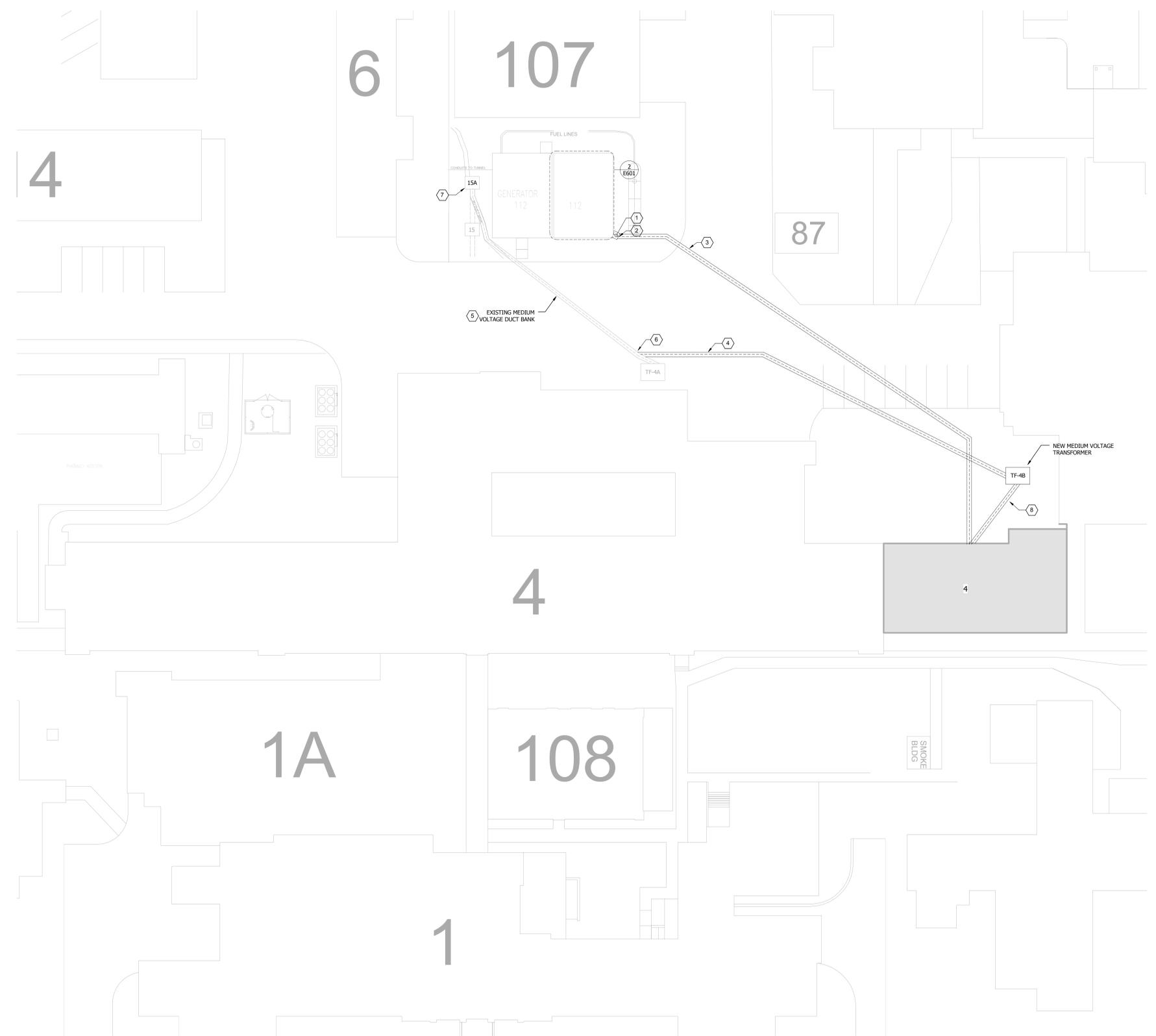


three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot



- GENERAL NOTES:**
- COORDINATE AND SCHEDULE ALL POWER OUTAGES WITH THE COR.
 - SAW/CUT EXISTING ASPHALT AND CONCRETE SURFACES TO INSTALL NEW DUCT BANKS. ALL SURFACES SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
- KEYNOTES:**
- EXISTING UNDERGROUND CONDUITS STUBBED OUT FROM BUILDING 112E. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF STUB OUTS PRIOR TO INSTALLATION. CONDUIT STUBB OUT ARE AS FOLLOWS:
 1) TWO (2) 3" CONDUITS TO EMERGENCY EQUIPMENT FEED SWITCHBOARD
 2) ONE (1) 1.5" CONDUIT TO EMERGENCY ESSENTIAL FEED SWITCHBOARD.
 3) ONE (1) 1" CONDUIT TO GENERATOR CONTROL CIRCUIT
 - SPLICE NEW 3" UNDERGROUND CONDUITS TO EXISTING UNDERGROUND CONDUITS PRIOR TO PULLING NEW CONDUCTORS. NEW 2" UNDERGROUND CONDUITS TO BE RAN INSIDE THE BUILDING. SPLICE NEW 1" UNDERGROUND CONDUIT TO EXISTING UNDERGROUND 1" CONDUIT PRIOR TO PULLING NEW CONDUCTORS.
 - CONDUITS TO GENERATOR BUILDING SHALL BE ENCASED IN A CONCRETE DUCT BANK.
 - MEDIUM VOLTAGE CONDUIT AND WIRE TO BE ENCASED IN A CONCRETE DUCT BANK.
 - EXISTING UNDERGROUND DUCT BANK CONTAINS TWO 4" PVC CONDUITS. ONE CONDUIT FEED BUILDING 4 TRANSFORMER, THE OTHER CONDUIT IS A SPARE. USE THE SPARE CONDUIT TO FEED THE NEW TRANSFORMER.
 - INTERCEPT THE SPARE CONDUIT IN THE EXISTING DUCTBANK. REPAIR DUCTBANK AND INTEGRATE INTO NEW DUCT BANK. PROTECT END OF SPARE CONDUIT ENTERING X-FORMER, CONTRACTOR SHALL OBTAIN GOVERNMENT'S APPROVAL PRIOR TO PATCHING CONCRETE AND BACKFILL.
 - EXISTING 4-COMPARTMENT MEDIUM VOLTAGE SWITCH WITH ONE SPARE COMPARTMENT. USE THE SPARE COMPARTMENT TO FEED THE NEW TRANSFORMER. PROVIDE CABLE TERMINATIONS AND DEAD FRONT LOAD BREAKS. PROVIDE SMU-20 30E FUSE AND N-FITTINGS FOR EACH PHASE. REPLACE EXISTING IDENTIFICATION NAMEPLATE ON THE EXTERIOR OF THE CABINET.
 - CONDUITS FROM NEW TRANSFORMER TO NEW BUILDING SERVICE ENTRANCE SHALL BE ENCASED IN A CONCRETE DUCT BANK.

1 ELECTRICAL SITE PLAN
 0 10' 20' 40'

CONSTRUCTION DOCUMENTS 100%

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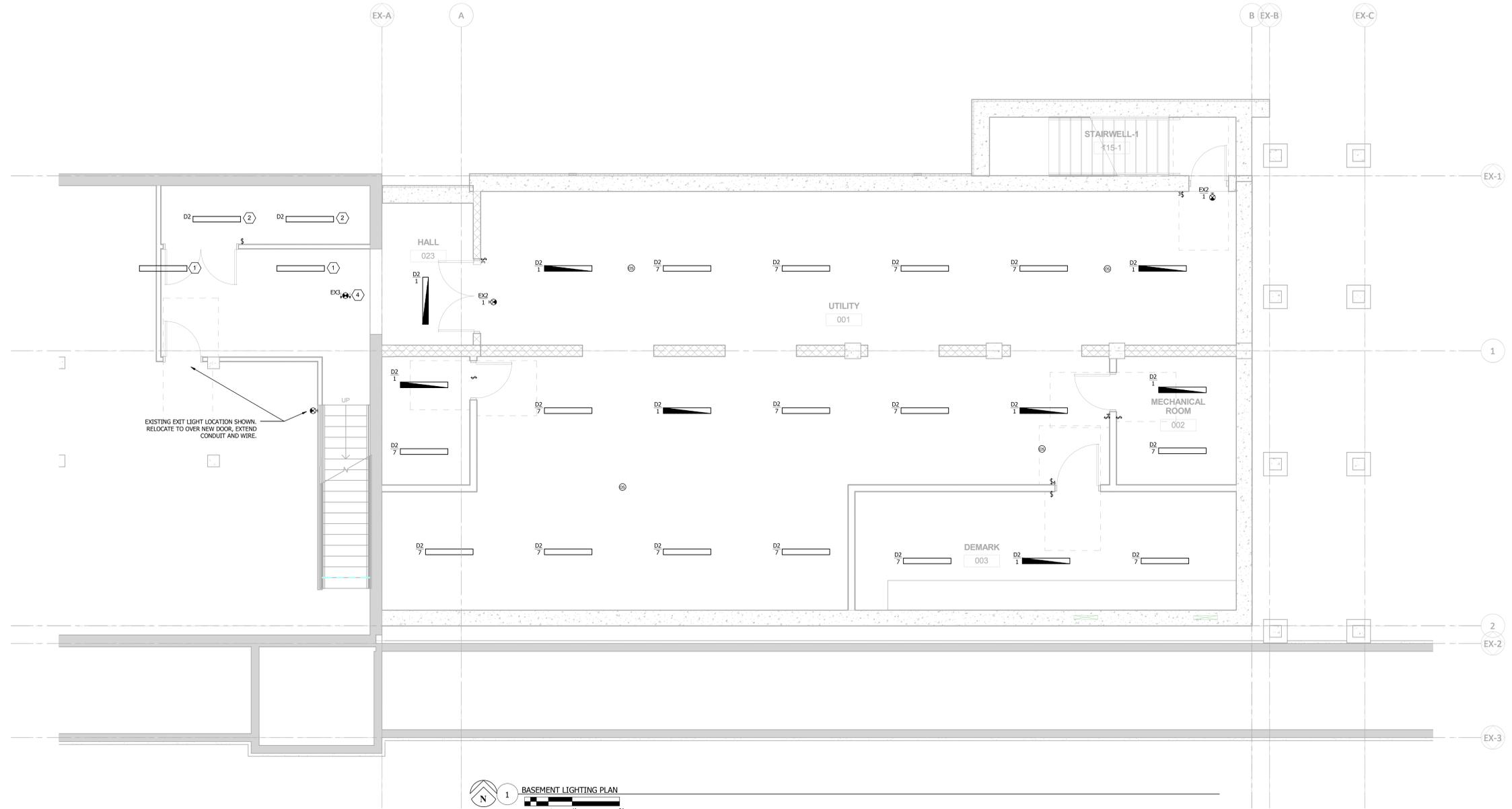
DRAWING TITLE
 ELECTRICAL SITE PLAN

| | |
|---|------------------|
| PROJECT CONSTRUCT NEW IT CENTER FOR HEALTH CARE TECHNOLOGY MANAGEMENT EXPANSION | DATE 04.01.15 |
| BLOCK NEW IT | DESIGNER RSB |
| DRAWN ARM | CHECKED E201 |
| LOCATION ST. CLOUD VA HCS ST. CLOUD, MN 56303 | |



- GENERAL NOTES:
- LUMINAIRES IN ARE TO BE MOUNTED TO THE CEILING, UNLESS NOTED OTHERWISE.
 - IN MECH ROOM 002 AND DEMARK ROOM 003, CHAIN HANG FIXTURE SO THAT LENS OF FIXTURE IS FLUSH WITH BOTTOM OF CEILING MOUNTED DUCT WORK.
 - FIXTURES SHOWN AS NIGHT LIGHTS ARE TO ALSO SERVE AS EMERGENCY EGRESS LIGHTING. LUMINAIRES SHALL BE POWERED FROM AN EMERGENCY POWERED PANEL AS CIRCUITED AND SHALL BE UNSWITCHED.

- KEYNOTES:
- EXISTING CHAIN HUNG FIXTURES. RELOCATE FIXTURES TO POSITION THEM IN THE STAIRWELL AREA SO NOT TO CONFLICT WITH EXISTING WALLS. RECIRCUIT EXISTING WALLS SO THEY BECOME UNSWITCHED NIGHT LIGHTS.
 - NEW CHAIN HUNG FIXTURES. POWER FROM EXISTING LIGHTING CIRCUIT.
 - CIRCUIT NEW EXIT LIGHT WITH RELOCATED STAIRWELL LIGHTING.



1 BASEMENT LIGHTING PLAN

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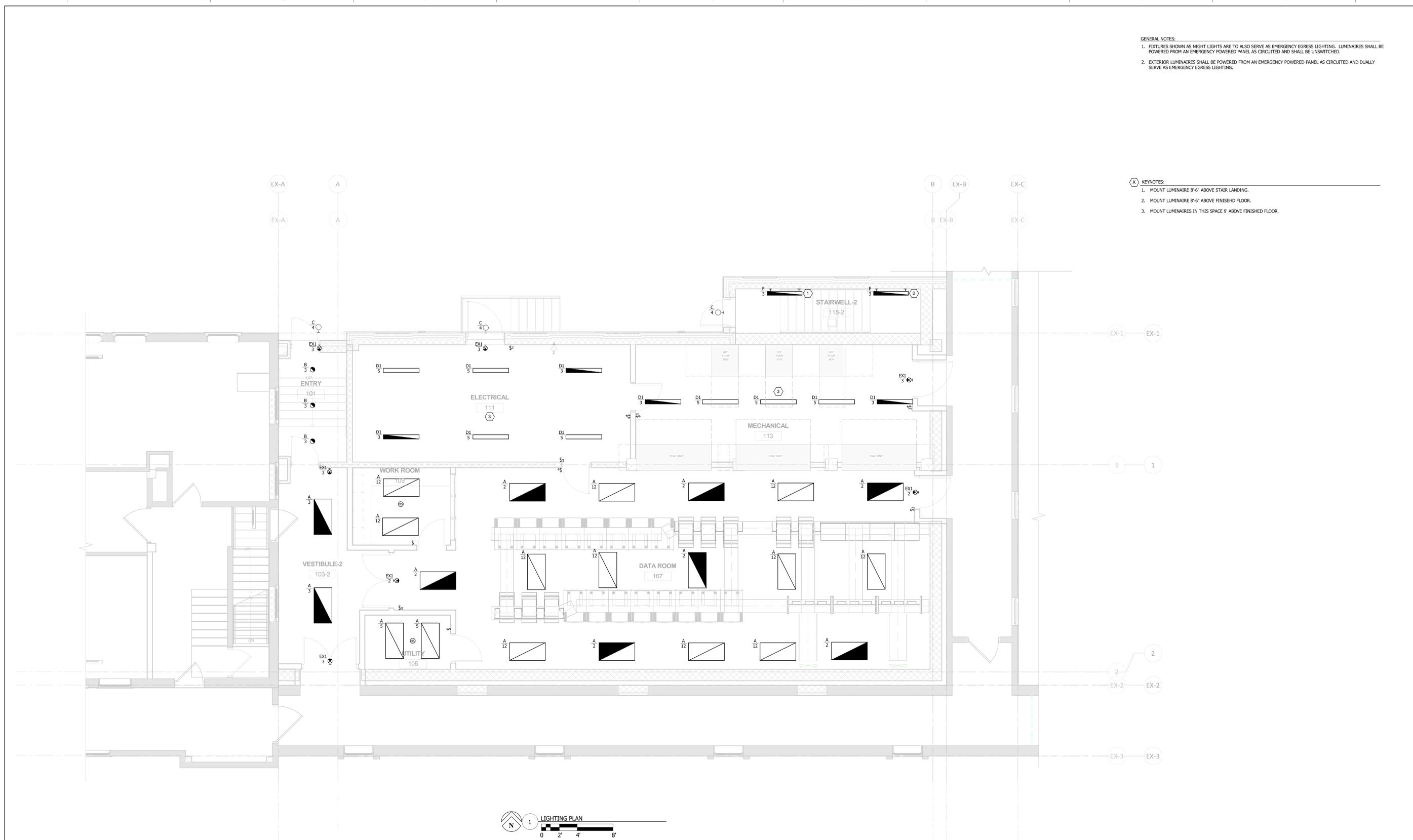
DRAWING TITLE
BASEMENT LIGHTING PLAN

| | |
|---|---------------------|
| PROJECT CONSTRUCT NEW IT CENTER FOR HEALTH CARE TECHNOLOGY MANAGEMENT EXPANSION | DATE 04.01.15 |
| DESIGNED BY NEW IT | REVISIONS RSB |
| DRAWN BY ARM | CHECKED BY DATE |
| DATE ST. CLOUD VA HCS ST. CLOUD, MN 56303 | DRAWING NO. E301 |



- GENERAL NOTES:
1. FIXTURES SHOWN AS NIGHT LIGHTS ARE TO ALSO SERVE AS EMERGENCY EGRESS LIGHTING. LUMINAIRES SHALL BE POWERED FROM AN EMERGENCY POWERED PANEL AS CIRCUITED AND SHALL BE UNSWITCHED.
 2. EXTERIOR LUMINAIRES SHALL BE POWERED FROM AN EMERGENCY POWERED PANEL AS CIRCUITED AND DUALY SERVE AS EMERGENCY EGRESS LIGHTING.

- (X) KEYNOTES:
1. MOUNT LUMINAIRE 8'-6" ABOVE STAIR LANDING.
 2. MOUNT LUMINAIRE 8'-6" ABOVE FINISHED FLOOR.
 3. MOUNT LUMINAIRES IN THIS SPACE 9' ABOVE FINISHED FLOOR.



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[Signature]
AUSTIN K. KRAUER, P.E.
DATE: 04/01/2015 REG. NO. MN 43334

DRAWING TITLE
FIRST FLOOR LIGHTING PLAN

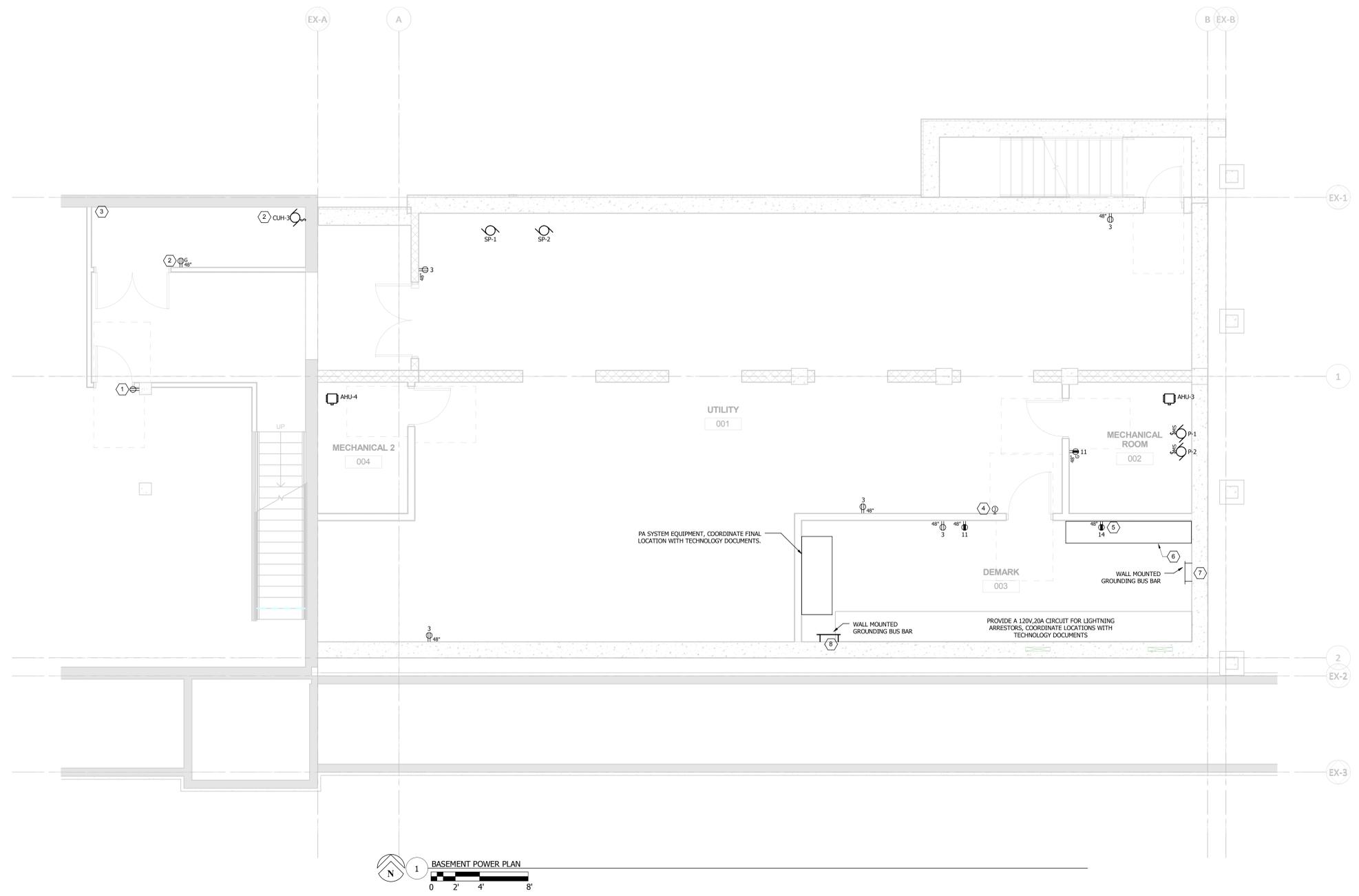
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|--|-------------------|
| PROJECT: CONSTRUCT NEW IT CENTER FOR HEALTH CARE TECHNOLOGY MANAGEMENT EXPANSION | DATE: 04.01.15 |
| SUBJECT: NEW IT | DESIGNER: RSB |
| DRAWN: ARM | CHECKED: E302 |
| LOCATION: ST. CLOUD VA HCS ST. CLOUD, MN 56303 | |



three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

- KEYNOTES:**
1. REMOVE EXISTING RECEPTACLE.
 2. CIRCUIT NEW DEVICE TO EXISTING RECEPTACLE CIRCUIT IN BASEMENT OF BUILDING 4.
 3. COORDINATE WALL MOUNTED MECHANICAL EQUIPMENT MODIFICATIONS NEEDED FOR COORDINATION OF NEW WALL WITH THE MECHANICAL DOCUMENTS.
 4. DOUBLE GANG JUNCTION BOX MOUNTED AT DOOR HANDLE HEIGHT FOR CARD READER. PROVIDE CONDUIT STUBBED UP ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF CABLING UNDER DIVISION 28. COORDINATE SIZE OF JUNCTION BOX REQUIRED FOR THE KEYPAD PROVIDED UNDER DIVISION 28 PRIOR TO INSTALLATION. COORDINATE ADDITIONAL CONDUIT REQUIREMENTS WITH DIVISION 28.
 5. EMERGENCY RECEPTACLE DEDICATED FOR CENTURYLINK EQUIPMENT. COORDINATE FINAL LOCATION WITH CENTURYLINK AND THE COR.
 6. SPACE DEDICATED FOR CENTURYLINK VOICE/DATA SERVICE EQUIPMENT. CONTRACTOR SHALL INCLUDE ALL CENTURYLINK WORK IN THE BASE BID PRICE. CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH CENTURYLINK AND ESTABLISHING THE NEW SERVICE AT THE BUILDING. REFER TO TECHNOLOGY DOCUMENTS FOR ADDITIONAL INFORMATION.
 7. GROUNDING BUS BAR DEDICATED FOR CENTURYLINK EQUIPMENT. COORDINATE FINAL LOCATION WITH CENTURYLINK. PROVIDE A 1/0AWG GROUNDING CONDUCTOR TO SERVICE ENTRANCE EQUIPMENT.
 8. GROUNDING BUS BAR DEDICATED FOR LIGHTNING ARRESTORS AND DEMARK EQUIPMENT. COORDINATE FINAL LOCATION WITH TECHNOLOGY EQUIPMENT SUPPLIER. PROVIDE A 1/0AWG GROUNDING CONDUCTOR TO SERVICE ENTRANCE EQUIPMENT.

- GENERAL NOTES:**
1. PROVIDE A 208V/20A CIRCUIT TO THE PA EQUIPMENT. COORDINATE FINAL LOCATION WITH THE TECHNOLOGY DOCUMENTS AND THE COR. CONTRACTOR SHALL FIELD VERIFY VOLTAGE AND RATING OF EXISTING PA EQUIPMENT PRIOR TO ROUGH-INS. REFER TO TECHNOLOGY DOCUMENTS FOR ADDITIONAL INFORMATION.



1 BASEMENT POWER PLAN

0 2' 4' 8'

CONSTRUCTION DOCUMENTS 100%

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| DRAWN | NEW IT RSB |
| CHECKED | ARM |
| DATE | 04.01.15 |
| SCALE | AS NOTED |
| PROJECT NO. | 656-14-246 |
| DRAWING NO. | E401 |

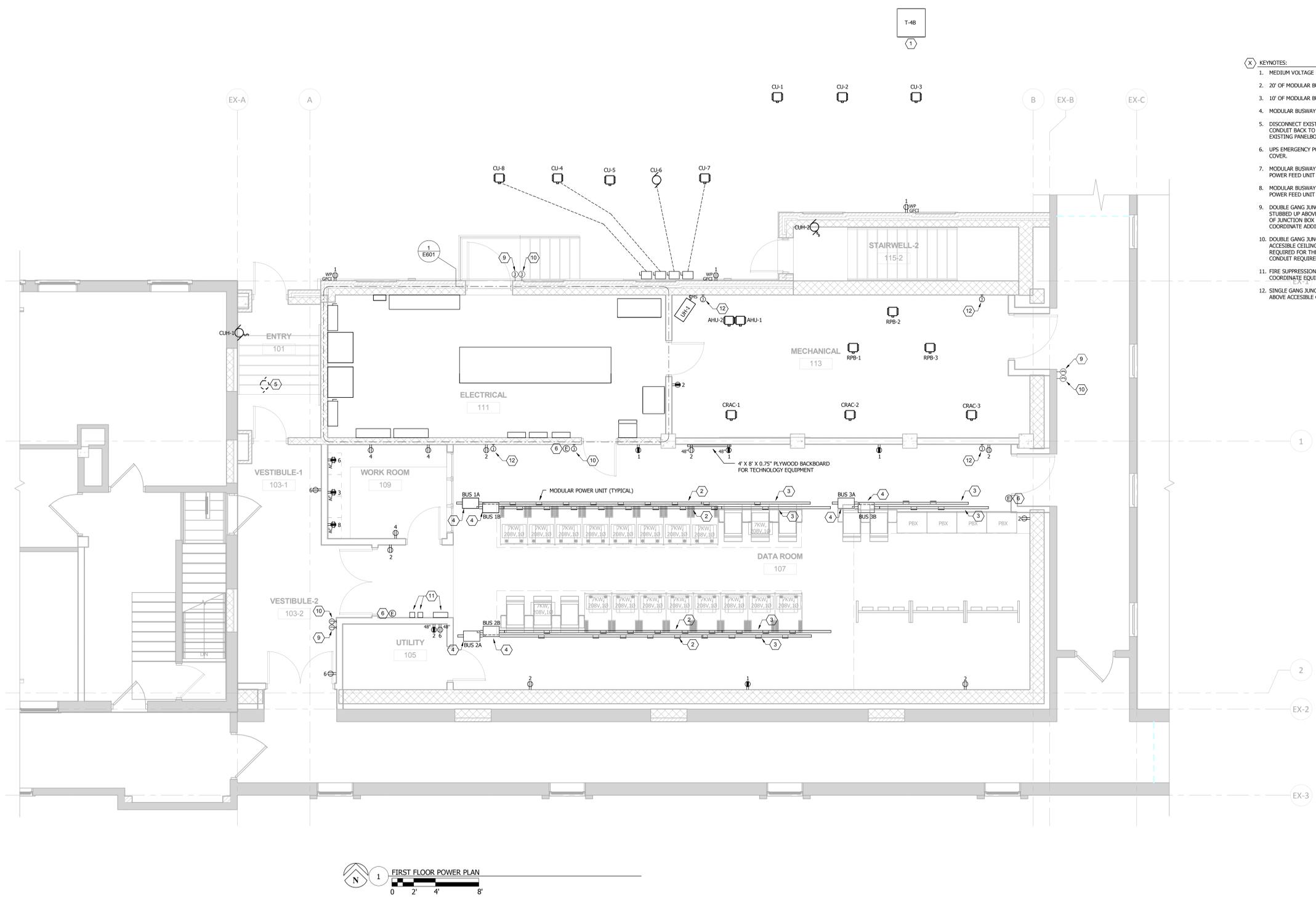
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| DRAWN | NEW IT RSB |
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| SCALE | AS NOTED |
| PROJECT NO. | 656-14-246 |
| DRAWING NO. | E401 |



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 one eighth inch = one foot

- GENERAL NOTES:
1. MOUNT MODULAR BUSWAY TO THE STRUCTURAL CEILING. PROVIDE MANUFACTURER MOUNTING HARDWARE AND DEVICES FOR SECURING THE BUSWAY. MODULAR DEVICES SHALL BE LOCATED UNDER THE GRID CEILING. COORDINATE LOCATION WITH OTHER CEILING MOUNTED EQUIPMENT AND DATA RACK LOCATIONS.
 2. SEAL ALL CONDUIT OPENINGS THROUGH DATA ROOM WALLS WITH DUCT SEAL OR SIMILAR TO PREVENT THE FIRE SUPPRESSION GAS TO LEAK INTO ADJACENT AREAS.
 3. REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-INS REQUIRED FOR SECURITY EQUIPMENT. NOT ALL ROUGH-INS ARE SHOWN ON THIS DRAWING.
 4. PROVIDE A 120V CIRCUIT ABOVE EACH DOOR WITH A CARD READER. REFER TO TECHNOLOGY DOCUMENTS FOR ADDITIONAL INFORMATION.

- (X) KEYNOTES:
1. MEDIUM VOLTAGE PAD MOUNT TRANSFORMER. REFER TO SITE PLANS FOR LOCATION.
 2. 20' OF MODULAR BUSWAY; QUANTITY OF MODULAR POWER UNITS AS SHOWN.
 3. 10' OF MODULAR BUSWAY; QUANTITY OF MODULAR POWER UNITS AS SHOWN.
 4. MODULAR BUSWAY END POWER FEED UNIT, SIZE AND ORIENTATE FOR INSTALLATION IN SPACE ABOVE CEILING.
 5. DISCONNECT EXISTING CONDENSING UNIT AND OUTDOOR WALL MOUNTED DISCONNECT SWITCH. REMOVE ALL CONDUIT BACK TO NEAREST JUNCTION BOX UTILIZED BY OTHER CIRCUITS AND REMOVE AND WIRING BACK TO EXISTING PANELBOARD IN BUILDING 4.
 6. UPS EMERGENCY POWER SHUTDOWN PUSHBUTTON PROVIDED IN A PROTECTED ENCLOSURE WITH FLIP OPEN COVER.
 7. MODULAR BUSWAY END POWER FEED UNIT, SIZE AND ORIENTATE FOR INSTALLATION IN SPACE ABOVE CEILING. POWER FEED UNIT TO BE FED FROM SAME CIRCUIT FEEDING BUS 3A.
 8. MODULAR BUSWAY END POWER FEED UNIT, SIZE AND ORIENTATE FOR INSTALLATION IN SPACE ABOVE CEILING. POWER FEED UNIT TO BE FED FROM SAME CIRCUIT FEEDING BUS 3B.
 9. DOUBLE GANG JUNCTION BOX MOUNTED AT DOOR HANDLE HEIGHT FOR CARD READER. PROVIDE CONDUIT STUBBED UP ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF CABLING UNDER DIVISION 28. COORDINATE SIZE OF JUNCTION BOX REQUIRED FOR THE KEYPAD PROVIDED UNDER DIVISION 28 PRIOR TO INSTALLATION. COORDINATE ADDITIONAL CONDUIT REQUIREMENTS WITH DIVISION 28.
 10. DOUBLE GANG JUNCTION BOX MOUNTED AT 46" AFF FOR KEY PAD. PROVIDE CONDUIT STUBBED UP ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF CABLING UNDER DIVISION 28. COORDINATE SIZE OF JUNCTION BOX REQUIRED FOR THE KEYPAD PROVIDED UNDER DIVISION 28 PRIOR TO INSTALLATION. COORDINATE ADDITIONAL CONDUIT REQUIREMENTS WITH DIVISION 28.
 11. FIRE SUPPRESSION AND DETECTION EQUIPMENT, PROVIDE 120V CIRCUITS TO THIS EQUIPMENT UNDER DIVISION 26. COORDINATE EQUIPMENT REQUIREMENTS AND LOCATION WITH THE DIVISION 28 DOCUMENTS.
 12. SINGLE GANG JUNCTION BOX MOUNTED AT 8" AFF FOR MOTION DETECTOR. PROVIDE CONDUIT STUBBED UP ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF CABLING UNDER DIVISION 28.



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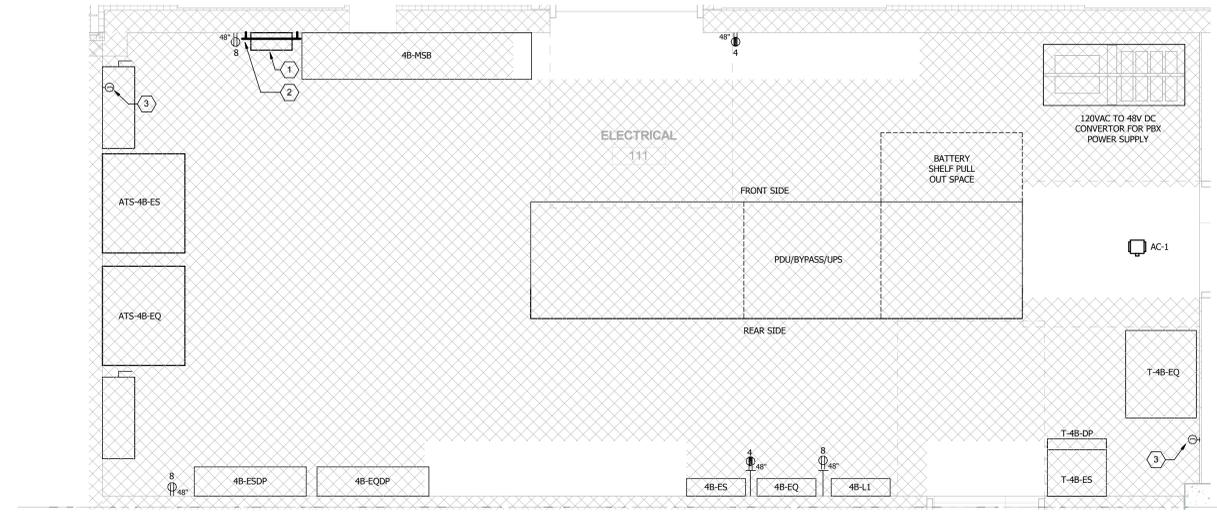
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| CONSTRUCT NEW IT CENTER FOR HEALTH CARE TECHNOLOGY MANAGEMENT EXPANSION | 04.01.15 |
| BUILDING: | DESIGNER: |
| NEW IT | RSB |
| DATE: | SCALE: |
| ST. CLOUD VA HCS | ARM |
| ST. CLOUD, MN 56303 | DATE: |
| | E402 |

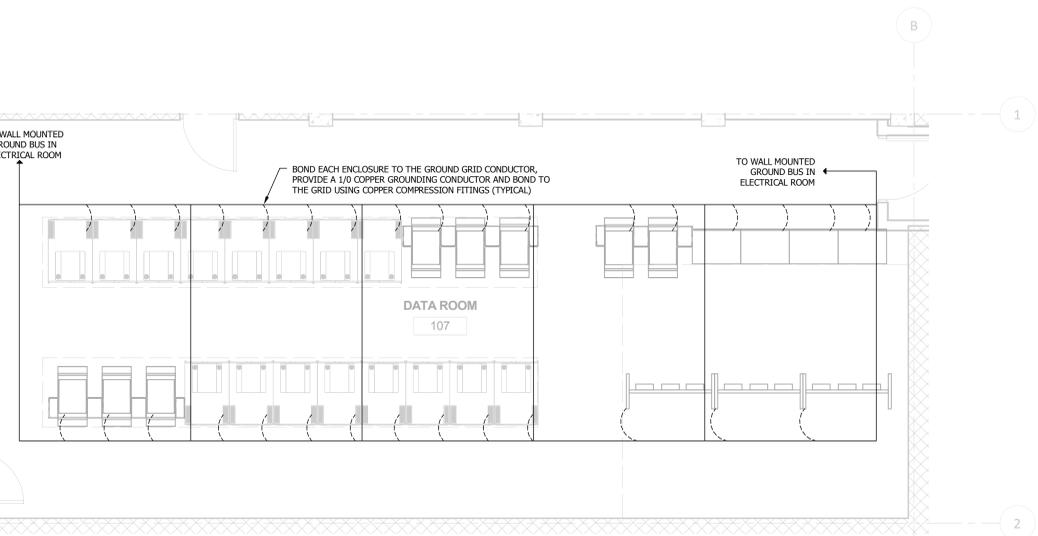
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 Brainerd | Montevideo | Alexandria

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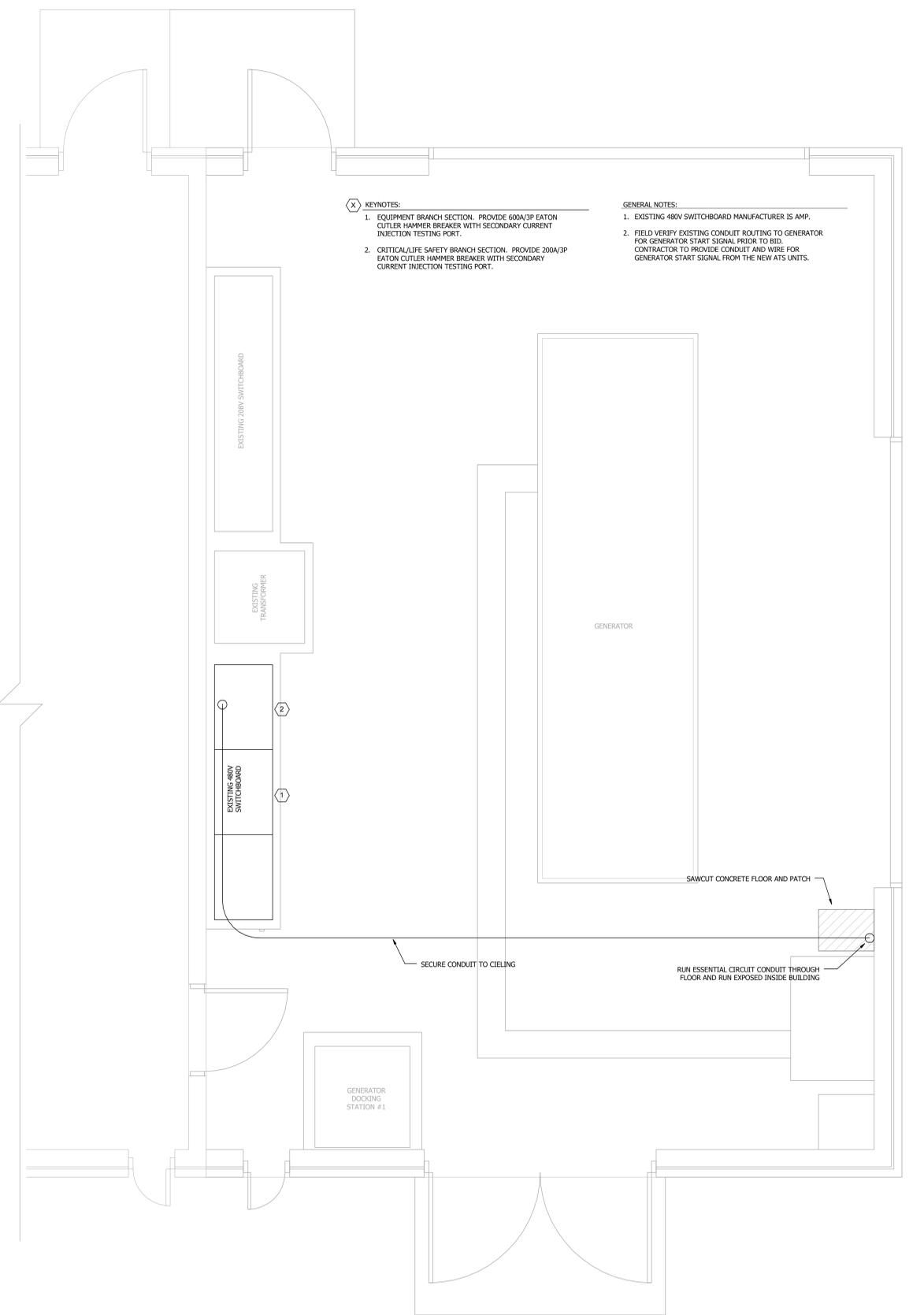
- KEYNOTES:**
- POWER METERING EQUIPMENT. PROVIDE SQUARE D ION 7550 IN AN WALL MOUNTED ENCLOSURE. PROVIDE A SQUARE D POWER LOGIC METER IN A SEPERATE ENCLOSURE MOUNTED BELOW THE ION 7550 ENCLOSURE. PROVIDE CT'S AT THE MAIN SWITCHBOARD AND CABLING TO THE POWER METER. PROVIDE A BELDEN 892 CABLE BETWEEN THE POWER METER AND THE ION 7550. PROVIDE REQUIRED CONDUIT, CABLING AND PROGRAMING TO CONNECT THE METERING SYSTEMS TO THE CAMPUS MONITORING NETWORK.
 - WALL MOUNTED GROUNDING BUSS BAR MOUNTED ABOVE POWER METERING EQUIPMENT.
 - SINGLE GANG JUNCTION BOX MOUNTED AT 8' AFF FOR MOTION DETECTOR. PROVIDE CONDUIT STUBBED UP ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF CABLING UNDER DIVISION 28.
- GENERAL NOTES:**
- VERIFY ALL EQUIPMENT DIMENSIONS, DEDICATED WORK SPACE AND ROOM LAYOUT PRIOR TO ORDERING EQUIPMENT. IF A CONFLICT EXISTS NOTIFY THE COR.
 - PROVIDE A SCALED DRAWING OF THE EQUIPMENT LAYOUT IN THE SPACE SHOWING ACTUAL DIMENSIONS OF ALL PROPOSED EQUIPMENT. THE DRAWING SHALL BE PROVIDED WITH THE EQUIPMENT SUBMITTALS.
 - GRAY CROSSHATCHING REPRESENTS SPACE DEDICATED FOR ELECTRICAL EQUIPMENT TO MEET NFPA 70 REQUIRED EQUIPMENT CLEARANCES.
 - ALL DIMENSIONS ARE BASED ON EQUIPMENT USED AS BASIS OF DESIGN.
 - PDU/UPS TO BE CONNECTED TO THE CAMPUS MONITORING SYSTEM. COORDINATE REQUIREMENTS WITH THE CONTROL SYSTEM PROVIDER. PROVIDE CONDUIT AND CABLING AS NEEDED TO ESTABLISH COMMUNICATIONS.

ENLARGED PLAN - ELECTRICAL ROOM 111



- GENERAL NOTES:**
- GROUNDING GRID AND EQUIPMENT CONNECTIONS SHALL BE LOCATED IN THE RAISED FLOOR SPACE.
 - MOUNT THE GROUNDING GRID CONDUCTOR TO THE RAISED FLOOR SUPPORTS USING BRONZE, U-BOLT GROUNDING CLAMPS. SPACE BETWEEN CLAMPS SHALL NOT BE GREATER THAN 5'.

DATA ROOM GROUNDING GRID



- KEYNOTES:**
- EQUIPMENT BRANCH SECTION. PROVIDE 600A/3P EATON CUTLER HAMMER BREAKER WITH SECONDARY CURRENT INJECTION TESTING PORT.
 - CRITICAL/LIFE SAFETY BRANCH SECTION. PROVIDE 200A/3P EATON CUTLER HAMMER BREAKER WITH SECONDARY CURRENT INJECTION TESTING PORT.
- GENERAL NOTES:**
- EXISTING 480V SWITCHBOARD MANUFACTURER IS AMP.
 - FIELD VERIFY EXISTING CONDUIT ROUTING TO GENERATOR FOR GENERATOR START SIGNAL. PRIOR TO BID, CONTRACTOR TO PROVIDE CONDUIT AND WIRE FOR GENERATOR START SIGNAL FROM THE NEW ATS UNITS.

ENLARGED PLAN - BUILDING 112

CONSTRUCTION DOCUMENTS 100%

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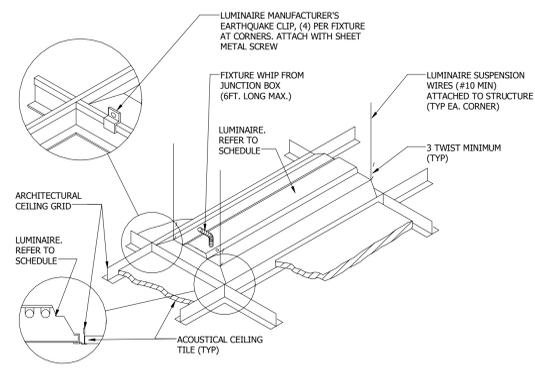
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 ENLARGED ELECTRICAL PLANS

PROJECT:
 CONSTRUCT NEW IT CENTER FOR HEALTH CARE TECHNOLOGY MANAGEMENT EXPANSION

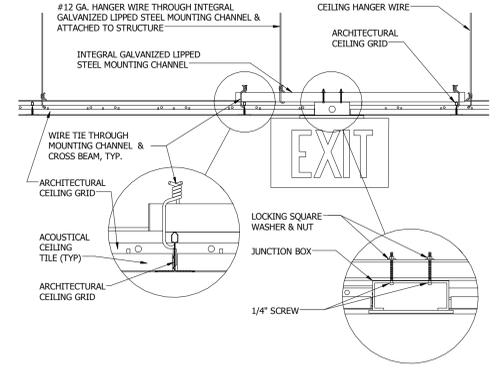
DATE: 04.01.15
 REVISION: AS NOTED
 PROJECT NO.: 656-14-246

BLOCK: NEW IT
 DESIGNED BY: RSB
 DRAWN BY: Author
 CHECKED BY:
 DATE: E601

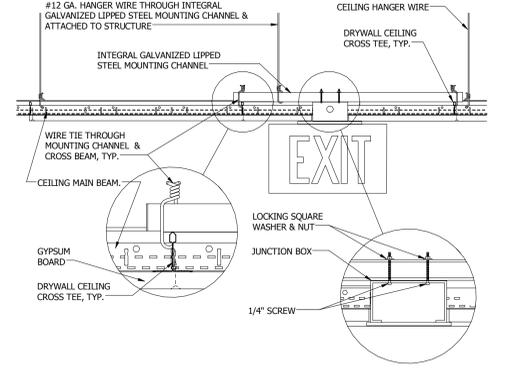




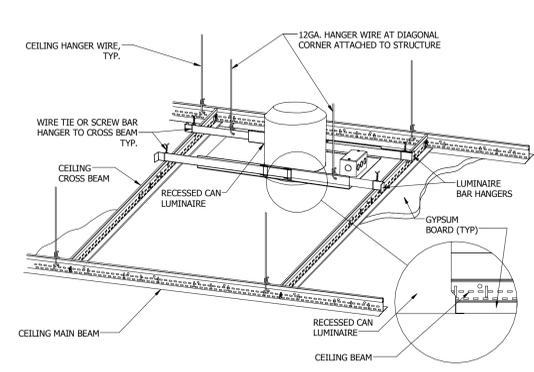
1 LUMINAIRE MOUNTING - LAY-IN CEILING
NOT TO SCALE



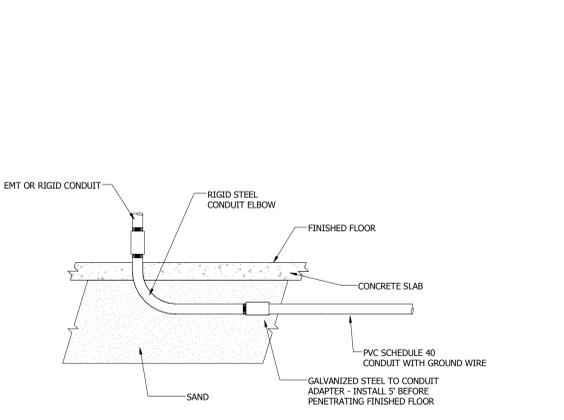
2 EXIT SIGN MOUNTING - LAY-IN CEILING
NOT TO SCALE



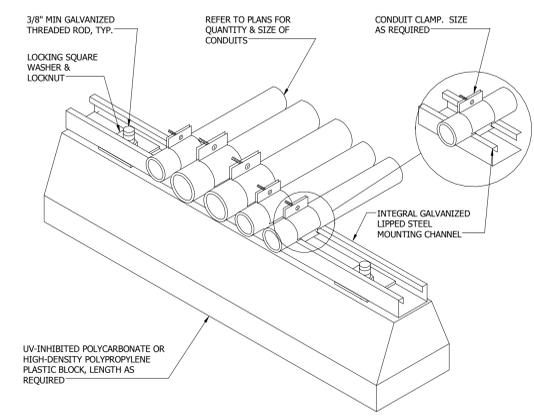
3 EXIT SIGN MOUNTING - GYPBOARD CEILING
NOT TO SCALE



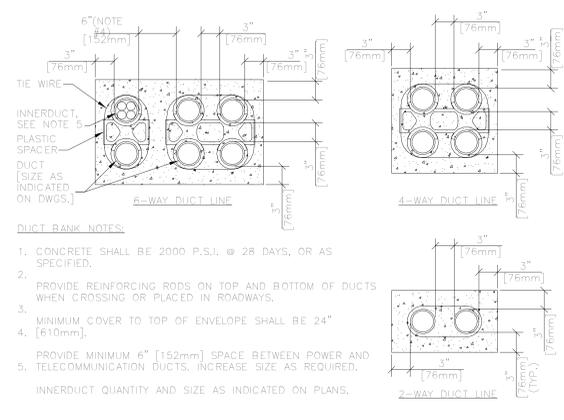
4 DOWNLIGHT MOUNTING - GYPBOARD CEILING
NOT TO SCALE



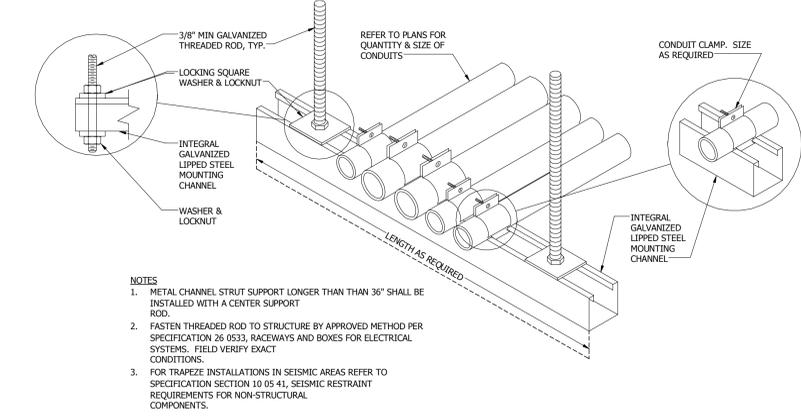
5 BELOW SLAB CONDUIT
NOT TO SCALE



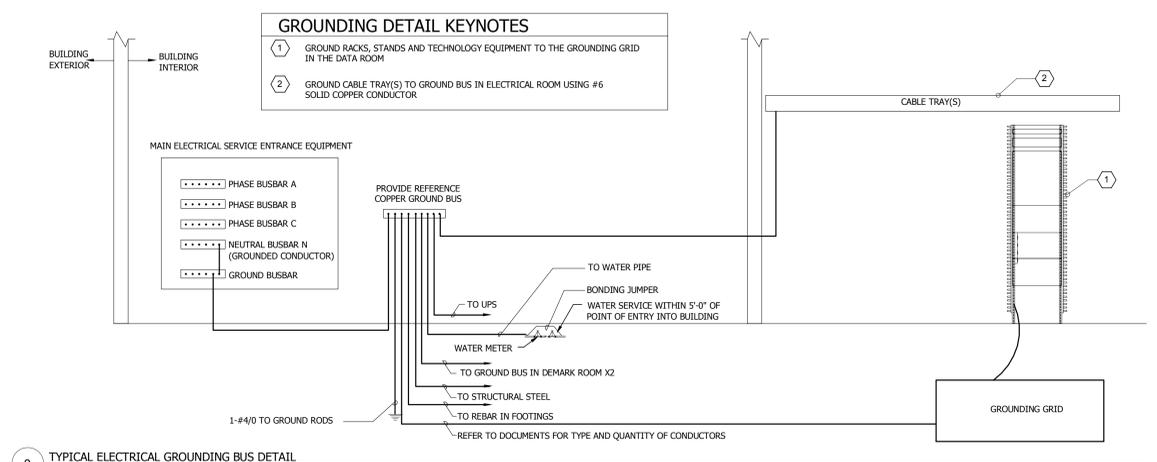
6 ROOF CONDUIT SUPPORT
NOT TO SCALE



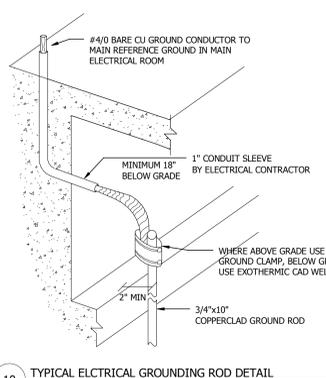
7 VA STANDARD DUCT BANK DETAILS
NOT TO SCALE



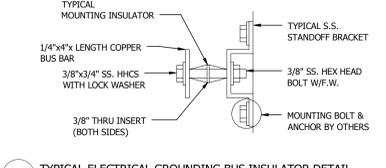
8 CONDUIT TRAPEZE MOUNTING
NOT TO SCALE



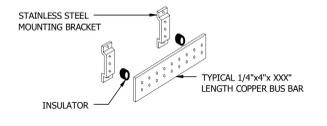
9 TYPICAL ELECTRICAL GROUNDING BUS DETAIL
NOT TO SCALE



10 TYPICAL ELECTRICAL GROUNDING ROD DETAIL
NOT TO SCALE



11 TYPICAL ELECTRICAL GROUNDING BUS INSULATOR DETAIL
NOT TO SCALE



12 TYPICAL ELECTRICAL GROUNDING BUS BAR DETAIL
NOT TO SCALE

GROUNDING DETAIL KEYNOTES

- 1 GROUND RACKS, STANDS AND TECHNOLOGY EQUIPMENT TO THE GROUNDING GRID IN THE DATA ROOM
- 2 GROUND CABLE TRAY(S) TO GROUND BUS IN ELECTRICAL ROOM USING #6 SOLID COPPER CONDUCTOR

CONSTRUCTION DOCUMENTS 100%

| NO. | REVISION | DATE |
|-----|----------|------|
| | | |



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120 17th Avenue W.
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(520) 762-1290

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3339 West St. Germain, Suite 250
St. Cloud, MN 56301
(320) 217-5557



Alexandria
525 Broadway Street
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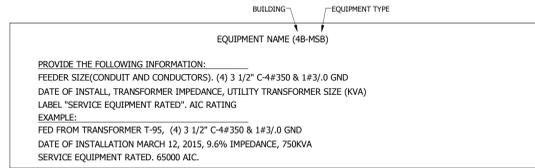
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DATE: 04/01/2015
REG. NO.:

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ELECTRICAL DETAILS

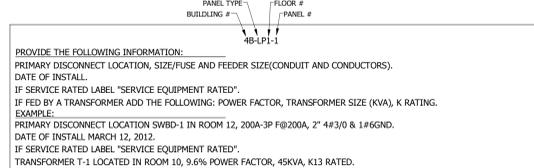
| | | |
|---|------------------|-----------------------|
| PROJECT: CONSTRUCT NEW IT CENTER FOR HEALTH CARE TECHNOLOGY MANAGEMENT EXPANSION | | DATE: 04.01.15 |
| BLOCK: NEW IT | | REVISION: AS NOTED |
| DESIGNER: NEW IT | DRAWN BY: RSB | CHECKED BY: ARM |
| LOCATION: ST. CLOUD VA HCS ST. CLOUD, MN 56303 | | SCALE: E701 |





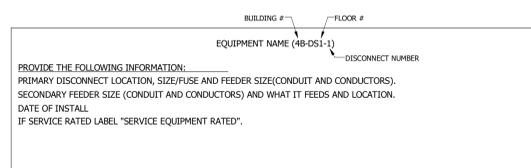
- NOTES:
1. PROVIDE SIGNS ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 600 VOLTS.
 2. THE ABOVE LABELING IS MINIMUM REQUIRED. IN ADDITION TO THE MINIMUM REQUIREMENT, ADD ALL LABELING REQUIRED PER THE NEC.
 3. LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT SO IT'S IN SIGHT.

1 SERVICE EQUIPMENT LABEL
NOT TO SCALE



- NOTES:
1. PROVIDE SIGNS ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 600 VOLTS.
 2. THE ABOVE LABELING IS MINIMUM REQUIRED. IN ADDITION TO THE MINIMUM REQUIREMENT, ADD ALL LABELING REQUIRED PER THE NEC.
 3. LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT SO IT'S IN SIGHT.

2 PANEL LABEL
NOT TO SCALE



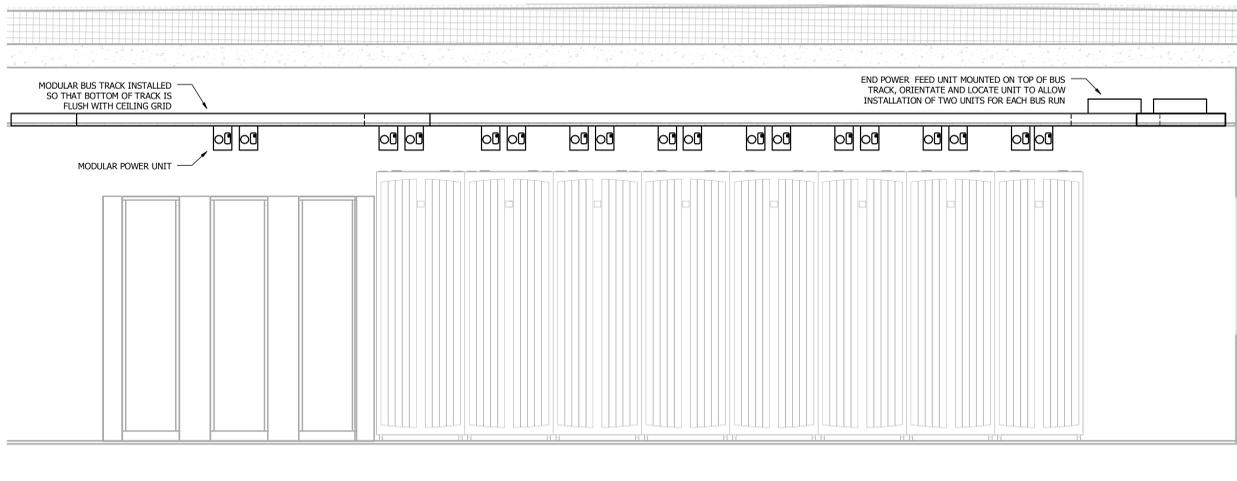
- NOTES:
1. PROVIDE SIGNS ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 600 VOLTS.
 2. THE ABOVE LABELING IS MINIMUM REQUIRED. IN ADDITION TO THE MINIMUM REQUIREMENT, ADD ALL LABELING REQUIRED PER THE NEC.
 3. LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT SO IT'S IN SIGHT.

3 DISCONNECT LABEL
NOT TO SCALE



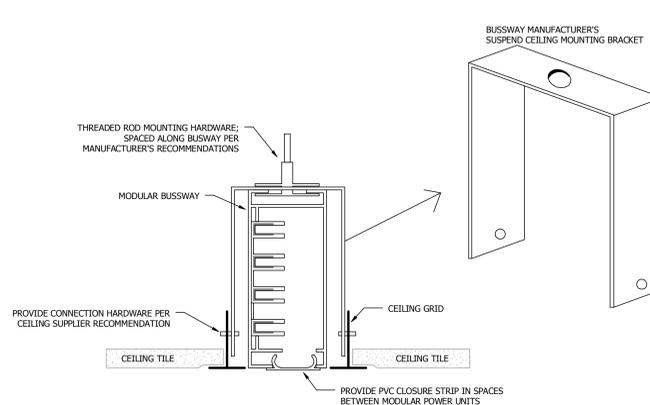
- NOTES:
1. LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT SO IT'S IN SIGHT.

4 MEDIUM VOLTAGE SWITCH LABEL
NOT TO SCALE

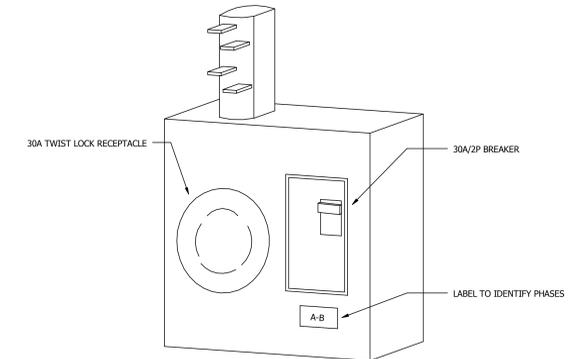


- GENERAL NOTES:
1. PROVIDE MOUNTING HARDWARE FOR MODULAR BUS PER MANUFACTURER RECOMMENDATIONS.
 2. MODULAR BUS MOUNTING HARDWARE SHALL BE MOUNTED TO THE UNISTRUT GRID WHICH IS PROVIDED UNDER THE ARCHITECTURAL DOCUMENTS. PROVIDE ADDITIONAL UNISTRACK PEICES AND ACCESSORIES AS NEEDED TO ALIGN UNISTRACK WITH MODULAR BUS MOUNTING HARDWARE.
 3. COORDINATE CEILING GRID PEICES AND ACCESSORIES FOR MOUNTING IN THE GRID CEILING WITH THE CEILING SUPPLIER AND MODULAR BUS MANUFACTURER. PROVIDE ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION.
 4. NOT ALL EQUIPMENT IS SHOWN.

5 MODULAR BUS ELEVATION (TYPICAL)



6 MODULAR BUSS CROSS SECTION MOUNTING DETAIL
NOT TO SCALE



7 MODULAR POWER UNIT
NOT TO SCALE

CONSTRUCTION DOCUMENTS 100%

| NO | REVISION | DATE |
|----|----------|------|
| | | |



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120 17th Avenue W,
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(520) 762-1290

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St. Cloud, MN 56301
(320) 217-5557



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525 Broadway Street
Alexandria, MN 56308
phone 320.759.9300
facsimile 320.759.9362
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MINNESOTA.

ANNEX K: KAREEM, PE
DATE: 04/01/2015

DRAWN BY:
ELECTRICAL DETAILS

PROJECT:
CONSTRUCT NEW IT CENTER
FOR HEALTH CARE
TECHNOLOGY MANAGEMENT
EXPANSION

SHEET NO:
NEW IT

DRAWN BY:
RSB

CHECKED BY:
ARM

DATE:
04.01.15

SCALE:
AS NOTED

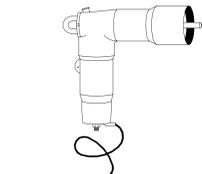
PROJECT NO:
656-14-246

DATE:
04.01.15

SCALE:
E702



| 13.8 KV TRANSFORMER SCHEDULE | | | | | | | |
|------------------------------|------------------------------|------|--------------------|----------------------|--------------------|--------|---------|
| NUMBER | TRANSFORMER (By Building) | TYPE | PRIMARY VOLTAGE | SECONDARY VOLTAGE | CONNECTION TYPE | RATING | REMARKS |
| TF-4B | BUILDING 4 | PAD | 13.8 KV | 480Y/277 | DELTA-WYE | 750KVA | |



1
E500
LOAD BREAK ELBOW
SURGE ARRESTER



NOTE:
USE "DANGER" SIGNS ON ALL DUCTS, PULLBOXES, AND JUNCTION BOXES CONTAINING CONDUCTORS OPERATING AT POTENTIALS OVER 600 VOLTS.
USE "WARNING" SIGNS ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 600 VOLTS.

| STANDARD PROPORTIONS ALL DIMENSIONS IN INCHES | | | | |
|---|-------|----------|---------|-------------|
| SIGN SIZE | | RED OVAL | | WORD DANGER |
| Min. Height | Width | Height | Width | Height |
| 3 1/2 | x 5 | 1 7/16 | x 4 1/4 | 23/32 |

"DANGER" / "WARNING" SIGN

2
E500
EQUIPMENT WARNING SIGNS
NO SCALE

EQUIPMENT NAME

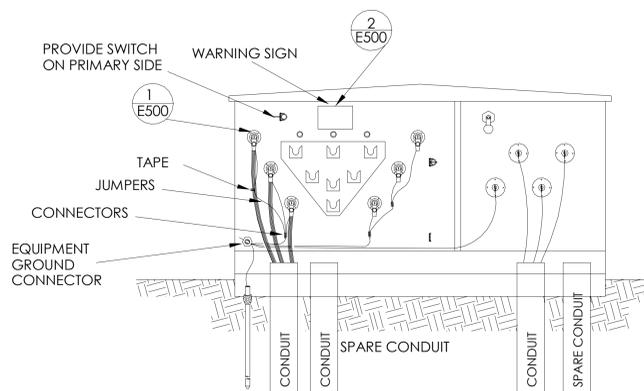
PRIMARY DISCONNECT LOCATION, SIZE/FUSE AND FEEDER SIZE(CONDUIT AND CONDUCTORS).
SECONDARY DISCONNECT LOCATION, SIZE/FUSE AND FEEDER SIZE(CONDUIT AND CONDUCTORS).
DATE, TRANSFORMER POWER FACTOR, TRANSFORMER SIZE IF FEED FROM TRANSFORMER
IF SERVICE RATED LABEL "SERVICE EQUIPMENT RATED".
AIC RATING.

NOTES:
USE "WARNING" SIGNS ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 600 VOLTS.

THE ABOVE LABELING IS MINIMUM REQUIRED ALSO ADD ALL LABELING PER NEC.

LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT WITH BOLTS OR RIVETS.

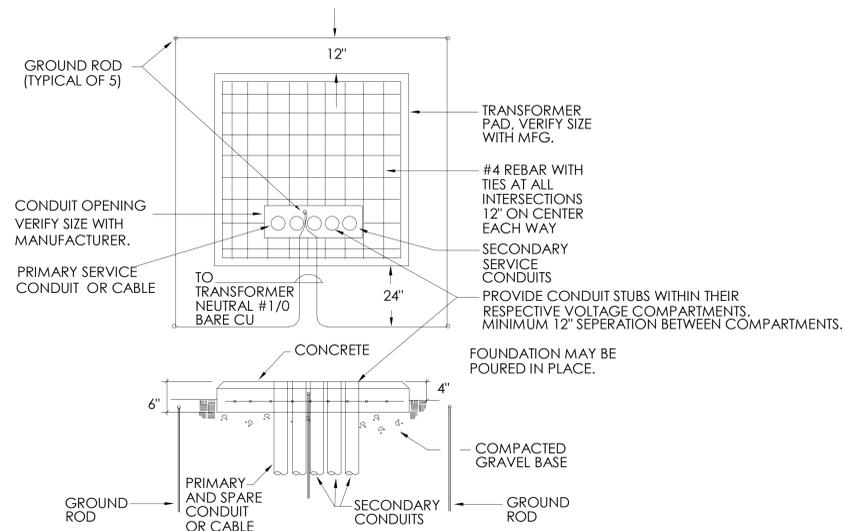
3
E500
EQUIPMENT LABELING SIGNS
NO SCALE



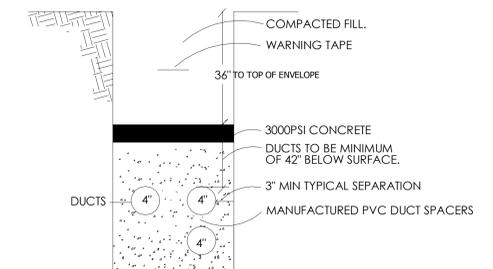
SEE DETAIL 5/E500 FOR TRANSFORMER PAD.

4
E500
THREE PHASE PAD MOUNTED TRANSFORMER
NO SCALE

TRANSFORMER BY CONTRACTOR.
INCLUDING FEATURES:
ADJUSTABLE TAP SETTINGS.
BAYONET FUSES
PRIMARY ROTARY SWITCH (OIL COMPARTMENT)
OIL SAMPLE PORT ON SECONDARY SIDE
LOCKABLE DOOR
SEE SPECIFICATIONS 26-12-19



5
E500
NEW TRANSFORMER PAD DETAIL
NO SCALE



6
E500
DUCTBANK AND TRENCH DETAIL
NO SCALE

CONSTRUCTION DOCUMENTS 100%

| NO | REVISION | DATE |
|----|----------|------|
| | | |



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I hereby certify that this plan
specification, or report was prepared
by me or under my direct supervision and
I am a duly Licensed Professional Engineer
under the laws of the State of
Minnesota.

DATE: 04/01/2015

DRAWN BY:
ELECTRICAL DETAILS

PROJECT:
CONSTRUCT NEW IT CENTER
FOR HEALTH CARE
TECHNOLOGY MANAGEMENT
EXPANSION

SHEET NO:
NEW IT

DESIGN BY:
RSB

DRAWN BY:
ARM

CHECKED BY:
DATE:

DATE: 04.01.15

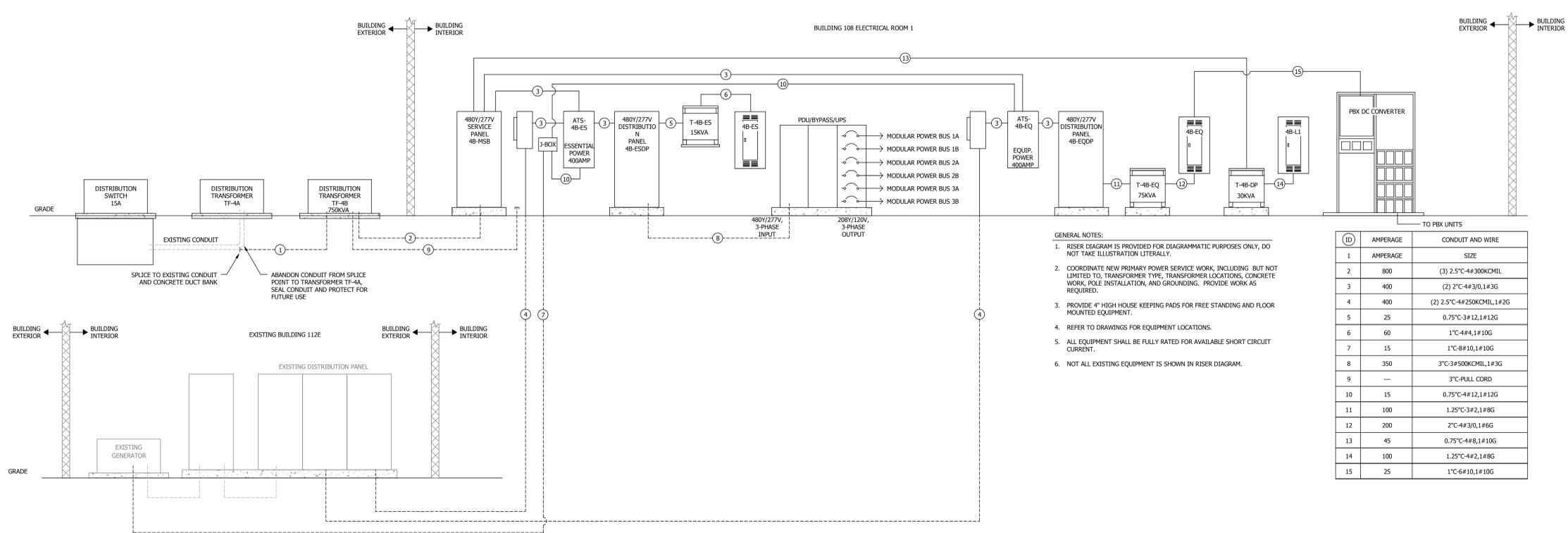
FIG. NO. AS NOTED

PROJECT NO. 656-14-246

DATE: 04.01.15

FIG. NO. E703





- GENERAL NOTES:
1. RISER DIAGRAM IS PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY, DO NOT TAKE ILLUSTRATION LITERALLY.
 2. COORDINATE NEW PRIMARY POWER SERVICE WORK, INCLUDING BUT NOT LIMITED TO, TRANSFORMER TYPE, TRANSFORMER LOCATIONS, CONCRETE WORK, POLE INSTALLATION, AND GROUNDING. PROVIDE WORK AS REQUIRED.
 3. PROVIDE 4" HIGH HOUSE KEEPING PADS FOR FREE STANDING AND FLOOR MOUNTED EQUIPMENT.
 4. REFER TO DRAWINGS FOR EQUIPMENT LOCATIONS.
 5. ALL EQUIPMENT SHALL BE FULLY RATED FOR AVAILABLE SHORT CIRCUIT CURRENT.
 6. NOT ALL EXISTING EQUIPMENT IS SHOWN IN RISER DIAGRAM.

| (ID) | AMPERAGE | CONDUIT AND WIRE SIZE |
|------|----------|----------------------------|
| 1 | AMPERAGE | |
| 2 | 800 | (3) 2.5" C-4#300KCMIL |
| 3 | 400 | (2) 2" C-4#3/0,1#3G |
| 4 | 400 | (2) 2.5" C-4#250KCMIL,1#2G |
| 5 | 25 | 0.75" C-3#12,1#12G |
| 6 | 60 | 1" C-4#4,1#10G |
| 7 | 15 | 1" C-8#10,1#10G |
| 8 | 350 | 3" C-3#500KCMIL,1#3G |
| 9 | --- | 3" C-PULL CORD |
| 10 | 15 | 0.75" C-4#12,1#12G |
| 11 | 100 | 1.25" C-3#2,1#8G |
| 12 | 200 | 2" C-4#3/0,1#6G |
| 13 | 45 | 0.75" C-4#8,1#10G |
| 14 | 100 | 1.25" C-4#2,1#8G |
| 15 | 25 | 1" C-6#10,1#10G |

1 RISER DIAGRAM
NOT TO SCALE

CONSTRUCTION DOCUMENTS 100%

| | | |
|-----|----------|------|
| NO. | REVISION | DATE |
| | | |



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(520) 762-1290

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(320) 217-5557



Alexandria
525 Broadway Street
Alexandria, MN 56308
phone 320.759.9303
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REGISTERED UNDER THE LAWS OF THE STATE OF
MINNESOTA.

[Signature]
DATE: 04/01/2015
REG. NO. MN 41334

DRAWING FILE:
ELECTRICAL RISER DIAGRAMS

PROJECT:
CONSTRUCT NEW IT CENTER
FOR HEALTH CARE
TECHNOLOGY MANAGEMENT
EXPANSION

BLOCK: NEW IT
ARM: ARM
DATE: 04.01.15
ISSUE: AS NOTED
PROJECT NO: 656-14-246
DRAWING NO: E801



| LUMINAIRE SCHEDULE | | | | | | | | | |
|--------------------|--------------------------------|------------|---------------|---|------------------------------|--|--------------------------------------|--|--|
| ID TAG | TYPE | INPUT LOAD | MOUNTING | LIGHT SOURCE | VOLTAGE/BALLAST | DESCRIPTION | COLOR | APPROVED MANUFACTURER | |
| A | 2X4 ARCHITECTURAL LED TROFFER | 40 VA | RECESSED | LED, 4000 MIN. DELIVERED LUMENS, 3,500K, CRI OF 90+ | MULTIVOLT/ELECTRONIC DIMMING | 20-GAUGE STEEL HOUSING, FIELD REPLACEABLE LIGHT ENGINE, POWER SUPPLY, THERMAL MANAGEMENT, AND POSTICAL MIXING COMPONENTS, ONE-PIECE LOWER REFLECTOR WITH A TEXTURED HIGH REFLECTANCE WHITE POLYESTER POWDER COATING, DIFFUSING LENS INTEGRATED WITH UPWARD-FACING LED STRIP TO ELIMINATE DIRECT VIEW OF LEDS WITH LOWER REFLECTOR. | WHITE | CRE24 SERIES, OR EQUAL | |
| B | 6" DOWNLIGHT EXTERIOR WALL | 25 VA | RECESSED WALL | LED 1700 LUMENS | 120V | OPEN CLEAR | BRONZE | GOTHAM LIGHTING EVO SERIES, OR EQUAL | |
| C | 4" LED STRIPLIGHT | 27 VA | CHAIN HUNG | LED (1) 21 LED LIGHT/BAR 80CRI 4000K | 120V/ELECTRONIC | TWO PIECE DIE CAST ALUMINUM HOUSING AND REMOVABLE HINGED DOOR FRAME, TYPE 4 DIST., BRONZE IN COLOR, INTEGRAL PHOTOCCELL | BRONZE | COOPER ISW IMPACT ELITE SMALL WEDGE SERIES, OR EQUAL | |
| D1 | 4" LED STRIPLIGHT | 43 VA | SURFACE MOUNT | LED, 3000 DELIVERED LUMENS, 4000K | 120V/ELECTRONIC | CODE-GAUGE COLD ROLLED STEEL HOUSING CHANNEL, SNAP ON/OFF LENS DIFFUSER, TOOLLESS CHANNEL COVER REMOVAL | WHITE | LITHONIA ZL2N SERIES, OR EQUAL | |
| D2 | 4" LED STRIPLIGHT | 43 VA | SURFACE MOUNT | LED, 3000 DELIVERED LUMENS, 4000K | 120V/ELECTRONIC | CODE-GAUGE COLD ROLLED STEEL HOUSING CHANNEL, SNAP ON/OFF LENS DIFFUSER, TOOLLESS CHANNEL COVER REMOVAL | WHITE | LITHONIA ZL2N SERIES, OR EQUAL | |
| E2 | EXIT SIGN W/EMERGENCY LIGHTING | 6 VA | UNIVERSAL | LED | 120V | TERMOPLASTIC IMPACT RESISTANT, SCRATCH RESISTANT, CORROSION RESISTANT HOUSING, LED LAMP HEADS | WHITE W/RED LETTERING | LITHONIA LHQM SERIES, SURE-LITE APCH-9P, OR EQUAL | |
| EX1 | EXIT SIGN | 6 VA | UNIVERSAL | LED | 120V | DIE CAST, BRUSHED ALUMINUM FACE, BLACK HOUSING, RED LETTERS, FACES AND ARROWS AS SHOWN ON PLANS | BRUSHED ALUMINUM FACE, BLACK HOUSING | LITHONIA LE SERIES, OR EQUAL | |
| EX2 | EXIT SIGN W/EMERGENCY LIGHTING | 6 VA | UNIVERSAL | LED | 120V | TERMOPLASTIC IMPACT RESISTANT, SCRATCH RESISTANT, CORROSION RESISTANT HOUSING, LED LAMP HEADS | WHITE W/RED LETTERING | LITHONIA LHQM SERIES, SURE-LITE APCH-9P, OR EQUAL | |
| EX3 | EXIT SIGN | 5 VA | UNIVERSAL | LED | 120V | TERMOPLASTIC IMPACT RESISTANT, SCRATCH RESISTANT, CORROSION RESISTANT HOUSING | WHITE HOUSING, RED LETTERING | LITHONIA LQM SERIES, OR EQUAL | |
| F | LED STAIR LIGHT | 24 VA | SURFACE/WALL | LED; 2505 DELIVERED LUMENS, 3500K | 120V/ELECTRONIC | INTEGRAL OCCUPANCY SENSOR TO DIM LIGHT TO 25% ON WHEN UNOCCUPIED AND 100% ON WHEN OCCUPIED, HIGH IMPACT ACRYLIC DIFFUSER, CRESCENT-SHAPE LINEAR FACETED REFRACTOR SYSTEM, CODE GAUGE ROLLED STEEL HOUSING | WHITE POLYESTER POWDER COAT | LITHONIA VL SERIES, OR EQUAL | |

| SWITCHBOARD: 4B-MSB | | | | | |
|--------------------------|-------------|-----------------|--------|---------------------|---------------------------------|
| LOCATION: ELECTRICAL 111 | | VOTLS: 480Y/277 | | BUSS RATING: 1000 A | |
| ENCLOSURE: NEMA 1 | | PHASES: 3 | | MAINS TYPE: BREAKER | |
| MOUNTING: FREE STANDING | | WIRES: 4 | | MAINS RATING: 800 A | |
| CKT | DESCRIPTION | POLES | RATING | LOAD | NOTES |
| 1 | 4B-ESDP | 3 | 400 A | 248,145 | 100% RATED BREAKER |
| 2 | 4B-EQDP | 3 | 400 A | 226,854 | 100% RATED BREAKER |
| 3 | T-4B-DP | 3 | 20 A | 10,871 | |
| 4 | CU-4 | 3 | 20 A | 9,650 | |
| 5 | CU-7 | 3 | 15 A | 5,000 | |
| 6 | CU-8 | 3 | 20 A | 9,650 | |
| 7 | AHU-1 | 3 | 15 A | 1,000 | |
| 8 | AHU-2 | 3 | 15 A | 1,000 | |
| 9 | AHU-3 | 3 | 20 A | 1,000 | |
| 10 | AHU-4 | 3 | 15 A | 1,500 | |
| 11 | SPARE | 3 | 100 A | | |
| 12 | SPARE | 3 | 20 A | | |
| 13 | | | | | |
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| 35 | | | | | |
| 36 | | | | | |
| TOTAL CONNECTED LOAD | | | | 514670 | TOTAL CALCULATED LOAD: 620 AMPS |

NOTES:
1. 100% RATED MAIN BREAKER
2. PROVIDE INTEGRAL SPD

| MOTOR AND EQUIPMENT SCHEDULE | | | | | | | | | | | | |
|------------------------------|---------------------|----------------|-----|------|------------|-------|-------------|--------------|-----------|----------|--------------------|--------------------|
| EQUIPMENT ID | LOCATION | EQUIPMENT DATA | | | DISCONNECT | | | STARTER DATA | | | FEEDER SIZE | NOTES |
| | | HP | FLA | MOP | VOLTS | PHASE | PROVIDED BY | AMPS/POLES | FUSES | LOCATION | | |
| AC-1 | ELECTRICAL RM 111 | 19.8 | 25 | 480 | 3 | MECH | ----- | ----- | ----- | ----- | 0.75" C-3#10,1#10G | |
| AHU-1 | MECHANICAL RM 113 | 1.0 | 15 | 480 | 3 | MECH | ----- | ----- | ----- | ----- | 0.75" C-3#12,1#12G | |
| AHU-2 | MECHANICAL RM 113 | 1.0 | 15 | 480 | 3 | MECH | ----- | ----- | ----- | ----- | 0.75" C-3#12,1#12G | |
| AHU-3 | MECH ROOM 002 | 1.0 | 15 | 480V | 3 | MECH | ----- | ----- | ----- | ----- | 0.75" C-3#12,1#12G | |
| AHU-4 | MECH RM 2 004 | 1.75 | 15 | 480V | 3 | MECH | ----- | ----- | ----- | ----- | 0.75" C-3#12,1#12G | |
| CRAC-1 | MECHANICAL RM 3 | 59.6 | 80 | 480 | 3 | MECH | ----- | ----- | AT UNIT | MECH | 1" C-3#3,1#8G | |
| CRAC-2 | MECHANICAL RM 3 | 59.6 | 80 | 480 | 3 | MECH | ----- | ----- | AT UNIT | MECH | 1" C-3#3,1#8G | |
| CRAC-3 | MECHANICAL RM 3 | 59.6 | 80 | 480 | 3 | MECH | ----- | ----- | AT UNIT | MECH | 1" C-3#3,1#8G | |
| CU-1 | EXTERIOR | 5.6 | 15 | 480V | 3 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| CU-2 | EXTERIOR | 5.6 | 15 | 480V | 3 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| CU-3 | EXTERIOR | 4656 | 15 | 480V | 3 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| CU-4 | EXTERIOR | 11.6 | 20 | 480 | 3 | ELEC | 30A/3P | ----- | NEAR UNIT | MECH | 0.75" C-3#12,1#12G | |
| CU-5 | EXTERIOR | 11.7 | 20 | 480 | 3 | MECH | ----- | ----- | ----- | MECH | 0.75" C-3#12,1#12G | |
| CU-6 | EXTERIOR | 12.4 | 20 | 208V | 1 | ELEC | 30A/3P | ----- | AT UNIT | MECH | 0.75" C-2#12,1#12G | |
| CU-7 | EXTERIOR | 6 | 15 | 480V | 3 | ELEC | 30A/3P | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| CU-8 | EXTERIOR | 11.6 | 20 | 480 | 3 | ELEC | 30A/3P | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| CUH-1 | ENTRY 101 | ----- | 15 | 120V | 1 | ELEC | ----- | ----- | AT UNIT | MECH | 0.75" C-2#12,1#12G | |
| CUH-2 | STARBUCKS RM 115-2 | ----- | 15 | 120V | 1 | ELEC | ----- | ----- | AT UNIT | MECH | 0.75" C-2#12,1#12G | |
| CUH-3 | BASEMENT BUILDING 4 | ----- | 15 | 120V | 1 | ELEC | ----- | ----- | AT UNIT | MECH | 0.75" C-2#12,1#12G | |
| P-1 | MECHANICAL ROOM 002 | ----- | 15A | 120V | 1 | ----- | ----- | ----- | ELEC | MS | AT UNIT | 0.75" C-2#12,1#12G |
| P-2 | MECHANICAL ROOM 002 | ----- | 15A | 120V | 1 | ----- | ----- | ----- | ELEC | MS | AT UNIT | 0.75" C-2#12,1#12G |
| RPB-1 | MECHANICAL RM 3 | 7.0 | 15 | 480V | 3 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| RPB-2 | MECHANICAL RM 3 | 7.0 | 15 | 480V | 3 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| RPB-3 | MECHANICAL RM 3 | 7.0 | 15 | 480V | 3 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-3#12,1#12G | |
| SP-1 | UTILITY RM 001 | ----- | 15A | 120V | 1 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-2#12,1#12G | |
| SP-2 | UTILITY RM 001 | ----- | 15A | 120V | 1 | MECH | ----- | ----- | AT UNIT | MECH | 0.75" C-2#12,1#12G | |
| UH-1 | MECHANICAL RM 3 | ----- | 120 | 1 | ELEC | ----- | ----- | ----- | NEAR UNIT | MECH | 0.75" C-2#12,1#12G | |

LEGEND:
FRAC = FRACTIONAL HORSEPOWER
MS = MANUAL MOTOR STARTER
VFD = VARIABLE FREQUENCY DRIVE
SSRV = SOLID STATE REDUCED VOLTAGE STARTER
PNVR = FULL VOLTAGE NON-REVERSING STARTER
M = MOTOR RATED SWITCH
MANUF = PROVIDE FUSES PER MANUFACTURER RECOMMENDATIONS
MECH = PROVIDED BY EQUIPMENT SUPPLIER OR WITH EQUIPMENT
ELEC = PROVIDED UNDER DIVISION 26

| PANELBOARD SCHEDULE | | | | | | | | | | | | |
|---------------------------|-----------------------------------|--------------------|-------|----------|-------------------------|------|-------|-------|-----------------------|------------------------------------|--|----|
| NAME: 4B-L1 | | CIRCUIT BREAKER: X | | | MAIN RATING: 100A | | | | | | | |
| LOCATION: ELECTRICAL ROOM | | MAIN LUGS ONLY: | | | VOLTAGE: 208Y/120 | | | | | | | |
| MOUNTING: SURFACE | | WIRES: 4 | | | PHASE: 3 | | | | | | | |
| CKT | CIRCUIT DESCRIPTION | TRIP | POLES | A | B | C | POLES | TRIP | CIRCUIT DESCRIPTION | CKT | | |
| 1 | R. EXTERIOR | 20 A | 1 | 540 | 1260 | | | | 1 | 20 A R. RM 6 | | |
| 3 | R. RMS 001, 002, 003 | 20 A | 1 | | 900 | 540 | | | 1 | 20 A R. RM 16 | | |
| 5 | L. RMS 105, 111, 113 | 20 A | 1 | | | 381 | 540 | | 1 | 20 A R. RM 17 | | |
| 7 | L. RMS 001, 002, 003, 023 | 20 A | 1 | 645 | 540 | | | | 1 | 20 A DEMARC RM LIGHTNING ARRESTORS | | |
| 9 | CU-6 | 20 A | 2 | | 1290 | 1500 | | | 1 | 20 A | | |
| 11 | CABINET UNIT HEATERS CUH-1, CUH-2 | 20 A | 1 | 1000 | 0 | | | | 1 | 20 A SPARE | | |
| 13 | SPARE | 20 A | 1 | | 0 | 0 | | | 1 | 20 A SPARE | | |
| 15 | SPARE | 20 A | 1 | | 0 | 0 | | | 1 | 20 A SPARE | | |
| 17 | SPARE | 20 A | 1 | | 0 | 0 | | | 1 | 20 A SPARE | | |
| 19 | SPARE | 20 A | 1 | 0 | 0 | | | | 1 | 20 A SPARE | | |
| 21 | SPARE | 20 A | 1 | | 0 | 0 | | | 1 | 20 A SPARE | | |
| 23 | SPARE | 20 A | 1 | | 0 | 0 | | | 1 | 20 A SPARE | | |
| 25 | SPARE | 20 A | 1 | 0 | 0 | | | | 1 | 20 A SPARE | | |
| 27 | SPARE | 20 A | 1 | | 0 | 0 | | | 1 | 20 A SPARE | | |
| 29 | SPARE | 20 A | 1 | | 0 | 0 | | | 1 | 20 A SPARE | | |
| 31 | SPARE | 20 A | 1 | 0 | 0 | | | | 1 | 20 A SPARE | | |
| 33 | SPACE | -- | -- | | 0 | 0 | | | -- | SPACE | | |
| 35 | SPACE | -- | -- | | 0 | 0 | | | -- | SPACE | | |
| 37 | SPACE | -- | -- | 0 | 0 | | | | -- | SPACE | | |
| 39 | SPACE | -- | -- | | 0 | 0 | | | -- | SPACE | | |
| 41 | SPACE | -- | -- | | 0 | 0 | | | -- | SPACE | | |
| TOTAL CONNECTED LOAD | | | | 10425 VA | TOTAL CALCULATED DEMAND | | | 10871 | TOTAL CALCULATED AMPS | | | 30 |

GENERAL NOTES:
1.
2.
3.

KEY NOTES:
* GFCI RATED BREAKER
** PROVIDE HACR RATED BREAKER
*** ISOLATED GROUND CIRCUIT

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Alexandria Office
120 17th Avenue W,
Alexandria, MN 56308
(520) 762-1290

St. Cloud Office
3339 West St. Germain, Suite 250
St. Cloud, MN 56301
(320) 217-5557



Alexandria
525 Broadway Street
Alexandria, MN 56308
phone 320.759.9300
facsimile 320.759.0162
www.jlgarchitects.com
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PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND
I AM AN ENGINEER IN THE STATE OF
MINNESOTA.
DATE: 04/01/2015

DRAWN BY:
ELECTRICAL SCHEDULES

PROJECT:
CONSTRUCT NEW IT CENTER
FOR HEALTH CARE
TECHNOLOGY MANAGEMENT
EXPANSION

DATE: 04.01.15
REVISED:
ISSUED:
PROJECT NO:
656-14246



| PANELBOARD SCHEDULE | | NAME: 4B-ESDP | | CIRCUIT BREAKER: X | | MAIN RATING: 400 | | | | | |
|----------------------------|------------------------|-----------------------------|-------|-------------------------------|-------|-------------------|-------|-----------------------|---------------------|-----|--|
| | | LOCATION: ELECTRICAL RM 111 | | MAIN LUGS ONLY: | | VOLTAGE: 480Y/277 | | | | | |
| | | MOUNTING: SURFACE | | WIRES: 4 | | PHASE: 3 | | | | | |
| CKT | CIRCUIT DESCRIPTION | TRIP | POLES | A | B | C | POLES | TRIP | CIRCUIT DESCRIPTION | CKT | |
| 1 | | | | 81200 | 2147 | | | | | 2 | |
| 3 | UPS AC RECTIFIER INPUT | 350 A | 3 | | 81200 | 1484 | | 25 A | T-4B-ES | 4 | |
| 5 | | | | | | 81200 | 2000 | | | 6 | |
| 7 | | | | 0 | 0 | | | | | 8 | |
| 9 | SPARE | 20 A | 3 | | 0 | 0 | | 20 A | SPARE | 10 | |
| 11 | SPACE | -- | -- | 0 | 0 | | | -- | SPACE | 12 | |
| 13 | SPACE | -- | -- | | 0 | 0 | | -- | SPACE | 14 | |
| 15 | SPACE | -- | -- | | | 0 | 0 | -- | SPACE | 16 | |
| 17 | SPACE | -- | -- | | | 0 | 0 | -- | SPACE | 18 | |
| 19 | SPACE | -- | -- | 0 | 0 | | | -- | SPACE | 20 | |
| 21 | SPACE | -- | -- | | 0 | 0 | | -- | SPACE | 22 | |
| 23 | SPACE | -- | -- | | | 0 | 0 | -- | SPACE | 24 | |
| 25 | SPACE | -- | -- | 0 | 0 | | | -- | SPACE | 26 | |
| 27 | SPACE | -- | -- | | 0 | 0 | | -- | SPACE | 28 | |
| 29 | SPACE | -- | -- | | | 0 | 0 | -- | SPACE | 30 | |
| TOTAL CONNECTED LOAD | | 249231 VA | | TOTAL CALCULATED DEMAND | | 248145 | | TOTAL CALCULATED AMPS | | 298 | |
| GENERAL NOTES: | | | | KEY NOTES: | | | | | | | |
| 1. PROVIDE INTEGRAL SPD | | | | * GFCCI RATED BREAKER | | | | | | | |
| 2. 100% RATED MAIN BREAKER | | | | ** PROVIDE HACR RATED BREAKER | | | | | | | |
| 3. | | | | *** ISOLATED GROUND CIRCUIT | | | | | | | |

| PANELBOARD SCHEDULE | | NAME: 4B-EQDP | | CIRCUIT BREAKER: X | | MAIN RATING: 400 | | | | | |
|----------------------------|---------------------|-----------------------------|-------|-------------------------------|-------|-------------------|-------|-----------------------|---------------------|-----|--|
| | | LOCATION: ELECTRICAL RM 111 | | MAIN LUGS ONLY: | | VOLTAGE: 480Y/277 | | | | | |
| | | MOUNTING: SURFACE | | WIRES: 4 | | PHASE: 3 | | | | | |
| CKT | CIRCUIT DESCRIPTION | TRIP | POLES | A | B | C | POLES | TRIP | CIRCUIT DESCRIPTION | CKT | |
| 1 | | | | 0 | 16667 | | | | | 2 | |
| 3 | SPARE | 20 A | 3 | | 0 | 16667 | | 80 A | CRAC-1 | 4 | |
| 5 | | | | | | 0 | 16667 | | | 6 | |
| 7 | | | | 1940 | 16667 | | | | | 8 | |
| 9 | RPB-1 | 15 A | 3 | | 1940 | 16667 | | 80 A | CRAC-2 | 10 | |
| 11 | | | | | | 1940 | 16667 | | | 12 | |
| 13 | | | | 1940 | 16667 | | | | | 14 | |
| 15 | RPB-2 | 15 A | 3 | | 1940 | 16667 | | 80 A | CRAC-3 | 16 | |
| 17 | | | | | | 1940 | 16667 | | | 18 | |
| 19 | | | | 1940 | 1552 | | | | | 20 | |
| 21 | RPB-3 | 15 A | 3 | | 1940 | 1552 | | 15 A | CU-1 | 22 | |
| 23 | | | | 5487 | 1552 | | | | | 24 | |
| 25 | | | | | 5487 | 1552 | | | | 26 | |
| 27 | AC-1 | 25 A | 3 | | | 5487 | 1552 | 15 A | CU-2 | 28 | |
| 29 | | | | | | 5487 | 1552 | | | 30 | |
| 31 | | | | 0 | 1552 | | | | | 32 | |
| 33 | SPARE | 15 A | 3 | | 0 | 1552 | | 15 A | CU-3 | 34 | |
| 35 | | | | | | 0 | 1552 | | | 36 | |
| 37 | | | | 4700 | 3215 | | | | | 38 | |
| 39 | T-4B-EQ | 20 A | 3 | | 1920 | 3215 | | 20 A | CU-5 | 40 | |
| 41 | | | | | | 4420 | 3215 | | | 42 | |
| TOTAL CONNECTED LOAD | | 227894 VA | | TOTAL CALCULATED DEMAND | | 226714 | | TOTAL CALCULATED AMPS | | 273 | |
| GENERAL NOTES: | | | | KEY NOTES: | | | | | | | |
| 1. PROVIDE INTEGRAL SPD | | | | * GFCCI RATED BREAKER | | | | | | | |
| 2. 100% RATED MAIN BREAKER | | | | ** PROVIDE HACR RATED BREAKER | | | | | | | |
| 3. | | | | *** ISOLATED GROUND CIRCUIT | | | | | | | |

| PANELBOARD SCHEDULE | | NAME: 4B-ES | | CIRCUIT BREAKER: X | | MAIN RATING: 60 | | | | | |
|----------------------|--|-----------------------------|-------|-------------------------------|------|-------------------|-------|-----------------------|------------------------|-----|--|
| | | LOCATION: ELECTRICAL RM 111 | | MAIN LUGS ONLY: | | VOLTAGE: 208Y/120 | | | | | |
| | | MOUNTING: SURFACE | | WIRES: 4 | | PHASE: 3 | | | | | |
| CKT | CIRCUIT DESCRIPTION | TRIP | POLES | A | B | C | POLES | TRIP | CIRCUIT DESCRIPTION | CKT | |
| 1 | L RMS 001 | 20 A | 1 | 356 | 291 | | | 20 A | L RM 107 | 2 | |
| 3 | L RMS 101,103-2, 111, 113, 115-2 | 20 A | 1 | | 403 | 81 | | 20 A | L EXTERIOR | 4 | |
| 5 | CLEAN AGENT CONTROL PANEL | 20 A | 1 | | | 1000 | 500 | 20 A | JOHNSON CONTROLS PANEL | 6 | |
| 7 | EARLY WARNING AIR SAMPLING CONTROL PANEL 1 | 20 A | 1 | 1000 | 0 | | | 20 A | SPARE | 8 | |
| 9 | EARLY WARNING AIR SAMPLING CONTROL PANEL 1 | 20 A | 1 | | 1000 | 0 | | 20 A | SPARE | 10 | |
| 11 | PA SYSTEM EQUIPMENT | 20 A | 2 | 500 | 0 | | 500 | 20 A | SPARE | 12 | |
| 13 | SPACE | 20 A | 1 | | | | | 20 A | SPARE | 14 | |
| 15 | SPACE | 20 A | 1 | | 0 | 0 | | 20 A | SPARE | 16 | |
| 17 | SPACE | 20 A | 1 | | | 0 | 0 | 20 A | SPARE | 18 | |
| 19 | SPACE | 20 A | 1 | 0 | 0 | | | 20 A | SPARE | 20 | |
| 21 | SPACE | 20 A | 1 | | 0 | 0 | | 20 A | SPARE | 22 | |
| 23 | SPACE | 20 A | 1 | | | 0 | 0 | 20 A | SPARE | 24 | |
| 25 | SPACE | 20 A | 1 | 0 | 0 | | | 20 A | SPARE | 26 | |
| 27 | SPACE | 20 A | 1 | | 0 | 0 | | 20 A | SPARE | 28 | |
| 29 | SPACE | 20 A | 1 | | | 0 | 0 | 20 A | SPARE | 30 | |
| TOTAL CONNECTED LOAD | | 5631 VA | | TOTAL CALCULATED DEMAND | | 4545 | | TOTAL CALCULATED AMPS | | 13 | |
| GENERAL NOTES: | | | | KEY NOTES: | | | | | | | |
| 1. | | | | * GFCCI RATED BREAKER | | | | | | | |
| 2. | | | | ** PROVIDE HACR RATED BREAKER | | | | | | | |
| 3. | | | | *** ISOLATED GROUND CIRCUIT | | | | | | | |

| PANELBOARD SCHEDULE | | NAME: 4B-EQ | | CIRCUIT BREAKER: X | | MAIN RATING: 200 | | | | | |
|----------------------|---|-----------------------------|-------|-------------------------------|------|-------------------|-------|-----------------------|--------------------------------|-----|--|
| | | LOCATION: ELECTRICAL RM 111 | | MAIN LUGS ONLY: | | VOLTAGE: 208Y/120 | | | | | |
| | | MOUNTING: SURFACE | | WIRES: 4 | | PHASE: 3 | | | | | |
| CKT | CIRCUIT DESCRIPTION | TRIP | POLES | A | B | C | POLES | TRIP | CIRCUIT DESCRIPTION | CKT | |
| 1 | R. RM 6 | 20 A | 1 | 720 | 360 | | | 20 A | R. RM 113,002, 105 | 2 | |
| 3 | R. RM 16 | 20 A | 1 | | 360 | 360 | | 20 A | R. RM 4 | 4 | |
| 5 | MECHANICAL ROOM 002 HW AND GLYCOL PUMPS | 20 A | 1 | | | 1000 | 360 | 20 A | R. RM 16 | 6 | |
| 7 | SUMP PUMP SP-1 | 20 A | 1 | 1000 | 360 | | | 20 A | R. RM 16 | 8 | |
| 9 | SUMP PUMP SP-1 | 20 A | 1 | | 1000 | 200 | | 20 A | UH-1 | 10 | |
| 11 | R. RMS 002, 003, 004 | 20 A | 1 | | | 540 | 440 | 20 A | L. RMS 107, 109 | 12 | |
| 13 | DOOR ELECTRIC STROKES | 20 A | 1 | 500 | 180 | | | 20 A | RM 003 CENTURYLINK EQUIPMENT | 14 | |
| 15 | SECURITY CONTROL | 20 A | 1 | | 500 | 0 | | 20 A | SPARE | 16 | |
| 17 | SPACE | 20 A | 1 | | | 0 | 0 | 20 A | SPARE | 18 | |
| 19 | SPACE | 20 A | 1 | 0 | 0 | | | 20 A | SPARE | 20 | |
| 21 | SPACE | 20 A | 1 | | 0 | 2080 | | 25 A | DC POWER CONVERTER RECTIFIER 1 | 22 | |
| 23 | SPACE | 20 A | 1 | | | 0 | 2080 | | | 24 | |
| 25 | SPACE | 20 A | 1 | 0 | 2080 | | | 25 A | DC POWER CONVERTER RECTIFIER 1 | 26 | |
| 27 | SPACE | 20 A | 1 | | 0 | 2080 | | | | 28 | |
| 29 | SPACE | 20 A | 1 | | | 0 | 2080 | 25 A | DC POWER CONVERTER RECTIFIER 1 | 30 | |
| 31 | SPACE | 20 A | 1 | 0 | 2080 | | | | | 32 | |
| 33 | SPACE | 20 A | 1 | | 0 | 0 | | 20 A | SPARE | 34 | |
| 35 | SPACE | 20 A | 1 | | | 0 | 0 | 20 A | SPARE | 36 | |
| 37 | SPACE | 20 A | 1 | 0 | 0 | | | 20 A | SPARE | 38 | |
| 39 | SPACE | 20 A | 1 | | 0 | 0 | | 20 A | SPARE | 40 | |
| 41 | SPACE | 20 A | 1 | | | 0 | 0 | 20 A | SPARE | 42 | |
| TOTAL CONNECTED LOAD | | 20360 VA | | TOTAL CALCULATED DEMAND | | 19320 | | TOTAL CALCULATED AMPS | | 53 | |
| GENERAL NOTES: | | | | KEY NOTES: | | | | | | | |
| 1. | | | | * GFCCI RATED BREAKER | | | | | | | |
| 2. | | | | ** PROVIDE HACR RATED BREAKER | | | | | | | |
| 3. | | | | *** ISOLATED GROUND CIRCUIT | | | | | | | |

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| | | |
|-----|----------|------|
| NO. | REVISION | DATE |
| | | |



Alexandria Office
120 17th Avenue W,
Alexandria, MN 56308
(520) 762-1290

St. Cloud Office
3339 West St. Germain, Suite 250
St. Cloud, MN 56301
(320) 217-5557



JLG 130708

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I HEREBY CERTIFY THAT THIS PLAN
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I AM AN ENGINEER OR ARCHITECT REGISTERED AND
LICENSED UNDER THE LAWS OF THE STATE OF
MINNESOTA.

DATE: 04/01/2015

DRAWN BY:
ELECTRICAL SCHEDULES

| | | | |
|--------------|---|-------------|----------|
| PROJECT: | CONSTRUCT NEW IT CENTER FOR HEALTH CARE TECHNOLOGY MANAGEMENT EXPANSION | DATE: | 04.01.15 |
| DRAWN BY: | NEW IT | CHECKED BY: | RSB |
| DATE: | ST. CLOUD VA HCS ST. CLOUD, MN 56303 | SCALE: | AS NOTED |
| PROJECT NO.: | 656-14-246 | DATE: | 04.01.15 |
| SCALE: | AS NOTED | DATE: | 04.01.15 |
| DATE: | 04.01.15 | DATE: | 04.01.15 |

