HISTORIC AND DESIGN REVIEW COMMISSION

November 01, 2017

HDRC CASE NO: 2017-468 **ADDRESS:** 900 BROADWAY **LEGAL DESCRIPTION:** NCB 454 BLK 32 LOT 1&2 **ZONING:** FBZ T6-1, HS, RIO-2 **CITY COUNCIL DIST.:** 1 LANDMARK: Barbera Sporting Goods **APPLICANT:** Anissa Chettouh **OWNER: Ridgemont Properties**, Inc Exterior modifications, rehabilitation, signage and Historic Tax Certification **TYPE OF WORK: APPLICATION RECEIVED:** October 13, 2017 **60-DAY REVIEW:** December 12, 2017

REQUEST:

The applicant is requesting a Certificate of Appropriateness for approval to:

- 1. Perform rehabilitative scopes of work to the historic structure including the repair of existing steel industrial windows, aluminum windows, the existing fire escape, the entrance portico and masonry facades.
- 2. Install a new aluminum storefront system to replacement the existing, non-original aluminum and wood storefront systems.
- 3. Rebuild damaged and modified window openings.
- 4. Open previously enclosed storefront systems on the Ninth Street Elevation.
- 5. Modify existing garage doors on the Ninth Street Elevation and alley elevation.
- 6. Install signage (wall and blade signs) on the Broadway and Ninth Street Elevations.
- 7. Receive Historic Tax Certification

APPLICABLE CITATIONS:

Historic Design Guidelines, Chapter 2, Guidelines for Exterior Maintenance and Alterations

2. Materials: Masonry and Stucco

A. MAINTENANCE (PRESERVATION)

i. Paint—Avoid painting historically unpainted surfaces. Exceptions may be made for severely deteriorated material where other consolidation or stabilization methods are not appropriate. When painting is acceptable, utilize a water permeable paint to avoid trapping water within the masonry.

ii. Clear area—Keep the area where masonry or stucco meets the ground clear of water, moisture, and vegetation. *iii. Vegetation*—Avoid allowing ivy or other vegetation to grow on masonry or stucco walls, as it may loosen mortar and stucco and increase trapped moisture.

iv. Cleaning—Use the gentlest means possible to clean masonry and stucco when needed, as improper cleaning can damage the surface. Avoid the use of any abrasive, strong chemical, sandblasting, or high-pressure cleaning method.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

i. Patching—Repair masonry or stucco by patching or replacing it with in-kind materials whenever possible. Utilize similar materials that are compatible with the original in terms of composition, texture, application technique, color, and detail, when in-kind replacement is not possible. EIFS is not an appropriate patching or replacement material for stucco. *ii. Repointing*—The removal of old or deteriorated mortar should be done carefully by a professional to ensure that masonry units are not damaged in the process. Use mortar that matches the original in color, profile, and composition when repointing. Incompatible mortar can exceed the strength of historic masonry and results in deterioration. Ensure that the new joint matches the profile of the old joint when viewed in section. It is recommended that a test panel is prepared to ensure the mortar is the right strength and color.

iii. Removing paint—Take care when removing paint from masonry as the paint may be providing a protectant layer or hiding modifications to the building. Use the gentlest means possible, such as alkaline poultice cleaners and strippers, to remove paint from masonry.

iv. Removing stucco-Remove stucco from masonry surfaces where it is historically inappropriate. Prepare a test panel to

ensure that underlying masonry has not been irreversibly damaged before proceeding.

6. Architectural Features: Doors, Windows, and Screens

A. MAINTENANCE (PRESERVATION)

i. Openings—Preserve existing window and door openings. Avoid enlarging or diminishing to fit stock sizes or air conditioning units. Avoid filling in historic door or window openings. Avoid creating new primary entrances or window openings on the primary façade or where visible from the public right-of-way.

ii. Doors—Preserve historic doors including hardware, fanlights, sidelights, pilasters, and entablatures.

iii. Windows—Preserve historic windows. When glass is broken, the color and clarity of replacement glass should match the original historic glass.

iv. Screens and shutters-Preserve historic window screens and shutters.

v. Storm windows—Install full-view storm windows on the interior of windows for improved energy efficiency. Storm window may be installed on the exterior so long as the visual impact is minimal and original architectural details are not obscured.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

i. Doors—Replace doors, hardware, fanlight, sidelights, pilasters, and entablatures in-kind when possible and when deteriorated beyond repair. When in-kind replacement is not feasible, ensure features match the size, material, and profile of the historic element.

ii. New entrances—Ensure that new entrances, when necessary to comply with other regulations, are compatible in size, scale, shape, proportion, material, and massing with historic entrances.

iii. Glazed area—Avoid installing interior floors or suspended ceilings that block the glazed area of historic windows. *iv. Window design*—Install new windows to match the historic or existing windows in terms of size, type, configuration, material, form, appearance, and detail when original windows are deteriorated beyond repair.

v. Muntins—Use the exterior muntin pattern, profile, and size appropriate for the historic building when replacement windows are necessary. Do not use internal muntins sandwiched between layers of glass.

vi. Replacement glass—Use clear glass when replacement glass is necessary. Do not use tinted glass, reflective glass, opaque glass, and other non-traditional glass types unless it was used historically. When established by the architectural style of the building, patterned, leaded, or colored glass can be used.

vii. Non-historic windows—Replace non-historic incompatible windows with windows that are typical of the architectural style of the building.

viii. Security bars-Install security bars only on the interior of windows and doors.

ix. Screens—Utilize wood screen window frames matching in profile, size, and design of those historically found when the existing screens are deteriorated beyond repair. Ensure that the tint of replacement screens closely matches the original screens or those used historically.

x. Shutters—Incorporate shutters only where they existed historically and where appropriate to the architectural style of the house. Shutters should match the height and width of the opening and be mounted to be operational or appear to be operational. Do not mount shutters directly onto any historic wall material.

10. Commercial Facades

A. MAINTENANCE (PRESERVATION)

i. Character-defining features—Preserve character-defining features such as cornice molding, upper-story windows, transoms, display windows, kickplates, entryways, tiled paving at entryways, parapet walls, bulkheads, and other features that contribute to the character of the building.

ii. Windows and doors—Use clear glass in display windows. See Guidelines for Architectural Features: Doors, Windows, and Screens for additional guidance.

iii. Missing features—Replace missing features in-kind based on evidence such as photographs, or match the style of the building and the period in which it was designed.

iv. Materials—Use in-kind materials or materials appropriate to the time period of the original commercial facade when making repairs.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

i. New features—Do not introduce new facade elements that alter or destroy the historic building character, such as adding inappropriate materials; altering the size or shape of windows, doors, bulkheads, and transom openings; or altering the façade from commercial to residential. Alterations should not disrupt the rhythm of the commercial block.

ii. Historical commercial facades—Return non-historic facades to the original design based on photographic evidence. Keep in mind that some non-original facades may have gained historic importance and should be retained. When evidence is not available, ensure the scale, design, materials, color, and texture is compatible with the historic building. Consider the features of the design holistically so as to not include elements from multiple buildings and styles.

UDC Section 35-618. Tax Exemption Qualifications:

(a) Assessed Valuation. In accordance with the provisions of this article, a building, site, or structure which meets the definition of a historically significant site in need of tax relief to encourage preservation and which is substantially rehabilitated and/or restored as certified by the historic and design review commission and approved by the city tax assessor-collector, shall have an assessed value for ad valorem taxation as follows regardless of ownership during the granted time period:

(1) A residential property shall have the assessed value for ad valorem taxation for a period of ten (10) tax years equal to the assessed value prior to preservation.

(b) Applicability. This exemption shall begin on the first day of the first tax year after verification of completion of the preservation required for certification; provided the building shall comply with the applicable zoning regulations for its use and location.

(c) Application. Application for a historic structure preservation tax exemption pursuant to this division is to be filed with the office of historic preservation. The historic preservation officer shall be the agent of the city for the purposes of administering this division provided that the historic preservation officer request a recommendation from the historic and design review commission. Each application shall be signed and sworn to by the owner of the property and shall:

State the legal description of the property proposed for certification;
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(2) Include an affidavit by the owner describing the historic significance of the structure in need of tax relief;

(3) Include a final complete set of plans for the historic structure's restoration or rehabilitation;

(4) Include a statement of costs for the restoration or rehabilitation work;

(5) Include a projection of the estimated construction, time and predicted completion date of the historic restoration or rehabilitation;

(6) Authorize the members of the historic and design review commission, the city tax assessor-collector and city officials to visit and inspect the property proposed for certification and the records and books of the owners as necessary to certify that the property in question is in substantial need of restoration or rehabilitation;

(7) Include a detailed statement of the proposed use for the property; and

(8) Provide any additional information to the historic and design review commission which the owner deems relevant or useful such as the history of the structure or access to the structure by the public.

Each application shall contain sufficient documentation confirming or supporting the information submitted therein.
(e) Verification of Completion. Upon completion of the restoration and rehabilitation, together with a fee as specified

in Appendix "C" of this chapter, the owner, who may not be the same as at the time of application, shall submit a sworn statement of completion acknowledging that the historically significant site in need of tax relief to encourage preservation has been substantially rehabilitated or restored as certified by the historic and design review commission. The historic and design review commission, upon receipt of the sworn statement of completion, but no later than thirty (30) days thereafter, shall make an investigation of the property and shall recommend either approval or disapproval of the fact that the property has been substantially completed as required for certification. If the historic and design review commission recommends that it has not been substantially completed as so required, then the certified applicant may be required by the historic preservation officer to complete the restoration or rehabilitation in order to secure the tax exemption provided herein. If the verification of completion is favorable, the historic and design review commission shall recommend approval and the historic preservation office may notify the tax assessor-collector in writing of compliance. Thereafter, the tax assessor-collector shall provide the property with the historic tax exemption.

(f) Historic Preservation Tax Exemptions.

(1) Historic Preservation Tax Exemption for Residences in Need of Substantial Repair. In accordance with the provisions of this chapter, a historically significant residential building, which meets both the definitions of a historically significant site in need of tax relief to encourage preservation and of a residential property in Appendix "A" of this chapter, and is either individually designated or is located within the boundaries of a locally designated historic district which is substantially rehabilitated and is approved by the chief appraiser of the Bexar County Appraisal District, shall have an assessed value for ad valorem taxation as follows:

A. A residential property shall have no assessed value for ad valorem taxation for a period of five (5) tax years after verification, as defined in Appendix "A" to this chapter. Thereafter, the exempt property shall be reappraised at current market value and assessed at a fifty (50) percent rate for an additional consecutive five-year period.

B. This exemption shall begin on the first day of the first tax year after verification of completion of the substantial rehabilitation by the historic and design review commission, provided compliance with subsection (b) of this section.
 (g) Eligibility.

(1) The tax exemption options outlined in subsection (f), above, will remain in effect unless terminated by designation status being removed pursuant to subsection 35-606(g) of this article.

FINDINGS:

- a. The historic structure at 900 Broadway was constructed circa 1925 as the Poe Motor Company, an automobile dealership. Since that time, the structure has been known as the Murray Motor Sales Company. The structure was constructed in the Spanish Colonial style and features decorative portico.
- b. This request received conceptual approval at the September 20, 2017, Historic and Design Review Commission hearing, as submitted.
- c. REHABILITATION The applicant has proposed rehabilitative scopes of work to the historic structure that include the repair of existing steel industrial windows, aluminum windows, the existing fire escape, the entrance portico and masonry facades. This is consistent with the Guidelines for Exterior Maintenance and Alterations.
- d. STOREFRONT SYSTEM The applicant has proposed to install new, aluminum storefront systems to replace the existing, aluminum and wood storefront system that is not original to the historic structure. The applicant has noted that the new aluminum storefront will be detailed to reflect the storefront systems that were originally installed. Staff finds this appropriate and consistent with the Guidelines. The applicant has submitted detailed construction documents including dimensions. Staff finds the proposed installation appropriate.
- e. WINDOW OPENING RESTORATION The applicant has proposed to restore existing window openings that have been previously modified. These modifications include the removal or modification of brick mullions. The applicant has proposed to remove the non-original brick and reconstruct the brick columns to restore the window openings. The applicant has noted that salvaged brick from the structure will be used to reconstruct the brick columns. Aluminum windows to match those on the second story of the Broadway elevation will be installed. Staff finds the proposed restoration to be appropriate and consistent with the Guidelines.
- f. PEDESTRIAN ENTRANCES On the north (parking lot) elevation, the applicant has proposed to install two, double width pedestrian entrance doors. This elevation lacks the architectural significance found on the Broadway and Ninth Street elevations and is void of façade openings with the exception of four, second level windows. Staff finds the proposed entrances to be appropriate given the non-primary status of this elevation.
- g. STOREFRONT OPENING RESTORATION On the Ninth Street façade, the applicant has proposed to reopen the enclosed storefront openings. The openings are original to the structure and per the applicant will be reintroduced to match those on the Broadway façade. The proposed storefront will be detailed to match that being installed on the Broadway (west) elevation. Staff finds this to be appropriate and consistent with the Guidelines for Exterior Maintenance and Alterations.
- h. GARAGE DOOR MODIFICATIONS Both the Ninth Street elevation as well as the rear alley elevation features overhead, rolling garage doors. The applicant has proposed to remove the garage doors on the Ninth Street elevation and install a fixed, pedestrian door and an aluminum storefront system with divided lites to replicate a garage door. Staff finds both proposals appropriate. The alley façade's door and door opening will be removed and infilled. The infilled opening will feature an inset to show the original opening.
- i. SIGNAGE The applicant has noted the installation of four signs with three of the four proposed at the locations of historic signs that have been previously removed. Generally, staff finds the proposed signage to be appropriate. The applicant shall submit detailed signage documents to staff prior to permitting and fabrication. All signage should be internally illuminated and fabricated from metal.
- j. HISTORIC TAX CERTIFICATION The applicant is requesting Historic Tax Certification. The requirements for Historic Tax Certification outlined in UDC Section 25-618 have been met and the applicant has provided evidence to that effect to the Historic Preservation Officer including photographs and an itemized list of costs.

RECOMMENDATION:

Staff recommends approval based on findings a through j with the stipulation that final signage documents be submitted to staff for review and approval prior to permitting and fabrication. All signage should be internally illuminated and fabricated from metal.

CASE MANAGER:

Edward Hall



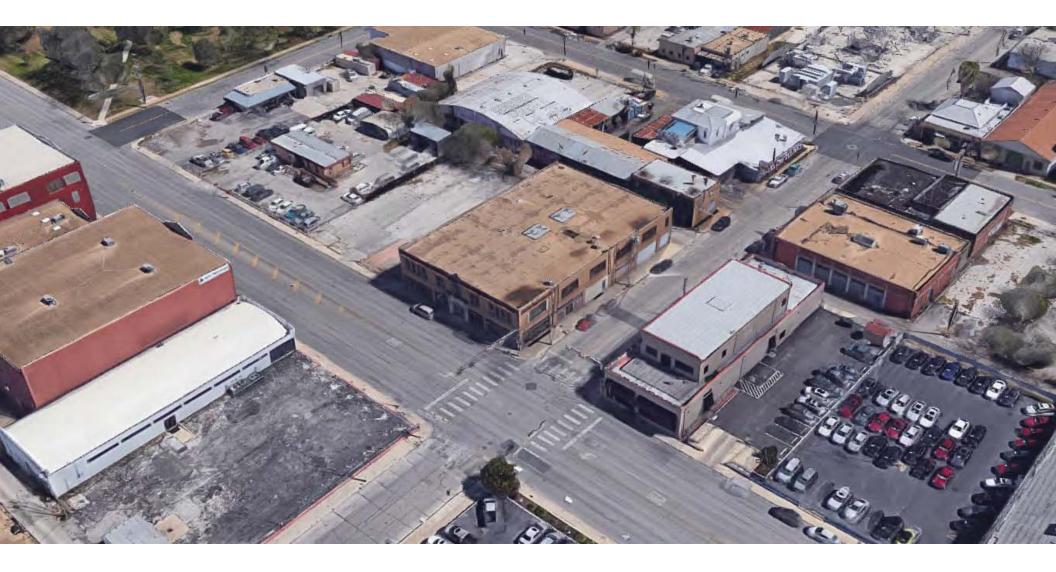


Flex Viewer

Powered by ArcGIS Server

Printed:Sep 15, 2017

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Murray Motors Office Lofts 900 Broadway, San Antonio

The building at the Northeast corner of Broadway and Ninth was built c. 1925 as the Poe Motor Company automobile dealership. Not used as an auto dealership facility since the mid-1970s, the building became a sporting goods store then an antique store. The building is to be repurposed as loft office space geared towards housing start-up companies.

The highly detailed entry portico on the Broadway elevation includes cast stone pilasters and engaged columns, cornices, dentils, a cartouche, and curved arch will be repaired, restored, and cleaned. Missing pieces will be replicated and installed. All masonry on the building (brick and cast stone) will be cleaned of graffiti, repaired, repointed as required, and cleaned of environmental pollution, dirt and grime.

The non-original aluminum and wood storefronts along Broadway and Ninth Streets at the ground floor will be replaced with new aluminum detailed to reflect the storefronts that were originally installed in the building. The windows located on the second floor facing Broadway will remain. They are not original, but are older aluminum frames probably installed in the late 1950s or early 60s. They will be cleaned, repaired, and re-caulked. All the existing divided-lite steel industrial pivot windows on all elevations will be repaired, cleaned and repainted. The window opening located on the second floor of the Ninth Street elevation (closest to Broadway) had been reduced in size and infilled with incompatible brick at some point in time, and the original brick columns (similar to those on the Broadway elevation) had been removed. The existing windows and brick infill will be removed and the brick columns rebuilt and new aluminum windows to match those on the Broadway elevation will be installed.

A new main entrance will be created on the north side of the building adjacent to the parking lot, which will be regraded and repaved. A simple canvas awning will be added above the new entry. A new exit door on this same side of the building (further east towards the alley) will be installed as required by code. The windows on this elevation of the building will remain in place and rehabbed as noted above, and the concrete columns and beams will be cleaned and remain exposed.

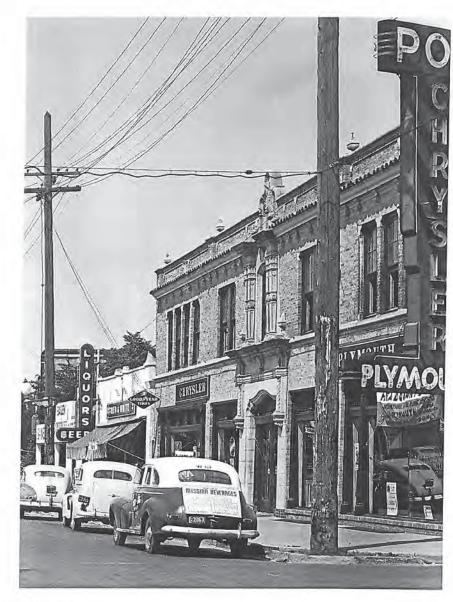
The openings on the ground floor of the Ninth Street elevation, currently filled in with stucco and glass block, will be reopened with aluminum storefront installed to match the other new storefront. At the east bay of this elevation are two garage doors. A small one at the end that was used to access the ramp to the basement and a larger one adjacent to it (to the west). Both garage doors will be infilled with a fixed steel garage door with vertical divided lites.

The alley side of the building (east elevation) will be cleaned of graffiti, and the brick repointed as needed. The existing steel fire escape will be repaired, sandblasted and repainted. It will be load-tested to ensure stability and structural integrity, for continued safe usage as a fire exit from the second floor. The garage door (new door but original opening) will be removed and infilled with stucco and set back in from the exterior wall so the original opening will read.

New signage will be added to the front façade to reflect the signage that was originally there (see historic photos) – a blade sign on the corner and banners along the front above the storefronts.







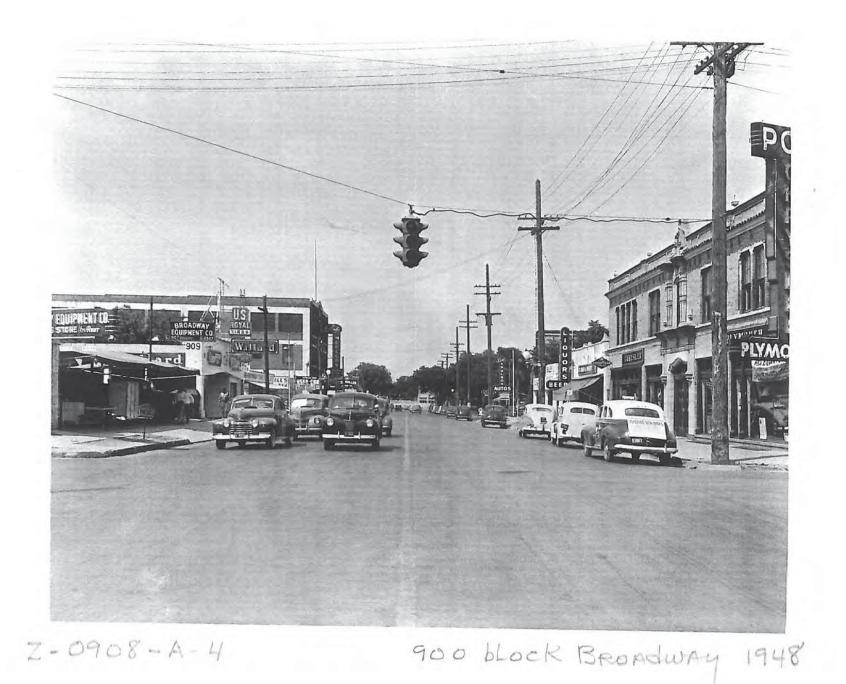


Detail of z-0908-A-4

Detail of Z-0908-A-4















WEST



WEST



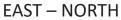
WEST













NORTH



NORTH







EAST 2ND FLOOR





EAST 1ST FLOOR



EAST

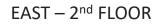
















EAST 2ND FLOOR





EAST - 2ND FLOOR AT FIRE ESCAPE



EAST - 2ND FLOOR AT FIRE ESCAPE



EAST - AT FIRE ESCAPE



EAST – 1ST FLOOR AT ELECTRICAL SERVICE







SOUTH





SOUTH



SOUTH





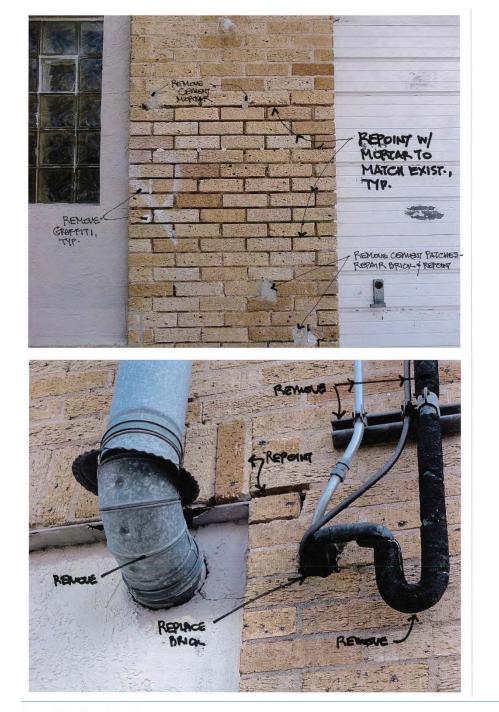


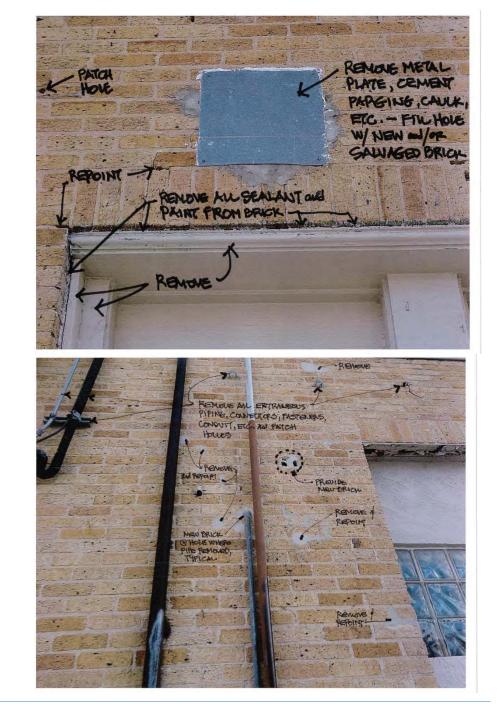
ROOF

ROOF









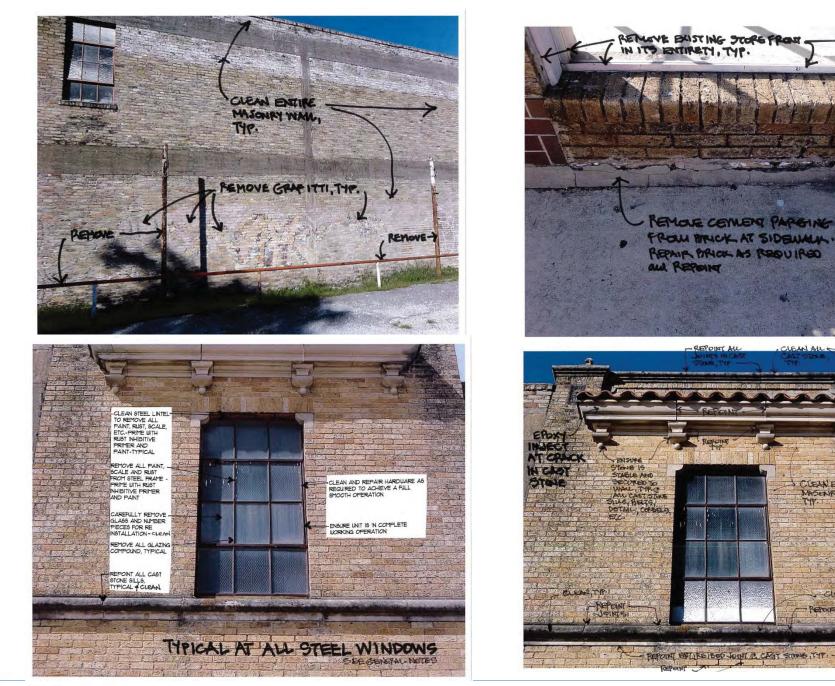






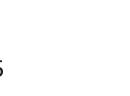








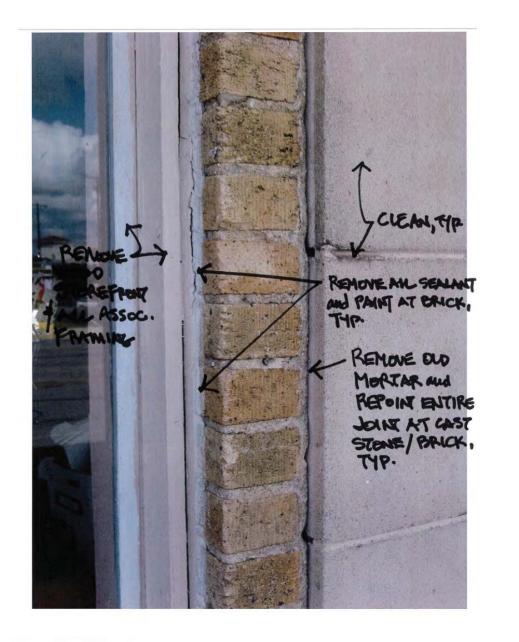


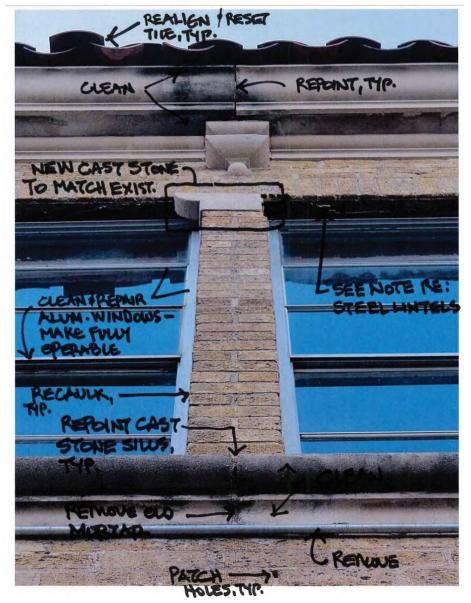


CLEAN ENCIRE .

MASCANEY WALL

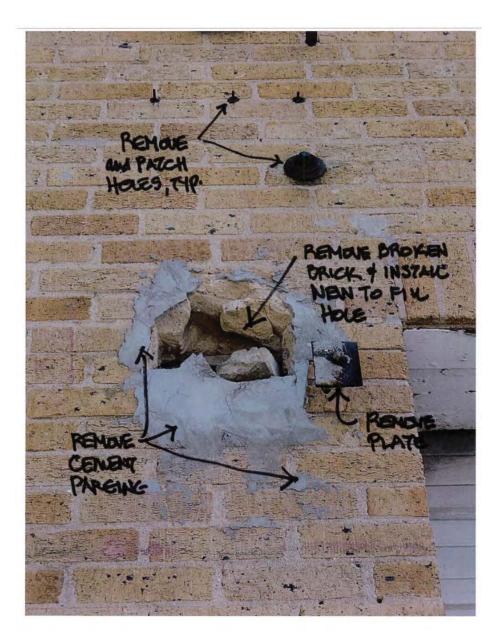
CLEAN EPOIN

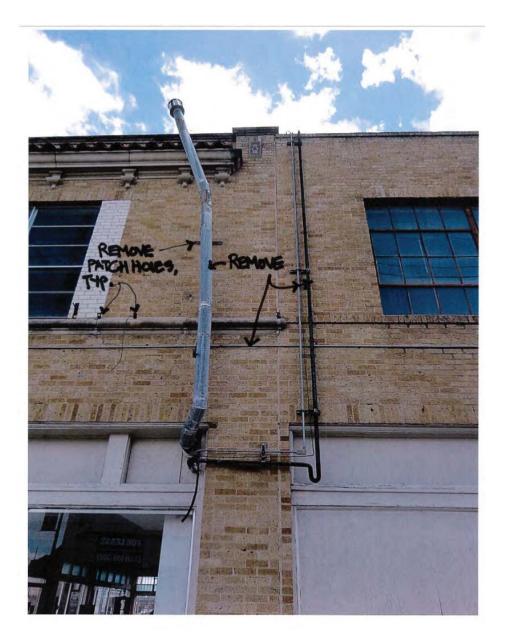






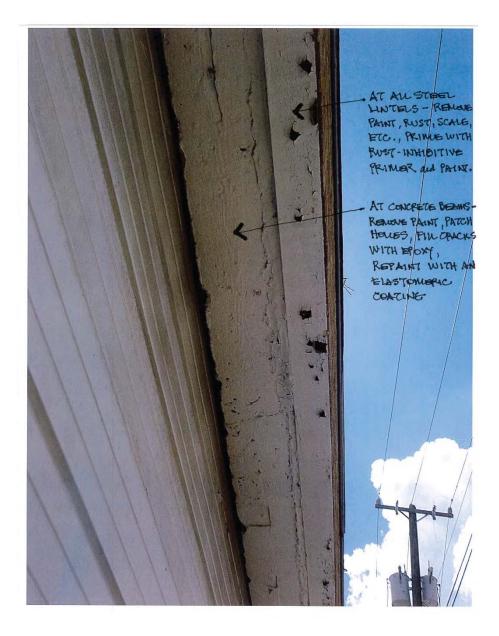


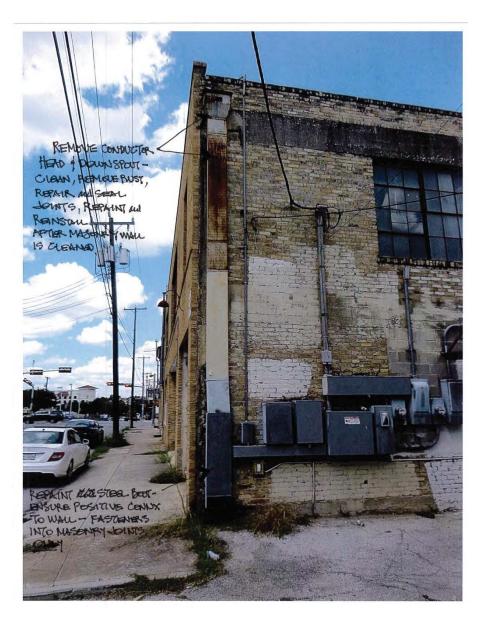






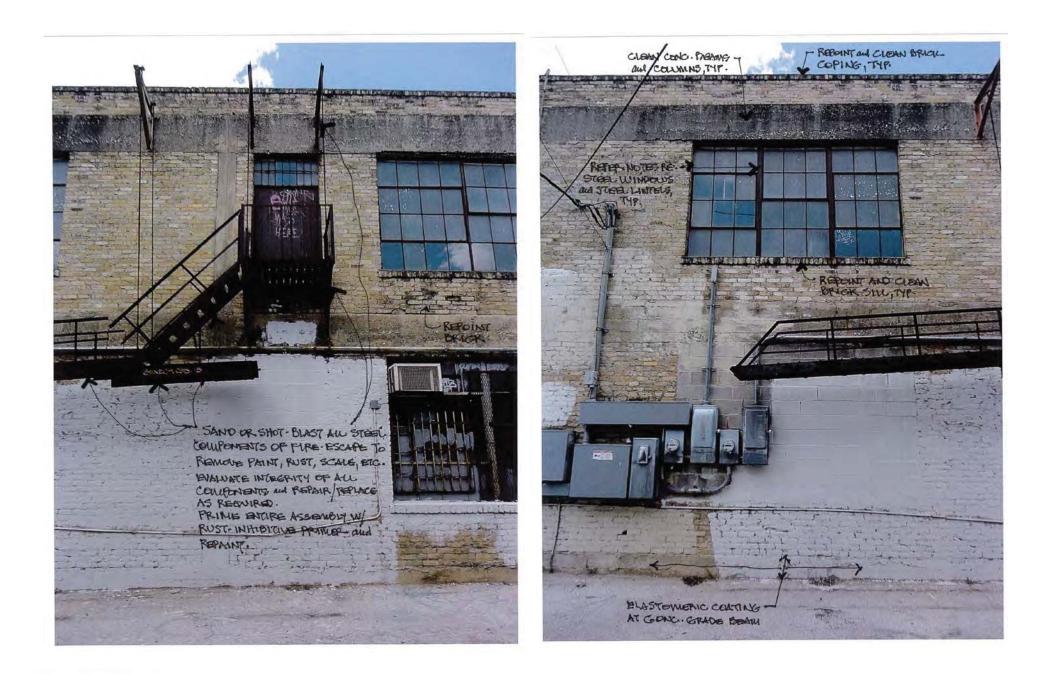


















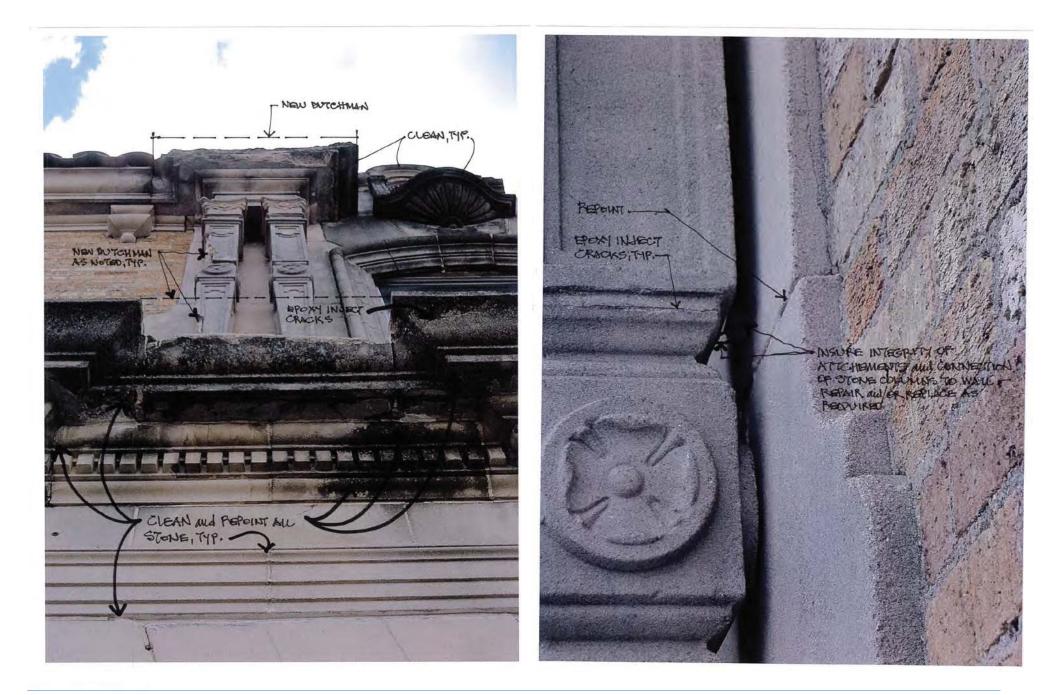






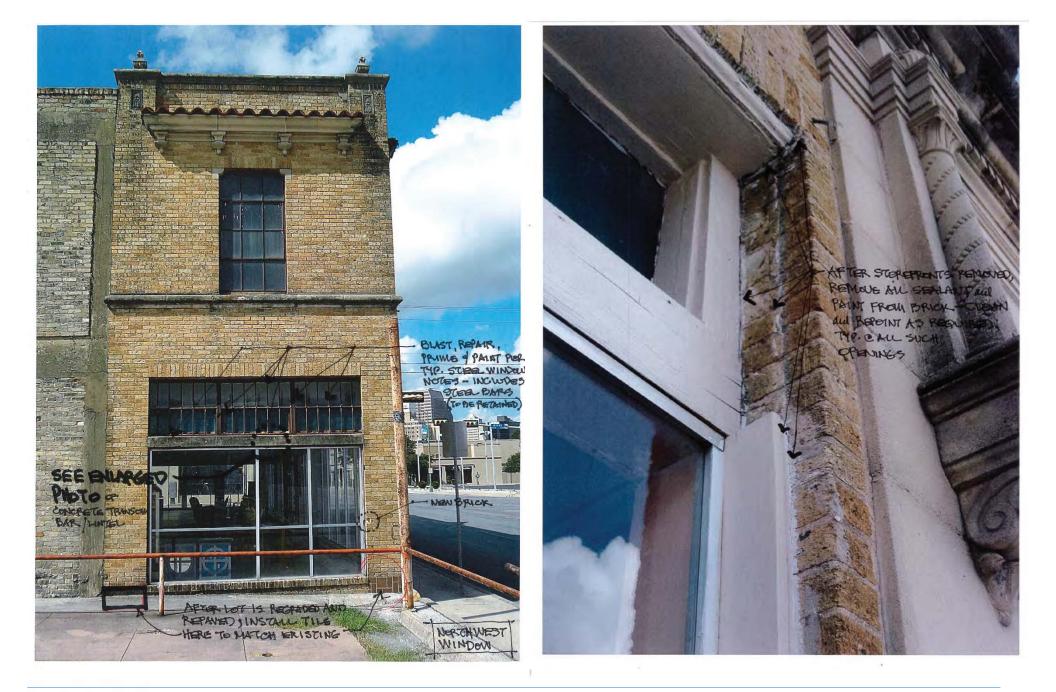






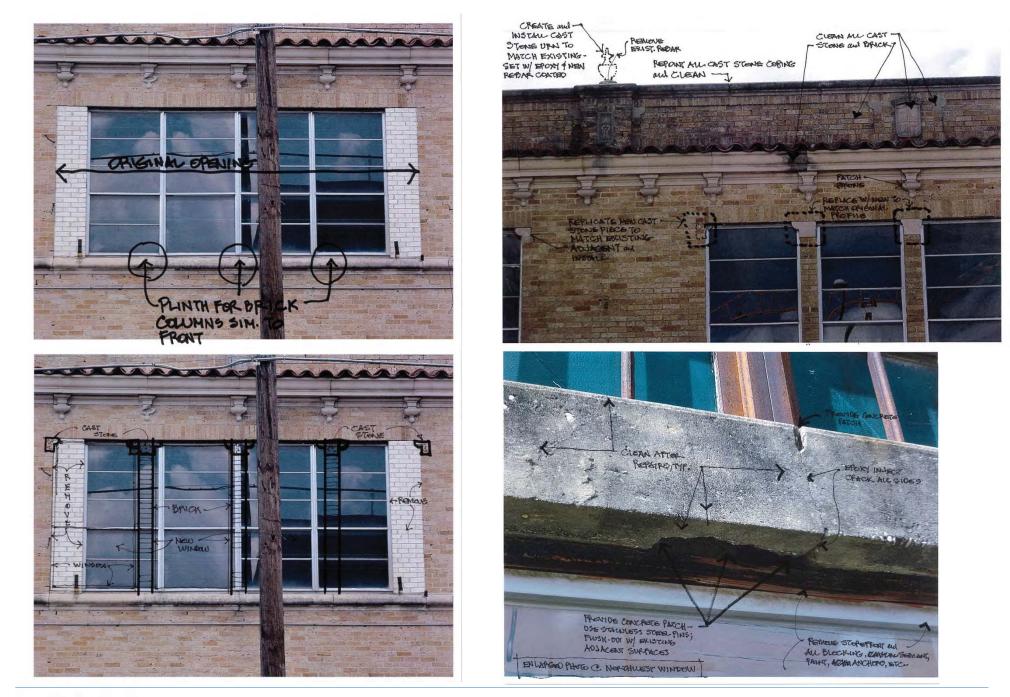
























WEST RENDER







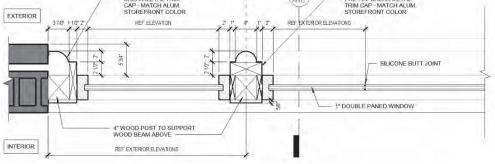
NORTH RENDER





STOREFRONT SYSTEMS

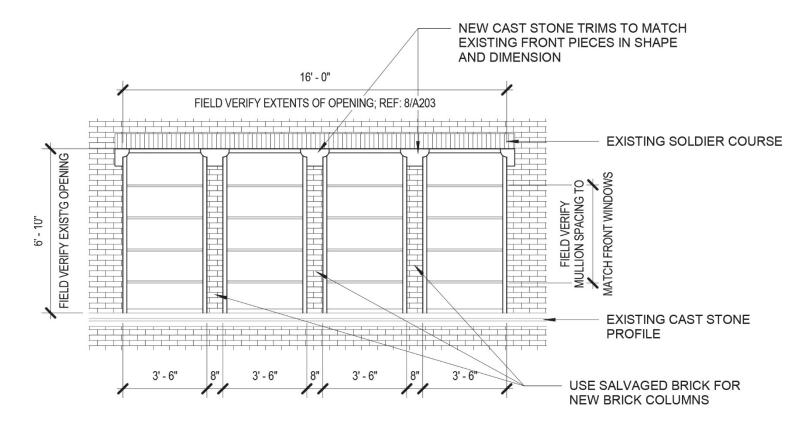
BREAK METAL PROFILES EXTERIOR INTERIOR 24' - 3" EXISTING EXTERIOR WALL FIELD VERIFY EXISTING OPENING WIDTH ALUM. CLOSURE PLATE 5 1/2" 3' - 7" 6" 15' - 2" 3' - 7" 5 1/2" ALUM. STOREFRONT FRAME AND GLAZING SYSTEM; RE: WIND. SCHED 1 ** ALIGN MULLIONS WITH EXISTING WINDOW PATTERN ABOVE 1 **REF: EXTERIOR ELEVATIONS** 6 1/2" A602 12" WOOD BEAM PRE-FIN. BREAK METAL TRIM CAP - MATCH ALUM STOREFRONT COLOR -PRE-FIN. BREAK METAL TRIM CAP - MATCH ALUM STOREFRONT COLOR õ EXISTING OPENING 1/2" I PATT 10-1 Ti, VERIFY 1-7" SYSTEM: RE: WIND, SCHED. HIGH PERFORMACE SILL FLASHING SET ON A CONTINUOUS BEAD OF SEALANT B SILICONE BUTT JOINT 2 LL. EXISTING EXTERIOR WALL A602 PRE-FIN BREAK METAL BREAK METAL TRIM Dark Bronze Aluminum Frames CAP - MATCH ALUM. STOREFRONT COLOR TRIM CAP - MATCH ALUM. STOREFRONT COLOR EXTERIOR









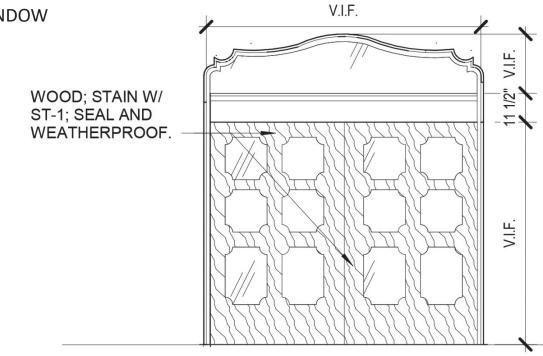




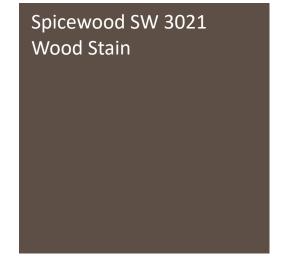








NOTE: Existing door to be replaced with a fixed in place "window" to replicate original building entry. It will not be operable nor contain door hardware.





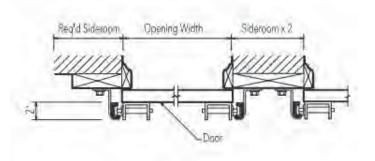




OVERHEAD – ALUMINUM SECTIONAL DOOR

*NOTE – DOOR WILL BE BOLTED IN PLACE AND WILL NOT TRAVEL IN TRACKS.

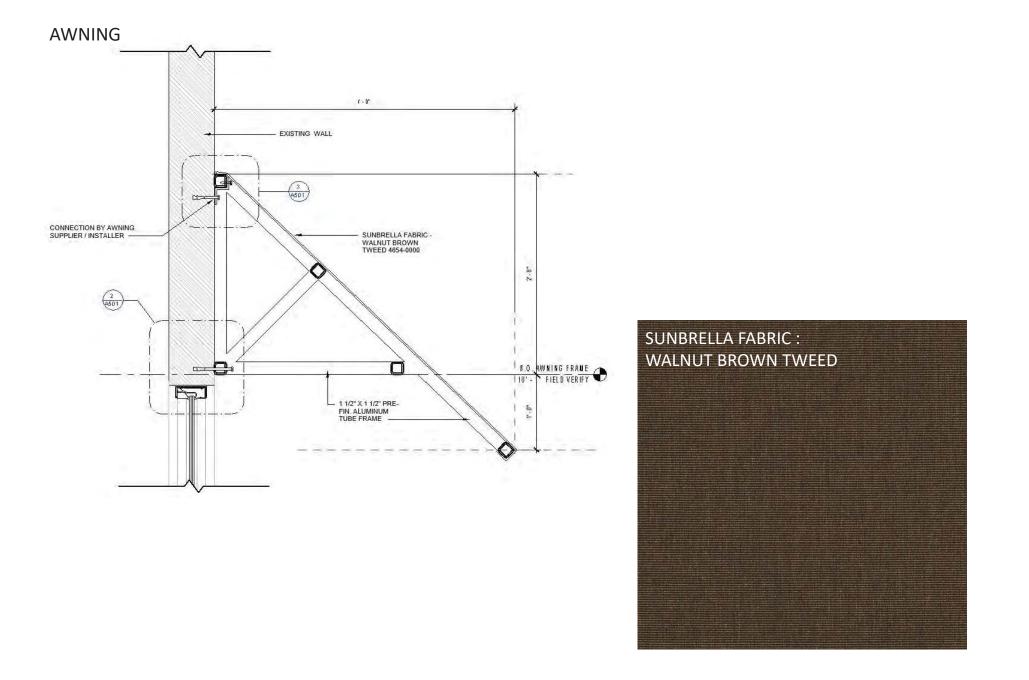
Backroom = Opening Height + 18" Horizontal Track Assembly Headplate Headplate Vertical Track Assembly Jamb Brackets





MURRAY MOTOR OFFICE LOFTS 900 BROADWAY, SAN ANTONIO, TX 78215







MURRAY MOTOR OFFICE LOFTS 900 BROADWAY, SAN ANTONIO, TX 78215



CLAY TILE REPLACEMENT



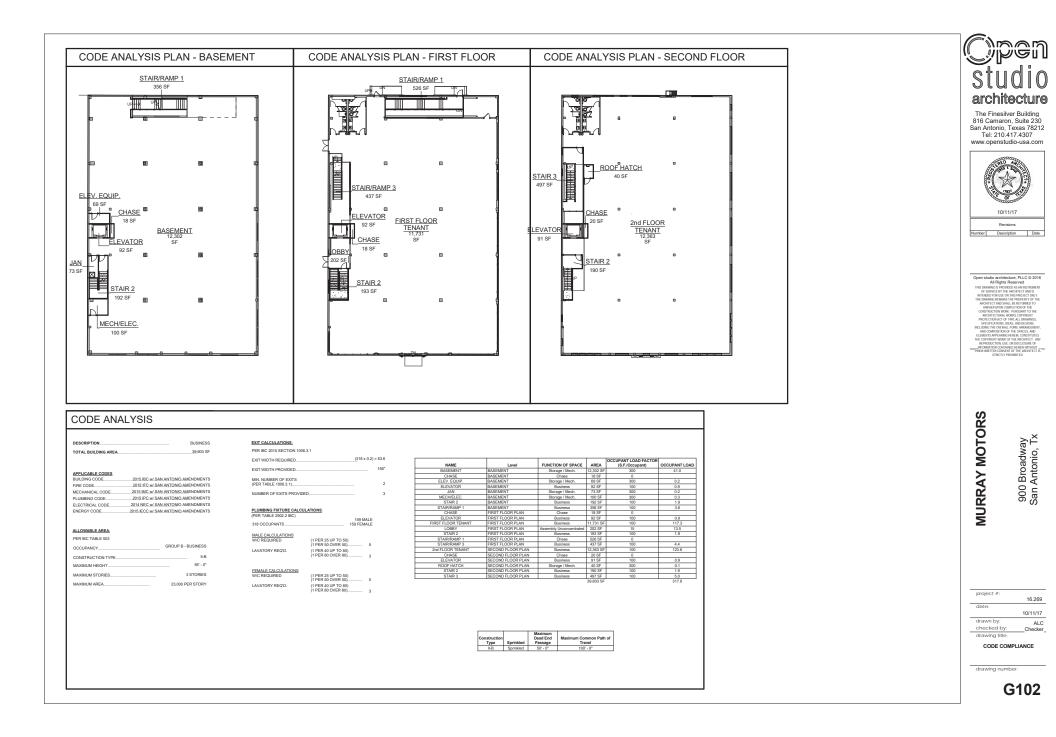


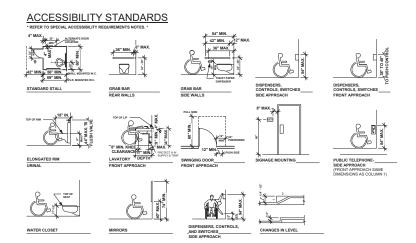


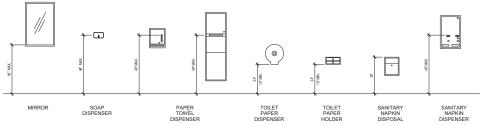
MURRAY MOTOR OFFICE LOFTS 900 BROADWAY, SAN ANTONIO, TX 78215



GENERAL NOTES	INDEX OF DRAWINGS	
1. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY, AND WHAT IS REQUIRED BY ONE, ARCHITECTURAL, CML, STRUCTURAL, MECHANICAL, PLUMBING, OR ELECTRICAL DRAWINGS OR SPECIFICATIONS, ADDENDUM, BULETINS, OR OTHER DOCUMENT, SHALE JEA S BINDING AS IF REQUIRED BY ALL. CONTRACTOR SHALL USE ONLY COMPLETE ESTS OF CONTRACT DOCUMENTS FOR ACIA AND EVERY TITLE OF WORK.		Studio
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22. UNLESS NOTED OTHERWISE, SITE PLANDMENSIONS, ARE TO FACE OF CURB. FLOOR PLAN DIMENSIONS ARE TO FACE OF STUDIES FRAMME, INSCRIPT, CONTRETINUE AND LANCELS, OF MEDIAATION WILLS. 24. SPECIAL INSTRUCTIONS NOTE: 71 THE CONTRETION OF CONSTRUCTION A FINAL REPORT OF REQUIRED SPECIAL INSPECTIONS (PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE CONFIRMS THAT THE LISTED REQUIRED SPECIAL INSPECTIONS HAVE EBEN CONDUCTED AND COMPLETE WILL BE SUBMITTED TO THE BUILDING OFFICIAL VIA THE OWNERS. IT IS CUR UNDERSTINATION THAT A CERTIFICATE OF OCCUMPING/ WILL NOT THE DETERMINATION FEODINED SPECIAL INSPECTIONS AND ALL AS STUDY CURLING OFFICIAL INSPECTIONS HAVE EBEN CONDUCTED AND COMPLEX WILL AS STUDY CURLING OFFICIAL INSPECTIONS HAVE EBEN CONDUCTED NOT COMPLEX AND LISTED OR REQUIRED DETERMINATION OF FEODINED SPECIAL INSPECTIONS AND ALL AS STUDY CURLINGUES INSPECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE DOCUMENTATION THAT ALL REQUIRED INSPECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE DOCUMENTATION THAT ALL REQUIRED INSPECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE DOCUMENTATION THAT ALL REQUIRED INSPECTIONS. IN IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE DOCUMENTATION THAT ALL REQUIRED INSPECTIONS MAY EBED CONDUCTED NON ALCONCIDENT. INTO THAT ALL REQUIRED	VICINITY MAP VICINITY MAP PROJECT LOCATION PROJECT LOCATION PROJECT LOCATION PROJECT	
25. GOVERNME CODE AND FRE DEPARTMENT FRED INCRECTORS SHULL DECTART SIZE. TYPE, QUANTITY AND LOCATING OF DOTIT TEMPORYMENT PROVIDENTIALE FRE EXTINUENTIAL FRED ATTICUENTS. 38. ALL DROGED LECTRICAL EQUIPMENT CONDUITS, PLUMBING LINES, ETC. SHALL BE PAINTED WIMIN (2) CONTS OF PAINT TO MATCH ADJUSTIFY SUPRACES. 37. KINOX BOX-LOCATE PER LOCAL FRE DEPARTMENT REQUIREMENTS.		project #: 18.289 date: 1911/17 drawn by: ALC checked by: Obeder drawing title: COVER SHEET drawing number:
		G101











TOILET PARTITION WHERE OCCURS

BAR WITH 1 GAP FROM WALL

TOILET PAPER

HC.

WATER CLOSET BACK WALL

TYPICAL PLUMBING FIXTURES AND ACCESSORIES MOUNTING HEIGHTS

1.12 MIN.

WATER CLOSET



URINAL SCR WHERE OCCURS

TOE SPACE

URINAI



HANDLE PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT RECUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE.

MOUNTING HEIGHT: HARDWARE REQUIRED FOR ACCESSIBLE DOOR PASSAGE SHALL BE MOUNTED NO HIGHER THAN 48'ABOVE FINISHED FLOOR.

CLOSER OPERATION: THE SWEEP PERIOD OF A CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR WILL TAKE AT LEAST 3 SECONDS TO MOVE TO A POINT 3" FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR.

THE MAXIMUM FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE AS FOLLOWS: FOLLOWS: (A) EXTERIOR HINGED DOOR: NO REPLACEMENT (B) INTERIOR HINGED DOORS: 5 LBF (C) SLIDING OR FOLDING DOORS: 5 LBF

CONTROLS AND OPERATING MECHANISM. HEIGHT SWITCHES, HERMOSTATS, CONTROLS, DISPENSERS, RECEPTACLES, MOT THE HIGHEST OF DRUBLE COMMENTS SHALL BE PLACED NO HIGHER THAN MOT THE HIGHEST OF DRUBLE COMMENTS SHALL BE PLACED NO HIGHER THAN EXCEPTION: THESE REQUEREMENTS DO NOT APPLY WHERE THE USE OF SPECAL EXCEPTION: THESE REQUEREMENTS DO NOT APPLY WHERE THE USE OF SPECAL SHALL AND COMMENTATION OF MALE AND COMMONCATIONS SYSTEMS RECEPTIACLES ARE NOT NORMALLY MIENDED FOR THE USE BY BUILDING OCCUPANTS.

FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS NO MORE THAN 44* ABOVE THE FLOOR.

OPERATION: CONTROLS AND OPERATING MECHANISM SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR GREATER THAN 5 I JR

3

THAN 5 LBF. GRAB BARS: THE OLITSIDE DIAMETER OR WIDTH OF THE GRIPPING SURFACES OF A HANDRALL OR GRAB SHALL BE -11/4" TO 1-1/2", OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE.

IF HANDRAILS OR GRAB BARS ARE MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1-1/2*.

BENDING STRESS IN A GRAB BAR OR SEAT INDUCED BY THE MAXIMUM BENDING MOMENT FROM THE APPLICATION OF 250 LBF. SHALL BE LESS THAN THE ALLOWABLE STRESS FOR THE MATERIAL OF THE GRAB BAR OR SEAT.

SHEAR STRESS INDUCED A GRAB BAR OR SEAT BY THE APPLICATION OF 250 LBF. SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE MATERIAL OF THE GRAB BAR OR SEAT SHEAR STRESS INDUCED IN A FASTENER OR MOUNTING INVERTIGATION OF THE GRAND BIN OR SE SHEAR STRESS INDUCED IN A FASTENER OR MOUNTING DEVICE FROM THE APPLICATION OF 250 LBF. SHALL BE LESS THAN THE ALLOWABLE LATERAL LOAD OF ETHER THE FASTENER OR MOUNTING DEVICE OR THE SUPPORTING STRUCTURE WHICHEVER IS THE SMALLER ALLOWABLE LOAD.

TENSLE FORCE INDUCED IN A FASTENER BY A DIRECT TENSION FORCE OF 260 LBF PLUS THE MAXIMUM MOMENT FROM THE APPLICATION OF 250 LBF. SHALL BE LESS THAN THE ALLOWABLE WITHORAWAL LOAD BETWEEN THE FASTENER AND THE SUPPORTING STRUCTURE.

ROTATION OF GRAB BARS WITHIN THEIR FITTINGS IS NOT ACCEPTABLE.

OVERHEAD SIGN CHARACTERS AND NUMBERS SHALL BE SIZED ACCORDING TO THE VIEWING DISTANCE FROM WHICH THEY ARE TO READ. FOR SUSPENDED OR PROJECTED OVERHEAD SIGNS, THE MINIMUM CHARACTER HIEJRY IT 3'.

FINISH: THE CHARACTERS AND BACKGROUND OF SIGNS SHALL BE EGGSHELL, MATTE, OR OTHER NON GLARE-FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND.

PERMANENT DENTIFICATION SIGNS PROVIDED FOR ROOM AND SPACES, SIGN SHALL BE INSTALLED ON THE WALL ADJACE'NT TO THE LATCH SBE OF THE DOOR. WHERE THERE IN NO WALL SPACE TO THE LATCH SIGLE OF THE DOOR, WILCIDEN AT DOUBLE LEAF DOORS SIGNS SHALL BE FLACED ON THE NEAREST ADJACE'NT WALL MONITING HERHT SHALL ABOVE FINISH FLOORT OT THE CENTERLIE OF THE SIGN.

B

MEN

SIGN FOR MEN'S ROOM

COUNTER WHERE OCCURS

WASTE

E SINK BOWL 6 1/2* DEEP

LAVATORY OR VANITY SINK

MOUNTING LOCATION FOR REACH SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3° OF SISMAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF A DOOR.

ADA TOILET ROOM SIGN ADA SIGNAGE BY GENERAL CONTRACTOR PER ADA REQ.

DOM SIGNAGE 2 12" HIGH, M

Íb

WOMEN

SIGN FOR WOMEN'S ROOM

BRAILE CHARACTERS AND PICTORIAL SWIBOL SIGNS (PICTOGRAMS) SHALL BE RAISED 102°, UPPER CASE, SAN SERVE OR SAMPLE SERVE TYPE AND SHALL BE ACCOMPANED WITH GRADE 2 PICTORIANS SHALL BE ACCOMPANED BY THE FOLLWARTH VERBAL DESCRIPTION FA ACED DIRECTLY BELOW THE PICTOGRAM. THE BORDER DIMENSION OF THE PICTOGRAM SHALL BE 6° MINIMUM IN HEIGHT.

SHARP OR ABRASIVE ELEMENTS ARE NOT ACCEPTABLE FOR A HANDRAL OR GRAB BAR OR ANY WALL OR OTHER SUFFACE ADJACENT TO TIS EDGES. THE WORTH-ONEGIN RATIO OF LITERS AND NUMBERS ON SIGNS SHALL HAVE BETWEEN 35 AND 11 AND A STROKE WORTH-ONEGHT RATIO BETWEEN 15 AND 110 USING AN UMPERAGE. TO REMESURABLENT UMPER ADE LITERS ARE PRIMITED.

Number Description Date Open studio architecture, PLLC © 2016 All Rights Reserved

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architecture The Finesilver Building

816 Camaron, Suite 230 San Antonio, Texas 78212 Tel: 210.417.4307



Revisions

MOTORS

MURRAY

project #

drawn by

checked by:

STANDARDS drawing number

G103

drawing title ACCESSIBILITY

) Broadway Antonio, Tx

900 I San A

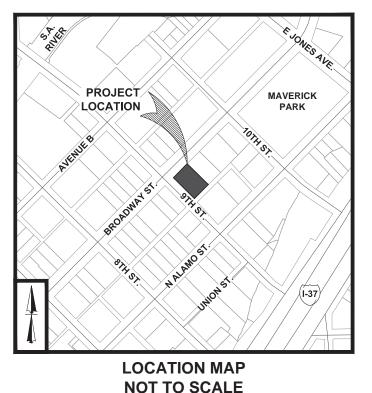
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10/11/17

SO GS

PERMIT SET - OCTOBER 13, 2017

MURRAY MOTORS 900 BROADWAY STREET, SAN ANTONIO, TX



SHEET INDEX						
SHEET NUMBER	SHEET TITLE					
C1.0	COVER SHEET					
C1.1	EXISTING CONDITION & DEMOLITION PLAN					
C2.0	SITE, DIMENSIONAL & FIRE PROTECTION PLAN					
C3.0	OVERALL UTILITY PLAN					
C4.0	GRADING & DRAINAGE PLAN					
C5.0	PAVING PLAN					
C6.0	CIVIL & UTILITY DETAIL SHEET					
C6.1	COSA DETAIL SHEET					
C7.0	EROSION CONTROL PLAN					
C7.1	EROSION CONTROL DETAILS					

OWNER / DEVELOPER INFORMATION 900 BROADWAY LTD./RIDGEMONT PROPERTIES ATTN: TREBES SASSER, JR. 5701 BROADWAY, SUITE 200 SAN ANTONIO, TEXAS 78209 PHONE: 210-826-1800 FAX: 210-547-0837



PLAT NO. - XXXXXX KFW JOB NO. - 655-01-01 SHEET NUMBER: **C1.0**







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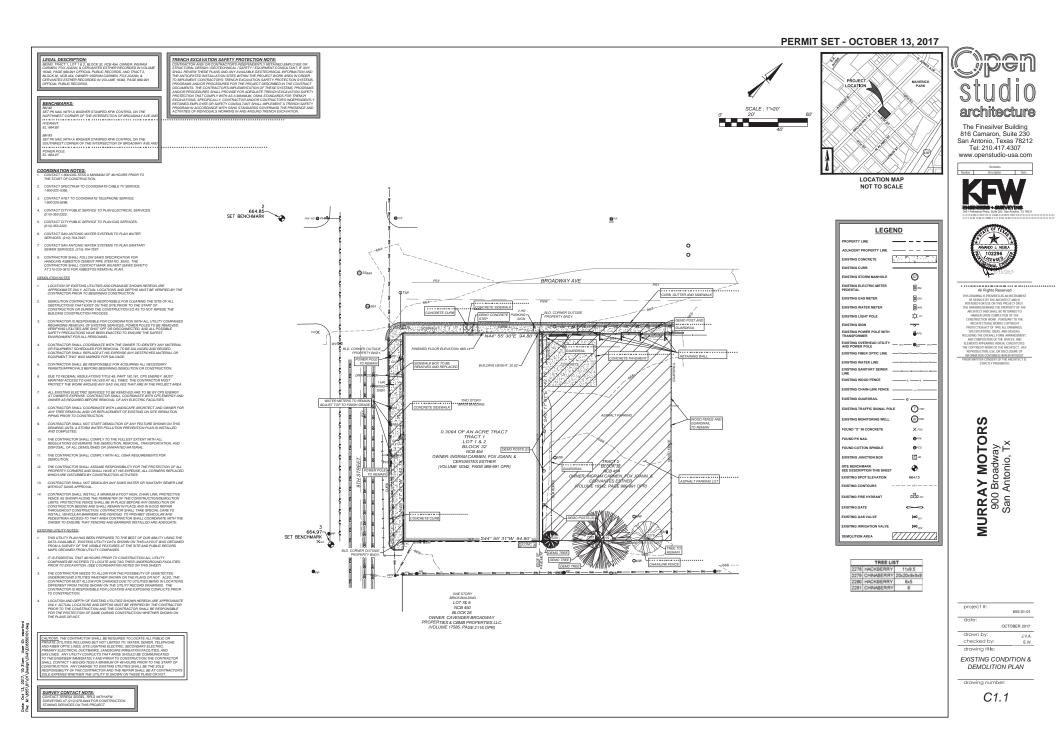
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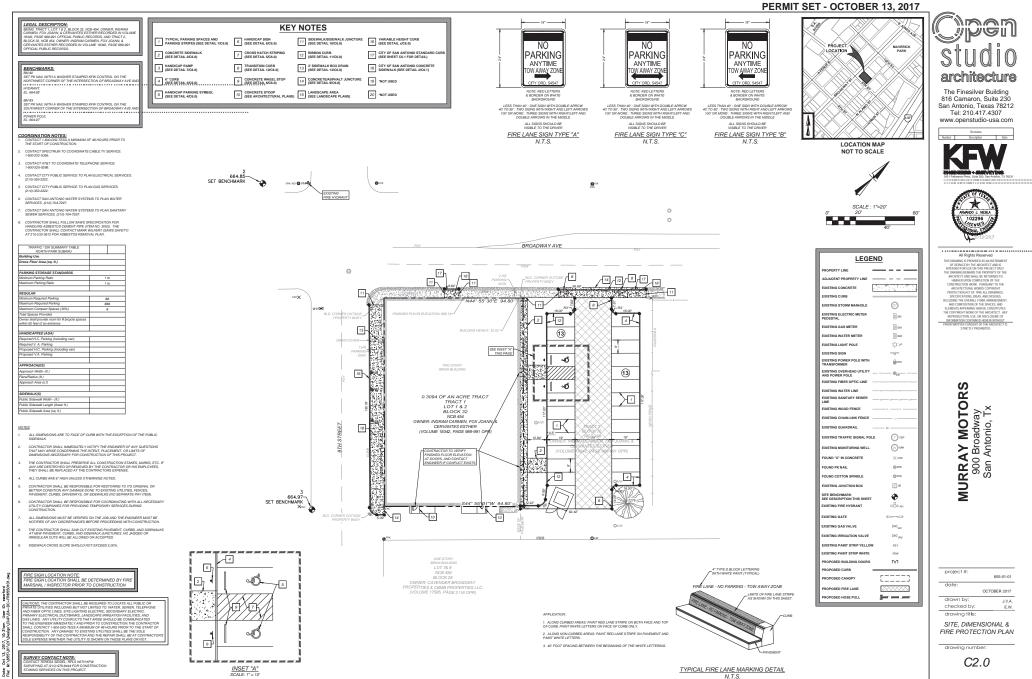
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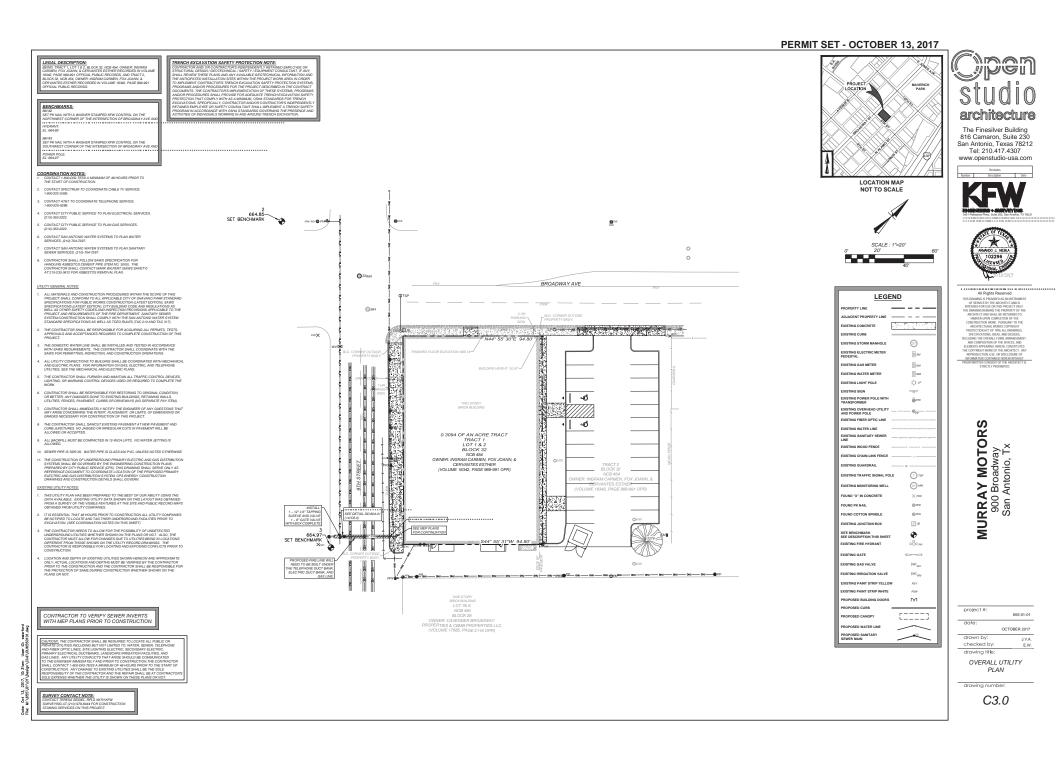
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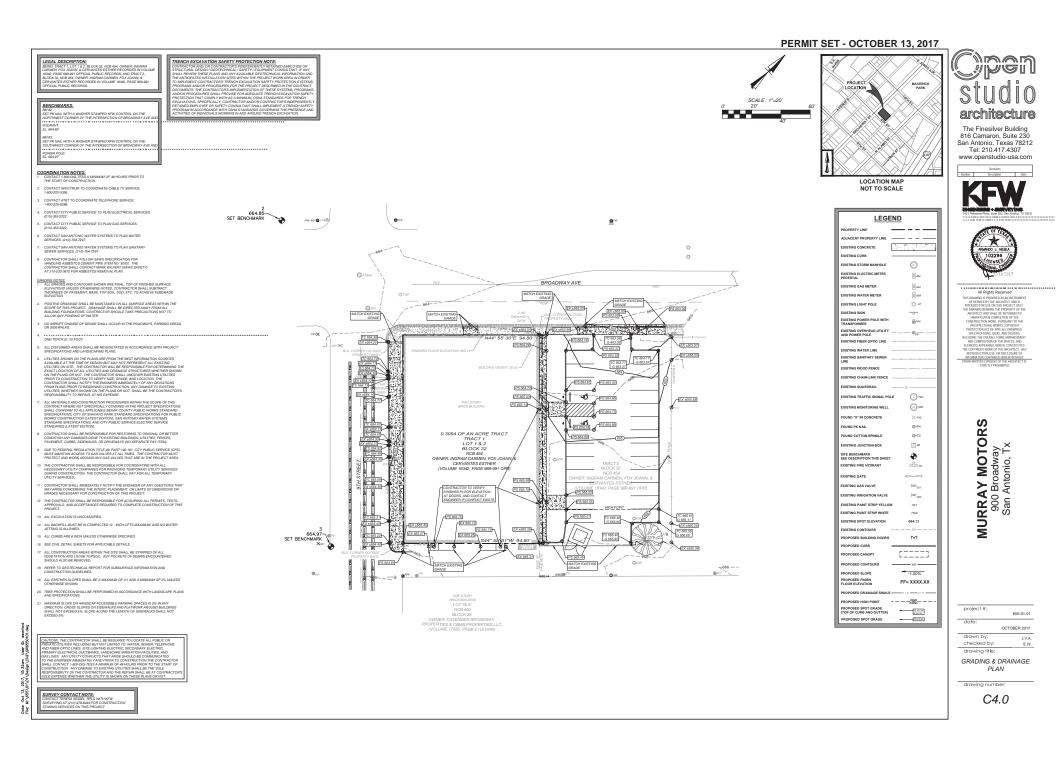
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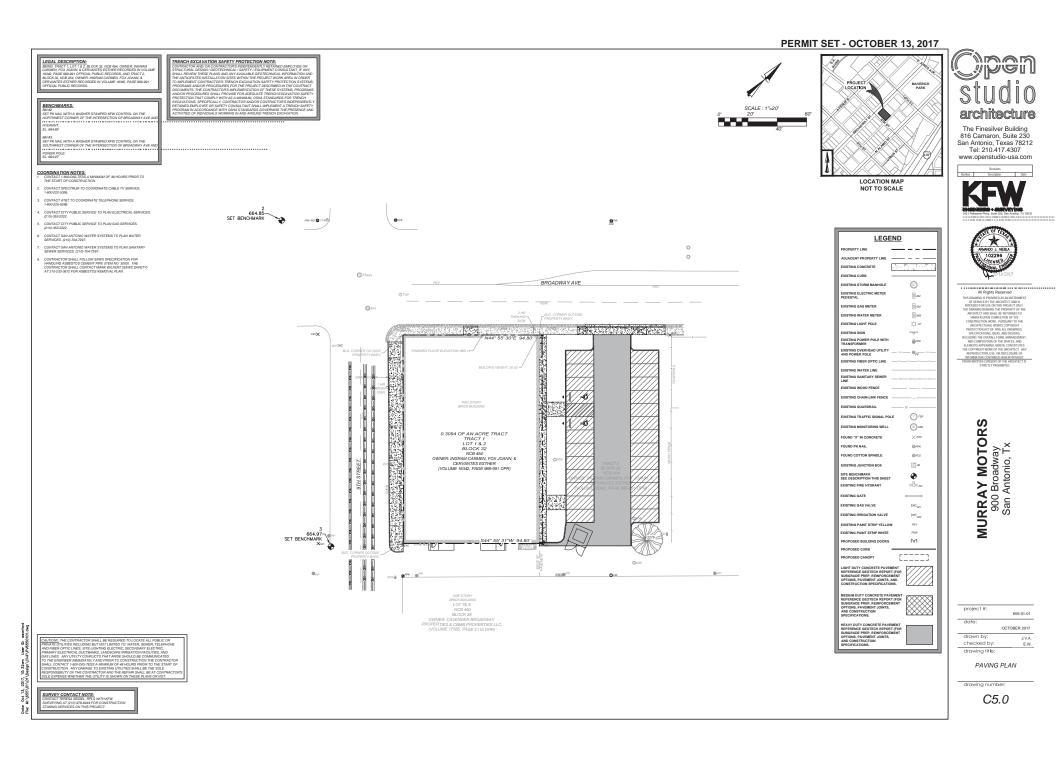


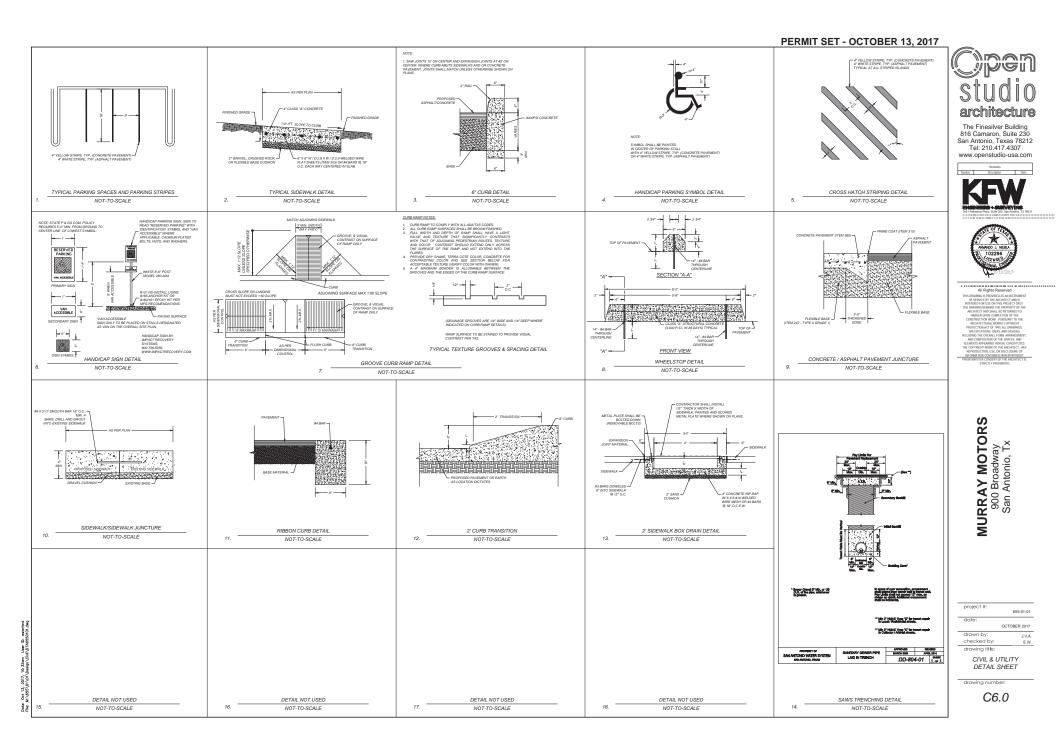


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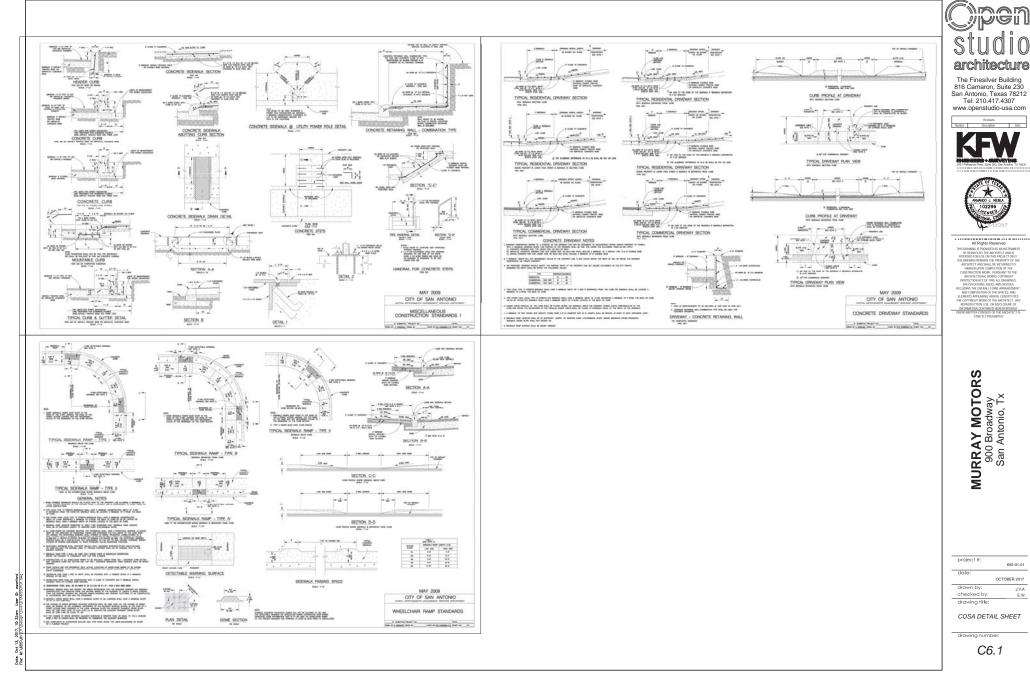


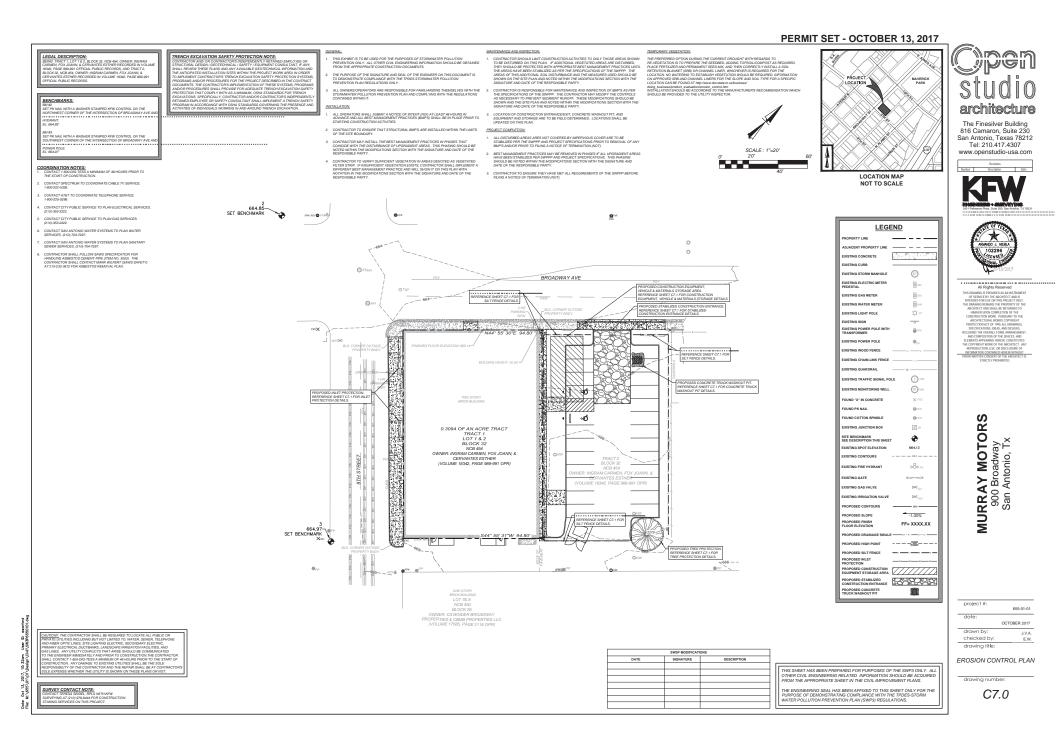




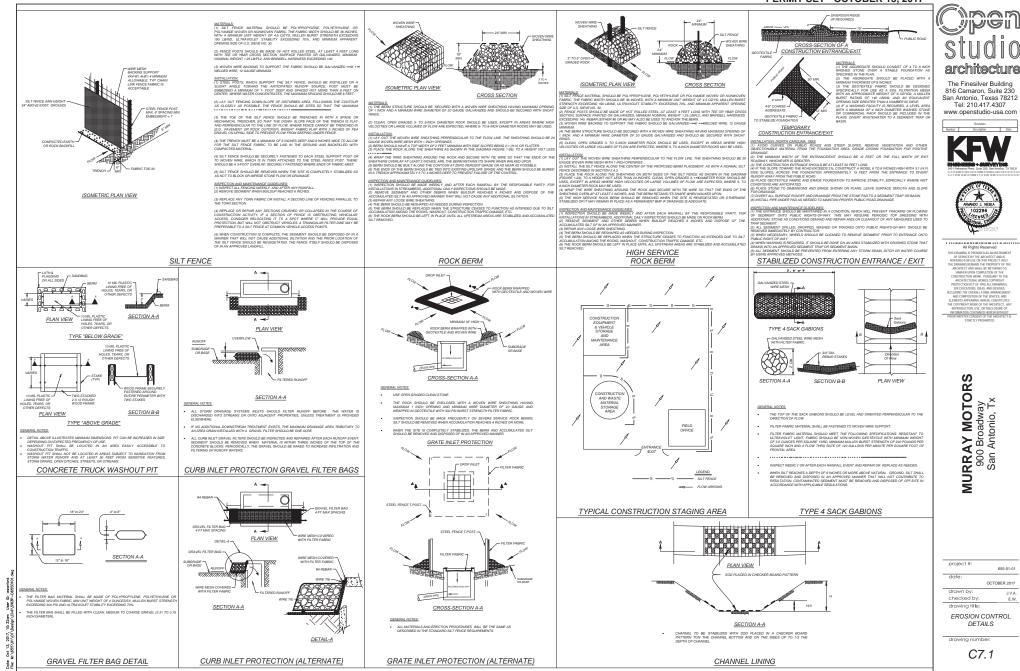


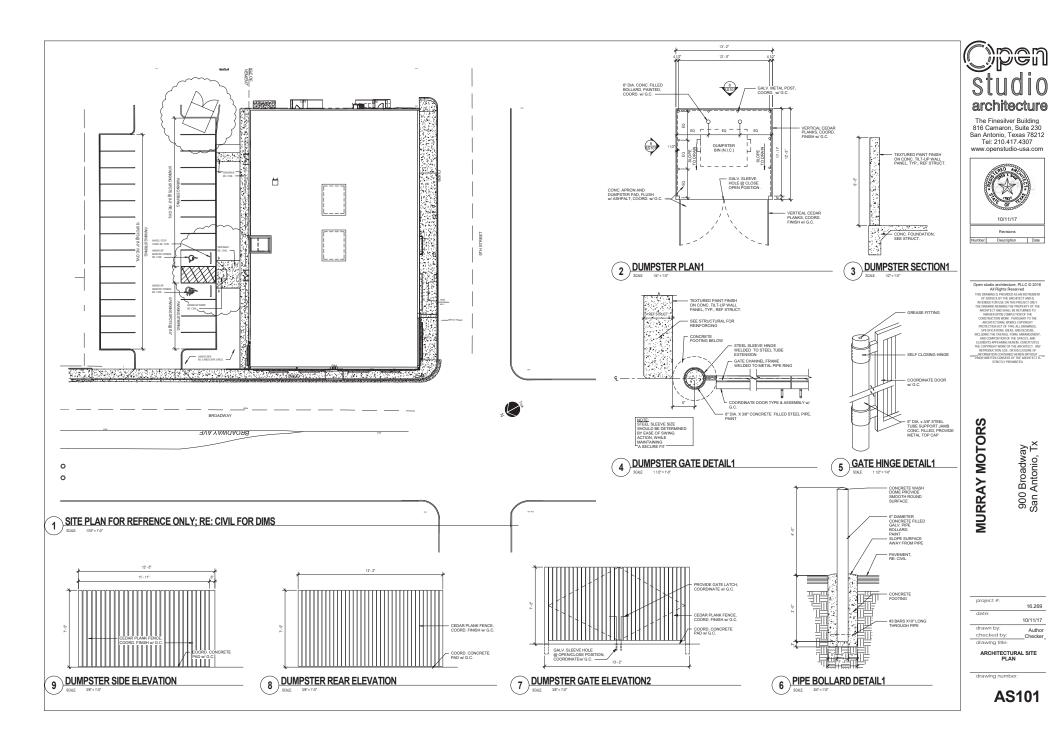
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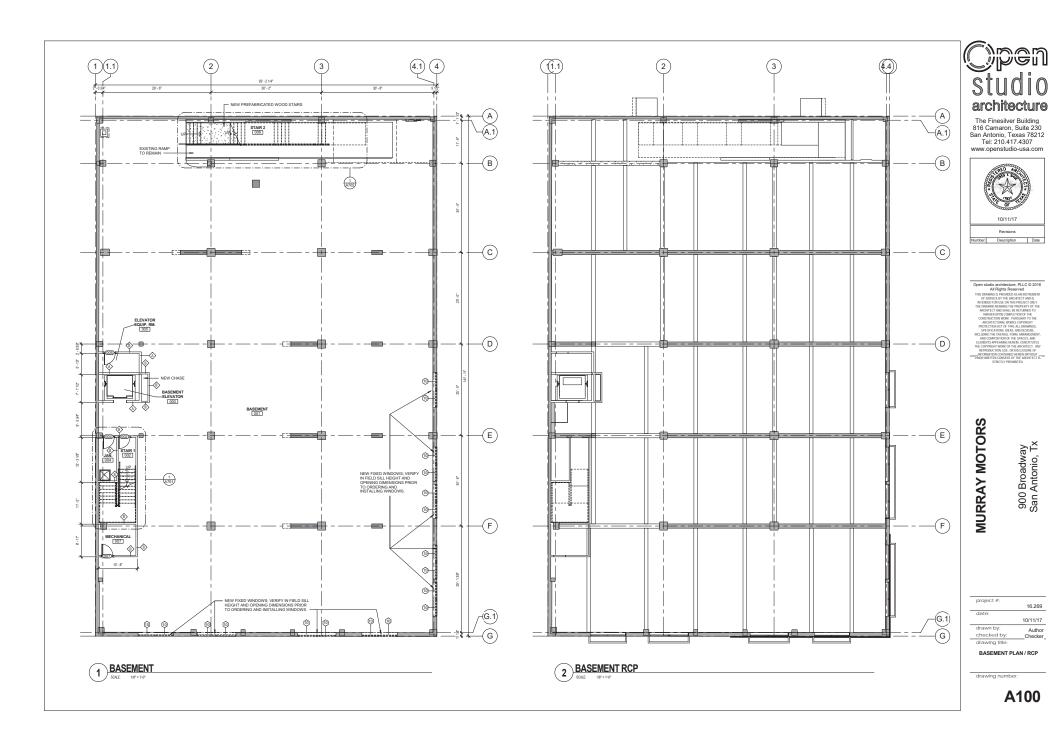


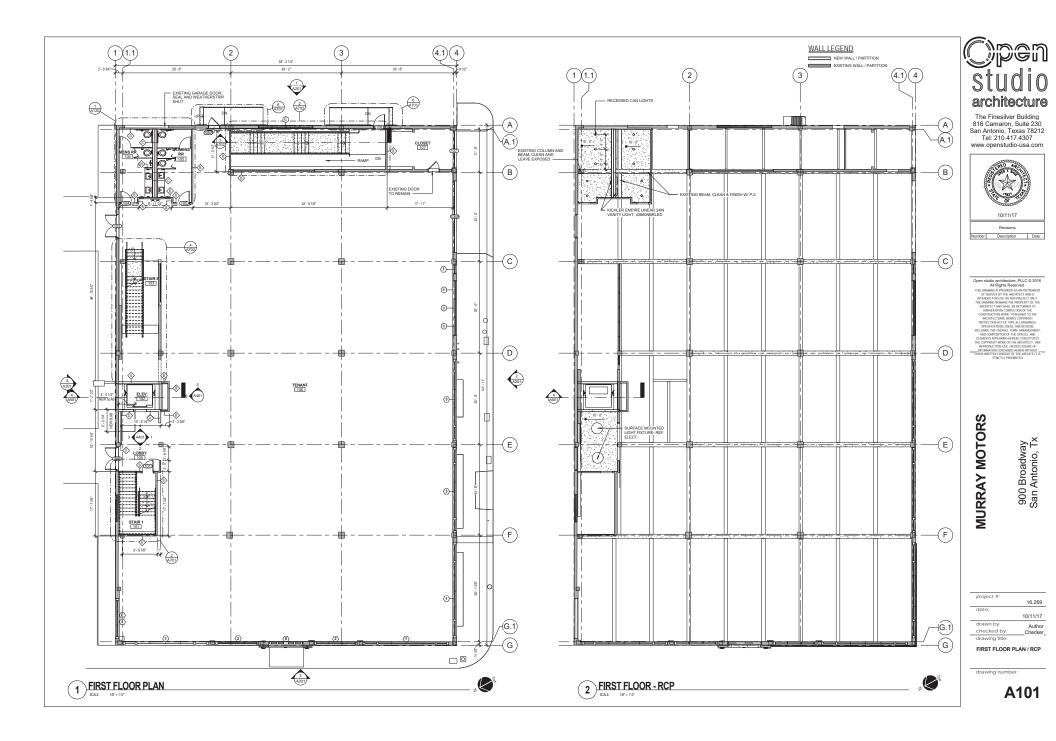


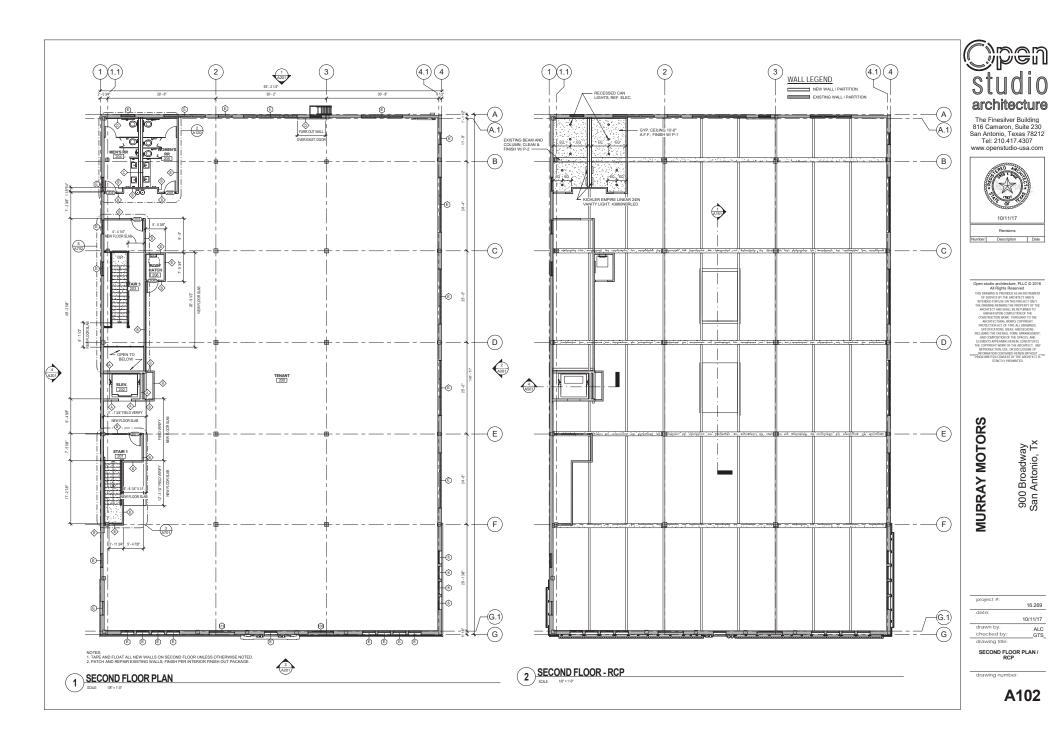
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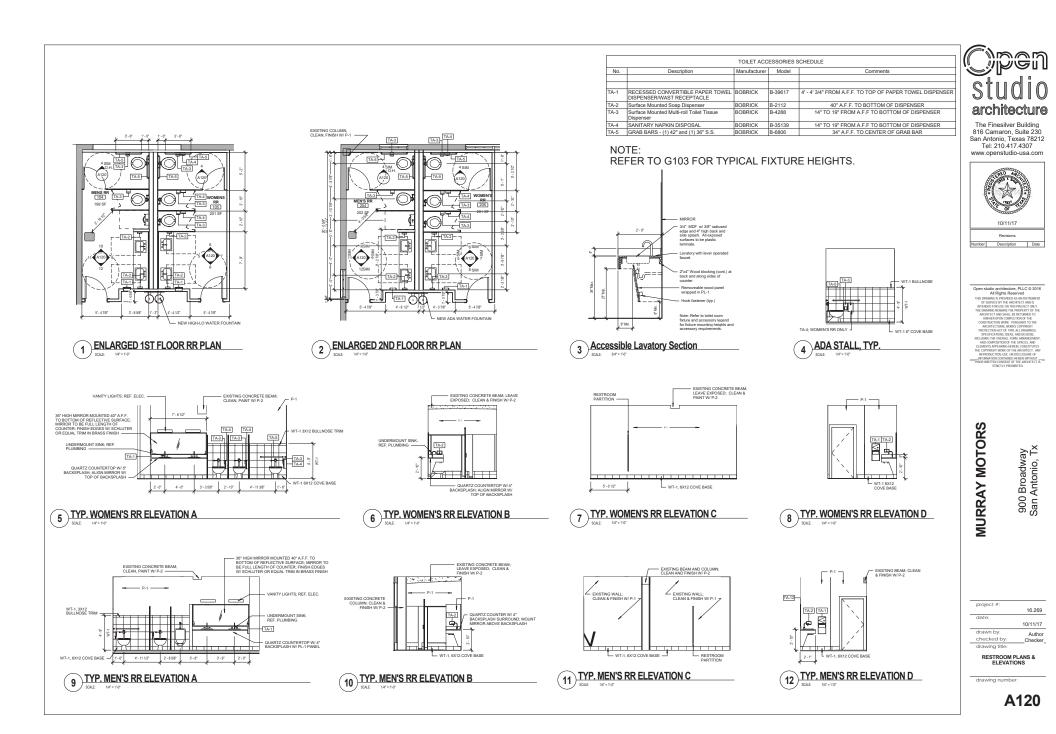


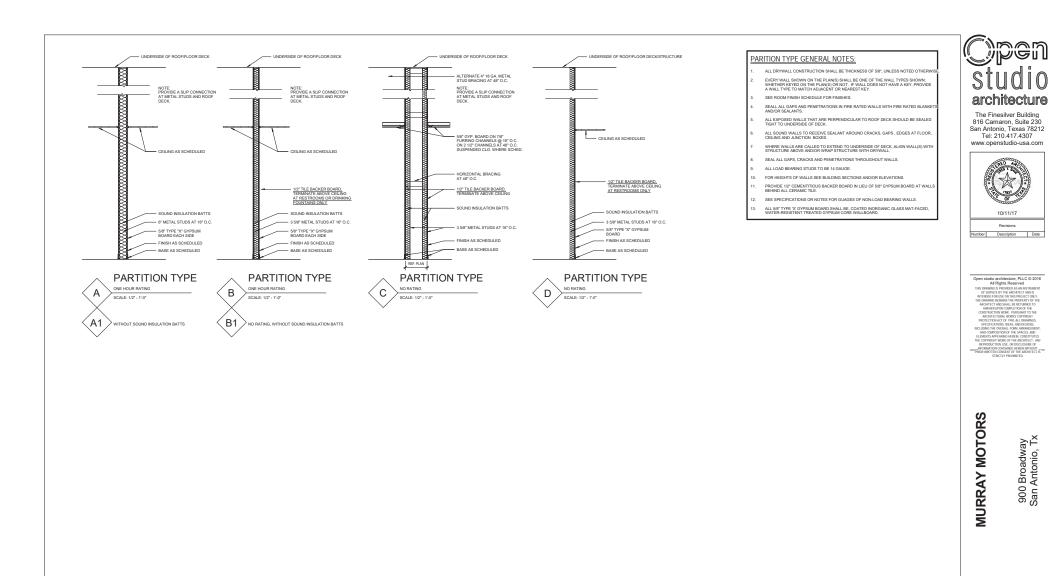




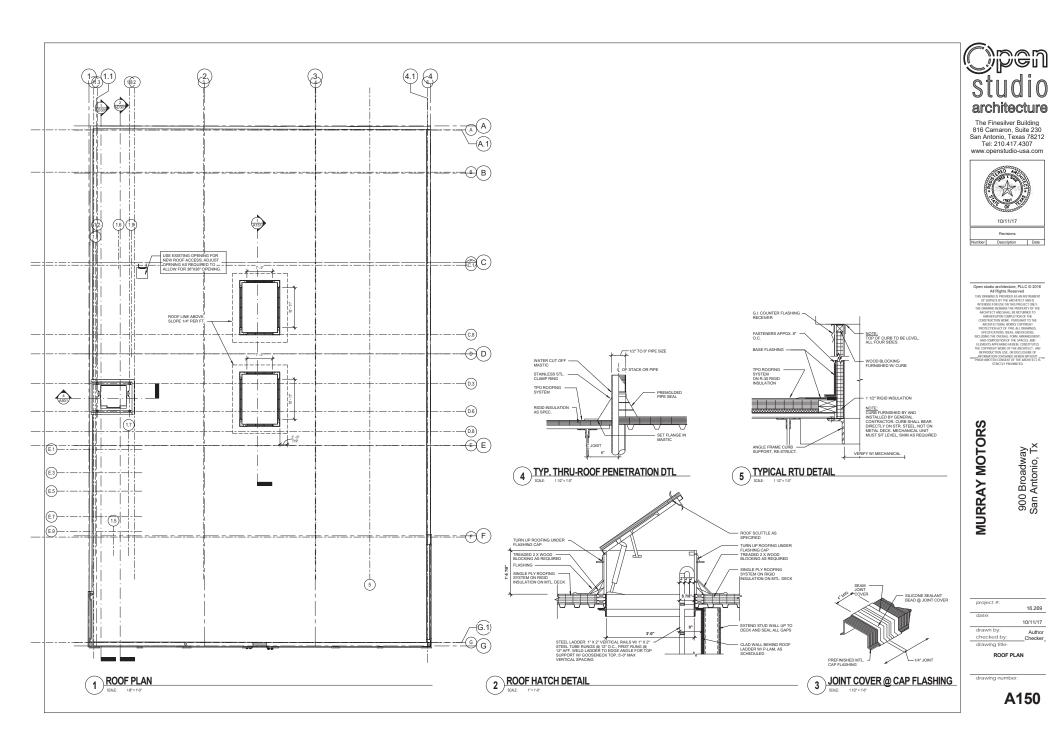


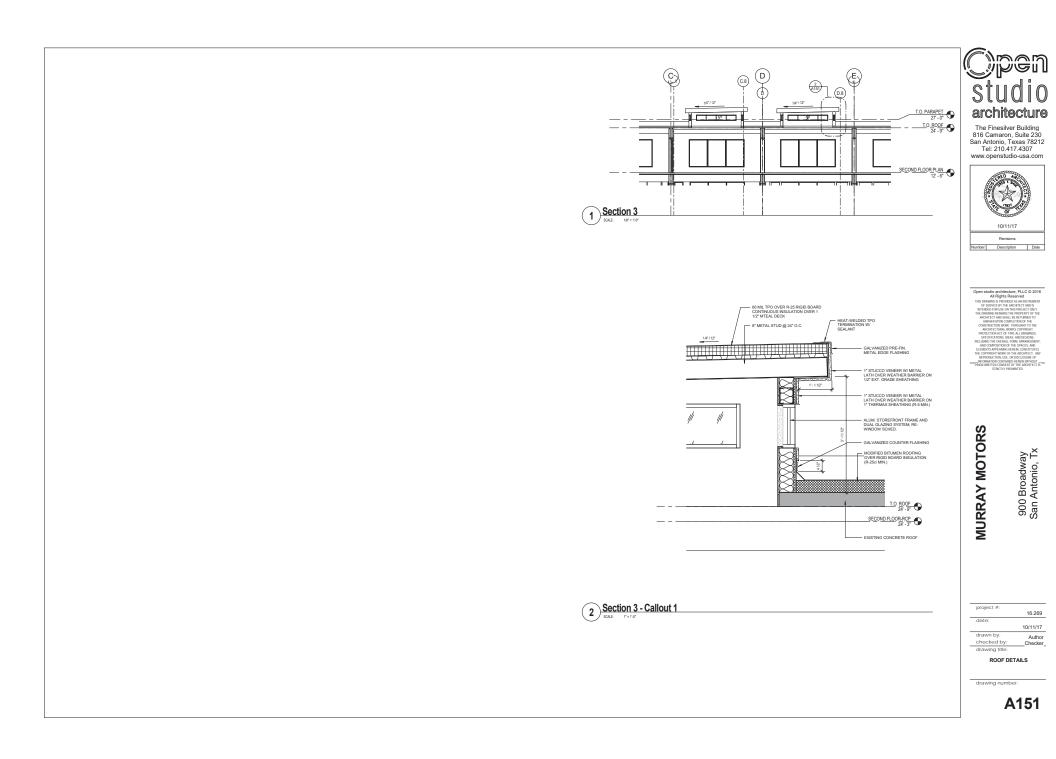


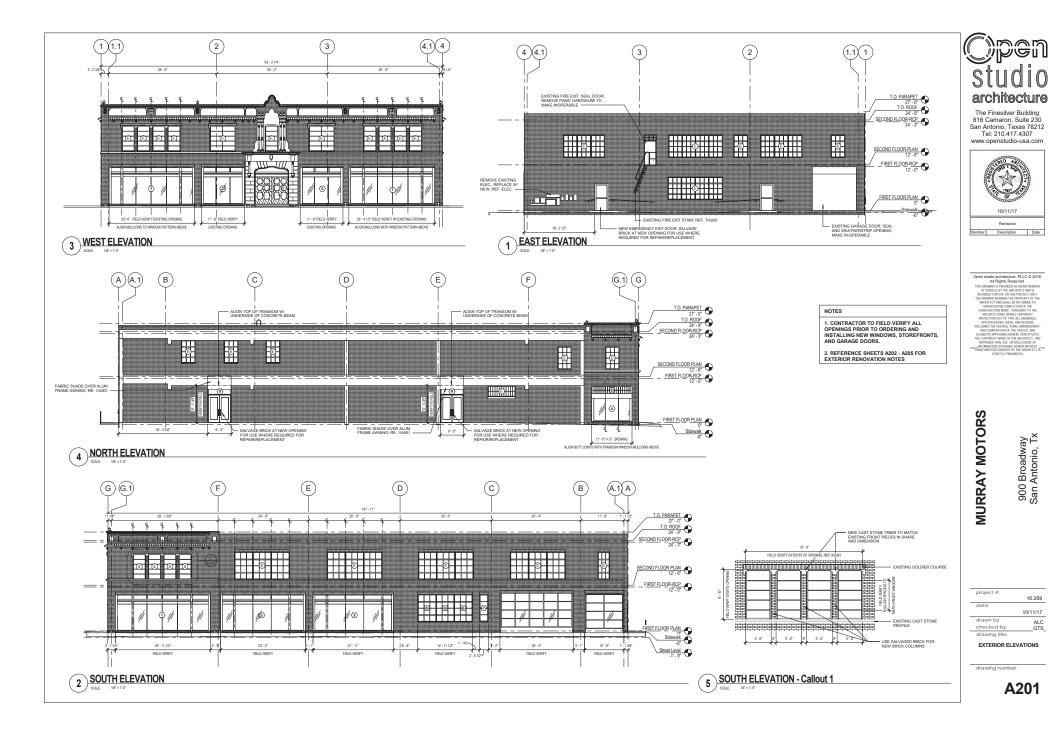




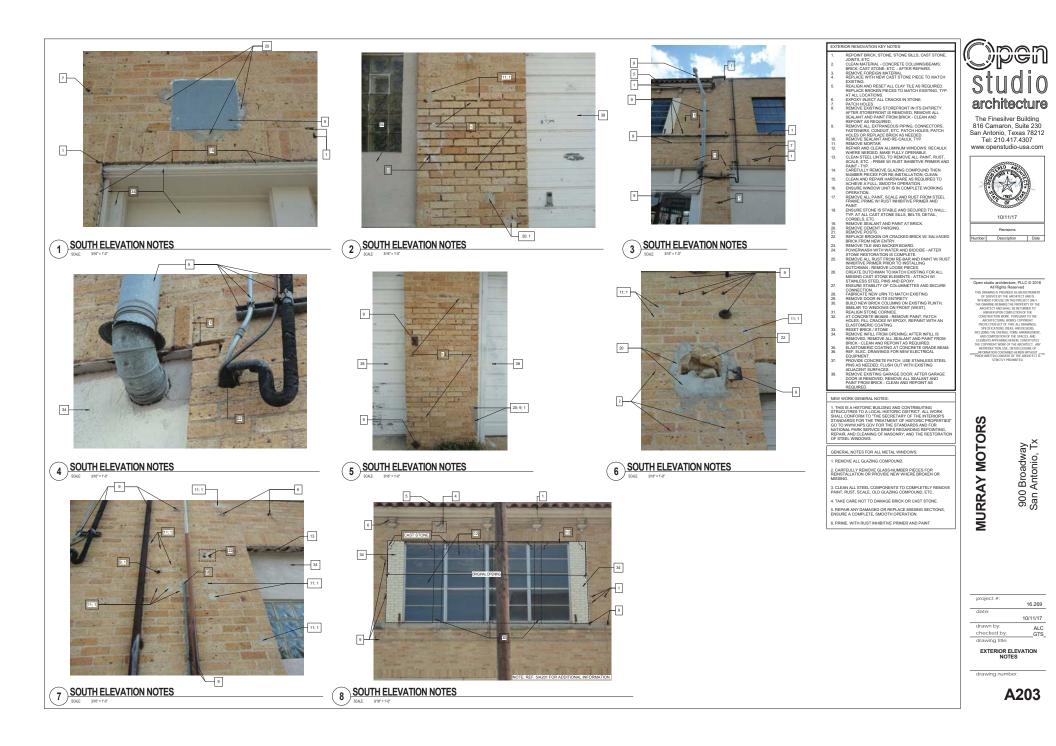
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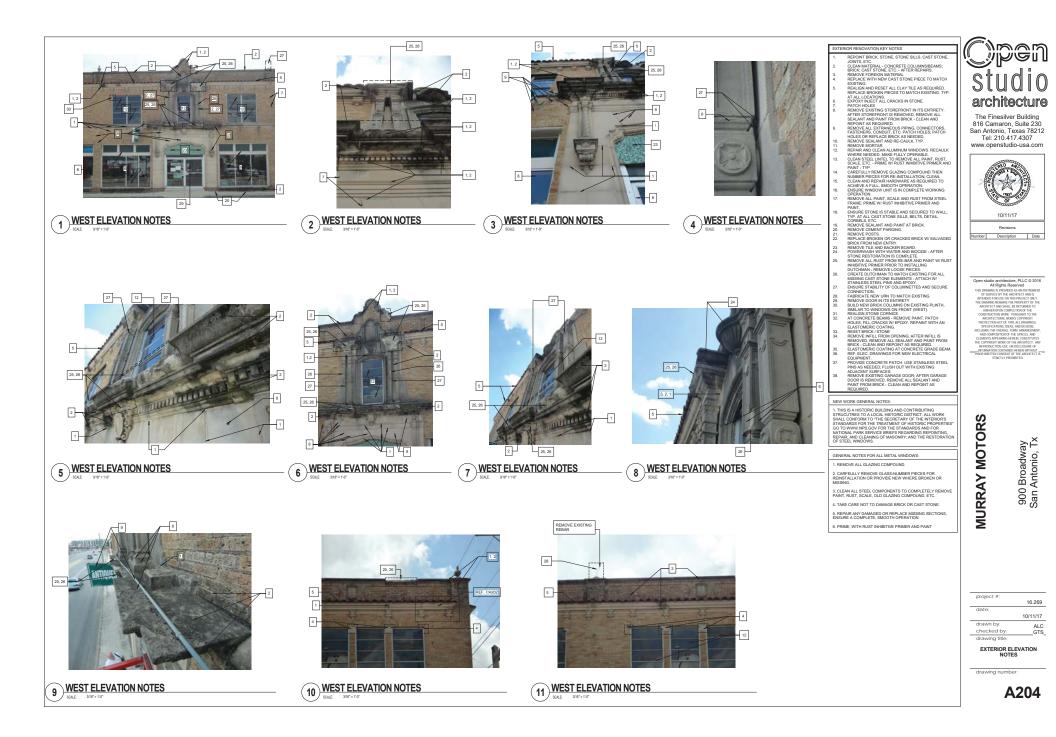


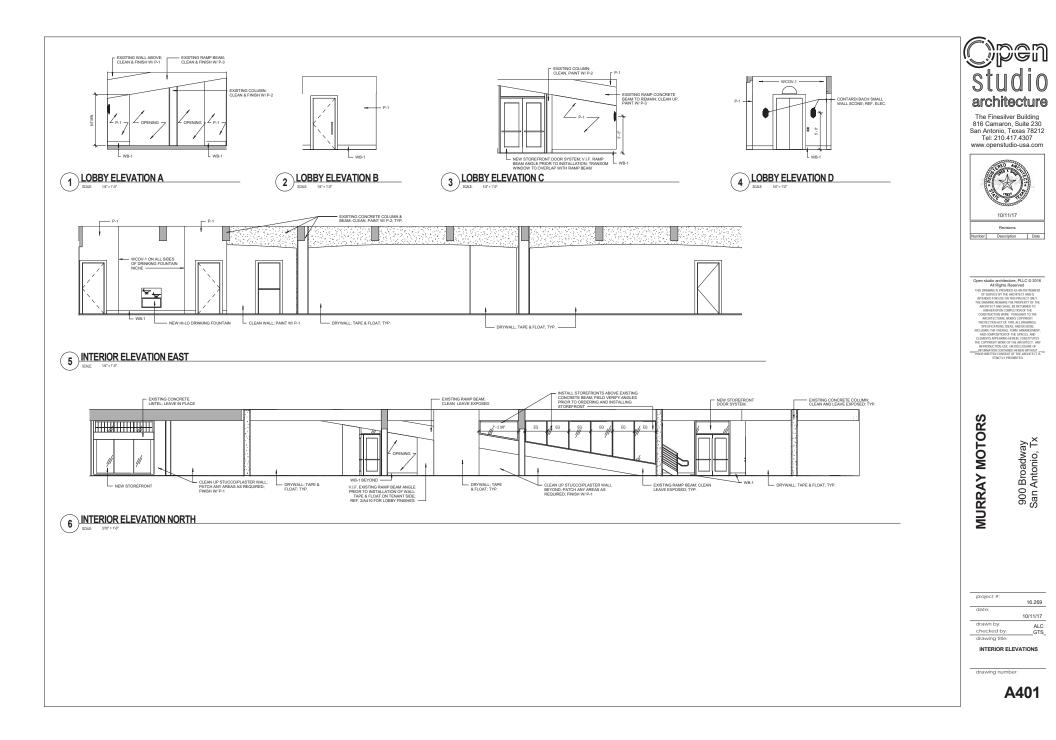


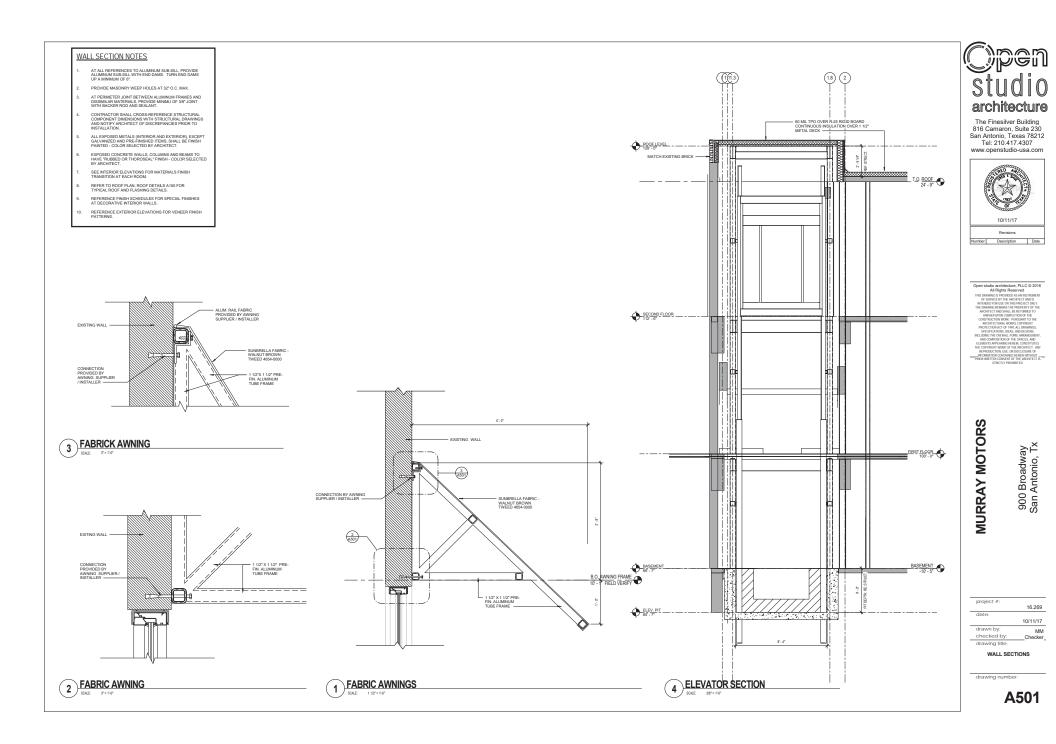


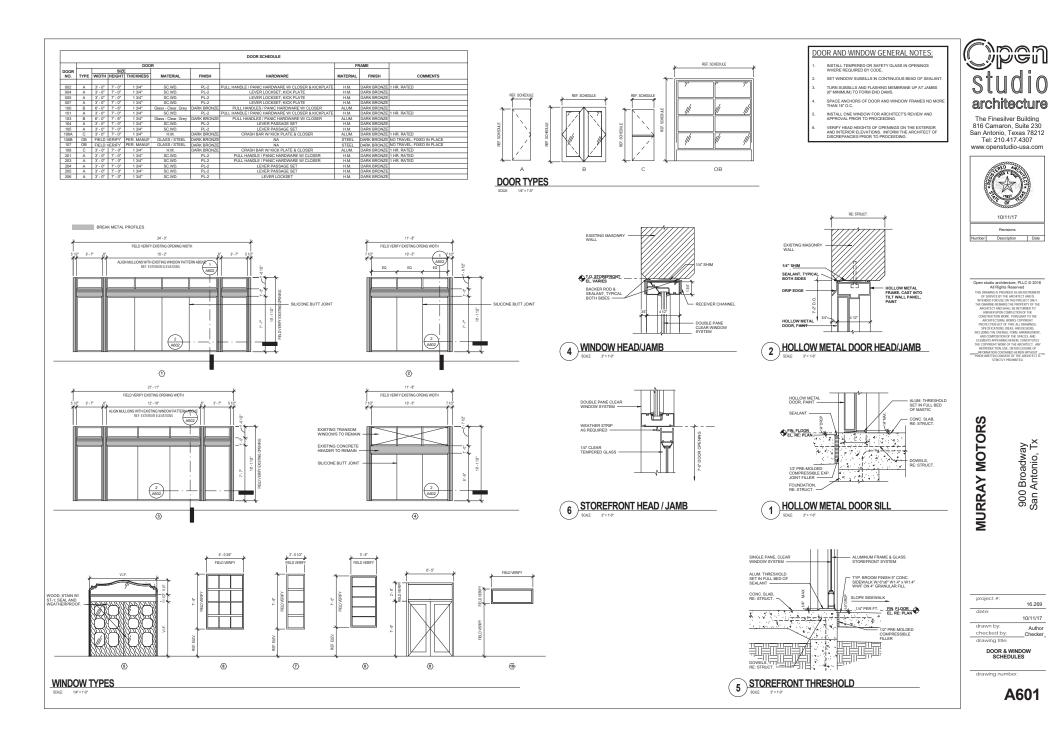


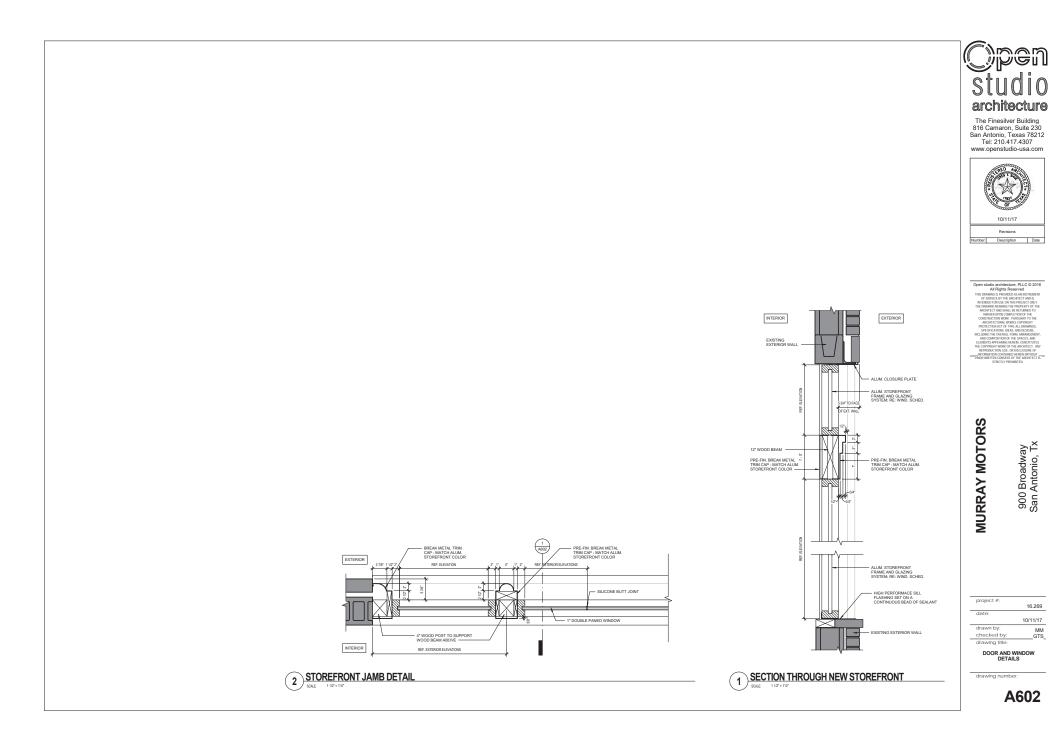












	ROOM FINISH SCHEDULE									
		FLO	FLOORING CEILING WALLS							
RM. NO.	ROOM NAME	FINISH	BASE	FINISH	HEIGHT	PLAN NORTH	PLAN SOUTH	PLAN EAST	PLAN WEST	REMARKS
	BASEMENT	SC-1	NA	NA	OPEN					CLEAN WALLS, CEILINGS FLOOR; PROVIDE WB-1 AT ALL NEW WALLS
	STAR 1	SC-1	WB-1	P-1	NA	P-1	P-1	P-1	P-1	
	BASEMENT ELEVATOR				PER. MANUF.					COORDINATE W/ INTERIOR DESIGNER
	JAN.	SC-1	WB-1	P-1	OPEN	P-1	P-1	P-1	P-1	
005	ELEVATOR EQUIP. RM.	SC-1	WB-1	P-1	OPEN	P-1	P-1	P-1	P-1	
006	STAIR 2	WOOD	WB-1	P-1	OPEN	P-1	P-1	P-1	P-1	
007	MECHANICAL	SC-1	WB-1	P-1	OPEN	P-1	P-1	P-1	P-1	
100	LOBBY	SC-1	WB-1	P-1	10'-0*	REF. ELEV.	REF. ELEV.	REF. ELEV.	REF. ELEV.	
101	STAIR 1	SC-1	WB-1	P-1	NA	P-1	P-1	P-1	P-1	
102	ELEV.				PER. MANUF.					COORDINATE W/ INTERIOR DESIGNER
103	STAIR 3	SC-1	WB-1	P-1	NA					
104	MENS RR	SC-1	WT-1	P-1	10'-0*	WT-1 / P-1	P-1	WT-1 / P-1	WT-1/	REF. ELEVATIONS FOR FINISH LOCATIONS
105	WOMENS RR	SC-1	WT-1	P-1	10'-0*	WT-1/P-1	P-1	P-1	WT-1/P-1	REF. ELEVATIONS FOR FINISH LOCATIONS
106	TENANT	SC-1	NA	NA						TAPE & FLOAT WALLS - FINISHES TO BE COORDINATED IN INTERIOR PACKAGE
107	CLOSET	SC-1	NA	NA	OPEN					TAPE & FLOAT WALLS - FINISHES TO BE COORDINATED IN INTERIOR PACKAGE
200	TENANT	SC-1	NA	NA	OPEN					TAPE & FLOAT WALLS - FINISHES TO BE COORDINATED IN INTERIOR PACKAGE
201	STAIR 1	SC-1	WB-1	P-1	NA					TAPE & FLOAT WALLS - FINISHES TO BE COORDINATED IN INTERIOR PACKAGE
202	ELEV.				PER. MANUF.					COORDINATE W/ INTERIOR DESIGNER
203	STAIR 3	SC-1	WB-1	P-1	NA					TAPE & FLOAT WALLS - FINISHES TO BE COORDINATED IN INTERIOR PACKAGE
204	MEN'S RR	SC-1	WT-1	P-1	10'-0*	WT-1/P-1	P-1	WT-1/P-1	P-1	REF. ELEVATIONS FOR FINISH LOCATIONS
205	WOMEN'S RR	SC-1	WT-1	P-1	10'-0"	WT-1/P-1	P-1	P-1	WT-1/P-1	REF. ELEVATIONS FOR FINISH LOCATIONS
206	ROOF HATCH	SC-1	WB-1	P.1	OPEN	P.1	P.1	P.1	P.1	

MATERIAL FINISH SCHEDULE						
NO.	MATERIAL	MANUFACTURER	DESCRIPTION	MODEL	COLOR	NOTES
01_FLOOR FINISH						
SC-1	SEALED CONCRETE					CLEAN AND POLISH EXISTING FLOOR
02_WALL						
WB-1	RESILIENT WALL BASE	JOHNSONITE		6"	66 EITHER ORE	
03_WALL						
	FIELD PAINT	PPG		PPG 1029-4	PHOTO GRAY	
P-2	ACCENT PAINT	PPG		PPG 1028-5	AUTUMN GRAY	
P-3	ACCENT PAINT	PPG		PPG 1027-6	CONSERVATION	
P-4	DOOR TRIM	PPG		PPG 1023-7	AFTERNOON TEA	
WCOV-1	WALLCOVERING	TRI-KES		2VBN-06 BANKWIRE	FERRIC	CONTACT: FRIEDA LUJAN 210.849.4726
WT-1	WALL TILE	STONEPEAK CERAMICS	12X12; RESTROOM WALLS	USG1212D184	GREY DINASTY	CONTACT: NANCY BECKER 210.241.4170; PROVIDE MATCHING WALL BASE & BULLNOSE
04_LAMIN	IATES & SOLID SURFACES					
	PLASTIC LAMINATE	WILSONART		TRACELESS FINISH 15505-31	BLACK VELVET	
QS-1	QUARTZ SURFACE	CAMBRIA	RESTROOM COUNTER & BACKSPLASH	COASTAL COLLECTION	SEAGROVE	CONTACT: ALLISON WHITE 832.499.4788
	RIOR FINISHES					
	ALUMINUM STOREFRONT MULLIONS	TUBELITE OR EQUAL		CLASS I - AAMA 611	DB-DARK BRONZE ANODIZED	
	AWNING FABRIC	SUNBRELLA		4618-0000	WALNUT BROWN TWEED	CONTACT: TOOD TRAUBE 210.259.1099
ST-1	WOOD STAIN	SHERWIN WILLIAMS		SPICEWOOD	SW 3021	

*COORDINATE W/ INTERIOR DESIGNER ON RESTROOM PARITION FINISHES



The Finesilver Building 816 Camaron, Suite 230 San Antonio, Texas 78212 Tel: 210.417.4307 www.openstudio-usa.com



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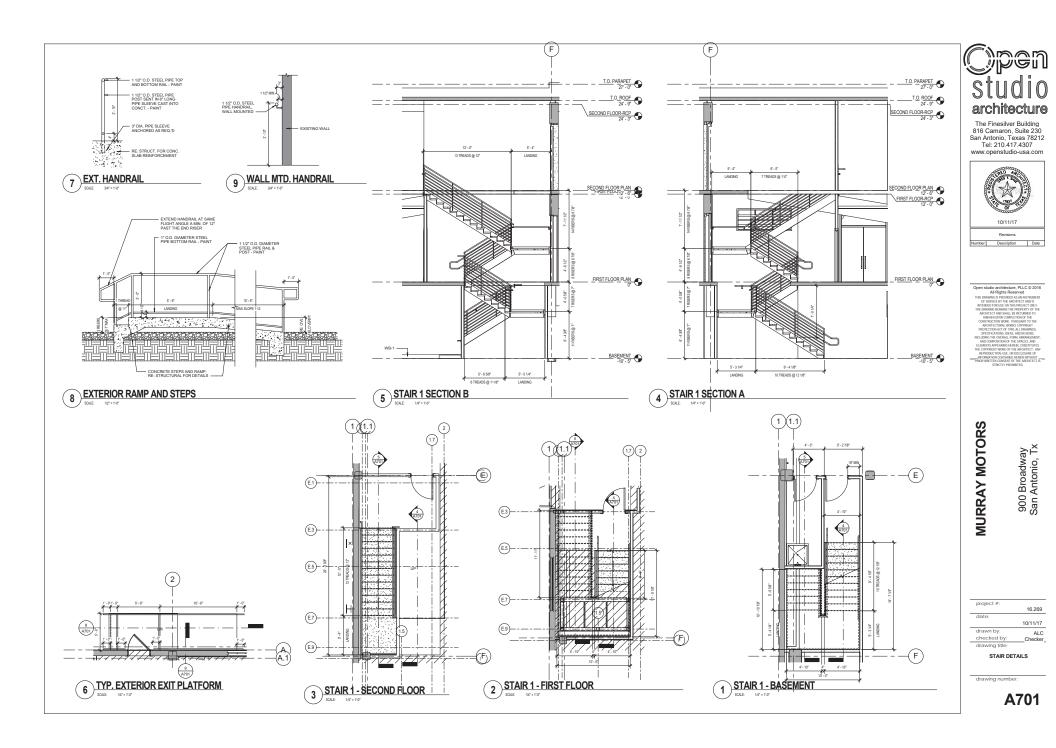
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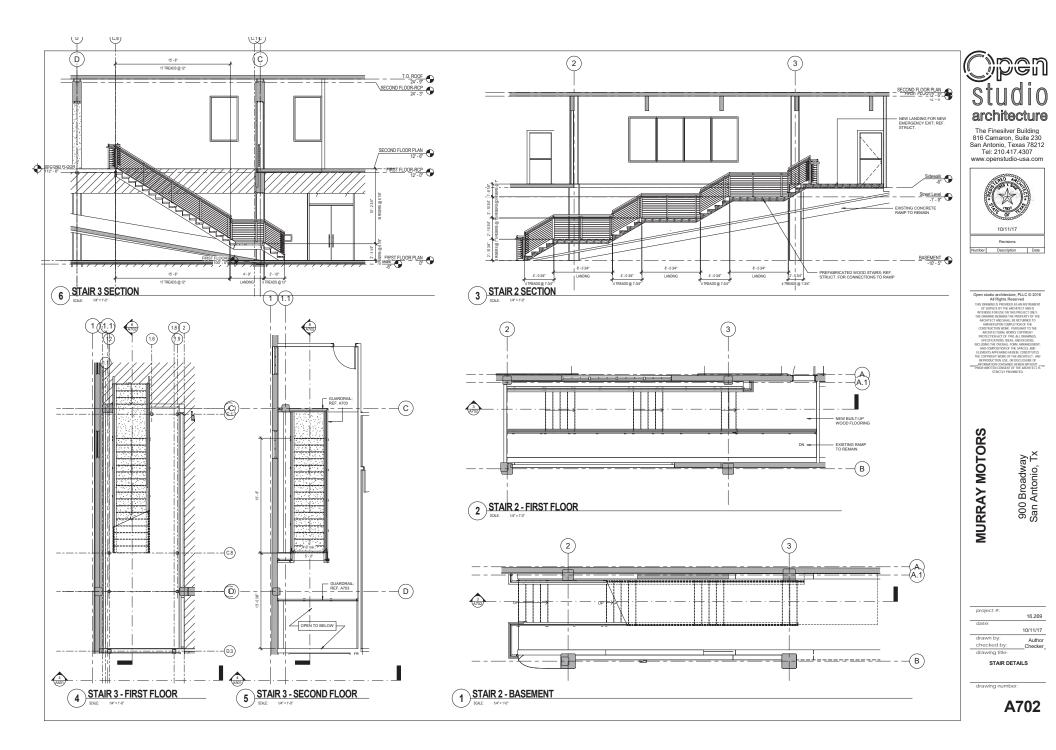
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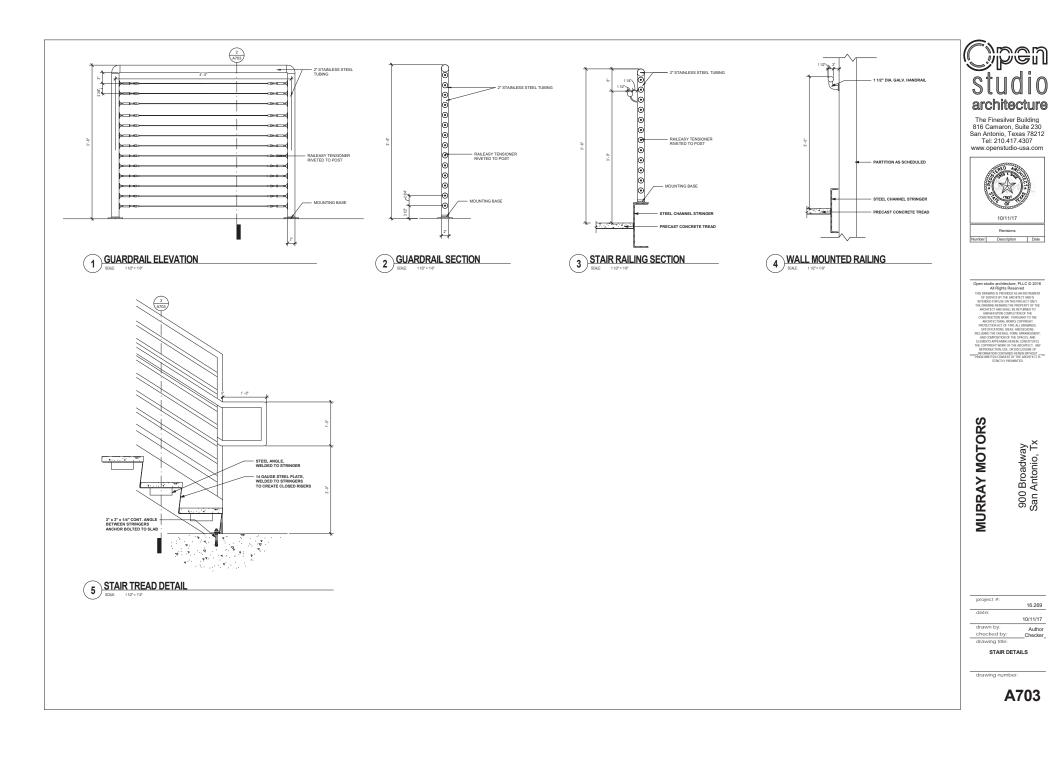


A610

drawing number:







STRUCTURAL NOTES

GENERAL:

- BUILDING CODE: IBC 2015 EDITION WITH CITY OF SAN ANTONIO AMENDMENT.
- GN-2 THE DETAILS DESIGNATED AS "TYPICAL DETAILS", APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN DETAILS.
- THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE REQUIREMENTS OF OTHER TRADES (ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ETC.) WITH THE STRUCTURAL DOCUMENTS PRIOR TO FABRICATION OR INSTALLATION OF ANY STRUCTURAL MEMBERS.
- THE CONTRACTOR AND FABRICATOR SHALL VERIFY ALL QUANTITIES, DMENSIONS AND CONDITIONS THOROUGHLY WITH THE CONTRACT DOCUMENTS AND THEN NOTIFY THE ARCHITECTERGINEER OF ANY DISCREPANCIES OR INCONSISTENCES BEFORE SUBMITTING SHOP DRAWINGS AND PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS FOR NUMERICAS
- UMERCADING. COMPLETED SHOP DRAVINGS SHALL BE PROVIDED, AS SPECIFIED, FOR ALL FABRICATED ITEMS AND SHALL BE REVENDED IN THE GENERAL CONTACTOR PROFIT OF ARBICATION. STRUCTURAL DRAVINGS UNITAL TERMINISTIC STRUCTURAL PROFILE TRUCTURAL DRAVINGS UNITAL TERMINISTIC STRUCTURAL PROFILE DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVEN SHOP DRAVINGS FOR THE LIMITED DRAVINGS. THE STRUCTURAL REVENER WILL REVENER SHOP DRAVINGS SHOP DRAVINGS SHOP DRAVINGS SHOP DRAVINGS SHOP DRAVINGS SHOP DRAVINGS SHULL BE SHOP DRAVINGS SHULL BE SHOP DRAVINGS SHULL BE SHOP DRAVINGS SHULL BE SHAP TO THE REVENER.

A CONCRETE MIX DESIGN FOR EACH TYPE OF CONCRETE TO BE USED. B. CONCRETE REINFORCING STEEL SHOP DRAWINGS INCLUDING PLACEMENT DRAWINGS AND CUT SHEETS. C. STRUCTURAL STEEL SHOP DRAWINGS. D. METAL DECK DRAWINGS.

- GN-6 SHOP DRAWINGS NOT PREVIOUSLY REVIEWED BY THE GENERAL CONTRACTOR SHALL BE RETURNED WITHOUT REVIEW BY STRUCTURAL ENGINEER. STRUCTURAL ENGINEER DOES NOT BEAR ANY RESPONSIBILITY OF THE STRUCTURAL MEMBERS BUILT WITHOUT APPROVED SHOP
- GN-7 GENERAL CONTRACTOR SHALL INSPECT JOB FOR COMPLETION BEFORE SCHEDULING ANY OBSERVATION BY THE ENGINEER.
- GN-8 SEE ARCHL, AND MEP DRAWINGS FOR LOCATIONS AND SIZES OF SLAB OPENINGS, SLEEVES, INSERTS, ANCHORS AND BOLTS REQUIRED BY VARIOUS TRADES.
- GN-9 ALL PLUMBING CONDUITS AT FOUNDATION SHOULD HAVE FLEXIBLE CONNECTIONS TO SUSTAIN A MAXIMUM DIFFERENTIAL MOVEMENT OF 1 INCH.
- GN-10 THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. CONTRACTOR SHALL CONSIDER ALL CONSTRUCTION LOADS APPLIED TO THE STRUCTURE. CONTRACTOR BHALL CONSERVATION CONSTRUCTION CONS. APPLED TO THE ENCLOSED PERMINENT VASIFIE CONSTRUCTION CONS. APPLED TO THE ENCLOSED PERMINENT VASIFIE CONSTRUCTIONS OWNER REQUERED STITLE CONSTRUCTION COLLEMENTS OF THE STRUCTURAL EXPOSATE CONTRACTOR SHALL PROVIDE OURFITUCTION COLLEMENTS OF THE STRUCTURAL EXPOSATE CONTRACTOR SHALL PROVIDE WHICH VERY THE MERING OF STRUCTURALLY MAINTAINING THE INTEGRITY OF THE CONFLICTION OF THE STRUCTURE.
- GN-11 THE CONTRACTOR IS SHALL BE RESPONSIBLE FOR CHECKING THE ADEQUACY OF THE STRUCTURE TO SUPPORT ALL CONSTRUCTION LOADS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE TO DESIGN OR CHECK THE STRUCTURE FOR CONSTRUCTION ACTIVITIES.
- GH-F ALL SPORED MISCLE MARCHS STEEL AND LATEL ANGLES SHALL BE CLEMED AND GALVANEED. DRY Y ANY CONTROL SHOT HE HIT OF PROCESS AND ACCORENT TO A.S.T.M. A723. WHEN APPLICABLE FIELD WELDS, BOLTED CONNECTIONS AND ABRADED AFEAS SHALL BE CLEMED AND TOUCHED BY WHIT GALVANDERD FRAME PART IN ALCORANCE WITH THE AND TOUCHED BY WHIT GALVANDERD FRAME PART IN ALCORANCE WITH DRY FLAL CONTAINED NO LESS THAN BYS ZIAC-DUST BY WEIGHT, AND COMPLYING WITH THE DDD 2-2103A C SSSPC-PART 20.
- GN-13 CONTRACTOR TO INCLUDE 1,000 POUNDS OF MISC. STEEL ISTRUCTURAL STEEL REINFORCING STEEL LIGHT GAGE STEEL AND MISC. STEEL IN HIS BID PRICE FOR INSTALLATION PER DESIGN TEAM IMEMERS. THIS ALLOWANCE SHOULD INCLUDE LABOR DURING ANYTIME OF CONSTRUCTION.
- GH-14 THE ENGINEER SHALL NOT HAVE CONTROL OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEMORY, METHODS, TECHNOLES, SECURISELSS, OR PROCEDURES, FOR ARETY OMISSIONS OF THE CONTROL OF SUBCONTRACTOR, OR ANY OTHER FREEMONS REPROPAUNG ANY OF THE WORK, OR FOR THE FALLIEE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACTOR DOLUMENT.
- GN-15 PERIOD: STE DISERVATIONS BY FELD DEPRESENTATIVES OF JPM CONSULTING EXCEPTION IN CONTRACT, INC. IN THE DEPRESENTATIVES OF JPM CONSULTING DOWNERS, INC. ARE 242 CLIST FOR THE DEPRESENTATIVES OF DETERMINANCE THE VICENCE THE DOWNERS OF THE DEPRESENTATION OF THE DEPRESENTATIVES OF JPM CONTRACT DOCUMENTS. THESE LIMITES DET GOSERVATIONA RAR FOR TIMEDRED TO BE A CHECK OF THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIOD: IN AN EFFORT TO INFOM THE OWNERS OF DEFECTS AND DEPRESENTATION.
- GP-16 ASSUMPTIONS HAVE BEEN MADE BY THIS OFFICE REGARDING EXSTING CONDITIONS. ACTUAL CONDITIONS MAY USE FROM THOSE ASSUMED. FIELD VERY EAR TATION OF EXSTING TIME TO A STATE AND A STATEMENT - GN-17 PROTECT ALL REMAINING EXISTING STRUCTURES. ANY DAMAGE TO AN EXISTING STRUCTURE SHALL BE REPAIRED TO EQUIVALENT OR BETTER CONDITION.
- GN-18 PROVIDE CONTROL JOINTS AT 15'-0' ON CENTER MAXIMUM FOR ALL BRITTLE FINISHES, UNLESS NOTED OTHERWISE BY ARCHITECT..
- GN-19 IF CONFLICT EXISTS BETWEEN DRAWINGS, NOTES, AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS SHALL GOVERN.

SCHEDULE OF SITE OBSERVATIONS BY ENGINEER

- \$0.1 ALL STRUCTURAL ELEMENTS OF THE BUILDING SHALL BE OBSERVED BY THE STRUCTURAL ENGINEER'S REPRESENTATIVE DURING THE CONSTRUCTION PHASE, SO THAT A FINAL LETTER OF COMPLIANCE CAN BE PROVIDED TO THE OWNER AND/OR BUILDING AUTHORITY.
- PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE STRUCTURAL ENGINEER TO SET UP A SCHEDULE FOR THE FOLLOWING OBSERVATIONS.
- A. CONCRETE: FOR EACH CONCRETE POUR UNLESS NOTED OTHERWISE BY THE ENGINEER. SEE NOTE 5 OF CONCRETE AND CONCRETE REINFORCEMENT.

B. STRUCTURAL STEEL: BEFORE CONNECTIONS AND STRUCTURAL MEMBERS ARE HIDDEN BY INSTALLATION OF ARCHITECTURAL FINISHES.

C. STRUCTURAL FLOOR/ROOF DECK: BEFORE WELDING AND/OR SCREWS ARE HIDDEN BY

D. NOTIFY ARCHITECT AT LEAST 24 HOURS BEFORE EACH SITE OBSERVATION IS REQUIRED TO ALLOW TIME FOR ARRANGEMENTS TO BE MADE WITH ENGINEER FOR SITE OBSERVATION.

NOTE: THESE STRUCTURAL OBSERVATIONS ARE THE REQUIREMENTS OF THE STRUCTURAL BENERIER AND DOES NOT INCLUDE OR WANTE THE RESPONSIBILITY FOR THE STRUCTURAL BENINEER REQUIRED BY OHMFTER 17 OF THE 2018 INTERNATIONAL BUILDING COL: SPECUL INSPECTION SHALL BE PERFORMED BY THE SPECIAL INSPECTOR WHO SHALL BE HIRED BY OWNER TO MEET CHAPTER TO F BIC 2015.

- METAL DECK:
- CONCRETE AND CONCRETE REINFORCEMENT: STRUCTURAL CONCRETE SHALL BE IN ACCORDANCE WITH THE CODE APPLICABLE EDITION OF "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318)", THE AMERICAN
 - ALL CONCRETE REINFORCEMENT SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL, CONFORMING TO ASTM A 615, GRADE 60, EXCEPT WELDABLE REBARS ASTM A706, GR. 60, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A168, GRADE 70°
- CN-3 DETAIL REINFORCING BARS AND PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH
- CN-4 ALL REINFORCING SHALL BE PROPERLY CHAIRED AND TIED PER ACI 315 (SP66) AND CRSI (PLACING REINFORCING BARS) PRIOR TO PLACING CONCRETE.
- CN-5 PLACEMENT OF ALL REINFORCING STEEL SHALL BE OBSERVED BY THE ENGINEER PRIOR TO CONCRETE PLACEMENT UNLESS APPROVED OTHERWISE.

ALL CONCRETE SHALL BE NORMAL WEIG				
OTHERWISE. AGGREGATE SHALL MEET	ASTM C33 R	EQUIREME	NTS, AND SHALL BE 3/4"	" TO 1 1/2"
NOMINAL AGGREGATE SIZE. CONCRETE	ON METAL	DECK IS TO	UTILIZE 3/4" MAXIMUM	
AGGREGATE. PROVIDE ADMIXTURES AS	REQUIRED	TO IMPROV	E WORKABILITY, THE G	ENERAL
CONTRACTOR SHALL COORDINATE SLUB	MP REQUIRE	MENTS UN	LESS NOTED OTHERWIS	SE IN
STRUCTURAL DOCUMENTS. PLASTIC CC	NCRETE TE	MPERATUR	E SHALL NOT EXCEED 9	90
DEGREES PRIOR TO PLACEMENT. ALL C	ONCRETE S	HALL BE CL	JRED FOR A MINIMUM O	F 7 DAYS
USING MOIST CURING PROCEDURES, OR	CURING CO	MPOUNDS	WHICH WILL NOT INTER	RFERE
WITH THE BONDING OF FINISH THEFT OF	ORS NO FLY	ASH SHAL	I BE USED AT ARCHITE	CTURALLY
EXPOSED CONCRETE WITHOUT PRIOR A	PPROVAL F	ROM ARCHI	TECT THE ELYASH COM	TENT
SHALL NOT EXCEED THE PERCENTAGE (OF CEMENTI	TIQUS MAT	FRIALS SHOWN BELOW	IN
ADDITION TO ABOVE THE CONCRETE SH	ALL MEET T	HE FOLLOW	ING REOLIREMENTS	
ADDITION TO ADOVE THE CONCILETE ON	POLL MILLI I	IL I OLLON	nito ne gontemento.	
DESCRIPTION OF LISE	fc	MAX W/C	ELYASH CONTENT	
SLAB-ON-GRADE	3.000 PSI	N/A	25% MAX	
CONCRETE ON METAL DECK		0.5	25% MAX	
FOOTINGS	3 000 PSI		25% MAX	

- PROVIDE A SET OF CYLINDERS IN ACCORDANCE WITH ASTM C 31 TO BE TAKEN BY AN INDEPENDENT TESTING LAB AT THE FREQUENCY SPECIFIED IN ACI 318 AND THE GOVERNING BULDING CODE WITH LOCAL AMENDMENTS. COMPRESSION TEST RESULTS SHALL BE REPORTED TO THE ENGINEER WITHIN 24 HOURS. CN-7
- CN-8 NO SUBSEQUENT CONSTRUCTION WILL BE ALLOWED UNTIL CONCRETE HAS REACHED 75% OF DESIGN STRENGTH.
- CN-9 PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE VII.
- CN-10 NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED WITHOUT THE SPECIFIC APPROVAL OF THE STRUCTURAL ENGINEER. CN-11 CONCRETE COVER SHOULD BE AS FOLLOWS:
 - A. FOOTINGS AND OTHER PRINCIPAL STRUCTURAL MEMBERS IN WHICH CONCRETE IS CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3 INCHES.
 - B. WHERE CONCRETE SURFACES, AFTER REMOVAL OF FORMS, ARE EXPOSED TO WEATHER OR EARTH:
- C. WHERE SURFACES ARE NOT DIRECTLY EXPOSED TO WEATHER OR EARTH:

- CM-12 MECHANICAL AND ELECTRICAL CONDUIT CAN NOT BE PLACED IN BEAMS PARALLEL TO BEAM REINFORCING. PROVIDE A NUMMIM OF 1 12° CLEAR BETWEEN CONDUIT AND PARALLEL REINFORCING. DO NOT BUILDE' CONDUITS CONDUITS SHALL BE PLACED IN THE MIDDLE ONE THIRD OF THE SLAB THICKNESS OR BEAM DEPTH.
- CN-13 SET AND BUILD INTO FORM WORK ANCHORAGE DEVICES AND OTHER EMBEDDED ITEMS REQUIRED FOR OTHER WORK THAT IS ATTACHED TO OR SUPPORTED BY CAST-IN-PLACE CONCRETE. REBAR PROJECTING FROM CONCRETE SHALL BE SECURED IN PLACE PRIOR TO PLACING CONCRETE.

DEFERRED DESIGN SUBMITTAL:

CN-2

CN-6

SUBMITTALS LISTED IN DD-2 ARE TO BE DESIGNED, DETAILED, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS. SEE PLANS AND SPECIFICATIONS FOR DESIGN REQUIREMENTS OF THESE ELEMENTS. DD-1

DD-2	ITEM	RESPONSIBLE FOR SHOP	RESPONSIBLE FOR INSPECTION
	o LIGHT GAUGE METAL	STRUCTURAL ENGINEER AND	BUILDING INSPECTOR (COSA)

STUDS	BUILDING INSPECTOR (COSA)	

- MD-1 ALL GALVANIZED (600 EXCEPT WHERE EXPOSED TO WEATHER, USE G90) METAL ROOF DECK SHALL BE FURNISHED WITH A MINIMUM TWO SPAN CONDITION, UNLESS NOTED OR DETAILED OTHERWISE, ROOF DECK 202 EIS NOTED ON THE PLANS AND SHALL CONFORM TO THE FOLLOWING MINIMUM, SECTION PROPERTIES: A. ALL ROOF DECK EXCEPT AS NOTED (SUPPORTS SPACED NOT MORE THAN 6'-0 o.c.) 1 1/2", TYPE "B", 22 GAGE, o I = 0.169 IN 4/FT.
 - o Sp = 0.186 IN 3/FT o Sn = 0.192 IN 3/FT o Fy = 33,000 PSI
 - B. WHERE NOTED AS 1.0' DEEP DECK (SUPPORT SPACED NOT MORE THAN 4'0'o.c.) 1.0', TYPE E, 26 GAGE
 - o I = 0.041 IN 4/FT.

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o Sp = 0.067 IN 3/F1
o Sn = 0.071 IN 3/F1
o Fy = 60,000 PSI
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- MD-2 ROOF DECK COMPLYING WITH THE CODE APPLICABLE EDITION OF THE STEEL DECK INSTITUTE SHALL BE ATTACHED TO SUPPORTING MEMBERS TO RESIST A DIAPHRAGM SHEAR FORCE OF THE FOLLOWING:
- A. (TYP. ROOF DECK ATTACHMENT U.N.O.) TYP. 1.5B DECK SHALL BE ATTACHED TO ALL SUPPORTING MEMBERS WITH 5/8° DM. PUDDLE WELDS IN 4 3/85 PATTERN. PROVIDE MINIMUM 4 #10 TEK SCREW SIDE LAP FASTENERS PER SPAN.
- MD-3 ALL FIELD WELDING OF DECK SHALL BE IN STRICT ACCORDANCE WITH ANSIAWS D1 3 STRUCTURAL WELDING CODE SWEET STEEL. EACH WELDER MUST DEMONSTRATE AN ABILITY TO PRODUCE SATISFACTORY WELD SUSING A PROCEDURE SUCH AS SHOWN IN STEEL DECK INSTITUTE MANUAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STEEL DECK IN STRUCTURE ANALIAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STEEL DECK IN STRUCTURE ANALIAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STEEL DECK IN STRUCTURE ANALIAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STEEL DECK IN STRUCTURE ANALIAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STEEL DECK IN STRUCTURE ANALIAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STEEL DECK IN STRUCTURE ANALIAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STEEL DECK IN STRUCTURE ANALIAL OF CONSTRUCTION WITH STEEL DECK OR AS DESCRIE STRUCTURE ANALIAN ANALIA
- MD-4 PAINTED STEEL FLOOR DECK SHALL CONFORM TO LATEST EDITION OF ASTM A683, STRUCTURAL QUALITY (Fy = 60KSI). OTHER PROPERTIES SHALL HAVE THE FOLLOWING MINIMUMS:
 - FLOOR DECK: DEPTH
 - A. DECKING SHALL BE CONTINUOUS OVER AT LEAST 3 SUPPORTS. EACH DECKING PANEL SHALL BE ATTACHED TO SUPPORTING WITH 88" DIA. ARC PUDDLE WELDS WITH WELDING WASHERS AND TO ADJACENT PANELS WITH #10 SELF-TAPPING SCREWS AT THE SPACING DIPOLITION OF ADJACENT PANELS WITH #10 SELF-TAPPING SCREWS AT THE SPACING

- MD-5 WIRE MESH SHALL BE A LAPPED MINIMUM OF 8". MESH SHALL BE CHAIRED AS REQUIRED TO MAINTAIN A 1" CLEAR COVER FROM TOP OF SLAB.
- MD-6 DECK MANUFACTURER SHALL FURNISH SHEET METAL CLOSURES BETWEEN FLOOR UNITS AND BEAMS, GIRDERS OR COLUMNS AS REQUIRED. THESE ACCESSORIES SHALL BE OF THE TYPE REQUIRED BY THE STEEL DECK INSTITUTE.
- MD-7 DECK MANUFACTURER SHALL FURNISH RIDGE, VALLEY PLATES, AND FLAT PLATES AT CHANGE OF DECK DIRECTION TO PROVIDE A FINISHED SURFACE FOR THE APPLICATION OF ROOF INSULATION AND ROOF COVERING.
- MD-8 PRIOR TO START OF FABRICATION, STEEL FABRICATOR SHALL PROVIDE COMPLETE ERECTION AND FABRICATION DRAWINGS SHOWING LAYOUT AND TYPES OF DECK PANELS, ANCHORAGE DETALS, SUPPLEMENTARY FRAMING AND ALL ACCESSORIES.

DESIGN LOADS:

- DL1 DEAD LOADS INCLUDE THE WEIGHT OF CONSTRUCTION MATERIALS INCORPORATED INTO THE BUILDING, INCLUDING BUT NOT LIMITED TO WALLS, FLOORS, ROOFS, CELINGS, STARRWAYS, BUILT-IN PARTITIONS, FINISHES, CLADDING AND OTHER SIMILARIVI INCORPORATED ARCHITECTURAL AND STRUCTURAL ITEMS, AND FXED SERVICE EQUIPMENT. ALL DEAD LOADS ARE CONSIDERED PERMANNET LOADS INMUNIM ROOF DEAD LOAD IS 2N PSF OR ACTUAL LOAD WHICHEVER IS LARGER.
- DL2 DEAD LOADS FOR MECHANICAL UNITS ARE BASED ON THE WEIGHTS OF EQUIPMENT, AS INDICATED ON THE STRUCTURAL DRAWINGS INCLUDING THE WEIGHT OF CONCRETE PADS, WHERE INDICATED), ANY CHARGES IN TYPE, SEL LOCATION OR NUMBER OF PIECES OF EQUIPMENT SHOLD BE REPORTED TO THE ARCHITECT FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING INDIREST RENT OT THE PLACEMENT OF SUPPORTING INDIREST OF PIECES OF
- DL-3 UNIFORM DESIGN LIVE LOADING IS AS FOLLOWS: ROOF
 OFFICES + PARTITIONS.....
 LOBBIES & FIRST FLOOR CORRIDORS.......

DL-4 ROOF LIVE LOADS MAY BE REDUCED.

- DL-6 WIND LOADS:
- WIND LOADS:
 II

 O RISK CATEGORS WIND SPEED, Vul.
 II

 0 ALDWARLE DESIGN WIND SPEED, Vul.
 72 MPH

 0 ALDWARLE DESIGN WIND SPEED, Vul.
 72 MPH

 0 EXPOSITE CATEGORY.
 10"

 0 FROSURE CATEGORY.
 10"

 0 INTERNAL PRESSURE COEFFICIENT.
 4" 0.18

 0 FOR COMPONENTS AND CLADING GROSS WIND PRESSURE, SEE DL 9.
 100 MPRESSURE, SEE DL 9.

DL-8 UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS FOR FUTURE FLOORS, ROOFS OR OTHER LOADS.

DL-9 COMPONENTS AND CLADDING PRESSURES:

R	DOF PRESS	SURES		W	ALL PRESS	SURES
	TRIBUTARY	AREA (PSF)			TRIBUTARY	AREA (PSF)
ZONE	10 SQ. FT.	100 SQ. FT.		ZONE	10 SQ. FT.	500 SQ. FT.
1	35.2/-38.5	32.0/-32.0	1	4	38.5/-41.7	28.7/-32.0
2	35.2/-45.0	32.0/-38.5		5	38.5/-51.5	28.7/-32.0
3	35.2/-45.0	32.0/-38.5				
			1			

NOTE: 1. REFER TO ASCE 7-10 FOR DEFINITION OF 'a' DIMENSION

<u>)</u>Den SS-1 STRUCTURAL STEEL SHALL CONFORM TO THE 2010 'SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS' OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, AISC 380-10. SS-2 WELDING: CODE APPLICABLE EDITION OF THE STRUCTURAL WELDING CODE - STEEL, AMERICAN WELDING SOCIETY (AWS D1.1 AND AWS D1.3). architecture

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INCLUDING THE OVERALL FORM, ARRANGENERY, ADD COMPOSITION OF THE SPACES, AND ELEMENTS APPEARING HEREIN, CONSTITUTES THE OOPVIGHTUN WORK OF THE ARCHTECT. NAM REPROJUCTION, USE, OR DISCLOSURE OF INFORMATION CONTAINED HEREIN WITHOUT PRIOR WRITTEN CONSENT OF THE AROHTECT IS STRECTLY PROHIBITED.

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10-11-2017

J.Z. / S.S.T.

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MOTOR

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checked by:

drawing title

STRUCTURAL NOTES drawina number:

S1.1

date

CATION

Tak

816 Camaron, Suite 230

- SS-3 VERIFY THE EXACT SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS FOR MECHANICAL AND ELECTRICAL REQUIREMENTS AND COORDINATE WITH MECHANICAL AND ELECTRICAL CONTRACTOR PRIOR TO FABRICATION OF MATERIALS. SS-4 STEEL SHALL BE MEET THE FOLLOWING REQUIREMENTS:
- WIDE FLANGES.......ASTM A992 Gr. 50 OTHER ROLLED SHAPES, PLATES, BARS.....ASTM A36 OTHER ROLLED SHAPES, PLATES, BARS.......ASTM A36 PIPE (Fy 35ksi)............ASTM A53 Gr. B TUBE (Fy 46ksi).......ASTM A500 Gr. B

STRUCTURAL STEEL:

- S56 STEEL SHALL BE CLEANED PER SSPC-SP2 STEEL SHALL BE PAINTED WITH ONE SHOP COAT OF RED OXIDE PRIMER, MINIMUM OF 1.5 MLS (DRY FLM THICKNESS). DO NOT PANT STRUCTURAL STEEL AND ANCHOR RODS THAT ARE TO BE EMBEDDED IN CONCRETE OR TO RECEIVE FIREPROOFING.

MINIMUM SIZE OF F	ILLET WELDS
MATERIAL THICKNESS OF THINNER PART JOINED, IN	MINIMUM SIZE OF FILLET WELD, IN.
TO 1/4 INCLUSIVE	3/16
OVER 1/4 TO 1/2	1/4
OVER 1/2 TO 3/4	5/16
OVER 3/4	3/8
LEG DIMENSION OF FILLE	

- S5-7 BOLTED BEAM CONNECTIONS SHALL BE SIMPLE FRAMED SHEAR CONNECTIONS USING A.S.T.M. A2009 BOLTS AND SHALL BE IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL ACCONNECTIONS SHALL BE "IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL CONNECTIONS SHALL BE "INACONOMIC TO THE "SPECIFICATION FOR STRUCTURAL CONNECTIONS SHALL BE "INACONOMIC TO THE SPECIFICATION FOR STRUCTURAL LOWIS USING HEAT STRUCTURE LOWING THE SPECIFICATION FOR STRUCTURAL LOWIS USING HEAT STRUCTURE LOWING THE SPECIFICATION FOR THE OTHERWISE IN THE CONSTRUCTION DOLUMENTS THE CONNECTIONS MUST BE DESIGNED TO SIRPORT ONE-THE THE TOTAL UNCONCLUDE APACITY SHOWING THE "DOWNING THE CONSTRUCTION DOLUMENTS THE CONNECTIONS MUST BE DESIGNED TO SIRPORT ONE-THE THE TOTAL UNCOULD APACITY SHOWING THE "DOWNING THE CONSTRUCTION DOLUMENTS THE CONNECTIONS MUST BE DESIGNED THE CONSTRUCTION DOLUMENTS THE CONNECTIONS MUST BE DESIGNED TO SIRPORT ONE-THE TOTAL TWO MOLIL APACITY AND AND THE "DOWNING THE CONSTRUCTION DOLUMENTS THE CONNECTIONS MUST BE DESIGNED TO SIRPORT ONE-SIRPORT TO BE ACCOUNT ON THE "DOWNING THE CONSTRUCTION DOLUMENTS THE CONNECTIONS MUST BE DESIGNED THE CONSTRUCTION DOLUMENTS THE CONNECTIONS MUST BE DESIGNED TO SIRPORT ONE-SIRPORT TO BE ACCOUNT ON THE "DOWNING THE DESIGNED THE CONSTRUCTION DOLUMENTS THE CONSTRUCTION DESIGNED THE CONSTRUCTION DOLUMENTS THE DESIGNED DEFENDED THE DESIGNED TO CONSTRUCT THE DESIGNED ONE TO THE "DOWNING THE DESIGNED THE DESIGNED ONE CONNECTIONS MUST BE DESIGNED TO THE DESIGNED THE DESIGNED ONE CONNECTIONS MUST BE DESIGNED TO THE DESIGNED THE DESIGNED ONE CONNECTIONS MUST BE DESIGNED TO THE DESIGNED THE DESIGNED ONE TO THE DESIGNED ONE TO SHOP TO SHOP TO DOWNING THE DESIGNED THE DESIGNED ONE TO SHOP TO SHOP TO SHOP SHOP TO DEFENSE THE DESIGNED THE DESIGNED ONE SHOP TO SHOP THE DESTRUCTION DESIGN ONE TO SHOP TO SHOP TO SHOP THE DESTRUCTION DESIGN ONE TO SHOP TO SHOP TO SHOP TO SHOP TO SHOP THE DESTRUCTION DESTRUCTIONS DOLT THE MUST DESTRUCT DEFENSE THE DES
 - IN FRAMED BEAM CONNECTIONS, WELDS MAY BE SUBSTITUTED FOR BOLTED CONNECTIONS ACCORDANCE WITH TABLE 10.2 OF THE AISC MANUAL OF STEEL CONSTRUCTION. TO OBTAIN AN ALL WELDED CONNECTION IT IS RECOMMENDED SUCH CONNECTIONS BE CHOSEN FROM TABLE 10.3 OF THE AISC MANUAL OF STEEL CONSTRUCTION.

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- THE CONTRACTOR SHALL REVIEW SHOP AND FIELD WELD REQUREMENTS FOR COMPATIBILI WITH THE CONSTRUCTION SEQUENCE. PROPOSED REVISIONS FROM SHOP TO FIELD WELDS OR FROM FIELD TO SHOP WELDS SHALL BE IDENTIFIED BY THE CONTRACTOR ON THE SHOP DRAWINGS.
- SS-10 DRY PACK SHALL BE 5,000 PSI FIVE STAR NON-SHRINK GROUT OR EOUIVALENT. INSTALL DRY PACK UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED. AT COLUMNS, INSTALL DRY PACK UNDER BASE PLATES AFTER COLUMN HAS BEEN PLUMBED BUT PRIOR TO FLOOR OR ROOF INSTALLATION. SS-11 NO MECHANICAL UNITS (SUCH AS A/C UNITS, HEATER UNITS, ETC.) ARE TO BE HUNG FROM STRUCTURE, UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.

SS-12 CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL EXISTING CONSTRUCTION DURING ALL FIELD WELDING OPERATIONS. A FIRE EXTINUISHER SHALL BE ON THE JOB SITE AND IN THE IMMEDIATE WORKING AREA OF ALL FIELD WELDING.

SS-13 CONTRACTOR SHALL PROVIDE STRUCTURAL STEEL AND MISCELLANEOUS STEEL REQUIRED BY THE ELEVATOR MANUFACTURER FOR A COMPLETE INSTALLATION OF ELEVATOR AND DUMBWATER.

S5-14 ROLLED MEMBER SIZES / THICKNESSES INDICATED ON THE STRUCTURAL DRAWINGS ARE REQUIRED MINIMUMS TO MEET STRENGTH AND DEFLECTION REQUIREMENTS. MEMBER THICKNESSES CAN BE INCREASED AS REQUIRED TO ACCOMMONTE ROLLIPS FABRICATO REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER OR DESIGN TEAM MEMBERS.

SS-15 COORDINATE ALL EXPOSED BOLTED AND WELDED CONNECTIONS WITH ARCHITECTURAL DETAILS. ALL WELDS EXPOSED TO VIEW SHALL BE CLEANED AND GROUND SMOOTH.

SPECIAL INSPECTIONS

	CIAL INSPECTIONS NOTES: SECULA INSPECTIONS NOTES: SECULA INSPECTION WORK IN OTI NALIDED IN THE STRUCTURAL ENGINEERS SECURED BY AUTHORITES HAVING JURISCICTION AS THE RESPONSIBILTO'D THE OWIRE. ALL AUSPECTION REPORTS TAULLE CORPED TO THE STRUCTURAL ENGINEER, AND A FAULLETTER OF COMPAUANCE SHALL BE PROVIDED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CANARE (TYPICALLY AGAINANCE SHALL BE PROVIDED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CANARE (TYPICALLY AGAINST CONTRACTION REPORTS THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CANARE (TYPICALLY AGAINST CONTRACTION REPORTS THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CANARE (TYPICALLY AGAINST CONTRACTION REPORTS TO REPORTS)	
	SPECIAL INSPECTION SHALL INCLUDE:	CONCR
	o SITE PREPARATION (NOT REQUIRED)	CONCR
	 PIER FOUNDATION (NOT REQUIRED) 	1. Inspe
	o CONCRETE	prestres
	o WOOD (NOT REQUIRED)	2. Reinf
	o WELDING OF STRUCTURAL STEEL	a. Ve
	 STEEL ELEMENTS OF COMPOSITE CONSTRUCTION (NOT REQUIRED) 	an b Ins
	o BOLTING OF STRUCTURAL STEEL	c. Ins
	o STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL	c. ins
	o MASONRY I (NOT REQUIRED)	3. Inspe
	o MASONRY II (NOT REQUIRED)	
SP-2	INSPECTOR QUALIFICATIONS: QUALIFICATIONS LISTED NTHE TESTING A INSPECTION REQUIREMENTS TAILES ARE RECOMMENDATIONS OF THE LOCAL MEERISG OF THE TEXTS COUNCL OF EXIMPLEMENTS TAILES ANAL RECOMMENDED THAT THE SPECIAL INSPECTORS SHOULD BE EMPLOYED BY AN AGENCY ACCREDITED BY ANY NATIONALLY RECOMPLEXED ACCREDITING BODY SHOULD AS ANSHITO, ALXIN, NUAP, ICC ETC	4. Insper a. Ad po
SP-3	DEFINITIONS AG-MERICAN CONCRETE INSTITUTE ADSCARD-ADSC: THE INTERNATIONAL ASSOCIATION OF FOUNDATION DRILING ADSC-MERICAN AND TITUTE OF STEEL CONSTRUCTION ADSC-MERICAN AND ADDRESS OF ADDRESS ADST-MERICAN ADDRESS OF ADDRESS ADST-MERICAN ADDRESS OF ADDRESS ADST-MERICAN ADDRESS OF ADDRESS ADST-MERICAN ADDRESS OF ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS POI - PRECASTFREESTRESSED OWNERETE INSTITUTE POI - PRECAST	5. Verify
SP-4	TESTING AND INSPECTION DIRECTED BY ASTM E329 GUIDELINES WHERE NOTED $^{m x}$ ON THE TESTING & INSPECTION REQUIREMENTS TABLES.	specime slump ar
SP-5	THE SPECIAL INSPECTOR CANNOT BE AN EMPLOYEE OF THE CONTRACTOR.	tempera

44% THE SECURE VARIATION A UNKNO THE RESULTED OF HEAD OF FARMOND. THE SECURE UNSPECTOR SHALL VERY THAT THE SECURE VARIATION AND ADDRESSING SAVE SAVE SHOP FARMOND. THE SECURE UNSPECTOR SHALL VERY THAT INSPECTOR CONTROL OF THE WORKMASHER AND THE FARMONDES ADDRESSING TO PREVIDE TO PREVENT BEREFETTION CONTROL OF THE WORKMASHER AND THE FARMONDES ADDRESSING TO THE CONTROL OF THE WORKMASHER WORK IS PERFORMED ON THE PREVIDENCE OF THE THAT THE SECURE OF AND ADDRESSING TO PREVENT TO THE CONTROL WORK IS PERFORMED ON THE PREVENTS OF A TARGENTIATION THAT IS INFOLLED IN A NATIONALLY ACCEPTED TO PREVENT PROGRAM AND ESTIMATION (INCLUDENT ADDRESSING). A DRESSING THAT THE WORK AND FERENCES TO PREVENT WORK IS PERFORMED ON THE PREVENTS OF A TARGENTIATION THAT IS INFOLLED IN A NATIONALLY ACCEPTED TO PREVENT PROGRAM AND CONTROL FOR THE PREVENTS OF A TARGENTIATION TO THE CONTROL TO PREVENT ADD TO THE REGISTERED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ACCEPTED DESIGNAL IN DRESSINGLIC CARRES STATING THAT THE WORK WAS PERFORMED IN ADD TO THE REGISTERED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD TO THE REGISTERED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD TO THE REGISTERED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD TO THE REGISTERED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD TO THE REGISTERED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD TO THE REGISTERED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD THE PERFORMED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD THE PERFORMED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD THE PERFORMED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD THE PERFORMED DESIGNAL IN RESPONSIBLE CARRES STATING THAT THE WORK WAS PERFORMED IN ADD THE PERFORMED DESIGNAL DO STATING THAT THE PERFORMED IN ADDRESSING THAT THE THE THAT

	G STRUCTURAL		
Required Verification and Inspection BOLTING STRUCTURAL STEEL	Frequency of Verification and Inspection	IBC Section and Reference Standard IBC 1705.2	Inspector Qualifications
1. Inspection tasks prior to bolting:			
a. Manufacturer's certifications available for fastener materials	Periodic	IBC 1705.2.1; AISC 360-10 C-N5.6-1: Structural Steel Notes	CWI/Associate/ Technical Graduate, AWS or
 Fasteners marked in accordance with ASTM requirements 	Periodic	on construction documents and specification section	CRSI
c. Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane) ¹	Periodic	05120	
d. Proper bolting procedure selected for joint detail	Periodic		
 Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements. 	Periodic		
 Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used 	Continuous		
g. Proper storage provided for bolts, nuts, washers and other fastener components	Periodic		
2. Inspection tasks during bolting:			
 Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required² 	Periodic	IBC 1705.2.1; AISC 360-10 C-N5.6-2: Structural Steel Notes on construction	CWI/Associate/ Technical Graduate, AWS or CRSI
 Joint brought to the snug-tight condition prior to the pretensioning operation? 	Periodic	documents and specification section 05120	
c. Fastener component not turned by the wrench prevented from rotating ²	Periodic		
d. Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	Periodic		
3. Inspection tasks after bolting:			
a. Document acceptance or rejection of bolted connections	Continuous	AISC 360-10 C-N5.6-3	CWI/Associate/ Technical Graduate AWS or CRSI
4 homeotics to be noted in this table are the second like	of the Presid Increase	er er Ouelik: Annuenen lenneste	· (OAD The febricator -

 Inspection tasks noted in this table are the responsibility of the Special Inspector or Quality Assurance Inspector (QAI). The fabricator and erector are responsible for all inspection tasks indicated in AISC 360-10 Section N5 and assigned to the Quality Control Inspector (QCI) Inspection tasks may be coordinated with the fabricator or erector's Quality Control Inspector (QCI) where indicated with this footnote. All other tasks shall be performed by the Special Inspector.

CONCRETE CONS	TRUCTION	
Frequency of Verification and Inspection	IBC Section and Reference Standard	Inspector Qualifications
Periodic	IBC 1908.4; ACI 318: 20, 25.2, 25.3, 26.5.1-26.5.3; Concrete and Concrete Reinforcement Notes on construction documents and Specifications	*Qualifications based on ASTM E329
Periodic	AWS D1.4; ACI 318: 26.5.4; Concrete and Concrete	CWI or
Periodic	construction documents and	Associate CWI
Continous	Specifications	
Periodic	ACI 318: 17.8.2; Specifications	Technician trained in field of work and has at least one year of experience
te members.		
Continous	ACI 318: 17.8.2.4; Specifications	Technician trained in field of work and AC
Periodic	ACI 318: 17.8.2; Specifications	Adhesive Anchor Certil
Periodic	IBC 1904.1., 1904.2, 1908.2, 1908.3; ACI 318: Ch. 19, 26.4.3, 26.4.4; Concrete and Concrete Reinforcement Notes on construction documents and Specifications	* Qualifications based on ASTM C1077
Continuous	IBC 1908.10; ASTM C 172, C31; ACI 318: 26.4.5, 26.12; Concrete and Concrete Reinforcement Notes on construction documents and Project Specifications	Qualifications based on ASTM C1077
N/A	IBC 1908.6, 1908.7.7, 1908.8; ACI 318: 26.4.5; Project specifications	* Qualifications based on ASTM C1077
Periodic	IBC 1908.9; ACI 318: 26.4.7-26.4.9; Concrete and Concrete Reinforcement Notes on construction documents and Project Specifications	* Qualifications based on ASTM C1077
	-	
N/A	ACI 318: 26.902.1, 26.9.2.3; Post-Tensioned Notes on	* Qualifications based on
N/A	and project specifications	ASTM C1077
N/A	ACI 318: 26.8; Structural Notes on conctruction documents and Project Specifications	
N/A	ACI 318: 26.10.2; Post-Tensioned Notes on construction documents and project specifications	* Qualifications based on ASTM C1077
Periodic	ACI 318: 26.10.1(b); Details on construction documents and Project Specifications	
	Concerte conservation of the second s	Vertification and Impaction Reference Standard BC 1705.3 BC 1705.4 ACI 316:20,25.2 Periodic BC 1705.4 ACI 316:20,25.2 Periodic ACI 316:20,25.4 ACI 316:20,25.2 Periodic ACI 316:20,25.4 ACI 316:20,25.2 Periodic ACI 316:20,25.2 ACI 316:20,25.2 Periodic ACI 316:17,8.2 Specifications Periodic ACI 316:17,8.2 Specifications Periodic ACI 316:17,8.2 Specifications Periodic ACI 316:17,8.2 Specifications Remote ACI 316:17,8.2 Specifications Periodic ACI 316:17,8.2 Specifications Periodic ACI 316:17,8.2 Specifications Periodic ACI 316:17,8.2 Specifications Periodic ACI 316:17,8.2 Specifications Rec 1908.1, 6.004.2 Specifications Contences Reinforement More Decoredic Reinforement More Contences Reinforement More Contences Reinforement More Rec 1908.1, 6.004.7, 1908.2 Specifications Specifications <t< td=""></t<>

STEEL CONSTRUCTION	I AND SPECIAL IN ON OTHER THAN S BC TABLE 1705.2.	STRUCTURAL STEEL	
Required Verification and Inspection	Frequency of Verification and Inspection	IBC Section and Reference Standard IBC 1705.2	Inspector Qualifications
1. Material verification of cold-formed steel deck:			
 Identification markings to conform to ASTM standards specified in the approved construction documents 	Periodic	IBC 1705.2.2; Applicable ASTM Materials Standards; Structural Steel Notes	CWI/Associate/ Technical Graduate, AWS or CRSI
b. Manufacturer's certified test reports	Periodic	on construction documents and specifications	
2. Inspection of welding other than structural steel:			
a. Cold-formed steel deck:			CWI/Associate/
1) Floor and roof deck welds	Periodic	AWS D1.3	Graduate, AWS or CRSI
b. Reinforcing steel:		IBC 1705.2.2; AWS D1.4: ACI 318:	1
 Verification of weldability of reinforcing steel other than ASTM A706 	Periodic	D1.4; ACI 318: Section 3.5.2; concrete and concrete reinforcement notes	
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear terinforcement.	Continuous	on construction documents and specifications	
3. Shear reinforcement	Continuous		
4. Other reinforcement steel	Periodic	1	

WELD	ING OF STRUC	ISPECTION TASKS FC <u>FURAL STEEL</u> 1, C-N5.4-2, C-N5.4-3)	R
Required Verification and Inspection	Frequency of Verification and	IBC Section and Reference Standard	Inspector Qualifications
WELDING OF STRUCTURAL STEEL	Inspection	IBC 1705.2	
 Inspection tasks prior to welding: 			
a. Welding procedure specifications (WPSs) available	Continuous	IBC 1705.2.1; AISC 360-10 C-N5.4-1:	
 Manufacturer certifications for welding consumables available. 	Continuous	AWS D1.1; Structural Steel Notes on construction	CWI and ASNT or Licensed Engineer
c. Material identification (type/grade)	Periodic	documents and specification section 05120	
d. Welder identification system?	Periodic	05120	
 e. Fil-up of groove weld (including joint geometry) 1) Joint preparation. 2) Dimensions (alignment, root opening, root face, bevel) 3) Clearitiness (condition of steel surfaces) 4) Tacking (tack weld quality and location) 4) Backing type and fit (if applicable) 	Periodic		
f. Configuration and finish of access holes.	Periodic		
g. Fit-up of fillet welds ² 1) Dimensions (alignment, gaps at root) 2) Cleanliness (condition of steel surfaces) 3) Tacking (tack weld quality and location) 4) Exposure control	Periodic		
2. Inspection tasks during welding:			
a. Use of qualified welders	Periodic	IBC 1705.2.1; AISC 360-10 C-N5.4-2: AWS D1.1: Structural	CWI and ASNT or Licensed Engineer
 b. Control and handling of welding consumable\$ 1) Packaging 2) Exposure control 	Periodic	AWS D1.1; Structural Steel Notes on construction documents and	
c. No welding over cracked tack welds	Periodic	specification section 05120	
 d. Environmental conditions 1) Wind speed within limits 2) Precipitation and temperature 	Periodic		
e. WF95 followed ² 1) Settings on weld equipment 2) Travel speed 3) Setected welding materials 4) Shelding gas type/flow rate 5) Preheat applied 6) Interpass temperature maintained (min./max.) 7) Proper position (F, V, H, O, H)	Periodic		
f. Welding Techniques ² 1) Interpass and final cleaning 2) Each pass within profile limitations 3) Each pass meets quality requirements.	Periodic		
Inspection tasks after welding:			
a. Welds cleaned	Periodic	IBC 1705.2.1; AISC	CWI and ASNT or
b. Size, length and location of welds	Continuous	360-10 C-N5.4-2: AWS D1.1; Structural Steel Notes on	Licensed Engineer
c. Welds meet visual acceptance criteria 1) Crack Prohibition 2) Weldbase-metal fusion 3) Crister cross section 4) Weld size 6) Weld size 6) Undercut 7) Porosity	Continuous	construction documents and specification section 05120	
d. Arc strikes	Continuous		
e. k-area ³	Continuous		
f. Backing removed and weld tabs removed (if required) Continuous		
g. Repair activities	Continuous	_	
h. Document acceptance or rejection of welded joint or member	Continuous		

footnote. All other tasks shall be performed by the Special Inspector. 3. When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75 mm) of the weld.



S1.2

SPECIAL INSPECTIONS



The Finesilver Building 816 Camaron, Suite 230 San Antonio, Texas 78212 Tel: 210.417.4307 www.openstudio-usa.com



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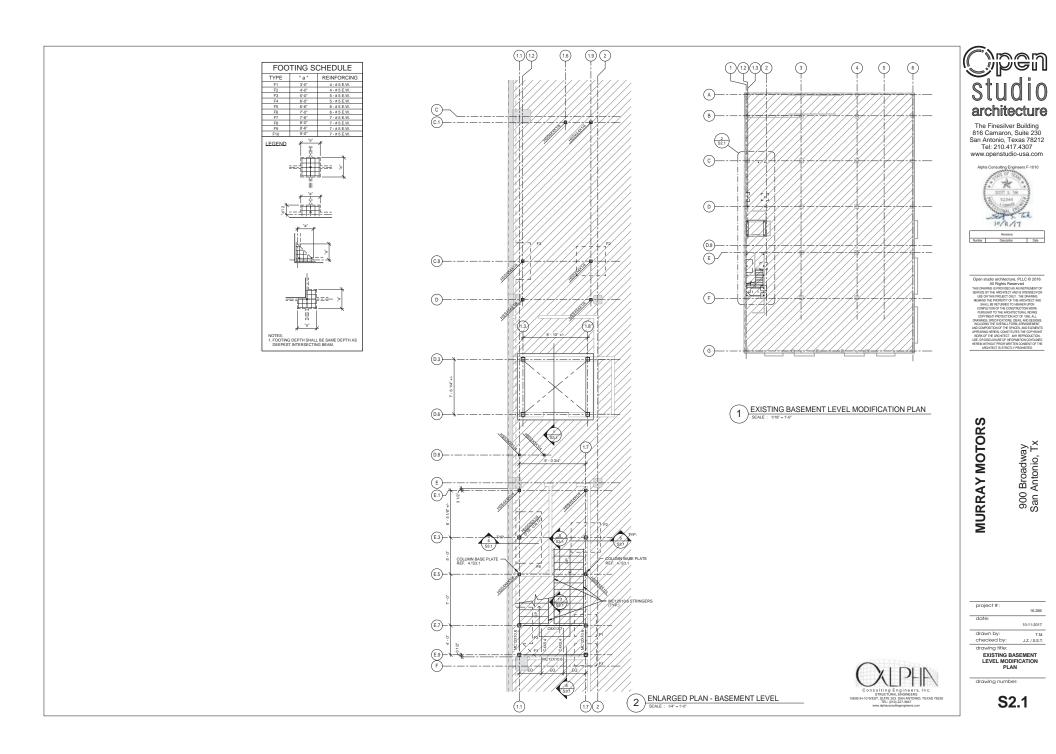
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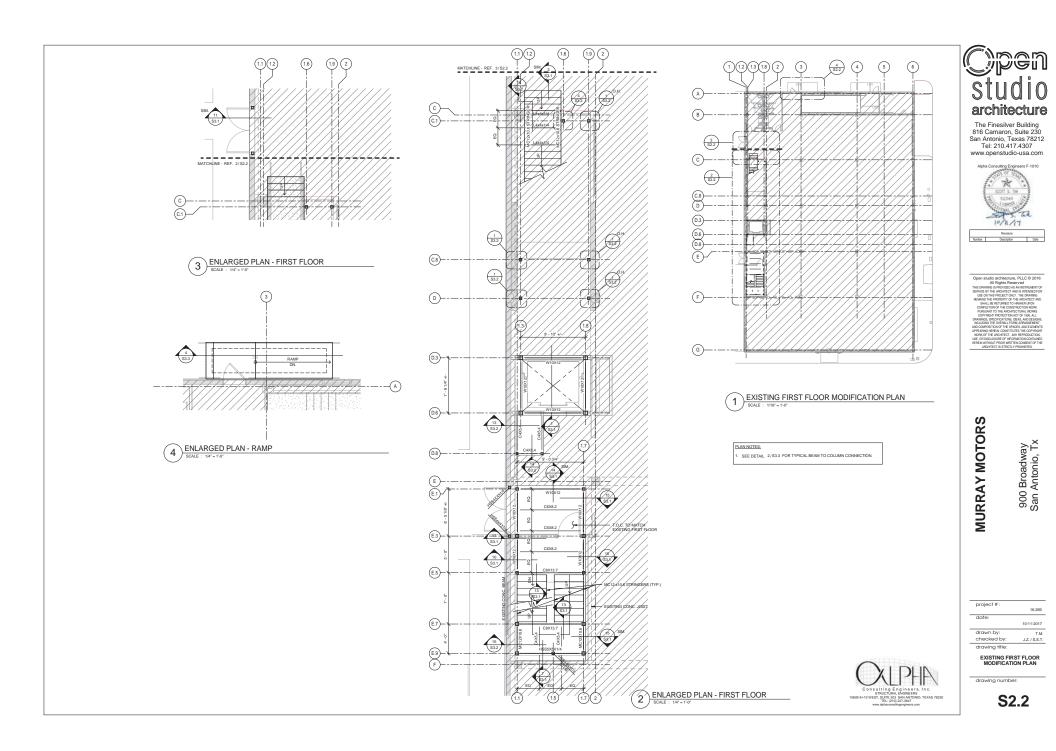
MURRAY MOTORS

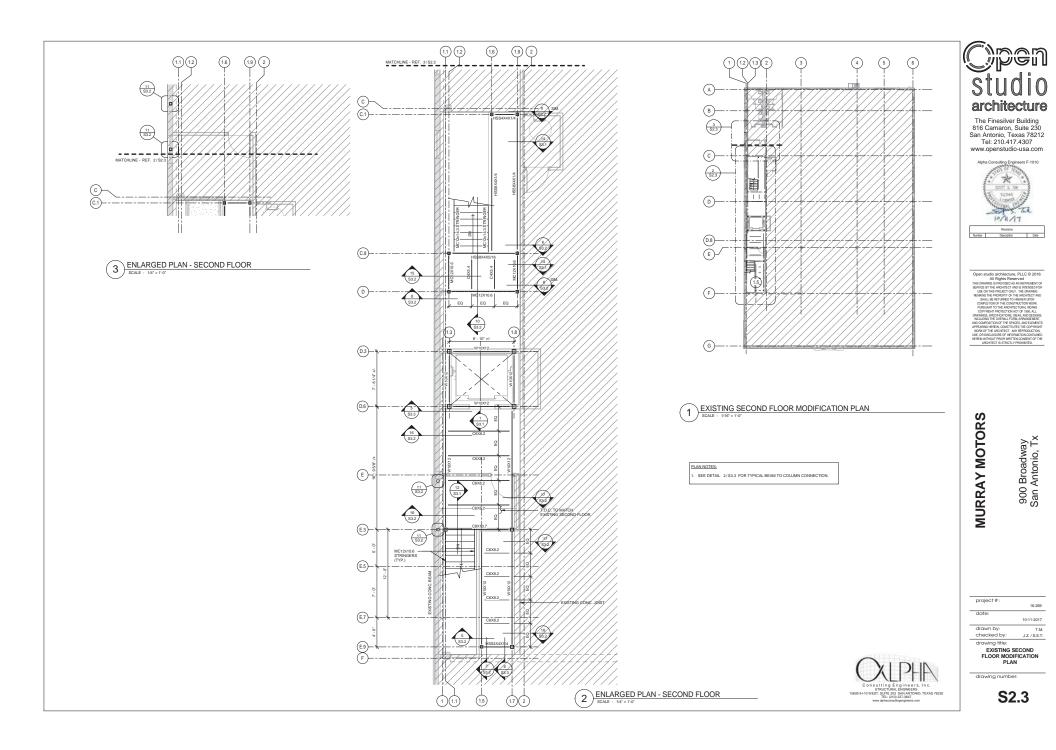
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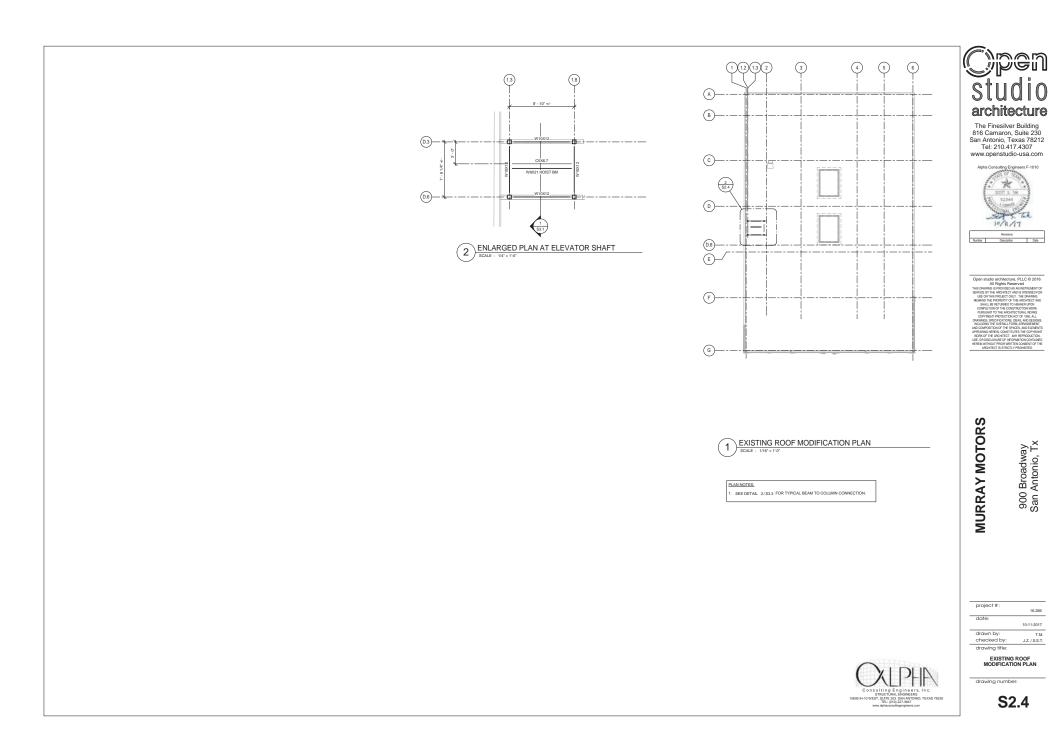
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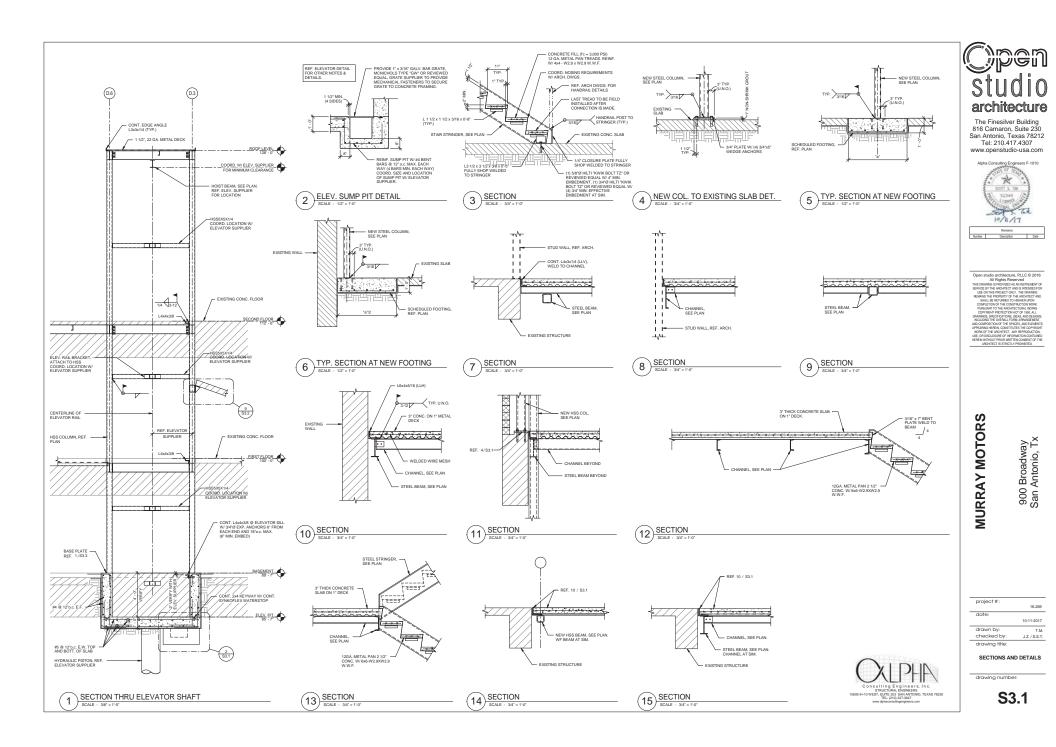
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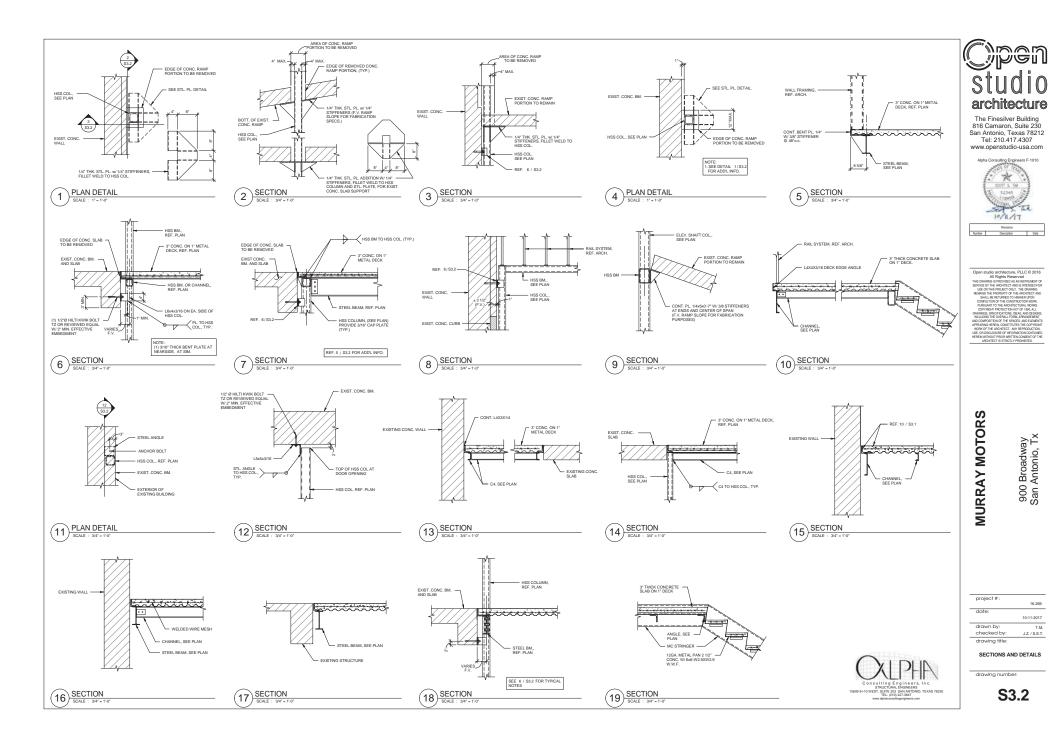


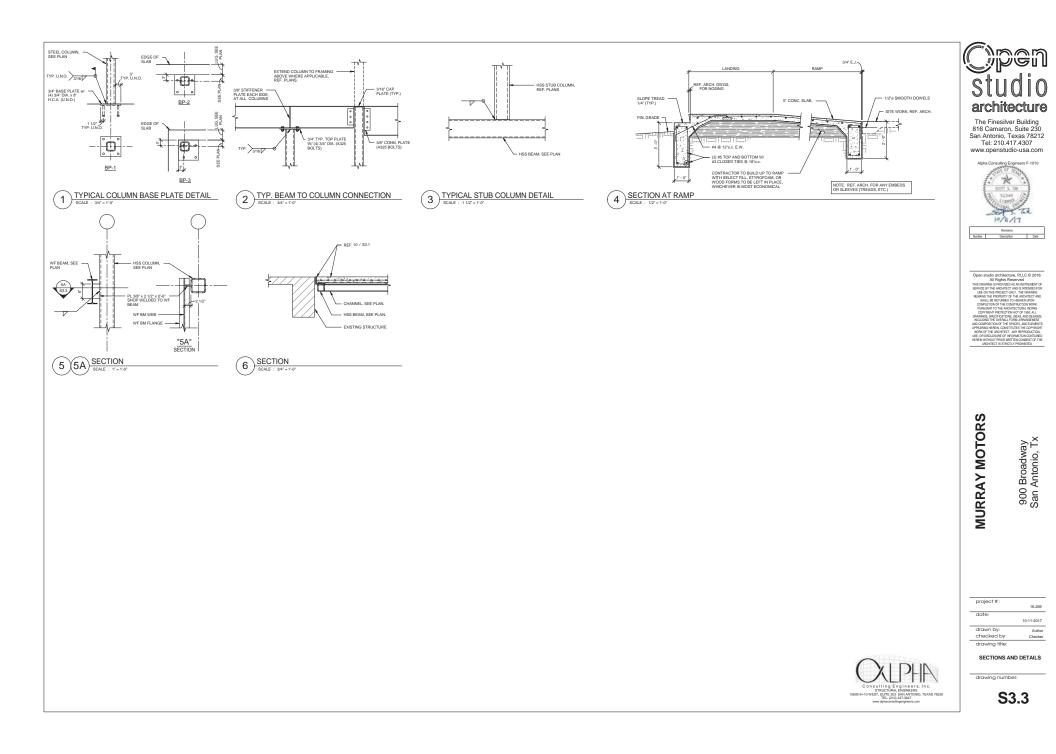


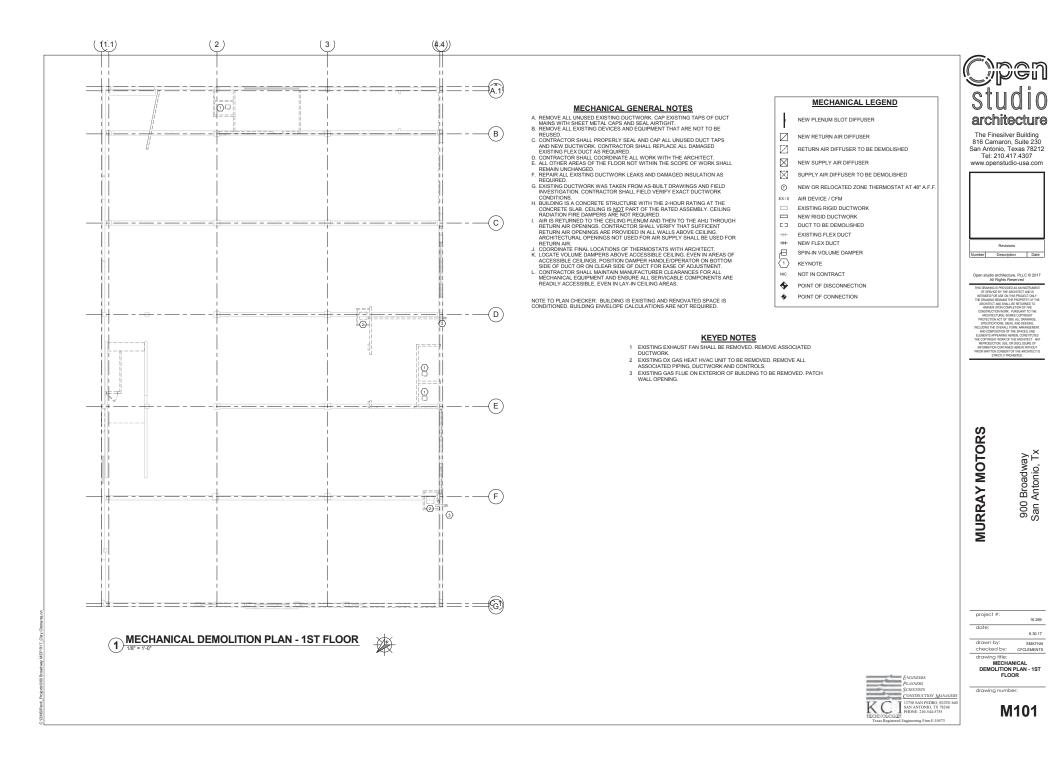


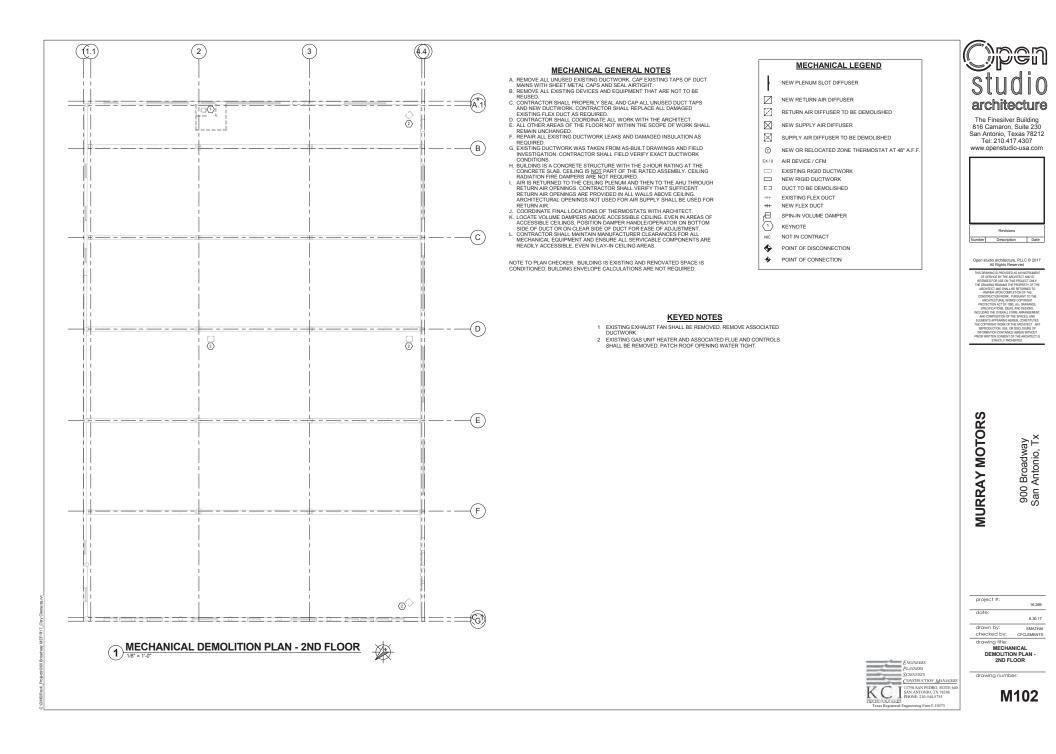


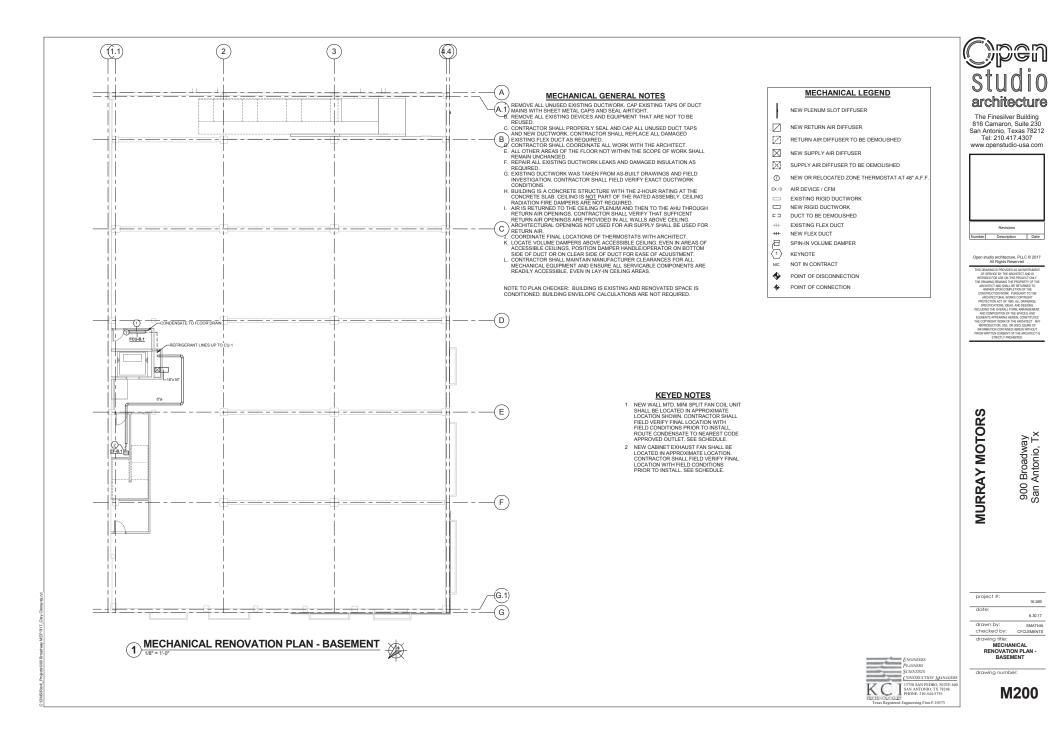


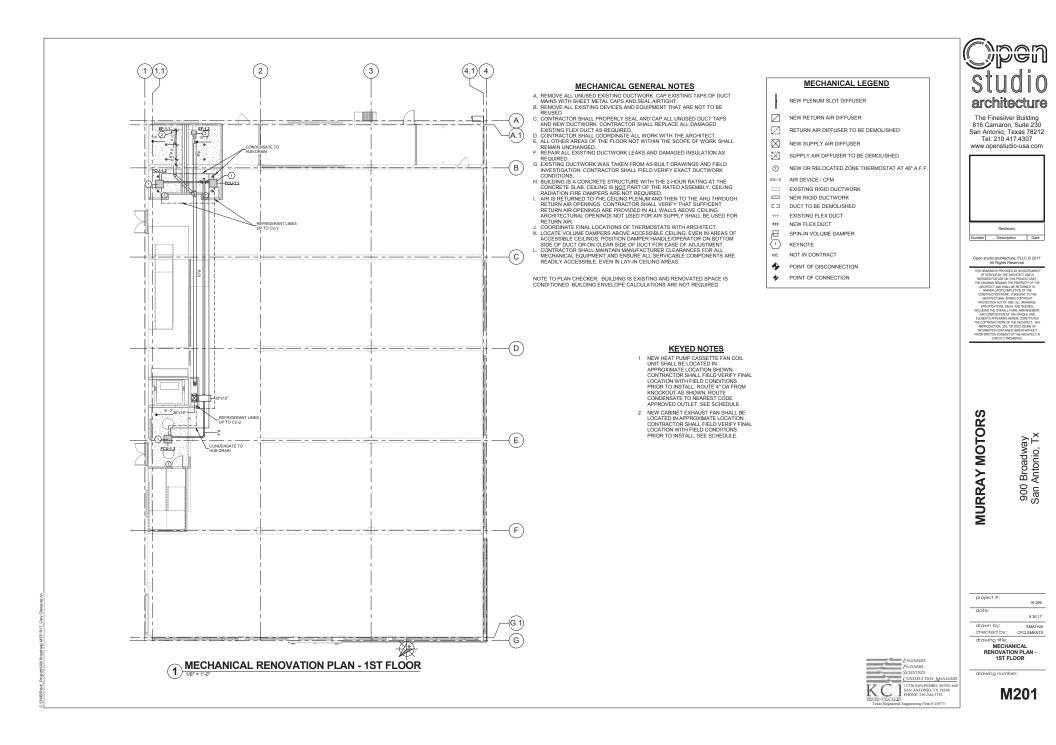


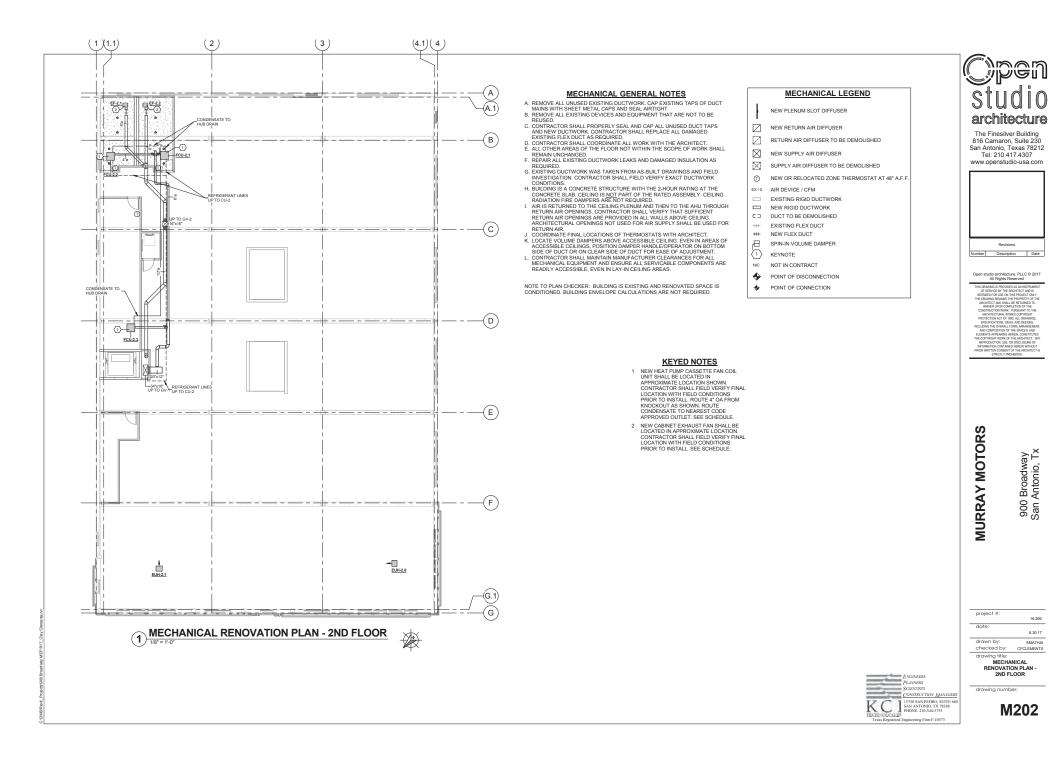


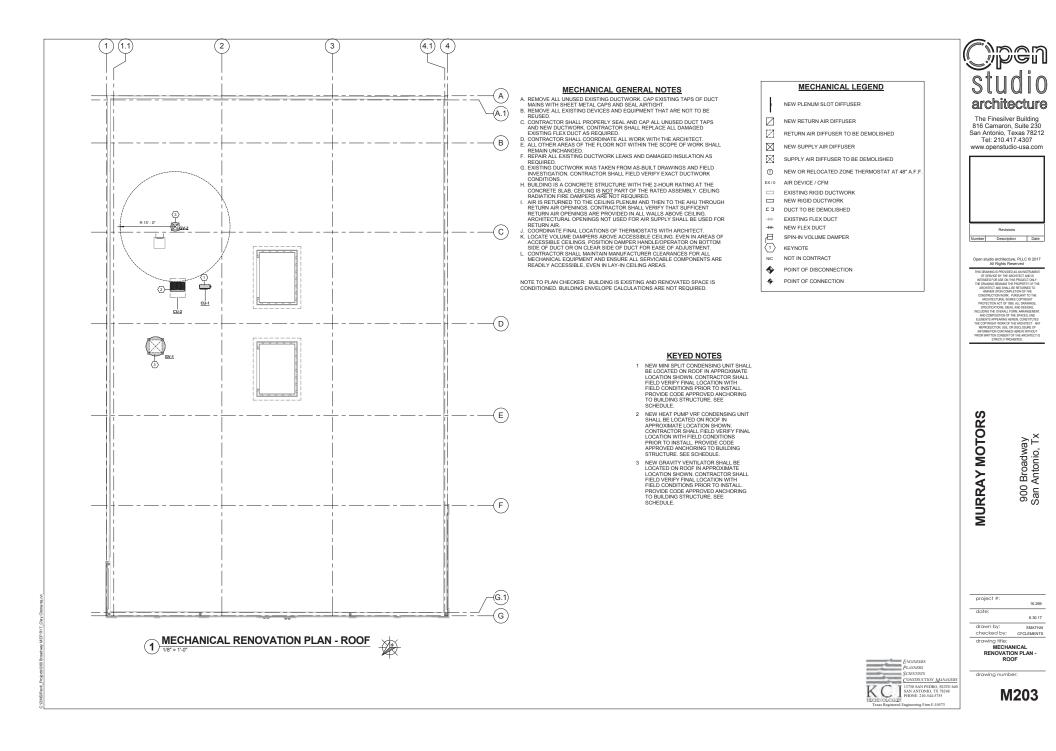












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	Revisions		
Number	Description	Date	

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MURRAY MOTORS



drawing number:

	ENGINEERS
and the second division of the second divisio	PLANNERS
-	SCIENTISTS
_	CONSTRUCTION MANAGERS
KCI	13750 SAN PEDRO, SUITE 640 SAN ANTONIO, TX 78248 PHONE: 210-544-5755
Texas Registered	Engineering Firm F-10573

M300

AIR DEVICE SCHEDULE

TAG	SERVICE	MANUFACTURER AND MODEL	FACE SIZE	NECK SIZE	CFM	FINISH	MATERIAL	NOTES
				6"ø	0-180			
A	SUPPLY	TITUS OMNI LAY-IN	24"x24"	8"ø	181-235	WHITE	STEEL	1,2
				10"ø	236-405			
в	RETURN	24"x24"			WHITE	STEEL		

INOUT TAKEO PROVIDE OPP BLADE DAMPER AT EAG
 INSULATE SLOT DIFFUSER PLENUMS

GRAVITY VENTILATO PROJECT: MURRAY MOTORS	OR SCHEDULE	
TAG	GV-1	GV-2
SERVICE	O.A. INTAKE	EXHAUST
AREA SERVED	ALL FLOORS	1ST & 2ND RRs
AIR FLOW, CFM	3,900	375
MAX. STATIC PRES., IN. W.C.	0.05	0.01
ACCESSORIES		
INSECT SCREEN	YES	YES
DAMPER	NO	NO
ROOF CURB	YES	YES
NOTES	1,2,3	1,2
GREENHECK MODEL OR EQ.	GRSI 42	GRSR 16
NOTES: 1. COORDINATE FINISH WITH A 2. PROVIDE ALL REQUIRED AC 3. EACH FLOOR IS DESIGNED	CESSORIES FOR FULL	OPERATION.

	SERVICE	EXHAUST
	AREA SERVED	JANITORS

BACKDRAFT DAMPER

FAN SPEED CONTROLLER

GREENHECK MODEL OR EQ.

FAN SCHEDULE PROJECT: MURRAY MOTORS

TAG

FAN TYPE	CABINET FAN	CABINET FAN
AIR FLOW CFM	75	150
EXT. STATIC PRES	0.5" WG	0.5" WG
DRIVE	DIRECT	DIRECT
MOTOR DATA	80 W	128 W
VOLTS/PH/CYCLES	115/1/60	115/1/60
ACCESSORIES		
FACTORY DISCONNECT	NO	NO

YES

YES

SP-B110

EF-B.1

EF-1.1,2; EF-2.1,2

EXHAUST

1ST & 2ND RRs

YES

YES

1

SP-B150

NOTES: 1. FAN SHALL BE CONTROLLED BY TIME CLOCK. SET TIME CLOCK TO OCCUPIED HOURS WHICH COULD DIFFER FROM BUSINESS HOURS.

NOTES



SYSTEM NUMBER	1
SERVICES	EQUIP. ROOM
FAN COIL	
TAG	FCU-8.1
CONFIGURATION	WALL MOUNTED
SUPPLY CFM	745
FAN (FLA)	0.76
VOLTSIPHICYCLES	208/1/60
BTUH, SENS	12,500
BTUH, MAX	16,000
ENT DB/WB, "F	75/63
LVG DB/WB, "F	55/54
FILTER TYPE	WASHABLE
FACTORY DISCONNECT	YES
SINGLE POINT WIRING	YES
CONCEALED CONDENSATE PUMP	YES
REFRIGERANT	R-410A
DAIKIN MODEL OR EQUAL	FTK18NMVJU
CONDENSING UNIT	
TAG	CU-1
AMBIENT TEMP, "F	105
MINIMUM SYSTEM ARI SEER	14.5
SPEED	SINGLE
OPERATES DOWN TO, "F	14
VOLTSIPHICYCLES	208/1/60
MCAMOP	18.3/20
DAIKIN MODEL OR EQUAL	RK18NMVJU

VARIABLE REFRIGERANT HEAT PUMP SPLIT SYSTEM SCHEDULE

1.01	1.02	1.03	2.01	2.02	2.03
1ST FLOOR LOBBY	1ST FLOOR MENS RR	1ST FLOOR WOMENS RR	2ND FLOOR LOBBY	2ND FLOOR MENS RR	1ST FLOOR WOMENS RR
FCU-1.01	FCU-1.02	FCU-1.03	FCU-2.01	FCU-2.02	FCU-2.03
CLG CASSETTE	CLG CASSETTE	CLG CASSETTE	CLG CASSETTE	CLG CASSETTE	CLG CASSETTE
540	525	245	640	930	610
15	15	15	15	15	15
-				-	
10,700	10,400	5,200	13,400	19,300	12,400
14,200	12,800	7,600	14,400	20,800	14,400
75.9 / 61.5	75.7 / 60.6	76.4 / 62.8	75.4 / 60.2	75.4 / 60.2	75.6 / 60.5
55.0 / 52.2	55.0 / 51.9	55.0 / 52.1	55.0 / 52.1	55.0 / 52.1	55.0 / 52.1
9,500	9,100	4,600	11,000	15,600	10,500
WASHABLE /	WASHABLE /	WASHABLE /	WASHABLE /	WASHABLE /	WASHABLE /
208/1/60	208/1/60	208/1/60	208/1/60	208/1/60	208/1/60
0.9/15	0.9/15	0.8/15	0.7/15	1.3/15	0.9/15
YES	YES	YES	YES	YES	YES
YES	YES	YES	YES	YES	YES
R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
FXZQ18MNJU9	FXZQ18MNJU9	FXZQ09MNJU9	FXFQ24TVJU	FXFQ30TVJU	FXZQ18MNJU9
BRC1E73	BRC1E73	BRC1E73	BRC1E73	BRC1E73	BRC1E73
		CU	-2		
		88,3	800		
		90.8	323		
		10	8		
		9.	4		
		VARIA	ABLE		
		30	0		
		460/3	3/60		
		36.3	/45		
		R-41	10A		
		RXYQ96	STATJU		
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NOTES REQUIRED BTUHS ARE NET; FAN HEAT HAS NOT BEEN ACCOUNT. OUTSIDE AIR IS UNCONDITIONED AND DELIVERED DIRECTLY TO UNIT. PROVIDE KNOCKOUT AND APPLICABLE ACCESSORIES FOR FULL OPERATION. PROVIDE FIELD INSTALLED COL AND HAIL GAURD. PROVIDE FACTORY MTD, CONDENSATE PUMPS ON ALL FCUS. PROVIDE FACTORY MTD, CONDENSATE PUMPS ON ALL FCUS.



The Finesilver Building 816 Camaron, Suite 230 San Antonio, Texas 78212 Tel: 210.417.4307 www.openstudio-usa.com ٦

Revisions	

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900 Broadway San Antonio, Tx

MURRAY MOTORS

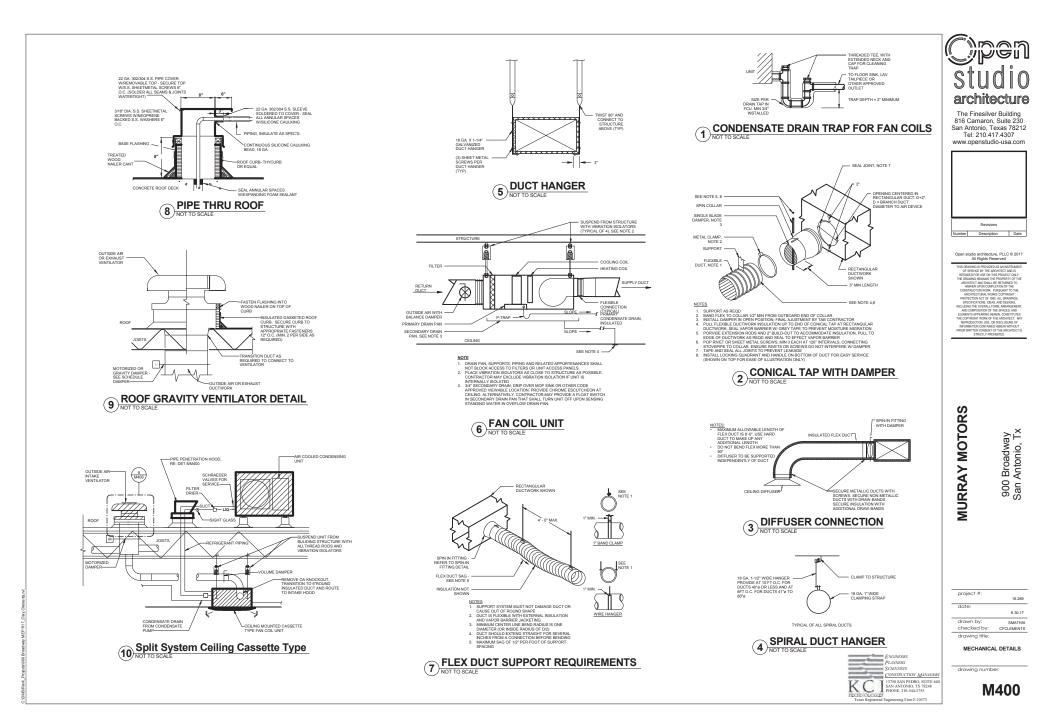


M301

PLANNERS SCIENTISTS

KC

CONSTRUCTION MANAGERS 13750 SAN PEDRO, SUITE 640 SAN ANTONIO, TX 78248 PHONE: 210-544-5755



HVAC DESIGN CRITERIA 76°F COOLING (MINIMUM ALLOWED BY 2015 IECC, SECTION C302.1) 72°F HEATING (MAXIMUM ALLOWED BY 2015 IECC, SECTION C302.1) HUMIDITY CONTROL: THIS PROJECT HAS NO DIRECT CONTROL OF HUMIDITY

OUTDOOR DESIGN CONDITIONS (SAN ANTONIO, TEXAS) PER 2017 ASHRAE FUNDAMENTALS HANDBOOK

IAPTER 14: 97.6°F DB, 73.6°F WB SUMMER; 29.9°F DB WINTER 3222 DEGREE DAYS COOLING; 1380 DEGREE DAYS HEATING CLIMATE ZONE 2A

CODE INFORMATION: APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO: CITY OF SAM ANTONIO BUILDING CODE: 2012 BIC, AMENDED CITY OF SAM ANTONIO MENDANCIAL CODE: 2012 UMC, AMENDED CITY OF SAM ANTONIO COMMERCIAL DERREGY CONSERVATION CODE: 2015 ECC AMENDED

FIRE AND SMOKE DAMPER REQUIREMENTS - 2006 IBC

FIRE WALLS (716.5.1): FIRE DAMPERS ARE REQUIRED

SHAFT ENCLOSURES (716.5.3): FIRE & SMOKE. EXCEPTIONS: (1.1) Fire damper not required in 22" vertical sub ducts in exhaust shafts with continuous upward flow to the

(1) table (12). In Group are comprised, and provide the comprised are comprised and provide the comprised are presented on the comprised are presented on the comprised are not required at presentations of a darka where belier isome enhanced genering are an installed with insteller where the comprised are not experiment of the shaft that its, provided on the comprised are the comprised are the comprised and the comprised are the comprised are not experiment of the shaft that its, provided comprised are the comprised are the comprised and the the conduct.

OUTSIDE AIR REQUIREMENTS: PER ASHRAE 62.1-2013 OFFICE CONFERENCE ROOMS: 5 CFM PER PERSON, 0.06 CFM PER SQ.FT. OFFICE SPACES: 5 CFM PER PERSON, 0.06 CFM PER SQ.FT.

ENERGY CODE PER 2015 IECC CHAPTER 5 (NOT ASHRAE 90.1) - MANDATORY

C403 2.1 Calculation of beating and cooling loads. Engineer has performed HVAC load calculations using Trace 700 C403.2.2 Equipment sizing. The output capacity of heating and cooling equipment shall be not greater than the loads calculated in accordance with Section C403.2.1. A single piece of equipment providing both heating and cooling shall satisfy this provision for one function with the capacity for the other function as small as possible, within available equipment options.

Exceptions: 1. Required slandby equipment and systems provided with controls and devices that allow such systems or equipment to operate automatically only when the primary equipment is not exercise. 2. Controls that have the capability to sequence the operation of each unit based on load.

C403.2.3 HVAC equipment performance requirements. Equipment shall meet the minimum efficiency requirements of Tables C403.2.3.

C403.2.4 HVAC system controls. Each heating and cooling system shall be provided with them C403.2.4.1 Thermostatic controls. The supply of heating and cooling energy to each zone shall be controlled by individual thermostatic controls capable of responding to temperature within the zone. Where humidification or dehumidification or both is provided, at least one humidity control device shall be provided for each humidity control. or control

C403.2.4.1.1 Heat pump supplementary heat. Heat pumps having supplementary electric resistance heat shall have controls that, except during defrost, prevent supplementary heat operation where the heat pump can provide the heating

C403.2.4.1.2 Deadband. Where used to control both heating and cooling, zone thermostatic controls sha temperature range or deadband of at least 5°F within which the supply of heating and cooling energy to it capable of being shut off or reduced to a minimum.

Thermostats requiring manual changeover between heating and cooling modes. Occupancies or applications requiring precision in indoor temperature control as approved by the code official

C403.2.4.1.3 Set point overlap restriction. Where a zone has a separate heating and a separate cooling thermostatic control located within the zone, a limit switch, mechanical edgo, or direct digital control systems with software programming shall be provided with the capability to prevent the heating set point from exceeding the cooling set point and to maintain a deadband in accordance with Section C403.2.4.1.2.

C403.2.4.2 Off-hour controls. Each zone shall be provided with thermostatic setback controls that are controlled by either an automatic time clock or programmable control system.

Exceptions: 1. Zones that will be operated continuously 2. Zones with a full HVAC load demand not exceeding 6,800 Btu/h and having a readily accessible manual shutoff

C403.2.4.2.1 Thermostatic setback capabilities. Thermostatic setback controls shall have the capability to set back or temporarily operate the system to maintain zone temperatures down to 55°F or up to 85°F.

C403.2.4.2.2 Automatic setback and shutdown capabilities. Automatic time clock or programmable controls shall bl capable of starting and stopping the system for seven offlerent daily schedules per week and relativing their programming and close the setting during a size of power for all east 10 hours. Addionally, controls shall have a manual override that allows temporary operation of the system for up to 2 hours, a manually operated timer capable of being adjuence to generate hypertext the system of rule brains. For allowing sensor. able controls shall be

C403.2.4.2.3 Automatic start capabilities. Automatic start controls shall be provided for each HVAC system. The controls shall be capable of automatically adjusting the daily start time of the HVAC system in order to bring each space to the design document tempeature immediative noir to scheduled occurrance.

C403.2.4.3 Shutoff dampers. Outdoor air intake and exhaust openings and stairway and shaft vents shall be prov with Class I motorized dampers. The dampers shall have an air leakage rate not greater than 4 dm/H^{*} of damper surface area at 10 inch water gauge and shaft be baleded by an approved agency when tested in accordance with

toor air intake and exhaust dampers shall be installed with automatic controls configured to close when the systems access everyed are not in use or during unoccupied period warm-up and seback operation, unless the systems de require outdoor or exhaust air in accordance with the international Mechanical Code or the dampers are opened

Stairway and shaft vent dampers shall be installed with automatic controls configured to open upon the activation of any fire alarm initiating device of the building's fire alarm system or the interruption of power to the damper.

Exception: Gravity (nonmotorized) dampers shall be permitted to be used as follows

In buildings less than three stories in height above grade plane.
 In buildings of any height located in Climate Zones 1, 2 or 3.
 Where the design exhaust capacity is not greater than 300 cfm

Gravity (nonmotivitied) dampers shall have an at leakage rate not greater than 20 ofmit²⁴ where not less than 24 inches in either dimension and 40 climb²⁴ where kess than 24 inches in either dimension. The rate of at leakage shall be determined at 13 lock nater gauge when lested in accordance with AMCA 5000 for such purpose. The dampers shall be labeled by an approved agency.

C403.2.6 Ventilation. Ventilation, either natural or mechanical, shall be provided in accordance with Chap International Mechanical Code. Where mechanical ventilation is provided, the system shall provide the ca reduce the outdoor air support to the minimum required by Chapter 4 of the International Mechanical Code.

C463.2.9 Duct and plenum insulation and sealing. Supply and return air ducts and plenums shall be insulated with a minimum of 64 insulation where located in unconditioned spaces and where located outside he building with a Minimum of 46 insulation where located in unconditioned spaces and where located uncode he human building events or unconditioned or exempt spaces by an inimum of R-8 insulation in Climate Zones 1 through 4 and a minimum of R-1 (Insulation in Climate Zones 5 through 3).

Exceptions: nated within equipment

Where the design temperature difference between the interior and exterior of the duct or plenum is not greater an 15°F. Ducts, air handlers and filter boxes shall be securely fastened and sealed with welds, gaskets, mastics dhesives. mastic-dus-embedded fabric systems or taces.

C403.2.9.1 Duct construction, Ductwork shall be constructed and erected in accordance with the International

C483.2.8.1.11 compressers duct pretents. Longhuideral and transverse jubits, sense and connections of apply and terms ducts operating at a ballc pretentive law in original to 2 mices and the second transverse with the multiculture in insistance instances are calculationary specific to the duct system has a constance with the multiculture in insistance instances. The second excellent second transverse is a second to the second second transverse to the complete calculation structure. The second excellent second transverse is a second on the second second second second second second second second in the second respective. Locking has been second respective. Locking has a specified in this second second second second second second second second second respective. Locking has a specified in this second second second second second second second second second respective. Locking has a specified in this second
403.2.10 Piping insulation. Piping serving as part of a heating or cooling system shall be thermally insulated in accordance with Table C403.2.10.

Exceptions: Tractory-installed organity within TMCC equipment Intel data data in accordance with a large for produce methode by the Court 2. Factory-installed price within com Reccurs and und withinfact and rate and according to ANH4 do loceopt that the sampling and variation provides of Section 5.5 within rot apply and ANH4 MA. Sequenching 3. Paging that coverys duited that three a design operating the prevalues most and according to a sequenching 3. Paging that coverys duited that three a design operating the prevalues most and an effect of the Statistical covery table at a to be done OT.

C403.2.10.1 Protection of piping insulation. Piping insulation exposed to the weather shall be protected from damage, including that due to sunlight, moisture, equipment maintenance and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Addresive tage shall not be permitted.

C403.2.11 Mechanical systems commissioning and completion requirements. Mechanical systems shall be commissioned and completed in accordance with Section C408.2. SECTION C408 SYSTEM COMMISSIONING

C408.1 General. This section covers the commissioning of the building mechanical systems in Section C403 and electrical power and lighting systems in Section C405.

C408.2 Mechanical systems and service water-heating systems commissioning and completion requirement Prior to the final mechanical and plumbing inspections, the registered design professional or approved agency shall provide evidence of mechanical systems commissioning and completion in accordance with the provisions of this

struction document notes shall clearly indicate provisions for commissioning and completion requirements ordance with this section and are permitted to refer to specifications for further requirements. Copies of all umentation shall be given to the owner or owner's authorized agent and made available to the code official uest in accordance with Sections C408.2.4 and C408.2.5.

Exceptions: The following systems are exempt: 1. Mechanical systems and service water heater systems in buildings where the total mechanical equipment capacity is less than 48,000 Bluht ocoling capacity and 600,000 Bluh combined service water-heating and space pacity. ns included in Section C403.3 that serve individual dwelling units and sleeping units.

C408.2.2 Systems adjusting and balancing. HVAC systems shall be balanced in accordance will generally accept engineering standards. At and water flow rates shall be measured and adjusted to deliver final flow rates within the tolerances provided in the product specifications. Test and balance activities shall include air system and hydronic system balancing.

C408.2.2.1 Air systems balancing. Each supply air outlet and zone terminal device shall be equipped with m air balancing in accordance with the requirements of Chapter 6 of the International Mechanical Code. Dischar balancing in accordance with the requirements or Chapter o or the international Mechanical Code. Lischard meres used for air-system balancing are prohibited on constant/volume fans and variable-volume fans with motors hp and larger. Air systems shall be balanced in a manner to first minimize throttling losses then, for fans with system wer of oreater than 1 hp. fan socied shall be adjusted to meed design flow conditions.

Exception: Fans with fan motors of 1 hp or less are not required to be provided with a means for air balancing

C408.2.3 Functional performance testing. Functional performance testing specified in Sections C408.2.3.1 through C408.2.3.3 shall be conducted.

C408.2.3.1 Equipment. mance testing shall demonstrate the installation and operation of con

All modes as described in the sequence of operation.
 Redundant or automatic back-up mode.
 Performance of alarms.
 Mode of operation upon a loss of power and restoration of power.

Exception: Unitary or packaged HVAC equipment listed in Tables C403.2.3(1) through C403.2.3(3) that do no

C408.2.3.2 Controls. HVAC and service water-heating control systems shall be tested to document that co devices, components, equipment and systems are calibrated and adjusted and operate in accordance with plans and specifications. Sequences of operation shall be functionally tested to document they operate in a with approved plans and specifications.

C408.2.5.1 Drawings.

C408.2.5.2 Mar

ance manual shall be provided and include all of the followi etating and maintentance mainua usual or provides an uninued and or some involving. Submittal data stating equipment size and selected options for each piece of equipment requiring maintenance. Manufacturer's operation manuals and maintenance manuals for each piece of equipment requiring sintenance, except equipment not fumished as part of the project. Required routine maintenance actions shall be

sany identified. Name and address of at least one service agency. HVAC and service hot water controls system maintenance and calibration information, including wiring agarms, schematism and control adgrence descriptions. Desired of field determined set points shall be emanently recorded on control drawings at control devices or, for digital control systems, in system progr

Tructions. Submittal data indicating all selected options for each piece of lighting equipment and lighting controls. Overation and maintenance manuals for each piece of lighting equipment. Required routine maintenanc

Operation and maintenance manuals for each piece of lighting equipment. Required routi actions, cleaning and recommended relamping shall be clearly identified.
 A schedule for inspecting and recalibrating all lighting controls.
 A narrative of how each system is intended to operate, including recommended set points

C408.2.6.3 System balancing report. A written report describing the activities and measurements completed in accordance with Section C408.2.2.

C408.3 Liphting system functional testing. Controls for automatic liphting systems shall comply with this section

C408.3.1 Functional testing. Prior to passing final inspection, the registered design professional shall provide evi that the lighting control systems have been tested to ensure that control hardware and software are calibrated, as programmed and in proger working condition in accordance with the construction documents and mundature's instructions. Functional testing shall be in accordance with Sections C408.3.1.1 and C408.3.1.2 for the applicable

C408.3.1.1 Occupant sensor controls. Where occupant sensor controls are provided, the following proce

formed: Certify that the occupant sensor has been located and aimed in accordance with manufacture

Levelage trademission is as certificate and animation in accordance with manufacture is
 2. For projective this where on freem concepts are senses, each enserved and be tested.

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3.4. For manual-on occupant sensor controls, the lights turn on only when manually activated. 3.5. The lights are not incorrectly turned on by movement in adjacent areas or by HVAC operation

C408.3.1.2 Time-switch controls. Where time-switch controls are provided, the following procedures shall be

Confirm that the time-switch control is programmed with accurate weekday, weekend and holiday sched Provide documentation to the owner of time-switch controls programming including weekday, weekend, d set-up and preference program setting correct time and date in the time switch

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studio

architecture

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Revision

Number Description Date

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project #

drawn by

drawing title:

drawing number

MECHANICAL

SPECIFICATIONS

M500

date

816 Camaron, Suite 230

Copper pipe fittings: ASME B16.18, cast brass, or ASME B16.22 solder wrought copper. Tee Connections: Mechanically extracted collars with notched and dimpled branch tube. Joints: Solder, lead free, ASTM B32; 95-5 lin-ations, or lin and ever, with methic range 430 to 535 degrees F. Braze, AWS A5.8 BCuP silveriphosphonus/copp alloy with meting range 1190 - 1480 degrees F.

Pipe, duct and equipment hangers and supports shall be per the local code. Support piping at a minimum every 10' or less for 1° and larger pipe, every 6' on 3/4' or smaller. With copper pipe use copper hangers or tape at contact point.

Support flex ducts per manufacturer's installation instructions (provide instructions for inspector review). Alternate acceptable flex duct support (in City of Houston) is 26 gage, 1.5 inch wide galvanized iron straps on 4-foot maximu seacing.

Roof curits (required for all roof mounted equipment): Galvanized steel shell and base, mittered cart, instalation, wood nade: Roof curits shall match the roof plath and shall be compatible with the roof type. For mechanical another units larger of gypaus howed or sold shall shell be this lagging? For mechanical include, nature add roomford or process cooling on thering, manufacturer shall provide and/oren professional break and the constrained procession cooling on thering, manufacturer shall provide and/oren professional break and/oren to conform which and/oren the constrained break and/oren professional break and/oren to conform which and/oren to the constrained break and/oren professional break and/oren to conform which and/oren to the constrained break and/oren professional break and/oren to conform which and/oren to the constrained break and/oren professional break and/oren to conform which and/oren to the constrained break and/oren professional break and/oren to the constrained break and/oren to the constrained break and/oren and/oren to the constrained break and/oren professional break and/oren to the constrained break and/or and/oren to the constrained break and/oren professional break and/oren and/oren to the constrained break and/oren and

23 05 48 VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING & EQUIPMENT Air handlers, furnaces, fans and fan coils shall be suspended or supported with spring isolator unless internally isolated. Provide flexible duct connections at all air handlers, rooflop units and flans, unless internally isolated.

23 05 53 IDENTIFICATION FOR HVAC PIPING & EQUIPMENT

23 05 93 TESTING, ADJUSTING AND BALANCING (TAB) FOR HVAC Balance may be by a qualified employee of the mechanical contractor. Technician shall be AABC or NEBB certified

Balance in accordance with NEBB Procedural Standards – 1999 Procedural Standards for Building Systems, or AABC 2002 Associated Air Balance Council Test and Balance Procedures.

Adjust system to achieve air quantilies shown, then adjust volumes to provide constant temperature (42 °F) throughout the zone, Adjust an showeve, where angolicable and where available. Calibrate all thermostites. Mark sectionis on all dampers and valves. Return to project at 1 and 3 month intervals after completion to make balance adjustments in response to Owner's proceived confloct.

omn report (vetBild or AABL: Chemist) and include – General dats. I hangelabe data on all equipment. Outside air temp; cfm each supply, exhaust and return grille and actual room temperatures and humidites vs. selpoints – Fanx: Volume and static pressure; fan rom and amps DX air handres; fan colis er furraces: supply and return air temp, volume and static pressure; fan rom and amps, Outside ar cfm.

Air systems shall be balanced to meet air quantities shown at each air device; and, in a manner to first minimize throtting losses in the effected system. Then, for fans with fan system power greater than 1 HP, fan speed shall be adjusted to meet design flow conditions.

HVAC control systems shall be tested to ensure that control elements are calibrated, adjusted, and in proper working condition. Submit test documentation

No adjustment to existing air handlers and fans serving the area are allowed without Owner's express knowledge and

spread less liair 20, since developer less liair 20 da per Ao IW Exe, IVEP A 200, 0E213 - Millimun I de R values for non-resident projects (excluding film resistance) are: Within the conditioned space: Supply R5.8; Return -none required; Exhaust or relief: none required; and/tioned outside air R5.6

Conditioned outside air R5.6 2. In return air perums (but inside building insulation envelope): Supply R5.6; Return-none required; Exhaust or relief: none required; Conditioned outside air R5.6 3. In shathe, jehrums of thir downs roll used for return air (but inside building insulation envelope): Supply R5.6; Return R5.6; Exhaust or relief: R5.6; Conditioned outside air R5.6

External duct wrap: Kol face rigid or flexible fiberglass with vapor retarder. R value stenciled on outside. ASTM A66 Water Vapor Permeance: 0.5 permer maximum. Mold Growth per ASTM C 1358. No Growth: GREENQUARD Environmental Institute Certified. Vapor Related Jacket confirming to ASTM C 1358. per 1-F3 Growth Adler (FSK), or White polycopiene-accim-ktaft (PSK), 2º Stagle large on tengladiret seam. Athere to duct with vapor tamer type adherev. Ownlag Jacks. Japons and Jacket Certifications and Antonia and

arrier Coating: Vimasco Vapor-Block 749, Foster 30-85, Childers Chil-Perm #CP-34, or equivalent. Reinf ster Mast-a-Fab, Childers Chil Glas #10, or equivalent.

Pipe insulations, mastics and jackets located in environmental air plenums shall have maximum flame spread index of 26 and maximum smoke developed index of not exceeding 50 in accordance with ASTM E84.

Primary condensate drains inside buildings: 3/4" Armaflex for entire length. No insulation required outdoors. Insulation of exconders (overflow) condensate drains not required

Refrigerant suction line piping: 1* Armaflex. Paint outdoor portions with manufacturer's recommended water ret-ultraviolat order radiation protective costion

Refrigerant liquid line piping: 1" Armaflex. Paint outdoor portions with manufacturer's recommended water retardan ultraviolet solar radiation protective coatino.

23 or 0 Commodulating OF MVAC All projects is tes than 480,000 Bluh cooling capacity and 600,000 Bluh combined service water-heating and space heating capacity or with systems that serve individual dwelling and sleeping units: Test and balance contractor shall observe HVAC control systems and document that all control elements are calibrated, adjusted, and in proper workin

ostats, automatic changeover, battery backup. Honeywell TB7220 series or

ENGINEERS PLANNERS

KC I SAN PEDRO, SUITI SAN ANTONIO, TX 78248 PHONE: 210-544-5755

CONSTRUCTION MANAGERS

Insulate backs of supply diffusers when in attics or when ceiling plenum is not used for return air

23 07 16 HVAC EQUIPMENT INSULATION Flame spread less than 25, smoke developed less than 50 as per ASTM E84, NFPA 255, UL 273.

moke developed less than 50 as per ASTM E84, NFPA 255, UL273. Minimum required.

red. Piping: Provide pipe markers every 20 feet. Identify service and flow direction. Install in clear view and align

h axis of piping. Fire damper access doors: See fire damper specifications. Celing tacks: Provide celing tacks to locate valves or dampers above T-bar type panel celings. Locate in ner of panel closest to equipment. Color code: equipment. Yellow. Fire dampersismoke dampers: Red. Valves

Supports for duct and air devices within rated ceiling or floor assemblies shall be per the UL listing

Flash and seal equipment and pipe stacks. Curb thicknesses shall be sufficient to allow required condensate drain trap depth.

Submit report (NEBB or AABC format) and include

23 07 13 DUCT INSULATION

Internal liners- see section 23 31 00.

23 07 19 HVAC PIPING INSULATION

23 08 00 COMMISSIONING OF HVAC

23 09 23 ELECTRIC CONTROLS FOR HVAC

DX condensing units: Condensing air temp, units amps

Support roof mounted duct or pipe using frame constructed of hot-dip galvanized steel strut and plastii not penetrate or cause damage to the roof membrane. Portable Pipe Hanger, Miro or equal.

23 05 29 HANGERS AND SUPPORTS FOR HVAC PIPING & EQUIPMENT

headse, and set-up and preference program settings. Werly the correct lime and date in the lime switch. Werly that any battery back-up is installed and energized. Werly that any battery back-up is installed and energized. Mark 1999 and the setting of the Name Setting of the I.2. Marks up of the setting of the located of the setting of the setting of the set is setted at shuff occors. Setting is setting of the setting of the set is setted at shuff occors.

C408.3.1.3 Daylight responsive controls. Where daylight responsive controls are provided, the following shall be

Control devices have been properly located, field calibrated and set for accurate setpoints and threshold

avers. Daylight controlled lighting loads adjust to light level set points in response to available daylight. The locations of calibration adjustment equipment are readily accessible only to authorized perso

C408.3.2 bocumentation requirements. The construction downerist shall specify that documents certifying that the installed lighting controls meet documented performance criteria of Section C405 are to be provided to the building owner within 90 days from the date of receipt of the certificate of occupancy.

WIND LOAD & EQUIPMENT ANCHORAGE Re defined under 2015 MC 3011. Based on Risk Category II, the wind speed is 115 mph. Exterior HVAC equipment shall be securely fastemed in place. Supports shall be designed and constructed to sustain vertical and horizontal loads within the stress imitations specified in ASCE 7-10 Chapter 20. Applicable vertical and lateral coefficients shall be

Exterior ducts and pipes shall be supported in a like manner.

HVAC GENERAL NOTES (APPLY TO ALL SHEETS) DRAWINGS ARE DIAGRAMMATIC: CONFIRM DIA PRAWINGS ARE DIAGRAMMATIC: CONFIRM DIMENSIONS AND LOCATIONS IN THE FIELD. RUNOUTS TO INDIVIDUAL AIR DEVICES ARE SAME SIZE AS AIR DEVICE NECK UNLESS OTHERWISE

TED. DUCT SIZES SHOWN ARE FREE AREA. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR TYPE OF CEILING AND LOCATION OF CEILING

DEVICE

DEVICES. SEE ARCH LEIVATIONS FOR LOCATION OF WALL MTD DEVICES. PLENUMS ARE CROWIDED AND NOT ALL OBSTACLES ARE NOICATED. ALLOW FOR ADDITIONAL DUCT OR PIPE OFFSETS OR TRANSITIONS ON TO INDICATE DO INDIANINGS. SEAL ALL PENETRATIONS OF FLOORS, RATED WALLS, EXTERIOR WALLS CONTRACTOR SHALL SUBMIT DRAWINGS FOR ALL DEMINIST IN AT HEAVY MANNER AND PAY ALL

SEMBLIES. DO NOT RUN DUCT OR PIPE ABOVE ELECTRICAL PANELS. ALL WORK IN OR ABOVE OCCUPIED AREAS SHALL BE AT OWNERS CONVENIENCE AND MAY BI

A market second and the Albert LobertVELD WARK SECTIONENTIES Bandkart Merchanical Recurstration and a second and a second and a second and a bandkarts. Remove databased to atom calling tables toos. Re-support any remaining ductippe that was supported by demolition walls. Damage to existing materials/explaned will be repaired at no additional cost. Give demolished explanned to Ouran. Bandge and Bandgers and a second second and second and and and and and Warrandy, Guaranteel tables and materials for 1-year. Warranties begin upon Ouner's scoeptance of substantial completion of the materials. Band comparent, air devices, waive, duct accessories and controls. Sand complete ductions at a pupping thousanges. Sander on approved explanets and the discretion of a discretion.

wings. Submit Cathge insufacion of an equipment, an evolus, varies, ous accessores and ochain mplete ductwork and piping abor drawings, based on approved equipment and field observation of build . Submit detailed layout of mechanical rooms and yards. Incomplete submittats will be returned to the un-reviewed. No time extensions or cost increases will be allowed for defavs caused bur return of inco-tions. Submit detailed accessor and submittats and the submittats will be returned to the un-reviewed.

A manushance that and system acceptone. These manuals shall be in accordance with indust and such as ASHRAE Guideline 1 and shall include, at a minimum, the following: (a) Submittal ent size and selected policies for each pice of equipment requiring maintenance. (b) Operation

stating equipment size and selected options for each piece of equipment requiring maintenance, (b) Operation manual and maintenance manualise for each piece of uppermet requiring maintenance, scopet equipment for to furnised as a option of the project. Required routine maintenance actions at allo be clearly destitled. (c) Names and addresses of all test or device agency. (c) NCC control systems maintenance. Subject equipment testing maintenance, scopet equipment control agency. (c) NCC control systems maintenance actions at allo be clearly destitled. (c) Names and addresses of all test and the state of the state of the state of testing and the state of testing and testing and the state of control damage all control devices or, for digital control systems, in programming comments, (c) A complete neuration of those each system is instrined to operate, includio suggested selections. Provide instruction on system operation of those and system is instructed to operate. Includio suggested selections. Provide instruction on system operation of the state system is instructed to operate. Includio suggested selections. Provide instruction operation operation operation operation operation operation.

Confined detaining in contrast devices of the Bight scalars presents in translate means the scalar devices in the scalar of the scalar scalars of the scalar devices in the scalar of the scalar scalars of the scalar devices in the scalar of the scalar scalars of the scalar devices in the scalar the scalar devices i

HVAC condensate drains: Inside building use insulated copper or galvanized steel in environmental air plenums, Inside (but rot in environmental air plenums) may use insulated PVC. Outside building, use uninsulated VV restated PVC condensate intering explosited cost user what hand has been than the visit set unit or levels than 34 kinchs. Discharge condensate to an approvel location inside or unbaside building. Do not discharge into a gutter system if that gutter discharges on the public walk or stress.

Steel Joints: Threaded, welded, or roll-grooved (do not use cut-groove). Welded joints will be full circle butt-weld joints to ANSI/ASME B31.9 latest edition. No other welded joints will be allowed. Backing rings are not allowed.

Steel fittings: ASME B16.3, malleable iron or ASTM A234/A234M, forged steel welding type. Thread-o-lets, Weld-o

State stronger Str

standing water is detected in the primary pan

23 05 03 PIPES FOR HVAC PIPING AND EQUIPMENT Air vents at high points; drains at low points. Provide dielectric unions between dissi

contractione: Provide 3 contex of operation and ma

23 09 93.11 SEQUENCES OF OPERATION

9.11 BC002B00 SUP OFFENDING A. For systems larger than 2000 CPM: provide ionization-type smike delector in supply or return ductors to shit, and down upon detection of the parameter of products of combustion. Detectors located in the system of the system thermostatic controls and the costable of providing a thermostate range or sets thand of a least 9⁻ F while thermostatic controls and the costable of providing a thermostate range or sets thand of a least 9⁻ F while there thermostatic controls and the costable of providing a thermostate range or set accessible (reternet homes, calar processing, museum, and or valied hospital areas) and are approved by the authority having the system of the system. First hulf/or each while area costable (reternet homes), calar processing, museum, and or valied hospital areas) and are approved by the authority having the system. First hulf/or each while the costable costable of the system of the system.

urindiciton. c. Automatic Shutdown. Each HVAC system shall have controls that can start and stop the system under different time schedules for seven different daylypes per week, are capable of relaining programming and time setting during loss of power for a period of at least 10 hours, and include an accessible manual overrifie, or equivalent function, that allows temporary operation of the system for up to

two hours. d. Setback Controls. Heating systems have the capability to automatically restart and temporarily coreate the system to maintain zone temperatures above a heating sepoint adjustable down to 55°F or lower. Cooling systems shall have the capability to automatically restart and temporarily operate the systems are required to maintain zone temperatures below a cooling appoint adjustable up to 55°F or thigher

system as required to martials nove temperatures below as cooling septont disputable up to 8% or hyper of percent this pack handly levels. 6. Gravity Hoods, Vents, and Wenflaters, RJ (notabor all supply and exhault hoods, write, and 6. Struct Bargers Controls, Bioh notabora air supply and exhaults hoods resorted the of a tour motorized dampers that automatically that when the systems or spaces served are not in use. Ventilation controls and dampers that automatically that when the systems or spaces served are not in use. Ventilation and an exhibit a submatically share the systems or spaces served are not in use. Ventilation and an exhibit a dampers of a dampers are accepted and that systems with a design outdoor ari intellate or enhand capacity of 30 of not lease. 6. Adjustments to exequences of operation. Make programming, set point, and other changes to the Sequences of Operation and directed by Engineer as a neural of automating handle. 6. Adjustments the sequences of operation. Make programming, set point, and other changes to the Sequences of Operation and directed by Engineer as a neural of submitted and ensuing review.

2. SINGLE ZONE CONSTANT VOLUME A/C PACKAGED OR SPLIT SYSTEM:

a Porgammable thermostic control system officin cycles; multiple cycles per day. When system is on, fan runs confiruously. b. Zone thermostic vices compressor(s) and activates indoor fan, during cooling mode. Upon a call for heating, the indoor fan and the heating coil shall be activated to maintain setpoint.

23 23 00 REFRIGERANT PIPING AND SPECIALTIES

23.23 WERPROJECKMI I PHING AND SPELUAL IES Size per AC unit mandature ir sequements in the engineered reviewed equipment submittalis), including requirement for long line applications. Provide solenoid valves, taps and/or accumulator when recommended by condensing unit vendors, such as for underground lines. Provide decidated set of rehigerant philog for each rehigerant circuit. Use factory seated line sets, unless size or distance exceeds factory set availability. Route hidden from view. Insulte succini mine. Seal wall pentifications.

Copper Tubing: ASTM B280, Type ACR hard drawn or annealed. Filtings: ASME B16:22 wrought copper. Joints: E AWS A5.8 BCuP silver/inbosphorus/copper alloy with melting range 1190 to 1480 degrees F. Unions, flanges, and copings: copper pipe: bronze, soldered joints.

23 31 00 HVAC DUCTS Do not bibinciate duct from these drawings, confirm all dimensions and available space in field. Dimensions given on drawings are nickle free area, sheet metal is larger on lined duct. Branch biskedfs to have 45 degree entryl filling with volume damper. Elsows to be radius type with minimum centerline radius 1.5 times width or mitered elbows with single thickness turning vanes.

Sheet metal: Use galvanized sheet metal, conforming to current SMACNA for construction, reinforcing, support and other aspects. PRESSURE CLASS:

Supply from single zone units: +1"

Exhaust: -1" upstream of fan, 1" downstream DUCT SEALING:

2: In Contract System 24, 2010/PUENT 2003 TAULE 11:01 Seal Level A. H Intervense joint and tonglutinal seams. In all duct wall penetrations Seal Level A. H Intervense joint and tonglutinal seams. In all duct wall penetrations Seal Level A. H Intervense joint seams need not be sealed Toor Tames, duct connections to pagement) Doct wall peretrained include to all are inflict to come, tops, holes, note, wires A non self-sealing

fasteners

Supply and outside air ducts, all locations; return or exhaust ducts, outdoors: Seal Level A. Return or exhaust ducts, indoors: Seal Level B Seal all metal ducts using Hardcast or equal mastic plus fiberglass scrim.

DUCT LINER / INSULATION SCHEDULE: Pacturgular supply - Unitined, externally insulated, except that 25 feet closest to fain or air units shall be insulated, except that 25 feet closest to fain or air units shall be Round supply. Unitined, externally insulated Return duck- Internal Inter Exhaust: No liner, no insulation, except that exhaust ducts in non-conditioned attics shall be externally

nsulated Outside air – Unlined, externally insulated, except that 15 feet closest to a fan shall be internally lined

Liner (when specified in duct description above). Schuller Permacote Linacoustic. Certainteed Tough Gard or equal, 11 PCF (pounds per cubic foot) density, coated fiberglass conforming to ASTM (1017); coating to be cleanable and stating pervent microadia) guidens CP-1372, or equivalent) with 90% coverage and stack clope. Meet mimmum noise reduction Standard of ASTMC1071. Leading edges and transverse joints to seadel, Foster 81-420 (while), CP-6304(h) (while), CP-1353 (back), or equivalent).

Liner R-values shall meet duct insulation values spec'd in section 23 07 03. In addition to meeting R-values, the following minimum thicknesses shall be maintained for acoustic reasons: Supply duct: 1[°]. Return ducts: 1/2[°] except that within 15 feet of an or air unit use 1[°]. Return air sound traps: 1[°].

23 33 00 AIR DUCT ACCESSORIES Provide manual balancing dampers in all supply and exhaust branches. Provide manual balancing dampers in outside air and return ducts to each air unt. Provide manual balancing damper at each motorized duct damper location. VOLUME CONTROL DAMPERS: per SMACNN HVAC Duct Computer Smarthane and the start Facebook Single Halds dampers for fact sizes up to 8 x30 mch. Multi Blasb Damper: opposed balae pattern. Assemble center and edge imped balas in prime ceated or galavized frame channel with table that availse. Except in numd accurot 12 inches and smaller, furnish end bearings. Furnish closed end bearings on ducts having pressure classification over 2 inches wa

Furrish locking, indicating quadrant regulators on single and multi-blade dampers. On insulated ducts mount quadrant regulators on standoff mounting brackets, bases, or adapters to allow full insulation thickness. Where rod lengths exceed 30 inches lumiah regulators at both ends.

All balance damper operators shall be accessible via access panel, lay-in ceiling or remote cable operator. All motorized damper operators shall be accessible and shall not block the air stream.

Outdoor air, supply and exhaust air dampers shall have a maximum leakage rate of 0.3 cfm per square foot.

DUCT ACCESS DOORS: per SMACNA, rigid and close fitting of galvanized steel with sealing gaskets and quick fastering looking devices. For insulated docknork, furmish same insulating value as adjacent duck, plus sheet metal over. Less fina 12 finates as, acceure with salk lock. Up to 18 finches as; two hotiges and two salk locks. Up to 24 x 48 inches: Three hinges and two compression latches. Access panels with sheet metal screw lastners or requiring use of tools are not acceptate. Smooth or table finate and noted damper access doors per local requirements

FLEXIBLE CONNECTIONS: per SMACNA. Fabric crimped into 24 gage galvanized metal edging strip. Fabric: Approx 3 inches wide. UL listed fire-retardant neoprene coated woven glass fiber fabric conforming to NEPA 90A.

FIRE DAMPERS: Type B or C, Static UL labeled with1-12 trading as per UL 565 and as per NPPA 90A and loca building code. Label access doors "FIRE DAMPER ACCESS". Instal as per manufacturer's instructions (SUBMIT COPY WITH SHOP DRAVINGS). Use alimine dampers at wall grilles. Use dynamic labeled dampers in systems intended to operate with fans on during a fire.

23 81 43 AIR SOURCE UNITARY HEAT PUMPS

23 82 00 CONVECTION HEATING AND COOLING UNITS ELECTRIC UNIT HEATERS

SMOKE DAMPERS Class II as per LL 55S. Provide electric operator, controlled by area detectors acting through fire alarm panel. When smoke dampers are behind a grille; use damper designed for operator access thru the grille. Select damper with sleeve length suitable for project conditions.

COMBINATION FIRE and SMOKE DAMPERS: Conform to requirements for fire dampers and smoke dampers

23 37 13 AIR INLETS AND OUTLETS For air devices located in lay-in ceilings, vendor shall confirm ceiling grid type and size prior to ordering air devices. Acceptable Manufactures: Titus, Price, MetalAire, Nailor, Kreuger

23 41 00 HVAC AIR CLEANING DEVICES Filters shall be 2⁺, 30 percent efficiency as per ASHRAE 52.2 -1999, Maximum initial resistance at 500 fpm = 0.25⁺ AAF Perfect Pielar HC Mit or caula. Use standard sizes only.

Provide construction filters for the duration of this project in all air units serving the project area. Replace with new filters after balancing and adjusting is complete. Provide temporary filter media over all return or exhaust grilles in project area, to keep construction duat out of air systems.

AIR COOLED CONDENSING UNITS: UL or CSA listed and ARI certified. Copper tube, aluminium fin coils. Pr with crankcase heaters, overload protection, time delay relay, filter drier, sight glass, and arti-short cycle relay larger than 10 ions shall be provided with dual compressors.

23 81 26 SPLIT-SYSTEM AIR-CONDITIONERS 24 91 26 SPCI13/ST51EM ARK-CUNITIONERS DX FAN COLL UNTIS: Factory painted galvanized steel, insulated casing; sloped drain pan; filter rack; multispeed biover; control transformer; supply and return duct flarges, coopter coilValuminum fins, and manufacturer's standard expansion valve or metering device. Coll factory matched to condensing unit.

23 11 AJR SOURCE UNITARY HEAT FUMPS Be schedule. Synapping and the schedule and the sche

ELECTRC UNIT FLEATERS Enclosed coper the automation free detended of coled individ-shortne resistance wire centered in lubes and embedded in refractory material. U. Listed and lubeids assembly with ferminal pair and called and refractions. Enclosed 10x87 listed in the site wire and site resolution of the site and the site of the

Sig in care col. BOO inductions out. UL listed for any destance and for use with a conditioning equity. Advantated tables frames and local, gallingtis, terminol use this fraged and constrained and instabilistic behaviored Auto reset thermal primary catalax, manual reset secondary thermal catalax. Terminal block for field wring. Phase biblianced heaters. A this wrink's contraction is each stage, built in contract, and indicate and the second stage and thermal primary catalax. Thermal reset secondary thermal catalax. Terminal block for field wring. Phase biblianced heaters. A this wrink's contraction is each stage, built in contract, and thermal catalax and provide PE subtracts for each stage table tables galled bibliance stages and the stage bibliance stages and the stage stages and the stage stages and the stage stages and the stage stages and the stages and the stages stages and the stages and the stages stages and the stages stages and the stages stages and the stages
The antided search, had recovery endite heat sums all contidening system, shall be 3 Variable Religence Variant Beard and cost controls (b) relytems, shall need lisering at intercontrols that load schedule controlsers is schedule. The system shall control of multiple expensions, suran to electron (B) bools for hand- normal (BC) controlsers, multiple expensions, and the state of the control of the state of

When heat recovery is specified, operation of the system shall permit either individual cooling or heating of each fan coil simultaneously or all of the fan coil units associated with one BS box, or BC Controller. See drawings for BS box, or BC Controller, locations, associated VIKV equipment, and schematic diagram. The BS boxe, or BC Controllers, shall have the capacity to control up to BM MH (cooling) downstream of the double manual states of the control of the states of the state

The indoor units shall be connected to the condensing unit utilizing manufacturer specified piping joints and headers to ensure correct refrigerant (how and balancing. T-style joints are not acceptable. All joints shall be installed per manufacturer's instructions.

Indoor units shall consist (in combination, or individually) of: evaporator fan unit-horizontally ducted, evaporator fan unit-vertically ducted, ductless cassette: and/or wall-mounted fan coll unit.

SECTION 23 90 05 - VARIABLE REFRIGERANT VOLUME (VRV) SYSTEMS Acceptable Manufacturers: Daikin AC, Mitsubishi, Toshiba, Trane, Samsung, JCI, or LG

Tel: 210 417 4307 www.openstudio-usa.com

All units

Öpen

studio

architecture

The Finesilver Building

816 Camaron, Suite 230 San Antonio, Texas 78212

S

MOTOR

MURRAY

900 Broadway San Antonio, Tx

project #: 16.269 date: 6.30.17 drown by SMATHAI checked by: CFCLEMENTS drawing title:

MECHANICAL SPECIFICATIONS



M501

drawing number:

ELECTRICAL DEMO NOTES

- REQUIRED. CIRCUITS WITHOUT A SEPARATE GREEN GROUNDING WIRE INSTALL A GREE ORCOTTS WITHOUT A SEPARATE BREEK GROUDING WIRE - INSTALLA GREEK GROUDING WIRF OR EVERY RECEPTACLE OUTLET AND DEVICES. INSTALLATION OF THE GREEN GROUNDING WIRE MAY RECURE THE REMOVAL OF EXISTIN RES. PROVIDE NEW WIRE AS REQUIRED.
 FIXTURES IMPROPERLY SUPPORTED OR INADEQUATELY SUPPORTED BY DEVICE DOUDE SUPPORTED OR INADEQUATELY SUPPORTED BY DEVICE
- ENCIDES IMPORTES UNPORTED OR NACEQUATELY SUPPORTED BY DEVICE PROVIDE PROPER SUPPORT FEB. NE.C. SELA, LI PRIETTATIONS THRUGH RATED FOORSWALLSCELUNGSPARTITIONS ELLOSTING ARMONES MARCIN HUBBE CONJUTIVISES SWITCHESS STATETES, J-BOXES, COMMANICATION SYSTEM AND DEVICES IMPOLIET AREA SHALL BE ELLOSTING ARMONES MARCIN HUBBE CONJUTIVISES SWITCHESS STATETES, J-BOXES, COMMANICATION SYSTEM AND DEVICES IMPOLIET AREA SHALL BE ELLOSTING ARMONES MARCIN HUBBE CONJUTIVISES WILL BE REMOVED AND TO PHILE IN A BEADER HUBBE DEVICES OF AND HUBBE CONJUT. FROVE ELEBERSING AND HORMAL CROUTS AND FILE IN SEMANTE CONDUCT.

- POWER GENERAL NOTES
- A. REMOVE ALL UNUSED CABLING, WIRE AND CONDUIT IN THIS SPACE. TERMINATE CONDUITS OUTSIDE ELECTRICAL ROOM WITH A JUNCTION BOX.
- TURN BREAKER OFF AND UPDATE PANEL DIRECTORY TO INDICATE SPARE BREAKER AND DATE OF CHANGE.
- BREAKER AND DATE OF CHANGE. COORDINATE LOATIONS OF ALL DEVICES AND JUNCTION BOXES WITH THE EQUIPMENT INSTALLER. CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CIRCUITS (3 PHASE WIRES, 1 NEUTRAL + 1 GROUND) IN A COMMON CONDUIT, EXCEPT WHERE PECIFICALLY NOTED AND ALLOWED. WHERE MORE THAN THREE CURRENT CARRYING CONDUCTORS (ERAMPLES: 3 PHASE WIRES + 1 CURRENT CARRYING NEUTRAL, CONDUCTORS (ERAMPLES: 3 PHASE WIRES + 1 CURRENT CARRYING CONDUCTOR) ARE INSTALLED IN A COMMON CONDUIT, THE CURRENT COMMON CONDUCTOR ARE INSTALLED IN A COMMON CONDUIT. AMPACITY OF ALL CURRENT-CARRYING CONDUCTORS SHALL BE DERATED PER 2014 NEC ARTICLE 310.15 (B)(3)(A). EXAMPLE: (6)-20AMP CKTS WITH 8 CURRENT CARRYING WIRES IN A COMMON CONDUIT MUST USE MINIMUM #10 WIRE 70% X 35A = 24.5 AMPS. PROVIDE COMMON TRIP BREAKERS FOR MULTIWIRE CIRCUITS PER 2014 NEC ARTICLE 210.4 (B).

LIGHTING GENERAL NOTES

- A. CONNECT ALL EXIT LIGHTS TO UN-SWITCHED POWER AHEAD OF ALL
- LIGHT SWITCHES EXIT LIGHTS ARE SWITCHED AT PANEL ONLY. B. LIGHTS ARE CONTROLLED BY LIGHTING CONTROL SYSTEM AND/OR ENERGY MANAGEMENT SYSTEM (EMS), HOMERUN LIGHTING CRCUIT TO PANEL VIA RELAY PANEL (OR CONTACTOR PANEL), FIELD VERIFY EXACT LOCATION WITH BUILDING ENGINEER. C. ALL 2X# LIGHT FIXTURES ARE TYPE TRA' UNLESS OTHERWISE
- ALL 2 AL LIGHT FLAURES ARE THE PA UNLESS OTHERWISE SPECIFIED. ALL LIGHT SWITCHES TO BE GANGED TOGETHER WHERE POSSIBLE. CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CIRCUITS (3 PHASE WIRES, 1 NEUTRAL + 1 GROUND) IN A COMMON CONDUIT. EXCEPT WHERE SPECIFICALLY NOTED AND ALLOWED. WHERE MORE
- THAN THREE CURRENT CARRYING CONDUCTORS (EXAMPLES: 3 PHASE WIRES + 1 CURRENT CARRYING NEUTRAL CONDUCTOR) ARE PHASE WIRES + 1 CURRENT CARRYING NEUTRAL CONDUCTOR) ARE INSTALLED IN A COMMON CONDUIT, THE AMPACTY OF ALL CURRENT CONTROL CONDUCTOR AND A COMMON CONDUIT THE AMPACTY OF ALL CURRENT CONTROL CONDUCTOR AND A CONDUCTOR AND A CONTROL AND A CONTROL MURES IN A COMMON CONDUT THIS TUSE MINIMUM #10 WIRE 70% X 33A = 24 S AMPS. PROVIDE COMMON TRIP BREAKERS FOR MULTIWIRE CIRCUITS PER 2014 NEC ARTICLE 2104 (B). ALL FLUORESCENT FUTURES WI DOUBLE-ENDED LAMPS: PROVIDE A DISCONNECTION MEANS PER 2014 NEC ARTICLE 104.1030(G)

2015 IECC

- A COMMISSIONING PLAN MUST BE DEVELOPED BY A REGISTERED. DESIGN PROFESSIONAL OR APPROVED AGENCY. THE PLAN SHALL INCLUDE THE FOLLOWING ITEMS: • A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE
- A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE
 ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING.
 A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED
- FUNCTIONS TO BE TESTED.
- CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. MEASURABLE CRITERIA FOR PERFORMANCE

LIGHTING COMMISSIONING NOTES

- LIGHTING SYSTEM COMMISSIONING ACTIVITIES INCLUDE BUT SHALL NOT BE LIMITED TO: SUBMITTAL REVIEWS FIELD OBSERVATION

 - ENSURE ALL FIXTURES HAVE LAMPS AND ARE OPERATIONAL
 - TEST EMERGENCY LIGHTING (INCLUDING EXIT SIGNS) ENSURE ALL OCCUPANCY & DAYLIGHT SENSORS HAVE BEEN INSTALLED PER THE MANUFACTURERS INSTRUCTIONS AND ARE
- INSTALLED FEX THE MANUFACTURERS INSTRUCTIONS AND ARE OPERATING AS INTERDED. VENRY STATUS INDICATORS ON DEVICES ARE CORRECT. CONFIRM SWITCHES AND DEVICES CONTROL LIGHT FXTURES AS INDICATED ON THE DRAWINGS. THE LIST OF COMMISSIONED SYSTEMS INCLUDES, BUT SHALL NOT BE
- LIMITED TO: LIGHT FIXTURES
- EXIT SIGNS EMERGENCY EGRESS LIGHTING
- OCCUPANCY SENSORS DAYLIGHT SENSORS

 DAYLIGH SENSORS
 TIME-CLOCK & TIME-SWITCH CONTROLS
 DIMMER SYSTEMS
 DIMMER SYSTEMS
 BAS INTERFACE
 DOCUMENTATION CERTIFYING THE INSTALLED LIGHTING CONTROLS
 DOCUMENTATION CERTIFYING THE INSTALLED LIGHTING CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA OF SECTION C405 OF THE 2015 IECC ARE TO BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATE OF OCCUPANCY.

- ELECTRICAL LEGEND
- All Symbols Shown Are Not Necessarily Used In This Project New 2' X 4' Light Fixture. Letter Indicates Type
- New 2' X 2' Light Fixture. Letter Indicates Type.
- 2' X 4' Light Fixture with Lamp(s) Connected to Emergency Battery Ballast. Connect to Un-Switched Power Leads. Provide Bodine #B50 (1100 Lumens) Unless Noted Otherwise Elsewhere. (Note: Similar for all emergency Light Fixtures)
- Exit Light. Provide Directional Chevron(s) Arrow(s) as Indicated on Plans. Connect Integral Battery Pack to un-switch power leads.
 - Single Pole Switch
- \$3 Three(3) Way Switch

¢

- \$4 Four(4) Way Switch
- \$M Manual Motor Starter With Proper Thermal Element Installed. Switch, Three-Way Momentary Contact Toggle Type With Center Neutral Position. Similar To ASCO # 173A2. \$wc
- Duplex Receptacle, 20Amp, 125Volt, 2Pole, 3Wire, Grounding Type, NEMA 5-20R
- Ф
- Ground Fault Interruptor (GFI) Duplex Receptacle. Similar To Duplex ₿GF Receptacle Above
- Weatherproof (WP) Duplex Receptacle. Similar to Duplex Receptacle Above.
- GRWP Ground Fault Interruptor (GFI) & Weatherproof (WP) Duplex Receptacle. Similar to Duplex Receptacle Above. Double (QUAD) Duplex Receptacle with Common Cover Plate.
- ≑ Similar to Duplex Receptacle. Ground Fault Interruptor (GFI) Double (QUAD) Duplex Receptacle **⊕**GF with Common Cover Plate. Similar to Ground Fault Interruptor
- lex Receptacle. 220V Receptacle. Type as Indicated on Plans. መ
- Ö Dedicated Duplex Receptacle, Provide Grav Color (Confirm w/Architect) Receptacle and Cover Plate, with Intended Usages of Receptacles Engraved on Coverplate (E.G. "Copier").
- 4 Dedicated Quad. Receptacle, Provide Gray Color (Confirm w/Architect) Receptacle and Cover Plate, with Intended Usages of Receptacles Engraved on Coverplate (E.G. "Copier").
- -Existing Double (QUAD) Duplex Receptacle
- Existing Duplex Receptacle.
- ۰
- Remote Ground Fault Interruptor (GFI) Reset Device. Leviton # X7590-* or similar. Telephone Outlet. Provide Back Box/Cover Plate. Install 3/4"C. with Bushing and Pull String, Stubbed to Accessible Ceiling. ×
- Data Outlet. Provide Back Box/Cover Plate. Install 3/4"C. with Bushing and Pull String, Stubbed to Accessible Ceiling. Δ
- Combination Telephone/Data Outlet. Provide Back Box/Cover Plate. Install 3/4"C. with Bushing and Pull String, Stubbed to Above V
- Accessible Ceiling.
- Existing Phone Outlet w
- Existing Data Outlet.
- Existing Phone/Data Combo Outlet.
- Poke-Thru or Recessed Floor Box for Power and Data. Type Specified on Plans. (DV)
- D Junction Box
- ₽ Electrical Panel Boards
- Disconnect Switch. All Switches Shall Be Heavy Duty Type (E.G. 30A/3P/600/NF/NEMA 1) Ь
- Fused Disconnect Switch. Similar to Above. '
- Combination Disconnect Switch and Magnetic Motor Starter. 30Amp Size 1 Minimum Typical Unless Noted Otherwise. Provide Control Power Transformer. 2 N.O. and 2 N.C. Contacts, Hand-Off-4⊠ Automatic Switch, Red Pilot Lights ("Run" Light). Provide Overload Relays Matching FLA of Equipment.
- Conduit Run Concealed in Wall or Ceiling
- Conduit Run Concealed in Floor
- Homerun to Electrical Panelboards

Legend Notes: 1. The word "provide" as used in these drawings shall mean "materials and labor turnished and installed by Electrical Contractor". 2. Mounting height of all light switches, dimmers, receptacles, telephone, data with the shall be a servirance with the "American with Disabilities

- Act' Light Switches, Dimmers, etc. (+42") Receptacles, Telephone, Data, etc. (+18")
- All mounting, heights are measured from finished floor to center of device. Mounting heights are measured from finished floor to center of device. Mounting heights shown on the architect drawings and specifications take precedence. Verify exact mounting height required with architect and install accordingly.

Remove Existing Equipment Remove Existing Equi Relocated Equipment Alternating Current Ampere Fuse Above Finished Floor Authority Having Jurisdiction Ampere Interrupting Capacity Ampere Trip Automatic Transfer Switch American Wire Gauge Circuit Breaker Contractor Furnished Contractor Installed Current Transformer Each Electrical Contractor Fire Alarm Fire Alarm Annunciation Panel Fire Alarm Control Panel Full Load Amps General Contractor Ground Fault Interrupte Galvanized Rigid Steel Horsepower Inverter Power System Junction Box Kilo-Volt-Ampere Local Area Network Lighting Main Circuit Breaker Main Distribution Frame Main Lugs Only Mounted National Electrical Code National Electrical Manufacturers Association Not to Scale Owner Furnished Contractor Installed Owner Furnished Owner Installed Overcurrent Overcurrent Protection Pole Public Address Telephone Terminal Board Transient Voltage Surge Suppressor Typical Under Counter Unless Noted Otherwise Variable Speed Drive

PLANNERS

SCIENTISTS SCIENTISIS CONSTRUCTION MANAGERS 13750 SAN PEDRO AVE: #640

KCI 13750 SAN PEDRO AVE. #640 SAN ANTONIO, TX 78232 PHONE: 210-544-5751

FAX: 713-237-9801

ELECTRICAL ABBREVIATIONS

(E) (N) (RM) (R'D) AC AF AFF AHJ AIC AMP

AT ATS

AWG

CB

CFCI

CLG CT

CU DISC. DIST.

EA E C

FA FAAP FACP FLA

G.C. GFI

GRD

GRS

HP IDF I.P.S.

JB KVA KW LAN

LTS

MCB MDF MLO MTD MTG

NEC NEMA

NF NTS

OFCI

OC OCP

. PA PB PH PNL

RCPT

REC

REC RECP REQ'D SN SPECS SPKR

SWBD SWGR

TVSS TYP. UC. U/C

U.N.O.

VA VSD

W W/

W/O

XFMR XFR

TEL TTB

Existing

Relocate

Ampere

Conduit

Circuit

Ceiling

Copper

Fach

Ground

Kilowatt

Mounting

Non-Fused

Not to Scale

Push Button

Recentacle

Receptacle Receptacle Receptacle Required Solid Neutral Specifications

Switchboard

Switchgear

Telephone

Watt or Wire With

Without Weatherproof Transformer Transfer

Volt Volt-Ampere

Speaker

Phase

Panel

Lights

Disconnect Distribution



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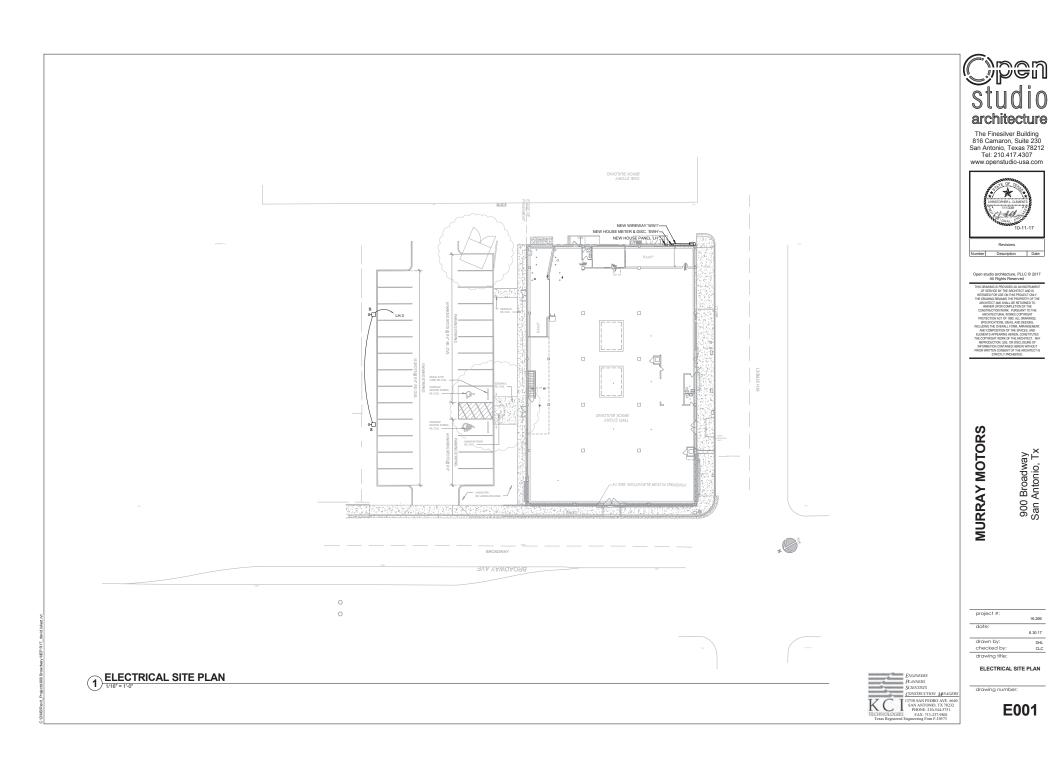
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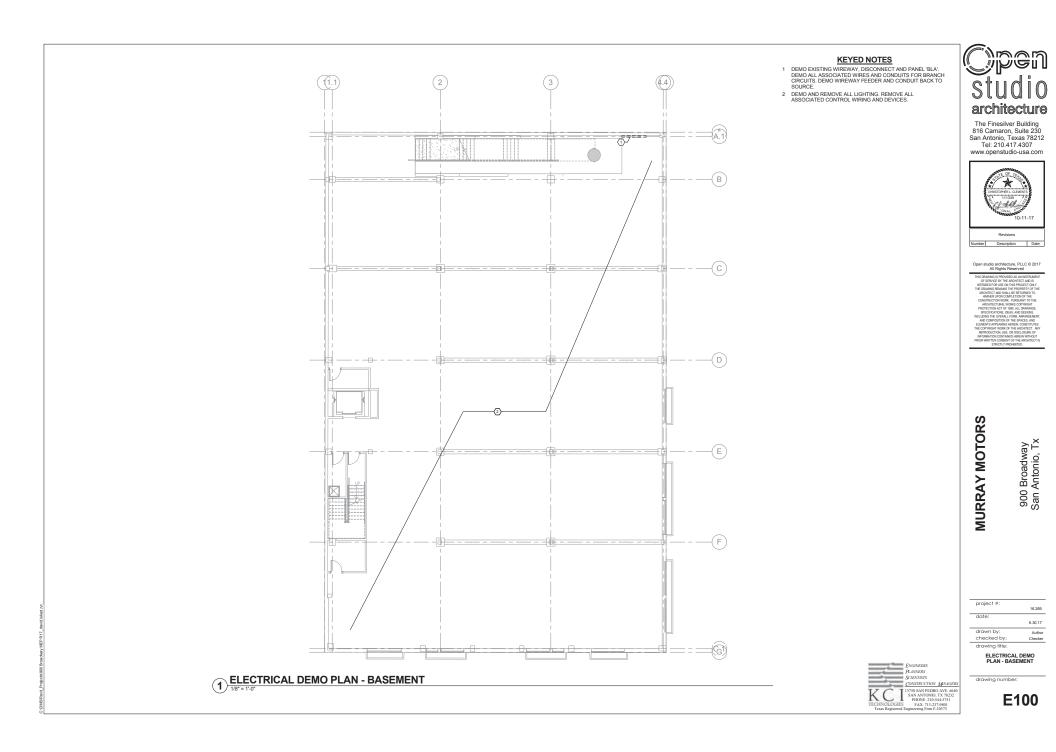
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drawn by:	Author
checked by:	Checker
drawing title:	
ELECTRICAL	

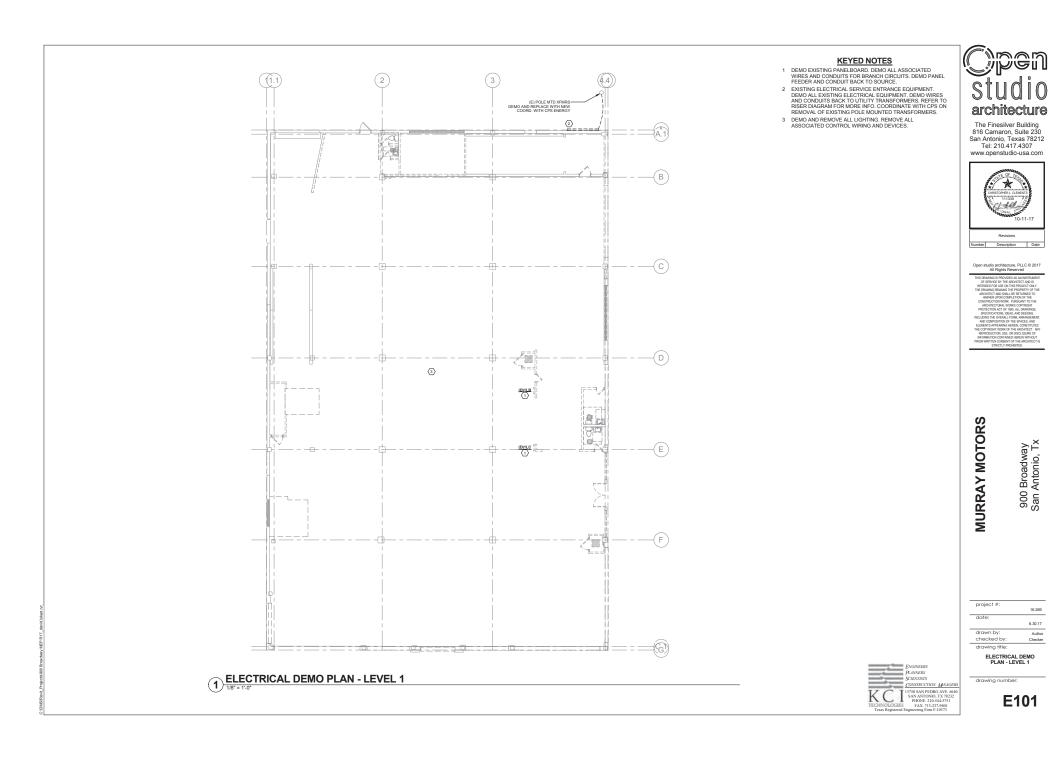
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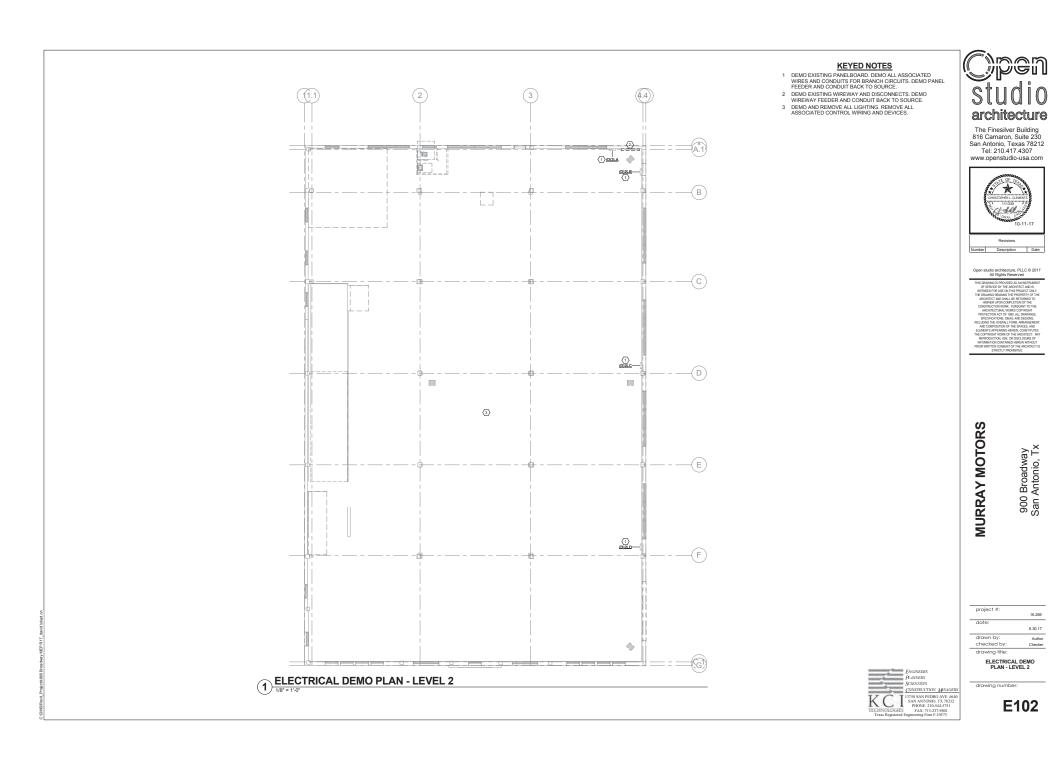
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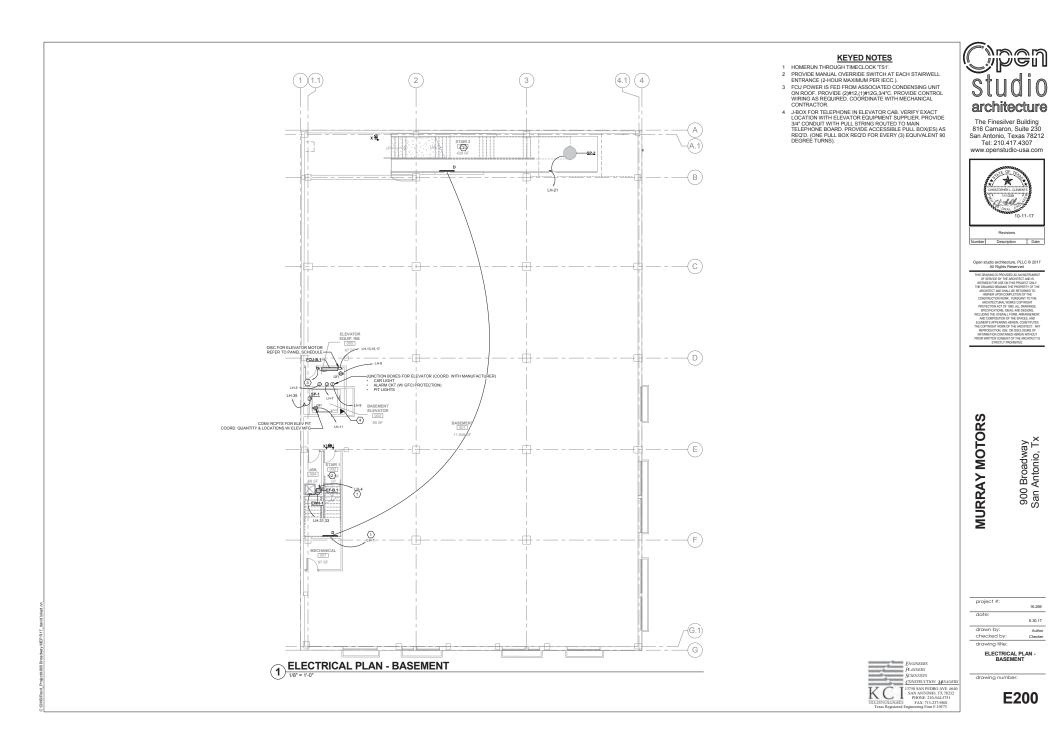


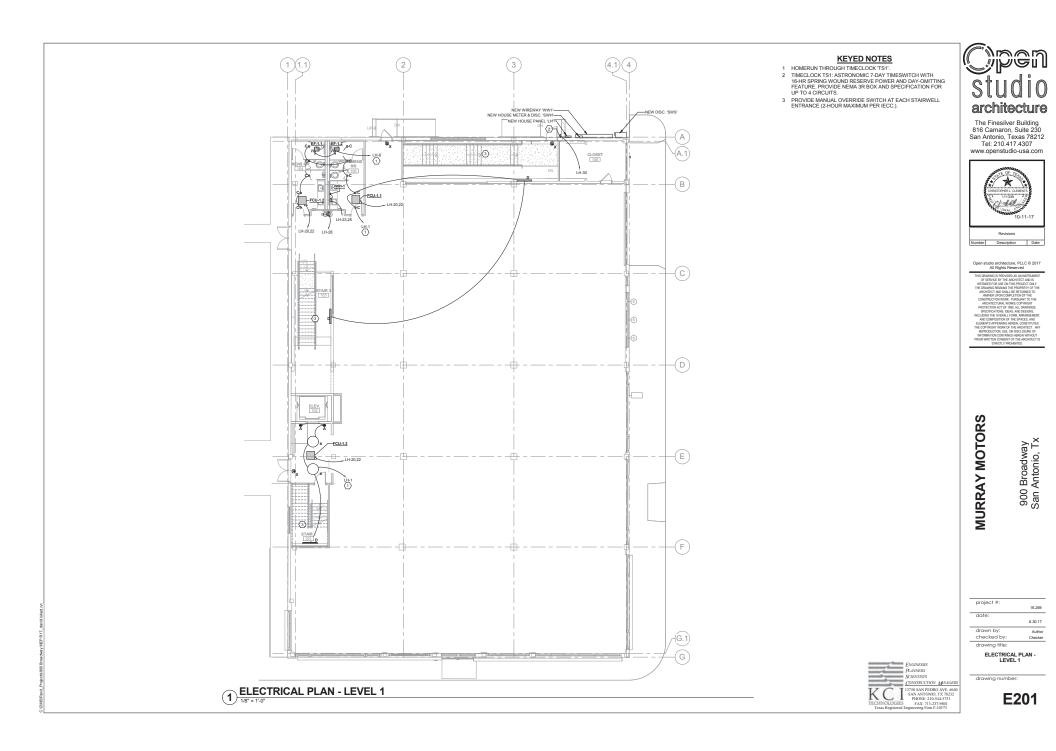


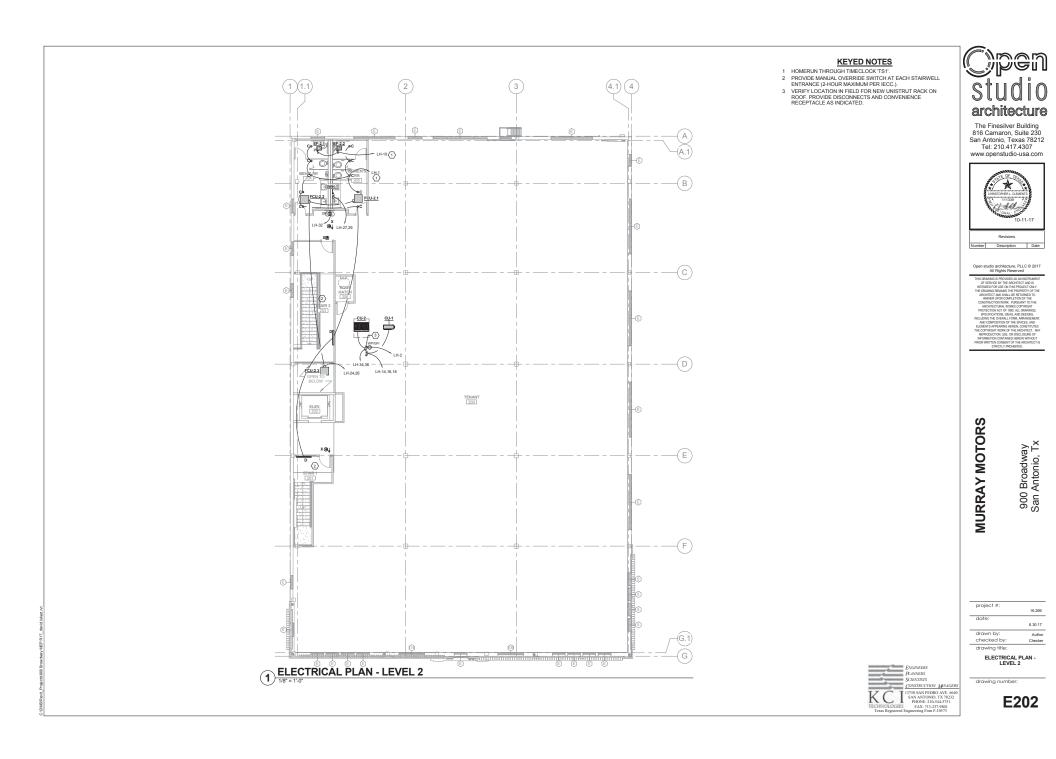


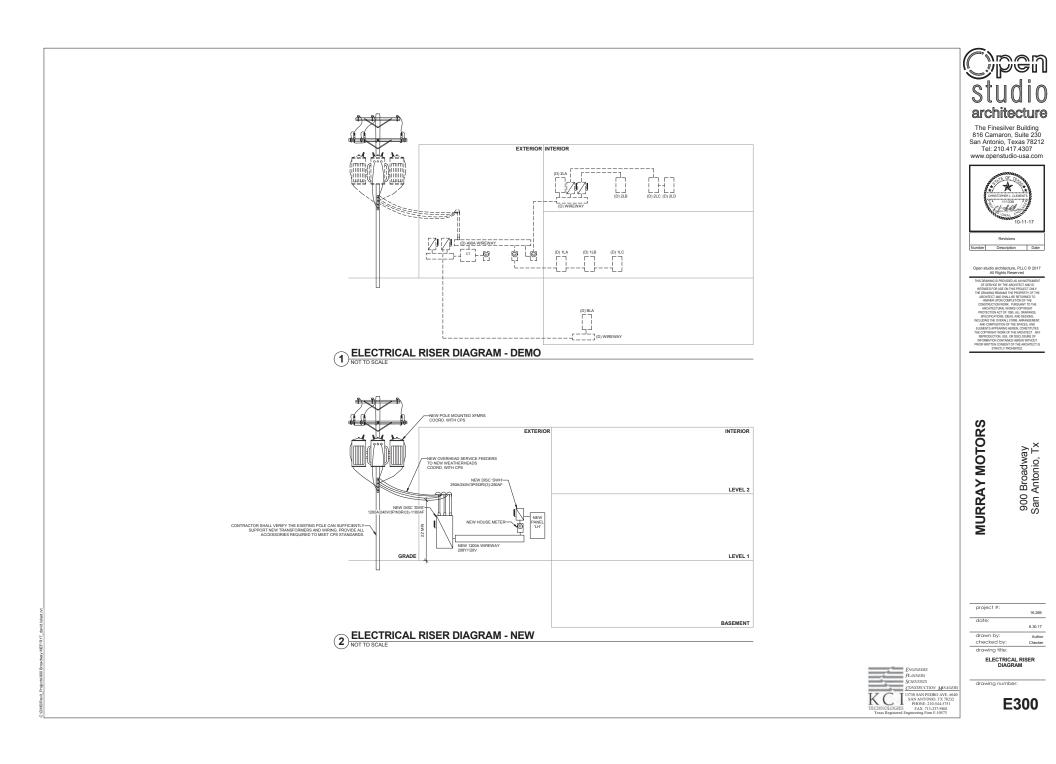












ELECTRICAL LOAD ANALYSIS

WIREWAY "WW1"

30"H x 16"D x 15FT L (Provide Wireway with insulated stepped busbars)

											Status	NEW	
	3 runs of 4#500 KCM, 1 #3/0 G, 3.5"conduit (RMC *)										Enclosure (NEMA)	3R	
	Feeder Ampacity = 1140A							reaker (CB)		x	A.I.C. (KA)	42 KA	
							Fused	Switch (FS)			_	Mounting: Wa	
	Upstream Feeder Breaker Protecting "WW1": 1100Amp										-		
CKT.	LOAD	Load	CONN.	CONN.	Cont.	0.C.	BKR	POLES	Pt	ase	PHASE WIRES, NEUTRAL & GRD	FEEDER	
	DESCRIPTIONS	Туре	KVA	AMP	Loads	Туре	AMP				& CONDUIT SIZE	AMPACITY	
1	SPD (Externally Mounted) Erico #TDX200 Modular	MIS			-	CB	100	3P	Α	вĊ	1 run 4#3, 1#8G, 1 1/2*C	100 Am	
2	Panel "LH"	-	78.6	218.2	-	CB	250	3P	A	вĊ	1 run 4#250, 1#4 G, S*C.	255 Am	
3	SPACE				Y	CB				вĊ			
4	SPACE				Y	CB			A	B C			
5	SPACE				Y	CB			A	в С			
6	SPACE				Y	CB			A	вĊ			
							WIREV	WW YAY	1" L	OAL	ANALYSIS		
LOAD		Load	DMND	LOA	D (KVA)			LOAD (KVA)			NEC CALCULATION		
DESC	RPTION	Туре	FCTR	CON	ECTED.			CALCULATED	2		REFERENCE		
LIGH	TING	L	1.25	1.4				1.7			125% of connected loads		
RECI	EPTACLES	R	1	1.8				1.8			NEC2014 Art. 220.44		
C00	LING LOADS - HVAC	Ċ	1	18.0				18.0			Cooling loads larger than heating		
HEA'	FING LOADS - HVAC (non-coincident wiccoling)	н						-					
MOT	OR	MT	1	30.5				30.5					
MISC	NON-CONTINUOUS LOADS	MIS	1	19.6				19.6					
TOTA	NL LOAD (KVA)			71.2 KVA				71.6 KVA					
TOTA	AL LOAD (AMP AVG)			197.7 AME				198.7 AMP			PbA+177A PbB+213A PbC+237A Neut+17A		

208Y/120V 3Ph 4W,full size neutral,wicoppe PANFI									(Fed from V	W(1)				
174122														
Copper Bus Rating								X	MC		New		Panel	
Mains Rating (M.C.B.)								_	ML					d Ground Bus
		4#250.1#4						_		id Thru Luga	SEE PLAN		Locati	
	Feeder	Ampacity =	255A					_		int-Trip MCB	Surface		Mounti	
(Al Branch Broukers Shall Be But On Type)						_		35 KA			38			une (NEMA)
LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD	(Note 1)	TRIPIPOLE (Note 2)	CKT #	РН	CKT #	TRIPPOLE (Note 2)	(Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
CORELTG	L	0.20	1.7	2#12.1#12G.1/2*C	20 /1	1	A	2	20 /1	2#12.1#12G.1/2*C	1.5	0.18	R	1 D.R.
SITELTG	L	1.16	2.7	2#12.1#12G.1/2*C	20 /1	3	в	4	20 /1	2#12.1#12G.1/2*C	0.7	0.1	MIS	EF-8.1 **Disc30A/2P/240V/N
FLEVATOR CAR LIGHTS	MIS	0.05	0.4	2812 18120 1/200	20 /1	5	c	6	20 /1	2812 18120 1/210	2.1	0.3	MIS	FE-11812 **Disc304/29/24
FLEVATOR ALARM	MIS	0.10	0.8	2812 18120 1/200	20 /1	7	-	8	20 /1	2812 18120 1/210	1.5	0.18	R	DED RCPT FOR ELEV MACH F
ELEVATOR PIT LIGHTS	MIS	0.20	1.7	2#12.1#12G.1/2*C	20 /1	2	в	10	20 /1	2#12.1#12G.1/2*C	2.1	0.3	MIS	EF-2.1 & 2.2 "Disc30A/2P/24
60.8	R	1.08	9.0	2812 18120 1/200	20 /1	11	C	12	20 /1					SPARE
FLEVATOR	MT	0.4	78.0	341/0 1450 1 1/210	200 /3	13	-	14	45.73	4#8.1#10G.3/4*C (Note 3)	36.3	4.4	с	012
* 25HP Einvator 78FLA	MT	2.4	78.0	#10 + 190Am		15	в	16		# = 100m	36.3	4.4	c	*** 38.3 FLA 13.1 KVA
***Disc200A/3P/240V/NEMA1/(3)-150F	MT	2.4	78.0			17	c	18			36.3	4.4	c	*** Discellar/3P/240V/NEN/3P
"Shunt Trip for breaker above"			"Shurt Trip Accessory" /1 19			Ā	20	20 /2	3#12.1#12G.1/2*C (Note 3)	2.6	0.3	c	FCU-1.01. FCU-1.02 & FCU-1.0	
SP-2.1/2HP Disc30A/2P/240V/N1	MT	1.2	2.8	2#12.1#12G.3/4°C	20 /1	21	в	22			2.6	0.3	с	"2.6 FLA .5 KVA-Disc30A2P(240V)
WH-1	MIS	4.2	39.9	3#8.1#10G.3/4*C (Note 3)	50 /2	23	с	24	20 /2	3#12.1#12G.1/2*C (Note 3)	2.9	0.3	С	FCU-2.01. FCU-2.02 & FCU-2.0
"8 3KW 39.9 FLA-Dac60A(2P)240V/NF/N1	MIS	4.2	39.9			25	A	28			2.9	0.3	с	"2.9 FLA 6 KVA-Disc30A2P(240V)
WH-1	MIS	4.2	39.9	3#8.1#10G.3/4*C (Note 3)	50 /2	27	в	28	20 /1	2812 18120 1/210	15	0.18	R	PWC
"8 3KW 39.9 FLA-Dac60A2P(240VNF/N1	MIS	4.2	39.9			29	с	30	20 /1	2#12.1#12G.1/2*C	0.4	0.05	MIS	TIMECLOCK TS1"
EWH-1	MIS	1.0	9.6	3#12.1#12G.1/2*C (Note 3)	20 /2	31	A	32	20 /1	2#12.1#12G.1/2*C	1.5	0.18	R	EWC
"200 95 ELADIS-TRADEDOKNENI	MIS	1.0	9.6			33	в	34	20 /2	3#12.1#12G.1/2*C (Note 3)	18.3	1.9	С	CU-1/FCU-1.8
SP-1.1/2HP Disc30A/2P/240V/N1	MT	1.2	2.8	2#12.1#12G.3/4°C	20 /1	35	с	36			18.3	1.9	с	"18.3 FLA 3.8 KVA-Disc30A/2P/2H
SPACE					/1	37	A	38	/1					SPACE
SPACE					/1	39	В	40	//					SPACE
SPACE					/1	41	с	42	/1					SPACE
					PANEL	"LH"	LOA	D AN	ALYSIS		-			
LOAD DESCRIPTION		TYPE	DEMAND	10/	D (KVA)				NEC CALCU	ATION				
			FACTOR	CONNECTED	CALCUL	ATED			REFERENCE					
LIGHTING		L	1.25	1.4		1.7			125% of cor	meched loads				
RECEPTAGLES		R	1	1.8		1.8								
COOLING LOADS - HVAC C		C	1	18.0		18.0			Cooling load	is larger than heating				
HEATING LOADS - HVAC (non-coincident wiccosing) H														
NOTOR		MT	1	30.5		30.5								
MISC. NON-CONTINUOUS LOADS		MIS	1	19.6		19.6								
25% LARGEST MOTOR (28.1 KVA)		-	0.25			7.0								
TOTAL LOAD (KVA)				71.2 KVA	78	6 KVA								
TOTAL LOAD (AMP AVG)				197.7 AMP	218.2		_			Phantala Philippia Photosia Net				



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Author

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MURRAY MOTORS

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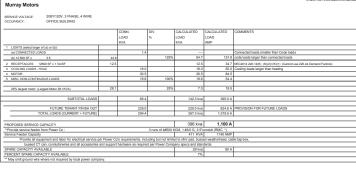
drawn by:

checked by:

drawing title: ELECTRICAL SCHEDULES & DETAILS

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date:



Feeder Schedule Murray Motors				78(1ma 08)11 Ool 17 82096 Venine 82 Santi oler
EQPT	MAIN BUS (AMPS)	MCB (AMPS)	MLO (AMPS)	Feeder **
Main Service Feeder	-	-	-	3 runs of 4#500 KCM, 1 #3/0 G, 3.5"conduit (RMC *)
WW1	1100	-		3 runs of 4#500 KCM, 1 #3/0 G, 3.5"conduit (RMC *)

 \vdash

Equipment Short	Circuit Ratings Summary	(Point-to-Point Calculation)	
Murray Motors			
EQPT	DIST. FROM	CALCULATED SHORT	EQPT A.I.C.

EQPT	DIST. FROM UPSTREAM EQPT (FT)	CALCULATED SHORT CKT CURRENT (AMPS)	EQPT A.I.C. RATINGS (AMPS)
WW1	25	33,956	42,000
		28.131	

LIGH	IT FIXTURE SCHE	DULE				
TYPE	MFG. AND CATALOG NO.	DESCRIPTIONS	MOUNTING	LAMP (QTY., WATT & TYPE)	VOLTS	REMARKS
A	CONTARDI BACH LARGE	DECORATIVE WALL SCONCE	SURFACE	84W LED	UNV	1
в	KICHLER MACLAIN 43742NBR	ROUND PENDANT FIXTURE	PENDANT	100W LED	UNV	1
с	TBD COORD. WITH ARCH	RECESSED CAN LIGHT	RECESSED	40W MAX LED	UNV	1
D	COLUMBIA LCL-4-35-ML-E-U-ELL14	LENSED STRIP LIGHT WITH 90-MIN EMERGENCY BATTERY BALLAST	SURFACE	42W LED	UNV	1
s	SPAULDING ARA3-A-64L-4K-070-4-U	POLE MOUNTED AREA LIGHT	POLE	580W LED	UNV	1,2,3
х	DUAL-LITE LT SERIES	EXIT LIGHT FIXTURE WITH FROG EYES WITH 90-MIN BATTERY	SURFACE	10W LED	UNV	1

Feeder Ampacity 1140A 1140A 255A

NOTES. 1. OLORS AND FINISHES WITH ARCH. 2. MOUNTED AT 2000 AND FINISHES WITH ARCH. 2. MOUNTED AT 37 VAROVE GRADE. PROVIDE 30 POLE TO MATCH FIXTURE FINISH. PROVIDE MOUNTING ACCESORIES AS REQUIRED. 3. PROVIDE WITH SCL OCCUMARCY SENSOR/PHOTOCELL TO DIM LIGHTS IN ACCORDANCE WITH 2016 IECC. PROVIDE ALL RELATED OPTIONS AND ACCESSORIES FOR A COMPLETE AND OPERATIONAL SYSTEM.



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- Note 1:
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- Note 2:
- Note 3:
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MURRAY MOTORS 900 BROADWAY SAN ANTONIO, TEXAS GENERAL NOTES AND ELECTRICAL SPECIFICATIONS

IN CASE OF CONFLICTS BETWEEN DRAWINGS, OR SPECS AND DRAWINGS, CONTRACTORS SHALL REQUEST CLARIFICATIONS IN WHITING FROM ARCHITECT/ENGINEER, OTHERWISE THE MORE STRINGENT REQUIREMENTS SHALL BE PROVIDED.

CODE INFORMATION: APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO: NATIONAL ELECTRICAL CODE (2014 N.E.C.). INFERNATIONAL BLDG CODE 2015, LIFE SAFETY CODE (NFPA 101), TEXAS ACCESSIBILITY STANDARDS, AMERICANS WITH DISABILITIES ACT. OCCUPANCY CLASSIFICATION: B

9 69 09 ABAC ELECTRICAL REQUIREMENTS PERMITS AND CODES OFFINA AND PAY FOR ALL RECEISENTY PERMITS AND REQUIRED NEPPECTURES ELEMENTATION DURING DATE: M PERMITS AND PAY PERMITS AND REQUIRED NEPPECTURES ELEMENTATION DURING DATE: M PERMITS ANY REQUIRED TEMPORARY POWER AUTORITICS FOR AUTOR TRADES AND ALL CONSTRUCTION TRALERS. PROVIDE TEMPORARY POWER RUTCELL TEMPORARY POWER RECEITERS. CONTRACTOR TRALERS. PROVIDE TEMPORARY ELEMENTS SERVICE ALL TEMPORARY POWER RECEITERS. CONTRACTOR TRALERS. PROVIDE TEMPORARY ELEMENTS SERVICE ALL TEMPORARY POWER RECEITERS. CONTRACTOR TRALERS. PROVIDE TEMPORARY ELEMENTS SERVICE ALL TEMPORARY POWER RECEITERS. CONTRACTOR TRALERS. PROVIDE TEMPORARY ELEMENTS SERVICE ALL TEMPORARY POWER RECEITERS. CONTRACTOR TRALERS. PROVIDE TEMPORARY ELEMENTS SERVICE ALL TEMPORARY POWER RECEITERS. CONTRACTOR TRALERS. PROVIDE TEMPORARY ELEMENTS SERVICE ALL TEMPORARY POWER RECEITERS. CONTRACTOR TRALERS. PROVIDE TEMPORARY ELEMENTS SERVICE ALL TEMPORARY POWER RECEITERS. CONTRACTOR SERVICES AND RECEITES SERVICES ALL TEMPORARY POWER RECEITERS. CONTRACTOR SERVICES AND RECEITES SERVICES ALL TEMPORARY POWER RECEITERS. CONTRACTOR SERVICES AND RECEITES SERVICES ALL TEMPORARY POWER RECEITERS. POWER AND RECEIVES SERVICES AND RECEIVES SERVICES ALL TEMPORARY POWER RECEITERS. POWER AND RECEIVES

VISITING THE JOB SITE VISIT THE SITE OF THE PROPOSED CONSTRUCTION IN ORDER TO FULLY UMBERSITING THE FACULTES DUPFICULTES AND RESTRICTIONS ATTEMDNA THE EXECUTION OF THE WINTED FROM HIS ORDINAL PROFINAL DUE TO HIS FALLY TO RECOMPOSED FOR THE WINTED FROM HIS ORDINAL PROFINAL DE TO HIS FALLY FOR THE INSTALLOT ON A DECOMPLY THING FOR THE INSTALLATION AND COMPLETION OF THE WORK IN UNDER VISION FOR THE BROWN DEFINITION OF THE FOR THE AND THE PROFINAL ORDER FOR THE FOR THE PROFINAL ORDER FOR THE PROFILE OF THE WORK IN UNDER THEREIN.

DRAWINGS: DRAWINGS ARE DIAGRAMMATIC, CONFIRM DIMENSIONS & LOCATIONS IN THE FIELD. IF CONFLICTING DIMENSIONS ARE SHOWN, USE LARGER DIMENSIONS AND VERIFY WITH ARCHITECT. SEE ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF FIXTURES AND WALL MOUNTED

NATERIAL: ALL MATERIALS SHALL BE NEW, MADE IN USA AND U.L. LISTED. MATERIAL INSTALLATION SHALL COMPLY WITH NEC REQUIREMENTS AND PERFORM BY CRAFTSMAN SKILLED IN THIS PARTICULAR

EQUIPMENT PROTECTION: PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION.

BILINGHING HILL CLAREF TANGE CONSIGNATION INTERCESS OF AUXOLETY RELATES OF SOUTHAINTON WITH CLAREF TANGES CONSIGNATION INTERCESS OF AUXOLETY RELATES OF WORK LODGE SUBJECT OF CONTACTS, IS CONSIGNED A WHITT FINALES OF SOUTHAINTON AUXOLETY CONTACTS, IS CONSIGNED A WHITT FINALES OF AUXOLETY RELATES OF SOUTHAINTON AUXOLETY CONTACTS, IS CONSIGNED A WHITT FINALES OF SOUTHAINTON AUXOLETY CONTACTS, IS CONSIGNED A WHITT FINALES OF SOUTHAINTON AUXOLETY CONTACTS, IS CONSIGNED A WHITT FINALES OF SOUTHAINTON AUXOLETY CONTACTS, IS CONSIGNED AND AUXOLETY AUXOLETY TEXTURES, IS THE AUXOLETY AUXOLETY AUXOLETY AUXOLETY AUXOLETY AUXOLETY TEXTURES, INTERCESS, IS THIN I AND AUXOLETY AUXOLETY AUXOLETY AUXOLETY SOUTHAINTON AUXOLETY AUXOL Loss must write a write the summing clush that in the United Window UNLESS NOTED OTHERWISE, VERIFY CHARACTERTISTICS OF ALL COUNDENT WITH DIVISION IS AND OTHER SPECIAL DIVISION (ELEVATORS ETC) BEFORE ROUGHING IN THE ELECTRICAL CONNECTIONS AND ENERGIZING THE COUPINENT MECHPILUIBING/SPECIAL EQPT ACCESS AND CLEARANCE AREAS. REMOVE ANY IMPROPELY INSTALLED ELECTRICAL EQPT AND CONDUCT THAT ARE LIMITING PROFER ACCESS FOR EQPT SERVICE AND

ACCESS PANEL: PROVIDE ACCESS PANELS OR DOORGE FOR ALL DEINCESS RECHINING ADULTS THET BABRARY FOR J. JANCTON KORSE PULL DOOLS ET CHAIL AD DEINCESS RECHINING ADULTS THET CODE AND/OR THE J.COL. AUTORITY HAWING JARSIDICTION, APPERANNEE OF ACCESS PANELS DOORS PAUL BE ACCEPTABLE TO ARCHITECT PANELSDOORS BAUL BE DESIGNOR FOR THE PIRE RETING OF WALL OR CELINIG IN WHICH THEY ARE INSTALLED. ALL BE DESIGNOR FOR THE PIRE RETING OF WALL BE ACCEPTABLE TO ARCHITECT BAUES FROM OTHER DONSIONS).

PLENUMS: PLENUMS ARE CROWDED AND NOT ALL OBSTACLES ARE INDICATED. ALLOW FOR CONDUIT OFFSETS AND PULL BOXES NOT INDICATED ON DRAWINGS.

PLASTER, GYPSUM BOARD OR OTHER NON-ACCESSIBLE CEILINGS: CONTRACTOR SHALL MINIMIZE CUTTING AND PATCHING BY INSTALLING CONDUIT PRIOR TO CEILINGWALLIPARTITION COVER-UP.

LOSS OR MANAGET TO EXTEND FACTURE: THE CONTINUENCES BALL BE RESPONDED FOR LOSS OR DAMAGET TO THE EXISTING FACILITIES CAUSED BY HIAM DO IN NORMARE, AND BALL BE RESPONDED FOR REPAYING OR REPLACED SUCH LOSS OF PROVIDENT OF THE REPLACED AND THE CAUSE PROVIDENT OF THE REPLACED SUCH COST REPORTS OF THE REPLACED AND THE CAUSE PROVIDENT OF THE REPLACED SUCH COST REPORTS OF THE REPLACED AND THE CAUSE PROVIDENT OF THE REPLACED REPORTS OF THE REPLACED AND THE CAUSE PROVIDENT OF THE REPORT REPORTS OF THE REPLACED AND THE CAUSE PROVIDENT OF THE REPORT REPORTS OF THE REPLACED AND THE CAUSE PROVIDENT OF THE REPORT OF THE DEBUG AND THE COST OF THE CAUSE PROVIDENT OF THE REPORT OF THE DEBUG AND THE REPORT OF THE COST OF THE REPORT OF THE

EXISTING UTILITIES, CONTRACTOR SHALL REMOVE CEILING GRID, TILES, DOORS, PIPING, AIR CONDITIONING DUCTWORK AND EQUIPMENT, ETC., TO PROVIDE THIS ACCESS AND SHALL REI SAME LIPON COMPLETION OF WORK IN THE AREAS AFFECTED.

ELECTRICAL SERVICE OUTAGE SERVICE TO THE EXISTING BUILDING SHALL BE MAINTAINED DURING NORMAL WORKING HARIAS ANY SERVICE OUTAGE REQUIRED TO COMPLETE THE WORK SHALL BE THE TIME AND FOR THE LENGTH OF TIME AS DIRECTED BY THE OWNER. ALL PREMIUM TIME SHALL BE

FIRE STOPS AND PENETRATION SEALS: ALL PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS SHALL I RE SEALED WITH 3M FIRE RESISTANT FOAM SEALANT, TO PREVENT THE SPREAD OF SMOKE, FIRE, TOXIC GAS OR WATER THROUGH THE FENETRATION ETHER BEFORE, DURING OR AFTER A FIRE. FIRE RATING OF THE PENETRATION SEAL SHALL BE AT LEAST THAT OF THE FLOOR OR WALL INTO IT IS INSTALLED. SO THAT THE ORIGINAL FIRE RATING OF THE FLOOR OR WALL IS MAINTAINED AS REQUIRED BY ARTICLE 2002 LOF THE INSTITUAL ELECTROLAC.CODE.

CLEAN UP: A) PROVIDE FOR ISOLATION OF WORK AREAS AND DAILY REMOVAL OF DEBRIS. B) CLEAN ALL EQUIPMENT AND FIXTURE LENSES. C) REPLACE ALL BURNED OUT LAMPS. D) TOUCH UP WITH PAINT WHERE REQUIRED.

VITENE REJURNEL SUBINITAL DATA SUBNITIALS ARE REQUIRED BUT NOT LIMITED TO THE FOLLOWING EQUIPMENT. LIGHTING FIXTURES, SWITCHGEAR, MICCS IOSTRIBUTIONE PANELIDOARDS, BRANCH ORGUIT PANELIDOARDS, TRANSFORMERS, SWITCHGES ETC, EMPERANY STANDING VENERATOR, SYSTEM, FINE ALARM SYSTEM, NURRE CALL; SYSTEM, SECURITY SYSTEM, TELEPHONE SYSTEM, COMMUNICATION SYSTEM, CONDUCTIFITUNS, WIRES; LIGHTINON PROFESTION SYSTEM

SHOP DRAWINGS: SHOP DRAWINGS AS REQUIRED SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST TO THE ARCHITECT. THESE SHOP DRAWINGS SHALL BE PREPARED TO INDICATE INSTALLATION OF MAJOR EQUIPMENT WHERE SPECIAL COORDINATION

PROBLEMENT OVERCURRENT A SAFETY DISCONNECT DEVICES FOR HAAC EOPT: OVERCURRENT (OC) & DISCONNECT DEVICES SHOWN ON PLANS ARE BASED ON A SPECTOR; HVAC EQUIPARENT MARS/ACTURER HVAC BESPONSIBLITY OF THE ELECTRICAL ON DISCONSTRUCTION OF DOMINISTRY OF DISCONSTOL DEVICES INTO THE HVAC CONTRACTOR PRIOR TO SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY THE HVAC CONTRACTOR PRIOR TO SUBBITTING SUCH EVICES FOR ENDRERES REVIEW. ANY DEVILOSING STORE SHOWN ON SHORE ON THE DISCONSTOL DEVICES INTO DEVILOSING FOR OUR SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY DEVILOSING FOR OUR SES HOWN ON DISCONSTOL DIVED IN THE SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY DEVILOSING FOR OUR SES HOWN ON DISCONSTOL DIVED IN THE SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY DEVILOSING FOR OUR SES HOWN ON DISCONSTOL DIVED IN THE SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY DEVILOSING FOR OUR SES HOWN ON DISCONSTOL DIVED IN THE SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY DEVILOSING FOR OUR SES HOWN ON DIVED FOR DIVED IN THE SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY DEVILOSING FOR OUR SERVICES ANY ON DIVED FOR DIVED IN THE SUBBITTION SUBBITTING SUCH EVICES FOR ENDREREST REVIEW. ANY DEVILOSING FOR OUR SERVICES HOWN ON DIVED FOR DIVED IN THE SUBBITTIONS AND THE OUT OF DIVED IN THE SUBBITTIONS. THE ELECTROLL LEVIALIDARS FRAME SIZES SHOWN ON LIVENAMINGS MUST BE NOTED IN THE SUBMIT TALS. THE ELECTRON ON THAT TALE TO DOTATION OF THE SUBMIT SUBMITS AND THE SUBMITS AND

COMPLETE SYSTEMS: ALL SYSTEMS SHALL BE COMPLETE AND WORKING AT COMPLETION OF CONSTRUCTION

CAME INCLUME. TRALL INSPECTION & OPERATING TESTS: ALL ELECTRICAL SYSTEMS MUST BE CHECKED FOR PROPER PCAARTY AND SEQUENCE, ALL MOTORS MUST BE CHECKED FOR PROPER ROTATION AND ALL EDIFIMENT (INCLUME NAVA), ELEVATOR AND SPECILA EQUIPMENT) CHECKED FOR PROPER YOU TAGE AND PHASING REQUIREMENTS: RRIOR TO THE APPLICATION OF ANY POWER, THE CONTRACTOR MUST ESTIMY THAT ALL CONNECTED EQUIPMENT MUST THE CHARACTER SITUS OF THE SUPPLY CARCUL

VOLTAGE, PHASING AND FEEDER RECUIREMENT MATTER THE CHARACTERISTICS OF THE SUPPLY CRICUIT VOLTAGE, PHASING AND FEEDER RECUIREMENTS. AT THE TIME DESIGNATED BY THE ARCHITECT, THE ENTER SYSTEM SHALL BE INSPECTED BY THE THE INSPECTOR. EXAMINEST THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESENT THE INSPECTOR.

THIS INSPECTION. THIS INSPECTION. AFTER ALL SYSTEMS HAVE BEEN COMPLETED AND PUT INTO OPERATION, SUBJECT EACH SYSTEM TO AN OPERATING TEST UNDER DESIGN CONJITIONS TO ENSURE PROPER SEQUENCE AND OPERATION FUNCTIONING OF ALL SYSTEMS SPECIAL TESTS OF INSPIRIAL SYSTEMS ARE SPECIFIED UNDER FUNCTIONING OF ALL SYSTEMS SPECIAL TESTS OF INSPIRIAL SYSTEMS ARE SPECIFIED UNDER

FUNCTIONS OF ALL STOLENS OFFICIAL ESTIMATION OF AN INFORMATION AND MYLAR REPRODUCIBLES TO THE MANUALL RECTAINED. PROVIDE A EFO CA SABULT DRAWINGS AND MYLAR REPRODUCIBLES TO THE HANGEMACH AFTER THE INSPECTION. ANY TELES WHICH ARE NOTED AS INSEENING TO BE CHANGED OR CORRECTED IN DREPET TO CARBY WITH THESE SPECIFICATIONS AND THE DRAWINGS SHALL BE ACCOMPLISHED WITHOUT DELXY.

GUARANTEE: GUARANTEE ALL WORK AND MATERIALS FURNISHED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER AND ARCHITECT. GUARANTEE SHALL NICLUDE: ALL HADR, PARTS, TRAVELSUBSITENCE, SOFTWARE CHANGESINE-PROGRAMMING, ETC.

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AL 6 73 SHORT CIRCUIT CALCULATION, PROTECTIVE DEVICE COORDINATION AND ARC PLASH STUDIES STUDIE

NETHOD SHO ASSUMPTIONS, BIG YOE LINE DURPAN, (1) 517/TE LUNELLUSIND AND REG FLASHINGTON SHO AND SHALL DO THE DEVOIDED THE THE DURPENT PARTED SHO VICTS OR LESS AND SUPPLIED BY ONE TRANSFORMER PARTED LESS THAN 155 YAU DOTINGTONE SHALL PROVIDE WARNARD LESS TO SELETIONEL, EDWINETT PARTED SHO THAN DOTINGTONE SHALL PROVIDE WARNARD LESS TO SELETIONEL, EDWINETY BURNARDT SHALL INLUEE, BUT NOT LARTED TO SWITCHEORAGE, DISTRIBUTION PARELS, MUTOR DOTING LOTERING, PARELS, CONTACTORES, DISCONCET SWITCHEORAGE, DISTRIBUTION PARELS, MUTOR DOTING LOTERING, PARELS, CONTACTORES, DISCONCET SWITCHEORAGE, DISTRIBUTION PARELS, MUTOR

14 ST CONSTITUTION ADDRESS CONSTITUTIONE DE ALLOS DELLOS DELECTRICAL METALLOS DELANOS INMUNERATORES DE ALLES TRANSLE OR INFORMATIONE DE ALLOS DE ALLOS INMUNERATORES DE ALLES TRANSLE ORI ADDRESS DE ALLOS DE ALLOS DE INDÚCISIÓN DE ALLES DE ALLOS DE ORIGONAL DE ALLOS DE ALLOS DE ALLOS DE SELLOS DE ALLOS DE ALLES DE ORIGONAL DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLES DE ALLOS DE ORIGONAL DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLES DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLES DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLES DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLES DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLES DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE DELANOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE ALLOS DE DELANOS DE ALLOS DE DELANOS DE ALLOS DE DELANOS DE ALLOS DE DELANOS DE ALLOS DE DELANOS DE ALLOS DE ENCASEMENT FOR ALL INCOMING SERVICE CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE. PROVIDE RED DETECTABLE WARNING TAPE OVER ENTIRE RUN OF SERVICE AND MAJOR CONDUIT

HIGHLIGHED STETCHALE WANNED THE OWNE EINER BULG' SERVICE AND WANCE COLUMN. THE REAL OF A DECIDENCIES OF A D TO BULDOW LIKES ROUTE CHART & DRECTY AS PROBABLE WITH LARGET RAULUS BIOL PROMIT DOWNLOAD LIKES ROUTE CHART AS DRECTY AS PROBABLE WITH LARGET RAULUS BIOL PROMIT BOORDERS TITUCTURED, DREVING AND LARGE LA CORDUCT ON FOR DWALLES EUPPOTIED TO MA BOORDERS TO BULDOWNLOAD LARGE MER STATUS AND LARGE BULDOWNLOAD DO AN BOORDERS THE CHART AND LARGE AND LARGE AND LARGE AND TABLE SEVENTIES AND PROMITED AND LARGET AND LARGET AND LARGET AND LARGET AND LARGET AND LARGET AND PROMITED AND LARGET AND LARGET AND LARGET AND LARGET AND LARGET AND LARGET AND PROMITED AND LARGET AND PROMITED AND LARGET AND PROMITED AND LARGET AND LAR "CADDY PIRAMID" OR EGUAL BY COOPER BLINE. SUPPORT AT INTERVAL NOT TO EXCEED 10 ON CENTE NAM WITHIN 5 OR WIT DERLETION FOR CONDUIT, TENEN OR CONDUIT TIENDER FERE NISTALITON, COA SCRATCHES WITH ZINC PART PROVIDE PILL WIRE IN ALL CONDUIT (POWER, FIRE ALARM, TELEPHOLE NAD OTHER COMMUNICATION CONDUIT) PILL WIRE ALSO REQUIEDE IN ALL SPARE CONDUIT PROLECT RECORD DOCUMENTS, ACCUMATELY RECORD ACTUAL ROUTING OF ALL UNDERSLAB AND UNDERRICONDO CONJUTS, INCLUED DIMENSIONE FORM REY BUILLAND FORTS AND DEPTH OF COVER.

OUTLET BOXES: SHALL BE GALVANIZED STEEL SUITABLE FOR LOCATION. CEILING OUTLET BOXES SHALL BE 4° OCTAGON. WALL OUTLET BOXES SHALL BE PROPER DESIGN TO ACCOMMODATE THE DEVICES REQUIRED - 4 INCH SQUARE WITH RAISED COVER. PROVIDE RACO, STEEL CITY OR APPLETON. ALL J-BOXES / SPLUE BOXES MUST BACCESSIBLE.

JUNCTION /PULL BOXES: (A) FOR EACH CONDUIT RUN: PROVIDE ONE JUNCTION/PULL BOX FOR EACH EQUIVALENT THREE QUARTER BENDS (270'). (B) UNDERGROUND FEEDERS: MINIMUM ONE PULL BOX FOR

26 05 19 BUILDING WIRE AND CABLE TED CARLE CO. OR CARL

WIRE (INGNOLE, AMERICAN INSULATED CABLE CO., OR CABLE O., AMERICABLE O., AMERICAB RATED WIRE MAY BE USED BUT ONLY AT 2750 CRBC F AMPACITY, BRECENCY AND NORMAL CRUTE C MUST BE INSTALLED IN SEPARATE CONDUIT AND DEVICE BOXES PER N.E.C. ARTICLE 700.3.(B).

IS IN THE INTERVIEW IN THE PARTY OF THE PARTY INTERVIEW IN THE PARTY INTERVIEW INTERVI RATED LOW-SMOKE CABLE MAY BE USED IN LEU OF WIRE/CONDUIT TYPE INSTALLATION ALL INELMINIATIO CABLE SHALL BE PROPERIN SUPPORTED IN SIMOLI INIXE, CABLE TES CLIPIE TO VIRAP AND SUPPORT COMMUNICATION WIRES IN ADMENIATE SUPPORT DEVICES MER NOT CABLE AND SUPPORT COMMUNICATION WIRES IN ADMENIATE SUPPORT DEVICES MER NOT ADMENIATION OF 127 ADDRO CELLING TILES AND LIT FROM TYPE COMMUNICATION WIREN CABLES ANNIHAMO OF 127 ADDRO CELLING TILES AND LIT FROM TYPE COMMUNICATION WIRENSI.

FIELD INSULATION TESTING: INSULATION RESISTANCE OF ALL CONDUCTORS SHALL BE TESTED. EACH CONDUCTOR SHALL HAVE ITS INSULATION RESISTANCE TESTED AFTER HE INSTALLATION IS COMPLETED AND ALL SPLUESE. TRAF AND CONNECTIONS ARE MADE EXCEPT CONNECTION TO OR INTO TIS SOURCE AND POINT (OR FOUNTS) OF TERMINATION. INSULATION RESISTANCE OF CONDUCTORS WHICH ARE: TO OPPARE A F AGO VICES OF LESS SHALL BE TESTED FU SIONS A BOLCE INCODER OF INST LESS THAN 100 VCLTS DC. INSULATION RESISTANCE OF CONDUCTORS RATED AT 800 VCLTS SHALL FREE OF SHORTS AND GROUNDS AND HAVE A MINIMUM RESISTANCE FHASES TO-PHASE AND PHASE T GROUND OF AT LEAST 10 MEODHMS. CONDUCTORS THAT DO NOT EXCEED INSULATION RESISTANCE YALLES LISTED ABOVE SHALL BE FREMVED AT CONTRACTORS EXPENSE AND REPTACED AND TEST HALL FURNISH AL INSTRUMENTS AND PER TO THE OWNER. THESE TESTS REPORTS SHALL DENTRY EACH CONDUCTOR TESTED, DATE AND TIME OF TEST AND WEATHER CONDITIONS. EACH TEST SHALL BE SIGNED BY THE PARTY MAKING THE TEST.

26 27 26 WIRING DEVICES WIRING DEVICES: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS. MATCH BASE BUILDING STANDARD DEVICES. IF NO STANDARD HAS BEEN ESTABLISHED: ALL DEVICES SHALL BE LEVITON

GECORAT THE (WHITE COOR CONFIRM WIRACHTECTOR APPROVED EQUAL UNLESS SPECIFIED OTHERWISE BY ARCHTECT, ALL RECEPTALES SHALL BE FED SPECIFYE. DIMERS WITCHS: PHOVIDE DEVICATES NUMBER SWITCHS: DEVICE THE NOT SHARE NEUTRAL WITH 2 OR MORE BRANCH ORCUTS. DO NOT BREAK FINS (HAT SWISS) ON DIMER SWITCH. DERNALD DIMERS SWITCHSE MY BE USED ONLY WHERE SPECIFICALLY APPROVED BY

ENGINEER GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE SHALL COMPLY WITH 2006 UL 943 SAFETY STANDARD. GFCI RECEPTACLE SHALL HAVE INTEGRAL END-OF-LIFE LED INDICATOR LIGHT, AND CONTINUOUS SENSING AND SELF-TESTING EVERY 60 SECTORS. PROVIDE HUBBELL GRESSEC OR

ISOLATED POWER RECEPTACLES (IF USED) TO BE ORANGE COLOR, WITH CIRCUIT NUMBER AND PANEL NAME ENGRAVED ON FACE PLATE.

NAME ENDRAVED ON FACE PLATE. OUVER PLATES HIGH ABUGE MILLON OR STAINLESS STEEL PER ARCHITECT. PROVIDE CIRCUIT NUMBER ALL ELECTRICAL BOXES ON OPPOSITE SIDES OF CORRIDOR WALLS AND FREWALLS MUST BE SEPRARTED BY A HORIZONTAL IDISTANCE OF NOT LESS THAN 24 INCHES.

TESTING AND CERTIFICATION: CONTRACTOR SHALL DELIVER A WRITTEN REPORT CERTIFYING THAT EVERY RECEPTACLE HAS BEEN TESTED AS FOLLOWS AND FOUND ACCEPTABLE: (A) THE PHYSICAL INTERRITY OF EAH RECEPTACLE SHALL BE CONFINEND BY VISUAL INSPECTION. (B) THE CONTINUT THE GROUNDING ORGUIT IN EACH ELECTRICAL RECEPTACLE SHALL BE VERIFIED. (c) CORRECT POLARTY OF THE FOT AND NEITING: CONNECTIONS IN EACH ELECTRICAL RECEPTACLE SHALL BE NEITING THE FOT AND NEITING CONNECTIONS IN EACH ELECTRICAL RECEPTACLE SHALL BE CONFIRME ON THE THAT AND RED INVECTIVAL CONNECTIONS IN EACH FEED ROAD, RECEPTACE BALL BE CONFIRMED, 10) THE RETENTION FORCE OF THE GROUNDING BLADE OF FACH RELECTRICAL RECEPTACE EXCEPT LOCKING-TYPE RECEPTACES) SHALL BE NOT LESS THAN 115 GRAMS (4 OZ.).

In the set of explanation and a proposed of explanation and a constraint of the explanation of the explan PROVIDE MEDIAL DATABLE LINING PROVIDE EXCITATIONAL UNLEDED TYPE; FOR ABOVE GRADE CONNECTION PROVIDE MECHANICAL BOLLED TYPE CONNECTIONS UTILIZIONA HIGH CONDUCTIVE COPPER ALLOY OR BRONZE LUGS OR CLAMPS. SERVICE GROUND REBISTANCE: MUST BE LESS THAN 25 OHMS. PROVIDE ADDITIONAL ORDINIDE DOCUMENT DE DESENTATIONE MUST BE LESS THAN 25 OHMS. PROVIDE

26 05 53 ELECTRICAL IDENTIFICATION IDENTIFICATION: LABEL ALL JUNCTION AND PULL BOXES WITH PANELS AND CIRCUIT NUMBERS. FURNISH MARKERS OR PANT BAND FOR EACH CONDUIT LONGER THAN 6 FEET, SPACING 20 FEET ON CENTER.

DOADS OF YANT BAND CONTRACT CON MUCHES DOTING CLOCK OCCU. 1, 4 (44) CC1 POTEN-CALC, 10 (2014) CC1 POTEN, 14 CAV (1994) CC1 POTENCIA, 10 (2014) CC1 PO

 BINU COLOR CORE & PAPECARES,
 ALL PANELS SHALL BE IDENTIFIED USING NAMEPLATES WITH 4 ROWS OF TEXT (LETTER HEIGHT SHALL BE

ALL PAGES SHULL BE CONTINED USING NUMERATES WITH 4 ROWS OF TEXT SETTERHEDRY SHULL BE UP ADALE SOLUTION 16 OF 36 CTT AND 16 OF 36 CTT AND 16 OF 36 OF

208V, 3 PHASE, 3 WIRE FEEDER SIZE 3 # 4/0 THWN, 1 # 4 G, 2 1/2°C.

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2.4.1.1.0.TELEVIDING INTERCEDURES OF WHOMOS HALL CONTRACT TO UNIT COPER BLOCK OF WHOMOS PROVIDE WITCHEARCH WHICH FROM THE ACCESS TO BLOCK AD DEVICES FOR INSTALLATION AND FINITE MAINTENANCE FOR HIT FINIT LOCK AD DISD. TOTAL WITCHEARCH WHICH FROM THE ACCESS TO BLOCK AD DEVICES FOR INSTALLATION AND FINITE MAINTENANCE FOR EXCENSION BLOCK AD DISD. TOTAL WITCHEARCH WHICH FOR THE ACCESS AD DEVICES TO UNIT HOUSE DETERMINE CARRENT BATHING FOR EXCENSION BLOCK AD DISD. TOTAL WITCHEARCH WHICH FOR THE ACCESS AD DISD. NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO BUTTANE INSTALL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION BUPPORTS SCLUEDED TO THE SECTION FRAME AND BLOCT TO NEUTRAL BLOCK MILLION THE SATHINGTON ADD TO THE SECTION NEUTRAL BLOCK MILLION THE SATHINGTON ADD TO THE SECTION FRAME AND BLOCK TO NEUTRAL BLOCK MILLION THE SATHINGTON ADD TO THE SECTION FRAME AND BLOCK THE SATHINGTON NEUTRAL BLOCK MILLION THE SATHINGTON ADD TO THE SATHINGTON ADD THE SATHINGT and also RALAUCENT SECTION. THUS PROVING A CONTRACIN BUTTRAL BIS IN SECH SECURITY FEEL INTO THE UNIT RELEASED TO THE OWNER ALCONTRACING BUTTRAL BIS IN SECH SECURITY FEEL INTO THE UNIT RELEASE ADDRESS TO THE OWNER ADDRESS ADDRESS ADDRESS TO DETERMINATIVE TO THE UNIT RELEASE ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS DOTOTERMINATIVE DETERMINATION ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS DOTOTERMINATIVE RELEASED AND THE OWNER ADDRESS ADDRESS ADDRESS ADDRESS BUTTOREBUILDED AND THE OWNER ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS BUTTOREBUILDED AND THE OWNER ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS BUTTOREBUILDED AND THE OWNER ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS BUTTOREBUILDED AND THE OWNER ADDRESS AD

GROUND-AULT PROTECTION PROVINCE ORDINAL FAULT REVECTION ON DECUT PROTECTIVE EDUCES WHERE NOCKTEE ON THE ORDINALST. THE UNIT SALLL INCLUEE COORDINATES CURRENT SINGLAS SOLID STATE RELAY AND NONTOR PANEL OF THE SAME MANUFACTURER, OLIFICAT ERISORS, SPROVING ROUND-FAULT PROTECTION AS AN INTEGRAL PART OF THE CIRCUIT PROTECTIVE DEVICE. A RESIDUAL SCHEME SHALL BE USED WHICH INCORPORATES AN ADDITIONAL CURRENT TRANSFI MONITOR THE NEUTRAL.

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VES SHALL ALSO SHOW THE GROUND FAULT PROTECTIVE RELAT

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ACCEPTABLE MANUFACTURERS ARE DE, SQUARE D, EATONICUTLER-HAMMER, AND SIEMENS. MATCH EXISTING WHERE REQUIRED BY OWNER.

THE AT A FARLE DATE: A FARLE DATE OF A LIVE COPPE BLEES LOUG CENTER TYPE FARLE DATES AFEND A CONTRACT OF A LIVE COPPER BLEES LOUG CENTER TYPE FARLE DATES AFEND A CONTRACT OF A LIVE COPPER BLEES LOUG CENTER THE COPPER AFEND CONTRACT OF A LIVE AND A LIVE COPPER BLEES LOUG CENTER THE A LIVE AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND CONTRACT OF A LIVE AFEND AFEND AFEND CONTRACT OF A LIVE AFEND CO

RAFER RATED 100 AMP OR LESS SHALL BE SUITABLE FOR TERMINATING 75-DEGREE C RATED FOR ONLY 60-DEGREE C WIRE IS NOT ACCEPTABLE. SEE SECTION 16123 -BUILDING WIRE AND CABLE). ALL EQUIPMENT SHALL BE LABELED, PANELBOARDS SHALL BE LABELED BOTH ON THE COVERPLATES

ALL COMMENT DALL. THE LARGED PARELEAVED SHULL REARED DOTT ON THE COVERYLATES PARELEARDED DOTT THE LARGED PARELEAVED SHULL REARED DOTT ON THE OCCURRENT REARED READ TO THE OWNER AND THE

26 28 19 ENCLOSED SAFETY SWITCHES ALL SAFETY SWITCHES SHALL BE HEAVY-DUTY TYPE WITH QUICK-MAKE, QUICK-BREAK

ALL SAFETY SWITCHES SHALL BE HEAVY-DUT TYPE WITH OUTCAMME. DUTCABEAK CONTACTS AND SUITABLE FOR TRANSMIT TO TSOEDERE COME PROVIDE SACH WITCH WITH A ROCAND LUD (PROVIDE A DEFENSIONEL FORM ACCESSIBLE, COM PROOF DOOR INTERLOCK TO PROVENT OFFINING THE DOOR IS OFFINISHED TO TRANSMITT AND A DEFENSION OF THE DOOR TO PROVENT OFFINISH TO PROVIDE IS OFFINISHED TO TRANSMITT AND A DEFENSION OF THE DOOR TO PROVE THE DOOR TO PROVE EXPOSED WHEN THE DOOR IS OFFINISHED AND THE DOOR TO HIT WITH AN ISOLATED, FULL DO THAT TO LIVE PARTS ARE EXPOSED WHEN THE DOOR IS OFFINISHED WITCH WITH AN ISOLATED, FULL DO THAT DO LIVE PARTS ARE EXPOSED WHEN THE DOOR IS OFFINISHED AND THE ELOCK TO THE PROVE FULL BUTCHES ARE SHOWN INFORMATING OUR DIMONITION THE BULCH TO THE ENGLIGENCE WHERE FUBILES WITCHES ARE SHOWN, PROVIDE SWITCHES WITH REJECTION-TYPE FUSE HOLDERS WHICH ARE SUITABLE FOR USE WITH FUSES. IN GENERAL, MOUNT SWITCHES SO THAT OPERATING HANDLE IS APPROXIMATELY 44 WITH TUBES. IN GENERAL, MIGUNT SWITCHES SU THAT UPENALING HARDLE IS APPROXIMATELY 44 INCHES ABOVE FINISHED FLOOR, WHERE GROUPED, ALLON TOPS OF SWITCHES. ACCEPTRALE MANUFACTURERS ARE GE, SQUARE D, EATONICUTLER-HAMMER, AND SIEMENS. MATCH EXISTING WHERE REQUIRED BY OWNER.

26 22 00 DRY TYPE TRANSFORMERS PROVIDE DRY TYPE QUIET TRANSFORMERS (PER ANSI - C89 AND UL 506), SELF-COOLED NEMA CLASS AA. COPPER VIRE WINDINGS, ALUMINUM WINDING TRANSFORMER IS ACCEPTABLE. PROVIDED THAT SUBSTITUTE VINUEINUS, ALUMINUM VINUEINU I HANSFÖRMER IS ACCEPTABLE, PROVID SUBSTITUTE ALUMINUM FRANSFÖRMER IS IN COMPLIANCE WITH NEC CLEARANCE REQI TRANSFORMERS MUST MEET OR EXCEED NEMA TP-1 ENERGY EFFICIENCY STANDARDS. URNISH FULL-LOAD TAPS IN THE PRIMARY WINDINGS AS FOLLOWS:

 KVA. BATING.
 TAPS

 3-15 KVA, SINGLE PHASE
 (2) 5% TAPS BELOW RATED VOLTAGE

 9-15 KVA, THREE PHASE
 (2) 5% TAPS BELOW RATED VOLTAGE

25-100 KVA, SINGLE PHASE (6) 2.5% TAPS, (4) BELOW & (2) ABOVE RATED VOLTAGE 30-300 KVA, THREE PHASE (6) 2.5% TAPS, (4) BELOW & (2) ABOVE RATED VOLTAGE

SELECT THE APPROPRIATE TAP SETTING ON TRANSFORMER SO THAT THE ACTUAL SECONDARY VOLTAGE IS 1/2/OF A TAP SPAN AT FULL LOAD. RECORD THE TRANSFORMER SERIAL NUMBER KVA. RATING SELECTED TAP SETTING AND SECONDARY VOLTAGE READINGS. SUBMIT COPIES OF THE RECORD TO THE ARCHITECTRONINEER.

AVERAGE SOUND LEVELS MUST NOT EXCEED THE FOLLOWING VALUES KVA 0-9 10-50 51-150

PROVIDE A 220C INSULATION SYSTEM FOR A MAXIMUM 115-DEGREE C TEMPERATURE RISE OVER A 40-DEGREE

END OF SPECIFICATION

GENERAL NOTES: (APPLY TO ALL ELECTRICAL SHEETS) G1 ALL CIRCUIT NUMBERS SHOWN ARE FOR REFERENCE ONLY. FIELD VERIFY ACTUAL CIRCUIT NUMBERS REG7 AND ADJUST ACCORDINGLY.

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architecture

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Revisions

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Author

Checker

10-11-17

IS RECID AND ADJUST ACCORDINGLY. PROVIDE TYPE-WRITTEN DIRECTORJES REFLECTING ACTUAL CIRCUIT NUMBERS USED, WITH FIELD REVISED/ RELOCATED CIRCUITS CLEARLY INDICATED. DIRECTORJES) SHALL INCLUDE DATE AND PROJECT DESCRIPTION. EXAMPLE: 2006 NEW BLDG.

G2 EACH CIRCUIT IS SHOWN WITH AN INDIVIDUAL HOMERUN. E.C. MAY ELECT TO COMBINE TWO OR MORE CIRCUITS IN ONE COMMON CONJULT AND WITH COMMON NEUTRAL WHERE ALLOWED (ORCUTS) WITH HORI CONTROL OF ANAMINIC COMPRENTS MAY NOT BUS COMMON NEUTRAL. EXAMPLE CIRCUITS WITH HORI ALLER ELECTRONIC POWER BUPPLIES BUILD AS COMPLY TIESS, COMPRENT SUPPLIES DESCRIPTION OF ANAMINIC COMPLY AND AND AND AND AND AND AND AND AND MARKING CONTROL POWER BUPPLIES BUILD AS COMPLY TIESS, COMPLIES AND ADMINISTIC CONJULCTORS ARE RETAILED IN A RECOVENY. SEE IN E.C. ANTICLE 310, ISBN 2744 CARRYING CONJULCTORS ARE RETAILED IN A RECOVENY. SEE IN E.C. ANTICLE 310, ISBN 2744

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TEMPERATURE LIMITATIONS ON AMPACITY OF CONDUCTOR: THE AMPACITY OF A CONDUCTOR SHALL BE SELECTED BASED ON THE NATIONAL ELECTRICAL CODE ARTICLES 310 51 AND 141 AC(1)(1)(2). THE THEMERATURE LIMITATIONS NOTED IN 110.14 (2)(1)(2) MAY BE PARAHRASED AS FOLLOWS: (4) CIRCUITS RATED 100 AMP CLESS:

31 THRU 40 409 41 AND ABOVE 359

L'IDEUTRY PARTD 1902AUR OR LESSENTES. L'IDEUTRY PARTD 1902AUR OR LESSENTES. CONCETTOR MAINE LE LES DIUTION Y À LESSENTE C. AND 96 DECRETE C. CONCETTOR MAINE LE LES DIUTION Y À LESSENTES. LESTE AND LESTERTES POR LES MITTIR HAURER RANDO CONCETTOR LESSENTES LESTE AND LESTERTES POR LES MITTIR HAURER RANDO CONCETTOR LESSENTES LESTE AND LESTERTES POR LES MITTIR HAURER RANDO CONCULTOR LABORER IL LESSE LESTE AND LESTERTES POR LES MITTIR HAURER RANDO CONCULTOR LABORER IL LESSE LESTE AND LESTERTES POR LES MITTIR HAURER RANDO CONCULTOR LABORER IL LESSE LESTE AND LESTERTES CARACITY. ELCETTORS HOHERT TERFERANTER CARLE ARE ALL LOND PROVIDED THE ELUPERNET IS LESTE AND LESTERTES CARLES CARACITY.

G4 ALL CONDUIT AND WIRE MUST BE CONCEALED FROM VIEW. EXPOSED CONDUIT AND WIRE ARE NOT ACCEPTABLE, EXCEPTIONS ARE CENTRAL PLANT, MECHANICAL/ELECTRICAL ROOMS.

EXISTING CONSTRUCTION ALL IN WITHING IN STALLED IN EXISTING VALUE (LINGUAL ROOMS, SHALL BE CONCEALED, INCLUDING CONCRETE BLOCK WALL. PATCH ANY CUT AREAS TO MATCH EXISTING CONDITION.

OS ALL ELECTRICAL AND COMMUNICATION DEVICES (JURIT SWITCHES, RECEPTACLES, TELEPHONE, DATA ETC.) SHALL BE RECESSED MOUNTED UNESS NOTED OTHERWISE. FRED VERBIY RECEPTACLE MOUNTOM RECEIRANTS WITH OWNER ARCH. MOUNT ALL DUPLCK RECEPTACLES WITH THE A'C ORDINATION TELEVISION DEVICES INTO THERMIES ON RECEIVED BY OWNER/ARCH. NEUTRAL TERMINAL SHALL BE ON TOP FOR INFORMATIALY MOUNTED RECEPTACLES.

G7 EQUIPMENT LAYOUT IS BASED ON SQUARE D AND/OR SIEMENS. EQUIPMENT BY OTHER MANUFACTURERS SUCH AS GE MAY HAVE LARGER DIMENSIONS. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROVIDE EQUIPMENT WITH SIMILAR DIMENSIONS THAT WOULD FIT IN THE SPACE NOTE:

Y LOCATION OF ALL OUTLETS (POWER & COMMUNICATION) WITH EQUIDA NOTARE RESERVEST THE RESET TO JUNCE A WY VUILET IS FEET TO ANY DIRECTON PROOF TO ROUGHA ALL RECORDERACES WITHIN REFET OF ANY VERTAGE ACMAINED BINS DOWNAMERE T.C.T. BALL HALL GROUDE FLAL EPROTECTION. WIETHER PERCIFICALLY INDUCTION DOWNAMERE T.C.T. BALL HALL GROUDE FLAL EPROTECTION. WIETHER PERCIFICALLY INDUCTION DOWNAMERE T.C.T. AREAS WITHIN TO ANY ADDRESS AND ADDRESS A

UNDERNOUTIER UNITARIA INTERIOR ELEVATIONS ALL WEATHERPROOF NUET LOCATION ANDIOR OUTDOOR RECEPTACLES SHALL HAVE "WFATHERPROOF-INUSE" COVERS (NEC ARTICLE 406.8(B)), PROVIDE RACO BELL RAYNTTE II 69 SWITCHES/STARTERS FOR MECH AND OTHER EQUIPMENT: LOCATION OF DISCONNECT SWITCHES, STARTERS, CONTROL STATIONS ETC ARE SHOWN DIAGRAMMATICALLY ON THE DRAWINGS. E.C. SHALL

INSTALL SUCH DEVICES IN COMPLIANCE WITH COOR DEVICES OF ADVANCES AND THE UNAWINGS, E.C. SHALL DEVICES SHALL BE ACCESSIBLE AFTER COLUMENT ARE IN PLACE AND SATISFY CODE CLEARANCE REQUIREMENTS, REMOVE AND RE-INSTALL DEVICES THAT ARE INACCESSIBLE OR WITH INADEQUATE CODE CLEARANCE COORDINATE INSTALLATION WITH/AC.

G10 HVAC EQUIPMENT: OVERCURRENT DEVICES, DISCONNECT SWITCHES, CONDUITWIRE ARE SELECTED BASED ONE COUPMENT SHOWN ON MECHANCIAL DRAWINGS, FIELD VERIEY RATINGS OF EQPT SUPPLIED BY HVAC, REVISE ELECTRICAL AS REQUIRED TO MARCH ACTUAL EQUIPTION TO ACTUAL EQUIRED TO MARCH SUPPLIED BY MECH

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GT2 EXHIBIT FAMS. WHERE EXHIBIT FAMS ARE INDICATED AS INTERCOCRED WITH TWAC EQUIFA E.C. SHALL PROVIDE ALL REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. COORDINATE INTERLOCK REQUIREMENTS WITH TWAC

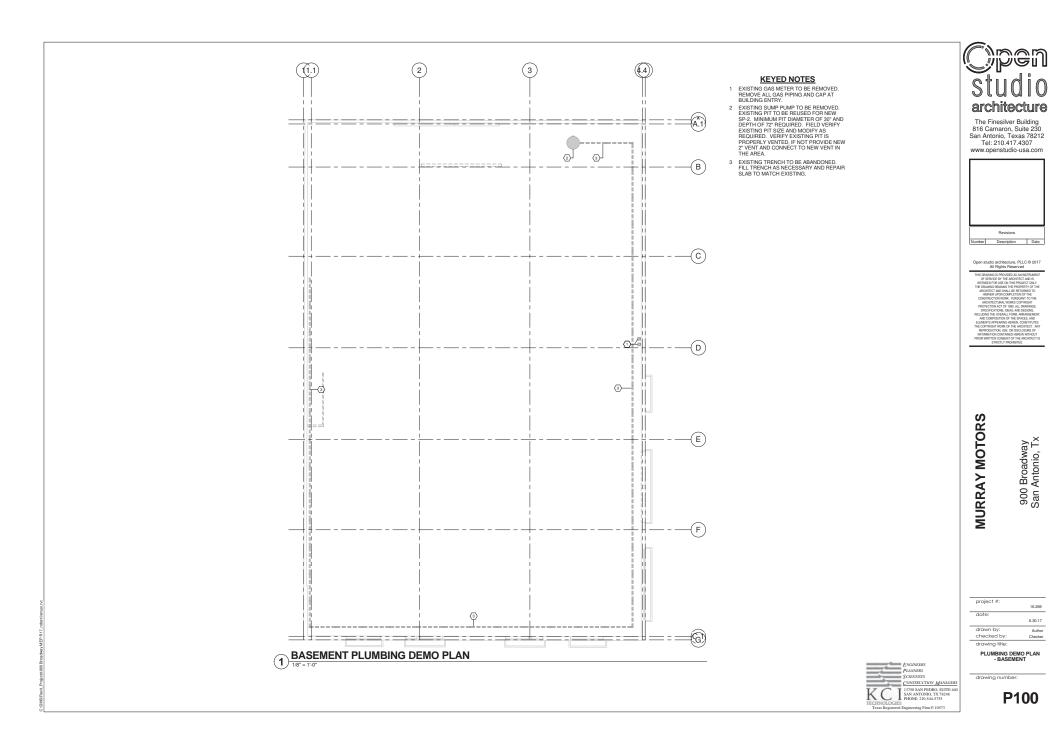
ALL REQUIRED AND NECES ELECTRICAL EQUIPMENT.

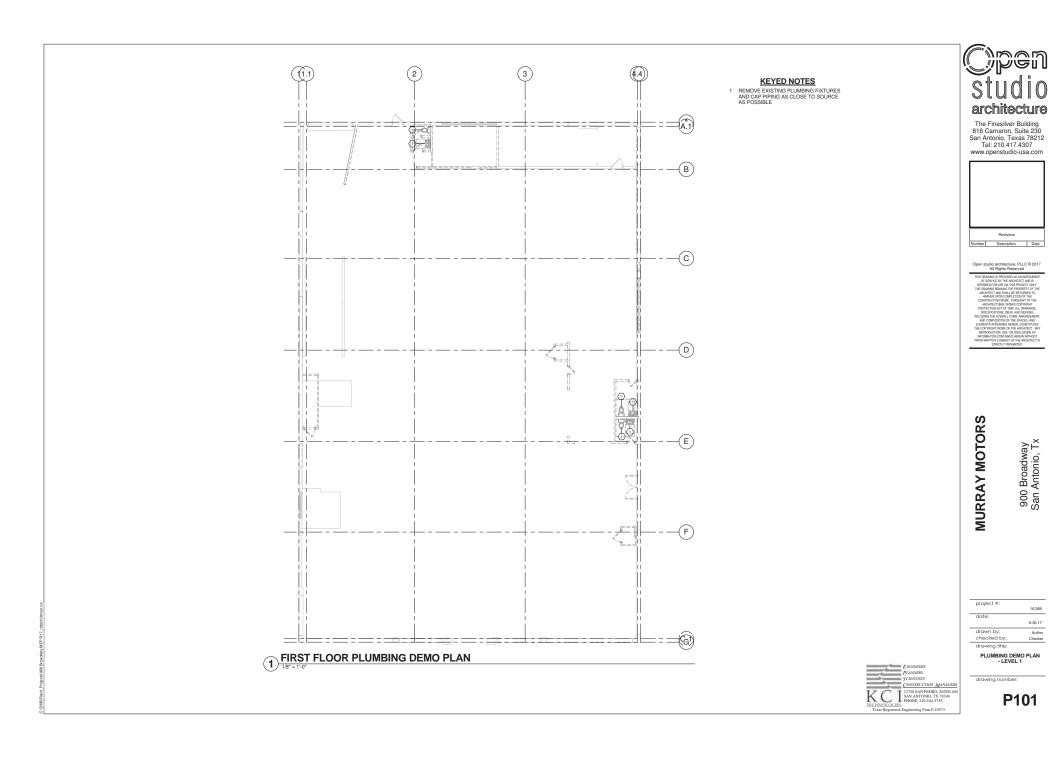
G13 PROVIDE HOUSE KEEPING CONCRETE PAD (MINIMUM 4" HIGH) FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT INCLUDING TRANSFORMERS, SWITCHBOARDS, M.C.C., TRANSFER SWITCHES ETC. PROVIDE ALL REQUIRED AND NECESSARY GALVANED UNISTRU SUPPORT FOR ALL INDOORNOUTDOOR

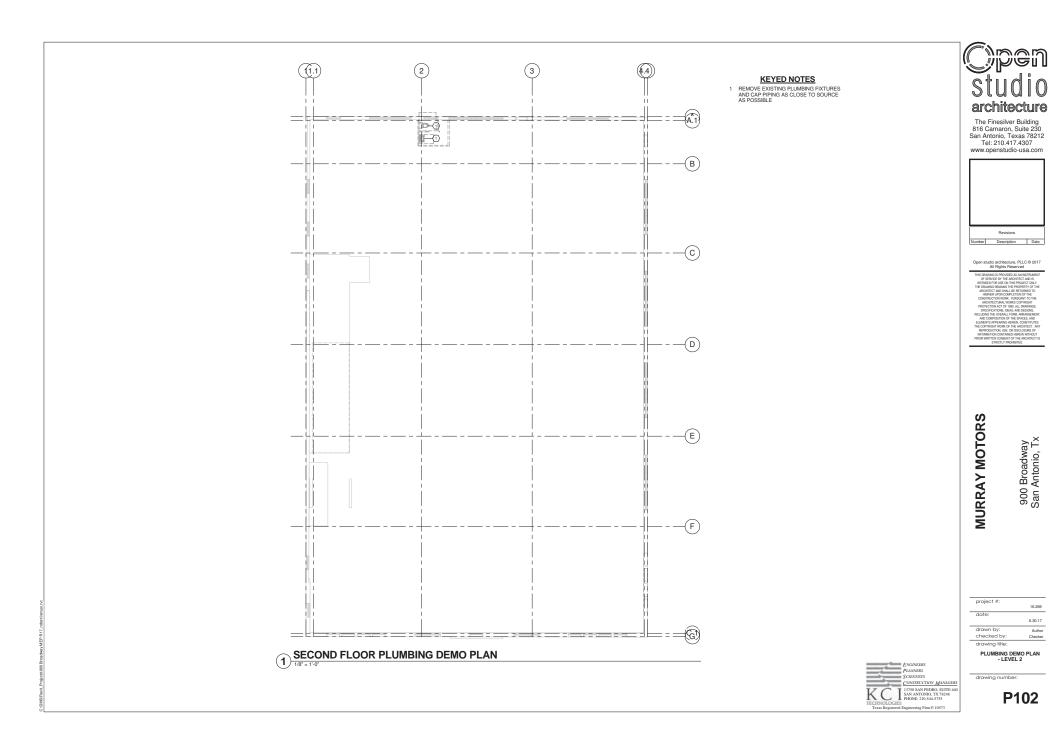
G14 FIRE WALL: DO NOT INSTALL RECEPTACLES, TELEPHONE, DATA OUTLETS ETC. BACK-TO-BACK IN FIRE/SMOKE PARTITIONS OR WITHIN THE SAME SPACE ENCLOSED BY TWO ADJACENT STUDS. ALSO APPLY TO ALL CORRIDOR WALLS.

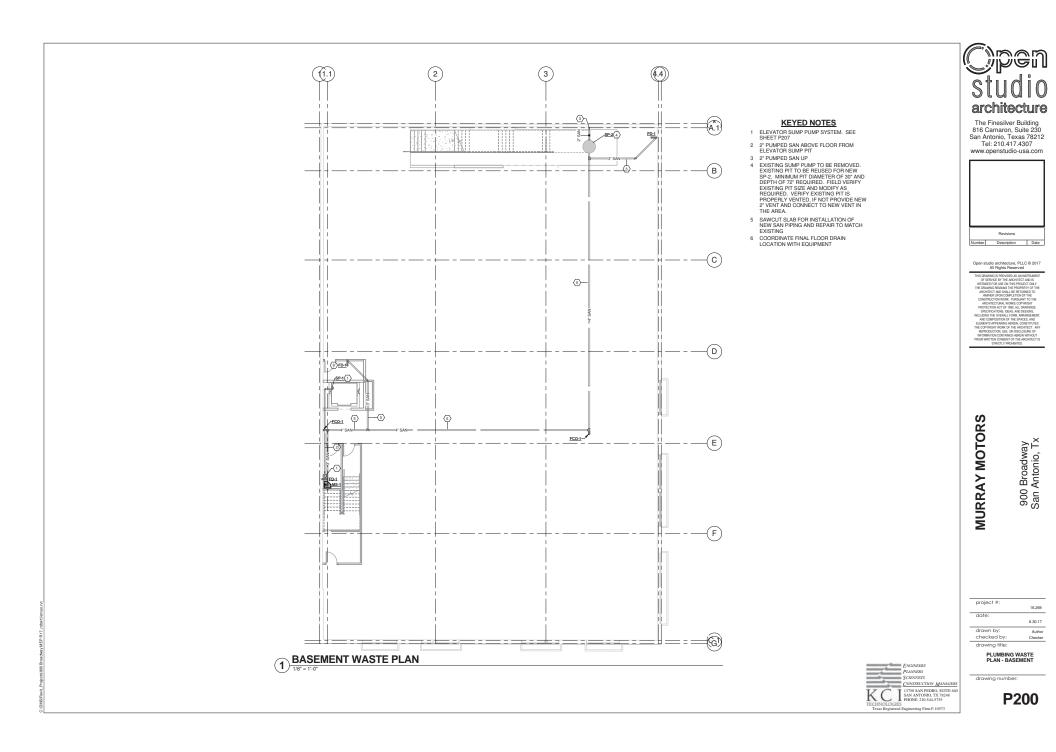
G16 EACH HOMERNIN GROUT SHALL BE 2 # 12 THWN. 1 #12 GROUND, 1/2" CONDUIT TO NEW 20 AMPH-POLE BREAKER THPCAL, UNASS NOTED OTHERWISE IN PAREL SCHEDULES AND/OR CRAVINCIS, NEW BREAKERNIN, CALLED DESTRICK AND AND SHALL AND CHEDSTRICK IN STIFL AND CRAVINCIS, NEW BREAKERNIN, CALLED DESTRICK, AND AND SHALL AND CHEDSTRICK IN STIFL AND CRAVINCIS, NEW BREAKERNIN, CALLED DESTRICK, AND AND SHALL AND CHEDSTRICK IN STIFL AND CRAVINCIS, NEW BREAKERNIN, CALLED DESTRICK, AND AND SHALL AND CHEDSTRICK IN STIFL AND CONDUCTORS FOR 20 AMPERE, 27 VOLT BRANCH CIRCUITS LONGER THAN 200 FEFT. E.C. MAY USE DISTING SAFARE BREAKERS IF AVAILABLE.

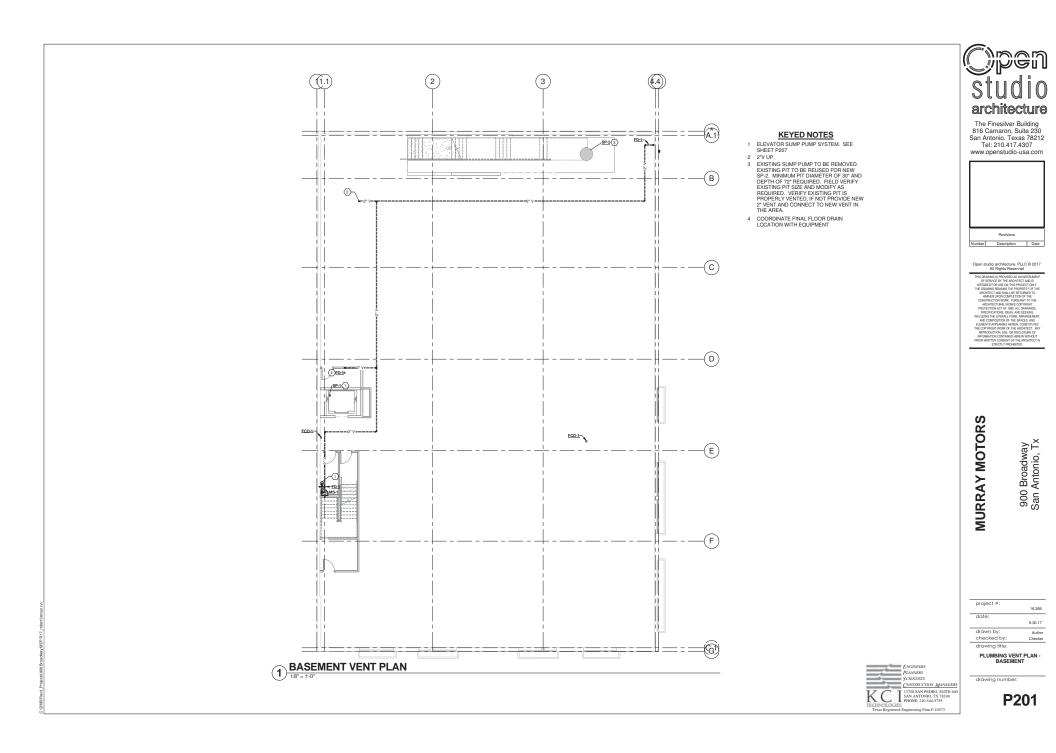
C. DOR PAD-MOUNTED A/C EQUIPMENT: CONNECT A/C EQUIPMENT TO OUTDOOR NEMA 3R

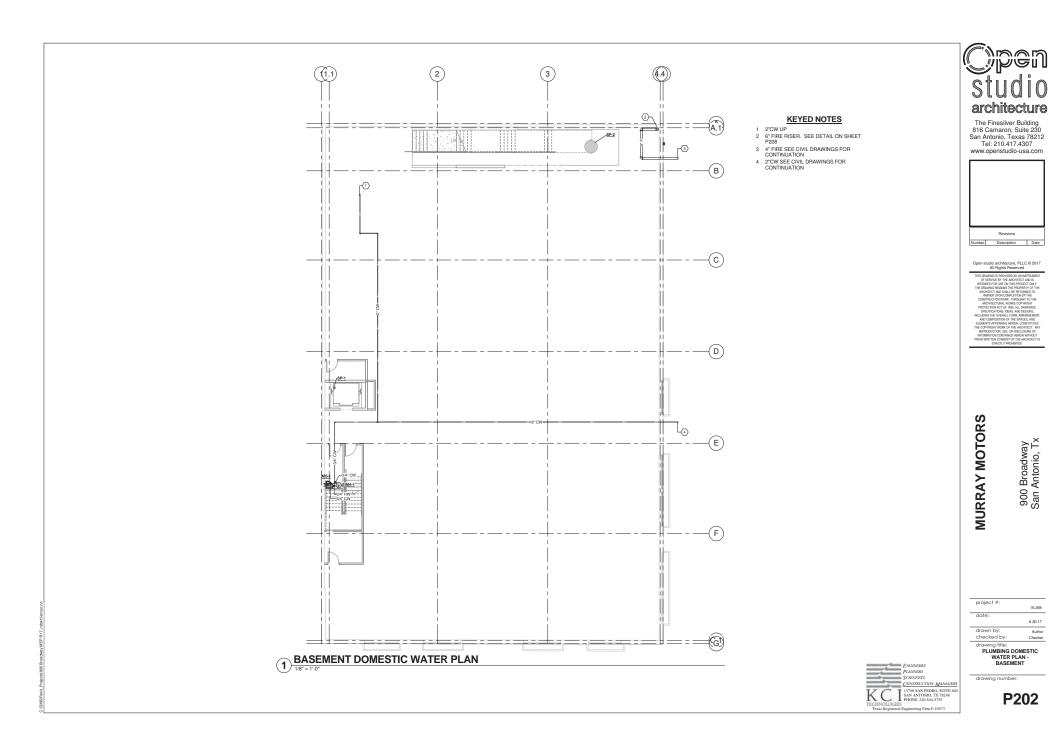


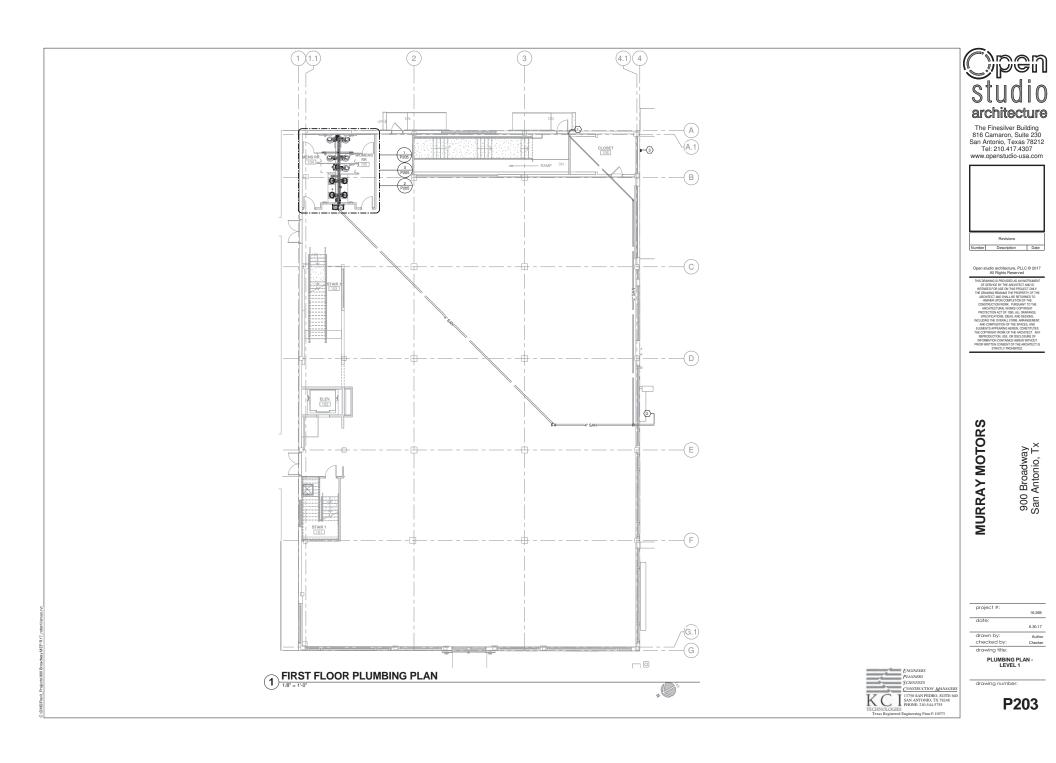


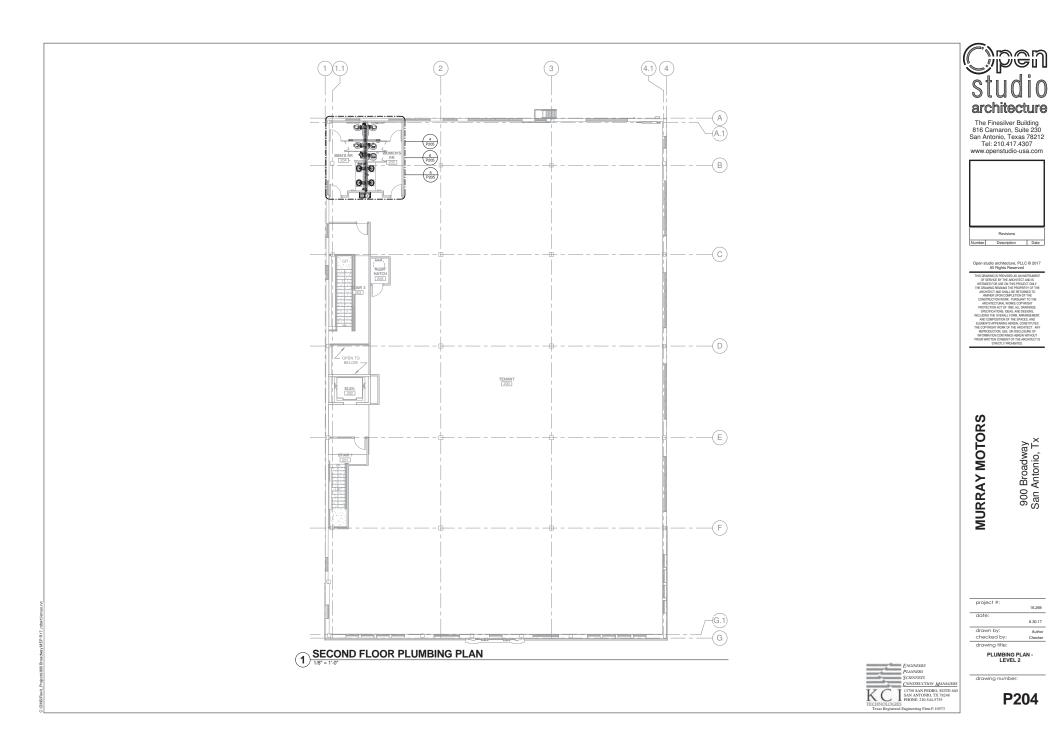


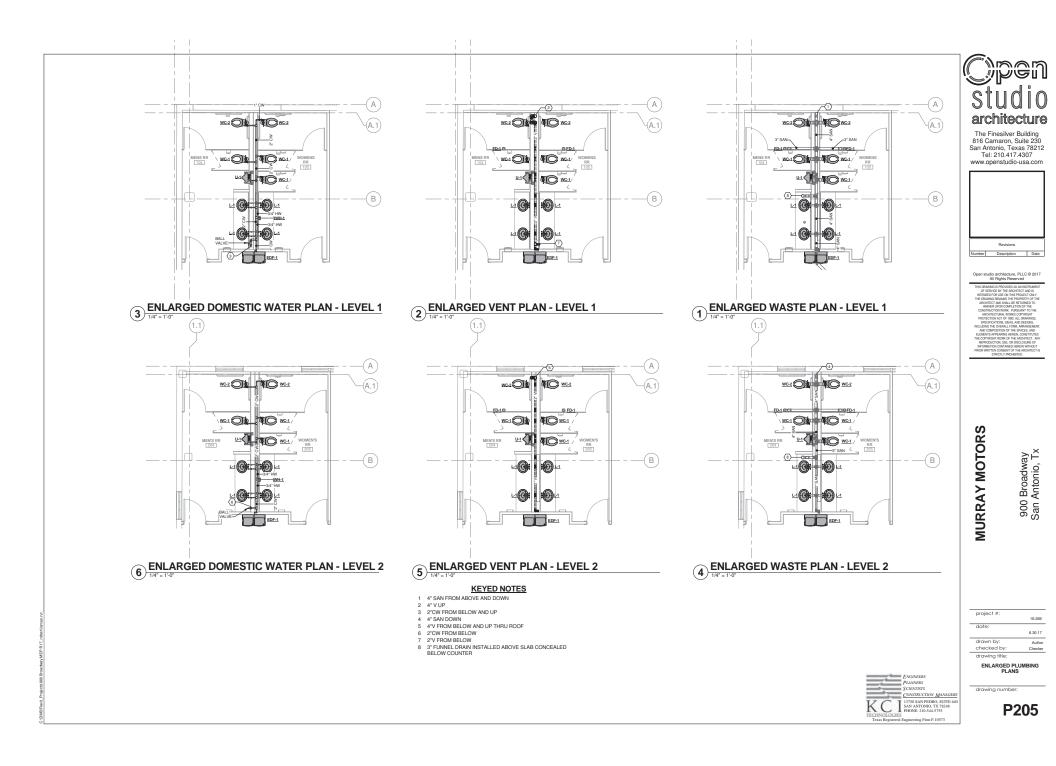












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					CONNECTION					
				ACCESSORIES						
EDF-1	WALL MOUNTED ELECTRIC REFRIGERATED WATER COOLER, SELF-CLOSING CONTROLS ON FRONT AND		EZSTL8C		1/2"		2*			
FCO-1	NICKLE BRONZE TOP		4020-04				4*			
FD-1	WITH FLASHING COLLAR AND 5" NICKEL BRONZE ROUND ADJUSTABLE STRAINER			SURE SEAL TRAP GUARD #SS3000			3*			
L-1	VITREOUS CHINA BASIN LAVATORY, THREE HOLES @ 4" CENTERSET, FRONT OVERFLOW, GRID STRAINER, PROVIDE	SLOAN		GPM), WATTS #LFMMV THERMOSTATIC MIXING VALVE, McGUIRE STOPS AND	1/2"	1/2"	2*			
MS-1		FIAT			1/2"	1/2*	3*			
U-1	HIGH EFFICIENCY URINAL TOP SPUD WALL HUNG WITH MANUAL FLUSH VALVE, VITREOUS CHINA, WASHDOWN FLUSH ACTION, EXTENDED SIDES FOR PRIVACY, 3/4" TOP SPUD, A.D.A MOUNTING HEIGHT			SLOAN ROYAL #186-0.5 (0.5 GPF) MANUAL FLUSH VALVE, JAY R. SMITH CARRIER	3/4"		2*			
WC-1	HIGH EFFICIENCY WATER CLOSET, FLOOR MOUNTED, VITREOUS CHINA, ELONGATED SYPHON JET FLUSH ACTION BOWL, TOP SPUD FOR USE WITH EXPOSED FLUSH VALVE, PROVIDE DUAL WAX RINGS. STANDARD MOUNTING HEIGHT.			MUNXIG VALVE, MCGUIRE STOPS AND D, TRAV BED-1610 (FIAT BESCAS SERVICE FAUCET W VICELD BERKET, FLAT BESCASSE HANGER, FLAT BESCASSE STANLESS UNXERS FLAT BESCASSE STANLESS SLAND SCALAR SEA STANLESS SLAND SCALAR SEA STANLESS SLAND SCALAR SEA STANLESS MANUAL FLUSH VALVE, BARTH CARBER MANUAL FLUSH VALVE, BERS MANUAL FLUSH VALVE, BERS			4*			
WC-2	HIGH EFFICIENCY WATER CLOSET, FLOOR MOUNTED, VITREOUS CHINA, ELONGATED SYPHON JET FLUSH ACTION BOWL, TOP SPUD FOR USE WITH EXPOSED FLUSH VALVE, PROVIDE DUAL WAX RINGS, A.D.A. MOUNTING HEIGHT.	SLOAN	ST-2029		1*		4*			

	ELECTRIC WATER HEATER SCHEDULE									
MARK	DESCRIPTION	MANUFACTURER	MODEL #	ELEMENT WATTAGE	VOLTAGE	PHASE	ACCESSORIES			
IWH-1	TANKLESS WATER HEATER	EEMAX	SPEX8208T ML	8300 W	208 V	1				
IWH-1	TANKLESS WATER HEATER	EEMAX	SPEX8208T ML	8300 W	208 V	1				
EWH-1	15 GALLON (LOW BOY) COMMERCIAL LIGHT DUTY ELECTRIC WATER HEATER	A.O. SMITH "DURA-POWER"	DEL-15	2000 W	208 V	1	WATTS #LFN36-M1 VACUUM RELIEF VALVE AND AMTROL 'THERM-X-TROL' EXPANSION TANK			

		1	PUMP S	CHEDUL	.E			
	Basis o	f Design	Perfor	mance	Mot	or		
Tag	Manufacturer	Model Number	Flow (gal/min)	Head (ft-H2O)	Power (hp)	Voltage (V-ø-Hz)	Remarks	
SP-1	SEE SHEET P207 FOR PUMP INFORMATION							
SP-2	BELL & GOSSETT	2WF-0511	50	15	.5	115	BELL & GOSSETT #S10020N1 PANEL, BELL & GOSSETT #CBE2020 CENTRIPRO RAIL SYSTEM	

2

PLUMBING GENERAL NOTES (apply to all sheets) A. Drawings are diagrammatic; confirm dimensions and locations in the field. If conflicting dimensions are shown,

use larger dimension.

B. Contractor shall field verify size, location, and condition of existing piping before proceeding with bid and construction. Any reused piping found to be in poor condition or not per current code requirements shall be

Construction. Any feased pping tound to be in pode condition or not per current code requirements shall be one of the second se

with the below listed applicable codes: 1. 2015 International Plumbing Code with local Amendments

2015 International Energy Conservation Code
 3. 2015 International Energy Conservation Code
 3. 2015 International Fire Code
 F. All exceptions or substitutions taken to specified materials, fixtures, equipment, or requirements of these

7. All exceptions to substantiations taken to specified materials, induces, equipment, or requirements or unsee documents shall be submitted to the owner, Architect, and Engineer for review prior to purchase and installation. G. Refer to project contract documentation and architectural drawings for additional requirements and information H. See Architectural plans and elevations for exact location of flutures and wall mounted edvices. I. Plenums are crowded and not all obstacles are indicated. Allow for additional pipe offsets, as required, and when an Unified to the destantiation.

when not indicated on drawings. J. Properly seal all penetrations of floors, exterior walls, and rated walls. K. Secure all permits and provide any required temporary utilities.

L. All plumbing vents thru roof shall have the minimum separation from HVAC outside air inlets, per the applicable

code: coordinate with HVAC contractor

All work in or above occupied areas shall be at Owner's convenience and may be during evenings or weekends. Schedule at service interruptions in advance with Owner. N. Location of existing understab plumbing is estimated – allow for exploratory chipping to confirm actual

O. Contractor shall visit site prior to bid – no extras will be allowed for conditions that could be readily observed.

P. Piping shall not be routed over electrical panels or transformers.
O. Provide water harmer arrestors par ASSE 1010 for maintenance free operation on all quick acting valves. Size as per PDI standards; or, as specified. The use of air chambers shall not be acceptable and are not allowed.
R. The general contractor shall make an allowance in his price to pay all gas company solutions soluted with the second state. installation of gas service and meter at the building.

PLUMBING SPECIFICATIONS

22 05 00 COMMON WORK RESULTS FOR PLUMBING

Demolition Demointon: Remove pipe to above ceiling or below floor. Provide new supports for any remaining pipe that was supported by demolished walls. Damage to existing materials/equipment will be repaired at no additional cost. Where fixtures an removed, cap utilities inside wall, above ceiling, or below floor. Return demolished equipment/fixtures to Owner for re-use. If owner does not want same, properly dispose items off-site.

Shop drawings:

Submit all fixtures, trim, equipment, specialties and insulation for review by Engineer-of-Record. Operations and maintenance instructions:

Provide 3-copies of operation and maintenance manuals to Owner. Provide instruction on system operation to Owner's representatives.

Owners representatives. Record drawings: Mittin 50 days after the days the days the days of the days configuration of all piping distribution systems, including sizes. For below grade sanitary piping, provide installed invert elevations Coordination

Coordination: Provide Electrical Contractor with electrical requirements of approved equipment in sufficient time to order panel boards, disconnects, and related appurtenances.

Access doors Provide Milcor, or equal, for access to all valves, controls, water hammer arrestors, or other devices requiring maintenance. Doors shall match wall or ceiling rating. Architect must approve location and appearance of all access doors, prior to installation.

Sleeves: Provide metal sleeves where pipes or control wiring penetrate walls.

22 05 23 GENERAL DUTY VALVES FOR PLUMBING PIPING

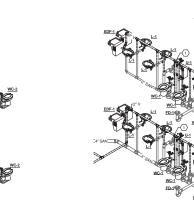
Ball valves: Nibco 585 Series with NIB SEAL – two piece, fullport, bronze body, stainless steel trim, memory stop, with insulated handle; or equivalent in Scott, Kitz, or Milwaukee.

WASTE AND VENT RISER DIAGRAM

KEYED NOTES

1 3" FUNNEL DRAIN INSTALLED ABOVE SLAB

CONCEALED BELOW COUNTER



DOMESTIC WATER RISER DIAGRAM $(\mathbf{1})$

22.05.29 HANGERS AND SUPPORTS

Pipe and equipment hangers and supports shall be per local code. Support all above floor piping utilizing support systems manufactured for the applicable installation. Wire or tape supports are not acceptable provide a " reinforced concrete housekeeping pad with chamfered edges for all floor or ground mounted equipment. Isolate all water piping from direct contact with structural members (studs, joists, beams, etc.) to prevent the transmission of sound Flash and seal equipment, pipe stacks, and roof penetrations.

No wood sills allowed. Roof supports compatible with existing roof system shall be portable pipe hangers or approved equal.

22.05.73 PLUMBING COMPONENTS IDENTIFICATION

22 05 73 PLUMBING COMPONENTS IDENTIFICATION Equipment: permanent label (steino): metal lag or engraved plastic) with unit lag or name and area or space served. Pipnig: provide Brady or Steion pipe markers every 20 leet. Identify service, flow direction, and pressure. Install in clear view and align with axis of pipnig. Valve tags: Install engraved metal tags with corrosion resistant chain. Number tags consecutively by location. Valve Tag: Chart: Typewitten letter size list in anolazed aluminum, or plastic laminated, frame.

22 07 19 PIPING INSULATION

All insulation must have flame spread less than 25 and smoke developed less than 50 as per ASTM E84, NFPA 255, and UI 273 Provide galvanized sheet metal shields at all pipe hangers for pipes 11/2" or larger. For pipe 4" and larger, provide

high-density insulation (calcium silicate) inserts at hange Domestic cold water in exterior walls, attics above building insulation, or other areas subject to freezing - 1"

fiberglass. Domestic hot water - For pipe sizes 11/2" or less, provide 11/2" fiberglass insulation with all-service jacket. 2" and larger, provide 2" fiberglass insulation with all-service jacket.

Roof drain bodies and horizontal piping - All pipe sizes, provide minimum 11/2" thick, 0.75 lb, density fiberglass insulation with foil vapor barrier

Insulate all exposed drain and water supply piping beneath handicap accessible sinks with closed cell insulating kit as manufactured by 'Truebro' or equal by 'McGuire.'

Floor drains receiving condensate from HVAC units or ice machines shall be insulated minimum 5-feet downstream of

22 10 00 PLUMBING PIPING

Domestic holicoid - ASTM B88 Type "L" copper with wrought copper or cast bronze fittings using lead-free solder joints. Or, press fit type copper fittings, up to 4" diameter and meeting ASME B16.18 and B16.22. Copper, or galvanized, grooved piping materials may be used with Engineer aproval. System shall be drainable.

Testing: upon completion of construction, all domestic water piping shall be thoroughly flushed and sterilized. Submit Certificates of Testing for Engineer review.

Waste and vent

wasie and verit – Above sida: ASTM A888 Service Weight hubless cast iron pipe and fittings, with ASTM C1540 heavy duty clamps and ASTM C561 Gaskets; and/or ASTM D1748 Schedule 40 PVC pipe shall be iron pipe size (IPS) conforming to ASTM D1785 and D2655, with DDW on-but fittings and clamps. Fabricated DVW fittings shall conform to ASTM F1866. No-hub clamps shall be manufactured by 'Tyler Pipe,' Clamp-All,' Husky,' or 'Mission.' Transitions betwee undersiab PVC and above siab cast ino shall be as detailed on plans. NOTE: PVC shall not be used for waste, or vent, piping in any return air plenum.

Make connections between dissimilar piping materials with adaptors manufactured for the applicable type of

transition

Provide dielectric isolation device (dielectric union or coupling) where copper lines connect to ferrous lines or

Support piping every 10'-0" or less for 1" and larger pipe size; every 6'-0" for 3/4" or smaller piping. When installing non-insulated copper pipe, use copper hangers or tape at contact point.

All piping penetrations through floors shall be sealed with UL listed firestop.

22 40 00 PLUMBING FIXTURES

Refer to plumbing construction drawings for 'Plumbing Fixture Schedule.'

Fixtures shall be certified to meet the water saving performance standards of Texas Civil Statutes Section 372.002 and shall be listed with the State as complying with such. All fixtures shall comply with the more restrictive of ANSI or the following (when tested per ANSI testing proceedures):

a) maximum flow from sink or lavatory faucet or faucet aerator shall be 2.20 gallons per minute (gpm) at a pressure of 60 psi:

b) maximum flow from a shower head shall be 2.75 gpm at a pressure of 80 psi a) maximum volume of water per flush from a urinal and associated flush valve shall not exceed 0.5 gallon;
 d) maximum volume of water per flush from a toilet shall not exceed 1.28 gallons.

Fixtures shall comply with requirements of the Americans with Disabilities Act, Public Law 101-336 and with State of Texas Civil Statutes Articles 7,6018. Flush controls shall be no more than 44" above floor and on the wide side of stalls. Urinal rims shall not exceed 17" above fliorinshed floor; flush controls shall be no more than 44" above floor. Exceed how later and drain pipes shall be configured to protect against contract and shall be insulated with

prefabricated covers by Truebro or equal. Lavatories shall be minimum 17" front to back and shall allow minimum 27" high knee clearance.

Drinking fountain spouts shall be no higher than 36"; flow shall be parallel to unit front and arc at least 4" high.

21 13 00 FIRE SPRINKLER SUPPRESSION SYSTEM

Project area shall be fully sprinklered. For areas requiring new devices, provide pendant mounted chrome plated heads in ceilings or sidewalls. For sprinklers located in ceilings, insure new heads are of the concealed type.

All head locations shall be field-reviewed by the Architect and shall typically be centered (+/-2") in ceiling tiles or ceiling elements.

Work shall be by a licensed fire sprinkler contractor in accordance with current NFPA 13, Texas Department of Insurance Fire Sprinkler Rules and Factory Mutual (FM).

Piping: Up to 4" diameter – Schedule 40 black steel, ASTM A135 with class 125 cast iron threaded, or grooved, fittings. 4" diameter & larger – Schedule 10 iron pipe may be used. All piping shall be concealed above finished ceilings; seal penetrations of flors and rated walls. Coordinate pipe routing with other trades.

Hire Sprinkler Contractor shall be responsible for system design and a layout that provides proper coverage. Submit the following to Engineer for review hydraulic calculations and pipehead shop drawings, approved in writing by a licensed Professional Engineer or Contractor's Responsible Managing Employee. Contractor shall be responsible for all required submittate to ChyrCourty, Fire Marshall and FM (or insurance agency designated by Owner). Test system in presence of local authonies. Work shall proceed prior to receiving State Board and FM approvable, however after receipt of agency reviews, Contractor shall return to site and make all required modifications or additions at no additional cost.





project #:	
	16.269
date:	
	6.30.17
drawn by:	Author
checked by:	Checker

P206

drawing title PLUMBING SPECIFICATIONS

900 Broadway San Antonio, Tx

architecture

The Finesilver Building 816 Camaron, Suite 230 San Antonio, Texas 78212

Tel: 210,417,4307 www.openstudio-usa.com

Revision

Description Date

Open studio architecture, PLLC © 2017 All Rights Reserved

S

MOTOR

URRAY

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ELEVATOR SUMP PUMP SYSTEM

Gener

The contractor shall furnish and install a ParkUSA EleVader Model ELV-XX complete pump, separator, and control and alarm system as shown on the drawings. Pump(s) shall be provided for each elevator hoistway.

The system shall be capable of pumping all water & Ruicks automatically from the elevator pit as required by ASME A17.105A B44 Safety Code for Elevators and Escatators, 2007, Section 22.25. The system shall function automatically to remove water and fluids from the pit automatically without any human intervention. Systems that do not remove all the fluid including oil are not compliant and will not be accepted.

An oil-water separator or equivalent protection shall be used to treat oily wastewater automatically from the elevator pit prior to discharge into the public sanitary sever as required. Pumping into the storm sever is not permitted. Systems that do not remove the oil will not be accepted.

Sump Pump

A submether sump pump is located in the sump save of the elevator (refer to join deniroy). The sump pump and the sponflar of the testing hand your hear the sponse pump seture second card of the elevator capacity of a bit second of the spon ASME AUX 3 Section 2.2.2.6.2003, pump seture the second card pump shall be constructed and setulates of test. (The Standards and the Interval week pump seture) and pump shall be constructed and setures of test (The Standards and the Interval week pump) and the constructed and setures of test (The Standards and the Interval week pump) and the constructed and setures of test (The Standards and the Interval week pump) and the constructed and test (The Interval The Standards and the Interval test (The Standards and the Interval by the one off test which control. The pump shall have a size 1-14 ministrum discharge controllers. The more handing and testienty test (The Standards and the Interval testient) have a same route, not charging to Watem implies and shall be control and the scalar control standards and testients the pump shall have a size 1-14 ministrum discharge controls. The more handing and testienty testient testients and the Interval testients and the size testient the assessment and the provided test any ministrum and testients durin and the provided testient ministrum.

Oil/Water Separator

The segment is loaded effer freededing or encessed in flow rear the shift of branch address briefs being specific. Refer to the solution of reacient specific segments The segments and the segments and the segment and the segments and the segment and the segment and the segment specific segment specific segments and the segment specific segment specific segment specific segments and the segment specific segment specific segments and the segment specific segment specific segment specific segments and the segment specific segment specific segment specific segments and the segment specific segment specific segments and the segment specific segment sp

Control System

The control system shall consist of float sensors and a single control panel (NEMA 4X weatherproof) that is wall mounted near the elevator shaft. The control panel shall be constructed and tested to meet ULS08 standards and shall be housed in a weatherproof NEMA 4X electrical endosure with a wiring terminal step for field wiring to the J-Box in the hobitway.

The control panel shall have the following functions: a. Operates the sump pump, "On/Off" depending on shaft water levels. The panel shall have a "Hand-Off-Auto"

switch, a "Pump Run" light, and suxiliary contacts for a BAS system. b. Indicates "Sump High Level" of the elevator shaft. In the event of pump mailunction, the panel shall have a "Sump High Level" illuminated red light and high decibel warming horn, a "Sience" switch and suxiliary dry contacts for BAS

High Level" illuminated red light and high decibel warning horn, a "Silence" switch and auxiliary dry contacts for BAS system.

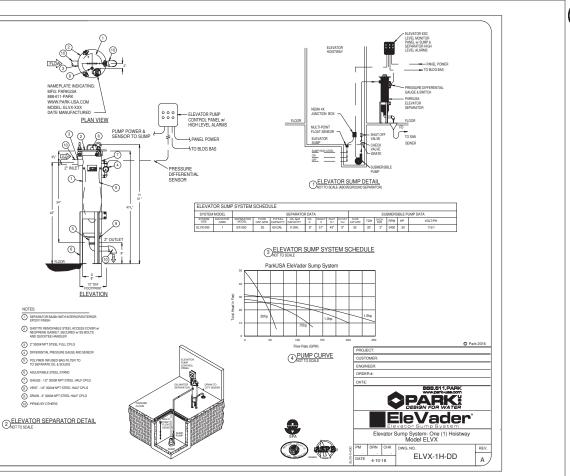
c. Indicates "High Oil Level" of the separator. In the event of a high accumulation of oil in the separator, the panel shall have a "Separator High Level" illuminated red fight & high decibel warning horn, a "Silence" switch, and auxiliary dry contacts for ARS system. NOTE: The presence of all DDES NOT prevent the pump from operating.

The panel also includes a separate over-current relay and field adjustable motor overload having a range of 5 to 15 arrups, bactory set at 8 arrups for this pump application. The control panel shall have a combination manual "Restel Publ" to test awitch for motor overload with both automatic, manual reset and control diagnostics. The control system must be factory set for automatic overload restant.

The control system shall include three field adjustable float switches located in the sump; Pump OR, Pump OR, and High Level. Phoreids a lastory preview IRUMA IP water tight precinc box with a din rail montal wining lemminal ating horeids fables yintelides in a SMLAM P preview. The sum of the part predict lastory instellation is not SMLAM P preview. Not allow between the hump and junction box with a loss maximum of B forus per NEC 2008. The cable shall be heavy usage, water tight and o instellation. The close is and is any preview between the last of the simple shall be labory monted on the pump boxed on the JAM P beam of the part per SMLAM P and P beams of the pump and pump and the SMLAM P and the simple shall be labory monted on the pump boxed on the pump and beam beams of the simple shall be labory mounted and postioned with the secatard and tabor tested as a complex system.

Acceptable Manufacturers:

ParkUSA Elevader System, 888-611-PARK, www.Park-USA com or Engineered pre-approved equal, provided all of the specifications are met.





Revisions Number Description Date

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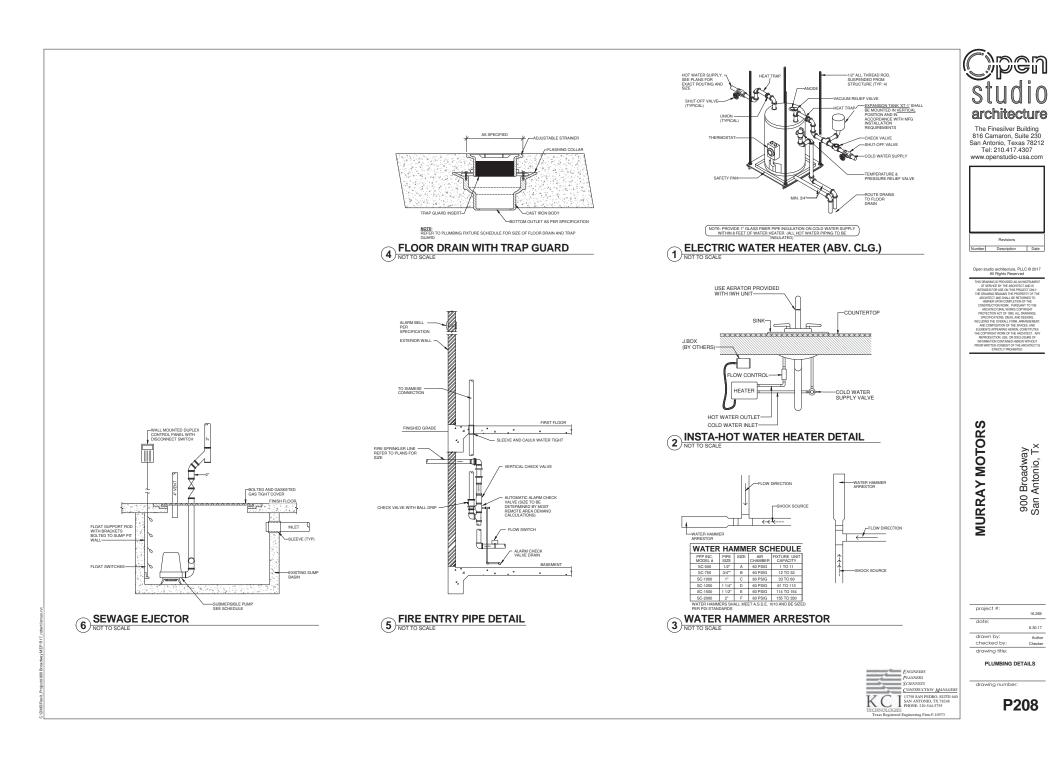
MURRAY MOTOR

PLUMBING DETAILS

E-Nuineless Scientists Construction Manages Ling And Petro, Suite 640 Sin Anthronic Disks 5755 Petrole: 210-544-5755

Texas Rea







Estimating Worksheet

 Project Name
 900 Broadway
 Job #

 Project Information
 Oliont Properties

y & State	SA TX	Dat	e 9/1	1/2017		
Spec No.	Description	Units		Price		Total
	Demolition and Make Safe					
02400	(removed roof demo)	1	\$	71,360.00	\$	71,360.0
02500	Parking lot pave and restripe (Allowance)	1	\$	34,000.00	\$	34,000.0
03300	Concrete pan infill in stairs	1	\$	9,600.00	\$	9,600.0
	Masonry (Allowance for patching brick outside when we demo					
	ramps) and point-up mortar on south and west sides of					
04000	building	4		75 000 00		75 000 0
04200	-Redo entry masonry Structural Steel and Misc. Steel Fabrication (4) sets of interior	1	\$	75,000.00	\$	75,000.0
05500	stairs	1	¢	197,645.00	¢	107 4 / E /
05500	1	1	\$	2,500.00	\$ \$	197,645.0 2,500.0
06400	Rough Carpentry and Wood Blocking Millwork	1	•	2,300.00	⇒ \$	2,500.0
08400	Waterproofing	1	\$	70,000.00	۵ \$	70,000.0
07100	waterproofing	1	\$	70,000.00	Þ	70,000.0
	Roofing: New built- up roof. (Patchwork for new vents and RTU					
07400	curbs and flashing). Includes a roof hatch for roof access.	1	\$	84,000.00	\$	84,000.0
08100	Doors, Frames, and Hardware	11	\$	1,100.00	\$	12,100.0
08400	Glass and Glazing Systems	1	\$	115,274.00	\$	115,274.0
09200	Metal & Wood Stud Framing, Insulation and Drywall	1	\$	51,360.00	\$	51,360.0
09300	Wall and Floor Tile (Bathroom floors and wet walls)	1	\$	26,485.00	\$	26,485.0
09600	Polished Concrete and Wall Base at Common areas only	1	\$	6,125.00	\$	6,125.0
09500	Ceiling Systems	1	\$	-	\$	
09720	Wallcoverings	1	\$	-	\$	-
09800	Solid Surface Countertops (4) RR tops	1	\$	3,725.00	\$	3,725.0
09900	Tape, Float and Paint (Just the common areas)	1	\$	28,235.00	\$	28,235.0
10280	Bathroom Accessories and Toilet Partitions	1	\$	5,994.00	\$	5,994.
10440	Fire Extinguishers	4	\$	225.00	\$	900.0
11400	Elevator and shaft	1	\$	84,250.00	\$	84,250.0
11550	Adjustable platform for roof terrace (60'X20' or 1200SF)		\$	97,605.00	\$	-
11770	Glass panel system with aluminum rails (180 LF of rails)		\$	47,340.00	\$	-
12200	Window Treatments	1	\$	-	\$	-
21130	Fire Sprinkler Systems (includes basement)	1	\$	77,200.00	\$	77,200.
28050	Fire Alarm Systems	1	\$	17,698.00	\$	17,698.
22100	Plumbing	1	\$	67,299.00	\$	67,299.
	HVAC: Heating, Ventilation and Air Conditioning (the entire					
23000	building excluding basement)	1	\$	239,710.00	\$	239,710.
	Electrical Power and Lighting Systems (no lighting in open					
26000	area)	1	\$	86,120.00	\$	86,120.
09010	Final Cleaning	1	\$	2,500.00	\$	2,500.
01100	Dumpsters	1	\$	6,000.00	\$	6,000.
01200	Port-a-lets	1	\$	1,500.00	\$	1,500.0
01300	Permits (By Owner)	1	\$	-	\$	-
	General Conditions	1	\$	73,925.00	\$	73,925.0
	Contractor's Fee	1	\$	76,912.00	\$	76,912.0
	Clarifications: Excludes work in the basement and confernce					
	rooms on the 2nd floor. Price includes normal working hours but excludes audio and visual systems, IT systems, kitchen					
	equipment and appliances				¢	
					\$	-
				Sub Total	\$	1,527,417.
			Тах	(es (8.25%)	\$	126,011.9
				t Alternates		1,653,428.

Alternates include taxes, general conditions and profit

Sub-divide (5) lease spaces, metal studs, insulation and	
Alternate #1 drywall only	\$ 36,725.00