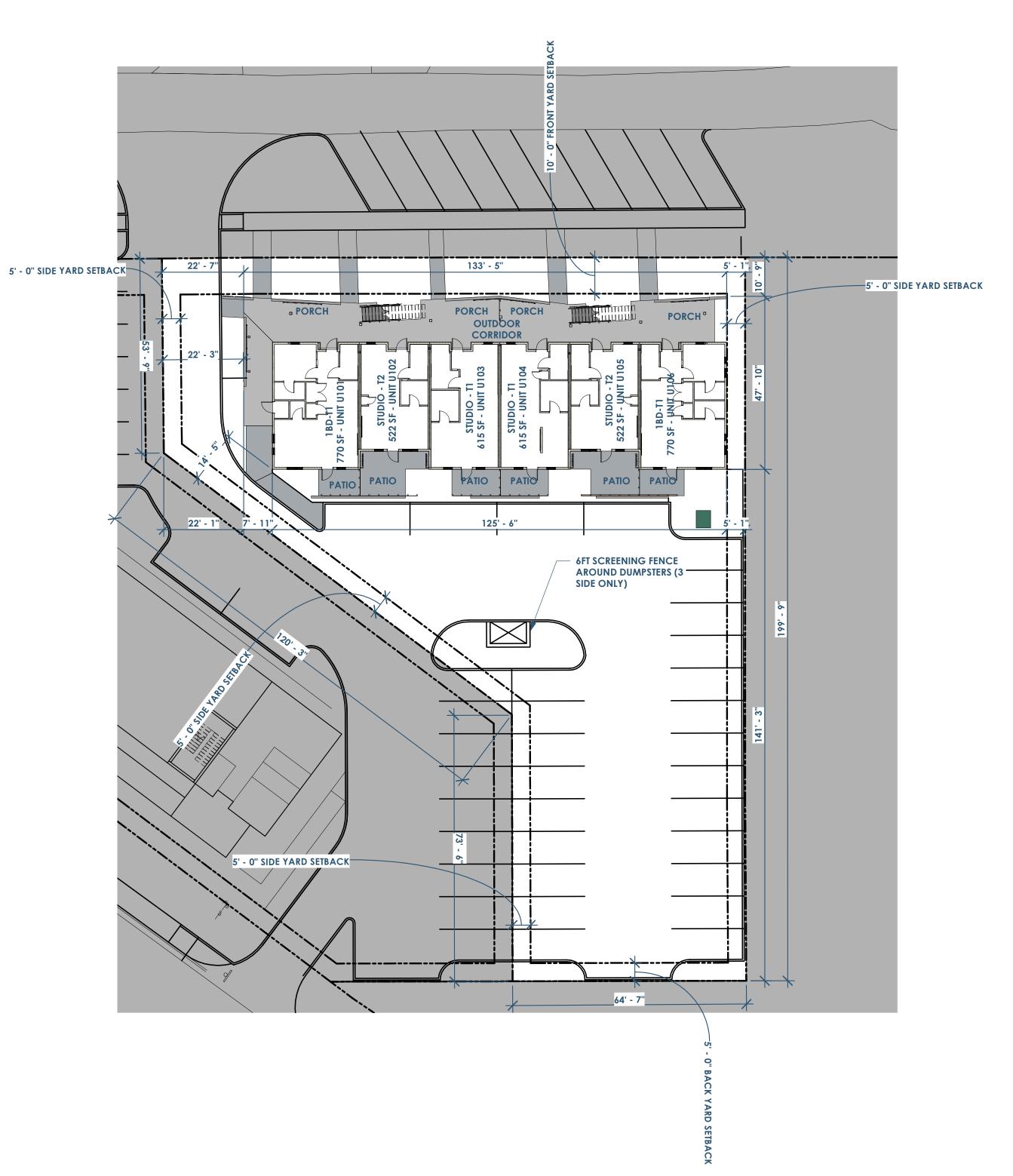
MARCO POLO - 101 W 33RD STREET

CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY



	CODE INFORMATION
ABBUG/217 C 2	
APPLICABLE CODES:	GENERAL: • BUILDING/DWELLING CODE IBC 2015 & AHJ AMENDMENTS
	EXISTING: ENERGY CONSERVATION:
	• INTERNATIONAL ENERGY CONSERVATION CODE 2015 & AHJ AMENDMENTS PLUMBING:
	MECHANICAL: • MECHANICAL CODE IMC 2015 & AHJ AMENDMENTS ELECTRICAL:
	• ELECTRICAL CODE NEC 2017 & AHJ AMENDMENTS FIRE:
	FIRE/LIFE SAFETY CODE 2009 NFPA-1 & AHJ AMENDMENTS ACCESSIBILITY: ANSI STANDARD A117.1-2009- FOR ACCESSIBILITY
	FUEL:
CHAPTER 3 USE AND OCCUPANCY	INTERNATIONAL FUEL GAS CODE 2015 & AHJ AMENDMENTS 310.4 RESIDENTIAL GROUP R-2
CLASSIFICATION: SECTION 420 GROUPS I-1, R-1, R-2,	SECTION 420 GROUPS R-2
R-3 AND R-4	FIRE PARTITIONS IN ACCORDANCE WITH SECTION 708 HORIZONTAL ASSEMBLIES IN ACCORDANCE WITH SECTION 711.
CHAPTER 5 CLASSIFICATION OF WORK:	NEW
504.3 HEIGHT IN FEET	R-2 – TYPE VB (SPRINKLERED): • ACTUAL: 35FT • ALLOWED: 60FT
504.4 NUMBER OF STORIES	R-2 – TYPE VB (SPRINKLERED):
	• ACTUAL: 3 • ALLOWED: 4
506.2 ALLOWABLE AREA DETERMINATION	• TABULAR PER FLOOR AREA LIMIT PER CHAPTER 5 = 7000 SQ.FT. • ALLOW HEIGHT = 60 FT; ALLOW STORIES = 3
& 506.3 FRONTAGE INCREASE:	NFPA 13 SPRINKLERS COMPUTE AREA INCREASE DUE TO FRONTAGE: FRONTAGE COEFFICIENT, IF 0.589
	PERIMETER, P 354 FT 'FRONTAGE' PERIMETER, F 306 FT
	 WEIGHTED AVERAGE DISTANCE FROM 'F' = 228.75 FT COMPUTE ALLOWABLE PER STORY AREA, AA = AT +(NS X IF) = 25120.94 SQ.FT.
	 MAXIMUM ALLOWABLE AREA = AA X 3 = 75362.83 SQ.FT. MAXIMUM NUMBER OF STORIES FOR GROUP R WITH NFPA 13R SPRINKLERS, PER SEC. 903.3.1.2.THIS
	CRITERIA IS MET, SO STORY LIMIT = 3 • THE REVISED ALLOWABLE HEIGHT IS 60 FT.
	ACTUAL • (ALL FLOORS): 16,826SF • FLOORS: 3
508.3 NONSEPARATED OCCUPANCIES:	N/A
508.4 SEPARATED OCCUPANCIES	N/A
TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)	FOR TYPE VB STRUCTURAL FRAME: 0 HR BEARING WALLS- EXTERIOR: 0 HR BEARING WALLS-INTERIOR: 0 HR NON-BEARING WALLS-EXTERIOR – (SEE TABLE 602)
	NON-BEARING WALLS-INTERIOR: 0 HR FLOOR CONSTRUCTION: 0 HR ROOF CONSTRUCTION: 0 HR
	TYPE-VB
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS	
BASED ON FIRE SEPARATION DISTANCE	• X < 5C = 1 HR • 5 ≤ X ≤ 10 = 1 HR • 10 ≤ X ≤ 30 = 0 HR
	• X ≥ 30 = 0 HR
708.3 FIRE-RESISTANCE RATING	CORRIDORS: 1/2HR RATED DWELLING UNIT AND SLEEPING UNIT SEPARATIONS: 1/2HR RATED
711.2.4.3 DWELLING UNITS AND SLEEPING UNITS	BETWEEN DWELLING UNITS: 1/2HR RATED
	FOR SPRINKLERED R-2: INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS: CLASS C CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS: CLASS C
SPRINKLERS (SECTION 903	ROOMS AND ENCLOSED: CLASS C NFPA13 SPRINKLER THROUGHOUT PROJECT (R-2)
AUTOMATIC SPRINKLER SYSTEMS): SECTION 1020 CORRIDORS	CORRIDORS: 1/2HR RATED
	SEE SECTION 1021 EGRESS BALCONIES FOR CORRIDOR RATING AT EXTERIOR WALL
SECTION 1004 OCCUPANT LOAD	TABLE 1004.1.2 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT
1006.2.1 EGRESS BASED ON	RESIDENTIAL: 200 GROSS FOR R-2
OCCUPANT LOAD AND COMMON PATH OF EGRESS TRAVEL DISTANCE:	MAXIMUM COMMON PATH WITH SPRINKLER SYSTEM: 125FT MAXIMUM OCCUPANT LOAD OF SPACE WITH ONE EXIT: 49
SECTION 1017 EXIT ACCESS TRAVEL DISTANCE:	FOR R-2: 250 (W/SPRINKLER)
1020.4 DEAD ENDS: SECTION 1021 EGRESS BALCONIES	50FT (WITH NFPA13 SPRINKLERS) EXTERIOR EGRESS BALCONIES SHALL BE SEPARATED FROM THE INTERIOR OF THE BUILDING BY WALLS AND OPENING PROTECTIVES AS REQUIRED FOR CORRIDORS.
	SECTION 1020 CORRIDORS 1020.1 CONSTRUCTION
	CORRIDORS SHALL BE FIRE-RESISTANCE-RATED IN ACCORDANCE WITH TABLE 1020.1. THE CORRIDOR WALLS REQUIRED TO BE FIRE-RESISTANCE-RATED SHALL COMPLY WITH SECTION 708 FOR FIRE PARTITIONS.
2902.1 MINIMUM NUMBER OF	EXCEPTIONS: CORRIDORS ADJACENT TO THE EXTERIOR WALLS OF BUILDINGS SHALL BE PERMITTED TO HAVE UNPROTECTED OPENINGS ON UNRATED EXTERIOR WALLS WHERE UNRATED WALLS ARE PERMITTED BY TABLE 602 AND UNPROTECTED OPENINGS ARE PERMITTED BY TABLE 705.8. CLASSIFICATION & OCCUPANCY:
FIXTURES	
	R-2
	WATER CLOSETS: 1 PER DWELLING LAVATORIES: 1 PER DWELLING

• BATHTUBS/ SHOWERS: 1 PER DWELLING

GENERAL NOTES

• GENERAL CONTRACTOR RESPONSIBLE FOR ALL FEES ASSOCIATED WITH PERMITS, APPLICATIONS, TAXES, AND CERTIFICATES OF INSPECTIONS. ANY CONSTRUCTION THAT DEVIATES FROM THE DRAWING IS UNAUTHORIZED, IF NOT AUTHORIZED BY THE ARCHITECT. IN SUCH AN EVENT, CONTRACTOR IS RESPONSIBLE FOR ANY REWORK THAT MIGHT BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR ALL THE RULES/REGULATIONS OF THE AUTHORITY HAVING JURISDICTION. INCLUDED, BUT NOT LIMITED TO ALL CITY, • CONTRACTORS SHALL VISIT THE SITE PRIOR TO CONSTRUCTION TO DETERMINE

HOW NEW CONSTRUCTION IS COMPATIBLE WITH EXISTING CONDITIONS. CONTRACTOR TO NOTIFY ARCHITECT IF THERE ARE ANY OMISSIONS, CONFLICTS, A FAILURE TO SO WILL RESULT IN THE CONTRACTOR RESPONSIBLE FOR ANY CONTRACTOR RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND TAKEOFFS

BEFORE BIDDING AND/OR ORDERING MATERIALS. CONTRACTOR WILL NOTIFY ARCHITECT IF THERE ANY DRAWING CONFLICTS AND AWAIT DIRECTION BEFORE COMMENCING. DO NOT SCALE THE DRAWINGS.

 ALL THROUGH AND MEMBRANE PENETRATIONS AT ALL FIRE/SMOKE RATED PARTITIONS/CEILINGS/FLOORS TO BE SEALED WITH A CODE COMPLIANT, U.L. APPROVED FIRE STOP. • GENERAL CONTRACTOR TO COORDINATE THE SIZE/LOCATION OF ANY ACCESS PANELS AND/OR CLEAN OUTS WITH THE M/E/P CONTRACTOR AND ARCHITECT. ALL CONTRACTORS AND VENDORS TO FAMILIARIZE THEMSELVES WITH THE ENTIRE **ALTERNATE DISCIPLINES.**

 ANY FURNITURE SHOWN IS FOR REFERENCE AND IS NOT IN THE CONTRACTOR. CONTRACTORS SHALL BE RESPONSIBLE FOR REPAIRING ANY PROPERTY DAMAGE THAT MAY HAVE RESULTED FROM THEIR WORK.

 ANY CHANGE THAT RESULTS IN ADDITIONAL COST/TIME MUST TO APPROVED BY THE OWNER/ARCHITECT PRIOR TO CONSTRUCTION. • DETAILS ARE TO BE INTERPRETED AS TYPICAL. THAT IS, UNLESS SPECIFICALLY CALLED OUT OTHERWISE, THE DETAIL IS TO BE APPLIED TO SIMILAR CONDITIONS THROUGHOUT THE PROJECT. • ALL EXTERIOR FLATWORK AROUND THE BUILDING TO SLOPE A MINIMUM OF 2%

AWAY FROM THE BUILDING. • ANY PENETRATIONS IN THE EXTERIOR ENVELOPE TO BE SEALED TO PREVENT ANY AIR/WATER LEAKAGE PER IBC CODE REQUIREMENTS.

• UNLESS OTHERWISE NOTED, SLOPE FLOOR 2% TOWARD ANY DRAINS INDICATED ON THE DRAWINGS. • CONTRACTOR SHALL KEEP THE CONSTRUCTION CLEAN-REMOVING ANY ACCUMULATION OF DEBRIS AND/OR UNUSED EQUIPMENT.

LICENSED STRUCTURAL ENGINEER RETAINED BY THE CONTRACTOR. • GENERAL CONTRACTOR TO VERIFY WITH THE M/E/P CONTRACTORS ALL PIPE/DUCT LOCATION PRIOR TO FRAMING. MANUFACTURED MATERIAL/EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S

• CONTRACTOR TO PROTECT ANY EXPOSED CONCRETE THAT IS MEANT TO BE A

GENERAL CONTRACTOR TO PROVIDE ARCHITECT AT LEAST (2) WEEKS WHEN REVIEWING ANY SHOP DRAWINGS AND/OR SUBSTITUTION REQUESTS. REVIEW OF SHOP DRAWINGS DOES NOT CONSTITUTE THE APPROVAL OF SAFETY REQUIREMENTS AND/OR CONSTRUCTION MEAN AND METHODS. • THE PRESENCE OF THE ARCHITECT ON SITE DOES NOT CONSTITUTE APPROVAL OF THE WORK. THE CONTRACTOR SHALL CALL THE ARCHITECT'S ATTENTION TO ANYTHING SPECIFICALLY NEEDS THE ARCHITECT'S APPROVAL. ONLY ARCHITECTURAL AND STRUCTURAL DRAWINGS HAVE BEEN COORDINATED WITH THE ARCHITECT. CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY WORK

OUTSIDE THESE SCOPES (M/E/P, FOR EXAMPLE) THAT INTERFERES WITH THIS ARCH/STRUCT DRAWING SET. GENERAL CONTRACTOR TO EDUCATE THE OWNER ON THE OPERATION AND MAINTENANCE OF ALL INSTALLED PRODUCT AND/OR EQUIPMENT. PRIOR TO SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL CLEAN SITE AND DELIVER ALL REQUIRED GUARANTEES, LIEN WAITERS AND MAINTENANCE MANUALS • ARCHITECT NOT RESPONSIBLE FOR THE EXPLORATION. PRESENCE. HANDLING. AND/OR ADVERSE EXPOSURE OF ANY HAZARDOUS MATERIALS, IN ANY FROM.

• ALL EXTERIOR STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED. ALL NOTCHING, DRILLING, WELDING AND BENDING DONE PRIOR TO DIPPING. ANY PRODUCT OR MATERIALS THAT ARE NOT CALLED OUT IN THE DRAWINGS, BUT REQUIRED FOR PROPER INSTALLATION AND PERFORMANCE OF THE WORK, SHALL BE PROVIDED BY THE CONTRACTOR. • THE CONTRACTOR TO PROVIDE ALL THE NECESSARY BLOCKING AND/OR

MAINTAIN INGRESS AND EGRESS TO THE PROJECT SITE.

TOWNSHIP, COUNTY, STATE, AND FEDERAL CODES, STATUTES, AND ORDINANCES. OR DISCREPANCIES IN THE DRAWINGS BEFORE ANY CONSTRUCTION TAKES PLACE.

DRAWING SET, AS REQUIRED INFORMATION MAY BE ON MULTIPLE SHEETS AND

 OWNER RESPONSIBLE FOR ANY WORK NOT SPECIFICALLY CALLED OUT IN THE DRAWINGS.

• ALL FINISH AND COLOR SELECTIONS TO BE VERIFIED WITH ARCHITECT

 CONTRACTOR TO BE RESPONSIBLE FOR THE COLLECTION, TRANSPORT AND DISPOSAL OF ALL CONSTRUCTION WASTE. • CONTRACTORS RESPONSIBLE FOR ANY TEMPORARY SHORING THAT MIGHT BE NECESSARY DURING CONSTRUCTION. ALL SHORING TO BE DESIGNED BY A

FINISHED SURFACE.

INCLUDING, BUT NOT LIMITED TO ASBESTOS PRODUCTS, POLYCHLORINATED BIPHENYL (PCB) OR OTHER TOXIC SUBSTANCES.

STRUCTURAL SUPPORT REQUIRE TO PROPERLY INSTALL MOUNTED ASSEMBLIES, INCLUDED BY NOT LIMITED TO GRAB BARS, PLUMBING FIXTURES, MILLWORK AND



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SHEET INDEX

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TYPICAL WOOD ROOF TRUSS DETAILS

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UNIT PLANS - STUDIOS - LONG AND SHORT - (TYPE | 06/10/22 - Issued for Permit





MEP: AMC Engineers 508 E Jackson St # 552 Burnet, TX 78611 info@amcengineers.com



opening design Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703

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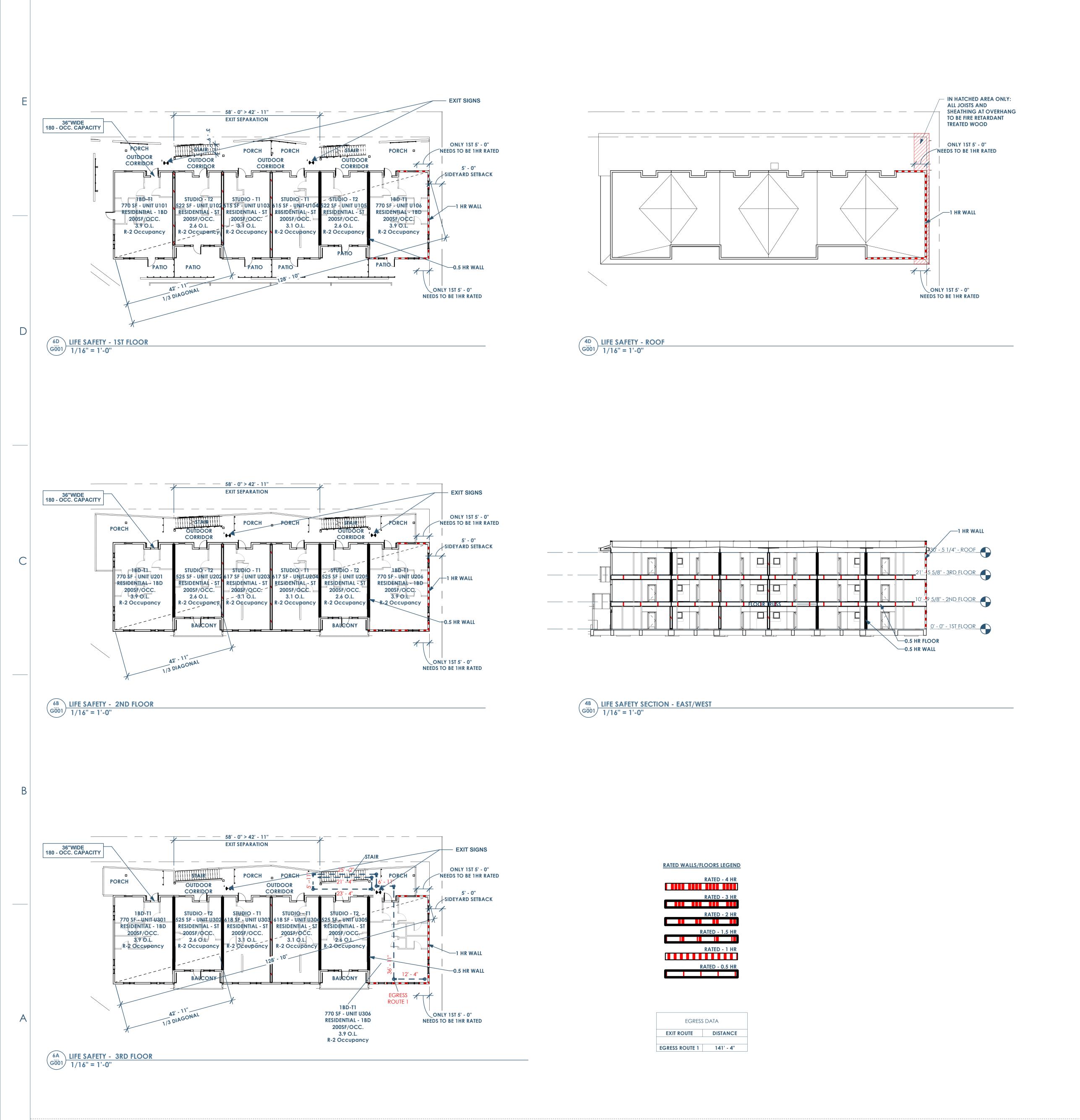
2A G000 1" = 200'-0"











Level	Name	Occupancy	Area	Function of Space	Area Allowance Per Occupant	Occi
1ST FLOOR	OUTDOOR CORRIDOR	R-2	759 SF	CIRCULATION	200	3.
1ST FLOOR	STAIR	R-2	84 SF	CIRCULATION	200	0.
1ST FLOOR	STAIR	R-2	84 SF	CIRCULATION	200	0.
1ST FLOOR	PATIO	R-2	84 SF	RESIDENTIAL	200	0.4
1ST FLOOR	PATIO	R-2	149 SF	RESIDENTIAL	200	0.
1ST FLOOR	PATIO	R-2	98 SF	RESIDENTIAL	200	0.
1ST FLOOR	PATIO	R-2	96 SF	RESIDENTIAL	200	0.
1ST FLOOR	PATIO	R-2	161 SF	RESIDENTIAL	200	0.8
1ST FLOOR	PATIO	R-2	90 SF	RESIDENTIAL	200	0.4
1ST FLOOR	PORCH	R-2	145 SF	RESIDENTIAL	200	0.7
1ST FLOOR	PORCH	R-2	97 SF	RESIDENTIAL	200	0.5
1ST FLOOR	PORCH	R-2	94 SF	RESIDENTIAL	200	0.5
1ST FLOOR	PORCH	R-2	86 SF	RESIDENTIAL	200	0.4
1ST FLOOR	1BD-T1	R-2	770 SF	RESIDENTIAL - 1BD	200	3.9
1ST FLOOR	1BD-T1	R-2	770 SF	RESIDENTIAL - 1BD	200	3.9
1ST FLOOR	STUDIO - T1	R-2	615 SF	RESIDENTIAL - ST	200	3.1
1ST FLOOR	STUDIO - T1	R-2	615 SF	RESIDENTIAL - ST	200	3.1
1ST FLOOR	STUDIO - T2	R-2	522 SF	RESIDENTIAL - ST	200	2.6
1ST FLOOR	STUDIO - T2	R-2	522 SF	RESIDENTIAL - ST	200	2.6
1ST FLOOR: 19			5842 SF			29.
2ND FLOOR	OUTDOOR CORRIDOR	R-2	613 SF	CIRCULATION	200	3.1
2ND FLOOR	STAIR	R-2	84 SF	CIRCULATION	200	0.4
2ND FLOOR	STAIR	R-2	84 SF	CIRCULATION	200	0.4
2ND FLOOR	BALCONY	R-2	123 SF	RESIDENTIAL	200	0.6
2ND FLOOR	BALCONY	R-2	123 SF	RESIDENTIAL	200	0.6
2ND FLOOR	PORCH	R-2	334 SF	RESIDENTIAL	200	1.7
2ND FLOOR	PORCH	R-2	107 SF	RESIDENTIAL	200	0.5
2ND FLOOR	PORCH	R-2	101 SF	RESIDENTIAL	200	0.5
2ND FLOOR	PORCH	R-2	131 SF	RESIDENTIAL	200	0.7
2ND FLOOR	1BD-T1	R-2	770 SF	RESIDENTIAL - 1BD	200	3.9
2ND FLOOR	1BD-T1	R-2	770 SF	RESIDENTIAL - 1BD	200	3.9
2ND FLOOR	STUDIO - T1	R-2	617 SF	RESIDENTIAL - ST	200	3.1
2ND FLOOR	STUDIO - T1	R-2	617 SF	RESIDENTIAL - ST	200	3.1
2ND FLOOR	STUDIO - T2	R-2	525 SF	RESIDENTIAL - ST	200	2.6
2ND FLOOR	STUDIO - T2	R-2	525 SF	RESIDENTIAL - ST	200	2.6
2ND FLOOR: 15			5526 SF			27.
3RD FLOOR	OUTDOOR CORRIDOR	R-2	635 SF	CIRCULATION	200	3.2
3RD FLOOR	STAIR	R-2	84 SF	CIRCULATION	200	0.4
3RD FLOOR	STAIR	R-2	81 SF	CIRCULATION	200	0.4
3RD FLOOR	BALCONY	R-2	123 SF	RESIDENTIAL	200	0.6
3RD FLOOR	BALCONY	R-2	123 SF	RESIDENTIAL	200	0.6
3RD FLOOR	PORCH	R-2	224 SF	RESIDENTIAL	200	1.1
3RD FLOOR	PORCH	R-2	107 SF	RESIDENTIAL	200	0.5
3RD FLOOR	PORCH	R-2	101 SF	RESIDENTIAL	200	0.5
3RD FLOOR	PORCH	R-2	131 SF	RESIDENTIAL	200	0.7
3RD FLOOR	1BD-T1	R-2	770 SF	RESIDENTIAL - 1BD	200	3.9
3RD FLOOR	1BD-T1	R-2	770 SF	RESIDENTIAL - 1BD	200	3.9
3RD FLOOR	STUDIO - T1	R-2	618 SF	RESIDENTIAL - ST	200	3.1
3RD FLOOR	STUDIO - T1	R-2	618 SF	RESIDENTIAL - ST	200	3.1
3RD FLOOR	STUDIO - T2	R-2	525 SF	RESIDENTIAL - ST	200	2.6
3RD FLOOR	STUDIO - T2	R-2	525 SF	RESIDENTIAL - ST	200	2.6
3RD FLOOR: 15			5435 SF			27.
Grand total: 49			16804 SF			84.



ARCHITECTURE

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B. AUTHORITY HAVING JURISDICTION:...

C. RISK CATEGORY:..... 2. DEAD LOADS: A. DEAD LOADS ARE BASED UPON THE ACTUAL WEIGHTS OF MATERIALS OF CONSTRUCTION AND FIXED SERVICE EQUIPMENT. ASSUMPTIONS FOR WALL AND ROOF ASSEMBLIES ARE SHOWN BELOW: a. METAL PANELS - 3 PSF

c. STONE / BRICK VENEER - 40 PSF d. ADHERED STONE/BRICK - 10 PSE

e. SINGLE PLY MEMBRANE ROOF WITH INSULATION ASSEMBLY - 10 PSF

a. ASSUMED LOADS FOR KNOWN EQUIPMENT ARE INDICATED ON THE STRUCTURAL DRAWINGS. ANY CHANGES IN THE TYPE, SIZE, LOCATION OR WEIGHT OF EQUIPMENT SHALL BE REPORTED TO THE EOR FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE SUBMISSION OF SHOP DRAWINGS. b. ASSUMED EQUIPMENT WEIGHTS INCLUDE THE WEIGHT OF CONCRETE PADS OR CURBS (IF APPLICABLE)

C. FOR EQUIPMENT NOT INDICATED ON THE STRUCTURAL DRAWINGS IN WHICH THE WEIGHT OF THE EQUIPMENTS DIVIDED BY ITS SURFACE AREA EXCEEDS THE INDICATED LIVE LOAD FOR THE LOCATION, THE CONTRACTOR SHALL NOTIFY THE EOR PRIOR TO SUBMISSION OF SHOP DRAWINGS. C. HANGING CEILING AND MECHANICAL LOADS: AN ALLOWANCE OF 5 PSF HAS BEEN MADE FOR HANGING CEILING AND MECHANICAL EQUIPMENTS SUCH AS DUCT WORK AND SPRINKLER PIPES.

...1.5 x SAME AS OCCUPANCY SERVED B. PRIVATE ROOMS AND CORRIDORS SERVING THEM.....40 PSF C. PUBLIC ROOMS AND CORRIDORS SERVING THEM... D. STAIRS AND EXITS.... ...100 PSF | 300 LB ROOF LIVE LOAD a. Ordinary, flat, pitched and curved unoccupied roofs:20 PSF, 300 LB SNOW LOAD: A. GROUND SNOW LOAD, Pg: A. ULTIMATE DESIGN WIND SPEED Vult B. NOMINAL DESIGN WIND SPEED, Vasd:..... 89 MPH (3-SEC PEAK GUST) C. WIND EXPOSURE CATEGORY:.....

D. INTERNAL PRESSURE COEFFICIENT: E. COMPONENTS AND CLADDING PRESSURES SEE SCHEDULE F. MAIN WIND FORCE RESISTING SYSTEM:.... WOOD SHEAR WALLS A. 100-YEAR RAINFALL INTENSITY (IN/HR) B. MAXIMUM ROOF RAIN LOAD:... C. MAXIMUM RAINWATER LEVEL - PONDING (STATIC + HYDRAULIC HEAD):.... D. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE TOTAL RAIN WATER LEVEL EXCEEDS THE DESIGNED RAIN ROOF LOAD.

MAPPED SPECTRAL RESPONSE VALUES, DESIGN SPECTRAL RESPONSE VALUES, AND AS SITE CLASS, HAVE BEEN PROVIDED BY A. GEOTECHNICAL COMPANY AND REPORT NO B. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS, S₅ & S₇ C. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS, SDS & SD1:.. 0.057 & 0.040 E. SEISMIC DESIGN CATEGORY, SDC: F. DESIGN BASE SHEAR:..

C&C - GROSS ULTIMATE WIND PRESSURE

Cladding	Location	Effective	Coeff	cients	Wind pre	essures	a = MINIMUM OF (10% OF LEAST HO OF LEAST HORIZONTAL DIMENSION		ON OR 0.4h) BUT NOT LESS THAN 4%
Type		Area (sf)		-GCp	+p (psf)	-p (psf)	OF ELFORMONIZON THE DIMENSION	OK 311	
Wall	Interior	10	0.90	-0.99	+30.6	-33.2	h = MEAN ROOF HEIGHT OF A BUILI	DING, EXCEPT THAT	EAVE HEIGHT SHALL BE USED FOR RO
		40	0.80	-0.89	+27.9	-30.5	ANGLES LESS THAN OR EQUAL TO 1	0° (~2:12 ROOF PITO	CH)
		50	0.79	-0.88	+27.5	-30.0	AAEANI DOOE HEICHT - THE AVEDAC		/E HEIGHT AND HEIGHT TO THE HIGH
		100	0.74	-0.83	+26.1	-28.7	POINT ON THE ROOF SURFACE.	SE OF THE ROOF EAT	VE NEIGHT AND NEIGHT TO THE HIGH
		500	0.63	-0.72	+23.0	-25.5			
Wall	Edge	10	0.90	-1.26	+30.6	-40.8			
		40	0.80	-1.07	+27.9	-35.4			
		50	0.79	-1.04	+27.5	-34.5			7
		100	0.74	-0.94	+26.1	-31.8	COMPONENTS AND	CLADDING	
		500	0.63	-0.72	+23.0) -25.5	ZONES		
Roof	Interior	10	0.30	-1.00	+13.6	-33.5	DESCRIPTION	ZONE	
		40	0.24	-0.94	+11.9	-31.8	DESCRIPTION	ZONL	
		50	0.23	-0.93	+11.6	-31.5	ROOF INTERIOR	1	
		100	0.20	-0.90	+10.8	-30.6			
		341	0.20	-0.90	+10.8	-30.6	ROOF EDGE	2	
Roof	Edge	10	0.90	-1.80	+30.6	-56.2	DOOF CODIUED		
		40	0.80	-1.38	+27.9	-44.2	ROOF CORNER	3	
		50	0.79	-1.31	+27.5	-42.3	WALL INTERIOR	4	
		100	0.74	-1.10	+26.1	-36.3		•	
		500	0.63	-1.10	+23.0	-36.3	WALL EDGE	5	
Roof	Corner	10	0.90	-1.80	+30.6	-56.2			
		40	0.80	-1.38	+27.9	-44.2			
		50	0.79	-1.31	+27.5	-42.3			
		100	0.74	-1.10	+26.1	-36.3			
		500	0.63	-1.10	+23.0	-36.3			
Overhang	Interior	10	0.00	-1.70	+10.0	-48.2	21.		
	& Edge	40	0.00	-1.64	+10.0	-46.5	3	1	
		50	0.00	-1.63	+10.0	-46.2		1'	
		100	0.00	-1.60	+10.0	-45.4	5 % %	.i.s.	3
		500	0.00	-1.10	+10.0	-31.2	4 0, 1	2	3
Overhang	Corner	10	0.00	-1.70	+10.0	-48.2	4		
		40	0.00	-1.64	+10.0	-46.5			70.6h
		50	0.00	-1.63	+10.0	-46.2		3	5 / //
		100	0.00	-1.60	+10.0	-45.4			I OWN.
		500	0.00	-1.10	+10.0	-31.2		0.64	O.bh LEASTHORZ. DIM.
Parapet	Interior	10	2.70	-1.89	+76.6	-53.6		74	XX m
		40	2.18	-1.70	+61.9	-48.2			X
		50	2.10	-1.67	+59.6	-47.3			•
		100	1.84	-1.57	+52.2	-44.6	<u>FLAT /HIP/</u>	GABLE ROO I	F - h ≤ 60
_		500	1.73	-1.35	+49.1	-38.3	· · · · · · · · · · · · · · · · · · ·	< SLOPE ≤ 7°	
Parapet	Edge	10	2.70	-2.16	+76.6	-61.3	<u> </u>	3-0. *	<u> </u>
l		40	2.18	-1.87	+61.9	-53.1			

a = MINIMUM OF (10% OF LEAST HORIZONTAL DIMENSION OR 0.4h) BUT NOT LESS THAN 4%

FOUNDATION DESIGN CRITERIA

. GEOTECHNICAL REPORT: THIS FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS PROVIDED IN SITE-SPECIFIC GEOTECHNICAL REPORT. IN DESIGNING THE FOUNDATION FOR THE PROPOSED STRUCTURE, THE FOUNDATION DESIGN ENGINEER DOES NOT ASSUME RESPONSIBILITY FOR THE ACCURACY OF THE GEOTECHNICAL ENGINEER'S REPORT OR ANY INFORMATION CONTAINED THEREIN. INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT(S) REFLECTS CONDITIONS AS FOUND AT THE LOCATION OF THE BORINGS. ACTUAL CONDITIONS AT LOCATIONS BETWEEN AND SURROUNDING THE BORINGS MAY DIFFER FROM THE SOIL STRATIGRAPHY DEPICTED BY THE BORINGS. IF THERE ARE ANY CONDITIONS DIFFERING FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, OR IF ANY CHANGES HAVE BEEN IMPOSED ON THE SOILS IN QUESTION SINCE THE REPORT WAS WRITTEN. THEN THE DESIGN ENGINEER OF RECORD SHOULD BE NOTIFIED IN WRITING PRIOR TO CONSTRUCTION OF THE FOUNDATION IN ORDER TO REVIEW THE EFFECTS ON THE PERFORMANCE OF THE DESIGNED FOUNDATION. A. GEOTECHNICAL ENGINEER: **DUDLEY** B. REPORT NUMBER: 22-00109

C. REPORT DATE: D. THE FOUNDATION DESIGN PARAMETERS PROVIDED WILL NOT ELIMINATE POST-CONSTRUCTION FOUNDATION MOVEMENT. AS SUCH, MEASURES SHALL BE TAKEN TO INCREASE THE TOLERANCE OF THE STRUCTURE SUPPORTED BY THE FOUNDATION, MEASURES INCLUDE BUT ARE NOT LIMITED TO FREQUENT CONTROL JOINTS FOR MASONRY/BRICK/STONE/STUCCO EXTERIOR VENEER (15'-0 MAXIMUM), VERTICALLY SLOTTED CLIPS TO ATTACH ROOF TRUSSES TO NON-LOAD BEARING WALLS, ETC. ABNORMAL CONDITIONS: IF THE FOUNDATION IS INSTALLED DURING A DRY OR WET PERIOD, WHICH IS CONSIDERED EXTREME OR ABNORMAL, THEN THE BUILDER SHALL NOTIFY THE GEOTECHNICAL ENGINEER AND FOUNDATION ENGINEER PRIOR TO CONSTRUCTION FOR POSSIBLE SOIL CONDITIONING OR FOUNDATION RE-DESIGN .

FOUNDATION MOVEMENT: THE FOUNDATION HAS BEEN DESIGNED WITH THE ASSUMPTION THAT MOVEMENT CAN BE TOLERATED WITHIN A STANDARD PERFORMANCE LIMIT: A. STANDARD PERFORMANCE DEFLECTION LIMIT: L/360 B. STANDARD PERFORMANCE TILT LIMIT: 178 . SOIL MOISTURE LEVEL: A REASONABLY UNIFORM SOIL MOISTURE LEVEL IS MAINTAINED AROUND THE FOUNDATION FOR THE LIFE OF THE STRUCTURE. . FOUNDATION MAINTENANCE: POSITIVE DRAINAGE AWAY FROM THE STRUCTURE SHALL BE MAINTAINED FOR THE LIFE OF THE STRUCTURE AND THE CONTRACTOR SHALL CONVEY THIS

REQUIREMENT TO THE OWNER, THE INITIAL AND ALL SUBSEQUENT OWNERS MAINTAIN THE FOUNDATION IN ACCORDANCE WITH THE LATEST REVISION OF DOCUMENT NO. FPA-SC-07, "FOUNDATION MAINTENANCE AND INSPECTION GUIDE FOR RESIDENTIAL AND OTHER LOW-RISE BUILDINGS", AVAILABLE ON THE FOUNDATION PERFORMANCE ASSOCIATION'S WEBSITE: WWW.FOUNDATIONPERFORMANCE.ORG. CONTRACTOR SHALL PROVIDE THIS DOCUMENT TO OWNER. 6. EXPIRATION: PLANS ARE VALID FOR 6-MONTHS FROM THE DATE THE PLANS ARE ISSUED OR REVISED BY THE ENGINEER. CONTACT ENGINEER FOR REVIEW IF PLANS HAVE EXPIRED OR IF CONSTRUCTION OF THE FOUNDATION HAS NOT COMMENCED WITHIN THIS TIME FRAME.

LATERAL LOAD RESISTING SYSTEM

1. ALL LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IS PROVIDED EXCLUSIVELY BY VERTICAL LATERAL LOAD RESISTING SYSTEM, THE HORIZONTAL DIAPHRAGMS DISTRIBUTE THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL LOAD RESISTING SYSTEM. A. VERTICAL LATERAL LOAD RESISTING SYSTEM: WOOD-FRAMED SHEAR WALLS B. HORIZONTAL LATERAL LOAD RESISTING SYSTEM: WOOD STRUCTURAL PANEL ROOF DECK

STAIR. HANDRAILS. RESTROOM ACCESSORIES AND GUARDRAIL SPECIFICATIONS:

1. ALL STAIRS, GUARDRAILS AND HANDRAILS SHALL BE DESIGNED BY A REGISTERED STRUCTURAL ENGINEER BASED ON THE FOLLOWING DESIGN CRITERIA:

a. STAIR STRINGERS, TREADS AND RISERS SHALL BE DESIGNED TO SUPPORT 100 PSF LIVE LOAD.

b. INDIVIDUAL STAIR TREADS SHALL BE DESIGNED TO SUPPORT A 300 LB CONCENTRATED LOAD PLACED IN A POSITION THAT WOULD CAUSE THE MAX STRESS B. HANDRAII AND GUARDS a. Guard top rail and handrails: the top rail of guardrails and handrails shall be designed to withstand a load of 50 PLF applied horizontally at right angles, or a b. INTERMEDIATE RAILS, PANEL FILLER AND THEIR CONNECTIONS SHALL BE DESIGNED TO WITHSTAND A LOAD OF 50 PSF APPLIED HORIZONTALLY AT RIGHT ANGLES OVER THE ENTIRE TRIBUTARY

AREA, INCLUDING OPENINGS AND SPACES BETWEEN RAILS. C. RESTROOM ACCESSORIES: a. Grab Bars, tub and shower seats, fasteners, and mounting devices shall be designed to resist a concentrated load of 250 pounds at any location and in any

STRUCTURAL DEFERRED SUBMITTALS:

1. Structural deferred submittals are those portions of the design which require structural engineering that are not submitted at the time of the application but are to be submitted to the building OFFICIAL AT A LATER DATE. DEFERRED SUBMITTALS SHALL BE SUBMITTED TO AND APPROVED BY THE BUILDING OFFICIAL PRIOR TO INSTALLATION OF ANY SAID WORK. 2. COMPLETE STRUCTURAL SHOP DRAWINGS FOR CONSTRUCTION OF EACH BUILDING COMPONENT NOT DESIGNED BY THE STRUCTURAL ENGINEER-OF-RECORD (SER) AND NOT SPECIFIED ON THE PROJECT CONSTRUCTION DOCUMENTS SHALL BE SEALED AND SIGNED BY A SPECIALTY STRUCTURAL ENGINEER (SSE) WHO IS A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS BEING CONSTRUCTED WHO IS QUALIFIED TO PERFORM SAID WORK. A SEAL BY A LICENSED PROFESSIONAL ENGINEER IS NOT REQUIRED FOR EITHER PRODUCTS WHICH HAVE BEEN TESTED AND CERTIFIED BY AN APPROVED AGENCY SUCH AS THE ICC NOR FOR COMPONENTS

WHICH ARE FABRICATED BY A FABRICATOR THAT IS CERTIFIED BY AN APPROVED AGENCY IN WHICH THE AGENCY SPECIFIED THAT SEALING OF THE SHOP DRAWINGS IS NOT REQUIRED (E.G. STEEL JOIST INSTITUTE IN REGARDS TO OPEN WFB STFFL LOISTS) 3. THE SPECIALTY STRUCTURAL ENGINEER (SSE) SHALL SPECIFICALLY INDICATE IN A COVER PAGE AT THE FRONT OF THE SHOP DRAWING THAT THEY ARE THE STRUCTURAL ENGINEER IN RESPONSIBLE CHARGE FOR THE DEFERRED SUBMITTAL AND THAT THEY HAVE REVIEWED THE SHOP DRAWING TO ENSURE COMPLIANCE WITH THEIR DESIGN AND CALCULATIONS.

4. ALL STRUCTURAL DEFERRED SUBMITTALS SHALL BE REVIEWED BY THE SER AND MARKED AS EITHER NO EXCEPTIONS OR EXCEPTION NOTED, PRIOR TO SUBMITTING TO THE "FOR CONSTRUCTION" VERSION TO THE AUTHORITY HAVING JURISDICTION (AHJ) AND PRIOR TO RELEASE FOR FABRICATION. 5. STRUCTURAL DEFERRED SUBMITTALS ON THIS PROJECT INCLUDE:

A. STAIRS, GUARDRAIL, HANDRAILS, GRAB BARS, LADDERS, ETC. (NOT REQUIRED IF USING CERTIFIED AND TESTED PRODUCTS/ASSEMBLIES) B. CURTAINWALL, STOREFRONT, WINDOWS (NOT REQUIRED IF USING CERTIFIED AND TESTED PRODUCTS/ASSEMBLIES) C. METAL PLATE CONNECTED WOOD TRUSSES

1. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES

2. THE CONTRACTOR IS RESPONSIBLE FOR QUALITY CONTROL, INCLUDING WORKMANSHIP AND MATERIALS FURNISHED BY SUBCONTRACTORS AND SUPPLIERS. 3. REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR COMPLETE INFORMATION REGARDING: SLEEVES, CURBS, INSERTS, DEPRESSIONS, OPENINGS, ETC. 4. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST REVISIONS/ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS OR MATERIAL PROCUREMENT.

5. THE USE OR REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, DUE TO ANY ERRORS THAT MAY OCCUR 6. ALL WORK SHALL CONFORM TO OSHA STANDARDS. 7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES,

STREETS AND UTILITIES IN ACCORDANCE WITH ALL CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. 8. THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCIES BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS. 9. FRAMING LAYOUTS ARE PROVIDED TO REPRESENT DESIGN CONCEPTS AND SYSTEMS CONSTRUCTION. THE CONTRACTOR AND SUBCONTRACTORS ARE RESPONSIBLE FOR MATERIAL QUANTITIES AND ANY AND ALL UNSPECIFIED COMPONENTS REQUIRED FOR CONSTRUCTION. 10. WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EITHER LOCATED ON COLUMN LINES OR ARE EQUALLY SPACED BETWEEN THE LOCATED

11. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN 12. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS. AS INDICATED BY THE ENGINEER, SHALL GOVERN.

13. THE FLOOR DESIGN LIVE LOAD FOR EACH ELEVATED FLOOR STRUCTURE OR PORTION THEREOF THAT EXCEEDS 50 POUNDS PER SQUARE FOOT (PSF) SHALL BE STATED ON DURABLE SIGNS AND CONSPICUOUSLY POSTED BY THE OWNER IN THE APPLICABLE AREA(S) OF THE BUILDING. 14. ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE SUCH ITEMS AS, BUT NOT LIMITED TO, PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO A SALT ENVIRONMENT OR OTHER HARSH CHEMICALS. 15. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION A. THE ENGINEER SHALL NOT HAVE CONTROL NOR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR

PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. B. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF THE STRUCTURAL ENGINEER IS SOLELY FOR THE PURPOSE OF BECOMING GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK COMPLETED AND DETERMINING, IN GENERAL, IF THE WORK OBSERVED IS BEING PERFORMED IN A MANNER INDICATING THAT THE WORK, WHEN FULLY COMPLETED, WILL BE IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR. 16. WATERPROOFING OF THE BUILDING ENVELOPE IS OF CRITICAL IMPORTANCE TO LONG-TERM STRUCTURAL PERFORMANCE. WATERPROOFING DESIGN SHALL BE THE

RESPONSIBILITY OF THE ARCHITECT/CONTRACTOR AND SHALL BE IN ACCORDANCE WITH BEST PRACTICES FOR THE LOCALITY AND THE PARTICULAR ASSEMBLY.

CONTRACTOR QUALIFICATION

1. WORK SHALL BE PERFORMED BY A QUALIFIED CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR EXPERIENCED IN THIS TYPE OF WORK. SUCH KNOWLEDGE SHALL INCLUDE MAKING ALLOWANCES FOR PERFORMING WORK OF THIS NATURE FOLLOWING INDUSTRY STANDARDS OF CARE. 2. THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS SHALL UNDERSTAND THE NATURE OF DRAWING PRODUCTION AND COORDINATION BETWEEN CONSULTANTS AND SHALL NOT ENTER INTO A CONTRACT BASED ON DRAWINGS THAT ARE BELIEVED TO CONTAIN DISCREPANCIES OR ARE OTHERWISE INCOMPLETE UNLESS PROPER ALLOWANCES HAVE BEEN MADE FOR COST IMPLICATIONS THAT MAY ARISE DUE TO FUTURE DRAWING CHANGES MADE IN PREPARATION OF FINAL CONSTRUCTION DOCUMENTS.

3. IN THE COURSE OF PRODUCING AND ISSUING DRAWINGS, VARIOUS STAGES OF COMPLETION ARE DEVELOPED. THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS SHALL UNDERSTAND

THE PURPOSE AND CONTENT CONTAINED IN PERMIT, PRICING, AND CONSTRUCTION DRAWINGS. COST IMPLICATIONS AND CONTRACTIBILITY ARE THE RESPONSIBILITY OF THE CONSTRUCTION

1. NO PROVISIONS FOR ANY FUTURE EXPANSION HAVE BEEN MADE IN THE STRUCTURAL DESIGN

CONTRACTOR AND SUBCONTRACTORS UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.

1. ALL REQUESTS FOR SUBSTITUTIONS OF MATERIALS OR DETAILS SHOWN IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED FOR APPROVAL DURING THE BIDDING PERIOD. ONCE BIDS ARE ACCEPTED, PROPOSED SUBSTITUTIONS WILL BE CONSIDERED ONLY WHEN THEY ARE OFFICIALLY SUBMITTED WITH AN IDENTIFIED SAVINGS TO BE DEDUCTED FROM THE

REQUEST FOR INFORMATION (RFI)

1. RFI'S MUST INCLUDE A TRANSMITTAL SHEET THAT INDICATES THE FOLLOWING: A. RFI NUMBER B. RFI CATEGORY: a. REQUEST FOR SUBSTITUTION b. CORRECTIVE REPAIR c. ADDITIONAL INFORMATION REQUIRED d. DISCREPANCY BETWEEN CONSTRUCTION DOCUMENTS C. DATE SUBMITTED D. DATE RESPONSE NEED BY

F. SUBMITTED BY (INCLUDE FMAIL AND PHONE NUMBER) F. RFI DESCRIPTION INCLUDING: a. SHEET NUMBER, DETAIL AND/OR SPECIFICATION NUMBER IF APPLICABLE b. SKETCHES IF APPLICABLE

c. PHOTOS IF APPLICABLE.

1. SUBMITTAL LIST AND SCHEDULE A. THE GENERAL CONTRACTOR SHALL PREPARE A DETAILED LIST AND SCHEDULE OF ALL SUBMITTAL ITEMS TO BE SENT TO THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION. THIS LIST SHALL BE UPDATED AND REVISED AS THE JOB PROGRESSES.

A. ALL SUBMITTALS MUST BE REVIEWED AND ELECTRONICALLY STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO THE DESIGN TEAM AS NO EXCEPTIONS. B. ALL SUBMITTALS MUST INCLUDE A TRANSMITTAL SHEET WHICH INDICATES: a. Submittal number per the following format: e.g. 03 30 00-01.00 (Division, Submittal # for Division, Issue # - the example indicates the first submittal, first issue of a b. BRIEF DESCRIPTION OF SUBMITTAL CONTENTS

d. REQUESTED RETURN DATE e. ISSUING PARTY INCLUDING NAME, PHONE NUMBER AND EMAIL

C. CONTRACTOR SHALL PROVIDE THE SUBMITTAL IN ELECTRONIC (PDF) FORMAT, SUBMITTALS SHALL NOT BE SCANNED COPIES OF PRINTED DOCUMENTS. D. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER SHOWN OR COMMENTED IN THE SHOP DRAWING

E. THE CONTRACTOR MUST ALLOW A MINIMUM OF 14 DAYS FOR STRUCTURAL REVIEW OF ALL SUBMITTALS. THE CONTRACTOR CAN REQUEST AN EXPEDITED REVIEW AT AN AGREED UPON FEE WITH F. STRUCTURAL STEEL SUBMITTALS MUST BE ACCOMPANIED BY THE SDS/2 OR TEKLA MODEL WHICH WILL BE USED BY THE DESIGN TEAM AS A VISUAL AID TO THE SHOP DRAWINGS. 3. REFER TO THE SPECIFICATIONS FOR A LIST OF ALL THE REQUIRED SUBMITTALS.

4. ENGINEER REVIEW STAMP DESIGNATIONS: ALL DESIGNATIONS ARE INDICATIVE OF A REVIEW FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS.

a. NO ITEMS WERE FOUND TO BE IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS, NO "FOR REVIEW" RESUBMITTAL REQUIRED. B. EXCEPTIONS NOTED a. ITEMS WERE FOUND IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS AND NEED TO BE REVISED PRIOR TO SUBMITTING "FOR CONSTRUCTION" SUBMITTAL

C. REVISE AND RESUBMIT a. SIGNIFICANT ITEMS WERE FOUND IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS. THE SUBMITTAL NEEDS TO BE RESUBMITTED "FOR REVIEW" D. NOT REVIEWED a. THE SUBMITTAL WAS NOT STRUCTURAL.

E. FOR INFORMATION ONLY a. THE SUBMITTAL DID NOT REQUIRE REVIEW BUT HAS BEEN FILED FOR THE RECORD. F. IMPACT TO STRUCTURE

a. The Submittal has been reviewed for the structurally impact to the structure only

. ADDITIONAL INSPECTIONS REQUIRED BY STRUCTURAL ENGINEER: REFERENCE SPECIFICATIONS

B CONCRETE SLAB AND LINDER-FLOOR INSPECTION:

1. CONSTRUCTION OR WORK FOR WHICH A PERMIT IS REQUIRED SHALL BE SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL AND SUCH CONSTRUCTION OR WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED. REQUIRED TESTING INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

A. FOUNDATION INSPECTION: a. FOOTING AND FOUNDATION INSPECTIONS SHALL BE MADE AFTER EXCAVATIONS FOR FOOTINGS ARE COMPLETE AND ANY REQUIRED REINFORCING STEEL IS IN PLACE. FOR CONCRETE FOUNDATIONS, ANY REQUIRED FORMS SHALL BE IN PLACE PRIOR TO INSPECTION. MATERIALS FOR THE FOUNDATION SHALL BE ON THE JOB, EXCEPT WHERE CONCRETE IS READY MIXED IN ACCORDANCE WITH ASTM C94, THE CONCRETE NEED NOT BE ON THE JOB.

a. Concrete slab and under-floor inspections shall be made after in-slab or under-floor reinforcing steel and building service equipment. Conduit. PIPING ACCESSORIES AND OTHER ANCILLARY EQUIPMENT ITEMS ARE IN PLACE, BUT BEFORE ANY CONCRETE IS PLACED OR FLOOR SHEATHING INSTALLED, INCLUDING C. FRAME INSPECTION:

a. Framing inspections shall be made after the roof deck or sheathing, all framing, fireblocking and bracing are in place and pipes, chimneys and VENTS TO BE CONCEALED ARE COMPLETE AND THE ROUGH ELECTRICAL, PLUMBING, HEATING WIRES, PIPES AND DUCTS ARE APPROVED. . SPECIAL INSPECTIONS - REFER TO THE STATEMENT OF SPECIAL INSPECTION FOR REQUIRED STRUCTURAL SPECIAL INSPECTIONS

DRAWING INTERPRETATION

A. PARTIAL PLANS, ELEVATIONS, SECTIONS, DETAIL OR SCHEDULES LABELED WITH "TYPICAL" AT THE BEGINNING OF THEIR TITLE SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THE THOSE SPECIFICALLY SHOWN. THE APPLICABILITY OF THE CONTENT OF THESE VIEWS TO LOCATIONS ON THE PLAN CAN BE DETERMINED FROM THE TITLE OF THE VIEW. SUCH VIEWS SHALL APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. DECISIONS REGARDING APPLICABILITY OF THESE "TYPICAL" VIEWS SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER. 2. COLOR: THESE DRAWINGS ARE INTENDED TO BE VIEWED IN COLOR. IF THE FOLLOWING COLORS ARE NOT RED. GREEN BLUE THEN THIS DRAWING SET IS NOT BEING VIEWED AS INTENDED. 3. SCALE: IF THE FOLLOWING LINE IS NOT EXACTLY 1" LONG, THEN THIS SET HAS BEEN SCALED.

1. DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF THE ACI DETAILING MANUAL ACI 315 AND SP-66 (ACI DETAILING MANUAL)

2. CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60, WITH SUPPLEMENTARY REQUIREMENTS. 3. COMPLETE REINFORCING PLACEMENT DRAWINGS PREPARED IN ACCORDANCE WITH ACI315 SHALL BE REVIEWED BY THE ENGINEER AND AVAILABLE ON THE JOB SITE PRIOR TO & DURING THE PLACING OF CONCRETE. 4. ALL REINFORCING STEEL SHALL BE SUPPORTED AT DESIGNED DEPTH USING PLASTIC OR METALLIC CHAIRS SPACED AT 48" OC IN ALL DIRECTIONS TO SUPPORT FULL LENGTH OF

REINFORCEMENT. IF ALTERNATE IS TO BE USED, PROPOSED CHAIR IS TO BE SUBMITTED IN WRITING AND APPROVED BY E.O.R. 5. END HOOKS, DEVELOPMENT LENGTHS, AND SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318. 6. REINFORCEMENT MAY BE PLACED IN BUNDLES OF NOT MORE THAN TWO W/ THE CLEAR DISTANCE BETWEEN BUNDLES OF REINFORCEMENT OR TENDONS OF 3 INCHES MINIMUM. CONCRETE COVER NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH ACI 318. 7. COVERAGE: THE FOLLOWING SHALL BE THE MINIMUM REINFORCEMENT CONCRETE COVERAGE (INCLUDING TENDONS):

B. CONCRETE EXPOSED TO EARTH OR WEATHER: a. NO. 6 AND LARGER b. NO. 5 BAR AND SMALLER

C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND 34" 8. UNO, ALL LAP SPLICES OF REINFORCEMENT IN GROUND SUPPORTED ELEMENTS (GRADE BEAMS, FOOTINGS, MAT FOUNDATIONS) SHALL BE A MINIMUM OF 48Ø, WHERE Ø = THE DIAMETER OF THE BAR, REINFORCEMENT IN ELEVATED STRUCTURES SHALL REFER TO THE TYPICAL LAP SPLICE DETAIL.

REINFORCED CONCRETE - 03 30 00

A. CONCRETE WORK SHALL CONFORM TO THE LATEST ED. OF ACI 301 (SPECIFICATIONS FOR STRUCTURAL CONCRETE) UNO IN THESE CONSTRUCTION DOCUMENTS.

A. ALL CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED REGISTERED ENGINEER, MIX DESIGN DATA RESULTS EITHER COMPLYING WITH THE FIELD EXPERIENCE OR TRIAL MIXTURE METHOD PER ACI 301/318 SHALL BE SUBMITTED FOR EACH CONCRETE MIX. PROPORTIONS OF MATERIALS FOR CONCRETE SHALL BE ESTABLISHED TO: a. PROVIDE WORKABILITY AND CONSISTENCY TO PERMIT CONCRETE TO BE WORKED READILY INTO FORMS AND AROUND REINFORCEMENT UNDER CONDITIONS OF PLACEMENT TO BE EMPLOYED, WITHOUT SEGREGATION OR EXCESSIVE BLEEDING.

b. MEET REQUIREMENTS FOR APPLICABLE EXPOSURE REQUIREMENTS. c. MEET OR EXCEED THE REQUIRED F'C.

d. NOT EXCEED THE MAXIMUM W/C RATIO B. THE CONTRACTOR MUST INDICATE THE PLANNED PLACEMENT METHOD FOR EACH CONCRETE MIX.

C. WATER MAY NOT BE ADDED TO THE CONCRETE MIX IN THE FIELD TO ADJUST THE SLUMP (RETEMPERING) WITHOUT THE SPECIAL INSPECTOR BEING PRESENT TO CONFIRM THAT IT DOES NOT EXCEED THE W/C RATIO OR DESIGN SLUMP. THE READY-MIX COMPANY MUST INDICATE THE MAXIMUM WATER WITHHELD AT THE PLANT. IF THE AMOUNT, THE W/C RATIO OR DESIGN SLUMP IS EXCEEDED D. SLUMP TESTS SHALL BE PERFORMED AT THE POINT OF PLACEMENT WITH THE EXCEPTIONS NOTED BELOW: a. IF THE POINT OF DELIVERY IS THE SAME AS THE POINT OF PLACEMENT (CONCRETE IS PLACED DIRECTLY FROM TRUCK)

b. IF THE CONTRACTOR HAS DEVELOPED AN ACCEPTABLE (APPROVED BY SPECIAL INSPECTOR AND EOR) CORRELATION BETWEEN FRESH CONCRETE PROPERTIES AT THE POINT OF DELIVERY AND

E. AIR-ENTRAINED CONCRETE SHALL NOT BE USED IN ANY NORMALWEIGHT CONCRETE FLOOR SLAB THAT IS TO RECEIVE A HARD-TROWELED FINISH CONCRETE MATERIALS:

A. HYDRAULIC CEMENT a. USE ASTM C150 TYPE I OR TYPE III, EXCEPT WHERE SPECFICALLY INDICATED OTHERWISE IN TABLE BELOW.

a. FLY ASH MAY BE USED TO REPLACE A PORTION OF THE PORTLAND CEMENT, SUBJECT TO THE APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER NOT TO EXCEED THE AMOUNTS LISTED IN THE CONCRETE TABLE. b. USE ASTM C618 CLASS C OR F

C. NORMAL WEIGHT AGGREGATE: d. USF ASTM C33.

b. MATERIAL CERTIFICATES FROM THE AGGREGATE SUPPLIER MUST BE SUBMITTED WITH THE CONCRETE MIX DESIGN c. RIVER ROCK OR PEA STONE AGGREGATES ARE NOT ACCEPTABLE.

a. COMPLY WITH THE REQUIREMENTS OF ASTM C1602.

4. CHLORIDE ION A. FOR CORROSION PROTECTION OF REINFORCEMENT IN CONCRETE, MAXIMUM WATER SOLUBLE ION CONCENTRATIONS IN HARDENED CONCRETE AT AGES FROM 28 TO 42 DAYS CONTRIBUTED FROM THE THE INGREDIENTS INCLUDING WATER, AGGREGATES, CEMENTITIOUS MATERIALS, AND ADMIXTURES SHALL NOT EXCEED THE LIMITS INDICATED IN THE TABLE BELOW.

D. TOLERANCES FOR CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST ED. OF ACI 117 (SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS).

A. CONCRETE SHALL BE PLACED CAREFULLY SO AS NOT TO DEVIATE REINFORCEMENT FROM THE DESIGN LOCATION.

B. CONCRETE SHALL BE PROPERLY VIBRATED, ESPECIALLY AROUND POST-TENSIONED ANCHORAGES AND CONGESTED AREAS SUCH AS COLUMN JOINTS. C. PLACEMENT OF CONCRETE SHALL BE COMPLETED WITHIN 90 MINUTES AFTER THE INTRODUCTION OF THE MIXING WATER, IN ACCORDANCE WITH ASTM C94.

ELEMENT EXPOSURE CATEGORY MAX W/CM MAX COARSE MIN. AIR f'c MAX CL-MAX FLY ASH RATIO AGG. SIZE CONTENT INTERIOR SLABS-ON-GROUNDA 3,500 F0,S0,P(W)0,C1 0.30 0.45

. FINISHING: FINISHING OPERATIONS AND BULL FLOATING SHALL BE COMPLETED PRIOR TO THE ACCUMULATION OF BLEED WATER ON THE SURFACE. FINAL FINISHING SHOULD NOT BEGIN UNTIL THE

BLEED WATER HAS EVAPORATED AND THE WATER SHEEN HAS DISAPPEARED FROM THE SURFACE. TROWELLING THE WET SURFACE WILL WEAKEN IT AND CAN RESULT IN SURFACE CRAZING AND DUSTING. REFER TO ARCHITECTURE FOR FINAL FINISHING REQUIREMENTS (STEEL TROWEL, BROOM FINISH, ETC.). 2. EXCESSIVE BLEED WATER REMOVAL: BLEEDING (FREE SURFACE WATER) OCCURS AS AGGREGATES SETILE IN THE PLACED CONCRETE, DISPLACING WATER TO THE SURFACE. IF ALLOWED TO REMAIN ON THE SURFACE, IT DILUTES THE CEMENT CONTENT, SIGNIFICANTLY REDUCING THE STRENGTH NEAR THE SURFACE. THE CONTRACTOR SHALL REMOVE BLEED WATER. ONE METHOD OF REMOVING

BLEED WATER IS TO DRAG THE SURFACE WITH A GARDEN HOSE. 3. CONTROL JOINTS (SAW CUTS) IF REQUIRED, SHALL BE MADE AS SOON AS THE CONCRETE CAN SUPPORT THE WEIGHT OF WORKER AND THE EQUIPMENT. 4. CURING: IMMEDIATELY AFTER FINISHING THE SLAB, THE SLAB MUST BE CURED FOR A MINIMUM OF 7 DAYS BY EITHER:

A. APPLYING A WATER-BASED DISSIPATING RESIN TYPE CURING COMPOUND WHICH CHEMICALLY BREAKS DOWN AFTER APPROXIMATELY 4 WEEKS. MEMBRANE FORMING COMPOUND SHALL ADHERE TO ASTM C 309, TYPE O OR 1D, CLASS B. THE COMPOUND SHALL BE APPLIED IN TWO COATS, EACH AT RIGHT ANGLES TO THE OTHER TO ENSURE A TIGHTLY SEALED SURFACE. B. WET-CURED BY KEEPING THE SURFACE WET AFTER THE CONCRETE HAS SET AND FINISHING IS COMPLETE.

CONCRETE CRACKS

1. EVEN WITH PROPER DESIGN AND CONSTRUCTION ALL CONCRETE WILL CRACK, PLASTIC SHRINKAGE CRACKS CONTINUE TO OPEN AS THE SLAB AGES UP TO APPROXIMATELY ONE YEAR, AND REACH 50% OF THEIR FINAL SIZE IN APPROXIMATELY 30 DAYS, MANY PLASTIC SHRINKAGE CRACKS ARE VERY SMALL WHICH MAKE THEM BARELY NOTICEABLE AND INCONSEQUENTIAL TO THE STRUCTURAL PERFORMANCE OF THE CONCRETE. CRACKS WIDER THAN APPROXIMATELY 0.06" ARE LIKELY INDICATIVE OF CONCRETE THAT DID NOT ADHERE TO THE CONCRETE MIX REQUIREMENTS, PLACEMENT, FINISHING AND CURING REQUIREMENTS. IN ADDITION TO BEING VISIBLY OBJECTIONABLE, IF THESE CRACKS EXIST IN REGULAR CONSISTENCY, THEY MAY REDUCE THE STRUCTURAL PERFORMANCE OF THE CONCRETE AND REQUIRE STRUCTURAL REPAIR (FILL CRACKS WITH EPOXY PRODUCT) OR REPLACEMENT.

'ETEMPERING (ADDING WATER TO CONCRETE ON-SITE'

WEATHER, HIGH WIND, LOW HUMIDITY, OR A DELAY IN APPLYING THE CURING MEMBRANE.

1. WATER SHALL NOT BE ADDED TO THE MIX TRUCKS ON THE JOB SITE IN EXCESS OF THE VOLUME OF WATER THAT IS SPECIFICALLY INDICATED TO HAVE BEEN WITHHELD FROM THE READY MIX . PRIOR TO ADDING WATER, THE CONTRACTOR SHALL CONFIRM THAT THE MIX IS NOT ALREADY WITHIN TOLERANCE ON SLUMP. WATER SHALL ONLY BE ADDED IF THE SLUMP IS BELOW TOLERANCE AND THE READY MIX SUPPLIER HAD INDICATED THE VOLUME OF WITHHELD (TRIM) WATER.

2. PLASTIC SHRINKAGE CRACKS: OCCUR SOON AFTER THE CONCRETE IS PLACED AND WHILE IT IS STILL PLASTIC. IT IS CAUSED BY OVERLY RAPID DRYING OF THE SURFACE, USUALLY DUE TO HOT

FLOOR FLATNESS AND LEVELNESS

1. SPECIFIED OVERALL VALUES FOR FLATNESS (SOF_F) AND LEVELNESS (SOF_L) SHALL CONFORM TO THE VALUES LISTED BELOW FOR THE FLOOR SURFACE CLASSIFICATION NOTED FOR EACH SLAB CATEGORY NOTED. CLASSIFICATION SOFE SOFE TYPICAL APPLICABLIITY OF CLASSIFICATION

SLABS IN NONPUBLIC AREAS, MECHANICAL ROOMS, SURFACES TO HAVE THICK-SET TILE OR A TOPPING, AND PARKING STRUCTURES B. MODERATELY FLAT 25 20 CARPETED AREAS 25 INDUSTRIAL SLABS, EXPOSED SLABS IN PUBLIC SPACES, SLABS TO RECEIVE THIN-SET FLOORING

D. VFRY FLAT 35 ICE OR ROLLER RINKS: GYMNASIUM FLOORS SCHEDULED TO RECEIVE WOOD PLAYING FLOOR E. SUPER FLAT 60 40 MOVIE OR TELEVISION STUDIOS

2. MINIMUM LOCAL VALUES FOR FLATNESS (MLF_E) AND LEVELNESS (MLF_E) SHALL EQUAL 3/5 OF THE SOF_E AND SOF_L VALUES, RESPECTIVELY, UNLESS NOTED OTHERWISE. < FOR INDUSTRIAL SLABS, MLF_E SHALL BE 23 AND MLF; SHALL BE 17. >THE MLF; AND MLF; VALUES SHALL APPLY TO THE MINIMUM AREAS BOUNDED BY THE COLUMN LINES AND HALF-COLUMN LINES, OR THE MINIMUM AREAS BOUNDED BY THE CONSTRUCTION AND CONTRACTION JOINTS, WHICHEVER ARE THE SMALLER AREAS. 3. THE SOF, AND MFL, TOLERANCE VALUES SHALL APPLY ONLY TO LEVEL SLABS-ON-GROUND OR TO LEVEL, UNCAMBERED SUSPENDED SLABS THAT ARE SHORED SUCH THAT IT CANNOT DEFLECT

FROM THE TIME THE FLOOR IS PLACED TO THE TIME IT IS MEASURED. 4. SLABS SPECIFIED TO SLOPE SHALL HAVE A TOLERANCE FROM THE SPECIFIED SLOPE OF 3/8" IN 10 FEET AT ANY POINT.

STRUCTURAL STEEL - 05 12 00

A. ALL STRUCTURAL STEEL IS TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF AISC 360 (SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS).

a. Steel located within Permanently Conditioned, non-corrosive space and within the building envelope does not require shop paint unless steel will BE EXPOSED TO THE ELEMENTS FOR A YEAR OR MORE DURING CONSTRUCTION. b. ALL STEEL LOCATED IN UNCONDITIONED SPACE AND/OR OUTSIDE THE BUILDING ENVELOPE SHALL EITHER BE HOT-DIP GALVANIZED OR PAINTED WITH A ZINC RICH PAINT. THE CONTRACTOR SHALL PREPARE THE STEEL IN ACCORDANCE WITH THE GALVANIZING OR PAINT REQUIREMENTS. :. WHERE GALVANIZATION IS REQUIRED, STRUCTURAL STEEL MEMBERS, FABRICATIONS, AND WELDED ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION BY HOT DIP PROCESS IN ACCORDANCE WITH ASTM A123, WEIGHT OF ZINC COATING SHALL CONFORM TO THE REQUIREMENTS SPECIFIED UNDER "WEIGHT OF COATING" IN ASTM A123

OR ASTM A386, AS APPLICABLE. THE AFFECTED PORTIONS OF FIELD WELDED GALVANIZED ASSEMBLIES SHALL BE FIELD PAINTED WITH ZINC RICH CORROSION RESISTANT d. Closed shapes such as tubes and pipes to be galvanized that require a hole for fabrication shall have the hole either filled with weld material and GALVANIZATION REPAIRED OR SEALED WITH EXTERIOR GRADE SEALANT APPROPRIATE FOR THAT USE. . Structural steel members to receive fireproofing shall not be primed nor painted. Fireproofing material thickness shall be increased as required for

STEEL MEMBERS NOT CONFORMING TO THE MINIMUM SIZES INDICATED IN THE U.L. FIRE RESISTANCE DIRECTORY-VOLUME 1 AND FOR STEEL MEMBERS DETERMINED D. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE CONTRACT DOCUMENTS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS. E. THE CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER OF ANY MISFABRICATED STRUCTURAL STEEL PRIOR TO ERECTION OF SAME.

f. Penetrations shall not be cut in structural steel members unless so indicated in the drawings or as reviewed by the engineer.

A. ALL HOT ROLLED STEEL PLATES, SHAPES AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A6, LATEST ED. a. W-SHAPES: b. Channels, angles, plates: A36 c. RECTANGULAR HSS: A500, GR.C ($F_Y = 50 \text{ KSI}$)

d. ROUND HSS: A500, GR.B ($F_Y = 42 \text{ KSI}$) A. STRUCTURAL STEEL SUBMITTALS MUST BE ACCOMPANIED BY THE SDS/2 OR TEKLA MODEL WHICH WILL BE USED BY THE DESIGN TEAM AS A VISUAL AID TO THE SHOP DRAWINGS

B. SHOP DRAWINGS MUST BE PRODUCED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE. 4. CONNECTIONS a. CONNECTION DESIGN: ALL STEEL CONNECTIONS NOT FULLY DETAILED WITHIN THESE DRAWINGS SHALL BE DESIGNED BY A CONNECTION ENGINEER TO BE HIRED BY THE CONTRACTOR. THE CONTRACTOR'S CONNECTION ENGINEER SHALL BE A PROFESSIONAL ENGINEER FAMILIAR WITH THE DESIGN OF SUCH ELEMENTS AND SHALL BE LICENSED TO PRACTICE ENGINEERING IN THE STATE IN WHICH THE PROJECT IS BEING CONSTRUCTED. CONNECTION DESIGNS AND DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL. THE FINAL CONFIGURATION, PLATE AND ANGLE THICKNESS, NUMBER OF BOLTS ETC. SHALL BE DESIGNED BY THE CONNECTION ENGINEER.

b. Structural Bolts: All Bolts in Structural Connection Shall Conform to ASTM A325 TYPE 1, UNLESS NOTED OTHERWISE ON THE DRAWINGS. c. THREADED ROUND STOCK: THREADED RODS SHALL CONFORM TO ASTM F1554 GR55 S1 d. WELDING: UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (SMAW), F7XX-EXX (SAW), E770S-X (GMAW) OR E8XT-X (FCAW). FIELD WELDING TO BE DONE BY CERTIFIED WELDERS FOR STRUCTURAL STEEL. CONTINUOUS INSPECTION BY A SPECIAL INSPECTOR IS REQUIRED. SHOP WELDS MUST BE PERFORMED IN FABRICATION SHOP THAT IS CERTIFIED BY THE AUTHORITY HAVING JURISDICTION.

e. ANCHOR RODS: ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554. THE TYPICAL SIZE SHALL BE 3/4" AND SHALL BE EMBEDDED A MINIMUM OF 1'-0" WITH A HEAVY HEX NUT AT THE EMBEDDED UNLESS NOTED OTHERWISE. ANCHOR RODS SHALL BE GR. 55 S1 UNO. GROUT: GROUT BELOW STRUCTURAL STEEL BASE PLATES SHALL BE NON-METALLIC, NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 6,000 PSI WHEN BEARING ON A 3,000 PSI CONCRETE OR LESS. g. SPLICING STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT WRITTEN APPROVAL FROM EOR.

I. HEADED CONCRETE STUD ANCHORS ("HSA") SHALL BE NELSON OR KSM HEADED CONCRETE ANCHORS (OR APPROVED ALTERNATIVE), AND SHALL CONFORM TO ASTM A108. GRADES C-1010 THROUGH C-1020. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE STUD WELDING EQUIPMENT IN THE SHOP OR IN THE FIELD. WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM WELDING SYSTEMS COMPANY. DEFORMED BAR ANCHORS ("DBA") SHALL BE NELSON OR KSM DEFORMED BAR ANCHORS (OR APPROVED ALTERNATIVE), AND SHALL BE MADE FROM COLD DRAWN WIRE PER ASTM A496 CONFORMING TO ASTM A108 WITH A MINIMUM YIELD STRENGTH OF 70 KSI. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE WELDING EQUIPMENT IN THE SHOP OR IN THE FIELD. WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM

WEIDING SYSTEMS COMPANY. . ALL FILLET WELDS SHALL HAVE A MINIMUM SIZE PER THE FOLLOWING, UNO IN SPECIFIC DETAILS. MATERIAL THICKNESS OF THINNER PART JOINED "T"
 SIZE OF FILLET WELD

 T= 1/4 T = 5/16 T = 3/8 T = 7/16 T = 1/2 T = 3/4 T > 3/4"

WOOD FRAMING SPECIFICATIONS (06 10 00)

1. WOOD FRAMING SIZES, FIRESTOPS, ANCHORAGE, FURRING AND CONNECTORS NOT SHOWN ON THE CONSTRUCTION DOCUMENTS SHALL AT A MINIMUM ADHERE TO THE PRESCRIPTIVE DESIGN PER THE BUILDING CODE.

2. STRUCTURAL LUMBER IN PERMANENTLY CONDITIONED SPACE SHALL MEET OR EXCEED THE FOLLOWING GRADES, PRODUCT LINE OR CRITERIA:

a. STUD GRADE SOUTHERN YELLOW PINE b. STUD GRADE DOUGLAS FIR-LARCH C. VERTICAL STUD USE ONLY CERTIFIED FINGER- JOINTED OF HEM-FIR. SOUTHERN PINE OR DOUGLAS-FIR

 HRA DESIGNATION (HEAT RESISTANT ADHESIVE) REQUIRED FOR STUDS IN FIRE-RESISTANCE RATED ASSEMBLIES. a. NO.2 GRADE SOUTHERN YELLOW PINE

b. NO.2 GRADE DOUGLAS FIR-LARCH C. LAMINATED VENEER LUMBER (LVL) BEAM / HEADER / GIRDER a. WEYERHAEUSER 2.0E MICROLAM LVL b. BOISE CASCADE VERSA-LAM 2.0E 3100Fb D. GLUED LAMINATED (GLULAM) BEAM / HEADER / GIRDER: a. 3½" & 5½" WIDE: ANTHONY POWER BEAM 3000Fb - 2.1E - 300Fv

b. 7" WIDE: ANTHONY POWER BEAM 2800Fb - 2.1E - 300Fv

a. NO.2 GRADE SOUTHERN YELLOW PINE b. NO.2 GRADE DOUGLAS FIR-LARCH c. NO.2 STRUCTURAL FINGER-JOINTED OF HEM-FIR, SOUTHERN PINE OR DOUGLAS FIR HRA DESIGNATION (HEAT RESISTANT ADHESIVE) REQUIRED FOR STUDS IN FIRE-RESISTANCE RATED ASSEMBLIES

a. DIMENSIONAL LUMBER/TIMBERS: NO.2 GRADE SOUTHERN YELLOW PINE OR DOUGLAS FIR-LARCH b. Parallel Strand Lumber (PSL): Trusjoist 1.8E Parallam PSL Posts G. PLATES:

a. NO.3 GRADE SOUTHERN YELLOW PINE b. NO.3 GRADE DOUGLAS FIR-LARCH a. NO.3 GRADE SOUTHERN YELLOW PINE

b. NO.3 GRADE DOUGLAS FIR-LARCH

E. RAFTERS:

3. STRUCTURAL LUMBER <u>NOT IN PERMANENTLY CONDITIONED SPACE</u> SHALL ADHERE TO THE FOLLOWING SPECIFICATIONS: A. DIMENSION LUMBER

a. Same species and grades as listed above, however they must be pressure-treated. B. GLUED LAMINATED BEAM / HEADERS / GIRDER:

5. ALL LUMBER SHALL BE KILN DRIED WITH A MAXIMUM MOISTURE CONTENT OF 19%.

a. POWER PRESERVED GLULAM BEAM (24F-V5M1/SP) TREATED WITH COPPER GUARD AT 0.04 PCF OR CLEAR-GUARD AT 0.055 PCF. 4. WOOD STRUCTURAL PANEL A. WOOD STRUCTURAL PANELS, WHEN USED STRUCTURALLY (INCLUDING THOSE USED FOR SIDING, ROOF AND WALL SHEATHING, SUBFLOORING, DIAPHRAGMS AND BUILT-UP MEMBERS). SHALL BE APA PERFORMANCE-RATED CONFORMING TO DOC PS 1, DOC PS 2 OR ANSI/APA PRP 210, EACH PANEL OR MEMBER SHALL BE IDENTIFIED FOR GRADE. BOND CLASSIFICATION, AND PERFORMANCE CATEGORY BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY. THE PERFORMANCE CATEGORY VALUE SHALL BE USED AS THE "NOMINAL PANEL THICKNESS" OR "PANEL THICKNESS". a SUBELOOR: 23/32 PERFORMANCE CATEGORY APA RATED STURD-LELOOR 24 o C EXPOSURE 1

b. Sheathing/decking: 7/16 (unless noted otherwise, ref shear wall schedule) performance category apa rated sheathing, 32/16, exposure 1 B. WOOD STRUCTURAL PANELS WHEN PERMANENTLY EXPOSED IN OUTDOOR APPLICATIONS SHALL BE OF EXTERIOR TYPE, EXCEPT THAT WOOD STRUCTURAL PANEL ROOF SHEATHING EXPOSED TO THE OUTDOORS ON THE UNDERSIDE IS PERMITTED TO BE EXPOSURE 1 TYPE.

7. ALL LUMBER SHALL BE IDENTIFIED BY THE GRADE MARK OF A LUMBER GRADING OR INSPECTION AGENCY THAT HAS BEEN APPROVED BY AN ACCREDITATION AGENCY THAT 8. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESERVATIVE TREATED WOOD, ALL FASTENERS INCLUDING ANCHOR BOLTS, POWER-ACTUATED FASTENERS, NAILS, CLIPS, AND HANGERS ATTACHED TO PRESERVATIVE TREATED SHALL BE APPROVED FOR THE ENVIRONMENT. NAILS AND STAPLES

6. ALL GLUED-LAMINATED (GLULAM) MEMBERS SHALL ADHERE TO ANSI A 190.1 & ASTM D 3737 AND BE MANUFACTURED BY ANTHONY POWER BEAM (3000Fb - 2.1E).

A. NAILS AND STAPLES SHALL CONFORM TO REQUIREMENTS OF ASTM F 1667. NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS FOLLOWS: 80 KIPS PER SQUARE INCH (KSI) (551 MPA) FOR SHANK DIAMETERS LARGER THAN 0.177 INCH (4.50 MM) BUT NOT LARGER THAN 0.254 INCH (6.45 MM), 90 KSI (620 MPA) FOR SHANK DIAMETERS LARGER THAN 0.142 INCH (3.61 MM) BUT NOT LARGER THAN 0.177 INCH (4.50 MM) AND 100 KSI (689 MPA) FOR SHANK DIAMETERS OF AT LEAST 0.099 INCH (2.51 MM) BUT NOT LARGER THAN 0.142 INCH (3.61 MM). 10. FASTENERS FOR FIRE-RETARDANT TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED STEEL OR STAINLESS STEEL

a. LUMBER SPECIES AND GRADE

BUILDING CODE

7. TRUSSES SPANNING 60 FEET OR FURTHER

. TRUSSES SHALL BE DESIGNED BY THE TRUSS MANUFACTURER IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION" (ANSI/TPI 1-2014) AND SHALL CONFORM TO IBC §2303.4. THE DESIGN SHALL INCLUDE ALL TEMPORARY AND PERMANENT BRACING, TEMPORARY BRACING MAY REMAIN IN-PLACE IF IT DOES NOT INTERFERE WITH ARCHITECTURAL REQUIREMENTS. 2. SUBMITTALS: THE TRUSS MANUFACTURER SHALL PREPARE AND SUBMIT A TRUSS SUBMITTAL PACKAGE (PRODUCT DATA AND SHOP DRAWINGS) FOR THE WOOD TRUSSES TO THE CONTRACTOR. THE CONTRACTOR AFTER REVIEWING AND APPROVING THE TRUSS SUBMITTAL PACKAGE, SHALL FORWARD THE TRUSS SUBMITTAL PACKAGE TO DUDLEY FOR REVIEW.

DUDLEY WILL REVIEW THE TRUSS SUBMITTAL PACKAGE FOR GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS. TRUSS SUBMITTAL PACKAGES SHALL BE PREPARED, SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. THE TRUSS SUBMITTAL PACKAGE SHALL INCLUDE AT A MINIMUM: A. PRODUCT DATA AND ICC APPROVAL FOR FRAMING MEMBERS AND FASTENERS THAT HAVE BEEN DESIGNED BY OTHERS. B. SHOP DRAWINGS SHALL INCLUDE AT A MINIMUM:

a. PROJECT NAME, LOCATION AND BUILDING CODE b. LAYOUTS INCLUDING TEMPORARY AND PERMANENT BRIDGING REQUIREMENTS. C. PROFILES INCLUDING ALL JOINTS, BEARING POINTS, DEFLECTION RATIOS, AND REACTIONS. d. BLOCKING REQUIREMENTS e. REQUIRED BEARING WIDTHS f. NUMBER OF PLIES IF GREATER THAN ONE

5. TRUSS DEFLECTION LIMITS: TRUSSES SHALL BE LIMITED TO THE FOLLOWING DEFLECTION LIMITS:

h. SIZE, GAUGE AND LOCATION OF PLATES . TRUSS TO TRUSS HARDWARE REQUIREMENTS i. NAME AND TRADEMARK OF PLATE MFR AND TRUSS FABRICATOR C. CALCULATIONS INCLUDING BUT NOT LIMITED TO:

 DESIGN LOADS STRESS REDUCTION FACTORS USED FOR PLATES 3. DRAG TRUSS SHALL BE PROVIDED ABOVE AND BELOW ALL INTERIOR SHEAR WALLS. THE DRAG TRUSSES SHALL BE DESIGNED TO SUPPORT AN ALLOWABLE LINEAR LOAD EQUAL TO THAT OF THE SHEAR WALL (IF SHEAR WALLS ARE ABOVE AND BELOW THE LARGE ALLOWABLE SHEAR LOAD SHALL APPLY). 4. TRUSS RESTRAINT/BRACING METHODS SHALL BE IN ACCORDANCE WITH BCSI-B3 (PERMANENT RESTRAINT/BRACING OF CHORDS AND WEB MEMBERS) UNLESS NOTED OTHERWISE

LIVE LOAD (L/360) TOTAL LOAD (L/240 B. PITCHED ROOF TRUSS: LIVE LOAD (L/240) TOTAL LOAD (L/180) C. SHALLOW (< = 4:12) PITCHED ROOF TRUSSES: LIVE LOAD (L/360) TOTAL LOAD (L/240) 6. CAMBER SHALL BE BUILT INTO ROOF TRUSSES TO COMPENSATE FOR VERTICAL DEFLECTION. THE CAMBER SHALL BE LARGEST AT THE MID-SPAN OF THE TRUSS. A. PITCHED ROOF TRUSS: 1.00 X DEFLECTION FROM ACTUAL DEAD LOAD.

PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING FOR ALL TRUSSES WITH CLEAR SPANS 60 FEET OR GREATER.

a. REGARDLESS OF THE BUILDING TYPE, BUILDING DESIGNS MUST COMPENSATE FOR THE FACT THAT WOOD SHRINKS AS IT DRIES. SHRINKAGE CONTINUES UNTIL WOOD REACHES IT EQUILIBRIUM MOISTURE CONTENT (EMC), WHICH AVERAGES 8-12% OF MOISTURE CONTENT FOR MOST STRUCTURES IN THE U.S.. THE CONTRACTOR SHALL PREPARE AND ENFORCE A PLAN TO MINIMIZE MOISTURE IN THE WOOD FRAMING, DRYWALL SHALL NOT BE INSTALLED UNTIL THE MOISTURE CONTENT OF ALL WOOD

A. THE TRUSS MFR. SHALL CONTRACT WITH A QUALIFIED REGISTERED DESIGN PROFESSIONAL FOR THE DESIGN OF THE TEMPORARY INSTALLATION RESTRAINT/BRACING AND THE

FRAMING IS BELOW 1.5% b. THE CONSTRUCTION OF A WOOD FRAMED BUILDING REQUIRES AN UNDERSTANDING OF FRAMING TOLERANCES, SHRINKAGE, AND INTERACTION WITH DISSIMILAR c. ROUGH OPENINGS IN EXTERIOR WALLS SHALL BE UPSIZED APPROXIMATELY 1/2" TO ACCOMMODATE SHRINKAGE. d. PROVIDE 1/8" WIDE JOINTS IN SHEATHIN

e. THE CONTRACTOR SHALL INCORPORATE DIFFERENTIAL VERTICAL MOVEMENT INTO THE DESIGN OF THE PLUMBING SYSTEM INCLUDING VERTICAL EXPANSION JOINTS, GAPS AROUND HORIZONTAL PLUMBING RUNS, AVOIDING HORIZONTAL PLUMBING RUNS IN LOAD BEARING STUDS. f. CARE SHALL BE TAKEN DURING CONSTRUCTION TO LIMIT THE MOISTURE EXPOSURE OF THE LUMBER. IF THE LUMBER DOES BECOME WET, MEASURES SHALL BE TAKEN TO BRING THE MOISTURE CONTENT BACK TO OR BELOW 15% PRIOR TO INSTALLING ARCHITECTURAL FINISHES. g. THE APPROXIMATE WOOD SHRINKAGE ASSUMING ALL LUMBER IS SOUTHERN PINE WITH AN INSTALLED MOISTURE CONTENT OF 19% AND A FINAL MOISTURE CONTENT OF

10% IS AS FOLLOWS: 3rd STORY BOTTOM PLATE: FLOOR TRUSS: DOUBLE TOP PLATE: 0.067" 2ND STORY BOTTOM PLATE: FLOOR TRUSS: DOUBLE TOP PLATE: 0.067" 1ST STORY BOTTOM PLATE: 0.034"

TOTAL ESTIMATED SHRINKAGE: [0.370"]



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Description Issued for Permit

TYPICAL GENERAL NOTES

BE SOLICITED TO PROVIDE SPECIAL INSPECTIONS FOR THE SOILS AND TESTING FOR THE SOIL AND CONCRETE.

3. DUTIES OF THE SPECIAL INSPECTOR: A. THE SPECIAL INSPECTOR SHALL REVIEW ALL WORK LISTED BELOW FOR CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AND THE IBC.

B. THE SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE EOR, CONTRACTOR, OWNER AND BUILDING OFFICIAL ON A WEEKLY BASIS, OR MORE FREQUENTLY AS REQUIRED BY THE BUILDING OFFICIAL. ALL ITEMS NOT IN COMPLIANCE SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND IF UNCORRECTED, TO THE EOR AND THE BUILDING OFFICIAL. C. ONCE CORRECTIONS HAVE BEEN MADE BY THE CONTRACTOR, THE SPECIAL INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AS WELL AS THE APPLICABLE WORKMANSHIP PROVISIONS OF THE IBC.

4. DUTIES AND RESPONSIBILITIES OF THE CONTRACTOR: A. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER AND THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK. IN ACCORDANCE WITH IBC 1704.4, THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED WITHIN THIS "STATEMENT OF SPECIAL INSPECTIONS".

B. THE CONTRACTOR SHALL NOTIFY THE RESPONSIBLE SPECIAL INSPECTION THAT WORK IS READY FOR INSPECTION AT LEAST ONE WORKING DAY (24 HOURS MINIMUM) BEFORE SUCH INSPECTION IS REQUIRED. C. ALL WORK REQUIRING SPECIAL INSPECTION SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL IT HAS BEEN OBSERVED BY THE SPECIAL INSPECTOR. 5. PLEASE SEE THE "SPECIAL INSPECTION SCHEDULE" FOR THE TYPES, EXTENTS AND FREQUENCY OF SPECIFIC ITEMS REQUIRING SPECIAL INSPECTIONS AND STRUCTURAL TESTS AS PART OF THIS PROJECT.

WIND-RESISTING COMPONENTS (1705.11.3)

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR FASTENING OF THE FOLLOWING SYSTEMS AND COMPONENTS: 1. ROOF COVERING, ROOF DECK AND ROOF FRAMING CONNECTIONS. 2. EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGMS AND FRAMING

6. REFER TO ARCHITECTURAL AND/OR MEP DRAWINGS FOR ADDITIONAL SPECIAL INSPECTION REQUIRED. DUDLEY ENGINEERING HAS LISTED THE STRUCTURAL SPECIAL INSPECTIONS AND TESTING.

REQUIRED VERIFICATION AND INSPECTION OF GRADING AND DRAINAGE FOR FOUNDATIONS ON EXPANSIVE SOILS

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
AFTER BUILDING CONSTRUCTION AND LANDSCAPING HAVE BEEN COMPLETED, FINAL GRADES SHALL BE VERIFIED TO DOCUMENT REQUIRED DRAINAGE	-	Х	YES
AFTER BUILDING CONSTRUCTION AND LANDSCAPING HAVE BEEN COMPLETED, DOWNSPOUTS SHALL BE INSPECTED TO CONFIRM CONFORMANCE.	-	Х	YES
GRADES AROUND THE STRUCTURE SHALL BE PERIODICALLY INSPECTED AND ADJUSTED AS PART OF THE BUILDING'S MAINTENANCE PROGRAM	-	X	YES
PLUMBING LEAK "HYRDROSTATIC" TEST PERFORMED BY A LICENSED PLUMBER. TEST TO OCCUR AFTER ROUGH PLUMBING INSTALL	-	X	YES
WHERE PAVING/FLATWORK ABUT THE FOUNDATION, A MAINTENANCE PROGRAM SHALL BE ESTABLISHED TO EFFECTIVELY SEAL AND MAINTAIN JOINTS AND PREVENT SURFACE WATER INFILTRATION.	-	Х	YES

REQUIRED VERIFICATION AND INSPECTION OF SOILS (TABLE 1705.6)

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	-	X	YES
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIALS	-	Х	YES
PERFORM CLASSIFICATION AND TESTING OF COMPACTED MATERIALS	-	Х	YES
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	Х	-	YES
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THE SITE HAS BEEN PREPARED PROPERLY	-	X	YES

REQUIRED VERIFICATION AND INSPECTION OF WOOD CONSTRUCTION (§1705.5)

		•	
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
PREFABRICATED WOOD STRUCTURAL ELEMENTS (METAL PLATE CONNECTED WOOD TRUSSES) FABRICATION AND IMPLEMENTATION PROCEDURES (NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION	-	Х	YES
A. INSPECT GRADE AND THICKNESS OF WOOD STRUCTURAL PANEL SHEATHING. B. VERIFY NOMINAL SIZE OF FRAMING MEMBERS AT ADJOINING PANEL EDGES, THE NAILS OR STAPLE DIAMETER AND LENGTH, THE NUMBER OF FASTENER LINES AND THAT THE SPACING BETWEEN FASTENERS IN EACH LINE AND AT EDGE MARGINS AGREES WITH THE APPROVED BUILDING PLANS	-	Х	NO
METAL-PLATE-CONNECTED WOOD TRUSSES SPANNING 60 FT OR GREATER A. VERIFY THAT TEMPORARY INSTALLATION RESTRAINT/BRACING AND THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAIN/BRACING ARE INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE	-	Х	NO
INSPECTION OF NAILING, BOLTING, ANCHORING AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC / MAIN WIND FORCE RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR WALLS AND HOLD-DOWNS.	-	Х	YES
MOISTURE CONTENT OF LOAD BEARING WOOD FRAMING: • MOISTURE CONTENT JUST PRIOR TO INSTALLING SHEET ROCK SHOULD BE AT OR BELOW 15%. SPECIAL ATTENTION SHALL BE PAID TO MEMBERS ORIENTED WITH THEIR VERTICAL AXIS PERPENDICULAR TO THE VERTICAL PLANE (PLATES, JOISTS, TRUSS CHORDS, ETC.)	-	Х	YES

REQUIRED VERIFICATION AND INSPECTION OF STRUCTURAL STEEL CONSTRUCTION (§1705.2.1)

STRUCTURAL STEEL - GENERAL
PECT THE FABRICATED OR ERECTED STEEL FRAME, AS APPROPRIATE, TO VERIFY COMPLIANCE WITH THE DETAIL DOCUMENTS, SUCH AS BRACES, STIFFENERS, MEMBER LOCATIONS AND PROPER APPLICATION OF JOINT
STRUCTURAL STEEL - ANCHOR RODS / EMBED PLATES

SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. AS A MINIMUM, THE DIAMETER, GRADE, TYPE AND LENGTH OF THE ANCHOR RODS OR EMBEDDED ITEM, AND THE EXTENT OR DEPTH OF EMBEDMENT INTO THE CONCRETE, SHALL BE VERIFIED PRIOR TO PLACEMENT OF CONCRETE.

STRUCTURAL STEEL - WELDS	S			
VERIFICATION AND INSPECTION	CON	TINUOUS	PERIODIC	REQUIRE
INSPECTION TASKS PRIOR TO WELDING (AISC 360 TABLE N5.4-1)				
WELDING PROCEDURE SPECIFICATION (WPS'S) AVAILABLE		Х	-	YES
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE		Х	-	YES
MATERIAL IDENTIFICATION (TYPE / GRADE)		-	Х	YES
WELDER IDENTIFICATION SYSTEM		-	Х	YES
FIT-UP GROOVE WELDS		-	Х	NO
CONFIGURATION AND FINISH OF ACCESS HOLES		-	Х	NO
FIT-UP FILLET WELDS		-	Х	YES
CHECK WELDING EQUIPMENT		-	Х	YES
INSPECTION TASKS DURING WELDING (AISC 360 TABLE N5.4-2)				
USE OF QUALIFIED WELDERS		-	Х	YES
CONTROL AND HANDLING OF WELDING CONSUMABLES		-	Х	YES
NO WELDING OVER CRACKED TACK WELDS		-	Х	YES
Environmental conditions (wind speed within limits, precipitation and temperature		-	X	YES
WPS FOLLOWED SETTINGS ON WELDING EQUIPMENT TRAVEL SPEED SELECTED WELDING MATERIALS SHIELDING GAS TYPE / FLOW RATE PREHEAT APPLIED INTERPASS TEMPERATURE MAINTAINED (MIN/ MAX) PROPER POSITION (F, V, H, OH)			X	YES
WELDING TECHNIQUES INTERPASS AND FINAL CLEANING EACH PASS WITHIN PROFILE LIMITATIONS EACH PASS MEET QUALITY REQUIREMENTS		-	X	YES
WELDS CLEANED		-	Х	YES
SIZE, LENGTH AND LOCATION OF WELDS		Х	-	YES
WELDS MEET VISUAL ACCEPTANCE CRITERIA CRACK PROHIBITION WELD / BASE-METAL FUSION CRATER CROSS SECTION WELD PROFILES WELD SIZE UNDERCUT POROSITY		X	-	YES
ARC STRIKES		Χ	-	YES
k-AREA		Х	-	YES
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)		Х	-	YES
REPAIR ACTIVITIES		Х	-	YES
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT MEMBER		Х	-	YES
		X	-	YES

	^	-	ILS
NON-DESTRUCTIVE TESTING OF WELDED JOIL	NTS		
FILLET WELDS:			
MT TEST A MINIMUM OF 10% OF THE LENGTH OF EACH FILLET WELD EXCEEDING 5/16".	-	Х	YES
PERIODIC MT TESTING OF REPRESENTATIVE FILLET WELDS 5/16" AND LESS BUT NEED NOT EXCEED 10% OF ALL SUCH WELDS, EXCEPT AS REQUIRED FOR HIGH REJECTION RATES AS INDICATED IN THE FOLLOWING PARAGRAPH.	-	X	YES
INCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS.	X	-	YES
PARTIAL JOINT PENETRATION (PJP) WELDS INCLUDING FLARE BEVEL WELDS			
MT TEST A MINIMUM OF 25% OF THE LENGTH OF EACH PJP WELD EXCEEDING 5/16" EFFECTIVE IHROAT.	-	Χ	YES
PERIODIC MT TESTING OF REPRESENTATIVE PJP WELDS 5/16" AND LESS BUT NEED NOT EXCEED 10% OF ALL SUCH WELDS, EXCEPT AS REQUIRED FOR HIGH REJECTION RATES AS INDICATED IN THE FOLLOWING PARAGRAPH.	-	X	YES
NCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS	Х	-	YES
COMPLETE JOINT PENETRATION (CJP) WELDS			
ALL CJP WELDS EXCEEDING 5/16" THICKNESS SHALL BE 100% UT TESTED PER AWS D1.1 CLAUSE 6 PART F. THE TESTING LABORATORY SHALL REVIEW THE CJP JOINTS TO DETERMINE WHERE GEOMETRY OR ACCESSIBILITY PRECLUDES THE USE OF STANDARD SCANNING PATTERNS PER AWS D1.1 CLAUSE 6 PART F. AT THESE LOCATIONS THE TESTING LABORATORY SHALL DEVELOP AND SUBMIT FOR APPROVAL A WRITTEN TESTING PROCEDURE IN ACCORDANCE WITH AWS D1.1 ANNEX S.	X	-	YES
PERIODIC MT TESTING OF REPRESENTATIVE CJP WELDS 5/16" AND LESS NOT TO EXCEED 10% OF ALL SUCH WELDS.	-	Х	YES
NCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO	Х	-	YES

STRUCTURAL STEEL HIGH-STRENGTH BOLTS (TURN-OF-NUT)

NOT BE CAUSE FOR REJECTION.

TURN-OF-NUT PRETENSIONING: THE INSPECTOR SHALL OBSERVE THE PRE-INSTALLATION VERIFICATION TESTING REQUIRED IN SECTION 8.2. SUBSEQUENTLY, IT SHALL BE ENSURED BY ROUTINE OBSERVATION THAT THE BOLTING CREW PROPERLY ROTATES THE TURNED ELEMENT RELATIVE TO THE UNTURNED ELEMENT BY THE AMOUNT SPECIFIED IN TABLE 8.2. ALTERNATIVELY, WHEN FASTENER ASSEMBLIES ARE MATCH-MARKED AFTER THE INITIAL FIT-UP OF THE JOINT BUT PRIOR TO PRETENSIONING, VISUAL INSPECTION AFTER PRETENSIONING IS PERMITTED IN LIEU OF ROUTINE OBSERVATION. NO FURTHER EVIDENCE OF CONFORMITY IS REQUIRED. A PRETENSION THAT IS GREATER THAN THE VALUE SPECIFIED IN TABLE 8.1 SHALL NOT BE CAUSE FOR REJECTION. A ROTATION THAT EXCEEDS THE REQUIRED VALUES, INCLUDING TOLERANCE, SPECIFIED IN TABLE 8.2 SHALL

	TABLE 8.2: NUT ROTATIO	N FROM SNUG-TIGHT CONDITION FOR	? Turn-of-nut pretensioning	
BOLT LENGTH	D	ISPOSITION OF OUTER FACES OF BOLTI	ED PARTS	
	BOTH FACE NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS	
LENGTH≤ 4d _b	1/3 TURN	1/2 TURN	2/3 TURN	
4d _b < LENGTH ≤ 8d _b	1/2 TURN	2/3 TURN	5/6 TURN	
8d _b < LENGTH ≤ 12d _b	2/3 TURN	5/6 TURN	1 TURN	

a. NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR ALL REQUIRED ROTATIONS, THE TOLERANCE IS PLUS 60° AND MINUS 30° b. APPLICABLE TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

STRUCTURAL STEEL HIGH-STRENGTH BOLTS (SNUG-TIGHT) - INSPECTION TASKS PRIOR TO BOLTING								
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED					
DOCUMENTATION AND ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	-	Х	YES					

STRUCTURAL STEEL HIGH-STRENGTH BOLTS (SNUG-TIGHT) - INSI	PECTION TASKS DUR	ING BOLTING	
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
DOCUMENTATION OF ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS.	-	Х	YES











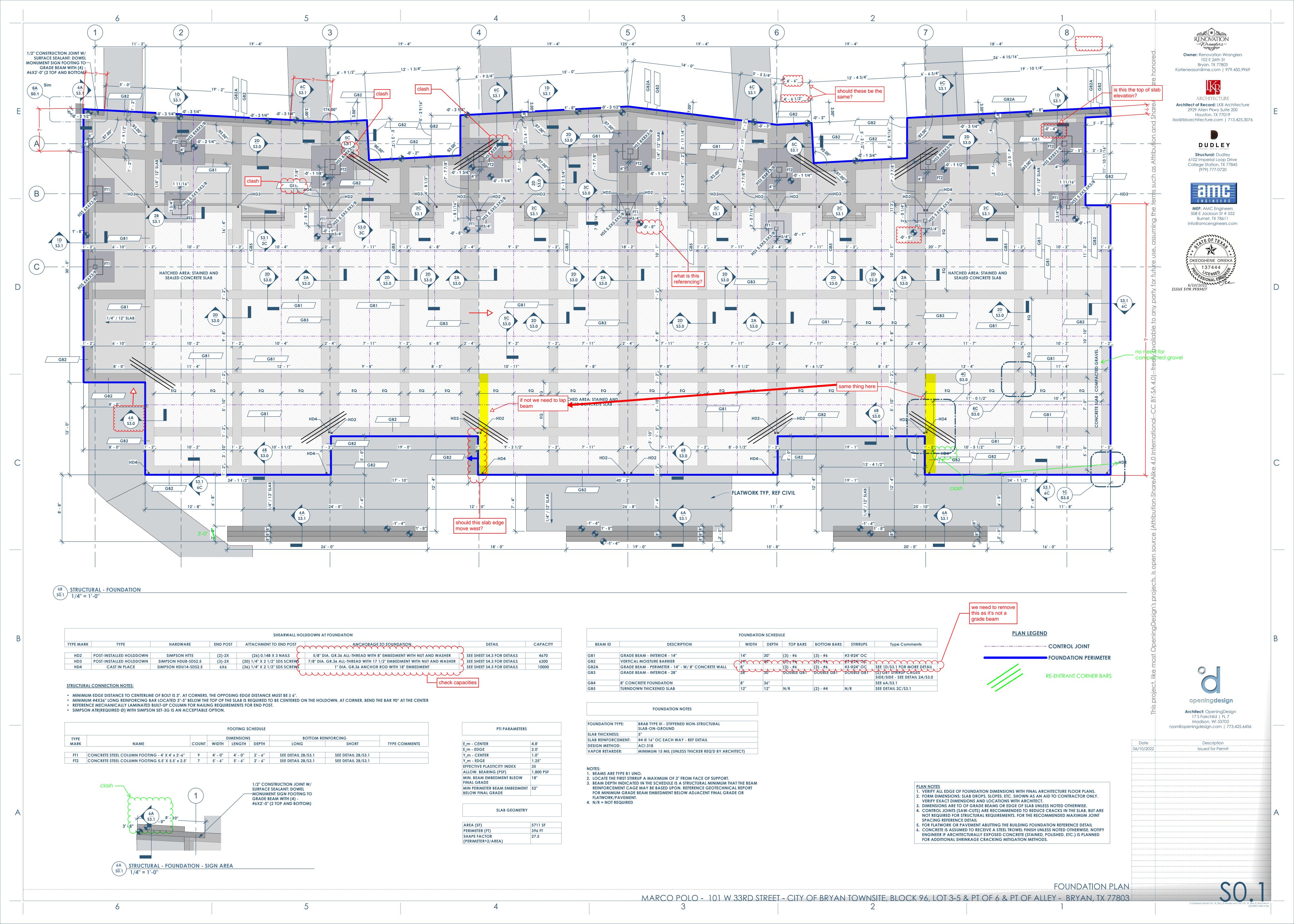
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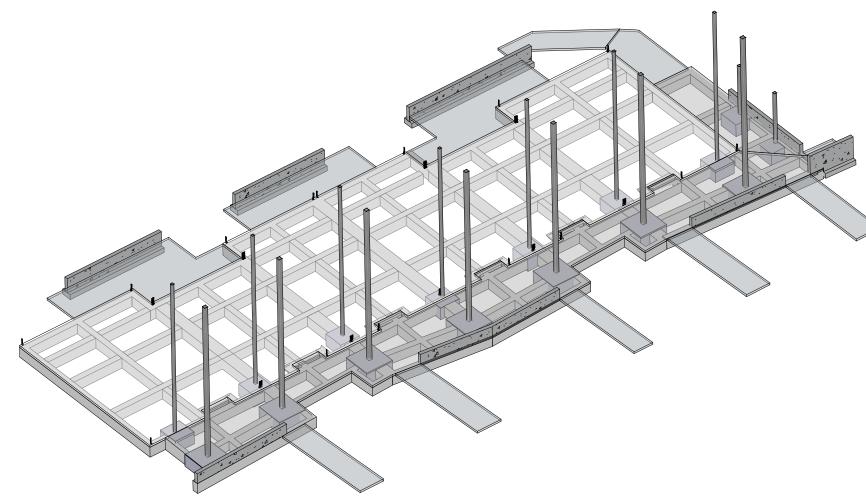
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STATEMENT OF SPECIAL INSPECTIONS

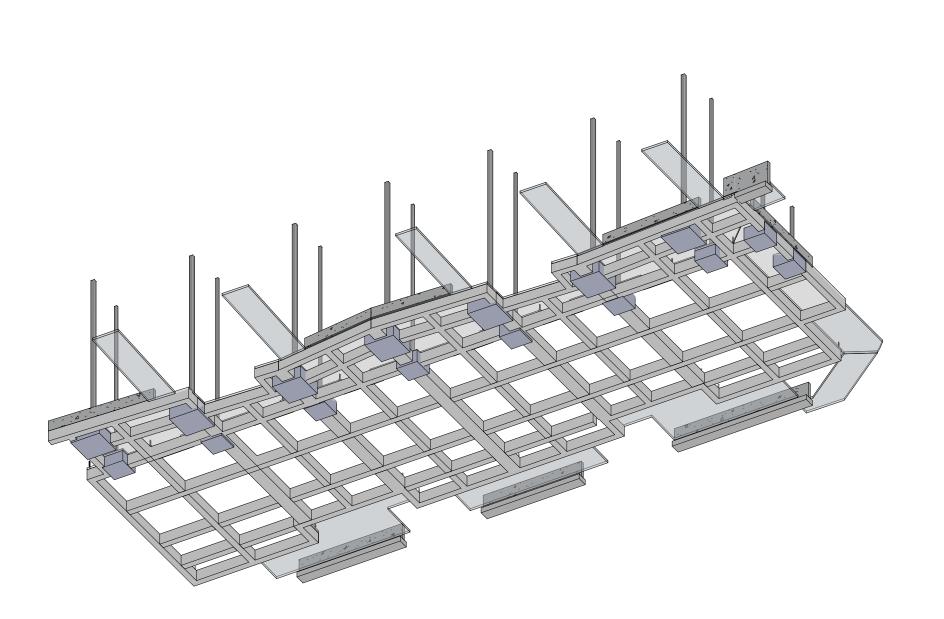
ENSURE ACCEPTABLE WELDS.



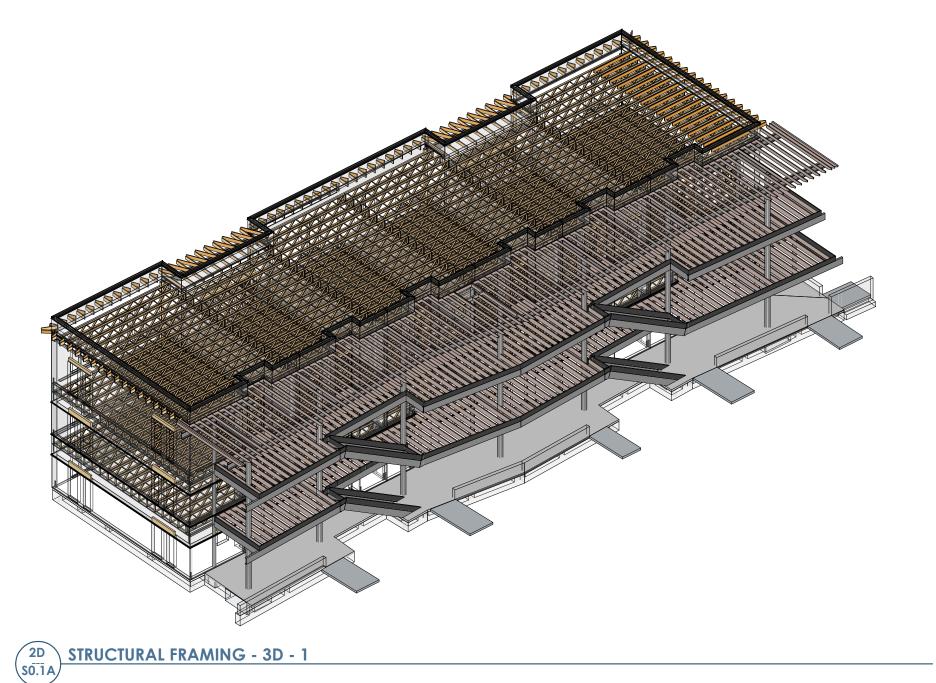
- 1. SUBGRADE IMPROVEMENT: A. PROVIDE MINIMUM 2 FEET SELECT FILL TO TOP OF BUILDING PAD ELEVATION. THE SELECT FILL PAD MUST BE OF UNIFORM THICKNESS UNO BY GEOTECHNICAL ENGINEER.
- 2. SITE PREPARATION: A. SOFT SOILS SHOULD BE REMOVED UNTIL FIRM SOIL IS REACHED. THE SOFT SOILS CAN BE AERATED AND PLACED BACK IN SIX-INCH LOOSE LIFTS AND COMPACTED TO 95% AS SPECIFIED BY ASTM D-698. TREE STUMPS, TREE roots, old slabs, old foundations and existing pavements should be removed from the STRUCTURE AREA. IF THE TREE STUMPS AND ROOTS ARE LEFT IN PLACE, SETTLEMENT AND TERMITE INFESTATION MAY OCCUR. ONCE A ROOT SYSTEM IS REMOVED, A VOID IS CREATED IN THE SUBSOIL. IT IS RECOMMENDED TO FILL THESE VOIDS WITH STRUCTURAL FILL OR CEMENT-STABILIZED SAND AND COMPACT TO 95% AS SPECIFIED
- B. ANY LOW-LYING AREAS INCLUDING RAVINES, DITCHES, SWAMPS, ETC. SHOULD BE FILLED WITH STRUCTURAL FILL AND PLACED IN EIGHT-INCH LIFTS. EACH LIFT SHOULD BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS SPECIFIED BY ASTM D-698.
- C. THE EXPOSED SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS or per subgrade improvement requirements. The subgrade should then be compacted to 95% of THE MAXIMUM DENSITY AS DETERMINED BY THE STANDARD MOISTURE DENSITY RELATIONSHIP (ASTM D-698). IN THE EVENT THAT THE UPPER SIX (6) INCHES CANNOT BE COMPACTED DUE TO EXCESSIVE MOISTURE, WE RECOMMEND THAT THESE SOILS BE EXCAVATED AND REMOVED OR CHEMICALLY STABILIZED TO PROVIDE A FIRM BASE FOR FILL PLACEMENT. PROOF ROLLING SHOULD BE PERFORMED USING A HEAVY TIRED LOADED
- TRUCK OR PNEUMATIC RUBBER-TIRED WEIGHING 20 TONS. D. THE SELECT FILL SOILS SHALL BE LIMITED TO THE FOOTPRINT OF THE FOUNDATION. IF OVERBUILD IS REQUIRED, INSTALL HORIZONTAL CLAY CAP TO COVER THE FILL OVERBUILD.
- BEYOND THE PERIMETER OF THE STRUCTURE. E. THE FLOOR SLAB SHOULD BE PLACED AS SOON AS POSSIBLE AFTER THE BUILDING PAD IS PREPARED. IF THE BUILDING PAD IS LEFT EXPOSED TO RAINFALL, PERCHED GROUNDWATER CONDITIONS MAY DEVELOP WHICH WILL UNDERMINE THE INTEGRITY OF THE FLOOR SLAB. ALL TRENCHES (WATER, CABLE, ELECTRICAL) SHOULD BE PROPERLY BACKFILLED AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITIES. SAND OR PERMEABLE MATERIALS SHOULD NOT BE USED AS BACKFILL. IMPROPERLY BACKFILLED AND IMPROPERLY COMPACTED TRENCH, IF LEFT EXPOSED WILL ALSO BE ANOTHER SOURCE FOR PERCHED GROUNDWATER CONDITIONS. IN GENERAL PERCHED WATER TENDS TO BE TRAPPED WITHIN THE FILL. THE TRAPPED GROUNDWATER TENDS TO SOFTEN THE SUBGRADE. POSITIVE DRAINAGE SHOULD BE MAINTAINED ACROSS THE ENTIRE BUILDING PAD. f. a qualified soil technician should monitor all earthwork operations, field density tests should BE CONDUCTED ON EACH LIFT USING A NUCLEAR DENSITY GAUGE. THE GAUGE SHOULD BE CALIBRATED EVERY DAY. PRIOR TO FIELD DENSITY TESTS, A 50-POUND SAMPLE FROM THE SUBGRADE SOILS SHOULD BE OBTAINED. A SIMILAR SAMPLE SHOULD BE OBTAINED FROM THE FILL SOILS. A STANDARD MOISTURE DENSITY RELATIONSHIP (ASTM D-698) SHOULD BE PERFORMED ON EACH SAMPLE IN ORDER TO OBTAIN AN OPTIMUM MOISTURE CONTENT AND A MAXIMUM DRY DENSITY. THE FIELD DENSITY TESTS SHOULD BE COMPARED TO THESE RESULTS EVERY TIME THE SOILS ARE TESTED IN THE FIELD. 3. LOW SWELL POTENTIAL STRUCTURAL FILL (SELECT FILL)
- A. LOW SWELL POTENTIAL SELECT FILL SHOULD CONSIST OF COHESIVE SOILS FREE OF ORGANICS OR OTHER DELETERIOUS MATERIALS AND SHOULD HAVE A PLASTICITY INDEX NOT LESS THAN 7 OR MORE THAN 20. SANDY CLAYS ARE RECOMMENDED FOR USE. THE LOW SWELL POTENTIAL SELECT FILL SHOULD BE CLEANED AND FREE OF ORGANIC MATTER OR OTHER DELETERIOUS MATERIAL. THE FILL SHOULD BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698 (STANDARD PROCTOR). THE MOISTURE CONTENT AT THE TIME OF COMPACTION SHOULD BE -2%, +3% OF THE OPTIMUM VALUE AS DEFINED BY ASTM D 698. THE REFERENCED MOISTURE CONTENT AND DENSITY SHOULD BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
- 4. HORIZONTAL MOISTURE BARRIER A. WHERE THE PERIMETER OF THE FOUNDATION DOES NOT HAVE LOW PERMEABILITY FLATWORK (SIDEWALK, PAVEMENT, PATIO, ETC.) ABUTTING THE FOUNDATION, A HORIZONTAL MOISTURE BARRIER VIA CLAY CAP AND VAPOR RETARDER MUST BE PROVIDED.
- a. CLAY CAP: A MINIMUM 5' WIDE LOW PERMEABILITY CLAY "CAP" SHALL BE PLACED ALONG THE EXTERIOR OF THE FOUNDATION TO HELP MINIMIZE MOISTURE INFILTRATION INTO THE SELECT FILL SOIL PADS. THE LOW PERMEABILITY, 1-FOOT THICK CLAY "CAP" SHALL HAVE A MINIMUM PLASTICITY INDEX (PI) OF 30. b. VAPOR RETARDER: BELOW THE CLAY CAP, A MIN 15 MIL VAPOR RETARDER MUST BE PROVIDED ON A MINIMUM 5% SLOPE. RETARDER MUST BE SECURED TO THE FOUNDATION.
- 5. DRAINAGE A. ROOF DRAINAGE SHOULD BE COLLECTED BY A SYSTEM OF GUTTERS AND DOWN SPOUTS AND TRANSMITTED A MINIMUM DISTANCE OF 5' AWAY FROM THE FOUNDATION TO AN AREA WITH POSITIVE DRAINAGE AWAY FROM THE FOUNDATION, PREFERABLY TO A PAVED SURFACE WHERE WATER CAN DRAIN RAPIDLY AWAY FROM THE STRUCTURE. SIDEWALKS, PARKING AREAS, BUILDING ACCESS DRIVES, AND THE GENERAL GROUND SURFACE SHOULD BE SLOPED SO THAT WATER WILL DRAIN AWAY FROM THE STRUCTURE. WATER SHOULD NOT BE ALLOWED TO POND NEAR THE BUILDING FOUNDATIONS.
- B. FINAL GRADES SHALL SLOPE A MINIMUM OF 5% FOR THE FIRST 10 FEET AWAY FROM THE FOUNDATION IN ALL DIRECTIONS. THIS SLOPE SHALL OCCUR IN THE SELECT FILL OR IN-SITU SOIL. MERELY SLOPING TOPSOIL IS NOT SUFFICIENT.
- A. AVOID THE USE OF METAL EDGING OR OTHER DAMMING DEVICES WITHIN FIVE FEET OF THE FOUNDATION. THE ROOTS OF TREES AND LARGE PLANTS REMOVE LARGE QUANTITIES OF WATER FROM THE SOIL. IF THESE TREES AND SHRUBS ARE NEAR THE FOUNDATION AND IF SUFFICIENT WATER IS NOT SUPPLIED, THE SOILS MAY SHRINK IF EXPANSIVE, CAUSING SUBSIDENCE IN THE FOUNDATION. DURING DRY PERIODS, ENOUGH WATER SHOULD BE SUPPLIED TO TREES TO MINIMIZE SHRINKING OF EXPANSIVE SOILS AROUND THEM. MOST OF THE IRRIGATION WATER SHOULD BE APPLIED WELL AWAY FROM THE FOUNDATION TO ATTRACT THE TREE ROOTS IN THAT DIRECTION. WHEN TREES MATURE TO THE POINT OF SHADING THE ENTIRE LOT, REGULAR PRUNING WILL BE NEEDED TO REDUCE THEIR WATER UPTAKE. LANDSCAPING (PLANTS, SHRUBS, FLOWERS, ETC.) SHOULD NOT TRAP WATER AGAINST THE FOUNDATION. PROVIDE A SLOPE IN SOILS BELOW LANDSCAPE BEDDING AND IN THE BEDDING AWAY FROM THE FOUNDATION. ALTERNATIVELY, PROVIDE SWALES AROUND AND THROUGH THE LANDSCAPING TO DRAIN WATER AWAY. PROVIDE UNIFORM GROUND COVER AROUND THE FOUNDATION. THIS WILL HELP KEEP THE MOISTURE EVAPORATION RATE UNIFORM. IN AREAS THAT ARE NOT PLANTED, USE MULCH. EXTEND THE GROUND COVER AT LEAST FIVE FEET FROM THE FOUNDATION.
- B. ANY/ALL TREES SHALL BE PLANTED AT A MINIMUM DISTANCE EQUIVALENT TO THE HEIGHT OF THE TREE OR THE DRIP LINE PLUS 10 FEET WHICHEVER IS GREATER. 7. SOIL MOISTURE
- A. EXPANSIVE SOILS HEAVE AND SUBSIDE DUE TO CHANGES IN MOISTURE CONTENT. CHANGES IN MOISTURE CONTENT CAN CAUSE VERY LARGE CHANGES IN SOIL VOLUME WHEN GOING FROM A DRY TO A SATURATED CONDITION, AND VICE VERSA. THIS MOVEMENT DOES NOT MEAN THE FOUNDATION IS IMPROPERLY DESIGNED OR THAT IT HAS FAILED. THE FOUNDATION DESIGN ENGINEER CANNOT CONTROL THE MOISTURE CONTENT OF THE SOIL, BUT OFTEN THE OWNER/TENANT CAN. UNIFORMITY IS THE KEY: UNIFORM MOISTURE CONTENT IN THE SOIL, UNIFORMLY MAINTAINED IN ALL AREAS AROUND THE FOUNDATION. IF CHANGES IN MOISTURE CONTENT ARE UNIFORM, THEN MOVEMENT OF THE FOUNDATION WILL BE UNIFORM AND LESS DISTRESS WILL BE CREATED IN THE STRUCTURE. IF CHANGES IN MOISTURE CONTENT ARE NON-UNIFORM, THEN THERE MAY BE DIFFERENTIAL MOVEMENT IN THE FOUNDATION. DIFFERENTIAL MOVEMENT CAN CAUSE GREATER (AND MORE OBVIOUS) DISTRESS IN THE STRUCTURE. LEAKING POOLS, LEAKING PLUMBING LINES, LEAKING DRAINS, DRIPPING FAUCETS, DRIPPING AIR CONDITIONING CONDENSATE LINES, AND MISDIRECTED WATER FROM CLOGGED AND BROKEN GUTTERS AND DOWNSPOUTS CAN CAUSE LOCAL HIGH MOISTURE CONTENTS THAT CAN RESULT IN DIFFERENTIAL MOVEMENT IN AREAS OF EXPANSIVE SOILS. THESE CONDITIONS SHOULD BE REMEDIED AS SOON AS POSSIBLE. TREES IN OR NEAR THE FOOTPRINT OF THE FOUNDATION, EITHER REMOVED OR PLANTED DURING CONSTRUCTION, CAUSE THE MAJORITY OF FOUNDATION PROBLEMS REQUIRING REPAIR IN THIS AREA. TREES REMOVED DURING CONSTRUCTION TEND TO CAUSE HEAVE OF EXPANSIVE SOILS DURING THE FIRST FEW YEARS, WITH INITIAL DISTRESS OFTEN EVIDENT AT THE TIME OF MOVE-IN. TREES PLANTED DURING OR AFTER CONSTRUCTION TEND TO CAUSE SUBSIDENCE OF EXPANSIVE SOILS. HOWEVER, SIGNIFICANT SUBSIDENCE DISTRESS WILL USUALLY NOT OCCUR FOR TEN TO TWENTY YEARS AS THE TREES MATURE. 8. CLIMATE
- A. DURING PERIODS OF DRY WEATHER, THE SOIL AROUND THE FOUNDATION SHOULD BE IRRIGATED IF THE BUILDING IS LOCATED IN AN AREA WHERE EXPANSIVE SOILS ARE KNOWN TO OCCUR. THE MOST COMMONLY USED IRRIGATION SYSTEM IS ABOVEGROUND TIMED SPRINKLERS WITH A MANUAL OVERRIDE SO THEY CAN BE TURNED OFF IN RAINY WEATHER. AN AUTOMATIC BELOWGROUND IRRIGATION SYSTEM THAT SENSES THE MOISTURE CONTENT OF THE SOIL MAY ALSO BE USED. TEND TO KEEP THE IRRIGATION SYSTEM SET ON "MANUAL", AND ONLY USE IT IN DRIER PERIODS WHEN WILTING OF THE LAWN GRASSES AND OTHER VEGETATION OCCURS. THE IRRIGATION SHOULD BE DONE AT LEAST ONE TO TWO FEET AWAY FROM THE FOUNDATION, AND THEN LIGHTLY SO THAT TREE ROOTS ARE NOT ATTRACTED THERE. DO NOT ALLOW SPRINKLERS TO SPRAY WATER AGAINST THE STRUCTURE. IN EXTENDED DRY PERIODS, SHOULD THE SOIL CRACK AND PULL AWAY FROM THE FOUNDATION, DO NOT WATER DIRECTLY INTO THE GAP.
- UTILITIES A. CONNECTIONS FOR UTILITIES (PLUMBING, ELECTRICAL, GAS, ETC.) THAT ARE UNDERNEATH, GO THROUGH OR ARE ATTACHED TO THE FOUNDATION SHALL HAVE BE FLEXIBLE TO ACCOMMODATE FOUNDATION MOVEMENT OF AT LEAST 2". ALL DRAINAGE PIPING, AND GENERAL PLUMBING SYSTEMS ASSOCIATED WITH THE FOUNDATION OR IN PROXIMITY TO THE FOUNDATION SHALL BE LEAK TESTED FOLLOWING INSTALLATION AND ON AN ANNUAL BASIS.
- 10. ARCHITECTURAL FINISHES A. TILE FLOORS SHALL BE JOINTED FREQUENTLY TO MINIMIZE CRACKING.
- B. WALL COVERINGS SHALL BE JOINTED ON EACH SIDE OF DOOR AND WINDOW OPENINGS. C. ALL ARCHITECTURAL FINISHES SHALL MIRROR CONTROL, EXPANSION OR CONSTRUCTION JOINTS IN THE FOUNDATION.

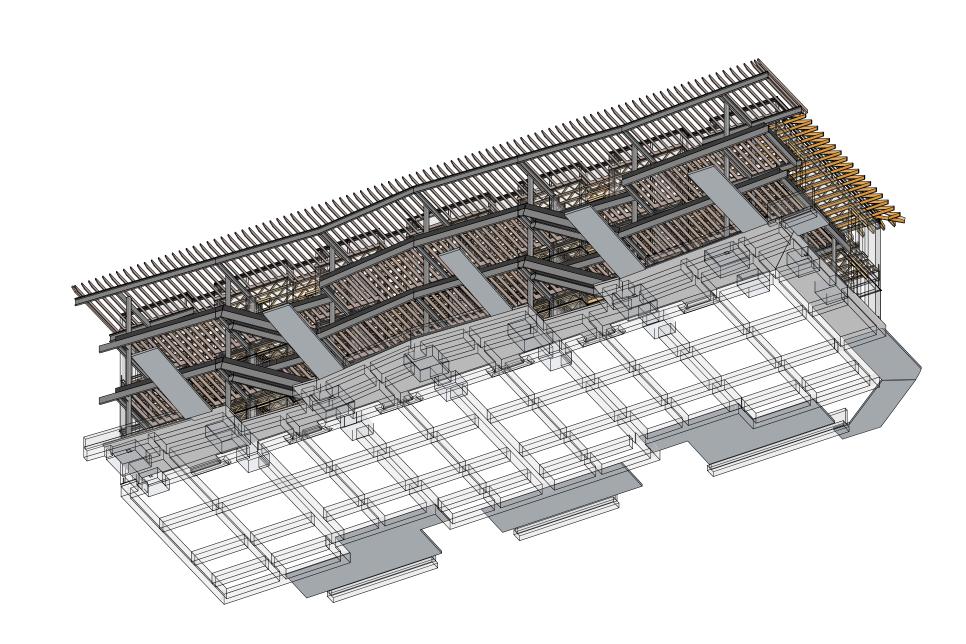






4B STRUCTURAL FOUNDATION - 3D - 2





2B STRUCTURAL FRAMING - 3D - 2



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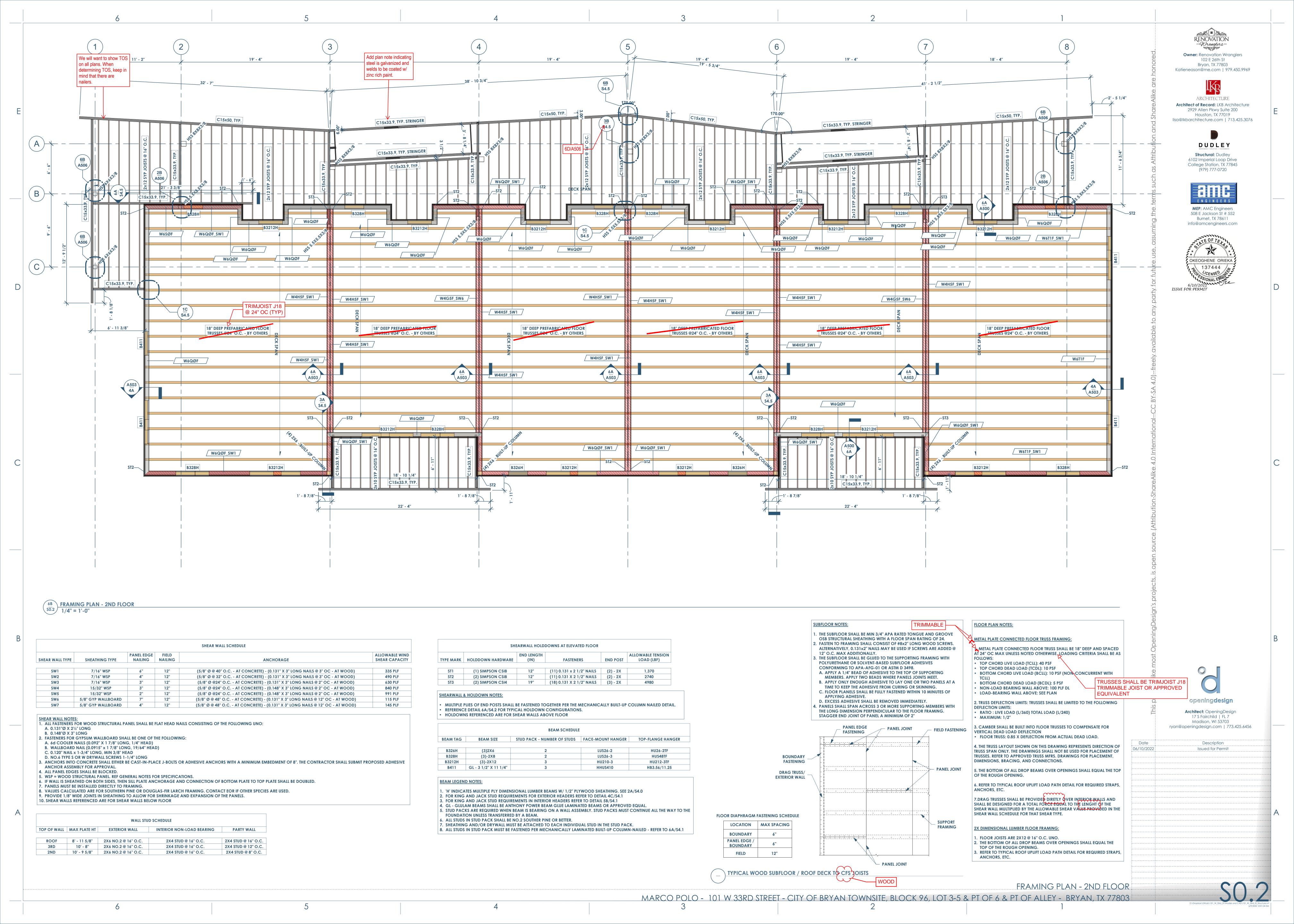
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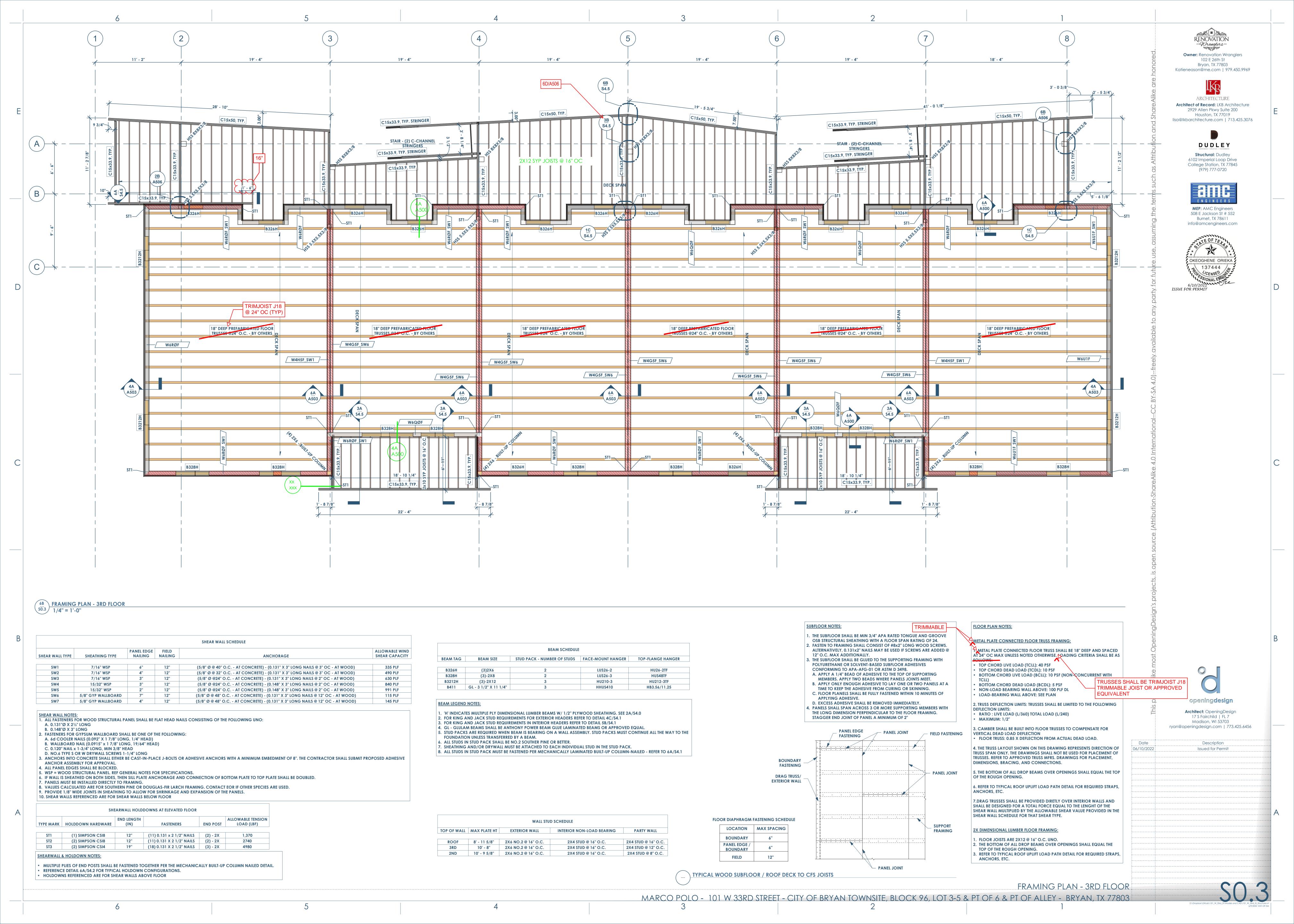
FOUNDATION NOTES AND 3D

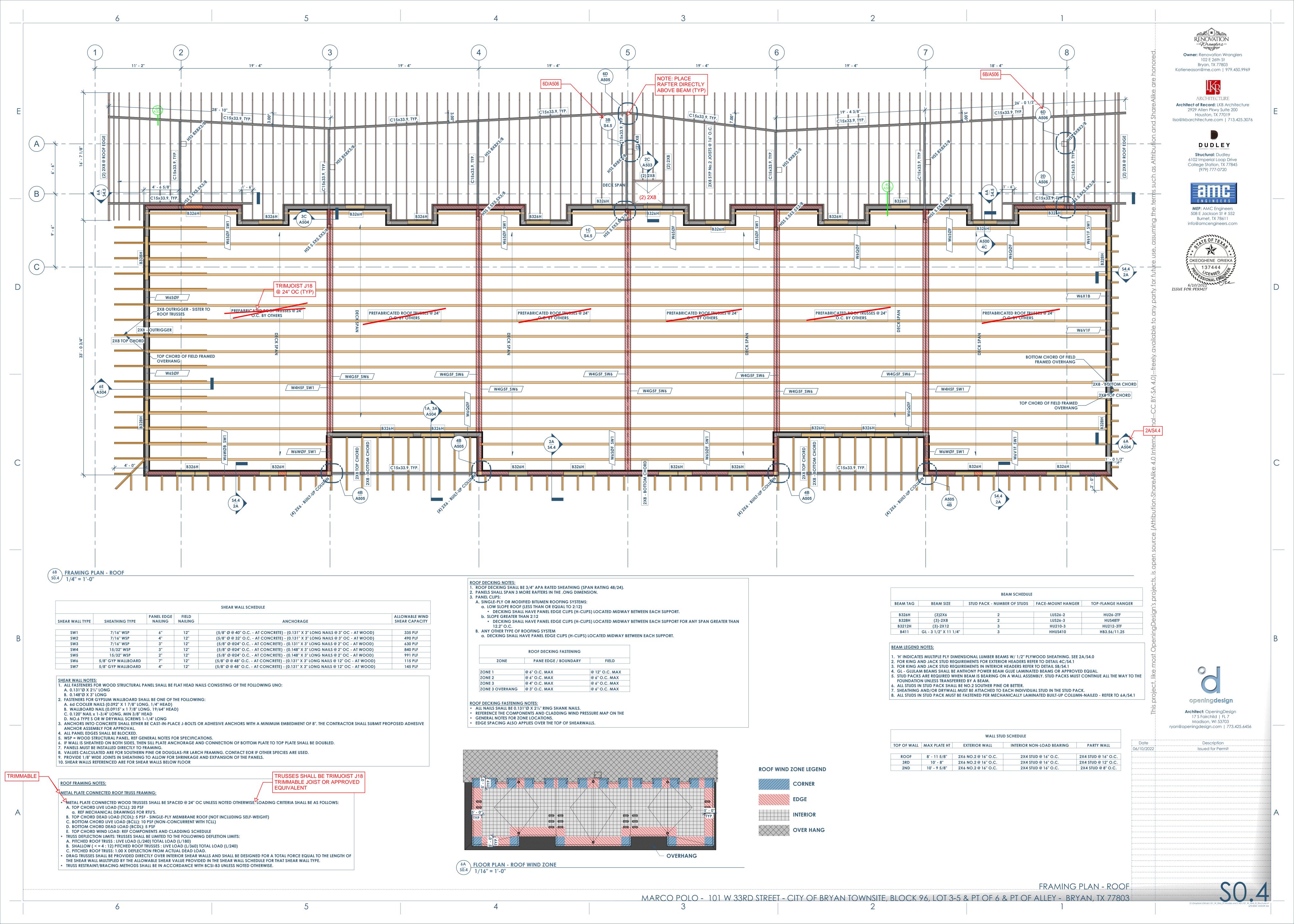
MARCO POLO - 101 W 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

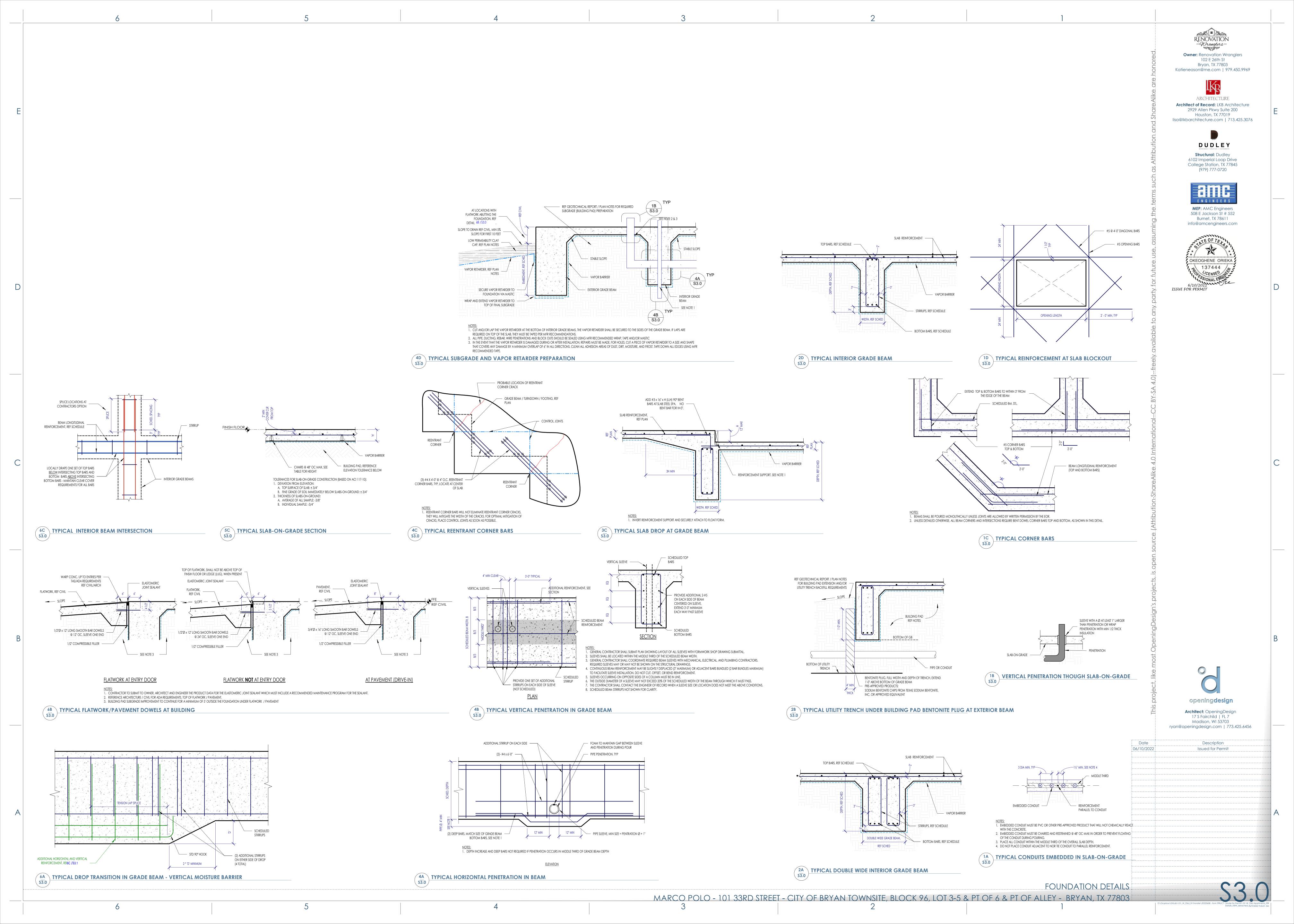
Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703 ryan@openingdesign.com | 773.425.6456

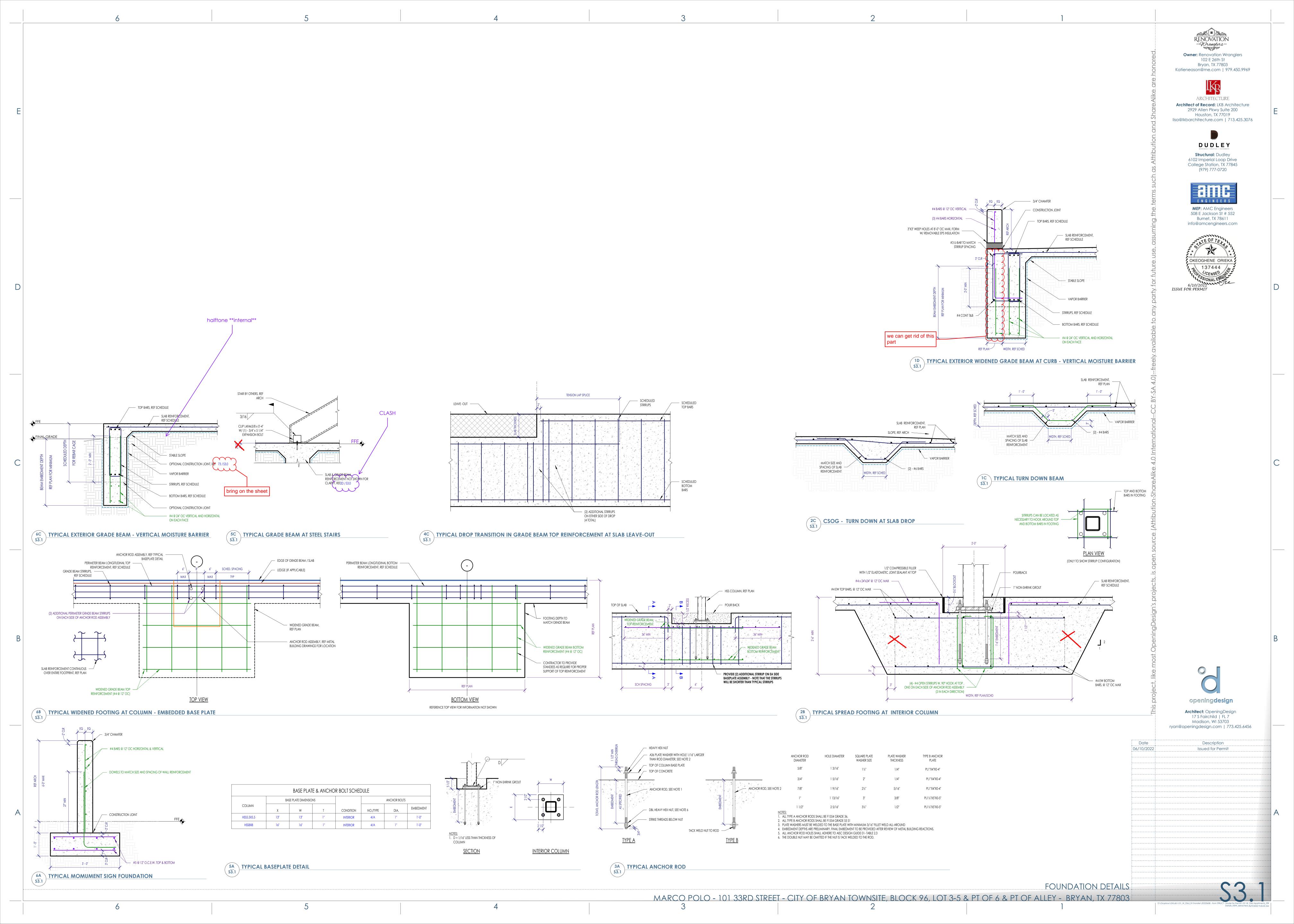
Issued for Permit











TYPICAL FASTENING SCHEDULE							
CONNECTION ID	CONNECTION TYPE	FASTENING	FASTENING ORIENTATION				
1	JOIST TO SILL OR GIRDER	(3) - 0.131"Ø X 3"	TOENAIL				
2	SOLE PLATE TO JOIST OR BLOCKING	0.148"Ø X 3½" NAILS @ 12" OC NAILS	FACE NAIL				
3	TOP PLATE TO STUD	(3) - 0.131"Ø X 3" NAILS	END NAIL				
4	STUD TO SOLE PLATE - OPTION 1	[2] - 16d COMMON (3) - 0.131"Ø X 3" NAILS	END NAIL				
5	STUD TO SOLE PLATE - OPTION 2	(4) 0.131"Ø X 3" NAILS	TOENAIL				
6	DOUBLE/MULTIPLE STUDS	REFERENCE DETAIL 6A / \$4.1	FACE NAIL				
7	DOUBLE TOP PLATES	0.131"Ø X 3" NAILS @ 12" OC	FACE NAIL				
8	DOUBLE TOP PLATE SPLICE	REFERENCE DETAIL 3A / \$4.1	FACE NAIL				
9	BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE	(3) - 0.131"Ø X 3" NAILS	TOENAIL				
10	RIM JOIST TO TOP PLATE	0.131"Ø X 3" NAILS @ 6" OC	TOENAIL				
11	CEILING JOIST TO TOP PLATE	(5) - 0.131"Ø X 3" NAILS	TOENAIL				
12	CEILING JOIST LAP OVER PARTITIONS	(4) - 0.131"Ø X 3" NAILS	FACE NAIL				
13	CEILING JOIST TO PARALLEL RAFTERS	(4) - 0.131"Ø X 3" NAILS	FACE NAIL				
14	RAFTER TO TOP PLATE	(3) - 0.131"Ø X 3" NAILS	TOENAIL				
15	BUILT-UP CORNER STUDS	0.131"Ø X 3" NAILS @ 16" OC	FACE NAIL				
16	BUILT-UP BEAMS	REFERENCE DETAIL 2A / S4.0	FACE NAIL				
17	COLLAR TIE TO RAFTER	(4) - 0.131"Ø X 3" NAILS	FACE NAIL				
18	JACK RAFTER TO HIP	(4) - 0.131"Ø X 3" NAILS	TOENAIL				
19	RAFTER TO RIDGE BOARD/BEAM	(3) - 0.131"Ø X 3" NAILS	TOENAIL				
20	BLOCKING B/T STUDS	(3) - 0.131"Ø X 3" NAILS EACH SIDE	TOENAIL				

1/6 JOIST DEPTH, MAX

MIDDLE THIRD

NOTCHING AND BORING ONLY ALLOWED IN

BORING AND NOTCHING NOT ALLOWED IN

MIDDLE THIRD

OUTER THIRD

OUTER THIRDS OF SPAN

TYPICAL WOOD FASTENING SCHEDULE

1/4 JOIST DEPTH, MAX ----

OUTER THIRD

ALLOWABLE NOTCHING AND BORING OF FLOOR JOISTS

6A WOOD NAILER TO TOP OF STRUCTURAL STEEL

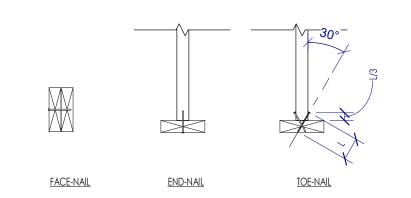
ZONES WHERE HORIZONTAL HOLES ARE PERMITTED, SEE NOTE 1

NOTES:

1. HOLE SIZE: THE HOLE DIAMETER SHALL NOT EXCEED 1½" OR D/10, WHICHEVER IS SMALLEST. 2. <u>VARIANCE:</u> FOR LARGER HOLE DIAMETERS' OR FOR HOLES OUTSIDE OF THE PERMITTED ZONES, WRITTEN PERMISSION MUST BE OBTAINED FROM THE EOR.

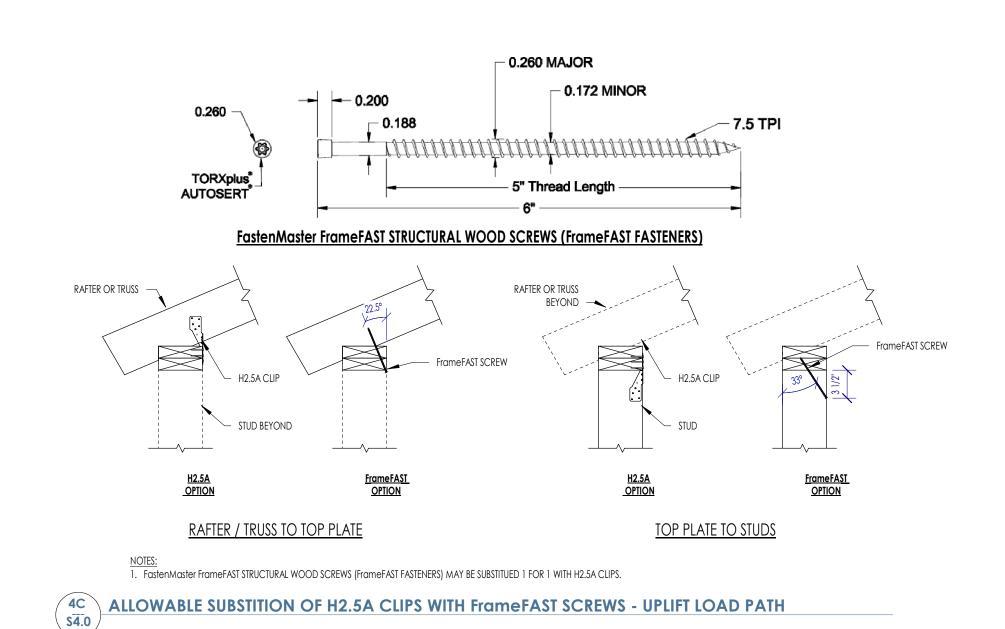
3. <u>LIMITATIONS:</u> THE ABOVE CRITERIA ONLY APPLY TO SIMPLY-SUPPORTED, UNIFORMLY LOADED GLUE LAMINATED BEAMS. FOR BEAMS THAT ARE EITHER CONTINUOUS ACROSS MULTIPLE SPANS OR THAT ARE SUPPORTING NON-UNIFORM LOADS, WRITTEN PERMISSION MUST BE OBTAINED FROM THE EOR.

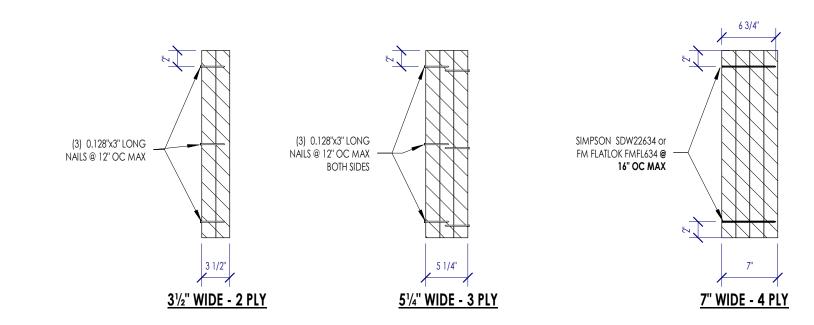
4E S4.0 ALLOWABLE HORIZONTAL HOLE LOCATIONS IN GLUE LAMINATED TIMBER BEAMS



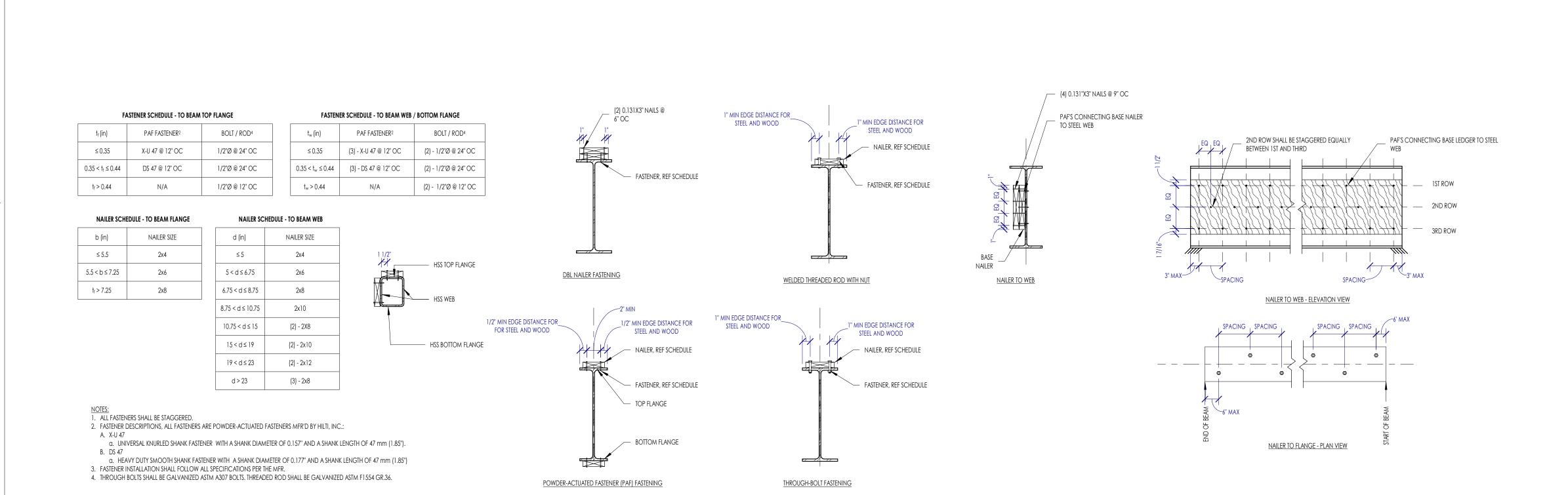
TYPICAL NAILING CONFIGURATIONS

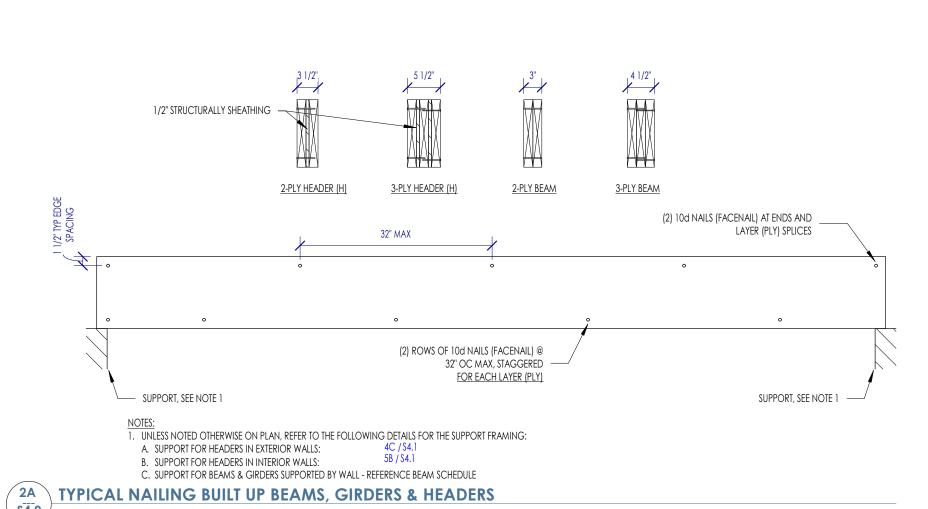
34.0





2C TYPICAL LVL MULTIPLE PLY FASTENING REQUIREMENTS





TYPICAL WOOD FRAMING DETAILS

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

opening design

Architect: OpeningDesign

17 S Fairchild | FL 7

Madison, WI 53703 ryan@openingdesign.com | 773.425.6456

> Description Issued for Permit

-Wranglers-Owner: Renovation Wranglers 102 E 26th St Bryan, TX 77803 Katieneason@me.com | 979.450.9969

ARCHITECTURE Architect of Record: LKB Architecture 2929 Allen Pkwy Suite 200

Houston, TX 77019 lisa@lkbarchitecture.com | 713.425.3076

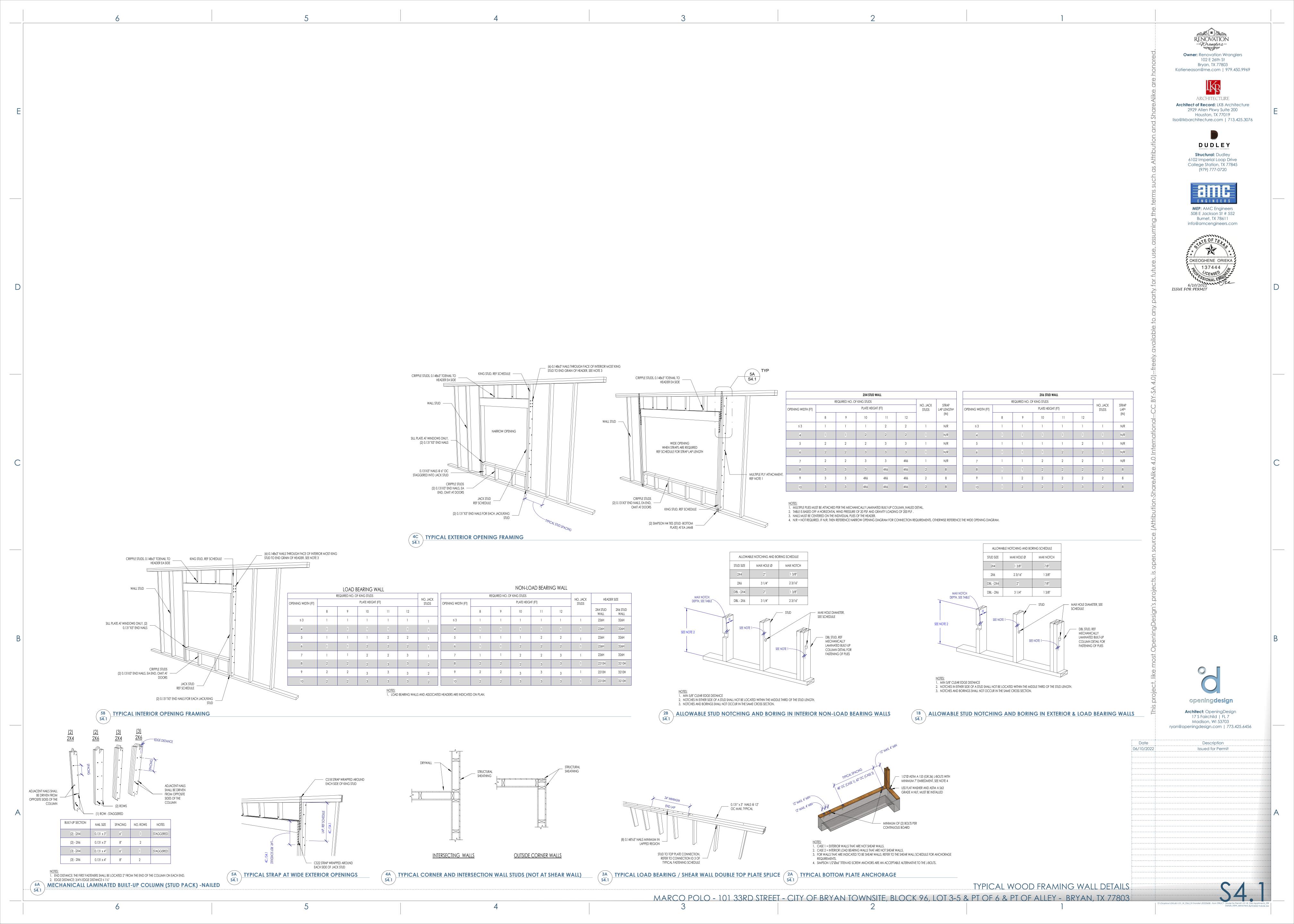
DUDLEY

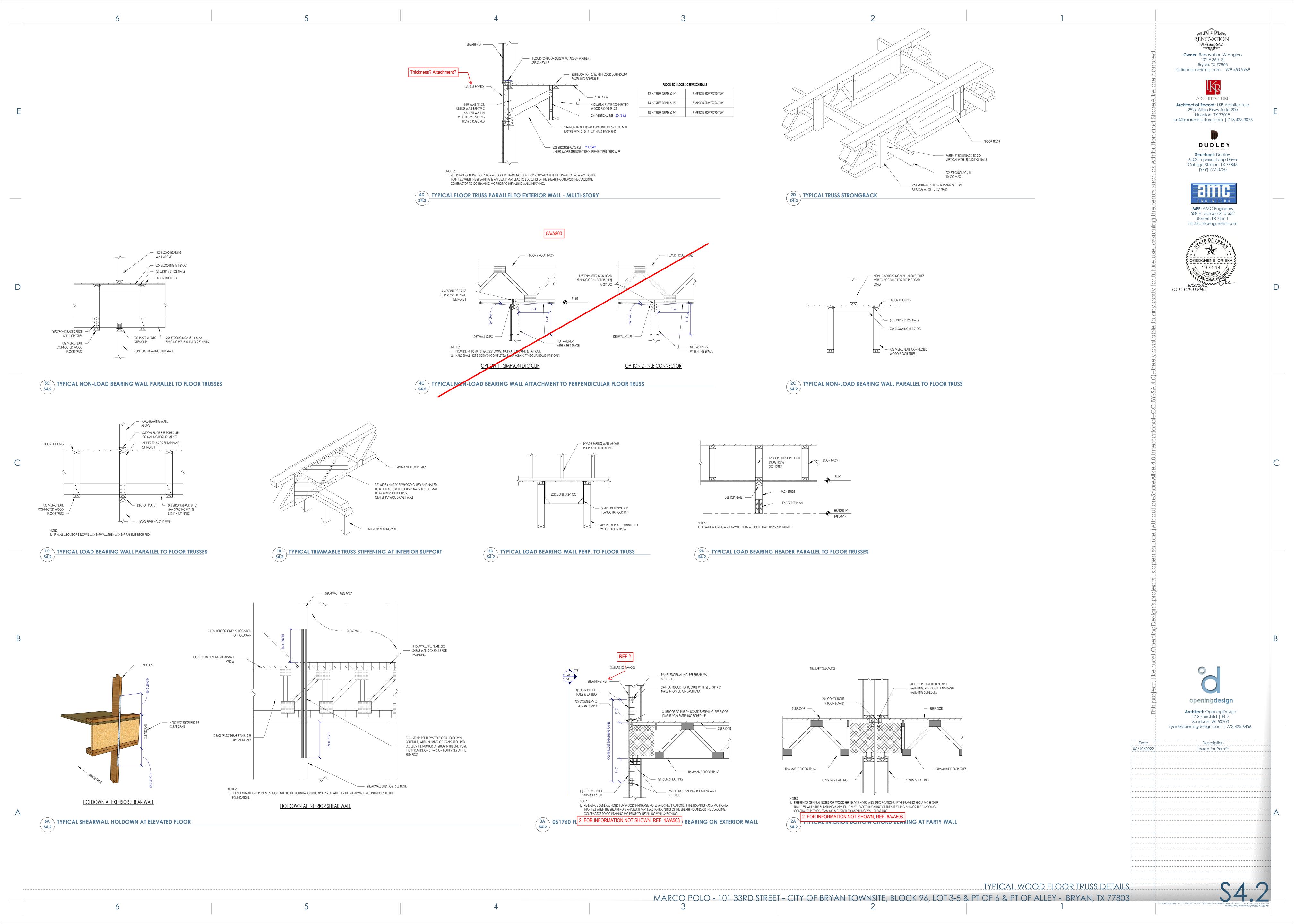
Structural: Dudley 6102 Imperial Loop Drive

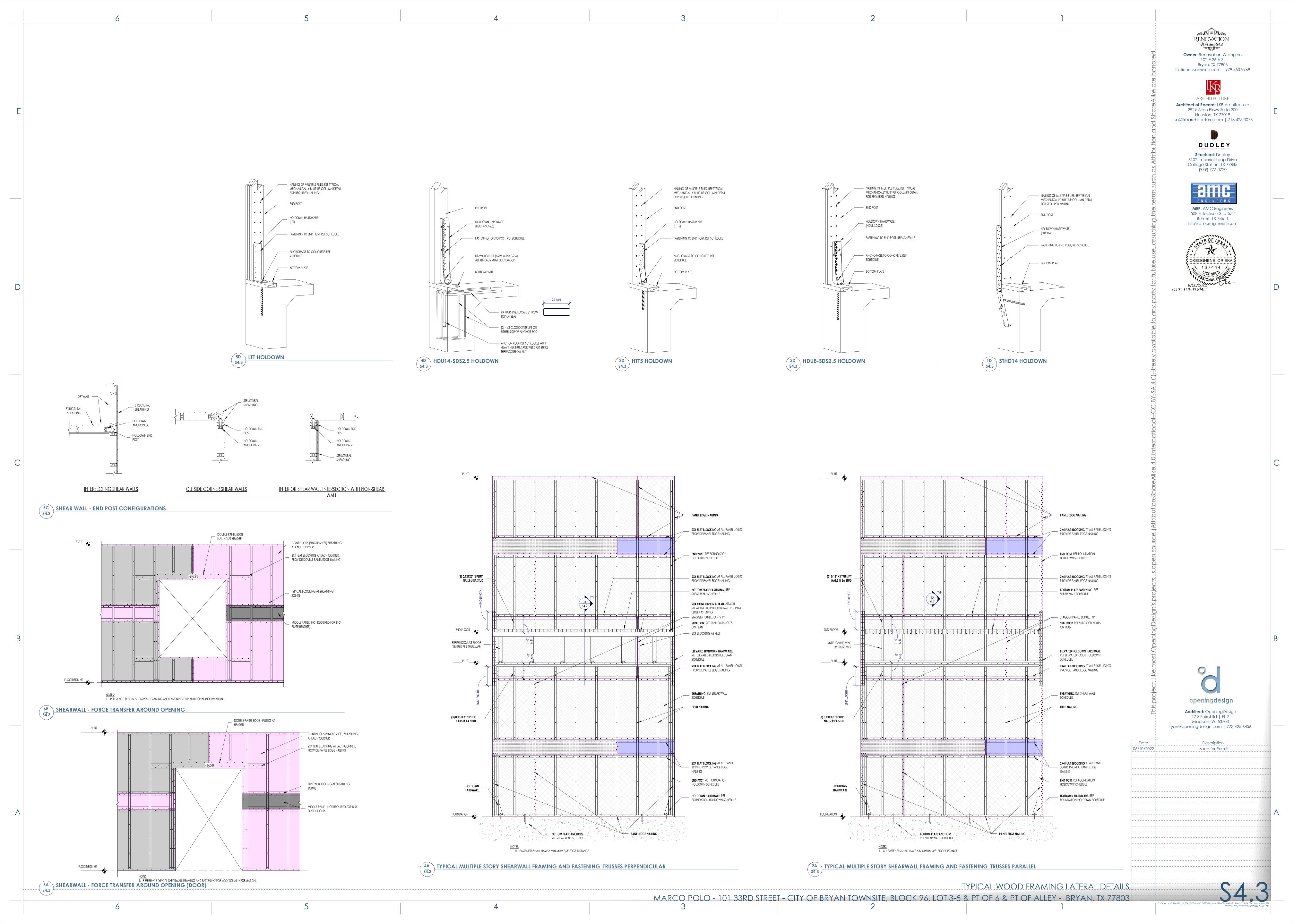
College Station, TX 77845 (979) 777-0720

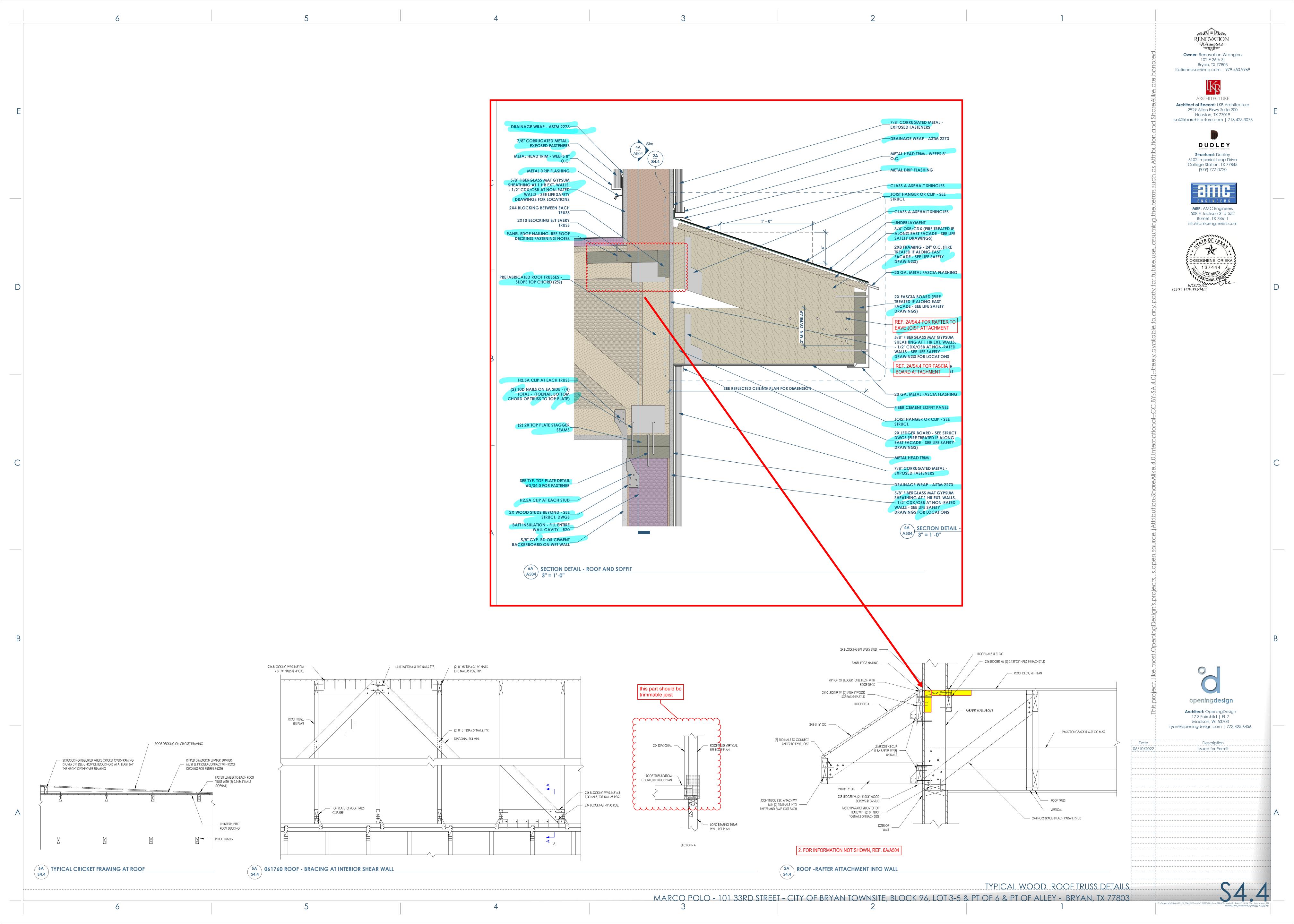
MEP: AMC Engineers 508 E Jackson St # 552 Burnet, TX 78611 info@amcengineers.com

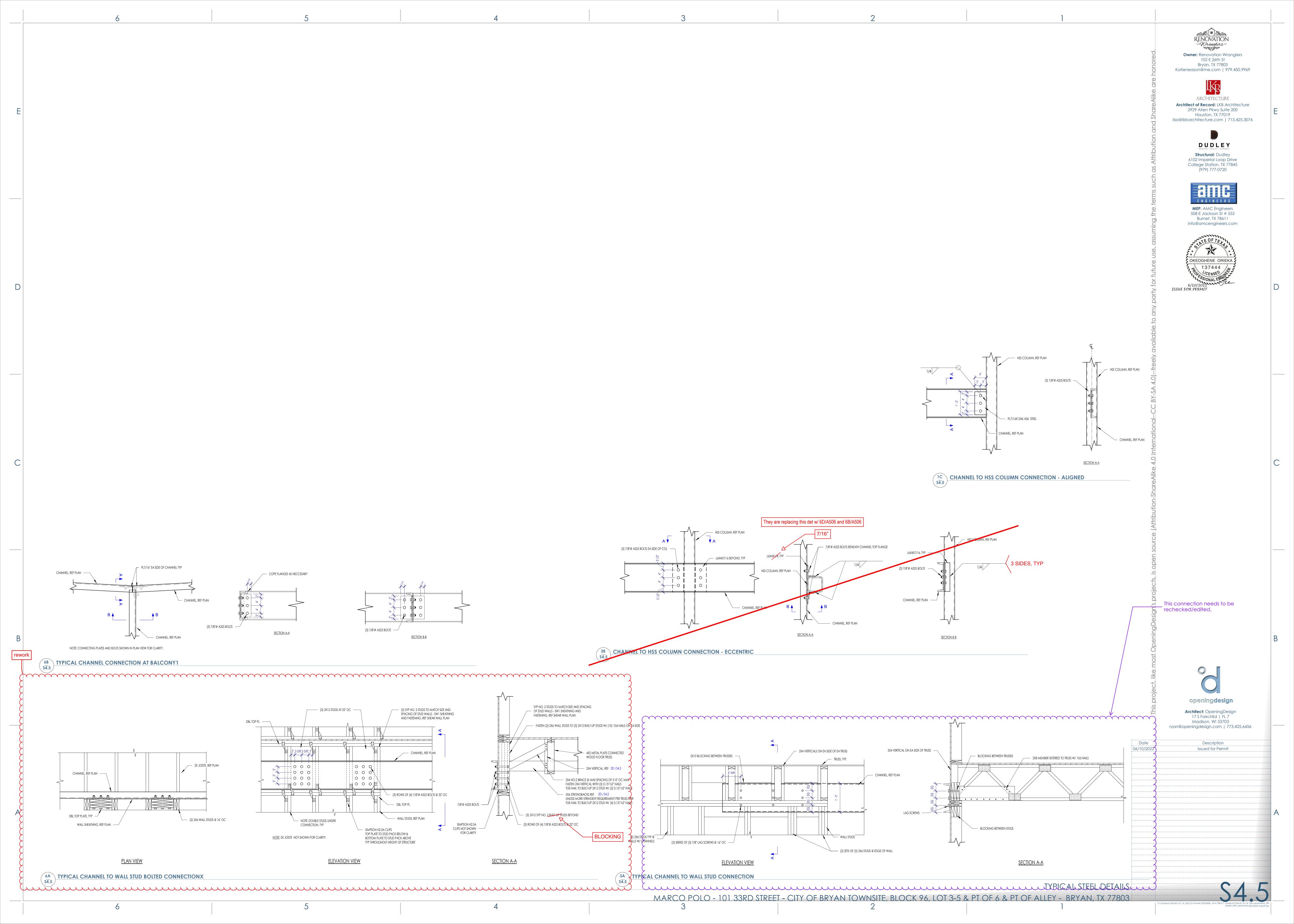
ISSUE FOR PERMIT

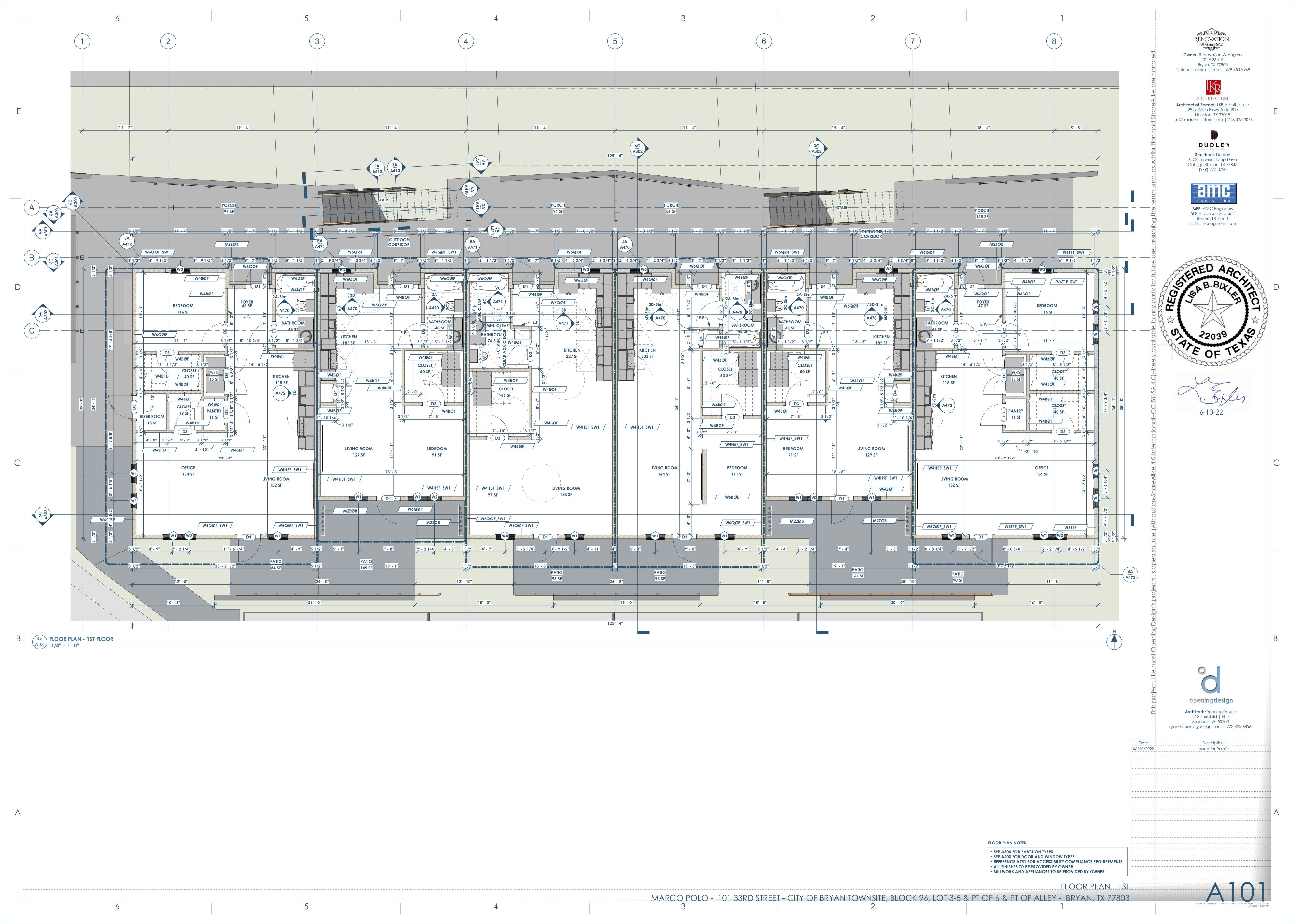


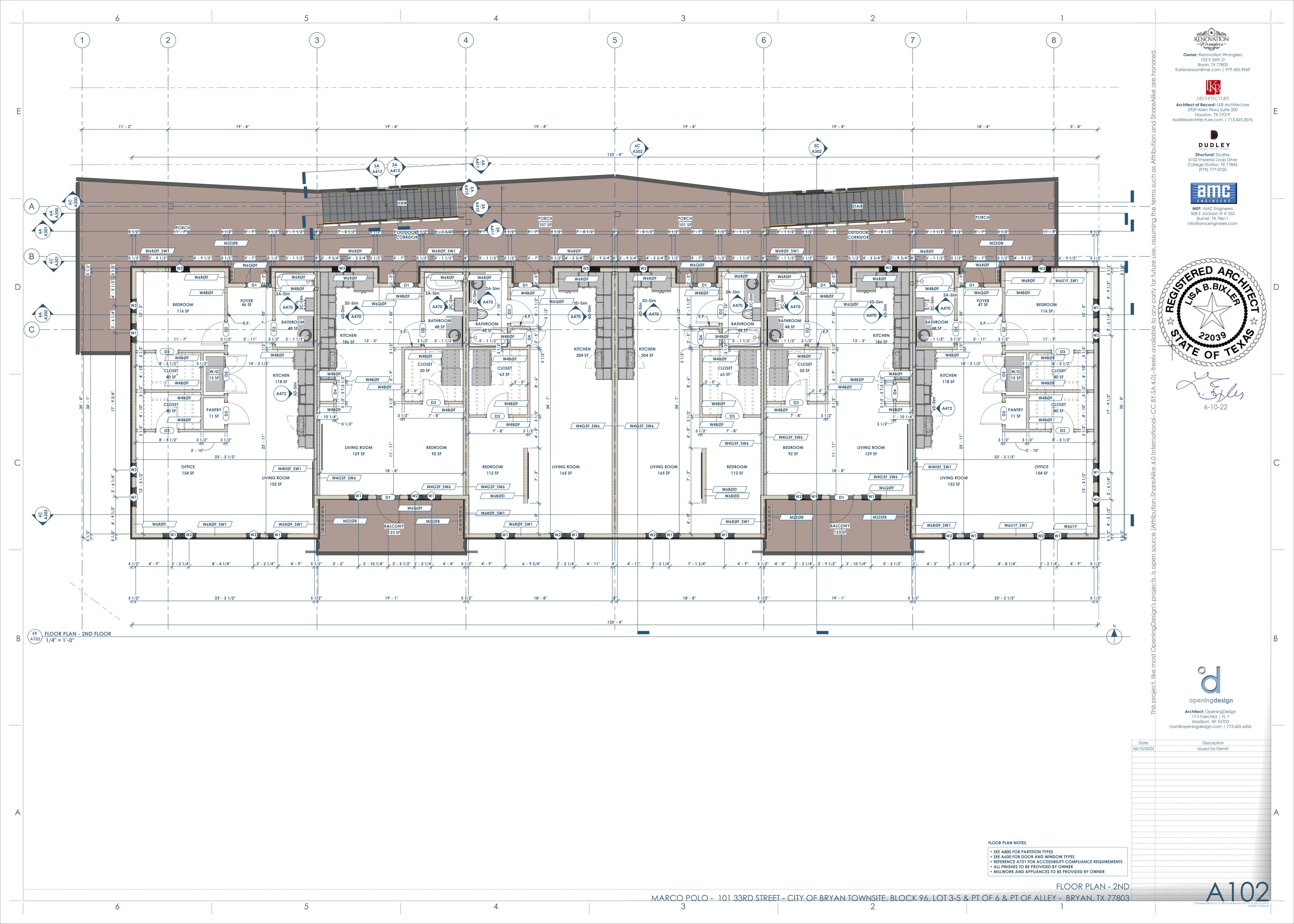


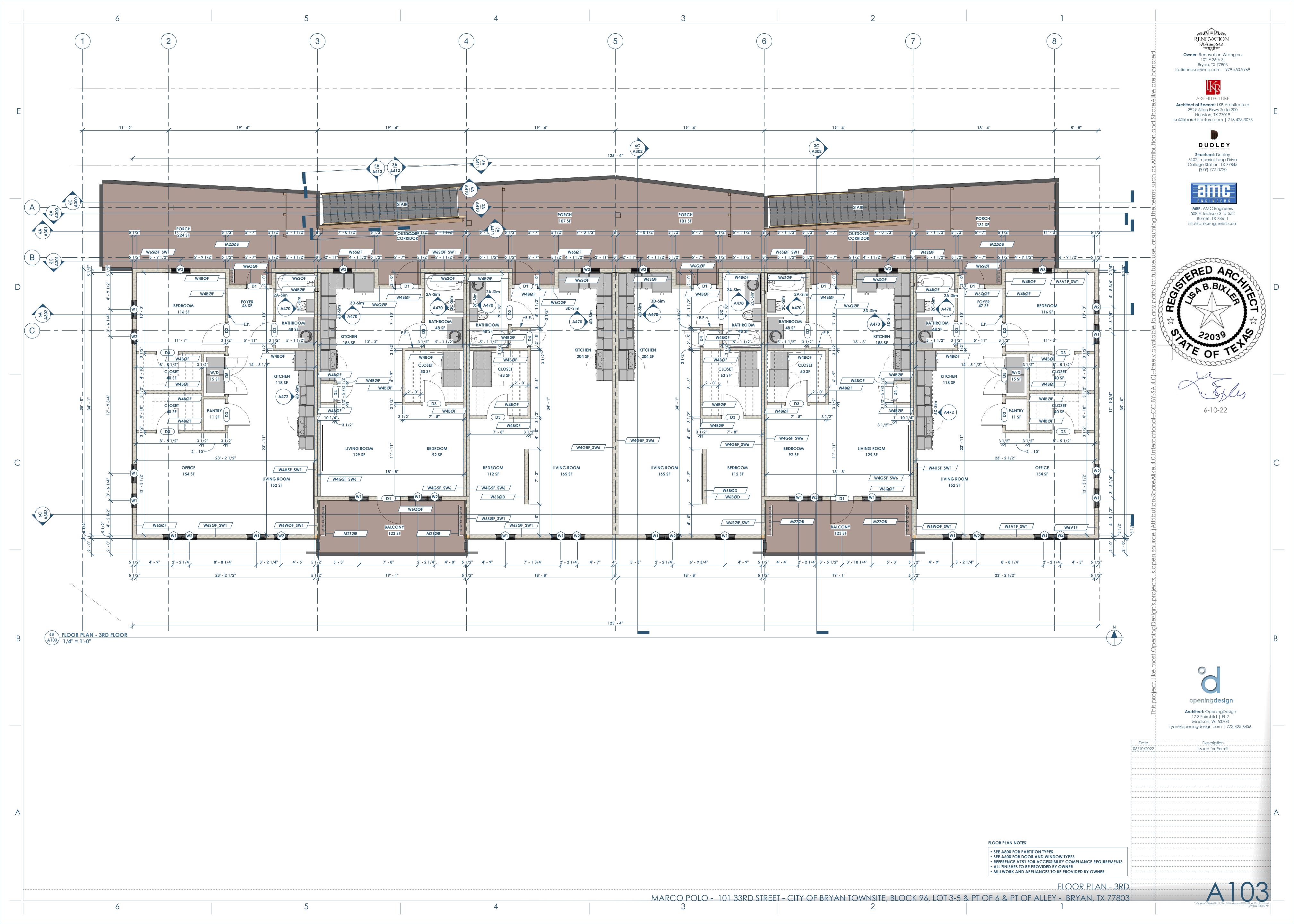


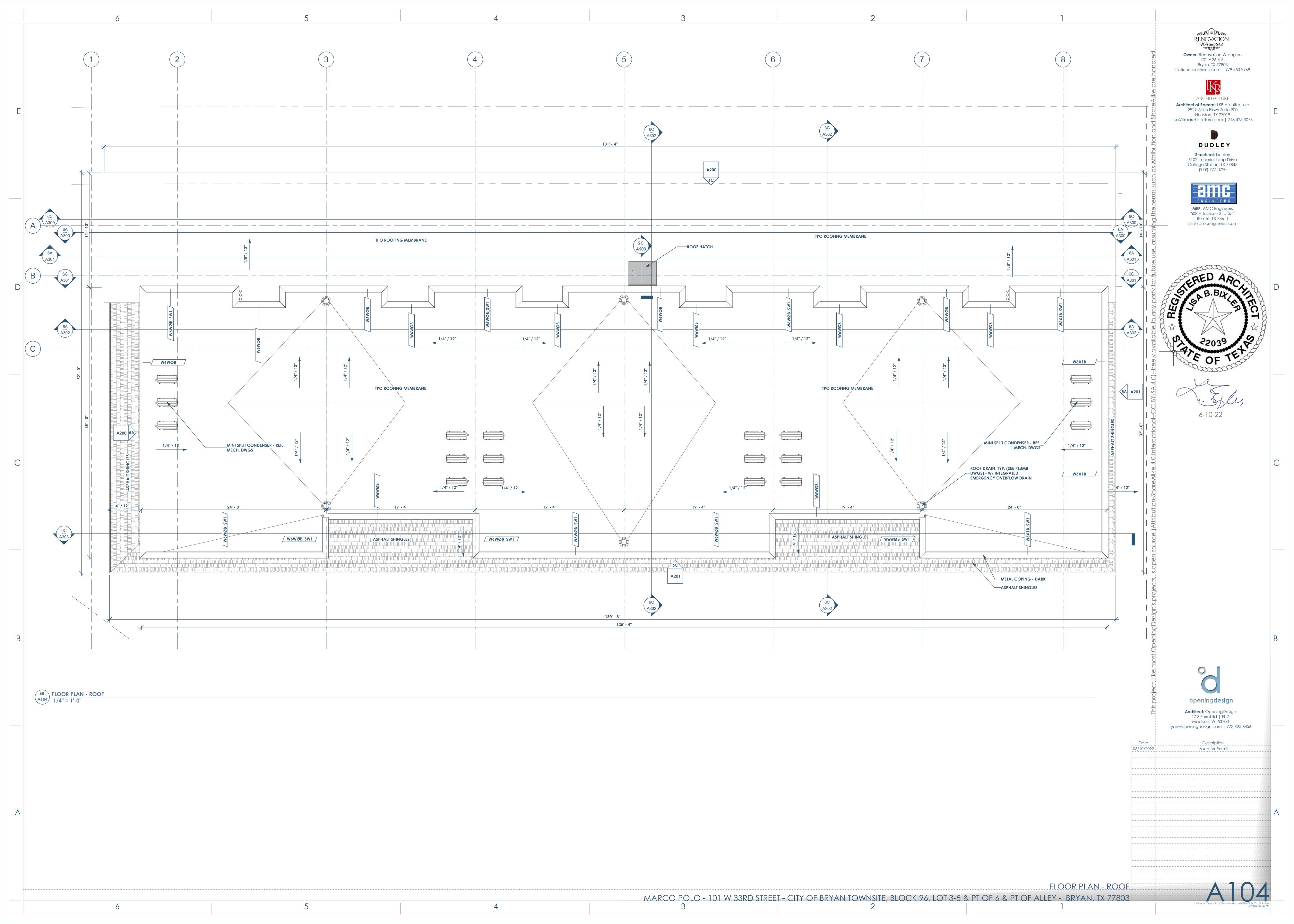


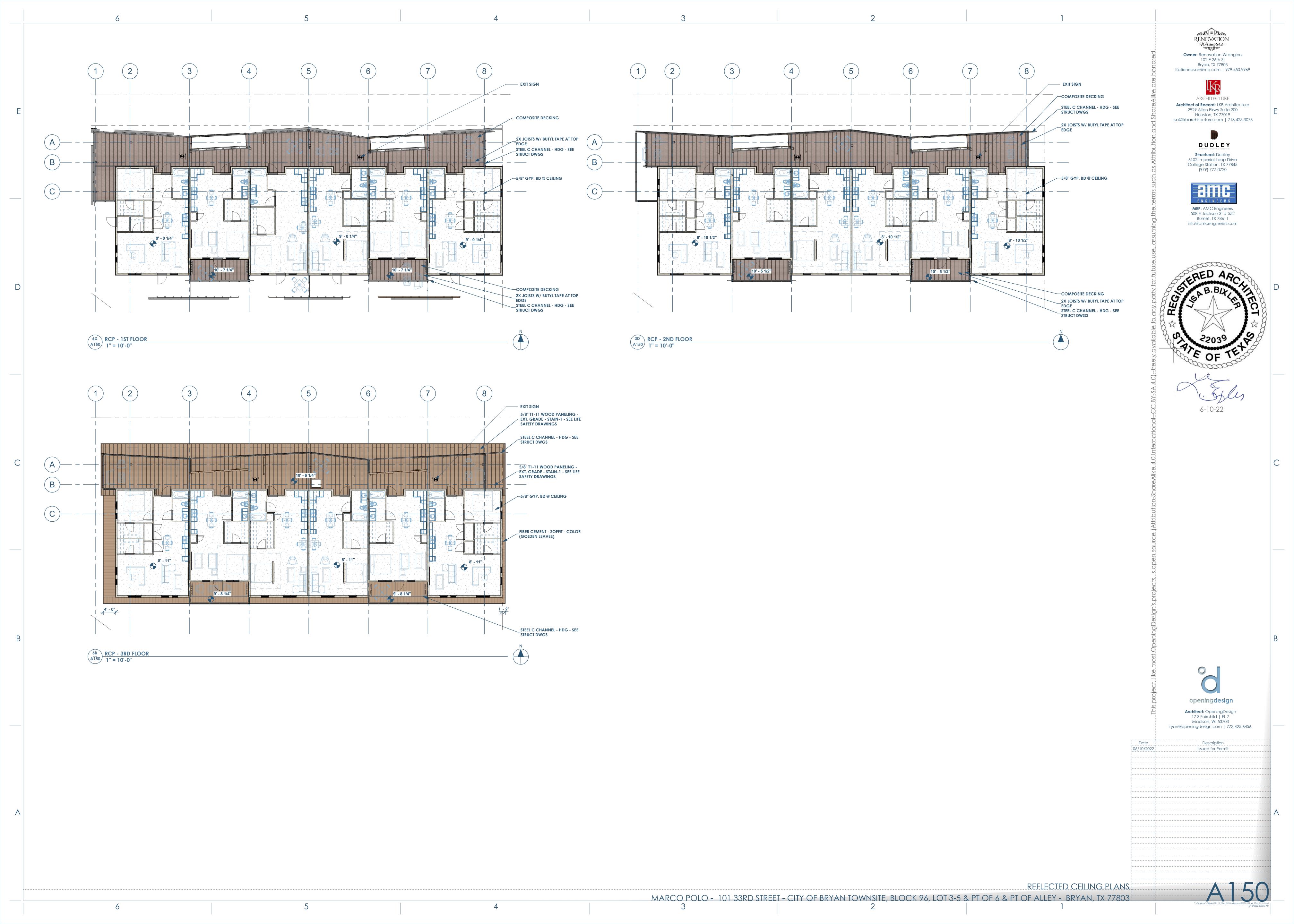














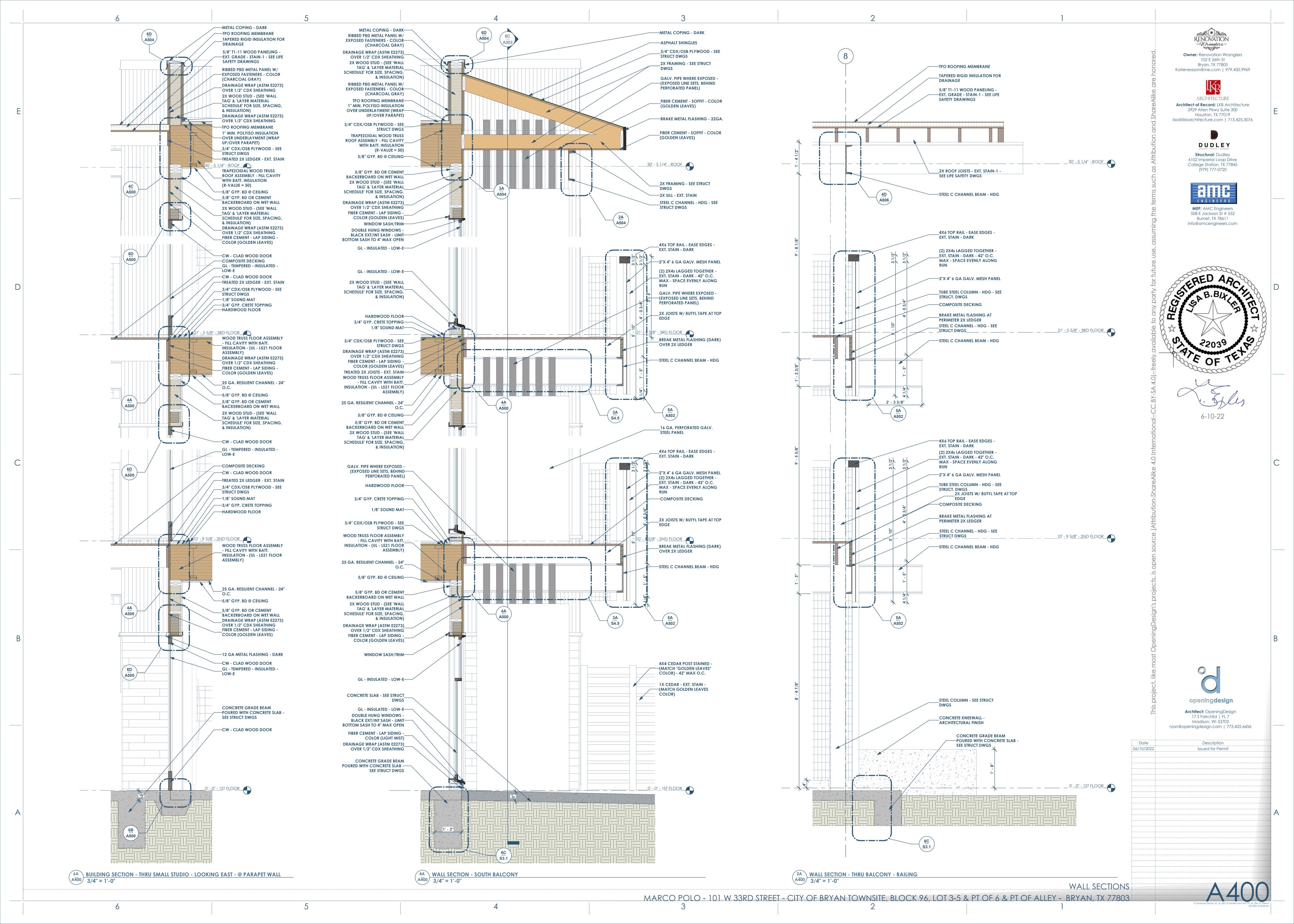


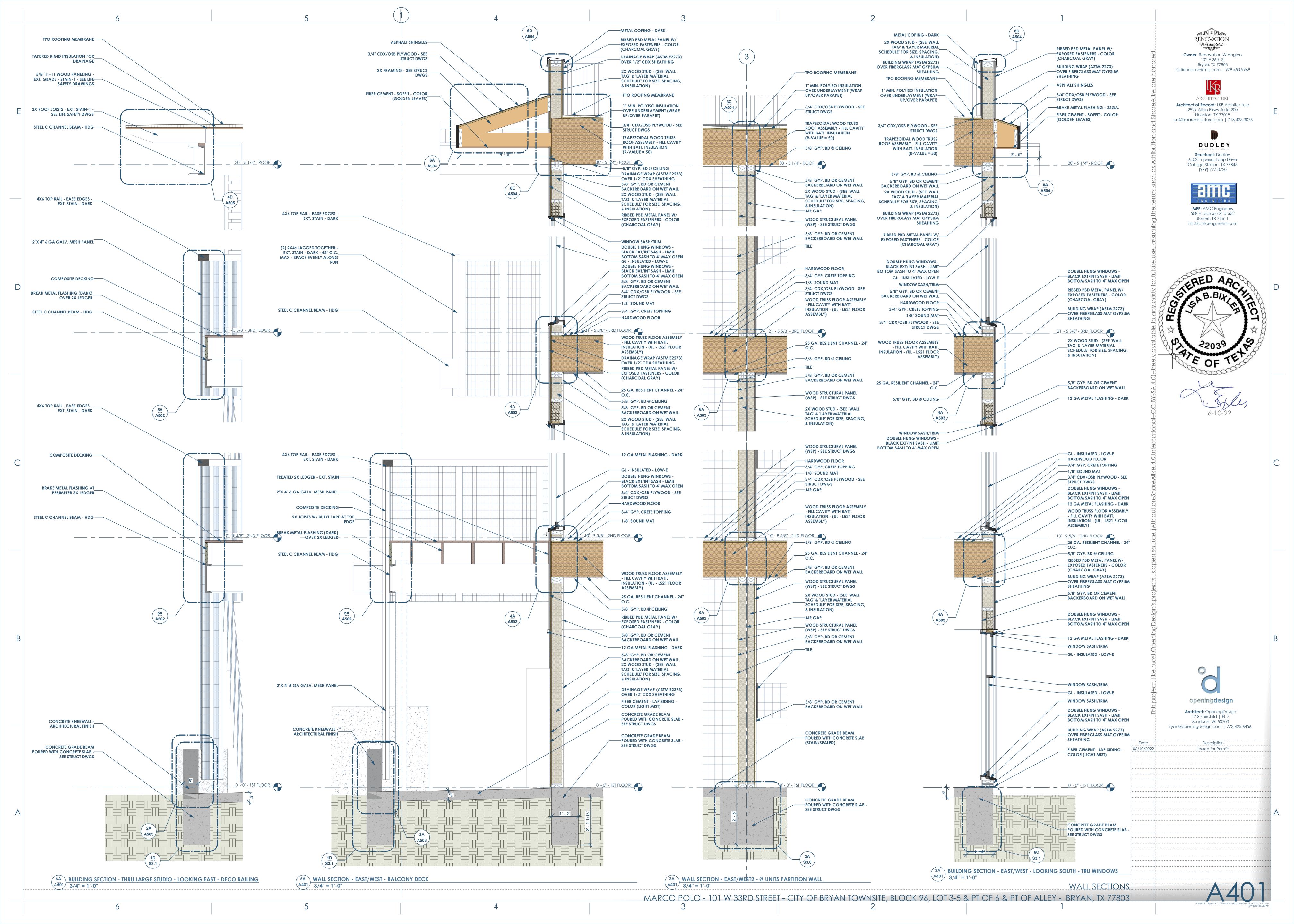


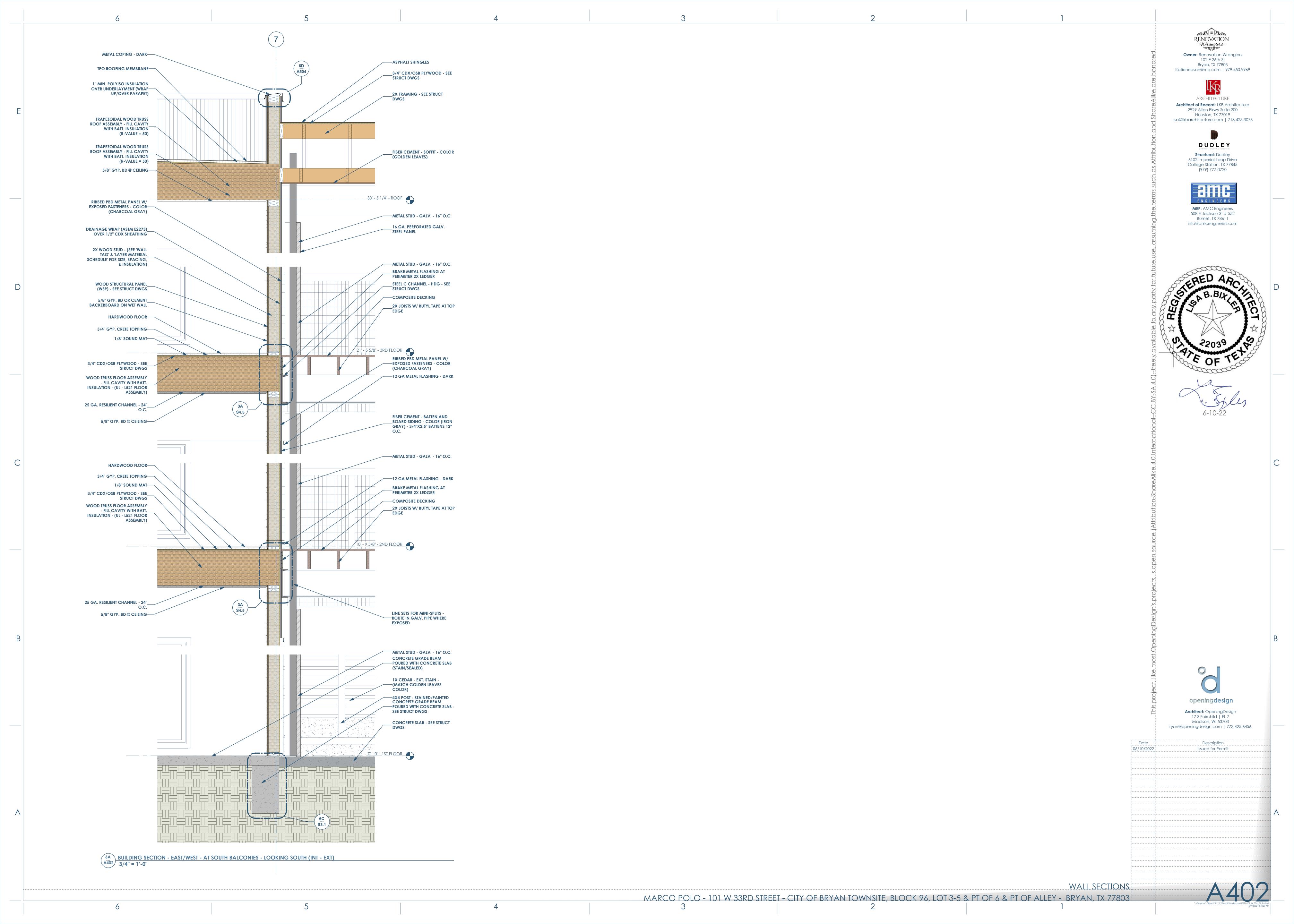


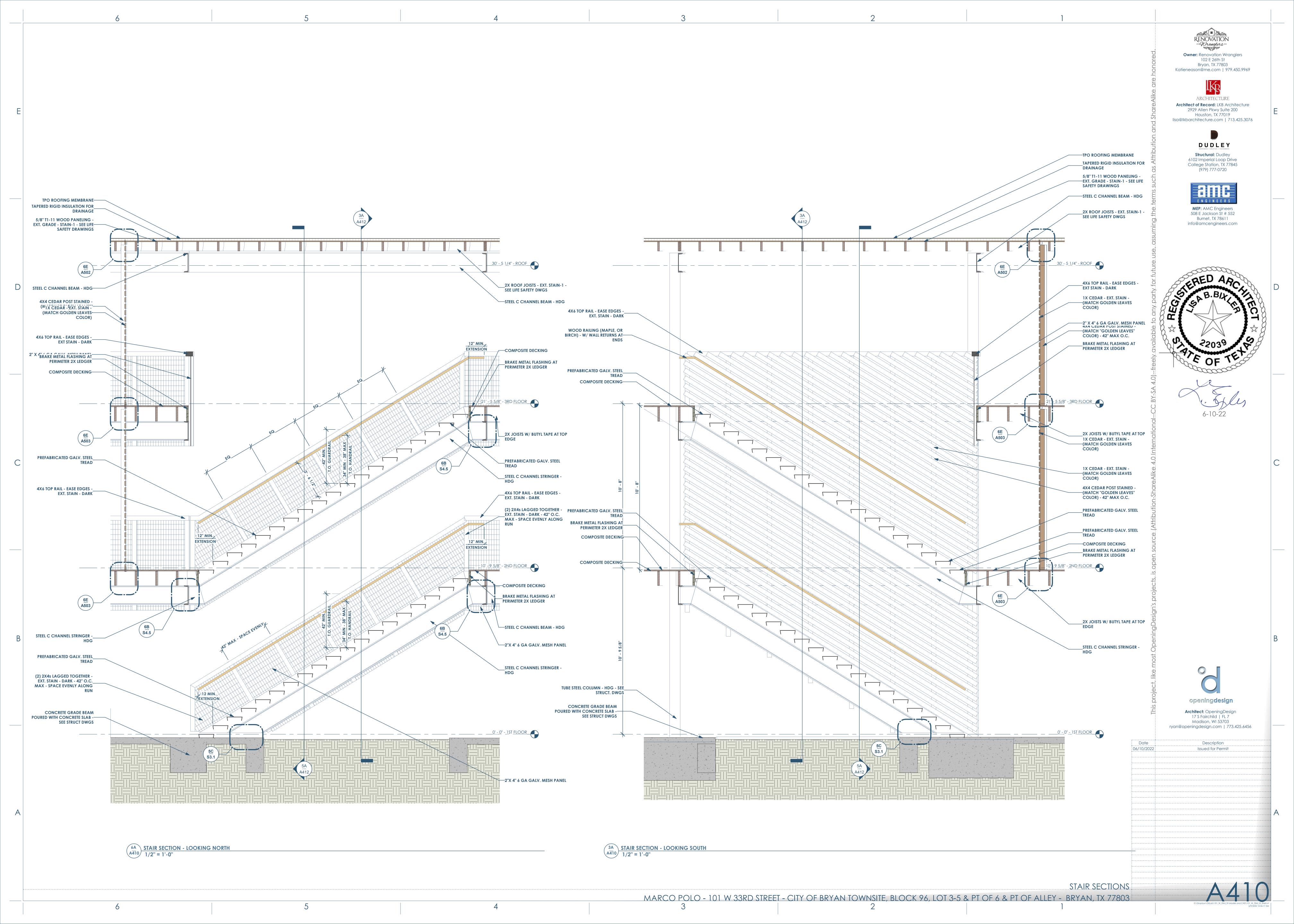


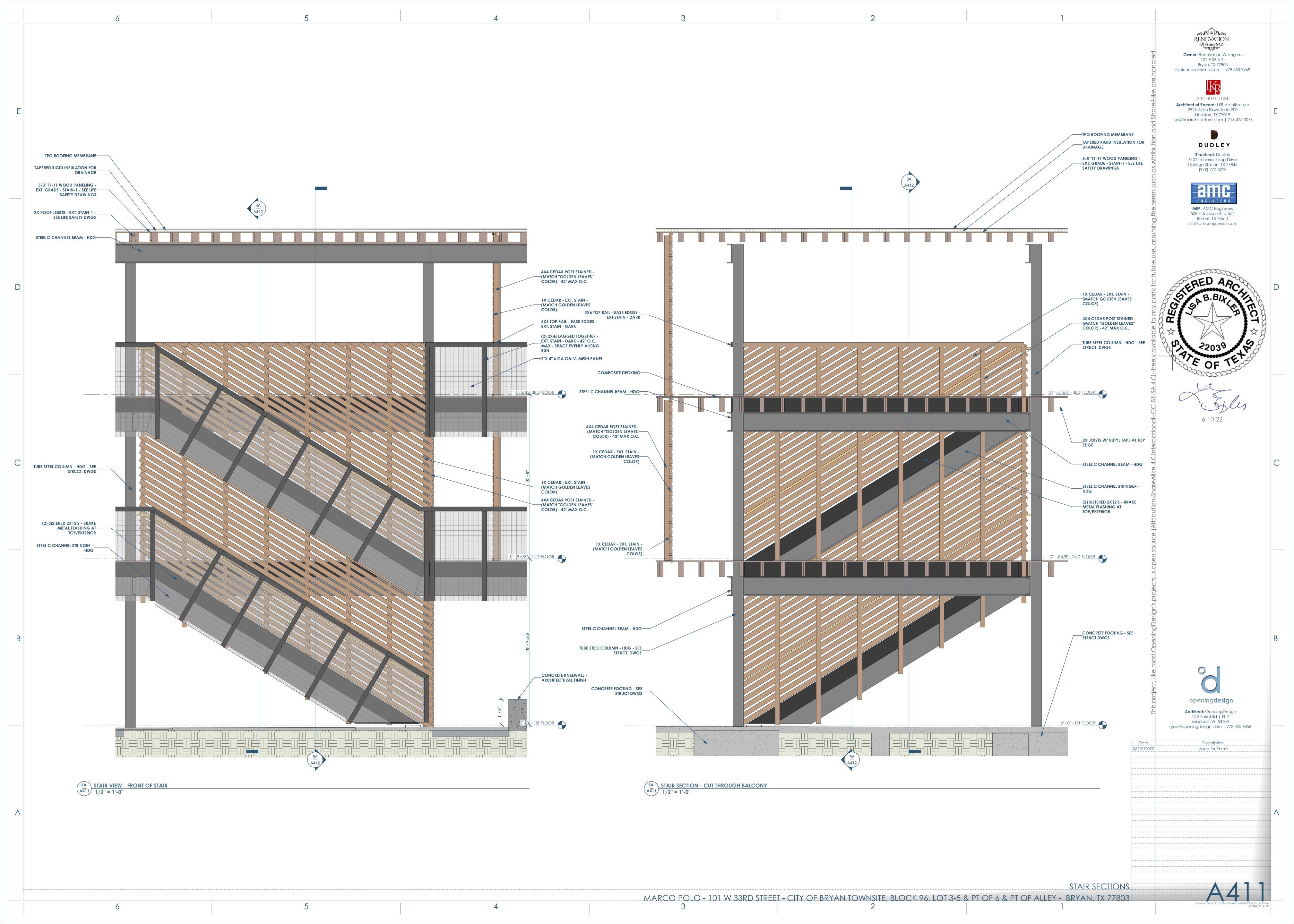


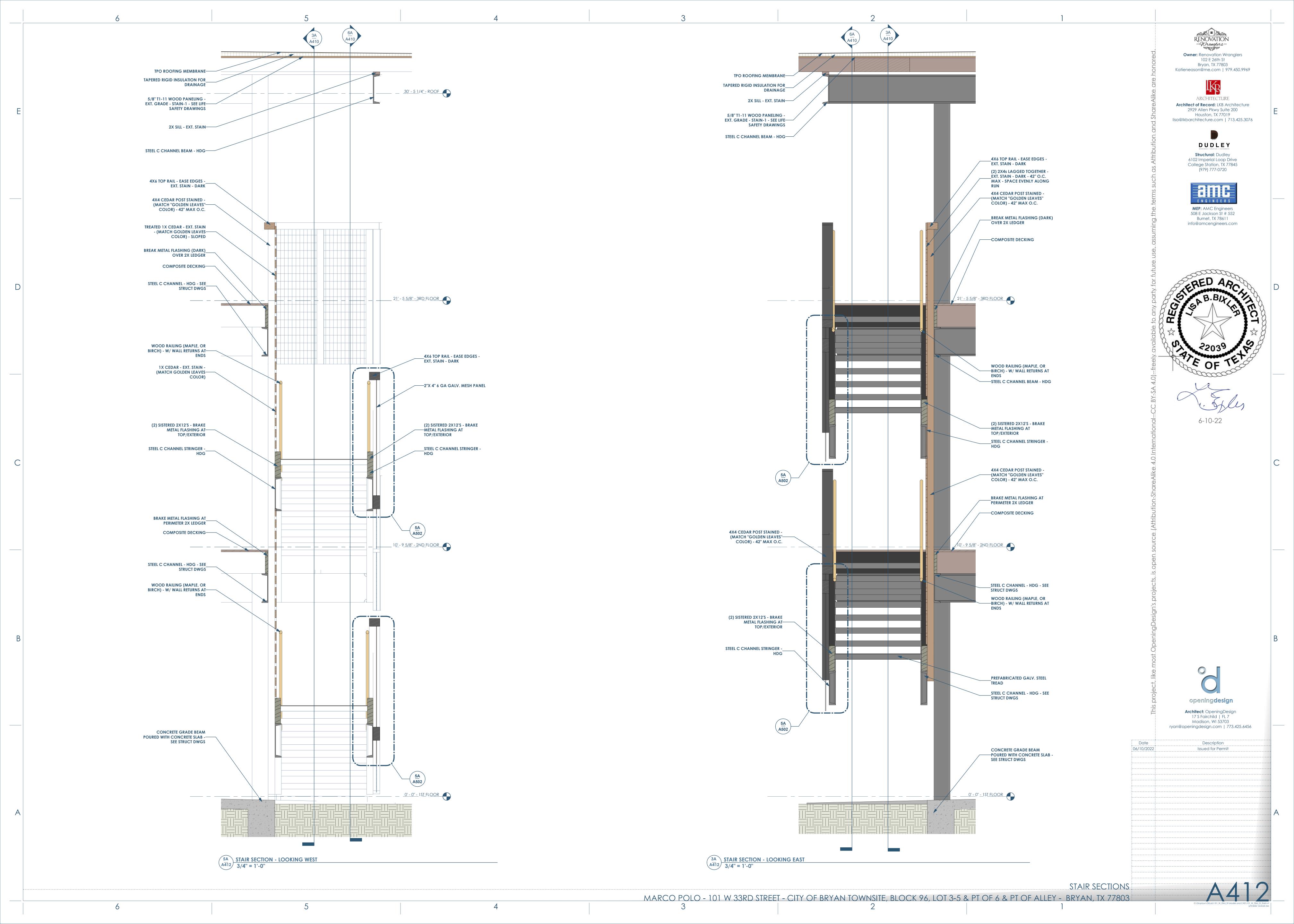


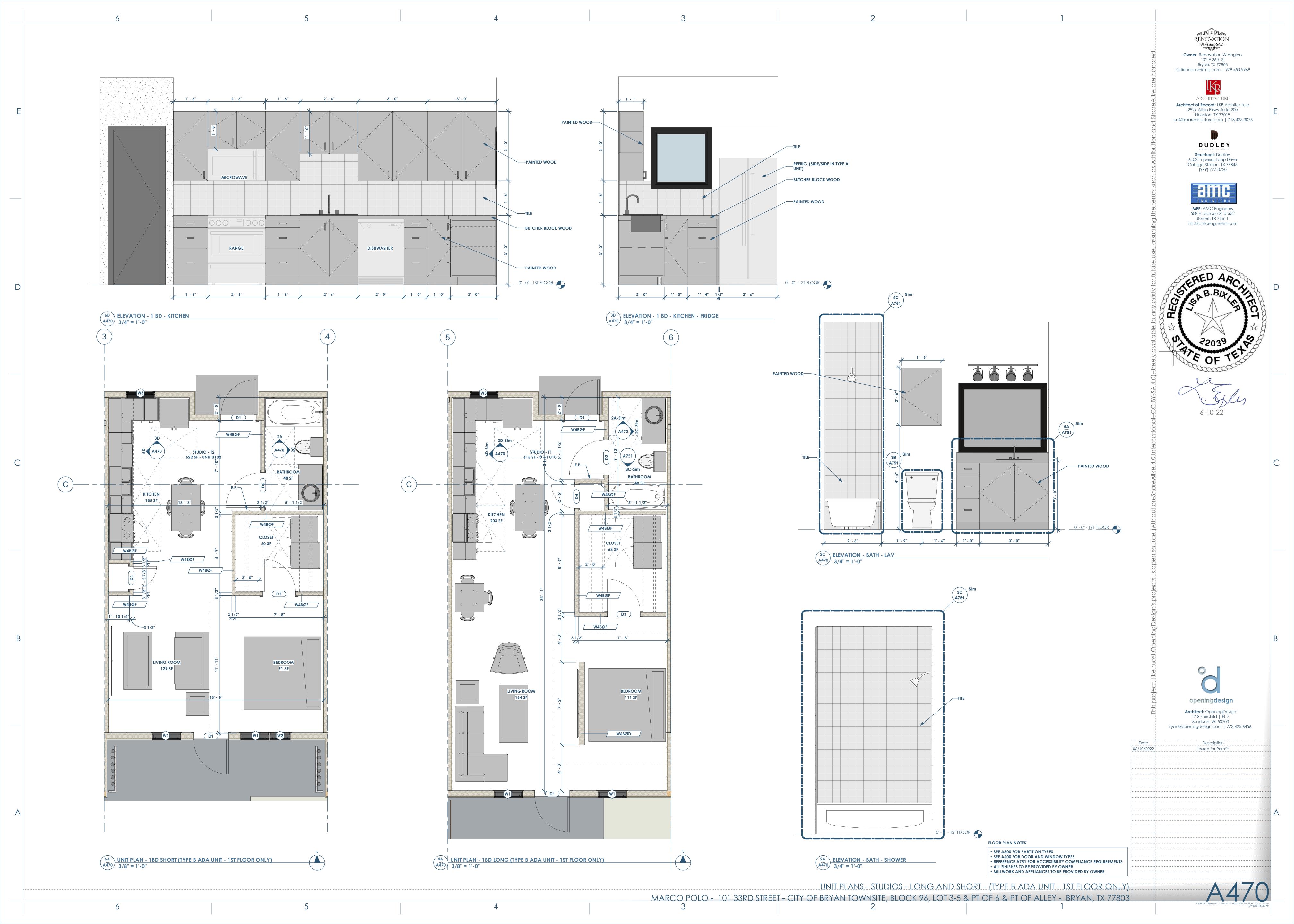


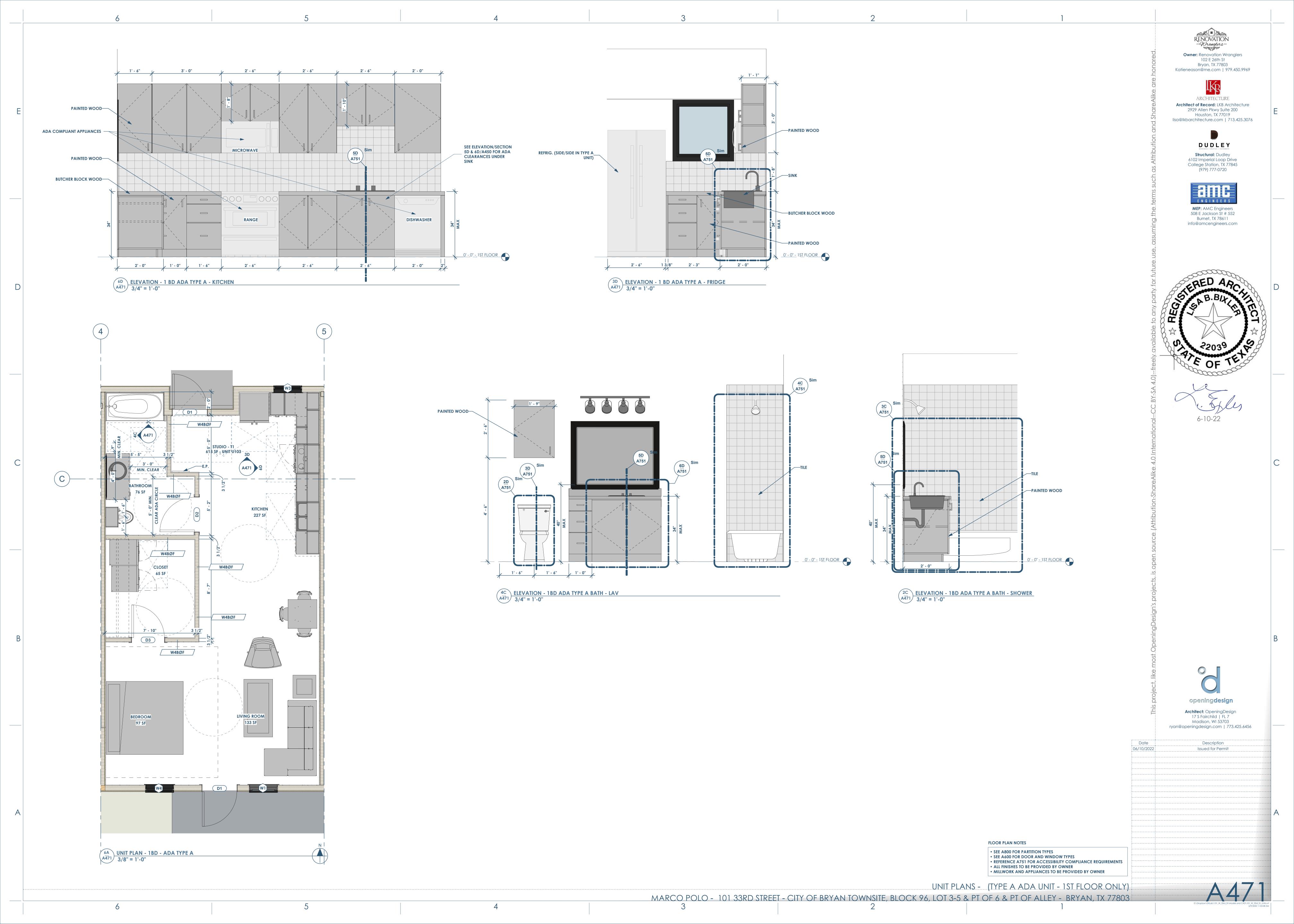


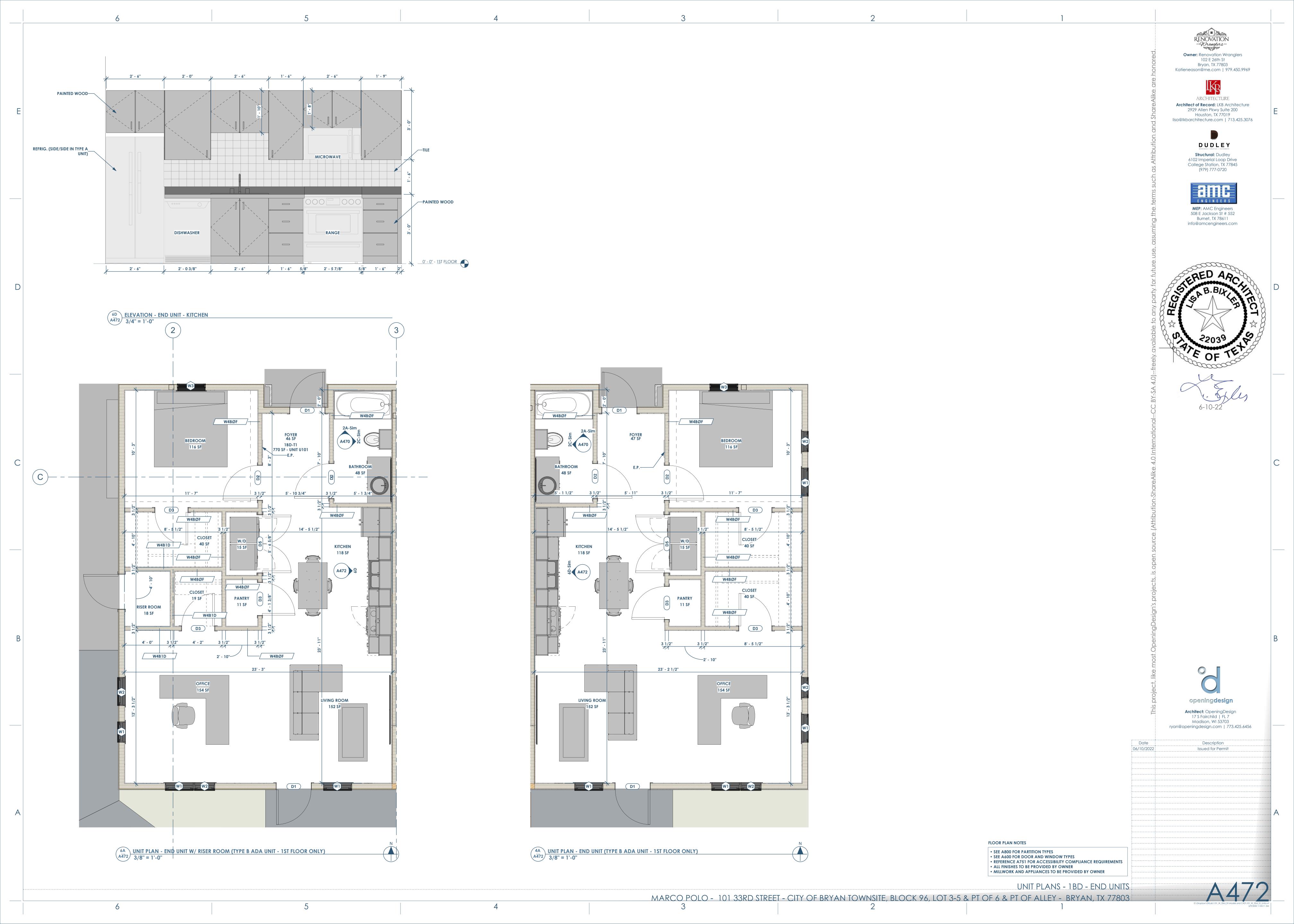


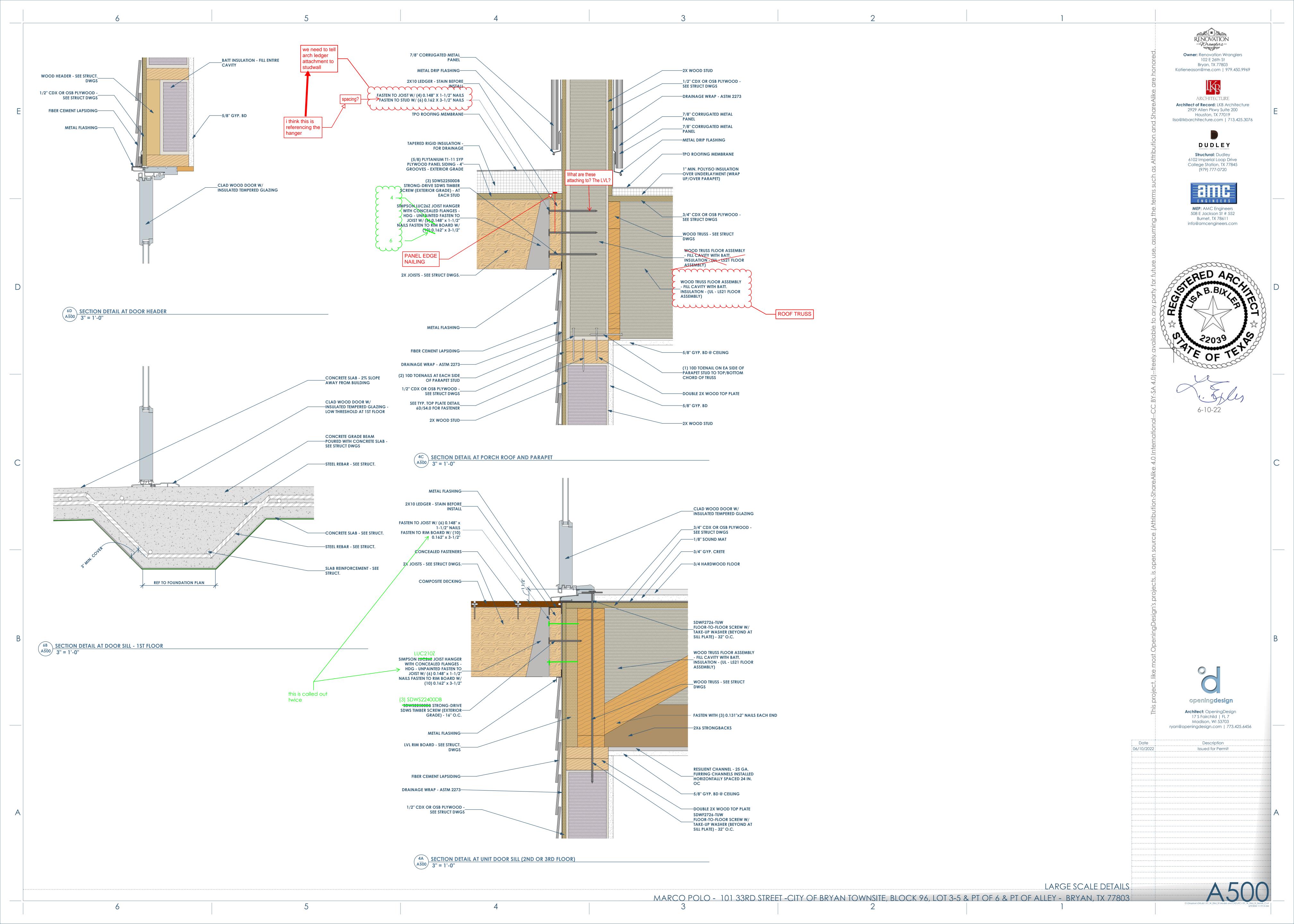


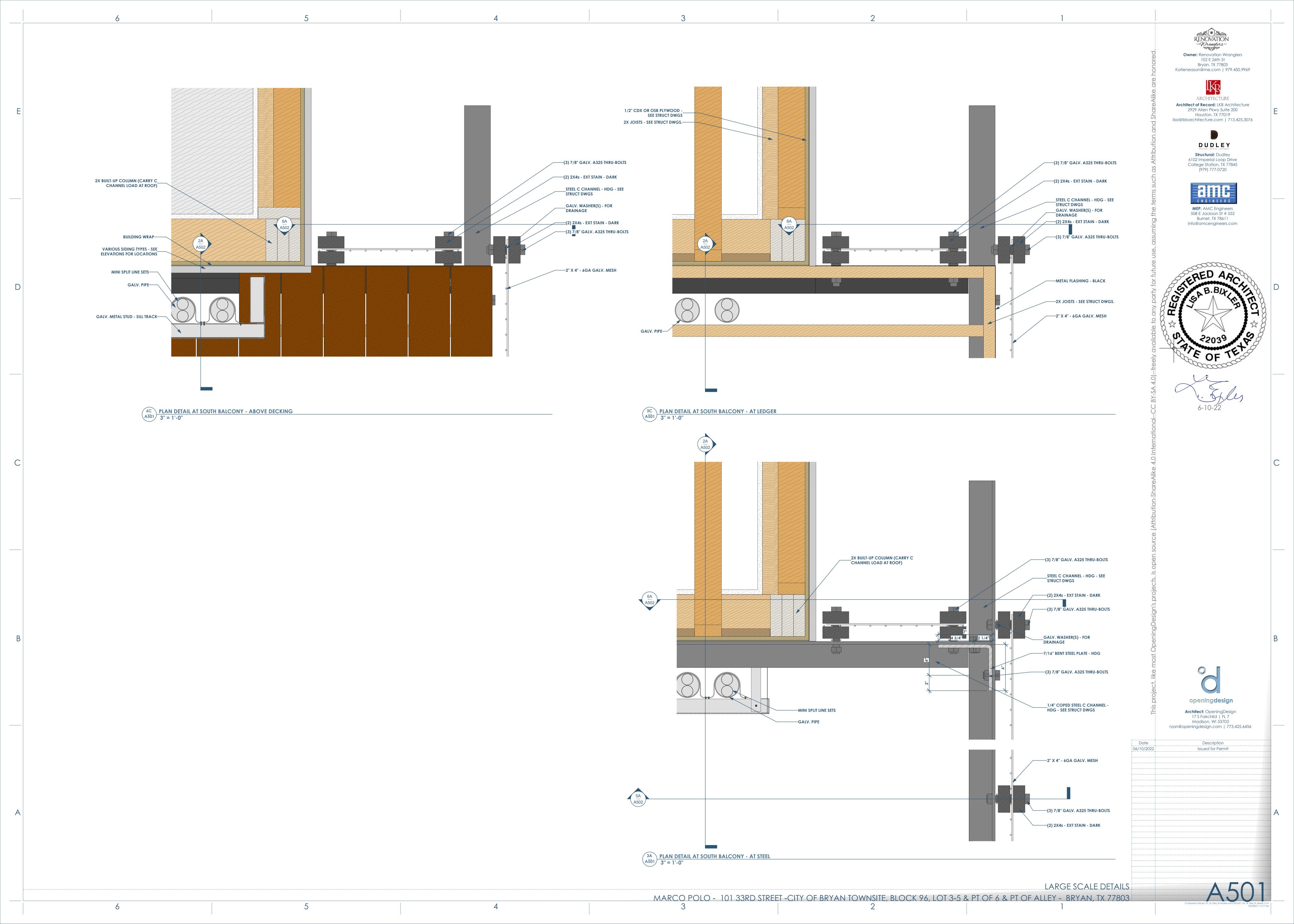


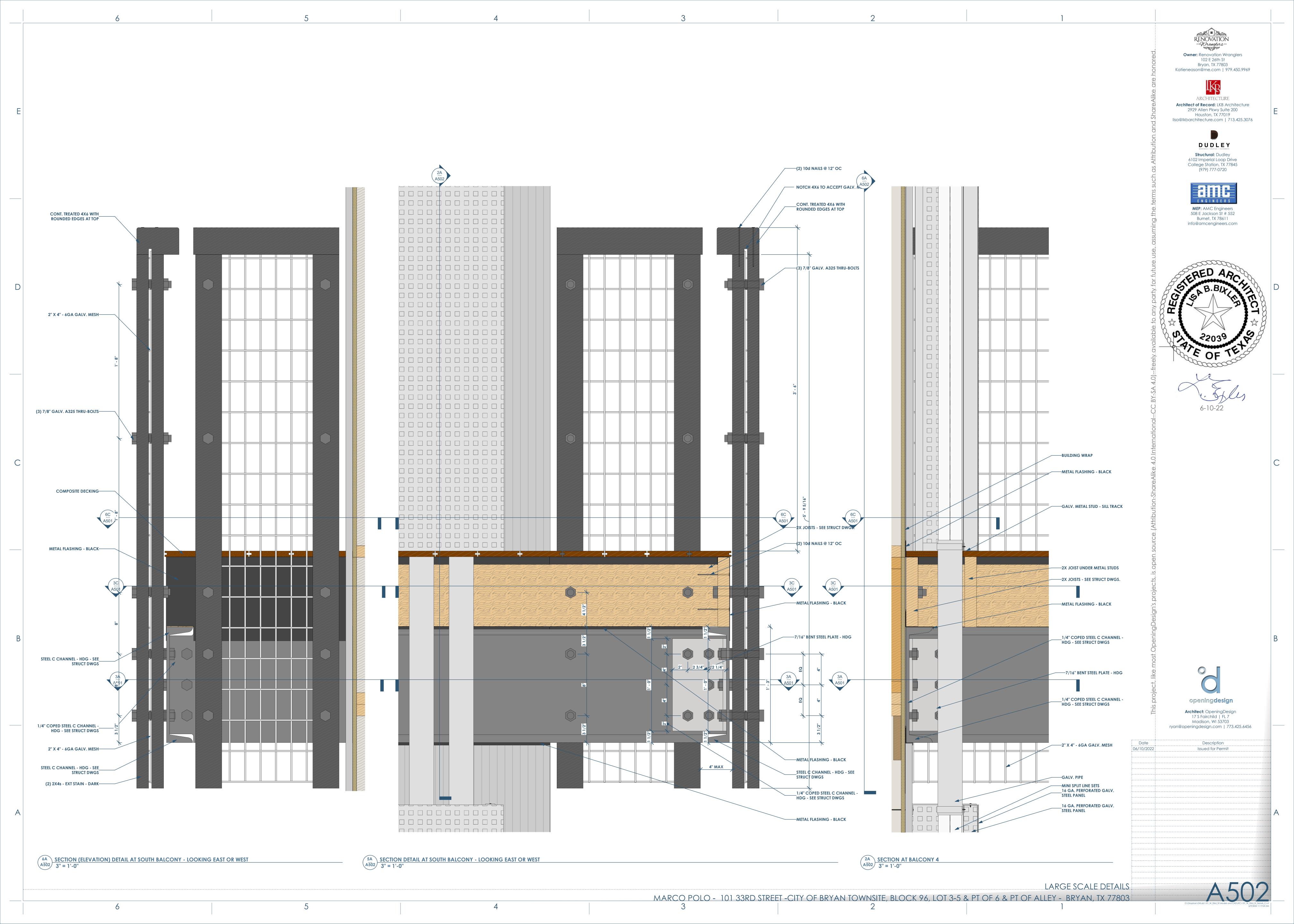


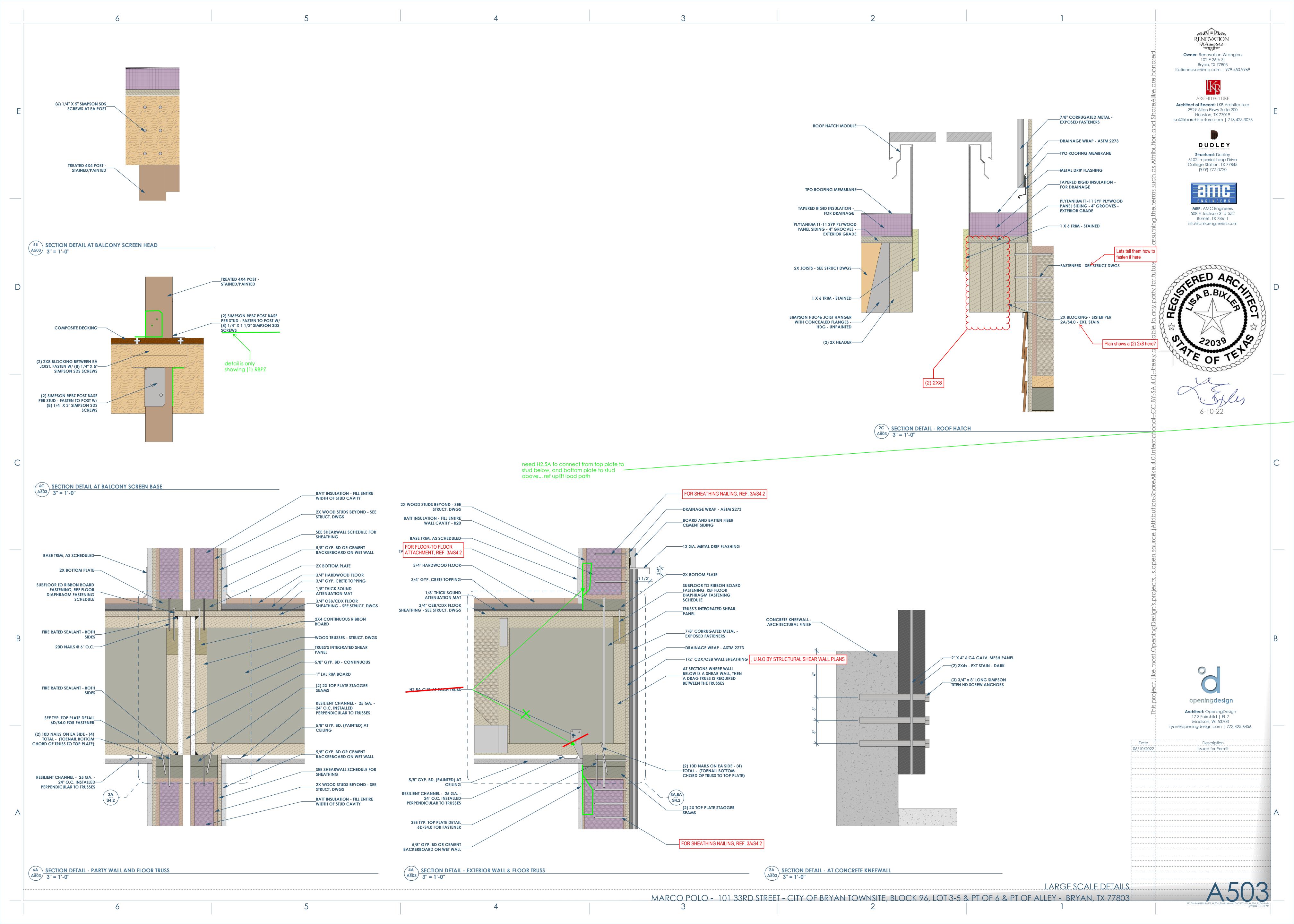


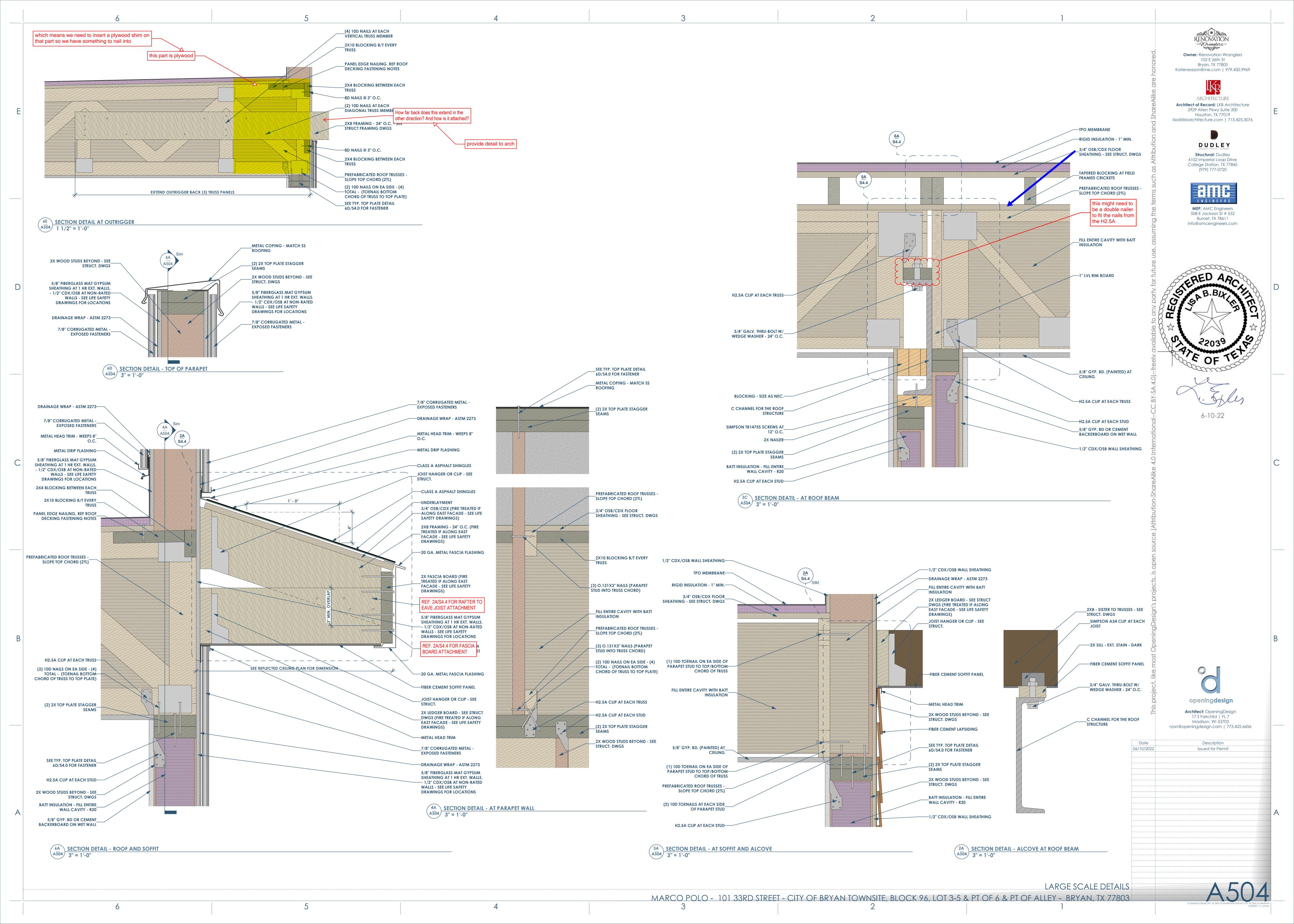


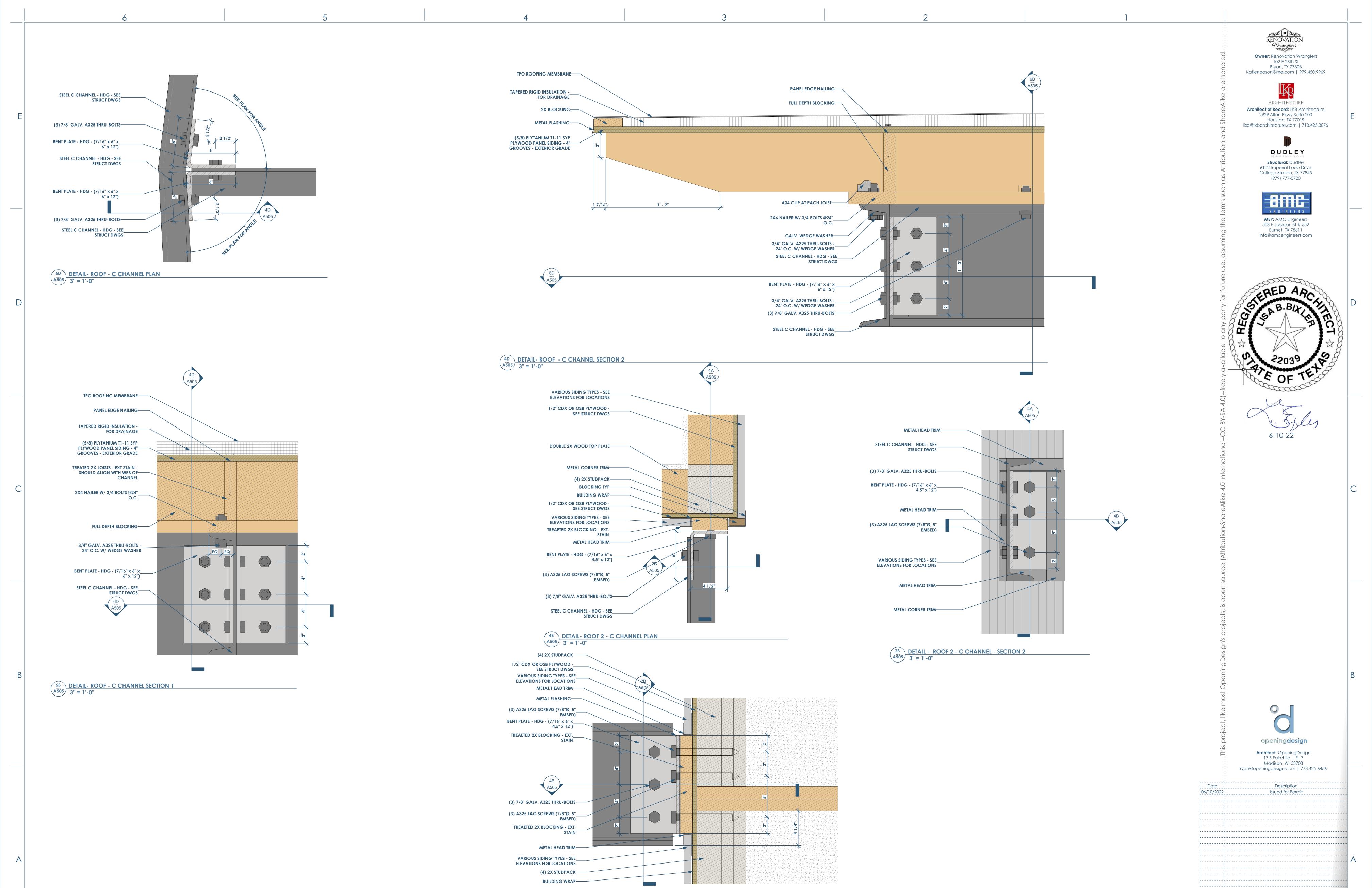








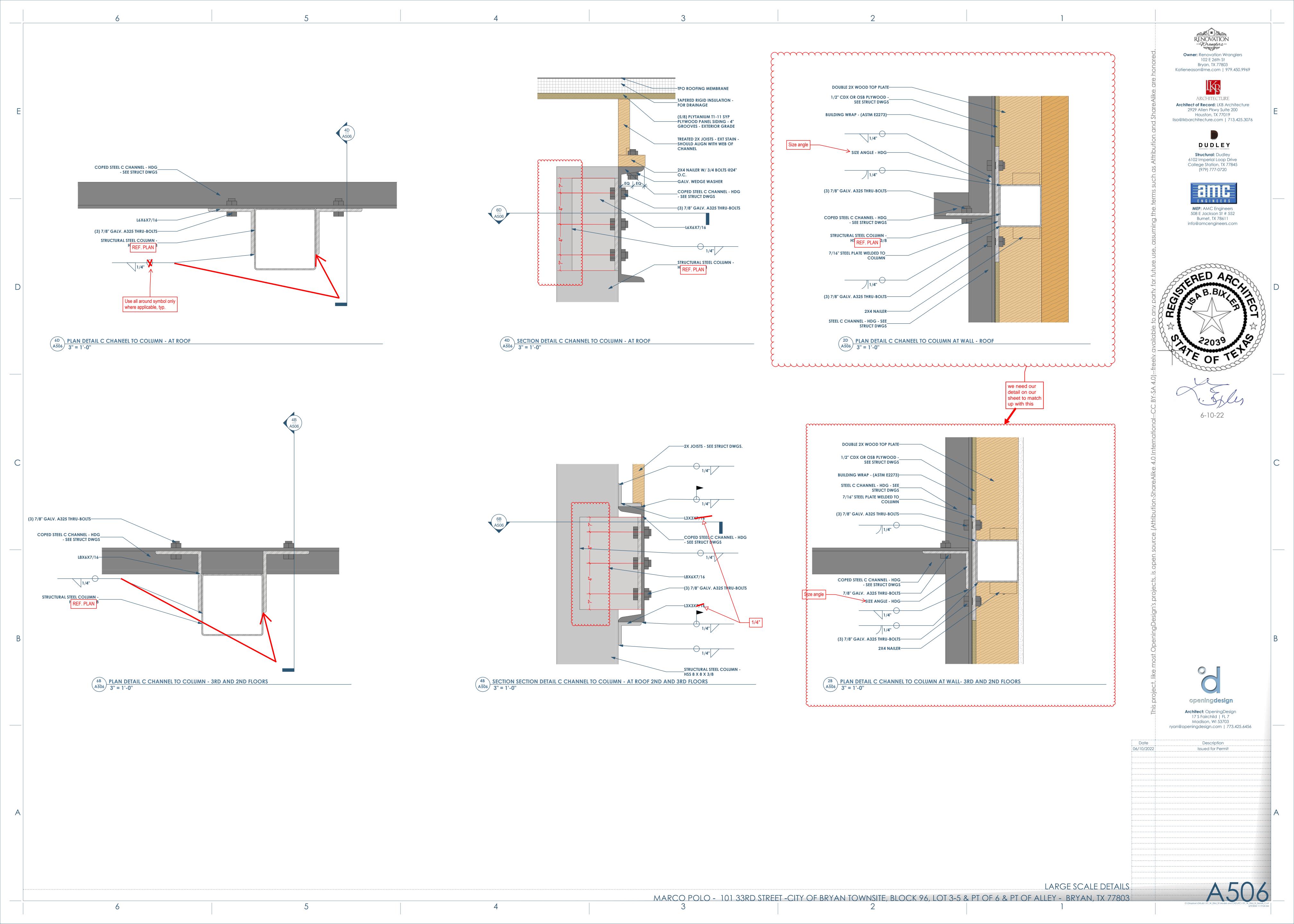




LARGE SCALE DETAILS

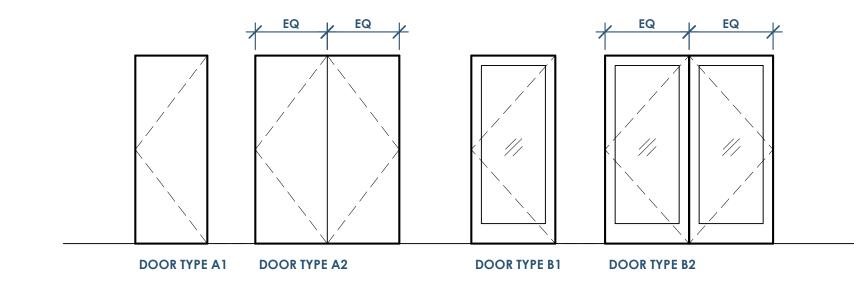
MARCO POLO - 101 33RD STREET -CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

DETAIL - ROOF 2 - C CHANNEL - SECTION 1
3" = 1'-0"



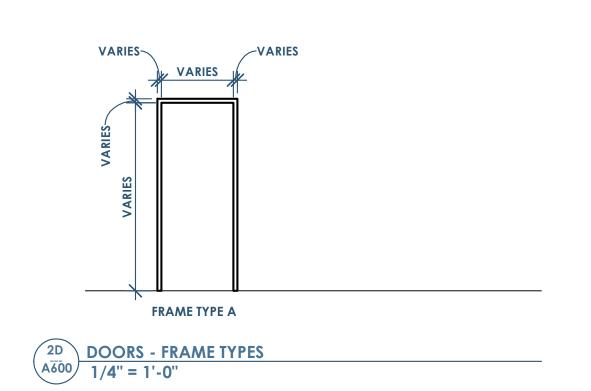
	DOOR SCHEDULE - TYPE										
TYPE MARK	COUNT	ТҮРЕ	WIDTH	HEIGHT	FIRE RATING	DOOR TYPE	DOOR MATERIAL	FRAM TYPE	FRAME MATERIAL	GLAZING	TYPE COMMENTS
D1	28	SINGLE - LITE - MUNTINS - 3-0 x 6-8	3' - 0"	6' - 8"		B1	CW - CLAD WOOD DOOR	A	CW - CLAD WOOD DOOR	GL - TEMPERED - INSULATED - LOW-E	
D2	24	SINGLE - FLUSH - 3-0 x 6-8	3' - 0"	6' - 8"		A1	WD - HOLLOW CORE	Α	WD	-	
D3	30	SINGLE - FLUSH - 2-10 x 6-8	2' - 10"	6' - 8"		A 1	WD - HOLLOW CORE	Α	WD	-	
D4	11	SINGLE - FLUSH - 2-0 x 6-8	2' - 0"	6' - 8"		A 1	WD - HOLLOW CORE	Α	WD	-	
D5	6	DOUBLE - FLUSH - 5-0 x 6-8	5' - 0"	6' - 8"		A2	WD - HOLLOW CORE	Α	WD	-	
D6	1	SINGLE - HOLLOW METAL - 3-0 x 6-8	3' - 0"	6' - 8"		A 1	нм	Α	нм	N/A	

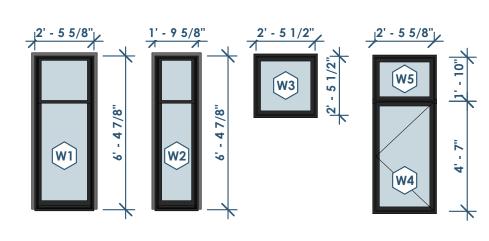
			SIMP	PLIFIED WINDOW SCHE	DULE	
PHASE CREATED	TYPE MARK	COUNT	ТҮРЕ	WIDTH	HEIGHT	TYPE COMMENTS
1ST PHASE	W1	46	DOUBLE HUNG - TYPE 2	2' - 5 5/8"	6' - 4 7/8"	BOTTOM SASH LIMITED TO 4" MAX OPEN
1ST PHASE	W2	31	DOUBLE HUNG - TYPE 1	1' - 9 5/8"	6' - 4 7/8"	BOTTOM SASH LIMITED TO 4" MAX OPEN
1ST PHASE	W3	18	FIXED PICTURE - TYPE 1	2' - 5 1/2"	2' - 5 1/2"	
1ST PHASE	W4	1	CASEMENT - TYPE 1	2' - 5 5/8"	4' - 7"	ADA REACH REQUIREMENTS FOR TYPE A UNIT
1ST PHASE	W5	1	FIXED PICTURE - TYPE 2	2' - 5 5/8"	1' - 10"	



DOORS - PANEL TYPES

1/4" = 1'-0"





2C WINDOW TYPES 1/4" = 1'-0"



Katieneason@me.com | 979.450.9969 ARCHITECTURE

Architect of Record: LKB Architecture 2929 Allen Pkwy Suite 200 Houston, TX 77019 Iisa@Ikbarchitecture.com | 713.425.3076

DUDLEY Structural: Dudley 6102 Imperial Loop Drive College Station, TX 77845 (979) 777-0720



MEP: AMC Engineers 508 E Jackson St # 552 Burnet, TX 78611 info@amcengineers.com



Architect: OpeningDesign
17 S Fairchild | FL 7
Madison, WI 53703
ryan@openingdesign.com | 773.425.6456

Date	Description
06/10/2022	
<u> </u>	

SCHEDULES

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

• Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and

Design/System/Construction/Assembly Usage Disclaimer

- use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance
- encountered in the field. • When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials
- and alternate methods of construction. Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

Design No. U341

August 19, 2020 Bearing Wall Rating — 1 Hr.

Finish Rating — Min 20 min.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

https://iq.ulprospector.com/en/profile?e=14916

Design Criteria and Allowable Variances

BXUV.U341 | UL Product iQ surface of Classified veneer baseboard with joints reinforced with paper tape.

4. Sheathing — (Optional) — Septum may be sheathed with min 7/16 in. thick wood structural panels min grade "C-D" or "Sheathing" or min 1/2 in. thick Mineral and Fiber Boards*. See Mineral and Fiber Boards (CERZ) category for names of Classified companies.

5. Batts and Blankets* — 3-1/2 in. max thickness glass or mineral fiber batt insulation. Optional when sheathing (Item 4) is used on both halves of wall. See Batts and Blankets (BZJZ) category for list of Classified companies.

5A. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft³. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions supplied with the product. U S GREENFIBER L L C — INS735, INS745 and INS750LD for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD, and INS773LD are to be used for dry application only.

5B. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) when Sheathing (Item 4) is used on both halves of wall -Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft. **NU-WOOL CO INC** — Cellulose Insulation

5C. Batts and Blankets* — (Required for use with Wall and Partition Facings and Accessories, Item 2A. Use of Sheathing, Item 4, does not nullify requirement of Item 5C for use with Item 2A) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5D. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) and Item 5A when Sheathing (Item 4) is used on both halves of wall - Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³. INTERNATIONAL CELLULOSE CORP — Celbar-RL

5E. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of

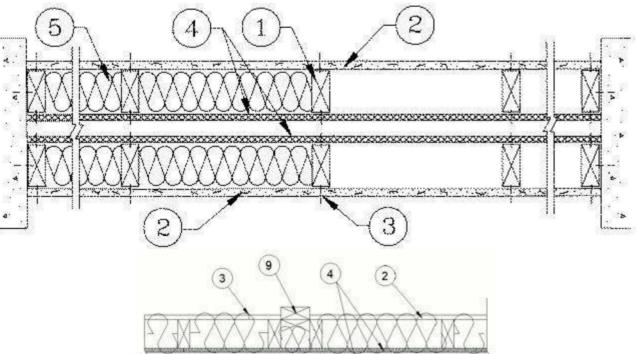
the studs. The minimum dry density shall be 5.79 lbs/ft³. **APPLEGATE HOLDINGS L L C** — Applegate Advanced Stabilized Cellulose Insulation

https://iq.ulprospector.com/en/profile?e=14916

6. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: A. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 2.

B. Steel Framing Members* — Used to attach furring channels (Item a) to studs (Item 1) . Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction

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BXUV.U341 | UL Product iQ

1. Wood Studs — Nom 2 by 4 in., spaced 24 in. OC max. Cross braced at mid-height and effectively firestopped at top and bottom of wall. No min. air space between stud rows except to accommodate attachment of sheathing, where required. See

2. Gypsum Board* — Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or **U305.** Nom 5/8 in. thick 4 ft wide. Gypsum board applied horizontally or vertically, unless specified below, and nailed to studs and bearing plates 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam head. As an alternate, No. 6 bugle head drywall screws, 1-7/8 in. long, may be substituted for the 6d cement coated nails. When Steel Framing Members* (Item 6-6C) are used, wallboard attached to furring channels with 1 in. long Type S bugle-head steel

When used in widths other than 48 in., gypsum board to be installed horizontally.

AMERICAN GYPSUM CO (View Classification) — CKNX.R14196

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374

CABOT MANUFACTURING ULC (View Classification) — CKNX.R25370

CERTAINTEED GYPSUM INC (View Classification) — CKNX.R3660

CGC INC (View Classification) — CKNX.R19751

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C (View Classification) — CKNX.R18482

GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717

LOADMASTER SYSTEMS INC (View Classification) — CKNX.R11809

furring channels as described in Item 2.

PLITEQ INC — Type Genie Clip

https://ig.ulprospector.com/en/profile?e=14916

BXUV.U341 | UL Product iQ

fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels. **PAC INTERNATIONAL L L C** — Types RSIC-1, RSIC-1 (2.75).

6A. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to

b. Steel Framing Members* — Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted

6B. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 2.

b. Steel Framing Members* — Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips. **STUDCO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips - Type A237R

6C. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: A. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 2.

B. Steel Framing Members* — Used to attach furring channels (Item 6CA) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted **REGUPOL AMERICA** — Type SonusClip

6D. **Steel Framing Members*** — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below: a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 2.

b. Steel Framing Members* — Used to attach resilient channels (Item 6Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.

KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

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NATIONAL GYPSUM CO (View Classification) — CKNX.R3501

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094

PANEL REY S A (View Classification) — CKNX.R21796

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262

THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

USG MEXICO S A DE C V (View Classification) — CKNX.R16089

2A. **Gypsum Board*** — (As an alternate to Item 2, not shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically to studs and bearing plates on one side of the assembly with 1-5/8 in. long Type S screws spaced 12 in. OC at perimeter of panels and 8 in. OC in the field. Horizontal joints of vertically applied panels need not be backed by studs. Panel joints covered with paper tape and two layers of joint compound. Screwheads covered with two layers of joint compound. Batts and Blankets placed in stud cavity as described in Item 5C. Not evaluated for use with Steel Framing Members, Furring Channels or Fiber,

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-530 (finish rating 23 min).

2B. **Gypsum Board*** — (As an alternate to Item 2, not shown) — Any 5/8 in. thick gypsum panels that are eligible for use in Design Nos. L501, G512 or U305, supplied by the Classified companies listed below shown in the **Gypsum Board*** (CKNX) category. Applied horizontally or vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally. UNITED STATES GYPSUM CO

USG BORAL DRYWALL SFZ LLC USG MEXICO S A DE C V

2C. **Gypsum Board*** — (As an alternate to Item 2, Not Shown) — 5/8 in. thick gypsum panels applied horizontally or vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed

AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc

NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type

FSMR-C, Type FSW-6, Type FSL

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1

THAI GYPSUM PRODUCTS PCL — Type C or Type X https://iq.ulprospector.com/en/profile?e=14916

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6E. Steel Framing Members* — (Optional, Not Shown) — Used as an alternate method to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 24 in. O.C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions. PAC INTERNATIONAL L L C — Type RC-1 Boost

7. Wall and Partition Facings and Accessories* — (Optional, Not shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

8. Mineral and Fiber Board* — ((Optional, Not Shown) — For optional use as an additional layer on one or both sides of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing as described in Item 2. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

9. Non-Bearing Wall Partition Intersection — (Optional) — Two nominal 2 by 4 in. stud or nominal 2 by 6 in. stud nailed together with two 3in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Nonbearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

(Optional, Not Shown) Alternate Construction For Use On One Side Of The Wall.

HOMASOTE CO — Homasote Type 440-32

10. Mineral and Fiber Board* — For use with Items 10A-10D) — Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with minimum 1-3/8 in. long ring shanked nails or 1-1/4 in. long Type W steel screws, spaced 12 in. OC along board edges and 24 in. OC in field of board along intermediate framing. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board. **HOMASOTE CO** — Homasote Type 440-32

10A. Glass Fiber Insulation — (For use with Item 10) — 3-1/2 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall. See Batts and Blankets (BKNV or BZJZ) categories for names of Classified companies.

10B. Batts and Blankets* — (As an alternate to Item 10B, For use with Item 10), 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 3-1/2 in. face of the studs with staples placed 24 in. OC. THERMAFIBER INC — Type SAFB, SAFB FF

10C. Adhesive — (For use with Item 10) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 14A).

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2D. **Gypsum Board*** — (As an alternate to Items 2, 2A, 2B and 2C) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed as described in Item 2. When used in widths of other than 48 in., gypsum boards are to be installed horizontally. **GEORGIA-PACIFIC GYPSUM L L C** — GreenGlass Type X, Type DGG.

2E. **Gypsum Board*** — (As an alternate to Items 2 through 2D) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically only and secured as described in Item 2. **GEORGIA-PACIFIC GYPSUM L L C** — Type X ComfortGuard Sound Deadening Gypsum Board.

2F. Gypsum Board* — (As an alternate to Items 2 through 2E) - Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads, 7 in. OC. Not for use with item #6. NATIONAL GYPSUM CO — Type SBWB

2G. **Gypsum Board*** — (As an alternate to Items 2 through 2F) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types QuietRock ES.

2H. Gypsum Board* — (As an alternate to Items 2 through 2G) — Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically or horizontally fastened to the studs and plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. **CERTAINTEED GYPSUM INC** — Type SilentFX

21. Wall and Partition Facings and Accessories* — (As an alternate to Items 2 through 2H) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527.

2J. Gypsum Board* — (As an alternate to 5/8 in. Type FSW in Item 2) — 2 layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal joints on the same side need not be staggered. Inner layer attached with fasteners, as described in item 2, spaced 24 in. OC. Outer layer attached per Item 2. NATIONAL GYPSUM CO — Type FSW.

2K. Gypsum Board* — (As an alternate to Item 2) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally. CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

3. Joints and Nailheads — Gypsum board joints of outer layer covered with tape and joint compound. Nail heads of outer layer covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire https://iq.ulprospector.com/en/profile?e=14916

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10D. **Gypsum Board*** — (For use with Item 10) — 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 14A) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 10). Secured to outermost studs and bearing plates with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound. Finish Rating 30 Min. AMERICAN GYPSUM CO — Type AG-C

CERTAINTEED GYPSUM INC — Type C

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

NATIONAL GYPSUM CO — Types FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Type CTypes C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2020-08-19

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·M)ranalers-

102 E 26th St Bryan, TX 77803

Katieneason@me.com | 979.450.9969

ARCHITECTURE

Architect of Record: LKB Architecture

2929 Allen Pkwy Suite 200

Houston, TX 77019

lisa@lkbarchitecture.com | 713.425.3076

DUDLEY

Structural: Dudley

6102 Imperial Loop Drive

College Station, TX 77845

(979) 777-0720

MEP: AMC Engineers

508 E Jackson St # 552

Burnet, TX 78611

info@amcengineers.com

*WYW **Owner:** Renovation Wranglers

Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703

Issued for Permit

WALL - FIRE RATED ASSEMBLY DETAIL - U341

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

ryan@openingdesign.com | 773.425.6456

5/28/22, 5:11 PM

1. **Wood Studs** — Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

gypsum panels, refer to Items 6 through 6F, Steel Framing Members*.

side of wood stud without furring channels as described in Item 3.

(finish rating 22 min), Type LightRoc (finish rating 23 min.) or Type AG-C

S-12 bugle head steel screws spaced as described in Item 4.

spaced 8 in. OC starting with a 4" stagger.

perimeter and 12 in. OC in the field.

AMERICAN GYPSUM CO — Types AGX-1

CABOT MANUFACTURING ULC — Type X

CERTAINTEED GYPSUM INC — Type X

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pan-head self-drilling screw.

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NATIONAL GYPSUM CO — Type FSW (finish rating 25 min)

48 in., gypsum panels are to be installed horizontally

used in widths other than 48 in., gypsum panels are to be installed horizontally.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 545

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-13

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

KEENE BUILDING PRODUCTS CO INC - Type RC+ Assurance Clip

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

accessory manufacturer's installation instructions.

PAC INTERNATIONAL L L C — Type RC-1 Boost

perimeter for sound control.

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alternatives for obtaining STC rating.

vertically. Gypsum panels secured as described in Item 3 with nail length increased to 2 in.

OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

head steel screws. When resilient channels are used, insulation, Items 5C or 5D is required.

A. Item 2, above — Nailheads Shall be covered with joint compound.

insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

head steel screws spaced 12 in. OC.

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2. Joints and Nail-Heads — Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted

3. **Gypsum Board*** — 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or

When Item 6A, Steel Framing Members*, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring

vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of

When Items 6, 6B, 6C, 6D, 6E, or 6F, Steel Framing Members*, are used, gypsum panels attached to furring channels with 1 in. long Type S bugle-

channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-

When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long,

AMERICAN GYPSUM CO — Types AGX-1(finish rating 23 min.), M-Glass (finish rating 23 min.), Type AGX-11 (finish rating 26 min), Type AGX-12

CABOT MANUFACTURING ULC — Type X (finish rating 22 min), 5/8 Type X, Moisture Resistant Type X, Gypsum Sheathing Type X, Mold &

face layer screw length to be increased to 2-1/2 in. Lead batten strips required behind vertical joints of lead backed gypsum wallboard

and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on

the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the

adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) when installed over lead backed board to be min 2-1/2 in. Type

top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or

3N. **Gypsum Board*** — (As an alternate to Item 3) — 5/8 in. thick, 4 ft. wide, applied horizontally or vertically with vertical joints

3O. Wall and Partition Facings and Accessories* — (As an alternate to Item 3, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels,

applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

3P. Gypsum Board* — (As an alternate to Item 3, Not Shown) — Two layers nom. 5/16 in. thick gypsum panels applied vertically or

horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by wood

studs. Horizontal joints on the same side between face and base layers need not be staggered. Base layer gypsum panels fastened to studs with 1-1/4 in. long drywall nails spaced 8 in. OC. Face layer gypsum panels fastened to studs with 1-7/8 in. long drywall nails

3Q. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied

screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than

3R. Gypsum Board* — (As an alternate to Item 3. For use with Item 5H) — Any 5/8 in, thick, 4 ft, wide, Gypsum Board listed in Item 3.

above. Applied either horizontally or vertically, and screwed to panels with 1-5/8 in. long Type W coarse thread steel screws at 8 in. OC

at perimeter and in the field with the last two screws 4 and 3/4 in. from the edges of the board when applied as the base layer. When

3T. Wall and Partition Facings and Accessories* — (As an alternate to 5/8 in. thick board as outlined in Item 3) — Nominal 1-3/8 in.

3U. **Gypsum Board*** — (As an alternate to Item 3 - For use with Foamed Plastic products, Item 5J) — 5/8 in. thick, 4 ft. wide, applied

vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels nailed 7 in.

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thick, 4 ft wide panels, applied vertically or horizontally. Fastened with #6 x 2 in. long drywall screws spaced 8 in. OC along the

6F. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs.

and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on

b. Steel Framing Members* — Used to attach furring channels (Item 6Fa) to studs. Clips spaced 48 in. OC. Clips secured to studs with

6G. Steel Framing Members* — (Optional, Not Shown) — Used as an alternate method to attach resilient channels to wall studs. A

resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 16 in. O.C. Channel

ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to

hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel.

The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the

7. Furring Channel — Optional — Not Shown — For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced

vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips

8. Caulking and Sealants — (Not Shown, Optional) — A bead of acoustical sealant applied around the partition perimeter for sound

D. Item 6, above — Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of

E. Item 8, above — Caulking and Sealants (Not Shown) A bead of acoustical sealant shall be applied around the partition

F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as

10. Wall and Partition Facings and Accessories* — (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use

as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations.

When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL

Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener

length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified

9. **STC Rating** — The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

B. Item 2, above — Joints As described, shall be covered with fiber tape and joint compound.

Channels secured to stude as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in.

3S. Gypsum Board* — 3/4 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or

either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel

CERTAINTEED GYPSUM INC — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.

centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 3 or 3A.

CERTAINTEED GYPSUM INC — Easi-Lite Type X (finish rating 24 min), Easi-Lite Type X-2 (finish rating 24 min)

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527 (finish rating 24 min).

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self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1 (finish rating 24 min)

Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

head steel screws spaced 12 in, OC, All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite

Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.

when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of

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Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials. Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction Only products which bear UL's Mark are considered Certified.

Fire-resistance Ratings - ANSI/UL 263 BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada <u>See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States</u> Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

May 27, 2022

Bearing Wall Rating — 1 Hr Finish Rating — See Items 3, 3A, 3D, 3E, 3F, 3G, 3H, 3J and 3L.

STC Rating - 56 (See Item 9) This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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5/28/22, 5:11 PM iq.ulprospector.com_en/profile_BXUV.U305 - Fire-resistance Ratings - ANSI/UL 263 | UL Product iQ in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum boards are to be installed GEORGIA-PACIFIC GYPSUM L L C — Type DGG (finish rating 20 min), GreenGlass Type X (finish rating 23 min)

3F. Gypsum Board* — (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) — 5/8 in. glass-mat faced with square edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC around the perimeter and in the field with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Nails shall be placed 1 inch and 3 inch from horizontal joints and 7 inch OC CGC INC — Type USGX (finish rating 22 min)

UNITED STATES GYPSUM CO — Type USGX (finish rating 22 min.)

USG BORAL DRYWALL SFZ LLC — , Type USGX (finish rating 22 min.

USG MEXICO S A DE C V — Type USGX (finish rating 22 min.)

MAYCO INDUSTRIES INC — "X-Ray Shielded Gypsum"

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

3G. Gypsum Board* — (As an alternate to Items 3 through 3F) — 5/8 in. thick paper surfaced applied vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. **GEORGIA-PACIFIC GYPSUM L L C** — Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min)

3H. **Gypsum Board*** — (As an alternate to Items 3) — Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

3I. Gypsum Board* — (As an alternate to Items 3 through 3H, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES (finish rating 20 min)

3J. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick paper surfaced applied vertically or horizontally. Gypsum panels secured with 1-1/4 in. Type W coarse thread gypsum panel steel screws spaced a maximum of 12 in. OC. CERTAINTEED GYPSUM INC — Type SilentFX

3K. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 8 in. OC with the last screw 1 in. from the edge of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min).

3L. Gypsum Board* — (As an alternate to Item 3) — For Direct Application to Studs Only — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick. compression fitted or adhered over the screw heads. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".

3M. **Gypsum Board*** — (As an alternate to Items 3) — For Direct Application to Studs Only — For use as the base layer or as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the https://ig.ulprospector.com/en/profile?e=14888

5/28/22, 5:11 PM iq.ulprospector.com_en/profile_BXUV.U305 - Fire-resistance Ratings - ANSI/UL 263 | UL Product iQ b. Steel Framing Members* — Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring

6A. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members on one side of studs as described below: a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as

described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 3. b. Steel Framing Members* — Used to attach furring channels (Item 6Aa) to one side of studs only. Clips spaced 48 in. OC., and

secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are

friction fitted into clips. KINETICS NOISE CONTROL INC — Type Isomax 6B. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in.

and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on

b. Steel Framing Members* — Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. PLITEQ INC — Type Genie Clip

each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

6C. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC., and secured to studs with No. 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips. STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6D. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. REGUPOL AMERICA — Type SonusClip

6E. Steel Framing Members* — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below: a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 3.

b. Steel Framing Members* — Used to attach resilient channels (Item 6Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in.

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5/28/22, 5:11 PM iq.ulprospector.com_en/profile_BXUV.U305 - Fire-resistance Ratings - ANSI/UL 263 | UL Product iQ CERTAINTEED GYPSUM INC — Type C, Type X-1 (finish rating 26 min); Type EGRG or GlasRoc (finish rating 23 min), GlasRoc-2, Type Habito (finish rating 26 min), Type LWTX (finish rating 18 min), Type LGFC6A (finish rating 34 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX (finish rating 21 min), Type CLLX (finish rating 24 min)

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min), Type ULIX (finish rating 20 min)

GEORGIA-PACIFIC GYPSUM L L C — Type 5 (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 26 min), Type C (finish rating 26 min), Type 7 (finish rating 26 min), Type 8 (finish rating 26 min), Type 8 (finish rating 26 min), Type 9 (finish rating 26 min), Type 8 (finish rating 26 min), Type 9 (finish rating 26 min), 26 min), Type DGG (finish rating 20 min), Type GPFS1 (finish rating 20 min), Type GPFS2 (finish rating 20 min), Type GPFS6 (finish rating 26 min), Type DS, Type DAP, Type DD (finish rating 20 min), Type DA, Type DAPC, Type LS (finish rating 23 min), Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, Type LWX (finish rating 22 min), Veneer Plaster Base-Type LWX (finish rating 22 min), Water Rated-Type LWX (finish rating 22 min), Sheathing Type-LWX (finish rating 22 min), Soffit-Type LWX (finish rating 22 min), Type DGLW (finish ra 22 min), Water Rated-Type DGLW (finish rating 22 min), Sheathing Type- DGLW (finish rating 22 min), Soffit-Type DGLW (finish rating 22 min), Type LWX (finish rating 22 min), Type LW2X (finish rating 22 min), Veneer Plaster Base - Type LW2X (finish rating 22 min), Water Rated - Type LW2X (finish rating 22 min), Sheathing - Type LW2X (finish rating 22 min), Soffit - Type LW2X (finish rating 22 min), Type DGL2W (finish rating 22 min), Water Rated - Type DGL2W (finish rating 22 min), Sheathing - Type DGL2W (finish rating 22 min)

NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 20 min), T rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), nin), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min), Type FSW-8, Type FSLX (finish rating 21 min), Type RSX (finish rating 26 min).

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), Type PG-4 (finish rating 20 min), Type PG-6 (finish rating 23 min), Types PG-3WS, PG-5WS, PGS-WRS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min), PG-11 PG-13 (Nails increased to 2 in.), Type PG-C or PGI (finish rating 26 min)

PANEL REY S A — Type ARX, GREX, GRIX, PRX, PRC, PRC2; Types RHX, Guard Rey, MDX, ETX (finish rating 22 min), PRX2 (finish rating 21 min)

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 (finish rating 26 min)

THAI GYPSUM PRODUCTS PCL — Type C, Type X (finish rating 26 min)

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type IP-X2 (finish rating 24 min), T min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type ULIX (finish rating 20 min)

USG BORAL DRYWALL SFZ LLC — Type SGX (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (fi 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), SCX (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type ULX (finish rating 22 min)

3A. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LighttRoc (finish

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CGC INC — Type SCX

PANEL REY S A — Type ARX, PRX

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SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type X

UNITED STATES GYPSUM CO — Types SCX and SGX USG BORAL DRYWALL SFZ LLC — Types SCX and SGX

USG MEXICO S A DE C V — Type SCX

3V. Gypsum Board* — (As an alternate to Item 3. For use with Item 5K) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 3 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the

4. Steel Corner Fasteners — (Optional) — For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. Batts and Blankets* — (Optional — Required when Item 6A is used (RC-1)) — Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be friction-fitted to completely fill the stud cavities. CERTAINTEED CORP

KNAUF INSULATION LLC MANSON INSULATION INC

ROCKWOOL — Types Acoustical Fire Batts and Type AFB, min. density 1.69 pcf / 27.0 kg/m³

ROCKWOOL MALAYSIA SDN BHD — Type Acoustical Fire Batts

ROCK WOOL MANUFACTURING CO — Delta Board

THERMAFIBER INC — Type SAFB, SAFB FF

JOHNS MANVILLE

5A. Fiber, Sprayed* — (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft³. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions supplied with the product. When Item 6B is used, Fiber, Sprayed shall be INS735, INS745, INS750LD, INS765LD, INS773LD or SANCTUARY.

U S GREENFIBER L L C — INS735, INS745, INS750LD and SANCTUARY for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD, and INS773LD are to be used for dry application only

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5/28/22, 5:11 PM iq.ulprospector.com en/profile BXUV.U305 - Fire-resistance Ratings - ANSI/UL 263 | UL Product iQ 11. Cementitious Backer Units* — (Optional Item Not Shown — For Use On Face Of 1 Hr Systems With All Standard Items Required) - 7/16 in., 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide. Applied vertically or horizontally with vertical joints centered over studs. Fastened to study and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, and a minimum of 3/4 in. for wood framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing

NATIONAL GYPSUM CO — Type DuraBacker, PermaBase, DuraBacker Plus, or PermaBase Plus

12. Non-Bearing Wall Partition Intersection — (Optional) —Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

13. Mesh Netting — (Not Shown) — Any thin, woven or non-woven fibrous netting material attached with staples to the outer face of one row of studs to facilitate the installation of the sprayed fiber from the opposite row.

14. Mineral and Fiber Board* — (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with 2 in. long Type W steel screws, spaced 12 in. OC. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board. **HOMASOTE CO** — Homasote Type 440-32

14A. Mineral and Fiber Board* — (Optional, Not Shown) — For use with Items 14B-14E) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with minimum 1-3/8 in. long ring shanked nails or 1-1/4 in. long Type W steel screws, spaced 12 in. OC along board edges and 24 in. OC in field of board along intermediate framing. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board. **HOMASOTE CO** — Homasote Type 440-32

14B. Glass Fiber Insulation — (For use with Item 14A) — 3-1/2 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall. See Batts and Blankets (BKNV or BZJZ) categories for names of Classified companies.

14C. Batts and Blankets* — (As an alternate to Item 14B, For use with Item 14A), 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 3-1/2 in, face of the studs with staples placed 24 in, OC. THERMAFIBER INC — Type SAFB, SAFB FF

14D. Adhesive — (For use with Item 14A) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 14A).

14E. **Gypsum Board*** — (For use with Item 14A) — 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 14A) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws spaced 8 in. OC along edges of each vertical joint and 12 in, OC in intermediate field of the Mineral and Fiber Board (Item 14A). Secured to outermost studs and bearing plates with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound. Finish Rating 30 Min. AMERICAN GYPSUM CO — Type AG-C

CGC INC — Types C, IP-X2, IPC-AR

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CERTAINTEED GYPSUM INC — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

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CERTAINTEED GYPSUM INC — Type C, Type X-1 (finish rating 26 min), Type EGRG or GlasRoc.

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min)

NATIONAL GYPSUM CO — Type FSW (finish rating 24 min)

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type Type SHX (finish rating 24 min), Type FRX-G (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min)

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (fi 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX, Type IP-AR (finish rating 24 min), Type SHX (finish rating 24 min), Type IP-AR (finish rating 24 min), T min), Type IPC-AR (finish rating 24 min)

3B. **Gypsum Board*** — (As an alternate to Item 3) — Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. CGC INC — Types AR, IP-AR

UNITED STATES GYPSUM CO — Types AR, IP-AR

USG MEXICO S A DE C V — Types AR, IP-AR

3C. Gypsum Board* — (As an alternate to Items 3, 3A and 3B) — 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required. **CGC INC** — Type SHX

UNITED STATES GYPSUM CO — Type SHX

USG MEXICO S A DE C V — Type SHX

3D. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, or 3C — Not Shown) — For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in, long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 1-1/2 in, wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". **RAY-BAR ENGINEERING CORP** — Type RB-LBG (finish rating 24 min)

3E. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, 3C, and 3D) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8

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5/28/22, 5:11 PM iq.ulprospector.com_en/profile_BXUV.U305 - Fire-resistance Ratings - ANSI/UL 263 | UL Product iQ 5B. Fiber, Sprayed* — (Not Shown - Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft. **NU-WOOL CO INC** — Cellulose Insulation

5C. Batts and Blankets* — Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, friction-fitted to fill interior THERMAFIBER INC — Type SAFB, SAFB FF

5D. Glass Fiber Insulation — (As an alternate to Item 5C) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

5E. Batts and Blankets* — (Required for use with Wall and Partition Facings and Accessories, Item 3D) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5F. Fiber, Sprayed* — (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D) — As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber,

5G. Fiber, Sprayed* — (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D). — As an alternate to Batts and Blankets (Item 5) and Item 5A - Brown Colored Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed stud cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³.

AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

5H. Foamed Plastic* — (Optional -For use with Item 3R) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity. **SES FOAM INC** — Nexseal[™] 2.0 or Nexseal[™] 2.0 LE Spray Foam and Sucraseal Spray Foam.

51. **Fiber, Sprayed*** — (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft³. **APPLEGATE HOLDINGS L L C** — Applegate Advanced Stabilized Cellulose Insulation

5J. Foamed Plastic* — (Optional, Not Shown - For use with Item 3U) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity. GACO WESTERN L L C — Types GacoEZSpray F4500, GacoProFill FR6500R, Gaco 052N, GacoOnePass F1850, GacoOnePass Low GWP F1880, and

5K. Foamed Plastic* — (Optional, Not Shown - For use with Item 3V) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity. CARLISLE SPRAY FOAM INSULATION — Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, and Foamsulate HFO.

6. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

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iq.ulprospector.com_en/profile_BXUV.U305 - Fire-resistance Ratings - ANSI/UL 263 | UL Product iQ 5/28/22, 5:11 PM NATIONAL GYPSUM CO — Types FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C **USG MEXICO S A DE C V** — Types C, IP-X2, IPC-AR

https://iq.ulprospector.com/en/profile?e=14888

14F. Mineral and Fiber Board — (Optional, Not Shown) — For optional use as an additional layer on one side of wall - Nom 1/2 in. thick, 4 ft wide, square edge fiber boards applied vertically to studs on one side of the wall in between the wood studs and the UL Classified Gypsum Board (Item 3). Fiber boards installed with 1-1/4 in. long, Type W, bugle head, coarse thread gypsum board screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 3) installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board. **BLUE RIDGE FIBERBOARD INC** — SoundStop

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively. Last Updated on 2022-05-27

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

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Owner: Renovation Wranglers 102 E 26th St Bryan, TX 77803

Katieneason@me.com | 979.450.9969

ARCHITECTURE **Architect of Record:** LKB Architecture 2929 Allen Pkwy Suite 200 Houston, TX 77019 lisa@lkbarchitecture.com | 713.425.3076

> DUDLEY **Structural:** Dudley 6102 Imperial Loop Drive College Station, TX 77845 (979) 777-0720





Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703 ryan@openingdesign.com | 773.425.6456

Issued for Permit

WALL - FIRE RATED ASSEMBLY DETAIL - U305

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

BXUV.L521 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning
- alternate materials and alternate methods of construction. • Only products which bear UL's Mark are considered Certified.

• Authorities Having Jurisdiction should be consulted before construction.

Fire-resistance Ratings - ANSI/UL 263

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for

Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

Design No. **L521**

February 14, 2022

Unrestrained Assembly Rating — 1 Hr Finish Rating — 25 Min (See Items 5 and 5A), 20 Min (See Items 6H and 7A) This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor

shall be used — See Guide BXUV or BXUV7

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick adhered to subfloor with Hacker Floor Primer.

Metal Lath (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi.

2. Trusses — Parallel chord trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically

members secured together with min 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to

the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each

tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each

tooth has a twist for stiffness. The pairs are repeated on approx. 7/8 in. centers with four rows of teeth per inch of plate width.

3. Air Duct* — Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper

4. Ceiling Damper* — For use with min 18 in. deep trusses. Max nom area shall be 324 sq in. with the length not to exceed 24 in.

and the width not to exceed 20 in. Max height of damper shall be 14 in. Aggregate damper openings shall not exceed 162 sq in.

4A. Alternate Ceiling Damper* — For use with min 18 in. deep trusses. Max nom area shall be 196 sq in. with the length not to

exceed 26 in. and the width not to exceed 14 in. Max height of damper shall be 7 in. Aggregate damper openings shall not exceed

98 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided

4B. Alternate Ceiling Damper* — For use with min 18 in. deep trusses. Max nom area shall be 256 sq in. with the length not to

exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 17 in. Aggregate damper openings shall not

provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.

exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions

with the damper. A steel grille (Item 9) not to exceed 144 in.² shall be installed in accordance with installation instructions.

per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the

or horizontally. Min truss depth is 12 in. when no Ceiling Damper* is used and 18 in. when a Ceiling Damper* is used. Truss

the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping

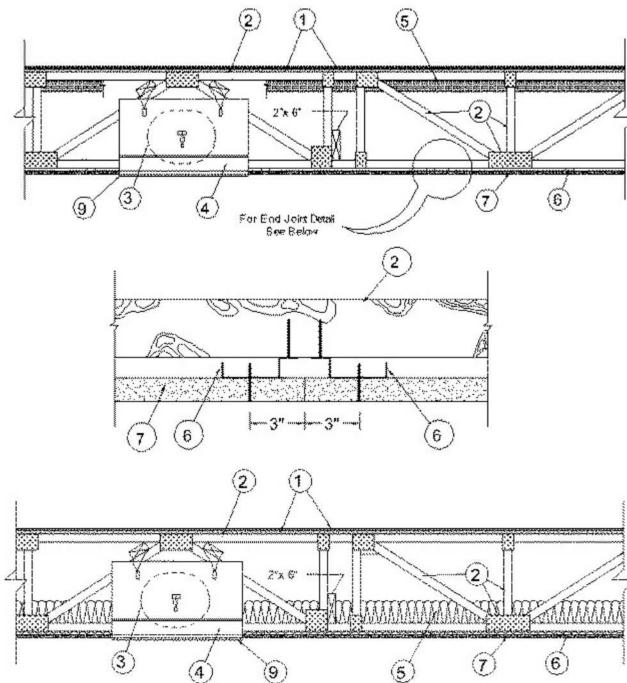
Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand. Refer to the manufacturer's instructions

accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill High Strength, Gyp-Span Radiant

damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.

Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32 mm) of floor-topping mixture.



Alternate Insulation Placement

1. **Flooring System** — The flooring system shall consist of one of the following:

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Floor — Min 1 by 4 in. T & G lumber installed perpendicular to trusses, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered.

System No. 2

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring* — Floor Topping Mixture — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C — Types LRK, HSLRK

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

minimum thickness of floor topping over each floor mat material. UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the

Alternate Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding minimum thickness of floor topping over floor mat. **GRASSWORX L L C** — SC Types

System No. 3 (For Use with Item 7A Only)

Finish Floor — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and 2-1/2 in. long nails, spaced 12 in. OC along each truss and 8 in. OC at the perimeter.

Structural Cement-Fiber Units* — Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the end edges of the panel.

UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C — Types LRK, HSLRK

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Structural Cement-Fiber Units* — Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the end edges of the panel.

UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) — Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19 mm). HACKER INDUSTRIES INC — FIRM-FILL SCM 125

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25 mm). **HACKER INDUSTRIES INC** — Type FIRM-FILL SCM 250

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm) HACKER INDUSTRIES INC — FIRM-FILL SCM 400

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm). **HACKER INDUSTRIES INC** — Type FIRM-FILL SCM 750

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Gyp-Span Radiant

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Floor* — Mineral and Fiber Board — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. **HOMASOTE CO** — Type 440-32 Mineral and Fiber Board

Floor Mat Materials* — (Optional) — Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of floor-topping mixture. Floor topping thickness a min 1 in. over the floor mat. **HACKER INDUSTRIES INC** — Type Hacker Sound-Mat

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HACKER INDUSTRIES INC — Type Hacker Sound-Mat II

thickness a nom 1-1/4 in. over the floor mat.

recommended for use with eligible floor mat(s).

C&S AIR PRODUCTS — Model RD-521

C&S AIR PRODUCTS — Model RD-521-BT

C&S AIR PRODUCTS — Models RD-521-IP, RD-521-NP

POTTORFF — Models CFD-521-IP, CFD-521-NP

POTTORFF - Model CFD-521-BT

POTTORFF — Model CFD-521

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4C. Alternate Ceiling Damper* — For use with min 18 in. deep trusses. Max nom area shall be 144 sq in. with the length not to exceed 14 in. and the width not to exceed 12 in. Max height of damper shall be 17-7/8 in. Aggregate damper openings shall not exceed 74 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions

provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.

POTTORFF — Models CFD-521-90, CFD-521-90NP

C&S AIR PRODUCTS — Models RD-521-90, RD-521-NP90

DELTA ELECTRONICS INC — Models CRD2, GBR-CRD, ITG-CRD

installed in accordance with installation instructions.

BROAN-NUTONE L L C — Model RDFUWT

BROAN-NUTONE L L C — Models RDJ1 and RDH

4D. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 8-9/16 in. and the width not to exceed 8-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 38 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.

4E. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 9-1/4 in. and the width not to exceed 9-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 45 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions. **DELTA ELECTRONICS INC** — Model SIG-CRD

sq in. with the length not to exceed 11-1/16 in. and the width not to exceed 11-7/8 in. Aggregate damper openings shall not exceed 66 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions. **DELTA ELECTRONICS INC** — Model SMT-CRD

4F. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 131

4G. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in. Aggregate damper openings shall not exceed 52 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.

4H. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-1/8 in. Aggregate damper openings shall not exceed 57 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be

PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA — Model PC-RD05C5

41. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-15/16 in. Aggregate damper openings shall not exceed 40 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A metallic grille (Item 9) shall be installed in accordance with installation instructions.

4J. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions. BROAN-NUTONE L L C — Model RDMWT

4K. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions. BROAN-NUTONE L L C — Model RDMWT2

5. Batts and Blankets* — (Optional) — Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 24 in. OC, no insulation shall be installed in the concealed space. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 16 in. OC, the insulation shall be a max of 3-1/2 in. thick, and shall be secured against the subflooring with staples at 12 in. OC or held suspended in the concealed space with 0.090 in. diam galv steel wires attached to the wood trusses at 12 in. OC. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced a max of 12 in. OC or when the Steel Framing Members (Item 6B) are used, there is no limit in the overall thickness of insulation, and the insulation can be secured against the subflooring, held suspended in the concealed space or draped over the resilient or furring channels (or Steel Framing Members) and gypsum panel membrane. When **Steel Framing Members** (Item 6C) are used, max 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6Ca) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6Cd). The finished rating has only been determined when the insulation is secured to the subflooring.

5A. Fiber, Sprayed* — (Dry Dense Packed 100% Borate Formulation) — (Optional) — As an alternate to Item 5, When used, the resilient channel and gypsum board attachment is modified as specified in Items 6 and 7 and wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions supplied with the product. When Item 5A (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, 6G or 6H. U S GREENFIBER L L C — INS735, INS745, INS750LD, INS765LD, INS773LD, & SANCTUARY to be used with dry application only.

5B. Fiber, Sprayed* — (Loose Fill 100% Borate Formulation) — (Optional) — As an alternate to Items 5 and 5A, The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a minimum dry density of 0.5 lb/ft³ and at a max thickness of 3-1/2 in., in accordance with the application instructions supplied with the product. Wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. When Item 5B (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, 6D, 6E, 6F, 6G, 6H or 6l. USGREENFIBER LLC — INS735, INS745, INS750LD, INS765LD, INS773LD, & SANCTUARY to be used with dry application only.

5C. Foamed Plastic* — (As alternate to Item 5, 5A, or 5B, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft³ density, while maintaining a minimum 8-1/2 in. clearance between the spray foam insulation and the gypsum board (Item 7). Spray foam insulation is limited for use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4K) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6I. SES FOAM INC — Sucraseal

5D. Cavity Insulation - Batts and Blankets* or Fiber, Sprayed* — (As described above in Items 5 through 5B) — (For Use with Item 7A, Not Shown) — Min. 3-1/2 in thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 6H)/gypsum board (Item 7A) ceiling membrane.

5E. Foamed Plastic* — (As alternate to Item 5, 5A, or 5C, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft³ or 2.0 lb/ft³ density, depending on the product installed. Spray foam insulation is limited to use with minimum 18 in. deep trusses (Item 2).

When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6I. BASF CORP — Enertite® NM, Enertite® G, FE178®, Spraytite® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, and

5F. Foamed Plastic* — (As alternate to Item 5, 5A, 5B, 5C or 5E, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 17 in. at a nominal 0.5 lb/ft³ density, while maintaining a minimum 1-1/2 in. clearance between the spray foam insulation and the gypsum board (Item 7).

Spray foam insulation is limited for use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4K) in the concealed space, no clearance is necessary between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6l. SES FOAM INC — EasySeal.5

5G. Foamed Plastic* — (As alternate to Item 5 - not to be used in combination with any alternates to item 5) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 11 in. at a nominal 0.5 lb/ft³ - 2.5 lb/ft³ density, while maintaining a minimum 7 in. clearance between the spray foam insulation and the gypsum board (Item 7). Spray foam insulation is limited for use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board spaced maximum 3 in. away from gypsum butt joints. Gypsum board to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4K) in the concealed space, no clearance is necessary between damper housing and spray foam insulation. Only for use with item 6 not evaluated for use with

CARLISLE SPRAY FOAM INSULATION — Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, and Foamsulate HFO.

6. **Resilient Channels** — Formed from min 25 MSG galv steel installed perpendicular to trusses. When there is no insulation installed in the concealed space the resilient channels are spaced 24 in. OC. When insulation (Item 5) is secured to the underside of the subfloor the resilient channels are spaced 16 in. OC. When insulation, Items 5, 5A or 5B is applied over the resilient channel/gypsum panel ceiling membrane, or when Item 5C, 5E or 5F is applied to underside of subflooring, the resilient channels are spaced 12 in. OC. Channels secured to each truss with 1-1/4 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint as shown in the above illustration. Additional channels shall extend min 6 in. beyond each side edge of panel.

6A. **Steel Framing Members*** — (Not Shown) — As an alternate to Item 6. a. Furring Channels — Formed of No. 25 MSG galv steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5, 5A or 5B is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of

b. Steel Framing Members* —

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Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating trusses with No. 8 x 2-1/2 in. course drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to alternating trusses with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. RSIC-Si-X secured to alternating trusses with No 10. X 3-1/2 in. coarse screw. Furring channels are friction fitted into clips. RSIC-1, RSIC-V and RSIC-Si-X clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that

Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703

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FLOOR - FIRE RATED ASSEMBLY DETAIL - L521

Metal Lath (Optional) — (Optional) — For use with 3/8 in. (10 mm), or greater, floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1 in. (25 mm) over the floor mat. Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s).

System No. 8

Subflooring —Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

https://iq.ulprospector.com/en/profile?e=14276

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

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Owner: Renovation Wranglers 102 E 26th St Bryan, TX 77803 Katieneason@me.com | 979.450.9969

ARCHITECTURE

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DUDLEY

Structural: Dudley 6102 Imperial Loop Drive College Station, TX 77845 (979) 777-0720







ryan@openingdesign.com | 773.425.6456

wide gypsum board shall be installed as described in Item 7.

angle or channel to facilitate the ceiling installation.

6C. **Steel Framing Members*** — (Not Shown) — As an alternate to Item 6.

as listed below.

CGC INC — Type DGL or RX

USG INTERIORS LLC — Type DGL or RX

channels as described in Item 7.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75), RSIC-Si-X

supports the gypsum board butt joints, as described in Item 7. When Fiber, Sprayed (Item 5B) is used, two layers of nom 5/8 in. thick, 4 ft

6B. Steel Framing Members — (Not Shown) — As an alternate to Item 6, main runners, cross tees, cross channels and wall angle

SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections. Hanger

b. Cross Tees or Channels — Nom 4 ft long cross tees, with 15/16 in. or 1-1/2 in. wide face, or nom 4 ft long cross channels, with

1-1/2 in. wide face, either spaced 16 in. OC, installed perpendicular to the main runners. Additional cross tees or channels used 8

c. Wall Angle or Channel — Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls

at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum

a. Furring Channels — Hat-shaped furring channels, 7/8 in. deep by 2-5/8 in. wide at the base and 1-1/4 in. wide at the face,

formed from No. 25 ga. galv steel, spaced max. 16 in. OC perpendicular to trusses and Cold Rolled Channels (Item 6Cb). Furring

channels secured to Cold Rolled Channels at every intersection with a 1/2 in. pan head self-drilling screw through each furring

one at each end of overlap. Supplemental furring channels at base layer and outer layer gypsum board butt joints are not

channel leg. Ends of adjoining channels overlapped 4 in. and tied together with two double strand No. 18 SWG galv steel wire ties,

required. Batts and Blankets draped over furring channels as described in Item 5. Two layers of gypsum board attached to furring

b. Cold Rolled Channels — 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses,

min. 6 in. and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

the top and bottom of the blocking at each Steel Framing Member (Item 6Cd) location.

Spring gauge of hanger chosen per manufacturer's instructions.

6D. **Steel Framing Members*** — (Not Shown) — As an alternate to Item 6.

KINETICS NOISE CONTROL INC — Type ICW

BXUV.L521 - Fire-resistance Ratings - ANSI/UL 263 | UL Product iQ

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friction-fitted into the channel caddy on the Steel Framing Members (Item 6Cd). Adjoining lengths of cold rolled channels lapped

c. Blocking — Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber

(blocking), min. 6 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the truss (Item 2) at

d. Steel Framing Members* — Hangers spaced 48 in. OC. max along truss, and secured to the Blocking (Item 6Cc) on alternating

trusses with a single 5/16 in. by 2 in. hex head lag bolt or four #6 1-1/4 in. drywall screws through mounting hole(s) on the hanger

bracket. The two 1/4 in. long steel teeth on the hanger are embedded in the side of the blocking. Hanger positioned on blocking

a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood

b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to

from base layer end joints. Butted side joints of outer layer to be offset min. 18 in. from butted side joints of base layer. When Steel Framing Members (Item 6C) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long

dimensions perpendicular to furring channels (Item 6Ca). Base layer attached to the furring channels using 1 in. long Type S bugle

head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints centered on

the continuous furring channels. Butted base layer end joints to be offset a min of 16 in. in adjacent courses. Outer layer attached

to the furring channels using 1-5/8 in. long Type S bugle head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints centered on the continuous furring channels and offset a min of 16 in. from butted end joints of base layer. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer. When Steel Framing Members

(Item 6D) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 12 in. OC in

continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two furring channels shall be spaced approximately 4 in. OC, and be

attached to underside of the truss with one Isomax clip at each end of the channel. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Outer layer attached to the furring channels using 1-5/8 in. long Type S bugle-head steel screws spaced 12

in. OC in the field. The end of the outer layer boards at the butt joint shall be attached to the base layer boards with 1-5/8 in. long

Type G screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min of 8 in. from base layer end

joints. Butted side joints of outer layer to be offset min 18 in. from butted side joints of base layer. Outer layer shall be finished as

the field of the board. Butted end joints shall be staggered min 2 ft. within the assembly, and occur midway between the

structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the

furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining

channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.

and leveling bolt height adjusted such that furring channels are flush with bottom of trusses before gypsum board installation.

in. from each side of butted gypsum board end joints. The cross tees or channels may be riveted or screw-attached to the wall

a. Main Runners — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by min 12

wires wrapped and twist-tied on 16d nails driven in to side of trusses at least 5 in. above the bottom face.

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back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than

length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection

of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run

b. Blocking — Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber

c. Steel Framing Members* — Used to attach furring channels (Item 6La) to trusses. Clips spaced 48 in. OC and secured along

6N. Steel Framing Members* — (Optional, Not Shown) — Used as an alternate method to attach resilient channels to structural

members. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 24

in. O.C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional

accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge

of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with

the accessory and per the accessory manufacturer's installation instructions. Gypsum Board butt joints staggered minimum 24 in.

7. **Gypsum Board*** — Nom 5/8 in. thick, 48 in. wide gypsum panels. When resilient channels (Item 6) are used, gypsum panels

installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type S bugle head steel

screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. When insulation (Items 5 or 5A)

is applied over the resilient channel/gypsum panel ceiling membrane screw spacing shall be reduced to 8 in. OC. When insulation

(Item 5C, 5E or 5F) is applied to the underside of the subflooring, screw spacing shall be reduced to 8 in. OC and minimum 1-1/4

in. long Type S screws to install gypsum to the resilient channels (Item 6), and butted end joints shall be staggered min. 2 ft within

the assembly, and occur midway between the continuous furring channels. End joints secured to both resilient channels as shown

perpendicular to furring channels. Panels attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced

8 in. OC along butted end joints and in the field of the panel. Butted end joints shall be staggered min. 2 ft within the assembly,

of furring channel equal to the width of the gypsum panel plus 6 in. on each end. The two support furring channels shall be

spaced approximately 3-1/2 in. OC, and be attached to underside of the truss with one clip at each end of the channel. When

Steel Framing Members* (Item 6B) are used, gypsum panels installed with long dimension perpendicular to cross tees with side

joints centered along main runners and end joints centered along cross tees. Panels fastened to cross tees with 1 in. long. Type S

bugle-head screws spaced in the field and 8 in. OC along end joints. Panels fastened to main runners with 1 in. long . Type S

Sprayed (Items 5A or 5B) is used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions

bugle-head screws spaced midway between cross tees. Screws along sides and ends of panels spaced 3/8 to 1/2 in. from panel

edge. End joints of panels shall be staggered with spacing between joints on adjacent panels not less than 42 ft OC. When Fiber,

perpendicular to furring channels. Base layer gypsum board secured with 1 in. long Type S bugle head steel screws spaced 12 in.

shown in end joint detail. Outer layer gypsum board secured with 1-5/8 in. long Type S bugle head steel screws spaced 12 in. OC

When both Steel Framing Members (Item 6A) and Fiber, Sprayed (Items 5A or 5B) are used, furring channels spaced 12 in. OC

and two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimension perpendicular to furring channels.

Base layer secured to furring channels with nom 1 in. long Type S bugle head screws spaced 8 in. OC along butted end joints and

continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the

width of the gypsum board plus 6 in. on each end. The two support furring channels shall be spaced approximately 3-1/2 in. OC,

and be attached to the underside of the truss with one clip at each end of the channel. Outer layer secured to furring channels

using 1-5/8 in. long Type S screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min. of 8 in.

in the field of the board. Butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the

OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. End joints secured to both resilient channels as

and located a min of 1/2 in. from side joints and 3 in. from the end joints. Outer layer shall be finished as described in Item 8.

and occur midway between the continuous furring channels. Each end of each gypsum panel shall be supported by a single length

in end joint detail. When Steel Framing Members (Item 6A) are used, gypsum panels installed with long dimensions

truss webs at each furring channel intersection with min. 3/4 in. long self-drilling #10 x 1-1/2 in. screws through each of the

and bottom of the blocking at each Steel Framing Member (Item 6c) location with 16d nails or minimum 2-1/2 in. screws.

(blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top

perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels

with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

provided hole locations. Furring channels are friction fitted into clips.

PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

OC and Gypsum Board screws spaced 8 in. OC when used.

PAC INTERNATIONAL L L C — Types RC-1 Boost

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FLOOR - FIRE RATED ASSEMBLY DETAIL - L521 CONT.

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

the bottom chord of alternating trusses with two No. 8 x 2-1/2 in. course drywall screws, one through the hole at each end of the clip. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC and secured to consecutive trusses. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 5B.

KINETICS NOISE CONTROL INC — Type Isomax

6E. **Steel Framing Members*** — (Not Shown) — As an alternate to Item 6. a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire near each end of overlap.

b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with one No. 8 x 2-1/2 in. coarse drywall screw through center grommet. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC and secured to consecutive trusses. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips

required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Not evaluated for use with

PLITEQ INC — Type Genie Clip

6F. Steel Framing Members* — (Not Shown) — As an alternate to Items 6, furring channels and Steel Framing Members as a. Furring Channels — Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to joists. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing

b. Steel Framing Members* — Used to attach furring channels (Item a) to the trusses (Item 2). Clips spaced at 48" OC and secured to the bottom of the joists with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6G. Steel Framing Members* — (Not Shown) — As an alternate to Item 6 — Not for use with Items 5, 5A or 5B — Main runners nom 12 ft long, spaced 72 in. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and

6K. Steel Framing Members* — (Not Shown) — As an alternate to Item 6. furring channels and Steel Framing Members as a. Furring Channels — Hat channels formed of No. 25 MSG galv steel, nom. 2-23/32 in. wide by 7/8 in. deep, When there is no

together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

channels will extend to an adjacent truss where it is secured with a clip.

KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

resilient channel/gypsum panel ceiling membrane, or when Item 5C, 5E or 5F is applied to underside of subflooring, the resilient channels are spaced 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap. b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC with No. 8 x

underside of the subfloor the resilient channels are spaced 16 in. OC. When insulation, Items 5, 5A or 5B is applied over the

insulation installed in the concealed space the resilient channels are spaced 24 in. OC. When insulation (Item 5) is secured to the

b. Steel Framing Members* — Used to attach furring channels (Item 6la) to the trusses (Item 2). Clips spaced 48 in. OC on

alternating trusses and secured to the bottom chord of the trusses with one 2-1/2 in. coarse drywall screw through the center

channels are overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are

6J. Steel Framing Members* — (Not Shown) — Used to attach resilient channels (Item 6) to trusses (Item 2). Clips spaced 48 in.

OC on adjacent trusses, and secured to trusses with one No. 8 x 2-1/2 in. coarse drywall screw through center grommet hole.

Channels secured to clips with one #10 x 1/2 in. pan-head self-drilling screw. Ends of adjoining channels overlapped 6 in. and

board butt joints require additional resilient channels spaced 3 in. from the butt joint on either side. One edge of the extra

secured together with two #8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum

required to hold the furring channel that supports one end of the gypsum board butt joints as described in Item 7.

grommet in accordance with the manufacturer's installation instructions. Furring channels are then friction fitted into clips. Ends of

2-1/2 in. course drywall screw through the center grommet. Furring channels are friction fitted into clips. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. **CLARKDIETRICH BUILDING SYSTEMS** — Type ClarkDietrich Sound Clip

6L. Steel Framing Members* — (Not Shown a. Furring Channels — Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced as indicated in Item 6, perpendicular to the trusses. Channels secured to Cold Rolled Channels at every intersection with a 3/4 in. TEK screw through each furring channel leg. Ends of adjoining channels overlapped 12 in. and fastened together with two double strand No. 18 SWG galv

steel wire ties, one at each end of overlap, or with two 3/4 in. TEK screws in each leg of the overlap section. Two furring channels

used at end joints of gypsum board (Item 7), each extending a min of 6 in. beyond both side edges of the board. b. Cold Rolled Channels — 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6Ld) and secured with two 3/4 in. TEK screws. Adjoining lengths of cold rolled channels lapped min. 12 in. and secured along bottom legs with four 3/4 in. TEK screws and wire-tied

c. **Blocking** — Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top and bottom of the blocking at each Steel Framing Member (Item 6Ld) location with 16d nails or minimum 2-1/2 in. screws.

1-1/2 in. screws through mounting holes on the hanger bracket. PAC INTERNATIONAL L L C — Type RSIC-SI-CRC EZ Clip

d. Steel Framing Members* — Spaced 48 in. OC. max along truss, and secured to the truss on alternating trusses with two, #10 x

6M. Steel Framing Members* — (Not Shown) — As an alternate to Item 6. a. Furring Channels — Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced as indicated in Item 6, perpendicular to trusses and friction fit into Steel Framing Members (Item 6Mc). Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap or with two TEK screws along each leg of

the 6 in. overlap. Two furring channels used at end joints of gypsum board (Item 7). Butt joint channels held in place by strong

shall be reduced to 12 in. OC. Channels secured to joists as described in Item b. galvanized steel wire. Additional clips are required to hold furring channel that supports the gypsum board butt joints as

cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation. **USG INTERIORS LLC** — Type DGL or RX

spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b.

6H. Resilient Channels — For Use With Item 7A - Formed from min 25 MSG galv steel installed perpendicular to trusses and spaced 16 in. OC. Channels secured to each truss with 1-5/8 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint. Additional channels shall extend min 6 in. beyond each side edge of panel. Insulation, Item 5D is applied over the resilient channel/gypsum panel ceiling membrane.

6l. Steel Framing Members* — (Not Shown) — As an alternate to Item 6, furring channels and Steel Framing Members as a. Furring Channels — Formed of No. 25 MSG galvanized steel, 2-1/2 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to

trusses. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel

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When Steel Framing Members (Item 6L) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 7. Adjacent butt joints staggered minimum 48 in. OC.

When Steel Framing Members (Item 6M) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 7. Butt joints

staggered minimum 24 in. OC. CGC INC — Types C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR 7A. **Gypsum Board*** — For use with Items 5D and 6H. Nom 5/8 in. thick, 48 in. wide gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type S bugle head steel screws spaced 8 in. OC and

located a min of 1/2 in. from side joints and 3 in. from the end joints. Finish Rating with this ceiling system is 20 min.

CGC INC — Type ULIX

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UNITED STATES GYPSUM CO — Type ULIX 8. Finishing System — (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads.

Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster

may be applied to the entire surface of gypsum board.

9. Grille — Grille installed in accordance with the installation instructions provided with the ceiling damper. 10. Wire Mesh — (Not Shown) — For use with Item 5A and 5B — 1 in. 20 gauge galvanized poultry netting installed between the furring channels and gypsum board. The poultry netting is attached with washers and 1/2 in. wafer head screws, spaced 24 in. OC.,

trusses. The cut-openings in the poultry netting shall be staggered at a maximum of 6 ft.

to the furring channels. The **Fiber, Sprayed** (Item 5A or 5B) is installed through cut-openings in the poultry netting, in-between

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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occur 3 in. from the continuous furring channels. At the gypsum board butt joints, an additional single length of furring channel shall be installed and be spaced approximately 3 in. from the butt joint (6 in. from the continuous furring channels) to support the floating end of the gypsum board. Each of these shorter sections of furring channel shall extend one truss beyond the width of the gypsum panel and be attached to the adjacent trusses with one SonusClip at every truss involved with the butt joint.

described in Item 8. When Steel Framing Members (Item 6E) are used, one layer of nom 5/8 in. thick, 4 ft wide are installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels using 1 in. long No. 6 Type S buglehead steel screws spaced 12 in. OC in the field of the board. Butted end joints shall be staggered minimum 2 ft. within the assembly. Additional furring channels constructed as per Item 6E shall be used to support each end of each gypsum board. These additional furring channels shall be attached to underside of the truss with Genie clips as described in Item 6E. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Outer layer attached to the furring channels using 1-5/8 in. long No. 6 Type S bugle-head steel screws spaced 12 in. OC in the field. The outer layer boards at the butt joint shall be attached to the base layer boards with No. 10, 1-1/2 in. long drywall screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min of 24 in. from base layer end joints. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer. When Steel Framing Members (Item 6F) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S buglehead steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from joint. Screw spacing along the gypsum board butt joint and along both additional channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butt joint furring channels shall be

attached with one RESILMOUNT Sound Isolation Clip at each end of the channel. When alternate Steel Framing Members* (Item 6G) are used, gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tees with the end joints staggered min 4 ft and centered between cross tees which are spaced 8 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide pieces of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tees at opposite corners of the backer strip with hold down clips to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with 1 in. drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the

in. from the side joints and max 8 in. OC in the field of the board. When Steel Framing Members (Item 6I) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1-1/4 in. long, fine thread, #6, Type S bugle-head steel screws spaced 8 in. OC along butt joints and in the field of the board. Gypsum board butted end joints shall be staggered minimum 24 in, and

backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4

When Steel Framing Members (Item 6J) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions. perpendicular to resilient channels. Gypsum board secured to resilient channels with nom 1 in, long Type S bugle-head steel screws spaced 8 in. OC in the field of the board and located 3/4 in. from side joints and 3 in. end joints. Gypsum board joints are to be staggered by a

minimum of 24 in. 5/19/2022, 8:54 PM14 of 14

6A A613 L521 2 12" = 1'-0"

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XHEZ - Through-penetration Firestop Systems

XHEZ7 - Through-penetration Firestop Systems Certified for Canada See General Information for Through-penetration Firestop Systems

See General Information for Through-penetration Firestop Systems Certified for Canada

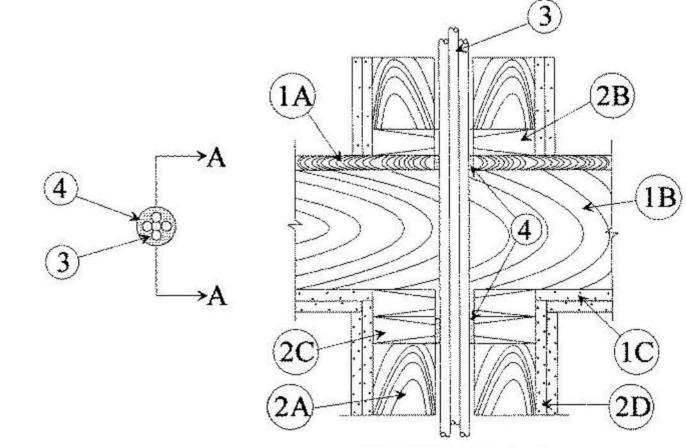
System No. F-C-3012

April 06, 2018

ANSI/UL1479 (ASTM E814)	CAN/ULC S115		
F Ratings — 1 and 2 Hr (See Item 1)	F Ratings — 1 and 2 Hr (See Item 1)		
T Ratings — 0, 1 and 1-3/4 Hr (See Item 3)	FT Ratings — 0, 1 and 1-3/4 Hr (See Item 3)		
	FH Ratings — 1 and 2 Hr (See Item 1)		
	FTH Ratings — 0, 1 and 1-3/4 Hr (See Item 3)		

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1. Floor-Ceiling Assembly — The 1 or 2 hr fire-rated solid or trussed lumber joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The general construction features of the floor-ceiling assembly are summarized below:

A. Flooring System — Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor-Ceiling Design. Max diam of opening for 1 or 2 hr assembly is 2-1/2 in. (64 mm) or 2 in. (51 mm), respectively.

or **Structural Wood Members*** with bridging as required and with ends firestopped. C. Furring Channels — (Not Shown) — (As required) - Resilient galvanized steel furring installed in accordance with

B. Wood Joists* — Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses

the manner specified in the individual L500 Series Designs in the Fire Resistance Directory.

D. Gypsum Board* — Thickness, type, number of layers and fasteners shall be as specified in the individual Floor-

Ceiling Design. Max diam of opening for 1 or 2 hr assembly is 2-1/2 in. (64 mm) or 2 in. (51 mm), respectively.

The F Rating of the firestop system is equal to the rating of the floor-ceiling assembly.

construction features:

2. Chase Wall — (Optional) - The through penetrant (Item 3) may be routed through a fire-rated or non-rated single, double or staggered wood stud/gypsum wallboard chase wall. The chase wall shall be constructed to include the following

A. Studs — Nom 2 by 6 in. (51 by 152 mm) or double nom 2 by 4 in. (51 by 102 mm) lumber studs. B. Sole Plate — Nom 2 by 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Max

C. Top Plate — The double top plate shall consist of two nom 2 by 6 in. (51 by 152 mm) or two sets of parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Max diam of opening for 1 or 2 hr rated assembly is 2-1/2 in. (64 mm)

diam of opening for 1 or 2 hr rated assembly is 2-1/2 in. (64 mm) or 2 in. (51 mm), respectively.

iq.ulprospector.com_en/profile_XHEZ.F-C-3012 - Through-penetration Firestop Systems | UL Product iQ or 2 in. (51 mm), respectively.

D. **Gypsum Board*** — One or two layers of min 1/2 in. (13 mm) gypsum board.

3. Cables — In 1 hr fire-rated assemblies, aggregate cross-sectional area of cables in opening to be max 45 percent of the cross-sectional area of the opening (max 2 in. (51 mm) diam bundle). Cables to be rigidly supported on both sides of floor assembly. Any combination of the following types and sizes of copper conductors may be used: A. RG 59 coaxial cable with single copper conductor, cellular polyethylene cellular foam insulation and polyvinyl chloride (PVC) jacket.

B. Max 8/C No. 22 AWG telephone cable with polyvinyl chloride (PVC) jacketing.

C. Max 2/C No. 12 AWG cable with polyvinyl chloride (PVC) insulation and jacketing.

D. Max 3/C with ground No. 2/0 AWG aluminum or copper Type SER cable with polyvinyl chloride (PVC) insulation.

E. Max 3/C with ground No. 2/0 AWG Type NM cable with polyvinyl chloride (PVC) insulation.

F. Max 3/C No. 12 AWG MC (BX) cable with polyvinyl chloride (PVC) insulation.

G. Max 1 in. diam metal clad TEK cable with PVC jacket.

H. Max 4/C with ground No. 300 kcmil (or smaller) aluminum SER cable with PVC insulation and jacket.

I. Through Penetrating Product* - Any cables, Metal-Clad Cable+ or Armored Cable+ currently Classified under the Through Penetrating Products category.

See Through Penetrating Product (XHLY) category in the Fire Resistance Directory for names of manufacturers.

The T Rating is 1 and 1-3/4 hr for 1 and 2 hr rated assemblies, respectively, for cables 3A through 3G. The T Rating is 0 hr for

4. Fill, Void or Cavity Material* — Sealant — Min 3/4 in. (19 mm) thickness of fill material applied within the annulus, flush with top surface of floor or sole plate. Min 5/8 in. (16 mm) thickness of fill material also applied within the annulus, flush with bottom surface of ceiling or lower top plate. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS611A Sealant or FS-One Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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FIRE STOP - FLOOR - FRAMED - ELECTRIC CABLE - F_1HR&2HR - T_1HR&2HR - L_NA - HILTI - XHEZ.F-C-3012

12" = 1'-0"

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XHEZ.F-C-8009 - Through-penetration Firestop

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See General Information for Through-penetration Firestop Systems

XHEZ - Through-penetration Firestop Systems XHEZ7 - Through-penetration Firestop Systems Certified for Canada

See General Information for Through-penetration Firestop Systems Certified for Canada

System No. F-C-8009

January 21, 2015

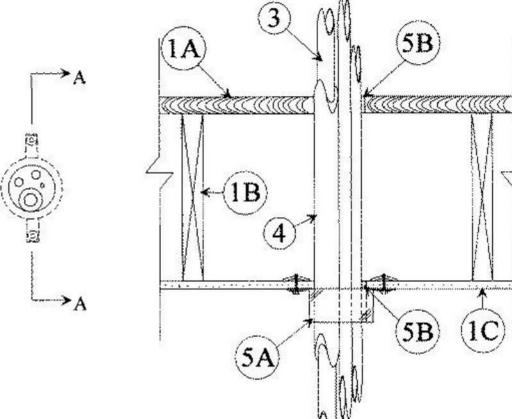
FH Rating — 1 Hr

FTH Rating — 1 Hr

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
Rating — 1 Hr	F Rating — 1 Hr
Rating — 1 Hr	FT Rating — 1 Hr

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SECTION A-A

System tested with a pressure differential of 2.5 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

1. Floor-Ceiling Assembly — The 1 hr fire-rated wood joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory, as summarized

A. Flooring System — Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor-Ceiling Design. Max diam of opening is 3 in. (76 mm).

B. Wood Joists — Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses

or **Structural Wood Members*** with bridging as required and with ends firestopped.

C. Gypsum Board* — Thickness, type, number of layers and fasteners shall be as specified in the individual Floor-Ceiling Design. Max diam of opening in ceiling [when chase wall (Item 2) is not provided] is 3 in. (76 mm).

2. Chase Wall — (Optional, Not Shown) — The through penetrant (Item 3) may be routed through a 1 hr fire-rated single, double or staggered wood stud/gypsum wallboard chase wall constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following

construction features: A. Studs — Nom 2 by 6 in. (51 by 152 mm) lumber or double nom 2 by 4 in. (51 by 102 mm) lumber studs.

B. Sole Plate — Nom 2 by 6 in. (51 by 152 mm) lumber or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Max diam of opening shall be 3 in. (76 mm).

C. Top Plate — The double top plate shall consist of two nom 2 by 6 in. (51 by 152 mm) lumber plates or 2 sets of

parallel nom 2 by 4 in. (51 by 102 mm) lumber, tightly butted. Max diam of opening is 3 in. (76 mm).

iq.ulprospector.com_en/profile_XHEZ.F-C-8009 - Through-penetration Firestop Systems | UL Product iQ D. Gypsum Board* — Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.

3. Through Penetrants — Pipe, cable and tubing to be bundled and rigidly supported on both sides of floor assembly. A nom annular space of min 0 in. (point contact) to max 1/2 in. (13 mm) is required within the firestop system. The following types and sizes of pipe, cable and tubing are to be used in the firestop system in sufficient quantities to fill the firestop device: A. Cable — Type PJT thermoset cable, 5/C No. 18 AWG copper conductor, plastic insulation and jacket.

B. Polyvinyl Chloride (PVC) Pipe — Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

C. Copper Tubing — Nom 3/4 in. (19 mm) diam (or smaller) Type L (or heavier) copper tubing.

D. Copper Tubing — Nom 1/2 in. (13 mm) diam (or smaller) Type L (or heavier) copper tubing.

4. Tube Insulation — Plastics+ — Nom 1/2 in. (13 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. Insulation to be installed only on one through reverant having a max nom diam of 3/4 in. (19 See Plastics+ (QMFZ2) category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube

insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.

5. **Firestop System** — The firestop system shall consist of the following: A. Firestop Device* — Firestop Collar — Firestop collar shall be installed in accordance with the accompanying

installation instructions. Collar to be installed and latched around the penetrants and secured to underside of gypsum wallboard ceiling using the anchor hooks provided with the collar. The anchor hooks are to be secured to the surface of the ceiling with min 3/16 in. diam min 2-1/2 in. long toggle bolts. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 64-3 90/3"N, CP 64-3 63/2"N, CP 64-3 50/1-1/2"N.

B. Fill, Void or Cavity Material* — Sealant — Min 3/4 in. (19 mm) thickness of fill material applied within the annulus, flush with top surface of floor or sole plate. Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with bottom surface of ceiling or lower top plate. Caulk to be forced into interstices of penetration group to max extent possible at top surface of floor or sole plate and bottom surface of ceiling or lower top plate. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS611A, FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

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6A FIRE STOP - FLOOR - FRAMED - GROUPINGS - F_1HR&2HR - T_1HR&2HR - L_NA - HILTI - XHEZ.F-C-8009

FIRE STOP DETAILS - FLOOR

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

Owner: Renovation Wranglers 102 E 26th St Bryan, TX 77803 Katieneason@me.com | 979.450.9969

ARCHITECTURE **Architect of Record:** LKB Architecture 2929 Allen Pkwy Suite 200 Houston, TX 77019

> DUDLEY Structural: Dudley 6102 Imperial Loop Drive College Station, TX 77845 (979) 777-0720

lisa@lkbarchitecture.com | 713.425.3076









Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703 ryan@openingdesign.com | 773.425.6456

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XHEZ - Through-penetration Firestop Systems

XHEZ7 - Through-penetration Firestop Systems Certified for Canada See General Information for Through-penetration Firestop Systems

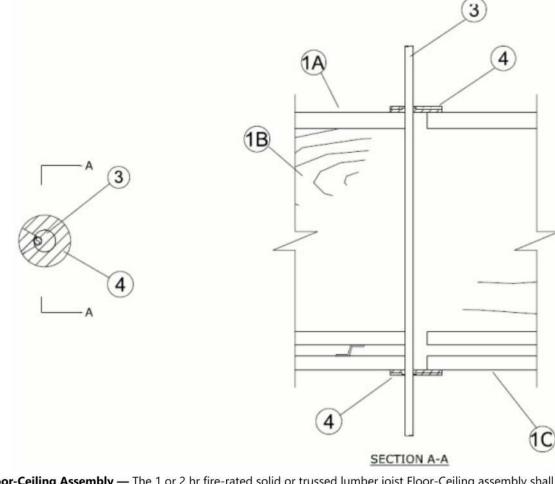
See General Information for Through-penetration Firestop Systems Certified for Canada

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System No. F-C-1168

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 and 2 Hr (See Item 1)	F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 1 and 2 Hr (See Item 1)	FT Ratings — 1 and 2 Hr (See Item 1)
L Rating at Ambient — Less than 1 CFM/Opening	FH Ratings — 1 and 2 Hr (See Item 1)
L Rating at 400 F — Less than 1 CFM/Opening	FTH Ratings — 1 and 2 Hr (See Item 1)
	L Rating at Ambient — Less than 1 CFM/Opening
	L Rating at 400 F — Less than 1 CFM/Opening

5/26/22, 11:28 AM iq.ulprospector.com_en/profile_XHEZ.F-C-1168 - Through-penetration Firestop Systems | UL Product iQ



1. Floor-Ceiling Assembly — The 1 or 2 hr fire-rated solid or trussed lumber joist Floor-Ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory, as summarized below:

A. Flooring System — Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor-Ceiling Design. Opening may be round, rectangular or irregular with a max diam or dimension of 1 in. (25 mm).

B. Joists — Nom 10 in. (254 mm) deep (or deeper) lumber and steel joist, trusses or Structural Wood Members* with bridging as required and with ends firestopped.

C. Gypsum Board* — Nom 4 ft (122 cm) wide by 5/8 in. (16 mm) thick. Gypsum board direct-attached to joists or screw-attached to furring channels as specified in the individual Floor-Ceiling Design. Opening may be round, rectangular or irregular with a max diam or dimension of 1 in. (25 mm).

The F, FT, FH and FTH Rating of the firestop system is equal to the rating of the floor-ceiling assembly.

2. Chase Wall — (Optional. Not Shown) — The through penetrants (Item 3) may be routed through a fire-rated or non-rated single, double or staggered wood stud/gypsum board chase wall constructed of the materials and Partition design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or 2 by 8 in. (51 by 203 mm) lumber studs.

B. Sole Plate — Nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or 2 by 8 in. (51 by 203 mm) lumber plates. Opening to be centered in sole plate. Opening may be round, rectangular or irregular with a max diam or dimension of 1 in. (25 mm).

C. Top Plate — The double top plate shall consist of two nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or 2 by 8 in. (51 by 203 mm) lumber. Opening to be centered in top plate. Opening may be round, rectangular or irregular with a max diam or dimension of 1 in. (25 mm).

iq.ulprospector.com_en/profile_XHEZ.F-C-1168 - Through-penetration Firestop Systems | UL Product iQ 5/26/22, 11:28 AM D. Gypsum Board* — Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.

3. **Through Penetrant** — Max one metallic pipe, tubing or conduit installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of the opening shall be min 0 in. (point contact). Pipe or tubing to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of pipes, tubing or

conduit may be used: A. Steel Pipe — Nom 3/4 in. (19 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.

B. Iron Pipe — Nom 3/4 in. (19 mm) diam (or smaller) cast or ductile iron pipe.

C. Copper Tubing — Nom 1/2 in. (13 mm) diam (or smaller) Type L and Type K (or heavier) copper tubing.

D. Copper Pipe — Nom 1/2 in. (13 mm) diam (or smaller) Regular (or heavier) copper pipe. E. Conduit — Nom 3/4 in. (19 mm) diam (or smaller) rigid or flexible steel conduit.

F. Conduit — Nom 3/4 in. (19 mm) diam (or smaller) electrical metallic tubing (EMT).

4. Fill, Void or Cavity Material* — Nom 60 mm diam by 3 mm thick putty disc with one seam at radius. Paper-backer of disc to be removed and disc firmly pressed around the penetrant lapping nom 5 mm onto penetrant to completely cover opening and firmly pressed to lap onto the floor and ceiling (or plates) around periphery of opening. Disc seam to be firmly pressed and sealed tight, Disc to be installed at both sides of opening in floor-ceiling assembly. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-D 1" Firestop Putty Disc

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada),

<u>Last Updated</u> on 2020-04-29

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FIRE STOP - FLOOR - FRAMED - METALLIC PIPE, CONDUIT OR TUBING - F_1HR&2HR - T_1HR&2HR - L_NA - HILTI - XHEZ.F-C-1168 12" = 1'-0"

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5/26/22, 11:25 AM iq.ulprospector.com_en/profile_XHEZ.F-C-2030 - Through-penetration Firestop Systems | UL Product iQ

UL Product iQ^o XHEZ.F-C-2030 - Through-penetration Firestop

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- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
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XHEZ - Through-penetration Firestop Systems

See General Information for Through-penetration Firestop Systems

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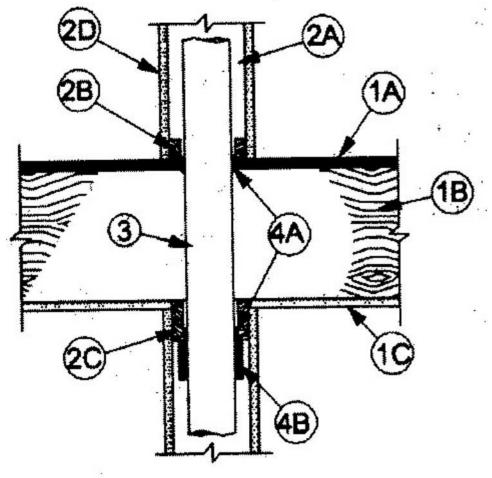
A615 12" = 1'-0"

System No. F-C-2030

April 06, 2018

F Ratings — 1 and 2 Hr (See tem 1) T Ratings — 0, 3/4, 1, 1-1/2 and 2 Hr (See Item 3) 5/26/22, 11:25 AM iq.ulprospector.com_en/profile_XHEZ.F-C-2030 - Through-penetration Firestop Systems | UL Product iQ

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System tested with a pressure differential of 2.5 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

1. Floor-Ceiling Assembly — The 1 or 2 hr fire-rated solid or trussed lumber joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The F Rating of the firestop system is equal to the rating of the floor-ceiling and wall assemblies. The general construction features of the floor-ceiling assembly are summarized below:

A. Flooring System — Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor-Ceiling Design. Diam of opening shall be 1 in. (25 mm) larger than the nom diam of through-penetrant (Item 3).

B. Joists — Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or **Structural Wood Members*** with bridging as required and with end firestopped.

C. Gypsum Board* — Thickness, type, number of layers and fasteners shall be as specified in the individual Floor-Ceiling Design. Diam of opening shall be 1 in. (25 mm) larger than the nom diam of through-penetrant (Item 3).

D. Furring Channels — (Not Shown) (As required) - Resilient galvanized steel furring installed in accordance with the manner specified in the individual L500 Series Designs in the Fire Resistance Directory.

2. Chase Wall — (Optional) - The through penetrant (Item 3) may be routed through a fire-rated or non-rated single, double or staggered wood stud/gypsum wallboard chase wall. The chase wall shall be constructed to include the following

A. Studs — Nom 2 by 6 in. (51 by 152 mm) or double nom 2 by 4 in. (51 by 102 mm) lumber studs.

B. Sole Plate — Nom 2 by 6 in. (51 by 152 mm) (or larger) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Diam of opening shall be 1 in. (25 mm) larger than the nom diam of through-penetrant (Item 3).

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iq.ulprospector.com_en/profile_XHEZ.F-C-2030 - Through-penetration Firestop Systems | UL Product iQ C. Top Plate — The double top plate shall consist of two nom 2 by 6 in. (51 by 152 mm) (or larger) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Diam of opening shall be 1 in. (25 mm) larger than the nom diam of through-penetrant (Item 3).

D. **Gypsum Board*** — One or two layers of min 1/2 in. (13 mm) gypsum board.

3. Through-Penetrants — One nom 1-1/2 in. (38 mm), 2 in. (51 mm), 3 in. (76 mm) or 4 in. (102 mm) diam nonmetallic pipe to be installed within the firestop system. Diam of opening through flooring system and through sole and top plates of chase wall to be max 2-1/8 in. (54 mm), 2-5/8 in. (67 mm), 4 in. (102 mm) or 5 in. (127 mm) for nom 1-1/2 in. (38 mm), 2 in. (51 mm), 3 in. (76 mm) or 4 in. (102 mm) diam nonmetallic pipe sizes, respectively. Pipe to be rigidly supported on both sides of the floor-ceiling assembly. The T Rating is dependent on the size of the through-penetrant. For 2 hr rated assemblies, the T Rating is 2 hr for 1-1/2 in. (38 mm) diam (and smaller) pipes and 1-1/2 hr for pipes greater than 1-1/2 in. (38 mm) diam. For 1 hr rated assemblies, the T rating is 1 hr for 1-1/2 in. (38 mm) diam (and smaller) pipes, 3/4 hr for 2 in. (51 mm) diam pipes and 0 hr for pipes greater than 2 in. (51 mm) diam. The following types of nonmetallic pipes may be used:

A. Polyvinyl Chloride (PVC) Pipe — Schedule 40 solid-core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — SDR17 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

C. Acrylonitrile Butadiene Styrene (ABS) pipe — Schedule 40 solid-core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

D. Flame Retardant Polypropylene(FRPP) Pipe — Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

4. **Firestop System** — The details of the firestop system shall be as follows:

A. Fill, Void or Cavity Material* — Sealant — Min 3/4 in. (19 mm) thickness of fill material to be installed within the annular space between the pipe and the flooring (Item 1A) or sole plate. Min 5/8 in. (16 mm) thickness applied within the annular space, flush with the bottom surface of ceiling or lower top plate. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealantor FS-ONE MAX Intumescent Sealant.

B. Firestop Device* — Firestop Collar — Firestop collar shall be installed in accordance with the accompanying installation instructions. Collar to be installed and latched around the pipe and secured to underside of ceiling or chase wall top plate (Item 2C) using the anchor hooks provided with the collar. (Minimum 2 anchor hooks for 1-1/2 (38 mm) and 2 in. (51 mm) diam pipes and 3 anchor hooks for 3 in. (76 mm) diam pipes). The anchor hooks are to be secured to the ceiling with min 3/16 in. (5 mm) diam steel toggler bolts or to the chase wall top plate with min No. 12 by min 1 in. (25 mm) long steel wood screws in conjunction with steel washers.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643 50/1.5"N, CP643 63/2"N, CP 643 90/3"N or CP643 110/4"N

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Owner: Renovation Wranglers 102 E 26th St Bryan, TX 77803

Katieneason@me.com | 979.450.9969

ARCHITECTURE

Architect of Record: LKB Architecture

2929 Allen Pkwy Suite 200

Houston, TX 77019 lisa@lkbarchitecture.com | 713.425.3076

DUDLEY

Structural: Dudley

6102 Imperial Loop Drive

College Station, TX 77845

(979) 777-0720

MEP: AMC Engineers 508 E Jackson St # 552

Burnet, TX 78611 info@amcengineers.com

Date	Description
6/10/2022	Issued for Permit

FIRE STOP DETAILS - FLOOR

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

6A FIRE STOP - FLOOR - FRAMED - NONMETALLIC PIPE_CONDUIT_TUBING - F_1HR&2HR - T_1HR&2HR - L_NA - HILTI - XHEZ.F-C-2030

UL Product iQ®

XHEZ.W-L-3441 - Through-penetration Firestop

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- and alternate methods of construction. Only products which bear UL's Mark are considered Certified.

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XHEZ7 - Through-penetration Firestop Systems Certified for Canada See General Information for Through-penetration Firestop Systems

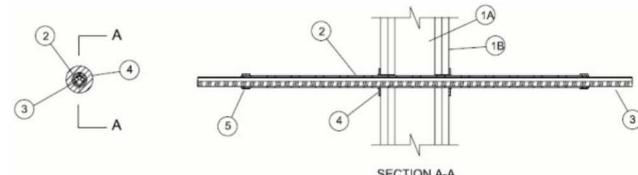
See General Information for Through-penetration Firestop Systems Certified for Canada

System No. W-L-3441

April 29, 2020

CAN/ULC S115
F Ratings — 1 and 2 Hr (See Item 1)
FT Ratings — 1 and 2 Hr (See item 1)
FH Ratings — 1 and 2 Hr (See Item 1)
FTH Ratings— 1 and 2 Hr (See item 1)
L Rating at Ambient — Less than 5.1 L/s/m²/Opening
L Rating at 204 C — Less than 5.1 L/s/m²/Opening

5/26/22, 11:14 AM iq.ulprospector.com_en/profile_XHEZ.W-L-3441 - Through-penetration Firestop Systems | UL Product iQ



1. Wall Assembly — The 1 or 2 fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. **Gypsum Board*** — Nom 5/8 in. (16 mm) thick gypsum board, with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory. Opening may be round, rectangular or irregular with a max diam or dimension of 1-1/8 in. (19 mm).

The Ratings of the firestop system are equal to the fire rating of the wall assembly.

2. Metallic Sleeve — Nom 1 in. (25 mm) diam (or smaller) rigid steel conduit installed flush with wall surfaces. The annular space between steel sleeve and periphery of opening shall be min 0 in. (point contact) to max 1/8 in. (3 mm). When opening dimension exceeds 1 in. (25 mm), max annular space is 3/8 in. (10 mm). The sleeve shall extend up to 12 in. (305 mm) beyond one or both wall surfaces. As an option, sleeve may extend continuously beyond one wall surface. The conduit sleeve shall be secured to the adjacent stud within the wall cavity with a steel conduit strap attached to web of stud with min two no. 8 sheet metal screws with washers or shall be rigidly supported on those sides of the wall where the sleeve is extended. As an option, the sleeve may be provided with a plastic grommet at the ends of the sleeve.

3. Cables — Within the sleeve (Item 2), the cables may represent a 0 to 100 percent visual fill. Cables to be tightly bundled within the sleeve and rigidly supported on both sides of wall assembly. Any combination of the following types of cables may

A. Max 3/C No. 8 AWG NM copper conductor cable (Romex) with PVC insulation and jacket.

B. Type RG 6/U coaxial cable with fluorinated ethylene or PVC insulation and jacketing.

C. Max 24 fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation.

D. Max 4 pr No. 22 AWG (or smaller) Cat 5 or Cat 6 computer cables with PVC or plenum rated insulation and jacketing.

E. Maximum 3/C No. 10 AWG copper conductor metal-clad cable.

AFC CABLE SYSTEMS INC

insulation and jacketing.

F. Through Penetrating Product* — Max two copper conductor No. 18 AWG (or smaller) Power or Non-Power Limited Fire Alarm Cable with or without a jacket under a metal armor.

G. Max 7/C-No. 12 AWG copper conductor control cable with PVC or XLPE insulation and jacket.

H. Max 100 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with PVC or plenum rated

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4. Fill, Void or Cavity Material* — Nom 60 mm diam by 3 mm thick putty disc with one seam at radius. Paper-backer of disc to be removed and disc firmly pressed around the sleeve at each surface of wall to lap min 5 mm onto sleeve and firmly pressed to lap onto the wall around periphery of opening. Disc seams to be firmly pressed and sealed tight, Discs to be installed at both sides of wall opening.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-D 1" Firestop Cable Disc

5. Fill, Void or Cavity Material* — Nom 60 mm diam by 3 mm thick putty disc with one seam at radius. Paper-backer of disc to be removed and disc firmly pressed around the cable/cable bundle at exit from each end of sleeve, lapping min 5 mm onto cables to completely cover opening and firmly pressed to lap onto the sleeve periphery. Disc seam to be firmly pressed and sealed tight, Discs to be installed at both sides of wall opening.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-D 1" Firestop Putty Disc

6. Fill, Void or Cavity Material*— Sealant — As an alternate to Item 4, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the sleeve/wall interface. Fill material installed symmetrically on both sides of the wall. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 606 or FS-ONE MAX Intumescent Sealant

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FIRE STOP - WALLS - FRAMED WALLS - ELECTRIC CABLE - F_1HR&2HR - T_1HR&2HR - L_5 - HILTI - XHEZ.W-L-3441

12" = 1'-0"

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XHEZ.W-L-1095 - Through-penetration Firestop

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- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field. When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product
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XHEZ - Through-penetration Firestop Systems XHEZ7 - Through-penetration Firestop Systems Certified for Canada

See General Information for Through-penetration Firestop Systems Certified for Canada

System No. W-L-1095

January 21, 2015

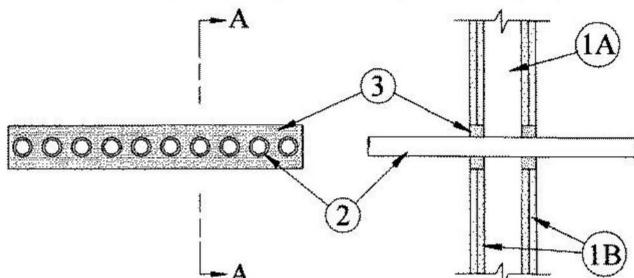
ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 & 2 Hr (See Item 1)	F Ratings — 1 & 2 Hr (See Item 1)
T Ratings — 1 & 2 Hr (See Item 3)	FT Ratings — 1 & 2 Hr (See Item 3)
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Ratings — 1 & 2 Hr (See Item 1)
L Rating At 400 F — 4 CFM/sq ft	FTH Ratings — 1 & 2 Hr (See Item 3)
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — 4 CFM/sq ft

6A FIRE STOP - WALLS - FRAMED WALLS - METALLIC PIPE, CONDUIT OR TUBING - F_1HR&2HR - T_1HR&2HR - L_5 - HILTI - XHEZ.W-L-1095

5/26/22, 11:16 AM

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SECTION A-A

1. Wall Assembly — The 1 or 2 h fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max size of opening 2-5/8 in. (67 mm) by 18 in. (457 mm). The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is

2. **Electric Metallic Tubing (EMT)** — One or more nom 1 in. (25 mm) diam steel electric tubing. The annular space shall be min 1/2 in. (13 mm) to a max 1 in. (25 mm). Conduit to be rigidly supported on both sides of wall assembly.

3. Fill, Void or Cavity Material* — Sealant — For 2 h F Rating, min 1-1/4 in. (32 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 1 h F Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2015-01-21

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info@amcengineers.com

	1	 	
Date	1		Description
0/2022	† !	 	Issued for Perm

FIRE STOP DETAILS - WALLS

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and
- use of UL Certified products, equipment, system, devices, and materials. • Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance
- · When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials
- and alternate methods of construction. Only products which bear UL's Mark are considered Certified.

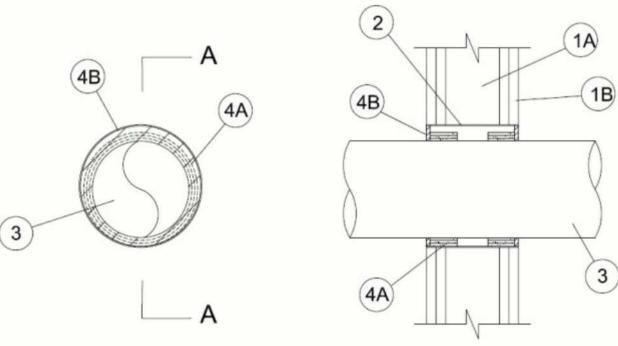
Through-penetration Firestop Systems XHEZ - Through-penetration Firestop Systems

See General Information for Through-penetration Firestop Systems

System No. W-L-2649

August 2, 2021

F Ratings — 1 and 2 Hr (See Item 1) T Ratings — 1 and 2 Hr (See Item 1) L Rating At Ambient - 1.2 CFM/sq ft L Rating At 400°F - Less Than 1 CFM/sq ft 5/26/22, 11:04 AM iq.ulprospector.com_en/profile_XHEZ.W-L-2649 - Through-penetration Firestop Systems | UL Product iQ



SECTION A-A The hourly F and T Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features: A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102

mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — One or two layers of nom 5/8 in. (16 mm) thick gypsum board, as specified in the individual Wall and Partition Design. Maximum diam of opening is 8 in. (203 mm).

2. Steel Sleeve — Cylindrical sleeve fabricated from min 0.016 in. (0.41 mm) thick galv sheet steel (28 gauge or heavier) and having a min 1 in. (25 mm) lap along the longitudinal seam. Sleeve installed by coiling the sheet steel to a diam smaller than the through opening, inserting the coil through the opening and releasing the coil. The ends of the steel sleeve shall be flush with each surface of the wall. Gypsum board compound shall be used at ends of sleeve to finish any gaps between sleeve and cut edge of gypsum board at both sides of wall.

3. Through Penetrants — One nonmetallic pipe to be installed concentrically or eccentrically within the firestop system. Annular space within the firestop system is dependent upon the max diam and type of penetrant used as tabulated in Item 4A. Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used: A. Polypropylene Random (PP-R) Pipe — Nom 6 in. (160 mm) diam (or smaller) Cosmoplast PP-R SDR 6 pipe for use in closed (process or supply) piping systems.

B. Polypropylene Random (PP-R) Pipe — Nom 6 in. (160 mm) diam (or smaller) Coprax PP-R SDR 6 pipe for use in closed (process or supply) piping systems.

C. Polypropylene Random (PP-R) Pipe — Nom 6 in. (160 mm OD) diam (or smaller) Aquatherm Greenpipe PP-R SDR 7.4 and SDR 11 pipe for use in closed (process or supply) piping systems.

D. High Density Polyethylene (HDPE) Pipe — Nom 6 in. (152 mm) diam (or smaller) SDR11 HDPE pipe for use in closed (process or supply) piping systems.

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pipe for use in closed (process or supply) piping systems. H. Polypropylene (PP-RCT) Pipe — Nom 6 in. (160 mm OD) diam (or smaller) Uponor pipe PP-R SDR 9 or 11 pipe for use in closed (process or supply) piping systems. 4. **Firestop System** — The firestop system shall consist of the following: A. Fill, Void or Cavity Material* — Wrap Strip — Nom 3/16 in. (4.8 mm) thick by 1-3/4 in. (44 mm) wide intumescent wrap strip. Layers of wrap strip are continuously wrapped around the pipe with ends tightly butted and held in place with tape. Wrap strip installed within the opening at each side of wall and recessed from both surfaces of wall to accommodate the required thickness of sealant (Item 4B). The number of layers for a given size penetrant is shown in table below: HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W45/1-3/4" Firestop Wrap Strip

5/26/22, 11:04 AM

closed (process or supply) piping systems.

for use in closed (process or supply) piping systems.

Max Pipe Size, in. (mm)	Max Opening Diam, in. (mm)	Annular Space Min, in. (mm)	Annular Space Max, in. (mm)	Number of Layers
3 (90)	4-1/2 (114)	3/16 (4.8)	3/4 (19)	1
4 (110)	6 (152)	3/8 (10)	1-1/8 (29)	2
6 (160)	8 (203)	9/16 (14)	1-3/16 (30)	3

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E. Polypropylene (PP-RCT) Pipe — Nom 6 in. (160 mm OD) diam (or smaller) Aquatherm Bluepipe PP-R SDR 9 or 11 pipe for use in

F. Polypropylene (PP-RCT) Pipe — Nom 6 in. (160 mm OD) diam (or smaller) Nupi Americas Niron pipe PP-R SDR 7.3, 9 or 11 pipe

G. Polypropylene (PP-RCT) Pipe — Nom 6 in. (160 mm OD) diam (or smaller) Aquatechnik NA Fusion-Tech pipe PP-R SDR 7.4 or 11

Metric dimensions shown for pipes (Items 3A, 3B and 3C) in parenthesis are actual metric OD's marked on pipe.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

B. Fill, Void or Cavity Material* — Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For L Rating, the sealant shall extend over the edge of sleeve and lap onto the gypsum wall surface at both sides of

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2021-08-02

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3. **Firestop System** — The details of the firestop system shall be as follows:

6C TIRE STOP - WALLS - FRAMED WALLS - NONMETALLIC PIPE_CONDUIT_TUBING - F_1HR&2HR - T_1HR&2HR - L_5 - HILTI - XHEZ.W-L-2649

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XHEZ.W-L-8081 - Through-penetration Firestop

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- use of UL Certified products, equipment, system, devices, and materials. Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance
- encountered in the field. • When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials
- and alternate methods of construction. Only products which bear UL's Mark are considered Certified.

XHEZ - Through-penetration Firestop Systems XHEZ7 - Through-penetration Firestop Systems Certified for Canada

See General Information for Through-penetration Firestop Systems See General Information for Through-penetration Firestop Systems Certified for Canada

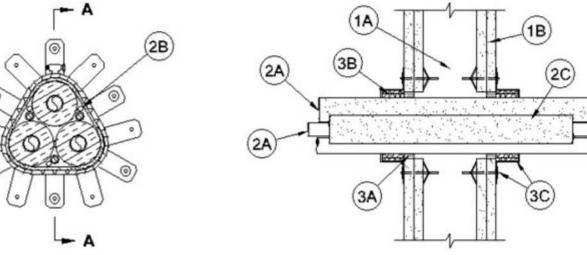
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System No. W-L-8081

January 28, 2015

ANSI/UL1479 (ASTM E814)	CAN/ULC S115		
F Rating — 1 and 2 Hr (See Item 1)	F Rating — 1 and 2 Hr (See Item 1)		
T Rating —0 and 1 Hr (See Item 1)	FT Rating —0 and 1 Hr (See Item 1)		
	FH Rating — 1 and 2 Hr (See Item 1)		
	FTH Rating — 0 and 1 Hr (See Item 1)		

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1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Max diam of opening is 6 in. (152 mm).

The hourly F, FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The hourly T, FT, FTH Ratings of the firestop system are 0 hr for 1 hr fire rated wall assemblies and 1 hr for 2 hr

2. Air Conditioning (AC) Line Set — Max of three AC line sets bundled within the opening. Each line set consists of one metallic pipe, one insulated metallic pipe and one electrical cable. The aggregate cross-sectional area of the penetrants does not exceed 84 percent of the cross-sectional area of the wall opening. The annular space between the penetrants and the periphery of opening shall be min 0 in. (point contact) to max 1-1/2 in. (38 mm). Penetrants to be rigidly supported on both sides of wall assembly.

2A. Metallic Pipes — The following types and sizes of metallic pipes, conduits or tubing may be used: A. Steel Pipe — Nom 1 in. (25 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.

B. Iron Pipe — Nom 1 in. (25 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit — Nom 1/2 in (13 mm) diam (or smaller) steel conduit or EMT.

D. Copper Pipe or Tube — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tube or Regular (or heavier) copper pipe.

2B. Cables — Max 4 pair No. 18 AWG (or smaller) thermostat cable with PVC insulation and jacket.

2C. Pipe Covering — The following pipe covering shall be used with the metallic pipes (Types 2A, 2B and 2D only) having a nom diam greater than 1/2 in. (13 mm): A. Tube Insulation - Plastics# — Nom 1 in. (25 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC)

flexible foam furnished in the form of tubing. See **Plastics** (QMFZ2) category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation meeting the above specifications and having a UL 94 Flammability Classification of 94-5VA may be used.

A. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall assembly. Fill material forced into grouped penetrant interstices to max extent possible

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HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

B. Fill, Void or Cavity Material* — Wrap Strip - Nom 3/16 in. (5 mm) thick by 1-3/4 in. (44 mm) wide intumescent wrap strip. Wrap strip is continuously wrapped around the outer circumference of bundled penetrants two times with ends butted and held in place with tape. Wrap strip installed flush with both surfaces of wall assembly. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E- W25/1-3/4" Wrap Strip

C. Steel Collar — Steel collar fabricated from coils of precut min 0.016 in. (0.41 mm) thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be min 1-3/4 in. (44 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs on 1-3/4 in. (44 mm) centers for securement to both surfaces of wall. In addition, collars contain preformed retainer tabs 1/2 in. (13 mm) wide by 3/16 in. (5 mm) long, located opposite the anchor tabs. Collar shall be tightly wrapped over the wrap strip, overlapping min 1 in. (25 mm) at seam and compressed with a min 1/2 in. (13 mm) wide by 0.028 in. (0.71 mm) thick stainless steel band at collar mid-height. Every other anchor tab of collar secured to surface of wall with min 1-1/2 in. (38 mm) long drywall or laminate screws with min 3/4 in. (19 mm) steel washers.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Bearing the UL Recognized Component Marking

Last Updated on 2015-01-28

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6A WALLS - FRAMED WALLS - GROUPINGS - F_1HR&2HR - T_1HR&2HR - L_NA - HILTI - XHEZ.W-L-8081

FIRE STOP DETAILS - WALLS

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

Owner: Renovation Wranglers 102 E 26th St Bryan, TX 77803 Katieneason@me.com | 979.450.9969

ARCHITECTURE **Architect of Record:** LKB Architecture 2929 Allen Pkwy Suite 200 Houston, TX 77019 lisa@lkbarchitecture.com | 713.425.3076





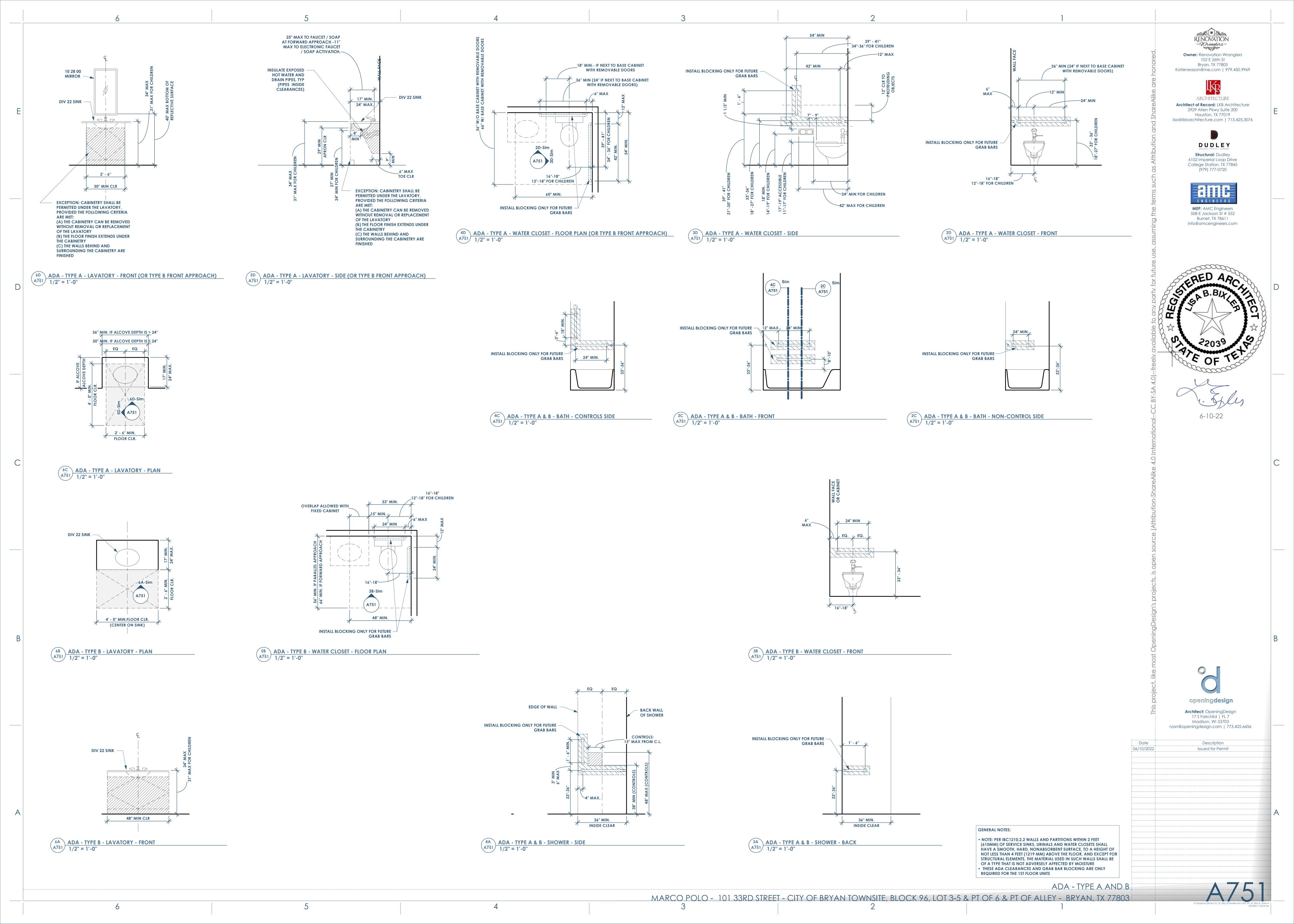


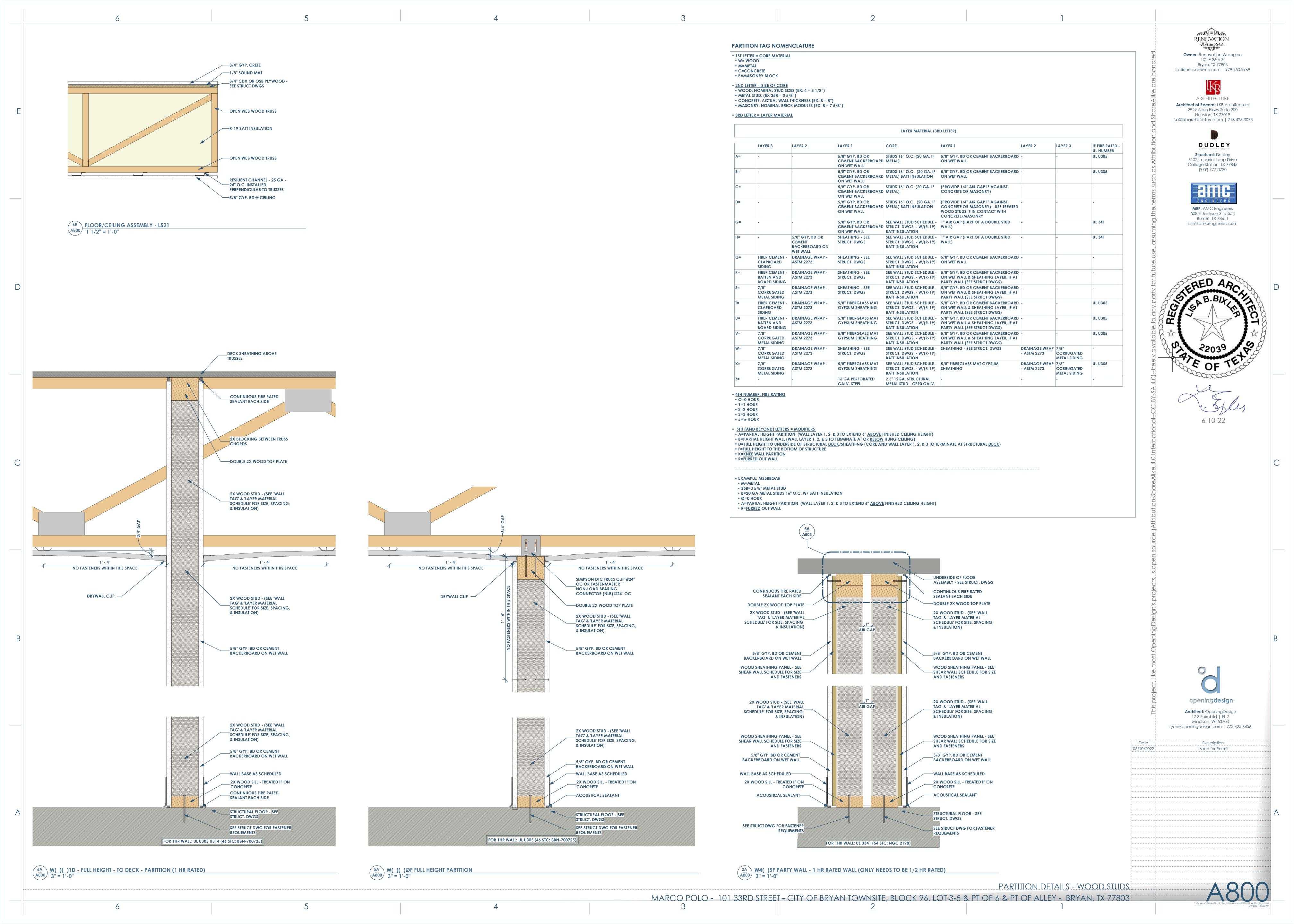


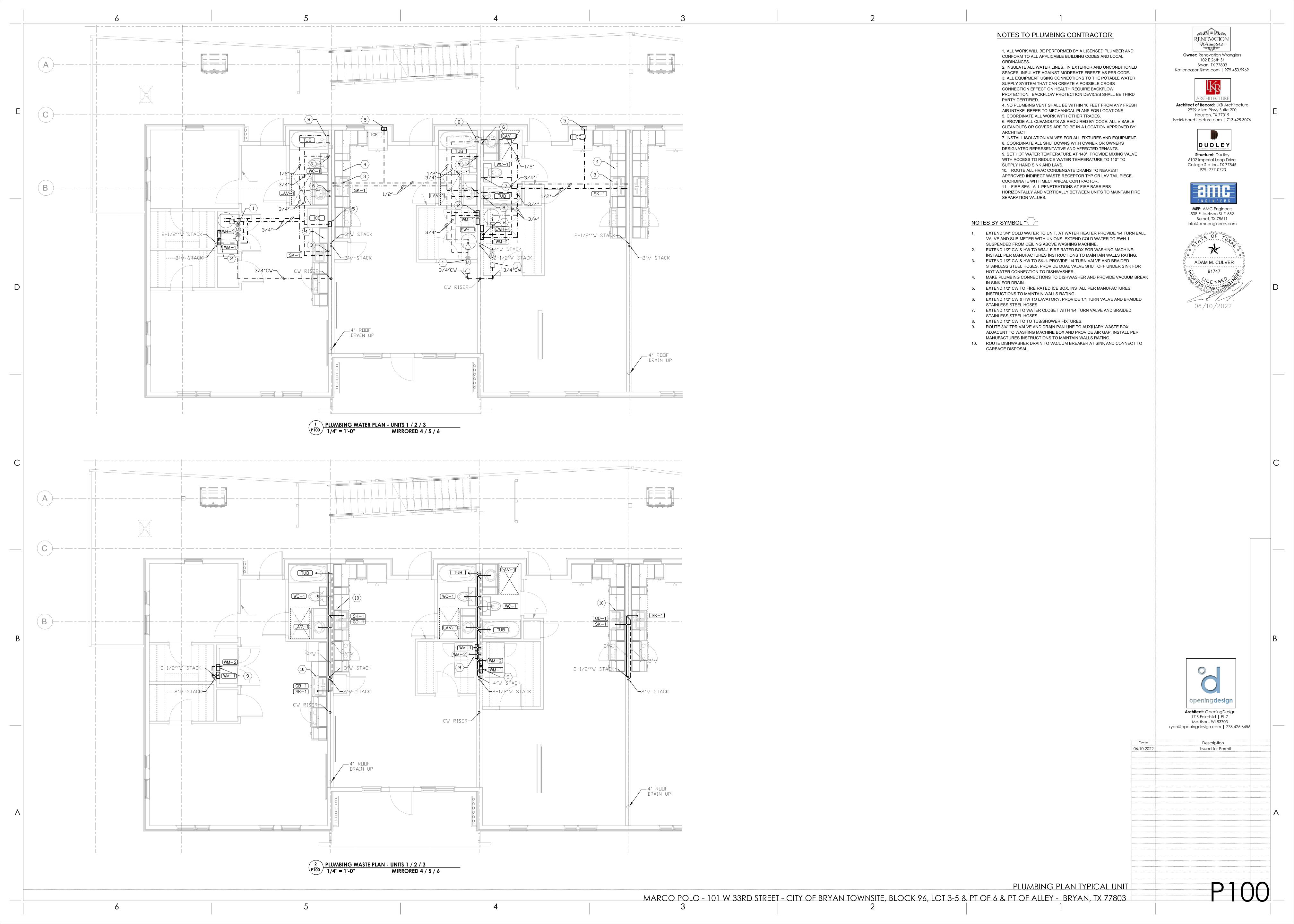
opening **design** Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703 ryan@openingdesign.com | 773.425.6456

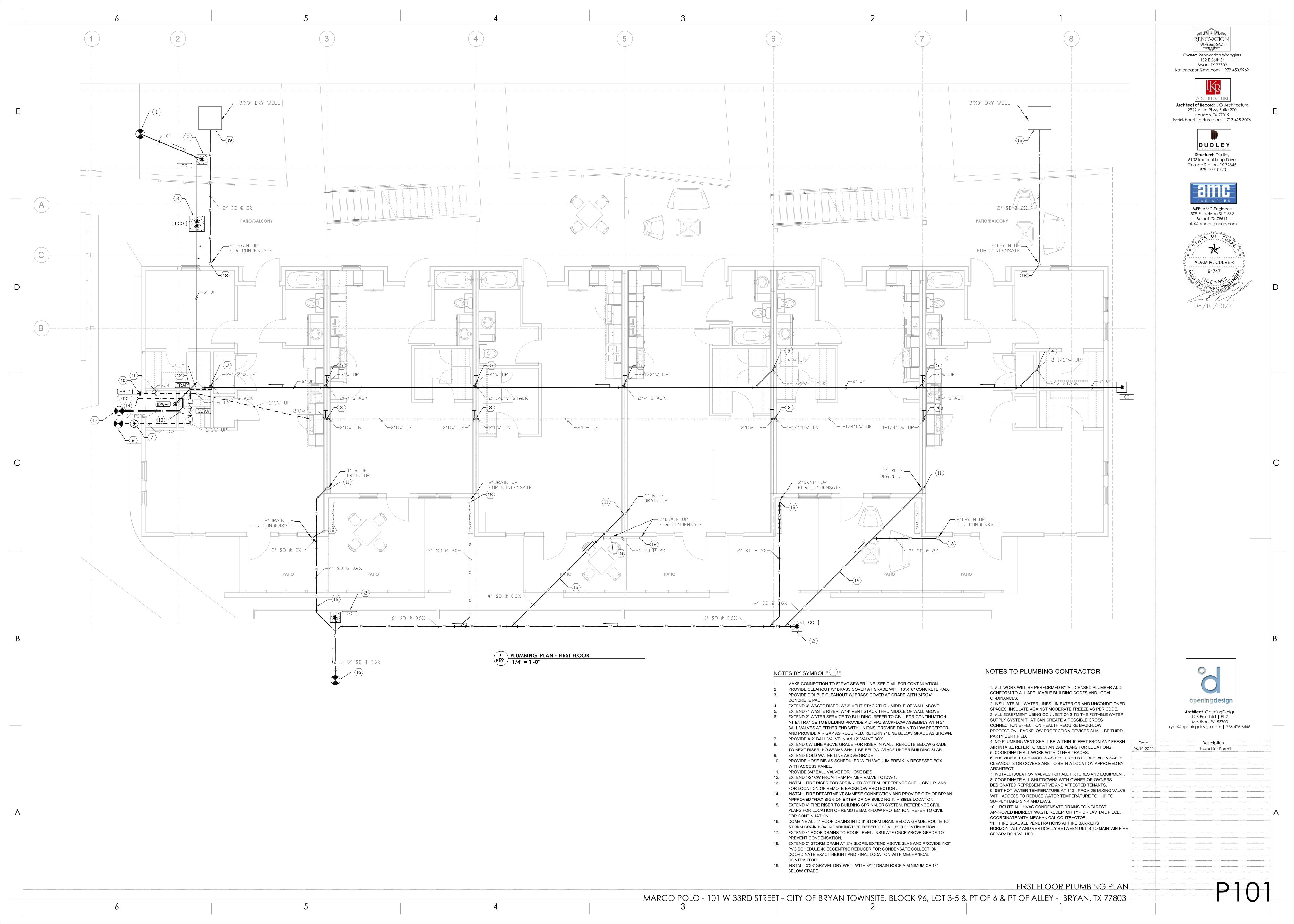
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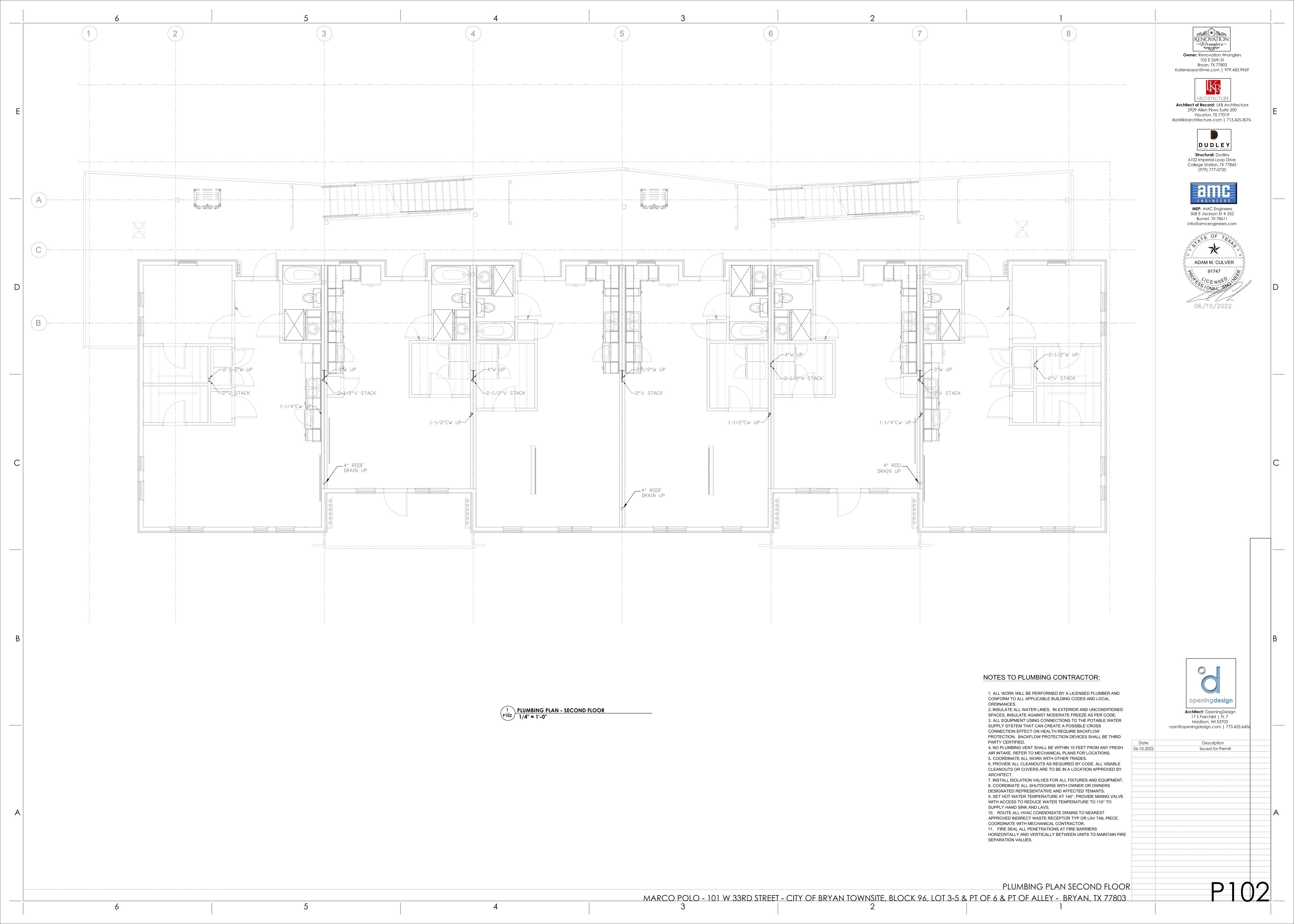
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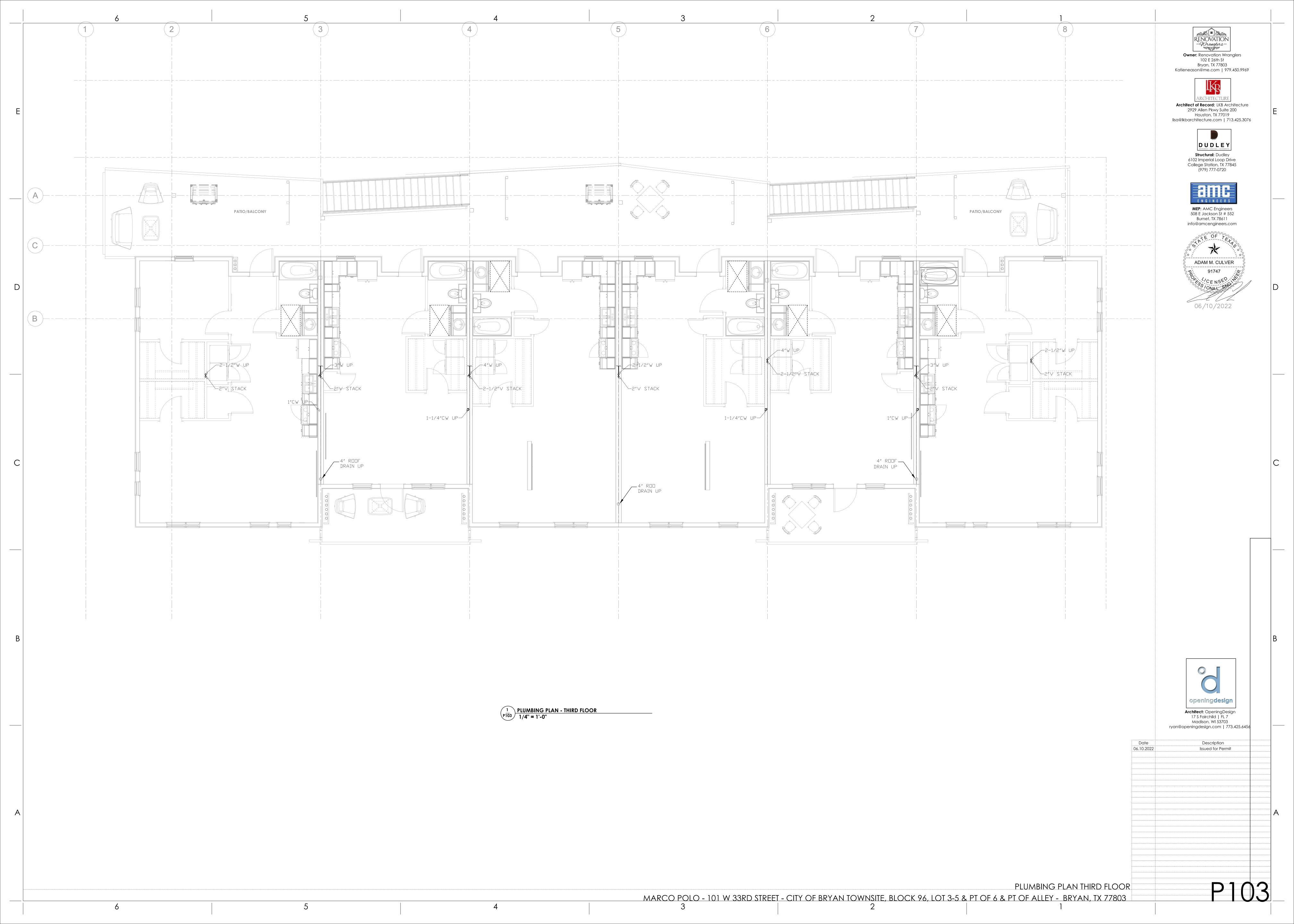


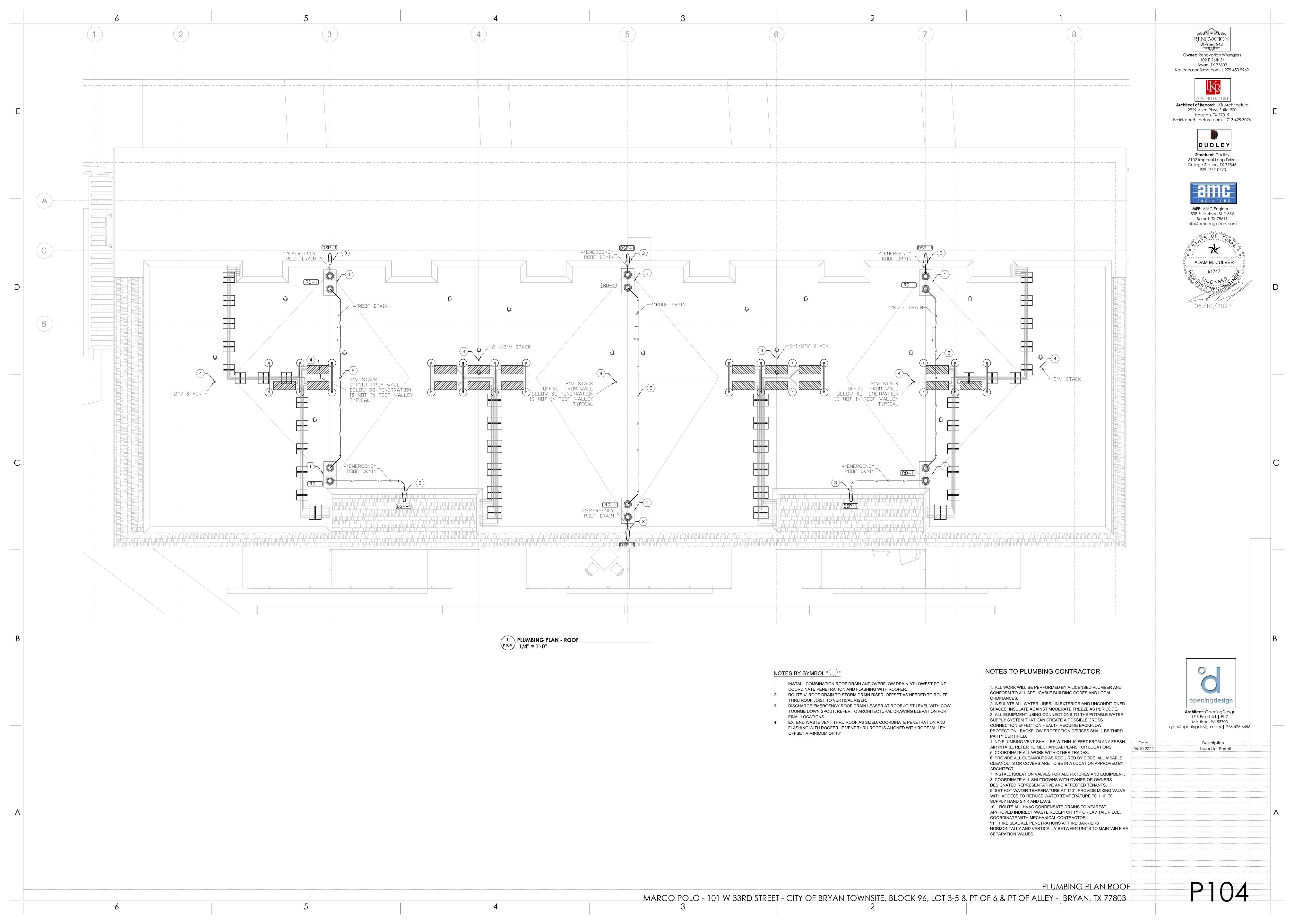


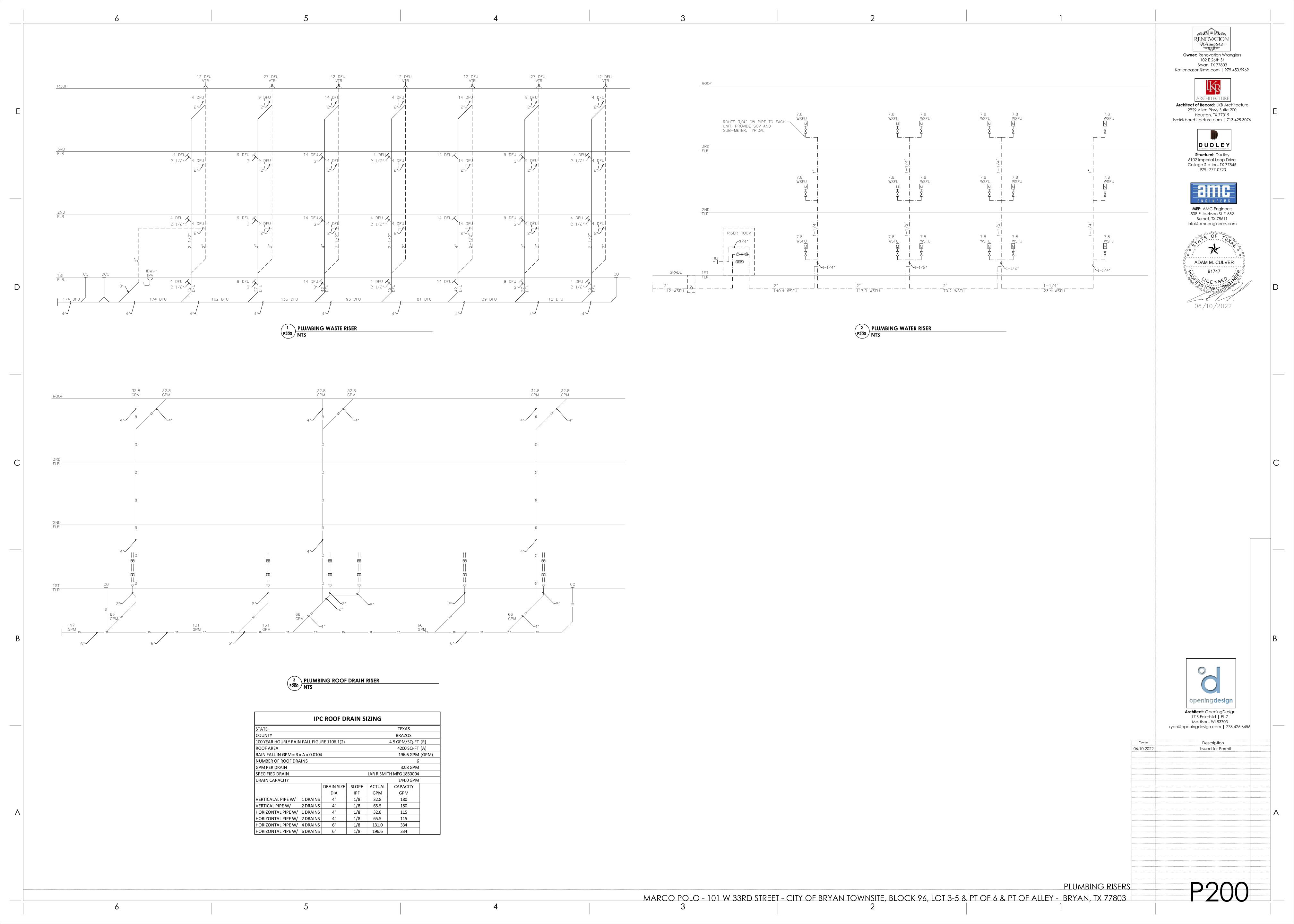


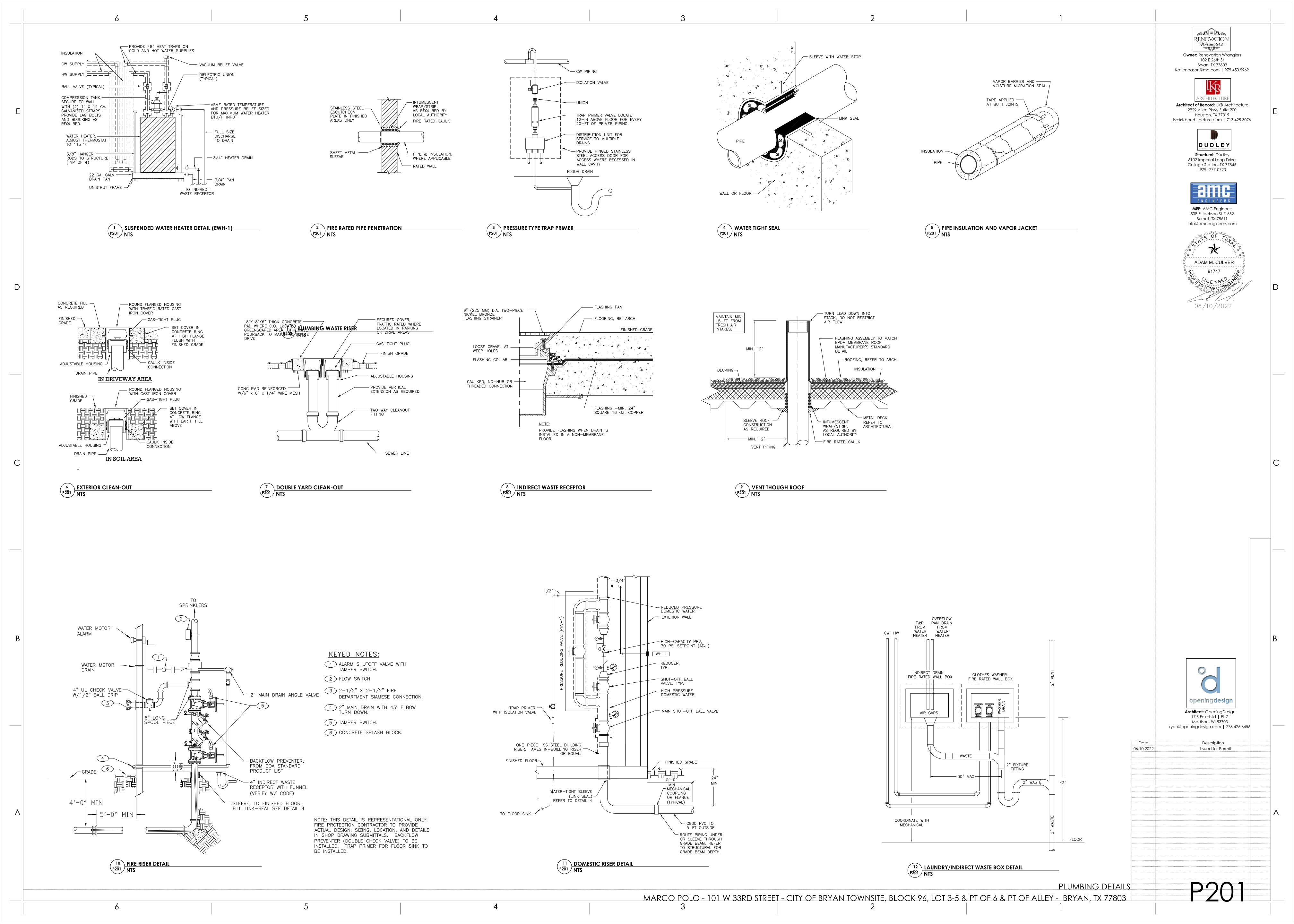












PLUMBING GENERAL NOTES . PLUMBING CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AT JOB SITE. PLUMBING CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PROJECT CONSTRUCTION

DOCUMENTS AND SPECIFICATIONS PRIOR TO BIDDIG THE PROJECT. CONTRACTOR SHALL VERIFY THE EXACT SIZE, LOCATION, PRESSURE, AND DEPTH OF ALL EXISTING

UTILITY LINES BEFORE COMMENCING WORK. PRIOR TO ROUGH-IN THE PLUMBING CONTRACTOR SHALL REVIEW ALL PLUMBING SCHEDULES, DRAWINGS, DETAILS, AND NOTES.

WATER AND WASTE WATER SERVICES LOCATION AND SIZE MAY VARY. REFERENCE SITE PLAN. 6. ALL UTILITY LINES BEING TAPED SHALL HAVE THEIR LOCATION, DEPTH, SLOPE, AND PRESSURE

VERIFIED BY CONTRACTOR PRIOR TO THE START OF WORK. PLUMBING INSTALLATION SHALL BE PERFORMED BY A LICENSED PLUMBER AND SHALL COMPLY WITH ARCHITECTURALS PRIOR TO ROUGH-IN. ALL FEDERAL, STATE, LOCAL CODES, AND AUTHORITIES HAVING JURISDICTION. ALL MATERIALS, FIXTURES, AND DEVICES SHALL CONFORM TO APPROVED APPLICABLE STANDARDS.

PROVIDE ALL EQUIPMENT, MATERIAL, LABOR, SUPERVISION, COSTS, AND SERVICES REQUIRED TO COMPLETELY INSTALL A COMPLETE AND WORKING SYSTEMS INCLUDING ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLY INCIDENTAL, OR CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFIED OR SHOWN.

9. ALL PIPING TO BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED.

10. PLUMBING CONTRACTOR TO TERMINATE ALL WATER AND GAS ROUGH-INS WITH SHUTOFF VALVES PRIOR TO CONNECTING EQUIPMENT OR FIXTURES.

11. INSULATE ALL DOMESTIC WATER PIPING.

12. INSULATE ALL HOT AND COLD WATER PIPING LOCATED IN THE CEILING OR WALLS.

13. PIPE INSULATION TO BE AS FOLLOWS: PIPING WITH A DIAMETER OF 1-1/4" AND BELOW 1" INSULATION IS REQUIRED. PIPING WITH A DIAMETER OF 1-1/2" AND ABOVE 2" INSULATION IS REQUIRED - BASED ON INSULATION HAVING A CONDUCTIVITY (K) NOT EXCEEDING 0.27 BTU PERIN/H X FT SQUARED X DEGREE F.

14. ALL UNDERGROUND WATER SERVICE TUBING SHALL BE TYPE "L" COPPER AND SHALL BE INSTALLED WITH A $\frac{1}{2}$ " ARMAFLEX INSULATION OR EQUIVALENT. 15. PLUMBING CONTRACTOR TO COORDINATE INSTALLATION OF PIPING AND EQUIPMENT WITH OTHER

TRADES ON SITE PRIOR TO INSTALLATION OF SUCH PIPING AND EQUIPMENT. SHOULD A CONFLICT

31. AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13 AND OTHER APPLICABLE ARISE BETWEEN SYSTEMS REQUIRING A GRADE OR SLOPE, THE DRAINAGE SYSTEM (I.E. SANITARY

16.	ANY EXISTING ACTIVE PIPING SYSTEMS WHICH MUST REMAIN, BUT ARE IN CONFLICT WITH NEW
	LAYOUT SHALL BE RELOCATED AT NO ADDITIONAL COST OVER THE CONTRACT AMOUNT.

17. WHETHER SPECIFICALLY INDICATED OR NOT THE PLUMBING CONTRACTOR SHALL REMOVE ALL EXISTING EQUIPMENT AND ASSOCIATED PLUMBING THAT IS NO LONGER A PART OF AN ACTIVE

18. CONTRACTOR TO SUPPORT ALL WALL HUNG FIXTURES BY MEANS OF AN APPROVED CARRIER.

19. PLUMING CONTRACTOR SHALL EXTEND ALL INDIRECT DRAINS AND CONDENSATE LINES FROM EQUIPMENT TO FLOOR SINKS AND INDIRECT WASTE DRAINS IN ASSOCIATED AREAS.

20. DRAWINGS MAY NOT BE TO SCALE. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF FIXTURE INSTALLATION.

21. PLUMBING CONTRACTOR TO VERIFY ALL LOCATIONS OF HANDICAPPED PLUMBING FIXTURES WITH 22. CONTRACTOR TO COORDINATE ALL WORK WITH THE OWNER OR OWNERS DESIGNATED

REPRESENTATIVE. 23. ALL WORK IS SUBJECT TO THE APPROVAL OF THE ARCHITECT.

24. ALL VENT PIPING TO BE 2" DIAMETER UNLESS OTHERWISE NOTED.

25. ALL VENT PENETRATIONS THROUGH ROOF TO MAINTAIN A CLEARANCE OF 10 FEET MINIMUM FROM ANY FRESH AIR INTAKE.

26. PLUMBING CONTRACTOR SHALL INSTALL AIR CHAMBERS ON ALL HOT AND COLD WATER ROUGH-INS

AND PROVIDE SHOCK ARRESTORS ON ALL QUICK CLOSING VALVES. 27. ALL PENETRATIONS THRU FIRE RATES WALL, FLOORS, CEILINGS, OR ASSEMBLIES SHALL BE SEAL

28. A THERMOSTATIC MIXING VALVE SHALL BE REQUIRED FOR ALL LAVATORIES SERVING PUBLIC RESTROOMS AND THE WATER TEMPERATURE SHALL BE LIMITED TO 120° F. THE WATER HEATER THERMOSTAT SHALL NOT BE CONSIDERED A CONTROL FOR MEETING THIS REQUIREMENT.

29. ALL FIXTURES MUST HAVE TRAPS AND VENTED ON THE TRAP ARM.

WITH AN APPROVED MATERIAL TO MAINTAIN THE FIRE RATING ASSEMBLY.

STANDARDS IS REQUIRED. SPRINKLER SYSTEM TO BE DEFERED SUBMITTAL PROVIDED BY SPRINKLE

30. PROVIDE HEAT TRAP FITTINGS ON BOTH COLD WATER AND HOT WATER LINES FOR ALL DOMESTIC WATER

PLUM	BING	PIPE MATERIALS	
SYMBOL	ABB.	DESCRIPTION	SPECIFICATION
	CW	COLD WATER PIPING	ABOVEGROUND DOMESTIC WATER PIPING: NPS 2 (DN 50) AND SMALLER, SHALL BE ONE OF THE FOLLOWING:
	HW	HOT WATER PIPING	1. TYPE L; COPPER PRESSURE FITTINGS; AND SILVER SOLDERED JOINTS. 2.TYPE K; COPPER PRESSURE FITTINGS; AND SILVER SOLDERED JOINTS. 3. IF ALLOWED BY LOCAL AHJ, PEX TYPE PLUMBING WITH METALIC CONNECTIONS AND VALVES.
	HWR	HOT WATER RETURN PIPING	BELOW GROUND DOMESTIC WATER PIPING-NO JOINTS UNDER GROUND: NPS 2-1/2 AND SMALLER SHALL BE THE FOLLOWING: 1. TYPE L; COPPER PRESSURE FITTINGS; AND SILVER SOLDERED JOINTS. 2. IF ALLOWED BY LOCAL AHJ, PEX TYPE PLUMBING WITH METALIC CONNECTIONS AND VALVES.
FW	FW	FILTERED RO WATER	FILTERED RO WATER PIPING SHALL BE ONE OF THE FOLLOWING: 1. CPVC SCHEDULE 80 PIPING WITH ALL PLASTIC OR STAINLESS STEEL CONNECTIONS AND VALVES 2. PEX TYPE PLUMBING WITH ALL PLASTIC OR STAINLESS STEEL CONNECTIONS AND VALVES.
	ww	WASTE WATER	ABOVE GROUND, SOIL, WASTE, AND STORM DRAIN PIPING: NPS 4 (DN 100) AND SMALLER SHALL BE ANY OF THE FOLLOWING: 1. SERVICE CLASS, CAST-IRON SOIL PIPE AND FITTINGS; GASKETS; AND GASKETED JOINTS. 2. HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS; CISPI HEAVY-DUTY HUBLESS-PIPING COUPLINGS; AND COUPLED JOINTS. * IF ALLOWED BY LOCAL AUTHORITIES. 3. SOLID WALL ABS PIPE, ABS SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS. 4. SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS. 5. DISSIMILAR PIPE-MATERIAL COUPLINGS: SHIELDED, NON-PRESSURE TRANSITION COUPLINGS.
GW	GW SD	GREASE WATER STORM DRAIN	UNDERGROUND, SOIL, WASTE, AND STORM DRAIN PIPING NPS 4 (DN 100) AND SMALLER SHALL BE ANY OF THE FOLLOWING: 1. HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS; CISPI HEAVY-DUTY CAST-IRON HUBLESS-PIPING COUPLINGS; AND COUPLED JOINTS. * IF ALLOWED BY LOCAL AUTHORITIES. 2. SOLID WALL ABS PIPE, ABS SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS.
			3. SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS. 4. DISSIMILAR PIPE-MATERIAL COUPLINGS: SHIELDED, NON-PRESSURE TRANSITION COUPLINGS. ABOVE GROUND, VENT PIPING NPS 4 (DN 100) AND SMALLER SHALL BE THE FOLLOWING:
	V	VENT PIPING	 SERVICE CLASS, CAST-IRON SOIL PIPE AND FITTINGS; GASKETS; AND GASKETED JOINTS. HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS; CISPI HEAVY-DUTY HUBLESS-PIPING COUPLINGS; AND COUPLED JOINTS. SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS, IF ALLOWED BY LOCAL AUTHORITIES. DISSIMILAR PIPE-MATERIAL COUPLINGS: SHIELDED, NON-PRESSURE TRANSITION COUPLINGS.
GAS ———	GAS	GAS PIPING	ABOVE GROUND, GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON FITTINGS

		VOLT/PH/HZ	230V/1Ø/60HZ
	ELEC. DATA	KW PER ELEMENT	4.5
	271171	NO. OF ELEMENTS	2
	GPM @ 90° F	RISE	21
	MANUFACTU	IRER	RHEEM
	MODEL NO.		PROE36 SE RH95
	ACCESSORII	ΞS	-

WATER HEATER SCHEDULE

36

DESIGNATION

DATA

STORAGE - CAPACITY GALLONS

INPUT BTUH

		С	OLD WATER	₹	IXTURES WASTEWATER							
FIXTURES	TAG	F.U. COUNT	WSFU	CW F. U.	F.U. COUNT	DFU	WW D.F.U					
PRIVATE BATHROOM GROUP		18 x	3.6 =	64.8	18 x	5.0 =	90.0					
KITCHEN SINK	SK	18 x	1.4 =	25.2	18 x	2.0 =	36.0					
DISH WASHING MACHINE	DISH	18 x	1.4 =	25.2	18 x	2.0 =	36.0					
CLOTHS WASHING MACHINE	WASH	18 x	1.4 =	25.2	18 x	2.0 =	36.0					
HOSE BIBB	HB-1	1 x	1.0 =	1.0	1 x	0.0 =	.0					
TOTALS NOTES: BASED ON IPC 2021 TABLES E1	02 2/2) 8. 7	700.1		141.4			198.0					
TOTAL				CW	F. U. 141.4	ww.	D.F.U 198.0					

WATER METER	AND PIPE CALCULA	TION
ESTIMATED PEAK WSFU		142
ESTIMATED PEAK DEMAN	D	= 53.0 GPM
HIGHEST FIXTURE UNIT =	30 FT	
30 FT x 0.4	3 = 12.9 PSI STATIC LOS	S
HORIZ. PIPE LENGTH FROM	M TAP TO METER	25 F1
HORIZ. PIPE LENGTH FROM	M METER TO BUILDING	200 FT
HORIZ. PIPE LENGTH BUILI	DING TO LAST FIXTURE	125 F7
VERTICAL PIPE RISE TO HIG	GHEST FIXTURE	30 F7
ESTIMATED TOTAL PIPE LE	NGTH	380 F1
FITTING LOSS FACTOR		1.25
TOTAL DEVELOPED LENGT	Н	475 F1
BUILDING PIPE LOSS CALC	ULATION	
DEVICE	SIZE	LOSS
METER	1-1/2"	7.0 PS
FIXTURE FLUSH VALVE	-	15.0 PS
STATIC		12.9 PS
TOTAL BUILDING PRESSUR	RE LOSS	34.9 PS
PRESSURE AT STREET		60.0 PS
BUILDING LOSS		34.9 PS
DIFFERENCE		25.10
MAX PSI DROP ALLOWABI	LE PER 100 FT OF PIPE	5.28
PROPOSED 1-1/2" METER	AND 2" MAIN WATER LIN	E
NOTES:		
1. THIS CALCULATION IS B.		
2. VERIFY PRESSURE AT TII	ME OF CONSTRUCTION. II	F PRESSURE
AT MAIN IS GREATER THA	N 80 PSI, PROVIDE AND II	NSTALL A
CUSTOMER PRESSURE RED	OUCING VALVE TO 80 PSI.	

MADIA	NANUICACTUDED / NAODEL #	PLUMBING FIXTURE			I-IN SIZE		NOTES	LOCATION	MAXIMUN
MARK	MANUFACTURER / MODEL #	DESCRIPTION	CW	HW	WASTE	VENT	NOTES	LOCATION	WATER FLO
SK-1	TO BE SELECTED BY OWNER	STAINLESS STEEL 2 COMPARTMENT SINK WITH FAUCET.	1/2"	1/2"	2"	1-1/2"	INCLUDE ALL REQUIRED DRAINS, TRAPS, VALVES, AND BRAIDED STAINLESS STEEL HOSES.	NON-ADA	1.8 GPW
SK-ADA	TO BE SELECTED BY OWNER	ADA COMPIANT STAINLESS STEEL 2 COMPARTMENT SINK WITH ADA COMPLIANT FAUCET. MOUNT WITHIN REQUIRED TAS AND ADA HEIGHT.	1/2"	1/2"	2"	1-1/2"	INCLUDE ALL REQUIRED DRAINS, TRAPS, VALVES, AND BRAIDED STAINLESS STEEL HOSES.REVIEW ARCHITECTURAL PLANS FOR REQUIRED APPROACH AND DETAIL FOR PROTECTION FROM DRAIN LINE. PROVIDE TRUBRO DRIAN AND VALVE COVERS IF REQUIRED.	ADA	1.8 GPM
LAV-1	TO BE SELECTED BY OWNER	LAVATORY WITH OVERFLOW, SURFACE MOUNTED FAUCET	1/2"	1/2"	2"	1-1/2"	INCLUDE ALL REQUIRED DRAINS, TRAPS, VALVES, AND BRAIDED STAINLESS STEEL HOSES.	NON-ADA	1.5
LAV-ADA	TO BE SELECTED BY OWNER	LAVATORY WITH OVERFLOW, SURFACE MOUNTED FAUCET WITH ADA COMPLIANT FAUCET. MOUNT WITHIN REQUIRED TAS AND ADA HEIGHT.	1/2"	1/2"	2"	1-1/2"	INCLUDE ALL REQUIRED DRAINS, TRAPS, VALVES, AND BRAIDED STAINLESS STEEL HOSES. REVIEW ARCHITECTURAL PLANS FOR REQUIRED APPROACH AND DETAIL FOR PROTECTION FROM DRAIN LINE. PROVIDE TRUBRO DRIAN AND VALVE COVERS IF REQUIRED.	ADA	1.5
WC-1	TO BE SELECTED BY OWNER	TANK WATER CLOSET, WHITE VITREOUS CHINA, ELONGATED BOWL, FLOOR MOUNT, 1.6 GAL /FLUSH. SOFT CLOSE ELONGATED WHITE SEAT.	1/2"	-	3"	2"	INCLUDE ALL REQUIRED SEAL, VALVES, AND BRAIDED STAINLESS STEEL HOSES.	NON-ADA	1.6
WC-ADA	TO BE SELECTED BY OWNER	ADA COMPLIANT TANK WATER CLOSET, WHITE VITREOUS CHINA, ELONGATED BOWL, 16-1/2" ELEV. FLOOR MOUNT, 1.6 GAL /FLUSH. SOFT CLOSE ELONGATED WHITE SEAT.	1/2"	-	3"	2"	INCLUDE ALL REQUIRED SEAL, VALVES, AND BRAIDED STAINLESS STEEL HOSES.	ADA	1.6
TUB	MIXING VALVE SHOWER / TUB SHOWER KIT	TUB WITH OVERFLOW, DRAIN KIT, SINGLE CONTROL PRESSURE BALANCE MIXING VALVE WITH SCREWDRIVER STOPS - MEETS REQUIREMENTS ASSE 1016, WITH TEMPERATURE LIMIT ADJUSTMENT, CERAMIC DISC VALVE, COMBINATION 1/2" COPPER SWEAT/IPS 4-PORT HOOK UP, MOUNTING BRACKET AND PLASTER GUARD INCLUDED. SHOWER ARM WITH FLANGE, SOLID BRASS.SHOWER ARM MOUNT, ATTACHES TO END OF SHOWER ARM.	1/2"	1/2"	2"	1-1/2"		NON-ADA	2.5 GPM
TB-ADA	MIXING VALVE SHOWER / TUB SHOWER KIT	ADA COMPLIANT TUB WITH SEAT, OVERFLOW, DRAIN KIT, SINGLE CONTROL PRESSURE BALANCE MIXING VALVE WITH SCREWDRIVER STOPS - MEETS REQUIREMENTS ASSE 1016, WITH TEMPERATURE LIMIT ADJUSTMENT, CERAMIC DISC VALVE, COMBINATION 1/2" COPPER SWEAT/IPS 4-PORT HOOK UP, MOUNTING BRACKET AND PLASTER GUARD INCLUDED. SHOWER ARM WITH FLANGE, SOLID BRASS.SHOWER ARM MOUNT, ATTACHES TO END OF SHOWER ARM.	1/2"	1/2"	2"	1-1/2"		ADA	2.5 GPW
GD-1	INSINKERATOR BADGER 5	FOOD WASTE DISPOSAL - 1/2 HP	-	-	1-1/2"	-	CONNECT DISHWASHER DRAIN TO WASTE DISPOSAL PORT	ALL UNITS	N/A
IM-1	OATEY OR EQUAL	RECESSED FIRE RATED ICE MAKER BOX 1/4 TURN BALL VALVE W/ WATER HAMMER ARESTOR	1/2"	-	-	-	FIRE RATED	ALL UNITS	N/A
WM-1	OATEY OR EQUAL	RECESSED FIRE RATED WASHING MACHINE OUTLET BOX WITH FACEPLATE, 1/4 TURN BALL VALVES, AND WATER HAMER ARRESTORS	1/2"	1/2"	2"	1-1/2"	FIRE RATED	ALL UNITS	N/A
WM-2	OATEY OR EQUAL	RECESSED FIRE RATED DRAIN AUXILLARY DRAIN BOX			2"	1-1/2"	FIRE RATED	ALL UNITS	N/A
IDW-1	JAY R. SMITH MANUFACTURING CO. MODEL #3510Y04	FUNNEL-CEPTOR INDIRECT WASTE DRAIN WITH SEDIMENT BUCKET AND 4" DIAMETER FUNNEL.	-	-	4"	2"	INSTALL WITH AUX. INLET FITTING 1/2" NTP FOR TRAP PRIMER. MODEL 2697.	RISER ROOM	N/A
DCVA	WATTS SERIES 719	BRASS BODY DOUBLE CHECK VALVE ASSEMBLY	2"	х			PROVIDE SIZE COMPERABLE TO WATER LINE CONNECTION	RISER ROOM	N/A
НВ	JAY R. SMITH MANUFACTURING CO. MODEL #5519	GUARDIAN DUAL CHECK 1/4 TURN NON-FREEZE WALL HYDRANT WITH AUTOMATIC DRAINING INTEGRAL VACUUM BREAKER, DUAL CHECK VALVE AND STAINLESS STEEL BOX	3/4"					RISER ROOM	N/A
со	JAY R. SMITH MANUFACTURING CO. MODEL# 4040	SQUARE NICKLE BRONZE TOP CLEANOUT	-	-	4"/6"			VARRIES	N/A
DSP-1	JAY R. SMITH MANUFACTURING CO. MODEL #1770	DOWNSPOUT NOZZEL			4"			ROOF	N/A
TPV	JAY R. SMITH MANUFACTURING CO. MODEL # 2694	TRAP PRIMER VALVE	1/2"					RISER ROOM	N/A
RD-1	JAY R. SMITH MANUFACTURING CO. MODEL #1850C04	ROOF AND OVERFLOW DRAIN WITH DECK PLATE			4"			ROOF	N/A



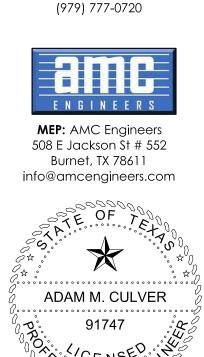
RENOVATION



Structural: Dudley

6102 Imperial Loop Drive

College Station, TX 77845



06/10/2022



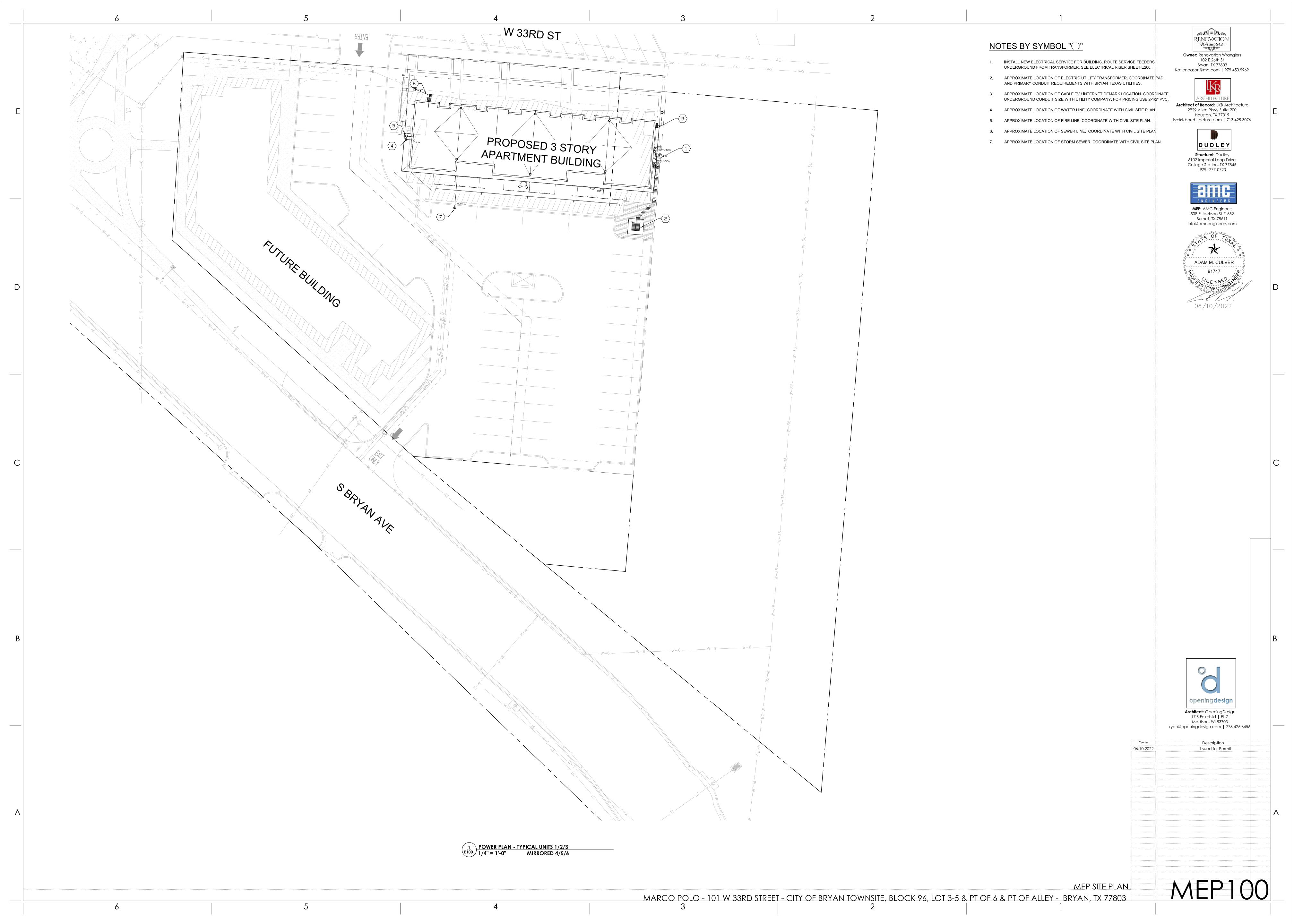
Description

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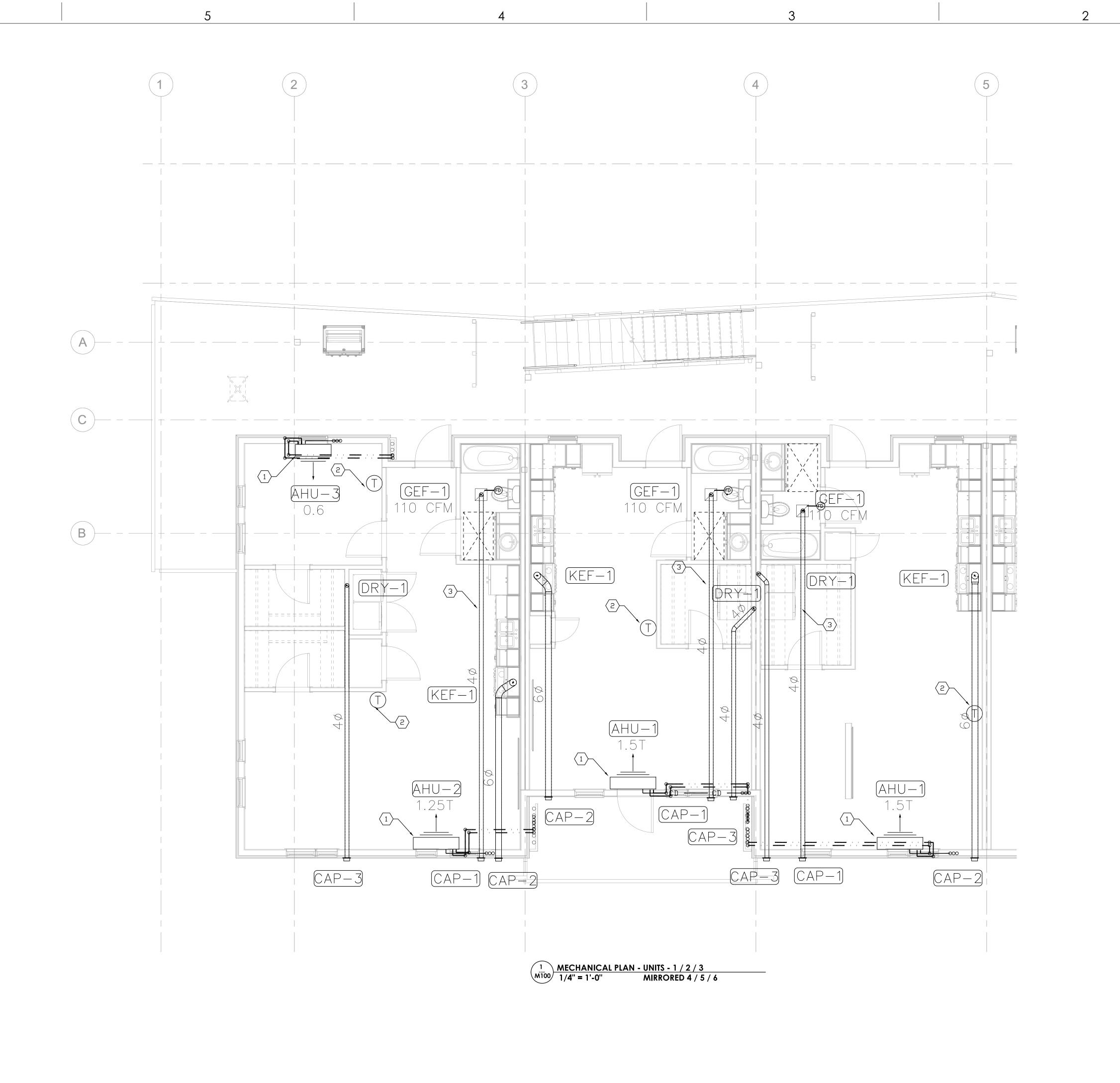
P300

PLUMBING DETAILS

MARCO POLO - 101 W 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803







NOTES TO HVAC CONTRACTOR:

1. COORDINATE LOCATION OF ALL ROOF OR EXTERIOR WALL PENETRATIONS (IF ANY) WITH ARCH/STRUCTAL & BUILDING OWNER PRIOR TO STARTING WORK. ALL ROOF/WALL PENETRATIONS ARE TO BE FLASHED TO ROOF MANUFACTURERS SPECIFICATIONS AND DETAILS. MAINTAIN RATING OF WALL AND ROOF ASSEMBLY.

2. REFER TO REFLECTED CEILING PLAN AND COORDINATE WITH OWNER THE EXACT FINAL LOCATIONS OF ALL CEILING GRILLS, DIFFUSERS, AND FANS.

3. ENVIRONMENTAL EXHAUST DUCTS SHALL TERMINATE OUTSIDE THE BUILDING AND NOT UNDERNEATH ANY COVERED AREAS. THE EXHAUST SHALL TERMINATE NO LESS THAN 3-FEET FROM PROPERTY LINE AND NO LESS THAN 3 FEET FROM OPENINGS INTO THE BUILDING.

4. CLOTHES DRYER EXHAUST DUCTS SHALL TERMINATE OUTSIDE THE BUILDING AND NOT UNDERNEATH ANY COVERED AREAS. THE EXHAUST SHALL TERMINATE NO LESS THAN 3-FEET FROM PROPERTY LINE AND NO LESS THAN 3 FEET FROM OPENINGS INTO THE BUILDING.

5. THE IBC & IMC HAVE MINIMUM REQUIREMENTS FOR SERVICE CLEARANCES TO GAS FURNACES, CONDENSING UNITS & AIR HANDLING UNITS PLUS A LOCATION THRU WHICH THE UNITS THEORETICALLY CAN BE REMOVED.

6. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATIONS OF THE UNITS AND TO COORDINATE CLEARANCES AVAILABLE AND EQUIPMENT REMOVAL PANELS WITH THE ARCHITECT PRIOR TO STARTING WORK TO ENSURE THAT THE INSTALLATION CONFORMS TO APPLICABLE LOCAL AND NATIONAL

NOTES BY SYMBOL "()"

1. PROVIDE HEAT PUMP MINI-SPLIT SYSTEM EQUIPMENT AS SCHEDULED. MOUNT ON WALL ABOVE WINDOW AND DOOR FRAMES. POSITION AS REQUIRED TO ACHIEVE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES. CONFIRM FINAL MOUNTING LOCATION WITH ARCHITECT. ROUTE REFRIGERANT LINES AS SHOWN AND MAINTAIN RATING OF CEILING AND WALL ASSEMBLYS. ROUTE TO EXTERIOR OF BUILDING BEHIND ARCHITECTURAL CHASE AND ROUTE TO ROOF LEVEL. FIELD VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION. COORDINATE WALL PENETRATIONS WITH G.C. AND ARCHITECT. MECHANICAL CONTRACTOR TO PROVIDE THE FOLLOWING:

A. CONDENSATE DRAIN: ROUTE CONDENSATE DRAIN TO WITH 1/4"/FT SLOPE THRU WALL TO CONSOLIDATED VERTICAL DROP AREA TO GROUND LEVEL WHILE MAINTAINING RATING OF WALLS AND FLOOR/CEILING ASSEMBLIES. DAYLIGHT 3/4" CONDENSATE LINE ABOVE GRADE DESIGNATED DRAIN AT GROUND LEVEL. PROVIDE WATERLESS IN-LINE MINI-TRAP EZE-180.

2. PROVIDE A DAKIN ONE+ SMART (7) DAY PROGRAMMABLE WALL MOUNTED THERMOSTAT AS SHOWN. COORDINATE MOUNTING HEIGHT AND LOCATION WITH ARCHITECT AND OWNER.

3. PROVIDE RESTROOM EXHAUST FAN WITH GRAVITY DAMPER AS SCHEDULED WITH RADIATION DAMPER AT CEILING PENETRATION. EXTEND EXHAUST HORIZONTALLY FROM EXHAUST FAN THRU EXTERIOR WALL/ROOF. COORDINATE EXTERIOR WALL/ROOF PENETRATION WITH G.C. AND/OR ARCHITECT TO VERIFY FLASHING REQUIREMENTS AND MAINTAIN RATING OF ASSEMBLIES.

4. INSTALL RATED WALL DRYER BOX MODEL DB-350 OR APPROVED EQUAL AT DRYER LOCATION. COORDINATE WITH GC THE REQUIRED INSULATION TO FILL CAVITY VOID AT BETWEEN STUDS TO MAINTAIN UL LISTING. COORDINATE LOCATION WITH ARCHITECT AND PLUMBING CONTRACTOR.

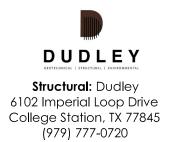
5. INSTALL 4" DRYER VENT UPWARD AND EXTEND EXHAUST HORIZONTALLY/VERTICALLY FROM DRYER THRU JOISTS TO EXTERIOR WALL/ROOF. PROVIDE SCHEDULED TERMINATION CAP AND PROVIDE GRAVITY DAMPER. COORDINATE EXTERIOR WALL/ROOF PENETRATION WITH G.C. AND/OR ARCHITECT TO VERIFY FLASHING REQUIREMENTS AND MAINTAIN RATING OF ASSEMBLIES. WRAP DRYER EXHAUST DUCT WITH 3M™ FIRE BARRIER DRYER VENTILATION WRAP 1-HR RATED ENTIRE LENGTH OF DUCT INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

6. INSTALL SCHEDULED RANGE VENT HOOD/MICROWAVE COMBO. COORDINATE WALL/ROOF PENETRATION WITH G.C. AND/OR ARCHITECT TO VERIFY FLASHING REQUIREMENTS AND MAINTAIN RATING OF ASSEMBLIES. EXTEND EXHAUST HORIZONTALLY/VERTICALLY FROM EXHAUST FAN THRU EXTERIOR WALL/ROOF.PROVIDE GRAVITY DAMPER. WRAP EXHAUST DUCT WITH 3M™ FIRE BARRIER DRYER VENTILATION WRAP 1-HR RATED ENTIRE LENGTH OF DUCT INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

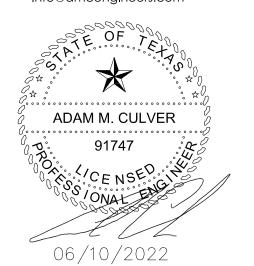








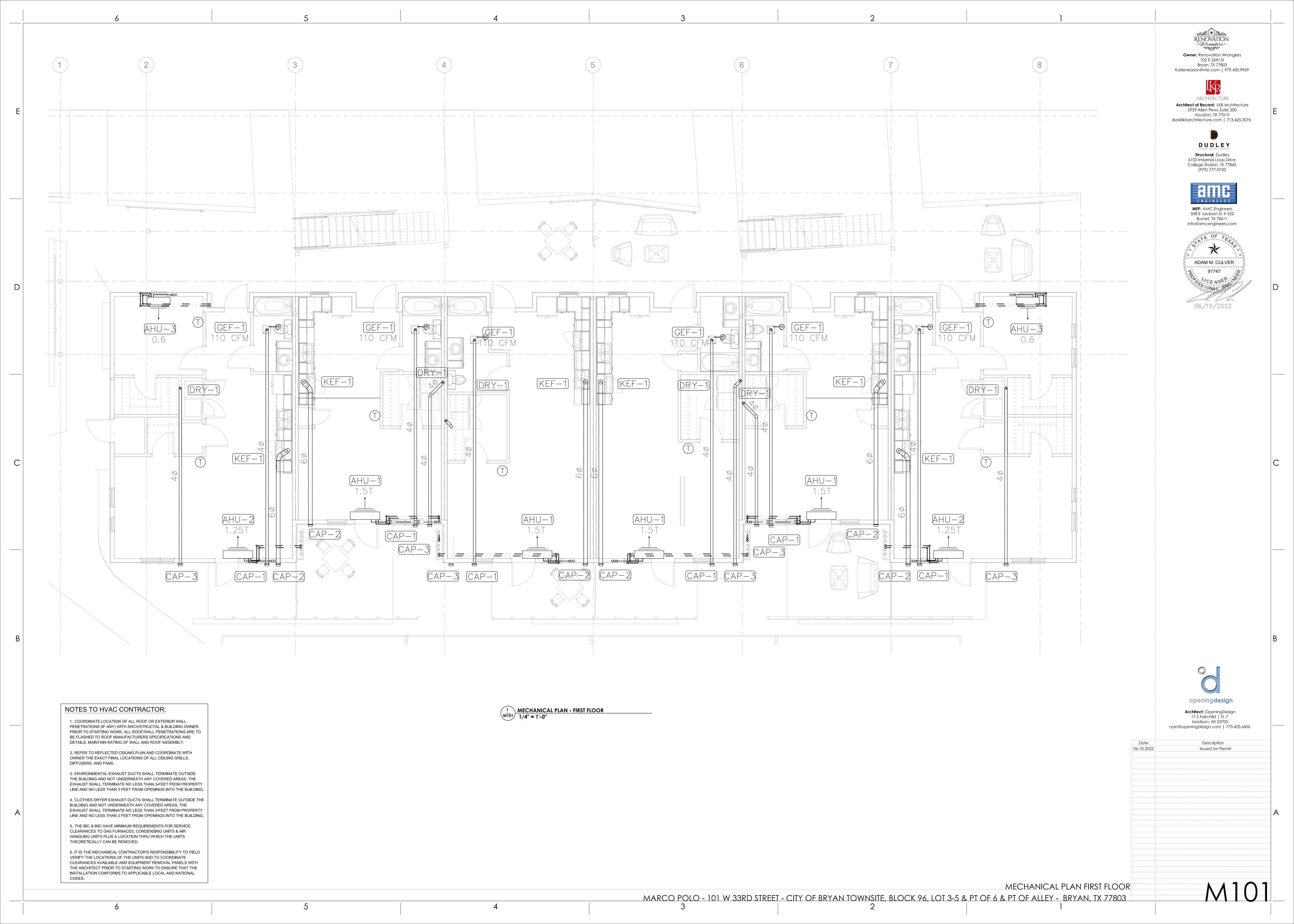


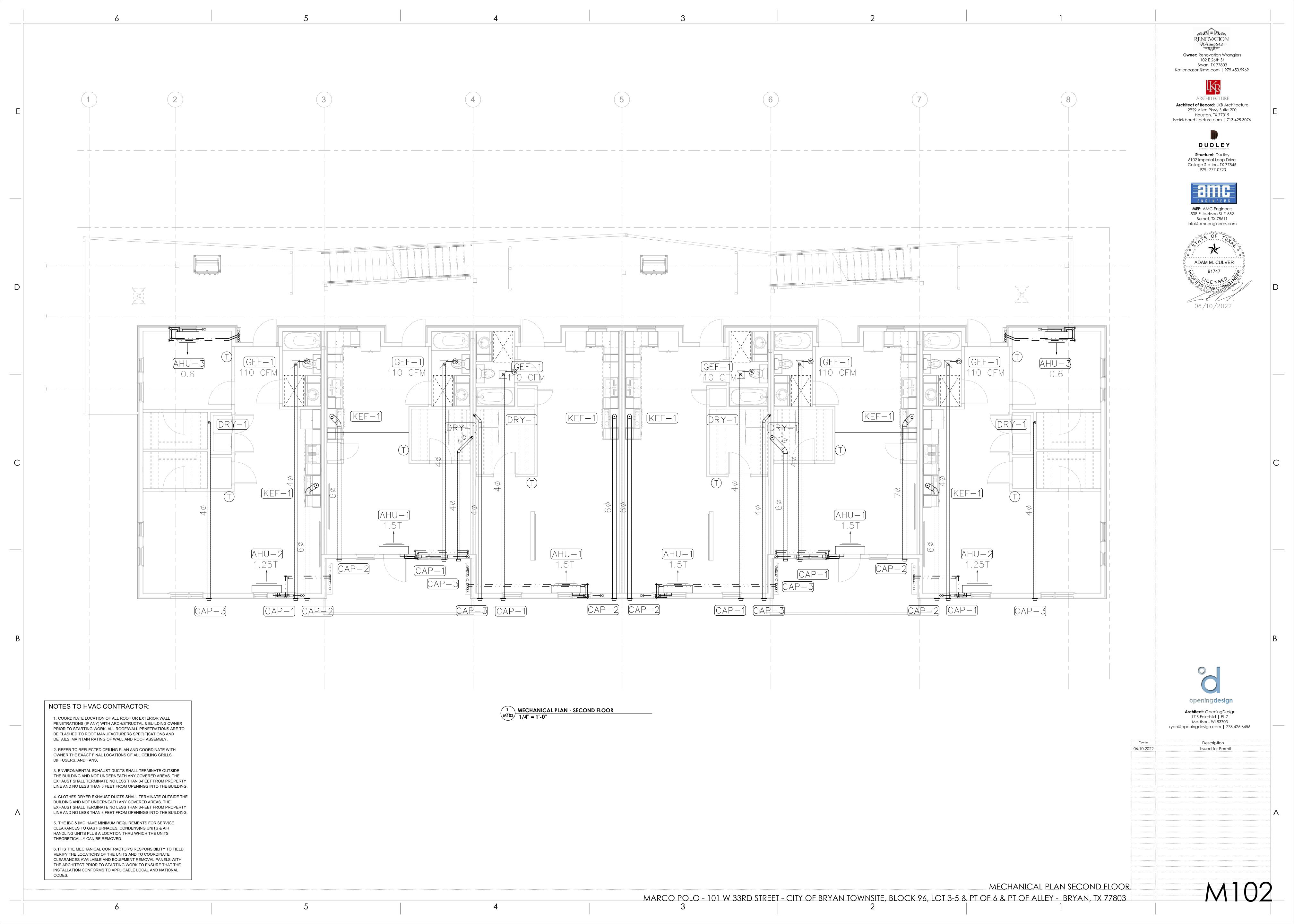


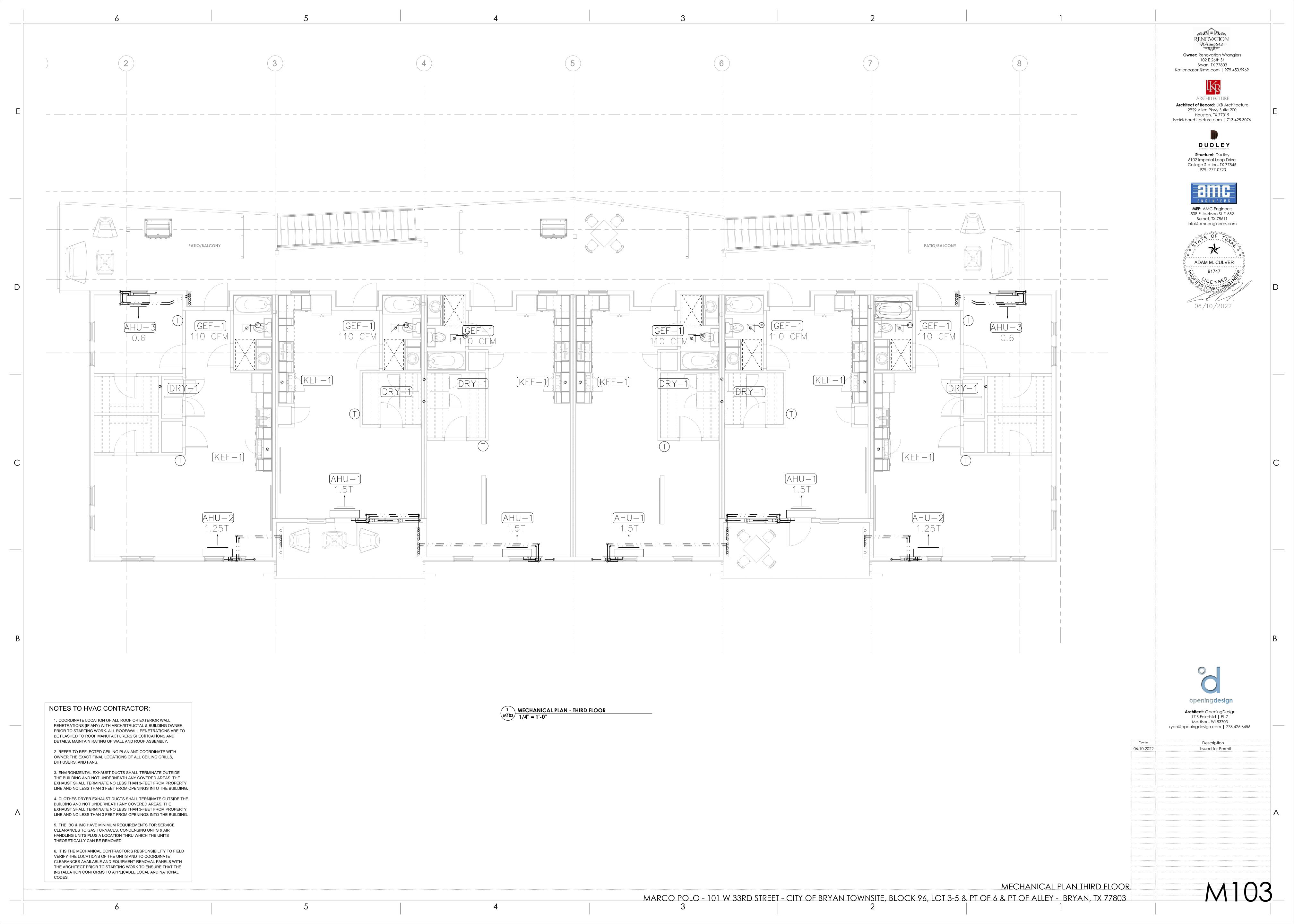


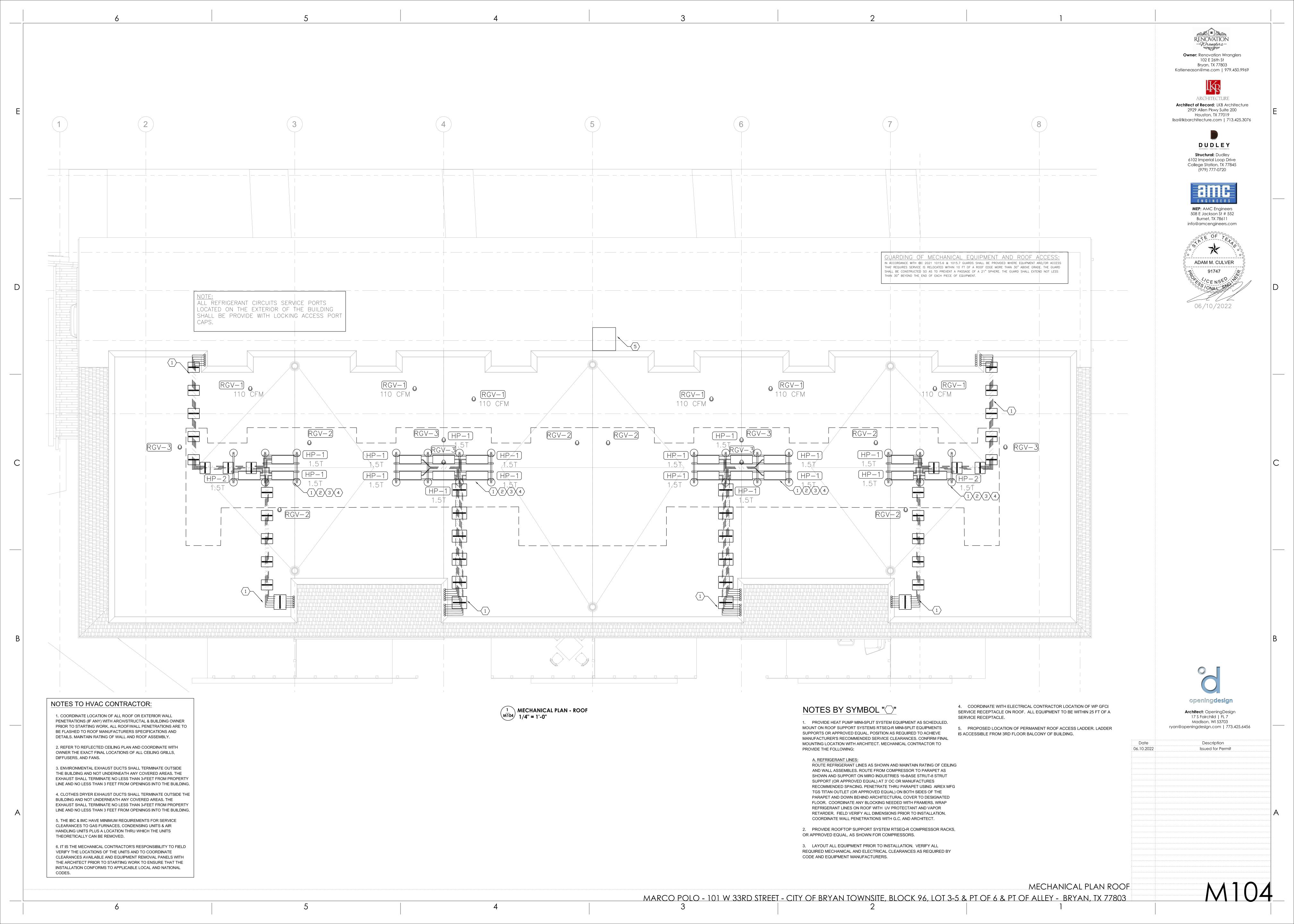
opening design Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703 ryan@openingdesign.com | 773.425.6456

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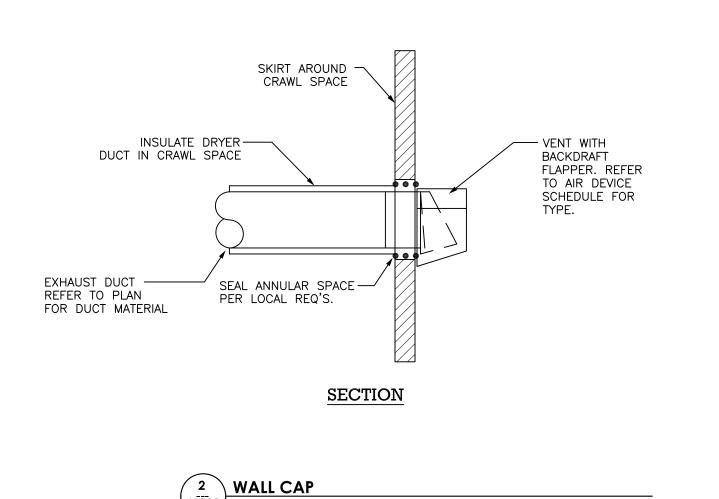


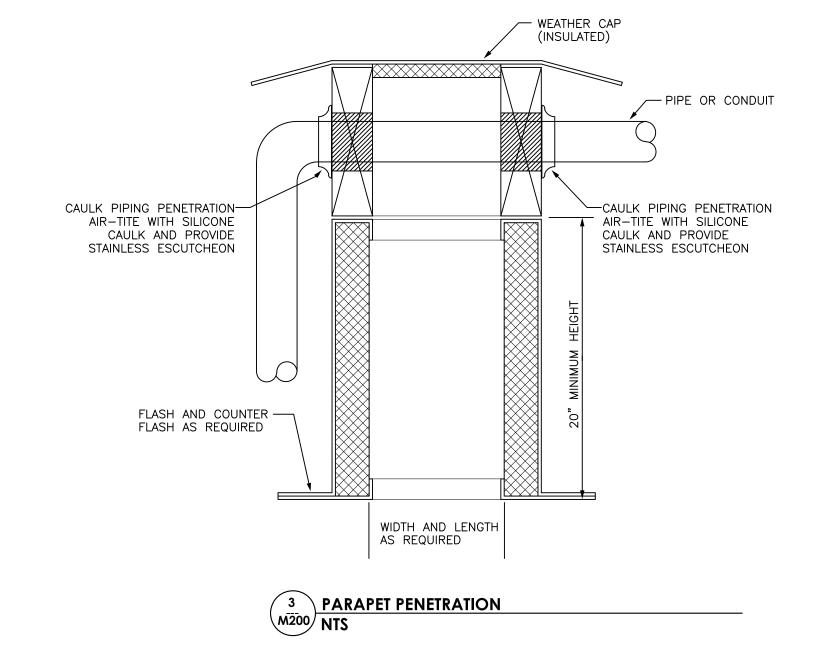


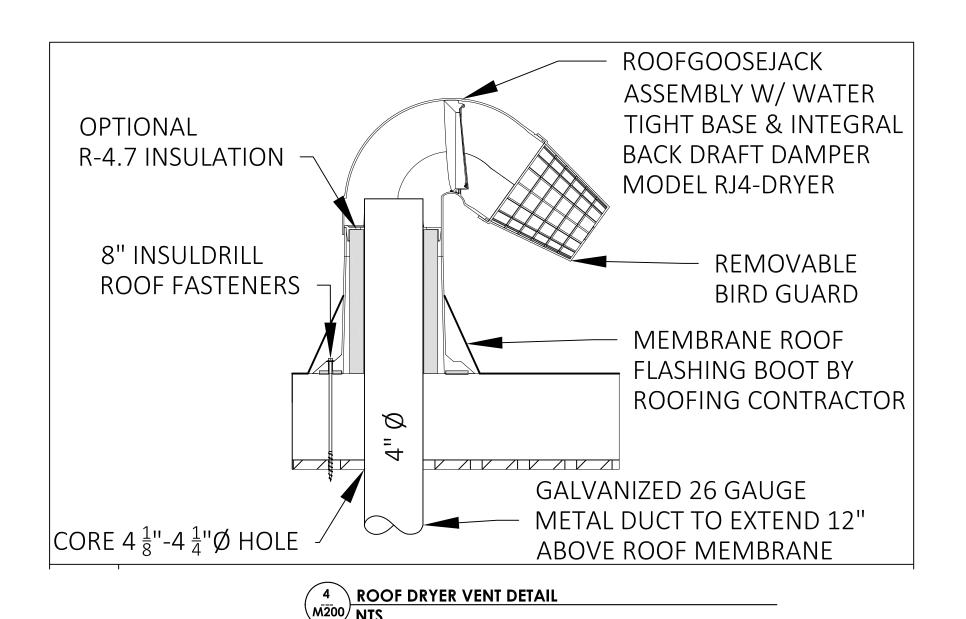


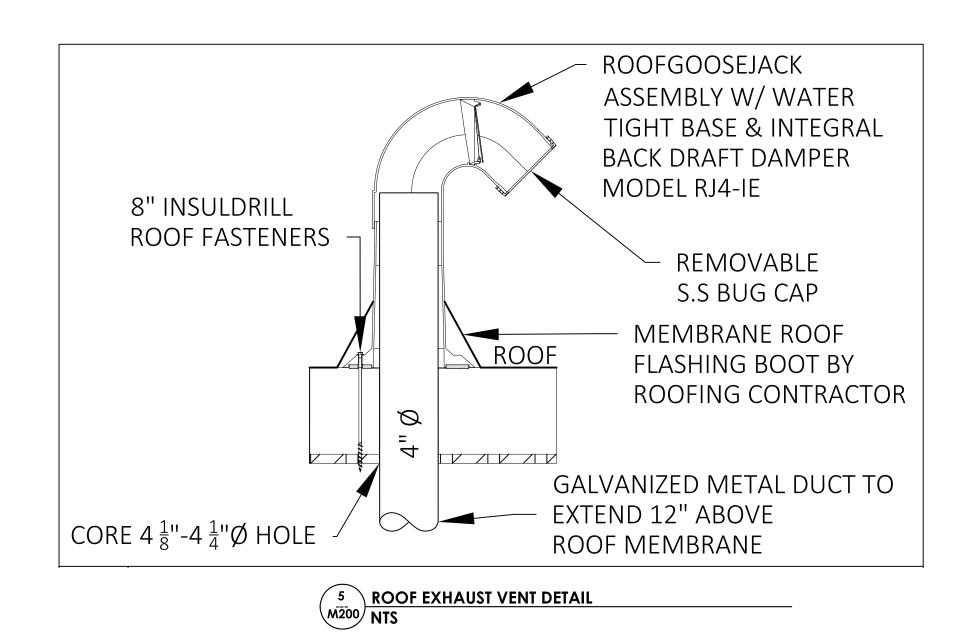
- RATED ENCLOSURE EQUAL TO CEILING RATING. ALUMINUM EXHAUST PIPE ----I CEILING TYPE AS SPECIFIED - SCHEDULED EXHAUST FAN BY ARCHITECT FIRE CAULK— INTEGRATED DAMPER

1 BATHROOM EXHAUST FAN





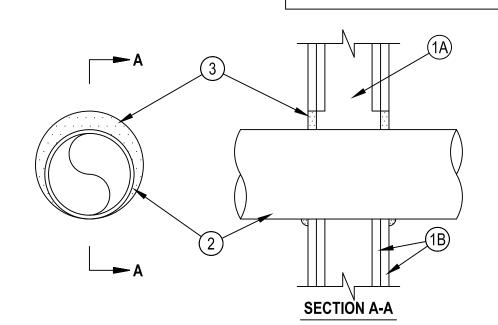






F Ratings — 1 and 2 Hr (See Items 1 and 3) FT Rating — 0 Hr
FT Rating — 0 Hr
FH Ratings —1 and 2 Hr (See Items 1 and 3)
FTH Rating — 0 Hr
FTH Rating — 0 Hr
L Rating at Ambient — Less Than 5.1 L/s/m2

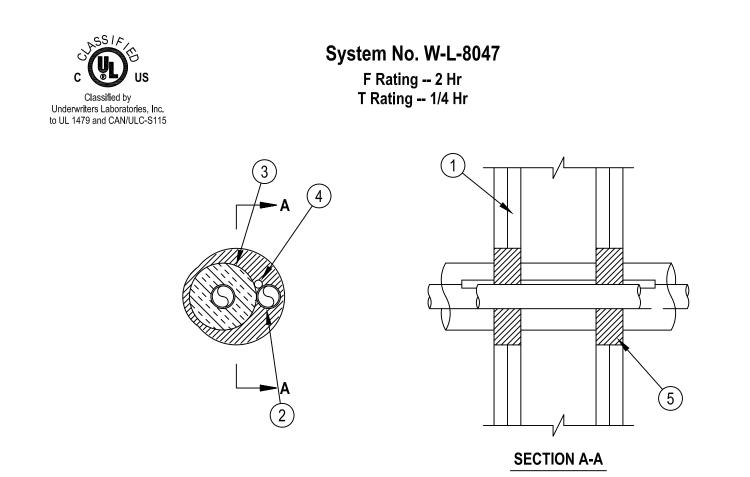
L Rating at 204°C — Less Than 5.1 L/s/m2



- 1. Wall Assembly The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction
- A. Studs Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. For M Rating, steel studs to be min 3-5/8 in. (92 mm) wide. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating
- B. Gypsum Board* 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls. The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly. The M Rating is applicable only to 1 hr rated walls.
- 2. Through-Penetrants One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used: A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
- B. Iron Pipe Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
- C. Conduit Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit. D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
- E. Copper Pipe Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe. 3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall
- interface on both surfaces of wall. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Υ	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada),



- 1. Wall Assembly The 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following
- A. Studs Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC. B. Gypsum Board* — The gypsum board type, thickness number of layers, fastener type and sheet orientation shall be specified in the
- individual Wall and Partition Design in the UL Fire Resistance Directory. Max diam of opening is 4-1/2 in. (114 mm). 2. Through Penetrants — One or more pipe or tubing to be installed concentrically or eccentrically within the opening. The space between any penetrant and the periphery of the opening shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm). Pipes or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used: A. Copper Tube — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tube.
- B. Copper Pipe Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe. 3. Tube Insulation - Plastics+ — Nom 3/4 in. (19 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. Tube insulation to be installed on one or more of the metallic pipes or tubes. See Plastics+ (QMFZ2) category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube
- insulation material meeting the above specifications and having a UL 94 Flammability Classification of 94-5VA may be used. 4. Cables — Max of one 4 pair No. 18 AWG (or smaller) cable with PVC insulation and jacket materials. 5. Fill, Void or Cavity Material - Sealant* — Min 1-1/4 in. (32 mm) thickness of fill material applied within annulus between penetrants and gypsum board, flush with both surfaces of wall. At point contact, a 1/4 in. (6 mm) bead of fill material shall be applied at the penetrant/gypsum board
- HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada),

Classified by	ANSI/UL1479 (ASTM E814)	CAN/ULC S115
Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115	F Rating — 1 and 2 Hr (See Item 1)	F Rating — 1 and 2 Hr (See Item 1)
	T Rating — 0 and 3/4 Hr (See item 3)	FT Rating — 0 and 3/4 Hr (See item 3)
	L Rating At Ambient — 15 CFM/sq ft	FH Rating — 1 and 2 Hr (See Item 1)
	L Rating At 400 F — 8 CFM/sq ft	FTH Rating — 0 and 3/4 Hr (See item 3)
		L Rating At Ambient — 15 CFM/sq ft
		L Rating At 400 F — 8 CFM/sq f
	△ (3)	

1. Wall Assembly — The 1 or 2 fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

- A. Studs Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. B. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum board, with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory. Max diam of opening is 5-1/2 in. (138 mm) when sleeve (Item 2) is employed. Max diam of opening is 4 in. (102 mm) when sleeve (Item 2) is not employed.
- The F, FH Ratings of the firestop system are equal to the fire rating of the wall assembly. 2. Metallic Sleeve — (Optional) - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or Schedule 5 (or heavier) steel pipe or min 0.016 in. thick (0.41 mm, No. 28 ga) galv steel sleeve installed flush with wall surfaces. The annular space between steel sleeve and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1 in. (25mm). When Schedule 5 steel pipe or EMT is used, sleeve may extend up to 18 in. (457 mm) beyond the wall surfaces. As an option when Schedule 5 steel pipe or EMT is used, sleeve may extend continuously beyond one wall surface. When cable bundle penetrates wall assembly at an angle of 45 degrees, no metallic sleeve is used.

System No. W-L-3065

3. Cables — Aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (point contact) to max 1 in. (25 mm). When sleeve is continuous on one side of wall (see Item 2), the cable fill may be 0 to 45% and the max annular space is not limited. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types and sizes of copper conductor cables may be used:

- A. Max 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and jacket.
- B. Max 25 pair No. 24 AWG telephone cable with PVC insulation and jacket.
- B1. Max 4 pr No. 22 AWG Cat 5 or Cat 6 computer cables. C. Type RG/U coaxial cable with polyethylene (PE) insulation and PVC jacket having a max outside diameter of ½ in. (13 mm). C1. Max RG 6/U coaxial cable with fluorinated ethylene insulation and jacketing.
- D. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 5/8 in. (16 mm). E. Through Penetrating Products*— Max three copper conductor No. 8 AWG .Metal-Clad Cable+.
- AFC CABLE SYSTEMS INC F. Max 3/C (with ground)(or smaller) No. 8 AWG copper conductor cable with PVC insulation and jacketing.
- G. Max 3/4 in. (19 mm) diam copper ground cable with or without a PVC jacket. H. Fire Resistive Cables* - Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable.
- I. Max 4/C with ground 300 kcmil (or smaller) aluminum SER cable with PVC insulation and jacket. J. Through Penetrating Product* - Any cables, Metal-Clad Cable+ or Armored Cable+ currently Classified under the Through Penetrating
- Products category.
- K. Maximum 3/C No. 8 AWG metal-clad cable.
- L. Maximum 5/8 diam fiber-optic cable with PVC jacket. For cable bundle penetrating the wall assembly at an angle of 45 degrees, the T, FT, FTH Ratings are 0 hr and 3/4 hr for 1 and 2 hr wall
- assemblies, respectively. See Through Penetrating Product (XHLY) category in the Fire Resistance Directory for names of manufacturers. 4. Fill, Void or Cavity Material*— Sealant or Putty — Fill material applied within the annulus, flush with each end of the steel sleeve or wall surface. Fill material installed symmetrically on both sides of the wall. A min 5/8 in. (16 mm) thickness of sealant is required for the 1 or 2 hr F
- Rating . An additional 1/2 in. (13 mm) diam bead of fill material shall be applied at the interface of sleeve with gypsum board. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S, CP606, FS-One Sealants or FS-ONE MAX Intumescent Sealantor or CP618 Putty 5. Packing Material — (Optional, Not Shown) — Mineral wool forming material may be used as a backer for the fill material (Item 4). When used, it shall be firmly packed into annular space within the sleeve as a permanent form and recessed from end of sleeve to accommodate the
 - required thickness of fill material. * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

MECHANICAL DETAILS

opening design

Architect: OpeningDesign

17 S Fairchild | FL 7

Madison, WI 53703

ryan@openingdesign.com | 773.425.6456

Description

Issued for Permit

RENOVATION -Wranglers-**Owner:** Renovation Wranglers 102 E 26th St Bryan, TX 77803 Katieneason@me.com | 979.450.9969

ARCHITECTURE **Architect of Record:** LKB Architecture

2929 Allen Pkwy Suite 200 Houston, TX 77019 lisa@lkbarchitecture.com | 713.425.3076

DUDLEY

Structural: Dudley

6102 Imperial Loop Drive

College Station, TX 77845 (979) 777-0720

ENGINEERS

MEP: AMC Engineers

508 E Jackson St # 552 Burnet, TX 78611

info@amcengineers.com

ADAM M. CULVER

91747

06/10/2022

, CE NSED

MARCO POLO - 101 W 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

interface on both sides of wall.

06.10.2022

GENERAL NOTES

- 1. THE CONTRACTOR IS TO REVIEW THE DESIGN DOCUMENTS PRIOR TO BID TO FAMILIARIZE THEMSELVES WITH ALL DESIGN INTENT. SUBMISSION OF BID INDICATES THE CONTRACTORS UNDERSTANDING OF THE DOCUMENTS AND THEIR WILLINGNESS TO WORK WITH THESE CONDITIONS. NO ADDITIONAL TIME OR MONEY WILL BE ALLOTTED DUE TO THE LACK OF COORDINATION WITH THE GENERAL CONTRACTOR OR OTHER TRADES.
- 2. ALL WORK SHALL COMPLY WITH THE APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND ORDINANCES. FOLLOW RECOMMENDED PRACTICES AS SET DOWN BY ASME, SMACNA, ASHRAE, NFPA, INTERNATIONAL BUILDING CODE, INTERNATIONAL PLUMBING CODE, NATIONAL ELECTRIC CODE, AGA, AND OSHA, AS THEY APPLY TO THIS PROJECT,
- 3. ALL CONTRACTORS SHALL COORDINATE THROUGH THE DESIGNATED PROJECT CONSTRUCTION MANAGER. COORDINATE WORK COMPLETELY WITH ALL OTHER TRADES.

EXCEPT IN CASES WHERE LOCAL AHJ STATUTES GOVERN.

REQUIRED.

ASSEMBLIES.

- 4. THE MECHANICAL CONTRACTOR IS TO COORDINATE THE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO ELECTRICAL ROUGH-IN. NO ADDITIONAL TIME OR MONEY WILL BE ALLOTTED DUE TO LACK OF COORDINATION.
- 5. COORDINATE PLACEMENT AND SUPPORTS FOR ALL EQUIPMENT WITH STRUCTURAL ENGINEER DURING STRUCTURAL SHOP DRAWING PHASE.
- 6. THE CONTRACTORS SHALL COORDINATE DUCT, PIPING, CONDUIT, AND EQUIPMENT SUPPORTS WITH RATED CEILING INSTALLATION PRIOR TO INSTALLATION ON BOTTOM OF STRUCTURE. SEAL ALL PENETRATIONS TO MAINTAIN THE INTEGRITY OF THE FIRE ASSEMBLY.
- ALL DUCT SIZES AND ROUTING SHALL BE COORDINATED COMPLETELY WITH ALL OTHER TRADES PRIOR TO MANUFACTURING AND INSTALLATION OF DUCTWORK. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND MAY NOT REFLECT ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BID. VERIFY EXACT STRUCTURAL LAYOUT AND DIMENSIONS AT JOB SITE, AND PROVIDE ADDITIONAL DUCTWORK, OFFSETS, AND FITTINGS AS
- THE CONTRACTOR SHALL VERIFY THAT ALL NEW MECHANICAL EQUIPMENT IS INSTALLED SO THAT ALL REQUIRED SERVICE MAINTENANCE & CODE CLEARANCES ARE MAINTAINED FOR ALL EQUIPMENT. COORDINATE COMPLETELY WITH ALL NEW WALLS, OTHER TRADES, AND FIELD MEASUREMENTS TO DETERMINE EXACT INSTALLATION LOCATIONS FOR EQUIPMENT. REFER TO THE EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION.
- 9. ON ACCESS SIDE OF ALL UNITS MAINTAIN A MINIMUM OF 30" CLEAR WORKING SPACE OR MANUFACTURERS RECOMMENDED CLEARANCE, WHICHEVER IS GREATER.
- 10. REFER TO DRAWINGS FOR ADDITIONAL PROJECT REQUIREMENTS AND SCOPE OF WORK.

SHEETMETAL CONSTRUCTED IN STRICT ACCORDANCE WITH SMACNA STANDARDS.

- 11. VERIFY FINAL DIMENSIONS FROM ARCHITECTURAL DRAWINGS AND ACTUAL SITE MEASUREMENTS IF POSSIBLE.
- 12. ALL DUCT WORK DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
- 13. DUCT SIZES INDICATED ARE FREE AREA SIZES. ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK SHALL BE
- 14. TRANSITIONS FROM DUCT SIZE SHOWN TO EQUIPMENT. ALLOW FOR CLEARANCE BETWEEN STRUCTURAL JOISTS.
- 15. TRANSITION FROM DUCT SIZE TO WALL/ROOF OPENING SIZE FOR DUCT WORK TERMINATION/CAPS.
- 16. THE POINT OF ENVIRONMENTAL EXHAUST DUCT DISCHARGE SHALL BE A MINIMUM OF 3'-0" FROM ANY OPERABLE
- 17. COORDINATE EXHAUST FANS AND AHUS WITH LIGHTING LAYOUT AND ARCHITECTURAL REFLECTED CEILING PLANS. MECHANICAL CONTRACTOR SHALL VERIFY THAT LOCATION OF DEVISES SHOWN ON THE DRAWINGS ARE ACCEPTABLE TO THE ARCHITECT PRIOR TO INSTALLATION.
- 18. EXTEND ALL DRYER EXHAUST DUCTS TO EXTERIOR OF BUILDING AND CONNECT TO DRYER EXHAUST GRILLES OR GOOSENECK. PROVIDE BACKDRAFT DAMPER. DRYER EXHAUST DUCT SHALL NOT BE CONNECTED OR INSTALLED WITH SHEETMETAL SCREWS OR OTHER FASTENERS WHICH WILL OBSTRUCT THE AIR FLOW. DRYER EXHAUST DUCT SHALL BE MADE OF A CITY OF BRYAN APPROVED DUCT MATERIAL. COORDINATE SEALING AROUND EXTERIOR WALL
- PENETRATION WITH ARCHITECT. COORDINATE EXTERIOR FINISH WITH ARCHITECT. 19. PROVIDE GALVANIZED DRYER VENT EXHAUST DUCT. EXHAUST DUCT SHALL BE RIGID HARD CAST DUCT AND SEALED AIRTIGHT. DRYER EXHAUST DUCT SHALL BE WRAPPED WITH 3M FIRE BARRIER DRYER VENTILATION WRAP INSTALLED PER MANUFACTURES INSTRUCTIONS. MAINTAIN FIRE RATING OF ALL PENETRATIONS THROUGH RATED
- 20. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LENGTHS OF THE REFRIGERANT PIPING WITH ALL FITTINGS AND SUBMIT TO THE MANUFACTURER. THE REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED PER MANUFACTURER'S RECOMMEND INSTALLATION INSTRUCTIONS.
- 21. CONTRACTOR SHALL PROVIDE ACCESS PANELS AS REQ'D FOR ALL HVAC EQUIPMENT LOCATED ON THESE DRAWINGS. CONTRACTOR SHALL LOCATE ALL REQ'D ACCESS PANELS AND SUBMIT SHOP DRAWINGS SHOWING LOCATIONS TO THE ARCHITECT AND MECHANICAL ENGINEER.
- 22. WHERE THERMOSTATS ARE LOCATED ADJACENT TO LIGHTING FIXTURE SWITCHES, THE THERMOSTAT SHALL BE ALIGNED WITH THE LIGHT SWITCH. MOUNT ALL THERMOSTATS AT 48" AFF, UNLESS NOTED OTHERWISE. REFER TO DEVICE COORDINATION DETAIL FOR ADDITIONAL INFORMATION.
- 23. CONFIRM LOCATION & MOUNTING HEIGHT OF EACH THERMOSTAT WITH OWNER PRIOR TO INSTALLATION.
- 24. ALL DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES AND WITH EXISTING CONDITIONS. THE CONTRACTOR SHALL NOT INSTALL OR FABRICATE ANY WORK SHOWN UNTIL ALL SUCH WORK IS FULLY COORDINATED. NOT ALL OFFSETS AND FITTINGS ARE SHOWN. PROVIDE OFFSETS AND FITTINGS AS REQUIRED BY FIELD CONDITIONS AT NO
- ADDITIONAL COST TO OWNER. 25. SYMBOLS SHOWN ARE ILLUSTRATIVE IN NATURE AND ARE PROVIDED ONLY FOR USE AS REFERENCE.
- 26. CONTRACTOR TO VERIFY ALL REQUIRED FLOOR/CEILING, ROOF, AND WALL PENETRATIONS. COORDINATE ALL PENETRATIONS WITH GENERAL CONTRACTOR TO MAINTAIN THE INTEGRITY OF THE FIRE ASSEMBLY.
- 27. COORDINATE REQUIREMENTS FOR ALL EQUIPMENT, AIR DEVICES, DUCTWORK, AIR FLOWS, AND ALL APPURTENANCES DURING SUBMITTAL AND SHOP DRAWINGS PHASES AT NO ADDITIONAL COST TO OWNER.
- 28. GUARANTEE WORK FOR ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE PROJECT AND DURING THAT PERIOD MAKE GOOD ANY FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS WORKMANSHIP.

						AIR	S CC)ITI	ONIN	G UN	IT SCI	HEDU	JLE												
	MANUF: LG			COOL	ING CAPACIT	Υ			HEA	ATING CAPAC	ITY		NOMINAL	INDOOR	ELEC. I	NDOOF	R	ELEC. OUTD	OOR	L	INE SIZE (II	NCH)				
DESIGNATION	EQUIPMENT MODEL#	WT (LB)	NOMINAL TONS	SEER/ EER	GROSS TOTAL (MBh)	AMBIENT (°F)	WB (°F)		HSPF/ COP	CAPACITY (MBTU)	AMBIENT (°F)	WB DB (°F)	NOMINAL CFM H/M/L	FAN MOTOR (W)	VOLT/PH/HZ	MCA	МОСР	VOLT/PH/HZ MO	CA MOCE	COND. DRAIN	REFER. SUCTION	REFER. LIQUID	MAX PIPING LENGTH	MAX HEIGHT OFFSET	REF TYPE	REMARKS
AHU-1 / HP-1	FTXB18AXVJU / RXB18AXVJU	31 / 82	1.5	17.0 / 10.5	18.0	95°	67	80	9 / 3.3	17.9	47	60 70	430 / 374 / 318	40	-	-	-	240/1Ø/60 16	.2 20	3/4	1/2	1/4	98.4 FT	32.8	R-410A	1 2 3 4
AHU-2 / AHU-3 HP-2	CTX07AXVJU / CTX12AXVJU / 2MXS18NMJUA	20 / 20 / 77	1.5	18.9 / 12.5	18.0	95°	67	80	10.7 / 4.33	18.9	47	60 70	310 / 280 / 249 430 / 340 / 249	38 / 38	-	-	-	240/1Ø/60 15	.8 20	3/4 X 2	1/2 X 1 3/8X1	1/4 X 2	164 FT	49.25	R-410A	1 2 3 4 5

- (1) CORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION OF MANUFACURE REQUIRED SURGE PROTECTOR IN DISCONNECT.
- 2 DEDICATED ELECTRICAL CIRCUIT IS NOT REQUIRED FOR INDOOR AIR HANDLERS. COORDINATE REQUIRED CONTROL AND POWER WIRING FROM COMPRESSOR TO FAN WITH ELECTRICAL CONTRACTOR. UNITS POWERED BY OUTDOOR UNIT.
- 3 COORDINATE ROUTING OF HVAC CONDENSATE SLOPED AT 1/4" PER FOOT THRU WALL TO DISCHARGE POINT AT GRADE. INSTALL WATERLESS IN-LINE MINITRAP EZT-180 OR APPROVED EQUAL.
- PROVIDE DAKIN ONE+ SMART THERMOSTAT(S) WITH AIR HANDLER(S) 5 ORDER MULTI ZONE UNIT TO SERVE 2 AIR HANDLERS AND PROVIDE 2 T-STATS.

				EXHAL	JST F	AN SCH	EDUL	E					
DESIGNATION	SERVICE	MANUFACTURER	MODEL NUMBER	TYPE	CFM	ESP "W.G."	DRIVE	MOTOR HP (W)	FLA (A)	VOLT/PH/HZ	WEIGHT (LB)	REMARKS	
GEF-1	RESTROOM	BROAN	RB110	EXHAUST FAN	110	0.25	DIRECT	29.8	0.3	115/1Ø/60	12	1	

1) INSTALL UL RATED BROAN NUTONE RADIATION DAMPER RDFU SUITABLE FOR 1, 2, OR 3 HOUR RATED FLOOR-CEILING ASSEMBLIES W/ 165°F FUSIBLE LINK OR APPROVED EQUAL.

	MECHANI	CAL COMP	ONEN	IT SCI	HEDU	LE	
- 1.0			СОМРС	NENT INFORM	MATION		
TAG ID	DESCRIPTION	MANUFACTURER PART NUMBER	DUCT SIZE	BACKDRAFT DAMPER	BIRD / INSECT SCREEN	COLOR	REMARKS
CAP-1	BATHROOM EXHAUST	FAMCO #WVEB4BK	Ø4"	YES	YES	BLACK	1
CAP-2	KITCHEN	FAMCO #WVEB6BK	Ø6"	YES	YES	BLACK	1
CAP-3	DRYER	FAMCO DWV4BK	Ø4"	YES	NO	BLACK	1
RGV-1	BATHROOM EXHAUST	ROOF GOOSE VENT #RG4-IE-27	Ø4"	YES	YES	-	1
RGV-2	KITCHEN	ROOF GOOSE VENT #RG6-IE INS-27	Ø6"	YES	YES	-	
RGV-3	DRYER	ROOF GOOSE VENT #RG4-DRYER-INS-27	Ø4"	YES	YES	-	1

PROVIDE ROUND VERTICAL DUCT ORIENTATION ORDER BACK DRAFT DAMPER / SOLD SEPARATELY ROUTE DUCT AS SHOWN ON PLANS AND PROVIDE 7" WALL CAP OR ROOF CAP AS SHOWN ON PLANS.

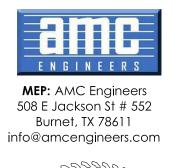


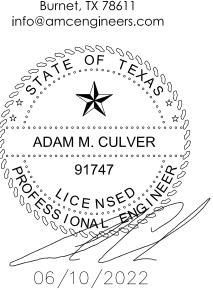


Houston, TX 77019

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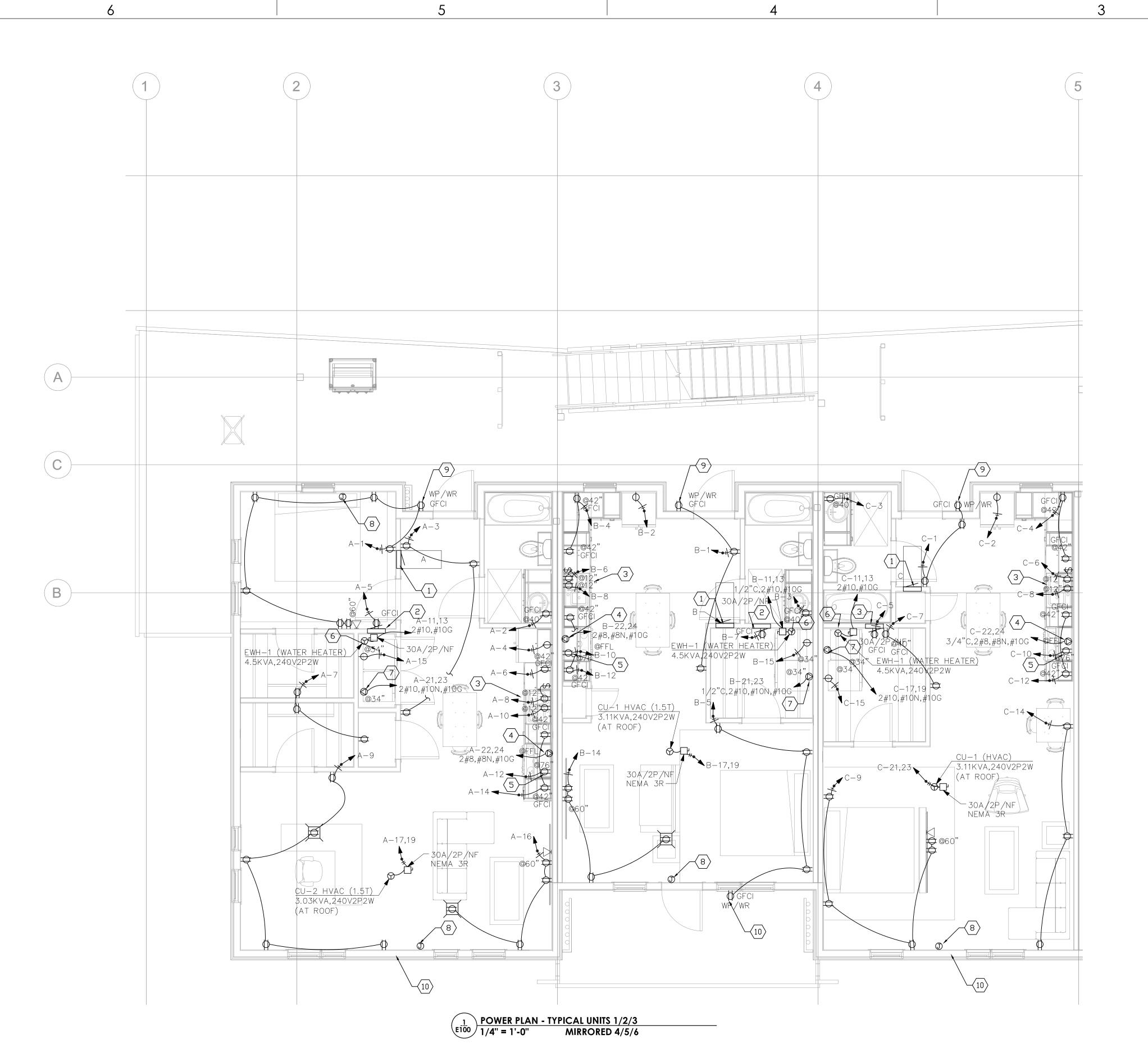








Description 06.10.2022 Issued for Permit



GENERAL NOTES

- 1. ALL WORK IS TO BE PERFORMED BY A LICENSED ELECTRICIAN AND IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.
- 2. REFER TO SHEET E300 FOR ELECTRICAL SCHEDULES
- FIELD VERIFY ELECTRICAL POINT OF CONNECTION. COORDINATE WITH ELECTRIC COMPANY REPRESENTATIVE.
- 4. PRIOR TO ROUGH-IN, FIELD VERIFY ALL ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURERS.
- FIELD VERIFY MOUNTING HEIGHT OF ALL RECEPTACLES PRIOR TO ROUGH-IN
- 6. COORDINATE SWITCH, RECEPTACLE. & COVER COLOR WITH OWNER..
- 7. ALL PLUG IN KITCHEN APPLIANCE OUTLETS ARE TO BE DEDICATED TO A SINGLE APPLIANCE.
- 8. AT RESIDENTIAL UNITS. PROVIDE TAMPER-RESISTANT RECEPTACLES FOR ALL 120V/1Ø/20A OUTLETS.
- ALL DWELLING BRANCH CIRCUITS OUTLETS AS REQUIRED BY NEC 210.12
 (A) SHALL BE PROTECTED BY A BY A 20-AMP RATED ARC-FAULT CIRCUIT INTERRUPTER.
- 10. PROVIDE WEATHER-RESISTANT RECEPTACLES FOR ALL 120V/1Ø/20A EXTERIOR OUTLETS.
- 11. CONTRACTOR SHALL USE MULTI-GANG BOXES IN ALL POSSIBLE LOCATIONS WHERE NECESSARY.
- 12. SOUNDPROOF ALL GANG BOXES AND FIXTURES IN COMMON WALLS WITH SOUND AND FIRE RATED ACOUSTICAL PUTTY PAD TMS ACOUSTICAL
- 13. COORDINATE PLACEMENT OF COMMON WALL ELECTRICAL GANG BOXES TO MAINTAIN FIRE RATING OF WALL ASSEMBLY. FIRE SEAL ALL PENETRATIONS AS REQUIRED BY CODE.

NOTES BY SYMBOL "()"

PUTTY PAD OR APPROVED EQUAL.

- 1. INSTALL DWELLING UNIT PANEL PER SCHEDULE. COORDINATE FINAL LOCATION AND MOUNTING HEIGHT WITH OWNER/ARCHITECT.
- 2. INSTALL LEVITON SERIES 140 STRUCTURED MEDIA ENCLOSURE WITH HINGED COVER AND #47606-BNP HOME NETWORK PANEL. PROVIDE LEVITON 47605-DP AC RECEPTACLE AND SURGE PROTECTOR INTEGRATED TO THE BOTTOM OF THE ENCLOSURE. ROUTE (1) 3/4" CONDUITS W/PULL STRINGS FOR BUNDLED STRUCTURED CABLE WITH CAT6 (DATA) AND RG6 (TV) FROM ENCLOSURE TO THE COMMUNICATIONS JUNCTION BOX AT EXTERIOR OF THE BUILDING.
- 3. RECEPTACLES LOCATED BELOW CABINET FOR CONNECTION TO DISPOSER AND DISHWASHER. VERIFY EXACT SWITCH LOCATION FOR DISPOSER WITH THE ARCHITECT PRIOR TO INSTALLATION. SWITCH SHALL BE PERMANENTLY LABELED "DISPOSER". THE DISHWASHER SHALL NOT REQUIRE A SWITCH. PROVIDE APPLIANCE CORDS AND INSTALL APPLIANCE CORDS FOR EACH EQUIPMENT. COORDINATE EXACT LOCATIONS WITH THE PLUMBING CONTRACTOR.
- 4. RECEPTACLE FOR CONNECTION TO RANGE/OVEN. VERIFY NEMA CONFIGURATION WITH OWNER. COORDINATE EXACT PLACEMENT WITH OWNER BASED ON UNIT ORDERED. UTILIZE 3#8, #10G MINIMUM.
- 5. RECEPTACLE FOR CONNECTION TO COMBINATION MICROWAVE/VENT. COORDINATE EXACT LOCATION/HEIGHT WITH OWNER BASED ON PRODUCT ORDERED.
- 6. JUNCTION BOX FOR CONNECTION TO WATER HEATER. PROVIDE DISCONNECT OR BREAKER LOCK-OUT AS REQUIRED AT RESPECTIVE LOAD CENTER FOR WATER HEATER DISCONNECT AS REQUIRED PER NEC ARTICLE 422.31(B). UTILIZE 2#10, #10G MINIMUM.
- 7. RECEPTACLE FOR CONNECTION TO DRYER. VERIFY NEMA CONFIGURATION WITH OWNER. UTILIZE 3#10, #10G MINIMUM.
- 8. JUNCTION BOX FOR CONNECTION TO MECHANICAL UNIT. PROVIDE DISCONNECT ADJACENT TO AHU OR BREAKER LOCK-OUT AS REQUIRED BY LOCAL AHJ AT RESPECTIVE LOAD CENTER. COORDINATE WIRE REQUIREMENTS WITH ELECTRICAL CONTRACTOR. UTILIZE 4#12 MINIMUM FOR CONTROL WIRES AT AHU. ROUTE (1) 3/4" CONDUIT FROM AHU TO CONDENSER UNIT ON ROOF FOR CONTROLS.
- 9. EXTERIOR GFI RECEPTACLES SHALL BE WIRED TO THE LINE SIDE ONLY OF THE RECEPTACLE.
- 10. NOT ALL PATIO RECEPTACLES ARE SHOWN AS PATIO VARY FROM LEVEL TO LEVEL. IF A PATIO AND REAR DOOR EXIST PROVIDE RECEPTACLE ADJACENT TO REAR DOOR. EXTERIOR GFI RECEPTACLES SHALL BE WIRED TO THE LINE SIDE ONLY OF THE RECEPTACLE.
- 9. PROVIDE CEILING MOUNTED JUNCTION BOX WITH UNSWITCHED 120-VOLT CIRCUIT INDICATED FOR CONNECTION TO SMOKE DETECTOR. SMOKE DETECTOR SHALL BE GENTEX 9000 SERIES (OR APPROVED EQUAL) WITH 120-VOLT RATED SUPPLY, BACK-UP BATTERY, AND AUDIBLE ALARM. ALL SMOKE DETECTORS WITHIN RESPECTIVE UNITS SHALL BE INTERLOCKED (WITH CONDUIT AND WIRING AS REQUIRED BY THE MANUFACTURER) TO PROVIDE AN AUDIBLE ALARM AT ALL SMOKE DETECTORS WITHIN THE RESPECTIVE UNIT UPON ALARM ACTIVATION OF ANY SMOKE DETECTOR. RE: SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



Owner: Renovation Wranglers
102 E 26th St
Bryan, TX 77803

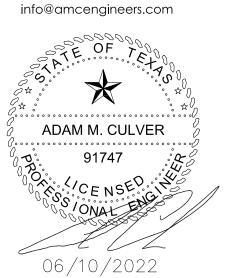


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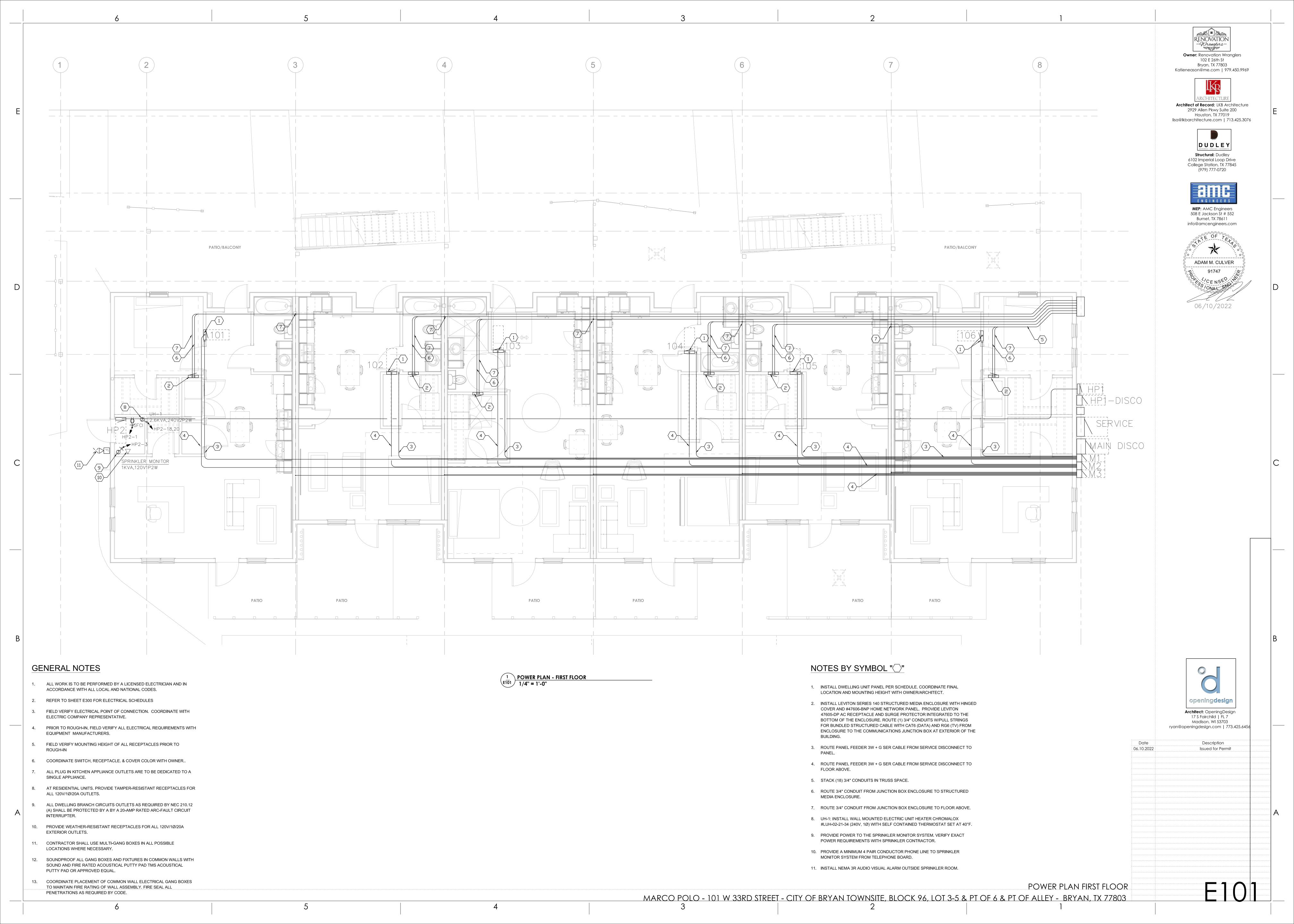


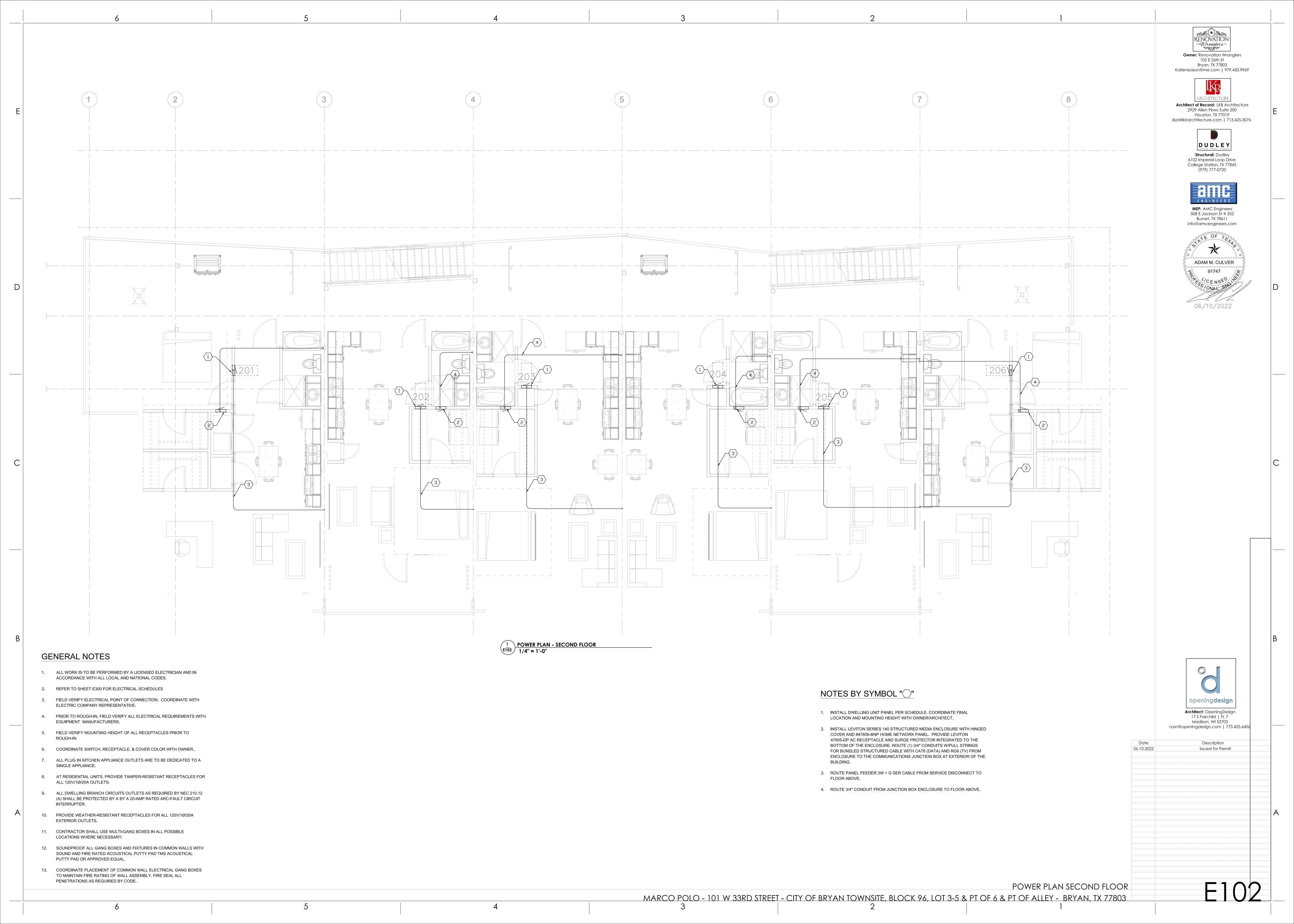
openingdesign

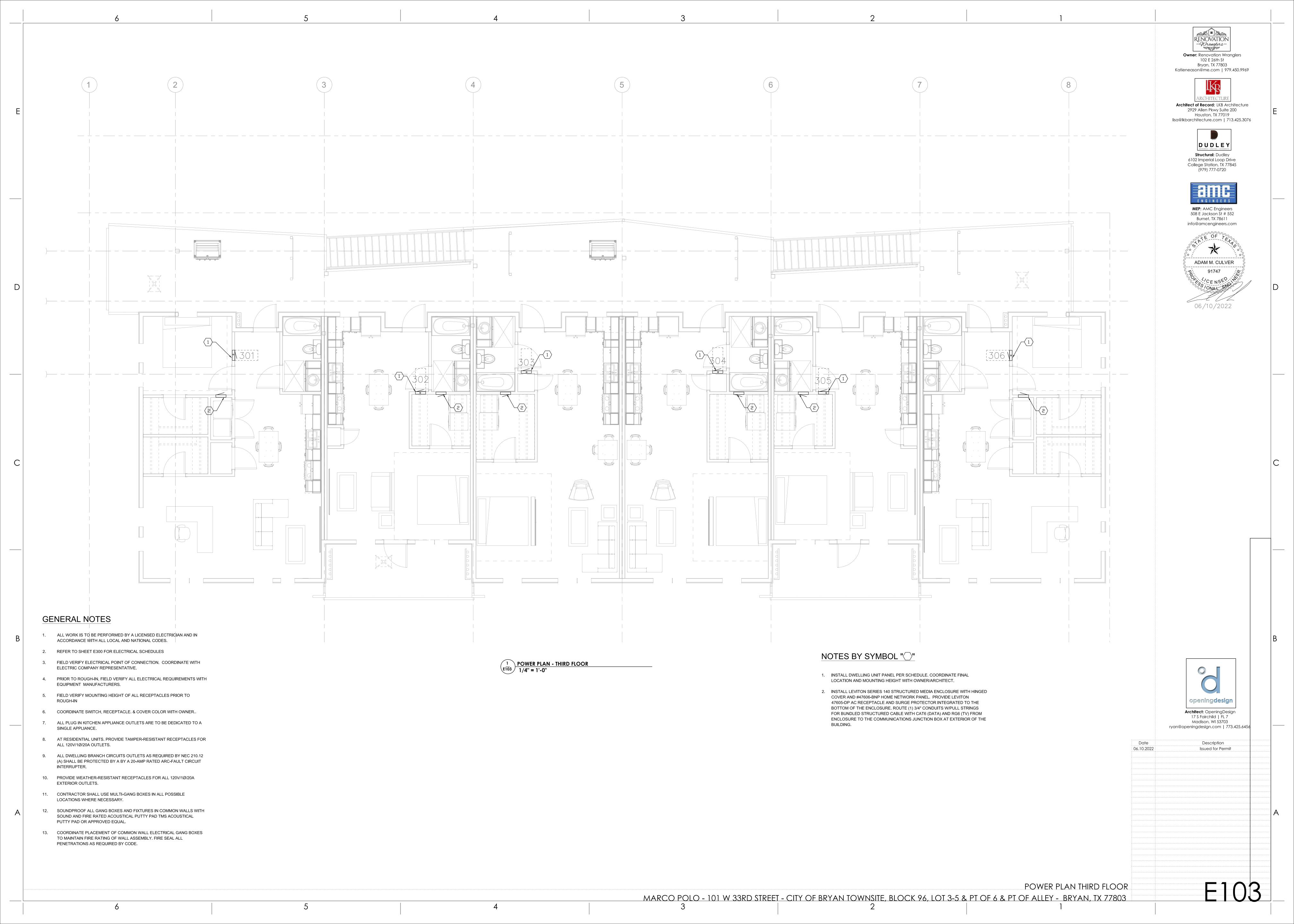
Architect: OpeningDesign
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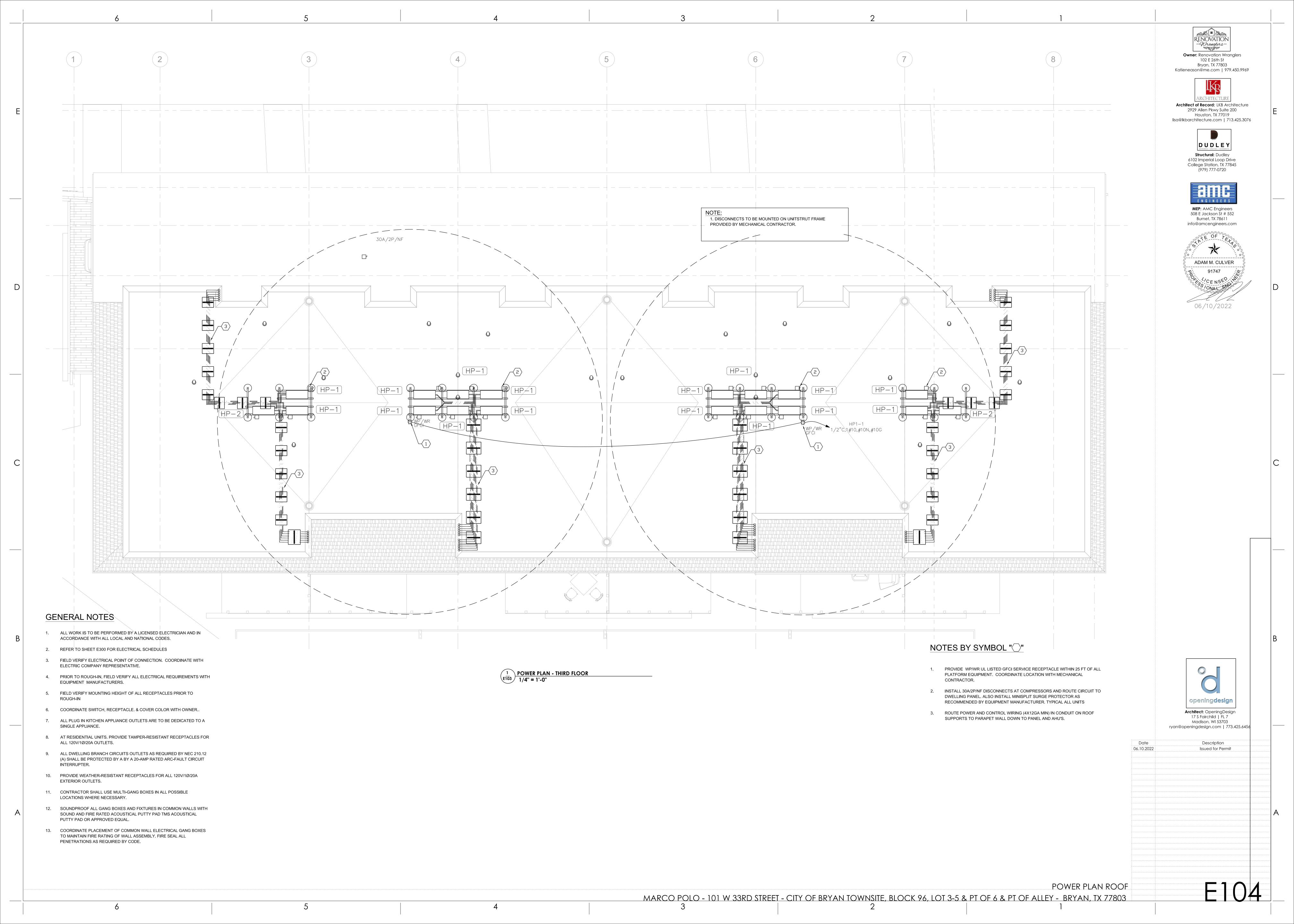
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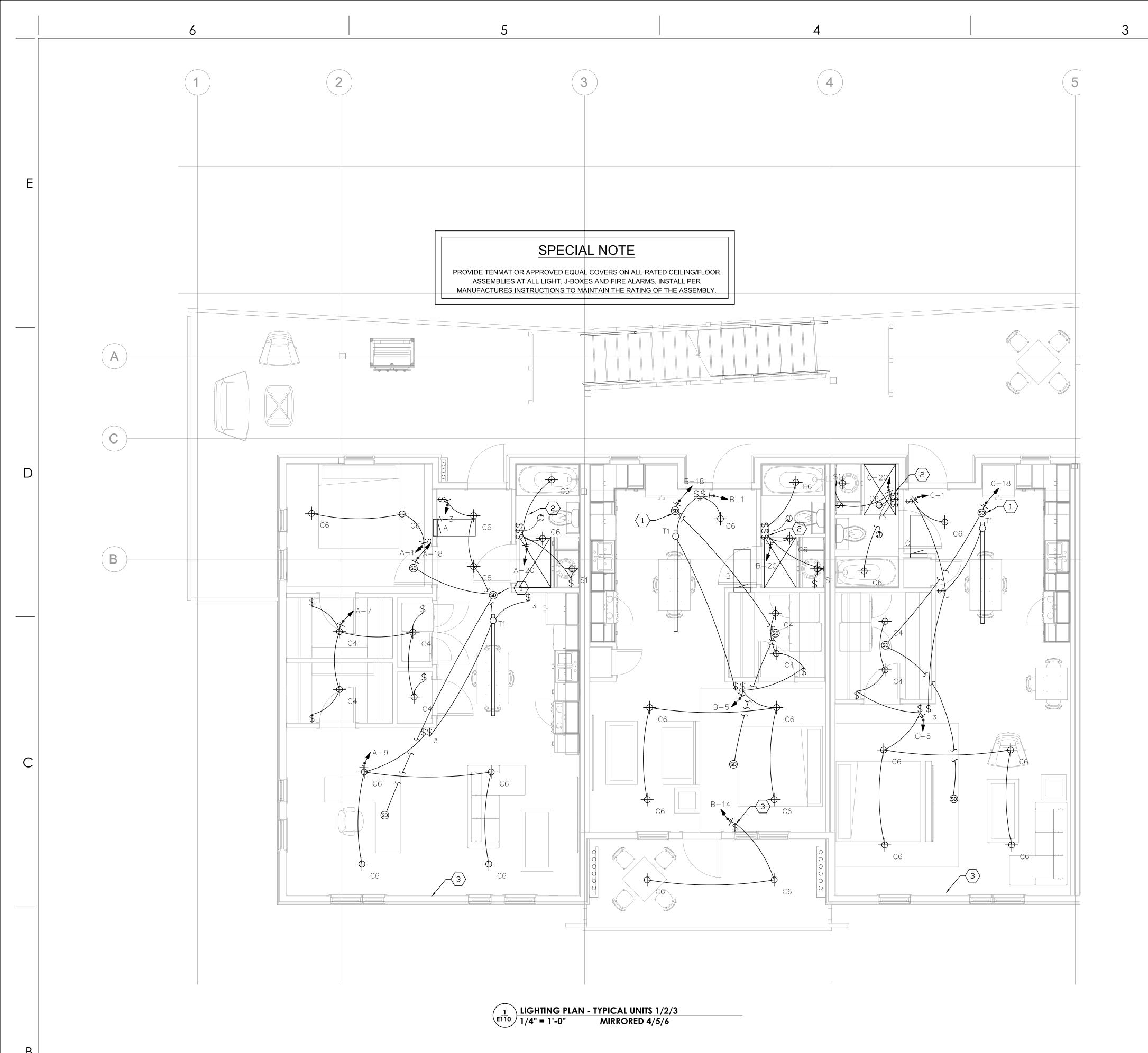
06.10.2022











GENERAL NOTES

INTERRUPTER.

- 1. ALL WORK IS TO BE PERFORMED BY A LICENSED ELECTRICIAN AND IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.
- 2. REFER TO SHEET E300 FOR ELECTRICAL SCHEDULES
- EQUIPMENT MANUFACTURERS.
- ROUGH-IN

- 8. AT RESIDENTIAL UNITS. PROVIDE TAMPER-RESISTANT RECEPTACLES FOR
- 9. ALL DWELLING BRANCH CIRCUITS OUTLETS AS REQUIRED BY NEC 210.12
- SOUND AND FIRE RATED ACOUSTICAL PUTTY PAD TMS ACOUSTICAL
- 1. PROVIDE CEILING MOUNTED JUNCTION BOX WITH UNSWITCHED 120-VOLT CIRCUIT INDICATED FOR CONNECTION TO SMOKE DETECTOR. SMOKE DETECTOR SHALL BE GENTEX 9000 SERIES (OR APPROVED EQUAL) WITH 120-VOLT RATED SUPPLY, BACK-UP BATTERY, AUDIBLE ALARM AND EMERGENCY EGRESS LIGHTING. ALL SMOKE DETECTORS WITHIN RESPECTIVE UNITS SHALL BE INTERLOCKED (WITH #12/3 WIRING AS REQUIRED BY THE MANUFACTURER) TO PROVIDE AN AUDIBLE ALARM AT ALL SMOKE DETECTORS WITHIN THE RESPECTIVE UNIT UPON ALARM ACTIVATION OF ANY SMOKE DETECTOR.
- 2. PROVIDE DEDICATED CIRCUIT FOR BATHROOM FAN AND LIGHTS.
- ADJACENT TO DOOR CLOSING SIDE AND POWER SWITCH AND LIGHTS FROM



- 3. FIELD VERIFY ELECTRICAL POINT OF CONNECTION. COORDINATE WITH ELECTRIC COMPANY REPRESENTATIVE.
- 4. PRIOR TO ROUGH-IN, FIELD VERIFY ALL ELECTRICAL REQUIREMENTS WITH
- 5. FIELD VERIFY MOUNTING HEIGHT OF ALL RECEPTACLES PRIOR TO
- 6. COORDINATE SWITCH, RECEPTACLE. & COVER COLOR WITH OWNER..
- 7. ALL PLUG IN KITCHEN APPLIANCE OUTLETS ARE TO BE DEDICATED TO A SINGLE APPLIANCE.
- ALL 120V/1Ø/20A OUTLETS.
- (A) SHALL BE PROTECTED BY A BY A 20-AMP RATED ARC-FAULT CIRCUIT
- 10. PROVIDE WEATHER-RESISTANT RECEPTACLES FOR ALL 120V/1Ø/20A EXTERIOR OUTLETS.
- 11. CONTRACTOR SHALL USE MULTI-GANG BOXES IN ALL POSSIBLE LOCATIONS WHERE NECESSARY.
- 12. SOUNDPROOF ALL GANG BOXES AND FIXTURES IN COMMON WALLS WITH PUTTY PAD OR APPROVED EQUAL.
- 13. COORDINATE PLACEMENT OF COMMON WALL ELECTRICAL GANG BOXES TO MAINTAIN FIRE RATING OF WALL ASSEMBLY. FIRE SEAL ALL PENETRATIONS AS REQUIRED BY CODE.

NOTES BY SYMBOL "()"

- 3. WHEN UNIT HAS A REAR PORCH WITH LIGHTS PLACE SWITCH INSIDE CIRCUIT ON REAR WALL.



CHITECTUR

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Houston, TX 77019

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DUDLEY

Structural: Dudley 6102 Imperial Loop Drive

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ENGINEERS MEP: AMC Engineers

508 E Jackson St # 552

Burnet, TX 78611 info@amcengineers.com

ADAM M. CULVER

91747

06/10/2022

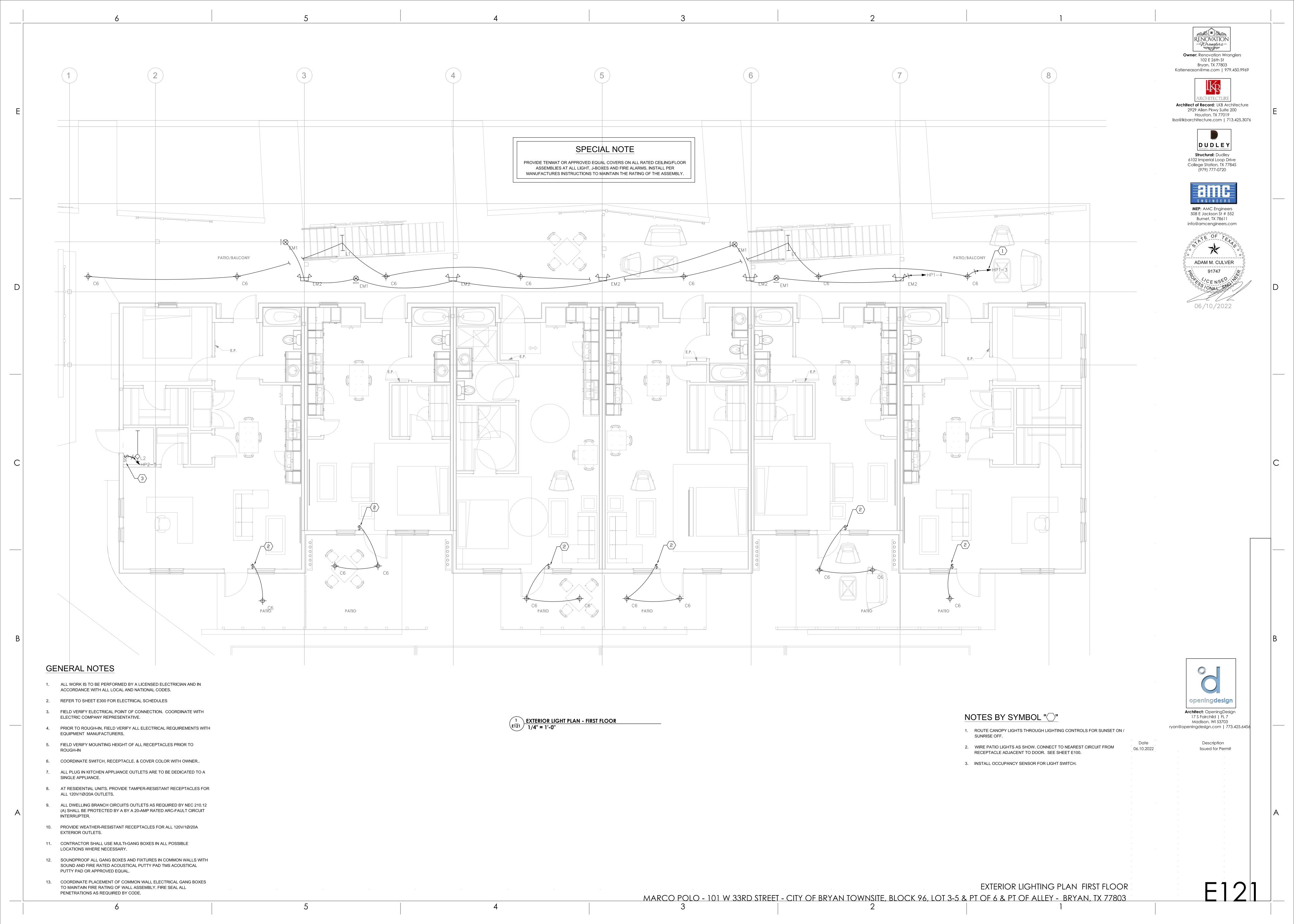
LIGHTING PLAN TYPICAL UNIT

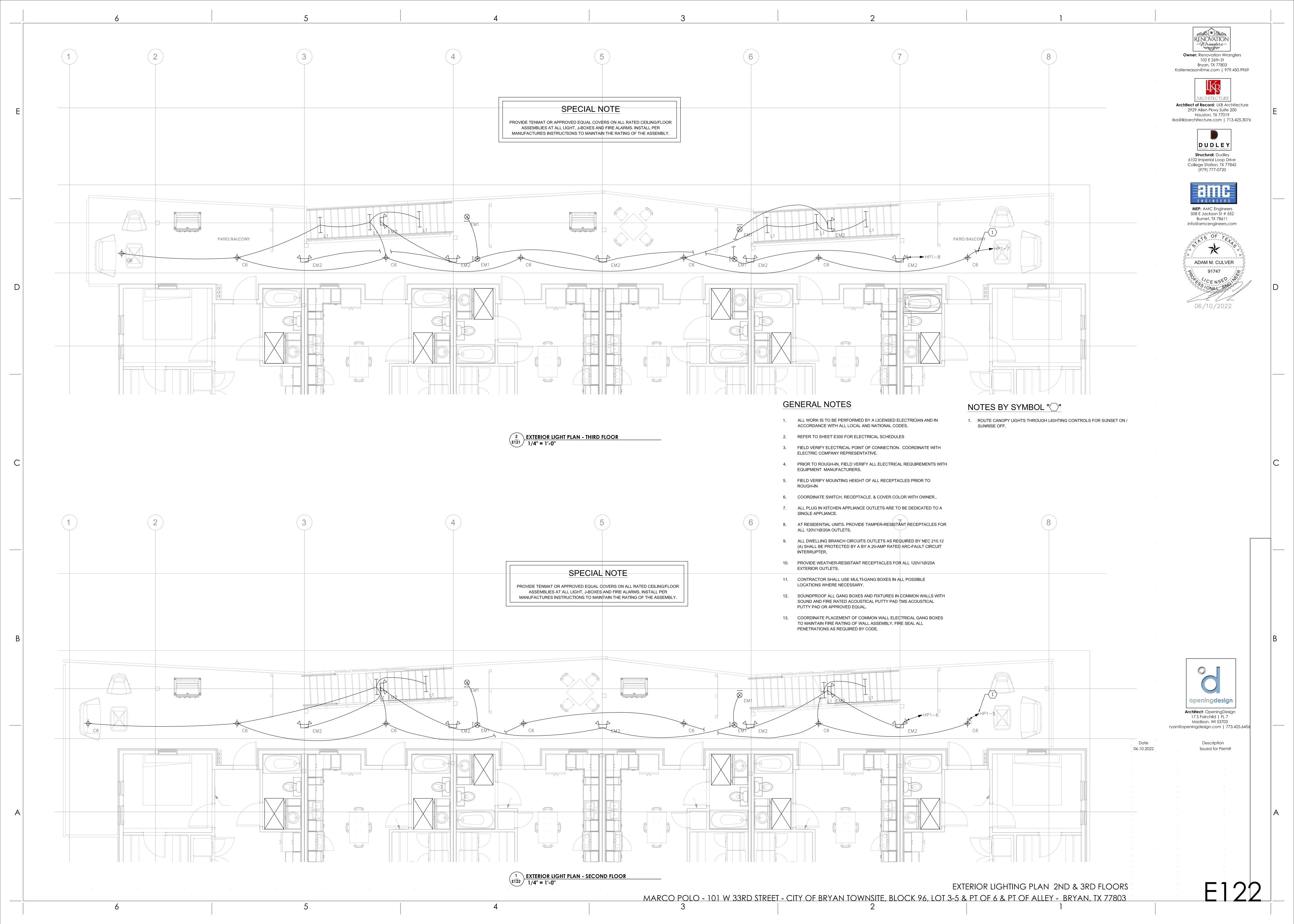
MARCO POLO - 101 W 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

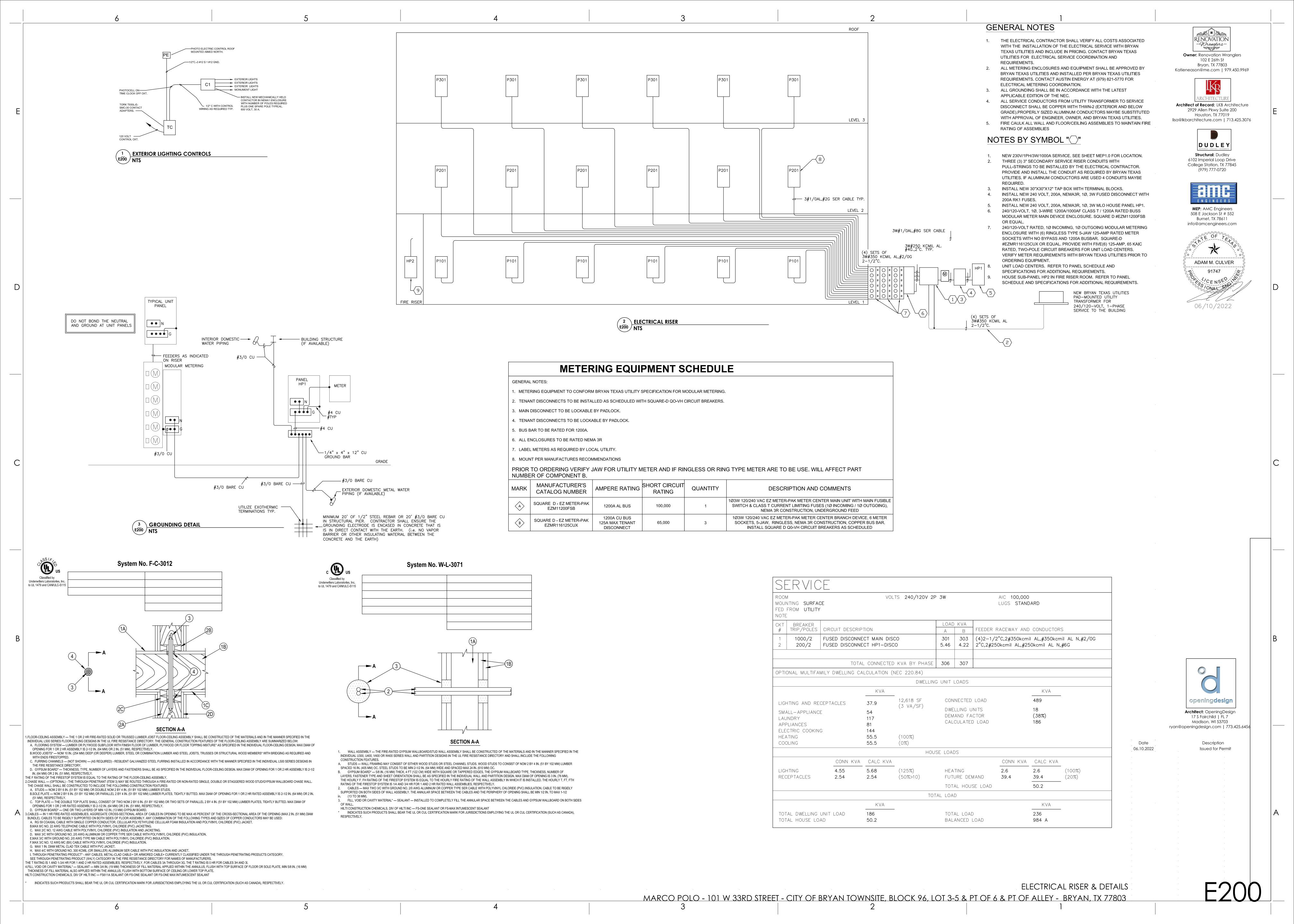
Date 06.10.2022

Architect: OpeningDesign 17 S Fairchild | FL 7 Madison, WI 53703 ryan@openingdesign.com | 773.425.6456

> Description Issued for Permit







DEVICE	FAULT	AIC	L-L	FEE	EDER	T	RANSFORM	'ER	MOTOR
		RATING	VOLTS	SIZE	LENGTH	KV A	<i>Z</i> %	FAULT AT PRIMARY	FAULT
SERVICE	82,920	100,000	240V	(4)#350kcm AL	il				920
HP1-DISCO	50,379	100,000	240V	#250kcmil AL	13'				304
HP1	35,527	42,000	240V	#250kcmil AL	12'				137
HP2	3,857	22,000	240V	#1/0 AL	138'				1
MAIN DISCO	74,268	100,000	240V	(4)#350kcm AL	il13'				921
M1	42,308	50,000	240V	(3)#400kcm	il12'				308
101	3,941	22,000	240V	#1/0 AL	145'				52
102	5,093	22,000	240V	#1/0 AL	110'				53
103	5,616	22,000	240V	#1/0 AL	99'				54
104	7,322	22,000	240V	#1/0 AL	74'				55
105	9,147	22,000	240V	#1/0 AL	58'				58
106	11,995	22,000	240V	#1/0 AL	42'				63
M2	42,308	50,000	240V	(3)#400kcm	nil13'				308
201	3,656	22,000	240V	#1/0 AL	156'				52
202	4,622	22,000	240V	#1/0 AL	122'				54
203	5,050	22,000	240V	#1/0 AL	111'				53
204	6,381	22,000	240V	#1/0 AL	86'				54
205	7,732	22,000	240V	#1/0 AL	70'				56
206	9,688	22,000	240V	#1/0 AL	54'				59
М3	42,308	50,000	240V	(3)#400kcm	n 114'				308
301	3,400	22,000	240V	#1/0 AL	169'				51
302	4,221	22,000	240V	#1/0 AL	134'				53
303	4,574	22,000	240V	#1/0 AL	123'				53
304	5,639	22,000	240V	#1/0 AL	99'				54
305	6,667	22,000	240V	#1/0 AL	82'				55
306	8,079	22,000	240V	#1/0 AL	66'				56

DEVICE	FEEDE.	R	BRANCH CIRCU	UIT	TOTAL
	VOLTAGE DROP	WIRE SIZE	MAX VOLTAGE DROP	WIRE SIZE	─ VOLTAGE DROF
SERVICE	0%	(4)#350kcm AL	il —	_	0%
HP1-DISCO	0.05%	#250kcmil AL	_	_	0.05%
HP1	0.09%	#250kcmil AL	1.21% (CKT 7)	#10	1.3%
HP2	0.54%	#1/0 AL	0.56% (CKT 3)	#12	1.1%
MAIN DISCO	0.15%	(4)#350kcm AL	il —	_	0.15%
M1	0.2%	(3)#400kcm	il —	_	0.2%
101	2.03%	#1/0 AL	1.37% (CKT 17,19)	#10	3.4%
102	1.57%	#1/0 AL	1.27% (CKT 17,19)	#10	2.84%
104	1.13%	#1/0 AL	1.39% (CKT 9)	#12	2.52%
105	0.92%	#1/0 AL	1.27% (CKT 17,19)	#10	2.19%
106	0.73%	#1/0 AL	1.37% (CKT 17,19)	#10	2.1%
M2	0.2%	(3)#400kcm	il —	_	0.2%
201	2.18%	#1/0 AL	1.37% (CKT 17,19)	#10	3.56%
202	1.73%	#1/0 AL	1.27% (CKT 17,19)	#10	3%
203	1.6%	#1/0 AL	1.39% (CKT 9)	#12	2.99%
204	1.29%	#1/0 AL	1.39% (CKT 9)	#12	2.68%
205	1.07%	#1/0 AL	1.27% (CKT 17,19)	#10	2.35%
206	0.89%	#1/0 AL	1.37% (CKT 17,19)	#10	2.26%
М3	0.21%	(3)#400kcm	il —	_	0.21%
301	2.34%	#1/0 AL	1.37% (CKT 17,19)	#10	3.72%
302	1.89%	#1/0 AL	1.27% (CKT 17,19)	#10	3.16%
303	1.76%	#1/0 AL	1.39% (CKT 9)	#12	3.15%
304	1.45%	#1/0 AL	1.39% (CKT 9)	#12	2.84%
305	1.23%	#1/0 AL	1.27% (CKT 17,19)	#10	2.5%
306	1.05%	#1/0 AL	1.37% (CKT 17,19)	#10	2.42%

OOM ED	1 From servic	E		OLTS 240/120V 2 F NC 100,000	' 3W		FRAME SIZE 1000 TRIP SIZE 1000
NOTE							T
CKT #	BREAKER TRIP/POLES	 CIRCUIT DESCF	RIPTION		LOAD	KVA B	FEEDER RACEWAY AND CONDUCTORS
1 2 3	1000/2 1000/2 1000/2	PANEL MAIN PANEL MAIN PANEL MAIN			100 100 100	101 101 101	(3)3"C,2#400kcmil,#400kcmil N,#2/0G (3)3"C,2#400kcmil,#400kcmil N,#2/0G (3)3"C,2#400kcmil,#400kcmil N,#2/0G
		TO	TAL CONNEC	TED KVA BY PHASE	301	303	
OPTI	DNAL MULTIFAI	MILY DWELLING	CALCULATION KVA	(NEC 220.84)			KVA
LIGI	HTING AND RE	CEPTACLES	37.9	12,618 SF	CON	NECTED	LOAD 489
SM/ LAU APF	ALL—APPLIANCI NDRY PLIANCES CTRIC COOKING	Ε	54 117 81 144	(3 VA/SF)	DEM. CAL	LING U AND FA CULATEI ANCED	(38%) D LOAD 186
HEA	TING DLING	<u> </u>	55.5 55.5	(100%) (0%)			

OOM ED FROM SER V	VICE		TS 240/120 100,000	V 2P 3	3W			FRAME SIZE TRIP SIZE 2	200		
OTE KT BREAKER					LOAD						
# TRIP/POLE 1 200/2	PANEL HP1	TION			A 5.46			RACEWAY AND Okcmil AL,#25			
	TOTAL	_ CONNECTED) KVA BY PH.	ASE	5.46	4.22					
PTIONAL MULTII	FAMILY DWELLING CA	LCULATION (I	<u> </u>	LLING	UNIT L	OADS					
		KVA	-				0.4.0		KVA	_	
					DWEI	NECTED I LLING UN AND FAC	ITS		0 0 (N/A)		
				HOUSE	CAL	CULATED			0		
LIGHTING	4.55	CALC KVA 5.68	- (125%)		REC	EPTACLES	ò	2.54	2.54	- (50%>10)	
					HEA			2.6	2.6 10.8	(100%)	
		KVA		TOTAL	LOA[)			KVA		
TOTAL DWELLIN		0 10.8	-			AL LOAD ANCED LO	DAD		10.8 45.1 A	_	
1 🗆 1											
DOM AT SERVI	ICE LOCATION	VOL	TS 240/120	V 2P 3	3W			AIC 42,000			
OUNTING SURF ED FROM HP1- DTE	FACE	BUS	S AMPS 200 UTRAL 100%					MAIN BKR 20 LUGS STAND			
KT CKT	IRCUIT DESCRIPTION		LOAD	KVA B	CKT #	CKT BKR	CIRCUI ⁻	T DESCRIPTION		LOAD	KVA B
3 20/1 19	ECEPTACLE ST FLOOR LIGHTING ND FLOOR LIGHTING	_	0.36	0.226	2 4 6	20/1 20/1 20/1	EMERG	ENT SIGN ENCY LIGHTING ENCY LIGHTING		1.5	0.57
20/1 3 20/1 S	RD FLOOR LIGHTING PACE		0.354	0.482	8 10	20/1 20/1 20/1	EMERGE SPACE	ENCY LIGHTING		0.704	0.6
3 20/1 S	PACE PACE PACE		0	0	12 14 16	20/1 20/1 20/1	SPACE SPACE SPACE			0	0
7 20/1 S 9 20/1 S	PACE PACE PACE		0 0	0	18 20 22	20/1 20/1 100/2	SPACE SPACE			0 2.54	0
3 20/1 S 5 20/1 S	PACE PACE		0	0	24 26	20/1	SPACE	111 2		0	2.3
, ,	PACE PACE		0	0	28	20/1 20/1	SPACE SPACE	TAL CONNECTE		0 PHASE 5.46	4.2
								L CONNECTED			35.2
PHONAL MULTI	FAMILY DWELLING CA	LCULATION (I	,	LLING	unit l	LOADS					
		KVA	-		CONI	NECTED I	_OAD		KVA 0	_	
					DEM.	LING UN AND FAC CULATED	TOR		0 (N/A) 0		
				HOUSE			LUAD				
lighting	4.55	5.68	(125%)		RECE HEA	EPTACLES	ò	2.54 2.6	2.54 2.6	- (50%>10) (100%)	
				TOTAL	TOTA	AL HOUSE	ELOAD	2.0	10.8	_	
		KVA		TOTAL	_ LOA[)			KVA	_	
TOTAL DWELLIN TOTAL HOUSE		0 10.8				AL LOAD ANCED LO	DAD		10.8 45.1 A		
1 P2	-D. DOOH	VOL	TC 040 /400	V 0D :	714			AIO 00 000			
OOM fire rise Ounting rece Ed from hp1		BUS	TS 240/120 S AMPS 100 JTRAL 100%	V 2P .	3 W			AIC 22,000 Main Bkr M Lugs Stand			
OTE KT CKT # BKR C	IRCUIT DESCRIPTION		LOAD		CKT #	CKT BKR	CIRCUIT	T DESCRIPTION) KVA
1 20/1 R	ECEPTACLE PRINKLER MONITOR		0.18	B 1	2 4	20/1 20/1		LER CONTROLL	_ER	1	0
5 20/1 LI 7 20/1 S	IGHTING PACE PACE		0.064	0	6 8 10	20/1 20/1	SPACE SPACE SPACE			0	0
11 20/1 S 3 20/1 S	PACE PACE		0	0	12	20/1 20/1 20/1	SPACE SPACE			0	0
7 20/1 S	PACE PACE PACE		0	0	16 18 20	20/1 20/2	SPACE UH-1			1.3	1.3
						'		TAL CONNECTED			2.3
PTIONAL MULTII	FAMILY DWELLING CA	LCULATION (I	·	7 1 1 1 1 1	1.18.77	0.45	1012	L CONNECTED	וט כ זיייו ד	PHASE 21.2	19.2
		KVA	DWE -	LLING	unit l	LUADS			KVA	_	
					DWEI	NECTED I	ITS		0		
					DEM.	AND FAC	TOR		(N/A) 0		
	CONN KVA	CALC KVA		HOUSE	LOAD)S		CONN KVA	CALC KVA	_	
LIGHTING	0.064	0.08	(125%)		RECE HEA	EPTACLES TING	S	2.18 2.6	2.18 2.6	- (50%>10) (100%)	
				ТОТАІ	TOT <i>A</i>	AL HOUSE	ELOAD		4.86		
		KVA		. , , , ,	۰ ۱۱				KVA		
TOTAL DWELLIN	C LIMIT LOAD	0	-		TOT	AL LOAD			4.86	_	

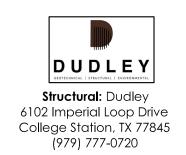
	nting f i from	_USH	В	OLTS 240/120 US AMPS 125 EUTRAL 100%)V 2P 3	SW.		AIC 22,00 main bkr lugs st a	MLO		
CKT #	CKT BKR	CIRCUIT DESCRIPTION	Į.	LOAD	KVA B	CKT #	CKT BKR	CIRCUIT DESCRIPT	ION	LC	AD KVA
1 3 5 7	20/1 20/1 20/1 20/1	LIGHTING, RECEPTACE LIGHTING, RECEPTACE RECEPTACLE LIGHTING, RECEPTACE	LE LE	1.29 0.18	0.576 0.58	2 4 6 8	20/1 20/1 20/1 20/1	RECEPTACLE REFRIGERATOR CONV. RECEPT. KI GARBAGE DISPOSA		0.1	8 1.2
9 11 13 15	20/1 30/2 20/1	LIGHTING, RECEPTACE EWH-1 (WATER HEAD LAUNDRY		0.956 2.25	2.25 1.5	10 12 14 16	20/1 20/1 20/1 20/1	DISHWASHER MICROWAVE VENT CONV. RECEPT. KI RECEPTACLE		1.3	5 1.0
17 19 21 23	20/2 30/2 	CU-2 HVAC (1.5T) DRYER		1.52 2.5	1.52 2.5	18 20 22 24	20/1 20/1 40/2	SMOKE DETECTOR: LIGHTING ELECTRIC RANGE	5	0	0.0
25 27 29	20/1 20/1 20/1	SPACE SPACE SPACE		0	0	26 28 30	20/1 20/1 20/1	SPACE SPACE SPACE		0	0
								TOTAL CONNECT	CTED KVA BY P		
OPTIO	DNAL DW	ELLING UNIT CALCULA	TION (NEC 2 CONN KV	*		•		CONN KV	/A CALC KVA		,
SMA LAU APF ELE	ALL—APP NDRY PLIANCES CTRIC CO		2.54 3 6.5 4.5 8 24.5	 848 SF (3 VA/SF)		UF O\ MAX TOTA	RAL LOAP TO 10 /ER 10 K HEATING L LOAD NCED LO	KVA 10 KVA 14.5 G OR COOLING	10 5.82 3.03 18.9 78.5 A	(100%) (40%) (220.82(C)(1))

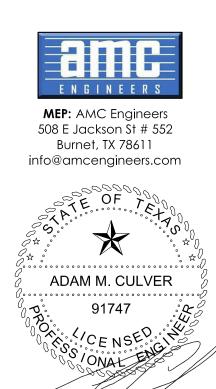
MOUN FED I	NTING FI FROM	05/202/205/302/30 LUSH 1 / BOTTOM FEED	В	OLTS 240/120 US AMPS 125 EUTRAL 100%		SW.		AIC 22, 0 MAIN BKI LUGS S	R MLO			
CKT #	CKT BKR	CIRCUIT DESCRIPTION	N	LOAD	KVA B	CKT #	CKT BKR	CIRCUIT DESCRIP	TION		LOAD	KVA B
1	20/1	LIGHTING, RECEPTAC		0.562		2	20/1	REFRIGERATOR			1.25	
3 5	20/1 20/1	RECEPTACLE LIGHTING, RECEPTAC	LE	0.796	0.18	4 6	20/1 20/1	CONV. RECEPT. GARBAGE DISPOS			1.25	1.5
7 9	20/1 20/1	RECEPTACLE SPACE	>	0	0.18	8 10	20/1 20/1	DISHWASHER MICROWAVE / VI			1	1.2
11 13 15	30/2	EWH-1 (WATER HEA	IER)	2.25	2.25 1.5	12 14 16	20/1 20/1	CONV. RECEPT. LIGHTING, RECEP			1.07	1.5
17 19	20/1 20/2	WASHING MACHINE CU-1 HVAC (1.5T)		1.56	1.56	18	20/1 20/1 20/1	SPACE SMOKE DETECTO LIGHTING	RS		0.2	0.04
21 23	30/2 I	DRYER		2.5	2.5	22 24	40/2	ELECTRIC RANGE			4	4
25 27	20/1 20/1	SPACE SPACE		0	0	26	20/1 20/1	SPACE SPACE			0	0
29	20/1	SPACE		0		30	20/1	SPACE			0	
								TOTAL CONN	ECTED KVA BY	PHASE	16.4	16.4
								TOTAL CONNEC	CTED AMPS BY	PHASE	137	137
OPTIC	DNAL DW	ELLING UNIT CALCULA	TION (NEC 2 CONN KV	,				CONN k	(VA CALC KV	А		
	HTING AN	D RECEPTACLES	1.73 3	 575 SF (3 VA/SF)		UF	RAL LO <i>A</i> ' TO 10 'ER 10 k	KVA 10	10 5.49	— (10 (40	0%) %)	
LAU	NDRY		6.5					OR COOLING	3.11	•	7°) 0.82(C)((1))
	LIANCES CTRIC CO		4.5 8				L LOAD	2.4.0	18.6			
		RAL LOAD	23.7			BALA	NCED LO	DAU	77.5 A			

- 	10.3 /10		4 \/∩	LTS 240/12 0)V 2P 7	3W		Δ	AIC 22,0	100			
	TING FL			S AMPS 125		7 * *			MAIN BKR				
ED F				UTRAL 100%					UGS ST				
		1 / BOTTOM FEED											
KT	CKT			LOAD	KVA	CKT	CKT					LOAD	KVA
#	BKR	CIRCUIT DESCRIPTION	V	А	В	#	BKR	CIRCUIT	DESCRIP ⁻	TION		А	В
1	20/1	SMOKE DETECTORS RECEPTACLE	LIGHTING,	0.562		2	20/1	REFRIGEF	RATOR			1.25	
3	20/1	RECEPTACLE			0.18	4	20/1	CONV. RI	ECEPT. K	KITCHEN			1.5
5	20/1	LIGHTING, RECEPTAC	CLE	0.256		6	20/1	GARBAGE				1.25	
7	20/1	RECEPTACLE			0.36	8	20/1	DISHWAS					1.2
9	20/1	RECEPTACLE		1.22		10	20/1	MICROWA	VE / VE	NT		1	
11	30/2	EWH-1 (WATER HEA	TER)		2.25	12	20/1	CONV. RI		KITCHEN			1.5
3				2.25		14	20/1	RECEPTA	CLE			0.54	
15	20/1	WASHING MACHINE			1.5	16	20/1	SPACE					0
17	30/2	DRYER		2.5		18	20/1	SPACE				0	
19					2.5	20	20/1	LIGHTING					0.041
21	20/2	CU-1 (HVAC)		1.56		22	40/2	ELECTRIC	RANGE			4	
23					1.56	24						_	4
25	20/1	SPACE		0	_	26	20/1	SPACE				0	
27	20/1	SPACE			0	28	20/1	SPACE					0
29	20/1	SPACE		0		30	20/1	SPACE				0	
										ECTED KVA BY		16.4	16.6
								TOTAL	CONNEC	CTED AMPS BY	PHASE	137	138
DP TIO	NAL DWI	ELLING UNIT CALCULA	TION (NEC 22	0.82)		•							
			CONN KVA					-	CONN K	VA CALC KV	<u>A</u>		
LIGH	ting an	D RECEPTACLES	2.04	680 SF (3 VA/SF)			RAL LOAP TO 10		10	10	(100)%)	
SMA	LL-APPL	LIANCE	3	, , ,			/ER 10 K		14	5.62	(40%	,	
LAUI	NDRY		6.5					OR COOL		3.11	`). 82(C)(1))
APP	LIANCES		4.5								`	\ /\	,,
ELEC	CTRIC CC	OOKING	8				L LOAD	\		18.7			
TOT	\I	RAL LOAD	24	_		BALA	NCED LO	IAU		78 A			









06/10/2022



Issued for Permit

	L LEGEND	0)4156	(NOT ALL SYMBOLS WILL APPLY TO THIS
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING		EMERGENCY LIGHTING
$-\times-\times-\times-$	REMOVE	\boxtimes	UNIT CEILING MOUNTED EXIT SIGN —
	NEW WORK		ARROW AS INDICATED
H	HOMEDIAL CONDUCT		TWO FACED EXIT SIGN
	HOMERUN CONDUIT	HX	WALL MOUNTED EXIT
	NUETRAL		SWITCHBOARD, POWER
	PHASE GROUND	LP-XX	PANELBOARD LIGHTING PANELBOARD
			LIGHTING PANELBOARD
	FLEXIBLE CONDUIT	T	TRANSFORMER
<u></u>	CONDUIT TURNING DOWN CONDUIT TURNING UP	30	NON-FUSIBLE SAFETY SWITCH
•	CONDUIT UP AND		(NUMBER INDICATES SWITCH SIZ
	DOWN	40/60	FUSED SAFETY SWITCH (NUMBER INDICATE FUSE/SWITCH SIZES)
480V 600A	BUSWAY WITH	20	COMBINATION MAGNETIC STARTER AND CIRCUIT BREAKER
——————————————————————————————————————	DESCRIPTION GROUNDING		2 — INDICATES NEMA STARTE 20 — INDICATES CIRCUIT BRE
6 X 24	CONDUCTOR CABLE TRAY WITH		TRIP SINGLE POLE SWITCH —
	DESCRIPTION CEILING JUNCTION BOX	\$ _a	USE SUBSCRIPT TO DESIGNATE
() H()	WALL JUNCTION BOX	\$ _D	CONTROL OF PARTICULAR OUTLE DIMMER SWITCH
	DUPLEX RECEPTACLE	\$2	DOUBLE POLE SWITCH
<u>H</u>	OUTLET SINGLE RECEPTACLE	\$3	THREE-WAY SWITCH
	OUTLET	\$4	FOUR-WAY SWITCH
-	DOUBLE DUPLEX	\$ _{WP}	WEATHERPROOF SWITCH
⊕ GFCI WP	RECEPTACLE OUTLET GROUND FAULT CIRCUIT INTERUPTER DUPLEX OUTLET WITH WEATHERPROOF		KEY OPERATED SWITCH
	COVER		DIMMER SWITCH —
$lue{\mathbb{Q}}$	SPLIT WIRED DUPLEX RECEPTACLE	⊢⊿ 600	NUMBER INDICATES WATTAGE
● IG	=DUPLEX ISOLATED	⊢ M	OCCUPANCY SENSING SWITCH
Y	GROUND	HP	PHOTOCELL
\bigcirc^{A}	SPECIAL PURPOSE OUTLET — USE SUBSCRIPT TO IDENTIFY	lacksquare	DATA PORT / PHONE
	TYPE IN SPECS		
A A	FLOOR RECEPTACLE OUTLET USE SUBSCRIPT TO IDENTIFY		
	TYPE IN SPECS		
HCR	CLOCK RECEPTACLE		
	RECEPTACLE RACEWAY		
A	FLUORESCENT LUMINARE		
	A=FIXTURE TYPE		
1, b	1=CIRCUIT NUMBER b=SWITCH CONTROLLING FIXTURE		
\vdash	FLUORESCENT STRIP		
	LUMINAIRE		
	WALL MOUNTED FLUORESCENT		
	LUMINAIRE		
	CEILING MOUNTED LUMINAIRE		
\bigcirc	WALL MOUNTED		
•—	LUMINAIRE LIGHT POLE WITH		
_	LUMINAIRE	1	1

1. PERFORM INSTALLATION IN ACCORDANCE WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND APPLICABLE COA ORDINANCES, AND BRYAN TEXAS UTILITY DESIGN CRITERIA. EQUIPMENT

SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (UL). 2. PROVIDE AND MAINTAIN A CLEAR WORKING SPACE ABOUT ELECTRIC EQUIPMENT (SWITCHBOARDS, PANELBOARDS, ETC.) IN

3. ALL GROUNDING SHALL BE PER NEC AND LOCAL CODES.

UNPROTECTED OPENINGS IN ENCLOSURES.

LUMINAIRE SCHEDULE

LAMP

(1) 10W LED

(1) 14W LED

(1) 27W

(1) 23.8W

(1) 13W LED

(6) 8W LED MR16

SYMBOL

Ю——

CALLOUT

EM2

ACCORDANCE WITH NEC ARTICLES 110.26 AND 110.34.

- 4. THE ELECTRICAL CONTRACTOR SHALL VERIFY SIZES OF BREAKERS, FUSES, WIRES, ETC FOR ALL EQUIPMENT PROVIDED AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO MAKING CONNECTIONS.
- 5. PROVIDE CIRCUIT BREAKERS WITH UL LISTED INTERRUPTING RATING (RMS SYMMETRICAL AMPERES) GREATER THAN THE AVAILABLE FAULT CURRENT SHOWN ON THE ELECTRICAL ONE—LINE DIAGRAM.
- 6. BOND RACEWAYS AND THE FRAMES AND ENCLOSURES OF MOTORS, BREAKERS, SWITCHES, AND OTHER ELECTRICAL EQUIPMENT TO THE BUILDING GROUNDING SYSTEM. INSTALL AN INSULATED EQUIPMENT GROUND CONDUCTOR IN EACH RACEWAY OR CONDUIT. SIZE EQUIPMENT GROUND CONDUCTOR IN ACCORDANCE WITH NEC TABLE 250.122.
- 7. USE 12 AWG OR LARGER CONDUCTORS FOR ALL WIRING, UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS. MINIMUM 12. CONFIRM EXACT LOCATION OF CEILING FIXTURES WITH OWNER BEFORE ROUGH—IN. WIRE/CONDUIT SIZES ARE #12 AWG COPPER IN 1/2" CONDUIT.
- 8. USE ONLY COPPER CONDUCTORS ON CIRCUITS 600V AND LESS. CONDUCTORS 10 AWG AND SMALLER SHALL BE SOLID AND 8 AWG AND LARGER AWG SHALL BE STRANDED. PROVIDE TYPE THHN/THWN WIRE INSULATION; XHHW INSULATION MAY BE USED FOR
- 1 AWG AND LARGER. NM WIRE MAYBE USED FOR DWELLING CIRCUITS WERE ALLOWED BY CODE. 9. INSTALL OUTDOOR EQUIPMENT TO BE WEATHERPROOF AND TO EXCLUDE BIRDS AND RODENTS WITH MAXIMUM 1/2" DIAMETER
- 10. TEST CONDUCTORS FOR CONTINUITY AND FREEDOM FROM SHORTS AND UNINTENTIONAL GROUNDS. NO WIRING SHALL BE LOADED 15. ROUTE (1) 3/4" CONDUIT WITH PULLSTRING FROM EACH INDOOR MECHANICAL UNIT TO RESPECTIVE CONDENSING UNIT FOR BEYOND THE PERMITTED AMPACITIES ALLOWED BY NEC.
- 11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND MATERIALS NECESSARY TO MAKE A COMPLETE AND WORKABLE
- 12. THE ELECTRICAL CONTRACTOR SHALL LAYOUT SERVICE ENTRANCE AND METERING EQUIPMENT TO SCALE WITH ACTUAL COMPONENTS TO BE INSTALLED TO ENSURE PROPER FIT AND CLEARANCES PRIOR TO INSTALLATION. NOTIFY ENGINEER OF ANY DIMENSIONAL CONFLICTS.
- 13. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO SUBMITTING BID.
- 14. KEEP JOB SITE IN AN ORDERLY CONDITION AND AT PROJECT COMPLETION, REMOVE ALL WASTE. LEAVE THE JOB SITE IN A CONDITION ACCEPTABLE TO THE OWNER OR OWNERS REPRESENTATIVE.
- 15. IF A CONFLICT ARISES BETWEEN THE FIELD CONDITIONS AND THESE GENERAL ELECTRICAL REQUIREMENTS, CONTACT THE DESIGN 19. ROUTE 3/4" CONDUIT WITH PULL STRING FROM EACH VOICE/DATA AND CABLE TV OUTLET TO THE HOME NETWORK PANEL. ENGINEER AND OWNER FOR DIRECTIONS.
- 16. UNLESS OTHERWISE NOTED, BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER (THW OR EQUAL, NM FOR DWELLING CIRCUITS AS 21. PROVIDE FIRE RATED LIGHT COVER FOR ALL CEILING MOUNTED LIGHT FIXTURES AND CEILING JUNCTION BOXES. UTILIZE TENMAT ALLOWED BY CODE) SIZED AS FOLLOWS;

BREAKER RATINGS	WIRE SIZE	BREAKER RATING	WIRE SIZE
15 AMP	#12 AWG	90 AMP	#2 AWG
20 AMP	#12 AWG	100 AMP	#1 AWG
30 AMP	#10 AWG	110 AMP	#1 AWG
40 AMP	# 8 AWG	125 AMP	#1 AWG
50 AMP	# 6 AWG	150 AMP	#1/O AWG
60 AMP	# 4 AWG	175 AMP	#2/0 AWG
70 AMP	# 4 AWG	200 AMP	#3/0 AWG
80 AMP	# 4 AWG		

- 17. CONTRACTOR SHALL INDICATE ALL CHANGES FROM THE ORIGINAL PLANS MADE DURING THE INSTALLATION OF HIS WORK IN RED INK ON TWO BLUELINE PRINTS. ALSO PROVIDE ELECTRONIC 'AS-BUILT'.
- 18. THE CONTRACTOR SHALL PREPARE A TYPED PANEL DIRECTORY FOR EACH PANEL UTILIZED FOR THIS PROJECT. THIS DIRECTORY 30. ELECTRICAL CONTRACTOR SHALL COMPLY WITH COLOR CODING OF CONDUCTORS IN ACCORDANCE WITH NEC. SHALL IDENTIFY THE CIRCUIT NUMBER, DEVICES SERVED, AND LOCATION OF DEVICES BY ROOM NUMBER. HE SHALL FILE THEM WITH THE BUILDING MANAGER WHEN THE WORK IS COMPLETED.
- 19. SHOULD ANY ERRORS, OMISSIONS, CONFLICTS OR AMBIGUITIES EXIST IN EITHER/OR BOTH THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BRING THESE TO THE ATTENTION OF THE CONTRACTING OFFICER IMMEDIATELY FOR ADJUSTMENT IN WRITING BEFORE SIGNING THE CONTRACT OR PROCEEDING WITH THE WORK, OTHERWISE, HE SHALL AT HIS OWN EXPENSE, SUPPLY THE PROPER MATERIALS AND LABOR TO MAKE GOOD ANY DAMAGE OR DEFECT CAUSED BY SUCH UNINTENTIONAL ERROR.

DESCRIPTION

6" low lumen Matte White Wafer

Selectable White LED 27K30K35K _

THE LIGHTING SOURCE WET LOCATION

LITHONIA FEM LED ENCLOSED AND

LED TRACK LIGHT SYSTEM W/ 6 HEADS

Fixture — 10 Watt

EMERGENCY LIGHT

35K 90CRI (GLEDS)

GASKETED LED STRIP

LED WALL SCONCE

4 in. Ultra Thin Selectable LED Downlight | CEILING

LITHONIA LIGHTING EDG-EDGR EXIT LIGHT CEILING

DMW2 L24 3000LM WD AFL MVOLT GZ1 | CEILING

MOUNTING

CEILING

CEILING

CEILING

WALL

MODEL

LED 30K40K50K MVOLT

LITHONIA EDG 2 R 120

LL LED 27K30K35K

90CRI MW M6

90CRI 3500K

WL LMR

35K 90CRI

90CRI

FEM L48 4000LM

IMAFD WD MVOLT 35K

TO BE SELECTED BY

OWNER / ARCHITECT

| Lithonia Lighting WF4 | 10

Lithonia Lighting, WF6 | 9.93

- 20. MAKE ALL PENETRATIONS THROUGH WALLS AT 90 DEGREE ANGLES. SEAL ALL PENETRATIONS AT FIRE AND SMOKE PARTITIONS WITH FIRE SAFING MATERIAL. SEAL ALL PENETRATIONS AT SOUND WALLS WITH SOUNDPROOFING MATERIAL.
- 21. ALL MATERIALS FURNISHED UNDER THIS CONTRACT SHALL BE NEW UNLESS OTHERWISE NOTED.
- 22. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION OR ACCEPTANCE OF THE WORK. THE CONTRACTOR SHALL REPAIR OR REPLACE, AT HIS OWN EXPENSE WHEN ORDERED TO DO SO, ALL WORK THAT MAY DEVELOP DEFECTS IN MATERIAL OR WORKMANSHIP WITHIN SAID PERIOD OF TIME.
- 23. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR SERVICE INTENDED, AS INTERPRETED BY THE CONTRACTING OFFICER. THE INSTALLATION OF ALL EQUIPMENT SHALL BE MADE BY EXPERIENCED CRAFTSMAN IN A NEAT, WORKMANLIKE MANNER. ALL MATERIALS, TOOLS, COSTS, AND SERVICES NECESSARY TO COMPLETELY INSTALL ALL ELECTRICAL WORK SHALL BE PROVIDED BY THE CONTRACTOR.
- 24. IT IS THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS THAT THE CONTRACTOR SHALL PROVIDE AN ELECTRICAL INSTALLATION THAT IS COMPLETE. ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLY INCIDENTAL, OR CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFICALLY CALLED OUT OR SHOWN ON THE CONSTRUCTION DOCUMENTS SHALL BE PROVIDED.
- 13. COORDINATE WITH THE OWNER FOR EXACT LIGHTING FIXTURE AND OUTLET LOCATIONS. WHEN INSTRUCTED BY THE CONTRACTING OFFICER THE CONTRACTOR SHALL RELOCATE OUTLETS LOCATED AT UNACCEPTABLE LOCATIONS AT NO ADDITIONAL COST IF NEW LOCATIONS ARE LESS THAN TWO-FEET.
- 14. COORDINATE THE EXACT LOCATION OF ALL UNIT LOAD CENTERS AND HOME NETWORK PANEL WITH THE ARCHITECT PRIOR TO INSTALLATION. ALL FEEDER CONDUIT ROUTING SHALL BE COORDINATED WITH THE ARCHITECT AND ALL OTHER TRADES PRIOR TO INSTALLATION. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A COMPLETE SHOP DRAWING THAT INDICATES THE ROUTING AND SIZE OF ALL CONDUIT FOR REVIEW PRIOR TO INSTALLATION.
- CONTROL WIRING. ROUTE (1) 3/4" CONDUIT FROM EACH UNIT LOAD CENTER TO THE RESPECTIVE CONDENSING UNIT FOR POWER
- 16. ALL DWELLING BRANCH CIRCUITS OUTLETS AS REQUIRED BY NEC 210.12 (A) SHALL BE PROTECTED BY A BY A 20-AMP RATED ARC-FAULT CIRCUIT INTERRUPTER. FOR ALL 120V/10/20A BRANCH CIRCUITS SUPPLYING OUTLETS IN FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, DENS, MEDIA ROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS.
- 17. AT RESIDENTIAL UNITS, SWITCHES FOR RESTROOM EXHAUST FANS SHALL BE INSTALLED USING A COMMON COVER PLATE WITH THE ADJACENT LIGHT SWITCHES. RE: LIGHTING PLANS.
- 18. AT RESIDENTIAL UNITS, RECEPTACLES LOCATED ON OPPOSITE SIDES OF A COMMON WALL SHALL BE ROUGHED IN A MINIMUM OF
- 1'-0" APART HORIZONTALLY TO LIMIT NOISE TRANSMISSION.
- 20. ALL EXTERIOR FIRE ALARM DEVICES SHALL BE WEATHERPROOF.
- #FF109-300 OR EQUAL. VERIFY FIXTURE HEIGHT PRIOR TO PURCHASE AND PROVIDE APPROPRIATE FIRE RATED COVER AS REQUIRED.
- 22. AT RESIDENTIAL UNITS. PROVIDE TAMPER—RESISTANT RECEPTACLES FOR ALL 120V/10/20A OUTLETS.
- 23. PROVIDE WEATHER-RESISTANT RECEPTACLES FOR ALL 120V/10/20A EXTERIOR OUTLETS.
- 24. CONTRACTOR SHALL USE MULTI-GANG BOXES IN ALL POSSIBLE LOCATIONS WHERE NECESSARY.
- 25. PROVIDE EXPANSION FITTINGS ON ALL CONDUIT CROSSING EXPANSION JOINTS.
- 26. CONDUIT SHALL BE EMT WITH COMPRESSION FITTING (MINIMUM 1/2"C.)

VOLTS

INPUTWATTS

Lithonia Lighting, DMW2 | 27.85 | 120V 1P 2W | RATED FOR WET

120V 1P 2W

23.8

NOTE 1

WITH ARCHITECT

LOCATION. VERIFY

FINAL FINISH WITH

SURFACE MOUNTED

OWNER.ARCHITECT

WITH ARCHITECT

ARCHITECT

120V 1P 2W | VERIFY FINAL FINISH

120V 1P 2W EXTERIOR EXIT LIGHT

120V 1P 2W TO BE SELECTED BY

120V 1P 2W | VERIFY FINAL FINISH

120V 1P 2W | LISTED FOR WET

120V 1P 2W WET LOCATION

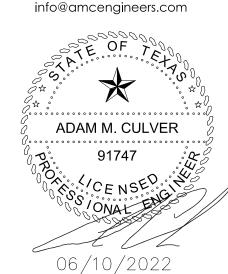
- ALL BRANCH CIRCUITS WITH AN OVERALL LENGTH IN EXCESS OF 75 FT SHALL BE INCREASED IN WIRE SIZE TO ACCOMMODATE 27. FLEX CONDUIT MAYBE USED WHEN INSTALLED IN ACCORDANCE WITH NEC AND LOCAL ORDINANCES.
 - 28. ALL RECEPTACLES AND SWITCHES SHALL BE RATED AT 20 AMPERE MINIMUM.
 - 29. ELECTRICAL CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH: 2008 NEC; 2009 IECC ENERGY CODE.











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Description Issued for Permit

06.10.2022

ELECTRICAL PANEL SCHEDULES

MARCO POLO - 101 W 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803