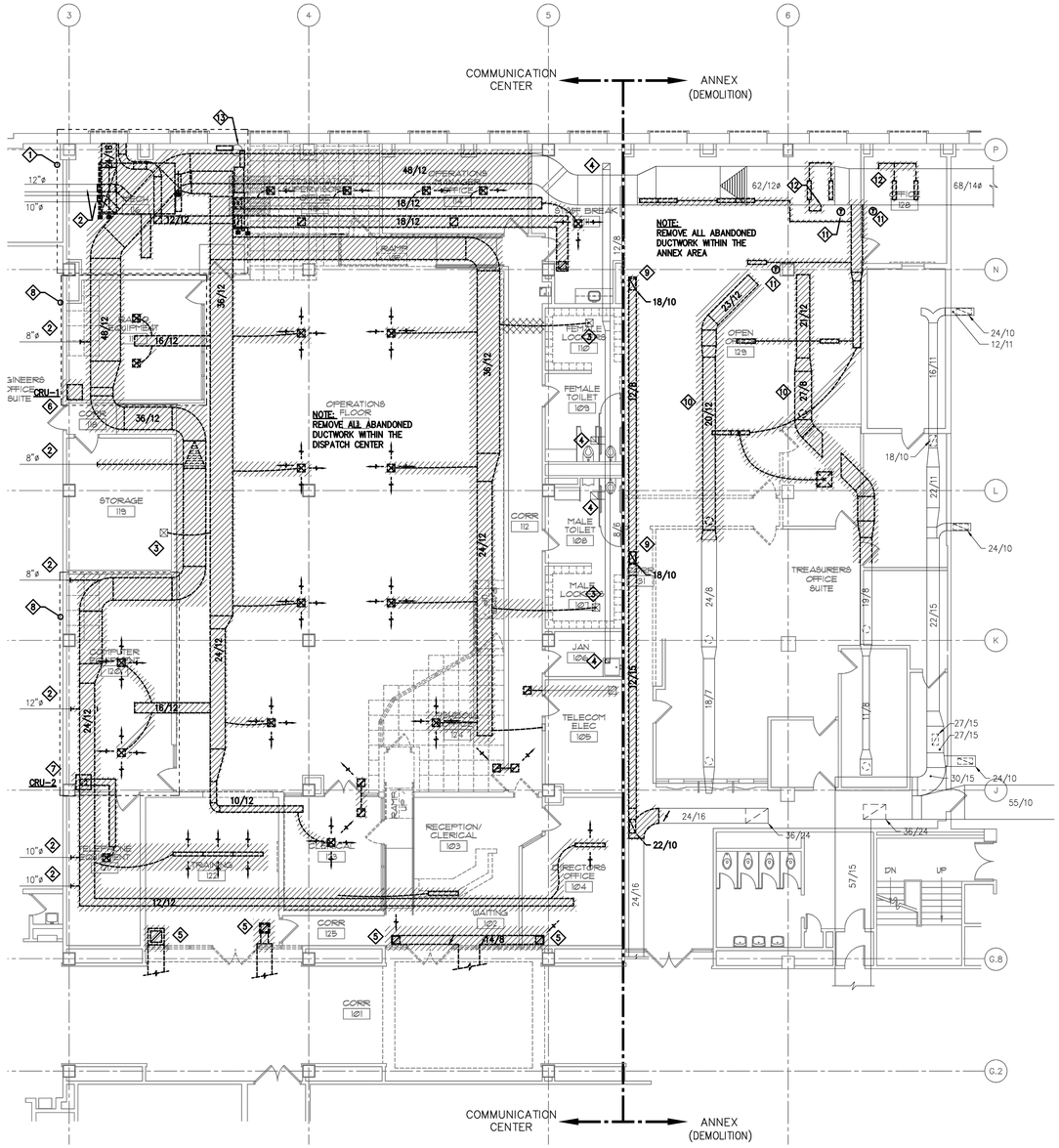
Sheet No.
HT1.1



B HD2.1 HVAC DEMOLITION PLAN – PIPING

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

12"0 1' 5' 10' 20'



A HD2.1 HVAC DEMOLITION PLAN – DUCTWORK

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

12"0 1' 5' 10' 20'

GENERAL NOTES (B/HD2.1):

1. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
2. CONTRACTOR TO ENSURE AREAS SHALL REMAIN OPERATIONAL AT ALL TIMES.
3. REFER TO ARCHITECT FOR PHASING DIAGRAMS.

KEYED NOTES (B/HD2.1):

1. REMOVE EXISTING STEAM UNIT HEATER. DEMOLISH PIPING BACK TO MAIN. CAP AND SEAL PIPING AS REQUIRED.
2. REMOVE CHILLED WATER PIPING TO THIS POINT AS SHOWN. CAP AND SEAL TO AS NEW CONDITION.
3. REMOVE CHILLED WATER PIPING BACK TO MAIN AS SHOWN. CAP AND SEAL TO AS NEW CONDITION.
4. REMOVE CHILLED WATER PIPING BACK TO MAIN AS SHOWN. CAP AND SEAL TO AS NEW CONDITION.
5. EXISTING WALL FINS TO REMAIN. FEILD VERIFY EXISTING CONTROL VALVES. PROVIDE EQUAL.
6. EXISTING WALL FINS TO BE DEMOLISHED.
7. EXISTING STEAM PIPING TO FLOOR ABOVE TO REMAIN.

GENERAL DEMOLITION & NEW WORK NOTES:

1.) THIS CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AT THE PROJECT SITE BEFORE SUBMITTING BIDS. CONTRACTOR IS ADVISED THAT ALL LOCATIONS ARE APPROXIMATE.

2.) AN ATTEMPT HAS BEEN MADE TO SHOW ALL PIPING, FIXTURES, DUCTWORK, AND OUTLETS. THIS CONTRACTOR SHALL VISIT THE SITE TO VERIFY COMPONENTS, LOCATIONS AND SIZES SHOWN OR NOT SHOWN. ALL COMPONENTS NEED TO BE REMOVED IN THE DEMOLITION AREA UNLESS NOTED ON THE DRAWINGS.

3.) IT IS MANDATORY THAT THE EXISTING BUILDING REMAIN IN CONTINUOUS & NON-INTERRUPTED OPERATION DURING REMODELING/ALTERING OF THE EXISTING BUILDING THE SPECIFIC AREA(S) BEING REMODELED/ALTERED AT ANY SCHEDULED TIME ARE OBVIOUSLY EXCLUSIVE OF THIS STATEMENT. SERVICES TO EXISTING BUILDING SHALL BE KEPT ON CONTINUOUS OPERATION INCLUDING CONTROLS OF SYSTEM, STEAM, HEATING, HOT WATER, HVAC SUPPLY, RETURN & EXHAUST, ETC. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH PROJECT CONSTRUCTION SHALL BE ARRANGED WITH THE OWNER THROUGH THE GENERAL CONTRACTOR A MINIMUM OF TWO (2) WEEKS IN ADVANCE. TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.

4.) THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN DEMOLITION, REMOVAL, CAPPING, STORING, ABANDONING, DISCONNECTING, RELOCATING AND RECONNECTION OF EXISTING EQUIPMENT AND MATERIAL. ALL CUTTING, PATCHING, REPAIRING, REPLACEMENT AND REFINISHING, SHALL MATCH THE EXISTING CONSTRUCTION AS NEARLY AS POSSIBLE.

5.) THESE DRAWINGS ARE NECESSARILY DIAGRAMMATIC IN NATURE. NOT ALL FITTINGS, OFFSETS, VENTS, OR DRAINS ARE SHOWN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING AND INCLUDE ALL FITTINGS, OFFSETS, VENTS, AND DRAINS AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.

6.) EXCEPT WHERE OTHERWISE SHOWN OR NOTED ON DRAWING – "TO BE RETAINED, RELOCATED" OR HEREINAFTER NOTED, ALL EXISTING EQUIPMENT AND MATERIAL IN AREAS TO BE REMODELED/ALTERED SHALL BE REMOVED WHERE THEY INTERFERE WITH PROPOSED NEW CONSTRUCTION &/OR INTERFERE W/PROPOSED USAGE OF SPACE BY OWNER AS FOLLOWS:

(A) REMOVE ANY PIPES PROTRUDING ABOVE FINISHED FLOOR OR THROUGH WALL AND CAP AND FINISH OVER WITH MATERIAL TO MATCH EXISTING.

(B) REMOVE ALL FIXTURES, CARRIERS, SUPPLY & WASTE & VENT PIPING, STEAM, HEATING HOT WATER, HVAC SUPPLY, RETURN & EXHAUST AS NOTED. CAP AT NEAREST ACTIVE MAIN. SUPPLY & RETURN MAINS TO BE VALVED & CAPPED.

(C) IN REMODELED/ALTERED AREAS ANY PIPING OR DUCTWORK PASSING THROUGH THE REMODELED AREAS TO SERVE (OR BEING SERVED FROM EXISTING ADJACENT, REMOTE, OR SURROUNDING AREA THAT ARE TO REMAIN) SHALL BE RETAINED AND KEPT OPERATIONAL AND SHALL BE REROUTED IN ALL CASES WHERE THEY INTERFERE WITH ANY NEW WORK OR USAGE TO BE ACCOMPLISHED IN THE REMODELED AREA.

(D) PENETRATIONS THROUGH EXISTING WALLS AND FLOORS FORMERLY OCCUPIED BY REMOVED PIPING SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION.

7.) THIS CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS TO BECOME FAMILIAR WITH THE EXTENT OF ALTERATION/REMODELING WORK AND MORE SPECIFICALLY NOTE WHERE NEW PARTITIONING IS BEING INSTALLED, WHERE EXISTING PARTITIONING IS BEING REMOVED, WHERE CEILINGS ARE BEING REMOVED AND OR REPLACED, ETC.

8.) SEE SPECIFICATIONS & ARCHITECTURAL SHEETS FOR CONSTRUCTION PHASING REQUIREMENTS. DURING EACH PHASE, AS MUCH WORK AS POSSIBLE MUST BE PERFORMED WITHIN THE BOUNDARIES OF THAT PHASE.

9.) REPLACE DIFFUSERS AND GRILLES WHERE NEW CEILINGS ARE SHOWN ON ARCHITECTURAL PLANS. MAKE DUCT MODIFICATIONS IN THIS AREA FOR NEW CEILINGS, LIGHTS, WALLS AND ROOM LAYOUTS.

GENERAL NOTES (A/HD2.1):

1. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
2. REFER TO ARCHITECT FOR PHASING DIAGRAMS.

KEYED NOTES (A/HD2.1):

1. ALL EQUIPMENT AND DUCTWORK IN MECHANICAL ROOM EXCEPT TAPS NOTED WITH LEGEND NOTE TWO SHALL BE DEMOLISHED.
2. EXISTING FLEXIBLE DUCT TAKE-OFFS SERVING ADJACENT SPACE SHALL REMAIN.
3. EXISTING SUPPLY AIR DIFFUSER TO REMAIN.
4. EXISTING EXHAUST DUCT RISER AND EXISTING EXHAUST FAN TO REMAIN.
5. EXISTING EXHAUST GRILLES TO BE DEMOLISHED. PATCH AND SEAL REMAINING DUCTWORK TO AS NEW CONDITION.
6. EXISTING CRU TO BE DEMOLISHED. NEW CRU-2 (REF: A/M2.1) SHALL BE INSTALLED AND OPERATIONAL PRIOR TO DEMOLITION OF THIS CRU.
7. EXISTING CRU TO BE DEMOLISHED. NEW CRU-3 (REF A/M2.1) SHALL BE INSTALLED AND OPERATIONAL PRIOR TO DEMOLITION OF THIS CRU.
8. RADIO EQUIPMENT ROOM AND COMPUTER ROOM SHALL REMAIN 100% OPERATIONAL AT ALL TIMES.
9. DEMOLISH RETURN GRILLE AND ASSOCIATED DUCTWORK AS SHOWN.
10. ENTIRELY DEMOLISH EXISTING ABANDONED-IN-PLACE DUCTWORK FROM PROJECT AREA.
11. DEMOLISH EXISTING THERMOSTAT WITH ASSOCIATED PNEUMATIC TUBING (OR WIRING) BACK TO SOURCE. CAP TUBING BRANCH AT MAIN.
12. DEMOLISH SUPPLY DUCT TAP OFF OF MAIN. PATCH AND SEAL HOLE IN MAIN.
13. EXISTING CENTRAL VACUUM SHALL BE REMOVED AND RELOCATED. SEE H2.1 FOR NEW LOCATION.

NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

1st Floor
City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

Venture Architects

Venture Architects
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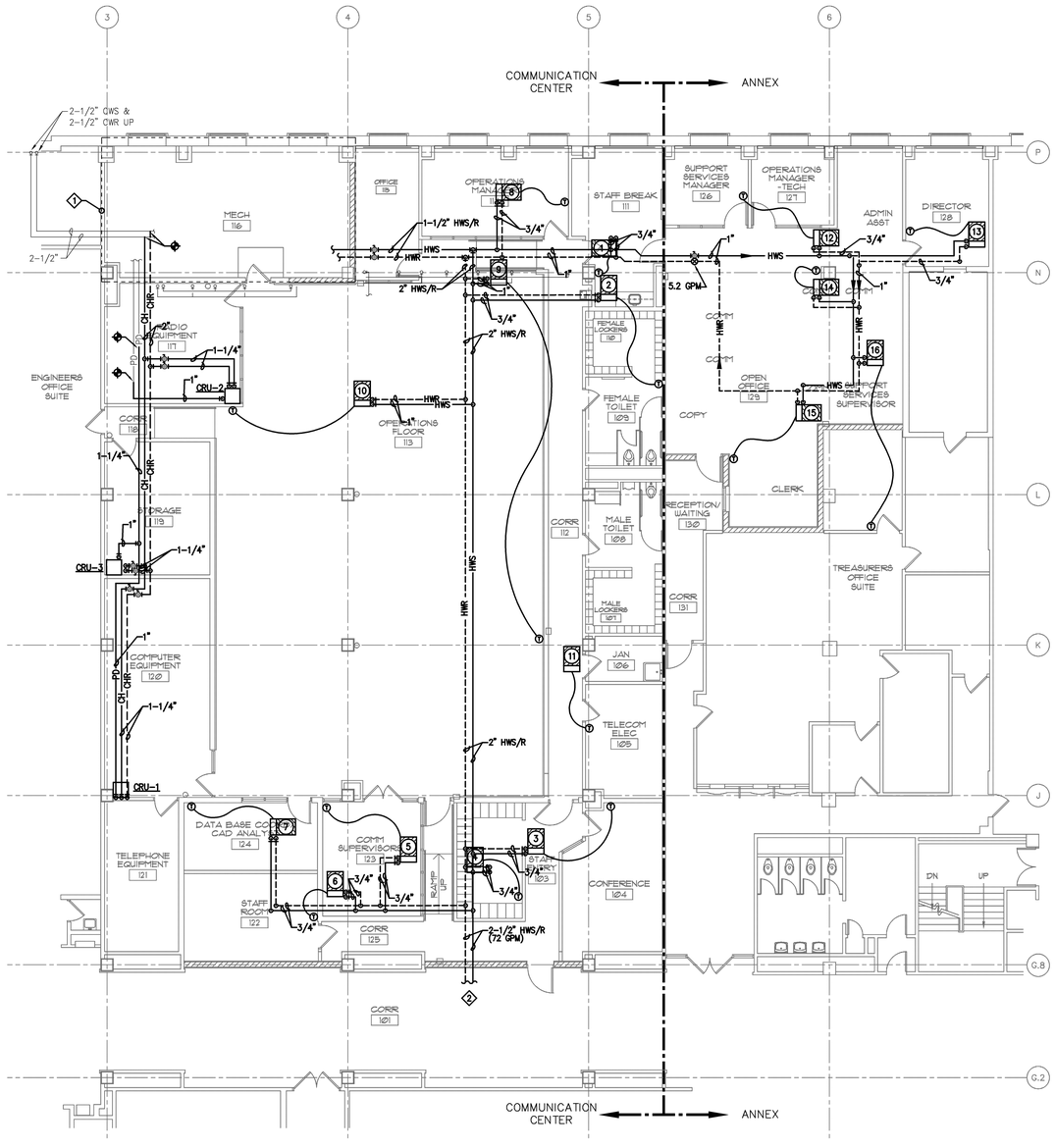
Telephone 414-271-3395

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC DEMOLITION PLAN

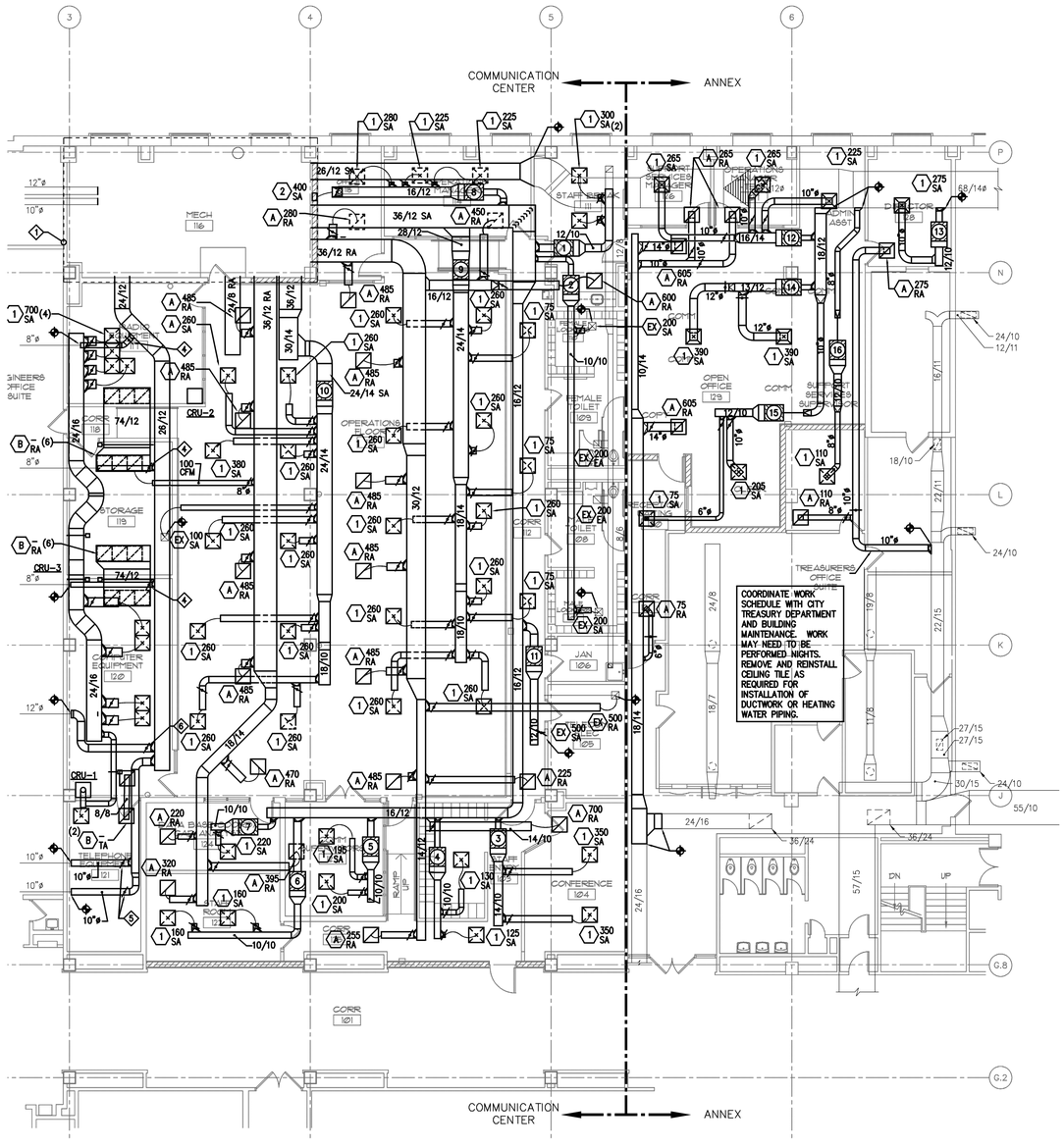
Sheet No.
HD2.1



B H2.1 HVAC NEW WORK PLAN – PIPING

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

12"0 1' 5' 10' 20'



A H2.1 HVAC NEW WORK PLAN – DUCTWORK

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

12"0 1' 5' 10' 20'

NOTE:

ALL SUPPLY, RETURN, AND EXHAUST DUCT TAPS SHALL BE SIZED ACCORDING TO THE FOLLOWING TABLE.

RUN-OUT DUCT SIZE	SUPPLY AIR DIFFUSER CFM	RETURN/EXHAUST AIR GRILLE CFM
6"	0–110	0–95
8"	110–230	95–210
10"	230–420	210–360
12"	420–680	360–600
14"	680–1000	600–900

GENERAL NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
2. SEE ENLARGED PLAN A/H3.1 FOR MECHANICAL ROOM DETAILS.
3. REFER TO ARCHITECT FOR PHASING DIAGRAMS.
4. VAV BOXES SHALL NOT BE LOCATED ABOVE A WORK STATION.
5. EACH CONTRACTOR IS RESPONSIBLE FOR MAINTAINING BUILDING SECURITY. CONTRACTOR SHALL SUBMIT WORKING SCHEDULE TO FACILITY MANAGEMENT. AND PUBLIC WORKS.
6. PROVIDE MANUAL DAMPER AT EACH BRANCH PER SPECIFICATIONS.
6. VERIFY ALL THERMOSTAT LOCATIONS WITH OWNER BEFORE ROUGH-IN.

KEYED NOTES

1. REFER TO ENLARGED PLAN THIS AREA.
2. CONNECT TO EXISTING HW MAIN IN CORRIDOR.
3. PROVIDE SUPPLY AIR PLENUM AT DISCHARGE. CONNECT SUPPLY AIR DUCTS TO PLENUM AS SHOWN.
4. REBALANCE EXISTING 8" DUCT TO 160 CFM.
5. REBALANCE EXISTING 10" DUCT TO 285 CFM.
6. REBALANCE EXISTING 12" DUCT TO 450 CFM.

NOTE:
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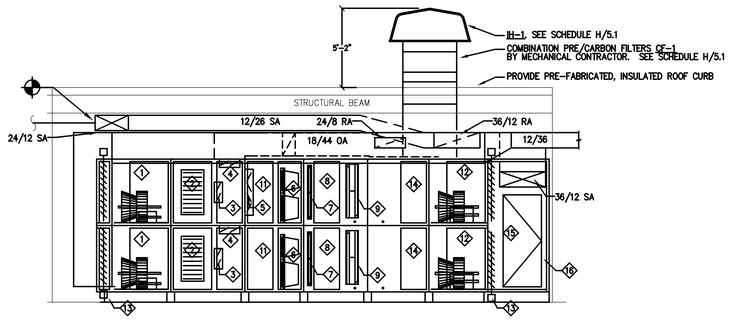
VA PROJECT # 208006

Sheet Name
HVAC NEW WORK PLAN

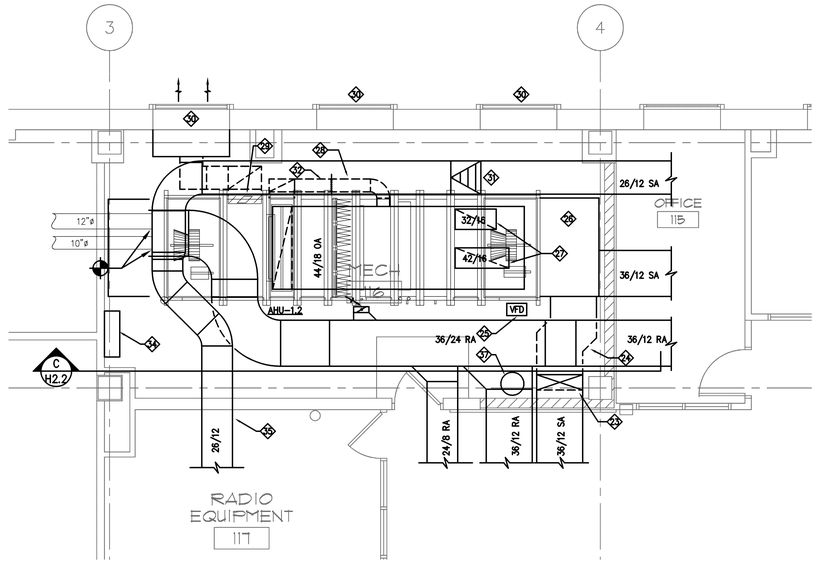
Sheet No.
H2.1



C H2.2 SECTION – MECHANICAL ROOM

SCALE: 1/4" = 1'-0"

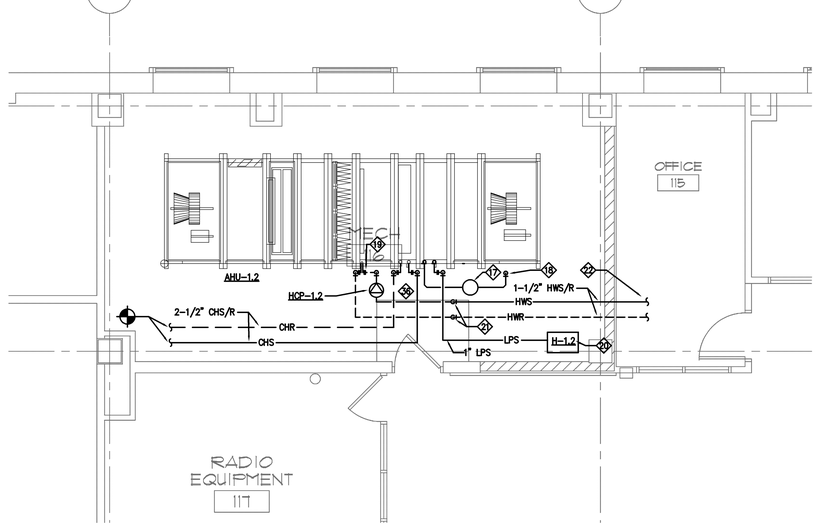
12" 0 1' 5' 10'



A H2.2 HVAC NEW WORK PLAN – DUCTWORK

SCALE: 1/4" = 1'-0"

12" 0 1' 5' 10'



B H2.2 HVAC NEW WORK PLAN – PIPING

SCALE: 1/4" = 1'-0"

12" 0 1' 5' 10'

GENERAL NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
2. CONTRACTOR TO ENSURE AREAS REMAIN OPERATIONAL DURING CONSTRUCTION.
3. REFER TO DRAWINGS H1.1 AND H1.2 FOR OWNER FURNISHED AND CONTRACTOR INSTALLED EQUIPMENT.
4. EACH CONTRACTOR IS RESPONSIBLE FOR MAINTAINING BUILDING SECURITY. CONTRACTOR SHALL SUBMIT WORKING SCHEDULE TO FAILICITY MANAGEMENT AND PUBLIC WORKS.

KEYED NOTES:

1. PLENUM RETURN FAN.
2. RELIEF AIR SECTION. PROVIDE DAMPER FULL SIZE OF OPENING.
3. 20X62 PARALLEL BLADE RETURN AIR DAMPER.
4. OA SECTION. PARALLEL BLADE DAMPERS FULL SIZE OF OPENINGS (TOP AND BACK SIDE). SECTION SHALL BE ONE SINGLE PLENUM SHARED BY AHU-1 AND AHU-2.
5. 30X72 OPPOSED BLADE ISOLATION AIR DAMPER.
6. COMBINATION FILTER SECTION (30% PREFILTER AND 65% FINAL FILTER).
7. HEATING COIL.
8. ACCESS SECTION.
9. COOLING COIL WITH DRAIN PAN.
10. HUMIDIFIER SECTION WITH DRIP PAN.
11. ACCESS SECTION.
12. PLENUM SUPPLY AIR FAN.
13. PARALLEL BLADE ISOLATION DAMPER.
14. ACCESS SECTION. PROVIDE ACCESS DOOR.
15. 24X72 DOOR. DOOR SHALL SWING INWARD.
16. SUPPLY AIR PLENUM SECTION.
17. DRAIN COOLER.
18. ROUTE STEAM CONDENSATE OPEN SITE TO FLOOR DRAIN.
19. HOT WATER PUMPS 1 AND 2 BY MECHANICAL CONTRACTOR. SEE C/H4.1.
20. HUMIDIFIER STEAM GENERATOR. CONTRACTOR TO PROVIDE LOW PRESSURE STEAM PIPING AS SHOWN. REFER TO PLUMBING DRAWINGS FOR COLD WATER PIPING CONNECTION.
21. HOT WATER SUPPLY AND RETURN PIPING DOWN TO AVOID LOW PRESSURE STEAM AND CHILLED WATER PIPING.
22. FOR CONTINUATION, SEE B/H2.1.
23. 36/12 SUPPLY AIR UP
24. OFFSET SUPPLY AIR DUCT AROUND COLUMN AS SHOWN.
25. VARIABLE FREQUENCY DRIVES MOUNTED ON UNISTRUT AND PROVIDED BY MECHANICAL CONTRACTOR.
26. SUPPLY AIR PLENUM.
27. 32/16 AND 42/16 OA DOWN FROM INTAKE ON LOW ROOF. SEE C/H2.2.
28. TAP 18/10 OA DUCT TO SIDE OF OA PLENUM AND CONNECT FULL SIZE ON AHU-1 AND AHU-2 SIDE OA INTAKE AS SHOWN.
29. ROUTE RELIEF AIR FULL SIZE OF AHU-1 AND AHU-2 OUT THROUGH NEW LOUVER AS SHOWN.
30. PROVIDE NEW LOUVER. SEE SPECIFICATIONS. BLANK OFF AND INSULATE LOUVER AS SHOWN. SEE D/H4.2.
31. SLOPE SUPPLY AIR DUCT UP APPROXIMATELY 1'-2" AS REQUIRED TO AVOID OA INTAKE DUCT. SEE C/H2.2.
32. AIRFLOW MEASURING STATION. MAINTAIN 1'-8" CLEAR FROM TAPS, BENDS, OR TRANSITIONS, BEFORE AND AFTER TO MAINTAIN ACCURACY.
33. NOT USED
34. NEW DDC CONTROL PANEL TO BE MOUNTED AFTER THE REMOVAL OF THE UPS BATTERIES.
35. MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION WITH EXISTING AND NEW ELECTRICAL COMPONENTS.
36. PIPING TYPICAL OF BOTH AHU-1 AND AHU-2. REFER TO H6.1.
37. RELOCATED CENTRAL VACUUM SYSTEM.

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Venture Architects
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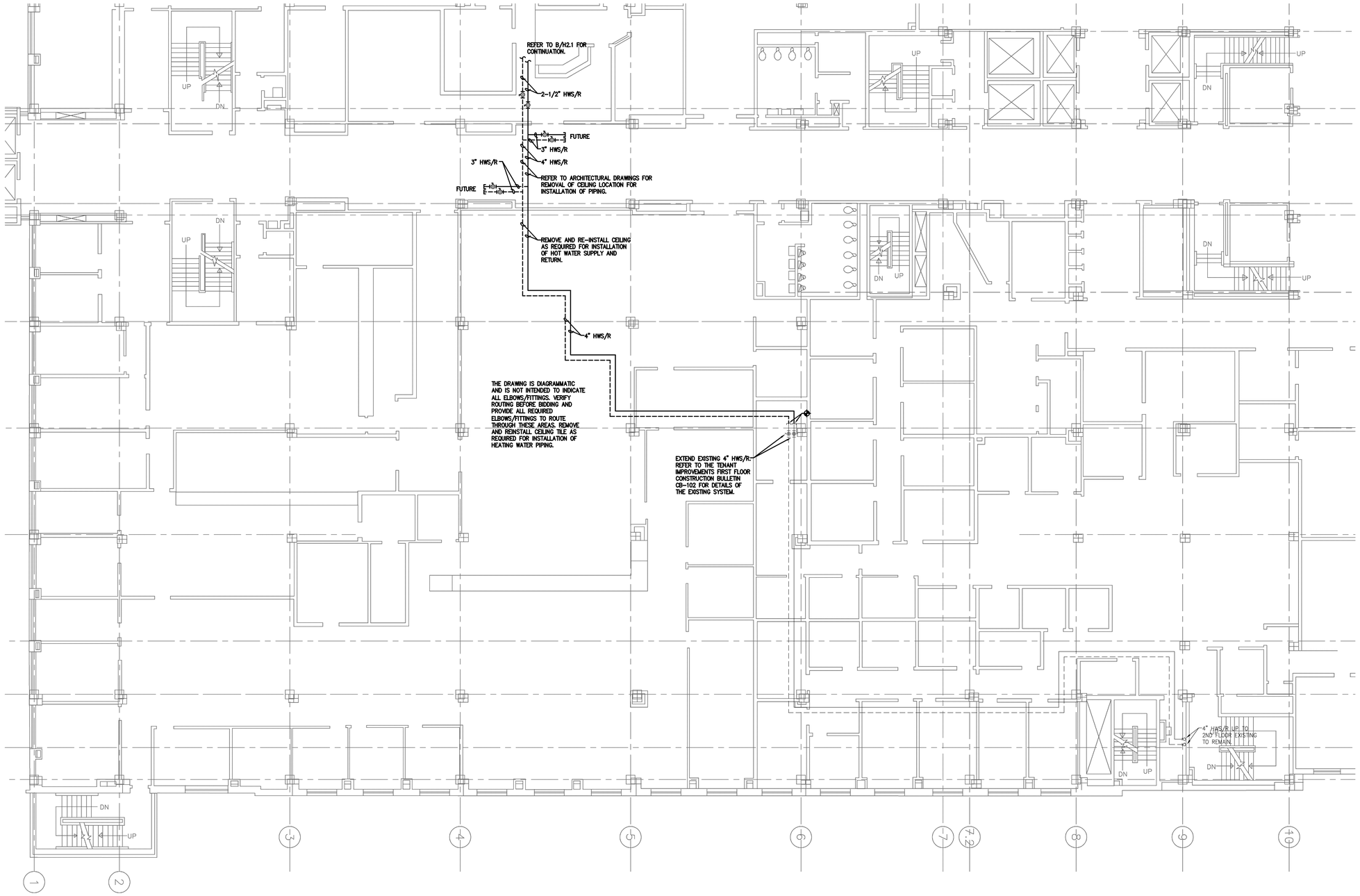
COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC NEW WORK
PLANS

Sheet No.
H2.2

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.



A / H2.3 HVAC NEW WORK PLAN – PIPING

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

12"0 1' 5' 10' 20'

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COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC NEW WORK PLAN

Sheet No.
H2.3

NOTE:
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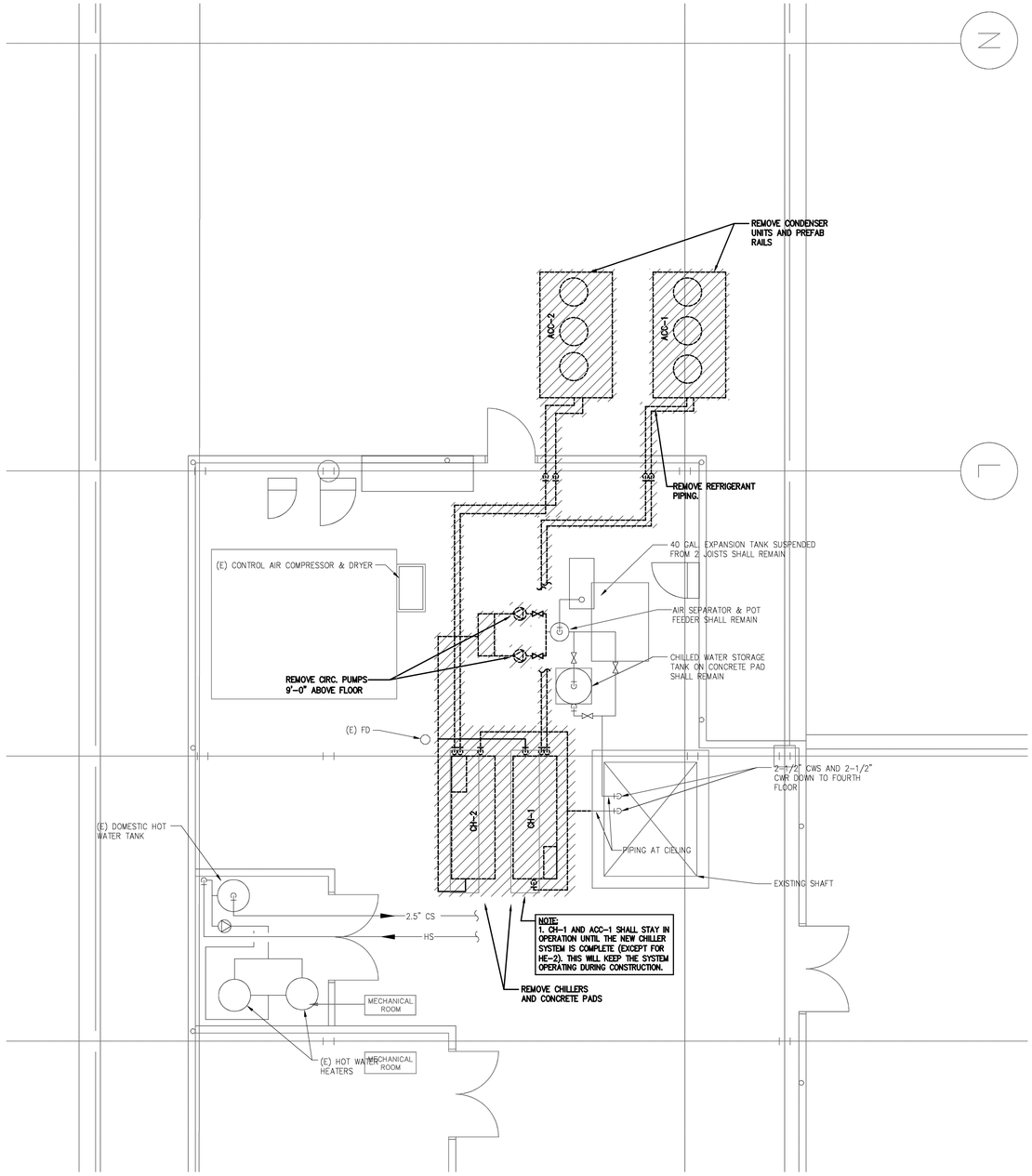
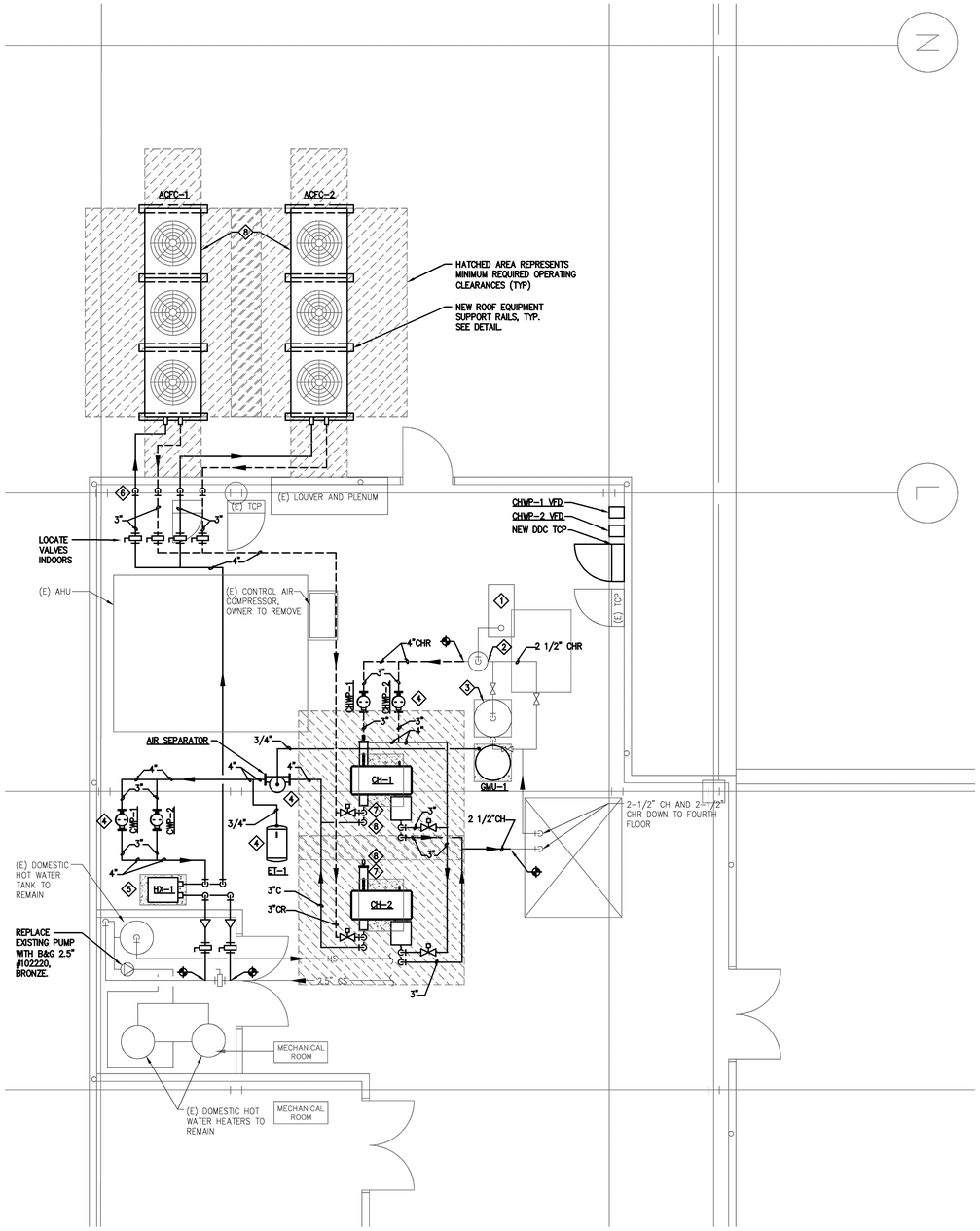


A H3.1 HVAC DEMOLITION PLAN – PENTHOUSE

SCALE: 1/4" = 1'-0"

12" 0 1' 5' 10'



B H3.1 HVAC NEW WORK PLAN – PENTHOUSE

SCALE: 1/4" = 1'-0"

12" 0 1' 5' 10'

KEYED NOTES:

1. (E) 40-GALLON EXPANSION TANK TO BE RE-USED.
2. (E) AIR SEPARATOR AND POT FEEDER TO BE RE-USED.
3. (E) PAD MOUNTED CHILLER WATER STORAGE TANK TO BE RE-USED.
4. SUSPEND NEW HYDRONIC EQUIPMENT APPROXIMATELY 9'-0" AFF.
5. PROVIDE NEW 4" CONCRETE EQUIPMENT PAD. PAINT PAD TO MATCH FLOOR, USE VOC FREE PAINT.
6. NEW PIPING TO PENETRATE WALL ABOVE AND BEHIND EXISTING TEMPERATURE CONTROL PANELS (TCP). DO NOT LOCATE PIPING ABOVE EXISTING TCPs OR ELECTICAL PANELS.
7. PROVIDE NEW 4" CONCRETE EQUIPMENT PAD. PAINT PAD TO MATCH FLOOR, USE VOC FREE PAINT. PROVIDE 4"x4"x1/8" WALL STRUCTURAL FOOT RAILS RESTING ON WAFFLE VIBRATION ISOLATORS PER MANUFACTURER RECOMMENDATIONS. ISOLATORS TO BE 4"x4"x1" MINIMUM WITH MAXIMUM LOAD RATING OF AT LEAST 50 PSI.
8. INCLUDE CRANE RENTAL COSTS IN BID IF CRANE RENTAL IS REQUIRED.

NOTE:
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HEI JOB NO. 09-0082A

Date of Issue 11/30/09

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Reference Diagram

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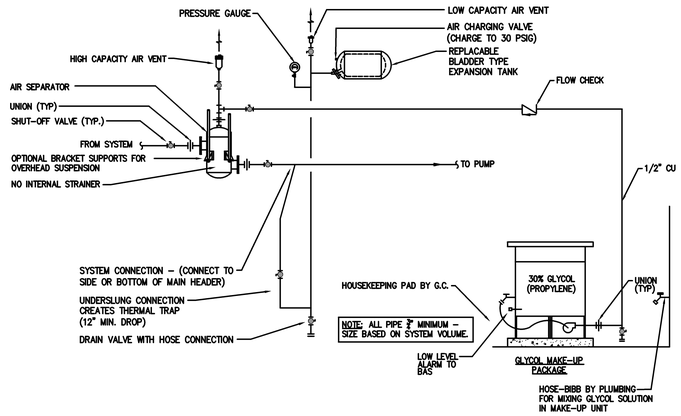
COUNTY BID # 109055

VA PROJECT # 208006

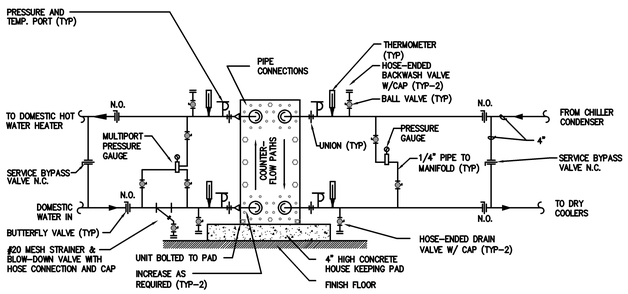
Sheet Name
HVAC DEMOLITION + NEW WORK PLANS

Sheet No.
H3.1



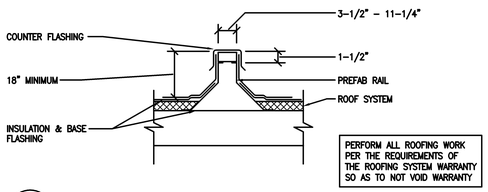
F / H4.1 AIR SEPARATOR, EXPANSION TANK, AND MAKE-UP WATER PIPING DETAIL (FOR CLOSED LOOP CONDENSER WATER SYSTEM)

NO SCALE



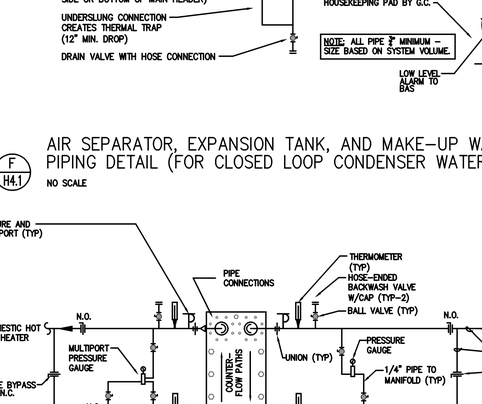
G / H4.1 PLATE AND FRAME HEAT EXCHANGER INSTALLATION DETAIL

NO SCALE



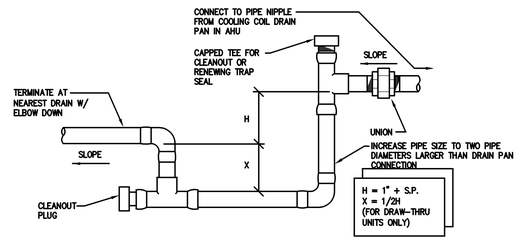
H / H4.1 RAIL DETAIL

NO SCALE



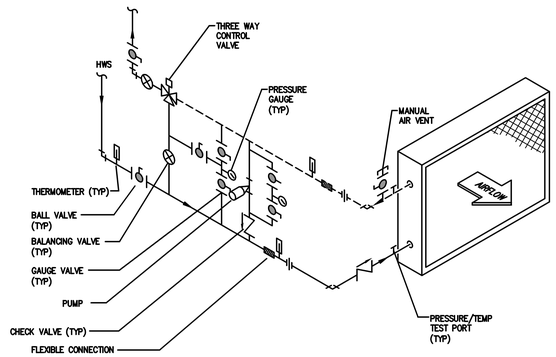
E / H4.1 CH. COOLING COIL PIPING SCHEMATIC (2-WAY)

NO SCALE



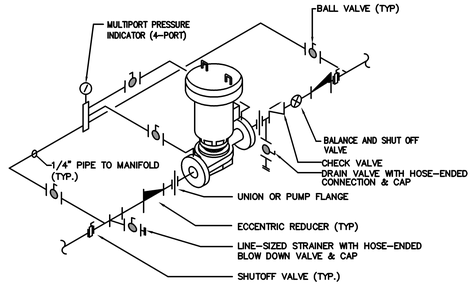
B / H4.1 CONDENSATION DRAIN

NO SCALE



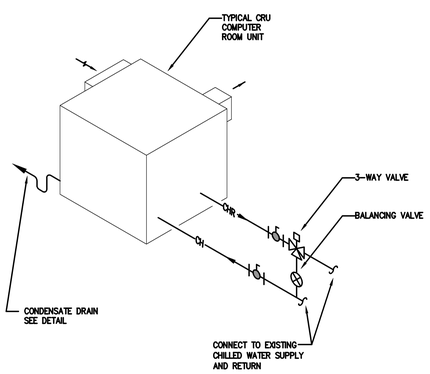
C / H4.1 HOT WATER COIL PIPING SCHEMATIC (3-WAY, PUMP)

NO SCALE



D / H4.1 INLINE PUMP DETAIL

NO SCALE



A / H4.1 COMPUTER ROOM UNIT PIPING SCHEMATIC

NO SCALE

HEATING/VENTILATING SYMBOL LIST

SYMBOL	DESCRIPTION		
— C —	CONDENSER WATER FLOW		ELBOW TURNED UP
- - CR - -	CONDENSER WATER RETURN		ELBOW TURNED DOWN
— HWS —	HOT WATER SUPPLY		TEE – TOP OUTLET
- - HWR - -	HOT WATER RETURN		TEE – BOTTOM OUTLET
— CH —	CHILLED WATER SUPPLY		SCREWED UNION
- - CHR - -	CHILLED WATER RETURN		FLANGED UNION
— D —	DRAIN LINE		PRESSURE REDUCING VALVE
— PD —	PUMPED DRAIN LINE		CONCENTRIC REDUCER
— RL —	REFRIGERANT LIQUID LINE		ECCENTRIC REDUCER
— RS —	REFRIGERANT SUCTION LINE		STRAINER
— RD —	REFRIGERANT DISCHARGE LINE		GAGE COCK
— MU —	MAKE UP WATER		PIPE GUIDE
— B —	BRINE SUPPLY		CAP OR PLUG FOR ≤ 2", BLIND FLANGE FOR > 2"
— BR —	BRINE RETURN		VACUUM BREAKER
— A —	COMPRESSED AIR PIPING		FLOW MEASURING DEVICE
— HPS —	HIGH PRESSURE STEAM SUPPLY PIPING		EXISTING TO BE REMOVED
— MPS —	MEDIUM PRESSURE STEAM SUPPLY PIPING		FLEXIBLE PUMP OR PIPE CONNECTION
— LPS —	LOW PRESSURE STEAM SUPPLY PIPING		SUPPLY AIR DUCT (TOWARD)
— HPR —	HIGH PRESSURE STEAM RETURN PIPING		SUPPLY AIR DUCT (AWAY)
— MPR —	MEDIUM PRESSURE STEAM RETURN PIPING		RETURN OR OUTDOOR AIR DUCT (TOWARD)
— LPR —	LOW PRESSURE STEAM RETURN PIPING		RETURN OR OUTDOOR AIR DUCT (AWAY)
— CPD —	CONDENSATE PUMP DISCHARGE PIPING	24"OX	SUPPLY (FIRST NUMBER IS SIDE SHOWN, SECOND NUMBER IS SIDE NOT SHOWN)
— FW —	FEED WATER PUMP PIPING	24"OX	RETURN/EXHAUST (ARROWS INDICATE DIRECTION OF FLOW)
	BUTTERFLY VALVE		TURNING VANES
	GATE VALVE		MANUAL VOLUME DAMPER
	CHECK VALVE	BD	BACKDRAFT DAMPER
	CALIBRATED BALANCE VALVE	M	MOTORIZED DAMPER
	AUTOMATIC TWO-WAY TWO-POSITION CONTROL VALVE	FD SD	FIRE DAMPER / SMOKE DAMPER
	AUTOMATIC TWO-WAY MODULATING CONTROL VALVE		FLEXIBLE DUCT CONNECTION
	GLOBE VALVE		FLEXIBLE DUCT
	BALL VALVE		ACCESS PANEL
	RELIEF VALVE		INCLINED RISE (IN DIRECTION OF AIR FLOW)
	PIPE ANCHOR		INCLINED DROP (IN DIRECTION OF AIR FLOW)
	THERMOMETER	SA	SUPPLY AIR
	STEAM TRAP	RA	RETURN AIR
	PRESSURE GAUGE	EA	EXHAUST AIR
	MANUAL AIR VENT	OA	OUTSIDE AIR
P	ROOM PRESSURE SENSOR	ΔP	PRESSURE DROP
H	HUMIDISTAT	(E)	EXISTING
T	THERMOSTAT OR DDC TEMPERATURE SENSOR		
	NEW CONNECTION TO EXISTING		

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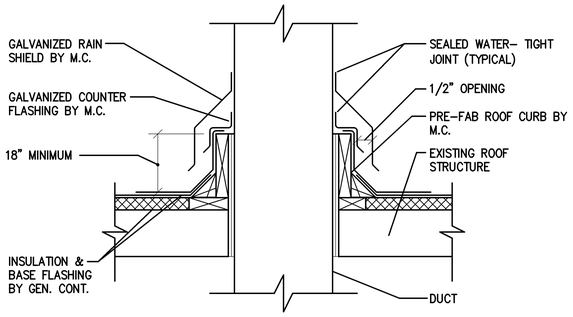
COUNTY BID # 109055

VA PROJECT # 208006

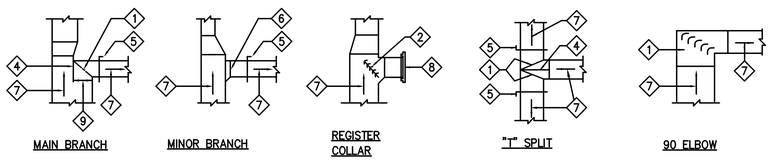
Sheet Name
HVAC DETAILS

Sheet No.
H4.1



A H4.2 DUCT THROUGH ROOF

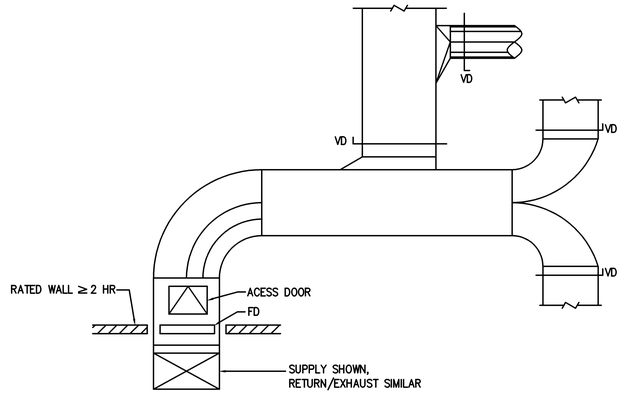
NO SCALE



1. TURNING VANES OR EXTRACTOR WITH LEADING & TRAILING EDGES PARALLEL TO SIDE OF DUCT.
2. ADJUSTABLE AIR EXTRACTOR.
3. BRANCH DUCTWORK AS SHOWN ON PLAN.
4. FIXED SPLITTER.
5. MANUAL DAMPER.
6. 45° SHOE TAP OR STRAIGHT TAP WITH 2.
7. AIR FLOW.
8. AIR DEVICE.
9. THROAT SIZE, KEY NOTED ON PLAN.

B H4.2 DUCTWORK AND CONNECTIONS

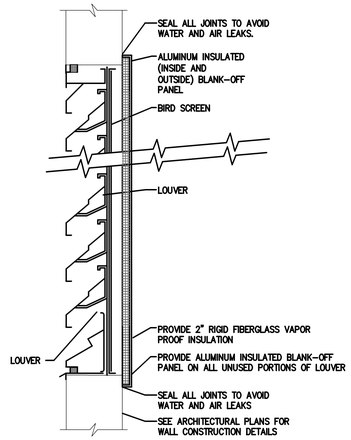
NO SCALE



1. PROVIDE VOLUME DAMPERS AT ALL TAKE-OFFS AND BRANCHES
2. DETAIL APPLICABLE FOR LOW PRESSURE SUPPLY, RETURN AND EXHAUST DUCTS
3. PROVIDE ACCESS DOOR AT ALL FD, SD, F/SD AND MODULATING CONTROL DAMPERS
4. PROVIDE MULTIPLE OPPOSED BLADE DAMPERS IN DUCTS WITH CROSS-SECTIONAL GREATER THAN 1.5 SQ. FT.

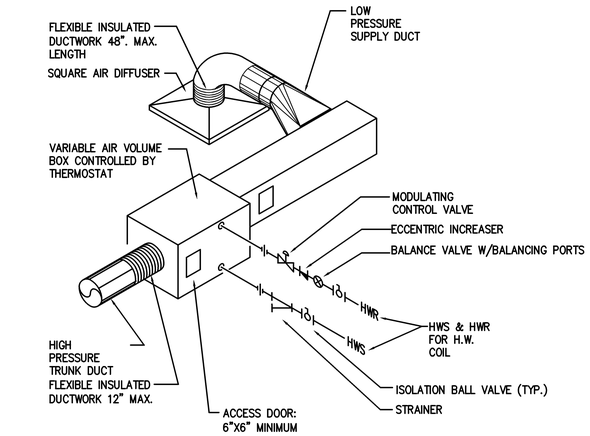
C H4.2 LOW PRESSURE DUCT DETAIL

NO SCALE



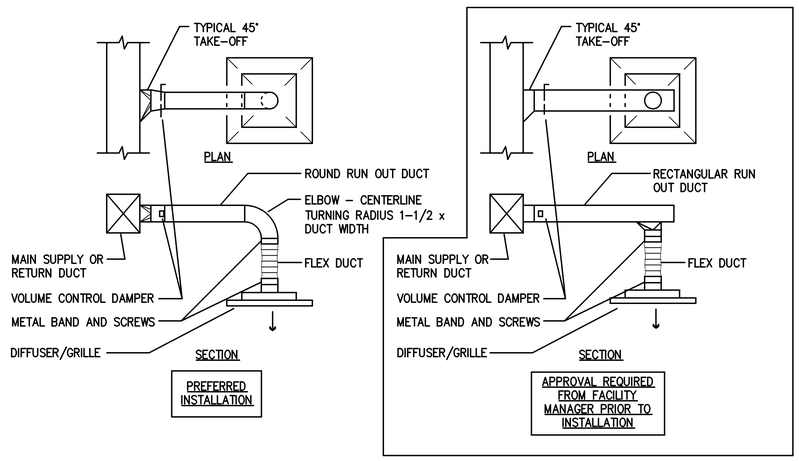
D H4.2 LOUVER BLANK OFF DETAIL

NO SCALE



E H4.2 TYPICAL VARIABLE AIR VOLUME BOX (SQUARE 2-WAY)

NO SCALE



NOTES:
1. FLEXIBLE DUCT SHALL BE ONLY USED FOR ALIGNMENT AND NOT FOR OFFSET OR CHANGE IN DIRECTION.
2. CONTRACTOR SHALL PROVIDE TRANSITION FROM NECK SIZE INDICATED TO DUCT SIZE INDICATED AS REQUIRED.

F H4.2 SUPPLY AND RETURN DUCT TAKE-OFF DETAIL

NO SCALE

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

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Madison, Wisconsin

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COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC DETAILS

Sheet No.
H4.2

PUMP SCHEDULE

MARK	DESCRIPTION	GPM	SUCTION/ DISCHARGE	HEAD (FT OF WATER)		FLUID TEMP (°F)	MOTOR DATA				NOTES
				OPERATING	CUT-OFF		HP	RPM	VOLTS	PHASE	
CHWP-1	IN-LINE CENTRIFUGAL PUMP	74	1.5"/1.5"	64	77	43-57	3	1750	480	3	1, VARIABLE FLOW
CHWP-2	IN-LINE CENTRIFUGAL PUMP	74	1.5"/1.5"	64	77	43-57	3	1750	480	3	2, VARIABLE FLOW
HCP-1	IN-LINE CENTRIFUGAL PUMP	20	1.25"/1.25"	10	20	80	1/4	1725	120	1	3, CONSTANT FLOW
HCP-2	IN-LINE CENTRIFUGAL PUMP	20	1.25"/1.25"	10	20	80	1/4	1725	120	1	4, CONSTANT FLOW
CWP-1	IN-LINE CENTRIFUGAL PUMP	93	2"/2"	55	68	110-120	3	3450	480	3	5, CONSTANT FLOW
CWP-2	IN-LINE CENTRIFUGAL PUMP	93	2"/2"	55	68	110-120	3	3450	480	3	6, CONSTANT FLOW

NOTES:
1. CHILLED WATER PRIMARY PUMP, PROVIDE WITH PREMIUM EFFICIENT INVERTER-DUTY MOTOR WITH GROUNDING RING, VARIABLE FREQUENCY DRIVE
2. CHILLED WATER STAND-BY PUMP, PROVIDE WITH PREMIUM EFFICIENT INVERTER-DUTY MOTOR WITH GROUNDING RING, VARIABLE FREQUENCY DRIVE
3. HEATING WATER COIL PRIMARY PUMP
4. HEATING WATER COIL STAND-BY PUMP
5. CONDENSER WATER PRIMARY PUMP. 30% PROPYLENE GLYCOL. PROVIDE PREMIUM EFFICIENT MOTOR
6. CONDENSER WATER STAND-BY PUMP. 30% PROPYLENE GLYCOL. PROVIDE PREMIUM EFFICIENT MOTOR

COMPUTER ROOM AIR-CONDITIONING (INDOOR) UNIT SCHEDULE

MARK	DESCRIPTION	MIN. OPERATING CFM	COOLING CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	CHILLED WATER FLOW (GPM)	ELECTRICAL DATA						REMARKS
						FAN FLA	WSA	MAX. FUSE	VOLTZ	PHASE	HERTZ	
CRU-1	VERTICAL CHILLED WATER AIR-CONDITIONING UNIT	2800	59.9	54.4	12	28.1	35.1	40	460	3	60	ALL
CRU-2	VERTICAL CHILLED WATER AIR-CONDITIONING UNIT	2800	59.9	54.4	12	28.1	35.1	40	460	3	60	ALL
CRU-3	VERTICAL CHILLED WATER AIR-CONDITIONING UNIT	2800	59.9	54.4	12	28.1	35.1	40	460	3	60	ALL

REMARKS:
1. PROVIDE FACTORY CONDENSATE PUMP.
2. PROVIDE FACTORY FILTERS.
3. PROVIDE UNIT WITH FACTORY MICROPROCESSOR CONTROL.
4. PROVIDE FACTORY THERMOSTAT.
5. UNIT SHALL BE FLOOR MOUNTED.
6. HOT WATER AND CHILLED WATER CONTROL VALVES BY UNIT MANUFACTURER.

GRILLE AND DIFFUSER SCHEDULE

MARK	DESCRIPTION	MAX CFM	NECK SIZE	FACE SIZE	MAX S.P. (IN WATER)	MAX NOISE LEVEL (NC)	THROW (FEET)	MATERIAL	FRAME	AIR PATTERN	REMARKS
SUPPLY AIR											
(1)	SQUARE PLAQUE DIFFUSER	100	6"Ø	24 X 24	0.02	10	1 - 4	ALUMINUM	LAY-IN	4-WAY	ALL
		200	8"Ø	24 X 24	0.03	10	3 - 8				
		325	10"Ø	24 X 24	0.06	10	4 - 12				
		500	12"Ø	24 X 24	0.10	14	5 - 15				
		800	14"Ø	24 X 24	0.18	23	9 - 20				
(2)	DOUBLE DEFLECTION BLADES W/ 3/4" SPACING	215	10 X 6	10 X 6	0.11	20	10 - 20	ALUMINUM	SURFACE MOUNT	22.5° DEFLECTION DUAL DEFL.	ALL
		350	12 X 8	12 X 8	0.10	17	6 - 14				
		2000	24 X 18	24 X 18	0.07	27	34 - 63				
RETURN / EXHAUST											
(A)	LOUVER DROP FACE GRILLE	100	6"Ø	24 X 24	0.02	10	-	ALUMINUM	LAY-IN	-	ALL
		200	8"Ø	24 X 24	0.12	16	-				
		325	10"Ø	24 X 24	0.13	20	-				
		500	12"Ø	24 X 24	0.15	24	-				
		800	14"Ø	24 X 24	0.20	31	-				
		1100	18 X 18	24 X 24	0.09	23	-				
		1500	22 X 22	24 X 24	0.07	22					
(B)	SINGLE DEFLECTION BLADES W/ 3/4" SPACING	100	6 X 6	6 X 6	0.05	15	-	ALUMINUM	SURFACE MOUNT	35° DEFLECTION	ALL
		215	10 X 6	10 X 6	0.02	15	-				
		350	12 X 8	12 X 8	0.05	17	-				
		660	18 X 10	18 X 10	0.05	17	-				
		2000	36 X 18	36 X 18	0.06	24	-				

NOTES:
1. ALL GRILLES AND DIFFUSERS SHALL NOT EXCEED NC-30 REGARDLESS OF SIZE LISTED UNLESS SPECIFIED OTHERWISE.
2. COORDINATE EXACT DIFFUSER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
3. DIFFUSER SHALL BE OF ALUMINUM CONSTRUCTION WITH CUSTOM COLOR SELECTED BY ARCHITECT. COORDINATE BORDER WITH ARCHITECT
4. DUCT MOUNTED BALANCING DAMPERS SHALL BE FURNISHED AND INSTALLED WHERE RUNOUT IS ABOVE AN ACCESSABLE CEILING. IN LOCATIONS ABOVE HARD CEILINGS, DIFFUSERS SHALL BE FURNISHED WITH OPPOSED BLADE DAMPER OPERABLE THRU DIFFUSER FACE.
5. FIRST THROW VALUE IS 150 FPM TERMINAL VELOCITY, SECOND THROW VALUE (IF LISTED) IS 50 FPM TERMINAL VELOCITY.

OUTDOOR AIR INTAKE HOOD

MARK	DESCRIPTION	INTAKE CFM	TOTAL PRESSURE DROP (INCHES)	DIMENSIONS (LxWxH)	THROAT	MAX THROAT VELOCITY (FPM)	REMARKS
IH-1	OUTDOOR AIR INTAKE HOOD WITH SPACE FOR CARBON FILTER	10,000	0.048	56"x72"x62"	48"x64"	500	ALL

REMARKS:
1. PROVIDE SPACE FOR CARBON FILTER. SEE SCHEDULE.
2. PROVIDE BIRDSCREEN
3. PROVIDE INTEGRAL ROOF CURB AS REQUIRED.

CARBON FILTER SCHEDULE

MARK	DESCRIPTION	MEDIA	TOTAL PRESSURE DROP (INCHES)	DIMENSIONS (LxWxH)
CF-1	HIGH EFFICIENCY GAS PHASE ADSORBERS	CARBON	0.30" WG	12"x24"x12"

OWNER FURNISHED CONTRACTOR INSTALLED

HUMIDIFIER SCHEDULE

MARK	DESCRIPTION	QUANTITY	PERFORMANCE		ELECTRICAL			BASIS OF DESIGN	NOTES:
			STEAM CAPACITY (lbs/hr)	STAGES	CURRENT DRAW	VOLTS	PHASE	MANUFACTURER & MODEL	
H-1	ELECTRIC TO STEAM HUMIDIFIER	1	55	1.00	25.3	480	3	DRI-STEEM VM-21	
H-2	ELECTRIC TO STEAM HUMIDIFIER	1	55	1.00	25.3	480	3	DRI-STEEM VM-21	
NOTES:									

AIR HANDLING UNIT SCHEDULE

TAG			AHU-1	AHU-2
TYPE			VAV	VAV
SERVICE			STANDBY	PRIMARY
LOCATION			MECHANICAL ROOM	MECHANICAL ROOM
ARRANGEMENT			DRAW-THRU	DRAW-THRU
SYSTEM AIRFLOW	TOTAL AIRFLOW (CFM)		10,000	10,000
	MIN. OUTDOOR AIRFLOW (CFM)		1500	1500
SUPPLY FAN	FAN	QUANTITY	1	1
		FAN TYPE / WHEEL DIAM (IN)	AF PLENUM / 24.5	AF PLENUM / 24.5
		AIRFLOW (CFM)	10,000	10,000
		FAN SPEED (RPM)	2199	2199
		E.S.P. (IN WG)	2.50	2.50
		T.S.P. (IN WG)	4.26	4.26
	MOTOR	QUANTITY	1	1
		FAN HORSEPOWER (BHP)	12.11	12.11
		MOTOR HORSEPOWER (HP)	15	15
		SPEED (RPM)	1750	1750
		DRIVE	VFD	VFD
		VOLTS / PHASE / HERTZ	460/3/60	460/3/60
RETURN FAN	FAN	QUANTITY	1	1
		FAN TYPE / WHEEL DIAM (IN)	AF PLENUM / 24.5	AF PLENUM / 24.5
		AIRFLOW (CFM)	10,000	10,000
		FAN SPEED (RPM)	1691	1691
		E.S.P. (IN WG)	1.50	1.50
	MOTOR	QUANTITY	1	1
		FAN HORSEPOWER (BHP)	6.45	6.45
		MOTOR HORSEPOWER (HP)	7.5	7.5
		SPEED (RPM)	1,750	1,750
		DRIVE	VFD	VFD
		VOLTS / PHASE / HERTZ	460/3/60	460/3/60
COOLING COIL DATA	TYPE		STANDARD	STANDARD
	COIL	MIN. FACE AREA (SQ FT)	20.12	20.12
		MAX. FACE VELOCITY (FPM)	497	497
		ROWS	6	6
		FINS PER INCH	10	10
	CAPACITY	NET TOTAL (MBH)	350	350
		NET SENSIBLE (MBH)	270	270
	FLUID	PERCENT GLYCOL & TYPE	0% / WATER	0% / WATER
		E.W.T. / L.W.T. (°F)	43/56.6	43/56.6
		FLOW RATE (GPM)	50.5	50.5
		MAX. P.D. (FT WG)	15.6	15.6
	AIR	UNIT E.A.T. DB / WB (°F)	77.4/64.2	77.4/64.2
		UNIT L.A.T. DB / WB (°F)	52.9/52.3	52.9/52.3
		MAX. A.P.D. (IN WG)	0.70	0.70
HEATING COIL DATA	TYPE		STANDARD	STANDARD
	COIL	MIN. FACE AREA (SQ FT)	19.25	19.25
		MAX. FACE VELOCITY (FPM)	519	519
		ROWS	1	1
		FINS PER INCH	6	6
	CAPACITY (MBH)		228	228
	FLUID	PERCENT GLYCOL & TYPE	0% / WATER	0% / WATER
		E.W.T. / L.W.T. (°F)	160/140	160/140
		FLOW RATE (GPM)	23	23
		MAX. P.D. (FT WG)	3.5	3.5
	AIR	UNIT E.A.T. / L.A.T. (°F)	42/63	42/63
		MAX. A.P.D. (IN WG)	0.60	0.60
HUMIDIFIER DATA	STEAM CAPACITY (LBS/HR)		54	54
		CURRENT DRAW	25.3	25.3
		ABSORBTION DISTANCE (IN)	24	24
		VOLTS/PHASE/HERTZ	460/3/60	460/3/60
FILTERS	PRE	THICKNESS & TYPE	2" PLEATED	2" PLEATED
		MIN. EFF. RATING VALUE	30%	30%
		MIN. FACE AREA (SQ FT)	23.0	23.0
		MAX. FACE VELOCITY (FPM)	435	435
		DESIGN A.P.D. (DIRTY) (IN WG)	1.0	1.0
		CLEAN A.P.D. (IN WG)	0.6	0.6
	FINAL	THICKNESS & TYPE	12" PLEATED	12" PLEATED
		MIN. EFF. RATING VALUE	65%	65%
		MIN. FACE AREA (SQ FT)	23.0	23.0
		MAX. FACE VELOCITY (FPM)	435	435
		DESIGN A.P.D. (DIRTY) (IN WG)	1.0	1.0
		CLEAN A.P.D. (IN WG)	0.6	0.6
MAX. UNIT DIMENSIONS	LENGTH (IN)		244	244
	WIDTH (IN)		84	84
	HEIGHT (IN)		64	64
	WEIGHT (LBS)		4788	4788
DESIGN SPACE TEMPERATURE	SUMMER, DB / %RH		68/50	68/50
	WINTER, DB		72	72
REMARKS				

1. PROVIDE UNIT WITH VARIABLE SPEED FANS. VARIABLE FREQUENCY DRIVE BY MECHANICAL CONTRACTOR.
2. DIRTY FILTER STATIC PRESSURE SHALL BE UTILIZED TO DETERMINE FAN TOTAL STATIC PRESSURE.
3. FAN MUST BE STABLE DOWN TO 30% OF CFM.
4. COIL SHALL BE CAPABLE OF BEING REMOVED FROM WITHIN THE UNIT ENCLOSURE.
5. COIL FRAMES SHALL HAVE MOUNTING ANGLES FOR SHEET-METAL
6. CONTRACTOR TO VERIFY ACCESS TO MECHANICAL ROOM FOR COORDINATION.
7. ALL CONTROL DAMPERS, INCLUDING BUT NOT LIMITED TO SUPPLY FAN ISOLATION DAMPERS, ALL RELIEF AIR DAMPERS, ALL RETURN AIR DAMPERS, THE MINIMUM OA DAMPER, THE ECONOMIZER DAMPER, AND THE OA PASS THROUGH DAMPER SHALL BE PROVIDED BY THE AIR HANDLING UNIT MANUFACTURER.
8. AHU-1 SHALL BE CAPABLE OF STRUCTURALLY SUPPORTING AHU-2.
9. ALL AHU SECTIONS SHALL BE CAPABLE OF ENTERING THE SPACE THROUGH EXISTING 60" X 80" LOUVERS.

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No. Description Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

1st Floor
City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

Venture Architects

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COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC SCHEDULES

Sheet No.
H5.1

HEAT RECOVERY CHILLER SCHEDULE

MARK	CAPACITY (TONS)	kW	EVAPORATOR DATA					REFRIGERANT	COMPRESSOR DATA			CONDENSER DATA					ELECTRICAL DATA				NOTES
			GPM	EWT	LWT	PD (IN FT)	% GLYCOL		QUANTITY	TYPE	STEPS OF UNLOADING	EWT	LWT	GPM	% PROPYLENE GLYCOL	PD (FT)	VOLTS	PHASE	MCA	MOCP	
CH-1	27.3	30.8	46.7	57	43	5.6	0	NOTE 2	2	SCROLL	2	110	120	93	30	6.2	460	3	70	110	1
CH-2	27.3	30.8	46.7	57	43	5.6	0	NOTE 2	2	SCROLL	2	110	120	93	30	6.2	460	3	70	110	1

1. CHILLER MANUFACTURER TO PROVIDE DDC CONTROLLER WITH INTERFACE AS REQUIRED TO COMMUNICATE WITH EXISTING DDC SYSTEM MANUFACTURER. CONTROLLER TO STAGE BOTH MODULES. ONE COMPRESSOR TO BE LOCKED OUT VIA CONTROLS SO THAT NO MORE THAN THREE COMPRESSORS WILL RUN SIMULTANEOUSLY THE FOURTH COMPRESSOR IS PROVIDED FOR BACK-UP. MANUFACTURER CONTROLLER CYCLE ON AND OFF THE CHILLERS CHILLED WATER AND CONDENSER WATER ISOLATION VALVES.
2. OWNERS PREFERRED REFRIGERANT IS 134A, R410A IS ACCEPTABLE.

AIR COOLED FLUID COOLER SCHEDULE

MARK	DESCRIPTION	M.B.H. REJECTION	GPM	EWT	LWT	DESIGN DB/WB	WATER PRESS DROP (FT.)	ELECTRICAL				L (IN.)	W (IN.)	H (IN.)	NOTES
								MCA	MOCP	VOLT	PHASE				
ACFC-1	FLUID COOLER	443	93	120	110	95/76	3.0	12.4	12	460	3	88	46	50	1, 2, 3
ACFC-2	FLUID COOLER	443	93	120	110	95/76	3.0	12.4	12	460	3	88	46	50	1, 2, 3

1. PROVIDE MNFR. ACCESSORY DISCONNECT, CONTROLS TRANSFORMER, & SINGLE TEMPERATURE CONTROLLER.
2. 1x3 FAN ARRANGEMENT, PROVIDE 6 COOLING STAGES.
3. PROVIDE CONTROL INTERFACE TO EXISTING DDC SYSTEM.

PLATE-TO-PLATE HEAT EXCHANGER SCHEDULE

MARK	DESCRIPTION	COND. WATER (GPM)	ENTERING COND. WATER TEMP (°F)	LEAVING COND. WATER TEMP (°F)	PRESSURE DROP (FEET HEAD)	DOMESTIC WATER (GPM)	ENTERING DOMESTIC WATER TEMP. (°F)	LEAVING DOMESTIC WATER TEMP. (°F)	DOMESTIC WATER PRESSURE DROP (FEET HEAD)	HEATING SURFACE (SQUARE FEET)	DIA. (IN.)	NOTES
HX-1	HEAT RECOVERY CHILLER CONDENSER WATER TO DOMESTIC HOT WATER	186	120	110	22	VARIES	60	VARIES	VARIES	43.92	4	1, 2, 3

1. DOUBLE-WALL HEAT EXCHANGER REQUIRED.
2. 988# OPERATING WEIGHT, 804,000 BTU/H OF HEAT EXCHANGED.
3. CONDENSER WATER IS 30% PROPYLENE GLYCOL.

GLYCOL MAKE-UP UNIT SCHEDULE

MARK	DESCRIPTION	GPM	DISCHARGE	MAX. PRESSURE [PSI]	MOTOR DATA			NOTES
					HP	VOLTS	PHASE	
GMU-1	CONDENSER WATER SYSTEM MAKE-UP	1.8	1/2"	50	1/3	110	1	1

1. INCLUDE LOW LEVEL CUT-OFF AND 110v SIGNAL FOR REMOTE ALARM THROUGH BAS, ISOLATION VALVES, STRAINER, PRESSURE TANK WITH PRESSURE CONTROL, PRV & GAUGE, TRANSLUCENT TANK WITH LID, MAG. STARTER, MOTOR AND CONTROLS, FIELD ADJUSTABLE DISCHARGE PRESSURE (FACTORY PRESET FOR 12 PSIG)

EXPANSION TANK SCHEDULE

MARK	DESCRIPTION	MAX SYSTEM TEMP [°F]	SYSTEM DELTA T [°F]	MINIMUM TANK VOLUME [GAL]	MINIMUM ACCEPTANCE VOLUME [GAL.]	INITIAL PRESSURE [PSIG]	RELIEF VALVE SETTING [PSIG]	REMARKS
ET-1	CONDENSER WATER SYSTEM	120	10	6	5	12	50	1

1. HORIZONTAL ARRANGEMENT

VARIABLE VOLUME TERMINAL UNIT SCHEDULE

MARK	DESCRIPTION	MAX. AIRFLOW (CFM)	HEATING AIRFLOW (CFM)	MIN. AIRFLOW (CFM)	BOX INLET SIZE (DIA.)	DISCH. DUCT SIZE (IN. X IN.)	MAX. A.P.D. (IN.)	NOISE CRITERIA		COOLING L.A.T. (°F)	HEATING COIL						NOTES
								MAX. DISCHARGE (NC)	MAX. RADIATED (NC)		ROWS	FPI	FDP (FT. H2O)	L.A.T. (°F)	COIL CAPACITY (MBH)	COIL FLOW (GPM)	
VAV-1	HOT WATER VAV TERMINAL	600	320	320	8	12.5 X 11.5	0.08	17	24	55	1	13	1.8	95	15.3	1.6	1
VAV-2	HOT WATER VAV TERMINAL	400	400	400	8	12.5 X 11.5	0.08	17	24	55	1	16	2.5	95	18.1	1.9	1
VAV-3	HOT WATER VAV TERMINAL	700	210	210	10	15.5 X 13.5	0.01	17	25	55	1	12	2.4	95	11.1	1.0	1
VAV-4	HOT WATER VAV TERMINAL	255	120	120	6	11.5 X 9.5	0.22	19	21	55	1	10	0.3	95	6.9	0.7	1
VAV-5	HOT WATER VAV TERMINAL	395	185	185	6	11.5 X 9.5	0.22	19	21	55	1	12	0.5	95	8.9	0.9	1
VAV-6	HOT WATER VAV TERMINAL	320	100	100	6	11.5 X 9.5	0.08	19	21	55	1	12	0.3	95	4.7	0.4	1
VAV-7	HOT WATER VAV TERMINAL	220	80	80	4	11.5 X 9.5	0.01	24	17	55	1	10	0.3	95	6.9	0.7	1
VAV-8	HOT WATER VAV TERMINAL	1130	345	345	14	20.5 X 19.5	0.01	15	20	55	2	12	2.4	85	18.7	2.0	1
VAV-9	HOT WATER VAV TERMINAL	2825	1130	1130	14	20.5 X 19.5	0.01	15	20	55	1	16	6.6	95	56.8	5.8	1
VAV-10	HOT WATER VAV TERMINAL	2720	1130	1130	14	20.5 X 19.5	0.01	15	20	55	1	16	6.6	95	56.8	5.8	1
VAV-11	HOT WATER VAV TERMINAL	500	0	0	6	20.5 X 19.5	0.01	15	20	55	0	0	0	55	0	0	1
VAV-12	HOT WATER VAV TERMINAL	755	500	225	10	15.5 X 13.5	0.22	17	18	55	2	0	0.8	110	29.7	2.1	1
VAV-13	HOT WATER VAV TERMINAL	275	200	80	6	11.5 X 9.5	0.23	11	14	55	3	0	1.2	110	29.7	1.8	1
VAV-14	HOT WATER VAV TERMINAL	780	315	315	8	12.5 X 11.5	0.26	21	22	55	1	0	0.4	85	10.2	0.7	1
VAV-15	HOT WATER VAV TERMINAL	280	145	145	6	11.5 X 9.5	0.13	14	14	55	1	0	0.1	90	5.4	0.3	1
VAV-16	HOT WATER VAV TERMINAL	110	55	55	5	11.5 X 9.5	0.02	10	10	55	1	0	0.1	119	3.8	0.3	1

1. SELECTION BASED ON THE FOLLOWING CRITERIA: MAX. ACCEPTABLE DISCHARGE NOISE LEVEL IS 25 NC AT 0.75" WG INLET STATIC PRESSURE, LEAVING AIR TEMPERATURE (LAT) SHALL NOT EXCEED 115°F WITHOUT ENGINEER APPROVAL. MAX. ACCEPTABLE COIL WPD IS 5'. NORMALLY OPEN CONTROL DAMPER POSITION, COORDINATE WITH CONTROL CONTRACTOR. PROVIDE WITH HOSPITAL GRADE FIBER-FREE LINER AS SPECIFIED. MAX. ACCEPTABLE BOX APD IS 0.35" WG INCLUDING COIL. HEATING CFM IS EQUAL TO BOX MIN. UNLESS OTHERWISE INDICATED.
2. MAXIMUM CFM INDICATED IS BASED ON MAXIMUM OF 75% OF THE NOMINAL BOX CAPACITY.
3. LEAVING AIR TEMPERATURE SHALL NOT EXCEED 110°F. NORMALLY OPEN CONTROL POSITION, COORDINATE WITH CONTROL CONTRACTOR.
4. BOX STATIC PRESSURE WITH REHEAT COIL SHALL NOT EXCEED 0.20" W.G.

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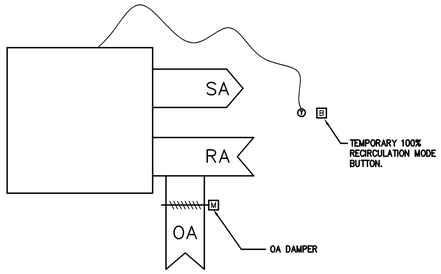
Sheet No.
H5.2



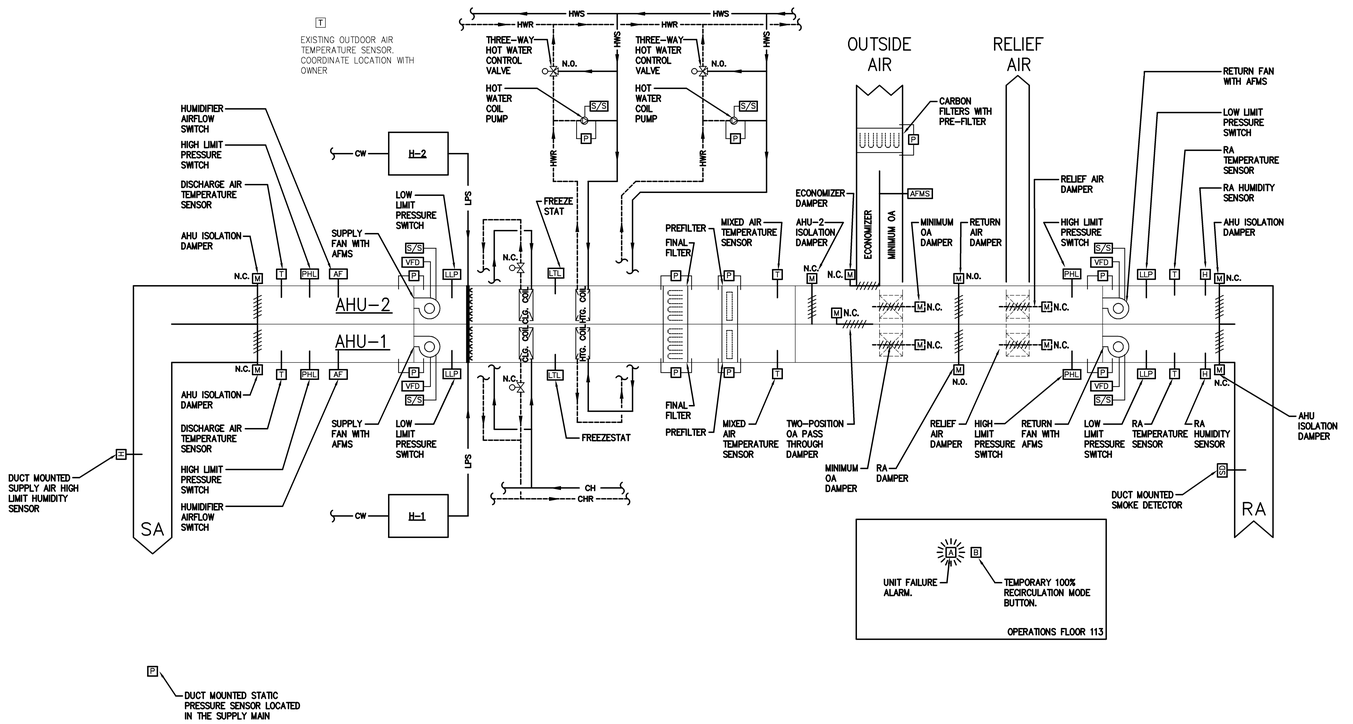
SEQUENCE OF OPERATION:

PROVIDE ALL CONTROLS NECESSARY FOR TEMPORARY AIR HANDLING UNIT TO MAINTAIN TEMPERATURE SETPOINT (ADJUSTABLE) IN OCCUPIED SPACE.

THE OA DAMPER SHALL BE CLOSED WHEN THE UNIT IS OFF. WHEN THE UNIT IS ON DURING NORMAL OPERATION THE OA DAMPER SHALL BE AT MINIMUM POSITION. WHEN THE TEMPORARY 100% RECIRCULATION MODE BUTTON IS PRESSED, THE DDC SYSTEM SHALL CLOSE THE OA DAMPER. THE DDC SYSTEM SHALL OPEN THE OA DAMPER AFTER 15 MINUTES (ADJUSTABLE). IF THE TEMPORARY 100% RECIRCULATION MODE BUTTON IS PRESSED PRIOR TO THE DDC SYSTEM OPENING THE OA DAMPER, THEN THE DDC SYSTEM SHALL WAIT AN ADDITIONAL 4 HOURS (ADJUSTABLE) TO OPEN THE OA ISOLATION DAMPER. MINIMUM OA DAMPER POSITION SHALL BE SET BY TEST AND BALANCE CONTRACTOR TO ACHIEVE SPECIFIED PERCENT OUTSIDE AIR.

B / H6.1 TEMPORARY AIR HANDLING UNIT

NO SCALE



CONTROL SEQUENCE

PROVIDE AND INSTALL ALL CONTROLS NECESSARY TO PERFORM THE FUNCTIONS LISTED.

ALL CONTROLS SHALL BE PERFORMED BY DIRECT DIGITAL CONTROL (DDC) SYSTEMS WITH ELECTRIC ACTUATION, UNLESS NOTED OTHERWISE.

PROVIDE ALL CONTROL DAMPERS WITH ELECTRIC OPERATORS AND LINKAGES, UNLESS NOTED OTHERWISE. WHENEVER FANS ARE OFF, RELATED CONTROL AIR DAMPERS SHALL MOVE TO FAIL POSITIONS.

PROVIDE ALL TEMPERATURE CONTROL VALVES WITH ELECTRIC OPERATORS, UNLESS NOTED OTHERWISE.

ALL CONTROL DAMPERS, UNIT ISOLATION DAMPERS, AND DAMPER ACTUATORS ARE PROVIDED BY THE AIR HANDLING UNIT MANUFACTURER. SMOKE DETECTORS ARE PROVIDED AND WIRED BY THE ELECTRICAL CONTRACTOR BUT INSTALLED BY THE MECHANICAL CONTRACTOR.

AHU OPERATION: AHU RUNS CONTINUOUSLY. AHU-1 AND AHU-2 ARE REDUNDANT SYSTEMS FOR 100% BACKUP. AHU-1 AND AHU-2 SHALL BE INTERLOCKED SO THAT ONLY ONE UNIT CAN RUN AT ONE TIME. DDC SYSTEM SHALL DESIGNATE ONE UNIT AS PRIMARY AND ONE UNIT AS STANDBY. PRIMARY UNIT SHALL RUN CONTINUOUSLY. UNIT ISOLATION DAMPERS OF PRIMARY UNIT SHALL REMAIN FULLY OPEN. STANDBY UNIT SHALL REMAIN SHUT DOWN CONTINUOUSLY. HOT WATER CONTROL VALVE, CHILLED WATER CONTROL VALVE, UNIT ISOLATION DAMPERS, MINIMUM OA DAMPER, AND RELIEF AIR DAMPER OF STANDBY UNIT SHALL REMAIN FULLY CLOSED. WHENEVER AHU-1 IS DESIGNATED THE PRIMARY UNIT, THE OA PASS THROUGH DAMPER SHALL BE OPEN. WHENEVER AHU-1 IS DESIGNATED AS THE STANDBY UNIT, THE OA PASS THOUGH DAMPER SHALL BE CLOSED. UPON FAILURE OF PRIMARY UNIT FOR ANY REASON STANDBY UNIT SHALL BECOME PRIMARY UNIT, ALARM SHALL BE SENT TO DDC SYSTEM, AND UNIT FAILURE ALARM SHALL SOUND IN SPACE. STANDBY AND PRIMARY UNIT DESIGNATIONS SHALL BE AUTOMATICALLY ROTATED BY DDC SYSTEM ON AN ADJUSTABLE, PERIODIC BASIS.

ECONOMIZER: DDC SYSTEM SHALL INDEX THE SYSTEM INTO ECONOMIZER MODE WHEN OUTSIDE DRY BULB AIR IS BELOW RETURN AIR DRY BULB. WHEN RETURN AIR DRY BULB IS ABOVE OUTSIDE AIR ENTHALPY, DDC SYSTEM SHALL INDEX THE SYSTEM INTO MINIMUM OUTSIDE AIR MODE. WHEN IN ECONOMIZER MODE, ECONOMIZER DAMPER SHALL BE FULLY OPEN, RETURN AIR DAMPER SHALL BE FULLY CLOSED, AND RELIEF AIR DAMPER SHALL BE FULLY OPEN. IF THE MIXED AIR TEMPERATURE FALLS BELOW 55°F (ADJUSTABLE), ECONOMIZER DAMPER, RETURN AIR DAMPER, AND RELIEF AIR DAMPER SHALL MODULATE TO MAINTAIN THE MIXED AIR TEMPERATURE AT 55°F (ADJUSTABLE). WHEN IN MINIMUM OUTSIDE AIR MODE, ECONOMIZER DAMPER SHALL BE FULLY CLOSED AND RETURN AIR DAMPER AND RELIEF AIR DAMPER SHALL BE IN MIN OA POSITION.

MINIMUM OUTSIDE AIR: WHEN SUPPLY FAN IS ON, THE MINIMUM OA DAMPER OF THE PRIMARY UNIT, THE RA DAMPER OF THE PRIMARY UNIT, AND THE RELIEF AIR DAMPER OF THE PRIMARY UNIT SHALL BE POSITIONED BY DDC SYSTEM TO FURNISH MINIMUM OUTSIDE AIR QUANTITY, AS SCHEDULED AND AS MEASURED BY MINIMUM OA AFMS.

DURING NORMAL OPERATION THE ECONOMIZER AND MINIMUM OA SHALL FUNCTION AS DETAILED ABOVE. DURING TEMPORARY 100% RECIRCULATION MODE, THE RELIEF AIR DAMPER, THE MINIMUM OA DAMPER, THE ECONOMIZER DAMPER, AND THE OA PASS THROUGH DAMPER SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN FULLY. WHEN THE TEMPORARY 100% RECIRCULATION MODE BUTTON IS PRESSED DURING NORMAL MODE, THE DDC SYSTEM SHALL OPERATE THE PRIMARY AIR HANDLING UNIT IN TEMPORARY 100% RECIRCULATION MODE FOR 15 MINUTES (ADJUSTABLE). WHEN THE TEMPORARY 100% RECIRCULATION MODE BUTTON IS PRESSED DURING TEMPORARY 100% RECIRCULATION MODE, THE DDC SYSTEM SHALL OPERATE THE PRIMARY AIR HANDLING UNIT IN TEMPORARY 100% RECIRCULATION MODE FOR 4 HOURS (ADJUSTABLE). THE PRIMARY AIR HANDLING UNIT SHALL RETURN TO NORMAL MODE FOLLOWING THE TEMPORARY 100% RECIRCULATION MODE.

HEATING COIL: HOT WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT 55°F (ADJUSTABLE). HOT WATER COIL PUMP SHALL RUN CONTINUOUSLY WHENEVER THE OUTDOOR AIR TEMPERATURE FALLS BELOW 40° (ADJUSTABLE).

COOLING COIL: CHILLED WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT OF 52°F (ADJUSTABLE). INTERLOCK OPERATION WITH HEATING COIL TO PREVENT SIMULTANEOUS HEATING AND COOLING.

WHENEVER THE SUPPLY FAN OF EITHER UNIT IS OFF, THE CORRESPONDING HOT WATER CONTROL VALVE AND CHILLED WATER CONTROL VALVE SHALL CLOSE.

AHU SYSTEM SMOKE CONTROL: ELECTRONIC SMOKE DETECTOR PROVIDED AND WIRED BY E.C. BUT INSTALLED BY MECHANICAL CONTRACTOR IN AHU RETURN AIR PLENUM SHALL SENSE SMOKE IN AIRSTREAM, SEND ALARM TO FIRE ALARM SYSTEM (BY E.C.) AND PROVIDE SIGNAL TO DDC TO SHUT DOWN AHU SUPPLY FAN AND RETURN FAN AND MOVE ALL ASSOCIATED CONTROL VALVES AND CONTROL DAMPERS TO FAIL POSITIONS.

FILTERS: MONITOR DIRT LOADING OF FILTERS VIA MEASUREMENT OF PRESSURE DIFFERENTIAL ACROSS PREFILTER, CARBON FILTERS, AND FINAL FILTER BANKS. INDICATE ALARM THROUGH THE DDC WHEN DIFFERENTIAL PRESSURE EXCEEDS (ADJUSTABLE) SETPOINT.

SUPPLY FAN: MODULATE SUPPLY FAN SPEED THROUGH VFD. PROVIDE STATIC PRESSURE SENSOR IN THE DISTRIBUTION DUCTWORK AT THE END OF THE SYSTEM. VFD SHALL MODULATE TO MAINTAIN STATIC PRESSURE SETPOINT. LIMIT FAN DISCHARGE STATIC PRESSURE; WHEN EXCEEDED, ALARM INDICATION SHALL BE INDICATED THROUGH THE DDC, SUPPLY AND RETURN FANS SHALL SHUT DOWN, AND ALL VALVES AND DAMPERS SHALL MOVE TO FAIL POSITIONS. DESIRED DISCHARGE STATIC PRESSURE AND DISCHARGE STATIC PRESSURE HIGH LIMIT TO BE DETERMINED DURING TESTING, ADJUSTING, AND BALANCING BY TAB CONTRACTOR.

RETURN FAN: AN AIR FLOW MONITOR LOCATED AT THE RETURN FAN INLET SHALL MODULATE THE VARIABLE FREQUENCY DRIVE ON THE RETURN FAN TO MAINTAIN A CONSTANT (RETURN CFM) = (SUPPLY CFM) – (EXHAUST CFM).

HUMIDIFIER SHALL BE ENABLED TO OPERATE WHEN AIR HANDLING UNIT SUPPLY FAN IS ON AND CHILLED WATER CONTROL VALVE IS CLOSED. DISCHARGE AIR HUMIDITY SETPOINT SHALL BE RESET BY CONTROLLING HUMIDITY SENSOR BETWEEN ZERO AND 90% RH (MAX.). HUMIDIFIER SHALL BE DISABLED WHEN DISCHARGE AIR HUMIDITY EXCEEDS 90% AT 55°F. CONTROLLING HUMIDITY SENSOR SHALL BE LOCATED IN MAIN RETURN AIR DUCTWORK BEFORE MIXING WITH OUTSIDE AIR. CONTROLLING HUMIDITY SETPOINT SHALL BE RESET FROM 25% RH TO 45% RH (ADJUSTABLE) AS OUTSIDE AIR TEMPERATURE VARIES FROM –10 TO 50°F.

INTERLOCKS: REFER TO SPECIFIC EQUIPMENT CONTROL SEQUENCES SUCH AS EXHAUST FANS FOR INTERLOCK REQUIREMENTS WITH THIS UNIT.
THE FOLLOWING SAFETY INTERLOCKS SHALL BE ACCOMPLISHED THROUGH HARDWIRED RELAY CONNECTIONS OR AUXILIARY CONTACTS AND SHALL ENABLE EQUIPMENT OR SYSTEMS TO OPERATE WHEN AIR HANDLING UNIT SUPPLY FAN IS ON.
- SMOKE DETECTORS
- HIGH AND LOW PRESSURE SWITCHES
- LOW TEMPERATURE LIMIT SWITCH (FREEZESTAT)

INTERLOCK THE FOLLOWING AUXILIARY EQUIPMENT
- HUMIDIFIER VIA AIR FLOW SWITCH.

LOW TEMPERATURE LIMIT SWITCH (FREEZESTAT) SHALL BE DIRECTLY WIRED THROUGH MOTOR CONTROL CIRCUIT TO STOP AIR HANDLING UNIT AND CLOSE UNIT ISOLATION DAMPERS UPON SENSING AIR TEMPERATURE BELOW 38°F (ADJUSTABLE). STATUS OF TEMPERATURE SWITCH SHALL BE REPORTED TO THE DDC SYSTEM. TEMPERATURE SWITCH MUST BE MANUALLY RESET BEFORE AIR HANDLING UNIT CAN BE STARTED.

HIGH STATIC PRESSURE SAFETY SWITCH (2" WG, ADJUSTABLE) ON SUPPLY FAN DISCHARGE AIR, LOW LIMIT PRESSURE SWITCH (–2" WG, ADJUSTABLE) UPSTREAM OF SUPPLY FAN INLET, LOW STATIC PRESSURE SAFETY SWITCH (–1" WG, ADJUSTABLE) ON RETURN FAN SUCTION, AND HIGH LIMIT PRESSURE SWITCH (1.5" WG, ADJUSTABLE) DOWNSTREAM OF RETURN FAN DISCHARGE SHALL BE DIRECTLY WIRED THROUGH MOTOR CONTROL CIRCUIT TO SHUT DOWN UNIT IMMEDIATELY. STATUS OF EACH PRESSURE SWITCH SHALL BE REPORTED TO HVAC CONTROL DDC SYSTEM. PRESSURE SWITCHES MUST BE MANUALLY RESET BEFORE AIR HANDLING UNIT CAN BE STARTED.

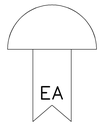
BOTH PRIMARY AND STANDBY UNITS SHALL SHUT DOWN ON TOTAL LOSS OF CONTROL POWER. ALARM SHALL BE SENT TO DDC SYSTEM, AND UNIT FAILURE ALARM SHALL SOUND IN SPACE.

FAILURE MODE: FAN FAILURE ALARM SHALL BE GENERATED IF SUPPLY FAN DOES NOT START WITHIN 2 MINUTES. FAILURE SHALL BE RESET MANUALLY THROUGH DDC SYSTEM SOFTWARE. FAILURE MODE SHALL BE INITIATED WHEN UNIT IS SHUTDOWN DUE TO ONE OF SAFETY CONTROLS OR FROM LOSS OF SIGNAL. UPON VFD FAILURE, FAN SHALL SHUT DOWN PER STOP SEQUENCE AND DDC SYSTEM SHALL ANNUNCIATE ALARM CONDITION FOR RESPECTIVE VFD ALARM STATUS RELAY.

EMERGENCY POWER MODE: REFER TO THE HEAT RECOVERY CHILLER SYSTEM INSTALLATION & CONTROL DIAGRAM FOR TEMPORARY AIR HANDLER SHUT DOWN DURING EMERGENCY POWER MODE.

A / H6.1 AIR HANDLING UNIT CONTROL (AHU-1 AND AHU-2)

NO SCALE



CONTROL SEQUENCE

REMOVE EXISTING CONTROL CONNECTION TO AHU-3, EXISTING EXHAUST FAN SHALL BE INTERLOCKED WITH NEW AHU'S OPERATION. IF EITHER AHU IS OPERATING, THE EXHAUST FAN SHALL OPERATE.

C / H6.1 EXISTING EXHAUST FAN CONTROL

NO SCALE

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

1st Floor
City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

Venture Architects

Venture Architects
325 E. Highland
Milwaukee, WI 53202
Telephone 414-271-3595

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC CONTROL SEQUENCES

Sheet No.
H6.1

SEQUENCE OF OPERATION:

SELF CONTAINED CONTROLS BY CHILLER MANUFACTURER SHALL OPERATE THE CHILLERS AND THE TWO-POSITION ISOLATION VALVES. ALL OTHER CONTROL FUNCTIONS IN THIS SEQUENCE OF OPERATION BY DDC SYSTEM.

SELF CONTAINED CONTROLS BY CHILLER MANUFACTURER SHALL DESIGNATE EITHER CH-1 OR CH-2 AS THE PRIMARY CHILLER AND THE OTHER AS THE SECONDARY CHILLER ON A PERIOD, ROTATING, ADJUSTABLE BASIS.

NO CHILLER SHALL OPERATE UNTIL CORRESPONDING CHILLED WATER PUMP AND CONDENSER WATER PUMP PROVE FLOW.

CH-1 AND CH-2 SHALL MAINTAIN THE EVAPORATOR LWT SETPOINT (ADJUSTABLE). ONE OF THE COMPRESSORS OF THE PRIMARY CHILLER SHALL ENERGIZE FIRST. IF NECESSARY, THE SECOND COMPRESSOR OF THE PRIMARY CHILLER SHALL ENERGIZE SECOND. IF NECESSARY, ONE COMPRESSOR OF THE SECONDARY CHILLER SHALL ENERGIZE THIRD. ALL FOUR COMPRESSORS OF BOTH CHILLERS SHALL NOT OPERATE SIMULTANEOUSLY. CHILLER MANUFACTURER SHALL PROVIDE LOCK-OUT. THE SEQUENCING OF THE COMPRESSORS SHALL NOT BE ROTATED WITH LAG/LAG DESIGNATIONS. INDICATE HIGH LEAVING WATER TEMPERATURE ALARM WHENEVER THE LWT RISES ABOVE THE HIGH LIMIT SETPOINT (ADJUSTABLE). INDICATE LOW LEAVING WATER TEMPERATURE ALARM WHENEVER THE LWT FALLS BELOW THE LOW LIMIT SETPOINT (ADJUSTABLE).

SELF CONTAINED CONTROLS BY CHILLER MANUFACTURER SHALL OPEN THE TWO-POSITION ISOLATION VALVES OF CH-1 WHENEVER CH-1 IS IN OPERATION. SELF CONTAINED CONTROLS BY CHILLER MANUFACTURER SHALL OPEN THE TWO-POSITION ISOLATION VALVES OF CH-2 WHENEVER CH-2 IS IN OPERATION.

CHILLERS SHALL SEND COMPRESSOR STATUS SIGNALS TO DDC SYSTEM.

DDC SYSTEM SHALL DESIGNATE CHWP-1 LEAD CHILLED WATER PUMP AND CHWP-2 LAG CHILLED WATER PUMP. LEAD/LAG DESIGNATION SHALL ROTATE ON A PERIODIC, ADJUSTABLE BASIS. DDC SYSTEM SHALL OPERATE THE CHILLED WATER PUMPS IN RESPONSE TO COMPRESSOR STATUS SIGNALS. DDC SYSTEM SHALL SIGNAL THE VFD OF THE LEAD PUMP TO PROVIDE 36 GPM (ADJUSTABLE) WHENEVER ONE COMPRESSOR IS OPERATING. DDC SYSTEM SHALL SIGNAL THE VFD OF THE LEAD PUMP TO PROVIDE 50 GPM (ADJUSTABLE) WHENEVER TWO COMPRESSORS ARE OPERATING. DDC SYSTEM SHALL SIGNAL THE VFD OF THE LEAD PUMP TO PROVIDE 74 GPM (ADJUSTABLE) WHENEVER THREE COMPRESSORS ARE OPERATING. THE DDC SYSTEM SHALL MONITOR THE STATUS OF THE LEAD CHILLED WATER PUMP WITH A CURRENT SENSOR. INDICATE ALARM THROUGH THE DDC SYSTEM WHENEVER THE LEAD PUMP FAILS TO OPERATE.

DDC SYSTEM SHALL DESIGNATE CWP-1 LEAD CONDENSER WATER PUMP AND CWP-2 LAG CONDENSER WATER PUMP. LEAD/LAG DESIGNATION SHALL ROTATE ON A PERIODIC, ADJUSTABLE BASIS. THE DDC SYSTEM SHALL OPERATE THE LEAD CONDENSER WATER PUMP IF ONE OR TWO COMPRESSORS ARE OPERATING. THE DDC SYSTEM SHALL OPERATE BOTH CONDENSER WATER PUMPS IF THREE COMPRESSORS ARE OPERATING. THE DDC SYSTEM SHALL OPERATE THE LEAD CONDENSER WATER PUMP CONTINUOUSLY WHENEVER THE OUTDOOR AIR TEMPERATURE IS AT OR BELOW 15°F (ADJUSTABLE). THE DDC SYSTEM SHALL MONITOR THE STATUS OF EACH CONDENSER WATER PUMP WITH A CURRENT SENSOR. INDICATE ALARM THROUGH THE DDC SYSTEM WHENEVER A PUMP FAILS TO OPERATE.

THE DDC SYSTEM SHALL MONITOR TEMPERATURE AND PRESSURE ON THE INLET AND OUTLET OF THE PLATE AND FRAME HEAT EXCHANGER ON BOTH THE CONDENSER WATER SIDE AND THE DOMESTIC HOT WATER SIDE.

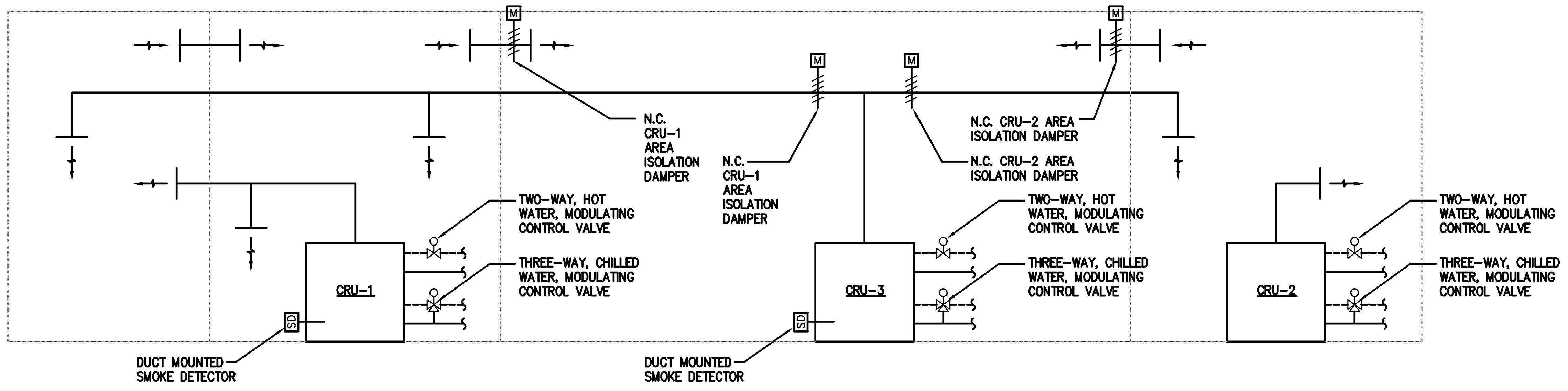
DDC SYSTEM SHALL DESIGNATE ACFC-1 LEAD AIR COOLED FLUID COOLER AND ACFC-2 LAG AIR COOLED FLUID COOLER. LEAD/LAG DESIGNATION SHALL ROTATE ON A PERIODIC, ADJUSTABLE BASIS. DDC SYSTEM SHALL STAGE ON AVAILABLE FANS WITHIN THE LEAD AIR COOLED FLUID COOLER IN ORDER TO MAINTAIN THE CONDENSER EWT SETPOINT (ADJUSTABLE). IF NECESSARY THE DDC SYSTEM SHALL STAGE ON AVAILABLE FANS IN THE LAG AIR COOLED FLUID COOLER TO MAINTAIN THE CONDENSER EWT SETPOINT (ADJUSTABLE). INDICATE HIGH ENTERING WATER TEMPERATURE ALARM WHENEVER THE EWT RISES ABOVE THE HIGH LIMIT SETPOINT (ADJUSTABLE). INDICATE LOW ENTERING WATER TEMPERATURE ALARM WHENEVER THE LWT FALLS BELOW THE LOW LIMIT SETPOINT (ADJUSTABLE). THE DDC SYSTEM SHALL MONITOR THE CONDENSER LWT OF CH-1 AND THE CONDENSER LWT OF CH-2.

DDC SYSTEM SHALL RECEIVE SIGNAL FROM WATER MAKEUP TANK LOW LEVEL SWITCH.

THE CHILLER MANUFACTURER SHALL FURNISH CH-1, CH-2, AND THE CHILLER CONTROL PANEL. TEMPERATURE CONTROL CONTRACTOR SHALL FURNISH ALL CONTROL VALVES AND SENSORS NOT OTHERWISE FURNISHED BY THE CHILLER MANUFACTURER.

EMERGENCY POWER MODE: THE BAS SHALL RECEIVE A SIGNAL FROM THE EMERGENCY TRANSFER SWITCH PROVIDED BY THE ELECTRICAL CONTRACTOR THAT THE SYSTEM IS OPERATING ON EMERGENCY POWER. REFER TO THE ELECTRICAL DRAWINGS/SPECIFICATIONS AND ELECTRICAL CONTRACTOR FOR EMERGENCY POWER SEQUENCE. PROVIDE THE FOLLOWING SEQUENCE DURING EMERGENCY POWER:

1. RESET THE CONDENSER WATER TO LEAVING 95°F AND ENTERING 85°F (ADJ.). RESET CONDENSER WATER TO LEAVING 43°F AND ENTERING 57°F (ADJ.)
2. A MAXIMUM OF ONLY ONE MODULE CAN OPERATOR UNDER EMERGENCY POWER.
3. AUTOMATICALLY LOCK OUT THREE COMPRESSORS ALLOWING ONLY ONE COMPRESSOR TO OPERATOR. (LOAD LIMIT TO 25%)
4. RESET THE TIME BETWEEN CYCLING COMPRESSORS TO A MAXIMUM OF 90 SECONDS (ADJ.)
5. MONITOR THE RETURN WATER; IF THE TEMPERATURE OF THE RETURN WATER REACHES 60°F, UNLOCK A COMPRESSOR (LOAD LIMIT OF 50%) IN THE SAME MODULE AS THE COMPRESSOR OPERATING. SHUT DOWN THE SUPPLY AND RETURN FAN IN BOTH AIR HANDLER UNITS. SEND A SHUT DOWN SIGNAL TO THE U.P.S. SYSTEM. COORDINATE SIGNAL WITH THE ELECTRICAL CONTRACTOR.
6. 30 SECONDS AFTER COMPRESSOR STARTS, START AIR HANDLING UNIT AND SEND A SIGNAL TO THE U.P.S. SYSTEM TO START.
7. IF THE COMPRESSOR DOES NOT OPERATE AFTER 100 SECONDS, SEND ALARM AND OPERATE SECOND MODULE.
8. AFTER SECOND COMPRESSOR SATISFIES LOAD AND AUTOMATICALLY SHUTS DOWN, LOAD LIMIT COMPRESSORS TO 25% AGAIN AND START SEQUENCE OVER.



SEQUENCE OF OPERATION:

GENERAL – FOR EACH COMPUTER ROOM UNIT, PROVIDE TWO-WAY, MODULATING CONTROL VALVE FOR HOT WATER CONTROL AND PROVIDE A THREE-WAY, MODULATING CONTROL VALVE FOR CHILLED WATER CONTROL. COORDINATE WITH COMPUTER ROOM UNIT MANUFACTURER.

CRU-1
SELF CONTAINED CONTROL SYSTEM SHALL MAINTAIN ROOM TEMPERATURE AT 72° (ADJUSTABLE) AND ROOM HUMIDITY AT 50% (ADJUSTABLE). FAILURE SHALL BE REPORTED TO DDC SYSTEM. UNITS SHALL CONNECT TO DDC SYSTEM FOR MONITORING AND SETPOINT ADJUSTMENT VIA BACNET MSTP. ELECTRONIC SMOKE DETECTOR PROVIDED AND WIRED BY E.C. BUT INSTALLED BY MECHANICAL CONTRACTOR IN RETURN AIR PLENUM SHALL SENSE SMOKE IN AIRSTREAM, SEND ALARM TO FIRE ALARM SYSTEM (BY E.C.) AND PROVIDE SIGNAL TO DDC TO SHUT DOWN UNIT.

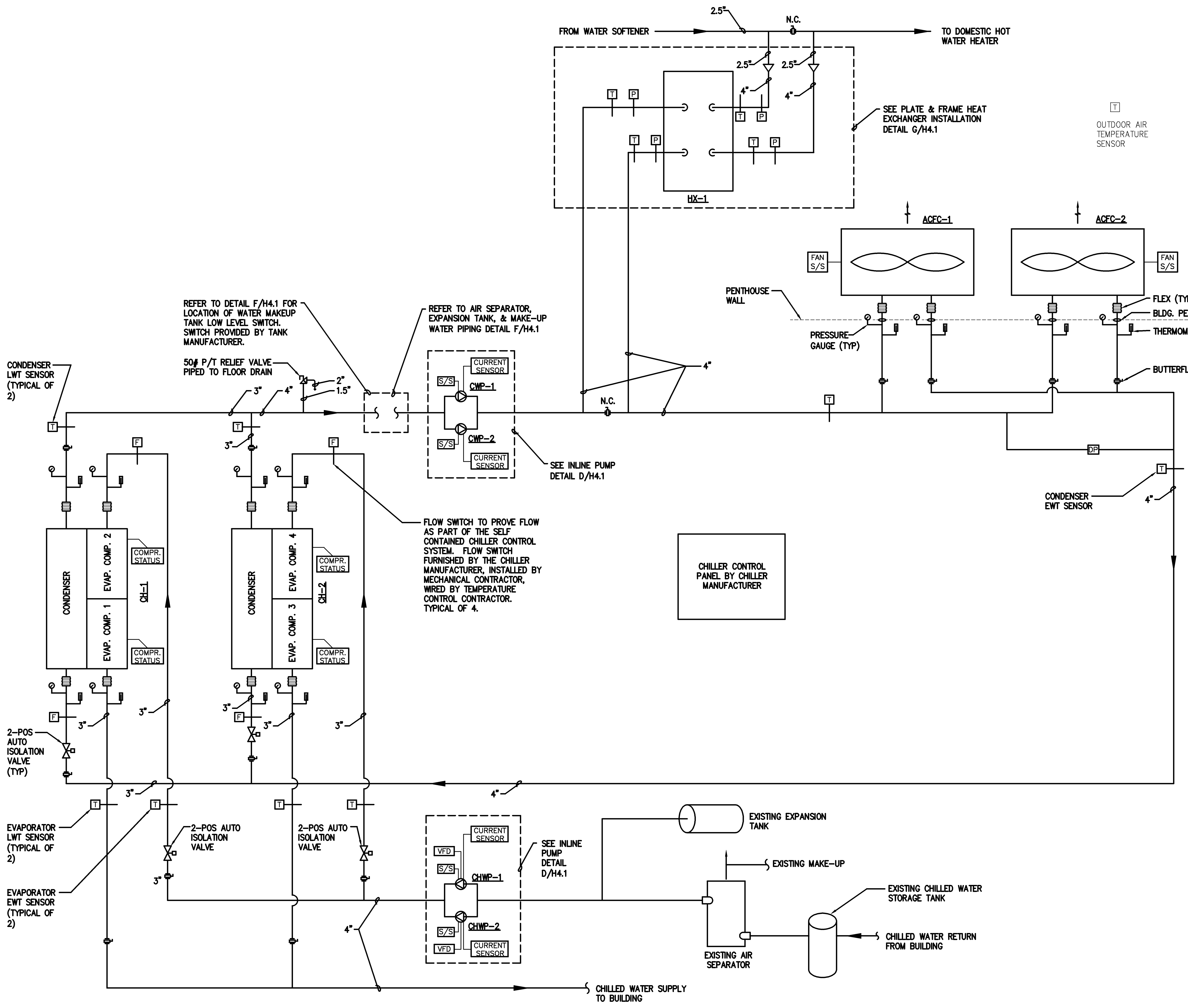
CRU-2
SELF CONTAINED CONTROL SYSTEM SHALL MAINTAIN ROOM TEMPERATURE AT 72° (ADJUSTABLE) AND ROOM HUMIDITY AT 50% (ADJUSTABLE). FAILURE SHALL BE REPORTED TO DDC SYSTEM. UNITS SHALL CONNECT TO DDC SYSTEM FOR MONITORING AND SETPOINT ADJUSTMENT VIA BACNET MSTP.

CRU-3
UPON FAILURE OF CRU-1, DDC SYSTEM SHALL OPEN CRU-1 AREA ISOLATION DAMPERS AND DDC SYSTEM SHALL SEND SIGNAL TO CRU-3 SELF CONTAINED CONTROL SYSTEM TO START CRU-3. ELECTRONIC SMOKE DETECTOR PROVIDED AND WIRED BY E.C. BUT INSTALLED BY MECHANICAL CONTRACTOR IN RETURN AIR PLENUM SHALL SENSE SMOKE IN AIRSTREAM, SEND ALARM TO FIRE ALARM SYSTEM (BY E.C.) AND PROVIDE SIGNAL TO DDC TO SHUT DOWN UNIT.

UPON FAILURE OF CRU-2, DDC SYSTEM SHALL OPEN CRU-2 AREA ISOLATION DAMPERS AND DDC SYSTEM SHALL SEND SIGNAL TO CRU-3 SELF CONTAINED CONTROL SYSTEM TO START CRU-3.

A/H6.2 COMPUTER ROOM UNIT CONTROL

NO SCALE



B/H6.2 HEAT RECOVERY CHILLER SYSTEM INSTALLATION & CONTROL DIAGRAM

NO SCALE

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
City County Building
210 Martin Luther
King Jr. Blvd.
Madison, Wisconsin

Venture Architects

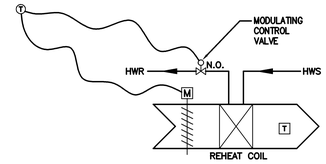
Venture Architects
205 W. Highland
Milwaukee, WI 53203
Telephone 414-271-3359

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
HVAC CONTROL
SEQUENCES

Sheet No.
H6.2



CONTROL SEQUENCE:

CONTROLS ARE DIRECT DIGITAL, WITH ELECTRIC ACTUATION. REFER TO TERMINAL UNIT SPECIFICATION FOR CONTROLS FURNISHED WITH UNIT. FOR EACH TERMINAL UNIT, PROVIDE DDC CONTROL TO MONITOR SPACE TEMPERATURE, MODULATE THE UNIT DAMPER AND MODULATE THE TWO-WAY, ELECTRIC, N.O. REHEAT COIL VALVE TO MAINTAIN SPACE TEMPERATURE. SPACE TEMPERATURE SHALL BE BETWEEN 70 & 75 DEGREES F. (ADJUSTABLE). IF THE VAV CONTROLLER LOSES POWER FOR MORE THEN 30 SECONDS, SEND AN ALARM SIGNAL TO THE DDC SYSTEM USER INTERFACE. THE CONTROLLER SHALL MONITOR THE ROOM TEMPERATURE AND SEND AN ALARM SIGNAL TO THE DDC SYSTEM USER INTERFACE IF THE ROOM HIGH LIMIT OR LOW LIMIT TEMPERATURES (ADJUSTABLE) ARE MET.

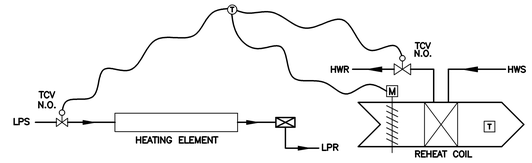
WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM COOLING AIRFLOW (ADJUSTABLE) AND THE MAXIMUM COOLING AIRFLOW (ADJUSTABLE) UNTIL THE ZONE TEMPERATURE IS SATISFIED. WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM COOLING AIRFLOW (ADJUSTABLE). WHEN THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM HEATING AIRFLOW (ADJUSTABLE) AND MODULATE THE REHEAT CONTROL VALVE TO MAINTAIN THE HEATING SETPOINT.

PROVIDE DISCHARGE AIR TEMPERATURE SENSOR. DDC SYSTEM SHALL MONITOR DISCHARGE AIR TEMPERATURE.

VAV BOXES LOCATED IN AREAS WITH REGULAR BUSINESS HOURS SHALL HAVE OCCUPIED AND UNOCCUPIED MODES. IN OCCUPIED MODES, THE VAV BOX SHALL OPERATE AS DETAILED ABOVE. IN UNOCCUPIED MODE, THE DAMPER SHALL CLOSE AND THE REHEAT CONTROL VALVE SHALL CLOSE. OCCUPIED/UNOCCUPIED MODE STATUS SHALL BE DETERMINED BY THE DDC SYSTEM IN RESPONSE TO TIME CLOCK SETTINGS (ADJUSTABLE)

A / H6.3 VARIABLE AIR VOLUME BOX W/ REHEAT CONTROL

NO SCALE



CONTROL SEQUENCE:

CONTROLS ARE DIRECT DIGITAL, WITH ELECTRIC ACTUATION. REFER TO TERMINAL UNIT SPECIFICATION FOR CONTROLS FURNISHED WITH UNIT. FOR EACH TERMINAL UNIT, PROVIDE DDC CONTROL TO MONITOR SPACE TEMPERATURE, MODULATE THE UNIT DAMPER AND MODULATE THE TWO-WAY, ELECTRIC, N.O. REHEAT COIL VALVE AND WALL FIN CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE. SPACE TEMPERATURE SHALL BE BETWEEN 70 & 75 DEGREES F (ADJUSTABLE). IF THE VAV CONTROLLER LOSES POWER FOR MORE THEN 30 SECONDS, SEND AN ALARM SIGNAL TO THE DDC SYSTEM USER INTERFACE. THE CONTROLLER SHALL MONITOR THE ROOM TEMPERATURE AND SEND AN ALARM SIGNAL TO THE DDC SYSTEM USER INTERFACE IF THE ROOM HIGH LIMIT OR LOW LIMIT TEMPERATURES ARE MET.

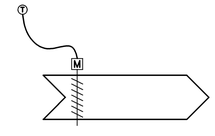
WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM COOLING AIRFLOW (ADJUSTABLE) AND THE MAXIMUM COOLING AIRFLOW (ADJUSTABLE) UNTIL THE ZONE TEMPERATURE IS SATISFIED. WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM COOLING AIRFLOW (ADJUSTABLE). WHEN THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM HEATING AIRFLOW (ADJUSTABLE) AND MODULATE THE REHEAT CONTROL VALVE TO MAINTAIN THE HEATING SETPOINT. IF THE REHEAT CONTROL VALVE IS FULLY OPEN AND THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT, THE WALL FIN CONTROL VALVE SHALL MODULATE TO MAINTAIN THE HEATING SETPOINT.

THE WALL FIN CONTROL VALVE SHALL REMAIN FULLY CLOSED WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE 40°F. (ADJUSTABLE)

PROVIDE DISCHARGE AIR TEMPERATURE SENSOR. DDC SYSTEM SHALL MONITOR DISCHARGE AIR TEMPERATURE.

B / H6.3 VAV BOX W/ REHEAT AND WALL FIN CONTROL

NO SCALE



CONTROL SEQUENCE:

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WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM AIRFLOW (ADJUSTABLE) AND THE MAXIMUM COOLING AIRFLOW (ADJ) UNTIL THE ZONE TEMPERATURE IS SATISFIED.

C / H6.3 VARIABLE AIR VOLUME BOX W/O REHEAT CONTROL

NO SCALE

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Date of Issue 11/30/09

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Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
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VA PROJECT # 208006

Sheet Name
HVAC CONTROL SEQUENCES

Sheet No.
H6.3

ELECTRICAL ABBREVIATIONS

A, AMP	AMPERE	MOA	MULTI-OUTLET ASSEMBLY
AC	ABOVE COUNTER	MSS	MANUAL STARTER SWITCH
AFF	ABOVE FINISHED FLOOR	MTR	MOTOR
AIC	AMPERE INTERRUPTING CAPACITY	MC	MECHANICAL CONTRACTOR
AL	ALUMINUM	MFR	MANUFACTURER
ARCH	ARCHITECT, ARCHITECTURE	N/C	NORMALLY CLOSED
ATS	AUTOMATIC TRANSFER SWITCH	N/O	NORMALLY OPEN
AUX	AUXILIARY	NEC	NATIONAL ELECTRICAL CODE
AV	AUDIO – VISUAL	NEMA	NATIONAL ELECTRICAL MFR'S ASSOC.
AP	ACCESS PANEL	NFSS	NON- FUSED SAFETY SWITCH
BC	BELOW COUNTER	NIC	NOT IN CONTRACT
BTM	BOTTOM	NL	NIGHT LIGHT
C	CONDUIT	NTS	NOT TO SCALE
CB	CIRCUIT BREAKER	O.C.	ON CENTER
CCTV	CLOSED CIRCUIT TELEVISION	OL	OVERLOADS
CRT	CATHODE-RAY TUBE	P	POLE
C/T	CURRENT TRANSFORMER	PF	POWER FACTOR
CU	COPPER	PH	PHASE
CTR	COUNTER	PNL	PANEL
DC	DIRECT CURRENT	PP	POWER POLE
DISC	DISCONNECT	PR	PAIR
DIST	DISTRIBUTION	PRI	PRIMARY
DN	DOWN	P/T	POTENTIAL TRANSFORMER
EC	ELECTRICAL CONTRACTOR	PVC	POLYVINYL CHLORIDE
ECB	ENCLOSED CIRCUIT BREAKER	PC	PLUMBING CONTRACTOR
ELEC	ELECTRIC, ELECTRICAL	RMC	RIGID METALLIC CONDUIT
EM	EMERGENCY	REQD	REQUIRED
EMT	ELECTRICAL METALLIC TUBING	RVT	REDUCED VOLTAGE TRANSFORMER
EQ	EQUIPMENT	S/N	SOLID NEUTRAL
ETR	EXISTING TO REMAIN	SPEC	SPECIFICATION
EWC	ELECTRIC WATER COOLER	SPKR	SPEAKER
EX	EXISTING	SP	SPARE
EXP	EXPLOSION PROOF	SW	SWITCH
EXT	EXTERIOR	SWBD	SWITCHBOARD
F	FUSE	SWGR	SWITCHGEAR
FA	FIRE ALARM	SQFT	SQUARE FOOT
FLR	FLOOR	SS	STAINLESS STEEL
FVNR	FULL VOLTAGE NON-REVERSING	SC	SECURITY CONTRACTOR
FVR	FULL VOLTAGE REVERSING	TEL	TELEPHONE
FBO	FURNISHED BY OWNER/ OTHERS	TERM	TERMINAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	XFMR	TRANSFORMER
GND	GROUND	TV	TELEVISION
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GWH	GAS WATER HEATER	EU	UNDERGROUND ELECTRICAL
HOA	HAND-OFF-AUTOMATIC SWITCH	UG	UNDERGROUND
HP	HORSEPOWER	UH	UNIT HEATER
HV	HIGH VOLTAGE	UT	UNDERGROUND TELEPHONE
HVAC	HEATING, VENTILATING, AIR CONDITIONING	UOD	UNLESS OTHERWISE NOTED
HC	HEATING CONTRACTOR	V	VOLT
IMC	INTERMEDIATE METALLIC CONDUIT	VA	VOLT AMPERES
JB	JUNCTION BOX	VFD	VARIABLE FREQUENCY DRIVE
KV	KILOVOLT	VOL	VOLUME
KVA	KILOVOLT-AMPERE	VC	VENTILATION CONTRACTOR
KVAR	KILOVOLT-AMPERE REACTIVE	W	WATT
KW	KILOWATT	W/	WITH
KWH	KILOWATT HOUR	W/O	WITHOUT
LV	LOW VOLTAGE	WG	WIRE GUARD/PROTECTIVE SHIELDING
MCC	MOTOR CONTROL CENTER	WP	WEATHERPROOF
MCP	MOTOR CIRCUIT PROTECTOR	2S1W	2 SPEED SINGLE WINDING
MCB	MAIN CIRCUIT BREAKER	2S2W	2 SPEED DOUBLE WINDING
MIN	MINIMUM	TFA	TO FLOOR ABOVE
MISC	MISCELLANEOUS	TFB	TO FLOOR BELOW
MLO	MAIN LUGS ONLY		
MMC	MANUAL MOTOR CONTROLLER		

SYMBOL LIST

SYMBOL	DESCRIPTION
$	SWITCH
$D	SWITCH, DIMMABLE
	DUPLEX RECEPTACLE
GFI	DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER
	FLOOR BOX – RAISED FLOOR
	DATA OUTLET
	BRANCH PANEL
	MOTOR
EF 1	MECHANICAL EQUIPMENT CONNECTION WITH DESIGNATION
	MOTOR WITH DESIGNATION
	JUNCTION BOX
	EMERGENCY LIGHT
	TRACK LIGHTING FIXTURE
	SUSPENDED FLUORESCENT FIXTURE
	EXIT FIXTURE
	RECESSED FIXTURE
	FLUORESCENT FIXTURE, SURFACE MOUNTED
	WALL MOUNTED LIGHT FIXTURE
S	OCCUPANCY SENSOR
F	PHOTO SENSOR, CEILING MOUNTED
F_S	FIRE ALARM, AUTOMATIC SMOKE DETECTOR
F_H	FIRE ALARM, AUTOMATIC HEAT DETECTOR
F	FIRE ALARM, STROBE (15 CANDELA U.N.O.)
F_D	AUTOMATIC SENSOR – DUCT SMOKE DETECTOR
F_{DT}	DUCT SMOKE DETECTOR TEST SWITCH
	MANUAL MOTOR STARTER

ONE LINE

SYMBOL	DESCRIPTION
	AUTOMATIC TRANSFER SWITCH
	MANUAL TRANSFER SWITCH
	CIRCUIT BREAKER
	CIRCUIT BREAKER-DRAWOUT
	CONTACTOR
	SWITCH
	FUSE
	FUSED SWITCH
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	TRANSFORMER
M	METER
Y	INCOMING SERVICE
	BUS BAR
(100/4)	FEEDER DESIGNATION
Δ	DELTA
	WYE
	GROUND

MOUNTING HEIGHTS OF ELECTRICAL DEVICES

"UP" MEANS UP FROM FINISHED FLOOR TO CENTERLINE OF DEVICE
"DN" MEANS DOWN FROM FINISHED CEILING TO CENTERLINE OF DEVICE

1.	WALL SWITCHES	UP 42"
2.	*RECEPTACLES	UP 18"
3.	DISCONNECT SWITCHES	UP 66"
4.	FIRE ALARM HORNS / STROBES	UP 80" OR 6" BELOW CEILING
5.	PUSHBUTTON STATIONS	UP 42"
6.	PANELS TOP @	72" (TOP)
7.	VISUAL FIRE ALARM STROBE	UP 80"

*A. THE EXACT MOUNTING HEIGHT REQUIRED FOR THESE DEVICES SHALL BE COORDINATED BY THE ELECTRICAL CONTRACTOR.

B. ALL DEVICE MOUNTING HEIGHTS SHALL MEET ALL ACCESSIBILITY STANDARDS.

GENERAL NOTES:

1. ALL BRANCH CIRCUITS SHALL HAVE GROUND CONDUCTORS.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE, IF REQUIRED, ADJUSTMENTS (±) 6'-0" IN THE LOCATION OF ALL SYSTEM DEVICES. FIXTURES, OUTLETS, PANELS, ETC. IN ORDER TO EXPEDITE THE ELECTRICAL WORK. THE POSITION OF ALL WORK AS SHOWN IS INTENDED TO BE FIXED AND IN THE PROPER LOCATION. SUCH REQUIRED ADJUSTMENT SHALL BE DETERMINED BY THE A/E.
3. ALL EMERGENCY DUPLEX RECEPTACLES SHALL BE PROVIDED WITH ENGRAVED NAME PLATES IDENTIFYING THE PANEL NAME AND CIRCUIT BRANCH, FIRMLY ATTACHED.
4. PROVIDE SEPARATE NEUTRAL FOR EACH BRANCH CIRCUIT PHASE CONDUCTOR.
5. SEE ARCHITECTURAL SHEETS FOR EXACT LOCATION OF DEVICES. COORDINATE LOCATION OF DEVICES WITH ARCHITECTS FIELD PERSON TO ENSURE PROPER LOCATION AND HEIGHT.
6. SMOKE DETECTORS SHALL BE MOUNTED A MINIMUM OF 3'-0" FROM ANY AIR SUPPLY DIFFUSER.
7. WALL SWITCHES FOR EMERGENCY LIGHTING FIXTURE SHALL BE RED.
8. SEE SPECIFICATIONS FOR DEFINITIONS OF FLOOR BOX TYPES.

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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HEI JOB NO. 09-60802A

Date of Issue 11/30/09

No. Description Date

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
City County Building
210 Martin Luther
King Jr. Blvd.
Madison, Wisconsin

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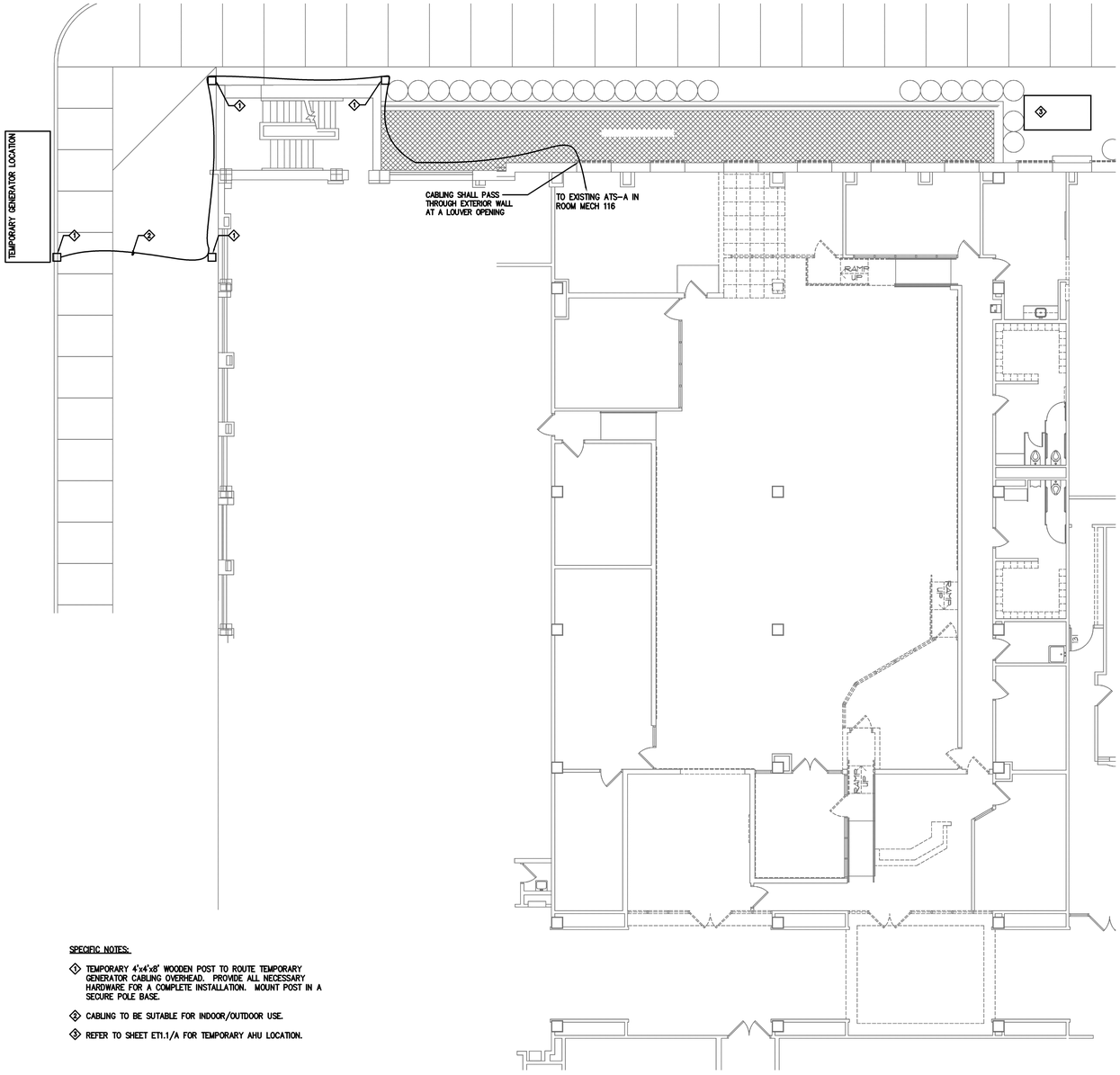
COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
ELECTRICAL SYMBOLS
AND ABBREVIATIONS

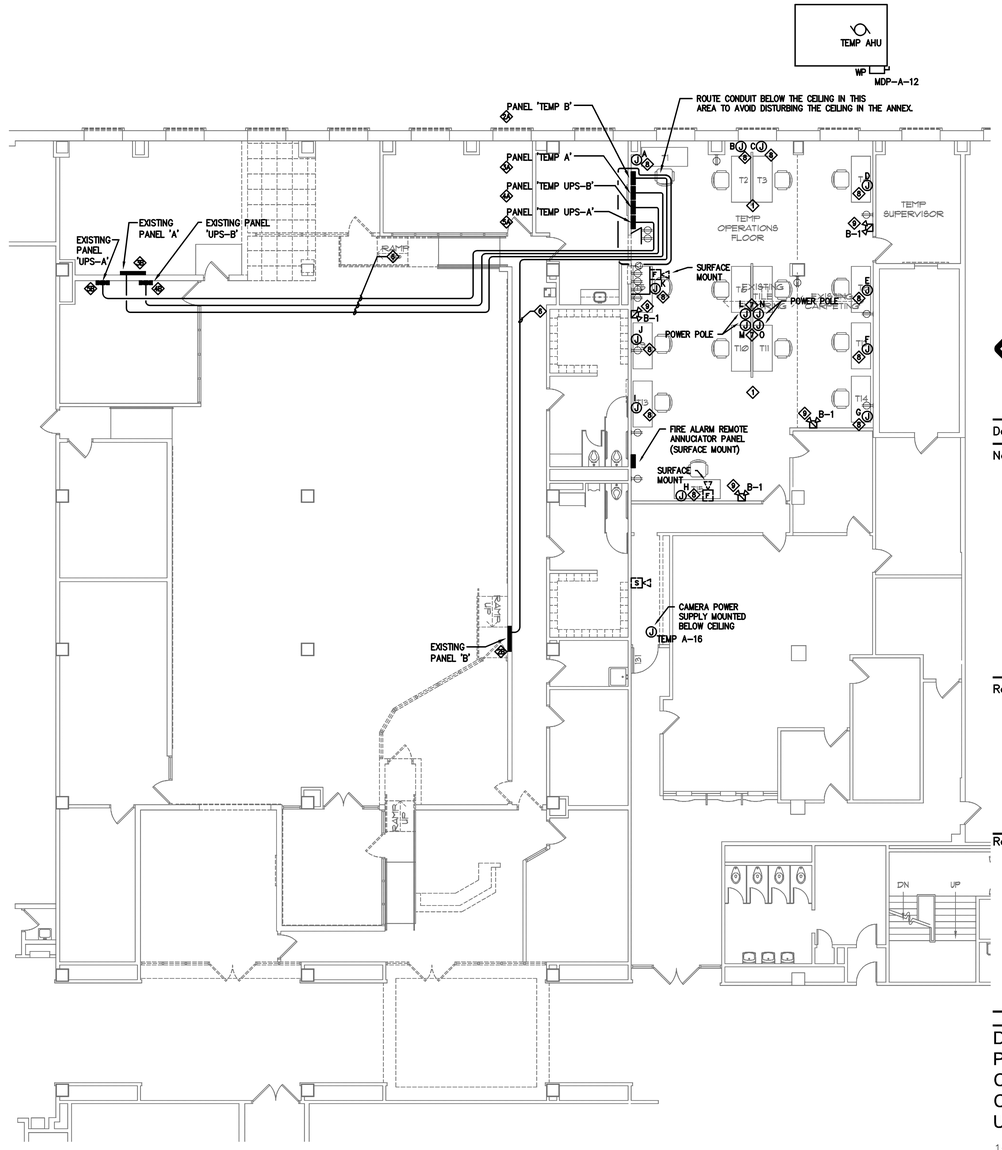
Sheet No.
E0.1



B ET1.1 ELECTRICAL TEMPORARY GENERATOR PLAN

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

12"0 1' 5' 10' 20'



A ET1.1 ELECTRICAL TEMPORARY ANNEX PLAN

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

12"0 1' 5' 10' 20'

SPECIFIC NOTES:

1. TEMPORARY 4'x4'x8' WOODEN POST TO ROUTE TEMPORARY GENERATOR CABLING OVERHEAD. PROVIDE ALL NECESSARY HARDWARE FOR A COMPLETE INSTALLATION. MOUNT POST IN A SECURE POLE BASE.
2. CABLING TO BE SUITABLE FOR INDOOR/OUTDOOR USE.
3. REFER TO SHEET ET1.1/A FOR TEMPORARY AHU LOCATION.

TEMPORARY CIRCUITRY SCHEDULE

	PANEL			
J-BOX LETTER	TEMP UPS-A	TEMP UPS-B	TEMP A	TEMP B
A	1	1	1	1
B	3	3	3	3
C	5	5	5	5
D	7	7	7	7
E	9	9	9	9
F	11	11	11	11
G	13	13	13	13
H	15	15	15	15
I	16	16	16	16
J	14	14	14	14
K	12	12	12	12
L	10	10	10	10
M	8	8	8	8
N	6	6	6	6
O	4	4	4	4

NOTE: CIRCUITS ARE FOR GROUPING PURPOSES ONLY

LINE WEIGHT KEY

- ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW
- ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN
- ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED

SPECIFIC NOTES:

1. ALL EXISTING RECEPTACLES AND RACEWAY IN THIS AREA SHALL REMAIN UNTIL COMPLETION OF NEW CALL CENTER (SEE SHEET ED1.1).
2. ALL LIGHTING AND SWITCHING SHALL REMAIN. REWORK EXISTING CIRCUITRY TO BE SERVED BY PANEL 'TEMP A' AND 'TEMP B'. LIGHTING LOADS SHALL BE DISTRIBUTED AS EVENLY AS POSSIBLE BETWEEN PANEL 'TEMP A' AND 'TEMP B'. REFER TO SHEET ED1.1 FOR EXISTING LIGHTING LAYOUT.
3. PROVIDE AND INSTALL (1) SURFACE MOUNTED 42 POLE, 100A, THREE PHASE PANEL. PANEL SHALL BE POPULATED WITH BREAKERS OF THE SAME TYPE AND SIZE AS EXISTING PANEL 'B'. LABEL PANEL AND BREAKERS AS INDICATED.
4. PROVIDE AND INSTALL (1) 60/3P BREAKER IN EXISTING PANEL 'B' TO SERVE PANEL 'TEMP B'.
5. PROVIDE AND INSTALL (1) SURFACE MOUNTED 42 POLE, 100A, THREE PHASE PANEL. PANEL SHALL BE POPULATED WITH BREAKERS OF THE SAME TYPE AND SIZE AS EXISTING PANEL 'A'. LABEL PANEL AND BREAKERS AS INDICATED.
6. PROVIDE AND INSTALL (1) 60/3P BREAKER IN EXISTING PANEL 'A' TO SERVE PANEL 'TEMP A'.
7. PROVIDE AND INSTALL (1) SURFACE MOUNTED 30 POLE, 100A, SINGLE PHASE PANEL. PANEL SHALL BE POPULATED WITH BREAKERS OF THE SAME TYPE AND SIZE AS EXISTING PANEL 'UPS B'. LABEL PANEL AND BREAKERS AS INDICATED.
8. PROVIDE AND INSTALL (1) 60/2P BREAKER IN EXISTING PANEL 'UPS B' TO SERVE PANEL 'TEMP UPS-B'.
9. PROVIDE AND INSTALL (1) SURFACE MOUNTED 30 POLE, 100A, SINGLE PHASE PANEL. PANEL SHALL BE POPULATED WITH BREAKERS OF THE SAME TYPE AND SIZE AS EXISTING PANEL 'UPS A'. LABEL PANEL AND BREAKERS AS INDICATED.
10. PROVIDE AND INSTALL (1) 60/2P BREAKER IN EXISTING PANEL 'UPS A' TO SERVE PANEL 'TEMP UPS-A'.

SPECIFIC NOTES:

1. ROUTE ABOVE ACCESSIBLE CEILING IN A FASHION SO AS TO NOT OBSTRUCT FUTURE RENOVATION WORK IN THE OPERATIONS FLOOR. SECURE TO FASTENERS TO STRUCTURAL MEMBERS. SEE ONE LINE DIAGRAM FOR FEEDER SIZES.
2. PROVIDE TWO L7-15R AND TWO 5-20R NEMA RECEPTACLES IN EACH POWER POLE. CIRCUIT AS INDICATED.
3. PROVIDE A 4 GANG SURFACE MOUNTED JUNCTION BOX. MOUNT SECURELY TO THE WALL 18"AFF. PROVIDE AND INSTALL TWO L7-15R ONE CIRCUITED TO 'TEMP UPS-A' AND THE OTHER TO 'TEMP UPS-B'. PROVIDE AND INSTALL TWO 5-20R NEMA RECEPTACLES ONE CIRCUITED TO 'TEMP-A' AND 'TEMP-B'. REFER TO THE TEMPORARY CIRCUITRY SCHEDULE ON THIS SHEET FOR CIRCUIT GROUPING.
4. TEMPORARY B-1 FIXTURES TO BE CIRCUITED TO PANEL TEMP-B.

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

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Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

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City County Building
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Madison, Wisconsin

Venture Architects

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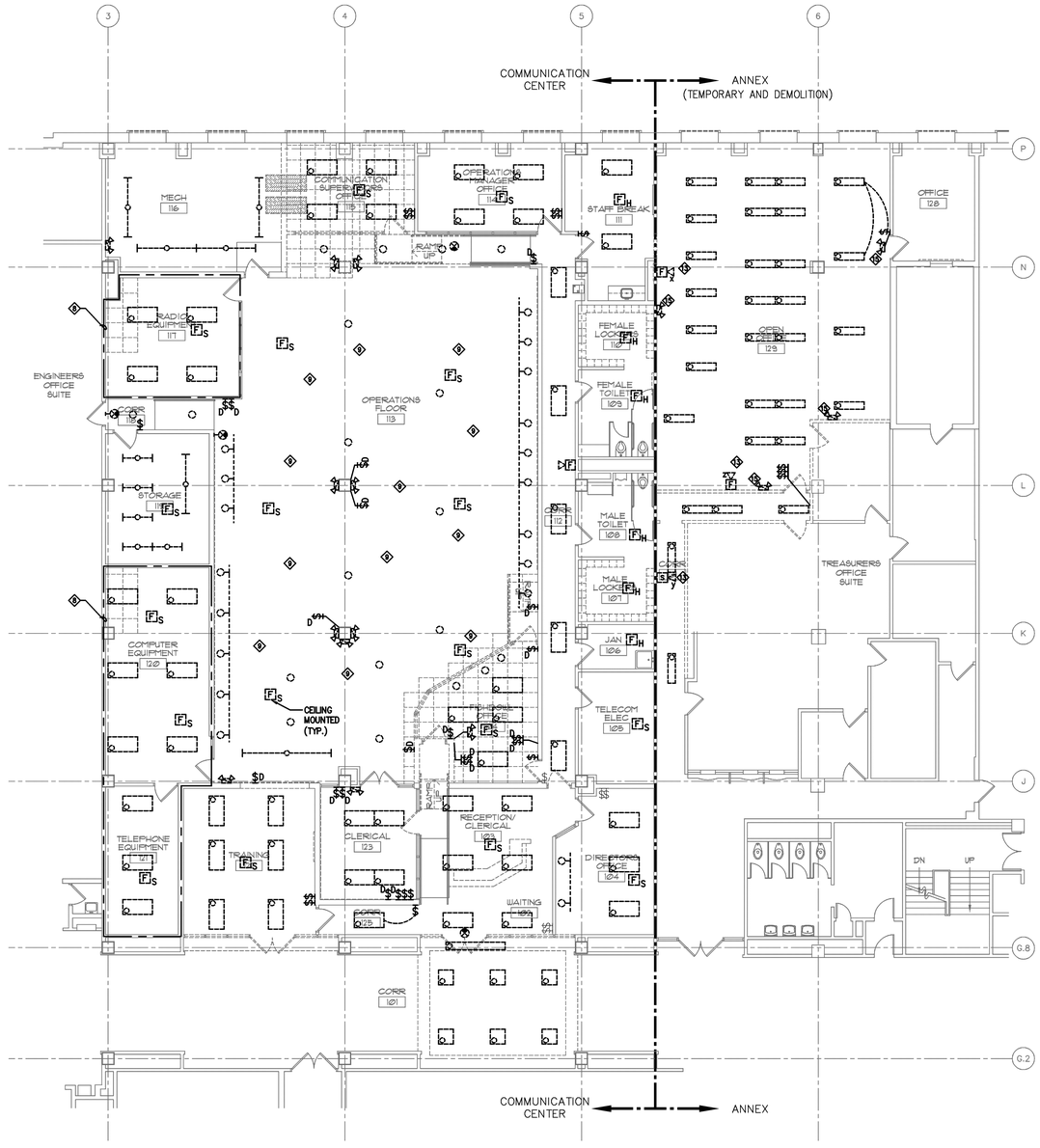
VA PROJECT # 208006

Sheet Name
ELECTRICAL
TEMPORARY ANNEX PLAN

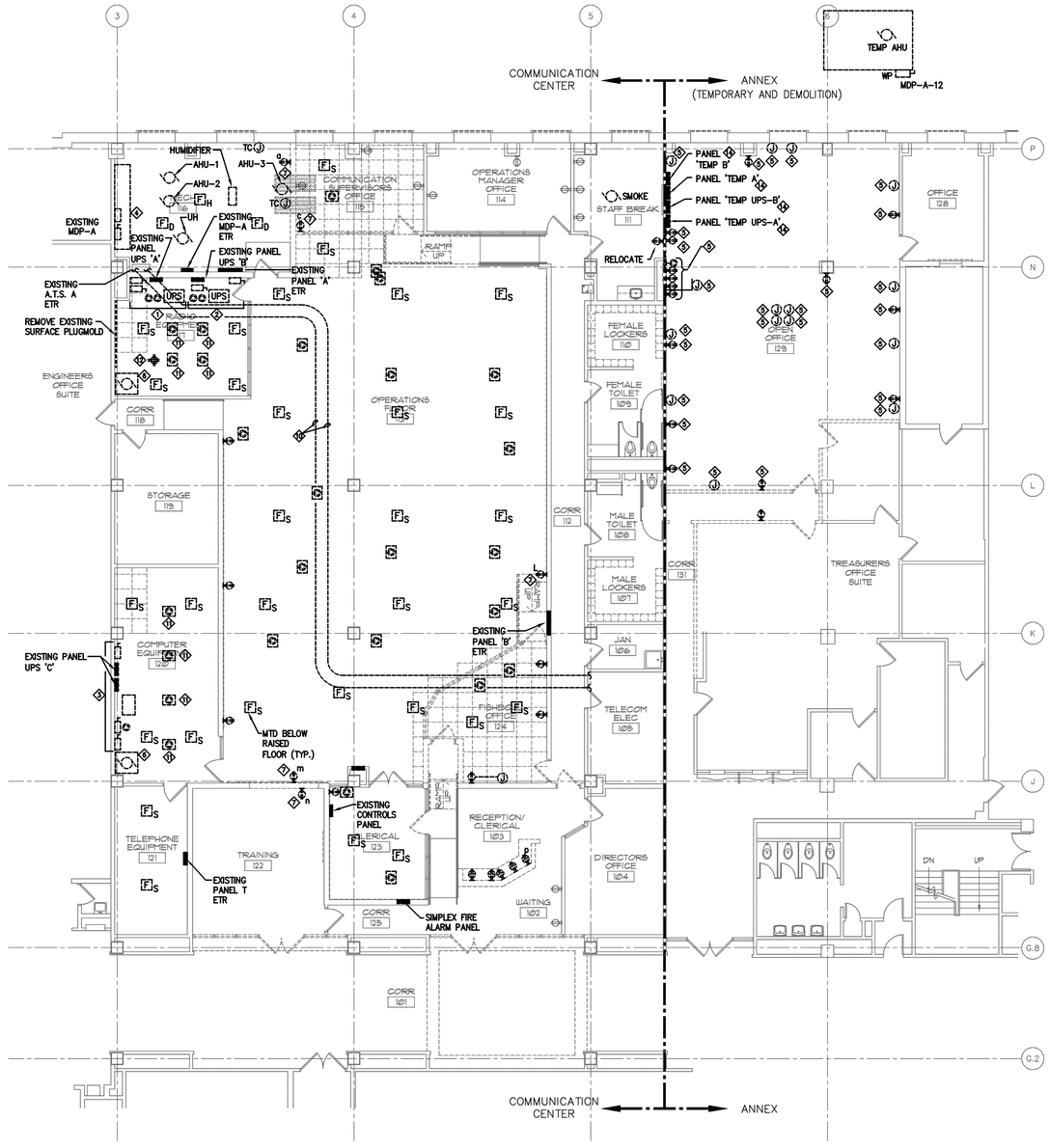
Sheet No.
ET1.1



B ED1.1 ELECTRICAL DEMOLITION PLAN – LIGHTING

SCALE: 1/8" = 1'–0"

12"0 1' 5' 10' 20'



A ED1.1 ELECTRICAL DEMOLITION PLAN – POWER

SCALE: 1/8" = 1'–0"

12"0 1' 5' 10' 20'

REFER TO SHEET ET1.1 FOR TEMPORARY WORK TO BE COMPLETED BEFORE DEMOLITION OF THE EXISTING OPERATIONS CENTER.

GENERAL ELECTRICAL DEMOLITION REQUIREMENTS:

1.) ELECTRICAL CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AT THE PROJECT SITE BEFORE SUBMITTING COST PROPOSAL.

2.) AN ATTEMPT HAS BEEN MADE TO SHOW ALL DEVICES TO BE REMOVED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY DEVICES NOT SHOWN. ALL DEVICES NEED TO BE REMOVED IN THE DEMOLITION AREA UNLESS NOTED ON THE DRAWINGS. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION THAT THE ELECTRICAL CONTRACTOR SHALL DISCONNECT ALL ELECTRICAL MOTORS AND ASSOCIATED EQUIPMENT, REMOVE ALL ELECTRICAL APPARATUS, INCLUDING, BUT NOT LIMITED TO CONDUIT, WIRING, DEVICES, JUNCTION BOXES, FIXTURES, SPEAKERS, FIRE ALARM EQUIPMENT, TELECOMMUNICATION AND DATA DEVICES AND OTHER SIGNALING DEVICES IN THE DEMOLITION AREA AS NOTED BY A DASHED LINE, DASHED SYMBOL, OR A NOTATION.

3.) IT IS MANDATORY THAT THE EXISTING BUILDING REMAIN IN CONTINUOUS AND NON–INTERRUPTED OPERATION DURING REMODELING/ALTERING OF THE EXISTING BLDG. THE SPECIFIC AREA(S) BEING REMODELED/ALTERED AT ANY SCHEDULED TIME ARE OBVIOUSLY EXCLUSIVE OF THE STATEMENT. SERVICES TO EXISTING BLDG. SHALL BE KEPT IN CONTINUOUS OPERATION INCLUDING POWER, LIGHTING, TELEPHONE, FIRE ALARM, ETC. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH PROJECT CONSTRUCTION, SHALL BE HELD TO, ARRANGED WITH THE OWNER THROUGH THE GENERAL CONTRACTOR, A MINIMUM OF TWO (2) WEEKS IN ADVANCE. TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.

4.) ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN DEMOLITION, REMOVAL, CAPPING, STORING, ABANDONING, DISCONNECTING, RELOCATING AND RECONNECTION OF EXISTING ELECTRICAL EQUIPMENT AND MATERIAL. ALL CUTTING, PATCHING, REPAIRING, REPLACEMENT AND REFINISHING, SHALL MATCH THE EXISTING CONSTRUCTION AS NEARLY AS POSSIBLE.

GENERAL ELECTRICAL DEMOLITION REQUIREMENTS (CONTINUTED):

5.) EXCEPT WHERE OTHERWISE SHOWN OR NOTED ON DRAWING – "TO BE RETAINED, RELOCATED" OR HEREINAFTER NOTED, ALL EXISTING ELECTRICAL EQUIPMENT AND MATERIAL IN AREAS TO BE REMODELED/ALTERED SHALL BE REMOVED WHERE THEY INTERFERE WITH PROPOSED NEW CONSTRUCTION AND OR INTERFERE WITH PROPOSED USAGE OF SPACE BY OWNER AS FOLLOWS:

(A) REMOVE ANY CONDUITS PROTRUDING ABOVE FINISHED FLOOR, CAP AND FINISH OVER WITH FLOOR MATERIAL TO MATCH EXISTING.

(B) REMOVE ALL LIGHT FIXTURES, RECEPTACLES, SWITCHES, ETC. AND ASSOCIATED WIRING.

(C) REMOVE ALL SURFACE MOUNTED CONDUIT/BOXES AND THEIR ASSOCIATED WIRING. REMOVE ALL CONCEALED RACEWAYS, BOXES AND WIRING FROM PARTITIONS BEING DEMOLISHED.

(D) REMOVE ALL EXISTING WIRING/CABLING FROM ALL EXISTING CONCEALED RACEWAYS IN PARTITION THAT ARE TO REMAIN.

(E) IN REMODELED/ALTERED AREAS ANY FEEDERS, CONDUITS, BRANCH CIRCUITS, SIGNAL AND TELEPHONE CIRCUITS, ETC. PASSING THROUGH THE REMODELED AREAS TO SERVE (OR BE SERVED FROM EXISTING ADJACENT, REMOTE, OR SURROUNDING AREA THAT ARE TO REMAIN) SHALL BE RETAINED AND KEPT OPERATIONAL AND SHALL BE REROUTED IN ALL CASES WHERE THEY INTERFERE WITH ANY NEW WORK OR USAGE TO BE ACCOMPLISHED IN THE REMODELED AREA.

(F) WHERE DEVICES ARE OMITTED FROM PRESENT BRANCH CIRCUITS, THE REMAINING DEVICES SHALL BE REWIRED, IF NEEDED AND AS REQUIRED, TO REMAIN ON THEIR RESPECTIVE CIRCUITS AND IN OPERATING CONDITION.

GENERAL ELECTRICAL DEMOLITION REQUIREMENTS (CONTINUTED):

6.) ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS TO FAMILIARIZE HIMSELF WITH EXTENT OF ALTERATION/REMODELING WORK AND MORE SPECIFICALLY NOTE WHERE NEW PARTITIONING IS BEING INSTALLED, WHERE EXISTING PARTITIONING IS BEING REMOVED, WHERE CEILINGS ARE BEING REMOVED AND OR REPLACED, ETC.

7.) ALL WIRING (POWER, LIGHTING, FIRE ALARM) NOT REUSED FOR REMODELING AREAS, SHALL BE COMPLETELY REMOVED BACK TO ASSOCIATED PANELS. EMPTY BOXES AND CONDUITS SHALL BE REMOVED BEYOND REMODELED AREA (ABOVE CEILING).

8.) THE OWNER SHALL HAVE THE FIRST CHOICE TO ACCEPT EXISTING DEVICES BEING REMOVED.

9.) ALL EXISTING FIRE ALARM DEVICES SHALL BE REMOVED AND REPLACED WITH NEW SYSTEM DEVICES. EXISTING CONDUIT MAY BE REUSED WHERE CODE COMPLIANT.

LINE WEIGHT KEY

——— ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW

——— ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN

– – – – ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED

SPECIFIC NOTES:

1. REMOVE ALL DISCONNECT SWITCHES, TRANSFER SWITCHES, SPECIAL OUTLETS, UPS UNITS, PANEL BOARDS AND ALL ASSOCIATED CONDUIT AND WIRING FOR UPS SYSTEM A. COORDINATE WITH PROJECT PHASING.
2. REMOVE ALL DISCONNECT SWITCHES, TRANSFER SWITCHES, SPECIAL OUTLETS, UPS UNITS, PANEL BOARDS AND ALL ASSOCIATED CONDUIT AND WIRING FOR UPS SYSTEM B. COORDINATE WITH PROJECT PHASING.
3. REMOVE ALL DISCONNECT SWITCHES, TRANSFER SWITCHES, SPECIAL OUTLETS, UPS UNITS, PANEL BOARDS AND ALL ASSOCIATED CONDUIT AND WIRING FOR UPS SYSTEM C. COORDINATE WITH PROJECT PHASING.
4. REMOVE BATTERIES, CHARGER, DISCONNECT SWITCH, CONDUIT AND WIRING ASSOCIATED WITH UPS SYSTEM A & B. COORDINATE WITH PROJECT PHASING.
5. DISCONNECT AND REMOVE ALL EXISTING DEVICES, CABLING, JUNCTION BOXES AND RACEWAY (WHERE ACCESSIBLE) BACK TO SOURCE.
6. DISCONNECT EXISTING CONNECTIONS TO EXISTING CRAC UNITS.
7. INTERCEPT EXISTING CIRCUIT AT NEAREST UNDISTURBED JUNCTION BOX AND EXTEND TO NEW DEVICE LOCATION. LETTER DESIGNATION USED FOR LOCATION ON SHEET E2.1.
8. EXISTING FIXTURES TO BE REMOVED OR TEMPORARILY SUPPORTED FOR CEILING REMOVAL AND HVAC DUCT INSTALLATION. RECONNECT AND REINSTALL EXISTING FIXTURES IN REINSTALLED.

SPECIFIC NOTES (CONTINUED):

9. FIXTURES ATTACHED TO WORKSTATION SHALL BE REMOVED WITH WORKSTATION.
10. EXISTING 3 ½" RIGID STEEL CONDUIT AND 4#500MCM AND 1#1/0 GND FEEDER ABOVE CEILING FOR NORMAL AND EMERGENCY SERVICE SHALL BE DISCONNECTED, REMOVED AND REINSTALLED TO AVOID NEW DUCT WORK INSTALLATION. COORDINATE WITH TEMPORARY GENERATOR INSTALLATION AND CONNECTIONS.
11. EXISTING FLOOR BOX AND DEVICES TO BE REMOVED WITH ASSOCIATED CIRCUITS FOLLOWING NEW CIRCUITS FROM NEW UPS A&B. COORDINATE WITH PROJECT PHASING.
12. DISCONNECT AND REMOVE EXISTING DOUBLE DUPLEX OUTLETS (4) FROM BELOW FLOOR FOLLOWING NEW CIRCUITS FOR EQUIPMENT FROM PANEL UPSC. COORDINATE WITH PROJECT PHASING.
13. RELOCATE EXISTING FIRE ALARM DEVICE. LETTER DESIGNATION USED FOR LOCATION ON SHEET E2.1.
14. DISCONNECT AND REMOVE EXISTING PANELS INSTALLED FOR TEMPORARY PURPOSES UNDER PHASE 1. REMOVE ALL ASSOCIATED FEEDERS BACK TO SOURCE. COORDINATE WITH PROJECT PHASING.
15. DISCONNECT AND REMOVE FIXTURES IN AN ORDERLY FASHION SO THEY CAN BE RELOCATED FOR USE IN THE NEW TEMPORARY OPERATIONS AREA.

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

1st Floor
City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

Venture Architects

Venture Architects
2418 W. Highland
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COUNTY BID # 109055

VA PROJECT # 208006

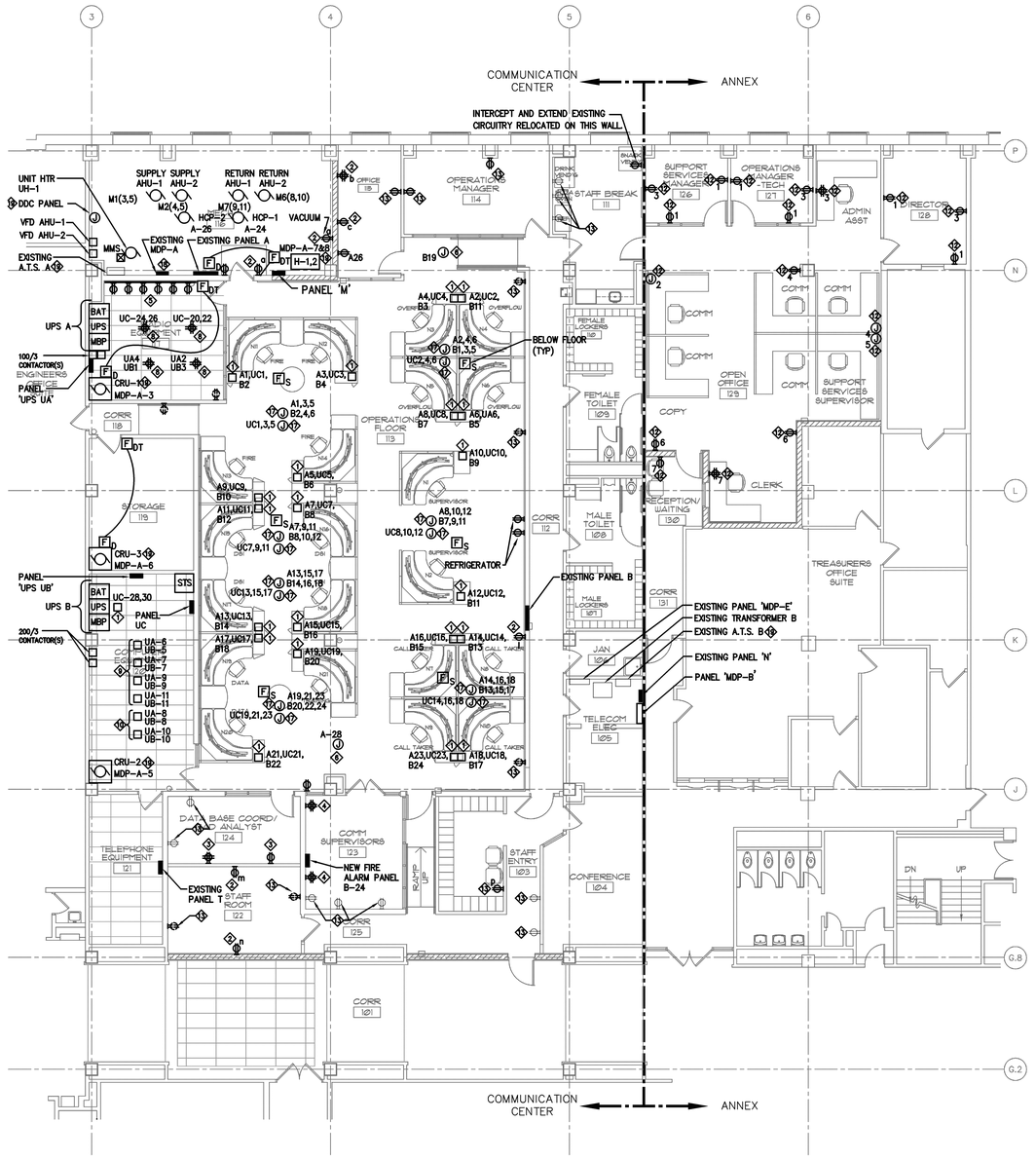
Sheet Name
ELECTRICAL DEMOLITION PLANS

Sheet No.
ED1.1

B E2.1 ELECTRICAL NEW WORK PLAN – LIGHTING

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

12"0 1' 5' 10' 20'



A E2.1 ELECTRICAL NEW WORK PLAN – POWER

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

12"0 1' 5' 10' 20'

GENERAL NOTES:

1. CIRCUITING NOTE:
CIRCUITING NUMBERS INDICATED ON THE DRAWINGS ARE SHOWN FOR THE PURPOSE OF CLARIFYING THE GROUPING OF OUTLETS OR FIXTURES. THE ACTUAL NUMBER ASSIGNED TO THE CIRCUIT SHALL SUIT THE BUSSING AND BRANCH CIRCUIT(S) AVAILABLE TO THE ASSIGNED PANEL. E.C. SHALL REUSE EXISTING CIRCUIT BREAKERS WHERE POSSIBLE AND PROVIDE NEW AS REQUIRED. EXISTING CONDUIT MAY BE REUSED WHERE CODE COMPLIANT. CONTRACTOR SHALL LABEL ALL NEW AND EXISTING DEVICES/FIXTURES AND JUNCTION BOXES WITH ACTUAL CIRCUIT BREAKER NUMBERS USED. PANEL INDEXES SHALL BE UPDATED WITH ALL NEW AND EXISTING LOADS/DEVICES.

2. EXISTING CIRCUITS:
ALL DEVICES, LIGHTING FIXTURES, CONTROLS, ETC. SHALL REMAIN CONNECTED TO EXISTING PANELS A,B, AND N UNLESS OTHERWISE NOTED. PANEL DIRECTORIES SHALL BE UPDATED WITH RECORD INFORMATION.

3. TYPE B1 FIXTURES SHALL BE CIRCUITED TO A–25 UNLESS OTHERWISE NOTED.

4. ALL TYPE X1 FIXTURES SHALL BE CIRCUITED TO THE NEAREST EMERGENCY POWER CIRCUIT.

5. ALL POWER USED FOR THE PURPOSED ON CONSTRUCTION SHALL BE SERVED BY RISER #4 APPROXIMATELY 75'–0" WEST DOWN THE CORRIDOR FROM THE 911 CALL CENTER. COORDINATE FEEDER ROUTE WITH OWNER.

LINE WEIGHT KEY

———	ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW
———	ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN
- - - - - - -	ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED

SPECIFIC NOTES:

1. FLUSH FLOOR BOX BELOW EQUIPMENT ENCLOSURE WITH 2 DUPLEX EMERGENCY OUTLETS AND 2 DUPLEX UPS OUTLET. SEE DETAIL B/E5.1. CUT OPENING IN EXISTING OR NEW FLOOR PANELS AS REQUIRED FLOOR BOX INSTALLATION.
2. NEW DEVICE CONNECTED TO EXISTING CIRCUIT INTERCEPTED AT NEAREST UNDISTURBED JUNCTION BOX. PROVIDE 2#12, 1#12GND IN ¾"C FROM JUNCTION BOX TO DEVICE. SEE NOTE #7 ON SHEET ED1.1.
3. PROVIDE 2#12 AND 1#12GND IN ¾"C TO EXISTING SPARE BREAKER IN EXISTING PANEL A.
4. PROVIDE 2#12 AND 1#12GND IN ¾"C TO EXISTING SPARE BREAKER IN EXISTING PANEL B.
5. WIREMOLD 3000 WITH DUPLEX OUTLET 24"O.C. CONNECT TO SPARE 1P–20A BREAKER IN PANEL A.
6. JUNCTION BOX ABOVE CEILING WITH 120V CIRCUIT FOR CONNECTION TO VAV BOXES. PROVIDE 2#12 AND 1#12GND IN ¾"C TO SPARE 1P–20A BREAKER IN PANEL A OR B.
7. NORMAL AND EMERGENCY 480V FEEDERS RELOCATED ABOVE CEILING. COORDINATE EXACT LOCATION AND ELEVATIONS WITH NEW HVAC DUCT WORK. COORDINATE WITH TEMPORARY GENERATOR INSTALLATION AND CONNECTIONS.
8. TWO DOUBLE DUPLEX OUTLETS IN SURFACE BOXES BELOW RAISED FLOOR FOR RADIO EQUIPMENT.
9. FLUSH FLOOR BOX ADJACENT TO EQUIPMENT RACKS WITH TWO DUPLEX OUTLETS OUTLETS. DISCONNECT AND REMOVE EXISTING FLOOR BOXES AND CIRCUITS TO PANEL UPSC.

SPECIFIC NOTES:

10. FLUSH FLOOR BOX ADJACENT TO EQUIPMENT RACK WITH TWO NEMA 5–30R OUTLET. CONNECT TO PANELS AS NOTED WITH 2#10 AND 1#10 GND.
11. CONNECT FIXTURES TO EXISTING LIGHTING CIRCUIT SERVING EXISTING SPACE.
12. NEW DEVICES, CONNECT TO EXISTING CIRCUIT INTERCEPT AT NEAREST UNDISTURBED JUNCTION BOX. GROUP CIRCUITS AS INDICATED. PROVIDE 2#12, 1#12GND IN ¾"C FROM JUNCTION BOX TO DEVICE. CIRCUITS TO EXISTING PANELS FOR THIS DEVICE. DO NOT CONNECT TO 911 DISTRIBUTION.
13. EXISTING DEVICES TO REMAIN.
14. REINSTALL EXISTING FIXTURES IN THE NEW CEILING. SEE SPECIFIC NOTE #8 ON SHEET ED2.1.
15. INTERCEPT EXISTING CIRCUITS, PREVIOUSLY USED FOR LIGHTING, AT THE NEAREST UNDISTURBED JUNCTION BOX. PROVIDE 2#12, 1#12GND IN ¾"C FROM JUNCTION BOX TO DEVICE. CIRCUIT TO EXISTING PANELS FOR THIS FIXTURE. DO NOT CONNECT TO 911 DISTRIBUTION.
16. FIRE ALARM DEVICE SHALL BE CAPABLE OF VISUAL NOTIFICATION (STROBE) AND VOICE MESSAGES ONLY (NO ALARM TONE).
17. DISTRIBUTION BOX BELOW RAISED FLOOR – ROUTE CIRCUITS AS INDICATED VIA DISTRIBUTION BOX TO CALL CENTER STATIONS.
18. PROVIDE NEW 2"C ROUTED FROM PANEL MDP–A UP TO PENTHOUSE. REFER TO SHEET E5.1 DETAIL E APPROXIMATE CONDUIT ROUTE. REFER TO SHEET E2.2 DETAIL B FOR APPROXIMATE ROUTE IN THE PENTHOUSE. REFER TO SHEET E5.1 DETAIL B FOR BREAKER, FEEDER AND CONDUIT SIZE.

SPECIFIC NOTES:

19. PROVIDE N.O. SIGNAL CIRCUIT FROM UNIT TO TRANSFER SWITCHES CIRCUIT UPON FAILURE OF NORMAL POWER. CIRCUIT TO REMAIN CLOSED AFTER TRANSFER TO EMERGENCY POWER. CIRCUIT TO OPEN ONLY AFTER RETRANSFER TO NORMAL POWER. PURPOSE OF CIRCUIT IS TO DE ENERGIZE THE HUMIDIFIERS AND REHEAT COILS DURING EMERGENCY GENERATOR OPERATION.

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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VentureArchitects

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COUNTY BID # 109055

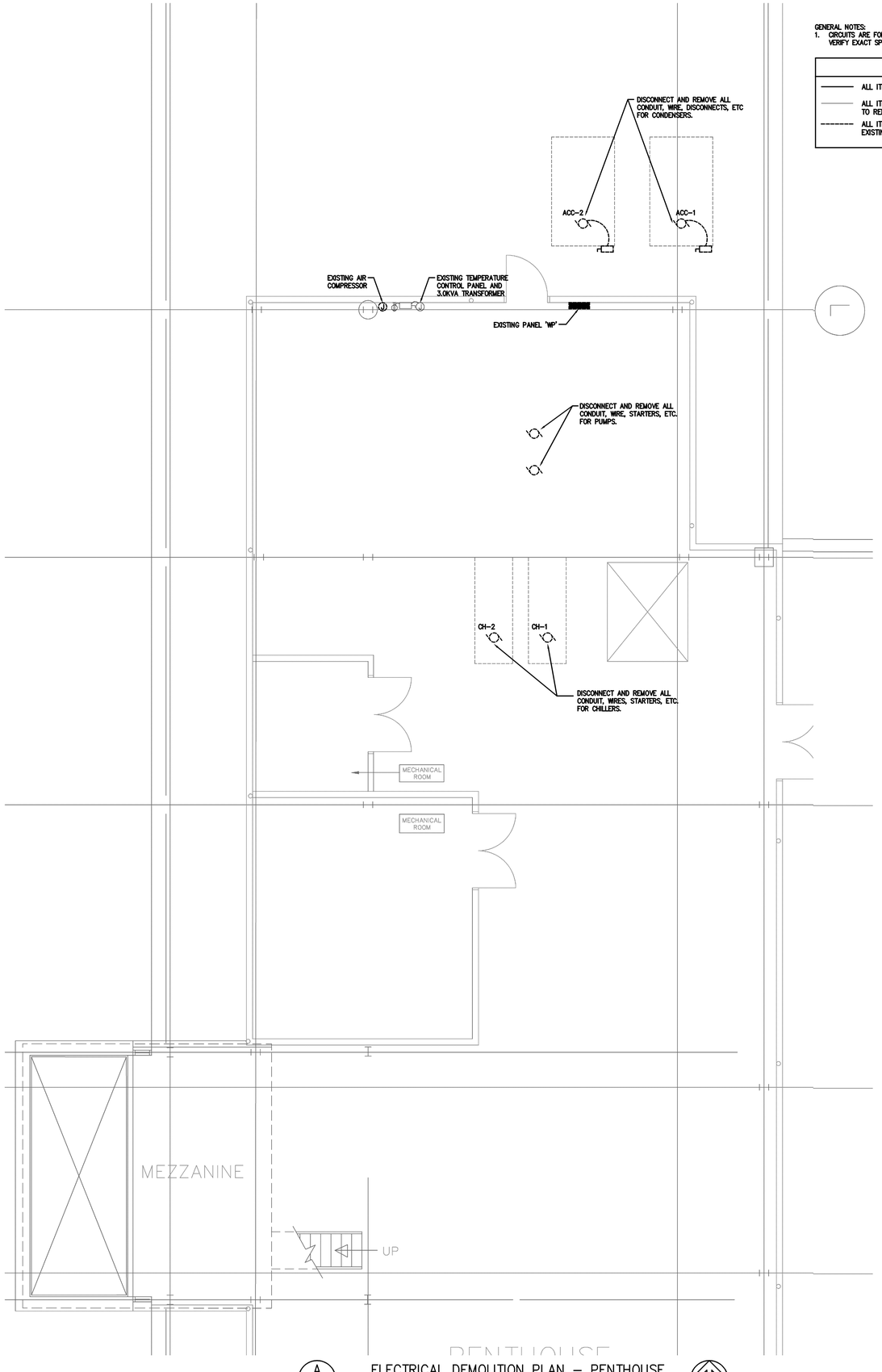
VA PROJECT # 208006

Sheet Name
ELECTRICAL
NEW WORK PLAN

Sheet No.
E2.1

GENERAL NOTES:
1. CIRCUITS ARE FOR GROUPING PURPOSES ONLY. FIELD VERIFY EXACT SPACES

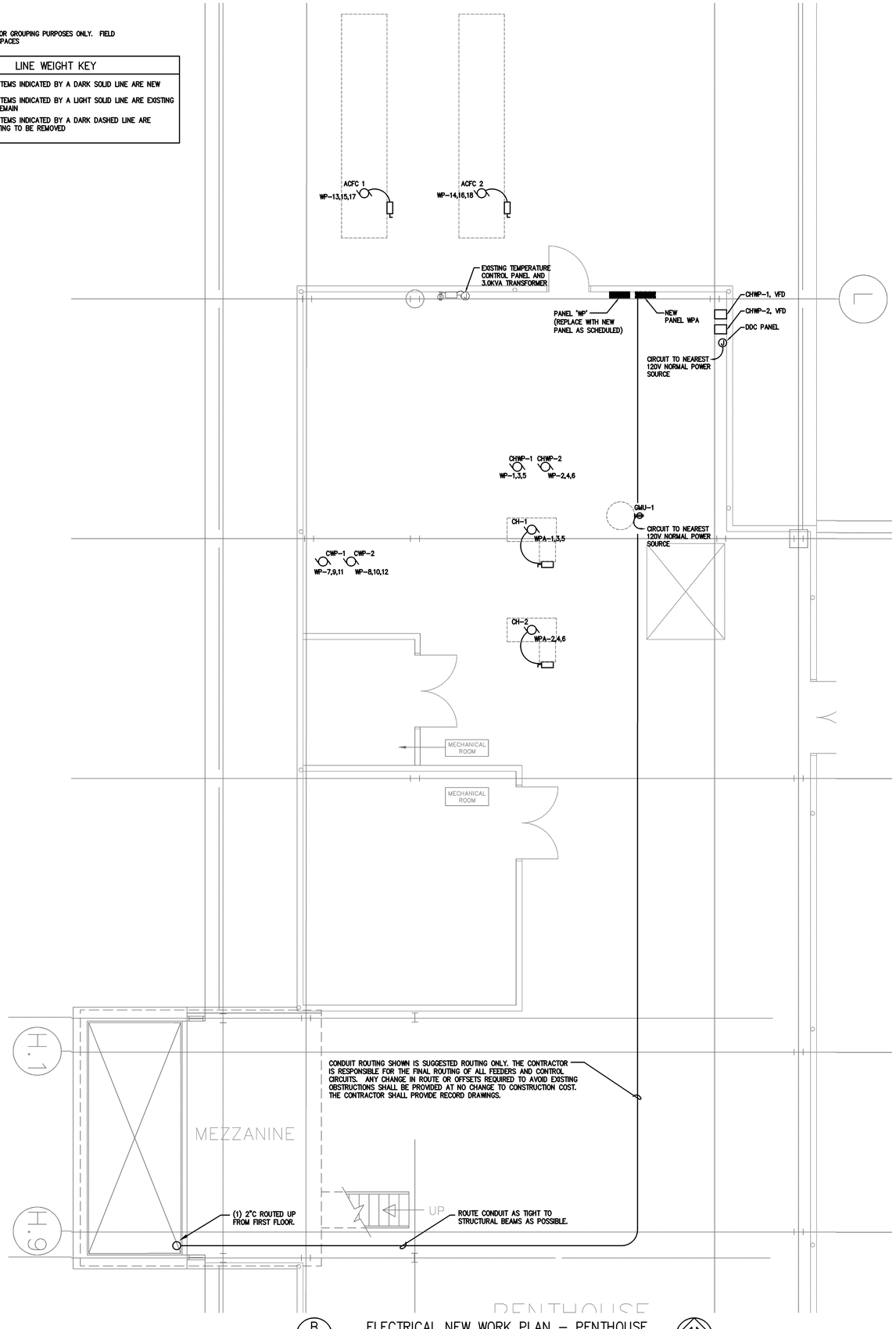
LINE WEIGHT KEY	
———	ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW
———	ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN
- - - - - -	ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED



A E2.2 ELECTRICAL DEMOLITION PLAN – PENTHOUSE

SCALE: 1/4" = 1'-0"

12" 0 1' 5' 10'



B E2.2 ELECTRICAL NEW WORK PLAN – PENTHOUSE

SCALE: 1/4" = 1'-0"

12" 0 1' 5' 10'

NOTE:
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HEI JOB NO. 09-8082A

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COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
ELECTRICAL DEMO + NEW WORK PLAN

Sheet No.
E2.2

LIGHTING FIXTURE SCHEDULE

MARK	FIXTURE TYPE	FIXTURE DIFFUSER	VOLT.	LAMP # & WATTS	LAMP TYPE	MOUNTING TYPE	MOUNTING HT.	MANUFACTURER NAME	MANUFACTURER SERIES NO.	REMARKS
A1	2 X 4 TROFFER	ACRYLIC PRISMATIC .125"	120	3-F32W	T8 SP 35K	RECESS.	CEILG.	LITHONIA METALUX COLUMBIA	2SP 2GP 4PS24	2-ELECTRONIC BALLAST < 10% THD, SWITCH INBOARD& OUTBOARD LAMPS, FUSING, RFL WHITE FINISH
B-1	BATTERY PACK		120	2-5.4w	MR24	SURFACE	WALL	LITHONIA METALUX COLUMBIA	ELM2	THERMOPLASTIC HOUSING MAINTENANCE-FREE LEAD -CALCIUM BATTERY MOUNT 18" BELOW CEILING
D1	2 X 4 TROFFER	DIRECT INDIRECT	120	2-F32W	T8 SP 35K	RECESS.	CEILG.	LITHONIA METALUX COLUMBIA	2AV	ELECTRONIC BALLAST < 10% THD, FUSING, RFL WHITE FINISH
D2	2 X 4 TROFFER	DIRECT INDIRECT	120	3-F32W	T8 SP 35K	RECESS.	CEILG.	LITHONIA METALUX COLUMBIA	2AV	ELECTRONIC BALLAST < 10% THD, FUSING, RFL WHITE FINISH
D3	2X2 TROFFER	DIRECT	120	2-F14W	T5 SP 35K	RECESS.	CEILG.	LEDALITE FOCAL POINT AXIS	9722	ELECTRONIC BALLAST < 10% THD, WHITE FINISH
I-1	1X4 INDUSTIAL	WIRE GUARD	120	2-F32W	T8 SP 35K	SURFACE	CEILG.	LITHONIA METALUX COLUMBIA	LA	PROVIDE CHAIN HANGERS. FIXTURES TO FINISH 8'-0" ABOVE FLOOR.. COORDINATE WITH DUCT WORK LOCATION
L1	6.5" DOWN-LIGHT	DOWN LIGHT	120	LED 51W	3000K	RECESS.	CEILG.	RENAISSANCE LIGHTING	ED02	
L2	4" OPEN DOWN-LIGHT	DOWN LIGHT	120	LED 29W	3000K	RECESS.	CEILG.	RENAISSANCE LIGHTING	ED04	
L3	4" OPEN DOWN-LIGHT	WALL WASH	120	LED 29W	3000K	RECESS.	CEILG.	RENAISSANCE LIGHTING	ED04	
S1	STEP LIGHT	LOUVER FACE	120	LEC .5W	3000K	RECESS.	WALL	KENALL	MSL	MOUNT 18" ABOVE FLOOR
X1	EXIT SIGN SINGLE FACE	RED	120	LED	LED	UNIV.	CEILING	LITHONIA SURE-LITES PRESCOLITE	LESW CAX EDC	DIE-CAST ALUMINUM WHITE HOUSING, BATTERY & CHARGER,

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR TRIM TYPES, COORDINATE WITH REFLECTED CEILING PLANS

DISCONNECT SWITCH AND STARTER SCHEDULE

MARK	LOAD	DISC SW	STAR-TER	VOLTS	PHASE	HP	VA	AMPS	SW	FUSE	NEMA SIZE	STR TYPE	NEMA ENCL.	CONTROL	CONDUIT & WIRE
SF-1	AHU-1 SUPPLY FAN	HC	**	480	3	15.0	17,438	21.0	**	**	**	VFD			3/4",10,#12 GND, 3/4"C.
SF-2	AHU-2 SUPPLY FAN	HC	**	480	3	15.0	17,438	21.0	**	**	**	VFD			3/4",10,#12 GND, 3/4"C.
RF-1	AHU-1 RETURN FAN	HC	**	480	3	7.5	9,134	11.0	**	**	**	VFD			3/4",12,#12 GND, 3/4"C.
RF-2	AHU-2 RETURN FAN	HC	**	480	3	7.5	9,134	11.0	**	**	**	VFD			3/4",12,#12 GND, 3/4"C.
ACFC-1	CONDENSER 1	HC	HC	480	3	7.5	9,134	11.0	30.0	20.0	1.0	FBO		3P-30 MPMFDS	3/4",12,#12 GND, 3/4"C.
ACFC-2	CONDENSER 2	HC	HC	480	3	7.5	9,134	11.0	30.0	20.0	1.0	FBO		3P-30 MPMFDS	3/4",12,#12 GND, 3/4"C.
CWP-1	CONDENSER WATER PUMP 1	EC	EC	480	3	3.0	3,986	4.8	30.0	8.0	1.0	FVNR			3/4",12,#12 GND, 3/4"C.
CWP-2	CONDENSER WATER PUMP 2	EC	EC	480	3	3.0	3,986	4.8	30.0	8.0	1.0	FVNR			3/4",12,#12 GND, 3/4"C.
CH-1	CHILLER 1	HC	HC	480	3		51,651	62.2	---	110.0	---	FBO			3/4,1,#6 GND, 1"C.
CH-2	CHILLER 2	HC	HC	480	3		51,651	62.2	---	110.0	---	FBO			3/4,1,#6 GND, 1"C.
CRU-1	COMP. ROOM AC 1	HC	HC	480	3		6,975	8.4	---	---	---	FBO			3/4",10,#10 GND, 3/4"C.
CRU-2	COMP. ROOM AC 2	HC	HC	480	3		6,975	8.4	---	---	---	FBO			3/4",10,#10 GND, 3/4"C.
CRU-3	COMP. ROOM AC 3	HC	HC	480	3		6,975	8.4	---	---	---	FBO			3/4",10,#10 GND, 3/4"C.
HCP-1	HOT WATER PUMP 1	EC	EC	120	1	0.3	696	5.8	---	---	---	MMS			2,#12, 1,#12GRD, 3/4"C
HCP-2	HOT WATER PUMP 2	EC	EC	120	1	0.3	696	5.8	---	---	---	MMS			2,#12, 1,#12GRD, 3/4"C
AHU-T	TEMP AIR HANDLING UNIT 1	HC	HC	480	3		102,970	124.0	---	---	---	FBO		3P-200 MPMFDS	3/C2/0, 1,#6 GND, 1 1/2"C.
H-1	HUMIDIFIER 1	EC	HC	480	3		21,009	25.3	---	---	---	FBO		3P-60A	3,#6, 1,#10 GRD, 3/4"C.
H-2	HUMIDIFIER 2	EC	HC	480	3		21,009	25.3	---	---	---	FBO		3P-60A	3,#6, 1,#10 GRD, 3/4"C.
GMU-1	GYLCOL MAKE-UP UNIT	EC	HC	120	1	0.3	864	7.2	---	---	---	FBO		OUTLET RECEPTACLE	2,#12, 1,#12GRD, 3/4"C
CHWP-1	CHILLED WATER PUMP	HC	HC	480	3	3.0	3,986	4.8	**	**	**	VFD			3,#12, 1,#12GRD, 3/4"C
CHWP-2	CHILLED WATER PUMP	HC	HC	480	3	3.0	3,986	4.8	**	**	**	VFD			3,#12, 1,#12GRD, 3/4"C

*ELECTRICAL CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH CONTRACTOR SUPPLYING EQUIPMENT PRIOR TO ALL TRADES ORDERING EQUIPMENT TO ENSURE THE PROPER SELECTION AND COST IMPLICATIONS OF EQUIPMENT SELECTION. COSTS INCURRED DUE TO CHANGES SHALL BE DEFERRED TO THE TRADE SUPPLYING THE EQUIPMENT.
**CONSULT VFD SUPPLIER FOR PROPER SWITCH/FUSE SIZING.
FBO=FURNISHED BY OTHERS, VFD=VARIABLE SPEED DRIVE BY EC, MMS=MANUAL MOTOR STARTER, FVNR=FULL VOLTAGE NON REVERSING
HC=HEATING CONTRACTOR, EC=ELECTRICAL CONTRACTOR

EMERGENCY DISTRIBUTION PANEL SCHEDULE

NAME	VOLTAGE	PHASE	WIRE	OCP	
EXISTING MDP-A	480	3	4	BREAKER	
BREAKER NO.	FRAME AMPS	TRIP AMPS	TCL VA	DEMAND VA	LOAD SERVED	REMARKS
1	250	110	10,839	10,821	TRANS A	REUSE EXISTING BKR
2	100	100	37,212	35,352	PANEL WP	REUSE EXISTING BKR
3	100	15	6,975	6,627	CRU 1	REUSE EXISTING BKR
4	100	70	33,200	31,540	PANEL R	REUSE EXISTING BKR
5	100	15	6,975	6,627	CRU 2	REUSE EXISTING BKR
6	100	15	**	**	CRU 3	REUSE EXISTING BKR
7	100	40	21,009	19,959	HUM 1	REUSE EXISTING BKR
8	100	40	**	**	HUM 2	REUSE EXISTING BKR
9	100	100	26,573	25,244	PANEL M	PROVIDE NEW BKR
10	100	70	4,500	4,500	UPS A	PROVIDE NEW BKR
11	100	60	**	**	UPS A	PROVIDE NEW BKR
12	250	175	**	**	TEMP AHU	PROVIDE NEW BKR
13	250	200	103,302	98,137	PANEL WPA	PROVIDE NEW BKR
14	100	40				EXISTING SPARE
AIC =	42,000	TOTALS:	250,585	238,805	TCL A =	302
BUS SIZE =	400	MAIN =	400A MCB		DEMAND A =	288

** NON CONCURRENT LOAD
EXISTING PANEL IS SQUARE D I-LINE TYPE.
REMOVE 1 EXISTING 3P/30A BREAKER AND INSTALL NEW BREAKERS IN EXISTING SPACE.
REMOVE 1 EXISTING 3P/15A BREAKER AND INSTALL NEW BREAKER IN EXISTING SPACE.

EMERGENCY DISTRIBUTION PANEL SCHEDULE

NAME	VOLTAGE	PHASE	WIRE	OCP	
MDP-B	208	3	4	BREAKER	
BREAKER NO.	FRAME AMPS	TRIP AMPS	TCL VA	DEMAND VA	LOAD SERVED	REMARKS
1	250	200	10,300	10,150	PANEL B	EXISTING
2	250	175	27,465	27,465	UPS B	AC INPUT
3	250	150	**	**	UPS B	BY PASS
4	100	20				SPACE
5	100	20				SPACE
6	100	20				SPACE
AIC =	42,000	TOTALS:	37,765	37,615	TCL A =	105
BUS SIZE =	400	MAIN =	MLO		DEMAND A =	105

16435

** NON CONCURRENT LOAD

244,850 total demand
180,229 less humidifier & 1/2 of cooling.

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
EXISTING PANEL A (LEFT)	120/ 208	3	4	225A	MLO	22,000
	CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN					SURFACE
NEMA 1	COPPER GROUND BAR					DOUBLE MAIN LUGS

LOAD	CODE	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	CODE	LOAD
WORK STATION (WS) N11	R	1	20	1	465							
					465			2	20	1	R	WORKSTATION (WS) N4
WORK STATION (WS) N12	R	1	20	3		465						
						465		4	20	1	R	WORKSTATION (WS) N3
WORKSTATION (WS) N 14	R	1	20	5			465					
							465	6	20	1	R	WORKSTATION (WS) N6
WS N 16	R	1	20	7	465							
					465			8	20	1	R	WS N5
WS N13	R	1	20	9		465						
						465		10	20	1	R	WS N1
WS N15	R	1	20	11			465					
							465	12	20	1	R	WS N2
WS N17	R	1	20	13	465							
					465			14	20	1	R	WS N8
WS N 18	R	1	20	15		465						
						465		16	20	1	R	WS N 7
WS N 19	R	1	20	17			465					
							465	18	20	1	R	WS N10
WS N 21	R	1	20	19	465							
								20	20		R	GENERAL OUTLET
WS N 20	R	1	20	21		465						
								22	20	3	R	VAV JUNC BOX
WS N 9	R	1	20	23			465					
							348	24	15	1	M	HCP-1
LIGHTING	L		20	25	725							
								26	20	1	M	HCP-2
EXISTING LIGHTING	L	3	20	27								
								28	20	1	L	EXISTING LIGHTING
EXISTING LIGHTING	L		20	29								
								30	20	1	L	EXISTING LIGHTING
EXISTING LIGHTING	L	1	20	31								
								32	20	1	L	EXISTING LIGHTING
EXISTING OUTLETS	R	1	20	33								
								34	20	1	R	EXISTING OUTLETS
EXISTING OUTLETS	R	1	20	35								
								36	20	1	R	EXISTING OUTLETS
EXISTING OUTLETS	R	1	20	37								
								38	20	1	R	EXISTING OUTLETS
EXISTING OUTLETS	R	1	20	39								
								40	20	1	R	EXISTING OUTLETS
EXISTING OUTLETS	R	1	20	41								
								42	20	1	R	EXISTING OUTLETS
3,580	PHASE A		RECEPT-VA @		per NEC		9,785	TCL VA				10,838
3,255	PHASE B		LIGHTS-VA @		100%		725	DEMAND VA				10,821
3,603	PHASE C		MOTOR-VA @		95%		331	HI-PH CONN. A				33
10,838	TCL		KITCHEN-VA @		80%			DEMAND A				30

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
UPS PANEL UA	120/ 208	3	4	100A	MLO	22,000
	CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN					SURFACE
NEMA 1	COPPER GROUND BAR,					

LOAD	CODE	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	CODE	LOAD
	R		125	1								
STATIC TRANS SW	R	3	125	3	500							
								2	20	1	R	RADIO ROOM OUTLETS
	R		125	5		500						
								4	20	1	R	RADIO ROOM OUTLETS
COMPUTER ROOM OUTLETS	R	1	20	7	500							
					500							
							500	6	20	1	R	COMPUTER ROOM OUTLETS
COMPUTER ROOM OUTLETS	R	1	20	9		500						
						1,000		8	20	1	R	COMPUTER ROOM OUTLETS
COMPUTER ROOM OUTLETS	R	1	20	11			500					
								10	30	1	R	COMPUTER ROOM OUTLETS
SPARE	R	1	20	13								
								12	20	1	R	SPARE
SPARE	R	1	20	15								
								14	20	1	R	SPARE
SPARE	R	1	20	17								
								16	20	1	R	SPARE
	R	1	20	19								
								18	20	1	R	SPARE
	R	1	20	21								
								20	20	1	R	
	R	1	20	23								
								22	20	1	R	
	R	1	20	25								
								24	20	1	R	
	R	1	20	27								
								26	20	1	R	
	R	1	20	29								
								28	20	1	R	
	R	1	20	31								
								30	20	1	R	
	R	1	20	33								
								32	20	1	R	
	R	1	20	35								
								34	20	1	R	
	R	1	20	37								
								36	20	1	R	
	R	1	20	39								
								38	20	1	R	
	R	1	20	41								
								40	20	1	R	
1,500	PHASE A		RECEPT-VA @		per NEC		4,500	TCL VA				4,500
2,000	PHASE B		LIGHTS-VA @		100%			DEMAND VA				4,500
1,000	PHASE C		MOTOR-VA @		95%			HI-PH CONN. A				17
4,500	TCL		KITCHEN-VA @		80%			DEMAND A				13

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
UPS PANEL UC	120/ 208	3	4	225A	MLO	22,000
	CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN					SURFACE
NEMA 1	COPPER GROUND BAR,					

LOAD	CODE	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	CODE	LOAD
WORK STATION (WS) N11	R	1	20	1	925							
					925			2	20	1	R	WORKSTATION (WS) N4
WORK STATION (WS) N12	R	1	20	3		925						
						925		4	20	1	R	WORKSTATION (WS) N3
WORKSTATION (WS) N 14	R	1	20	5			925					
							925	6	20	1	R	WORKSTATION (WS) N6
WS N 16	R	1	20	7	925							
					925			8	20	1	R	WS N5
WS N13	R	1	20	9		925						
						925		10	20	1	R	WS N1
WS N15	R	1	20	11			925					
							925	12	20	1	R	WS N2
WS N17	R	1	20	13	925							
					925			14	20	1	R	WS N8
WS N 18	R	1	20	15		925						
						925		16	20	1	R	WS N 7
WS N 19	R	1	20	17			925					
							925	18	20	1	R	WS N10
WS N 21	R	1	20	19	925							
					500			20	20	1	R	RADIO ROOM OUTLETS
WS N 20	R	1	20	21		925						
						500		22	20	1	R	RADIO ROOM OUTLETS
WS N 9	R	1	20	23			465					
							500	24	20	1	R	RADIO ROOM OUTLETS
	R		30	25	1,000							
					500			26	20	1	R	RADIO ROOM OUTLETS
PANEL T	R	2	30	27		1,000						
						500		28	20	1	R	MOTOROLA OUTLET
SPARE	R	1	20	29								
							500	30	20	1	R	MOTOROLA OUTLET
SPARE	R	1	20	31								
								32	20	1	R	SPARE
SPARE	R	1	20	33								
								34	20	1	R	SPARE
SPACE WITH BUS	R	1	20	35								
								36	20	1	R	SPACE WITH BUS
SPACE WITH BUS	R	1	20	37								
								38	20	1	R	SPACE WITH BUS
SPACE WITH BUS	R	1	20	39								
								40	20	1	R	SPACE WITH BUS
SPACE WITH BUS	R	1	20	41								
								42	20	1	R	SPACE WITH BUS
8,475	PHASE A		RECEPT-VA @		per NEC		16,983	TCL VA				23,985
8,475	PHASE B		LIGHTS-VA @		100%			DEMAND VA				16,983
7,015	PHASE C		MOTOR-VA @		95%			HI-PH CONN. A				70
23,985	TCL		KITCHEN-VA @		80%			DEMAND A				47

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
EXISTING WP	277/ 480	3	4	EXISTING	EXISTING	EXISTING
	CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN					SURFACE MOUNT
NEMA 1	COPPER GROUND BAR					EXISTING

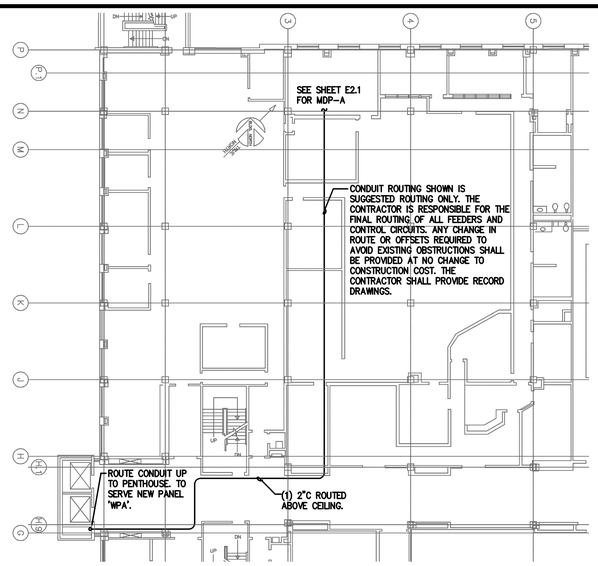
LOAD	CODE	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	CODE	LOAD
CHWP-1	M	3	15	1	1,329							
					1,329			2	15	3	M	CHWP-2
	M	3	15	3		1,329						
						1,329		4	15	3	M	
	M	3	15	5			1,329					
							1,329	6	15	3	M	
CWP-1	M	3	15	7	1,329							
					1,329			8	15	3	M	CWP-2
	M	3	15	9		1,329						
						1,329		10	15	3	M	
	M	3	15	11			1,329					
							1,329	12	15	3	M	
ACFC-1	M	3	15	13	3,045							
					3,045			14	15	3	M	ACFC-2
	M	3	15	15		3,045						
						3,045		16	15	3	M	
	M	3	15	17			3,045					
							3,045	18	15	3	M	
3kVA TRANS	M	2	15	19	1,500							
								20	20	3	M	EXISTING SPARE
	M	2	15	21		1,500						
								22	20	3	M	
EXISTING SPACE	M			23								
								24	20	3	M	
EXISTING SPARE	M		60	25								
								26	60	3	M	EXISTING SPARE
	M		60	27								
								28	60	3	M	
	M		60	29								
								30	60	3	M	
12,904	PHASE A		RECEPT-VA @		per NEC		--	TCL VA				37,212
12,904	PHASE B		LIGHTS-VA @		100%		--	DEMAND VA				35,352
11,404	PHASE C		MOTOR-VA @		95%		35,352	HI-PH CONN. A				47
37,212	TCL		KITCHEN-VA @		80%		--	DEMAND A				43

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
EXISTING PANEL B (LEFT)	120/ 208	3	4	225A	MLO	22,000
	CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN					FLUSH MOUNTING TRIM
NEMA 1	COPPER GROUND BAR					DOUBLE MAIN LUGS

LOAD	CODE	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	CODE	LOAD
WORKSTATION (WS) N4	R	1	20	1	465							
					465			2	20	1	R	WORK STATION (WS) N11
WORKSTATION (WS) N3	R	1	20	3		465						
						465		4	20	1	R	WORK STATION (WS) N12
WORKSTATION (WS) N6	R	1	20	5			465					
							465	6	20	1	R	WORKSTATION (WS) N 14
WS N5	R	1	20	7	465							
					465			8	20	1	R	WS N 16
WS N1	R	1	20	9		465						
						465		10	20	1	R	WS N13
WS N2	R	1	20	11			465					
							465	12	20	1	R	WS N15
WS N8	R	1	20	13	465							
					465			14	20	1	R	WS N17
WS N 7	R	1	20	15		465						
						465		16	20	1	R	WS N 18
WS N10	R	1	20	17			465					
							465	18	20	1	R	WS N 19
VAV JUNC BOX	R	1	20	19	500							
					465			20	20	1	R	WS N 21
EXISTING LIGHTING	L	1	20	21								
						465		22	20	1	R	WS N 20
EXISTING LIGHTING	L	1	20	23								
							500	24	20	1	R	F.A.C.P.
EXISTING LIGHTING	L		125	25								
					0			26	110		R	EXISTING LIGHTING
EXISTING OUTLET	R	3	125	27								
						0		28	110	3	R	EXISTING OUTLET
EXISTING OUTLET	R		125	29								
							0	30	110		R	EXISTING OUTLET
EXISTING OUTLET	R	1	20	31								
								32	20	1	R	EXISTING OUTLET
EXISTING OUTLET	R	1	20	33								
								34	20	1	R	EXISTING OUTLET
EXISTING OUTLET	R	1	20	35								
								36	20	1	R	EXISTING OUTLET
EXISTING OUTLET	R	1	20	37								
								38	20	1	R	EXISTING OUTLET
EXISTING OUTLET	R	1	20	39								
								40	20	1	R	EXISTING OUTLET
EXISTING OUTLET	R	1	20	41								
								42	20	1	R	EXISTING OUTLET
3,755	PHASE A		RECEPT-VA @		per NEC		10,150	TCL VA				10,300
3,255	PHASE B		LIGHTS-VA @		100%		--	DEMAND VA				10,150
3,290	PHASE C		MOTOR-VA @		95%		--	HI-PH CONN. A				31
10,300	TCL		KITCHEN-VA @		80%		--	DEMAND A				28

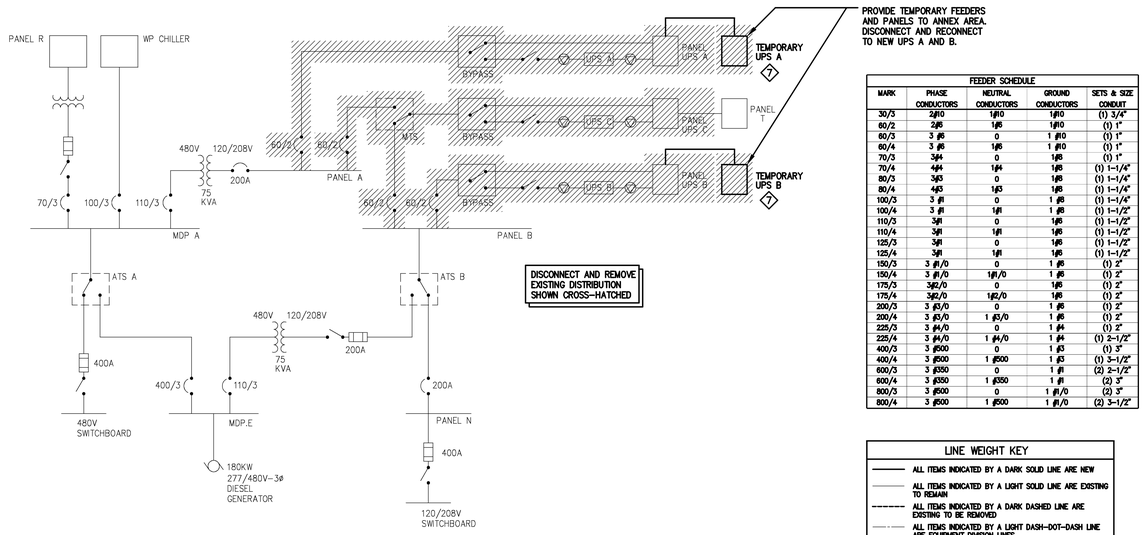
BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
UPS PANEL UB	120/ 208	3	4	100A	MLO	22,000
	CODE: L=LIGHTING, R=RECEPTACLES, M=MOTORS, K=KITCHEN					SURFACE
NEMA 1	COPPER GROUND BAR,					

LOAD	CODE	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	CODE	LOAD
RADIO ROOM OUTLETS	R	1	20	1	500							
								2	125		R	
RADIO ROOM OUTLETS	R	1	20	3		500						STATIC TRANS SW
								4	125	3	R	
COMPUTER ROOM OUTLETS	R	1	20	5			500					
								6	125		R	
COMPUTER ROOM OUTLETS	R	1	20	7	500							
								8	20	1	R	COMPUTER ROOM OUTLETS
COMPUTER ROOM OUTLETS	R	1	20	9		500						
						1,000		10	30	1	R	COMPUTER ROOM OUTLETS
SPARE	R	1	20	11			500					
								12	20	1	R	SPARE
SPARE	R	1	20	13								
								14	20	1	R	SPARE
SPARE	R	1	20	15								
								16	20	1	R	SPARE
SPARE	R	1	20	17								
								18	20	1	R	SPARE
	R	1	20	19								
								20	20	1	R	
	R	1	20	21								
								22	20	1	R	
	R	1	20	23								
								24	20	1	R	
	R	1	20	25								
								26	20	1	R	
	R	1	20	27								
								28	20	1	R	
	R	1	20	29								
								30	20	1	R	
	R	1	20	31								
								32	20	1	R	
	R	1	20	33								
								34	20	1	R	
	R	1	20	35								
								36	20	1	R	
	R	1	20	37								
								38	20	1	R	
	R	1	20	39								
								40	20	1	R	
	R	1	20	41								
								42	20	1	R	
1,000	PHASE A		RECEPT-VA @		per NEC		3,500	TCL VA			



E E5.1 PARTIAL FIRST FLOOR ELECTRICAL PLAN

1/16"=1'-0"

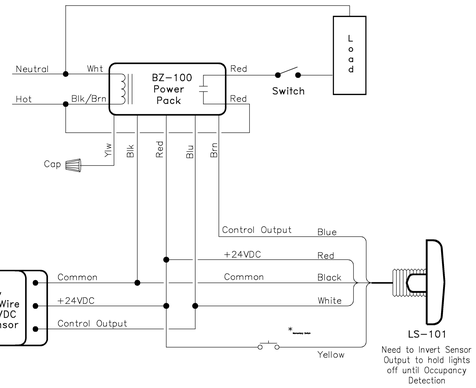


A E5.1 ELECTRICAL ONE-LINE DIAGRAM - DEMOLITION

NO SCALE

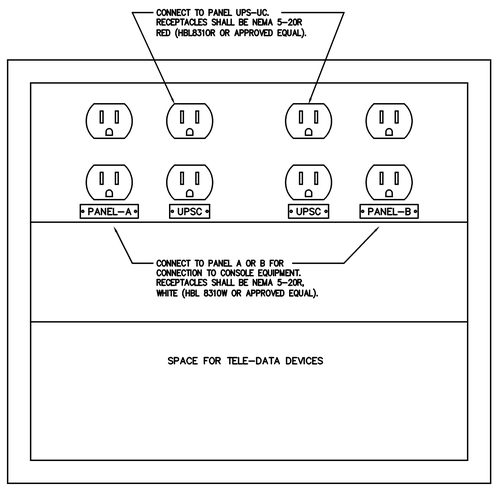
FEEDER SCHEDULE				
MARK	PHASE CONDUCTORS	NEUTRAL CONDUCTORS	GROUND CONDUCTORS	SETS & SIZE CONDUIT
30/3	3#10	1#10	1#10	(1) 3/4"
60/2	2#6	1#6	1#10	(1) 1"
60/3	3 #6	0	1 #10	(1) 1"
60/4	3 #6	1#6	1 #10	(1) 1"
70/3	3#4	0	1#8	(1) 1"
70/4	4#4	1#4	1#8	(1) 1-1/4"
80/3	3#3	0	1#8	(1) 1-1/4"
80/4	4#3	1#3	1#8	(1) 1-1/4"
100/3	3 #1	0	1 #8	(1) 1-1/4"
100/4	3 #1	1#1	1 #8	(1) 1-1/2"
110/3	3#1	0	1#8	(1) 1-1/2"
110/4	3#1	1#1	1#8	(1) 1-1/2"
125/3	3#1	0	1#8	(1) 1-1/2"
125/4	3#1	1#1	1#8	(1) 1-1/2"
150/3	3 #1/0	0	1 #8	(1) 2"
150/4	3 #1/0	1#1/0	1 #8	(1) 2"
175/3	3#2/0	0	1#8	(1) 2"
175/4	3#2/0	1#2/0	1#8	(1) 2"
200/3	3 #3/0	0	1 #8	(1) 2"
200/4	3 #3/0	1 #3/0	1 #8	(1) 2"
225/3	3 #4/0	0	1 #4	(1) 2"
225/4	3 #4/0	1 #4/0	1 #4	(1) 2-1/2"
400/3	3 #500	0	1 #3	(1) 3"
400/4	3 #500	1 #500	1 #3	(1) 3-1/2"
600/3	3 #350	0	1 #1	(2) 2-1/2"
600/4	3 #350	1 #350	1 #1	(2) 3"
800/3	3 #500	0	1 #1/0	(2) 3"
800/4	3 #500	1 #500	1 #1/0	(2) 3-1/2"

LINE WEIGHT KEY
ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW
ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN
ALL ITEMS INDICATED BY A DARK DASHED LINE ARE EXISTING TO BE REMOVED
ALL ITEMS INDICATED BY A LIGHT DASH-DOT-DASH LINE ARE EQUIPMENT DIVISION LINES



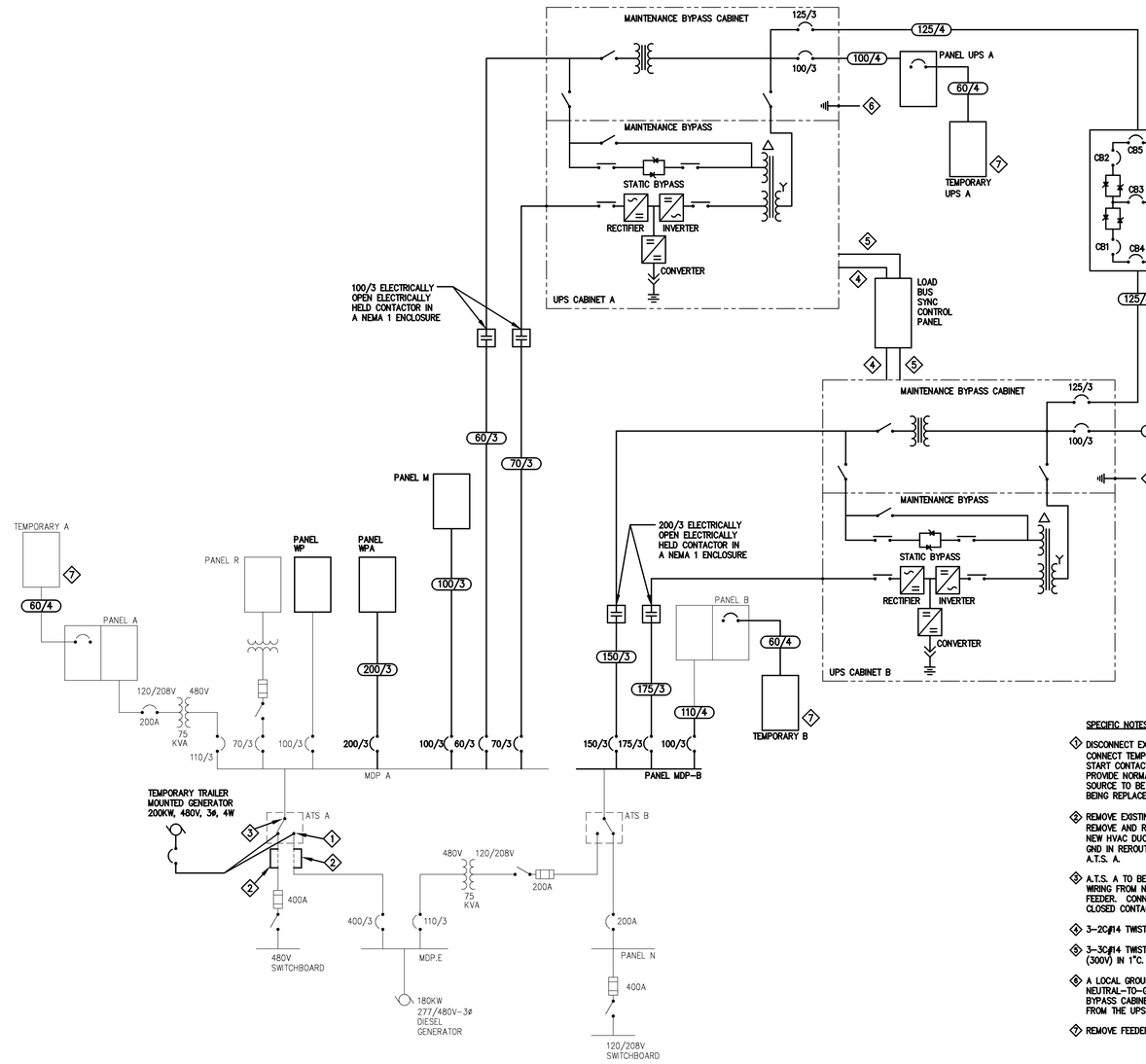
C E5.1 TYPICAL WIRING DIAGRAM FOR A PHOTOSENSOR WITH OPTIONAL OCCUPANCY SENSOR

NO SCALE



D E5.1 ACCESS FLOOR DELIVERY MODULE IN ALL OTHER LOCATIONS

NO SCALE



B E5.1 ELECTRICAL ONE-LINE DIAGRAM - NEW WORK

NO SCALE

SPECIFIC NOTES:

1. DISCONNECT EXISTING FEEDER WIRING FROM EMERGENCY TERMINALS AND CONNECT TEMPORARY GENERATOR FEEDER. PROVIDE 2 #12 IN ¾"C FROM START CONTACTS OF EXISTING A.T.S. A TO TEMPORARY GENERATOR. PROVIDE NORMALLY CLOSED RELAY CONNECTED TO EMERGENCY POWER SOURCE TO BE USED AS START CONTACTS WHEN NORMAL FEEDER IS BEING REPLACED.
2. REMOVE EXISTING 4 #500MCM AND 1 #1/ 0 GND FROM EXISTING 3 ½"C. REMOVE AND REROUTE EXISTING 3 ½" RIGID CONDUIT TO COORDINATE WITH NEW HVAC DUCT WORK INSTALLATION. PROVIDE 4 #500MCM AND 1 #1/ 0 GND IN REROUTED CONDUIT AND RECONNECT TO EMERGENCY TERMINALS OF A.T.S. A.
3. A.T.S. A TO BE OPERATED IN TEST MODE. DISCONNECT EXISTING FEEDER WIRING FROM NORMAL TERMINALS AND CONNECT TEMPORARY GENERATOR FEEDER. CONNECT 2 #12 FROM A.T.S. A START CONTACTS TO NORMALLY CLOSED CONTACTS OF RELAY AS NOTED IN NOTE #1 ABOVE.
4. 3-2C#14 TWISTED STRANDED PAIR (LOW VOLTAGE) IN 3/4" C.
5. 3-3C#14 TWISTED STRANDED AND 1-2C#14 TWISTED STRANDED PAIR (300V) IN 1"C.
6. A LOCAL GROUNDING ELECTRODE CONDUCTOR MUST BE INSTALLED AND A NEUTRAL-TO-GROUND BOND MUST BE INSTALLED IN THE MAINTENANCE BYPASS CABINET. THE NEUTRAL-TO-GROUND BOND MUST BE REMOVED FROM THE UPS MODULE.
7. REMOVE FEEDER AND PANEL FOLLOWING COMPLETION OF 911 CENTER.

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

Henneman Engineering Inc.
Madison:
1232 Fourier Drive, Suite 101
Madison, Wisconsin 53717-1960
Email: info@henneman.com
Website: http://www.henneman.com
T 608.833.7000
F 608.833.6996
HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No. Description Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

1st Floor
City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

Venture Architects

Venture Architects
325 W. Highland
Milwaukee, WI 53203
Telephone 414-271-3395

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
ELECTRICAL ONE-LINE DIAGRAM

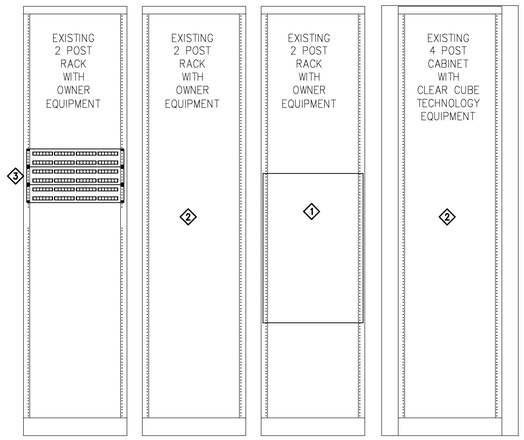
Sheet No.
E5.1

TELECOMMUNICATIONS SYSTEMS

SYMBOL	DESCRIPTION
X ▼	TELECOMMUNICATIONS OUTLET, X = FACEPLATE CONFIGURATION
X ▼	TELECOMMUNICATIONS OUTLET ABOVE COUNTER, X = FACEPLATE CONFIGURATION
S ▼	SPECIAL OUTLET, SEE SHEET NOTES
▼	NEW TELECOMMUNICATIONS FLOOR DELIVERY MODULE – SEE FACEPLATE DETAILS
▼	NEW TELECOMMUNICATIONS FLOOR DELIVERY MODULE FOR RADIO EQUIPMENT – SEE FACEPLATE DETAILS
⊽	TELECOMMUNICATIONS OUTLET, TO BE REMOVED
▽ ETR	TELECOMMUNICATIONS OUTLET, EXISTING TO REMAIN
AP	WIRELESS ACCESS POINT – (1) DATA JACK
⊠◀	TELE/POWER POLE
☒◀	SURFACE MOUNTED RACEWAY AND BOX FOR TELECOMMUNICATIONS CABLES
☰	EXISTING RELAY RACK
▭◁	CLOSED CIRCUIT TV CAMERA, (1) DATA JACK
CR	CARD READER
◙ DR	DOOR RELEASE
▨ AP	ANNUNCIATOR PANEL

LEGEND

D = DATA (CAT 6) TERMINATE IN COMPUTER EQUIPMENT ROOM 120
V = VOICE (CAT 6) TERMINATE IN TELEPHONE EQUIPMENT ROOM 121
B = BLANK
R = RADIO (CAT 6) TERMINATE IN RADIO EQUIPMENT ROOM 117
REP = PROPRIETARY 7 PAIR RADIO CABLE TERMINATE IN RADIO EQUIPMENT ROOM 117
REP12 = (1) 12 PAIR COMMUNICATIONS CABLE TERMINATE IN RADIO EQUIPMENT ROOM 117



C / T2.1 EXISTING RACK ELEVATIONS

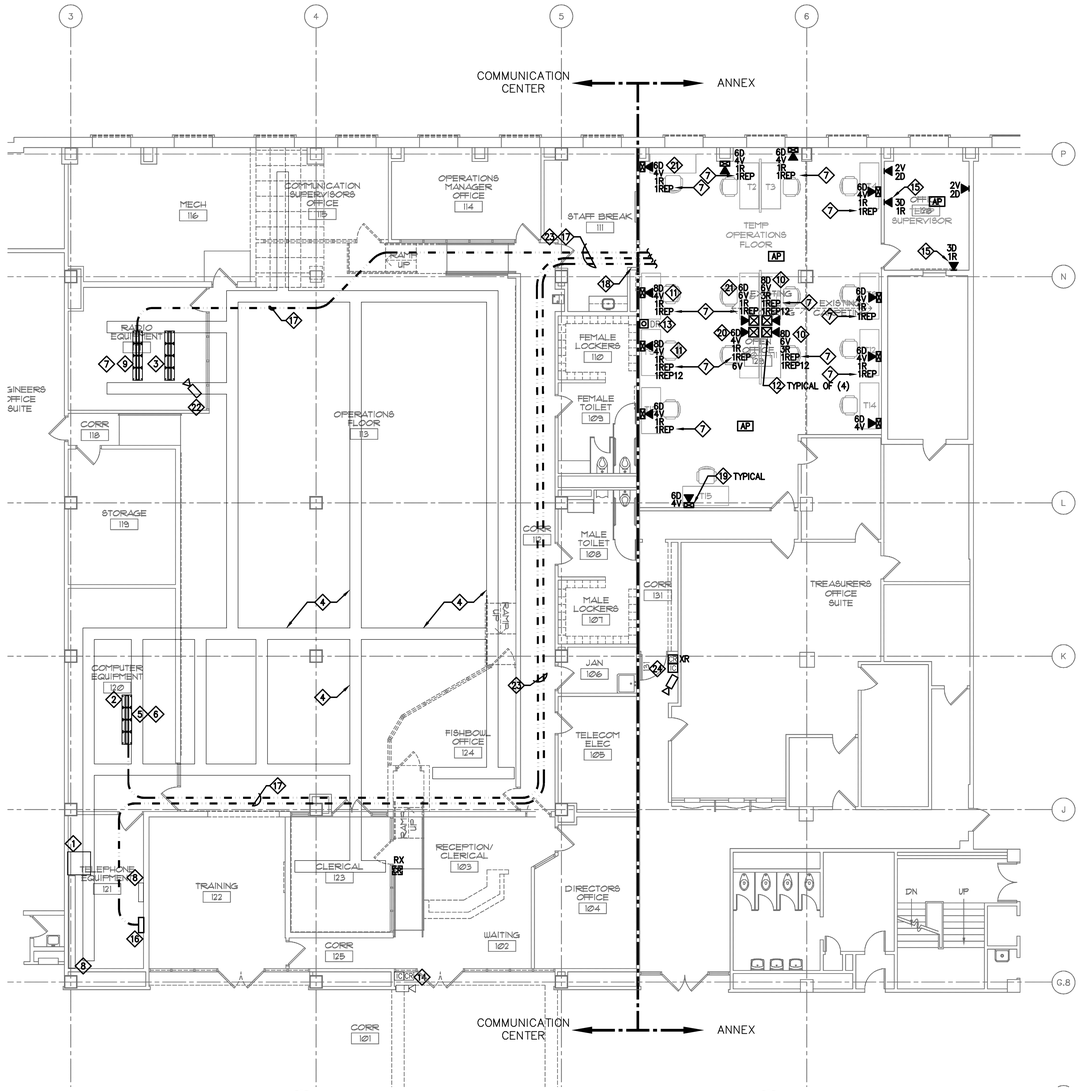
NO SCALE

GENERAL NOTES:

1. VERIFY EXACT NEW PATCH PANEL LOCATION IN EXISTING RACK.

DETAIL NOTES:

1. SPACE RESERVED FOR FUTURE EQUIPMENT. DO NOT USE FOR TEMPORARY PHASE.
2. THIS RACK IS FULL OF OWNER'S EQUIPMENT. DO NOT DISTURB DURING ANY PART OF THIS PROJECT.
3. (3) NEW 48 PORT ANGLED PATCH PANELS FOR DATA CONNECTIONS TO TEMPORARY ANNEX SPACE. FIELD VERIFY THAT THE PATCH PANELS CAN BE PLACED IN THIS SPACE. COORDINATE WITH MIKE BARGER (608) 266–4295. PROVIDE COSTS FOR MOVING ANY EXISTING EQUIPMENT IF REQUIRED TO ACCOMMODATE NEW PATCH PANELS



A / TT1.1 TELECOMMUNICATIONS TEMPORARY PLAN

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

12"0 1' 5' 10' 20'

GENERAL NOTES:

1. "XR" INDICATES EXISTING DEVICE RELOCATED TO THIS LOCATION FOR THIS PHASE OF CONSTRUCTION.

2. "RX" INDICATES DEVICE TO BE RELOCATED FROM THIS LOCATION TO NEW LOCATION LABELED "XR" FOR THIS PHASE OF CONSTRUCTION.

3. ALL COMMUNICATIONS CABLES FOR THIS TEMPORARY PHASE TO BE ROUTED FROM TELEPHONE EQUIPMENT ROOM, COMPUTER EQUIPMENT ROOM AND RADIO EQUIPMENT ROOM OVERHEAD AS INDICATED BY — — — — — LINES. FIELD COORDINATE ROUTES WITH OWNER TO KEEP EXISTING STATIONS OPERATIONAL AND TO BE ABLE TO KEEP LIVE DURING DEMOLITION AND NEW CONSTRUCTION PHASES IN COMMUNICATION CENTER.

4. FIELD COORDINATE LOCATION OF WIRELESS ACCESS POINT DATA CABLE WITH JEFF MEYER FROM DAN COUNTY IT (608) 266–9110 BEFORE BEGINNING ROUGH–IN. UNITS AND CABLING TO BE SURFACE MOUNTED.

5. ALL TELECOMMUNICATIONS AND RADIO CABLING IN THE TEMPORARY ANNEX SPACE WILL BE SURFACE MOUNTED. DO NOT DISTURB THE EXISTING CEILINGS OR WALLS, IF IT BECOMES NECESSARY TO DISTURB THESE CONTACT OWNER, ARCHITECT AND ENGINEER BEFORE COMMENCING ANY WORK.

6. ALL BOXES AND CONDUITS ARE BY ELECTRICAL CONTRACTOR.

SHEET NOTES:

1. EXISTING AT&T 911 CIRCUITS FEEDING THE COMMUNICATIONS CENTER TO REMAIN.
2. EXISTING LOCATION OF COMPUTER AIDED DISPATCH SYSTEM TO REMAIN.
3. EXISTING LOCATION OF RADIO SERVICE EQUIPMENT TO REMAIN.
4. EXISTING UNDERFLOOR LOW VOLTAGE CABLE TRAY TO REMAIN.
5. EXISTING DANE COUNTY NETWORK RACK TO REMAIN.
6. EXISTING DOT MONITOR SWITCH TO REMAIN. (SAME RACK AS COUNTY NETWORK.)
7. SALVAGE EXISTING 7–PIN CABLE NOTED IN SHEET NOTE 15 ON SHEET TD2.1. ROUTE THESE CABLES FROM EXISTING RADIO EQUIPMENT RACK (SHEET NOTE 3) TO LOCATION SHOWN BY DESIGNATION "1REP." COORDINATE ROUTE AND TERMINATION WITH ALL EXISTING WORK STATIONS AND KEITH LIPPERT SO AS NOT TO DISRUPT OR DISTURB EXISTING WORK STATIONS OR RADIO EQUIPMENT. PROVIDE (1) NEW CAT 6 CABLE (DESIGNATION "1R") FROM RADIO ROOM TO EACH LOCATION. COIL A MINIMUM OF 15' OF CABLE AT RADIO ROOM WITH AN RJ–45 CONNECTOR TERMINATED ON THE END. THE RADIO SHOP WILL PUT THIS CABLE IN ITS FINAL LOCATION.
8. EXISTING TELECOMMUNICATIONS TERMINATIONS TO REMAIN.
9. EXISTING RACKS FOR RADIO SERVICE TO REMAIN. RACKS WILL BE USED IN A FUTURE PHASE. DO NOT FILL RACKS WITH EQUIPMENT.
10. THIS STATION TO BE CABLED FOR SUPERVISOR STATION. VERIFY WITH OWNER (CHAD FLECK (608) 283–2912) THAT THIS WILL BE THE TEMPORARY SUPERVISOR STATION BEFORE BEGINNING ANY ROUGH–IN.
11. THIS STATION TO BE CABLED FOR DATA STATION. VERIFY WITH OWNER (CHAD FLECK (608) 283–2912) THAT THIS WILL BE THE TEMPORARY DATA STATION BEFORE BEGINNING ANY ROUGH–IN.
12. POLE TO BE PROVIDED BY ELECTRICAL CONTRACTOR. FIELD COORDINATE LOCATIONS, CABLE ROUTES AND OTHER REQUIREMENTS WITH OWNER AND ELECTRICAL CONTRACTOR BEFORE ROUGH–IN.
13. PROVIDE REMOTE DOOR RELEASE BUTTON FROM THIS STATION TO DOOR 131. COORDINATE LOCATION WITH CHAD FLECK BEFORE ROUGH–IN.
14. EXISTING CARD READER, CAMERA AND INTERCOM TO REMAIN DURING THIS PHASE.
15. LOCATION OF AMBER ALERT SYSTEM. FIELD COORDINATE WITH CHAD FLECK BEFORE ROUGH–IN. PROVIDE SURFACE MOUNT BOXES AND RACEWAY.
16. LOCATION FOR TEMPORARY VOICE 110 BLOCKS FOR THIS PHASE. FIELD COORDINATE WITH OWNER AND AT&T (JESSE DUHR (262) 501–1857) BEFORE BEGINNING ANY ROUGH–IN.
17. PROPOSED TELECOM CABLE ROUTE. SEE GENERAL NOTE 3.
18. FOLLOW SAME PATH AS TEMPORARY ELECTRICAL FEEDERS, FIRE STOP OPENING WITH UL LISTED SYSTEM AS REQUIRED. PROVIDE MINIMUM (2) 4" CONDUITS THROUGH WALL.
19. PROVIDE SURFACE RACEWAY AND BOXES FOR TELECOMMUNICATIONS CABLING TO TEMPORARY STATIONS.
20. LOCATE BACK UP TELEPHONE CONNECTIONS AT THIS STATION. (6) VOICE CABLES ARE FOR BACK UP TELEPHONES. FIELD COORDINATE ALL CABLES, CONNECTIONS, DEVICES AND ANY OTHER EQUIPMENT NECESSARY FOR A COMPLETE INSTALLATION WITH CHAD FLECK (OWNER) AND JESSE DUHR (AT&T) BEFORE ROUGH–IN.
21. LOCATE BACK UP RADIO EQUIPMENT AND CONNECTIONS AT THIS STATION. FIELD COORDINATE EXACT LOCATION OF EQUIPMENT AND CABLING REQUIREMENTS WITH CHAD FLECK AND KEITH LIPPERT (608) 266–4768 BEFORE INSTALLATION.
22. PROVIDE FOR A TEMPORARY IP CAMERA IN ROOM 117. CAMERA TO BE WEB ENABLED. PROVIDE SOFTWARE TO ENABLE CAMERA AND ALL OTHER NECESSARY DEVICES AND CABLING TO MAKE FOR A COMPLETE INSTALLATION. COORDINATE EXACT PLACEMENT OF CAMERA WITH CHAD FLECK BEFORE INSTALLATION.
23. PROVIDE J–HOOKS ATTACHED TO STRUCTURE FOR TEMPORARY CABLING TO ANNEX SPACE.
24. CARD READER, INTERCOM AND CCTV CAMERA ARE TO BE MOVED FROM THIS TEMPORARY LOCATION TO PERMANENT LOCATION AS INDICATED BY SHEET NOTES 7 AND 9 ON SHEET T2.1.

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
City County Building
210 Martin Luther
King Jr. Blvd.
Madison, Wisconsin

Venture/Architects

Venture Architects
205 W. Highland
Milwaukee, WI 53203
Telephone 414-271-3359

COUNTY BID # 109055
VA PROJECT # 208006

Sheet Name
TELECOM
TEMPORARY PLAN

Sheet No.
TT1.1

GENERAL TELECOM DEMOLITION REQUIREMENTS:

1.) REMOVE ALL VOICE AND DATA LOCATIONS SHOWN AS DEMO. REMOVE FACEPLATES, JACKS AND CABLE BACK TO SOURCE. THE SOURCE LOCATIONS WILL VARY DEPENDING ON WHICH CABLE FEEDS WHICH LOCATION.

2.) THE TELECOMMUNICATIONS CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AT THE PROJECT SITE BEFORE SUBMITTING COST PROPOSAL.

3.) THE TELECOMMUNICATIONS CONTRACTOR SHALL VISIT THE SITE TO VERIFY DEVICES NOT OTHERWISE SHOWN. ALL DEVICES NEED TO BE REMOVED IN THE DEMOLITION AREA UNLESS NOTED ON THE DRAWINGS.

4.) IT IS MANDATORY THAT THE EXISTING BUILDING AND TEMPORARY 911 DISPATCH AREA REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING REMODELING/ALTERING. TELEPHONE AND DATA SERVICES TO EXISTING BUILDING SHALL BE KEPT ON CONTINUOUS OPERATION. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH PROJECT CONSTRUCTION, SHALL BE HELD TO A MINIMUM AND ARRANGED WITH THE OWNER THROUGH THE GENERAL CONTRACTOR TWO (2) WEEKS IN ADVANCE. TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.

5.) THE TELECOMMUNICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN DEMOLITION, REMOVAL, CAPPING, STORING, ABANDONING, DISCONNECTING, RELOCATING AND RECONNECTION OF EXISTING TELECOM EQUIPMENT AND MATERIAL. ALL CUTTING, PATCHING, REPAIRING, REPLACEMENT AND REFINISHING, SHALL MATCH THE EXISTING CONSTRUCTION AS NEARLY AS POSSIBLE.

6.) EXCEPT WHERE OTHERWISE SHOWN OR NOTED ON DRAWING – "TO BE RETAINED, RELOCATED" OR HEREINAFTER NOTED, ALL EXISTING TELECOM EQUIPMENT AND MATERIAL IN AREAS TO BE REMODELED/ALTERED SHALL BE REMOVED WHERE THEY INTERFERE WITH PROPOSED NEW CONSTRUCTION AND/OR INTERFERE WITH PROPOSED USAGE OF SPACE BY OWNER AS FOLLOWS:

(A) REMOVE ANY CONDUITS PROTRUDING ABOVE FINISHED FLOOR, CAP AND FINISH OVER WITH FLOOR MATERIAL TO MATCH EXISTING.

(B) REMOVE ALL SURFACE MOUNTED CONDUIT/BOXES AND THEIR ASSOCIATED WIRING. REMOVE ALL CONCEALED RACEWAYS, BOXES AND WIRING FROM PARTITIONS BEING DEMOLISHED.

(C) ANY TELEPHONE OR DATA CIRCUITS PASSING THROUGH THE REMODELED AREAS TO SERVE (OR BE SERVED FROM) EXISTING ADJACENT, REMOTE OR SURROUNDING AREAS THAT ARE TO REMAIN, SHALL BE RETAINED AND KEPT OPERATIONAL AND SHALL BE REROUTED IN ALL CASES WHERE THEY INTERFERE WITH ANY NEW WORK OR USAGE TO BE ACCOMPLISHED IN THE REMODELED AREA.

7.) TELECOMMUNICATIONS CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS TO FAMILIARIZE HIMSELF WITH EXTENT OF ALTERATION/REMODELING WORK AND MORE SPECIFICALLY NOTE WHERE NEW PARTITIONING IS BEING INSTALLED, WHERE EXISTING PARTITIONING IS BEING REMOVED, WHERE CEILINGS ARE BEING REMOVED AND OR REPLACED, ETC.

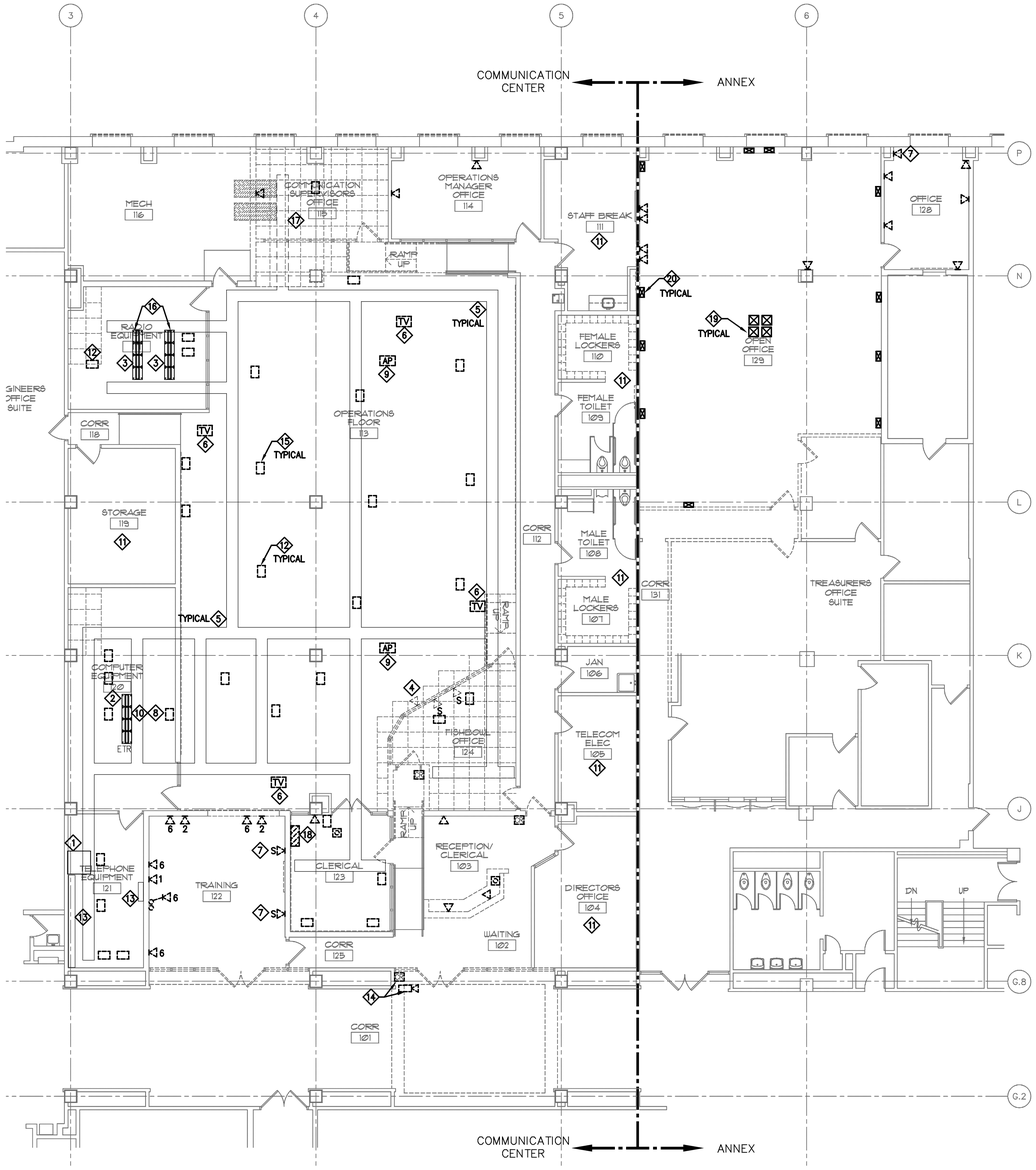
8.) ALL LOW VOLTAGE WIRING (VOICE, DATA) NOT REUSED FOR REMODELING AREAS SHALL BE COMPLETELY REMOVED BACK TO SOURCE IN ASSOCIATED TELECOM ROOM. EMPTY BOXES AND CONDUITS SHALL BE REMOVED BEYOND REMODELED AREA (ABOVE CEILING).

9.) THE OWNER SHALL HAVE THE FIRST CHOICE TO ACCEPT EXISTING DEVICES BEING REMOVED.

10.) ALL DEMO WORK IS SHOWN ON THIS DRAWING. DEMOLISH EACH AREA DURING PHASE SHOWN. ALL OTHER AREAS ARE TO REMAIN COMPLETELY OPERATIONAL UNTIL THEIR DEMO PHASE.

SHEET NOTES:

1. EXISTING AT&T 911 CIRCUITS FEEDING THE COMMUNICATIONS CENTER TO REMAIN.
2. EXISTING LOCATION OF COMPUTER AIDED DISPATCH SYSTEM TO REMAIN.
3. EXISTING LOCATION OF RADIO SERVICE EQUIPMENT TO REMAIN.
4. EXISTING SCROLLING DISPLAY SIGN, REMOVE OUTLET AND CABLING BACK TO SOURCE AND TURN SIGN OVER TO OWNER.
5. EXISTING UNDER FLOOR CABLE TRAY TO REMAIN.
6. EXISTING DEPT. OF TRANSPORTATION TRAFFIC MONITORS, REMOVE OUTLET AND CABLING BACK TO COMPUTER EQUIPMENT ROOM 120 AND TURN MONITORS OVER TO OWNER.
7. REMOVE 25 PAIR TERMINATION JACK AND CABLING BACK TO SOURCE AND PROVIDE BLANK COVER ON OUTLET BOX.
8. EXISTING DEPT. OF TRANSPORTATION RECEIVER TO REMAIN.
9. REMOVE EXISTING WIRELESS ACCESS POINT AND CABLING BACK TO SOURCE. TURN DEVICE OVER TO OWNER.
10. EXISTING DANE COUNTY NETWORK EQUIPMENT TO REMAIN.
11. ALL TELECOMMUNICATIONS DEVICES IN THIS ROOM TO REMAIN AS IS.
12. EXISTING ACCESS FLOOR DELIVERY MODULE: TYPICAL. COORDINATE REMOVAL OF EXISTING TELECOMMUNICATIONS AND RADIO COMMUNICATIONS CABLING WITH ALL OTHER CONTRACTORS .
13. EXISTING TELECOMMUNICATIONS TERMINATIONS TO REMAIN.
14. EXISTING CARD READER WILL BE RELOCATED WHEN WALL IS MOVED. FIELD COORDINATE CONNECTIVITY AND CABLING REQUIREMENTS WITH INNOVATIVE SYSTEMS (JIM HOLTZ (414) 761-7350). REFER TO SHEET T2.1 FOR NEW LOCATION OF CARD READER. EXISTING CCTV CAMERA TO BE REMOVED AND TURNED OVER TO OWNER. REMOVE ALL EXISTING CABLING FOR CCTV CAMERA BACK TO SOURCE.
15. SALVAGE ALL TELECOMMUNICATIONS CABLE OTHER THAN VOICE AND DATA CABLING IN UNDERFLOOR CABLE TRAY WHEN DEMOLISHING EXISTING COMMUNICATIONS CENTER. COORDINATE RETURN OF CABLES TO KEITH LIPPERT (608) 266-9149 FOR HIS USE.
16. EXISTING EQUIPMENT RACKS TO REMAIN.
17. REMOVE EXISTING UNDERFLOOR CABLE TRAY SHOWN DASHED. TRAY TO BE RELOCATED AS SHOWN ON SHEET T2.1. COORDINATE GROUNDING OF TRAY WITH ELECTRICAL CONTRACTOR.
18. EXISTING DOOR CONTROL PANEL TO BE REMOVED WHEN ALL DOORS ARE MOVED AND NEW DOOR CONTROLS ARE IN PLACE. FIELD COORDINATE WITH OWNER AND ALL TRADES BEFORE COMMENCING DEMOLITION.
19. REMOVE TELE\POWER POLE INSTALLED DURING TEMPORARY ANNEX PHASE AND TURN OVER TO OWNER.
20. REMOVE SURFACE MOUNTED RACEWAY INSTALLED DURING TEMPORARY ANNEX PHASE. OWNER HAS FIRST CHOICE TO ACCEPT DEVICES.



A TD2.1 TELECOMMUNICATIONS DEMOLITION PLAN

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

12"0 1' 5' 10' 20'

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County Public Safety Communications Center Infrastructure Upgrades

1st Floor
City County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin

Venture Architects

Venture Architects
309 E Highland
Milwaukee, WI 53202
Telephone 414-271-3399

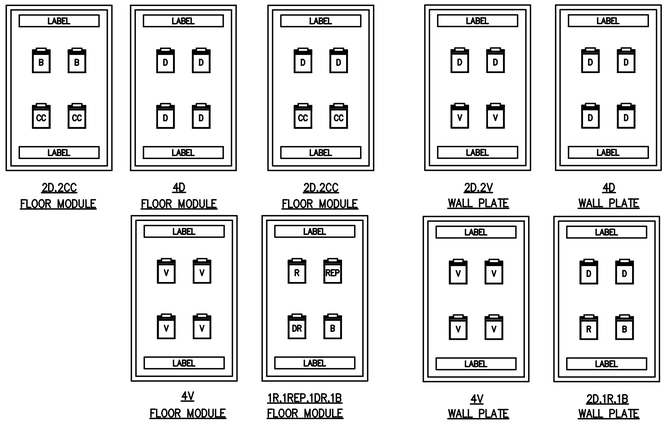
COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
TELECOM DEMOLITION PLAN

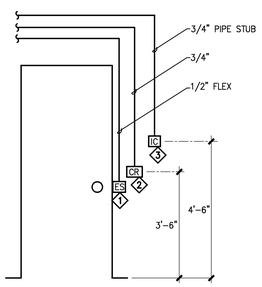
Sheet No.
TD2.1

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.



B T2.1 FACEPLATE CONFIGURATION DETAIL

NO SCALE

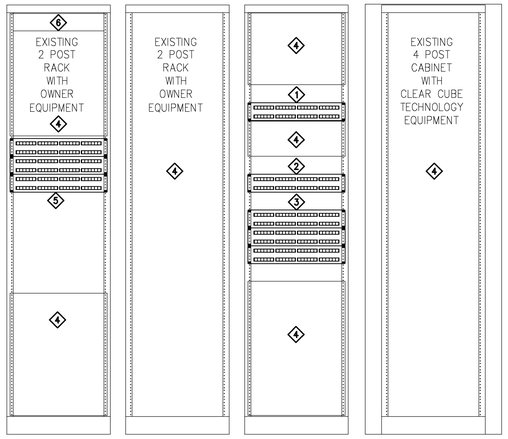


D T2.1 SECURE DOOR DETAIL

NO SCALE

DETAIL NOTES:

1. ELECTRIC STRIKE BY GENERAL CONTRACTOR. REFER TO ARCHITECTURAL DOOR HARDWARE.
2. RELOCATED EXISTING CARD READER. COORDINATE CABLING AND ALL REQUIREMENTS WITH JIM HOLTZ AT INNOVATIVE SYSTEMS BEFORE COMMENCING INSTALLATION.
3. REFER TO SHEET NOTES FOR WALL MOUNTED INTERCOM SYSTEM INFORMATION. INSTALL PER MANUFACTURER'S REQUIREMENTS.



C T2.1 EXISTING RACK ELEVATIONS

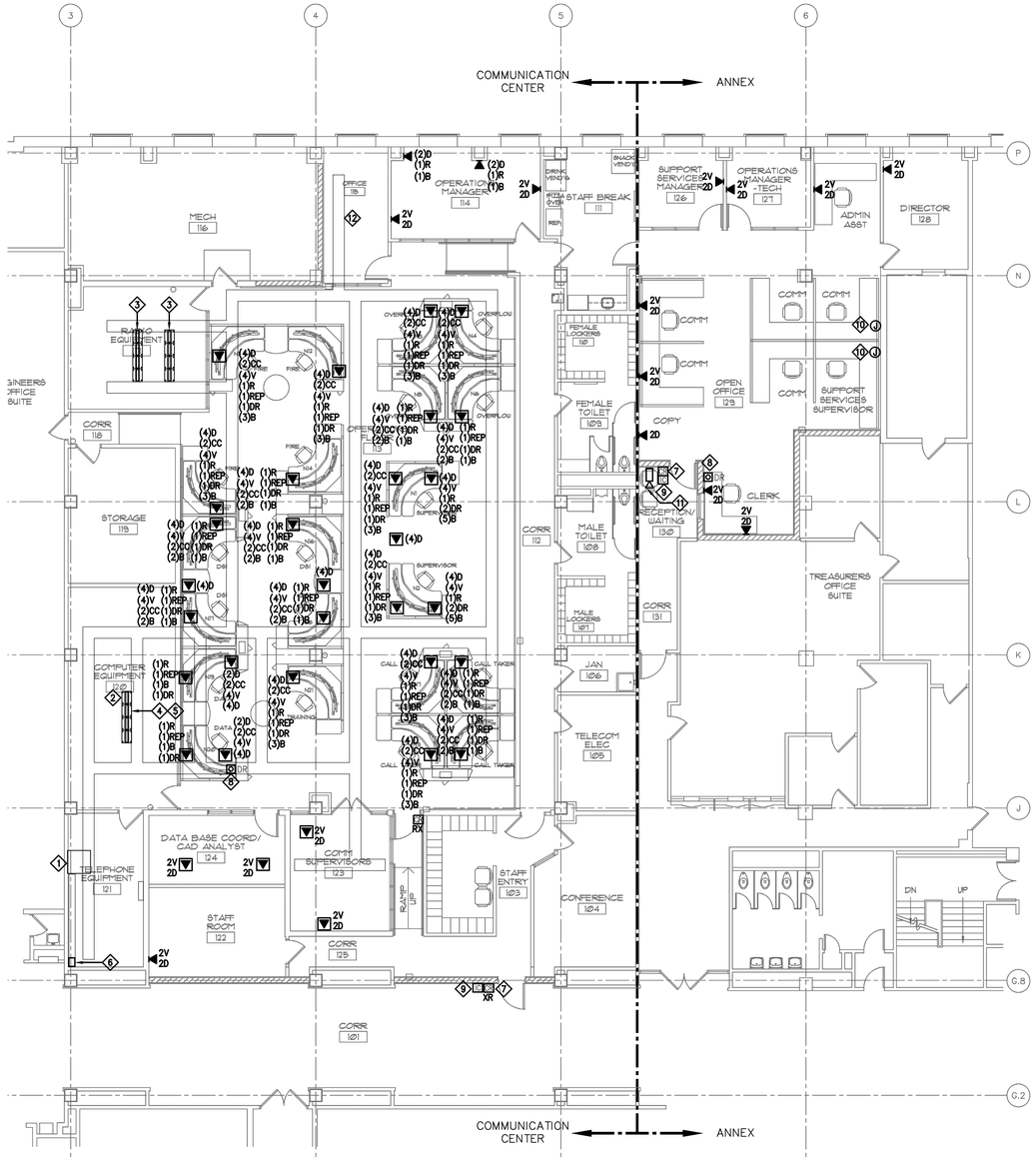
NO SCALE

GENERAL NOTES:

1. VERIFY EXACT NEW PATCH PANEL LOCATIONS IN EXISTING RACKS.

DETAIL NOTES:

1. (1) NEW 48 PORT ANGLED PATCH PANEL DEDICATED TO CLEAR CUBE TECHNOLOGY CABLING.
2. (1) NEW 48 PORT ANGLED PATCH PANEL DEDICATED TO RADIO CABLING. THE CABLES DESIGNATED "DR" TO BE TERMINATED AT THIS PATCH PANEL FOR FUTURE RADIO COMMUNICATIONS.
3. (3) NEW PATCH PANELS DEDICATED TO DANE COUNTY NETWORK DATA CABLING.
4. EXISTING OWNER EQUIPMENT. DO NOT DISTURB DURING ANY PHASE OF THIS PROJECT.
5. (3) PATCH PANELS INSTALLED FOR TEMPORARY ANNEX MOVE. AFTER NEW WORK STATIONS ARE FULLY FUNCTIONAL IN THIS PHASE AS DEEMED BY OWNER (CHAD FLECK) THESE PATCH PANELS AND OVER CEILING CABLING CAN BE REMOVED.
6. PROVIDE (1) 12 STRAND 62.5 MICRON MULTI MODE FIBER OPTIC CABLE FROM EXISTING PATCH PANEL IN EXISTING COMPUTER ROOM 120 UP TO 3RD FLOOR TELECOM ROOM ADJACENT TO STAIR B. FIELD COORDINATE ROUTE AND LOCATIONS WITH MIKE BARGER (608) 266-4295 BEFORE INSTALLATION.



A T2.1 TELECOMMUNICATIONS NEW WORK PLAN

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

12"0 1' 5' 10' 20'

GENERAL NOTES:

1. ALL NEW WORK IS SHOWN ON THIS DRAWING. PERFORM WORK IN EACH AREA DURING PHASE SHOWN. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PHASING. ALL OTHER AREAS ARE TO REMAIN COMPLETELY OPERATIONAL UNTIL THEIR DEMO PHASE. REFER TO SHEET TD2.1.
2. "XR" INDICATES EXISTING DEVICE RELOCATED TO THIS LOCATION FOR THIS PHASE OF CONSTRUCTION.
3. "RX" INDICATES DEVICE TO BE RELOCATED FROM THIS LOCATION TO NEW LOCATION LABELED "XR" FOR THIS PHASE OF CONSTRUCTION.
4. ALL BOXES AND CONDUITS ARE BY ELECTRICAL CONTRACTOR.

SHEET NOTES:

1. EXISTING AT&T 911 CIRCUITS FEEDING THE COMMUNICATIONS CENTER TO REMAIN.
2. EXISTING LOCATION OF COMPUTER AIDED DISPATCH SYSTEM TO REMAIN. CLEAR CUBE TECHNOLOGY HAS BEEN INSTALLED FOR ALL (21) NEW WORK STATIONS IN SOLID CABINET. ADD (1) DEDICATED 48 PORT PATCH PANEL IN EXISTING 2 POST RACK TO THE LEFT SIDE OF CABINET. ALL SYMBOLS MARKED WITH "CC" – ROUTE CABLES BACK TO THIS DEDICATED PATCH PANEL. ALL CABLES TO BE LOW SKEW CABLES, REFER TO SPEC.
3. EXISTING LOCATION OF RADIO SERVICE EQUIPMENT TO REMAIN. THIS RACK IS FULL OF EXISTING RADIO EQUIPMENT – DO NOT DISTURB.
4. EXISTING DANE COUNTY NETWORK EQUIPMENT TO REMAIN. ADD (3) DEDICATED 48 PORT PATCH PANELS IN EXISTING 2 POST RACK WHERE THE DANE COUNTY NETWORK SWITCH CURRENTLY EXISTS. ALL SYMBOLS MARKED WITH "D" – ROUTE CABLES BACK TO THESE DEDICATED PATCH PANELS. ALL OF THESE CABLES TO BE CAT 6.
5. EXISTING DOT RECEIVER TO REMAIN.
6. ADD NEW 110 VOICE BLOCK (1-100 PAIR) FOR NEW VOICE CABLES FEEDING NEW WORK STATIONS. ALL SYMBOLS MARKED WITH A "V" – ROUTE CABLES BACK TO THIS NEW VOICE BLOCK THROUGH UNDERFLOOR CABLE TRAY. ALL CABLES TO BE CAT 6.
7. RELOCATED CARD READER. COORDINATE INSTALLATION WITH JIM HOLTZ AT INNOVATIVE SYSTEMS (414) 761-7350.
8. LOCATION OF DESK MOUNTED MASTER INTERCOM STATION SIMILAR TO AIPHONE MODEL LEM-1DL WITH AIPHONE TRANSFORMER PT-1210. REFER TO DOOR DETAIL D/T2.1. COORDINATE DOOR RELEASE WITH ARCHITECTURAL DOOR HARDWARE.
9. LOCATION OF WALL MOUNTED DOOR INTERCOM STATION SIMILAR TO AIPHONE MODEL LE-D.
10. PROVIDE SURFACE MOUNTED RACEWAY WITH CONNECTION TO SYSTEMS FURNITURE. COORDINATE EXACT CONNECTION TYPE WITH OWNER FURNISHED EQUIPMENT.
11. MOVE EXISTING CCTV CAMERA FROM LOCATION SHWON ON SHEET T71.1 AT DOOR 131 TO THIS FINAL LOCATION.

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No.	Description	Date

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
City County Building
210 Martin Luther
King Jr. Blvd.
Madison, Wisconsin

VentureArchitects

Venture Architects
325 E. Highland
Milwaukee, WI 53202
Telephone 414-271-3399

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
TELECOM
NEW WORK PLAN

Sheet No.
T2.1

GENERAL NOTES: PLUMBING AND FIRE PROTECTION

1. VISIT THE BUILDING SITE AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING CONDITIONS AFFECTING THE WORK. THE MODIFIED OR NEW SYSTEM SHALL BE CERTIFIED BY INSURANCE UNDERWRITERS, LOCAL FIRE MARSHALL AND OWNER REQUIREMENTS.

2. VERIFY ALL MEASUREMENTS, PIPE SIZES, PIPE LOCATIONS, ELEVATIONS, ETC. AT SITE.

3. DRAWINGS OF ALL OTHER TRADES SHALL BE REVIEWED. COORDINATE THE INSTALLATION AND SCHEDULING OF THE WORK WITH OTHER TRADES TO PREVENT INTERFERENCE WITH THEIR RESPECTIVE INSTALLATION.

4. INSTALL ALL WORK SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. DEVIATIONS FROM LOCATIONS OF PIPING INDICATED ON THE DRAWINGS MAY HAVE TO BE MADE AT NO ADDITIONAL COST TO THE OWNER IN ORDER TO CLEAR THE WORK OF THE OTHER TRADES. HOWEVER, ALL SUCH DEVIATIONS SHALL BE PREVIOUSLY APPROVED BY THE OWNER'S REPRESENTATIVE.

5. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES, SPRINKLER HEADS, SOFFITS, STRUCTURAL DIMENSIONS AND LAYOUT. VERIFY CEILING HEIGHT AND MATERIALS.

6. IT IS THE INTENT OF THESE DRAWINGS THAT A COMPLETE WORKING SYSTEM PROPERLY TESTED, WILL BE OPERATIONAL UPON COMPLETION OF INSTALLATION.

7. CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BID OPENING. THE ENGINEER RESERVES THE RIGHT TO FINAL DECISION.

8. SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION OF ALL FIXTURES, EQUIPMENT, PIPING, SUPPORTS, SPRINKLER HEADS, HYDRAULIC CALCULATIONS, PLANS INDICATING HEAD TYPES AND LOCATIONS AND AS STATED IN THE SPECIFICATIONS.

9. UNLESS NOTED OTHERWISE ALL PIPING 3" AND LARGER SHALL BE INSTALLED AT A SLOPE OF 1/8" PER FOOT AND PIPING 2" AND SMALLER AT 1/4" PER FOOT.

10. INSTALL NEW SPRINKLER HEADS, PROVIDE NEW PIPING, INCLUDING PIPE DROPS FOR NEW CONNECTIONS FROM EXISTING PIPES. NEW PIPING, HANGERS AND HEADS SHALL BE APPROVED BY ENGINEER AND EQUAL TO OR MATCH EXISTING TYPE(S) PRIOR TO INSTALLATION.

11. COORDINATE FINAL LOCATION OF ALL DRAINS AND CLEANOUTS WITH ARCHITECTURAL AND HVAC TRADES.

12. COORDINATE WITH OWNER AND OTHER TRADES UTILITY REQUIREMENTS DURING CONSTRUCTION. MAINTAIN ALL UTILITIES DURING CONSTRUCTION AND PHASING. COORDINATE ALL TEMPORARY SHUTDOWNS WITH OWNER AND OTHER TRADES.

13. DISCONNECT AND REMOVE EXISTING PIPING AND SPRINKLER HEADS. EXTEND EXISTING PIPING TO NEW HEADS. REVISE SPRINKLER SYSTEM FOR PHASING. REVISE EXISTING PIPING TO ACCOMMODATE NEW WORK. RAISE EXISTING PIPING AS REQUIRED.

14. REFER TO PLUMBING DRAWINGS FOR ANY SITE PLANS, ABBREVIATIONS AND SYMBOL SCHEDULE.

15. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF HOLES AND OPENINGS IN WALLS, CEILINGS, ROOF AND FLOORS. REMOVE AND REPLACE CEILINGS AS REQUIRED, COORDINATE WITH G.C..

16. MATCH BUILDING/ OWNER STANDARDS, CENTER SPRINKLER HEADS IN CEILING TILES.

PLUMBING SYMBOL LIST

SYMBOL	DESCRIPTION
	SANITARY LINE ABOVE FLOOR
	SANITARY LINE BELOW FLOOR
	VENT PIPING
	COLD WATER SUPPLY PIPING
	HOT WATER SUPPLY PIPING
	HOT WATER RECIRCULATION/RETURN PIPING
	CAPPED PIPING
	NEW CONNECTION
	PIPING/EQUIP TO BE REMOVED
FCO	CLEANOUT – FLOOR OR YARD
CO	CLEANOUT – PLUG TYPE
	BALL VALVE
	BALANCING VALVE
	CHECK VALVE
	GATE VALVE
	GLOBE VALVE
	PRESSURE REDUCING VALVE
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	TEE – TOP OUTLET
	TEE – BOTTOM OUTLET
	SCREWED UNION
	FLANGED UNION
HB	HOSE BIBB
WH	WALL HYDRANT
2"FD–A	FLOOR DRAIN, DESIGNATION, NUMBER & SIZE
F–1	FIXTURE DESIGNATION & NUMBER
	ELECTRIC WATER COOLER / DRINKING FOUNTAIN
	LAVATORY
	REDUCED PRESSURE BACKFLOW PREVENTOR
	URINAL, WALL MOUNTED
M	METER
	WATER CLOSET – TANK TYPE
	WATER CLOSET, FLOOR SET – FLUSH VALVE
	WATER CLOSET, WALL MOUNTED – FLUSH VALVE
	CONCEALED SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD

NOTE:
THIS IS A COMPOSITE LIST OF SYMBOLS, NOT ALL PERTAIN SPECIFICALLY TO THIS JOB.

PLUMBING ABBREVIATIONS

ABBR	DESCRIPTION
AF	ABOVE FLOOR
AFF	ABOVE FINISHED FLOOR
ALP	ALARM PANEL
ASC	ABOVE SUSPENDED CEILING
AV	ACID VENT
AW	ACID WASTE
BF	BELOW FLOOR
BV	BALL VALVE
CA	CLINICAL AIR
CAI	CLINICAL AIR INTAKE
CDR	CHILLED DRINKING WATER RETURN
CDW	CHILLED DRINKING WATER
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
CSS	CLINICAL SERVICE SINK
CSW	COLD SOFT WATER
CW	COLD WATER
CWV	CLEAR WATER VENT
CWW	CLEAR WATER WASTE
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNIT
DI	DEIONIZED WATER
DN	DOWN
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
F	FIRE
FCO	FINISHED CLEANOUT
FD	FLOOR DRAIN
FDV	FIRE DEPARTMENT VALVE
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FPC	FIRE PROTECTION CONTRACTOR
FS	FLOW SWITCH
FT	FOOT
FWCO	FINISHED WALL CLEANOUT
G	GAS
GC	GENERAL CONTRACTOR
GO	GAS OUTLET
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HC	HEATING CONTRACTOR
HD	HUB DRAIN
HW	HOT WATER
HWR	HOT WATER RETURN
HWT	HOT WATER TAP
IE	INVERT ELEVATION
L	LAVATORY (LAV)
LA	LABORATORY AIR
LS	LABORATORY SINK
LV	LABORATORY VACUUM
MB	MOP BASIN
MV	MIXING VALVE
OXY	OXYGEN (O2)
OSD	OPEN SITE DRAIN
PC	PLUMBING CONTRACTOR
RD	ROOF DRAIN
RM	ROOM
RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
S	SINK
SAN	SANITARY
SFU	SUPPLY FIXTURE UNITS
SP	STAND PIPE
SS	SANITARY STACK
ST	STORM
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
UF	UNDER FLOOR
U	URINAL
V	VENT
VAC	VACUUM
VACE	VACUUM EXHAUST
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTOR
WSFU	WATER SUPPLY FIXTURE UNITS

NOTE:
THIS IS A COMPOSITE LIST OF ABBREVIATIONS, NOT ALL PERTAIN SPECIFICALLY TO THIS JOB.

PLUMBING SHEET INDEX

NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR PHASING INFORMATION.

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Madison, Wisconsin 53717-1960
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Website: http://www.henneman.com
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HEI JOB NO. 09-6082A

Date of Issue 11/30/09

No. Description Date

Reference Diagram

Reference Plan

Dane County
Public Safety
Communications
Center Infrastructure
Upgrades

1st Floor
City County Building
210 Martin Luther
King Jr. Blvd.
Madison, Wisconsin

Venture Architects

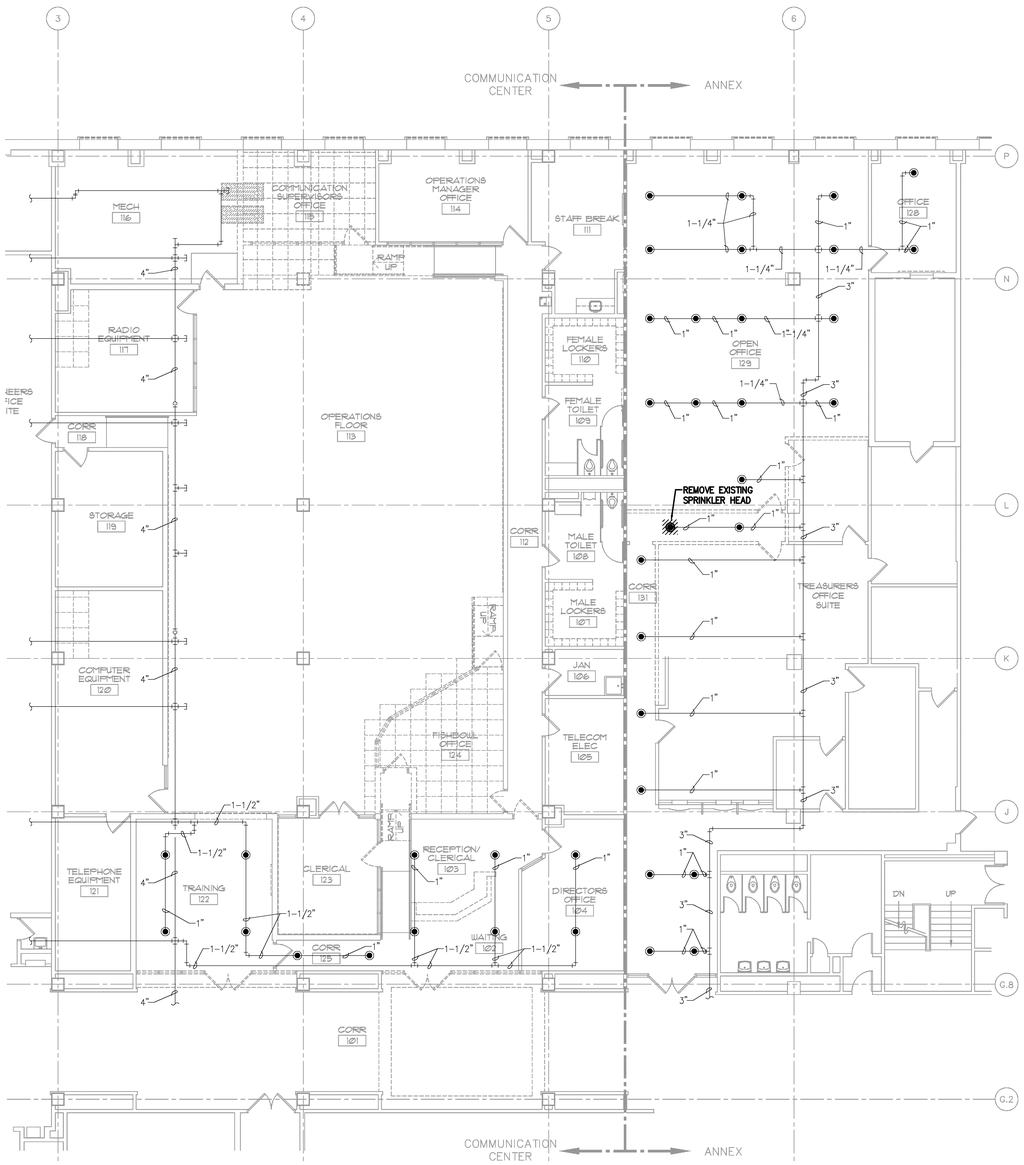
Venture Architects
309 E. Highland
Milwaukee, WI 53202
Telephone 414-271-3395

COUNTY BID # 109055

VA PROJECT # 208006

Sheet Name
PLUMBING SYMBOLS,
NOTES AND ABBREVIATIONS

Sheet No.
P0.1

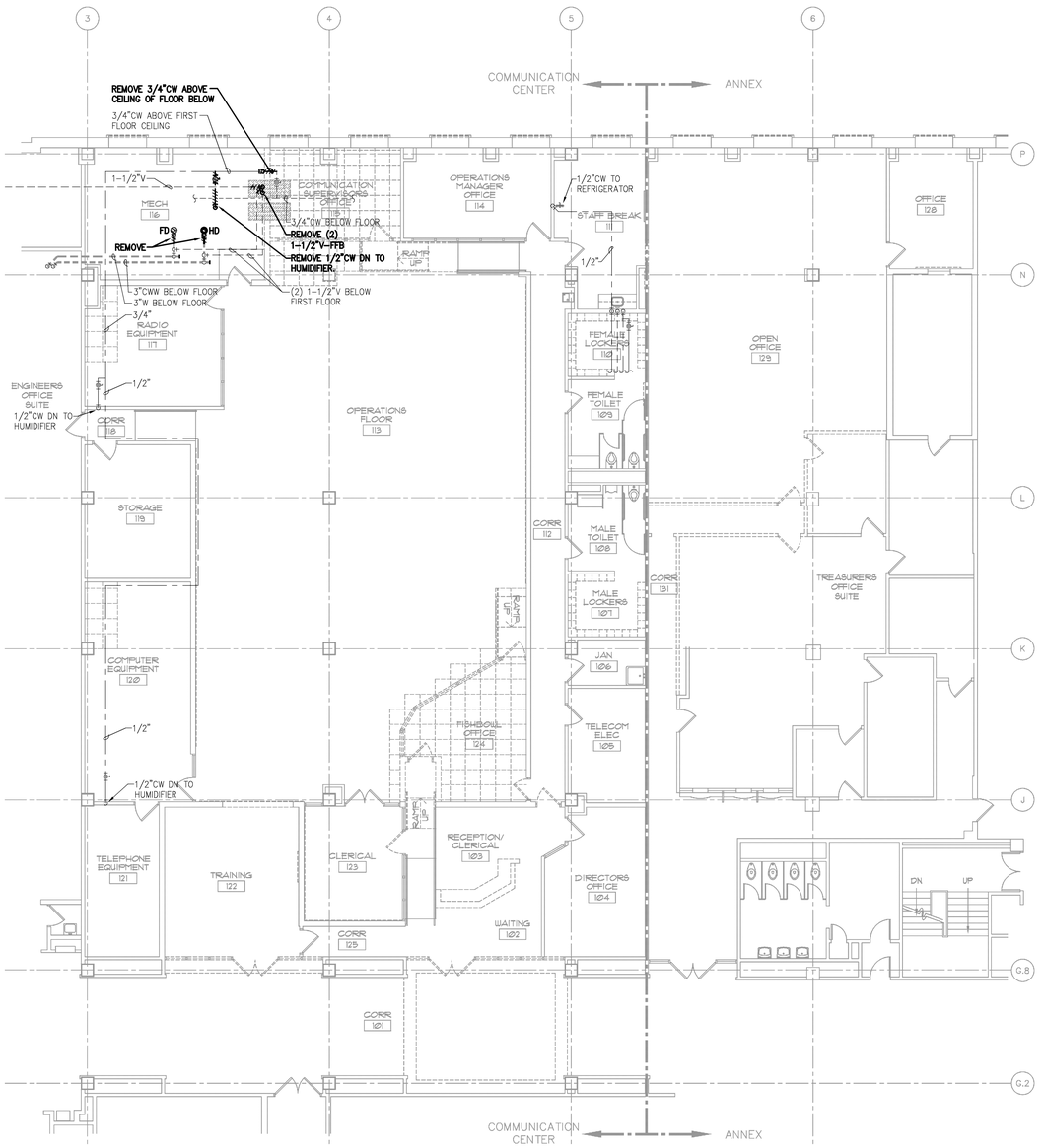


A PD2.1 DEMOLITION PLAN – FIRE PROTECTION

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

12"0 1' 5' 10' 20'

1. ALL SPRINKLERS AND PIPING SHOWN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
2. ALL SPRINKLER PIPE & PIPE SIZE INFORMATION IS TAKEN FROM ORIGINAL DESIGN DRAWINGS PREPARED BY OTHERS AND HAS NOT BEEN VERIFIED.
3. REMOVE AND REINSTALL FIRE PROTECTION SPRINKLER PIPING AS REQUIRED FOR INSTALLATION OF NEW DUCTWORK AND CEILING.



B PD2.1 DEMOLITION PLAN – PLUMBING

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

12"0 1' 5' 10' 20'

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VA PROJECT # 208006

Sheet Name
PLUMBING AND FIRE PROT. DEMOLITION PLANS

NOTE:
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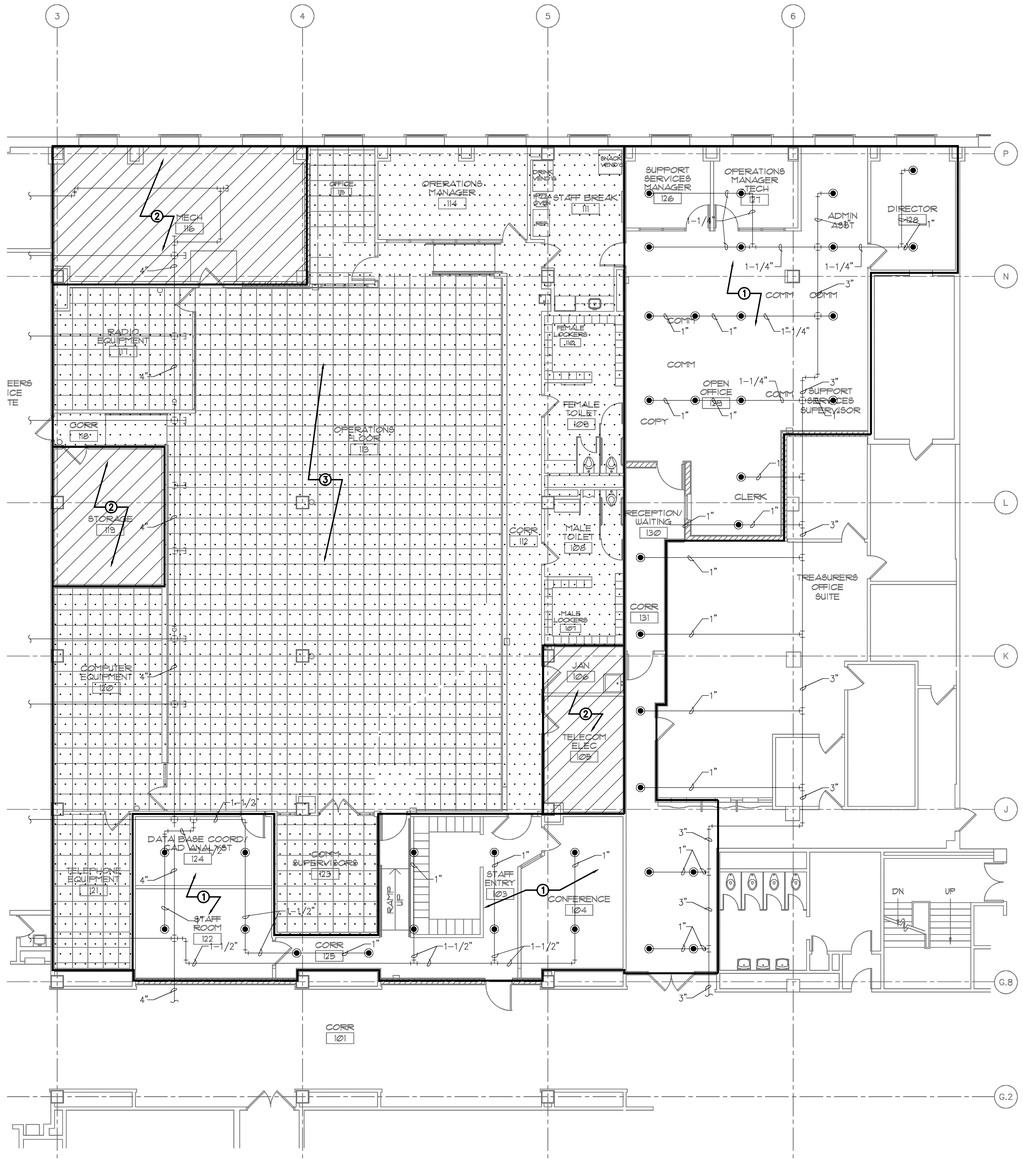
Sheet No.
PD2.1



A P2.1 NEW WORK PLAN – FIRE PROTECTION

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

12"0 1' 5' 10' 20'

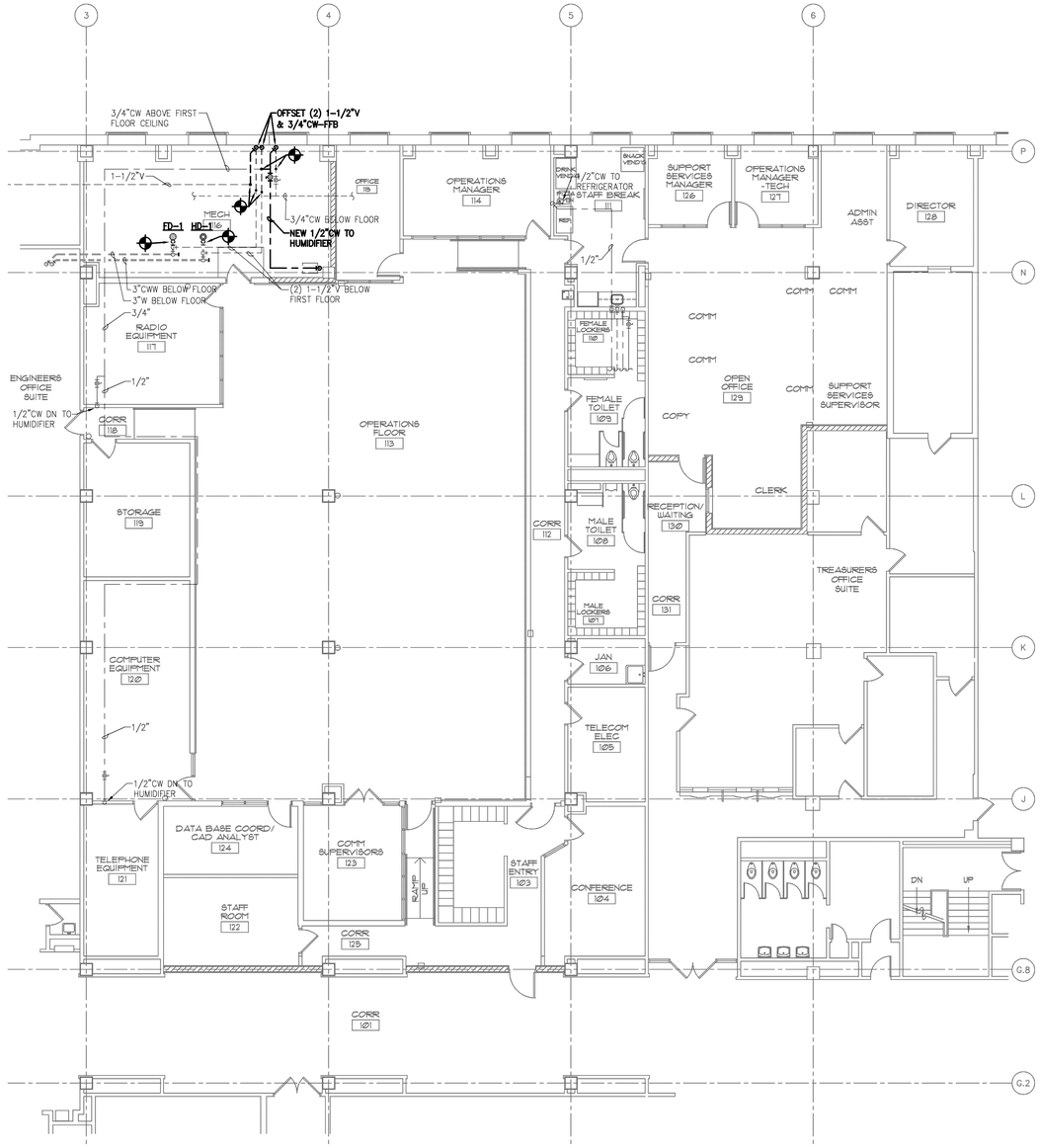
COORDINATE NEW SPRINKLER LOCATIONS WITH ELECTRICAL AND MECHANICAL CONTRACTORS.

FIRE PROTECTION NOTES:

① AREA PROTECTED BY EXISTING AUTOMATIC SPRINKLER SYSTEM. REMOVE, RELOCATE OR REPLACE SPRINKLERS AS REQUIRED TO MATCH EXISTING FLOOR PLAN. MODIFY EXISTING PIPING AS NEEDED.

② ADD AUTOMATIC UPRIGHT SPRINKLERS TO EXISTING NON-SPRINKLERED AREA. MODIFY EXISTING PIPING AS NEEDED.

③ ADD AUTOMATIC CONCEALED SPRINKLERS TO EXISTING NON-SPRINKLERED AREA. MODIFY EXISTING PIPING AS NEEDED.



B P2.1 NEW WORK PLAN – PLUMBING

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

12"0 1' 5' 10' 20'

NOTE:
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Sheet Name
PLUMBING AND FIRE PROT. NEW WORK PLANS

Sheet No.
P2.1