

IFB T990043/SU-021119: Perception Lab Renovation Addendum #1 * February 26, 2020

To: Prospective Bidders

No. of Pages: 16 page(s)

SUNY Purchase hereby issues this Addendum, dated 2/26/2020, for the above referenced IFB, in order to provide the clarifications provided on page 2.

Bid packages are due no later than 2:00 pm, Thursday, March 5, 2020. Please note that as the bidder, you must sign THIS ADDENDUM and submit it with your bid package.

Respectfully,

cbeth

Elizabeth Pleva Associate Director of Contract and Procurement Services

Acknowledgement of ADDENDUM #1

Signature Date

Typed printed name and title

Company name

Think Wide Open



Capital Facilities Planning

Addendum

To:Prospective BiddersFrom:Muneeza Ismail
Project Manager, Capital Facilities PlanningRe:Addendum No. 1 to specifications SU-021119
Visual Arts Perception Lab Renovation – Electrical, Mechanical drawing changesDATE:FEB 26TH, 2020

Mechanical Drawings

See the attached mechanical drawings indicating:

- 1- DDC to Pneumatic thermostat change
- 2- Removal of wall penetration details

Electrical Drawings

See the attached electrical drawings indicating:

1-Addition of specs for low voltage modular cables, jacks and faceplates

2-Addition of a patch panel and patch cords in the CTS closet

3-Removal of note to correct reference to an alternate

| SYMBOI | LS LIST | - | FIECTDICAL | ADDI | |
|-------------------|--|-------|-----------------------|---------|-------------------------|
| Φ. | DUPLEX RECEPTACLE RATED AT 20-AMPS 120 VOLTS. | | ELECTRICAL | ABBI | XEVIATIONS |
| Г С | C= ABOVE CEILING | 0 | "AT" OR "EACH AT" | G | GROUND |
| # | | A | AMPERE | GFI | GROUND FAULT INTERUPTER |
| ₩ | WALL DOUBLE DUPLEX EACH RECEPTACLE RATED AT 20 AMPS, 120 VOLTS. N ONE 4"X4" BOX | AC | ABOVE COUNTER | GND | GROUND |
| <i>⊂</i> A | SPECIAL PURPOSE RECEPTACLE | AF | AMPERE FRAME | HC | HUNG CEILING |
| | LETTER INDICATES TYPE 'A' 208 VOLTS 30 AMPS | AFF | ABOVE FINISHED FLOOR | HP | HORSEPOWER |
| | 2 POLE 3 WIRE (NEMA 6-30R) | ALM | | HZ | HERTZ |
| | DATA OUTLET BOX, CAT6/CAT6A JACK, AND FACEPLATE. PROVIDE CAT6/6A | ASTM | | JD | |
| | E-003 FOR LOCATION OF CLOSET. | AUTO | | KW | KILOWATT |
| 2 | ALL 2-PORT OUTLETS ARE FOR WAPS AND SHALL BE PROVIDED WITH | AWG | AMERICAN WIRE GAUGE | KWH | KILOWATT HOUR |
| ∇' | ALL 3 AND 4-PORT OUTLETS ARE FOR OTHER IT OUTLETS AND SHALL | BKR | BREAKER | LTG | LIGHTING |
| | CM' INDICATES CEILING-MOUNTED | BLDG | BUILDING | LV | LOW VOLTAGE |
| | CATE JACK: LEVITON ATLAS-X1 CATE UTP QUICKPORT, OR APPROVED EQUAL. | c | CONDUIT | MAX | MAXIMUM |
| | FACEPLATE: COMMSCOPE 1-406185-1 4-PORT, OR APPROVED EQUAL. | .c | DEGREE CELSIUS | MECH | MECHANICAL |
| \sim | CEILING MOUNTED JUNCTION BOX (J-BOX) WITH HOMERUN CIRCUIT | СВ | CIRCUIT BREAKER | MFS | MAIN FUSED SWITCH |
| (\mathbf{J}) | AND FLEXIBLE CONNECTION TO EQUIPMENT. USE SEALTITE FOR OUTDOOR CONNECTIONS. | СКТ | CIRCUIT | MIN | MINIMUM |
| A | WALL MOUNTED JUNCTION BOX (J-BOX) WITH HOMERUN CIRCUIT | CLG | CEILING | N | NEUTRAL |
| | OUTDOOR CONNECTIONS. | CLOS | CLOSET | NIC | NOT IN CONTRACT |
| VAV | VAV DAMPER WITH 120V, 20AMP, SINGLE POLE TOGGLE | COMM | COMMUNICATION | NTS | NOT TO SCALE |
| | | CONT | CONTINUATION | PB | PULLBOX |
| RM | INDICATES EXISTING TO BE REMOVED | CI | CURRENT TRANSFORMER | Phu Phu | PHASE |
| | WALL-MOUNTED SWITCH FOR USE WITH POWERPACKS AND | DEC | DECREE | PNL | PANEL |
| | MOTION SENSORS. REFER TO DETAIL 2/DWG E-102 FOR MORE INFORMATION. | DISC | DISCONNECT | PWK | POWER |
| \$ ⁴ P | '4P' INDICATES FOUR-POLE | DISC | DOWN | REO | REQUIRED |
| a | '2P' INDICATES TWO-POLE 'D' INDICATES DIMMING | DWG | DRAWING | RM | ROOM |
| | | EA | EACH | SCHED | SCHEDULE |
| | '4P' MODEL: nPODM 4P DX WH | EC | ELECTRICAL CONTRACTOR | SECT | SECTION |
| | LOWEDCASE LETTER REFERS TO FIVELIRES CONTROLLED | EL | ELEVATION | SP | SINGLE POLE |
| 100 | LOWERCASE LETTER REFERS TO FIXTURES CONTROLLED. | ELEC | ELECTRICAL | SPEC | SPECIFICATION |
| VS | WALL-MOUNTED VACANCY SENSOR/SWITCH. REFER TO DETAIL 2/DWG E-102 FOR MORE INFORMATION. | EM | EMERGENCY | SW | SWITCH |
| | MANUFACTURER: ACUITY CONTROLS | EQPT | EQUIPMENT | SYM | SYMMETRICAL |
| | MODEL: WSX SA WH | EXIST | EXISTING | SYS | SYSTEMS |
| EMPPD | VACANCY-POWERPACK WITH 0-10V DIMMING RECESSED IN | EXT | EXTERIOR | TBD | TO BE DETERMINED |
| 15 | INFORMATION. | ۴ | DEGREE FAHRENHEIT | TEMP | TEMPERATURE |
| | MANUFACTURER: ACUITY CONTROLS | FA | FIRE ALARM | TYP | TYPICAL |
| | MUDEL: NPP16 U SA | FAP | FIRE ALARM PANEL | UNF | UNFUSED |
| | 'EM' INDICATES EMERGENCY POWERPACK 'EM' MODEL: nPP16 D ER SA | FBU | FURNISHED BY UTHERS | | UNLESS UTHERWISE NUTED |
| | LOWERCASE LETTER REFERS TO LIGHT FIXTURES CONTROLLED. | FL | FLOOR | VA | |
| | | FLEX | FLEXIBLE | w | WATT |
| (Line) | CEILING-MOUNTED MOTION SENSOR. REFER TO DETAIL 2/DWG | FLUOR | FLUORESCENT | WP | WEATHERPROOF |
| (MS) | E-102 FOR MORE INFORMATION. | FT | FEET OR FOOT | | |
| | MANUFACTURER: ACUITY CONTROLS MODEL: nCM PDT 9 RJB | | | | |
| | LOWERCASE LETTER REFERS TO LIGHT FIXTURES CONTROLLED. | | | | |
| 10 | CORNER-MOUNTED MOTION SENSOR MOUNTED AT 10'-0" A.F.F. | | | | |
| \$ | REFER TO DETAIL 2/DWG E-102 FOR MORE INFORMATION. | | | | |
| | MANUFACTURER: ACUITY CONTROLS MODEL: nWV PDT 16 | | | | |
| | LOWERCASE LETTER REFERS TO LIGHT FIXTURES CONTROLLED. | | | | |
| | | | | | |
| | CONCEALED CONDUIT | | | | |
| | PULL BOX | | | | |
| | FUSED DISCONNECT SWITCH. FUSE TO BE EQUAL TO OR LESS | | | | |
| | THAN THE WIRING AMPACITY. | | | | |
| | THAN OR EQUAL TO OVER CURRENT PROTECTION. U.O.N. | | | | |
| | MOTOR | | | | |
| | PP-KIT/21,23,25 | | | | |
| | - min | | | | |
| HOMERUN NOTATION | PANEL DESIGNATION | | | | |
| | WALL-MOUNTED SPEAKER, PROVIDE EMPTY 3/4"C FROM BACK BOX TO JUNCTION BOX BEHIND PODIUM | | | | |
| | 'PA' INDICATES FOR PODIUM PA SYSTEM | | | | |
| WAP | CEILING-MOUNTED WIRELESS ACCESS POINT. | | | | |
| AL | ASSISTED LISTENING DEVICE LOCATION. PROVIDE EMPTY 1"C TO FROM BACK BOX TO JUNCTION BOX BEHIND PODIUM. | | | | |
| | 8" FLUSH POKE-THRU FLOOR BOX FOR POWER, 6-PORT DATA AND A/V. MANUFACTURER: LEGRAND BOX MODEL: 8ATC2PBK DATA PLATE MODEL: 8ATC6A SPEAKER WIRE PLATE MODEL: 8DEC (2 TOTAL) SPEAKER WIRE ACCESS STRAPS: WP1014 (2 TOTAL) BOTTOM HOUSING ASSEMBLY: 1150CHA BOTTOM HOUSING ASSEMBLY: 1125CHA | | | | |

ONS

- ELECTRICAL GENERAL NOTES
- 1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWING IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- 2. SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. BOXES: PROVIDE BARRIERS BETWEEN EMERGENCY AND NORMAL WIRING.
- 3. FIRESTOPPING SHALL BE INSTALLED WHENEVER WIRING OR RACEWAYS CROSS FIRE RATED CONSTRUCTION. 4. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS ARE NOT PERMITTED.
- 5. PROVIDE PULLBOXES AS, REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES.
- 6. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE. 7. WIRE COLOR CODING: AS PER CODE. WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
- 8. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES, SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART.
- 9. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
- 10. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION. 11. CONTRACTOR SHALL REFER TO THE LATEST "CAMPUS NETWORK CABLE INSTALLATION SPECIFICATION" DOCUMENT FOR INFORMATION REGARDING THE
- INSTALLATION OF TELECOMMUNICATIONS CABLING AND PATHWAYS, ACCESS CONTROL, AND POKE-THRU DETAILS.

| | | NY | 'S ECC 201 | 5 COMPLIANCE | (LIGHTING) | 6 I |
|-------------------|---------------------|---------|---------------|-----------------|-------------------------|--|
| ROOM | ROOM AREA (SQ. FT.) | WATTAGE | WATTS/SQ. FT. | ALLOWABLE WATTS | ALLOWABLE WATTS/SQ. FT. | LIGHTING CONTROLS |
| VESTIBULES | 129 | 78 | 0.6 | 85.1 | 0.66 | LIGHTS UNCONTROLLED |
| PERCEPTION LAB | 2024 | 1200 | 0.6 | 2510 | 1.24 | MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES) |
| | TOTAL: | 1278 | | 2595.1 | | 2220 |

NOTE: ALL LIGHT FIXTURES WILL BE FURNISHED BY CAMPUS, FOR INSTALLATION BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.

| Ê | | |
|---|--------|----------|
| | E-001 | ELECTRIC |
| | E-002 | ELECTRIC |
| | E-003 | ELECTRIC |
| | ED-101 | ELECTRIC |
| | ED-102 | ELECTRIC |
| | E-101 | ELECTRIC |
| | E-102 | ELECTRIC |
| 1 | E-200 | ELECTRIC |
| Γ | E-300 | ELECTRIC |
| | | |

| CLIENT CLIENT SUNY 735 PL MECHANICAL & E COL 2 WHI PH ACOUSTICAL COL 23 E PH | PURCHASS ANDERSC IRCHASE, IECTRICAL C IRCHASE, IECTRICAL C ILADO ENC HOLLAND TE PLAINS ONE: (914) ISULTANT INFIELD, C ONE: (860) | SE COLLI SE COLLI N HILL F NY 1057 CONSULTA SINEERIN AVENUE S, NY 106 332-765 CONSULTA CONSULTA SINEERIN AVENUE 3, NY 106 332-765 | EGE RD 7 NT NG 03 8 TING LLC D 0 |
|---|--|---|---|
| TOPOLICIES OF COLUMN FREVISIONS | VISUAL ARTS PERCEPTION LAB F | | PURCHASE, NY 10577 |
| SEAL SEAL SEAL SEAL SEAL SEAL SEAL SEAL | R: BID & TE: 09.11 AR DC BER: 20076 | PERMI ^T .2019 SYME IS, GE COMF ING L | BOLS, ENERAL PLIANCE IST |

| | ELECTRICAL DRAWING LIST | |
|----|--|--|
| AL | SYMBOLS LIST, ABBREVIATIONS, GENERAL NOTES, CODE COMPLIANCE AND DRAWING LIST | |
| AL | VISUAL ARTS BUILDING NORTH FIRST FLOOR PLAN | |
| AL | VISUAL ARTS BUILDING NORTH SECOND FLOOR PLAN | |
| AL | DEMOLITION PLAN | |
| AL | LIGHTING DEMOLITION PLAN | |
| AL | POWER/DATA PLAN | |
| AL | LIGHTING PLAN AND LIGHTING CONTROLS WIRING DIAGRAM | |
| AL | PANEL SCHEDULES AND DETAILS | |
| AL | SPECIFICATIONS | |
| | | |





| ARCHITECT EIG SIMSBUI PH F WWW CLIENT CLIENT SUNY 735 PU MECHANICAL & EI COL 2 WHI PH ACOUSTICAL COM | PURCHAS ANDERSC IRCHASE, LECTRICAL C LADO ENC HOLLAND TE PLAINS ONE: (914) | ASE STREE CTICUT 264-1628 264-16 | ZERO GN 06070 4 om EGE RD 7 NT NG 503 8 TING LLC |
|--|---|--|--|
| REVISIONS REVISIONS REVISIONS REV SEAL | NFIELD, C ONE: (860) NOTENONATION LAB RENOVATION DESCENTION LAB RENOVATION | L 06082 966-735 | |
| ISSUED FOI ISSUED DA DRAWN BY: CHECKED BY: PROJECT NUM SU-021119 DRAWING NAME EL DEM(| R: BID & TE: 09.11 AR DC BER: 20076 | PERMI .2019 | L |

-DISCONNECT AND REMOVE EXISTING EXIT SIGN. CIRCUIT TO REMAIN. (TYP. FOR 2)

| CLIER | ANICAL & EI SUNY 735 PU ANICAL & EI COL 2 WHI PH | PURCHAS ANDERSC PURCHAS ANDERSC IRCHASE, LECTRICAL C LADO ENC HOLLAND TE PLAINS ONE: (914) | ASE STREE ECTICUT 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 264-1628 2005ULTA SINEERIN AVENUE 5, NY 106 332-765 200SULTA AVENUE 5, NY 106 332-765 | ZERO GN 106070 4 om EGE RD 7 NT NT NG 1003 18 TING LLC D 10 | |
|---|---|---|---|--|--|
| | SUNY PURCHASE COLLEGE | VISUAL ARTS PERCEPTION LAB RENOVATION | 735 ANDERSEN HILL RD | PURCHASE, NY 10577 | |
| | | | | | |
| | | | | | |
| SEAL ISS ISS DR/ CHE PRC SU DRAV | SUED FOI SUED DA SUED DA AWN BY: ECKED BY: DJECT NUM -021119 VING NAME | R: BID & TE: 09.11 AR DC BER: 20076 | PERMI .2019 | T | |
| DRAV | DEM(| | ON P | PLAN | |
| | El |) -' | 10 | 2 | |

| PANE | L NO | P-11 SECTION 1 | XISTING | PANEL | | | SSED ACE MOUNTED | MAIN LUG ONLY | REV. DATE | _ | |
|--|--|--|---------------------------------|-------|--------------|------|----------------------------|--|-------------|--|-----|
| MAIN | CP | 7/200 PHW+G | | NC | | | SAM | FEED THRU LUG | REV. DATE | - | |
| CKT | TRIP | BUS WIN. IN ENKOPI | LOAD | PER | PHASE | AMPS | LOAD | | | TRIP | C |
| NO. | (AMPS) | DESCRIPTION OF LOAD | (AMPS) | Α | В | C | (AMPS) | DESCRIPTION OF LO | AD | (AMPS) | Ņ |
| 1 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | Ţ |
| 3 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | EXISTING CIRCUIT | | 20 | |
| 5 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | | 20 | |
| 7 | 20 | EXISTING CIRCUIT | 0 | 7.5 | | | 7.5 | PERCEPTION LAB RECEPT | ACLES | 20 | 1 |
| 9 | 20 | EXISTING CIRCUIT | 0 | | 9 | | 9 | PERCEPTION LAB RECEPT | ACLES | 20 | |
| 11 | 20 | EXISTING CIRCUIT | 0 | | | 12 | 12 | PERCEPTION LAB RECEPT | ACLES | 20 | ľ |
| 13 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | 4 |
| 15 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | EXISTING CIRCUIT | | 20 | 0 |
| 17 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | | 20 | |
| 19 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | |
| 21 | | | 0 | | 0 | 1 | 0 | EXISTING CIRCUIT | | 20 | 3 |
| 23 | 100 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | | 20 | |
| 1 | 1 1 | | | 100 | | | | | | | 1 - |
| | | | | 7.5 | 9 | 12 | | | | | |
| | | | | | | | | | | | |
| DANE | 1. NO | P-12 SECTION 1 E | XISTING | PANEL | - | | SSED | | REV. DATE | | |
| VOLTS | S 120 | $\frac{1}{2}$ Section | 1 | | Ē | | ACE MOUNTED | | REV. DATE | | |
| MAIN | СВ | BUS MIN, INTERRUPTI | NG RATI | NG _ | | | SYMM. | DFEED THRU LUG | REV. DATE | _ | |
| CKT | TRIP | DESCRIPTION OF LOAD | LOAD | PER | PHASE | AMPS | LOAD | DESCRIPTION OF LOA | AD. | | C |
| NU. | (AMPS) | | (AMPS) | A | В | C | (AMPS) | | | (AMPS) | r |
| 1 | 20 | | 0 | 0 | , é | | 0 | | | 20 | |
| 3 | 20 | | 0 | | 0 | | 0 | EXISTING CIRCUIT | | 20 | |
| 5 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | | 20 | - |
| 7 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | k |
| 9 | | | 0 | | 0 | | 0 | | | | 1 |
| 11 | 20 | PERCEPTION LAB RECEPTACLES | 9 | | | 9 | 0 | EXISTING CIRCUIT | | 20 | |
| 13 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | |
| 15 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | EXISTING CIRCUIT | | 20 | |
| 17 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | | 30 | 5 |
| | | | - | 0 | 0 | | | | | 1.000 | |
| | | | | v | Ū | | | | | | |
| | | | | | | | | | | | |
| | | P-12 SECTION 2 E | XISTING | PANEL | Ē | RECE | SSED | | REV. DATE _ | | |
| VOLTS | S 120 | $\frac{1}{2}$ $\frac{1}$ | 1 | | | | ACE MOUNTED | | REV. DATE | | |
| MAIN | СВ | BUSMIN, INTERRUPTI | NG RATI | NG _ | | | SYMM. | □FEED THRU LUG | REV. DATE | | |
| CKT | TRIP | DESCRIPTION OF LOAD | LOAD | PER | PHASE | AMPS | LOAD | DESCRIPTION OF LOA | AD | | C |
| NO. | (AMPS) | | (AMPS) | A | В | C | (AMPS) | | | (AMPS) | ŋ |
| - 17 | 20 | | 0 | U | | | U | | | 20 | |
| 19 | 20 | EXISTING CIRCUIT | 0 | | 0 | 1.1 | 0 | EXISTING CIRCUIT | | 20 | |
| 21 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | | 20 | |
| 23 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | Ş |
| 25 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | EXISTING CIRCUIT | | 20 | 3 |
| 27 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | | 20 | |
| 29 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | 1 |
| 31 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | EXISTING CIRCUIT | | 20 | |
| 33 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | 1.1 | 20 | |
| 35 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | 2 |
| 27 | 20 | PERCEPTION LAB/STORAGE RECEPTACLES | 10.5 | | 10.5 | | 0 | EXISTING CIRCUIT | | 20 | 5 |
| 57 | 20 | EXISTING CIRCUIT | 0 | | i Linear - I | 0 | 0 | EXISTING CIRCUIT | F | 20 | |
| 39 | | | 0 | 0 | | | 0 | EXISTING CIRCUIT | | 20 | |
| 39 41 | 20 | | | ۲ × | | | | CALCUNC ONCON | | ~v | |
| 39 41 42 | 20 | | 0 | | ٥ | | 0 | EXISTING CIPCUIT | | 20 | |
| 37 39 41 43 | 20 20 | | 0 | | 0 | 0 | 0 | | | 20 | |
| 39 41 43 45 | 20 20 20 | | 0 | | 0 | 0 | 0 | EXISTING CIRCUIT EXISTING CIRCUIT | | 20 20 | |
| 37 39 41 43 45 47 | 20 20 20 20 20 | | 0 0 0 | 0 | 0 | 0 | 0 0 0 | EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT | | 20 20 20 | |
| 37 39 41 43 45 47 49 | 20 20 20 20 20 20 | EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT | 0 0 0 0 | 0 | 0 0 | 0 | 0 0 0 0 | EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT | | 20 20 20 20 20 | |
| 37 39 41 43 45 47 49 51 | 20 20 20 20 20 20 20 20 | EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT | 0 0 0 0 0 0 | 0 | 0 0 | 0 | 0 0 0 0 | EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT | | 20 20 20 20 20 20 | |
| 37 39 41 43 45 47 49 51 53 | 20 20 20 20 20 20 20 20 20 | EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT | 0 0 0 0 0 0 0 | 0 | 0 | 0 | 0 0 0 0 0 0 | EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT EXISTING CIRCUIT | | 20 20 20 20 20 20 20 20 | 4 |

0

0 10.5 0

0

0

0

EXISTING CIRCUIT

100 56 58

0

0

EXISTING CIRCUIT

EXISTING CIRCUIT

57 20

| PANE VOLTS | L NO 577, CB | <u>L-11</u> SECTION /480 PH <u>3</u> W BUS M | 4G | 1 TING RATI | NG _ | t | | ssed Ace Mounted Symm. | □MAIN LUG ONLY REV. DATE □MAIN CB REV. DATE □FEED THRU LUG REV. DATE | | _ |
|---------------|--------------------|--|-----|----------------|----------|-------|-----------|------------------------------|--|----------------|----------|
| CKT NO. | TRIP (AMPS) | DESCRIPTION OF LC | AD | LOAD (AMPS) | PER A | PHASE | AMPS C | LOAD (AMPS) | DESCRIPTION OF LOAD | TRIP (AMPS) | CK NO |
| 11 | 20 | EXISTING CIRCUIT | | 0 | 0 | | | 0 | EXISTING CIRCUIT | 20 | 2 |
| 3 | 20 | EXISTING CIRCUIT | | 0 | | 0 | | 0 | EXISTING CIRCUIT | 20 | 4 |
| 5 | 20 | EXISTING CIRCUIT | | 0 | | | 0 | 0 | EXISTING CIRCUIT | 20 | 6 |
| 7 | 20 | EXISTING CIRCUIT | | 0 | 0 | | | 0 | | | 8 |
| 9 | 20 | EXISTING CIRCUIT | | 0 | | 0 | | 0 | EXISTING CIRCUIT | 100 | 10 |
| 11 | 20 | EXISTING CIRCUIT | 1 | 0 | | | 0 | 0 | | | 12 |
| 13 | 20 | EXISTING CIRCUIT | 1 | 0 | 0 | | | 0 | EXISTING CIRCUIT | 20 | 14 |
| 15 | 20 | EXISTING CIRCUIT | 1 | 0 | | 0 | | 0 | | 120 | 16 |
| 17 | 20 | EXISTING CIRCUIT | | 0 | | | 0 | 0 | EXISTING CIRCUIT | 100 | 18 |
| 19 | 20 | EXISTING CIRCUIT | 1.0 | 0 | 0 | | | 0 | | 1. +++ | 20 |
| | | | | | 0 | 0 | 0 | - | | | ń |

| DANEL | CONEDIN |
|-------|---------|
| PANEL | SCHEDUL |
| | |

PANEL SCHEDULES SHOWN FOR INFORMATIONAL PURPOSES ONLY

- PANEL SCHEDULE KEY NOTES
- (1) REUSE EXISTING CIRCUIT TO FEED NEW RECEPTACLES IN PERCEPTION LAB.
- 2 REUSE EXISTING LIGHTING CIRCUIT TO FEED NEW RECEPTACLES IN GALLERY.

| MAIN | CB | BUSMIN. INTERRUP | TING RATIN | NG _ | | | SYMM. | EILED MILO LOG REV. DATE | | - |
|------------|----------------|---------------------------------|----------------|------|-------|------|----------------|--------------------------|----------------|------------|
| CKT NO. | TRIP (AMPS) | DESCRIPTION OF LOAD | LOAD (AMPS) | PER | PHASE | AMPS | LOAD (AMPS) | DESCRIPTION OF LOAD | TRIP (AMPS) | CKT NO. |
| 1 | 20 | EXISTING CIRCUIT | 0 | 8.8 | | | 8.8 | PERCEPTION LAB LIGHTING | 20 | 2 |
| 3 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | EXISTING CIRCUIT | 20 | 4 |
| 5 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | 20 | 6 |
| 7 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | 20 | 8 |
| 9 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | EXISTING CIRCUIT | 20 | 10 |
| 11 | 20 | PERCEPTION LAB/STORAGE LIGHTING | 2.2 | | | 2.2 | 0 | EXISTING CIRCUIT | 20 | 12 |
| 13 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | EXISTING CIRCUIT | 20 | 14 |
| 15 | 20 | EXISTING CIRCUIT | 0 | | 0 | | 0 | SPACE | Ú III | 16 |
| 17 | 20 | EXISTING CIRCUIT | 0 | | | 0 | 0 | EXISTING CIRCUIT | 20 | 18 |
| 19 | 20 | EXISTING CIRCUIT | 0 | 0 | | | 0 | | i la l | 20 |
| 21 | | SPACE | 0 | | 0 | | 0 | EXISTING CIRCUIT | 20 | 22 |
| 23 | | SPACE | 0 | | | 0 | 0 | | | 24 |
| 25 | -12 | SPACE | 0 | 0 | | | 0 | SPACE | 111. | 26 |

| ACOUSTICAL CONSULTANT COLLADO ENGINEERING 2 HOLLAND AVENUE WHITE PLAINS, NY 10603 PHONE: (914) 332-7658 ACOUSTICAL CONSULTANT COTE ACOUSTICAL CONSULTING LLC 23 MISTY MEADOW RD ENFIELD, CT 06082 PHONE: (860) 966-7350 ANN 102L2 PHONE: (860) PHONE: (860) 966-7350 ANN 102L2 PHONE: (860) PHONE: (860) PHON |
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| LECTRIC | AL WORK | 2) 3) | NAME OF ARCHITECT AND ENGINEER ITEM IDENTIFICATION |
|----------------|---|--|---|
| A. | THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, | 4) C. SUBMIS | SIONS: |
| B. | ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR. | 1) 2) | CONTRACTOR SHALL SUBMIT A F DISCUSSED AND APPROVED MET SUBMITTAL WILL THEN BE FORW UNLESS OTHERWISE DISCUSSED |
| C. | DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS. | 3) | SHOP DRAWINGS AT ONE TIME, RESPONSE IS REQUIRED. PROVIDE A SEPARATE TRANSMITT INDICATE PRODUCT BY SPECIFIC. SUBMITTALS INTO APPROPRIATE |
| D. | INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL. | 4) | ONLY PAGES WHICH ARE PERTIN INDICATED ON THE PRODUCT DA |
| E, | REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL. | 5) 6) | MARK EACH COPY OF STANDARE REFERENCED TO SPECIFICATION SHOW REFERENCE STANDARDS, AND PIPING DIAGRAMS AND COM |
| F. | CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERPLIED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS PEOLIDED WITH | 7) | REQUIRED CLEARANCES. MODIFY MANUFACTURER'S STAND SUPPLEMENT STANDARD INFORM APPLICABLE TO THE WORK. DEL |
| | NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED. | 8) 9) | THE ENGINEER WILL REVIEW THE SAME PRODUCT. ADDITIONAL RES PAYABLE BY THE CONTRACTOR. PARTIAL SUBMITTALS OR SUBMIT ARE SUBJECT TO RETURN WITH |
| G. | DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK. | D. SUBMIT | SHOP DRAWINGS FOR THE FOLLOWING |
| н. | THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR. | 1) 2) 3) 4) | WIRE AND CABLE WALL SWITCHES INSERTION RECEPTACLES LIGHTING FIXTURES. |
| l, | SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL. | 4. AS-BUILT DRA | WINGS AND EQUIPMENT OPERATIONAL I |
| J. | ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR. | A. UPON EQUIPM ALL EC | COMPLETION AND ACCEPTANCE OF WOR IENT MANUALS AND DEMONSTRATE TO DUIPMENT AND APPARATUS FURNISHED |
| К. | THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID. | B. THESE BINDER THE OV C. THE IN | S WITH CLEAR ACETATE COVERS. CON WITH CLEAR ACETATE COVERS. CON WITH CLEAR ACETATE COVERS. CON WITH CLEAR ACETATE COVERS. CON STRUCTION BOOKLET SHALL BEAR THE |
| L. | UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION. | ARCHIT D. REPROI THE WO | ect and engineer. Ducible "As-built" drawings shall Drk. "As-built" drawings shall be |
| М. | ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS. | 5. GENERAL PRO | VISIONS FOR ELECTRICAL WORK: |
| N. | SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING CONDUIT (SIZES, CLEARANCES, ETC) AND | A. SPECIF SUCH A OMITTEI B. DEFINIT 1) | ICATIONS ARE OF SIMPLIFIED FORM AN AS "THE CONTRACTOR SHALL," "SHALL D FOR BREVITY. IONS: "PROVIDE": TO SUPPLY, INSTALL AI REGULAR OPERATION THE PARTICULA NOTED. |
| 0. | CONDITIONS. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS | 2) 3) | "INSTALL": TO ERECT, MOUNT AND "FURNISH" OR "SUPPLY: TO PURCI RELATED ACCESSORIES. |
| P, | THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL. | 4) 5) 6) | WORK : LABOR, MATERIALS, EQUIP REQUIRED FOR PROPER AND COMPL "WIRING": RACEWAY, FITTINGS, WIRE "CONCEALED": EMBEDDED IN MASO WITHIN DOUBLE PARTITIONS OR HUN |
| 2. Scope A. | OF WORK: SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING | 7) 8) | ENCLOSURES. "EXPOSED": NOT INSTALLED UNDER "SIMILAR" OR "EQUAL": EQUAL IN I SPECIFIED PRODUCT. |
| B. | ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, | C. TEMPO DATE W EXTEND WORKIN BEOUR | RARY LIGHT AND POWER: PROVIDE TE (ITHIN THE CONSTRUCTION AREAS FOR SYSTEMS TO NEW CONSTRUCTION AS IG HOURS OF ALL TRADES. COST OF ED MAINTENANCE INCLUDING LAMPS A |
| C. | THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES | D. QUALIT 1) 2) | Y ASSURANCE QUALITY AND GAUGE OF MATERIALS: DEFECTS AND LISTED BY UNDERWRI TESTING AGENCY AND BEARING THEI SHALL BE OF SAME MANUFACTURER GUARANTEE: ALL MATERIALS AND W |
| D. | AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK. | 3) 4) | PARAGRAPH 2.C. CURRENT CHARACTERISTICS: a. DISTRIBUTION: 277/480 VOL GROUNDED NEUTRAL. HEIGHTS OF OUTLETS: FROM FINISHI a. RECEPTACLES: 1 FT-6 IN b. WALL SWITCHES: 4 FT-0 IN EXCEPTIONS: AT JUNCTION OF DIFF |
| 3. SHOP | DRAWINGS | F. PRODU | WALL SURFACE, IN VIOLATION OF CO |
| A. | PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER. | 1) | ACCESSIBILITY: FOR OPERATION, M PERMITTED. CHANGES OF MAGNITUL REVIEW. GROUP CONCEALED ELECT |
| | INDICATE ON FACIL CLIOD DRAWINGS SUDWITTED. | | ACCESSIBLE THROUGH ACCESS DOO |

PROJECT NAME AND LOCATION 1)

F. MATERIALS

ECT AND ENGINEER

OF PRIME CONTRACTOR

HALL SUBMIT A PDF OR TIFF FILE TO ARCHITECT THROUGH PREVIOUSLY APPROVED METHOD (EMAIL, SUBMITTAL EXCHANGE PROGRAM, ETC). THEN BE FORWARDED TO RELEVANT PARTIES FOR REVIEW. WISE DISCUSSED & AGREED, PROVIDE ALL EQUIPMENT SUBMITTALS AND AT ONE TIME, THE SAME TIME; AT LEAST, THREE WEEKS BEFORE A

- REQUIRED. ARATE TRANSMITTAL FOR EACH SUBMITTAL ITEM. TRANSMITTALS SHALL JCT BY SPECIFICATION SECTION NAME AND NUMBER. SEPARATE ALL O APPROPRIATE SPECIFICATION SECTION NUMBER. DO NOT COMBINE
- SECTIONS. ENTIRE MANUFACTURER'S CATALOG; IT WILL NOT BE REVIEWED. SUBMIT HICH ARE PERTINENT TO THE PROJECT. ALL OPTIONS WHICH ARE THE PRODUCT DATA SHALL BECOME PART OF THE CONTRACT AND SHALL HETHER SPECIFIED ARE NOT.
- PY OF STANDARD PRINTED DATA TO IDENTIFY PERTINENT PRODUCTS, SPECIFICATION SECTION AND ARTICLE NUMBER. CE STANDARDS, PERFORMANCE CHARACTERISTICS AND CAPACITIES; WIRING
- GRAMS AND CONTROLS; COMPONENT PARTS; FINISHES; DIMENSIONS AND RANCES. CTURER'S STANDARD SCHEMATIC DRAWINGS AND DIAGRAMS TO TANDARD INFORMATION AND TO PROVIDE INFORMATION SPECIFICALLY
- THE WORK. DELETE INFORMATION NOT APPLICABLE. WILL REVIEW THE ORIGINAL SUBMITTAL AND ONE RESUBMITTAL FOR THE
- ADDITIONAL RESUBMITTALS WILL BE REVIEW ON A HOURLY RATE, CONTRACTOR. TALS OR SUBMITTALS NOT PROPERLY FORMATTED AS INDICATED ABOVE
- O RETURN WITHOUT REVIEW FOR THE CONTRACTOR TO CORRECT. OR THE FOLLOWING:
- ENT OPERATIONAL INSTRUCTIONS
- CEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF RATUS FURNISHED UNDER THIS CONTRACT.
- BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING ATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO TO THE ENGINEER.
- SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT,
- DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF RAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE

ICAL WORK:

- IPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN
- SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND ION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE
- RECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES. UPPLY: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH
- MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS ROPER AND COMPLETE INSTALLATION.
- AY, FITTINGS, WIRE, BOXES AND RELATED ITEMS. MBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN
- INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE. UAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF

WER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE CTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING RADES. COST OF ENERGY WILL BE PAID FOR BY OWNER. PROVIDE ALL ICLUDING LAMPS AND SOCKETS.

- IGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM TED BY UNDERWRITERS LABORATORIES, INC., OR OTHER NATIONALLY APPROVED AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION ME MANUFACTURER, EXCEPT AS NOTED. MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN
- TERISTICS: N: 277/480 VOLT (AND 120/208 VOLT), 3 PHASE, 4 WIRE, 60 HERTZ WITH NEUTRAL.
- ETS: FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR: ES: 1 FT-6 IN.
- CHES: 4 FT-0 IN.
- JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN I VIOLATION OF CODE, OR AS NOTED OR DIRECTED.
- OR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS SHALL BE NGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY DUGH ACCESS DOORS.
- CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.

2) INSERTS AND SUPPORTS:

- a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED,
- SINGLE ROD: SIMILAR TO GRINNELL FIG. 281. - MULTI-ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END CAPS AND CLOSURE
- CLIP FORM NAILS FLUSH WITH INSERTS. MAXIMUM LOADING 75 PERCENT OF RATING.
- b. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY). CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW.
- c. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.
- G. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.
- H. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.
- I. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.
- J. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

6. RACEWAYS:

- F. PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES. CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS ARE NOMINAL DIAMETERS. MINIMUM DIAMETER SHALL BE 3/4 IN.
- G. MATERIALS
- RACEWAYS:
- a. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS. b. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP, GALVANIZED. 2) FITTINGS AND ACCESSORIES:
- a. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.
- D. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT. c. BUSHINGS: METALLIC INSULATED TYPE.
- BOXES: a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. PROVIDE BARRIERS IN NEW AND RENOVATED BOXES BETWEEN 120/208 VOLT AND 277/480 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL WIRING. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.
- H. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS, FOR ABOVE FLOOR FITTINGS, TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE. EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS.

- HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS.
- CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.
- ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.
- RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.
- I. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.
- J. JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE. INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.
- K. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE-PARTITIONS ROOMS.
- L. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

7. WIRE AND CABLE:

GENERAL NOTES

- 1. GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
- 2. DRAWINGS ARE DIAGRAMMATIC. DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.
- 3. COORDINATE THIS WORK WITH THAT OF OTHER TRADES. 4. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN
- IN ELEVATION ARE VERTICAL. 5. MANUFACTURERS MODEL NUMBERS ARE SPECIFIED SOLELY TO
- ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
- 6. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S REQUIREMENTS.
- 7. PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE. 8. PROVIDE HANGERS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS
- REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE. 9. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH
- EXISTING OPERATIONS IN THE FACILITY. 10. MECHANICAL CONTRACTOR TO NOTIFY OWNER PRIOR TO STARTING WORK TO VERIFY COMPLIANCE WITH BOND AND WARRANTY OF
- EXISTING ROOF. 11. RUN DUCTS CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS.
- 12. INSTALL THERMOSTATS 4'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE DIRECTED BY ARCHITECT.

DEMOLITION NOTES

- 1. THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF HVAC WORK AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE OWNER/ENGINEER.
- 2. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE TO FUNCTIONING HVAC SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED. 3. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT
- AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
- 4. THE CONTRACTOR SHALL NOTIFY THE OWNER, AT THE APPROPRIATE TIME, OF THE PROJECTED DEMOLITION AND INSTALLATION SCHEDULE SO THAT THE MECHANICAL WORK MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS.
- 5. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVERTIME IF REQUIRED, TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
- 6. THE SHUTDOWN OF EXISTING BUILDING HVAC SERVICES SHALL BE COORDINATED WITH THE OWNER, MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.

AIR SYSTEMS

- 1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT
- LOCATIONS OF AIR DEVICES. 2. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE
- DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED. 3. USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE
- AVAILABLE DICTATES.
- 4. DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
- 5. PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.

| MECH | ANICAL DRAWING LIST |
|-------|--|
| M-001 | MECHANICAL SYMBOLS LIST, ABBREVIATIONS, GENERAL NOTES AND DRAWING LIST |
| M-100 | MECHANICAL DEMOLITION/EXISTING PLAN |
| M-101 | MECHANICAL CONSTRUCTION PLAN |
| M-200 | MECHANICAL SCHEDULES AND DETAILS |
| M-300 | MECHANICAL SPECIFICATIONS |

HVAC SYMBOLS (NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

HVAC ABBREVIATIONS

| AD | ACCESS DOOR | | |
|-------|---|---|---|
| AFF | ABOVE FINISHED FLOOR | | HUT WATER RETURN |
| AL | ACOUSTICAL LINING | HWS | HUT WATER SUPPLY |
| AP | ACCESS PANEL | IN | INCH OR INCHES |
| BTU | BRITISH THERMAL UNIT | KW | KILOWATT |
| BTUH | BTU PER HOUR | Ļ | LENGTH |
| CD | CEILING DIFFUSER | LD | LINEAR DIFFUSER |
| CFM | CUBIC FEET PER MINUTE | LIN FT | LINEAR FEET |
| CG | CEILING GRILLE | MAX | MAXIMUM |
| CLG | CEILING | MBH | THOUSAND BTU PER HOUR |
| CR | CFILING REGISTER | MIN | MINIMUM |
| DWC | DRAWING | NO. | NUMBER |
| DIAM | DIAMETER | NTS | NOT TO SCALE |
| DIAM | DAMETER | OAI | OUTSIDE AIR INTAKE |
| | | PRV | PRESSURE REDUCING VALVE |
| (E) | EXISTING TO REMAIN | PSI | POUNDS PER SQUARE INCH |
| EL | ELEVATION | PSIA | PSI ABSOLUTE |
| (ER) | EXISTING TO BE REMOVED | PSIG | PSI GAUGE |
| (ERR) | EXISTING TO BE REMOVED AND RELOCATED | RA | RETURN AIR |
| EXIST | EXISTING | RG | RETURN GRILLE |
| •F | DEGREES FAHRENHEIT | RHC | REHEAT COIL |
| FD | FIRE DAMPER | RM | ROOM |
| FPM | FEET PER MINUTE | RPM | REVOLUTIONS PER MINUTE |
| FPS | FEET PER SECOND | SA | SUPPLY AIR |
| FT | FEET | SPEC | SPECIFICATION |
| GAL | GALLON | TEMP | TEMPERATURE |
| HR | HOUR | TRD | TRANSFER DUCT |
| HT | HEIGHT | TYP | TYPICAL |
| | AD AFF AL AP BTU BTUH CD CFM CQ CIG DWG DIAM DN (E) EL (ER) (ER) FT FD FPM FPS FT GAL HR HT | ADACCESS DOORAFFABOVE FINISHED FLOORALACOUSTICAL LININGAPACCESS PANELBTUBRITISH THERMAL UNITBTUHBTU PER HOURCDCEILING DIFFUSERCFMCUBIC FEET PER MINUTECGCEILING GRILLECLGCEILING REGISTERDWGDRAWINGDIAMDAMETERDNDOWN(E)EXISTING TO REMAINELELEVATION(ER)EXISTING TO BE REMOVEDMGFINSTING TO BE REMOVED AND RELOCATEDFDFIRE DAMPERFPMFEET PER MINUTEFPSFEET PER MINUTEFPMFEET PER MINUTEFPMFEET PER SECONDFTFEETGALGALLONHRHOURHTHEIGHT | ADACCESS DOORHWRAFFABOVE FINISHED FLOORHWSALACOUSTICAL LININGINAPACCESS PANELKWBTUBRITISH THERMAL UNITLBTUHBTU PER HOURLDCDCEILING DIFFUSERMAXCGCEILING GRILLEMBHCLGCEILING REGISTERMINCRCEILING REGISTERNO.DWGDRAWINGNTSDIAMDAMETEROAIDNDEVNPRV(E)EXISTING TO REMAINPSIA(ER)EXISTING TO BE REMOVEDPSIG(ERR)EXISTING TO BE REMOVED ANDRAFDDEGREES FAHRENHEITRHCFDFIRE DAMPERRMFPMFEET PER MINUTESAFPMFEET PER SECONDSAFTFEET PER SECONDFEMPHRHOURTRDHTHEIGHTTYP |

VOLTS

V

VERTICAL DUCT DROP

(IN DIRECTION OF AIRFLOW)

NEW PIPE WITH DIRECTION OF FLOW

EXISTING PIPING

- SECTION DESIGNATION

- SHEET NO. WHERE SECTION IS SHOWN

| SUNY PURCHASE COLLEGE SUNY PURCHASE COLLEGE SUNY PURCHASE COLLEGE VISUAL ARTS PERCEPTION LAB RENOVATION 735 ANDERSEN HILL RD T35 ANDERSEN HILL RD PURCHASE, NY 10577 PURCHASE, NY 10577 | Image: Section of the section of th |
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KEY NOTES

(1) EXISTING LINEAR DIFFUSER PLENUM TO BE REMOVED ALONG WITH BRANCH DUCTS, AS INDICATED. BRANCH DUCT OPENINGS ON THE MAIN SUPPLY DUCT TO BE PATCHED AIR TIGHT (TYPICAL FOR ALL LOCATIONS).

(2) EXISTING TRANSFER DUCT IS COVERED BY GYPSUM BOARD AT THIS LOCATION. GYPSUM BOARD SHALL BE REMOVED FOR TRANSFER OF AIR.

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GENERAL NOTES:

- 1. ALL NEW AND EXISTING EQUIPMENT (INCLUDING EXISTING CAV BOXES), AND DUCTWORK WITHIN THE PERCEPTION LAB SPACE SHALL BE SUPPORTED OR RE-HUNG USING A COMBINATION OF 'KINETICS' AF-100 (FOR 20-100 LBS LOADS) AND AF-200 (FOR 50-200 LBS LOADS) HANGERS. 2. THE PERCEPTION LAB SPACE IS SERVED BY EXISTING UNIT, AC-4, WHICH IS A CONSTANT AIR
- VOLUME (CAV) SYSTEM. 3. ALL DEMOLITION AND NEW WORK SHALL BE SCHEDULED IN ADVANCE WITH THE BUILDING MANAGER.

KEY NOTES:

- 1 NEW 3-SLOT LINEAR DIFFUSER WITH 27 CFM/FT. TOTAL LENGTH OF LINEAR DIFFUSER IS 35'. CONTRACTOR TO RE-BALANCE THE EXISTING CAV BOXES TO PROVIDE 945 CFM.
- (2) PROVIDE A 24"X24" CEILING ACCESS PANEL. COORDINATE FINAL LOCATION DURING CONSTRUCTION.
- 3 REPLACE THE EXISTING PNEUMATIC THERMOSTAT WITH A NEW PNEUMATIC THERMOSTAT. REFER TO SPECIFICATION DRAWING M-300 FOR ADDITIONAL DETAILS.

4 PROVIDE BALANCING DAMPER AT EACH NEW BRANCH DUCT WITH REMOTE CABLE CONTROL KIT. (TYPICAL AT ALL LOCATIONS). REFER TO DETAIL 3 ON M-200.

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| TAG | APPLICATION | MODULE SIZE | NECK SIZE | CFM | MAX P.D. | MAX NC | MATERIAL | MODEL | RE |
| CR-C | RETURN | 24X10 | | 0-475 | 0.006 | 1.4 | STEEL | 350 RL | SEE |
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HVAC SPECIFICATIONS

1. General

- A. The "General Conditions of the Contract for Construction," AIA document A201, latest edition, and these specifications as applicable are part of this contract.
- B. All applicable codes, laws and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these specifications, and their provisions shall be carried out by the contractor who shall inform the owner, prior to submitting a proposal, of any work or materials which violate any of the above laws and regulations. Any work done by the contractor causing such violation shall be corrected by the contractor.
- C. Investigate each space through which equipment must be moved. Where necessary, equipment shall be shipped from manufacturer in sections of size suitable for moving through available restrictive spaces. Ascertain from building owner at what times of day equipment may be moved through all areas.
- D. Ductwork and piping is shown diagrammatically and does not show all offsets, drops and rises of runs. The contractor shall allow in his price for routing of ductwork and piping to avoid obstructions. Exact locations are subject to approval of the architect. Coordination with the existing services, including those of other trades is required.
- E. Support all ductwork and piping from building structure and/or framing in an approved manner. Where overhead construction does not permit fastening or supports for equipment, furnish additional framing. Inserts shall be steel, slotted type and factory painted. Single rod shall be similar to Grinnell Fig. 281. Multi-rod shall be similar to Fee & Mason Series 9000 with end caps and closure strips. Maximum loading including pipes, ductwork contents and covering shall not exceed 75% of rated insert capability. When supporting from building use beam clamps in approved manner.
- Install work so as to be readily accessible for operation, maintenance and repair. Minor deviations from drawings may be made to accomplish this, but changes which involve extra cost shall not be made without approval.
- G. Removal and relocation of certain existing work will be necessary for the performance of the general work. All existing conditions cannot be completely detailed on the drawings. The contractor shall survey the site and include all changes in making up the work proposal.
- H. Plan installation of new work and connections to existing work to insure minimum interference with regular operation of existing facilities. All system shutdowns affecting other 1) Sheet metal shop standards. areas shall be coordinated with building owner. Install isolation valves at point of connection to the existing piping. Provide temporary duct caps and/or connections to minimize shutdown time.
- I. Connect new work to existing work in neat and approved manner. Restore existing work disturbed while installing new work to acceptable condition as determined by architect.
- J. Disconnect, remove and/or relocate existing material, equipment and other work as noted required for proper installation of new system.
- K. The contractor shall keep all equipment and materials, and all parts of the building, exterior spaces and adjacent streets, sidewalks and pavements, free from material and debris resulting from the execution of this work. Excess materials will not be permitted to accumulate either on the interior or the exterior.
- L. Seal openings around ducts and piping through partitions, walls and floors (not in shafts) with mineral wool or other noncombustible material.
- M. All present material, equipment and construction debris to be removed under this contract shall become the property of the contractor with the exception of specific equipment and apparatus requested by the building representative, architect or as noted to be relocated on the drawings shall be properly disposed of by this contractor.
- N. Materials and workmanship, unless otherwise noted, shall be in accordance with building standards.
- 0. The work in the building shall be done when and as directed, and in a manner satisfactory to the owner. The work shall be performed so as to cause the least possible inconvenience and disturbance to the present occupants.
- P. The contractor's proposal for all work shall be predicated on the performance of the work during regular working hours. When so directed, however, the contractor shall install work in overtime and the additional cost to be charged therefore shall be only the "premium" portion of the wages paid.
- Q. Unless otherwise specifically specified, include all cutting and patching of existing floors, walls, partitions and other materials in the existing building. The contractor shall restore these areas to original condition.
- R. Removable access tiles and/or access doors are required in hung ceilings, shafts and walls for all volume and fire dampers, and all other mechanical equipment and devices. HVAC contractor to furnish access location requirements to general contractor. Access tile identification: provide buttons, tabs, and markers to identify location of concealed valves, dampers and equipment.
- S. All material and equipment to be new unless otherwise noted and shall be in accordance with building standards.
- Submission of a proposal shall be construed as evidence that a careful examination of the portions of the existing building, equipment, etc., which affect this work, and the access to such spaces, has been made and that the contractor is familiar with existing conditions and difficulties that will affect the execution of the work. Later claims shall not be made for labor. equipment or materials required because of difficulties encountered which could have been foreseen during such an examination. The on-site inspection shall verify existing ductwork, piping (sizes, clearances, etc) and conditions.
- U. Insurance: In accordance with building requirements and shall include a hold harmless clause for owner and engineer.
- V. The final acceptance will be made after the contractor has adjusted his equipment, balanced the various systems, demonstrated that it fulfills the requirements of the drawings and specifications and has furnished all the required certificates of inspection and approval.
- W. Specifications are of simplified form and include incomplete sentences. Words or phrases such as "the contractor shall," "shall be," "furnish," "provide," "a," "the," and "all" have been omitted for brevity.
- X. Definitions:
- 1) "Provide": To supply, install and connect up complete and ready for safe and regular operation the particular work referred to unless specifically otherwise noted.
- 2) "Install": To erect, mount and connect complete with related accessories.
- 3) "Furnish" or "Supply": To purchase, procure, acquire and deliver complete with related accessories.
- 4) "Work": Labor, materials, equipment, apparatus, controls, accessories and other items required for proper and complete installation.
- 5) "Concealed": Embedded in masonry or other construction, installed in furred spaces, within double partitions or hung ceilings, in trenches, in crawl spaces, or in enclosures.
- 6) "Exposed": Not installed underground or "Concealed" as defined above.
- 7) "Similar" or "Equal": Equal in materials, weight, size, design and efficiency of specified product.
- 2. Scope of work
- A. The work under contract includes all labor, materials and appliances necessary for the furnishing, installing and testing, complete and ready for safe operation of the systems. Work shall be installed in a neat, workmanlike manner.

B. The contractor shall give necessary notice, file drawings and specifications with the department having jurisdiction, obtain permits or licenses necessary to carry out this work and pay all fees therefore. The contractor shall arrange for inspection and tests of any or B. Provide sound lining for the following ductwork: all parts of the work if so required by authorities and pay all charges for same. The contractor shall pay all costs for, and furnish to the owner before final billing, all certificates necessary as evidence that the work installed conforms with all regulations where they apply to this work.

The contractor shall furnish a written guarantee to replace or repair promptly and assume responsibility for all expenses incurred for any workmanship and equipment in which defects develop within one year from the date of final certificate for payment and/or from date or actual use of equipment or occupancy of spaces, by owner, included under the various parts of the work, whichever date is earlier. This work shall be done as directed by the owner. This guarantee shall also provide that where defects occur, the contractor will assume responsibility for all expenses incurred in repairing and replacing work of other trades affected by defects, repairs or replacements in equipment supplied by the contractor.

D. Special inspection by a licensed professional engineer to be hired by the owner.

Prior to the installation of any work and procurement of equipment provide complete set o coordinated shop drawings of all new and existing equipment, ductwork, piping and control systems indicating capacity dimensions and sequence of operation for written approval by the architect and engineer.

Shop drawings

Indicate on each submission: project name and location, architect and engineer, item identification and approval stamp of prime contractor.

Submissions:

Submissions 11 in, X 17 in, or smaller: Provide in electronic PDF format to the engineer with a copy to the architect. All submittals shall be complete, otherwise they will be returned to the contractor as "not reviewed".

2) Submissions larger than 11 in. X 17 in.: Provide in electronic PDF format to the engineer with a copy to the architect. All submittals shall be complete, otherwise they will be returned to the contractor as "not reviewed".

C. Submit shop drawings for the following:

A DUCMOVOUT. 3) Duct insulation/interior lining. Ceiling diffusers and return grilles.

5) Air testing and balancing report. Pneumatic thermostat.

mmm 4. As-built drawings and equipment operation instructions

A. On completion and acceptance of work, this contractor shall furnish written instructions, equipment manuals and demonstrate to the owner the proper operation and maintenance of all equipment and apparatus furnished under this contract.

These instructions shall be typed on 8-1/2 in. X 11 in. paper and bound in three-ring binders with clear acetate covers. The contractor shall give three copies of the instructions 9. to the owner and one copy to the engineer.

C. The instruction booklet shall be organized in sections, with one section per system. The cover of the instruction booklet shall bear the name, address and phone number of the project, architect, engineer, mechanical contractor and subcontractors.

As-built drawings in PDF format indicating as-installed conditions shall be provided to the architect after completion of the installation.

5. Sheet metal work

Except as otherwise shown or noted, all ductwork and other sheet metal work shall be galvanized sheet steel and shall be installed in accordance with the latest edition of Sheet Metal and Air Conditioning Contractors National Association, Inc. duct construction standards, pressure classification 2 in. W.G

Volume dampers: Galvanized steel, per SMACNA "Low Velocity Manual," except provide bearing at one end of damper rod and quadrant, with lever and lock screw at other end. For insulated ducts, guadrants mounted on collar to clear insulation. Install with levers accessible.

C. Access doors: Insulated or uninsulated, same as duct.

1) Provide minimum 24" x 24" on main ducts, and 12" x 12" on branch ducts, unless otherwise approved, at fire dampers and at all duct accessories requiring access.

2) All access doors to be hinged, with latch similar to Ventlock No. 100.

D. Flexible connections: Neoprene-coated glass fabric, 30 oz per square yard with sewed and cemented seams, similar to Vent Fabrics. Provide with metal collars. Allow minimum movement of 1 in.

E. Turning vanes: Galvanized steel small double-thickness vanes with 2 in. inside radius. Fire dampers: UL listed, galvanized steel construction, multi-bladed type, spring loaded,

equipped with fusible link, conforming to NFPA standard 90A. Similar to air balance Model 319-P, rated as required. See installation on drawing.

G. All duct dimensions indicated on plans are inside clear dimensions.

H. Wire mesh screen (WMS): No. 16 USSG, 3/4 square mesh, in 1 in. wide galvanized steel enclosing frame. Flanged duct opening to receive frame.

Low pressure flexible duct: Shall be a factory fabricated high temperature copolymer impregnated glass fabric, locked to cold rolled flat steel spiral. Similar to Wiremold 57. Maximum installed length shall not exceed 18 in.

6. Air outlets

A. General:

1) Margin types, colors, finish and methods of attachment for all diffusers, grilles and registers shall be coordinated with architectural ceiling and wall details and specifications.

2) Frame type suitable for mounting in ceiling or wall construction as indicated on architectural

3) Exact location of all air outlets as per architectural plans.

4) Suitable for operation at 20% excess and 20% less than noted capacity for constant volume systems and at 20% excess and 60% less than noted capacity for variable volume systems. Manufacturer responsible for examining application of each outlet and guarantee that each will provide required NC levels and comfort space conditions without drafts throughout operating range.

5) All registers and diffusers shall be provided with opposed blade volume dampers. Damper operating levers shall be accessible at the face of air outlets.

B. Linear diffusers: Extruded aluminum construction, natural anodize finish, removable core, air deflection vane and cable operated damper in each branch tap with minimum 3 feet of cable to diffuser face. Similar to Titus Model ML-39.

C. Registers and grilles:

1) Return and exhaust registers: steel construction with volume damper. Similar to Titus

Noise control

- A. All room NC levels shall be 35 or less.
- 1) Air transfer ducts.
- 2) Linear diffuser plenums.
- Acoustical return boots.
- Also where noted on a drawing
- C. Sound-lining in ductwork: Fibrous glass, minimum 3 lb density, 1 in. thickness, maximum 0.25 K factor at 75°F mean temperature with acrylic coated finish factory applied edge coating and stenciled in accordance with NFPA 90. Flame spread shall be a maximum of 25. Lining shall not support microbial growth and shall be tested in accordance with ASTM C 1071 and ASTM G21/G22. Similar to Manville Permacote Lina Coustic.
- All sound lining, adhesives, faces and accessories to be applied in accordance with D. manufacturer's recommendations, except as otherwise noted.
- Testing and balancing
- A. Re-balance the existing two (2) CAV boxes for the new air flow and hot water requirements.
- B. Air balancing shall be accomplished by adjustment of fans, constant volume boxes, and branch dampers for major adjustments. Adjustment of terminal dampers and devices shall be for trim or minor adjustment only. This shall be done to permit the least noise generation in the terminal areas and utilize minimum fan energy.
- Upon completion of the installation, the contractor shall rebalance any existing portions of the air distribution system affected by the renovation, and also balance all the new work.
- D. The contractor shall provide all labor, pressure gauges, flow meters, sheaves, and belts required to balance systems.
- E. Balancing report shall be provided on AABC-type forms.
- F. Air handling units and constant volume boxes shall be balanced to within +5% of their design capacities. All other air quantities shall be balanced to within +10% of the design augntities.
- G. Balancing and testing shall be performed and supervised by one of the following independent firms specializing in testing and balancing:
- 1) Precision Testing and Balancing, Inc.
- 2) Air Conditioning Test and Balancing Corp.
- Approved equal.
- The performance and capacity of all systems and equipment to be demonstrated by the contractor.
- Vibration isolation
- A. General:
- 1) Provide isolation for ductwork.
- 2) Install in accordance with manufacturer's instructions.
- 3) Provide leveling devices and approved resilient restraining devices as required to limit equipment and piping motion in excess of 1/4 in.
- Acceptable manufacturers:
- Mason Industries, Inc.
- b. Vibration Eliminator Co.
- c. Korfund Dynamics Corp.
- B. Ceiling equipment:
- 1) Provide spring hanger rod isolators. Steel compression spring and neoprene sound pad within a steel retainer box. Similar to Mason Type PCHS.
- 2) 1 in. minimum static deflection. 1/2 in. minimum reserve deflection. Factory-preloaded to 75% of rated load.

3) Provide supplemental steel as required where equipment or structure cannot support point

10. Controls

A. Replace existing pneumatic thermostat with a new pneumatic thermostat, equal to Siemens model # 192-202/Item # 4E666. Thermostat shall be direct acting, 2-pipe design for heating and cooling. The thermostat shall utilize a throttling range of 3 to 15 PSI compressed air with a bi-metal element and a temperature control range of 45°F to 85°F.

END OF SECTION

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