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*          STAAD.Pro V8i SELECTseries6          *
*          Version  20.07.11.33                 *
*          Proprietary Program of              *
*          Bentley Systems, Inc.               *
*          Date=    MAR 12, 2023               *
*          Time=    20:30:50                  *
*
*          USER ID:                            *
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1. STAAD SPACE
INPUT FILE: C:\Users\Liliana\Downloads\TRABE TR3.STD
2. START JOB INFORMATION
3. ENGINEER DATE 08-MAR-23
4. END JOB INFORMATION
5. INPUT WIDTH 79
6. UNIT METER KG
7. JOINT COORDINATES
8. 1 0 3 0; 2 3.6 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 0.3 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 LIST ALL
29. MEMBER LOAD
30. 1 UNI GY -720 0 1.1
31. 1 UNI GY -1200 1.1
32. 1 CON GY -570 1.1
33. PERFORM ANALYSIS

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P R O B L E M   S T A T I S T I C S

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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 IN-CORE ADVANCED MATH SOLVER

TOTAL        PRIMARY LOAD CASES =        1, TOTAL DEGREES OF FREEDOM =        6  
TOTAL LOAD COMBINATION CASES =        0 SO FAR.

WARNING: IN UNIFORM MEMBER LOAD. ITEM "f3" NOT PROVIDED FOR MEMBER        1 CASE        1  
"f3" ASSUMED TO BE MEMBER LENGTH =        3.60

\*\*\*WARNING - INSTABILITY AT JOINT        2        DIRECTION = MX  
PROBABLE CAUSE SINGULAR-ADDING WEAK SPRING  
K-MATRIX DIAG= 5.2880359E+03 L-MATRIX DIAG= 5.3430894E-11 EQN NO        4  
\*\*\*NOTE - VERY WEAK SPRING ADDED FOR STABILITY

\*\*\*NOTE\*\* STAAD DETECTS INSTABILITIES AS EXCESSIVE LOSS OF SIGNIFICANT DIGITS  
DURING DECOMPOSITION. WHEN SIGNIFICANT DIGITS LOST IS GREATER THAN 9  
STAAD PRINTS A SINGULARITY NOTICE.

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

- 34. START CONCRETE DESIGN
- 35. CODE MEXICAN
- 36. FC 2.00014E+006 ALL
- 37. FYMAIN 4.2003E+007 ALL
- 38. TRACK 2 ALL
- 39. DESIGN BEAM 1

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**BEAM NO. 1 DESIGN RESULTS - FLEXURE**

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

LEN - 3600.00 (mm) FY - 412. FC - 20. SIZE - 150.00 X 300.00 (mm)

LEVEL	HEIGHT (mm)	BAR INFO	FROM (mm)	TO (mm)	ANCHOR	
					STA	END
1	43.	2 - 3MM	0.	3600.	YES	NO
2	72.	2 - 3MM	0.	3600.	YES	NO

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| CRITICAL POS MOMENT= 22.43 kNm AT 1800.00 (mm) LOAD 1|
| REQD STEEL= 283.59 (mm2) ROW=0.0078 ROWMX=0.0152 ROWMN=0.0024 |
| 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 = 239.42/ 299.57 (mm) |
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Cracked Moment of Inertia Iz at above location =0.88456E+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	1/ 0
300.00	80.70/ 0.00	6./ 0.00	1/ 0
600.00	153.49/ 0.00	12./ 0.00	1/ 0
900.00	223.97/ 0.00	17./ 0.00	1/ 0
1200.00	279.55/ 0.00	21./ 0.00	1/ 0
1500.00	302.89/ 0.00	22./ 0.00	1/ 0
1800.00	307.82/ 0.00	22./ 0.00	1/ 0
2100.00	294.00/ 0.00	22./ 0.00	1/ 0
2400.00	262.34/ 0.00	20./ 0.00	1/ 0
2700.00	214.74/ 0.00	16./ 0.00	1/ 0
3000.00	153.57/ 0.00	12./ 0.00	1/ 0
3300.00	81.27/ 0.00	7./ 0.00	1/ 0
3600.00	0.00/ 0.00	0./ 0.00	0/ 1

**BEAM NO. 1 DESIGN RESULTS - SHEAR**

AT START SUPPORT - Vu= 0.05 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.

STAAD SPACE

-- PAGE NO. 4

AT END SUPPORT - Vu= 0.05 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.  
40. END CONCRETE DESIGN  
41. FINISH

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

\*\*\*\* DATE= MAR 12,2023 TIME= 20:30:50 \*\*\*\*

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* 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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