GAP - EMS SCOPE AND RESPONSIBILITIES

CONVENTIONAL / HEAT PUMP - HVAC EQUIPMENT

MECHANICAL CONTRACTOR RESPONSIBILITIES

- 1. THE FOLLOWING ARE RESPONSIBILITIES OF THE MECHANICAL CONTRACTOR DURING THE CONSTRUCTION PHASE:
- a. INSTALL TEMPORARY THERMOSTATS AS PART OF STANDARD SCOPE OF WORK. THESE THERMOSTATS SERVE AS A CONSTRUCTION STAT UNTIL NETWORK IS AVAILABLE AND EMS INSTALLER IS ON SITE.
- b. WHERE REQUIRED, VALVES WITH ACTUATORS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR. ACTUATOR MUST ACCEPT A 2-10VDC OR 4-20mA CONTROL SIGNAL.

ELECTRICAL CONTRACTOR RESPONSIBILITIES

- 1. THE FOLLOWING ARE RESPONSIBILITIES OF THE ELECTRICAL INSTALLER DURING THE CONSTRUCTION PHASE:
- a. ELECTRICAL INSTALLER SHALL PROVIDE AND INSTALL 3/4" CONDUIT WHEN REQUIRED.
- b. PROVIDE ONE DUAL OUTLET IN CLOSE PROXIMITY OF NETWORK CONNECTION FOR CONNECTION OF QD2040.
- c. PROVIDE 15 AMP, 3-PHASE POWER TO DTS-310 PULSE METER. ELECTRICIAN MUST USE SAME VOLTAGE AS BEING METERED.
- d. ELECTRICAL CONTRACTOR SHALL INSTALL EXTERIOR PHOTOCELL AND WIRE TO BACK ROOM WHERE LIGHTING CONTROLLER IS LOCATED (SEE PLANS).

EMS INSTALLER RESPONSIBILITIES

- 1. THE FOLLOWING ARE RESPONSIBILITIES OF THE EMS INSTALLER DURING THE CONSTRUCTION PHASE.
- a. PROPER COMMISSIONING OF EMS CONTROLS REQUIRES THE ETHERNET PORT CONNECTION OR OPTIONAL CELL MODEM FOR QD2040 TO BE INSTALLED AND ACTIVATED PRIOR TO EMS INSTALLATION.
- b. EMS INSTALLER SHALL INSURE THAT SITE IS ON-LINE THROUGH THE UBIQUITY SERVER AND PERFORM ALL FINAL COMMISSIONING, SCHEDULING AND PROGRAMMING FUNCTIONS. INSTALLER MUST CONTACT CORY MEARS (PH: 800-288-9383 EXT.9290) TO PERFORM COMMISSIONING DUTIES. ALLOW UP TO 2 HOURS PER UNIT FOR COMMISSIONING.
- c. EMS INSTALLER SHALL MOUNT QD2040 AT START OF INSTALLATION TO CONFIRM CONNECTION TO UBIQUITY.
- d. PULL MULTI-CONDUCTOR STANDARD THERMOSTAT WIRE FROM HVAC UNIT TO WALL WHERE EACH SZ SERIES THERMOSTAT WILL BE MOUNTED. INCLUDE 18 GAUGE TWISTED/SHIELDED WIRE FROM YORK UNIT TO THERMOSTAT FOR ECONOMIZER FAULT DETECTION AND REFRIGERANT FAULT DETECTION.
- e. MOUNT TS3001 IN OCCUPIED SPACE (IF APPLICABLE, SEE M FLOOR PLAN). PULL 2-CONDUCTOR 18 GAUGE TWISTED/SHIELDED WIRE FROM TS3001 REMOTE SENSOR TO WALL WHERE SZ SERIES THERMOSTAT OR SZ SERIES VAV CONTROLLLER WILL BE MOUNTED.
- f. PULL 3-CONDUCTOR 22 GAUGE TWISTED/SHIELDED WIRE FROM SPACE WHERE EACH SZ THERMOSTAT IS LOCATED, TO BE TERMINATED ON USB/RS485 COMMUNICATION CENTER QD2040.
- g. PULL 3-CONDUCTOR 22 GAUGE TWISTED/SHIELDED WIRE FROM SEC MODBUS COMMUNICATION CARD DAISEY CHAINED FROM EACH HVAC UNIT TO BE TERMINATED ON USB/RS485 COMMUNICATION CENTER QD2040.
- h. PULL 2-CONDUCTOR 18 GAUGE WIRE FROM VAV ACTUATOR TO WALL WHERE SZ SERIES VAV CONTOLLER WILL BE MOUNTED. PULL 3-CONDUCTOR 22 GAUGE TWISTED/SHIELDED WIRE FROM SPACE WHERE VAV CONTROLLER IS LOCATED, TO BE TERMINATED ON USB/RS485 COMMUNICATION CENTER QD2040.
- i. MOUNT TS1002 DISCHARGE AIR SENSOR IN VAV SUPPLY AIR DUCT LOCATION. PULL 2-CONDUCTOR 18 GAUGE TWISTED/SHIELDED WIRE FROM TS1002 SENSOR TO WALL WHERE SZ SERIES VAV CONTROLLER WILL BE MOUNTED.
- j. CONTROLS INSTALLER TO MOUNT CO2 SENSORS IN SPACE PER MECHANICAL DRAWINGS AND WIRE TO JCI ECONOMIZER CONTROLLER LOCATED AT UNIT WITH 3-CONDUCTOR 18 GAUGE TWISTED/SHIELDED WIRE.
- k. PULL 2-CONDUCTOR 18 GAUGE TWISTED/SHIELDED WIRE FROM PULSE ENERGY METER TO SE1000 PULSE TRANSDUCER AND PULL 3-CONDUCTOR 22 GAUGE TWISTED/SHIELDED WIRE FROM SE1000 TO BE TERMINATED ON USB/RS485 COMMUNICATION CONVERTER QD2040. CONNECT CURRENT TRANSDUCERS TO APPROPRIATE LINE VOLTAGE FOR MONITORING.
- I. MOUNT PQ1008 EMPLOYEE LIGHTING OVERRIDE SWITCH (IF APPLICABLE, SEE E FLOOR PLAN). PULL 2 CONDUCTOR 18 GAUGE WIRE FROM PQ1008 TO CORRESPONDING DIGITAL INPUT ON SL2105 LIGHTING CONTROLLER. PULL 3-CONDUCTOR 22 GAUGE TWISTED/SHIELDED WIRE FROM SL2105 TO BE TERMINATED ON USB/RS485 COMMUNICATION CENTER QD2040.
- m. CONNECT STORE LIGHTING SCENES (UP TO 5 SCENES) TO CORRESPONDING DIGITAL OUTPUT ON SL2105 LIGHTING CONTROLLER. IF CONTACTORS FOR LIGHTING SCENES ARE LINE VOLTAGE, EMS INSTALLER TO PROVIDE 24V PILOT RELAYS BETWEEN SL2105 AND LIGHTING CONTACTORS IF NEEDED. WIRE EXTERIOR PHOTOCELL TO ANALOG INPUT ON SL2105 LIGHTING CONTROLLER WITH 3 CONDUCTOR 18 GAUGE.
- n. IF HVAC EQUIPMENT IS HEAT PUMP OR CONVENTIONAL, PROGRAMMING FOR OUTPUTS MUST BE DONE THROUGH KEYPAD. ON SZ SERIES THERMOSTATS WITH HEAT PUMP OPTION, FACTORY DEFAULT IS A HEAT PUMP THERMOSTAT WITH O/B TERMINALS USED FOR REVERSING VALVE. IF UNITS ARE CONVENTIONALLY WIRED, KEYPAD PROGRAMMING MUST BE SET TO CONVENTIONAL.
- o. EMS INSTALLER SHALL MAKE ALL FINAL CONNECTIONS OF COMMUNICATIONS WIRING AND SENSOR WIRING.

ENERGY MANAGEMENT SYSTEM NOTES

1. HVAC SYSTEMS SHALL BE CONTROLLED AND MONITORED BY A LOCAL ENERGY MANAGEMENT SYSTEM UTILIZING TCS BASYS COMMUNICATING THERMOSTATS, CONTROLLERS, AND COMPONENTS AS DESCRIBED BELOW. THE SYSTEM SHALL INCLUDE COMMUNICATIONS INTERFACE, WHICH WILL CONNECT THE LOCAL BUILDING AUTOMATION SYSTEM TO GAP MULTI-SITE UBIQUITY BUILDING MANAGEMENT SYSTEM.

2. CERTAIN MATERIALS AND SERVICES SHALL BE PROVIDED BY TCS BASYS UNDER SEPARATE CONTRACT WITH THE OWNER OR CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WORK OF THIS PROJECT WITH WORK TO BE PROVIDED BY EMS INSTALLER IN ORDER TO PROVIDE A COMPLETE AND OPERABLE ENERGY MANAGEMENT SYSTEM. THE NOTES AND THE BAS SYSTEM SCHEMATIC ON THIS SHEET ARE INTENDED TO CLARIFY THE CONTRACTOR'S RESPONSIBILITIES.

3. CERTAIN WORK IS TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR DURING THE CONSTRUCTION PHASE. SEE ELECTRICAL PLAN.

4. THE FOLLOWING MATERIALS WILL BE PROVIDED BY TCS BASYS UNDER SEPARATE CONTRACT:

- QD2040 COMMUNICATIONS CENTER
- CELLULAR MODEM
- MULTI-STAGE PROGRAMMABLE THERMOSTATS WITH RS485 COMMUNICATIONS
- REMOTE ROOM TEMPERATURE SENSORS IF APPLICABLE (SEE M PLAN)
- DUCT TEMPERATURE SENSORS FOR VAV SUPPLY AIR TEMPERATURE
- MANAGER'S OVERRIDE TWIST TIMER IF APPLICABLE (SEE M PLAN)
- 5 CHANNEL LIGHTING CONTROLLER WITH REMOTE OVERRIDE SWITCH
- 3 CHANNEL LIGHTING CONTROLLER WITH REWOTE OVERRIDE 3W
- OUTDOOR ANALOG PHOTOCELL

 DELAYS FOR HIGHTING CONTROLS
- RELAYS FOR LIGHTING CONTROLS
- LINE POWERED DTS-310 PULSE POWER METER

5. INSTALLATION OF FIRE/SMOKE SYSTEMS OR CONNECTIONS TO LINE VOLTAGE ARE NOT INCLUDED IN THE TCS CONTROLS PACKAGE.

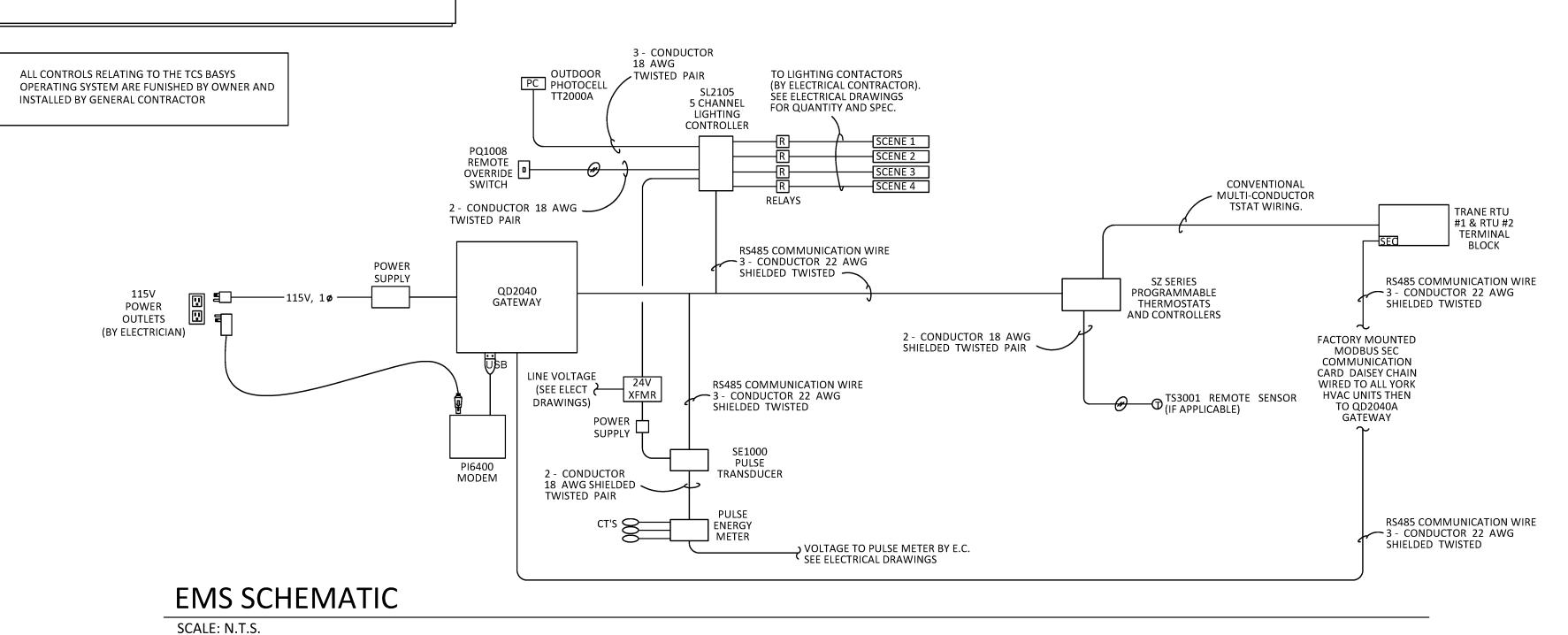
TCS BASYS CONTROLS CONTACT

GENERAL CONTRACTOR IS NOT REQUIRED TO HIRE TCS BASYS TO INSTALL THE EQUIPMENT. INSTALL PROPOSALS WILL BE AVAILABLE TO GENERAL CONTRACTORS ONLY. IF GENERAL CONTRACTOR WOULD LIKE TO GET A QUOTE FROM TCS BASYS, THEY MAY CONTACT:

CORY MEARS, PROJECT MANAGER - PH: 800-288-9383 EXT. 9290

EMAIL: cmears@tcsbasys.com

TCS TECHNICAL SUPPORT: 800-288-9383 EXT. 8010



Sequence of Operation Schdule ighting Controller | Relay | Contactor | Photocell Off Scene 1 - All Store Lights ON 10A-9P ADJ. Open | Closed Closed | Open Scene 1 - All Store Lights OFF 9P-10A ADJ. Off Scene 2 - Employee Lights ON 8A-11P ADJ. Open | Closed Scene 2 - Employee Lights OFF 11P-8A ADJ. On Closed Scene 2 - Bypass Button On Demand* Open | Closed Scene 3 - Specialty Lights ON 7A-11P ADJ. Off Scene 3 - Specialty Lights OFF 11P-7A ADJ On Closed Scene 4 - Outside Lights OFF (High Ambient Light) On Open Open > 400 fc Off Scene 4 - Outside Lights ON (Low Ambient Light) 6A-12M Closed | Closed < 400 fc Scene 4 - Outside Lights OFF On Open | Open

*During OFF hours only, pressing bypass button overrides Employee lights ON for two hours or until bypass button is pressed again.

NEW STORE

ATHLETA

GAP INC.
STORE DEVELOPMENT
2 FOLSOM STREET
SAN FRANCISCO, CA 94105

DESIGN TYPE:

GENERATION:

PROTOTYPE DATE:

230 NE
230 NE
240 NE

2021

PROTOTYPE DATE:
OPENING:

ARCHITECT INFO:

brr

ARCHITECT OF RECORD:

MARIAH MEYER
8131 METCALF AVE
SUITE 300
OVERLAND PARK, KS 66204
www.brrarch.com

FAX:913-262-9044

PROFESSIONAL STAMP:

ISSUE TYPE:

LL/PERMIT/BID: 02/19/21

REVISIONS:

DRAWN BY: **HEI**

A/E JOB NUMBER: 65011072

TITLE SHEET:

CONTROLS SCHEMATIC

SHEET NUMBER: