Design of utility membrane structures combined with use of renewable energy sources

Master-Thesis

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Statement

I hereby declare that the work presented in this Master thesis, entitled

Design of utility membrane structures in public spaces combined with use of renewable energy sources,

is entirely my own and that I did not use any sources or auxiliary means other than those referenced.

Vadodara, India, 30th June 2020.

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Vishal Arjunbhai Desai

Foreword

I dedicate this thesis to my Mother, who has always been my best critic and teacher; my Father, who has always been a silent wall which has protected me from the troubles and provided me space to dedicate time beyond my work and complete this course; my Sister, who has taken a lot of pain during these times in giving wings to my ideas with her creations; my Wife, who has made the journey towards completion possible with all the patience, strength and has been a steadfast partner to me; my Son, who was born during the course and brought joy to all of us; Prof. Robert Off for all the patience and kindness shown towards me during this course and guiding me towards completion; Heike, who has been a friend during this journey and helped me at every step; and finally a special dedication to my friend and tutor Niraj Naik, who guided this thesis at every step and helped me complete it, without him this thesis would not have been complete.

Thank You.

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1 Introduction

What does public space mean?

A public space refers to an area or place that is open and accessible to all peoples, regardless of gender, race, ethnicity, age or socio-economic level. These are public gathering spaces such as plazas, squares and parks. Connecting spaces, such as sidewalks and streets, are also public spaces (1). These spaces are planned and developed so as people from all backgrounds can gather, work, exchange ideology and travel to their respective destinations.

India is a densely populated country with over 1.376 billion population as on 3rd April 2020, divided into urban and rural areas. The country's urban population constitutes nearly 35% against the 65% rural population. There is a stark growth in urbanization which constituted 27.6% of the population in the year 2000 (2). This shows there is an immense pressure for developing of urban spaces against the rural spaces. But against the growth of this percentage, the development of public utilities, spaces etc. are not parallel and it is quite low compared to trajectory of increase in urban population. Due to this discrepancy, the developed public spaces are quite less compared to the dense population which can make use of them.

1.1 Streets and other public spaces

"Streets are many things: thoroughfares, bazaars, theatres, exhibitions, restaurants. They encompass a huge range of activities from worship and business, to political protests and funeral and marriage processions. On its streets, India eats, works, sleeps, moves, celebrates and worships." (3)

Streets in India are spaces that connect private zone and the public zone. These shared spaces are used by pedestrians, rickshaw pullers, stray animals, motorized two wheelers, bicycles, vegetable vendors, street food stalls, bus stands and shelters, etc. (4)

Figure 1.1 Crowded public spaces.
So much open space available for walking and creating spaces for roadside vendors. But because of lack of organization, there is no space to walk, to park the vehicles on the sideways, power consumption is also chaotic, unsafe and sometimes illegal.

Figure 1.2 Street side vendors.
This is a common feature in the streets of India. There are many reasons for this, one of it is lack of sufficient infrastructure for them to develop their own business, lack of respect for rules and regulations, authorities not strict enough to disallow this without any permission or organization.

Figure 1.3 Street side shopping
These street side shops are temporary structures which run on power either generated by a generator running on diesel, car batteries etc. Imagine if these streets were paved, organized, provided great signage, lighting, music etc, it would be a carnival every day.

Figure 1.4 Streets of Pune during non-rush hours.
More developed and organized streets with green cover and sufficient space to walk and organized parking. Such streets a present in metro cities and tie two cities but not in all the cities.

Figure 1.5 Public Park near Gateway of India, Mumbai
These open spaces are for people to rest, to get together, for sports activities, small functions, events etc. As you can see, it is quite adequate for public gathering, but it can be so much more than that with creative ideas.

Figure 1.6 Alpha One mall, Ahmedabad.
This mall like many other malls is a public place where people gather in thousands to shop, eat, meet, entertainment etc. As you can see, there is an open parking area which is not thoroughly created for public utility except car and two-wheeler parking as the weather condition is quite extreme especially during summers. These are under-utilized spaces which can be created to make this area more beautiful and inviting for everyone.

Figure 1.7 Banaras Riverfront
Varanasi, also known as Banaras or Kashi is a city on the banks of River Ganga in Uttar Pradesh. It is the holiest of the seven sacred cities for Hindus as well as Jains and played a very important role in development of Buddhism. People come in thousands to take a dip in the river Ganga, for religious purposes, for praying etc. It is a large public space which has tremendous scope of development for trade and commerce as well as for beautification.

Figure 1.8 Haat Bazaar, New Delhi
Haat Bazaar is an open-air market for local and rural vendors to conduct trade under temporary roofs for short span of time. These types of markets are created for all the local traders to come together and attract large number of people that also helps in them getting great business. These markets are conducted in intervals like once or twice a month, once in 3 months or even once a year.

Figure 1.9 Haat Bazaar, New Delhi
One more image of the Bazaar

Figure 1.10 Kumbh Mela, Allahabad
Kumbh Mela is a major pilgrimage and festival in India. It is celebrated in a cycle of approximately 12 years at four river-bank pilgrimage sites i.e. Allahabad, Ujjain, Nashik and Haridwar. This festival is marked by a ritual dip in the rivers, but it is also a celebration of community commerce with numerous fairs, education, religious discourses by saints, mass feedings of monks or the poor, and entertainment spectacle. The visitors come in millions for this mela.

Figure 1.11 Happy Streets, Vadodara
Happy Street is an initiative by The Times of India which encourages people to use non-motorized transport and to come out onto the streets to socialize every Sunday morning through a wide array of activities. Some initiatives taken by citizens to create social awareness along with entertainment.

Figure 1.12 Urban Flea Market, Ahmedabad
Flea markets organized by small scale businesses for handicrafts, garments, beverages, paintings, home décor, art and craft, electronic gadgets, etc. are becoming very common nowadays which encourage businesses run in small premises or from home. These are organized once a month or quarterly.

Figure 1.13 Bauma expo, Gurgaon.
Big exhibitions are organized by vendors where people come in thousands and there are huge display areas. These types of exhibitions are organized very regularly and there is a lot of power consumption.

Figure 1.14 Statue of Unity, Gujarat
It is the tallest statue in the world. It attracts millions of visitors every day and there is a lot of scope for beautification of public spaces.

Figure 1.15 Sabarmati Riverfront, Ahmedabad
Beautiful spaces are created at the Sabarmati Riverfront where everyday people come for walking, jogging, having a get together, sightseeing, etc. It is still being developed and there is a huge scope for development of these designed public spaces.

Figure 1.16 Kakaria lakefront, Ahmedabad
This lakefront is in the city center where a large population visits every day. It is mainly for walking, jogging, sightseeing, get togethers, etc. There is also a small zoo for the visitors to check out. It is quite nicely developed but there is still tremendous scope of beautification here.

1.2 Efficient utilization of public spaces?

Streets, parks, malls, melas, gatherings, happy streets etc. are an inherent part of the Indian culture. An Indian who has grown up in these surroundings would see nothing odd about it. It has always been there. But being there doesn't make it being organized and being planned. These spaces are more vibrant thanks to the people, but they also need to be more planned, convenient and with all the necessary amenities.

1.2.1 Lack of basic amenities

All the public spaces shared in the previous images, clearly show that there is lack of basic amenities in these public spaces. There is lack of street furniture, that can help people walking along the street, parks etc. to rest for a bit, to catch their breath or even sit idle for a while. By street furniture, we mean chairs, benches, waiting area for auto rickshaws, buses, taxis, dust bins, shades to protect from the sun, rain etc., toilets, streetlights and a lot more.

1.2.2 Insufficient lightings and unplanned signboards

The above displayed spaces very clearly show that there is insufficient area lighting; by area lighting what I mean to convey is light good enough for one to never be in a dark spot on the street or public space, light sufficient enough to read signages, light clear enough to tread the street and other public spaces. Secondly, the signboards put up for shops, for stalls, for branding etc. are thoroughly unplanned and have no specific location allotted and it does not work as per any standard specification. It is truly chaotic the way they are placed everywhere and sometimes even on the walkways. There is also a lack of proper typology for signages for conveying different spaces. These signages do not follow any standard specifications or fonts along with background for clear readability or also for conveying messages easily. It varies from place to place and it is sometimes insufficient to convey proper directions or messages on the streets, public parks, riverfronts etc.

1.3 Observations

This chapter conveys many important points as mentioned below

1. India is a highly populated country with huge diversity. It is a developing country and many public spaces have been developed but to reach its full potential, a lot of development still needs to be done.
2. Demarcation of public spaces is a big necessity e.g. what is the path to walk on, where a stall can be set up, where and with what specifications the signages and signboards can be put up, provision of good signages which can guide a person to a specific destination, etc.

3. There is no planning when it comes to energy consumption in these spaces e.g. area lighting is insufficient, there is no proper provision of power outlet where people can use it to run their stalls and the electrification is haywire, there is no planning of waste disposal of these stalls, waste disposal done by people treading these public spaces, waste management like recyclable waste, no recyclable waste, no creation of compost through bio-degradable waste, no creation of power through renewable resources etc.
4. Provision of basic amenities is also missing like street furniture, i.e. furniture for standing under the shade while waiting for buses, taxis, auto rickshaws, inadequate benches under shades for waiting, no provision of signages to guide towards such amenities if provided, etc.
5. There is a huge potential for usage of renewable energy sources like solar energy, wind energy etc. which can help beautify these spaces and also make it functional along with value addition of these spaces. These spaces can be utilized for get togethers, discussions and meetings, spaces where people can sit and work, paint, interact with the environment, revenue generation for the government and private owners can also be possible in such spaces if they provide facilities for such things.
6. Parking is also a big factor in the summation of the chaos in India. Planned parking spots if provided with parking meters, can generate huge revenue for the local municipal corporations. Also, with the addition of electric vehicles, electric pedal assisted bicycles, PHEV (plug-in hybrid electric vehicles) to the market, such spaces need to be developed to allow for their charging and can be a big form of revenue generation. Such spaces can be developed on renewable energy sources to become self-sufficient to allow for lower use of fossil fuels to generate electricity and save money for the electrification of such spaces.

In all, there is a huge scope of developing public spaces which can be functional as well as aesthetically attractive in order to be provide wonderful spaces for people to sit, rest, talk, meditate etc. and also act as a revenue generator for the private owner or the local municipal corporation. This paper shall try to cover these aspects in small ways like creation of utility membrane structures with the use of renewable energy sources.

2 Public spaces in India at present and a need for radical change

Zukin defines public spaces as the ‘Window into a city’s soul’, a window to look beyond, that brings in the haptics, the views, sounds and feel of the city (5). ‘Our impressions of a city are formed mainly by the quality of public spaces. If they are not pleasant and preserved, or if they transmit a sense of insecurity, we will seldom return. Good planning of these spaces should be the rule, not the exception’. Public areas shape community ties in neighborhoods. They are places of encounter and can facilitate political mobilization, stimulate actions and help prevent crime. They are environments for interaction and exchange of ideas that impact the quality of the urban environment. Public spaces also present health benefits, both physical and mental: people feel better and tend to be more active in attractive, public spaces (6).

A good public space is one that reflects diversity and encourages people to live together effortlessly, creating the necessary conditions for permanence, which invites people to be on the street. It is the vitality of spaces that attracts people. What guarantees this vitality is the possibility of enjoying urban spaces in various ways (6).

2.1 Bifurcation of regions of India based on their locations and public spaces

William Robson, in his famous book, ‘The Great Cities of the World’, lists the numerous functions of the Cities. ‘The most widespread services administered by the municipalities are public health, hospitals, city planning, water supply, sewerage and sewage disposal, public cleansing, education, highway construction, street maintenance and lighting, public assistance, welfare, police forces, fire-fighting, the provision of public housing and housing regulation, parks and playgrounds, recreational and cultural amenities, public transport, markets, abattoirs, cemeteries and crematoria. These services form the central core of the local government; although all of them are not everywhere entrusted to the municipal government of the great city.” (7)

Major Indian cities can be grouped in the following categories for a comparative study of their urban open spaces (7).

1. Seaside Cities and towns: Mumbai, Chennai, Visakhapatnam, Pondicherry, Kochi-Ernakulam
2. Hill Stations: Abu, Darjeeling, Gangtok, Kullu-Manali, Mahabaleshwar, Mussoorie, Ooty, Nainital, Shillong, Shimla, Srinagar
3. Religious Places: Allahabad, Amritsar, Rishikesh, Haridwar, Varanasi, Mathura-Vrindavan, Tiruchirapalli, Madurai
4. Cities with historical monuments: Agra, Delhi, Vadodara, Khajuraho, Lucknow, Mamallapuram, Mysore, Aurangabad, Hyderabad, Indore, Jaipur, Jodhpur

5. Metro-cities other than on seaside: Ahmedabad, Patna, Nagpur, Pune, Bhopal, Guwahati, Kolkata (7).

2.1.1 Public spaces in seaside cities and towns

Seaside cities and towns India has a vast coastline and several cities and towns have developed on the coast, some of them as port-cities. The sea is naturally the main attraction in these cities and beaches like Chowpaty in Mumbai, Marina at Chennai, Rishikonda beach at Vizagand Cherai beach near Kochi have become famous. Some beaches are away from the city. However, when a popular beach is located within the city, it becomes a popular tourist attraction and has a fair-like atmosphere in evenings and on holidays. A large number of eating joints develop on the beach and it becomes an important centre for solid waste creation in the city (7).

Figure 2.1 Chowpatty Beach, Mumbai
It is located in a densely populated area and a very common place for family outing, for tourists, morning and evening walks etc. The image shows that there is no provision of any beach furniture, a separate space for kids and toddlers, no sports facilities, no walkways for people to walk or run, no demarcation of space for food stalls, activities etc., no provision of basic amenities like drinking water, shower area and changing area, toilets, no lifeguards or even lifeguard cabins, which reduces the safety of people enjoying the water activities and a lot more things are missing.

Figure 2.2 Street food at Chowpatty beach, Mumbai
Street food is an essential at this beach and the food served is extremely popular and has great variety. All these stalls have been present at the beach since many years. The area around these food stalls is littered daily by thousands of visitors at the beach and the waste disposal is not proper. There is no separation of recyclable waste, non-recyclable waste, biodegradable waste and plastic. Also, there is no proper provision of furniture around these stalls where people can sit and enjoy the meal comfortably. The tables and chairs are of poor quality and not attractive for many kinds of crowd.

Figure 2.3 Street Hawkers outside Marina beach, Chennai
The image is a sharp reminder that even the most beautiful spaces like Marina beach can be spoilt by unorganized public spaces within and nearby the beach. Just imagine if all the stalls were given a proper location, well numbered, with all the signages and signboards as per specifications, clean approach, hygienic environment around it with waste disposal management, well designed stalls with good quality materials unlike the shabby and unfinished materials used to create the stalls, proper furniture around the stalls with good quality tables and chairs, clean drinking water outlets, proper parking spaces, it would be one of the most attractive public space in the whole state and would attract tourists from all over the world. This clearly shows that public spaces are like the clothes a person wears, if the clothes are attractive, clean, well ironed, it gives a very nice view but if unkempt, it creates a very dilapidated image.

2.1.2 Public spaces at hill stations

In India, which is generally a warm country, the hill stations, typically with altitudes of 3500 feet to 7500 feet, offer a cool and enjoyable climate in summer months. In view of the dominance of non-agricultural activities at these places, most states have converted the hill station village panchayats to municipalities. Although the normally resident population of a hill station may be small, it increases many folds during the summer months.

Various points on hill tops giving an excellent view of mountains are usually the most common tourist attractions in hill stations. In addition, hill stations such as Abu, Nainital, Ooty and Srinagar have beautiful lakes famous for boating or strolls around. Mahabaleshwar and Shillong also have small beautiful lakes. Darjeeling, Gangtok, Mussoorie, Shimla do not have lakes but are still attractive because of their altitude, malls and viewpoints (7).

Figure 2.4 Naini lake, Nainital, Uttarakhand
Nainital is a wonderful tourist destination and attracts a lot of tourists especially during the summers. Nainital has well planned public spaces and has a lot of tourist attraction like roadside shopping to get some good deals, beautiful views etc. It has decent street furniture for taking a break. There is lesser focus on power consumption and waste disposal. Power consumption is generally from fossil fuels and there is no focus on use of other renewable resources. There is also lesser focus on rainwater harvesting which can help develop agriculture which is difficult due to the topography. There is immense potential for development in such spaces which can make it comparable to some of the most beautiful destinations in the world. There is also lack of signages for guiding the tourists or the locals, lack of necessities like clean drinking water fountains, toilets at regular intervals etc.

Figure 2.5 Botanical Garden, Ooty, Tamilnadu
Ooty is one of the greener hill stations. It has beautiful botanical gardens, parks, lovely views and a very organized roadside market. It also has good street furniture, area lighting and also public spaces where people can gather for leisure activities. One input I would like to suggest it they can make use of renewable energy sources at these locations and can also generate revenue from them for the locals to earn money.

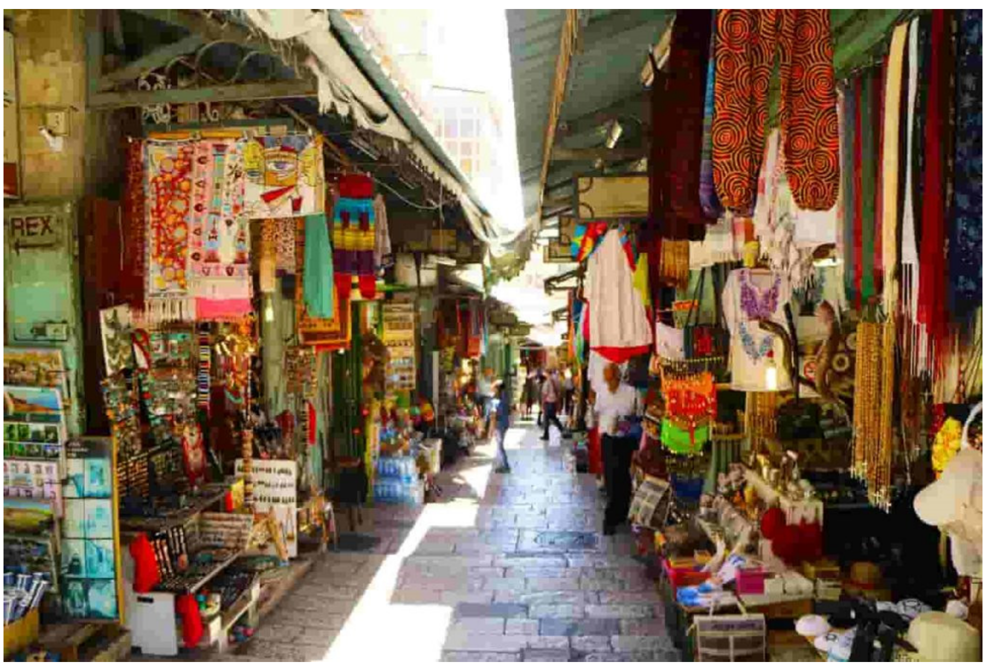

Figure 2.6 Roadside shopping, Ooty, Tamilnadu
Roadside shopping is a big attraction where you get decent woolens and many other accessories at a great price. These places are still unorganized and need a lot of beautification, placing of street furniture, lighting, demarcation of spaces, signages as per standard specifications, provision of basic amenities, etc.

2.1.3 Public spaces at religious destination

India is a deeply religious country. So, the orthodox throng the religious places on holidays and certain specific religious days. Many of the religious towns are ancient and the religious shrine is situated in the oldest parts of the city with narrow lanes. Usually the religious shrines are under the management of temple trusts but the environs such as roads, streetlights, cleaning are to be maintained by the urban local body. Figure 1.7 and 1.10 clearly show their present condition (7).

Figure 2.7 Streets of Mathura, Uttar Pradesh
The image speaks for itself. No scope of public space left, no walk way, no planned area lighting, no typology of signage, no planning of space for signboards which as can be seen are everywhere, no space for parking, no scope of power management and planned power consumption.

Figure 2.8 Signboard of Late Bharat Ratna holder Ustad Bismillah Khan, Varanasi
Another image that speaks for itself. There is lack of planning, sanitization, open drains, no proper placing of signboard, street furniture, no specific typology, signboard placed just in one language which might not be readable for all, no proper planned public space like street to walk on, for cyclists to ride their bicycles on, for motorists to park their vehicles etc. There is also no planning of power consumption and power management in these spaces.

2.1.4 Public spaces in cities with historical monuments

A single structure that has made India world-famous is the Taj Mahal, the most important heritage monument in the country. The Taj with Agra Fort and Fatehpur-Sikri constitute the most visited public places in the city of Agra. The maintenance of these places is with the Archaeological Survey of India but the approaches, the environs, roads, lighting and water supply are handled by the Agra Municipal Corporation and the state government of Uttar Pradesh (7).

Delhi, the National Capital of India, is also a historically important place with the Qutab Minar and the Red Fort among the most visited sites. The circular market at Connaught Place (now Rajiv Chowk), the India Gate and the Raj Path famous for its Annual Republic Day parade on the 26th January are other places where a large number of people assemble. The Government of India plays an important part in maintaining these assets. Jaipur, the Pink City, is the third place that completes the tourist Golden Triangle of India along with Delhi and Agra. The City Palace, Amer Fort and Hawa Mahal are the places of attraction in Jaipur (7).

Hyderabad’s Charminar, Salar Jung Museum and Lucknow’s Imambaras are the historical places of attraction. However, modern attractions like the Ramoji Film City of Hyderabad and Ambedkar Memorial and Kanshiram Memorial Gardens of Lucknow have now come up (7).

Mysore, Baroda and Jaipur are famous for their palaces, many of which have now become museums. Jodhpur and Gwalior have important hill-top forts that are important urban spaces (7).

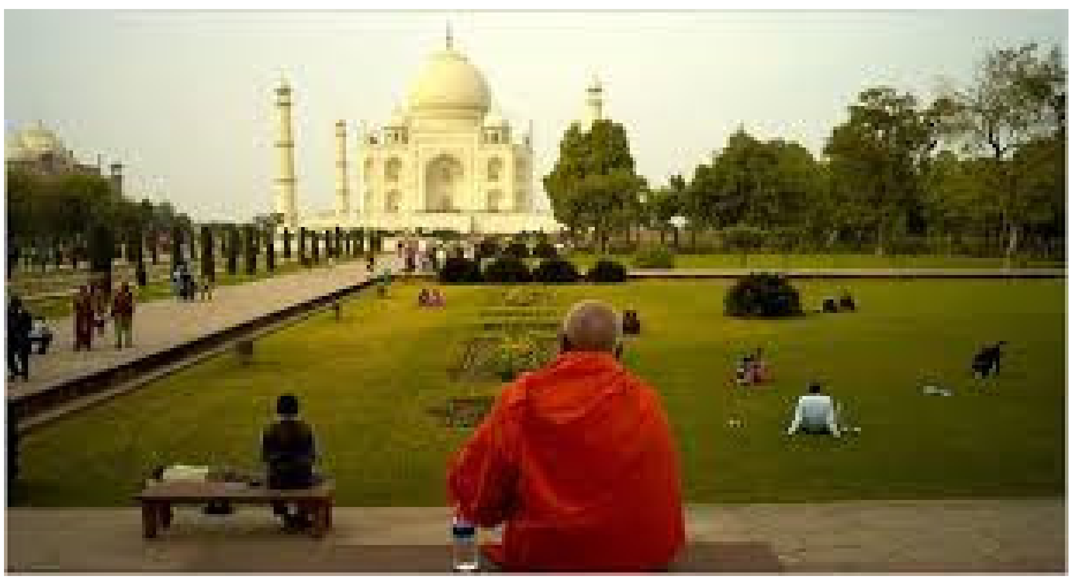

Figure 2.9 Public space outside the Taj Mahal, Agra
The Taj Mahal is one of the seven wonders of the world. It is an extremely popular destination. What makes this monument attractive is the space outside the monument which magnifies its grandeur. The streets outside demand a lot more attention. It needs to be developed to match the beauty of this wonder. For such places, unique typology can be used for signages and directions, like that of storytelling along the way, the walk ways to can be developed in a way to guide you to these beautiful monuments, the street furniture too can be unique for such destinations which is both artistic and functional and also should use renewable energy sources to make it more economical in the long run.

Figure 2.10 Envisaged approach via Chandni Chowk to Red Fort, Delhi
This image is that of one envisaged by the urban planners and they want to make the streets free from non-motorized vehicles. It is a nicely planned idea. The work has already started and let us hope it turns out to be better than the vision. One input I would like to suggest is use of renewable energy sources to light up the area in the evening, provide spaces for people to sit and work on their laptops etc charged via the renewable energy, provide good waiting areas etc.

Figure 2.11 Chandni Chowk of the past, Delhi
This image is that of the market in the past which is being redeveloped as per planning shown in the previous image. Wherever there is a crisis, there is an ample opportunity for development. For Chandni Chowk it is going to be the same, if the public spaces are well planned and well developed, it will create a shopping zone where tourists, locals etc. will be attracted even more than usual to shop. It will create increase the revenue generation of the shopkeepers and increase the value of their properties. Also, improved public spaces means more hygiene, more interaction, more space for exchanging ideas etc.

2.1.5 Public spaces in metro cities other than on seaside

These cities may not have beaches and sea-side promenades, but still they have their own grandeur.

Kolkata, the Capital of the British India till early twentieth century is now a widely spread out city. But the vast green space surrounding Fort William, the headquarters of the Army's Eastern Command, called the Maidan, can be called its major urban space. The Maidan has numerous playgrounds including the famed Eden Gardens, several football stadia, Kolkata Racecourse and the marble masterpiece of Victoria Memorial. It is rightly called the lungs of Kolkata (7).

Bangalore's most important public spaces would be the Central Cubbon Park gardens around the majestic Vidhan Soudha, Lalbagh garden with its glass house also provides another important lung to this bustling city (7).

Ahmedabad, Patna, Pune, Nagpur and Bhopal have their own share of historical buildings. However, I would consider the Kankaria Lake and the Zoo at Ahmedabad, the Museums of Patna, Shaniwarwada at Pune, lake gardens and Seminary Hills at Nagpur and the Lake Drive Area of Bhopal to be more attractive urban public places in these cities. Some of these are managed by the local governments (7).

Guwahati, the largest city in the North-East is located on the south bank of the river Brahmaputra. In my view, gardens/sandy beaches on the banks of Brahmaputra with the Umanand temple river island in the middle offer a majestic view and could be considered the most important urban public place in Guwahati (7).

Figure 2.12 Howrah bridge, Kolkata
Image of streets of Kolkata capturing the howrah bridge and the streets around the bridge with the famous yellow taxis. There are many iconic spaces in Kolkata, and this is one of them. But when it comes to well-planned public spaces, many questions may be asked here. One of them being, why are there no proper footpath, no street furniture, no area demarcation, no pick up stands for taxis, auto rickshaws, buses, unplanned development of street side stalls, spreading of the road side shops onto the footpaths leaving no space for the pedestrians. There is tremendous scope of development of public spaces along with utilization of renewable energy sources which can be beneficial for the local municipal corporation as well as owners of the roadside stores, etc. Well planned and developed spaces always attract more business and more business means everybody grows together.

Figure 2.13 Manek chowk, Ahmedabad
Manek Chowk is a notable city square in Old Ahmedabad, India. It is surrounded by historical structures. This bustling open square near the center of the city functions as a vegetable market in the morning and a jewelry market in the afternoon, the second biggest in India, at an apparently 3 million rupees of annual turnover. It is most famous, however, for its food stalls that start to emerge around 9:30 in the evening and continue till late night, with various local street snacks. All day long this area attracts hoards of people. Development of public spaces in such areas is a prime necessity. Provision of proper street furniture, demarcation of areas around the shops for sitting, waiting, parking, proper area lighting, activities other than food in the evening to attract all kinds of crowd, usage of renewable resources in these spaces to help save a lot of money for the stall owners, are few inputs. Proper planning can also help maintain hygiene of the area as well as waste disposal management would be possible. We should also take care, that the raw vibrancy of this area is not lost as it is part of the local culture and the uniqueness itself is an attraction.

Figure 2.14 Guwahati, Assam
Guwahati is the largest city in Assam and the biggest metropolis in the north eastern region of India. It is situated on the south bank of Brahmaputra river. The Guwahati region hosts diverse wildlife including rare animals such as Asian elephants, pythons, tigers, rhinoceros, gaurs, primate species, and endangered birds. Being a densely populated area, it has many gardens, temples, zoo, parks, etc. to attract visitors. There is a lot of scope of development in these areas. The signages for directions, destinations, road rules, etc. can be developed in a very creative manner in such places as this place has a vibe of its own and it houses such endangered species that if developed well, it can be very eye catch. The signages should represent the endangered species, the road markers should also have some creative art work to show the important attractions in Guwahati, the street furniture can also be very artistically developed giving the local artists a free hand or keeping some competitions where they can show their talent and exceptional skills.

2.2 Observations

India is a land of "Unity in diversity". The high mountain ranges, vast seas, large river-irrigated lands, countless rivers and streams, dark forests, sandy deserts, all these have adorned India with an exceptional diversity. Among the people there are numerous races, castes, creeds, religions and languages. The culture is different in every region of India. The public spaces in each area represent the lifestyle, the culture, the habits and give an overall view of how the people in that specific area live their lives.

The elements that encompass the public space domain need to be grouped broadly at the macro level as the "generics" and at the micro level as the "specifics". This would greatly enable the planner to keep the focus on larger governing issues as a unifying factor yet concentrating on the specifics that etches the unique experience of the space (8).

Urban public spaces have often been discussed with reference to the generics of:

- Access and linkages
- Purpose and activities
- Comfort and image
- Sociability (8)

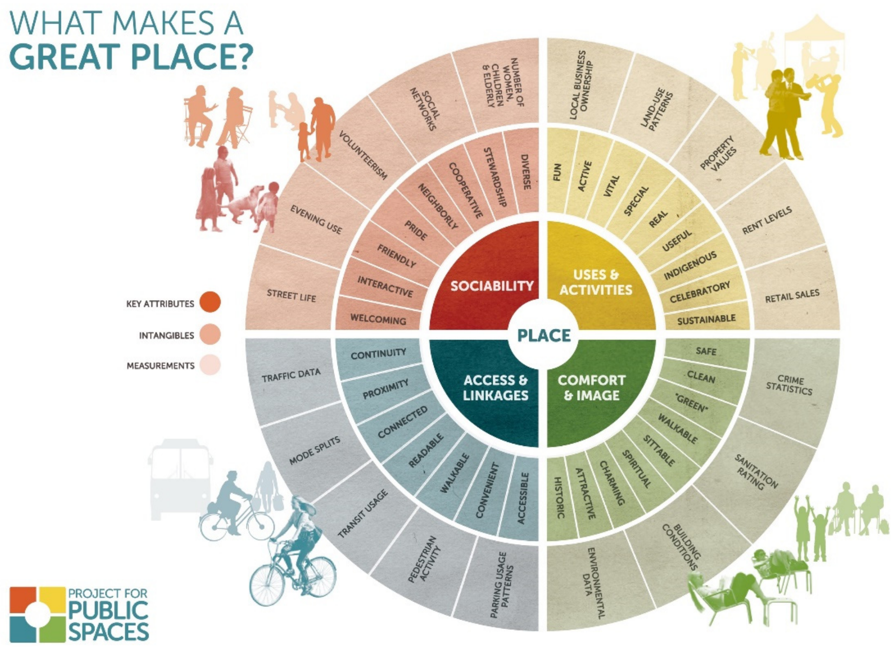

Figure 2.15 Generics of public spaces
In evaluating thousands of public spaces around the world, Project for Public Spaces (PPS) has found that to be successful, they generally share the following four qualities: they are **accessible**; people are engaged in **activities** there; the space is **comfortable** and has a good image; and finally, it is a **sociable** place: one where people meet each other and take people when they come to visit. PPS developed The Place Diagram above as a tool to help people in judging any place, good or bad (8).

As the above information conveys, there is a big scope for development in public spaces in India. With such a scope there also come wonderful opportunities for fresh ideas. The outline for these ideas to be successfully implemented can be highlighted in the below pointers:

1. **Cultural impact:** It should represent the local culture, the colours, the vibrancy and the aesthetics. Help from local artists, architects, urban planners, and artisans should be taken to incorporate this.

2. **Functionality:** It should be fully functional and should set high benchmarks in quality. Quality products in public spaces represent a strong foundation of ideas and an outlook towards its sustainability in future. Poor quality products will die with time.
3. **Renewable energy sources:** It should make use of renewable sources like the solar energy, wind energy, rainwater harvesting, etc. It should be self-sufficient, and the product should be a conscious effort towards a greener future.
4. **Value for money:** It should be made locally to avoid high costs and should be within a budget. Too expensive products do more harm than good. When setting a budget, there is a fine line between trying to keep it too expensive or too cheap. Both are hurtful in the long run. It should be reasonably priced, and it should be easy to produce, transfer and assemble at the location.
5. **Aesthetically appealing:** It should create very interesting spaces which increase the overall value of that location itself and be a major point of attraction. For e.g. the Statue of Unity in Gujarat created a huge impact on the surrounding areas due to increase in number of visitors and it helped their businesses develop and grow. Such interesting structures always create a strong value addition.

3 Bhadra square redevelopment – A case study on public spaces

In the previous chapters, we have distributed the different regions of India based on its geographic location and its public spaces. In this chapter, I have taken up a case study of redevelopment of Bhadra square located in the Old City of Ahmedabad, Gujarat, India.

On the eastern bank of Sabarmati, like a continuum, the citadel of Sultan Ahmed Shah-I (the founder of Ahmedabad) was slowly transforming into a cultural hub for the city. By 14th century, the nerve center of this citadel was consolidated in an axis formed in the Bhadra Fort, its entry gate Teen Darwaja (three gates) and the bazaar street that connected to the Jami Mosque and the tombs of the royal family. It is a place for cultural gatherings and religious processions that occur often in the dense social fabric of the old city. It is a historic city center whose original outline could still be traced (9).

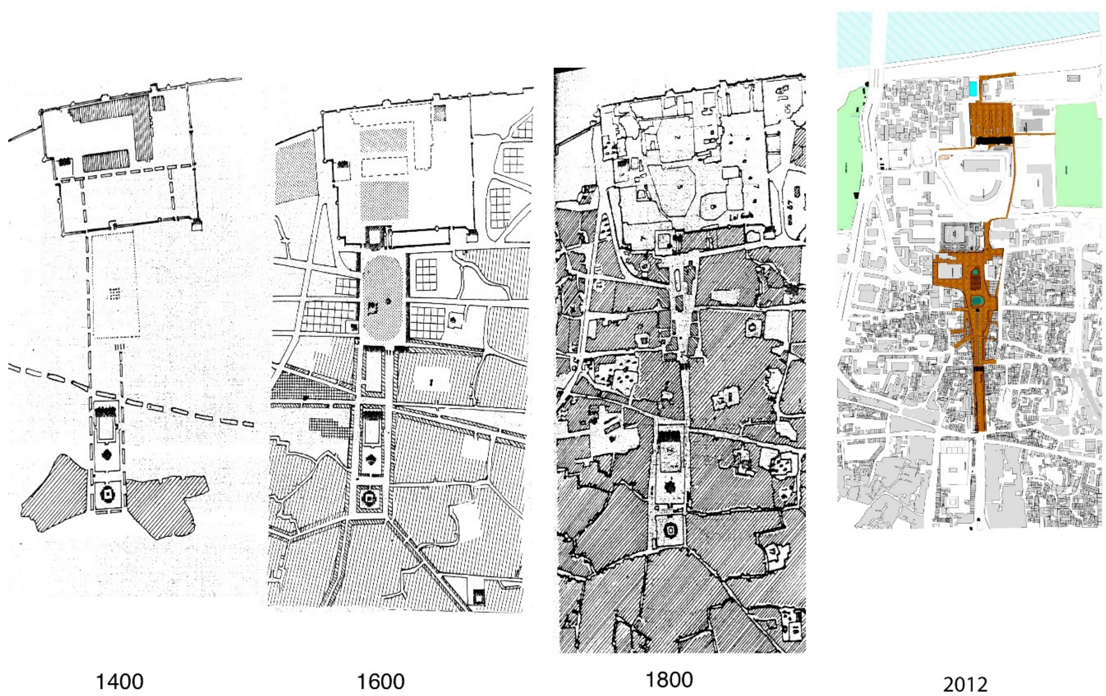

Figure 3.1 Bhadra area, development from 1400 to 2012 (10)
This image shows the evolution of the area.

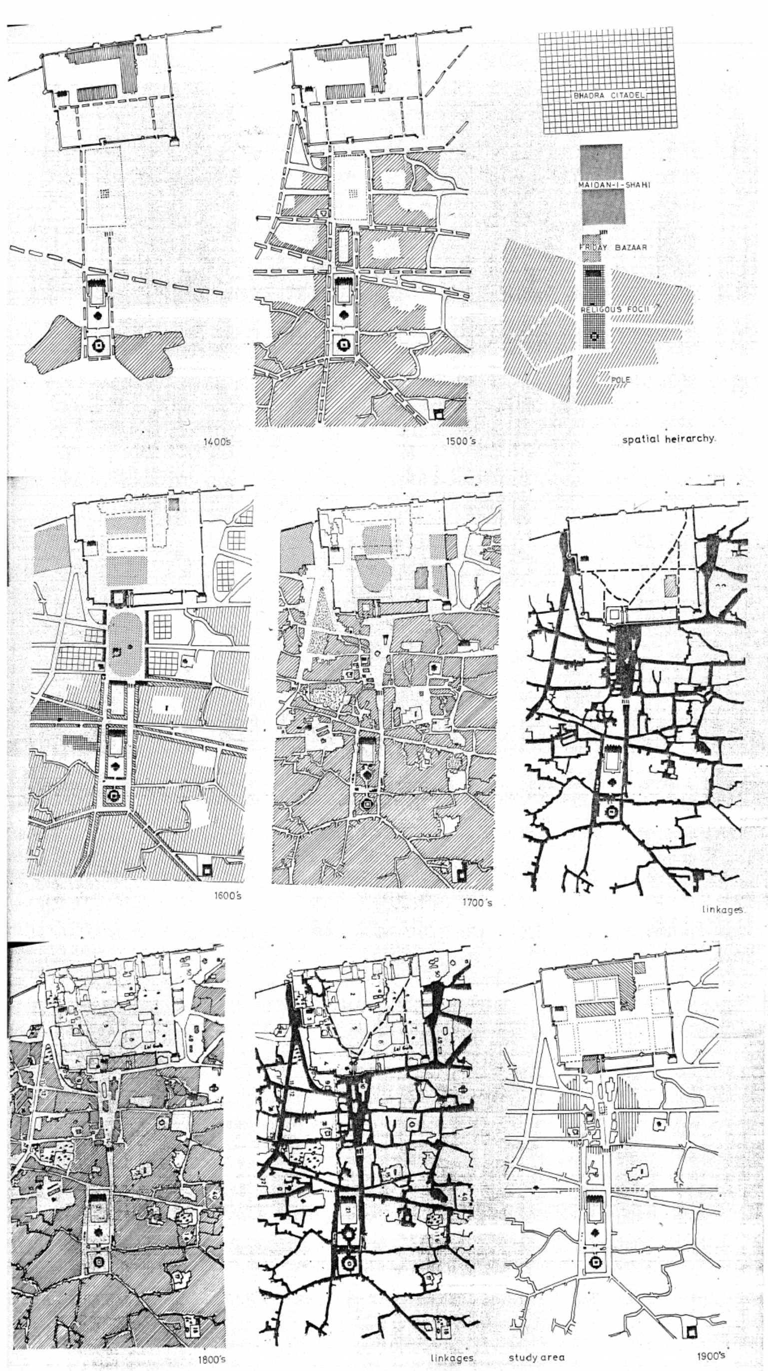

Figure 3.2 Bhadra Area, development from 1400s to 1900s, showing linkages and spatial hierarchy (10)
This image shows the evolution of Bhadra Area. It clearly depicts how it grew and how the purpose of this area changed with time.

3.1 The basic principles of the redevelopment

Funded by the JNNURM (Jawaharlal Nehru National Urban Renewal Mission), the project became the first of its kind as a redevelopment and pedestrianization of a public space in an Indian old city. The redevelopment plan focuses on very basic aspects of the city to be considered in detail, traffic congestion, no pedestrian demarcation, dense built fabric, unorganized informal activities, scarcity of open spaces, noise and air pollution (9).

The basic principles of the masterplan for redevelopment of Bhadra Precinct were to make the historic core a walkable precinct, develop pedestrian plazas, promote the use of public transport, develop large parks, conserve the heritage monuments and make this place a true city center of Ahmedabad (9).

The project started in 2011 and completed November 2014 in collaboration with different public, private and independent organizations such as the Ahmedabad Municipal Corporation and the Archeological Survey of India, Vastu Shilpa Foundation for Studies and Research in Environmental Design and CEPT University; as well as multidisciplinary team of professionals like planners, engineers, architects, historians and conservationists; in a dialogue with the local organized groups of temple and mosque representatives as well as informal vendors and shop owners (9).

In 2009, the scenario was of a plaza whose original outline could still be traced, but that had been greatly encroached upon and suffered from intense traffic congestion, no pedestrian demarcation, unorganized informal activities, unutilized open spaces, haphazard parking, as well as noise and air pollution (9).

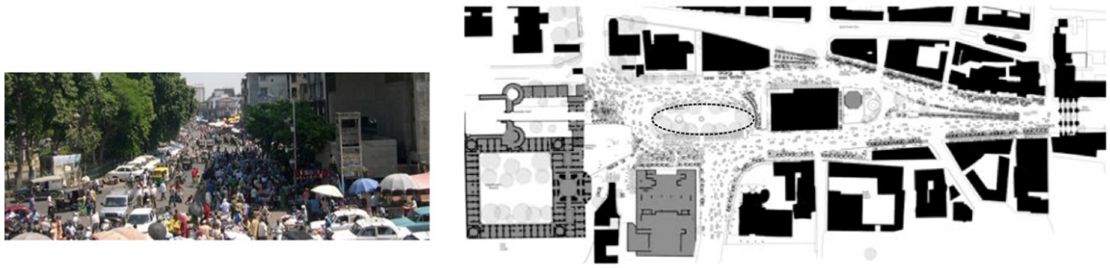

Figure 3.3 Bhadra Square, before and after
This image gives a basic comparison of alteration in the original planning to make it a non-motorized public space and also to provide specific areas for street hawkers, shops, development of approaches, public space for gathering and get together and also freeing up the movement within this spaces (9).

Along with the pedestrianization of the plaza, public access to the Bhadra site by pedestrian friendly lanes as well as enhancing the connection across the Sabarmati River through a pedestrian bridge have been proposed. The project also includes the conservation and adaptative reuse of the Bhadra Fort by the Archeological Survey of India and the Redevelopment of the Lal Darwaja Bus Terminus near the Plaza. The up gradation of the Bus Terminus also provides an opportunity to meet the parking requirements within the congested walled city.

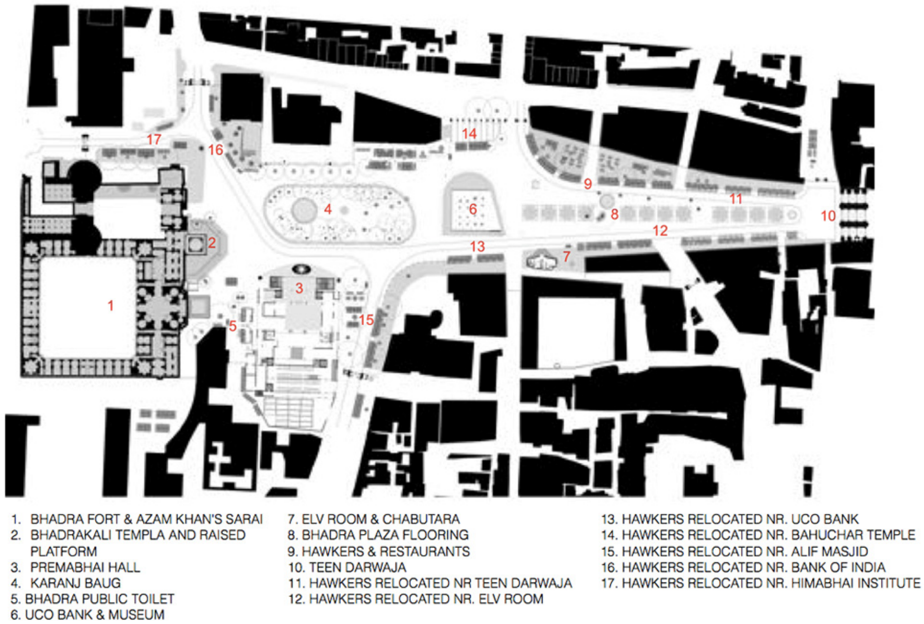

Figure 3.4 Overall plan of Bhadra redevelopment
This figure shows the different locations by numbering. It also shows relocation of different hawkers with reference to their type of business.

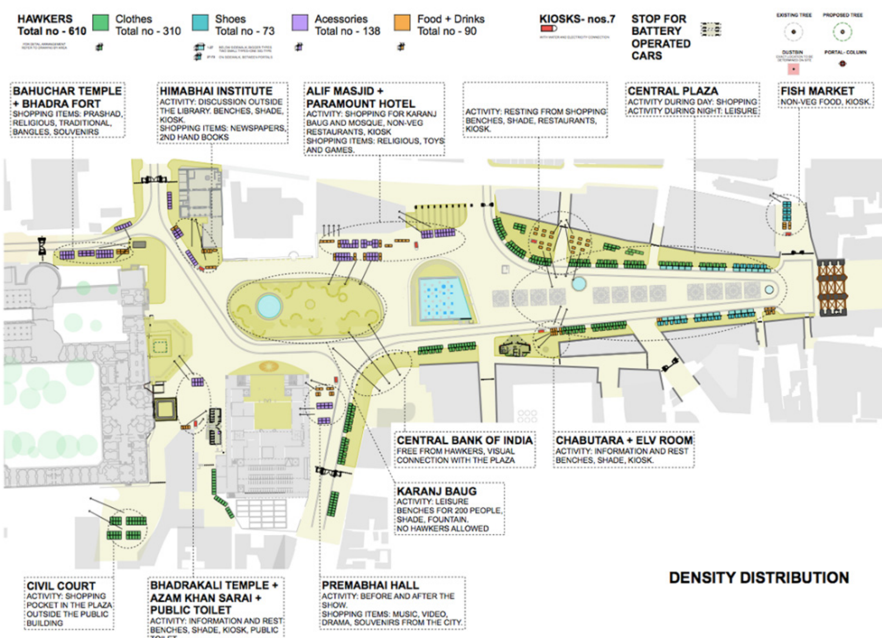

Figure 3.5 Overall density distribution as per the redevelopment plan
This drawing indicates overall planning and relocation of hawkers depending on the type of products they sell like clothes, shoes, accessories, food, and drinks etc. They have also provided spaces for parking for normal and battery-operated vehicles.

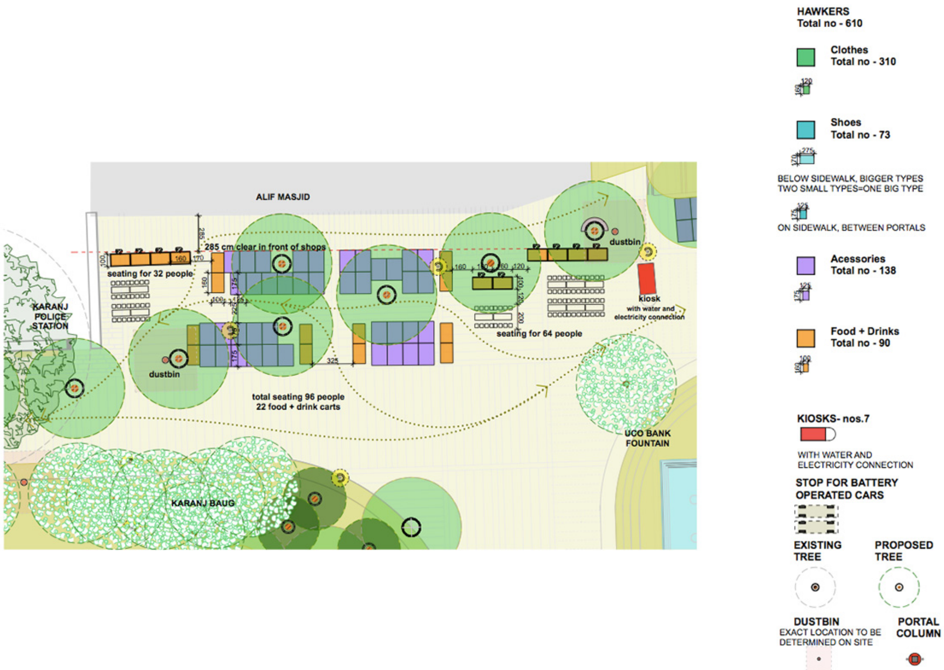

Figure 3.6 Density distribution part I

The Figure 3.5 is an overall plan. That plan is divided into 3 parts. This is the first part.

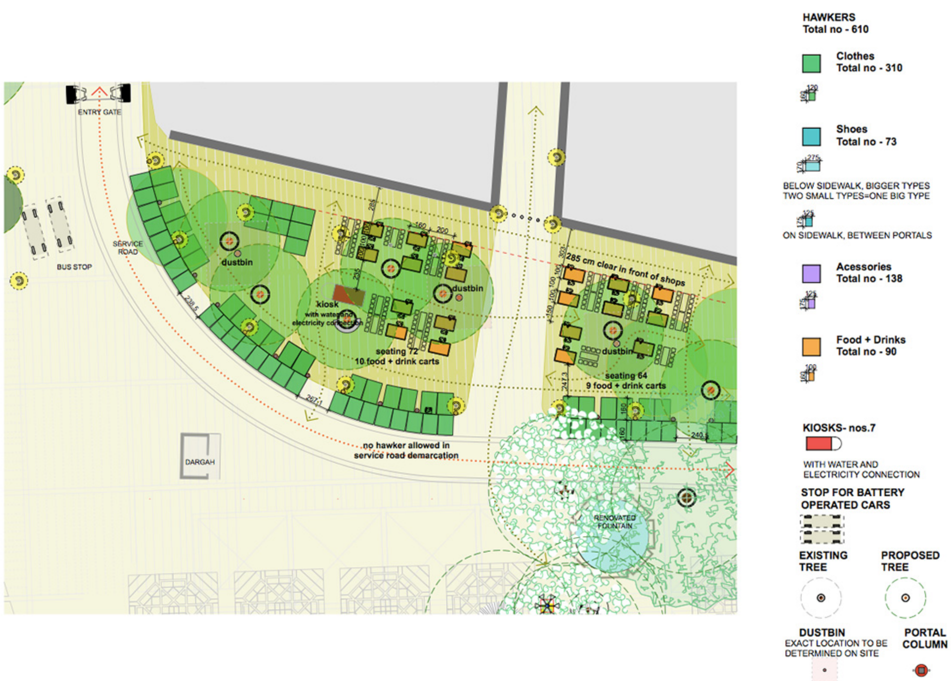

Figure 3.7 Density distribution part II

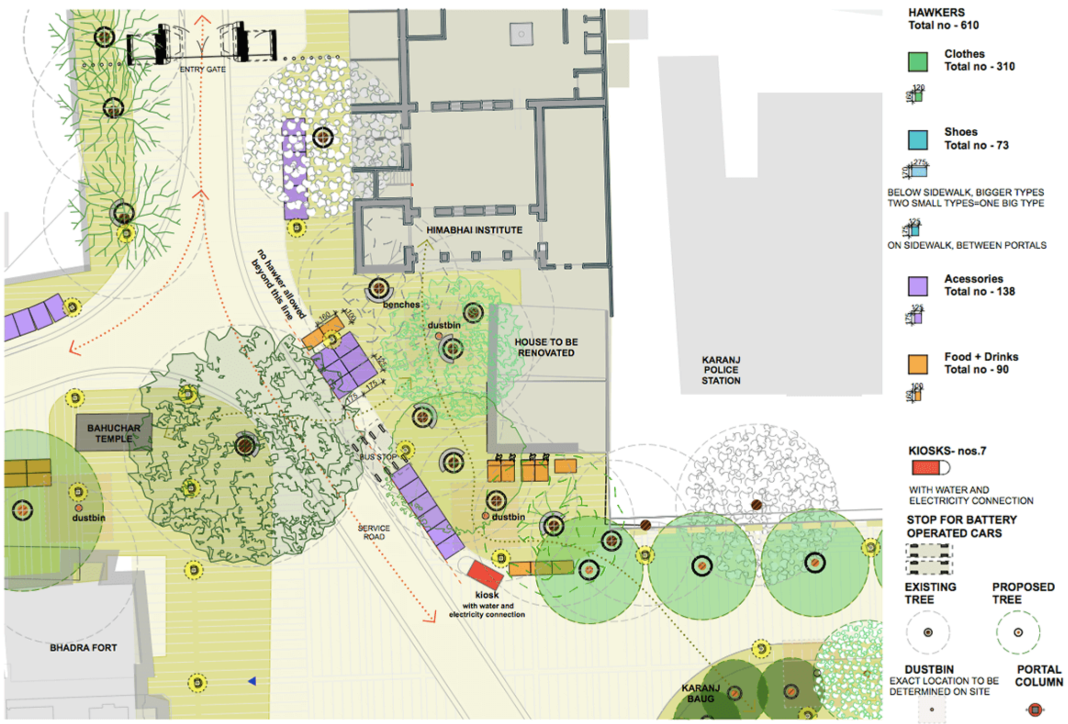

Figure 3.8 Density distribution part III

The design allows the informal and formal activities occur while maintaining the quality and character of a vast public space with leisure zones with trees and shade, fountains, and seating areas. Some of the other issues the project addresses are the up gradation of physical elements such as signage, lighting, landscaping, and street furniture. Designed portal columns, arranged along the market space demarcate the commercial activity. These vertical elements guide the new location of the stalls and the zones for street vendors, as well as provide light and structure for the awnings required in monsoon or summer seasons (9).

Figure 3.9 Rendered image of the Bhadra square showing the Premabhai hall and the Teen Darwaja

This is the concept rendered image which inspired development of the Bhadra square redevelopment. It shows the Premabhai hall on the right and the Teen Darwaja at the top of the image. This square creates a unique space which allows public to gather at this square, enjoy the surroundings and also it can be developed for many other purposes like for social gatherings, functions etc.

Figure 3.10 Rendered image of the Teen Darwaja

This image shows that the space in front of Teen Darwaja has been developed in such a way that it allows freeing up a lot of movement around it. Previously this area used to be extremely crowded, but due to pedestrianization and also due to proper relocation of the street hawkers, it has become very spacious and it has also projected the Teen Darwaja as a unique identity which allows tourists to visit, have heritage walks around this area and also to enjoy the local market shopping.

Figure 3.11 Rendered image portraying the redeveloped Bhadra Square along with Premabhai Hall
This image shows creation of steps to portray demarcation of spaces. It also shows how the flow of the human traffic would occur in this area and how they would converse with the environment (9).

Figure 3.12 Bhadra Square after redevelopment
This real-life image shows how the area has be developed giving prime importance to public spaces, flow of pedestrian traffic and how the real estate around the area has been developed. Such spaces create greater value of the buildings present around them and help attract tremendous business (9).

Figure 3.13 Before and after image of approach towards the Teen Darwaja
This image shows the drastic change made in this area along with some old structures being demolished and creation of new structures. The entry of Teen Darwaja has been created in such a manner to retain its old charm as well as give it a modern touch by the public spaces around it (9).

Figure 3.14 Before and after images of the Bhadra square and its public spaces
The images on the left depict the condition before the development of the Square and the images on the right depict the condition after the development in 2014. These images show that the planned relocation of the street hawkers, demolition of the encroached spaces and redevelopment into public spaces greatly free up the area for ventilation, hygiene, movement, waste disposal and also add a greater value to the real estate in this area (9).

3.2 Observations

Redevelopment of old heritage spaces is always a tough task. As per my understanding, a lot of difficulties must have been faced by the local corporation in transferring the street hawkers to a different location, in demolition of old structures which even though might have encroached public spaces have been standing for more than 30 years and some even for longer duration, not allowing motorized vehicles to pass through these spaces also means revising the movement of vehicular traffic around the area by diversions and even reconstruction of roads, infrastructure for sanitation etc., a lot of hindrance even during construction as it lies within city premises and all the rules need to adhered to for the same. It was a challenging project no doubt for the architects, the local municipal authorities, the contractors and even for the people owning the shops and buildings in this area as during construction a lot of loss would have been borne by them.

But such redevelopments need to be planned with a vision for future growth. In the year 2017 Ahmedabad was declared as the India's first heritage city by UNESCO. Ahmedabad's nomination received huge support from around 20 countries, who lauded the peaceful co-existence of dominant Hindu, Islamic and Jain communities in the Walled City area. Besides its architectural marvels of wooden havelis, the world community also stressed on the fact that the city was the epicenter of non-violent freedom struggle that led to country's independence from colonial rulers in 1947 (11).

According to Ahmedabad Municipal Commissioner Mukesh Kumar, there are 2600 heritage sites and over two dozen ASI protected monuments and sites in the walled city which has been declared as the first World Heritage City of the country. In 2011, the city had figured in UNESCO's tentative list (11).

The Bhadra Square was a very important part of these heritage sites.

Looking at this case study, below are my observations:

- Public spaces are an integral part of the society. They are the true representation of the culture, habits, social structure, and connectivity. Public spaces represent how people in the surrounding area, eat, behave, shop, connect socially, etc.
- In the previous chapters, I have provided thorough representation of the public spaces in India. As per my observation, these spaces need a huge revamp and the local corporations are working towards it with the smart city initiatives.
- One of the biggest missing points in these initiatives has found to be use of renewable energy sources like the sun, wind, and water. India is on it way to be the biggest solar power creator within the next few years.

- The public spaces are the locations where these renewable energy resources can create the biggest impact on the environment. The carbon footprint generated due to the use of fossil fuels can be drastically reduced by the usage of renewable energy.
- The use of solar energy can help make any product self-sufficient after its break even, can reduce the development of infrastructure to provide power in such places and save money, can be used for charging of electric vehicles in parking lots, can be used for area lighting in public spaces, can be used for power consumption in street side stalls, can be used for highlighting the signages and signboards, etc. There is immense potential for these uses.
- Combination of the tensile structures along with the renewable energy sources like the solar energy can create a beautiful structure which is both aesthetic and functional and can add a lot of value to the public spaces.

4 Superkilen Park: A unique case study of urban public space in Copenhagen, Denmark

Project: Urban revitalization Superkilen Copenhagen

Designers: BIG Architect, Bjarke Ingels Group

Partners: Topotek 1 (Landscape architecture studio) and Superflex (architecture collective)

Client: Realdania and the community of Copenhagen

Planning: Began in 2007

Opening day: June 2012

Superkilen is a half a mile-long urban space wedging through one of the most ethnically diverse and socially challenged neighborhoods in Denmark. It has one overarching idea that it is conceived as a giant exhibition of urban best practice – a sort of collection of global found objects that come from 60 different nationalities of the people inhabiting the area surrounding it. Ranging from exercise gear from muscle beach LA to sewage drains from Israel, palm trees from China and neon signs from Qatar and Russia. Each object is accompanied by a small stainless plate inlaid in the ground describing the object, what it is and where it is from – in Danish and in the language(s) of its origin. A sort of surrealist collection of global urban diversity that in fact reflects the true nature of the local neighborhood – rather than perpetuating a petrified image of homogenous Denmark (12).

Superkilen is the result of the creative collaboration between BIG, Topotek1 and SUPERFLEX, which constitutes a rare fusion of architecture, landscape architecture and art - from early concept to construction stage (12).

4.1 A world exhibition at nørrebro

Superkilen is a park that supports diversity. It is a world exhibition of furniture and everyday objects from all over the world, including benches, lamp posts, trash cans and plants – requisites that every contemporary park should include and that the future visitors of the park have helped to select. Superkilen reattributes motifs from garden history. In the garden, the translocation of an ideal, the reproduction of another place, such as a far-off landscape, is a common theme through time. As the Chinese reference the mountain ranges with the miniature rocks, the Japanese the ocean with their rippled gravel, or how the Greek ruins are showcased as replicas in the English gardens. Superkilen is a contemporary, urban version of a universal garden (12).

Figure 4.1 Superkilen Black Zone
Motifs from different countries are placed here to encourage people from different nationalities residing here to come and use this public space and to feel closer to home. It is a unique step taken and also have created a public space which is one of a kind.

4.1.1 Three zones, three colors – one neighborhood

The conceptual starting point is a division of Superkilen into three zones and colors – green, black and red. The different surfaces and colors are integrated to form new, dynamic surroundings for the everyday objects. The desire for more nature is met through a significant increase of vegetation and plants throughout the whole neighborhood arranged as small islands of diverse tree sorts, blossom periods, colors - and origin matching the one of surrounding everyday objects (12).

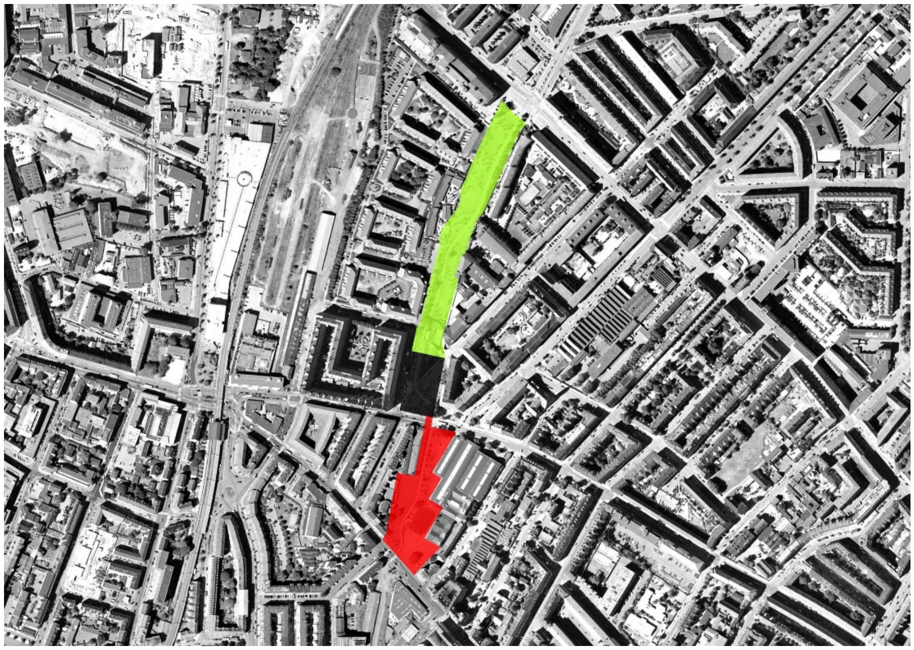

Figure 4.2 Three zones – Red, Black and Green on a 3D map
This map shows the bifurcation of the zones of this park. The three zones are marked by different colours. The red zone has its surrounding in bright playful colours like red, pink orange along with bright motifs, the black zones use is named after the shade of the asphalt tarmac which is dark grey and the motifs are placed in grayscale colours like black, grey, white etc. The green zone is named after the shade of the green cover in that area. This zone is like a traditional green park with furniture for sitting, signages of different countries, shades etc.

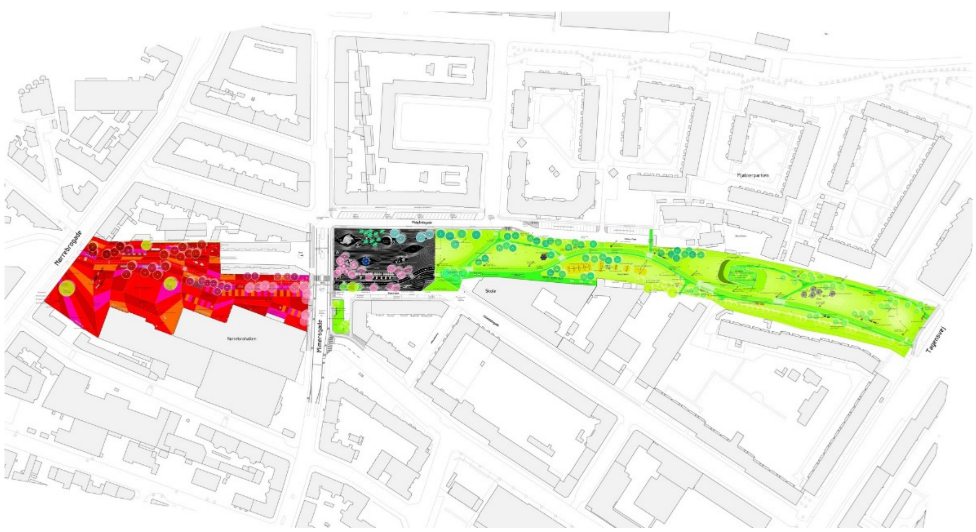

Figure 4.3 Site Plan of Superkilen Park
This drawing is a more accurate representation of the park with three zones of the park demarcated by the colours red, black and green.

4.1.2 Market/culture/sport – the red square

As an extension of the sports and cultural activities at the Nørrebrohall, the Red Square is conceived as an urban extension of the internal life of the hall. A range of recreational offers and the large central square allows the residents to meet each other through physical activity and games. The colored surface is integrated both in terms of colors and material with the Nørrebrohall and its new main entrance, where the surface merges inside and outside in the new foyer (12).

Facades are incorporated visually in the project by following the color of the surface conceptually folding upwards and hereby creating a three-dimensional experience. By the large facade towards Nørrebrogade is an elevated open space, which almost like a tribune enables the visitors to enjoy the afternoon sun with a view. In addition to the cultural and sports facilities, the Red Square creates the setting for an urban marketplace which attracts visitors every weekend from Copenhagen and the suburbs (12).

Figure 4.4 Red Square – Superkilen

Superkilen's central marketplace is located in the area of the existing hockey field. A large area on the square is covered by a multifunctional rubber surface to enable ballgames, markets, parades, and skating rinks in winter etc. The mobile tribunes of Nørrebrohallen can be moved there for open-air movie/sports presentations. The square towards East allows outdoor service from the café inside by the future main entrance. Towards North, the visitors will enjoy basketball courts, parking spaces and an outdoor fitness area (12).

Fitness area, Thai boxing, playground (slide from Chernobyl, Iraqi swings, Indian climbing playground), Sound system from Jamaica, a stencil of Salvador Allende, plenty of benches (from Brazil, classic UK cast Iron litter bins, Iran and Switzerland), bike stands and a parking area are some of the motifs imported from their originating countries (12).

Figure 4.5 Another view of Red Square – Superkilen Park

Figure 4.6 Image of artistic swings at Red Square

4.1.3 Urban living room – the black square

Mimers Plads is the heart of the Superkilen Masterplan. This is where the locals meet around the Moroccan fountain, the Turkish bench, under the Japanese cherry-trees as the extension of the area's patio. In weekdays, permanent tables, benches and grill facilities serve as an urban living room for backgammon, chess players etc. The bike traffic is moved to the East side of the Square by partly solving the problem of height differences towards Midgaardsgade and enable a bike ramp between Hotherplads and the intersecting bike path connection. Towards North is a hill facing south with a view to the square and its activity (12).

Brazilian bar chairs under the Chinese palm trees, Japanese octopus playground next to the long row of Bulgarian picnic tables and Argentinean BBQ's, Belgian benches around the cherry trees, UV (black light) light highlighting all white from the American shower lamp, Norwegian bike rack with a bike pump, Liberian cedar trees, etc., are some of the unique motifs imported to create this urban square (12).

To protect from the street ending at the north east corner of the square and to meet the wishes from the neighbors, the planners have folded up a corner of the square creating a covered space (12).

Unlike the pattern on the red square, the white lines on Mimers Plads are all moving in straight lines from north to south, curving around the different furniture to avoid touching it. Here the pattern is highlighting the furniture instead of just being a caped under it (12).

Figure 4.7 Black Square – Superkilen Park

Figure 4.8 Children's play area in the Black Square – Superkilen Park

Figure 4.9 Unique landscape and plantation at Black Square – Superkilen Park

Figure 4.10 Two girls of Palestinian heritage at Black Square – Superkilen Park
These two residents of Palestinian heritage were requested to bring back soil from Palestine from their Grandmother's residence in Palestine and they tilled the soil themselves and plantation was done on it. This is a great way of accommodating people from all over the world residing there with open arms and gives a feeling of something that is their own.

4.1.4 Sports & play area – the green park

Bauman once said that "sport is one of the few institutions in society, where people can still agree on the rules". No matter where you are from, what you believe in and which language you speak, you can always play football together. Therefore, several sports facilities are moved to the Green Park, including the existing hockey field with an integrated basketball court as it will create a natural gathering spot for local young people from Mjolnerpark and the adjacent school.

The activities of the Green Park with its soft hills and surfaces appeals to children, young people and families. A green landscape and a playground where families with children can meet for picnics, sunbathing and breaks in the grass, but also hockey tournaments, badminton games and workout between the hills (12).

Figure 4.11 The Green Area – Superkilen Park

From Tagensvej at the very north, the park is welcoming with a big rotating neon sign from USA, a big Italian chandelier and a black Osborne Bull from Costa del Sol (a wish from a Spanish couple living in the area!).

Figure 4.12 Black Osborne Bull – Green Park, Superkilen Park

Armenian picnic tables next to Mjølnerparken with South African BBQ's, a volcano shapes sports arena for basketball and football, a line dance pavilion from Texas, muscle beach from LA with a high swing from Kabul, Spanish ping pong tables and a pavilion for the kids to hang out in are some of the spaces created in the Green Zone.

Figure 4.13 Basketball Court in Green Park, Superkilen Park

Figure 4.14 Armenian Picnic tables – Green Park, Superkilen Park

The green park is turning into Mimers Plads on the top of the hill to the south. From the top of the hill you can almost overlook the entire Superkilen (12).

4.1.5 Traffic connections

To create better and more transparent infrastructure throughout the neighborhood, the current bike paths are reorganized, new connections linking to the surrounding neighborhoods are created, with emphasis on the connection to Mimersgade, where citizens have expressed desire for a bus passage. This transition concerns the whole traffic in the area at outer Norrebro and is a part of a greater infrastructure plan. Alternatives to the bus passage include signals, an extended middle lane or speed bumps (12).

4.2 Idea behind Superkilen Park

Communication with residents was an intrinsic part of this scheme and the team spent vast quantities of time discussing design details with the multicultural community, ensuring that each nationality had an input into the final concept. BIG Architects clarifies: "The choice of colours and materials begin as neutral to language and culture but acquire a meaning over time as they are used in the cityscape and populated by the inhabitants. The different surfaces and colours of the area are integrated so that they become a backdrop for a variety of objects chosen by the citizens and curated by the designers. This backdrop is at the same time neutral, distinctive and discreet." (13)

The design concentrates on the integration of more than sixty different cultures, blending symbols of the ethnically diverse community into a single architectural gesture. It is a project by the people and for the people. As Bjarke Ingels, Founding Partner of BIG explains: "Rather than a public outreach process towards the lowest common denominator or a politically correct post-rationalization of preconceived ideas navigated around any potential public resistance - we proposed public participation as the driving force of the design leading towards the maximum freedom of expression." (14). Not only does the site represent diversity and multiculturalism but the use of activities was created in response to the local's demands and needs such as creating a more efficient transport network with bikes and accommodating leisure activities that is suitable for everyone (15).

4.3 Observations

Superkilen is a great example of creating a democratic public space which does not have a boundary, barrier or any specific ideology, it is truly welcoming to all who live in and around that area and it also has a piece of art, motif, street furniture or even street lighting which reminds the residents of their home country. This neutrality is something that attracts tourists from all over the globe to come and visit this unique and colorful park.

The area around Superkilen Park accommodates people from many nationalities like Sweden, Germany, Norway, Morocco, Pakistan, Iraq, Lebanon, Iran, Palestine, India, etc. There was a big necessity for such people to exchange thoughts socially, interact, meet, have events, to create a good camaraderie. Public spaces are a very strong means to create such societies where there is no boundary or barrier, no discrimination depending on their backgrounds. Superkilen Park with its democratic thought process created a huge public space which allowed people to spend more time outside, young and old ones playing together, interacting, having fun, having joint events etc. It helped create a stronger bond between the residents there and remove the barrier of language or backgrounds.

Below are some of my observations for this case study:

- The public space is created in a densely populated area with locals from Denmark itself as well from different countries.
- The park is different from other parks where it is isolated by compound walls or even plantations and you need to get inside the park to be part of it. Superkilen is designed in such a way that there is no specific barrier for entering it. Its borderless design has created a welcoming appearance and it is not at all isolated from the roadside.
- This space is a great example of street furniture. Modern design of street furniture from different parts of the world like double swings from Iraq, trash cans from UK, benches from Slovenia, Ethiopia, Portugal, Miami, Prague and Porto cohabit with Swiss hammocks, Armenian picnic tables, Moroccan fountain which acts as a meeting point, Japanese playground slide which acts as a giant calamari, Brazilian phone boxes, Romanian chess tables, ultraviolet lamps from United States, Carioca bar stools and many other motifs.
- The planning has been done regarding area demarcation, its purpose has been clearly defined by the motifs and the demarcation and it allows for development of the spaces around this area. It increases the value of the properties around this area as huge numbers of visitors are attracted to this park. It also creates a means of livelihood for the residents who live around these areas.
- The use of renewable energy sources can be done here to create a greater value for such spaces. The renewable energy sources can help in area lighting, generating power which can be connected to the grid to generate solar credits, us wind energy to generate electricity, provide charging stations for mobiles, laptops, electric vehicles, run on solar energy, provide waiting areas for buses, taxis run on solar energy, this solar energy makes the utility structures self-sufficient and also saves a lot of money in the long run. They can help reducing the carbon footprint in that area due to power consumption.
- Combination of the tensile structures along with the renewable energy sources like the solar energy can create a beautiful structure which is both aesthetic and functional and can add a lot of value to such public spaces.

The next chapter will take us through my idea, concept, and design of utility tensile structures for public spaces using the renewable sources of energy like the solar energy.

5 Stages of product creation and development

"It is really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them." – Steve Jobs.

In the previous chapters, I have shown the importance of development of public spaces which are designed in collaboration with the surroundings which envelope it. These public spaces are created by many elements; street furniture is one of the most critical elements of such spaces. It is the unique design of the street furniture which represents the cultural background of the people using it, the habits, the social skills and its functionality. This thesis is based on the design of utility membrane structures in public spaces which utilize the renewable energy sources which here is specifically Solar Energy.

It is very easy to just showcase my product design and explain it, but the very purpose of this design, how the idea generated, how it is to be developed, how it is to be put up in the market for commercial use, how it is to be protected for many years, an app based ecosystem created for this product, how it can be useful to create a big business, etc., is in itself more essential.

The product development cycle is one which helps create a broad plan regarding how a product is to be metaphorically converted from a seed to a full blooming tree with fruits which has more seeds and which in turn results into more full blooming trees.

The product development cycle is divided into the following stages

5.1 Product Ideation

Public spaces are an essential as discussed in the previous chapter. I had been observing that in such spaces, the utility of tensile structures was very little. When these types of structures were created, they fulfilled the functionality, but only partially; they fulfilled form, but it I felt that there was always potential for more. The question always arose in my mind, why is solar energy not being utilized for such structures. India is endowed with vast solar energy potential. About 5,000 trillion kWh per year energy is incident over India's land area with most parts receiving 4-7 kWh per sq. m per day. Solar photovoltaics power can effectively be harnessed providing huge scalability in India. There has been a visible impact of solar energy in the Indian energy scenario during the last few years. Solar energy based decentralized and distributed applications have benefited millions of people in Indian villages by meeting their cooking, lighting and other energy needs in an environment friendly manner. Further, solar energy sector in India has emerged as a significant player in the grid connected power generation capacity over the years. It supports the government agenda of sustainable growth, while, emerging as an integral part of the solution to meet the nation's energy needs and an essential player for energy security. National Institute of Solar Energy has assessed the Country's solar potential of about 748 GW assuming 3% of the waste land area to be covered by Solar PV modules. Solar energy has taken a central place in India's National Action Plan on Climate Change with National Solar Mission as one of the key Missions. National Solar Mission (NSM) was launched on 11th January 2010. NSM is a major initiative of the Government of India with active participation from States to promote ecological sustainable growth while addressing India's energy security challenges. It will also constitute a major contribution by India to the global effort to meet the challenges of climate change. The Mission's objective is to establish India as a global leader in solar energy by creating the policy conditions for solar technology diffusion across the country as quickly as possible (16).

Recently, India achieved 5th global position in solar power deployment by surpassing Italy. Solar power capacity has increased by more than 11 times in the last five years from 2.6 GW in March,2014 to 30 GW in July 2019 (16).

These statistics clearly portray the important role solar power plays in the electricity generation for consumption in India.

The main motivation behind my business idea was:

- Aim to reduce carbon footprint due to consumption of fossil fuels.
- Create an ecosystem with the help of modern technology to get better results.
- Make use of tensile membrane along with Solar Photovoltaics system to create a self-sustaining structure which achieves break even after 4-5 years and after that it becomes a very low maintenance structure which generates electricity free of cost and can also be used for revenue creation.
- Creation of unique products which have a genuine requirement but have not been developed or optimized yet.
- Going from small to big – meaning the key in developing the product is creating smaller structures which have wider functionality and easy for masses to absorb because of its reasonable value.
- The design of the structure is to be kept neutral and keep a possibility of adding local environmental elements to it which represent culture, language, habits, to allow flexibility. Designing a different product for different location for the same function is not a pragmatic approach.
- Budget is always the biggest decision maker in any business. So, a fine balance between quality of the product and allowable budget of the client needs to be maintained. One must keep in mind that the quality of the product cannot be compromised as it affects the brand value in the future. We should not select too premium quality products which can be replaced

by good quality products at cheaper rates but are also fulfilling our specifications. So, specifications play a very important role.

Solar Power always intrigued me as a renewable energy source more than others due to the following reasons:

- Ease of access: - The photovoltaic (PV) panels are easily available in the market, either locally manufactured or imported. It allows people to set up the panels in their houses very easily.
- Initial rate of investment is high but the breakeven can also be achieved in 3-5 years depending on the design and after that the investment starts giving returns for many years depending on the quality of the panels and the type of design for zero to low maintenance.
- Off grid solar power generation can be utilized in many structures like street furniture, for example street lighting, electrification of waiting areas for buses, taxis etc., charging stations in parks and in campuses for electronics, electric bicycles, electric two wheelers and electric cars, signboards can also use power generated from solar energy which results in savings in the form of wirings from the transformers to such locations, solar pumps are also created as off grid structures which are now lifelines of many farmers and also many more purposes.
- Solar energy helps cut electricity bills and save money.
- Creation of self-sufficient infrastructure is possible due to solar energy if enough area is available for direct sunlight and it helps save a lot of money for the owners and the government.

Looking at the above points in the next chapter I shall explain the products identified based on the above parameters.

5.2 Product Identification

Looking as the points mentioned in the previous chapter, I came up with the idea of creating beautiful tensile structures which are more utilitarian and the structure allows mounting of Photovoltaic (PV) panels on it and it can be either an off grid structure or can be an on grid structure depending on its function and its location. This concept is very simple. But what is more essential is their utilization which has tremendous potential. There are many structures that I have thought of which can be created and utilized for business growth. I will list out a few of them.

5.2.1 Solar powered tensile roof open workstations

5.2.1.1 Concept

The idea is to create an open desk with a tensile roof which mounts a solar panel on top of it and provision of charging ports and plugs at the desk which allows for charging of laptops, tablets or mobile phones and also provides power for lighting, fan and any other add-on which is necessary. A mobile app ecosystem is also to be created for these workstations through which it can be located by GPS, availability of slots can also be checked, it can be pre-booked, more than one seat can be booked at a time if you wish to have a meeting as well and it can be on chargeable basis which can create revenue for the owner. The mobile application can also show the carbon footprints reduced by using such workstations.

Figure 5.1 Rendered image of a conceptual open work desk
This image shows the open work desk. Power ports are to be provided for people sitting below it and charge their laptops, tablets, mobile phones etc. The solar panels are mounted on the roof to generate electricity. This electricity can be on grid or off grid and help save money on electricity bills in both the case. Off grid means, it is not connected to any electrical supply, whereas on grid means, the structure is connected to the electrical supply and the power generated by solar energy gives credit units which reduce the electricity bill. Additional power generated by this structure is a big bonus.

5.2.1.2 Application

There are multiple applications for such workstations. They are listed as below

1. For open spaces in corporate campuses: - In such campuses, there is always a lot of space outside the building, above the building, in the big atriums etc. Such spaces are generally unutilized. If these structures are implemented, it can create a totally new space where

meetings can be held, where you can work and also be part of the environment, where you can enjoy the nature as well as it consumes electricity generated by solar energy. It can be placed on terraces as well where there is no scope of development due to the municipal corporations' by-laws. Such spaces would attain a new life and vigor and act as a change in thought process due to the openness.

2. For open spaces in hospitality sector: - In hotels, there are lounge spaces near swimming pools, on roof tops, in balconies, in gardens, such spaces can be monetized by created workspaces which can be provided for use on chargeable basis. Such structures add an aesthetic value as well monetary value. These spaces can also be used for generating power from solar energy which can be used for area lighting as well as for reducing the electricity bills of the hotels and also for providing space for marking on these structures which help in generating revenue. Hospitality sector also include restaurants, bistros, and cafes. These structures can help open restaurants on terraces, which can become a nice sitting space as well a workspace where people can work, have meetings as well as have their food. It creates a nice revenue generating model. Bistros can extend their space outside the premises by providing roadside workspaces which become an extension of their restaurants and become a nice meeting point or a working place.
3. For public spaces like gardens, parks or even on the roadside: - Public spaces as discussed in the above chapters include parks, gardens, and streets. Such spaces are a medium for gathering, exchanging ideas, interacting, and connecting different cultures e.g. Superkilen Park. These public spaces are not explored a lot in India and have tremendous scope. As these spaces are created on behest of the local municipal authorities, they would look for ways to earn revenue out of it. Such workspaces or solar charging desks or sitting desks can be welcomed into them and in this technologically driven generation, power is a big necessity and because it provides for power, it can be added to these spaces. These desks add an opportunity in such spaces to work in such parks, sit for some time, interact with your friends or family or business colleague, gather up students for open air teaching, for college students to meet and work together, advertising in such workspaces, having public space cafes where you can work and also have your snacks or coffee served to you. There is a lot of potential in such public spaces. These workspaces can also be designed in a manner to allow for street hawkers to use it to sell their products, get electricity free of cost and also allot them specific spaces so that they don't crowd up the public spaces in unwanted areas.
4. Exhibition areas: - Exhibition halls and open to sky exhibitions always require workspaces where the product can be displayed as well as explained. Such structures can be used to advertise, exhibit, discuss business and all this can be done on power generated from solar energy. These structures if created on grid, can effectively reduce the electricity bills as well

as have a tremendous impact on the carbon footprint as they are ecologically sustainable structures. These structures can also be designed in a modular form so that they can be shifted easily, erected easily and after their purpose is over in that exhibition, can be dismantled easily and transported for other uses. It creates a great value for brands which regularly have exhibitions for their products in different spaces.

5. Construction sites: - Construction sites are one of the most difficult places to be in India when the site is in areas which are not easily accessible, basic utilities are unavailable initially, there is not even a proper place to sit and work. Such structures can be developed in such a manner that they are modular, durable, handy to shift, erect and dismantle and can become a great marketing desk for the visitors to come and discuss business. Such structures create a wonderful workspace which is self-sufficient and has all the necessities. It adds tremendous value for upcoming projects are creates a wonderful first impression and is financially logical. At such sites, generally these structures are off grid structures.
6. Industrial campuses: - For industrial campuses which are spread over huge area, there is also tremendous scope for public spaces, i.e. spaces where people gather for refreshments, for interaction, for meetings, for peace of mind and even for social gatherings. Such spaces are unexplored for open work desks. These work desks create a great attraction point for people to get out, enjoy the surrounding, meet people, work, share ideas and also as there it would be an on grid structure, it can greatly reduce electricity bills.
7. Educational institutions: - Open air classrooms, online classrooms which can be attended by sitting outside the classes, discussing projects with friends at such open spaces, discussing other ideas, etc., can be solved by such open workspaces. These workspaces also add a great value for such institutions which can earn a lot of revenue by providing such spaces on chargeable basis, or even use such structures for advertisement which can be a big revenue generator. These structures can effectively reduce the electricity bills due to power generation from solar energy.

There are many more possibilities for such structures which can be explored.

5.2.1.3 Benefits

There are many benefits of such structures.

1. They run on solar power and hence reduce the carbon footprint
2. They can have an app ecosystem which helps people find them easily, check availability, check how much it would cost to sit for how much time, check how much carbon footprint they have reduced and also be a part of this community where they can share their ideas or meet.
3. Reduction of electricity bills

4. Add more life to public spaces and make them financially more viable for municipal corporations as they can be a great way to generate revenue through rentals and advertisements.
5. It can be a great part of smart city initiatives which the government of Indian is pushing the cities towards where the public spaces are developed with the help of modern technologies and they also have street furniture which are ecologically sustainable.
6. These structures can achieve break even within few years and after that zero to low maintenance would only be required which makes it value for your money.
7. Adds great aesthetic value to public spaces or any other spaces where it is used. Such structures can become a great point of attraction for tourists, visitors, office going people or even students to meet or work.

5.2.2 Tensile roof solar powered charging stations for electric bicycles and electric two-wheelers

5.2.2.1 Concept

“In order to have clean air in the cities, you have to go electric.” – Elon Musk.

After years of being viewed as a fringe technology, the battery electric vehicle market is finally nearing a tipping point. Several factors include a positive change in customer perceptions, technological advancements and greater intervention from governments are combining to focus attention on BEV (Battery electric vehicle) adoption.

Deloitte estimates that the market will reach a tipping point in 2022 – when the cost of ownership of a BEV is on par with its internal combustion engine counterparts, With cost of ownership no longer a barrier to purchase, BEVs will become a realistic, viable option for any new car buyer.

Based on conversations with industry executives and the experience of working on multiple EV based projects, Deloitte has identified five areas that will be key to success in the EV market. The five areas that organizations can seek to find a competitive advantage are brand, customer experience, production strategy, talent, and business model.

The last two years have been noteworthy ones for automotive industry. Indeed, 2017 was a landmark year for electric vehicles (EVs) as global sales of battery electric vehicles (BEV) and plug-in hybrid vehicles (PHEV) surpassed one million units for the first time.

Regarding adoption of EVs and electric bicycles, there are some concerns as shown in the below image along with a survey done.

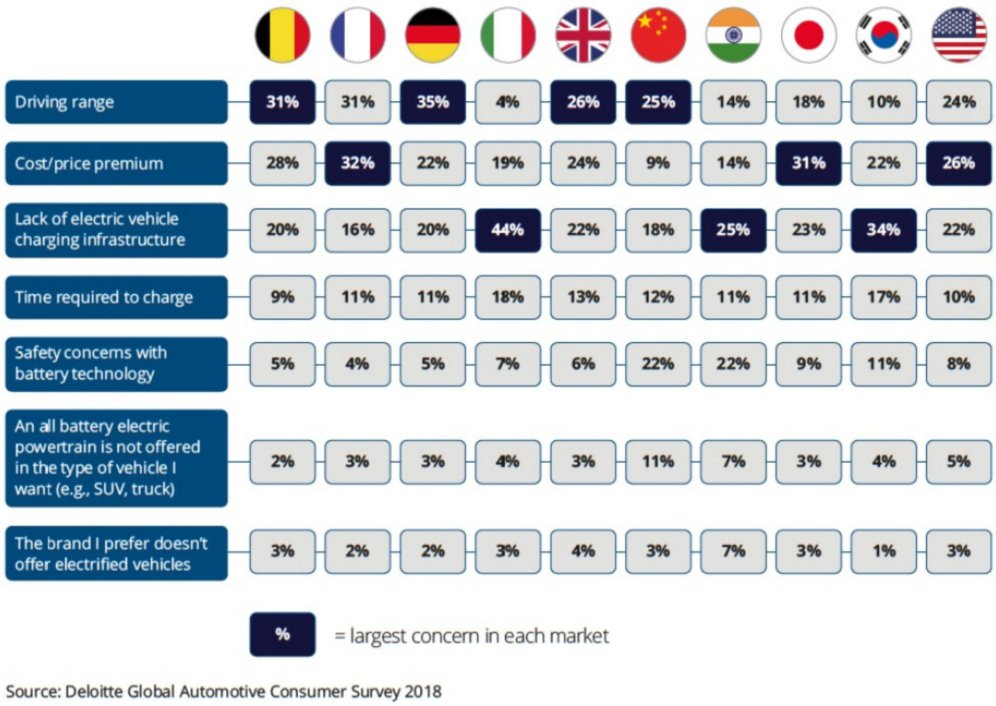

Figure 5.2 Customer survey about concerns regarding adoption of battery electric vehicles

The above figure shows five main concerns regarding of EVs. The concern regarding lack of electric vehicle charging infrastructure is our main base for the concept of Solar powered charging station.

The main idea is to create charging stations for electric cycles and electric two wheelers which are powered by Solar Energy. These structures can be on grid or off grid structures depending on their locations. The idea is to create a network of such charging stations mainly on grid, which are supported by an mobile app ecosystem, through which it can be tracked, availability of bicycles or two wheelers can be checked, they can be booked, the battery status of the vehicle booked can be checked and also the carbon footprint reduction can be checked because of use of electric bicycles or two wheelers. The solar powered charging station are created with the help of tensile fabric in a very elegant manner and the solar panels are mounted on top of the roof which covers the area. These charging stations can accommodate several electric vehicles depending on the client's requirements. There is to be an anti-theft mechanism for checking if any vehicle is stolen as these bikes would have an inbuilt GPS tracker.

The advantage of having these on grid structures is that it can greatly reduce the electricity bills and additional power generated can be utilized for area lighting, charging other electric gadgets like mobile phones, laptops, etc.

5.2.2.2 Application

There is a tremendous scope for such structures. The different areas where they can be utilized are listed as below: -

1. Industrial campuses: - Industrial campuses are spread over acres of land and generally, the mode of transport in such campuses is by four wheelers or two wheelers working on internal combustion engine. The negatives of such vehicles is that they itself are expensive, they run on fuel which causes pollution, generally these vehicles are run by drivers which causes an increase in the overheads of the company, the maintenance charges of such vehicles is also high along with insurance which is an annual expense. Against that the electric two wheelers or bicycles is something that the present generation are turning towards which allows them to move freely and individually without any drivers, they can pick up vehicles from the nearby charging station, use it to reach their destination and drop off their EV at the nearest charging station and walk. This saves a lot of costs like maintenance costs, fuel costs, insurance costs, overhead costs, reduction in pollution etc. The charging stations which are to be created in the large industrial campus run on solar energy and generate enough power for charging and because they are designed as on grid structures, they can reduce the electricity bills of the companies drastically. Also, an additional advertising space can be provided in these campuses which can itself be a revenue generator for the company. Such charging stations create a very distinct image of a company which promotes green energy and imagine if a customer enters the premises and wants to go from point A to point B, he or she can just pick up his electric bicycle from point A charging station, ride to point B which is shown in the GPS map and put his electric bicycle for charging at point B and continue as per his or her schedule.
2. Public spaces within the cities under smart city initiatives: - By public spaces meaning parks, gardens, streets, markets, beaches, tourist spots etc. Such charging stations along with a strong mobile app ecosystem can create a great network for visitors, locals, foreigners, for traveling within the city limits with the help of electric vehicles, making cashless payments and also once the destination of travel is reached, the electric vehicle can be put for charging at the nearest charging station which can again be located via app. These charging stations can help create a network of rental vehicles or even be used for charging of private vehicles. It can become a great revenue generator for its owners as it can become free of cost after few years of owning owing to the return in investment and after that it would require very little maintenance. It can help visitors from other cities to not worry about safety, about cost of travel as this travel would be far cheaper than the travel done via fueled vehicles. Even in a tourist destination say a place like Goa, where a lot of tourists make visits annually, these

tourists generally hire local two wheelers to check out the local destinations. If these vehicles would become fully electric which are charged by solar energy, then it becomes far cheaper for the owners, for the customers and reduces the carbon footprint.

3. Institutional campus: - Institutions spread over huge area have a lot of vehicles traveling within the premises. To cover such big distances, the institutions can set up multiple charging stations where electric bicycles or two wheelers can be provided on rental basis and it would be powered by a strong mobile app ecosystem which would help locate the charging stations, check its availability, create subscription models for the students and teachers alike and also create a strong community where they can interact, create competitions or challenges which can create a strong bonding. Such institutions can also implement the policy for creating the total campus a non-motorized area where only electric vehicles, electric bicycles and normal cycles are allowed for traveling to create a push towards greener environment.
4. Office campuses: - Offices placed within a huge campus where there is a lot of distance to cover from the entry point are a good target audience. Such spaces can be developed into fully non-motorized area and only allow for electric vehicles, electric bicycles, and normal cycles. These vehicles can be provided on rental basis which allow the customers to just pick it up at the entry point, ride to their destination and just put it back at its Solar powered charging station nearby and get to work. The app ecosystem can allow for many brands to utilize these charging station and can tie up with those companies to work together online. It can help campuses reduce their parking spaces and create more space to plant more trees, parks, public spaces within the institutions.
5. Special economic zones: - A special economic zone (SEZ) is an area in which the business and trade laws are different from the rest of the country. SEZs are located within a country's national borders, and their aims include increased trade balance, employment, increased investment, job creation and effective administration. Usually the goal is to increase foreign investments. SEZs have been established in several countries, including China, India, Jordan, Poland, Kazakhstan, Philippines, and Russia. North Korea has also attempted this to a degree. The SEZs are isolated regions created solely for development of industries for manufacturing. They are spread on many square kilometers of land and are connected through a strong network of road and infrastructure. There is a great scope for creation of many solar charging stations for electric vehicles which can be used to travel within these SEZs and help reduce consumption of a lot of fossil fuel as well as reduce carbon footprint. The strong point is the app ecosystem which is used to locate such charging stations, and which can help in creating a rental business for electric vehicles. The structures can be created in such a way that additional space for advertising is provided which creates a way to generate revenue.

5.2.2.3 Benefits

Below are the benefits of Solar power charging stations: -

1. They run on solar power and hence reduce the carbon footprint
2. They can have an app ecosystem which helps people find them easily, check availability, check how much it would cost to sit for how much time, check how much carbon footprint they have reduced and also be a part of this community where they can share their ideas or meet.
3. Reduction of electricity bills
4. Add more life to public spaces and make them financially more viable for municipal corporations as they can be a great way to generate revenue through rentals and advertisements.
5. It can be a great part of smart city initiatives which the government of Indian is pushing the cities towards where the public spaces are developed with the help of modern technologies and they also have street furniture which are ecologically sustainable.
6. These structures can achieve break even within few years and after that zero to low maintenance would only be required which makes it value for your money.
7. Adds great aesthetic value to public spaces or any other spaces where it is used.
8. It can be part of an ecosystem which supports companies which manufacture electric bicycles and electric two wheelers to have a strong network of charging stations which works on solar energy and helps them grow. Additional space for advertising also generates a lot of revenue for the owner of the charging stations.

5.2.3 Solar powered glamping tents made up of tensile membrane roof

5.2.3.1 Concept

Glamping is a portmanteau of "glamorous" and "camping", and describes a style of camping with amenities and, in some cases, resort-style services not usually associated with "traditional" camping.

While just a short while ago eco accommodation might have been considered something of a niche trend, the facts are that it is becoming more and more widespread, as tourists are resoundingly riding the growing wave of global environmental awareness. According to a report done by booking.com in 2017 – 65% of global travelers expressed a desire to stay in eco-friendly or “green” accommodation. Subsequent years have done nothing to dampen that enthusiasm, with eco accommodation consistently outranking other sectors in the tourism and hospitality industry. In a recent article in the Australian newspaper titled ‘Green With Energy’ a spotlight was shone on some of the resorts, hotels and accommodation sites around Australia who are doing great things to increase sustainability and provide accommodation without compromising the planet's precious resources (17).

Glamping tents are growing everywhere around the world and fast becoming a preferred choice for people living in urban environment where traffic, air pollution, noise pollution, large crowds, dominate their life and they prefer peace and serenity when taking a break from work, going on a vacation, or want to stay in isolation. Such tents have all the necessary amenities like luxury toilet, living room and even a small verandah. It is designed to run on solar energy, it is to be a modular structure and it is to be designed in such a manner that it is easily transported, erected and disassembled by few people within couple of days itself. It provides a lot of flexibility for tourism industry and for people who prefer to live for a long duration isolated and enjoy the natural surroundings.

The concept is to allow for customization as per the requirement of the customer. The main structure would remain the same, but the internal planning can be customized to allow the customers to make their choices and feel more attached to the glamping tents. This also allows for creating different uses out of the available structure and change the interiors in the future to change its purpose of use.

The advantage of running it on solar energy is that this renewable energy is going to be available for nearly the whole year in India. It must be an on-grid structure with electrical power as well as during seasons like monsoon, winter when the solar energy is not at its peak, in such times, the electrical power is available to keep the tents powered. The advantage of having it on grid is that the solar power when not consumed, it gives credits which help reduce the electricity bills all year long. Additional power can also be used for area lighting.

5.2.3.2 Application

Below are the applications of solar powered glamping tents: -

1. Tents for hospitality industries: - Hospitality industry is putting more focus on greener solutions and creating cottages or tents in national parks, forest areas, near beaches and many other locations. Such tents are designed in such a way that they have all the basic amenities which are luxurious like a toilet, kitchen, living room and a verandah. The solar energy powers room lighting, kitchen equipment, also heats up the water for bathing and washing. The advantage of having such tents is that it is very easy to erect. It would take just a couple of days of erection and would be ready to use. It is also cost effective and is flexible to create as per the client's requirements. The solar power generation can be monitored via an app ecosystem and the apps also would be used to show how much pollution is reduced by such structures. The best part of this is, as it is modular, it is also very easy to renovate and change its purpose.

2. Tents for recreation centers: - Recreational centers like old age homes, glamping tents for children forest camps, picnic camps, for social activities on farmhouses, etc. This is an ideal solution for such spaces. It is very portable, accessible, and easy to maintain.
3. Tents for private homes on the mountains: - These tents can also be developed on private properties as homes. These act as an ecologically sustainable structure which does not consume a lot of power and mainly runs on solar power.
4. Tents for military camps: - These tents can be developed for military accommodation. It makes a lot of sense developing such camps which run on solar power and are easy to erect and disassemble. Being modular, they can easily be transported and can be set up again. It is also to be designed with the flexibility to set it up on any kind of terrains.

5.2.3.3 Benefits

Below are the benefits of such glamping tents: -

1. As such tents also have all the necessary amenities, along with few luxuries, it provides an option for people who are willing to spend more on camping with luxuries rather than just on tents. It creates an option which was not previously available.
2. For the owner, as it runs on renewable energy, it saves a lot of money on setting up certain infrastructure and reduces the electricity bills.
3. It helps in achieving break even within few years and hence is a value for money asset for its owners.
4. It helps reducing the carbon footprint on the environment and encourage its occupants to live more sustainably.
5. It can bring people closer to nature more easily thanks to the facilities it has onboard.
6. Being modular in design, it is easy to deliver in the oddest of places, erect it within few days and dismantle it when its purpose is over and deliver it to another place.
7. Modular design also helps in flexibility in providing the amenities as per the clients' requirements rather than having a fixed design. Its flexibility is also its biggest advantage and it can be renovated very easily in the future as per the requirement or even change its purpose.
8. This kind of structure is designed to look aesthetically beautiful and to be functional as well.

5.3 Points to consider for product development and launch it

Mr. Ratan N. Tata, the former chairman of Tata Group, created a template to help one chart development in a startup company. It is a very simple format but covers all the essentials to consider and to collect data for before launching a product and when presenting it to the investors for raising fund (18).

5.3.1 Problem

'What is the problem that you are trying to solve? Validate the problem with real life examples.' (18)

The problem we are trying to solve here is make more use of clean renewable energy sources in everyday life to reduce pollution. For example, one of the major developments in the past years has been the creation of electric vehicles which have good battery life, can be cheaper in the long run and more accessible. We are trying to solve the use of clean renewable energy sources to create infrastructure around this product.

5.3.2 Solution

'What is your solution to this problem?' (18)

My solution to this problem is to create utility tensile structures which generate power from clean renewable energy sources. The reason for using tensile structures is to create structures which are aesthetic yet fully functional and provide a good value for the investment.

"My hope is that light flexible architecture might bring about a new and open society." – Frei Otto.

5.3.3 Unique selling proposition

'What characteristics make your solution a "never-before" solution?' (18)

Main characteristics of this proposition are to create tensile structures like open desk workstations, glamping tents, charging stations, utility boxes, etc., all to run on clean renewable energy sources. Every utility structure of mine is built with a specific purpose in mind and it creates a value for itself in the long run. These structures are itself a means to earn money, reduce carbon footprint, attract more business, and create a very strong value addition to your existing business.

5.3.4 Competition and barrier to entry

'How do the current solutions compare with your solution? How easy it is to replicate your solution? What category of competitors do you belong to?' (18)

Analysis of current solutions comparable to the solutions created by me are necessary. It is always healthy to find out what are the other solutions, how are they faring, what do they lack, how did they grow their business, was it successful etc. Such analysis is a must when it comes to proposing your product to investors for raising funds. Regarding the ease with which your solution can be replicated, in today's market, no idea is difficult to replicate, but the purpose of my concept is not just the idea, but the vision of this idea, where it can be applied, how it can be applied, how it can be used to generate revenue, how it can be converted from concept to reality. So according to me, the vision for the idea holds the key to developing this concept. Also, when it comes to category of competitors, being a unique product which I can safely say right now does not have a lot of competition. But the competition can catch up so it is always wise to create products along with a proper ecosystem which the clients can easily connect with their ecosystem and adopt easily.

5.3.5 Revenue model

‘How do you make money off your solution? Example: subscription model, direct sales, ad-based model, 3-5 years projection and your top cash burn reasons.’ (18)

Creating a revenue model is very critical for development and growth of this concept. The key is to be flexible with the revenue model depending on the kind of clients willing to adopt your product. A proper 5-year projection is necessary for this. Expense assessment and prediction for this time is a must. Identifying the capital expense and operational expense is a must.

5.3.6 Target Market

‘The size of the market vs the percentage you are targeting; A granular profiling of your customer; For ex: age, geography, purchase habits, personal traits; What channels will you use to get to this market?’ (18)

Depending on the type of the product developed, it is very important to find the target audience. The accessibility to this target audience is important. For the same, their age group, their location, personal habits and traits and other such information are required finding the right target audience. By identifying the audience based on this information, the channels through which they can be reached can be found out. For example, glamping tents have a target audience of families with parents in age group of 30-45 years and having very young kids aging from 6-15 years. This audience would use this product the most and depending on that a business proposition for the client can be created who would run the facility with glamping tents run on renewable energy sources. This makes for a more valuable proposition.

5.3.7 Your product or service

‘Explain how your product or service adds value; try and explain in layman terms.’ (18)

This means that the marketing must be precise and clear. It does not have to be complicated to understand. The language used, the method of explanation, the way of presentation should we very clear and should be explained in layman terms. Your target audience should easily understand your product, its benefits, and its value addition to their existing business. It can be represented through images, videos or uncomplicated graphics.

5.3.8 Milestones

'Milestones you have reached so far. For example, prototypes, patents, pilots, etc. Milestones for the next 1, 3 and 5 years if possible; milestones for what would you do if you get funded.' (18)

Milestones are a great means to plan the development and launch of a product. It is also important that the product is tested, if it is a unique design, it is patented, prototypes are created, tested and finally run successfully before launching of the product. These targets need to be part of the milestones. Long term milestone planning is also necessary like plan for next 1 year and what milestones you want to achieve, for 3 years etc. If getting funded by investors is part of your plan, separate milestones for the same need to be developed. Proper calculation of funding is necessary where it will flow and how it has been calculated as per the milestones. Such planning helps in keeping your eyes on the goal that has to be achieved and helps focus on the essentials.

5.3.9 The Team

'Introduce your founding members, along with credentials, mention why and how they are involved exhibit unity in thinking, in strategy.' (18)

Core team needs to be represented as part of proposal along with their ideas, credentials, their specialties, and their thought process for the concept product which exhibits unity in thinking. Your team is your company's identity.

5.4 Product design, creation, and cost calculation

The product design and creation are the most important part of product development. All the needs must be considered and all the factors regarding it must be considered.

I have identified some products in chapter 5.2, and I shall take up the product design, creation, and cost calculation of just one of those products for this thesis. The product whose design and creation which I shall discuss for the thesis is "Solar powered tensile roof open workstations."

As this topic is very detailed and critical, a separate chapter is allocated to it i.e. chapter 6.

5.5 Identifying the manufacturers, suppliers, and vendors for supply chain

Once the product is designed, created i.e. specifications have been identified and its costing has been calculated, it is necessary to identify the key links in the supply chain. The supply chain can be divided into the following parts:

5.5.1 Elements of the tensile structure

The elements of the tensile structure can be bifurcated into the steel structure, the tensile fabric, reinforced concrete pedestal on which the structure is erected and other elements like street furniture, lighting and framework for advertising space. The specifications need to be clearly defined for the type of steel to be used, the connections, the paint finish of the steel, the procedure of erection of the structure as well as the casting of reinforced cement concrete for pedestal on which the structure rests.

Figure 5.3 Steel structure with tensile fabric, done by Birdair, USA
This image is an example of the steel structure for tensile fabric along with RCC pedestals and tensile fabric.

The other main element of the tensile structure is tensile fabric. Identification of the brand of fabric to be used, checking its quality, identifying the fabricators for tensile fabric, finalizing the methodology of cutting, patterning and welding of the fabric by providing shop drawings, packing the material, transporting it to the site, unfolding it and erecting the fabric via the fabricators, and finally thoroughly checking it so that there are no errors in erection and avoiding as many wrinkles as possible. It is very necessary to define the specifications in detail for absolute clarity to the supplier, fabricator, and erector. Supervising the work is also of the utmost importance. Templates can also be created so that a continuous supply of steel structures with specific quality and design are maintained.

5.5.2 Elements of the solar charging station

The key elements in setting up a solar charging station on the tensile structures are solar panels, inverter, electric vehicle chargers, electrical cabling, and earthing.

Identifying the quality of solar panels is of great importance as the lifespan of the panels should be 10 years at least along with good efficiency. There are wide range of solar panels available but only a select few work as per this criterion. After the solar panels brand and make is identified, its suppliers need to be lined up so that there is no loophole in the supply chain.

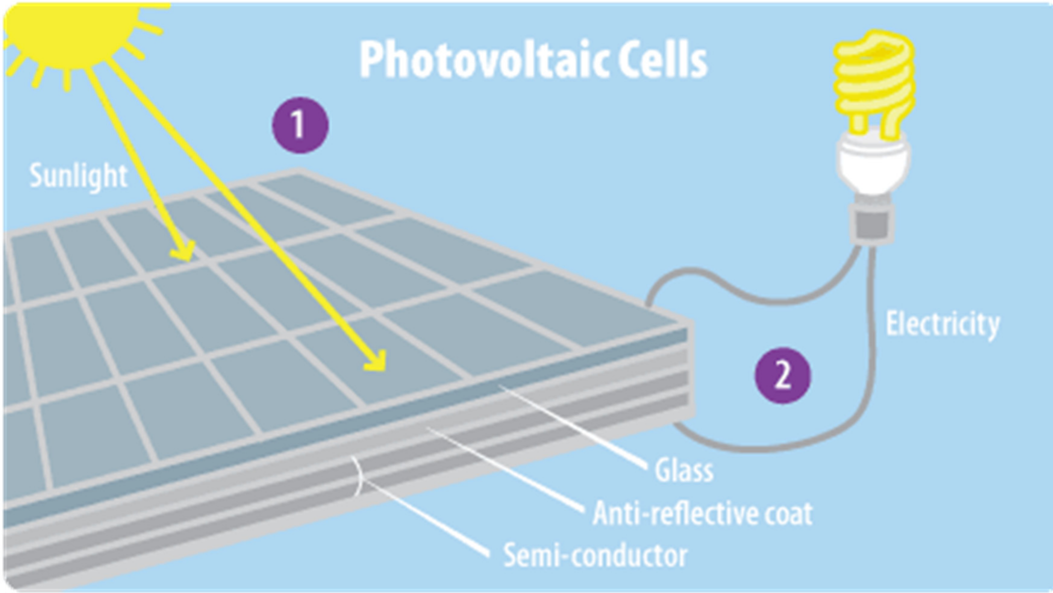

Figure 5.4 Photovoltaic cell i.e. solar panel in detail
The image gives a clear representation of how a solar panel is created and what is its primary function.

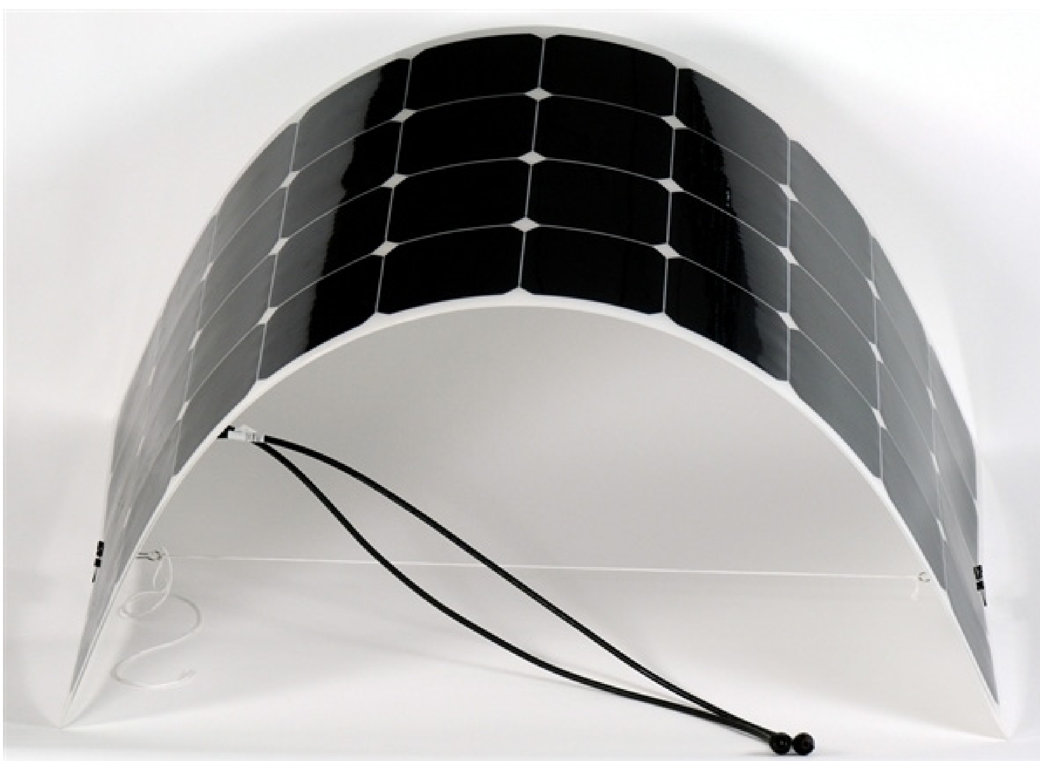

Figure 5.5 Flexible solar panels
These solar panels are flexible and can be stitched onto the tensile fabric as per the shape of the structure and it creates a better option for tensile structures

The next part is selecting a good quality inverter with long life and easy maintenance. The inverter should have a long-term warranty to reduce future maintenance costs.

Figure 5.6 Inverter for solar power

Once the electricity is generated via solar panels and transferred to inverter, either this is directly consumed or if not consumed, it needs to be stored. To store this, batteries are required. For batteries, there are two options: lead acid battery or lithium ion battery. Depending on its properties and budget, a battery can be selected.

Figure 5.7 Battery for storage of power generated

Now for the power generated and stored, sockets need to be provided to plug the electrical charger of the electric vehicle to these sockets for charging.

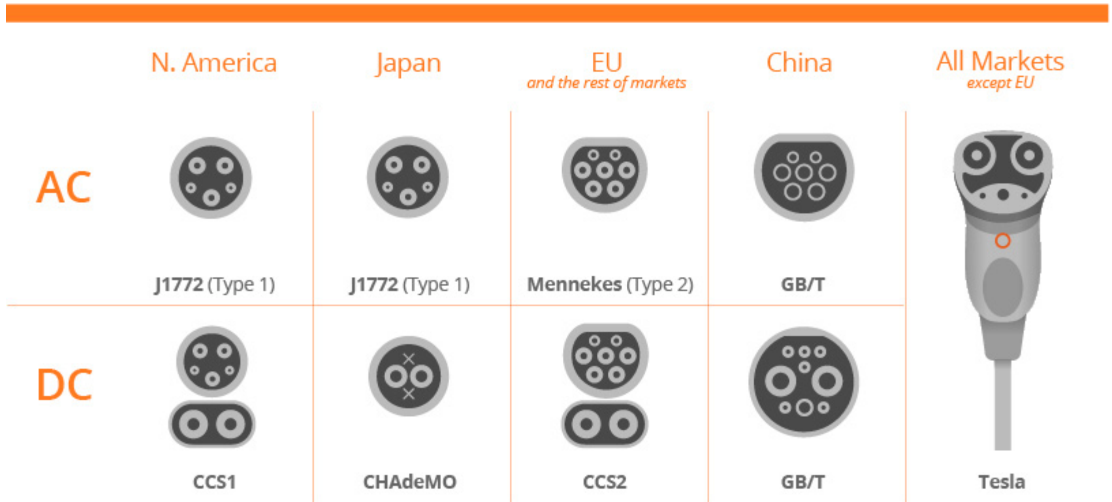

Figure 5.8 Types of charging connectors for electric vehicles
This image shows different variations of the charging connectors in different countries considering the supply of power i.e. either AC or DC.

There are multiple brands available for all these products, so a proper survey needs to be conducted, suppliers need to be identified and proper contracts must be created to create a proper chain of supply.

5.6 Product manufacturing and distribution management

Once the specifications are finalized, vendors identified, it is very important to create a standard operation procedure for manufacturing of these structures along with all elements. Once that is created, the next step is to create a distribution management system wherein proper co-ordination is created between different vendors so that they can come together and work in unison to create a proper supply of good with the required quality and as per the defined specification. Distribution management also depends on a very important component i.e. logistics. Logistics is the biggest asset in timely delivery of the components and the products to different regions of the country in time. Logistics management platform is a necessity for smooth operation and delivery of fully finished products as per requirement and satisfaction.

Figure 5.9 Supply chain management chart
This image shows a method of leaner supply chain management. This method is created for smaller businesses to reduce the mistakes in supply, maintain quality, proper storage and transport it to different parts of the world. This model helps reduce overhead costs and helps improve quality of production.

5.7 A centralized platform for customer care services

Customer care platform is very critical for creating a link between manufacturing division and customers. The platform is to provide the following services: -

5.7.1 Dealing with inquiries for the product

The customer care platform should be well equipped with complete information of the product, along with all the statistics for any comparison against normal on grid structure. All queries must be documented and responded to in a timely manner.

5.7.2 Receiving orders for the product

The platform should have all the required information to generate orders for the products for customers. They should also have been trained to transfer the orders to manufacturing facility with the defined timeline along with all the customer information. All this needs to be well documented and also conveyed efficiently to the manufacturing division.

5.7.3 Providing updates regarding the orders

The platform should be in continuous contact with the manufacturing division to get regular updates of the orders taken. These updates must be passed on to the customers whenever they ask regarding the same in a proper manner to make sure that the customers' requirements are taken into consideration. They should also be in contact with the erection team once the order is dispatched to find out when the order with be ready for use and update the same to the customers.

5.7.4 After sales services

The platform should be available to the customer even after the order is supplied and ready for use to take proper feedback, resolve any issues and for future maintenance contracts. Documentation of the feedback, analyzing it for fine tuning of the product for better service and creating portfolio of the product based on the positive reception of the product for marketing it is very essential. This service is very essential as it helps build a strong brand value for the product which creates more orders for the future due to word of mouth marketing.

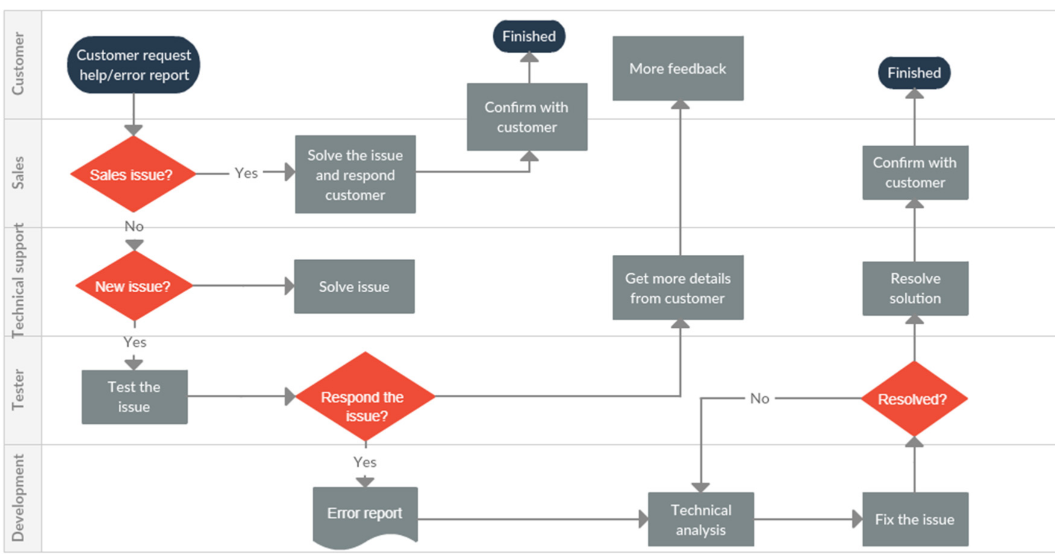

Figure 5.10 New customer process flow chart for customer care

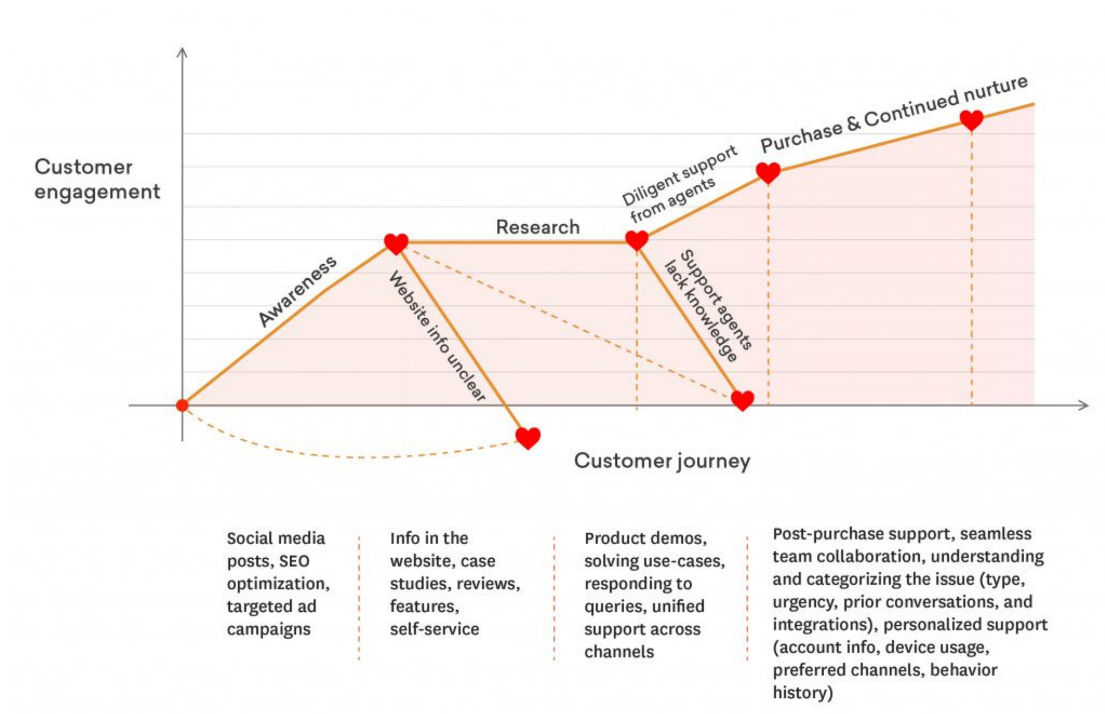

Figure 5.11 Customer engagement v/s customer journey for customer care

Customer engagement is very important to retain customers. The graph above very clearly portrays how it helps us retain customers and help us improve our products on receiving their feedback.

The next chapter is dedicated to architectural drawings, structural analysis, and design as well as cost calculation along with statistics regarding solar energy.

6 Product design, creation and cost calculation

"Designing and developing anything of consequence is incredibly challenging." – Jonathan Ive.

Product design consists of the architectural drawing, general arrangement drawing, its structural drawings along with specifications and finally its cost calculation.

The product under consideration is solar powered tensile roof open workstations.

6.1 Architectural details

The architecture details are provided in Annexure I. There are three drawings in annexure I and are as follows:

- Annexure I – A – Plan View
- Annexure I – B – Front View
- Annexure I – C – Isometric View

The architectural details show the overall structure and the solution for drainage of water as well as electrical cabling and its connection to the control panel where the inverter and batteries are stored. The water drain chamber is provided below finish ground level and can be connect to the storm water drain nearby.

6.2 Structural details

6.2.1 Load consideration

For the design of this structure, the loads and design consideration are as per the following Standards:

- IS 875 part I – Dead Load and self-weight
- IS 875 part II – Live Load
- IS 875 part III – Wind Load
- European design guide for tensile surface structures – External C_p values for conical structures, page 261 section A1.2, Membrane stress factors page 179 section 6.2.
- IS 800:2007 – Structural steel design

Below is are the different load considered.

Table 1 Load Considerations

Sr. No.	Loads	Value	Remarks
1	**Pre-stress**	Warp pre-stress = 0.5 kN/m Weft pre-stress = 0.5 kN/m	Assigned for form-finding.
2	**LC1 - Dead Load**		
2A	Self-weight	In the direction of gravity i.e. -ve Z-direction	
2B	Load due to solar panels	Uniform load in -ve Z-direction = 0.15 kN/m	
3	**LC2 - Live Load**		
3A	Surface load	0.75 kN/m^2	Considering load while erection.
3B	Member load	0.25 kN/m	Considering load while mounting of solar panels as well as load on members during maintenance.
4	**LC3, LC4, LC5, LC6, LC7, LC8, LC9, LC10 – Wind load in +ve X-direction and +ve Y-direction**	**Design as per IS 875 part III**	**Wind load in +ve X-direction and +ve Y-direction with Cpi = ±0.7 factor and Cpe as per European design guide page 261 section A1.2**
4A	Location considered	Mumbai / Vadodara	
4B	Basic wind speed V_b	44 m/s	
4C	Probability factor (risk coefficient) $\mathbf{k_1}$ for a structure with low hazard of life and mean probable design life of structure 25 years	0.91	As per table-I, clause 5.3.1, page 11.

4D	Terrain, height and structure size factor k_2 for open terrain with well scattered obstructions having height between 1.5 to 10m, therefore we can consider category-2 as per clause 5.3.2.1 of IS 875 part III and as per clause 5.3.2.2 structures having maximum dimension less than 20m in horizontal and vertical direction are to be categorized in Class – A.	1.0	As per clause 5.3.2.1 and clause 5.3.2.2 page 8 onwards.
4E	Topography factor k_3	1.2	As per clause 5.3.3 and appendix C page 56; consider upwind slope = 10 degrees.
4F	Design wind speed $V_z = k_1 \times k_2 \times k_3$	48.048 m/s	As per clause 5.3, page 8
4G	Design wind pressure $P_z = 0.6 \times V_z^2$	1.385 kN/m^2	As per clause 5.4, page 12
4H	Internal pressure coefficient C_{pi}	±0.7	As per clause 6.2.3.2, buildings with openings more than 20% of the wall area, internal pressure coefficient is ±0.7

4I	External pressure coefficient C_{pe}	Zone A = -0.15 Zone B = -0.6 Zone C = -1.0 Zone D = 0.4 / -0.2	As per the European design guide for tensile surface structures, page 261 section A1.2 for conical structures

External C_p Values for Conical Structures		Zones			
	Angle of slope of membrane to horizontal /deg.	A	B	C	D
Open sided structure	40	-0.15	-0.6	-1.0	+0.4/-0.2
Closed structure	40	-0.41	-0.7	-1.0	+0.75/-0.6

Figure 6.1 External Cp Values for conical structure

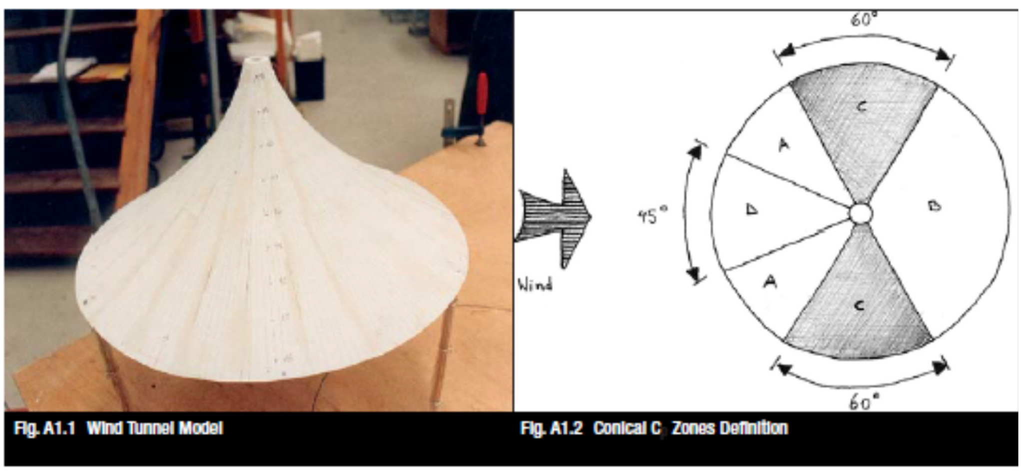

Fig. A1.1 Wind Tunnel Model
Fig. A1.2 Conical C Zones Definition

Figure 6.2 Zones definition for conical structures

4J	LC3 wind direction in +ve X-dir, Zone D = 0.4, C_{pi} = 0.7	Wind force for Zones for this case F for Zone A = -1.17725 Zone B = -1.8005 Zone C = -2.3545 Zone D = -0.4155	As per clause 6.2.1 of IS 875-part III, page 13, **$F = (C_{pe} - C_{pi}).A.P_d$** We have considered **A** = 1 m^2 and **P_d** as per sr. no. **4G**

4K	LC4 wind direction in +ve X-dir, Zone D = -0.2, C_{pi} = 0.7	Wind force for Zones for this case F for Zone A = -1.17725 Zone B = -1.8005 Zone C = -2.3545 Zone D = -1.2465	As per clause 6.2.1 of IS 875-part III, page 13, **F= (C_{pe} – C_{pi}).A.P_d** We have considered **A** = 1 m^2 and P_d as per sr. no. **4G**
4L	LC5 wind direction in +ve X-dir, Zone D = 0.4, C_{pi} = -0.7	Wind force for Zones for this case F for Zone A = 0.55 Zone B = 0.1 Zone C = -0.3 Zone D = 1.1	As per clause 6.2.1 of IS 875-part III, page 13, **F= (C_{pe} – C_{pi}).A.P_d** We have considered **A** = 1 m^2 and P_d as per sr. no. **4G**
4M	LC6 wind direction in +ve X-dir, Zone D = -0.2, C_{pi} = -0.7	Wind force for Zones for this case F for Zone A = 0.55 Zone B = 0.1 Zone C = -0.3 Zone D = 0.5	As per clause 6.2.1 of IS 875-part III, page 13, **F= (C_{pe} – C_{pi}).A.P_d** We have considered **A** = 1 m^2 and P_d as per sr. no. **4G**
4N	LC7 wind direction in +ve Y-dir, Zone D = 0.4, C_{pi} = 0.7	Wind force for Zones for this case F for Zone A = -1.17725 Zone B = -1.8005 Zone C = -2.3545 Zone D = -0.4155	As per clause 6.2.1 of IS 875-part III, page 13, **F= (C_{pe} – C_{pi}).A.P_d** We have considered **A** = 1 m^2 and P_d as per sr. no. **4G**
4O	LC8 wind direction in +ve Y-dir, Zone D = -0.2, C_{pi} = 0.7	Wind force for Zones for this case F for Zone A = -1.17725 Zone B = -1.8005 Zone C = -2.3545 Zone D = -1.2465	As per clause 6.2.1 of IS 875-part III, page 13, **F= (C_{pe} – C_{pi}).A.P_d** We have considered **A** = 1 m^2 and P_d as per sr. no. **4G**

4P	LC9 wind direction in +ve Y-dir, Zone D = 0.4, C_{pi} = -0.7	Wind force for Zones for this case F for Zone A = 0.55 Zone B = 0.1 Zone C = -0.3 Zone D = 1.1	As per clause 6.2.1 of IS 875-part III, page 13, **F= (C_{pe} – C_{pi}).A.P_d** We have considered **A** = 1 m^2 and **P_d** as per sr. no. **4G**
4M	LC10 wind direction in +ve Y-dir, Zone D = -0.2, C_{pi} = -0.7	Wind force for Zones for this case F for Zone A = 0.55 Zone B = 0.1 Zone C = -0.3 Zone D = 0.5	As per clause 6.2.1 of IS 875-part III, page 13, **F= (C_{pe} – C_{pi}).A.P_d** We have considered **A** = 1 m^2 and **P_d** as per sr. no. **4G**

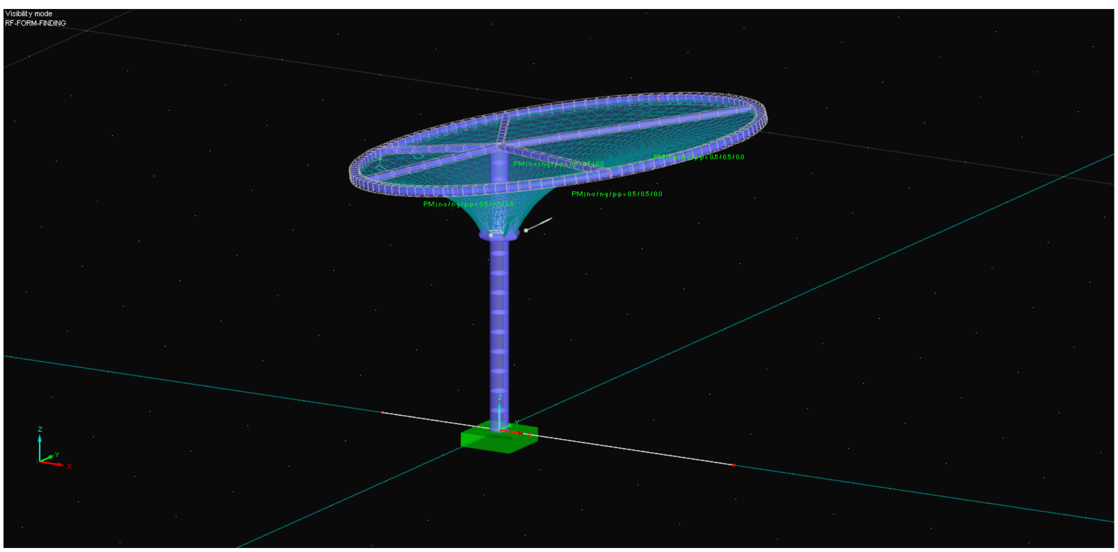

Figure 6.3 Isometric view of the model

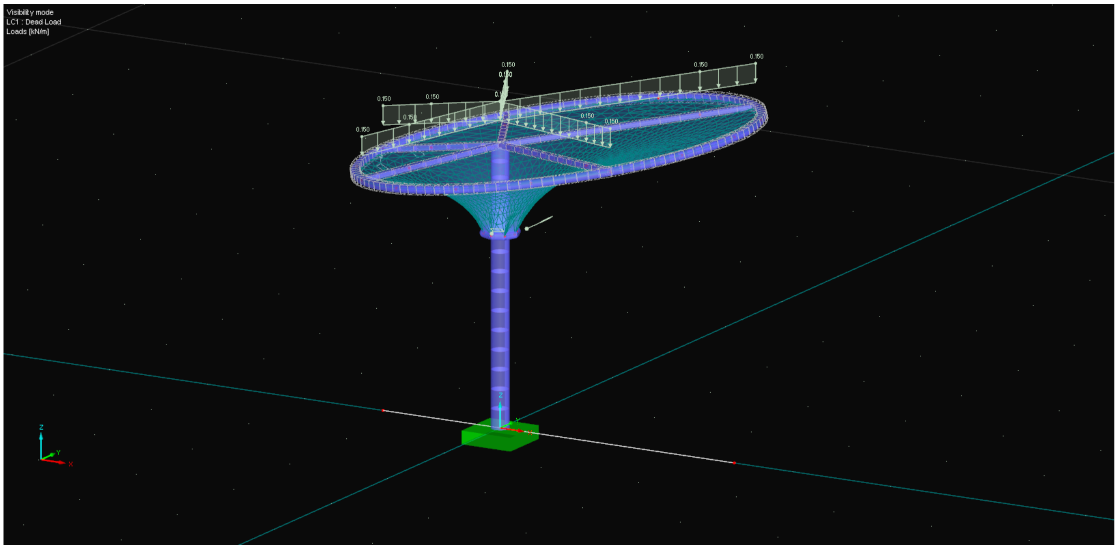

Figure 6.4 Load case LC1 – Dead Load

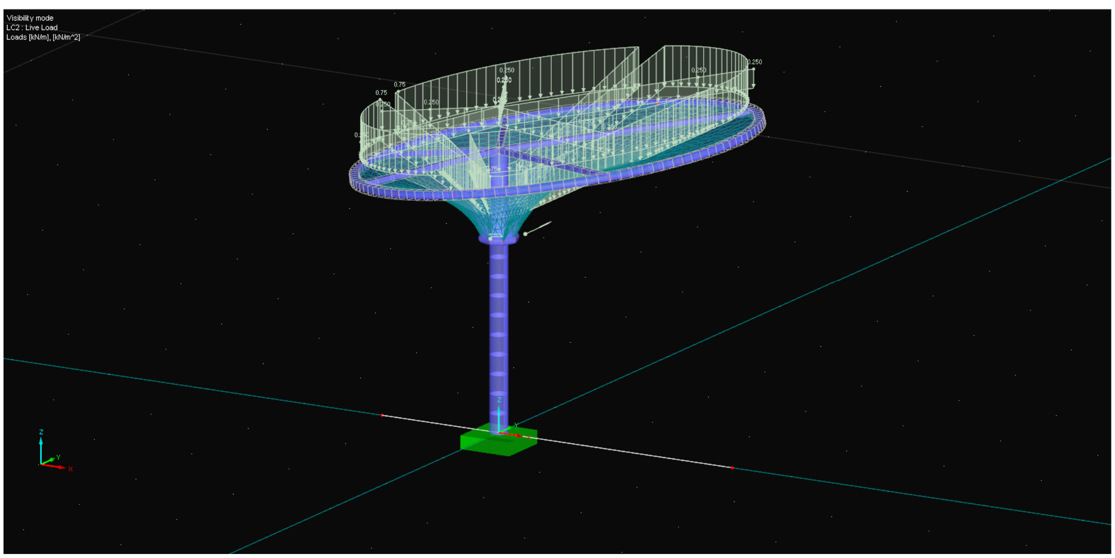

Figure 6.5 Load case LC2 – Live Load

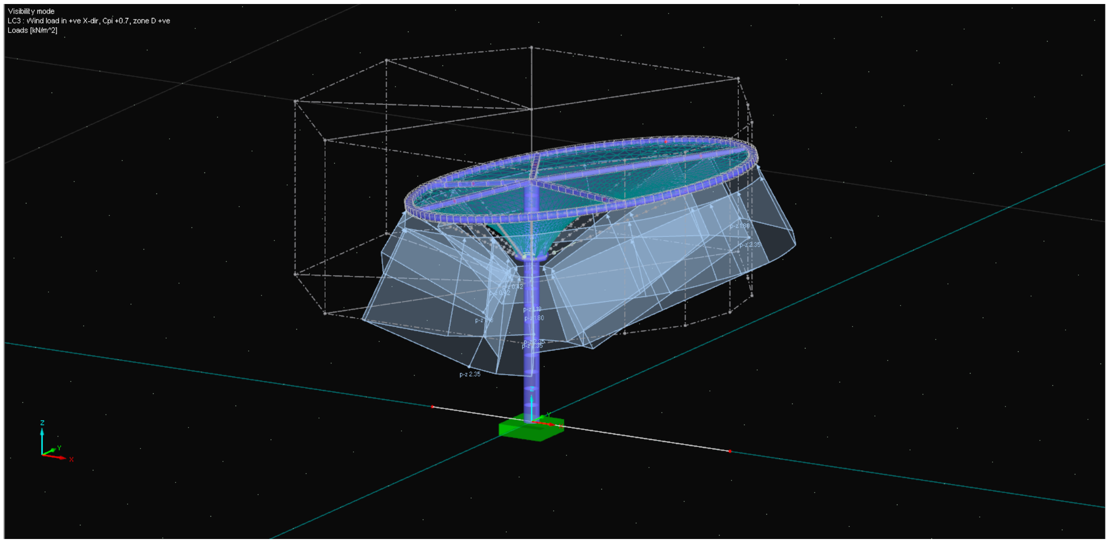

Figure 6.6 Load case LC3 – Wind load in +ve X-direction with Zone D = 0.4 and C_{pi} = 0.7

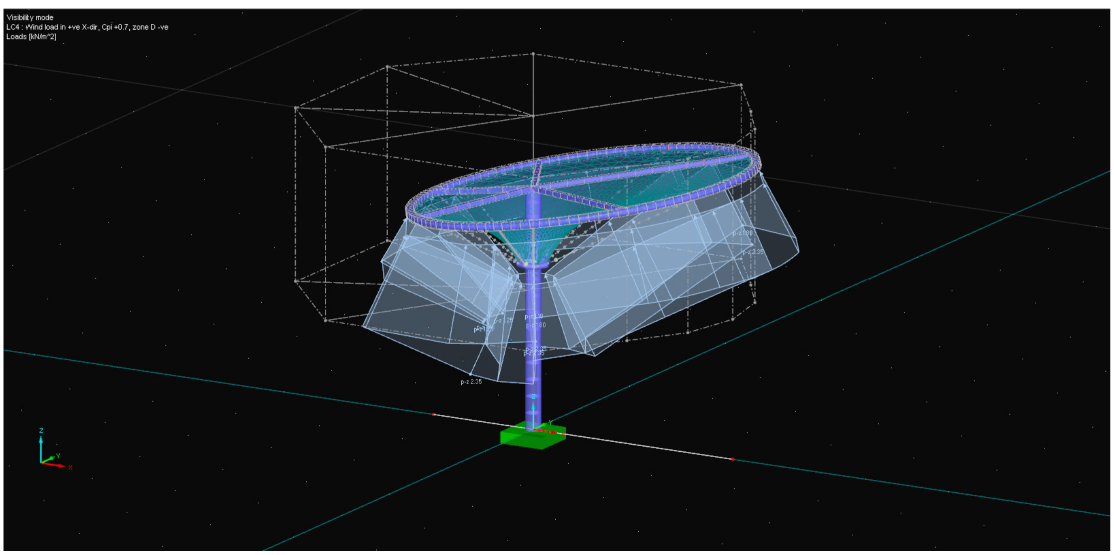

Figure 6.7 Load case LC4 – Wind load in +ve X-direction with Zone D = -0.2 and C_{pi} = 0.7

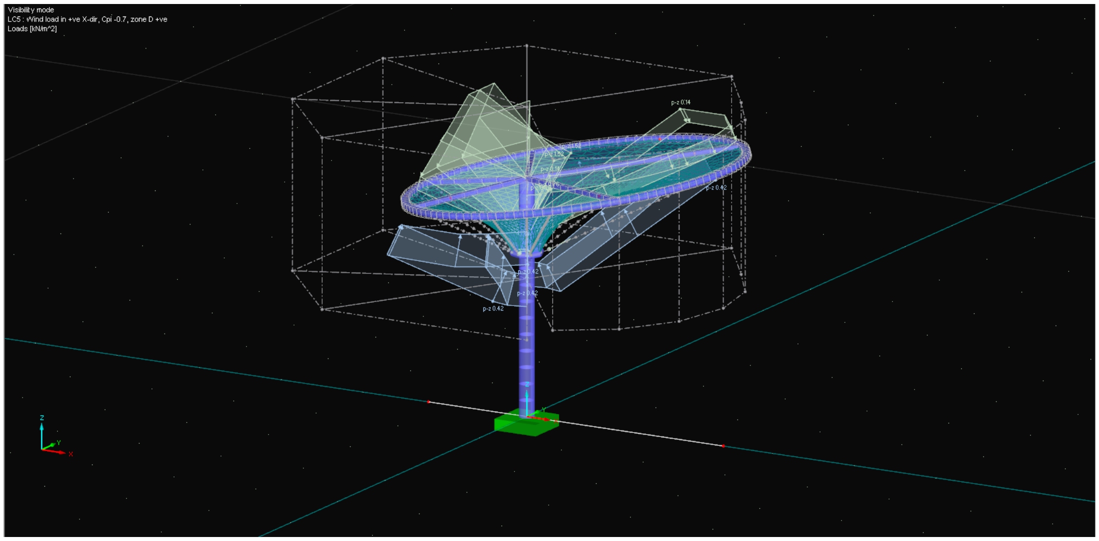

Figure 6.8 Load case LC5 – Wind load in +ve X-direction with Zone D = 0.4 and C_{pi} = -0.7

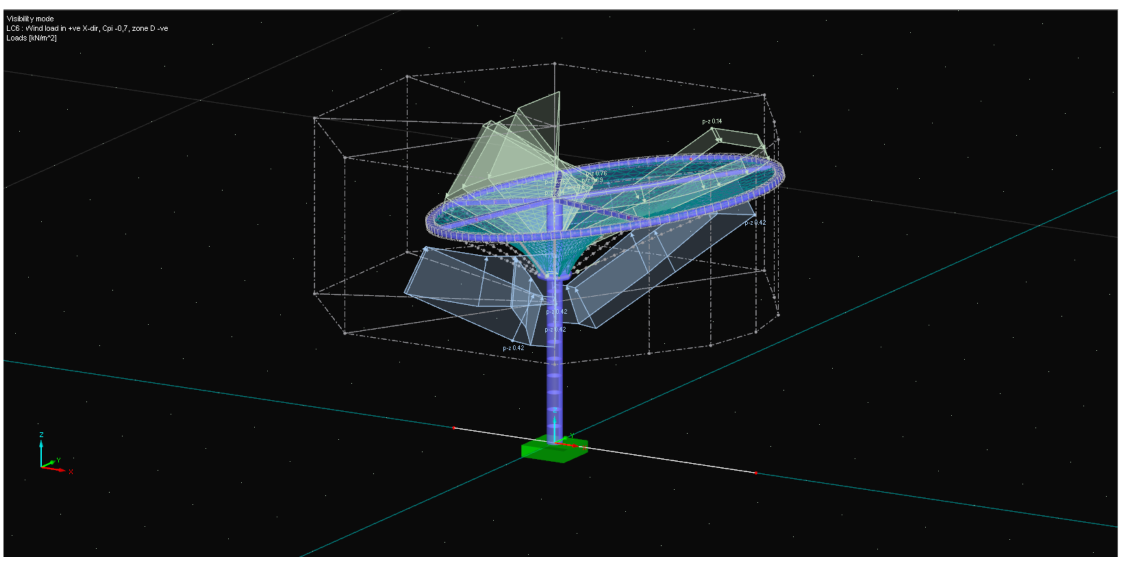

Figure 6.9 Load case LC6 – Wind load in +ve X-direction with Zone D = -0.2 and C_{pi} = -0.7

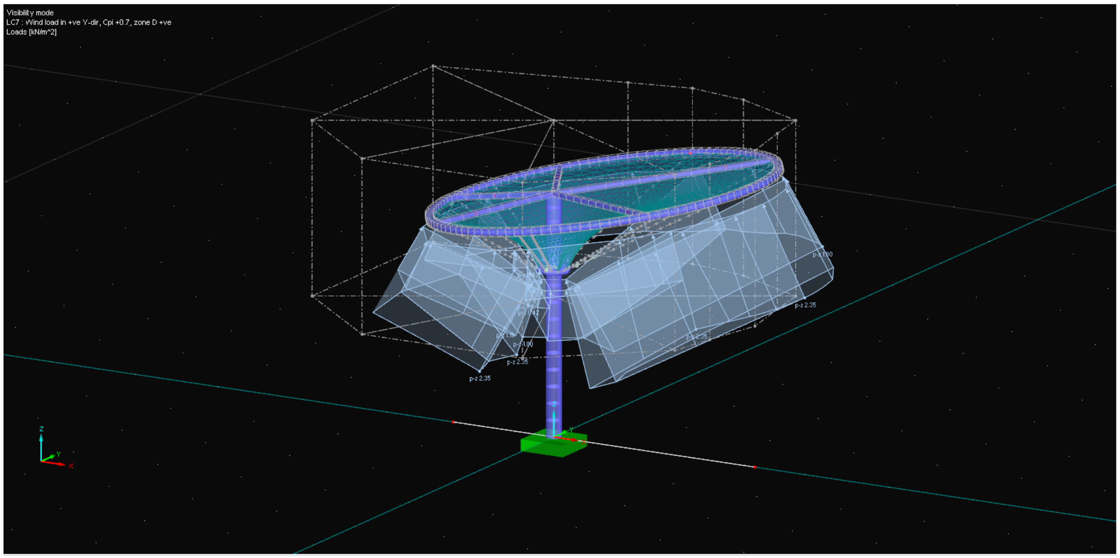

Figure 6.10 load case LC7 – Wind load in +ve Y-direction with Zone D = 0.4 and C_{pi} = 0.7

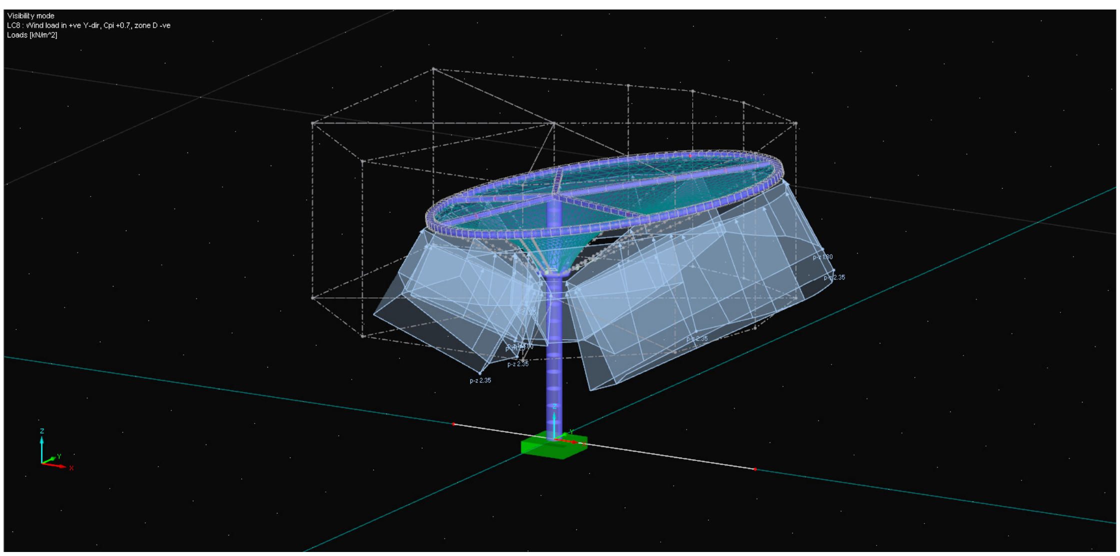

Figure 6.11 Load case LC8 – Wind load in +ve Y-direction with Zone D = -0.2 and C_{pi} = 0.7

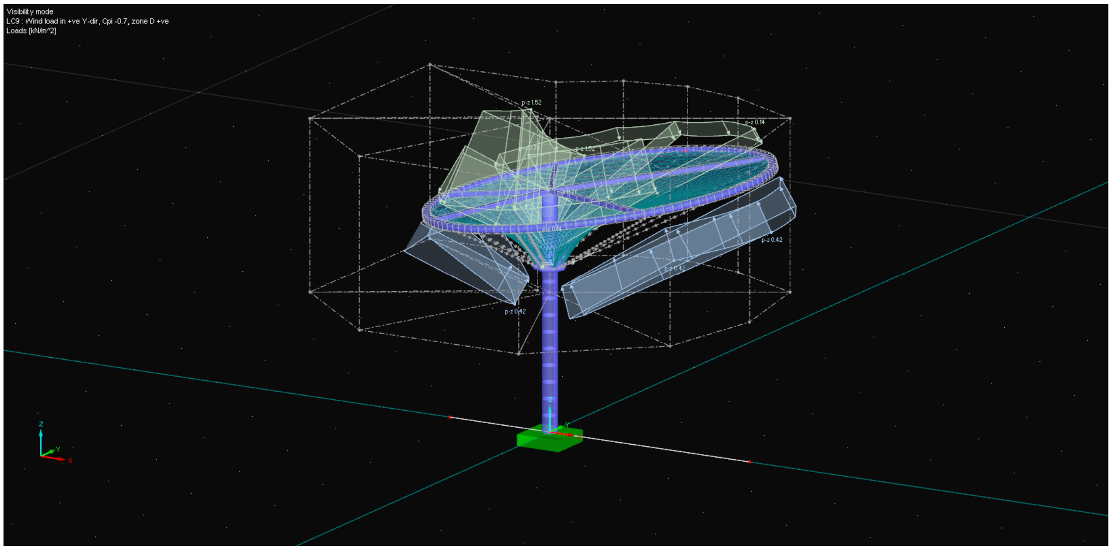

Figure 6.12 Load Case LC9 – Wind load in +ve Y-direction with Zone D = 0.4 and C_{pi} = -0.7

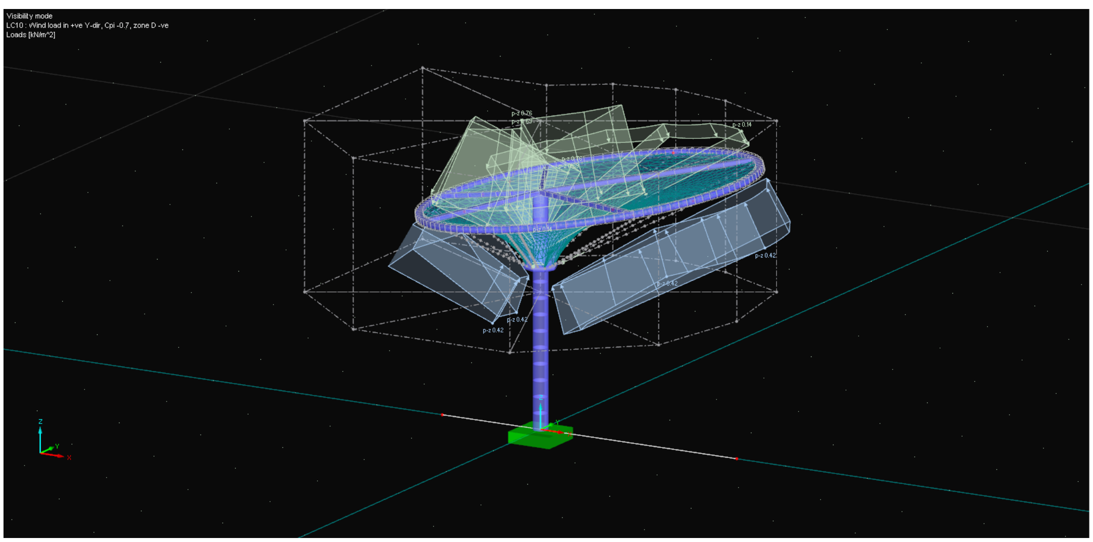

Figure 6.13 Load case LC10 – Wind load in +ve Y-direction with Zone D = -0.2 and C_{pi} = -0.7

6.2.2 Load Combinations

Below are the load combinations as per the IS 800:2007 code for General construction in steel. Combinations from CO1 to CO18 are for limit state of strength criteria and from CO19 to CO36 are for limit state of serviceability criteria.

1. CO1 = 1.5*LC1
2. CO2 = 1.5*LC1 + 1.5*LC2
3. CO3 = 1.2*LC1 + 1.2*LC2 + 1.2*LC3
4. CO4 = 1.2*LC1 + 1.2*LC2 + 1.2*LC4
5. CO5 = 1.2*LC1 + 1.2*LC2 + 1.2*LC5
6. CO6 = 1.2*LC1 + 1.2*LC2 + 1.2*LC6
7. CO7 = 1.2*LC1 + 1.2*LC2 + 1.2*LC7
8. CO8 = 1.2*LC1 + 1.2*LC2 + 1.2*LC8
9. CO9 = 1.2*LC1 + 1.2*LC2 + 1.2*LC9
10. CO10 = 1.2*LC1 + 1.2*LC2 + 1.2*LC10
11. CO11 = 1.5*LC1 + 1.5*LC3
12. CO12 = 1.5*LC1 + 1.5*LC4
13. CO13 = 1.5*LC1 + 1.5*LC5
14. CO14 = 1.5*LC1 + 1.5*LC6
15. CO15 = 1.5*LC1 + 1.5*LC7
16. CO16 = 1.5*LC1 + 1.5*LC8
17. CO17 = 1.5*LC1 + 1.5*LC9
18. CO18 = 1.5*LC1 + 1.5*LC10
19. CO19 = LC1
20. CO20 = LC1 + LC2
21. CO21 = LC1 + 0.8*LC2 + 0.8*LC3
22. CO22 = LC1 + 0.8*LC2 + 0.8*LC4
23. CO23 = LC1 + 0.8*LC2 + 0.8*LC5
24. CO24 = LC1 + 0.8*LC2 + 0.8*LC6
25. CO25 = LC1 + 0.8*LC2 + 0.8*LC7
26. CO26 = LC1 + 0.8*LC2 + 0.8*LC8
27. CO27 = LC1 + 0.8*LC2 + 0.8*LC9
28. CO28 = LC1 + 0.8*LC2 + 0.8*LC10
29. CO29 = LC1 + LC3
30. CO30 = LC1 + LC4
31. CO31 = LC1 + LC5
32. CO32 = LC1 + LC6
33. CO33 = LC1 + LC7
34. CO34 = LC1 + LC8
35. CO35 = LC1 + LC9
36. CO36 = LC1 + LC10

6.2.3 Structural analysis and design

Structural analysis and design of this model is done on rfem software and a structural analysis report is generated for this and attached in annexure V.

6.2.4 Structural drawings

The Structural GA drawings and shop drawings are provided in annexure II. In all there are seven drawings and are titled as below:

- Annexure II – A – Shop drawing of structural details plan
- Annexure II – B – Shop drawing of structural details elevation
- Annexure II – C – Shop drawing - details
- Annexure II – D – Shop drawing - details
- Annexure II – E – Shop drawing - details
- Annexure II – F – Shop drawing - details
- Annexure II – G – Shop drawing - details

6.2.5 Fabric Design

As per European design guide, the factors of safety for the tensile fabric are as shown in the Figure 6.14

A_0 = 1.0 – 1.2 (1.2)	Reduction factor taking into account that the small width strip tensile test produces a higher value than the biaxial strength. (The lower value of 1.0 is appropriate if the loading produces dominant stress in one direction of the weave).
A_1 = 1.6 – 1.7 (1.5 – 3.4)	Reduction factor for long-term loads, with the connection factors very dependent on seam widths (excluding stitched seams).
A_2 = 1.1 – 1.2 (1.2)	Reduction factor for pollution and degradation (again excluding stitched seams).
A_3 = 1.1 – 1.25 (1.4 – 1.95)	Reduction factor for high temperature load cases (i.e. prestress + self weight in summer & excluding wind cooling).

Appropriate seam widths are assumed in the above, particularly for the connection factors for A_1 and A_3 (typically minimum values of 40mm for PVC type I and 80 mm for type IV). See also Chapter 10.

To summarise the above the following ranges of global safety factors can be obtained:

For the Material:

Permanent:	$A_{res} = \gamma_f \times \gamma_m \times A_0 \times A_1 \times A_2 \times A_3$	**= 4.9 – 6.4**
Wind storm:	$A_{res} = \gamma_f \times \gamma_m \times A_0 \times A_2$	**= 2.9 – 3.2**
Maximum snow:	$A_{res} = \gamma_f \times \gamma_m \times A_0 \times A_1 \times A_2$	**= 4.4 – 5.1**

Figure 6.14 Global safety factors for membrane design as per European design guide (19)

Permanent:	γ_f = 1.5 x Prestress and Self Weight
Wind storm	γ_f = 1.6 x Prestress and Self Weight and Wind Load
Maximum Snow	γ_f = 1.5 x Prestress and Self Weight and Snow Load

Figure 6.15 Load factors for different conditions applied for design (19)

In this, the dominating load condition is that of the windstorm. For windstorm, the load combination considered is shown in Figure 6.15 i.e.

$$\gamma_f = 1.6 \times (Prestress\ and\ Selfweight\ and\ Wind\ Load)$$
$$n_x = 1.6\ \times (31.01) = 49.62\ kN/m$$
$$n_y = 1.6 \times (7.87) = 12.6\ kN/m$$
$$For\ Precontraint\ Ferrari\ 1302$$
$$Warp\ tensile\ strength = 800\ daN/5cm = 160\ kN/m$$
$$For\ wind\ storm,\ \ allowable\ stress\ factor\ A_{res} = 3.0$$
$$so,\ \ allowable\ stress\ for\ fabric = \frac{160}{3} = 53.33\ kN/m$$
$$Fill\ tensile\ strength = 560\ daN/5cm = 115\ kN/m$$
$$For\ wind\ storm, allowable\ stress\ factor\ A_{res} = 3.0$$
$$so,\ \ allowable\ stress\ for\ fabric\ in\ fill\ dir = \frac{115}{3} = 38.33\ kN/m$$
$$n_x = 49.62\ kN/m < 53.33\ kN/m\ ,\ \ hence\ it\ is\ safe$$
$$n_y = 12.6\ kN/m < 38.33\ kN/m$$

Hence, the fabric selected is Precontraint Ferrari 1302.

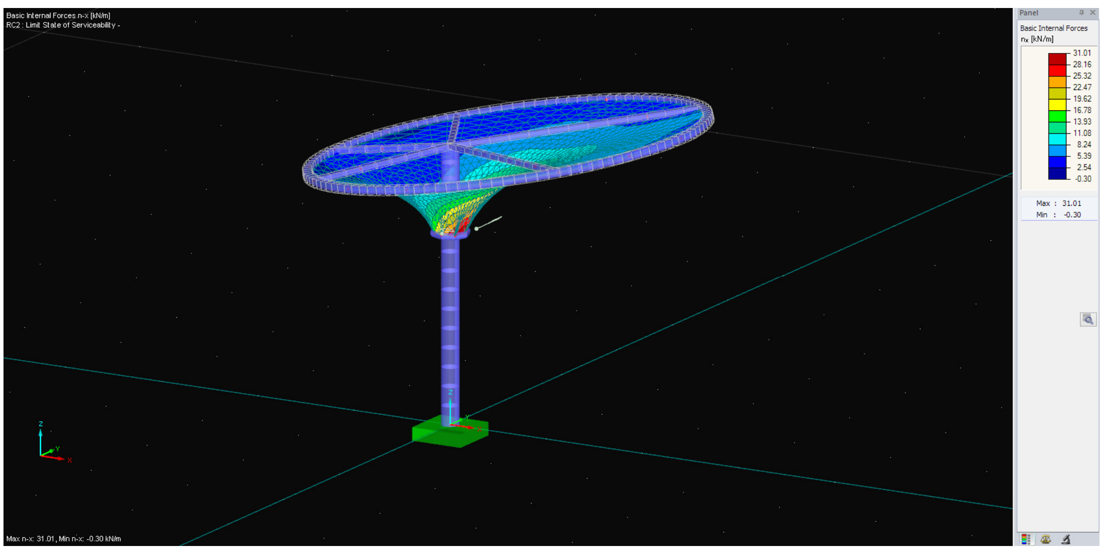

Figure 6.16 Image showing stress n_x for limit state of serviceability criteria

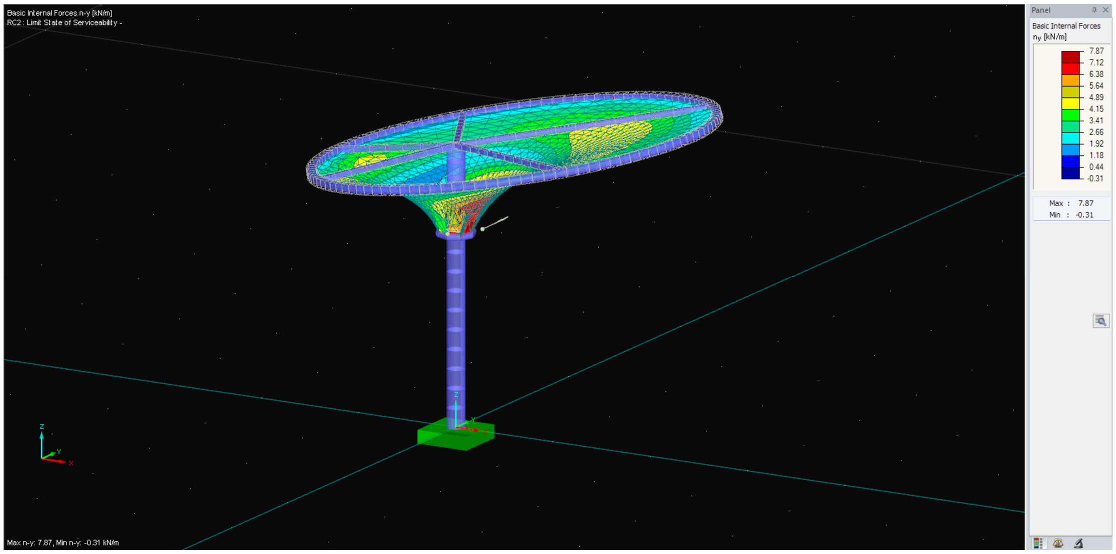

Figure 6.17 Image showing stress n_y for limit state of serviceability criteria

6.2.6 Fabric Patterning drawings

The fabric patterning drawings are provided in annexure III. In all there are two drawings and are as below:

- Annexure III – A – Patterning details Part - I
- Annexure III – B – Patterning details Part - II

6.3 Cost Calculation

A rate analysis sheet has been prepared and attached in annexure V along with the pie chart representing the percentage distribution between the material supply and its labour for fabrication, erection and commissioning. This annexure is divided into two parts as shown below:

- Annexure IV – A – Cost calculation sheet
- Annexure IV – B – Pie chart showing distribution between material supply and labour

7 Vision for the future

"Deal with crisis in such a way that you can hold your head high and sleep well at night" – Ratan Tata.

Today, fossil fuels make up more than three-quarters of global primary energy consumption, in transportation, industry and housing. They are also by far the leading energy source for generating electricity, accounting for more than two-thirds of the total mix despite regular gains by renewable energies. Fossil fuels are expected to maintain their dominant position for several decades to come (20). Consumption of these fossil fuels results in emission of greenhouse gases which have a detrimental effect on the environment and all the living organisms which depend on them.

Looking to the present condition, there is tremendous scope and progress in the field of usage of renewable energy sources.

This thesis sheds some light on the possibilities of creating utility tensile structures which are powered by renewable energy resources. These kind of structures can help create a new segment for development in the field of tensile structures which can help in penetration of these structures in developing countries as well as developed countries and because they are powered by renewable energy sources, they become more accessible, more environment friendly and also more financially more viable in long term.

Public spaces development is an ongoing process and it is also a necessary development for more interaction, community development, exchange of ideas and for psychological well-being. When these types of structures enter into the public spaces, allowing the people to use it for work, for creative development, for leisure or also as a part of their ongoing journey, it helps reduce a lot of greenhouse emission, pollution and also contributes to a more environment friendly way of living.

We as humans have created an environment around us which helps us live a more comfortable life, but for sustainability of this comfort, it is very necessary that we give back to the nature what we have taken. It is the circle of life and to do so, it is necessary that we increase the green cover, shift to renewable energy sources for electricity, reduce consumption of fossil fuels and also leave a better footprint for the future generation. It is possible and it is the best way forward.

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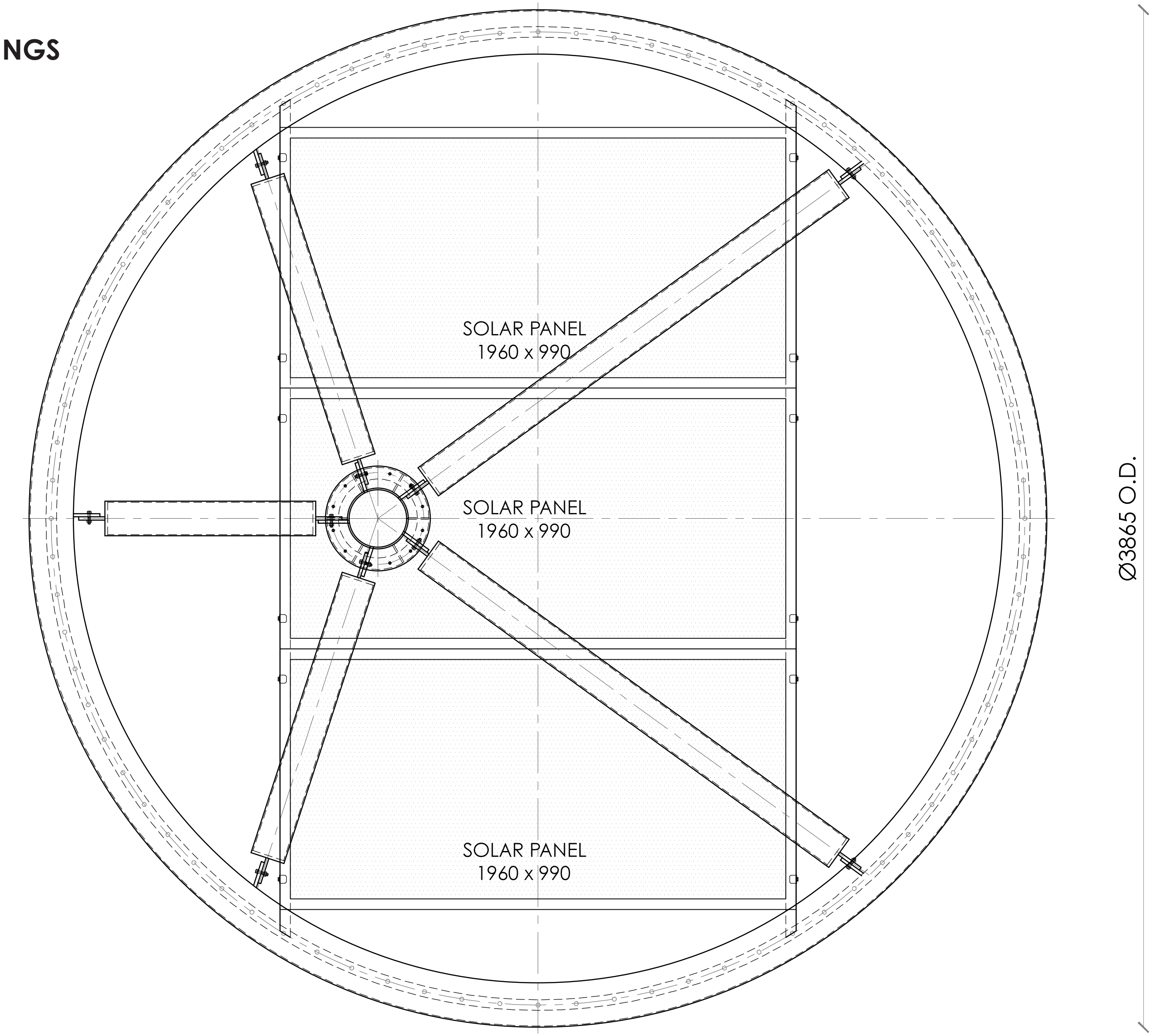
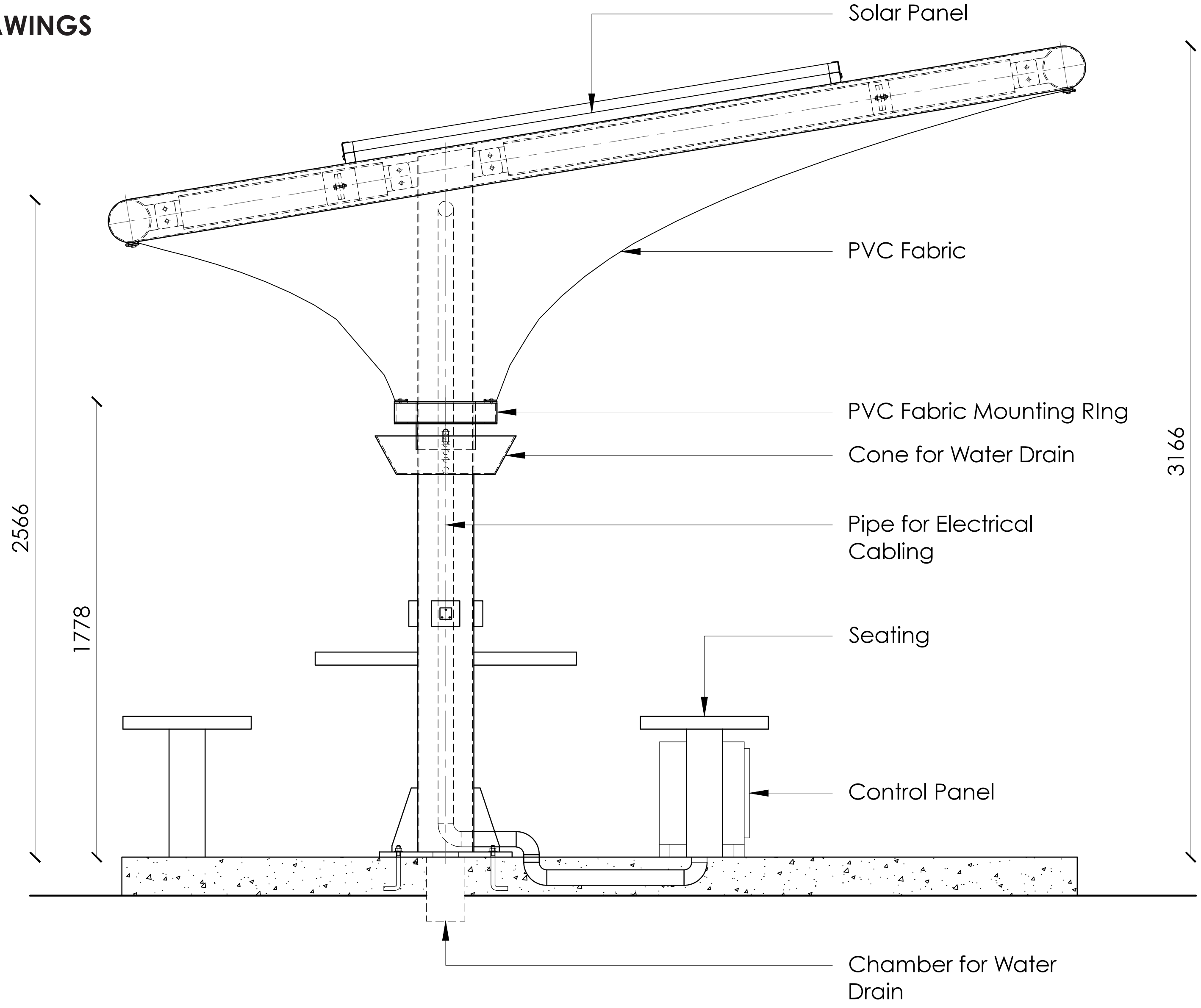
ANNEXURE I - A
ARCHITECTURAL DRAWINGS



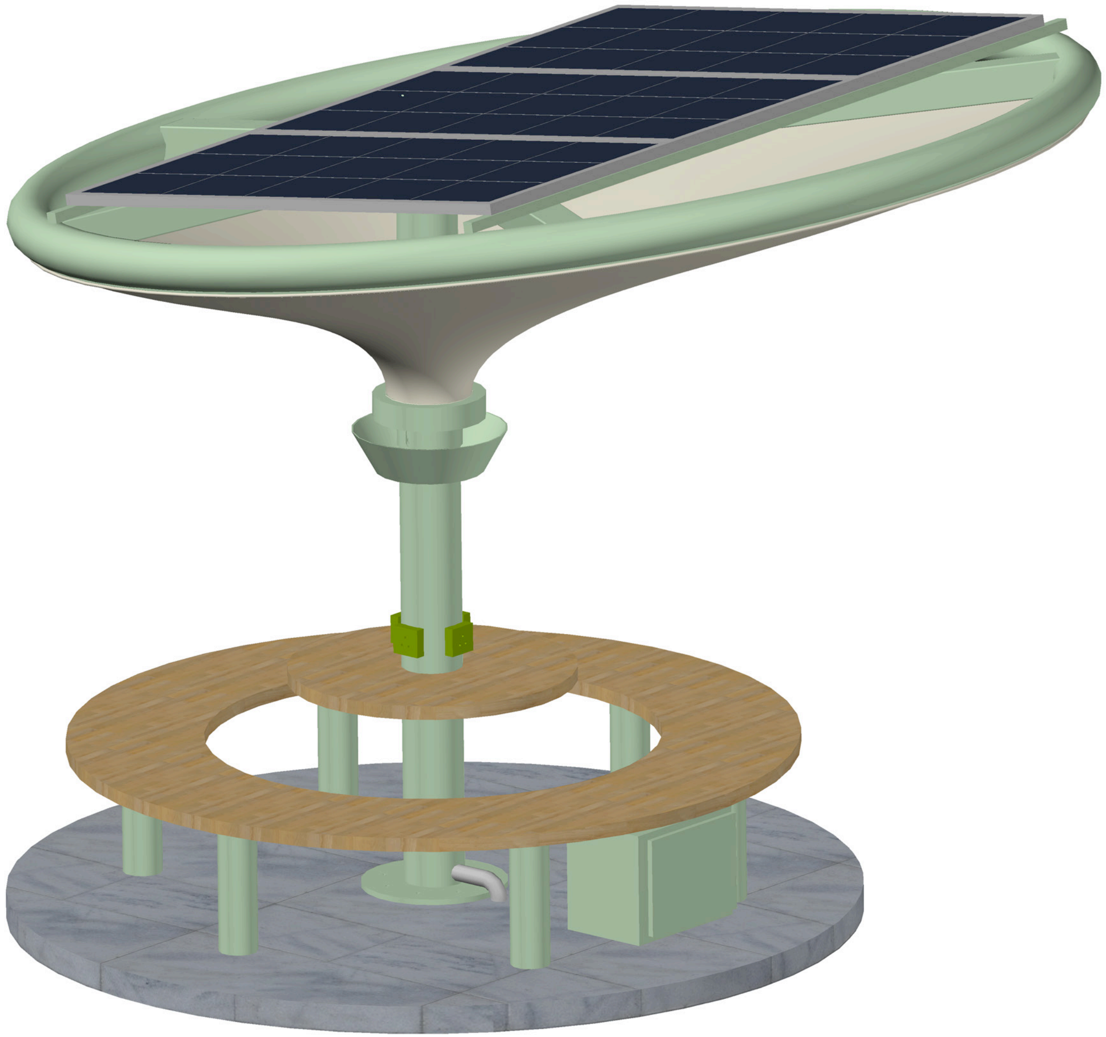
PLAN SCALE 1:25

ANNEXURE I - B
ARCHITECTURAL DRAWINGS

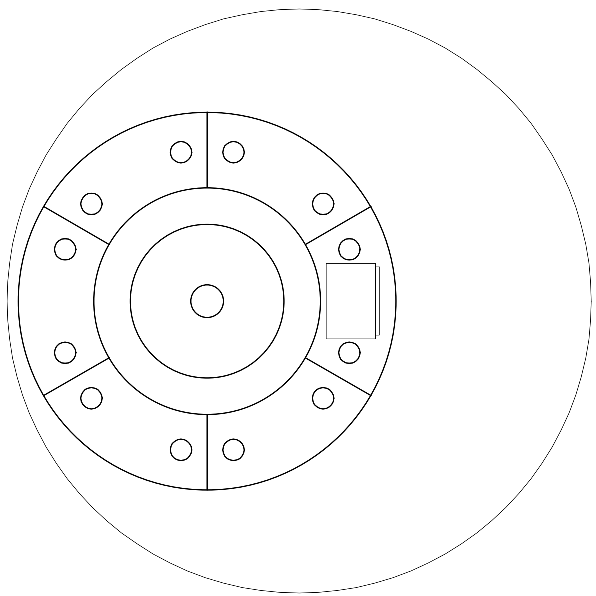


FRONT ELEVATION SCALE 1:25

ANNEXURE I - C

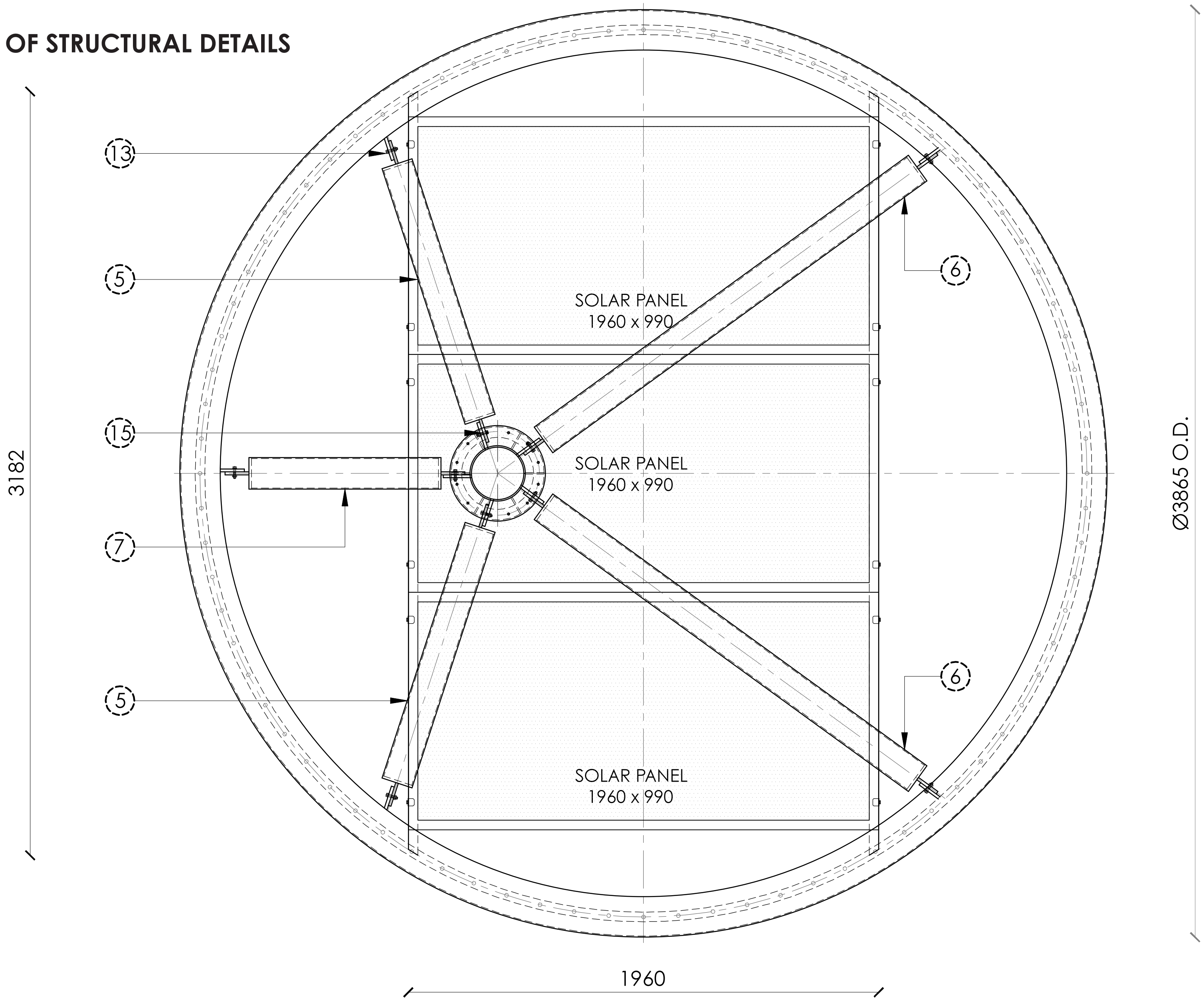


ISOMETRIC VIEW



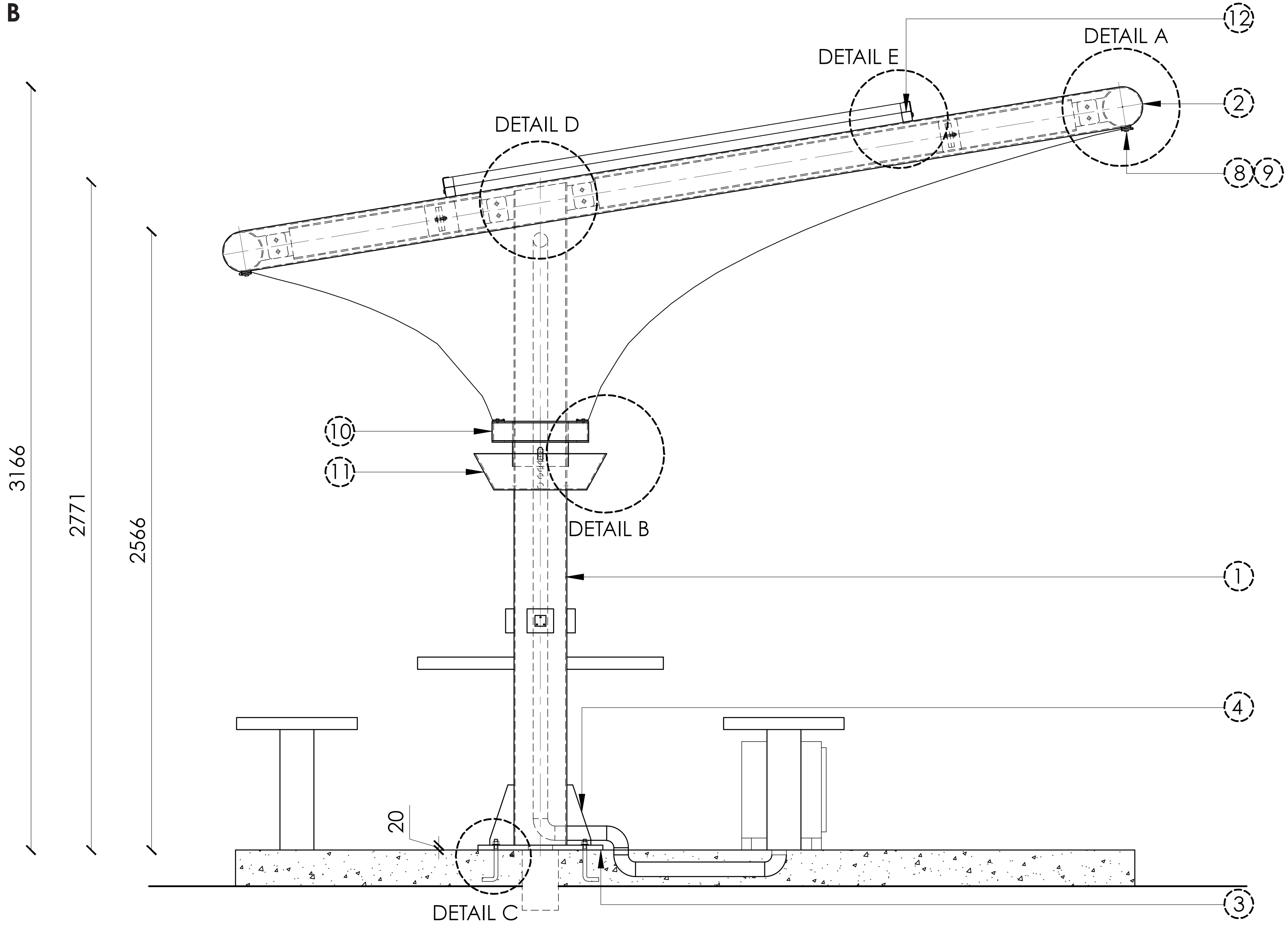
SEATING ARRANGEMENT

ANNEXURE II - A
SHOP DRAWINGS OF STRUCTURAL DETAILS



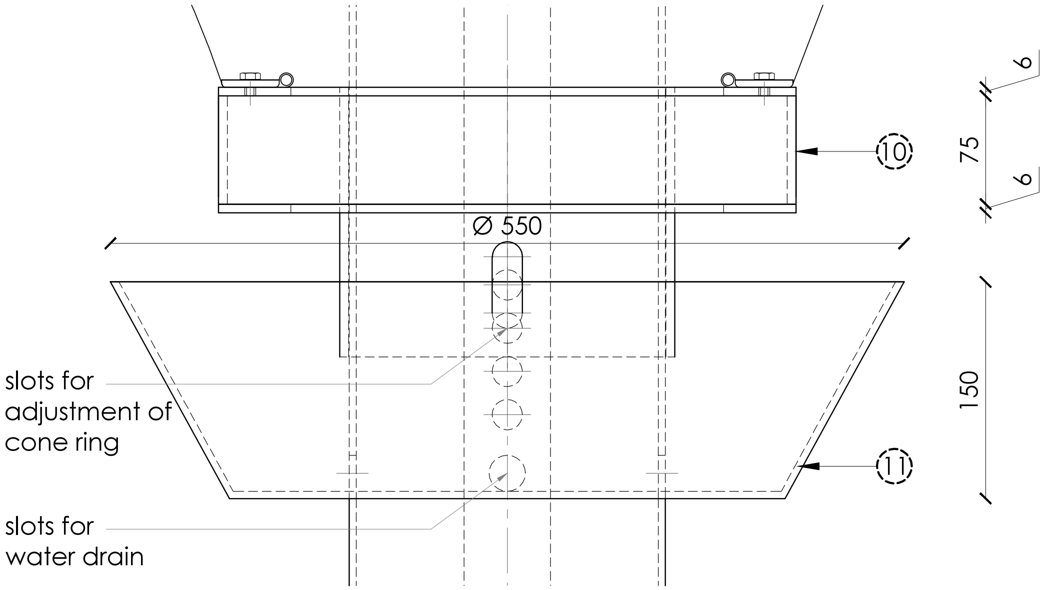
GA PLAN SCALE 1:25

ANNEXURE II - B

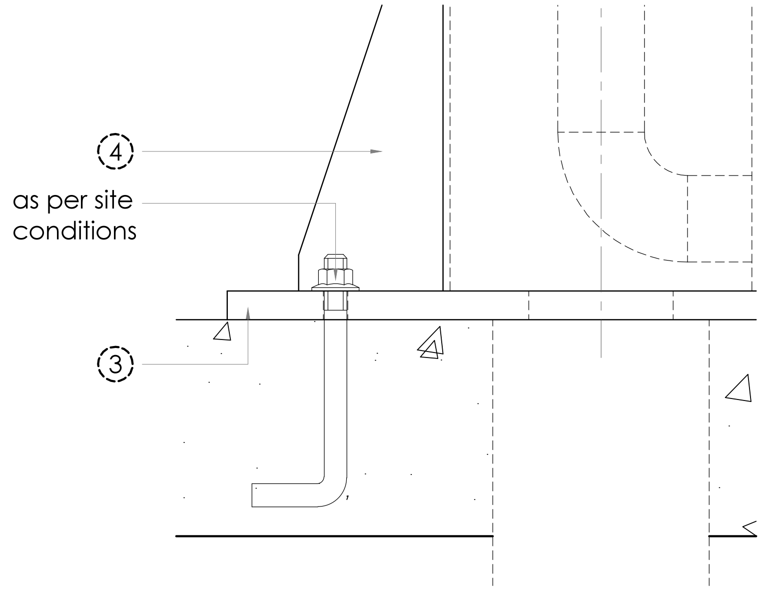


FRONT ELEVATION SCALE 1:25

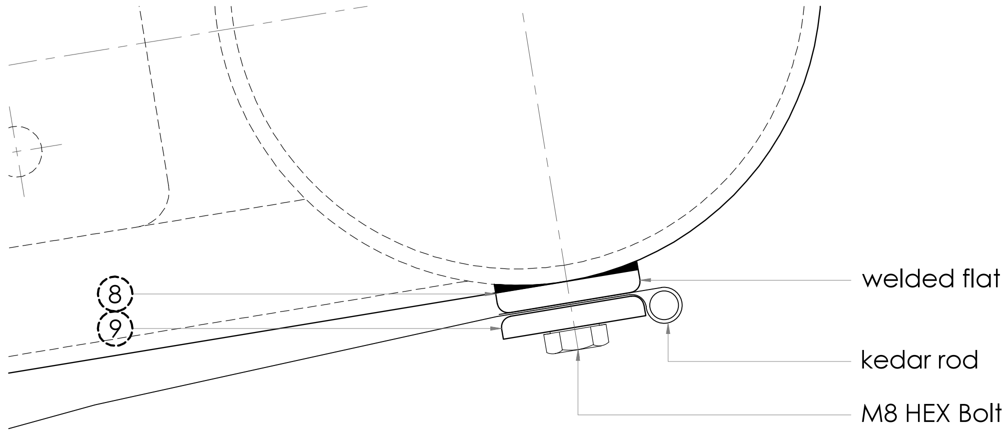
ANNEXURE II - C



DETAIL B SCALE 1:5



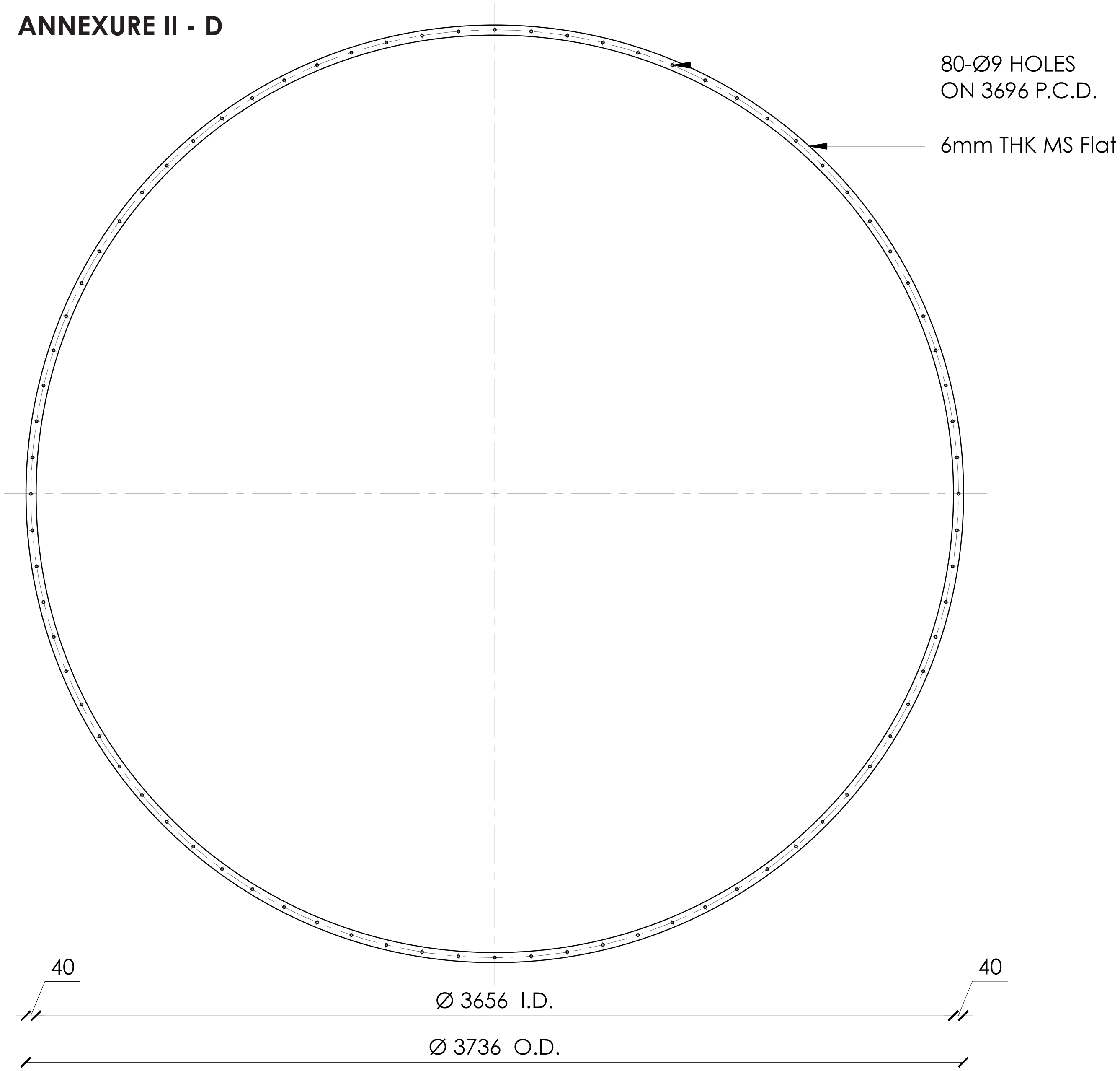
DETAIL C SCALE 1:5



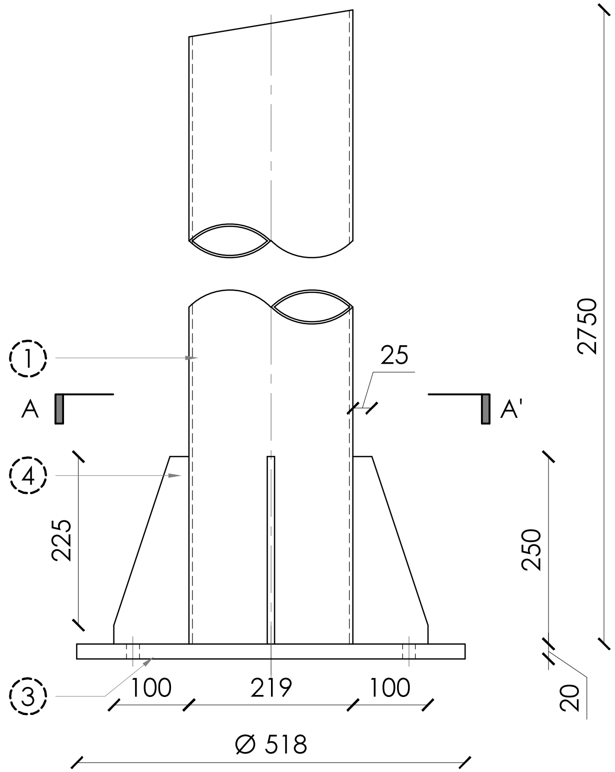
DETAIL A SCALE 1:2
FABRIC MOUNTING DETAIL

ITEM NO.	DESCRIPTION	QTY	DIMENSION	MATERIAL
1	PIPE-Ø219.1 x 4.85mm THK	1	2768 LG	MS PAINTED
2	PIPE-Ø168.3 x 4.5mm THK	1	11611 LG	MS PAINTED
3	BASE PLATE	1	Ø518 x 20 THK	MS PAINTED
4	STIFFENER	4	10 THK	MS PAINTED
5	SHS-132 x 4.8mm THK	2	1120LG	MS PAINTED
6	SHS-132 x 4.8mm THK	2	1920 LG	MS PAINTED
7	SHS-132 x 4.8mm THK	1	799LG	MS PAINTED
8	FLAT - 40 x 6	1	11611 LG	MS PAINTED
9	FLAT - 40 x 6	1	11611 LG	MS PAINTED
10	CONE RING	1	8 THK	MS PAINTED
11	CONE	1	8 THK	MS PAINTED
12	SHS-40x2.6	2	3182L	MS PAINTED
13	PLATE FOR SQ. PIPE	10	10 THK	MS PAINTED
14	PLATE FOR ROUND PIPE	5	10 THK	MS PAINTED
15	PLATE	5	10 THK	MS PAINTED
16	PLATE	10	10 THK	MS PAINTED

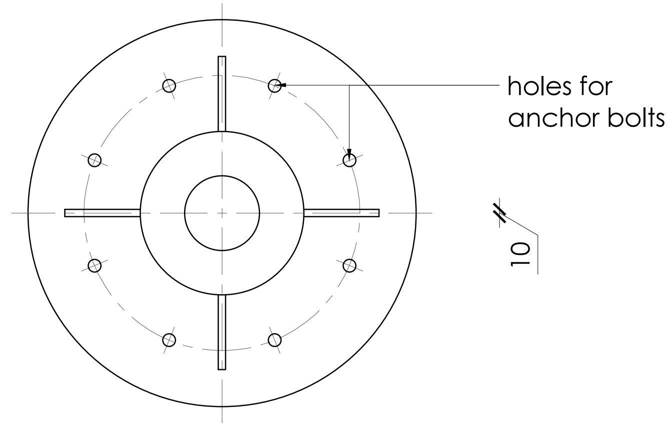
ANNEXURE II - D



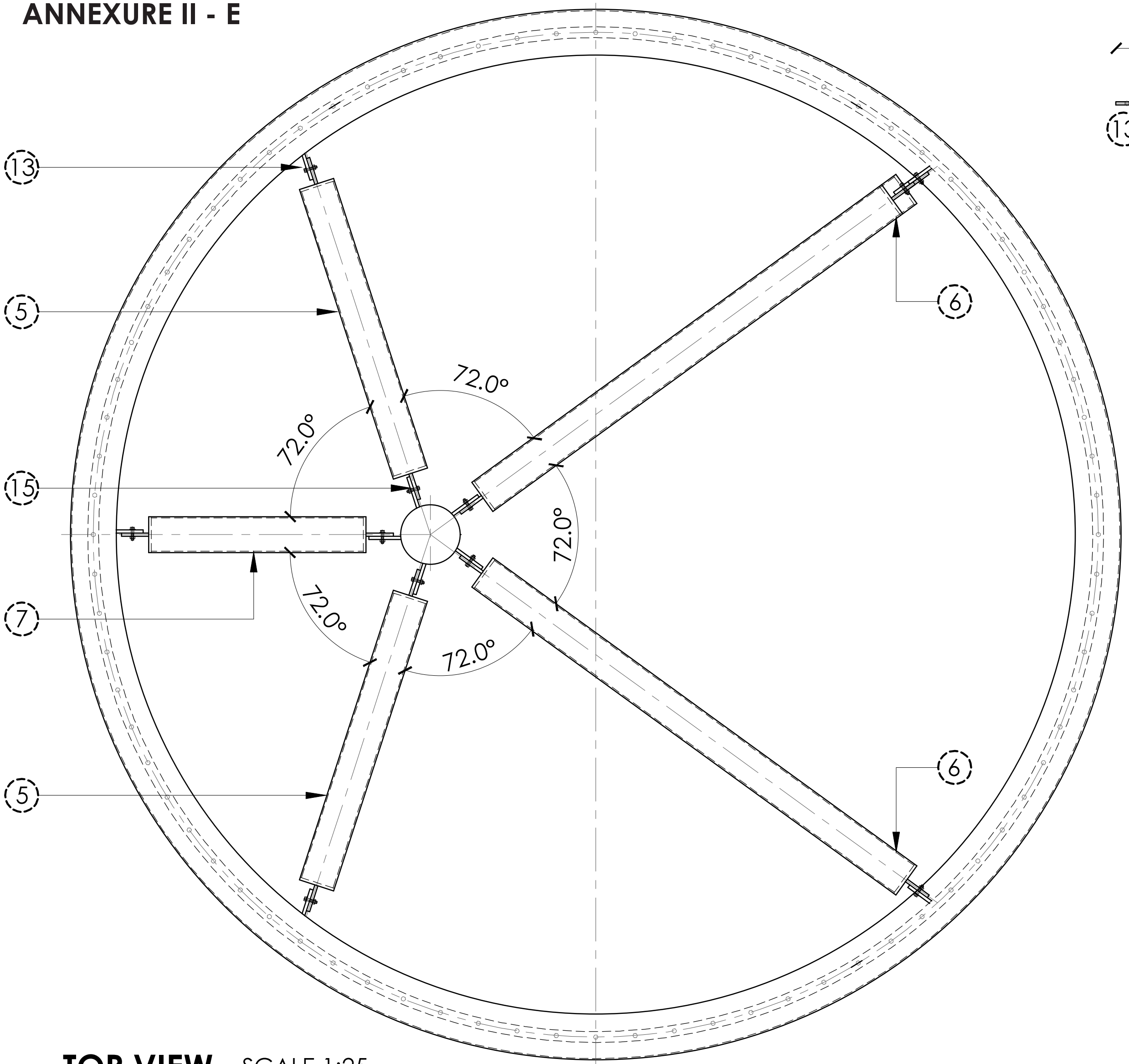
ITEM #8 SCALE 1:25



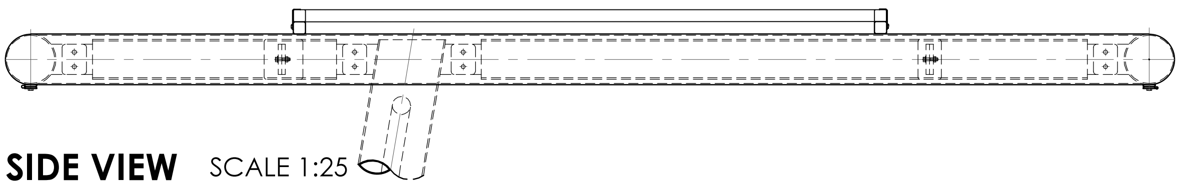
ITEM #1,3,4 SCALE 1:10



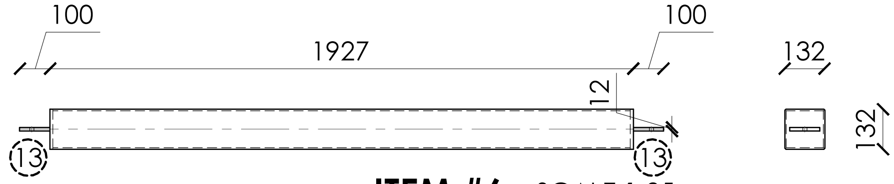
SECTION AA'



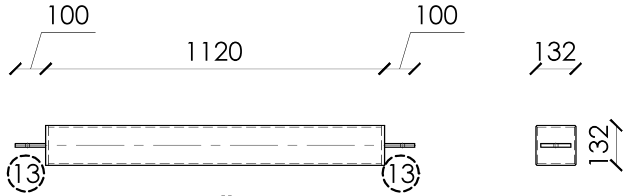
TOP VIEW SCALE 1:25



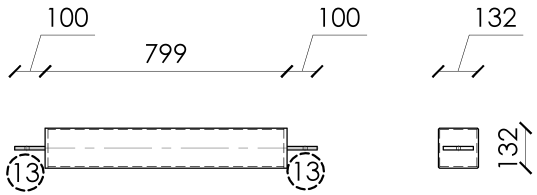
SIDE VIEW SCALE 1:25



ITEM #6 SCALE 1:25

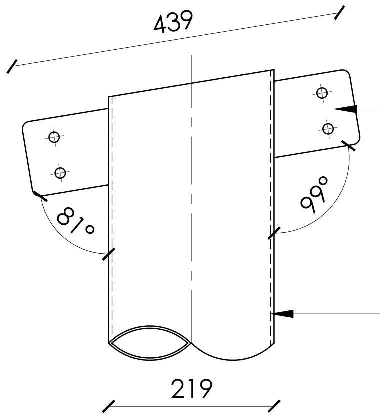


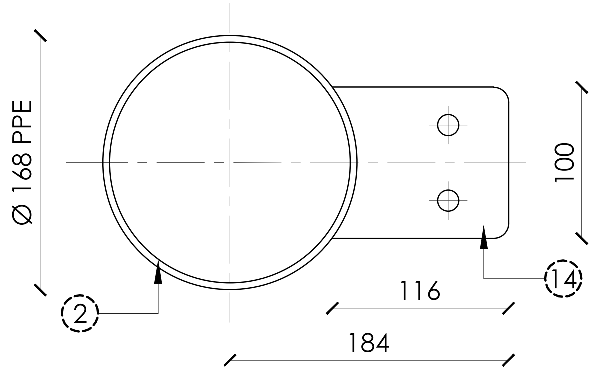
ITEM #5 SCALE 1:25



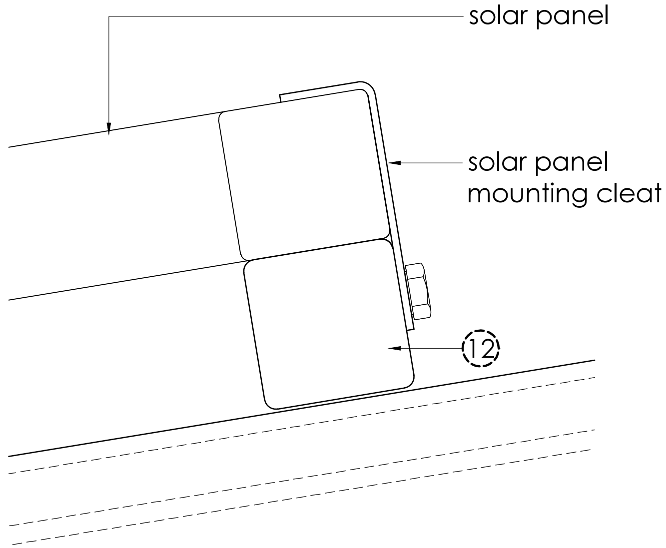
ITEM #7 SCALE 1:25

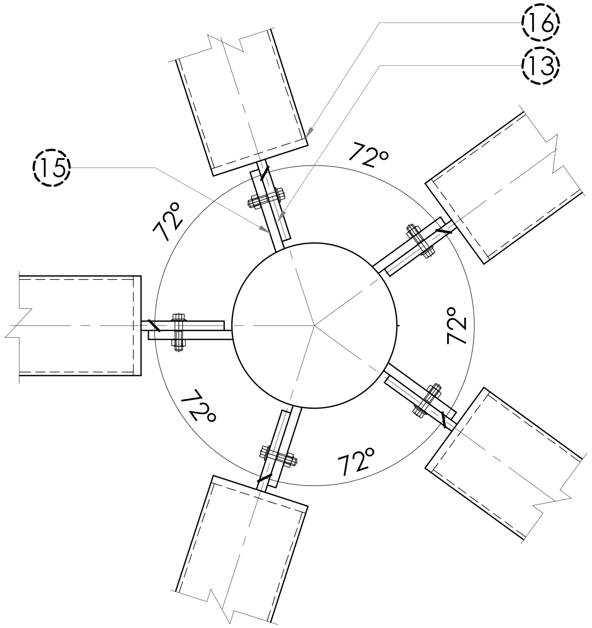
ANNEXURE II - F

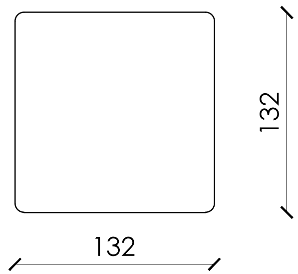




MOUNTING DETAIL OF SQUARE PIPE WITH ROUND PIPE SCALE 1:5

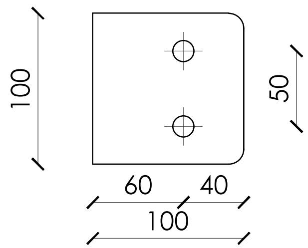


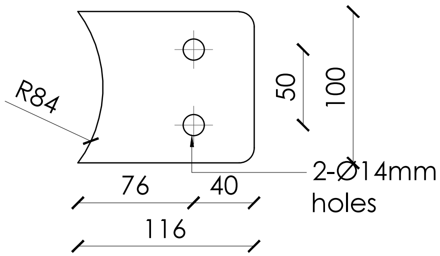


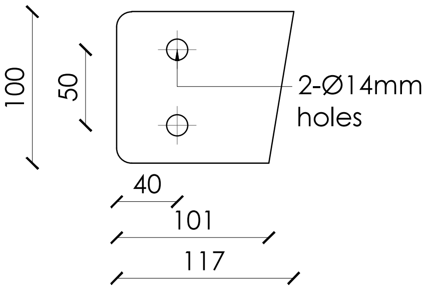


ITEM #16 SCALE 1:5

DETAIL D
ITEM #12 SCALE 1:5
SOLAR PANEL MOUNTING DETAIL







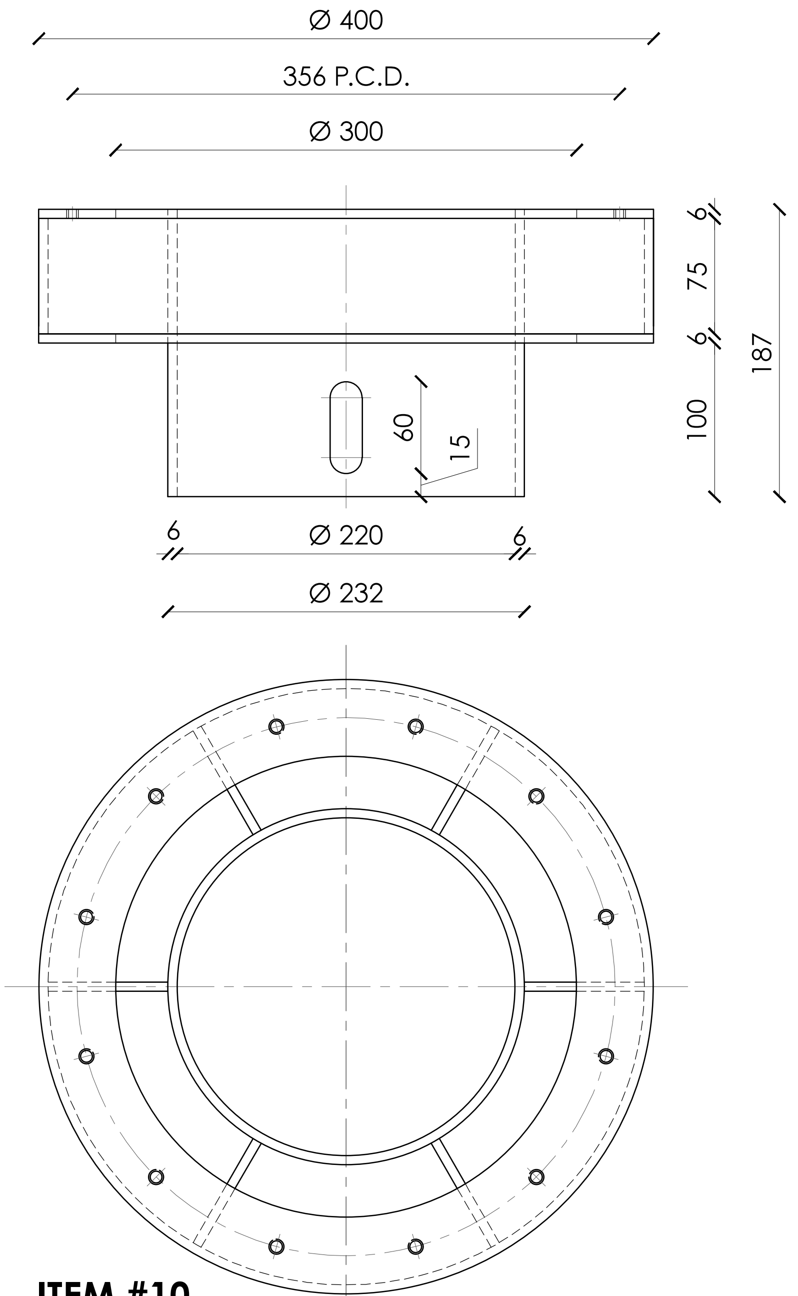
DETAIL D SCALE 1:10

ITEM #13 SCALE 1:5

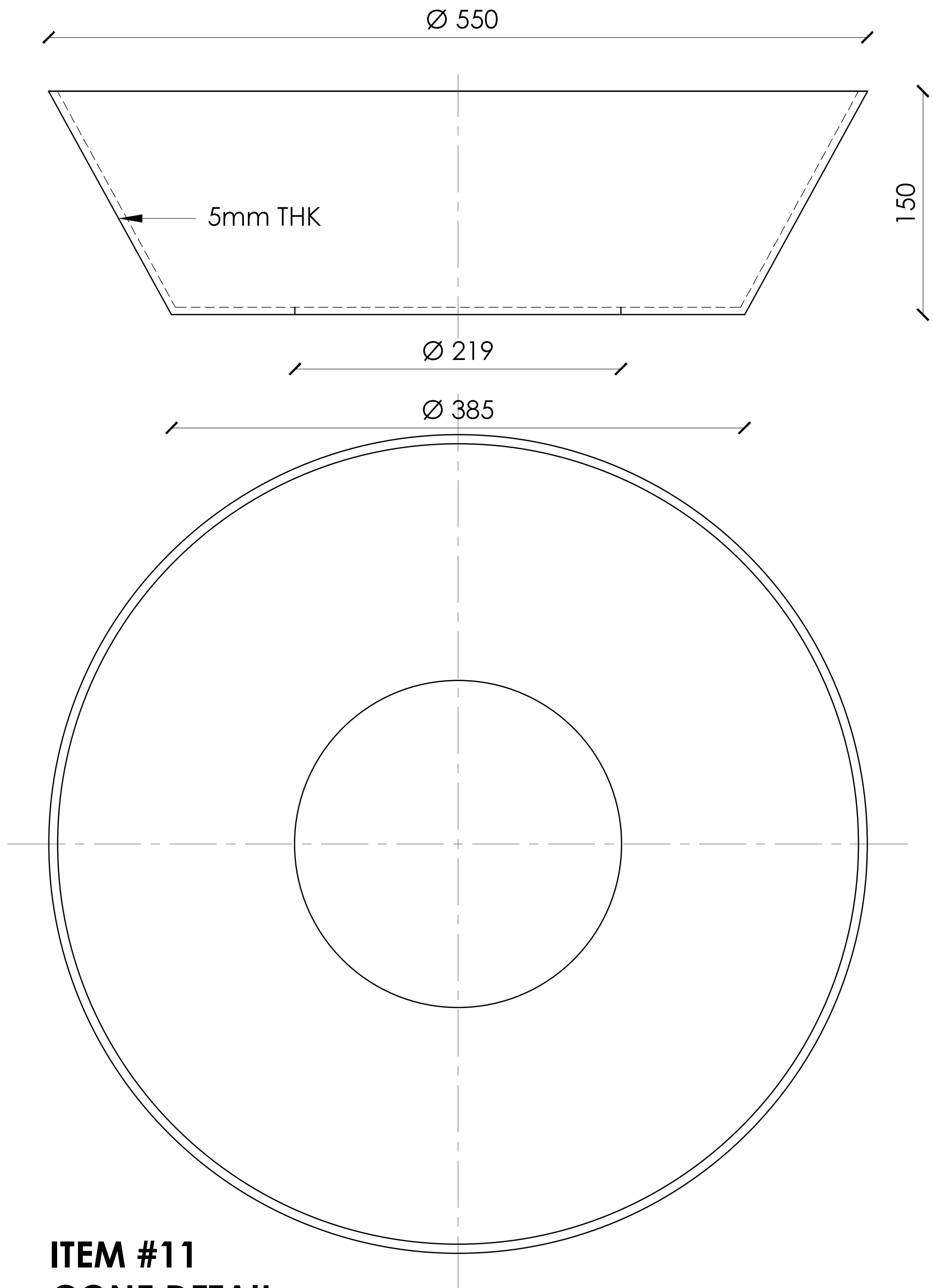
ITEM #14 SCALE 1:5

ITEM #15 SCALE 1:5

ANNEXURE II - G

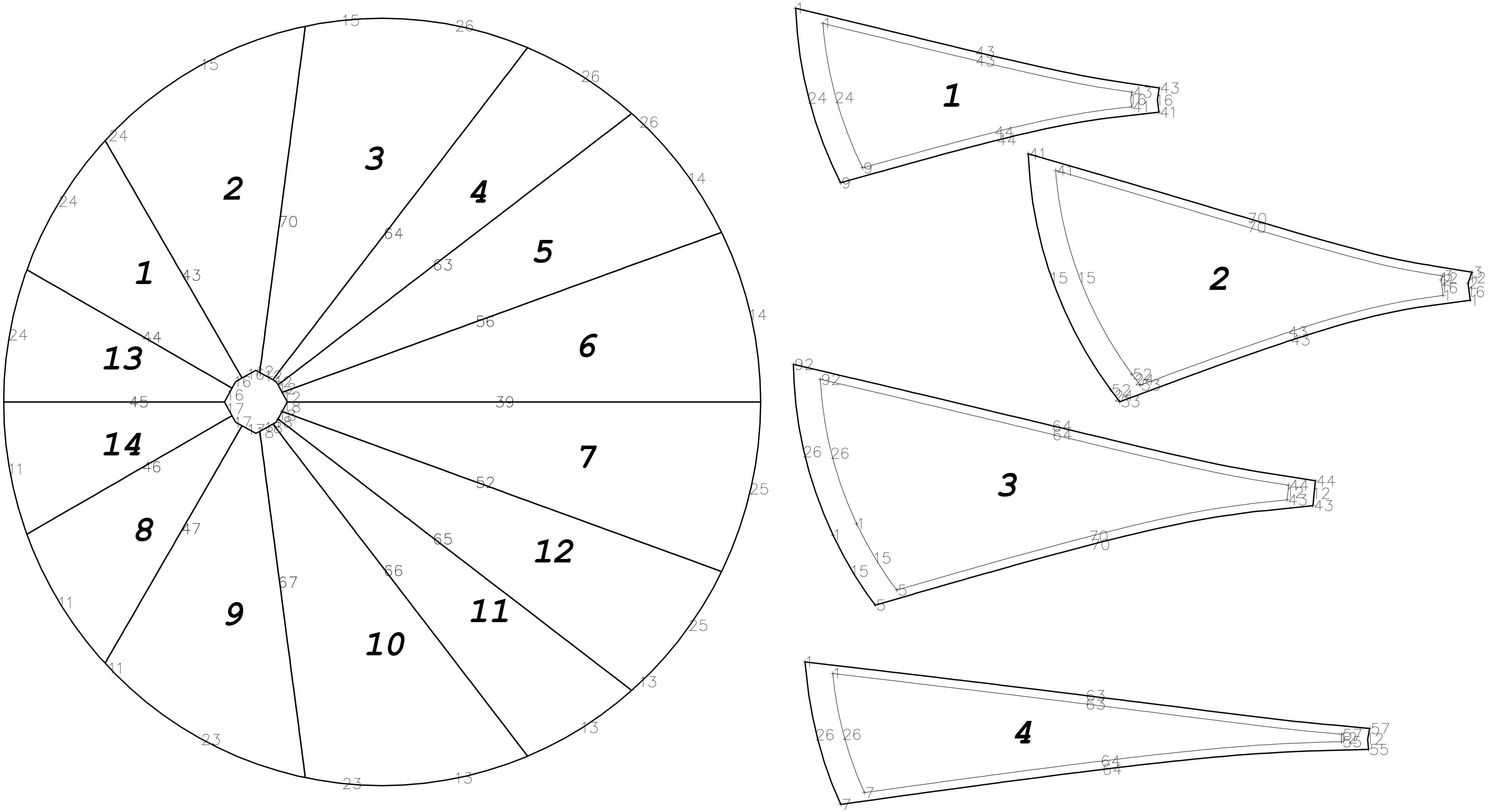


ITEM #10
PVC FABRIC MOUNTING RING SCALE 1:5



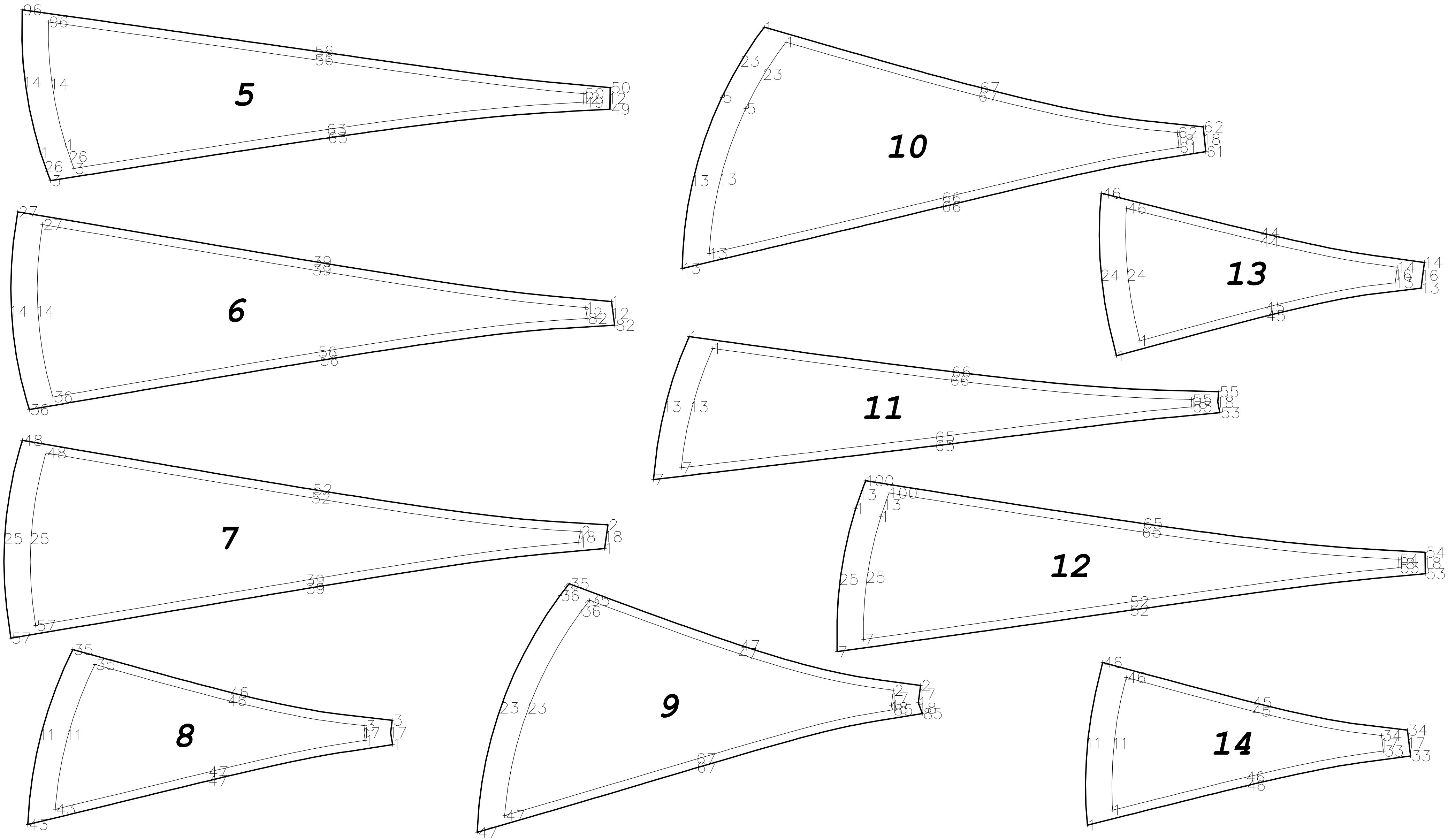
ITEM #11
CONE DETAIL SCALE 1:5

ANNEXURE III - A



PATTERNING DETAIL PART I SCALE 1:25

ANNEXURE III - B



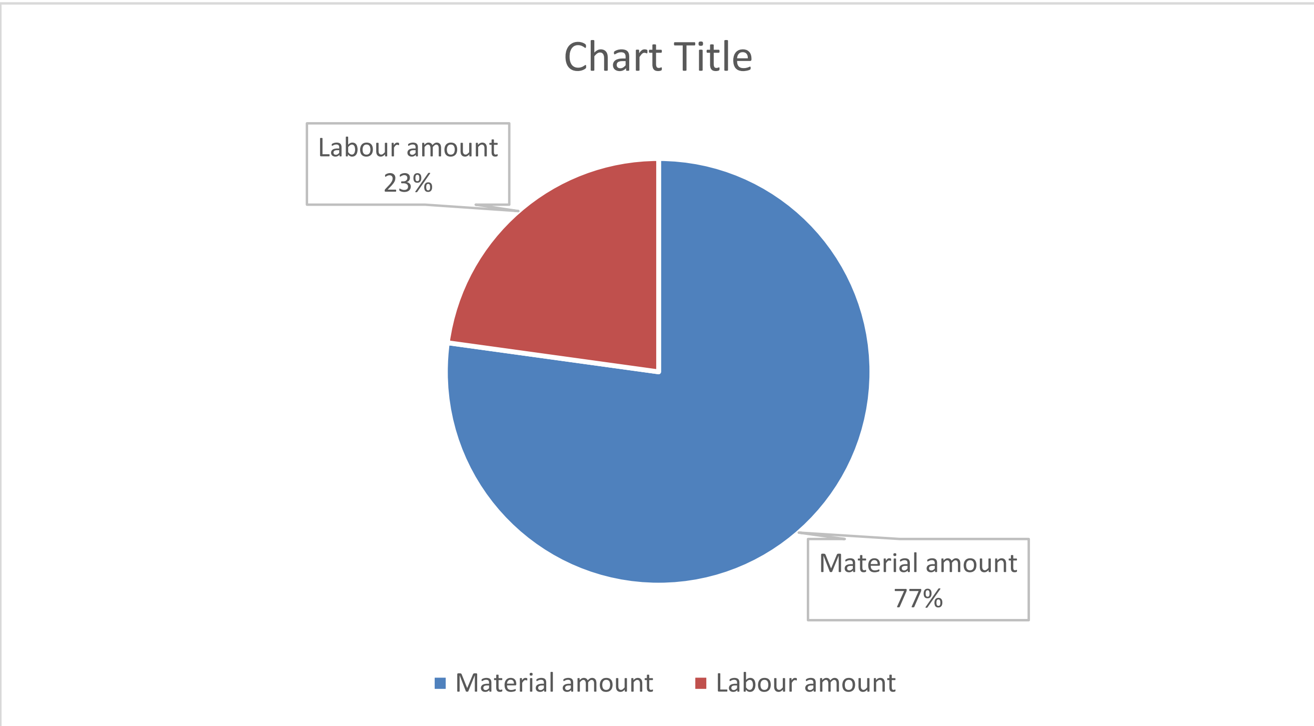
PATTERNING DETAIL PART II SCALE 1:25

Annexure IV - A- Cost calculation sheet

IMS Thesis - Design of utility structures using renewable energy sources.
By Vishal Desai.
Location - Vadodara / Mumbai
Task - Open desk workstation powered by solar energy

Item No.	Description	Unit	Nos	Length	Area	Thickness	Unit Weight	Total	Rate	Amount
Sec.A	**Structural Steel supply**									
1.0	Round pipe 219.1mm dia, 4.85mm thick	m	1	2.768		4.85	26.20	72.52		
2.0	Round pipe 168.3mm dia, 4.5mm thick	m	1	11.611			18.45	214.23		
3.0	Base plate 518mm dia, 20mm thick	m^2	1		0.211	0.02	7850.00	33.09		
4.0	SHS 132mm, 4.8mm thick	m	2	2.171			19.07	82.81		
5.0	SHS 132mm, 4.8mm thick	m	2	1.44			19.07	54.93		
6.0	SHS 132mm, 4.8mm thick	m	1	1.094			19.07	20.87		
7.0	Flat 40mm x6 mm	m	1	11.611			1.88	21.83		
8.0	Flat 40mm x6 mm	m	1	11.611			1.88	21.83		
9.0	PVC fabric mounting Ring									
9.1	400mm outer dia ring from 50mm height, 6mm thick sheet	m^2	2		1.257		2.36	5.93		
9.2	400mm outer dia ring from 75mm height, 6mm thick sheet	m^2	1		1.257		3.53	4.44		
9.3	75mm height, 6mm thick inner stiffeners 80mm long	m^2	6		0.08		3.53	1.69		
9.4	Round pipe 232mm dia, 6mm thick	m	1	0.187			34.31	6.42		
10.0	Cone for water outlet									
10.1	150mm, 5mm thick and 550mm top dia, 385mm bottom dia	m^2	1		1.727		5.89	10.17		
10.2	90mm wide ring, 5mm thick, 385mm outer dia	m^2	1		1.21		3.53	4.27		
11.0	SHS 40mm, 2.6 mm thick for solar panel frame	m	2	3.182			2.98	18.95		
12.0	Stiffener for base plate 100 x250 mm 10 mm thick	m^2	4		0.025		78.50	7.85		
							Total weight in Kgs	**581.81**	**₹ 55.00**	**₹ 31,999.77**
Sec.B	**Hilti make Chemical Anchor Fastner 20 mm dia 300 mm long**	**Nos**						**6.00**	**₹ 1,500.00**	**₹ 9,000.00**
Sec.C	**Membrane supply and its accessories**									
1.0	Highpoint/Saddle/Valley/ Ridge/Hypar PVC Membrane	m^2	Plan Area 3.865mm dia					10.75		
			Surface factor 1.4					15.05		
			Wastage Factor 1.5					22.58		
		m^2	Final Qty. of Membrane					22.58	₹ 900.00	₹ 20,321.47
2.0	Miscellaneous: Nuts, bolts, kedar rod, PVC rain water pipe, PVC electrical cable pipe	LS						1	₹ 5,000.00	₹ 5,000.00
							Total			**₹ 25,321.47**
Sec.D	**Transportation**	**LS**	**1**					**1**	**₹ 10,000.00**	**₹ 10,000.00**
Sec.E	**Solar Panels, inverter and batteries along with electrical cable and accessories**									
1.0	Solar Panels: 1960x990x42 mm; Weight: 23 kgs	Nos	3					3	₹ 9,500.00	₹ 28,500.00
2.0	Inverter for off grid structure	Nos	1					1	₹ 15,000.00	₹ 15,000.00
3.0	Battery	Nos	2					2	₹ 3,500.00	₹ 7,000.00
4.0	Electrical cable and accessories and storage box	LS	1					1	₹ 10,000.00	₹ 10,000.00
									Total	**₹ 60,500.00**
Sec.F	**Labour charges of different components**									
1.0	Fabrication and painting of structural steel	Kgs	1				581.81	581.81	₹ 30.00	₹ 17,454.42
2.0	Erection of structural steel at site	Kgs	1				581.81	581.81	₹ 15.00	₹ 8,727.21
3.0	Fabrication of membrane at workshop	m^2	1		15.05			15.05	₹ 250.00	₹ 3,763.24
4.0	Erection of membrane at site	m^2	1		15.05			15.05	₹ 500.00	₹ 7,526.47
5.0	Fixing of solar panels along with electrification and battery as well as inverter on site	LS	1					1	₹ 3,000.00	₹ 3,000.00
									Total	**₹ 40,471.34**
									Grand total	**₹ 177,292.58**
								Add for Design +Overhead+ Profit	**30%**	**₹ 53,187.77**
									Final total excluding GST	**₹ 230,480.35**

Annexure IV - B - Pie chart showing % distribution between material supply and labour



STRUCTURAL ANALYSIS

PROJECT

Design of utility tensile structures using renewable energy sources

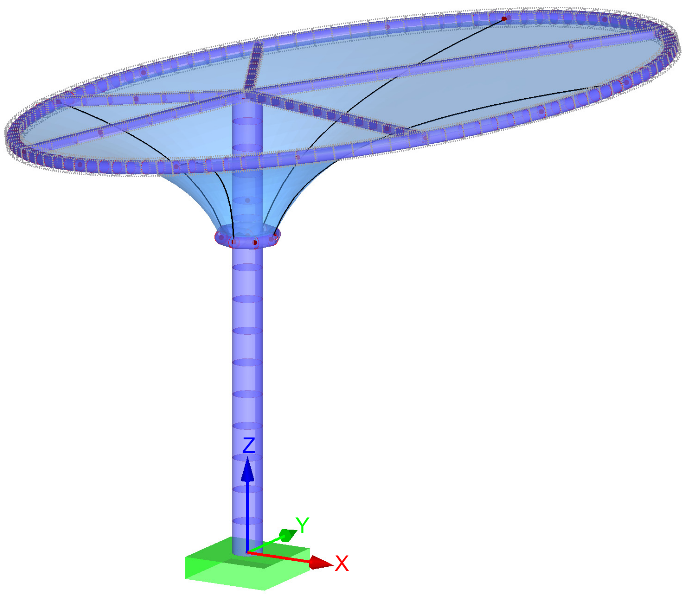
CLIENT

IMS institute, Dessau

CREATED BY

Vishal A. Desai

Isometric

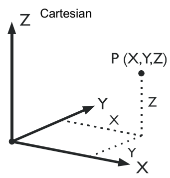


MODEL - GENERAL DATA

General	Model name	:	asymmetric cone workstation
	Project name	:	Asymmetric cone 1
	Type of model	:	3D
	Positive direction of global axis Z	:	Upward
	Classification of load cases and combinations	:	According to Standard: IS 800 National Annex: None
	☒ Automatically create combinations	:	☒ Load Combinations
Options	☒ RF-FORM-FINDING - Find initial equilibrium shapes of membrane and cable structures		
	☒ RF-CUTTING-PATTERN		
	☐ Piping analysis		
	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s^2

FE MESH SETTINGS

General	Target length of finite elements	l_{FE}	:	0.500 m
	Maximum distance between a node and a line to integrate it into the line	ε	:	0.001 m
	Maximum number of mesh nodes (in thousands)		:	500
Members	Number of divisions of members with cable, elastic foundation, taper, or plastic characteristic		:	10
	☒ Activate member divisions for large deformation or post-critical analysis			
	☒ Use division for members with node lying on them			
Surfaces	Maximum ratio of FE rectangle diagonals	Δ_D	:	1.800
	Maximum out-of-plane inclination of two finite elements	α	:	0.50 °
	Shape direction of finite elements		:	Triangles and quadrangles ☒ Same squares where possible



1.1 NODES

Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
1	Standard	-	Cartesian	0.000	0.000	0.000	
2	Standard	-	Cartesian	0.000	0.000	1.800	
5	Standard	-	Cartesian	0.000	0.000	2.600	
6	Standard	-	Cartesian	2.400	0.000	3.000	
9	Standard	-	Cartesian	-1.200	0.000	2.400	
11	Standard	-	Cartesian	0.600	-1.825	2.700	
12	Standard	-	Cartesian	0.150	0.000	1.800	
13	Standard	-	Cartesian	-0.150	0.000	1.800	
14	Standard	-	Cartesian	0.000	0.150	1.800	
17	Standard	-	Cartesian	0.600	1.825	2.700	
18	Standard	-	Cartesian	1.873	-1.290	2.912	
19	Standard	-	Cartesian	1.873	1.290	2.912	
20	Standard	-	Cartesian	-0.673	1.290	2.488	
21	Standard	-	Cartesian	-0.673	-1.290	2.488	
30	Standard	-	Cartesian	0.600	1.775	2.700	
33	Standard	-	Cartesian	0.000	-0.150	1.800	
34	Standard	-	Cartesian	-0.106	0.106	1.800	
35	Standard	-	Cartesian	-0.106	-0.106	1.800	
36	Standard	-	Cartesian	0.106	-0.106	1.800	
37	Standard	-	Cartesian	0.106	0.106	1.800	
39	Standard	-	Cartesian	-0.089	-1.686	2.585	
40	Standard	-	Cartesian	-1.063	-0.698	2.423	
42	Standard	-	Cartesian	-1.063	0.698	2.423	
43	Standard	-	Cartesian	-0.089	1.686	2.585	
45	Standard	-	Cartesian	2.263	-0.698	2.977	
46	Standard	-	Cartesian	1.289	-1.686	2.815	
48	Standard	-	Cartesian	1.289	1.686	2.815	
49	Standard	-	Cartesian	2.263	0.698	2.977	
50	Standard	-	Cartesian	-0.442	-0.848	2.526	
51	Standard	-	Cartesian	1.465	-1.009	2.844	
52	Standard	-	Cartesian	1.465	1.009	2.844	
53	Standard	-	Cartesian	-0.442	0.848	2.526	
54	Standard	-	Cartesian	-0.707	0.000	2.482	
55	Standard	-	Cartesian	0.000	0.000	2.000	

1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
1	Polyline	1,2	1.800	Z	
2	Polyline	2,55	0.200	Z	
3	Polyline	9,13	1.209	XZ	
4	Polyline	33,11	1.994		
5	Polyline	12,6	2.550	XZ	
6	Polyline	14,17	1.994		
7	Polyline	9,54	0.500	XZ	

1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [m]		Comment
11	Arc	9,40,21	1.433		
12	Arc	12,37,14	0.236	XY	
13	Arc	11,46,18	1.433		
14	Arc	6,49,19	1.433		
15	Arc	17,43,20	1.433		
16	Arc	14,34,13	0.236	XY	
17	Arc	13,35,33	0.236	XY	
18	Arc	33,36,12	0.236	XY	
19	Polyline	2,14	0.150	Y	
20	Polyline	2,12	0.150	X	
21	Polyline	2,33	0.150	Y	
22	Polyline	2,13	0.150	X	
23	Arc	21,39,11	1.433		
24	Arc	20,42,9	1.433		
25	Arc	18,45,6	1.433		
26	Arc	19,48,17	1.433		
27	Polyline	20,53	0.500		
29	Polyline	5,50	0.960		
30	Polyline	5,51	1.796		
32	Polyline	19,52	0.500		
33	Polyline	50,21	0.500		
34	Polyline	51,18	0.500		
35	Polyline	52,5	1.796		
36	Polyline	53,5	0.959		
37	Polyline	54,5	0.717	XZ	
38	Polyline	55,5	0.600	Z	

1.3 MATERIALS

Matl. No.	Modulus E [kN/m²]	Modulus G [kN/m²]	Poisson's Ratio ν [-]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	Concrete f'c = 4000 psi | ACI 318-14						
	24855600.00	10356500.00	0.200	22.62	9.90E-06	1.00	Isotropic Linear Elastic
2	Steel A992 | ANSI/AISC 360-16:2016						
	1.99948E+08	77221300.00	0.295	78.49	1.20E-05	1.00	Isotropic Linear Elastic
3	Ferrari Precontraint 502						
				5.79	0.00E+00	1.00	Orthotropic Elastic 2D...
	Additional material parameters are defined in the Material Model dialog box						
4	S 450 1.4462 (Bars, Rounds and Section Steel) | DIN EN 1993-1-4:2007-02						
	2.00000E+08	76923100.00	0.300	78.50	1.20E-05	1.10	Isotropic Linear Elastic
5	Steel IS 10748 3 | IS 800:2007						
	2.00000E+08	76900000.00	0.300	78.50	1.20E-05	1.00	Isotropic Linear Elastic
6	LAC 720 SLF - Dickson						
				7.06	0.00E+00	1.00	Orthotropic Elastic 2D...
	Additional material parameters are defined in the Material Model dialog box						
7	Steel IS 10748 3 | IS 800:2007						
	2.00000E+08	76900000.00	0.300	78.50	1.20E-05	1.00	Isotropic Linear Elastic
8	LAC 950 SLF - DICKSON						
				9.32	0.00E+00	1.00	Orthotropic Elastic 2D...
	Additional material parameters are defined in the Material Model dialog box						
9	Precontraint 1302 - Ferrari						
				13.24	0.00E+00	1.00	Orthotropic Elastic 2D...
	Additional material parameters are defined in the Material Model dialog box						

1.3.5 MATERIALS - MATERIAL MODEL - ORTHOTROPIC ELASTIC 2D

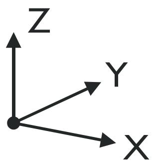
Matl. No.	Modulus of Elasticity [kN/m²] E_x	E_y	Shear Modulus [kN/m²] G_{yz}	G_{xz}	G_{xy}	Poisson's Ratio[-] ν_{xy}	ν_{yx}
3	Ferrari Precontraint 502						
	340980.00	379560.00	113660.00	113660.00	113660.00	0.500	0.557
6	LAC 720 SLF - Dickson						
	296320.00	155740.00	98773.00	98773.00	98773.00	0.500	0.263
8	LAC 950 SLF - DICKSON						
	433750.00	208800.00	144583.00	144583.00	144583.00	0.500	0.241
9	Precontraint 1302 - Ferrari						
	694140.00	525330.00	231380.00	231380.00	231380.00	0.500	0.378

1.4 SURFACES

Surface No.	Surface Type Geometry	Stiffness	Boundary Lines No.	Matl. No.	Thickness Type	d [mm]	Area A [m²]	Weight W [kg]
1	Quadrangle	Membrane - Orthotropic	3,17,4,23,11	9	Constant	1.0	2.140	2.83
2	Quadrangle	Membrane - Orthotropic	4,13,25,5,18	9	Constant	1.0	3.412	4.52
3	Quadrangle	Membrane - Orthotropic	5,14,26,6,12	9	Constant	1.0	3.411	4.52
4	Quadrangle	Membrane - Orthotropic	3,16,6,15,24	9	Constant	1.0	2.140	2.83

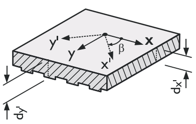
1.4.3 SURFACES - FORM-FINDING

Surface No.	Calculation Method	Specify Forces $n_{x'}$ [kN/m]	$n_{y'}$ [kN/m]	Specify Stress $\sigma_{x'}$ [MPa]	$\sigma_{y'}$ [MPa]	Interior Pressure p_p [Pa]	
1	Projection	0.5	0.5	0.5	0.5	0.0	
2	Projection	0.5	0.5	0.5	0.5	0.0	
3	Projection	0.5	0.5	0.5	0.5	0.0	
4	Projection	0.5	0.5	0.5	0.5	0.0	



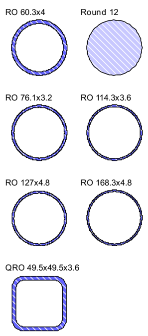
1.7 NODAL SUPPORTS

Support No.	Nodes No.	Axis System	Column in Z	Support Conditions u_X	u_Y	u_Z	φ_X	φ_Y	φ_Z
1	1	Global X,Y,Z	☐	☒	☒	☒	☒	☒	☒



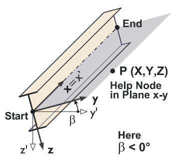
1.12 ORTHOTROPIC SURFACES AND MEMBRANES

Surface No.	Definition Type	Orthotropy Direction β [°]	Stiffness Reduction Factors k [-]	k_b [-]	k_{33} [-]	k_s [-]	k_{44} [-]	k_{55} [-]	k_m [-]	k_{88} [-]	k_e [-]
1	Constant thickness	0.00	1.00	-	-	-	-	-	-		-
2	Constant thickness	0.00	1.00	-	-	-	-	-	-		-
3	Constant thickness	0.00	1.00	-	-	-	-	-	-		-
4	Constant thickness	0.00	1.00	-	-	-	-	-	-		-



1.13 CROSS-SECTIONS

Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	RO 60.3x4 | IS 3601-2006							
	2	56.35	28.17	28.17	0.00	0.00	60.3	60.3
		7.07	3.52	3.52				
2	Round 12							
	4	0.20	0.10	0.10	0.00	0.00	12.0	12.0
		1.13	0.95	0.95				
3	RO 76.1x3.2 | IS 1161-1998							
	5	97.56	48.78	48.78	0.00	0.00	76.1	76.1
		7.33	3.64	3.64				
4	RO 114.3x3.6 | IS 1161-1998							
	5	383.97	191.98	191.98	0.00	0.00	114.3	114.3
		12.52	6.21	6.21				
5	RO 127x4.8 | IS 1161-1998							
	5	688.99	344.50	344.50	0.00	0.00	127.0	127.0
		18.43	9.14	9.14				
6	RO 168.3x4.8 | IS 1161-1998							
	7	1649.14	824.57	824.57	0.00	0.00	168.3	168.3
		24.66	12.23	12.23				
7	QRO 49.5x49.5x3.6 | IS 4923-1997							
	7	35.54	21.42	21.42	0.00	0.00	49.5	49.5
		6.28	2.81	2.81				



1.17 MEMBERS

Mbr. No.	Line No.	Member	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
1	12	Beam	Node	0 / x-y	3	3	-	-	-	-	0.236	XY
2	16	Beam	Node	0 / x-y	3	3	-	-	-	-	0.236	XY
3	17	Beam	Node	0 / x-y	3	3	-	-	-	-	0.236	XY
4	18	Beam	Node	0 / x-y	3	3	-	-	-	-	0.236	XY
5	19	Beam	Angle	0.00	3	3	-	-	-	-	0.150	Y
6	20	Beam	Angle	0.00	3	3	-	-	-	-	0.150	X
7	21	Beam	Angle	0.00	3	3	-	-	-	-	0.150	Y
8	22	Beam	Angle	0.00	3	3	-	-	-	-	0.150	X
9	11	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
10	13	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
11	14	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
12	15	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
13	1	Beam	Angle	0.00	6	6	-	-	-	-	1.800	Z
14	23	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
15	24	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
16	25	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
17	26	Beam	Node	0 / x-y	3	3	-	-	-	-	1.433	
18	2	Beam	Angle	0.00	6	6	-	-	-	-	0.200	Z
19	7	Beam	Angle	0.00	7	7	-	-	-	-	0.500	XZ
20	27	Beam	Angle	0.00	7	7	-	-	-	-	0.500	
21	29	Beam	Angle	0.00	7	7	-	-	-	-	0.960	
22	30	Beam	Angle	0.00	7	7	-	-	-	-	1.796	
23	32	Beam	Angle	0.00	7	7	-	-	-	-	0.500	
24	33	Beam	Angle	0.00	7	7	-	-	-	-	0.500	
25	34	Beam	Angle	0.00	7	7	-	-	-	-	0.500	
26	35	Beam	Angle	0.00	7	7	-	-	-	-	1.796	
27	36	Beam	Angle	0.00	7	7	-	-	-	-	0.959	
28	37	Beam	Angle	0.00	7	7	-	-	-	-	0.717	XZ
29	38	Beam	Angle	0.00	6	6	-	-	-	-	0.600	Z

1.21 SETS OF MEMBERS

Set No.	Set of Members Description	Type	Member No.	Length [m]	Comment
1	circular member	Contin. member	9,15,12,17,11,16,10,14	11.466	
2	strut 1	Contin. member	19,28	1.217	
3	strut 2	Contin. member	21,24	1.460	
4	strut 3	Contin. member	22,25	2.296	
5	strut 4	Contin. member	23,26	2.296	
6	strut 5	Contin. member	20,27	1.459	

1.23 FE MESH REFINEMENTS

Refinem. No.	FE Mesh Refinement applied to	Nodes No.	Number Divisions	Sphere Radius [m]	Target FE Length [m] Inner	Outer	Comment
1	Surfaces	1-4		0.100			

2.1 LOAD CASES

Load Case	Load Case Description	IS 800 Action Category	Active	Self-Weight - Factor in Direction X	Y	Z
LC1	Dead Load	Dead	☒	0.000	0.000	-1.000
LC2	Live Load	Live	☐			
LC3	Wind load in +ve X-dir, Cpi +0.7, zone D +ve	Wind	☐			
LC4	Wind load in +ve X-dir, Cpi +0.7, zone D -ve	Wind	☐			
LC5	Wind load in +ve X-dir, Cpi -0.7, zone D +ve	Wind	☐			
LC6	Wind load in +ve X-dir, Cpi -0,7, zone D -ve	Wind	☐			
LC7	Wind load in +ve Y-dir, Cpi +0.7, zone D +ve	Wind	☐			
LC8	Wind load in +ve Y-dir, Cpi +0.7, zone D -ve	Wind	☐			
LC9	Wind load in +ve Y-dir, Cpi -0.7, zone D +ve	Wind	☐			
LC10	Wind load in +ve Y-dir, Cpi -0.7, zone D -ve	Wind	☐			
Form-Finding			☐			
Cutting Pattern			☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	Dead Load	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC2	Live Load	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Wind load in +ve X-dir, Cpi +0.7, zone D +ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC4	Wind load in +ve X-dir, Cpi +0.7, zone D -ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Wind load in +ve X-dir, Cpi -0.7, zone D +ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC6	Wind load in +ve X-dir, Cpi -0, 7, zone D -ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC7	Wind load in +ve Y-dir, Cpi +0.7, zone D +ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of n	: ⦿	Newton-Raphson

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
		nonlinear algebraic equations		
		Activate stiffness factors of:	: ⊠	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC8	Wind load in +ve Y-dir, Cpi +0.7, zone D -ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ⊠	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC9	Wind load in +ve Y-dir, Cpi -0.7, zone D +ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ⊠	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC10	Wind load in +ve Y-dir, Cpi -0.7, zone D -ve	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Activate stiffness factors of:	: ⊠	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
Form-Finding		Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
Cutting Pattern		Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1	Str.	1.5*LC1	1	1.50	LC1	Dead Load
CO2	Str.	1.5*LC1 + 1.5*LC2	1	1.50	LC1	Dead Load
			2	1.50	LC2	Live Load
CO3	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC3	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC3	Wind load in +ve X-dir, Cpi +0.7, zone D +ve
CO4	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC4	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC4	Wind load in +ve X-dir, Cpi +0.7, zone D -ve
CO5	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC5	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC5	Wind load in +ve X-dir, Cpi -0.7, zone D +ve
CO6	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC6	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC6	Wind load in +ve X-dir, Cpi -0,7, zone D -ve
CO7	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC7	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC7	Wind load in +ve Y-dir, Cpi +0.7, zone D +ve
CO8	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC8	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC8	Wind load in +ve Y-dir, Cpi +0.7, zone D -ve
CO9	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC9	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC9	Wind load in +ve Y-dir, Cpi -0.7, zone D +ve
CO10	Str.	1.2*LC1 + 1.2*LC2 + 1.2*LC10	1	1.20	LC1	Dead Load
			2	1.20	LC2	Live Load
			3	1.20	LC10	Wind load in +ve Y-dir, Cpi -0.7, zone D -ve
CO11	Str.	1.5*LC1 + 1.5*LC3	1	1.50	LC1	Dead Load
			2	1.50	LC3	Wind load in +ve X-dir, Cpi +0.7, zone D +ve
CO12	Str.	1.5*LC1 + 1.5*LC4	1	1.50	LC1	Dead Load
			2	1.50	LC4	Wind load in +ve X-dir, Cpi +0.7, zone D -ve
CO13	Str.	1.5*LC1 + 1.5*LC5	1	1.50	LC1	Dead Load
			2	1.50	LC5	Wind load in +ve X-dir, Cpi -0.7, zone D +ve
CO14	Str.	1.5*LC1 + 1.5*LC6	1	1.50	LC1	Dead Load
			2	1.50	LC6	Wind load in +ve X-dir, Cpi -0,7, zone D -ve
CO15	Str.	1.5*LC1 + 1.5*LC7	1	1.50	LC1	Dead Load
			2	1.50	LC7	Wind load in +ve Y-dir, Cpi +0.7, zone D +ve
CO16	Str.	1.5*LC1 + 1.5*LC8	1	1.50	LC1	Dead Load
			2	1.50	LC8	Wind load in +ve Y-dir, Cpi +0.7, zone D -ve
CO17	Str.	1.5*LC1 + 1.5*LC9	1	1.50	LC1	Dead Load
			2	1.50	LC9	Wind load in +ve Y-dir, Cpi -0.7, zone D +ve
CO18	Str.	1.5*LC1 + 1.5*LC10	1	1.50	LC1	Dead Load
			2	1.50	LC10	Wind load in +ve Y-dir, Cpi -0.7, z

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
						zone D -ve
CO19	Ser.	LC1	1	1.00	LC1	Dead Load
CO20	Ser.	LC1 + LC2	1	1.00	LC1	Dead Load
			2	1.00	LC2	Live Load
CO21	Ser.	LC1 + 0.8*LC2 + 0.8*LC3	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC3	Wind load in +ve X-dir, Cpi +0.7, zone D +ve
CO22	Ser.	LC1 + 0.8*LC2 + 0.8*LC4	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC4	Wind load in +ve X-dir, Cpi +0.7, zone D -ve
CO23	Ser.	LC1 + 0.8*LC2 + 0.8*LC5	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC5	Wind load in +ve X-dir, Cpi -0.7, zone D +ve
CO24	Ser.	LC1 + 0.8*LC2 + 0.8*LC6	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC6	Wind load in +ve X-dir, Cpi -0,7, zone D -ve
CO25	Ser.	LC1 + 0.8*LC2 + 0.8*LC7	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC7	Wind load in +ve Y-dir, Cpi +0.7, zone D +ve
CO26	Ser.	LC1 + 0.8*LC2 + 0.8*LC8	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC8	Wind load in +ve Y-dir, Cpi +0.7, zone D -ve
CO27	Ser.	LC1 + 0.8*LC2 + 0.8*LC9	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC9	Wind load in +ve Y-dir, Cpi -0.7, zone D +ve
CO28	Ser.	LC1 + 0.8*LC2 + 0.8*LC10	1	1.00	LC1	Dead Load
			2	0.80	LC2	Live Load
			3	0.80	LC10	Wind load in +ve Y-dir, Cpi -0.7, zone D -ve
CO29	Ser.	LC1 + LC3	1	1.00	LC1	Dead Load
			2	1.00	LC3	Wind load in +ve X-dir, Cpi +0.7, zone D +ve
CO30	Ser.	LC1 + LC4	1	1.00	LC1	Dead Load
			2	1.00	LC4	Wind load in +ve X-dir, Cpi +0.7, zone D -ve
CO31	Ser.	LC1 + LC5	1	1.00	LC1	Dead Load
			2	1.00	LC5	Wind load in +ve X-dir, Cpi -0.7, zone D +ve
CO32	Ser.	LC1 + LC6	1	1.00	LC1	Dead Load
			2	1.00	LC6	Wind load in +ve X-dir, Cpi -0,7, zone D -ve
CO33	Ser.	LC1 + LC7	1	1.00	LC1	Dead Load
			2	1.00	LC7	Wind load in +ve Y-dir, Cpi +0.7, zone D +ve
CO34	Ser.	LC1 + LC8	1	1.00	LC1	Dead Load
			2	1.00	LC8	Wind load in +ve Y-dir, Cpi +0.7, zone D -ve
CO35	Ser.	LC1 + LC9	1	1.00	LC1	Dead Load
			2	1.00	LC9	Wind load in +ve Y-dir, Cpi -0.7, zone D +ve
CO36	Ser.	LC1 + LC10	1	1.00	LC1	Dead Load
			2	1.00	LC10	Wind load in +ve Y-dir, Cpi -0.7, zone D -ve

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	1.5*LC1	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	1.5*LC1 + 1.5*LC2	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	1.2*LC1 + 1.2*LC2 + 1.2*LC3	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	1.2*LC1 + 1.2*LC2 + 1.2*LC4	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO5	1.2*LC1 + 1.2*LC2 + 1.2*LC5	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO6	1.2*LC1 + 1.2*LC2 + 1.2*LC6	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO7	1.2*LC1 + 1.2*LC2 + 1.2*LC7	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO8	1.2*LC1 + 1.2*LC2 + 1.2*LC8	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO9	1.2*LC1 + 1.2*LC2 + 1.2*LC9	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO10	1.2*LC1 + 1.2*LC2 + 1.2*LC10	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ⊠ Materials (partial factor γM)
			: ⊠ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ⊠ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO11	1.5*LC1 + 1.5*LC3	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ⊠ Consider favorable effects due to tension
			: ⊠ Refer internal forces to deformed system for:
			⊠ Normal forces N
			⊠ Shear forces V_y and V_z
			⊠ Moments M_y, M_z and M_T

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO12	1.5*LC1 + 1.5*LC4	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO13	1.5*LC1 + 1.5*LC5	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO14	1.5*LC1 + 1.5*LC6	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO15	1.5*LC1 + 1.5*LC7	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO16	1.5*LC1 + 1.5*LC8	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO17	1.5*LC1 + 1.5*LC9	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO18	1.5*LC1 + 1.5*LC10	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO19	LC1	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO20	LC1 + LC2	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO21	LC1 + 0.8*LC2 + 0.8*LC3	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO22	LC1 + 0.8*LC2 + 0.8*LC4	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO23	LC1 + 0.8*LC2 + 0.8*LC5	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO24	LC1 + 0.8*LC2 + 0.8*LC6	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO25	LC1 + 0.8*LC2 + 0.8*LC7	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO26	LC1 + 0.8*LC2 + 0.8*LC8	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO27	LC1 + 0.8*LC2 + 0.8*LC9	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO28	LC1 + 0.8*LC2 + 0.8*LC10	Method of analysis	: ⦿	Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿	Newton-Raphson

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO29	LC1 + LC3	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO30	LC1 + LC4	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO31	LC1 + LC5	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO32	LC1 + LC6	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO33	LC1 + LC7	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO34	LC1 + LC8	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO35	LC1 + LC9	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO36	LC1 + LC10	Method of analysis	: ⦿ Large deformation analysis
		Method for solving system of nonlinear algebraic equations	: ⦿ Newton-Raphson
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.7 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Limit State of Strength -	CO1/p or to CO18
RC2	Limit State of Serviceability -	CO19/p or to CO36

LC1
Dead Load

3.2 MEMBER LOADS — LC1: Dead Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	19-25,27,28	Force	Uniform	ZL	True Length	p	-0.150	kN/m
2	Members	26	Force	Uniform	ZL	True Length	p	-0.150	kN/m

3.2/1 MEMBER LOADS - LOAD ECCENTRICITY — LC1: Dead Load

No.	Reference to	On Members No.	Absolute Offset Mbr. Start e_Y [mm]	Absolute Offset Mbr. Start e_Z [mm]	Absolute Offset Mbr. End e_Y [mm]	Absolute Offset Mbr. End e_Z [mm]	Relative Offset Mbr. Start y-Axis	Relative Offset Mbr. Start z-Axis	Relative Offset Mbr. End y-Axis	Relative Offset Mbr. End z-Axis
1	Members	19-25,27,28	0.0	0.0	0.0	0.0	Middle	Middle	Middle	Middle
2	Members	26	0.0	0.0	0.0	0.0	Middle	Middle	Middle	Middle

LC2
Live Load

3.2 MEMBER LOADS — LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	19-28	Force	Uniform	ZL	True Length	p	-0.250	kN/m

3.2/1 MEMBER LOADS - LOAD ECCENTRICITY — LC2: Live Load

No.	Reference to	On Members No.	Absolute Offset Mbr. Start e_Y [mm]	Absolute Offset Mbr. Start e_Z [mm]	Absolute Offset Mbr. End e_Y [mm]	Absolute Offset Mbr. End e_Z [mm]	Relative Offset Mbr. Start y-Axis	Relative Offset Mbr. Start z-Axis	Relative Offset Mbr. End y-Axis	Relative Offset Mbr. End z-Axis
1	Members	19-28	0.0	0.0	0.0	0.0	Middle	Middle	Middle	Middle

3.4 SURFACE LOADS — LC2: Live Load

No.	On Surfaces No.	Load Type	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit
1	1-4	Force	Uniform	ZL	p	-0.75	kN/m^2

LC3
Wind load in +ve X-dir, Cpi +0.7, zone D +ve

3.10 FREE POLYGON LOADS — LC3

No.	On Surfaces No.	Project.	Load Distribution	Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	1.18	kN/m^2	-1.250	2.165	0.000
					p	1.18	kN/m^2	0.000	0.000	0.000
					p	1.18	kN/m^2	-2.310	0.957	0.000
2	1-4	XY	Uniform	z	p	1.18	kN/m^2	-2.310	-0.957	3.600
					p	1.18	kN/m^2	0.000	0.000	3.600
					p	1.18	kN/m^2	-1.250	-2.165	3.600
3	1-4	XY	Uniform	z	p	1.80	kN/m^2	1.250	2.165	0.000
					p	1.80	kN/m^2	0.000	0.000	0.000
					p	1.80	kN/m^2	1.250	-2.165	0.000
					p	1.80	kN/m^2	1.873	-1.290	0.000
					p	1.80	kN/m^2	2.263	-0.698	0.000
					p	1.80	kN/m^2	2.400	0.000	0.000
					p	1.80	kN/m^2	2.263	0.698	0.000
					p	1.80	kN/m^2	1.873	1.290	0.000
4	1-4	XY	Uniform	z	p	2.35	kN/m^2	-1.250	2.165	0.000
					p	2.35	kN/m^2	0.000	0.000	0.000
					p	2.35	kN/m^2	1.250	2.165	0.000
5	1-4	XY	Uniform	z	p	2.35	kN/m^2	-1.250	-2.165	0.000
					p	2.35	kN/m^2	0.000	0.000	0.000
					p	2.35	kN/m^2	1.250	-2.165	0.000
6	1-4	XY	Uniform	z	p	0.42	kN/m^2	-2.310	0.957	0.000
					p	0.42	kN/m^2	0.000	0.000	0.000
					p	0.42	kN/m^2	-2.310	-0.957	0.000

LC4
Wind load in +ve X-dir, Cpi +0.7, zone D -ve

3.10 FREE POLYGON LOADS LC4

No.	On Surfaces No.	Project.	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	1.18	kN/m²	-1.250	2.165	0.000
					p	1.18	kN/m²	0.000	0.000	0.000
					p	1.18	kN/m²	-2.310	0.957	0.000
2	1-4	XY	Uniform	z	p	1.18	kN/m²	-2.310	-0.957	0.000
					p	1.18	kN/m²	0.000	0.000	0.000
					p	1.18	kN/m²	-1.250	-2.165	0.000
3	1-4	XY	Uniform	z	p	1.80	kN/m²	1.250	2.165	0.000
					p	1.80	kN/m²	0.000	0.000	0.000
					p	1.80	kN/m²	1.250	-2.165	0.000
					p	1.80	kN/m²	1.873	-1.290	0.000
					p	1.80	kN/m²	2.263	-0.698	0.000
					p	1.80	kN/m²	2.400	0.000	0.000
					p	1.80	kN/m²	2.263	0.698	0.000
					p	1.80	kN/m²	1.873	1.290	0.000
4	1-4	XY	Uniform	z	p	2.35	kN/m²	-1.250	-2.165	0.000
					p	2.35	kN/m²	0.000	0.000	0.000
					p	2.35	kN/m²	1.250	-2.165	0.000
5	1-4	XY	Uniform	z	p	2.35	kN/m²	-1.250	2.165	0.000
					p	2.35	kN/m²	0.000	0.000	0.000
					p	2.35	kN/m²	1.250	2.165	0.000
6	1-4	XY	Uniform	z	p	1.25	kN/m²	-2.310	0.957	0.000
					p	1.25	kN/m²	0.000	0.000	0.000
					p	1.25	kN/m²	-2.310	-0.957	0.000

LC5
Wind load in +ve X-dir, Cpi -0.7, zone D +ve

3.10 FREE POLYGON LOADS LC5

No.	On Surfaces No.	Project.	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	-0.76	kN/m²	-2.310	0.957	0.000
					p	-0.76	kN/m²	0.000	0.000	0.000
					p	-0.76	kN/m²	-1.250	2.165	0.000
2	1-4	XY	Uniform	z	p	-0.76	kN/m²	-2.310	-0.957	0.000
					p	-0.76	kN/m²	0.000	0.000	0.000
					p	-0.76	kN/m²	-1.250	-2.165	0.000
3	1-4	XY	Uniform	z	p	-0.14	kN/m²	1.250	2.165	0.000
					p	-0.14	kN/m²	0.000	0.000	0.000
					p	-0.14	kN/m²	1.289	-1.686	0.000
					p	-0.14	kN/m²	1.873	-1.290	0.000
					p	-0.14	kN/m²	2.263	-0.698	0.000
					p	-0.14	kN/m²	2.400	0.000	0.000
					p	-0.14	kN/m²	2.263	0.698	0.000
					p	-0.14	kN/m²	1.873	1.290	0.000
4	1-4	XY	Uniform	z	p	0.42	kN/m²	-1.250	2.165	0.000
					p	0.42	kN/m²	0.000	0.000	0.000
					p	0.42	kN/m²	1.250	2.165	0.000
5	1-4	XY	Uniform	z	p	0.42	kN/m²	-1.250	-2.165	0.000
					p	0.42	kN/m²	0.000	0.000	0.000
					p	0.42	kN/m²	1.250	-2.165	0.000
6	1-4	XY	Uniform	z	p	-1.52	kN/m²	-2.310	0.957	0.000
					p	-1.52	kN/m²	0.000	0.000	0.000
					p	-1.52	kN/m²	-2.310	-0.957	0.000

LC6
Wind load in +ve X-dir, Cpi -0,7, zone D -ve

3.10 FREE POLYGON LOADS LC6

No.	On Surfaces No.	Project.	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	-0.76	kN/m²	-1.250	2.165	0.000
					p	-0.76	kN/m²	0.000	0.000	0.000
					p	-0.76	kN/m²	-2.310	0.957	0.000
2	1-4	XY	Uniform	z	p	-0.76	kN/m²	-2.310	-0.957	0.000
					p	-0.76	kN/m²	0.000	0.000	0.000
					p	-0.76	kN/m²	-1.250	-2.165	0.000
3	1-4	XY	Uniform	z	p	-0.14	kN/m²	1.250	2.165	0.000
					p	-0.14	kN/m²	0.000	0.000	0.000
					p	-0.14	kN/m²	1.250	-2.165	0.000
					p	-0.14	kN/m²	1.873	-1.290	0.000
					p	-0.14	kN/m²	2.263	-0.698	0.000
					p	-0.14	kN/m²	2.400	0.000	0.000
					p	-0.14	kN/m²	2.263	0.698	0.000
					p	-0.14	kN/m²	1.873	1.290	0.000
4	1-4	XY	Uniform	z	p	0.42	kN/m²	-1.250	2.165	0.000
					p	0.42	kN/m²	0.000	0.000	0.000
					p	0.42	kN/m²	1.250	2.165	0.000
5	1-4	XY	Uniform	z	p	0.42	kN/m²	-1.250	-2.165	0.000
					p	0.42	kN/m²	0.000	0.000	0.000
					p	0.42	kN/m²	1.250	-2.165	0.000
6	1-4	XY	Uniform	z	p	-0.69	kN/m²	-2.310	0.957	0.000
					p	-0.69	kN/m²	0.000	0.000	0.000
					p	-0.69	kN/m²	-2.310	-0.957	0.000

LC7
Wind load in +ve Y-dir, Cpi +0.7, zone D +ve

3.10 FREE POLYGON LOADS LC7

No.	On Surfaces No.	Project.	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	1.18	kN/m^2	-2.165	-1.250	0.000
					p	1.18	kN/m^2	0.000	0.000	0.000
					p	1.18	kN/m^2	-0.957	-2.310	0.000
2	1-4	XY	Uniform	z	p	1.18	kN/m^2	0.957	-2.310	0.000
					p	1.18	kN/m^2	0.000	0.000	0.000
					p	1.18	kN/m^2	2.165	-1.250	0.000
3	1-4	XY	Uniform	z	p	1.80	kN/m^2	-2.165	1.250	0.000
					p	1.80	kN/m^2	0.000	0.000	0.000
					p	1.80	kN/m^2	2.165	1.250	0.000
					p	1.80	kN/m^2	1.289	1.686	0.000
					p	1.80	kN/m^2	0.600	1.825	0.000
					p	1.80	kN/m^2	-0.089	1.686	0.000
4	1-4	XY	Uniform	z	p	2.35	kN/m^2	-2.165	-1.250	0.000
					p	2.35	kN/m^2	0.000	0.000	0.000
					p	2.35	kN/m^2	-2.165	1.250	0.000
5	1-4	XY	Uniform	z	p	2.35	kN/m^2	0.000	0.000	0.000
					p	2.35	kN/m^2	2.165	-1.250	0.000
					p	2.35	kN/m^2	2.263	-0.698	0.000
					p	2.35	kN/m^2	2.400	0.000	0.000
					p	2.35	kN/m^2	2.263	0.698	0.000
					p	2.35	kN/m^2	2.165	1.250	0.000
6	1-4	XY	Uniform	z	p	0.42	kN/m^2	-0.957	-2.310	0.000
					p	0.42	kN/m^2	0.000	0.000	0.000
					p	0.42	kN/m^2	0.957	-2.310	0.000

LC8
Wind load in +ve Y-dir, Cpi +0.7, zone D -ve

3.10 FREE POLYGON LOADS LC8

No.	On Surfaces No.	Project.	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	1.18	kN/m^2	-0.957	-2.310	0.000
					p	1.18	kN/m^2	0.000	0.000	0.000
					p	1.18	kN/m^2	-2.165	-1.250	0.000
2	1-4	XY	Uniform	z	p	1.18	kN/m^2	0.957	-2.310	0.000
					p	1.18	kN/m^2	0.000	0.000	0.000
					p	1.18	kN/m^2	2.165	-1.250	0.000
3	1-4	XY	Uniform	z	p	1.80	kN/m^2	-2.165	1.250	0.000
					p	1.80	kN/m^2	0.000	0.000	0.000
					p	1.80	kN/m^2	2.165	1.250	0.000
					p	1.80	kN/m^2	1.289	1.686	0.000
					p	1.80	kN/m^2	0.600	1.825	0.000
					p	1.80	kN/m^2	-0.089	1.686	0.000
4	1-4	XY	Uniform	z	p	2.35	kN/m^2	-2.165	-1.250	0.000
					p	2.35	kN/m^2	0.000	0.000	0.000
					p	2.35	kN/m^2	-2.165	1.250	0.000
5	1-4	XY	Uniform	z	p	2.35	kN/m^2	2.165	-1.250	0.000
					p	2.35	kN/m^2	0.000	0.000	0.000
					p	2.35	kN/m^2	2.165	1.250	0.000
					p	2.35	kN/m^2	2.400	0.000	0.000
6	1-4	XY	Uniform	z	p	1.25	kN/m^2	-0.957	-2.310	0.000
					p	1.25	kN/m^2	0.000	0.000	0.000
					p	1.25	kN/m^2	0.957	-2.310	0.000

LC9
Wind load in +ve Y-dir, Cpi -0.7, zone D +ve

3.10 FREE POLYGON LOADS LC9

No.	On Surfaces No.	Project.	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	-0.76	kN/m^2	-0.957	-2.310	0.000
					p	-0.76	kN/m^2	0.000	0.000	0.000
					p	-0.76	kN/m^2	-2.165	-1.250	0.000
2	1-4	XY	Uniform	z	p	-0.76	kN/m^2	0.957	-2.310	0.000
					p	-0.76	kN/m^2	0.000	0.000	0.000
					p	-0.76	kN/m^2	2.165	-1.250	0.000
3	1-4	XY	Uniform	z	p	-0.14	kN/m^2	-2.165	1.250	0.000
					p	-0.14	kN/m^2	0.000	0.000	0.000
					p	-0.14	kN/m^2	2.165	1.250	0.000
					p	-0.14	kN/m^2	1.289	1.686	0.000
					p	-0.14	kN/m^2	0.600	1.825	0.000
					p	-0.14	kN/m^2	-0.089	1.686	0.000
					p	-0.14	kN/m^2	-0.673	1.290	0.000
4	1-4	XY	Uniform	z	p	0.42	kN/m^2	-2.165	-1.250	0.000
					p	0.42	kN/m^2	-0.150	0.000	0.000
					p	0.42	kN/m^2	-2.165	1.250	0.000
5	1-4	XY	Uniform	z	p	0.42	kN/m^2	0.000	0.000	0.000
					p	0.42	kN/m^2	2.165	-1.250	0.000
					p	0.42	kN/m^2	2.400	0.000	0.000
					p	0.42	kN/m^2	2.165	1.250	0.000
6	1-4	XY	Uniform	z	p	-1.52	kN/m^2	-0.957	-2.310	0.000
					p	-1.52	kN/m^2	0.000	0.000	0.000
					p	-1.52	kN/m^2	0.957	-2.310	0.000

LC10
Wind load in +ve Y-dir,
Cpi -0.7, zone D -ve

3.10 FREE POLYGON LOADS

LC10

No.	On Surfaces No.	Project.	Load Distribution	Load Direction	Load Parameters Symbol	Value	Unit	Load Position X [m]	Y [m]	Z [m]
1	1-4	XY	Uniform	z	p	-0.76	kN/m²	-0.957	-2.310	0.000
					p	-0.76	kN/m²	0.000	0.000	0.000
					p	-0.76	kN/m²	-2.165	-1.250	0.000
2	1-4	XY	Uniform	z	p	-0.76	kN/m²	0.957	-2.310	0.000
					p	-0.76	kN/m²	0.000	0.000	0.000
					p	-0.76	kN/m²	2.165	-1.250	0.000
3	1-4	XY	Uniform	z	p	-0.14	kN/m²	-2.165	1.250	0.000
					p	-0.14	kN/m²	0.000	0.000	0.000
					p	-0.14	kN/m²	2.165	1.250	0.000
					p	-0.14	kN/m²	1.289	1.686	0.000
					p	-0.14	kN/m²	0.600	1.825	0.000
					p	-0.14	kN/m²	-0.089	1.686	0.000
					p	-0.14	kN/m²	-0.673	1.290	0.000
4	1-4	XY	Uniform	z	p	0.42	kN/m²	-2.165	-1.250	0.000
					p	0.42	kN/m²	0.000	0.000	0.000
					p	0.42	kN/m²	-2.165	1.250	0.000
5	1-4	XY	Uniform	z	p	0.42	kN/m²	0.000	0.000	0.000
					p	0.42	kN/m²	2.165	-1.250	0.000
					p	0.42	kN/m²	2.400	0.000	0.000
					p	0.42	kN/m²	2.165	1.250	0.000
6	1-4	XY	Uniform	z	p	-0.69	kN/m²	-0.957	-2.310	0.000
					p	-0.69	kN/m²	0.000	0.000	0.000
					p	-0.69	kN/m²	0.957	-2.310	0.000

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
Load Case LC10 - Wind load in +ve Y-dir, Cpi -0.7, zone D -ve				
	Sum of loads in X	0.09	kN	
	Sum of support reactions in X	0.09	kN	Deviation 0.00%
	Sum of loads in Y	-0.51	kN	
	Sum of support reactions in Y	-0.51	kN	Deviation 0.00%
	Sum of loads in Z	-1.34	kN	
	Sum of support reactions in Z	-1.34	kN	Deviation 0.00%
	Resultant of reactions about X	2.069	kNm	At center of gravity of model (X:0.334, Y:0.000, Z:2.244 m)
	Resultant of reactions about Y	-0.977	kNm	At center of gravity of model
	Resultant of reactions about Z	0.357	kNm	At center of gravity of model
	Max. displacement in X	-16.7	mm	FE Mesh Node No. 710 (X: 1.475, Y: 0.117, Z: 2.722 m)
	Max. displacement in Y	-15.1	mm	FE Mesh Node No. 421 (X: 0.716, Y: -1.332, Z: 2.637 m)
	Max. displacement in Z	-61.4	mm	FE Mesh Node No. 478 (X: 0.850, Y: -1.295, Z: 2.660 m)
	Max. vector displacement	64.0	mm	FE Mesh Node No. 478 (X: 0.850, Y: -1.295, Z: 2.660 m)
	Max. rotation about X	14.5	mrad	FE Mesh Node No. 292 (X: 0.102, Y: -1.754, Z: 2.613 m)
	Max. rotation about Y	4.5	mrad	FE Mesh Node No. 1261 (X: 1.026, Y: -0.707, Z: 2.768 m)
	Max. rotation about Z	4.5	mrad	FE Mesh Node No. 290 (X: 2.177, Y: -0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.875E+32493		
	Infinity Norm	1.978E+10		
Load Case RF-FORM-FINDING				
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	0.00	kN	
	Resultant of reactions about X	0.000	kNm	At center of gravity of model (X:0.334, Y:0.000, Z:2.244 m)
	Resultant of reactions about Y	0.000	kNm	At center of gravity of model
	Resultant of reactions about Z	0.000	kNm	At center of gravity of model
	Max. displacement in X	-58.9	mm	FE Mesh Node No. 316 (X: 0.870, Y: -0.000, Z: 2.478 m)
	Max. displacement in Y	-49.6	mm	FE Mesh Node No. 1052 (X: 0.150, Y: 0.726, Z: 2.349 m)
	Max. displacement in Z	264.8	mm	FE Mesh Node No. 317 (X: 0.784, Y: -0.000, Z: 2.434 m)
	Max. vector displacement	271.2	mm	FE Mesh Node No. 317 (X: 0.784, Y: -0.000, Z: 2.434 m)
	Max. rotation about X	2.3	mrad	FE Mesh Node No. 50 (X: -0.442, Y: -0.848, Z: 2.525 m)
	Max. rotation about Y	3.6	mrad	FE Mesh Node No. 1272 (X: 1.319, Y: 0.908, Z: 2.815 m)
	Max. rotation about Z	0.4	mrad	FE Mesh Node No. 50 (X: -0.442, Y: -0.848, Z: 2.525 m)
	Method of analysis	3rd Order		Newton-Raphson
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	13		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	5.895E+32223		
	Infinity Norm	1.972E+10		
Load Combination CO1 - 1.5*LC1				
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-4.70	kN	
	Sum of support reactions in Z	-4.70	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-0.1	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	8.0	mm	FE Mesh Node No. 6 (X: 2.401, Y: -0.000, Z: 2.992 m)
	Max. displacement in Y	-3.3	mm	FE Mesh Node No. 330 (X: 0.126, Y: -0.174, Z: 1.931 m)
	Max. displacement in Z	-31.0	mm	FE Mesh Node No. 6 (X: 2.401, Y: -0.000, Z: 2.992 m)
	Max. vector displacement	32.0	mm	FE Mesh Node No. 6 (X: 2.401, Y: -0.000, Z: 2.992 m)
	Max. rotation about X	4.7	mrad	FE Mesh Node No. 1260 (X: 0.879, Y: -0.606, Z: 2.744 m)
	Max. rotation about Y	13.7	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	0.7	mrad	FE Mesh Node No. 1261 (X: 1.026, Y: -0.707, Z: 2.768 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	9		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	6.578E+31850		
	Infinity Norm	1.975E+10		
Load Combination CO2 - 1.5*LC1 + 1.5*LC2				
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-20.47	kN	
	Sum of support reactions in Z	-20.47	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	3.5	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-67.6	mm	FE Mesh Node No. 323 (X: 0.294, Y: -0.000, Z: 2.054 m)
	Max. displacement in Y	49.8	mm	FE Mesh Node No. 88 (X: 0.024, Y: -0.242, Z: 1.969 m)
	Max. displacement in Z	-268.5	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. vector displacement	273.9	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. rotation about X	41.1	mrad	FE Mesh Node No. 1261 (X: 1.026, Y: -0.707, Z: 2.768 m)
	Max. rotation about Y	110.7	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	7.2	mrad	FE Mesh Node No. 280 (X: 1.472, Y: -1.597, Z: 2.839 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	15		
	Maximum value of element of stiffness matrix on diagonal	9.861E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.238E+3301 4		
	Infinity Norm	1.991E+10		
Load Combination CO3 - 1.2*LC1 + 1.2*LC2 + 1.2*LC3				
	Sum of loads in X	-5.14	kN	
	Sum of support reactions in X	-5.14	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	5.78	kN	
	Sum of support reactions in Z	5.78	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-6.6	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-60.5	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. displacement in Y	7.7	mm	FE Mesh Node No. 99 (X: 0.264, Y: -1.154, Z: 2.510 m)
	Max. displacement in Z	125.3	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	139.0	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	-3.7	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Y	-32.9	mrad	Member No. 25, x: 0.214 m
	Max. rotation about Z	-1.7	mrad	FE Mesh Node No. 643 (X: 2.177, Y: 0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	4		
	Maximum value of element of stiffness matrix on diagonal	9.860E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	3.733E+3287 7		
	Infinity Norm	2.0E+10		
Load Combination CO4 - 1.2*LC1 + 1.2*LC2 + 1.2*LC4				
	Sum of loads in X	-4.91	kN	
	Sum of support reactions in X	-4.91	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	6.36	kN	
	Sum of support reactions in Z	6.36	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-5.9	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-58.6	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. displacement in Y	7.7	mm	FE Mesh Node No. 99 (X: 0.264, Y: -1.154, Z: 2.510 m)
	Max. displacement in Z	123.3	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	136.4	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. rotation about X	-3.7	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Y	-31.7	mrad	FE Mesh Node No. 1270 (X: 1.602, Y: -1.103, Z: 2.861 m)
	Max. rotation about Z	-1.7	mrad	FE Mesh Node No. 643 (X: 2.177, Y: 0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	4		
	Maximum value of element of stiffness matrix on diagonal	9.860E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	4.410E+3288 4		
	Infinity Norm	1.999E+10		
Load Combination CO5 - 1.2*LC1 + 1.2*LC2 + 1.2*LC5				
	Sum of loads in X	-0.60	kN	
	Sum of support reactions in X	-0.60	kN	Deviation 0.00%
	Sum of loads in Y	0.01	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	0.01	kN	Deviation 0.00%
	Sum of loads in Z	-17.69	kN	
	Sum of support reactions in Z	-17.69	kN	Deviation 0.00%
	Resultant of reactions about X	-0.1	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	1.8	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-64.2	mm	FE Mesh Node No. 323 (X: 0.294, Y: -0.000, Z: 2.054 m)
	Max. displacement in Y	49.0	mm	FE Mesh Node No. 88 (X: 0.024, Y: -0.242, Z: 1.969 m)
	Max. displacement in Z	-230.9	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	235.9	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	-34.0	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Max. rotation about Y	90.4	mrad	FE Mesh Node No. 1272 (X: 1.319, Y: 0.908, Z: 2.815 m)
	Max. rotation about Z	-5.3	mrad	FE Mesh Node No. 654 (X: 1.382, Y: 1.644, Z: 2.824 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	12		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	2.378E+3296 2		
	Infinity Norm	1.985E+10		
Load Combination CO6 - 1.2*LC1 + 1.2*LC2 + 1.2*LC6				
	Sum of loads in X	-0.33	kN	
	Sum of support reactions in X	-0.33	kN	Deviation 0.00%
	Sum of loads in Y	-0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	-17.18	kN	
	Sum of support reactions in Z	-17.18	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	2.5	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-63.0	mm	FE Mesh Node No. 323 (X: 0.294, Y: -0.000, Z: 2.054 m)
	Max. displacement in Y	42.1	mm	FE Mesh Node No. 397 (X: 0.129, Y: -0.257, Z: 2.033 m)
	Max. displacement in Z	-234.1	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	239.4	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	33.8	mrad	FE Mesh Node No. 1261 (X: 1.026, Y: -0.707, Z: 2.768 m)
	Max. rotation about Y	92.2	mrad	FE Mesh Node No. 1272 (X: 1.319, Y: 0.908, Z: 2.815 m)
	Max. rotation about Z	5.2	mrad	Member No. 10, x: 0.819 m
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	15		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	2.486E+3295 3		
	Infinity Norm	1.987E+10		
Load Combination CO7 - 1.2*LC1 + 1.2*LC2 + 1.2*LC7				
	Sum of loads in X	-4.40	kN	
	Sum of support reactions in X	-4.40	kN	Deviation 0.00%
	Sum of loads in Y	-1.21	kN	
	Sum of support reactions in Y	-1.21	kN	Deviation 0.00%
	Sum of loads in Z	4.39	kN	
	Sum of support reactions in Z	4.39	kN	Deviation 0.00%
	Resultant of reactions about X	3.7	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-7.3	kNm	At center of gravity of model
	Resultant of reactions about Z	0.7	kNm	At center of gravity of model
	Max. displacement in X	-69.8	mm	FE Mesh Node No. 712 (X: 1.665, Y: 0.133, Z: 2.784 m)
	Max. displacement in Y	-17.9	mm	FE Mesh Node No. 101 (X: 0.338, Y: -1.482, Z: 2.595 m)
	Max. displacement in Z	153.7	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. vector displacement	169.3	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. rotation about X	18.1	mrad	FE Mesh Node No. 278 (X: -0.180, Y: -1.644, Z: 2.566 m)
	Max. rotation about Y	-42.6	mrad	Member No. 23, x: 0.286 m
	Max. rotation about Z	7.9	mrad	FE Mesh Node No. 289 (X: 2.125, Y: -0.971, Z: 2.947 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.860E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	7.295E+3286 9		
	Infinity Norm	2.9E+10		
Load Combination CO8 - 1.2*LC1 + 1.2*LC2 + 1.2*LC8				
	Sum of loads in X	-4.57	kN	
	Sum of support reactions in X	-4.57	kN	Deviation 0.00%
	Sum of loads in Y	-0.74	kN	
	Sum of support reactions in Y	-0.74	kN	Deviation 0.00%

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of loads in Z	5.57	kN	
	Sum of support reactions in Z	5.57	kN	Deviation 0.00%
	Resultant of reactions about X	2.3	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-7.0	kNm	At center of gravity of model
	Resultant of reactions about Z	0.5	kNm	At center of gravity of model
	Max. displacement in X	-70.1	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. displacement in Y	-11.4	mm	FE Mesh Node No. 277 (X: 1.195, Y: -1.723, Z: 2.793 m)
	Max. displacement in Z	154.0	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. vector displacement	169.3	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. rotation about X	11.6	mrad	FE Mesh Node No. 278 (X: -0.180, Y: -1.644, Z: 2.566 m)
	Max. rotation about Y	-43.0	mrad	FE Mesh Node No. 49 (X: 2.264, Y: 0.698, Z: 2.970 m)
	Max. rotation about Z	7.1	mrad	Member No. 16, x: 0.409 m
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.860E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	9.672E+32874		
	Infinity Norm	2.6E+10		
Load Combination CO9 - 1.2*LC1 + 1.2*LC2 + 1.2*LC9				
	Sum of loads in X	-0.08	kN	
	Sum of support reactions in X	-0.08	kN	Deviation 0.00%
	Sum of loads in Y	-0.99	kN	
	Sum of support reactions in Y	-0.99	kN	Deviation 0.00%
	Sum of loads in Z	-19.22	kN	
	Sum of support reactions in Z	-19.22	kN	Deviation 0.00%
	Resultant of reactions about X	4.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	1.1	kNm	At center of gravity of model
	Resultant of reactions about Z	0.3	kNm	At center of gravity of model
	Max. displacement in X	-66.9	mm	FE Mesh Node No. 400 (X: 0.286, Y: -0.116, Z: 2.070 m)
	Max. displacement in Y	-47.9	mm	FE Mesh Node No. 1045 (X: 0.024, Y: 0.242, Z: 1.969 m)
	Max. displacement in Z	-228.5	mm	FE Mesh Node No. 571 (X: 1.410, Y: -1.070, Z: 2.770 m)
	Max. vector displacement	232.6	mm	FE Mesh Node No. 571 (X: 1.410, Y: -1.070, Z: 2.770 m)
	Max. rotation about X	58.1	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	95.2	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	9.8	mrad	FE Mesh Node No. 280 (X: 1.472, Y: -1.597, Z: 2.839 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	13		
	Maximum value of element of stiffness matrix on diagonal	9.861E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	8.768E+33021		
	Infinity Norm	1.996E+10		
Load Combination CO10 - 1.2*LC1 + 1.2*LC2 + 1.2*LC10				
	Sum of loads in X	-0.05	kN	
	Sum of support reactions in X	-0.05	kN	Deviation -0.00%
	Sum of loads in Y	-0.63	kN	
	Sum of support reactions in Y	-0.63	kN	Deviation 0.00%
	Sum of loads in Z	-17.99	kN	
	Sum of support reactions in Z	-17.99	kN	Deviation 0.00%
	Resultant of reactions about X	2.6	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	1.5	kNm	At center of gravity of model
	Resultant of reactions about Z	0.2	kNm	At center of gravity of model
	Max. displacement in X	-62.5	mm	FE Mesh Node No. 400 (X: 0.286, Y: -0.116, Z: 2.070 m)
	Max. displacement in Y	-48.0	mm	FE Mesh Node No. 1045 (X: 0.024, Y: 0.242, Z: 1.969 m)
	Max. displacement in Z	-215.2	mm	FE Mesh Node No. 572 (X: 1.516, Y: -0.963, Z: 2.787 m)
	Max. vector displacement	219.3	mm	FE Mesh Node No. 572 (X: 1.516, Y: -0.963, Z: 2.787 m)
	Max. rotation about X	49.0	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	90.8	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	8.2	mrad	FE Mesh Node No. 280 (X: 1.472, Y: -1.597, Z: 2.839 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	13		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	7.378E+32987		
	Infinity Norm	1.992E+10		
Load Combination CO11 - 1.5*LC1 + 1.5*LC3				
	Sum of loads in X	-7.72	kN	
	Sum of support reactions in X	-7.72	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	22.68	kN	

4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Z	22.68	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-10.6	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-116.6	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	8.9	mm	FE Mesh Node No. 99 (X: 0.264, Y: -1.154, Z: 2.510 m)
	Max. displacement in Z	239.5	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. vector displacement	266.3	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. rotation about X	-17.8	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	-92.8	mrad	Member No. 25, x: 0.071 m
	Max. rotation about Z	-5.1	mrad	FE Mesh Node No. 1260 (X: 0.879, Y: -0.606, Z: 2.744 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.853E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	4.480E+33145		
	Infinity Norm	2.024E+10		
Load Combination CO12 - 1.5*LC1 + 1.5*LC4				
	Sum of loads in X	-7.47	kN	
	Sum of support reactions in X	-7.47	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	23.40	kN	
	Sum of support reactions in Z	23.40	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-9.9	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-114.3	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	8.9	mm	FE Mesh Node No. 99 (X: 0.264, Y: -1.154, Z: 2.510 m)
	Max. displacement in Z	237.3	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. vector displacement	263.3	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. rotation about X	-17.8	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	-91.7	mrad	Member No. 25, x: 0.071 m
	Max. rotation about Z	-5.1	mrad	FE Mesh Node No. 1260 (X: 0.879, Y: -0.606, Z: 2.744 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.854E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	2.133E+33164		
	Infinity Norm	2.022E+10		
Load Combination CO13 - 1.5*LC1 + 1.5*LC5				
	Sum of loads in X	-0.72	kN	
	Sum of support reactions in X	-0.72	kN	Deviation 0.00%
	Sum of loads in Y	0.01	kN	
	Sum of support reactions in Y	0.01	kN	Deviation 0.00%
	Sum of loads in Z	-6.37	kN	
	Sum of support reactions in Z	-6.37	kN	Deviation 0.00%
	Resultant of reactions about X	-0.1	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-1.2	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-17.4	mm	FE Mesh Node No. 698 (X: 0.307, Y: 0.019, Z: 2.071 m)
	Max. displacement in Y	9.0	mm	FE Mesh Node No. 187 (X: 0.007, Y: -0.997, Z: 2.430 m)
	Max. displacement in Z	-66.5	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. vector displacement	68.6	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. rotation about X	-7.5	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Max. rotation about Y	18.0	mrad	FE Mesh Node No. 1272 (X: 1.319, Y: 0.908, Z: 2.815 m)
	Max. rotation about Z	-2.2	mrad	FE Mesh Node No. 1275 (X: 0.879, Y: 0.606, Z: 2.744 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	9		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.214E+32398		
	Infinity Norm	1.973E+10		
Load Combination CO14 - 1.5*LC1 + 1.5*LC6				
	Sum of loads in X	-0.42	kN	
	Sum of support reactions in X	-0.42	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-5.74	kN	
	Sum of support reactions in Z	-5.74	kN	Deviation 0.00%

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-0.4	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	18.9	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. displacement in Y	-8.4	mm	FE Mesh Node No. 1104 (X: 0.134, Y: 1.135, Z: 2.486 m)
	Max. displacement in Z	-70.1	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	72.6	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	7.2	mrad	Member No. 22, x: 1.257 m
	Max. rotation about Y	20.3	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	-2.1	mrad	FE Mesh Node No. 1275 (X: 0.879, Y: 0.606, Z: 2.744 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	8		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	9.702E+3236 5		
	Infinity Norm	1.974E+10		
Load Combination CO15 - 1.5*LC1 + 1.5*LC7				
	Sum of loads in X	-6.78	kN	
	Sum of support reactions in X	-6.78	kN	Deviation 0.00%
	Sum of loads in Y	-1.59	kN	
	Sum of support reactions in Y	-1.59	kN	Deviation 0.00%
	Sum of loads in Z	20.95	kN	
	Sum of support reactions in Z	20.95	kN	Deviation 0.00%
	Resultant of reactions about X	4.4	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-11.6	kNm	At center of gravity of model
	Resultant of reactions about Z	1.1	kNm	At center of gravity of model
	Max. displacement in X	-126.8	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	-21.1	mm	FE Mesh Node No. 276 (X: 1.099, Y: -1.754, Z: 2.777 m)
	Max. displacement in Z	265.4	mm	FE Mesh Node No. 716 (X: 1.983, Y: 0.132, Z: 2.879 m)
	Max. vector displacement	294.3	mm	FE Mesh Node No. 714 (X: 1.865, Y: 0.141, Z: 2.845 m)
	Max. rotation about X	31.7	mrad	FE Mesh Node No. 1273 (X: 1.172, Y: 0.807, Z: 2.792 m)
	Max. rotation about Y	-106.1	mrad	Member No. 23, x: 0.357 m
	Max. rotation about Z	9.6	mrad	FE Mesh Node No. 289 (X: 2.125, Y: -0.971, Z: 2.947 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	6		
	Maximum value of element of stiffness matrix on diagonal	9.853E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.700E+3314 4		
	Infinity Norm	2.035E+10		
Load Combination CO16 - 1.5*LC1 + 1.5*LC8				
	Sum of loads in X	-7.05	kN	
	Sum of support reactions in X	-7.05	kN	Deviation 0.00%
	Sum of loads in Y	-1.00	kN	
	Sum of support reactions in Y	-1.00	kN	Deviation 0.00%
	Sum of loads in Z	22.41	kN	
	Sum of support reactions in Z	22.41	kN	Deviation 0.00%
	Resultant of reactions about X	2.8	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-11.2	kNm	At center of gravity of model
	Resultant of reactions about Z	0.7	kNm	At center of gravity of model
	Max. displacement in X	-127.6	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	-14.7	mm	FE Mesh Node No. 1179 (X: -0.107, Y: 1.156, Z: 2.466 m)
	Max. displacement in Z	266.0	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. vector displacement	295.1	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. rotation about X	26.9	mrad	FE Mesh Node No. 1273 (X: 1.172, Y: 0.807, Z: 2.792 m)
	Max. rotation about Y	-106.3	mrad	Member No. 23, x: 0.357 m
	Max. rotation about Z	8.5	mrad	FE Mesh Node No. 290 (X: 2.177, Y: -0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	6		
	Maximum value of element of stiffness matrix on diagonal	9.853E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	5.674E+3316 3		
	Infinity Norm	2.031E+10		
Load Combination CO17 - 1.5*LC1 + 1.5*LC9				
	Sum of loads in X	0.18	kN	
	Sum of support reactions in X	0.18	kN	Deviation 0.00%
	Sum of loads in Y	-1.16	kN	
	Sum of support reactions in Y	-1.16	kN	Deviation 0.00%
	Sum of loads in Z	-8.26	kN	
	Sum of support reactions in Z	-8.26	kN	Deviation 0.00%
	Resultant of reactions about X	4.9	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Resultant of reactions about Y	-2.0	kNm	At center of gravity of model
	Resultant of reactions about Z	0.7	kNm	At center of gravity of model
	Max. displacement in X	-19.5	mm	FE Mesh Node No. 386 (X: 1.055, Y: -0.082, Z: 2.564 m)
	Max. displacement in Y	-28.9	mm	FE Mesh Node No. 98 (X: 0.281, Y: -1.269, Z: 2.541 m)
	Max. displacement in Z	-128.9	mm	FE Mesh Node No. 15 (X: 0.439, Y: -1.378, Z: 2.591 m)
	Max. vector displacement	133.1	mm	FE Mesh Node No. 15 (X: 0.439, Y: -1.378, Z: 2.591 m)
	Max. rotation about X	41.4	mrad	FE Mesh Node No. 1268 (X: -0.519, Y: -0.996, Z: 2.512 m)
	Max. rotation about Y	27.0	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Z	7.5	mrad	FE Mesh Node No. 289 (X: 2.125, Y: -0.971, Z: 2.947 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.035E+32591		
	Infinity Norm	1.986E+10		
Load Combination CO18 - 1.5*LC1 + 1.5*LC10				
	Sum of loads in X	0.13	kN	
	Sum of support reactions in X	0.13	kN	Deviation 0.00%
	Sum of loads in Y	-0.74	kN	
	Sum of support reactions in Y	-0.74	kN	Deviation -0.00%
	Sum of loads in Z	-6.72	kN	
	Sum of support reactions in Z	-6.72	kN	Deviation 0.00%
	Resultant of reactions about X	3.1	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-1.5	kNm	At center of gravity of model
	Resultant of reactions about Z	0.5	kNm	At center of gravity of model
	Max. displacement in X	-18.0	mm	FE Mesh Node No. 312 (X: 1.220, Y: -0.000, Z: 2.629 m)
	Max. displacement in Y	21.8	mm	FE Mesh Node No. 131 (X: -0.022, Y: -0.322, Z: 2.061 m)
	Max. displacement in Z	-99.4	mm	FE Mesh Node No. 479 (X: 0.902, Y: -1.368, Z: 2.683 m)
	Max. vector displacement	102.8	mm	FE Mesh Node No. 479 (X: 0.902, Y: -1.368, Z: 2.683 m)
	Max. rotation about X	27.3	mrad	FE Mesh Node No. 1268 (X: -0.519, Y: -0.996, Z: 2.512 m)
	Max. rotation about Y	21.2	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Z	6.2	mrad	FE Mesh Node No. 290 (X: 2.177, Y: -0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	6		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	4.412E+32522		
	Infinity Norm	1.982E+10		
Load Combination CO19 - LC1				
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-3.14	kN	
	Sum of support reactions in Z	-3.14	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	0.0	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	4.9	mm	FE Mesh Node No. 6 (X: 2.401, Y: -0.000, Z: 2.992 m)
	Max. displacement in Y	1.0	mm	FE Mesh Node No. 327 (X: 0.043, Y: -0.221, Z: 1.943 m)
	Max. displacement in Z	-18.0	mm	FE Mesh Node No. 6 (X: 2.401, Y: -0.000, Z: 2.992 m)
	Max. vector displacement	18.6	mm	FE Mesh Node No. 6 (X: 2.401, Y: -0.000, Z: 2.992 m)
	Max. rotation about X	2.6	mrad	FE Mesh Node No. 1260 (X: 0.879, Y: -0.606, Z: 2.744 m)
	Max. rotation about Y	7.9	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	-0.4	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	4		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	5.798E+32073		
	Infinity Norm	1.974E+10		
Load Combination CO20 - LC1 + LC2				
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-13.65	kN	
	Sum of support reactions in Z	-13.65	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	2.2	kNm	At center of gravity of model

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-57.9	mm	FE Mesh Node No. 323 (X: 0.294, Y: -0.000, Z: 2.054 m)
	Max. displacement in Y	-39.0	mm	FE Mesh Node No. 1045 (X: 0.024, Y: 0.242, Z: 1.969 m)
	Max. displacement in Z	-189.1	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	193.6	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. rotation about X	-27.6	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Max. rotation about Y	74.7	mrad	FE Mesh Node No. 1272 (X: 1.319, Y: 0.908, Z: 2.815 m)
	Max. rotation about Z	-4.1	mrad	FE Mesh Node No. 653 (X: 1.472, Y: 1.597, Z: 2.839 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	12		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.288E+32848		
	Infinity Norm	1.985E+10		
Load Combination CO21 - LC1 + 0.8*LC2 + 0.8*LC3				
	Sum of loads in X	-3.24	kN	
	Sum of support reactions in X	-3.24	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	3.27	kN	
	Sum of support reactions in Z	3.27	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-4.4	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-41.3	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. displacement in Y	6.4	mm	FE Mesh Node No. 148 (X: 0.149, Y: -1.244, Z: 2.516 m)
	Max. displacement in Z	91.5	mm	FE Mesh Node No. 379 (X: 1.762, Y: -0.139, Z: 2.814 m)
	Max. vector displacement	100.4	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. rotation about X	-2.3	mrad	FE Mesh Node No. 1281 (X: -0.368, Y: 0.707, Z: 2.537 m)
	Max. rotation about Y	-18.7	mrad	FE Mesh Node No. 1243 (X: -0.871, Y: 0.000, Z: 2.454 m)
	Max. rotation about Z	-1.2	mrad	FE Mesh Node No. 643 (X: 2.177, Y: 0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	4		
	Maximum value of element of stiffness matrix on diagonal	9.861E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	7.218E+32759		
	Infinity Norm	1.990E+10		
Load Combination CO22 - LC1 + 0.8*LC2 + 0.8*LC4				
	Sum of loads in X	-3.09	kN	
	Sum of support reactions in X	-3.09	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	3.65	kN	
	Sum of support reactions in Z	3.65	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-3.9	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-40.1	mm	FE Mesh Node No. 380 (X: 1.665, Y: -0.133, Z: 2.784 m)
	Max. displacement in Y	6.3	mm	FE Mesh Node No. 148 (X: 0.149, Y: -1.244, Z: 2.516 m)
	Max. displacement in Z	90.3	mm	FE Mesh Node No. 379 (X: 1.762, Y: -0.139, Z: 2.814 m)
	Max. vector displacement	98.8	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. rotation about X	-2.1	mrad	FE Mesh Node No. 1282 (X: -0.295, Y: 0.565, Z: 2.550 m)
	Max. rotation about Y	-17.9	mrad	FE Mesh Node No. 1243 (X: -0.871, Y: 0.000, Z: 2.454 m)
	Max. rotation about Z	-1.2	mrad	FE Mesh Node No. 643 (X: 2.177, Y: 0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	4		
	Maximum value of element of stiffness matrix on diagonal	9.861E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.285E+32763		
	Infinity Norm	1.989E+10		
Load Combination CO23 - LC1 + 0.8*LC2 + 0.8*LC5				
	Sum of loads in X	-0.39	kN	
	Sum of support reactions in X	-0.39	kN	Deviation 0.00%
	Sum of loads in Y	0.01	kN	
	Sum of support reactions in Y	0.01	kN	Deviation 0.00%
	Sum of loads in Z	-12.42	kN	
	Sum of support reactions in Z	-12.42	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	1.1	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max. displacement in X	-54.5	mm	FE Mesh Node No. 323 (X: 0.294, Y: -0.000, Z: 2.054 m)
	Max. displacement in Y	-38.4	mm	FE Mesh Node No. 1045 (X: 0.024, Y: 0.242, Z: 1.969 m)
	Max. displacement in Z	-168.3	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	172.5	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	-23.5	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Max. rotation about Y	62.7	mrad	FE Mesh Node No. 1272 (X: 1.319, Y: 0.908, Z: 2.815 m)
	Max. rotation about Z	-3.7	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	11		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	3.013E+32802		
	Infinity Norm	1.981E+10		
Load Combination CO24 - LC1 + 0.8*LC2 + 0.8*LC6				
	Sum of loads in X	-0.21	kN	
	Sum of support reactions in X	-0.21	kN	Deviation 0.00%
	Sum of loads in Y	-0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	-12.09	kN	
	Sum of support reactions in Z	-12.09	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	1.6	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-55.0	mm	FE Mesh Node No. 323 (X: 0.294, Y: -0.000, Z: 2.054 m)
	Max. displacement in Y	-34.2	mm	FE Mesh Node No. 757 (X: 0.170, Y: 0.242, Z: 2.045 m)
	Max. displacement in Z	-170.4	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. vector displacement	174.8	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	23.3	mrad	FE Mesh Node No. 1261 (X: 1.026, Y: -0.707, Z: 2.768 m)
	Max. rotation about Y	63.8	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	-3.7	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	10		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	2.309E+32795		
	Infinity Norm	1.982E+10		
Load Combination CO25 - LC1 + 0.8*LC2 + 0.8*LC7				
	Sum of loads in X	-2.73	kN	
	Sum of support reactions in X	-2.73	kN	Deviation 0.00%
	Sum of loads in Y	-0.75	kN	
	Sum of support reactions in Y	-0.75	kN	Deviation -0.00%
	Sum of loads in Z	2.34	kN	
	Sum of support reactions in Z	2.34	kN	Deviation 0.00%
	Resultant of reactions about X	2.5	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-4.8	kNm	At center of gravity of model
	Resultant of reactions about Z	0.5	kNm	At center of gravity of model
	Max. displacement in X	-48.9	mm	FE Mesh Node No. 712 (X: 1.665, Y: 0.133, Z: 2.784 m)
	Max. displacement in Y	-12.6	mm	FE Mesh Node No. 101 (X: 0.338, Y: -1.482, Z: 2.595 m)
	Max. displacement in Z	115.4	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. vector displacement	125.5	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. rotation about X	12.2	mrad	FE Mesh Node No. 44 (X: -0.270, Y: -1.597, Z: 2.552 m)
	Max. rotation about Y	-24.4	mrad	FE Mesh Node No. 642 (X: 2.223, Y: 0.792, Z: 2.963 m)
	Max. rotation about Z	5.9	mrad	FE Mesh Node No. 289 (X: 2.125, Y: -0.971, Z: 2.947 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	4		
	Maximum value of element of stiffness matrix on diagonal	9.861E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	8.883E+32747		
	Infinity Norm	1.996E+10		
Load Combination CO26 - LC1 + 0.8*LC2 + 0.8*LC8				
	Sum of loads in X	-2.83	kN	
	Sum of support reactions in X	-2.83	kN	Deviation 0.00%
	Sum of loads in Y	-0.46	kN	
	Sum of support reactions in Y	-0.46	kN	Deviation 0.00%
	Sum of loads in Z	3.13	kN	
	Sum of support reactions in Z	3.13	kN	Deviation 0.00%
	Resultant of reactions about X	1.6	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-4.6	kNm	At center of gravity of model
	Resultant of reactions about Z	0.3	kNm	At center of gravity of model
	Max. displacement in X	-48.9	mm	FE Mesh Node No. 712 (X: 1.665, Y: 0.133, Z: 2.784 m)

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max. displacement in Y	-8.0	mm	FE Mesh Node No. 1105 (X: 0.149, Y: 1.244, Z: 2.516 m)
	Max. displacement in Z	115.3	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. vector displacement	125.3	mm	FE Mesh Node No. 713 (X: 1.762, Y: 0.139, Z: 2.814 m)
	Max. rotation about X	8.1	mrad	FE Mesh Node No. 50 (X: -0.442, Y: -0.848, Z: 2.525 m)
	Max. rotation about Y	-24.8	mrad	FE Mesh Node No. 49 (X: 2.264, Y: 0.698, Z: 2.970 m)
	Max. rotation about Z	5.3	mrad	FE Mesh Node No. 289 (X: 2.125, Y: -0.971, Z: 2.947 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	4		
	Maximum value of element of stiffness matrix on diagonal	9.861E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	6.363E+32750		
	Infinity Norm	1.994E+10		
Load Combination CO27 - LC1 + 0.8*LC2 + 0.8*LC9				
	Sum of loads in X	-0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	-0.67	kN	
	Sum of support reactions in Y	-0.67	kN	Deviation 0.00%
	Sum of loads in Z	-13.44	kN	
	Sum of support reactions in Z	-13.44	kN	Deviation 0.00%
	Resultant of reactions about X	2.7	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	0.7	kNm	At center of gravity of model
	Resultant of reactions about Z	0.3	kNm	At center of gravity of model
	Max. displacement in X	-55.4	mm	FE Mesh Node No. 754 (X: 0.300, Y: 0.076, Z: 2.072 m)
	Max. displacement in Y	-40.9	mm	FE Mesh Node No. 1045 (X: 0.024, Y: 0.242, Z: 1.969 m)
	Max. displacement in Z	-165.3	mm	FE Mesh Node No. 571 (X: 1.410, Y: -1.070, Z: 2.770 m)
	Max. vector displacement	168.9	mm	FE Mesh Node No. 571 (X: 1.410, Y: -1.070, Z: 2.770 m)
	Max. rotation about X	39.6	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	66.3	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	6.3	mrad	FE Mesh Node No. 280 (X: 1.472, Y: -1.597, Z: 2.839 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	13		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	5.400E+32856		
	Infinity Norm	1.989E+10		
Load Combination CO28 - LC1 + 0.8*LC2 + 0.8*LC10				
	Sum of loads in X	-0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	-0.42	kN	
	Sum of support reactions in Y	-0.42	kN	Deviation 0.00%
	Sum of loads in Z	-12.62	kN	
	Sum of support reactions in Z	-12.62	kN	Deviation 0.00%
	Resultant of reactions about X	1.7	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	0.9	kNm	At center of gravity of model
	Resultant of reactions about Z	0.2	kNm	At center of gravity of model
	Max. displacement in X	-52.3	mm	FE Mesh Node No. 754 (X: 0.300, Y: 0.076, Z: 2.072 m)
	Max. displacement in Y	-40.4	mm	FE Mesh Node No. 1045 (X: 0.024, Y: 0.242, Z: 1.969 m)
	Max. displacement in Z	-155.5	mm	FE Mesh Node No. 571 (X: 1.410, Y: -1.070, Z: 2.770 m)
	Max. vector displacement	159.1	mm	FE Mesh Node No. 571 (X: 1.410, Y: -1.070, Z: 2.770 m)
	Max. rotation about X	33.2	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	62.8	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	5.1	mrad	FE Mesh Node No. 281 (X: 1.559, Y: -1.545, Z: 2.853 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	11		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	4.377E+32826		
	Infinity Norm	1.986E+10		
Load Combination CO29 - LC1 + LC3				
	Sum of loads in X	-4.63	kN	
	Sum of support reactions in X	-4.63	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	15.25	kN	
	Sum of support reactions in Z	15.25	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-7.2	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-77.2	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	7.5	mm	FE Mesh Node No. 99 (X: 0.264, Y: -1.154, Z: 2.510 m)

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max. displacement in Z	170.9	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. vector displacement	187.3	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. rotation about X	-10.6	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	-58.1	mrad	Member No. 25, x: 0.071 m
	Max. rotation about Z	-3.0	mrad	FE Mesh Node No. 1260 (X: 0.879, Y: -0.606, Z: 2.744 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.858E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	8.660E+3301 0		
	Infinity Norm	2.6E+10		
Load Combination CO30 - LC1 + LC4				
	Sum of loads in X	-4.46	kN	
	Sum of support reactions in X	-4.46	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	15.73	kN	
	Sum of support reactions in Z	15.73	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-6.7	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	-75.6	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	7.5	mm	FE Mesh Node No. 99 (X: 0.264, Y: -1.154, Z: 2.510 m)
	Max. displacement in Z	169.5	mm	FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. vector displacement	185.4	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	-10.6	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	-57.4	mrad	Member No. 25, x: 0.071 m
	Max. rotation about Z	-3.0	mrad	Member No. 22, x: 1.077 m
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.859E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.648E+3302 7		
	Infinity Norm	2.5E+10		
Load Combination CO31 - LC1 + LC5				
	Sum of loads in X	-0.47	kN	
	Sum of support reactions in X	-0.47	kN	Deviation 0.00%
	Sum of loads in Y	0.01	kN	
	Sum of support reactions in Y	0.01	kN	Deviation 0.00%
	Sum of loads in Z	-4.25	kN	
	Sum of support reactions in Z	-4.25	kN	Deviation 0.00%
	Resultant of reactions about X	-0.1	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-0.8	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	12.7	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. displacement in Y	6.8	mm	FE Mesh Node No. 147 (X: 0.134, Y: -1.135, Z: 2.486 m)
	Max. displacement in Z	-46.7	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. vector displacement	48.4	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. rotation about X	-4.5	mrad	FE Mesh Node No. 1274 (X: 1.026, Y: 0.706, Z: 2.768 m)
	Max. rotation about Y	11.0	mrad	FE Mesh Node No. 1272 (X: 1.319, Y: 0.908, Z: 2.815 m)
	Max. rotation about Z	-1.6	mrad	FE Mesh Node No. 290 (X: 2.177, Y: -0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	5.397E+3228 0		
	Infinity Norm	1.973E+10		
Load Combination CO32 - LC1 + LC6				
	Sum of loads in X	-0.28	kN	
	Sum of support reactions in X	-0.28	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-3.83	kN	
	Sum of support reactions in Z	-3.83	kN	Deviation 0.00%
	Resultant of reactions about X	0.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-0.3	kNm	At center of gravity of model
	Resultant of reactions about Z	0.0	kNm	At center of gravity of model
	Max. displacement in X	14.1	mm	FE Mesh Node No. 306 (X: 1.759, Y: -0.000, Z: 2.812 m)
	Max. displacement in Y	-6.8	mm	FE Mesh Node No. 129 (X: 0.016, Y: -0.338, Z: 2.079 m)
	Max. displacement in Z	-48.9	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max. vector displacement	50.8	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. rotation about X	4.4	mrad	FE Mesh Node No. 1261 (X: 1.026, Y: -0.707, Z: 2.768 m)
	Max. rotation about Y	12.5	mrad	FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	-1.5	mrad	FE Mesh Node No. 1275 (X: 0.879, Y: 0.606, Z: 2.744 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	6.062E+32259		
	Infinity Norm	1.974E+10		
Load Combination CO33 - LC1 + LC7				
	Sum of loads in X	-3.99	kN	
	Sum of support reactions in X	-3.99	kN	Deviation 0.00%
	Sum of loads in Y	-0.97	kN	
	Sum of support reactions in Y	-0.97	kN	Deviation 0.00%
	Sum of loads in Z	14.10	kN	
	Sum of support reactions in Z	14.10	kN	Deviation 0.00%
	Resultant of reactions about X	3.0	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-7.8	kNm	At center of gravity of model
	Resultant of reactions about Z	0.7	kNm	At center of gravity of model
	Max. displacement in X	-84.5	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	-14.2	mm	FE Mesh Node No. 1105 (X: 0.149, Y: 1.244, Z: 2.516 m)
	Max. displacement in Z	192.0	mm	FE Mesh Node No. 714 (X: 1.865, Y: 0.141, Z: 2.845 m)
	Max. vector displacement	210.0	mm	FE Mesh Node No. 714 (X: 1.865, Y: 0.141, Z: 2.845 m)
	Max. rotation about X	19.5	mrad	FE Mesh Node No. 1273 (X: 1.172, Y: 0.807, Z: 2.792 m)
	Max. rotation about Y	-66.5	mrad	Member No. 23, x: 0.357 m
	Max. rotation about Z	7.0	mrad	Member No. 16, x: 0.409 m
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.858E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	2.703E+33008		
	Infinity Norm	2.013E+10		
Load Combination CO34 - LC1 + LC8				
	Sum of loads in X	-4.14	kN	
	Sum of support reactions in X	-4.14	kN	Deviation 0.00%
	Sum of loads in Y	-0.60	kN	
	Sum of support reactions in Y	-0.60	kN	Deviation 0.00%
	Sum of loads in Z	15.08	kN	
	Sum of support reactions in Z	15.08	kN	Deviation 0.00%
	Resultant of reactions about X	1.9	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-7.5	kNm	At center of gravity of model
	Resultant of reactions about Z	0.4	kNm	At center of gravity of model
	Max. displacement in X	-84.8	mm	FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	-10.6	mm	FE Mesh Node No. 1105 (X: 0.149, Y: 1.244, Z: 2.516 m)
	Max. displacement in Z	191.9	mm	FE Mesh Node No. 714 (X: 1.865, Y: 0.141, Z: 2.845 m)
	Max. vector displacement	209.8	mm	FE Mesh Node No. 714 (X: 1.865, Y: 0.141, Z: 2.845 m)
	Max. rotation about X	16.4	mrad	Member No. 26, x: 0.359 m
	Max. rotation about Y	-66.6	mrad	Member No. 23, x: 0.357 m
	Max. rotation about Z	6.2	mrad	Member No. 16, x: 0.409 m
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.858E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	7.482E+33026		
	Infinity Norm	2.011E+10		
Load Combination CO35 - LC1 + LC9				
	Sum of loads in X	0.13	kN	
	Sum of support reactions in X	0.13	kN	Deviation 0.00%
	Sum of loads in Y	-0.80	kN	
	Sum of support reactions in Y	-0.80	kN	Deviation 0.00%
	Sum of loads in Z	-5.50	kN	
	Sum of support reactions in Z	-5.50	kN	Deviation 0.00%
	Resultant of reactions about X	3.2	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-1.3	kNm	At center of gravity of model
	Resultant of reactions about Z	0.5	kNm	At center of gravity of model
	Max. displacement in X	-16.2	mm	FE Mesh Node No. 312 (X: 1.220, Y: -0.000, Z: 2.629 m)
	Max. displacement in Y	-22.4	mm	FE Mesh Node No. 98 (X: 0.281, Y: -1.269, Z: 2.541 m)
	Max. displacement in Z	-95.3	mm	FE Mesh Node No. 15 (X: 0.439, Y: -1.378, Z: 2.591 m)
	Max. vector displacement	98.7	mm	FE Mesh Node No. 15 (X: 0.439, Y: -1.378, Z: 2.591 m)

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max. rotation about X	26.6	mrad	FE Mesh Node No. 1268 (X: -0.519, Y: -0.996, Z: 2.512 m)
	Max. rotation about Y	18.0	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Z	5.6	mrad	FE Mesh Node No. 289 (X: 2.125, Y: -0.971, Z: 2.947 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	1.864E+3248 5		
	Infinity Norm	1.982E+10		
Load Combination CO36 - LC1 + LC10				
	Sum of loads in X	0.09	kN	
	Sum of support reactions in X	0.09	kN	Deviation 0.00%
	Sum of loads in Y	-0.50	kN	
	Sum of support reactions in Y	-0.50	kN	Deviation 0.00%
	Sum of loads in Z	-4.48	kN	
	Sum of support reactions in Z	-4.48	kN	Deviation 0.00%
	Resultant of reactions about X	2.1	kNm	At center of gravity of model (X:0.3, Y:0.0, Z:2.2 m)
	Resultant of reactions about Y	-1.0	kNm	At center of gravity of model
	Resultant of reactions about Z	0.3	kNm	At center of gravity of model
	Max. displacement in X	-15.4	mm	FE Mesh Node No. 311 (X: 1.309, Y: -0.000, Z: 2.663 m)
	Max. displacement in Y	16.1	mm	FE Mesh Node No. 131 (X: -0.022, Y: -0.322, Z: 2.061 m)
	Max. displacement in Z	-73.6	mm	FE Mesh Node No. 479 (X: 0.902, Y: -1.368, Z: 2.683 m)
	Max. vector displacement	76.3	mm	FE Mesh Node No. 479 (X: 0.902, Y: -1.368, Z: 2.683 m)
	Max. rotation about X	17.2	mrad	FE Mesh Node No. 1268 (X: -0.519, Y: -0.996, Z: 2.512 m)
	Max. rotation about Y	14.0	mrad	FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Z	4.6	mrad	FE Mesh Node No. 290 (X: 2.177, Y: -0.883, Z: 2.955 m)
	Method of analysis	3rd Order		Newton-Raphson
	Reduction of stiffness			Materials, Cross-sections, Members, Surfaces
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	5		
	Number of iterations	5		
	Maximum value of element of stiffness matrix on diagonal	9.862E+09		
	Minimum value of element of stiffness matrix on diagonal	1.0E+02		
	Stiffness matrix determinant	2.776E+3242 4		
	Infinity Norm	1.979E+10		
Summary				
	Max. displacement in X	-127.6	mm	CO16, FE Mesh Node No. 305 (X: 1.850, Y: -0.000, Z: 2.840 m)
	Max. displacement in Y	49.8	mm	CO2, FE Mesh Node No. 88 (X: 0.024, Y: -0.242, Z: 1.969 m)
	Max. displacement in Z	-268.5	mm	CO2, FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. vector displacement	295.1	mm	CO16, FE Mesh Node No. 304 (X: 1.941, Y: -0.000, Z: 2.866 m)
	Max. rotation about X	58.1	mrad	CO9, FE Mesh Node No. 1262 (X: 1.173, Y: -0.808, Z: 2.792 m)
	Max. rotation about Y	110.7	mrad	CO2, FE Mesh Node No. 1263 (X: 1.319, Y: -0.909, Z: 2.815 m)
	Max. rotation about Z	9.8	mrad	CO9, FE Mesh Node No. 280 (X: 1.472, Y: -1.597, Z: 2.839 m)
	Other Settings:			
	Number of 1D finite elements	191		
	Number of 2D finite elements	2336		
	Number of 3D finite elements	0		
	Number of FE mesh nodes	1291		
	Number of equations	7746		
	Max. number of iterations	100		
	Number of divisions for member results	10		
	Division of cable/foundation/tapered members	10		
	Number of member divisions for searching maximum values	10		
	Subdivisions of FE mesh for graphical results	0		
	Percentage of iterations according to Picard method in combination with Newton-Raphson method	5	%	
	Options:			
	Activate shear stiffness of members (Ay, Az)	☒		
	Activate member divisions for large deformation or post-critical analysis	☒		
	Activate entered stiffness modifications	☒		
	Ignore rotational degrees of freedom	☐		
	Check of critical forces of members	☒		
	Nonsymmetric direct solver if demanded by nonlinear model	☐		
	Method for the system of equations	Direct		
	Plate bending theory	Mindlin		
	Solver version	64-bit		
	Precision and Tolerance:			
	Change default setting	☐		

■ 4.1 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
1	LC10	0.09	-0.51	-1.34	3.21	-0.34	0.19	Wind load in +ve Y-dir, Cpi -0.7, zone D -ve
	Form-Finding	0.00	0.00	0.00	0.00	0.00	0.00	
	CO1	0.00	0.00	-4.70	0.00	1.52	0.00	
	CO2	0.00	0.00	-20.47	0.00	10.32	0.00	
	CO3	-5.14	0.00	5.78	0.00	-20.05	0.00	
	CO4	-4.91	0.00	6.36	0.00	-19.08	0.00	
	CO5	-0.60	0.01	-17.69	-0.09	6.37	0.00	
	CO6	-0.33	0.00	-17.18	0.00	7.48	0.00	
	CO7	-4.40	-1.21	4.39	6.43	-18.63	0.33	
	CO8	-4.57	-0.74	5.57	4.00	-19.12	0.24	
	CO9	-0.08	-0.99	-19.22	6.25	7.37	-0.03	
	CO10	-0.05	-0.63	-17.99	4.01	7.39	0.00	
	CO11	-7.72	0.00	22.68	-0.01	-35.53	0.00	
	CO12	-7.47	0.00	23.40	-0.01	-34.42	0.00	
	CO13	-0.72	0.01	-6.37	-0.11	-0.71	-0.01	
	CO14	-0.42	0.00	-5.74	0.00	0.57	0.00	
	CO15	-6.78	-1.59	20.95	8.02	-33.78	0.56	
	CO16	-7.05	-1.00	22.41	5.04	-34.50	0.38	
	CO17	0.18	-1.16	-8.26	7.50	1.19	0.30	
	CO18	0.13	-0.74	-6.72	4.80	1.01	0.23	
	CO19	0.00	0.00	-3.14	0.00	1.01	0.00	
	CO20	0.00	0.00	-13.65	0.00	6.78	0.00	
	CO21	-3.24	0.00	3.27	0.00	-12.72	0.00	
	CO22	-3.09	0.00	3.65	0.00	-12.09	0.00	
	CO23	-0.39	0.01	-12.42	-0.06	4.43	0.00	
	CO24	-0.21	0.00	-12.09	0.00	5.14	0.00	
	CO25	-2.73	-0.75	2.34	4.15	-11.74	0.23	
	CO26	-2.83	-0.46	3.13	2.58	-12.04	0.17	
	CO27	0.00	-0.67	-13.44	4.16	5.19	0.05	
	CO28	0.00	-0.42	-12.62	2.66	5.15	0.05	
	CO29	-4.63	0.00	15.25	0.00	-22.67	0.00	
	CO30	-4.46	0.00	15.73	0.00	-21.91	0.00	
	CO31	-0.47	0.01	-4.25	-0.07	-0.46	-0.01	
	CO32	-0.28	0.00	-3.83	0.00	0.40	0.00	
	CO33	-3.99	-0.97	14.10	5.17	-21.44	0.37	
	CO34	-4.14	-0.60	15.08	3.23	-21.87	0.25	
	CO35	0.13	-0.80	-5.50	5.04	0.81	0.23	
	CO36	0.09	-0.50	-4.48	3.22	0.67	0.17	
Σ Supp.	LC10	0.09	-0.51	-1.34				
Σ Loads	LC10	0.09	-0.51	-1.34				
Σ Supp.	LC5005	0.00	0.00	0.00				
Σ Loads	LC5005	0.00	0.00	0.00				
Σ Supp.	CO1	0.00	0.00	-4.70				
Σ Supp.	CO1	0.00	0.00	-4.70				
Σ Supp.	CO2	0.00	0.00	-20.47				
Σ Supp.	CO2	0.00	0.00	-20.47				
Σ Supp.	CO3	-5.14	0.00	5.78				
Σ Supp.	CO3	-5.14	0.00	5.78				
Σ Supp.	CO4	-4.91	0.00	6.36				
Σ Supp.	CO4	-4.91	0.00	6.36				
Σ Supp.	CO5	-0.60	0.01	-17.69				
Σ Supp.	CO5	-0.60	0.01	-17.69				
Σ Supp.	CO6	-0.33	0.00	-17.18				
Σ Supp.	CO6	-0.33	0.00	-17.18				
Σ Supp.	CO7	-4.40	-1.21	4.39				
Σ Supp.	CO7	-4.40	-1.21	4.39				
Σ Supp.	CO8	-4.57	-0.74	5.57				
Σ Supp.	CO8	-4.57	-0.74	5.57				
Σ Supp.	CO9	-0.08	-0.99	-19.22				
Σ Supp.	CO9	-0.08	-0.99	-19.22				
Σ Supp.	CO10	-0.05	-0.63	-17.99				
Σ Supp.	CO10	-0.05	-0.63	-17.99				
Σ Supp.	CO11	-7.72	0.00	22.68				
Σ Supp.	CO11	-7.72	0.00	22.68				
Σ Supp.	CO12	-7.47	0.00	23.40				
Σ Supp.	CO12	-7.47	0.00	23.40				
Σ Supp.	CO13	-0.72	0.01	-6.37				
Σ Supp.	CO13	-0.72	0.01	-6.37				
Σ Supp.	CO14	-0.42	0.00	-5.74				
Σ Supp.	CO14	-0.42	0.00	-5.74				
Σ Supp.	CO15	-6.78	-1.59	20.95				
Σ Supp.	CO15	-6.78	-1.59	20.95				
Σ Supp.	CO16	-7.05	-1.00	22.41				
Σ Supp.	CO16	-7.05	-1.00	22.41				
Σ Supp.	CO17	0.18	-1.16	-8.26				
Σ Supp.	CO17	0.18	-1.16	-8.26				
Σ Supp.	CO18	0.13	-0.74	-6.72				
Σ Supp.	CO18	0.13	-0.74	-6.72				
Σ Supp.	CO19	0.00	0.00	-3.14				
Σ Supp.	CO19	0.00	0.00	-3.14				
Σ Supp.	CO20	0.00	0.00	-13.65				
Σ Supp.	CO20	0.00	0.00	-13.65				
Σ Supp.	CO21	-3.24	0.00	3.27				
Σ Supp.	CO21	-3.24	0.00	3.27				
Σ Supp.	CO22	-3.09	0.00	3.65				
Σ Supp.	CO22	-3.09	0.00	3.65				
Σ Supp.	CO23	-0.39	0.01	-12.42				
Σ Supp.	CO23	-0.39	0.01	-12.42				
Σ Supp.	CO24	-0.21	0.00	-12.09				
Σ Supp.	CO24	-0.21	0.00	-12.09				
Σ Supp.	CO25	-2.73	-0.75	2.34				
Σ Supp.	CO25	-2.73	-0.75	2.34				

■ 4.1 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
Σ Supp.	CO26	-2.83	-0.46	3.13				
Σ Supp.	CO26	-2.83	-0.46	3.13				
Σ Supp.	CO27	0.00	-0.67	-13.44				
Σ Supp.	CO27	0.00	-0.67	-13.44				
Σ Supp.	CO28	0.00	-0.42	-12.62				
Σ Supp.	CO28	0.00	-0.42	-12.62				
Σ Supp.	CO29	-4.63	0.00	15.25				
Σ Supp.	CO29	-4.63	0.00	15.25				
Σ Supp.	CO30	-4.46	0.00	15.73				
Σ Supp.	CO30	-4.46	0.00	15.73				
Σ Supp.	CO31	-0.47	0.01	-4.25				
Σ Supp.	CO31	-0.47	0.01	-4.25				
Σ Supp.	CO32	-0.28	0.00	-3.83				
Σ Supp.	CO32	-0.28	0.00	-3.83				
Σ Supp.	CO33	-3.99	-0.97	14.10				
Σ Supp.	CO33	-3.99	-0.97	14.10				
Σ Supp.	CO34	-4.14	-0.60	15.08				
Σ Supp.	CO34	-4.14	-0.60	15.08				
Σ Supp.	CO35	0.13	-0.80	-5.50				
Σ Supp.	CO35	0.13	-0.80	-5.50				
Σ Supp.	CO36	0.09	-0.50	-4.48				
Σ Supp.	CO36	0.09	-0.50	-4.48				

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 3: RO 76.1x3.2 | IS 1161-1998								
1	LC10	12	0.000	-0.15	0.11	-0.17	-0.00	0.03	0.01
		37	0.115	-0.15	0.11	-0.17	-0.00	0.01	-0.00
			0.115	-0.12	-0.09	0.03	-0.00	0.00	-0.00
		14	0.230	-0.12	-0.09	0.03	-0.00	0.01	0.01
	Form-Finding	12	0.000	0.05	0.01	-0.07	0.00	0.01	0.00
		37	0.115	0.05	0.01	-0.07	0.00	0.00	-0.00
			0.115	0.05	-0.01	0.07	-0.00	0.00	-0.00
		14	0.230	0.05	-0.01	0.07	-0.00	0.01	0.00
	CO1	12	0.000	0.05	-0.02	-0.01	-0.00	0.00	-0.00
		37	0.115	0.05	-0.02	-0.02	-0.00	0.00	0.00
			0.115	0.03	0.02	-0.01	-0.00	-0.00	0.00
		14	0.230	0.03	0.02	-0.02	-0.00	-0.00	-0.00
	CO2	12	0.000	0.12	-0.07	-0.00	-0.00	-0.00	-0.01
		37	0.115	0.12	-0.07	-0.01	-0.00	-0.01	0.00
			0.115	-0.27	0.05	0.02	0.00	-0.01	0.00
		14	0.230	-0.27	0.05	0.01	0.00	-0.00	-0.00
	CO3	12	0.000	-0.72	0.59	-0.96	0.02	0.15	0.04
		37	0.115	-0.72	0.59	-0.97	0.02	0.03	-0.02
			0.115	0.00	-0.40	1.15	-0.01	0.04	-0.02
		14	0.230	0.00	-0.40	1.14	-0.01	0.17	0.02
	CO4	12	0.000	-0.67	0.56	-0.97	0.02	0.15	0.04
		37	0.115	-0.67	0.57	-0.97	0.02	0.04	-0.02
			0.115	0.05	-0.38	1.14	-0.01	0.04	-0.02
		14	0.230	0.05	-0.38	1.13	-0.01	0.17	0.02
	CO5	12	0.000	0.12	-0.04	-0.03	-0.00	-0.00	-0.00
		37	0.115	0.12	-0.04	-0.04	-0.00	-0.01	0.00
			0.115	-0.15	0.04	-0.01	0.00	-0.01	0.00
		14	0.230	-0.15	0.04	-0.01	0.00	-0.01	-0.00
	CO6	12	0.000	0.13	-0.05	-0.03	-0.00	-0.00	-0.00
		37	0.115	0.13	-0.05	-0.04	-0.00	-0.01	0.00
			0.115	-0.21	0.03	0.01	0.00	-0.01	0.00
		14	0.230	-0.21	0.03	0.00	0.00	-0.01	-0.00
	CO7	12	0.000	-1.12	0.72	-1.13	0.01	0.16	0.05
		37	0.115	-1.12	0.72	-1.14	0.01	0.03	-0.03
			0.115	-0.38	-0.63	0.94	-0.02	0.03	-0.03
		14	0.230	-0.38	-0.63	0.93	-0.02	0.14	0.04
	CO8	12	0.000	-0.99	0.67	-1.10	0.01	0.17	0.05
		37	0.115	-0.99	0.67	-1.11	0.01	0.04	-0.03
			0.115	-0.19	-0.55	0.98	-0.02	0.04	-0.03
		14	0.230	-0.19	-0.55	0.98	-0.02	0.15	0.03
	CO9	12	0.000	-0.01	-0.07	0.02	-0.00	-0.01	-0.00
		37	0.115	-0.01	-0.07	0.01	-0.00	-0.00	0.00
			0.115	-0.26	0.06	0.03	0.00	-0.00	0.00
		14	0.230	-0.26	0.06	0.02	0.00	-0.00	-0.00
	CO10	12	0.000	-0.02	-0.07	0.03	-0.00	-0.01	-0.00
		37	0.115	-0.02	-0.07	0.02	-0.00	-0.00	0.00
			0.115	-0.24	0.05	0.02	0.00	-0.00	0.00
		14	0.230	-0.24	0.05	0.01	0.00	-0.00	-0.00
	CO11	12	0.000	-1.50	1.20	-2.02	0.04	0.31	0.09
		37	0.115	-1.50	1.20	-2.03	0.04	0.07	-0.05
			0.115	0.07	-0.81	2.39	-0.03	0.08	-0.05
		14	0.230	0.07	-0.81	2.38	-0.03	0.35	0.05
	CO12	12	0.000	-1.38	1.14	-2.05	0.04	0.31	0.09
		37	0.115	-1.38	1.14	-2.06	0.04	0.08	-0.05
			0.115	0.16	-0.78	2.38	-0.03	0.08	-0.05
		14	0.230	0.15	-0.78	2.37	-0.03	0.35	0.04
	CO13	12	0.000	0.09	-0.02	0.00	0.00	0.00	-0.00
		37	0.115	0.09	-0.02	-0.01	0.00	0.00	0.00
			0.115	-0.13	0.01	0.12	0.00	0.00	0.00
		14	0.230	-0.13	0.01	0.11	0.00	0.02	-0.00
	CO14	12	0.000	0.08	-0.02	0.02	0.00	-0.00	-0.00
		37	0.115	0.08	-0.02	0.01	0.00	0.00	0.00
			0.115	-0.15	0.01	0.14	0.00	0.00	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
1	CO14	14	0.230	-0.15	0.01	0.13	0.00	0.02	-0.00
	CO15	12	0.000	-1.95	1.36	-2.18	0.03	0.32	0.09
		37	0.115	-1.95	1.36	-2.19	0.03	0.07	-0.06
			0.115	-0.45	-1.12	2.27	-0.03	0.07	-0.06
		14	0.230	-0.45	-1.12	2.26	-0.03	0.33	0.06
	CO16	12	0.000	-1.77	1.28	-2.15	0.03	0.32	0.09
		37	0.115	-1.77	1.28	-2.16	0.03	0.08	-0.06
			0.115	-0.16	-1.00	2.33	-0.03	0.08	-0.06
		14	0.230	-0.16	-1.00	2.32	-0.03	0.34	0.06
	CO17	12	0.000	-0.05	0.06	-0.08	-0.00	0.01	0.00
		37	0.115	-0.05	0.06	-0.09	-0.00	0.00	-0.00
			0.115	-0.10	-0.06	0.04	-0.00	0.00	-0.00
		14	0.230	-0.10	-0.06	0.03	-0.00	0.00	0.00
	CO18	12	0.000	-0.09	0.07	-0.12	-0.00	0.02	0.00
		37	0.115	-0.09	0.07	-0.13	-0.00	0.00	-0.00
			0.115	-0.06	-0.05	-0.00	-0.00	0.00	-0.00
		14	0.230	-0.06	-0.05	-0.01	-0.00	0.00	0.00
	CO19	12	0.000	0.08	-0.03	-0.02	-0.00	0.00	-0.00
		37	0.115	0.08	-0.03	-0.02	-0.00	0.00	0.00
			0.115	0.03	0.02	0.00	-0.00	0.00	0.00
		14	0.230	0.03	0.02	-0.00	-0.00	0.00	-0.00
	CO20	12	0.000	0.08	-0.04	-0.01	-0.00	-0.00	-0.00
		37	0.115	0.08	-0.04	-0.02	-0.00	-0.00	0.00
			0.115	-0.22	0.03	0.02	0.00	-0.00	0.00
		14	0.230	-0.22	0.03	0.02	0.00	-0.00	-0.00
	CO21	12	0.000	-0.49	0.41	-0.67	0.01	0.10	0.03
		37	0.115	-0.49	0.41	-0.68	0.01	0.02	-0.02
			0.115	0.01	-0.28	0.79	-0.01	0.03	-0.02
		14	0.230	0.01	-0.28	0.79	-0.01	0.12	0.02
	CO22	12	0.000	-0.45	0.39	-0.68	0.01	0.10	0.03
		37	0.115	-0.45	0.39	-0.68	0.01	0.03	-0.02
			0.115	0.05	-0.27	0.79	-0.01	0.03	-0.02
		14	0.230	0.05	-0.27	0.78	-0.01	0.12	0.02
	CO23	12	0.000	0.09	-0.03	-0.02	-0.00	-0.00	-0.00
		37	0.115	0.09	-0.03	-0.03	-0.00	-0.00	0.00
			0.115	-0.07	0.03	-0.01	0.00	-0.00	0.00
		14	0.230	-0.07	0.03	-0.02	0.00	-0.01	-0.00
	CO24	12	0.000	0.08	-0.02	-0.03	-0.00	-0.00	-0.00
		37	0.115	0.08	-0.02	-0.03	-0.00	-0.01	0.00
			0.115	-0.18	0.01	0.03	0.00	-0.01	0.00
		14	0.230	-0.18	0.01	0.02	0.00	-0.00	-0.00
	CO25	12	0.000	-0.76	0.49	-0.81	0.01	0.12	0.03
		37	0.115	-0.76	0.49	-0.82	0.01	0.03	-0.02
			0.115	-0.24	-0.43	0.61	-0.01	0.02	-0.02
		14	0.230	-0.24	-0.43	0.60	-0.01	0.09	0.03
	CO26	12	0.000	-0.67	0.46	-0.79	0.01	0.12	0.03
		37	0.115	-0.67	0.46	-0.80	0.01	0.03	-0.02
			0.115	-0.12	-0.37	0.64	-0.01	0.03	-0.02
		14	0.230	-0.12	-0.37	0.63	-0.02	0.10	0.02
	CO27	12	0.000	0.05	-0.05	0.00	-0.00	-0.00	-0.00
		37	0.115	0.05	-0.05	-0.00	-0.00	-0.00	0.00
			0.115	-0.15	0.04	0.02	0.00	-0.00	0.00
		14	0.230	-0.15	0.04	0.01	0.00	-0.00	-0.00
	CO28	12	0.000	0.08	-0.04	-0.02	-0.00	-0.00	-0.00
		37	0.115	0.08	-0.04	-0.02	-0.00	-0.01	0.00
			0.115	-0.13	0.03	0.02	0.00	-0.01	0.00
		14	0.230	-0.13	0.03	0.02	0.00	-0.00	-0.00
	CO29	12	0.000	-1.05	0.84	-1.40	0.03	0.21	0.06
		37	0.115	-1.05	0.84	-1.40	0.03	0.05	-0.03
			0.115	0.06	-0.57	1.62	-0.02	0.06	-0.03
		14	0.230	0.06	-0.57	1.62	-0.02	0.24	0.03
	CO30	12	0.000	-0.97	0.80	-1.42	0.03	0.22	0.06
		37	0.115	-0.97	0.80	-1.42	0.03	0.06	-0.03
			0.115	0.13	-0.55	1.61	-0.02	0.06	-0.03
		14	0.230	0.13	-0.55	1.60	-0.02	0.24	0.03
	CO31	12	0.000	0.09	-0.02	0.02	0.00	-0.00	-0.00
		37	0.115	0.09	-0.02	0.01	0.00	0.00	0.00
			0.115	-0.11	0.01	0.11	0.00	0.00	0.00
		14	0.230	-0.11	0.01	0.10	0.00	0.01	-0.00
	CO32	12	0.000	0.07	-0.02	0.03	0.00	-0.00	-0.00
		37	0.115	0.07	-0.02	0.03	0.00	0.00	0.00
			0.115	-0.12	0.01	0.11	0.00	0.00	0.00
		14	0.230	-0.12	0.01	0.10	0.00	0.02	-0.00
	CO33	12	0.000	-1.35	0.94	-1.52	0.02	0.23	0.06
		37	0.115	-1.35	0.94	-1.53	0.02	0.05	-0.04
			0.115	-0.27	-0.77	1.49	-0.02	0.05	-0.04
		14	0.230	-0.27	-0.77	1.48	-0.02	0.22	0.05
	CO34	12	0.000	-1.23	0.89	-1.50	0.02	0.23	0.06
		37	0.115	-1.23	0.89	-1.51	0.02	0.06	-0.04
			0.115	-0.08	-0.69	1.53	-0.02	0.05	-0.04
		14	0.230	-0.08	-0.69	1.53	-0.02	0.23	0.04
	CO35	12	0.000	-0.05	0.06	-0.10	-0.00	0.01	0.00
		37	0.115	-0.05	0.06	-0.10	-0.00	0.00	-0.00
			0.115	-0.09	-0.06	0.03	-0.00	-0.00	-0.00
		14	0.230	-0.09	-0.06	0.03	-0.00	0.00	0.00
	CO36	12	0.000	-0.08	0.06	-0.12	-0.00	0.02	0.00
		37	0.115	-0.08	0.06	-0.13	-0.00	0.00	-0.00
			0.115	-0.07	-0.05	-0.00	-0.00	0.00	-0.00
		14	0.230	-0.07	-0.05	-0.01	-0.00	0.00	0.00
2	LC10	14	0.000	0.06	0.00	0.02	0.00	0.00	0.00
		34	0.115	0.06	0.00	0.02	0.00	0.01	0.00
			0.115	0.11	0.03	0.11	-0.00	0.01	0.00
		13	0.230	0.11	0.03	0.11	-0.00	0.02	-0.00
	Form- F	14	0.000	0.05	0.01	-0.06	0.00	0.01	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
2	Finding								
		34	0.115	0.05	0.01	-0.06	0.00	0.00	-0.00
			0.115	0.05	-0.01	0.06	-0.00	0.00	-0.00
		13	0.230	0.05	-0.01	0.06	-0.00	0.01	0.00
	CO1	14	0.000	-0.06	0.01	0.02	0.00	-0.00	0.00
		34	0.115	-0.06	0.01	0.01	0.00	0.00	-0.00
			0.115	-0.08	-0.02	0.01	0.00	0.00	-0.00
		13	0.230	-0.08	-0.02	0.00	0.00	0.00	0.00
	CO2	14	0.000	-0.50	-0.01	0.13	0.00	-0.01	-0.00
		34	0.115	-0.50	-0.01	0.12	0.00	0.00	0.00
			0.115	-0.17	0.02	-0.14	-0.00	0.00	0.00
		13	0.230	-0.17	0.02	-0.15	-0.00	-0.02	-0.00
	CO3	14	0.000	0.85	-0.26	-0.49	0.02	0.11	-0.01
		34	0.115	0.85	-0.26	-0.50	0.02	0.06	0.02
			0.115	1.72	0.45	0.55	-0.02	0.06	0.02
		13	0.230	1.72	0.45	0.54	-0.02	0.12	-0.04
	CO4	14	0.000	0.87	-0.23	-0.55	0.02	0.12	-0.01
		34	0.115	0.87	-0.23	-0.56	0.02	0.06	0.01
			0.115	1.71	0.41	0.61	-0.02	0.06	0.01
		13	0.230	1.71	0.41	0.60	-0.02	0.13	-0.03
	CO5	14	0.000	-0.46	-0.03	0.17	0.00	-0.02	-0.00
		34	0.115	-0.46	-0.03	0.16	0.00	0.00	0.00
			0.115	-0.20	0.03	-0.11	0.00	0.00	0.00
		13	0.230	-0.20	0.03	-0.11	0.00	-0.01	-0.00
	CO6	14	0.000	-0.43	-0.01	0.15	0.00	-0.01	-0.00
		34	0.115	-0.43	-0.01	0.14	0.00	0.00	0.00
			0.115	-0.13	0.01	-0.12	-0.00	0.00	0.00
		13	0.230	-0.13	0.01	-0.12	-0.00	-0.01	-0.00
	CO7	14	0.000	0.54	0.01	-0.53	0.02	0.10	0.01
		34	0.115	0.54	0.01	-0.54	0.02	0.04	0.01
			0.115	1.26	0.25	0.90	-0.01	0.04	0.01
		13	0.230	1.26	0.25	0.89	-0.01	0.15	-0.02
	CO8	14	0.000	0.68	-0.06	-0.54	0.02	0.11	0.00
		34	0.115	0.68	-0.06	-0.55	0.02	0.04	0.01
			0.115	1.39	0.29	0.87	-0.01	0.05	0.01
		13	0.230	1.39	0.29	0.86	-0.01	0.15	-0.03
	CO9	14	0.000	-0.44	-0.01	0.09	-0.00	-0.01	-0.00
		34	0.115	-0.44	-0.01	0.09	-0.00	-0.00	0.00
			0.115	-0.15	0.01	-0.12	-0.00	-0.00	0.00
		13	0.230	-0.15	0.01	-0.13	-0.00	-0.02	-0.00
	CO10	14	0.000	-0.43	-0.02	0.10	-0.00	-0.01	-0.00
		34	0.115	-0.43	-0.02	0.09	-0.00	0.00	0.00
			0.115	-0.20	0.02	-0.13	-0.00	-0.00	0.00
		13	0.230	-0.20	0.02	-0.14	-0.00	-0.02	-0.00
	CO11	14	0.000	1.83	-0.51	-1.10	0.05	0.24	-0.03
		34	0.115	1.83	-0.51	-1.11	0.05	0.12	0.03
			0.115	3.45	0.90	1.22	-0.05	0.12	0.03
		13	0.230	3.45	0.90	1.21	-0.05	0.26	-0.07
	CO12	14	0.000	1.82	-0.47	-1.17	0.05	0.25	-0.03
		34	0.115	1.82	-0.47	-1.18	0.05	0.12	0.03
			0.115	3.33	0.84	1.32	-0.05	0.12	0.03
		13	0.230	3.32	0.84	1.31	-0.05	0.27	-0.07
	CO13	14	0.000	-0.06	0.01	-0.06	-0.00	0.01	0.00
		34	0.115	-0.06	0.01	-0.07	-0.00	0.00	-0.00
			0.115	0.01	-0.01	-0.00	-0.00	0.00	-0.00
		13	0.230	0.01	-0.01	-0.01	-0.00	0.00	0.00
	CO14	14	0.000	-0.08	0.01	-0.07	-0.00	0.01	0.00
		34	0.115	-0.08	0.01	-0.08	-0.00	0.00	-0.00
			0.115	-0.01	-0.01	-0.03	-0.00	0.00	-0.00
		13	0.230	-0.01	-0.01	-0.04	-0.00	-0.00	0.00
	CO15	14	0.000	1.42	-0.21	-1.16	0.05	0.24	0.00
		34	0.115	1.42	-0.21	-1.17	0.05	0.10	0.02
			0.115	2.91	0.69	1.53	-0.04	0.11	0.02
		13	0.230	2.91	0.69	1.52	-0.04	0.28	-0.05
	CO16	14	0.000	1.63	-0.31	-1.20	0.05	0.25	-0.01
		34	0.115	1.63	-0.31	-1.21	0.05	0.11	0.03
			0.115	3.06	0.75	1.50	-0.04	0.11	0.03
		13	0.230	3.06	0.75	1.49	-0.04	0.28	-0.06
	CO17	14	0.000	-0.05	0.01	0.06	0.00	-0.00	0.00
		34	0.115	-0.05	0.01	0.05	0.00	0.00	0.00
			0.115	-0.06	0.01	0.00	-0.00	0.01	0.00
		13	0.230	-0.06	0.01	-0.01	-0.00	0.00	-0.00
	CO18	14	0.000	0.01	-0.01	0.09	0.01	-0.00	-0.00
		34	0.115	0.01	-0.01	0.08	0.01	0.01	0.00
			0.115	0.02	0.03	0.04	-0.00	0.01	0.00
		13	0.230	0.02	0.03	0.03	-0.00	0.01	-0.00
	CO19	14	0.000	-0.02	0.02	-0.00	0.00	0.00	0.00
		34	0.115	-0.02	0.02	-0.01	0.00	0.00	-0.00
			0.115	-0.06	-0.03	0.02	-0.00	0.00	-0.00
		13	0.230	-0.06	-0.03	0.01	-0.00	0.00	0.00
	CO20	14	0.000	-0.38	-0.02	0.11	0.00	-0.01	-0.00
		34	0.115	-0.38	-0.02	0.10	0.00	0.00	0.00
			0.115	-0.16	0.03	-0.12	-0.00	0.00	0.00
		13	0.230	-0.16	0.03	-0.12	-0.00	-0.01	-0.00
	CO21	14	0.000	0.60	-0.18	-0.36	0.02	0.08	-0.01
		34	0.115	0.60	-0.18	-0.36	0.02	0.04	0.01
			0.115	1.22	0.31	0.40	-0.02	0.04	0.01
		13	0.230	1.22	0.31	0.40	-0.02	0.08	-0.02
	CO22	14	0.000	0.61	-0.16	-0.40	0.02	0.08	-0.01
		34	0.115	0.61	-0.16	-0.40	0.02	0.04	0.01
			0.115	1.21	0.28	0.44	-0.02	0.04	0.01
		13	0.230	1.21	0.28	0.44	-0.02	0.09	-0.02
	CO23	14	0.000	-0.34	-0.02	0.12	0.00	-0.01	-0.00
		34	0.115	-0.34	-0.02	0.11	0.00	0.00	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	Vy	Vz	Moments [kNm] MT	My	Mz
2	CO23		0.115	-0.15	0.02	-0.07	0.00	0.00	0.00
		13	0.230	-0.15	0.02	-0.08	0.00	-0.01	-0.00
	CO24	14	0.000	-0.26	-0.02	0.10	0.00	-0.01	-0.00
		34	0.115	-0.26	-0.02	0.09	0.00	0.00	0.00
			0.115	-0.11	0.02	-0.09	-0.00	0.00	0.00
		13	0.230	-0.11	0.02	-0.10	-0.00	-0.01	-0.00
	CO25	14	0.000	0.37	0.02	-0.35	0.02	0.07	0.01
		34	0.115	0.37	0.02	-0.36	0.02	0.03	0.00
			0.115	0.89	0.16	0.67	-0.01	0.03	0.00
		13	0.230	0.89	0.16	0.66	-0.01	0.11	-0.02
	CO26	14	0.000	0.47	-0.03	-0.36	0.02	0.07	0.00
		34	0.115	0.47	-0.03	-0.37	0.02	0.03	0.00
			0.115	0.98	0.19	0.64	-0.01	0.03	0.00
		13	0.230	0.98	0.19	0.63	-0.01	0.11	-0.02
	CO27	14	0.000	-0.32	-0.01	0.08	-0.00	-0.01	-0.00
		34	0.115	-0.32	-0.01	0.07	-0.00	0.00	0.00
			0.115	-0.12	0.01	-0.09	-0.00	-0.00	0.00
		13	0.230	-0.12	0.01	-0.10	-0.00	-0.01	-0.00
	CO28	14	0.000	-0.36	-0.02	0.10	0.00	-0.01	-0.00
		34	0.115	-0.36	-0.02	0.10	0.00	0.00	0.00
			0.115	-0.14	0.02	-0.11	-0.00	0.00	0.00
		13	0.230	-0.14	0.02	-0.11	-0.00	-0.01	-0.00
	CO29	14	0.000	1.30	-0.35	-0.78	0.03	0.17	-0.02
		34	0.115	1.30	-0.36	-0.78	0.03	0.08	0.02
			0.115	2.47	0.62	0.87	-0.03	0.08	0.02
		13	0.230	2.47	0.62	0.87	-0.03	0.18	-0.05
	CO30	14	0.000	1.30	-0.33	-0.83	0.03	0.17	-0.02
		34	0.115	1.30	-0.33	-0.83	0.03	0.08	0.02
			0.115	2.38	0.58	0.94	-0.03	0.08	0.02
		13	0.230	2.38	0.58	0.94	-0.03	0.19	-0.05
	CO31	14	0.000	-0.07	0.01	-0.05	-0.00	0.01	0.00
		34	0.115	-0.07	0.01	-0.06	-0.00	0.00	-0.00
			0.115	-0.01	-0.01	-0.03	-0.00	0.00	-0.00
		13	0.230	-0.01	-0.01	-0.04	-0.00	-0.00	0.00
	CO32	14	0.000	-0.07	0.01	-0.07	-0.00	0.01	0.00
		34	0.115	-0.07	0.01	-0.08	-0.00	0.00	-0.00
			0.115	-0.00	-0.01	-0.05	-0.00	0.00	-0.00
		13	0.230	-0.00	-0.01	-0.05	-0.00	-0.00	0.00
	CO33	14	0.000	1.00	-0.13	-0.80	0.03	0.16	-0.00
		34	0.115	1.00	-0.13	-0.81	0.03	0.07	0.01
			0.115	2.05	0.46	1.13	-0.02	0.07	0.01
		13	0.230	2.05	0.46	1.13	-0.02	0.20	-0.04
	CO34	14	0.000	1.15	-0.20	-0.83	0.03	0.17	-0.01
		34	0.115	1.15	-0.20	-0.84	0.03	0.07	0.02
			0.115	2.16	0.50	1.10	-0.03	0.08	0.02
		13	0.230	2.16	0.50	1.10	-0.03	0.20	-0.04
	CO35	14	0.000	-0.01	-0.00	0.06	0.00	-0.00	0.00
		34	0.115	-0.01	-0.00	0.05	0.00	0.00	0.00
			0.115	-0.02	0.02	0.02	-0.00	0.01	0.00
		13	0.230	-0.02	0.02	0.01	-0.00	0.01	-0.00
	CO36	14	0.000	0.03	-0.01	0.07	0.00	-0.00	-0.00
		34	0.115	0.03	-0.01	0.07	0.00	0.01	0.00
			0.115	0.03	0.03	0.05	-0.00	0.01	0.00
		13	0.230	0.03	0.03	0.04	-0.00	0.01	-0.00
3	LC10	13	0.000	0.10	-0.08	-0.05	0.00	0.01	-0.01
		35	0.115	0.10	-0.08	-0.05	0.00	0.01	0.00
			0.115	0.19	0.07	-0.01	-0.00	0.01	0.00
		33	0.230	0.19	0.07	-0.01	-0.00	0.00	-0.01
	Form-Finding	13	0.000	0.05	0.01	-0.06	0.00	0.01	0.00
		35	0.115	0.05	0.01	-0.06	0.00	0.00	-0.00
			0.115	0.05	-0.01	0.06	-0.00	0.00	-0.00
		33	0.230	0.05	-0.01	0.06	-0.00	0.01	0.00
	CO1	13	0.000	-0.08	0.02	-0.00	-0.00	0.00	0.00
		35	0.115	-0.08	0.02	-0.01	-0.00	0.00	-0.00
			0.115	-0.06	-0.01	-0.01	-0.00	0.00	-0.00
		33	0.230	-0.06	-0.01	-0.02	-0.00	-0.00	0.00
	CO2	13	0.000	-0.18	-0.03	0.15	0.00	-0.02	-0.00
		35	0.115	-0.18	-0.03	0.14	0.00	0.00	0.00
			0.115	-0.54	0.03	-0.12	-0.00	0.00	0.00
		33	0.230	-0.54	0.03	-0.13	-0.00	-0.01	-0.00
	CO3	13	0.000	1.72	-0.45	-0.54	0.02	0.12	-0.04
		35	0.115	1.72	-0.45	-0.55	0.02	0.06	0.02
			0.115	0.85	0.26	0.50	-0.02	0.06	0.02
		33	0.230	0.85	0.26	0.49	-0.02	0.11	-0.01
	CO4	13	0.000	1.71	-0.41	-0.60	0.02	0.13	-0.03
		35	0.115	1.71	-0.41	-0.61	0.02	0.06	0.01
			0.115	0.87	0.23	0.56	-0.02	0.06	0.01
		33	0.230	0.87	0.23	0.56	-0.02	0.12	-0.01
	CO5	13	0.000	-0.19	-0.02	0.12	-0.00	-0.01	-0.00
		35	0.115	-0.19	-0.02	0.11	-0.00	0.00	0.00
			0.115	-0.47	0.03	-0.16	-0.00	0.00	0.00
		33	0.230	-0.47	0.03	-0.17	-0.00	-0.02	-0.00
	CO6	13	0.000	-0.14	-0.01	0.12	0.00	-0.01	-0.00
		35	0.115	-0.14	-0.01	0.11	0.00	0.00	0.00
			0.115	-0.39	0.01	-0.13	-0.00	0.00	0.00
		33	0.230	-0.39	0.01	-0.14	-0.00	-0.01	0.00
	CO7	13	0.000	1.50	-0.54	-0.51	0.02	0.12	-0.04
		35	0.115	1.50	-0.54	-0.52	0.02	0.06	0.02
			0.115	1.42	0.46	0.21	-0.03	0.06	0.02
		33	0.230	1.42	0.46	0.20	-0.03	0.08	-0.03
	CO8	13	0.000	1.59	-0.49	-0.63	0.02	0.13	-0.04
		35	0.115	1.59	-0.49	-0.63	0.02	0.06	0.02
			0.115	1.30	0.38	0.36	-0.03	0.06	0.02

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
3	CO8	33	0.230	1.30	0.38	0.36	-0.03	0.10	-0.03
	CO9	13	0.000	-0.11	-0.01	0.15	0.00	-0.02	0.00
		35	0.115	-0.11	-0.01	0.14	0.00	0.00	0.00
			0.115	-0.40	0.00	-0.10	0.00	0.00	0.00
		33	0.230	-0.40	0.00	-0.11	0.00	-0.01	0.00
	CO10	13	0.000	-0.14	-0.02	0.15	0.00	-0.02	0.00
		35	0.115	-0.14	-0.02	0.15	0.00	0.00	0.00
			0.115	-0.41	0.01	-0.10	0.00	0.00	0.00
		33	0.230	-0.41	0.01	-0.11	0.00	-0.01	0.00
	CO11	13	0.000	3.45	-0.90	-1.21	0.05	0.26	-0.07
		35	0.115	3.45	-0.90	-1.22	0.05	0.12	0.03
			0.115	1.82	0.51	1.11	-0.05	0.12	0.03
		33	0.230	1.82	0.51	1.10	-0.05	0.24	-0.03
	CO12	13	0.000	3.32	-0.84	-1.31	0.05	0.27	-0.07
		35	0.115	3.32	-0.84	-1.32	0.05	0.12	0.03
			0.115	1.82	0.47	1.18	-0.05	0.12	0.03
		33	0.230	1.82	0.47	1.17	-0.05	0.25	-0.03
	CO13	13	0.000	-0.00	0.02	0.01	0.00	0.00	0.00
		35	0.115	-0.00	0.02	0.00	0.00	0.00	-0.00
			0.115	-0.08	-0.01	0.07	0.00	0.00	-0.00
		33	0.230	-0.08	-0.01	0.06	0.00	0.01	0.00
	CO14	13	0.000	-0.01	0.01	0.04	0.00	-0.00	0.00
		35	0.115	-0.01	0.01	0.03	0.00	0.00	-0.00
			0.115	-0.08	-0.01	0.08	0.00	0.00	-0.00
		33	0.230	-0.08	-0.01	0.07	0.00	0.01	0.00
	CO15	13	0.000	3.18	-0.96	-1.21	0.04	0.25	-0.08
		35	0.115	3.18	-0.96	-1.22	0.04	0.11	0.03
			0.115	2.42	0.70	0.96	-0.05	0.11	0.03
		33	0.230	2.42	0.70	0.95	-0.05	0.22	-0.05
	CO16	13	0.000	3.22	-0.91	-1.30	0.04	0.26	-0.08
		35	0.115	3.22	-0.91	-1.31	0.04	0.12	0.03
			0.115	2.25	0.61	1.09	-0.05	0.11	0.03
		33	0.230	2.25	0.61	1.08	-0.05	0.24	-0.04
	CO17	13	0.000	-0.04	-0.03	-0.02	0.00	0.00	-0.00
		35	0.115	-0.04	-0.03	-0.03	0.00	0.00	0.00
			0.115	0.10	0.04	0.01	-0.00	0.00	0.00
		33	0.230	0.10	0.04	0.00	-0.00	0.00	-0.00
	CO18	13	0.000	-0.01	-0.04	-0.04	0.00	0.01	-0.00
		35	0.115	-0.01	-0.04	-0.05	0.00	0.00	0.00
			0.115	0.09	0.04	-0.01	-0.00	0.00	0.00
		33	0.230	0.09	0.04	-0.02	-0.00	0.00	-0.00
	CO19	13	0.000	-0.06	0.03	-0.01	0.00	0.00	0.00
		35	0.115	-0.06	0.03	-0.02	0.00	0.00	-0.00
			0.115	-0.02	-0.02	0.01	-0.00	0.00	-0.00
		33	0.230	-0.02	-0.02	0.00	-0.00	0.00	0.00
	CO20	13	0.000	-0.17	-0.02	0.13	0.00	-0.01	-0.00
		35	0.115	-0.17	-0.02	0.12	0.00	0.00	0.00
			0.115	-0.34	0.01	-0.09	-0.00	0.00	0.00
		33	0.230	-0.34	0.01	-0.10	-0.00	-0.01	-0.00
	CO21	13	0.000	1.22	-0.31	-0.40	0.02	0.08	-0.02
		35	0.115	1.22	-0.31	-0.40	0.02	0.04	0.01
			0.115	0.60	0.18	0.36	-0.02	0.04	0.01
		33	0.230	0.60	0.18	0.36	-0.02	0.08	-0.01
	CO22	13	0.000	1.21	-0.28	-0.44	0.02	0.09	-0.02
		35	0.115	1.21	-0.28	-0.44	0.02	0.04	0.01
			0.115	0.61	0.16	0.40	-0.02	0.04	0.01
		33	0.230	0.61	0.16	0.40	-0.02	0.08	-0.01
	CO23	13	0.000	-0.11	-0.01	0.08	-0.00	-0.01	-0.00
		35	0.115	-0.11	-0.01	0.07	-0.00	0.00	0.00
			0.115	-0.27	0.01	-0.10	-0.00	0.00	0.00
		33	0.230	-0.27	0.01	-0.10	-0.00	-0.01	-0.00
	CO24	13	0.000	-0.09	-0.01	0.08	-0.00	-0.01	-0.00
		35	0.115	-0.09	-0.01	0.08	-0.00	-0.00	0.00
			0.115	-0.21	0.01	-0.08	-0.00	-0.00	0.00
		33	0.230	-0.21	0.01	-0.09	-0.00	-0.01	-0.00
	CO25	13	0.000	1.07	-0.38	-0.37	0.01	0.09	-0.03
		35	0.115	1.07	-0.38	-0.37	0.01	0.05	0.02
			0.115	1.02	0.34	0.11	-0.02	0.04	0.02
		33	0.230	1.02	0.34	0.10	-0.02	0.05	-0.02
	CO26	13	0.000	1.13	-0.35	-0.45	0.01	0.10	-0.03
		35	0.115	1.13	-0.35	-0.46	0.01	0.04	0.01
			0.115	0.93	0.28	0.22	-0.02	0.04	0.01
		33	0.230	0.93	0.28	0.21	-0.02	0.07	-0.02
	CO27	13	0.000	-0.09	-0.00	0.11	0.00	-0.01	0.00
		35	0.115	-0.09	-0.00	0.10	0.00	0.00	0.00
			0.115	-0.28	-0.00	-0.07	0.00	0.00	0.00
		33	0.230	-0.28	-0.00	-0.07	0.00	-0.01	0.00
	CO28	13	0.000	-0.14	-0.00	0.11	0.00	-0.01	0.00
		35	0.115	-0.14	-0.00	0.10	0.00	-0.00	0.00
			0.115	-0.29	0.00	-0.09	0.00	0.00	0.00
		33	0.230	-0.29	0.00	-0.09	0.00	-0.01	0.00
	CO29	13	0.000	2.47	-0.62	-0.87	0.03	0.18	-0.05
		35	0.115	2.47	-0.62	-0.87	0.03	0.08	0.02
			0.115	1.29	0.35	0.79	-0.03	0.08	0.02
		33	0.230	1.29	0.35	0.78	-0.03	0.17	-0.02
	CO30	13	0.000	2.38	-0.58	-0.94	0.03	0.19	-0.05
		35	0.115	2.38	-0.58	-0.94	0.03	0.08	0.02
			0.115	1.30	0.33	0.83	-0.03	0.08	0.02
		33	0.230	1.30	0.33	0.83	-0.03	0.17	-0.02
	CO31	13	0.000	-0.01	0.01	0.03	0.00	-0.00	0.00
		35	0.115	-0.01	0.01	0.03	0.00	0.00	-0.00
			0.115	-0.08	-0.01	0.07	0.00	0.00	-0.00
		33	0.230	-0.08	-0.01	0.06	0.00	0.01	0.00
	CO32	13	0.000	-0.00	0.01	0.05	0.00	-0.00	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
3	CO32	35	0.115	-0.00	0.01	0.05	0.00	0.00	-0.00
			0.115	-0.07	-0.01	0.08	0.00	0.00	-0.00
		33	0.230	-0.07	-0.01	0.07	0.00	0.01	0.00
	CO33	13	0.000	2.27	-0.67	-0.88	0.03	0.18	-0.05
		35	0.115	2.27	-0.67	-0.89	0.03	0.08	0.02
			0.115	1.74	0.50	0.63	-0.04	0.08	0.02
		33	0.230	1.74	0.50	0.62	-0.04	0.15	-0.04
	CO34	13	0.000	2.30	-0.64	-0.95	0.03	0.19	-0.05
		35	0.115	2.30	-0.64	-0.95	0.03	0.08	0.02
			0.115	1.62	0.43	0.73	-0.04	0.08	0.02
		33	0.230	1.62	0.43	0.73	-0.04	0.16	-0.03
	CO35	13	0.000	-0.01	-0.04	-0.02	0.00	0.00	-0.00
		35	0.115	-0.01	-0.04	-0.02	0.00	0.00	0.00
			0.115	0.09	0.04	0.00	-0.00	0.00	0.00
		33	0.230	0.09	0.04	-0.01	-0.00	0.00	-0.00
	CO36	13	0.000	0.01	-0.04	-0.03	0.00	0.01	-0.00
		35	0.115	0.01	-0.04	-0.04	0.00	0.00	0.00
			0.115	0.08	0.04	-0.02	-0.00	0.00	0.00
		33	0.230	0.08	0.04	-0.03	-0.00	0.00	-0.00
4	LC10	33	0.000	0.16	-0.02	-0.08	0.00	0.01	-0.00
		36	0.115	0.16	-0.02	-0.08	0.00	-0.00	0.00
			0.115	-0.21	-0.02	0.15	0.00	0.00	0.00
		12	0.230	-0.21	-0.02	0.15	0.00	0.02	0.00
	Form-Finding	33	0.000	0.05	0.01	-0.07	0.00	0.01	0.00
		36	0.115	0.05	0.01	-0.07	0.00	0.00	-0.00
			0.115	0.05	-0.01	0.07	-0.00	0.00	-0.00
		12	0.230	0.05	-0.01	0.07	-0.00	0.01	0.00
	CO1	33	0.000	0.03	-0.02	0.02	0.00	-0.00	-0.00
		36	0.115	0.03	-0.02	0.01	0.00	-0.00	0.00
			0.115	0.05	0.02	0.02	0.00	0.00	0.00
		12	0.230	0.05	0.02	0.01	0.00	0.00	-0.00
	CO2	33	0.000	-0.33	-0.06	-0.02	-0.00	-0.00	-0.00
		36	0.115	-0.33	-0.06	-0.03	-0.00	-0.01	0.00
			0.115	0.07	0.07	0.02	0.00	-0.01	0.00
		12	0.230	0.07	0.07	0.01	0.00	-0.01	-0.01
	CO3	33	0.000	0.01	0.40	-1.14	0.01	0.17	0.02
		36	0.115	0.01	0.40	-1.15	0.01	0.04	-0.02
			0.115	-0.72	-0.59	0.97	-0.02	0.03	-0.02
		12	0.230	-0.72	-0.59	0.96	-0.02	0.15	0.04
	CO4	33	0.000	0.06	0.38	-1.13	0.01	0.17	0.02
		36	0.115	0.06	0.38	-1.14	0.01	0.04	-0.02
			0.115	-0.67	-0.57	0.97	-0.02	0.04	-0.02
		12	0.230	-0.67	-0.56	0.97	-0.02	0.15	0.04
	CO5	33	0.000	-0.18	-0.04	-0.00	-0.00	-0.01	-0.00
		36	0.115	-0.18	-0.04	-0.01	-0.00	-0.01	0.00
			0.115	0.13	0.05	0.05	0.00	-0.01	0.00
		12	0.230	0.13	0.05	0.04	0.00	-0.00	-0.00
	CO6	33	0.000	-0.21	-0.03	-0.01	-0.00	-0.00	-0.00
		36	0.115	-0.21	-0.03	-0.01	-0.00	-0.01	0.00
			0.115	0.13	0.05	0.04	0.00	-0.01	0.00
		12	0.230	0.13	0.05	0.03	0.00	-0.00	-0.00
	CO7	33	0.000	0.84	0.09	-0.75	0.02	0.12	0.00
		36	0.115	0.84	0.09	-0.76	0.02	0.04	-0.01
			0.115	-0.49	-0.35	0.90	-0.01	0.04	-0.01
		12	0.230	-0.49	-0.35	0.90	-0.01	0.14	0.03
	CO8	33	0.000	0.70	0.19	-0.89	0.02	0.14	0.01
		36	0.115	0.70	0.19	-0.90	0.02	0.04	-0.01
			0.115	-0.60	-0.43	0.98	-0.01	0.04	-0.01
		12	0.230	-0.60	-0.43	0.97	-0.01	0.15	0.04
	CO9	33	0.000	-0.38	-0.03	-0.06	-0.00	-0.00	-0.00
		36	0.115	-0.38	-0.03	-0.07	-0.00	-0.01	0.00
			0.115	0.14	0.05	0.01	0.00	-0.01	0.00
		12	0.230	0.14	0.05	0.00	0.00	-0.01	-0.01
	CO10	33	0.000	-0.36	-0.03	-0.04	-0.00	-0.00	-0.00
		36	0.115	-0.36	-0.03	-0.05	-0.00	-0.01	0.00
			0.115	0.11	0.06	0.00	0.00	-0.01	0.00
		12	0.230	0.11	0.06	-0.00	0.00	-0.01	-0.01
	CO11	33	0.000	0.08	0.81	-2.38	0.03	0.35	0.05
		36	0.115	0.08	0.81	-2.39	0.03	0.08	-0.05
			0.115	-1.50	-1.20	2.03	-0.04	0.07	-0.05
		12	0.230	-1.50	-1.20	2.02	-0.04	0.31	0.09
	CO12	33	0.000	0.16	0.78	-2.37	0.03	0.35	0.04
		36	0.115	0.16	0.78	-2.38	0.03	0.08	-0.05
			0.115	-1.38	-1.14	2.06	-0.04	0.08	-0.05
		12	0.230	-1.38	-1.14	2.05	-0.04	0.31	0.09
	CO13	33	0.000	-0.15	-0.01	-0.11	-0.00	0.02	-0.00
		36	0.115	-0.15	-0.01	-0.12	-0.00	0.00	0.00
			0.115	0.07	0.02	0.01	-0.00	0.00	0.00
		12	0.230	0.07	0.02	-0.00	-0.00	0.00	-0.00
	CO14	33	0.000	-0.15	-0.01	-0.13	-0.00	0.02	-0.00
		36	0.115	-0.15	-0.01	-0.14	-0.00	0.00	0.00
			0.115	0.08	0.02	-0.01	-0.00	0.00	0.00
		12	0.230	0.08	0.02	-0.02	-0.00	-0.00	-0.00
	CO15	33	0.000	1.22	0.40	-1.96	0.03	0.31	0.02
		36	0.115	1.22	0.40	-1.96	0.03	0.09	-0.02
			0.115	-1.21	-0.85	1.77	-0.04	0.09	-0.02
		12	0.230	-1.21	-0.85	1.76	-0.04	0.29	0.07
	CO16	33	0.000	0.88	0.55	-2.15	0.03	0.33	0.03
		36	0.115	0.88	0.54	-2.16	0.03	0.09	-0.03
			0.115	-1.32	-0.97	1.92	-0.04	0.09	-0.03
		12	0.230	-1.32	-0.97	1.91	-0.04	0.31	0.08
	CO17	33	0.000	0.21	-0.03	-0.08	-0.00	0.01	-0.00
		36	0.115	0.21	-0.03	-0.09	-0.00	-0.00	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
4	CO17		0.115	-0.13	0.01	0.10	0.00	-0.00	0.00
		12	0.230	-0.13	0.01	0.09	0.00	0.01	-0.00
	CO18	33	0.000	0.14	-0.02	-0.05	0.00	0.00	-0.00
		36	0.115	0.14	-0.02	-0.06	0.00	-0.00	0.00
			0.115	-0.19	-0.01	0.13	0.00	0.00	0.00
		12	0.230	-0.19	-0.01	0.12	0.00	0.01	0.00
	CO19	33	0.000	0.03	-0.02	0.00	0.00	0.00	-0.00
		36	0.115	0.03	-0.02	-0.00	0.00	0.00	0.00
			0.115	0.08	0.03	0.02	0.00	0.00	0.00
		12	0.230	0.08	0.03	0.02	0.00	0.00	-0.00
	CO20	33	0.000	-0.26	-0.04	-0.04	-0.00	-0.00	-0.00
		36	0.115	-0.26	-0.04	-0.04	-0.00	-0.01	0.00
			0.115	0.07	0.05	0.02	0.00	-0.01	0.00
		12	0.230	0.07	0.05	0.02	0.00	-0.00	-0.00
	CO21	33	0.000	0.02	0.28	-0.79	0.01	0.12	0.02
		36	0.115	0.02	0.28	-0.79	0.01	0.03	-0.02
			0.115	-0.49	-0.41	0.68	-0.01	0.02	-0.02
		12	0.230	-0.49	-0.41	0.67	-0.01	0.10	0.03
	CO22	33	0.000	0.05	0.27	-0.78	0.01	0.12	0.02
		36	0.115	0.05	0.27	-0.79	0.01	0.03	-0.02
			0.115	-0.45	-0.39	0.68	-0.01	0.03	-0.02
		12	0.230	-0.45	-0.39	0.68	-0.01	0.10	0.03
	CO23	33	0.000	-0.16	-0.02	-0.01	-0.00	-0.00	-0.00
		36	0.115	-0.16	-0.02	-0.02	-0.00	-0.01	0.00
			0.115	0.09	0.03	0.04	0.00	-0.01	0.00
		12	0.230	0.09	0.03	0.03	0.00	-0.00	-0.00
	CO24	33	0.000	-0.08	-0.02	0.02	-0.00	-0.00	-0.00
		36	0.115	-0.08	-0.02	0.01	-0.00	-0.00	0.00
			0.115	0.06	0.03	0.00	0.00	-0.00	0.00
		12	0.230	0.06	0.03	-0.00	0.00	-0.00	-0.00
	CO25	33	0.000	0.58	0.07	-0.51	0.01	0.08	0.00
		36	0.115	0.58	0.07	-0.52	0.01	0.02	-0.01
			0.115	-0.36	-0.26	0.69	-0.01	0.03	-0.01
		12	0.230	-0.36	-0.26	0.68	-0.01	0.11	0.02
	CO26	33	0.000	0.48	0.14	-0.60	0.01	0.09	0.01
		36	0.115	0.48	0.14	-0.61	0.01	0.02	-0.01
			0.115	-0.42	-0.31	0.73	-0.01	0.03	-0.01
		12	0.230	-0.42	-0.31	0.73	-0.01	0.11	0.03
	CO27	33	0.000	-0.33	-0.02	-0.05	-0.00	-0.00	-0.00
		36	0.115	-0.33	-0.02	-0.05	-0.00	-0.01	0.00
			0.115	0.12	0.04	0.02	0.00	-0.01	0.00
		12	0.230	0.12	0.04	0.01	0.00	-0.00	-0.00
	CO28	33	0.000	-0.09	-0.03	0.04	-0.00	-0.01	-0.00
		36	0.115	-0.09	-0.03	0.03	-0.00	-0.00	0.00
			0.115	0.01	0.05	-0.04	0.00	-0.00	0.00
		12	0.230	0.01	0.05	-0.04	0.00	-0.01	-0.00
	CO29	33	0.000	0.07	0.57	-1.62	0.02	0.24	0.03
		36	0.115	0.07	0.57	-1.62	0.02	0.06	-0.03
			0.115	-1.05	-0.84	1.40	-0.03	0.05	-0.03
		12	0.230	-1.05	-0.84	1.40	-0.03	0.21	0.06
	CO30	33	0.000	0.13	0.55	-1.60	0.02	0.24	0.03
		36	0.115	0.13	0.55	-1.61	0.02	0.06	-0.03
			0.115	-0.97	-0.80	1.42	-0.03	0.06	-0.03
		12	0.230	-0.97	-0.80	1.41	-0.03	0.22	0.06
	CO31	33	0.000	-0.13	-0.01	-0.10	-0.00	0.01	-0.00
		36	0.115	-0.13	-0.01	-0.11	-0.00	0.00	0.00
			0.115	0.07	0.02	-0.01	-0.00	0.00	0.00
		12	0.230	0.07	0.02	-0.02	-0.00	-0.00	-0.00
	CO32	33	0.000	-0.11	-0.01	-0.10	-0.00	0.02	-0.00
		36	0.115	-0.11	-0.01	-0.11	-0.00	0.00	0.00
			0.115	0.07	0.02	-0.03	-0.00	0.00	0.00
		12	0.230	0.07	0.02	-0.03	-0.00	-0.00	-0.00
	CO33	33	0.000	0.86	0.29	-1.30	0.03	0.21	0.01
		36	0.115	0.86	0.29	-1.31	0.03	0.06	-0.02
			0.115	-0.86	-0.61	1.29	-0.02	0.06	-0.02
		12	0.230	-0.86	-0.61	1.28	-0.02	0.21	0.05
	CO34	33	0.000	0.64	0.39	-1.43	0.02	0.22	0.02
		36	0.115	0.64	0.39	-1.44	0.02	0.06	-0.02
			0.115	-0.93	-0.68	1.37	-0.02	0.06	-0.02
		12	0.230	-0.93	-0.68	1.36	-0.02	0.22	0.05
	CO35	33	0.000	0.15	-0.03	-0.05	0.00	0.01	-0.00
		36	0.115	0.15	-0.03	-0.05	0.00	-0.00	0.00
			0.115	-0.13	0.01	0.08	0.00	0.00	0.00
		12	0.230	-0.13	0.01	0.07	0.00	0.01	0.00
	CO36	33	0.000	0.10	-0.02	-0.03	0.00	0.00	-0.00
		36	0.115	0.10	-0.02	-0.04	0.00	-0.00	0.00
			0.115	-0.17	-0.01	0.11	0.00	0.00	0.00
		12	0.230	-0.17	-0.01	0.10	0.00	0.01	0.00
5	LC10	2	0.000	0.28	0.05	-0.49	-0.00	0.06	0.00
		14	0.150	0.28	0.05	-0.49	-0.00	-0.01	-0.00
	Form-Finding	2	0.000	0.03	-0.00	-0.26	-0.00	0.03	-0.00
		14	0.150	0.03	-0.00	-0.26	-0.00	-0.01	0.00
	CO1	2	0.000	-0.00	-0.03	-0.00	-0.00	0.00	-0.00
		14	0.150	-0.00	-0.03	-0.01	-0.00	0.00	0.00
	CO2	2	0.000	-0.09	-0.03	0.21	-0.01	-0.02	-0.00
		14	0.150	-0.09	-0.03	0.20	-0.01	0.01	0.00
	CO3	2	0.000	0.30	0.60	-3.17	-0.06	0.34	0.05
		14	0.150	0.30	0.60	-3.18	-0.06	-0.14	-0.04
	CO4	2	0.000	0.29	0.57	-3.27	-0.05	0.35	0.05
		14	0.150	0.30	0.57	-3.28	-0.05	-0.14	-0.03
	CO5	2	0.000	-0.04	-0.04	0.19	-0.01	-0.02	-0.00
		14	0.150	-0.04	-0.04	0.18	-0.01	0.01	0.00
	CO6	2	0.000	-0.07	-0.04	0.18	-0.01	-0.02	-0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
5	CO6	14	0.150	-0.07	-0.04	0.17	-0.01	0.01	0.00
	CO7	2	0.000	1.18	0.42	-3.53	-0.04	0.40	0.03
		14	0.150	1.18	0.42	-3.55	-0.04	-0.13	-0.03
	CO8	2	0.000	0.90	0.46	-3.55	-0.04	0.40	0.04
		14	0.150	0.90	0.46	-3.56	-0.04	-0.14	-0.03
	CO9	2	0.000	-0.07	-0.01	0.21	-0.01	-0.02	-0.00
		14	0.150	-0.07	-0.01	0.20	-0.01	0.01	0.00
	CO10	2	0.000	-0.08	-0.01	0.20	-0.01	-0.02	-0.00
		14	0.150	-0.08	-0.01	0.19	-0.01	0.01	0.00
	CO11	2	0.000	0.56	1.19	-6.74	-0.11	0.72	0.10
		14	0.150	0.56	1.19	-6.75	-0.11	-0.30	-0.07
	CO12	2	0.000	0.55	1.13	-6.91	-0.10	0.73	0.10
		14	0.150	0.55	1.13	-6.92	-0.10	-0.30	-0.07
	CO13	2	0.000	-0.02	-0.01	-0.10	-0.01	0.01	-0.00
		14	0.150	-0.02	-0.01	-0.11	-0.01	-0.01	0.00
	CO14	2	0.000	-0.02	-0.02	-0.11	-0.01	0.01	-0.00
		14	0.150	-0.02	-0.02	-0.13	-0.01	-0.01	0.00
	CO15	2	0.000	1.59	0.90	-7.17	-0.09	0.79	0.07
		14	0.150	1.60	0.90	-7.18	-0.09	-0.29	-0.06
	CO16	2	0.000	1.18	0.98	-7.23	-0.10	0.79	0.08
		14	0.150	1.18	0.98	-7.24	-0.10	-0.30	-0.07
	CO17	2	0.000	0.18	0.02	-0.14	-0.01	0.02	0.00
		14	0.150	0.18	0.02	-0.15	-0.01	-0.00	-0.00
	CO18	2	0.000	0.19	0.05	-0.28	-0.00	0.04	0.00
		14	0.150	0.19	0.05	-0.29	-0.00	-0.01	-0.00
	CO19	2	0.000	0.00	-0.03	-0.04	0.00	0.01	-0.00
		14	0.150	0.00	-0.03	-0.05	0.00	-0.00	0.00
	CO20	2	0.000	-0.06	-0.03	0.14	-0.01	-0.01	-0.00
		14	0.150	-0.06	-0.03	0.14	-0.01	0.01	0.00
	CO21	2	0.000	0.22	0.42	-2.24	-0.04	0.24	0.04
		14	0.150	0.22	0.42	-2.25	-0.04	-0.10	-0.03
	CO22	2	0.000	0.22	0.39	-2.31	-0.03	0.25	0.03
		14	0.150	0.22	0.39	-2.32	-0.03	-0.10	-0.02
	CO23	2	0.000	-0.03	-0.03	0.12	-0.01	-0.01	-0.00
		14	0.150	-0.03	-0.03	0.11	-0.01	0.01	0.00
	CO24	2	0.000	-0.04	-0.03	0.14	-0.01	-0.01	-0.00
		14	0.150	-0.04	-0.03	0.13	-0.01	0.01	0.00
	CO25	2	0.000	0.86	0.30	-2.50	-0.03	0.29	0.02
		14	0.150	0.86	0.30	-2.51	-0.03	-0.09	-0.02
	CO26	2	0.000	0.66	0.33	-2.51	-0.03	0.28	0.03
		14	0.150	0.66	0.33	-2.51	-0.03	-0.10	-0.02
	CO27	2	0.000	-0.06	-0.01	0.14	-0.01	-0.01	-0.00
		14	0.150	-0.06	-0.01	0.13	-0.01	0.01	0.00
	CO28	2	0.000	-0.04	-0.05	0.13	-0.01	-0.01	-0.01
		14	0.150	-0.04	-0.05	0.12	-0.01	0.01	0.00
	CO29	2	0.000	0.41	0.84	-4.69	-0.07	0.50	0.07
		14	0.150	0.41	0.84	-4.70	-0.07	-0.21	-0.05
	CO30	2	0.000	0.41	0.80	-4.81	-0.07	0.51	0.07
		14	0.150	0.41	0.80	-4.81	-0.07	-0.21	-0.05
	CO31	2	0.000	-0.03	-0.01	-0.07	-0.00	0.01	-0.00
		14	0.150	-0.03	-0.01	-0.08	-0.00	-0.01	0.00
	CO32	2	0.000	-0.02	-0.02	-0.09	-0.00	0.01	-0.00
		14	0.150	-0.02	-0.02	-0.10	-0.00	-0.01	0.00
	CO33	2	0.000	1.15	0.66	-4.99	-0.06	0.55	0.05
		14	0.150	1.15	0.66	-5.00	-0.06	-0.20	-0.05
	CO34	2	0.000	0.86	0.70	-5.02	-0.06	0.55	0.06
		14	0.150	0.87	0.70	-5.03	-0.06	-0.21	-0.05
	CO35	2	0.000	0.18	0.02	-0.21	-0.00	0.03	0.00
		14	0.150	0.18	0.02	-0.22	-0.00	-0.01	-0.00
	CO36	2	0.000	0.19	0.04	-0.31	-0.00	0.04	0.00
		14	0.150	0.19	0.04	-0.32	-0.00	-0.01	-0.00
6	LC10	2	0.000	0.17	-0.09	-0.33	0.01	0.04	-0.01
		12	0.150	0.17	-0.09	-0.33	0.01	-0.01	0.00
	Form-Finding	2	0.000	0.03	0.00	-0.28	0.00	0.03	0.00
		12	0.150	0.03	0.00	-0.28	0.00	-0.01	0.00
	CO1	2	0.000	-0.09	0.00	0.01	0.00	-0.00	0.00
		12	0.150	-0.09	0.00	0.00	0.00	-0.00	-0.00
	CO2	2	0.000	-0.29	0.02	0.03	0.00	0.01	0.00
		12	0.150	-0.29	0.02	0.02	0.00	0.01	0.00
	CO3	2	0.000	2.34	0.00	-4.33	0.00	0.51	0.00
		12	0.150	2.35	0.00	-4.34	0.00	-0.14	0.00
	CO4	2	0.000	2.24	0.00	-4.32	0.00	0.50	0.00
		12	0.150	2.25	0.00	-4.33	0.00	-0.15	0.00
	CO5	2	0.000	-0.20	-0.00	0.02	0.00	0.01	-0.00
		12	0.150	-0.20	-0.00	0.01	0.00	0.01	0.00
	CO6	2	0.000	-0.21	0.00	0.02	0.00	0.00	0.00
		12	0.150	-0.21	0.00	0.01	0.00	0.01	-0.00
	CO7	2	0.000	2.13	-0.29	-3.70	0.02	0.42	-0.03
		12	0.150	2.14	-0.29	-3.71	0.02	-0.14	0.02
	CO8	2	0.000	2.20	-0.20	-3.97	0.01	0.45	-0.02
		12	0.150	2.21	-0.20	-3.98	0.01	-0.15	0.01
	CO9	2	0.000	-0.29	-0.05	0.00	-0.00	0.01	-0.00
		12	0.150	-0.29	-0.05	-0.01	-0.00	0.01	0.00
	CO10	2	0.000	-0.27	-0.02	0.01	-0.00	0.01	-0.00
		12	0.150	-0.27	-0.02	0.00	-0.00	0.01	0.00
	CO11	2	0.000	4.77	0.00	-9.06	0.00	1.06	0.00
		12	0.150	4.78	0.00	-9.07	0.00	-0.30	0.00
	CO12	2	0.000	4.57	0.00	-9.08	0.00	1.05	0.00
		12	0.150	4.58	0.00	-9.09	0.00	-0.31	0.00
	CO13	2	0.000	-0.11	0.01	-0.30	-0.00	0.04	0.00
		12	0.150	-0.11	0.01	-0.31	-0.00	-0.01	-0.00
	CO14	2	0.000	-0.12	-0.00	-0.33	0.00	0.04	-0.00
		12	0.150	-0.12	-0.00	-0.34	0.00	-0.01	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	Vy	Vz	Moments [kNm] MT	My	Mz
6	CO15	2	0.000	4.62	-0.35	-8.41	0.03	0.97	-0.03
		12	0.150	4.62	-0.35	-8.42	0.03	-0.29	0.02
	CO16	2	0.000	4.66	-0.22	-8.79	0.02	1.01	-0.02
		12	0.150	4.67	-0.22	-8.80	0.02	-0.31	0.01
	CO17	2	0.000	0.05	-0.07	-0.19	0.00	0.02	-0.01
		12	0.150	0.05	-0.07	-0.20	0.00	-0.01	0.00
	CO18	2	0.000	0.08	-0.04	-0.20	0.00	0.02	-0.00
		12	0.150	0.08	-0.04	-0.21	0.00	-0.01	0.00
	CO19	2	0.000	-0.11	-0.00	-0.01	0.00	0.00	-0.00
		12	0.150	-0.11	-0.00	-0.02	0.00	-0.00	0.00
	CO20	2	0.000	-0.22	-0.01	0.00	0.00	0.01	-0.00
		12	0.150	-0.22	-0.01	-0.01	0.00	0.01	0.00
	CO21	2	0.000	1.62	0.00	-3.00	0.00	0.35	0.00
		12	0.150	1.62	0.00	-3.01	0.00	-0.10	-0.00
	CO22	2	0.000	1.55	0.00	-2.99	0.00	0.35	0.00
		12	0.150	1.55	0.00	-3.00	0.00	-0.10	-0.00
	CO23	2	0.000	-0.14	0.00	0.02	0.00	0.00	0.00
		12	0.150	-0.14	0.00	0.01	0.00	0.00	-0.00
	CO24	2	0.000	-0.11	-0.02	0.04	0.00	-0.00	-0.00
		12	0.150	-0.11	-0.02	0.03	0.00	0.01	0.00
	CO25	2	0.000	1.45	-0.21	-2.54	0.01	0.29	-0.02
		12	0.150	1.45	-0.21	-2.55	0.01	-0.10	0.01
	CO26	2	0.000	1.50	-0.15	-2.72	0.01	0.31	-0.01
		12	0.150	1.50	-0.15	-2.73	0.01	-0.10	0.01
	CO27	2	0.000	-0.21	-0.01	0.01	0.00	0.00	-0.00
		12	0.150	-0.21	-0.01	0.00	0.00	0.01	0.00
	CO28	2	0.000	-0.17	-0.04	0.06	0.00	-0.00	-0.01
		12	0.150	-0.17	-0.04	0.05	0.00	0.01	0.00
	CO29	2	0.000	3.34	0.00	-6.18	0.00	0.72	0.00
		12	0.150	3.34	0.00	-6.19	0.00	-0.21	0.00
	CO30	2	0.000	3.20	0.00	-6.19	0.00	0.71	0.00
		12	0.150	3.20	0.00	-6.20	0.00	-0.22	0.00
	CO31	2	0.000	-0.08	0.00	-0.25	-0.00	0.03	0.00
		12	0.150	-0.08	0.00	-0.26	-0.00	-0.00	-0.00
	CO32	2	0.000	-0.08	-0.00	-0.25	0.00	0.03	-0.00
		12	0.150	-0.08	-0.00	-0.26	0.00	-0.00	0.00
	CO33	2	0.000	3.18	-0.26	-5.70	0.02	0.65	-0.03
		12	0.150	3.18	-0.26	-5.70	0.02	-0.20	0.01
	CO34	2	0.000	3.22	-0.17	-5.96	0.01	0.68	-0.02
		12	0.150	3.22	-0.17	-5.96	0.01	-0.21	0.01
	CO35	2	0.000	0.06	-0.07	-0.18	0.00	0.02	-0.01
		12	0.150	0.06	-0.07	-0.19	0.00	-0.01	0.00
	CO36	2	0.000	0.07	-0.05	-0.18	0.00	0.02	-0.00
		12	0.150	0.07	-0.05	-0.19	0.00	-0.01	0.00
7	LC10	2	0.000	-0.24	-0.08	-0.20	0.00	0.02	-0.01
		33	0.150	-0.24	-0.08	-0.20	0.00	-0.01	0.00
	Form-Finding	2	0.000	0.03	0.00	-0.26	0.00	0.03	0.00
		33	0.150	0.03	0.00	-0.26	0.00	-0.01	-0.00
	CO1	2	0.000	-0.00	0.03	-0.00	0.00	0.00	0.00
		33	0.150	-0.00	0.03	-0.01	0.00	0.00	-0.00
	CO2	2	0.000	-0.08	0.07	0.23	0.01	-0.02	0.01
		33	0.150	-0.08	0.07	0.21	0.01	0.01	-0.00
	CO3	2	0.000	0.30	-0.60	-3.17	0.06	0.34	-0.05
		33	0.150	0.30	-0.60	-3.18	0.06	-0.14	0.04
	CO4	2	0.000	0.30	-0.57	-3.27	0.05	0.35	-0.05
		33	0.150	0.30	-0.57	-3.28	0.05	-0.14	0.03
	CO5	2	0.000	-0.04	0.03	0.20	0.01	-0.02	0.00
		33	0.150	-0.04	0.03	0.19	0.01	0.01	-0.00
	CO6	2	0.000	-0.07	0.04	0.18	0.01	-0.02	0.00
		33	0.150	-0.07	0.04	0.17	0.01	0.01	-0.00
	CO7	2	0.000	-0.77	-0.65	-2.62	0.04	0.27	-0.06
		33	0.150	-0.77	-0.65	-2.63	0.04	-0.12	0.04
	CO8	2	0.000	-0.43	-0.62	-2.98	0.04	0.31	-0.06
		33	0.150	-0.43	-0.62	-2.99	0.04	-0.14	0.04
	CO9	2	0.000	-0.14	0.08	0.23	0.01	-0.03	0.01
		33	0.150	-0.14	0.08	0.22	0.01	0.01	-0.00
	CO10	2	0.000	-0.13	0.07	0.21	0.01	-0.02	0.01
		33	0.150	-0.13	0.07	0.20	0.01	0.01	-0.00
	CO11	2	0.000	0.56	-1.19	-6.74	0.11	0.72	-0.10
		33	0.150	0.56	-1.19	-6.75	0.11	-0.30	0.07
	CO12	2	0.000	0.56	-1.12	-6.91	0.10	0.73	-0.10
		33	0.150	0.56	-1.13	-6.92	0.10	-0.30	0.07
	CO13	2	0.000	0.01	0.02	-0.10	0.01	0.01	0.00
		33	0.150	0.01	0.02	-0.12	0.01	-0.01	-0.00
	CO14	2	0.000	-0.02	0.02	-0.11	0.01	0.01	0.00
		33	0.150	-0.02	0.02	-0.13	0.01	-0.01	-0.00
	CO15	2	0.000	-0.80	-1.31	-6.00	0.09	0.62	-0.12
		33	0.150	-0.79	-1.31	-6.01	0.09	-0.28	0.07
	CO16	2	0.000	-0.31	-1.25	-6.49	0.10	0.68	-0.12
		33	0.150	-0.31	-1.26	-6.50	0.10	-0.30	0.07
	CO17	2	0.000	-0.24	-0.01	-0.10	0.01	0.01	-0.00
		33	0.150	-0.24	-0.01	-0.11	0.01	-0.00	-0.00
	CO18	2	0.000	-0.20	-0.02	-0.13	0.00	0.01	-0.00
		33	0.150	-0.20	-0.02	-0.15	0.00	-0.01	0.00
	CO19	2	0.000	0.00	0.03	-0.04	-0.00	0.01	0.00
		33	0.150	0.00	0.03	-0.05	-0.00	-0.00	-0.00
	CO20	2	0.000	-0.08	0.03	0.18	0.01	-0.02	0.00
		33	0.150	-0.08	0.03	0.17	0.01	0.01	-0.00
	CO21	2	0.000	0.22	-0.42	-2.24	0.04	0.24	-0.04
		33	0.150	0.22	-0.42	-2.25	0.04	-0.10	0.03
	CO22	2	0.000	0.22	-0.39	-2.31	0.03	0.25	-0.03
		33	0.150	0.22	-0.39	-2.32	0.03	-0.10	0.02
	CO23	2	0.000	-0.04	0.02	0.15	0.01	-0.02	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
7	CO23	33	0.150	-0.04	0.02	0.14	0.01	0.01	-0.00
	CO24	2	0.000	-0.04	0.00	0.14	0.01	-0.01	-0.00
		33	0.150	-0.04	0.00	0.13	0.01	0.01	-0.00
	CO25	2	0.000	-0.50	-0.44	-1.88	0.03	0.20	-0.04
		33	0.150	-0.50	-0.44	-1.88	0.03	-0.09	0.02
	CO26	2	0.000	-0.27	-0.43	-2.12	0.03	0.22	-0.04
		33	0.150	-0.27	-0.43	-2.13	0.03	-0.09	0.02
	CO27	2	0.000	-0.09	0.05	0.18	0.01	-0.02	0.00
		33	0.150	-0.09	0.05	0.18	0.01	0.01	-0.00
	CO28	2	0.000	-0.07	0.02	0.19	0.00	-0.02	0.00
		33	0.150	-0.07	0.02	0.18	0.00	0.01	-0.00
	CO29	2	0.000	0.41	-0.84	-4.69	0.07	0.50	-0.07
		33	0.150	0.41	-0.84	-4.70	0.07	-0.21	0.05
	CO30	2	0.000	0.41	-0.79	-4.81	0.07	0.51	-0.07
		33	0.150	0.41	-0.80	-4.81	0.07	-0.21	0.05
	CO31	2	0.000	-0.01	0.02	-0.08	0.00	0.01	0.00
		33	0.150	-0.01	0.02	-0.09	0.00	-0.01	-0.00
	CO32	2	0.000	-0.02	0.02	-0.09	0.00	0.01	0.00
		33	0.150	-0.02	0.02	-0.10	0.00	-0.01	-0.00
	CO33	2	0.000	-0.52	-0.89	-4.22	0.06	0.44	-0.08
		33	0.150	-0.52	-0.89	-4.23	0.06	-0.19	0.05
	CO34	2	0.000	-0.19	-0.86	-4.54	0.06	0.48	-0.08
		33	0.150	-0.19	-0.86	-4.55	0.06	-0.20	0.05
	CO35	2	0.000	-0.20	-0.03	-0.06	0.00	0.01	-0.00
		33	0.150	-0.20	-0.03	-0.07	0.00	-0.00	0.00
	CO36	2	0.000	-0.17	-0.03	-0.10	0.00	0.01	-0.00
		33	0.150	-0.17	-0.03	-0.11	0.00	-0.01	0.00
8	LC10	2	0.000	-0.17	0.03	-0.19	-0.01	0.02	0.00
		13	0.150	-0.17	0.03	-0.19	-0.01	-0.01	-0.00
	Form-Finding	2	0.000	0.03	0.00	-0.24	-0.00	0.03	0.00
		13	0.150	0.03	0.00	-0.24	-0.00	-0.01	0.00
	CO1	2	0.000	0.07	0.00	0.02	-0.00	-0.00	0.00
		13	0.150	0.07	0.00	0.01	-0.00	-0.00	0.00
	CO2	2	0.000	0.05	0.03	0.39	-0.00	-0.05	0.00
		13	0.150	0.05	0.03	0.38	-0.00	0.01	-0.00
	CO3	2	0.000	-1.89	0.00	-2.12	0.00	0.18	0.00
		13	0.150	-1.89	0.00	-2.13	0.00	-0.13	0.00
	CO4	2	0.000	-1.72	0.00	-2.32	0.00	0.21	0.00
		13	0.150	-1.72	0.00	-2.33	0.00	-0.14	0.00
	CO5	2	0.000	-0.03	-0.00	0.44	-0.00	-0.06	-0.00
		13	0.150	-0.03	-0.00	0.43	-0.00	0.01	0.00
	CO6	2	0.000	0.01	-0.00	0.38	0.00	-0.05	0.00
		13	0.150	0.01	-0.00	0.37	0.00	0.01	0.00
	CO7	2	0.000	-1.55	0.29	-2.07	-0.03	0.18	0.02
		13	0.150	-1.55	0.29	-2.08	-0.03	-0.13	-0.02
	CO8	2	0.000	-1.59	0.19	-2.26	-0.02	0.20	0.01
		13	0.150	-1.59	0.19	-2.27	-0.02	-0.14	-0.01
	CO9	2	0.000	0.05	-0.04	0.37	-0.00	-0.04	-0.00
		13	0.150	0.05	-0.04	0.36	-0.00	0.01	0.00
	CO10	2	0.000	0.04	-0.02	0.33	-0.00	-0.04	-0.00
		13	0.150	0.04	-0.02	0.32	-0.00	0.01	0.00
	CO11	2	0.000	-3.69	-0.00	-4.62	0.00	0.41	0.00
		13	0.150	-3.69	-0.00	-4.64	0.00	-0.28	0.00
	CO12	2	0.000	-3.45	-0.00	-4.89	0.00	0.44	0.00
		13	0.150	-3.45	-0.00	-4.90	0.00	-0.29	0.00
	CO13	2	0.000	0.00	-0.00	-0.05	0.00	0.00	-0.00
		13	0.150	0.00	-0.00	-0.06	0.00	-0.00	0.00
	CO14	2	0.000	0.03	0.00	-0.09	-0.00	0.01	0.00
		13	0.150	0.03	0.00	-0.11	-0.00	-0.01	-0.00
	CO15	2	0.000	-3.27	0.34	-4.62	-0.03	0.42	0.03
		13	0.150	-3.27	0.34	-4.63	-0.03	-0.28	-0.02
	CO16	2	0.000	-3.30	0.21	-4.88	-0.02	0.44	0.02
		13	0.150	-3.30	0.21	-4.90	-0.02	-0.29	-0.02
	CO17	2	0.000	-0.04	0.02	0.00	-0.00	-0.00	0.00
		13	0.150	-0.04	0.02	-0.01	-0.00	-0.00	-0.00
	CO18	2	0.000	-0.09	0.03	-0.07	-0.00	0.00	0.00
		13	0.150	-0.09	0.03	-0.08	-0.00	-0.01	-0.00
	CO19	2	0.000	0.12	-0.00	-0.05	0.00	0.01	-0.00
		13	0.150	0.12	-0.00	-0.06	0.00	-0.00	-0.00
	CO20	2	0.000	0.04	-0.01	0.30	-0.00	-0.04	-0.00
		13	0.150	0.04	-0.01	0.29	-0.00	0.01	0.00
	CO21	2	0.000	-1.29	0.00	-1.54	0.00	0.14	0.00
		13	0.150	-1.29	0.00	-1.55	0.00	-0.09	0.00
	CO22	2	0.000	-1.18	0.00	-1.67	0.00	0.15	0.00
		13	0.150	-1.18	0.00	-1.68	0.00	-0.10	0.00
	CO23	2	0.000	-0.02	-0.00	0.30	-0.00	-0.04	-0.00
		13	0.150	-0.02	-0.00	0.29	-0.00	0.01	0.00
	CO24	2	0.000	0.00	-0.02	0.25	0.00	-0.03	-0.00
		13	0.150	0.00	-0.02	0.24	0.00	0.01	0.00
	CO25	2	0.000	-1.09	0.19	-1.46	-0.02	0.13	0.01
		13	0.150	-1.09	0.19	-1.47	-0.02	-0.09	-0.01
	CO26	2	0.000	-1.12	0.13	-1.60	-0.01	0.14	0.01
		13	0.150	-1.12	0.13	-1.61	-0.01	-0.10	-0.01
	CO27	2	0.000	0.04	-0.02	0.27	-0.00	-0.03	-0.00
		13	0.150	0.04	-0.02	0.26	-0.00	0.01	0.00
	CO28	2	0.000	0.04	-0.04	0.25	-0.00	-0.03	-0.01
		13	0.150	0.04	-0.04	0.24	-0.00	0.01	0.00
	CO29	2	0.000	-2.57	0.00	-3.30	0.00	0.30	0.00
		13	0.150	-2.57	0.00	-3.30	0.00	-0.20	0.00
	CO30	2	0.000	-2.40	0.00	-3.48	0.00	0.32	0.00
		13	0.150	-2.40	0.00	-3.49	0.00	-0.20	0.00
	CO31	2	0.000	0.02	-0.00	-0.07	0.00	0.01	-0.00
		13	0.150	0.02	-0.00	-0.08	0.00	-0.00	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
8	CO32	2	0.000	0.05	-0.00	-0.13	0.00	0.02	-0.00
		13	0.150	0.05	-0.00	-0.14	0.00	-0.00	-0.00
	CO33	2	0.000	-2.27	0.23	-3.27	-0.02	0.30	0.02
		13	0.150	-2.27	0.23	-3.28	-0.02	-0.19	-0.02
	CO34	2	0.000	-2.30	0.14	-3.46	-0.01	0.32	0.01
		13	0.150	-2.30	0.14	-3.47	-0.01	-0.20	-0.01
	CO35	2	0.000	-0.06	0.01	-0.02	-0.00	-0.00	0.00
		13	0.150	-0.06	0.01	-0.03	-0.00	-0.01	-0.00
	CO36	2	0.000	-0.09	0.02	-0.08	-0.00	0.00	0.00
		13	0.150	-0.09	0.02	-0.08	-0.00	-0.01	-0.00
9	LC10	9	0.000	-0.84	-0.73	0.28	-0.16	-0.54	-0.18
		40	0.717	-1.23	-0.17	-0.03	0.03	-0.48	0.08
			0.717	-1.23	-0.17	-0.03	0.03	-0.48	0.08
		21	1.433	-1.85	-0.12	-0.31	0.23	-0.56	0.17
	Form-Finding	9	0.000	-0.92	0.02	0.14	-0.07	-0.16	0.00
		40	0.717	-0.92	-0.00	0.01	-0.01	-0.13	-0.00
			0.717	-0.92	-0.00	0.01	-0.01	-0.13	-0.00
		21	1.433	-0.91	-0.01	-0.09	0.04	-0.15	0.00
	CO1	9	0.000	-0.52	0.05	0.09	-0.14	-0.27	0.01
		40	0.717	-0.50	-0.01	-0.02	-0.03	-0.28	-0.01
			0.717	-0.50	-0.01	-0.02	-0.03	-0.28	-0.01
		21	1.433	-0.46	-0.09	-0.11	0.08	-0.31	0.03
	CO2	9	0.000	-11.03	2.74	0.45	-0.77	-1.74	0.50
		40	0.717	-11.65	-0.44	-0.17	-0.09	-1.78	-0.27
			0.717	-11.65	-0.43	-0.19	-0.09	-1.78	-0.27
		21	1.433	-11.41	-3.39	-0.82	0.65	-2.05	1.10
	CO3	9	0.000	-7.48	2.71	0.41	-0.15	-0.35	0.69
		40	0.717	-7.76	0.17	0.18	-0.05	-0.16	-0.30
			0.717	-7.76	0.17	0.18	-0.05	-0.16	-0.30
		21	1.433	-7.05	-1.95	-0.04	-0.00	-0.13	0.36
	CO4	9	0.000	-7.17	2.29	0.43	-0.14	-0.31	0.64
		40	0.717	-7.58	0.23	0.14	-0.06	-0.15	-0.30
			0.717	-7.58	0.24	0.14	-0.06	-0.15	-0.30
		21	1.433	-7.06	-2.01	-0.03	-0.00	-0.13	0.37
	CO5	9	0.000	-10.67	3.12	0.52	-0.69	-1.47	0.70
		40	0.717	-11.08	-0.11	-0.19	-0.12	-1.49	-0.34
			0.717	-11.08	-0.11	-0.20	-0.12	-1.49	-0.34
		21	1.433	-10.26	-3.02	-0.84	0.52	-1.81	0.80
	CO6	9	0.000	-10.05	2.88	0.43	-0.66	-1.41	0.64
		40	0.717	-10.57	-0.09	-0.22	-0.11	-1.45	-0.32
			0.717	-10.57	-0.09	-0.23	-0.11	-1.45	-0.32
		21	1.433	-9.96	-2.97	-0.80	0.52	-1.77	0.78
	CO7	9	0.000	-4.77	-0.34	0.56	-0.24	-0.79	-0.09
		40	0.717	-4.52	-0.45	0.25	0.02	-0.54	0.14
			0.717	-4.52	-0.45	0.25	0.02	-0.54	0.14
		21	1.433	-4.65	-1.00	-0.06	0.21	-0.43	0.67
	CO8	9	0.000	-5.44	0.31	0.54	-0.22	-0.67	0.09
		40	0.717	-5.36	-0.16	0.23	-0.01	-0.45	-0.04
			0.717	-5.36	-0.16	0.23	-0.01	-0.45	-0.04
		21	1.433	-5.07	-1.43	0.03	0.14	-0.32	0.56
	CO9	9	0.000	-9.19	1.00	0.72	-0.76	-2.14	0.08
		40	0.717	-10.21	-0.64	-0.23	0.05	-2.08	-0.04
			0.717	-10.21	-0.64	-0.26	0.05	-2.08	-0.04
		21	1.433	-10.95	-2.78	-1.21	0.93	-2.44	1.15
	CO10	9	0.000	-8.45	1.19	0.60	-0.72	-1.89	0.15
		40	0.717	-9.33	-0.49	-0.20	0.00	-1.86	-0.10
			0.717	-9.33	-0.49	-0.22	0.00	-1.86	-0.10
		21	1.433	-9.80	-2.54	-1.04	0.78	-2.18	0.97
	CO11	9	0.000	-12.37	4.15	0.72	-0.03	-0.24	1.04
		40	0.717	-13.03	0.15	0.44	-0.02	0.18	-0.45
			0.717	-13.03	0.16	0.44	-0.02	0.18	-0.45
		21	1.433	-12.11	-3.23	0.16	-0.14	0.36	0.71
	CO12	9	0.000	-12.47	3.65	0.75	-0.03	-0.23	0.98
		40	0.717	-13.08	0.20	0.41	-0.03	0.17	-0.45
			0.717	-13.08	0.21	0.41	-0.03	0.17	-0.45
		21	1.433	-12.19	-3.27	0.16	-0.14	0.34	0.71
	CO13	9	0.000	-4.94	1.78	0.39	-0.27	-0.49	0.51
		40	0.717	-5.06	0.30	-0.08	-0.09	-0.45	-0.24
			0.717	-5.05	0.30	-0.08	-0.09	-0.45	-0.24
		21	1.433	-4.33	-1.15	-0.39	0.11	-0.63	0.07
	CO14	9	0.000	-4.09	1.51	0.25	-0.23	-0.40	0.44
		40	0.717	-4.37	0.31	-0.11	-0.08	-0.40	-0.21
			0.717	-4.37	0.31	-0.11	-0.08	-0.40	-0.21
		21	1.433	-3.95	-1.11	-0.33	0.11	-0.57	0.06
	CO15	9	0.000	-9.83	0.80	0.82	-0.14	-0.84	0.20
		40	0.717	-9.75	-0.52	0.54	0.09	-0.35	0.02
			0.717	-9.75	-0.52	0.54	0.09	-0.35	0.02
		21	1.433	-9.29	-2.33	0.24	0.16	-0.02	1.09
	CO16	9	0.000	-10.75	1.56	0.83	-0.12	-0.72	0.41
		40	0.717	-10.88	-0.21	0.53	0.06	-0.25	-0.17
			0.717	-10.88	-0.21	0.53	0.06	-0.25	-0.17
		21	1.433	-10.21	-2.77	0.30	0.09	0.08	0.94
	CO17	9	0.000	-1.47	-1.31	0.54	-0.35	-1.27	-0.34
		40	0.717	-2.30	-0.39	-0.11	0.12	-1.16	0.19
			0.717	-2.30	-0.39	-0.11	0.12	-1.16	0.19
		21	1.433	-3.59	-0.23	-0.81	0.60	-1.36	0.37
	CO18	9	0.000	-1.24	-0.88	0.39	-0.30	-0.94	-0.23
		40	0.717	-1.88	-0.27	-0.08	0.05	-0.89	0.09
			0.717	-1.88	-0.27	-0.08	0.05	-0.89	0.09
		21	1.433	-2.69	-0.27	-0.57	0.42	-1.04	0.26
	CO19	9	0.000	-0.50	-0.03	0.11	-0.11	-0.21	-0.01
		40	0.717	-0.47	-0.01	-0.01	-0.03	-0.20	0.00
			0.717	-0.47	-0.01	-0.01	-0.03	-0.20	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
9	CO19	21	1.433	-0.42	-0.02	-0.10	0.06	-0.24	0.01
	CO20	9	0.000	-6.31	1.50	0.34	-0.54	-1.21	0.28
		40	0.717	-6.70	-0.19	-0.10	-0.07	-1.22	-0.15
			0.717	-6.70	-0.19	-0.11	-0.07	-1.22	-0.15
		21	1.433	-6.68	-1.67	-0.58	0.44	-1.41	0.52
	CO21	9	0.000	-5.45	1.86	0.33	-0.15	-0.34	0.47
		40	0.717	-5.64	0.13	0.11	-0.05	-0.21	-0.20
			0.717	-5.64	0.13	0.11	-0.05	-0.21	-0.20
		21	1.433	-5.12	-1.36	-0.08	0.03	-0.21	0.25
	CO22	9	0.000	-5.24	1.55	0.35	-0.14	-0.32	0.43
		40	0.717	-5.50	0.17	0.08	-0.05	-0.20	-0.20
			0.717	-5.50	0.17	0.08	-0.05	-0.20	-0.20
		21	1.433	-5.12	-1.40	-0.07	0.03	-0.21	0.25
	CO23	9	0.000	-6.75	1.98	0.38	-0.49	-1.06	0.46
		40	0.717	-7.00	0.01	-0.11	-0.08	-1.06	-0.22
			0.717	-7.00	0.02	-0.12	-0.08	-1.06	-0.22
		21	1.433	-6.49	-1.71	-0.58	0.37	-1.27	0.40
	CO24	9	0.000	-6.26	1.83	0.31	-0.47	-1.01	0.43
		40	0.717	-6.62	0.04	-0.14	-0.08	-1.04	-0.21
			0.717	-6.62	0.04	-0.15	-0.08	-1.04	-0.21
		21	1.433	-6.27	-1.71	-0.54	0.37	-1.24	0.39
	CO25	9	0.000	-3.36	-0.34	0.45	-0.20	-0.62	-0.09
		40	0.717	-3.16	-0.34	0.17	0.00	-0.44	0.11
			0.717	-3.16	-0.34	0.17	0.00	-0.44	0.11
		21	1.433	-3.31	-0.61	-0.10	0.16	-0.38	0.47
	CO26	9	0.000	-3.85	0.11	0.43	-0.19	-0.54	0.04
		40	0.717	-3.77	-0.13	0.14	-0.02	-0.38	-0.01
			0.717	-3.77	-0.13	0.14	-0.02	-0.38	-0.01
		21	1.433	-3.62	-0.93	-0.04	0.12	-0.32	0.39
	CO27	9	0.000	-5.20	0.27	0.53	-0.54	-1.49	-0.02
		40	0.717	-5.88	-0.37	-0.15	0.03	-1.44	0.02
			0.717	-5.88	-0.37	-0.16	0.03	-1.44	0.02
		21	1.433	-6.60	-1.27	-0.88	0.63	-1.69	0.59
	CO28	9	0.000	-4.78	0.48	0.42	-0.51	-1.30	0.05
		40	0.717	-5.36	-0.26	-0.14	-0.01	-1.29	-0.03
			0.717	-5.36	-0.26	-0.15	-0.01	-1.29	-0.03
		21	1.433	-5.85	-1.23	-0.73	0.53	-1.51	0.49
	CO29	9	0.000	-8.59	2.75	0.56	-0.07	-0.28	0.69
		40	0.717	-9.02	0.12	0.29	-0.02	0.02	-0.30
			0.717	-9.02	0.12	0.30	-0.02	0.02	-0.30
		21	1.433	-8.43	-2.06	0.05	-0.06	0.12	0.43
	CO30	9	0.000	-8.64	2.37	0.59	-0.07	-0.27	0.65
		40	0.717	-9.05	0.16	0.27	-0.03	0.02	-0.30
			0.717	-9.05	0.16	0.27	-0.03	0.02	-0.30
		21	1.433	-8.48	-2.10	0.04	-0.06	0.11	0.44
	CO31	9	0.000	-3.56	1.27	0.28	-0.19	-0.36	0.37
		40	0.717	-3.65	0.24	-0.05	-0.06	-0.32	-0.17
			0.717	-3.65	0.24	-0.05	-0.06	-0.32	-0.17
		21	1.433	-3.11	-0.80	-0.26	0.08	-0.44	0.03
	CO32	9	0.000	-2.98	1.08	0.19	-0.16	-0.29	0.32
		40	0.717	-3.21	0.25	-0.08	-0.05	-0.29	-0.16
			0.717	-3.21	0.25	-0.08	-0.05	-0.29	-0.16
		21	1.433	-2.89	-0.80	-0.22	0.08	-0.41	0.03
	CO33	9	0.000	-6.69	0.30	0.66	-0.14	-0.65	0.08
		40	0.717	-6.56	-0.37	0.36	0.04	-0.31	0.04
			0.717	-6.56	-0.37	0.35	0.04	-0.31	0.04
		21	1.433	-6.34	-1.35	0.06	0.12	-0.12	0.70
	CO34	9	0.000	-7.34	0.83	0.66	-0.13	-0.58	0.23
		40	0.717	-7.38	-0.14	0.34	0.02	-0.24	-0.09
			0.717	-7.38	-0.14	0.34	0.02	-0.24	-0.09
		21	1.433	-6.98	-1.69	0.11	0.08	-0.06	0.59
	CO35	9	0.000	-0.83	-1.10	0.39	-0.25	-0.86	-0.28
		40	0.717	-1.36	-0.29	-0.07	0.07	-0.78	0.16
			0.717	-1.36	-0.29	-0.07	0.07	-0.78	0.16
		21	1.433	-2.39	-0.00	-0.56	0.39	-0.92	0.24
	CO36	9	0.000	-0.80	-0.72	0.29	-0.22	-0.64	-0.18
		40	0.717	-1.22	-0.18	-0.06	0.02	-0.61	0.08
			0.717	-1.22	-0.18	-0.06	0.02	-0.61	0.08
		21	1.433	-1.83	-0.14	-0.38	0.28	-0.71	0.18
10	LC10	11	0.000	-2.57	0.13	0.12	-0.02	-0.03	-0.16
		46	0.717	-2.66	-0.02	-0.18	-0.01	-0.06	-0.21
			0.717	-2.66	-0.02	-0.18	-0.01	-0.06	-0.21
		18	1.433	-2.46	-0.22	-0.42	0.06	-0.28	-0.13
	Form-Finding	11	0.000	-0.89	0.00	0.01	-0.02	-0.07	-0.00
		46	0.717	-0.89	0.01	-0.03	0.01	-0.08	-0.00
			0.717	-0.89	0.01	-0.03	0.01	-0.08	-0.00
		18	1.433	-0.88	0.02	-0.07	0.05	-0.11	-0.01
	CO1	11	0.000	-0.38	0.00	0.05	-0.02	-0.24	-0.02
		46	0.717	-0.39	-0.03	-0.03	0.07	-0.22	-0.01
			0.717	-0.39	-0.03	-0.03	0.07	-0.22	-0.01
		18	1.433	-0.39	-0.07	-0.10	0.16	-0.22	0.02
	CO2	11	0.000	-10.70	-0.04	0.13	-0.07	-1.29	-0.65
		46	0.717	-11.02	-1.29	-0.79	0.46	-1.46	-0.23
			0.717	-11.02	-1.29	-0.80	0.46	-1.46	-0.23
		18	1.433	-10.72	-3.43	-1.40	1.13	-1.97	1.38
	CO3	11	0.000	-5.20	0.06	0.07	-0.10	-0.00	0.01
		46	0.717	-4.69	0.20	0.21	-0.11	0.06	-0.10
			0.717	-4.69	0.20	0.21	-0.11	0.06	-0.10
		18	1.433	-4.51	0.50	0.35	-0.16	0.21	-0.32
	CO4	11	0.000	-5.21	0.06	0.08	-0.09	-0.00	0.01
		46	0.717	-4.70	0.20	0.21	-0.10	0.07	-0.10
			0.717	-4.70	0.20	0.21	-0.10	0.07	-0.10
		18	1.433	-4.51	0.50	0.35	-0.15	0.21	-0.32

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
10	CO5	11	0.000	-9.14	0.06	0.14	-0.07	-1.19	-0.39
		46	0.717	-9.60	-0.91	-0.58	0.41	-1.29	-0.14
			0.717	-9.60	-0.91	-0.60	0.41	-1.29	-0.14
		18	1.433	-9.52	-2.77	-1.13	0.98	-1.66	1.13
	CO6	11	0.000	-9.04	0.06	0.14	-0.06	-1.18	-0.39
		46	0.717	-9.53	-0.91	-0.59	0.42	-1.28	-0.14
			0.717	-9.53	-0.91	-0.61	0.42	-1.28	-0.14
		18	1.433	-9.46	-2.75	-1.14	0.98	-1.65	1.12
	CO7	11	0.000	-4.05	0.14	0.17	-0.10	0.31	-0.53
		46	0.717	-3.53	-0.19	0.02	-0.22	0.31	-0.41
			0.717	-3.53	-0.19	0.02	-0.22	0.31	-0.41
		18	1.433	-3.45	0.37	-0.03	-0.32	0.19	-0.44
	CO8	11	0.000	-3.90	0.30	0.18	-0.09	0.30	-0.32
		46	0.717	-3.64	0.03	0.08	-0.21	0.33	-0.42
			0.717	-3.64	0.03	0.08	-0.21	0.33	-0.42
		18	1.433	-3.72	0.23	0.05	-0.33	0.26	-0.48
	CO9	11	0.000	-10.84	-0.03	0.20	-0.11	-0.98	-0.80
		46	0.717	-10.66	-1.37	-0.95	0.31	-1.24	-0.33
			0.717	-10.66	-1.36	-0.97	0.31	-1.24	-0.33
		18	1.433	-9.76	-3.04	-1.75	0.93	-2.01	1.21
	CO10	11	0.000	-9.72	-0.01	0.25	-0.07	-0.98	-0.64
		46	0.717	-9.82	-1.12	-0.81	0.33	-1.14	-0.28
			0.717	-9.81	-1.11	-0.82	0.33	-1.14	-0.28
		18	1.433	-9.15	-2.64	-1.58	0.88	-1.79	1.04
	CO11	11	0.000	-9.38	-0.02	0.03	-0.15	0.60	-0.09
		46	0.717	-8.61	0.16	0.35	-0.39	0.63	-0.13
			0.717	-8.61	0.16	0.36	-0.39	0.63	-0.13
		18	1.433	-8.37	0.80	0.76	-0.67	0.82	-0.44
	CO12	11	0.000	-9.41	-0.03	0.04	-0.15	0.59	-0.09
		46	0.717	-8.64	0.16	0.36	-0.39	0.63	-0.13
			0.717	-8.64	0.16	0.36	-0.39	0.63	-0.13
		18	1.433	-8.39	0.80	0.76	-0.66	0.82	-0.44
	CO13	11	0.000	-2.80	0.17	0.09	-0.06	-0.43	0.15
		46	0.717	-3.03	-0.04	-0.03	0.10	-0.40	0.01
			0.717	-3.03	-0.04	-0.03	0.10	-0.40	0.01
		18	1.433	-3.13	-0.90	-0.16	0.26	-0.40	0.33
	CO14	11	0.000	-2.66	0.22	0.08	-0.04	-0.41	0.13
		46	0.717	-2.94	-0.07	-0.04	0.12	-0.38	-0.00
			0.717	-2.94	-0.07	-0.04	0.12	-0.38	-0.00
		18	1.433	-3.05	-0.89	-0.18	0.27	-0.39	0.32
	CO15	11	0.000	-7.55	-0.17	0.16	-0.14	1.07	-0.66
		46	0.717	-6.98	-0.20	0.06	-0.55	0.99	-0.41
			0.717	-6.98	-0.20	0.07	-0.55	0.99	-0.41
		18	1.433	-7.03	0.77	0.22	-0.91	0.79	-0.58
	CO16	11	0.000	-8.03	0.18	0.18	-0.13	1.03	-0.46
		46	0.717	-7.53	-0.05	0.14	-0.54	1.00	-0.45
			0.717	-7.53	-0.05	0.15	-0.54	1.00	-0.45
		18	1.433	-7.59	0.58	0.30	-0.91	0.86	-0.60
	CO17	11	0.000	-4.65	0.18	0.18	-0.08	-0.23	-0.37
		46	0.717	-4.37	-0.33	-0.41	0.02	-0.34	-0.32
			0.717	-4.37	-0.32	-0.41	0.02	-0.34	-0.32
		18	1.433	-3.76	-0.68	-0.89	0.23	-0.78	0.04
	CO18	11	0.000	-3.50	0.14	0.23	-0.04	-0.20	-0.23
		46	0.717	-3.58	-0.10	-0.27	0.04	-0.23	-0.26
			0.717	-3.58	-0.10	-0.27	0.04	-0.23	-0.26
		18	1.433	-3.28	-0.47	-0.68	0.18	-0.54	-0.07
	CO19	11	0.000	-0.33	0.00	0.04	-0.02	-0.17	-0.01
		46	0.717	-0.32	-0.01	-0.02	0.04	-0.16	-0.01
			0.717	-0.32	-0.01	-0.02	0.04	-0.16	-0.01
		18	1.433	-0.31	-0.03	-0.07	0.11	-0.16	0.01
	CO20	11	0.000	-6.62	-0.02	0.09	-0.04	-0.93	-0.30
		46	0.717	-6.92	-0.59	-0.50	0.33	-1.02	-0.10
			0.717	-6.92	-0.59	-0.50	0.33	-1.02	-0.10
		18	1.433	-6.87	-1.59	-0.95	0.78	-1.34	0.65
	CO21	11	0.000	-3.79	0.05	0.06	-0.07	-0.07	0.01
		46	0.717	-3.43	0.14	0.11	-0.05	-0.03	-0.07
			0.717	-3.43	0.14	0.11	-0.05	-0.03	-0.07
		18	1.433	-3.28	0.30	0.17	-0.05	0.05	-0.21
	CO22	11	0.000	-3.80	0.05	0.06	-0.07	-0.07	0.01
		46	0.717	-3.43	0.14	0.11	-0.05	-0.03	-0.07
			0.717	-3.43	0.14	0.11	-0.05	-0.03	-0.07
		18	1.433	-3.28	0.31	0.17	-0.05	0.05	-0.22
	CO23	11	0.000	-5.95	0.05	0.09	-0.05	-0.86	-0.16
		46	0.717	-6.34	-0.44	-0.39	0.29	-0.92	-0.06
			0.717	-6.34	-0.44	-0.39	0.29	-0.92	-0.06
		18	1.433	-6.41	-1.50	-0.79	0.69	-1.16	0.60
	CO24	11	0.000	-5.86	0.05	0.09	-0.04	-0.85	-0.16
		46	0.717	-6.28	-0.43	-0.39	0.30	-0.90	-0.06
			0.717	-6.28	-0.43	-0.40	0.30	-0.90	-0.06
		18	1.433	-6.35	-1.48	-0.79	0.69	-1.15	0.59
	CO25	11	0.000	-2.96	0.13	0.12	-0.07	0.12	-0.39
		46	0.717	-2.56	-0.13	0.00	-0.12	0.12	-0.32
			0.717	-2.56	-0.13	0.00	-0.12	0.12	-0.32
		18	1.433	-2.44	0.19	-0.05	-0.16	0.04	-0.32
	CO26	11	0.000	-2.83	0.25	0.12	-0.07	0.11	-0.24
		46	0.717	-2.63	0.03	0.04	-0.12	0.13	-0.33
			0.717	-2.63	0.04	0.04	-0.12	0.13	-0.33
		18	1.433	-2.64	0.08	0.00	-0.16	0.09	-0.35
	CO27	11	0.000	-6.98	0.00	0.15	-0.08	-0.75	-0.44
		46	0.717	-6.91	-0.70	-0.60	0.24	-0.90	-0.21
			0.717	-6.91	-0.69	-0.61	0.24	-0.90	-0.21
		18	1.433	-6.38	-1.50	-1.18	0.67	-1.38	0.57
	CO28	11	0.000	-6.21	0.01	0.18	-0.05	-0.73	-0.34
		46	0.717	-6.34	-0.54	-0.51	0.24	-0.82	-0.17

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
10	CO28		0.717	-6.34	-0.54	-0.51	0.24	-0.82	-0.17
		18	1.433	-5.97	-1.30	-1.06	0.64	-1.23	0.47
	CO29	11	0.000	-6.57	0.01	0.02	-0.11	0.33	-0.02
		46	0.717	-6.02	0.18	0.20	-0.24	0.34	-0.09
			0.717	-6.02	0.18	0.20	-0.24	0.34	-0.09
		18	1.433	-5.84	0.66	0.43	-0.39	0.44	-0.36
	CO30	11	0.000	-6.59	0.01	0.03	-0.11	0.33	-0.02
		46	0.717	-6.03	0.18	0.20	-0.24	0.34	-0.09
			0.717	-6.03	0.18	0.20	-0.24	0.34	-0.09
		18	1.433	-5.86	0.66	0.43	-0.39	0.44	-0.36
	CO31	11	0.000	-1.97	0.09	0.06	-0.04	-0.28	0.13
		46	0.717	-2.17	0.01	-0.04	0.07	-0.27	0.02
			0.717	-2.17	0.01	-0.04	0.07	-0.27	0.02
		18	1.433	-2.28	-0.62	-0.12	0.17	-0.28	0.23
	CO32	11	0.000	-1.90	0.13	0.05	-0.03	-0.27	0.12
		46	0.717	-2.13	-0.02	-0.04	0.07	-0.26	0.01
			0.717	-2.13	-0.02	-0.04	0.07	-0.26	0.01
		18	1.433	-2.24	-0.62	-0.13	0.18	-0.27	0.23
	CO33	11	0.000	-5.26	-0.08	0.11	-0.11	0.61	-0.45
		46	0.717	-4.81	-0.07	0.03	-0.34	0.56	-0.31
			0.717	-4.81	-0.07	0.04	-0.34	0.56	-0.31
		18	1.433	-4.82	0.62	0.11	-0.54	0.43	-0.47
	CO34	11	0.000	-5.57	0.18	0.12	-0.10	0.59	-0.29
		46	0.717	-5.20	0.05	0.08	-0.33	0.57	-0.34
			0.717	-5.20	0.05	0.08	-0.33	0.57	-0.34
		18	1.433	-5.23	0.48	0.16	-0.54	0.48	-0.49
	CO35	11	0.000	-3.32	0.15	0.12	-0.05	-0.19	-0.27
		46	0.717	-3.12	-0.19	-0.26	0.03	-0.26	-0.25
			0.717	-3.12	-0.19	-0.26	0.03	-0.26	-0.25
		18	1.433	-2.67	-0.37	-0.59	0.17	-0.53	-0.05
	CO36	11	0.000	-2.52	0.13	0.15	-0.03	-0.16	-0.17
		46	0.717	-2.61	-0.04	-0.18	0.03	-0.18	-0.21
			0.717	-2.61	-0.04	-0.18	0.03	-0.18	-0.21
		18	1.433	-2.38	-0.29	-0.45	0.14	-0.38	-0.10
11	LC10	6	0.000	-1.64	-0.11	-0.01	-0.06	-0.29	0.48
		49	0.716	-1.52	0.74	0.02	0.06	-0.28	0.26
			0.716	-1.52	0.74	0.02	0.06	-0.28	0.26
		19	1.433	-1.77	1.43	0.01	0.16	-0.23	-0.57
	Form-Finding	6	0.000	-0.87	0.00	-0.00	0.00	-0.07	0.02
		49	0.716	-0.88	0.03	-0.03	0.03	-0.07	0.01
			0.716	-0.88	0.03	-0.03	0.03	-0.07	0.01
		19	1.433	-0.90	0.04	-0.07	0.06	-0.09	-0.02
	CO1	6	0.000	-0.36	0.00	-0.00	0.00	-0.17	-0.00
		49	0.716	-0.36	-0.02	-0.07	0.07	-0.19	0.00
			0.716	-0.36	-0.02	-0.07	0.07	-0.19	0.00
		19	1.433	-0.34	-0.05	-0.14	0.15	-0.22	0.03
	CO2	6	0.000	-10.38	0.00	-0.01	0.00	-1.14	-0.46
		49	0.716	-10.29	-1.11	-0.85	0.48	-1.36	-0.09
			0.716	-10.29	-1.10	-0.86	0.48	-1.36	-0.09
		19	1.433	-9.54	-2.95	-1.44	1.12	-1.91	1.32
	CO3	6	0.000	-4.39	-0.00	0.00	0.00	-0.03	0.30
		49	0.716	-4.48	0.49	0.19	0.00	0.04	0.13
			0.716	-4.48	0.49	0.19	0.00	0.04	0.13
		19	1.433	-4.81	1.00	0.35	-0.04	0.23	-0.41
	CO4	6	0.000	-4.38	-0.00	0.00	0.00	-0.03	0.30
		49	0.716	-4.48	0.50	0.19	0.00	0.04	0.13
			0.716	-4.48	0.50	0.19	0.00	0.04	0.13
		19	1.433	-4.82	1.01	0.35	-0.05	0.23	-0.41
	CO5	6	0.000	-9.28	0.00	-0.01	0.00	-0.90	-0.51
		49	0.716	-9.17	-1.06	-0.76	0.39	-1.11	-0.15
			0.716	-9.17	-1.06	-0.77	0.39	-1.11	-0.15
		19	1.433	-8.43	-2.77	-1.27	0.92	-1.61	1.19
	CO6	6	0.000	-9.20	0.00	-0.00	0.00	-0.90	-0.49
		49	0.716	-9.09	-1.04	-0.75	0.38	-1.10	-0.15
			0.716	-9.09	-1.04	-0.76	0.38	-1.10	-0.15
		19	1.433	-8.36	-2.71	-1.28	0.91	-1.61	1.16
	CO7	6	0.000	-3.65	0.10	-0.02	-0.06	-0.33	0.95
		49	0.716	-3.69	1.57	0.37	0.05	-0.21	0.37
			0.716	-3.69	1.57	0.37	0.05	-0.21	0.37
		19	1.433	-4.30	3.45	0.76	0.06	0.24	-1.43
	CO8	6	0.000	-3.99	0.06	-0.03	-0.05	-0.28	0.87
		49	0.716	-4.05	1.39	0.36	0.05	-0.16	0.37
			0.716	-4.05	1.39	0.36	0.05	-0.16	0.37
		19	1.433	-4.61	3.03	0.74	0.04	0.27	-1.22
	CO9	6	0.000	-8.43	-0.02	0.06	-0.09	-1.32	-0.06
		49	0.716	-8.17	-0.32	-0.49	0.44	-1.41	0.06
			0.716	-8.17	-0.32	-0.50	0.44	-1.41	0.06
		19	1.433	-7.87	-1.06	-0.99	1.04	-1.67	0.54
	CO10	6	0.000	-8.00	-0.04	0.02	-0.07	-1.21	-0.09
		49	0.716	-7.80	-0.36	-0.51	0.42	-1.33	0.05
			0.716	-7.80	-0.36	-0.52	0.42	-1.33	0.05
		19	1.433	-7.55	-1.15	-0.98	0.99	-1.60	0.57
	CO11	6	0.000	-8.35	0.00	0.00	0.00	0.22	0.47
		49	0.716	-8.45	0.75	0.54	-0.11	0.40	0.21
			0.716	-8.45	0.76	0.54	-0.11	0.40	0.21
		19	1.433	-8.94	1.64	1.02	-0.35	0.88	-0.63
	CO12	6	0.000	-8.36	0.00	0.00	0.00	0.22	0.47
		49	0.716	-8.47	0.75	0.53	-0.11	0.40	0.21
			0.716	-8.47	0.76	0.54	-0.11	0.40	0.21
		19	1.433	-8.96	1.64	1.02	-0.35	0.88	-0.63
	CO13	6	0.000	-3.03	-0.00	-0.00	0.00	-0.21	-0.32
		49	0.716	-2.97	-0.52	-0.19	0.09	-0.26	-0.15
			0.716	-2.97	-0.52	-0.19	0.09	-0.26	-0.15

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
11	CO13	19	1.433	-2.61	-1.34	-0.31	0.22	-0.39	0.50
	CO14	6	0.000	-2.94	0.00	-0.00	0.00	-0.20	-0.30
		49	0.716	-2.88	-0.49	-0.19	0.09	-0.26	-0.14
			0.716	-2.88	-0.49	-0.19	0.09	-0.26	-0.14
		19	1.433	-2.52	-1.25	-0.31	0.21	-0.39	0.46
	CO15	6	0.000	-7.54	0.09	-0.03	-0.09	-0.20	1.12
		49	0.716	-7.61	1.85	0.79	-0.04	0.05	0.46
			0.716	-7.61	1.84	0.79	-0.04	0.05	0.46
		19	1.433	-8.38	4.19	1.59	-0.21	0.89	-1.68
	CO16	6	0.000	-8.05	0.05	-0.04	-0.07	-0.16	1.04
		49	0.716	-8.13	1.66	0.78	-0.04	0.09	0.46
			0.716	-8.13	1.66	0.78	-0.04	0.09	0.46
		19	1.433	-8.83	3.73	1.57	-0.22	0.91	-1.45
	CO17	6	0.000	-2.37	-0.20	0.02	-0.14	-0.67	0.63
		49	0.716	-2.05	0.96	0.03	0.12	-0.66	0.38
			0.716	-2.05	0.96	0.03	0.12	-0.66	0.38
		19	1.433	-2.24	2.07	-0.00	0.36	-0.54	-0.77
	CO18	6	0.000	-2.11	-0.22	-0.01	-0.10	-0.54	0.58
		49	0.716	-1.88	0.87	0.01	0.11	-0.54	0.36
			0.716	-1.88	0.87	0.01	0.11	-0.54	0.36
		19	1.433	-2.08	1.76	-0.01	0.31	-0.45	-0.65
	CO19	6	0.000	-0.28	0.00	-0.00	0.00	-0.12	0.01
		49	0.716	-0.28	0.00	-0.05	0.05	-0.13	0.00
			0.716	-0.28	0.00	-0.05	0.05	-0.13	0.00
		19	1.433	-0.29	-0.01	-0.10	0.10	-0.15	0.01
	CO20	6	0.000	-6.76	0.00	-0.00	0.00	-0.79	-0.22
		49	0.716	-6.70	-0.53	-0.56	0.33	-0.93	-0.05
			0.716	-6.70	-0.53	-0.56	0.33	-0.93	-0.05
		19	1.433	-6.30	-1.42	-1.00	0.77	-1.30	0.63
	CO21	6	0.000	-3.17	-0.00	-0.00	0.00	-0.08	0.21
		49	0.716	-3.24	0.35	0.10	0.03	-0.04	0.09
			0.716	-3.24	0.35	0.10	0.03	-0.04	0.09
		19	1.433	-3.48	0.67	0.17	0.03	0.07	-0.28
	CO22	6	0.000	-3.17	-0.00	-0.00	0.00	-0.08	0.21
		49	0.716	-3.24	0.35	0.10	0.03	-0.04	0.09
			0.716	-3.24	0.35	0.10	0.03	-0.04	0.09
		19	1.433	-3.48	0.68	0.17	0.02	0.07	-0.28
	CO23	6	0.000	-6.32	0.00	-0.00	0.00	-0.65	-0.30
		49	0.716	-6.25	-0.61	-0.51	0.28	-0.79	-0.10
			0.716	-6.25	-0.60	-0.51	0.28	-0.79	-0.10
		19	1.433	-5.78	-1.60	-0.89	0.65	-1.12	0.66
	CO24	6	0.000	-6.25	0.00	-0.00	-0.00	-0.65	-0.30
		49	0.716	-6.18	-0.59	-0.50	0.27	-0.78	-0.10
			0.716	-6.18	-0.59	-0.51	0.27	-0.78	-0.10
		19	1.433	-5.72	-1.56	-0.89	0.64	-1.12	0.65
	CO25	6	0.000	-2.55	0.08	-0.01	-0.04	-0.26	0.72
		49	0.716	-2.59	1.18	0.21	0.06	-0.19	0.28
			0.716	-2.59	1.18	0.21	0.06	-0.19	0.28
		19	1.433	-3.07	2.49	0.42	0.09	0.08	-1.05
	CO26	6	0.000	-2.79	0.05	-0.02	-0.03	-0.23	0.65
		49	0.716	-2.86	1.04	0.21	0.06	-0.16	0.28
			0.716	-2.86	1.04	0.21	0.06	-0.16	0.28
		19	1.433	-3.29	2.19	0.41	0.07	0.10	-0.90
	CO27	6	0.000	-5.46	-0.02	0.04	-0.06	-0.91	0.07
		49	0.716	-5.29	-0.00	-0.34	0.30	-0.97	0.08
			0.716	-5.29	-0.00	-0.35	0.30	-0.97	0.08
		19	1.433	-5.20	-0.18	-0.72	0.71	-1.16	0.13
	CO28	6	0.000	-5.18	-0.04	0.01	-0.05	-0.83	0.04
		49	0.716	-5.05	-0.05	-0.35	0.29	-0.91	0.07
			0.716	-5.05	-0.05	-0.36	0.29	-0.91	0.07
		19	1.433	-4.98	-0.30	-0.71	0.68	-1.10	0.18
	CO29	6	0.000	-5.81	-0.00	0.00	0.00	0.09	0.36
		49	0.716	-5.90	0.58	0.32	-0.05	0.20	0.15
			0.716	-5.90	0.58	0.32	-0.05	0.20	0.15
		19	1.433	-6.28	1.24	0.61	-0.18	0.49	-0.49
	CO30	6	0.000	-5.82	-0.00	0.00	0.00	0.09	0.36
		49	0.716	-5.91	0.58	0.32	-0.05	0.20	0.15
			0.716	-5.91	0.58	0.32	-0.05	0.20	0.15
		19	1.433	-6.29	1.24	0.61	-0.18	0.49	-0.50
	CO31	6	0.000	-2.23	-0.00	-0.00	0.00	-0.16	-0.25
		49	0.716	-2.18	-0.38	-0.13	0.07	-0.19	-0.12
			0.716	-2.18	-0.38	-0.13	0.07	-0.19	-0.12
		19	1.433	-1.90	-1.00	-0.20	0.16	-0.27	0.36
	CO32	6	0.000	-2.19	0.00	-0.00	0.00	-0.15	-0.23
		49	0.716	-2.14	-0.36	-0.13	0.06	-0.19	-0.11
			0.716	-2.14	-0.36	-0.13	0.06	-0.19	-0.11
		19	1.433	-1.86	-0.94	-0.21	0.15	-0.27	0.34
	CO33	6	0.000	-5.17	0.07	-0.02	-0.05	-0.16	0.85
		49	0.716	-5.24	1.41	0.48	-0.01	-0.01	0.34
			0.716	-5.24	1.41	0.48	-0.01	-0.01	0.34
		19	1.433	-5.85	3.12	0.95	-0.09	0.50	-1.28
	CO34	6	0.000	-5.53	0.04	-0.03	-0.04	-0.14	0.79
		49	0.716	-5.61	1.27	0.47	-0.01	0.01	0.34
			0.716	-5.61	1.27	0.47	-0.01	0.01	0.34
		19	1.433	-6.16	2.79	0.94	-0.10	0.52	-1.12
	CO35	6	0.000	-1.61	-0.13	0.01	-0.09	-0.45	0.53
		49	0.716	-1.39	0.82	-0.00	0.09	-0.44	0.30
			0.716	-1.39	0.82	-0.00	0.09	-0.44	0.30
		19	1.433	-1.60	1.67	-0.05	0.25	-0.39	-0.65
	CO36	6	0.000	-1.48	-0.15	-0.01	-0.06	-0.36	0.48
		49	0.716	-1.33	0.72	-0.01	0.08	-0.37	0.28
			0.716	-1.33	0.72	-0.01	0.08	-0.37	0.28
		19	1.433	-1.55	1.40	-0.04	0.22	-0.32	-0.54
12	LC10	17	0.000	-1.23	-0.17	0.01	0.05	-0.05	-0.10

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
12	LC10	43	0.717	-1.19	-0.21	-0.09	0.07	-0.05	0.04
			0.717	-1.19	-0.21	-0.09	0.07	-0.05	0.04
		20	1.433	-1.00	-0.11	-0.22	0.10	-0.12	0.17
	Form-Finding	17	0.000	-0.89	-0.00	-0.01	0.02	-0.07	-0.00
		43	0.717	-0.90	-0.00	-0.07	0.05	-0.08	0.00
			0.717	-0.90	-0.00	-0.07	0.05	-0.08	0.00
		20	1.433	-0.90	-0.01	-0.14	0.09	-0.13	0.00
	CO1	17	0.000	-0.38	-0.00	-0.05	0.02	-0.24	-0.02
		43	0.717	-0.37	-0.04	-0.13	0.12	-0.28	-0.01
			0.717	-0.37	-0.04	-0.13	0.12	-0.28	-0.01
		20	1.433	-0.36	-0.09	-0.21	0.24	-0.33	0.04
	CO2	17	0.000	-10.70	0.05	-0.15	0.07	-1.29	-0.65
		43	0.717	-10.20	-1.23	-1.07	0.62	-1.61	-0.25
			0.717	-10.20	-1.23	-1.09	0.62	-1.61	-0.25
		20	1.433	-9.13	-3.20	-1.72	1.37	-2.26	1.30
	CO3	17	0.000	-5.21	-0.06	-0.07	0.10	-0.00	0.01
		43	0.717	-5.80	-0.11	-0.02	0.10	0.01	0.03
			0.717	-5.80	-0.11	-0.01	0.10	0.01	0.03
		20	1.433	-6.31	-0.63	-0.11	0.09	0.01	0.28
	CO4	17	0.000	-5.21	-0.06	-0.08	0.09	-0.00	0.01
		43	0.717	-5.81	-0.11	-0.02	0.09	0.01	0.03
			0.717	-5.81	-0.11	-0.02	0.09	0.01	0.03
		20	1.433	-6.28	-0.68	-0.11	0.09	0.01	0.29
	CO5	17	0.000	-9.19	-0.06	-0.15	0.07	-1.19	-0.39
		43	0.717	-8.87	-0.73	-0.87	0.57	-1.44	-0.11
			0.717	-8.87	-0.73	-0.88	0.57	-1.44	-0.12
		20	1.433	-8.59	-2.15	-1.45	1.23	-1.94	0.85
	CO6	17	0.000	-9.04	-0.05	-0.15	0.06	-1.18	-0.39
		43	0.717	-8.67	-0.72	-0.85	0.56	-1.43	-0.12
			0.717	-8.67	-0.72	-0.86	0.56	-1.43	-0.12
		20	1.433	-8.29	-2.16	-1.39	1.21	-1.92	0.83
	CO7	17	0.000	-3.30	-0.12	-0.04	0.15	0.29	0.03
		43	0.717	-3.80	-0.03	-0.12	0.04	0.28	0.05
			0.717	-3.80	-0.03	-0.12	0.04	0.28	0.05
		20	1.433	-4.15	-0.24	-0.27	-0.05	0.14	0.14
	CO8	17	0.000	-3.89	-0.11	-0.05	0.14	0.29	-0.07
		43	0.717	-4.36	-0.22	-0.14	0.03	0.26	0.02
			0.717	-4.36	-0.22	-0.13	0.03	0.26	0.02
		20	1.433	-4.59	-0.66	-0.28	-0.05	0.11	0.32
	CO9	17	0.000	-8.48	0.04	-0.15	0.08	-1.03	-0.55
		43	0.717	-8.14	-1.12	-0.87	0.53	-1.29	-0.20
			0.717	-8.14	-1.12	-0.88	0.53	-1.29	-0.20
		20	1.433	-7.14	-2.83	-1.37	1.13	-1.79	1.20
	CO10	17	0.000	-8.19	0.05	-0.14	0.08	-1.01	-0.52
		43	0.717	-7.84	-1.03	-0.86	0.51	-1.26	-0.19
			0.717	-7.84	-1.03	-0.87	0.51	-1.26	-0.19
		20	1.433	-6.87	-2.60	-1.37	1.10	-1.77	1.09
	CO11	17	0.000	-9.38	0.02	-0.02	0.15	0.60	-0.09
		43	0.717	-10.23	-0.36	0.14	-0.09	0.67	-0.04
			0.717	-10.23	-0.36	0.15	-0.09	0.67	-0.04
		20	1.433	-10.73	-1.58	0.09	-0.36	0.68	0.63
	CO12	17	0.000	-9.41	0.03	-0.03	0.15	0.59	-0.09
		43	0.717	-10.28	-0.36	0.14	-0.09	0.66	-0.04
			0.717	-10.28	-0.36	0.14	-0.09	0.66	-0.04
		20	1.433	-10.79	-1.60	0.08	-0.35	0.66	0.63
	CO13	17	0.000	-2.84	-0.22	-0.09	0.06	-0.43	0.13
		43	0.717	-3.13	0.34	-0.24	0.23	-0.49	0.07
			0.717	-3.13	0.34	-0.24	0.23	-0.49	0.07
		20	1.433	-4.00	-0.33	-0.39	0.44	-0.59	-0.05
	CO14	17	0.000	-2.66	-0.22	-0.08	0.04	-0.41	0.13
		43	0.717	-2.87	0.35	-0.21	0.21	-0.47	0.07
			0.717	-2.87	0.35	-0.21	0.21	-0.47	0.07
		20	1.433	-3.60	-0.35	-0.32	0.41	-0.55	-0.05
	CO15	17	0.000	-7.33	0.02	0.04	0.22	1.03	-0.05
		43	0.717	-8.13	-0.22	-0.01	-0.19	1.06	-0.04
			0.717	-8.13	-0.22	0.00	-0.19	1.06	-0.04
		20	1.433	-8.53	-1.15	-0.17	-0.58	0.86	0.42
	CO16	17	0.000	-8.06	0.03	0.03	0.22	1.02	-0.17
		43	0.717	-8.83	-0.46	-0.03	-0.19	1.03	-0.08
			0.717	-8.83	-0.46	-0.02	-0.19	1.03	-0.08
		20	1.433	-9.10	-1.65	-0.19	-0.57	0.81	0.64
	CO17	17	0.000	-1.34	-0.21	-0.02	0.10	-0.25	-0.18
		43	0.717	-1.24	-0.38	-0.17	0.20	-0.26	0.04
			0.717	-1.24	-0.38	-0.17	0.20	-0.26	0.04
		20	1.433	-0.92	-0.48	-0.33	0.31	-0.34	0.36
	CO18	17	0.000	-1.38	-0.20	-0.02	0.09	-0.22	-0.19
		43	0.717	-1.27	-0.39	-0.17	0.17	-0.24	0.03
			0.717	-1.27	-0.39	-0.17	0.17	-0.24	0.03
		20	1.433	-0.95	-0.47	-0.34	0.28	-0.33	0.35
	CO19	17	0.000	-0.33	-0.00	-0.04	0.02	-0.17	-0.01
		43	0.717	-0.35	-0.02	-0.10	0.09	-0.20	-0.00
			0.717	-0.35	-0.02	-0.10	0.09	-0.20	-0.00
		20	1.433	-0.37	-0.04	-0.16	0.18	-0.24	0.02
	CO20	17	0.000	-6.64	0.03	-0.10	0.05	-0.93	-0.30
		43	0.717	-6.26	-0.57	-0.69	0.44	-1.12	-0.11
			0.717	-6.26	-0.56	-0.70	0.44	-1.12	-0.11
		20	1.433	-5.61	-1.50	-1.18	0.95	-1.54	0.61
	CO21	17	0.000	-3.79	-0.05	-0.06	0.07	-0.07	0.01
		43	0.717	-4.22	-0.07	-0.06	0.10	-0.07	0.03
			0.717	-4.22	-0.07	-0.06	0.10	-0.07	0.03
		20	1.433	-4.60	-0.43	-0.18	0.13	-0.11	0.20
	CO22	17	0.000	-3.80	-0.05	-0.06	0.07	-0.07	0.01
		43	0.717	-4.22	-0.07	-0.07	0.10	-0.08	0.02

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
12	CO22		0.717	-4.22	-0.07	-0.06	0.10	-0.08	0.02
		20	1.433	-4.57	-0.46	-0.18	0.13	-0.11	0.20
	CO23	17	0.000	-5.99	-0.05	-0.10	0.05	-0.86	-0.16
		43	0.717	-5.75	-0.31	-0.59	0.41	-1.02	-0.03
			0.717	-5.75	-0.31	-0.60	0.41	-1.02	-0.04
		20	1.433	-5.65	-1.02	-1.03	0.87	-1.36	0.39
	CO24	17	0.000	-5.86	-0.05	-0.10	0.04	-0.85	-0.16
		43	0.717	-5.58	-0.30	-0.58	0.40	-1.01	-0.04
			0.717	-5.58	-0.30	-0.58	0.40	-1.01	-0.04
		20	1.433	-5.41	-1.03	-0.99	0.85	-1.34	0.39
	CO25	17	0.000	-2.40	-0.12	-0.04	0.11	0.11	0.00
		43	0.717	-2.74	-0.05	-0.13	0.07	0.08	0.05
			0.717	-2.74	-0.05	-0.13	0.07	0.08	0.05
		20	1.433	-2.98	-0.16	-0.27	0.05	-0.03	0.12
	CO26	17	0.000	-2.81	-0.11	-0.04	0.10	0.11	-0.06
		43	0.717	-3.14	-0.18	-0.14	0.06	0.08	0.02
			0.717	-3.14	-0.18	-0.13	0.06	0.08	0.02
		20	1.433	-3.29	-0.45	-0.27	0.05	-0.04	0.24
	CO27	17	0.000	-5.23	0.02	-0.11	0.06	-0.78	-0.28
		43	0.717	-4.96	-0.58	-0.57	0.39	-0.93	-0.09
			0.717	-4.96	-0.58	-0.57	0.39	-0.93	-0.09
		20	1.433	-4.32	-1.42	-0.94	0.81	-1.25	0.62
	CO28	17	0.000	-5.08	0.02	-0.10	0.06	-0.75	-0.27
		43	0.717	-4.79	-0.54	-0.56	0.38	-0.90	-0.09
			0.717	-4.79	-0.54	-0.56	0.38	-0.90	-0.09
		20	1.433	-4.16	-1.30	-0.93	0.79	-1.22	0.56
	CO29	17	0.000	-6.57	-0.01	-0.02	0.11	0.33	-0.02
		43	0.717	-7.18	-0.18	0.04	-0.03	0.37	-0.00
			0.717	-7.18	-0.18	0.05	-0.03	0.37	-0.00
		20	1.433	-7.58	-0.91	-0.06	-0.17	0.34	0.37
	CO30	17	0.000	-6.59	-0.01	-0.02	0.11	0.33	-0.02
		43	0.717	-7.22	-0.18	0.04	-0.03	0.36	-0.00
			0.717	-7.22	-0.18	0.04	-0.03	0.36	-0.00
		20	1.433	-7.62	-0.93	-0.06	-0.16	0.33	0.37
	CO31	17	0.000	-2.00	-0.13	-0.06	0.04	-0.28	0.12
		43	0.717	-2.21	0.28	-0.18	0.16	-0.32	0.05
			0.717	-2.21	0.28	-0.18	0.16	-0.32	0.05
		20	1.433	-2.90	-0.20	-0.29	0.30	-0.41	-0.06
	CO32	17	0.000	-1.90	-0.13	-0.05	0.03	-0.27	0.12
		43	0.717	-2.06	0.28	-0.16	0.14	-0.32	0.04
			0.717	-2.06	0.28	-0.16	0.14	-0.32	0.04
		20	1.433	-2.66	-0.23	-0.25	0.28	-0.39	-0.06
	CO33	17	0.000	-5.06	-0.04	0.01	0.16	0.59	-0.01
		43	0.717	-5.63	-0.11	-0.05	-0.08	0.60	0.01
			0.717	-5.63	-0.11	-0.05	-0.08	0.60	0.01
		20	1.433	-5.95	-0.59	-0.20	-0.29	0.44	0.24
	CO34	17	0.000	-5.58	-0.03	0.00	0.15	0.58	-0.09
		43	0.717	-6.12	-0.27	-0.06	-0.08	0.58	-0.02
			0.717	-6.12	-0.27	-0.06	-0.08	0.58	-0.02
		20	1.433	-6.35	-0.94	-0.22	-0.29	0.42	0.39
	CO35	17	0.000	-0.92	-0.19	-0.01	0.07	-0.20	-0.12
		43	0.717	-0.85	-0.26	-0.12	0.15	-0.20	0.05
			0.717	-0.85	-0.26	-0.12	0.15	-0.20	0.05
		20	1.433	-0.64	-0.20	-0.25	0.24	-0.26	0.22
	CO36	17	0.000	-1.03	-0.18	-0.01	0.06	-0.18	-0.13
		43	0.717	-0.96	-0.28	-0.13	0.13	-0.19	0.04
			0.717	-0.96	-0.28	-0.13	0.13	-0.19	0.04
		20	1.433	-0.73	-0.25	-0.26	0.22	-0.26	0.23
14	LC10	21	0.000	-1.63	0.36	0.66	-0.20	-0.54	0.26
		39	0.717	-2.25	0.31	0.39	-0.06	-0.20	0.01
			0.717	-2.25	0.31	0.39	-0.06	-0.20	0.01
		11	1.433	-2.57	0.13	0.12	-0.02	-0.03	-0.16
	Form-Finding	21	0.000	-0.90	0.01	0.14	-0.09	-0.13	0.00
		39	0.717	-0.90	0.00	0.07	-0.05	-0.08	0.00
			0.717	-0.90	0.00	0.07	-0.05	-0.08	0.00
		11	1.433	-0.89	0.00	0.01	-0.02	-0.07	-0.00
	CO1	21	0.000	-0.36	0.09	0.21	-0.24	-0.33	0.04
		39	0.717	-0.37	0.04	0.13	-0.12	-0.28	-0.01
			0.717	-0.37	0.04	0.13	-0.12	-0.28	-0.01
		11	1.433	-0.38	0.00	0.05	-0.02	-0.24	-0.02
	CO2	21	0.000	-9.13	3.20	1.72	-1.37	-2.26	1.30
		39	0.717	-10.20	1.23	1.09	-0.62	-1.61	-0.25
			0.717	-10.20	1.23	1.07	-0.62	-1.61	-0.25
		11	1.433	-10.70	-0.04	0.15	-0.06	-1.29	-0.65
	CO3	21	0.000	-6.31	0.63	0.11	-0.09	0.01	0.28
		39	0.717	-5.79	0.11	0.01	-0.10	0.01	0.03
			0.717	-5.79	0.10	0.02	-0.10	0.01	0.03
		11	1.433	-5.20	0.06	0.07	-0.10	-0.00	0.01
	CO4	21	0.000	-6.28	0.67	0.11	-0.09	0.01	0.29
		39	0.717	-5.81	0.11	0.02	-0.09	0.01	0.03
			0.717	-5.81	0.11	0.02	-0.09	0.01	0.03
		11	1.433	-5.21	0.06	0.08	-0.09	-0.00	0.01
	CO5	21	0.000	-8.58	2.16	1.43	-1.23	-1.93	0.85
		39	0.717	-8.84	0.72	0.87	-0.57	-1.43	-0.12
			0.717	-8.85	0.72	0.86	-0.57	-1.43	-0.12
		11	1.433	-9.14	0.05	0.15	-0.07	-1.19	-0.39
	CO6	21	0.000	-8.29	2.16	1.39	-1.21	-1.92	0.84
		39	0.717	-8.67	0.72	0.86	-0.56	-1.43	-0.12
			0.717	-8.67	0.72	0.85	-0.56	-1.43	-0.12
		11	1.433	-9.04	0.05	0.15	-0.06	-1.18	-0.39
	CO7	21	0.000	-3.31	1.92	0.67	-0.03	-0.28	1.00
		39	0.717	-4.07	1.07	0.43	-0.01	0.11	-0.09
			0.717	-4.07	1.07	0.43	-0.01	0.11	-0.09

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
14	CO7	11	1.433	-4.05	0.13	0.17	-0.10	0.31	-0.53
	CO8	21	0.000	-3.93	1.36	0.51	-0.00	-0.18	0.74
		39	0.717	-4.08	0.70	0.33	0.00	0.13	0.01
			0.717	-4.08	0.70	0.33	0.00	0.13	0.01
		11	1.433	-3.90	0.30	0.17	-0.09	0.30	-0.32
	CO9	21	0.000	-8.79	3.29	2.51	-1.34	-2.58	1.44
		39	0.717	-10.41	1.48	1.51	-0.56	-1.47	-0.28
			0.717	-10.41	1.49	1.50	-0.56	-1.47	-0.28
		11	1.433	-10.84	-0.04	0.21	-0.11	-0.98	-0.80
	CO10	21	0.000	-7.94	2.76	2.08	-1.24	-2.32	1.19
		39	0.717	-9.21	1.20	1.30	-0.52	-1.43	-0.22
			0.717	-9.21	1.20	1.29	-0.52	-1.43	-0.22
		11	1.433	-9.72	-0.02	0.26	-0.07	-0.98	-0.64
	CO11	21	0.000	-10.73	1.57	-0.09	0.36	0.68	0.62
		39	0.717	-10.23	0.36	-0.15	0.09	0.67	-0.04
			0.717	-10.23	0.36	-0.15	0.09	0.67	-0.04
		11	1.433	-9.38	-0.02	0.02	-0.15	0.60	-0.09
	CO12	21	0.000	-10.79	1.60	-0.08	0.35	0.67	0.63
		39	0.717	-10.28	0.36	-0.14	0.09	0.66	-0.04
			0.717	-10.28	0.36	-0.14	0.09	0.66	-0.04
		11	1.433	-9.41	-0.03	0.03	-0.15	0.59	-0.09
	CO13	21	0.000	-4.00	0.35	0.37	-0.44	-0.57	-0.06
		39	0.717	-3.12	-0.37	0.23	-0.24	-0.48	0.06
			0.717	-3.12	-0.37	0.22	-0.24	-0.48	0.06
		11	1.433	-2.80	0.17	0.09	-0.06	-0.43	0.15
	CO14	21	0.000	-3.60	0.35	0.32	-0.41	-0.55	-0.06
		39	0.717	-2.87	-0.35	0.21	-0.21	-0.47	0.07
			0.717	-2.87	-0.35	0.21	-0.21	-0.47	0.07
		11	1.433	-2.66	0.22	0.08	-0.04	-0.41	0.13
	CO15	21	0.000	-7.05	3.24	0.70	0.47	0.27	1.48
		39	0.717	-7.71	1.46	0.44	0.24	0.83	-0.23
			0.717	-7.71	1.46	0.45	0.24	0.83	-0.23
		11	1.433	-7.55	-0.17	0.15	-0.14	1.07	-0.66
	CO16	21	0.000	-8.29	2.48	0.52	0.49	0.38	1.15
		39	0.717	-8.47	1.04	0.32	0.24	0.83	-0.08
			0.717	-8.47	1.04	0.33	0.24	0.83	-0.08
		11	1.433	-8.04	0.18	0.17	-0.13	1.03	-0.46
	CO17	21	0.000	-3.04	0.98	1.64	-0.58	-1.35	0.57
		39	0.717	-4.32	0.68	0.93	-0.22	-0.57	-0.05
			0.717	-4.32	0.69	0.92	-0.22	-0.57	-0.05
		11	1.433	-4.65	0.18	0.18	-0.08	-0.23	-0.37
	CO18	21	0.000	-2.29	0.63	1.13	-0.46	-1.03	0.39
		39	0.717	-3.11	0.45	0.69	-0.17	-0.49	-0.01
			0.717	-3.11	0.45	0.69	-0.17	-0.49	-0.01
		11	1.433	-3.50	0.14	0.23	-0.04	-0.20	-0.23
	CO19	21	0.000	-0.37	0.04	0.16	-0.18	-0.24	0.02
		39	0.717	-0.35	0.02	0.10	-0.09	-0.20	-0.00
			0.717	-0.35	0.02	0.10	-0.09	-0.20	-0.00
		11	1.433	-0.33	0.00	0.04	-0.02	-0.17	-0.01
	CO20	21	0.000	-5.59	1.50	1.18	-0.95	-1.54	0.61
		39	0.717	-6.24	0.56	0.70	-0.44	-1.12	-0.11
			0.717	-6.24	0.56	0.69	-0.44	-1.12	-0.11
		11	1.433	-6.62	-0.03	0.10	-0.04	-0.93	-0.30
	CO21	21	0.000	-4.60	0.43	0.18	-0.13	-0.11	0.19
		39	0.717	-4.22	0.07	0.06	-0.10	-0.07	0.03
			0.717	-4.22	0.07	0.06	-0.10	-0.07	0.03
		11	1.433	-3.79	0.05	0.06	-0.07	-0.07	0.01
	CO22	21	0.000	-4.57	0.46	0.18	-0.13	-0.11	0.20
		39	0.717	-4.22	0.07	0.06	-0.10	-0.08	0.02
			0.717	-4.22	0.07	0.07	-0.10	-0.08	0.02
		11	1.433	-3.80	0.05	0.06	-0.07	-0.07	0.01
	CO23	21	0.000	-5.64	1.03	1.02	-0.87	-1.35	0.39
		39	0.717	-5.72	0.30	0.59	-0.41	-1.01	-0.04
			0.717	-5.72	0.30	0.58	-0.41	-1.01	-0.04
		11	1.433	-5.95	0.05	0.10	-0.05	-0.86	-0.16
	CO24	21	0.000	-5.41	1.03	0.99	-0.85	-1.34	0.38
		39	0.717	-5.58	0.29	0.58	-0.40	-1.01	-0.04
			0.717	-5.58	0.29	0.58	-0.40	-1.01	-0.04
		11	1.433	-5.86	0.05	0.10	-0.04	-0.85	-0.16
	CO25	21	0.000	-2.41	1.27	0.52	-0.10	-0.28	0.71
		39	0.717	-2.97	0.78	0.31	-0.05	-0.01	-0.05
			0.717	-2.97	0.78	0.31	-0.05	-0.01	-0.05
		11	1.433	-2.96	0.13	0.12	-0.07	0.12	-0.39
	CO26	21	0.000	-2.86	0.90	0.41	-0.08	-0.22	0.52
		39	0.717	-2.97	0.51	0.26	-0.04	0.00	0.02
			0.717	-2.97	0.51	0.26	-0.04	0.00	0.02
		11	1.433	-2.83	0.25	0.12	-0.07	0.11	-0.24
	CO27	21	0.000	-5.52	1.69	1.71	-0.96	-1.78	0.77
		39	0.717	-6.64	0.82	0.99	-0.42	-1.07	-0.14
			0.717	-6.64	0.82	0.98	-0.42	-1.07	-0.14
		11	1.433	-6.98	-0.00	0.15	-0.08	-0.75	-0.44
	CO28	21	0.000	-4.93	1.36	1.42	-0.89	-1.60	0.61
		39	0.717	-5.79	0.64	0.85	-0.38	-1.02	-0.10
			0.717	-5.80	0.64	0.84	-0.38	-1.02	-0.10
		11	1.433	-6.21	0.01	0.18	-0.05	-0.73	-0.34
	CO29	21	0.000	-7.58	0.91	0.05	0.17	0.34	0.36
		39	0.717	-7.18	0.18	-0.05	0.03	0.37	-0.00
			0.717	-7.18	0.18	-0.05	0.03	0.37	-0.00
		11	1.433	-6.57	0.01	0.02	-0.11	0.33	-0.02
	CO30	21	0.000	-7.62	0.93	0.06	0.16	0.33	0.37
		39	0.717	-7.22	0.18	-0.04	0.03	0.36	-0.00
			0.717	-7.22	0.18	-0.04	0.03	0.36	-0.00
		11	1.433	-6.59	0.01	0.02	-0.11	0.33	-0.02
	CO31	21	0.000	-2.91	0.21	0.28	-0.30	-0.40	-0.07

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
14	CO31	39	0.717	-2.21	-0.29	0.17	-0.16	-0.32	0.04
			0.717	-2.21	-0.29	0.17	-0.16	-0.32	0.04
		11	1.433	-1.97	0.10	0.06	-0.04	-0.28	0.13
	CO32	21	0.000	-2.66	0.23	0.25	-0.28	-0.39	-0.06
		39	0.717	-2.06	-0.28	0.16	-0.14	-0.32	0.04
			0.717	-2.06	-0.28	0.16	-0.14	-0.32	0.04
		11	1.433	-1.90	0.13	0.05	-0.03	-0.27	0.12
	CO33	21	0.000	-4.94	2.02	0.53	0.23	0.09	0.97
		39	0.717	-5.39	0.98	0.31	0.11	0.46	-0.13
			0.717	-5.39	0.98	0.31	0.11	0.46	-0.13
		11	1.433	-5.26	-0.08	0.11	-0.11	0.61	-0.45
	CO34	21	0.000	-5.80	1.49	0.43	0.24	0.15	0.73
		39	0.717	-5.88	0.66	0.24	0.11	0.46	-0.02
			0.717	-5.88	0.66	0.24	0.11	0.46	-0.02
		11	1.433	-5.57	0.18	0.12	-0.10	0.59	-0.29
	CO35	21	0.000	-2.04	0.64	1.08	-0.41	-0.91	0.40
		39	0.717	-3.04	0.50	0.61	-0.16	-0.41	-0.03
			0.717	-3.04	0.50	0.60	-0.16	-0.41	-0.03
		11	1.433	-3.32	0.15	0.12	-0.05	-0.19	-0.27
	CO36	21	0.000	-1.58	0.39	0.76	-0.32	-0.70	0.28
		39	0.717	-2.20	0.33	0.46	-0.12	-0.35	0.01
			0.717	-2.20	0.33	0.45	-0.12	-0.35	0.01
		11	1.433	-2.52	0.13	0.15	-0.03	-0.16	-0.17
15	LC10	20	0.000	-1.11	0.00	-0.04	-0.04	-0.17	0.10
		42	0.717	-0.83	0.10	-0.20	0.04	-0.26	0.05
			0.717	-0.83	0.10	-0.20	0.04	-0.26	0.05
		9	1.433	-0.81	0.60	-0.44	0.18	-0.44	-0.16
	Form-Finding	20	0.000	-0.91	0.01	0.09	-0.04	-0.15	0.00
		42	0.717	-0.92	0.00	-0.01	0.01	-0.13	-0.00
			0.717	-0.92	0.00	-0.01	0.01	-0.13	-0.00
		9	1.433	-0.92	-0.02	-0.14	0.07	-0.16	0.00
	CO1	20	0.000	-0.46	0.09	0.11	-0.08	-0.31	0.03
		42	0.717	-0.50	0.01	0.02	0.03	-0.28	-0.01
			0.717	-0.50	0.01	0.02	0.03	-0.28	-0.01
		9	1.433	-0.52	-0.05	-0.09	0.14	-0.27	0.01
	CO2	20	0.000	-11.41	3.39	0.82	-0.65	-2.05	1.11
		42	0.717	-11.66	0.44	0.19	0.09	-1.77	-0.26
			0.717	-11.66	0.44	0.17	0.09	-1.77	-0.26
		9	1.433	-11.03	-2.73	-0.45	0.77	-1.74	0.50
	CO3	20	0.000	-7.05	1.95	0.04	0.00	-0.13	0.36
		42	0.717	-7.76	-0.17	-0.18	0.05	-0.16	-0.30
			0.717	-7.76	-0.17	-0.18	0.05	-0.16	-0.30
		9	1.433	-7.48	-2.71	-0.41	0.15	-0.35	0.69
	CO4	20	0.000	-7.06	2.01	0.03	0.00	-0.13	0.37
		42	0.717	-7.58	-0.24	-0.14	0.06	-0.15	-0.30
			0.717	-7.58	-0.23	-0.14	0.06	-0.15	-0.30
		9	1.433	-7.17	-2.29	-0.43	0.14	-0.31	0.64
	CO5	20	0.000	-10.27	3.02	0.85	-0.53	-1.82	0.80
		42	0.717	-11.08	0.11	0.21	0.12	-1.50	-0.34
			0.717	-11.08	0.12	0.20	0.12	-1.50	-0.34
		9	1.433	-10.68	-3.12	-0.51	0.69	-1.48	0.70
	CO6	20	0.000	-9.96	2.97	0.80	-0.52	-1.77	0.78
		42	0.717	-10.57	0.09	0.23	0.11	-1.45	-0.32
			0.717	-10.57	0.09	0.22	0.11	-1.45	-0.32
		9	1.433	-10.05	-2.88	-0.43	0.66	-1.41	0.64
	CO7	20	0.000	-4.42	0.58	-0.24	-0.03	-0.04	0.16
		42	0.717	-4.71	0.09	-0.49	0.03	-0.30	-0.09
			0.717	-4.71	0.09	-0.49	0.03	-0.30	-0.09
		9	1.433	-4.72	-0.13	-0.80	0.22	-0.71	-0.03
	CO8	20	0.000	-5.15	0.91	-0.17	-0.05	-0.06	0.29
		42	0.717	-5.50	0.08	-0.41	0.01	-0.27	-0.08
			0.717	-5.50	0.08	-0.41	0.01	-0.27	-0.08
		9	1.433	-5.47	-0.43	-0.72	0.18	-0.63	0.10
	CO9	20	0.000	-9.24	2.76	0.35	-0.46	-1.70	0.94
		42	0.717	-9.23	0.43	-0.20	0.20	-1.68	-0.18
			0.717	-9.23	0.43	-0.21	0.20	-1.68	-0.18
		9	1.433	-8.91	-1.49	-0.90	0.89	-1.88	0.20
	CO10	20	0.000	-8.75	2.50	0.46	-0.48	-1.66	0.86
		42	0.717	-8.68	0.38	-0.10	0.15	-1.58	-0.15
			0.717	-8.67	0.38	-0.11	0.15	-1.58	-0.15
		9	1.433	-8.30	-1.42	-0.77	0.78	-1.72	0.22
	CO11	20	0.000	-12.11	3.23	-0.16	0.14	0.36	0.71
		42	0.717	-13.03	-0.16	-0.44	0.02	0.18	-0.45
			0.717	-13.03	-0.15	-0.44	0.02	0.18	-0.45
		9	1.433	-12.37	-4.15	-0.72	0.03	-0.24	1.04
	CO12	20	0.000	-12.19	3.27	-0.16	0.14	0.34	0.71
		42	0.717	-13.08	-0.21	-0.41	0.03	0.17	-0.45
			0.717	-13.08	-0.20	-0.41	0.03	0.17	-0.45
		9	1.433	-12.47	-3.65	-0.75	0.03	-0.23	0.98
	CO13	20	0.000	-4.33	1.16	0.40	-0.12	-0.64	0.08
		42	0.717	-5.05	-0.30	0.09	0.09	-0.46	-0.24
			0.717	-5.05	-0.30	0.09	0.09	-0.46	-0.24
		9	1.433	-4.94	-1.78	-0.37	0.27	-0.49	0.51
	CO14	20	0.000	-3.95	1.11	0.33	-0.11	-0.57	0.06
		42	0.717	-4.37	-0.31	0.11	0.08	-0.40	-0.21
			0.717	-4.37	-0.31	0.11	0.08	-0.40	-0.21
		9	1.433	-4.09	-1.51	-0.25	0.23	-0.40	0.44
	CO15	20	0.000	-9.37	1.77	-0.60	0.07	0.52	0.47
		42	0.717	-9.99	0.10	-0.88	-0.03	-0.01	-0.24
			0.717	-9.99	0.10	-0.88	-0.03	-0.01	-0.24
		9	1.433	-9.82	-1.33	-1.16	0.11	-0.73	0.26
	CO16	20	0.000	-10.30	2.18	-0.53	0.06	0.48	0.63
		42	0.717	-11.01	0.09	-0.79	-0.04	0.01	-0.23

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
15	CO16		0.717	-11.01	0.10	-0.79	-0.04	0.01	-0.23
		9	1.433	-10.79	-1.72	-1.09	0.08	-0.66	0.41
	CO17	20	0.000	-1.38	0.31	-0.27	-0.04	-0.41	0.22
		42	0.717	-1.13	0.21	-0.47	0.16	-0.65	0.03
			0.717	-1.13	0.21	-0.47	0.16	-0.65	0.03
		9	1.433	-1.26	0.80	-0.82	0.47	-0.96	-0.24
	CO18	20	0.000	-1.36	0.27	-0.11	-0.07	-0.38	0.21
		42	0.717	-1.10	0.17	-0.30	0.10	-0.53	0.06
			0.717	-1.10	0.17	-0.30	0.10	-0.53	0.06
		9	1.433	-1.16	0.72	-0.64	0.35	-0.76	-0.19
	CO19	20	0.000	-0.42	0.02	0.10	-0.06	-0.24	0.01
		42	0.717	-0.47	0.01	0.01	0.03	-0.20	0.00
			0.717	-0.47	0.01	0.01	0.03	-0.20	0.00
		9	1.433	-0.50	0.03	-0.11	0.11	-0.21	-0.01
	CO20	20	0.000	-6.69	1.66	0.58	-0.45	-1.41	0.52
		42	0.717	-6.70	0.19	0.11	0.06	-1.23	-0.14
			0.717	-6.70	0.19	0.10	0.06	-1.23	-0.14
		9	1.433	-6.31	-1.49	-0.33	0.54	-1.22	0.28
	CO21	20	0.000	-5.12	1.36	0.08	-0.03	-0.21	0.25
		42	0.717	-5.64	-0.13	-0.11	0.05	-0.21	-0.20
			0.717	-5.64	-0.13	-0.11	0.05	-0.21	-0.20
		9	1.433	-5.45	-1.85	-0.33	0.15	-0.34	0.47
	CO22	20	0.000	-5.12	1.40	0.07	-0.03	-0.21	0.25
		42	0.717	-5.50	-0.17	-0.08	0.05	-0.20	-0.20
			0.717	-5.50	-0.17	-0.08	0.05	-0.20	-0.20
		9	1.433	-5.24	-1.55	-0.35	0.14	-0.32	0.43
	CO23	20	0.000	-6.51	1.71	0.59	-0.37	-1.28	0.40
		42	0.717	-7.01	-0.01	0.13	0.08	-1.07	-0.22
			0.717	-7.01	-0.01	0.12	0.08	-1.07	-0.22
		9	1.433	-6.75	-1.98	-0.38	0.49	-1.07	0.46
	CO24	20	0.000	-6.27	1.69	0.55	-0.37	-1.24	0.39
		42	0.717	-6.61	-0.04	0.15	0.08	-1.03	-0.21
			0.717	-6.61	-0.04	0.14	0.08	-1.03	-0.21
		9	1.433	-6.26	-1.82	-0.31	0.47	-1.01	0.43
	CO25	20	0.000	-3.16	0.35	-0.08	-0.05	-0.15	0.12
		42	0.717	-3.33	0.10	-0.31	0.03	-0.29	-0.05
			0.717	-3.33	0.10	-0.31	0.03	-0.29	-0.05
		9	1.433	-3.34	0.03	-0.60	0.19	-0.57	-0.05
	CO26	20	0.000	-3.67	0.58	-0.04	-0.06	-0.16	0.21
		42	0.717	-3.89	0.09	-0.26	0.02	-0.27	-0.04
			0.717	-3.89	0.09	-0.26	0.02	-0.27	-0.04
		9	1.433	-3.88	-0.18	-0.55	0.17	-0.51	0.04
	CO27	20	0.000	-5.38	1.37	0.26	-0.32	-1.19	0.48
		42	0.717	-5.23	0.24	-0.14	0.15	-1.18	-0.09
			0.717	-5.23	0.24	-0.15	0.15	-1.18	-0.09
		9	1.433	-5.04	-0.66	-0.64	0.63	-1.31	0.06
	CO28	20	0.000	-5.11	1.23	0.34	-0.33	-1.15	0.44
		42	0.717	-4.92	0.20	-0.07	0.11	-1.09	-0.07
			0.717	-4.92	0.20	-0.07	0.11	-1.09	-0.07
		9	1.433	-4.69	-0.63	-0.54	0.55	-1.19	0.08
	CO29	20	0.000	-8.43	2.06	-0.05	0.06	0.12	0.43
		42	0.717	-9.02	-0.12	-0.30	0.02	0.02	-0.29
			0.717	-9.02	-0.12	-0.29	0.02	0.02	-0.29
		9	1.433	-8.59	-2.74	-0.56	0.07	-0.28	0.69
	CO30	20	0.000	-8.48	2.10	-0.04	0.06	0.11	0.44
		42	0.717	-9.05	-0.16	-0.27	0.03	0.02	-0.30
			0.717	-9.05	-0.16	-0.27	0.03	0.02	-0.30
		9	1.433	-8.64	-2.37	-0.59	0.07	-0.27	0.65
	CO31	20	0.000	-3.11	0.81	0.26	-0.09	-0.45	0.04
		42	0.717	-3.64	-0.24	0.05	0.06	-0.33	-0.17
			0.717	-3.64	-0.23	0.05	0.06	-0.33	-0.17
		9	1.433	-3.56	-1.27	-0.27	0.19	-0.36	0.37
	CO32	20	0.000	-2.89	0.80	0.22	-0.08	-0.41	0.03
		42	0.717	-3.21	-0.25	0.08	0.05	-0.29	-0.16
			0.717	-3.21	-0.25	0.08	0.05	-0.29	-0.16
		9	1.433	-2.98	-1.08	-0.19	0.16	-0.29	0.32
	CO33	20	0.000	-6.40	0.99	-0.29	0.02	0.20	0.27
		42	0.717	-6.77	0.09	-0.56	-0.00	-0.10	-0.14
			0.717	-6.77	0.09	-0.56	-0.00	-0.10	-0.14
		9	1.433	-6.68	-0.66	-0.87	0.12	-0.59	0.12
	CO34	20	0.000	-7.06	1.28	-0.24	0.01	0.18	0.38
		42	0.717	-7.49	0.08	-0.50	-0.01	-0.09	-0.13
			0.717	-7.49	0.08	-0.50	-0.01	-0.09	-0.13
		9	1.433	-7.37	-0.93	-0.82	0.10	-0.54	0.23
	CO35	20	0.000	-0.86	0.10	-0.14	-0.04	-0.31	0.13
		42	0.717	-0.64	0.17	-0.30	0.11	-0.46	0.03
			0.717	-0.64	0.17	-0.30	0.11	-0.46	0.03
		9	1.433	-0.70	0.67	-0.56	0.33	-0.67	-0.21
	CO36	20	0.000	-0.96	0.11	-0.04	-0.06	-0.29	0.14
		42	0.717	-0.73	0.13	-0.19	0.07	-0.37	0.05
			0.717	-0.73	0.13	-0.19	0.07	-0.37	0.05
		9	1.433	-0.75	0.58	-0.45	0.24	-0.53	-0.16
16	LC10	18	0.000	-2.67	-0.42	0.02	-0.24	-0.14	-0.36
		45	0.717	-2.08	-0.76	-0.02	-0.16	-0.23	0.14
			0.717	-2.08	-0.76	-0.02	-0.16	-0.23	0.14
		6	1.433	-1.64	-0.11	-0.01	-0.06	-0.29	0.48
	Form-Finding	18	0.000	-0.90	-0.04	0.07	-0.06	-0.09	-0.02
		45	0.717	-0.88	-0.03	0.03	-0.03	-0.07	0.01
			0.717	-0.88	-0.03	0.03	-0.03	-0.07	0.01
		6	1.433	-0.87	0.00	0.00	0.00	-0.07	0.02
	CO1	18	0.000	-0.34	0.05	0.14	-0.15	-0.22	0.03
		45	0.717	-0.36	0.02	0.07	-0.07	-0.19	0.00
			0.717	-0.36	0.02	0.07	-0.07	-0.19	0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
16	CO1	6	1.433	-0.36	0.00	-0.00	0.00	-0.17	-0.00
	CO2	18	0.000	-9.56	2.88	1.44	-1.11	-1.91	1.32
		45	0.717	-10.29	1.10	0.86	-0.48	-1.36	-0.09
			0.717	-10.29	1.10	0.85	-0.48	-1.36	-0.09
		6	1.433	-10.38	-0.01	0.01	-0.00	-1.14	-0.46
	CO3	18	0.000	-4.81	-1.00	-0.35	0.04	0.23	-0.41
		45	0.717	-4.48	-0.49	-0.19	-0.00	0.04	0.13
			0.717	-4.48	-0.49	-0.19	-0.00	0.04	0.13
		6	1.433	-4.39	0.00	-0.00	0.00	-0.03	0.30
	CO4	18	0.000	-4.82	-1.01	-0.35	0.05	0.23	-0.41
		45	0.717	-4.48	-0.50	-0.19	-0.00	0.04	0.13
			0.717	-4.48	-0.50	-0.19	-0.00	0.04	0.13
		6	1.433	-4.38	0.00	-0.00	0.00	-0.03	0.30
	CO5	18	0.000	-8.41	2.75	1.27	-0.91	-1.61	1.18
		45	0.717	-9.15	1.05	0.76	-0.38	-1.11	-0.15
			0.717	-9.15	1.06	0.75	-0.38	-1.11	-0.15
		6	1.433	-9.28	-0.00	0.00	0.00	-0.90	-0.51
	CO6	18	0.000	-8.36	2.71	1.28	-0.91	-1.61	1.16
		45	0.717	-9.09	1.04	0.76	-0.38	-1.10	-0.15
			0.717	-9.09	1.04	0.75	-0.38	-1.10	-0.15
		6	1.433	-9.20	-0.00	0.00	0.00	-0.90	-0.49
	CO7	18	0.000	-4.37	-2.74	-0.72	-0.13	0.36	-0.96
		45	0.717	-3.84	-1.29	-0.41	-0.16	-0.13	0.54
			0.717	-3.84	-1.29	-0.41	-0.16	-0.13	0.54
		6	1.433	-3.65	0.10	-0.02	-0.06	-0.33	0.95
	CO8	18	0.000	-4.51	-2.49	-0.73	-0.08	0.40	-0.92
		45	0.717	-4.12	-1.22	-0.42	-0.13	-0.09	0.47
			0.717	-4.12	-1.22	-0.42	-0.13	-0.09	0.47
		6	1.433	-3.99	0.06	-0.03	-0.05	-0.28	0.87
	CO9	18	0.000	-9.02	2.00	1.12	-1.24	-1.69	0.93
		45	0.717	-8.84	0.52	0.63	-0.63	-1.43	0.07
			0.717	-8.84	0.52	0.62	-0.62	-1.43	0.07
		6	1.433	-8.43	-0.02	0.07	-0.09	-1.32	-0.06
	CO10	18	0.000	-8.42	1.89	1.04	-1.12	-1.56	0.84
		45	0.717	-8.32	0.48	0.58	-0.56	-1.31	0.03
			0.717	-8.32	0.48	0.56	-0.56	-1.31	0.03
		6	1.433	-8.00	-0.04	0.03	-0.07	-1.22	-0.09
	CO11	18	0.000	-8.94	-1.64	-1.02	0.35	0.88	-0.63
		45	0.717	-8.45	-0.76	-0.54	0.11	0.40	0.21
			0.717	-8.45	-0.75	-0.54	0.11	0.40	0.21
		6	1.433	-8.35	-0.00	-0.00	0.00	0.22	0.47
	CO12	18	0.000	-8.96	-1.65	-1.02	0.35	0.88	-0.63
		45	0.717	-8.47	-0.76	-0.54	0.11	0.40	0.21
			0.717	-8.47	-0.75	-0.53	0.11	0.40	0.21
		6	1.433	-8.36	-0.00	-0.00	0.00	0.22	0.47
	CO13	18	0.000	-2.58	1.31	0.31	-0.21	-0.39	0.48
		45	0.717	-2.95	0.51	0.19	-0.09	-0.26	-0.16
			0.717	-2.95	0.51	0.19	-0.09	-0.26	-0.16
		6	1.433	-3.03	-0.00	-0.00	0.00	-0.21	-0.32
	CO14	18	0.000	-2.52	1.25	0.31	-0.21	-0.39	0.46
		45	0.717	-2.88	0.49	0.19	-0.09	-0.26	-0.14
			0.717	-2.88	0.49	0.19	-0.09	-0.26	-0.14
		6	1.433	-2.94	-0.00	0.00	0.00	-0.20	-0.30
	CO15	18	0.000	-8.22	-3.41	-1.55	0.11	1.07	-1.19
		45	0.717	-7.68	-1.57	-0.84	-0.11	0.16	0.62
			0.717	-7.68	-1.57	-0.84	-0.11	0.16	0.62
		6	1.433	-7.54	0.09	-0.03	-0.09	-0.20	1.12
	CO16	18	0.000	-8.65	-3.14	-1.55	0.16	1.10	-1.13
		45	0.717	-8.17	-1.49	-0.86	-0.08	0.20	0.55
			0.717	-8.17	-1.49	-0.86	-0.08	0.20	0.55
		6	1.433	-8.05	0.06	-0.04	-0.07	-0.16	1.04
	CO17	18	0.000	-3.95	-0.29	0.19	-0.59	-0.46	-0.31
		45	0.717	-3.09	-0.91	0.05	-0.39	-0.58	0.19
			0.717	-3.09	-0.91	0.05	-0.39	-0.58	0.19
		6	1.433	-2.37	-0.20	0.02	-0.14	-0.67	0.63
	CO18	18	0.000	-3.41	-0.18	0.09	-0.45	-0.32	-0.34
		45	0.717	-2.73	-0.93	-0.00	-0.30	-0.45	0.13
			0.717	-2.73	-0.93	-0.01	-0.30	-0.45	0.13
		6	1.433	-2.11	-0.22	-0.01	-0.10	-0.54	0.58
	CO19	18	0.000	-0.29	0.01	0.10	-0.10	-0.15	0.01
		45	0.717	-0.28	-0.00	0.05	-0.05	-0.13	0.00
			0.717	-0.28	-0.00	0.05	-0.05	-0.13	0.00
		6	1.433	-0.28	0.00	-0.00	0.00	-0.12	0.01
	CO20	18	0.000	-6.29	1.42	1.00	-0.76	-1.29	0.63
		45	0.717	-6.70	0.53	0.56	-0.33	-0.93	-0.05
			0.717	-6.70	0.53	0.55	-0.33	-0.93	-0.05
		6	1.433	-6.76	-0.00	0.00	0.00	-0.79	-0.22
	CO21	18	0.000	-3.48	-0.67	-0.17	-0.03	0.07	-0.28
		45	0.717	-3.24	-0.35	-0.10	-0.03	-0.04	0.09
			0.717	-3.24	-0.35	-0.10	-0.03	-0.04	0.09
		6	1.433	-3.17	0.00	0.00	0.00	-0.08	0.21
	CO22	18	0.000	-3.48	-0.68	-0.17	-0.02	0.07	-0.28
		45	0.717	-3.24	-0.35	-0.10	-0.03	-0.04	0.09
			0.717	-3.24	-0.35	-0.10	-0.03	-0.04	0.09
		6	1.433	-3.17	0.00	0.00	0.00	-0.08	0.21
	CO23	18	0.000	-5.76	1.58	0.89	-0.64	-1.13	0.66
		45	0.717	-6.23	0.60	0.51	-0.27	-0.79	-0.10
			0.717	-6.23	0.60	0.50	-0.27	-0.79	-0.10
		6	1.433	-6.32	-0.00	0.00	0.00	-0.65	-0.30
	CO24	18	0.000	-5.72	1.55	0.89	-0.64	-1.12	0.65
		45	0.717	-6.18	0.59	0.51	-0.27	-0.78	-0.10
			0.717	-6.18	0.59	0.50	-0.27	-0.78	-0.10
		6	1.433	-6.25	-0.00	0.00	-0.00	-0.65	-0.30
	CO25	18	0.000	-3.12	-2.03	-0.40	-0.13	0.15	-0.71

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	Vy	Vz	Moments [kNm] MT	My	Mz
16	CO25	45	0.717	-2.71	-0.97	-0.23	-0.12	-0.14	0.41
			0.717	-2.70	-0.97	-0.23	-0.12	-0.14	0.41
		6	1.433	-2.55	0.08	-0.01	-0.04	-0.26	0.72
	CO26	18	0.000	-3.22	-1.84	-0.41	-0.10	0.17	-0.68
		45	0.717	-2.91	-0.92	-0.24	-0.10	-0.11	0.35
			0.717	-2.91	-0.92	-0.24	-0.10	-0.11	0.35
		6	1.433	-2.79	0.05	-0.02	-0.03	-0.23	0.65
	CO27	18	0.000	-6.07	0.81	0.81	-0.85	-1.17	0.38
		45	0.717	-5.79	0.12	0.43	-0.43	-0.98	0.08
			0.717	-5.79	0.12	0.43	-0.43	-0.98	0.08
		6	1.433	-5.46	-0.02	0.04	-0.06	-0.91	0.07
	CO28	18	0.000	-5.66	0.79	0.75	-0.77	-1.08	0.34
		45	0.717	-5.45	0.12	0.39	-0.38	-0.89	0.04
			0.717	-5.45	0.12	0.38	-0.38	-0.89	0.04
		6	1.433	-5.18	-0.04	0.02	-0.05	-0.83	0.04
	CO29	18	0.000	-6.28	-1.24	-0.61	0.18	0.49	-0.50
		45	0.717	-5.90	-0.58	-0.32	0.05	0.20	0.15
			0.717	-5.90	-0.58	-0.32	0.05	0.20	0.15
		6	1.433	-5.81	0.00	-0.00	0.00	0.09	0.36
	CO30	18	0.000	-6.29	-1.24	-0.61	0.18	0.49	-0.50
		45	0.717	-5.91	-0.58	-0.32	0.05	0.20	0.15
			0.717	-5.91	-0.58	-0.32	0.05	0.20	0.15
		6	1.433	-5.82	0.00	-0.00	0.00	0.09	0.36
	CO31	18	0.000	-1.88	0.98	0.20	-0.15	-0.27	0.35
		45	0.717	-2.17	0.38	0.13	-0.06	-0.19	-0.12
			0.717	-2.17	0.38	0.13	-0.06	-0.19	-0.12
		6	1.433	-2.23	-0.00	-0.00	0.00	-0.16	-0.25
	CO32	18	0.000	-1.86	0.94	0.21	-0.15	-0.27	0.34
		45	0.717	-2.14	0.36	0.13	-0.06	-0.19	-0.11
			0.717	-2.14	0.36	0.13	-0.06	-0.19	-0.11
		6	1.433	-2.19	-0.00	0.00	0.00	-0.15	-0.23
	CO33	18	0.000	-5.74	-2.60	-0.93	0.03	0.61	-0.93
		45	0.717	-5.30	-1.20	-0.51	-0.09	0.06	0.47
			0.717	-5.30	-1.20	-0.51	-0.09	0.06	0.47
		6	1.433	-5.17	0.08	-0.02	-0.05	-0.16	0.85
	CO34	18	0.000	-6.04	-2.39	-0.93	0.06	0.63	-0.89
		45	0.717	-5.64	-1.14	-0.52	-0.07	0.08	0.41
			0.717	-5.64	-1.14	-0.52	-0.07	0.08	0.41
		6	1.433	-5.53	0.05	-0.03	-0.04	-0.14	0.79
	CO35	18	0.000	-2.89	-0.46	0.16	-0.40	-0.33	-0.33
		45	0.717	-2.16	-0.78	0.05	-0.26	-0.39	0.17
			0.717	-2.16	-0.78	0.05	-0.26	-0.39	0.17
		6	1.433	-1.61	-0.13	0.01	-0.09	-0.45	0.53
	CO36	18	0.000	-2.54	-0.30	0.09	-0.31	-0.24	-0.32
		45	0.717	-1.96	-0.77	0.01	-0.20	-0.31	0.12
			0.717	-1.96	-0.77	0.01	-0.20	-0.31	0.12
		6	1.433	-1.48	-0.15	-0.01	-0.06	-0.36	0.48
17	LC10	19	0.000	-1.29	-0.27	0.19	-0.04	-0.22	-0.34
		48	0.716	-1.22	-0.14	0.10	0.02	-0.11	-0.21
			0.716	-1.22	-0.14	0.10	0.02	-0.11	-0.21
		17	1.433	-1.23	-0.17	0.01	0.05	-0.05	-0.10
	Form-Finding	19	0.000	-0.88	-0.02	0.07	-0.05	-0.11	-0.01
		48	0.716	-0.89	-0.01	0.03	-0.01	-0.08	-0.00
			0.716	-0.89	-0.01	0.03	-0.01	-0.08	-0.00
		17	1.433	-0.89	-0.00	-0.01	0.02	-0.07	-0.00
	CO1	19	0.000	-0.39	0.07	0.10	-0.16	-0.22	0.02
		48	0.716	-0.39	0.03	0.03	-0.07	-0.22	-0.01
			0.716	-0.39	0.03	0.03	-0.07	-0.22	-0.01
		17	1.433	-0.38	-0.00	-0.05	0.02	-0.24	-0.02
	CO2	19	0.000	-10.74	3.36	1.40	-1.12	-1.97	1.38
		48	0.716	-11.02	1.29	0.80	-0.46	-1.46	-0.23
			0.716	-11.02	1.29	0.79	-0.46	-1.46	-0.23
		17	1.433	-10.70	0.04	-0.13	0.07	-1.29	-0.65
	CO3	19	0.000	-4.51	-0.50	-0.35	0.16	0.21	-0.32
		48	0.716	-4.69	-0.20	-0.21	0.11	0.06	-0.10
			0.716	-4.69	-0.20	-0.21	0.11	0.06	-0.10
		17	1.433	-5.21	-0.06	-0.07	0.10	-0.00	0.01
	CO4	19	0.000	-4.51	-0.50	-0.35	0.15	0.21	-0.32
		48	0.716	-4.70	-0.20	-0.21	0.10	0.07	-0.10
			0.716	-4.70	-0.20	-0.21	0.10	0.07	-0.10
		17	1.433	-5.21	-0.06	-0.08	0.09	-0.00	0.01
	CO5	19	0.000	-9.56	2.81	1.14	-0.98	-1.67	1.14
		48	0.716	-9.65	0.93	0.60	-0.41	-1.29	-0.14
			0.716	-9.65	0.93	0.59	-0.41	-1.29	-0.14
		17	1.433	-9.19	-0.06	-0.14	0.07	-1.19	-0.39
	CO6	19	0.000	-9.46	2.75	1.14	-0.98	-1.65	1.12
		48	0.716	-9.53	0.91	0.61	-0.42	-1.28	-0.14
			0.716	-9.53	0.91	0.59	-0.42	-1.28	-0.14
		17	1.433	-9.04	-0.06	-0.14	0.06	-1.18	-0.39
	CO7	19	0.000	-3.09	-2.01	-0.19	0.34	0.20	-1.11
		48	0.716	-2.87	-0.66	-0.05	0.26	0.24	-0.22
			0.716	-2.87	-0.66	-0.05	0.26	0.24	-0.22
		17	1.433	-3.30	-0.12	-0.04	0.15	0.29	0.03
	CO8	19	0.000	-3.55	-1.55	-0.20	0.34	0.22	-0.89
		48	0.716	-3.43	-0.45	-0.06	0.25	0.25	-0.23
			0.716	-3.43	-0.45	-0.06	0.25	0.25	-0.23
		17	1.433	-3.89	-0.11	-0.05	0.14	0.29	-0.07
	CO9	19	0.000	-8.36	1.87	1.27	-0.88	-1.64	0.70
		48	0.716	-8.60	0.84	0.65	-0.34	-1.17	-0.25
			0.716	-8.60	0.84	0.64	-0.34	-1.17	-0.25
		17	1.433	-8.48	0.04	-0.14	0.08	-1.03	-0.55
	CO10	19	0.000	-8.05	1.87	1.23	-0.86	-1.60	0.71
		48	0.716	-8.32	0.82	0.64	-0.33	-1.15	-0.22

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
17	CO10		0.716	-8.32	0.82	0.63	-0.33	-1.15	-0.22
		17	1.433	-8.19	0.04	-0.13	0.08	-1.01	-0.52
	CO11	19	0.000	-8.37	-0.79	-0.76	0.67	0.82	-0.44
		48	0.716	-8.61	-0.16	-0.36	0.39	0.63	-0.13
			0.716	-8.61	-0.16	-0.35	0.39	0.63	-0.13
		17	1.433	-9.38	0.02	-0.03	0.15	0.60	-0.09
	CO12	19	0.000	-8.39	-0.80	-0.76	0.66	0.82	-0.44
		48	0.716	-8.64	-0.16	-0.36	0.39	0.63	-0.13
			0.716	-8.64	-0.16	-0.36	0.39	0.63	-0.13
		17	1.433	-9.41	0.03	-0.04	0.15	0.59	-0.09
	CO13	19	0.000	-3.17	0.96	0.17	-0.26	-0.40	0.35
		48	0.716	-3.09	0.08	0.04	-0.10	-0.39	-0.00
			0.716	-3.09	0.08	0.04	-0.10	-0.39	-0.00
		17	1.433	-2.84	-0.22	-0.09	0.06	-0.43	0.13
	CO14	19	0.000	-3.05	0.89	0.18	-0.27	-0.39	0.32
		48	0.716	-2.94	0.07	0.04	-0.12	-0.38	-0.00
			0.716	-2.94	0.07	0.04	-0.12	-0.38	-0.00
		17	1.433	-2.66	-0.22	-0.08	0.04	-0.41	0.13
	CO15	19	0.000	-6.87	-2.55	-0.53	0.93	0.79	-1.28
		48	0.716	-6.63	-0.66	-0.12	0.60	0.89	-0.21
			0.716	-6.63	-0.66	-0.11	0.60	0.89	-0.21
		17	1.433	-7.33	0.02	0.03	0.22	1.03	-0.05
	CO16	19	0.000	-7.48	-2.01	-0.52	0.92	0.80	-1.04
		48	0.716	-7.36	-0.43	-0.12	0.59	0.88	-0.24
			0.716	-7.36	-0.42	-0.12	0.59	0.88	-0.24
		17	1.433	-8.06	0.03	0.02	0.22	1.02	-0.17
	CO17	19	0.000	-1.58	-0.42	0.31	-0.16	-0.45	-0.47
		48	0.716	-1.36	-0.16	0.15	-0.01	-0.31	-0.30
			0.716	-1.37	-0.16	0.15	-0.01	-0.31	-0.30
		17	1.433	-1.34	-0.21	-0.02	0.10	-0.25	-0.18
	CO18	19	0.000	-1.54	-0.14	0.28	-0.14	-0.40	-0.36
		48	0.716	-1.40	-0.10	0.14	-0.01	-0.28	-0.29
			0.716	-1.40	-0.10	0.13	-0.01	-0.28	-0.29
		17	1.433	-1.38	-0.20	-0.02	0.09	-0.22	-0.19
	CO19	19	0.000	-0.31	0.03	0.07	-0.11	-0.16	0.01
		48	0.716	-0.32	0.01	0.02	-0.04	-0.16	-0.01
			0.716	-0.32	0.01	0.02	-0.04	-0.16	-0.01
		17	1.433	-0.33	-0.00	-0.04	0.02	-0.17	-0.01
	CO20	19	0.000	-6.88	1.60	0.96	-0.78	-1.34	0.65
		48	0.716	-6.93	0.59	0.50	-0.33	-1.02	-0.11
			0.716	-6.93	0.59	0.50	-0.33	-1.02	-0.10
		17	1.433	-6.64	0.02	-0.09	0.05	-0.93	-0.30
	CO21	19	0.000	-3.28	-0.30	-0.17	0.05	0.05	-0.21
		48	0.716	-3.43	-0.14	-0.11	0.05	-0.03	-0.07
			0.716	-3.43	-0.14	-0.11	0.05	-0.03	-0.07
		17	1.433	-3.79	-0.05	-0.06	0.07	-0.07	0.01
	CO22	19	0.000	-3.28	-0.31	-0.17	0.05	0.05	-0.22
		48	0.716	-3.43	-0.14	-0.11	0.05	-0.03	-0.07
			0.716	-3.43	-0.14	-0.11	0.05	-0.03	-0.07
		17	1.433	-3.80	-0.05	-0.06	0.07	-0.07	0.01
	CO23	19	0.000	-6.43	1.52	0.79	-0.69	-1.16	0.61
		48	0.716	-6.38	0.45	0.40	-0.29	-0.92	-0.06
			0.716	-6.38	0.45	0.39	-0.29	-0.92	-0.06
		17	1.433	-5.99	-0.05	-0.10	0.05	-0.86	-0.16
	CO24	19	0.000	-6.35	1.48	0.79	-0.69	-1.15	0.59
		48	0.716	-6.28	0.44	0.40	-0.30	-0.91	-0.06
			0.716	-6.28	0.44	0.39	-0.30	-0.91	-0.06
		17	1.433	-5.87	-0.05	-0.09	0.04	-0.85	-0.16
	CO25	19	0.000	-2.19	-1.33	-0.08	0.17	0.05	-0.79
		48	0.716	-2.08	-0.47	-0.02	0.14	0.08	-0.18
			0.716	-2.08	-0.47	-0.02	0.14	0.08	-0.18
		17	1.433	-2.40	-0.12	-0.04	0.11	0.11	0.00
	CO26	19	0.000	-2.52	-1.01	-0.08	0.17	0.06	-0.64
		48	0.716	-2.48	-0.32	-0.03	0.14	0.08	-0.19
			0.716	-2.48	-0.32	-0.02	0.14	0.08	-0.19
		17	1.433	-2.81	-0.11	-0.05	0.10	0.11	-0.06
	CO27	19	0.000	-5.32	0.72	0.85	-0.63	-1.14	0.24
		48	0.716	-5.37	0.36	0.40	-0.25	-0.85	-0.15
			0.716	-5.37	0.36	0.40	-0.25	-0.85	-0.15
		17	1.433	-5.23	0.01	-0.10	0.06	-0.78	-0.28
	CO28	19	0.000	-5.14	0.77	0.83	-0.62	-1.10	0.27
		48	0.716	-5.22	0.37	0.40	-0.24	-0.83	-0.13
			0.716	-5.22	0.37	0.39	-0.24	-0.83	-0.13
		17	1.433	-5.08	0.02	-0.10	0.06	-0.75	-0.27
	CO29	19	0.000	-5.84	-0.66	-0.43	0.39	0.44	-0.36
		48	0.716	-6.02	-0.18	-0.20	0.24	0.34	-0.09
			0.716	-6.02	-0.18	-0.20	0.24	0.34	-0.09
		17	1.433	-6.57	-0.01	-0.02	0.11	0.33	-0.02
	CO30	19	0.000	-5.86	-0.66	-0.43	0.39	0.44	-0.36
		48	0.716	-6.03	-0.18	-0.20	0.24	0.34	-0.09
			0.716	-6.03	-0.18	-0.20	0.24	0.34	-0.09
		17	1.433	-6.59	-0.01	-0.03	0.11	0.33	-0.02
	CO31	19	0.000	-2.31	0.67	0.13	-0.17	-0.28	0.24
		48	0.716	-2.21	0.03	0.04	-0.07	-0.27	0.01
			0.716	-2.21	0.03	0.04	-0.07	-0.27	0.01
		17	1.433	-2.00	-0.13	-0.06	0.04	-0.28	0.12
	CO32	19	0.000	-2.24	0.62	0.13	-0.18	-0.27	0.23
		48	0.716	-2.13	0.02	0.04	-0.07	-0.26	0.01
			0.716	-2.13	0.02	0.04	-0.07	-0.26	0.01
		17	1.433	-1.90	-0.13	-0.05	0.03	-0.27	0.12
	CO33	19	0.000	-4.70	-1.86	-0.29	0.55	0.43	-0.97
		48	0.716	-4.56	-0.54	-0.06	0.37	0.50	-0.17
			0.716	-4.56	-0.54	-0.06	0.37	0.50	-0.17
		17	1.433	-5.06	-0.04	0.01	0.16	0.59	-0.01

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	Vy	Vz	Moments [kNm] MT	My	Mz
17	CO34	19	0.000	-5.14	-1.49	-0.29	0.55	0.44	-0.80
		48	0.716	-5.07	-0.37	-0.07	0.36	0.50	-0.19
			0.716	-5.07	-0.37	-0.06	0.36	0.50	-0.19
		17	1.433	-5.58	-0.03	-0.00	0.15	0.58	-0.09
	CO35	19	0.000	-1.07	-0.36	0.22	-0.13	-0.33	-0.41
		48	0.716	-0.93	-0.17	0.10	-0.02	-0.24	-0.24
			0.716	-0.93	-0.17	0.10	-0.02	-0.24	-0.24
		17	1.433	-0.92	-0.19	-0.01	0.07	-0.20	-0.12
	CO36	19	0.000	-1.10	-0.12	0.19	-0.11	-0.30	-0.30
		48	0.716	-1.04	-0.10	0.09	-0.01	-0.22	-0.23
			0.716	-1.04	-0.10	0.09	-0.01	-0.22	-0.23
		17	1.433	-1.03	-0.18	-0.01	0.06	-0.18	-0.13
Section No. 6: RO 168.3x4.8 | IS 1161-1998									
13	LC10	1	0.000	-1.34	0.51	0.09	0.19	0.34	3.21
		2	1.800	-1.34	0.51	0.08	0.19	0.49	2.29
	Form-Finding	1	0.000	0.00	0.00	0.00	0.00	0.00	0.00
		2	1.800	0.00	0.00	0.00	0.00	0.00	0.00
	CO1	1	0.000	-4.70	0.00	0.00	0.00	-1.52	0.00
		2	1.800	-4.18	0.00	0.01	0.00	-1.51	0.00
	CO2	1	0.000	-20.47	0.00	0.00	-0.00	-10.32	0.00
		2	1.800	-19.94	0.00	0.22	-0.00	-10.11	0.00
	CO3	1	0.000	5.78	-0.00	-5.14	-0.00	20.05	-0.00
		2	1.800	6.29	-0.00	-5.04	-0.00	10.90	-0.00
	CO4	1	0.000	6.36	-0.00	-4.91	-0.00	19.08	-0.00
		2	1.800	6.85	-0.00	-4.80	-0.00	10.35	-0.00
	CO5	1	0.000	-17.69	-0.01	-0.60	-0.00	-6.37	-0.09
		2	1.800	-17.27	-0.01	-0.47	-0.00	-7.34	-0.07
	CO6	1	0.000	-17.18	0.00	-0.33	-0.00	-7.48	0.00
		2	1.800	-16.77	0.00	-0.19	-0.00	-7.94	0.00
	CO7	1	0.000	4.39	1.21	-4.40	0.33	18.63	6.43
		2	1.800	4.89	1.18	-4.33	0.33	10.78	4.28
	CO8	1	0.000	5.57	0.74	-4.57	0.24	19.12	4.00
		2	1.800	6.06	0.72	-4.47	0.24	10.99	2.68
	CO9	1	0.000	-19.22	0.99	-0.08	-0.03	-7.37	6.25
		2	1.800	-18.80	1.10	0.07	-0.03	-7.38	4.35
	CO10	1	0.000	-17.99	0.63	-0.05	0.00	-7.39	4.01
		2	1.800	-17.57	0.70	0.09	0.00	-7.35	2.81
	CO11	1	0.000	22.68	-0.00	-7.72	-0.00	35.53	-0.01
		2	1.800	23.43	-0.00	-6.98	-0.00	22.35	-0.01
	CO12	1	0.000	23.40	-0.00	-7.47	-0.00	34.42	-0.01
		2	1.800	24.14	-0.00	-6.73	-0.00	21.69	-0.01
	CO13	1	0.000	-6.37	-0.01	-0.72	-0.01	0.71	-0.11
		2	1.800	-5.85	-0.01	-0.72	-0.01	-0.59	-0.08
	CO14	1	0.000	-5.74	-0.00	-0.42	-0.00	-0.57	-0.00
		2	1.800	-5.21	-0.00	-0.42	-0.00	-1.33	0.00
	CO15	1	0.000	20.95	1.59	-6.78	0.56	33.78	8.02
		2	1.800	21.68	1.43	-6.12	0.56	22.21	5.30
	CO16	1	0.000	22.41	1.00	-7.05	0.38	34.50	5.04
		2	1.800	23.15	0.89	-6.34	0.38	22.49	3.34
	CO17	1	0.000	-8.26	1.16	0.18	0.30	-1.19	7.50
		2	1.800	-7.72	1.22	0.19	0.30	-0.86	5.35
	CO18	1	0.000	-6.72	0.74	0.13	0.23	-1.01	4.80
		2	1.800	-6.19	0.77	0.14	0.23	-0.77	3.44
	CO19	1	0.000	-3.14	0.00	0.00	0.00	-1.01	0.00
		2	1.800	-2.79	0.00	0.00	0.00	-1.00	0.00
	CO20	1	0.000	-13.65	0.00	0.00	0.00	-6.78	0.00
		2	1.800	-13.30	0.00	0.10	0.00	-6.70	0.00
	CO21	1	0.000	3.27	-0.00	-3.24	-0.00	12.72	-0.00
		2	1.800	3.65	-0.00	-3.20	-0.00	6.93	-0.00
	CO22	1	0.000	3.65	-0.00	-3.09	-0.00	12.09	-0.00
		2	1.800	4.03	-0.00	-3.05	-0.00	6.57	-0.00
	CO23	1	0.000	-12.42	-0.01	-0.39	-0.00	-4.43	-0.06
		2	1.800	-12.08	-0.01	-0.32	-0.00	-5.07	-0.04
	CO24	1	0.000	-12.09	0.00	-0.21	-0.00	-5.14	0.00
		2	1.800	-11.74	0.00	-0.15	-0.00	-5.47	0.00
	CO25	1	0.000	2.34	0.75	-2.73	0.23	11.74	4.15
		2	1.800	2.72	0.73	-2.71	0.23	6.84	2.82
	CO26	1	0.000	3.13	0.46	-2.83	0.17	12.04	2.58
		2	1.800	3.51	0.45	-2.80	0.17	6.98	1.76
	CO27	1	0.000	-13.44	0.67	-0.00	0.05	-5.19	4.16
		2	1.800	-13.09	0.72	0.07	0.05	-5.13	2.90
	CO28	1	0.000	-12.62	0.42	-0.00	0.05	-5.15	2.66
		2	1.800	-12.27	0.45	0.07	0.05	-5.09	1.87
	CO29	1	0.000	15.25	-0.00	-4.63	-0.00	22.67	-0.00
		2	1.800	15.69	-0.00	-4.31	-0.00	14.64	-0.00
	CO30	1	0.000	15.73	-0.00	-4.46	-0.00	21.91	-0.00
		2	1.800	16.16	-0.00	-4.14	-0.00	14.20	-0.00
	CO31	1	0.000	-4.25	-0.01	-0.47	-0.01	0.46	-0.07
		2	1.800	-3.90	-0.01	-0.47	-0.01	-0.40	-0.05
	CO32	1	0.000	-3.83	-0.00	-0.28	-0.00	-0.40	-0.00
		2	1.800	-3.48	-0.00	-0.27	-0.00	-0.89	0.00
	CO33	1	0.000	14.10	0.97	-3.99	0.37	21.44	5.17
		2	1.800	14.53	0.90	-3.71	0.37	14.53	3.49
	CO34	1	0.000	15.08	0.60	-4.14	0.25	21.87	3.23
		2	1.800	15.51	0.55	-3.84	0.25	14.71	2.19
	CO35	1	0.000	-5.50	0.80	0.13	0.23	-0.81	5.04
		2	1.800	-5.15	0.83	0.13	0.23	-0.58	3.57
	CO36	1	0.000	-4.48	0.50	0.09	0.17	-0.67	3.22
		2	1.800	-4.13	0.52	0.09	0.17	-0.51	2.30
18	LC10	2	0.000	-2.56	1.15	-0.38	0.17	0.46	2.24
		55	0.200	-2.55	1.15	-0.38	0.17	0.38	2.01
	Form-Finding	2	0.000	-1.04	-0.00	-0.00	0.00	-0.01	-0.00

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
18	Form- Finding	55	0.200	-1.04	-0.00	-0.00	0.00	-0.01	-0.00
	CO1	2	0.000	-4.15	-0.00	0.21	0.00	-1.51	0.00
		55	0.200	-4.09	-0.00	0.21	0.00	-1.47	0.00
	CO2	2	0.000	-19.09	-0.00	0.66	0.01	-10.18	-0.00
		55	0.200	-19.03	-0.00	0.68	0.01	-10.05	0.00
	CO3	2	0.000	-6.50	-0.00	-10.47	-0.00	10.46	-0.00
		55	0.200	-6.45	-0.00	-10.48	-0.00	8.37	-0.00
	CO4	2	0.000	-6.34	-0.00	-9.90	-0.00	9.95	-0.00
		55	0.200	-6.28	-0.00	-9.91	-0.00	7.97	-0.00
	CO5	2	0.000	-16.43	-0.02	-0.22	-0.00	-7.42	-0.07
		55	0.200	-16.38	-0.02	-0.21	-0.00	-7.46	-0.06
	CO6	2	0.000	-16.01	0.00	0.11	0.00	-8.02	0.00
		55	0.200	-15.97	0.00	0.12	0.00	-7.99	0.00
	CO7	2	0.000	-7.03	3.70	-9.07	0.29	10.46	4.10
		55	0.200	-6.97	3.70	-9.07	0.29	8.65	3.36
	CO8	2	0.000	-6.70	2.44	-9.34	0.21	10.66	2.57
		55	0.200	-6.64	2.44	-9.35	0.21	8.79	2.08
	CO9	2	0.000	-17.98	1.18	0.49	-0.03	-7.45	4.35
		55	0.200	-17.94	1.19	0.51	-0.03	-7.35	4.11
	CO10	2	0.000	-16.82	0.76	0.49	0.01	-7.41	2.81
		55	0.200	-16.77	0.76	0.50	0.01	-7.31	2.65
	CO11	2	0.000	-3.74	-0.00	-17.83	-0.00	21.49	-0.01
		55	0.200	-3.64	-0.00	-17.84	-0.00	17.92	-0.00
	CO12	2	0.000	-3.65	-0.00	-17.00	-0.00	20.87	-0.01
		55	0.200	-3.55	-0.00	-17.01	-0.00	17.47	-0.00
	CO13	2	0.000	-6.41	-0.05	-0.58	-0.01	-0.64	-0.08
		55	0.200	-6.35	-0.05	-0.58	-0.01	-0.76	-0.07
	CO14	2	0.000	-5.86	-0.00	-0.24	-0.00	-1.38	-0.00
		55	0.200	-5.80	-0.00	-0.24	-0.00	-1.43	0.00
	CO15	2	0.000	-4.52	4.51	-16.22	0.50	21.47	5.07
		55	0.200	-4.42	4.51	-16.22	0.50	18.23	4.17
	CO16	2	0.000	-4.25	2.82	-16.53	0.34	21.73	3.19
		55	0.200	-4.15	2.82	-16.54	0.34	18.42	2.63
	CO17	2	0.000	-8.15	1.73	0.06	0.29	-0.90	5.34
		55	0.200	-8.09	1.74	0.07	0.29	-0.89	4.99
	CO18	2	0.000	-6.87	1.22	-0.10	0.24	-0.80	3.41
		55	0.200	-6.81	1.23	-0.10	0.24	-0.82	3.17
	CO19	2	0.000	-2.95	0.00	0.29	-0.00	-1.00	0.00
		55	0.200	-2.91	0.00	0.29	-0.00	-0.94	0.00
	CO20	2	0.000	-12.68	0.02	0.42	-0.00	-6.76	-0.01
		55	0.200	-12.64	0.02	0.43	-0.00	-6.67	-0.01
	CO21	2	0.000	-5.37	-0.00	-6.94	-0.00	6.65	-0.00
		55	0.200	-5.33	-0.00	-6.95	-0.00	5.26	-0.00
	CO22	2	0.000	-5.25	-0.00	-6.57	-0.00	6.31	-0.00
		55	0.200	-5.21	-0.00	-6.57	-0.00	4.99	-0.00
	CO23	2	0.000	-11.50	-0.01	-0.16	-0.00	-5.12	-0.05
		55	0.200	-11.46	-0.01	-0.15	-0.00	-5.15	-0.05
	CO24	2	0.000	-11.17	0.01	0.01	-0.01	-5.51	0.00
		55	0.200	-11.13	0.01	0.02	-0.01	-5.51	0.00
	CO25	2	0.000	-5.66	2.49	-5.99	0.21	6.63	2.69
		55	0.200	-5.61	2.49	-6.00	0.21	5.43	2.20
	CO26	2	0.000	-5.44	1.65	-6.17	0.15	6.76	1.69
		55	0.200	-5.40	1.66	-6.17	0.15	5.52	1.36
	CO27	2	0.000	-12.49	0.75	0.38	0.05	-5.18	2.89
		55	0.200	-12.45	0.75	0.39	0.05	-5.10	2.74
	CO28	2	0.000	-11.65	0.49	0.35	0.03	-5.13	1.86
		55	0.200	-11.61	0.49	0.35	0.03	-5.06	1.76
	CO29	2	0.000	-3.17	-0.00	-11.90	-0.00	14.08	-0.00
		55	0.200	-3.11	-0.00	-11.91	-0.00	11.70	-0.00
	CO30	2	0.000	-3.12	-0.00	-11.33	-0.00	13.67	-0.00
		55	0.200	-3.07	-0.00	-11.33	-0.00	11.40	-0.00
	CO31	2	0.000	-4.37	-0.04	-0.34	-0.01	-0.43	-0.05
		55	0.200	-4.34	-0.04	-0.34	-0.01	-0.50	-0.05
	CO32	2	0.000	-4.04	-0.00	-0.10	-0.00	-0.91	0.00
		55	0.200	-4.00	-0.00	-0.10	-0.00	-0.93	0.00
	CO33	2	0.000	-3.65	3.05	-10.70	0.33	14.06	3.34
		55	0.200	-3.59	3.05	-10.71	0.33	11.92	2.73
	CO34	2	0.000	-3.48	1.91	-10.92	0.22	14.22	2.10
		55	0.200	-3.42	1.91	-10.92	0.22	12.04	1.72
	CO35	2	0.000	-5.63	1.29	-0.03	0.22	-0.61	3.54
		55	0.200	-5.60	1.29	-0.03	0.22	-0.62	3.29
	CO36	2	0.000	-4.79	0.94	-0.14	0.17	-0.54	2.26
		55	0.200	-4.75	0.94	-0.14	0.17	-0.56	2.07
29	LC10	55	0.000	-2.55	1.15	-0.38	0.17	0.38	2.01
		5	0.600	-2.55	1.15	-0.38	0.17	0.15	1.31
	Form- Finding	55	0.000	-1.04	-0.00	-0.00	0.00	-0.01	-0.00
		5	0.600	-1.04	-0.00	0.00	0.00	-0.01	-0.00
	CO1	55	0.000	-4.09	-0.00	0.21	0.00	-1.47	0.00
		5	0.600	-3.92	-0.00	0.22	0.00	-1.34	0.00
	CO2	55	0.000	-19.03	-0.00	0.68	0.01	-10.05	0.00
		5	0.600	-18.85	-0.00	0.75	0.01	-9.62	0.00
	CO3	55	0.000	-6.45	-0.00	-10.48	-0.00	8.37	-0.00
		5	0.600	-6.29	-0.00	-10.49	-0.00	2.08	-0.00
	CO4	55	0.000	-6.28	-0.00	-9.91	-0.00	7.97	-0.00
		5	0.600	-6.12	-0.00	-9.92	-0.00	2.03	-0.00
	CO5	55	0.000	-16.38	-0.02	-0.21	-0.00	-7.46	-0.06
		5	0.600	-16.24	-0.02	-0.17	-0.00	-7.58	-0.05
	CO6	55	0.000	-15.97	0.00	0.12	0.00	-7.99	0.00
		5	0.600	-15.83	0.00	0.17	0.00	-7.90	0.00
	CO7	55	0.000	-6.97	3.70	-9.07	0.29	8.65	3.36
		5	0.600	-6.81	3.71	-9.09	0.29	3.20	1.14
	CO8	55	0.000	-6.64	2.44	-9.35	0.21	8.79	2.08
		5	0.600	-6.48	2.44	-9.36	0.21	3.17	0.62

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
29	CO9	55	0.000	-17.94	1.19	0.51	-0.03	-7.35	4.11
		5	0.600	-17.79	1.21	0.55	-0.03	-7.03	3.39
	CO10	55	0.000	-16.77	0.76	0.50	0.01	-7.31	2.65
		5	0.600	-16.63	0.78	0.55	0.01	-7.00	2.19
	CO11	55	0.000	-3.64	-0.00	-17.84	-0.00	17.92	-0.00
		5	0.600	-3.38	-0.00	-17.85	-0.00	7.21	-0.00
	CO12	55	0.000	-3.55	-0.00	-17.01	-0.00	17.47	-0.00
		5	0.600	-3.30	-0.00	-17.02	-0.00	7.26	-0.00
	CO13	55	0.000	-6.35	-0.05	-0.58	-0.01	-0.76	-0.07
		5	0.600	-6.18	-0.05	-0.58	-0.01	-1.11	-0.04
	CO14	55	0.000	-5.80	-0.00	-0.24	-0.00	-1.43	0.00
		5	0.600	-5.63	-0.00	-0.23	-0.00	-1.57	0.00
	CO15	55	0.000	-4.42	4.51	-16.22	0.50	18.23	4.17
		5	0.600	-4.17	4.51	-16.24	0.50	8.49	1.46
	CO16	55	0.000	-4.15	2.82	-16.54	0.34	18.42	2.63
		5	0.600	-3.89	2.82	-16.56	0.34	8.49	0.94
	CO17	55	0.000	-8.09	1.74	0.07	0.29	-0.89	4.99
		5	0.600	-7.92	1.75	0.07	0.29	-0.85	3.95
	CO18	55	0.000	-6.81	1.23	-0.10	0.24	-0.82	3.17
		5	0.600	-6.64	1.23	-0.10	0.24	-0.88	2.43
	CO19	55	0.000	-2.91	0.00	0.29	-0.00	-0.94	0.00
		5	0.600	-2.79	0.00	0.29	-0.00	-0.76	0.00
	CO20	55	0.000	-12.64	0.02	0.43	-0.00	-6.67	-0.01
		5	0.600	-12.52	0.02	0.45	-0.00	-6.41	-0.02
	CO21	55	0.000	-5.33	-0.00	-6.95	-0.00	5.26	-0.00
		5	0.600	-5.20	-0.00	-6.95	-0.00	1.09	-0.00
	CO22	55	0.000	-5.21	-0.00	-6.57	-0.00	4.99	-0.00
		5	0.600	-5.09	-0.00	-6.58	-0.00	1.05	-0.00
	CO23	55	0.000	-11.46	-0.01	-0.15	-0.00	-5.15	-0.05
		5	0.600	-11.35	-0.01	-0.13	-0.00	-5.24	-0.04
	CO24	55	0.000	-11.13	0.01	0.02	-0.01	-5.51	0.00
		5	0.600	-11.01	0.01	0.04	-0.01	-5.49	-0.00
	CO25	55	0.000	-5.61	2.49	-6.00	0.21	5.43	2.20
		5	0.600	-5.49	2.49	-6.00	0.21	1.83	0.70
	CO26	55	0.000	-5.40	1.66	-6.17	0.15	5.52	1.36
		5	0.600	-5.27	1.66	-6.18	0.15	1.82	0.36
	CO27	55	0.000	-12.45	0.75	0.39	0.05	-5.10	2.74
		5	0.600	-12.33	0.76	0.41	0.05	-4.86	2.29
	CO28	55	0.000	-11.61	0.49	0.35	0.03	-5.06	1.76
		5	0.600	-11.49	0.50	0.37	0.03	-4.84	1.46
	CO29	55	0.000	-3.11	-0.00	-11.91	-0.00	11.70	-0.00
		5	0.600	-2.96	-0.00	-11.91	-0.00	4.55	-0.00
	CO30	55	0.000	-3.07	-0.00	-11.33	-0.00	11.40	-0.00
		5	0.600	-2.92	-0.00	-11.34	-0.00	4.60	-0.00
	CO31	55	0.000	-4.34	-0.04	-0.34	-0.01	-0.50	-0.05
		5	0.600	-4.22	-0.04	-0.34	-0.01	-0.71	-0.02
	CO32	55	0.000	-4.00	-0.00	-0.10	-0.00	-0.93	0.00
		5	0.600	-3.88	-0.00	-0.10	-0.00	-0.99	0.00
	CO33	55	0.000	-3.59	3.05	-10.71	0.33	11.92	2.73
		5	0.600	-3.44	3.05	-10.72	0.33	5.49	0.90
	CO34	55	0.000	-3.42	1.91	-10.92	0.22	12.04	1.72
		5	0.600	-3.27	1.91	-10.93	0.22	5.48	0.57
	CO35	55	0.000	-5.60	1.29	-0.03	0.22	-0.62	3.29
		5	0.600	-5.48	1.30	-0.03	0.22	-0.64	2.51
	CO36	55	0.000	-4.75	0.94	-0.14	0.17	-0.56	2.07
		5	0.600	-4.64	0.94	-0.14	0.17	-0.65	1.50
	Section No. 7: QRO 49.5x49.5x3.6 | IS 4923-1997								
19	LC10	9	0.000	-1.18	0.03	-0.68	-0.10	0.34	0.02
		54	0.500	-1.18	0.03	-0.68	-0.10	0.00	0.00
	Form-Finding	9	0.000	0.04	0.00	-0.28	-0.00	0.14	0.00
		54	0.500	0.04	0.00	-0.28	-0.00	-0.00	0.00
	CO1	9	0.000	0.11	0.00	-0.19	-0.00	0.27	0.00
		54	0.500	0.14	0.00	-0.34	-0.00	0.14	0.00
	CO2	9	0.000	5.27	-0.00	-1.03	-0.00	1.55	-0.00
		54	0.500	5.33	-0.00	-1.29	-0.00	0.97	0.00
	CO3	9	0.000	5.35	-0.00	-0.86	0.00	0.30	-0.00
		54	0.500	5.40	-0.00	-1.12	0.00	-0.20	-0.00
	CO4	9	0.000	4.65	-0.00	-0.83	0.00	0.29	-0.00
		54	0.500	4.70	-0.00	-1.09	0.00	-0.19	-0.00
	CO5	9	0.000	6.06	-0.00	-1.19	0.00	1.38	-0.00
		54	0.500	6.12	-0.00	-1.38	0.00	0.74	0.00
	CO6	9	0.000	5.57	0.00	-1.00	-0.00	1.33	0.00
		54	0.500	5.62	0.00	-1.20	-0.00	0.77	0.00
	CO7	9	0.000	0.09	0.05	-1.30	-0.08	0.46	0.06
		54	0.500	0.15	0.05	-1.57	-0.08	-0.26	0.04
	CO8	9	0.000	1.02	-0.02	-1.20	-0.04	0.41	0.00
		54	0.500	1.08	-0.02	-1.47	-0.04	-0.26	0.02
	CO9	9	0.000	2.41	0.26	-1.68	-0.26	1.65	0.12
		54	0.500	2.48	0.27	-1.92	-0.26	0.75	-0.01
	CO10	9	0.000	2.53	0.15	-1.43	-0.17	1.51	0.06
		54	0.500	2.59	0.15	-1.66	-0.17	0.74	-0.01
	CO11	9	0.000	8.41	-0.00	-1.42	0.00	0.06	-0.00
		54	0.500	8.44	-0.00	-1.60	0.00	-0.69	-0.00
	CO12	9	0.000	7.51	-0.00	-1.46	0.00	0.07	-0.00
		54	0.500	7.53	-0.00	-1.63	0.00	-0.70	-0.00
	CO13	9	0.000	3.49	0.00	-0.82	0.00	0.53	-0.00
		54	0.500	3.52	0.00	-0.96	0.00	0.09	-0.00
	CO14	9	0.000	2.92	0.00	-0.57	-0.00	0.46	-0.00
		54	0.500	2.95	0.00	-0.71	-0.00	0.14	-0.00
	CO15	9	0.000	2.47	0.02	-1.94	-0.10	0.25	0.06
		54	0.500	2.50	0.02	-2.10	-0.10	-0.76	0.05
	CO16	9	0.000	3.60	-0.04	-1.87	-0.06	0.21	0.00
		54	0.500	3.63	-0.04	-2.03	-0.06	-0.76	0.02

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
19	CO17	9	0.000	-1.95	0.19	-1.31	-0.31	0.83	0.10
		54	0.500	-1.92	0.20	-1.47	-0.31	0.13	0.00
	CO18	9	0.000	-1.44	0.08	-0.98	-0.18	0.65	0.04
		54	0.500	-1.41	0.08	-1.13	-0.18	0.13	-0.00
	CO19	9	0.000	-0.06	0.00	-0.22	-0.00	0.21	0.00
		54	0.500	-0.04	0.00	-0.32	-0.00	0.08	-0.00
	CO20	9	0.000	2.85	-0.00	-0.75	0.00	1.08	-0.00
		54	0.500	2.89	-0.00	-0.95	0.00	0.65	-0.00
	CO21	9	0.000	3.63	-0.00	-0.70	0.00	0.30	-0.00
		54	0.500	3.67	-0.00	-0.90	0.00	-0.10	-0.00
	CO22	9	0.000	3.16	-0.00	-0.68	0.00	0.29	-0.00
		54	0.500	3.20	-0.00	-0.88	0.00	-0.10	-0.00
	CO23	9	0.000	3.84	-0.00	-0.85	0.00	0.99	-0.00
		54	0.500	3.88	-0.00	-1.02	0.00	0.52	0.00
	CO24	9	0.000	3.51	0.00	-0.70	0.00	0.94	-0.00
		54	0.500	3.55	0.00	-0.87	0.00	0.55	-0.00
	CO25	9	0.000	-0.12	0.02	-0.99	-0.05	0.40	0.04
		54	0.500	-0.08	0.02	-1.19	-0.05	-0.14	0.03
	CO26	9	0.000	0.53	-0.02	-0.93	-0.02	0.36	-0.00
		54	0.500	0.57	-0.02	-1.12	-0.02	-0.15	0.01
	CO27	9	0.000	0.87	0.16	-1.20	-0.18	1.17	0.08
		54	0.500	0.92	0.16	-1.39	-0.18	0.52	0.00
	CO28	9	0.000	1.05	0.09	-1.00	-0.11	1.06	0.04
		54	0.500	1.09	0.09	-1.19	-0.11	0.51	-0.00
	CO29	9	0.000	5.55	-0.00	-1.10	0.00	0.13	-0.00
		54	0.500	5.57	-0.00	-1.20	0.00	-0.44	-0.00
	CO30	9	0.000	4.91	-0.00	-1.13	0.00	0.14	-0.00
		54	0.500	4.93	-0.00	-1.24	0.00	-0.45	-0.00
	CO31	9	0.000	2.49	0.00	-0.59	0.00	0.37	0.00
		54	0.500	2.51	0.00	-0.68	0.00	0.06	-0.00
	CO32	9	0.000	2.07	0.00	-0.43	-0.00	0.33	0.00
		54	0.500	2.09	0.00	-0.53	-0.00	0.09	-0.00
	CO33	9	0.000	1.25	0.01	-1.48	-0.06	0.27	0.04
		54	0.500	1.27	0.01	-1.58	-0.06	-0.50	0.04
	CO34	9	0.000	2.05	-0.03	-1.43	-0.04	0.24	0.00
		54	0.500	2.07	-0.03	-1.53	-0.04	-0.50	0.01
	CO35	9	0.000	-1.63	0.12	-0.91	-0.20	0.58	0.07
		54	0.500	-1.61	0.13	-1.02	-0.20	0.09	0.01
	CO36	9	0.000	-1.16	0.04	-0.69	-0.11	0.46	0.02
		54	0.500	-1.14	0.05	-0.80	-0.11	0.09	-0.00
20	LC10	20	0.000	0.15	0.10	-0.16	-0.00	0.14	0.09
		53	0.500	0.15	0.10	-0.16	-0.00	0.06	0.04
	Form-Finding	20	0.000	0.02	0.03	-0.23	0.02	0.12	0.02
		53	0.500	0.02	0.03	-0.23	0.02	0.01	0.00
	CO1	20	0.000	0.19	0.08	-0.32	0.11	0.30	0.06
		53	0.500	0.21	0.08	-0.46	0.11	0.11	0.02
	CO2	20	0.000	7.02	0.63	-2.48	0.79	1.83	0.47
		53	0.500	7.09	0.58	-2.73	0.79	0.53	0.16
	CO3	20	0.000	2.70	-0.03	-0.16	-0.11	0.14	-0.06
		53	0.500	2.72	-0.03	-0.42	-0.11	-0.01	-0.04
	CO4	20	0.000	2.80	-0.03	-0.14	-0.11	0.13	-0.06
		53	0.500	2.83	-0.03	-0.41	-0.11	-0.00	-0.04
	CO5	20	0.000	5.50	0.42	-2.25	0.63	1.62	0.29
		53	0.500	5.55	0.39	-2.46	0.63	0.45	0.08
	CO6	20	0.000	5.45	0.41	-2.15	0.65	1.58	0.29
		53	0.500	5.50	0.38	-2.36	0.65	0.46	0.09
	CO7	20	0.000	0.86	0.01	-0.03	-0.17	0.04	-0.02
		53	0.500	0.89	-0.00	-0.30	-0.17	-0.04	-0.02
	CO8	20	0.000	1.66	0.07	-0.10	-0.16	0.04	0.03
		53	0.500	1.68	0.06	-0.36	-0.16	-0.07	0.00
	CO9	20	0.000	6.00	0.63	-1.64	0.56	1.44	0.48
		53	0.500	6.04	0.60	-1.84	0.56	0.57	0.16
	CO10	20	0.000	5.47	0.59	-1.76	0.57	1.43	0.44
		53	0.500	5.51	0.56	-1.97	0.57	0.51	0.15
	CO11	20	0.000	5.02	-0.13	0.25	-0.45	-0.37	-0.14
		53	0.500	5.04	-0.13	0.08	-0.45	-0.28	-0.08
	CO12	20	0.000	5.10	-0.12	0.24	-0.45	-0.36	-0.14
		53	0.500	5.11	-0.13	0.07	-0.45	-0.28	-0.08
	CO13	20	0.000	1.53	-0.00	-0.79	0.11	0.57	-0.04
		53	0.500	1.54	-0.00	-0.94	0.11	0.14	-0.04
	CO14	20	0.000	1.49	-0.01	-0.66	0.13	0.52	-0.04
		53	0.500	1.51	-0.01	-0.80	0.13	0.15	-0.04
	CO15	20	0.000	3.04	-0.15	0.43	-0.52	-0.51	-0.13
		53	0.500	3.06	-0.16	0.26	-0.52	-0.34	-0.06
	CO16	20	0.000	4.03	-0.06	0.35	-0.51	-0.49	-0.06
		53	0.500	4.04	-0.07	0.18	-0.51	-0.36	-0.03
	CO17	20	0.000	0.90	0.23	-0.02	0.04	0.33	0.19
		53	0.500	0.91	0.22	-0.17	0.04	0.28	0.08
	CO18	20	0.000	0.84	0.22	-0.19	0.06	0.33	0.18
		53	0.500	0.86	0.22	-0.34	0.06	0.20	0.07
	CO19	20	0.000	0.07	0.06	-0.26	0.07	0.22	0.04
		53	0.500	0.08	0.06	-0.36	0.07	0.07	0.01
	CO20	20	0.000	3.36	0.38	-1.73	0.54	1.28	0.27
		53	0.500	3.40	0.36	-1.92	0.54	0.36	0.09
	CO21	20	0.000	1.87	0.01	-0.26	-0.05	0.20	-0.03
		53	0.500	1.89	0.00	-0.45	-0.05	0.02	-0.03
	CO22	20	0.000	1.95	0.00	-0.24	-0.04	0.19	-0.02
		53	0.500	1.96	0.00	-0.44	-0.04	0.02	-0.03
	CO23	20	0.000	2.90	0.25	-1.59	0.45	1.16	0.16
		53	0.500	2.93	0.24	-1.77	0.45	0.32	0.04
	CO24	20	0.000	2.89	0.24	-1.51	0.45	1.13	0.16
		53	0.500	2.92	0.23	-1.68	0.45	0.33	0.04
	CO25	20	0.000	0.54	0.04	-0.18	-0.09	0.13	0.02

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
20	CO25	53	0.500	0.55	0.03	-0.38	-0.09	-0.01	-0.00
	CO26	20	0.000	1.09	0.08	-0.22	-0.08	0.14	0.05
		53	0.500	1.11	0.08	-0.42	-0.08	-0.02	0.01
	CO27	20	0.000	3.00	0.39	-1.16	0.39	1.03	0.29
		53	0.500	3.03	0.38	-1.34	0.39	0.41	0.10
	CO28	20	0.000	2.73	0.37	-1.23	0.39	1.02	0.28
		53	0.500	2.75	0.36	-1.41	0.39	0.36	0.09
	CO29	20	0.000	3.10	-0.07	-0.01	-0.27	-0.14	-0.09
		53	0.500	3.10	-0.07	-0.11	-0.27	-0.17	-0.05
	CO30	20	0.000	3.16	-0.07	-0.02	-0.27	-0.14	-0.09
		53	0.500	3.17	-0.07	-0.13	-0.27	-0.17	-0.05
	CO31	20	0.000	1.03	-0.01	-0.56	0.08	0.39	-0.04
		53	0.500	1.04	-0.01	-0.66	0.08	0.09	-0.03
	CO32	20	0.000	1.05	-0.02	-0.48	0.09	0.36	-0.04
		53	0.500	1.06	-0.02	-0.57	0.09	0.10	-0.03
	CO33	20	0.000	1.65	-0.07	0.08	-0.32	-0.22	-0.07
		53	0.500	1.66	-0.07	-0.02	-0.32	-0.21	-0.03
	CO34	20	0.000	2.34	-0.01	0.03	-0.31	-0.22	-0.02
		53	0.500	2.35	-0.01	-0.07	-0.31	-0.23	-0.02
	CO35	20	0.000	0.36	0.15	-0.09	0.03	0.26	0.13
		53	0.500	0.37	0.15	-0.19	0.03	0.19	0.05
	CO36	20	0.000	0.42	0.16	-0.20	0.05	0.26	0.13
		53	0.500	0.43	0.16	-0.30	0.05	0.13	0.05
21	LC10	5	0.000	0.51	-0.23	0.96	-0.11	-0.99	-0.19
		50	0.960	0.52	-0.23	0.95	-0.11	-0.08	0.03
	Form-Finding	5	0.000	0.02	-0.03	0.23	-0.02	-0.21	-0.03
		50	0.960	0.02	-0.03	0.23	-0.02	0.01	0.00
	CO1	5	0.000	0.23	-0.08	0.75	-0.11	-0.48	-0.06
		50	0.960	0.21	-0.08	0.46	-0.11	0.11	0.02
	CO2	5	0.000	7.07	-0.53	3.53	-0.79	-2.44	-0.37
		50	0.960	7.08	-0.59	2.73	-0.79	0.53	0.16
	CO3	5	0.000	2.77	0.04	0.95	0.11	-0.67	-0.01
		50	0.960	2.72	0.03	0.42	0.11	-0.01	-0.04
	CO4	5	0.000	2.87	0.04	0.94	0.11	-0.64	-0.01
		50	0.960	2.83	0.03	0.40	0.11	-0.00	-0.04
	CO5	5	0.000	5.55	-0.35	3.05	-0.63	-2.15	-0.26
		50	0.960	5.56	-0.39	2.42	-0.63	0.45	0.08
	CO6	5	0.000	5.49	-0.34	2.97	-0.65	-2.07	-0.25
		50	0.960	5.50	-0.38	2.36	-0.65	0.46	0.09
	CO7	5	0.000	3.27	-0.52	1.49	0.07	-1.32	-0.39
		50	0.960	3.24	-0.52	0.92	0.07	-0.17	0.11
	CO8	5	0.000	3.07	-0.32	1.25	0.10	-1.06	-0.26
		50	0.960	3.03	-0.31	0.70	0.10	-0.13	0.04
	CO9	5	0.000	6.46	-0.71	4.62	-0.80	-3.81	-0.51
		50	0.960	6.58	-0.79	3.84	-0.80	0.21	0.18
	CO10	5	0.000	5.66	-0.60	3.97	-0.74	-3.16	-0.43
		50	0.960	5.73	-0.66	3.26	-0.74	0.28	0.15
	CO11	5	0.000	5.07	0.14	0.23	0.45	-0.36	0.05
		50	0.960	5.04	0.13	-0.08	0.45	-0.28	-0.08
	CO12	5	0.000	5.14	0.13	0.25	0.45	-0.37	0.04
		50	0.960	5.11	0.13	-0.07	0.45	-0.28	-0.08
	CO13	5	0.000	1.57	0.01	1.21	-0.11	-0.87	-0.03
		50	0.960	1.55	0.01	0.91	-0.11	0.14	-0.04
	CO14	5	0.000	1.52	0.01	1.10	-0.13	-0.76	-0.02
		50	0.960	1.51	0.01	0.80	-0.13	0.15	-0.04
	CO15	5	0.000	6.06	-0.55	0.93	0.37	-1.19	-0.43
		50	0.960	6.04	-0.52	0.54	0.37	-0.50	0.08
	CO16	5	0.000	5.64	-0.30	0.71	0.41	-0.95	-0.27
		50	0.960	5.62	-0.28	0.34	0.41	-0.45	0.01
	CO17	5	0.000	1.27	-0.53	2.89	-0.34	-2.76	-0.43
		50	0.960	1.32	-0.55	2.56	-0.34	-0.15	0.08
	CO18	5	0.000	0.99	-0.37	2.12	-0.26	-1.93	-0.30
		50	0.960	1.01	-0.38	1.81	-0.26	-0.05	0.05
	CO19	5	0.000	0.10	-0.06	0.55	-0.07	-0.37	-0.05
		50	0.960	0.08	-0.06	0.36	-0.07	0.07	0.01
	CO20	5	0.000	3.42	-0.33	2.40	-0.54	-1.69	-0.24
		50	0.960	3.42	-0.36	1.91	-0.54	0.37	0.09
	CO21	5	0.000	1.92	-0.00	0.85	0.05	-0.60	-0.03
		50	0.960	1.89	-0.00	0.45	0.05	0.02	-0.03
	CO22	5	0.000	1.99	-0.00	0.83	0.04	-0.59	-0.03
		50	0.960	1.96	-0.00	0.44	0.04	0.02	-0.03
	CO23	5	0.000	2.94	-0.22	2.17	-0.44	-1.54	-0.18
		50	0.960	2.94	-0.24	1.74	-0.44	0.32	0.04
	CO24	5	0.000	2.95	-0.21	2.10	-0.45	-1.47	-0.16
		50	0.960	2.94	-0.23	1.68	-0.45	0.33	0.04
	CO25	5	0.000	2.12	-0.39	1.17	0.02	-1.01	-0.29
		50	0.960	2.10	-0.39	0.76	0.02	-0.09	0.08
	CO26	5	0.000	2.03	-0.25	1.01	0.04	-0.84	-0.20
		50	0.960	2.00	-0.25	0.62	0.04	-0.06	0.04
	CO27	5	0.000	3.18	-0.50	3.19	-0.55	-2.66	-0.38
		50	0.960	3.23	-0.54	2.71	-0.55	0.16	0.11
	CO28	5	0.000	2.79	-0.40	2.73	-0.51	-2.19	-0.30
		50	0.960	2.81	-0.43	2.28	-0.51	0.21	0.09
	CO29	5	0.000	3.12	0.07	0.32	0.27	-0.38	0.01
		50	0.960	3.10	0.07	0.11	0.27	-0.17	-0.05
	CO30	5	0.000	3.18	0.07	0.33	0.27	-0.39	0.01
		50	0.960	3.17	0.07	0.13	0.27	-0.17	-0.05
	CO31	5	0.000	1.06	0.02	0.84	-0.08	-0.62	-0.02
		50	0.960	1.05	0.02	0.64	-0.08	0.09	-0.03
	CO32	5	0.000	1.07	0.02	0.77	-0.09	-0.54	-0.01
		50	0.960	1.06	0.02	0.57	-0.09	0.10	-0.03
	CO33	5	0.000	3.67	-0.40	0.75	0.23	-0.91	-0.32
		50	0.960	3.66	-0.39	0.52	0.23	-0.31	0.06

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
21	CO34	5	0.000	3.42	-0.23	0.62	0.25	-0.76	-0.20
		50	0.960	3.41	-0.22	0.39	0.25	-0.28	0.01
	CO35	5	0.000	0.69	-0.39	1.92	-0.23	-1.83	-0.31
		50	0.960	0.72	-0.40	1.71	-0.23	-0.09	0.07
	CO36	5	0.000	0.60	-0.27	1.41	-0.17	-1.28	-0.21
		50	0.960	0.60	-0.27	1.21	-0.17	-0.02	0.04
22	LC10	5	0.000	-0.23	0.12	0.46	0.08	-0.72	0.09
		51	1.796	-0.22	0.13	0.46	0.08	0.10	-0.13
	Form-Finding	5	0.000	-0.07	-0.01	0.14	-0.01	-0.22	-0.02
		51	1.796	-0.07	-0.01	0.14	-0.01	0.04	-0.00
	CO1	5	0.000	0.03	-0.05	0.92	-0.06	-1.03	-0.08
		51	1.796	0.11	-0.05	0.39	-0.06	0.14	0.01
	CO2	5	0.000	5.98	-0.23	4.92	-0.35	-6.17	-0.39
		51	1.796	6.48	-0.26	3.07	-0.36	0.74	0.01
	CO3	5	0.000	-1.72	0.10	0.53	0.06	0.02	0.11
		51	1.796	-1.57	0.09	-0.44	0.06	0.10	-0.07
	CO4	5	0.000	-1.73	0.10	0.53	0.05	0.02	0.11
		51	1.796	-1.58	0.09	-0.44	0.05	0.10	-0.07
	CO5	5	0.000	5.31	-0.28	4.02	-0.31	-5.13	-0.41
		51	1.796	5.67	-0.29	2.58	-0.31	0.61	0.07
	CO6	5	0.000	5.24	-0.27	4.04	-0.31	-5.16	-0.40
		51	1.796	5.61	-0.29	2.60	-0.31	0.61	0.07
	CO7	5	0.000	-3.42	0.42	0.59	0.21	-0.02	0.42
		51	1.796	-3.28	0.40	-0.40	0.21	0.15	-0.34
	CO8	5	0.000	-3.03	0.36	0.50	0.18	0.14	0.36
		51	1.796	-2.88	0.35	-0.50	0.18	0.13	-0.29
	CO9	5	0.000	4.71	-0.08	4.53	-0.10	-5.90	-0.23
		51	1.796	5.16	-0.07	3.07	-0.10	0.72	-0.11
	CO10	5	0.000	4.25	-0.11	4.20	-0.15	-5.48	-0.26
		51	1.796	4.65	-0.11	2.83	-0.15	0.67	-0.07
	CO11	5	0.000	-2.69	0.31	-0.98	0.25	2.29	0.41
		51	1.796	-2.52	0.29	-1.65	0.25	-0.11	-0.14
	CO12	5	0.000	-2.69	0.31	-0.98	0.25	2.29	0.41
		51	1.796	-2.52	0.29	-1.65	0.25	-0.11	-0.14
	CO13	5	0.000	2.17	-0.18	1.18	-0.08	-1.39	-0.21
		51	1.796	2.26	-0.18	0.60	-0.08	0.19	0.11
	CO14	5	0.000	2.11	-0.17	1.20	-0.09	-1.43	-0.21
		51	1.796	2.20	-0.17	0.62	-0.09	0.18	0.10
	CO15	5	0.000	-4.52	0.62	-0.84	0.46	2.22	0.71
		51	1.796	-4.35	0.60	-1.61	0.46	-0.05	-0.41
	CO16	5	0.000	-4.05	0.57	-0.95	0.43	2.37	0.66
		51	1.796	-3.88	0.54	-1.70	0.43	-0.07	-0.37
	CO17	5	0.000	0.24	0.14	1.79	0.16	-2.39	0.07
		51	1.796	0.35	0.15	1.24	0.16	0.32	-0.19
	CO18	5	0.000	0.16	0.11	1.47	0.09	-1.89	0.05
		51	1.796	0.26	0.11	0.93	0.09	0.25	-0.15
	CO19	5	0.000	-0.02	-0.03	0.62	-0.04	-0.69	-0.05
		51	1.796	0.03	-0.03	0.26	-0.04	0.10	0.00
	CO20	5	0.000	2.83	-0.18	3.15	-0.25	-4.17	-0.30
		51	1.796	3.09	-0.20	2.14	-0.25	0.51	0.02
	CO21	5	0.000	-1.13	0.06	0.56	0.02	-0.27	0.05
		51	1.796	-1.03	0.05	-0.15	0.02	0.11	-0.04
	CO22	5	0.000	-1.14	0.06	0.56	0.02	-0.27	0.05
		51	1.796	-1.04	0.05	-0.15	0.02	0.10	-0.04
	CO23	5	0.000	2.95	-0.21	2.74	-0.22	-3.59	-0.31
		51	1.796	3.16	-0.22	1.84	-0.22	0.44	0.07
	CO24	5	0.000	2.90	-0.21	2.74	-0.22	-3.61	-0.31
		51	1.796	3.11	-0.22	1.84	-0.22	0.43	0.06
	CO25	5	0.000	-2.45	0.30	0.59	0.12	-0.28	0.28
		51	1.796	-2.34	0.29	-0.13	0.12	0.14	-0.25
	CO26	5	0.000	-2.13	0.25	0.53	0.10	-0.18	0.24
		51	1.796	-2.03	0.25	-0.19	0.10	0.13	-0.22
	CO27	5	0.000	2.11	-0.06	3.04	-0.08	-4.11	-0.18
		51	1.796	2.36	-0.06	2.17	-0.08	0.51	-0.07
	CO28	5	0.000	1.92	-0.08	2.83	-0.11	-3.81	-0.19
		51	1.796	2.14	-0.09	1.99	-0.11	0.47	-0.05
	CO29	5	0.000	-2.05	0.19	-0.53	0.16	1.29	0.24
		51	1.796	-1.96	0.18	-0.94	0.16	-0.04	-0.10
	CO30	5	0.000	-2.05	0.19	-0.53	0.16	1.29	0.24
		51	1.796	-1.97	0.18	-0.94	0.16	-0.04	-0.10
	CO31	5	0.000	1.57	-0.14	0.79	-0.05	-0.94	-0.16
		51	1.796	1.63	-0.14	0.41	-0.05	0.13	0.08
	CO32	5	0.000	1.54	-0.13	0.80	-0.06	-0.97	-0.15
		51	1.796	1.59	-0.13	0.42	-0.06	0.13	0.08
	CO33	5	0.000	-3.44	0.42	-0.46	0.28	1.27	0.47
		51	1.796	-3.36	0.41	-0.92	0.28	-0.00	-0.30
	CO34	5	0.000	-3.08	0.38	-0.52	0.26	1.37	0.43
		51	1.796	-2.99	0.38	-0.98	0.26	-0.01	-0.27
	CO35	5	0.000	-0.20	0.13	1.21	0.09	-1.65	0.08
		51	1.796	-0.13	0.13	0.86	0.09	0.22	-0.16
	CO36	5	0.000	-0.10	0.10	1.00	0.05	-1.31	0.05
		51	1.796	-0.04	0.10	0.65	0.05	0.18	-0.12
23	LC10	19	0.000	-1.75	-0.14	-0.19	0.05	0.21	-0.21
		52	0.500	-1.75	-0.14	-0.20	0.05	0.11	-0.14
	Form-Finding	19	0.000	-0.07	0.01	-0.14	0.01	0.11	0.00
		52	0.500	-0.07	0.01	-0.14	0.01	0.04	-0.00
	CO1	19	0.000	0.12	0.05	-0.24	0.06	0.30	0.03
		52	0.500	0.11	0.05	-0.39	0.06	0.14	0.01
	CO2	19	0.000	6.44	0.27	-2.84	0.36	2.22	0.14
		52	0.500	6.48	0.25	-3.07	0.36	0.74	0.01
	CO3	19	0.000	-1.53	-0.09	0.71	-0.06	-0.19	-0.11
		52	0.500	-1.57	-0.09	0.44	-0.06	0.10	-0.07

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
23	CO4	19	0.000	-1.54	-0.09	0.70	-0.05	-0.19	-0.11
		52	0.500	-1.58	-0.09	0.44	-0.05	0.10	-0.07
	CO5	19	0.000	5.70	0.30	-2.41	0.31	1.86	0.22
		52	0.500	5.73	0.29	-2.60	0.30	0.61	0.07
	CO6	19	0.000	5.59	0.30	-2.41	0.32	1.86	0.22
		52	0.500	5.61	0.29	-2.60	0.31	0.61	0.07
	CO7	19	0.000	-5.61	-0.25	0.94	-0.09	-0.24	-0.34
		52	0.500	-5.65	-0.27	0.68	-0.09	0.16	-0.21
	CO8	19	0.000	-4.71	-0.27	0.93	-0.11	-0.25	-0.36
		52	0.500	-4.75	-0.29	0.66	-0.11	0.15	-0.22
	CO9	19	0.000	2.99	0.15	-2.26	0.39	1.89	0.02
		52	0.500	3.00	0.15	-2.49	0.39	0.70	-0.06
	CO10	19	0.000	3.08	0.15	-2.22	0.34	1.83	0.03
		52	0.500	3.09	0.15	-2.44	0.34	0.66	-0.04
	CO11	19	0.000	-2.49	-0.27	1.78	-0.25	-0.97	-0.28
		52	0.500	-2.51	-0.29	1.65	-0.25	-0.11	-0.14
	CO12	19	0.000	-2.50	-0.27	1.78	-0.25	-0.97	-0.28
		52	0.500	-2.52	-0.29	1.65	-0.25	-0.11	-0.15
	CO13	19	0.000	2.37	0.18	-0.47	0.08	0.46	0.19
		52	0.500	2.35	0.17	-0.61	0.08	0.19	0.10
	CO14	19	0.000	2.21	0.17	-0.48	0.09	0.46	0.18
		52	0.500	2.20	0.17	-0.62	0.09	0.18	0.10
	CO15	19	0.000	-6.92	-0.43	2.10	-0.31	-1.06	-0.49
		52	0.500	-6.94	-0.47	2.00	-0.31	-0.03	-0.28
	CO16	19	0.000	-5.91	-0.44	2.07	-0.33	-1.06	-0.51
		52	0.500	-5.93	-0.49	1.96	-0.32	-0.04	-0.29
	CO17	19	0.000	-2.57	-0.14	-0.33	0.19	0.52	-0.25
		52	0.500	-2.59	-0.14	-0.49	0.19	0.31	-0.18
	CO18	19	0.000	-1.97	-0.15	-0.30	0.13	0.46	-0.25
		52	0.500	-1.99	-0.15	-0.45	0.13	0.27	-0.17
	CO19	19	0.000	0.04	0.03	-0.16	0.04	0.21	0.02
		52	0.500	0.03	0.03	-0.26	0.04	0.10	0.00
	CO20	19	0.000	3.08	0.20	-1.96	0.25	1.53	0.12
		52	0.500	3.09	0.20	-2.14	0.24	0.51	0.02
	CO21	19	0.000	-1.00	-0.05	0.35	-0.02	-0.02	-0.07
		52	0.500	-1.03	-0.05	0.15	-0.02	0.11	-0.04
	CO22	19	0.000	-1.01	-0.05	0.35	-0.02	-0.02	-0.07
		52	0.500	-1.03	-0.05	0.15	-0.02	0.10	-0.04
	CO23	19	0.000	3.19	0.23	-1.68	0.21	1.32	0.18
		52	0.500	3.19	0.22	-1.84	0.21	0.44	0.06
	CO24	19	0.000	3.11	0.23	-1.68	0.22	1.31	0.18
		52	0.500	3.12	0.22	-1.84	0.22	0.43	0.06
	CO25	19	0.000	-3.94	-0.19	0.49	-0.05	-0.05	-0.26
		52	0.500	-3.97	-0.20	0.29	-0.05	0.15	-0.16
	CO26	19	0.000	-3.30	-0.19	0.49	-0.06	-0.06	-0.27
		52	0.500	-3.33	-0.20	0.29	-0.06	0.14	-0.17
	CO27	19	0.000	0.91	0.11	-1.57	0.28	1.33	0.02
		52	0.500	0.91	0.11	-1.76	0.28	0.49	-0.04
	CO28	19	0.000	1.09	0.11	-1.53	0.24	1.28	0.02
		52	0.500	1.09	0.11	-1.72	0.24	0.47	-0.03
	CO29	19	0.000	-1.95	-0.17	1.03	-0.16	-0.54	-0.18
		52	0.500	-1.96	-0.18	0.94	-0.16	-0.04	-0.10
	CO30	19	0.000	-1.95	-0.17	1.03	-0.16	-0.54	-0.18
		52	0.500	-1.96	-0.18	0.94	-0.16	-0.04	-0.10
	CO31	19	0.000	1.71	0.13	-0.32	0.05	0.31	0.15
		52	0.500	1.70	0.13	-0.42	0.05	0.13	0.08
	CO32	19	0.000	1.61	0.13	-0.33	0.06	0.31	0.14
		52	0.500	1.59	0.13	-0.42	0.06	0.13	0.08
	CO33	19	0.000	-5.12	-0.30	1.23	-0.19	-0.59	-0.36
		52	0.500	-5.13	-0.32	1.15	-0.19	0.01	-0.21
	CO34	19	0.000	-4.41	-0.31	1.22	-0.20	-0.59	-0.37
		52	0.500	-4.42	-0.33	1.13	-0.20	-0.00	-0.21
	CO35	19	0.000	-2.10	-0.12	-0.27	0.13	0.38	-0.20
		52	0.500	-2.11	-0.12	-0.38	0.13	0.22	-0.14
	CO36	19	0.000	-1.58	-0.13	-0.25	0.09	0.34	-0.20
		52	0.500	-1.59	-0.13	-0.36	0.09	0.19	-0.14
24	LC10	50	0.000	0.52	-0.23	0.95	-0.11	-0.08	0.03
		21	0.500	0.52	-0.24	0.95	-0.11	0.40	0.15
	Form-Finding	50	0.000	0.02	-0.03	0.23	-0.02	0.01	0.00
		21	0.500	0.02	-0.03	0.23	-0.02	0.12	0.02
	CO1	50	0.000	0.21	-0.08	0.46	-0.11	0.11	0.02
		21	0.500	0.19	-0.08	0.32	-0.11	0.30	0.06
	CO2	50	0.000	7.08	-0.59	2.73	-0.79	0.53	0.16
		21	0.500	7.02	-0.63	2.48	-0.79	1.83	0.47
	CO3	50	0.000	2.72	0.03	0.42	0.11	-0.01	-0.04
		21	0.500	2.70	0.03	0.16	0.11	0.14	-0.06
	CO4	50	0.000	2.83	0.03	0.40	0.11	-0.00	-0.04
		21	0.500	2.80	0.03	0.14	0.11	0.13	-0.06
	CO5	50	0.000	5.56	-0.39	2.42	-0.63	0.45	0.08
		21	0.500	5.51	-0.41	2.22	-0.63	1.61	0.29
	CO6	50	0.000	5.49	-0.38	2.36	-0.65	0.46	0.09
		21	0.500	5.45	-0.41	2.15	-0.65	1.58	0.29
	CO7	50	0.000	3.24	-0.52	0.92	0.07	-0.17	0.11
		21	0.500	3.21	-0.53	0.66	0.07	0.22	0.37
	CO8	50	0.000	3.03	-0.31	0.70	0.10	-0.13	0.04
		21	0.500	3.00	-0.32	0.43	0.10	0.15	0.20
	CO9	50	0.000	6.58	-0.79	3.84	-0.80	0.21	0.18
		21	0.500	6.49	-0.86	3.64	-0.81	2.07	0.60
	CO10	50	0.000	5.73	-0.66	3.26	-0.74	0.28	0.15
		21	0.500	5.66	-0.71	3.05	-0.74	1.85	0.50
	CO11	50	0.000	5.04	0.13	-0.08	0.45	-0.28	-0.08
		21	0.500	5.02	0.13	-0.25	0.45	-0.37	-0.14
	CO12	50	0.000	5.11	0.13	-0.07	0.45	-0.28	-0.08

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
24	CO12	21	0.500	5.10	0.12	-0.24	0.45	-0.36	-0.14
	CO13	50	0.000	1.55	0.01	0.91	-0.11	0.14	-0.04
		21	0.500	1.54	0.01	0.77	-0.11	0.56	-0.05
	CO14	50	0.000	1.51	0.01	0.80	-0.13	0.15	-0.04
		21	0.500	1.49	0.01	0.66	-0.13	0.52	-0.04
	CO15	50	0.000	6.04	-0.53	0.54	0.37	-0.50	0.08
		21	0.500	6.02	-0.54	0.37	0.37	-0.27	0.35
	CO16	50	0.000	5.62	-0.28	0.34	0.41	-0.45	0.01
		21	0.500	5.60	-0.29	0.17	0.41	-0.32	0.16
	CO17	50	0.000	1.32	-0.55	2.56	-0.34	-0.15	0.08
		21	0.500	1.29	-0.57	2.41	-0.34	1.10	0.36
	CO18	50	0.000	1.01	-0.38	1.81	-0.26	-0.05	0.05
		21	0.500	0.99	-0.39	1.66	-0.26	0.82	0.25
	CO19	50	0.000	0.08	-0.06	0.36	-0.07	0.07	0.01
		21	0.500	0.07	-0.06	0.26	-0.07	0.22	0.04
	CO20	50	0.000	3.42	-0.36	1.91	-0.54	0.37	0.09
		21	0.500	3.38	-0.38	1.72	-0.54	1.27	0.27
	CO21	50	0.000	1.89	-0.00	0.45	0.05	0.02	-0.03
		21	0.500	1.87	-0.01	0.26	0.05	0.20	-0.03
	CO22	50	0.000	1.96	-0.00	0.44	0.04	0.02	-0.03
		21	0.500	1.95	-0.00	0.24	0.04	0.19	-0.03
	CO23	50	0.000	2.94	-0.24	1.74	-0.44	0.32	0.04
		21	0.500	2.91	-0.25	1.57	-0.44	1.15	0.16
	CO24	50	0.000	2.94	-0.23	1.68	-0.45	0.33	0.04
		21	0.500	2.91	-0.24	1.50	-0.45	1.13	0.16
	CO25	50	0.000	2.10	-0.39	0.76	0.02	-0.09	0.08
		21	0.500	2.08	-0.40	0.56	0.02	0.24	0.28
	CO26	50	0.000	2.00	-0.25	0.62	0.04	-0.06	0.04
		21	0.500	1.98	-0.25	0.42	0.04	0.20	0.16
	CO27	50	0.000	3.23	-0.54	2.71	-0.55	0.16	0.11
		21	0.500	3.18	-0.57	2.53	-0.55	1.46	0.40
	CO28	50	0.000	2.81	-0.43	2.28	-0.51	0.21	0.09
		21	0.500	2.78	-0.45	2.10	-0.51	1.30	0.31
	CO29	50	0.000	3.10	0.07	0.11	0.27	-0.17	-0.05
		21	0.500	3.09	0.07	0.01	0.27	-0.14	-0.09
	CO30	50	0.000	3.17	0.07	0.13	0.27	-0.17	-0.05
		21	0.500	3.16	0.07	0.02	0.27	-0.14	-0.09
	CO31	50	0.000	1.05	0.02	0.64	-0.08	0.09	-0.03
		21	0.500	1.04	0.02	0.55	-0.08	0.39	-0.04
	CO32	50	0.000	1.06	0.02	0.57	-0.09	0.10	-0.03
		21	0.500	1.05	0.02	0.48	-0.09	0.36	-0.04
	CO33	50	0.000	3.66	-0.39	0.52	0.23	-0.31	0.06
		21	0.500	3.65	-0.40	0.41	0.23	-0.08	0.26
	CO34	50	0.000	3.41	-0.22	0.39	0.25	-0.28	0.01
		21	0.500	3.40	-0.22	0.28	0.25	-0.11	0.12
	CO35	50	0.000	0.71	-0.40	1.71	-0.23	-0.09	0.07
		21	0.500	0.70	-0.41	1.61	-0.23	0.74	0.27
	CO36	50	0.000	0.60	-0.27	1.21	-0.17	-0.02	0.04
		21	0.500	0.59	-0.28	1.11	-0.17	0.56	0.18
25	LC10	51	0.000	-0.22	0.13	0.46	0.08	0.10	-0.13
		18	0.500	-0.23	0.13	0.46	0.08	0.33	-0.19
	Form-Finding	51	0.000	-0.07	-0.01	0.14	-0.01	0.04	-0.00
		18	0.500	-0.07	-0.01	0.14	-0.01	0.11	0.00
	CO1	51	0.000	0.11	-0.05	0.39	-0.06	0.14	0.01
		18	0.500	0.12	-0.05	0.24	-0.06	0.30	0.03
	CO2	51	0.000	6.47	-0.26	3.07	-0.36	0.74	0.01
		18	0.500	6.43	-0.27	2.84	-0.36	2.22	0.14
	CO3	51	0.000	-1.57	0.09	-0.44	0.06	0.10	-0.07
		18	0.500	-1.53	0.09	-0.71	0.06	-0.19	-0.11
	CO4	51	0.000	-1.58	0.09	-0.44	0.05	0.10	-0.07
		18	0.500	-1.54	0.09	-0.70	0.05	-0.19	-0.11
	CO5	51	0.000	5.67	-0.29	2.58	-0.31	0.61	0.07
		18	0.500	5.65	-0.31	2.39	-0.31	1.86	0.22
	CO6	51	0.000	5.61	-0.29	2.60	-0.31	0.61	0.07
		18	0.500	5.59	-0.30	2.41	-0.32	1.86	0.22
	CO7	51	0.000	-3.28	0.40	-0.40	0.21	0.15	-0.34
		18	0.500	-3.24	0.38	-0.67	0.21	-0.11	-0.53
	CO8	51	0.000	-2.88	0.35	-0.50	0.18	0.13	-0.29
		18	0.500	-2.84	0.33	-0.77	0.18	-0.18	-0.46
	CO9	51	0.000	5.16	-0.07	3.07	-0.10	0.72	-0.11
		18	0.500	5.11	-0.06	2.89	-0.10	2.21	-0.08
	CO10	51	0.000	4.65	-0.11	2.83	-0.15	0.67	-0.07
		18	0.500	4.62	-0.11	2.63	-0.15	2.03	-0.01
	CO11	51	0.000	-2.52	0.29	-1.65	0.25	-0.11	-0.14
		18	0.500	-2.50	0.27	-1.78	0.25	-0.97	-0.28
	CO12	51	0.000	-2.52	0.29	-1.65	0.25	-0.11	-0.14
		18	0.500	-2.50	0.27	-1.78	0.25	-0.97	-0.28
	CO13	51	0.000	2.26	-0.18	0.60	-0.08	0.19	0.11
		18	0.500	2.28	-0.18	0.46	-0.08	0.45	0.20
	CO14	51	0.000	2.20	-0.17	0.62	-0.09	0.18	0.10
		18	0.500	2.21	-0.17	0.48	-0.09	0.46	0.18
	CO15	51	0.000	-4.35	0.60	-1.61	0.46	-0.05	-0.41
		18	0.500	-4.33	0.55	-1.74	0.46	-0.89	-0.69
	CO16	51	0.000	-3.87	0.54	-1.70	0.43	-0.07	-0.37
		18	0.500	-3.86	0.50	-1.83	0.43	-0.95	-0.62
	CO17	51	0.000	0.35	0.15	1.24	0.16	0.32	-0.19
		18	0.500	0.36	0.15	1.09	0.16	0.90	-0.27
	CO18	51	0.000	0.26	0.11	0.93	0.09	0.25	-0.15
		18	0.500	0.27	0.11	0.78	0.09	0.68	-0.21
	CO19	51	0.000	0.03	-0.03	0.26	-0.04	0.10	0.00
		18	0.500	0.04	-0.03	0.16	-0.04	0.21	0.02
	CO20	51	0.000	3.09	-0.20	2.14	-0.25	0.51	0.02
		18	0.500	3.08	-0.20	1.95	-0.25	1.53	0.12

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
25	CO21	51	0.000	-1.03	0.05	-0.15	0.02	0.11	-0.04
		18	0.500	-1.00	0.05	-0.35	0.02	-0.02	-0.07
	CO22	51	0.000	-1.04	0.05	-0.15	0.02	0.10	-0.04
		18	0.500	-1.01	0.05	-0.35	0.02	-0.02	-0.07
	CO23	51	0.000	3.16	-0.22	1.84	-0.22	0.44	0.07
		18	0.500	3.16	-0.23	1.67	-0.22	1.31	0.18
	CO24	51	0.000	3.11	-0.22	1.84	-0.22	0.43	0.06
		18	0.500	3.10	-0.23	1.67	-0.22	1.31	0.18
	CO25	51	0.000	-2.34	0.29	-0.13	0.12	0.14	-0.25
		18	0.500	-2.32	0.28	-0.33	0.12	0.03	-0.39
	CO26	51	0.000	-2.03	0.25	-0.19	0.10	0.13	-0.22
		18	0.500	-2.00	0.24	-0.39	0.10	-0.02	-0.34
	CO27	51	0.000	2.36	-0.06	2.17	-0.08	0.51	-0.07
		18	0.500	2.35	-0.06	2.00	-0.08	1.55	-0.04
	CO28	51	0.000	2.14	-0.09	1.99	-0.11	0.47	-0.05
		18	0.500	2.13	-0.09	1.81	-0.11	1.42	-0.00
	CO29	51	0.000	-1.96	0.18	-0.94	0.16	-0.04	-0.10
		18	0.500	-1.95	0.17	-1.03	0.16	-0.54	-0.18
	CO30	51	0.000	-1.97	0.18	-0.94	0.16	-0.04	-0.10
		18	0.500	-1.95	0.17	-1.03	0.16	-0.54	-0.18
	CO31	51	0.000	1.63	-0.14	0.41	-0.05	0.13	0.08
		18	0.500	1.64	-0.14	0.32	-0.05	0.31	0.15
	CO32	51	0.000	1.59	-0.13	0.42	-0.06	0.13	0.08
		18	0.500	1.61	-0.13	0.33	-0.06	0.31	0.14
	CO33	51	0.000	-3.36	0.41	-0.92	0.28	-0.00	-0.30
		18	0.500	-3.34	0.39	-1.01	0.28	-0.49	-0.50
	CO34	51	0.000	-2.99	0.38	-0.98	0.26	-0.01	-0.27
		18	0.500	-2.98	0.36	-1.07	0.26	-0.53	-0.45
	CO35	51	0.000	-0.13	0.13	0.86	0.09	0.22	-0.16
		18	0.500	-0.12	0.13	0.76	0.09	0.62	-0.22
	CO36	51	0.000	-0.04	0.10	0.65	0.05	0.18	-0.12
		18	0.500	-0.03	0.10	0.55	0.05	0.48	-0.17
26	LC10	52	0.000	-1.75	-0.14	-0.20	0.05	0.11	-0.14
		5	1.796	-1.75	-0.14	-0.19	0.05	-0.24	0.12
	Form-Finding	52	0.000	-0.07	0.01	-0.14	0.01	0.04	-0.00
		5	1.796	-0.07	0.01	-0.14	0.01	-0.22	-0.02
	CO1	52	0.000	0.11	0.05	-0.39	0.06	0.14	0.01
		5	1.796	0.03	0.05	-0.92	0.06	-1.03	-0.08
	CO2	52	0.000	6.48	0.25	-3.07	0.36	0.74	0.01
		5	1.796	5.99	0.23	-4.92	0.36	-6.17	-0.39
	CO3	52	0.000	-1.57	-0.09	0.44	-0.06	0.10	-0.07
		5	1.796	-1.72	-0.10	-0.53	-0.06	0.02	0.11
	CO4	52	0.000	-1.58	-0.09	0.44	-0.05	0.10	-0.07
		5	1.796	-1.73	-0.10	-0.53	-0.05	0.01	0.11
	CO5	52	0.000	5.73	0.29	-2.59	0.30	0.61	0.07
		5	1.796	5.36	0.27	-4.04	0.30	-5.15	-0.41
	CO6	52	0.000	5.61	0.29	-2.60	0.31	0.61	0.07
		5	1.796	5.24	0.27	-4.04	0.31	-5.16	-0.40
	CO7	52	0.000	-5.65	-0.27	0.68	-0.09	0.16	-0.21
		5	1.796	-5.81	-0.27	-0.39	-0.09	0.43	0.29
	CO8	52	0.000	-4.75	-0.29	0.66	-0.11	0.15	-0.22
		5	1.796	-4.91	-0.29	-0.38	-0.11	0.41	0.31
	CO9	52	0.000	3.01	0.15	-2.49	0.39	0.70	-0.06
		5	1.796	2.68	0.11	-3.67	0.38	-4.74	-0.27
	CO10	52	0.000	3.09	0.15	-2.44	0.34	0.66	-0.04
		5	1.796	2.77	0.12	-3.64	0.34	-4.70	-0.27
	CO11	52	0.000	-2.51	-0.29	1.65	-0.25	-0.11	-0.15
		5	1.796	-2.68	-0.31	0.98	-0.25	2.29	0.41
	CO12	52	0.000	-2.52	-0.29	1.65	-0.25	-0.11	-0.15
		5	1.796	-2.69	-0.31	0.98	-0.25	2.29	0.41
	CO13	52	0.000	2.35	0.17	-0.61	0.08	0.19	0.10
		5	1.796	2.27	0.18	-1.19	0.08	-1.40	-0.21
	CO14	52	0.000	2.20	0.17	-0.62	0.09	0.18	0.10
		5	1.796	2.11	0.17	-1.20	0.09	-1.43	-0.21
	CO15	52	0.000	-6.94	-0.47	2.00	-0.31	-0.03	-0.28
		5	1.796	-7.15	-0.46	1.01	-0.30	2.80	0.60
	CO16	52	0.000	-5.93	-0.49	1.96	-0.32	-0.04	-0.29
		5	1.796	-6.13	-0.48	1.04	-0.32	2.77	0.62
	CO17	52	0.000	-2.59	-0.14	-0.49	0.19	0.31	-0.18
		5	1.796	-2.67	-0.15	-0.99	0.19	-1.03	0.09
	CO18	52	0.000	-1.99	-0.15	-0.45	0.13	0.27	-0.17
		5	1.796	-2.06	-0.16	-0.96	0.13	-1.02	0.11
	CO19	52	0.000	0.03	0.03	-0.26	0.04	0.10	0.00
		5	1.796	-0.02	0.03	-0.62	0.04	-0.69	-0.05
	CO20	52	0.000	3.10	0.20	-2.14	0.24	0.51	0.02
		5	1.796	2.83	0.18	-3.16	0.24	-4.17	-0.30
	CO21	52	0.000	-1.03	-0.05	0.15	-0.02	0.11	-0.04
		5	1.796	-1.13	-0.06	-0.56	-0.02	-0.27	0.05
	CO22	52	0.000	-1.03	-0.05	0.15	-0.02	0.10	-0.04
		5	1.796	-1.14	-0.06	-0.56	-0.02	-0.27	0.05
	CO23	52	0.000	3.20	0.22	-1.84	0.21	0.44	0.06
		5	1.796	2.98	0.21	-2.75	0.21	-3.61	-0.31
	CO24	52	0.000	3.12	0.22	-1.84	0.22	0.43	0.06
		5	1.796	2.91	0.21	-2.74	0.22	-3.61	-0.31
	CO25	52	0.000	-3.97	-0.20	0.29	-0.05	0.15	-0.16
		5	1.796	-4.08	-0.20	-0.45	-0.05	0.00	0.20
	CO26	52	0.000	-3.33	-0.20	0.29	-0.06	0.14	-0.17
		5	1.796	-3.44	-0.21	-0.45	-0.06	-0.01	0.21
	CO27	52	0.000	0.91	0.11	-1.76	0.28	0.49	-0.04
		5	1.796	0.72	0.08	-2.52	0.27	-3.34	-0.20
	CO28	52	0.000	1.09	0.11	-1.72	0.24	0.47	-0.03
		5	1.796	0.90	0.09	-2.49	0.24	-3.29	-0.20
	CO29	52	0.000	-1.96	-0.18	0.94	-0.16	-0.04	-0.10

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
26	CO29	5	1.796	-2.04	-0.19	0.53	-0.16	1.29	0.24
	CO30	52	0.000	-1.96	-0.18	0.94	-0.16	-0.04	-0.10
		5	1.796	-2.05	-0.19	0.53	-0.16	1.29	0.24
	CO31	52	0.000	1.70	0.13	-0.42	0.05	0.13	0.08
		5	1.796	1.64	0.13	-0.80	0.05	-0.95	-0.16
	CO32	52	0.000	1.59	0.13	-0.42	0.06	0.13	0.08
		5	1.796	1.54	0.13	-0.80	0.06	-0.97	-0.15
	CO33	52	0.000	-5.14	-0.32	1.15	-0.19	0.01	-0.21
		5	1.796	-5.23	-0.32	0.60	-0.19	1.63	0.39
	CO34	52	0.000	-4.42	-0.33	1.13	-0.20	-0.00	-0.21
		5	1.796	-4.52	-0.33	0.61	-0.20	1.61	0.40
	CO35	52	0.000	-2.11	-0.12	-0.38	0.13	0.22	-0.14
		5	1.796	-2.16	-0.13	-0.71	0.13	-0.78	0.08
	CO36	52	0.000	-1.59	-0.13	-0.36	0.09	0.19	-0.14
		5	1.796	-1.64	-0.13	-0.69	0.09	-0.76	0.09
27	LC10	53	0.000	0.15	0.10	-0.16	-0.00	0.06	0.04
		5	0.959	0.15	0.10	-0.16	-0.00	-0.10	-0.06
	Form-Finding	53	0.000	0.02	0.03	-0.23	0.02	0.01	0.00
		5	0.959	0.02	0.03	-0.23	0.02	-0.21	-0.03
	CO1	53	0.000	0.21	0.08	-0.46	0.11	0.11	0.02
		5	0.959	0.23	0.08	-0.75	0.11	-0.48	-0.06
	CO2	53	0.000	7.09	0.58	-2.73	0.79	0.53	0.16
		5	0.959	7.08	0.53	-3.53	0.79	-2.44	-0.36
	CO3	53	0.000	2.72	-0.03	-0.42	-0.11	-0.01	-0.04
		5	0.959	2.77	-0.04	-0.96	-0.11	-0.67	-0.01
	CO4	53	0.000	2.83	-0.03	-0.40	-0.11	-0.00	-0.04
		5	0.959	2.87	-0.04	-0.94	-0.11	-0.65	-0.01
	CO5	53	0.000	5.55	0.39	-2.46	0.63	0.45	0.08
		5	0.959	5.54	0.35	-3.08	0.63	-2.18	-0.27
	CO6	53	0.000	5.50	0.38	-2.36	0.65	0.46	0.09
		5	0.959	5.49	0.34	-2.97	0.65	-2.07	-0.25
	CO7	53	0.000	0.89	-0.00	-0.30	-0.17	-0.04	-0.02
		5	0.959	0.93	-0.01	-0.82	-0.17	-0.58	-0.01
	CO8	53	0.000	1.68	0.06	-0.36	-0.16	-0.07	0.00
		5	0.959	1.72	0.05	-0.89	-0.16	-0.67	-0.05
	CO9	53	0.000	6.04	0.60	-1.84	0.56	0.57	0.16
		5	0.959	6.06	0.59	-2.42	0.56	-1.45	-0.40
	CO10	53	0.000	5.51	0.56	-1.97	0.57	0.51	0.15
		5	0.959	5.52	0.54	-2.56	0.57	-1.65	-0.37
	CO11	53	0.000	5.04	-0.13	0.08	-0.45	-0.28	-0.08
		5	0.959	5.07	-0.14	-0.24	-0.45	-0.36	0.04
	CO12	53	0.000	5.11	-0.13	0.07	-0.45	-0.28	-0.08
		5	0.959	5.14	-0.13	-0.25	-0.45	-0.37	0.04
	CO13	53	0.000	1.54	-0.00	-0.94	0.11	0.14	-0.04
		5	0.959	1.56	-0.00	-1.23	0.11	-0.90	-0.04
	CO14	53	0.000	1.51	-0.01	-0.80	0.13	0.15	-0.04
		5	0.959	1.52	-0.01	-1.10	0.13	-0.76	-0.02
	CO15	53	0.000	3.06	-0.16	0.26	-0.52	-0.34	-0.06
		5	0.959	3.08	-0.17	-0.04	-0.52	-0.23	0.10
	CO16	53	0.000	4.04	-0.07	0.18	-0.51	-0.36	-0.03
		5	0.959	4.07	-0.08	-0.14	-0.51	-0.34	0.03
	CO17	53	0.000	0.91	0.22	-0.17	0.04	0.28	0.08
		5	0.959	0.93	0.22	-0.45	0.04	-0.01	-0.14
	CO18	53	0.000	0.86	0.22	-0.34	0.06	0.20	0.07
		5	0.959	0.88	0.22	-0.63	0.06	-0.26	-0.14
	CO19	53	0.000	0.08	0.06	-0.36	0.07	0.07	0.01
		5	0.959	0.10	0.06	-0.55	0.07	-0.37	-0.05
	CO20	53	0.000	3.40	0.36	-1.92	0.54	0.36	0.09
		5	0.959	3.40	0.33	-2.41	0.54	-1.70	-0.24
	CO21	53	0.000	1.89	0.00	-0.45	-0.05	0.02	-0.03
		5	0.959	1.92	0.00	-0.85	-0.05	-0.60	-0.03
	CO22	53	0.000	1.96	0.00	-0.44	-0.04	0.02	-0.03
		5	0.959	1.99	0.00	-0.83	-0.04	-0.59	-0.03
	CO23	53	0.000	2.93	0.24	-1.77	0.45	0.32	0.04
		5	0.959	2.94	0.22	-2.19	0.45	-1.57	-0.18
	CO24	53	0.000	2.92	0.23	-1.68	0.45	0.33	0.04
		5	0.959	2.93	0.21	-2.10	0.45	-1.48	-0.17
	CO25	53	0.000	0.55	0.03	-0.38	-0.09	-0.01	-0.00
		5	0.959	0.58	0.03	-0.76	-0.09	-0.55	-0.03
	CO26	53	0.000	1.11	0.08	-0.42	-0.08	-0.02	0.01
		5	0.959	1.14	0.07	-0.81	-0.08	-0.61	-0.06
	CO27	53	0.000	3.03	0.38	-1.34	0.39	0.41	0.10
		5	0.959	3.05	0.37	-1.74	0.39	-1.06	-0.25
	CO28	53	0.000	2.75	0.36	-1.41	0.39	0.36	0.09
		5	0.959	2.77	0.35	-1.82	0.40	-1.18	-0.25
	CO29	53	0.000	3.10	-0.07	-0.11	-0.27	-0.17	-0.05
		5	0.959	3.12	-0.07	-0.32	-0.27	-0.38	0.01
	CO30	53	0.000	3.17	-0.07	-0.13	-0.27	-0.17	-0.05
		5	0.959	3.18	-0.07	-0.34	-0.27	-0.39	0.01
	CO31	53	0.000	1.04	-0.01	-0.66	0.08	0.09	-0.03
		5	0.959	1.05	-0.01	-0.85	0.08	-0.63	-0.02
	CO32	53	0.000	1.06	-0.02	-0.57	0.09	0.10	-0.03
		5	0.959	1.07	-0.02	-0.77	0.09	-0.54	-0.01
	CO33	53	0.000	1.66	-0.07	-0.02	-0.32	-0.21	-0.03
		5	0.959	1.67	-0.08	-0.22	-0.32	-0.33	0.04
	CO34	53	0.000	2.35	-0.01	-0.07	-0.31	-0.23	-0.02
		5	0.959	2.36	-0.01	-0.28	-0.31	-0.39	-0.01
	CO35	53	0.000	0.37	0.15	-0.19	0.03	0.19	0.05
		5	0.959	0.38	0.15	-0.38	0.03	-0.08	-0.09
	CO36	53	0.000	0.43	0.16	-0.30	0.05	0.13	0.05
		5	0.959	0.44	0.16	-0.49	0.05	-0.25	-0.10
28	LC10	54	0.000	-1.18	0.03	-0.68	-0.10	0.00	0.00
		5	0.717	-1.19	0.03	-0.68	-0.10	-0.48	-0.02

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	
28 28	Form-Finding	54	0.000	0.04	0.00	-0.28	-0.00	-0.00	0.00	
		5	0.717	0.04	0.00	-0.28	-0.00	-0.20	0.00	
	CO1	54	0.000	0.14	0.00	-0.34	-0.00	0.14	0.00	
		5	0.717	0.17	0.00	-0.55	-0.00	-0.17	-0.00	
	CO2	54	0.000	5.33	-0.00	-1.29	-0.00	0.97	0.00	
		5	0.717	5.41	-0.00	-1.73	-0.00	-0.11	0.00	
	CO3	54	0.000	5.40	-0.00	-1.12	0.00	-0.20	-0.00	
		5	0.717	5.46	-0.00	-1.56	0.00	-1.15	-0.00	
	CO4	54	0.000	4.70	-0.00	-1.09	0.00	-0.19	-0.00	
		5	0.717	4.76	-0.00	-1.52	0.00	-1.13	-0.00	
	CO5	54	0.000	6.12	-0.00	-1.38	0.00	0.74	0.00	
		5	0.717	6.18	-0.00	-1.74	0.00	-0.37	0.00	
	CO6	54	0.000	5.62	0.00	-1.20	-0.00	0.77	0.00	
		5	0.717	5.69	0.00	-1.55	-0.00	-0.21	-0.00	
	CO7	54	0.000	0.15	0.05	-1.57	-0.08	-0.26	0.04	
		5	0.717	0.20	0.05	-1.95	-0.08	-1.52	0.00	
	CO8	54	0.000	1.08	-0.02	-1.47	-0.04	-0.26	0.02	
		5	0.717	1.13	-0.02	-1.86	-0.04	-1.45	0.03	
	CO9	54	0.000	2.48	0.27	-1.92	-0.26	0.75	-0.01	
		5	0.717	2.54	0.28	-2.29	-0.26	-0.75	-0.20	
	CO10	54	0.000	2.59	0.15	-1.66	-0.17	0.74	-0.01	
		5	0.717	2.65	0.16	-2.04	-0.17	-0.58	-0.12	
	CO11	54	0.000	8.44	-0.00	-1.60	0.00	-0.69	-0.00	
		5	0.717	8.44	-0.00	-1.99	0.00	-1.97	0.00	
	CO12	54	0.000	7.53	-0.00	-1.63	0.00	-0.70	-0.00	
		5	0.717	7.54	-0.00	-2.01	0.00	-2.00	0.00	
	CO13	54	0.000	3.52	0.00	-0.96	0.00	0.09	-0.00	
		5	0.717	3.55	0.00	-1.19	0.00	-0.68	-0.00	
	CO14	54	0.000	2.95	0.00	-0.71	-0.00	0.14	-0.00	
		5	0.717	2.98	0.00	-0.92	-0.00	-0.44	-0.00	
	CO15	54	0.000	2.50	0.02	-2.10	-0.10	-0.76	0.05	
		5	0.717	2.49	0.02	-2.37	-0.10	-2.35	0.04	
	CO16	54	0.000	3.63	-0.04	-2.03	-0.06	-0.76	0.02	
		5	0.717	3.62	-0.04	-2.33	-0.06	-2.32	0.05	
	CO17	54	0.000	-1.92	0.20	-1.47	-0.31	0.13	0.00	
		5	0.717	-1.89	0.21	-1.67	-0.31	-0.99	-0.14	
	CO18	54	0.000	-1.41	0.08	-1.13	-0.18	0.13	-0.00	
		5	0.717	-1.38	0.09	-1.34	-0.18	-0.76	-0.07	
	CO19	54	0.000	-0.04	0.00	-0.32	-0.00	0.08	-0.00	
		5	0.717	-0.02	0.00	-0.46	-0.00	-0.20	-0.00	
	CO20	54	0.000	2.89	-0.00	-0.95	0.00	0.65	-0.00	
		5	0.717	2.94	-0.00	-1.25	0.00	-0.13	0.00	
	CO21	54	0.000	3.67	-0.00	-0.90	0.00	-0.10	-0.00	
		5	0.717	3.71	-0.00	-1.20	0.00	-0.85	-0.00	
	CO22	54	0.000	3.20	-0.00	-0.88	0.00	-0.10	-0.00	
		5	0.717	3.24	-0.00	-1.18	0.00	-0.83	-0.00	
	CO23	54	0.000	3.88	-0.00	-1.02	0.00	0.52	0.00	
		5	0.717	3.92	-0.00	-1.29	0.00	-0.30	0.00	
	CO24	54	0.000	3.55	0.00	-0.87	0.00	0.55	-0.00	
		5	0.717	3.60	0.00	-1.14	0.00	-0.17	-0.00	
	CO25	54	0.000	-0.08	0.02	-1.19	-0.05	-0.14	0.03	
		5	0.717	-0.04	0.02	-1.47	-0.05	-1.09	0.01	
	CO26	54	0.000	0.57	-0.02	-1.12	-0.02	-0.15	0.01	
		5	0.717	0.61	-0.02	-1.41	-0.02	-1.05	0.03	
	CO27	54	0.000	0.92	0.16	-1.39	-0.18	0.52	0.00	
		5	0.717	0.96	0.16	-1.67	-0.18	-0.58	-0.11	
	CO28	54	0.000	1.09	0.09	-1.19	-0.11	0.51	-0.00	
		5	0.717	1.14	0.09	-1.47	-0.11	-0.44	-0.07	
	CO29	54	0.000	5.57	-0.00	-1.20	0.00	-0.44	-0.00	
		5	0.717	5.58	-0.00	-1.43	0.00	-1.38	0.00	
	CO30	54	0.000	4.93	-0.00	-1.24	0.00	-0.45	-0.00	
		5	0.717	4.94	-0.00	-1.45	0.00	-1.41	0.00	
	CO31	54	0.000	2.51	0.00	-0.68	0.00	0.06	-0.00	
		5	0.717	2.53	0.00	-0.83	0.00	-0.48	-0.00	
	CO32	54	0.000	2.09	0.00	-0.53	-0.00	0.09	-0.00	
		5	0.717	2.11	0.00	-0.67	-0.00	-0.34	-0.00	
	CO33	54	0.000	1.27	0.01	-1.58	-0.06	-0.50	0.04	
		5	0.717	1.27	0.01	-1.74	-0.06	-1.68	0.03	
	CO34	54	0.000	2.07	-0.03	-1.53	-0.04	-0.50	0.01	
		5	0.717	2.07	-0.03	-1.71	-0.04	-1.66	0.04	
	CO35	54	0.000	-1.61	0.13	-1.02	-0.20	0.09	0.01	
		5	0.717	-1.59	0.13	-1.15	-0.20	-0.68	-0.08	
	CO36	54	0.000	-1.14	0.05	-0.80	-0.11	0.09	-0.00	
		5	0.717	-1.12	0.05	-0.93	-0.11	-0.53	-0.03	

■ 4.1 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
1	RC1	Max	0.18	0.01	23.40	8.02	10.32	0.56	Limit State of Strength -
		Min	-7.72	-1.59	-20.47	-0.11	-35.53	-0.03	Limit State of Strength -
	RC2	Max	0.13	0.01	15.73	5.17	6.78	0.37	Limit State of Serviceability -
		Min	-4.63	-0.97	-13.65	-0.07	-22.67	-0.01	Limit State of Serviceability -

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
	Section No. 3: RO 76.1x3.2 | IS 1161-1998										
1	RC1	12	0.000	Max N	0.13	-0.05	-0.03	-0.00	-0.00	-0.00	CO 6
				Min N	-1.95	1.36	-2.18	0.03	0.32	0.09	CO 15
				Max V_y	-1.95	1.36	-2.18	0.03	0.32	0.09	CO 15
				Min V_y	-0.01	-0.07	0.02	-0.00	-0.01	-0.00	CO 9
				Max V_z	-0.02	-0.07	0.03	-0.00	-0.01	-0.00	CO 10
				Min V_z	-1.95	1.36	-2.18	0.03	0.32	0.09	CO 15
				Max M_T	-1.38	1.14	-2.05	0.04	0.31	0.09	CO 12
				Min M_T	0.12	-0.04	-0.03	-0.00	-0.00	-0.00	CO 5
				Max M_y	-1.77	1.28	-2.15	0.03	0.32	0.09	CO 16
				Min M_y	-0.01	-0.07	0.02	-0.00	-0.01	-0.00	CO 9
				Max M_z	-1.95	1.36	-2.18	0.03	0.32	0.09	CO 15
				Min M_z	0.12	-0.07	-0.00	-0.00	-0.00	-0.01	CO 2
		37	0.115	Max N	0.13	-0.05	-0.04	-0.00	-0.01	0.00	CO 6
				Min N	-1.95	1.36	-2.19	0.03	0.07	-0.06	CO 15
				Max V_y	-1.95	1.36	-2.19	0.03	0.07	-0.06	CO 15
				Min V_y	-0.01	-0.07	0.01	-0.00	-0.00	0.00	CO 9
				Max V_z	-0.02	-0.07	0.02	-0.00	-0.00	0.00	CO 10
				Min V_z	-1.95	1.36	-2.19	0.03	0.07	-0.06	CO 15
				Max M_T	-1.38	1.14	-2.06	0.04	0.08	-0.05	CO 12
				Min M_T	0.12	-0.04	-0.04	-0.00	-0.01	0.00	CO 5
				Max M_y	-1.38	1.14	-2.06	0.04	0.08	-0.05	CO 12
				Min M_y	0.12	-0.07	-0.01	-0.00	-0.01	0.00	CO 2
				Max M_z	-0.01	-0.07	0.01	-0.00	-0.00	0.00	CO 9
				Min M_z	-1.95	1.36	-2.19	0.03	0.07	-0.06	CO 15
			0.115	Max N	0.16	-0.78	2.38	-0.03	0.08	-0.05	CO 12
				Min N	-0.45	-1.12	2.27	-0.03	0.07	-0.06	CO 15
				Max V_y	-0.26	0.06	0.03	0.00	-0.00	0.00	CO 9
				Min V_y	-0.45	-1.12	2.27	-0.03	0.07	-0.06	CO 15
				Max V_z	0.07	-0.81	2.39	-0.03	0.08	-0.05	CO 11
				Min V_z	0.03	0.02	-0.01	-0.00	-0.00	0.00	CO 1
				Max M_T	-0.26	0.06	0.03	0.00	-0.00	0.00	CO 9
				Min M_T	-0.16	-1.00	2.33	-0.03	0.08	-0.06	CO 16
				Max M_y	0.16	-0.78	2.38	-0.03	0.08	-0.05	CO 12
				Min M_y	-0.21	0.03	0.01	0.00	-0.01	0.00	CO 6
				Max M_z	-0.26	0.06	0.03	0.00	-0.00	0.00	CO 9
				Min M_z	-0.45	-1.12	2.27	-0.03	0.07	-0.06	CO 15
		14	0.230	Max N	0.15	-0.78	2.37	-0.03	0.35	0.04	CO 12
				Min N	-0.45	-1.12	2.26	-0.03	0.33	0.06	CO 15
				Max V_y	-0.26	0.06	0.02	0.00	-0.00	-0.00	CO 9
				Min V_y	-0.45	-1.12	2.26	-0.03	0.33	0.06	CO 15
				Max V_z	0.07	-0.81	2.38	-0.03	0.35	0.05	CO 11
				Min V_z	0.03	0.02	-0.02	-0.00	-0.00	-0.00	CO 1
				Max M_T	-0.26	0.06	0.02	0.00	-0.00	-0.00	CO 9
				Min M_T	-0.16	-1.00	2.32	-0.03	0.34	0.06	CO 16
				Max M_y	0.15	-0.78	2.37	-0.03	0.35	0.04	CO 12
				Min M_y	-0.15	0.04	-0.01	0.00	-0.01	-0.00	CO 5
				Max M_z	-0.45	-1.12	2.26	-0.03	0.33	0.06	CO 15
				Min M_z	-0.27	0.05	0.01	0.00	-0.00	-0.00	CO 2
	RC2	12	0.000	Max N	0.09	-0.03	-0.02	-0.00	-0.00	-0.00	CO 23
				Min N	-1.35	0.94	-1.52	0.02	0.23	0.06	CO 33
				Max V_y	-1.35	0.94	-1.52	0.02	0.23	0.06	CO 33
				Min V_y	0.05	-0.05	0.00	-0.00	-0.00	-0.00	CO 27
				Max V_z	0.07	-0.02	0.03	0.00	-0.00	-0.00	CO 32
				Min V_z	-1.35	0.94	-1.52	0.02	0.23	0.06	CO 33
				Max M_T	-0.97	0.80	-1.42	0.03	0.22	0.06	CO 30
				Min M_T	0.08	-0.02	-0.03	-0.00	-0.00	-0.00	CO 24
				Max M_y	-1.23	0.89	-1.50	0.02	0.23	0.06	CO 34
				Min M_y	0.05	-0.05	0.00	-0.00	-0.00	-0.00	CO 27
				Max M_z	-1.35	0.94	-1.52	0.02	0.23	0.06	CO 33
				Min M_z	0.08	-0.04	-0.01	-0.00	-0.00	-0.00	CO 20
		37	0.115	Max N	0.09	-0.03	-0.03	-0.00	-0.00	0.00	CO 23
				Min N	-1.35	0.94	-1.53	0.02	0.05	-0.04	CO 33
				Max V_y	-1.35	0.94	-1.53	0.02	0.05	-0.04	CO 33
				Min V_y	0.05	-0.05	-0.00	-0.00	-0.00	0.00	CO 27
				Max V_z	0.07	-0.02	0.03	0.00	0.00	0.00	CO 32
				Min V_z	-1.35	0.94	-1.53	0.02	0.05	-0.04	CO 33
				Max M_T	-0.97	0.80	-1.42	0.03	0.06	-0.03	CO 30
				Min M_T	0.08	-0.02	-0.03	-0.00	-0.01	0.00	CO 24
				Max M_y	-0.97	0.80	-1.42	0.03	0.06	-0.03	CO 30
				Min M_y	0.08	-0.04	-0.02	-0.00	-0.01	0.00	CO 28
				Max M_z	0.05	-0.05	-0.00	-0.00	-0.00	0.00	CO 27
				Min M_z	-1.35	0.94	-1.53	0.02	0.05	-0.04	CO 33
			0.115	Max N	0.13	-0.55	1.61	-0.02	0.06	-0.03	CO 30
				Min N	-0.27	-0.77	1.49	-0.02	0.05	-0.04	CO 33
				Max V_y	-0.15	0.04	0.02	0.00	-0.00	0.00	CO 27
				Min V_y	-0.27	-0.77	1.49	-0.02	0.05	-0.04	CO 33
				Max V_z	0.06	-0.57	1.62	-0.02	0.06	-0.03	CO 29
				Min V_z	-0.07	0.03	-0.01	0.00	-0.00	0.00	CO 23
				Max M_T	-0.13	0.03	0.02	0.00	-0.01	0.00	CO 28
				Min M_T	-0.08	-0.69	1.53	-0.02	0.05	-0.04	CO 34
				Max M_y	0.13	-0.55	1.61	-0.02	0.06	-0.03	CO 30
				Min M_y	-0.13	0.03	0.02	0.00	-0.01	0.00	CO 28
				Max M_z	-0.15	0.04	0.02	0.00	-0.00	0.00	CO 27
				Min M_z	-0.27	-0.77	1.49	-0.02	0.05	-0.04	CO 33
		14	0.230	Max N	0.13	-0.55	1.60	-0.02	0.24	0.03	CO 30
				Min N	-0.27	-0.77	1.48	-0.02	0.22	0.05	CO 33

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
1	RC2			Max V_y	-0.15	0.04	0.01	0.00	-0.00	-0.00	CO 27
				Min V_y	-0.27	-0.77	1.48	-0.02	0.22	0.05	CO 33
				Max V_z	0.06	-0.57	1.62	-0.02	0.24	0.03	CO 29
				Min V_z	-0.07	0.03	-0.02	0.00	-0.01	-0.00	CO 23
				Max M_T	-0.13	0.03	0.02	0.00	-0.00	-0.00	CO 28
				Min M_T	-0.08	-0.69	1.53	-0.02	0.23	0.04	CO 34
				Max M_y	0.13	-0.55	1.60	-0.02	0.24	0.03	CO 30
				Min M_y	-0.07	0.03	-0.02	0.00	-0.01	-0.00	CO 23
				Max M_z	-0.27	-0.77	1.48	-0.02	0.22	0.05	CO 33
				Min M_z	-0.22	0.03	0.02	0.00	-0.00	-0.00	CO 20
2	RC1	14	0.000	Max N	1.83	-0.51	-1.10	0.05	0.24	-0.03	CO 11
				Min N	-0.50	-0.01	0.13	0.00	-0.01	-0.00	CO 2
				Max V_y	0.54	0.01	-0.53	0.02	0.10	0.01	CO 7
				Min V_y	1.83	-0.51	-1.10	0.05	0.24	-0.03	CO 11
				Max V_z	-0.46	-0.03	0.17	0.00	-0.02	-0.00	CO 5
				Min V_z	1.63	-0.31	-1.20	0.05	0.25	-0.01	CO 16
				Max M_T	1.63	-0.31	-1.20	0.05	0.25	-0.01	CO 16
				Min M_T	-0.44	-0.01	0.09	-0.00	-0.01	-0.00	CO 9
				Max M_y	1.82	-0.47	-1.17	0.05	0.25	-0.03	CO 12
				Min M_y	-0.46	-0.03	0.17	0.00	-0.02	-0.00	CO 5
				Max M_z	0.54	0.01	-0.53	0.02	0.10	0.01	CO 7
				Min M_z	1.83	-0.51	-1.10	0.05	0.24	-0.03	CO 11
		34	0.115	Max N	1.83	-0.51	-1.11	0.05	0.12	0.03	CO 11
				Min N	-0.50	-0.01	0.12	0.00	0.00	0.00	CO 2
				Max V_y	0.54	0.01	-0.54	0.02	0.04	0.01	CO 7
				Min V_y	1.83	-0.51	-1.11	0.05	0.12	0.03	CO 11
				Max V_z	-0.46	-0.03	0.16	0.00	0.00	0.00	CO 5
				Min V_z	1.63	-0.31	-1.21	0.05	0.11	0.03	CO 16
				Max M_T	1.63	-0.31	-1.21	0.05	0.11	0.03	CO 16
				Min M_T	-0.44	-0.01	0.09	-0.00	-0.00	0.00	CO 9
				Max M_y	1.83	-0.51	-1.11	0.05	0.12	0.03	CO 11
				Min M_y	-0.44	-0.01	0.09	-0.00	-0.00	0.00	CO 9
				Max M_z	1.83	-0.51	-1.11	0.05	0.12	0.03	CO 11
				Min M_z	-0.08	0.01	-0.08	-0.00	0.00	-0.00	CO 14
			0.115	Max N	3.45	0.90	1.22	-0.05	0.12	0.03	CO 11
				Min N	-0.20	0.02	-0.13	-0.00	-0.00	0.00	CO 10
				Max V_y	3.45	0.90	1.22	-0.05	0.12	0.03	CO 11
				Min V_y	-0.08	-0.02	0.01	0.00	0.00	-0.00	CO 1
				Max V_z	2.91	0.69	1.53	-0.04	0.11	0.02	CO 15
				Min V_z	-0.17	0.02	-0.14	-0.00	0.00	0.00	CO 2
				Max M_T	-0.20	0.03	-0.11	0.00	0.00	0.00	CO 5
				Min M_T	3.45	0.90	1.22	-0.05	0.12	0.03	CO 11
				Max M_y	3.33	0.84	1.32	-0.05	0.12	0.03	CO 12
				Min M_y	-0.15	0.01	-0.12	-0.00	-0.00	0.00	CO 9
				Max M_z	3.45	0.90	1.22	-0.05	0.12	0.03	CO 11
				Min M_z	-0.01	-0.01	-0.03	-0.00	0.00	-0.00	CO 14
		13	0.230	Max N	3.45	0.90	1.21	-0.05	0.26	-0.07	CO 11
				Min N	-0.20	0.02	-0.14	-0.00	-0.02	-0.00	CO 10
				Max V_y	3.45	0.90	1.21	-0.05	0.26	-0.07	CO 11
				Min V_y	-0.08	-0.02	0.00	0.00	0.00	0.00	CO 1
				Max V_z	2.91	0.69	1.52	-0.04	0.28	-0.05	CO 15
				Min V_z	-0.17	0.02	-0.15	-0.00	-0.02	-0.00	CO 2
				Max M_T	-0.20	0.03	-0.11	0.00	-0.01	-0.00	CO 5
				Min M_T	3.45	0.90	1.21	-0.05	0.26	-0.07	CO 11
				Max M_y	3.06	0.75	1.49	-0.04	0.28	-0.06	CO 16
				Min M_y	-0.15	0.01	-0.13	-0.00	-0.02	-0.00	CO 9
				Max M_z	-0.08	-0.02	0.00	0.00	0.00	0.00	CO 1
				Min M_z	3.45	0.90	1.21	-0.05	0.26	-0.07	CO 11
	RC2	14	0.000	Max N	1.30	-0.33	-0.83	0.03	0.17	-0.02	CO 30
				Min N	-0.38	-0.02	0.11	0.00	-0.01	-0.00	CO 20
				Max V_y	0.37	0.02	-0.35	0.02	0.07	0.01	CO 25
				Min V_y	1.30	-0.35	-0.78	0.03	0.17	-0.02	CO 29
				Max V_z	-0.34	-0.02	0.12	0.00	-0.01	-0.00	CO 23
				Min V_z	1.15	-0.20	-0.83	0.03	0.17	-0.01	CO 34
				Max M_T	1.15	-0.20	-0.83	0.03	0.17	-0.01	CO 34
				Min M_T	-0.07	0.01	-0.07	-0.00	0.01	0.00	CO 32
				Max M_y	1.30	-0.33	-0.83	0.03	0.17	-0.02	CO 30
				Min M_y	-0.34	-0.02	0.12	0.00	-0.01	-0.00	CO 23
				Max M_z	0.37	0.02	-0.35	0.02	0.07	0.01	CO 25
				Min M_z	1.30	-0.35	-0.78	0.03	0.17	-0.02	CO 29
		34	0.115	Max N	1.30	-0.33	-0.83	0.03	0.08	0.02	CO 30
				Min N	-0.38	-0.02	0.10	0.00	0.00	0.00	CO 20
				Max V_y	0.37	0.02	-0.36	0.02	0.03	0.00	CO 25
				Min V_y	1.30	-0.36	-0.78	0.03	0.08	0.02	CO 29
				Max V_z	-0.34	-0.02	0.11	0.00	0.00	0.00	CO 23
				Min V_z	1.15	-0.20	-0.84	0.03	0.07	0.02	CO 34
				Max M_T	1.15	-0.20	-0.84	0.03	0.07	0.02	CO 34
				Min M_T	-0.07	0.01	-0.08	-0.00	0.00	-0.00	CO 32
				Max M_y	1.30	-0.36	-0.78	0.03	0.08	0.02	CO 29
				Min M_y	-0.32	-0.01	0.07	-0.00	0.00	0.00	CO 27
				Max M_z	1.30	-0.36	-0.78	0.03	0.08	0.02	CO 29
				Min M_z	-0.02	0.02	-0.01	0.00	0.00	-0.00	CO 19
			0.115	Max N	2.47	0.62	0.87	-0.03	0.08	0.02	CO 29
				Min N	-0.16	0.03	-0.12	-0.00	0.00	0.00	CO 20
				Max V_y	2.47	0.62	0.87	-0.03	0.08	0.02	CO 29
				Min V_y	-0.06	-0.03	0.02	-0.00	0.00	-0.00	CO 19
				Max V_z	2.05	0.46	1.13	-0.02	0.07	0.01	CO 33

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
2	RC2			Min V_z	-0.16	0.03	-0.12	-0.00	0.00	0.00	CO 20
				Max M_T	-0.15	0.02	-0.07	0.00	0.00	0.00	CO 23
				Min M_T	2.47	0.62	0.87	-0.03	0.08	0.02	CO 29
				Max M_y	2.38	0.58	0.94	-0.03	0.08	0.02	CO 30
				Min M_y	-0.12	0.01	-0.09	-0.00	-0.00	0.00	CO 27
				Max M_z	2.47	0.62	0.87	-0.03	0.08	0.02	CO 29
				Min M_z	-0.06	-0.03	0.02	-0.00	0.00	-0.00	CO 19
		13	0.230	Max N	2.47	0.62	0.87	-0.03	0.18	-0.05	CO 29
				Min N	-0.16	0.03	-0.12	-0.00	-0.01	-0.00	CO 20
				Max V_y	2.47	0.62	0.87	-0.03	0.18	-0.05	CO 29
				Min V_y	-0.06	-0.03	0.01	-0.00	0.00	0.00	CO 19
				Max V_z	2.05	0.46	1.13	-0.02	0.20	-0.04	CO 33
				Min V_z	-0.16	0.03	-0.12	-0.00	-0.01	-0.00	CO 20
				Max M_T	-0.15	0.02	-0.08	0.00	-0.01	-0.00	CO 23
				Min M_T	2.47	0.62	0.87	-0.03	0.18	-0.05	CO 29
				Max M_y	2.16	0.50	1.10	-0.03	0.20	-0.04	CO 34
				Min M_y	-0.16	0.03	-0.12	-0.00	-0.01	-0.00	CO 20
				Max M_z	-0.06	-0.03	0.01	-0.00	0.00	0.00	CO 19
				Min M_z	2.47	0.62	0.87	-0.03	0.18	-0.05	CO 29
3	RC1	13	0.000	Max N	3.45	-0.90	-1.21	0.05	0.26	-0.07	CO 11
				Min N	-0.19	-0.02	0.12	-0.00	-0.01	-0.00	CO 5
				Max V_y	-0.00	0.02	0.01	0.00	0.00	0.00	CO 13
				Min V_y	3.18	-0.96	-1.21	0.04	0.25	-0.08	CO 15
				Max V_z	-0.14	-0.02	0.15	0.00	-0.02	0.00	CO 10
				Min V_z	3.32	-0.84	-1.31	0.05	0.27	-0.07	CO 12
				Max M_T	3.45	-0.90	-1.21	0.05	0.26	-0.07	CO 11
				Min M_T	-0.08	0.02	-0.00	-0.00	0.00	0.00	CO 1
				Max M_y	3.32	-0.84	-1.31	0.05	0.27	-0.07	CO 12
				Min M_y	-0.11	-0.01	0.15	0.00	-0.02	0.00	CO 9
				Max M_z	-0.08	0.02	-0.00	-0.00	0.00	0.00	CO 1
				Min M_z	3.18	-0.96	-1.21	0.04	0.25	-0.08	CO 15
		35	0.115	Max N	3.45	-0.90	-1.22	0.05	0.12	0.03	CO 11
				Min N	-0.19	-0.02	0.11	-0.00	0.00	0.00	CO 5
				Max V_y	-0.00	0.02	0.00	0.00	0.00	-0.00	CO 13
				Min V_y	3.18	-0.96	-1.22	0.04	0.11	0.03	CO 15
				Max V_z	-0.14	-0.02	0.15	0.00	0.00	0.00	CO 10
				Min V_z	3.32	-0.84	-1.32	0.05	0.12	0.03	CO 12
				Max M_T	3.45	-0.90	-1.22	0.05	0.12	0.03	CO 11
				Min M_T	-0.08	0.02	-0.01	-0.00	0.00	-0.00	CO 1
				Max M_y	3.32	-0.84	-1.32	0.05	0.12	0.03	CO 12
				Min M_y	-0.08	0.02	-0.01	-0.00	0.00	-0.00	CO 1
				Max M_z	3.45	-0.90	-1.22	0.05	0.12	0.03	CO 11
				Min M_z	-0.00	0.02	0.00	0.00	0.00	-0.00	CO 13
			0.115	Max N	2.42	0.70	0.96	-0.05	0.11	0.03	CO 15
				Min N	-0.54	0.03	-0.12	-0.00	0.00	0.00	CO 2
				Max V_y	2.42	0.70	0.96	-0.05	0.11	0.03	CO 15
				Min V_y	-0.08	-0.01	0.07	0.00	0.00	-0.00	CO 13
				Max V_z	1.82	0.47	1.18	-0.05	0.12	0.03	CO 12
				Min V_z	-0.47	0.03	-0.16	-0.00	0.00	0.00	CO 5
				Max M_T	-0.08	-0.01	0.08	0.00	0.00	-0.00	CO 14
				Min M_T	2.25	0.61	1.09	-0.05	0.11	0.03	CO 16
				Max M_y	1.82	0.51	1.11	-0.05	0.12	0.03	CO 11
				Min M_y	-0.06	-0.01	-0.01	-0.00	0.00	-0.00	CO 1
				Max M_z	1.82	0.51	1.11	-0.05	0.12	0.03	CO 11
				Min M_z	-0.08	-0.01	0.07	0.00	0.00	-0.00	CO 13
		33	0.230	Max N	2.42	0.70	0.95	-0.05	0.22	-0.05	CO 15
				Min N	-0.54	0.03	-0.13	-0.00	-0.01	-0.00	CO 2
				Max V_y	2.42	0.70	0.95	-0.05	0.22	-0.05	CO 15
				Min V_y	-0.08	-0.01	0.06	0.00	0.01	0.00	CO 13
				Max V_z	1.82	0.47	1.17	-0.05	0.25	-0.03	CO 12
				Min V_z	-0.47	0.03	-0.17	-0.00	-0.02	-0.00	CO 5
				Max M_T	-0.08	-0.01	0.07	0.00	0.01	0.00	CO 14
				Min M_T	2.25	0.61	1.08	-0.05	0.24	-0.04	CO 16
				Max M_y	1.82	0.47	1.17	-0.05	0.25	-0.03	CO 12
				Min M_y	-0.47	0.03	-0.17	-0.00	-0.02	-0.00	CO 5
				Max M_z	-0.40	0.00	-0.11	0.00	-0.01	0.00	CO 9
				Min M_z	2.42	0.70	0.95	-0.05	0.22	-0.05	CO 15
	RC2	13	0.000	Max N	2.47	-0.62	-0.87	0.03	0.18	-0.05	CO 29
				Min N	-0.17	-0.02	0.13	0.00	-0.01	-0.00	CO 20
				Max V_y	-0.06	0.03	-0.01	0.00	0.00	0.00	CO 19
				Min V_y	2.27	-0.67	-0.88	0.03	0.18	-0.05	CO 33
				Max V_z	-0.17	-0.02	0.13	0.00	-0.01	-0.00	CO 20
				Min V_z	2.30	-0.64	-0.95	0.03	0.19	-0.05	CO 34
				Max M_T	2.47	-0.62	-0.87	0.03	0.18	-0.05	CO 29
				Min M_T	-0.11	-0.01	0.08	-0.00	-0.01	-0.00	CO 23
				Max M_y	2.30	-0.64	-0.95	0.03	0.19	-0.05	CO 34
				Min M_y	-0.17	-0.02	0.13	0.00	-0.01	-0.00	CO 20
				Max M_z	-0.06	0.03	-0.01	0.00	0.00	0.00	CO 19
				Min M_z	2.27	-0.67	-0.88	0.03	0.18	-0.05	CO 33
		35	0.115	Max N	2.47	-0.62	-0.87	0.03	0.08	0.02	CO 29
				Min N	-0.17	-0.02	0.12	0.00	0.00	0.00	CO 20
				Max V_y	-0.06	0.03	-0.02	0.00	0.00	-0.00	CO 19
				Min V_y	2.27	-0.67	-0.89	0.03	0.08	0.02	CO 33
				Max V_z	-0.17	-0.02	0.12	0.00	0.00	0.00	CO 20
				Min V_z	2.30	-0.64	-0.95	0.03	0.08	0.02	CO 34
				Max M_T	2.47	-0.62	-0.87	0.03	0.08	0.02	CO 29
				Min M_T	-0.11	-0.01	0.07	-0.00	0.00	0.00	CO 23

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
3	RC2			Max M_y	2.30	-0.64	-0.95	0.03	▷ 0.08	0.02	CO 34
				Min M_y	-0.14	-0.00	0.10	0.00	▷ -0.00	0.00	CO 28
				Max M_z	2.27	-0.67	-0.89	0.03	0.08	▷ 0.02	CO 33
				Min M_z	-0.06	0.03	-0.02	0.00	0.00	▷ -0.00	CO 19
			0.115	Max N	▷ 1.74	0.50	0.63	-0.04	0.08	0.02	CO 33
				Min N	▷ -0.34	0.01	-0.09	-0.00	0.00	0.00	CO 20
				Max V_y	1.74	▷ 0.50	0.63	-0.04	0.08	0.02	CO 33
				Min V_y	-0.02	▷ -0.02	0.01	-0.00	0.00	-0.00	CO 19
				Max V_z	1.30	0.33	▷ 0.83	-0.03	0.08	0.02	CO 30
				Min V_z	-0.27	0.01	▷ -0.10	-0.00	0.00	0.00	CO 23
				Max M_T	-0.07	-0.01	0.08	▷ 0.00	0.00	-0.00	CO 32
				Min M_T	1.74	0.50	0.63	▷ -0.04	0.08	0.02	CO 33
				Max M_y	1.29	0.35	0.79	-0.03	▷ 0.08	0.02	CO 29
				Min M_y	-0.21	0.01	-0.08	-0.00	▷ -0.00	0.00	CO 24
				Max M_z	1.74	0.50	0.63	-0.04	0.08	▷ 0.02	CO 33
				Min M_z	-0.02	-0.02	0.01	-0.00	0.00	▷ -0.00	CO 19
		33	0.230	Max N	▷ 1.74	0.50	0.62	-0.04	0.15	-0.04	CO 33
				Min N	▷ -0.34	0.01	-0.10	-0.00	-0.01	-0.00	CO 20
				Max V_y	1.74	▷ 0.50	0.62	-0.04	0.15	-0.04	CO 33
				Min V_y	-0.02	▷ -0.02	0.00	-0.00	0.00	0.00	CO 19
				Max V_z	1.30	0.33	▷ 0.83	-0.03	0.17	-0.02	CO 30
				Min V_z	-0.27	0.01	▷ -0.10	-0.00	-0.01	-0.00	CO 23
				Max M_T	-0.07	-0.01	0.07	▷ 0.00	0.01	0.00	CO 32
				Min M_T	1.74	0.50	0.62	▷ -0.04	0.15	-0.04	CO 33
				Max M_y	1.30	0.33	0.83	-0.03	▷ 0.17	-0.02	CO 30
				Min M_y	-0.27	0.01	-0.10	-0.00	▷ -0.01	-0.00	CO 23
				Max M_z	-0.28	-0.00	-0.07	0.00	-0.01	▷ 0.00	CO 27
				Min M_z	1.74	0.50	0.62	-0.04	0.15	▷ -0.04	CO 33
4	RC1	33	0.000	Max N	▷ 1.22	0.40	-1.96	0.03	0.31	0.02	CO 15
				Min N	▷ -0.38	-0.03	-0.06	-0.00	-0.00	-0.00	CO 9
				Max V_y	0.08	▷ 0.81	-2.38	0.03	0.35	0.05	CO 11
				Min V_y	-0.33	▷ -0.06	-0.02	-0.00	-0.00	-0.00	CO 2
				Max V_z	0.03	-0.02	▷ 0.02	0.00	-0.00	-0.00	CO 1
				Min V_z	0.08	0.81	▷ -2.38	0.03	0.35	0.05	CO 11
				Max M_T	1.22	0.40	-1.96	▷ 0.03	0.31	0.02	CO 15
				Min M_T	-0.38	-0.03	-0.06	▷ -0.00	-0.00	-0.00	CO 9
				Max M_y	0.16	0.78	-2.37	0.03	▷ 0.35	0.04	CO 12
				Min M_y	-0.18	-0.04	-0.00	-0.00	▷ -0.01	-0.00	CO 5
				Max M_z	0.08	0.81	-2.38	0.03	0.35	▷ 0.05	CO 11
				Min M_z	-0.33	-0.06	-0.02	-0.00	-0.00	▷ -0.00	CO 2
		36	0.115	Max N	▷ 1.22	0.40	-1.96	0.03	0.09	-0.02	CO 15
				Min N	▷ -0.38	-0.03	-0.07	-0.00	-0.01	0.00	CO 9
				Max V_y	0.08	▷ 0.81	-2.39	0.03	0.08	-0.05	CO 11
				Min V_y	-0.33	▷ -0.06	-0.03	-0.00	-0.01	0.00	CO 2
				Max V_z	0.03	-0.02	▷ 0.01	0.00	-0.00	0.00	CO 1
				Min V_z	0.08	0.81	▷ -2.39	0.03	0.08	-0.05	CO 11
				Max M_T	1.22	0.40	-1.96	▷ 0.03	0.09	-0.02	CO 15
				Min M_T	-0.38	-0.03	-0.07	▷ -0.00	-0.01	0.00	CO 9
				Max M_y	1.22	0.40	-1.96	0.03	▷ 0.09	-0.02	CO 15
				Min M_y	-0.38	-0.03	-0.07	-0.00	▷ -0.01	0.00	CO 9
				Max M_z	-0.33	-0.06	-0.03	-0.00	-0.01	▷ 0.00	CO 2
				Min M_z	0.08	0.81	-2.39	0.03	0.08	▷ -0.05	CO 11
			0.115	Max N	▷ 0.14	0.05	0.01	0.00	-0.01	0.00	CO 9
				Min N	▷ -1.50	-1.20	2.03	-0.04	0.07	-0.05	CO 11
				Max V_y	0.07	▷ 0.07	0.02	0.00	-0.01	0.00	CO 2
				Min V_y	-1.50	▷ -1.20	2.03	-0.04	0.07	-0.05	CO 11
				Max V_z	-1.38	-1.14	▷ 2.06	-0.04	0.08	-0.05	CO 12
				Min V_z	0.08	0.02	▷ -0.01	-0.00	0.00	0.00	CO 14
				Max M_T	0.13	0.05	0.05	▷ 0.00	-0.01	0.00	CO 5
				Min M_T	-1.32	-0.97	1.92	▷ -0.04	0.09	-0.03	CO 16
				Max M_y	-1.21	-0.85	1.77	-0.04	▷ 0.09	-0.02	CO 15
				Min M_y	0.14	0.05	0.01	0.00	▷ -0.01	0.00	CO 9
				Max M_z	0.07	0.07	0.02	0.00	-0.01	▷ 0.00	CO 2
				Min M_z	-1.50	-1.20	2.03	-0.04	0.07	▷ -0.05	CO 11
		12	0.230	Max N	▷ 0.14	0.05	0.00	0.00	-0.01	-0.01	CO 9
				Min N	▷ -1.50	-1.20	2.02	-0.04	0.31	0.09	CO 11
				Max V_y	0.07	▷ 0.07	0.01	0.00	-0.01	-0.01	CO 2
				Min V_y	-1.50	▷ -1.20	2.02	-0.04	0.31	0.09	CO 11
				Max V_z	-1.38	-1.14	▷ 2.05	-0.04	0.31	0.09	CO 12
				Min V_z	0.08	0.02	▷ -0.02	-0.00	-0.00	-0.00	CO 14
				Max M_T	0.13	0.05	0.04	▷ 0.00	-0.00	-0.00	CO 5
				Min M_T	-1.32	-0.97	1.91	▷ -0.04	0.31	0.08	CO 16
				Max M_y	-1.38	-1.14	2.05	-0.04	▷ 0.31	0.09	CO 12
				Min M_y	0.14	0.05	0.00	0.00	▷ -0.01	-0.01	CO 9
				Max M_z	-1.50	-1.20	2.02	-0.04	0.31	▷ 0.09	CO 11
				Min M_z	0.14	0.05	0.00	0.00	-0.01	▷ -0.01	CO 9
	RC2	33	0.000	Max N	▷ 0.86	0.29	-1.30	0.03	0.21	0.01	CO 33
				Min N	▷ -0.33	-0.02	-0.05	-0.00	-0.00	-0.00	CO 27
				Max V_y	0.07	▷ 0.57	-1.62	0.02	0.24	0.03	CO 29
				Min V_y	-0.26	▷ -0.04	-0.04	-0.00	-0.00	-0.00	CO 20
				Max V_z	-0.09	-0.03	▷ 0.04	-0.00	-0.01	-0.00	CO 28
				Min V_z	0.07	0.57	▷ -1.62	0.02	0.24	0.03	CO 29
				Max M_T	0.86	0.29	-1.30	▷ 0.03	0.21	0.01	CO 33
				Min M_T	-0.33	-0.02	-0.05	▷ -0.00	-0.00	-0.00	CO 27
				Max M_y	0.13	0.55	-1.60	0.02	▷ 0.24	0.03	CO 30
				Min M_y	-0.09	-0.03	0.04	-0.00	▷ -0.01	-0.00	CO 28
				Max M_z	0.07	0.57	-1.62	0.02	0.24	▷ 0.03	CO 29

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
4	RC2			Min M_z	0.15	-0.03	-0.05	0.00	0.01	▷ -0.00	CO 35
		36	0.115	Max N	▷ 0.86	0.29	-1.31	0.03	0.06	-0.02	CO 33
				Min N	▷ -0.33	-0.02	-0.05	-0.00	-0.01	0.00	CO 27
				Max V_y	0.07	▷ 0.57	-1.62	0.02	0.06	-0.03	CO 29
				Min V_y	-0.26	▷ -0.04	-0.04	-0.00	-0.01	0.00	CO 20
				Max V_z	-0.09	-0.03	▷ 0.03	-0.00	-0.00	0.00	CO 28
				Min V_z	0.07	0.57	▷ -1.62	0.02	0.06	-0.03	CO 29
				Max M_T	0.86	0.29	-1.31	▷ 0.03	0.06	-0.02	CO 33
				Min M_T	-0.33	-0.02	-0.05	▷ -0.00	-0.01	0.00	CO 27
				Max M_y	0.64	0.39	-1.44	0.02	▷ 0.06	-0.02	CO 34
				Min M_y	-0.33	-0.02	-0.05	-0.00	▷ -0.01	0.00	CO 27
				Max M_z	-0.26	-0.04	-0.04	-0.00	-0.01	▷ 0.00	CO 20
				Min M_z	0.07	0.57	-1.62	0.02	0.06	▷ -0.03	CO 29
			0.115	Max N	▷ 0.12	0.04	0.02	0.00	-0.01	0.00	CO 27
				Min N	▷ -1.05	-0.84	1.40	-0.03	0.05	-0.03	CO 29
				Max V_y	0.07	▷ 0.05	0.02	0.00	-0.01	0.00	CO 20
				Min V_y	-1.05	▷ -0.84	1.40	-0.03	0.05	-0.03	CO 29
				Max V_z	-0.97	-0.80	▷ 1.42	-0.03	0.06	-0.03	CO 30
				Min V_z	0.01	0.05	▷ -0.04	0.00	-0.00	0.00	CO 28
				Max M_T	0.09	0.03	0.04	▷ 0.00	-0.01	0.00	CO 23
				Min M_T	-0.97	-0.80	1.42	▷ -0.03	0.06	-0.03	CO 30
				Max M_y	-0.86	-0.61	1.29	-0.02	▷ 0.06	-0.02	CO 33
				Min M_y	0.12	0.04	0.02	0.00	▷ -0.01	0.00	CO 27
				Max M_z	0.07	0.05	0.02	0.00	-0.01	▷ 0.00	CO 20
				Min M_z	-1.05	-0.84	1.40	-0.03	0.05	▷ -0.03	CO 29
		12	0.230	Max N	▷ 0.12	0.04	0.01	0.00	-0.00	-0.00	CO 27
				Min N	▷ -1.05	-0.84	1.40	-0.03	0.21	0.06	CO 29
				Max V_y	0.07	▷ 0.05	0.02	0.00	-0.00	-0.00	CO 20
				Min V_y	-1.05	▷ -0.84	1.40	-0.03	0.21	0.06	CO 29
				Max V_z	-0.97	-0.80	▷ 1.41	-0.03	0.22	0.06	CO 30
				Min V_z	0.01	0.05	▷ -0.04	0.00	-0.01	-0.00	CO 28
				Max M_T	0.09	0.03	0.03	▷ 0.00	-0.00	-0.00	CO 23
				Min M_T	-0.97	-0.80	1.41	▷ -0.03	0.22	0.06	CO 30
				Max M_y	-0.97	-0.80	1.41	-0.03	▷ 0.22	0.06	CO 30
				Min M_y	0.01	0.05	-0.04	0.00	▷ -0.01	-0.00	CO 28
				Max M_z	-1.05	-0.84	1.40	-0.03	0.21	▷ 0.06	CO 29
				Min M_z	0.07	0.05	0.02	0.00	-0.00	▷ -0.00	CO 20
5	RC1	2	0.000	Max N	▷ 1.59	0.90	-7.17	-0.09	0.79	0.07	CO 15
				Min N	▷ -0.09	-0.03	0.21	-0.01	-0.02	-0.00	CO 2
				Max V_y	0.56	▷ 1.19	-6.74	-0.11	0.72	0.10	CO 11
				Min V_y	-0.04	▷ -0.04	0.19	-0.01	-0.02	-0.00	CO 5
				Max V_z	-0.09	-0.03	▷ 0.21	-0.01	-0.02	-0.00	CO 2
				Min V_z	1.18	0.98	▷ -7.23	-0.10	0.79	0.08	CO 16
				Max M_T	-0.00	-0.03	-0.00	▷ -0.00	0.00	-0.00	CO 1
				Min M_T	0.56	1.19	-6.74	▷ -0.11	0.72	0.10	CO 11
				Max M_y	1.59	0.90	-7.17	-0.09	▷ 0.79	0.07	CO 15
				Min M_y	-0.07	-0.01	0.21	-0.01	▷ -0.02	-0.00	CO 9
				Max M_z	0.56	1.19	-6.74	-0.11	0.72	▷ 0.10	CO 11
				Min M_z	-0.04	-0.04	0.19	-0.01	-0.02	▷ -0.00	CO 5
		14	0.150	Max N	▷ 1.60	0.90	-7.18	-0.09	-0.29	-0.06	CO 15
				Min N	▷ -0.09	-0.03	0.20	-0.01	0.01	0.00	CO 2
				Max V_y	0.56	▷ 1.19	-6.75	-0.11	-0.30	-0.07	CO 11
				Min V_y	-0.04	▷ -0.04	0.18	-0.01	0.01	0.00	CO 5
				Max V_z	-0.07	-0.01	▷ 0.20	-0.01	0.01	0.00	CO 9
				Min V_z	1.18	0.98	▷ -7.24	-0.10	-0.30	-0.07	CO 16
				Max M_T	-0.00	-0.03	-0.01	▷ -0.00	0.00	0.00	CO 1
				Min M_T	0.56	1.19	-6.75	▷ -0.11	-0.30	-0.07	CO 11
				Max M_y	-0.04	-0.04	0.18	-0.01	▷ 0.01	0.00	CO 5
				Min M_y	0.55	1.13	-6.92	-0.10	▷ -0.30	-0.07	CO 12
				Max M_z	-0.09	-0.03	0.20	-0.01	0.01	▷ 0.00	CO 2
				Min M_z	0.56	1.19	-6.75	-0.11	-0.30	▷ -0.07	CO 11
	RC2	2	0.000	Max N	▷ 1.15	0.66	-4.99	-0.06	0.55	0.05	CO 33
				Min N	▷ -0.06	-0.03	0.14	-0.01	-0.01	-0.00	CO 20
				Max V_y	0.41	▷ 0.84	-4.69	-0.07	0.50	0.07	CO 29
				Min V_y	-0.04	▷ -0.05	0.13	-0.01	-0.01	-0.01	CO 28
				Max V_z	-0.06	-0.03	▷ 0.14	-0.01	-0.01	-0.00	CO 20
				Min V_z	0.86	0.70	▷ -5.02	-0.06	0.55	0.06	CO 34
				Max M_T	0.00	-0.03	-0.04	▷ 0.00	0.01	-0.00	CO 19
				Min M_T	0.41	0.84	-4.69	▷ -0.07	0.50	0.07	CO 29
				Max M_y	1.15	0.66	-4.99	-0.06	▷ 0.55	0.05	CO 33
				Min M_y	-0.06	-0.03	0.14	-0.01	▷ -0.01	-0.00	CO 20
				Max M_z	0.41	0.84	-4.69	-0.07	0.50	▷ 0.07	CO 29
				Min M_z	-0.04	-0.05	0.13	-0.01	-0.01	▷ -0.01	CO 28
		14	0.150	Max N	▷ 1.15	0.66	-5.00	-0.06	-0.20	-0.05	CO 33
				Min N	▷ -0.06	-0.03	0.14	-0.01	0.01	0.00	CO 20
				Max V_y	0.41	▷ 0.84	-4.70	-0.07	-0.21	-0.05	CO 29
				Min V_y	-0.04	▷ -0.05	0.12	-0.01	0.01	0.00	CO 28
				Max V_z	-0.06	-0.03	▷ 0.14	-0.01	0.01	0.00	CO 20
				Min V_z	0.87	0.70	▷ -5.03	-0.06	-0.21	-0.05	CO 34
				Max M_T	0.00	-0.03	-0.05	▷ 0.00	-0.00	0.00	CO 19
				Min M_T	0.41	0.84	-4.70	▷ -0.07	-0.21	-0.05	CO 29
				Max M_y	-0.04	-0.05	0.12	-0.01	▷ 0.01	0.00	CO 28
				Min M_y	0.41	0.80	-4.81	-0.07	▷ -0.21	-0.05	CO 30
				Max M_z	0.00	-0.03	-0.05	0.00	-0.00	▷ 0.00	CO 19
				Min M_z	0.41	0.84	-4.70	-0.07	-0.21	▷ -0.05	CO 29
6	RC1	2	0.000	Max N	▷ 4.77	0.00	-9.06	0.00	1.06	0.00	CO 11
				Min N	▷ -0.29	0.02	0.03	0.00	0.01	0.00	CO 2

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
6	RC1			Max V_y	-0.29	▷ 0.02	0.03	0.00	0.01	0.00	CO 2
				Min V_y	4.62	▷ -0.35	-8.41	0.03	0.97	-0.03	CO 15
				Max V_z	-0.29	0.02	▷ 0.03	0.00	0.01	0.00	CO 2
				Min V_z	4.57	0.00	▷ -9.08	0.00	1.05	0.00	CO 12
				Max M_T	4.62	-0.35	-8.41	▷ 0.03	0.97	-0.03	CO 15
				Min M_T	-0.27	-0.02	0.01	▷ -0.00	0.01	-0.00	CO 10
				Max M_y	4.77	0.00	-9.06	0.00	▷ 1.06	0.00	CO 11
				Min M_y	-0.09	0.00	0.01	0.00	▷ -0.00	0.00	CO 1
				Max M_z	-0.29	0.02	0.03	0.00	0.01	▷ 0.00	CO 2
				Min M_z	4.62	-0.35	-8.41	0.03	0.97	▷ -0.03	CO 15
		12	0.150	Max N	▷ 4.78	0.00	-9.07	0.00	-0.30	0.00	CO 11
				Min N	▷ -0.29	0.02	0.02	0.00	0.01	0.00	CO 2
				Max V_y	-0.29	▷ 0.02	0.02	0.00	0.01	0.00	CO 2
				Min V_y	4.62	▷ -0.35	-8.42	0.03	-0.29	0.02	CO 15
				Max V_z	-0.29	0.02	▷ 0.02	0.00	0.01	0.00	CO 2
				Min V_z	4.58	0.00	▷ -9.09	0.00	-0.31	0.00	CO 12
				Max M_T	4.62	-0.35	-8.42	▷ 0.03	-0.29	0.02	CO 15
				Min M_T	-0.27	-0.02	0.00	▷ -0.00	0.01	0.00	CO 10
				Max M_y	-0.29	0.02	0.02	0.00	▷ 0.01	0.00	CO 2
				Min M_y	4.58	0.00	-9.09	0.00	▷ -0.31	0.00	CO 12
				Max M_z	4.62	-0.35	-8.42	0.03	-0.29	▷ 0.02	CO 15
				Min M_z	-0.11	0.01	-0.31	-0.00	-0.01	▷ -0.00	CO 13
	RC2	2	0.000	Max N	▷ 3.34	0.00	-6.18	0.00	0.72	0.00	CO 29
				Min N	▷ -0.22	-0.01	0.00	0.00	0.01	-0.00	CO 20
				Max V_y	-0.08	▷ 0.00	-0.25	-0.00	0.03	0.00	CO 31
				Min V_y	3.18	▷ -0.26	-5.70	0.02	0.65	-0.03	CO 33
				Max V_z	-0.17	-0.04	▷ 0.06	0.00	-0.00	-0.01	CO 28
				Min V_z	3.20	0.00	▷ -6.19	0.00	0.71	0.00	CO 30
				Max M_T	3.18	-0.26	-5.70	▷ 0.02	0.65	-0.03	CO 33
				Min M_T	-0.08	0.00	-0.25	▷ -0.00	0.03	0.00	CO 31
				Max M_y	3.34	0.00	-6.18	0.00	▷ 0.72	0.00	CO 29
				Min M_y	-0.17	-0.04	0.06	0.00	▷ -0.00	-0.01	CO 28
				Max M_z	-0.08	0.00	-0.25	-0.00	0.03	▷ 0.00	CO 31
				Min M_z	3.18	-0.26	-5.70	0.02	0.65	▷ -0.03	CO 33
		12	0.150	Max N	▷ 3.34	0.00	-6.19	0.00	-0.21	0.00	CO 29
				Min N	▷ -0.22	-0.01	-0.01	0.00	0.01	0.00	CO 20
				Max V_y	-0.08	▷ 0.00	-0.26	-0.00	-0.00	-0.00	CO 31
				Min V_y	3.18	▷ -0.26	-5.70	0.02	-0.20	0.01	CO 33
				Max V_z	-0.17	-0.04	▷ 0.05	0.00	0.01	0.00	CO 28
				Min V_z	3.20	0.00	▷ -6.20	0.00	-0.22	0.00	CO 30
				Max M_T	3.18	-0.26	-5.70	▷ 0.02	-0.20	0.01	CO 33
				Min M_T	-0.08	0.00	-0.26	▷ -0.00	-0.00	-0.00	CO 31
				Max M_y	-0.17	-0.04	0.05	0.00	▷ 0.01	0.00	CO 28
				Min M_y	3.20	0.00	-6.20	0.00	▷ -0.22	0.00	CO 30
				Max M_z	3.18	-0.26	-5.70	0.02	-0.20	▷ 0.01	CO 33
				Min M_z	-0.14	0.00	0.01	0.00	0.00	▷ -0.00	CO 23
7	RC1	2	0.000	Max N	▷ 0.56	-1.19	-6.74	0.11	0.72	-0.10	CO 11
				Min N	▷ -0.80	-1.31	-6.00	0.09	0.62	-0.12	CO 15
				Max V_y	-0.14	▷ 0.08	0.23	0.01	-0.03	0.01	CO 9
				Min V_y	-0.80	▷ -1.31	-6.00	0.09	0.62	-0.12	CO 15
				Max V_z	-0.14	0.08	▷ 0.23	0.01	-0.03	0.01	CO 9
				Min V_z	0.56	-1.12	▷ -6.91	0.10	0.73	-0.10	CO 12
				Max M_T	0.56	-1.19	-6.74	▷ 0.11	0.72	-0.10	CO 11
				Min M_T	-0.00	0.03	-0.00	▷ 0.00	0.00	0.00	CO 1
				Max M_y	0.56	-1.12	-6.91	0.10	▷ 0.73	-0.10	CO 12
				Min M_y	-0.14	0.08	0.23	0.01	▷ -0.03	0.01	CO 9
				Max M_z	-0.08	0.07	0.23	0.01	-0.02	▷ 0.01	CO 2
				Min M_z	-0.80	-1.31	-6.00	0.09	0.62	▷ -0.12	CO 15
		33	0.150	Max N	▷ 0.56	-1.19	-6.75	0.11	-0.30	0.07	CO 11
				Min N	▷ -0.79	-1.31	-6.01	0.09	-0.28	0.07	CO 15
				Max V_y	-0.14	▷ 0.08	0.22	0.01	0.01	-0.00	CO 9
				Min V_y	-0.79	▷ -1.31	-6.01	0.09	-0.28	0.07	CO 15
				Max V_z	-0.14	0.08	▷ 0.22	0.01	0.01	-0.00	CO 9
				Min V_z	0.56	-1.13	▷ -6.92	0.10	-0.30	0.07	CO 12
				Max M_T	0.56	-1.19	-6.75	▷ 0.11	-0.30	0.07	CO 11
				Min M_T	-0.00	0.03	-0.01	▷ 0.00	0.00	-0.00	CO 1
				Max M_y	-0.04	0.03	0.19	0.01	▷ 0.01	-0.00	CO 5
				Min M_y	0.56	-1.13	-6.92	0.10	▷ -0.30	0.07	CO 12
				Max M_z	0.56	-1.19	-6.75	0.11	-0.30	▷ 0.07	CO 11
				Min M_z	-0.14	0.08	0.22	0.01	0.01	▷ -0.00	CO 9
	RC2	2	0.000	Max N	▷ 0.41	-0.84	-4.69	0.07	0.50	-0.07	CO 29
				Min N	▷ -0.52	-0.89	-4.22	0.06	0.44	-0.08	CO 33
				Max V_y	-0.09	▷ 0.05	0.18	0.01	-0.02	0.00	CO 27
				Min V_y	-0.52	▷ -0.89	-4.22	0.06	0.44	-0.08	CO 33
				Max V_z	-0.07	0.02	▷ 0.19	0.00	-0.02	0.00	CO 28
				Min V_z	0.41	-0.79	▷ -4.81	0.07	0.51	-0.07	CO 30
				Max M_T	0.41	-0.84	-4.69	▷ 0.07	0.50	-0.07	CO 29
				Min M_T	0.00	0.03	-0.04	▷ -0.00	0.01	0.00	CO 19
				Max M_y	0.41	-0.79	-4.81	0.07	▷ 0.51	-0.07	CO 30
				Min M_y	-0.07	0.02	0.19	0.00	▷ -0.02	0.00	CO 28
				Max M_z	-0.09	0.05	0.18	0.01	-0.02	▷ 0.00	CO 27
				Min M_z	-0.52	-0.89	-4.22	0.06	0.44	▷ -0.08	CO 33
		33	0.150	Max N	▷ 0.41	-0.84	-4.70	0.07	-0.21	0.05	CO 29
				Min N	▷ -0.52	-0.89	-4.23	0.06	-0.19	0.05	CO 33
				Max V_y	-0.09	▷ 0.05	0.18	0.01	0.01	-0.00	CO 27
				Min V_y	-0.52	▷ -0.89	-4.23	0.06	-0.19	0.05	CO 33
				Max V_z	-0.07	0.02	▷ 0.18	0.00	0.01	-0.00	CO 28

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
7	RC2			Min V_z	0.41	-0.80	-4.81	0.07	-0.21	0.05	CO 30
				Max M_T	0.41	-0.84	-4.70	0.07	-0.21	0.05	CO 29
				Min M_T	0.00	0.03	-0.05	-0.00	-0.00	-0.00	CO 19
				Max M_y	-0.07	0.02	0.18	0.00	0.01	-0.00	CO 28
				Min M_y	0.41	-0.80	-4.81	0.07	-0.21	0.05	CO 30
				Max M_z	0.41	-0.84	-4.70	0.07	-0.21	0.05	CO 29
				Min M_z	-0.07	0.02	0.18	0.00	0.01	-0.00	CO 28
8	RC1	2	0.000	Max N	0.07	0.00	0.02	-0.00	-0.00	0.00	CO 1
				Min N	-3.69	-0.00	-4.62	0.00	0.41	0.00	CO 11
				Max V_y	-3.27	0.34	-4.62	-0.03	0.42	0.03	CO 15
				Min V_y	0.05	-0.04	0.37	-0.00	-0.04	-0.00	CO 9
				Max V_z	-0.03	-0.00	0.44	-0.00	-0.06	-0.00	CO 5
				Min V_z	-3.45	-0.00	-4.89	0.00	0.44	0.00	CO 12
				Max M_T	0.00	-0.00	-0.05	0.00	0.00	-0.00	CO 13
				Min M_T	-3.27	0.34	-4.62	-0.03	0.42	0.03	CO 15
				Max M_y	-3.30	0.21	-4.88	-0.02	0.44	0.02	CO 16
				Min M_y	-0.03	-0.00	0.44	-0.00	-0.06	-0.00	CO 5
				Max M_z	-3.27	0.34	-4.62	-0.03	0.42	0.03	CO 15
				Min M_z	0.05	-0.04	0.37	-0.00	-0.04	-0.00	CO 9
		13	0.150	Max N	0.07	0.00	0.01	-0.00	-0.00	0.00	CO 1
				Min N	-3.69	-0.00	-4.64	0.00	-0.28	0.00	CO 11
				Max V_y	-3.27	0.34	-4.63	-0.03	-0.28	-0.02	CO 15
				Min V_y	0.05	-0.04	0.36	-0.00	0.01	0.00	CO 9
				Max V_z	-0.03	-0.00	0.43	-0.00	0.01	0.00	CO 5
				Min V_z	-3.45	-0.00	-4.90	0.00	-0.29	0.00	CO 12
				Max M_T	0.00	-0.00	-0.06	0.00	-0.00	0.00	CO 13
				Min M_T	-3.27	0.34	-4.63	-0.03	-0.28	-0.02	CO 15
				Max M_y	0.05	0.03	0.38	-0.00	0.01	-0.00	CO 2
				Min M_y	-3.45	-0.00	-4.90	0.00	-0.29	0.00	CO 12
				Max M_z	0.05	-0.04	0.36	-0.00	0.01	0.00	CO 9
				Min M_z	-3.27	0.34	-4.63	-0.03	-0.28	-0.02	CO 15
	RC2	2	0.000	Max N	0.12	-0.00	-0.05	0.00	0.01	-0.00	CO 19
				Min N	-2.57	0.00	-3.30	0.00	0.30	0.00	CO 29
				Max V_y	-2.27	0.23	-3.27	-0.02	0.30	0.02	CO 33
				Min V_y	0.04	-0.04	0.25	-0.00	-0.03	-0.01	CO 28
				Max V_z	-0.02	-0.00	0.30	-0.00	-0.04	-0.00	CO 23
				Min V_z	-2.40	0.00	-3.48	0.00	0.32	0.00	CO 30
				Max M_T	0.00	-0.02	0.25	0.00	-0.03	-0.00	CO 24
				Min M_T	-2.27	0.23	-3.27	-0.02	0.30	0.02	CO 33
				Max M_y	-2.40	0.00	-3.48	0.00	0.32	0.00	CO 30
				Min M_y	-0.02	-0.00	0.30	-0.00	-0.04	-0.00	CO 23
				Max M_z	-2.27	0.23	-3.27	-0.02	0.30	0.02	CO 33
				Min M_z	0.04	-0.04	0.25	-0.00	-0.03	-0.01	CO 28
		13	0.150	Max N	0.12	-0.00	-0.06	0.00	-0.00	-0.00	CO 19
				Min N	-2.57	0.00	-3.30	0.00	-0.20	0.00	CO 29
				Max V_y	-2.27	0.23	-3.28	-0.02	-0.19	-0.02	CO 33
				Min V_y	0.04	-0.04	0.24	-0.00	0.01	0.00	CO 28
				Max V_z	-0.02	-0.00	0.29	-0.00	0.01	0.00	CO 23
				Min V_z	-2.40	0.00	-3.49	0.00	-0.20	0.00	CO 30
				Max M_T	0.00	-0.02	0.24	0.00	0.01	0.00	CO 24
				Min M_T	-2.27	0.23	-3.28	-0.02	-0.19	-0.02	CO 33
				Max M_y	0.04	-0.01	0.29	-0.00	0.01	0.00	CO 20
				Min M_y	-2.40	0.00	-3.49	0.00	-0.20	0.00	CO 30
				Max M_z	0.04	-0.02	0.26	-0.00	0.01	0.00	CO 27
				Min M_z	-2.27	0.23	-3.28	-0.02	-0.19	-0.02	CO 33
9	RC1	9	0.000	Max N	-0.52	0.05	0.09	-0.14	-0.27	0.01	CO 1
				Min N	-12.47	3.65	0.75	-0.03	-0.23	0.98	CO 12
				Max V_y	-12.37	4.15	0.72	-0.03	-0.24	1.04	CO 11
				Min V_y	-1.47	-1.31	0.54	-0.35	-1.27	-0.34	CO 17
				Max V_z	-10.75	1.56	0.83	-0.12	-0.72	0.41	CO 16
				Min V_z	-0.52	0.05	0.09	-0.14	-0.27	0.01	CO 1
				Max M_T	-12.37	4.15	0.72	-0.03	-0.24	1.04	CO 11
				Min M_T	-11.03	2.74	0.45	-0.77	-1.74	0.50	CO 2
				Max M_y	-12.47	3.65	0.75	-0.03	-0.23	0.98	CO 12
				Min M_y	-9.19	1.00	0.72	-0.76	-2.14	0.08	CO 9
				Max M_z	-12.37	4.15	0.72	-0.03	-0.24	1.04	CO 11
				Min M_z	-1.47	-1.31	0.54	-0.35	-1.27	-0.34	CO 17
		40	0.717	Max N	-0.50	-0.01	-0.02	-0.03	-0.28	-0.01	CO 1
				Min N	-13.08	0.20	0.41	-0.03	0.17	-0.45	CO 12
				Max V_y	-4.37	0.31	-0.11	-0.08	-0.40	-0.21	CO 14
				Min V_y	-10.21	-0.64	-0.23	0.05	-2.08	-0.04	CO 9
				Max V_z	-9.75	-0.52	0.54	0.09	-0.35	0.02	CO 15
				Min V_z	-10.21	-0.64	-0.23	0.05	-2.08	-0.04	CO 9
				Max M_T	-2.30	-0.39	-0.11	0.12	-1.16	0.19	CO 17
				Min M_T	-11.08	-0.11	-0.19	-0.12	-1.49	-0.34	CO 5
				Max M_y	-13.03	0.15	0.44	-0.02	0.18	-0.45	CO 11
				Min M_y	-10.21	-0.64	-0.23	0.05	-2.08	-0.04	CO 9
				Max M_z	-2.30	-0.39	-0.11	0.12	-1.16	0.19	CO 17
				Min M_z	-13.08	0.20	0.41	-0.03	0.17	-0.45	CO 12
			0.717	Max N	-0.50	-0.01	-0.02	-0.03	-0.28	-0.01	CO 1
				Min N	-13.08	0.21	0.41	-0.03	0.17	-0.45	CO 12
				Max V_y	-4.37	0.31	-0.11	-0.08	-0.40	-0.21	CO 14
				Min V_y	-10.21	-0.64	-0.26	0.05	-2.08	-0.04	CO 9
				Max V_z	-9.75	-0.52	0.54	0.09	-0.35	0.02	CO 15
				Min V_z	-10.21	-0.64	-0.26	0.05	-2.08	-0.04	CO 9
				Max M_T	-2.30	-0.39	-0.11	0.12	-1.16	0.19	CO 17
				Min M_T	-11.08	-0.11	-0.20	-0.12	-1.49	-0.34	CO 5

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member		Node	Location		Forces [kN]			Moments [kNm]			Corresponding
No.	RC	No.	x [m]		N	V_y	V_z	M_T	M_y	M_z	Load Cases
9	RC1			Max M_y	-13.03	0.16	0.44	-0.02	0.18	-0.45	CO 11
				Min M_y	-10.21	-0.64	-0.26	0.05	-2.08	-0.04	CO 9
				Max M_z	-2.30	-0.39	-0.11	0.12	-1.16	0.19	CO 17
				Min M_z	-13.08	0.21	0.41	-0.03	0.17	-0.45	CO 12
		21	1.433	Max N	-0.46	-0.09	-0.11	0.08	-0.31	0.03	CO 1
				Min N	-12.19	-3.27	0.16	-0.14	0.34	0.71	CO 12
				Max V_y	-0.46	-0.09	-0.11	0.08	-0.31	0.03	CO 1
				Min V_y	-11.41	-3.39	-0.82	0.65	-2.05	1.10	CO 2
				Max V_z	-10.21	-2.77	0.30	0.09	0.08	0.94	CO 16
				Min V_z	-10.95	-2.78	-1.21	0.93	-2.44	1.15	CO 9
				Max M_T	-10.95	-2.78	-1.21	0.93	-2.44	1.15	CO 9
				Min M_T	-12.19	-3.27	0.16	-0.14	0.34	0.71	CO 12
				Max M_y	-12.11	-3.23	0.16	-0.14	0.36	0.71	CO 11
				Min M_y	-10.95	-2.78	-1.21	0.93	-2.44	1.15	CO 9
				Max M_z	-10.95	-2.78	-1.21	0.93	-2.44	1.15	CO 9
				Min M_z	-0.46	-0.09	-0.11	0.08	-0.31	0.03	CO 1
	RC2	9	0.000	Max N	-0.50	-0.03	0.11	-0.11	-0.21	-0.01	CO 19
				Min N	-8.64	2.37	0.59	-0.07	-0.27	0.65	CO 30
				Max V_y	-8.59	2.75	0.56	-0.07	-0.28	0.69	CO 29
				Min V_y	-0.83	-1.10	0.39	-0.25	-0.86	-0.28	CO 35
				Max V_z	-6.69	0.30	0.66	-0.14	-0.65	0.08	CO 33
				Min V_z	-0.50	-0.03	0.11	-0.11	-0.21	-0.01	CO 19
				Max M_T	-8.59	2.75	0.56	-0.07	-0.28	0.69	CO 29
				Min M_T	-6.31	1.50	0.34	-0.54	-1.21	0.28	CO 20
				Max M_y	-0.50	-0.03	0.11	-0.11	-0.21	-0.01	CO 19
				Min M_y	-5.20	0.27	0.53	-0.54	-1.49	-0.02	CO 27
				Max M_z	-8.59	2.75	0.56	-0.07	-0.28	0.69	CO 29
				Min M_z	-0.83	-1.10	0.39	-0.25	-0.86	-0.28	CO 35
		40	0.717	Max N	-0.47	-0.01	-0.01	-0.03	-0.20	0.00	CO 19
				Min N	-9.05	0.16	0.27	-0.03	0.02	-0.30	CO 30
				Max V_y	-3.21	0.25	-0.08	-0.05	-0.29	-0.16	CO 32
				Min V_y	-6.56	-0.37	0.36	0.04	-0.31	0.04	CO 33
				Max V_z	-6.56	-0.37	0.36	0.04	-0.31	0.04	CO 33
				Min V_z	-5.88	-0.37	-0.15	0.03	-1.44	0.02	CO 27
				Max M_T	-1.36	-0.29	-0.07	0.07	-0.78	0.16	CO 35
				Min M_T	-7.00	0.01	-0.11	-0.08	-1.06	-0.22	CO 23
				Max M_y	-9.02	0.12	0.29	-0.02	0.02	-0.30	CO 29
				Min M_y	-5.88	-0.37	-0.15	0.03	-1.44	0.02	CO 27
				Max M_z	-1.36	-0.29	-0.07	0.07	-0.78	0.16	CO 35
				Min M_z	-9.05	0.16	0.27	-0.03	0.02	-0.30	CO 30
			0.717	Max N	-0.47	-0.01	-0.01	-0.03	-0.20	0.00	CO 19
				Min N	-9.05	0.16	0.27	-0.03	0.02	-0.30	CO 30
				Max V_y	-3.21	0.25	-0.08	-0.05	-0.29	-0.16	CO 32
				Min V_y	-6.56	-0.37	0.35	0.04	-0.31	0.04	CO 33
				Max V_z	-6.56	-0.37	0.35	0.04	-0.31	0.04	CO 33
				Min V_z	-5.88	-0.37	-0.16	0.03	-1.44	0.02	CO 27
				Max M_T	-1.36	-0.29	-0.07	0.07	-0.78	0.16	CO 35
				Min M_T	-7.00	0.02	-0.12	-0.08	-1.06	-0.22	CO 23
				Max M_y	-9.02	0.12	0.30	-0.02	0.02	-0.30	CO 29
				Min M_y	-5.88	-0.37	-0.16	0.03	-1.44	0.02	CO 27
				Max M_z	-1.36	-0.29	-0.07	0.07	-0.78	0.16	CO 35
				Min M_z	-9.05	0.16	0.27	-0.03	0.02	-0.30	CO 30
		21	1.433	Max N	-0.42	-0.02	-0.10	0.06	-0.24	0.01	CO 19
				Min N	-8.48	-2.10	0.04	-0.06	0.11	0.44	CO 30
				Max V_y	-2.39	-0.00	-0.56	0.39	-0.92	0.24	CO 35
				Min V_y	-8.48	-2.10	0.04	-0.06	0.11	0.44	CO 30
				Max V_z	-6.98	-1.69	0.11	0.08	-0.06	0.59	CO 34
				Min V_z	-6.60	-1.27	-0.88	0.63	-1.69	0.59	CO 27
				Max M_T	-6.60	-1.27	-0.88	0.63	-1.69	0.59	CO 27
				Min M_T	-8.48	-2.10	0.04	-0.06	0.11	0.44	CO 30
				Max M_y	-8.43	-2.06	0.05	-0.06	0.12	0.43	CO 29
				Min M_y	-6.60	-1.27	-0.88	0.63	-1.69	0.59	CO 27
				Max M_z	-6.34	-1.35	0.06	0.12	-0.12	0.70	CO 33
				Min M_z	-0.42	-0.02	-0.10	0.06	-0.24	0.01	CO 19
10	RC1	11	0.000	Max N	-0.38	0.00	0.05	-0.02	-0.24	-0.02	CO 1
				Min N	-10.84	-0.03	0.20	-0.11	-0.98	-0.80	CO 9
				Max V_y	-3.90	0.30	0.18	-0.09	0.30	-0.32	CO 8
				Min V_y	-7.55	-0.17	0.16	-0.14	1.07	-0.66	CO 15
				Max V_z	-9.72	-0.01	0.25	-0.07	-0.98	-0.64	CO 10
				Min V_z	-9.38	-0.02	0.03	-0.15	0.60	-0.09	CO 11
				Max M_T	-0.38	0.00	0.05	-0.02	-0.24	-0.02	CO 1
				Min M_T	-9.41	-0.03	0.04	-0.15	0.59	-0.09	CO 12
				Max M_y	-7.55	-0.17	0.16	-0.14	1.07	-0.66	CO 15
				Min M_y	-10.70	-0.04	0.13	-0.07	-1.29	-0.65	CO 2
				Max M_z	-2.80	0.17	0.09	-0.06	-0.43	0.15	CO 13
				Min M_z	-10.84	-0.03	0.20	-0.11	-0.98	-0.80	CO 9
		46	0.717	Max N	-0.39	-0.03	-0.03	0.07	-0.22	-0.01	CO 1
				Min N	-11.02	-1.29	-0.79	0.46	-1.46	-0.23	CO 2
				Max V_y	-4.69	0.20	0.21	-0.11	0.06	-0.10	CO 3
				Min V_y	-10.66	-1.37	-0.95	0.31	-1.24	-0.33	CO 9
				Max V_z	-8.64	0.16	0.36	-0.39	0.63	-0.13	CO 12
				Min V_z	-10.66	-1.37	-0.95	0.31	-1.24	-0.33	CO 9
				Max M_T	-11.02	-1.29	-0.79	0.46	-1.46	-0.23	CO 2
				Min M_T	-6.98	-0.20	0.06	-0.55	0.99	-0.41	CO 15
				Max M_y	-7.53	-0.05	0.14	-0.54	1.00	-0.45	CO 16
				Min M_y	-11.02	-1.29	-0.79	0.46	-1.46	-0.23	CO 2
				Max M_z	-3.03	-0.04	-0.03	0.10	-0.40	0.01	CO 13

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
10	RC1			Min M_z	-7.53	-0.05	0.14	-0.54	1.00	-0.45	CO 16
			0.717	Max N	-0.39	-0.03	-0.03	0.07	-0.22	-0.01	CO 1
				Min N	-11.02	-1.29	-0.80	0.46	-1.46	-0.23	CO 2
				Max V_y	-4.69	0.20	0.21	-0.11	0.06	-0.10	CO 3
				Min V_y	-10.66	-1.36	-0.97	0.31	-1.24	-0.33	CO 9
				Max V_z	-8.64	0.16	0.36	-0.39	0.63	-0.13	CO 12
				Min V_z	-10.66	-1.36	-0.97	0.31	-1.24	-0.33	CO 9
				Max M_T	-11.02	-1.29	-0.80	0.46	-1.46	-0.23	CO 2
				Min M_T	-6.98	-0.20	0.07	-0.55	0.99	-0.41	CO 15
				Max M_y	-7.53	-0.05	0.15	-0.54	1.00	-0.45	CO 16
				Min M_y	-11.02	-1.29	-0.80	0.46	-1.46	-0.23	CO 2
				Max M_z	-3.03	-0.04	-0.03	0.10	-0.40	0.01	CO 13
				Min M_z	-7.53	-0.05	0.15	-0.54	1.00	-0.45	CO 16
		18	1.433	Max N	-0.39	-0.07	-0.10	0.16	-0.22	0.02	CO 1
				Min N	-10.72	-3.43	-1.40	1.13	-1.97	1.38	CO 2
				Max V_y	-8.39	0.80	0.76	-0.66	0.82	-0.44	CO 12
				Min V_y	-10.72	-3.43	-1.40	1.13	-1.97	1.38	CO 2
				Max V_z	-8.39	0.80	0.76	-0.66	0.82	-0.44	CO 12
				Min V_z	-9.76	-3.04	-1.75	0.93	-2.01	1.21	CO 9
				Max M_T	-10.72	-3.43	-1.40	1.13	-1.97	1.38	CO 2
				Min M_T	-7.59	0.58	0.30	-0.91	0.86	-0.60	CO 16
				Max M_y	-7.59	0.58	0.30	-0.91	0.86	-0.60	CO 16
				Min M_y	-9.76	-3.04	-1.75	0.93	-2.01	1.21	CO 9
				Max M_z	-10.72	-3.43	-1.40	1.13	-1.97	1.38	CO 2
				Min M_z	-7.59	0.58	0.30	-0.91	0.86	-0.60	CO 16
	RC2	11	0.000	Max N	-0.33	0.00	0.04	-0.02	-0.17	-0.01	CO 19
				Min N	-6.98	0.00	0.15	-0.08	-0.75	-0.44	CO 27
				Max V_y	-2.83	0.25	0.12	-0.07	0.11	-0.24	CO 26
				Min V_y	-5.26	-0.08	0.11	-0.11	0.61	-0.45	CO 33
				Max V_z	-6.21	0.01	0.18	-0.05	-0.73	-0.34	CO 28
				Min V_z	-6.57	0.01	0.02	-0.11	0.33	-0.02	CO 29
				Max M_T	-0.33	0.00	0.04	-0.02	-0.17	-0.01	CO 19
				Min M_T	-6.59	0.01	0.03	-0.11	0.33	-0.02	CO 30
				Max M_y	-5.26	-0.08	0.11	-0.11	0.61	-0.45	CO 33
				Min M_y	-6.62	-0.02	0.09	-0.04	-0.93	-0.30	CO 20
				Max M_z	-1.97	0.09	0.06	-0.04	-0.28	0.13	CO 31
				Min M_z	-5.26	-0.08	0.11	-0.11	0.61	-0.45	CO 33
		46	0.717	Max N	-0.32	-0.01	-0.02	0.04	-0.16	-0.01	CO 19
				Min N	-6.92	-0.59	-0.50	0.33	-1.02	-0.10	CO 20
				Max V_y	-6.02	0.18	0.20	-0.24	0.34	-0.09	CO 29
				Min V_y	-6.91	-0.70	-0.60	0.24	-0.90	-0.21	CO 27
				Max V_z	-6.03	0.18	0.20	-0.24	0.34	-0.09	CO 30
				Min V_z	-6.91	-0.70	-0.60	0.24	-0.90	-0.21	CO 27
				Max M_T	-6.92	-0.59	-0.50	0.33	-1.02	-0.10	CO 20
				Min M_T	-4.81	-0.07	0.03	-0.34	0.56	-0.31	CO 33
				Max M_y	-5.20	0.05	0.08	-0.33	0.57	-0.34	CO 34
				Min M_y	-6.92	-0.59	-0.50	0.33	-1.02	-0.10	CO 20
				Max M_z	-2.17	0.01	-0.04	0.07	-0.27	0.02	CO 31
				Min M_z	-5.20	0.05	0.08	-0.33	0.57	-0.34	CO 34
			0.717	Max N	-0.32	-0.01	-0.02	0.04	-0.16	-0.01	CO 19
				Min N	-6.92	-0.59	-0.50	0.33	-1.02	-0.10	CO 20
				Max V_y	-6.02	0.18	0.20	-0.24	0.34	-0.09	CO 29
				Min V_y	-6.91	-0.69	-0.61	0.24	-0.90	-0.21	CO 27
				Max V_z	-6.03	0.18	0.20	-0.24	0.34	-0.09	CO 30
				Min V_z	-6.91	-0.69	-0.61	0.24	-0.90	-0.21	CO 27
				Max M_T	-6.92	-0.59	-0.50	0.33	-1.02	-0.10	CO 20
				Min M_T	-4.81	-0.07	0.04	-0.34	0.56	-0.31	CO 33
				Max M_y	-5.20	0.05	0.08	-0.33	0.57	-0.34	CO 34
				Min M_y	-6.92	-0.59	-0.50	0.33	-1.02	-0.10	CO 20
				Max M_z	-2.17	0.01	-0.04	0.07	-0.27	0.02	CO 31
				Min M_z	-5.20	0.05	0.08	-0.33	0.57	-0.34	CO 34
		18	1.433	Max N	-0.31	-0.03	-0.07	0.11	-0.16	0.01	CO 19
				Min N	-6.87	-1.59	-0.95	0.78	-1.34	0.65	CO 20
				Max V_y	-5.86	0.66	0.43	-0.39	0.44	-0.36	CO 30
				Min V_y	-6.87	-1.59	-0.95	0.78	-1.34	0.65	CO 20
				Max V_z	-5.86	0.66	0.43	-0.39	0.44	-0.36	CO 30
				Min V_z	-6.38	-1.50	-1.18	0.67	-1.38	0.57	CO 27
				Max M_T	-6.87	-1.59	-0.95	0.78	-1.34	0.65	CO 20
				Min M_T	-5.23	0.48	0.16	-0.54	0.48	-0.49	CO 34
				Max M_y	-5.23	0.48	0.16	-0.54	0.48	-0.49	CO 34
				Min M_y	-6.38	-1.50	-1.18	0.67	-1.38	0.57	CO 27
				Max M_z	-6.87	-1.59	-0.95	0.78	-1.34	0.65	CO 20
				Min M_z	-5.23	0.48	0.16	-0.54	0.48	-0.49	CO 34
11	RC1	6	0.000	Max N	-0.36	0.00	-0.00	0.00	-0.17	-0.00	CO 1
				Min N	-10.38	0.00	-0.01	0.00	-1.14	-0.46	CO 2
				Max V_y	-3.65	0.10	-0.02	-0.06	-0.33	0.95	CO 7
				Min V_y	-2.11	-0.22	-0.01	-0.10	-0.54	0.58	CO 18
				Max V_z	-8.43	-0.02	0.06	-0.09	-1.32	-0.06	CO 9
				Min V_z	-8.05	0.05	-0.04	-0.07	-0.16	1.04	CO 16
				Max M_T	-9.28	0.00	-0.01	0.00	-0.90	-0.51	CO 5
				Min M_T	-2.37	-0.20	0.02	-0.14	-0.67	0.63	CO 17
				Max M_y	-8.36	0.00	0.00	0.00	0.22	0.47	CO 12
				Min M_y	-8.43	-0.02	0.06	-0.09	-1.32	-0.06	CO 9
				Max M_z	-7.54	0.09	-0.03	-0.09	-0.20	1.12	CO 15
				Min M_z	-9.28	0.00	-0.01	0.00	-0.90	-0.51	CO 5
		49	0.716	Max N	-0.36	-0.02	-0.07	0.07	-0.19	0.00	CO 1
				Min N	-10.29	-1.11	-0.85	0.48	-1.36	-0.09	CO 2

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
11	RC1			Max V_y	-7.61	▷ 1.85	0.79	-0.04	0.05	0.46	CO 15
				Min V_y	-10.29	▷ -1.11	-0.85	0.48	-1.36	-0.09	CO 2
				Max V_z	-7.61	1.85	▷ 0.79	-0.04	0.05	0.46	CO 15
				Min V_z	-10.29	-1.11	▷ -0.85	0.48	-1.36	-0.09	CO 2
				Max M_T	-10.29	-1.11	-0.85	▷ 0.48	-1.36	-0.09	CO 2
				Min M_T	-8.47	0.75	0.53	▷ -0.11	0.40	0.21	CO 12
				Max M_y	-8.47	0.75	0.53	-0.11	▷ 0.40	0.21	CO 12
				Min M_y	-8.17	-0.32	-0.49	0.44	▷ -1.41	0.06	CO 9
				Max M_z	-7.61	1.85	0.79	-0.04	0.05	▷ 0.46	CO 15
				Min M_z	-2.97	-0.52	-0.19	0.09	-0.26	▷ -0.15	CO 13
			0.716	Max N	▷ -0.36	-0.02	-0.07	0.07	-0.19	0.00	CO 1
				Min N	▷ -10.29	-1.10	-0.86	0.48	-1.36	-0.09	CO 2
				Max V_y	-7.61	▷ 1.84	0.79	-0.04	0.05	0.46	CO 15
				Min V_y	-10.29	▷ -1.10	-0.86	0.48	-1.36	-0.09	CO 2
				Max V_z	-7.61	1.84	▷ 0.79	-0.04	0.05	0.46	CO 15
				Min V_z	-10.29	-1.10	▷ -0.86	0.48	-1.36	-0.09	CO 2
				Max M_T	-10.29	-1.10	-0.86	▷ 0.48	-1.36	-0.09	CO 2
				Min M_T	-8.47	0.76	0.54	▷ -0.11	0.40	0.21	CO 12
				Max M_y	-8.47	0.76	0.54	-0.11	▷ 0.40	0.21	CO 12
				Min M_y	-8.17	-0.32	-0.50	0.44	▷ -1.41	0.06	CO 9
				Max M_z	-7.61	1.84	0.79	-0.04	0.05	▷ 0.46	CO 15
				Min M_z	-2.97	-0.52	-0.19	0.09	-0.26	▷ -0.15	CO 13
		19	1.433	Max N	▷ -0.34	-0.05	-0.14	0.15	-0.22	0.03	CO 1
				Min N	▷ -9.54	-2.95	-1.44	1.12	-1.91	1.32	CO 2
				Max V_y	-8.38	▷ 4.19	1.59	-0.21	0.89	-1.68	CO 15
				Min V_y	-9.54	▷ -2.95	-1.44	1.12	-1.91	1.32	CO 2
				Max V_z	-8.38	4.19	▷ 1.59	-0.21	0.89	-1.68	CO 15
				Min V_z	-9.54	-2.95	▷ -1.44	1.12	-1.91	1.32	CO 2
				Max M_T	-9.54	-2.95	-1.44	▷ 1.12	-1.91	1.32	CO 2
				Min M_T	-8.96	1.64	1.02	▷ -0.35	0.88	-0.63	CO 12
				Max M_y	-8.83	3.73	1.57	-0.22	▷ 0.91	-1.45	CO 16
				Min M_y	-9.54	-2.95	-1.44	1.12	▷ -1.91	1.32	CO 2
				Max M_z	-9.54	-2.95	-1.44	1.12	-1.91	▷ 1.32	CO 2
				Min M_z	-8.38	4.19	1.59	-0.21	0.89	▷ -1.68	CO 15
	RC2	6	0.000	Max N	▷ -0.28	0.00	-0.00	0.00	-0.12	0.01	CO 19
				Min N	▷ -6.76	0.00	-0.00	0.00	-0.79	-0.22	CO 20
				Max V_y	-2.55	▷ 0.08	-0.01	-0.04	-0.26	0.72	CO 25
				Min V_y	-1.48	▷ -0.15	-0.01	-0.06	-0.36	0.48	CO 36
				Max V_z	-5.46	-0.02	▷ 0.04	-0.06	-0.91	0.07	CO 27
				Min V_z	-5.53	0.04	▷ -0.03	-0.04	-0.14	0.79	CO 34
				Max M_T	-6.32	0.00	-0.00	▷ 0.00	-0.65	-0.30	CO 23
				Min M_T	-1.61	-0.13	0.01	▷ -0.09	-0.45	0.53	CO 35
				Max M_y	-5.82	-0.00	0.00	0.00	▷ 0.09	0.36	CO 30
				Min M_y	-5.46	-0.02	0.04	-0.06	▷ -0.91	0.07	CO 27
				Max M_z	-5.17	0.07	-0.02	-0.05	-0.16	▷ 0.85	CO 33
				Min M_z	-6.32	0.00	-0.00	0.00	-0.65	▷ -0.30	CO 23
		49	0.716	Max N	▷ -0.28	0.00	-0.05	0.05	-0.13	0.00	CO 19
				Min N	▷ -6.70	-0.53	-0.56	0.33	-0.93	-0.05	CO 20
				Max V_y	-5.24	▷ 1.41	0.48	-0.01	-0.01	0.34	CO 33
				Min V_y	-6.25	▷ -0.61	-0.51	0.28	-0.79	-0.10	CO 23
				Max V_z	-5.24	1.41	▷ 0.48	-0.01	-0.01	0.34	CO 33
				Min V_z	-6.70	-0.53	▷ -0.56	0.33	-0.93	-0.05	CO 20
				Max M_T	-6.70	-0.53	-0.56	▷ 0.33	-0.93	-0.05	CO 20
				Min M_T	-5.91	0.58	0.32	▷ -0.05	0.20	0.15	CO 30
				Max M_y	-5.91	0.58	0.32	-0.05	▷ 0.20	0.15	CO 30
				Min M_y	-5.29	-0.00	-0.34	0.30	▷ -0.97	0.08	CO 27
				Max M_z	-5.24	1.41	0.48	-0.01	-0.01	▷ 0.34	CO 33
				Min M_z	-2.18	-0.38	-0.13	0.07	-0.19	▷ -0.12	CO 31
			0.716	Max N	▷ -0.28	0.00	-0.05	0.05	-0.13	0.00	CO 19
				Min N	▷ -6.70	-0.53	-0.56	0.33	-0.93	-0.05	CO 20
				Max V_y	-5.24	▷ 1.41	0.48	-0.01	-0.01	0.34	CO 33
				Min V_y	-6.25	▷ -0.60	-0.51	0.28	-0.79	-0.10	CO 23
				Max V_z	-5.24	1.41	▷ 0.48	-0.01	-0.01	0.34	CO 33
				Min V_z	-6.70	-0.53	▷ -0.56	0.33	-0.93	-0.05	CO 20
				Max M_T	-6.70	-0.53	-0.56	▷ 0.33	-0.93	-0.05	CO 20
				Min M_T	-5.91	0.58	0.32	▷ -0.05	0.20	0.15	CO 30
				Max M_y	-5.91	0.58	0.32	-0.05	▷ 0.20	0.15	CO 30
				Min M_y	-5.29	-0.00	-0.35	0.30	▷ -0.97	0.08	CO 27
				Max M_z	-5.24	1.41	0.48	-0.01	-0.01	▷ 0.34	CO 33
				Min M_z	-2.18	-0.38	-0.13	0.07	-0.19	▷ -0.12	CO 31
		19	1.433	Max N	▷ -0.29	-0.01	-0.10	0.10	-0.15	0.01	CO 19
				Min N	▷ -6.30	-1.42	-1.00	0.77	-1.30	0.63	CO 20
				Max V_y	-5.85	▷ 3.12	0.95	-0.09	0.50	-1.28	CO 33
				Min V_y	-5.78	▷ -1.60	-0.89	0.65	-1.12	0.66	CO 23
				Max V_z	-5.85	3.12	▷ 0.95	-0.09	0.50	-1.28	CO 33
				Min V_z	-6.30	-1.42	▷ -1.00	0.77	-1.30	0.63	CO 20
				Max M_T	-6.30	-1.42	-1.00	▷ 0.77	-1.30	0.63	CO 20
				Min M_T	-6.29	1.24	0.61	▷ -0.18	0.49	-0.50	CO 30
				Max M_y	-6.16	2.79	0.94	-0.10	▷ 0.52	-1.12	CO 34
				Min M_y	-6.30	-1.42	-1.00	0.77	▷ -1.30	0.63	CO 20
				Max M_z	-5.78	-1.60	-0.89	0.65	-1.12	▷ 0.66	CO 23
				Min M_z	-5.85	3.12	0.95	-0.09	0.50	▷ -1.28	CO 33
12	RC1	17	0.000	Max N	▷ -0.38	-0.00	-0.05	0.02	-0.24	-0.02	CO 1
				Min N	▷ -10.70	0.05	-0.15	0.07	-1.29	-0.65	CO 2
				Max V_y	-8.19	▷ 0.05	-0.14	0.08	-1.01	-0.52	CO 10
				Min V_y	-2.66	▷ -0.22	-0.08	0.04	-0.41	0.13	CO 14
				Max V_z	-7.33	0.02	▷ 0.04	0.22	1.03	-0.05	CO 15

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
12	RC1			Min V_z	-9.19	-0.06	-0.15	0.07	-1.19	-0.39	CO 5
				Max M_T	-7.33	0.02	0.04	0.22	1.03	-0.05	CO 15
				Min M_T	-0.38	-0.00	-0.05	0.02	-0.24	-0.02	CO 1
				Max M_y	-7.33	0.02	0.04	0.22	1.03	-0.05	CO 15
				Min M_y	-10.70	0.05	-0.15	0.07	-1.29	-0.65	CO 2
				Max M_z	-2.84	-0.22	-0.09	0.06	-0.43	0.13	CO 13
				Min M_z	-10.70	0.05	-0.15	0.07	-1.29	-0.65	CO 2
		43	0.717	Max N	-0.37	-0.04	-0.13	0.12	-0.28	-0.01	CO 1
				Min N	-10.28	-0.36	0.14	-0.09	0.66	-0.04	CO 12
				Max V_y	-2.87	0.35	-0.21	0.21	-0.47	0.07	CO 14
				Min V_y	-10.20	-1.23	-1.07	0.62	-1.61	-0.25	CO 2
				Max V_z	-10.23	-0.36	0.14	-0.09	0.67	-0.04	CO 11
				Min V_z	-10.20	-1.23	-1.07	0.62	-1.61	-0.25	CO 2
				Max M_T	-10.20	-1.23	-1.07	0.62	-1.61	-0.25	CO 2
				Min M_T	-8.83	-0.46	-0.03	-0.19	1.03	-0.08	CO 16
				Max M_y	-8.13	-0.22	-0.01	-0.19	1.06	-0.04	CO 15
				Min M_y	-10.20	-1.23	-1.07	0.62	-1.61	-0.25	CO 2
				Max M_z	-3.13	0.34	-0.24	0.23	-0.49	0.07	CO 13
				Min M_z	-10.20	-1.23	-1.07	0.62	-1.61	-0.25	CO 2
			0.717	Max N	-0.37	-0.04	-0.13	0.12	-0.28	-0.01	CO 1
				Min N	-10.28	-0.36	0.14	-0.09	0.66	-0.04	CO 12
				Max V_y	-2.87	0.35	-0.21	0.21	-0.47	0.07	CO 14
				Min V_y	-10.20	-1.23	-1.09	0.62	-1.61	-0.25	CO 2
				Max V_z	-10.23	-0.36	0.15	-0.09	0.67	-0.04	CO 11
				Min V_z	-10.20	-1.23	-1.09	0.62	-1.61	-0.25	CO 2
				Max M_T	-10.20	-1.23	-1.09	0.62	-1.61	-0.25	CO 2
				Min M_T	-8.83	-0.46	-0.02	-0.19	1.03	-0.08	CO 16
				Max M_y	-8.13	-0.22	0.00	-0.19	1.06	-0.04	CO 15
				Min M_y	-10.20	-1.23	-1.09	0.62	-1.61	-0.25	CO 2
				Max M_z	-3.13	0.34	-0.24	0.23	-0.49	0.07	CO 13
				Min M_z	-10.20	-1.23	-1.09	0.62	-1.61	-0.25	CO 2
		20	1.433	Max N	-0.36	-0.09	-0.21	0.24	-0.33	0.04	CO 1
				Min N	-10.79	-1.60	0.08	-0.35	0.66	0.63	CO 12
				Max V_y	-0.36	-0.09	-0.21	0.24	-0.33	0.04	CO 1
				Min V_y	-9.13	-3.20	-1.72	1.37	-2.26	1.30	CO 2
				Max V_z	-10.73	-1.58	0.09	-0.36	0.68	0.63	CO 11
				Min V_z	-9.13	-3.20	-1.72	1.37	-2.26	1.30	CO 2
				Max M_T	-9.13	-3.20	-1.72	1.37	-2.26	1.30	CO 2
				Min M_T	-8.53	-1.15	-0.17	-0.58	0.86	0.42	CO 15
				Max M_y	-8.53	-1.15	-0.17	-0.58	0.86	0.42	CO 15
				Min M_y	-9.13	-3.20	-1.72	1.37	-2.26	1.30	CO 2
				Max M_z	-9.13	-3.20	-1.72	1.37	-2.26	1.30	CO 2
				Min M_z	-3.60	-0.35	-0.32	0.41	-0.55	-0.05	CO 14
	RC2	17	0.000	Max N	-0.33	-0.00	-0.04	0.02	-0.17	-0.01	CO 19
				Min N	-6.64	0.03	-0.10	0.05	-0.93	-0.30	CO 20
				Max V_y	-6.64	0.03	-0.10	0.05	-0.93	-0.30	CO 20
				Min V_y	-0.92	-0.19	-0.01	0.07	-0.20	-0.12	CO 35
				Max V_z	-5.06	-0.04	0.01	0.16	0.59	-0.01	CO 33
				Min V_z	-5.23	0.02	-0.11	0.06	-0.78	-0.28	CO 27
				Max M_T	-5.06	-0.04	0.01	0.16	0.59	-0.01	CO 33
				Min M_T	-0.33	-0.00	-0.04	0.02	-0.17	-0.01	CO 19
				Max M_y	-5.06	-0.04	0.01	0.16	0.59	-0.01	CO 33
				Min M_y	-6.64	0.03	-0.10	0.05	-0.93	-0.30	CO 20
				Max M_z	-2.00	-0.13	-0.06	0.04	-0.28	0.12	CO 31
				Min M_z	-6.64	0.03	-0.10	0.05	-0.93	-0.30	CO 20
		43	0.717	Max N	-0.35	-0.02	-0.10	0.09	-0.20	-0.00	CO 19
				Min N	-7.22	-0.18	0.04	-0.03	0.36	-0.00	CO 30
				Max V_y	-2.06	0.28	-0.16	0.14	-0.32	0.04	CO 32
				Min V_y	-4.96	-0.58	-0.57	0.39	-0.93	-0.09	CO 27
				Max V_z	-7.18	-0.18	0.04	-0.03	0.37	-0.00	CO 29
				Min V_z	-6.26	-0.57	-0.69	0.44	-1.12	-0.11	CO 20
				Max M_T	-6.26	-0.57	-0.69	0.44	-1.12	-0.11	CO 20
				Min M_T	-6.12	-0.27	-0.06	-0.08	0.58	-0.02	CO 34
				Max M_y	-5.63	-0.11	-0.05	-0.08	0.60	0.01	CO 33
				Min M_y	-6.26	-0.57	-0.69	0.44	-1.12	-0.11	CO 20
				Max M_z	-2.21	0.28	-0.18	0.16	-0.32	0.05	CO 31
				Min M_z	-6.26	-0.57	-0.69	0.44	-1.12	-0.11	CO 20
			0.717	Max N	-0.35	-0.02	-0.10	0.09	-0.20	-0.00	CO 19
				Min N	-7.22	-0.18	0.04	-0.03	0.36	-0.00	CO 30
				Max V_y	-2.06	0.28	-0.16	0.14	-0.32	0.04	CO 32
				Min V_y	-4.96	-0.58	-0.57	0.39	-0.93	-0.09	CO 27
				Max V_z	-7.18	-0.18	0.05	-0.03	0.37	-0.00	CO 29
				Min V_z	-6.26	-0.56	-0.70	0.44	-1.12	-0.11	CO 20
				Max M_T	-6.26	-0.56	-0.70	0.44	-1.12	-0.11	CO 20
				Min M_T	-6.12	-0.27	-0.06	-0.08	0.58	-0.02	CO 34
				Max M_y	-5.63	-0.11	-0.05	-0.08	0.60	0.01	CO 33
				Min M_y	-6.26	-0.56	-0.70	0.44	-1.12	-0.11	CO 20
				Max M_z	-2.21	0.28	-0.18	0.16	-0.32	0.05	CO 31
				Min M_z	-6.26	-0.56	-0.70	0.44	-1.12	-0.11	CO 20
		20	1.433	Max N	-0.37	-0.04	-0.16	0.18	-0.24	0.02	CO 19
				Min N	-7.62	-0.93	-0.06	-0.16	0.33	0.37	CO 30
				Max V_y	-0.37	-0.04	-0.16	0.18	-0.24	0.02	CO 19
				Min V_y	-5.61	-1.50	-1.18	0.95	-1.54	0.61	CO 20
				Max V_z	-7.58	-0.91	-0.06	-0.17	0.34	0.37	CO 29
				Min V_z	-5.61	-1.50	-1.18	0.95	-1.54	0.61	CO 20
				Max M_T	-5.61	-1.50	-1.18	0.95	-1.54	0.61	CO 20
				Min M_T	-5.95	-0.59	-0.20	-0.29	0.44	0.24	CO 33

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
12	RC2			Max M_y	-5.95	-0.59	-0.20	-0.29	0.44	0.24	CO 33
				Min M_y	-5.61	-1.50	-1.18	0.95	-1.54	0.61	CO 20
				Max M_z	-4.32	-1.42	-0.94	0.81	-1.25	0.62	CO 27
				Min M_z	-2.90	-0.20	-0.29	0.30	-0.41	-0.06	CO 31
14	RC1	21	0.000	Max N	-0.36	0.09	0.21	-0.24	-0.33	0.04	CO 1
				Min N	-10.79	1.60	-0.08	0.35	0.67	0.63	CO 12
				Max V_y	-8.79	3.29	2.51	-1.34	-2.58	1.44	CO 9
				Min V_y	-0.36	0.09	0.21	-0.24	-0.33	0.04	CO 1
				Max V_z	-8.79	3.29	2.51	-1.34	-2.58	1.44	CO 9
				Min V_z	-10.73	1.57	-0.09	0.36	0.68	0.62	CO 11
				Max M_T	-8.29	2.48	0.52	0.49	0.38	1.15	CO 16
				Min M_T	-9.13	3.20	1.72	-1.37	-2.26	1.30	CO 2
				Max M_y	-10.73	1.57	-0.09	0.36	0.68	0.62	CO 11
				Min M_y	-8.79	3.29	2.51	-1.34	-2.58	1.44	CO 9
				Max M_z	-7.05	3.24	0.70	0.47	0.27	1.48	CO 15
				Min M_z	-4.00	0.35	0.37	-0.44	-0.57	-0.06	CO 13
		39	0.717	Max N	-0.37	0.04	0.13	-0.12	-0.28	-0.01	CO 1
				Min N	-10.41	1.48	1.51	-0.56	-1.47	-0.28	CO 9
				Max V_y	-10.41	1.48	1.51	-0.56	-1.47	-0.28	CO 9
				Min V_y	-3.12	-0.37	0.23	-0.24	-0.48	0.06	CO 13
				Max V_z	-10.41	1.48	1.51	-0.56	-1.47	-0.28	CO 9
				Min V_z	-10.23	0.36	-0.15	0.09	0.67	-0.04	CO 11
				Max M_T	-7.71	1.46	0.44	0.24	0.83	-0.23	CO 15
				Min M_T	-10.20	1.23	1.09	-0.62	-1.61	-0.25	CO 2
				Max M_y	-8.47	1.04	0.32	0.24	0.83	-0.08	CO 16
				Min M_y	-10.20	1.23	1.09	-0.62	-1.61	-0.25	CO 2
				Max M_z	-2.87	-0.35	0.21	-0.21	-0.47	0.07	CO 14
				Min M_z	-10.41	1.48	1.51	-0.56	-1.47	-0.28	CO 9
			0.717	Max N	-0.37	0.04	0.13	-0.12	-0.28	-0.01	CO 1
				Min N	-10.41	1.49	1.50	-0.56	-1.47	-0.28	CO 9
				Max V_y	-10.41	1.49	1.50	-0.56	-1.47	-0.28	CO 9
				Min V_y	-3.12	-0.37	0.22	-0.24	-0.48	0.06	CO 13
				Max V_z	-10.41	1.49	1.50	-0.56	-1.47	-0.28	CO 9
				Min V_z	-10.23	0.36	-0.15	0.09	0.67	-0.04	CO 11
				Max M_T	-7.71	1.46	0.45	0.24	0.83	-0.23	CO 15
				Min M_T	-10.20	1.23	1.07	-0.62	-1.61	-0.25	CO 2
				Max M_y	-8.47	1.04	0.33	0.24	0.83	-0.08	CO 16
				Min M_y	-10.20	1.23	1.07	-0.62	-1.61	-0.25	CO 2
				Max M_z	-2.87	-0.35	0.21	-0.21	-0.47	0.07	CO 14
				Min M_z	-10.41	1.49	1.50	-0.56	-1.47	-0.28	CO 9
		11	1.433	Max N	-0.38	0.00	0.05	-0.02	-0.24	-0.02	CO 1
				Min N	-10.84	-0.04	0.21	-0.11	-0.98	-0.80	CO 9
				Max V_y	-3.90	0.30	0.17	-0.09	0.30	-0.32	CO 8
				Min V_y	-7.55	-0.17	0.15	-0.14	1.07	-0.66	CO 15
				Max V_z	-9.72	-0.02	0.26	-0.07	-0.98	-0.64	CO 10
				Min V_z	-9.38	-0.02	0.02	-0.15	0.60	-0.09	CO 11
				Max M_T	-0.38	0.00	0.05	-0.02	-0.24	-0.02	CO 1
				Min M_T	-9.41	-0.03	0.03	-0.15	0.59	-0.09	CO 12
				Max M_y	-7.55	-0.17	0.15	-0.14	1.07	-0.66	CO 15
				Min M_y	-10.70	-0.04	0.15	-0.06	-1.29	-0.65	CO 2
				Max M_z	-2.80	0.17	0.09	-0.06	-0.43	0.15	CO 13
				Min M_z	-10.84	-0.04	0.21	-0.11	-0.98	-0.80	CO 9
	RC2	21	0.000	Max N	-0.37	0.04	0.16	-0.18	-0.24	0.02	CO 19
				Min N	-7.62	0.93	0.06	0.16	0.33	0.37	CO 30
				Max V_y	-4.94	2.02	0.53	0.23	0.09	0.97	CO 33
				Min V_y	-0.37	0.04	0.16	-0.18	-0.24	0.02	CO 19
				Max V_z	-5.52	1.69	1.71	-0.96	-1.78	0.77	CO 27
				Min V_z	-7.58	0.91	0.05	0.17	0.34	0.36	CO 29
				Max M_T	-5.80	1.49	0.43	0.24	0.15	0.73	CO 34
				Min M_T	-5.52	1.69	1.71	-0.96	-1.78	0.77	CO 27
				Max M_y	-7.58	0.91	0.05	0.17	0.34	0.36	CO 29
				Min M_y	-5.52	1.69	1.71	-0.96	-1.78	0.77	CO 27
				Max M_z	-4.94	2.02	0.53	0.23	0.09	0.97	CO 33
				Min M_z	-2.91	0.21	0.28	-0.30	-0.40	-0.07	CO 31
		39	0.717	Max N	-0.35	0.02	0.10	-0.09	-0.20	-0.00	CO 19
				Min N	-7.22	0.18	-0.04	0.03	0.36	-0.00	CO 30
				Max V_y	-5.39	0.98	0.31	0.11	0.46	-0.13	CO 33
				Min V_y	-2.21	-0.29	0.17	-0.16	-0.32	0.04	CO 31
				Max V_z	-6.64	0.82	0.99	-0.42	-1.07	-0.14	CO 27
				Min V_z	-7.18	0.18	-0.05	0.03	0.37	-0.00	CO 29
				Max M_T	-5.88	0.66	0.24	0.11	0.46	-0.02	CO 34
				Min M_T	-6.24	0.56	0.70	-0.44	-1.12	-0.11	CO 20
				Max M_y	-5.88	0.66	0.24	0.11	0.46	-0.02	CO 34
				Min M_y	-6.24	0.56	0.70	-0.44	-1.12	-0.11	CO 20
				Max M_z	-2.06	-0.28	0.16	-0.14	-0.32	0.04	CO 32
				Min M_z	-6.64	0.82	0.99	-0.42	-1.07	-0.14	CO 27
			0.717	Max N	-0.35	0.02	0.10	-0.09	-0.20	-0.00	CO 19
				Min N	-7.22	0.18	-0.04	0.03	0.36	-0.00	CO 30
				Max V_y	-5.39	0.98	0.31	0.11	0.46	-0.13	CO 33
				Min V_y	-2.21	-0.29	0.17	-0.16	-0.32	0.04	CO 31
				Max V_z	-6.64	0.82	0.98	-0.42	-1.07	-0.14	CO 27
				Min V_z	-7.18	0.18	-0.05	0.03	0.37	-0.00	CO 29
				Max M_T	-5.88	0.66	0.24	0.11	0.46	-0.02	CO 34
				Min M_T	-6.24	0.56	0.69	-0.44	-1.12	-0.11	CO 20
				Max M_y	-5.88	0.66	0.24	0.11	0.46	-0.02	CO 34
				Min M_y	-6.24	0.56	0.69	-0.44	-1.12	-0.11	CO 20
				Max M_z	-2.06	-0.28	0.16	-0.14	-0.32	0.04	CO 32

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
14	RC2			Min M_z	-6.64	0.82	0.98	-0.42	-1.07	-0.14	CO 27
		11	1.433	Max N	-0.33	0.00	0.04	-0.02	-0.17	-0.01	CO 19
				Min N	-6.98	-0.00	0.15	-0.08	-0.75	-0.44	CO 27
				Max V_y	-2.83	0.25	0.12	-0.07	0.11	-0.24	CO 26
				Min V_y	-5.26	-0.08	0.11	-0.11	0.61	-0.45	CO 33
				Max V_z	-6.21	0.01	0.18	-0.05	-0.73	-0.34	CO 28
				Min V_z	-6.57	0.01	0.02	-0.11	0.33	-0.02	CO 29
				Max M_T	-0.33	0.00	0.04	-0.02	-0.17	-0.01	CO 19
				Min M_T	-6.59	0.01	0.02	-0.11	0.33	-0.02	CO 30
				Max M_y	-5.26	-0.08	0.11	-0.11	0.61	-0.45	CO 33
				Min M_y	-6.62	-0.03	0.10	-0.04	-0.93	-0.30	CO 20
				Max M_z	-1.97	0.10	0.06	-0.04	-0.28	0.13	CO 31
				Min M_z	-5.26	-0.08	0.11	-0.11	0.61	-0.45	CO 33
15	RC1	20	0.000	Max N	-0.46	0.09	0.11	-0.08	-0.31	0.03	CO 1
				Min N	-12.19	3.27	-0.16	0.14	0.34	0.71	CO 12
				Max V_y	-11.41	3.39	0.82	-0.65	-2.05	1.11	CO 2
				Min V_y	-0.46	0.09	0.11	-0.08	-0.31	0.03	CO 1
				Max V_z	-10.27	3.02	0.85	-0.53	-1.82	0.80	CO 5
				Min V_z	-9.37	1.77	-0.60	0.07	0.52	0.47	CO 15
				Max M_T	-12.19	3.27	-0.16	0.14	0.34	0.71	CO 12
				Min M_T	-11.41	3.39	0.82	-0.65	-2.05	1.11	CO 2
				Max M_y	-9.37	1.77	-0.60	0.07	0.52	0.47	CO 15
				Min M_y	-11.41	3.39	0.82	-0.65	-2.05	1.11	CO 2
				Max M_z	-11.41	3.39	0.82	-0.65	-2.05	1.11	CO 2
				Min M_z	-0.46	0.09	0.11	-0.08	-0.31	0.03	CO 1
		42	0.717	Max N	-0.50	0.01	0.02	0.03	-0.28	-0.01	CO 1
				Min N	-13.08	-0.21	-0.41	0.03	0.17	-0.45	CO 12
				Max V_y	-11.66	0.44	0.19	0.09	-1.77	-0.26	CO 2
				Min V_y	-4.37	-0.31	0.11	0.08	-0.40	-0.21	CO 14
				Max V_z	-10.57	0.09	0.23	0.11	-1.45	-0.32	CO 6
				Min V_z	-9.99	0.10	-0.88	-0.03	-0.01	-0.24	CO 15
				Max M_T	-9.23	0.43	-0.20	0.20	-1.68	-0.18	CO 9
				Min M_T	-11.01	0.09	-0.79	-0.04	0.01	-0.23	CO 16
				Max M_y	-13.03	-0.16	-0.44	0.02	0.18	-0.45	CO 11
				Min M_y	-11.66	0.44	0.19	0.09	-1.77	-0.26	CO 2
				Max M_z	-1.10	0.17	-0.30	0.10	-0.53	0.06	CO 18
				Min M_z	-13.08	-0.21	-0.41	0.03	0.17	-0.45	CO 12
			0.717	Max N	-0.50	0.01	0.02	0.03	-0.28	-0.01	CO 1
				Min N	-13.08	-0.20	-0.41	0.03	0.17	-0.45	CO 12
				Max V_y	-11.66	0.44	0.17	0.09	-1.77	-0.26	CO 2
				Min V_y	-4.37	-0.31	0.11	0.08	-0.40	-0.21	CO 14
				Max V_z	-10.57	0.09	0.22	0.11	-1.45	-0.32	CO 6
				Min V_z	-9.99	0.10	-0.88	-0.03	-0.01	-0.24	CO 15
				Max M_T	-9.23	0.43	-0.21	0.20	-1.68	-0.18	CO 9
				Min M_T	-11.01	0.10	-0.79	-0.04	0.01	-0.23	CO 16
				Max M_y	-13.03	-0.15	-0.44	0.02	0.18	-0.45	CO 11
				Min M_y	-11.66	0.44	0.17	0.09	-1.77	-0.26	CO 2
				Max M_z	-1.10	0.17	-0.30	0.10	-0.53	0.06	CO 18
				Min M_z	-13.08	-0.20	-0.41	0.03	0.17	-0.45	CO 12
		9	1.433	Max N	-0.52	-0.05	-0.09	0.14	-0.27	0.01	CO 1
				Min N	-12.47	-3.65	-0.75	0.03	-0.23	0.98	CO 12
				Max V_y	-1.26	0.80	-0.82	0.47	-0.96	-0.24	CO 17
				Min V_y	-12.37	-4.15	-0.72	0.03	-0.24	1.04	CO 11
				Max V_z	-0.52	-0.05	-0.09	0.14	-0.27	0.01	CO 1
				Min V_z	-9.82	-1.33	-1.16	0.11	-0.73	0.26	CO 15
				Max M_T	-8.91	-1.49	-0.90	0.89	-1.88	0.20	CO 9
				Min M_T	-12.37	-4.15	-0.72	0.03	-0.24	1.04	CO 11
				Max M_y	-12.47	-3.65	-0.75	0.03	-0.23	0.98	CO 12
				Min M_y	-8.91	-1.49	-0.90	0.89	-1.88	0.20	CO 9
				Max M_z	-12.37	-4.15	-0.72	0.03	-0.24	1.04	CO 11
				Min M_z	-1.26	0.80	-0.82	0.47	-0.96	-0.24	CO 17
	RC2	20	0.000	Max N	-0.42	0.02	0.10	-0.06	-0.24	0.01	CO 19
				Min N	-8.48	2.10	-0.04	0.06	0.11	0.44	CO 30
				Max V_y	-8.48	2.10	-0.04	0.06	0.11	0.44	CO 30
				Min V_y	-0.42	0.02	0.10	-0.06	-0.24	0.01	CO 19
				Max V_z	-6.51	1.71	0.59	-0.37	-1.28	0.40	CO 23
				Min V_z	-6.40	0.99	-0.29	0.02	0.20	0.27	CO 33
				Max M_T	-8.48	2.10	-0.04	0.06	0.11	0.44	CO 30
				Min M_T	-6.69	1.66	0.58	-0.45	-1.41	0.52	CO 20
				Max M_y	-6.40	0.99	-0.29	0.02	0.20	0.27	CO 33
				Min M_y	-6.69	1.66	0.58	-0.45	-1.41	0.52	CO 20
				Max M_z	-6.69	1.66	0.58	-0.45	-1.41	0.52	CO 20
				Min M_z	-0.42	0.02	0.10	-0.06	-0.24	0.01	CO 19
		42	0.717	Max N	-0.47	0.01	0.01	0.03	-0.20	0.00	CO 19
				Min N	-9.05	-0.16	-0.27	0.03	0.02	-0.30	CO 30
				Max V_y	-5.23	0.24	-0.14	0.15	-1.18	-0.09	CO 27
				Min V_y	-3.21	-0.25	0.08	0.05	-0.29	-0.16	CO 32
				Max V_z	-6.61	-0.04	0.15	0.08	-1.03	-0.21	CO 24
				Min V_z	-6.77	0.09	-0.56	-0.00	-0.10	-0.14	CO 33
				Max M_T	-5.23	0.24	-0.14	0.15	-1.18	-0.09	CO 27
				Min M_T	-7.49	0.08	-0.50	-0.01	-0.09	-0.13	CO 34
				Max M_y	-9.02	-0.12	-0.30	0.02	0.02	-0.29	CO 29
				Min M_y	-6.70	0.19	0.11	0.06	-1.23	-0.14	CO 20
				Max M_z	-0.73	0.13	-0.19	0.07	-0.37	0.05	CO 36
				Min M_z	-9.05	-0.16	-0.27	0.03	0.02	-0.30	CO 30
			0.717	Max N	-0.47	0.01	0.01	0.03	-0.20	0.00	CO 19
				Min N	-9.05	-0.16	-0.27	0.03	0.02	-0.30	CO 30

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
15	RC2			Max V_y	-5.23	▹ 0.24	-0.15	0.15	-1.18	-0.09	CO 27
				Min V_y	-3.21	▹ -0.25	0.08	0.05	-0.29	-0.16	CO 32
				Max V_z	-6.61	-0.04	▹ 0.14	0.08	-1.03	-0.21	CO 24
				Min V_z	-6.77	0.09	▹ -0.56	-0.00	-0.10	-0.14	CO 33
				Max M_T	-5.23	0.24	-0.15	▹ 0.15	-1.18	-0.09	CO 27
				Min M_T	-7.49	0.08	-0.50	▹ -0.01	-0.09	-0.13	CO 34
				Max M_y	-9.02	-0.12	-0.29	0.02	▹ 0.02	-0.29	CO 29
				Min M_y	-6.70	0.19	0.10	0.06	▹ -1.23	-0.14	CO 20
				Max M_z	-0.73	0.13	-0.19	0.07	-0.37	▹ 0.05	CO 36
				Min M_z	-9.05	-0.16	-0.27	0.03	0.02	▹ -0.30	CO 30
		9	1.433	Max N	▹ -0.50	0.03	-0.11	0.11	-0.21	-0.01	CO 19
				Min N	▹ -8.64	-2.37	-0.59	0.07	-0.27	0.65	CO 30
				Max V_y	-0.70	▹ 0.67	-0.56	0.33	-0.67	-0.21	CO 35
				Min V_y	-8.59	▹ -2.74	-0.56	0.07	-0.28	0.69	CO 29
				Max V_z	-0.50	0.03	▹ -0.11	0.11	-0.21	-0.01	CO 19
				Min V_z	-6.68	-0.66	▹ -0.87	0.12	-0.59	0.12	CO 33
				Max M_T	-5.04	-0.66	-0.64	▹ 0.63	-1.31	0.06	CO 27
				Min M_T	-8.59	-2.74	-0.56	▹ 0.07	-0.28	0.69	CO 29
				Max M_y	-0.50	0.03	-0.11	0.11	▹ -0.21	-0.01	CO 19
				Min M_y	-5.04	-0.66	-0.64	0.63	▹ -1.31	0.06	CO 27
				Max M_z	-8.59	-2.74	-0.56	0.07	-0.28	▹ 0.69	CO 29
				Min M_z	-0.70	0.67	-0.56	0.33	-0.67	▹ -0.21	CO 35
16	RC1	18	0.000	Max N	▹ -0.34	0.05	0.14	-0.15	-0.22	0.03	CO 1
				Min N	▹ -9.56	2.88	1.44	-1.11	-1.91	1.32	CO 2
				Max V_y	-9.56	▹ 2.88	1.44	-1.11	-1.91	1.32	CO 2
				Min V_y	-8.22	▹ -3.41	-1.55	0.11	1.07	-1.19	CO 15
				Max V_z	-9.56	2.88	▹ 1.44	-1.11	-1.91	1.32	CO 2
				Min V_z	-8.65	-3.14	▹ -1.55	0.16	1.10	-1.13	CO 16
				Max M_T	-8.96	-1.65	-1.02	▹ 0.35	0.88	-0.63	CO 12
				Min M_T	-9.02	2.00	1.12	▹ -1.24	-1.69	0.93	CO 9
				Max M_y	-8.65	-3.14	-1.55	0.16	▹ 1.10	-1.13	CO 16
				Min M_y	-9.56	2.88	1.44	-1.11	▹ -1.91	1.32	CO 2
				Max M_z	-9.56	2.88	1.44	-1.11	-1.91	▹ 1.32	CO 2
				Min M_z	-8.22	-3.41	-1.55	0.11	1.07	▹ -1.19	CO 15
		45	0.717	Max N	▹ -0.36	0.02	0.07	-0.07	-0.19	0.00	CO 1
				Min N	▹ -10.29	1.10	0.86	-0.48	-1.36	-0.09	CO 2
				Max V_y	-10.29	▹ 1.10	0.86	-0.48	-1.36	-0.09	CO 2
				Min V_y	-7.68	▹ -1.57	-0.84	-0.11	0.16	0.62	CO 15
				Max V_z	-10.29	1.10	▹ 0.86	-0.48	-1.36	-0.09	CO 2
				Min V_z	-8.17	-1.49	▹ -0.86	-0.08	0.20	0.55	CO 16
				Max M_T	-8.47	-0.76	-0.54	▹ 0.11	0.40	0.21	CO 12
				Min M_T	-8.84	0.52	0.63	▹ -0.63	-1.43	0.07	CO 9
				Max M_y	-8.47	-0.76	-0.54	0.11	▹ 0.40	0.21	CO 12
				Min M_y	-8.84	0.52	0.63	-0.63	▹ -1.43	0.07	CO 9
				Max M_z	-7.68	-1.57	-0.84	-0.11	0.16	▹ 0.62	CO 15
				Min M_z	-2.95	0.51	0.19	-0.09	-0.26	▹ -0.16	CO 13
			0.717	Max N	▹ -0.36	0.02	0.07	-0.07	-0.19	0.00	CO 1
				Min N	▹ -10.29	1.10	0.85	-0.48	-1.36	-0.09	CO 2
				Max V_y	-10.29	▹ 1.10	0.85	-0.48	-1.36	-0.09	CO 2
				Min V_y	-7.68	▹ -1.57	-0.84	-0.11	0.16	0.62	CO 15
				Max V_z	-10.29	1.10	▹ 0.85	-0.48	-1.36	-0.09	CO 2
				Min V_z	-8.17	-1.49	▹ -0.86	-0.08	0.20	0.55	CO 16
				Max M_T	-8.47	-0.75	-0.53	▹ 0.11	0.40	0.21	CO 12
				Min M_T	-8.84	0.52	0.62	▹ -0.62	-1.43	0.07	CO 9
				Max M_y	-8.47	-0.75	-0.53	0.11	▹ 0.40	0.21	CO 12
				Min M_y	-8.84	0.52	0.62	-0.62	▹ -1.43	0.07	CO 9
				Max M_z	-7.68	-1.57	-0.84	-0.11	0.16	▹ 0.62	CO 15
				Min M_z	-2.95	0.51	0.19	-0.09	-0.26	▹ -0.16	CO 13
		6	1.433	Max N	▹ -0.36	0.00	-0.00	0.00	-0.17	-0.00	CO 1
				Min N	▹ -10.38	-0.01	0.01	-0.00	-1.14	-0.46	CO 2
				Max V_y	-3.65	▹ 0.10	-0.02	-0.06	-0.33	0.95	CO 7
				Min V_y	-2.11	▹ -0.22	-0.01	-0.10	-0.54	0.58	CO 18
				Max V_z	-8.43	-0.02	▹ 0.07	-0.09	-1.32	-0.06	CO 9
				Min V_z	-8.05	0.06	▹ -0.04	-0.07	-0.16	1.04	CO 16
				Max M_T	-9.28	-0.00	0.00	▹ 0.00	-0.90	-0.51	CO 5
				Min M_T	-2.37	-0.20	0.02	▹ -0.14	-0.67	0.63	CO 17
				Max M_y	-8.36	-0.00	-0.00	0.00	▹ 0.22	0.47	CO 12
				Min M_y	-8.43	-0.02	0.07	-0.09	▹ -1.32	-0.06	CO 9
				Max M_z	-7.54	0.09	-0.03	-0.09	-0.20	▹ 1.12	CO 15
				Min M_z	-9.28	-0.00	0.00	0.00	-0.90	▹ -0.51	CO 5
	RC2	18	0.000	Max N	▹ -0.29	0.01	0.10	-0.10	-0.15	0.01	CO 19
				Min N	▹ -6.29	-1.24	-0.61	0.18	0.49	-0.50	CO 30
				Max V_y	-5.76	▹ 1.58	0.89	-0.64	-1.13	0.66	CO 23
				Min V_y	-5.74	▹ -2.60	-0.93	0.03	0.61	-0.93	CO 33
				Max V_z	-6.29	1.42	▹ 1.00	-0.76	-1.29	0.63	CO 20
				Min V_z	-6.04	-2.39	▹ -0.93	0.06	0.63	-0.89	CO 34
				Max M_T	-6.29	-1.24	-0.61	▹ 0.18	0.49	-0.50	CO 30
				Min M_T	-6.07	0.81	0.81	▹ -0.85	-1.17	0.38	CO 27
				Max M_y	-6.04	-2.39	-0.93	0.06	▹ 0.63	-0.89	CO 34
				Min M_y	-6.29	1.42	1.00	-0.76	▹ -1.29	0.63	CO 20
				Max M_z	-5.76	1.58	0.89	-0.64	-1.13	▹ 0.66	CO 23
				Min M_z	-5.74	-2.60	-0.93	0.03	0.61	▹ -0.93	CO 33
		45	0.717	Max N	▹ -0.28	-0.00	0.05	-0.05	-0.13	0.00	CO 19
				Min N	▹ -6.70	0.53	0.56	-0.33	-0.93	-0.05	CO 20
				Max V_y	-6.23	▹ 0.60	0.51	-0.27	-0.79	-0.10	CO 23
				Min V_y	-5.30	▹ -1.20	-0.51	-0.09	0.06	0.47	CO 33
				Max V_z	-6.70	0.53	▹ 0.56	-0.33	-0.93	-0.05	CO 20

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
16	RC2			Min V_z	-5.64	-1.14	▷ -0.52	-0.07	0.08	0.41	CO 34
				Max M_T	-5.91	-0.58	-0.32	▷ 0.05	0.20	0.15	CO 30
				Min M_T	-5.79	0.12	0.43	▷ -0.43	-0.98	0.08	CO 27
				Max M_y	-5.91	-0.58	-0.32	0.05	▷ 0.20	0.15	CO 30
				Min M_y	-5.79	0.12	0.43	-0.43	▷ -0.98	0.08	CO 27
				Max M_z	-5.30	-1.20	-0.51	-0.09	0.06	▷ 0.47	CO 33
				Min M_z	-2.17	0.38	0.13	-0.06	-0.19	▷ -0.12	CO 31
			0.717	Max N	▷ -0.28	-0.00	0.05	-0.05	-0.13	0.00	CO 19
				Min N	▷ -6.70	0.53	0.55	-0.33	-0.93	-0.05	CO 20
				Max V_y	-6.23	▷ 0.60	0.50	-0.27	-0.79	-0.10	CO 23
				Min V_y	-5.30	▷ -1.20	-0.51	-0.09	0.06	0.47	CO 33
				Max V_z	-6.70	0.53	▷ 0.55	-0.33	-0.93	-0.05	CO 20
				Min V_z	-5.64	-1.14	▷ -0.52	-0.07	0.08	0.41	CO 34
				Max M_T	-5.91	-0.58	-0.32	▷ 0.05	0.20	0.15	CO 30
				Min M_T	-5.79	0.12	0.43	▷ -0.43	-0.98	0.08	CO 27
				Max M_y	-5.91	-0.58	-0.32	0.05	▷ 0.20	0.15	CO 30
				Min M_y	-5.79	0.12	0.43	-0.43	▷ -0.98	0.08	CO 27
				Max M_z	-5.30	-1.20	-0.51	-0.09	0.06	▷ 0.47	CO 33
				Min M_z	-2.17	0.38	0.13	-0.06	-0.19	▷ -0.12	CO 31
		6	1.433	Max N	▷ -0.28	0.00	-0.00	0.00	-0.12	0.01	CO 19
				Min N	▷ -6.76	-0.00	0.00	0.00	-0.79	-0.22	CO 20
				Max V_y	-2.55	▷ 0.08	-0.01	-0.04	-0.26	0.72	CO 25
				Min V_y	-1.48	▷ -0.15	-0.01	-0.06	-0.36	0.48	CO 36
				Max V_z	-5.46	-0.02	▷ 0.04	-0.06	-0.91	0.07	CO 27
				Min V_z	-5.53	0.05	▷ -0.03	-0.04	-0.14	0.79	CO 34
				Max M_T	-6.32	-0.00	0.00	▷ 0.00	-0.65	-0.30	CO 23
				Min M_T	-1.61	-0.13	0.01	▷ -0.09	-0.45	0.53	CO 35
				Max M_y	-5.82	0.00	-0.00	0.00	▷ 0.09	0.36	CO 30
				Min M_y	-5.46	-0.02	0.04	-0.06	▷ -0.91	0.07	CO 27
				Max M_z	-5.17	0.08	-0.02	-0.05	-0.16	▷ 0.85	CO 33
				Min M_z	-6.32	-0.00	0.00	0.00	-0.65	▷ -0.30	CO 23
17	RC1	19	0.000	Max N	▷ -0.39	0.07	0.10	-0.16	-0.22	0.02	CO 1
				Min N	▷ -10.74	3.36	1.40	-1.12	-1.97	1.38	CO 2
				Max V_y	-10.74	▷ 3.36	1.40	-1.12	-1.97	1.38	CO 2
				Min V_y	-6.87	▷ -2.55	-0.53	0.93	0.79	-1.28	CO 15
				Max V_z	-10.74	3.36	▷ 1.40	-1.12	-1.97	1.38	CO 2
				Min V_z	-8.39	-0.80	▷ -0.76	0.66	0.82	-0.44	CO 12
				Max M_T	-6.87	-2.55	-0.53	▷ 0.93	0.79	-1.28	CO 15
				Min M_T	-10.74	3.36	1.40	▷ -1.12	-1.97	1.38	CO 2
				Max M_y	-8.37	-0.79	-0.76	0.67	▷ 0.82	-0.44	CO 11
				Min M_y	-10.74	3.36	1.40	-1.12	▷ -1.97	1.38	CO 2
				Max M_z	-10.74	3.36	1.40	-1.12	-1.97	▷ 1.38	CO 2
				Min M_z	-6.87	-2.55	-0.53	0.93	0.79	▷ -1.28	CO 15
		48	0.716	Max N	▷ -0.39	0.03	0.03	-0.07	-0.22	-0.01	CO 1
				Min N	▷ -11.02	1.29	0.80	-0.46	-1.46	-0.23	CO 2
				Max V_y	-11.02	▷ 1.29	0.80	-0.46	-1.46	-0.23	CO 2
				Min V_y	-2.87	▷ -0.66	-0.05	0.26	0.24	-0.22	CO 7
				Max V_z	-11.02	1.29	▷ 0.80	-0.46	-1.46	-0.23	CO 2
				Min V_z	-8.64	-0.16	▷ -0.36	0.39	0.63	-0.13	CO 12
				Max M_T	-6.63	-0.66	-0.12	▷ 0.60	0.89	-0.21	CO 15
				Min M_T	-11.02	1.29	0.80	▷ -0.46	-1.46	-0.23	CO 2
				Max M_y	-6.63	-0.66	-0.12	0.60	▷ 0.89	-0.21	CO 15
				Min M_y	-11.02	1.29	0.80	-0.46	▷ -1.46	-0.23	CO 2
				Max M_z	-3.09	0.08	0.04	-0.10	-0.39	▷ -0.00	CO 13
				Min M_z	-1.36	-0.16	0.15	-0.01	-0.31	▷ -0.30	CO 17
			0.716	Max N	▷ -0.39	0.03	0.03	-0.07	-0.22	-0.01	CO 1
				Min N	▷ -11.02	1.29	0.79	-0.46	-1.46	-0.23	CO 2
				Max V_y	-11.02	▷ 1.29	0.79	-0.46	-1.46	-0.23	CO 2
				Min V_y	-2.87	▷ -0.66	-0.05	0.26	0.24	-0.22	CO 7
				Max V_z	-11.02	1.29	▷ 0.79	-0.46	-1.46	-0.23	CO 2
				Min V_z	-8.64	-0.16	▷ -0.36	0.39	0.63	-0.13	CO 12
				Max M_T	-6.63	-0.66	-0.11	▷ 0.60	0.89	-0.21	CO 15
				Min M_T	-11.02	1.29	0.79	▷ -0.46	-1.46	-0.23	CO 2
				Max M_y	-6.63	-0.66	-0.11	0.60	▷ 0.89	-0.21	CO 15
				Min M_y	-11.02	1.29	0.79	-0.46	▷ -1.46	-0.23	CO 2
				Max M_z	-3.09	0.08	0.04	-0.10	-0.39	▷ -0.00	CO 13
				Min M_z	-1.37	-0.16	0.15	-0.01	-0.31	▷ -0.30	CO 17
		17	1.433	Max N	▷ -0.38	-0.00	-0.05	0.02	-0.24	-0.02	CO 1
				Min N	▷ -10.70	0.04	-0.13	0.07	-1.29	-0.65	CO 2
				Max V_y	-8.19	▷ 0.04	-0.13	0.08	-1.01	-0.52	CO 10
				Min V_y	-2.66	▷ -0.22	-0.08	0.04	-0.41	0.13	CO 14
				Max V_z	-7.33	0.02	▷ 0.03	0.22	1.03	-0.05	CO 15
				Min V_z	-9.19	-0.06	▷ -0.14	0.07	-1.19	-0.39	CO 5
				Max M_T	-7.33	0.02	0.03	▷ 0.22	1.03	-0.05	CO 15
				Min M_T	-0.38	-0.00	-0.05	▷ 0.02	-0.24	-0.02	CO 1
				Max M_y	-7.33	0.02	0.03	0.22	▷ 1.03	-0.05	CO 15
				Min M_y	-10.70	0.04	-0.13	0.07	▷ -1.29	-0.65	CO 2
				Max M_z	-2.84	-0.22	-0.09	0.06	-0.43	▷ 0.13	CO 13
				Min M_z	-10.70	0.04	-0.13	0.07	-1.29	▷ -0.65	CO 2
	RC2	19	0.000	Max N	▷ -0.31	0.03	0.07	-0.11	-0.16	0.01	CO 19
				Min N	▷ -6.88	1.60	0.96	-0.78	-1.34	0.65	CO 20
				Max V_y	-6.88	▷ 1.60	0.96	-0.78	-1.34	0.65	CO 20
				Min V_y	-4.70	▷ -1.86	-0.29	0.55	0.43	-0.97	CO 33
				Max V_z	-6.88	1.60	▷ 0.96	-0.78	-1.34	0.65	CO 20
				Min V_z	-5.86	-0.66	▷ -0.43	0.39	0.44	-0.36	CO 30
				Max M_T	-4.70	-1.86	-0.29	▷ 0.55	0.43	-0.97	CO 33
				Min M_T	-6.88	1.60	0.96	▷ -0.78	-1.34	0.65	CO 20

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
17	RC2			Max M_y	-5.86	-0.66	-0.43	0.39	▷ 0.44	-0.36	CO 30
				Min M_y	-6.88	1.60	0.96	-0.78	▷ -1.34	0.65	CO 20
				Max M_z	-6.88	1.60	0.96	-0.78	-1.34	▷ 0.65	CO 20
				Min M_z	-4.70	-1.86	-0.29	0.55	0.43	▷ -0.97	CO 33
		48	0.716	Max N	▷ -0.32	0.01	0.02	-0.04	-0.16	-0.01	CO 19
				Min N	▷ -6.93	0.59	0.50	-0.33	-1.02	-0.11	CO 20
				Max V_y	-6.93	▷ 0.59	0.50	-0.33	-1.02	-0.11	CO 20
				Min V_y	-4.56	▷ -0.54	-0.06	0.37	0.50	-0.17	CO 33
				Max V_z	-6.93	0.59	▷ 0.50	-0.33	-1.02	-0.11	CO 20
				Min V_z	-6.03	-0.18	▷ -0.20	0.24	0.34	-0.09	CO 30
				Max M_T	-4.56	-0.54	-0.06	▷ 0.37	0.50	-0.17	CO 33
				Min M_T	-6.93	0.59	0.50	▷ -0.33	-1.02	-0.11	CO 20
				Max M_y	-5.07	-0.37	-0.07	0.36	▷ 0.50	-0.19	CO 34
				Min M_y	-6.93	0.59	0.50	-0.33	▷ -1.02	-0.11	CO 20
				Max M_z	-2.21	0.03	0.04	-0.07	-0.27	▷ 0.01	CO 31
				Min M_z	-0.93	-0.17	0.10	-0.02	-0.24	▷ -0.24	CO 35
			0.716	Max N	▷ -0.32	0.01	0.02	-0.04	-0.16	-0.01	CO 19
				Min N	▷ -6.93	0.59	0.50	-0.33	-1.02	-0.10	CO 20
				Max V_y	-6.93	▷ 0.59	0.50	-0.33	-1.02	-0.10	CO 20
				Min V_y	-4.56	▷ -0.54	-0.06	0.37	0.50	-0.17	CO 33
				Max V_z	-6.93	0.59	▷ 0.50	-0.33	-1.02	-0.10	CO 20
				Min V_z	-6.03	-0.18	▷ -0.20	0.24	0.34	-0.09	CO 30
				Max M_T	-4.56	-0.54	-0.06	▷ 0.37	0.50	-0.17	CO 33
				Min M_T	-6.93	0.59	0.50	▷ -0.33	-1.02	-0.10	CO 20
				Max M_y	-5.07	-0.37	-0.06	0.36	▷ 0.50	-0.19	CO 34
				Min M_y	-6.93	0.59	0.50	-0.33	▷ -1.02	-0.10	CO 20
				Max M_z	-2.21	0.03	0.04	-0.07	-0.27	▷ 0.01	CO 31
				Min M_z	-0.93	-0.17	0.10	-0.02	-0.24	▷ -0.24	CO 35
		17	1.433	Max N	▷ -0.33	-0.00	-0.04	0.02	-0.17	-0.01	CO 19
				Min N	▷ -6.64	0.02	-0.09	0.05	-0.93	-0.30	CO 20
				Max V_y	-6.64	▷ 0.02	-0.09	0.05	-0.93	-0.30	CO 20
				Min V_y	-0.92	▷ -0.19	-0.01	0.07	-0.20	-0.12	CO 35
				Max V_z	-5.06	-0.04	▷ 0.01	0.16	0.59	-0.01	CO 33
				Min V_z	-5.23	0.01	▷ -0.10	0.06	-0.78	-0.28	CO 27
				Max M_T	-5.06	-0.04	0.01	▷ 0.16	0.59	-0.01	CO 33
				Min M_T	-0.33	-0.00	-0.04	▷ 0.02	-0.17	-0.01	CO 19
				Max M_y	-5.06	-0.04	0.01	0.16	▷ 0.59	-0.01	CO 33
				Min M_y	-6.64	0.02	-0.09	0.05	▷ -0.93	-0.30	CO 20
				Max M_z	-2.00	-0.13	-0.06	0.04	-0.28	▷ 0.12	CO 31
				Min M_z	-6.64	0.02	-0.09	0.05	-0.93	▷ -0.30	CO 20
	Section No. 6: RO 168.3x4.8 | IS 1161-1998										
13	RC1	1	0.000	Max N	▷ 23.40	-0.00	-7.47	-0.00	34.42	-0.01	CO 12
				Min N	▷ -20.47	0.00	0.00	-0.00	-10.32	0.00	CO 2
				Max V_y	20.95	▷ 1.59	-6.78	0.56	33.78	8.02	CO 15
				Min V_y	-6.37	▷ -0.01	-0.72	-0.01	0.71	-0.11	CO 13
				Max V_z	-8.26	1.16	▷ 0.18	0.30	-1.19	7.50	CO 17
				Min V_z	22.68	-0.00	▷ -7.72	-0.00	35.53	-0.01	CO 11
				Max M_T	20.95	1.59	-6.78	▷ 0.56	33.78	8.02	CO 15
				Min M_T	-19.22	0.99	-0.08	▷ -0.03	-7.37	6.25	CO 9
				Max M_y	22.68	-0.00	-7.72	-0.00	▷ 35.53	-0.01	CO 11
				Min M_y	-20.47	0.00	0.00	-0.00	▷ -10.32	0.00	CO 2
				Max M_z	20.95	1.59	-6.78	0.56	33.78	▷ 8.02	CO 15
				Min M_z	-6.37	-0.01	-0.72	-0.01	0.71	▷ -0.11	CO 13
		2	1.800	Max N	▷ 24.14	-0.00	-6.73	-0.00	21.69	-0.01	CO 12
				Min N	▷ -19.94	0.00	0.22	-0.00	-10.11	0.00	CO 2
				Max V_y	21.68	▷ 1.43	-6.12	0.56	22.21	5.30	CO 15
				Min V_y	-17.27	▷ -0.01	-0.47	-0.00	-7.34	-0.07	CO 5
				Max V_z	-19.94	0.00	▷ 0.22	-0.00	-10.11	0.00	CO 2
				Min V_z	23.43	-0.00	▷ -6.98	-0.00	22.35	-0.01	CO 11
				Max M_T	21.68	1.43	-6.12	▷ 0.56	22.21	5.30	CO 15
				Min M_T	-18.80	1.10	0.07	▷ -0.03	-7.38	4.35	CO 9
				Max M_y	23.15	0.89	-6.34	0.38	▷ 22.49	3.34	CO 16
				Min M_y	-19.94	0.00	0.22	-0.00	▷ -10.11	0.00	CO 2
				Max M_z	-7.72	1.22	0.19	0.30	-0.86	▷ 5.35	CO 17
				Min M_z	-5.85	-0.01	-0.72	-0.01	-0.59	▷ -0.08	CO 13
	RC2	1	0.000	Max N	▷ 15.73	-0.00	-4.46	-0.00	21.91	-0.00	CO 30
				Min N	▷ -13.65	0.00	0.00	0.00	-6.78	0.00	CO 20
				Max V_y	14.10	▷ 0.97	-3.99	0.37	21.44	5.17	CO 33
				Min V_y	-4.25	▷ -0.01	-0.47	-0.01	0.46	-0.07	CO 31
				Max V_z	-5.50	0.80	▷ 0.13	0.23	-0.81	5.04	CO 35
				Min V_z	15.25	-0.00	▷ -4.63	-0.00	22.67	-0.00	CO 29
				Max M_T	14.10	0.97	-3.99	▷ 0.37	21.44	5.17	CO 33
				Min M_T	-4.25	-0.01	-0.47	▷ -0.01	0.46	-0.07	CO 31
				Max M_y	15.25	-0.00	-4.63	-0.00	▷ 22.67	-0.00	CO 29
				Min M_y	-13.65	0.00	0.00	0.00	▷ -6.78	0.00	CO 20
				Max M_z	14.10	0.97	-3.99	0.37	21.44	▷ 5.17	CO 33
				Min M_z	-4.25	-0.01	-0.47	-0.01	0.46	▷ -0.07	CO 31
		2	1.800	Max N	▷ 16.16	-0.00	-4.14	-0.00	14.20	-0.00	CO 30
				Min N	▷ -13.30	0.00	0.10	0.00	-6.70	0.00	CO 20
				Max V_y	14.53	▷ 0.90	-3.71	0.37	14.53	3.49	CO 33
				Min V_y	-3.90	▷ -0.01	-0.47	-0.01	-0.40	-0.05	CO 31
				Max V_z	-5.15	0.83	▷ 0.13	0.23	-0.58	3.57	CO 35
				Min V_z	15.69	-0.00	▷ -4.31	-0.00	14.64	-0.00	CO 29
				Max M_T	14.53	0.90	-3.71	▷ 0.37	14.53	3.49	CO 33
				Min M_T	-3.90	-0.01	-0.47	▷ -0.01	-0.40	-0.05	CO 31
				Max M_y	15.51	0.55	-3.84	0.25	▷ 14.71	2.19	CO 34
				Min M_y	-13.30	0.00	0.10	0.00	▷ -6.70	0.00	CO 20

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
13	RC2			Max M_z	-5.15	0.83	0.13	0.23	-0.58	3.57	CO 35
				Min M_z	-3.90	-0.01	-0.47	-0.01	-0.40	-0.05	CO 31
18	RC1	2	0.000	Max N	-3.65	-0.00	-17.00	-0.00	20.87	-0.01	CO 12
				Min N	-19.09	-0.00	0.66	0.01	-10.18	-0.00	CO 2
				Max V_y	-4.52	4.51	-16.22	0.50	21.47	5.07	CO 15
				Min V_y	-6.41	-0.05	-0.58	-0.01	-0.64	-0.08	CO 13
				Max V_z	-19.09	-0.00	0.66	0.01	-10.18	-0.00	CO 2
				Min V_z	-3.74	-0.00	-17.83	-0.00	21.49	-0.01	CO 11
				Max M_T	-4.52	4.51	-16.22	0.50	21.47	5.07	CO 15
				Min M_T	-17.98	1.18	0.49	-0.03	-7.45	4.35	CO 9
				Max M_y	-4.25	2.82	-16.53	0.34	21.73	3.19	CO 16
				Min M_y	-19.09	-0.00	0.66	0.01	-10.18	-0.00	CO 2
				Max M_z	-8.15	1.73	0.06	0.29	-0.90	5.34	CO 17
				Min M_z	-6.41	-0.05	-0.58	-0.01	-0.64	-0.08	CO 13
		55	0.200	Max N	-3.55	-0.00	-17.01	-0.00	17.47	-0.00	CO 12
				Min N	-19.03	-0.00	0.68	0.01	-10.05	0.00	CO 2
				Max V_y	-4.42	4.51	-16.22	0.50	18.23	4.17	CO 15
				Min V_y	-6.35	-0.05	-0.58	-0.01	-0.76	-0.07	CO 13
				Max V_z	-19.03	-0.00	0.68	0.01	-10.05	0.00	CO 2
				Min V_z	-3.64	-0.00	-17.84	-0.00	17.92	-0.00	CO 11
				Max M_T	-4.42	4.51	-16.22	0.50	18.23	4.17	CO 15
				Min M_T	-17.94	1.19	0.51	-0.03	-7.35	4.11	CO 9
				Max M_y	-4.15	2.82	-16.54	0.34	18.42	2.63	CO 16
				Min M_y	-19.03	-0.00	0.68	0.01	-10.05	0.00	CO 2
				Max M_z	-8.09	1.74	0.07	0.29	-0.89	4.99	CO 17
				Min M_z	-6.35	-0.05	-0.58	-0.01	-0.76	-0.07	CO 13
	RC2	2	0.000	Max N	-2.95	0.00	0.29	-0.00	-1.00	0.00	CO 19
				Min N	-12.68	0.02	0.42	-0.00	-6.76	-0.01	CO 20
				Max V_y	-3.65	3.05	-10.70	0.33	14.06	3.34	CO 33
				Min V_y	-4.37	-0.04	-0.34	-0.01	-0.43	-0.05	CO 31
				Max V_z	-12.68	0.02	0.42	-0.00	-6.76	-0.01	CO 20
				Min V_z	-3.17	-0.00	-11.90	-0.00	14.08	-0.00	CO 29
				Max M_T	-3.65	3.05	-10.70	0.33	14.06	3.34	CO 33
				Min M_T	-11.17	0.01	0.01	-0.01	-5.51	0.00	CO 24
				Max M_y	-3.48	1.91	-10.92	0.22	14.22	2.10	CO 34
				Min M_y	-12.68	0.02	0.42	-0.00	-6.76	-0.01	CO 20
				Max M_z	-5.63	1.29	-0.03	0.22	-0.61	3.54	CO 35
				Min M_z	-4.37	-0.04	-0.34	-0.01	-0.43	-0.05	CO 31
		55	0.200	Max N	-2.91	0.00	0.29	-0.00	-0.94	0.00	CO 19
				Min N	-12.64	0.02	0.43	-0.00	-6.67	-0.01	CO 20
				Max V_y	-3.59	3.05	-10.71	0.33	11.92	2.73	CO 33
				Min V_y	-4.34	-0.04	-0.34	-0.01	-0.50	-0.05	CO 31
				Max V_z	-12.64	0.02	0.43	-0.00	-6.67	-0.01	CO 20
				Min V_z	-3.11	-0.00	-11.91	-0.00	11.70	-0.00	CO 29
				Max M_T	-3.59	3.05	-10.71	0.33	11.92	2.73	CO 33
				Min M_T	-11.13	0.01	0.02	-0.01	-5.51	0.00	CO 24
				Max M_y	-3.42	1.91	-10.92	0.22	12.04	1.72	CO 34
				Min M_y	-12.64	0.02	0.43	-0.00	-6.67	-0.01	CO 20
				Max M_z	-5.60	1.29	-0.03	0.22	-0.62	3.29	CO 35
				Min M_z	-11.46	-0.01	-0.15	-0.00	-5.15	-0.05	CO 23
29	RC1	55	0.000	Max N	-3.55	-0.00	-17.01	-0.00	17.47	-0.00	CO 12
				Min N	-19.03	-0.00	0.68	0.01	-10.05	0.00	CO 2
				Max V_y	-4.42	4.51	-16.22	0.50	18.23	4.17	CO 15
				Min V_y	-6.35	-0.05	-0.58	-0.01	-0.76	-0.07	CO 13
				Max V_z	-19.03	-0.00	0.68	0.01	-10.05	0.00	CO 2
				Min V_z	-3.64	-0.00	-17.84	-0.00	17.92	-0.00	CO 11
				Max M_T	-4.42	4.51	-16.22	0.50	18.23	4.17	CO 15
				Min M_T	-17.94	1.19	0.51	-0.03	-7.35	4.11	CO 9
				Max M_y	-4.15	2.82	-16.54	0.34	18.42	2.63	CO 16
				Min M_y	-19.03	-0.00	0.68	0.01	-10.05	0.00	CO 2
				Max M_z	-8.09	1.74	0.07	0.29	-0.89	4.99	CO 17
				Min M_z	-6.35	-0.05	-0.58	-0.01	-0.76	-0.07	CO 13
		5	0.600	Max N	-3.30	-0.00	-17.02	-0.00	7.26	-0.00	CO 12
				Min N	-18.85	-0.00	0.75	0.01	-9.62	0.00	CO 2
				Max V_y	-4.17	4.51	-16.24	0.50	8.49	1.46	CO 15
				Min V_y	-6.18	-0.05	-0.58	-0.01	-1.11	-0.04	CO 13
				Max V_z	-18.85	-0.00	0.75	0.01	-9.62	0.00	CO 2
				Min V_z	-3.38	-0.00	-17.85	-0.00	7.21	-0.00	CO 11
				Max M_T	-4.17	4.51	-16.24	0.50	8.49	1.46	CO 15
				Min M_T	-17.79	1.21	0.55	-0.03	-7.03	3.39	CO 9
				Max M_y	-3.89	2.82	-16.56	0.34	8.49	0.94	CO 16
				Min M_y	-18.85	-0.00	0.75	0.01	-9.62	0.00	CO 2
				Max M_z	-7.92	1.75	0.07	0.29	-0.85	3.95	CO 17
				Min M_z	-16.24	-0.02	-0.17	-0.00	-7.58	-0.05	CO 5
	RC2	55	0.000	Max N	-2.91	0.00	0.29	-0.00	-0.94	0.00	CO 19
				Min N	-12.64	0.02	0.43	-0.00	-6.67	-0.01	CO 20
				Max V_y	-3.59	3.05	-10.71	0.33	11.92	2.73	CO 33
				Min V_y	-4.34	-0.04	-0.34	-0.01	-0.50	-0.05	CO 31
				Max V_z	-12.64	0.02	0.43	-0.00	-6.67	-0.01	CO 20
				Min V_z	-3.11	-0.00	-11.91	-0.00	11.70	-0.00	CO 29
				Max M_T	-3.59	3.05	-10.71	0.33	11.92	2.73	CO 33
				Min M_T	-11.13	0.01	0.02	-0.01	-5.51	0.00	CO 24
				Max M_y	-3.42	1.91	-10.92	0.22	12.04	1.72	CO 34
				Min M_y	-12.64	0.02	0.43	-0.00	-6.67	-0.01	CO 20
				Max M_z	-5.60	1.29	-0.03	0.22	-0.62	3.29	CO 35
				Min M_z	-11.46	-0.01	-0.15	-0.00	-5.15	-0.05	CO 23
		5	0.600	Max N	-2.79	0.00	0.29	-0.00	-0.76	0.00	CO 19

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
29	RC2			Min N	▷ -12.52	0.02	0.45	-0.00	-6.41	-0.02	CO 20
				Max V_y	-3.44	▷ 3.05	-10.72	0.33	5.49	0.90	CO 33
				Min V_y	-4.22	▷ -0.04	-0.34	-0.01	-0.71	-0.02	CO 31
				Max V_z	-12.52	0.02	▷ 0.45	-0.00	-6.41	-0.02	CO 20
				Min V_z	-2.96	-0.00	▷ -11.91	-0.00	4.55	-0.00	CO 29
				Max M_T	-3.44	3.05	-10.72	▷ 0.33	5.49	0.90	CO 33
				Min M_T	-11.01	0.01	0.04	▷ -0.01	-5.49	-0.00	CO 24
				Max M_y	-3.44	3.05	-10.72	0.33	▷ 5.49	0.90	CO 33
				Min M_y	-12.52	0.02	0.45	-0.00	▷ -6.41	-0.02	CO 20
				Max M_z	-5.48	1.30	-0.03	0.22	-0.64	▷ 2.51	CO 35
				Min M_z	-11.35	-0.01	-0.13	-0.00	-5.24	▷ -0.04	CO 23
	Section No. 7: QRO 49.5x49.5x3.6 | IS 4923-1997										
19	RC1	9	0.000	Max N	▷ 8.41	-0.00	-1.42	0.00	0.06	-0.00	CO 11
				Min N	▷ -1.95	0.19	-1.31	-0.31	0.83	0.10	CO 17
				Max V_y	2.41	▷ 0.26	-1.68	-0.26	1.65	0.12	CO 9
				Min V_y	3.60	▷ -0.04	-1.87	-0.06	0.21	0.00	CO 16
				Max V_z	0.11	0.00	▷ -0.19	-0.00	0.27	0.00	CO 1
				Min V_z	2.47	0.02	▷ -1.94	-0.10	0.25	0.06	CO 15
				Max M_T	6.06	-0.00	-1.19	▷ 0.00	1.38	-0.00	CO 5
				Min M_T	-1.95	0.19	-1.31	▷ -0.31	0.83	0.10	CO 17
				Max M_y	2.41	0.26	-1.68	-0.26	▷ 1.65	0.12	CO 9
				Min M_y	8.41	-0.00	-1.42	0.00	▷ 0.06	-0.00	CO 11
				Max M_z	2.41	0.26	-1.68	-0.26	1.65	▷ 0.12	CO 9
				Min M_z	5.27	-0.00	-1.03	-0.00	1.55	▷ -0.00	CO 2
		54	0.500	Max N	▷ 8.44	-0.00	-1.60	0.00	-0.69	-0.00	CO 11
				Min N	▷ -1.92	0.20	-1.47	-0.31	0.13	0.00	CO 17
				Max V_y	2.48	▷ 0.27	-1.92	-0.26	0.75	-0.01	CO 9
				Min V_y	3.63	▷ -0.04	-2.03	-0.06	-0.76	0.02	CO 16
				Max V_z	0.14	0.00	▷ -0.34	-0.00	0.14	0.00	CO 1
				Min V_z	2.50	0.02	▷ -2.10	-0.10	-0.76	0.05	CO 15
				Max M_T	6.12	-0.00	-1.38	▷ 0.00	0.74	0.00	CO 5
				Min M_T	-1.92	0.20	-1.47	▷ -0.31	0.13	0.00	CO 17
				Max M_y	5.33	-0.00	-1.29	-0.00	▷ 0.97	0.00	CO 2
				Min M_y	3.63	-0.04	-2.03	-0.06	▷ -0.76	0.02	CO 16
				Max M_z	2.50	0.02	-2.10	-0.10	-0.76	▷ 0.05	CO 15
				Min M_z	2.59	0.15	-1.66	-0.17	0.74	▷ -0.01	CO 10
	RC2	9	0.000	Max N	▷ 5.55	-0.00	-1.10	0.00	0.13	-0.00	CO 29
				Min N	▷ -1.63	0.12	-0.91	-0.20	0.58	0.07	CO 35
				Max V_y	0.87	▷ 0.16	-1.20	-0.18	1.17	0.08	CO 27
				Min V_y	2.05	▷ -0.03	-1.43	-0.04	0.24	0.00	CO 34
				Max V_z	-0.06	0.00	▷ -0.22	-0.00	0.21	0.00	CO 19
				Min V_z	1.25	0.01	▷ -1.48	-0.06	0.27	0.04	CO 33
				Max M_T	3.84	-0.00	-0.85	▷ 0.00	0.99	-0.00	CO 23
				Min M_T	-1.63	0.12	-0.91	▷ -0.20	0.58	0.07	CO 35
				Max M_y	0.87	0.16	-1.20	-0.18	▷ 1.17	0.08	CO 27
				Min M_y	5.55	-0.00	-1.10	0.00	▷ 0.13	-0.00	CO 29
				Max M_z	0.87	0.16	-1.20	-0.18	1.17	▷ 0.08	CO 27
				Min M_z	2.85	-0.00	-0.75	0.00	1.08	▷ -0.00	CO 20
		54	0.500	Max N	▷ 5.57	-0.00	-1.20	0.00	-0.44	-0.00	CO 29
				Min N	▷ -1.61	0.13	-1.02	-0.20	0.09	0.01	CO 35
				Max V_y	0.92	▷ 0.16	-1.39	-0.18	0.52	0.00	CO 27
				Min V_y	2.07	▷ -0.03	-1.53	-0.04	-0.50	0.01	CO 34
				Max V_z	-0.04	0.00	▷ -0.32	-0.00	0.08	-0.00	CO 19
				Min V_z	1.27	0.01	▷ -1.58	-0.06	-0.50	0.04	CO 33
				Max M_T	3.88	-0.00	-1.02	▷ 0.00	0.52	0.00	CO 23
				Min M_T	-1.61	0.13	-1.02	▷ -0.20	0.09	0.01	CO 35
				Max M_y	2.89	-0.00	-0.95	0.00	▷ 0.65	-0.00	CO 20
				Min M_y	2.07	-0.03	-1.53	-0.04	▷ -0.50	0.01	CO 34
				Max M_z	1.27	0.01	-1.58	-0.06	-0.50	▷ 0.04	CO 33
				Min M_z	1.09	0.09	-1.19	-0.11	0.51	▷ -0.00	CO 28
20	RC1	20	0.000	Max N	▷ 7.02	0.63	-2.48	0.79	1.83	0.47	CO 2
				Min N	▷ 0.19	0.08	-0.32	0.11	0.30	0.06	CO 1
				Max V_y	6.00	▷ 0.63	-1.64	0.56	1.44	0.48	CO 9
				Min V_y	3.04	▷ -0.15	0.43	-0.52	-0.51	-0.13	CO 15
				Max V_z	3.04	-0.15	▷ 0.43	-0.52	-0.51	-0.13	CO 15
				Min V_z	7.02	0.63	▷ -2.48	0.79	1.83	0.47	CO 2
				Max M_T	7.02	0.63	-2.48	▷ 0.79	1.83	0.47	CO 2
				Min M_T	3.04	-0.15	0.43	▷ -0.52	-0.51	-0.13	CO 15
				Max M_y	7.02	0.63	-2.48	0.79	▷ 1.83	0.47	CO 2
				Min M_y	3.04	-0.15	0.43	-0.52	▷ -0.51	-0.13	CO 15
				Max M_z	6.00	0.63	-1.64	0.56	1.44	▷ 0.48	CO 9
				Min M_z	5.02	-0.13	0.25	-0.45	-0.37	▷ -0.14	CO 11
		53	0.500	Max N	▷ 7.09	0.58	-2.73	0.79	0.53	0.16	CO 2
				Min N	▷ 0.21	0.08	-0.46	0.11	0.11	0.02	CO 1
				Max V_y	6.04	▷ 0.60	-1.84	0.56	0.57	0.16	CO 9
				Min V_y	3.06	▷ -0.16	0.26	-0.52	-0.34	-0.06	CO 15
				Max V_z	3.06	-0.16	▷ 0.26	-0.52	-0.34	-0.06	CO 15
				Min V_z	7.09	0.58	▷ -2.73	0.79	0.53	0.16	CO 2
				Max M_T	7.09	0.58	-2.73	▷ 0.79	0.53	0.16	CO 2
				Min M_T	3.06	-0.16	0.26	▷ -0.52	-0.34	-0.06	CO 15
				Max M_y	6.04	0.60	-1.84	0.56	▷ 0.57	0.16	CO 9
				Min M_y	4.04	-0.07	0.18	-0.51	▷ -0.36	-0.03	CO 16
				Max M_z	6.04	0.60	-1.84	0.56	0.57	▷ 0.16	CO 9
				Min M_z	5.04	-0.13	0.08	-0.45	-0.28	▷ -0.08	CO 11
	RC2	20	0.000	Max N	▷ 3.36	0.38	-1.73	0.54	1.28	0.27	CO 20
				Min N	▷ 0.07	0.06	-0.26	0.07	0.22	0.04	CO 19
				Max V_y	3.00	▷ 0.39	-1.16	0.39	1.03	0.29	CO 27

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
20	RC2			Min V_y	1.65	-0.07	0.08	-0.32	-0.22	-0.07	CO 33
				Max V_z	1.65	-0.07	0.08	-0.32	-0.22	-0.07	CO 33
				Min V_z	3.36	0.38	-1.73	0.54	1.28	0.27	CO 20
				Max M_T	3.36	0.38	-1.73	0.54	1.28	0.27	CO 20
				Min M_T	1.65	-0.07	0.08	-0.32	-0.22	-0.07	CO 33
				Max M_y	3.36	0.38	-1.73	0.54	1.28	0.27	CO 20
				Min M_y	1.65	-0.07	0.08	-0.32	-0.22	-0.07	CO 33
				Max M_z	3.00	0.39	-1.16	0.39	1.03	0.29	CO 27
				Min M_z	3.10	-0.07	-0.01	-0.27	-0.14	-0.09	CO 29
		53	0.500	Max N	3.40	0.36	-1.92	0.54	0.36	0.09	CO 20
				Min N	0.08	0.06	-0.36	0.07	0.07	0.01	CO 19
				Max V_y	3.03	0.38	-1.34	0.39	0.41	0.10	CO 27
				Min V_y	1.66	-0.07	-0.02	-0.32	-0.21	-0.03	CO 33
				Max V_z	1.66	-0.07	-0.02	-0.32	-0.21	-0.03	CO 33
				Min V_z	3.40	0.36	-1.92	0.54	0.36	0.09	CO 20
				Max M_T	3.40	0.36	-1.92	0.54	0.36	0.09	CO 20
				Min M_T	1.66	-0.07	-0.02	-0.32	-0.21	-0.03	CO 33
				Max M_y	3.03	0.38	-1.34	0.39	0.41	0.10	CO 27
				Min M_y	2.35	-0.01	-0.07	-0.31	-0.23	-0.02	CO 34
				Max M_z	3.03	0.38	-1.34	0.39	0.41	0.10	CO 27
				Min M_z	3.10	-0.07	-0.11	-0.27	-0.17	-0.05	CO 29
21	RC1	5	0.000	Max N	7.07	-0.53	3.53	-0.79	-2.44	-0.37	CO 2
				Min N	0.23	-0.08	0.75	-0.11	-0.48	-0.06	CO 1
				Max V_y	5.07	0.14	0.23	0.45	-0.36	0.05	CO 11
				Min V_y	6.46	-0.71	4.62	-0.80	-3.81	-0.51	CO 9
				Max V_z	6.46	-0.71	4.62	-0.80	-3.81	-0.51	CO 9
				Min V_z	5.07	0.14	0.23	0.45	-0.36	0.05	CO 11
				Max M_T	5.14	0.13	0.25	0.45	-0.37	0.04	CO 12
				Min M_T	6.46	-0.71	4.62	-0.80	-3.81	-0.51	CO 9
				Max M_y	5.07	0.14	0.23	0.45	-0.36	0.05	CO 11
				Min M_y	6.46	-0.71	4.62	-0.80	-3.81	-0.51	CO 9
				Max M_z	5.07	0.14	0.23	0.45	-0.36	0.05	CO 11
				Min M_z	6.46	-0.71	4.62	-0.80	-3.81	-0.51	CO 9
		50	0.960	Max N	7.08	-0.59	2.73	-0.79	0.53	0.16	CO 2
				Min N	0.21	-0.08	0.46	-0.11	0.11	0.02	CO 1
				Max V_y	5.04	0.13	-0.08	0.45	-0.28	-0.08	CO 11
				Min V_y	6.58	-0.79	3.84	-0.80	0.21	0.18	CO 9
				Max V_z	6.58	-0.79	3.84	-0.80	0.21	0.18	CO 9
				Min V_z	5.04	0.13	-0.08	0.45	-0.28	-0.08	CO 11
				Max M_T	5.11	0.13	-0.07	0.45	-0.28	-0.08	CO 12
				Min M_T	6.58	-0.79	3.84	-0.80	0.21	0.18	CO 9
				Max M_y	7.08	-0.59	2.73	-0.79	0.53	0.16	CO 2
				Min M_y	6.04	-0.52	0.54	0.37	-0.50	0.08	CO 15
				Max M_z	6.58	-0.79	3.84	-0.80	0.21	0.18	CO 9
				Min M_z	5.04	0.13	-0.08	0.45	-0.28	-0.08	CO 11
	RC2	5	0.000	Max N	3.67	-0.40	0.75	0.23	-0.91	-0.32	CO 33
				Min N	0.10	-0.06	0.55	-0.07	-0.37	-0.05	CO 19
				Max V_y	3.12	0.07	0.32	0.27	-0.38	0.01	CO 29
				Min V_y	3.18	-0.50	3.19	-0.55	-2.66	-0.38	CO 27
				Max V_z	3.18	-0.50	3.19	-0.55	-2.66	-0.38	CO 27
				Min V_z	3.12	0.07	0.32	0.27	-0.38	0.01	CO 29
				Max M_T	3.18	0.07	0.33	0.27	-0.39	0.01	CO 30
				Min M_T	3.18	-0.50	3.19	-0.55	-2.66	-0.38	CO 27
				Max M_y	0.10	-0.06	0.55	-0.07	-0.37	-0.05	CO 19
				Min M_y	3.18	-0.50	3.19	-0.55	-2.66	-0.38	CO 27
				Max M_z	3.12	0.07	0.32	0.27	-0.38	0.01	CO 29
				Min M_z	3.18	-0.50	3.19	-0.55	-2.66	-0.38	CO 27
		50	0.960	Max N	3.66	-0.39	0.52	0.23	-0.31	0.06	CO 33
				Min N	0.08	-0.06	0.36	-0.07	0.07	0.01	CO 19
				Max V_y	3.10	0.07	0.11	0.27	-0.17	-0.05	CO 29
				Min V_y	3.23	-0.54	2.71	-0.55	0.16	0.11	CO 27
				Max V_z	3.23	-0.54	2.71	-0.55	0.16	0.11	CO 27
				Min V_z	3.10	0.07	0.11	0.27	-0.17	-0.05	CO 29
				Max M_T	3.17	0.07	0.13	0.27	-0.17	-0.05	CO 30
				Min M_T	3.23	-0.54	2.71	-0.55	0.16	0.11	CO 27
				Max M_y	3.42	-0.36	1.91	-0.54	0.37	0.09	CO 20
				Min M_y	3.66	-0.39	0.52	0.23	-0.31	0.06	CO 33
				Max M_z	3.23	-0.54	2.71	-0.55	0.16	0.11	CO 27
				Min M_z	3.10	0.07	0.11	0.27	-0.17	-0.05	CO 29
22	RC1	5	0.000	Max N	5.98	-0.23	4.92	-0.35	-6.17	-0.39	CO 2
				Min N	-4.52	0.62	-0.84	0.46	2.22	0.71	CO 15
				Max V_y	-4.52	0.62	-0.84	0.46	2.22	0.71	CO 15
				Min V_y	5.31	-0.28	4.02	-0.31	-5.13	-0.41	CO 5
				Max V_z	5.98	-0.23	4.92	-0.35	-6.17	-0.39	CO 2
				Min V_z	-2.69	0.31	-0.98	0.25	2.29	0.41	CO 11
				Max M_T	-4.52	0.62	-0.84	0.46	2.22	0.71	CO 15
				Min M_T	5.98	-0.23	4.92	-0.35	-6.17	-0.39	CO 2
				Max M_y	-4.05	0.57	-0.95	0.43	2.37	0.66	CO 16
				Min M_y	5.98	-0.23	4.92	-0.35	-6.17	-0.39	CO 2
				Max M_z	-4.52	0.62	-0.84	0.46	2.22	0.71	CO 15
				Min M_z	5.31	-0.28	4.02	-0.31	-5.13	-0.41	CO 5
		51	1.796	Max N	6.48	-0.26	3.07	-0.36	0.74	0.01	CO 2
				Min N	-4.35	0.60	-1.61	0.46	-0.05	-0.41	CO 15
				Max V_y	-4.35	0.60	-1.61	0.46	-0.05	-0.41	CO 15
				Min V_y	5.67	-0.29	2.58	-0.31	0.61	0.07	CO 5
				Max V_z	6.48	-0.26	3.07	-0.36	0.74	0.01	CO 2
				Min V_z	-3.88	0.54	-1.70	0.43	-0.07	-0.37	CO 16

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
22	RC1			Max M_T	-4.35	0.60	-1.61	▷ 0.46	-0.05	-0.41	CO 15
				Min M_T	6.48	-0.26	3.07	▷ -0.36	0.74	0.01	CO 2
				Max M_y	6.48	-0.26	3.07	-0.36	▷ 0.74	0.01	CO 2
				Min M_y	-2.52	0.29	-1.65	0.25	▷ -0.11	-0.14	CO 11
				Max M_z	2.26	-0.18	0.60	-0.08	0.19	▷ 0.11	CO 13
				Min M_z	-4.35	0.60	-1.61	0.46	-0.05	▷ -0.41	CO 15
	RC2	5	0.000	Max N	▷ 2.95	-0.21	2.74	-0.22	-3.59	-0.31	CO 23
				Min N	▷ -3.44	0.42	-0.46	0.28	1.27	0.47	CO 33
				Max V_y	-3.44	▷ 0.42	-0.46	0.28	1.27	0.47	CO 33
				Min V_y	2.95	▷ -0.21	2.74	-0.22	-3.59	-0.31	CO 23
				Max V_z	2.83	-0.18	▷ 3.15	-0.25	-4.17	-0.30	CO 20
				Min V_z	-2.05	0.19	▷ -0.53	0.16	1.29	0.24	CO 30
				Max M_T	-3.44	0.42	-0.46	▷ 0.28	1.27	0.47	CO 33
				Min M_T	2.83	-0.18	3.15	▷ -0.25	-4.17	-0.30	CO 20
				Max M_y	-3.08	0.38	-0.52	0.26	▷ 1.37	0.43	CO 34
				Min M_y	2.83	-0.18	3.15	-0.25	▷ -4.17	-0.30	CO 20
				Max M_z	-3.44	0.42	-0.46	0.28	1.27	▷ 0.47	CO 33
				Min M_z	2.95	-0.21	2.74	-0.22	-3.59	▷ -0.31	CO 23
		51	1.796	Max N	▷ 3.16	-0.22	1.84	-0.22	0.44	0.07	CO 23
				Min N	▷ -3.36	0.41	-0.92	0.28	-0.00	-0.30	CO 33
				Max V_y	-3.36	▷ 0.41	-0.92	0.28	-0.00	-0.30	CO 33
				Min V_y	3.16	▷ -0.22	1.84	-0.22	0.44	0.07	CO 23
				Max V_z	2.36	-0.06	▷ 2.17	-0.08	0.51	-0.07	CO 27
				Min V_z	-2.99	0.38	▷ -0.98	0.26	-0.01	-0.27	CO 34
				Max M_T	-3.36	0.41	-0.92	▷ 0.28	-0.00	-0.30	CO 33
				Min M_T	3.09	-0.20	2.14	▷ -0.25	0.51	0.02	CO 20
				Max M_y	2.36	-0.06	2.17	-0.08	▷ 0.51	-0.07	CO 27
				Min M_y	-1.96	0.18	-0.94	0.16	▷ -0.04	-0.10	CO 29
				Max M_z	1.63	-0.14	0.41	-0.05	0.13	▷ 0.08	CO 31
				Min M_z	-3.36	0.41	-0.92	0.28	-0.00	▷ -0.30	CO 33
23	RC1	19	0.000	Max N	▷ 6.44	0.27	-2.84	0.36	2.22	0.14	CO 2
				Min N	▷ -6.92	-0.43	2.10	-0.31	-1.06	-0.49	CO 15
				Max V_y	5.70	▷ 0.30	-2.41	0.31	1.86	0.22	CO 5
				Min V_y	-5.91	▷ -0.44	2.07	-0.33	-1.06	-0.51	CO 16
				Max V_z	-6.92	-0.43	▷ 2.10	-0.31	-1.06	-0.49	CO 15
				Min V_z	6.44	0.27	▷ -2.84	0.36	2.22	0.14	CO 2
				Max M_T	2.99	0.15	-2.26	▷ 0.39	1.89	0.02	CO 9
				Min M_T	-5.91	-0.44	2.07	▷ -0.33	-1.06	-0.51	CO 16
				Max M_y	6.44	0.27	-2.84	0.36	▷ 2.22	0.14	CO 2
				Min M_y	-6.92	-0.43	2.10	-0.31	▷ -1.06	-0.49	CO 15
				Max M_z	5.70	0.30	-2.41	0.31	1.86	▷ 0.22	CO 5
				Min M_z	-5.91	-0.44	2.07	-0.33	-1.06	▷ -0.51	CO 16
		52	0.500	Max N	▷ 6.48	0.25	-3.07	0.36	0.74	0.01	CO 2
				Min N	▷ -6.94	-0.47	2.00	-0.31	-0.03	-0.28	CO 15
				Max V_y	5.73	▷ 0.29	-2.60	0.30	0.61	0.07	CO 5
				Min V_y	-5.93	▷ -0.49	1.96	-0.32	-0.04	-0.29	CO 16
				Max V_z	-6.94	-0.47	▷ 2.00	-0.31	-0.03	-0.28	CO 15
				Min V_z	6.48	0.25	▷ -3.07	0.36	0.74	0.01	CO 2
				Max M_T	3.00	0.15	-2.49	▷ 0.39	0.70	-0.06	CO 9
				Min M_T	-5.93	-0.49	1.96	▷ -0.32	-0.04	-0.29	CO 16
				Max M_y	6.48	0.25	-3.07	0.36	▷ 0.74	0.01	CO 2
				Min M_y	-2.51	-0.29	1.65	-0.25	▷ -0.11	-0.14	CO 11
				Max M_z	2.35	0.17	-0.61	0.08	0.19	▷ 0.10	CO 13
				Min M_z	-5.93	-0.49	1.96	-0.32	-0.04	▷ -0.29	CO 16
	RC2	19	0.000	Max N	▷ 3.19	0.23	-1.68	0.21	1.32	0.18	CO 23
				Min N	▷ -5.12	-0.30	1.23	-0.19	-0.59	-0.36	CO 33
				Max V_y	3.19	▷ 0.23	-1.68	0.21	1.32	0.18	CO 23
				Min V_y	-4.41	▷ -0.31	1.22	-0.20	-0.59	-0.37	CO 34
				Max V_z	-5.12	-0.30	▷ 1.23	-0.19	-0.59	-0.36	CO 33
				Min V_z	3.08	0.20	▷ -1.96	0.25	1.53	0.12	CO 20
				Max M_T	0.91	0.11	-1.57	▷ 0.28	1.33	0.02	CO 27
				Min M_T	-4.41	-0.31	1.22	▷ -0.20	-0.59	-0.37	CO 34
				Max M_y	3.08	0.20	-1.96	0.25	▷ 1.53	0.12	CO 20
				Min M_y	-5.12	-0.30	1.23	-0.19	▷ -0.59	-0.36	CO 33
				Max M_z	3.19	0.23	-1.68	0.21	1.32	▷ 0.18	CO 23
				Min M_z	-4.41	-0.31	1.22	-0.20	-0.59	▷ -0.37	CO 34
		52	0.500	Max N	▷ 3.19	0.22	-1.84	0.21	0.44	0.06	CO 23
				Min N	▷ -5.13	-0.32	1.15	-0.19	0.01	-0.21	CO 33
				Max V_y	3.19	▷ 0.22	-1.84	0.21	0.44	0.06	CO 23
				Min V_y	-4.42	▷ -0.33	1.13	-0.20	-0.00	-0.21	CO 34
				Max V_z	-5.13	-0.32	▷ 1.15	-0.19	0.01	-0.21	CO 33
				Min V_z	3.09	0.20	▷ -2.14	0.24	0.51	0.02	CO 20
				Max M_T	0.91	0.11	-1.76	▷ 0.28	0.49	-0.04	CO 27
				Min M_T	-4.42	-0.33	1.13	▷ -0.20	-0.00	-0.21	CO 34
				Max M_y	3.09	0.20	-2.14	0.24	▷ 0.51	0.02	CO 20
				Min M_y	-1.96	-0.18	0.94	-0.16	▷ -0.04	-0.10	CO 29
				Max M_z	1.70	0.13	-0.42	0.05	0.13	▷ 0.08	CO 31
				Min M_z	-4.42	-0.33	1.13	-0.20	-0.00	▷ -0.21	CO 34
24	RC1	50	0.000	Max N	▷ 7.08	-0.59	2.73	-0.79	0.53	0.16	CO 2
				Min N	▷ 0.21	-0.08	0.46	-0.11	0.11	0.02	CO 1
				Max V_y	5.04	▷ 0.13	-0.08	0.45	-0.28	-0.08	CO 11
				Min V_y	6.58	▷ -0.79	3.84	-0.80	0.21	0.18	CO 9
				Max V_z	6.58	-0.79	▷ 3.84	-0.80	0.21	0.18	CO 9
				Min V_z	5.04	0.13	▷ -0.08	0.45	-0.28	-0.08	CO 11
				Max M_T	5.11	0.13	-0.07	▷ 0.45	-0.28	-0.08	CO 12
				Min M_T	6.58	-0.79	3.84	▷ -0.80	0.21	0.18	CO 9
				Max M_y	7.08	-0.59	2.73	-0.79	▷ 0.53	0.16	CO 2

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
24	RC1			Min M_y	6.04	-0.53	0.54	0.37	▷ -0.50	0.08	CO 15
				Max M_z	6.58	-0.79	3.84	-0.80	0.21	▷ 0.18	CO 9
				Min M_z	5.04	0.13	-0.08	0.45	-0.28	▷ -0.08	CO 11
		21	0.500	Max N	▷ 7.02	-0.63	2.48	-0.79	1.83	0.47	CO 2
				Min N	▷ 0.19	-0.08	0.32	-0.11	0.30	0.06	CO 1
				Max V_y	5.02	▷ 0.13	-0.25	0.45	-0.37	-0.14	CO 11
				Min V_y	6.49	▷ -0.86	3.64	-0.81	2.07	0.60	CO 9
				Max V_z	6.49	-0.86	▷ 3.64	-0.81	2.07	0.60	CO 9
				Min V_z	5.02	0.13	▷ -0.25	0.45	-0.37	-0.14	CO 11
				Max M_T	5.10	0.12	-0.24	▷ 0.45	-0.36	-0.14	CO 12
				Min M_T	6.49	-0.86	3.64	▷ -0.81	2.07	0.60	CO 9
				Max M_y	6.49	-0.86	3.64	-0.81	▷ 2.07	0.60	CO 9
				Min M_y	5.02	0.13	-0.25	0.45	▷ -0.37	-0.14	CO 11
				Max M_z	6.49	-0.86	3.64	-0.81	2.07	▷ 0.60	CO 9
				Min M_z	5.02	0.13	-0.25	0.45	-0.37	▷ -0.14	CO 11
	RC2	50	0.000	Max N	▷ 3.66	-0.39	0.52	0.23	-0.31	0.06	CO 33
				Min N	▷ 0.08	-0.06	0.36	-0.07	0.07	0.01	CO 19
				Max V_y	3.10	▷ 0.07	0.11	0.27	-0.17	-0.05	CO 29
				Min V_y	3.23	▷ -0.54	2.71	-0.55	0.16	0.11	CO 27
				Max V_z	3.23	-0.54	▷ 2.71	-0.55	0.16	0.11	CO 27
				Min V_z	3.10	0.07	▷ 0.11	0.27	-0.17	-0.05	CO 29
				Max M_T	3.17	0.07	0.13	▷ 0.27	-0.17	-0.05	CO 30
				Min M_T	3.23	-0.54	2.71	▷ -0.55	0.16	0.11	CO 27
				Max M_y	3.42	-0.36	1.91	-0.54	▷ 0.37	0.09	CO 20
				Min M_y	3.66	-0.39	0.52	0.23	▷ -0.31	0.06	CO 33
				Max M_z	3.23	-0.54	2.71	-0.55	0.16	▷ 0.11	CO 27
				Min M_z	3.10	0.07	0.11	0.27	-0.17	▷ -0.05	CO 29
		21	0.500	Max N	▷ 3.65	-0.40	0.41	0.23	-0.08	0.26	CO 33
				Min N	▷ 0.07	-0.06	0.26	-0.07	0.22	0.04	CO 19
				Max V_y	3.09	▷ 0.07	0.01	0.27	-0.14	-0.09	CO 29
				Min V_y	3.18	▷ -0.57	2.53	-0.55	1.46	0.40	CO 27
				Max V_z	3.18	-0.57	▷ 2.53	-0.55	1.46	0.40	CO 27
				Min V_z	3.09	0.07	▷ 0.01	0.27	-0.14	-0.09	CO 29
				Max M_T	3.16	0.07	0.02	▷ 0.27	-0.14	-0.09	CO 30
				Min M_T	3.18	-0.57	2.53	▷ -0.55	1.46	0.40	CO 27
				Max M_y	3.18	-0.57	2.53	-0.55	▷ 1.46	0.40	CO 27
				Min M_y	3.09	0.07	0.01	0.27	▷ -0.14	-0.09	CO 29
				Max M_z	3.18	-0.57	2.53	-0.55	1.46	▷ 0.40	CO 27
				Min M_z	3.09	0.07	0.01	0.27	-0.14	▷ -0.09	CO 29
25	RC1	51	0.000	Max N	▷ 6.47	-0.26	3.07	-0.36	0.74	0.01	CO 2
				Min N	▷ -4.35	0.60	-1.61	0.46	-0.05	-0.41	CO 15
				Max V_y	-4.35	▷ 0.60	-1.61	0.46	-0.05	-0.41	CO 15
				Min V_y	5.67	▷ -0.29	2.58	-0.31	0.61	0.07	CO 5
				Max V_z	6.47	-0.26	▷ 3.07	-0.36	0.74	0.01	CO 2
				Min V_z	-3.87	0.54	▷ -1.70	0.43	-0.07	-0.37	CO 16
				Max M_T	-4.35	0.60	-1.61	▷ 0.46	-0.05	-0.41	CO 15
				Min M_T	6.47	-0.26	3.07	▷ -0.36	0.74	0.01	CO 2
				Max M_y	6.47	-0.26	3.07	-0.36	▷ 0.74	0.01	CO 2
				Min M_y	-2.52	0.29	-1.65	0.25	▷ -0.11	-0.14	CO 11
				Max M_z	2.26	-0.18	0.60	-0.08	0.19	▷ 0.11	CO 13
				Min M_z	-4.35	0.60	-1.61	0.46	-0.05	▷ -0.41	CO 15
		18	0.500	Max N	▷ 6.43	-0.27	2.84	-0.36	2.22	0.14	CO 2
				Min N	▷ -4.33	0.55	-1.74	0.46	-0.89	-0.69	CO 15
				Max V_y	-4.33	▷ 0.55	-1.74	0.46	-0.89	-0.69	CO 15
				Min V_y	5.65	▷ -0.31	2.39	-0.31	1.86	0.22	CO 5
				Max V_z	5.11	-0.06	▷ 2.89	-0.10	2.21	-0.08	CO 9
				Min V_z	-3.86	0.50	▷ -1.83	0.43	-0.95	-0.62	CO 16
				Max M_T	-4.33	0.55	-1.74	▷ 0.46	-0.89	-0.69	CO 15
				Min M_T	6.43	-0.27	2.84	▷ -0.36	2.22	0.14	CO 2
				Max M_y	6.43	-0.27	2.84	-0.36	▷ 2.22	0.14	CO 2
				Min M_y	-2.50	0.27	-1.78	0.25	▷ -0.97	-0.28	CO 11
				Max M_z	5.65	-0.31	2.39	-0.31	1.86	▷ 0.22	CO 5
				Min M_z	-4.33	0.55	-1.74	0.46	-0.89	▷ -0.69	CO 15
	RC2	51	0.000	Max N	▷ 3.16	-0.22	1.84	-0.22	0.44	0.07	CO 23
				Min N	▷ -3.36	0.41	-0.92	0.28	-0.00	-0.30	CO 33
				Max V_y	-3.36	▷ 0.41	-0.92	0.28	-0.00	-0.30	CO 33
				Min V_y	3.16	▷ -0.22	1.84	-0.22	0.44	0.07	CO 23
				Max V_z	2.36	-0.06	▷ 2.17	-0.08	0.51	-0.07	CO 27
				Min V_z	-2.99	0.38	▷ -0.98	0.26	-0.01	-0.27	CO 34
				Max M_T	-3.36	0.41	-0.92	▷ 0.28	-0.00	-0.30	CO 33
				Min M_T	3.09	-0.20	2.14	▷ -0.25	0.51	0.02	CO 20
				Max M_y	2.36	-0.06	2.17	-0.08	▷ 0.51	-0.07	CO 27
				Min M_y	-1.96	0.18	-0.94	0.16	▷ -0.04	-0.10	CO 29
				Max M_z	1.63	-0.14	0.41	-0.05	0.13	▷ 0.08	CO 31
				Min M_z	-3.36	0.41	-0.92	0.28	-0.00	▷ -0.30	CO 33
		18	0.500	Max N	▷ 3.16	-0.23	1.67	-0.22	1.31	0.18	CO 23
				Min N	▷ -3.34	0.39	-1.01	0.28	-0.49	-0.50	CO 33
				Max V_y	-3.34	▷ 0.39	-1.01	0.28	-0.49	-0.50	CO 33
				Min V_y	3.16	▷ -0.23	1.67	-0.22	1.31	0.18	CO 23
				Max V_z	2.35	-0.06	▷ 2.00	-0.08	1.55	-0.04	CO 27
				Min V_z	-2.98	0.36	▷ -1.07	0.26	-0.53	-0.45	CO 34
				Max M_T	-3.34	0.39	-1.01	▷ 0.28	-0.49	-0.50	CO 33
				Min M_T	3.08	-0.20	1.95	▷ -0.25	1.53	0.12	CO 20
				Max M_y	2.35	-0.06	2.00	-0.08	▷ 1.55	-0.04	CO 27
				Min M_y	-1.95	0.17	-1.03	0.16	▷ -0.54	-0.18	CO 30
				Max M_z	3.16	-0.23	1.67	-0.22	1.31	▷ 0.18	CO 23
				Min M_z	-3.34	0.39	-1.01	0.28	-0.49	▷ -0.50	CO 33

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
26	RC1	52	0.000	Max N	▷ 6.48	0.25	-3.07	0.36	0.74	0.01	CO 2
				Min N	▷ -6.94	-0.47	2.00	-0.31	-0.03	-0.28	CO 15
				Max V_y	5.73	▷ 0.29	-2.59	0.30	0.61	0.07	CO 5
				Min V_y	-5.93	▷ -0.49	1.96	-0.32	-0.04	-0.29	CO 16
				Max V_z	-6.94	-0.47	▷ 2.00	-0.31	-0.03	-0.28	CO 15
				Min V_z	6.48	0.25	▷ -3.07	0.36	0.74	0.01	CO 2
				Max M_T	3.01	0.15	-2.49	▷ 0.39	0.70	-0.06	CO 9
				Min M_T	-5.93	-0.49	1.96	▷ -0.32	-0.04	-0.29	CO 16
				Max M_y	6.48	0.25	-3.07	0.36	▷ 0.74	0.01	CO 2
				Min M_y	-2.51	-0.29	1.65	-0.25	▷ -0.11	-0.15	CO 11
				Max M_z	2.35	0.17	-0.61	0.08	0.19	▷ 0.10	CO 13
				Min M_z	-5.93	-0.49	1.96	-0.32	-0.04	▷ -0.29	CO 16
		5	1.796	Max N	▷ 5.99	0.23	-4.92	0.36	-6.17	-0.39	CO 2
				Min N	▷ -7.15	-0.46	1.01	-0.30	2.80	0.60	CO 15
				Max V_y	5.36	▷ 0.27	-4.04	0.30	-5.15	-0.41	CO 5
				Min V_y	-6.13	▷ -0.48	1.04	-0.32	2.77	0.62	CO 16
				Max V_z	-6.13	-0.48	▷ 1.04	-0.32	2.77	0.62	CO 16
				Min V_z	5.99	0.23	▷ -4.92	0.36	-6.17	-0.39	CO 2
				Max M_T	2.68	0.11	-3.67	▷ 0.38	-4.74	-0.27	CO 9
				Min M_T	-6.13	-0.48	1.04	▷ -0.32	2.77	0.62	CO 16
				Max M_y	-7.15	-0.46	1.01	-0.30	▷ 2.80	0.60	CO 15
				Min M_y	5.99	0.23	-4.92	0.36	▷ -6.17	-0.39	CO 2
				Max M_z	-6.13	-0.48	1.04	-0.32	2.77	▷ 0.62	CO 16
				Min M_z	5.36	0.27	-4.04	0.30	-5.15	▷ -0.41	CO 5
	RC2	52	0.000	Max N	▷ 3.20	0.22	-1.84	0.21	0.44	0.06	CO 23
				Min N	▷ -5.14	-0.32	1.15	-0.19	0.01	-0.21	CO 33
				Max V_y	3.20	▷ 0.22	-1.84	0.21	0.44	0.06	CO 23
				Min V_y	-4.42	▷ -0.33	1.13	-0.20	-0.00	-0.21	CO 34
				Max V_z	-5.14	-0.32	▷ 1.15	-0.19	0.01	-0.21	CO 33
				Min V_z	3.10	0.20	▷ -2.14	0.24	0.51	0.02	CO 20
				Max M_T	0.91	0.11	-1.76	▷ 0.28	0.49	-0.04	CO 27
				Min M_T	-4.42	-0.33	1.13	▷ -0.20	-0.00	-0.21	CO 34
				Max M_y	3.10	0.20	-2.14	0.24	▷ 0.51	0.02	CO 20
				Min M_y	-1.96	-0.18	0.94	-0.16	▷ -0.04	-0.10	CO 29
				Max M_z	1.70	0.13	-0.42	0.05	0.13	▷ 0.08	CO 31
				Min M_z	-4.42	-0.33	1.13	-0.20	-0.00	▷ -0.21	CO 34
		5	1.796	Max N	▷ 2.98	0.21	-2.75	0.21	-3.61	-0.31	CO 23
				Min N	▷ -5.23	-0.32	0.60	-0.19	1.63	0.39	CO 33
				Max V_y	2.98	▷ 0.21	-2.75	0.21	-3.61	-0.31	CO 23
				Min V_y	-4.52	▷ -0.33	0.61	-0.20	1.61	0.40	CO 34
				Max V_z	-4.52	-0.33	▷ 0.61	-0.20	1.61	0.40	CO 34
				Min V_z	2.83	0.18	▷ -3.16	0.24	-4.17	-0.30	CO 20
				Max M_T	0.72	0.08	-2.52	▷ 0.27	-3.34	-0.20	CO 27
				Min M_T	-4.52	-0.33	0.61	▷ -0.20	1.61	0.40	CO 34
				Max M_y	-5.23	-0.32	0.60	-0.19	▷ 1.63	0.39	CO 33
				Min M_y	2.83	0.18	-3.16	0.24	▷ -4.17	-0.30	CO 20
				Max M_z	-4.52	-0.33	0.61	-0.20	1.61	▷ 0.40	CO 34
				Min M_z	2.91	0.21	-2.74	0.22	-3.61	▷ -0.31	CO 24
27	RC1	53	0.000	Max N	▷ 7.09	0.58	-2.73	0.79	0.53	0.16	CO 2
				Min N	▷ 0.21	0.08	-0.46	0.11	0.11	0.02	CO 1
				Max V_y	6.04	▷ 0.60	-1.84	0.56	0.57	0.16	CO 9
				Min V_y	3.06	▷ -0.16	0.26	-0.52	-0.34	-0.06	CO 15
				Max V_z	3.06	-0.16	▷ 0.26	-0.52	-0.34	-0.06	CO 15
				Min V_z	7.09	0.58	▷ -2.73	0.79	0.53	0.16	CO 2
				Max M_T	7.09	0.58	-2.73	▷ 0.79	0.53	0.16	CO 2
				Min M_T	3.06	-0.16	0.26	▷ -0.52	-0.34	-0.06	CO 15
				Max M_y	6.04	0.60	-1.84	0.56	▷ 0.57	0.16	CO 9
				Min M_y	4.04	-0.07	0.18	-0.51	▷ -0.36	-0.03	CO 16
				Max M_z	6.04	0.60	-1.84	0.56	0.57	▷ 0.16	CO 9
				Min M_z	5.04	-0.13	0.08	-0.45	-0.28	▷ -0.08	CO 11
		5	0.959	Max N	▷ 7.08	0.53	-3.53	0.79	-2.44	-0.36	CO 2
				Min N	▷ 0.23	0.08	-0.75	0.11	-0.48	-0.06	CO 1
				Max V_y	6.06	▷ 0.59	-2.42	0.56	-1.45	-0.40	CO 9
				Min V_y	3.08	▷ -0.17	-0.04	-0.52	-0.23	0.10	CO 15
				Max V_z	3.08	-0.17	▷ -0.04	-0.52	-0.23	0.10	CO 15
				Min V_z	7.08	0.53	▷ -3.53	0.79	-2.44	-0.36	CO 2
				Max M_T	7.08	0.53	-3.53	▷ 0.79	-2.44	-0.36	CO 2
				Min M_T	3.08	-0.17	-0.04	▷ -0.52	-0.23	0.10	CO 15
				Max M_y	0.93	0.22	-0.45	0.04	▷ -0.01	-0.14	CO 17
				Min M_y	7.08	0.53	-3.53	0.79	▷ -2.44	-0.36	CO 2
				Max M_z	3.08	-0.17	-0.04	-0.52	-0.23	▷ 0.10	CO 15
				Min M_z	6.06	0.59	-2.42	0.56	-1.45	▷ -0.40	CO 9
	RC2	53	0.000	Max N	▷ 3.40	0.36	-1.92	0.54	0.36	0.09	CO 20
				Min N	▷ 0.08	0.06	-0.36	0.07	0.07	0.01	CO 19
				Max V_y	3.03	▷ 0.38	-1.34	0.39	0.41	0.10	CO 27
				Min V_y	1.66	▷ -0.07	-0.02	-0.32	-0.21	-0.03	CO 33
				Max V_z	1.66	-0.07	▷ -0.02	-0.32	-0.21	-0.03	CO 33
				Min V_z	3.40	0.36	▷ -1.92	0.54	0.36	0.09	CO 20
				Max M_T	3.40	0.36	-1.92	▷ 0.54	0.36	0.09	CO 20
				Min M_T	1.66	-0.07	-0.02	▷ -0.32	-0.21	-0.03	CO 33
				Max M_y	3.03	0.38	-1.34	0.39	▷ 0.41	0.10	CO 27
				Min M_y	2.35	-0.01	-0.07	-0.31	▷ -0.23	-0.02	CO 34
				Max M_z	3.03	0.38	-1.34	0.39	0.41	▷ 0.10	CO 27
				Min M_z	3.10	-0.07	-0.11	-0.27	-0.17	▷ -0.05	CO 29
		5	0.959	Max N	▷ 3.40	0.33	-2.41	0.54	-1.70	-0.24	CO 20
				Min N	▷ 0.10	0.06	-0.55	0.07	-0.37	-0.05	CO 19
				Max V_y	3.05	▷ 0.37	-1.74	0.39	-1.06	-0.25	CO 27

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Corresponding Load Cases
27	RC2			Min V_y	1.67	▷ -0.08	-0.22	-0.32	-0.33	0.04	CO 33
				Max V_z	1.67	-0.08	▷ -0.22	-0.32	-0.33	0.04	CO 33
				Min V_z	3.40	0.33	▷ -2.41	0.54	-1.70	-0.24	CO 20
				Max M_T	3.40	0.33	-2.41	▷ 0.54	-1.70	-0.24	CO 20
				Min M_T	1.67	-0.08	-0.22	▷ -0.32	-0.33	0.04	CO 33
				Max M_y	0.38	0.15	-0.38	0.03	▷ -0.08	-0.09	CO 35
				Min M_y	3.40	0.33	-2.41	0.54	▷ -1.70	-0.24	CO 20
				Max M_z	1.67	-0.08	-0.22	-0.32	-0.33	▷ 0.04	CO 33
				Min M_z	3.05	0.37	-1.74	0.39	-1.06	▷ -0.25	CO 27
28	RC1	54	0.000	Max N	▷ 8.44	-0.00	-1.60	0.00	-0.69	-0.00	CO 11
				Min N	▷ -1.92	0.20	-1.47	-0.31	0.13	0.00	CO 17
				Max V_y	2.48	▷ 0.27	-1.92	-0.26	0.75	-0.01	CO 9
				Min V_y	3.63	▷ -0.04	-2.03	-0.06	-0.76	0.02	CO 16
				Max V_z	0.14	0.00	▷ -0.34	-0.00	0.14	0.00	CO 1
				Min V_z	2.50	0.02	▷ -2.10	-0.10	-0.76	0.05	CO 15
				Max M_T	6.12	-0.00	-1.38	▷ 0.00	0.74	0.00	CO 5
				Min M_T	-1.92	0.20	-1.47	▷ -0.31	0.13	0.00	CO 17
				Max M_y	5.33	-0.00	-1.29	-0.00	▷ 0.97	0.00	CO 2
				Min M_y	3.63	-0.04	-2.03	-0.06	▷ -0.76	0.02	CO 16
				Max M_z	2.50	0.02	-2.10	-0.10	-0.76	▷ 0.05	CO 15
				Min M_z	2.59	0.15	-1.66	-0.17	0.74	▷ -0.01	CO 10
		5	0.717	Max N	▷ 8.44	-0.00	-1.99	0.00	-1.97	0.00	CO 11
				Min N	▷ -1.89	0.21	-1.67	-0.31	-0.99	-0.14	CO 17
				Max V_y	2.54	▷ 0.28	-2.29	-0.26	-0.75	-0.20	CO 9
				Min V_y	3.62	▷ -0.04	-2.33	-0.06	-2.32	0.05	CO 16
				Max V_z	0.17	0.00	▷ -0.55	-0.00	-0.17	-0.00	CO 1
				Min V_z	2.49	0.02	▷ -2.37	-0.10	-2.35	0.04	CO 15
				Max M_T	6.18	-0.00	-1.74	▷ 0.00	-0.37	0.00	CO 5
				Min M_T	-1.89	0.21	-1.67	▷ -0.31	-0.99	-0.14	CO 17
				Max M_y	5.41	-0.00	-1.73	-0.00	▷ -0.11	0.00	CO 2
				Min M_y	2.49	0.02	-2.37	-0.10	▷ -2.35	0.04	CO 15
				Max M_z	3.62	-0.04	-2.33	-0.06	-2.32	▷ 0.05	CO 16
				Min M_z	2.54	0.28	-2.29	-0.26	-0.75	▷ -0.20	CO 9
	RC2	54	0.000	Max N	▷ 5.57	-0.00	-1.20	0.00	-0.44	-0.00	CO 29
				Min N	▷ -1.61	0.13	-1.02	-0.20	0.09	0.01	CO 35
				Max V_y	0.92	▷ 0.16	-1.39	-0.18	0.52	0.00	CO 27
				Min V_y	2.07	▷ -0.03	-1.53	-0.04	-0.50	0.01	CO 34
				Max V_z	-0.04	0.00	▷ -0.32	-0.00	0.08	-0.00	CO 19
				Min V_z	1.27	0.01	▷ -1.58	-0.06	-0.50	0.04	CO 33
				Max M_T	3.88	-0.00	-1.02	▷ 0.00	0.52	0.00	CO 23
				Min M_T	-1.61	0.13	-1.02	▷ -0.20	0.09	0.01	CO 35
				Max M_y	2.89	-0.00	-0.95	0.00	▷ 0.65	-0.00	CO 20
				Min M_y	2.07	-0.03	-1.53	-0.04	▷ -0.50	0.01	CO 34
				Max M_z	1.27	0.01	-1.58	-0.06	-0.50	▷ 0.04	CO 33
				Min M_z	1.09	0.09	-1.19	-0.11	0.51	▷ -0.00	CO 28
		5	0.717	Max N	▷ 5.58	-0.00	-1.43	0.00	-1.38	0.00	CO 29
				Min N	▷ -1.59	0.13	-1.15	-0.20	-0.68	-0.08	CO 35
				Max V_y	0.96	▷ 0.16	-1.67	-0.18	-0.58	-0.11	CO 27
				Min V_y	2.07	▷ -0.03	-1.71	-0.04	-1.66	0.04	CO 34
				Max V_z	-0.02	0.00	▷ -0.46	-0.00	-0.20	-0.00	CO 19
				Min V_z	1.27	0.01	▷ -1.74	-0.06	-1.68	0.03	CO 33
				Max M_T	3.92	-0.00	-1.29	▷ 0.00	-0.30	0.00	CO 23
				Min M_T	-1.59	0.13	-1.15	▷ -0.20	-0.68	-0.08	CO 35
				Max M_y	2.94	-0.00	-1.25	0.00	▷ -0.13	0.00	CO 20
				Min M_y	1.27	0.01	-1.74	-0.06	▷ -1.68	0.03	CO 33
				Max M_z	2.07	-0.03	-1.71	-0.04	-1.66	▷ 0.04	CO 34
				Min M_z	0.96	0.16	-1.67	-0.18	-0.58	▷ -0.11	CO 27

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Project: Design of utility tensile structures | Model: asymmetric cone workstation | Date: 24/06/2020

RF-STEEL IS
CA1
Design of steel members according to IS

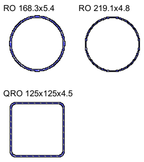
1.1 GENERAL DATA

Members to design:	9-29		
Sets of members to design:			
Ultimate Limit State Design			
Result combinations to design:	RC1	Limit State of Strength	-

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
5	Steel IS 10748 3 | IS 800:2007	20000.00	7690.00	0.300	24.00	
7	Steel IS 10748 3 | IS 800:2007	20000.00	7690.00	0.300	24.00	

1.3 CROSS-SECTIONS



Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Comment
3	5	RO 168.3x5.4 | IS 1161-1998	Pipe	
	The cross-section in RFEM is different from the cross-section in RF-STEEL IS.			
6	7	RO 219.1x4.8 | IS 1161-1998	Pipe	
	The cross-section in RFEM is different from the cross-section in RF-STEEL IS.			
7	7	QRO 125x125x4.5 | IS 4923-1997	Box rolled	
	The cross-section in RFEM is different from the cross-section in RF-STEEL IS.			

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Length	Buckling About Axis y			Buckling About Axis z			LTB		
No.	Possible	L [m]	Possible	$k_{cr,y}$	KL_y [m]	Possible	$k_{cr,z}$	KL_z [m]	Possible	K_z	K_w
9	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
10	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
11	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
12	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
13	☒	1.800	☒	1.00	1.800	☒	1.00	1.800	☐	1.0	1.0
14	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
15	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
16	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
17	☐	1.433	☐	1.00	1.433	☐	1.00	1.433	☐	1.0	1.0
	This type of member is not allowed for stability calculation.										
18	☒	0.200	☒	1.00	0.200	☒	1.00	0.200	☐	1.0	1.0
19	☒	0.500	☒	1.00	0.500	☒	1.00	0.500	☐	1.0	1.0
20	☒	0.500	☒	1.00	0.500	☒	1.00	0.500	☐	1.0	1.0
21	☒	0.960	☒	1.00	0.960	☒	1.00	0.960	☐	1.0	1.0
22	☒	1.796	☒	1.00	1.796	☒	1.00	1.796	☐	1.0	1.0
23	☒	0.500	☒	1.00	0.500	☒	1.00	0.500	☐	1.0	1.0
24	☒	0.500	☒	1.00	0.500	☒	1.00	0.500	☐	1.0	1.0
25	☒	0.500	☒	1.00	0.500	☒	1.00	0.500	☐	1.0	1.0
26	☒	1.796	☒	1.00	1.796	☒	1.00	1.796	☐	1.0	1.0
27	☒	0.959	☒	1.00	0.959	☒	1.00	0.959	☐	1.0	1.0
28	☒	0.717	☒	1.00	0.717	☒	1.00	0.717	☐	1.0	1.0
29	☒	0.600	☒	1.00	0.600	☒	1.00	0.600	☐	1.0	1.0