



March 20, 2024

Meng Tessie
1943 W. Summit Ave.
San Antonio, Texas 78201

**RE: Inspection of Existing Conventional Wood Framed Residential Garage Structure
Located at: 1943 W. Summit Ave., San Antonio, Texas**

Project No.: TX24-036.01

Ms. Tessie,

Pursuant your request, a representative from SEoT Engineering, PLLC met with you and your contractor (*Jesus*) at the above referenced project site on Wednesday, March 20, 2024. As a result of our initial conversation, the purpose of the site visit was to visually inspect the recently constructed (*less than 1 month ago*) conventional wood framing for the Garage.

The Garage framing consisted of a gabled-end structure that measured 20'-3" x 20'-0" (405 ft²). At the time of our inspection the construction process for the one-story garage structure was approximately 80 to 85% complete. Construction of the perimeter load bearing walls (2x4 @ 16" o.c.) was nearly complete with the exception of a window opening that was proposed in the left side wall. The exterior walls were not yet sheathed, but were adequately constructed using matching pressure treated 2x4 sole plate and double 2x4 top plate. The 16ft long garage door header that consisted of a (2 ply) 2x12 built-up beam was by observation, undersized. A new header size was analyzed by SEoT Engineering, PLLC and is specified below on page 2.

The roof framing consisted of 2x6 rafters typically spaced at 16" o.c., The span of the rafters was approximately 10 feet. The ridge beam consisted of a 2x8 that was properly installed with intermediate 2x support posts. The roof diaphragm was constructed with 15/32 APA rated OSB. The ceiling framing consisted of joists spanned front to rear. A ceiling flush beam (3 ply) 2x12 was installed at the mid-depth of the buildings and spanned from side to side. As a result the span of the ceiling joists measured approximately 10 feet. By observation, the ceiling flush beam was undersized for the load and span conditions. A new ceiling flush beam was analyzed by SEoT Engineering, PLLC and is specified below on page 2. The ceiling joists with rafters were connected to the double top plate at the front and rear walls using Simpson Strong-Tie H2.5A metal clips spaced not more than 4ft o.c..

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Some construction discrepancies were observed and are discussed below.

1. Replace existing undersized 16ft long garage door header with new **(2 ply) 1 3/4"x9 1/4", E2.0 LVL**.
 - Support each end of new header on 2 jack-studs (*trimmer studs*).
 - Connect plies together using 3 rows of 16d common nails spaced 24"o.c., applied to each face of built-up beam. Offset spacing between beam faces to provide a nominal fastener spacing of 12"o.c.
 - Use 1 1/4"x20 Ga. x 1"x10"metal strap to connect header to the trimmer and king studs. Install straps on both faces and at each end (4 straps total).
 - Install holdown anchors each side of garage door opening. Connect both trimmer and king studs at each end of garage opening to the foundation using holdown anchors by Simpson Strong-Tie; Use type "HTT4"or "HTT5" Connect to foundation using 5/8"dia. threaded rod (*ASTM F1554, Grade 36*).
2. The anchor-rods that connect the wall sole plate to the foundation were excessively spaced. To correct this condition it will be necessary to install new anchorages (1/2"or 5/8"dia.) as necessary to maintain a nominal spacing between successive anchors of not more than 6"o.c. Threaded rod anchors shall meet (*ASTM F1554, Grade 36*) specification.
 - Locate first anchor-rod from each end of wall at not more than 12"
 - Successive anchor-rods shall be spaced not more than 6"o.c.
3. Replace existing undersized ceiling flush beam with new **(3 ply) 1 3/4"x11 1/4", E2.0 LVL** built-up beam.
 - Bean new beam directly on double top plate. Install triple 2x4 built-up in-wall columns centered beneath the beam bearing-ends at each side wall.
 - Connect plies together using 3 rows of 16d common nails spaced 24"o.c., applied to each face of built-up beam. Offset spacing between beam faces to provide a nominal fastener spacing of 12"o.c.
4. Install wall sheathing (7/16"min. APA rated OSB, Exposure I) at all sides. Connect sheathing to sole plate and double top plate with 8d common nails (*hot dipped galvanized*) spaced at 6"o.c.. Spacing of fasteners shall be 6"o.c. along panel edges and 12"o.c. within the interior zone of the sheathing panel. If using staples, then staples shall consist of 2"long x1/2"crowns x 16ga. Staples must be coated to resist oxidation.

The above noted discrepancies and corresponding repairs were discussed in detail with your contractor (Jesus) prior to departing the site. However, should your contractor have any questions regarding the specified repairs as discussed herein, please inform him that he may contact SEoT Engineering anytime (210-913-8789).

Respectfully,
SEoT Engineering, PLLC
Texas Firm Reg. No. F-12870

Gilbert L. Leyendecker, P.E.

