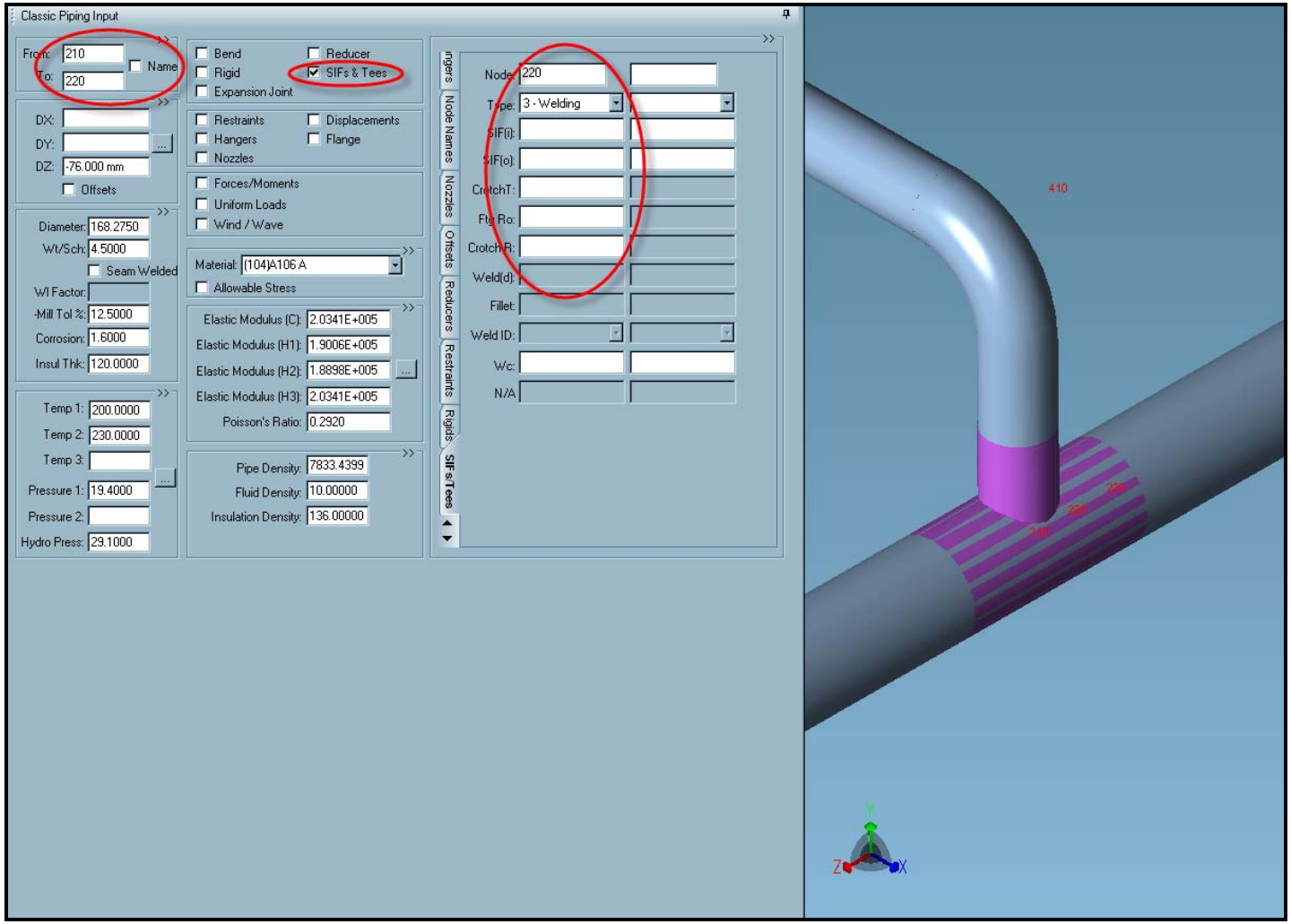
CASE 1. CALCULATING SIF(i)

NODE	Axial Stress MPa	Bending Stress MPa	Torsion Stress MPa	Hoop Stress MPa	Max Stress Intensity MPa	SIF In Plane	SIF Out Plane	Code Stress MPa	Allowable Stress MPa	Ratio %		Piping Code
210	13.32	1.47	0.62	29.61	30.64	1.000	1.000	16.69	0.00	0.00		B31.3
220	13.32	3.20	-0.62	29.61	30.64	**1.852**	2.135	18.19	0.00	0.00		B31.3
220	13.32	3.20	-0.00	29.61	30.62	**1.852**	2.135	17.96	0.00	0.00		B31.3
230	13.32	1.69	0.00	29.61	30.62	1.000	1.000	16.45	0.00	0.00		B31.3

HEADER: 210-220-230 (**220 is SIF point**)

BRANCH: **220**-410-etc..



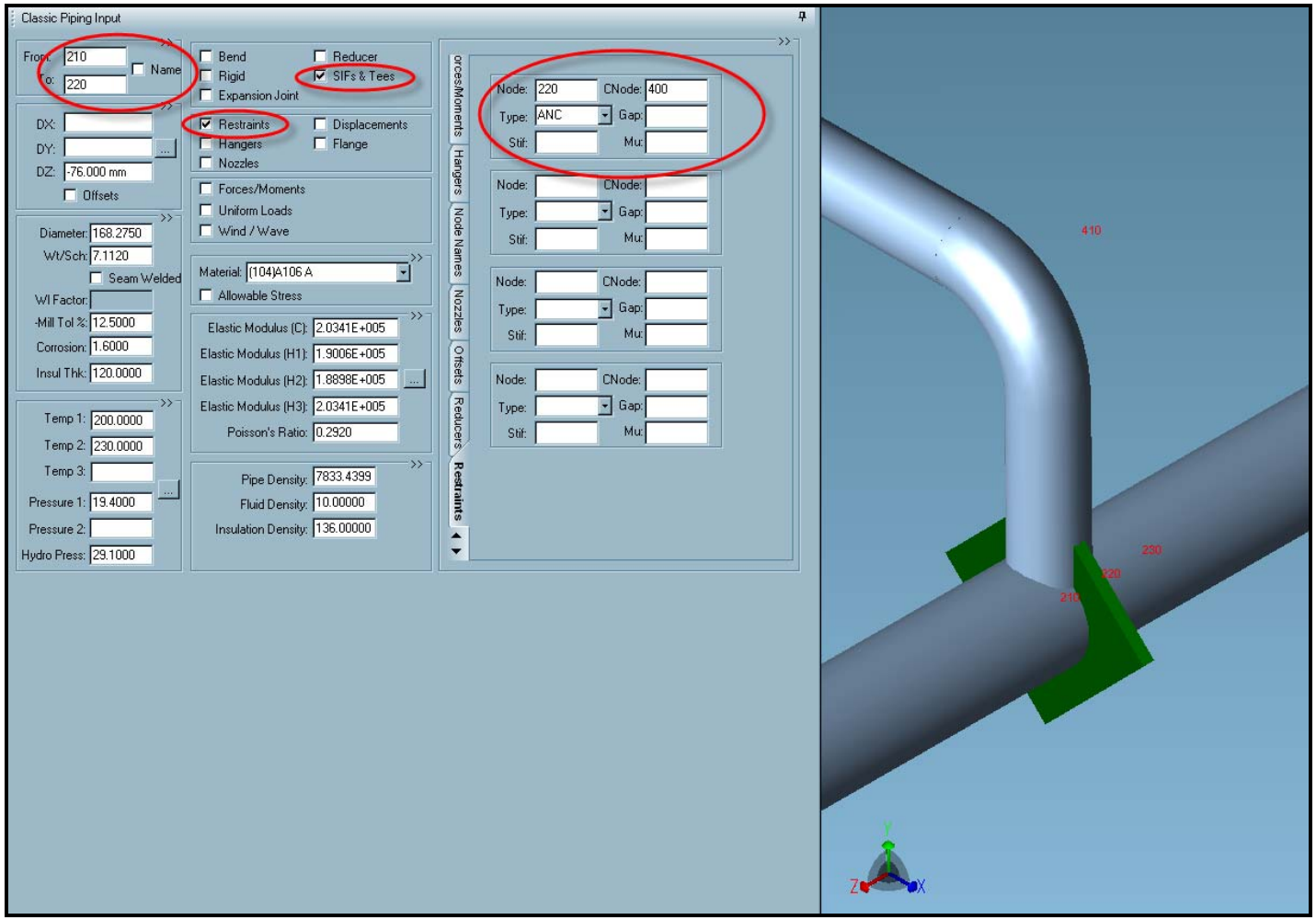
CASE 2. INSTERTING an ANCORE and CALCULATING BRANCH LOADS

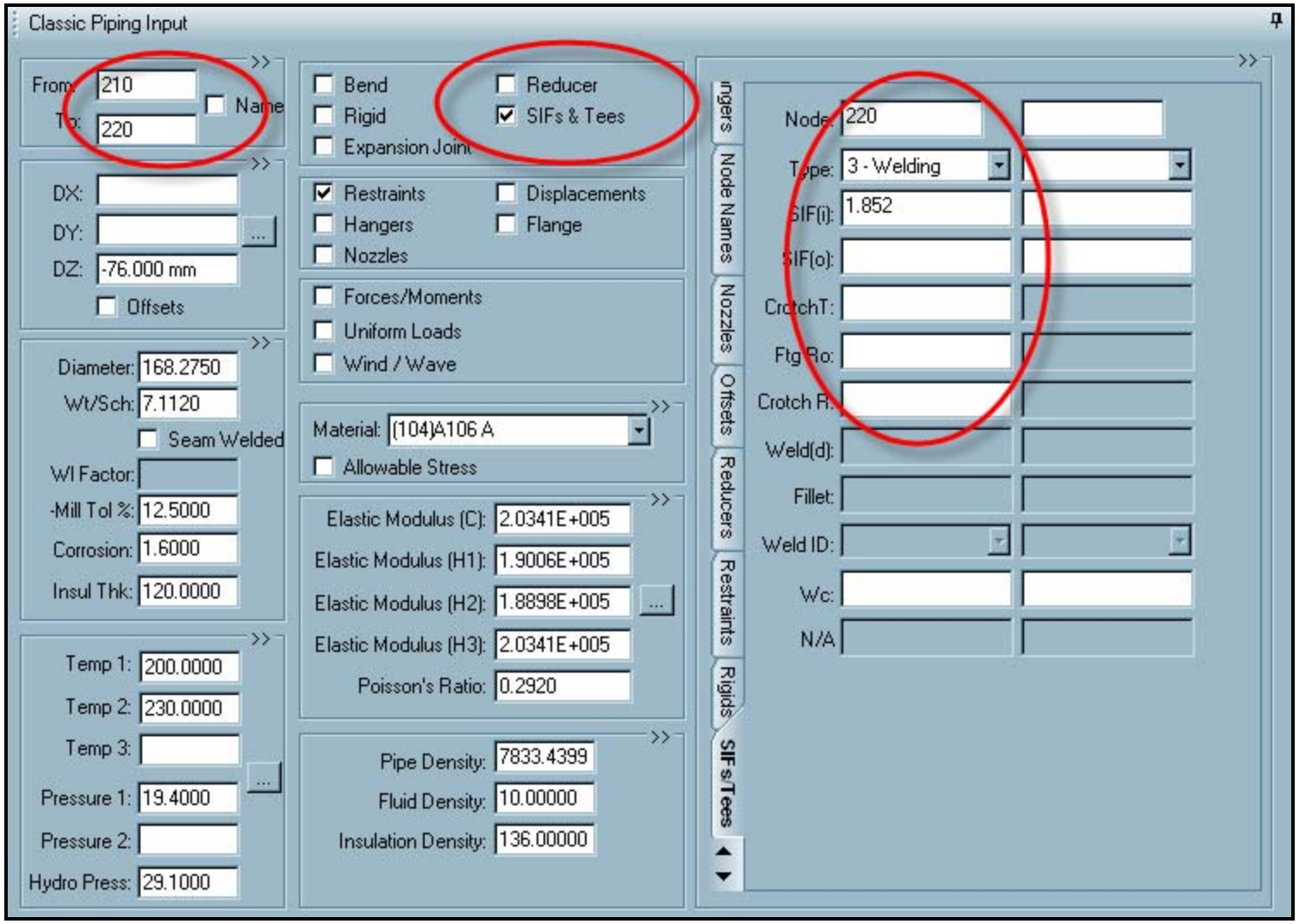
NODE	Axial Stress MPa	Bending Stress MPa	Torsion Stress MPa	Hoop Stress MPa	Max Stress Intensity MPa	SIF In Plane	SIF Out Plane	Code Stress MPa	Allowable Stress MPa	Ratio %		Piping Code
210	13.32	1.47	0.62	29.61	30.64	1.000	1.000	16.69	0.00	0.00		B31.3
220	13.32	3.20	-0.62	29.61	30.64	**1.852**	2.135	18.19	0.00	0.00		B31.3
220	13.32	3.20	-0.00	29.61	30.62	**1.852**	2.135	17.96	0.00	0.00		B31.3
230	13.32	1.69	0.00	29.61	30.62	1.000	1.000	16.45	0.00	0.00		B31.3

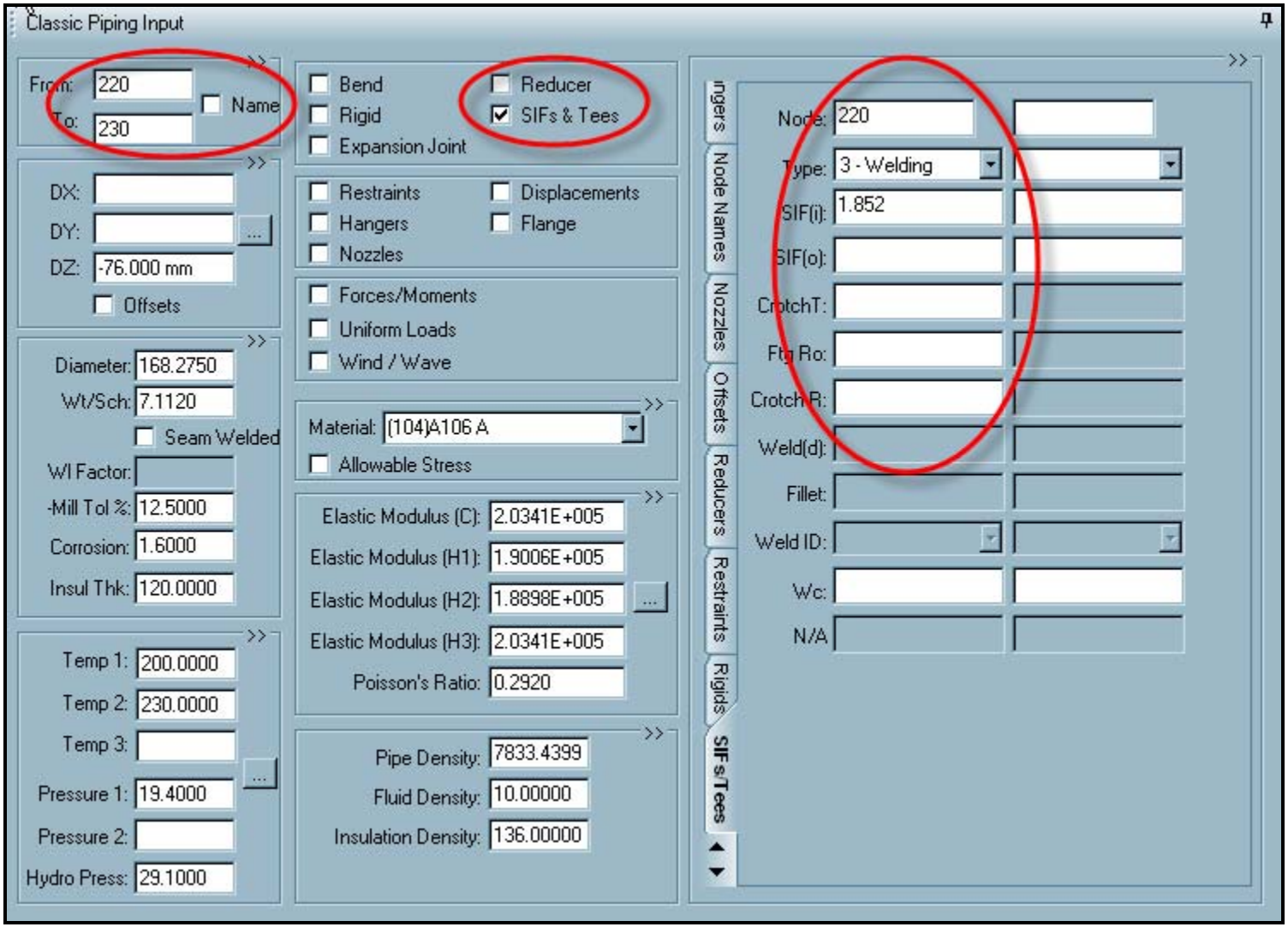
HEADER: 210-220-230 (**220 is SIF point with manualy inserted SIF(i) values and 220 is also an ANC with CNODE to point 400**)

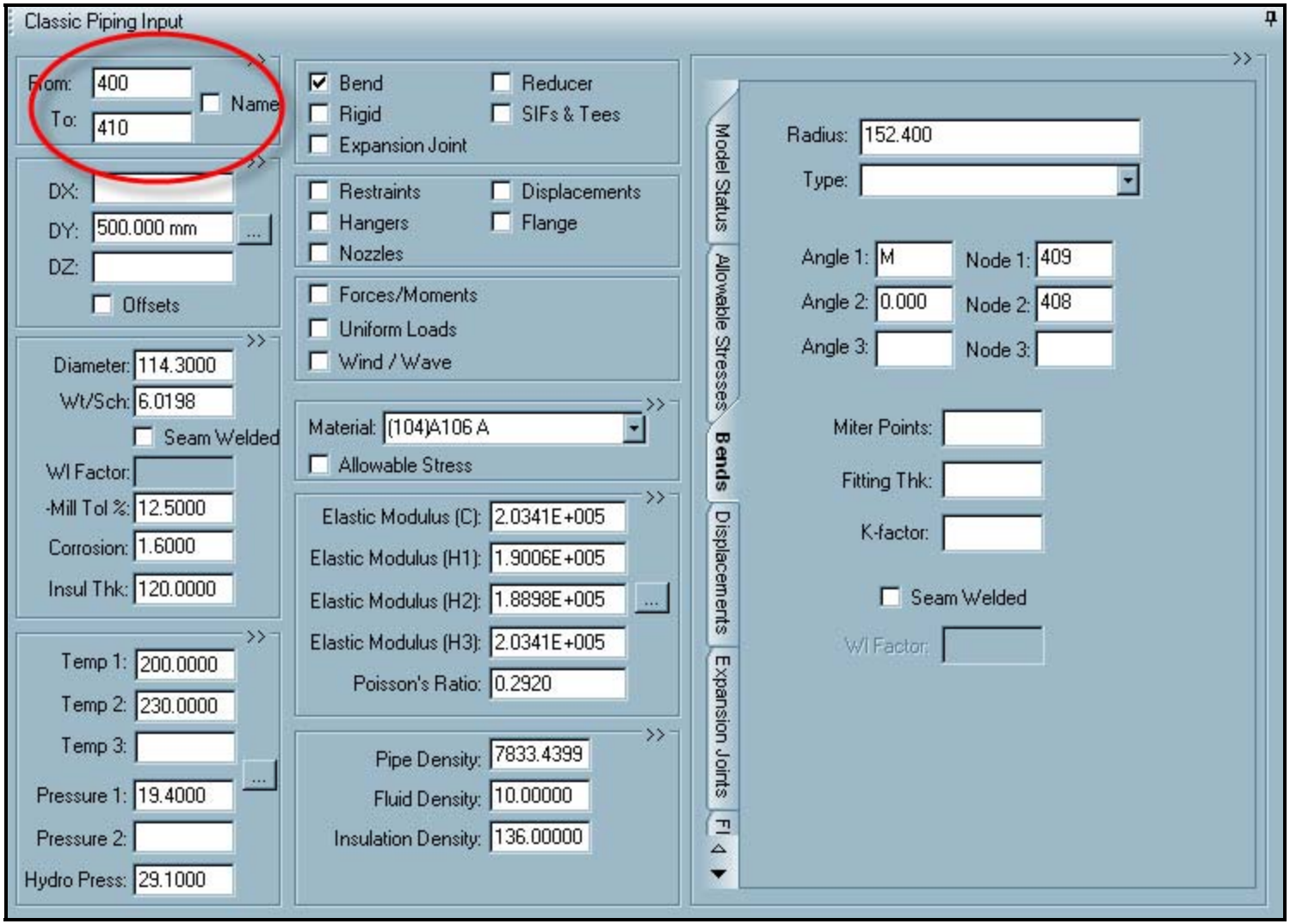
BRANCH: **400**-410-etc..

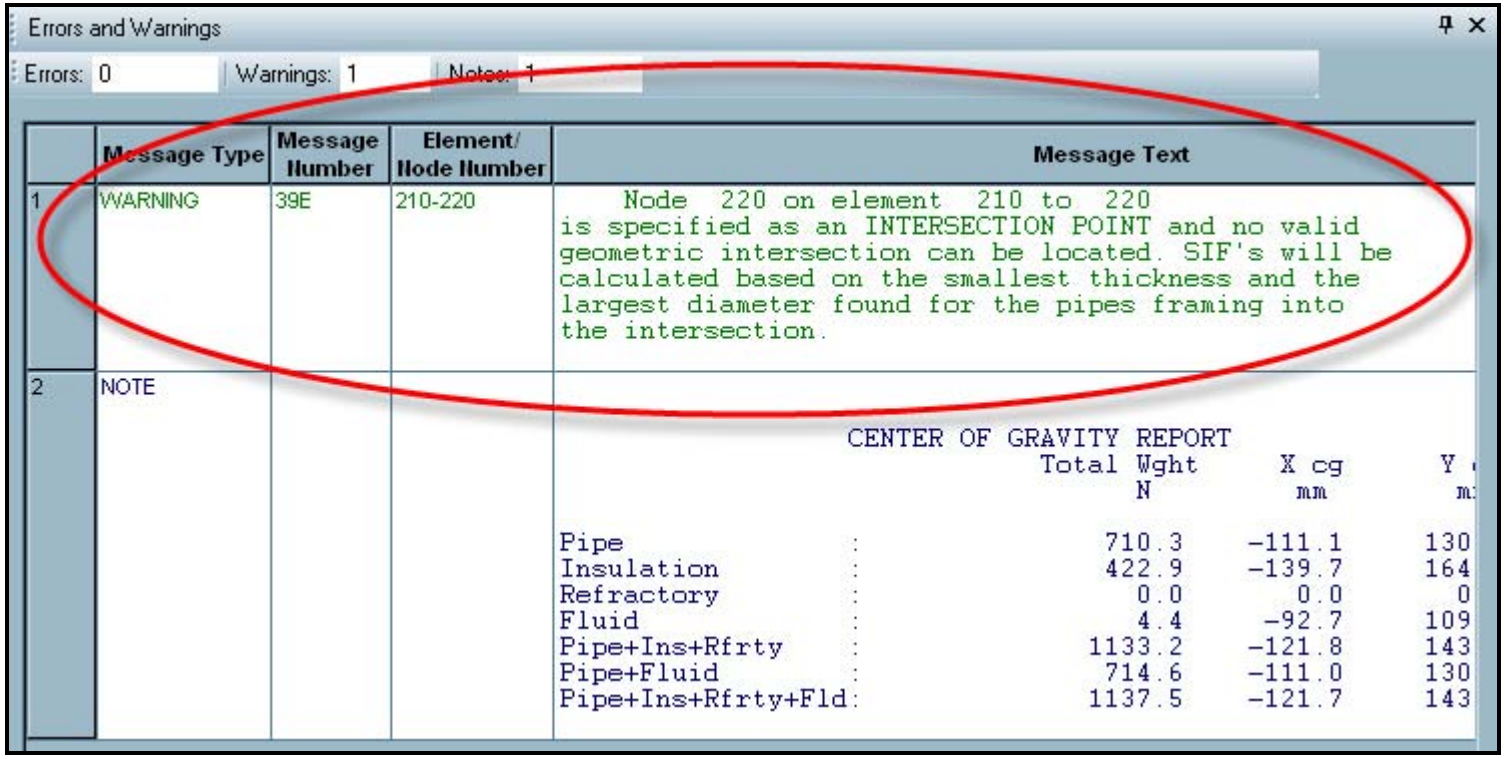
TO KNOW HOW SEE THE SCREENSHOTS




Classic Piping Input
From: 210
To: 220
Name
DX:
DY:
DZ: -76.000 mm
Offsets
Diameter: 168.2750
Wt/Sch: 7.1120
Seam Welded
WI Factor:
-Mill Tol %: 12.5000
Corrosion: 1.6000
Insul Thk: 120.0000
Temp 1: 200.0000
Temp 2: 230.0000
Temp 3:
Pressure 1: 19.4000
Pressure 2:
Hydro Press: 29.1000
Bend
Rigid
Expansion Joint
Reducer
SIFs & Tees
Restraints
Displacements
Hangers
Flange
Nozzles
Forces/Moments
Uniform Loads
Wind / Wave
Material: (104)A106 A
Allowable Stress
Elastic Modulus (C): 2.0341E+005
Elastic Modulus (H1): 1.9006E+005
Elastic Modulus (H2): 1.8898E+005
Elastic Modulus (H3): 2.0341E+005
Poisson's Ratio: 0.2920
Pipe Density: 7833.4399
Fluid Density: 10.00000
Insulation Density: 136.00000
Node: 220
Type: 3 - Welding
SIF(i): 1.852
SIF(o):
CrotchT:
Ftg Ro:
Crotch R:
Weld(d):
Fillet:
Weld ID:
Wc:
N/A
Node Names
Nozzles
Offsets
Reducers
Restraints
Rigids
SIFs/Tees


Classic Piping Input
From: 220
To: 230
Name
DX:
DY:
DZ: -76.000 mm
Offsets
Diameter: 168.2750
Wt/Sch: 7.1120
Seam Welded
WI Factor:
-Mill Tol %: 12.5000
Corrosion: 1.6000
Insul Thk: 120.0000
Temp 1: 200.0000
Temp 2: 230.0000
Temp 3:
Pressure 1: 19.4000
Pressure 2:
Hydro Press: 29.1000
Bend
Rigid
Expansion Joint
Reducer
SIFs & Tees
Restraints
Displacements
Hangers
Flange
Nozzles
Forces/Moments
Uniform Loads
Wind / Wave
Material: (104)A106 A
Allowable Stress
Elastic Modulus (C): 2.0341E+005
Elastic Modulus (H1): 1.9006E+005
Elastic Modulus (H2): 1.8898E+005
Elastic Modulus (H3): 2.0341E+005
Poisson's Ratio: 0.2920
Pipe Density: 7833.4399
Fluid Density: 10.00000
Insulation Density: 136.00000
Node Names
Nozzles
Offsets
Reducers
Restraints
Rigids
SIFs/Tees
Node: 220
Type: 3 - Welding
SIF(i): 1.852
SIF(o):
CrotchT:
Ftg Ro:
Crotch R:
Weld(d):
Fillet:
Weld ID:
Wc:
N/A


Classic Piping Input
From: 400
To: 410
Name
DX:
DY: 500.000 mm
DZ:
Offsets
Diameter: 114.3000
Wt/Sch: 6.0198
Seam Welded
WI Factor:
-Mill Tol %: 12.5000
Corrosion: 1.6000
Insul Thk: 120.0000
Temp 1: 200.0000
Temp 2: 230.0000
Temp 3:
Pressure 1: 19.4000
Pressure 2:
Hydro Press: 29.1000
Bend
Reducer
Rigid
SIFs & Tees
Expansion Joint
Restraints
Displacements
Hangers
Flange
Nozzles
Forces/Moments
Uniform Loads
Wind / Wave
Material: (104)A106 A
Allowable Stress
Elastic Modulus (C): 2.0341E+005
Elastic Modulus (H1): 1.9006E+005
Elastic Modulus (H2): 1.8898E+005
Elastic Modulus (H3): 2.0341E+005
Poisson's Ratio: 0.2920
Pipe Density: 7833.4399
Fluid Density: 10.00000
Insulation Density: 136.00000
Model Status
Allowable Stresses
Bends
Displacements
Expansion Joints
Fl
Radius: 152.400
Type:
Angle 1: M
Node 1: 409
Angle 2: 0.000
Node 2: 408
Angle 3:
Node 3:
Miter Points:
Fitting Thk:
K-factor:
Seam Welded
WI Factor:



Errors and Warnings

Errors: 0 | Warnings: 1 | Notes: 1

	Message Type	Message Number	Element/ Node Number	Message Text
1	WARNING	39E	210-220	Node 220 on element 210 to 220 is specified as an INTERSECTION POINT and no valid geometric intersection can be located. SIF's will be calculated based on the smallest thickness and the largest diameter found for the pipes framing into the intersection.
2	NOTE			CENTER OF GRAVITY REPORT

	Total Wght N	X cg mm	Y m
Pipe :	710.3	-111.1	130
Insulation :	422.9	-139.7	164
Refractory :	0.0	0.0	0
Fluid :	4.4	-92.7	109
Pipe+Ins+Rfrty :	1133.2	-121.8	143
Pipe+Fluid :	714.6	-111.0	130
Pipe+Ins+Rfrty+Fld :	1137.5	-121.7	143

RESTRAINT SUMMARY REPORT: Loads On Restraints
CASE 6 Operating Case (OPE)

NODE	Load Case	FX N	FY N	FZ N	MX Nm	MY Nm	MZ Nm
200		Rigid ANC					
	6 (OPE)	0	-733	135	-288	-0	138
220		Rigid ANC					
	6 (OPE)	-0	396	0	0	-0	-138
240		Rigid +Y; Rigid GUI					
	6 (OPE)	-0	-405	-121	0	0	0