## BEE COUNTY TAX OFFICE

## TAX OFFICE EXTENSIONS 411 E. HOUSTON ST BEEVILLE, TX 78102

#### **INDEX OF SHEETS:**

- CS.1 COVER SHEET
- DEMOLITION PLAN PROPOSED SITE PLAN
- C1.2 DETAILS.
- FLOOR PLAN
- REFLECTIVE CEILING PLAN
- EXISTING EXT. ELEVATION **EXTERIOR ELEVATIONS**
- SCHEDULES
- STRUCTURAL NOTES FASTENING SCHEDULE
- FOUNDATION PLAN
- ROOF FRAMING PLAN WINDSTORM PLAN
- E000.01 ELECTRICAL COVER SHEET
- E000.02 ELECTRICAL SPECIFICATIONS
- E201.01 FLOOR PLAN LIGHTING
- E201.11 FLOOR PLAN POWER
- M000.01 MECHANICAL COVER SHEET
- M000.02 MECHANICAL SPECIFICATIONS M201.01 FLOOR PLAN MECHANICAL
- M501.01 MECHANICAL DETAILS
- M601.01 MECHANICAL SCHEDULE

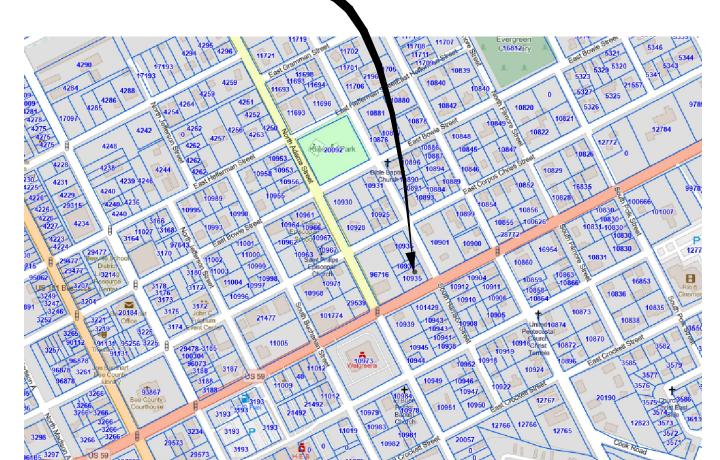
#### APPLICABLE BUILDING CODES:

#### **BUILDING CODE:**

- 2018 International Building Code
- 2018 International Residential Code - 2018 International Property Maintenance Code
- 2018 International Plumbing Code - 2018 International Fuel Gas Code
- 2018 International Mechanical Code
- 2018 International Fire Code
- 2018 International Energy Code - 2018 International Swimming Pool & Spa Code
- 2020 National Electrical Code

### CONSTRUCTION TYPE:

**ARCHITECTURAL BARRIERS:** 2012 TEXAS ACCESSIBILITY STANDARDS (TAS) TYPE: II - B (UNPROTECTED)



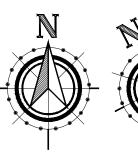
PROJECT LOCATION

**VICINITY MAP** 

#### GENERAL ACCESSIBILITY NOTES

- 1. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE CURRENT IBC ACCESSIBILITY CODE PER CITY/COUNTY/PARISH.
- 2. SITE ARRIVAL POINT: THE ACCESSIBLE ROUTE OF TRAVEL FROM THE PUBLIC RIGHT-OF-WAY AND THE NEAREST ACCESSIBLE PARKING TO THE BUILDING ENTRANCE, INCLUDING THE PROVISION OF ADEQUATE TYPE, QUANTITY AND COMPLIANCE OF THE ACCESSIBLE PARKING AND THE EXTERIOR LEVEL LANDING AT BUILDING ENTRIES AND OUTSIDE SEATING AREAS, SHALL BE THE RESPONSIBILITY OF THE LANDLORD AND ARE NOT PART OF THE SCOPE OF WORK, U.O.N.
- BUILDING ENTRANCES: WHERE NOT ALL ENTRANCES COMPLY WITH ACCESSIBILITY STANDARDS, PROVIDE SIGNAGE AS REQUIRED PER

**LOCATION MAP** 





<u>PLAN NORTH</u>

4. CONTRACTOR TO LEGALLY DISPOSE OF ALL CONSTRUCTION DEBRIS, EXCESS SOIL, EXTRA MATERIALS AND DEMOLISHED

1. GENERAL CONTRACTOR SHALL VISIT THE SITE TO INSPECT

ARCHITECT IN WRITING OF ANY AMBIGUITIES FOR

2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY

3. ALL EXISTING ITEMS TO REMAIN OR BE RELOCATED SHALL BE

PROTECTED FROM DAMAGE DURING CONSTRUCTION. ALL

EXISTING ITEMS TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER,

EXISTING CONDITIONS, DIMENSIONS, QUANTITIES, ETC. PRIOR

EXISTING CONDITIONS WITH REGARD TO THE SCOPE OF WORK PRIOR TO BIDDING PROJECT. IMMEDIATELY NOTIFY

GENERAL NOTES:

CLARIFICATION.

TO SUBMITTING BID.

AS DIRECTED BY THE ARCHITECT.

- 5. AT NO TIME DURING THE PROCESS OF THE WORK SHALL THE CONTRACTOR INTERRUPT THE CONTINUITY OF ANY OF THE REQUIRED SERVICES TO THE EXISTING BUILDINGS DURING SCHEDULED USAGE BY THE OWNER. ANY DAMAGE TO THESE SERVICES SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- CONTRACTOR SHALL WALK THE SITE, WHERE THE WORK WILL TAKE PLACE, WITH THE OWNERS REPRESENTATIVE & IDENTIFY, LOCATE & PHOTOGRAPH ALL DAMAGED WALKS, ETC. TO DETERMINE LOCATION & AMOUNTS OF EXISTING DAMAGE PRIOR TO BEGINNING WORK. MAIL A COPY OF THE LIST & PHOTOGRAPHS TO THE OWNER & THE ARCHITECT. VIDEO TAPE WITH VERBAL DESCRIPTION & LOCATION IS ACCEPTABLE.
- 7. ALL CONSTRUCTION WILL CONFORM TO ALL PERTINENT BUILDING CODES FOR THE AREA.
- 8. NO SUBSTITUTIONS OF BUILDING COMPONENTS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE OWNER OR ARCHITECT.
- 9. THE GENERAL CONTRACTOR & ALL SUBCONTRACTORS SHALL VERIFY ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, & REPORT ALL DISCREPANCIES TO THE ARCHITECT IN WRITING PRIOR TO COMMENCING ANY WORK THAT WOULD BE AFFECTED.
- 10. ONCE DEVIATIONS ARE CORRECTED, CONTRACTOR WILL INFORM ARCHITECT SO AN INSPECTION OF THE NEW WORK CAN BE PERFORMED.
- 11. THESE DRAWINGS ARE NOT INTENDED TO BE AN EXACT REPRESENTATION OF ALL CONDITIONS OR MATERIALS REQUIRED TO CONSTRUCT THIS PROJECT.

This drawing is part of a set of drawings for his project and shall not be considered valid unless it is accompanied by the complete set of

#### **CONFIDENTIAL - TRADE SECRETS**

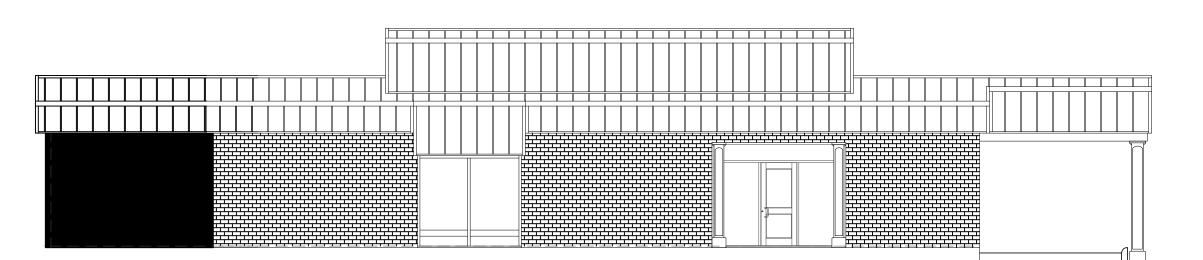
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THE LONE STAR NOTIFICATION COMPANY AT 1-800-669-8344

LYNN ENG. JOB No. 10.100208



## **DOCUMENT ISSUE DATE:**

ISSUED FOR FID: 07/07/2023 ADDENDUM: 00/00/0000 CONSTRUCTION ISSUE: 00/00/2023

PREPARED BY

## CONSULTANTS

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COORDINATING ENGINEERING



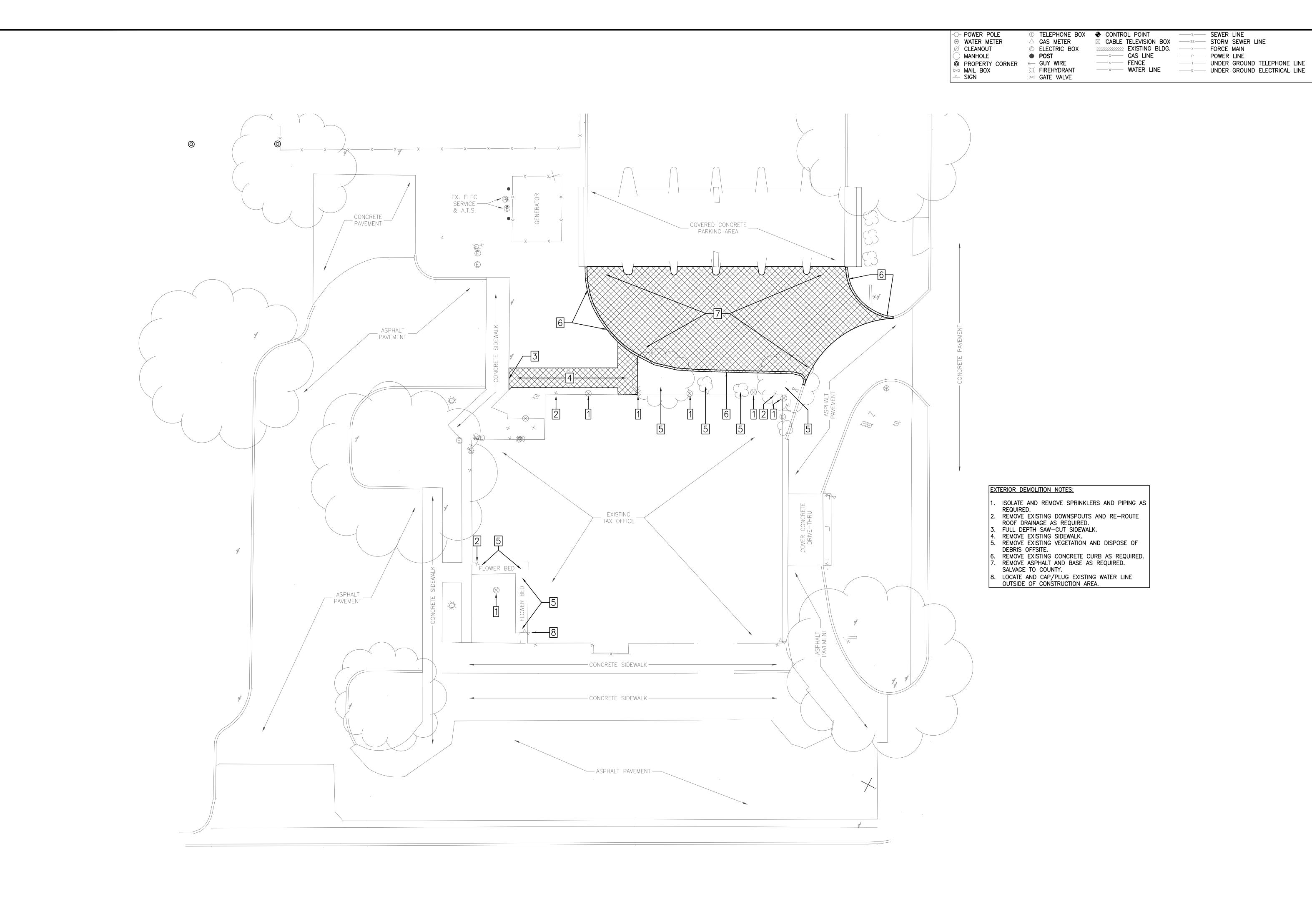
MITCHELL CARRILLO, PE, STRUCTURAL JOHN D. MERCER, PE, CIVIL

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5600 TENNYSON PARKWAY | SUITE 290 PLANO, TEXAS 75024

PH: 214.763.7300 FAX: 214.707.4760





ARCH/ENG SEAL:

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DEMOLITION

PROJECT NAME:

BEE COUNTY 105 W. CORPUS CHRISTI S BEEVILLE, TX. 78102

CUSTMER NAME:

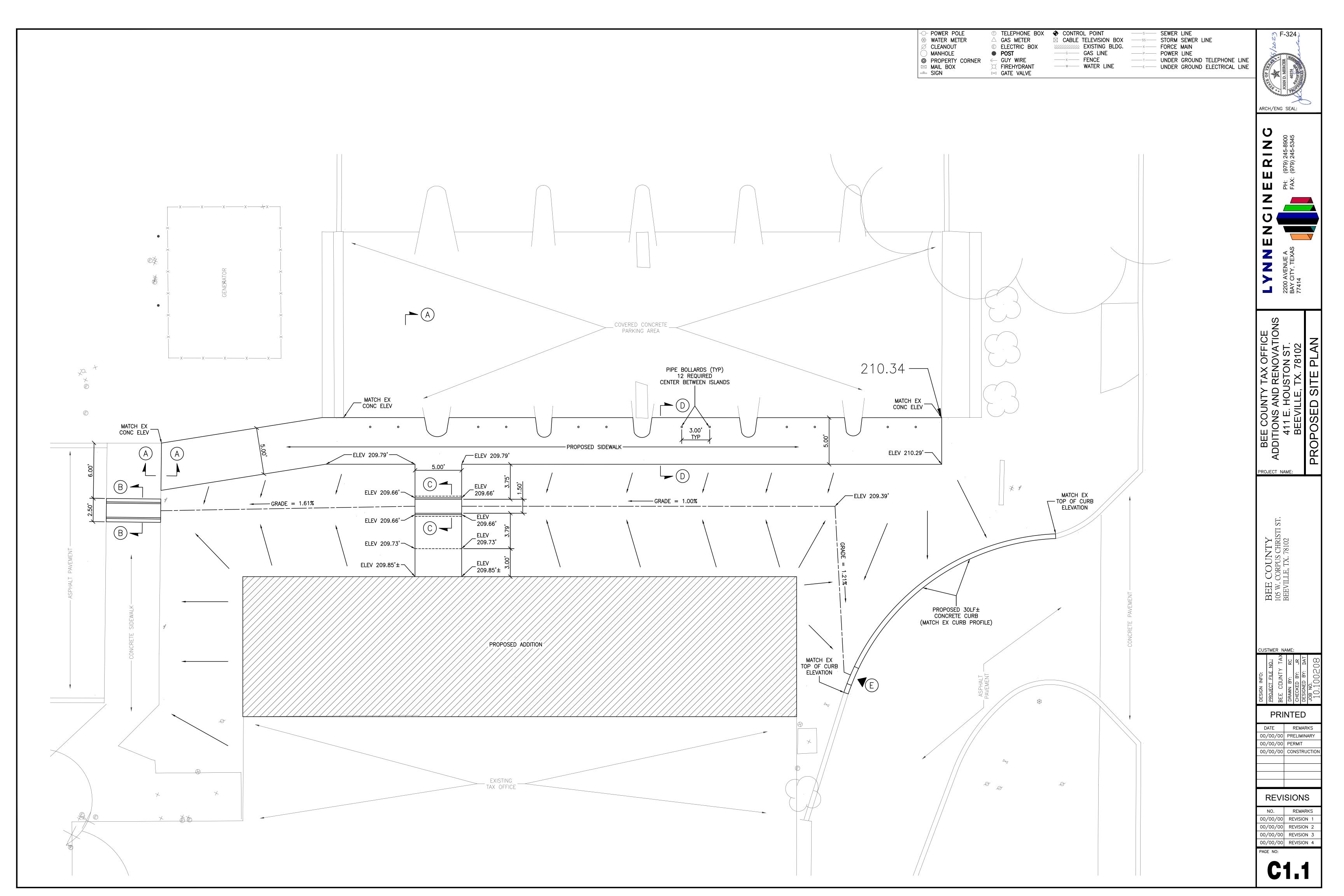
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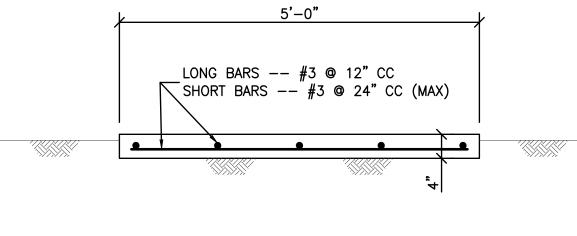
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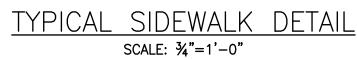
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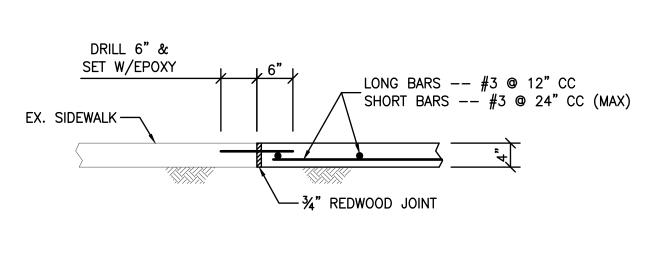
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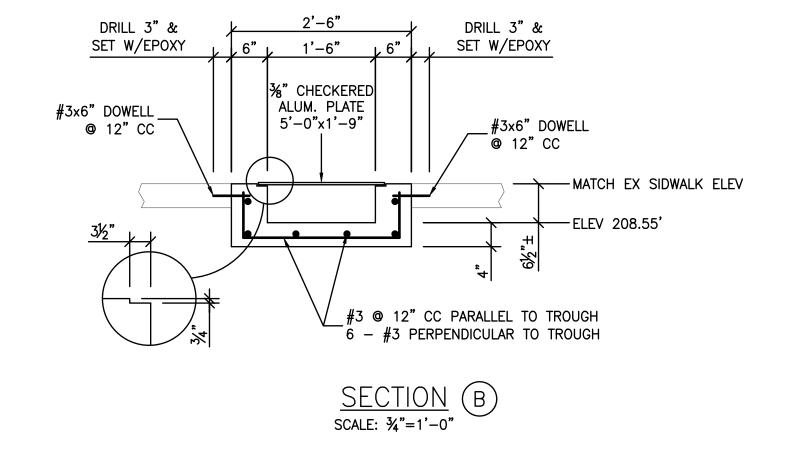
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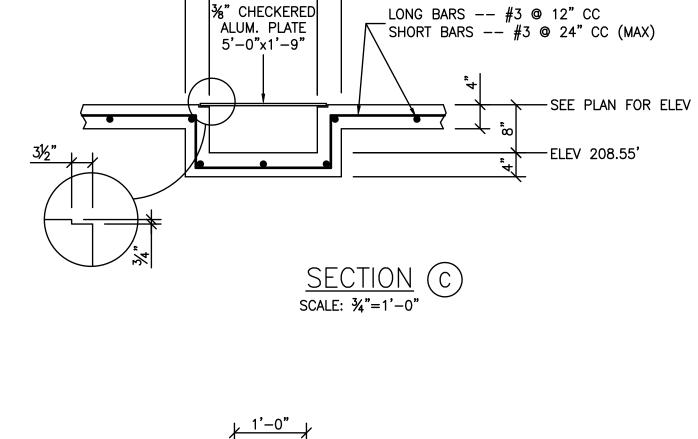


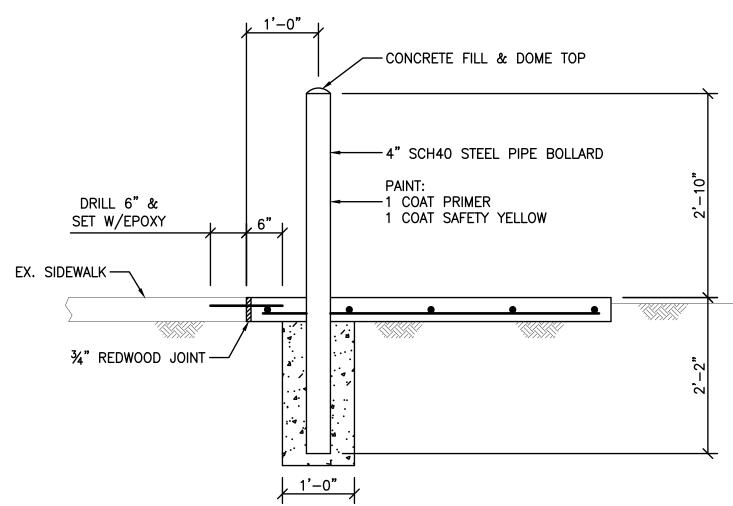


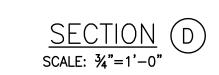


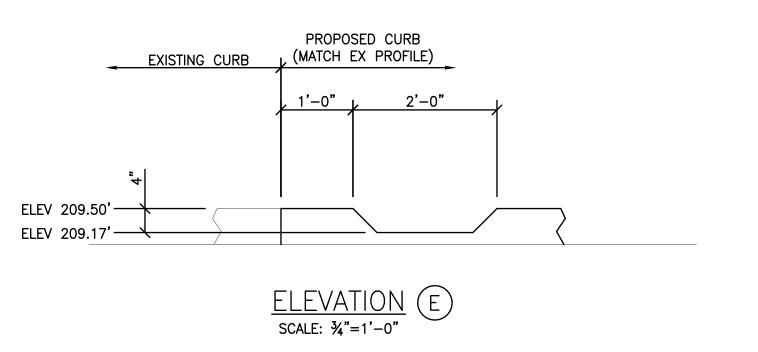
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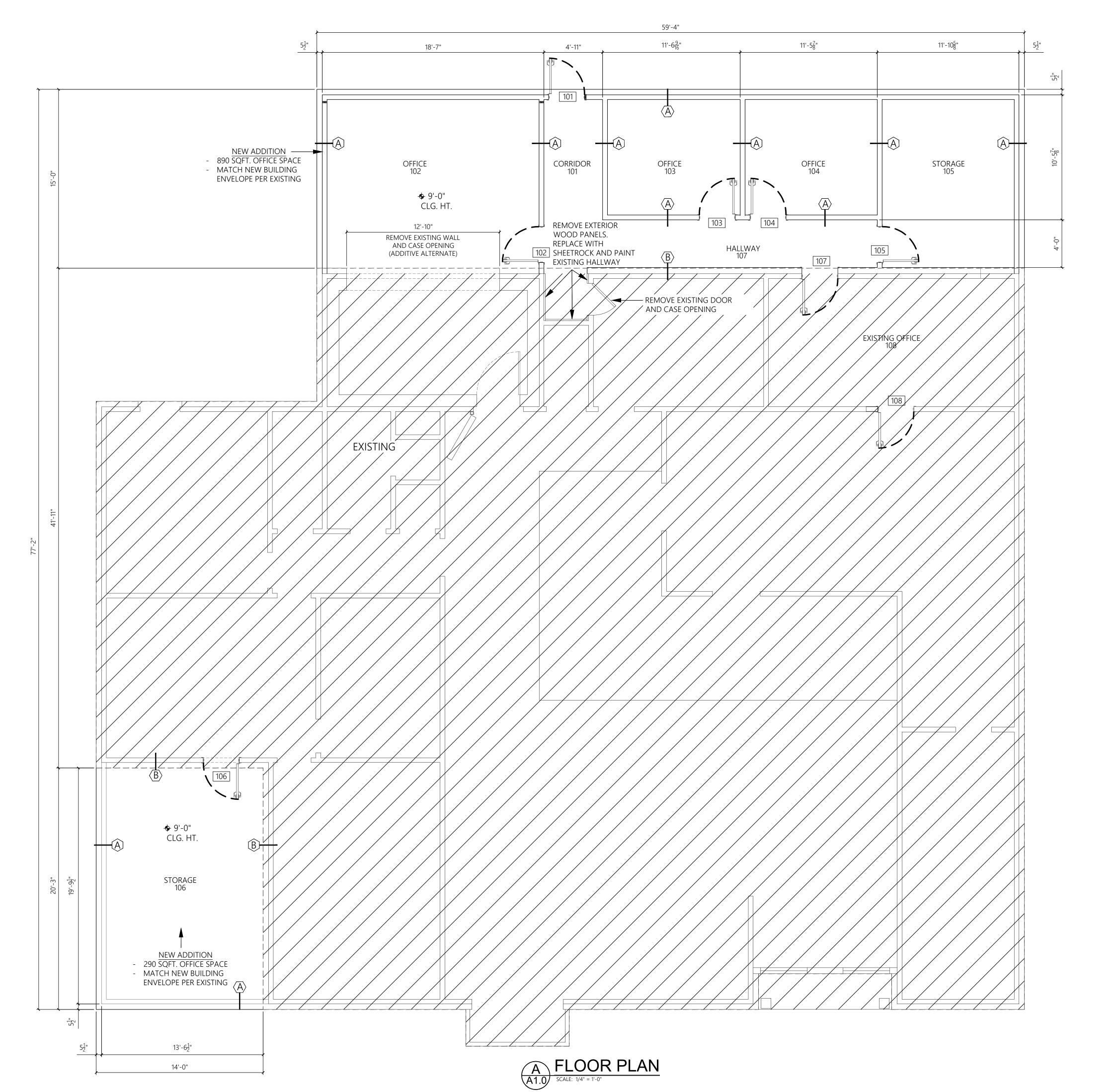








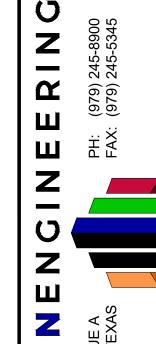




5/8" GYP.BD. ON INTERIOR SIDE OF STUDS.  $\frac{7}{16}$ " WALL SHEATHING ON EXTERIOR SIDE. PROVIDE SOUND BATT INSULATION.

5/8" GYP.BD. ON INTERIOR SIDE OF NEW STUDS. PROVIDE SOUND BATT INSULATION.





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ARCH/ENG SEAL:

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BEE COUNTY TAX OFFICE
ADDITIONS AND RENOVATIONS
411 E. HOUSTON ST.
BEEVILLE, TX. 78102
FLOOR PLAN

BEE COUNTY 105 W. CORPUS CHRISTI ST. BEEVILLE, TX. 78102

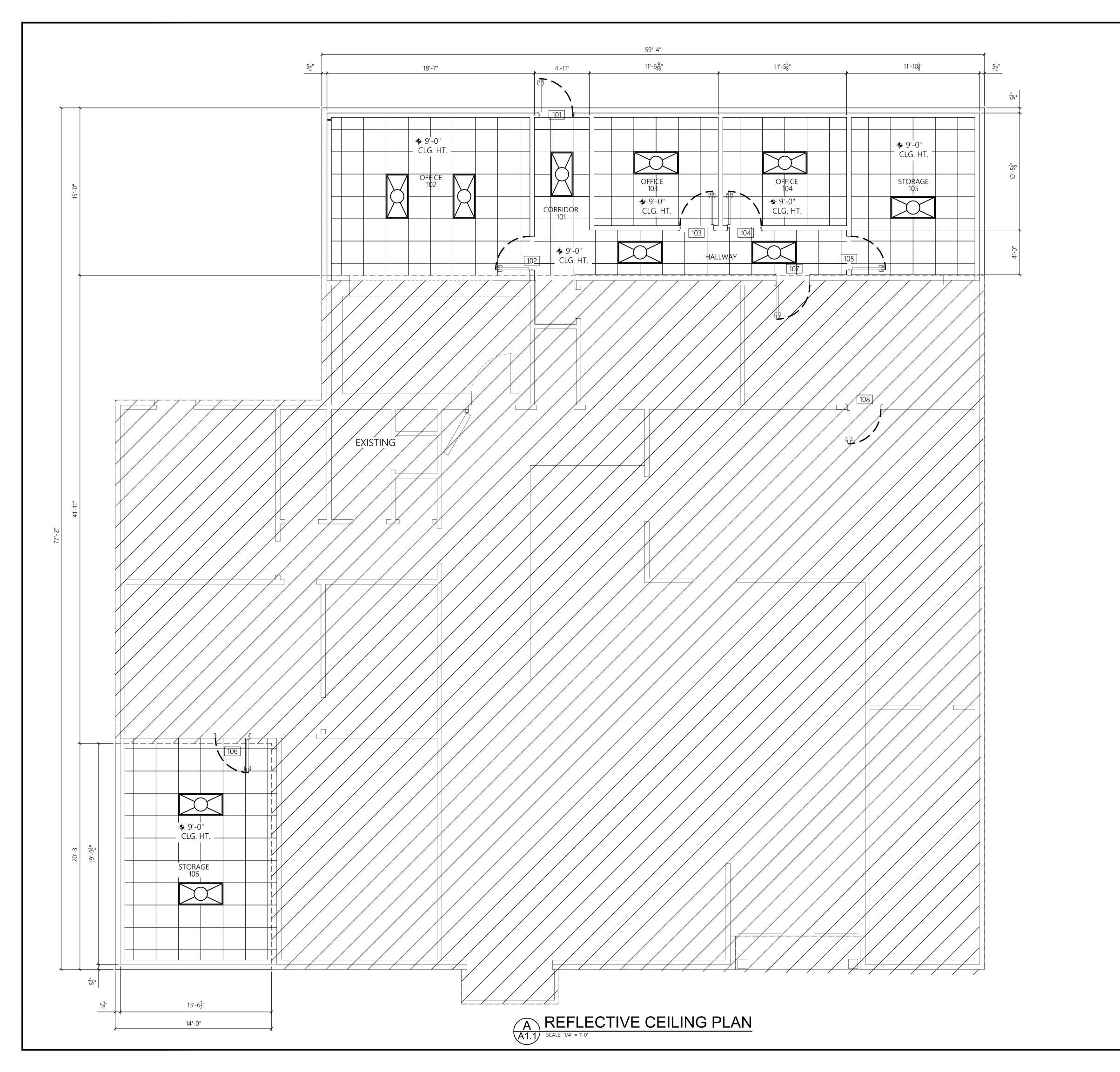
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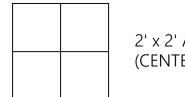
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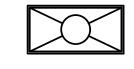
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2' x 2' ACCOUSTICAL PANEL CEILING (CENTER GRID IN ROOM U.N.O.)



2' x 4' FLAT PANEL LED TROFFER: REF MEP





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BEE COUNTY TAX OFFICE
ADDITIONS AND RENOVATIONS
411 E. HOUSTON ST.
BEEVILLE, TX. 78102
REFLECTIVE CEILING PLAN

BEE COUNTY 105 W. CORPUS CHRISTI ST. BEEVILLE, TX. 78102

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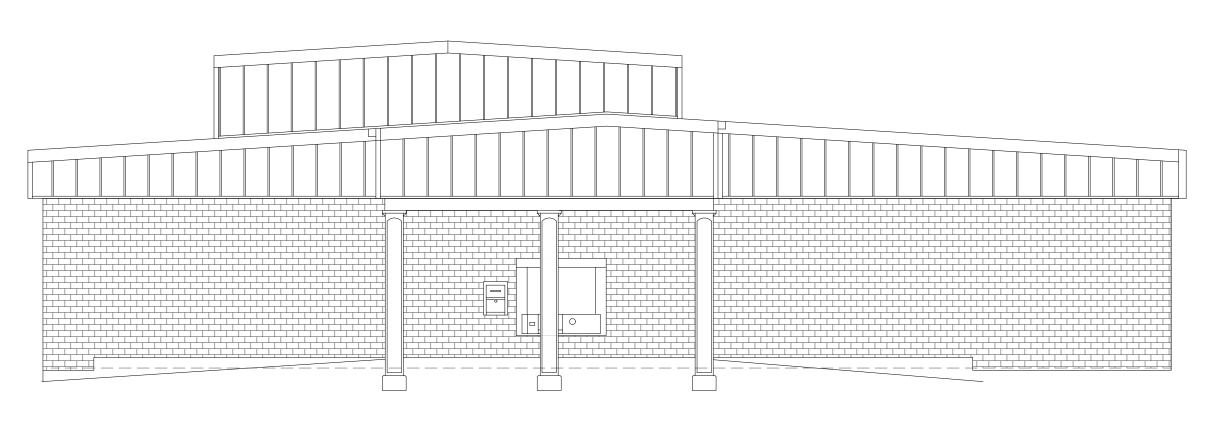
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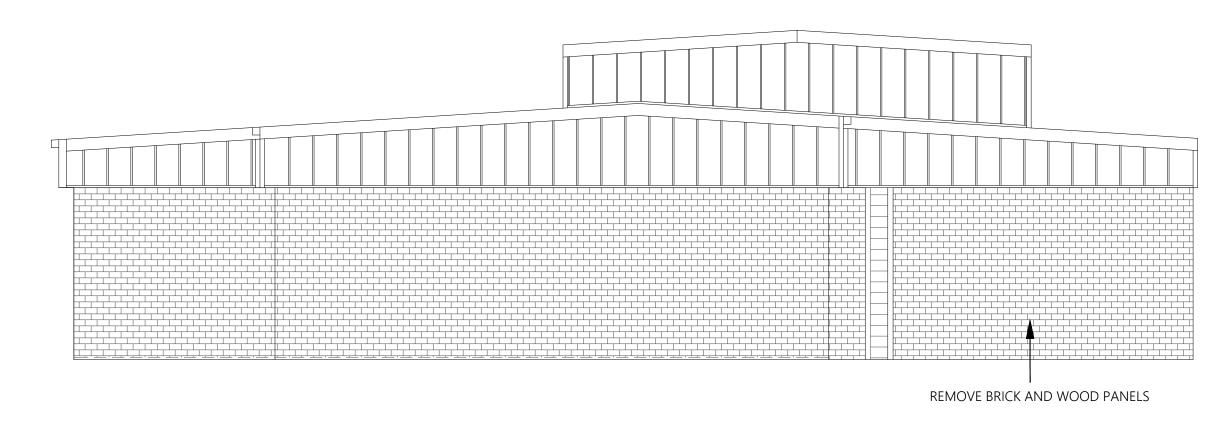
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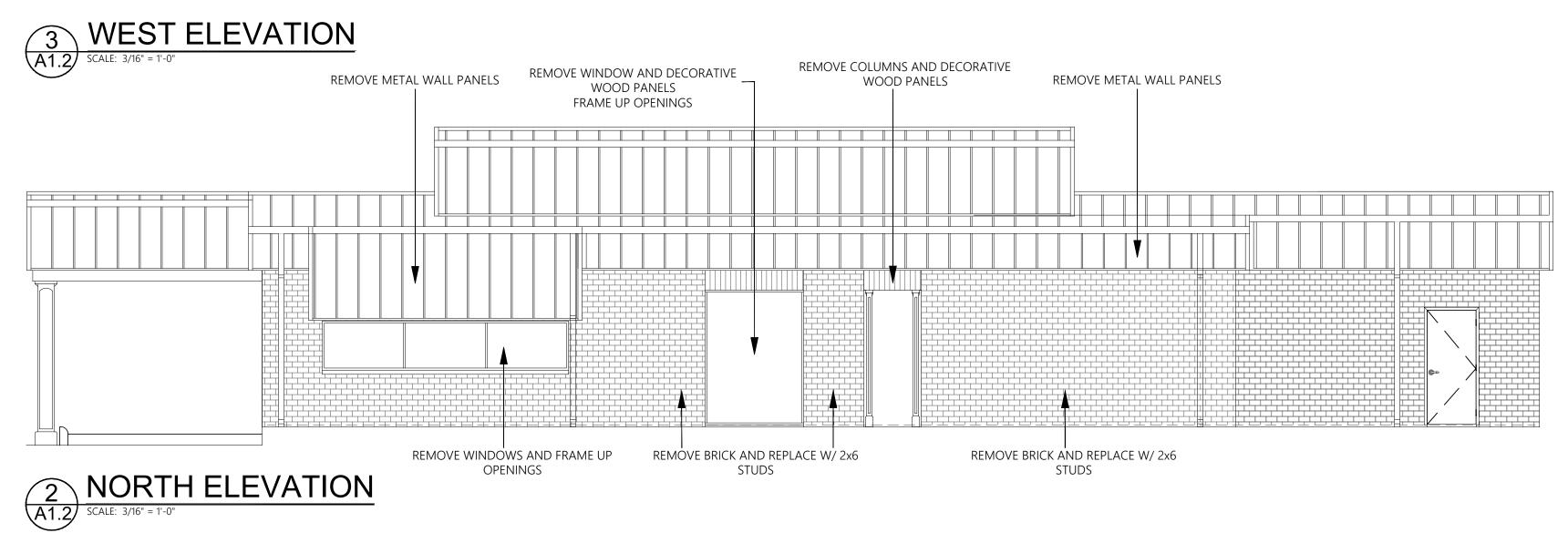




EAST ELEVATION - (S. HARRISON ST.)

SCALE: 3/16" = 1'-0"





NOTE:
1. PROVIDE AIR BARRIER OVER
WINDOW AREA WHEN WINDOWS ARE
REMOVED. WEATHERIZE WINDOW
OPENINGS ON DAY OF WINDOW
REMOVAL.
2. REMOVE CAMERAS AND CONDUIT
AND REINSTALL/REPLACE AS REQUIRED.



SOUTH ELEVATION - (E. HOUSTON ST.)

SCALE: 3/16" = 1'-0"

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E OF TE

N. MITCHELL GARRILLO

125070

/CENSE

07/05/2023

CH/ENG SEAL:

VENUE A

TY, TEXAS

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ADDITIONS AND RENOVATIONS 411 E. HOUSTON ST. BEEVILLE, TX. 78102

BEE COUNTY 105 W. CORPUS CHRISTI ST. BEEVILLE, TX. 78102

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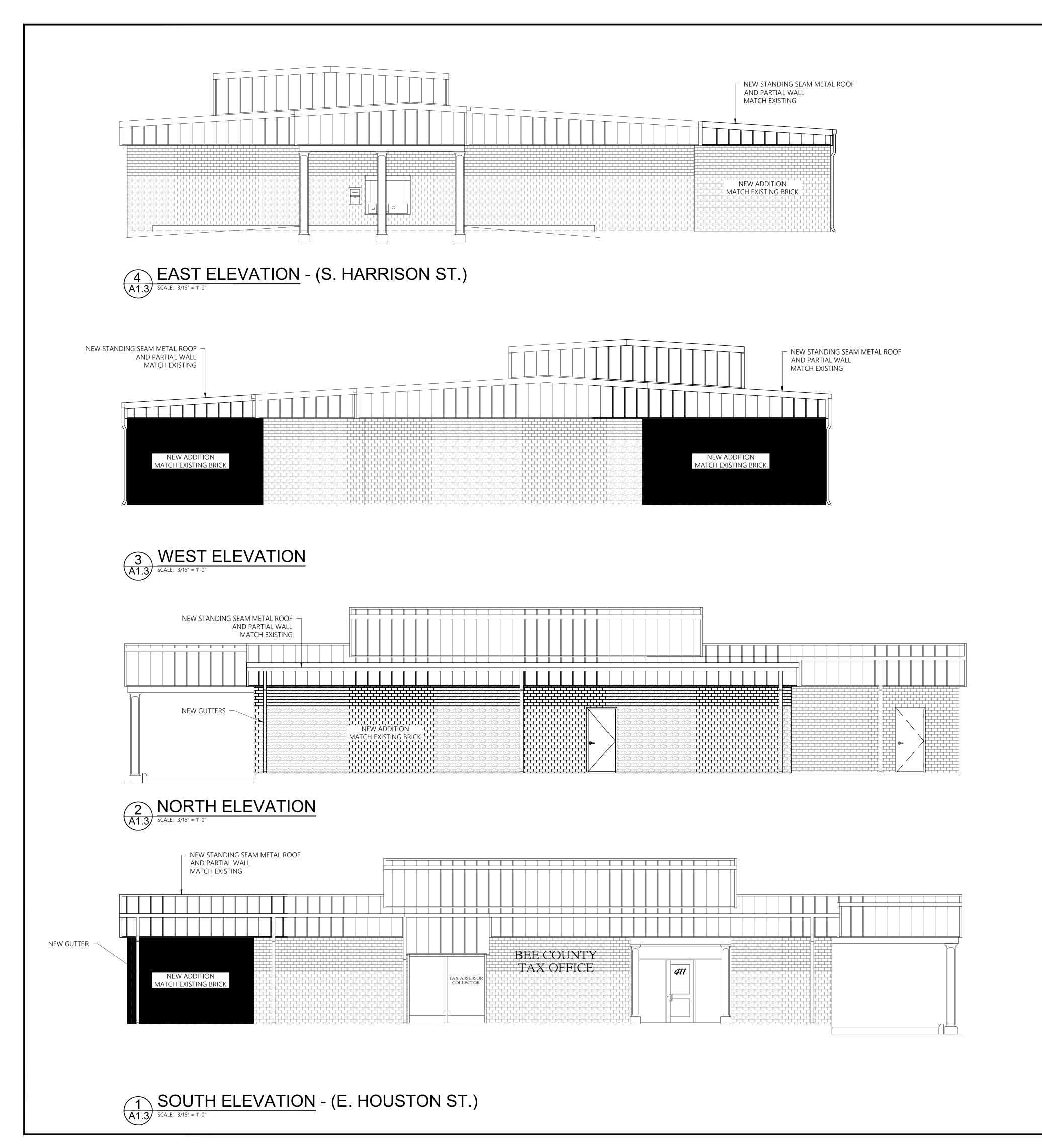
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101         CORRIDOR         CARPET SQUARES         RB         IP-1	N. MITCHEL 125
106         STORAGE         CARPET SQUARES         RB         IP-1	O7/05/ ARCH/ENG SE
	<b>Z</b> 245-8900
GENERAL NOTES  BASE	<b>—————————————————————————————————————</b>
RB 4" RUBBER COVE BASE WHITE SEMI-GLOSS  PAINT (EPOXY PAINT AS NOTED ON PLANS/SCHEDULE)	ー コ こ
IP-1 SHERWIN WILLIAMS - FLAT WHITE  EXTERIOR COLOR  EW -1 BRICK - COLOR MATCH EXISTING BY OWNER	5
	ш 2 « Ś
DOOR SCHEDULE	A VENUE A
FRAME	& GLASS D & GLASS
102 102 D.B./L.S. WD 3'-0" 7'-0" 1 \(\frac{1}{4}\)" A WD PAINTED DOOR - COLOR BY OWNER  103 103 D.B./L.S. WD 3'-0" 7'-0" 1 \(\frac{1}{4}\)" A WD PAINTED DOOR - COLOR BY OWNER  104 104 D.B./L.S. WD 3'-0" 7'-0" 1 \(\frac{1}{4}\)" A WD PAINTED DOOR - COLOR BY OWNER  105 PAINTED DOOR - COLOR BY OWNER  106 PAINTED DOOR - COLOR BY OWNER  107 PAINTED DOOR - COLOR BY OWNER  3. GLASS: TYPICAL - CW - CLEAR WIRE CP - CLEAR PLATE  108 PAINTED DOOR - COLOR BY OWNER  109 PAINTED DOOR - COLOR BY OWNER  100 PAINTED DOOR - COLOR BY OWNER	PAINTED ITEEL O
106 106 D.B./L.S. WD 3'-0" 7'-0" 1\frac{1}{4}" A WD PAINTED DOOR - COLOR BY OWNER  107 107 D.B./L.S. WD 3'-0" 7'-0" 1\frac{1}{4}" A WD PAINTED DOOR - COLOR BY OWNER  108 108 D.B./L.S. WD 3'-0" 7'-0" 1\frac{1}{4}" A WD PAINTED DOOR - COLOR BY OWNER  109 PAINTED DOOR - COLOR BY OWNER  PAINTED DOOR - COLOR BY OWNER  HM - HOLLOW METAL A WD PAINTED DOOR - COLOR BY OWNER  HW - HOLLOW METAL & WOOD  A, SF - ALUMINUM, FOR THE PROPERTY OF THE PROPERTY	STOREFRONT
5. THE FOLLOWING NOTES APPLY TO ALL HOLLOW METAL FRAMES:  A. ALL HOLLOW METAL FRAMES IN MASONRY OPENINGS SHALL BE FULLY GROUTED.  B. ALL HOLLOW METAL FRAMES SHALL BE FIELD PAINTED.  C. ALL DOOR JAMB ANCHORS SHALL BE VERIFIED WITH PLAN CONDITIONS AND SPECIFIC	CATIONS.
D. LABELED DOOR AND FRAMES SHALL CONFORM TO NFPA NO. 80.  E. PENNED KNOBS SHALL BE PROVIDED FOR ALL DOORS FROM CORRIDORS TO ELECTRIC  MECHANICAL ROOMS, TELEPHONE CLOSETS, AND STAIRS PENTHOUSES.  F. ALL FRAMES ARE "WRAP AROUND" UNLESS NOTED.	$\sim$ 1 CLOSETS $\sim$ $\sim$ $\sim$
G. REFER TO PROJECT MANUAL FOR HARDWARE SPECIFICATIONS  6. ALL DOORS ARE TO BE INSTALLED OR UPGRADED WITH ADA COMPLIANT HARDWARE.	COL SNS 11 E
AS SCHED SCHED SCHED	BEE ADDITION 4
U	PROJECT NAME
HARDWARE S	
D.B. DEAD B  (DOOR) (DOOR)  A  B	BOLT SET BAR JRE SET
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<u>DOOR ELE</u>	BEE ( 105 W. C BEEVILI
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5.4.5. ZONE 5 -26.56 PSF

POST INSTALLED ANCHORS;

5.4.2.

5.3. BUILDING CATEGORY: II

5.4. COMPONENTS AND CLADDING 5.4.1. ZONE 1 -19.92 PSF

5.4.4. ZONE 4 -21.56 PSF

ZONE 2 -43.89 PSF

ZONE 3 -71.56 PSF

1. EXCEPT OTHERWISE NOTED THE FOLLOWING SIMPSON PRODUCTS MAY BE USED. 1.1 ALL DRILLED AND EPOXIED ANCHOR BOLTS PLACED IN CRACKED OR UNCRACKED CONCRETE SHALL BE THREADED RODS WITH

SIMPSON SET-XP EPOXY OR EQUIVALENT 1.2 ALL DRILLED AND EPOXIED REBAR PLACED IN CRACKED OR UNCRACKED CONCRETE SHALL BE THREADED RODS WITH SIMPSON SET-XP EPOXY OR EQUIVALENT.

2. INSTALL ANCHORS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

3. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO THE EDGE OF CONCRETE. LOCATE ALL ANCHOR BOLTS IN ACCORDANCE WITH DRAWINGS

#### **WOOD FRAMING NOTES;**

- 1. WOOD FRAMING SHALL COMPLY WITH THE SOUTHERN PINE INSPECTION BUREAU, OR SHALL CONFORM TO SPECIFICATIONS AS PUBLISHED BY THE WESTERN WOODS PRODUCTS ASSOCIATION.
- 2. WOOD FRAMING MEMBERS NOMINAL 2X4 AND LARGER SHALL BE MINIMUM SOUTHERN PINE No. 2 OR EQUIVALENT.
- 3. WOOD COLUMNS NOMINAL 6X6 AND LARGER SHALL BE MINIMUM SOUTHERN PINE No. 2 OR EQUIVALENT.
- 4. ALL FRAMING MEMBERS (STUDS, RAFTERS, CEILING JOISTS, AND FLOOR JOISTS) ARE TO BE 16" ON CENTER UNLESS OTHERWISE NOTED.
- 5. ALL THE LOAD BEARING & SHEAR WALLS WITH A FLOOR ABOVE SHALL BE FRAMED WITH A MINIMUM OF 2X6 STUDS AT 16" O.C. AND, SIMILARLY, ALL THE LOAD BEARING & SHEAR WALLS WITH ONLY A ROOF ABOVE SHALL BE FRAMED WITH A MINIMUM OF 2X4 STUDS AT 16" O.C. UNLESS NOTED OTHERWISE.
- 6. ALL EXPOSED WOOD FRAMING AND FRAMING IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED FOR MOISTURE PROTECTION.
- 7. PRE-FABRICATED TRUSSES
- 7.1 FOR PRE-FABRICATED TRUSSES, FABRICATOR SHALL SUBMIT SHOP DRAWINGS SHOWING LAYOUT OF MEMBER, BRIDGING, BRACING, ERECTION DETAILS, TRUSS PENETRATIONS, AND DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER (TEXAS).
- 7.2 TRUSS MANUFACTURER IS RESPONSIBLE FOR ALL TRUSS—TRUSS CONNECTIONS. ENGINEER IS RESPONSIBLE FOR DESIGN OF UPLIFT CONNECTIONS.
- 8. ROOF DECKING
- (A) OSB (ORIENTED STRAND BOARD) 7/16" MIN. AND NAILING PATTERN SHOULD BE 4" O/C @ EDGE AND 6" O/C IN FIELD FOR ROOFS WITH ASPHALT SHINGLES.
- (A) APA RATED GRADED PLYWOOD 19/32" MIN FOR ROOFS WITH METAL STANDING SEAM PANELS.
- (B) APA RATED GRADED PLYWOOD 5/8" MIN. FOR ROOFS WITH CLAY TILES AND SCREW METAL PANELS.
- 8.2 ALL DECKING END SHEETS SHOULD BE STAGGERED. 8.3 ALL NAILS SHOULD BE 8d NAIL MIN.
- 8.4 REFER TO MANUFACTURER RECOMMENDATIONS FOR FASTENER SIZES & SPACING.
- 9.1 SEE WINDSTORM COMPLIANT PLAN (WSCP) UNLESS NOTED ON WSCP, ALL WALL SHEATHING IS ASSUMED TO BE 7/16" OSB FASTENED W/ 8d NAILS, 4" O.C. @ EDGES, 6" O.C. IN THE FIELD.
- 10. HIGH WIND UPLIFT CONNECTORS
- 10.1 ALL LOAD BEARING RAFTERS, STUDS, SHOULD BE STRAPPED/CLIPPED IN ACCORDANCE WITH WINDSTORM COMPLIANT PLAN.
- 11. NAILING, UNLESS OTHERWISE NOTED, SHALL BE PER THE 2018 IBC.
- 12. NOTCHING AND BORING:
- 12.1 NOTCHING SHOULD BE AVOIDED WHEN POSSIBLE, AND HOLES BORED IN BEAMS AND JOISTS CREATE THE SAME PROBLEMS AS NOTCHES. WHEN NECESSARY, THE HOLES SHOULD BE LOCATED IN AREAS WITH THE LEAST STRESS CONCENTRATION, GENERALLY ALONG THE NEUTRAL AXIS OF THE JOIST. LIMITATIONS ON THE ALLOWABLE CUTTING AND NOTCHING OF WOOD FLOOR JOISTS ARE MEANT TO RETAIN STRUCTURAL OR FUNCTIONAL INTEGRITY.
- 12.2 SAWN LUMBER: NOTCHES IN SOLID LUMBER JOISTS, RAFTERS AND BEAMS SHALL NOT EXCEED ONE—SIXTH OF THE DEPTH OF THE MEMBER. SHALL NOT BE LONGER THAN ONE—THIRD OF THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED IN THE MIDDLE ONE—THIRD OF THE SPAN. NOTCHES AT THE ENDS OF THE MEMBER SHALL NOT EXCEED ONE—FOURTH THE DEPTH OF THE MEMBER. THE TENSION SIDE OF MEMBERS 4 INCHES OR GREATER IN NOMINAL THICKNESS SHALL NOT BE NOTCHED EXCEPT AT THE ENDS OF THE MEMBERS. THE DIAMETER OF HOLES BORED OR CUT INTO MEMBERS SHALL NOT EXCEED ONE-THIRD THE DEPTH OF THE MEMBER. HOLES SHALL NOT BE CLOSER THAN 2 INCHES TO THE TOP OR BOTTOM OF THE MEMBER, OR TO ANY OTHER HOLE LOCATED IN THE MEMBER. WHERE THE MEMBER IS ALSO NOTCHED. THE HOLE SHALL NOT BE CLOSER THAN 2 INCHES TO THE NOTCH.
- 12.2.1 NOTCHES ON CANTILEVERED PORTIONS OF RAFTERS PERMITTED PROVIDED THE DIMENSION OF THE REMAINING PORTION OF THE RAFTER IS NOT LESS THAN 3 1/2 INCHES AND THE LENGTH OF
- THE CANTILEVER DOES NOT EXCEED 24 INCHES. 12.3 ENGINEERED WOOD PRODUCTS: CUTS, NOTCHES AND HOLES BORED IN TRUSSES, LAMINATED VENEER LUMBER, GLUE-LAMINATED MEMBERS OR I-JOISTS ARE NOT PERMITTED UNLESS THE EFFECTS OF SUCH
- PENETRATIONS ARE SPECIFICALLY CONSIDERED IN THE DESIGN OF THE MEMBER. 12.4 DRILLING AND NOTCHING - STUDS: ANY STUD IN AN EXTERIOR WALL OR BEARING PARTITION MAY BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25 PERCENT OF ITS WIDTH. STUDS IN NONBEARING PARTITIONS MAY BE NOTCHED TO A DEPTH NOT TO EXCEED 40 PERCENT OF A SINGLE STUD WIDTH. ANY STUD MAY BE BORED OR DRILLED, PROVIDED THAT THE DIAMETER OF THE RESULTING HOLE IS NO GREATER THAN 40 PERCENT OF THE STUD WIDTH, THE EDGE OF THE HOLE IS NO CLOSER THAN 5/8 INCH (15.9 MM) TO THE EDGE OF THE STUD, AND THE HOLE IS NOT LOCATED IN THE SAME SECTION AS A CUT OR NOTCH.
- 12.4.1 A STUD MAY BE BORED TO A DIAMETER NOT EXCEEDING 60 PERCENT OF ITS WIDTH, PROVIDED THAT SUCH STUDS LOCATED IN EXTERIOR WALLS OR BEARING PARTITIONS ARE DOUBLED AND THAT NOT MORE THAN TWO SUCCESSIVE
- 12.4.2 APPROVED STUD SHOES MAY BE USED WHEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. 12.5 DRILLING AND NOTCHING OF TOP PLATE. WHEN PIPING OR DUCTWORK IS PLACED IN OR PARTLY IN AN EXTERIOR WALL OR INTERIOR LOAD-BEARING WALL, NECESSITATING CUTTING, DRILLING OR NOTCHING OF THE TOP PLATE BY MORE THAN 50 PERCENT OF ITS WIDTH, A GALVANIZED METAL TIE OF NOT LESS THAN 0.054 INCHES THICK (16GA) AND 11/2 INCHES WIDE SHALL BE FASTENED TO EACH PLATE ACROSS AND TO EACH SIDE OF THE OPENING WITH NOT LESS THAN EIGHT 16D NAILS AT EACH SIDE OR EQUIVALENT.
- 12.5.1 WHEN THE ENTIRE SIDE OF THE WALL WITH THE NOTCH OR CUT IS COVERED BY WOOD STRUCTURAL PANEL SHEATHING.

#### CONCRETE FOUNDATION NOTES

- 1. STRIP AND REMOVE ALL SURFACE ORGANIC. TOPSOIL AND UNSUITABLE MATERIAL FROM UNDER ALL BUILDING AND PAVING AREAS AS REQUIRED.
- 2. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI STANDARD "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 LATEST EDITION.
- 3. CONCRETE MIXING, DELIVERY, PLACEMENT, FINISHING, AND TESTING TO BE IN ACCORDANCE WITH ACI-318
- 4. CONCRETE TO BE READY—MIX FROM A MIX DESIGNED TO MEET SPECIFIED STRENGTH REQUIREMENTS. WATER IS NOT TO BE ADDED TO CONCRETE IF MIXTURE WILL EXCEED THE A WATER/CEMENT RATIO OF 0.48.
- 5. ALL CONCRETE SHALL HAVE A 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS AND SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 3/4".
- 6. EXCAVATION OF BEAMS SHOULD BE CLEAN AND SQUARE
- 7. ALL REINFORCING BARS SHALL BE ASTM A-615, GRADE 60.
- 8. ALL REINFORCING STEEL SHALL BE LAPPED 50 BAR DIAMETERS UNLESS OTHERWISE NOTED.
- 9. ALL BENDING OF REINFORCING STEEL SHALL BE "COLD BENT".
- 10. ALL STEEL CONCRETE EMBEDMENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- 11. DESIGNS IN ACCORDANCE WITH ULTIMATE STRENGTH PROCEDURES AND ACI 318 LATEST EDITION.
- 12. ALL REINFORCING BARS SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, CHAIRS, OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
- 13. ALL BENDS AND HOOKS SHALL BE AS DETAILED IN THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 315 LATEST EDITION.
- 14. CLEAR COVER FOR ALL BARS SHALL BE AS FOLLOWS
- 14.1. FOR BARS IN FOOTINGS AND PIERS OR ANY OTHER BARS THAT ARE IN POURED IN DIRECT CONTACT WITH THE GROUND: 3
- 14.2. FOR BEAMS AND MATS OR ANY CONCRETE THAT IS POURED IN CONTACT WITH FORMS OR WEATHER: 2 INCHES FOR #5 AND LARGER, 1.5 INCHES FOR SMALLER
- 15. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE ACTUAL CONDITIONS AT THE SITE AND THAT ALL BEAMS AND DRILLED SHAFTS ARE FOUNDED ON A SUITABLE LOAD BEARING SOIL CAPABLE OF MEETING THE ASSUMED CAPACITIES LISTED BELOW.
- 16. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES THAT PENETRATE THE SLAB. NO UTILITY CONDUIT SHOULD PENETRATE THE SLAB AT A GRADE BEAM.
- 17. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BY MEASUREMENTS AT THE JOB SITE AND SHALL TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND TO PERFORM HIS WORK PROPERLY
- 18. ALL SPECIFIED CONCRETE GRADE BEAMS DEPTHS SHALL PENETRATE SOIL 18"
- 19. FLOATING OR TROWEL FINISH

#### SOIL PROPERTIES

- 1. ALL BUILT UP PADS SHOULD CONSIST OF FILL WITH A LIQUID LIMIT OF LESS THAN 35 AND A PLASTICITY INDEX BETWEEN 8 AND 15. THE FILL SHALL CONTAIN NO ORGANIC OR PERISHABLE MATERIAL, AND NO STONES GREATER THAN 2".
- 2. FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 6" THICKNESS AFTER COMPACTION. FILL SHALL BE DUMPED SO AS TO SECURE EVEN DISTRIBUTION AND TO AVOID FORMATION OF DISSIMILAR MATERIAL LAYERS.
- 3. PAD SHALL BE COMPACTED TO A 95% OR GREATER STANDARD PROCTOR.
- 4. THE FOUNDATION WAS DESIGNED WITH FOLLOWING ASSUMED SOIL CAPACITIES
- 4.1. 1500 PSF BEARING CAPACITY OF SUBGRADE
- 5. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL FORMS
- 6. SUBGRADE CONDITIONS AT THE SITE ARE ASSUMED. IT IS HIGHLY RECOMMENDED THAT A SOILS REPORT BE PROVIDED FOR AN ACCURATE DESCRIPTION OF THE CURRENT SITE CONDITIONS.

#### ANCHOR BOLT NOTES

FOUNDATION FASTENERS

- 1. ALL ANCHOR BOLTS SHOULD MEET ASTM A36 AND BE HOT DIPPED GALVANIZED.
- 2. BOTTOM PLATE OF THE WOOD SHEAR/BEARING WALLS TO BE CONNECTED TO THE CONCRETE WITH 5/8" DIA. ANCHOR BOLTS AT A MAXIMUM OF 32" O.C., WITH MINIMUM
- 7" EMBEDMENT INTO THE CONCRETE.
- 1. ALL BOLTS, NAILS, OR ANY OTHER FASTENERS USED TO CONSTRUCT THE FOUNDATION SHOULD RECEIVE CORROSION RESISTANCE TREATMENT IN ACCORDANCE WITH THE TEXAS REVISIONS IBC 06 FOR OPEN AREAS.

#### WIND BOURNE DEBRIS PROTECTION

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GLAZING IN BUILDINGS SHALL BE IMPACT RESISTANT OR PROTECTED WITH AN IMPACT-RESISTANT COVERING MEETING THE REQUIREMENTS OF AN APPROVED IMPACT-RESISTANT STANDARD OR ASTM E1996 AND ASTM E1886 REFERENCED HEREIN AS FOLLOWS:

1. GLAZED OPENINGS LOCATED WITHIN 30 FEET (9144 MM) OF GRADE SHALL MEET THE REQUIREMENTS OF THE LARGE MISSILE TEST OF ASTM E1996.

2. GLAZED OPENINGS LOCATED MORE THAN 30 FEET (9144 MM) ABOVE GRADE SHALL MEET THE PROVISIONS

OF THE SMALL MISSILE TEST OF ASTM E1996. **EXCEPTIONS:** 

1. WOOD STRUCTURAL PANELS WITH A MINIMUM THICKNESS OF 7/16 INCH (11.1  $\,$  MM) AND MAXIMUM PANEL SPAN OF 8 FEET (2438 MM) SHALL BE PERMITTED FOR OPENING PROTECTION IN BUILDINGS WITH A MEAN ROOF HEIGHT OF 33 FEET (10 058 MM) OR LESS THAT ARE CLASSIFIED AS A GROUP R-3 OR R-4 OCCUPANCY PANELS SHALL BE PRECUT SO THAT THEY SHALL BE ATTACHED TO THE FRAMING SURROUNDING THE OPENING CONTAINING THE PRODUCT WITH THE GLAZED OPENING PANELS SHALL BE PREDRILLED AS REQUIRED FOR THE ANCHORAGE METHOD AND SHALL BE SECURED WITH THE ATTACHMENT HARDWARE PROVIDED. ATTACHMENTS SHALL BE DESIGNED TO RESIST THE COMPONENTS AND CLADDING LOADS DETERMINED IN ACCORDANCE WITH THE PROVISIONS OF ASCE 7. WITH CORROSION-RESISTANT ATTACHMENT HARDWARE PROVIDED AND ANCHORS PERMANENTLY INSTALLED ON THE BUILDING. ATTACHMENT IN ACCORDANCE WITH TABLE 1609.2 WITH CORROSION-RESISTANT ATTACHMENT HARDWARE PROVIDED AND ANCHORS PERMANENTLY INSTALLED ON THE BUILDING IS PERMITTED FOR BUILDINGS WITH A MEAN ROOF HEIGHT OF 45 FEET (13 716 MM) OR LESS WHERE VASD DETERMINED IN ACCORDANCE WITH SECTION 1609.3.1 DOES NOT EXCEED 140 MPH (63 M/S) 2. GLAZING IN RISK CATEGORY I BUILDINGS, INCLUDING GREENHOUSES THAT ARE OCCUPIED FOR GROWING PLANTS ON A PRODUCTION OR RESEARCH BASIS, WITHOUT PUBLIC ACCESS SHALL BE PERMITTED TO BE GLAZING IN RISK CATEGORY II, ILL OR IV BUILDINGS LOCATED OVER 60 FEET (18 288 MM) ABOVE THE GROUND AND OVER 30 FEET (9144 MM) ABOVE AGGREGATE SURFACE ROOFS LOCATED WITHIN 1,500 FEET

#### CORROSION RESISTANCE FOR METAL CONNECTORS AND FASTENERS

(458 M) OF THE BUILDING SHALL BE PERMITTED TO BE UNPROTECTED.

FOR OPEN AREA: METAL CONNECTORS & FASTENERS IN OPEN AREAS SHALL BE EITHER STAINLESS STEEL ASTM A167; HOT-DIP GALVANIZED AFTER FABRICATION AND MEET ASTM A123 OR ASTM A153: OR HOT-DIP GALVANIZED PRIOR TO FABRICATION AND MEET ASTM A653. FOR VENTED OR ENCLOSED AREA: METAL CONNECTORS AND FASTENERS LOCATED IN VENTED OR ENCLOSED 145 < V < 160AREAS SHALL BE HOT-DIP GALVANIZED OR ELECTROGALVANIZED IN ACCORDANCE WITH ASTM A641: MECHANICALLY DEPOSITED ZINC COATINGS IN ACCORDANCE WITH ASTM B695; OR ELECTRODEPOSITED ZINC COATINGS IN ACCORDANCE WITH ASTM B633.

FOR OPEN AREAS: METAL CONNECTORS & FASTENERS IN OPEN AREAS SHALL BE EITHER STAINLESS STEEL AND ASTM A167: HOT-DIP GALVANIZED AFTER FABRICATION AND MEET ASTM A123 OR ASTM A153; HOT-DIP GALVANIZED OR GALVANNEALED PRIOR TO FABRICATION AND MEET ASTM A653; HOT DIP GALVANIZE OR V < 145 ELECTROGALVANIZED IN ACCORDANCE WITH ASTM A641; MECHANICALLY DEPOSIT ZINC COATINGS IN ACCORDANCE WITH ASTM B695; OR ELECTRODEPOSITED ZINC COATINGS IN ACCORDANCE WITH ASTM B633 FOR VENTED OR ENCLOSED AREAS: METAL CONNECTORS AND FASTENERS LOCATED IN VENTED OR ENCLOSED

AREAS SHALL BE EPOXY-COATED IN ACCORDANCE WITH ASTM A899.

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	TABLE R602	2.3(1) FASTENING SCHEDULE (IRC 2018)	
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERS A, B, C	SPACING AND LOCATION
		ROOF	
1	BLOCKING BETWEEN CEILING JOISTS OR RAFTERS TO TOP PLATE	4-8d BOX (2 1/2" × 0.113") OR 3-8d COMMON (2 1/2" × 0.131"); OR 3-10d BOX (3" × 0.128"); OR 3-3" × 0.131" NAILS	TOE NAIL
2	CEILING JOIST TO TOP PLATE	4-8d BOX (2 1/2" × 0.113") OR 3-8d COMMON (2 1/2" × 0.131"); OR 3-10d BOX (3" × 0.128"); OR 3-3" × 0.131" NAILS	PER JOIST, TOE NAIL
3	CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (SEE SECTION R802.5.2 AND TABLE R802.5.2)	4-10d BOX (3" × 0.128"); OR 3-16d COMMON (3 1/2" × 0.162"); OR 4-3" × 0.131" NAILS	FACE NAIL
4	CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER (HEEL JOINT) (SEE SECTION R802.5.2	TABLE R802.5.2	FACE NAIL
5	AND TABLE R802.5.2) COLLAR TIE TO RAFTER, FACE NAIL OR 1 1/4" X 20 GA. RIDGE STRAP TO RAFTER	4-10d BOX (3" × 0.128"); OR 3-10d COMMON (3" × 0.148"); OR 4-3" × 0.131" NAILS	FACE NAIL EACH RAFTER
6	RAFTER OR ROOF TRUSS TO PLATE	3-16d BOX (3 1/2" × 0.135"); OR 3-10d COMMON (3" × 0.148"); OR 4-10d BOX (3" × 0.128"); OR 4-3" × 0.131" NAILS	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS OR ROOF RAFTERS TO MINIMUM 2"	4-16d BOX (3 1/2" × 0.135"); OR 3-10d COMMON (3" × 0.148"); OR 4-10d BOX (3" × 0.128"); OR 4-3" × 0.131" NAILS	TOE NAIL
	RIDGE BEAM	3-16d BOX 3 1/2" × 0.135"); OR 2-16d COMMON (3 1/2" × 0.162"); OR 3-10d BOX (3" × 0.128"); OR 3-3" × 0.131" NAILS	END NAIL
	STUD TO STUD (NOT TO BRACED WALL	16d COMMON (3 1/2" × 0.162")	24" O.C. FACE NAIL
8	PANELS)	10d BOX (3" × 0.128"); OR 3" × 0.131" NAILS	16" O.C. FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16d BOX (3 1/2" × 0.135"); OR 3" × 0.131" NAILS	12" O.C. FACE NAIL
10	,	16d COMMON (3 1/2" × 0.162")  16d COMMON (3 1/2" × 0.162")	16" FACE NAIL  16" O.C. EACH EDGE FACE NAIL
10	BUILT-UP HEADER (2" TO 2" HEADER WITH 1/2" SPACER)	16d BOX (3 1/2" × 0.135")	12" O.C. EACH EDGE FACE NAIL
11	CONTINUOUS HEADER TO STUD	5-8d BOX (2 1/2" × 0.113"); OR 4-8d COMMON (2 1/2" × 0.131"); OR 4-10d BOX (3" × 0.128")	TOE NAIL
		16d COMMON (3 1/2" × 0.162")	16" O.C. FACE NAIL
12	TOP PLATE TO TOP PLATE	10d BOX (3" × 0.128"); OR 3" × 0.131" NAILS	12" O.C. FACE NAIL
13	DOUBLE TOP PLATE SPLICE	8-16d COMMON (3 1/2" × 0.162"); OR 12-16d BOX (3 1/2" × 0.135"); OR 12-10d BOX (3" × 0.128"); OR 12-3" × 0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
14	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL	16d COMMON (3 1/2" × 0.162")  16d BOX (3 1/2" × 0.135"); OR 3" × 0.131"	16" O.C. FACE NAIL
15	PANELS)  BOTTOM PLATE TO JOIST, RIM JOIST, BAND	NAILS 3-16d BOX (3 1/2" × 0.135"); OR	12" O.C. FACE NAIL  3 EACH 16" o.c. FACE NAIL
	JOIST OR BLOCKING (AT BRACED WALL PANEL)	2-16d COMMON (3 1/2" × 0.162"); OR 4-3" × 0.131" NAILS 4-8d BOX (2 1/2" × 0.113"); OR	
16	TOP OR BOTTOM PLATE TO STUD	3-16d BOX (3 1/2" × 0.135"); OR 4-8d COMMON (2 1/2" × 0.131"); OR 4-10d BOX (3" × 0.128"); OR 4-3" × 0.131" NAILS	TOE NAIL
		3-16d BOX (3 1/2" × 0.135"); OR 2-16d COMMON (3 1/2" × 0.162"); OR 3-10d BOX (3" × 0.128"); OR 3-3" × 0.131" NAILS	END NAIL
17	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10d BOX (3" × 0.128"); OR 2-16d COMMON (3 1/2" × 0.162"); OR 3-3" × 0.131" NAILS	FACE NAIL
18	1" BRACE TO EACH STUD AND PLATE	3-8d BOX (2 1/2" × 0.113"); OR 2-8d COMMON (2 1/2" × 0.131"); OR 2-10d BOX (3" × 0.128"); OR 2 STAPLES 1 3/4"	FACE NAIL
19	1" × 6" SHEATHING TO EACH BEARING	3-8d BOX (2 1/2" × 0.113"); OR 2-8d COMMON (2 1/2" × 0.131"); OR 2-10d BOX (3" × 0.128"); OR 2 STAPLES, 1" CROWN, 16 GA., 1 3/4" LONG	FACE NAIL
20	1" × 8" AND WIDER SHEATHING TO EACH BEARING	3-8d BOX (2 1/2" × 0.113"); OR 3-8d COMMON (2 1/2" × 0.131"); OR 3-10d BOX (3" × 0.128"); OR 3 STAPLES, 1" CROWN, 16 GA., 1 3/4"LONG WIDER THAN 1" × 8" 4-8d BOX (2 1/2" × 0.113"); OR 3-8d COMMON (2 1/2" × 0.131"); OR 3-10d BOX (3" × 0.128"); OR 4 STAPLES, 1" CROWN, 16 GA., 1 3/4" LONG	FACE NAIL

	TABLE R602	2.3(1) FASTENING SCHEDULE (IRC 2018)	
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERS A, B, C	SPACING AND LOCATION
		FLOOR	
21	JOIST TO SILL, TOP PLATE OR GIRDER	4-8d BOX (2 1/2" × 0.113"); OR 3-8d COMMON (2 1/2" × 0.131"); OR 3-10d BOX (3" × 0.128"); OR 3-3" × 0.131" NAILS	TOE NAIL
22	RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)	8d BOX (2 1/2" × 0.113")  8d COMMON (2 1/2" × 0.131"); OR 10d BOX (3" × 0.128"); OR 3" × 0.131" NAILS	4" O.C. TOE NAIL 6" O.C. TOE NAIL
23	1" × 6" SUBFLOOR OR LESS TO EACH JOIST	3-8d BOX (2 1/2" × 0.113"); OR 2-8d COMMON (2 1/2" × 0.131"); OR 3-10d BOX (3" × 0.128"); OR 2 STAPLES, 1" CROWN, 16 GA., 1 3/4" LONG	FACE NAIL
		FLOOR	
24	2" SUBFLOOR TO JOIST OR GRIDER	3-16d BOX (3 1/2" × 0.135"); OR 2-16d COMMON (3 1/2" × 0.162")	BLIND AND FACE NAIL
25	2" PLANK (PLANK & BEAM- FLOOR & ROOF)	3-16d BOX (3 1/2" × 0.135"); OR 2-16d COMMON (3 1/2" × 0.162")	AT EACH BEARING, FACE NAILS
26	BAND OR RIM JOIST TO JOIST	3-16d COMMON (3 1/2" × 0.162") 4-10 BOX (3" × 0.128"), OR 4-3" × 0.131" NAILS; OR 4-3" × 14 GA. STAPLES, 7/16" CROWN	END NAIL
	DINIT UD OIDDEDG AND DEANG O INOU	20d COMMON (4" × 0.192"); OR	NAIL EACH LAYER AS FOLLOWS: 32" O.C. AT TOP AND BOTTOM AND STAGGERED.
27	BUILT-UP GIRDERS AND BEAMS, 2-INCH LUMBER LAYERS	10d BOX (3" × 0.128"); OR 3" × 0.131" NAILS	24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
		AND: 2-20d COMMON (4" × 0.192"); OR 3-10d BOX (3" × 0.128"); OR 3-3" × 0.131" NAILS	FACE NAIL AT ENDS AND AT EACH SPLICE
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16d BOX (3 1/2" × 0.135"); OR 3-16d COMMON (3 1/2" × 0.162"); OR 4-10d BOX (3" × 0.128"); OR 4-3" × 0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NAIL
29	BRIDGING OR BLOCKING TO JOIST	$2-10 \text{ BOX } (3" \times 0.128"), \text{ OR } 2-8d \text{ COMMON} $ $(2 1/2" \times 0.131"; \text{ OR } 2-3" \times 0.131") \text{ NAILS}$	EACH END, TOE NAIL
			SPACING OF FASTENERS
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERS A, B, C	EDGES INTERMEDIATE (INCHES) H SUPPORTSC, E (INCHES)
	WOOD STRUCTURAL PANELS,	COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING	
37	3/4" AND LESS	6d DEFORMED (2" × 0.120") NAIL; or 8d COMMON (2 1/2" × 0.131") NAIL	6 12
38	7/8"—1"	8d COMMON (2 1/2" × 0.131") NAIL: OR 8d DEFORMED (2 1/2" × 0.120") NAIL	6 12
39	11/8" —11/4"	10d COMMON (3" × 0.148") NAIL; OR 8d DEFORMED (2 1/2" × 0.120") NAIL	6 12
A. NAIL	I INCH = 25.4 MM, 1 FOOT = 304.8 MM, 1 MILE F S ARE SMOOTH—COMMON, BOX OF DEFOREMED SH ATHING CONNECTIONS SHALL HAVE MINIMUM AVER	ANKS EXCEPT WHERE OTHERWISE STATED. NAILS	A LIGHT FOR FRANKS AND
100	2 INCH (20d COMMON NAIL), 90 KSI FOR SHANK KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LE PLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7,	SS.	KSI FOR SHANK DIAMETER OF
B. STAF	2 INCH (20d COMMON NAIL), 90 KSI FOR SHANK KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LE PLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7, S SHALL BE SPACED AT NOT MORE THAN 6 INCH	DIAMETERS LARGER THAN 0.142 INCH BUT NOT ISS. /16" ON DIAMETER CROWN WIDTH. ES ON CENTER AT ALL SUPPORTS WHERE SPANS	KSI FOR SHANK DIAMETER OF LARGER THAN 0.177 INCH, AND
100 B. STAF C. NAIL D. 4-F	2 INCH (20d COMMON NAIL), 90 KSI FOR SHANK KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LE PLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7,	DIAMETERS LARGER THAN 0.142 INCH BUT NOT SS. /16" ON DIAMETER CROWN WIDTH. ES ON CENTER AT ALL SUPPORTS WHERE SPANS PPLIED VERTICALLY.	KSI FOR SHANK DIAMETER OF LARGER THAN 0.177 INCH, AND
B. STAF C. NAIL D. 4-F E. SPAF F. FOR INCH	2 INCH (20d COMMON NAIL), 90 KSI FOR SHANK KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LE PLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7, S SHALL BE SPACED AT NOT MORE THAN 6 INCH OOT BY 8-FOOT BY 9-FOOT PANELS SHALL BE A	DIAMETERS LARGER THAN 0.142 INCH BUT NOT SS.  /16" ON DIAMETER CROWN WIDTH.  ES ON CENTER AT ALL SUPPORTS WHERE SPANS  PPLIED VERTICALLY.  SHALL BE BASED ON TABLE R602.3(2).  ACHED TO GABLE END ROOF FRAMING AND TO IT  ESPACED AT 6 INCHES ON CENTER WHERE THE	KSI FOR SHANK DIAMETER OF LARGER THAN 0.177 INCH, AND  S ARE 48 INCHES OR GREATER.  NTERMEDIATE SUPPORT WITHIN 48 ULTIMATE DESIGN WIND SPEED IS
B. STAF C. NAIL D. 4-F E. SPAF F. FOR INCH LESS GREA G. GYPS	2 INCH (20d COMMON NAIL), 90 KSI FOR SHANK KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LEPLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7, S SHALL BE SPACED AT NOT MORE THAN 6 INCHIOOT BY 8-FOOT BY 9-FOOT PANELS SHALL BE A CING OF FASTENERS NOT INCLUDED IN THIS TABLE WOOD STRUCTURAL PANEL ROOF SHEATHING ATTAILS OF ROOF EDGES AND RIDGES, NAILS SHALL BE STACED 4 INCHE	DIAMETERS LARGER THAN 0.142 INCH BUT NOT SS.  /16" ON DIAMETER CROWN WIDTH.  ES ON CENTER AT ALL SUPPORTS WHERE SPANS  PPLIED VERTICALLY.  SHALL BE BASED ON TABLE R602.3(2).  ACHED TO GABLE END ROOF FRAMING AND TO IT  ES SPACED AT 6 INCHES ON CENTER WHERE THE  IS ON CENTER WHERE THE ULTIMATE DESIGN WIN	KSI FOR SHANK DIAMETER OF LARGER THAN 0.177 INCH, AND  S ARE 48 INCHES OR GREATER.  NTERMEDIATE SUPPORT WITHIN 48 ULTIMATE DESIGN WIND SPEED IS ID SPEED IS 130 MPH OR
B. STAF C. NAIL D. 4-F E. SPAF F. FOR INCHLESS GRE G. GYPS SHE H. SPAF REQUEDED	2 INCH (20d COMMON NAIL), 90 KSI FOR SHANK KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LEPLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7, S SHALL BE SPACED AT NOT MORE THAN 6 INCHIOOT BY 8-FOOT BY 9-FOOT PANELS SHALL BE A CING OF FASTENERS NOT INCLUDED IN THIS TABLE WOOD STRUCTURAL PANEL ROOF SHEATHING ATTAILS OF ROOF EDGES AND RIDGES, NAILS SHALL BE STHAN 130 MPH AND SHALL BE SPACED 4 INCHE ATER BUT LESS THAN 140 MPH.	DIAMETERS LARGER THAN 0.142 INCH BUT NOT SS.  /16" ON DIAMETER CROWN WIDTH.  ES ON CENTER AT ALL SUPPORTS WHERE SPANS  PPLIED VERTICALLY.  SHALL BE BASED ON TABLE R602.3(2).  ACHED TO GABLE END ROOF FRAMING AND TO IT  SPACED AT 6 INCHES ON CENTER WHERE THE  SON CENTER WHERE THE ULTIMATE DESIGN WIN  AND SHALL BE INSTALLED IN ACCORADNCE WIT  EDGES APPLIES TO PANEL EDGES SUPPORTED IT  C. SPACING OF FASTENERS ON ROOF SHEATHING  RED BLOCKING. BLOCKING OF ROOF OR FLOOR S  BE PROVIDED EXCEPT AS REQUIRED BY OTHER	KSI FOR SHANK DIAMETER OF LARGER THAN 0.177 INCH, AND  S ARE 48 INCHES OR GREATER.  NTERMEDIATE SUPPORT WITHIN 48 ULTIMATE DESIGN WIND SPEED IS ID SPEED IS 130 MPH OR  H GA 253. FIBERBOARD  BY FRAMING MEMBERS AND PANEL EDGES APPLIES TO PANEL HEATHING PANEL EDGES
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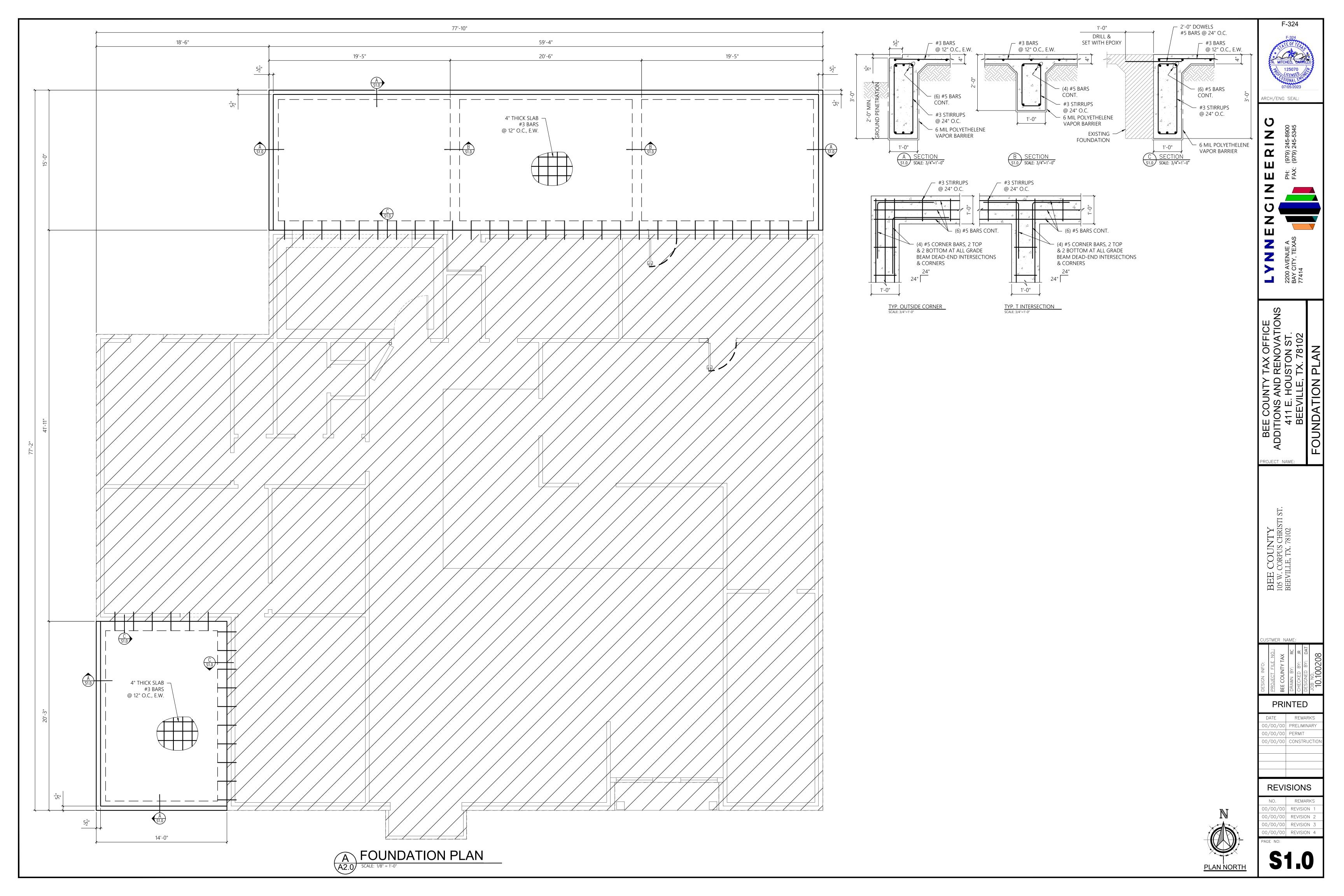
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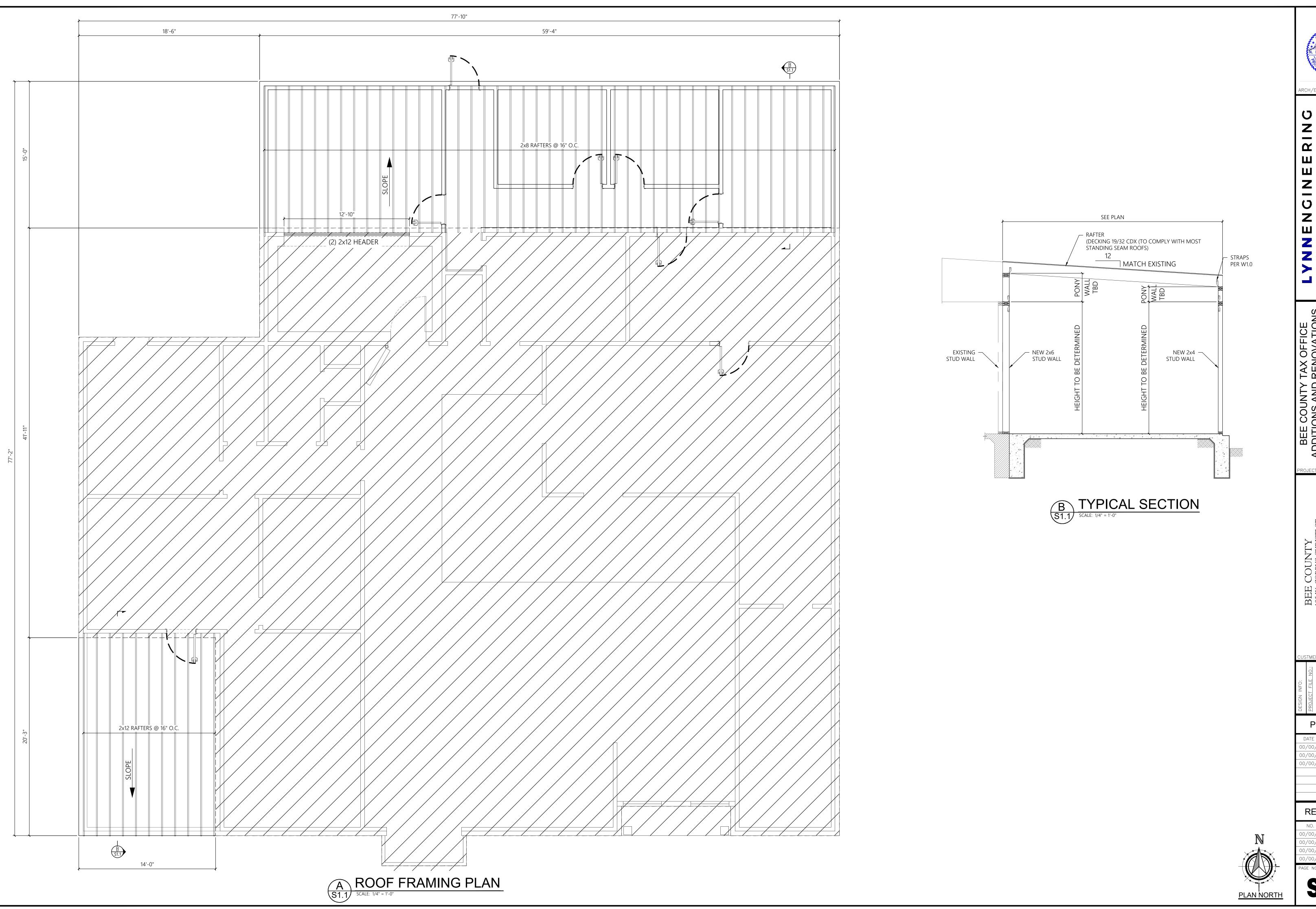
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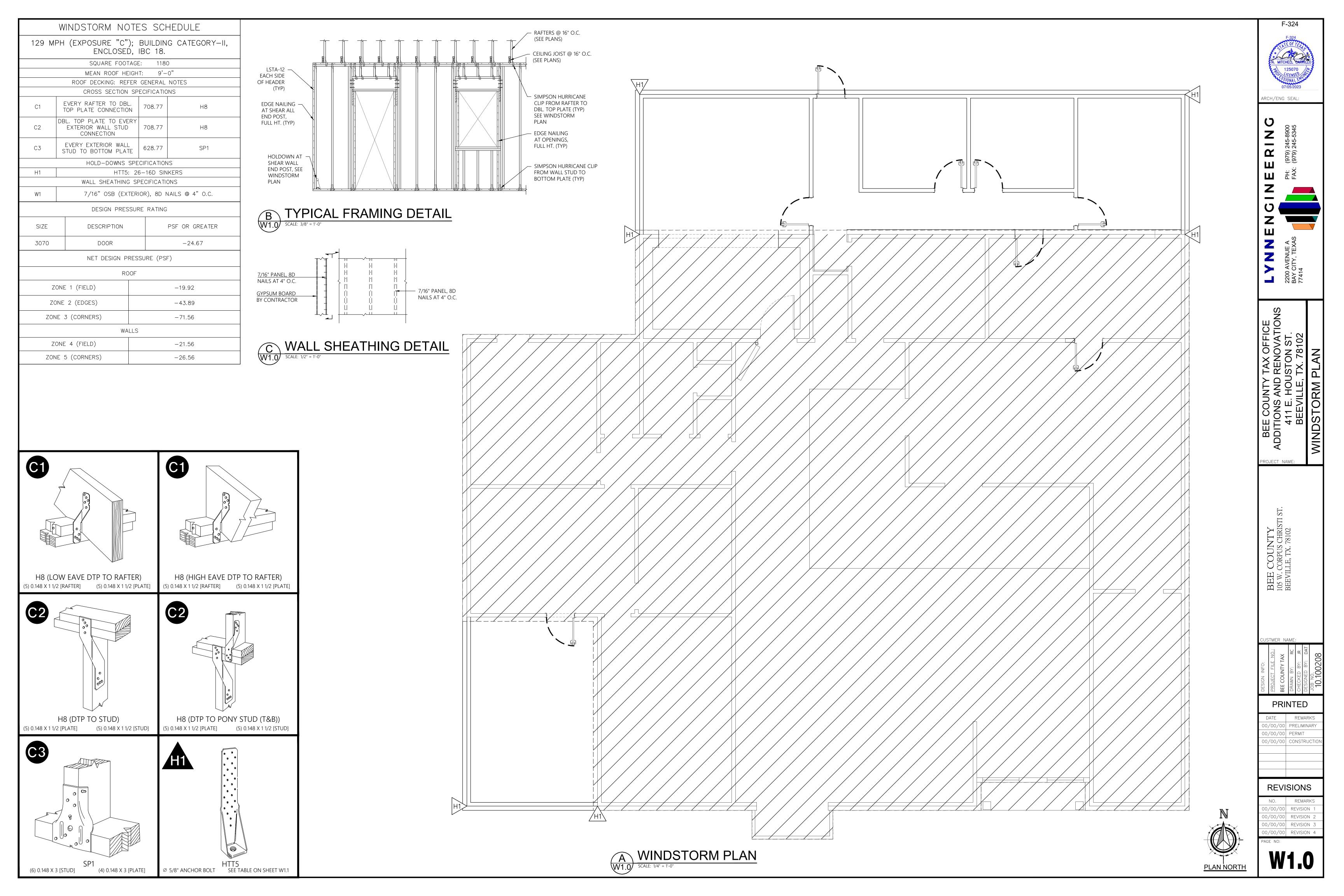
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### GENERAL ELECTRICAL NOTES

- 1. COORDINATE WITH THE ARCHITECT FOR EXACT LOCATION AND MOUNTING REQUIREMENTS FOR ALL OUTLETS. DISCREPANCY BETWEEN THE ARCHITECTURAL PLAN AND ELECTRICAL PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.
- 2. BRANCH CIRCUITS SHOWN ARE THE BE FIELD VERIFIED FOR AVAILABILITY PRIOR TO CONSTRUCTION. IF THERE IS A DISCREPANCY IN THE NUMBER OF AVAILABLE CIRCUITS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO CONSTRUCTION. CONTRACTOR SHALL UPDATE THE PANEL DIRECTOR OF THE EXISTING PANEL BOARD(S) USED FOR THIS SCOPE OF WORK. UPDATED DIRECTORY SHALL BE TYPEWRITTEN.
- 3. ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH NEC REQUIRED NEUTRAL
- 4. ALL GROUNDING AND PHASE CONDUCTORS SHALL BE IDENTIFIED AND
- 5. ALL WIRE AND CONDUIT TO BE ABANDONED SHALL BE REMOVED FROM ITS POINT OF SERVICE TO ITS POINT OF TERMINATION.
- 6. WHERE MULTIPLE WIRING DEVICES ARE SHOWN IN ONE LOCATION, THESE DEVICES SHALL BE MOUNTED UNDER A COMMON COVER PLATE UNLESS OTHERWISE SPECIFIED BY THE ARCHITECT. VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.
- BRANCH CIRCUITS UTILIZING MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A FACTORY APPROVED COMMON TRIPPING MEANS. REFER TO NEC 210.4(B), 605.6 AND 605.7.
- 8. THE CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL OWNER/TENANT FURNISHED FURNITURE AND EQUIPMENT PER RESPECTIVE MANUFACTURERS SPECIFICATIONS UNLESS NOTED OTHERWISE.
- 9. PROVIDE TYPE WRITTEN, SELF ADHESIVE STRIP WITH BRANCH CIRCUIT INFORMATION ON COVER PLATE OF EACH POWER RECEPTACLE.
- 10. THE CONTRACTOR SHALL PROVIDE A FLUSH WALL BOX WITH RING AND PULL WIRE TO 6 INCHES ABOVE CEILING AT ALL WALL TELEPHONE AND DATA
- 11. SOME EQUIPMENT MAY NEED RECEPTACLES, ELECTRICAL CONTRACTOR TO INSTALL RECEPTACLES WHERE REQUIRED, VERIFY WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. DO NOT HARDWIRE.

### GENERAL LIGHTING NOTES

- 1. BRANCH CIRCUITS SHOWN ARE TO BE FIELD VERIFIED FOR AVAILABILITY PRIOR TO CONSTRUCTION. IF THERE IS A DISCREPANCY IN THE NUMBER OF AVAILABLE CIRCUITS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO CONSTRUCTION. CONTRACTOR SHALL UPDATE THE PANEL DIRECTORY OF THE EXISTING PANEL BOARD(S) USED FOR THIS SCOPE OF WORK. UPDATED DIRECTORY SHALL BE TYPEWRITTEN.
- 2. ALL WIRE AND CONDUIT TO BE ABANDONED SHALL BE REMOVED FROM ITS' POINT OF ORIGIN TO ITS' POINT OF TERMINATION.
- 3. ALL EXISTING JUNCTION BOXES, AND OTHER ELECTRICAL, TELE/DATA AND LIFE SAFETY DEVICES WHICH ARE IN CONFLICT WITH NEW ARCHITECTURAL OR ARE NOW LOCATED IN AN ACCESSIBLE SPACE DUE TO STRUCTURAL, HVAC OR ACOUSTICAL REVISIONS AS A RESULT FROM THIS BUILD-OUT, ARE TO BE RELOCATED TO AN ACCESSIBLE LOCATION. EXTEND CONDUIT AND WIRING REQUIRED FOR SUCH RELOCATION.
- 4. NEW EXIT FIXTURES SHALL MATCH BUILDING STANDARD UNLESS NOTED OTHERWISE.
- 5. CONTRACTOR TO COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR LIGHTING FIXTURES TYPES AND QUANTITY.
- 6. VERIFY THE TYPE OF CEILING SYSTEM WITH GENERAL CONTRACTOR OR CEILING CONTRACTOR. PROVIDE FIXTURES WHICH ARE COMPATIBLE WITH THE CEILING SYSTEM AND INCLUDE ALL REQUIRED MOUNTING ACCESSORIES AND HARDWARE.
- 7. ANY FIXTURE SUBSTITUTION MUST BE APPROVED BY THE ARCHITECT AND/OR LIGHTING DESIGNER PRIOR TO BID. CONTRACTOR MUST BE PREPARED TO SUPPLY A SAMPLE AND/OR PHOTOMETRIC DATA IF REQUIRED. IF SUBSTITUTION IS REJECTED, CONTRACTOR MUST BE PREPARED TO PROVIDE SPECIFIED PRODUCT WITHOUT DELAY.
- 8. SUPPORT CEILING MOUNTED LIGHTING FIXTURES DIRECTLY FROM THE BUILDING STRUCTURE. DO NOT SUPPORT FIXTURES FROM PIPING, DUCTWORK OR ANY OTHER EQUIPMENT, OR SOLELY FROM THE SUSPENDED CEILING.
- 9. CROSS HATCHED LIGHT FIXTURES TO BE SERVED FROM NON-SWITCHED NIGHT LIGHT BRANCH CIRCUIT AND BE PROVIDED WITH 90 MINUTE BATTERY PACK EMERGENCY LIGHTING. REFERENCE LIGHTING SEQUENCE OF OPERATION FOR METHOD OF CONTROL FOR EACH AREA.
- 10. ALL EXIT SIGNS SHALL BE READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL AND SHALL MATCH BUILDING STANDARD.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CONDUIT	9	MOTOR CONTROL SWITCH	НМ	WALL MICROPHONE OUTLET
	CONDUIT IN OR UNDERFLOOR	φ	DUPLEX RECEPTACLE - STANDARD MOUNTING HEIGHT (18" AFF UNO)	H▽	WALL VOLUME CONTROL OUTLET
<b></b>	CONDUIT STUBBED UP	<b>P</b> <sub>A</sub>	DUPLEX RECEPTACLE ABOVE COUNTER (HEIGHT SPECIFIED BY ARCHIRECT)	Hī∨	RECESSED WALL TV OUTLET (REFERENCE SPECIAL DEVICE SCHEDUL
<del></del> ə	CONDUIT STUBBED DOWN	<b>P</b> GFCI	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE MOUNTING HEIGHT (18"AFF UNO)	•	PROGRAM CLOCK
0	LED LIGHTING FIXTURE	Фиѕв	USB CHARGING DUPLEX RECEPTACLE COMBO (1) TYPE A PORT, AND (1) TYPE C PORT	<b>a</b>	PROGRAM BELL
0	LED 2X2 LIGHT FIXTURE	<b>P</b>	DUPLEX RECEPTACLE ON GFCI BREAKER	CR	CARD READER
	WALL MOUNTED STRIP LIGHT FIXTURE	Φ	ISOLATED GROUND DUPLEX RECEPTACLE MOUNTING HEIGHT (18" AFF UNO)	•	PUSHBUTTON STATION
0	CELING LIGHTING FIXTURE	P	DEDICATE DUPLEX RECEPTACLE	Ó	BUZZER
Q	WALL LIGHTING FIXTURE	ф	CEILING MOUNTED DUPLEX RECEPTACLE	EPO	EMERGENCY POWER OFF PUSHBUTTON
<b>^</b>	CEILING LIGHTING FIXTURE - WALL WASHER	#	QUADRUPLEX RECEPTACLE MOUNTINGHEIGHT (18" AFF UNO)	Ø	MOTOR CONNECTION
0	EMERGENCY LIGHTING FIXTURE	φ	SIMPLEX RECEPTACLE		DISCONNECT SWITCH
<b>P</b>	WALL MOUNTED EXTERIOR LIGHT FIXTURE	φ	SPECIAL RECEPTACLE AS NOTED	⊠ı	FUSED DISCONNECT SWITCH
•	CEILING LIGHTING FIXTURE - EMERGENCY	$\nabla$	COMMUNICATION WALL OUTLET	⊠	MAGNETIC MOTOR STARTER
⊗	EXIT LIGHT FIXTURE - SINGLE FACE	<b>⊙</b> <sub>xx</sub>	FLOOR BOX POWER ONLY ("X" DENOTE TYPE REFERANCE FLOOR BOX SCHEDULE)	⊠i	COMBINATION MAGNETIC STARTER / DISCONNECT SWITCH
<b></b>	WALL EXIT LIGHT FIXTURE - SINGLE FACE	<b>⊗</b> xx	FLOOR BOX COMBINATION ("X" DENOTE TYPE REFERANCE FLOOR BOX SCHEDULE)		TRANSFORMER
•	EXIT LIGHT FIXTURE - DOUBLE FACE		POWER POLE	÷	GROUND CONNECTION
<b>#</b>	EMERGENCY BATTERY PACK LIGHT	S	WALL SPEAKER ASSEMBLY		PANELBOARD
7	LIGHTING TRACK WITH TRACK FIXTURES	9	CEILING SPEAKER ASSEMBLY	_	PANELBOARD FLUSH MOUNTED
\$	SINGLE POLE TOGGLE SWITCH	М	FLOOR MICROPHONE OUTLET		DISTRIBUTION PANEL / SWITCHBOARD
\$ <sub>P</sub>	TOGGLE SWITCH WITH PILOT LIGHT	•	JUNCTION BOX		HOME RUN
 \$ <sub>3</sub>	THREE-WAY TOGGLE SWITCH	H	WALL JUNCTION BOX	H - 1,3,5	ONE (1) THREE-POLE CIRCUIT
\$ <sub>4</sub>	FOUR-WAY TOGGLE SWITCH			M	ELECTRICAL METER
\$ <sub>R</sub>	RELAY CONTROL SWITCH				
\$ <sub>MC</sub>	MOMENTARY CONTROL SWITCH				
\$ <sub>M</sub>	TOGGLE SWITCH W/THERMAL OVERLOAD				
\$ <sub>K</sub>	KEY OPERATED SWITCH				
\$ <sup>OC</sup>	WALL MOUNTED VACANCY SENSOR (DUAL TECHNOLOGY)				
\$ OCD	WALL MOUNTED VACANCY SENSOR (DUAL TECHNOLOGY) (WITH DIMMING)				
\$ <sup>LV</sup>	LOW VOLTAGE PUSH-BUTTON SWITCH				
\$ LV XP	LOW VOLTAGE PUSH-BUTTON SWITCH "X" INDICATED NUMBER OF SWITCH LEGS				
\$ <sup>DV</sup>	LOW VOLTAGE PUSH-BUTTON SWITCH (WITH DIMMING)				
\$ DV XP	LOW VOLTAGE PUSH-BUTTON SWITCH (WITH DIMMING)"X" INDICATED NUMBER OF SWITCH LEGS				
<u>©</u>	CEILING OCCUPANCY SENSOR (DUAL TECHNOLOGY)				
<b>PC</b>	PHOTOSENSOR/ DAYLIGHT RESPONSIVE CONTROL				





SUTTON ELDRIDGE **ENGINEERING, LLC** 5600 Tennyson Parkway

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BEEVILLE, TX. 78102

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#### PART 1 - GENERAL

- 1.1 CAREFULLY READ THE SPECIFICATIONS AND COMPLY WITH ALL REQUIREMENTS. THESE GENERAL NOTES ARE INTENDED TO ASSIST THE CONTRACTOR DURING EXECUTION OF THE WORK. HOWEVER, THEY DO NOT COVER ALL OF THE SPECIFICATION REQUIREMENTS. ALL BIDDERS MUST BID PER PLANS AND SPECIFICATIONS.
- 1.2 THE TERM "PROVIDE" IN THESE SPECIFICATIONS AND ON THE DRAWINGS MEANS; FURNISH, TRANSPORT, INSTALL, CONNECT, WARRANTY AND START-UP, INCLUSIVELY.
- 1.3 THE SCOPE OF THE WORK SHALL INCLUDE THE FURNISHING AND INSTALLATION OF THE NECESSARY MATERIAL AND LABOR TO ACCOMPLISH THE WORK INDICATED BY THE DRAWINGS AND HEREIN SPECIFIED. ALL WORK BY CONTRACTOR SHALL CONFORM TO ALL APPLICABLE, FEDERAL, STATE AND LOCAL BUILDING CODES.
- 1.4 CONTRACTOR BEFORE SUBMITTING HIS BID, SHALL VISIT THE SITE, REVIEW THE EXISTING CONDITIONS AND ALLOW FOR ALL CHANGES THAT ARE NECESSARY TO COMPLETE INSTALLATION OF NEW ELECTRICAL WORK. SUBMISSION OF PROPOSALS SHALL BE TAKEN AS EVIDENCE THAT SUCH INSPECTIONS HAVE BEEN MADE. CLAIMS FOR EXTRA COMPENSATION FOR WORK THAT COULD HAVE BEEN FORESEEN BY SUCH INSPECTIONS, WHETHER SHOWN ON THE CONTRACT DOCUMENTS OR NOT SHALL NOT BE ACCEPTED NOR PAID.
- 1.5 COORDINATION: COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS RE-WORK.
- 1.6 DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTWORK AND CIRCUITS. CONTRACTOR SHALL CHECK ALL INFORMATION AND REPORT ANY APPARENT DISCREPANCIES BEFORE SUBMITTING BID.
- 1.7 CONTRACTOR SHALL SECURE AND PAY FOR ALL CONSTRUCTION PERMITS AND LICENSES AND SHALL PAY ALL GOVERNMENTAL AND PUBLIC UTILITY CHARGES AND INSPECTION FEES NECESSARY FOR THE EXECUTION OF THE WORK.

#### 1.8 SUBMITTALS

- A. PROVIDE PRODUCT DATA FOR ALL EQUIPMENT AND MATERIALS DESIGNATED ON THE DRAWINGS OR LISTED IN A SCHEDULE. THE SUBMITTALS SHALL INCLUDE WIRING DIAGRAMS, PRODUCT CERTIFICATION, MAINTENANCE DATA, AND WARRANTIES.
- B. IF REQUIRED PROVIDE SHOP DRAWINGS/COORDINATION DRAWINGS WITH DIMENSIONED PLANS AND SECTIONS OR ELEVATION LAYOUTS OF ELECTRICAL EQUIPMENT
- C. DEVIATIONS: THE APPROVAL OF SUBMITTAL DRAWINGS BY THE ARCHITECT/ENGINEER, OR HIS REPRESENTATIVE, SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR DEVIATION FROM DRAWINGS OR THE SPECIFICATIONS UNLESS HE HAS CALLED ATTENTION IN WRITING TO SUCH DEVIATIONS AT THE TIME OF SUBMISSION AND HAS OBTAINED WRITTEN APPROVAL FROM THE ARCHITECT/ENGINEER, OR HIS REPRESENTATIVE, OF SUCH DEVIATIONS.
- A. PROTECT THE EXISTING EQUIPMENT AND SYSTEMS TO REMAIN OPERATIONAL. IF DAMAGED OR DISTURBED IN THE COURSE OF THE DEMOLITION WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE WITH NEW PRODUCT OF EQUAL CAPACITY, QUALITY
- B. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO ARRANGE THE SHUT OFF OF
- C. CONTRACTOR SHALL BOX AND/OR PALLETIZE ALL DEMOLISHED EQUIPMENT AND PROTECT IT ON SITE. REMOVE THESE ITEMS FROM THE SITE AT THE DIRECTION OF THE OWNER.
- D. CONTRACTOR SHALL NOT CONSIDER DEMOLITION AND ALTERATION NOTES TO BE ALL-INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND ASSESS EACH AREA TO FULFILL THE INTENT OF THE COMPLETE DESIGN. REFER TO ARCHITECTURAL DOCUMENTS FOR DEFINITION OF SCOPE FOR DEMOLITION AREAS AND ADDITIONAL REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO VISIT THE SITE TO CONFIRM THE EXTENT OF DEMOLITION AND RESOLVE ANY DISCREPANCIES WITH OWNER'S/LANDLORD'S CONSTRUCTION MANAGER.
- FOR DEMOLITION AREAS, THE CONTRACTOR SHALL REVIEW THE MECHANICAL, PLUMBING, AND FIRE SUPPRESSION DEMOLITION DRAWINGS AND REMOVE WIRING, RACEWAYS, AND ELECTRICAL EQUIPMENT ASSOCIATED WITH THE MECHANICAL, PLUMBING AND FIRE
- ENSURE THAT ALL LIFE SAFETY SYSTEMS REMAIN OPERATIONAL AND MEET LIFE SAFETY CODE REQUIREMENTS FOR ALL OCCUPIED AREAS THAT REMAIN OPERATIONAL DURING/AFTER DEMOLITION. THIS INCLUDES BUT IS NOT LIMITED TO EGRESS PATHS, FIRE ALARM SYSTEMS, EGRESS LIGHTING AND OTHER LIFE SAFETY SYSTEMS.
- G. PROTECT EXISTING EQUIPMENT AND SYSTEMS INTENDED TO REMAIN OPERATIONAL. IF DAMAGED OR DISTURBED IN THE COURSE OF THE DEMOLITION WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE WITH NEW PRODUCT OF EQUAL CAPACITY, QUALITY AND FUNCTIONALITY.
- H. RE-ROUTE AND RE-CONNECT ANY CIRCUIT(S) THAT ARE TO REMAIN IN USE BUT INTERFERES WITH THE NEW CONSTRUCTION.
- I. WORK REQUIRING INTERRUPTION OF ELECTRICAL POWER, WHICH WOULD ADVERSELY AFFECT THE NORMAL OPERATION OF THE OWNER/LANDLORD 'S PROPERTY OR OTHER BUILDING TENANTS, SHALL BE DONE AT A TIME OTHER THAN NORMAL WORKING HOURS. SCHEDULE ALL OUTAGES WITH OWNER/LANDLORD PRIOR TO SHUTDOWN.
- OWNER/LANDLORD RESERVES THE RIGHTS TO ALL DEMOLISHED MATERIALS. COORDINATE AND VERIFY EQUIPMENT INTENDED TO BE SALVAGED PRIOR TO DEMOLITION. MATERIALS THAT OWNER/LANDLORD REQUESTS TO BE RE-USED OR SALVAGED, THE MATERIALS SHALL BE REMOVED IN A NEAT WORKMAN LIKE METHOD TO ALLOW THEIR RE-USE. PROTECT THE SALVAGE MATERIALS FOR REUSE BY PROPERLY PACKAGING THE MATERIALS TO PROTECT SALVAGED MATERIALS FROM DAMAGE; SECURELY PACKAGE ALL SALVAGE MATERIALS' INSTALLATION HARDWARE AND PARTS TO SALVAGED MATERIALS.
- K. REMOVE UNUSED BRANCH CIRCUITS BACK TO BRANCH PANELBOARD OF ORIGIN, MARK BREAKER AS 'SPARE' AND MAKE ELECTRICALLY SAFE. REMOVE ALL ABANDONED CONDUITS ABOVE LAY-IN CEILING, EXPOSED CONDUITS, FLEXIBLE CONDUITS, SURFACE RACEWAY, SURFACE MOUNTED OUTLET/JUNCTION BOXES AND EQUIPMENT UNLESS NOTED OTHERWISE
- REMOVE DEMOLISHED MATERIAL FROM PROJECT SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND REGULATIONS. FOLLOW ALL STATE AND LOCAL REGULATIONS AND CODES FOR PROPER DISPOSAL.
- 1.10 WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, PROJECT RECORD DOCUMENTATION (DRAWINGS) AND MANUALS SHALL BE PROVIDE TO THE BUILDING OWNER AND SHALL INCLUDE:
- A. OPERATIONS & MAINTENANCE MANUALS: INCLUDE, AS APPROPRIATE TO EACH ITEM, SUFFICIENT INFORMATION TO PROVIDE FOR THE OWNER'S OPERATION AND MAINTENANCE OF EQUIPMENT FURNISHED. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE
- 1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
- 2. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE
- 3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.
- B. AS-BUILTS/RECORD DRAWINGS: PROVIDE PDF SET OF THE FOLLOWING: 1. ELECTRONIC DRAWINGS FILES, IN AUTOCAD ".DWG" FORMAT, OF ALL DOCUMENTS ON CD
- DISKS OR FLASH DRIVES, CORRECTED WITH "AS INSTALLED" WORK.

2. ELECTRONIC DRAWINGS FILES, IN "PDF" FORMAT, OF ALL DOCUMENTS ON CD DISKS OR

- FLASH DRIVES, CORRECTED WITH "AS INSTALLED" WORK. 3. FULL-SIZE HARD COPIES OF ALL DOCUMENTS CORRECTED WITH "AS INSTALLED" WORK.
- 4. AS-BUILT/RECORD DRAWINGS SHALL INDICATE THE ACTUAL INSTALLATION AND INCLUDE
- THE FOLLOWING:
- a. A SINGLE-LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM b. FLOOR PLANS INDICATING LOCATION AND AREAS SERVED FOR ALL DISTRIBUTION.
- CONTACTS: INCLUDE WITH EACH PRODUCT, NAME, ADDRESS, AND TELEPHONE NUMBERS, OF INSTALLING CONTRACTOR, FACTORY AND LOCAL SERVICE REPRESENTATIVE.
- D. INSTRUCTIONS OF OWNER'S PERSONNEL: PRIOR TO FINAL INSPECTION AND ACCEPTANCE, FULLY INSTRUCT THE OWNER'S DESIGNATED OPERATING AND MAINTENANCE PERSONNEL IN THE OPERATING AND PERFORMANCE OF THE EQUIPMENT FURNISHED. WARRANTIES: INCLUDE WARRANTY INFORMATION PROPERLY EXECUTED BY RESPECTIVE
- MANUFACTURERS, SUPPLIERS, OR SUB-CONTRACTORS FOR THE EQUIPMENT AND SYSTEM
- 1.11 IN ADDITION TO THE ABOVE, CONTRACTOR SHALL ACCUMULATE DURING THE JOB'S PROGRESS. THE FOLLOWING DATA, IN PDF FORMATE, PREPARED IN A NEAT BROCHURE OR PACKET FOLDER AND TURNED OVER TO THE ARCHITECT FOR REVIEW AND SUBSEQUENT DELIVERY TO THE
- A. ALL WARRANTIES AND GUARENTEES AND MANUFACTURER'S DIRECTIONS ON EQUIPMENT AND MATERIAL COVERED IN THE CONTRACT INCLUDING THE NAMES, ADDRESSES AND

- TELEPHONE NUMBERS OF THE MANUFACTURER'S REPRESENTATIVE
- B. APPROVED FIXTURE BROCHURES, WIRING DIAGRAMS AND CONTROL DIAGRAMS (ORIGINAL DATA, NO COPIES).
- C. COPIES OF APPROVED SHOP DRAWINGS.
- 1.12 ALL OF THE ABOVE DATA SHALL BE SUBMITTED TO THE ARCHITECT FOR HIS REVIEW AT SUCH TIME AS THE CONTRACTOR SUBMITS HIS LAST ESTIMATE PRIOR TO HIS FINAL PAYMENT, BUT IN NO CASE, LESS THAN TWO WEEKS BEFORE FINAL INSPECTION
- 1.13 ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN AND UPDATED TO SHOW THE NEW WORK.
- 1.14 OWNER FURNISHED EQUIPMENT A. CONTRACTOR SHALL REQUEST A COPY OF THE PRE-PURCHASED EQUIPMENT PROCUREMENT BID INSTRUCTIONS AND SPECIFICATIONS.
- B. WHERE THE OWNER HAS ELECTED TO PROCURE SOME EQUIPMENT FOR THE PROJECT, IT IS THE INTENT OF THESE SPECIFICATIONS THAT THE CONTRACTOR SHALL ACCEPT RESPONSIBILITY OF THIS EQUIPMENT AND PROVIDE THE FOLLOWING:
- 1. COORDINATE SHOP DRAWING PREPARATION.
- PROVIDE SUPERVISION TO COORDINATE SHIPPING AND ACCEPT DELIVERY.
- 3. INSTALL AND SET IN PLACE
- 4. PROVIDE POWER AND CONTROL WIRING TO PROVIDE FUNCTIONS IN ACCORDANCE WITH THESE SPECIFICATIONS
- 5. DELIVER THE EQUIPMENT TO THE OWNER IN A WORKABLE, OPERATING, AND TESTED
- 6. PROVIDE SUPERVISION TO COORDINATE FACTORY AND ON-SITE TESTING, START-UP, AND
- COMMISSIONING IN ACCORDANCE WITH THESE SPECIFICATIONS. 7. PROVIDE SUPERVISION TO COORDINATE OWNER TRAINING AND PREPARATION OF O&M
- C. COORDINATE LIST OF EQUIPMENT PROVIDED BY OWNER WITH OWNER AND GENERAL
- D. THE CONTRACTOR SHALL REPLACE ANY OWNER EQUIPMENT/SYSTEMS UNDER HIS CONTROL OR SUPERVISION IF DAMAGED.

- 2.1 MATERIAL APPROVAL: ALL MATERIALS MUST BE NEW AND BEAR A UL LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OR A GOVERNING AGENCY.
- 2.2 HOMERUNS TO PANEL BOARDS SHALL BE ELECTRICAL METALLIC TUBING (EMT) EQUAL TO ALLIED TUBE AND CONDUIT.
- 2.3 WHERE ALLOWED BY LOCAL CODES, TYPE 'MC' CABLE MAY BE USED. 'MC' CABLE MUST BE PROVIDED WITH ALL REQUIRED SUPPORTS. TYPE 'BX' OR 'AC' CABLE SHALL NOT BE UTILIZED ON
- 2.4 ALL FUSES SHALL BE CURRENT-LIMITING TYPE AND BE U.L. LISTED. ACCEPTABLE MANUFACTURERS: LITTELFUSE, BUSSMAN
- 2.5 NEW SWITCHGEAR REQUIREMENTS SHALL UTILIZE EQUIPMENT OF THE SAME BRAND AND TYPE AS THE BASE BUILDING. IN NO CASE SHALL SAID EQUIPMENT BE OF LESS QUALITY THAN
- A. SAFETY SWITCHES SHALL BE SQUARE D TYPE 'HD'. PROVIDE WEATHERPROOF DEVICE WHEN INSTALLED OUTDOOR

- A. ELECTRIC METALLIC TUBING EXPOSED USE: FITTINGS SHALL BE OF WATERTIGHT STEEL COMPRESSION TYPE COUPLINGS FOR POWER, LIGHTING OR CONTROL WIRING.
- B. ELECTRIC METALLIC TUBING CONCEALED USE: IN WALLS AND ABOVE CEILINGS, IN DRYWALLS,
- C. ALL RACEWAY EXPOSED TO PHYSICAL DAMAGE SHALL BE RIGID STEEL, HOT DIPPED GALVANIZED AND SHALL BE ROUTED AT RIGHT ANGLES TO, OR PARALLEL WITH THE STRUCTURE. CONDUITS SHALL BE SECURED AT 8'-0" MAXIMUM INTERVALS AND WITHIN 36" OF EACH TERMINATION.
- D. MINIMUM SIZE FOR ALL CONDUITS SHALL BE 3/4".

COMPRESSION OR SET SCREW TYPE FITTINGS.

- E. PROVIDE HANGER SUPPORTS FOR 'EMT' AT INTERVALS NOT OVER 10' AND PROVIDE ONE SUPPORT NOT OVER 1' FROM EACH CHANGE IN DIRECTION.
- F. PROVIDE PULL BOXES AS REQUIRED.
- G. RIGID METALS CONDUIT: USE IN CONCRETE WALLS OR UNDER CONCRETE FLOOR SLABS,
- THROUGH AND ON THE ROOF. H. FLEXIBLE METAL CONDUIT: GALVANIZED STEEL, INTERLOCKING, AND SINGLE STRIP TYPE. USE FOR FINAL CONNECTIONS TO TRANSFORMERS, MOTORS AND LIGHTING FIXTURES. CLAMP
- OR ANGLE WEDGE TYPE CONNECTORS I. FITTINGS FOR COMMUNICATION SYSTEM RACEWAYS SHALL BE INDENTER OR SET SCREW
- J. PROVIDE PULL WIRE IN ALL RACEWAYS WITHOUT CONDUCTORS.

#### 2.7 WIRES AND CABLES

- A. CONNECTORS SHALL BE U.L. APPROVED FOR THE APPLICATION IN WHICH THEY ARE USED. INSULATION SHALL BE TYPE THHN/ THWN.
- B. ALL CONDUCTORS SHALL BE 98% CONDUCTIVITY SOFT DRAWN ANNEALED COPPER 600 VOLT
- C. CONDUCTORS SHALL BE NO. 12 AWG MINIMUM EXCEPT AS PERMITTED FOR CONTROL
- D. CONDUCTORS NO. 8 AND LARGER SHALL BE STRANDED, CONDUCTORS NO. 10 AND SMALLER
- E. MAKE ALL CONNECTIONS WITH SOLDERLESS INSULATED CONNECTORS EQUAL TO
- SCOTCHLOCK FOR NO. 8 AWG AND SMALLER. F. CONDUCTORS NO. 6 AWG AND LARGER SHALL BE SPLICED UTILIZING COPPER BOLT
- CLAMP-TYPE CONNECTOR OR HYDRAULICALLY CRIMPED COPPER CRIMP CONNECTORS.
- A. ALL GROUNDING CONNECTIONS SHALL BE WITH GROUNDING CLAMPS OR EXOTHERMIC
- B. WHERE FLEXIBLE CONDUIT IS USED, PROVIDE A CONTINUOUS COPPER BONDING
- C. ALL CONDUITS SUPPLYING FEEDERS AND BRANCH CIRCUITS SHALL BE PROVIDED WITH
- GROUNDING CONDUCTOR. D. PROVIDE GREEN GROUNDING PIGTAIL FOR EACH RECEPTACLE AND PIECE OF EQUIPMENT
- RATED FOR THE AMPERAGE OF THE CIRCUIT BEING CONNECTED.
- E. BOND ALL NON-CURRENT CARRYING METAL PARTS OF EACH:
- BRANCH CIRCUIT
- 2. DISTRIBUTION PANELS
- 3. SWITCHBOARDS
- 4. TRANSFORMERS
- 5. CONTROLLER ENCLOSURES
- MOTOR FRAMES
- 7. RACEWAYS 8. DEVICES AND DEVICE PLATES.
- 2.9 FURRED OUT WALLS:
- A. 1-1/2" DEEP, USED FOR FLUSH MOUNTED RECEPTACLES AND LIGHT SWITCHES. B. 4"X4"X1-1/2" DEEP WITH ½" RAISED SINGLE DEVICE COVER, USED FOR FLUSH MOUNTED
- COMMUNICATION/DATA ROUGH-IN.
- 2.10 OUTLET, JUNCTION AND PULL BOXES:
- A. OUTLET BOXES HOT DIPPED GALVANIZED: 1. 3-1/2" DEEP, USED FOR FLUSH MOUNTED RECEPTACLES AND LIGHT SWITCHES.
- 2. 4"X4"X2-1/8" DEEP WITH ½" RAISED SINGLE DEVICE COVER, USED FOR FLUSH MOUNTED COMMUNICATION/DATA ROUGH-IN.
- B. JUNCTION AND PULL BOXES: USE OUTLET BOXES WITH APPROPRIATE COVERS AS JUNCTION BOXES WHERE POSSIBLE. LARGER JUNCTION AND PULL BOXES SHALL BE FABRICATED FROM SHEET STEEL, SIZED ACCORDING TO CODE, WITH SCREW-ON COVERS, FINISH: GRAY BAKED ENAMEL.

#### 2.11 WIRING DEVICES:

- A. CONVENIENCE RECEPTACLES: 2-POLE, 3-WIRE, GROUNDING TYPE NEMA 5-20R. STANDARD RECEPTACLE: LEVITON #5362-1; GFI RECEPTACLE LEVITON #6599-1, OR EQUAL.
- B. WALL SWITCHES SHALL BE PREMIUM INDUSTRIAL SPECIFICATION GRADE, TOGGLE, QUIET TYPE, 20 AMP, 120/277V. STANDARD SWITCH: LEVITON 122-1; THREE-WAY SWITCH:
- C. DEVICE PLATES: STAINLESS STEEL FOR FLUSH AND ALL SURFACE MOUNTED DEVICES, EXCEPT

- PLENUM AREA MAY REQUIRE STAIN FINISH STAINLESS STEEL PLATES. CONFIRM FINISHES WITH ENGINEER BEFORE ORDERING.
- D. RECEPTACLES HUBBELL #2162, IG-#2162, OR GF-8300 SERIES.
- E. DIMMER SWITCHES LUTRON NOVA "N" SERIES OR EQUAL FOR INCANDESCENT LIGHTING and lutron nova "nlv" series or equal for low voltage incandescent lighting. 3-WAY DIMMERS SHALL BE EQUAL TO NOVA N-XXO3 SERIES. WHERE SPST SWITCHES OCCUR ADJACENT TO DIMMERS, SWITCHES SHALL MATCH DIMMER(S) IN APPEARANCE. REFER TO PLANS FOR MINIMUM DIMMER WATTAGE REQUIREMENTS.
- FLOOR OUTLETS (PEDESTAL) LEGRAND WIREMOLD FIT-200 SERIES OR EQUAL
- G. FLOOR OUTLETS (FLUSH) LEGRAND WIREMOLD RC4 OR 6ATC SERIES OR EQUAL UNLESS
- OTHERWISE SPECIFIED BY THE ARCHITECT. H. FLOOR OUTLET CONCRETE ENCASED: LEGRAND WIREMOLD RPNFP SERIES OR EQUAL WITH
- ACTIVATION DEVICES AS DIRECTED BY ARCHITECT. WALL OUTLETS TO BE INSTALLED WITH A CADDY "H" SERIES SUPPORT BRACKET
- J. CEILING MOUNTED OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY, INFRARED AND ULTRAPHONIC AS MANUFACTURED BY SENSORSWITCH #CM-PDT WHITE FINISH WITH (1) ONE #PP20 POWER PACK PER CONTROL CIRCUIT. CONTRACTOR SHALL VERIFY SENSOR TIME SETTING IS (20) TWENTY MINUTES MINIMUM. SUBSCRIPT '10' INDICATES #CM-PDT-10 SENSOR OF SAME FINISH AND TIME SETTING.
- K. WALL MOUNTED OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY, INFRARED AND ULTRAPHONIC, AS MANUFACTURED BY SENSORSWITCH #WSD-PDT, WHITE FINISH. CONTRACTOR SHALL VERIFY SENSOR TIME SETTING IS (20) TWENTY MINUTES MINIMUM.
- 2.12 MOUNTING HEIGHTS FROM FINISHED FLOOR TO CENTER OF DEVICE:
- A. 18" FOR RECEPTACLES, TELEPHONE AND DATA OUTLETS UNLESS OTHERWISE INDICATED ON B. +10" RECEPTACLES AT WORK BENCH (ABOVE WORK SURFACE) UNLESS OTHERWISE
- INDICATED BY THE ARCHITECT. C. +48" WALL SWITCHES
- 2.13 LIGHT FIXTURES: A. ALL FIXTURES SHALL BE UL-LISTED AND SUITABLE FOR THEIR ENVIRONMENT.
- B. PROVIDE FIXTURES AS LISTED IN THE LIGHTING FIXTURE SCHEDULE ON THE DRAWINGS.
- PROVIDE HIGH POWER FACTOR BALLASTS FOR COMPACT FLUORESCENT LAMPS. BALLAST VOLTAGE TO BE COMPATIBLE WITH CIRCUIT SOURCE VOLTAGE.
- E. EMERGENCY FIXTURES SHALL BE PROVIDED WITH BATTERY BACK-UP SYSTEM UNLESS NOTED OTHERWISE- REFER TO LIGHTING FIXTURE SCHEDULE.
- F. LINEAR EMERGENCY FIXTURES SHALL BURN STEADY PROVIDING NOT LESS THAN 1300LUMEN OUTPUT FOR A MINIMUM OF 90 MINUTES ON BATTERY POWER FOR EMERGENCY EGRESS.

- A. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES. VERIFY CEILING TYPES OF ALL ROOMS WITH ARCHITECT'S ROOM FINISH SCHEDULE
- PRIOR TO ORDERING LIGHT FIXTURES. B. LOCATION OF OUTLETS SHOWN IS APPROXIMATE ONLY. OUTLETS MAY BE MOVED TO SUIT CONFLICTING EQUIPMENT.
- C. EXACT LOCATION OF SWITCHES, FLOOR OUTLETS AND CONDUIT STUBS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO INSTALLATION.
- D. RECESSED FIXTURES IN SUSPENDED CEILINGS SHALL BE SUPPORTED FROM OVERHEAD STRUCTURES BY CEILING GRID WIRE.
- E. PROVIDE NECESSARY BACKING REQUIRED TO INSURE RIGID MOUNTING OF OUTLET BOXES. F. CONDUIT ROUTES SHOWN ARE APPROXIMATE ONLY AND MUST BE ADJUSTED IN THE FIELD TO CLEAR OTHER FACILITIES. ALL CONDUIT ROUTING SHALL BE OVERHEAD, CONCEALED IN
- WALL OR CEILING, UNLESS NOTED OTHERWISE. G. ALL HOME RUNS ARE INDICATED AS STARTING FROM THE OUTLET NEAREST THE PANEL AND CONTINUE IN THE GENERAL DIRECTION OF THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED. HOME RUNS TO PANELS SHALL BE IN INDIVIDUAL CONDUITS WITH CIRCUITS AS SHOWN, EXCEPT FOR SINGLE PHASE
- H. ALL EXPOSED RACEWAY RUNS ABOVE GRADE SHALL BE RIGID STEEL, HOT DIPPED GALVANIZED AND SHALL BE ROUTED AT RIGHT ANGLES TO, OR PARALLEL WITH THE STRUCTURE. CONDUITS SHALL BE SECURED AT 8'-0" MAXIMUM INTERVALS AND WITHIN 36"
- I. JUNCTION AND PULL BOXES GENERALLY SHALL NOT BE EXPOSED IN FINISH PLACES. PROVIDE PULL BOXES AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRES. COORDINATE THE LOCATIONS WITH OTHER TRADES. ALL JUNCTION AND PULL BOXES SHA BE ACCESSIBLE. PROVIDE PULL BOXES FOR EVERY THREE 90-DEGREE BENDS AND AS INDICATED ON THE DRAWINGS.
- J. RUN LOW VOLTAGE CABLES ABOVE DROPPED CEILING PARALLEL OR PERPENDICULAR TO COLUMN LINES. SECURE LOW VOLTAGE CABLES ON 48" CENTERS TO UNISTRUT CHANNEL OR OTHER SUPPORTS FASTENED TO CONCRETE CEILING. "THOMAS AND BETTS TY-RAP" CABLE TIES, OR EQUAL, SHALL BE USED TO HANG CABLES.
- K. SECURELY FASTEN ALL EQUIPMENT BY MEANS OF RODS, HANGER SUPPORTS, GUIDES, ANCHORS AND SWAY BRACES TO MAINTAIN ALIGNMENT AND TO PREVENT EQUIPMENT

L. INSTALLATION OF CONDUITS: USE RIGID STEEL IN WET LOCATIONS, WHERE SUBJECT TO

- MECHANICAL DAMAGE, IN CONCRETE OR BLOCK WALLS. USE EMT IN OTHER LOCATIONS WHERE PERMITTED BY CODE. 3.2 INSTALL MECHANICAL AND ELECTRICAL SYSTEMS TO FACILITATE SERVICING, MAINTENANCE, REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT
- EQUIPMENT FOR EASE OF DISCONNECTING WITH MINIMUM OF INTERFERENCE WITH OTHER 3.3 RUN LOW VOLTAGE CABLES ABOVE DROPPED CEILING PARALLEL OR PERPENDICULAR TO COLUMN LINES. SECURE LOW VOLTAGE CABLES ON 48" CENTERS TO UNISTRUT CHANNEL OR
- OTHER SUPPORTS FASTENED TO CONCRETE CEILING. "THOMAS AND BETTS TY-RAP" CABLE TIES, OR EQUAL, SHALL BE USED TO HANG CABLES.
- 3.4 ALL EXPOSED CONDUIT PENETRATIONS IN FINISHED CEILING AND WALL AREAS SHALL HAVE AN 3.5 ALL CEILING AND WALL CONDUIT PENETRATIONS AT FIRE RATED AREAS SHALL BE SEALED TO KEEP FIRE RATING INTEGRITY. PROVIDE GYPSUM BOARD BOXES FOR RECESSED LIGHT
- FIXTURES IN FIRE RATED LOCATIONS. 3.6 DO NOT CUT OR REMOVE ANY EXISTING STRUCTURAL MEMBER WITHOUT PRIOR WRITTEN
- APPROVAL FROM ARCHITECT. 3.7 CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT, UNLESS NOTED OTHERWISE. VERIFY EXACT EQUIPMENT LOCATION PRIOR TO
- INSTALLATION OF CONDUIT.
- 3.8 INSTALLATION OF WIRES: INSTALL ALL WIRES CONTINUOUS FROM OUTLET TO OUTLET, OR TERMINAL TO TERMINAL. SPLICES IN CABLES, WHEN REQUIRED, SHALL BE MADE IN PULL OR JUNCTION BOXES. MAKE BRANCH CIRCUIT SPLICES IN OUTLET BOXES WITH 8" OF CORRECTLY COLOR-CODED TAILS
- B. TERMINATE ALL GROUNDING, GROUNDED AND LINE CONNECTORS TO RECEPTACLES AND
- WIRING DEVICES TERMINALS AS RECOMMENDED BY MANUFACTURER. C. PROVIDE SEPARATE GROUNDED WIRE FOR EACH 120/208V BRANCH CIRCUIT AND DIMMING
- D. COLOR CODE WIRES AS FOLLOWS: Conductors 277/480V
- Orange Phase B Phase C Neutral White
- Ground 3.9 CONNECTIONS TO EQUIPMENT:
- A. FURNISH AND INSTALL REQUIRED POWER SUPPLY CONDUIT AND WIRING TO ALL OWNER
- B. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT, UNLESS NOTED OTHERWISE. VERIFY EXACT EQUIPMENT LOCATION PRIOR TO INSTALLATION OF CONDUIT. C. FURNISH AND INSTALL A DISCONNECT SWITCH IMMEDIATELY AHEAD OF, AND ADJACENT TO
- LOCATED WITHIN SIGHT OF THE SERVICING PANEL BOARD, CIRCUIT BREAKER OR SWITCH. VERIFY ALL EQUIPMENT NAMEPLATE CURRENT RATINGS PRIOR TO INSTALLATION. D. FURNISH AND INSTALL MANUAL THERMAL PROTECTION FOR ALL FRACTIONAL HORSEPOWER

MOTORS, NOT INTEGRALLY EQUIPPED WITH THERMAL PROTECTION.

EACH MAGNETIC MOTOR STARTER OR APPLIANCE. UNLESS THE MOTOR OR APPLIANCE IS

- E. FURNISH 120V POWER TO EACH CONTROL PANEL AND TIME SWITCH REQUIRING POWER TO
- 3.11 IDENTIFICATION:
- PROVIDE LABELS, NAME PLATES, DIRECTORIES AND CODING INFORMATION.
- B. PROVIDE NAME PLATES CONSTRUCTED OF 1/16" THICK PLASTIC (BLACK OR WHITE) LAMINATED MATERIAL, ENGRAVED THROUGH BLACK SURFACE MATERIAL TO EXPOSE WHITE
- C. IDENTIFICATION BANDING TAPE: BRADY "PERMA-CODE," OR WESTLINE "TEL-A-PIPE," WITH NAME OF THE SYSTEM PRINTED ON THE COLORED TAPE.
- D. PROVIDE LABELS TO PANELBOARDS, SWITCHBOARDS, STARTERS, DISCONNECT SWITCHES
- E. MARK THE COVERS OF ALL JUNCTION AND PULL BOXES WITH A BLACK FELT MARKER. INDICATE THE PANEL DESIGNATION AND CIRCUIT NUMBERS OF ALL WIRES PASSING

A. AFTER COMPLETING SYSTEM INSTALLATION, INCLUDING OUTLET FITTINGS AND DEVICES, INSPECT EXPOSED FINISH. REMOVE BURRS, DIRT, AND CONSTRUCTION DEBRIS, AND REPAIR

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REVISIONS

5600 Tennyson Parkway Suite 240

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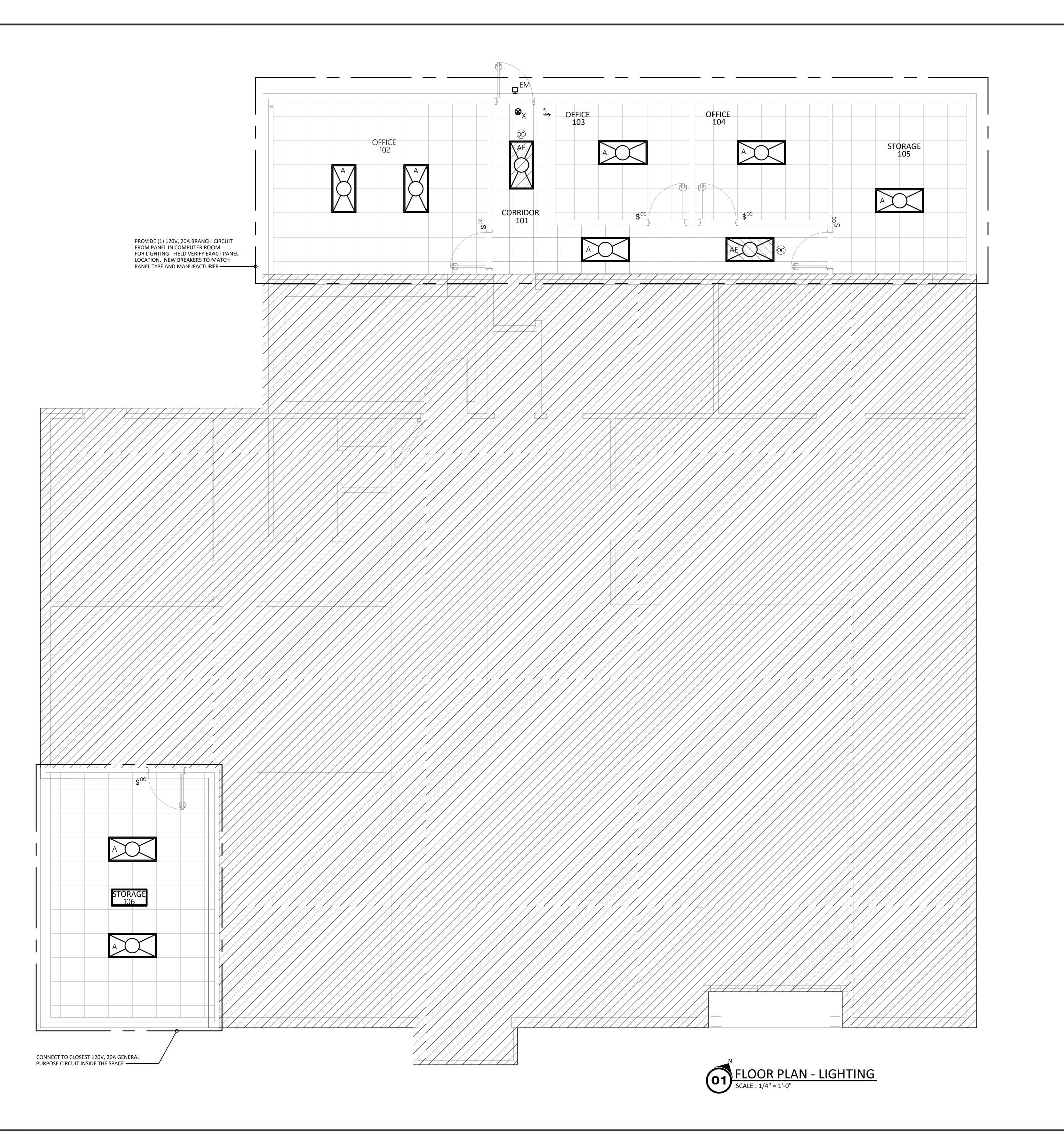
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**SUTTON ELDRIDGE ENGINEERING, LLC** Plano, Texas 75024 214.763.7300 Texas Registered Engineering Firm # F-18652



## LIGHTING SEQUENCE OF OPERATIONS IECC 2015

PRIVATE OFFICE

1. LIGHTING SHALL BE CONTROLLED WITH STAND-ALONE CEILING MOUNTED SENSOR OR WALL MOUNTED VACANCY SENSOR WITH 0-10V DIMMING CAPABILITY. REFERENCE DRAWINGS FOR SENSOR LOCATION.

#### CORRIDORS

- 1. LIGHTING SHALL BE CONTROLLED WITH MULTI-ZONE OPERATION WITH 0-10V DIMMING CAPABILITY AND TIME-CLOCK FUNCTIONALITY.
- 2. CONTROL STATIONS SHALL BE PRESET STATION FOR SCENE CONTROL, KEYPAD OR TOUCH-SCREEN.
- 3. DAYLIGHT SENSORS AND DIMMING SHALL BE USED AS REQUIRED FOR SPACES WITH MORE THAN 150W OF LIGHTING IN DAYLIGHT ZONES WITHIN SPACE, PER IECC 2015.
- 4. REFER TO DRAWINGS FOR COORDINATION OF SWITCH LEG AND ZONE CONTROL. 5. LIGHTS TO TURN ON AND OFF BASED OFF BUSINESS HOURS TIME CLOCK, WITH OVERRIDE
- STATION LOCKED OUT DURING BUSINESS HOURS.
- 6. AFTER HOURS LIGHTS CAN BE TURNED ON VIA OVERRIDE STATION OR CEILING MOUNTED OCCUPANCY SENSORS.

#### STORAGE ROOM

1. LIGHTING SHALL BE CONTROLLED WITH STAND-ALONE LINE VOLTAGE VACANCY SENSOR WITH ON/OFF OPERATION ONLY.

## LIGHTING FIXTURE LEGEND

- A 2 X 4 FLAT PANEL LED TROFFER, UNIVERSAL VOLTAGE 120/277, 0-10V, 35K, 5000 LUMEN, COOPER LIGHTING OR APPROVED EQUAL.
- AE 2 X 4 FLAT PANEL LED TROFFER, UNIVERSAL VOLTAGE 120/277, 0-10V, 35K, 5000 LUMEN, 14W EM BATTERY PACK INCLUDED. COOPER LIGHTING OR APPROVED EQUAL.
- X EXIT SIGN, THERMOPLASTIC, RED LETTERS, BATTERY PACK. SURE-LITES OR APPROVED EQUAL.
- EM EXTERIOR EGRESS EMERGENCY LIGHT, SURE-LITES AEL2 OR APPROVED EQUAL.

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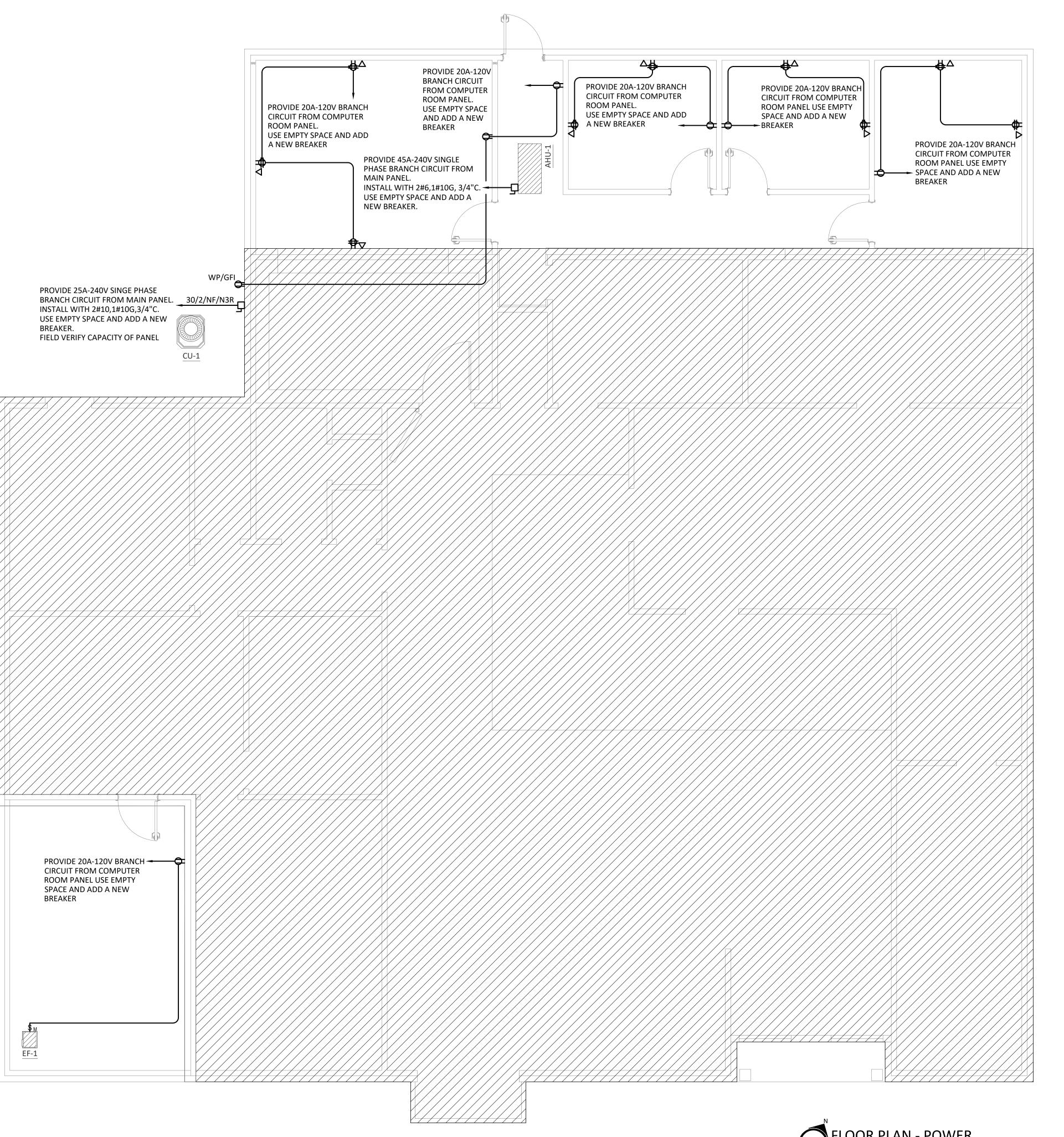
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SUTTON ELDRIDGE ENGINEERING, LLC 5600 Tennyson Parkway Suite 240 Texas Registered Engineering Firm # F-18652

FLOOR PLAN - POWER

SCALE: 1/4" = 1'-0"

BEE COUNTY TAX OFFICE
- RENOVS 411 E. HOUSTON ST.
BEEVILLE, TX. 78102
FLOOR PLAN - POWER

BEE COUNTY OFFICE 105 W. CORPUS CHRISTI ST. BEEVILLE, TX. 78102

USTMER NAME:

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DATE REMARKS 07/07/23 PERMIT

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**REVISIONS** 

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#### **COMMISSIONING NOTE:**

MECHANICAL AND ELECTRICAL SYSTEM COMMISSIONING PER INTERNATIONAL ENERGY CODE (IECC) SECTION C408.

THE CONTRACTOR SHALL ENGAGE THER SERVICES OF A REGISTERED PROFESSIONAL ENGINEER TO COMMISSION THE NEW MECHANICAL, PLUMBING AND ELECTRICAL SYSTEMS DESIGNED AND SPECIFIED FOR THIS PROJECT.

THE REGISTERED PROFESSIONAL ENGINEER SHALL DEVELOP A COMMISSIONING PLAN AND ACT AS THE PROJECT'S COMMISSIONING AUTHORITY. THE COMMISSIONING PLAN AND ACTIVITIES SHALL INCLUDE THE FOLLOWING:

- 1. A NARRATIVE DESCRIBING THE ACTIVITIES TO ACCOMPLISH DURING EACH COMMISSIONING PHASE.
- 2. PUBLISHED START-UP, PRE-FUNCTIONAL AND FUNCTIONAL TESTING FORMS AND SCRIPTS FOR EACH SPECIFIC EQUIPMENT, APPLIANCE AND SYSTEM. THE COMMISSIONING PLAN SHALL SATISFY THE REQUIREMENTS OF IECC
- SECTION C408 FOR FUNCTIONAL PERFORMANCE TESTING. 3. THE COMMISSIONING AUTHORITY SHALL MAINTAIN AN OPEN ISSUE LOG ITEMIZING DEFICIENCIES FOUND DURING SITE VISITS AND COMMISSIONING ACTIVITIES. THE COMMISSIONING AUTHORITY SHALL PUBLISH THIS OPEN ISSUE LOG AND COMPLETED COMMISSIONING FORMS TO THE BUILDING
- OWNER AT THE COMPLETION OF THE COMMISSIONING ACTIVITIES. 4. THE COMMISSIONING AUTHORITY IS RESPONSIBLE FOR ASSEMBLING AND ISSUING TO THE BUILDING OWNER THE FOLLOWING DOCUMENTATION WITHIN 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATION OF OCCUPANCY:
- 4.1. EQUIPMENT OPERATIONS AND MAINTENANCE MANUALS INCLUDING THE INFORMATION PER IECC SECTION C408.2.5.2.
- 4.2. SYSTEMS' TESTING AND BALANCING REPORTS. 4.3. FINAL COMMISSIONING REPORT.

THE FOLLOWING MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT AND SYSTEMS SHALL BE INCLUDED IN THE COMMISSIONING PLAN:

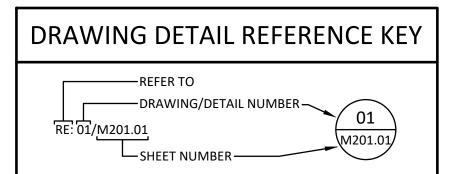
- 1. AIR HANDLING UNITS AND EXHAUST FANS AND CONTROLS.
- WATER HEATERS.
- 3. LIGHTING CONTROLS.

PROJECT DESIGN CRITERIA							
LOCATION							
CITY	BEEVILLE						
STATE	TX						
APPLICAB	LE CODES						
BUILDING	2015 IBC						
MECHANICAL	2015 IMC						
PLUMBING	2015 IPC						
ENERGY	2015 IECC						
ELECTRICAL	2014 NEC						
OUTDOOR DESIG	GN CONDITIONS						
ELEVATION	270						
SUMMER (DB/MCWB)	99.5°F / 74.7						
WINTER (DB)	32.4°F						
INDOOR DESIG	N CONDITIONS						
COOLING - DB/RH	75°F / 50%						
HEATING	70°F						

#### **GENERAL NOTES:**

- 1. "CONSTRUCTION DOCUMENTS" ARE DEFINED AS ALL DRAWINGS AND SPECIFICATIONS TOGETHER. CONTRACTOR SHALL FULLY EXAMINE AND BECOME FAMILIAR WITH THE CONSTRUCTION DOCUMENTS IN THEIR ENTIRETY. ANY DISCREPANCY OR UNCLEAR INFORMATION FOUND IN THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND ARCHITECT PRIOR TO PERFORMING ANY WORK INVOLVING ANY CONFLICTING INFORMATION. ALL COSTS SUBMITTED SHALL BE BASED ON THOROUGH KNOWLEDGE OF ALL PRODUCTS, MATERIALS, AND LABOR REQUIRED FOR COMPLETE, COORDINATED, PROPERLY INSTALLED, AND FUNCTIONING SYSTEMS. ANY ADDITIONAL COSTS DUE TO FAILURE TO COMPLY WITH THIS REQUIREMENT ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- 2. DRAWINGS ARE DIAGRAMMATIC AND SHOW ONLY GENERAL ARRANGEMENT OF WORK. NOT ALL TRANSITIONS, OFFSETS, SLOPES, ETC. ARE SHOWN THAT MAY BE REQUIRED FOR PROPER INSTALLATION. DRAWINGS DO NOT SHOW DIMENSIONS FOR LOCATING ANY WORK AND SHALL NOT BE SCALED FOR BIDDING, ORDERING, INSTALLATION, OR ANY OTHER PURPOSE.
- 3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS OF HIS WORK WITH ALL OTHER TRADES. THIS INCLUDES, BUT IS NOT LIMITED TO: POWER REQUIREMENTS; LOCATIONS OF EQUIPMENT, AIR DEVICES, DUCTWORK, AND PIPING; PROPER SERVICE AND CODE-REQUIRED WORKING CLEARANCES; CONTROLS REQUIREMENTS; ETC.
- 4. SUBMITTAL REVIEW: SUBMITTALS ARE REVIEWED BY THE ENGINEER ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS, MEANS AND METHODS OF CONSTRUCTIONS, AND COMPLIANCE WITH THE CONTRACT DOCUMENTS. CONTRACTOR IS FULLY RESPONSIBLE FOR ALL SUBMITTALS PROVIDED -EITHER BY HIM DIRECTLY, OR INDIRECTLY BY HIS VENDORS OR SUB-CONTRACTORS. SUBMITTALS PROVIDED BY VENDORS OR SUB-CONTRACTORS SHALL BE THOROUGHLY REVIEWED BY THE SUBMITTING CONTRACTOR FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS AND COORDINATION WITH ALL OTHER TRADES PRIOR TO SUBMITTAL TO THE
- 5. IN THE EVENT THERE ARE ANY ISSUES RELATED TO QUALITY OF MATERIALS AND/OR OPERATIONS OF ANY MECHANICAL, ELECTRICAL OR PLUMBING EQUIPMENT, THE OWNER SHALL PUT INTO FORCE ANY ARTICLES OF THE CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR RELATED TO ITEMS STATED ABOVE.
- 6. IN THE EVENT ANY ITEMS ARE DEEMED TO BE POOR QUALITY, NOT IN WORKING ORDER OR ANY OTHER DEFICIENCY, THE CONTRACTOR SHALL HAVE THE RIGHT TO ENFORCE ANY AND ALL WARRANTY LANGUAGE AS STATED BETWEEN THEIR (OWNER AND CONTRACTOR) AGREEMENT.
- 7. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY MATERIALS AND LABOR WHETHER SHOWN ON THE DRAWINGS OR NOT. THE OWNER MAINTAINS ALL RIGHTS AND FIRST REFUSAL FOR ANY SUBSTITUTIONS FOR ANY MATERIALS REQUIRED FOR THE COMPLETION OF THIS CONSTRUCTION PROJECT.
- 8. THE ARCHITECT AND ENGINEER SHALL BE HELD HARMLESS FOR ANY INSTALLATIONS NOT PREVIOUSLY REVIEWED OR DESIGNED.
- 9. ALL CONDUIT, RACEWAYS, PIPING, DUCTWORK, AND EQUIPMENT SHALL BE APPROVED BY OWNER PRIOR TO INSTALLATION AND COMMENCEMENT OF ANY WORK.
- 10. INSTALL ALL NEW CONDUIT, PIPING, UTILITIES, ETC. WITHIN NEW WALLS. ALL DUCTWORK SHALL BE INSTALLED CONCEALED ABOVE THE CEILING UNLESS NOTED OTHERWISE.

SYMBOL LEGEND							
SYMBOL	DESCRIPTION						
<u>(S)</u>	TEMPERATURE SENSOR						
Ō	THERMOSTAT						
Н	HUMIDISTAT						
₩-	3/4" DOOR UNDERCUT						
•	CONNECT TO EXISTING						



	HVAC DUCTWORK LEGEND	
SINGLE LINE DUCTWORK	DESCRIPTION	DOUBLE LINE DUCTWORK
—— <u>Э</u>	ROUND ELBOW DOWN	<b>2</b>
<b>—</b> •	ROUND ELBOW UP	2
<del>) -&gt;</del>	OFFSET TO CHANGE ELEVATION (AT 30° WHEN POSSIBLE. ARROW SLOPES DOWN, U.O.N.)	5
	ROUND RADIUS ELBOW R = 1	5
	90° STRAIGHT TEE	
	90° CONICAL TEE	
	45° LATERAL TAP	
	45° LATERAL CONICAL TEE	
<b>→</b>	SIZE OR SHAPE TRANSITION	
- <b>////</b>	ROUND FLEXIBLE DUCT	£
<b>—</b>	RECTANGULAR ELBOW DOWN	<u> </u>
<b>—</b>	RECTANGULAR ELBOW UP	<u> </u>
<del>]-&gt;</del> ]	OFFSET TO CHANGE ELEVATION (AT 30° WHERE POSSIBLE. ARROW SLOPES DOWN., U.O.N)	
	RECTANGULAR RADIUS ELBOW R = 1	Ę
	RECTANGULAR ELBOW WITH TURNING VANES	
	SPLIT BRANCH TAKE-OFF WITH SQUARE ELBOW & SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF WITH RADIUS ELBOW & SPLITTER DAMPER	
_	SPLIT BRANCH TAKE-OFF TEE WITH STATIONARY SPLITTER DAMPER	**************************************
	BRANCH TAKE-OFF WITH 45° LEAD IN TAP	<u> </u>
	INSULATED / LINED DUCTWORK (U.O.N.)	}
	SQUARE FACED CEILING DIFFUSER 4-WAY DIRECTIONAL THROW (U.N.O.)	
0	ROUND FACED CEILING DIFFUSER	
	CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER	}
<u> </u>	SIDEWALL SUPPLY GRILLE OR REGISTER	
	SUPPLY DUCT RISER	
	RETURN, EXHAUST OR OUTSIDE AIR DUCT RISER	
<u>+</u>	MANUAL BALANCING DAMPER	<b>T</b>
+	AUTOMATIC (MOTOR-OPERATED) DAMPER	<del>II</del> M
+FD	FIRE DAMPER	<del>TT</del> FD
<del> </del> @D	GRAVITY BACKDRAFT DAMPER	<del>II</del> GD
+FS	COMBINATION FIRE AND SMOKE DAMPER WITH SMOKE DETECTOR	<del>III</del> FS
+90	SMOKE DAMPER (AUTOMATIC) WITH SMOKE DETECTOR	
	RETURN GRILLE W/ RETURN AIR BOOT	
	EXISTING DUCTWORK TO BE DEMOLISHED	マンマ
	EXISTING DUCTWORK TO REMAIN	-
	NEW DUCTWORK	-
NOTE: NOT ALL SYMBOLS	S USED	

NOTE: NOT ALL SYMBOLS USED

ABBREVIATION	DESCRIPTION
ACU	AIR - CONDITIONING UNIT
AD	ACCESS DOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
AS	AIR SEPARATOR
CAV	CONSTANT AIR VOLUME TERMINAL
CC	COOLING COIL
CD	CEILING DIFFUSER
CHWP	CHILLED WATER PUMP
СР	CONDENSATE PUMP
CRAC	COMPUTER ROOM AIR CONDITIONER
CR	CEILING REGISTER
СТ	COOLING TOWER
CU	CONDENSING UNIT
СИН	CABINET UNIT HEATER
CWP	CONDENSER WATER PUMP
EF	EXHAUST FAN
EDH	ELECTRIC DUCT HEATER
EHC	ELECTRIC HEATER  ELECTRIC HEATING COIL
	EXHAUST REGISTER
ER	
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FPB	FAN POWERED BOX
GUH	GAS FIRED UNIT HEATER
Н	HUMIDIFIER
HP	HEAT PUMP
HRC	HEAT RECOVERY UNIT
HVLS	HIGH VOLUME LOW SPEED
HVU	HEATING AND VENTILATING UNIT
НХ	HEAT EXCHANGER
OAF	OUTSIDE AIR FAN
PRV	PRESSURE REDUCING VALVE
RAF	RETURN AIR FAN
RAG	RETURN AIR GRILLE
RAR	RETURN AIR REGISTER
RHC	REHEAT COIL
RTU	ROOF TOP A/C UNIT
SA	SOUND ATTENUATOR (TRAP)
SC	STEAM COIL
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SR	SUPPLY REGISTER
SRV	SAFETY RELIEF VALVE
TEF	TOILET EXHAUST FAN
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME TERMINAL UNIT
VFD (VSD)	VARIABLE FREQUENCY (SPEED) DRIVE
WCC	WATER COOLED CHILLER
VV CC	EN SOCIED STILLEN



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**REVISIONS** 

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/00/00 REVISION 4

A. FURNISH AND INSTALL ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED AND NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND ALL OTHER WORK AND MISCELLANEOUS ITEMS, NOT TECHNICAL BULLETINS, PRODUCT CATALOG INSTALLATION INSTRUCTIONS. SPECIFICALLY MENTIONED BUT REASONABLE INFERRED FOR A COMPLETE INSTALLATION, INCLUDING ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING THE SYSTEM. IT IS THE INTENT OF THE

DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE AND READY FOR OPERATION. B. ALL WORK BY THIS CONTRACTOR SHALL CONFORM TO ALL APPLICABLE, FEDERAL, STATE AND LOCAL

C. CONTRACTOR SHALL SECURE AND PAY FOR ALL CONSTRUCTION PERMITS AND LICENSES AND SHALL PAYPROVIDED BY THE CONTRACTOR. COORDINATION OF THE WORK WITH THE GENERAL CONTRACTOR AND ALL GOVERNMENTAL AND PUBLIC UTILITY CHARGES AND INSPECTION FEES NECESSARY FOR THE EXECUTION OWNER IS IMPERATIVE.

D. CONTRACTOR SHALL ARRANGE FOR AND PAY FOR ALL REQUIRED ENGINEER STAMPS, LICENSES, PERMITS AND INSPECTION FEES FOR DEFERRED DESIGN AND INSPECTION SCOPES OF WORK.

JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE EXISTING CONDITIONS AT THE JOBSITE 1. SHOW COMPLIANCE WITH THE BASIS OF DESIGN

BEFORE SUBMITTING PROPOSALS. SUBMISSION OF PROPOSALS SHALL BE TAKEN AS EVIDENCE THAT SUCH INSPECTIONS HAVE BEEN MADE. CLAIMS FOR EXTRA COMPENSATION FOR WORK THAT COULD HAVE BEEN FORESEEN BY SUCH INSPECTIONS, WHETHER SHOWN ON THE CONTRACT DOCUMENTS OR NOT SHALL NOT BE b. ALL EQUIPMENT LISTED IN A SCHEDULE

U.L. LABEL WHERE APPLICABLE UNLESS NOTED OTHERWISE. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR AFTER COMPLETION AND ACCEPTANCE BY THE OWNER UNLESS SPECIFICALLY STATED OTHERWISE FOR A PARTICULAR<sup>3</sup>. PIECE OF EQUIPMENT, COMPONET OR SYSTEM.

H. COORDINATION: COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK

K\_VALUE, THICKNESS, AND FURNISHED ACCESSORIES FOR EACH MECHANICAL SYSTEM REQUIRING ACTUAL JOB CONDITIONS BEFORE FABRICATING WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT INSULATION. NEEDLESS RE-WORK

DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTWORK AND PIPING SYSTEMS. CONTRACTOR SHALL CHECK ALL INFORMATION AND REPORT ANY

PROVIDE THE FOLLOWING:

a. COORDINATE SHOP DRAWING PREPARATION.

APPARENT DISCREPANCIES BEFORE SUBMITTING BID.

PROVIDE SUPERVISION TO COORDINATE SHIPPING AND ACCEPT DELIVERY.

INSTALL AND SET IN PLACE

PROVIDE POWER AND CONTROL WIRING TO PROVIDE FUNCTIONS IN ACCORDANCE WITH THESE SPECIFICATIONS.

e. DELIVER THE EQUIPMENT TO THE OWNER IN A WORKABLE, OPERATING, AND TESTED CONDITION. PROVIDE SUPERVISION TO COORDINATE FACTORY AND ON-SITE TESTING, START-UP, AND

COMMISSIONING IN ACCORDANCE WITH THESE SPECIFICATIONS. PROVIDE SUPERVISION TO COORDINATE OWNER TRAINING AND PREPARATION OF O&M MANUALS.

COORDINATE LIST OF EQUIPMENT PROVIDED BY OWNER WITH OWNER.

THE MECHANICAL CONTRACTOR SHALL REPLACE ANY OWNER EQUIPMENT/SYSTEMS UNDER HIS

CONTROL OR SUPERVISION IF DAMAGED.

K. INSPECTING AND SERVICING EXISTING MECHANICAL SYSTEMS

CONTRACTOR SHALL INSPECT AND SERVICE THE EXISTING EQUIPMENT, ROOF TOP UNITS AND EXHAUST FANS INDICATED TO REMAIN IN SERVICE. THE INSPECTION AND SERVICE SHALL PLACE THE EXISTING EQUIPMENT IN GOOD WORKING ORDER AND AS A MINIMUM INCLUDE THE FOLLOWING:

VARIABLE AIR VOLUME TERMINAL UNITS:

CHECK THE CONDITION OF THE UNITS' CABINET AND CASING.

CHECK THE CONDITION OF THE FAN BLOWER MOTOR, WHEEL AND SHROUD.

CLEAN THE FAN HOUSING AND BLOWER WHEEL.

4) CHECK THE CONDITION AND OPERATION OF THE HOT WATER COIL AND CONTROL VALVE.

CHECK THE CONDITION AND OPERATION OF THE ELECTRIC HEATING COIL AND SAFTEY SWITCHES. CHECK THE CONDITION AND OPERATION OF THE TERMINAL UNITS PRIMARY AIR DAMPER AND

ACTUATOR AND FLOW RING CHECK THE CONDITION AND CALIBRATION OF THE SPACE SENSOR

8) CHECK THE CONDITION OF THE CONTROLS AND COMMUNICATION WIRING.

SUBMIT A SERVICE REPORT TO THE ARCHITECT AT THE COMPLETION OF THE INSPECTION AND SERVICE. WITH A CAP TO SEAL ACCESS HOLE - EQUAL TO MAT RT-CCM. IDENTIFY ADDITIONAL SERVICE WORK REQUIRED TO PLACE THE EXISTING EQUIPMENT IN GOOD WORKING

1.2 CODE COMPLIANCE

A. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND APPLICABLE CODES AND STANDARDS.

B. IN CASE OF DIFFERENCE BETWEEN APPLICABLE CODES AND STANDARDS AND THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ARCHITECT/ENGINEER AND THE OWNER IN 4. METALAIRE WRITING OF SUCH DIFFERENCE. C. SHOULD THE CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH THE REQUIREMENTS

OF APPLICABLE CODES AND STANDARDS, CONTRACTOR SHALL BEAR ALL COSTS ARISING IN CORRECTING SUCH B. MINERAL FIBERGLASS BLANKET - 1.0 PCF: ASTM C 553 TYPE II, ASTM C 1290 TYPE III WITH FACTORY DEFECTS. APPLICABLE CODES AND STANDARDS SHALL INCLUDE ALL ORDINANCES, UTILITY COMPANY REGULATIONS, AND APPLICABLE REQUIREMENTS OF NATIONALLY ACCEPTED CODES AND STANDARDS.

1.3 GENERAL DEMOLITION REQUIREMENTS

BELOW AMBIENT; TYPE I FOR DUCTWORK WITH TEMPERATURES ABOVE AMBIENT. A. CONTRACTOR SHALL PROTECT THE EXISTING HVAC EQUIPMENT AND SYSTEMS INDICATED TO REMAIN OPERATIONAL PERMANENTLY OR TEMPORARILY. IF DAMAGED OR DISTURBED IN THE COURSE OF THE DEMOLITION WORK, REMOVE DAMAGED PORTIONS AND REPAIR OR REPLACE WITH NEW PRODUCT OF EQUAL ANGLES AND SIMILAR ACCESSORIES AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS FIELD ASSEMBLY OF SYSTEMS. DISASSEMBLE SYSTEMS ONLY TO EXTENT NECESSARY FOR SHIPPING AND CAPACITY, QUALITY AND FUNCTIONALITY.

B. CONTRACTOR SHALL MAKE "SAFE" ALL HVAC EQUIPMENTS. CONTRACTOR SHALL COORDINATE WITH E. DUCTWORK INSULATION COMPOUNDS: PROVIDE CEMENTS, ADHESIVES, COATINGS, SEALERS, THE OWNER TO ARRANGE THE SHUT OFF OF UTILITIES. THE CONTRACTOR SHALL LOCATE, IDENTIFY, APPLICATIONS INDICATED. DISCONNECT, AND SEAL OR CAP OFF UTILITIES SERVING BUILDING PRIOR TO PROCEEDING WITH THE REMOVAL OF THE HVAC SYSTEMS. THE CONTRACTOR SHALL NOT RELY ON AN OPERABLE ISOLATION VALVE TOF SECURELY ISOLATE A PIPING SYSTEM. CONTRACTOR SHALL PERMANENTLY CAP OR PLUG ALL OPEN PIPE ENDS.

CONTRACTOR SHALL ENGAGE THE BUILDING AUTOMATION SYSTEM (BAS) CONTRACTOR SELECTED BY THE OWNER TO REMOVE AND DISCONNECT ANY BAS DEVICE AND COMMUNICATION NETWORK.

EXISTING BELOW GRADE UTILITIES:

ABANDON EXISTING UTILITIES AND BELOW-GRADE UTILITY STRUCTURES. CUT UTILITIES AT LEAST 12 DEMOLISH EXISTING UTILITIES AND BELOW-GRADE UTILITY STRUCTURES THAT ARE WITHIN 5 FEET

OUTSIDE FOOTPRINT INDICATED FOR NEW CONSTRUCTION. ABANDON UTILITIES OUTSIDE THIS AREA. 3. FILL ABANDONED UTILITY STRUCTURES WITH SATISFACTORY SOIL MATERIALS ACCORDING TO PROJECT 3. EXPOSED SUPPLY AND RETURN AIR DUCT INSULATION:

OWNER DETERMINES THE EQUIPMENT'S SALVAGE VALUE. THE CONTRACTOR SHALL REMOVE THESE ITEMS 4. EQUIP CLEANING (EF-2) EXHAUST AIR FROM THE SITE AFTER AT THE DIRECTION OF THE OWNER. F. THE CONTRACTOR SHALL UTILIZE A CERTIFIED REFRIGERANT RECOVERY TECHNICIAN TO EVACUATE THE a. MATERIAL: MINERAL-FIBER BLANKET AIR-CONDITIONING AND REFRIGERATION EQUIPMENT AND RECOVER THE REFRIGERANT IN ACCORDANCE TO b. THICKNESS: 2 INCHES AND 1.0 PCF 40 CFR 82 AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION BEFORE STARTING DEMOLITION AND 2.3 DUCTWORK CONSTRUCTION REMOVAL OF THE EQUIPMENT. CONTRACTOR SHALL PROVIDE A STATEMENT SIGNED BY REFRIGERANT

RECOVERY TECHNICIAN RESPONSIBLE FOR RECOVERING REFRIGERANT, STATING THAT ALL REFRIGERANT THAT A. HVAC DUCTWORK MATERIALS

E. CONTRACTOR SHALL BOX AND/OR PALLETIZE ALL HVAC EQUIPMENT AND PROTECT ON SITE UNTIL THE h

WAS PRESENT WAS RECOVERED AND THAT RECOVERY WAS PERFORMED ACCORDING TO EPA REGULATIONS. INCLUDE NAME AND ADDRESS OF TECHNICIAN AND DATE REFRIGERANT WAS RECOVERED. (ASTM A 653/A 653M) LFQ, CHEM TREAT. INSTALL TEMPORARY MECHANICAL SYSTEMS LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, EXCEPT WHERE PITCH IS REQUIRED FOR PROPER DRAINAGE. CONCEALED DUCTS, AND STANDARD, ONE-SIDE BRIGHT FINISH FOR DUCT SURFACES EXPOSED TO VIEW. H. CUTTING AND PATCHING: ALL CUTTING AND PATCHING REQUIRED FOR WORK OF IN THIS DIVISION IS

PROVIDED BY THE CONTRACTOR. COORDINATION OF THE WORK WITH THE GENERAL CONTRACTOR IS IMPERATIVE. CONTRACTOR SHALL RECIEVE WRITTEN APPROVAL FROM THE GENERAL CONTRACTOR PRIOR TO 1. SAW-CUTTING OR CORING ANY STRUCTURAL SLABS OR MEMBERS

PROVIDE HANGERS, SUPPORTS AND ANCHORS AS REQUIRED.

1.4 GENERAL REQUIREMENTS

BACKFILL REQUIREMENTS.

A. INSTALL MECHANICAL AND ELECTRICAL SYSTEMS LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, EXCEPT WHERE PITCH IS REQUIRED FOR PROPER

B. INSTALL MECHANICAL AND ELECTRICAL SYSTEMS TO FACILITATE SERVICING, MAINTENANCE, REPAIR OR 3. RETURN AIR AND GENERAL TOILET EXHAUST AIR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF a. DISCONNECTING WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS.

C. SHOULD THE CONTRACTOR SUPPLY EQUIPMENT DIFFERING FROM THE SCHEDULED EQUIPMENT IN THE 4. EQUIP CLEANING EXHAUST AIR CONTRACT DOCUMENTS, CONTRACTOR SHALL BEAR ALL COSTS TO COORDINATE REQUIRED DESIGN

D. DELIVERY, STORAGE, AND HANDLING OF MATERIAL AND EQUIPMENT SHALL BE STORED AND HANDLED PER MANUFACTURER'S RECOMMENDATIONS. COMPLY WITH MANUFACTURER'S PRODUCT DATA, INCLUDING C. SYSTEM REQUIREMENTS INCLUDING PROPER CONNECTION OF DUCTWORK AND EQUIPMENT. EQUIPMENT ROUGH-IN: ROUGH-IN EQUIPMENT LOCATIONS SHOWN ON THE DRAWINGS ARE

APPROXIMATE ONLY. OBTAIN EXACT ROUGH-IN LOCATIONS FROM GENERAL CONTRACTOR AND/OR OWNER. 2. F. PROVIDE HANGERS, SUPPORTS AND ANCHORS AS REQUIRED. 45º ELBOWS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90º BRANCHES ARE INDICATED, PROVIDE G. CUTTING AND PATCHING: ALL CUTTING AND PATCHING REQUIRED FOR WORK OF IN THIS DIVISION IS CONICAL TYPE TEES.

H. FOR THROUGH WALL PENETRATION PROTECTION SYSTEMS COMPLY WITH UL C-AJ 1001 FOR CONCRETE a.

FLOOR AND WALL PENETRATIONS AND UL W-L 1039 FOR GYPSUM WALL BOARD PENETRATIONS. b. MANUFACTURERS:

E. SAFETY: THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS ON THEA. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA TO MEET THE FOLLOWING 1) CERTAINTEED "ULTRA\*LINER". REQUIREMENTS JOHNS MANSVILLE "LINACOUSTIC"

ALL EQUIPMENT DESIGNATED ON THE DRAWINGS

ALL DEVICES WHICH IS VISIBLE OR USED BY THE END-USER MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND SHALL BEAR THE 2. SUBMIT MANUFACTURER'S ASSEMBLY\_TYPE SHOP DRAWING FOR EACH ITEM INDICATING MATERIALS APPLICATION SHALL CONFORM TO MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR THE APPARENT AND METHODS OF ASSEMBLY OF COMPONENTS.

SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR METAL 2) ADHESIVES SHALL BE NON-INFLAMMABLE AFTER CURING. DUCTWORK MATERIALS AND PRODUCTS.

4. SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF MECHANICAL INSULATION. SUBMIT SCHEDULE SHOWING MANUFACTURER'S PRODUCT NUMBER,

5. SUBMIT MAINTENANCE DATA, INCLUDING CLEANING INSTRUCTIONS FOR FINISHES, AND SPARE PARTS DUCT LINER FASTENERS:

1.6 SUBSTITUTIONS: WHEREVER POSSIBLE, MORE THAN ONE MANUFACTURER HAS BEEN LISTED FOR VARIOUS ITEMS OR EQUIPMENT, ANY ONE OF WHICH WILL BE ACCEPTABLE. BASE THE BID ON USE OF 2. WHERE THE OWNER HAS ELECTED TO PROCURE SOME EQUIPMENT FOR THE PROJECT, IT IS THE INTENT MATERIALS SPECIFIED. IF, AFTER AWARD OF THE CONTRACT, A SUBSTITUTE IS PROPOSED, THE REQUEST FOR LINER", ARTICLES \$2.0 THROUGH \$2.11 WITHIN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS, METAL 3. GRIND WELDS TO PROVIDE SMOOTH SURFACE FREE OF BURRS, SHARP EDGES, AND WELD SPLATTER. OF THESE SPECIFICATIONS THAT THE CONTRACTOR SHALL ACCEPT RESPONSIBILITY OF THIS EQUIPMENT AND PERMISSION TO SUBSTITUTE SHALL BE ACCOMPANIED WITH A STATEMENT OF THE AMOUNT OF MONEY TO AND FLEXIBLE", FOURTH EDITION, 2020 REDUCE THE CONTRACT IF THE SUBSTITUTION IS PERMITTED. THE OWNER IS THE SOLE JUDGE O ACCEPTABILITY OF PROPOSED SUBSTITUTIONS. IF A SUBSTITUTE IS PERMITTED AND ANY REDESIGN EFFORT IS  $^{2)}$ THROUGH 7-14.

THEREBY NECESSITATED, THE REQUIRED REDESIGN SHALL BE AT THE CONTRACTOR'S EXPENSE. CLINCHED-PIN TYPE FASTENERS SHALL BE "GRIP-NAIL", OR APPROVED EQUAL 1.7 CONSTRUCT THE HVAC SYSTEM IN COMPLIANCE WITH THE FOLLOWING STANDARDS SMACNA STANDARDS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS, METAL RETAINING DISC TO PROVIDE PROPER ANCHORING AND TO PREVENT INJURY TO PERSONNEL.

AND FLEXIBLE", FOURTH EDITION, 2020, FOR FABRICATION AND INSTALLATION OF METAL DUCTWORK. B. SMACNA 2012: SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL, SECOND EDITION, 2012. SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS.

D. ASHRAE STANDARDS: COMPLY WITH 2012 ASHRAE HANDBOOK - HVAC SYSTEMS AND EQUIPMENT, CHAPTER 19 "DUCT CONSTRUCTION", FOR FABRICATION AND INSTALLATION OF METAL DUCTWORK. E. NFPA COMPLIANCE: COMPLY WITH NFPA 90A "STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS" AND NFPA 90B "STANDARD FOR THE INSTALLATION OF WARM

AIR HEATING AND AIR CONDITIONING SYSTEMS" ACGIH: INDUSTRIAL VENTILATION - A MANUAL OF RECOMMENDED PRACTICE, 20TH EDITION, AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS.

2.1 AIR DIFFUSERS, GRILLES AND REGISTERS

2.2 DUCTWORK INSULATION MATERIALS

APPLICATION SCHEDULE

INSULATION R-VALUES.

ITEMS NOT INSULATED:

FACTORY INSULATED FLEXIBLE DUCTS

MATERIAL: MINERAL-FIBER BLANKET

THICKNESS: 2 INCHES AND 1.0 PCF

MATERIAL: MINERAL-FIBER BOARD

THICKNESS: 2 INCHES AND 3.0 PCF

APPLICATION SCHEDULE

MEDIUM PRESSURE SUPPLY AIR:

PRESSURE CLASS: +4 IN WG

PRESSURE CLASS: +2 IN WG

PRESSURE CLASS: -1 IN WG

LOW PRESSURE SUPPLY AIR:

MATERIAL: G-90 GALVANIZED STEEL

MATERIAL: G-90 GALVANIZED STEEL

MATERIAL: G-90 GALVANIZED STEEL

2. CONCEALED SUPPLY AND RETURN AIR DUCT INSULATION:

d. HARDCAST. A. GENERAL: PROVIDE MANUFACTURER'S STANDARD CEILING AIR DIFFUSERS AND GRILLES WHERE SHOWN; OF SIZE, SHAPE, CAPACITY AND TYPE INDICATED, AND WITH ACCESSORIES AND FINISHES AS LISTED ON AIR DEVICE SCHEDULE. COLOR SELECTION SHALL BE FROM MANUFACTURER'S STANDARD COLOR CHIPS.

B. CEILING COMPATIBILITY: PROVIDE DIFFUSERS WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT CEILING SYSTEMS, AND THAT ARE SPECIFICALLY MANUFACTURED TO FIT INTO CEILING MODULE a. EXCEPT AS OTHERWISE INDICATED, PROVIDE HOT-DIPPED GALVANIZED STEEL FASTENERS, ANCHORS, WITH ACCURATE FIT AND ADEQUATE SUPPORT. REFER TO ARCHITECTURAL REFLECTIVE CEILING PLANS, ROOMRODS, STRAPS, TRIM AND ANGLES FOR SUPPORT OF DUCTWORK. FINISHING SCHEDULE AND SPECIFICATIONS FOR TYPES OF CEILING AND WALLS SYSTEMS WHICH WILL CONTAIN EACH TYPE OF CEILING AIR DIFFUSER, GRILLE AND REGISTERS. ALL AIR DEVICES INSTALLED IN PLASTER, GYP BOARD OR OTHER HARD CEILINGS OR WALLS SHALL BE PROVIDED WITH A SEPARATE

PROVIDE REMOTE MANUAL BALANCE DAMPER OPERATORS FOR ALL AIR DEVICE WHERE THE BALANCING DAMPER IS ABOVE AN SOLID CEILING. THE MANUAL OPERATOR SHALL BE AN IN THE DUCT OR a. EITHER SPIRAL WOUND SPRING STEEL WITH FLAMEPROOF VINYL SHEATHING, OR CORRUGATED OUT OF AIR STREAM TYPE WITH A CABLE EXTENDED TO AN ACCESSIBLE LOCATION - EQUAL TO MAT

ALUMINUM; COMPLYING WITH UL181. ROTO-TWIST CABLE OPERATED DAMPERS. OUT OF THE AIR STREAM TYPE CABLE SHALL BE TERMINATED AT INCONSPICUOUS WALL OR CEILING LOCATION WITH A MOUNTING BRACKET FOR ACTUATION CABLE SUPPORT b. AND FLEXIBLE", CHAPER 3, FOURTH EDITION.

THE FOLLOWING:

MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DIFFUSERS OF ONE OF C.

MINERAL FIBER BOARD - 3.0 PCF: ASTM C612 TYPE 1A OR 1B WITH FACTORY APPLIED FSK JACKET.

GALVANIZED STEEL DUCTWORK: SHALL BE CONSTRUCTED WITH G-90 OR BETTER GALVANIZED STEEL

ALUMINUM SHEETS: COMPLY WITH ASTM B 209 ALLOY 3003, H14 TEMPER; WITH MILL FINISH FOR

INSULATE ALL FLEXIBLE DUCTS, BOTH SUPPLY AND RETURN, WITH NOMINAL 2" THICK CONTINUOUS FLEXIBLE FIBERGLASS SHEATH WITH UL APPROVED VINYL BARRIER JACKET. b. INSULATION DENSITY SHALL BE 3/4 LBS/CU.FT.

INSTALLATION SHALL CONFORM TO CONDITIONS UNDER WHICH UL LISTING WAS GRANTED.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FLEXIBLE DUCTS MANUFACTURED BY ONE OF THE FOLLOWING:

JACKETS FOR DUCTWORK INSULATION: ASTM C 921, TYPE II FOR DUCTWORK WITH TEMPERATURES 2.4 DUCTWORK FABRICATION

PRESSURE CLASS: -1 IN WG

MISCELLANEOUS DUCTWORK MATERIALS

GENERAL: PROVIDE MISCELLANEOUS MATERIALS AND PRODUCTS TO COMPLETE THE DUCTWORK

FIBROUS GLASS, COMPLYING WITH THERMAL INSULATION MANUFACTURER'S ASSOCIATION (TIMA)

1) COMPLY WITH ASTM C 916 "SPECIFICATIONS FOR ADHESIVES FOR DUCT THERMAL INSULATION."

COMPLY WITH SMACNA "INSTALLATION STANDARDS FOR RECTANGULAR DUCTS USING FLEXIBLE

COMPLY WITH LINING DETAILS AS SHOWN IN THE REFERENCED SMACNA SECTION, FIGURES 7-11

1. DUCT SEALER SHALL BE FLEXIBLE, WATER-BASED, ADHESIVE SEALANT DESIGNED FOR USE IN ALL

COMPLY WITH REQUIREMENTS TABLE 1-1 IN SMACNA "HVAC DUCT CONSTRUCTION STANDARDS,

OUT WATER, AIR, AND MOISTURE. SEALER SHALL BE UL LISTED AND CONFORM TO ASTM E 84.

FINISH: NO 2B.

KNAUF TYPE "M".

Benjamin-Foster.

Duro Dyne "FPG".

METAL AND FLEXIBLE"

a. BENJAMIN-FOSTER

c. DURO DYNE S2.

b. DUCTMATE - PROSEAL

UNITED SHEET METAL.

DUCTWORK SUPPORT MATERIALS

AND FLEXIBLE"; CHAPTER 5, FOURTH EDITION.

MANUFACTURERS:

OWENS-CORNING "AEROFLEX".

DUCT LINER ADHESIVE

A. SHOP-FABRICATE DUCTWORK IN STANDARD LENGTHS, UNLESS OTHERWISE INDICATED OR REQUIRED D. DUCTWORK INSULATION ACCESSORIES: PROVIDE STAPLES, BANDS, WIRES, TAPE, ANCHORS, CORNER TO COMPLETE RUNS. PREASSEMBLE WORK IN SHOP TO GREATEST EXTENT POSSIBLE, SO AS TO MINIMIZE HANDLING. MATCH MARK SECTIONS FOR REASSEMBLY AND COORDINATED INSTALLATION.

B. SHOP-FABRICATE DUCTWORK OF GAUGES AND REINFORCEMENT COMPLYING WITH SMACNA "HVAC PROTECTIVE FINISHES AND SIMILAR COMPOUNDS AS RECOMMENDED BY INSULATION MANUFACTURER FOR DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE" AS FOLLOWS:

RECTANGULAR, STEEL: CHAPTER 2. FITTINGS AND CONSTRUCTION, CHAPTER 4.

ROUND, OVAL AND FLEXIBLE DUCT: CHAPTER 3.

4. RECTANGULAR DUCT LONGITUDINAL SEAMS: PITTSBURGH LOCK SHALL BE USED ON ALL LONGITUDINAL A. MAXIMUM LENGTH: FOR ANY DUCT RUN USING FLEXIBLE DUCTWORK, DO NOT EXCEED 6'0" EXTENDED METAL DUCTS WITH DUCT LINER OF SUFFICIENT THICKNESS TO COMPLY THE ENERGY CODE MINIMUM SEAMS. ALL LONGITUDINAL SEAMS WILL BE SEALED WITH MASTIC SEALANT.

LIMITED TO THE FINAL BRANCH RUN-OUT TO A SINGULAR AIR DIFFUSER NO LONGER THAN 10 FEET IN

6. DUCTMATE OR W.D.C.I. PROPRIETARY DUCT CONNECTION SYSTEMS WILL BE ACCEPTABLE. DUCT CONSTRUCTED USING THESE SYSTEMS WILL REFER TO THE MANUFACTURERS GUIDELINES FOR SHEET GAUGE, INTERMEDIATE REINFORCEMENT SIZE AND SPACING, AND JOINT REINFORCEMENTS. FORMED ON FLANGES (T.D.C./T.D.F./T-25A/T-25B) WILL ONLY BE ACCEPTABLE WHEN SUBMITTED FOR

SMACNA T-25 FLANGES.. NO OTHER CONSTRUCTION PERTAINING TO FORMED ON FLANGES WILL BE

2" POSITIVE PRESSURE STATIC OR LESS, AND MUST INCLUDE THE USE OF CORNERS, BOLTS AND CLEAT. 8. FABRICATE DUCT FITTINGS TO MATCH ADJOINING DUCTS, AND TO COMPLY WITH DUCT REQUIREMENTS AS APPLICABLE TO FITTINGS. EXCEPT AS OTHERWISE INDICATED, FABRICATE ELBOWS WITH EXPOSED FINISH. REMOVE BURRS, DIRT, AND CONSTRUCTION DEBRIS, AND REPAIR DAMAGED FINISHES. CENTER LINE RADIUS EQUAL TO ASSOCIATED DUCT WIDTH; AND FABRICATE TO INCLUDE TURNING VANES IN ELBOWS WHERE SHORTER RADIUS IS NECESSARY. LIMIT ANGULAR TAPERS TO 30º FOR CONTRACTING TAPERS 3.9 TESTING AND BALANCING

AND 20º FOR EXPANDING TAPERS. FABRICATE DUCTWORK WITH DUCT LINER IN EACH SECTION OF DUCT WHERE INDICATED. LAMINATE CAPACITIES WITH A N.E.B.B OR A.A.B.C APPROVED TESTING AND BALANCING CONTRACTOR. THE TESTING LINER TO INTERNAL SURFACES OF DUCT IN ACCORDANCE WITH INSTRUCTIONS BY MANUFACTURERS OF LINING AND ADHESIVE, AND FASTEN WITH MECHANICAL FASTENERS

10. ROUND DUCT JOINTS:

PART 3 - EXECUTION

a. 6"-14" DIAMETER, INTERIOR SLIP COUPLING BEADED AT CENTER, FASTENED TO DUCT WITH SEALING COMPOUND APPLIED CONTINUOUSLY AROUND JOINT BEFORE ASSEMBLING AND AFTER FASTENING. 11. PRESSURE CLASSIFICATIONS:

STATIC PRESSURE RATINGS FOR DUCTWORK SYSTEMS ARE NOTED IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE", FOURTH EDITION, 2020, TABLE 1-1 "PRESSURE CLASSIFICATION FOR DUCTWORK". b. GAUGES OF METAL AND REINFORCING METHODS SHALL CONFORM TO SMACNA REQUIREMENTS.

3.1 INSPECTION A. GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH METAL DUCTWORK IS TO BE INSTALLED. 3. APPROVED SHOP DRAWINGS

DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER

3.2 INSTALLATION OF METAL DUCTWORK

A. INSTALLATION: INSTALL METAL DUCTWORK IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

GENERAL: ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY FITTINGS: PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15º SYSTEMS RATED OVER 3 IN WG) AND NOISELESS (NO OBJECTIONABLE NOISE) SYSTEMS, CAPABLE OF CHANGE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 45º LATERALS AND PERFORMING EACH INDICATED SERVICE. INSTALL EACH RUN WITH MINIMUM NUMBER OF JOINTS. ALIGN c. DUCTWORK ACCURATELY AT CONNECTIONS, WITHIN 1/8" MISALIGNMENT TOLERANCE AND WITH INTERNAL DISASSEMBLY, REPAIR, AND REASSEMBLY; ALIGNING AND ADJUSTING INSTRUCTIONS. SURFACES SMOOTH. SUPPORT DUCTS RIGIDLY WITH SUITABLE TIES, BRACES, HANGERS AND ANCHORS OF TYPE WHICH WILL HOLD DUCTS TRUE TO SHAPE AND TO PREVENT BUCKLING. SUPPORT VERTICAL DUCTS AT

AHC-101; OF THICKNESS INDICATED, WITH ANTIMICROBIAL NEOPRENE COATING ADJACENT TO AIR STREAM. C. FIELD FABRICATION: COMPLETE FABRICAT FABRICATED WORK AND ACCOMMODATE INSTALLATION REQUIREMENTS.

> LOCATE DUCTWORK RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY TO THE BUILDING'S WALLS AND STRUCTURE AND AVOID DIAGONAL RUNS WHEREVER POSSIBLE. LOCATE DUCT AS INDICATED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, RUN DUCTWORK IN C. SHORTEST ROUTE WHICH DOES NOT OBSTRUCT USEABLE SPACE OR BLOCK ACCESS FOR SERVICING BUILDING PROJECT THREE RING BINDERS AND TWO COPIES OF THE FIELD RECORD DRAWING MARKED AS "AS

PERMANENT ENCLOSURE ELEMENTS OF BUILDING. PROVIDE CLEARANCE TO 1 INCH WHERE FURRING IS SHOWN FOR ENCLOSURE OR CONCEALMENT OF DUCTS, ALLOW FOR INSULATION THICKNESS. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL DUCTWORK FROM VIEW, BY

LOCATING IN MECHANICAL SHAFTS, HOLLOW WALL CONSTRUCTION OR ABOVE SUSPENDED CEILINGS. 4. DO NOT ENCASE HORIZONTAL RUNS IN SOLID PARTITIONS, EXCEPT AS SPECIFICALLY SHOWN.

5. COORDINATE LAYOUT WITH STRUCTURAL MEMBERS, SUSPENDED CEILING, LIGHTING LAYOUTS, SPRINKLER PIPING, PLUMBING SYSTEMS AND SIMILAR FINISHED WORK.

INSTALLATION OF EXPOSED DUCTWORK

PROTECT DUCTS EXPOSED IN FINISHED SPACES FROM BEING DENTED, SCRATCHED, OR DAMAGED. REMOVE / CLEAN ALL TAGS AND SHOP FABRICATION MARKS FROM DUCTWORK.

TRIM DUCT SEALANTS FLUSH WITH METAL. CREATE A SMOOTH AND UNIFORM EXPOSED BEAD. DO NOT USE TWO-PART TAPE SEALING SYSTEM.

WHEN WELDING STAINLESS STEEL WITH A NO. 3 OR 4 FINISH, GRIND THE WELDS FLUSH, POLISH THE EXPOSED WELDS, AND TREAT THE WELDS TO REMOVE DISCOLORATION CAUSED BY WELDING 4. MAINTAIN CONSISTENCY, SYMMETRY, AND UNIFORMITY IN THE ARRANGEMENT AND FABRICATION OF

FITTINGS, HANGERS AND SUPPORTS, DUCT ACCESSORIES, AND AIR OUTLETS. REPAIR OR REPLACE DAMAGED SECTIONS AND FINISHED WORK THAT DOES NOT COMPLY WITH THESE PROJECTING PINS IN TYPE 3 OR TYPE 4 APPLICATIONS SHALL BE CLIPPED OFF CLOSE ENOUGH TO THE

ALL HVAC EQUIPMENT AND DUCT SYSTEMS MUST BE PROTECTED FROM COLLECTING DUST AND DEBRIS DURING THE FABRICATION, DELIVERY AND INSTALLATION OF HVAC SYSTEMS. CONTRACTOR SHALL IMPLEMENT CONTROL PROCEDURES TO PROTECT THE CLEANINESS OF THE HVAC EQUIPMENT AND DUCT PRESSURE DUCT SYSTEMS. AFTER CURING, IT SHALL BE RESISTANT TO ULTRAVIOLET LIGHT AND SHALL SEAL SYSTEMS. CONTRACTOR SHALL WIPE CLEAN THE INTERIOR OF ALL SUPPLY AND RETURN DUCT WORK SEGEMENTS PRIOR TO INSTALLATION.  $\,$  DURING CONSTRUCTION THE CONTRACTOR SHALL SEAL ALL SUPPLY AND RETURN AIR DUCT OPENINGS WITH PLASTIC. WHEN THE HVAC SYSTEMS ARE PLACED INTO OPERATION PRIOR TO OWNER ACCEPTANCE, THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY FILTER MEDIA AT ALL RETURN AIR INLET AND IMPLEMENT LOCAL EXHAUST CAPTURE OF HIGH DUST PRODUCING CONSTRUCTION ACTIVITIES. THE TEMPORARY FILTER MEDIA SHALL A MERV RATING OF 8 AND WITH A TACKIFIER TO ENHANCE DUST RETENTION.

> G. ELECTRICAL EQUIPMENT SPACES: DO NOT ROUTE DUCTWORK THROUGH TRANSFORMER VAULTS AND THEIR ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES.

H. PENETRATIONS: WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS AND EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN CONSTRUCTION OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAUGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND SUBSTRATE.

WHERE DUCTS PASS THROUGH FIRE RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRE STOPPING COORDINATION: COORDINATE DUCT INSTALLATIONS WITH INSTALLATION OF ACCESSORIES, DAMPERS,

COIL FRAMES, EQUIPMENT, CONTROLS AND OTHER ASSOCIATED WORK OF DUCTWORK SYSTEM. COMPLY WITH APPLICABLE PROVISIONS SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL 3.3 LOCATE CEILING AIR DIFFUSERS, REGISTERS, AND GRILLES, AS INDICATED ON GENERAL CONSTRUCTION "REFLECTED CEILING PLANS". UNLESS OTHERWISE INDICATED, LOCATE UNITS IN CENTER OF ACOUSTICAL

A. INSTALL INSULATION MATERIALS, ACCESSORIES, AND FINISHES WITH SMOOTH, STRAIGHT, AND EVEN SURFACES; FREE OF VOIDS THROUGHOUT THE LENGTH OF DUCTS AND FITTINGS.

COMPLY WITH APPLICABLE PROVISIONS OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL B. INSTALL INSULATION MATERIALS, VAPOR BARRIERS OR RETARDERS, JACKETS, AND THICKNESSES REQUIRED FOR EACH ITEM OF DUCT SYSTEM AS SPECIFIED IN INSULATION SYSTEM SCHEDULES. INSTALL ACCESSORIES COMPATIBLE WITH INSULATION MATERIALS AND SUITABLE FOR THE SERVICE. INSTALL ACCESSORIES THAT DO NOT CORRODE, SOFTEN, OR OTHERWISE ATTACK INSULATION OR JACKET IN EITHER WET OR DRY STATE

> INSTALL INSULATION WITH LONGITUDINAL SEAMS AT TOP AND BOTTOM OF HORIZONTAL RUNS. E. INSTALL MULTIPLE LAYERS OF INSULATION WITH LONGITUDINAL AND END SEAMS STAGGERED.

H. INSTALL INSULATION WITH LEAST NUMBER OF JOINTS PRACTICAL.

KEEP INSULATION MATERIALS DRY DURING APPLICATION AND FINISHING. G. INSTALL INSULATION WITH TIGHT LONGITUDINAL SEAMS AND END JOINTS. BOND SEAMS AND JOINTS WITH ADHESIVE RECOMMENDED BY INSULATION MATERIAL MANUFACTURER.

WHERE VAPOR BARRIER IS REQUIRED, SEAL JOINTS, SEAMS, AND PENETRATIONS IN INSULATION AT HANGERS, SUPPORTS, ANCHORS, AND OTHER PROJECTIONS WITH VAPOR-BARRIER MASTIC. INSTALL INSULATION CONTINUOUSLY THROUGH HANGERS AND AROUND ANCHOR ATTACHMENTS.

FOR INSULATION APPLICATION WHERE VAPOR BARRIERS ARE INDICATED, EXTEND INSULATION ON ANCHOR LEGS FROM POINT OF ATTACHMENT TO SUPPORTED ITEM TO POINT OF ATTACHMENT TO STRUCTURE. TAPER AND SEAL ENDS AT ATTACHMENT TO STRUCTURE WITH VAPOR-BARRIER MASTIC.

INSTALL INSERT MATERIALS AND INSTALL INSULATION TO TIGHTLY JOIN THE INSERT. SEAL INSULATION TO INSULATION INSERTS WITH ADHESIVE OR SEALING COMPOUND RECOMMENDED BY INSULATION MATERIAL J. APPLY ADHESIVES, MASTICS, AND SEALANTS AT MANUFACTURER'S RECOMMENDED COVERAGE RATE

3.5 INSTALLATION OF FLEXIBLE DUCTS

5. ROUND DUCT SHALL BE EQUAL TO SPIRAL SEAM RL-1. ROUND DUCT WITH SNAPLOCK SEAMS SHALL IS B. INSTALLATION: INSTALL IN ACCORDANCE WITH CHAPTER 3 OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE", FOURTH EDITION.

A. GENERAL: CONNECT METAL DUCTWORK TO EQUIPMENT AS INDICATED, PROVIDE FLEXIBLE

CONNECTION FOR EACH DUCTWORK CONNECTION TO EQUIPMENT MOUNTED ON VIBRATION ISOLATORS, AND/OR EQUIPMENT CONTAINING ROTATING MACHINERY. PROVIDE ACCESS DOORS AS INDICATED.

3.6 EQUIPMENT CONNECTIONS

APPROVAL PRIOR TO INSTALLATION OF ANY DUCTWORK. FORMED ON FLANGES WILL BE CONSTRUCTED AS 3.7 FIELD QUALITY CONTROL A. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS ACCEPTABLE. FORMED ON FLANGES SHALL BE ACCEPTABLE FOR USE ON DUCTWORK 42" WIDE OR LESS, WITH AND EQUIPMENT.

A. CONTRACTOR SHALL TEST AND BALANCE THE HVAC SYSTEMS TO THE SCHEDULED AIR AND WATER

AND BALANCING ACTIVITIES SHALL BE RECORD ON N.E.B.B, A.A.B.C. TESTING AND BALANCINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW.

3.10 FIELD RECORD & AS-BUILT DRAWINGS AND SUBMITTAL AND OPERATING & MAINTENACE MANUALS

A. CONTRACTOR SHALL KEEP A CLEAN SET OF CONTRACT DRAWINGS ON THE JOB. NOTING DAILY ALL CHANGES MADE IN THESE DRAWINGS IN CONNECTION WITH THE FINAL INSTALLATION INCLUDING EXACT DIMENSIONED LOCATIONS OF ALL NEW AND UNCOVERED EXISTING UTILITIES. CONTRACTOR SHALL OBTAIN ORIGINALS OF THE FOLLOWING PROJECT INFORMATION TO PROVIDE

THREE (3) THREE RING BINDERS TO BE TURNED OVER TO THE ARCHITECT FOR REVIEW AND SUBSEQUENT DELIVERY TO THE OWNER. ALL WARRANTIES AND GUARANTEES FOR EQUIPMENT AND MATERIAL COVERED BY THE CONTRACT

INCLUDING THE NAMES, ADDRESSES AND TELEPHONE NUMBERS OF THE MANUFACTURER'S REPRESENTATIVE 2. APPROVED PRODUCT AND EQUIPMENT SUBMITTAL DATA.

OPERATING AND MAINTENANCE INSTRUCTIONS FOR MECHANICAL AND PLUMBING SYSTEMS. INCLUDE

a. DESCRIPTION OF FUNCTION, NORMAL OPERATING CHARACTERISTICS AND LIMITATIONS, PERFORMANCE CURVES, ENGINEERING DATA AND TESTS, AND COMPLETE NOMENCLATURE AND

COMMERCIAL NUMBERS OF ALL REPLACEABLE PARTS. MANUFACTURER'S PRINTED OPERATING PROCEDURES TO INCLUDE START\_UP, BREAK-IN, ROUTINE PRACTICES WHICH WILL ACHIEVE AIR TIGHT (5% LEAKAGE FOR SYSTEMS RATED 3 IN WG AND UNDER; 1% FOR INSTRUCTIONS; AND SUMMER AND WINTER OPERATING INSTRUCTIONS.

MAINTENANCE PROCEDURES FOR ROUTINE PREVENTATIVE MAINTENANCE AND TROUBLESHOOTING;

SERVICING INSTRUCTIONS AND LUBRICATION CHARTS AND SCHEDULES.

NUMBERS, ACCESSORIES, FEATURES, OPTIONAL FEATURES, ETC. FURNISHED ON THIS SPECIFIC PROJECT. ALL

MAINTENANCE BROCHURES SHALL BE CLEARLY MARKED TO INDICATE THE ACTUAL EQUIPMENT MODEL

TEST AND BALANCE REPORTS REQUIRED BY THESE SPECIFICATIONS. OTHER TEST AND INSPECTION REPORTS, PRODUCT DATA AND/OR DRAWINGS REQUIRED DURING

CONTRACTOR SHALL TWO-WEEKS PRIOR TO REQUESTING A FINAL INSPECTION, TURN OVER THE INSTALLED" WORK TO THE ARCHITECT FOR SUBSEQUENT REVIEW AND TRANSMITTAL TO THE OWNER. CONTRACTOR SHALL NOTE ALL CONSTRUCTION CHANGES, DATE EACH SHEET AND LABEL "AS-BUILTS" IN THE HOLD DUCTS CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS, AND OTHER STRUCTURAL AND REVISION BLOCK ON THE DRAWINGS. PROJECT CLOSE-OUT INFORMATION MUST BE SUBMITTED AND

CONTRACTOR SHALL PROVIDE TWO ELECTRONIC COPIES OF ALL REQUIRED CLOSE-OUT

APPROVED PRIOR TO REQUESTS FOR FINAL PAYMENT.

DOCUMENTATION INDICATED ABOVE

WALTER D. HÖRN 60795

SUTTON ELDRIDGE **ENGINEERING, LLC** 5600 Tennyson Parkway Suite 240 Plano, Texas 75024 214.763.7300 Texas Registered Engineering Firm # F-1865

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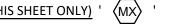
#### **GENERAL NOTES:**

- A. COORDINATE THE LOCATION OF ALL AIR DISTRIBUTION DEVICES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN INCLUDING LIGHT FIXTURES AND LIFE SAFETY DEVICES.
- B. VERIFY LOCATION OF THERMOSTATS/TEMPERATURE SENSORS WITH THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION TO COORDINATE WITH THE LATEST FURNITURE AND MILLWORK PLANS. INSTALL DEVICES AT 48" AFF, UNLESS OTHERWISE NOTED ON THE PLANS.
- C. ALL WORK SHALL COMPLY WITH THE LOCAL BUILDING, PLUMBING, AND MECHANICAL CODES, NFPA 90A, AND ANY OTHER APPLICABLE CODES.
- D. ALL LOCATIONS OF DEVICES ARE APPROXIMATE. SEE ARCHITECTURAL DRAWINGS FOR
- E. SEAL NEW OR EXISTING PENETRATIONS IN OF FLOORS, RATED PARTITIONS, AND CORRIDOR WALLS. USE FIRESTOP AT ALL RATED PARTITIONS.
- F. COORDINATE ALL FLOOR AND ROOF PENETRATIONS WITH STRUCTURAL.
- G. FLEX DUCT LENGTH NOT TO EXCEED 5'-0". PROVIDE MANUAL DAMPER AT ALL TAKE-OFFS.
- H. ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS.
- I. ALL DUCTWORK DIMENSIONS ARE CLEAR INSIDE DIMENSIONS. ADJUST METAL SIZES
- TO ACCOMMODATE INTERNAL DUCT LINER AS REQUIRED. J. TURNING VANES ARE REQUIRED AT EACH TURN IN THE DUCT. EXTRACTORS ARE
- K. PROVIDE FLEXIBLE CONNECTION AT INTAKE AND DISCHARGE OF MOTOR DRIVEN EQUIPMENT.
- L. LABEL ALL AIR VOLUME DAMPERS ON OUTSIDE OF DUCT INSULATION.

REQUIRED AT EACH SPLIT.

- M. FIELD VERIFY ALL LOCATIONS OF MECHANICAL EQUIPMENT AND EXHAUST FANS TO MAINTAIN A MINIMUM OF 10'-0" OF CLEARANCE BETWEEN ANY NEW AND/OR EXISTING OUTSIDE AIR INTAKES OR OPENINGS INTO BUILDING AND ANY EXHAUST OR VENT DISCHARGES.
- N. EQUIPMENT SHALL BE PROVIDED ACCESS TO PER SECTION 306 OF THE INTERNATIONAL MECHANICAL CODE. EXACT LOCATION AND REQUIREMENTS FOR ACCESS SHALL BE COORDINATED WITH ARCHITECT. REFER TO EXACT CODE SECTION
- a. ALL EQUIPMENT SHALL BE PROVIDED WITH A CLEAR WORKING SPACE NOT LESS THAN 30" DEEP AND 30" WIDE IN FRONT OF CONTROL AREA AND ANY OTHER AREA REQUIRING ACCESS FOR MAINTENANCE, PER IMC 306.1.
- EQUIPMENT IN AN ATTICS SHALL HAVE AN UNOBSTRUCTED PASSAGEWAY MEASURING NOT LESS THAN 30" HIGH x 22" WIDE x 20'-0" IN LENGTH ALONG THE PATH BACK TO THE ACCESS OPENING WITH CONTINUOUS, LEVEL FLOORING NOT LESS THAN 24" WIDE. ACCESS OPENING SHALL BE LARGE ENOUGH TO REMOVE THE LARGEST PIECE OF EQUIPMENT, BUT NOT LESS THAN 20"x30", PER IMC 306.3.
- EQUIPMENT ON ROOFS OR ELEVATED STUCTURES ABOVE 16'-0" SHALL BE PROVIDED WITH PERMANENT ACCESS, PER IMC 306.5.

## NOTES BY SYMBOL (THIS SHEET ONLY) ' (MX)



- 1. COORDINATE EXACT LOCATION OF OUTDOOR EQUIPMENT WITH ARCHITECT.
- 2. CONDENSING UNIT MOUNTED ON 4" HIGH (MIN.) CONCRETE EQUIPMENT PAD. COORDINATE TURN DOWN EDGE WITH FINAL GRADE. SIZE AND ROUTE REFRIGERANT PIPING TO ASSOCIATED AIR HANDLING UNIT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- . 6"Ø OA INTAKE TO AHU-1. PROVIDE HOODED WALL CAP WITH BIRDSCREEN AND MANUAL BALANCING DAMPER. BALANCE TO 80 CFM. MAINTAIN A MINIMUM OF 10'-0" CLEARANCE BETWEEN OA INTAKE AND EXHAUST TERMINATIONS, TYPICAL.
- PROVIDE HOODED WALL CAP WITH BIRDSCREEN FOR EXHAUST TERMINATION. MAINTAIN A MINIMUM FO 10'-0" CLEARANCE BETWEEN EXHUAST TERMINATIONS AND OA INTAKES,
- SUSPEND AHU ABOVE CEILING. COORDINATE EXACT LOCATION WITH LIGHTS AND CEILING GRID FOR PROPER SERVICE ACCESS. PROVIDE AUX. DRAIN PAN WITH WATER
- 5. COORDINATE EXACT HEIGHT OF DOOR GRILLE WITH ARCHITECT.
- REMOVE EXISTING MECHANICAL EQUIPMENT FROM THIS ROOM AND ANY CORRESPONDING OUTDOOR EQUIPMENT AND PLACE IN OWNER'S STOCK. COORDINATE NEW DIFFUSER/GRILLE LOCATIONS WITH EXISTING LIGHTS AND EXISTING CEILING
- 8. TAKE AHU CONDENSATE DRAIN TO NEAREST WASTE RECEPTICAL. DISCHARGE USING OPEN SITE CONNECTION.
- PROVIDE CONICAL SPIN-IN TAP WITH MANUAL BALANCING DAMPER ON SUPPLY AIR DIFFUSERS, TYPICAL.

BEEVILLE, TX. 78102

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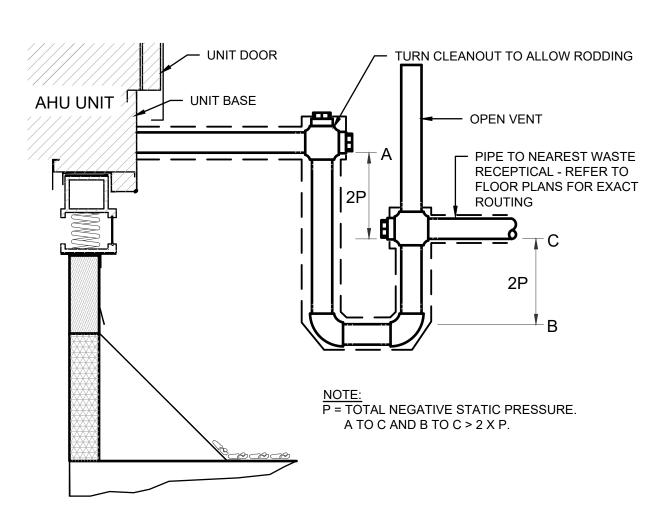
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**ENGINEERING, LLC** 5600 Tennyson Parkway

FLOOR PLAN - MECHANICAL

SCALE: 1/4" = 1'-0"

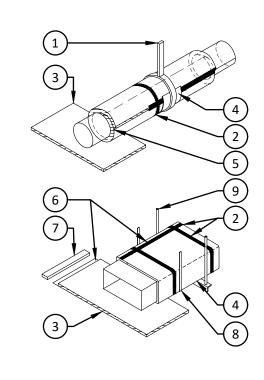
# O2 TYPICAL CONDENSING UNIT DETAIL SCALE: NTS



# O4 AHU CONDENSATE DRAIN DETAIL SCALE: NTS

- 1. CONNECT STRAP TO STRUCTURE ABOVE. REFER TO SMACNA SHEETMETAL CONSTRUCTION STANDARDS.
- SEAL SEAMS AND PENETRATIONS WITH APPROVED MASTIC REINFORCED W/ 3" GLASS MESH REINFORCEMENT OR 3" FOIL/VAPOR BARRIER TAPE.
- 3. WRAP FLEXIBLE FIBERGLASS INSULATION AROUND DUCTS AND SECURE WITH OUTWARD-CLINCHING STAPLES.
- 4. INSTALL NON-COMPRESSIBLE INSULATION MATERIAL AT HANGER SUPPORTS. ALL HANGER SUPPORTS AND SADDLES SHALL BE OUTSIDE OF INSULATION AND VAPOR BARRIER.
- 5. LAP INSULATION A MINIMUM OF 4 INCHES.
- 6. 2" TAPE FLAP.
- 7. DISCARD EXCESS INSULATION.
- 8. STRAP SUPPORTS. REFER TO SMACNA SHEETMETAL CONSTRUCTION STANDARDS.
- 9. ALL-THREAD RODS. REFER TO SMACNA SHEETMETAL CONSTRUCTION STANDARDS

NOTE: REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

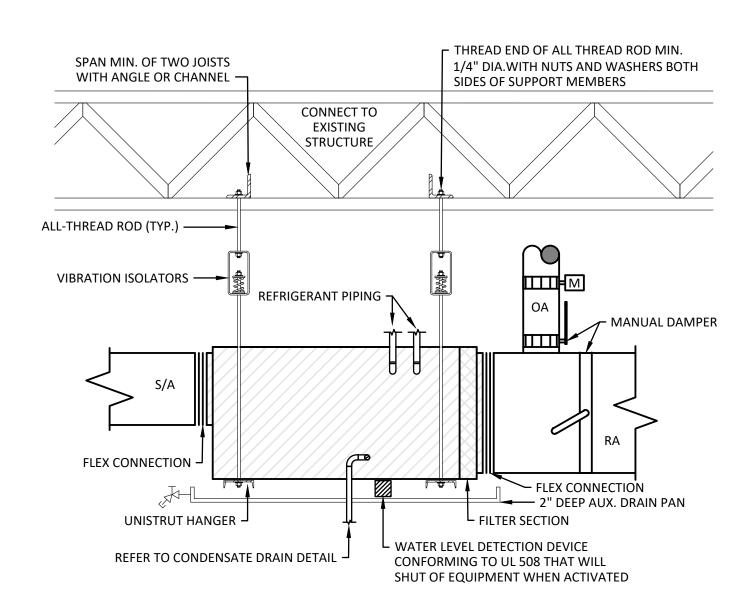


THIS NOT THIS

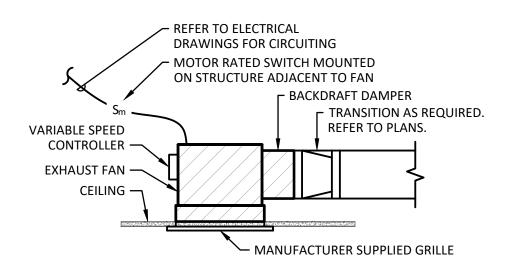
DO NOT COMPRESS WRAP

EXCESSIVELY AT CORNERS

ROUND/RECTANGULAR DUCT INSULATION DETAIL
SCALE: NTS

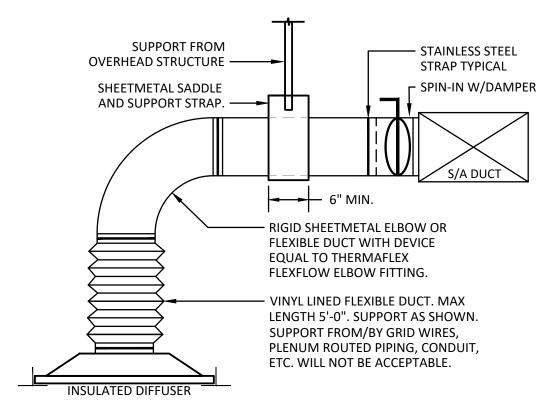


# HORIZONTAL FAN COIL UNIT DETAIL - SUSPENDED SCALE: NTS



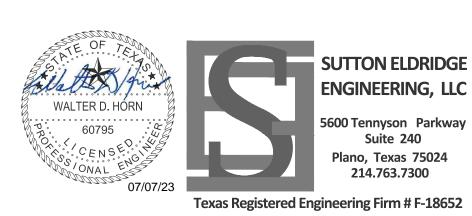
CEILING MOUNTED EXHAUST FAN DETAIL

SCALE: NTS



TYPICAL DIFFUSER DETAIL

SCALE: NTS



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BEEVILLE, TX. 78102

BEE COUNTY OFFICE 105 W. CORPUS CHRISTI ST. BEEVILLE, TX. 78102

BEE COL 105 W. CORPU BEEVILLE, T.

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SEE COUNTY TAX
DRAWN BY: SEE
CHECKED BY: SEE
DESIGNED BY: SEE
JOB NO.

PRINTED

DATE REMARKS
07/07/23 PERMIT

07/07/23 PERMIT 00/00/00 CONSTRUCTION

REVISIONS

NO. REMARKS

00/00/00 REVISION 1

00/00/00 REVISION 2

00/00/00 REVISION 3

00/00/00 REVISION 4

1501.01

OUTSIDE AIR CALCULATIONS IMC 2018 TABLE 403.3.1.1													
AHU-1	SUPPLY CFM	OA CFM/PERSON	TOTAL PEOPLE	OA CFM/FT2	EXHAUST CFM	SQUARE FOOTAGE	OA (CFM)						
101 CORRIDOR	85	-	-	0.06	0	162	9.72						
102 OFFCIE	255	5.00	1.3	0.06	0	260	22.1						
103 OFFICE	110	5.00	0.54	0.06	0	108	9.18						
104 OFFICE	110	5.00	0.54	0.06	0	108	9.18						
105 STORAGE	130	5.00	0.314	0.06	0	157	10.99						
EXISTING STORAGE	110	5.00	0.44	0.06	0	220	15.4						
TOTAL SUPPLY:	800				TOTAL O	A REQUIRED:	76.6						
					TOTAL O	A PROVIDED:	80.0						

	SPLIT SYSTEM AIR CONDITIONING																			
			FAN	I			COOLING	6 @ 105° F. Al	MBIENT			ELECTRIC	HEATING					ELECT	ΓRICAL	
DESIG.	SERVES	CFM	O.A. CFM	ESP (IN)	HP	TOTAL MBH	SENS MBH	EAT DB/WB	LAT DB/WB	SEER	KW @ 240V	NO. OF STAGES	EAT DB	LAT DB	EQUAL TO TRANE MODEL NUMBER	WEIGHT (LBS)	VOLT/ PHASE	FLA	MCA	МОСР
AHU-1	101 CORRIDOR; 102-104 OFFICES; 105 STORAGE; EXISTING STORAGE	800	80	0.3	1/3	22.6	16.5	76.8/65.3	57.3/55.8		7.68	1	64.7	94.9	TEM6A0B24H21	117	230/1	32.0	44	45
CU-1	AHU-1									14.6					4TTR4018N1	133	230/1	11.2	14	25

1) PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT, RETURN AIR FILTER BANK, AND 1" DEEP MERV-8 FILTER.

2) PROVIDE SINGLE POINT POWER CONNECTION TO EACH AIR HANDLING UNIT AND CONDENSING UNIT.

3) PROVIDE ELECTRICAL DISCONNECT FOR EACH AIR HANLDING UNIT AND CONDENSING UNIT.

4) REFER TO MANUFACTURER'S REQUIREMENTS FOR LINESET SIZING.

5) PROVIDE LOW VOLTAGE WIRING BETWEEN CONDENSING UNIT AND AIR HANDLER. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.

6) AIR HANDLING UNITS: VARIABLE FAN SPEED.

7) CONDENSING UNITS: VARIABLE COMPRESSOR SPEED.

					FANS						
				SP. IN		ACCESSORIES (SEE	EQUAL TO COOK		ELECTI	RICAL	
DESIG.	SERVES	CONTROL	CFM	W.G.	MOTOR HP	BELOW)	MODEL	VOLT/ PHASE	FLA	MCA	МОСР
EF-1	106 STORAGE	CONTROL WITH THERMOSTAT	215	0.25	35W	A-F	GCVF-340	115/1	0.30	0.38	15

ACCESSORIES: (PROVIDE AS NOTED)

(A) - BACKDRAFT DAMPER

(B) - ELECTRICALLY COMMUTATED MOTOR

(C) - PRE-WIRED NON-FUSED SERVICE DISCONNECT

(E) - 8" ROUND WALL CAP (F) - VARI-FLOW

RETURN

(F) - 7-DAY PROGRAMMABLE THERMOSTAT - COOLING SETPOINT 80°F

(D) - 8" ROUND DUCT ADAPTOR

	GRILLES - REGISTERS - DIFFUSERS													
DUTY	ТҮРЕ	NECK SIZE (IN)	FACE SIZE (IN)	MAX CFM	MAX NOISE CRITERIA (NC)	EQUAL TO								
SUPPLY	MATCH EXISTING	6	24X24	110	25	MATCH EXISTING								
SUPPLY	DOOR GRILLE	18X10	-	250	25	TITUS-T-700L								

24X24

24X24

10

ELECTRICAL NOTES:

230

400

25

25

DESIG. S1 S2

A) PROVIDE CEILING RADIATION DAMPER AT RATED ASSEMBLIES.

B) COORDINATE FRAME TYPE AND COLOR WITH ARCHITECT'S RCP.

RETURN MATCH EXISTING

MATCH EXISTING

SYSTEM	MATERIAL	INSULATION VALUE
SUPPLY/RETURN (INDOORS)	G-90 OR BETTER GALVANIZED SHEET METAL, SEE NOTE 1	R-6
SUPPLY/RETURN (OUTDOORS)		R-8 (CLIMATE ZONE 0-4)
		R-12 (CLIMATE ZONE 5-8)
GENERAL EXHAUST		N/A
SUPPLY/RETURN FLEX DUCT	UL 181 HELICAL SPRING STEEL W/ VINYL FILM	R-6
CONDENSATE DRAIN (INDOORS)	TYPE L COPPER (PLENUM)	R-3
	PVC	
CONDENSATE DRAIN (OUTDOORS)	TYPE L COPPER (PLENUM)	N/A
	PVC	
REFRIGERANT PIPING (SUCTION)	TYPE K COPPER	R-3
REFRIGERANT PIPING (LIQUID)	TYPE K COPPER	N/A

1. LOW PRESSURE DUCT THICKNESS WHEN LARGE DIMENSION IS:
1.a. UP TO 12" - 26 GAUGE
1.b. 13" TO 30" - 24 GAUGE
1.c. 21" TO 54" - 22 GAUGE
2. REFER TO EQUIPMENT MANUFACTURER'S INSTALLATION MANUAL FOR REFRIGERANT PIPING SIZING AND LINE LENGTH LIMITATIONS.

3. NOT ALL SYSTEMS MAY APPEAR IN PROJECT

SUTTON ELDRIDGE WALTER D. HORN ENGINEERING, LLC 5600 Tennyson Parkway Suite 240 Plano, Texas 75024 214.763.7300 Texas Registered Engineering Firm # F-18652

BEE COUNTY OFFICE 105 W. CORPUS CHRISTI ST. BEEVILLE, TX. 78102

MATCH EXISTING

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NO. REMARKS )/00/00 REVISION 1 /00/00 REVISION 2 )/00/00 REVISION 3 )/00/00 REVISION 4