Safe-T-Strap

SAFE-T-STRAP™

333 Frankcom Str., Ajax, Ontario L1S 1R4 Tel.: (905) 426-3243 Fax: (905) 426-2160

TOLL FREE: 1-800-547-4298
(In Canada and the U.S.A.)

www.safetystrap.com

Safe-T-Strap™ Horizontal Life Line System

Installation Procedures

For

Wood Roof Truss and Rafter Work

JULY 2000

CSA
APPROVED

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Installation Procedures
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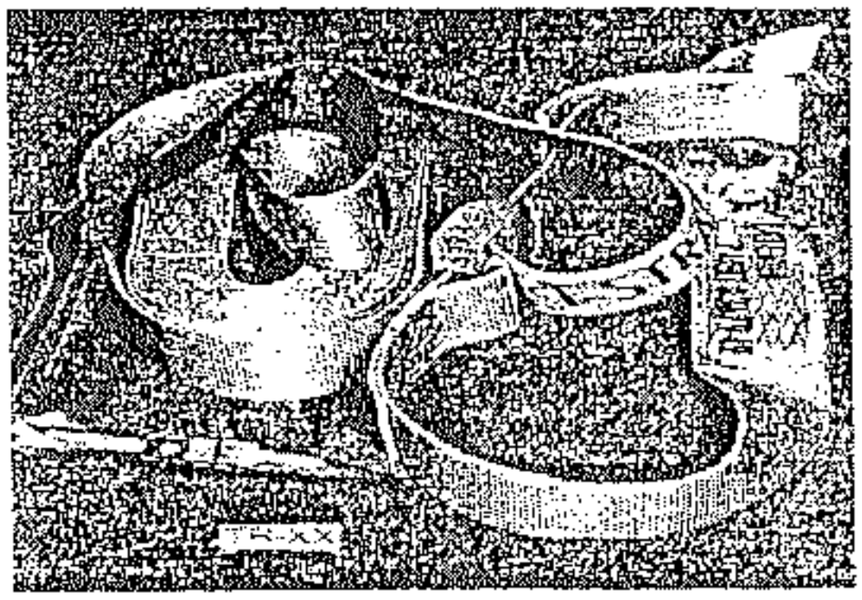
The Safe-T-Strap™ Horizontal Life Line System is an ideal solution to personal fall protection for workers erecting roof trusses and rafters of typical wood frame construction. The Safe-T-Strap™ HLL System is installed at the top level of stud walls for the full length of the house or building before any work is done constructing the roof.

Workers can attach their lanyard to the system and have full fall protection and complete freedom of movement while erecting the roof trusses or rafters.

Description

The Safe-T-Strap™ Horizontal Life Line System (Model TR-XX) consists of 2 inch wide polyester webbing fitted with 5000 lb capacity self locking snap hooks and a cam buckle adjuster to allow easy tension adjusting. The system is used with two Safe-T-Strap™ Double D-ring anchor straps (IS-01) which are installed around the top plate of stud walls. (See figure 1)



Safe-T-Strap™ Horizontal Life Line Model TR-XX

Figure 1

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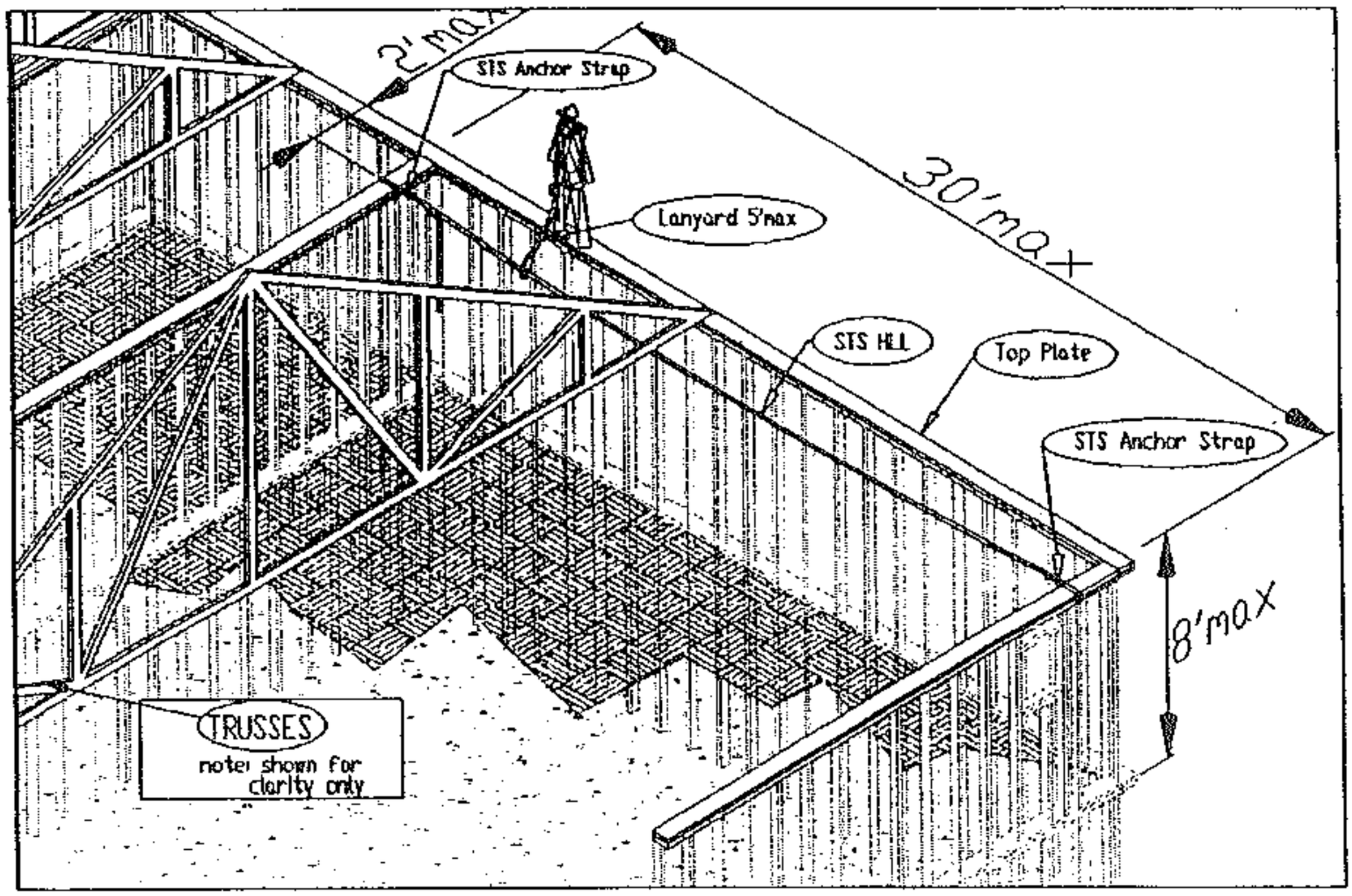
Installation Procedures

1) Inspection

Inspect all exterior and interior walls to make sure all top plates have been properly nailed and interior partition walls have been secured and nailed. The exterior walls must have the sheathing installed and/or the corner diagonal bracing installed.

2) Layout of HLL

The HLL should normally be installed parallel to the longest exterior wall of the house to provide the most freedom of movement for the worker. To minimize the potential force on the wall the HLL should be installed no more than 2 feet from the exterior wall of the house. (See figure 2 below)



Layout of Safe-T-Strap™ Horizontal Life Line System

Figure 2

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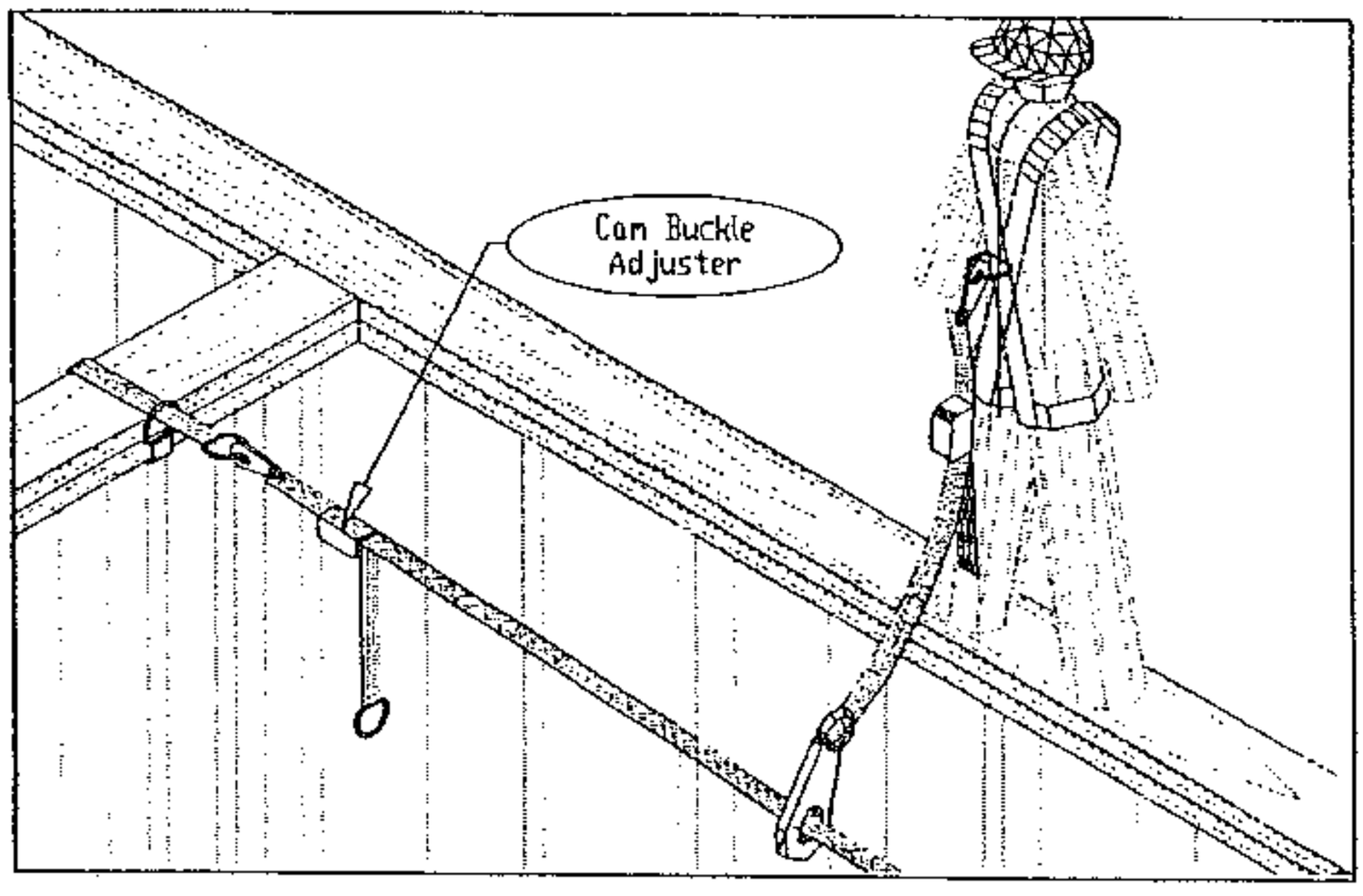
Using the Safe-T-Strap™ Horizontal Life Line

1) Once the HLL has been properly installed it can be used with the Safe-T-Strap™ lanyard (Model LHLL-03) or equivalent. Make sure the lanyard has a 3" self locking snap hook to allow the lanyard to slide along the length of the HLL.
2) Attach the 3" self locking snap hook of the lanyard to the HLL and check that it is free to slide along its length.



Attachment of lanyard to HLL

Figure 4

3) Do not use a lanyard greater than 5 feet in length.
4) The lanyard must be attached to a properly fitted full body harness using the self locking snap hook.

Note

In the event of a fall arrest of a worker using the Safe-T-Strap™ Horizontal Life Line, the entire system should be returned to Safe-T-Strap before using the system again.

The components of the system will be re-certified and returned to the user at no cost!!

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1-<u>Purpose of Test</u>

The purpose of the load test was to determine whether a 2" wide Safe-T- Strap with snap hooks at each end and a cam buckle adjuster, connected to two Safe-T-Straps wrapped around framing members in a floor under construction, would sustain the fall arrest forces of a worker attached to that static line.

A common practice on residential construction sites, is for framers to stand on rafter plates in order to set up and toe nail roof trusses.

The intent for this system is to provide fall protection to these workers.

Testing was conducted on the site of a residential unit under construction in Bowmanville on June 12, 2000 witnessed by the undersigned.

2660 Meadowvale Blvd. Unit 2
Mississauga, Ontario L5N 6M6
Tel: (905) 812-3709
Fax: (905) 812-3710

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2-Test Set-Up & Procedure

A Safe-T-Strap fall arrest line made of 2" nominal width polyester with a minimum specified tensile strength of 8000lb. webbing with a cam buckle adjuster and a double locking 5000 lb. capacity snap hook attached to the line by stitched loops was attached at each end to two Safe-T-Straps one wrapped around the framing members of the second storey end wall and the other around a the top member of a framed partition wall . The distance between the horizontal lifeline and the exterior edge of the rafter plate was measured to be 25". The distance between the two walls was measured to be 26' 4".

The Framing of the second storey was erected and the floor was plumb and square.

A Dynafor LCD Load Indicating Device- E98257 rated for 5Ton was attached to one end of the static line adjacent to the end wall to measure the peak fall arrest force.

The horizontal Safe-T-Strap lifeline was pulled taut by means of the cam buckle adjuster and a Safe-T-Strap lanyard was attached at approximately mid span of the line.

The lanyard was adjusted to provide a length of 64 inches and it's other end was attached to 225 lbs. weights supported at the rafter plate level.

These weights were then pulled at from ground level and allowed to free fall

Following the test the distance from the center of the weights to the top of the rafter plate was measured, the reading of the load gauge recorded and a visual inspection of the framing members, the horizontal static line and hardware was carried out.

The test was repeated.

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3-Test Results

Test 1:

The horizontal static line was pulled taut with no apparent sag in the line.

225 lb. weights were assembled on the adjacent to the rafter plate and tied to the lanyard then allowed to free-fall.

The impact force of the free arrested weights damaged a 12" x 18" section of the sidewall rigid insulation.

The framing members, the horizontal line, Safe-T-Straps at each end and the hardware were examined and found not to exhibit any signs of distress or failure.

The load cell registered a maximum peak fall arrest tensile force in the Safe-T-Strap horizontal lifeline of 835 lbs.

The final distance between the top of the rafter plate and the center of the weights was measured to be 7'-5".

Test 2:

The test was repeated with the same equipment. No sag was apparent in the horizontal lifeline and the load cell was reset.

The lanyard was adjusted to a length of 66" measured from the connection point at the horizontal lifeline and the connection at the weights.

The 225 lbs. were allowed to free-fall.

The load cell registered a peak fall arrest tensile force in the line of 870 lbs.

The framing members, horizontal line, Safe-T-Straps at each end and the hardware were all inspected and found not to exhibit any signs of distress or failure.

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4-Conclusion

The Safe-T-Strap horizontal static line attached to two Safe-T-Straps wrapped around an upper horizontal framing member that is part of a second floor framing system that is so framed, fastened, tied and braced as required by the Ontario Building Code, will safely arrest the force generated in the fall arrest of a worker attached to that line and will keep an arrested workers limb extremities from contacting the ground.

The maximum span of the horizontal static line must be limited to 30' between the connecting wall frames.

The horizontal static line must be attached within 2' of the rafter plate and a mid point sag in the horizontal line of 4" is recommended

A worker attached to the horizontal static line static must wear a full body harness attached to a lanyard with a maximum length of 5'

A competent person must inspect the Safe-T-Straps and hardware before each use.

Only one worker shall be attached to the line. An additional static line must be installed if a second worker is required to be on the same rafter plate and at the same span.

Prepared by:

Ralph Balbaa, M.Eng., P.Eng.,
HITE Engineering Corporation
June 19, 2000

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Mississauga, Ontario L5N 6M6
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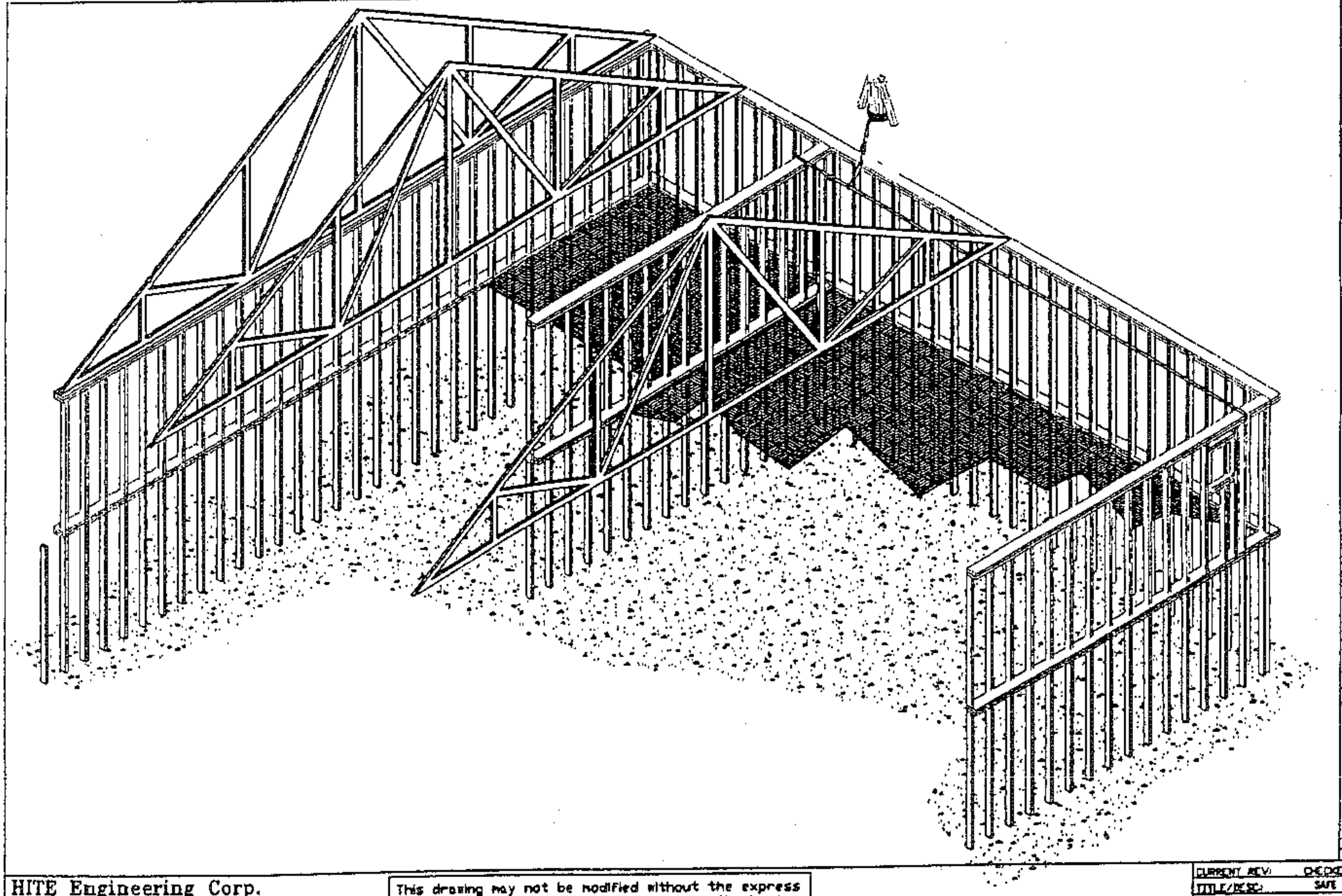

HITE Engineering Corp.
Consulting Engineers
2680 Meadowvale Blvd. Unit 2
Mississauga, Ontario L5N 6M6
T:905-812-3709
F:905-812-3710

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COMPANY:	SAFE-T-STRAP
PROJECT NUMBER:	
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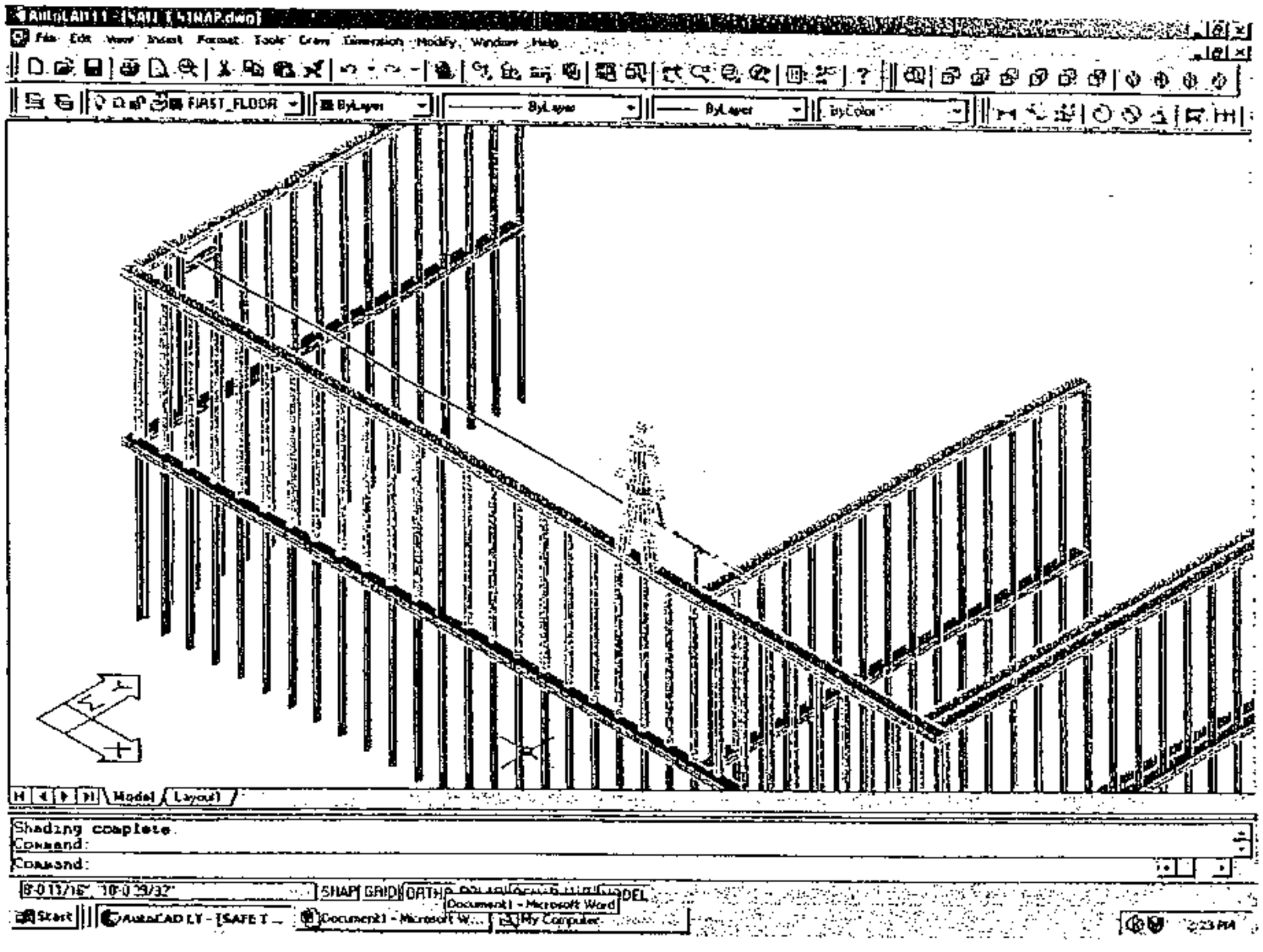
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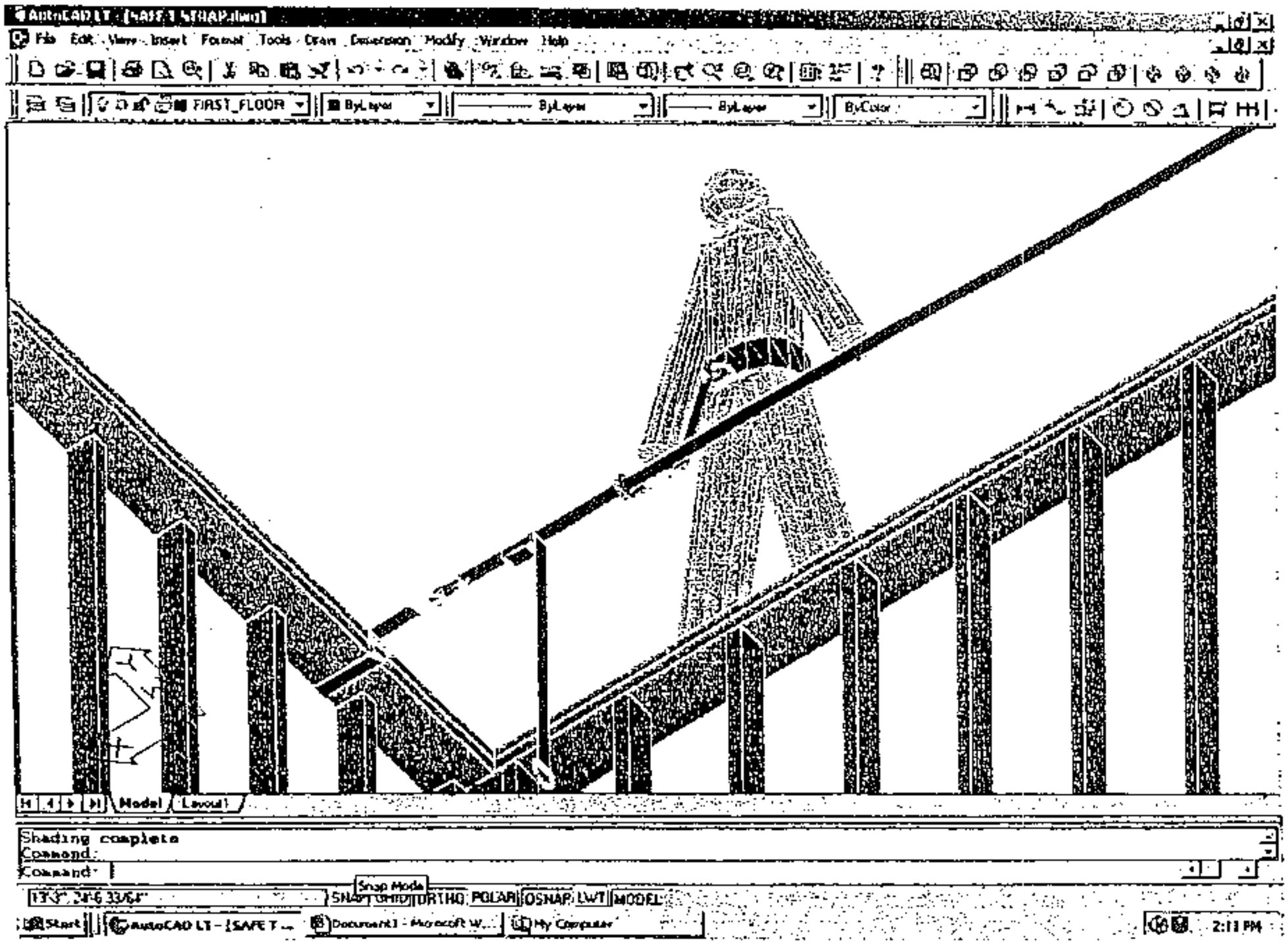
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