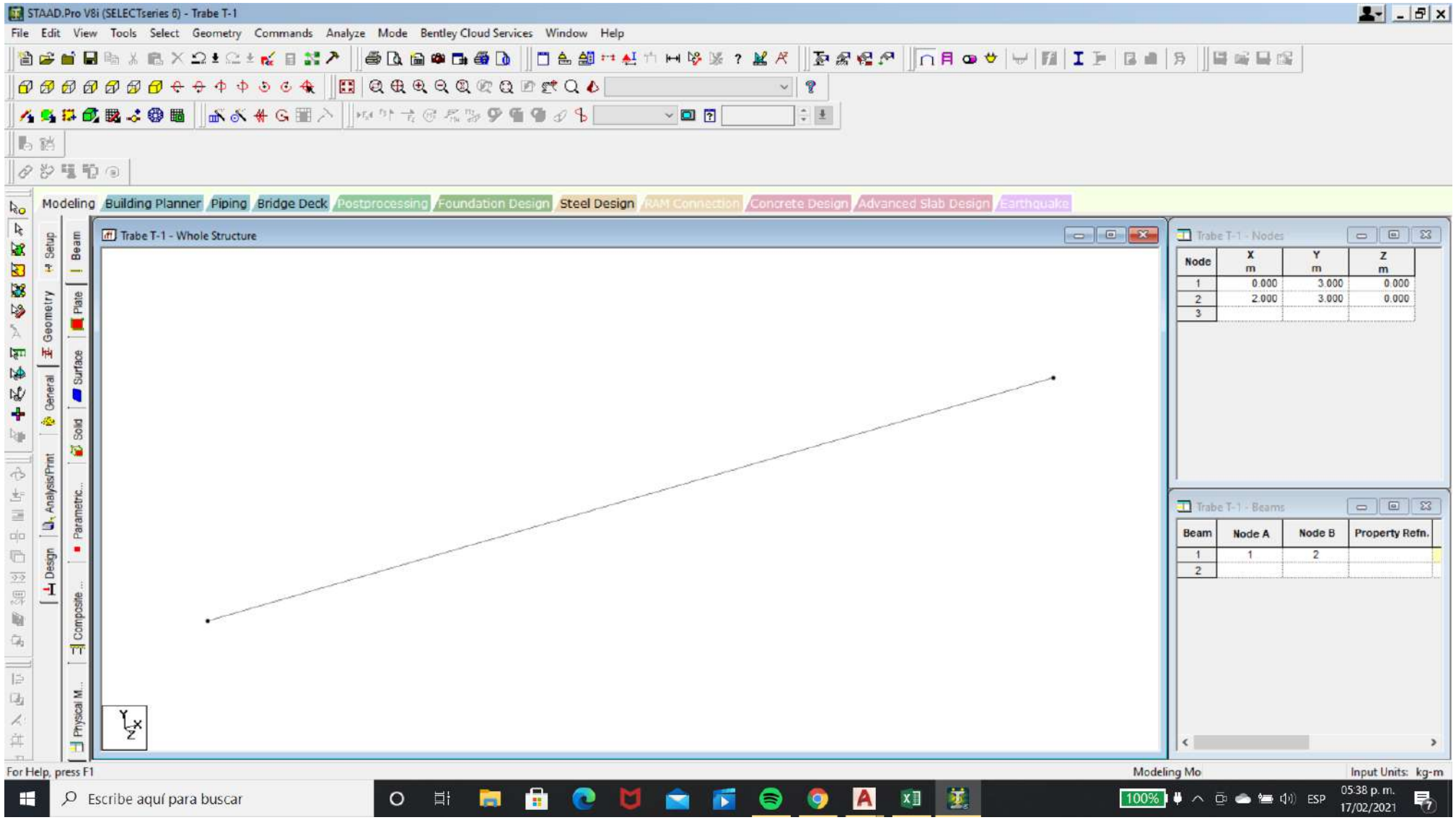
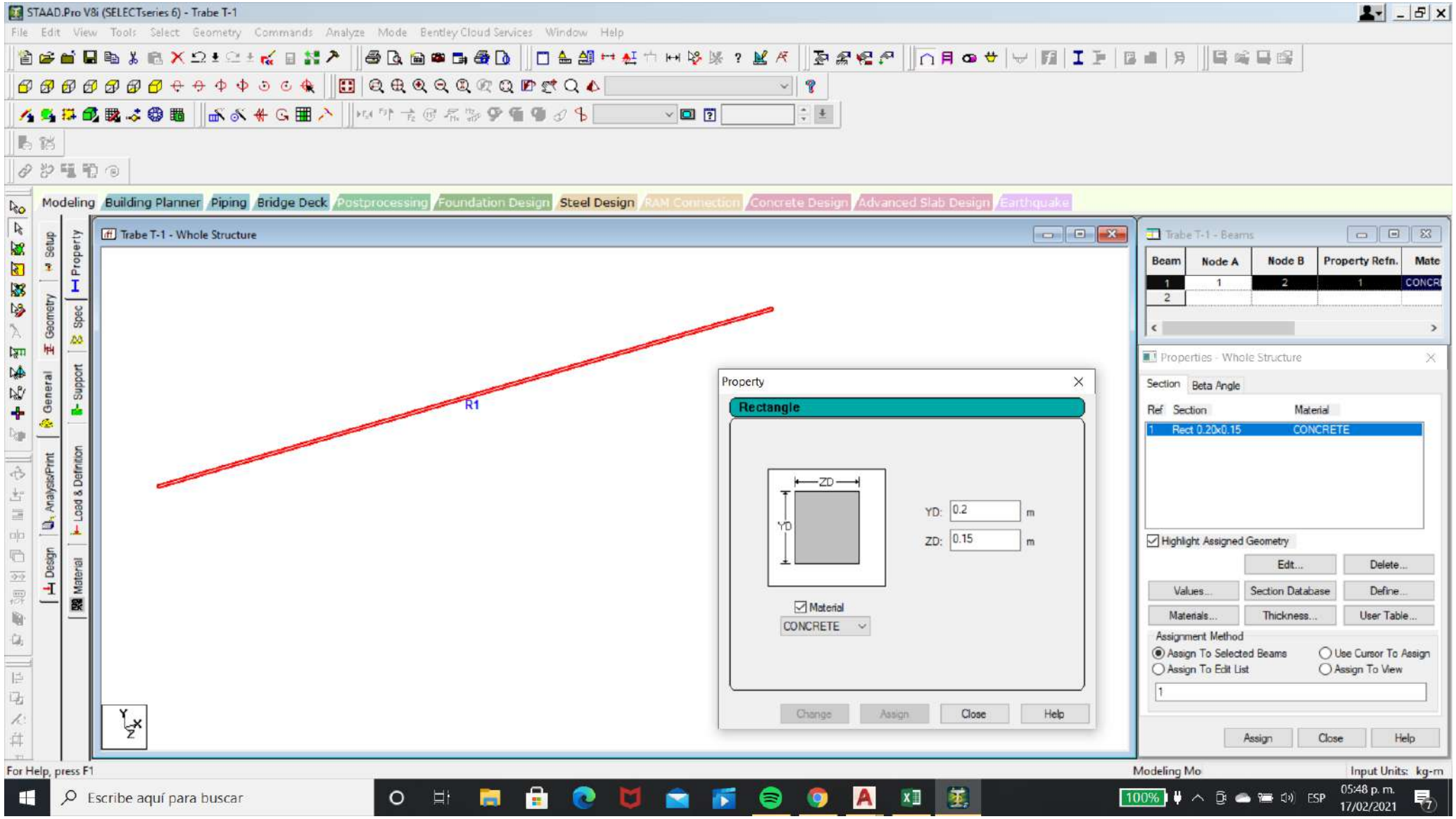
Nombre de alumno:
Virginia de Jesús Moreno Pérez
Nombre del profesor:
Pedro Alberto García López
Nombre del trabajo:
Examen

Materia:
Análisis de estructuras
Grado: 5to Cuatrimestre
Carrera y Grupo: Arquitectura, A

Comitán de Domínguez Chiapas a 17 de Febrero

TRABE TR-1


STAAD.Pro V8i (SELECTseries 6) - Trabe T-1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Beam Plate Surface Solid Parametric... Composite ... Physical M...
Trabe T-1 - Whole Structure
Trabe T-1 - Nodes
Node X m Y m Z m
1 0.000 3.000 0.000
2 2.000 3.000 0.000
3
Trabe T-1 - Beams
Beam Node A Node B Property Refn.
1 1 2
2
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
05:38 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Trabe T-1 - Whole Structure
R1
Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change Assign Close Help
Trabe T-1 - Beams
Beam Node A Node B Property Refn. Mate
1 1 2 1 CONCR
2
Properties - Whole Structure
Section Beta Angle
Ref Section Material
1 Rect 0.20x0.15 CONCRETE
Highlight Assigned Geometry
Edit... Delete...
Values... Section Database Define...
Materials... Thickness... User Table...
Assignment Method
Assign To Selected Beams Use Cursor To Assign
Assign To Edit List Assign To View
1
Assign Close Help
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
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ESP
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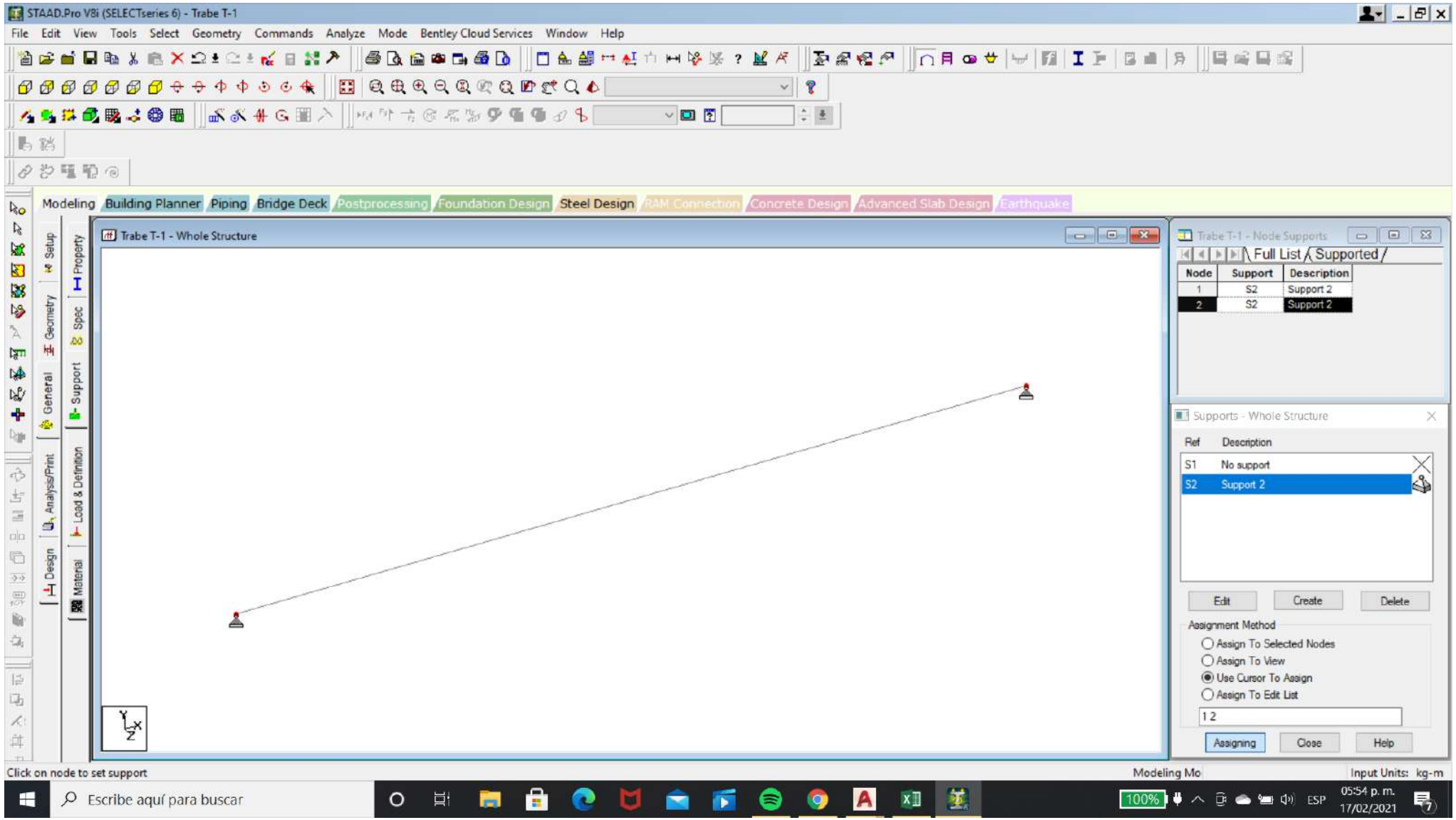
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Trabe T-1 - Whole Structure
Trabe T-1 - Node Supports
Full List Supported
Node Support Description
1 S2 Support 2
2 S2 Support 2
Supports - Whole Structure
Ref Description
S1 No support
S2 Support 2
Edit Create Delete
Assignment Method
Assign To Selected Nodes
Assign To View
Use Cursor To Assign
Assign To Edit List
1 2
Assigning Close Help
Click on node to set support
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
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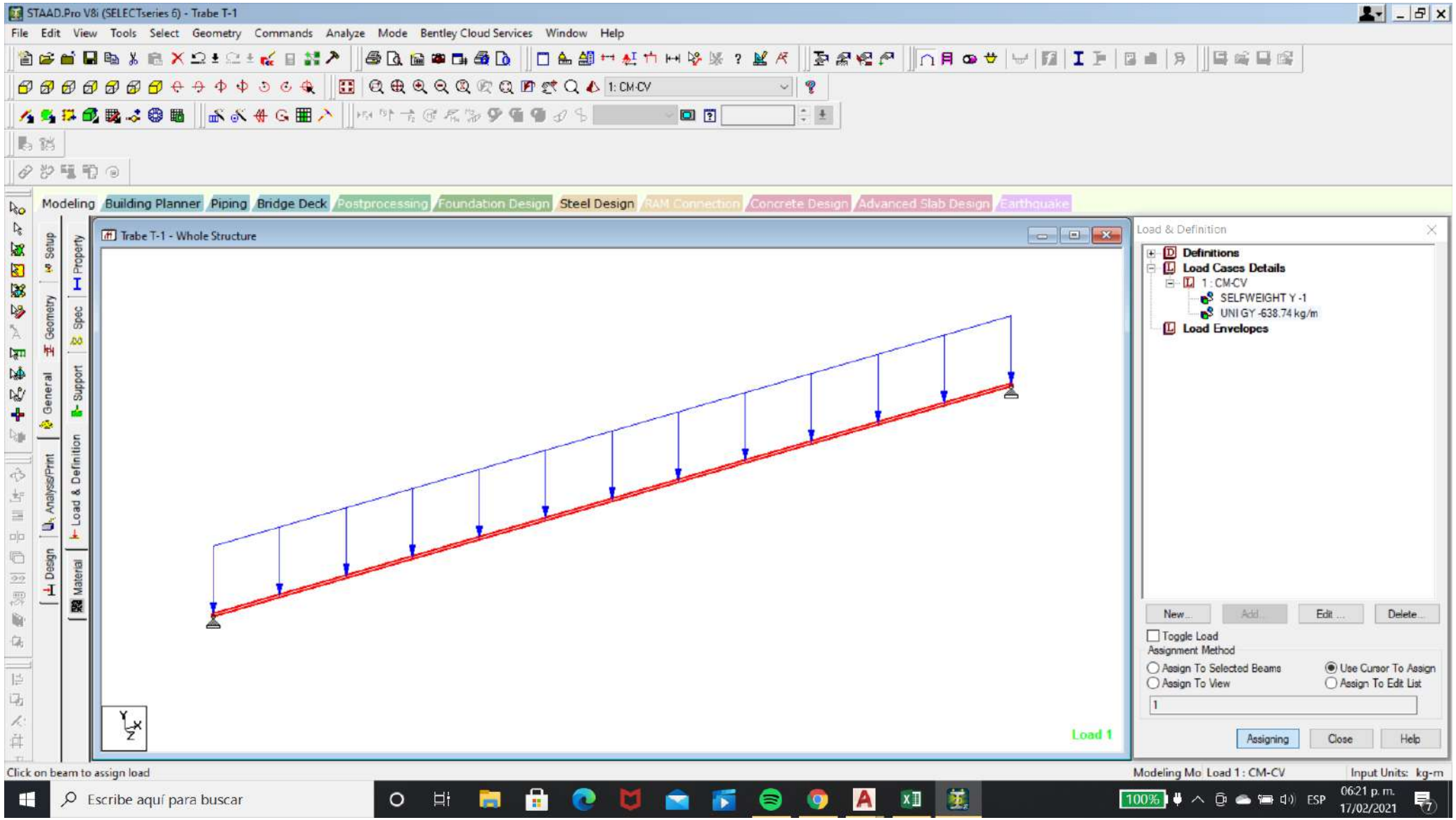
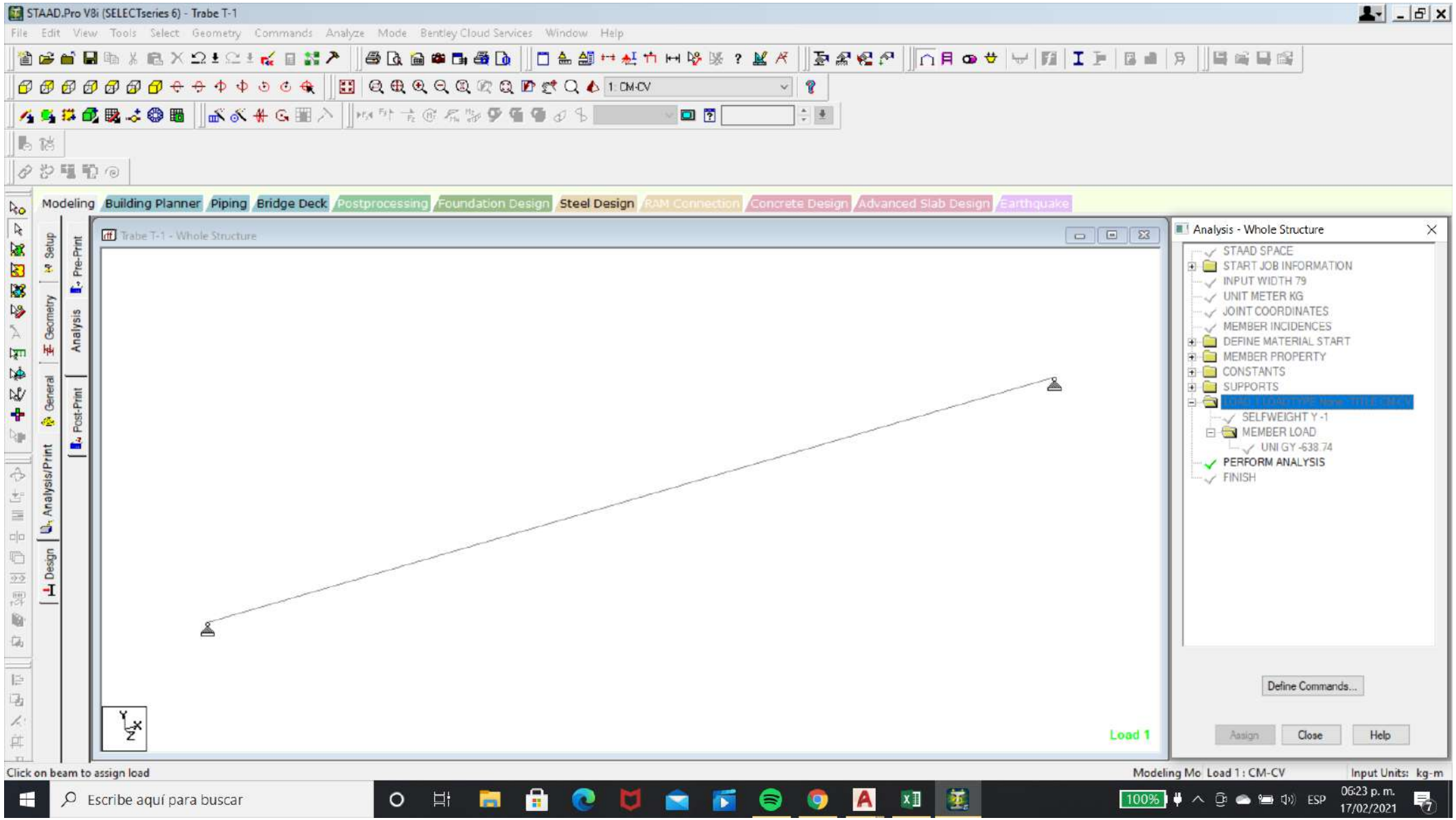
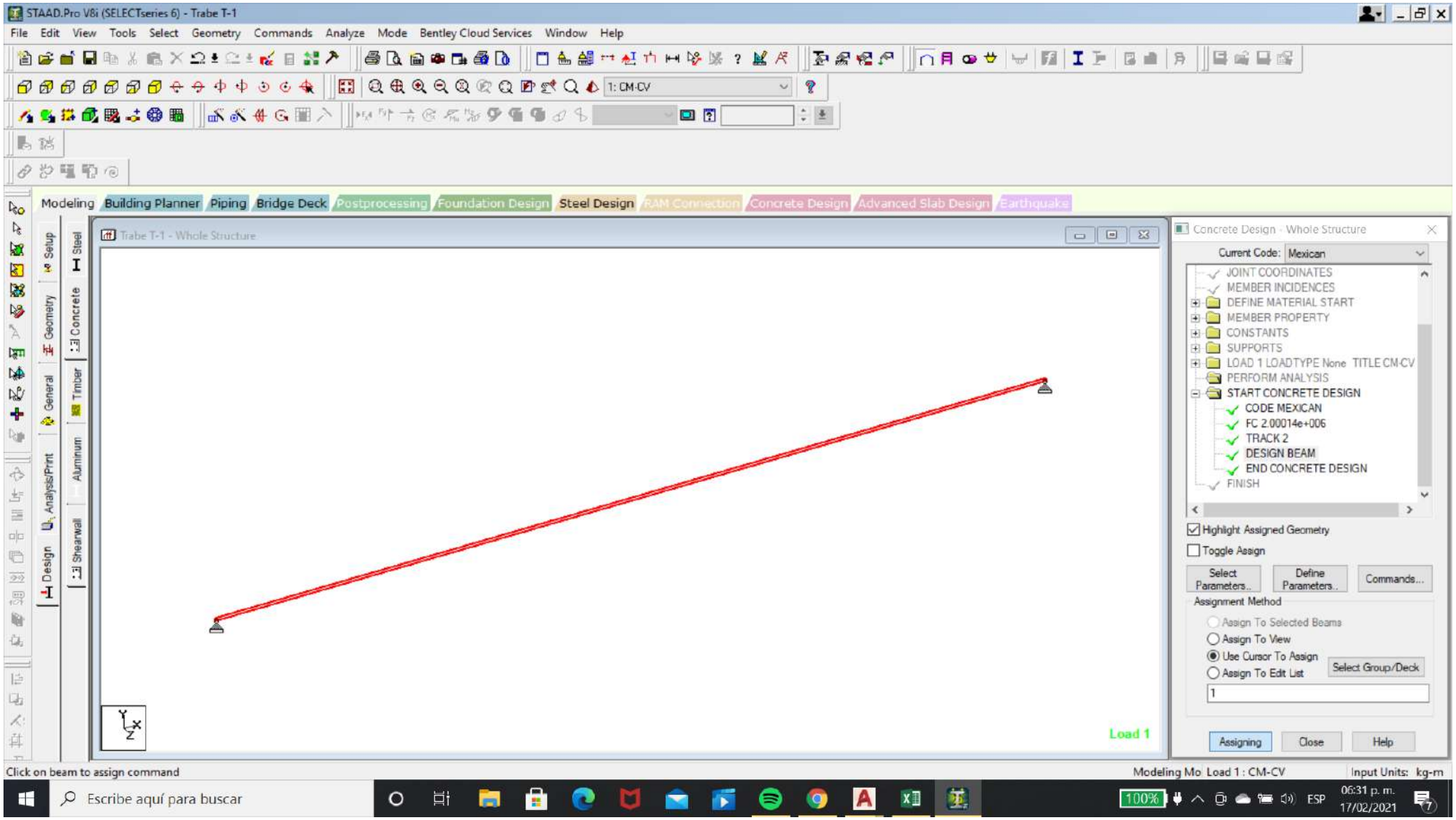
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM-CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Trabe T-1 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CM-CV
SELFWEIGHT Y -1
UNI GY -638.74 kg/m
Load Envelopes
New... Add... Edit ... Delete...
Toggle Load
Assignment Method
Assign To Selected Beams
Use Cursor To Assign
Assign To View
Assign To Edit List
1
Assigning Close Help
Click on beam to assign load
Modeling Mo Load 1 : CM-CV
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
06:21 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM-CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design Pre-Print Analysis Post-Print
Trabe T-1 - Whole Structure
Load 1
Analysis - Whole Structure
STAAD SPACE
START JOB INFORMATION
INPUT WIDTH 79
UNIT METER KG
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -638.74
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help
Click on beam to assign load
Modeling Mo Load 1 : CM-CV
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
06:23 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM-CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Steel Concrete Timber Aluminum Shearwall
Trabe T-1 - Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM-CV
PERFORM ANALYSIS
START CONCRETE DESIGN
CODE MEXICAN
FC 2.00014e+006
TRACK 2
DESIGN BEAM
END CONCRETE DESIGN
FINISH
Highlight Assigned Geometry
Toggle Assign
Select Parameters...
Define Parameters...
Commands...
Assignment Method
Assign To Selected Beams
Assign To View
Use Cursor To Assign
Assign To Edit List
Select Group/Deck
1
Assigning
Close
Help
Click on beam to assign command
Modeling Mo
Load 1 : CM-CV
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
06:31 p. m.
17/02/2021

BEAM NO. 1 DESIGN RESULTS - FLEXURE

PER CODE NTC FOR THE DESIGN AND CONSTRUCTION OF CONCRETE STRUCTURES,DDF

LEN - 2000.00(mm) FY - 412. FC - 20. SIZE - 150.00 X 200.00(mm)

LEVEL	HEIGHT (mm)	BAR INFO	FROM (mm)	TO (mm)	ANCHOR STA	ANCHOR END
1	42.	2 - 2.MM	0.	2000.	YES	YES

CRITICAL POS MOMENT= 3.49 kNm AT 1000.00 (mm) LOAD 1
REQD STEEL= 61.97 (mm2) ROW=0.0026 ROWMX=0.0152 ROWMN=0.0018
REQD COMP STEEL= 0.00 (mm2)
MAX/MIN/ACTUAL BAR SPACING= 66.22/ 37.90/ 66.22 (mm)
COMP MAX/MIN/ACTUAL BAR SPACING= 0.00/ 0.00/ 0.00 (mm)
BASIC/REQD. DEVELOPMENT LENGTH = 199.08/ 189.69(mm)

Cracked Moment of Inertia Iz at above location =0.13657E+08 mm^4

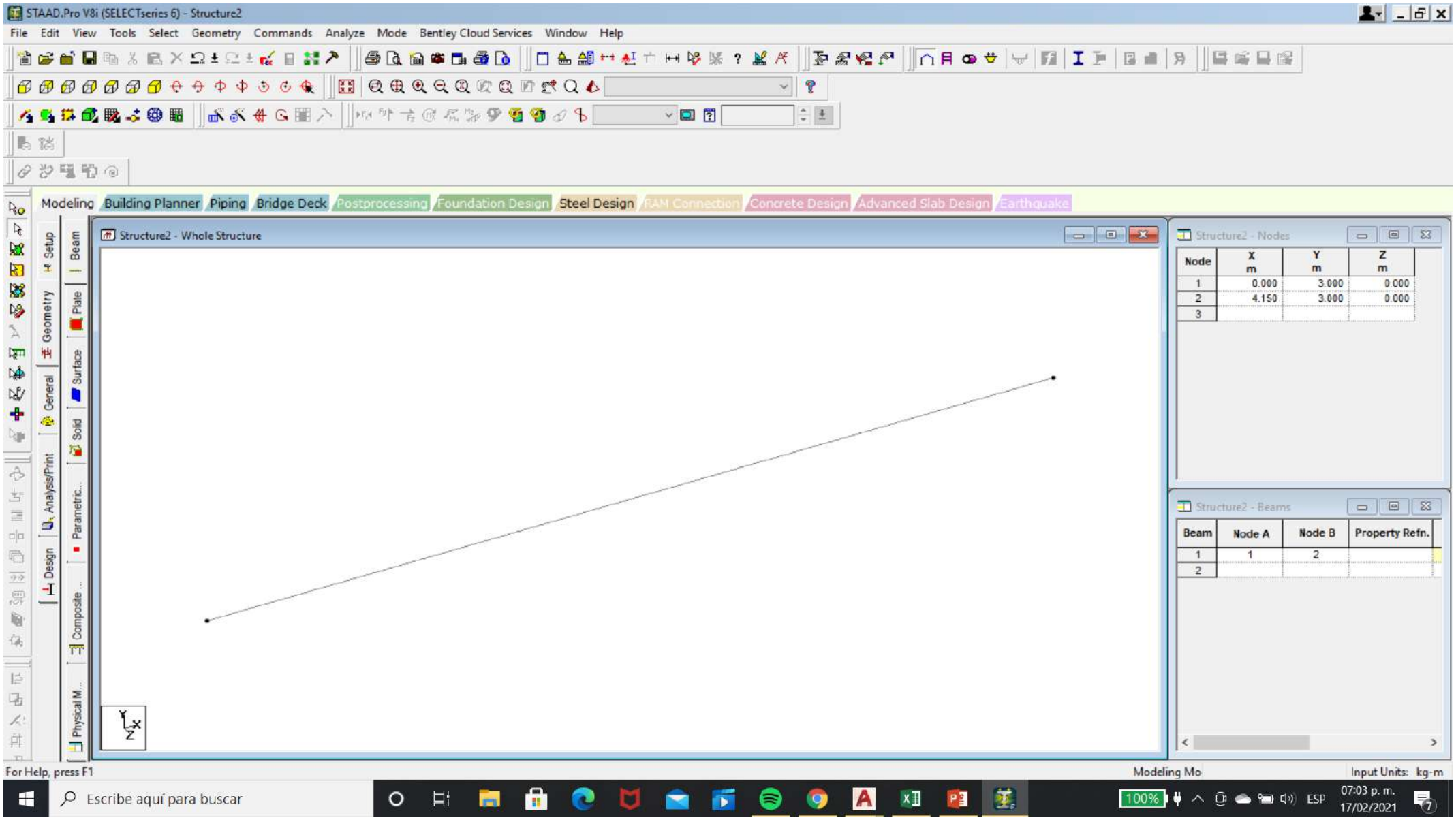
REQUIRED REINF. STEEL SUMMARY :

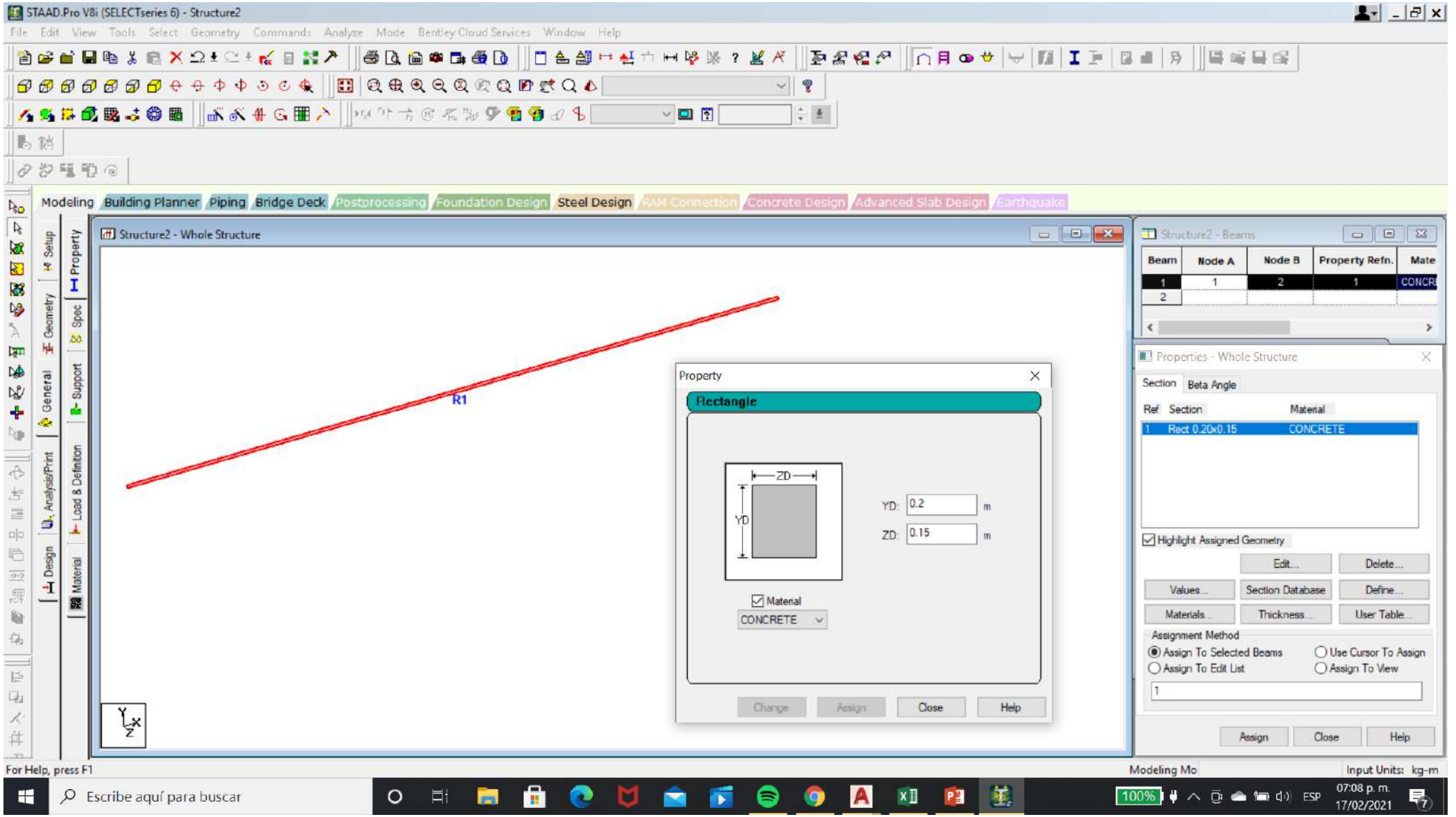
SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.00	0.00/	0.00	0./	0.00	0/	1
166.67	39.29/	0.00	1./	0.00	1/	0
333.33	49.93/	0.00	2./	0.00	1/	0
500.00	51.20/	0.00	3./	0.00	1/	0
666.67	61.13/	0.00	3./	0.00	1/	0
833.33	67.17/	0.00	3./	0.00	1/	0
1000.00	69.19/	0.00	3./	0.00	1/	0
1166.67	67.17/	0.00	3./	0.00	1/	0
1333.33	61.13/	0.00	3./	0.00	1/	0
1500.00	51.20/	0.00	3./	0.00	1/	0
1666.67	50.56/	0.00	2./	0.00	1/	0
1833.33	50.56/	0.00	1./	0.00	1/	0
2000.00	0.00/	0.00	0./	0.00	0/	1

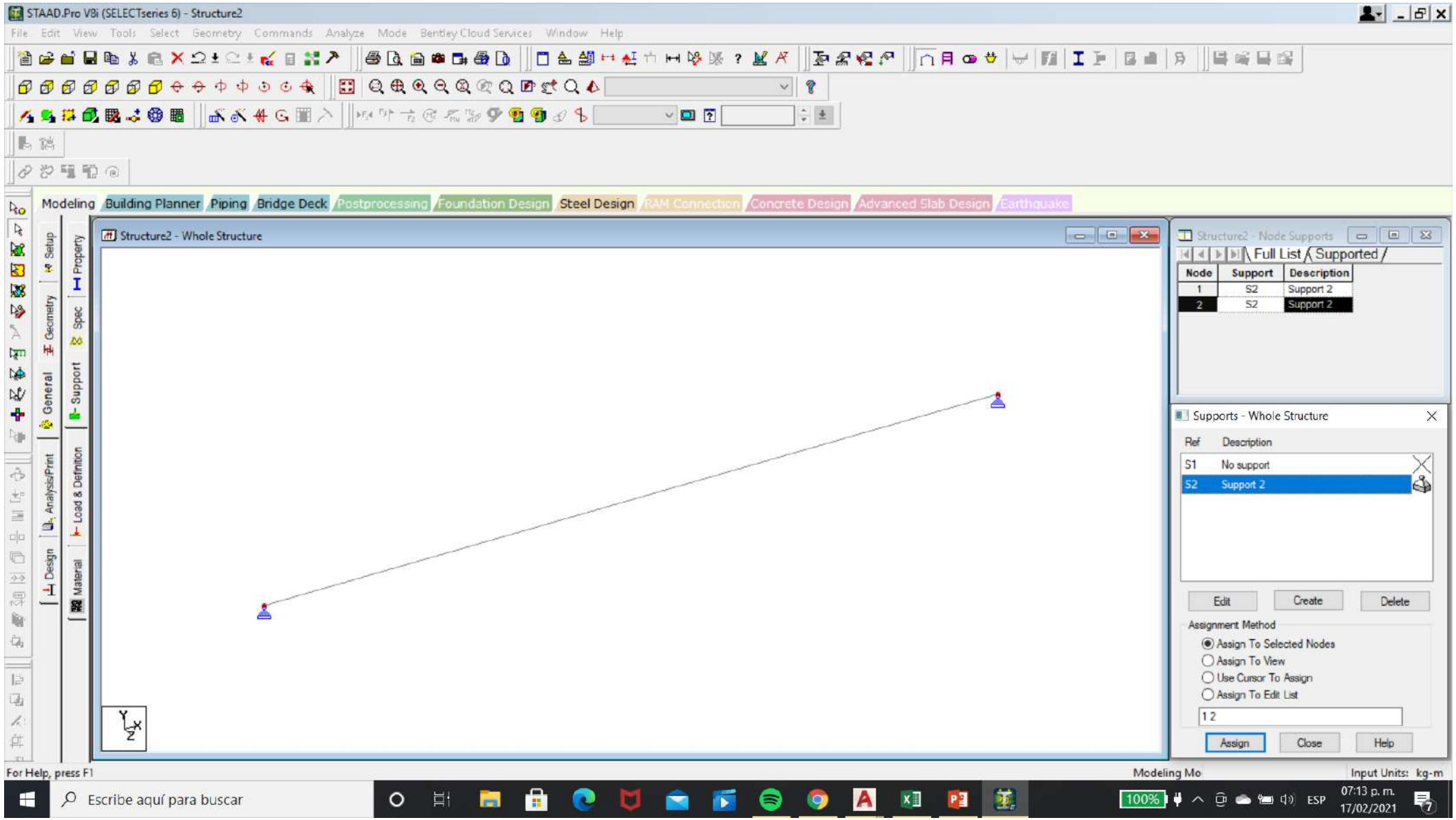
B E A M N O. 1 D E S I G N R E S U L T S - SHEAR

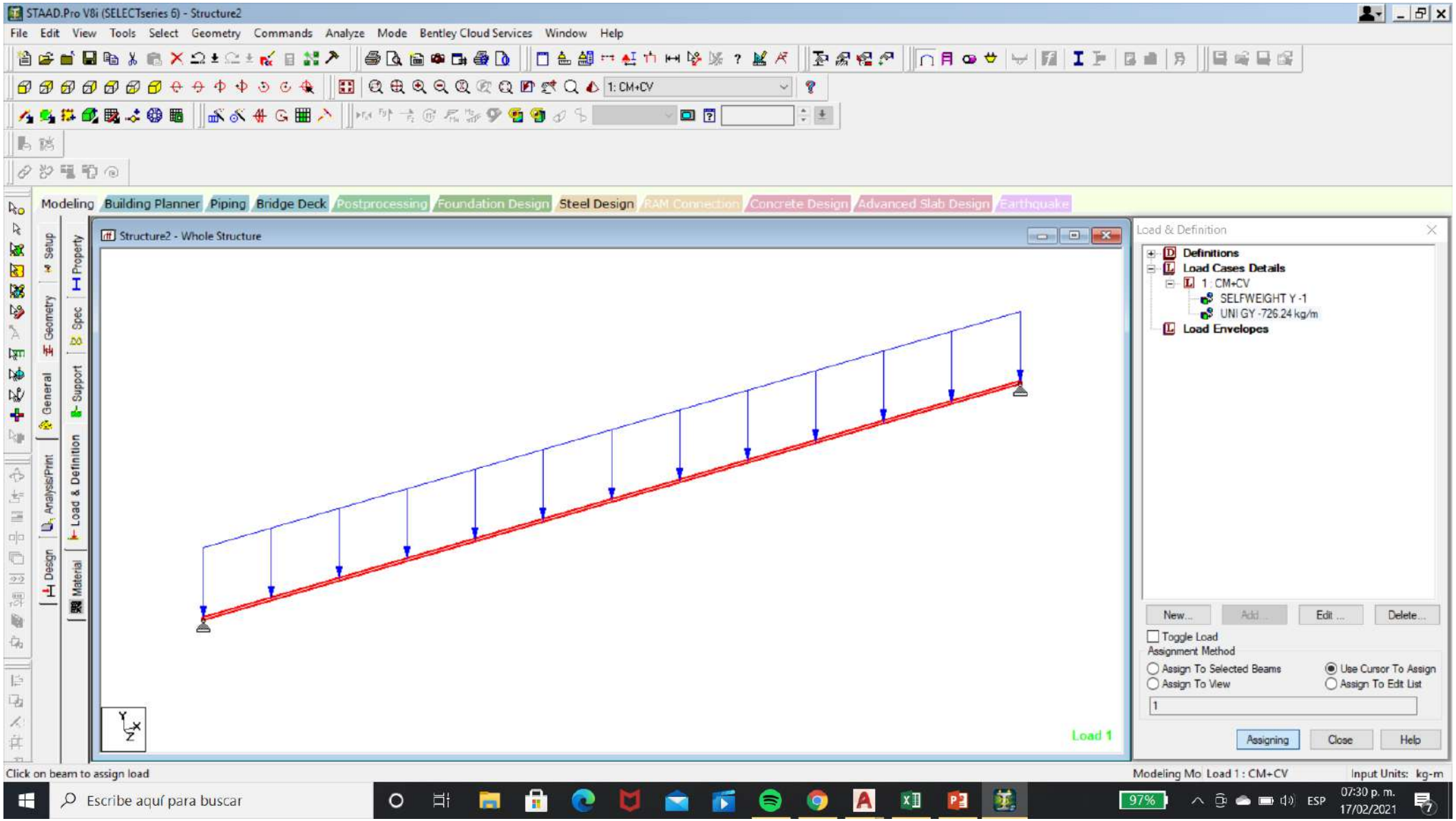
AT START SUPPORT - Vu= 0.01 KN Vc= 0.00 KN Vs= 0.00 KN
Tu= 0.00 Kn Me Tc= 0.00 Kn Me Ts= 0.00 Kn Me LOAD 1
STIRRUPS ARE NOT REQUIRED.

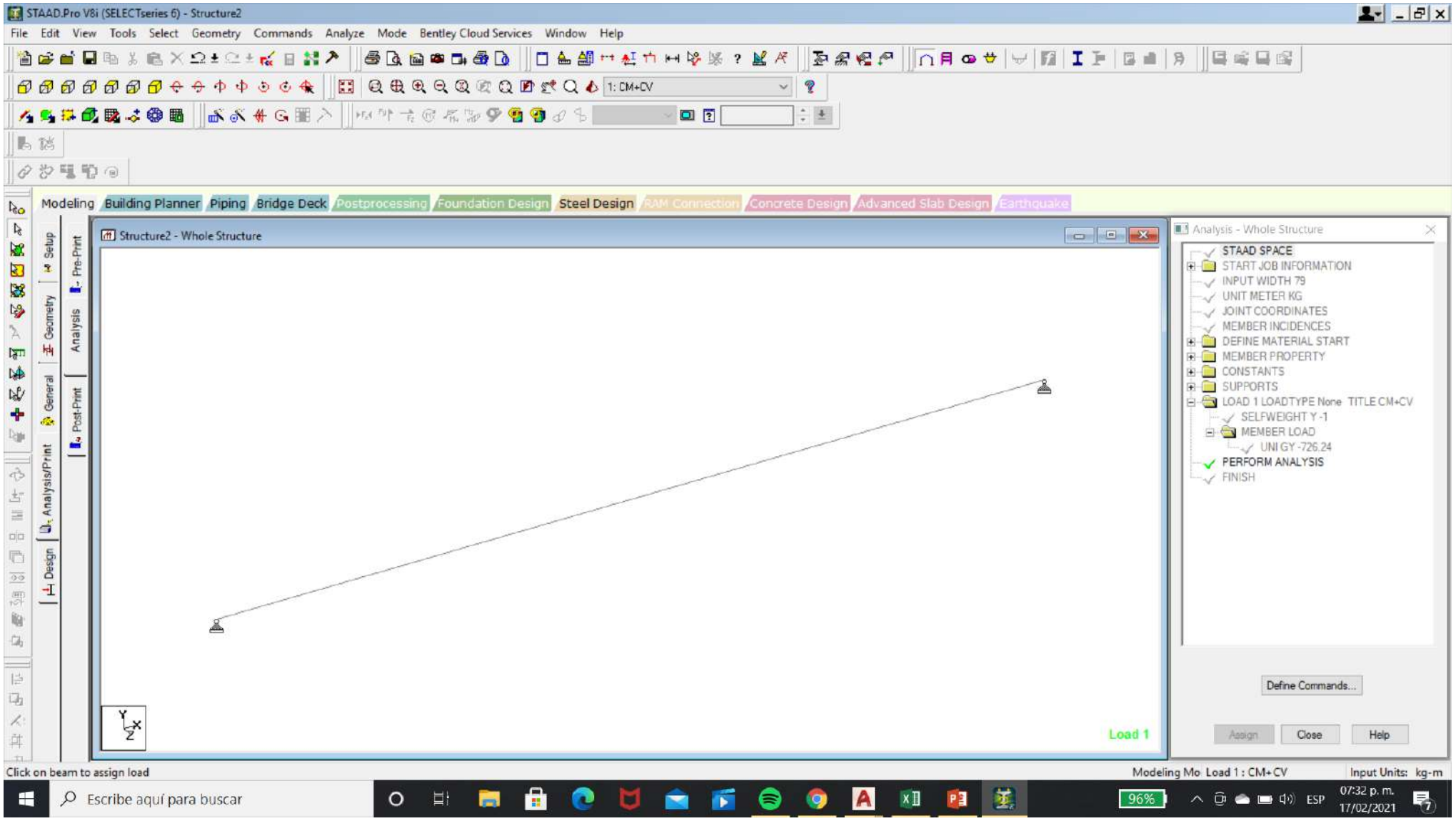
TRABE TR-2

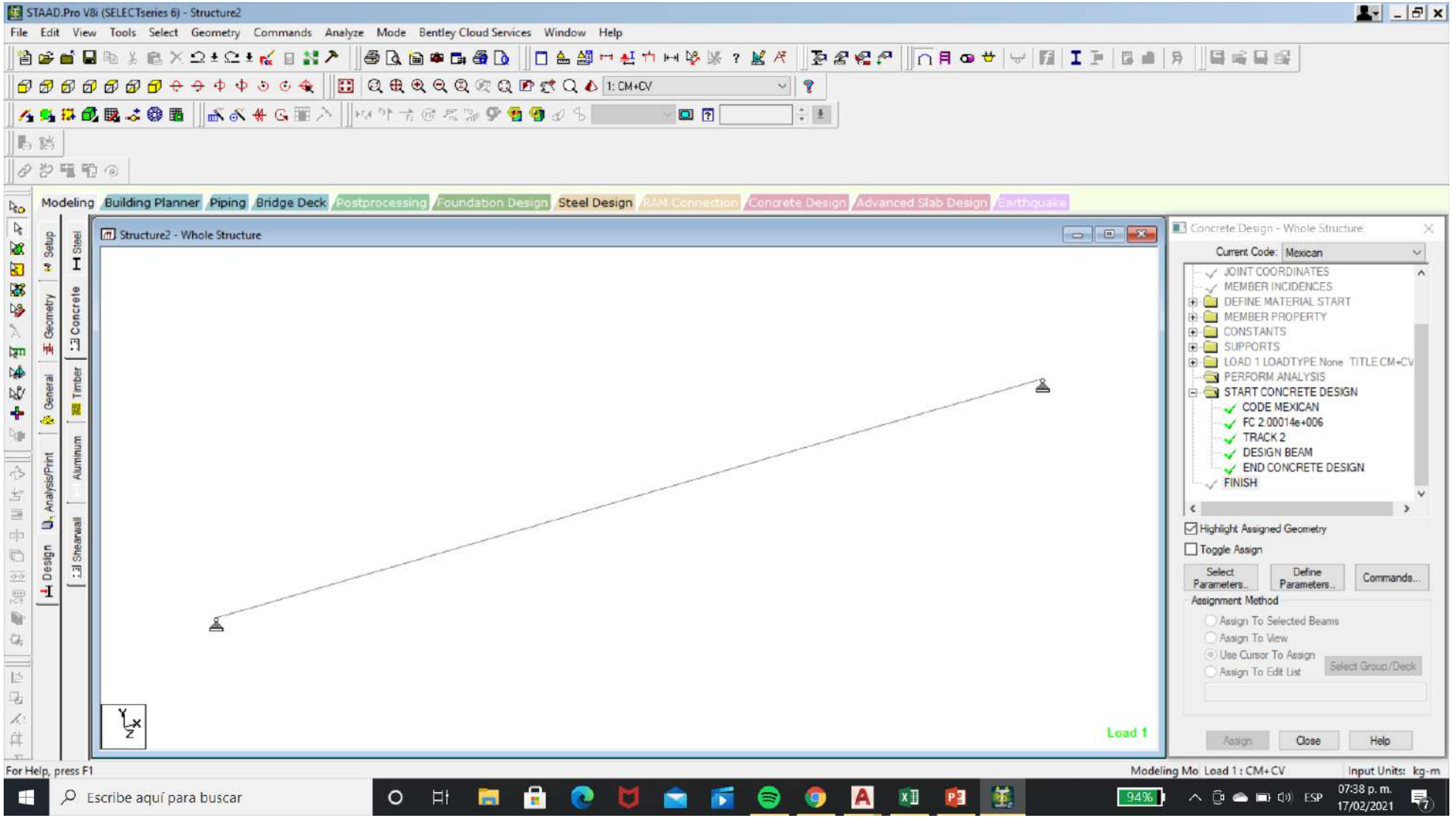

STAAD.Pro V8i (SELECTseries 6) - Structure2
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure2 - Whole Structure
Structure2 - Nodes
Node X m Y m Z m
1 0.000 3.000 0.000
2 4.150 3.000 0.000
3
Structure2 - Beams
Beam Node A Node B Property Refn.
1 1 2
2
Setup Geometry General Analysis/Print Design
Beam Plate Surface Solid Parametric... Composite ... Physical M...
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
07:03 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure2
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure2 - Whole Structure
R1
Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change Assign Close Help
Structure2 - Beams
Beam Node A Node B Property Refn. Mate
1 1 2 1 CONCR
2
Properties - Whole Structure
Section Beta Angle
Ref Section Material
1 Rect 0.20x0.15 CONCRETE
Highlight Assigned Geometry
Edit... Delete...
Values... Section Database Define...
Materials... Thickness... User Table...
Assignment Method
Assign To Selected Beams Use Cursor To Assign
Assign To Edit List Assign To View
1
Assign Close Help
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
07:08 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure2
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Structure2 - Whole Structure
Structure2 - Node Supports
Full List Supported
Node Support Description
1 S2 Support 2
2 S2 Support 2
Supports - Whole Structure
Ref Description
S1 No support
S2 Support 2
Edit Create Delete
Assignment Method
Assign To Selected Nodes
Assign To View
Use Cursor To Assign
Assign To Edit List
1 2
Assign Close Help
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
100%
ESP
07:13 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure2
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Structure2 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1: CM+CV
SELFWEIGHT Y -1
UNI GY -726.24 kg/m
Load Envelopes
New... Add... Edit ... Delete...
Toggle Load
Assignment Method
Assign To Selected Beams
Use Cursor To Assign
Assign To View
Assign To Edit List
1
Assigning Close Help
Click on beam to assign load
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
97%
ESP
07:30 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure2
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design Pre-Print Analysis Post-Print
Structure2 - Whole Structure
Load 1
Analysis - Whole Structure
STAAD SPACE
START JOB INFORMATION
INPUT WIDTH 79
UNIT METER KG
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -726.24
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help
Click on beam to assign load
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
96%
ESP
07:32 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure2
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure2 - Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
PERFORM ANALYSIS
START CONCRETE DESIGN
CODE MEXICAN
FC 2.00014e+006
TRACK 2
DESIGN BEAM
END CONCRETE DESIGN
FINISH
Highlight Assigned Geometry
Toggle Assign
Select Parameters..
Define Parameters..
Commands...
Assignment Method
Assign To Selected Beams
Assign To View
Use Cursor To Assign
Assign To Edit List
Select Group/Deck
Assign
Close
Help
For Help, press F1
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
94%
ESP
07:38 p. m.
17/02/2021

BEAM NO. 1 DESIGN RESULTS - FLEXURE

PER CODE NTC FOR THE DESIGN AND CONSTRUCTION OF CONCRETE STRUCTURES,DDF

LEN - 4150.00(mm) FY - 412. FC - 20. SIZE - 150.00 X 200.00(mm)

LEVEL	HEIGHT (mm)	BAR INFO	FROM (mm)	TO (mm)	ANCHOR STA	ANCHOR END
1	42.	2 - 2.MM	53.	3924.	NO	NO

CRITICAL POS MOMENT= 1.52 kNm AT 2075.00 (mm) LOAD 1
REQD STEEL= 39.29 (mm2) ROW=0.0017 ROWMX=0.0152 ROWMN=0.0018
REQD COMP STEEL= 0.00 (mm2)
MAX/MIN/ACTUAL BAR SPACING= 66.22/ 37.90/ 66.22 (mm)
COMP MAX/MIN/ACTUAL BAR SPACING= 0.00/ 0.00/ 0.00 (mm)
BASIC/REQD. DEVELOPMENT LENGTH = 199.08/ 120.26(mm)

Cracked Moment of Inertia Iz at above location =0.13657E+08 mm^4

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.00	0.00/	0.00	0./	0.00	0/	1
345.83	39.29/	0.00	0./	0.00	1/	0
691.67	39.29/	0.00	1./	0.00	1/	0
1037.50	39.29/	0.00	1./	0.00	1/	0

BASIC/REQD. DEVELOPMENT LENGTH = 199.08/ 120.26(mm)

Cracked Moment of Inertia Iz at above location =0.13657E+08 mm^4

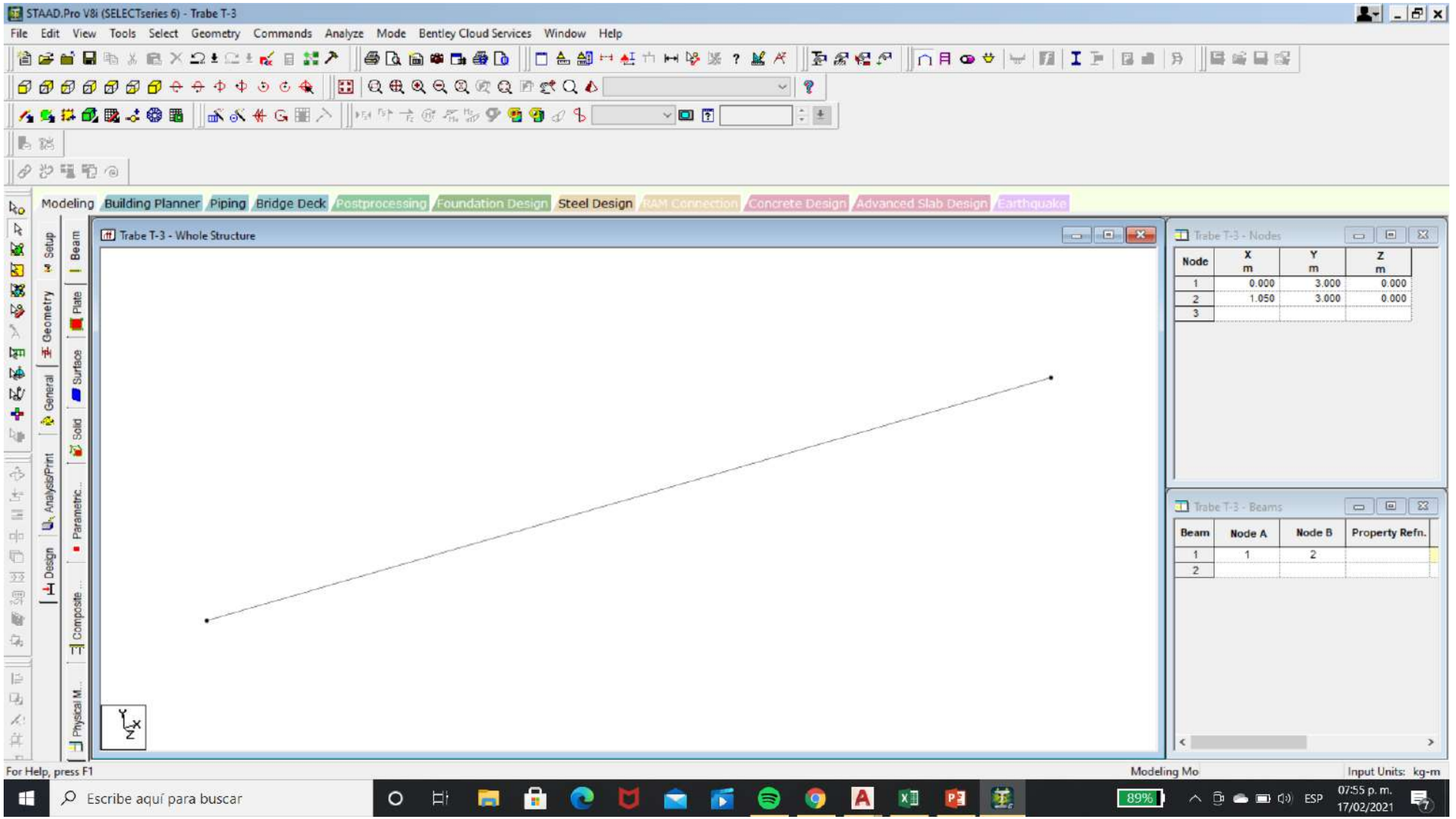
REQUIRED REINF. STEEL SUMMARY :

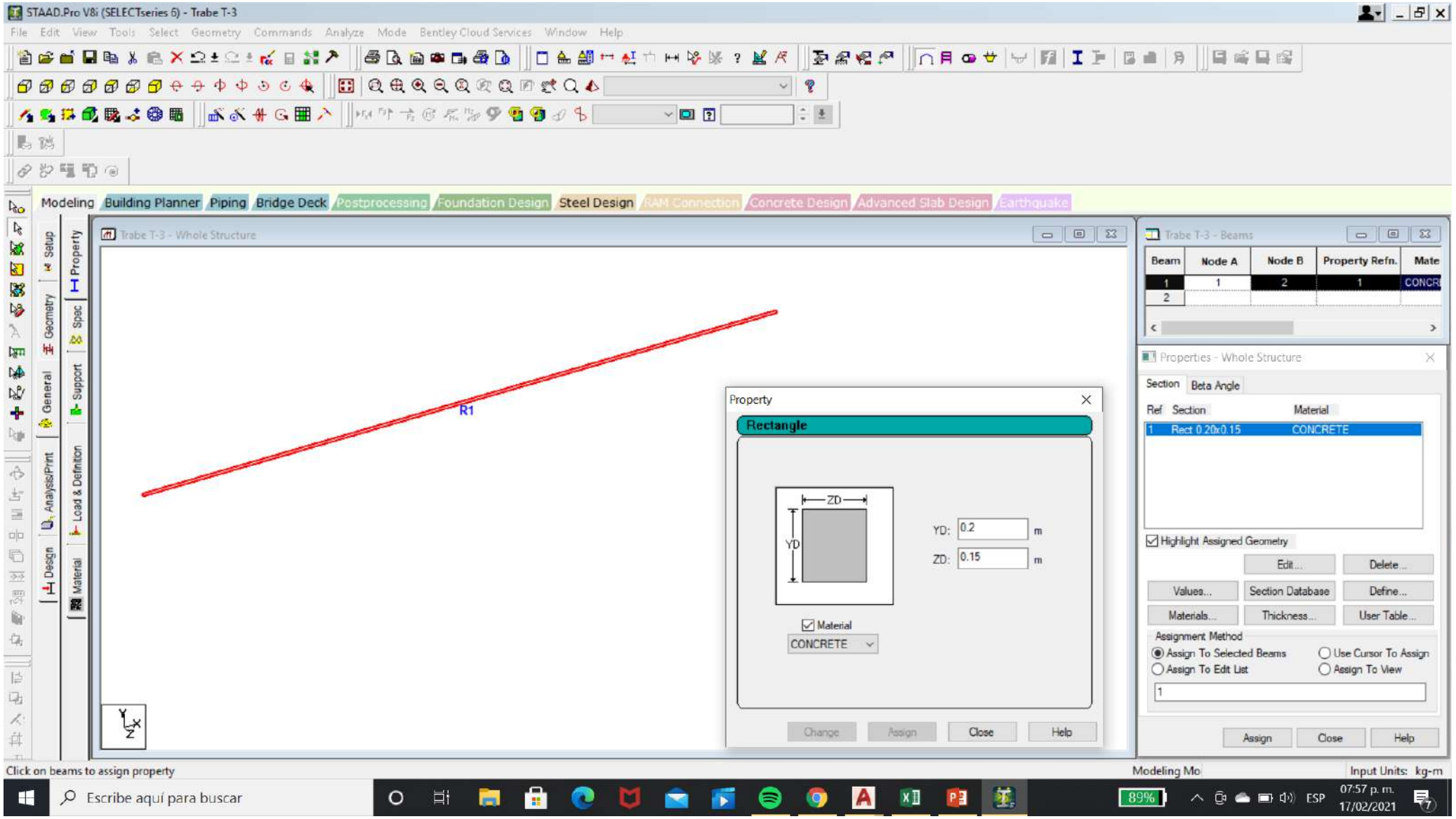
SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.00	0.00/	0.00	0./	0.00	0/	1
345.83	39.29/	0.00	0./	0.00	1/	0
691.67	39.29/	0.00	1./	0.00	1/	0
1037.50	39.29/	0.00	1./	0.00	1/	0
1383.33	39.29/	0.00	1./	0.00	1/	0
1729.17	39.29/	0.00	1./	0.00	1/	0
2075.00	39.29/	0.00	2./	0.00	1/	0
2420.83	39.29/	0.00	1./	0.00	1/	0
2766.67	39.29/	0.00	1./	0.00	1/	0
3112.50	39.29/	0.00	1./	0.00	1/	0
3458.33	39.29/	0.00	1./	0.00	1/	0
3804.17	39.29/	0.00	0./	0.00	1/	0
4150.00	0.00/	0.00	0./	0.00	0/	1

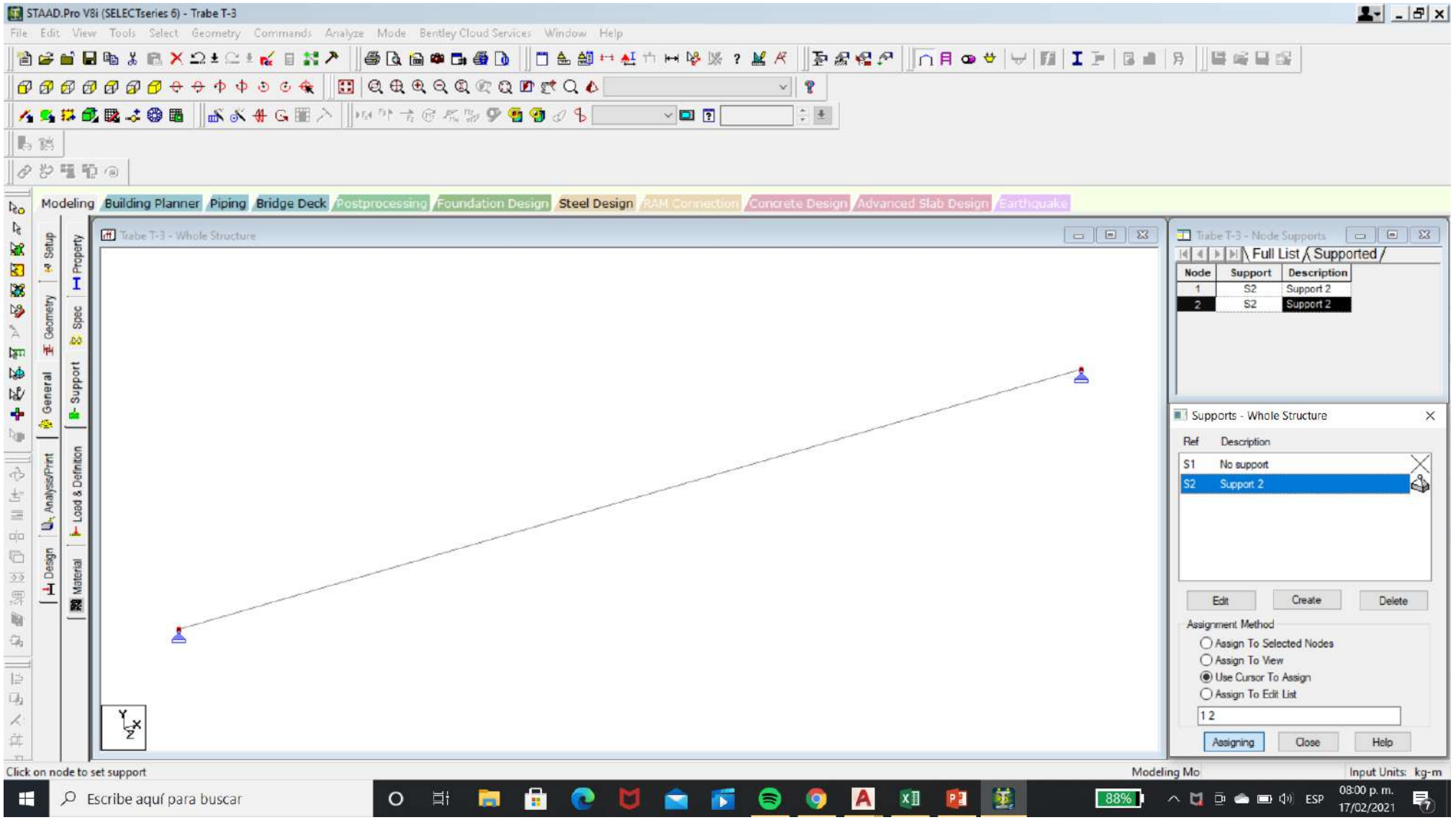
B E A M N O. 1 D E S I G N R E S U L T S - SHEAR

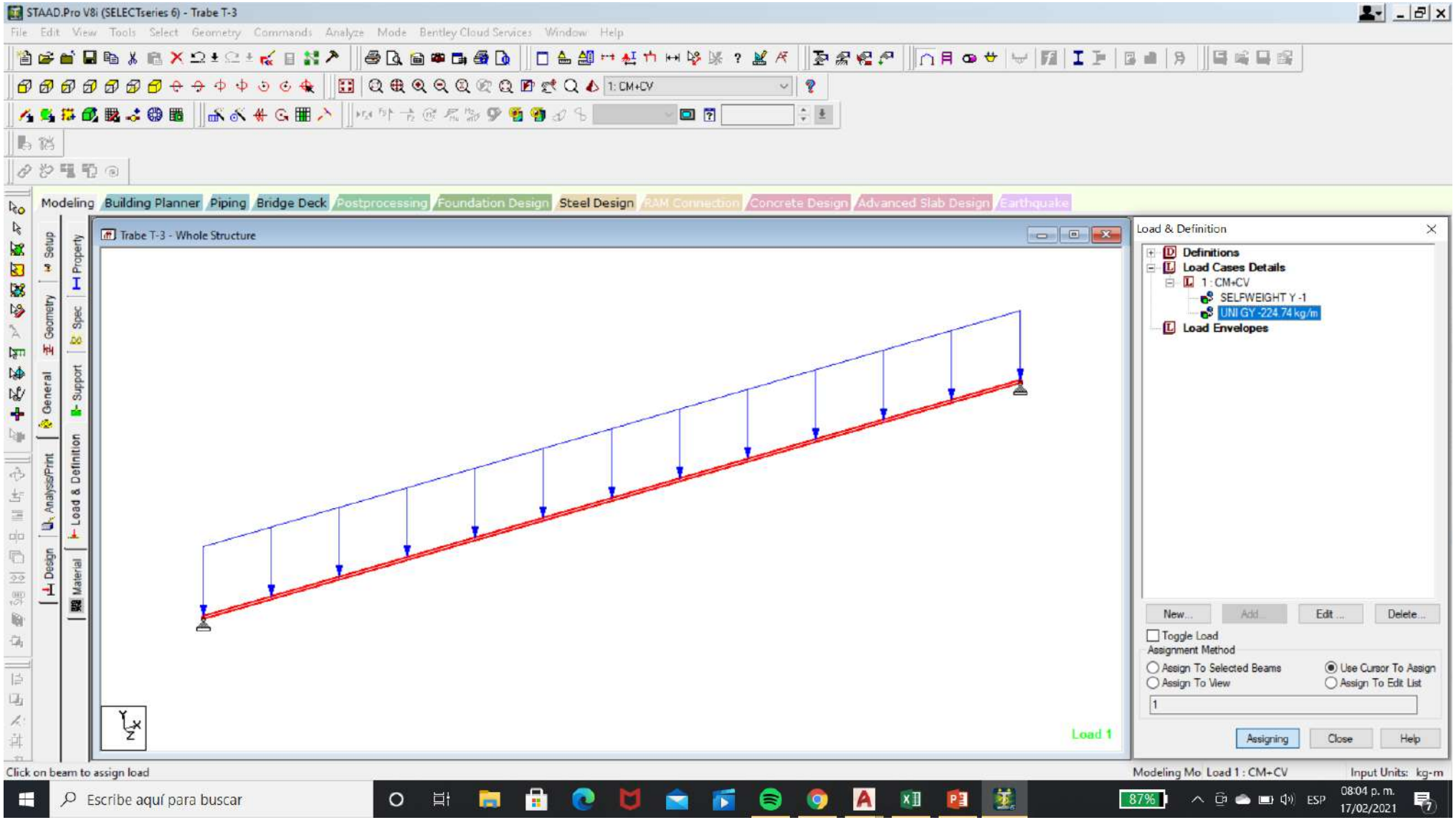
AT START SUPPORT - Vu= 0.00 KN Vc= 0.00 KN Vs= 0.00 KN
Tu= 0.00 Kn Me Tc= 0.00 Kn Me Ts= 0.00 Kn Me LOAD 1
STIRRUPS ARE NOT REQUIRED.

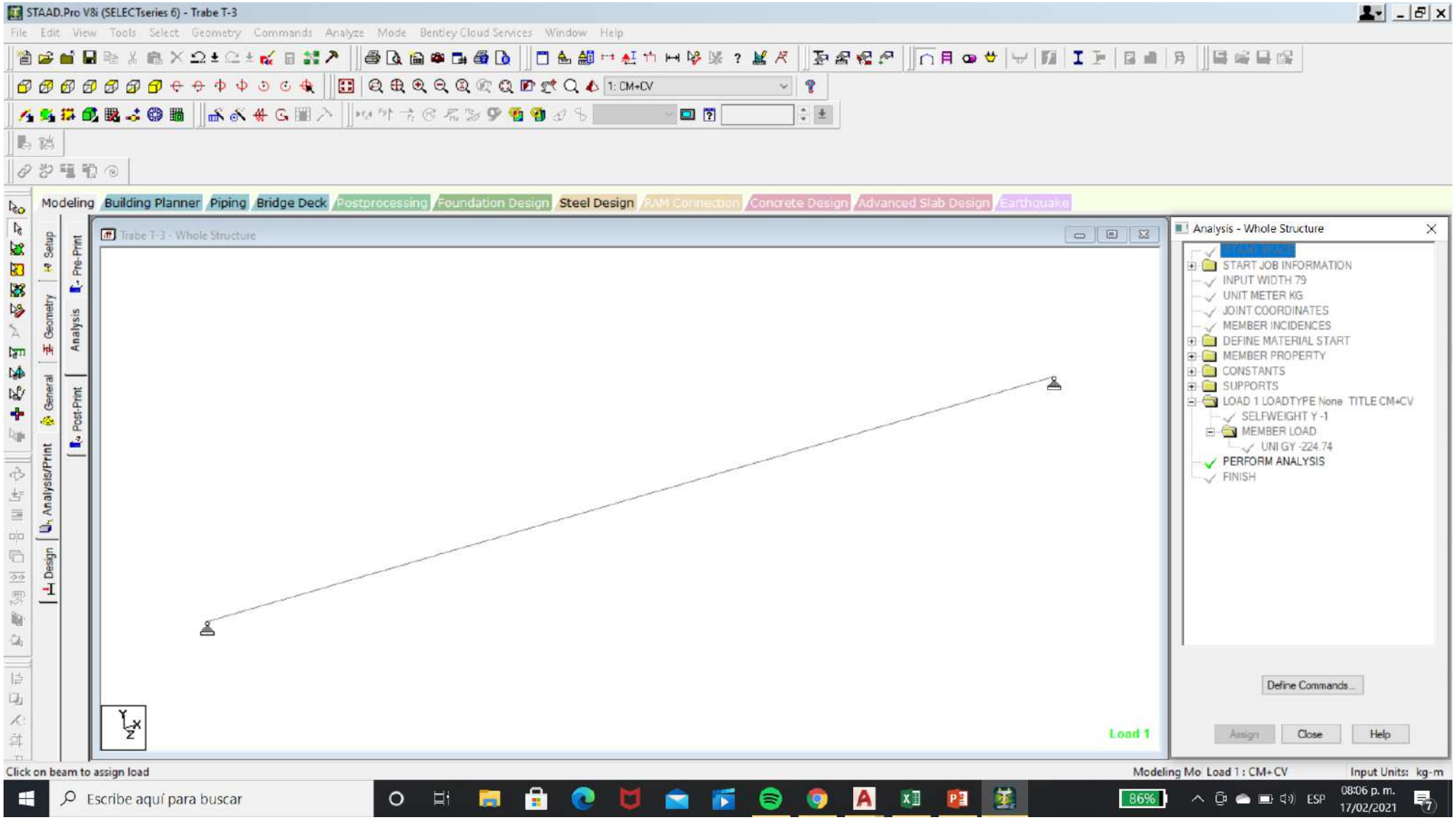
TRABE TR-3

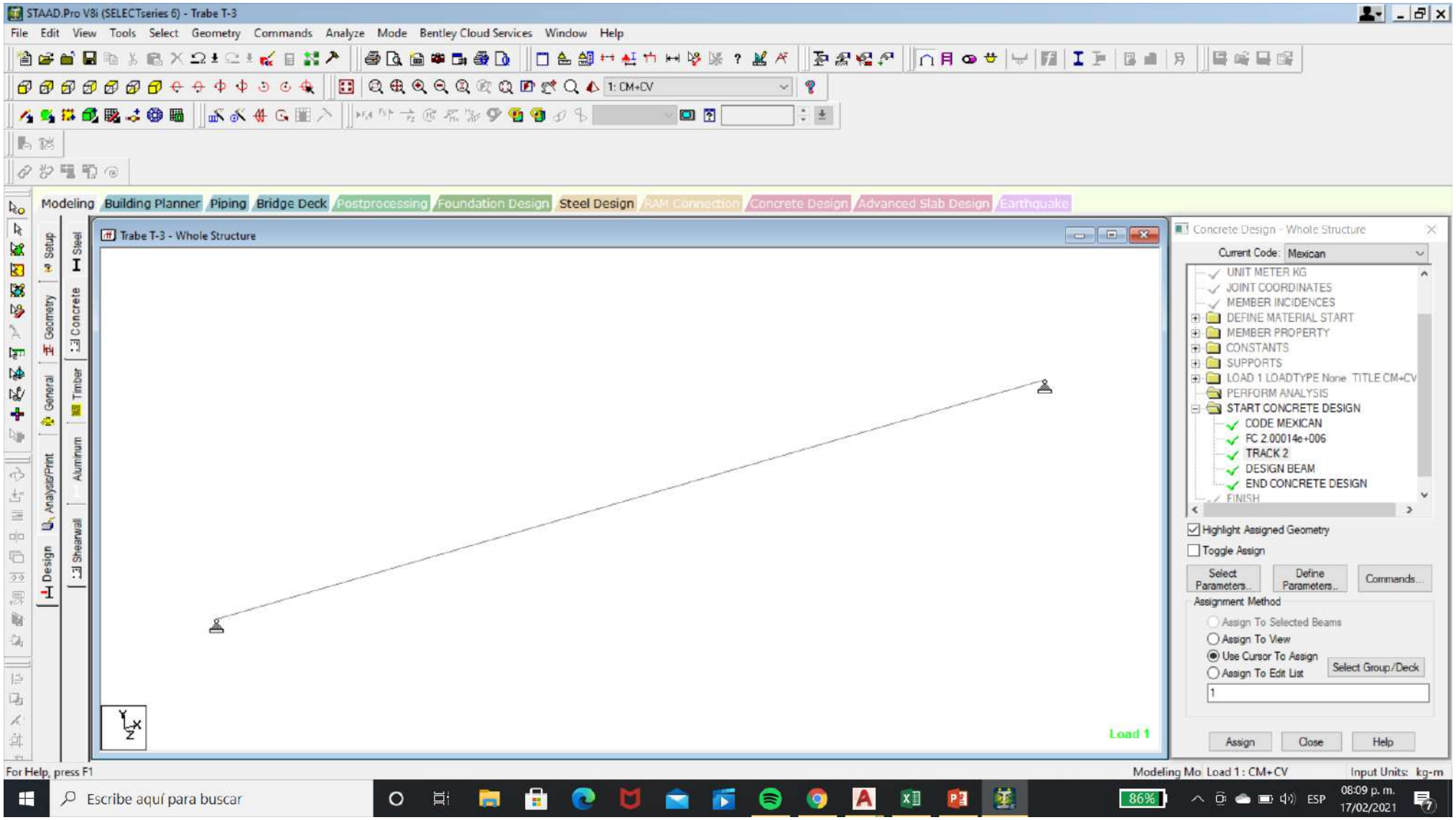

STAAD.Pro V8i (SELECTseries 6) - Trabe T-3
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Beam Plate Surface Solid Parametric... Composite... Physical M...
Trabe T-3 - Whole Structure
Trabe T-3 - Nodes
Node X m Y m Z m
1 0.000 3.000 0.000
2 1.050 3.000 0.000
3
Trabe T-3 - Beams
Beam Node A Node B Property Refn.
1 1 2
2
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
89%
ESP
07:55 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-3
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Trabe T-3 - Whole Structure
R1
Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change Assign Close Help
Trabe T-3 - Beams
Beam Node A Node B Property Refn. Mate
1 1 2 1 CONCR
2
Properties - Whole Structure
Section Beta Angle
Ref Section Material
1 Rect 0.20x0.15 CONCRETE
Highlight Assigned Geometry
Edit... Delete...
Values... Section Database Define...
Materials... Thickness... User Table...
Assignment Method
Assign To Selected Beams Use Cursor To Assign
Assign To Edit List Assign To View
1
Assign Close Help
Click on beams to assign property
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
89%
ESP
07:57 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-3
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Trabe T-3 - Whole Structure
Trabe T-3 - Node Supports
Full List Supported
Node Support Description
1 S2 Support 2
2 S2 Support 2
Supports - Whole Structure
Ref Description
S1 No support
S2 Support 2
Edit Create Delete
Assignment Method
Assign To Selected Nodes
Assign To View
Use Cursor To Assign
Assign To Edit List
1 2
Assigning Close Help
Click on node to set support
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
88%
ESP
08:00 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-3
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Trabe T-3 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CM+CV
SELFWEIGHT Y -1
UNI GY -224.74 kg/m
Load Envelopes
New... Add... Edit ... Delete...
Toggle Load
Assignment Method
Assign To Selected Beams
Use Cursor To Assign
Assign To View
Assign To Edit List
1
Assigning Close Help
Click on beam to assign load
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
87%
ESP
08:04 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-3
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Pre-Print Analysis Post-Print
Trabe T-3 - Whole Structure
Load 1
Analysis - Whole Structure
START SPACE
START JOB INFORMATION
INPUT WIDTH 79
UNIT METER KG
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -224.74
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help
Click on beam to assign load
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
86%
ESP
08:06 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Trabe T-3
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Steel Concrete Timber Aluminum Shearwall
Trabe T-3 - Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
UNIT METER KG
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
PERFORM ANALYSIS
START CONCRETE DESIGN
CODE MEXICAN
FC 2.00014e+006
TRACK 2
DESIGN BEAM
END CONCRETE DESIGN
FINISH
Highlight Assigned Geometry
Toggle Assign
Select Parameters...
Define Parameters...
Commands...
Assignment Method
Assign To Selected Beams
Assign To View
Use Cursor To Assign
Assign To Edit List
Select Group/Deck
1
Assign
Close
Help
For Help, press F1
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
86%
ESP
08:09 p. m.
17/02/2021

BEAM NO. 1 DESIGN RESULTS - FLEXURE

PER CODE NTC FOR THE DESIGN AND CONSTRUCTION OF CONCRETE STRUCTURES,DDF

LEN - 1050.00(mm) FY - 412. FC - 20. SIZE - 150.00 X 200.00(mm)

LEVEL	HEIGHT (mm)	BAR INFO	FROM (mm)	TO (mm)	ANCHOR STA	ANCHOR END
1	42.	2 - 2.MM	0.	1050.	YES	YES

CRITICAL POS MOMENT=	0.40 kNm	AT 525.00 (mm)	LOAD 1
REQD STEEL=	39.29 (mm2)	ROW=0.0017 ROWMX=0.0152	ROWMN=0.0018
REQD COMP STEEL=	0.00 (mm2)		
MAX/MIN/ACTUAL BAR SPACING=	66.22/ 37.90/ 66.22 (mm)		
COMP MAX/MIN/ACTUAL BAR SPACING=	0.00/ 0.00/ 0.00 (mm)		
BASIC/REQD. DEVELOPMENT LENGTH =	199.08/ 178.30(mm)		

Cracked Moment of Inertia Iz at above location =0.13657E+08 mm^4

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.00	0.00/	0.00	0./	0.00	0/	1
87.50	39.29/	0.00	0./	0.00	1/	0
175.00	39.29/	0.00	0./	0.00	1/	0
262.50	39.29/	0.00	0./	0.00	1/	0
350.00	39.29/	0.00	0./	0.00	1/	0
437.50	39.29/	0.00	0./	0.00	1/	0
525.00	39.29/	0.00	0./	0.00	1/	0
612.50	39.29/	0.00	0./	0.00	1/	0
700.00	39.29/	0.00	0./	0.00	1/	0
787.50	39.29/	0.00	0./	0.00	1/	0
875.00	39.29/	0.00	0./	0.00	1/	0
962.50	39.29/	0.00	0./	0.00	1/	0
1050.00	0.00/	0.00	0./	0.00	0/	1

COMP MAX/MIN/ACTUAL BAR SPACING=	0.00/ 0.00/ 0.00 (mm)		
BASIC/REQD. DEVELOPMENT LENGTH =	199.08/ 178.30(mm)		

Cracked Moment of Inertia Iz at above location =0.13657E+08 mm^4

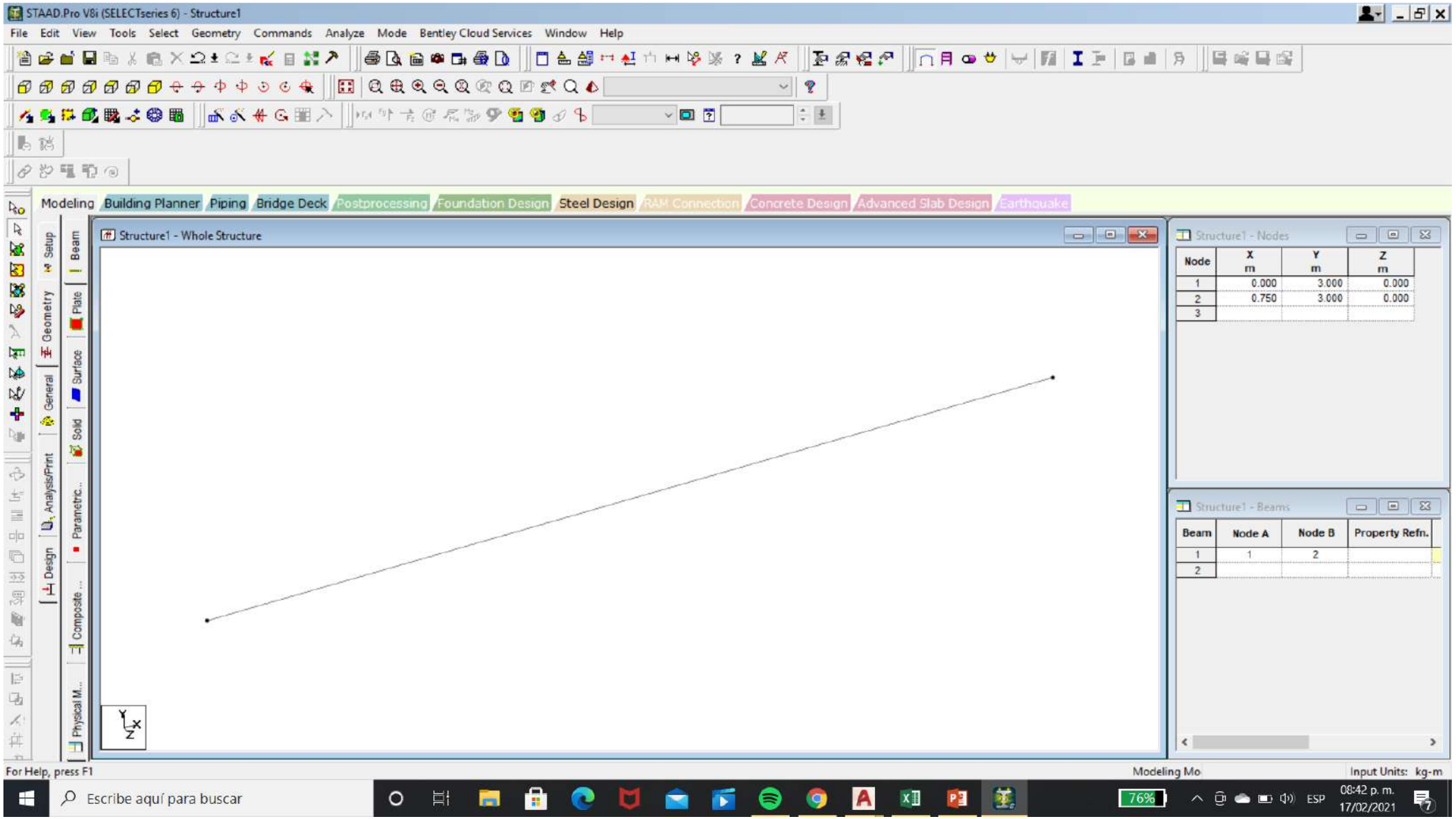
REQUIRED REINF. STEEL SUMMARY :

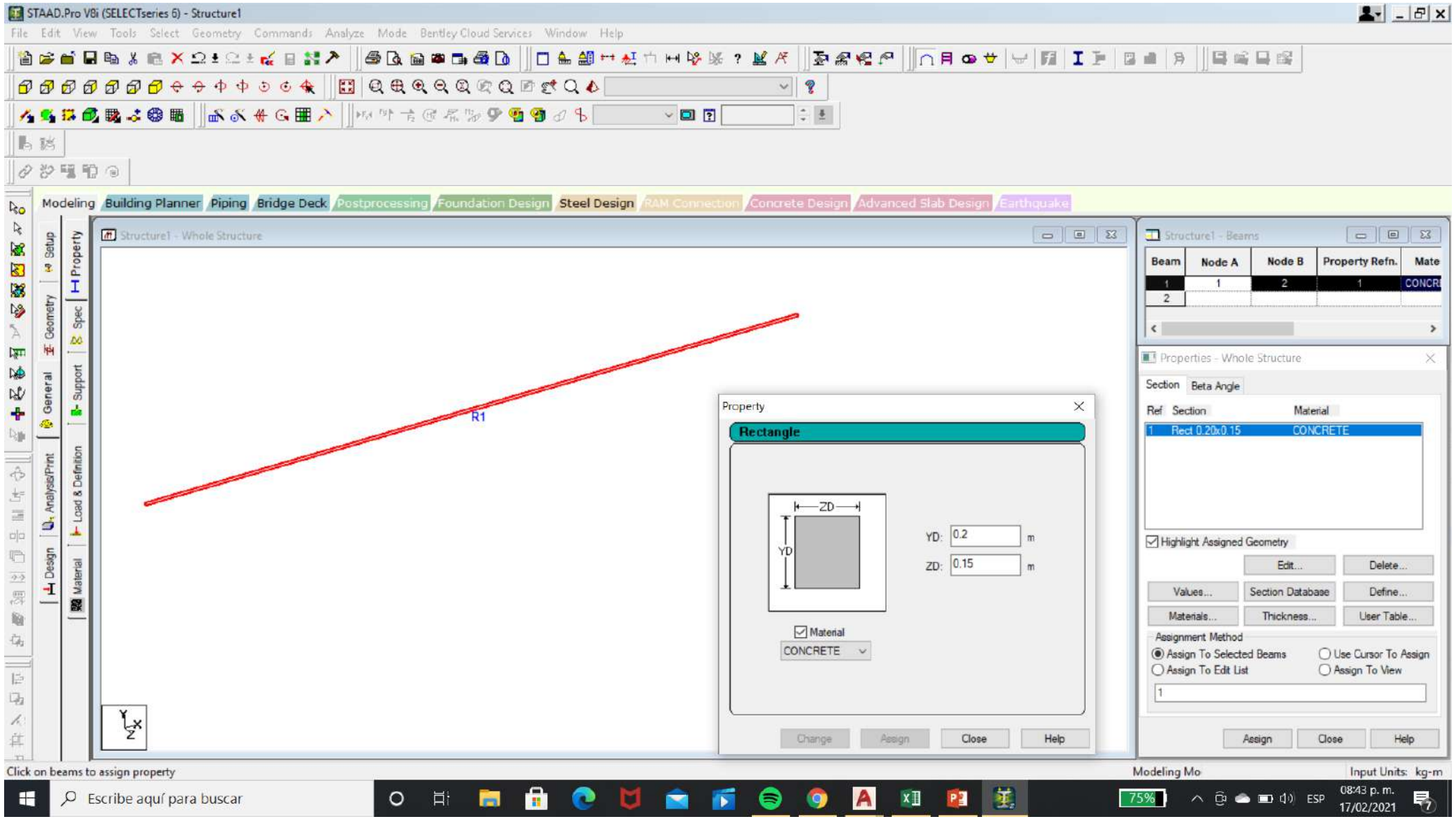
SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.00	0.00/	0.00	0./	0.00	0/	1
87.50	39.29/	0.00	0./	0.00	1/	0
175.00	39.29/	0.00	0./	0.00	1/	0
262.50	39.29/	0.00	0./	0.00	1/	0
350.00	39.29/	0.00	0./	0.00	1/	0
437.50	39.29/	0.00	0./	0.00	1/	0
525.00	39.29/	0.00	0./	0.00	1/	0
612.50	39.29/	0.00	0./	0.00	1/	0
700.00	39.29/	0.00	0./	0.00	1/	0
787.50	39.29/	0.00	0./	0.00	1/	0
875.00	39.29/	0.00	0./	0.00	1/	0
962.50	39.29/	0.00	0./	0.00	1/	0
1050.00	0.00/	0.00	0./	0.00	0/	1

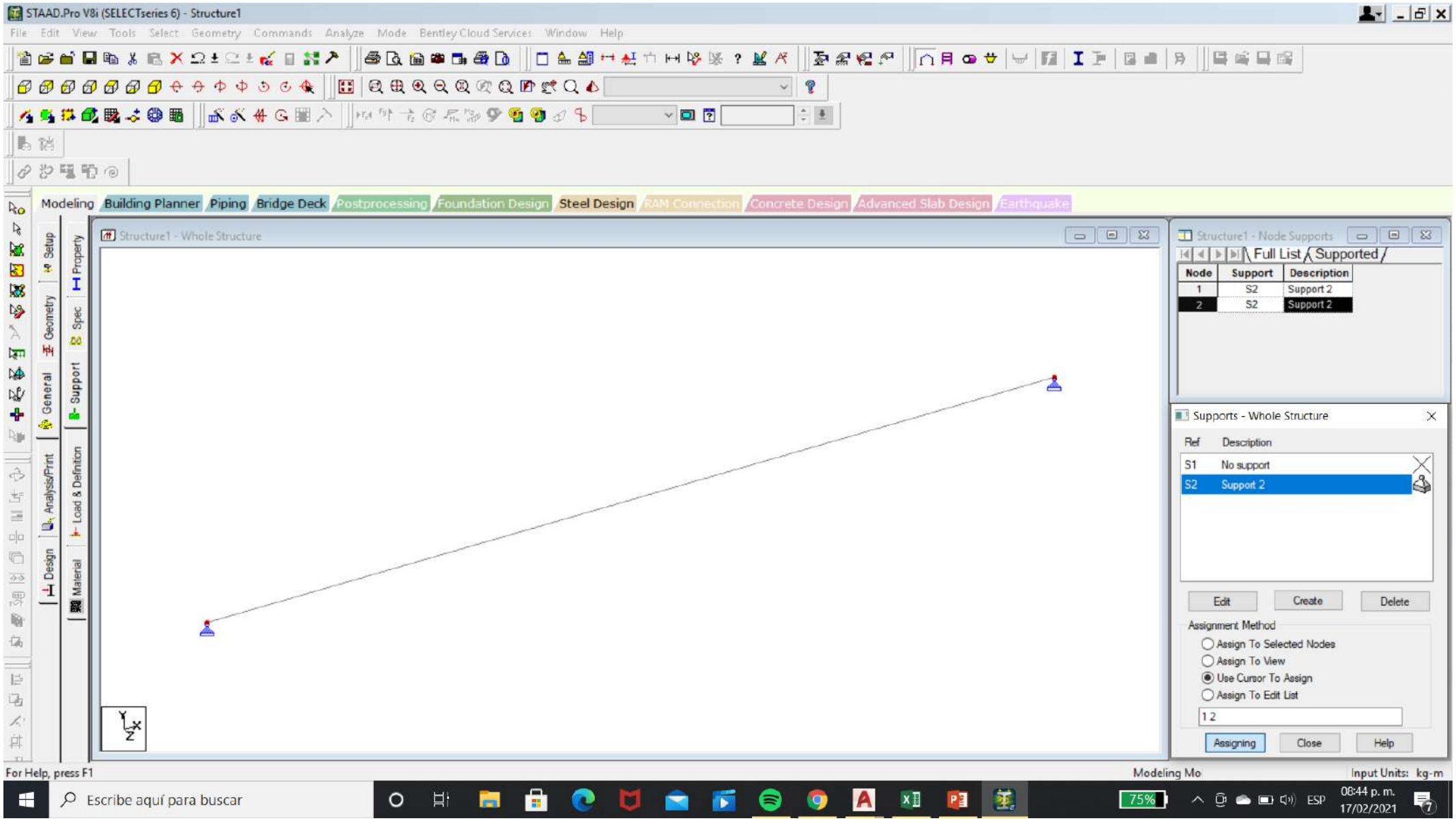
B E A M N O. 1 D E S I G N R E S U L T S - SHEAR

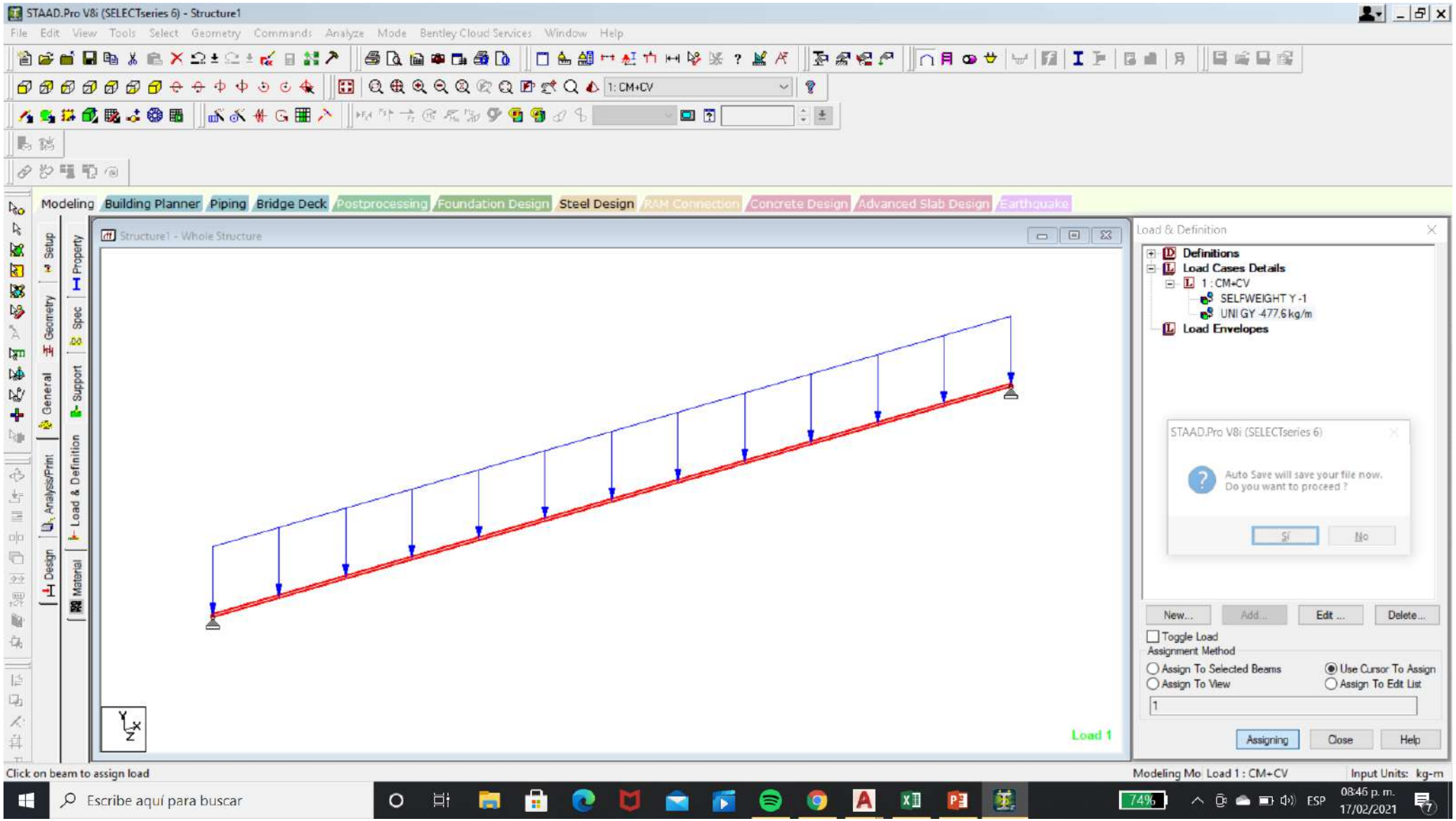
AT START SUPPORT - Vu= 0.00 KN Vc= 0.00 KN Vs= 0.00 KN
Tu= 0.00 Kn Me Tc= 0.00 Kn Me Ts= 0.00 Kn Me LOAD 1
STIRRUPS ARE NOT REQUIRED.

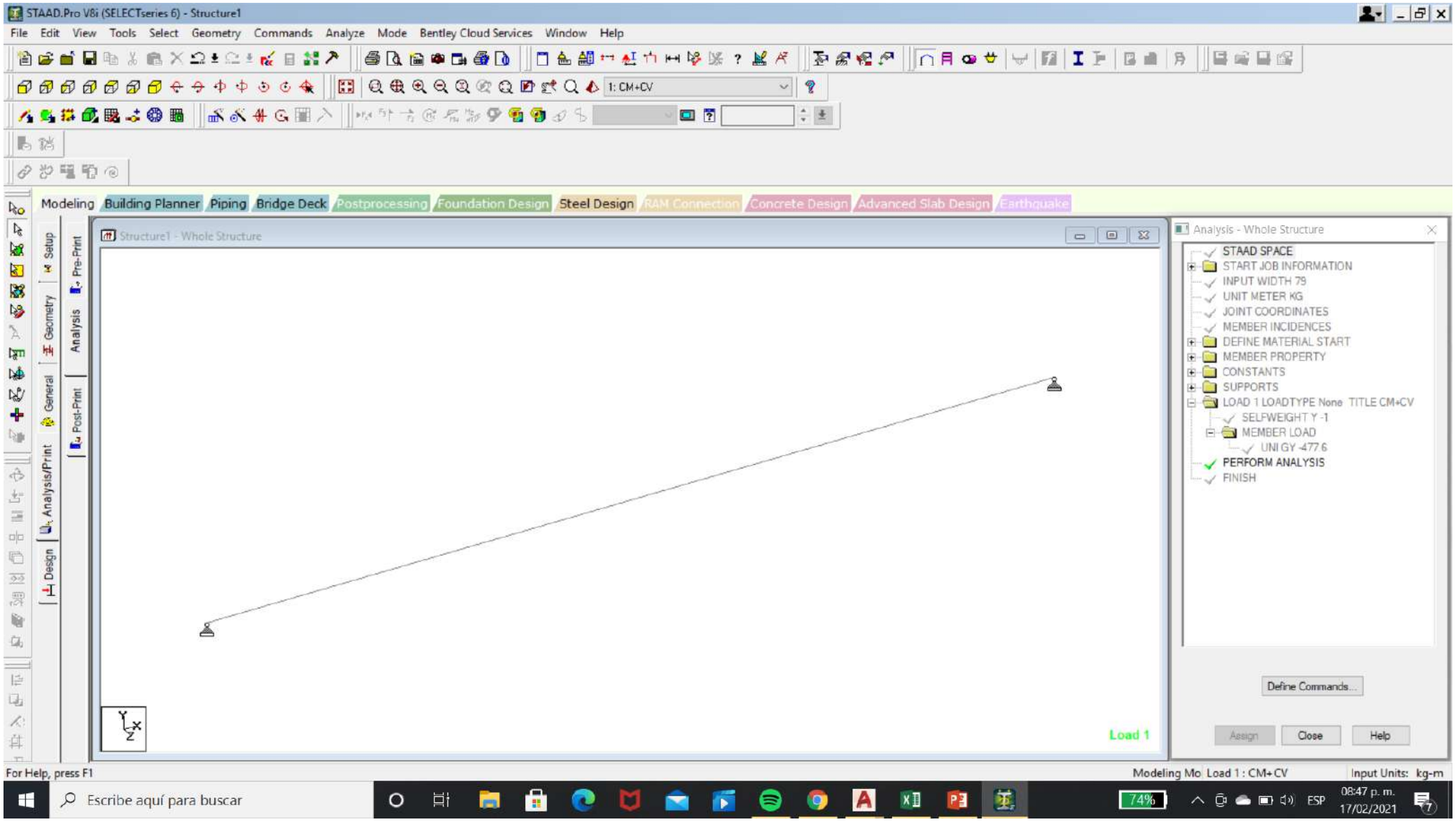
TRABE TR-4

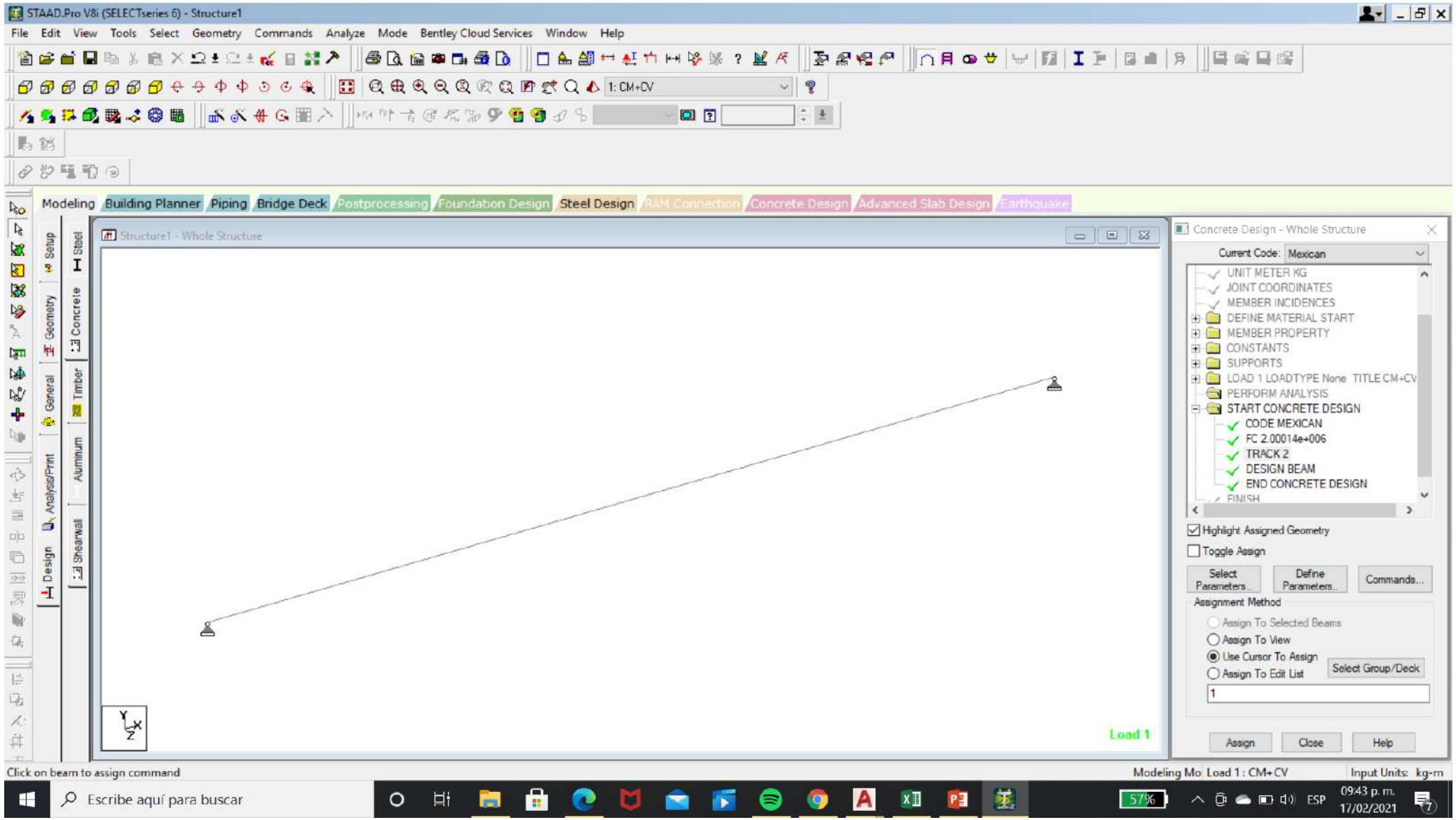

STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Beam Plate Surface Solid Parametric... Composite... Physical M...
Structure1 - Whole Structure
Structure1 - Nodes
Node X m Y m Z m
1 0.000 3.000 0.000
2 0.750 3.000 0.000
3
Structure1 - Beams
Beam Node A Node B Property Refn.
1 1 2
2
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
76%
ESP
08:42 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure1 - Whole Structure
R1
Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change Assign Close Help
Structure1 - Beams
Beam Node A Node B Property Refn. Mate
1 1 2 1 CONCR
2
Properties - Whole Structure
Section Beta Angle
Ref Section Material
1 Rect 0.20x0.15 CONCRETE
Highlight Assigned Geometry
Edit... Delete...
Values... Section Database Define...
Materials... Thickness... User Table...
Assignment Method
Assign To Selected Beams
Use Cursor To Assign
Assign To Edit List
Assign To View
Assign Close Help
Click on beams to assign property
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
75%
ESP
08:43 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Property Geometry Spec General Support Analysis/Print Load & Definition Design Material
Structure1 - Whole Structure
Structure1 - Node Supports
Full List Supported
Node Support Description
1 S2 Support 2
2 S2 Support 2
Supports - Whole Structure
Ref Description
S1 No support
S2 Support 2
Edit Create Delete
Assignment Method
Assign To Selected Nodes
Assign To View
Use Cursor To Assign
Assign To Edit List
1 2
Assigning Close Help
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
75%
ESP
08:44 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Structure1 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CM+CV
SELFWEIGHT Y -1
UNI GY -477.6 kg/m
Load Envelopes
STAAD.Pro V8i (SELECTseries 6)
Auto Save will save your file now.
Do you want to proceed ?
Si
No
New...
Add...
Edit ...
Delete...
Toggle Load
Assignment Method
Assign To Selected Beams
Use Cursor To Assign
Assign To View
Assign To Edit List
1
Assigning
Close
Help
Click on beam to assign load
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
74%
ESP
08:46 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Pre-Print Analysis Post-Print
Structure1 - Whole Structure
Load 1
Analysis - Whole Structure
STAAD SPACE
START JOB INFORMATION
INPUT WIDTH 79
UNIT METER KG
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -477.6
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help
For Help, press F1
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
74%
ESP
08:47 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Steel Concrete Timber Aluminum Shearwall
Structure1 - Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
UNIT METER KG
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
PERFORM ANALYSIS
START CONCRETE DESIGN
CODE MEXICAN
FC 2.00014e+006
TRACK 2
DESIGN BEAM
END CONCRETE DESIGN
FINISH
Highlight Assigned Geometry
Toggle Assign
Select Parameters...
Define Parameters...
Commands...
Assignment Method
Assign To Selected Beams
Assign To View
Use Cursor To Assign
Assign To Edit List
Select Group/Deck
1
Assign
Close
Help
Click on beam to assign command
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
57%
ESP
09:43 p. m.
17/02/2021

BEAM NO. 1 DESIGN RESULTS - FLEXURE

PER CODE NTC FOR THE DESIGN AND CONSTRUCTION OF CONCRETE STRUCTURES,DDF

LEN - 750.00(mm) FY - 412. FC - 20. SIZE - 150.00 X 200.00(mm)

LEVEL	HEIGHT (mm)	BAR INFO	FROM (mm)	TO (mm)	ANCHOR STA	ANCHOR END
1	42.	2 - 2.MM	0.	750.	YES	YES

CRITICAL POS MOMENT=	0.38 kNm	AT	375.00 (mm)	LOAD	1	
REQD STEEL=	39.29 (mm2)	ROW=0.0017	ROWMX=0.0152	ROWMN=0.0018		
REQD COMP STEEL=	0.00 (mm2)					
MAX/MIN/ACTUAL BAR SPACING=	66.22/ 37.90/ 66.22 (mm)					
COMP MAX/MIN/ACTUAL BAR SPACING=	0.00/ 0.00/ 0.00 (mm)					
BASIC/REQD. DEVELOPMENT LENGTH =	199.08/ 178.30(mm)					

Cracked Moment of Inertia Iz at above location =0.13657E+08 mm^4

REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.00	0.00/	0.00	0./	0.00	0/	1
62.50	39.29/	0.00	0./	0.00	1/	0
125.00	39.29/	0.00	0./	0.00	1/	0
187.50	39.29/	0.00	0./	0.00	1/	0
250.00	39.29/	0.00	0./	0.00	1/	0
312.50	39.29/	0.00	0./	0.00	1/	0
375.00	39.29/	0.00	0./	0.00	1/	0
437.50	39.29/	0.00	0./	0.00	1/	0
500.00	39.29/	0.00	0./	0.00	1/	0
562.50	39.29/	0.00	0./	0.00	1/	0
625.00	39.29/	0.00	0./	0.00	1/	0
687.50	39.29/	0.00	0./	0.00	1/	0
750.00	0.00/	0.00	0./	0.00	0/	1

COMP MAX/MIN/ACTUAL BAR SPACING=	0.00/ 0.00/ 0.00 (mm)					
BASIC/REQD. DEVELOPMENT LENGTH =	199.08/ 178.30(mm)					

Cracked Moment of Inertia Iz at above location =0.13657E+08 mm^4

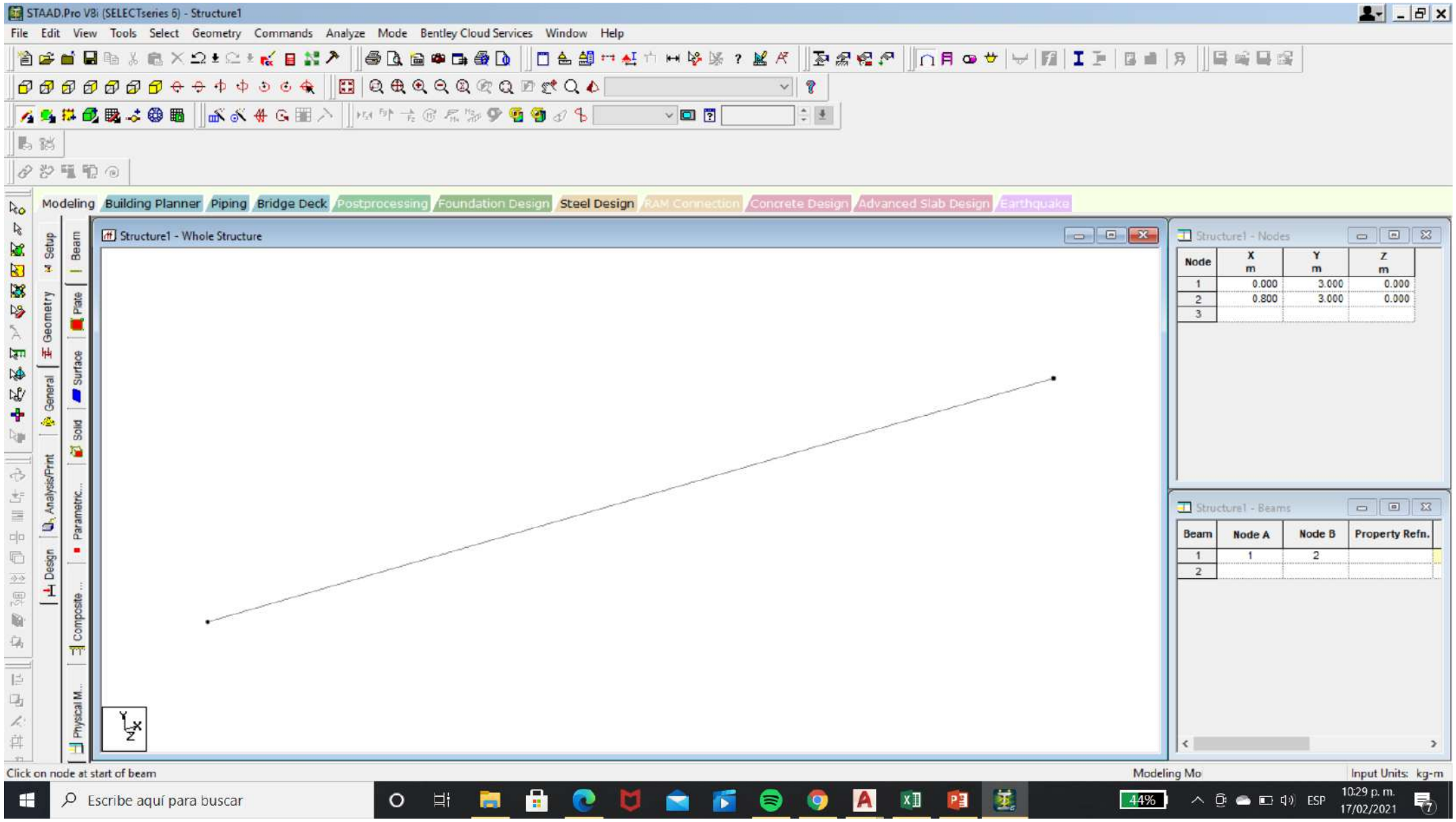
REQUIRED REINF. STEEL SUMMARY :

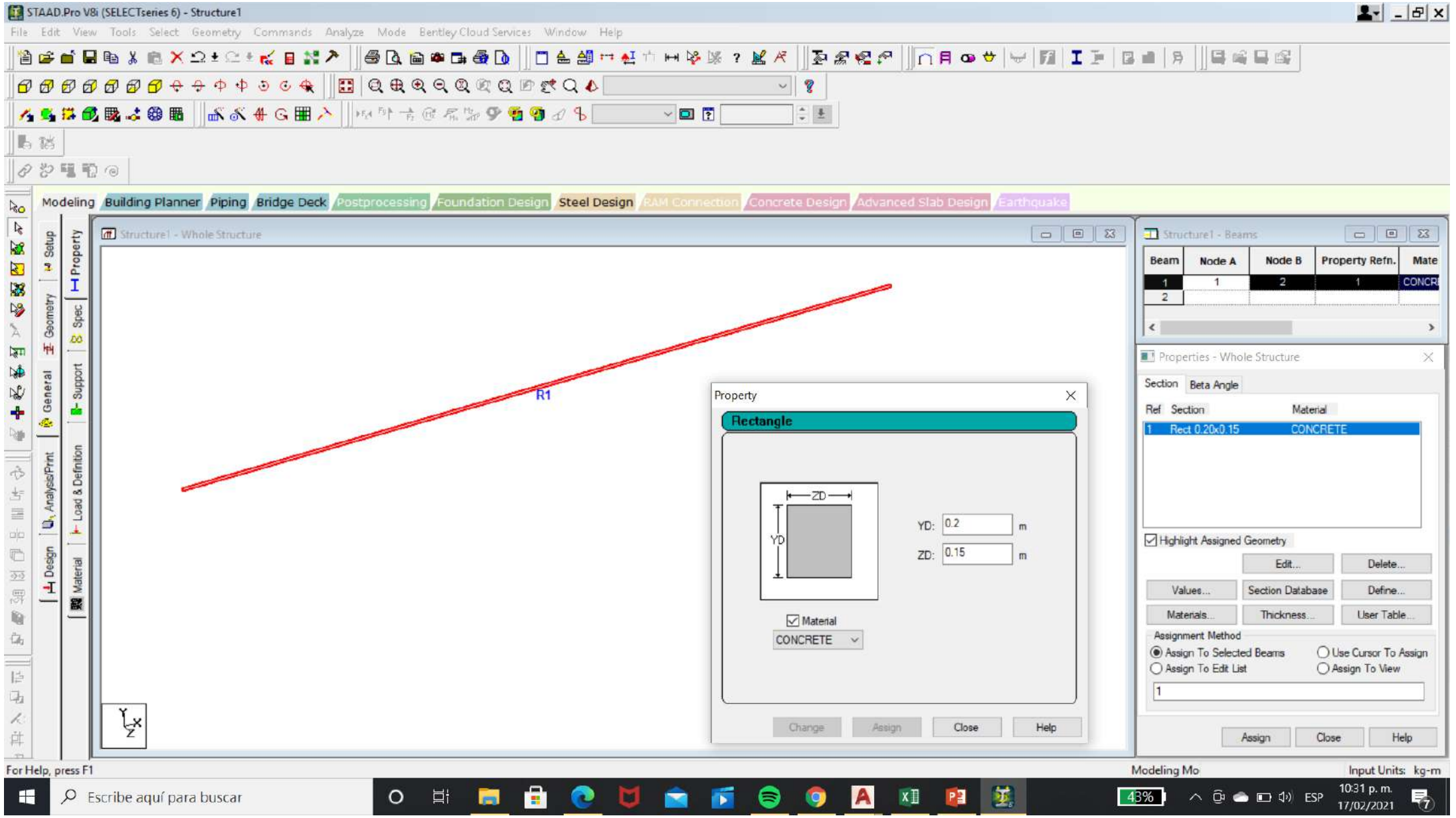
SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.00	0.00/	0.00	0./	0.00	0/	1
62.50	39.29/	0.00	0./	0.00	1/	0
125.00	39.29/	0.00	0./	0.00	1/	0
187.50	39.29/	0.00	0./	0.00	1/	0
250.00	39.29/	0.00	0./	0.00	1/	0
312.50	39.29/	0.00	0./	0.00	1/	0
375.00	39.29/	0.00	0./	0.00	1/	0
437.50	39.29/	0.00	0./	0.00	1/	0
500.00	39.29/	0.00	0./	0.00	1/	0
562.50	39.29/	0.00	0./	0.00	1/	0
625.00	39.29/	0.00	0./	0.00	1/	0
687.50	39.29/	0.00	0./	0.00	1/	0
750.00	0.00/	0.00	0./	0.00	0/	1

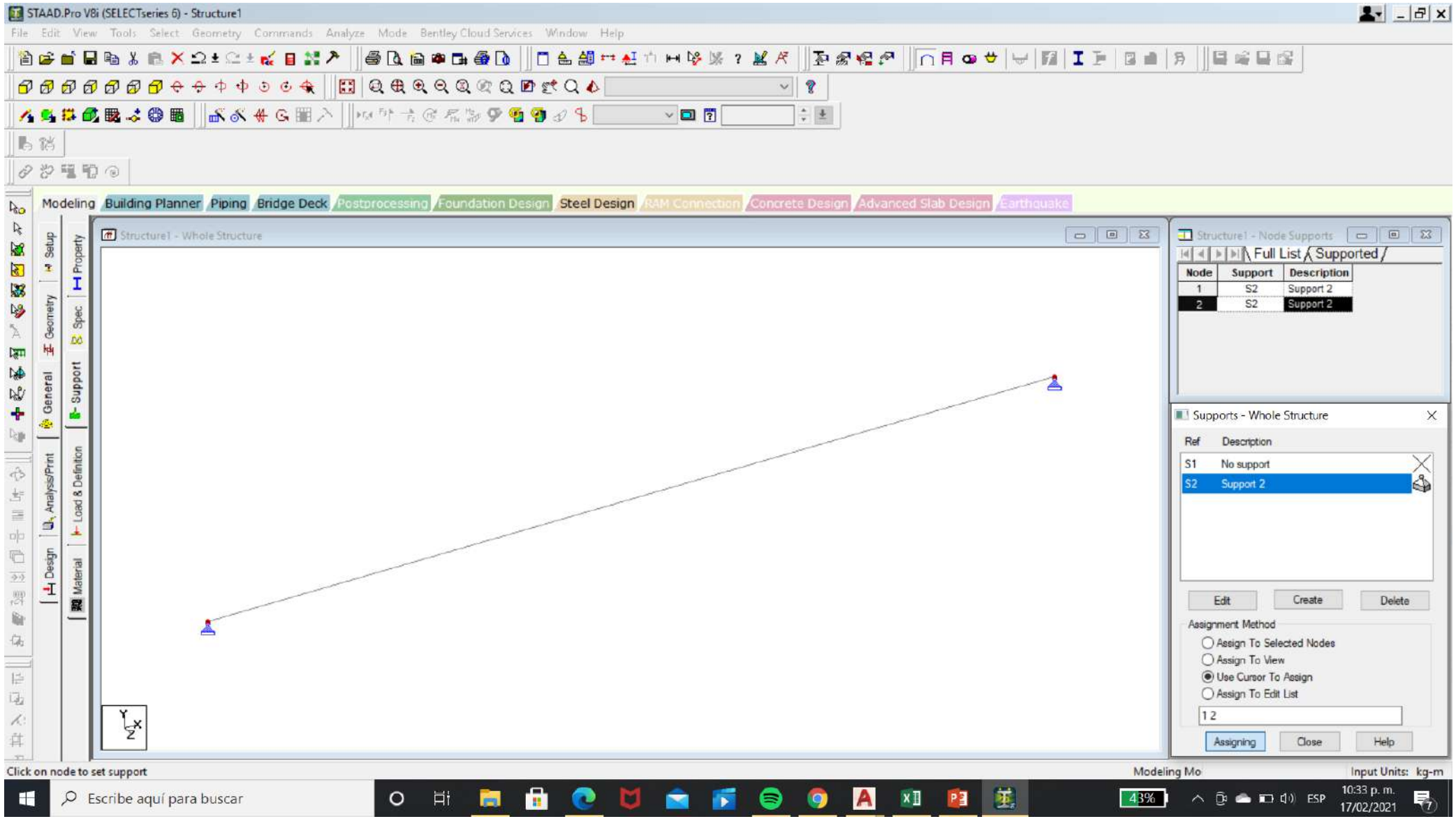
B E A M N O. 1 D E S I G N R E S U L T S - SHEAR

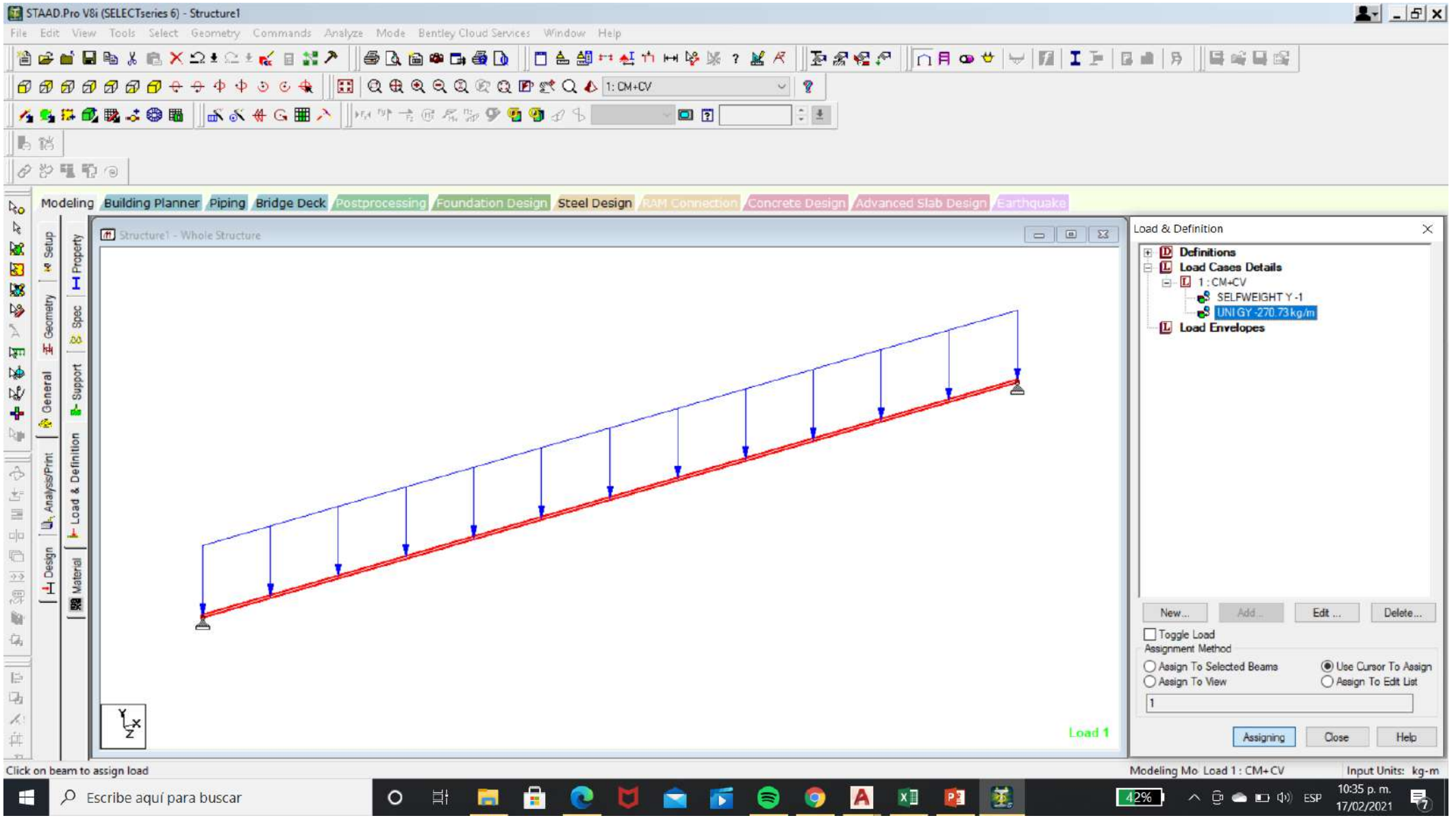
AT START SUPPORT - Vu= 0.00 KN Vc= 0.00 KN Vs= 0.00 KN
Tu= 0.00 Kn Me Tc= 0.00 Kn Me Ts= 0.00 Kn Me LOAD 1
STIRRUPS ARE NOT REQUIRED.

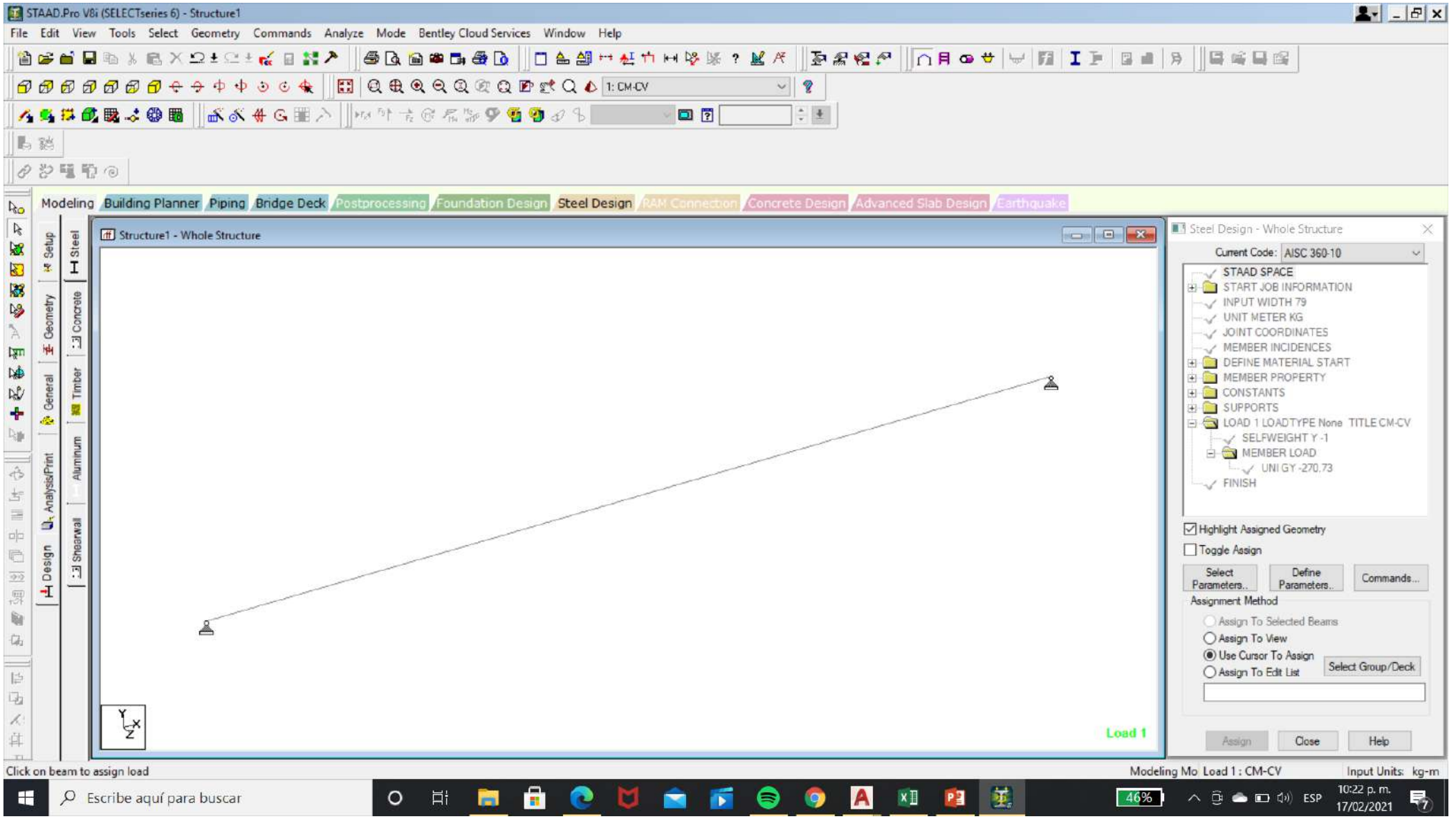
TRABE TR-5

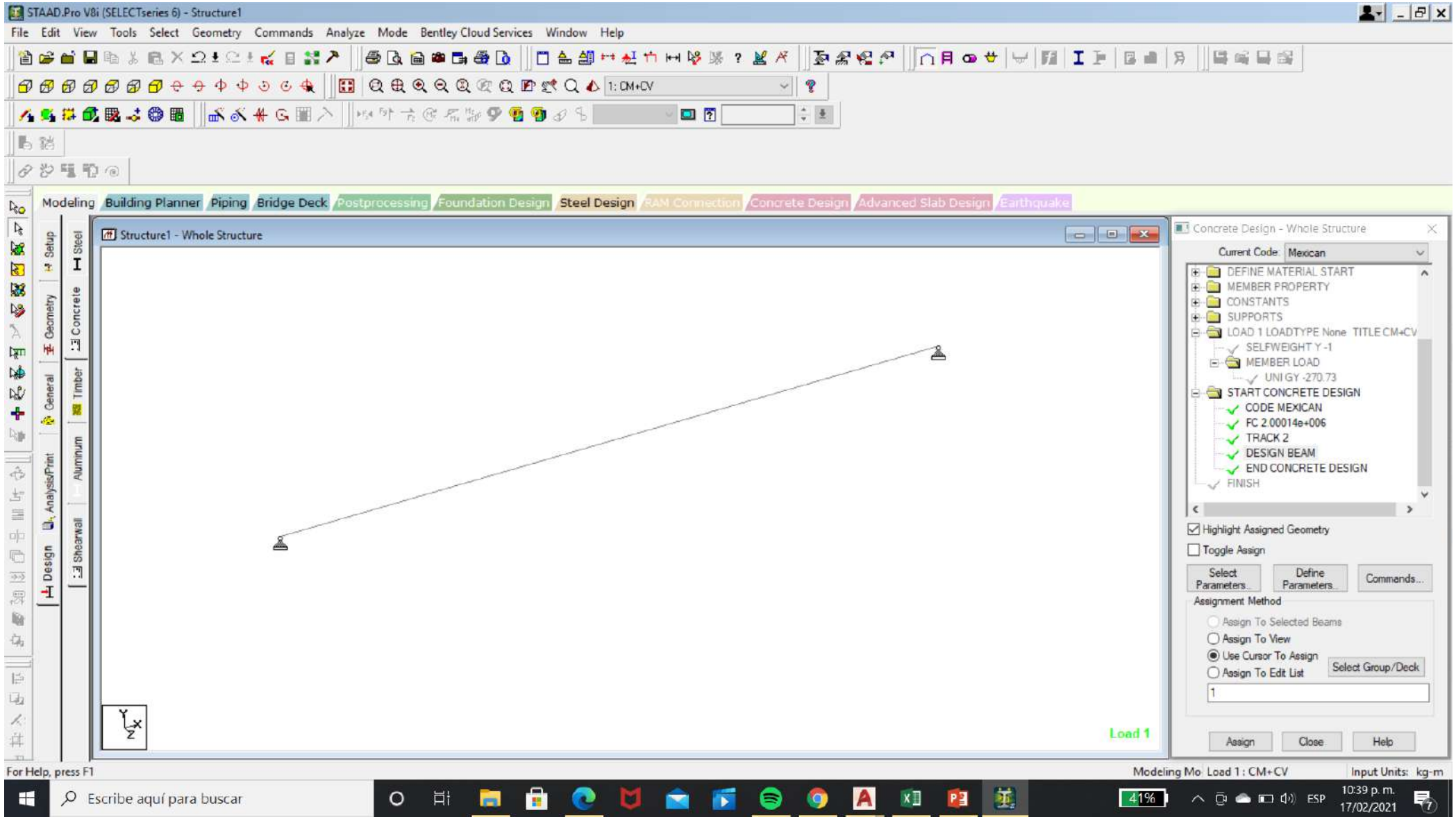

STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure1 - Whole Structure
Structure1 - Nodes
Node X m Y m Z m
1 0.000 3.000 0.000
2 0.800 3.000 0.000
3
Structure1 - Beams
Beam Node A Node B Property Refn.
1 1 2
2
Click on node at start of beam
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
44%
ESP
10:29 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure1 - Whole Structure
R1
Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change Assign Close Help
Structure1 - Beams
Beam Node A Node B Property Refn. Mate
1 1 2 1 CONCR
2
Properties - Whole Structure
Section Beta Angle
Ref Section Material
1 Rect 0.20x0.15 CONCRETE
Highlight Assigned Geometry
Edit... Delete...
Values... Section Database Define...
Materials... Thickness... User Table...
Assignment Method
Assign To Selected Beams Use Cursor To Assign
Assign To Edit List Assign To View
1
Assign Close Help
For Help, press F1
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
43%
ESP
10:31 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design Property Spec Support Load & Definition Material
Structure1 - Whole Structure
Structure1 - Node Supports
Full List Supported
Node Support Description
1 S2 Support 2
2 S2 Support 2
Supports - Whole Structure
Ref Description
S1 No support
S2 Support 2
Edit Create Delete
Assignment Method
Assign To Selected Nodes
Assign To View
Use Cursor To Assign
Assign To Edit List
1 2
Assigning Close Help
Click on node to set support
Modeling Mo
Input Units: kg-m
Escribe aquí para buscar
43%
ESP
10:33 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure1 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CM+CV
SELFWEIGHT Y -1
UNI GY -270.73 kg/m
Load Envelopes
New... Add... Edit ... Delete...
Toggle Load
Assignment Method
Assign To Selected Beams
Use Cursor To Assign
Assign To View
Assign To Edit List
1
Assigning Close Help
Setup Geometry General Analysis/Print Design
Property Spec Support Load & Definition Material
Click on beam to assign load
Modeling Mo Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
42%
ESP
10:35 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM-CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Structure1 - Whole Structure
Load 1
Steel Design - Whole Structure
Current Code: AISC 360-10
STAAD SPACE
START JOB INFORMATION
INPUT WIDTH 79
UNIT METER KG
JOINT COORDINATES
MEMBER INCIDENCES
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM-CV
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -270.73
FINISH
Highlight Assigned Geometry
Toggle Assign
Select Parameters..
Define Parameters..
Commands...
Assignment Method
Assign To Selected Beams
Assign To View
Use Cursor To Assign
Assign To Edit List
Select Group/Deck
Assign
Close
Help
Click on beam to assign load
Modeling Mo Load 1 : CM-CV
Input Units: kg-m
Escribe aquí para buscar
46%
ESP
10:22 p. m.
17/02/2021


STAAD.Pro V8i (SELECTseries 6) - Structure1
File Edit View Tools Select Geometry Commands Analyze Mode Bentley Cloud Services Window Help
1: CM+CV
Modeling Building Planner Piping Bridge Deck Postprocessing Foundation Design Steel Design RAM Connection Concrete Design Advanced Slab Design Earthquake
Setup Geometry General Analysis/Print Design
Steel Concrete Timber Aluminum Shearwall
Structure1 - Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
DEFINE MATERIAL START
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -270.73
START CONCRETE DESIGN
CODE MEXICAN
FC 2.00014e+006
TRACK 2
DESIGN BEAM
END CONCRETE DESIGN
FINISH
Highlight Assigned Geometry
Toggle Assign
Select Parameters...
Define Parameters...
Commands...
Assignment Method
Assign To Selected Beams
Assign To View
Use Cursor To Assign
Assign To Edit List
Select Group/Deck
1
Assign
Close
Help
For Help, press F1
Modeling Mo
Load 1 : CM+CV
Input Units: kg-m
Escribe aquí para buscar
41%
ESP
10:39 p. m.
17/02/2021

```
-------------------------------< PAGE 1 Ends Here >--------------------------
 STAAD SPACE                                                -- PAGE NO.    2


**WARNING - UNEXPECTED COMMAND IN LOAD DATA
           CHECK SPELLING AND ORDER OF DATA IN CASE NO.     1
COMMAND= START CONCRETE DESIGN
CHECK RESULTS CAREFULLY, LOADS MAY HAVE BEEN LOST

*** ERROR *** ABOVE LINE CONTAINS ERRONEOUS DATA.

DATA-CHECK MODE IS ENTERED.



          ************ END OF THE STAAD.Pro RUN ************

            **** DATE= FEB 17,2021    TIME= 22:40:35 ****

      ***************************************************************
      *   For technical assistance on STAAD.Pro, please visit       *
      *   http://selectservices.bentley.com/en-US/                  *
      *                                                             *
      *   Details about additional assistance from                  *
      *   Bentley and Partners can be found at program menu         *
      *   Help->Technical Support                                   *
      *                                                             *
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