



United States Department of the Interior
NATIONAL PARK SERVICE
Yosemite National Park
P. O. Box 577
Yosemite, California 95389

IN REPLY REFER TO:
L7615(YOSE-PM)

Memorandum

To: Gary Wuchner, Project Manager, Yosemite National Park

From: Superintendent, Yosemite National Park

Subject: NEPA and NHPA Clearance: 2016-021 Parkwide Communication Data Network Implementation: Turtleback Dome AT&T HVAC Upgrades (66519)

The Executive Leadership Team has reviewed the proposed project/action and completed its environmental assessment documentation, and we have determined the following:

- There will not be any effect on threatened, endangered, or rare species and/or their critical habitat.
- There will be no adverse effect on historical, cultural, or archeological resources.
- There will not be serious or long-term undesirable environmental or visual effects.

The subject proposed project, therefore, is now cleared for all NEPA and NHPA compliance requirements as presented above. Project plans and specifications are approved and construction and/or project implementation can commence.

For the proposed project actions to be within compliance requirements during construction and/or project implementation, the following mitigations must be adhered to:

- A decibel test is required by the safety office prior to installation of the new HVAC units to ensure decibel level decreases with the new units.
- Contractors will park or stage materials only on existing roads and parking spaces to protect plant species.
- The project manager will notify the RMS air quality monitoring team prior to construction to notify them that construction may affect the air quality data collected during the time of construction.

For complete compliance information see PEPC Project 66519.

//Linda C. Mazzu //
Linda C. Mazzu (Acting Superintendent)

Enclosure (with attachments)

*The signed original of this document is on file at the
Environmental Planning and Compliance Office in
Yosemite National Park.*

cc: Statutory Compliance File

Letter of Compliance Completion - Parkwide Communication Data Network Implementation: Turtleback Dome AT&T HVAC Upgrades - PEPC ID: 66519



Categorical Exclusion Form

Project: 2016-021 Parkwide Communication Data Network Implementation: Turtleback Dome AT&T HVAC Upgrades

PEPC Project Number: 66519

Description of Action (Project Description):

This project includes improvements and additions to the HVAC units supporting AT&T systems at Turtleback Dome and is needed to support and maintain existing site infrastructure for telecommunications throughout Yosemite. The current HVAC equipment is old and lacks the redundancy needed to avoid interruptions in communications service.

The project will involve:

1. Removing the existing package air conditioning unit and the associated ductwork currently serving the equipment building.
2. Installing two new, outdoor, redundant air-conditioning package units and the associated ductwork.
3. Installing associated electrical and controls system components for units operation.
4. Building associated structural supports (concrete pads and footings) for the HVAC units to sit on.

The project includes the design, engineering and construction services to remove and replace existing HVAC and the associated duct system for the existing radio antenna site. New work includes installing the new HVAC units outside, on the north side of the building, on concrete pads. This work is required to support AT&T's existing equipment load and potential equipment growth, to reduce operational costs, and address cooling issues (existing cooling for this infrastructure is inadequate).

Physical dimensions for the needed footprint will be approximately 28' long x 10' wide. The structure material of the ductwork is unpainted galvanized steel. The new AC unit color is light gray. Ground disturbance to place footings will be a maximum of 3 feet deep.

Project Locations:

Mariposa County, Ca

Mitigation(s):

- A decibel test is required by the safety office prior to installation of the new HVAC units to ensure decibel level decreases with the new units.
- Contractors will park or stage materials only on existing roads and parking spaces to protect plant species.
- The project manager will notify the RMS air quality monitoring team prior to construction to notify them that construction may affect the air quality data collected during the time of construction.

CE Citation: C.18 Construction of minor structures, including small improved parking lots, in previously disturbed or developed areas.

CE Justification:

Decision: I find that the action fits within the categorical exclusion above. Therefore, I am categorically excluding the described project from further NEPA analysis. No extraordinary circumstances apply.

Superintendent: // Linda C. Mazzu //

Date: 10/6/2016

Linda C. Mazzu (Acting Superintendent)

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Extraordinary Circumstances:

| If implemented, would the proposal... | Yes/No | Notes |
|---|--------|-------|
| A. Have significant impacts on public health or safety? | No | |
| B. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas? | No | |
| C. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA section 102(2)(E))? | No | |
| D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks? | No | |
| E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects? | No | |
| F. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects? | No | |
| G. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office? | No | |
| H. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species? | No | |
| I. Violate a federal, state, local or tribal law or requirement imposed for the protection of the environment? | No | |
| J. Have a disproportionately high and adverse effect on low income or minority populations (EO 12898)? | No | |
| K. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or adversely affect the physical integrity of such sacred sites (EO 13007)? | No | |
| L. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)? | No | |



ENVIRONMENTAL SCREENING FORM (ESF)

Updated Sept 2015 per NPS NEPA Handbook

A. PROJECT INFORMATION

Project Title: 2016-021 Parkwide Communication Data Network Implementation: Turtleback Dome AT&T HVAC Upgrades
PEPC Project Number: 66519
Project Type: Capital Improvement/New Construction (CI)
County, State: Mariposa, California
Project Leader: Gary Wuchner

B. RESOURCE IMPACTS TO CONSIDER:

| Resource | Potential for Impact | Potential Issues & Impacts |
|---|----------------------|---|
| Air Air Quality | Potential | Temporary air quality impacts are possible during the construction of the platform for the HVAC units. Gary will notify the RMS air quality team prior to construction to notify them that the air quality data collected during that time could be affected. |
| Biological Nonnative or Exotic Species | None | |
| Biological Species of Special Concern or Their Habitat | None | |
| Biological Vegetation | Potential | Contractors are to park and stage equipment on existing roads and parking areas to protect plant species. |
| Biological Wildlife and/or Wildlife Habitat including terrestrial and aquatic species | None | |
| Cultural Archeological Resources | None | |
| Cultural Cultural Landscapes | None | |
| Cultural Ethnographic Resources | None | No ethnographic resources have been identified within the project area. Tribal consultation was initiated via the Tribal Spreadsheet on 8/22/2016. No comments or concerns have been received to date. |
| Cultural Museum | None | |

| Resource | Potential for Impact | Potential Issues & Impacts |
|---|-----------------------------|--|
| Collections | | |
| Cultural Prehistoric/historic structures | None | |
| Geological Geologic Features | Potential | Ground disturbance will consist of holes up to 3 ft. deep to prepare the ground for the concrete footings to support the platform the HVAC system will sit on. |
| Geological Geologic Processes | None | |
| Lightscares Lightscares | None | |
| Other Human Health and Safety | None | |
| Other Operational | None | |
| Other Other | Potential | Oil and gas are used to power the vehicles and equipment necessary to install the HVAC systems. The AT&T contractor will have a spill plan in place. |
| Socioeconomic Land Use | None | |
| Socioeconomic Minority and low-income populations, size, migration patterns, etc. | None | |
| Socioeconomic Socioeconomic | None | |
| Soundscapes Soundscapes | Potential | The plans indicate that the maximum decibel level would be 79 Db, which is quieter than the current HVAC unit placed at Turtleback Dome. A decibel test is required by the safety office before installation of the 2 new units. |
| Viewsheds Viewsheds | None | |
| Visitor Use and Experience Recreation Resources | None | |
| Visitor Use and Experience Visitor Use and Experience | None | |
| Water Floodplains | None | |
| Water Marine or Estuarine Resources | None | |

| Resource | Potential for Impact | Potential Issues & Impacts |
|------------------------------------|----------------------|----------------------------|
| Water Water Quality or Quantity | None | |
| Water Wetlands | None | |
| Water Wild and Scenic River | None | |
| Wilderness Wilderness | None | |

Recommended:

| | |
|---|------------------------------|
| Compliance Specialists <u>// Kristin Anderson //</u> Compliance Specialist – Kristin Anderson | Date <u>10/5/2016</u> |
| <u>// Erin Davenport //</u> Compliance Program Manager – Erin Davenport | <u>10/5/2016</u> |
| <u>// Madelyn Ruffner //</u> Chief, Project Management – Madelyn Ruffner | <u>10/5/2016</u> |

Approved:

| | |
|---|------------------------------|
| Superintendent <u>// Linda C. Mazzu //</u> Linda C. Mazzu (Acting Superintendent) | Date <u>10/6/2016</u> |
|---|------------------------------|

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ASSESSMENT OF ACTIONS HAVING AN EFFECT ON HISTORIC PROPERTIES

A. DESCRIPTION OF UNDERTAKING

1. **Park:** Yosemite National Park

2. **Project Description:**

Project Name: 2016-021 Parkwide Communication Data Network Implementation: Turtleback Dome AT&T HVAC Upgrades

Prepared by: Sara Dolan **Date Prepared:** 09/12/2016 **Telephone:** (209) 379-1308

PEPC Project Number: 66519

Locations: Mariposa County, Ca

Area of potential effects (as defined in 36 CFR 800.16[d])

3. **Has the area of potential effects been surveyed to identify historic properties?**

No
 Yes

Source or reference:

4. **Potentially Affected Resource(s):**

5. **The proposed action will: (check as many as apply)**

- Destroy, remove, or alter features/elements from a historic structure
- Replace historic features/elements in kind
- Add non-historic features/elements to a historic structure
- Alter or remove features/elements of a historic setting or environment (inc. terrain)
Add non-historic features/elements (inc. visual, audible, or atmospheric) to a historic setting
or cultural landscape
- Disturb, destroy, or make archeological resources inaccessible
- Disturb, destroy, or make ethnographic resources inaccessible
- Potentially affect presently unidentified cultural resources
Begin or contribute to deterioration of historic features, terrain, setting, landscape elements,
or archeological or ethnographic resources
- Involve a real property transaction (exchange, sale, or lease of land or structures)
- Other (please specify): _____

6. **Supporting Study Data:**

(Attach if feasible; if action is in a plan, EA or EIS, give name and project or page number.)

B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisors as indicated by check-off boxes or as follows:

106 Advisor
Name: Kimball Koch
Date: 09/22/2016

Check if project does not involve ground disturbance []
Assessment of Effect: No Potential to Cause Effect No Historic Properties Affected No
Adverse Effect Adverse Effect Streamlined Review
Recommendations for conditions or stipulations:

Anthropologist
Name: Eirik Thorsgard
Date: 09/22/2016

Comments: No ethnographic resources have been identified within the project area. Tribal consultation was initiated via the Tribal Spreadsheet on 8/22/2016. No comments or concerns have been received to date.

Check if project does not involve ground disturbance []
Assessment of Effect: No Potential to Cause Effect No Historic Properties Affected No
Adverse Effect Adverse Effect Streamlined Review
Recommendations for conditions or stipulations:

Archeologist
Name: Sara Dolan
Date: 09/12/2016

Comments: There are no archeological concerns.

Check if project does not involve ground disturbance []
Assessment of Effect: No Potential to Cause Effect No Historic Properties Affected No
Adverse Effect Adverse Effect Streamlined Review
Recommendations for conditions or stipulations:

Historian
Name: Scott Carpenter
Date: 09/15/2016

Check if project does not involve ground disturbance []
Assessment of Effect: No Potential to Cause Effect No Historic Properties Affected No
Adverse Effect Adverse Effect Streamlined Review
Recommendations for conditions or stipulations:

Historical Architect
Name: Scott Carpenter
Date: 09/15/2016

Check if project does not involve ground disturbance []
Assessment of Effect: No Potential to Cause Effect No Historic Properties Affected No

Adverse Effect Adverse Effect Streamlined Review
Recommendations for conditions or stipulations:

Historical Landscape Architect
Name: Kimball Koch
Date: 09/13/2016

Comments: No historic properties identified

Check if project does not involve ground disturbance

Assessment of Effect: No Potential to Cause Effect No Historic Properties Affected No
Adverse Effect Adverse Effect Streamlined Review
Recommendations for conditions or stipulations:

No Reviews From: Curator, Other Advisor

C. PARK SECTION 106 COORDINATOR'S REVIEW AND RECOMMENDATIONS

1. Assessment of Effect:

- No Potential to Cause Effects
 No Historic Properties Affected
 No Adverse Effect
 Adverse Effect

2. Documentation Method:

A. STANDARD 36 CFR PART 800 CONSULTATION
Further consultation under 36 CFR Part 800 is needed.

B. STREAMLINED REVIEW UNDER THE 2008 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)

The above action meets all conditions for a streamlined review under section III of the 2008 Servicewide PA for Section 106 compliance.

APPLICABLE STREAMLINED REVIEW Criteria
(Specify 1-16 of the list of streamlined review criteria.)

C. PLAN-RELATED UNDERTAKING

Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 2008 Servicewide PA and 36 CFR Part 800.

Specify plan/EA/EIS:

D. UNDERTAKING RELATED TO ANOTHER AGREEMENT

The proposed undertaking is covered for Section 106 purposes under another document such as a statewide agreement established in accord with 36 CFR 800.7 or counterpart regulations.

Parkwide PA as amended in 2016

E. COMBINED NEPA/NHPA Document

Documentation is required for the preparation of an EA/FONSI or an EIS/ROD has been developed and used so as also to meet the requirements of 36 CFR 800.3 through 800.6

G. Memo to SHPO/THPO

H. Memo to ACHP

Assessment of Effect Form - Parkwide Communication Data Network Implementation: Turtleback Dome AT&T HVAC
Upgrades - PEPC ID: 66519



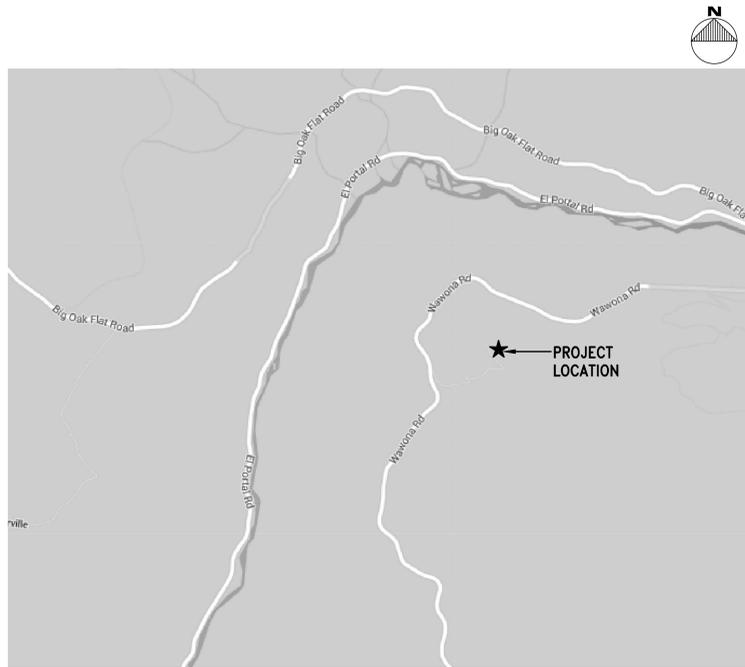
at&t

HVAC UPGRADE

4740 WAWONA ROAD
YOSEMITE, CALIFORNIA 95389

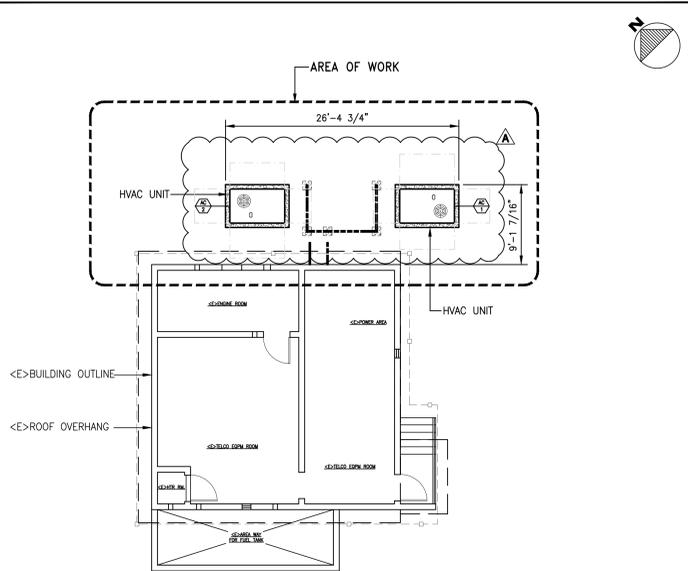
VICINITY MAP

SCALE: N.T.S.



AREA OF SITE WORK

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



APPLICABLE CODES

UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

- CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24): 2013
- CALIFORNIA BUILDING CODE (PART 2, TITLE 24): 2012 IBC WITH 2013 CA AMENDMENTS
- CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24): 2011 NEC WITH 2013 CA AMENDMENTS
- CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24): 2012 UMC WITH 2013 CA AMENDMENTS
- CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2012 UPC WITH 2013 CA AMENDMENTS
- CALIFORNIA ENERGY CODE (PART 6, TITLE 24): 2013
- CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24): 2013
- CALIFORNIA FIRE CODE (PART 9, TITLE 24): 2012 IFC WITH 2013 CA AMENDMENTS
- CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24): 2012 (INTERNATIONAL EXISTING BUILDING CODE WITH 2013 CA AMENDMENTS)
- CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24): 2013
- CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24): 2013
- PUBLIC SAFETY (TITLE 19), STATE FIRE MARSHAL: 2013
- NFPA 72, NATIONAL FIRE ALARM CODE, 2013 EDITION W/ CA AMENDMENTS

APPLICABLE SPECIFICATIONS

- SALAS O'BRIEN STANDARD SPECIFICATIONS FOR AT&T PROJECTS:**
THESE SPECIFICATIONS WERE ISSUED AUGUST 2015 BY SALAS O'BRIEN ENGINEERS AND ARE APPLICABLE TO THIS PROJECT. THEY SHALL BECOME BID DOCUMENTS FOR THIS PROJECT BY THIS REFERENCE. SPECIFICATION AND STANDARDS, SALAS O'BRIEN MASTER ARCHITECTURAL, MECHANICAL AND ELECTRICAL SPECIFICATIONS AS WELL AS SOBE/O'BRIEN GENERIC EQUIPMENT PROTECTION DETAILS. THESE REQUIREMENTS AND SPECIFICATIONS APPLY TO ALL MECHANICAL WORK AND MECHANICAL SUBCONTRACT WORK ON THE PROJECT. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT ALL PERSONNEL WORKING UNDER THE MECHANICAL CONTRACT, EITHER AS SUBCONTRACTORS OR EMPLOYEES, ADHERE TO THESE REQUIREMENTS AND SPECIFICATIONS. COPIES OF THESE SPECIFICATIONS ARE AVAILABLE FROM SALAS O'BRIEN ENGINEERS.
- OTHER APPLICABLE SPECIFICATIONS:**
OTHER SPECIFICATIONS MAY APPLY TO THIS PROJECT. AT&T'S ALLIANCE CONTRACTOR MAY ISSUE BID INSTRUCTIONS, EXHIBITS, OR ADDENDUMS WHICH APPLY TO THIS PROJECT.
- PRIORITY OF SPECIFICATIONS:**
IF THERE IS A CONFLICT BETWEEN ANY OF THE APPLICABLE SPECIFICATIONS, THE DOCUMENT WITH THE HIGHEST PRIORITY RANKING AS INDICATED BELOW SHALL APPLY.
#1 ADDENDUMS
#2 BID INSTRUCTIONS
#3 EXHIBITS (I.E. EXHIBIT A)
#4 INFORMATION ON THE DRAWINGS.
#5 SALAS O'BRIEN STANDARD SPECIFICATIONS FOR AT&T PROJECTS.

SUMMARY OF WORK

- DEMOLISH EXISTING OUTDOOR AC PACKAGE UNIT AND DUCTWORK. DISCONNECT EXISTING ELECTRICAL UTILITIES.
- DEMOLISH EXISTING AND/OVER DDC PANELS AND THE EXISTING CONTROLS DEVICES ASSOCIATED WITH THE DEMOLISHED MECHANICAL EQUIPMENT FOR UPGRADING WITH NEW RELIABLE DDC CONTROL PANELS AND NEW CONTROLS DEVICES.
- PROVIDE AND INSTALL NEW PACKAGE OUTDOOR AIR CONDITIONING HEAT PUMP UNITS AS REFLECTED IN THE MECHANICAL SCHEDULES. PROVIDE NEW CONCRETE PADS.
- PROVIDE NEW DUCTWORK SYSTEM WITH A CUSTOM BUILT-IN FILTER BANK CONTAINING 25% PRE-FILTER AND 65% FINAL FILTER AS REFLECTED IN THE DESIGN DOCUMENTS. PROVIDE DUCTWORK SUPPORTS.
- PROVIDE NEW CONTROLS DEVICES/EQUIPMENT AND UPGRADED DDC CONTROL PANELS BY "RELIABLE" WITH ASSOCIATED CONTROL WIRING.
- PERFORM TEST AND AIR BALANCE OF THE NEW AC-1 AND AC-2 AIR SYSTEMS. PROVIDE TEST AND AIR BALANCE REPORT.
- PROVIDE NEW SET OF PRE-FILTERS AND FINAL FILTERS AT THE END OF CONSTRUCTION.
- PROVIDE SUPPORTS AND FOOTINGS FOR THE EXTERIOR DUCTWORK.
- COMMISSION NEW MECHANICAL EQUIPMENT AND CONTROLS.
- PROVIDE TWO (2) PORTABLE PLUG-IN COOLING UNITS FOR TEMPORARY AIR CONDITIONING DURING THE CONSTRUCTION TO SERVE EACH EQUIPMENT ROOM AND COORDINATE EXACT LOCATION WITH BUILDING SPECIALIST. PROVIDE 3/4" SLOPPED CONDENSATE DRAIN(S) TO OUTSIDE AND COORDINATE WITH PROPERTY MANAGER ON ROUTING/EXITING BUILDING AND FINAL DISCHARGE LOCATION.
- ARRANGE FOR A GROUND PENETRATION SURVEY FOR THE AREA OF THE PROPOSED AC UNITS AND THE FOOTINGS INSTALLATION ENSURING NO EXISTING GROUND CABLES, ELECTRICAL AND COMMUNICATION CONDUITS/CABLES ARE PRESENT AND BE AFFECTED BY THIS INSTALLATION.

PRE-EXISTING CONDITIONS

- ANY EXISTING CONDITIONS, SYSTEMS, EQUIPMENT OR DEVICES THAT WILL BE RELIED UPON FOR THE SUCCESSFUL COMPLETION OF THIS PROJECT SHALL BE CONFIRMED TO BE OPERATING PROPERLY EARLY IN THE PROJECT.
 - THE CONTRACTOR (ALL APPLICABLE TRADES) SHALL ATTEND A MEETING WITH PROPERTY MANAGEMENT TO REVIEW THE EXISTING CONDITIONS THAT WILL BE RELIED ON. THIS MEETING SHALL EITHER BE PART OF THE KICK OFF MEETING, OR SCHEDULE EARLY IN THE PROJECT WHILE WAITING FOR NEW EQUIPMENT TO ARRIVE. NOTIFYING AT&T OF PROBLEMS WITH EXISTING CONDITIONS AT THE END OF THE PROJECT OR DURING COMMISSIONING IS NOT ACCEPTABLE.
 - EQUIPMENT, SYSTEMS OR DEVICES THAT THE CONTRACTOR OBSERVES TO BE OPERATING AND PROPERTY MANAGEMENT INDICATES HAVE BEEN OPERATING RELIABLY FOR AN EXTENDED PERIOD OF TIME MAY BE PRESUMED TO BE OPERATING PROPERLY.
 - ALL OTHER EXISTING CONDITIONS THAT WILL AFFECT THE SUCCESSFUL OUTCOME OF THE PROJECT SHALL BE TESTED TO ASSURE PROPER OPERATION.
 - IF IT IS DETERMINED UPON INITIAL TESTING THAT THERE ARE DEFICIENT ITEMS OR COMPONENTS THAT ARE PLANNED TO BE UTILIZED AS PART OF EITHER A TEMPORARY OR NEW SYSTEM, THE CONTRACTOR SHALL COMMUNICATE THE ISSUES WITH THE DESIGN ENGINEER AND WITH AT&T AND SUGGEST CORRECTIVE ACTION OR ALTERNATIVE MEANS.
- EXAMPLE INCLUDES, BUT ARE NOT LIMITED TO:
- EXISTING ELECTRICAL SERVICE
 - ANY DDC CONTROL COMPONENTS THAT WILL BE PART OF THE NEW SYSTEM BUT ARE NOT BEING REPLACED AS PART OF THE PROJECT.
 - THE PROJECT AFFECTS THE FIRE ALARM SYSTEM. THOSE PARTS OF THE EXISTING SYSTEM THAT WILL BE RELIED UPON SHALL BE PRE-TESTED. FOR EXAMPLE, AREA SMOKE DETECTORS THAT ARE REUSED SHOULD BE PRE-TESTED.

GENERAL NOTES

- ALL WORK SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES.
- CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ALL DIMENSIONS ARE APPROXIMATE. THE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT ALL FITTINGS, OFFSETS, ETC. ARE NOT SHOWN. THESE DRAWINGS ARE FOR THE GUIDANCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD FOR FABRICATION OF THE PIPING, PENETRATIONS, CONDUIT, WIRING, AND ALL COMPONENTS INTO A COMPLETE AND OPERABLE SYSTEM.
- WHERE DISCREPANCIES OCCUR BETWEEN THE PLANS AND SPECIFICATIONS CONTRACTOR SHALL NOTIFY OWNER OF ANY DISCREPANCIES IN WRITING. ANY ADJUSTMENT OF THE CONTRACT DOCUMENTS WITHOUT A DETERMINATION BY THE OWNER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. THE MOST STRINGENT REQUIREMENTS SHALL APPLY AS DETERMINED BY THE OWNER.
- THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NONCOMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED IN THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CHANGE ORDER, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- PRIOR TO SUBMITTING PROPOSAL, BIDDER SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND SHALL HAVE VISITED THE CONSTRUCTION SITE. HE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.
- THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.
- ALL DEVICES & EQUIPMENT ARE NEW, UNLESS OTHERWISE NOTED.
- THE PLANS AND SPECIFICATIONS DO NOT UNDERTAKE TO SHOW OR LIST EVERY ITEM TO BE PROVIDED, BUT RATHER TO DEFINE THE REQUIREMENTS FOR A FULL AND WORKING SYSTEM FROM THE STANDPOINT OF THE END USER. FOR THIS REASON, WHEN AN ITEM NOT SHOWN OR LISTED IS CLEARLY NECESSARY, FOR PROPER CONTROL/OPERATION OF EQUIPMENT WHICH IS SHOWN OR LISTED, PROVIDE AN ITEM WHICH WILL ALLOW THE SYSTEM TO FUNCTION PROPERLY AT NO INCREASE IN PRICE.
- A METHOD OF PROCEDURE (MOP) IS MANDATORY AND SHALL BE PROVIDED FOR THIS JOB. WORK SHALL NOT BE STARTED WITHOUT AN APPROVED/SIGNED MOP. REFER TO INSTALLATION AND JOB ACCEPTANCE HANDBOOK SUPPLEMENT (JAH) FOR MINIMUM REQUIREMENTS. DETAILED MOPS SHALL BE APPROVED FOR ALL PHASES AND PORTIONS OF WORK THAT MAY AFFECT ANY SERVICE OR INFRASTRUCTURE.
- WORK TO BE PERFORMED PER THE CURRENT AT&T TP-76300 TECHNICAL PUBLICATION MANUAL ISSUE/POSTED DATE OF 1/18/10, THE CRE SUPPLEMENTAL MASTER DATED 6/16/08, AND ANY INSTALLATION REQUIREMENT CHANGE NOTIFICATIONS TO THE CURRENT TP MANUAL. THE TP-76300 MANUAL AND INSTALLATION REQUIREMENT CHANGE NOTIFICATIONS ARE AVAILABLE FOR DOWNLOAD AT [HTTPS://EBIZNET.SBC.COM/SBCNEBS/](https://EBIZNET.SBC.COM/SBCNEBS/).
- CONTRACTOR SHALL PROTECT ALL TELEPHONE EQUIPMENT FROM ANY DAMAGE DUE TO DUST, MOISTURE OR CONTACT WITH WORK CREW OR MATERIALS. THIS PROTECTION SHALL BE INCLUDED IN THE BID, AND SHALL CONFORM TO AT&T STANDARDS (AVAILABLE FROM THE GENERAL CONTRACTOR).
- TELEPHONE COMPANY SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY POWER SHUTDOWN OF EXISTING PANELS OR SERVICE. SCHEDULE OF SHUTDOWNS SHALL BE AT CONVENIENCE OF THE TELEPHONE COMPANY. TELEPHONE COMPANY MAY, AT ITS OPTION, HAVE A REPRESENTATIVE PRESENT DURING SHUTDOWN. ALL WORK REQUIRING SHUTDOWNS OF EXISTING PANELS OR SERVICE SHALL BE DONE BETWEEN 12:00AM MIDNIGHT AND 6:00AM WEEKDAYS OR ON SATURDAY OR SUNDAY. REQUIRED SHUTDOWNS SHALL BE KEPT TO A MINIMUM. PROVISIONS SHALL BE MADE TO COOL TELEPHONE EQUIPMENT DURING ANY OUTAGE.
- INSTALL NAMEPLATES ON ALL EQUIPMENT WITH DESCRIPTION INDICATED ON DRAWINGS OR PROVIDED BY ENGINEER, IN ADDITION TO SIGNAGE REQUIRED BY NEC AND AT&T STANDARDS (ESP. TP MANUALS).
- COORDINATE EQUIPMENT LOCATIONS, CONTROL AND POWER WIRING REQUIREMENTS AND CONNECTION POINTS.
- ALL DUCT DIMENSIONS ARE INSIDE CLEAR. CONTRACTOR TO ADJUST FOR INSULATION REQUIREMENTS. DOUBLE DUCT ON EXTERIOR, DUCT COVERS, ETC.
- UNLESS OTHERWISE NOTED, ARRANGE, PAY FOR, COORDINATE AND PROVIDE ALL PERMITS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.

TEST AND BALANCE SUMMARY

PERFORM A COMPLETE TEST, ADJUST, AND BALANCE OF THE NEW AC-1/AC-2 AIR SYSTEM PER THE DESIGN AIR FLOWS INDICATED IN THE DESIGN DOCUMENTS. TEST NEW AC-1 AND AC-2 SYSTEMS SEPARATELY. MEASUREMENTS SHALL INCLUDE CFM'S, E.S.P., MOTOR AMPS, RPM'S, & RELIEF S.P.. ADJUST AIR SYSTEMS TO ACHIEVE THE AIR FLOWS INDICATED IN THE DESIGN DOCUMENTS AND MECHANICAL SCHEDULES. REFER TO THE SPECIFICATION BOOK SECTION 23 0593 FOR DETAILED TEST & BALANCE REQUIREMENTS.

SPECIAL BID INSTRUCTIONS

- THE AC-1 AND AC-2 HAVE A LEAD TIME OF 4-5 WEEKS. PRE-ORDER EQUIPMENT.
- ALL AT&T TELECOMMUNICATION SYSTEMS AND OPERATIONS SHALL NOT BE INTERRUPTED.
- UPGRADE EXISTING AND/OVER SYSTEM CONTROLS TO BE REPLACED WITH RELIABLE LPC CONTROLS.
- SPECIAL PLANNING AND COORDINATION WILL BE REQUIRED IN THE DELIVERY, INSTALLATION, ASSEMBLY AND RIGGING OF THE NEW PACKAGE UNITS. COORDINATE WITH AT&T FACILITY MANAGER FOR SCHEDULING.

PRE-EXISTING CONDITIONS

- ANY EXISTING CONDITIONS, SYSTEMS, EQUIPMENT OR DEVICES THAT WILL BE RELIED UPON FOR THE SUCCESSFUL COMPLETION OF THIS PROJECT SHALL BE CONFIRMED TO BE OPERATING PROPERLY EARLY IN THE PROJECT.
 - THE CONTRACTOR (ALL APPLICABLE TRADES) SHALL ATTEND A MEETING WITH PROPERTY MANAGEMENT TO REVIEW THE EXISTING CONDITIONS THAT WILL BE RELIED ON. THIS MEETING SHALL EITHER BE PART OF THE KICK OFF MEETING, OR SCHEDULE EARLY IN THE PROJECT WHILE WAITING FOR NEW EQUIPMENT TO ARRIVE. NOTIFYING AT&T OF PROBLEMS WITH EXISTING CONDITIONS AT THE END OF THE PROJECT OR DURING COMMISSIONING IS NOT ACCEPTABLE.
 - EQUIPMENT, SYSTEMS OR DEVICES THAT THE CONTRACTOR OBSERVES TO BE OPERATING AND PROPERTY MANAGEMENT INDICATES HAVE BEEN OPERATING RELIABLY FOR AN EXTENDED PERIOD OF TIME MAY BE PRESUMED TO BE OPERATING PROPERLY.
 - ALL OTHER EXISTING CONDITIONS THAT WILL AFFECT THE SUCCESSFUL OUTCOME OF THE PROJECT SHALL BE TESTED TO ASSURE PROPER OPERATION.
 - IF IT IS DETERMINED UPON INITIAL TESTING THAT THERE ARE DEFICIENT ITEMS OR COMPONENTS THAT ARE PLANNED TO BE UTILIZED AS PART OF EITHER A TEMPORARY OR NEW SYSTEM, THE CONTRACTOR SHALL COMMUNICATE THE ISSUES WITH THE DESIGN ENGINEER AND WITH AT&T AND SUGGEST CORRECTIVE ACTION OR ALTERNATIVE MEANS.
- EXAMPLE INCLUDES, BUT ARE NOT LIMITED TO:
- EXISTING ELECTRICAL SERVICE
 - ANY DDC CONTROL COMPONENTS THAT WILL BE PART OF THE NEW SYSTEM BUT ARE NOT BEING REPLACED AS PART OF THE PROJECT.
 - THE PROJECT AFFECTS THE FIRE ALARM SYSTEM. THOSE PARTS OF THE EXISTING SYSTEM THAT WILL BE RELIED UPON SHALL BE PRE-TESTED. FOR EXAMPLE, AREA SMOKE DETECTORS THAT ARE REUSED SHOULD BE PRE-TESTED.

SYMBOLS AND ABBREVIATIONS

| | | | | | |
|-------|---------------------------------|-------|-------------------------------|--------|---|
| — | EXISTING | AD | ACCESS DOOR | GSM | GALVANIZED SHEET METAL |
| — | NEW | AFF | ABOVE FINISHED FLOOR | HP | HORSEPOWER |
| -x-x- | TO BE DEMOLISHED/REMOVED | AH | AIR HANDLER | HR | HOUR |
| (F) | WORK ITEM (MECHANICAL) | AI | ANALOG INPUT | HVAC | HEATING, VENTILATING AND AIR CONDITIONING |
| (A) | AIR OUTLET MARK | AO | ANALOG OUTPUT | AP | ACCESS PANEL |
| (G) | GRILLE MARK | AS | AIR SEPARATOR | MAX | MAXIMUM |
| (N) | NECK SIZE | ARCH | ARCHITECTURAL | MECH | MECHANICAL |
| (D) | THROW DIRECTIONS | AS | AIR SEPARATOR | MFR | MANUFACTURER |
| (E) | EQUIPMENT TYPE | BDD | BACKDRAFT DAMPER | MIN | MINIMUM |
| (N) | EQUIPMENT NUMBER | BFP | BACKFLOW PREVENTER | MTD | MOUNTED |
| (S) | DETAIL/SECTION | BOD | BOTTOM OF DUCT | MVD | MANUAL VOLUME DAMPER |
| (S) | SHEET NUMBER | BOP | BOTTOM OF PIPE | <N> | NEW |
| (C) | POINT OF CONNECTION | BTUH | BRITISH THERMAL UNIT PER HOUR | N.T.S. | NOT TO SCALE |
| (D) | POINT OF DEMOLITION | CWR | CONDENSER WATER RETURN | OA | OUTSIDE AIR |
| (T) | THERMOSTAT | CWS | CONDENSER WATER SUPPLY | OAD | OUTSIDE AIR DAMPER |
| (S) | TEMPERATURE SENSOR | CWP | CONDENSER WATER PUMP | O.C. | ON CENTER |
| (SP) | STATIC PRESSURE SENSOR | CFM | CUBIC FEET PER MINUTE | PH | PHASE |
| (R) | REDUCER | CT | COOLING TOWER | PNL | PANEL |
| (D) | SUPPLY AIR DIFFUSER | CHWR | CHILLED WATER RETURN | <R> | REMOVE |
| (G) | RETURN AIR GRILLE | CHWS | CHILLED WATER SUPPLY | RA | RETURN AIR |
| (D) | EXHAUST AIR GRILLE | CHWP | CHILLED WATER PUMP | RBPFP | REDUCED PRESSURE BACKFLOW PREVENTER |
| (D) | MANUAL VOLUME DAMPER | CU | CONDENSING UNIT OR COPPER | SA | SUPPLY AIR |
| (D) | MOTORIZED DAMPER | DDC | DIRECT DIGITAL CONTROL | S.A.D. | SEE ARCHITECTURAL DRAWING |
| (D) | SQUARE ELBOW WITH TURNING VANES | DIA | DIAMETER | TMP | TEMPERATURE MONITOR PANEL |
| (D) | SQUARE TO ROUND TRANSITION | DI | DIGITAL INPUT | DO | DIGITAL OUTPUT |
| (D) | DIAMETER (PIPE OR DUCT) | DG | DRAWING | DWG | DRAWING |
| (D) | DDC CONTROL POINT | <E> | EXISTING | EA | EXHAUST AIR |
| (D) | CAP | EFF | EFFICIENCY | ET | EXPANSION TANK |
| (D) | ELBOW, TURNED UP | EQUIP | EQUIPMENT | FACP | FIRE ALARM CONTROL PANEL |
| (D) | ELBOW, TURNED DOWN | <F> | FUTURE | FD | FIRE DAMPER |
| (D) | CONNECTION, BOTTOM | FF | FINISHED FLOOR | FPM | FEET PER MINUTE |
| (D) | CONNECTION, TOP | FSD | FIRE/SMOKE DAMPER | FT | FOOT OR FEET |
| (D) | GATE VALVE | GA | GAUGE | GPW | GALLONS PER MINUTE |
| (D) | GLOBE VALVE | | | | |
| (D) | CHECK VALVE | | | | |
| (D) | BALL VALVE | | | | |
| (D) | BUTTERFLY VALVE | | | | |

BUILDING DATA

| | |
|-------------------------|--------------------------------------|
| BUILDING OCCUPANCY TYPE | B |
| BUILDING USE | TELECOMMUNICATIONS SWITCHING STATION |
| CONSTRUCTION TYPE | III-B |
| NUMBER OF FLOORS | 1 |
| OCCUPIED FLOORS | NONE |
| SQUARE FOOTAGE | 585 |
| FIRE SPRINKLERS | NO |

DRAWING INDEX

| SHT. NO. | DESCRIPTION |
|----------|---|
| G001 | COVER SHEET |
| A101 | ARCHITECTURAL FLOOR/SITE PLAN |
| A201 | ARCHITECTURAL ELEVATIONS |
| M001 | MECHANICAL SCHEDULES |
| M101 | MECHANICAL FLOOR/SITE PLAN |
| M201 | MECHANICAL ELEVATIONS |
| M501 | MECHANICAL DETAILS |
| M701 | MECHANICAL CONTROLS |
| E001 | ELECTRICAL NOTES, SYMBOLS & ABBREVIATIONS |
| E101 | ELECTRICAL FLOOR/SITE PLAN |
| E501 | ELECTRICAL DETAILS & SINGLE LINE DIAGRAM |
| S101 | STRUCTURAL NOTES AND PLANS |
| S102 | STRUCTURAL SECTIONS AND DETAILS |
| S103 | STRUCTURAL ELEVATION AND SECTION |

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PROJECT MANAGER
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PHONE: (559) 454-4382

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REGISTERED PROFESSIONAL ENGINEER
NO. 129041
MECHANICAL
STATE OF CALIFORNIA

REVISIONS / AUTHORIZATIONS

| NO. | REVISIONS / AUTHORIZATIONS | DATE | BY |
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| | DESIGN DEVELOPMENT SET | 02/29/16 | |
| | DESIGN DOCUMENTS SET | 04/08/16 | |
| | BID SUBMITTAL | 04/29/16 | |
| ▲ | VE ITEMS | 07/07/16 | |

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PROJECT TITLE

HVAC UPGRADE

4740 WAWONA ROAD
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CA US
YSMTCA03 123327.01 UG080

COVER SHEET GENERAL/TITLE/COVER

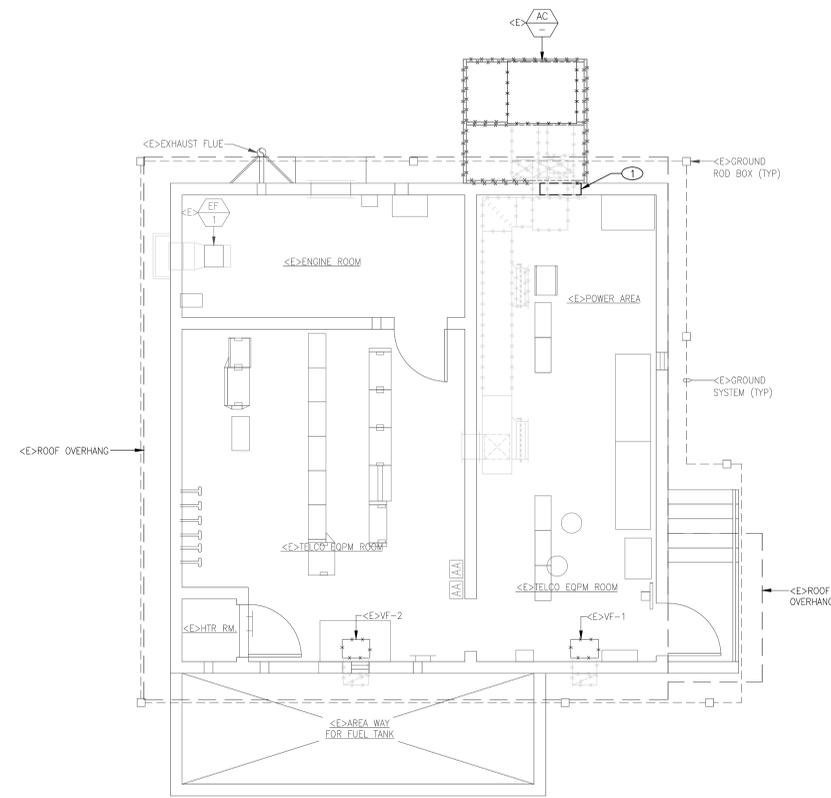
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| AT&T PROJECT NUMBER: | W21782 | DATE: 04/08/16 | SCALE: AS NOTED |
| AT&T AUTHORIZATION: | ERIC SAUCEDA | DRAWN BY: SDBE | CHECKED BY: BB |
| AT&T DRAWING NO.: | W21782G001 | SHEET: - | OF: - SHEETS |
| | | | SHEET NO. G001 |

GENERAL SHEET NOTES

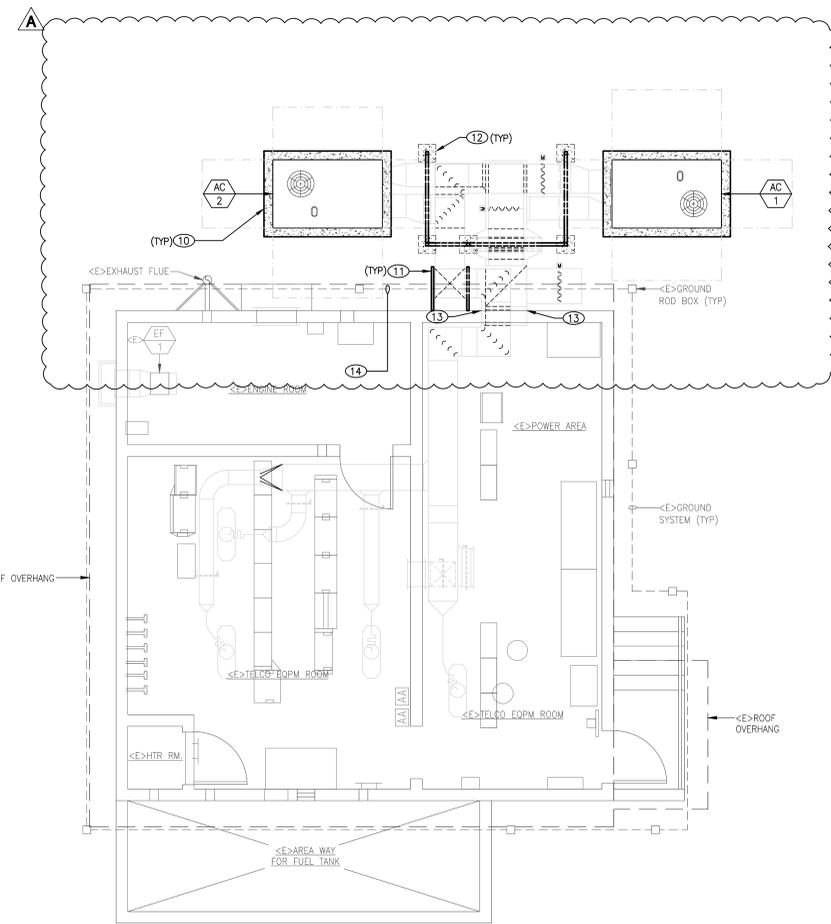
- A. ALL SUPPORTS TO BE GALVANIZED OR PAINT ALL SUPPORTS AND ASSOCIATED CONDUITS WITH TNEMEC POLYURETHANE PAINT AS FOLLOWS:
- SURFACE PREPARATION: SSPC-SP36 COMMERCIAL BLAST CLEAN.
 - PRIME: SHOP OR FIELD PRIME TNEMEC SERIES 90-97; 2.5 TO 3.5 MILS DFT.
 - INTERMEDIATE: SHOP OR FIELD INTERMEDIATE FINISH: HI-BUILD EPOXOLINE II SERIES V69-COLOR; 4.0 TO 6.0 MILS DFT.
 - FIELD FINISH: ENDURATONE SERIES 1029 SEMI-GLOSS; 2.0 TO 3.0 MILS DFT.
 - TOTAL DFT: 8.5 TO 12.5 MILS DFT.
 - CONTRACTOR TO PAINT COLOR TO MATCH EXISTING BUILDING FROM STANDARD MFR. LIST OF COLORS FOR APPROVAL.

REFERENCE SHEET NOTES

- DEMO:
- ① SAWCUT WALL FOR NEW RETURN AIR DUCT OPENING. SEE MECHANICAL DRAWINGS.
- NEW:
- ⑩ CONCRETE PAD, S.S.S.
 - ⑪ DUCT SUPPORT. SEE 7/M501.
 - ⑫ DUCT SUPPORT FOOTING, S.S.D.
 - ⑬ CAULK & SEAL ALL PENETRATIONS WEATHER TIGHT.
 - ⑭ PROTECT <E>ELECTRICAL GROUND SYSTEMS.



2 FLOOR/SITE PLAN - DEMO
SCALE: 1/4" = 1'-0"



1 FLOOR/SITE PLAN - NEW
SCALE: 1/4" = 1'-0"

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| ▲ | ADDENDUM #1 VE ITEMS | 07/07/16 | |

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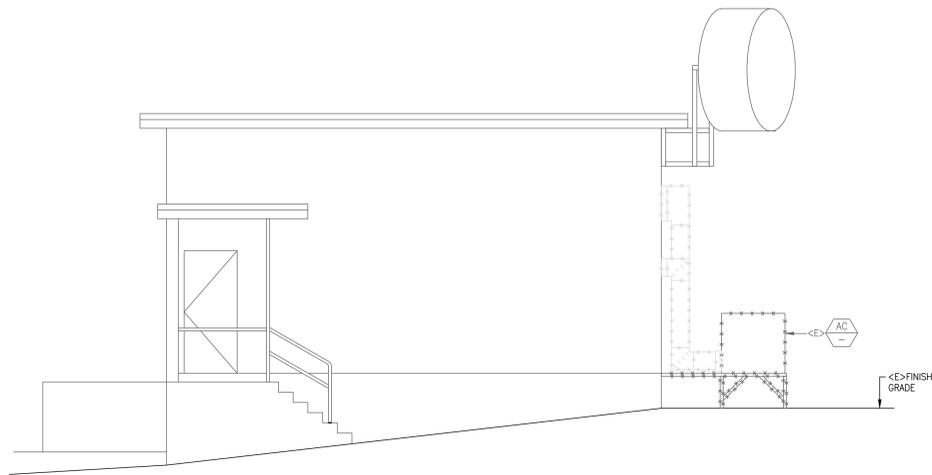


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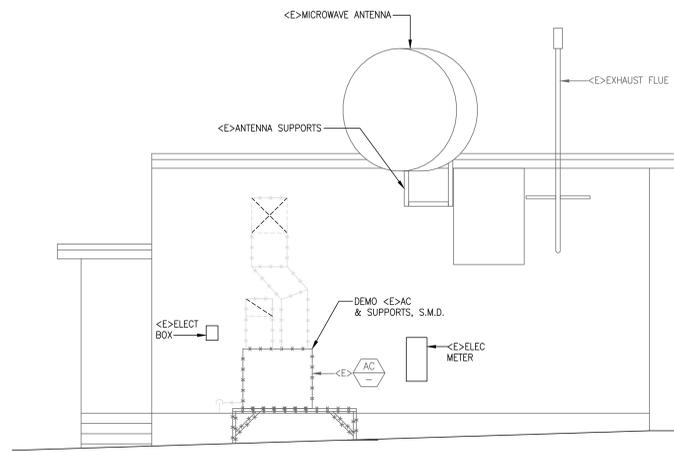
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SHEET TITLE
FLOOR/SITE PLAN ARCHITECTURAL

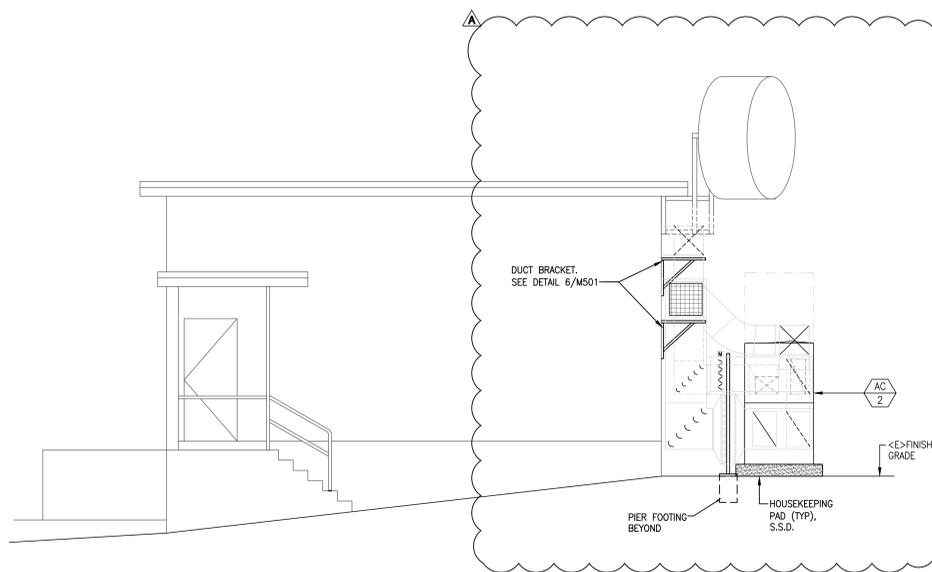
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| AT&T DRAWING NO: W21782A101 | SHEET NO. A101 | |



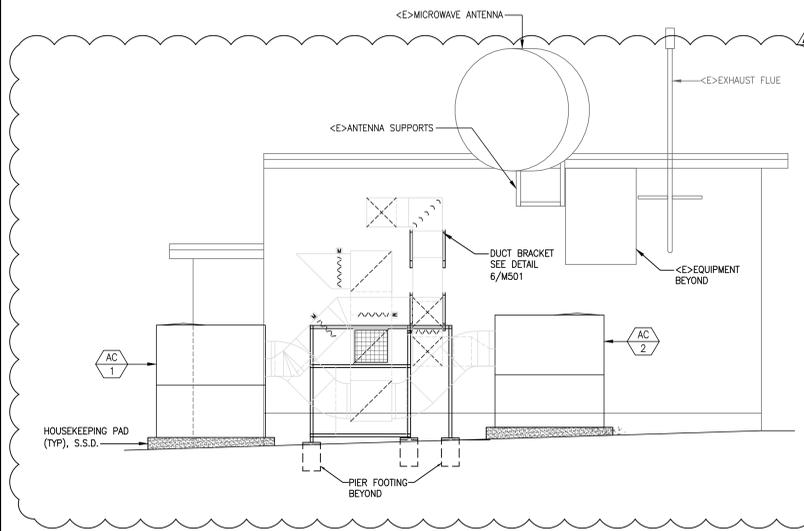
4 EAST ELEVATION — DEMO
SCALE: 1/4" = 1'-0"



2 NORTH ELEVATION — DEMO
SCALE: 1/4" = 1'-0"



3 EAST ELEVATION — NEW
SCALE: 1/4" = 1'-0"



1 NORTH ELEVATION — NEW
SCALE: 1/4" = 1'-0"



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SHEET TITLE
ELEVATIONS ARCHITECTURAL

| | | |
|---------------------------------------|--------------------------|-----------------|
| AT&T PROJECT NUMBER: W21782 | DATE: 04/08/16 | SCALE: AS NOTED |
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| SHEET: - | OF: - | SHEETS |
| AT&T DRAWING NO: W21782A201 | SHEET NO. A201 | |

| PACKAGE AIR CONDITIONING UNIT SCHEDULE | | | | | | | | | | | | | | | | | | | | | | |
|--|---------|--------------------|---------------|--------------|----------------|-----------------|-----|----------------------|--------------------|---------------------|-----|------------------|--------|--------|----------------------|----------|------------|-------------|------|------------------------|-----------------------|-----------------|
| TAG | MAKE | MODEL | AIRFLOW (CFM) | MIN OA (CFM) | ESP (IN. W.G.) | EVAPORATOR | | | | CONDENSER FAN MOTOR | | COMPRESSOR MOTOR | | | ELECTRIC HEATER (KW) | V/PH/HZ | MCA (AMPS) | MOCP (AMPS) | SEER | OPERATING WEIGHT (LBS) | DIMENSIONS LxWxH (IN) | NOTES |
| | | | | | | EVAP. FAN MOTOR | | SENSIBLE COOLING MBH | TOTAL CAPACITY MBH | QUANTITY | FLA | QUANTITY | RLA #1 | LRA #1 | | | | | | | | |
| | | | | | | HP | FLA | | | | | | | | | | | | | | | |
| AC-1 | CARRIER | 50HC-A06A0A3-0A0A0 | 2000 | 0 | 0.8 | 1 | 7.4 | 40.4 | 58.0 | 1 | 1.4 | 1 | 25 | 134 | 6 | 230/1/60 | 44 | 60 | 15.2 | 586 | 74.4x46.8x41.4 | 1,2,3,4,5,6,7,8 |
| AC-2 | CARRIER | 50HC-A06A0A3-0A0A0 | 2000 | 0 | 0.8 | 1 | 7.4 | 40.4 | 58.0 | 1 | 1.4 | 1 | 25 | 134 | 6 | 230/1/60 | 44 | 60 | 15.2 | 586 | 74.4x46.8x41.4 | 1,2,3,4,5,6,7,8 |

NOTES:
1) SINGLE POINT POWER CONNECTION.
2) LOW AMBIENT CONTROL AND WINTER START PACKAGE.
3) TIME GUARD IL.
4) COMPRESSOR HARD START KIT.
5) CRANCASE HEATER ACCESSORY.
6) ELECTRO-MECHANICAL UNIT.
7) PROVIDE 36" PREFABRICATED CURB, MICROMETL CRB-SDSML-36 (145 LBS). PRICE FOR EACH IS \$600.00. CONTACT MIKE MILLIKEN AT 1-800-884-4662.
8) PACKAGE UNITS HAVE BEEN PRE-SELECTED. PRICE FOR BOTH PACKAGE UNITS IS \$13,303. CONTACT DICK BARCLAY AT 408-453-3307.

| FILTER SCHEDULE | | | | | | | |
|-----------------|-----------|----------|-----|-----------------------|---------------------|---------------------------------|-----------------------------|
| TYPE | SIZE (IN) | EFF. (%) | QTY | INITIAL PRESSURE DROP | FINAL PRESSURE DROP | MODEL | NOTES |
| PRE-FILTER | 24x24x2 | 25 | 4 | 0.06" W.C. | 0.18" W.C. | CAMFIL AEROPLAT IV # 400010-005 | MERV 8 PLEATED PANEL FILTER |
| FINAL FILTER | 24x24x6 | 65 | 4 | 0.1 W.C. | 0.3 W.C. | CAMFIL RIGA FLOW # 402993-001 | MERV 11 RIGID FILTER |

| AIR DISTRIBUTION SCHEDULE | | | | | | | | | |
|---------------------------|--------|---------|-----------|---------------|---------|------|-----------|--|--|
| TAG | MAKE | MODEL | MATERIAL | BLADE SPACING | SIZE | CFM | COLOR | REMARKS | |
| A | TITUS | 350-ZFL | STEEL | 2" | 28"x28" | 2000 | #26 WHITE | RETURN AIR GRILLE | |
| B | CUSTOM | - | GLV.STEEL | - | 400 | - | - | CUSTOM BUILT AIR BOOT, SEE DETAIL 1 SHEET M501 | |
| C | CUSTOM | - | GLV.STEEL | - | 300 | - | - | CUSTOM BUILT AIR BOOT, SEE DETAIL 1 SHEET M501 | |

NOTES AND OPTIONS:
1) PROVIDE BALANCING DAMPERS UPSTREAM OF ALL OUTLETS.
2) GRILLS SHALL HAVE STANDARD WHITE FINISH.

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SHEET TITLE
SCHEDULES MECHANICAL

| | | |
|------------------------------------|-------------------|-----------------|
| AT&T PROJECT NUMBER: W21782 | DATE: 04/08/16 | SCALE: AS NOTED |
| AT&T AUTHORIZATION ERIC SAUCEDA | DRAWN BY: SDBE | CHECKED BY: BB |
| SHEET: - | OF: - | SHEETS |
| AT&T DRAWING NO: W21782M001 | SHEET NO. M001 | |

GENERAL SHEET NOTES

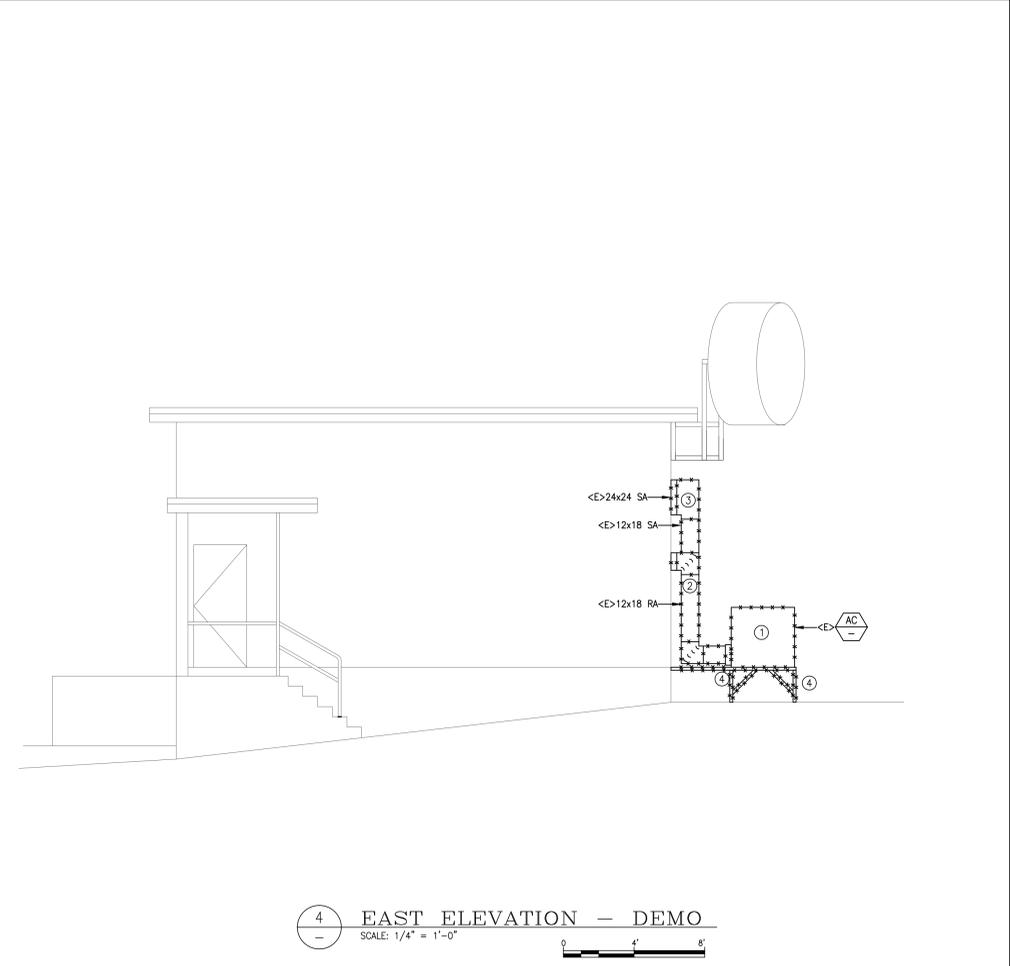
- A. REFER TO GENERAL NOTES ON G001, FLOOR PLAN ON M101, MECHANICAL DETAILS ON M501, CONTROLS RELATED WORK ON M701 AND ARCHITECTURAL DRAWINGS.
- B. VERIFY AND CONFIRM ON SITE ALL EXISTING CONDITIONS.
- C. INSTALL NEW DUCTWORK. UNLESS NOTED OTHERWISE, ALL OUTDOOR DUCTWORK SHALL BE DOUBLE WALL DUCTWORK AND INSULATED WITH R-8 INSULATION PER T-24. NEW INTERIOR DUCT SHALL MATCH THE SHAPE OF THE EXISTING DUCT. ALL DUCT DIMENSION SHOWN ON DRAWINGS ARE INTERIOR DIMENSIONS. CONSTRUCT PER SMACNA STANDARDS FOR 3" PRESSURE UPSTREAM OF CONTROL DAMPERS AND 2" PRESSURE DOWNSTREAM. ALSO SEE SPEC SECTION 13-0713. ALL DUCTWORK SHALL BE SHEET METAL, UNLESS NOTED. SUPPORT NEW DUCTWORK PER THE DUCT SUPPORT DETAILS ON DETAIL SHEET M501.
- D. PROVIDE DUST PROTECTION FOR ANY WORK TO BE PERFORMED WITHIN TEN FEET OF TELECOM EQUIPMENT.
- E. PROVIDE UNISTRAT DUCT SUPPORTS OFF VERTICAL STEEL MEMBERS FOR DUCT RISERS. REFER TO DETAILS ON M501 FOR HORIZONTAL DUCT SUPPORTS.
- F. PROVIDE TURNING VANES FOR ALL DUCT ELBOWS.
- G. PROVIDE BURGLAR BARS AT THE EXTERIOR DUCT WALL PENETRATIONS.

REFERENCE SHEET NOTES – DEMO

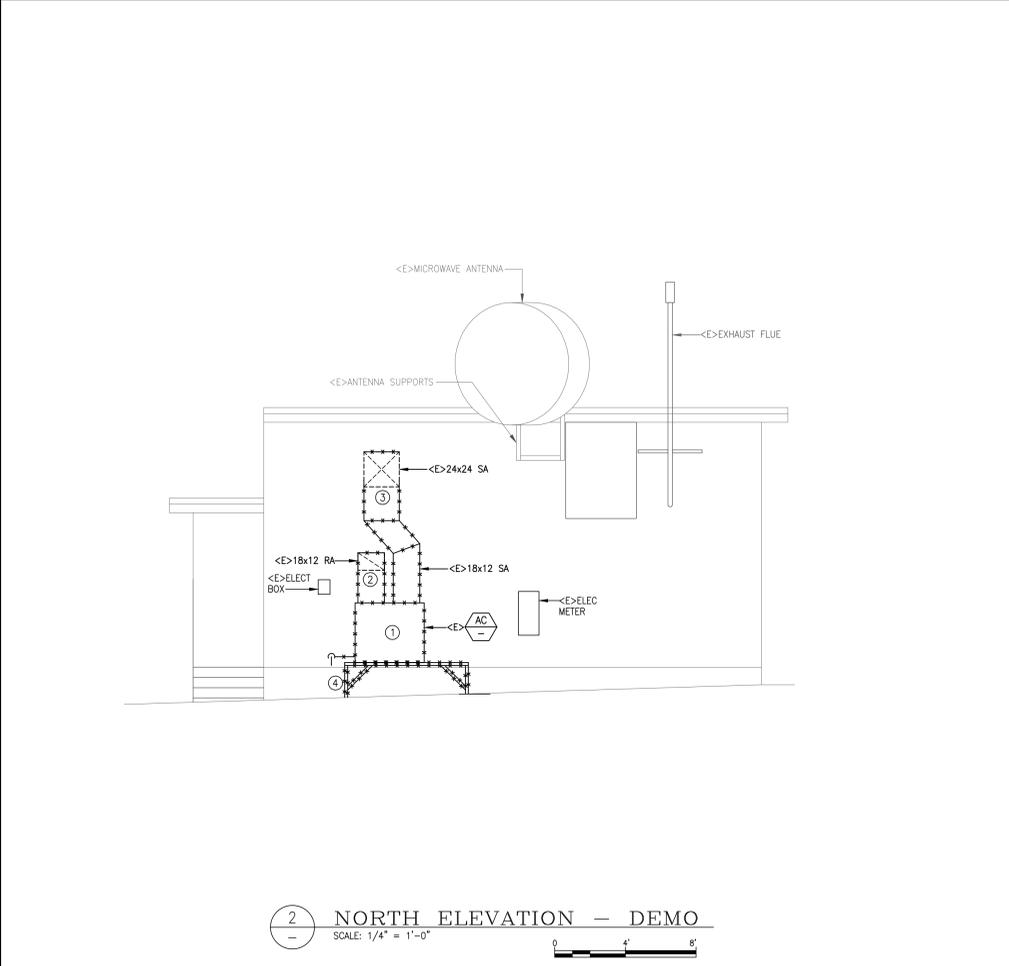
- MECHANICAL**
- ① DISCONNECT EXISTING AC UNIT FROM EXISTING DUCTWORK, LOW VOLTAGE CONTROLS AND ELECTRICAL UTILITIES' CONNECTIONS AND REMOVE IT. COORDINATE WITH ELECTRICAL SUB-CONTRACTOR.
 - ② REMOVE EXISTING OUTDOOR RETURN AIR DUCT AS INDICATED.
 - ③ REMOVE EXISTING OUTDOOR SUPPLY AIR DUCT AS INDICATED.
 - ④ REMOVE EXISTING PLATFORM STRUCTURE SUPPORTING EXISTING AC UNIT.

REFERENCE SHEET NOTES – NEW

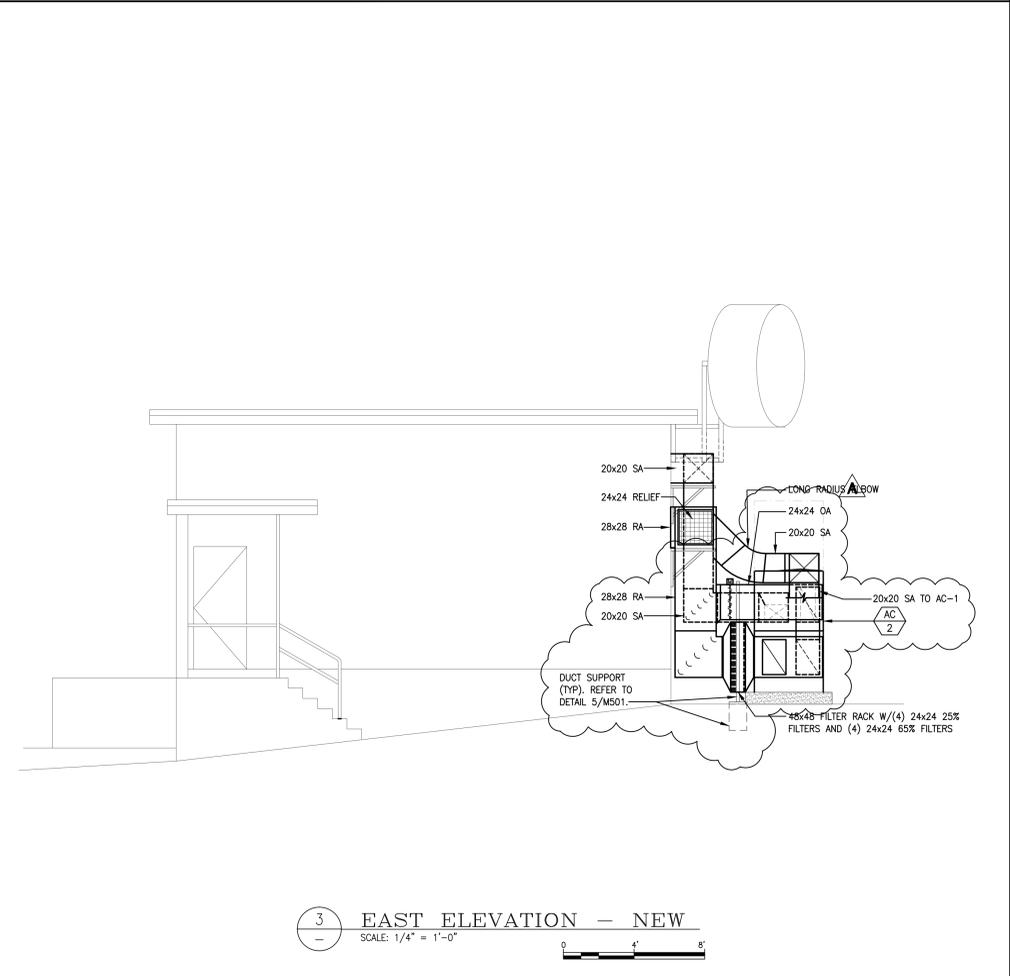
- MECHANICAL**
- ① PROVIDE NEW MOTORIZED CONTROL DAMPERS AS INDICATED. REFER TO M101 AND M701.
 - ② PROVIDE TURNING VANES ON SUPPLY AND RETURN DUCTWORK ELBOWS AS INDICATED.



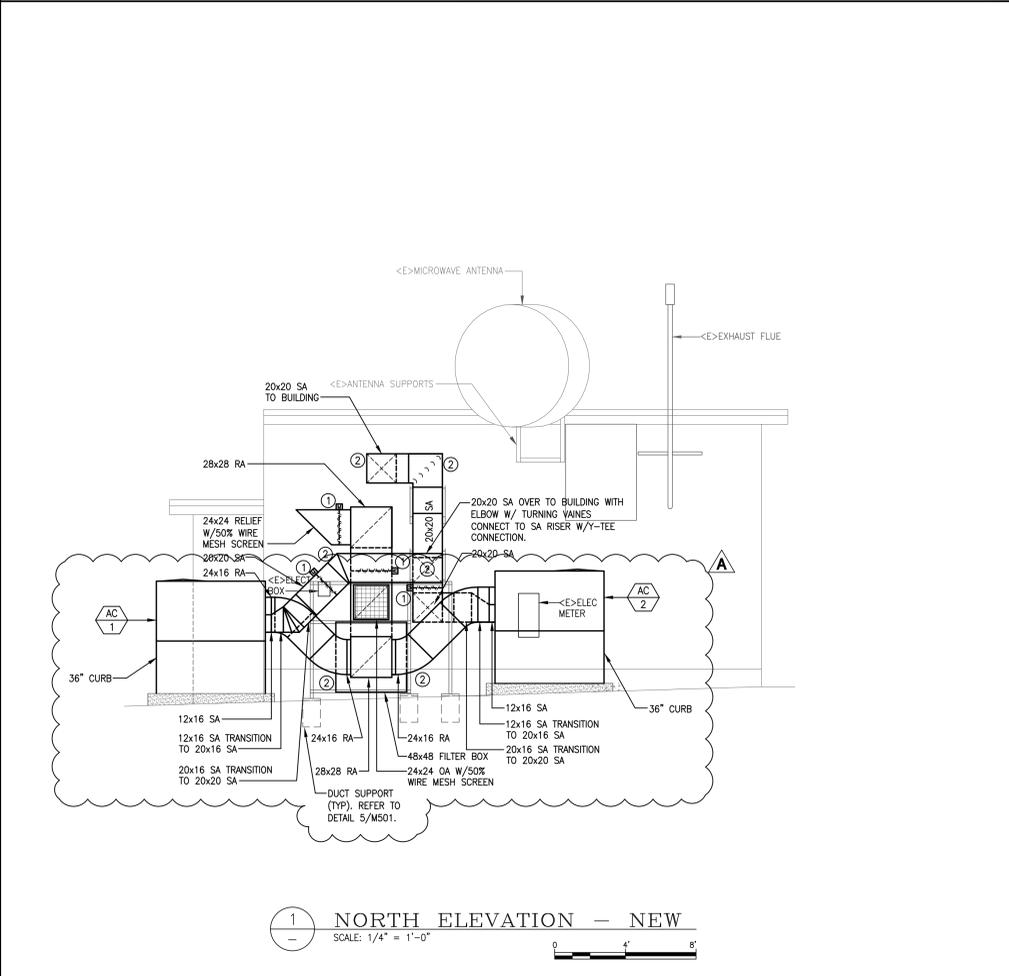
4 EAST ELEVATION – DEMO
SCALE: 1/4" = 1'-0"



2 NORTH ELEVATION – DEMO
SCALE: 1/4" = 1'-0"



3 EAST ELEVATION – NEW
SCALE: 1/4" = 1'-0"



1 NORTH ELEVATION – NEW
SCALE: 1/4" = 1'-0"

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BUILDINGS, CONSTRUCTION, AND/OR ZONING CHANGES.

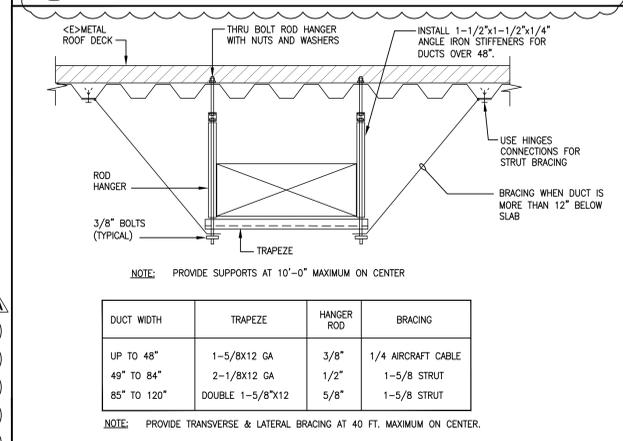
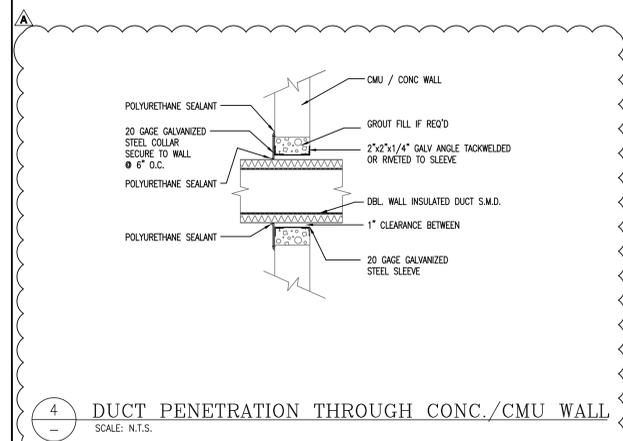


PROJECT TITLE
HVAC UPGRADE

4740 WAWONA ROAD
YOSEMITE
CA US
YSMTCA03 123327.01 UG080

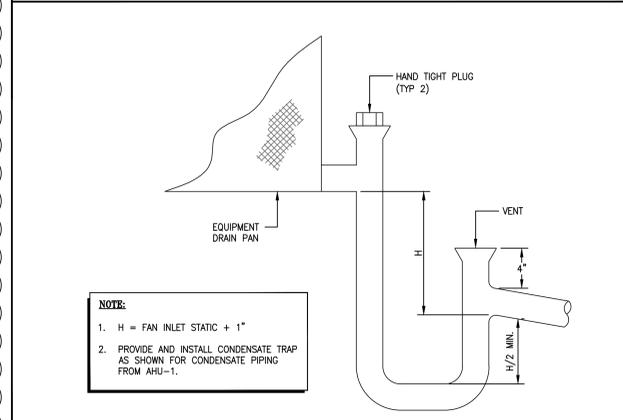
SHEET TITLE
**ELEVATIONS
MECHANICAL**

| | | |
|-------------------------------------|-------------------------|---------------------|
| AT&T PROJECT NUMBER: W21782 | DATE: 04/08/16 | SCALE: AS NOTED |
| AT&T AUTHORIZATION: ERIC SAUCEDA | DRAWN BY: W21782M201 | CHECKED BY: M201 |

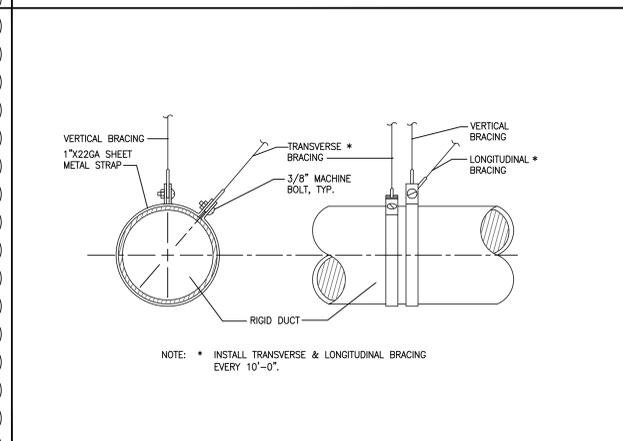


| DUCT WIDTH | TRAPEZE | HANGER ROD | BRACING |
|-------------|-----------------|------------|--------------------|
| UP TO 48" | 1-5/8x12 GA | 3/8" | 1/4 AIRCRAFT CABLE |
| 49" TO 84" | 2-1/8x12 GA | 1/2" | 1-5/8 STRUT |
| 85" TO 120" | DOUBLE 1-5/8x12 | 5/8" | 1-5/8 STRUT |

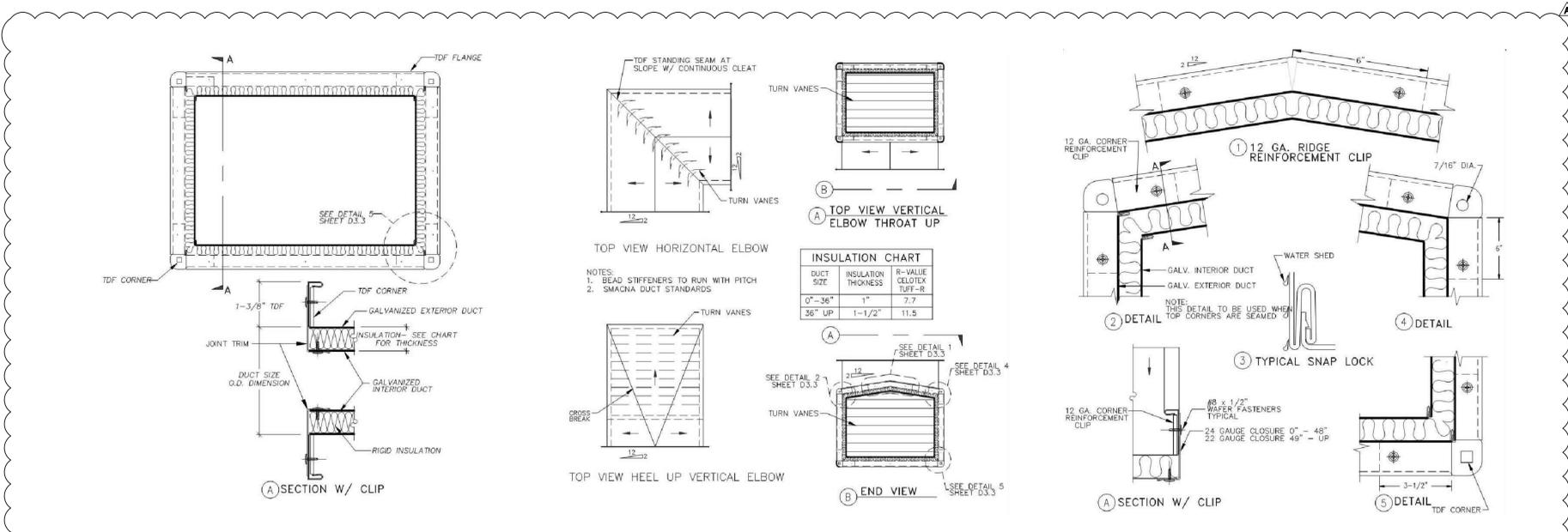
3 DUCT HANGER DETAIL
SCALE: N.T.S.



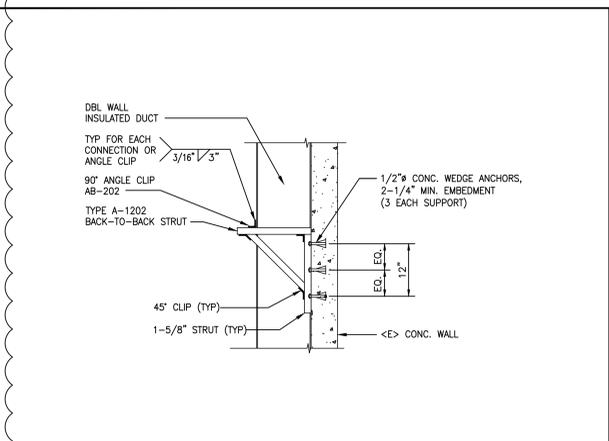
2 DRAW THROUGH CONDENSATE TRAP
SCALE: N.T.S.



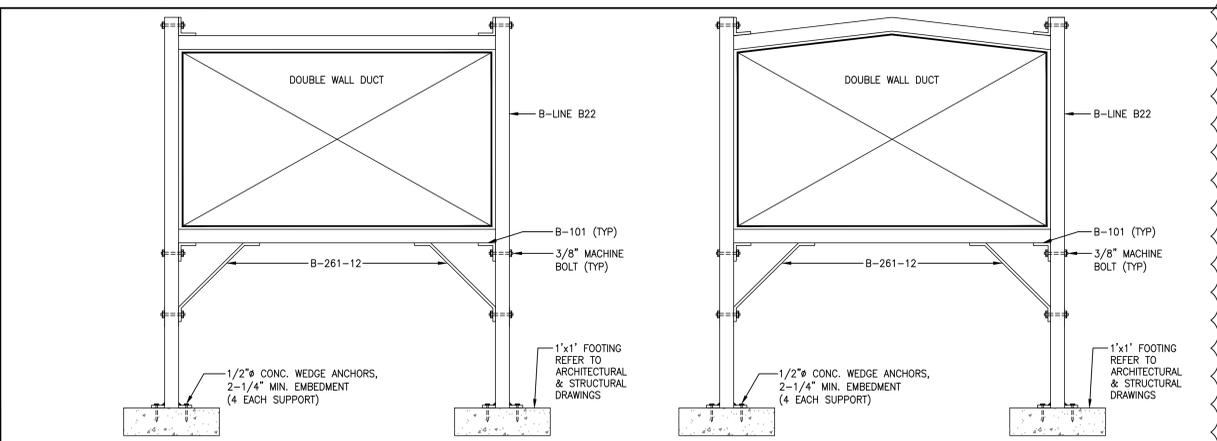
1 ROUND DUCT WITH STRAP DETAIL
SCALE: N.T.S.



7 INSULATED DOUBLE WALL DUCT DETAILS
SCALE: N.T.S.



6 SQUARE DUCT CMU WALL ANCHOR
SCALE: N.T.S.



5 DUCT SUPPORTS
SCALE: N.T.S.

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408.282.1500
408.287.2995 (f)
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Roseman | Los Angeles | Long Beach
Monterey | Oakland | Orange County
Sacramento | San Luis Obispo | Seattle

REVISIONS / AUTHORIZATIONS

| NO. | REVISIONS / AUTHORIZATIONS | DATE | BY |
|-----|----------------------------|----------|----|
| | DESIGN DEVELOPMENT SET | 02/29/16 | |
| | DESIGN DOCUMENTS SET | 04/08/16 | |
| | BID SUBMITTAL | 04/29/16 | |
| | VE ITEMS | 07/07/16 | |

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DRAWINGS PREPARED FOR
at&t CORPORATE REAL ESTATE

PROJECT TITLE
HVAC UPGRADE
4740 WAWONA ROAD
YOSEMITE
CA US
YSMTCA03 123327.01 UG080

SHEET TITLE
DETAILS MECHANICAL

| | | |
|-------------------------------------|--------------------------------|-------------------|
| AT&T PROJECT NUMBER: W21782 | DATE: 04/08/16 | SCALE: AS NOTED |
| AT&T AUTHORIZATION: ERIC SAUCEDA | DRAWN BY: SDBE | CHECKED BY: BB |
| | SHEET: - | OF: - SHEETS |
| | AT&T DRAWING NO: W21782M501 | SHEET NO: M501 |

SUMMARY OF WORK

- REPLACE ALL MAIN BUILDING CONTROLLERS AND TERMINAL EQUIPMENT CONTROLLERS WITH OPEN PROTOCOL (BACnet) CONTROLLERS. THE EXISTING ANDOVER CONTROL SYSTEM SHALL BE UPGRADED TO A WEB-BASED CONTROL SYSTEM BY RELIABLE LPC WITH FULL GRAPHICS. CONTROLLERS SHALL BE NEW BACnet COMPATIBLE. PICK UP ALL POINTS (SEE POINT LIST AND PROGRAM THE CONTROLLERS PER THE SEQUENCE OF OPERATION.
- PROVIDE FULL GRAPHICS FOR ALL CONTROL POINTS INSTALLED ON THE SYSTEM (SEE POINTS LIST FOR MORE INFORMATION). THE SYSTEM PROGRAMMING INCLUDING GRAPHIC PROGRAMMING SHALL RESIDE ON THE LOCAL CONTROLLER, AS WELL AS ON THE BACKNET CONTROLS SERVER (COORDINATE WITH ATT FOR LOCATION). THE LOCAL CONTROLLER SHALL HAVE THE CAPABILITY TO DOWNLOAD ALL PROGRAMMING FROM THE SERVER IN THE EVENT THAT PROGRAMMING IS LOST AT THE LOCAL CONTROLLER.
- THE CONTROLS REPLACEMENT SHALL BE PERFORMED SO THAT ALL HVAC SYSTEMS REMAIN OPERATIONAL AT ALL TIMES.
- PROVIDE FULL GRAPHICS FOR ALL CONTROL POINTS ON THE NEW SYSTEM. PROVIDE AND INSTALL CONTROLS SOFTWARE ON BUILDING SPECIALIST LAPTOP SO HE/SHE CAN CONNECT ONTO THE CONTROL SYSTEM WITHIN THE NETWORK.
- FULLY COMMISSION THE ENTIRE CONTROL SYSTEM UPON COMPLETION. PROVIDE A LIST AND PRICING TO REPLACE ALL DEVICES (OTHER THAN CONTROLLERS) THAT ARE FOUND TO BE DEFECTIVE. THIS INCLUDES ALL SENSORS, ACTUATOR, TRANSducers, TRANSFORMERS, ETC).
- CONNECT THE NEW SYSTEM TO THE WEB VIA THE BUILDING'S NETWORK. OBTAIN A NEW STATIC IP ADDRESS FROM ATT VERSION IP6. INSTALL CONDUIT AND CAT 6 WIRE OR A PULL STRING TO THE TELEPHONE BOARD AS DIRECTED BY ATT'S OCS DEPARTMENT. COORDINATE WITH OCS AND TERMINATE WIRES AS REQUIRED.
- REMOVE ALL CONTROLS MADE OBSOLETE BY THIS PROJECT. OFFER REMOVED DDC CONTROLLERS TO THE ATT BUILDING SPECIALIST AS SPARE PARTS.
- ALL NEW DDC OUTPUTS SHALL HAVE THE OPTIONAL MANUALLY OVERRIDDEN CAPABILITY.
- DISCONNECT AND RECONNECT THE POWER TO ALL CONTROLLERS REPLACED AS PART OF THIS PROJECT. UNLESS OTHERWISE NOTED, USE THE SAME POWER SOURCE.
- ALL NEW CONTROLLERS SHALL HAVE BUILT IN, OR NEW STAND ALONE UPS, UNLESS THE CONTROLLERS HAVE FLASH MEMORY THAT IS NOT AFFECTED BY POWER OUTAGES.
- WHEN RECALLED FROM THE FRONT-END COMPUTER, THE DESCRIPTION OF THE ZONE TEMPERATURE SENSOR AND CONTROL DAMPERS SHALL CLEARLY SAY WHERE THE SENSOR, OR CONTROL DAMPER IS LOCATED.
- GENERATE AN EMAIL TEXT ALARM FOR ALL ALARM CONDITIONS INCLUDING: EQUIPMENT FAILURE TO PROVE, OVER TEMPERATURE, EQUIPMENT GENERAL ALARM POINTS, ETC. EMAIL ALARMS SHALL BE SENT AS DIRECTED BY THE ATT PROPERTY MANAGER. COORDINATE WORK CLOSELY WITH THE ATT PROPERTY MANAGER.
- WHEN SYSTEM GOES INTO ALARM, THERE SHALL BE AN ICON THAT WILL FLASH ON THE FRONT END SCREEN.
- PROVIDE A ONE (1) YEAR PARTS AND LABOR WARRANTY ON ALL DDC CONTROLLERS.
- PROVIDE COMPLETE RECORD DRAWINGS, IN CAD AND HARDCOPIES, TO BOTH ATT AND SALAS O'BRIEN ENGINEERS.
- PROVIDE COMPLETE ACCEPTANCE TESTING WITH BUILDING SPECIALISTS AND DOCUMENT THAT EACH CONTROL POINT PERFORMS AS INTENDED.
- PROVIDE 8 HOURS TRAINING FOR BUILDING SPECIALIST.

GRAPHICS

- THE GRAPHICS SHALL BE ABLE TO DISPLAY AND PROVIDE ANIMATION BASED ON REAL-TIME DATA THAT IS ACQUIRED, CALCULATED, OR ENTERED.
- MULTIPLE GRAPHIC APPLICATIONS SHALL BE ABLE TO EXECUTE AT ANY ONE TIME ON A SINGLE WORKSTATION.
- PROVIDE GRAPHICS WITH POINT/CLICK BUTTONS TO MOVE FROM ANY ONE GRAPHIC TO ANOTHER GRAPHIC IN AN INTUITIVE MANNER. GRAPHICS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
 - SITE PLAN ENABLING POINT/CLICK TO EQUIPMENT AND FLOOR PLAN.
 - FLOOR PLAN WITH ACTUAL AND SETPOINT TEMPERATURE AND PATH TO EQUIPMENT.
 - PACKAGE UNITS, FAN(S) ETC. WITH ALL ACTUAL AND SETPOINT DISPLAYS OF CONTROL VARIABLES AND FAN STATUS INDICATED HEREIN OR ON THE POINT LIST.

CONTROLS POINTS LIST

| CONTROLS POINTS LIST | | | | | | | | | |
|----------------------|----------------------------------|--|-----------------------------|----|----|----|----|----------|--------------------|
| POINT ID. | CONTROL DEVICE | CONTROL DESCRIPTION | CONTROL DEVICE LOCATION | AI | AO | DI | DO | COMMENTS | |
| RM-TMP | TEMPERATURE SENSOR | ROOM TEMPERATURE | TELOCO EQUIP. ROOM INTERIOR | 1 | | | | | |
| RM-TMP | TEMPERATURE SENSOR | ROOM TEMPERATURE | POWER AREA ROOM INTERIOR | 1 | | | | | |
| BLDG-SP | STATIC PRESSURE SENSOR | BUILDING STATIC PRESSURE | TELOCO EQUIP. ROOM INTERIOR | 1 | | | | | |
| AC-1 (S/S) | LOGIC RELAY | A/C UNIT START/STOP | PACKAGED UNIT | | | | 1 | | LEAD/LAG OPERATION |
| AC-1 (ALM) | RELAY | PACKAGE UNIT GENERAL FAULT | PACKAGED UNIT | | | | | 1 | |
| AC-1 (SAD) | DAMPER ACTUATOR | SUPPLY AIR ISOLATION DAMPER | SA DUCT | | | | | 1 | NEMA 3R |
| AC-1 (SAT) | DUCT TEMP. TRMTR SENSOR-AVG. | SUPPLY AIR TEMP | SA DUCT | | 1 | | | | |
| AC-1 (SFS) | CURRENT SENSOR | SUPPLY FAN STATUS | PACKAGED UNIT | | | | 1 | | MONITORING |
| AC-1 (COMP) | LOGIC RELAY | COMPRESSOR START/STOP | PACKAGED UNIT | | | | 1 | | |
| AC-1 (EHTG) | LOGIC RELAY | ELECTRICAL HEATING | PACKAGED UNIT | | | | 1 | | MONITORING |
| AC-1 (COMP) | CURRENT SENSOR | COMPRESSOR STATUS | PACKAGED UNIT | | | | 1 | | MONITORING |
| AC-2 (S/S) | LOGIC RELAY | A/C UNIT START/STOP | PACKAGED UNIT | | | | 1 | | LEAD/LAG OPERATION |
| AC-2 (ALM) | RELAY | PACKAGE UNIT GENERAL FAULT | PACKAGED UNIT | | | | | 1 | |
| AC-2 (SAD) | DAMPER ACTUATOR | SUPPLY AIR ISOLATION DAMPER | SA DUCT | | | | | 1 | NEMA 3R |
| AC-2 (SAT) | DUCT TEMP. TRMTR SENSOR-AVG. | SUPPLY AIR TEMP | SA DUCT | | 1 | | | | |
| AC-2 (SFS) | CURRENT SENSOR | SUPPLY FAN STATUS | PACKAGED UNIT | | | | 1 | | MONITORING |
| AC-2 (COMP) | LOGIC RELAY | COMPRESSOR START/STOP | PACKAGED UNIT | | | | 1 | | |
| AC-2 (EHTG) | LOGIC RELAY | ELECTRICAL HEATING | PACKAGED UNIT | | | | 1 | | MONITORING |
| AC-2 (COMP) | CURRENT SENSOR | COMPRESSOR STATUS | PACKAGED UNIT | | | | 1 | | MONITORING |
| AC (PT) | DUCT STATIC PRESSURE TRANSMITTER | DUCT STATIC PRESSURE | COMMON SA DUCT | | | | 1 | | |
| RETQA-DMPR | DAMPER ACTUATOR (2) | RETURN AIR & OUTSIDE AIR DAMPER POSITION | RETURN & OUTSIDE AIR DUCTS | | | | 1 | | NEMA 3R (2) |
| OA-TMP | AIR TEMP SENSOR | OUTSIDE AIR TEMPERATURE | BLDG EXTERIOR | | | | 1 | | |
| MA-TMP | DUCT TEMP. TRMTR-AVG. | MIXED AIR TEMPERATURE | INTAKE AIR DUCT | | | | 1 | | |
| RA-TMP | DUCT TEMP. TRMTR-AVG. | RETURN AIR TEMPERATURE | RETURN DUCT | | | | 1 | | |
| FILTER ALM | PRESS. DIFF. SWITCH | DIRTY PRE-FILTER ALARM | FILTER BANK | | | | 1 | | |
| FILTER ALM | PRESS. DIFF. SWITCH | DIRTY FINAL FILTER ALARM | FILTER BANK | | | | 1 | | |
| RLF-DMPR | DAMPER ACTUATOR | RELIEF AIR DAMPER POSITION | RELIEF DUCT | | | | 1 | | NEMA 3R |
| FALM | RELAY | FIRE ALARM STATUS | ROOM INTERIOR | | | | 1 | | MONITORING |
| GEN | RELAY | GENERATOR RUN POINT | EQUIPMENT ROOM | | | | 1 | | |
| LOOP | RELAY | LOSS OF COMMERCIAL POWER POINT | EQUIPMENT ROOM | | | | 1 | | |
| TOTALS: | | | | 9 | 2 | 11 | 8 | 30 | |

GENERAL NOTES FOR CONTROLS

- THE BUILDING HAS EXISTING ANDOVER DDC CONTROLS SYSTEM TO BE UPGRADED WITH NEW RELIABLE LPC CONTROLS AND CONTROLS PANELS.
- CONTROLS CONTRACTOR TO PROVIDE PROGRAMMING, CONTROL DEVICES, WIRING, ETC. TO DELIVER SEAMLESS INTEGRATION WITH EQUIPMENT CONTROLS AND OVERALL SYSTEM CONTROLS TO PROVIDE A FULLY OPERATIONAL HVAC SYSTEM FOR THE FACILITY. REUSE EXISTING CONTROLS INFRASTRUCTURE AS FEASIBLE.
- ONCE EXISTING EQUIPMENT IS REMOVED, DEMO UNUSED CONTROL WIRING AND CONDUITS BACK TO EXISTING DDC PANEL.
- COORDINATE WITH BALANCE CONTRACTOR TO PROVIDE CONTROLS ACCESS TO ALLOW THE BALANCERS TO COMPLETE THEIR TEST AND BALANCE WORK.
- PROVIDE COMPLETE RECORD CONTROL DRAWINGS. ALSO PROVIDE SYSTEMS TRAINING WITH BUILDING SPECIALIST. UPDATE GRAPHICS USER INTERFACE AS REQUIRED AS IT TIES INTO AT&T'S OVERALL DDC MONITORING OPERATION.
- INSTALL COMMUNICATION WIRING TO ALL NEW DDC CONTROLLERS. COMM WIRING SHALL BE IN CONDUIT. CONTROL CONDUITS SHALL BE COLOR CODED BLUE. AT 5 FOOT CENTERS (MAX). PROVIDE A 1" (MIN) BLUE STRIPE USING BLUE PAINT OR TAPE. CONDUIT AND WIRE TO BE PROVIDED AND INSTALLED BY CONTROLS CONTRACTOR.
- VERIFY ON SITE EXISTING CONDITIONS AS REQUIRED.

BY ELECTRICAL CONTRACTOR:

REUSE EXISTING 20 AMP, 120 VOLT SINGLE PHASE CIRCUIT TO POWER ALL THE DDC CONTROLLERS.

PROVIDE NEW POWER TO THE NEW DDC CONTROL PANEL(S) AS REQUIRED. COORDINATE TERMINATION WITH CONTROLS CONTRACTOR.

PROVIDE NEW JUNCTION BOXES WITHIN 3 FEET OF EACH NEW DDC CONTROLLER. PROVIDE A JUNCTION BOX WITH A 50 VA, FOOT-MOUNTED, FUSED TRANSFORMER AS REQUIRED.

ACTUATOR SCHEDULE

| SERIES | LF | NF | AF |
|---------------------|-----------|-----------|------------|
| MANUFACTURER | BELIMO | BELIMO | BELIMO |
| FORCE | 35 IN-LB | 60 IN-LB | 133 IN-LB |
| CONTROL | 2-10 VDC | 2-10 VDC | 2-10 VDC |
| MAXIMUM DAMPER SIZE | 4 SQ. FT. | 8 SQ. FT. | 16 SQ. FT. |

- ASSUME ALL DAMPERS HAVE EDGE SEALS
- ALL DAMPERS SHALL HAVE SPRING RETURN TO OPEN IN CASE OF DAMPER FAILURE

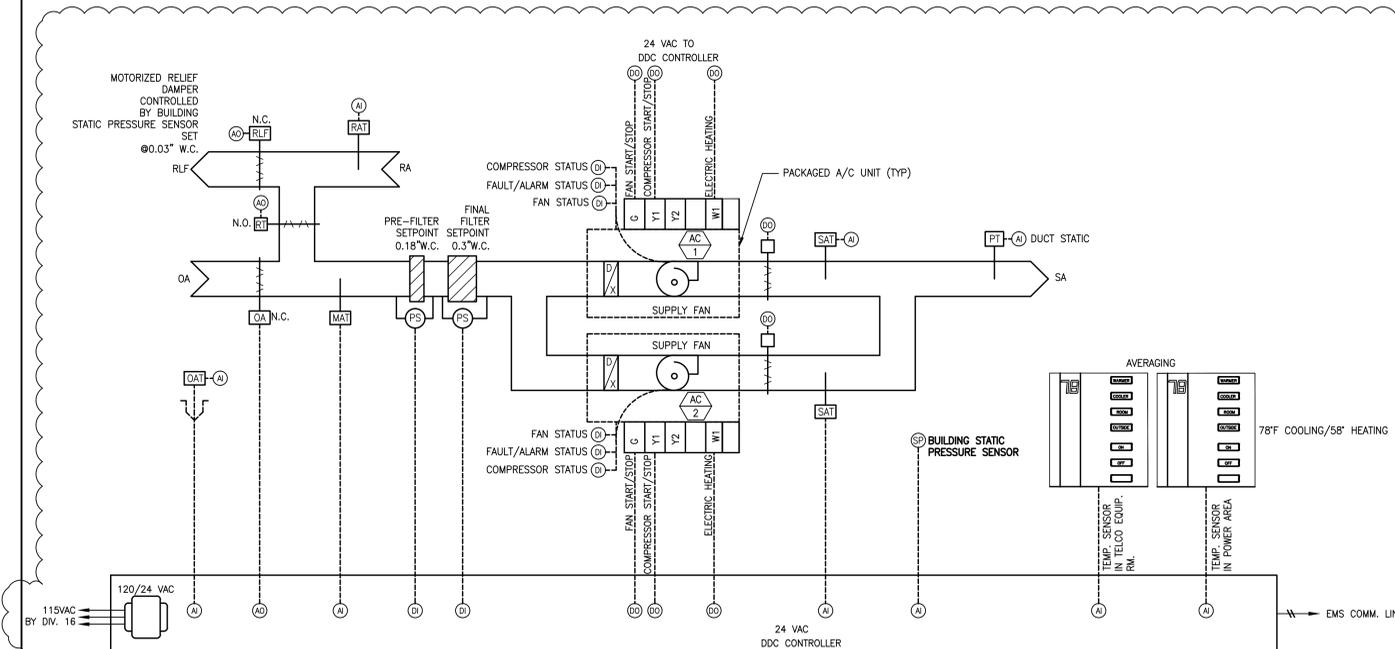
SEQUENCE OF OPERATION

- DDC SYSTEM WILL MONITOR THE TEMPERATURE OF THE CONTROLLED SPACE. BASED ON THE TEMPERATURE CONTROL SET POINTS, DDC SYSTEM THROUGH RELAY LOGIC WILL CONTROL THE COOLING AND HEATING OF THE PACKAGE AC UNIT(S) TO CONTROL SPACE TEMPERATURE. THE DDC SYSTEM WILL ALSO MONITOR THE FOLLOWING POINTS: SUPPLY FAN STATUS, COMPRESSOR STATUS, DISCHARGE AIR TEMPERATURE, ROOM TEMPERATURE, AND FIRE ALARM. THE DDC SYSTEM LOW VOLTAGE CONTROL WIRES WILL TERMINATE TO THE PACKAGE HEAT PUMP'S FACTORY TERMINAL STRIPS CONTROL BOARD. ALL FACTORY RECOMMENDED SAFETIES WILL NEED TO BE IN PLACE.
- FAN OPERATION: ON COMMAND FROM DDC THE LEAD AC UNIT FAN SHALL RUN CONTINUOUSLY WITH OPEN CORRESPONDING SUPPLY ISOLATION DAMPER. SHUTDOWN LEAD AC UNIT FAN AND CORRESPONDING ISOLATION DAMPER UPON INITIATION OF THE LAG AC UNIT. IF THE FIRE ALARM INPUT BECOMES ACTIVE, SUPPLY FAN IS TO SHUT DOWN.
- COOLING OPERATION: DDC WILL MONITOR THE SPACE TEMPERATURE AND COMPARE IT TO THE SPACE TEMPERATURE SET POINT OF 78°F (ADJUSTABLE). UPON POSITIVE CONFIRMATION OF THE FAN STATUS, IF THE SPACE TEMPERATURE DEVIATES MORE THAN 0.5°F (ADJUSTABLE) ABOVE THE SET POINT, THE COMPRESSOR WILL BE COMMANDED ON. DDC SYSTEM WILL MONITOR THE SUPPLY TEMPERATURE ENSURING FREEZE PROTECTION OF THE AC UNIT DUE TO OVERCOOLING THE SUPPLY AIR. IF THE SUPPLY AIR GETS TO BELOW SUPPLY AIR LOW SET POINT OF 45°F (ADJUSTABLE), THE COMPRESSOR WILL TURN OFF. IF AFTER, THE MINIMUM OFF TIME (ADJUSTABLE) IS MET AND THE SUPPLY AIR TEMPERATURE GETS ABOVE 55°F, THE COMPRESSOR WILL START AGAIN IF THE DDC SYSTEM IS STILL CALLING FOR COOLING. THE COMPRESSOR WILL HAVE A MINIMUM ON/OFF RUN TIME TO AVOID SHORT CYCLING.
- HEATING OPERATION: DDC WILL MONITOR THE SPACE TEMPERATURE AND COMPARE IT TO THE SPACE TEMPERATURE SET POINT OF 58°F (ADJUSTABLE). UPON POSITIVE CONFIRMATION OF THE FAN STATUS, IF THE SPACE TEMPERATURE DEVIATES MORE THAN 2°F (ADJUSTABLE) BELOW THE SET POINT, THE ELECTRIC HEATER WILL BE ENERGIZED.
- BUILDING HAS AN EXISTING AREA SMOKE DETECTION SYSTEM CONNECTED TO EXISTING FIRE ALARM PANEL. REUSE EXISTING RELAY ENSURING SHUT-OFF NEW AC UNITS UPON SIGNAL FROM EXISTING FIRE ALARM PANEL. DDC TO MONITOR VIA DRY CONTACTS IF FIRE ALARM IS ACTIVE.
- SYSTEM SHALL OPERATE ONE AC UNIT AT A TIME, KEEPING THE OTHER IN STANDBY MODE FOR REDUNDANCY. DDC SYSTEM THROUGH A RELAY LOGIC TO CONTROL LEAD LAG OPERATION. AC-1 AND AC-2 SHALL BE PREVENTED FROM OPERATING SIMULTANEOUSLY.
- ALTERNATE LEAD/LAG UNITS EVERY 100 HOURS (ADJ). LAG UNIT SHALL START IF LEAD UNIT FAILS, AND IF NO STATIC PRESSURE IS GENERATED IN COMMON SUPPLY AIR DUCT AS DETERMINED BY DUCT STATIC PRESSURE SENSOR. ALARM THROUGH DDC. ALLOW USER TO SELECT "LEAD/LAG OR OUT OF SERVICE" BETWEEN UNITS FOR MAINTENANCE PURPOSES.
- ECONOMIZER OPERATION: OUTSIDE AIR SHALL BE USED FOR COOLING WHENEVER IT IS 2 DEGREES OR MORE COOLER THAN THE ROOM TEMPERATURE. THE ECONOMIZER SHALL MODULATE, INTERLOCKED OA AND RA DAMPERS TO MAINTAIN AN "ECONOMIZER" ZONE TEMPERATURE SETPOINT. THIS SETPOINT SHALL BE 6 DEGREES (VIRTUAL POINT, ADJUSTABLE) LOWER THAN THE "MECHANICAL COOLING" ZONE TEMPERATURE SETPOINT. THE MECHANICAL COOLING SETPOINT SHALL BE INITIALLY SET AT 78 DEGREES.
- PROVIDE DIFFERENTIAL PRESSURE MONITORING ACROSS FILTER BANK TO INDICATE DIRTY FILTER STATUS/ALARM FOR BOTH: PRE-FILTERS (SETPOINT 0.18"W.C.) AND FINAL FILTERS (0.3"W.C.)
- PROVIDE DUCT TEMPERATURE SENSORS (AVERAGING TYPE) TO MONITOR SUPPLY AIR TEMPERATURE (SAT) FROM EACH AC UNIT, RETURN AIR TEMPERATURE (RAT), MIXED AIR TEMPERATURE (MAT) WITH USER-DEFINED ALARM PARAMETERS. PROVIDE SHIELDED OUTSIDE AIR TEMPERATURE (OAT) SENSOR MOUNTED TO BUILDING EXTERIOR.
- DISABLE ECONOMIZER OPERATION DURING THE EXISTING ENGINE EXHAUST OPERATION CYCLE.

MISCELLANEOUS:

- ALLOW FOR CHANGING ALL VIRTUAL SET POINTS DURING THE FIRST YEAR OF OPERATION AS REQUESTED BY THE ENGINEER, OR BUILDING SPECIALIST.
- SET BUILDING STATIC PRESSURE SENSOR IN EQUIPMENT ROOM TO 0.03" W.C. (ADJUSTABLE).

CONTROLS SCHEMATIC



1 AC CONTROL SCHEMATIC
SCALE: SCHEMATIC

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408.282.1500
408.287.2995 (f)
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Sacramento | San Luis Obispo | Seattle

REGISTERED PROFESSIONAL ENGINEER
No. M29041
MECHANICAL
STATE OF CALIFORNIA

REVISIONS / AUTHORIZATIONS

| NO. | REVISIONS / AUTHORIZATIONS | DATE | BY |
|-----|----------------------------|----------|----|
| | DESIGN DEVELOPMENT SET | 02/29/16 | |
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DRAWINGS PREPARED FOR
at&t CORPORATE REAL ESTATE

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SHEET TITLE
CONTROLS MECHANICAL

| | | |
|--------------------------------|-----------------------|-----------------|
| AT&T PROJECT NUMBER: W21782 | DATE: 04/08/16 | SCALE: AS NOTED |
| AT&T AUTHORIZATION | DRAWN BY: SDBE | CHECKED BY: BB |
| ERIC SAUCEDA | SHEET: - OF: - SHEETS | SHEET NO. M701 |

LOAD CALCULATIONS

| LOAD CALCULATION | | | |
|--|--------------------------------------|------------|-------------|
| EXISTING PANEL "HSP-1", 200A RATED, 1P, 3W, 120/240V | | | |
| A. EXISTING LOAD (GENERATOR RUN LOG, 2 YEAR RUN HISTORY--PEAK LOAD 08/04/15) | | | |
| MAIN DISTRIBUTION PANEL | 24705.88 | VA | |
| | SUB-TOTAL EXISTING LOAD | 24705.88 | VA |
| B. REMOVED LOAD | | | |
| AC | 13728.00 | VA | |
| | SUB-TOTAL REMOVED LOAD | 13728.00 | VA |
| D. NEW ADDITIONAL LOAD | | | |
| AC-1 | 14400.00 | VA | |
| AC-2 (REDUNDANT) | | | |
| | SUB-TOTAL NEW LOAD | 14400.00 | VA |
| | TOTAL LOAD : EXISTING - REMOVED+ NEW | 25377.88 | VA |
| | TOTAL CONNECTED LOAD | 108 | AMPS |
| | 200 @ 80% (NEC) ALLOWABLE LOAD | 160 | AMPS |

NOTE: ONLY 1 AC SHALL BE OPERATIONAL AT ANY TIME

APPLICABLE CODES

- UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
- CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24); 2013
 - CALIFORNIA BUILDING CODE (PART 2, TITLE 24); 2012 IBC WITH 2013 CA AMENDMENTS
 - CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24); 2011 NEC WITH 2013 CA AMENDMENTS
 - CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24); 2012 UMC WITH 2013 CA AMENDMENTS
 - CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2012 UPC WITH 2013 CA AMENDMENTS
 - CALIFORNIA ENERGY CODE (PART 6, TITLE 24); 2013
 - CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24); 2013
 - CALIFORNIA FIRE CODE (PART 9, TITLE 24); 2012 IFC WITH 2013 CA AMENDMENTS
 - CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24); 2012 (INTERNATIONAL EXISTING BUILDING CODE WITH 2013 CA AMENDMENTS)
 - CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24); 2013
 - CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24); 2013
 - PUBLIC SAFETY (TITLE 19), STATE FIRE MARSHAL: 2013
 - NFPA 72, NATIONAL FIRE ALARM CODE, 2013 EDITION W/ CA AMENDMENTS

APPLICABLE SPECIFICATIONS

- SALAS O'BRIEN STANDARD SPECIFICATIONS FOR AT&T PROJECTS:
THESE SPECIFICATIONS WERE ISSUED JANUARY 2001 BY SALAS O'BRIEN ENGINEERS AND ARE APPLICABLE TO THIS PROJECT. THEY SHALL BECOME BID DOCUMENTS FOR THIS PROJECT BY THIS REFERENCE. THEY INCLUDE BOTH MATERIAL SPECIFICATIONS AND SPECIAL REQUIREMENTS FOR WORKING IN TELECOMMUNICATIONS BUILDINGS. THESE REQUIREMENTS AND SPECIFICATIONS APPLY TO ALL MECHANICAL WORK AND MECHANICAL SUBCONTRACT WORK ON THE PROJECT. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT ALL PERSONNEL WORKING UNDER THE MECHANICAL CONTRACT, EITHER AS SUBCONTRACTORS OR EMPLOYEES, ADHERE TO THESE REQUIREMENTS AND SPECIFICATIONS. COPIES OF THESE SPECIFICATIONS ARE AVAILABLE FROM SALAS O'BRIEN ENGINEERS.
- OTHER APPLICABLE SPECIFICATIONS:
OTHER SPECIFICATIONS MAY APPLY TO THIS PROJECT. AT&T'S ALLIANCE CONTRACTOR MAY ISSUE BID INSTRUCTIONS, EXHIBITS, OR ADDENDUMS WHEN APPLICABLE TO THIS PROJECT.
- PRIORITY OF SPECIFICATIONS:
IF THERE IS A CONFLICT BETWEEN ANY OF THE APPLICABLE SPECIFICATIONS, THE DOCUMENT WITH THE HIGHEST PRIORITY RANKING AS INDICATED BELOW SHALL APPLY:
#1 ADDENDUMS
#2 BID INSTRUCTIONS
#3 EXHIBITS (I.E. EXHIBIT A)
#4 INFORMATION ON THE DRAWINGS.
#5 SALAS O'BRIEN STANDARD SPECIFICATIONS FOR AT&T PROJECTS.

SEQUENCE OF CONSTRUCTION & UTILITY SHUTDOWN

- THE DRAWINGS OUTLINE RECOMMENDED PHASING OF PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING (WITHIN 3 WEEKS OF PROJECT AWARD) AND MAINTAINING (UPDATED EVERY 2 WEEKS) A DETAILED CONSTRUCTION SCHEDULE FOR APPROVAL BY AT&T AND ENGINEER.
- ALL EXISTING BUILDING LOADS MUST REMAIN OPERATIONAL AT ALL TIMES, UNLESS SPECIAL PROVISIONS ARE MADE FOR A SHUTDOWN.
- ALL ELECTRICAL CONNECTIONS REQUIRING AN OUTAGE SHALL BE MADE DURING AN APPROVED TIME LIMIT. (MIDNIGHT TO 6AM) CHANGEDOVERS SHALL BE AS SHORT DURATION AS POSSIBLE.
- CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY COORDINATION AND INSPECTIONS, AND FOR CONSTRUCTION IN ACCORDANCE WITH PG&E REQUIREMENTS (PG&E GREENBOOK AND SUBSTRUCTURE DRAWINGS AND SPECIFICATIONS).
- ALL SHUTDOWNS SHALL BE COORDINATED WITH AT&T. THE APPROVED SPLICING TECHNICIAN SHALL BE ON SITE DURING THESE OUTAGES.
- CONTRACTOR SHALL INCLUDE ALL TEMPORARY OR RENTAL EQUIPMENT, PERMANENT AND TEMPORARY CONNECTIONS, AND WORK REQUIRED IN ORDER TO PROVIDE POWER TO SELECT BUILDING LOADS DURING REPLACEMENT OF SERVICE AND LOAD FEEDERS OR OTHER INTERRUPTIONS. EACH INTERRUPTION OR CUT OVER MAXIMUM DURATION SHALL BE APPROVED BY AT&T THROUGH THE DMOP PROCESS. WORK SHALL BE COMPLETED DURING NIGHTS OR WEEKENDS AT THE DISCRETION OF AT&T. THE CONTRACTOR SHALL PROCEED BY THE FOLLOWING GUIDELINES FOR INTERRUPTIONS TO LOAD-TYPES DESCRIBED AS FOLLOWS:
TELCO LOADS: MAXIMUM DURATION OF INTERRUPTION TO PDSC PANEL LOAD SHALL BE LIMITED TO 2 HOURS MAXIMUM DURING ANY 48 HOUR PERIOD. BACK-OUT PROVISIONS ARE REQUIRED, AND NON TELCO CUT OVERS SHOULD NOT BE SCHEDULED FOR SAME CUT OVER TIMES.
BUILDING LOADS: CONTRACTOR SHALL IDENTIFY LOADS BEING FED FROM AFFECTED PANEL(S) PRIOR TO DMOP MEETING, AND SHALL COMPLETE NEW FEEDER INSTALLATION TO CLOSE PROXIMITY OF LOAD TO MINIMIZE CUT OVER DURATION. CONTRACTOR SHALL BASE BID ON PROVIDING TEMPORARY CONNECTIONS FOR UP TO (10) 100A 3 PHASE LOADS ANYWHERE IN THE BUILDING. CONTRACTOR SHALL LIMIT CUT-OVERS TO NO MORE THAN 4 SUBPANELS PER DESIGNATED 24 HOUR (NIGHT OR WEEKEND) PERIOD WITHOUT APPROVAL BY AT&T AND ENGINEER.

SPECIAL CONDITIONS

- NOTE THAT EXISTING ALL UPS SUPPORTED LOADS SHALL BE MAINTAINED THROUGHOUT PROJECT, AND THAT STRICT PHASING STRATEGIES, AND DMOP REQUIREMENTS WILL BE NECESSARY. ALL REQUIRED SHUTDOWNS AND INTERRUPTIONS SHALL OCCUR DURING NIGHT, AND WEEKEND INTERVALS AS REQUIRED BY AT&T.
- TESTING AND COMMISSIONING OF ALL NEW WORK, LIFE SAFETY AND MODIFIED CIRCUITS SHALL BE COMPLETED PER ALL APPLICABLE SECTIONS OF NETA ATS, NETA MTS, AT&T, TP 76900. COMPLETE DOCUMENTATION SHALL BE PROVIDED. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
- ELECTRICAL CONTRACTOR SHALL HAVE EXPERIENCE WITH DATA CENTER INSTALLATIONS INCLUDING ALL SYSTEMS REFERENCED ON THESE DRAWINGS. CONTRACTOR SHALL BE FAMILIAR WITH ALL APPLICABLE SECTIONS OF REFERENCED TP AND BSP MANUALS. THE ON-SITE FIELD FOREMAN MUST PROVIDE REFERENCES SHOWING EVIDENCE (LETTER SIGNED BY A COMPANY PRINCIPAL) OF COMPLETING AT LEAST (10) PROJECTS IN THE CAPACITY OF ELECTRICAL PROJECT FOREMAN. LETTER MUST BE SUBMITTED PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.
- THIS PROJECT TAKES PLACE INSIDE A WORKING ELECTRONICS TEST LAB ENVIRONMENT. THE CONTRACTOR WILL BE EXPECTED TO ABIDE BY THE FOLLOWING REQUIREMENTS WITHOUT EXCEPTION:
 - NOTIFY LABS PERSONNEL IN ADVANCE OF ALL ON SITE WORK & OBTAIN THEIR APPROVAL TO CONDUCT THE PROPOSED TASKS.
 - THE CONTRACTOR SHALL USE EXTREME CARE AROUND THE LABS EQUIPMENT TO NOT TOUCH, DAMAGE, OR DISRUPT THIS EQUIPMENT IN ANY WAY.
 - PROTECT LAB EQUIPMENT IN THE VICINITY OF (WITHIN 10 FEET OF) WORK AREAS.
 - KEEP WORK AREAS CLEAN.
 - SITE TO BE CLEANED & HAVE RUBBISH REMOVED DAILY.
 - STAGE MATERIALS OUTSIDE THE LAB AREA.
 - SEE "DUST WALL CONSTRUCTION" FOR TEMPORARY WALL CONSTRUCTION.
 - ALL LIFE SAFETY SYSTEMS (FIRE ALARM AND FIRE SPRINKLER) WILL EITHER BE LEFT OPERATIONAL DURING THE CONSTRUCTION, OR A FIRE WATCH WILL BE PROVIDED WHILE THE SYSTEMS ARE NON-OPERATIONAL.

GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2013 CALIFORNIA ELECTRICAL CODE.
- A METHOD OF PROCEDURE (MOP) IS MANDATORY AND SHALL BE PROVIDED FOR THIS JOB. WORK SHALL NOT BE STARTED WITHOUT AN APPROVED/SIGNED MOP. REFER TO INSTALLATION AND JOB ACCEPTANCE HANDBOOK SUPPLEMENT (LHA) FOR MINIMUM REQUIREMENTS. DETAILED MOPS SHALL BE APPROVED FOR ALL PHASES AND PORTIONS OF WORK THAT MAY AFFECT ANY SERVICE OR INFRASTRUCTURE.
- WORK TO BE PERFORMED PER THE CURRENT AT&T TP-76300 TECHNICAL PUBLICATION MANUAL ISSUE/POSTED DATE OF 1/18/10, THE GRE SUPPLEMENTAL MASTER DATED 6/16/06, AND ANY INSTALLATION REQUIREMENT CHANGE NOTIFICATIONS TO THE CURRENT TP MANUAL. THE TP-76300 MANUAL AND INSTALLATION REQUIREMENT CHANGE NOTIFICATIONS ARE AVAILABLE FOR DOWNLOAD AT [HTTPS://EBZINET.SBC.COM/SBCNEBS/](https://EBZINET.SBC.COM/SBCNEBS/).
- CONTRACTOR SHALL PROTECT ALL TELEPHONE EQUIPMENT FROM ANY DAMAGE DUE TO DUST, MOISTURE OR CONTACT WITH WORK CREW OR MATERIALS. THIS PROTECTION SHALL BE INCLUDED IN THE BID, AND SHALL CONFORM TO AT&T STANDARDS (AVAILABLE FROM THE GENERAL CONTRACTOR).
- TELEPHONE COMPANY SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY POWER SHUTDOWN OF EXISTING PANELS OR SERVICE. SCHEDULE OF SHUTDOWNS SHALL BE AT CONVENIENCE OF THE TELEPHONE COMPANY. TELEPHONE COMPANY MAY, AT ITS OPTION, HAVE A REPRESENTATIVE PRESENT DURING SHUTDOWN. ALL WORK REQUIRING SHUTDOWNS OF EXISTING PANELS OR SERVICE SHALL BE DONE BETWEEN 12:00AM MIDNIGHT AND 6:00AM WEEKDAYS OR ON SATURDAY OR SUNDAY. REQUIRED SHUTDOWNS SHALL BE KEPT TO A MINIMUM. PROVISIONS SHALL BE MADE TO COOL TELEPHONE EQUIPMENT DURING ANY OUTAGE.
- ALL INTERIOR AND EXTERIOR SURFACES OF PANELS AND CABINETS SHALL BE CLEANED, VACUUM ALL MATERIAL AND METAL SHAVINGS FROM PANEL AND CABINET INTERIORS. APPLY TOUCH-UP SPRAY PAINT WHERE NEEDED.
- ADEQUATELY AFFIX AND SUPPORT ALL CONDUIT WORK PER NATIONAL ELECTRICAL CODE, IAH, AND NECA STANDARDS. BUS DUCT SHALL BE SUPPORTED PER MANUFACTURER.
- FIRE STOP ALL CONDUIT AND BUSWAY OPENINGS THROUGH WALLS AND CEILING PER AT&T APPROVED UL ASSEMBLY. INSTALL ESCUTCHEON PLATES AT BUILDING INTERIOR, WHERE EQUIPMENT IS INSTALLED ON THE EXTERIOR WALLS, STUB CONDUITS THROUGH WALL AND SEAL CONDUIT OPENINGS. THEN INSTALL EXTERIOR EQUIPMENT. ALSO, SEAL AROUND THE PERIMETER EDGE OF THE EQUIPMENT ENCLOSURE BETWEEN THE ENCLOSURE AND THE BUILDING.
- WHEN CALLED FOR, OR SCOPE OF WORK REQUIRES, ELECTRICAL EQUIPMENT TO BE REMOVED, ALL CONDUIT, WIRE, BOXES, HANGERS, ETC. SHALL BE REMOVED COMPLETELY. ALL OPENINGS SHALL BE PATCHED, SEALED AND PAINTED TO MATCH THE ADJACENT FINISH.
- PAINT ALL CONDUITS, BOXES, SUPPORTS, ETC. MOUNTED ON EXTERIOR OF BUILDING, TO MATCH ADJACENT BUILDING FINISH. WHERE EXISTING EXTERIOR EQUIPMENT IS REMOVED, PATCH AND PAINT TO MATCH ADJACENT FINISH.
- ALL CONDUCTORS INSTALLED IN HOUSE SERVICE PANEL, PANELBOARDS, ETC., SHALL BE TRAINED, LACED, AND INSTALLED WITH PHASE TAPE ON ALL CONDUCTORS.
- ALL SPLICES AND TERMINALS SHALL BE COMPRESSION TYPE, OF SEAMLESS PURE COPPER, TIN PLATED, LONG BARREL INSPECTION WINDOW, TERMINALS WITH TWO-HOLE PAD (WITH NEMA DRILLING), CLEAN ALL SURFACES AND INSTALL WITH OXIDE INHIBITING COMPOUND BURNDY PENETROX-E OR EQUAL. APPLY COMPOUND BETWEEN BUS BAR AND LUG PAD AND BETWEEN CONDUCTOR AND LUG BARREL. INSTALL COMPRESSION CONNECTORS WITH A FULLY CIRCUMFERENTIAL COMPRESSION DIE BURNDY HYPRSS OR EQUAL.
- INSTALL NAMEPLATES ON ALL EQUIPMENT WITH DESCRIPTION INDICATED ON DRAWINGS OR PROVIDED BY ENGINEER, IN ADDITION TO SIGNAGE REQUIRED BY NEC AND AT&T STANDARDS (BSP, TP MANUALS).
- COORDINATE EQUIPMENT LOCATIONS, CONTROL AND POWER WIRING REQUIREMENTS AND CONNECT POINTS.
- ABSOLUTELY UNDER NO CIRCUMSTANCES SHALL THE ENGINE GENERATOR BE LEFT DISCONNECTED FROM THE HOUSE SERVICE PANEL WHEN CONTRACTOR AND WORK CREW LEAVE THE BUILDING.
- CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING ELECTRICAL EQUIPMENT IN AREAS ADJACENT TO REMODEL AREA.
- WHEREVER EXISTING ELECTRICAL DEVICES AND EQUIPMENT CONFLICT WITH REMODEL WORK, RELOCATE THESE ITEMS AS DIRECTED.
- LABEL ALL CONDUIT WHERE IT BEGINS, AND WHERE IT TERMINATES INTO A BOX, PANEL, DEVICE, LOAD, OR DISCONNECT. CONDUIT SHALL BE LABELED EVERY 30 FEET OR LESS. CONDUIT SHALL BE LABELED WHERE IT PENETRATES ANY WALL OR FLOOR. LABEL SHALL BE PERMANENT PRINTED LABELS (DESCRIBING SOURCE, CIRCUIT, AND LOAD) LEGIBLE FROM FLOOR WHERE POSSIBLE (STANDING POSITION).
- CONTRACTOR IS RESPONSIBLE FOR BUS DUCT LAYOUT, PHASE COORDINATION, TRANSITIONS, BELLWS AND FITTINGS AS REQUIRED FOR INSTALLATION PER MANUFACTURER INSTRUCTIONS AND ACTUAL SITE CONDITIONS.
- ALL STEEL EXPOSED TO WEATHER SHALL BE STAINLESS STEEL OR HOT-DIP GALVANIZED, UNLESS OTHERWISE NOTED.
- ALL WIRING CONDUCTORS SHALL BE COPPER U.O.N.
- PROVIDE ARC FLASH HAZARD WARNING LABELS ON ALL EFFECTED ELECTRICAL EQUIPMENT, INCLUDING SWITCHBOARDS, PANEL BOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS. LABEL SHALL BE FACTORY PRE-PRINTED OR MACHINE-PRINTED SELF-ADHESIVE VINYL MATERIAL; UV, CHEMICAL, WATER, HEAT AND ABRASION RESISTANT, PRODUCED USING MATERIALS RECOGNIZED BY UL 969. MINIMUM SIZE: 3.5 BY 5 INCHES.
- UNLESS OTHERWISE NOTED, ARRANGE, PAY FOR, COORDINATE AND PROVIDE ALL PERMITS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.

ELECTRICAL SUMMARY OF WORK

- EXISTING 4 TON AIR CONDITIONING UNIT TO BE DEMOLISHED. REMOVE POWER CONNECTIONS.
- PROVIDE POWER TO AC-1 AND AC-2.
- PROVIDE EXTERIOR LIGHTING FOR CANOPY AREA.
- CONNECT NEW DDC AND TCP PANELS TO EXISTING ELECTRICAL CIRCUIT.

FIRE ALARM SCOPE

PROVIDE CONTROL MODULE FOR AUTOMATIC SHUTDOWN. RETEST COMPLETE FA SYSTEM FUNCTIONALITY UPON COMPLETION OF INSTALLATION.

SYMBOLS

| | |
|--|--|
| | EXTENT OF DEMOLITION |
| | NEW TO EXISTING CONNECTION |
| | WORK ITEM (ELECTRICAL) |
| | DETAIL DESIGNATION |
| | CONDUIT DOWN |
| | CONDUIT UP |
| | CONDUIT STUBBED OUT IN ACCESSIBLE CEILING LOCATION OR BELOW SPACE STRUCTURE AND CAPPED |
| | CONDUITS, WIRES, ETC. TO BE DEMOLISHED |
| | EXISTING DEVICES, CONDUITS, WIRES, ETC TO REMAIN |
| | NEW (BOLD) DEVICES, CONDUITS, WIRES, ETC. |
| | FLEXIBLE CONDUIT WITH CONNECTION TO EQUIPMENT |
| | BRANCH CIRCUIT WIRING IN CONDUIT CONCEALED - CEILING SPACE OR WALL |
| | BRANCH CIRCUIT WIRING IN CONDUIT - UNDER FLOOR, UNDERGROUND, OR WHERE POSSIBLE, EXPOSED ON ROOF OR BUILDING EXTERIOR. |
| | BRANCH CIRCUIT HOME RUN TO PANEL, CONCEALED IN CEILING SPACE OR WHERE POSSIBLE. |
| | BRANCH CIRCUIT HOMERUN TO PANEL |
| | DISCONNECT SWITCH - NON FUSED |
| | DISCONNECT SWITCH - HEAVY DUTY FUSED, 50 AMP FUSE, 60 AMP SWITCH |
| | DISCONNECT SWITCH - COMBINATION MOTOR STARTER |
| | WALL-MOUNTED DUPLEX RECEPTACLE 20A, 125V, 3WG, (2) NEMA 5-20R, ±18" UON |
| | WALL-MOUNTED DOUBLE DUPLEX RECEPTACLE 20A, 125V, 3WG, (2) NEMA 5-20R, ±18" UON |
| | DUPLEX GFI RECEPTACLE |
| | DUPLEX GFI RECEPTACLE, ABOVE COUNTER SPLASH |
| | DUPLEX GFI RECEPTACLE-WEATHERPROOF 20A, 125V, 3WG, NEMA 5-20R |
| | JUNCTION BOX - CEILING/WALL/FLOOR MOUNTED |
| | CIRCUIT BREAKER |
| | DISCONNECT SWITCH |
| | CURRENT TRANSFORMER COMPARTMENT AND KWH METER |
| | GROUND CONNECTION |
| | MOTOR |
| | NORMALLY OPEN/STARTER CONTACT |
| | NORMALLY CLOSED CONTACT |
| | PHASE |
| | TRANSFER SWITCH |
| | TRANSFORMER |
| | VARIABLE FREQUENCY DRIVE |
| | TEL/DATA OUTLET BOX WITH 3/4" CONDUIT STUBBED INTO ACCESSIBLE CEILING SPACE WIRING BY OTHERS |
| | OCCUPANCY SENSOR - CEILING |
| | OCCUPANCY SENSOR - WALL SWITCH/WIDE VIEW TYPE |
| | ILLUMINATED EXIT SIGN AND J-BOX (ARROWS INDICATE DIRECTION ON THE FACE, SHADED PORTION INDICATES FACE(S) ON SIGN, MOUNTED AT LOW LEVEL/CEILING/WALL) |
| | SINGLE POLE SWITCH, 48" AFF |
| | TIMER SWITCH |
| | THREE-WAY SWITCH, 48" AFF |
| | FIXTURE TAG |
| | LIGHTING FIXTURE TO BE REMOVED |
| | CEILING OR PENDANT MOUNTED LIGHTING FIXTURE |
| | WALL MOUNTED LIGHTING FIXTURE |
| | EMERGENCY LIGHTING UNIT |
| | FIRE ALARM CONTROL PANEL |

ABBREVIATIONS

| | | | |
|--------|--|--------|------------------------------------|
| A | AMPERE | REV | REVISION |
| AC | ALTERNATING CURRENT | RM | ROOM |
| AF | AMPERS FUSE/AMPERS FRAME | <RRN> | REMOVE AND REPLACE WITH NEW |
| AFF | ABOVE FINISHED FLOOR | <RR> | REMOVE AND RELOCATE |
| AIC | AMPERE INTERRUPTING CAPACITY | S | SIGNAL |
| ALT | ALTERNATE | SAD | SEE ARCHITECTURAL DRAWINGS |
| AS | AMPERE SWITCH | SCHED | SCHEDULE |
| AT | AMPERS TRIP | SCHM | SCHEMATIC |
| ATS | AUTOMATIC TRANSFER SWITCH | SECT | SECTION |
| APPROX | APPROXIMATE | SF | SQUARE FOOT/FEET |
| ARCH | ARCHITECT/ARCHITECTURAL | SHT | SHEET |
| ASSY | ASSEMBLY | SIM | SIMILAR |
| AUTO | AUTOMATIC | SPEC | SPECIFICATION |
| AWG | AMERICAN WIRING GAGE | SQ | SQUARE |
| BLDG | BUILDING | ST | SHUNT TRIP |
| BRKR | BREAKER | STOR | STORAGE |
| C. | CONDUIT | STRUCT | STRUCTURAL |
| CAB | CABINET | SW | SWITCH |
| CLG | CEILING | SWBO | SWITCHBOARD |
| CKT | CIRCUIT | SWGR | SWITCHGEAR |
| C.O. | CONDUIT ONLY | SYM | SYMBOL |
| CP | CONTROL PANEL | SYS | SYSTEM |
| CRAC | COMPUTER ROOM AIR CONDITIONER | TCP | TEMPERATURE CONTROL PANEL |
| CU | COPPER | TEL | TELEPHONE/TELECOM |
| DC | DIRECT CURRENT | TEMP | TEMPERATURE |
| DEG ° | DEGREE FAHRENHEIT | THRU | THROUGH |
| DEMO | DEMOLITION | TYP | TYPICAL |
| DEPT | DEPARTMENT | TVSS | TRANSIENT VOLTAGE SURGE PROTECTION |
| DTL | DETAIL | TV | TELEVISION |
| DM | DIMENSION | UBC | UNIFORM BUILDING CODE |
| DOC | DOCUMENT | UG | UNDERGROUND |
| DS | DISCONNECT SWITCH | UNON | UNLESS OTHERWISE NOTED |
| <E> | EXISTING | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| EA | EACH | UTIL | UTILITY |
| EF | EXHAUST FAN | V | VOLT |
| ELEC | ELECTRICAL | VAV | VARIABLE AIR VOLUME |
| ELEV | ELEVATION | VFD | VARIABLE FREQUENCY DRIVE |
| EM | EMERGENCY | VF | VERIFY IN FIELD |
| EQ | EQUAL | VOL | VOLUME |
| EQUIP | EQUIPMENT | W | WATT |
| EXP | EXPOSED | W/ | WITH |
| <F> | FUTURE | W/O | WITHOUT |
| FAAP | FIRE ALARM ANNUNCIATOR PANEL | WP | WEATHERPROOF |
| FACP | FIRE ALARM CONTROL PANEL | XMR | TRANSFORMER |
| FE | FIRE EXTINGUISHER | | |
| FIXT | FIXTURE | | |
| FSD | FIRE SMOKE DAMPER | | |
| FT | FOOT OR FEET | | |
| G | GROUND | | |
| GA | GAUGE | | |
| GFI | GROUND FAULT INTERRUPTER | | |
| GND | GROUND | | |
| HP | HORSEPOWER | | |
| HSP | HOUSE SERVICE PANEL | | |
| HZ | HERTZ | | |
| INSUL | INSULATION | | |
| JBOX | JUNCTION BOX | | |
| KV | KILOVOLT | | |
| KVA | KILOVOLT AMPERE | | |
| KW | KILOWATT | | |
| KWH | KILOWATT HOUR | | |
| LF | LINEAR FOOT | | |
| LT | LIGHT | | |
| LTS | LIGHTS | | |
| LV | LOW VOLTAGE | | |
| MAX | MAXIMUM | | |
| MCB | MAIN CIRCUIT BREAKER | | |
| MCC | MOTOR CONTROL CENTER | | |
| MECH | MECHANICAL | | |
| MIN | MINIMUM | | |
| MSB | MAIN SWITCHBOARD | | |
| MNTD | MOUNTED | | |
| <N> | NEW | | |
| N/A | NOT APPLICABLE | | |
| NBC | NATIONAL BUILDING CODE | | |
| NEC | NATIONAL ELECTRICAL CODE | | |
| NEMA | NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION | | |
| NIC | NOT IN CONTRACT | | |
| NL | NIGHT LIGHT | | |
| NTS | NOT TO SCALE | | |
| O.C. | ON CENTER | | |
| OS | OCCUPANCY SENSOR | | |
| P | POWER | | |
| PB | PULL BOX | | |
| PDU | POWER DISTRIBUTION UNIT | | |
| PH | PHASE | | |
| PHL | PANEL | | |
| <R> | REMOVE | | |
| REQ | REQUIRE | | |
| REV | REVISION | | |

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REGISTERED PROFESSIONAL ENGINEER
No. E0008
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS / AUTHORIZATIONS

| NO. | REVISIONS / AUTHORIZATIONS | DATE | BY |
|-----|----------------------------|----------|----|
| | DESIGN DEVELOPMENT SET | 02/29/16 | |
| | DESIGN DOCUMENTS SET | 04/08/16 | |
| | BID SUBMITTAL | 04/29/16 | |
| ▲ | VE ITEMS | 07/07/16 | |

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DRAWINGS PREPARED FOR

at&t CORPORATE REAL ESTATE

PROJECT TITLE
HVAC UPGRADE

4740 WAWONA ROAD
YOSEMITE
CA US
YSMTCA03 123327.01 UG080

SHEET TITLE
NOTES, SYMBOLS & ABBREVIATIONS ELECTRICAL

AT&T PROJECT NUMBER: **W21782** DATE: 04/08/16 SCALE: AS NOTED
DRAWN BY: [] CHECKED BY: BL

AT&T AUTHORIZATION SHEET: - OF: - SHEETS
AT&T DRAWING NO: **W21782E001** SHEET NO: **E001**

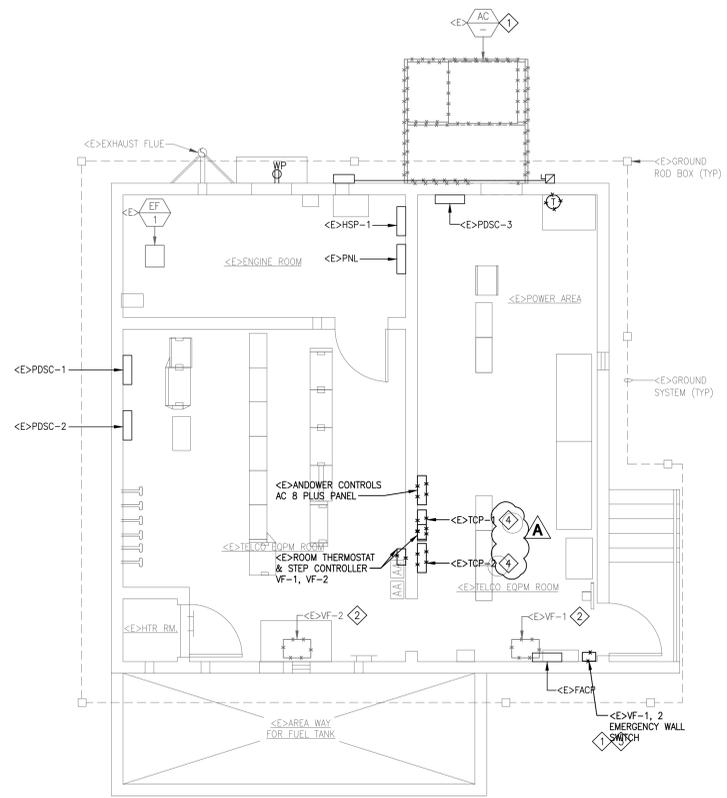
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GENERAL SHEET NOTES

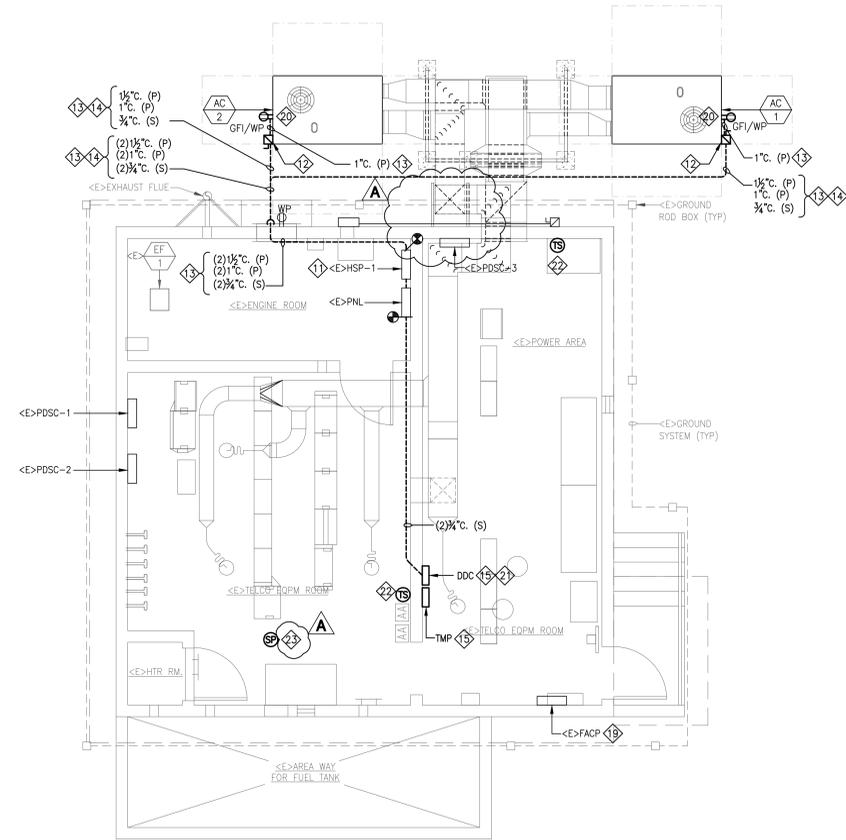
- A. PREPARE A SPECIAL METHOD OF PROCEDURE & COORDINATE SHUTDOWN OF ANY DEVICE WITH AT&T. SHUTDOWN MUST BE PERFORMED AFTER HOURS. PROVIDE TEMPORARY POWER & LIGHTING AS NEEDED.
- B. ELECTRICAL EQUIPMENT SHALL BE TESTED AS REQUIRED BY MANUFACTURER, AT&T & PER NETA ATS. PRIOR TO ENERGIZING NEW LOADS, CONTRACTOR SHALL HAVE A THIRD PARTY TESTING AGENCY PERFORM TESTS FOR ALL NEW EQUIPMENT & EXISTING EQUIPMENT WHICH HAS BEEN AFFECTED BY NEW WORK. THERMAL SCAN ALL PANELS THAT ACQUIRE NEW FEEDERS.
- C. BEFORE RUNNING ANY CONDUCTORS TO PANELS BEING RE-CIRCUITED CONFIRM CONDUCTOR SIZE & ARRANGEMENT (1#, 3#, 3W, 4W). REPORT ANY DISCREPANCY TO THE ENGINEER PRIOR TO CHANGING OUT CONDUCTORS CALLED FOR ON DRAWINGS.
- D. DEVICES SHOWN AS EXISTING SHALL REMAIN CONNECTED UNLESS OTHERWISE NOTED. WIRING DEVICES THAT MAY BE AFFECTED BY DEMOLITION OR REWIRING SHALL BE RECONNECTED.
- E. DEVICE LOCATION SHOWN IS DIAGRAMMATIC. FIELD VERIFY EXACT LOCATION & COUNT. ADJUST LOCATION +/- 10' AT NO ADDITIONAL COST.
- F. FIRE SEAL ALL RATED PENETRATIONS.
- G. WEATHER SEAL ALL BUILDING PENETRATIONS.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR RETURNING ANY SURFACE DISTURBED BY CONSTRUCTION TO THE CONDITION & FINISH OF THE ADJACENT SURFACES.
- I. PROVIDE BLACK BAKELITE NAMEPLATE FOR ELECTRICAL EQUIPMENT.
- J. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DUST PROTECTION MEASURES TO ALL EXISTING TELECOMMUNICATIONS EQUIPMENT FOR DURATION OF CONSTRUCTION.
- K. ALL INSTALLATIONS OR MODIFICATIONS SHALL CONFORM TO AT&T TP REQUIREMENTS.
- L. ALL CONDUITS SHALL BE COMPRESSION TYPE FITTINGS. SET SCREW FITTINGS NOT ACCEPTABLE.
- M. UNITS AC-1 AND AC-2 TO BE INTERLOCKED AND SHALL NOT RUN SIMULTANEOUSLY.
- N. CONTROL CONTRACTOR TO PROVIDE NEW CONTROL CONDUIT AND WIRES.

REFERENCE SHEET NOTES

- DEMO**
- 1 DISCONNECT AND REMOVE POWER CONNECTIONS TO DEMOLISHED EQUIPMENT. DEMOLISH CONDUIT AND WIRES BACK TO SOURCE. LABEL CIRCUIT AS SPARE AND UPDATE PANEL DIRECTORY.
 - 2 MECHANICAL EQUIPMENT TO BE DEMOLISHED. DISCONNECT AND REMOVE POWER CONNECTIONS.
 - 3 CONTRACTOR TO FIELD VERIFY VF-1,2 SWITCH INTERCONNECTION WITH FACP. RE-TEST FACP FUNCTIONS WHEN DEMOLITION IS COMPLETED.
 - 4 <E>-CIRCUIT TO BE REUSED.
- NEW**
- 1 EXISTING PANEL TO BE MODIFIED. SEE SINGLE LINE DIAGRAM.
 - 2 MOUNT DISCONNECT ON THE UNIT. COORDINATE WITH MECHANICAL CONTRACTOR.
 - 3 FURNISH AND INSTALL NEW CONDUIT AND WIRES. REFER TO SINGLE LINE DIAGRAM FOR DETAILS.
 - 4 UNDERGROUND CONDUITS. REFER TO TRENCHING DETAILS.
 - 5 RE-USE EXISTING CIRCUIT TO POWER NEW PANEL. PROVIDE 3/12 FROM EXISTING 'HPS-1' USING EXISTING CONDUIT.
 - 6 NOT USED.
 - 7 NOT USED.
 - 8 NOT USED.
 - 9 REUSE EXISTING CONTROL MODULE FOR AUTOMATIC SHUTDOWN.
 - 10 CONVENIENCE OUTLET.
 - 11 FIELD VERIFY AND RECONNECT SIGNAL FROM <E>-FACP. FACP SHALL CONTROL AC UNIT SHUTDOWN VIA NEW DDC PANEL. RETEST FACP FUNCTIONALITY UPON COMPLETION.
 - 12 CONTROLS CONTRACTOR TO FIELD VERIFY TEMPERATURE SENSOR LOCATION AND PROVIDE CONTROL WIRING AND CONDUIT FOR NEW AC UNITS AND SUPPLY FAN.
 - 13 STATIC PRESSURE SENSOR, PROVIDE CONTROL WIRING AND CONDUIT.



2 FLOOR/SITE PLAN - DEMO
SCALE: 1/4" = 1'-0"



1 FLOOR/SITE PLAN - NEW
SCALE: 1/4" = 1'-0"

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CA US
YSMTCA03 123327.01 UG080

SHEET TITLE
FLOOR/SITE PLAN ELECTRICAL

| | | |
|-------------------------------------|--------------------------------|-------------------|
| AT&T PROJECT NUMBER: W21782 | DATE: 04/08/16 | SCALE: AS NOTED |
| AT&T AUTHORIZATION: ERIC SAUCEDA | SHEET: - OF: - SHEETS | CHECKED BY: BL |
| | AT&T DRAWING NO: W21782E101 | SHEET NO: E101 |

STRUCTURAL NOTES

1. GENERAL

- A. CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE 2013 EDITION OF THE CALIFORNIA BUILDING CODE.
- B. THESE NOTES APPLY TO ALL DRAWINGS AND GOVERN UNLESS OTHERWISE NOTED OR SPECIFIED.
- C. VERIFY ALL EXISTING CONDITIONS AND PROPOSED DIMENSIONS AT JOB SITE. COMPARE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS BEFORE COMMENCING WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES AND DO NOT PROCEED WITH AFFECTED WORK UNTIL THEY ARE RESOLVED. DO NOT SCALE DRAWINGS.
- D. UNLESS OTHERWISE SHOWN OR NOTED, ALL TYPICAL DETAILS SHALL BE USED WHERE APPLICABLE.
- E. ALL DETAILS SHALL BE CONSIDERED TYPICAL AT SIMILAR CONDITIONS.
- F. SAFETY MEASURES: AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF THE PERSONS AND PROPERTY, PROVIDING NECESSARY SHORING AND BRACING, AND FOR ALL NECESSARY INDEPENDENT ENGINEERING REVIEWS OF THESE CONDITIONS. THE ENGINEER'S JOB SITE REVIEW IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.
- G. CONTRACTOR SHALL BRING OMISSIONS OR DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS TO THE STRUCTURAL ENGINEER'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.

2. TESTS & INSPECTIONS

- A. PROVIDE TESTS AND SPECIAL INSPECTIONS FOR ALL ITEMS AS REQUIRED BY THE CALIFORNIA BUILDING CODE 2013 EDITION SECTIONS 1704, 1707 AND 1708.
- B. THE OWNER (NOT THE CONTRACTOR) SHALL BE RESPONSIBLE FOR RETAINING AN INDEPENDENT TESTING LAB TO PERFORM ALL REQUIRED TESTING AND SPECIAL INSPECTIONS. A COPY OF ALL INSPECTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER.
- C. THE FOLLOWING SPECIFIC ITEMS SHALL BE INSPECTED AND/OR TESTED BY THE TESTING LAB IN ACCORDANCE WITH SECTION 1704, 1707, AND 1708 OF THE 2013 CALIFORNIA BUILDING CODE.
 - 1. EXPANSION ANCHORS - PERIODIC INSPECTION OF 25% OF ALL ANCHORS WITH A MINIMUM 25% OF ALTERNATING ANCHORS WITHIN A GROUP.
 - 2. REBAR PLACEMENT

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL INSPECTIONS AND ENSURING THAT ALL REQUIRED TESTING & INSPECTION IS PERFORMED TO THE SATISFACTION OF THE INSPECTOR.
 **THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 3 WORKING DAYS PRIOR TO TIME OF INSPECTION.

3A. DESIGN BASIS - EQUIPMENT AND NON-STRUCTURAL COMPONENTS

- A. CONSTRUCT IN CONFORMANCE WITH THE 2013 EDITION OF THE CALIFORNIA BUILDING CODE AND ALL APPLICABLE LOCAL ORDINANCES.
- B. SEISMIC DESIGN DATA FOR EQUIPMENT AND NON-STRUCTURAL COMPONENTS:
 SITE COORDINATES: LATITUDE - 37° 42' 42"N LONGITUDE - 119° 42' 6"W
 SEISMIC IMPORTANCE FACTOR $I_p = 1.0$
 MAPPED SPECTRAL RESPONSE ACCELERATION $S_s = 0.639$ $S_1 = 0.235$
 SITE CLASS: ASSUMED D
 SPECTRAL RESPONSE COEFFICIENTS: $S_{ds} = 0.549$ $S_{d1} = 0.303$
 SEISMIC DESIGN CATEGORY: D

| UNIT | A_p | R_p | z/h | F_p |
|------|-------|-------|-------|------------|
| AC | 2.5 | 2.0 | 0.0 | 0.16 W_p |

3B. DESIGN BASIS - BUILDING STRUCTURES

- A. CONSTRUCT IN CONFORMANCE WITH THE 2013 EDITION OF THE CALIFORNIA BUILDING CODE AND ALL APPLICABLE LOCAL ORDINANCES.
- B. GENERAL DESIGN DATA:
- C. WIND DESIGN DATA:
 BASIC WIND SPEED: 85 MPH
 WIND IMPORTANCE FACTOR: 1.0
 WIND EXPOSURE: B
- D. SEISMIC DESIGN DATA:
 SEISMIC IMPORTANCE FACTOR $I = 1.0$, OCCUPANCY CATEGORY II
 SITE COORDINATES: LATITUDE - 37° 42' 42"N LONGITUDE - 119° 42' 6"W
 MAPPED SPECTRAL RESPONSE ACCELERATION $S_s = 0.639$ $S_1 = 0.235$
 SITE CLASS: ASSUMED D
 SPECTRAL RESPONSE COEFFICIENTS: $S_{ds} = 0.549$ $S_{d1} = 0.303$
 SEISMIC DESIGN CATEGORY: D
 BASIC SEISMIC FORCE RESISTING SYSTEM(S): CANTILEVER STEEL COLUMNS
 RESPONSE MODIFICATION FACTOR(S) $R = 1.25$
 SEISMIC RESPONSE COEFFICIENT(S) $C_s = 0.4392$ (STRENGTH)
 DESIGN BASE SHEAR: 0.307W (ASD)
 ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE

4. CONCRETE

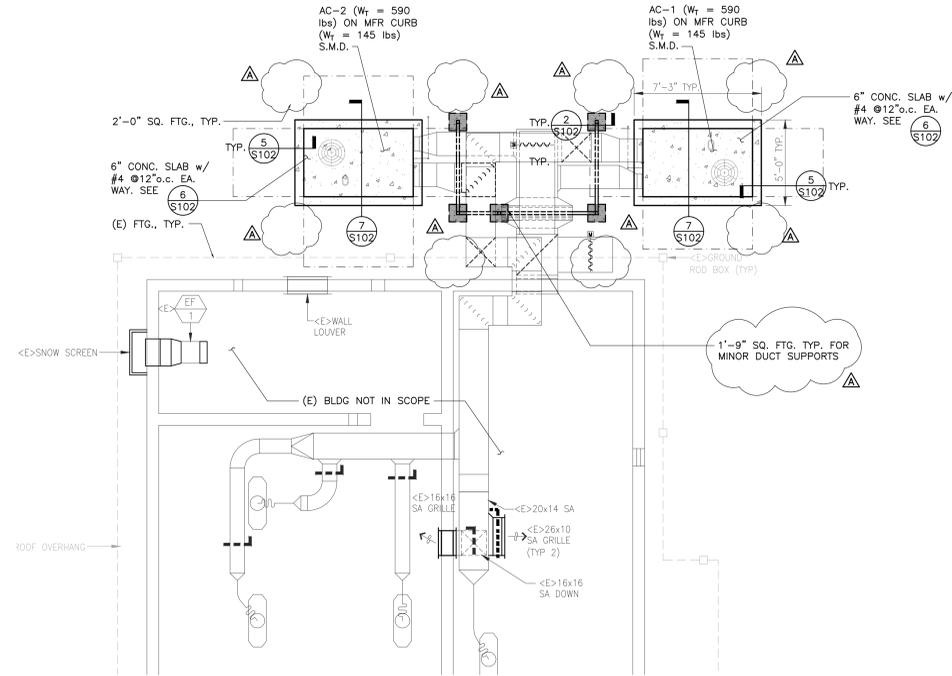
- A. REINFORCE ALL CONCRETE. INSTALL ALL INSERTS, BOLTS, ANCHORS, AND REINFORCING AND SECURELY TIE PRIOR TO PLACING CONCRETE.
- B. NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT.
- C. CONCRETE SHALL BE HARD ROCK CONCRETE, USING PORTLAND CEMENT TYPE I OR II LOW ALKALINE AND SHALL ATTAIN AN ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. MINIMUM CEMENT CONTENT = 6 SACKS/CU.YD. SEE NOTED D. MAXIMUM SLUMP = 4" AGGREGATE SIZE = MAXIMUM SIZE APPROPRIATE FOR FORM & REBAR CLEARANCE.
- D. CONTRACTOR MAY REPLACE PORTLAND CEMENT CONTENT WITH FLY ASH OR OTHER CEMENTITIOUS MATERIAL UNDER THE FOLLOWING CONDITIONS:
 - 1. A MAXIMUM OF 25% OF PORTLAND CEMENT CONTENT (BY WEIGHT) MAY BE REPLACED WITH OTHER CEMENTITIOUS MATERIAL WITH NO BREAK TEST RECORDS SUBMITTED.
 - 2. A MAXIMUM OF UP TO 50% OF PORTLAND CEMENT CONTENT (BY WEIGHT) MAY BE REPLACED WITH OTHER CEMENTITIOUS MATERIAL PROVIDED BREAK TEST RECORDS OF A MINIMUM OF 20 BREAKS WITHIN THE PAST YEAR ARE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO USE.
 - 3. FLY ASH SHALL NOT COMPOSE MORE THAN 25% OF THE CEMENTITIOUS MATERIAL.
- E. CONCRETE SHALL BE CONTINUOUSLY CURED FOR 10 DAYS AFTER PLACING IN ANY APPROVED MANNER, INCLUDING CURING COMPOUND, CURING PAPER, ETC. NOTE: FOOTINGS ARE EXCEPTED FROM THIS REQUIREMENT.
- F. CONDUITS OR PIPES (O.D.) WITHIN SLAB SHALL NOT EXCEED 30% OF SLAB THICKNESS AND SHALL BE SPACED AT LEAST FOUR-DIAMETER APART, UNLESS SPECIFICALLY DETAILED OTHERWISE.
- G. VERIFY ALL CONCRETE WORK DIMENSIONS WITH ARCHITECTURAL DRAWINGS BEFORE POURING CONCRETE.

5. REINFORCING STEEL

- A. ALL REINFORCING STEEL BARS SHALL CONFORM WITH THE STANDARD SPECIFICATIONS FOR DEFORMED BILLET-STEEL FOR CONCRETE REINFORCEMENT, ASTM DESIGNATION A615 OR A706 FOR SHEAR WALLS AND REINFORCING TO BE WELDED. BARS #5 AND LARGER SHALL BE GRADE 60. ALL OTHER BARS SHALL BE GRADE 40, UNLESS OTHERWISE NOTED.
- B. WIRE MESH SHALL CONFORM WITH ASTM A185-64.
- C. SUITABLE DEVICES OF SOME STANDARD MANUFACTURE SHALL BE USED TO HOLD REINFORCEMENT IN ITS TRUE HORIZONTAL AND VERTICAL POSITIONS. THESE DEVICES SHALL BE SUFFICIENTLY RIGID AND NUMEROUS TO PREVENT DISPLACEMENT OF THE REINFORCEMENT DURING PLACING OF CONCRETE.
- D. LAP SPLICE ALL BARS TO CLASS B SPLICE AND 2'-0" MINIMUM UNLESS OTHERWISE NOTED. PROVIDE 1 1/2" CLEARANCE BETWEEN PARALLEL BARS.
- E. UNLESS OTHERWISE NOTED, MAINTAIN COVERAGE TO FACE OF BARS AS FOLLOWS:
 - 1) 3" WHERE CONCRETE IS DEPOSITED AGAINST EARTH EXCEPT SLAB-ON-GRADE
 - 2) 2" WHERE CONCRETE IS EXPOSED TO EARTH BUT FORMED
 - 3) 1 1/2" FOR BEAMS, COLUMNS AND EXTERIOR SURFACES
 - 4) 1 1/4" FOR INTERIOR SLABS, JOISTS AND WALLS
- F. ALL SLABS ON GRADE SHALL HAVE CONTROL JOINTS TO CREATE APPROXIMATELY 20-FOOT SQUARES, UNLESS OTHERWISE NOTED ON THE PLANS.
- G. POUR SLABS OR WALLS WITH DIMENSIONS NOT EXCEEDING 60'-0". CONSTRUCT JOINTS PER CONSTRUCTION JOINT DETAILS PROVIDED.
- H. UNLESS DETAILED OTHERWISE, REINFORCING STEEL IN THE CONTINUOUS BEAMS, GRADE BEAMS, AND SPANDRELS SHALL HAVE TOP STEEL SPLICED AT THE MIDSPAN, AND THE BOTTOM STEEL SPLICED OVER SUPPORTS (30 BAR DIAMETER SPLICE MINIMUM). AT DISCONTINUOUS ENDS, THE TOP STEEL SHALL BE BENT DOWN 12-DIAMETER OR 12" MINIMUM, WHICHEVER IS GREATER.

6. EXPANSION ANCHORS

- A. MECHANICAL ANCHORS SHALL BE HILTI KWIK BOLTS TZ (ICC ESR 1917)
- B. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ICC ESR-1917.
- C. DRILL HOLES ON CONCRETE USING CARBIDE-TIPPED DRILL BITS CONFORMING TO ANSI B212.15.
- D. DRILLED HOLES MUST BE CLEANED WITH ALL DUST & DEBRIS REMOVED USING PRESSURIZED AIR.
- E. NUT & WASHER MUST BE TIGHTENED AGAINST THE BASE MATERIAL UNTIL THE APPROPRIATE INSTALLATION TORQUE SPECIFIED BY MANUFACTURER IS ACHIEVED.
- F. PROVIDE SPECIAL INSPECTION FOR INSTALLATION IN ACCORDANCE WITH SECTION 2 OF THESE NOTES. EXPANSION ANCHORS SHALL BE TORQUE TESTED TO 100% OF INSTALLATION TORQUE AS SPECIFIED BY MANUFACTURER.



A PARTIAL FLOOR/SITE PLAN
 SCALE: 1/4"=1'-0"

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| | BID SUBMITTAL | 04/29/16 | RH |
| | CONSTRUCTION DOCUMENTS | 06/06/16 | RH |
| Δ | VE ITEMS | 07/07/16 | RH |

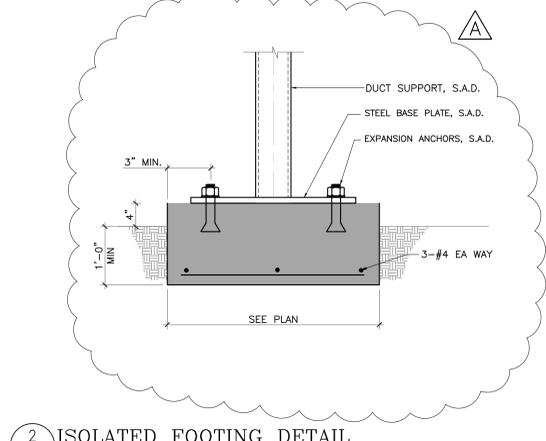
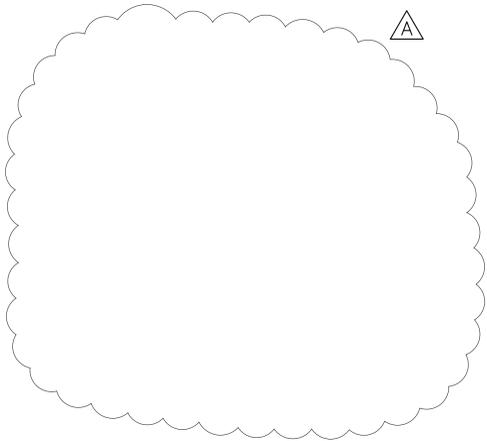
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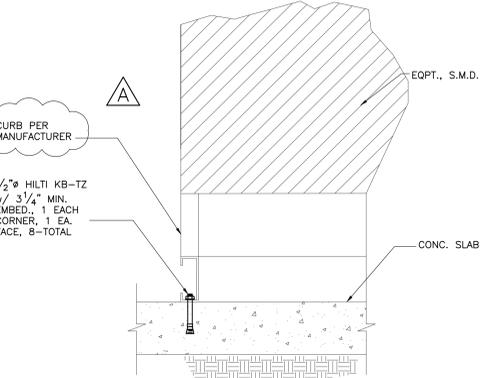
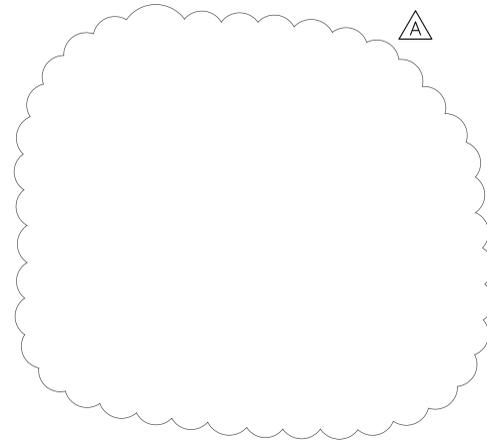
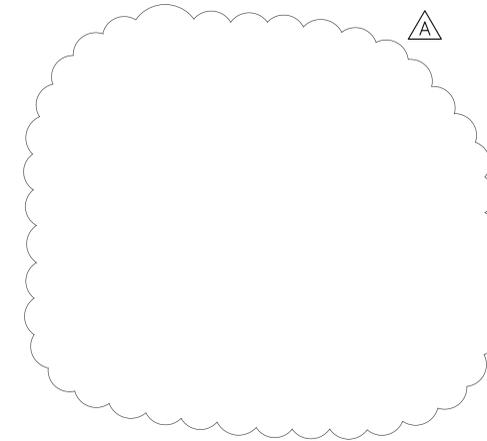
PROJECT TITLE:
HVAC UPGRADE
 4740 WAWONA RD
 YOSEMITE
 CA US
 YSMTC403 12332.01 UG080

SHEET TITLE:
NOTES AND PLANS STRUCTURAL

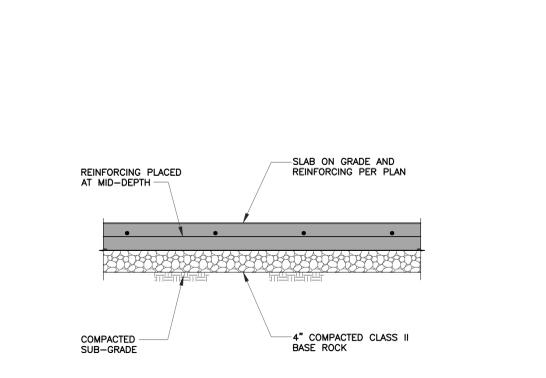
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| DRAWN BY: JB | CHECKED BY: JY | |
| AT&T AUTHORIZATION ERIC SAUCEDA | SHEET: 1 OF 1 SHEETS | SHEET NO. 101 |
| AT&T DRAWING NO: w21782s101 | | |



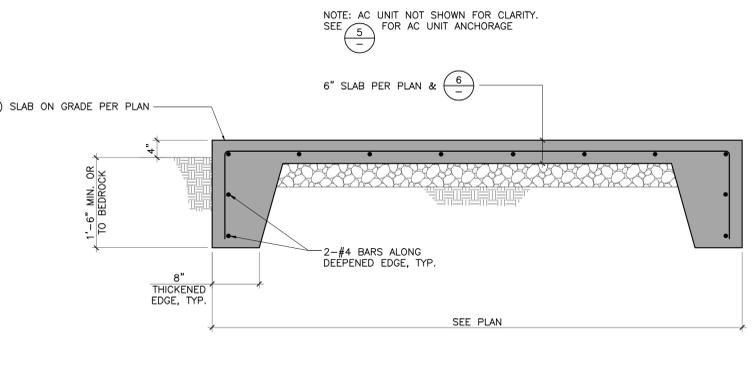
2 ISOLATED FOOTING DETAIL
SCALE: NO SCALE



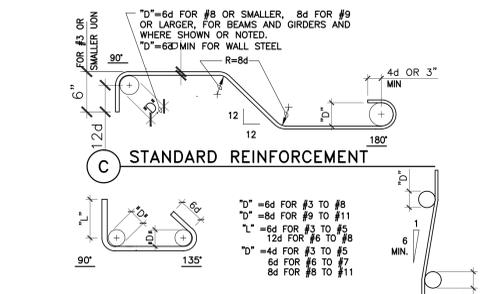
5 EQUIPMENT ANCHORAGE
SCALE: NO SCALE



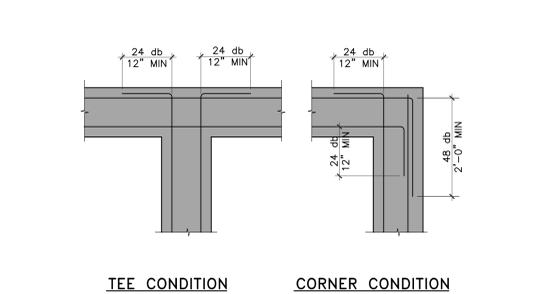
6 TYPICAL SLAB ON GRADE
SCALE: NO SCALE



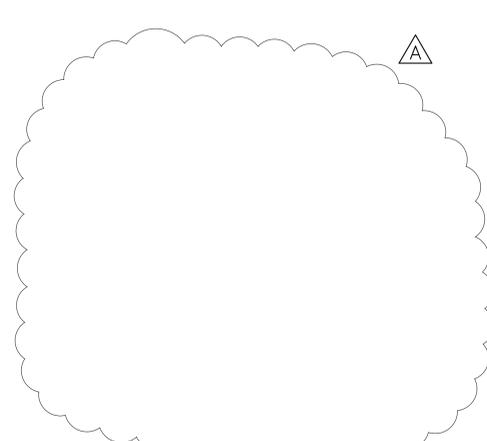
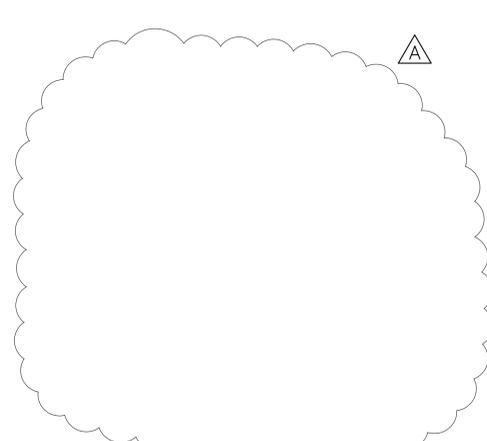
7 SLAB WITH DEEPENED EDGE
SCALE: NO SCALE



9 STANDARD REINFORCEMENT BENDS
SCALE: NO SCALE



10 STANDARD REINFORCEMENT HOOKS
SCALE: NO SCALE

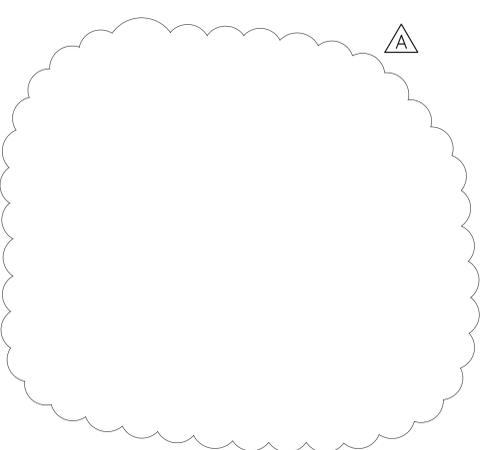
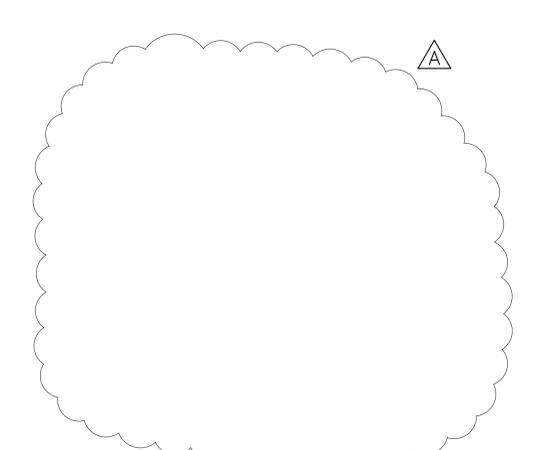


| CONCRETE STRENGTH | LAP TYPE | REBAR SIZE | | | | | | | | | |
|-------------------|----------|------------|----|----|----|----|----------|----|-----|-----|-----|
| | | GRADE 40 | | | | | GRADE 60 | | | | |
| | | #3 | #4 | #5 | #6 | #7 | #8 | #9 | #10 | #11 | |
| 2500 | A | 12 | 16 | 24 | 30 | 36 | 53 | 60 | 68 | 77 | 85 |
| | B | 16 | 21 | 32 | 39 | 47 | 69 | 78 | 88 | 100 | 110 |

TYPE: A (STAGGERED LAPS)

NOTES:
1. TYPE 'A' LAP SPLICES SHALL HAVE:
A) STAGGERED LAPS AS SHOWN ABOVE
B) AMOUNT OF CONCRETE BELOW BAR LESS THAN 12"
2. MULTIPLY ALL LENGTHS BY 1.5 IF EITHER OF THE FOLLOWING ARE TRUE
A) CLEAR SPACING OF BARS IS LESS THAN TWICE THE BAR DIAMETER
B) CLEAR COVER IS LESS THAN ONE BAR DIAMETER

13 REINFORCEMENT LAP SPLICE
SCALE: NO SCALE



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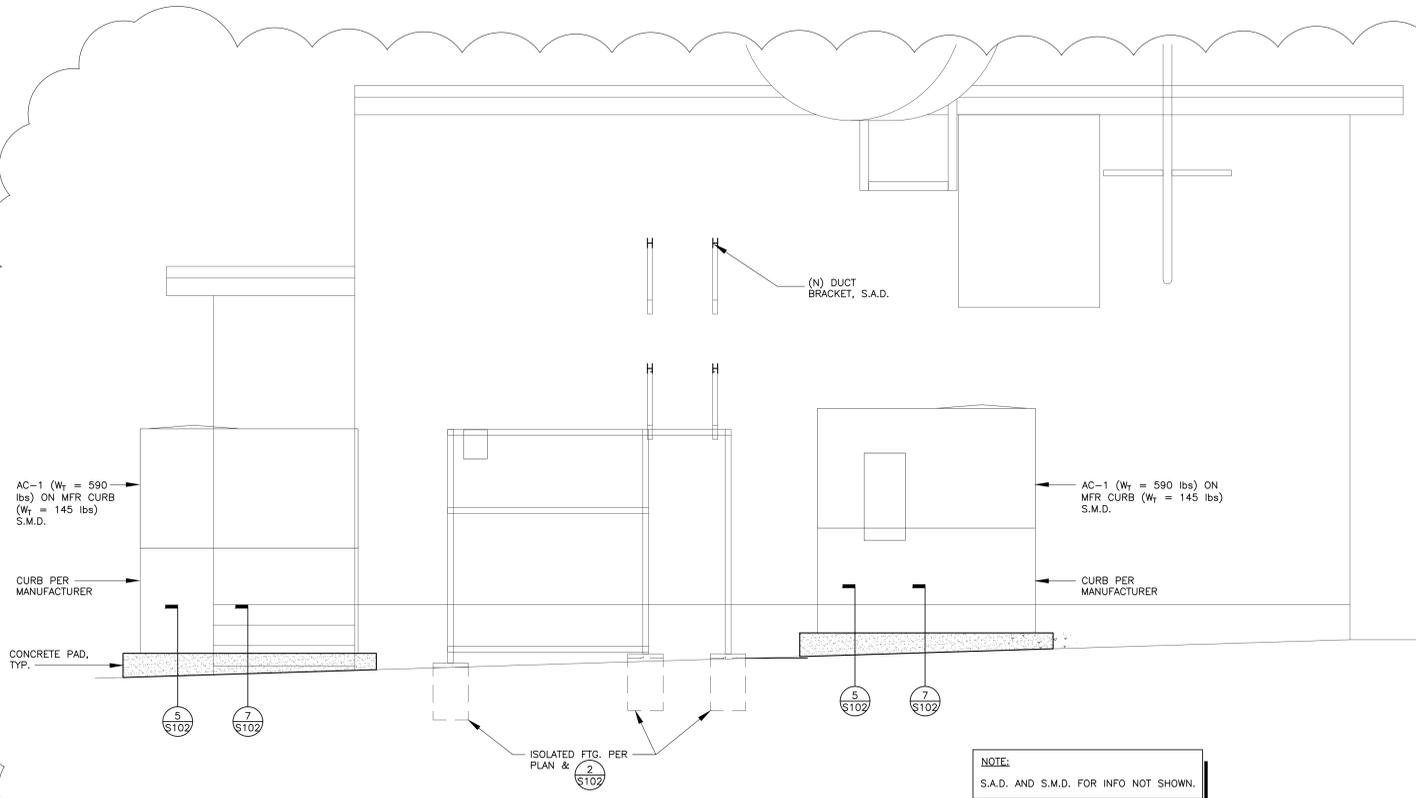
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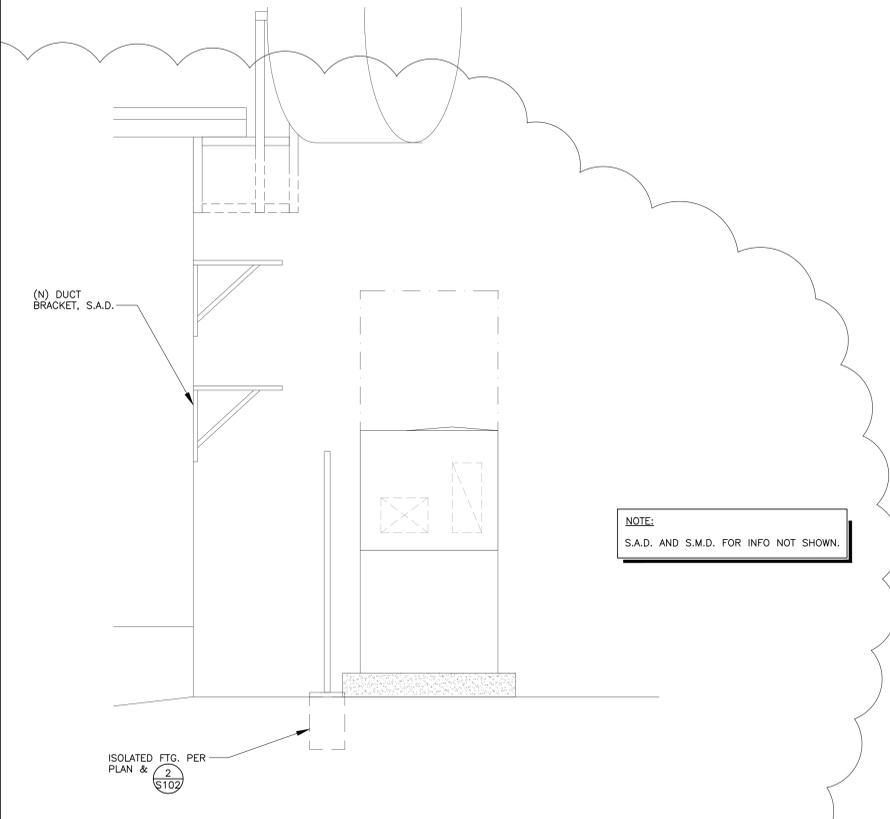
PROJECT TITLE:
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CA US
YSMCA03 12332.01 UG080

SHEET TITLE:
SECTIONS AND DETAILS STRUCTURAL

| | | |
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| AT&T AUTHORIZING ERIC SAUCEDA | SHEET: 101 | SHEETS: 102 |
| AT&T DRAWING NO: W21782S102 | | SHEET NO: 102 |



1 NORTH ELEVATION
SCALE: 1/2"=1'-0"



2 EAST ELEVATION
SCALE: 1/2"=1'-0"

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SHEET TITLE:
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| | AT&T DRAWING NO: W21782S103 | SHEET NO: 103 |