Nombre de alumno: Enrique fabian Jimenez fonseca

Nombre del profesor: pedro garcia

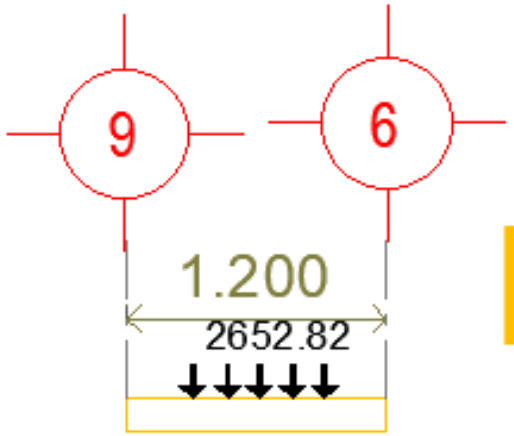
Nombre del trabajo: trabes

Materia: ANALISIS DE MATERIALES

Grado: 5to

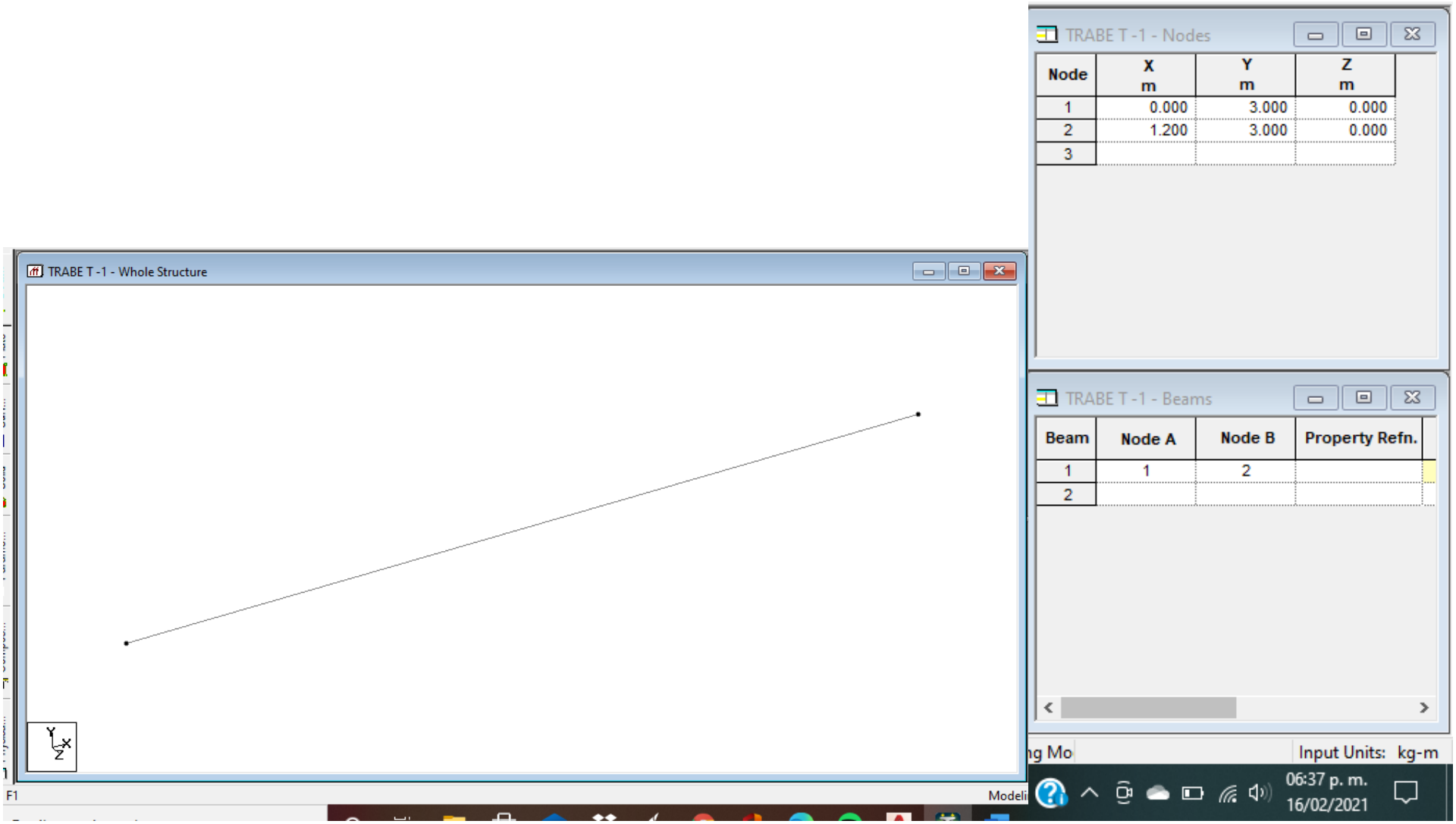
Grupo:

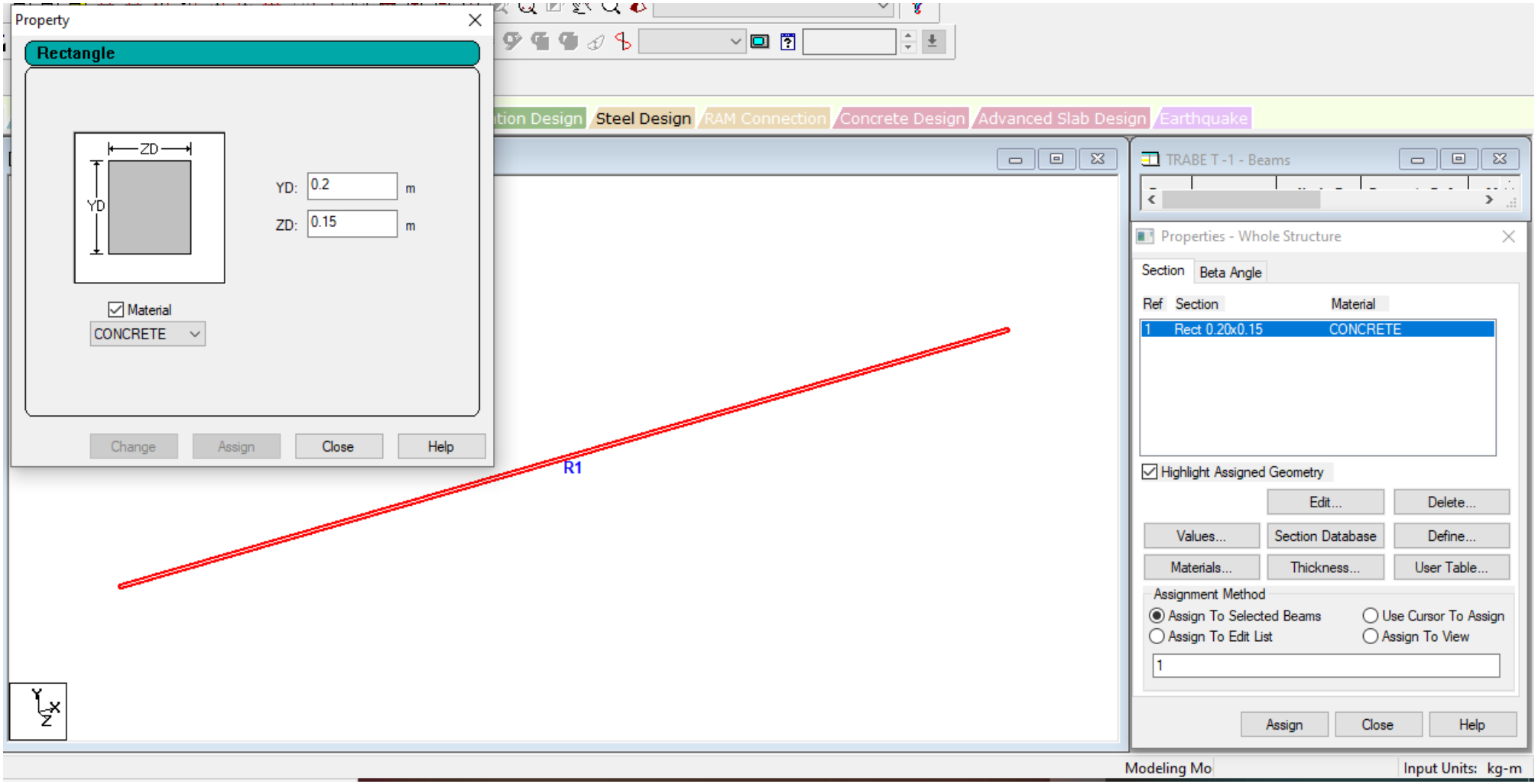
Comitán de Domínguez Chiapas a 12 de febrero de 2021.

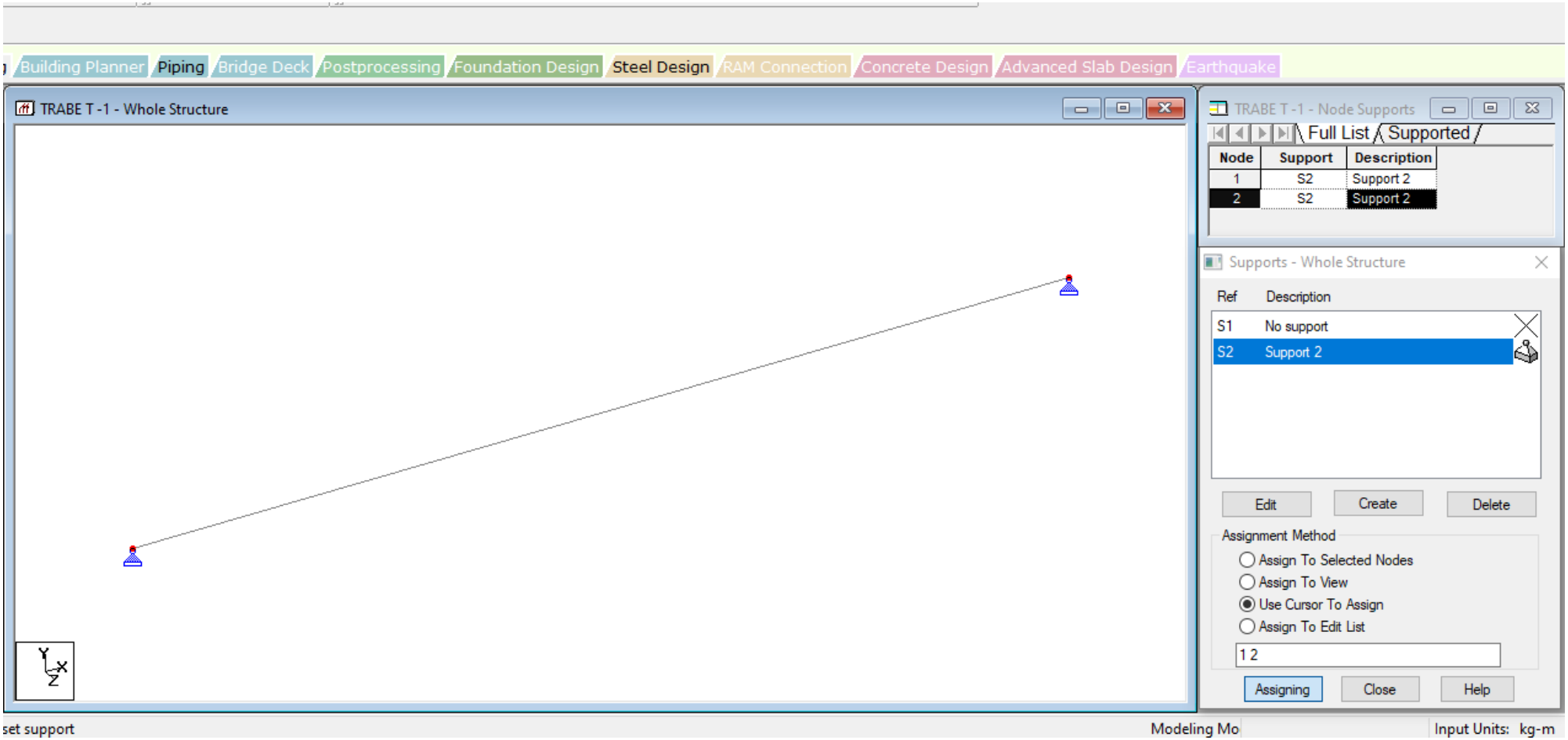


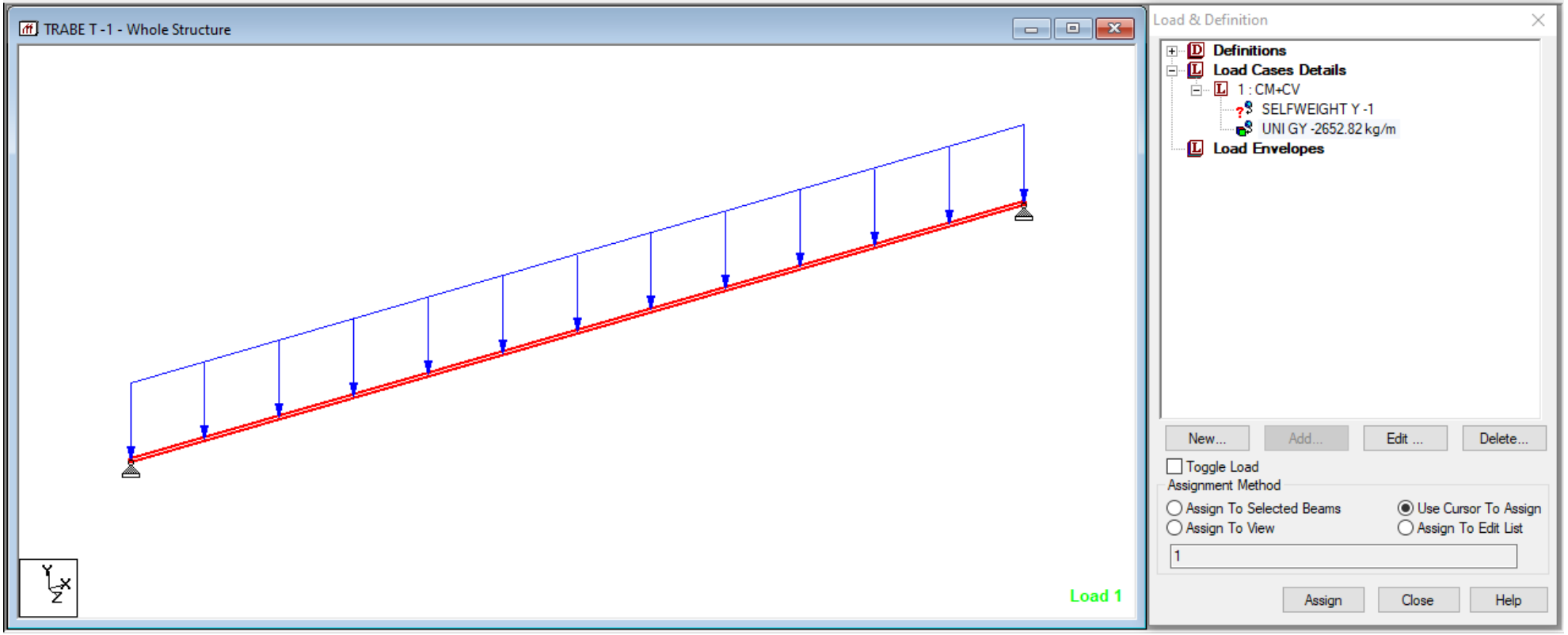
trabe 1

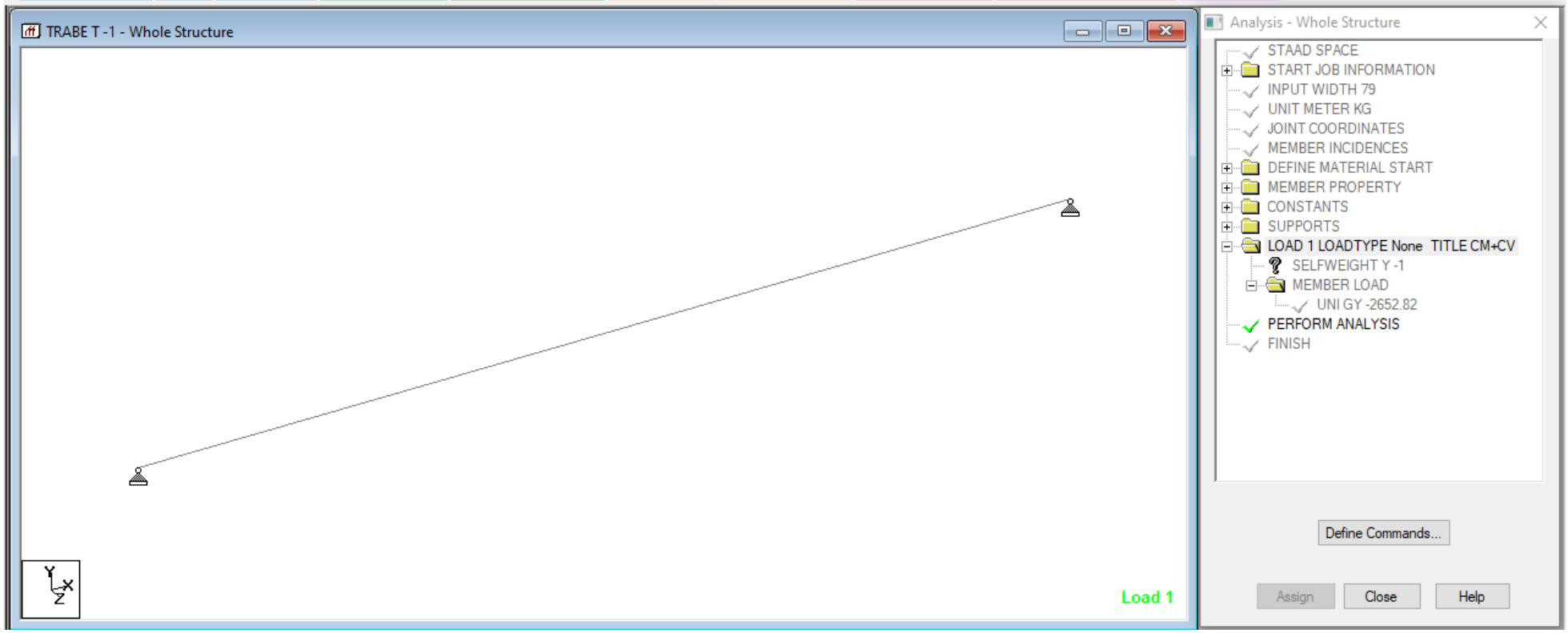
peralte

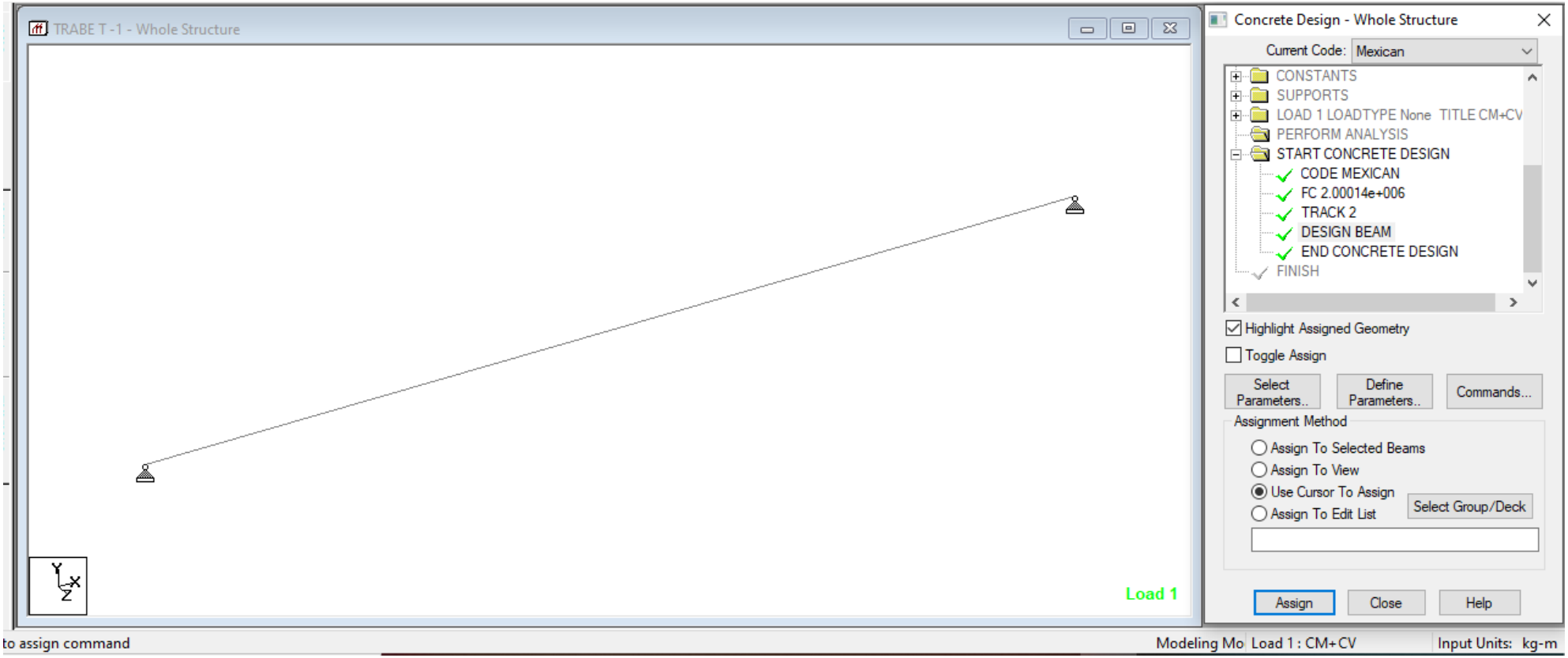

TRABE T -1 - Nodes
Node
X
m
Y
m
Z
m
1
0.000
3.000
0.000
2
1.200
3.000
0.000
3
TRABE T -1 - Beams
Beam
Node A
Node B
Property Refn.
1
1
2
2
TRABE T -1 - Whole Structure
Y
X
Z
Input Units: kg-m
F1
06:37 p. m.
16/02/2021


Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change
Assign
Close
Help
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
R1
TRABE T -1 - Beams
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
Modeling Mo
Input Units: kg-m


Building Planner
Piping
Bridge Deck
Postprocessing
Foundation Design
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
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
set support
Modeling Mo
Input Units: kg-m


TRABE T -1 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CM+CV
SELFWEIGHT Y -1
UNI GY -2652.82 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
Assign
Close
Help


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
LOAD 1 LOADTYPE None TITLE CM+CV
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -2652.82
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help


TRABE T -1 - Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
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
to assign command
Modeling Mo
Load 1 : CM+CV
Input Units: kg-m

TRABE T -1.anl - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

```
=================================================================

        BEAM  NO.     1 DESIGN RESULTS - FLEXURE

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

 LEN -  1200.00(mm)  FY -   412.  FC -   20.  SIZE -  150.00 X  200.00(mm)

 LEVEL     HEIGHT      BAR INFO        FROM          TO           ANCHOR
             (mm)                        (mm)          (mm)         STA  END
 ____________________________________________________________________

   1          42.      2 - 2.MM          0.          1200.         YES  YES
 |-----------------------------------------------------------------|
 | CRITICAL POS MOMENT=       4.68 kNm     AT   600.00 (mm)LOAD    1|
 | REQD STEEL=     84.55 (mm2)ROW=0.0036 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/   258.82(mm)        |
 |-----------------------------------------------------------------|

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


 REQUIRED REINF. STEEL SUMMARY :
 -------------------------------
 SECTION      REINF STEEL(+VE/-VE)      MOMENTS(+VE/-VE)     LOAD(+VE/-VE)
 ( MM )           (SQ.  MM )                (KNS-MET )
```

TRABE T -1.anl - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

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
100.00	39.29/	0.00	1./	0.00	1/	0
200.00	50.94/	0.00	3./	0.00	1/	0
300.00	69.75/	0.00	4./	0.00	1/	0
400.00	83.54/	0.00	4./	0.00	1/	0
500.00	91.96/	0.00	5./	0.00	1/	0
600.00	94.80/	0.00	5./	0.00	1/	0
700.00	91.96/	0.00	5./	0.00	1/	0
800.00	83.54/	0.00	4./	0.00	1/	0
900.00	69.75/	0.00	4./	0.00	1/	0
1000.00	50.94/	0.00	3./	0.00	1/	0
1100.00	50.56/	0.00	1./	0.00	1/	0
1200.00	0.00/	0.00	0./	0.00	1/	0

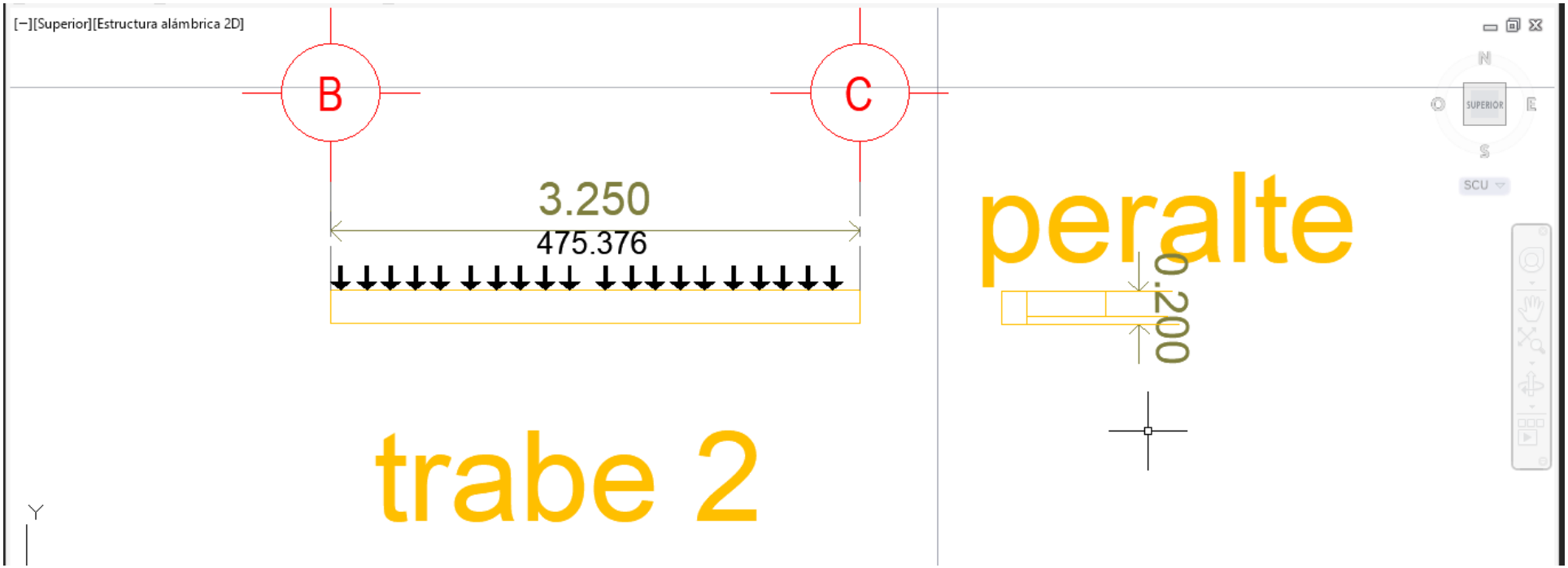
B E A M N O. 1 D E S I G N R E S U L T S - SHEAR

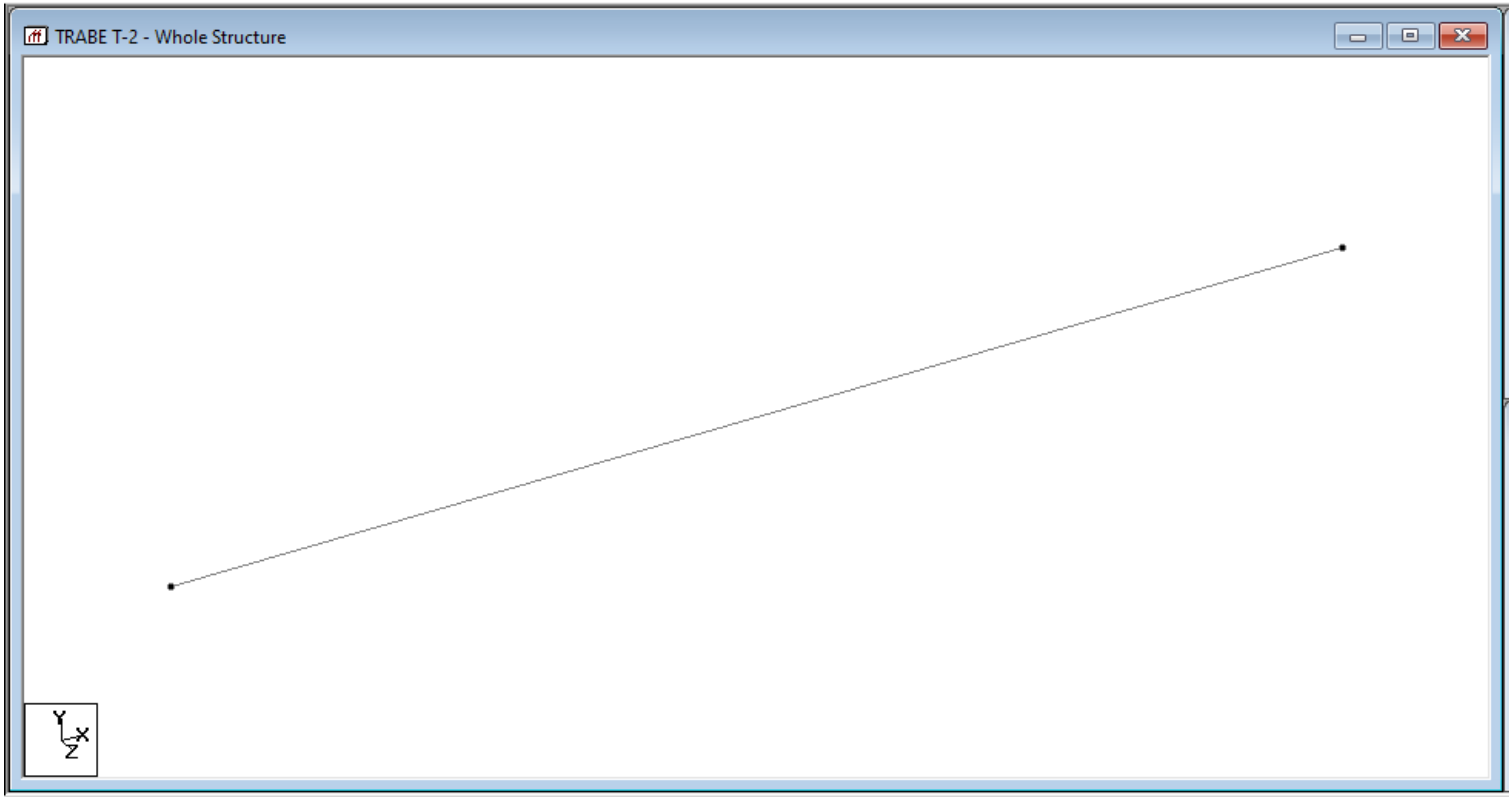
AT START SUPPORT - Vu= 0.02 KN Vc= 0.00 KN Vs= 0.00 KN
Tu= 0.00 Kn Me Tc= 0.00 Kn Me Ts= 0.00 Kn Me LOAD 1
STIRRUPS ARE NOT REQUIRED.

----------< PAGE 3 Ends Here >----------

STAAD SPACE -- PAGE NO. 4

AT END SUPPORT - Vu= 0.02 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


[−][Superior][Estructura alámbrica 2D]
B
C
3.250
475.376
peralte
0.200
trabe 2
N
O
SUPERIOR
E
S
SCU

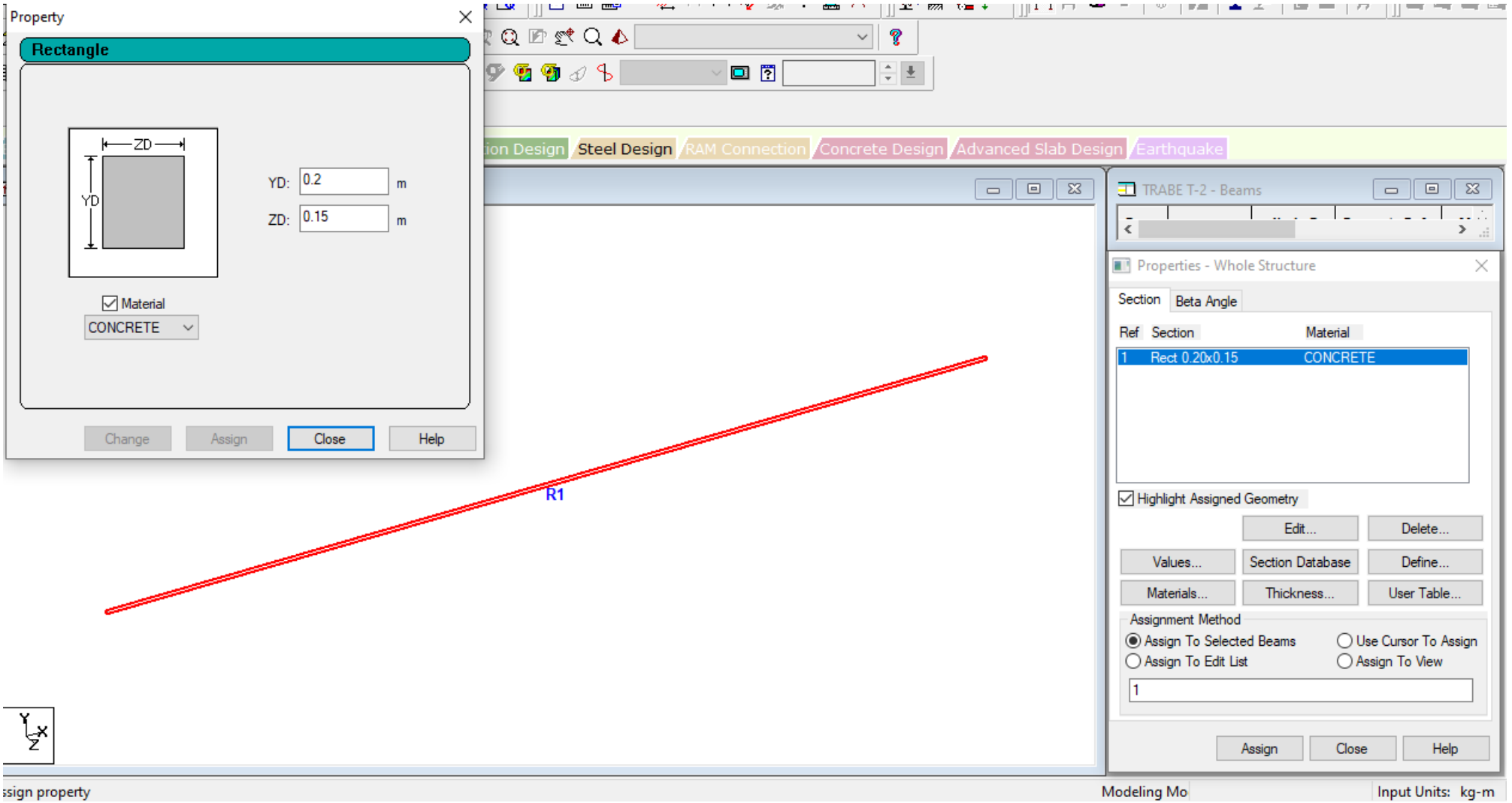


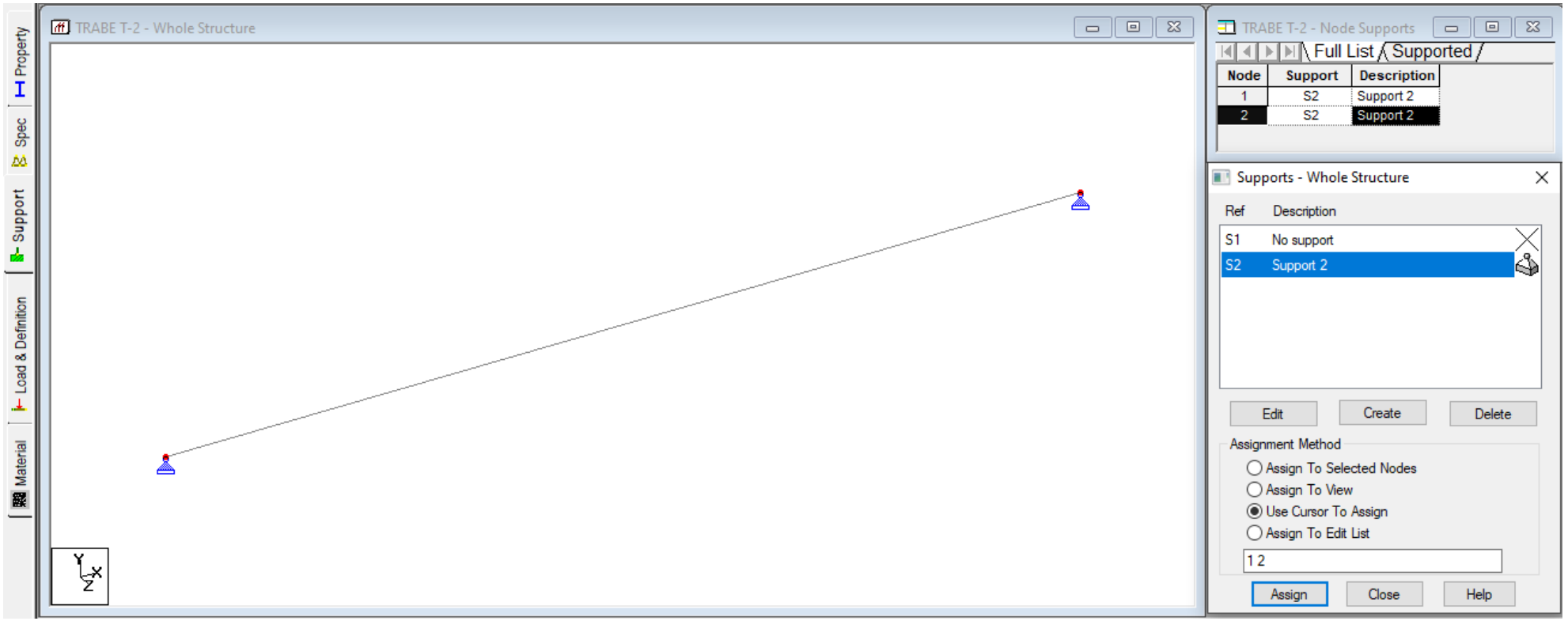
TRABE T-2 - Nodes

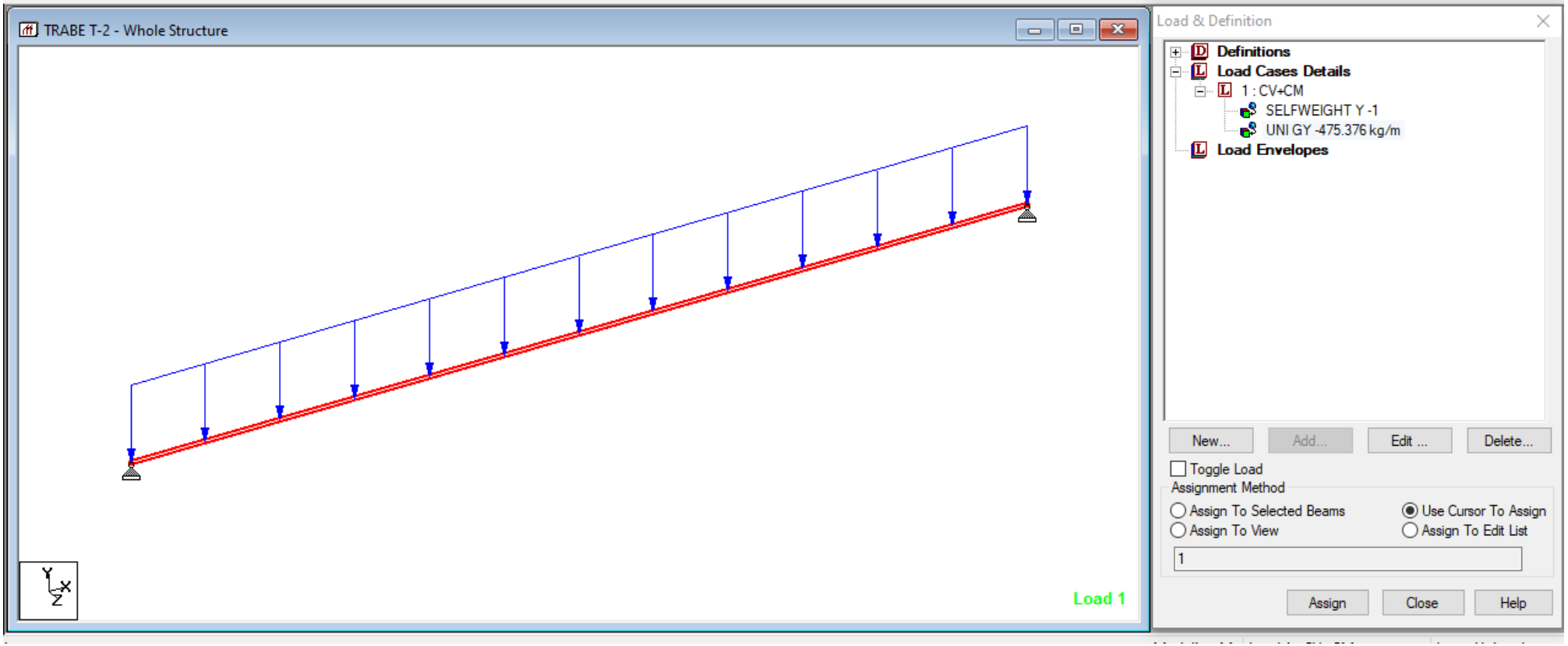
Node	X m	Y m	Z m
1	0.000	3.000	0.000
2	3.250	3.000	0.000
3			

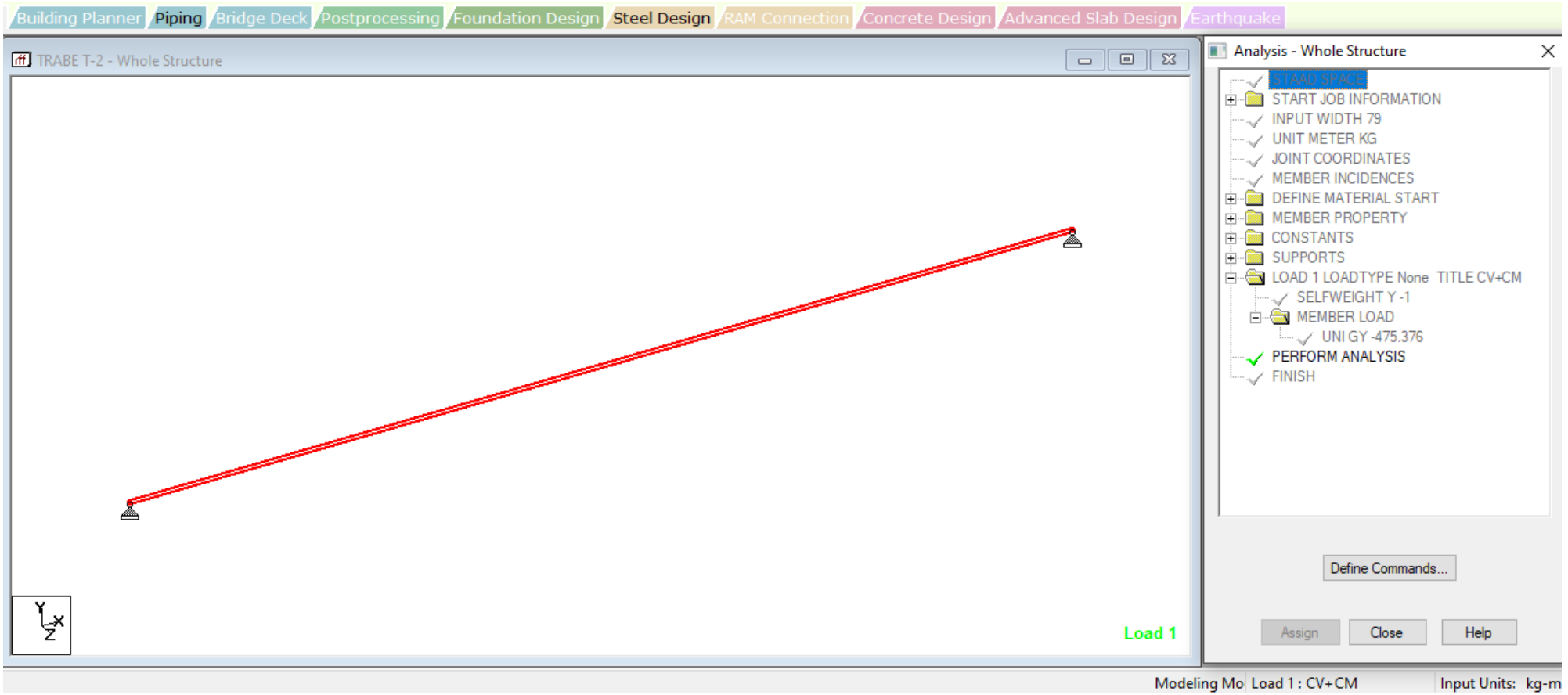
TRABE T-2 - Beams

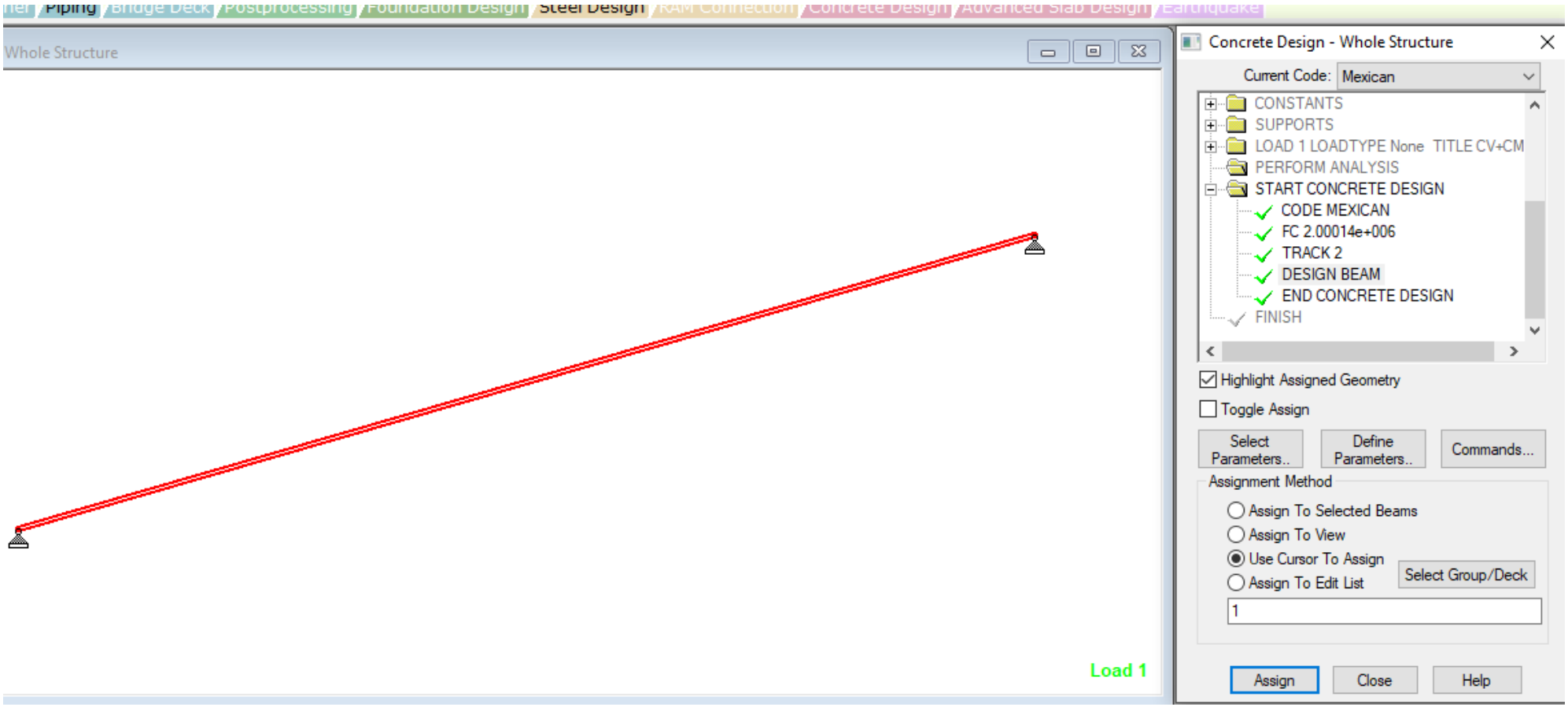
Beam	Node A	Node B	Property Refn.
1	1	2	
2			


Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change
Assign
Close
Help
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
R1
TRABE T-2 - Beams
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
Modeling Mo
Input Units: kg-m


Property
Spec
Support
Load & Definition
Material
TRABE T-2 - Whole Structure
TRABE T-2 - 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


TRABE T-2 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CV+CM
SELFWEIGHT Y -1
UNI GY -475.376 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
Assign
Close
Help


Building Planner
Piping
Bridge Deck
Postprocessing
Foundation Design
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
TRABE T-2 - 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 CV+CM
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -475.376
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help
Modeling Mo
Load 1 : CV+CM
Input Units: kg-m


Piping
Steel Design
Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CV+CM
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

TRABE T-2.anl - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

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=================================================================

        BEAM  NO.     1 DESIGN RESULTS - FLEXURE

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

 LEN -  3250.00(mm)  FY -   412.  FC -   20.  SIZE -  150.00 X  200.00(mm)

 LEVEL     HEIGHT      BAR INFO        FROM          TO           ANCHOR
             (mm)                        (mm)         (mm)         STA  END
 ____________________________________________________________________

   1          43.     2 -  3MM          0.          3250.         YES  YES
 |-----------------------------------------------------------------|
 | CRITICAL POS MOMENT=       7.09 kNm      AT 1625.00 (mm)LOAD    1|
 | REQD STEEL=    133.16 (mm2)ROW=0.0056 ROWMX=0.0152 ROWMN=0.0018 |
 | REQD COMP STEEL=      0.00 (mm2)                                 |
 | MAX/MIN/ACTUAL BAR SPACING=        64.63/ 39.50/ 64.63 (mm)     |
 | COMP MAX/MIN/ACTUAL BAR SPACING=    0.00/  0.00/  0.00 (mm)     |
 | BASIC/REQD. DEVELOPMENT LENGTH =    239.40/   281.31(mm)        |
 |-----------------------------------------------------------------|

   Cracked Moment of Inertia Iz at above location =0.18320E+08 mm^4


 REQUIRED REINF. STEEL SUMMARY :
 -------------------------------
 SECTION      REINF STEEL(+VE/-VE)      MOMENTS(+VE/-VE)     LOAD(+VE/-VE)
 ( MM )           (SQ.  MM )                 (KNS-MET )
```

TRABE T-2.anl - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

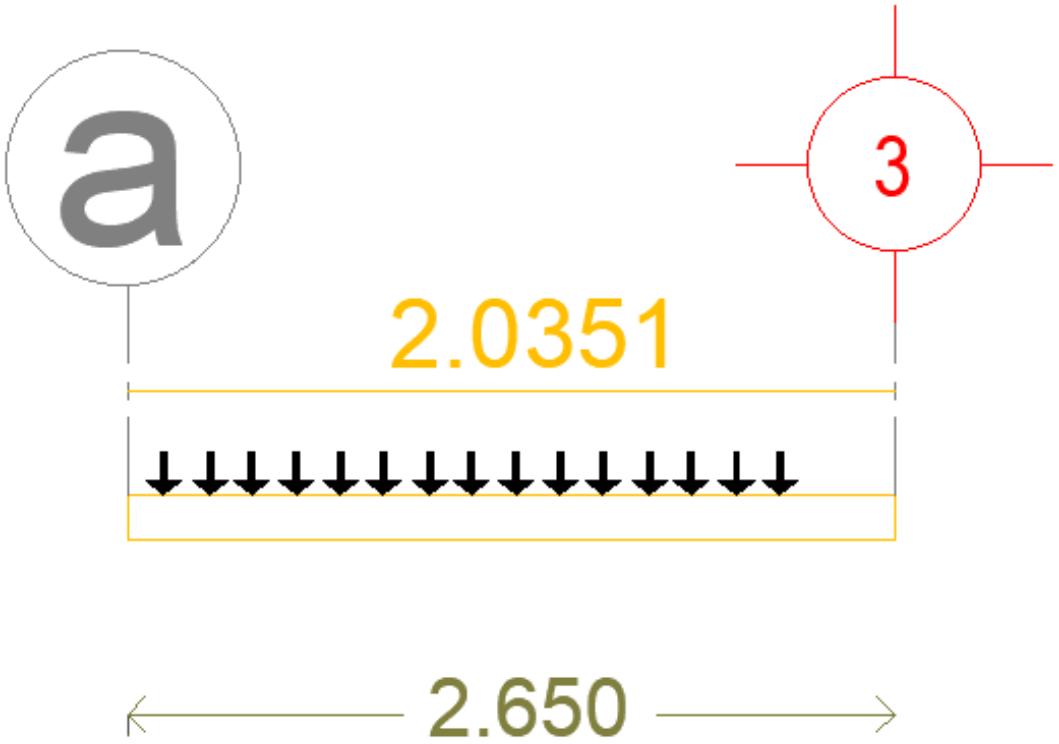
REQUIRED REINF. STEEL SUMMARY :

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
270.83	50.56/	0.00	2./	0.00	1/	0
541.67	78.75/	0.00	4./	0.00	1/	0
812.50	108.80/	0.00	5./	0.00	1/	0
1083.33	131.25/	0.00	6./	0.00	1/	0
1354.17	145.16/	0.00	7./	0.00	1/	0
1625.00	149.88/	0.00	7./	0.00	1/	0
1895.83	145.16/	0.00	7./	0.00	1/	0
2166.67	131.25/	0.00	6./	0.00	1/	0
2437.50	108.80/	0.00	5./	0.00	1/	0
2708.33	78.75/	0.00	4./	0.00	1/	0
2979.17	50.56/	0.00	2./	0.00	1/	0
3250.00	0.00/	0.00	0./	0.00	1/	0

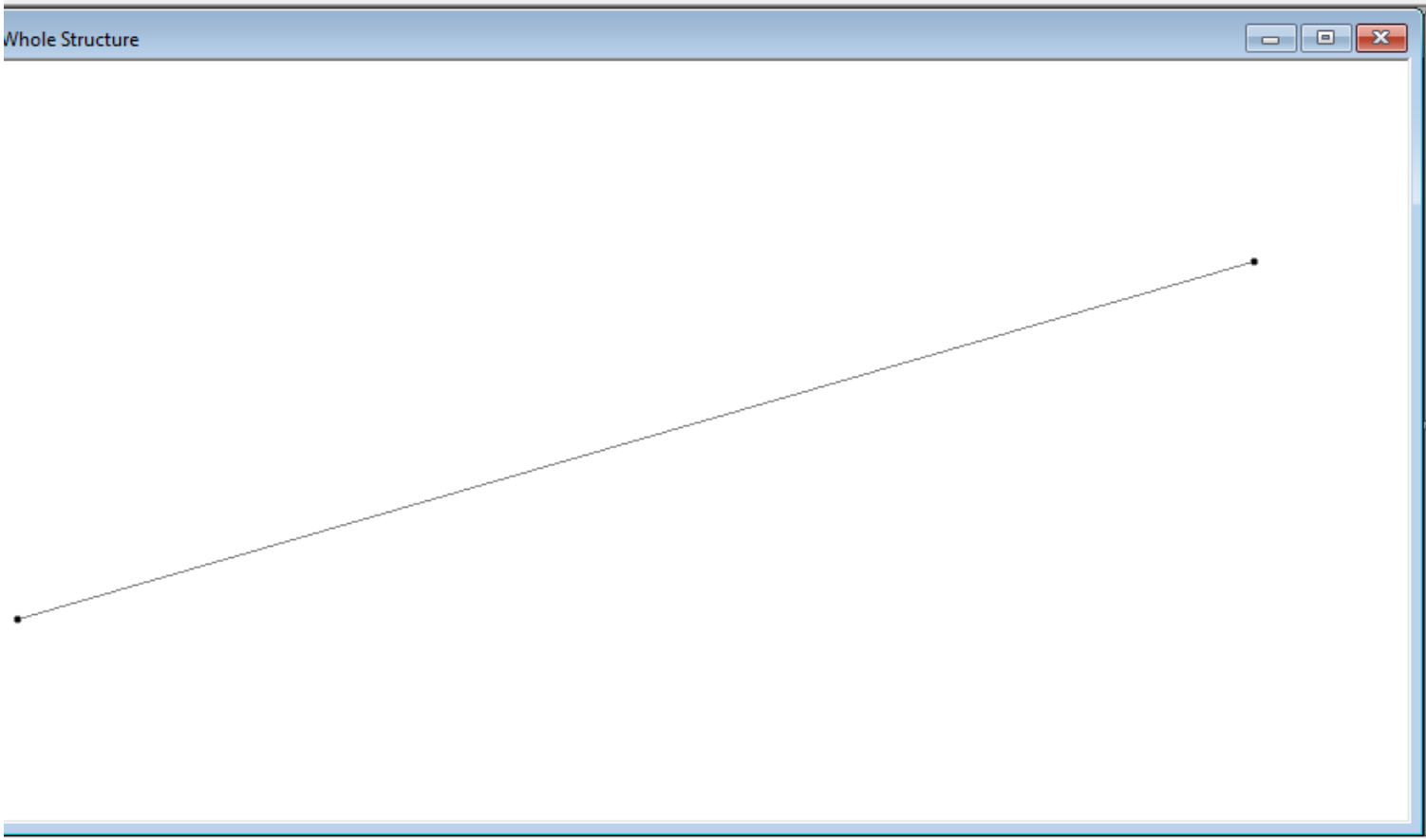
B E A M N O. 1 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 0.02 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.

----------< PAGE 3 Ends Here >----------


a
3
2.0351
2.650


peralte
0.301

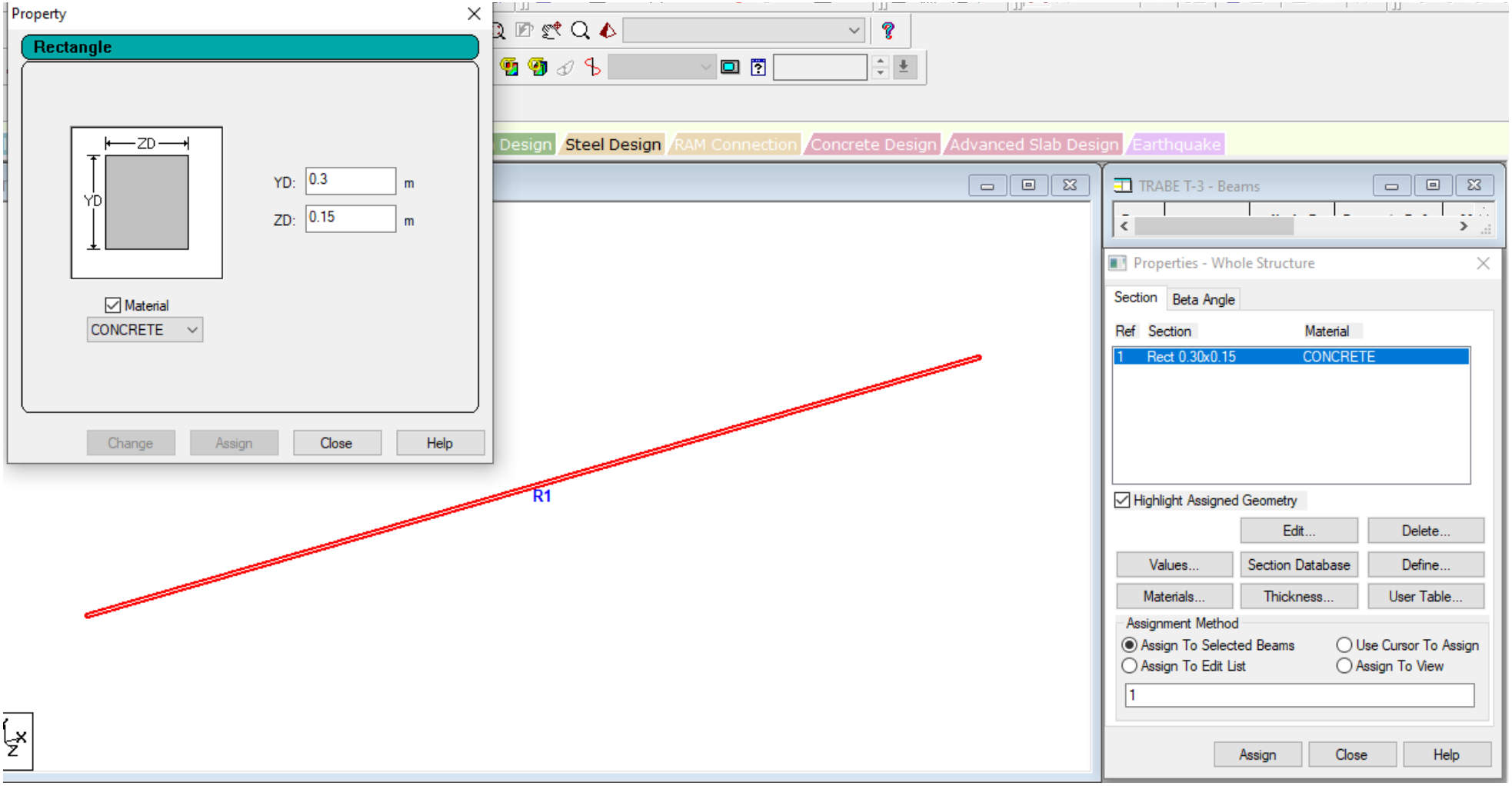


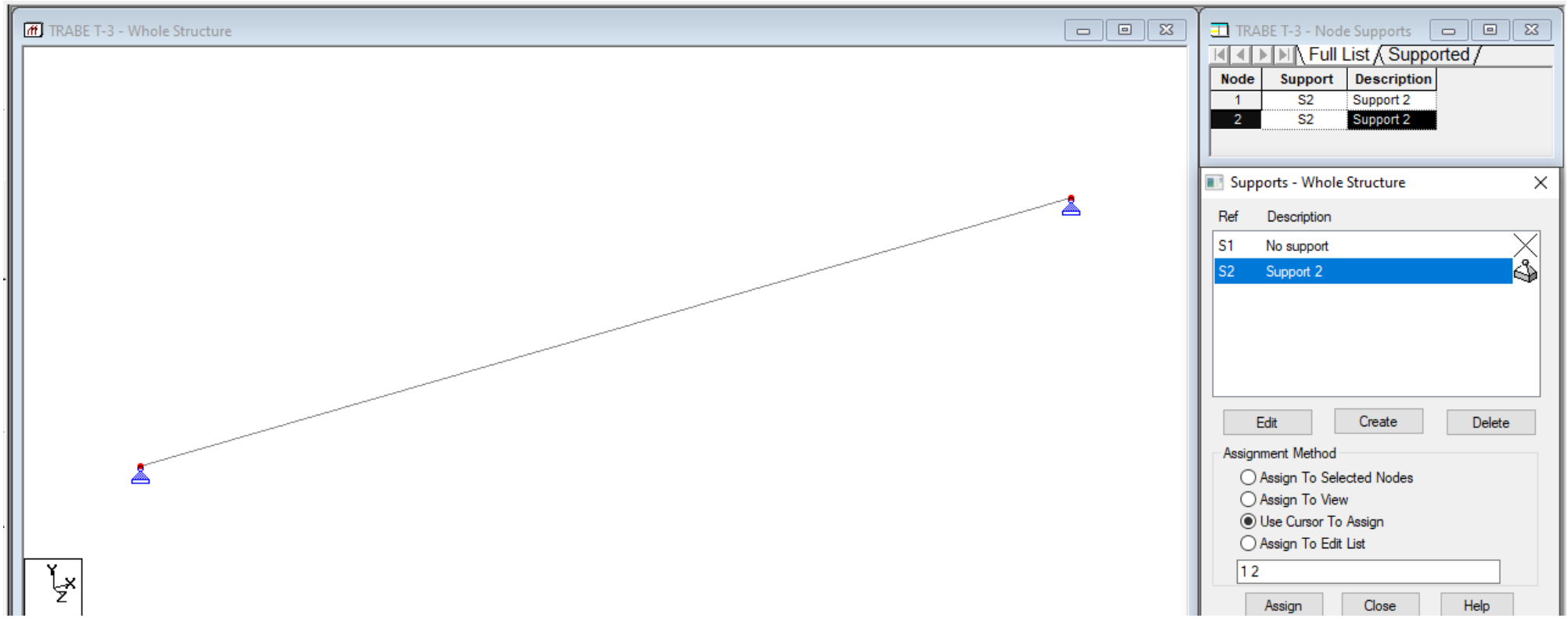
TRABE T-3 - Nodes

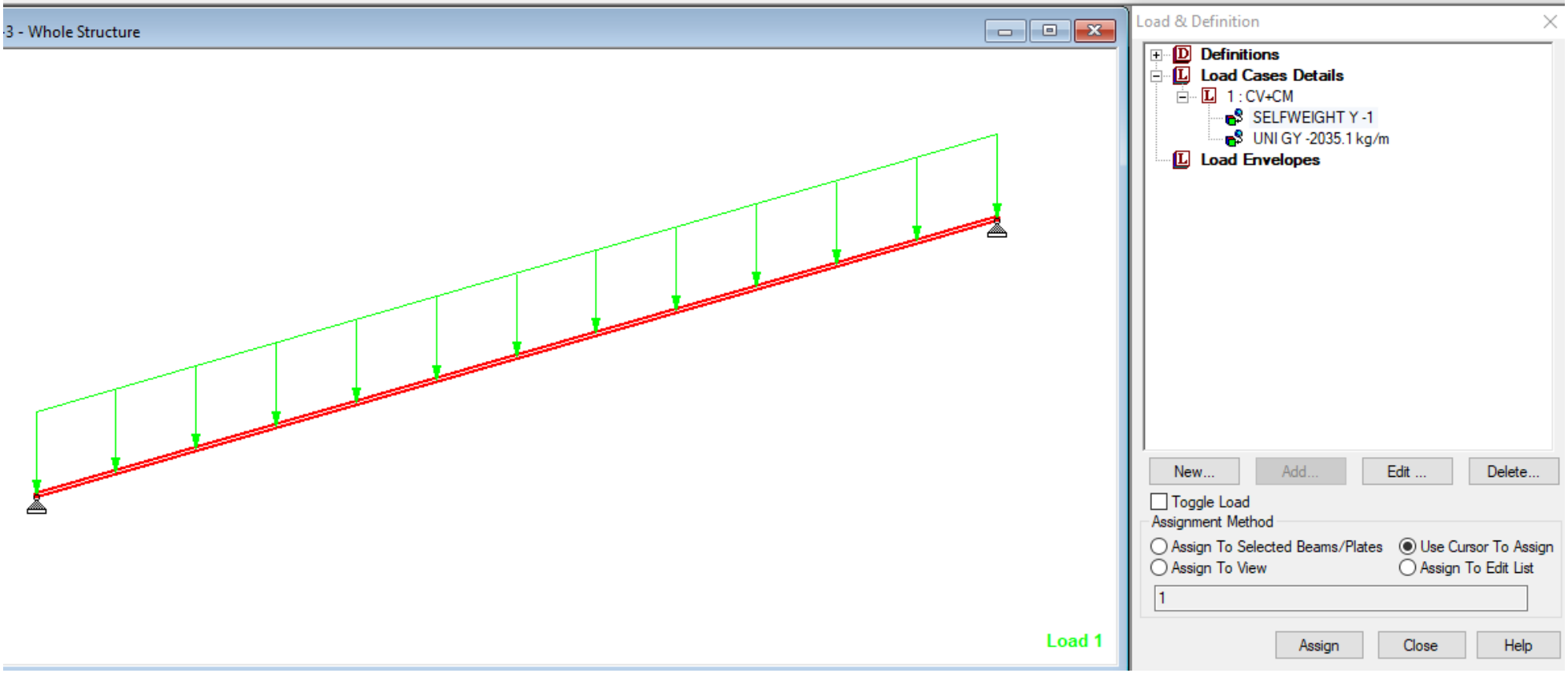
Node	X m	Y m	Z m
1	0.000	3.000	0.000
2	2.650	3.000	0.000
3			

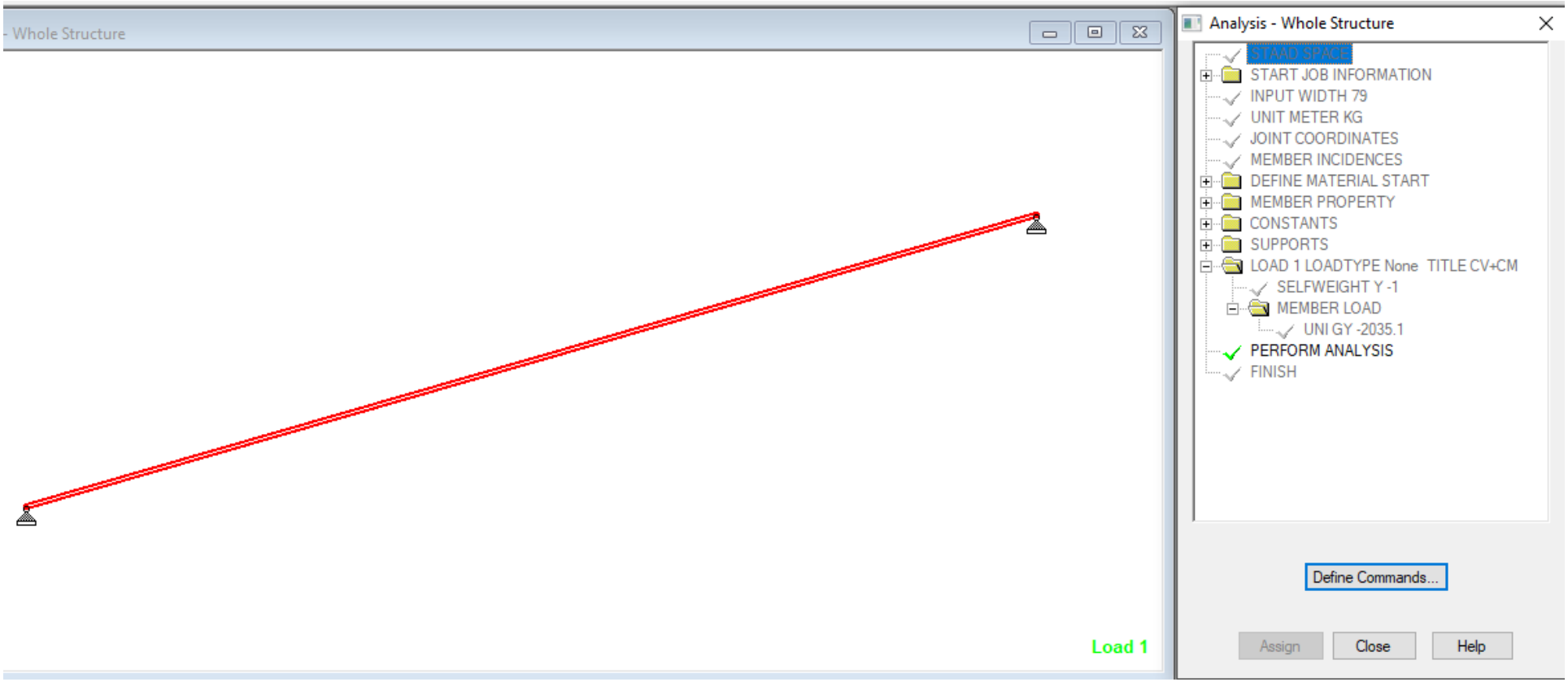
TRABE T-3 - Beams

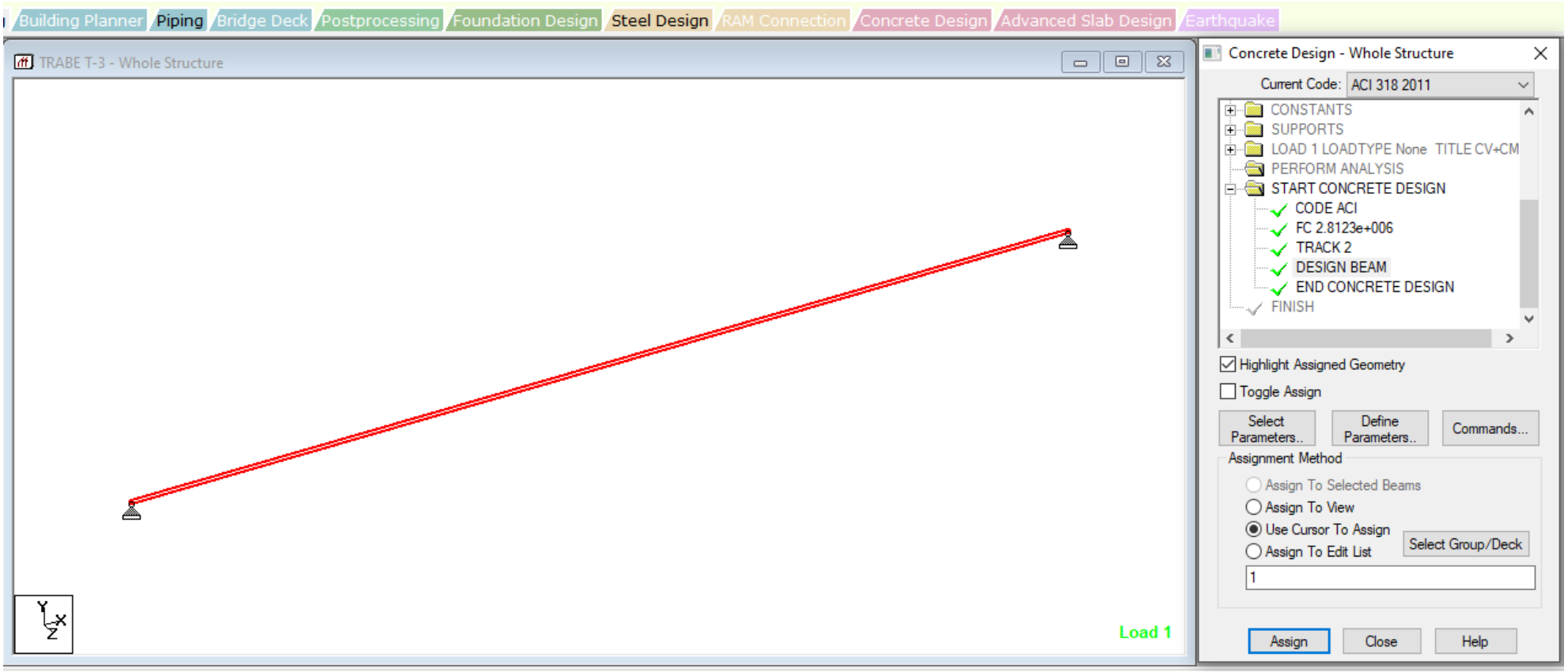
Beam	Node A	Node B	Property Refn.
1	1	2	
2			


Property
Rectangle
ZD
YD
YD: 0.3 m
ZD: 0.15 m
Material
CONCRETE
Change
Assign
Close
Help
Design
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
R1
TRABE T-3 - Beams
Properties - Whole Structure
Section
Beta Angle
Ref
Section
Material
1
Rect 0.30x0.15
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


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
Assign
Close
Help
Y
X
Z


3 - Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CV+CM
SELFWEIGHT Y -1
UNI GY -2035.1 kg/m
Load Envelopes
New...
Add...
Edit ...
Delete...
Toggle Load
Assignment Method
Assign To Selected Beams/Plates
Use Cursor To Assign
Assign To View
Assign To Edit List
1
Assign
Close
Help


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 CV+CM
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -2035.1
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help


Building Planner
Piping
Bridge Deck
Postprocessing
Foundation Design
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
TRABE T-3 - Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: ACI 318 2011
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CV+CM
PERFORM ANALYSIS
START CONCRETE DESIGN
CODE ACI
FC 2.8123e+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

TRABE T-3.anl - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

```
  32. START CONCRETE DESIGN
  33. CODE ACI
  34. FC 2.8123E+006 ALL
  35. TRACK 2 ALL
  36. DESIGN BEAM 1
-------------------------------< PAGE 2 Ends Here >--------------------------
  STAAD SPACE                                                -- PAGE NO.     3



          ACI 318-11   BEAM  NO.     1   DESIGN RESULTS
          ==============================================

  LEN -  2650. MM  FY -  414.  FC -  28.  MPA, SIZE -  150. X  300. MMS

  LEVEL     HEIGHT      BAR INFO        FROM          TO            ANCHOR
             (MM)                        (MM)          (MM)          STA  END
  ____________________________________________________________________________



  *** A SUITABLE BAR ARRANGEMENT COULD NOT BE DETERMINED.
  REQD. STEEL =     223. MM2,   MAX. STEEL PERMISSIBLE =     753. MM2
  MAX POS MOMENT =      18.45 KN-MET,   LOADING     1


  REQUIRED REINF. STEEL SUMMARY :
  -------------------------------
```

TRABE T-3.anl - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

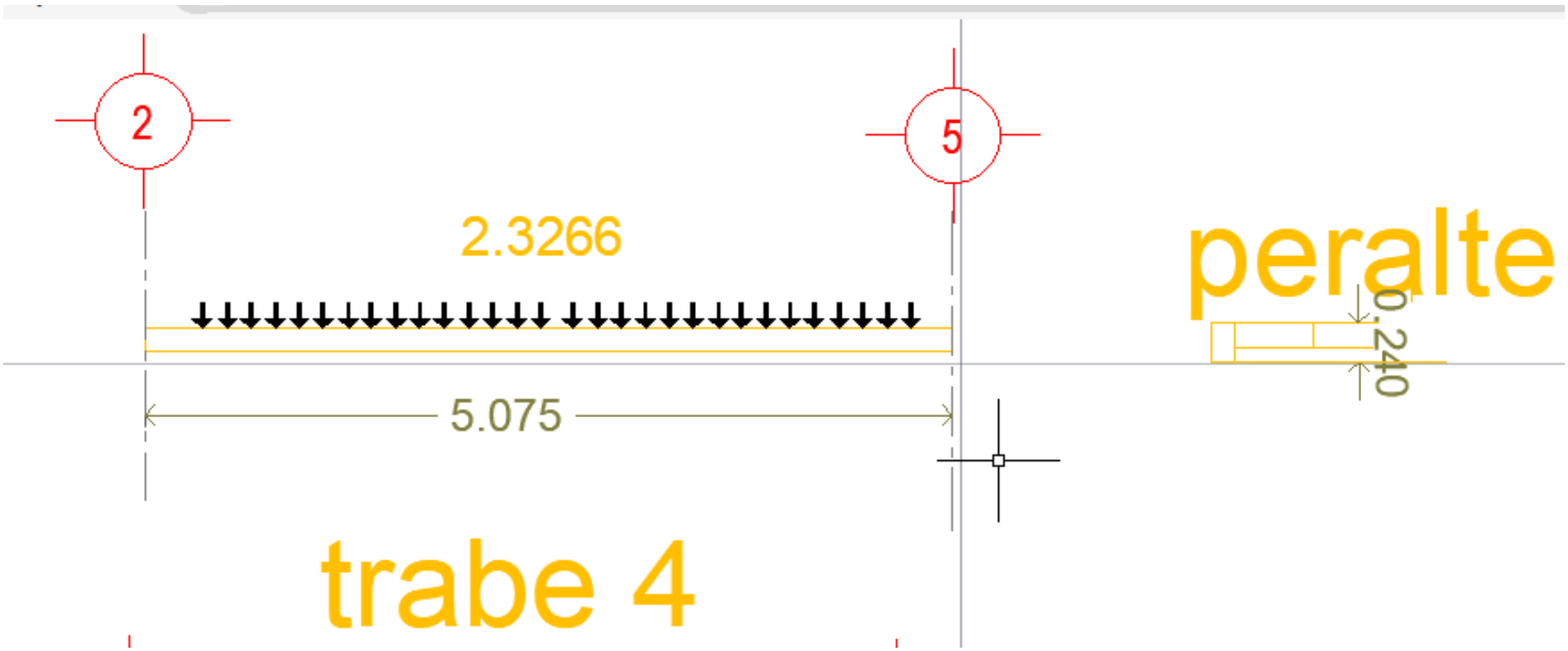
*** A SUITABLE BAR ARRANGEMENT COULD NOT BE DETERMINED.
REQD. STEEL = 223. MM2, MAX. STEEL PERMISSIBLE = 753. MM2
MAX POS MOMENT = 18.45 KN-MET, LOADING 1

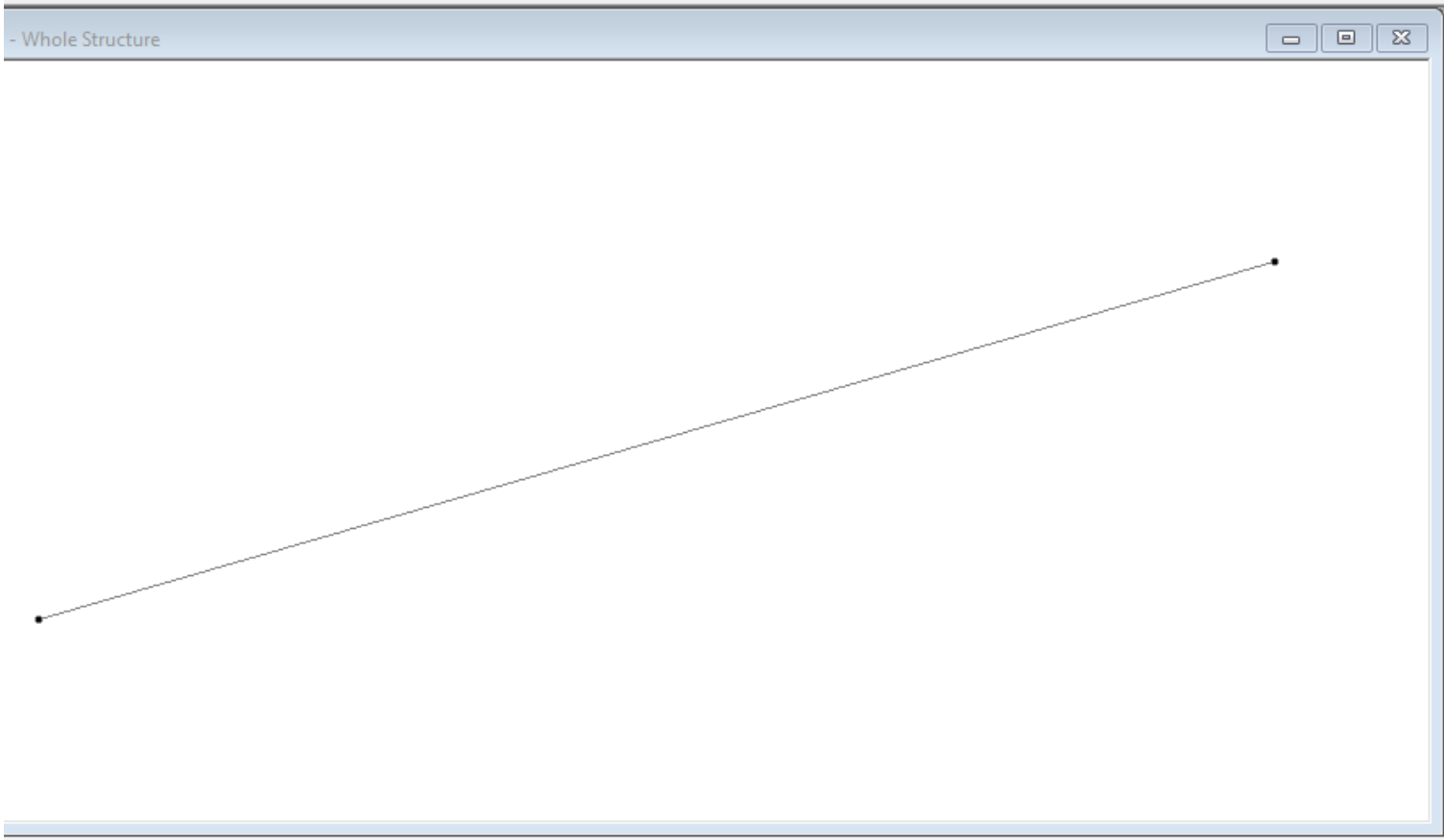
REQUIRED REINF. STEEL SUMMARY :

SECTION (MM)	REINF STEEL(+VE/-VE) (SQ. MM)		MOMENTS(+VE/-VE) (KNS-MET)		LOAD(+VE/-VE)	
0.	0./	0.	0./	0.	1/	0
221.	66./	0.	6./	0.	1/	0
442.	121./	0.	10./	0.	1/	0
662.	165./	0.	14./	0.	1/	0
883.	197./	0.	16./	0.	1/	0
1104.	217./	0.	18./	0.	1/	0
1325.	223./	0.	18./	0.	1/	0
1546.	217./	0.	18./	0.	1/	0
1767.	197./	0.	16./	0.	1/	0
1988.	165./	0.	14./	0.	1/	0
2208.	121./	0.	10./	0.	1/	0
2429.	66./	0.	6./	0.	1/	0
2650.	0./	0.	0./	0.	1/	0

----------< PAGE 3 Ends Here >----------

STAAD SPACE -- PAGE NO. 4


2
5
2.3266
peralte
0.240
5.075
trabe 4

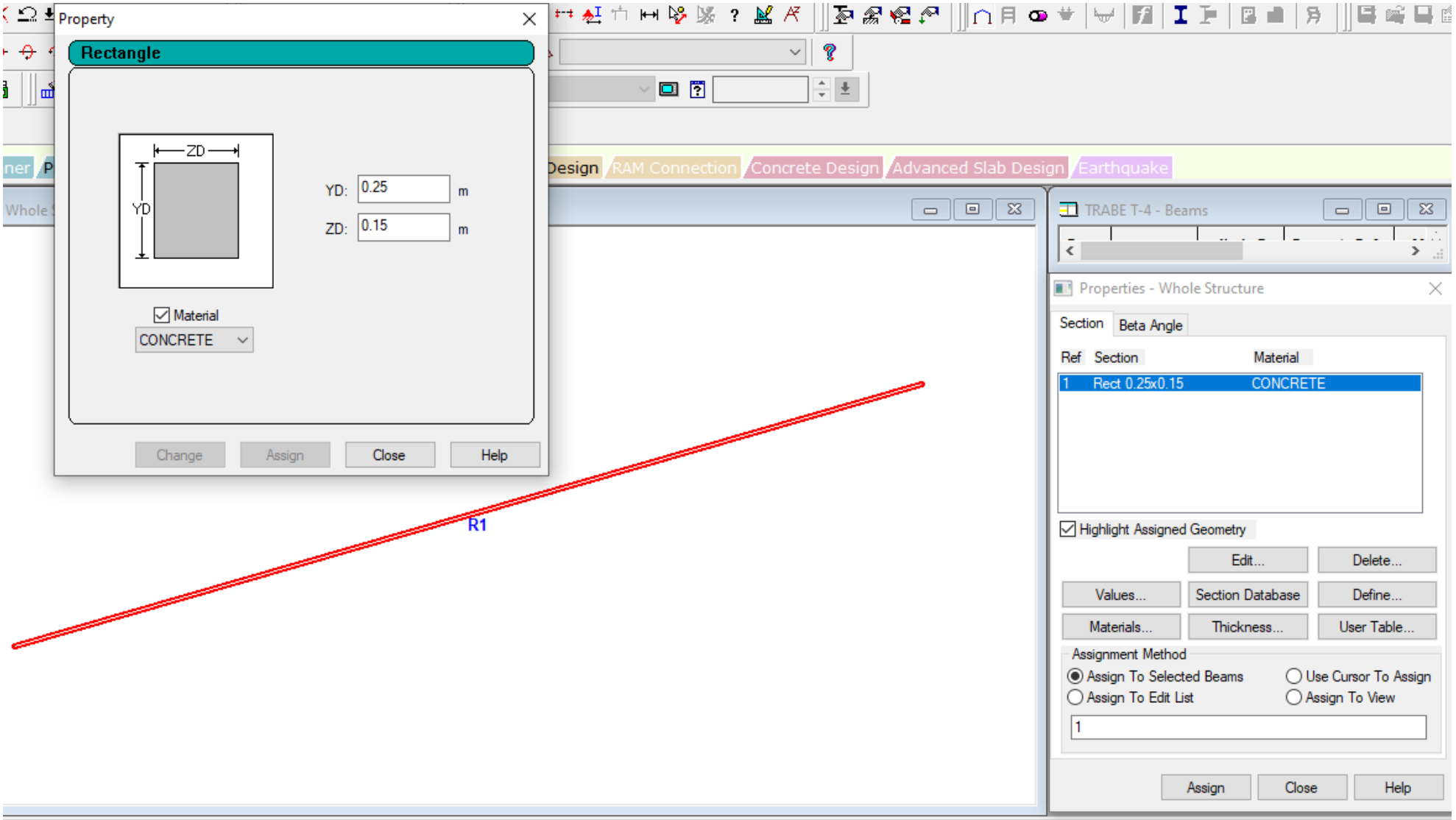


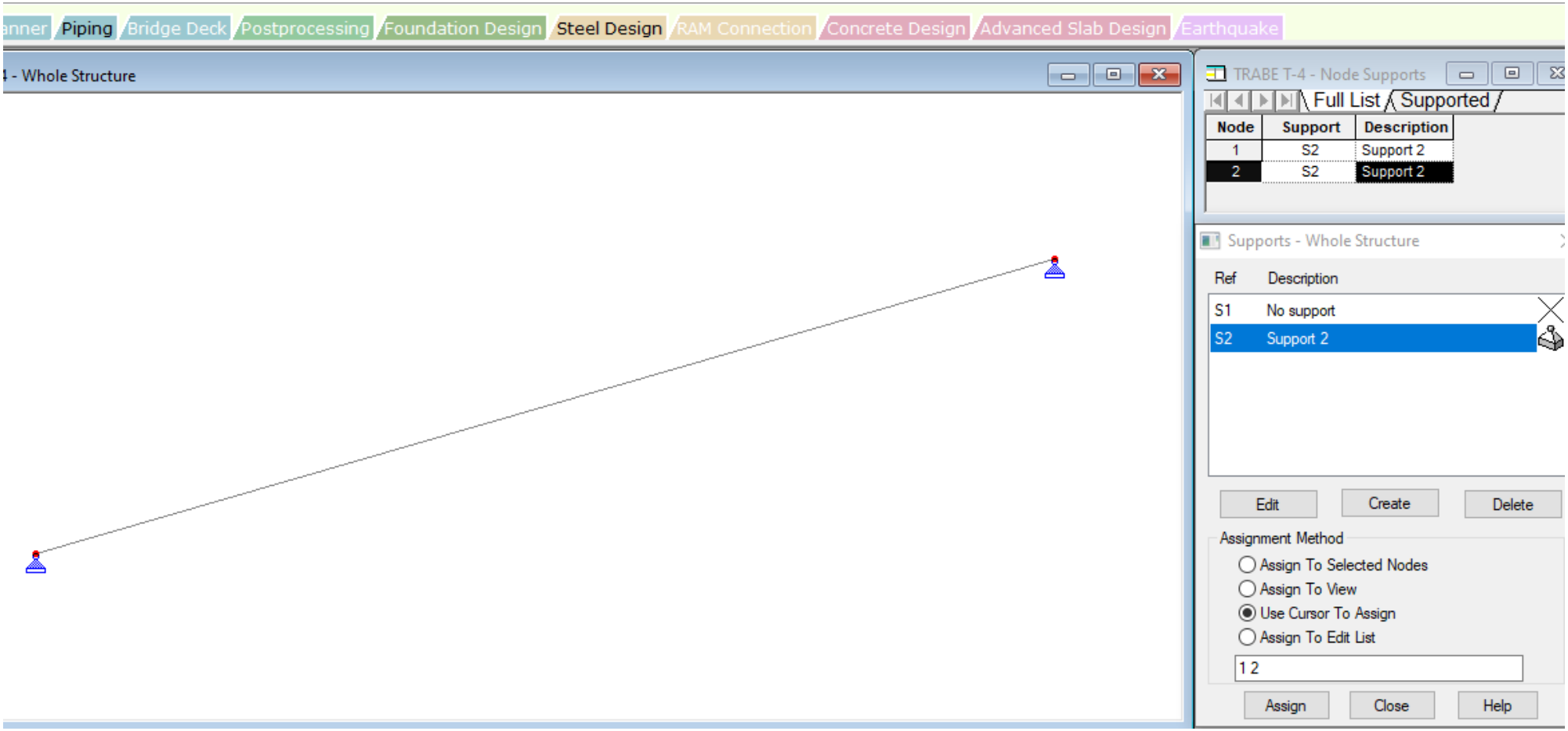
TRABE T-4 - Nodes

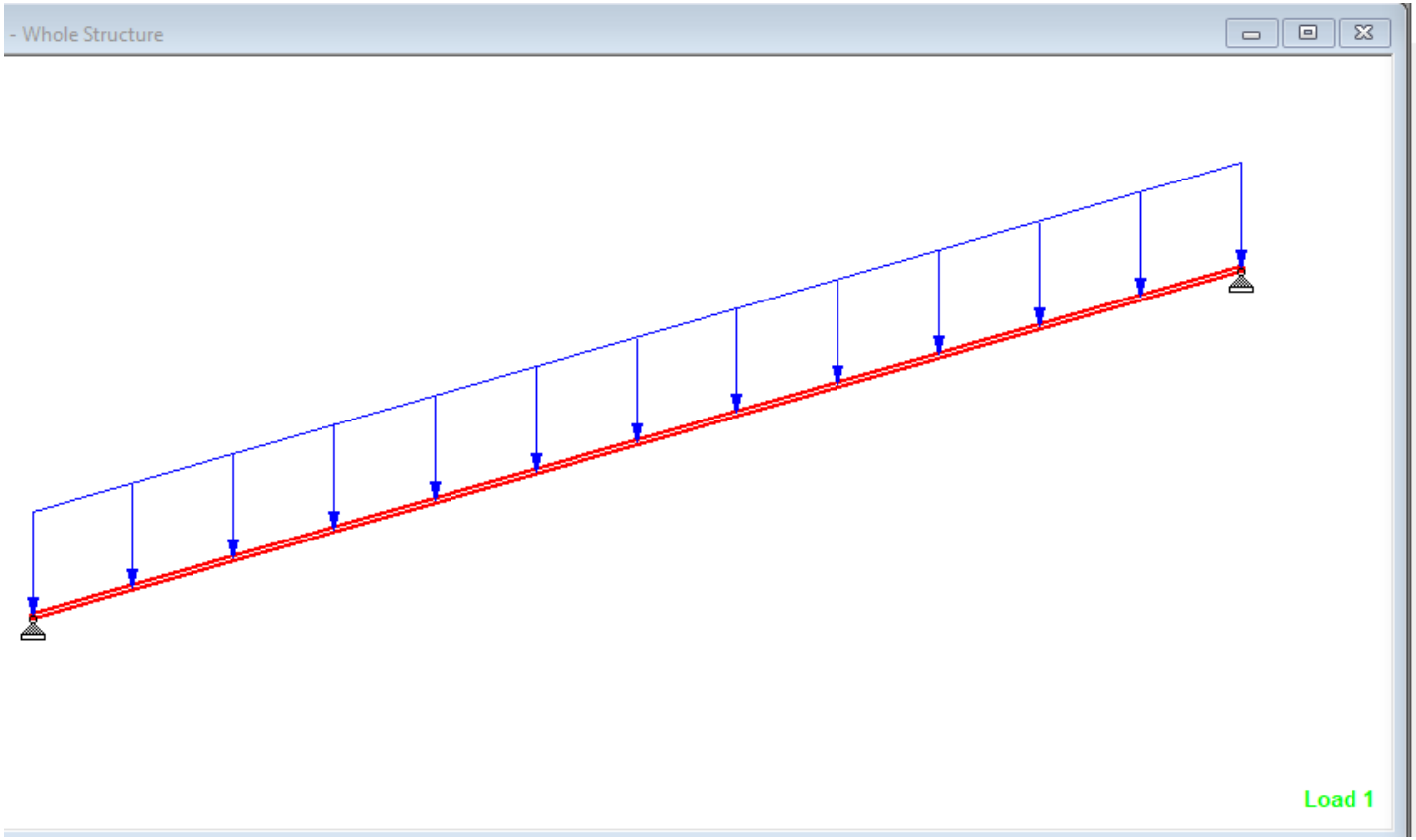
Node	X m	Y m	Z m
1	0.000	3.000	0.000
2	5.075	3.000	0.000
3			

TRABE T-4 - Beams

Beam	Node A	Node B	Property Refn.
1	1	2	
2			


Property
Rectangle
ZD
YD
YD: 0.25 m
ZD: 0.15 m
Material
CONCRETE
Change
Assign
Close
Help
Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
R1
TRABE T-4 - Beams
Properties - Whole Structure
Section
Beta Angle
Ref Section Material
1 Rect 0.25x0.15 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


anner
Piping
Bridge Deck
Postprocessing
Foundation Design
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
- Whole Structure
TRABE T-4 - 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



Load & Definition

- Definitions
- Load Cases Details
  - 1 : CV+CM
    - SELFWEIGHT Y -1
    - UNI GY -2326.6 kg/m
- Load Envelopes

New... | Add... | Edit ... | Delete...

☐ Toggle Load

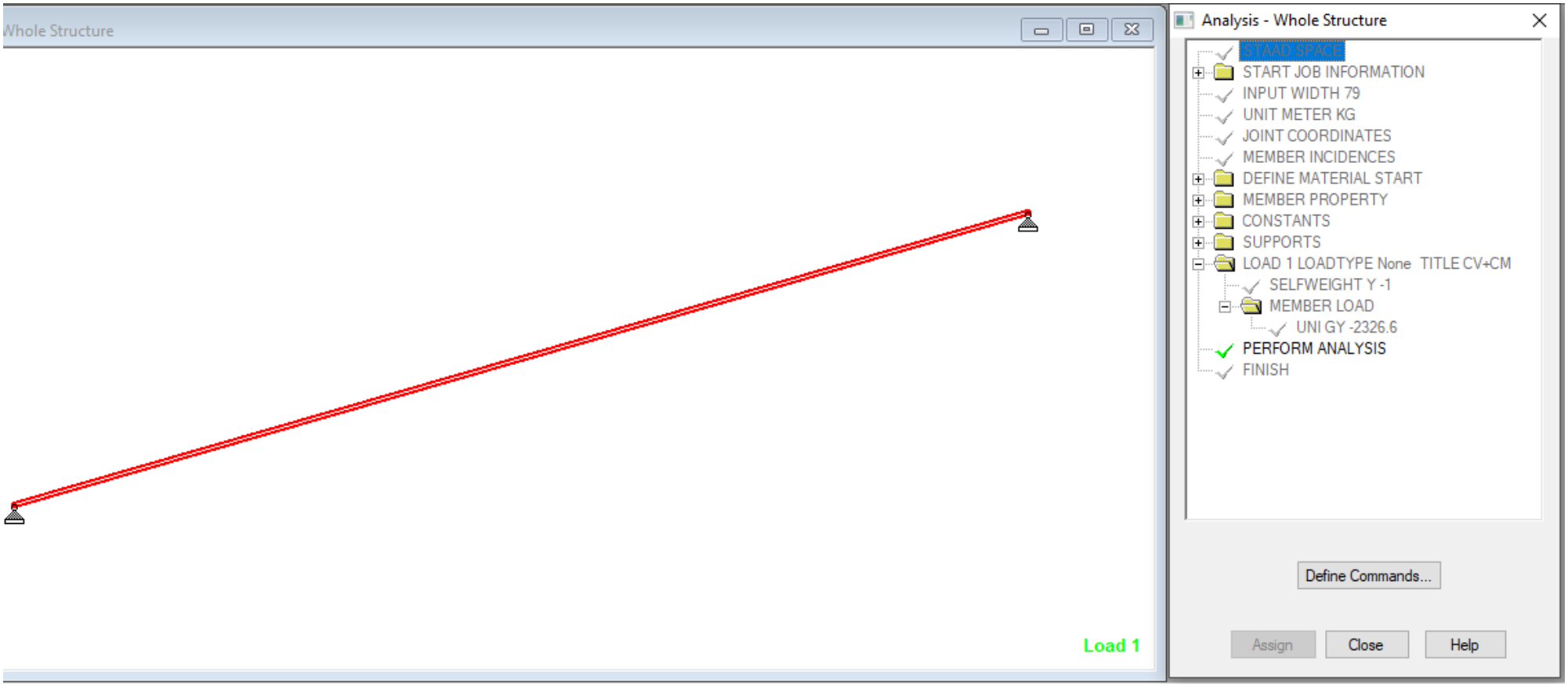
Assignment Method

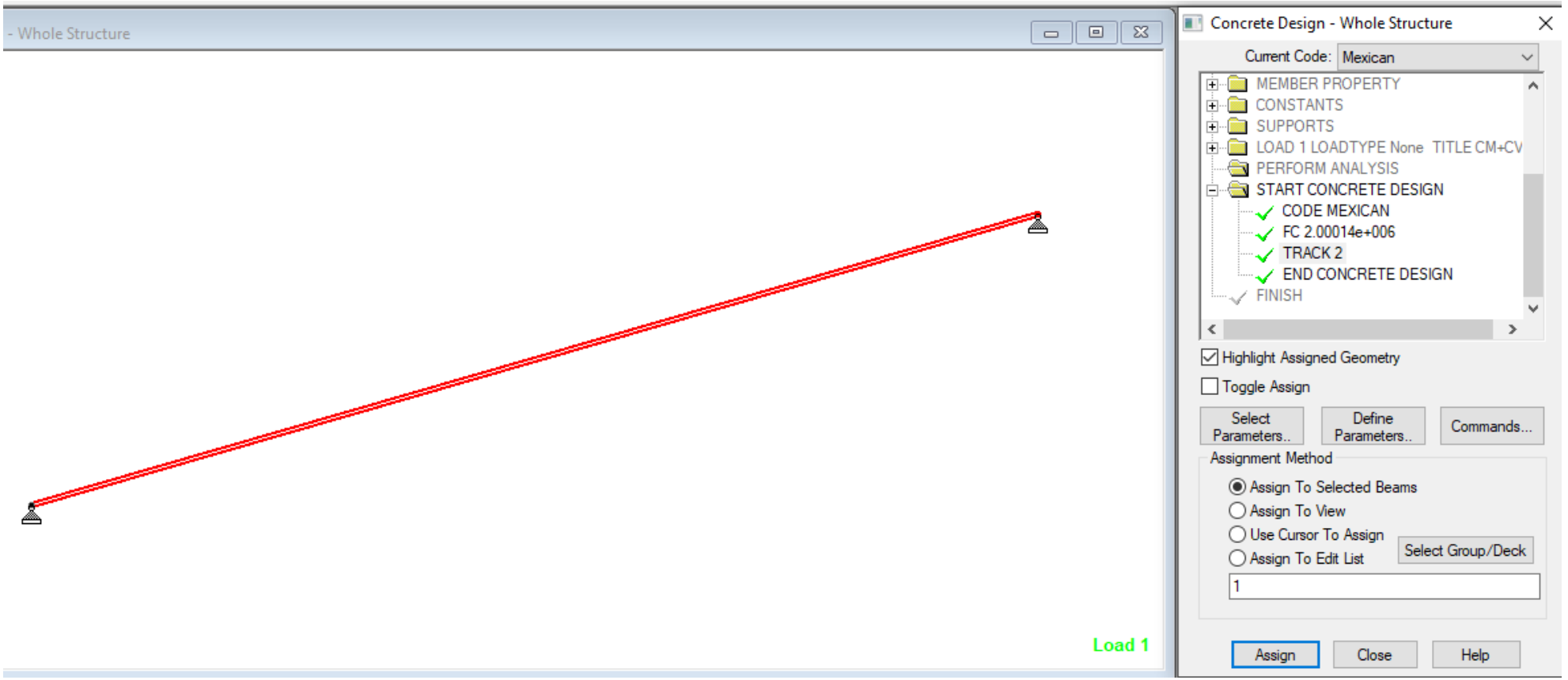
○ Assign To Selected Beams ◉ Use Cursor To Assign

○ Assign To View ○ Assign To Edit List

1

Assign | Close | Help


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 CV+CM
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -2326.6
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help


- Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CM+CV
PERFORM ANALYSIS
START CONCRETE DESIGN
CODE MEXICAN
FC 2.00014e+006
TRACK 2
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

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

```
     1. STAAD SPACE
INPUT FILE: C:\Users\enriq\OneDrive\Documentos\TRABE T-4.STD
     2. START JOB INFORMATION
     3. ENGINEER DATE 16-FEB-21
     4. END JOB INFORMATION
     5. INPUT WIDTH 79
     6. UNIT METER KG
     7. JOINT COORDINATES
     8. 1 0 3 0; 2 5.075 3 0
     9. MEMBER INCIDENCES
    10. 1 1 2
    11. DEFINE MATERIAL START
    12. ISOTROPIC CONCRETE
    13. E 2.21467E+009
    14. POISSON 0.17
    15. DENSITY 2402.62
    16. ALPHA 1E-005
    17. DAMP 0.05
    18. TYPE CONCRETE
    19. STRENGTH FCU 2.81228E+006
    20. END DEFINE MATERIAL
    21. MEMBER PROPERTY AMERICAN
    22. 1 PRIS YD 0.2 ZD 0.15
    23. CONSTANTS
    24. MATERIAL CONCRETE ALL
    25. SUPPORTS
    26. 1 2 PINNED
    27. LOAD 1 LOADTYPE NONE  TITLE CM+CV
    28. SELFWEIGHT Y -1
    29. MEMBER LOAD
    30. 1 UNI GY -2326.6
```

TRABE T-4 - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

```
            P R O B L E M   S T A T I S T I C S
            -----------------------------------

   NUMBER OF JOINTS          2  NUMBER OF MEMBERS       1
   NUMBER OF PLATES          0  NUMBER OF SOLIDS        0
   NUMBER OF SURFACES        0  NUMBER OF SUPPORTS      2


         SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER

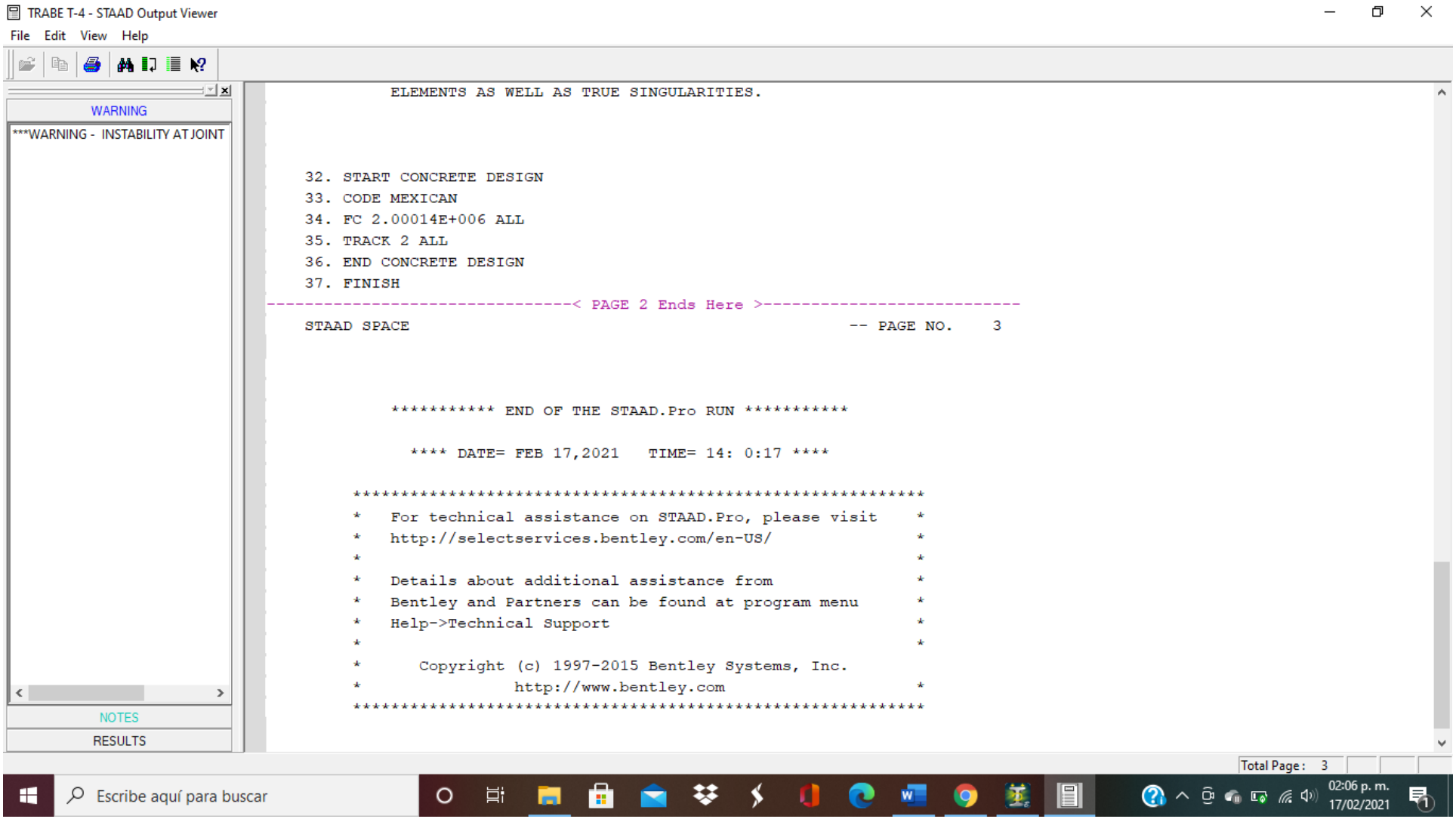
   ORIGINAL/FINAL BAND-WIDTH=     1/     1/      6 DOF
 TOTAL      PRIMARY LOAD CASES =      1, TOTAL DEGREES OF FREEDOM =       6
 TOTAL LOAD COMBINATION  CASES =      0  SO FAR.
   SIZE OF STIFFNESS MATRIX =         1 DOUBLE  KILO-WORDS
   REQRD/AVAIL. DISK SPACE  =      12.0/ 863838.8 MB



***WARNING -  INSTABILITY AT JOINT     2   DIRECTION = MX
 PROBABLE CAUSE SINGULAR-ADDING WEAK SPRING
 K-MATRIX DIAG=  1.9665293E+03 L-MATRIX DIAG=  0.0000000E+00 EQN NO       4
 ***NOTE - VERY WEAK SPRING ADDED FOR STABILITY

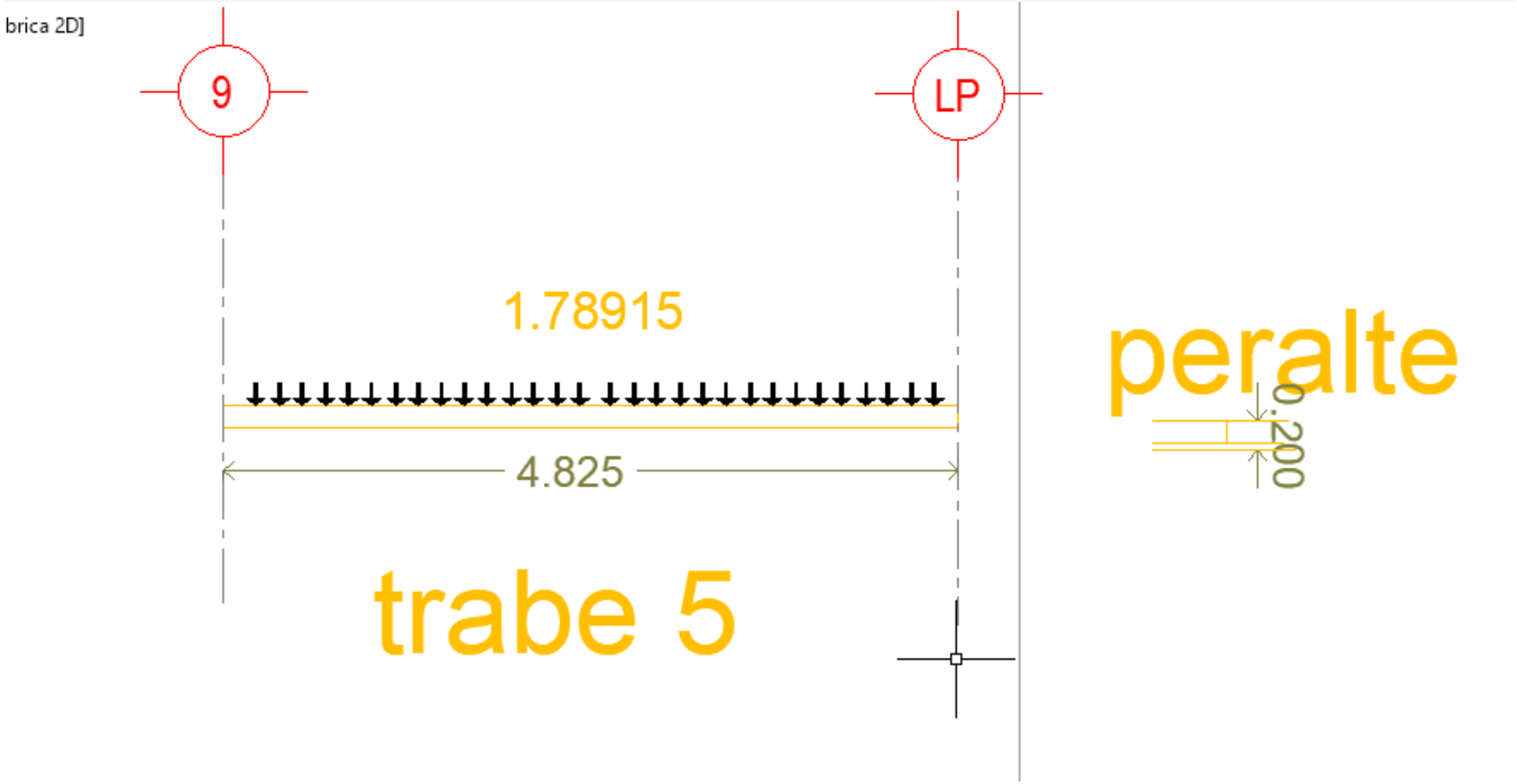
  **NOTE** STAAD DETECTS INSTABILITIES AS EXCESSIVE LOSS OF SIGNIFICANT DIGITS
           DURING DECOMPOSITION. WHEN A DECOMPOSED DIAGONAL IS LESS THAN THE
           BUILT-IN REDUCTION FACTOR TIMES THE ORIGINAL STIFFNESS MATRIX DIAGONAL,
           STAAD PRINTS A SINGULARITY NOTICE. THE BUILT-IN REDUCTION FACTOR
           IS   1.000E-09

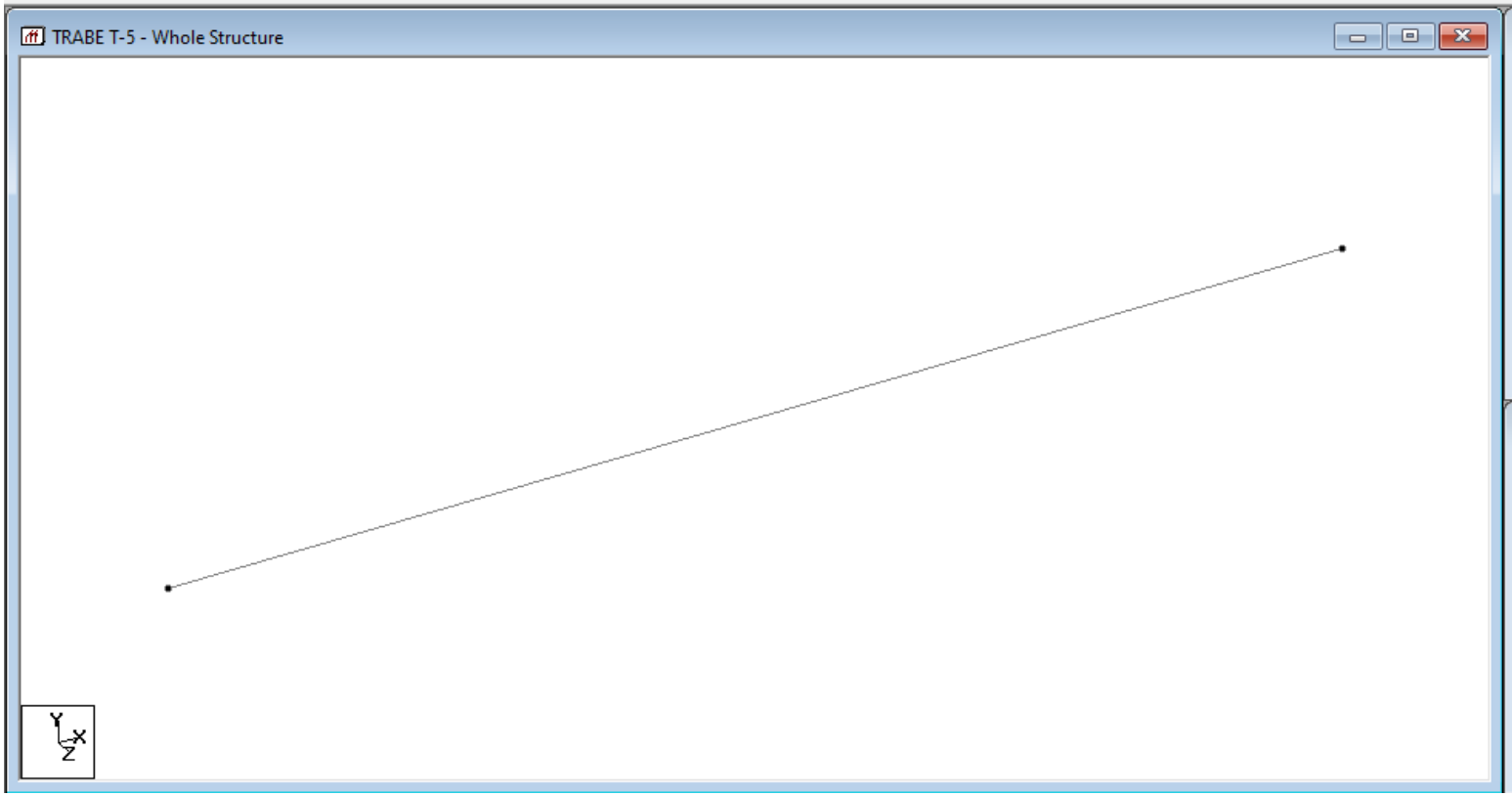
           THE ABOVE CONDITIONS COULD ALSO BE CAUSED BY VERY STIFF OR VERY WEAK
           ELEMENTS AS WELL AS TRUE SINGULARITIES.
```


TRABE T-4 - STAAD Output Viewer
File Edit View Help
WARNING
***WARNING - INSTABILITY AT JOINT
NOTES
RESULTS
ELEMENTS AS WELL AS TRUE SINGULARITIES.
32. START CONCRETE DESIGN
33. CODE MEXICAN
34. FC 2.00014E+006 ALL
35. TRACK 2 ALL
36. END CONCRETE DESIGN
37. FINISH
-------------------------------< PAGE 2 Ends Here >--------------------------
STAAD SPACE -- PAGE NO. 3
********** END OF THE STAAD.Pro RUN **********
**** DATE= FEB 17,2021 TIME= 14: 0:17 ****
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
Copyright (c) 1997-2015 Bentley Systems, Inc.
http://www.bentley.com
Total Page: 3
Escribe aquí para buscar
02:06 p. m.
17/02/2021

Una disculpa profe pero tengo más exámenes y usted no me responde, ojala y tome en cuenta eso , necesito trabajar y mi aplicación no me ayudo por que ya ve que no nos da los resultado peri si lo toma como si los hiciera, entonces opte por poner lo que me manda la aplicación

brica 2D]



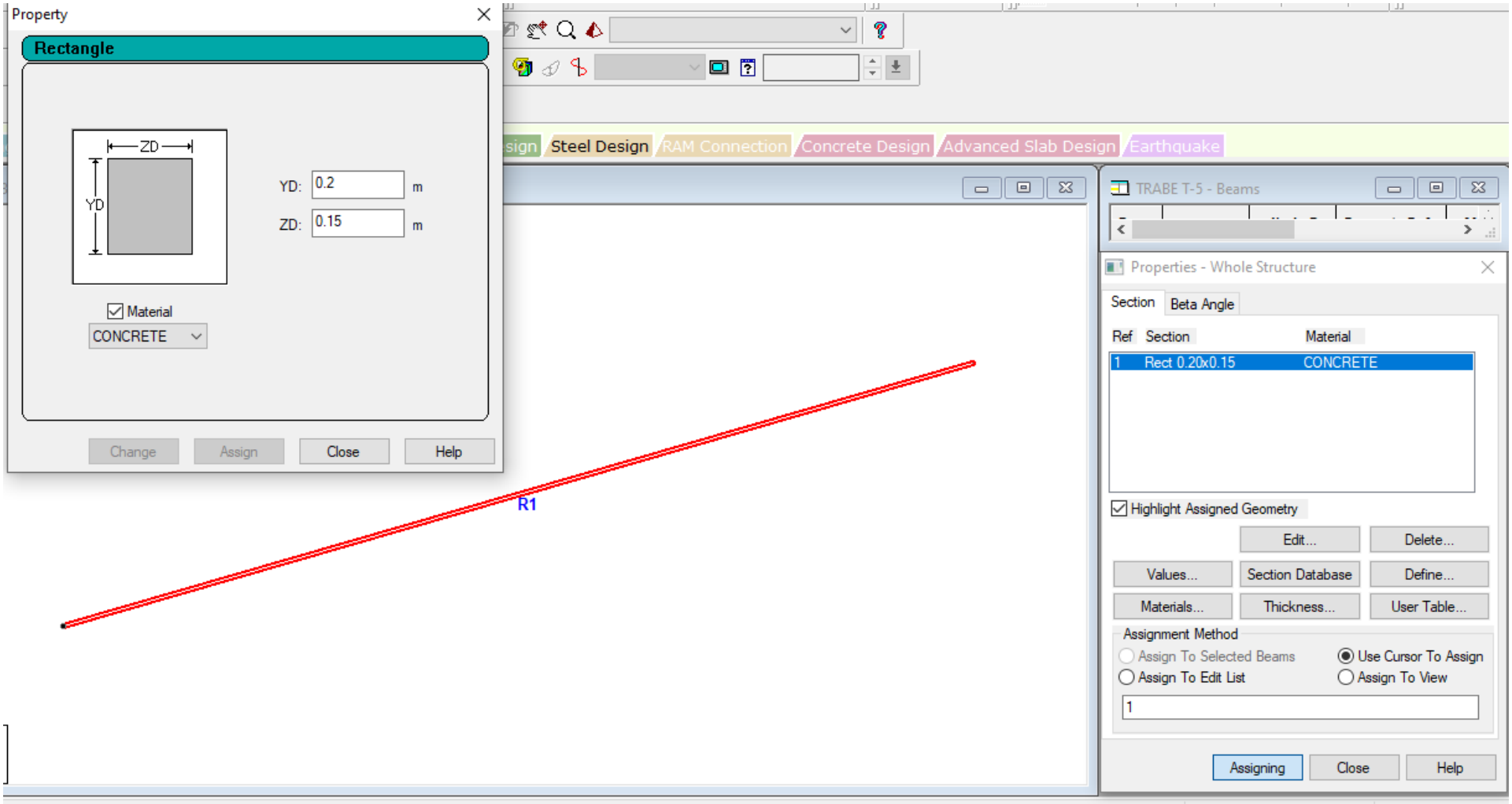


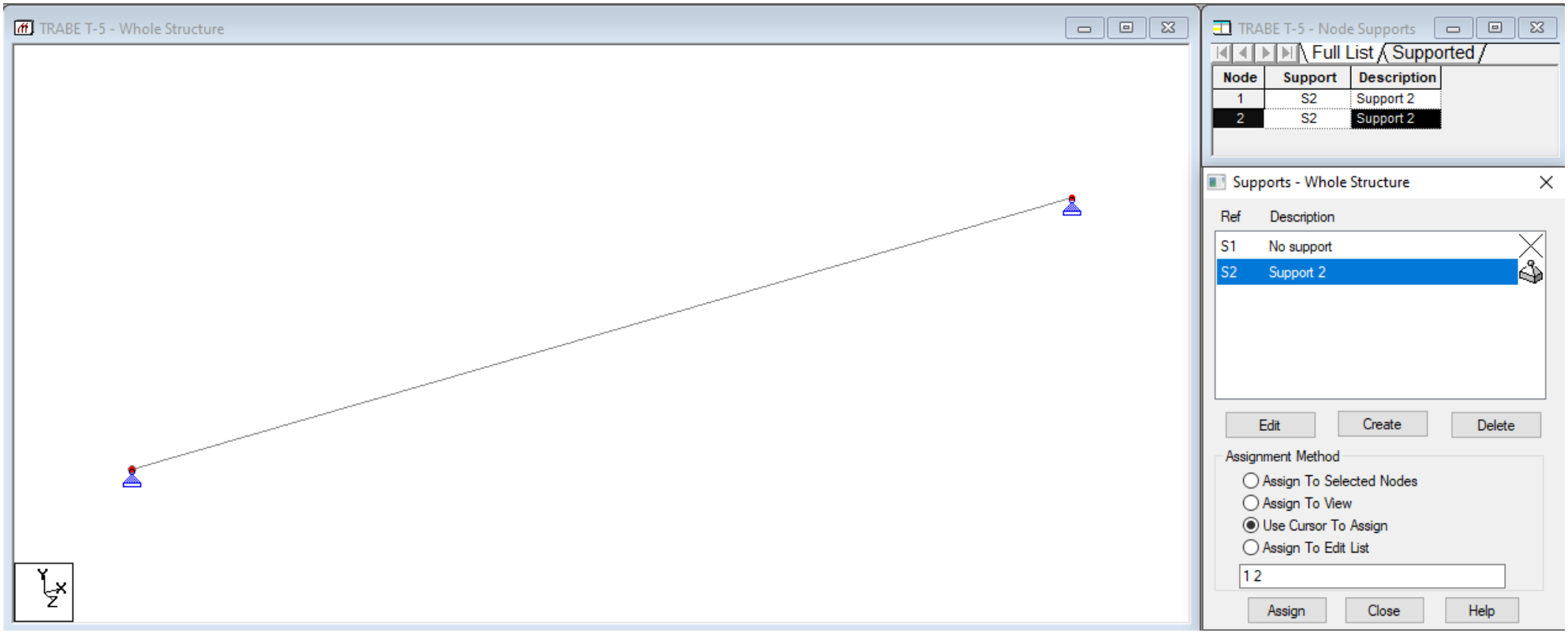
TRABE T-5 - Nodes

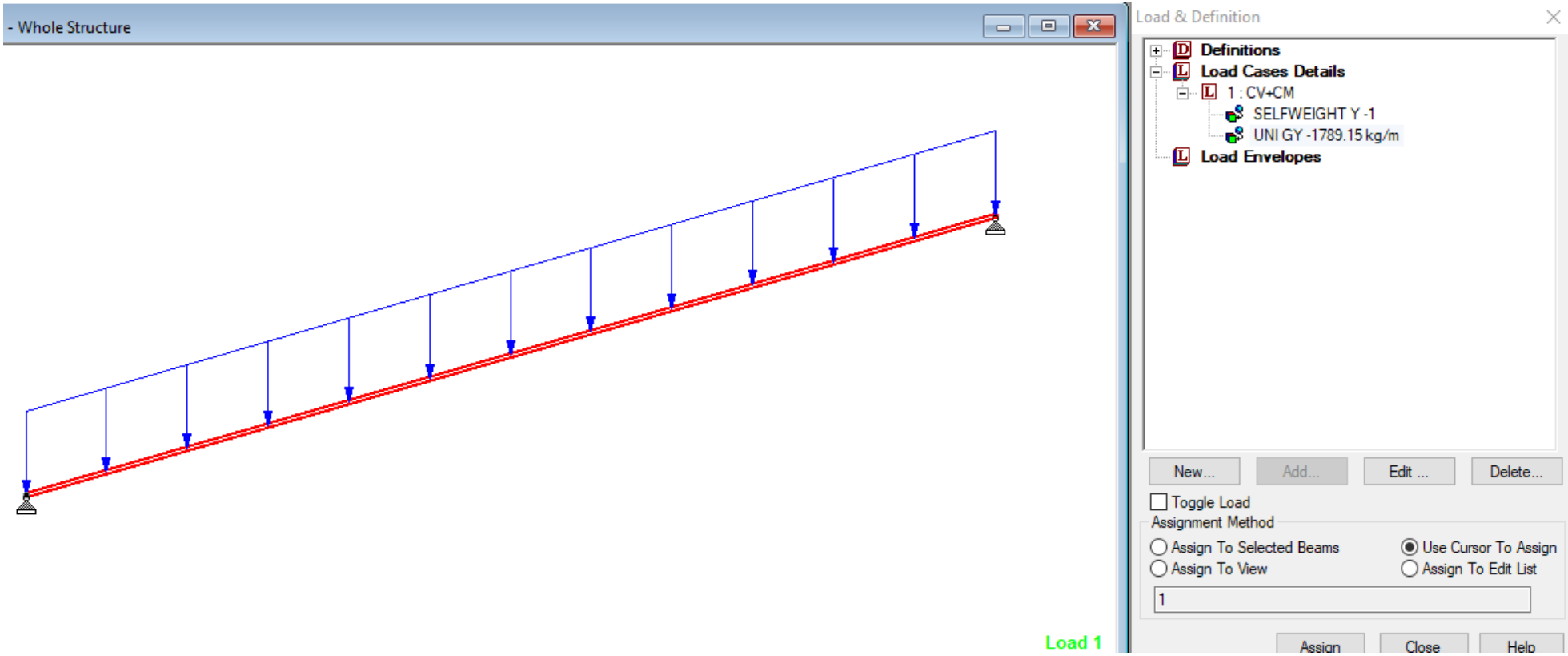
Node	X m	Y m	Z m
1	0.000	3.000	0.000
2	4.825	3.000	0.000
3			

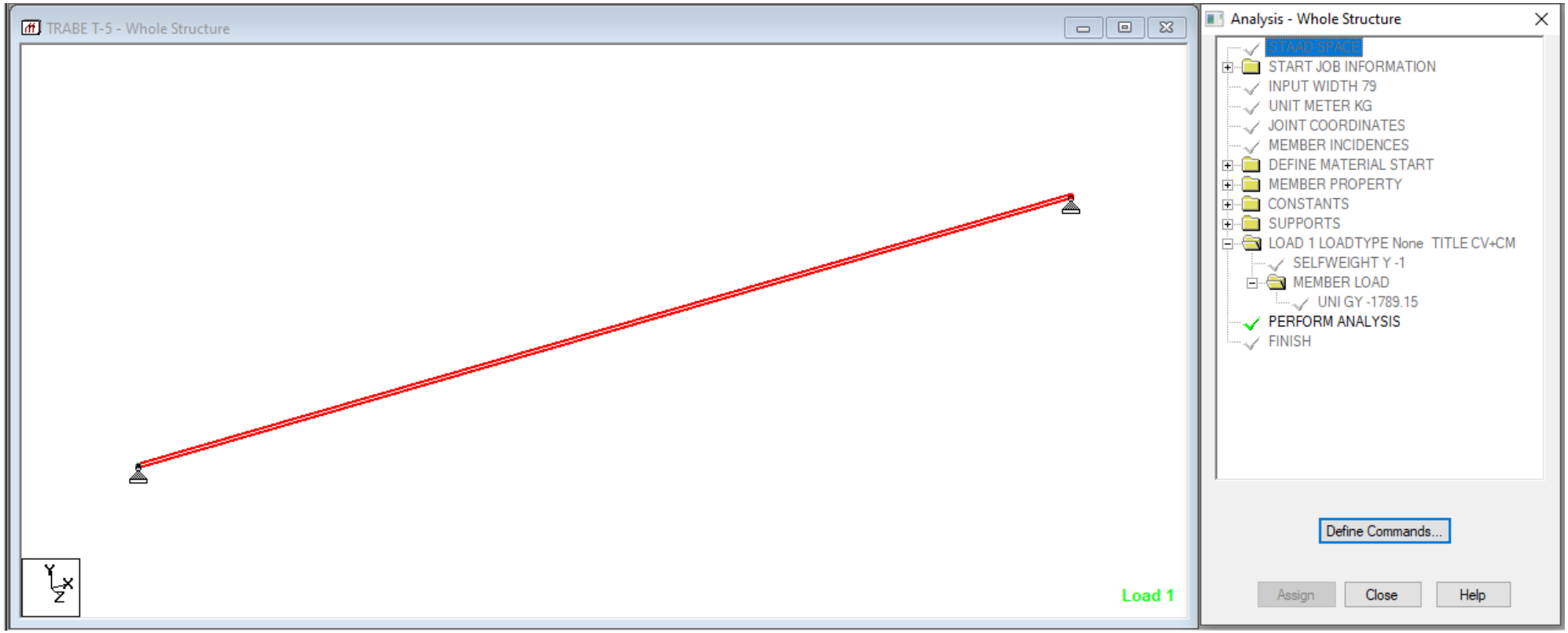
TRABE T-5 - Beams

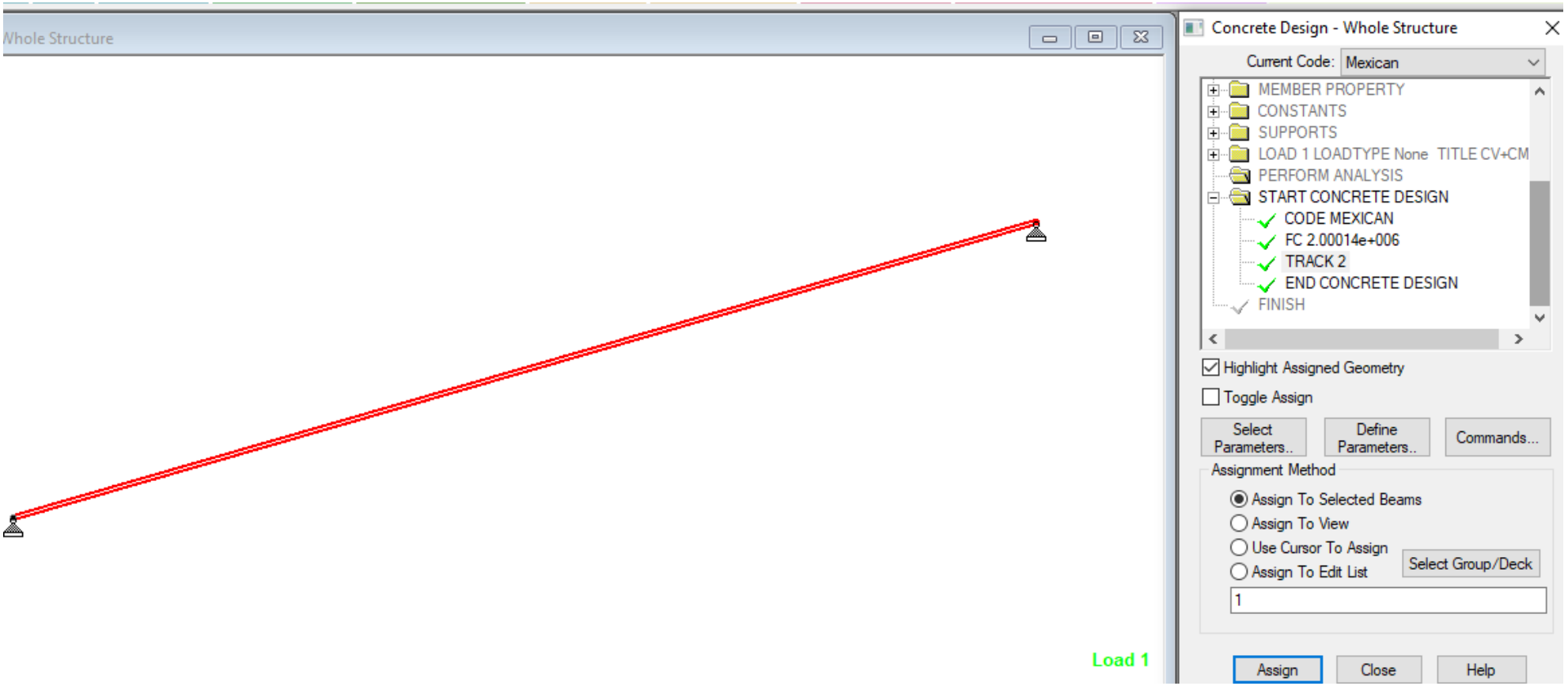
Beam	Node A	Node B	Property Refn.
1	1	2	
2			


Property
Rectangle
ZD
YD
YD: 0.2 m
ZD: 0.15 m
Material
CONCRETE
Change
Assign
Close
Help
Steel Design
RAM Connection
Concrete Design
Advanced Slab Design
Earthquake
R1
TRABE T-5 - Beams
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
Assigning
Close
Help


TRABE T-5 - Whole Structure
TRABE T-5 - 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
Y
X
Z


- Whole Structure
Load 1
Load & Definition
Definitions
Load Cases Details
1 : CV+CM
SELFWEIGHT Y -1
UNI GY -1789.15 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
Assign
Close
Help


TRABE T-5 - 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 CV+CM
SELFWEIGHT Y -1
MEMBER LOAD
UNI GY -1789.15
PERFORM ANALYSIS
FINISH
Define Commands...
Assign
Close
Help


Whole Structure
Load 1
Concrete Design - Whole Structure
Current Code: Mexican
MEMBER PROPERTY
CONSTANTS
SUPPORTS
LOAD 1 LOADTYPE None TITLE CV+CM
PERFORM ANALYSIS
START CONCRETE DESIGN
CODE MEXICAN
FC 2.00014e+006
TRACK 2
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

TRABE T-5 - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

```
     1. STAAD SPACE
INPUT FILE: C:\Users\enriq\OneDrive\Documentos\TRABE T-5.STD
     2. START JOB INFORMATION
     3. ENGINEER DATE 16-FEB-21
     4. END JOB INFORMATION
     5. INPUT WIDTH 79
     6. UNIT METER KG
     7. JOINT COORDINATES
     8. 1 0 3 0; 2 4.825 3 0
     9. MEMBER INCIDENCES
    10. 1 1 2
    11. DEFINE MATERIAL START
    12. ISOTROPIC CONCRETE
    13. E 2.21467E+009
    14. POISSON 0.17
    15. DENSITY 2402.62
    16. ALPHA 1E-005
    17. DAMP 0.05
    18. TYPE CONCRETE
    19. STRENGTH FCU 2.81228E+006
    20. END DEFINE MATERIAL
    21. MEMBER PROPERTY
    22. 1 PRIS YD 0.2 ZD 0.15
    23. CONSTANTS
    24. MATERIAL CONCRETE ALL
    25. SUPPORTS
    26. 1 2 PINNED
    27. LOAD 1 LOADTYPE NONE  TITLE CV+CM
    28. SELFWEIGHT Y -1 LIST ALL
    29. MEMBER LOAD
    30. 1 UNI GY -1789.15
```

TRABE T-5 - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

```
            P R O B L E M   S T A T I S T I C S
            -----------------------------------

   NUMBER OF JOINTS          2  NUMBER OF MEMBERS        1
   NUMBER OF PLATES          0  NUMBER OF SOLIDS         0
   NUMBER OF SURFACES        0  NUMBER OF SUPPORTS       2


         SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER

    ORIGINAL/FINAL BAND-WIDTH=     1/     1/      6 DOF
  TOTAL      PRIMARY LOAD CASES =     1, TOTAL DEGREES OF FREEDOM =       6
  TOTAL LOAD COMBINATION  CASES =     0  SO FAR.
    SIZE OF STIFFNESS MATRIX =        1 DOUBLE  KILO-WORDS
    REQRD/AVAIL. DISK SPACE  =     12.0/ 863830.1 MB



***WARNING -  INSTABILITY AT JOINT     2   DIRECTION = MX
 PROBABLE CAUSE SINGULAR-ADDING WEAK SPRING
 K-MATRIX DIAG=  2.0684220E+03 L-MATRIX DIAG=  0.0000000E+00 EQN NO       4
 ***NOTE - VERY WEAK SPRING ADDED FOR STABILITY

   **NOTE** STAAD DETECTS INSTABILITIES AS EXCESSIVE LOSS OF SIGNIFICANT DIGITS
            DURING DECOMPOSITION. WHEN A DECOMPOSED DIAGONAL IS LESS THAN THE
            BUILT-IN REDUCTION FACTOR TIMES THE ORIGINAL STIFFNESS MATRIX DIAGONAL,
            STAAD PRINTS A SINGULARITY NOTICE. THE BUILT-IN REDUCTION FACTOR
            IS   1.000E-09

            THE ABOVE CONDITIONS COULD ALSO BE CAUSED BY VERY STIFF OR VERY WEAK
            ELEMENTS AS WELL AS TRUE SINGULARITIES.
```

TRABE T-5 - STAAD Output Viewer

File Edit View Help

WARNING

***WARNING - INSTABILITY AT JOINT

NOTES

RESULTS

```
            ELEMENTS AS WELL AS TRUE SINGULARITIES.



    32. START CONCRETE DESIGN
    33. CODE MEXICAN
    34. FC 2.00014E+006 ALL
    35. TRACK 2 ALL
    36. END CONCRETE DESIGN
    37. FINISH
--------------------------------< PAGE 2 Ends Here >--------------------------
    STAAD SPACE                                                -- PAGE NO.    3



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

            **** DATE= FEB 17,2021   TIME= 14:10:13 ****

       ************************************************************
       *    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                               *
       *                                                          *
       *       Copyright (c) 1997-2015 Bentley Systems, Inc.
       *                  http://www.bentley.com                  *
       ************************************************************
```