

FINAL PROJECT

**ANALYSIS OF STRUCTURAL RESPONSE AND
MEMBER UTILIZATION FOR THE LOWER DECK AND
WELLHEAD ACCESS PLATFORM- NFQ14 TOPSIDE
DURING SPMT TRANSPORTATION**

Submitted in Partial Fulfilment of the Requirements for the Bachelor of
Civil Engineering Degree



Mosab Mohammed Musa Almarioud

21511285

**CIVIL ENGINEERING STUDY PROGRAM
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Arranged by:

Mosab Mohammed Musa Almarioud

21511285

Has been accepted to Fulfilment of the Requirements for the Bachelor of
Civil Engineering Degree

Assessed on

By the Board of Reviewer

Supervisor

15/08
2025

Jafar, S.T., M.T., MURP

NIK: 185111305

Reviewer I

19.08.25

Astriana Hardawati, S.T., M.Eng

NIK: 165111301

Reviewer II

Ir. Yunalia Muntafi, S.T., MT., Ph.D. Eng

NIK: 095110101

Approved

Head of Civil Engineering Study Program



Ir. Yunalia Muntafi, S.T., MT., Ph.D. Eng

NIK: 095110101

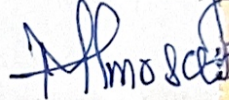
19/8/2025

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I hereby declare that the final project proposal I have submitted, as part of the requirements for the Civil Engineering program at Universitas Islam Indonesia, is entirely my own work. Any sections of the report that cite or reference the work of others have been properly acknowledged in accordance with the established guidelines for scientific writing. If it is later discovered that any part of this report, or the entire report, is not my own work or contains plagiarism, I accept full responsibility and understand that I may face sanctions, including the possible revocation of my degree.

Yogyakarta 20th July 2025

Author,



Mosab Mohammed Musa Almarioud

(21511285)

ABSTRACT

Transporting large offshore structures requires rigorous safety analysis. This research examines the structural response of the Lower Deck and Wellhead Access Platform (LD&WAP) for the NFQ14 Topside, part of Qatar's North Field Expansion Project, during its transport via Self-Propelled Modular Transporters (SPMTs). The study verifies the platform's integrity under static loads, including the impact of a shifted Center of Gravity (CoG).

A 3D model was developed in SACS using dead loads from TEKLA models and the Weight Control Report (WCR). Load combinations simulated worst-case scenarios. A static linear analysis determined maximum joint reactions and member utilization (Unity Check), with results benchmarked against the AISC design code.

The analysis confirmed the platform's system is robust. The maximum joint reaction was 159.83 metric tons under a shifted CoG, within the SPMT's capacity. The highest member utilization was 0.99, indicating an efficient but near-capacity design that requires monitoring. These findings validate the transportation plan and static analysis approach, ensuring the safe transport of the LD&WAP and offering a framework for future projects.

Keywords: Offshore Platform, Structural Analysis, SPMT, Transportation, Member Utilization, Unity Check, Center of Gravity (CoG), SACS.

FOREWARD

Praise and gratitude are extended to God Almighty, whose grace and guidance have made the completion of this Final Project possible. The preparation of this project involved numerous challenges, but with the support, feedback, and encouragement from various parties, it has been successfully completed. I would like to express my sincere appreciation to the following individuals for their valuable contributions:

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I acknowledge the shortcomings in this final project and welcome constructive criticism that will help improve future work. I hope this project can provide useful insights and contribute to the ongoing development of the Civil Engineering field.

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Yogyakarta 15th March 2025

Author,



Mosab Mohammed Musa Aimarioud

(21511285)

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LIST OF NOTATIONS AND ABBRVIATIONS

BSCFD	Billion Standard Cubic Feet Per Day
BVS	Beach Valve Station
CoG	Center of Gravity
CE	Construction Engineering
FWS	Full Well Stream
LNG	Liquefied Natural Gas
MTPA	Million Metric Tons Per Annum
SPMT	Self-propelled modular transporter (SPMT)
DAF	dynamic amplification factor
AWS	The American Welding Society
NFE	North Field East
NFQ	North Field Qatar
NFS	North Field South
NFXP	North Field Expansion Project
NMCB	North Field Main Control Building
NSS	National Security Shield
SACS	Structural Analysis Computer System (Software)
STPM	Sensor Tower Platform Marine
UC	Unity Check
WCR	Weight Control Report
WHP	Wellhead Platform
WSD	Working Stress Design
LD	Lower deck
WAP	Wellhead access platform
EPCI	Engineering, Procurement, Construction & Commissioning, and Installation

CHAPTER I

INTRODUCTION

1.1. Background

Civil engineering is pivotal in developing modern infrastructure, especially within the oil and gas sector. Offshore construction a vital branch of construction engineering encompasses the design, fabrication, and transportation of intricate structures, including topsides, lower decks, and wellhead access platforms. These components are essential for facilitating oil and gas extraction, ensuring operational efficiency, and maintaining structural stability in challenging marine environments (Liu & Li, 2017). The movement of these substantial structures demands meticulous planning, engineering precision, and strict adherence to safety standards (Muyiwa & Sadeghi, 2007).

One of the most ambitious projects in recent years is the North Field Expansion Project (NFXP) in Qatar, which aims to increase the country's liquefied natural gas (LNG) production capacity. A key component of this project is the transportation and installation of the lower deck and wellhead access platform (LD&WAP) for the NFQ14 Topside. The LD&WAP must be moved from the Jig area to its final position at the erection area, passing through two intermediate locations, RUBB1 and RUBB2, before being lifted and installed onto the topside. This multi-stage transportation process is a highly complex operation that requires detailed engineering and logistical planning.

The transportation of the Lower Deck and Wellhead Access Platform (LD&WAP) is a critical phase of the North Field Expansion Project (NFXP). This operation is not merely logistical it's an engineering challenge involving high financial stakes and strict safety requirements. The multi-stage movement demands coordination of advanced equipment like Self-Propelled Modular Transporters

(SPMTs). Dynamic loads from acceleration, hydraulic vibrations, and uneven terrain add complexity beyond the platform's self-weight.

Any miscalculation could lead to structural failures such as buckling, joint damage, or plastic deformation. Such failures would cause major project delays and financial losses, making risk mitigation essential.

Therefore, predictive structural analysis is not optional it's a fundamental necessity. It ensures all members stay within their allowable limits throughout the transport process. This guarantees the platform arrives safely and ready for installation at its final location.

The transportation of the LD&WAP begins at the Jig area, where the structure undergoes inspections and preparations to ensure it is ready for movement. Specialized equipment such as Self-propelled modular transporters (SPMTs) are utilized for the operation, providing the stability and maneuverability required for transporting such large components. The route from the Jig area to the intermediate locations must be carefully analyzed to avoid obstacles and ensure the safety of the structure and personnel involved.

The intermediate locations, RUBB1 and RUBB2, serve as critical staging points during the transportation process. At these locations, the LD&WAP is temporarily stored, allowing for inspections and adjustments before proceeding to the next stage. Ground conditions at these locations are prepared to ensure stability, and temporary supports are used to maintain the structural integrity of the platform. The transition between each stage of transportation is carefully coordinated to minimize risks and delays.

Environmental factors also play a significant role in the transportation of offshore structures. Weather conditions such as wind speeds, wave heights, and temperature variations must be monitored in real-time to ensure safe operations. Adverse weather can introduce additional stresses on the structure and impact the performance of transportation equipment. As such, transportation schedules are often flexible, allowing for adjustments based on environmental conditions to mitigate risks.

At the final stage, the LD&WAP is positioned in the erection area, where it is prepared for lifting and installation onto the NFQ14 Topside. This phase requires precision alignment of the structure with lifting equipment to ensure a smooth transition to its final location. The success of this stage is dependent on the accuracy of the transportation process and the condition of the structure upon arrival.

The challenges involved in transporting the LD&WAP highlight the importance of rigorous engineering and logistical planning. Issues such as structural stresses, route optimization, and compliance with international safety standards must be addressed to ensure the successful completion of the project. This project focuses on developing a comprehensive transportation plan that integrates advanced engineering techniques, real-time monitoring, and adaptive strategies to overcome these challenges.

By examining the transportation process in detail, this study aims to contribute to the field of offshore engineering, offering insights and best practices for similar projects in the future. The lessons learned from the NFQ14 transportation project will not only support the success of the North Field Expansion Project but also set a benchmark for the safe and efficient movement of large offshore structures worldwide.

1.2. Problem formulation

The problems in this study are formulated as follows:

1. What is the joint reaction value, including the maximum joint reaction, experienced by the Lower Deck and Wellhead Access Platform (LD&WAP) during transportation?
2. What is the member utilization (Unity Check) of the Lower Deck and Wellhead Access Platform (LD&WAP) under transportation loading conditions?
3. How does the Lower Deck and Wellhead Access Platform (LD&WAP) respond to additional loads and shifts in the center of gravity (CoG) during transportation?

1.3. Research purpose

The primary purpose of this research is to ensure the safety and structural integrity of the Lower Deck and Wellhead Access Platform (LD&WAP) during its transportation. This study will focus on understanding the structural response to various loading conditions and dynamic factors encountered during transportation, aiming to prevent potential damage. The objectives of the study are as follows:

1. **Structural Behavior Analysis:**

To analyze the joint reactions (including the maximum joint reaction) and member utilization (Unity Check) of the LD&WAP during transportation, ensuring the platform can withstand transportation-related stresses without compromising its structural integrity.

2. **Impact of Dynamic Loads:**

To assess the effect of dynamic loads and shifts in the center of gravity (CoG) on the stability of the LD&WAP, particularly focusing on how these changes impact the platform's safety and overall performance during transportation.

3. **Safety and Risk Assessment:**

To evaluate potential risks to the platform during transportation, including structural stresses, shifts in CoG, and unforeseen environmental factors, ensuring the LD&WAP remains safe and undamaged under varying conditions.

1.4. Research benefit

The outcomes of this study will offer significant theoretical and practical benefits:

1. **Theoretical Contribution:**

This research will expand the knowledge base in offshore construction and transportation logistics by providing detailed insights into the management of transporting complex and oversized offshore structures. It will address gaps in current literature regarding large-scale offshore logistics and transportation methodologies, particularly for platforms like the Lower

Deck and Wellhead Access Platform (LD&WAP). The study will also propose innovative approaches to overcoming logistical challenges specific to offshore transportation.

2. **Practical Applications:**

The practical outcomes of this study will have a direct impact on the efficiency and safety of offshore transportation operations, with key benefits including:

- **Refined Transportation Methodology:** Development of a robust, adaptable transportation strategy that can be applied to future offshore construction projects, ensuring both safety and operational efficiency.
- **Improved Safety Standards:** The research will enhance safety protocols by identifying potential risks and recommending measures to minimize damages during transportation, ensuring the safe movement of large offshore structures in challenging environments.
- **Guidelines for Offshore Transportation:** To contribute to the development of operational guidelines for the safe and efficient transportation of complex offshore structures, based on the insights gained from this study. These guidelines will inform best practices for future projects involving the transportation of large-scale offshore platforms.

1.5. **Research Limitations**

To simplify the scope of this research, the following limitations have been outlined:

1. **Scope of Study:** This study focuses solely on the logistics and transportation of the LD&WAP in Batam, excluding fabrication and other stages of the North Field Expansion Project (NFXP).
2. **Geographic Focus:** The research is limited to the Batam region, covering the movement of the LD&WAP from the fabrication yard to the offshore site, and does not include offshore logistics or operations in other regions.

3. **Transport Equipment:** The study will only examine Self-Propelled Modular Transporters (SPMTs), excluding other transport methods like tugboats, cranes, or marine vessels.
4. **Transportation Route:** The focus is on the primary transportation route inside Batam fabrication yard to the offshore site, without exploring alternative or backup routes.
5. **Data Availability:** The study will rely on historical data and simulations, as access to real-time data from previous transport operations may be restricted.
6. **Environmental and External Factors:** While historical data will be used to assess environmental risks, real-time variables during the actual transportation phase may not be fully accounted for.
7. **Technological Limitations:** The implementation of proposed technologies, such as modeling software or automation tools, may face constraints due to project-specific challenges.

CHAPTER II

LITERATURE REVIEW

2.1. Review of previous research

This chapter presents a comprehensive review of previous studies relevant to the core research questions of this study. The review is structured around the main area of members utilization under transportation loading conditions which is addressed with a detailed examination of existing literature.

2.2. Structural Design Optimization Using Unity Check

The optimization of offshore jacket structures has been a subject of significant research, particularly regarding their safety, durability, and weight efficiency in extreme marine environments. Offshore structures are typically composed of steel members, which are critical to their overall stability and ability to withstand the harsh conditions of the sea. One of the most important criteria in offshore structure design is ensuring that the structural components meet safety standards, especially under the impact of dynamic loads such as strong winds, waves, and currents. A crucial tool used to assess the safety of these components is the unity check, a calculation that ensures the stresses on each component do not exceed allowable limits. A unity check value of 1.0 indicates that the stress is at its maximum allowable value, while values greater than 1.0 signal potential failure or excessive stress, thus compromising the safety of the structure (Kim & Ha, 2025). In their research, Kim and Ha (2025) address the challenge of designing the Gageocho jacket structure, which has traditionally relied on large volumes of concrete grouting in its legs to ensure stability during extreme weather events, such as typhoons. This study proposes a more efficient approach, replacing the concrete reinforcement with steel members, which significantly reduces the weight of the structure. However, minimizing weight while maintaining safety is a delicate

balance, and this is where the unity check becomes a vital constraint in the optimization process.

To achieve this balance, the authors use a genetic algorithm (GA) to optimize the design of the Gageocho jacket structure, treating the inner diameter of the cross-sections of the structural members as the design variable. The GA seeks to minimize the overall weight of the structure while ensuring that the design satisfies the maximum stress limits and the unity check criteria, which are critical for offshore structures. The unity check acts as a design constraint, ensuring that the stress on each component does not exceed the allowable stress, thus ensuring that the structure remains safe under extreme loading conditions. By incorporating this check, the authors ensure that every part of the structure is robust enough to withstand the harsh marine environment.

Kim and Ha (2025) emphasize the importance of considering extreme environmental conditions, such as the effects of extreme waves, winds, and currents, which could impact the performance of the offshore structure. In their optimization model, these extreme conditions are simulated, and the unity check is applied to ensure that the optimized design remains within safe limits even in the most challenging scenarios. The results of the study show that the optimized design is 45% lighter than the original structure, demonstrating that it is possible to reduce the weight of offshore structures while still maintaining the necessary safety standards as dictated by the unity check.

This approach underscores the critical role of unity check in ensuring that offshore structures meet safety standards without unnecessary weight, thus contributing to the creation of more efficient and cost-effective designs for offshore platforms. By combining design optimization with strict safety checks, such as the unity check, Kim and Ha (2025) offer a methodology for developing offshore structures that are both efficient and safe, providing valuable insights for future offshore engineering projects.

2.3. The Effect of SPMT on Offshore Structure During Load-Out

The load-out process, which involves the transfer of offshore structures from the fabrication yard to the installation barge, is one of the most critical and complex stages in offshore platform construction. Offshore structures, including topsides and substructures, are often large, heavy, and require careful handling during transportation to prevent structural damage. In recent years, Self-Propelled Modular Transporters (SPMTs) have become the primary method for transferring these heavy loads across uneven ground surfaces. SPMTs are equipped with hydraulic leveling systems that allow them to stabilize and transport heavy loads by adjusting the ride height of each wheel individually. This ensures that the weight is evenly distributed, preventing damage to the structure during the load-out process (Baihaque & Koto, 2025).

Baihaque and Koto (2025) explore the role of SPMTs in the load-out of offshore structures, specifically comparing the performance of two different hydraulic leveling systems used in SPMTs: the three-point suspension system and the four-point suspension system. These suspension systems are designed to provide stability during transportation, but each system has its advantages depending on the weight and size of the structure being transported. The three-point suspension system is generally preferred for super-heavy structures because it provides better stability by ensuring that the load is evenly distributed across three support points. This system is particularly effective for very large offshore structures, where stability is paramount (Baihaque & Koto, 2025).

On the other hand, the four-point suspension system is more commonly used for medium-weight structures. It is more cost-effective and faster to set up compared to the three-point system, making it ideal for typical offshore structures that are not as massive as those requiring the three-point system. While both suspension systems ensure stability, the four-point system offers advantages in terms of cost, time, and productivity, as it is quicker to prepare and requires fewer resources (Baihaque & Koto, 2025).

Baihaque and Koto (2025) conducted simulations using Staad Pro and PIAS software to analyze the structural integrity of the offshore platform and the barge response during the load-out process. These simulations helped determine how the different suspension systems affect both the platform and the barge under different load-out conditions. The study concluded that the three-point suspension system is the safer option for super-heavy structures, as it provides better control over load distribution and minimizes the risk of damage. However, for normal to intermediate-weight structures, the four-point suspension system is recommended due to its cost-effectiveness and shorter setup time, which helps improve the overall efficiency of the load-out process.

The key advantage of using SPMTs for load-out, as highlighted by Baihaque and Koto (2025), is the ability to manage the structural stress during transportation. The SPMTs' hydraulic leveling system ensures that the weight of the offshore structure is evenly distributed across the axles, reducing the risk of overloading and damage to both the platform and the barge. This capability is critical because during load-out, the structure is subjected to dynamic forces that can induce stresses in different parts of the platform, and proper weight distribution is necessary to maintain structural integrity.

By using advanced hydraulic leveling systems, SPMTs also reduce the potential for stress concentration, which could otherwise lead to structural failure. This is particularly important for offshore structures, which must withstand not only the stresses induced during transportation but also the harsh environmental conditions they will face once installed in the marine environment.

2.4. Traffic Control and Directional Stability of SPMTs

The use of Self-Propelled Modular Transporters (SPMTs) in the transportation of large, heavy loads has been a significant development in heavy logistics, particularly in industries such as shipbuilding, construction, and power plant construction. These transporters are capable of carrying extraordinarily heavy loads by utilizing a hydraulic drive system, which controls the movement and stability of the vehicle. However, one of the key challenges in the operation of SPMTs is

ensuring directional stability, particularly during the transportation of extremely heavy and oversized structures. Kolosova et al. (2025) focus on addressing the critical issue of directional control by examining the traction systems of SPMTs, specifically comparing electric traction drive systems to other types of propulsion systems.

According to Kolosova et al. (2025), SPMTs rely on a precise control system that manages the wheel speeds to ensure stable movement, especially when navigating complex routes or uneven terrain. Traditional SPMTs used hydraulic drive systems, but with technological advancements, electric drive systems have become more prominent. This shift is largely due to the high starting torque and adjustable speed capabilities that electric systems offer, which are crucial for maintaining stability during heavy load transportation. Through their detailed analysis, Kolosova et al. (2025) demonstrate that DC electric drive systems are particularly effective for SPMTs, as they offer robust performance in terms of initial torque and provide better control over the direction and speed of each wheel. The electric traction systems allow for more sophisticated directional control, making it easier to maneuver large and heavy loads with precision.

Kolosova et al. (2025) further explain that the subordinate regulation systems of electric drives play a pivotal role in ensuring the directional stability of SPMTs. These systems adjust the speed of each wheel in response to changes in terrain and load conditions, ensuring that the SPMT maintains a stable and straight path. By analyzing the required wheel speed ratios for various types of movement, the authors identify key performance criteria for these systems, which are essential for ensuring the safe and efficient transport of offshore structures and other large loads. The ability to control the wheel speeds of each axle independently allows the SPMT to compensate for uneven terrain, which is particularly beneficial when transporting offshore structures from fabrication yards to installation sites. The study also presents a model experiment that simulates these operational scenarios, demonstrating the efficacy of the electric traction drive systems in improving both the stability and maneuverability of SPMTs.

The importance of directional stability in the operation of SPMTs cannot be overstated, particularly for the transportation of large offshore structures. Any deviation from a stable path can lead to structural damage to both the SPMT and the transported load, which can result in significant delays and additional costs. By implementing advanced electric traction drive systems with subordinate regulation, Kolosova et al. (2025) emphasize that it is possible to significantly improve the efficiency and safety of heavy load logistics, particularly in the offshore industry, where the load-out process is one of the most critical stages in construction.

Table 2.1 Comparison of Methodologies in Offshore Structure Transportation and Optimization Studies

Title	Methodology	Scientific Research Method	Similarities	Differences	Relevance to Research	Objective	Data Analysis
Structural Design Optimization of Gageocho Jacket Structure	Genetic algorithm-based optimization	Structural analysis and design	Focus on structural safety	Focused on optimizing the design of offshore structures for safety	Provides insights into Unity Check for the transportation load, helping assess structural integrity during transportation conditions.	To optimize the structural design and reduce weight while maintaining safety standards.	Structural optimization was analyzed using genetic algorithms, considering extreme environmental conditions, and Unity Check criteria as constraints.
			Use of Unity Check criteria for optimization	Not specifically about transportation loading			
			Application of extreme environmental conditions in design				

Table 2.2 Comparison of Methodologies in Offshore Structure Transportation and Optimization Studies

Title	Methodology	Scientific Research Method	Similarities	Differences	Relevance to Research	Objective	Data Analysis
The Effect of SPMT on the Offshore Structure While Loading on Barge	Simulation analysis using Staad Pro & PIAS	Structural simulation and analysis	Focus on transportation of heavy offshore structures	Focus on SPMT's effect on barge stability	Helps assess transportation dynamics for LD&WAP, particularly focusing on SPMT simulation, loading stability, and barge response.	To evaluate the impact of SPMT on structural integrity and barge stability during load-out.	Staad Pro and PIAS software were used to simulate the load-out process, examining the structural behavior of the offshore structure on the barge.
Traffic Control of Self-Propelled Modular Conveyors	Control system analysis and simulation	Traction and directional control system analysis	Examines SPMT for heavy transport	Focus on control systems and directional stability of SPMT	Provides insight into SPMT performance and directional stability, ensuring safe LD&WAP transportation with a stable load transfer to the barge.	To improve the directional stability and efficiency of SPMTs for heavy transport.	The control system of SPMTs was analyzed through simulations to assess traction and stability, ensuring optimal performance during the load-out process.
			Analyzes hydraulic levelling systems for SPMTs	No focus on the impact of SPMT on offshore structures' stress or fatigue during transportation			
			Focus on load distribution and stability				

Table 2.3 Comparison of Methodologies in Offshore Structure Transportation and Optimization Studies

Title	Methodology	Scientific Research Method	Similarities	Differences	Relevance to Research	Objective	Data Analysis
Transportation of the Lower Deck and Wellhead Access Platform NFQ14 Topside	Structural analysis and transportation simulation using SACS v.12.0	Structural analysis of offshore transportation	Examines the effect of SPMT on transportation and structural integrity	Focus on LD&WAP and SPMT interaction during transportation	SPMT impact on the LD&WAP and its response to loading conditions during transportation	To analyze the transportation dynamics and structural integrity of LD&WAP during load-out, focusing on joint reactions, member utilization, and CoG shifts.	Data is analyzed using SACS v.12.0 to calculate joint reactions, member utilization (Unity Check), and to simulate responses to additional loads and CoG shifts.
			Focus on Unity Check for structural safety	Emphasis on transportation dynamics and reaction forces during transport	Unity Check for structural integrity under transport conditions		
			Evaluates response under transportation load and shifting CoG				

2.5. Summary

In this comparative analysis, the studies reviewed provide valuable insights into the transportation and structural integrity of offshore structures, each addressing different aspects of the process. The first study, focused on structural design optimization of the Gagecho jacket structure, emphasizes the importance of ensuring structural safety while minimizing weight through Unity Check constraints. This is highly relevant to the Lower Deck and Wellhead Access Platform (LD&WAP), as the Unity Check will be crucial in assessing the structural integrity of the platform under transportation loading conditions, ensuring the design remains within safe operational limits.

The second study, which examines the impact of Self-Propelled Modular Transporters (SPMT) on offshore structures during the load-out process, aligns closely with the transportation phase of your project. This research underscores the significance of ensuring structural stability during the transfer of heavy structures onto barges, particularly through the use of simulation tools such as Staad Pro and PIAS. These tools can be integrated into your study to evaluate how the LD&WAP will respond to the forces and dynamic loads encountered during transportation, as well as to assess the joint reactions and the structural response of the platform to these forces.

The third study on traffic control of SPMTs provides an in-depth analysis of traction control systems and directional stability for SPMTs, which directly contributes to the operational stability of the transport process. The research findings highlight the importance of selecting the appropriate electric traction system for ensuring smooth and controlled movement of the offshore structure, particularly in uneven terrain or during load shifts. This is directly applicable to your project, where SPMT performance and its ability to maintain stability during transportation will play a pivotal role in minimizing risks to the LD&WAP.

In conclusion, the integration of insights from these studies into your project offers a robust framework for analyzing the transportation process of the LD&WAP. The use of finite element analysis (FEA), SPMT simulation, and real-world load measurements will provide a comprehensive understanding of the

structural behavior of the platform under transportation conditions, including the evaluation of joint reactions, Unity Check, and the response to additional loads or shifts in the center of gravity. This multi-faceted approach will ensure that the transportation process is not only efficient but also safe, maintaining the structural integrity of the LD&WAP throughout its journey to the installation site.

CHAPTER III

THEORETICAL BASIS

3.1. Project Overview

The North Field Expansion Project (NFXP) in Qatar aims to boost Liquefied Natural Gas (LNG) production capacity from 77 MTPA to 126 MTPA through two main phases:

1. North Field East (NFE) - Focuses on offshore infrastructure, including 8 wellhead platforms (WHPs) and subsea pipelines to support increased LNG production. It involves drilling 80 wells located 50–90 km offshore at depths of 20–57 meters. The design targets a flow rate of 6.36 BSCFD to Ras Laffan and incorporates two Sensor Tower Platforms for security monitoring (Qatar – Oil & Gas North Field Expansion (NFE) Project, 2021).
2. North Field South (NFS) - Expands LNG capacity further with 50 wells across 5 platforms located 20–30 km offshore in 18–24 meters of water. It includes building two LNG mega trains, interfield pipelines, and dual riser systems to enhance gas flow and connectivity.

The project scope includes engineering, procurement, fabrication, construction, installation, commissioning, and start-up support, awarded to McDermott Middle East Inc. NFXP solidifies Qatar's leading position in the global LNG market.

3.2. NFQ14 Topside Overview

The typical NFQ14 topside is a 6-legged structure with grid spacing of 15 meters (from South at grid C going North to grids A & B) by 17 meters (from grid 2 going East to grid 1). It has four (4) deck levels as follows: Cellar Deck at EL.+14300, Lower Deck at EL.+18800, Mezzanine Deck at EL.+23800, and Upper

Deck at EL.+29800, with Helideck at EL.+38900. All reference elevations are top of steel (TOS). An isometric view of NFQ14 Topside is shown below.

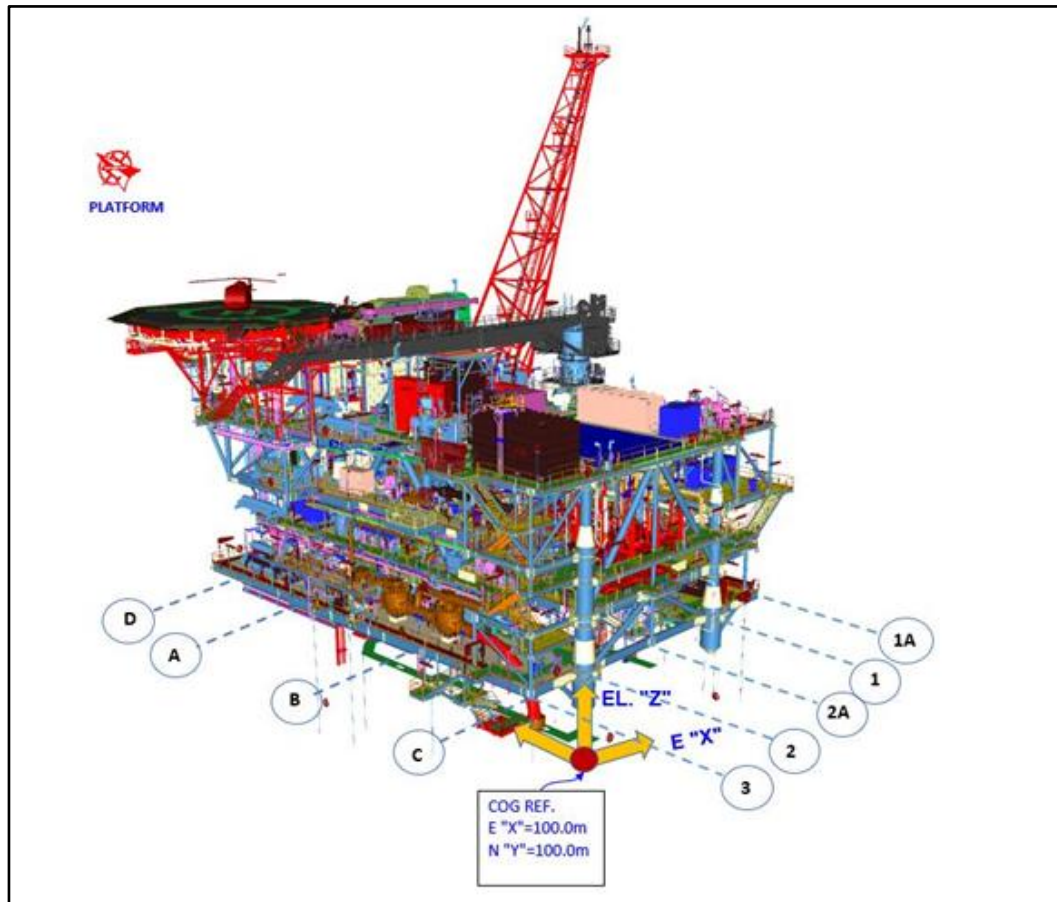


Figure 3.1 NFQ14 Topside 3D Model

3.3. NFQ14 Topside Co-ordinate System

The coordinate system for the CoG (Center of Gravity) calculation of the NFQ14 topside structure is based on the following references:

- Origin Point: Intersection of Grid Line C and Grid Line 2.
- Axes Definition:
 - E (X-axis) – Positive towards the East.
 - N (Y-axis) – Positive towards the North.
 - EL (Z-axis) – Positive upward, with 0.00m at the Lowest Astronomical Tide (LAT).
- Reference Levels:
 - Horizontal reference at +11.00m elevation.

- Vertical zero (0) at LAT.
- Units: All dimensions are in millimeters unless stated otherwise.

This system defines directions and elevations for precise structural positioning and calculations.

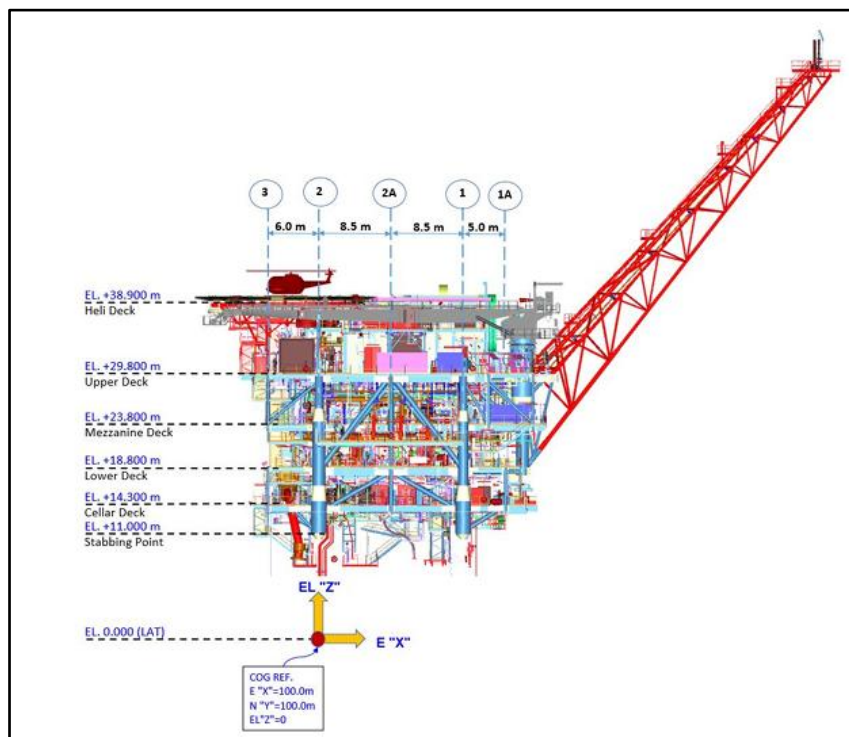


**Figure 3.2 NFQ14 Topside CoG Reference
Elevation View (Looking North)**

3.4. Lower deck and wellhead access deck NFQ14 Topside Overview

3.4.1. Lower Deck

The lower deck of an offshore platform serves as a crucial structural component, providing foundational support for the various modules and operational systems housed above it. This deck typically accommodates essential utilities and auxiliary systems, including power generation units, water treatment facilities, and storage for critical supplies. Additionally, the lower deck plays a vital role in ensuring the structural integrity of the platform, distributing loads from the upper decks and resisting environmental forces such as wave action and wind loads. The layout and design of the lower deck are optimized for weight distribution and accessibility, allowing for efficient maintenance and emergency response.

3.4.2. Wellhead Access Deck

The wellhead access deck is specifically designed to facilitate operations related to the wellhead, the critical interface between the surface equipment and the subsurface well. This deck is strategically positioned to allow direct access to the wellhead for drilling, production, and maintenance activities. It typically houses key equipment such as blowout preventers (BOPs), manifolds, and control systems required for managing the flow of hydrocarbons. The design of the wellhead access deck prioritizes safety and operational efficiency, incorporating features such as reinforced flooring, safety barriers, and redundant access routes. The deck's layout ensures that personnel can conduct well intervention and monitoring tasks with minimal risk, even in challenging offshore environments.

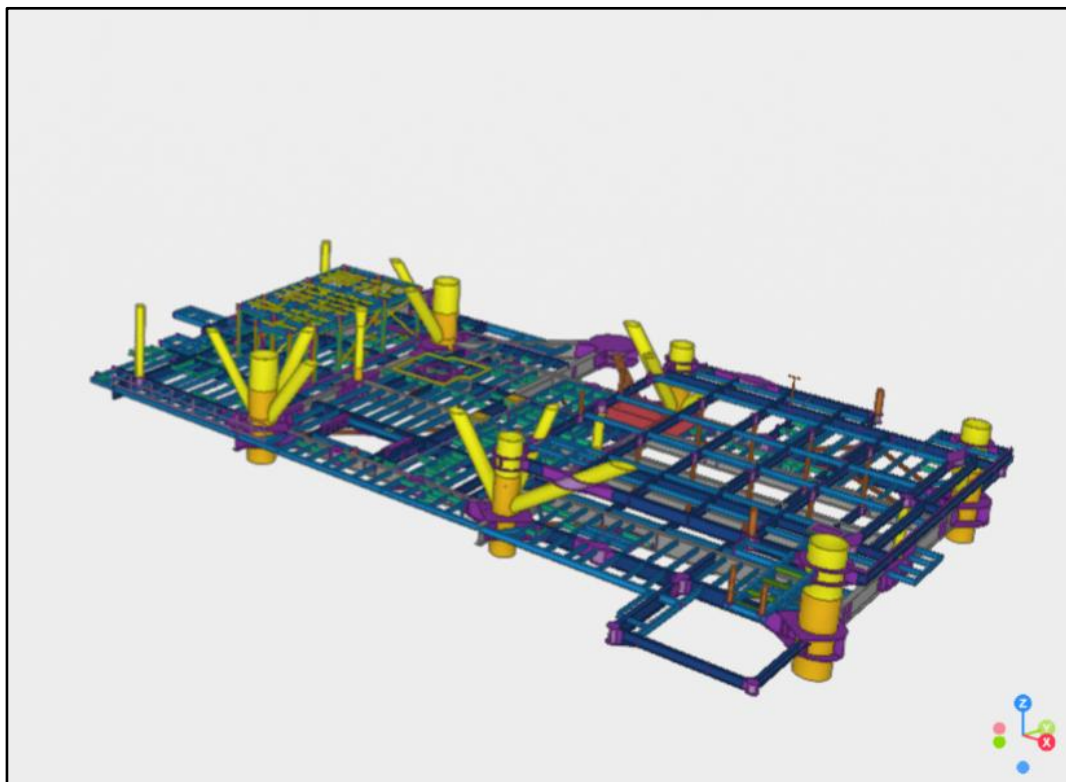


Figure 3.3 Lower Deck and Wellhead Access Deck – TEKLA 3D Mode

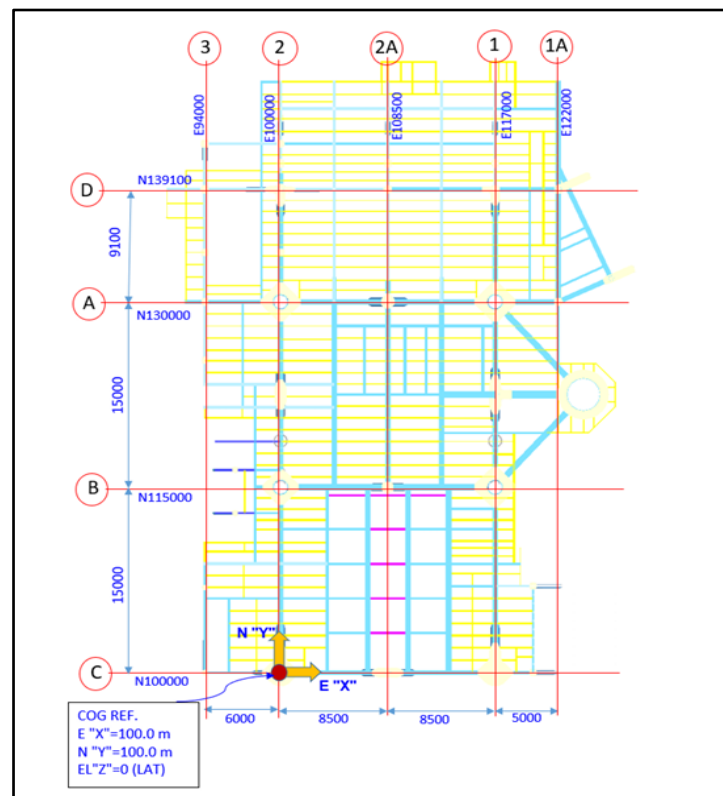


Figure 3.4 NFQ14 Topside CoG Reference – Plan View

3.5. Governing Codes and Standards

To ensure the structural analysis adheres to established engineering principles and safety requirements, this study is governed by internationally recognized codes and standards. The primary standard for structural member analysis is the American Institute of Steel Construction's Specification for Structural Steel Buildings (AISC 360-16). This specification provides the fundamental formulas for determining allowable stresses, member capacities, and the interaction equations used for the Unity Check (UC). Complementing these member-specific checks, the overall design context is informed by the American Petroleum Institute's Recommended Practice for Planning, Designing, and Constructing Fixed Offshore Platforms Working Stress Design (API RP 2A-WSD). This standard provides essential guidelines for the design of offshore structures and the principles underpinning the Unity Check calculation. The application of these standards

ensures that the methodology and results of this transportation analysis are robust, verifiable, and aligned with industry best practices for safety and reliability.

3.6. Structural Design in Offshore Platforms

Offshore structures are complex engineered infrastructures designed to resist environmental loads (environmental loads are given as seabed conditions, waves, current, and wind forces) and some kind of operational loads for example, supporting heavy machinery and human activities withstanding storms, hurricanes, and low-pressure systems in marine environments. Structural design for components like beams, columns, and braces involves dealing with loads in compression, tension, bending, and shear, with foundations in classical mechanics. Advanced software tools including the Structure Analysis Computer System (SACS) are then applied to these principles to determine that the platforms can safely operate under demanding conditions (Haritos, 2007).

3.6.1. Compression Members

Compression members are structural elements subjected to axial compressive forces. These forces can lead to buckling if they exceed a certain threshold. The fundamental framework for designing compression members is provided by Euler's buckling theory.

$$P_{cr} = \frac{(\pi^2 EI)}{(KL)^2} \dots\dots\dots (3.1)$$

- E: Modulus of elasticity, (N/m²)
- I: Moment of inertia of the cross-section, (m⁴)
- K: The effective length factor,
- L: Unsupported length of the member. (m)

3.6.2. Tension Members

Tension members are designed to withstand axial tensile forces without yielding or rupturing. The design tensile strength of these members is calculated using the following equation:

$$P_t = F_y A_g \dots\dots\dots (3.2)$$

where:

- F_y : Yield strength of the material, (N/m²)
- A_g : Gross cross-sectional area of the member. (m²)

The equation above ensures that the member can safely resist the maximum expected tensile force.

3.6.3. Center of Gravity (CoG)

The Center of Gravity (CoG) is a fundamental concept in structural engineering, representing the point where the total weight of an object is considered to be concentrated. Mathematically, the CoG coordinates ($X_{CoG}, Y_{CoG}, Z_{CoG}$) are determined by taking the weighted average of the individual component positions relative to their net weights (Hibbeler, 2016).

The general formula for CoG calculation in any direction (X, Y, or Z) is given by:

$$CoG_{axis} = \frac{\sum_{i=1}^n (W_i \cdot CoG_{axis,i})}{\sum_{i=1}^n W_i} \dots\dots\dots (3.3)$$

where:

- W_i = Net weight of the ii-th component
- $CoG_{axis,i}$ = Coordinate of the ith component along the specified axis (X, Y, or Z)
- n = Total number of components

This approach ensures an accurate representation of the structure's balance point, accounting for weight distribution across all structural elements modeled in TEKLA.

3.7. Design Methodologies: LRFD and ASD

Two primary design methodologies are employed in structural engineering for offshore platforms: Load and Resistance Factor Design (LRFD) and Allowable Stress Design (ASD). These methodologies are standardized in the AISC Steel Construction Manual.

3.7.1. Load and Resistance Factor Design (LRFD)

LRFD is a reliability-based design methodology that incorporates safety factors into both the load and resistance aspects of the design. The general LRFD equation is:

$$\sum \phi R_n \geq \sum \gamma_i Q_i \dots\dots\dots (3.4)$$

where:

- ϕ : Resistance factor,
- R_n : Nominal resistance,
- γ_i : Load factors,
- Q_i : Factored loads.

This method is particularly advantageous in offshore applications due to its ability to account for uncertainties in loads and material strengths.

3.7.2. Allowable Stress Design (ASD)

ASD is a traditional method that ensures the stresses in the structural members under service loads do not exceed allowable limits. The general ASD equation is:

$$\frac{R_n}{\Omega} \geq \sum Q_i \dots\dots\dots (3.5)$$

where:

- Ω : Safety factor,
- R_n : Nominal resistance,
- Q_i : Service loads.

3.8. Detailed Member Properties of Sections

Understanding the properties of structural members is crucial for accurate analysis and design. Key properties include section modulus, moment of inertia, and radius of gyration, which are critical for determining the strength and stiffness of structural elements.

3.8.1. Section Modulus (S)

The section modulus is a geometric property of a cross-section that measures its resistance to bending. It is calculated as the ratio of the moment of inertia to the

distance from the neutral axis to the outermost fiber and it can be seen in the figure 3.5.

The formula is:

$$S = \frac{I}{c} \dots\dots\dots (3.6)$$

where:

- I: Moment of inertia of the cross-section, (m⁴)
- C: Distance from the neutral axis to the outermost Fiber. (m²)
- A higher section modulus indicates a stronger section, capable of resisting greater bending moments without yielding.

3.8.2. Moment of Inertia (I)

The moment of inertia quantifies the stiffness of a cross-section in bending. It is determined by integrating the squared distance of each area element from the neutral axis. The formulas for the moment of inertia about the x-axis (Ix) and y-axis (Iy) are:

$$I = \int x^2 dA \dots\dots\dots (3.7)$$

$$I = \int y^2 dA \dots\dots\dots (3.8)$$

where:

- y: Distance from the x-axis to the differential area element (dA). (m)
- x: Distance from the y-axis to the differential area element (dA). (m)
- dA: The differential area element. (m)

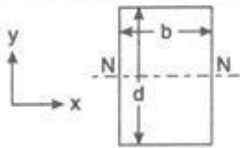
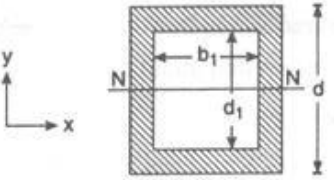
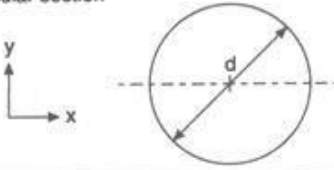
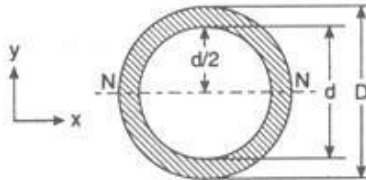
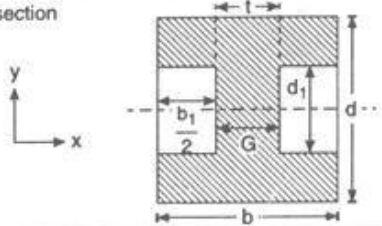
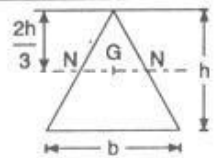
Table 11.2.1			
Type of section	Moment of Inertia	$y_{\max}$	Section modulus (Z)
Rectangle or parallelogram 	$I_{xx} = \frac{bd^3}{12}$ $I_{yy} = \frac{db^3}{12}$	$\frac{d}{2}$ $\frac{b}{2}$	$Z_{xx} = \frac{bd^2}{6}$ $Z_{yy} = \frac{db^2}{6}$
Hollow rectangular section 	$I_{xx} = \frac{bd^3}{12} - \frac{b_1d_1^3}{12}$ $I_{yy} = \frac{db^3}{12} - \frac{d_1b_1^3}{12}$	$\frac{d}{2}$ $\frac{b}{2}$	$Z_{xx} = \frac{1}{6d}(bd^3 - b_1d_1^3)$ $Z_{yy} = \frac{1}{6b}(db^3 - d_1b_1^3)$
Circular section 	$I_{xx} = \frac{\pi}{64} d^4$ $I_{yy} = \frac{\pi}{64} d^4$	$\frac{d}{2}$ $\frac{d}{2}$	$Z_{xx} = \frac{\pi}{32} d^3$ $Z_{yy} = \frac{\pi}{32} d^3$
Hollow circular section 	$I_{xx} = I_{yy} = I$ $I_{yy} = \frac{\pi}{64} (D^4 - d^4)$	$\frac{D}{2}$	$Z_{xx} = Z_{yy} = Z$ $Z = \frac{\pi}{32D} (D^4 - d^4)$
I-section 	$I_{xx} = \frac{bd^3}{12} - \frac{b_1d_1^3}{12}$ $I_{yy} = \frac{db^3}{12} - \frac{d_1b_1^3}{12}$ or $I_{xx} = \frac{1}{12} (bd^3 - (b-t)d_1^3)$	$\frac{d}{2}$ $\frac{b}{2}$	$Z_{xx} = \frac{1}{6d}(bd^3 - b_1d_1^3)$ $Z_{yy} = \frac{1}{6b}(db^3 - d_1b_1^3)$
Triangle 	$I_G = \frac{bh^3}{36}$	$\frac{2}{3} h$	$Z_G = \frac{bh^2}{24}$

Figure 3.5 Properties of Standard Sections.

3.8.3. Radius of Gyration (r)

The radius of gyration provides a measure of the distribution of the cross-sectional area about the centroid, and it is crucial in assessing the buckling resistance of slender columns.

The radius of gyration is defined as:

$$r = \sqrt{\frac{A}{I}} \dots\dots\dots(3.9)$$

where:

- I: Moment of inertia. (m⁴)
- A: Cross-sectional area.(m²)

3.8.4. Tubular Section Stress Analysis

In the Construction engineering department, tubular members are often used due to their high strength-to-weight ratio and excellent resistance to both compression and tension forces. Especially in the temporary support. This section delves into the stress analysis of tubular sections, covering key aspects such as column buckling, local buckling, bending stress, shear stress, and fillet weld size.

3.8.5. Column Buckling

Column buckling occurs when a structural member subjected to compressive forces becomes unstable and experiences lateral deflection.

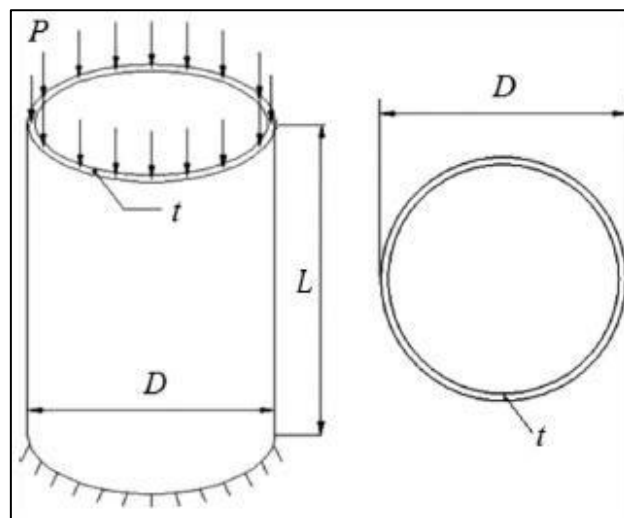


Figure 3.6 A Tubular Member Subject to Axial Compression

The axial compressive stress shall not exceed the allowable axial compressive stress. The axial compressive stress, f_a , could be determined with:

$$f_a = \frac{P}{A} \dots\dots\dots (3.10)$$

Where:

- P = axial compression (kN)
- A = surface area (m^2)

For members with D/t ratio greater than 60, further analysis needs to be conducted in order to investigate local buckling of unstiffened cylindrical member. In designing the tubular member, the K factor of the member needs to be considered from table C-C2.1 AISC 9th edition. Table 4 - 5 is table C-C2.1 AISC 9th edition.

Buckled shape of column shown by dashed line						
Theoretical K value	0.5	0.7	1.0	1.0	2.0	2.0
Recommended design value K	0.65	0.80	1.2	1.0	2.10	2.0
End condition key	 Rotation fixed and translation fixed Rotation free and translation fixed Rotation fixed and translation free Rotation free and translation free					

Figure 3.7 Effective Length Factors, K

(Source: SkyCiv Engineering)

3.8.6. Local Buckling

Local buckling refers to the buckling of individual elements of the cross-section rather than the entire member. It is particularly significant in thin-walled tubular sections.

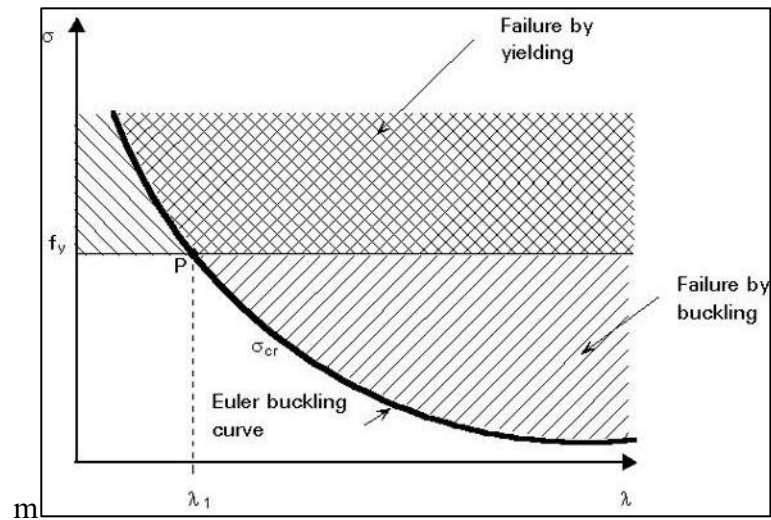


Figure 3.8 Local Buckling Curve and Modes of Failure

3.8.7. Compactness Check (Local Buckling)

Before determining the compressive or flexural strength of a member, its cross-section must be classified as compact, non-compact, or slender. This classification determines whether the section can reach its full plastic capacity before local buckling occurs. The check is performed by comparing the width-to-thickness ratios (λ) of the compression elements (flanges and web) to the limiting slenderness ratios (λ_p and λ_r) specified in AISC 360-16, Table B4.1.

3.8.8. Flange Local Buckling (FLB)

The slenderness ratio for the flange is calculated as:

$$\lambda_f = \frac{b_f}{2t_f} \dots\dots\dots(3.11)$$

Where:

- b_f = Full width of the flange
- t_f = Thickness of the flange

The flange is considered compact if its slenderness ratio is less than the limiting value for plastic design,

$$\lambda_{p,flange}: \lambda_f \leq \lambda_{p,flange} = 0.38 \sqrt{\frac{E}{F_y}} \dots\dots\dots(3.12)$$

Where:

- E = Modulus of Elasticity

- F_y = Yield Strength of the material

3.8.9. Web Local Buckling (WLB)

The slenderness ratio for the web is calculated as:

$$\lambda_w = \frac{h}{t_w} \dots\dots\dots(3.13)$$

Where:

- h = Clear distance between flanges less the fillet or corner radius for rolled shapes
- t_w = Thickness of the web

The web is considered compact if its slenderness ratio is less than the limiting value,

$$\lambda_{p,web}: \lambda_w \leq \lambda_{p,web} = 3.76 \sqrt{\frac{E}{F_y}} \dots\dots\dots(3.14)$$

If both the flange and the web are classified as compact, the entire section is considered compact and is not susceptible to premature failure from local buckling under design loads.

3.8.10. Elastic Local Buckling

For tubular sections, elastic local buckling occurs when the stress in the member is below the yield stress, and the behaviour can be analyzed assuming elastic material properties. The formula is

$$F_{xe} = 2CE t/D \dots\dots\dots(3.15)$$

Where:

- C = critical elastic buckling coefficient
- D = outside diameter, (m)
- t = wall thickness, (m).

Where:

$$F_{xc} = F_y \times [1.64 - 0.23(D/t)^{0.25}] \leq F_{xe} \dots\dots\dots(3.16)$$

Where:

- F_y = yield strength, (MPa)

- D = outside diameter, (m)
- t = wall thickness, (m).

3.8.11. Bending Stress

Bending stress in tubular sections is crucial in the design of offshore platforms, where members are often subjected to bending due to environmental loads. The bending stress that works on the tubular member shall not exceed the allowable bending stress. The maximum bending stress can be calculated using the bending equation:

$$f_b = \frac{Mc}{I} = \frac{R}{S} \dots\dots\dots (3.17)$$

Where:

- $C = D/2$ = outer radius, (m).
- M = bending moment, (kN.m)
- I = moment of inertia, (m⁴).
- S = section modulus, (m³).

The formulas below are used to determine the allowable bending stress,

f_b :

$$f_b = 0.75 F_y \quad \text{For} \quad \frac{D}{t} \leq \frac{1500}{F_y}$$

$$f_b = \left[0.84 - 1.74 \frac{F_y D}{Et} \right] F_y \quad \text{For} \quad \frac{1500}{F_y} \leq \frac{D}{t} \leq \frac{3000}{F_y}$$

$$f_b = \left[0.72 - 0.58 \frac{F_y D}{Et} \right] F_y \quad \text{For} \quad \frac{3000}{F_y} \leq \frac{D}{t} \leq \frac{3000}{F_y}$$

3.8.12. Shear Stress

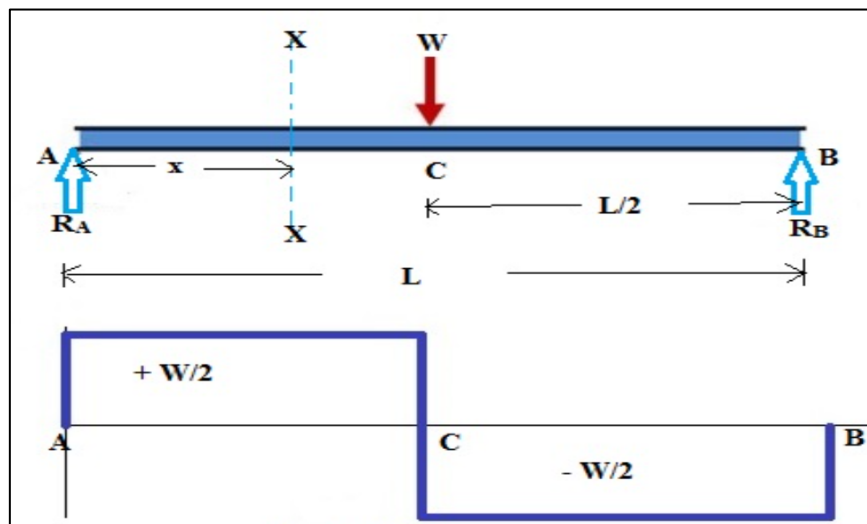


Figure 3.9 Shear Force Diagram

Shear stress in tubular sections can be critical, especially in members subjected to torsional or shear forces. The shear stress that works on the tubular member shall not exceed the allowable shear stress. The shear stress, f_v , for tubular member with hollow circle section could be determined with:

$$f_v = 0.4 F_y \dots\dots\dots (3.18)$$

Where:

- V = shear force, (kN).
- A = surface area, (m²).

3.9. Self-propelled modular transporter (SPMT) Arrangement

3.9.1. Modular Design and Configuration

SPMTs are designed in modular units, which can be combined in various configurations depending on the size and weight of the load. The number of modules used, and their arrangement are determined by the load's weight, dimensions, and the distribution of weight across the structure. Modules can be connected side by side or in a train formation to provide the necessary support and stability for the load.

Self-Propelled Modular Transporters (SPMTs) are versatile and essential tools in heavy transport and lifting operations, especially for moving large and heavy structures. The arrangement of SPMTs is a critical factor in ensuring that the load is transported safely and efficiently.

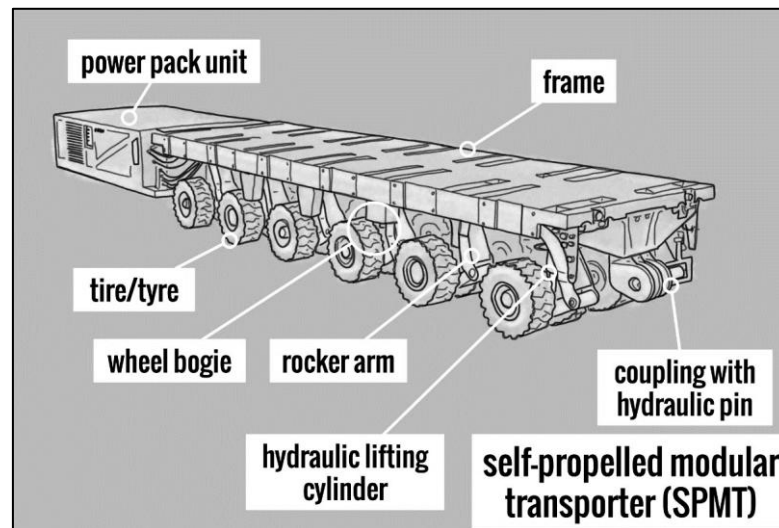


Figure 3.10 SPMT components

(Source: INCH - Technical English | pictorial: self-propelled modular)

3.9.2. Propulsion SPMT

The propulsion system of a Self-Propelled Modular Transporter (SPMT) is a crucial component that enables the movement and maneuvering of heavy loads. Each SPMT unit, whether it is a 4-liner or 6-liner, is equipped with driven bogies that provide the necessary power and control.

3.9.2.1. Propulsion Mechanics

The driven bogies are hydraulically powered, with each bogie typically equipped with multiple hydraulic motors that drive the wheels. This hydraulic system allows for precise control over the speed and direction of each bogie, enabling the SPMT to navigate complex paths and handle uneven terrain.

The propulsion is controlled by Hydraulic Power Units (HPUs) that are mounted on the SPMT. These units supply the necessary hydraulic pressure to the motors in the bogies, enabling the movement of the transporter.

3.9.2.2. SPMT '84 Specification:

The 1984 specification for Self-Propelled Modular Transporters (SPMTs) established key design and operational features that have made them essential for heavy lifting and transport. The modular design allows for flexible configurations to handle various load sizes and weights. Each unit is equipped with driven bogies powered by hydraulic motors, providing precise control, multi-directional movement, and rotation. The specification emphasized adaptability, ensuring SPMTs can safely and efficiently transport a wide range of heavy and oversized loads, setting the standard for complex transport operations.

1. Dimensions

Trailer height : 1500 ± 300 mm

Width : 2.43 m

Axle distance : 1400 mm

2. Capacities

Max. payload per line : 30.0 MT / line

Own weight per line : 4.0 MT / line

Maximum axle load : 34.0 MT / line

3. Spine Beam

Maximum allowable bending moment : 2500 kNm (255 MTm)

Maximum allowable shear force : 2000 kNm (204 MT)

4. Couplings

Maximum positive moment : 1780 kNm = 181 MTm

Maximum negative moment: 2380 kNm = 243 MTm

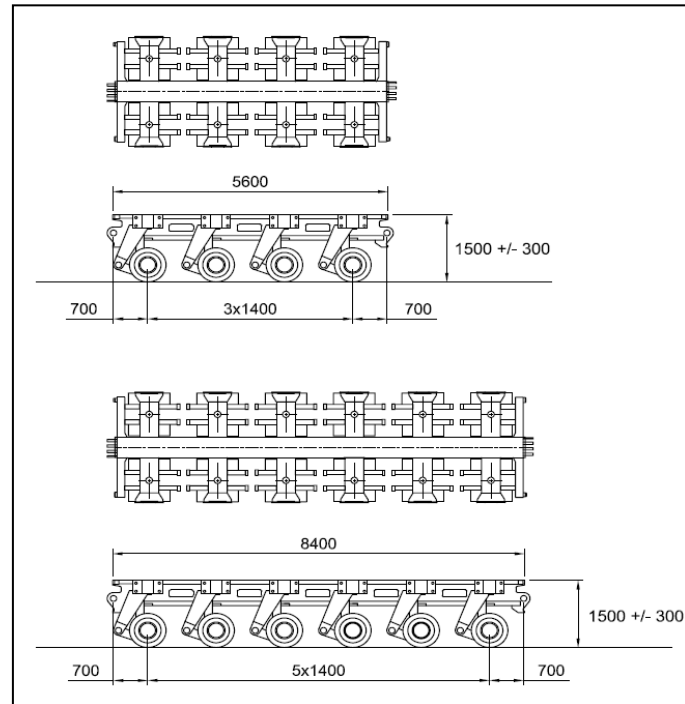


Figure 3.11 SPMT '84 Dimensions

3.10. Dead Load Concept in Offshore Transportation

In offshore structural engineering, dead loads represent permanent, unchanging forces resulting from the self-weight of a structure and its permanently installed equipment. These loads are a critical factor during the transportation phase of offshore modules, where they directly influence the design of transportation saddles, grillage, and seafastening systems. According to the American Institute of Steel Construction (AISC) 9th Edition (1989), dead loads consist of the weight of structural components, such as steel beams and plates, as well as non-structural elements including mechanical, piping, electrical, and instrumentation systems that are fixed to the structure. In the context of offshore topside modules, dead loads are essential in determining the structural behavior under static conditions experienced during loadout, lifting, and transportation operations.

For this project, the dead loads of the Lower Deck and Wellhead Access Platform NFQ14 Topside are divided into several key categories to facilitate systematic assessment and integration into the structural model. The first category is the Structural Loads (STRU), which comprises the self-weight of the primary steel

structure, including beams, columns, braces, and decking. The second group includes Equipment Loads, subdivided into the Temporary Refugee Room Loads (TRRR), representing the safety shelter and associated installations; Electrical Item Loads (TREL), referring to the weight of electrical panels and components; Instrument Item Loads (TRIN), encompassing instrumentation and control devices; and Piping Item Loads (TRPI), which account for process and utility piping networks. Finally, Scaffolding Loads (SCAF) represent temporary construction-related elements used during the transportation and installation phases.

3.11. Unity Check

The Unity Check (UC) is generally defined as the ratio of the actual stress or load to the allowable stress or load. It provides a measure of the safety and performance of a structural component under given conditions. A UC value equal to or greater than one indicates that the actual stress or load equals or exceeds the allowable stress or load, potentially signalling a risk of failure or overloading.

According to the API (American Petroleum Institute) standards, the Unity Check (UC) is calculated using the following formula:

$$UC = \frac{\sigma_{act}}{\sigma_{all}} \dots\dots\dots (3.19)$$

Where:

- UC = Unity Check
- σ_{act} = Actual stress or load experienced by the member.
- σ_{all} = Allowable stress or load (per design or code limits)

If the UC value is 1 or greater, it suggests that the stress or load applied to the component is at or above the limit, requiring further analysis or design modifications to ensure safety and reliability.

CHAPTER IV

METHODOLOGY

4.1. Analysis Model

The transportation analysis and design for the NFQ14 Lower Deck and Wellhead Access Platform were conducted utilizing Structural Analysis Computer System (SACS) software. A three-dimensional (3D) structural model was developed in SACS to assess the structural response to global loads during transportation conditions.

A static analysis employing fixed constraints (111111) was utilized to simulate connections between the structure and the supported joints of the deck during transportation. Additionally, several weak springs were modelled to ensure structural stability under various conditions.

The transportation arrangement proposed in this study employs 46 axle lines of Self-Propelled Modular Transporters (SPMT), specifically the in-house SPMT system. The SPMT system comprises 6-axle and 4-axle trailer modules, which can be mechanically linked and hydraulically coupled either end-to-end or side-by-side. This configuration provides a versatile supporting platform with adjustable lengths and widths. Furthermore, programmable, computer-controlled, electronic steering facilitates complex maneuvers with high precision, even under suboptimal site conditions.

The structural combined weight and Center of Gravity (CoG) were adjusted to closely match the design weight, and comparisons were made with the Weight Control Report (WCR) and TEKLA model. Weights of piping supports, electrical components, and instrumentation supports were incorporated into the analysis. Scaffolding weight was also included as a bulk load to yield conservative results.

The model's origin system and CoG, as modelled in SACS, are illustrated in the following figures:

1. Figure 4.1: NFQ14 Lower Deck SACS 3D Model

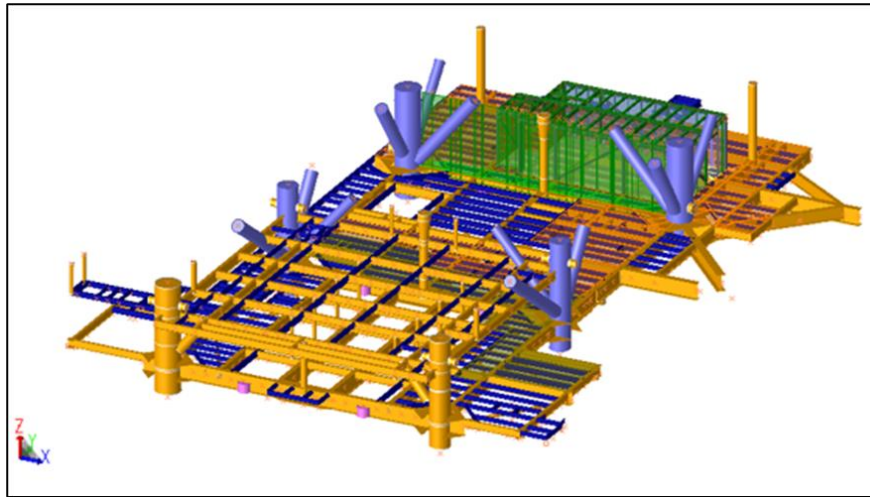


Figure 4.1 NFQ14 Lower Deck SACS 3D Model

2. Figure 4.2: SACS Model Coordinate System

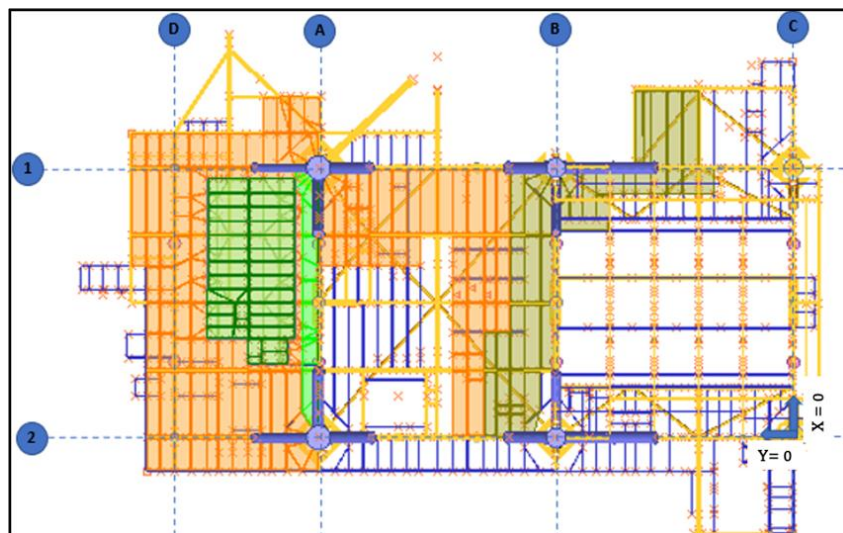


Figure 4.2 SACS Model Coordinate System

3. Figure 4.3: SACS Model Spring & Supported Joint

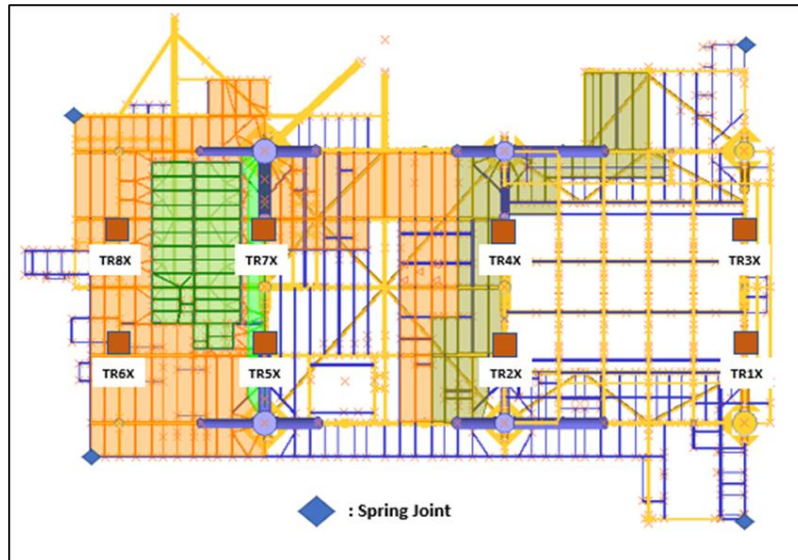


Figure 4.3 SACS Model Spring & Supported Joint

4.2. Required Data

The planning of the transportation for the NFQ14 Lower Deck and Wellhead Access Platform requires technical data related to the design and structural specifications. These data are essential for conducting structural analysis and transportation evaluations. The required data include:

1. Structural specifications of the NFQ14 Lower Deck and Wellhead Access Platform.
2. Design details and dimensions extracted from the TEKLA 3D Model.
3. Weight Control Report (WCR) and the TEKLA 3D Model providing weight and center of gravity (CoG) details.

4.3. Data Collection Method

The data collection process is crucial to ensure the accuracy of the structural analysis. Data collection is conducted by gathering design specifications, 3D models, and weight reports from relevant sources, including project documentation and engineering software outputs. The collected data form the foundation for model development and analysis.

4.4. Weight Basis and Load Combination

The design load of the NFQ14 Lower Deck consists of structural weight derived from the latest TEKLA 3D Model. The TEKLA 3D Model incorporates:

- Primary beams
- Secondary beams
- Elevation braces
- Structural nodes
- Deck plates
- Handrails
- Other tertiary components

Deck plates, handrails, and other tertiary components were manually input as non-generated loads in the SACS 3D Model. Stairs and gratings were excluded from the analysis to reflect transportation conditions.

- Differences observed between the TEKLA Model and the SACS 3D Model in terms of CoG and weight were addressed through:
- Applying couple forces in the X and Y directions.
- Introducing additional load factors into the SACS Model to shift its CoG to match the TEKLA Model.
- Adjusting the weight of the SACS Model to match the TEKLA Model.

Table 4.1 summarizes the adjusted loads and CoG alignment between the SACS and TEKLA Models, along with the structural combined load. The weights of piping, electrical, and instrumentation supports are included as detailed in the appendix. Additionally, 10% of the structural weight was incorporated as scaffolding weight.

4.5. Center of Gravity (CoG)

To compute the Center of Gravity (CoG) for the structural model in TEKLA, the following steps were implemented:

1. Data Extraction from TEKLA 3D Module

The net weight (W_i) and individual CoG coordinates (X_i, Y_i, Z_i) for each structural component were extracted from TEKLA's model database.

2. Summation of Net Weights

The total weight of the structure (W_{total}) was calculated as the sum of all individual component weights:

$$W_{total} = \sum_{i=1}^n W_i \dots\dots\dots (4.1)$$

3. Calculation of Weighted Averages for CoG Coordinates

The CoG along each axis was determined using the sum product of individual weights and their respective coordinates, normalized by the total weight (Hibbeler, 2016, p. 488):

$$X_{CoG} = \frac{\sum(W_i \cdot X_i)}{W_{total}} \dots\dots\dots (4.2)$$

$$Y_{CoG} = \frac{\sum(W_i \cdot Y_i)}{W_{total}} \dots\dots\dots (4.3)$$

$$Z_{CoG} = \frac{\sum(W_i \cdot Z_i)}{W_{total}} \dots\dots\dots (4.4)$$

Table 4.1 SACS Model – TEKLA Model – CoG & Weight Comparison

Item	Model weight		X	Y	Remarks
	KN	MT	[m]	[m]	
TEKLA Modeled Structure (Primary & Secondary)	2576.59	262.73	9.46	19.23	Coordinate referred to SACS Datum
SACS Modeled Structure (Primary & Secondary)	2431.78	247.97	9.56	19.32	Coordinate referred to SACS Datum

Table 4.2 SACS Structural Combined Load Condition and CoG**References**

Load Combination	Description	Component	Fz	CoG (m)	
			(MT)	X	Y
STPS	SACS Modeled Structure (Primary & Secondary)	-	-239.30	9.57	19.27
BLS1	Adjusted SACS Modeled Structure (Primary & Secondary)	(1.059 STPS) + (0.772 x Mx) + (-0.741 x My)	-262.72	9.46	19.23
BLS2	Structural Tertiary Items	-	-15.23	10.05	23.77
STRU	Combined Structural Lower Deck and Wellhead Access Deck Dead Loads	(1.0 x BLS1) + (1.0 x BLS2) +(2.264 x Mx) + (-0.303 x My)	-277.96	9.46	19.23

Table 4.3 Combined Lower Deck Structural Dead Load Condition and CoG Reference

Load Combination	Description	Component	Fz	CoG (m)		
			(MT)	X	Y	Z
1000	Combined Lower Deck Dead Loads	$(1.05 \times \text{STRU}) + (1.05 \times \text{SPEL}) + (1.05 \times \text{SPIN}) + (1.05 \times \text{TRR}) + (1.05 \times \text{SPIP}) + (1.05 \times \text{SCAF})$	429.74	9.29	19.82	2.73
1100	Combined Lower Deck Dead Loads (Shift -X,-Y)	$(1.0 \times 1000) + (33.784 \times \text{MX}) + (-15.955 \times \text{MY})$	493.72	8.01	17.41	2.73
1200	Combined Lower Deck Dead Loads (Shift +X,-Y)	$(1.0 \times 1000) + (33.784 \times \text{MX}) + (16.273 \times \text{MY})$	493.72	10.61	17.41	2.73
1300	Combined Lower Deck Dead Loads (Shift +X,+Y)	$(1.0 \times 1000) + (-28.024 \times \text{MX}) + (16.273 \times \text{MY})$	493.72	10.61	21.81	2.73
1400	Combined Lower Deck Dead Loads (Shift -X,+Y)	$(1.0 \times 1000) + (-28.024 \times \text{MX}) + (-15.955 \times \text{MY})$	493.72	8.01	21.81	2.73

Table 4.2. presents the basic load combinations employed in this analysis. Structural dead loads were modelled in SACS. Piping, electrical, and instrumentation (E&I) support loads, as well as non-generated dead loads, were extracted from the Weight Control Report. Variations in CoG positions were analyzed to verify structural integrity, with detailed results provided in Table 4.3

Table 4.4 SACS Basic Load Condition and CoG References

Load Condition	Description	Total Base Weight	CoG			
			SACS Datum (m)		WCR Datum (m)	
		MT	X	Y	X	Y
STRU	Structural Loads	277.96	9.46	19.23	109.46	119.23
TRRR	Temporary Refugee Room Loads	13.75	10.65	34.14	110.65	134.14
TREL	Electrical Item Loads	24.53	9.21	24.25	109.21	124.25
TRIN	Instrument Item Loads	20.300	7.71	19.96	107.71	119.96
TRPI	Piping Item Loads	40.83	9.15	21.97	109.15	121.97
SCAF	Scaffolding Loads	31.90	8.55	12.46	108.55	112.46

To simulate CoG shifting within the SACS model, dummy loads were applied in the Z direction, producing couple forces in the X and Y directions, thereby achieving the required CoG adjustments.

Table 4.5 Couple Force for CoG Shifting

Load Condition	Description	Fz	CoG (m)			Moments at Origin (N.m)		
		(MT)	X	Y	Z	MX	MY	MZ
MX+-	Load for shifting on X axis (couple force)	0	0	0	0	300.00	0.00	0.00
MY+-	Load for shifting on Y axis (couple force)	0	0	0	0	0.00	340.00	0.00

4.6. Research Stages

The research for this project was conducted through a systematic, ten-stage process designed to ensure a thorough and verifiable structural analysis. Each stage builds logically upon the previous one, progressing from foundational research and data gathering through to detailed analysis and the final formulation of conclusions and recommendations.

1. Literature Review The initial stage involved a comprehensive review of existing academic and industry literature on the structural transportation of offshore platforms, the dynamics of Self-Propelled Modular Transporters (SPMTs), and relevant structural analysis methodologies. This established the theoretical foundation for the study and informed the selection of best practices to be applied in the analysis.
2. Data Collection Following the literature review, a meticulous data collection process was undertaken to gather all necessary engineering data. This included detailed structural specifications, dimensional data from the TEKLA 3D Model, and the official Weight Control Report (WCR), which provided the authoritative data for the platform's mass and Center of Gravity (CoG).
3. Development of 3D Structural Model Using the collected data, a high-fidelity 3D structural model of the Lower Deck and Wellhead Access

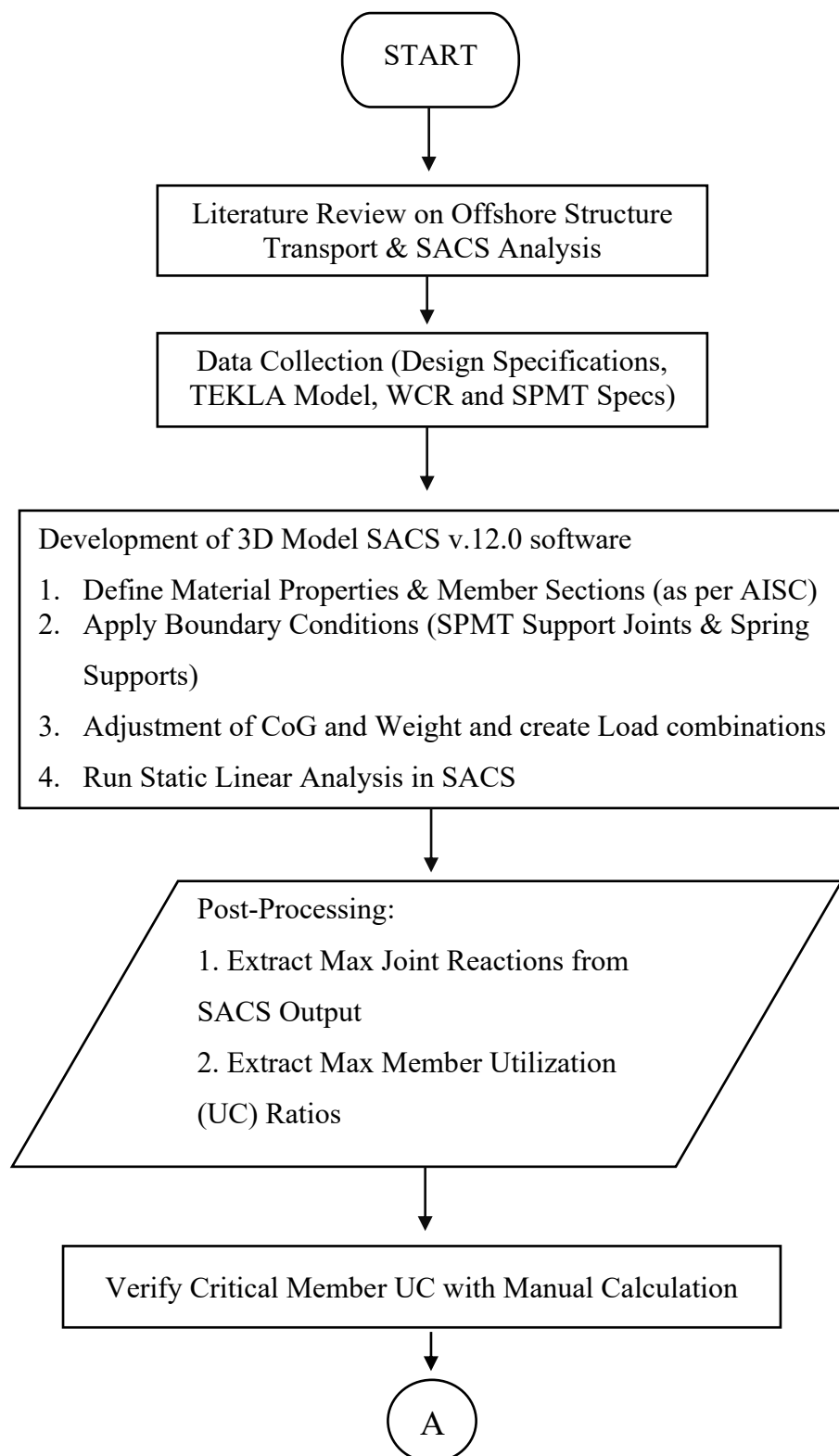
Platform was developed within the SACS v.12.0 software environment. This detailed digital twin of the physical structure served as the basis for the entire analytical scope of the project.

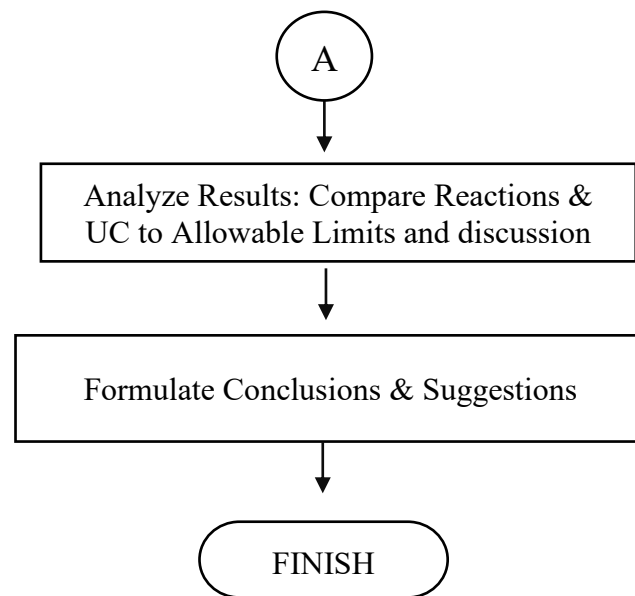
4. **Definition of Load Cases, Constraints, and Boundary Conditions** This critical step involved defining the boundary conditions to accurately simulate the SPMT support points, using a combination of fixed constraints and spring supports. Concurrently, all basic load cases for structural and non-structural components were created and cataloged within the SACS model.
5. **Application of Structural Weights** The weights of all primary, secondary, and tertiary components, as specified in the project documentation, were systematically applied to the corresponding elements within the SACS model. This ensured that the self-weight and mass distribution of the platform were accurately represented.
6. **Adjustment of CoG and Weight** To ensure the model's analytical accuracy, a calibration phase was performed. During this phase, the model's total weight and Center of Gravity (CoG) were precisely adjusted to match the authoritative values from the TEKLA model and the WCR, thereby validating the model's inputs before analysis.
7. **Creation of Load Combinations and Analysis** With a fully calibrated model, detailed load combinations were created to simulate real-world transport scenarios, including the critical effects of a shifted CoG. The SACS software was then used to run a static linear analysis for these combinations to calculate the complete structural response of the platform.
8. **Processing Output Data** In the post-processing phase, the raw output data from SACS was systematically processed to extract key performance indicators. This included the maximum joint reactions at the support points and the Unity Check (UC) ratio for every structural member across all load combinations.
9. **Analysis of Results and Integrity Assessment** The processed data was then subjected to a rigorous analysis and structural integrity assessment. In this

stage, the calculated stresses and reactions were compared against the allowable limits defined by the AISC design code to determine if all structural elements performed safely and adequately.

10. Formulation of Conclusions and Recommendations The final stage of the research involved synthesizing the entirety of the analytical findings. Based on the verified results, definitive conclusions were drawn regarding the safety and viability of the transportation plan, from which a set of actionable conclusions and recommendations was formulated.

4.7. Flowchart of Methodology





CHAPTER V

ANALYSIS AND DISCUSSION

5.1. Introduction

This chapter summarizes the results obtained from the analysis of the Lower Deck and Wellhead Access Platform (LD&WAP) using SACS software, focusing on the structural performance of the platform during transportation. It addresses the determination of joint reaction forces, identification of the maximum joint reactions experienced by the structure, assessment of member utilization (Unity Check) under transportation loading conditions, and evaluation of the platform's response to additional loads and shifts in the center of gravity (CoG). The analysis includes the results of member stress ratios and joint reactions. Further detailed numerical results and supporting calculations are provided in Appendix-1.

The locations of the joints referenced in this analysis are illustrated in Figure 5.1 below.

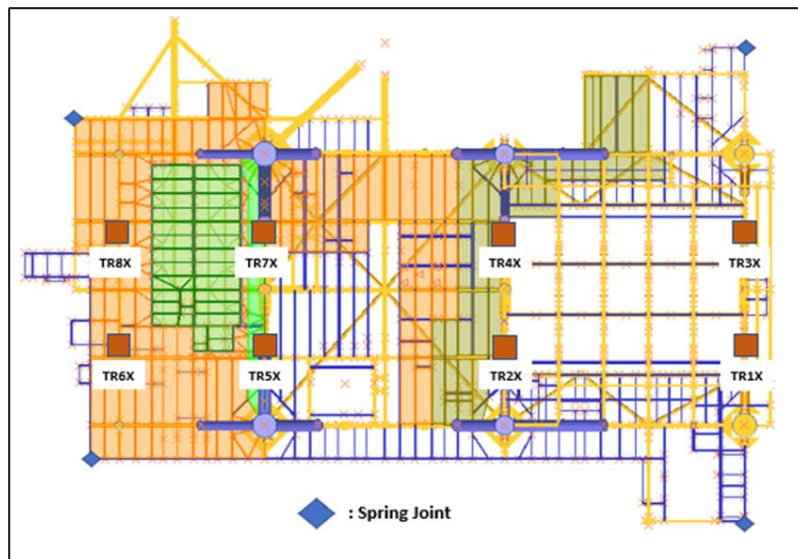


Figure 5. 1 SACS Model Spring & Supported Joint

5.2. Maximum Joint Reaction

Joint reactions in SACS are determined through linear static analysis after applying a series of predefined load combinations that simulate real transportation scenarios. The structural model includes assigned support conditions, such as fixed or spring supports, which define how the structure interacts with its environment. Once the loads are applied, the software analyzes how forces are distributed throughout the members and transferred to the joints. Based on this, SACS calculates the resulting support reactions at each specified joint. These joint reactions reflect the vertical forces that supports must resist during transportation.

The table below summarizes the reaction forces. The maximum vertical reaction, recorded at joint TRX7, is 107.21 metric tons (MT).

Table 5. 1 Summary of Normal Joint Reaction

No. Joint	Vertical Reaction (MT)	Load Combination
TR1X	38.62	1000
TR2X	78.73	1000
TR3X	36.41	1000
TR4X	81.99	1000
TR5X	45.67	1000
TR6X	5.44	1000
TR7X	107.21	1000
TR8X	23.01	1000

Table 5. 2 Summary of Maximum Joint Reaction

No. Joint	Max. Vertical Reaction (MT)	Load Combination
TR1X	41.81	1100
TR2X	139.62	1100
TR3X	40.05	1200
TR4X	139.28	1200
TR5X	103.07	1400
TR6X	7.36	1400
TR7X	159.83	1300
TR8X	28.27	1300

5.3. Member Utilization Check

The highest member utilization ratio is 0.99, observed in member 4361-TR7X under Load Combination 1300. A utilization ratio of 0.99 means the member is carrying 99% of its allowable design capacity, indicating efficient use of the structural strength without exceeding code limits. The maximum utilization values for each load combination are summarized in the table below.

Table 5. 3 Maximum Member UC

Load Combination	Member ID	UC
1000	4361-TR7X	0.72
1100	4843-4973	0.94
1200	4974-4843	0.93
1300	4361-TR7X	0.99
1400	TR5X-4D30	0.77

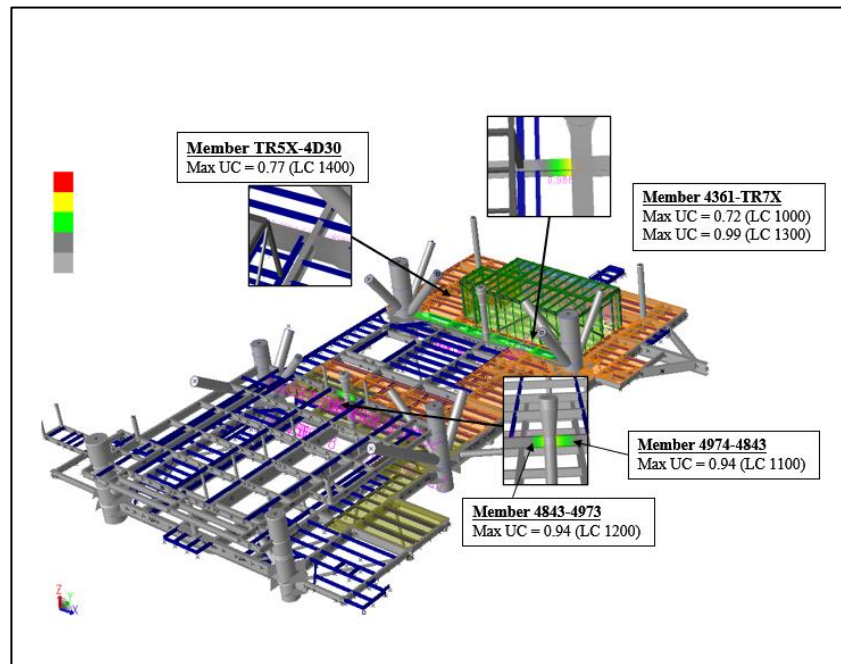


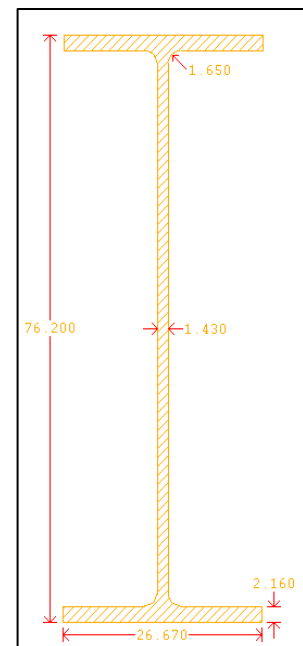
Figure 5.3. 1 SACS Model – Structural Member UC Plot

5.4. Manual Calculation

5.4.1. Section and Material Properties

Table 5. 4 Material Properties

Property	Value
Flange Width (b_x)	26.67 cm
Flange Thickness (t_x)	2.16 cm
Total Section Depth (d)	76.2 cm
Web Thickness (t_w)	1.43 cm
Plastic Section Modulus (x-axis) (Z_x)	206 cm ³
Elastic Section Modulus (x-axis) (S_x)	179.708 cm ³
Yield Strength (F_y)	345 MPa
Modulus of Elasticity (E)	205 GPa
Radius of Gyration (r_y)	3.07 mm
Cross-Sectional Area	220.5 mm ²



5.4.2. Compactness Check (Local Buckling)

To evaluate the local buckling behaviour, the width-to-thickness ratios of both the flange and the web are compared against the limiting values outlined in AISC 360-16, Table B4.1.

5.4.2.1. Flange Local Buckling (FLB)

The slenderness ratio for the flange is calculated as follows:

$$\begin{aligned}\lambda_f &= \frac{b_f}{2t_f} \\ &= \frac{266.7}{2 \times 21.6} \\ &= 6.17\end{aligned}$$

The limiting slenderness ratio for a compact flange is given by:

$$\begin{aligned}\lambda_{p,flange} &= 0.38 \sqrt{\frac{E}{F_y}} \\ &= 0.38 \sqrt{\frac{205000}{345}} \\ &= 9.28\end{aligned}$$

Since the slenderness ratio of the flange $\lambda_f(6.17)$ is less than the limiting ratio $\lambda_{p,flange}(9.28)$, the flange is classified as compact. This ensures that the flange is capable of reaching its full plastic moment capacity without experiencing local buckling.

5.4.2.2. Web Local Buckling (WLB)

The slenderness ratio for the web is calculated as follows:

$$\begin{aligned}\lambda_w &= \frac{d-2t_f}{t_w} \\ &= \frac{762-2(21.6)}{14.3} \\ &= 50.26\end{aligned}$$

The limiting slenderness ratio for a compact web is given by:

$$\lambda_{p,web} = 3.76 \sqrt{\frac{E}{F_y}}$$

$$\begin{aligned}
&= 3.76 \sqrt{\frac{205000}{345}} \\
&= 91.85
\end{aligned}$$

Since the slenderness ratio of the web $\lambda_w(50.26)$ is less than the limiting ratio $\lambda_{p,web}(91.85)$, the web is classified as compact. This indicates that the web is capable of reaching its full plastic moment without experiencing local buckling.

5.4.3. Section Classification

Since both the flange and web are classified as compact, the entire section is also considered compact. This classification ensures that the section can develop its full plastic moment capacity before local buckling occurs.

5.4.4. Stress Calculations

Stress calculations in structural engineering assess whether a material can safely withstand external loads. To ensure accuracy, force is measured in Newtons (N) and dimensions in millimeters (mm), with the results expressed in N/mm² (MPa). This standardized unit system ensures consistency and simplifies the interpretation of stress results.

5.4.4.1. Required Axial Stress (f_a)

The bending stress in the strong axis is calculated by dividing the required strong axis moment by the section modulus for the strong axis. The formula is:

$$f_a = \frac{P_r}{A}$$

Where:

- $P_r = 68.4 \text{ kN} = 68,400 \text{ N}$ (Required axial force SACS).
- $A = 22,050 \text{ mm}^2$ (cross-sectional area).

$$\begin{aligned}
f_a &= \frac{68,400 \text{ N}}{22,050 \text{ mm}^2} \\
&= 3.0998 \text{ MPa.}
\end{aligned}$$

5.4.4.2. Required Strong Axis Bending Stress (f_{bx})

The bending stress in the strong axis is calculated by dividing the required strong axis moment by the section modulus for the strong axis. The formula is:

$$f_{bx} = \frac{(M_{rx})}{(S_x)}$$

- $M_{rx} = 25.798 \text{ kNm} = 25,798,679 \text{ N}\cdot\text{mm}$ (required strong axis moment SACS).
- $S_x = 179.708 \text{ cm}^3$ (strong axis section modulus).

$$\begin{aligned} f_{bx} &= \frac{25\,798\,679 \text{ N}\cdot\text{mm}}{179\,708 \text{ mm}^3} \\ &= 143.615 \text{ MPa} \end{aligned}$$

5.4.4.3. Required Weak Axis Bending Stress (f_{by})

The bending stress in the weak axis is calculated by dividing the required weak axis moment by the section modulus for the weak axis. The formula is:

$$f_{by} = \frac{(M_{ry})}{(S_y)}$$

Where:

- $M_{ry} = 1.783 \text{ kNm} = 1,783,364.5 \text{ N}\cdot\text{mm}$ (required weak axis moment)
- $S_y = 179.708 \text{ cm}^3$ (weak axis section modulus)

$$\begin{aligned} f_{by} &= \frac{1,783,364.5 \text{ N}\cdot\text{mm}}{179\,708 \text{ mm}^3} \\ &= 9.934 \text{ MPa} \end{aligned}$$

5.4.5. Allowable Tensile Strength (P_c)

The tensile strength of the section is determined by its nominal strength (yielding) and a safety factor. The formula for calculating the tensile strength is as follows:

5.4.5.1. Nominal Strength (Yielding):

$$\begin{aligned} P_n &= F_y A \\ &= 345 \text{ MPa} \times 22,050 \text{ mm}^2 \\ &= 7,607,250 \text{ N} \\ &= 7,607 \text{ kN} \end{aligned}$$

Safety Factor: $\Omega_t = 1.67$

5.4.5.2. Allowable Strength:

The allowable tensile strength is calculated by dividing the nominal strength by the safety factor. This ensures the material operates within safe limits.

$$\begin{aligned} P_c &= \frac{7,607}{1.67} \\ &= 4,555 \text{ kN} \end{aligned}$$

5.4.6. Allowable Flexural Strength:

The flexural capacity of a structural member is determined by the controlling limit states, which in this case are yielding and lateral-torsional buckling (LTB). The capacity for unbraced members may be limited by lateral-torsional buckling (LTB) rather than yielding. To determine the governing buckling condition, the unbraced length of the member 4361-TR7X ($L_b = 5.64 \text{ m}$) is compared with the limiting unbraced lengths for yielding (L_p) and inelastic lateral-torsional buckling (L_r). This comparison helps identify which limit state governs the flexural strength of the member, influencing its overall stability and design capacity.

5.4.6.1. Limiting Unbraced Length for Yielding (L_p)

The limiting unbraced length for yielding, denoted as L_p , is calculated using the following formula:

$$L_p = 1.76 r_y \sqrt{\frac{E}{F_y}}$$

Where:

- r_y is the radius of gyration for the member,
- E is the modulus of elasticity (205000 MPa),
- F_y is the yield strength of the material (345 MPa).

$$\begin{aligned} L_p &= 1.76 r_y \sqrt{\frac{E}{F_y}} \\ &= 1.76 \times 30.7 \times \sqrt{\frac{205,000}{345}} \\ &= 1320 \text{ mm} = 1.32 \text{ m} \end{aligned}$$

This limiting unbraced length represents the maximum length at which the member can still maintain yielding as the controlling limit state without transitioning to buckling behavior.

5.4.6.2. Limiting Unbraced Length for Inelastic LTB (L_r)

To calculate L_r , the effective radius of gyration (r_{ts}) is first determined. This parameter accounts for the cross-sectional shape and dimensions, influencing how the member behaves under lateral-torsional loading.

The formula for (r_{ts}) is as follows:

$$r_{ts} = \frac{b_f}{\sqrt{12 \left(1 + \frac{1}{6} \frac{(d-2t_f)t_w}{b_f t_f} \right)}}$$

- Flange width, $b_f = 266.7$ mm
- Flange thickness, $t_f = 21.6$ mm
- Web thickness, $t_w = 14.3$ mm
- Total depth, $d = 762$ mm

$$\begin{aligned} r_{ts} &= \frac{b_f}{\sqrt{12 \left(1 + \frac{1}{6} \frac{(d-2t_f)t_w}{b_f t_f} \right)}} \\ &= \frac{266.7}{\sqrt{12 \left(1 + \frac{1}{6} \frac{(718.8)(14.3)}{(266.7)(21.6)} \right)}} \\ &= 67.59 \text{ mm} \end{aligned}$$

The effective radius of gyration, $r_{ts}=67.59$ mm, is critical for determining the unbraced length for inelastic lateral-torsional buckling, L_r .

Now applying the full expression for L_r :

$$L_r = 1.95 r_{ts} \cdot \frac{E}{0.7F_y} \cdot \sqrt{\frac{J_c}{S_x h_o} + \sqrt{\left(\frac{J_c}{S_x h_o} \right)^2 + 6.76 \left(\frac{0.7F_y}{E} \right)^2}}$$

Substituting the known values into this formula:

$$L_r = 1.95 \times 67.59 \times \frac{205,000}{0.7 \times 345} \sqrt{\frac{2,513,509 \times 1}{179,708 \times 740.4} + \sqrt{\left(\frac{2,513,509 \times 1}{179,708 \times 740.4} \right)^2 + 6.76 \left(\frac{0.7 \times 345}{205,000} \right)^2}}$$

$$\begin{aligned}
&= 111,886 \times \sqrt{0.01889 + \sqrt{(0.01889)^2 + (9.38 \times 10^{-6})}} \\
&= 111,886 \times \sqrt{0.03803} = 21,818 \text{ mm} \\
&= 21.82 \text{ m}
\end{aligned}$$

$$L_p = 1.32 < L_b = 5.64 < L_r = 21.82$$

Governing Limit State Determination Given:

- $L_p = 1.32 \text{ m}$
- $L_b = 5.64 \text{ m}$
- $L_r = 21.82 \text{ m}$

It can be seen that:

$$L_p < L_b < L_r$$

Since the unbraced length lies between L_p and L_r , the governing limit state for flexural strength is determined to be Inelastic Lateral-Torsional Buckling (LTB). This analysis is based on the comparison of calculated parameters and reveals how the member's unbraced length influences the buckling behavior.

5.4.7. Nominal Moment Capacity (M_n) for Inelastic LTB

With the governing limit state identified as Inelastic Lateral-Torsional Buckling (LTB), the nominal flexural strength M_n is calculated using the following formula:

$$M_n = C_b \left[M_p - (M_p - 0.7F_y S_x) \left(\frac{L_b - L_p}{L_r - L_p} \right) \right] \leq M_p$$

- Bending coefficient: $C_b = 1.0$ (Assumed)
- Plastic moment capacity: $M_p = 71.070 \text{ kN}\cdot\text{mm}$
- Yield strength: $F_y = 345 \text{ MPa}$
- Elastic section modulus: $S_x = 179,708 \text{ mm}^3$
- Unbraced length: $L_b = 5,640 \text{ mm}$
- Limiting lengths: $L_p = 1,320 \text{ mm}$, $L_r = 21,818 \text{ mm}$

$$M_n = C_b \left[M_p - (M_p - 0.7F_y S_x) \left(\frac{L_b - L_p}{L_r - L_p} \right) \right] \leq M_p$$

Substituting the known values into this formula:

$$\begin{aligned} M_n &= 1.0 \left[71.07 \times 10^6 - (71.07 \times 10^6 - 0.7 \times 179.708 \times 10^6) \left(\frac{5,640 - 1,32}{21,818 - 1,32} \right) \right] \\ &= 1.0 \left[71.07 \times 10^6 - (71.07 \times 10^6 - 43,441,146) \left(\frac{5.64 - 1.32}{21.82 - 1.32} \right) \right] \\ &= \left[71.07 \times 10^6 - (27.63 \times 10^6) \left(\frac{4.32}{20.50} \right) \right] \\ &= [71.07 \times 10^6 - (27.63 \times 10^6)(0.2107)] \\ &= [71.07 \times 10^6 - 5.82 \times 10^6] \\ &= 665.25 \text{ kNm} \\ M_n &= 65.25 \text{ kNm} \end{aligned}$$

This value is lower than the full plastic moment $M_p = 71.07 \text{ kNm}$, reflecting the reduction in strength due to the member being within the inelastic buckling range. This reduction is a result of the partial buckling behavior, indicating that the member is not in a fully elastic or fully plastic state, but instead in an intermediate inelastic state where its moment capacity is reduced compared to the full plastic capacity.

4.1.1. Allowable Strength

5.4.7.1. Allowable Strong Axis Flexural Strength (M_{cx})

The allowable strength in the strong axis is calculated by dividing the nominal flexural strength by the safety factor $\Omega_b = 1.67$:

$$\begin{aligned} M_{cx} &= \frac{M_n}{\Omega_b} \\ &= \frac{65.25 \text{ kNm}}{1.67} \\ &= 39.07 \text{ kNm} \end{aligned}$$

5.4.7.2. Allowable Weak Axis Flexural Strength (M_{cy})

The nominal strength in the weak axis is calculated by multiplying the yield strength with the section modulus:

$$M_n = M_p = F_y Z_x$$

Substituting the known values:

$$\begin{aligned} M_n &= M_p = F_y Z_x \\ &= 345 \text{ MPa} \times 71.07 \times 10^6 \text{ mm}^3 \\ &= 24.504 \text{ kNm} \end{aligned}$$

Substituting the known values:

$$\begin{aligned} M_{cy} &= \frac{65.25 \text{ kNm}}{1.67} \\ &= 39.07 \text{ kNm} \end{aligned}$$

The nominal moment capacity M_n under inelastic lateral-torsional buckling is calculated to be 65.25 kNm, which reflects a reduction from the full plastic moment capacity of 71.07 kNm due to the partial buckling behavior of the member. This confirms that the member operates in a more favorable inelastic range, contributing to a higher strength estimate compared to a fully plastic failure.

4.1.2. Combined Stress Interaction (Utilization Check)

The utilization check is performed to assess whether the combined stresses in the axial, strong-axis, and weak-axis directions satisfy the safety limits

$$\text{Utilization Check (UC)} = \frac{f_a}{F_a} + \frac{f_{bx}}{F_{bx}} + \frac{f_{by}}{F_{by}} \leq 1.0$$

Where:

- f_a , f_{bx} , and f_{by} are the applied stresses,
- F_a , F_{bx} , and F_{by} are the allowable stresses.

After performing the calculation, we obtain:

$$\begin{aligned} \text{UC} &= \frac{3.10}{207.0} + \frac{143.61}{151.5} + \frac{9.94}{258.75} \\ &= 0.015 + 0.94 + 0.038 \\ &= 0.993 \end{aligned}$$

Table 5. 5 Summary of Combined Stress and Utilization Check

Parameter	Applied	Allowable	Status
Axial Stress f_a	3.10 MPa	207.0 MPa	Safe
Strong-Axis Stress f_{bx}	143.61 MPa	151.5 MPa	Safe
Weak-Axis Stress f_{by}	9.94 MPa	258.75 MPa	Safe
Combined UC	0.993	≤ 1.0	Safe

The Utilization Check (UC) is performed to assess the adequacy of the member under the given loads. The formula used is:

$$\frac{P_r}{P_c} + \frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}} \leq 1.0$$

Where:

- P_r and P_c represent the axial load and its corresponding allowable value,
- M_{rx} and M_{cx} are the applied and allowable bending moments about the strong axis,
- M_{ry} and M_{cy} are the applied and allowable bending moments about the weak axis.

Substituting the known values:

$$\begin{aligned}
 UC &= \frac{68.4}{4555} + \frac{25.79}{39.07} + \frac{1.78}{39.07} \\
 &= 0.015 + 0.661 + 0.045 \\
 &= 0.721
 \end{aligned}$$

Since the Utilization Check (UC) value is 0.721, which is less than the safety threshold of 1.0, this confirms that the member is safe under the applied loads. The member satisfies all strength and stability criteria, ensuring its adequacy in the design.

Table 5. 6 Summary of Combined Load, Moment, and Utilization Check

Parameter	Applied	Allowable	Status
Axial Load (P_r)	68.4 kN	4555 kN	Safe
Bending Moment (M_{rx} - Strong Axis)	25.79 kNm	39.07 kNm	Safe
Bending Moment (M_{ry} - Weak Axis)	1.783 kNm	39.07 kNm	Safe
Utilization Check (UC)	0.721	≤ 1.0	Safe

5.5. Summary

Two independent structural member analyses were performed to verify adequacy based on combined force and moment interactions.

**Table 5. 7 Summary of Structural Verification Analyses:
Manual vs. Software**

Parameter	Manual Calculation 1 (Stress-Based)	SACS Software Result	Manual Calculation 2 (Load-Based)
Interaction Formula	$\frac{f_a}{F_a} + \frac{f_{bx}}{F_{bx}} + \frac{f_{by}}{F_{by}} \leq 1.0$	AISC 9th, Chapter F	$\frac{P_r}{P_c} + \frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}} \leq 1.0$
Applied Axial	3.10 MPa	3.10 MPa	68.4 kN
Allowable Axial	207.0 MPa	207.00 MPa	4555 kN
Axial Ratio	0.015	0.01	0.015
Applied Strong-Axis	143.61 MPa (fbx)	143.61 MPa (Fby)	25.79 kNm (Mrx)
Allowable Strong-Axis	151.5 MPa (Fbx)	151.51 MPa	39.07 kNm (Mcx)
Strong-Axis Ratio	0.94	0.95	0.661
Applied Weak-Axis	9.94 MPa (fby)	9.97 MPa (Fbz)	1.78 kNm (Mry)
Allowable Weak-Axis	258.75 MPa (Fby)	258.75 MPa	39.07 kNm (Mcy)
Weak-Axis Ratio	0.038	0.04	0.045

**Table 5. 8 Summary of Structural Verification Analyses:
Manual vs. Software**

Final Utilization Check	0.993	0.99	0.721
Status	Safe	Safe	Safe

The first analysis, based on applied stresses, resulted in a Utilization Check (UC) value of 0.993. This calculation was cross-verified against a SACS software model for member 4361-TR7X, which yielded a nearly identical UC ratio of 0.99. The close alignment between the manual calculation and the software output confirms the accuracy of the assessment. Both methods show the member is safe, though it is utilized to 99% of its capacity.

The second analysis, performed on the same member using an applied load and moment-based formula, resulted in a UC value of 0.708. This indicates that the member is safely within its design limits, operating at approximately 72.1% of its total capacity.

Both analyses confirm that the respective member satisfy the necessary strength and stability criteria, as the final UC values are less than the allowable limit of 1.0. The following table summarizes the key parameters from the two manual calculations and the SACS software output.

CHAPTER VI

CONCLUSIONS AND SUGGESTIONS

6.1. Conclusion

The structural analysis for the NFQ14 – Lower Deck and Wellhead Access Platform (LD&WAP) was performed to ensure its integrity during land transportation. The analysis was conducted using SACS software and supplemented by calculations in Microsoft Excel. The focus was on assessing the load conditions specific to structural elements, electrical and instrumentation (E&I) systems, piping components, and scaffolding loads, considering a non-standard operational category. Based on this analysis, the following conclusions are drawn in response to the problem formulation:

- **Joint Reactions and Support Safety**

The maximum recorded joint reaction was 159.83 metric tons at joint TR7X, under Load Combination 1300, simulating a shifted Center of Gravity (CoG). This result demonstrates the platform's sensitivity to CoG variations and reinforces the importance of accurate weight balancing before transport. While the magnitude of this reaction was significant, all joint forces remained within the capacity of the SPMT units and the supporting structural frame. The comprehensive data in Appendix B-1 validates these findings and demonstrates compliance with operational load limits.

- **Member Utilization and Structural Integrity**

The highest Unity Check (UC) was recorded at 0.99 for member 4361-TR7X, indicating that the member is operating at near-full capacity. While still within safe limits as per AISC 360-16 (ASD) guidelines, this near-threshold result suggests minimal reserve capacity in the current configuration. Other members with high UC values, such as 4843-4973 (0.94) and 4974-4843 (0.93), showed combined bending and tension effects.

These outcomes indicate that critical members are experiencing complex stress states, including interaction between vertical bending and axial loads—a behavior typical in multi-directional frame systems.

- Platform Behavior Under Shifted Load Cases

The simulated CoG shift cases (Load Combinations 1100 to 1400) demonstrated that the platform is capable of redistributing internal forces effectively without local failure or excessive overstressing. The structure exhibits sufficient redundancy and flexibility in handling non-uniform loading scenarios, confirming the robustness of the space-frame design. These results also validate the conservative nature of the analysis approach, which anticipates the most critical transport scenarios without requiring full dynamic simulation.

- Validity of Static Load Analysis for Transport Conditions

The application of a static load analysis approach augmented by CoG-shifted combinations and a 1.05 dead load factor proved sufficient to capture the worst-case load scenarios expected during transport. This simplified methodology balances accuracy and efficiency, enabling reliable structural evaluation without overcomplicating the modeling process. This technique aligns with standard industry practices for heavy, slow-moving loads where dynamic acceleration effects are minor.

- Software and Methodology Performance

The choice of SACS software proved appropriate for analyzing offshore platform components due to its capacity for tubular member checks, interaction equations, and complex joint reactions. The ability to evaluate combined stress conditions in three-dimensional frameworks allowed for an in-depth understanding of critical points, which would be difficult to obtain through manual methods or simpler tools.

6.2. Suggestions

Based on the above conclusions, several recommendations are proposed to improve structural design practices and ensure safe execution in future transportation projects:

- **Enhance Safety Margins in Design**
For members operating near full capacity, such as 4361-TR7X, design teams should consider reinforcement strategies, including increasing section size, adding stiffeners, or revising connection detailing. A safety margin of at least 10% beyond calculated loads is advisable, especially in components with high criticality or exposure to dynamic effects.
- **Adopt Adaptive CoG Modeling in Future Projects**
Future analyses should include more sophisticated sensitivity studies of CoG positions, potentially using probabilistic approaches to quantify the effects of small shifts in equipment placement or scaffold weight changes during loading. This would better reflect real-world uncertainties and provide added confidence in safety margins.
- **Introduce Real-Time Load Monitoring**
Instrumenting critical nodes such as TR7X with strain gauges or load cells during transportation would allow for real-time stress tracking, helping ensure that unexpected conditions do not push the system beyond its designed thresholds. This type of field validation also offers valuable feedback for future model calibration.
- **Strengthen Post-Transport Inspection Protocols**
Following transport, it is recommended that a visual inspection and NDT (Non-Destructive Testing) be conducted at locations identified in the analysis as having high stress concentrations or utilization rates. This ensures any hidden fatigue, cracking, or deformation is identified before the structure enters service.
- **Documentation for Knowledge Transfer**
This project should be archived and shared internally as a design case study, especially highlighting the interaction between structural analysis and

transportation planning. Key takeaways, including critical load paths and member behaviors, should be integrated into internal checklists and templates for future offshore platform developments.

- **Encourage Interdisciplinary Coordination**

Since many of the critical load effects stem from equipment placement, scaffold installation, and temporary loading, early coordination between structural, mechanical, and transport teams is crucial. Incorporating a design-for-transport mindset from the early design phase can significantly reduce retrofit or reinforcement requirements.

6.3. Future Work and Reflections

While this study relied on a static-equivalent approach, further investigation using dynamic simulations could offer deeper insight into the actual behavior of the platform under more aggressive conditions such as braking, turning, or wind loads during movement. Additionally, integrating fatigue analysis for reused structures or multi-phase transport projects may enhance long-term safety assurance.

From a broader perspective, the study underscores the value of digital structural simulations in modern offshore operations. Continued investment in simulation-driven engineering, supported by accurate field data, will be essential for optimizing safety, efficiency, and cost in future energy infrastructure projects.

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APPENDIXES

APPENDIX A: SACS Model Geometry and Load Definitions

- A-1: Joint Coordinate Report
- A-2: Load Summation Report

APPENDIX B: SACS Analysis Results – Joint Reaction Forces

- B-1: Joints Reaction Forces and Moments Report

APPENDIX C: SACS Analysis Results – Member Utilization (Unity Check)

- C-1: Member Unity Check Summary Report
- C-2: Members Combined and Shear Unity Check Report

APPENDIX D: Detailed Analysis of Critical Member 4361-TR7X

- D-1: Member Stress at Maximum Unity Check Report (for Member 4361-TR7X)
- D-2: Detailed Member Review and Redesign Report (for Member 4361-TR7X)

APPENDIX E: Weight Control and Center of Gravity (CoG) Data

- E-1: Weight Control Report (WCR) for NFQ14 Topside
- E-2: Detailed Component Weight and CoG Data

A-1: General Joints Reaction Forces and Moments Report

Joint Coordinate (m)				Report
Joint	X	Y	Z	Fixity
0001	-3.0000-5	36.800	1.845	111000 FIXED
0004	17.000	2.00000-5	0.443	
0005	17.000	15.000	0.195	
0009	17.000	30.000	0.195	
0010	-3.0000-5	30.000	0.195	
0011	-3.0000-5	15.000	0.195	
0020	-6.000	39.100	1.845	
0021	9.460	19.230	1.970	
3503	-3.0000-5	20.000	1.407	
3504	-2.0000-5	10.000	1.407	
3508	17.000	20.000	1.145	110000
3509	17.000	10.000	1.507	
3566	22.000	9.500	1.695	
3723	9.99999-6	-9.9999-6	0.443	
3769	0.780	35.520	1.845	
3859	3.330	35.520	1.845	
3876	3.330	33.550	1.845	
3907	2.028	18.760	1.845	
3908	1.528	18.760	1.845	
3967	0.780	33.550	1.845	
3968	0.780	35.460	1.845	110000
397A	0.780	36.370	1.845	
397B	0.780	33.640	1.845	
3985	0.780	33.000	1.845	
3986	3.330	33.000	1.845	
398A	3.330	33.640	1.845	
3A59	3.330	35.460	1.845	
3A90	3.330	36.370	1.845	
4001	17.000	30.000	1.845	
4002	17.000	2.00000-5	1.845	
4004	9.99999-6	-9.9999-6	1.845	110000
4005	17.000	15.000	1.845	
4006	-3.0000-5	15.000	1.845	
4008	-6.000	6.000	1.845	
4009	-6.000	-9.9999-6	1.845	
4010	-2.100	40.900	1.845	
4011	-2.100	40.000	1.845	
4012	-2.100	39.100	1.845	
4013	-2.100	38.075	1.845	
4014	-2.100	37.050	1.845	
4015	-2.100	36.370	1.845	110000
4016	-2.100	34.450	1.845	
4017	17.000	38.075	1.845	
4018	-2.100	33.640	1.845	
4019	-2.100	33.000	1.845	
4020	-2.100	32.050	1.845	
4021	-2.100	31.050	1.845	
4022	-2.100	30.000	1.845	
4023	-2.100	29.025	1.845	
4024	-2.100	28.120	1.845	
4025	-2.100	27.170	1.845	110000
4026	-2.100	26.250	1.845	
4027	-2.100	25.405	1.845	
4028	-2.100	24.405	1.845	
4029	-2.100	23.650	1.845	
4030	-2.100	22.500	1.845	
4031	-2.100	21.535	1.845	
4032	-2.100	20.610	1.845	
4033	-2.100	19.545	1.845	
4034	-2.100	18.760	1.845	
4035	-2.100	17.923	1.845	110000
4036	-2.100	17.000	1.845	
4037	-2.100	15.985	1.845	
4038	-2.100	15.000	1.845	

4039	22.635	23.962	1.845
4040	-2.100	13.300	1.845
4041	-2.100	12.450	1.845
4042	-2.100	11.600	1.845
4043	-2.100	10.000	1.845
4044	-2.100	9.000	1.845
4045	0.600	13.300	1.845
4046	-2.100	7.800	1.845
4047	-2.100	6.800	1.845
4048	-2.100	6.000	1.845
4049	-4.0000-5	40.900	1.845
4050	-4.0000-5	40.000	1.845
4051	-4.0000-5	39.100	1.845
4052	-3.0000-5	38.075	1.845
4053	-3.0000-5	37.050	1.845
4054	-3.0000-5	36.370	1.845
4055	-3.0000-5	34.450	1.845
4056	11.085	32.475	1.845
4057	-3.0000-5	33.640	1.845
4058	-3.0000-5	33.000	1.845
4059	-3.0000-5	32.050	1.845
4060	22.000	22.500	1.845
4061	21.500	32.486	1.845
4062	22.652	33.732	1.845
4063	-3.0000-5	28.120	1.845
4064	-3.0000-5	27.170	1.845
4065	-3.0000-5	26.250	1.845
4066	-3.0000-5	25.405	1.845
4067	-3.0000-5	25.000	1.845
4068	-3.0000-5	24.670	1.845
4069	-3.0000-5	24.405	1.845
4070	-3.0000-5	23.650	1.845
4071	-3.0000-5	22.500	1.845
4072	-3.0000-5	21.535	1.845
4073	-3.0000-5	20.610	1.845
4074	-3.0000-5	20.000	1.845
4075	-3.0000-5	19.545	1.845
4076	-3.0000-5	18.760	1.845
4077	-3.0000-5	17.923	1.845
4078	-3.0000-5	17.000	1.845
4079	-3.0000-5	19.620	1.845
4080	12.750	25.165	1.845
4081	22.000	10.000	1.845
4082	-0.600	28.120	1.845
4083	-3.0000-5	13.525	1.845
4084	-3.0000-5	13.300	1.845
4085	-3.0000-5	12.450	1.845
4086	-2.0000-5	11.125	1.845
4087	-2.0000-5	10.200	1.845
4088	-2.0000-5	10.000	1.845
4089	-2.0000-5	9.375	1.845
4090	-2.0000-5	8.800	1.845
4091	-2.0000-5	8.437	1.845
4092	-2.0000-5	7.800	1.845
4093	-2.0000-5	7.000	1.845
4094	-2.0000-5	6.800	1.845
4095	-2.0000-5	6.000	1.845
4096	-2.0000-5	5.500	1.845
4097	-2.0000-5	4.700	1.845
4098	-2.0000-5	3.200	1.845
4099	-2.0000-5	2.425	1.845
4100	-2.0000-5	1.625	1.845
4101	-0.600	13.300	1.845
4102	22.000	7.000	1.845
4103	2.400	-9.9999-6	1.845
4104	3.000	30.000	1.845
4105	4.250	29.025	1.845
4106	4.250	28.120	1.845
4107	2.478	17.923	1.845
4108	3.000	23.150	1.845
4109	4.250	26.290	1.845

4110	4.250	25.355	1.845
4111	4.250	24.405	1.845
4112	4.250	23.550	1.845
4113	4.250	22.500	1.845
4114	4.250	21.535	1.845
4115	4.250	20.610	1.845
4116	4.250	19.545	1.845
4117	4.250	18.760	1.845
4118	4.250	17.923	1.845
4119	4.250	17.000	1.845
4120	4.250	15.985	1.845
4121	3.200	15.000	1.845
4122	3.950	15.000	1.845
4123	3.200	14.100	1.845
4124	3.200	13.300	1.845
4125	3.200	12.450	1.845
4126	3.200	11.600	1.845
4127	2.700	15.000	1.845
4128	3.200	10.200	1.845
4129	3.200	9.000	1.845
4130	3.200	8.800	1.845
4131	-2.100	14.150	1.845
4132	3.200	7.800	1.845
4133	1.588	14.100	1.845
4134	3.200	6.800	1.845
4135	3.200	6.000	1.845
4136	3.200	5.500	1.845
4137	3.200	4.700	1.845
4138	3.200	3.650	1.845
4139	3.200	3.200	1.845
4140	3.200	2.425	1.845
4141	3.200	1.625	1.845
4142	3.200	0.837	1.845
4143	3.200	-9.9999-6	1.845
4144	4.250	40.900	1.845
4146	4.250	39.100	1.845
4147	4.250	38.190	1.845
4148	4.250	37.280	1.845
4149	4.250	36.370	1.845
4150	4.250	34.550	1.845
4152	4.250	33.640	1.845
4153	4.250	33.000	1.845
4154	4.250	32.050	1.845
4155	4.250	31.050	1.845
4158	4.700	15.000	1.845
4160	4.700	11.600	1.845
4162	4.700	8.800	1.845
4164	4.700	6.000	1.845
4166	4.700	3.200	1.845
4168	4.700	-2.0000-5	1.845
4169	4.635	32.475	1.845
4170	4.635	31.450	1.845
4171	22.000	8.000	1.845
4172	4.635	33.500	1.845
4173	5.050	42.100	1.845
4174	5.050	40.900	1.845
4175	16.335	34.660	1.845
4177	10.235	31.450	1.845
4180	14.543	31.450	1.845
4181	15.035	32.475	1.845
4182	9.385	31.450	1.845
4183	7.745	31.450	1.845
4185	5.900	15.000	1.845
4187	5.900	11.600	1.845
4189	5.900	8.800	1.845
4191	5.900	6.000	1.845
4193	5.900	3.200	1.845
4195	5.900	-2.0000-5	1.845
4196	6.550	42.100	1.845
4197	6.550	40.900	1.845
4198	6.550	40.000	1.845

4199	6.550	39.100	1.845
4200	6.150	11.600	1.845
4201	6.150	8.800	1.845
4202	6.150	6.000	1.845
4203	6.150	3.200	1.845
4204	6.235	35.460	1.845
4205	13.945	38.075	1.845
4206	6.235	33.500	1.845
4207	22.000	9.000	1.845
4208	6.235	32.475	1.845
4209	6.235	31.450	1.845
4210	22.000	9.500	1.845
4211	17.000	9.475	1.845
4212	6.900	15.000	1.845
4213	6.900	13.000	1.845
4214	6.900	11.600	1.845
4215	6.900	10.200	1.845
4216	6.900	8.800	1.845
4217	6.900	7.400	1.845
4218	6.900	6.000	1.845
4219	6.900	4.600	1.845
4220	6.900	3.200	1.845
4221	6.900	1.800	1.845
4222	6.900	-2.0000-5	1.845
4223	7.550	15.000	1.845
4225	7.900	11.600	1.845
4227	7.900	8.800	1.845
4229	7.900	6.000	1.845
4231	7.900	3.200	1.845
4233	7.685	-2.0000-5	1.845
4234	8.500	40.900	1.845
4235	8.500	40.000	1.845
4236	8.500	39.100	1.845
4237	15.140	38.075	1.845
4238	8.500	36.370	1.845
4239	13.945	36.370	1.845
4240	0.600	28.120	1.845
4241	8.500	33.500	1.845
4242	15.140	36.370	1.845
4243	8.500	32.475	1.845
4244	9.917	36.370	1.845
4245	11.333	36.370	1.845
4246	8.500	31.050	1.845
4247	8.500	30.000	1.845
4248	8.500	29.025	1.845
4249	8.500	28.260	1.845
4250	8.500	27.500	1.845
4251	8.500	26.740	1.845
4252	8.500	26.250	1.845
4253	8.500	25.355	1.845
4254	8.500	24.405	1.845
4255	8.500	23.550	1.845
4256	8.500	22.500	1.845
4257	8.500	21.535	1.845
4258	8.500	20.610	1.845
4259	8.500	19.545	1.845
4260	8.500	18.760	1.845
4261	8.500	17.923	1.845
4262	8.500	17.000	1.845
4263	8.500	15.985	1.845
4264	8.500	15.000	1.845
4265	17.000	18.700	1.845
4266	4.250	23.150	1.845
4267	-3.0000-5	23.150	1.845
4268	17.000	2.00000-5	3.998
4269	11.610	26.250	1.845
4270	11.610	26.035	1.845
4271	0.660	27.170	1.845
4272	0.660	23.150	1.845
4273	6.650	17.000	1.845
4274	9.100	15.000	1.845

4275	8.500	-2.0000-5	1.845	
4276	9.450	15.000	1.845	
4278	9.100	11.600	1.845	
4280	9.100	8.800	1.845	
4282	9.100	6.000	1.845	
4284	9.100	3.200	1.845	
4286	9.315	2.00000-5	1.845	
4287	9.300	45.000	1.845	
4288	9.300	43.600	1.845	
4289	9.300	42.700	1.845	
4290	9.300	40.900	1.845	000111
4291	9.300	40.000	1.845	
4292	9.300	39.100	1.845	
4293	10.100	15.000	1.845	
4294	10.100	13.000	1.845	
4295	10.100	11.600	1.845	
4296	10.100	10.200	1.845	
4297	10.100	8.800	1.845	
4298	10.100	7.400	1.845	
4299	10.100	6.000	1.845	
4300	10.100	4.600	1.845	
4301	10.100	3.200	1.845	
4302	10.100	1.800	1.845	
4303	10.100	2.00000-5	1.845	
4304	10.800	45.000	1.845	
4305	10.800	43.600	1.845	
4306	10.800	42.700	1.845	
4307	10.800	40.900	1.845	
4308	10.800	40.000	1.845	
4309	10.800	39.100	1.845	
4310	10.900	11.600	1.845	
4311	10.900	8.800	1.845	
4312	10.900	6.000	1.845	
4313	10.900	3.200	1.845	
4314	11.100	15.000	1.845	
4316	11.100	11.600	1.845	
4318	11.100	8.800	1.845	
4320	11.100	6.000	1.845	
4322	11.100	3.200	1.845	
4324	11.100	2.00000-5	1.845	
4325	19.200	41.850	1.845	110000
4326	17.000	41.850	1.845	
4327	12.750	41.850	1.845	
4328	10.800	41.850	1.845	
4329	8.500	35.641	1.845	
4330	9.917	38.075	1.845	
4331	12.750	33.500	1.845	
4332	11.333	38.075	1.845	
4333	16.335	33.500	1.845	
4334	17.000	34.550	1.845	
4335	11.807	27.500	1.845	
4336	12.062	28.260	1.845	
4337	12.062	26.740	1.845	
4338	12.300	15.000	1.845	
4340	12.300	11.600	1.845	
4342	12.300	8.800	1.845	
4344	12.300	6.000	1.845	
4346	12.300	3.200	1.845	
4348	12.300	2.00000-5	1.845	
4349	12.750	40.900	1.845	
4351	12.750	39.100	1.845	
4352	5.250	21.535	1.845	
4353	5.250	20.610	1.845	
4354	12.750	36.370	1.845	
4355	19.200	34.550	1.845	
4356	12.750	35.641	1.845	
4357	0.600	32.050	1.845	
4358	12.750	32.475	1.845	
4359	12.750	31.450	1.845	
4360	6.650	17.923	1.845	
4361	12.750	31.050	1.845	

4363	12.750	29.025	1.845
4364	12.750	28.525	1.845
4365	12.750	28.260	1.845
4366	12.750	27.500	1.845
4367	12.750	26.740	1.845
4368	12.750	26.475	1.845
4369	12.750	26.250	1.845
4370	12.750	25.355	1.845
4371	12.750	24.405	1.845
4372	12.750	23.550	1.845
4373	12.750	22.500	1.845
4374	12.750	21.535	1.845
4375	12.750	20.610	1.845
4376	12.750	19.545	1.845
4377	12.750	18.760	1.845
4378	12.750	17.923	1.845
4379	-0.600	32.050	1.845
4380	12.750	15.985	1.845
4382	13.800	15.000	1.845
4383	13.800	14.150	1.845
4384	13.800	13.300	1.845
4385	13.800	12.450	1.845
4386	13.800	11.600	1.845
4387	0.800	17.000	1.845
4388	13.800	10.750	1.845
4389	-0.600	17.000	1.845
4390	13.800	8.800	1.845
4391	1.764	15.985	1.845
4392	13.800	8.000	1.845
4393	1.610	31.050	1.845
4394	13.800	7.000	1.845
4395	13.800	6.000	1.845
4396	13.800	5.000	1.845
4397	13.800	4.000	1.845
4398	13.800	3.650	1.845
4399	13.800	3.200	1.845
4400	13.800	3.000	1.845
4401	13.800	2.000	1.845
4402	13.800	0.837	1.845
4403	13.800	2.00000-5	1.845
4404	13.438	28.260	1.845
4405	13.438	26.740	1.845
4406	13.693	27.500	1.845
4407	8.500	37.050	1.845
4408	6.235	37.050	1.845
4409	5.250	19.545	1.845
4410	3.650	20.610	1.845
4411	16.335	36.370	1.845
4412	-3.0000-5	27.560	1.845
4413	2.478	17.000	1.845
4414	3.000	22.500	1.845
4415	14.600	2.00000-5	1.845
4416	16.335	32.475	1.845
4417	16.335	31.450	1.845
4418	10.825	29.025	1.845
4419	10.825	28.260	1.845
4420	17.000	40.900	1.845
4421	17.000	40.000	1.845
4422	17.000	39.100	1.845
4423	17.000	38.190	1.845
4424	17.000	37.280	1.845
4425	17.000	36.370	1.845
4426	17.000	35.641	1.845
4427	10.825	27.500	1.845
4428	17.000	32.620	1.845
4429	17.000	33.000	1.845
4430	16.000	28.260	1.845
4431	15.121	29.025	1.845
4432	10.825	26.740	1.845
4433	15.350	14.150	1.845
4434	17.000	28.260	1.845

4435	17.000	27.500	1.845
4436	17.000	26.740	1.845
4437	17.000	26.250	1.845
4438	17.000	25.355	1.845
4439	17.000	25.000	1.845
4440	17.000	24.405	1.845
4441	17.000	23.550	1.845
4442	17.000	22.500	1.845
4443	17.000	21.535	1.845
4444	17.000	20.610	1.845
4445	17.000	20.000	1.845
4446	17.000	19.545	1.845
4447	17.000	18.760	1.845
4448	17.000	17.923	1.845
4449	17.000	17.000	1.845
4450	17.000	18.400	1.845
4451	10.825	26.250	1.845
4452	17.600	2.000	1.845
4453	17.000	13.300	1.845
4454	17.000	12.450	1.845
4455	17.000	11.600	1.845
4456	17.000	10.750	1.845
4457	17.000	10.000	1.845
4458	17.000	9.375	1.845
4459	1.596	29.025	1.845
4460	17.000	8.000	1.845
4461	3.300	30.000	1.845
4462	17.000	7.000	1.845
4463	17.000	6.000	1.845
4464	17.000	5.000	1.845
4465	17.000	4.000	1.845
4466	17.000	3.200	1.845
4467	17.000	3.000	1.845
4468	17.000	2.000	1.845
4469	18.647	0.837	1.845
4470	14.450	28.260	1.845
4471	17.700	22.500	1.845
4472	17.989	28.940	1.845
4473	18.983	27.875	1.845
4474	19.200	40.900	1.845
4475	19.200	40.000	1.845
4476	19.200	39.100	1.845
4477	19.200	38.190	1.845
4478	19.200	37.280	1.845
4479	19.200	36.370	1.845
4480	19.200	35.641	1.845
4481	14.450	27.500	1.845
4482	16.200	17.000	1.845
4483	19.200	33.500	1.845
4484	19.200	32.620	1.845
4485	19.200	31.820	1.845
4486	19.200	30.910	1.845
4487	19.200	30.000	1.845
4488	14.300	15.000	1.845
4489	16.400	13.300	1.845
4490	19.000	27.857	1.845
4491	15.236	15.985	1.845
4492	19.200	27.175	1.845
4493	19.200	26.250	1.845
4494	19.200	25.355	1.845
4495	19.200	24.405	1.845
4496	19.200	23.550	1.845
4497	19.200	22.500	1.845
4498	19.200	30.600	1.845
4499	22.000	6.000	1.845
4500	22.000	5.000	1.845
4501	22.000	4.000	1.845
4502	16.400	2.000	1.845
4503	22.000	3.000	1.845
4504	22.000	2.000	1.845
4505	22.000	0.837	1.845

4506	22.000	2.00000-5	1.845
4507	24.000	22.500	1.845
4508	24.418	35.641	1.845
4509	6.650	18.760	1.845
4510	16.335	36.640	1.845
4511	16.335	35.641	1.845
4512	6.650	19.545	1.845
4513	3.650	19.545	1.845
4514	14.450	26.740	1.845
4515	17.000	38.600	1.845
4516	6.650	20.610	1.845
4517	6.235	36.370	1.845
4518	16.335	37.050	1.845
4519	12.750	37.050	1.845
4520	21.500	29.860	1.845
4521	21.500	33.500	1.845
4522	10.825	25.355	1.845
4523	17.000	33.500	1.845
4525	16.335	34.450	1.845
4526	21.500	32.620	1.845
4527	21.500	31.820	1.845
4528	21.500	30.910	1.845
4529	20.042	30.910	1.845
4530	20.884	31.820	1.845
4531	8.500	28.120	1.845
4532	8.500	27.170	1.845
4533	21.500	35.641	1.845
4534	19.600	29.860	1.845
4535	19.200	27.643	1.845
4536	12.600	11.600	1.845
4537	12.600	8.800	1.845
4538	12.600	6.000	1.845
4539	12.600	3.200	1.845
4540	10.825	24.405	1.845
4541	10.825	23.550	1.845
4542	10.825	30.000	1.845
4543	15.340	6.000	1.845
4544	15.340	5.000	1.845
4545	15.340	7.000	1.845
4546	15.340	8.000	1.845
4547	15.340	9.000	1.845
4548	8.500	27.550	1.845
4549	15.340	10.750	1.845
4550	15.340	11.600	1.845
4551	15.340	12.450	1.845
4552	22.533	24.072	1.845
4553	21.850	22.500	1.845
4554	15.340	10.000	1.845
4555	7.550	30.000	1.845
4556	9.450	30.000	1.845
4557	22.619	33.696	1.845
4558	12.750	26.100	1.845
4559	12.750	27.715	1.845
4560	17.000	9.000	1.845
4561	-2.0000-5	9.000	1.845
4562	-2.0000-5	11.000	1.845
4563	13.800	10.000	1.845
4564	3.156	27.170	1.845
4565	8.500	41.850	1.845
4566	9.300	41.850	1.845
4567	7.900	15.000	1.845
4568	9.100	2.00000-5	1.845
4569	7.900	-2.0000-5	1.845
4570	12.750	17.000	1.845
4571	6.235	38.075	1.845
4572	-2.0000-5	9.500	1.845
4573	13.800	10.200	1.845
4574	19.200	29.860	1.845
4575	21.700	6.000	1.845
4576	17.000	9.620	1.845
4577	8.500	27.850	1.845

4578	12.750	25.040	1.845
4579	12.750	27.840	1.845
4580	17.000	31.865	1.845
4581	17.000	28.135	1.845
4582	18.865	30.000	1.845
4583	15.280	30.000	1.845
4584	-3.0000-5	31.700	1.845
4585	-3.0000-5	28.300	1.845
4586	1.520	30.000	1.845
4587	-1.700	30.000	1.845
4588	17.000	16.475	1.845
4589	17.000	13.525	1.845
4590	15.525	15.000	1.845
4591	-3.0000-5	16.440	1.845
4592	6.650	-2.0000-5	1.845
4593	1.475	15.000	1.845
4594	-1.475	15.000	1.845
4595	17.000	1.550	1.845
4596	18.550	2.00000-5	1.845
4597	15.450	2.00000-5	1.845
4598	10.350	2.00000-5	1.845
4599	-2.0000-5	1.600	1.845
4600	1.550	-9.9999-6	1.845
4601	-1.550	-2.0000-5	1.845
4602	4.250	27.170	1.845
4603	7.130	-2.0000-5	1.845
4604	9.870	2.00000-5	1.845
4605	17.000	15.000	2.209
4606	-3.0000-5	15.000	2.233
4607	10.425	15.000	1.845
4608	6.575	15.000	1.845
4609	9.885	15.000	1.845
460X	-3.0000-5	30.000	1.845
4610	7.115	15.000	1.845
4611	10.280	30.000	1.845
4612	6.720	30.000	1.845
4613	17.000	39.430	1.845
4614	9.890	30.000	1.845
4615	7.110	30.000	1.845
4616	16.670	39.100	1.845
4617	17.330	39.100	1.845
4618	17.000	38.770	1.845
4619	-4.0000-5	38.770	1.845
4620	-4.0000-5	39.430	1.845
4621	-0.330	39.100	1.845
4622	0.330	39.100	1.845
4623	8.500	38.860	1.845
4624	8.500	39.340	1.845
4625	8.740	39.100	1.845
4626	8.260	39.100	1.845
4627	22.000	5.730	1.845
4628	-3.0000-5	25.330	1.845
4629	17.000	24.720	1.845
4630	17.000	25.280	1.845
4631	-3.0000-5	20.380	1.845
4632	22.000	6.270	1.845
4633	-2.0000-5	9.650	1.845
4634	-2.0000-5	10.350	1.845
4635	-2.0000-5	5.720	1.845
4636	-2.0000-5	6.280	1.845
4637	-0.280	6.000	1.845
4638	0.280	6.000	1.845
4639	17.000	20.380	1.845
4640	17.000	10.380	1.845
4641	17.000	5.705	1.845
4642	17.000	6.295	1.845
4643	17.450	10.000	1.845
4644	17.990	39.100	1.845
4645	2.850	39.100	1.845
4646	2.650	27.170	1.845
4647	1.078	17.923	1.845

4648	1.078	17.000	1.845	
4649	-6.000	5.760	1.845	
4650	17.000	37.050	1.845	
4657	13.700	30.000	1.845	
4658	22.000	9.240	1.845	
4659	22.000	9.760	1.845	
4660	21.730	6.000	1.845	
4661	21.750	2.00000-5	1.845	
4662	22.000	0.250	1.845	
4663	-6.240	-9.9999-6	1.845	110000
4664	-5.760	-9.9999-6	1.845	
4665	-6.000	0.240	1.845	
4666	-6.240	6.000	1.845	
4667	-5.760	6.000	1.845	
4668	22.270	6.000	1.845	
4669	16.705	6.000	1.845	
4670	17.295	6.000	1.845	
4671	-6.000	6.240	1.845	
4672	1.528	17.923	1.845	
4673	8.500	31.450	1.845	
4674	2.670	30.000	1.845	
4675	4.250	31.450	1.845	
4676	1.528	17.000	1.845	
4677	2.028	17.923	1.845	
4678	2.028	17.000	1.845	
4679	-0.780	6.000	1.845	
4680	9.300	44.500	1.845	
4681	10.800	44.500	1.845	
4682	4.250	34.450	1.845	
4683	6.650	21.535	1.845	
4684	10.100	-1.375	1.845	
4685	9.100	-1.375	1.845	
4686	7.900	-1.375	1.845	
4687	6.900	-1.375	1.845	
468A	5.050	40.000	1.845	
4690	5.050	39.100	1.845	
4691	-2.100	35.460	1.845	
4692	-3.0000-5	35.460	1.845	
4693	4.250	35.460	1.845	
4694	10.000	17.000	1.845	
4695	17.000	27.875	1.845	
4696	17.000	31.450	1.845	
4697	17.300	32.620	1.845	
4698	18.052	31.820	1.845	
4700	15.660	31.450	1.845	
4701	8.500	34.450	1.845	
4702	8.500	35.460	1.845	
4703	4.250	37.050	1.845	
4704	4.250	38.075	1.845	
4705	17.000	15.000	2.474	
4706	-3.0000-5	15.000	2.474	
4707	16.335	37.050	5.645	
4708	11.085	37.050	5.645	
4709	11.085	31.450	5.645	
4710	16.335	31.450	5.645	
4711	6.235	37.050	5.645	
4712	6.235	31.450	5.645	
4713	4.635	31.950	5.645	
4714	4.635	34.450	5.645	
4715	6.235	34.450	5.645	
4716	11.935	37.050	5.645	
4717	8.500	38.075	1.845	
4718	12.750	38.075	1.845	
4719	14.535	37.050	5.645	
4720	15.435	37.050	5.645	
4721	6.990	37.050	5.645	
4722	7.745	37.050	5.645	
4723	4.950	23.550	1.845	
4724	9.385	37.050	5.645	
4725	10.235	37.050	5.645	
4726	6.990	31.450	5.645	

4727	7.745	31.450	5.645
4728	4.950	26.290	1.845
4729	9.385	31.450	5.645
4730	10.235	31.450	5.645
4731	11.935	31.450	5.645
4732	4.950	25.355	1.845
4733	13.635	31.450	5.645
4734	14.535	31.450	5.645
4735	15.435	31.450	5.645
4736	5.120	34.450	5.645
4737	5.435	31.950	5.645
4738	12.750	37.050	5.645
4739	8.500	37.050	5.645
4740	8.500	31.450	5.645
4741	12.750	31.450	5.645
4742	16.335	36.050	5.645
4743	16.335	34.450	5.645
4744	6.235	35.460	5.645
4745	6.235	33.615	5.645
4746	6.235	32.350	5.645
4747	4.635	33.615	5.645
4748	4.635	32.475	5.645
4749	13.635	37.050	5.645
4750	13.635	34.450	5.645
4751	14.535	34.450	5.645
4752	15.435	34.450	5.645
4753	12.750	34.450	5.645
4754	11.935	34.450	5.645
4755	11.085	34.450	5.645
4756	10.235	34.450	5.645
4757	9.385	34.450	5.645
4758	8.500	34.450	5.645
4759	7.745	34.450	5.645
4760	6.990	34.450	5.645
4761	4.950	24.405	1.845
4762	17.000	27.175	1.845
4764	-3.0000-5	11.600	1.845
4765	10.000	17.923	1.845
4766	-2.100	10.600	1.845
4767	-2.0000-5	10.600	1.845
4768	-2.0000-5	9.800	1.845
4769	10.000	18.760	1.845
4770	12.750	34.450	1.845
4771	10.000	19.545	1.845
4772	-2.100	6.375	1.845
4773	18.900	2.00000-5	1.845
4774	10.000	20.610	1.845
4775	3.200	10.600	1.845
4776	3.200	10.000	1.845
4777	-6.000	5.000	1.845
4778	-2.0000-5	5.000	1.845
4779	-4.875	6.375	1.845
4780	-4.875	6.000	1.845
4781	-4.875	5.000	1.845
4782	-2.100	5.000	1.845
4783	-2.0000-5	3.950	1.845
4784	3.200	3.950	1.845
4785	10.000	21.535	1.845
4786	11.850	17.000	1.845
4787	11.850	17.923	1.845
4788	11.850	19.545	1.845
4789	11.850	18.760	1.845
4790	11.850	20.610	1.845
4791	11.850	21.535	1.845
4792	6.650	17.600	1.845
4793	8.500	17.600	1.845
4794	10.000	17.600	1.845
4795	3.950	-9.9999-6	1.845
4796	3.950	11.600	1.845
4797	3.950	8.800	1.845
4798	3.950	6.000	1.845

4799	3.950	3.200	1.845
4800	13.050	15.000	1.845
4801	13.050	2.00000-5	1.845
4802	13.050	11.600	1.845
4803	13.050	8.800	1.845
4804	13.050	6.000	1.845
4805	13.050	3.200	1.845
4806	6.235	39.100	1.845
4807	-6.000	1.500	5.120
4808	-6.000	-9.9999-6	5.120
4809	-5.700	1.500	5.120
4810	-5.700	-9.9999-6	5.120
4811	-3.780	1.500	5.120
4812	-3.780	-2.0000-5	5.120
4813	-3.080	1.500	5.120
4814	-3.080	-2.0000-5	5.120
4815	-3.0000-5	15.000	5.120
4816	-3.0000-5	11.600	5.120
4817	-2.0000-5	11.344	5.120
4818	-2.0000-5	8.800	5.120
4819	-2.0000-5	6.000	5.120
4820	-2.0000-5	3.200	5.120
4821	-2.0000-5	3.115	5.120
4822	-2.0000-5	1.500	5.120
4823	9.99999-6	-9.9999-6	5.120
4824	2.388	-9.9999-6	5.120
4825	2.478	15.000	5.120
4826	3.200	15.000	5.120
4827	3.200	11.600	5.120
4828	3.200	8.800	5.120
4829	3.200	6.000	5.120
4830	3.200	3.200	5.120
4831	3.200	-9.9999-6	5.120
4832	5.969	-2.0000-5	5.120
4833	6.150	11.600	5.120
4834	6.150	8.800	5.120
4835	6.150	6.000	5.120
4836	6.150	3.200	5.120
4837	6.900	15.000	5.120
4838	6.900	11.600	5.120
4839	6.900	8.800	5.120
4840	6.900	6.000	5.120
4841	6.900	3.200	5.120
4842	6.900	-2.0000-5	5.120
4843	8.500	15.000	5.120
4844	8.500	-2.0000-5	5.120
4845	10.100	15.000	5.120
4846	10.100	11.600	5.120
4847	10.100	8.800	5.120
4848	10.100	6.000	5.120
4849	10.100	3.200	5.120
4850	10.100	2.00000-5	5.120
4851	10.900	11.600	5.120
4852	10.900	8.800	5.120
4853	10.900	6.000	5.120
4854	10.900	3.200	5.120
4855	11.031	2.00000-5	5.120
4856	13.800	15.000	5.120
4857	13.800	11.600	5.120
4858	13.800	8.800	5.120
4859	13.800	6.000	5.120
4860	13.800	3.200	5.120
4861	13.800	2.00000-5	5.120
4862	14.522	15.000	5.120
4863	14.612	2.00000-5	5.120
4864	17.000	15.000	5.120
4865	17.000	11.600	5.120
4866	17.000	11.344	5.120
4867	17.000	8.800	5.120
4868	17.000	6.000	5.120
4869	12.600	15.000	5.120

4870	17.000	2.00000-5	5.120	
4871	-2.0000-5	-1.600	5.120	
4872	8.500	-1.600	5.120	
4873	17.000	-1.600	5.120	
4874	2.000	15.000	5.120	
4875	2.500	11.600	5.120	
4876	2.500	8.800	5.120	
4877	2.500	6.000	5.120	
4878	2.500	3.200	5.120	
4879	2.000	-9.9999-6	5.120	
4880	15.000	15.000	5.120	
4881	15.000	11.600	5.120	
4882	15.000	8.800	5.120	
4883	15.000	6.000	5.120	
4884	15.000	3.200	5.120	
4885	15.000	2.00000-5	5.120	
4886	12.600	11.600	5.120	
4887	12.600	8.800	5.120	
4888	13.800	9.000	1.845	
4889	12.600	3.200	5.120	
4890	12.600	6.000	5.120	
4891	1.625	15.000	5.120	
4892	1.625	11.600	5.120	
4893	1.625	8.800	5.120	
4894	1.625	6.000	5.120	
4895	1.625	3.200	5.120	
4896	1.250	-9.9999-6	5.120	
4897	2.500	-9.9999-6	5.120	
4898	-3.0000-5	12.850	5.120	
4899	1.625	12.850	5.120	
4900	2.500	12.850	5.120	
4901	1.250	1.500	5.120	
4902	17.000	4.580	5.120	
4903	15.000	4.580	5.120	
4904	12.600	2.00000-5	5.120	
4905	6.500	15.000	5.120	
4906	10.500	15.000	5.120	
4907	15.000	13.600	5.120	
4908	17.000	13.600	5.120	
4909	23.650	2.000	1.845	
4910	23.650	2.00000-5	1.845	110000
4911	23.650	0.837	1.845	
4912	10.500	11.600	5.120	
4913	10.500	8.800	5.120	
4914	10.500	6.000	5.120	
4915	10.500	3.200	5.120	
4916	10.500	2.00000-5	5.120	
4959	11.350	11.600	5.120	
4962	11.350	8.800	5.120	
4965	11.350	6.000	5.120	
4968	11.350	3.200	5.120	
4971	11.350	2.00000-5	5.120	
4972	11.350	15.000	5.120	
4973	9.350	15.000	5.120	
4974	7.300	15.000	5.120	
4975	9.350	11.600	5.120	
4976	9.350	8.800	5.120	
4977	9.350	6.000	5.120	
4978	9.350	3.200	5.120	
4979	9.350	2.00000-5	5.120	
4980	7.300	11.600	5.120	
4981	7.300	8.800	5.120	
4982	7.300	6.000	5.120	
4983	7.300	3.200	5.120	
4984	7.300	-2.0000-5	5.120	
4A15	8.300	11.600	5.120	
4A18	8.300	8.800	5.120	
4A21	8.300	6.000	5.120	
4A24	8.300	3.200	5.120	
4A27	4.100	11.600	5.120	
4A28	4.100	8.800	5.120	

4A29	4.100	6.000	5.120
4A30	4.100	3.200	5.120
4A31	4.100	-9.9999-6	5.120
4A32	4.100	15.000	5.120
4A33	16.300	17.923	1.845
4A34	25.418	35.641	1.845
4A35	4.635	34.450	1.845
4A36	6.235	34.450	1.845
4A37	12.750	31.450	5.365
4A38	6.150	15.000	5.120
4A39	6.150	-2.0000-5	5.120
4A90	4.850	15.000	5.120
4A91	4.850	11.600	5.120
4A92	4.850	8.800	5.120
4A93	4.850	6.000	5.120
4A94	4.850	3.200	5.120
4A95	4.850	-2.0000-5	5.120
4A96	15.000	-1.600	5.120
4A97	16.000	13.600	5.120
4A98	16.000	11.600	5.120
4A99	16.000	8.800	5.120
4B01	-1.860	1.500	5.120
4B02	-1.860	-2.0000-5	5.120
4B03	-1.550	1.500	5.120
4B04	-1.550	-2.0000-5	5.120
4B05	-1.550	3.200	5.120
4B06	-0.550	3.200	5.120
4B07	-0.550	1.500	5.120
4B08	3.200	12.850	5.120
4B09	3.200	14.150	5.120
4B10	16.335	31.450	2.460
4B11	8.500	31.450	2.460
4B12	4.635	31.950	5.365
4B13	1.625	14.150	5.120
4B14	2.800	14.150	5.120
4B15	2.800	12.850	5.120
4B16	1.250	3.200	5.120
4B17	1.250	-1.600	5.120
4B18	2.500	-1.600	5.120
4B19	8.500	-0.800	5.120
4B20	2.500	-0.800	5.120
4B21	15.000	-0.800	5.120
4B22	2.500	1.500	5.120
4B23	4.635	34.450	2.460
4B24	16.335	37.050	5.365
4B25	8.500	37.050	5.365
4B26	12.750	37.050	2.460
4B27	16.335	36.050	1.845
4B28	15.000	17.923	1.845
4B29	16.335	34.660	5.645
4B30	16.335	34.660	5.045
4B31	16.335	36.050	5.045
4B32	5.435	33.615	5.645
4B33	5.120	33.615	5.645
4B34	8.500	35.275	5.645
4B35	7.745	35.275	5.645
4B36	6.990	35.275	5.645
4B37	7.460	35.275	5.645
4B38	7.460	34.450	5.645
4B39	6.235	36.370	5.645
4B40	16.300	20.610	1.845
4B41	15.000	20.610	1.845
4B43	9.99999-6	-9.9999-6	1.970
4B45	2.650	23.150	1.845
4B46	10.950	22.500	1.845
4B47	10.950	21.535	1.845
4B48	-0.550	35.460	1.845
4B49	-0.550	33.640	1.845
4B50	-0.550	34.450	1.845
4B56	6.650	19.150	1.845
4B57	8.500	19.150	1.845

4B58	10.000	19.150	1.845
4B59	5.435	31.950	1.845
4B60	6.990	31.450	1.845
4B61	15.439	31.450	1.845
4B62	13.646	31.450	1.845
4B63	11.073	31.450	1.845
4B64	11.912	31.450	1.845
4B65	16.335	32.475	5.645
4B66	16.335	33.500	5.645
4B68	16.335	36.640	5.645
4B69	15.439	37.050	1.845
4B70	14.543	37.050	1.845
4B71	13.646	37.050	1.845
4B72	11.900	37.050	1.845
4B73	11.050	37.050	1.845
4B74	10.200	37.050	1.845
4B75	9.350	37.050	1.845
4B76	7.745	37.050	1.845
4B77	6.990	37.050	1.845
4B81	3.500	36.370	1.845
4B83	11.850	19.150	1.845
4B86	3.500	35.460	1.845
4B87	3.500	34.450	1.845
4B88	3.500	33.640	1.845
4B89	-0.900	36.370	1.845
4B90	-0.900	35.460	1.845
4B91	-0.900	34.450	1.845
4B92	-0.900	33.640	1.845
4B93	3.500	33.920	1.845
4C01	5.435	32.533	5.645
4C02	4.635	33.500	5.645
4C03	2.550	37.050	1.845
4C04	9.792	32.475	1.845
4C05	7.367	32.475	1.845
4C06	14.375	31.050	1.845
4C07	9.917	31.050	1.845
4C08	11.333	31.050	1.845
4C09	5.667	31.050	1.845
4C10	7.083	31.050	1.845
4C11	2.550	38.075	1.845
4C12	2.550	39.100	1.845
4C13	17.000	1.257	1.845
4C14	13.945	39.100	1.845
4C15	15.140	39.100	1.845
4C16	-2.0000-5	1.257	1.845
4C17	13.893	32.475	1.845
4D01	11.807	28.260	1.845
4D02	11.807	26.740	1.845
4D03	13.693	28.260	1.845
4D04	13.693	26.740	1.845
4D05	2.160	23.150	1.845
4D06	2.160	22.500	1.845
4D07	0.900	11.600	1.845
4D08	0.900	10.600	1.845
4D09	0.900	10.000	1.845
4D10	0.900	9.000	1.845
4D11	1.500	11.600	1.845
4D12	1.500	10.600	1.845
4D13	1.500	10.000	1.845
4D14	1.500	9.000	1.845
4D15	3.650	27.170	1.845
4D16	3.650	23.150	1.845
4D17	19.900	35.641	1.845
4D18	19.900	38.636	1.845
4D19	19.900	36.370	1.845
4D20	19.900	37.280	1.845
4D21	19.900	38.190	1.845
4D22	8.500	26.290	1.845
4D23	3.750	40.900	1.845
4D24	3.750	40.000	1.845
4D25	2.650	40.900	1.845

4D26	2.650	40.000	1.845
4D27	3.750	41.600	1.845
4D28	2.650	41.600	1.845
4D29	4.635	31.050	1.845
4D30	4.635	30.000	1.845
4D31	6.235	31.050	1.845
4D32	6.235	30.000	1.845
4E01	2.550	36.370	1.845
4E02	4.650	39.100	1.845
4E03	4.650	38.075	1.845
4E04	-4.550	5.000	1.845
4E05	-3.330	5.000	1.845
4E06	-3.080	5.000	1.845
4E07	-1.860	5.000	1.845
4E08	-6.000	1.850	1.845
4E09	-4.480	-2.00000-5	5.120
4E10	9.300	42.100	1.845
4E11	9.300	42.465	1.845
4E12	9.300	43.685	1.845
4E13	22.280	2.000	1.845
4E14	15.300	4.580	5.120
4E15	16.520	4.580	5.120
4E16	15.000	3.000	5.120
4E17	15.000	1.780	5.120
4E18	19.250	2.000	1.845
4E19	18.900	3.000	1.845
4E20	19.550	4.000	1.845
4E21	15.353	0.837	1.845
4E22	19.250	3.000	1.845
4E23	20.500	2.000	1.845
4E24	23.500	2.000	1.845
4E25	0.850	1.625	1.845
4E26	1.602	0.837	1.845
4E27	20.500	2.500	1.845
4E28	20.500	3.000	1.845
4E29	19.400	2.00000-5	1.845
4E30	21.250	2.00000-5	1.845
4E31	4.650	37.050	1.845
4E32	4.650	36.370	1.845
4E33	4.650	38.800	1.845
4E34	4.650	36.800	1.845
4E3A	2.550	36.800	1.845
4E40	2.550	38.800	1.845
4E41	0.600	35.460	1.845
4E42	0.600	33.640	1.845
4E43	0.600	34.450	1.845
4F01	16.335	34.660	2.595
4F02	16.335	31.450	5.395
4L01	17.740	41.850	1.845
4L02	17.740	40.900	1.845
4L0A	17.740	40.000	1.845
4L10	17.740	38.190	1.845
4L11	17.740	37.280	1.845
4L12	17.740	36.370	1.845
4L13	17.740	35.641	1.845
4L14	17.740	39.100	1.845
4L15	11.300	41.850	1.845
4L16	11.300	40.900	1.845
4L17	11.300	40.000	1.845
4L18	11.300	39.100	1.845
4T01	6.235	31.950	5.645
4T02	4.635	31.950	1.845
4T03	6.235	31.950	1.845
5000	16.000	4.580	5.120
5001	17.000	30.000	6.965
5002	17.000	2.00000-5	6.965
5003	-3.0000-5	30.000	6.965
5004	9.99999-6	-9.9999-6	6.965
5005	17.000	15.000	6.965
5006	-3.0000-5	15.000	6.965
5021	-6.000	1.500	6.965

5022	-6.000	-9.9999-6	6.965	
5096	-4.0000-5	39.100	6.965	
5102	-3.0000-5	33.999	6.965	111111
5111	-3.0000-5	26.665	6.965	
5123	-3.0000-5	18.000	6.965	
5128	15.985	2.00000-5	5.120	
5136	-2.0000-5	8.776	6.965	
5143	-2.0000-5	3.200	6.965	
5159	4.151	30.000	6.965	111111
5160	4.068	15.000	6.965	
5213	8.500	30.000	6.965	
5231	8.500	15.000	6.965	
5292	12.849	30.000	6.965	
5293	12.932	15.000	6.965	
5305	16.000	6.000	5.120	
5312	15.000	1.550	5.120	
5316	17.000	39.100	6.965	
5323	17.000	34.039	6.965	
5333	17.000	26.808	6.965	111111
5344	17.000	18.000	6.965	
5354	17.000	8.753	6.965	
5438	6.500	15.000	6.965	
5439	10.500	15.000	6.965	
5442	17.000	4.580	6.965	
5733	15.985	-1.600	5.120	
5735	15.985	1.550	5.120	
5797	13.800	1.550	5.120	
5798	17.000	1.550	5.120	
5879	14.000	30.000	1.845	
5881	15.202	31.050	1.845	
5916	11.850	17.600	1.845	
5921	10.000	21.073	1.845	
5922	11.850	21.073	1.845	
5923	8.500	21.073	1.845	
5924	6.650	21.073	1.845	
A401	5.475	22.500	1.845	
A405	5.475	23.550	1.845	
A427	0.660	25.030	1.845	
A428	0.660	24.200	1.845	
A439	15.800	24.405	1.845	
A440	15.800	25.355	1.845	
A441	15.800	25.035	1.845	
A443	15.800	28.135	1.845	
A447	15.800	27.500	1.845	
A448	15.800	28.260	1.845	
A469	10.235	29.025	1.845	
A470	11.610	29.025	1.845	
A472	11.610	25.035	1.845	
A473	14.500	28.135	1.845	
A474	10.235	25.355	1.845	
A475	14.500	28.260	1.845	
A476	14.500	27.500	1.845	
A479	10.235	24.405	1.845	
A480	11.610	25.355	1.845	
A481	11.610	24.405	1.845	
S030	-1.860	1.666	5.120	
S031	-3.080	1.666	5.120	
S035	-4.480	1.500	5.120	
S094	9.010	43.685	1.845	
S095	9.010	42.465	1.845	
S135	23.500	2.560	1.845	
S136	22.280	2.560	1.845	
S188	19.250	2.500	1.845	
TR1X	4.250	-9.9999-6	1.845	001000
TR2X	4.250	15.000	1.845	001000
TR3X	12.750	2.00000-5	1.845	001000
TR4X	12.750	15.000	1.845	001000
TR5X	4.250	30.000	1.845	001000
TR6X	4.250	40.000	1.845	001000
TR7X	12.750	30.000	1.845	001000
TR8X	12.750	40.000	1.845	001000

A2 - Load Summation Report

Load Summation Report

- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z
SLF	Fx=	Mx= -46982.50 X	
	Fy=	My= 23255.71 Y	
	Fz= -2431.79	Mz= Z	9.563 19.320 2.875
- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z
1000	Fx=	Mx= -83507.08 X	
	Fy=	My= 39181.44 Y	
	Fz= -4214.35	Mz= Z	9.297 19.815 2.730
- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z
1100	Fx=	Mx= -73371.61 X	
	Fy=	My= 33755.05 Y	
	Fz= -4214.35	Mz= Z	8.010 17.410 2.730
- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z
1200	Fx=	Mx= -73371.61 X	
	Fy=	My= 44714.30 Y	
	Fz= -4214.35	Mz= Z	10.610 17.410 2.730
- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z
1300	Fx=	Mx= -91912.97 X	
	Fy=	My= 44714.25 Y	
	Fz= -4214.34	Mz= Z	10.610 21.810 2.730
- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z
1400	Fx=	Mx= -91913.00 X	
	Fy=	My= 33755.02 Y	
	Fz= -4214.34	Mz= Z	8.010 21.810 2.730
- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z
BLS1	Fx=	Mx= -49546.52 X	
	Fy=	My= 24387.53 Y	
	Fz= -2576.49	Mz= Z	9.465 19.230 2.875
- LC -	----- Load Summation -----	-----	Center of Force -----
	Force (kN)	Moment (kN-m) Dir (m)	X Y Z

BLS2	Fx=	Mx=	-3551.17	X			
	Fy=	My=	1502.33	Y			
	Fz=	Mz=	-149.38	Z	10.057	23.773	2.314

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z
BLS3	Fx=	Mx=	-7335.61	X			
	Fy=	My=	3103.34	Y			
	Fz=	Mz=	-308.57	Z	10.057	23.773	2.314

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z
ELEL	Fx=	Mx=	-7004.01	X			
	Fy=	My=	2756.34	Y			
	Fz=	Mz=	-297.87	Z	9.254	23.514	2.724

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z
ININ	Fx=	Mx=	-4485.90	X			
	Fy=	My=	1620.68	Y			
	Fz=	Mz=	-207.76	Z	7.801	21.592	2.306

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z
STPS	Fx=	Mx=	-46982.50	X			
	Fy=	My=	23255.71	Y			
	Fz=	Mz=	-2431.79	Z	9.563	19.320	2.875

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z
STRU	Fx=	Mx=	-52418.48	X			
	Fy=	My=	25786.84	Y			
	Fz=	Mz=	-2725.87	Z	9.460	19.230	2.844

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z
TREL	Fx=	Mx=	-5835.24	X			
	Fy=	My=	2217.52	Y			
	Fz=	Mz=	-240.56	Z	9.218	24.257	2.724

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z
TRIN	Fx=	Mx=	-3974.68	X			
	Fy=	My=	1535.94	Y			
	Fz=	Mz=	-199.08	Z	7.715	19.966	2.306

- LC -	----- Load Summation -----				Center of Force -----		
	Force (kN)	Moment (kN-m)	Dir (m)		X	Y	Z

TRPI	Fx=	Mx=	-8799.35		X			
	Fy=	My=	3663.89		Y			
	Fz=	Mz=	-400.39		Z	9.151	21.977	2.140

- LC -	----- Load Summation -----				+	----- Center of Force -----			
	Force (kN)	Moment (kN-m)		Dir (m)		X	Y	Z	
TRRR	Fx=	Mx=	-4603.88		X				
	Fy=	My=	1436.08		Y				
	Fz=	Mz=	-134.84		Z	10.650	34.142	4.708	

B-1: General Joints Reaction Forces and Moments Report

Joint Coordinate (m)				Report
Joint	X	Y	Z	Fixity
0001	-3.0000-5	36.800	1.845	111000 FIXED
0004	17.000	2.00000-5	0.443	
0005	17.000	15.000	0.195	
0009	17.000	30.000	0.195	
0010	-3.0000-5	30.000	0.195	
0011	-3.0000-5	15.000	0.195	
0020	-6.000	39.100	1.845	
0021	9.460	19.230	1.970	
3503	-3.0000-5	20.000	1.407	
3504	-2.0000-5	10.000	1.407	
3508	17.000	20.000	1.145	110000
3509	17.000	10.000	1.507	
3566	22.000	9.500	1.695	
3723	9.99999-6	-9.9999-6	0.443	
3769	0.780	35.520	1.845	
3859	3.330	35.520	1.845	
3876	3.330	33.550	1.845	
3907	2.028	18.760	1.845	
3908	1.528	18.760	1.845	
3967	0.780	33.550	1.845	
3968	0.780	35.460	1.845	110000
397A	0.780	36.370	1.845	
397B	0.780	33.640	1.845	
3985	0.780	33.000	1.845	
3986	3.330	33.000	1.845	
398A	3.330	33.640	1.845	
3A59	3.330	35.460	1.845	
3A90	3.330	36.370	1.845	
4001	17.000	30.000	1.845	
4002	17.000	2.00000-5	1.845	
4004	9.99999-6	-9.9999-6	1.845	110000
4005	17.000	15.000	1.845	
4006	-3.0000-5	15.000	1.845	
4008	-6.000	6.000	1.845	
4009	-6.000	-9.9999-6	1.845	
4010	-2.100	40.900	1.845	
4011	-2.100	40.000	1.845	
4012	-2.100	39.100	1.845	
4013	-2.100	38.075	1.845	
4014	-2.100	37.050	1.845	
4015	-2.100	36.370	1.845	110000
4016	-2.100	34.450	1.845	
4017	17.000	38.075	1.845	
4018	-2.100	33.640	1.845	
4019	-2.100	33.000	1.845	
4020	-2.100	32.050	1.845	
4021	-2.100	31.050	1.845	
4022	-2.100	30.000	1.845	
4023	-2.100	29.025	1.845	
4024	-2.100	28.120	1.845	
4025	-2.100	27.170	1.845	110000
4026	-2.100	26.250	1.845	
4027	-2.100	25.405	1.845	
4028	-2.100	24.405	1.845	
4029	-2.100	23.650	1.845	
4030	-2.100	22.500	1.845	
4031	-2.100	21.535	1.845	
4032	-2.100	20.610	1.845	
4033	-2.100	19.545	1.845	
4034	-2.100	18.760	1.845	
4035	-2.100	17.923	1.845	110000
4036	-2.100	17.000	1.845	
4037	-2.100	15.985	1.845	
4038	-2.100	15.000	1.845	

4039	22.635	23.962	1.845
4040	-2.100	13.300	1.845
4041	-2.100	12.450	1.845
4042	-2.100	11.600	1.845
4043	-2.100	10.000	1.845
4044	-2.100	9.000	1.845
4045	0.600	13.300	1.845
4046	-2.100	7.800	1.845
4047	-2.100	6.800	1.845
4048	-2.100	6.000	1.845
4049	-4.0000-5	40.900	1.845
4050	-4.0000-5	40.000	1.845
4051	-4.0000-5	39.100	1.845
4052	-3.0000-5	38.075	1.845
4053	-3.0000-5	37.050	1.845
4054	-3.0000-5	36.370	1.845
4055	-3.0000-5	34.450	1.845
4056	11.085	32.475	1.845
4057	-3.0000-5	33.640	1.845
4058	-3.0000-5	33.000	1.845
4059	-3.0000-5	32.050	1.845
4060	22.000	22.500	1.845
4061	21.500	32.486	1.845
4062	22.652	33.732	1.845
4063	-3.0000-5	28.120	1.845
4064	-3.0000-5	27.170	1.845
4065	-3.0000-5	26.250	1.845
4066	-3.0000-5	25.405	1.845
4067	-3.0000-5	25.000	1.845
4068	-3.0000-5	24.670	1.845
4069	-3.0000-5	24.405	1.845
4070	-3.0000-5	23.650	1.845
4071	-3.0000-5	22.500	1.845
4072	-3.0000-5	21.535	1.845
4073	-3.0000-5	20.610	1.845
4074	-3.0000-5	20.000	1.845
4075	-3.0000-5	19.545	1.845
4076	-3.0000-5	18.760	1.845
4077	-3.0000-5	17.923	1.845
4078	-3.0000-5	17.000	1.845
4079	-3.0000-5	19.620	1.845
4080	12.750	25.165	1.845
4081	22.000	10.000	1.845
4082	-0.600	28.120	1.845
4083	-3.0000-5	13.525	1.845
4084	-3.0000-5	13.300	1.845
4085	-3.0000-5	12.450	1.845
4086	-2.0000-5	11.125	1.845
4087	-2.0000-5	10.200	1.845
4088	-2.0000-5	10.000	1.845
4089	-2.0000-5	9.375	1.845
4090	-2.0000-5	8.800	1.845
4091	-2.0000-5	8.437	1.845
4092	-2.0000-5	7.800	1.845
4093	-2.0000-5	7.000	1.845
4094	-2.0000-5	6.800	1.845
4095	-2.0000-5	6.000	1.845
4096	-2.0000-5	5.500	1.845
4097	-2.0000-5	4.700	1.845
4098	-2.0000-5	3.200	1.845
4099	-2.0000-5	2.425	1.845
4100	-2.0000-5	1.625	1.845
4101	-0.600	13.300	1.845
4102	22.000	7.000	1.845
4103	2.400	-9.9999-6	1.845
4104	3.000	30.000	1.845
4105	4.250	29.025	1.845
4106	4.250	28.120	1.845
4107	2.478	17.923	1.845
4108	3.000	23.150	1.845
4109	4.250	26.290	1.845

4110	4.250	25.355	1.845
4111	4.250	24.405	1.845
4112	4.250	23.550	1.845
4113	4.250	22.500	1.845
4114	4.250	21.535	1.845
4115	4.250	20.610	1.845
4116	4.250	19.545	1.845
4117	4.250	18.760	1.845
4118	4.250	17.923	1.845
4119	4.250	17.000	1.845
4120	4.250	15.985	1.845
4121	3.200	15.000	1.845
4122	3.950	15.000	1.845
4123	3.200	14.100	1.845
4124	3.200	13.300	1.845
4125	3.200	12.450	1.845
4126	3.200	11.600	1.845
4127	2.700	15.000	1.845
4128	3.200	10.200	1.845
4129	3.200	9.000	1.845
4130	3.200	8.800	1.845
4131	-2.100	14.150	1.845
4132	3.200	7.800	1.845
4133	1.588	14.100	1.845
4134	3.200	6.800	1.845
4135	3.200	6.000	1.845
4136	3.200	5.500	1.845
4137	3.200	4.700	1.845
4138	3.200	3.650	1.845
4139	3.200	3.200	1.845
4140	3.200	2.425	1.845
4141	3.200	1.625	1.845
4142	3.200	0.837	1.845
4143	3.200	-9.9999-6	1.845
4144	4.250	40.900	1.845
4146	4.250	39.100	1.845
4147	4.250	38.190	1.845
4148	4.250	37.280	1.845
4149	4.250	36.370	1.845
4150	4.250	34.550	1.845
4152	4.250	33.640	1.845
4153	4.250	33.000	1.845
4154	4.250	32.050	1.845
4155	4.250	31.050	1.845
4158	4.700	15.000	1.845
4160	4.700	11.600	1.845
4162	4.700	8.800	1.845
4164	4.700	6.000	1.845
4166	4.700	3.200	1.845
4168	4.700	-2.0000-5	1.845
4169	4.635	32.475	1.845
4170	4.635	31.450	1.845
4171	22.000	8.000	1.845
4172	4.635	33.500	1.845
4173	5.050	42.100	1.845
4174	5.050	40.900	1.845
4175	16.335	34.660	1.845
4177	10.235	31.450	1.845
4180	14.543	31.450	1.845
4181	15.035	32.475	1.845
4182	9.385	31.450	1.845
4183	7.745	31.450	1.845
4185	5.900	15.000	1.845
4187	5.900	11.600	1.845
4189	5.900	8.800	1.845
4191	5.900	6.000	1.845
4193	5.900	3.200	1.845
4195	5.900	-2.0000-5	1.845
4196	6.550	42.100	1.845
4197	6.550	40.900	1.845
4198	6.550	40.000	1.845

4199	6.550	39.100	1.845
4200	6.150	11.600	1.845
4201	6.150	8.800	1.845
4202	6.150	6.000	1.845
4203	6.150	3.200	1.845
4204	6.235	35.460	1.845
4205	13.945	38.075	1.845
4206	6.235	33.500	1.845
4207	22.000	9.000	1.845
4208	6.235	32.475	1.845
4209	6.235	31.450	1.845
4210	22.000	9.500	1.845
4211	17.000	9.475	1.845
4212	6.900	15.000	1.845
4213	6.900	13.000	1.845
4214	6.900	11.600	1.845
4215	6.900	10.200	1.845
4216	6.900	8.800	1.845
4217	6.900	7.400	1.845
4218	6.900	6.000	1.845
4219	6.900	4.600	1.845
4220	6.900	3.200	1.845
4221	6.900	1.800	1.845
4222	6.900	-2.0000-5	1.845
4223	7.550	15.000	1.845
4225	7.900	11.600	1.845
4227	7.900	8.800	1.845
4229	7.900	6.000	1.845
4231	7.900	3.200	1.845
4233	7.685	-2.0000-5	1.845
4234	8.500	40.900	1.845
4235	8.500	40.000	1.845
4236	8.500	39.100	1.845
4237	15.140	38.075	1.845
4238	8.500	36.370	1.845
4239	13.945	36.370	1.845
4240	0.600	28.120	1.845
4241	8.500	33.500	1.845
4242	15.140	36.370	1.845
4243	8.500	32.475	1.845
4244	9.917	36.370	1.845
4245	11.333	36.370	1.845
4246	8.500	31.050	1.845
4247	8.500	30.000	1.845
4248	8.500	29.025	1.845
4249	8.500	28.260	1.845
4250	8.500	27.500	1.845
4251	8.500	26.740	1.845
4252	8.500	26.250	1.845
4253	8.500	25.355	1.845
4254	8.500	24.405	1.845
4255	8.500	23.550	1.845
4256	8.500	22.500	1.845
4257	8.500	21.535	1.845
4258	8.500	20.610	1.845
4259	8.500	19.545	1.845
4260	8.500	18.760	1.845
4261	8.500	17.923	1.845
4262	8.500	17.000	1.845
4263	8.500	15.985	1.845
4264	8.500	15.000	1.845
4265	17.000	18.700	1.845
4266	4.250	23.150	1.845
4267	-3.0000-5	23.150	1.845
4268	17.000	2.00000-5	3.998
4269	11.610	26.250	1.845
4270	11.610	26.035	1.845
4271	0.660	27.170	1.845
4272	0.660	23.150	1.845
4273	6.650	17.000	1.845
4274	9.100	15.000	1.845

4275	8.500	-2.0000-5	1.845	
4276	9.450	15.000	1.845	
4278	9.100	11.600	1.845	
4280	9.100	8.800	1.845	
4282	9.100	6.000	1.845	
4284	9.100	3.200	1.845	
4286	9.315	2.00000-5	1.845	
4287	9.300	45.000	1.845	
4288	9.300	43.600	1.845	
4289	9.300	42.700	1.845	
4290	9.300	40.900	1.845	000111
4291	9.300	40.000	1.845	
4292	9.300	39.100	1.845	
4293	10.100	15.000	1.845	
4294	10.100	13.000	1.845	
4295	10.100	11.600	1.845	
4296	10.100	10.200	1.845	
4297	10.100	8.800	1.845	
4298	10.100	7.400	1.845	
4299	10.100	6.000	1.845	
4300	10.100	4.600	1.845	
4301	10.100	3.200	1.845	
4302	10.100	1.800	1.845	
4303	10.100	2.00000-5	1.845	
4304	10.800	45.000	1.845	
4305	10.800	43.600	1.845	
4306	10.800	42.700	1.845	
4307	10.800	40.900	1.845	
4308	10.800	40.000	1.845	
4309	10.800	39.100	1.845	
4310	10.900	11.600	1.845	
4311	10.900	8.800	1.845	
4312	10.900	6.000	1.845	
4313	10.900	3.200	1.845	
4314	11.100	15.000	1.845	
4316	11.100	11.600	1.845	
4318	11.100	8.800	1.845	
4320	11.100	6.000	1.845	
4322	11.100	3.200	1.845	
4324	11.100	2.00000-5	1.845	
4325	19.200	41.850	1.845	110000
4326	17.000	41.850	1.845	
4327	12.750	41.850	1.845	
4328	10.800	41.850	1.845	
4329	8.500	35.641	1.845	
4330	9.917	38.075	1.845	
4331	12.750	33.500	1.845	
4332	11.333	38.075	1.845	
4333	16.335	33.500	1.845	
4334	17.000	34.550	1.845	
4335	11.807	27.500	1.845	
4336	12.062	28.260	1.845	
4337	12.062	26.740	1.845	
4338	12.300	15.000	1.845	
4340	12.300	11.600	1.845	
4342	12.300	8.800	1.845	
4344	12.300	6.000	1.845	
4346	12.300	3.200	1.845	
4348	12.300	2.00000-5	1.845	
4349	12.750	40.900	1.845	
4351	12.750	39.100	1.845	
4352	5.250	21.535	1.845	
4353	5.250	20.610	1.845	
4354	12.750	36.370	1.845	
4355	19.200	34.550	1.845	
4356	12.750	35.641	1.845	
4357	0.600	32.050	1.845	
4358	12.750	32.475	1.845	
4359	12.750	31.450	1.845	
4360	6.650	17.923	1.845	
4361	12.750	31.050	1.845	

4363	12.750	29.025	1.845
4364	12.750	28.525	1.845
4365	12.750	28.260	1.845
4366	12.750	27.500	1.845
4367	12.750	26.740	1.845
4368	12.750	26.475	1.845
4369	12.750	26.250	1.845
4370	12.750	25.355	1.845
4371	12.750	24.405	1.845
4372	12.750	23.550	1.845
4373	12.750	22.500	1.845
4374	12.750	21.535	1.845
4375	12.750	20.610	1.845
4376	12.750	19.545	1.845
4377	12.750	18.760	1.845
4378	12.750	17.923	1.845
4379	-0.600	32.050	1.845
4380	12.750	15.985	1.845
4382	13.800	15.000	1.845
4383	13.800	14.150	1.845
4384	13.800	13.300	1.845
4385	13.800	12.450	1.845
4386	13.800	11.600	1.845
4387	0.800	17.000	1.845
4388	13.800	10.750	1.845
4389	-0.600	17.000	1.845
4390	13.800	8.800	1.845
4391	1.764	15.985	1.845
4392	13.800	8.000	1.845
4393	1.610	31.050	1.845
4394	13.800	7.000	1.845
4395	13.800	6.000	1.845
4396	13.800	5.000	1.845
4397	13.800	4.000	1.845
4398	13.800	3.650	1.845
4399	13.800	3.200	1.845
4400	13.800	3.000	1.845
4401	13.800	2.000	1.845
4402	13.800	0.837	1.845
4403	13.800	2.00000-5	1.845
4404	13.438	28.260	1.845
4405	13.438	26.740	1.845
4406	13.693	27.500	1.845
4407	8.500	37.050	1.845
4408	6.235	37.050	1.845
4409	5.250	19.545	1.845
4410	3.650	20.610	1.845
4411	16.335	36.370	1.845
4412	-3.0000-5	27.560	1.845
4413	2.478	17.000	1.845
4414	3.000	22.500	1.845
4415	14.600	2.00000-5	1.845
4416	16.335	32.475	1.845
4417	16.335	31.450	1.845
4418	10.825	29.025	1.845
4419	10.825	28.260	1.845
4420	17.000	40.900	1.845
4421	17.000	40.000	1.845
4422	17.000	39.100	1.845
4423	17.000	38.190	1.845
4424	17.000	37.280	1.845
4425	17.000	36.370	1.845
4426	17.000	35.641	1.845
4427	10.825	27.500	1.845
4428	17.000	32.620	1.845
4429	17.000	33.000	1.845
4430	16.000	28.260	1.845
4431	15.121	29.025	1.845
4432	10.825	26.740	1.845
4433	15.350	14.150	1.845
4434	17.000	28.260	1.845

4435	17.000	27.500	1.845
4436	17.000	26.740	1.845
4437	17.000	26.250	1.845
4438	17.000	25.355	1.845
4439	17.000	25.000	1.845
4440	17.000	24.405	1.845
4441	17.000	23.550	1.845
4442	17.000	22.500	1.845
4443	17.000	21.535	1.845
4444	17.000	20.610	1.845
4445	17.000	20.000	1.845
4446	17.000	19.545	1.845
4447	17.000	18.760	1.845
4448	17.000	17.923	1.845
4449	17.000	17.000	1.845
4450	17.000	18.400	1.845
4451	10.825	26.250	1.845
4452	17.600	2.000	1.845
4453	17.000	13.300	1.845
4454	17.000	12.450	1.845
4455	17.000	11.600	1.845
4456	17.000	10.750	1.845
4457	17.000	10.000	1.845
4458	17.000	9.375	1.845
4459	1.596	29.025	1.845
4460	17.000	8.000	1.845
4461	3.300	30.000	1.845
4462	17.000	7.000	1.845
4463	17.000	6.000	1.845
4464	17.000	5.000	1.845
4465	17.000	4.000	1.845
4466	17.000	3.200	1.845
4467	17.000	3.000	1.845
4468	17.000	2.000	1.845
4469	18.647	0.837	1.845
4470	14.450	28.260	1.845
4471	17.700	22.500	1.845
4472	17.989	28.940	1.845
4473	18.983	27.875	1.845
4474	19.200	40.900	1.845
4475	19.200	40.000	1.845
4476	19.200	39.100	1.845
4477	19.200	38.190	1.845
4478	19.200	37.280	1.845
4479	19.200	36.370	1.845
4480	19.200	35.641	1.845
4481	14.450	27.500	1.845
4482	16.200	17.000	1.845
4483	19.200	33.500	1.845
4484	19.200	32.620	1.845
4485	19.200	31.820	1.845
4486	19.200	30.910	1.845
4487	19.200	30.000	1.845
4488	14.300	15.000	1.845
4489	16.400	13.300	1.845
4490	19.000	27.857	1.845
4491	15.236	15.985	1.845
4492	19.200	27.175	1.845
4493	19.200	26.250	1.845
4494	19.200	25.355	1.845
4495	19.200	24.405	1.845
4496	19.200	23.550	1.845
4497	19.200	22.500	1.845
4498	19.200	30.600	1.845
4499	22.000	6.000	1.845
4500	22.000	5.000	1.845
4501	22.000	4.000	1.845
4502	16.400	2.000	1.845
4503	22.000	3.000	1.845
4504	22.000	2.000	1.845
4505	22.000	0.837	1.845

4506	22.000	2.00000-5	1.845
4507	24.000	22.500	1.845
4508	24.418	35.641	1.845
4509	6.650	18.760	1.845
4510	16.335	36.640	1.845
4511	16.335	35.641	1.845
4512	6.650	19.545	1.845
4513	3.650	19.545	1.845
4514	14.450	26.740	1.845
4515	17.000	38.600	1.845
4516	6.650	20.610	1.845
4517	6.235	36.370	1.845
4518	16.335	37.050	1.845
4519	12.750	37.050	1.845
4520	21.500	29.860	1.845
4521	21.500	33.500	1.845
4522	10.825	25.355	1.845
4523	17.000	33.500	1.845
4525	16.335	34.450	1.845
4526	21.500	32.620	1.845
4527	21.500	31.820	1.845
4528	21.500	30.910	1.845
4529	20.042	30.910	1.845
4530	20.884	31.820	1.845
4531	8.500	28.120	1.845
4532	8.500	27.170	1.845
4533	21.500	35.641	1.845
4534	19.600	29.860	1.845
4535	19.200	27.643	1.845
4536	12.600	11.600	1.845
4537	12.600	8.800	1.845
4538	12.600	6.000	1.845
4539	12.600	3.200	1.845
4540	10.825	24.405	1.845
4541	10.825	23.550	1.845
4542	10.825	30.000	1.845
4543	15.340	6.000	1.845
4544	15.340	5.000	1.845
4545	15.340	7.000	1.845
4546	15.340	8.000	1.845
4547	15.340	9.000	1.845
4548	8.500	27.550	1.845
4549	15.340	10.750	1.845
4550	15.340	11.600	1.845
4551	15.340	12.450	1.845
4552	22.533	24.072	1.845
4553	21.850	22.500	1.845
4554	15.340	10.000	1.845
4555	7.550	30.000	1.845
4556	9.450	30.000	1.845
4557	22.619	33.696	1.845
4558	12.750	26.100	1.845
4559	12.750	27.715	1.845
4560	17.000	9.000	1.845
4561	-2.0000-5	9.000	1.845
4562	-2.0000-5	11.000	1.845
4563	13.800	10.000	1.845
4564	3.156	27.170	1.845
4565	8.500	41.850	1.845
4566	9.300	41.850	1.845
4567	7.900	15.000	1.845
4568	9.100	2.00000-5	1.845
4569	7.900	-2.0000-5	1.845
4570	12.750	17.000	1.845
4571	6.235	38.075	1.845
4572	-2.0000-5	9.500	1.845
4573	13.800	10.200	1.845
4574	19.200	29.860	1.845
4575	21.700	6.000	1.845
4576	17.000	9.620	1.845
4577	8.500	27.850	1.845

4578	12.750	25.040	1.845
4579	12.750	27.840	1.845
4580	17.000	31.865	1.845
4581	17.000	28.135	1.845
4582	18.865	30.000	1.845
4583	15.280	30.000	1.845
4584	-3.0000-5	31.700	1.845
4585	-3.0000-5	28.300	1.845
4586	1.520	30.000	1.845
4587	-1.700	30.000	1.845
4588	17.000	16.475	1.845
4589	17.000	13.525	1.845
4590	15.525	15.000	1.845
4591	-3.0000-5	16.440	1.845
4592	6.650	-2.0000-5	1.845
4593	1.475	15.000	1.845
4594	-1.475	15.000	1.845
4595	17.000	1.550	1.845
4596	18.550	2.00000-5	1.845
4597	15.450	2.00000-5	1.845
4598	10.350	2.00000-5	1.845
4599	-2.0000-5	1.600	1.845
4600	1.550	-9.9999-6	1.845
4601	-1.550	-2.0000-5	1.845
4602	4.250	27.170	1.845
4603	7.130	-2.0000-5	1.845
4604	9.870	2.00000-5	1.845
4605	17.000	15.000	2.209
4606	-3.0000-5	15.000	2.233
4607	10.425	15.000	1.845
4608	6.575	15.000	1.845
4609	9.885	15.000	1.845
460X	-3.0000-5	30.000	1.845
4610	7.115	15.000	1.845
4611	10.280	30.000	1.845
4612	6.720	30.000	1.845
4613	17.000	39.430	1.845
4614	9.890	30.000	1.845
4615	7.110	30.000	1.845
4616	16.670	39.100	1.845
4617	17.330	39.100	1.845
4618	17.000	38.770	1.845
4619	-4.0000-5	38.770	1.845
4620	-4.0000-5	39.430	1.845
4621	-0.330	39.100	1.845
4622	0.330	39.100	1.845
4623	8.500	38.860	1.845
4624	8.500	39.340	1.845
4625	8.740	39.100	1.845
4626	8.260	39.100	1.845
4627	22.000	5.730	1.845
4628	-3.0000-5	25.330	1.845
4629	17.000	24.720	1.845
4630	17.000	25.280	1.845
4631	-3.0000-5	20.380	1.845
4632	22.000	6.270	1.845
4633	-2.0000-5	9.650	1.845
4634	-2.0000-5	10.350	1.845
4635	-2.0000-5	5.720	1.845
4636	-2.0000-5	6.280	1.845
4637	-0.280	6.000	1.845
4638	0.280	6.000	1.845
4639	17.000	20.380	1.845
4640	17.000	10.380	1.845
4641	17.000	5.705	1.845
4642	17.000	6.295	1.845
4643	17.450	10.000	1.845
4644	17.990	39.100	1.845
4645	2.850	39.100	1.845
4646	2.650	27.170	1.845
4647	1.078	17.923	1.845

4648	1.078	17.000	1.845	
4649	-6.000	5.760	1.845	
4650	17.000	37.050	1.845	
4657	13.700	30.000	1.845	
4658	22.000	9.240	1.845	
4659	22.000	9.760	1.845	
4660	21.730	6.000	1.845	
4661	21.750	2.00000-5	1.845	
4662	22.000	0.250	1.845	
4663	-6.240	-9.9999-6	1.845	110000
4664	-5.760	-9.9999-6	1.845	
4665	-6.000	0.240	1.845	
4666	-6.240	6.000	1.845	
4667	-5.760	6.000	1.845	
4668	22.270	6.000	1.845	
4669	16.705	6.000	1.845	
4670	17.295	6.000	1.845	
4671	-6.000	6.240	1.845	
4672	1.528	17.923	1.845	
4673	8.500	31.450	1.845	
4674	2.670	30.000	1.845	
4675	4.250	31.450	1.845	
4676	1.528	17.000	1.845	
4677	2.028	17.923	1.845	
4678	2.028	17.000	1.845	
4679	-0.780	6.000	1.845	
4680	9.300	44.500	1.845	
4681	10.800	44.500	1.845	
4682	4.250	34.450	1.845	
4683	6.650	21.535	1.845	
4684	10.100	-1.375	1.845	
4685	9.100	-1.375	1.845	
4686	7.900	-1.375	1.845	
4687	6.900	-1.375	1.845	
468A	5.050	40.000	1.845	
4690	5.050	39.100	1.845	
4691	-2.100	35.460	1.845	
4692	-3.0000-5	35.460	1.845	
4693	4.250	35.460	1.845	
4694	10.000	17.000	1.845	
4695	17.000	27.875	1.845	
4696	17.000	31.450	1.845	
4697	17.300	32.620	1.845	
4698	18.052	31.820	1.845	
4700	15.660	31.450	1.845	
4701	8.500	34.450	1.845	
4702	8.500	35.460	1.845	
4703	4.250	37.050	1.845	
4704	4.250	38.075	1.845	
4705	17.000	15.000	2.474	
4706	-3.0000-5	15.000	2.474	
4707	16.335	37.050	5.645	
4708	11.085	37.050	5.645	
4709	11.085	31.450	5.645	
4710	16.335	31.450	5.645	
4711	6.235	37.050	5.645	
4712	6.235	31.450	5.645	
4713	4.635	31.950	5.645	
4714	4.635	34.450	5.645	
4715	6.235	34.450	5.645	
4716	11.935	37.050	5.645	
4717	8.500	38.075	1.845	
4718	12.750	38.075	1.845	
4719	14.535	37.050	5.645	
4720	15.435	37.050	5.645	
4721	6.990	37.050	5.645	
4722	7.745	37.050	5.645	
4723	4.950	23.550	1.845	
4724	9.385	37.050	5.645	
4725	10.235	37.050	5.645	
4726	6.990	31.450	5.645	

4727	7.745	31.450	5.645
4728	4.950	26.290	1.845
4729	9.385	31.450	5.645
4730	10.235	31.450	5.645
4731	11.935	31.450	5.645
4732	4.950	25.355	1.845
4733	13.635	31.450	5.645
4734	14.535	31.450	5.645
4735	15.435	31.450	5.645
4736	5.120	34.450	5.645
4737	5.435	31.950	5.645
4738	12.750	37.050	5.645
4739	8.500	37.050	5.645
4740	8.500	31.450	5.645
4741	12.750	31.450	5.645
4742	16.335	36.050	5.645
4743	16.335	34.450	5.645
4744	6.235	35.460	5.645
4745	6.235	33.615	5.645
4746	6.235	32.350	5.645
4747	4.635	33.615	5.645
4748	4.635	32.475	5.645
4749	13.635	37.050	5.645
4750	13.635	34.450	5.645
4751	14.535	34.450	5.645
4752	15.435	34.450	5.645
4753	12.750	34.450	5.645
4754	11.935	34.450	5.645
4755	11.085	34.450	5.645
4756	10.235	34.450	5.645
4757	9.385	34.450	5.645
4758	8.500	34.450	5.645
4759	7.745	34.450	5.645
4760	6.990	34.450	5.645
4761	4.950	24.405	1.845
4762	17.000	27.175	1.845
4764	-3.0000-5	11.600	1.845
4765	10.000	17.923	1.845
4766	-2.100	10.600	1.845
4767	-2.0000-5	10.600	1.845
4768	-2.0000-5	9.800	1.845
4769	10.000	18.760	1.845
4770	12.750	34.450	1.845
4771	10.000	19.545	1.845
4772	-2.100	6.375	1.845
4773	18.900	2.00000-5	1.845
4774	10.000	20.610	1.845
4775	3.200	10.600	1.845
4776	3.200	10.000	1.845
4777	-6.000	5.000	1.845
4778	-2.0000-5	5.000	1.845
4779	-4.875	6.375	1.845
4780	-4.875	6.000	1.845
4781	-4.875	5.000	1.845
4782	-2.100	5.000	1.845
4783	-2.0000-5	3.950	1.845
4784	3.200	3.950	1.845
4785	10.000	21.535	1.845
4786	11.850	17.000	1.845
4787	11.850	17.923	1.845
4788	11.850	19.545	1.845
4789	11.850	18.760	1.845
4790	11.850	20.610	1.845
4791	11.850	21.535	1.845
4792	6.650	17.600	1.845
4793	8.500	17.600	1.845
4794	10.000	17.600	1.845
4795	3.950	-9.9999-6	1.845
4796	3.950	11.600	1.845
4797	3.950	8.800	1.845
4798	3.950	6.000	1.845

4799	3.950	3.200	1.845
4800	13.050	15.000	1.845
4801	13.050	2.00000-5	1.845
4802	13.050	11.600	1.845
4803	13.050	8.800	1.845
4804	13.050	6.000	1.845
4805	13.050	3.200	1.845
4806	6.235	39.100	1.845
4807	-6.000	1.500	5.120
4808	-6.000	-9.9999-6	5.120
4809	-5.700	1.500	5.120
4810	-5.700	-9.9999-6	5.120
4811	-3.780	1.500	5.120
4812	-3.780	-2.0000-5	5.120
4813	-3.080	1.500	5.120
4814	-3.080	-2.0000-5	5.120
4815	-3.0000-5	15.000	5.120
4816	-3.0000-5	11.600	5.120
4817	-2.0000-5	11.344	5.120
4818	-2.0000-5	8.800	5.120
4819	-2.0000-5	6.000	5.120
4820	-2.0000-5	3.200	5.120
4821	-2.0000-5	3.115	5.120
4822	-2.0000-5	1.500	5.120
4823	9.99999-6	-9.9999-6	5.120
4824	2.388	-9.9999-6	5.120
4825	2.478	15.000	5.120
4826	3.200	15.000	5.120
4827	3.200	11.600	5.120
4828	3.200	8.800	5.120
4829	3.200	6.000	5.120
4830	3.200	3.200	5.120
4831	3.200	-9.9999-6	5.120
4832	5.969	-2.0000-5	5.120
4833	6.150	11.600	5.120
4834	6.150	8.800	5.120
4835	6.150	6.000	5.120
4836	6.150	3.200	5.120
4837	6.900	15.000	5.120
4838	6.900	11.600	5.120
4839	6.900	8.800	5.120
4840	6.900	6.000	5.120
4841	6.900	3.200	5.120
4842	6.900	-2.0000-5	5.120
4843	8.500	15.000	5.120
4844	8.500	-2.0000-5	5.120
4845	10.100	15.000	5.120
4846	10.100	11.600	5.120
4847	10.100	8.800	5.120
4848	10.100	6.000	5.120
4849	10.100	3.200	5.120
4850	10.100	2.00000-5	5.120
4851	10.900	11.600	5.120
4852	10.900	8.800	5.120
4853	10.900	6.000	5.120
4854	10.900	3.200	5.120
4855	11.031	2.00000-5	5.120
4856	13.800	15.000	5.120
4857	13.800	11.600	5.120
4858	13.800	8.800	5.120
4859	13.800	6.000	5.120
4860	13.800	3.200	5.120
4861	13.800	2.00000-5	5.120
4862	14.522	15.000	5.120
4863	14.612	2.00000-5	5.120
4864	17.000	15.000	5.120
4865	17.000	11.600	5.120
4866	17.000	11.344	5.120
4867	17.000	8.800	5.120
4868	17.000	6.000	5.120
4869	12.600	15.000	5.120

4870	17.000	2.00000-5	5.120	
4871	-2.0000-5	-1.600	5.120	
4872	8.500	-1.600	5.120	
4873	17.000	-1.600	5.120	
4874	2.000	15.000	5.120	
4875	2.500	11.600	5.120	
4876	2.500	8.800	5.120	
4877	2.500	6.000	5.120	
4878	2.500	3.200	5.120	
4879	2.000	-9.9999-6	5.120	
4880	15.000	15.000	5.120	
4881	15.000	11.600	5.120	
4882	15.000	8.800	5.120	
4883	15.000	6.000	5.120	
4884	15.000	3.200	5.120	
4885	15.000	2.00000-5	5.120	
4886	12.600	11.600	5.120	
4887	12.600	8.800	5.120	
4888	13.800	9.000	1.845	
4889	12.600	3.200	5.120	
4890	12.600	6.000	5.120	
4891	1.625	15.000	5.120	
4892	1.625	11.600	5.120	
4893	1.625	8.800	5.120	
4894	1.625	6.000	5.120	
4895	1.625	3.200	5.120	
4896	1.250	-9.9999-6	5.120	
4897	2.500	-9.9999-6	5.120	
4898	-3.0000-5	12.850	5.120	
4899	1.625	12.850	5.120	
4900	2.500	12.850	5.120	
4901	1.250	1.500	5.120	
4902	17.000	4.580	5.120	
4903	15.000	4.580	5.120	
4904	12.600	2.00000-5	5.120	
4905	6.500	15.000	5.120	
4906	10.500	15.000	5.120	
4907	15.000	13.600	5.120	
4908	17.000	13.600	5.120	
4909	23.650	2.000	1.845	
4910	23.650	2.00000-5	1.845	110000
4911	23.650	0.837	1.845	
4912	10.500	11.600	5.120	
4913	10.500	8.800	5.120	
4914	10.500	6.000	5.120	
4915	10.500	3.200	5.120	
4916	10.500	2.00000-5	5.120	
4959	11.350	11.600	5.120	
4962	11.350	8.800	5.120	
4965	11.350	6.000	5.120	
4968	11.350	3.200	5.120	
4971	11.350	2.00000-5	5.120	
4972	11.350	15.000	5.120	
4973	9.350	15.000	5.120	
4974	7.300	15.000	5.120	
4975	9.350	11.600	5.120	
4976	9.350	8.800	5.120	
4977	9.350	6.000	5.120	
4978	9.350	3.200	5.120	
4979	9.350	2.00000-5	5.120	
4980	7.300	11.600	5.120	
4981	7.300	8.800	5.120	
4982	7.300	6.000	5.120	
4983	7.300	3.200	5.120	
4984	7.300	-2.0000-5	5.120	
4A15	8.300	11.600	5.120	
4A18	8.300	8.800	5.120	
4A21	8.300	6.000	5.120	
4A24	8.300	3.200	5.120	
4A27	4.100	11.600	5.120	
4A28	4.100	8.800	5.120	

4A29	4.100	6.000	5.120
4A30	4.100	3.200	5.120
4A31	4.100	-9.9999-6	5.120
4A32	4.100	15.000	5.120
4A33	16.300	17.923	1.845
4A34	25.418	35.641	1.845
4A35	4.635	34.450	1.845
4A36	6.235	34.450	1.845
4A37	12.750	31.450	5.365
4A38	6.150	15.000	5.120
4A39	6.150	-2.0000-5	5.120
4A90	4.850	15.000	5.120
4A91	4.850	11.600	5.120
4A92	4.850	8.800	5.120
4A93	4.850	6.000	5.120
4A94	4.850	3.200	5.120
4A95	4.850	-2.0000-5	5.120
4A96	15.000	-1.600	5.120
4A97	16.000	13.600	5.120
4A98	16.000	11.600	5.120
4A99	16.000	8.800	5.120
4B01	-1.860	1.500	5.120
4B02	-1.860	-2.0000-5	5.120
4B03	-1.550	1.500	5.120
4B04	-1.550	-2.0000-5	5.120
4B05	-1.550	3.200	5.120
4B06	-0.550	3.200	5.120
4B07	-0.550	1.500	5.120
4B08	3.200	12.850	5.120
4B09	3.200	14.150	5.120
4B10	16.335	31.450	2.460
4B11	8.500	31.450	2.460
4B12	4.635	31.950	5.365
4B13	1.625	14.150	5.120
4B14	2.800	14.150	5.120
4B15	2.800	12.850	5.120
4B16	1.250	3.200	5.120
4B17	1.250	-1.600	5.120
4B18	2.500	-1.600	5.120
4B19	8.500	-0.800	5.120
4B20	2.500	-0.800	5.120
4B21	15.000	-0.800	5.120
4B22	2.500	1.500	5.120
4B23	4.635	34.450	2.460
4B24	16.335	37.050	5.365
4B25	8.500	37.050	5.365
4B26	12.750	37.050	2.460
4B27	16.335	36.050	1.845
4B28	15.000	17.923	1.845
4B29	16.335	34.660	5.645
4B30	16.335	34.660	5.045
4B31	16.335	36.050	5.045
4B32	5.435	33.615	5.645
4B33	5.120	33.615	5.645
4B34	8.500	35.275	5.645
4B35	7.745	35.275	5.645
4B36	6.990	35.275	5.645
4B37	7.460	35.275	5.645
4B38	7.460	34.450	5.645
4B39	6.235	36.370	5.645
4B40	16.300	20.610	1.845
4B41	15.000	20.610	1.845
4B43	9.99999-6	-9.9999-6	1.970
4B45	2.650	23.150	1.845
4B46	10.950	22.500	1.845
4B47	10.950	21.535	1.845
4B48	-0.550	35.460	1.845
4B49	-0.550	33.640	1.845
4B50	-0.550	34.450	1.845
4B56	6.650	19.150	1.845
4B57	8.500	19.150	1.845

4B58	10.000	19.150	1.845
4B59	5.435	31.950	1.845
4B60	6.990	31.450	1.845
4B61	15.439	31.450	1.845
4B62	13.646	31.450	1.845
4B63	11.073	31.450	1.845
4B64	11.912	31.450	1.845
4B65	16.335	32.475	5.645
4B66	16.335	33.500	5.645
4B68	16.335	36.640	5.645
4B69	15.439	37.050	1.845
4B70	14.543	37.050	1.845
4B71	13.646	37.050	1.845
4B72	11.900	37.050	1.845
4B73	11.050	37.050	1.845
4B74	10.200	37.050	1.845
4B75	9.350	37.050	1.845
4B76	7.745	37.050	1.845
4B77	6.990	37.050	1.845
4B81	3.500	36.370	1.845
4B83	11.850	19.150	1.845
4B86	3.500	35.460	1.845
4B87	3.500	34.450	1.845
4B88	3.500	33.640	1.845
4B89	-0.900	36.370	1.845
4B90	-0.900	35.460	1.845
4B91	-0.900	34.450	1.845
4B92	-0.900	33.640	1.845
4B93	3.500	33.920	1.845
4C01	5.435	32.533	5.645
4C02	4.635	33.500	5.645
4C03	2.550	37.050	1.845
4C04	9.792	32.475	1.845
4C05	7.367	32.475	1.845
4C06	14.375	31.050	1.845
4C07	9.917	31.050	1.845
4C08	11.333	31.050	1.845
4C09	5.667	31.050	1.845
4C10	7.083	31.050	1.845
4C11	2.550	38.075	1.845
4C12	2.550	39.100	1.845
4C13	17.000	1.257	1.845
4C14	13.945	39.100	1.845
4C15	15.140	39.100	1.845
4C16	-2.0000-5	1.257	1.845
4C17	13.893	32.475	1.845
4D01	11.807	28.260	1.845
4D02	11.807	26.740	1.845
4D03	13.693	28.260	1.845
4D04	13.693	26.740	1.845
4D05	2.160	23.150	1.845
4D06	2.160	22.500	1.845
4D07	0.900	11.600	1.845
4D08	0.900	10.600	1.845
4D09	0.900	10.000	1.845
4D10	0.900	9.000	1.845
4D11	1.500	11.600	1.845
4D12	1.500	10.600	1.845
4D13	1.500	10.000	1.845
4D14	1.500	9.000	1.845
4D15	3.650	27.170	1.845
4D16	3.650	23.150	1.845
4D17	19.900	35.641	1.845
4D18	19.900	38.636	1.845
4D19	19.900	36.370	1.845
4D20	19.900	37.280	1.845
4D21	19.900	38.190	1.845
4D22	8.500	26.290	1.845
4D23	3.750	40.900	1.845
4D24	3.750	40.000	1.845
4D25	2.650	40.900	1.845

4D26	2.650	40.000	1.845
4D27	3.750	41.600	1.845
4D28	2.650	41.600	1.845
4D29	4.635	31.050	1.845
4D30	4.635	30.000	1.845
4D31	6.235	31.050	1.845
4D32	6.235	30.000	1.845
4E01	2.550	36.370	1.845
4E02	4.650	39.100	1.845
4E03	4.650	38.075	1.845
4E04	-4.550	5.000	1.845
4E05	-3.330	5.000	1.845
4E06	-3.080	5.000	1.845
4E07	-1.860	5.000	1.845
4E08	-6.000	1.850	1.845
4E09	-4.480	-2.00000-5	5.120
4E10	9.300	42.100	1.845
4E11	9.300	42.465	1.845
4E12	9.300	43.685	1.845
4E13	22.280	2.000	1.845
4E14	15.300	4.580	5.120
4E15	16.520	4.580	5.120
4E16	15.000	3.000	5.120
4E17	15.000	1.780	5.120
4E18	19.250	2.000	1.845
4E19	18.900	3.000	1.845
4E20	19.550	4.000	1.845
4E21	15.353	0.837	1.845
4E22	19.250	3.000	1.845
4E23	20.500	2.000	1.845
4E24	23.500	2.000	1.845
4E25	0.850	1.625	1.845
4E26	1.602	0.837	1.845
4E27	20.500	2.500	1.845
4E28	20.500	3.000	1.845
4E29	19.400	2.00000-5	1.845
4E30	21.250	2.00000-5	1.845
4E31	4.650	37.050	1.845
4E32	4.650	36.370	1.845
4E33	4.650	38.800	1.845
4E34	4.650	36.800	1.845
4E3A	2.550	36.800	1.845
4E40	2.550	38.800	1.845
4E41	0.600	35.460	1.845
4E42	0.600	33.640	1.845
4E43	0.600	34.450	1.845
4F01	16.335	34.660	2.595
4F02	16.335	31.450	5.395
4L01	17.740	41.850	1.845
4L02	17.740	40.900	1.845
4L0A	17.740	40.000	1.845
4L10	17.740	38.190	1.845
4L11	17.740	37.280	1.845
4L12	17.740	36.370	1.845
4L13	17.740	35.641	1.845
4L14	17.740	39.100	1.845
4L15	11.300	41.850	1.845
4L16	11.300	40.900	1.845
4L17	11.300	40.000	1.845
4L18	11.300	39.100	1.845
4T01	6.235	31.950	5.645
4T02	4.635	31.950	1.845
4T03	6.235	31.950	1.845
5000	16.000	4.580	5.120
5001	17.000	30.000	6.965
5002	17.000	2.00000-5	6.965
5003	-3.0000-5	30.000	6.965
5004	9.99999-6	-9.9999-6	6.965
5005	17.000	15.000	6.965
5006	-3.0000-5	15.000	6.965
5021	-6.000	1.500	6.965

5022	-6.000	-9.9999-6	6.965	
5096	-4.0000-5	39.100	6.965	
5102	-3.0000-5	33.999	6.965	111111
5111	-3.0000-5	26.665	6.965	
5123	-3.0000-5	18.000	6.965	
5128	15.985	2.00000-5	5.120	
5136	-2.0000-5	8.776	6.965	
5143	-2.0000-5	3.200	6.965	
5159	4.151	30.000	6.965	111111
5160	4.068	15.000	6.965	
5213	8.500	30.000	6.965	
5231	8.500	15.000	6.965	
5292	12.849	30.000	6.965	
5293	12.932	15.000	6.965	
5305	16.000	6.000	5.120	
5312	15.000	1.550	5.120	
5316	17.000	39.100	6.965	
5323	17.000	34.039	6.965	
5333	17.000	26.808	6.965	111111
5344	17.000	18.000	6.965	
5354	17.000	8.753	6.965	
5438	6.500	15.000	6.965	
5439	10.500	15.000	6.965	
5442	17.000	4.580	6.965	
5733	15.985	-1.600	5.120	
5735	15.985	1.550	5.120	
5797	13.800	1.550	5.120	
5798	17.000	1.550	5.120	
5879	14.000	30.000	1.845	
5881	15.202	31.050	1.845	
5916	11.850	17.600	1.845	
5921	10.000	21.073	1.845	
5922	11.850	21.073	1.845	
5923	8.500	21.073	1.845	
5924	6.650	21.073	1.845	
A401	5.475	22.500	1.845	
A405	5.475	23.550	1.845	
A427	0.660	25.030	1.845	
A428	0.660	24.200	1.845	
A439	15.800	24.405	1.845	
A440	15.800	25.355	1.845	
A441	15.800	25.035	1.845	
A443	15.800	28.135	1.845	
A447	15.800	27.500	1.845	
A448	15.800	28.260	1.845	
A469	10.235	29.025	1.845	
A470	11.610	29.025	1.845	
A472	11.610	25.035	1.845	
A473	14.500	28.135	1.845	
A474	10.235	25.355	1.845	
A475	14.500	28.260	1.845	
A476	14.500	27.500	1.845	
A479	10.235	24.405	1.845	
A480	11.610	25.355	1.845	
A481	11.610	24.405	1.845	
S030	-1.860	1.666	5.120	
S031	-3.080	1.666	5.120	
S035	-4.480	1.500	5.120	
S094	9.010	43.685	1.845	
S095	9.010	42.465	1.845	
S135	23.500	2.560	1.845	
S136	22.280	2.560	1.845	
S188	19.250	2.500	1.845	
TR1X	4.250	-9.9999-6	1.845	001000
TR2X	4.250	15.000	1.845	001000
TR3X	12.750	2.00000-5	1.845	001000
TR4X	12.750	15.000	1.845	001000
TR5X	4.250	30.000	1.845	001000
TR6X	4.250	40.000	1.845	001000
TR7X	12.750	30.000	1.845	001000
TR8X	12.750	40.000	1.845	001000

B-1: Joints Reaction Forces and Moments Report

JOINTS REACTION FORCES AND MOMENTS REPORT

JOINT	LOAD COND	*****	kN	*****	*****	kN-m	*****
		FORCE (X)	FORCE (Y)	FORCE (Z)	MOMENT (X)	MOMENT (Y)	MOMENT (Z)
TR1X	1000	0.000	0.000	376.946	0.000	0.000	0.000
	1100	0.000	0.000	408.246	0.000	0.000	0.000
	1200	0.000	0.000	388.209	0.000	0.000	0.000
	1300	0.000	0.000	349.099	0.000	0.000	0.000
	1400	0.000	0.000	369.136	0.000	0.000	0.000
TR2X	1000	0.000	0.000	775.809	0.000	0.000	0.000
	1100	0.000	0.000	1372.854	0.000	0.000	0.000
	1200	0.000	0.000	753.898	0.000	0.000	0.000
	1300	0.000	0.000	222.335	0.000	0.000	0.000
	1400	0.000	0.000	841.291	0.000	0.000	0.000
TR3X	1000	0.000	0.000	355.981	0.000	0.000	0.000
	1100	0.000	0.000	363.348	0.000	0.000	0.000
	1200	0.000	0.000	391.710	0.000	0.000	0.000
	1300	0.000	0.000	352.543	0.000	0.000	0.000
	1400	0.000	0.000	324.180	0.000	0.000	0.000
TR4X	1000	0.000	0.000	809.808	0.000	0.000	0.000
	1100	0.000	0.000	773.448	0.000	0.000	0.000
	1200	0.000	0.000	1371.536	0.000	0.000	0.000
	1300	0.000	0.000	896.307	0.000	0.000	0.000
	1400	0.000	0.000	298.218	0.000	0.000	0.000
TR5X	1000	0.000	0.000	504.158	0.000	0.000	0.000
	1100	0.000	0.000	511.043	0.000	0.000	0.000
	1200	0.000	0.000	-116.625	0.000	0.000	0.000
	1300	0.000	0.000	439.317	0.000	0.000	0.000
	1400	0.000	0.000	1066.985	0.000	0.000	0.000
TR6X	1000	0.000	0.000	53.814	0.000	0.000	0.000
	1100	0.000	0.000	56.658	0.000	0.000	0.000
	1200	0.000	0.000	33.340	0.000	0.000	0.000
	1300	0.000	0.000	49.259	0.000	0.000	0.000
	1400	0.000	0.000	72.577	0.000	0.000	0.000
TR7X	1000	0.000	0.000	1104.676	0.000	0.000	0.000
	1100	0.000	0.000	556.159	0.000	0.000	0.000
	1200	0.000	0.000	1202.469	0.000	0.000	0.000
	1300	0.000	0.000	1620.478	0.000	0.000	0.000
	1400	0.000	0.000	974.169	0.000	0.000	0.000
TR8X	1000	0.000	0.000	233.128	0.000	0.000	0.000
	1100	0.000	0.000	172.583	0.000	0.000	0.000
	1200	0.000	0.000	189.804	0.000	0.000	0.000
	1300	0.000	0.000	284.964	0.000	0.000	0.000
	1400	0.000	0.000	267.743	0.000	0.000	0.000

C-1: Member Unity Check Summary Report

MEMBER UNITY CHECK REPORT																	
TIVE MEMBER ERNESS Z-Z	GRP	MAX. CRIT.		LOAD	DIST	* * * *	U N I T Y	C H E C K		C O M P O N E N T S				* * * *		E F F E C	
		UNITY	COND	COND	FROM	EULER	BUCKLING	***	SHEAR	***	* COMBINED BENDING AND AXIAL *				* * CM	VALUES	* SLEND
		CHECK		NO.	END	Y-Y	Z-Z	Y	Z	AXIAL	BEND-Y	BEND-Z	TOTAL	Y	Z	Y-Y	
					m												
4268-4870 7.78	DL4	0.03	C<.15	1200	0.0	0.000	0.000	0.022	0.001	0.001	0.024	0.001	0.026	0.850	0.850	7.78	
0009-4001 8.63	DL6	0.00	TN+BN	1000	1.6	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	8.63	
0010-460X 8.60	DL8	0.00	TN+BN	1000	1.6	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	8.60	
3723-4004 8.57	DLD	0.00	TN+BN	1000	1.4	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	8.57	
4004-4B43 20.96	DLD	0.05	C<.15	1100	0.0	0.000	0.000	0.018	0.001	0.003	0.039	0.005	0.047	0.850	0.850	6.23	
4B43-4823 7.17	DLE	0.04	C<.15	1100	0.0	0.000	0.000	0.016	0.001	0.003	0.031	0.005	0.039	0.850	0.850	7.17	
4823-5004 13.68	DLF	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	13.68	
0011-4006 10.79	DLJ	0.00	TN+BN	1000	1.6	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	10.79	
4006-4606 11.99	DLJ	0.20	C<.15	1100	0.0	0.000	0.000	0.076	0.019	0.003	0.195	0.001	0.199	0.850	0.850	11.99	
4606-4706 11.99	DLJ	0.13	C<.15	1100	0.0	0.000	0.000	0.042	0.000	0.001	0.128	0.000	0.130	0.850	0.850	11.99	
4706-4815 12.50	DLK	0.12	C<.15	1100	0.0	0.000	0.000	0.042	0.000	0.001	0.118	0.000	0.119	0.850	0.850	12.50	
4815-5006 11.51	DLL	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	11.51	
4864-5005 11.51	DLL	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	11.51	

5001-4001 9.56	DLQ	0.00	C<.15	1000	5.1	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.002	0.850	0.850	9.56
5003-460X 9.56	DLQ	0.00	C<.15	1000	5.1	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.002	0.850	0.850	9.56
0005-4005 10.79	DLR	0.00	TN+BN	1000	1.6	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	10.79
4005-4605 11.99	DLR	0.19	C<.15	1200	0.0	0.000	0.000	0.083	0.027	0.003	0.190	0.001	0.194	0.850	0.850	11.99
4605-4705 11.99	DLR	0.12	C<.15	1200	0.0	0.000	0.000	0.040	0.001	0.001	0.120	0.000	0.121	0.850	0.850	11.99
4705-4864 12.50	DLS	0.11	C<.15	1200	0.0	0.000	0.000	0.040	0.001	0.001	0.109	0.000	0.110	0.850	0.850	12.50
4002-4268 7.89	DLV	0.05	C<.15	1200	0.0	0.000	0.000	0.013	0.000	0.002	0.044	0.001	0.047	0.850	0.850	7.89
4002-0004 3.33	DLZ	0.00	TN+BN	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	3.33
4870-5002 17.24	DLZ	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	17.24
4659-4210 33.26	IK1	0.01	C<.15	1200	0.0	0.000	0.000	0.004	0.001	0.000	0.001	0.012	0.013	0.850	0.850	4.12
4210-4658 37.18	IK2	0.01	TN+BN	1400	0.3	0.000	0.000	0.003	0.000	0.000	0.001	0.008	0.010	0.850	0.850	14.70
4661-4506 28.29	IK3	0.02	BEND	1400	0.0	0.000	0.000	0.001	0.007	0.000	0.008	0.009	0.017	0.850	0.850	14.02
4662-4506 49.20	IK3	0.02	BEND	1400	0.0	0.000	0.000	0.001	0.005	0.000	0.009	0.008	0.017	0.850	0.850	24.39
4663-4009 63.19	IK4	0.00	SHEAR	1000	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	31.90
4665-4009 48.14	IK4	0.02	BEND	1300	0.0	0.000	0.000	0.000	0.003	0.000	0.004	0.012	0.016	0.850	0.850	24.30
4009-4664 53.81	IK5	0.02	BEND	1300	0.2	0.000	0.000	0.001	0.004	0.000	0.006	0.011	0.017	0.850	0.850	24.74
4613-4422 16.69	IL1	0.02	TN+BN	1300	0.0	0.000	0.000	0.001	0.010	0.003	0.016	0.003	0.022	0.850	0.850	10.98
4422-4618 22.10	IL2	0.03	TN+BN	1300	0.3	0.000	0.000	0.001	0.006	0.003	0.020	0.003	0.026	0.850	0.850	14.35

4616-4422 20.61	IL3	0.07	C<.15	1300	0.0	0.001	0.001	0.000	0.015	0.017	0.052	0.000	0.069	0.850	0.850	18.68
4422-4617 11.83	IL4	0.04	C<.15	1300	0.3	0.000	0.000	0.000	0.011	0.004	0.034	0.001	0.039	0.850	0.850	9.82
4620-4051 11.82	IL5	0.05	C<.15	1400	0.0	0.000	0.000	0.011	0.009	0.000	0.012	0.035	0.047	0.850	0.850	8.81
4051-4619 33.87	IL6	0.05	C<.15	1400	0.3	0.000	0.001	0.007	0.016	0.006	0.015	0.032	0.052	0.850	0.850	17.75
4621-4051 13.79	IL7	0.01	C<.15	1100	0.0	0.000	0.000	0.000	0.000	0.002	0.001	0.005	0.008	0.850	0.850	10.27
4051-4622 30.95	IL8	0.09	C<.15	1400	0.3	0.003	0.007	0.001	0.033	0.040	0.036	0.009	0.086	0.850	0.850	21.25
4626-4236 34.81	IL9	0.13	BEND	1400	0.0	0.004	0.011	0.001	0.024	0.050	0.078	0.006	0.135	0.850	0.850	22.25
4236-4625 36.82	ILA	0.14	C<.15	1300	0.2	0.004	0.010	0.006	0.018	0.041	0.076	0.023	0.141	0.850	0.850	22.50
4624-4236 22.52	ILB	0.02	TN+BN	1400	0.0	0.000	0.000	0.004	0.001	0.004	0.001	0.019	0.023	0.850	0.850	14.40
4236-4623 23.32	ILC	0.04	SHEAR	1400	0.0	0.000	0.000	0.001	0.040	0.000	0.001	0.004	0.040	0.850	0.850	28.82
4628-4067 26.25	ILD	0.18	TN+BN	1400	0.0	0.000	0.000	0.003	0.016	0.009	0.150	0.018	0.177	0.850	0.850	12.12
4067-4068 28.06	ILE	0.15	TN+BN	1400	0.3	0.000	0.000	0.003	0.015	0.009	0.134	0.009	0.152	0.850	0.850	12.27
4630-4439 28.79	ILF	0.11	TN+BN	1300	0.0	0.000	0.000	0.000	0.034	0.006	0.104	0.003	0.112	0.850	0.850	6.76
4439-4629 29.30	ILG	0.12	TN+BN	1300	0.3	0.000	0.000	0.000	0.033	0.006	0.116	0.002	0.124	0.850	0.850	10.45
4631-4074 35.73	ILH	0.14	BEND	1100	0.0	0.000	0.000	0.003	0.006	0.000	0.136	0.005	0.141	0.850	0.850	13.78
4074-4079 37.08	ILI	0.10	TN+BN	1100	0.4	0.000	0.000	0.003	0.007	0.004	0.096	0.005	0.105	0.850	0.850	10.29
4768-4633 25.47	ILJ	0.03	TN+BN	1100	0.1	0.000	0.000	0.000	0.008	0.006	0.018	0.004	0.028	0.850	0.850	12.25
4087-4088 20.67	ILK	0.02	TN+BN	1300	0.0	0.000	0.000	0.000	0.017	0.001	0.017	0.000	0.018	0.850	0.850	11.27

4088-4768 20.67	ILK	0.02	TN+BN	1100	0.2	0.000	0.000	0.000	0.008	0.005	0.012	0.002	0.018	0.850	0.850	12.77
4634-4087 25.48	ILM	0.03	TN+BN	1300	0.0	0.000	0.000	0.000	0.017	0.002	0.028	0.000	0.030	0.850	0.850	10.81
4636-4095 21.36	ILN	0.10	TN+BN	1400	0.0	0.000	0.000	0.001	0.019	0.004	0.088	0.007	0.098	0.850	0.850	9.96
4642-4463 29.03	ILN	0.16	BEND	1200	0.0	0.000	0.001	0.001	0.005	0.005	0.158	0.001	0.164	0.850	0.850	10.01
4095-4635 46.34	ILO	0.12	BEND	1300	0.3	0.000	0.000	0.001	0.009	0.000	0.109	0.013	0.122	0.850	0.850	12.03
4463-4641 37.37	ILO	0.19	BEND	1200	0.3	0.000	0.000	0.003	0.034	0.000	0.161	0.025	0.185	0.850	0.850	12.09
4637-4095 42.75	ILP	0.10	C<.15	1300	0.0	0.000	0.000	0.003	0.010	0.000	0.070	0.026	0.097	0.850	0.850	14.91
4669-4463 23.24	ILP	0.09	BEND	1200	0.0	0.000	0.001	0.003	0.020	0.009	0.073	0.010	0.092	0.850	0.850	7.99
4095-4638 24.76	ILQ	0.06	BEND	1200	0.3	0.000	0.000	0.001	0.015	0.002	0.049	0.008	0.058	0.850	0.850	8.09
4463-4670 39.42	ILQ	0.12	BEND	1200	0.3	0.000	0.003	0.001	0.013	0.011	0.093	0.015	0.120	0.850	0.850	12.71
4640-4457 23.83	ILR	0.08	TN+BN	1400	0.0	0.000	0.000	0.009	0.035	0.003	0.067	0.014	0.083	0.850	0.850	9.64
4457-4576 28.99	ILS	0.06	BEND	1200	0.4	0.000	0.000	0.006	0.017	0.003	0.044	0.017	0.064	0.850	0.850	11.12
4639-4445 50.07	ILT	0.08	TN+BN	1200	0.0	0.000	0.000	0.000	0.012	0.008	0.075	0.001	0.084	0.850	0.850	11.65
4445-4446 53.21	ILU	0.07	TN+BN	1200	0.5	0.000	0.000	0.000	0.013	0.008	0.063	0.001	0.072	0.850	0.850	8.31
4632-4499 36.33	ILV	0.02	BEND	1200	0.0	0.000	0.000	0.002	0.002	0.002	0.005	0.009	0.016	0.850	0.850	9.03
4671-4008 8.75	ILV	0.00	SHEAR	1000	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	5.21
4008-4649 57.33	ILW	0.01	BEND	1300	0.2	0.000	0.000	0.000	0.002	0.000	0.003	0.004	0.006	0.850	0.850	15.54
4499-4627 60.89	ILW	0.02	BEND	1200	0.3	0.000	0.000	0.002	0.002	0.000	0.004	0.015	0.018	0.850	0.850	15.77

4660-4499 52.31	ILX	0.03	TN+BN	1200	0.0	0.000	0.000	0.014	0.004	0.000	0.001	0.025	0.027	0.850	0.850	14.77
4666-4008 2.84	ILX	0.00	SHEAR	1000	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	0.82
4008-4667 79.36	ILY	0.00	BEND	1300	0.2	0.000	0.000	0.000	0.003	0.000	0.002	0.002	0.004	0.850	0.850	19.43
4499-4668 4.02	ILY	0.00	SHEAR	1000	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	0.97
4457-4643 36.86	ILZ	0.03	BEND	1200	0.4	0.000	0.000	0.001	0.004	0.001	0.014	0.012	0.028	0.850	0.850	11.36
4001-5333 48.39	K02	0.01	C<.15	1100	0.0	0.000	0.001	0.003	0.000	0.002	0.010	0.000	0.012	0.850	0.850	13.98
4605-4866 61.35	K02	0.13	C<.15	1200	0.0	0.000	0.003	0.023	0.003	0.005	0.000	0.120	0.126	0.850	0.850	21.19
4606-4817 26.37	K02	0.12	C<.15	1100	0.0	0.001	0.001	0.023	0.004	0.008	0.000	0.116	0.124	0.850	0.850	21.11
460X-5111 41.15	K02	0.01	C<.15	1000	0.0	0.000	0.001	0.003	0.000	0.001	0.010	0.000	0.011	0.850	0.850	13.15
460X-5159 20.42	K02	0.02	C<.15	1400	0.0	0.000	0.000	0.004	0.000	0.002	0.017	0.000	0.018	0.850	0.850	16.31
4817-5136 26.37	K02	0.01	C<.15	1000	0.0	0.000	0.000	0.003	0.000	0.001	0.007	0.000	0.008	0.850	0.850	21.11
4866-5354 61.35	K02	0.01	C<.15	1000	0.0	0.000	0.001	0.003	0.000	0.001	0.007	0.000	0.008	0.850	0.850	21.19
4605-4862 25.39	K03	0.19	TN+BN	1200	0.0	0.000	0.000	0.041	0.004	0.008	0.151	0.034	0.193	0.850	0.850	20.31
4862-5293 25.39	K03	0.00	C<.15	1000	0.0	0.000	0.000	0.002	0.000	0.001	0.004	0.000	0.005	0.850	0.850	20.31
4606-4825 25.19	K04	0.19	TN+BN	1100	0.0	0.000	0.000	0.039	0.000	0.010	0.182	0.000	0.191	0.850	0.850	20.15
4825-5160 25.19	K04	0.00	C<.15	1000	0.0	0.000	0.000	0.002	0.000	0.001	0.004	0.000	0.005	0.850	0.850	20.15
4051-5096 28.54	K06	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.002	0.850	0.850	28.54
4422-5316 28.54	K06	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.002	0.850	0.850	28.54

4449-4507 K06 56.00	0.04	SHEAR	1300	0.0	0.000	0.000	0.042	0.034	0.001	0.000	0.000	0.042	0.850	0.850	56.00
4275-4844 K08 23.50	0.08	C<.15	1100	3.3	0.001	0.001	0.008	0.000	0.013	0.009	0.058	0.080	0.850	0.850	23.50
4210-3566 K09 41.47	0.00	TN+BN	1000	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	41.47
4820-5143 K10 16.75	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	16.75
4902-5442 K10 16.75	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	16.75
4807-5021 K12 25.24	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	25.24
4808-5022 K12 25.58	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	25.58
4843-5231 K16 18.71	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	18.71
4605-5344 K17 16.30	0.01	C<.15	1000	0.0	0.000	0.000	0.002	0.000	0.001	0.009	0.000	0.010	0.850	0.850	13.04
4606-5123 K17 16.26	0.01	C<.15	1000	0.0	0.000	0.000	0.002	0.000	0.001	0.009	0.000	0.010	0.850	0.850	13.00
4001-5323 K19 57.00	0.02	C<.15	1000	0.0	0.000	0.001	0.003	0.000	0.002	0.018	0.000	0.020	0.850	0.850	19.23
460X-5102 K19 56.52	0.02	C<.15	1200	0.0	0.000	0.001	0.003	0.000	0.002	0.018	0.000	0.020	0.850	0.850	18.84
4001-5292 K1C 20.56	0.02	C<.15	1000	0.0	0.000	0.000	0.004	0.000	0.002	0.016	0.000	0.018	0.850	0.850	16.42
4247-5213 K22 27.04	0.00	C<.15	1000	1.3	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.002	0.850	0.850	27.04
4264-4843 K5G 34.24	0.23	C<.15	1100	0.0	0.003	0.003	0.036	0.001	0.013	0.210	0.007	0.229	0.850	0.850	34.24
3503-4074 K6A 21.92	0.00	TN+BN	1000	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	21.92
3504-4088 K6A 21.92	0.00	TN+BN	1000	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	21.92
3508-4445 K6A 21.92	0.00	TN+BN	1000	0.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	21.92

3509-4457 21.92	K6A	0.00	TN+BN	1000	0.1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.850	0.850	21.92
4002-4863 12.40	K6B	0.14	TN+BN	1200	0.0	0.000	0.000	0.038	0.009	0.001	0.045	0.091	0.137	0.850	0.850	9.93
4B43-4824 12.40	K6B	0.07	TN+BN	1200	0.0	0.000	0.000	0.019	0.004	0.002	0.063	0.000	0.065	0.850	0.850	9.93
4001-4367 62.78	LH1	0.20	C>.15A	1300	2.3	0.096	0.096	0.006	0.006	0.166	0.029	0.000	0.196	0.850	0.850	62.78
4005-4573 68.39	LH1	0.04	TN+BN	1400	2.5	0.000	0.000	0.013	0.013	0.010	0.027	0.000	0.038	0.850	0.850	68.39
4006-4128 68.39	LH1	0.06	C<.15	1100	2.5	0.020	0.020	0.000	0.000	0.031	0.027	0.000	0.059	0.850	0.850	68.39
4095-4128 72.22	LH1	0.05	TN+BN	1100	2.6	0.000	0.000	0.005	0.005	0.018	0.030	0.000	0.048	0.850	0.850	72.22
4095-4143 93.01	LH1	0.07	C<.15	1100	3.4	0.017	0.017	0.005	0.005	0.018	0.051	0.000	0.069	0.850	0.850	93.01
4109-4256 93.01	LH1	0.16	C<.15	1400	2.8	0.107	0.107	0.023	0.022	0.115	0.049	0.000	0.164	0.850	0.850	93.01
4117-4006 80.56	LH1	0.15	C<.15	1100	2.5	0.091	0.091	0.004	0.004	0.113	0.036	0.000	0.148	0.850	0.850	80.56
4117-4256 93.01	LH1	0.08	C<.15	1100	2.8	0.033	0.033	0.023	0.023	0.035	0.048	0.000	0.083	0.850	0.850	93.01
4247-4367 73.31	LH1	0.18	C<.15	1300	2.7	0.095	0.095	0.008	0.008	0.132	0.044	0.000	0.175	0.850	0.850	73.31
4256-4377 92.87	LH1	0.09	C<.15	1200	2.8	0.042	0.042	0.024	0.024	0.045	0.047	0.000	0.092	0.850	0.850	92.87
4367-4256 98.48	LH1	0.19	C<.15	1400	3.0	0.133	0.133	0.018	0.018	0.137	0.052	0.000	0.190	0.850	0.850	98.48
4367-4442 82.07	LH1	0.09	TN+BN	1400	3.0	0.000	0.000	0.017	0.017	0.042	0.051	0.000	0.093	0.850	0.850	82.07
4377-4005 80.56	LH1	0.16	C<.15	1200	2.5	0.103	0.103	0.007	0.006	0.128	0.031	0.000	0.159	0.850	0.850	80.56
4457-4575 84.39	LH1	0.06	TN+BN	1200	3.1	0.000	0.000	0.002	0.002	0.027	0.037	0.000	0.063	0.850	0.850	84.39
4463-4403 93.01	LH1	0.11	C<.15	1200	3.4	0.053	0.053	0.013	0.013	0.057	0.051	0.000	0.108	0.850	0.850	93.01

4214-4225 77.61	LPD	0.10	C<.15	1100	0.0	0.000	0.004	0.001	0.011	0.005	0.082	0.012	0.099	0.850	0.850	17.25
4216-4227 77.61	LPD	0.02	BEND	1300	0.6	0.000	0.000	0.000	0.003	0.000	0.021	0.002	0.023	0.850	0.850	17.25
4218-4229 77.61	LPD	0.03	BEND	1400	0.8	0.000	0.000	0.000	0.001	0.000	0.026	0.001	0.027	0.850	0.850	17.25
4220-4231 77.61	LPD	0.03	C<.15	1200	0.0	0.000	0.001	0.001	0.005	0.002	0.018	0.011	0.031	0.850	0.850	17.25
4225-4278 77.61	LPD	0.09	C<.15	1200	1.2	0.001	0.010	0.001	0.017	0.013	0.068	0.006	0.088	0.850	0.850	17.25
4227-4280 77.61	LPD	0.02	TN+BN	1300	0.0	0.000	0.000	0.000	0.002	0.002	0.017	0.002	0.021	0.850	0.850	17.25
4229-4282 77.61	LPD	0.03	BEND	1400	0.0	0.000	0.000	0.000	0.000	0.000	0.026	0.001	0.027	0.850	0.850	17.25
4231-4284 77.61	LPD	0.02	C<.15	STRU	1.2	0.000	0.001	0.000	0.002	0.002	0.016	0.001	0.019	0.850	0.850	17.25
4278-4295 77.61	LPD	0.14	C<.15	1200	1.0	0.001	0.010	0.001	0.024	0.013	0.112	0.015	0.140	0.850	0.850	17.25
4280-4297 77.61	LPD	0.04	C<.15	1200	1.0	0.000	0.001	0.000	0.015	0.002	0.040	0.003	0.044	0.850	0.850	17.25
4282-4299 77.61	LPD	0.03	C<.15	1200	1.0	0.000	0.006	0.000	0.015	0.007	0.016	0.007	0.030	0.850	0.850	17.25
4284-4301 77.61	LPD	0.03	C<.15	1200	1.0	0.000	0.001	0.001	0.008	0.002	0.023	0.009	0.034	0.850	0.850	17.25
4295-4310 89.73	LPD	0.15	C<.15	1200	0.0	0.001	0.013	0.001	0.038	0.014	0.121	0.013	0.149	0.850	0.850	19.94
4297-4311 89.73	LPD	0.06	C<.15	1200	0.0	0.000	0.001	0.001	0.023	0.001	0.043	0.016	0.060	0.850	0.850	19.94
4299-4312 89.73	LPD	0.05	C<.15	1200	0.0	0.000	0.007	0.002	0.019	0.008	0.017	0.028	0.054	0.850	0.850	19.94
4301-4313 89.73	LPD	0.09	C<.15	1200	0.0	0.000	0.004	0.004	0.023	0.005	0.028	0.056	0.089	0.850	0.850	19.94
4310-4316 89.73	LPD	0.07	C<.15	1200	0.0	0.001	0.013	0.001	0.034	0.014	0.049	0.007	0.070	0.850	0.850	19.94
4311-4318 89.73	LPD	0.02	BEND	1100	0.2	0.000	0.000	0.000	0.017	0.000	0.019	0.004	0.024	0.850	0.850	19.94

4312-4320 89.73	LPD	0.04	C<.15	1200	0.2	0.000	0.007	0.002	0.015	0.008	0.026	0.006	0.041	0.850	0.850	19.94
4313-4322 89.73	LPD	0.05	C<.15	1200	0.2	0.000	0.004	0.004	0.020	0.005	0.025	0.015	0.045	0.850	0.850	19.94
4316-4340 89.73	LPD	0.12	C<.15	1100	1.2	0.000	0.006	0.001	0.027	0.007	0.104	0.013	0.124	0.850	0.850	19.94
4318-4342 89.73	LPD	0.07	C<.15	1200	1.2	0.000	0.001	0.001	0.013	0.001	0.055	0.011	0.068	0.850	0.850	19.94
4320-4344 89.73	LPD	0.09	C<.15	1200	1.2	0.000	0.007	0.002	0.010	0.008	0.063	0.021	0.093	0.850	0.850	19.94
4322-4346 89.73	LPD	0.12	C<.15	1200	1.2	0.000	0.004	0.004	0.017	0.005	0.081	0.034	0.119	0.850	0.850	19.94
4326-4L01 53.35	LPD	0.03	C<.15	1300	0.7	0.000	0.000	0.001	0.001	0.000	0.022	0.007	0.029	0.850	0.850	23.71
4327-4326 103.07	LPD	0.42	BEND	1300	0.0	0.000	0.000	0.000	0.046	0.000	0.407	0.009	0.416	0.850	0.850	22.91
4328-4L15 67.91	LPD	0.19	TN+BN	1300	0.5	0.000	0.000	0.010	0.050	0.021	0.138	0.035	0.193	0.850	0.850	22.91
4340-4536 89.73	LPD	0.15	C<.15	1100	0.3	0.000	0.006	0.001	0.024	0.007	0.123	0.015	0.145	0.850	0.850	19.94
4342-4537 89.73	LPD	0.08	C<.15	1200	0.3	0.000	0.001	0.001	0.010	0.001	0.063	0.013	0.078	0.850	0.850	19.94
4344-4538 89.73	LPD	0.10	C<.15	1200	0.3	0.000	0.007	0.002	0.006	0.008	0.069	0.028	0.105	0.850	0.850	19.94
4346-4539 89.73	LPD	0.14	C<.15	1200	0.3	0.000	0.004	0.004	0.014	0.005	0.092	0.046	0.143	0.850	0.850	19.94
4387-4648 103.07	LPD	0.07	TN+BN	1100	0.0	0.000	0.000	0.011	0.007	0.007	0.009	0.054	0.069	0.850	0.850	22.91
4413-4119 103.07	LPD	0.05	BEND	1200	0.0	0.000	0.000	0.000	0.004	0.000	0.046	0.001	0.047	0.850	0.850	22.91
4500-4501 145.51	LPD	0.07	BEND	STRU	1.0	0.000	0.000	0.000	0.003	0.000	0.064	0.002	0.066	0.850	0.850	32.34
4501-4503 145.51	LPD	0.08	BEND	STRU	1.0	0.000	0.000	0.000	0.001	0.000	0.074	0.005	0.079	0.850	0.850	32.34
4503-4504 145.51	LPD	0.08	BEND	1200	1.0	0.000	0.000	0.001	0.000	0.000	0.060	0.024	0.084	0.850	0.850	32.34

4633-4572 31.27	LPL	0.03	TN+BN	1100	0.2	0.000	0.000	0.000	0.016	0.008	0.023	0.004	0.035	0.850	0.850	12.41
4767-4634 31.27	LPL	0.04	TN+BN	1300	0.0	0.000	0.000	0.000	0.037	0.002	0.039	0.000	0.042	0.850	0.850	10.95
4679-4637 100.46	LPM	0.10	C<.15	1300	0.5	0.000	0.000	0.003	0.013	0.000	0.073	0.027	0.100	0.850	0.850	19.34
4580-4696 15.54	NG1	0.14	C<.15	1200	0.0	0.000	0.000	0.006	0.067	0.010	0.116	0.017	0.143	0.850	0.850	12.08
4696-4001 6.36	NG2	0.10	SHEAR	1300	0.0	0.000	0.000	0.018	0.102	0.001	0.013	0.007	0.102	0.850	0.850	12.70
4001-4434 6.31	NG7	0.07	SHEAR	1100	0.0	0.000	0.000	0.002	0.073	0.000	0.027	0.002	0.073	0.850	0.850	9.07
4434-4581 10.48	NG9	0.08	C<.15	1100	0.1	0.000	0.000	0.000	0.065	0.001	0.073	0.002	0.076	0.850	0.850	6.68
4001-4582 14.23	NGA	0.05	SHEAR	1100	0.0	0.000	0.000	0.001	0.052	0.000	0.012	0.001	0.052	0.850	0.850	13.55
4582-4487 34.77	NGB	0.05	SHEAR	1100	0.0	0.000	0.000	0.005	0.047	0.000	0.032	0.003	0.047	0.850	0.850	10.54
4657-5879 24.39	NGX	0.36	C<.15	1300	0.0	0.002	0.003	0.002	0.219	0.032	0.318	0.006	0.355	0.850	0.850	16.42
5879-4583 22.97	NGY	0.22	SHEAR	1300	0.0	0.001	0.001	0.003	0.223	0.009	0.138	0.003	0.223	0.850	0.850	19.00
4583-4001 8.07	NGZ	0.22	SHEAR	1300	0.0	0.000	0.000	0.003	0.217	0.009	0.062	0.012	0.217	0.850	0.850	12.97
4588-4005 24.82	NH2	0.16	BEND	1400	0.9	0.000	0.000	0.001	0.112	0.000	0.157	0.004	0.161	0.850	0.850	9.60
4005-4589 10.53	NH8	0.21	TN+BN	1400	0.9	0.000	0.000	0.004	0.061	0.002	0.192	0.018	0.211	0.850	0.850	5.11
4590-4005 9.18	NHZ	0.53	C<.15	1200	0.0	0.003	0.001	0.022	0.408	0.088	0.322	0.116	0.527	0.850	0.850	12.67
4595-4C13 32.21	NI1	0.10	BEND	1200	0.0	0.000	0.000	0.005	0.037	0.000	0.064	0.037	0.101	0.850	0.850	8.75
4C13-4002 15.19	NI2	0.04	SHEAR	1200	0.6	0.000	0.000	0.001	0.041	0.000	0.034	0.003	0.041	0.850	0.850	12.09
4002-4596 11.36	NIA	0.03	BEND	1200	0.9	0.000	0.000	0.001	0.013	0.000	0.022	0.012	0.034	0.850	0.850	3.98

4597-4002 9.92	NIZ	0.28	C<.15	1200	0.0	0.000	0.001	0.017	0.098	0.027	0.121	0.134	0.282	0.850	0.850	8.58
4584-460X 15.00	NJ2	0.18	C<.15	1400	0.0	0.000	0.000	0.035	0.008	0.007	0.081	0.094	0.182	0.850	0.850	9.65
460X-4585 8.51	NJ8	0.27	TN+BN	1400	0.9	0.000	0.000	0.040	0.004	0.010	0.094	0.164	0.268	0.850	0.850	4.57
460X-4586 9.84	NJA	0.30	SHEAR	1400	0.8	0.000	0.000	0.004	0.297	0.004	0.181	0.002	0.297	0.850	0.850	14.06
4586-4674 24.31	NJB	0.35	C<.15	1400	1.1	0.000	0.000	0.004	0.301	0.004	0.332	0.013	0.349	0.850	0.850	19.27
4674-4104 24.31	NJB	0.39	C<.15	1400	0.3	0.001	0.001	0.002	0.300	0.009	0.373	0.011	0.394	0.850	0.850	19.27
4104-4461 27.61	NJC	0.56	C<.15	1400	0.3	0.001	0.002	0.003	0.301	0.012	0.528	0.016	0.556	0.850	0.850	18.34
4587-460X 6.52	NJZ	0.03	C<.15	1200	0.0	0.000	0.000	0.008	0.001	0.004	0.000	0.022	0.026	0.850	0.850	5.86
4591-4006 6.15	NK2	0.24	TN+BN	1400	0.0	0.000	0.000	0.021	0.065	0.011	0.154	0.074	0.239	0.850	0.850	5.18
4006-4083 6.86	NK8	0.17	TN+BN	1400	0.9	0.000	0.000	0.008	0.036	0.003	0.117	0.048	0.168	0.850	0.850	4.94
4006-4593 9.38	NKA	0.52	C<.15	1100	0.9	0.002	0.001	0.020	0.415	0.080	0.309	0.132	0.521	0.850	0.850	12.78
4594-4006 6.92	NKZ	0.06	C<.15	1400	0.0	0.000	0.000	0.014	0.014	0.000	0.007	0.057	0.064	0.850	0.850	6.02
4599-4C16 40.69	NL1	0.09	TN+BN	1100	0.0	0.000	0.000	0.000	0.028	0.015	0.064	0.010	0.088	0.850	0.850	8.75
4C16-4004 14.85	NL2	0.03	TN+BN	1100	0.0	0.000	0.000	0.000	0.028	0.007	0.026	0.001	0.034	0.850	0.850	8.76
4004-4600 10.99	NLA	0.18	C<.15	1200	0.8	0.000	0.001	0.003	0.101	0.031	0.121	0.027	0.179	0.850	0.850	8.97
4601-4004 15.15	NLZ	0.03	BEND	1300	0.0	0.000	0.000	0.000	0.008	0.000	0.022	0.010	0.032	0.850	0.850	5.01
4080-4578 56.87	TL2	0.16	C<.15	1200	0.1	0.012	0.020	0.001	0.031	0.041	0.120	0.002	0.163	0.850	0.850	43.65
4233-4569 21.08	TLA	0.03	C<.15	STRU	0.0	0.001	0.001	0.001	0.011	0.018	0.012	0.002	0.032	0.850	0.850	14.56

4275-4568 21.08	TLA	0.03	C<.15	1200	0.0	0.001	0.002	0.003	0.007	0.020	0.005	0.007	0.032	0.850	0.850	14.56
4286-4604 21.08	TLA	0.03	C<.15	BLS1	0.6	0.001	0.001	0.001	0.007	0.017	0.014	0.003	0.033	0.850	0.850	14.56
4568-4286 21.08	TLA	0.03	C<.15	STRU	0.0	0.001	0.001	0.001	0.005	0.017	0.010	0.002	0.029	0.850	0.850	14.56
4569-4275 21.08	TLA	0.03	C<.15	1100	0.6	0.001	0.002	0.001	0.012	0.020	0.008	0.007	0.035	0.850	0.850	14.56
4603-4233 21.08	TLA	0.04	C<.15	STRU	0.0	0.001	0.001	0.001	0.012	0.018	0.016	0.001	0.035	0.850	0.850	14.56
4604-4303 24.78	TLB	0.05	C<.15	STRU	0.2	0.001	0.002	0.002	0.007	0.022	0.018	0.007	0.046	0.850	0.850	14.03
4303-4598 43.21	TLC	0.07	C<.15	BLS1	0.2	0.001	0.010	0.001	0.028	0.033	0.038	0.002	0.074	0.850	0.850	14.13
4222-4603 24.78	TLD	0.05	C<.15	STRU	0.0	0.001	0.002	0.001	0.012	0.022	0.023	0.001	0.046	0.850	0.850	14.03
4592-4222 43.21	TLE	0.09	C<.15	STRU	0.0	0.001	0.011	0.000	0.035	0.035	0.047	0.006	0.088	0.850	0.850	14.13
4223-4567 17.95	TLF	0.14	C<.15	1100	0.0	0.004	0.003	0.002	0.069	0.052	0.083	0.003	0.138	0.850	0.850	20.02
4264-4274 17.95	TLF	0.12	C<.15	1100	0.0	0.003	0.003	0.002	0.008	0.044	0.074	0.004	0.121	0.850	0.850	20.02
4274-4276 17.95	TLF	0.14	C<.15	1200	0.3	0.004	0.003	0.002	0.066	0.050	0.083	0.003	0.136	0.850	0.850	20.02
4276-4609 17.95	TLF	0.15	C<.15	1200	0.4	0.002	0.003	0.002	0.068	0.050	0.102	0.003	0.155	0.850	0.850	14.37
4567-4264 17.95	TLF	0.12	C<.15	1100	0.0	0.004	0.003	0.002	0.068	0.052	0.067	0.004	0.123	0.850	0.850	20.02
4610-4223 17.95	TLF	0.16	C<.15	1100	0.0	0.002	0.003	0.002	0.071	0.051	0.103	0.004	0.158	0.850	0.850	14.37
4212-4610 19.70	TLG	0.19	C<.15	1100	0.0	0.002	0.004	0.003	0.072	0.059	0.129	0.004	0.192	0.850	0.850	14.02
4608-4212 29.21	TLH	0.33	C<.15	1100	0.0	0.003	0.015	0.003	0.162	0.097	0.231	0.007	0.335	0.850	0.850	13.21
4609-4293 19.70	TLI	0.19	C<.15	1200	0.2	0.002	0.004	0.002	0.069	0.058	0.127	0.004	0.188	0.850	0.850	14.02

4293-4607 29.21	TLJ	0.33	C<.15	1200	0.3	0.003	0.014	0.003	0.156	0.095	0.226	0.013	0.334	0.850	0.850	13.21
4247-4556 24.58	TLK	0.15	C<.15	1300	0.9	0.001	0.001	0.002	0.041	0.012	0.139	0.002	0.152	0.850	0.850	20.50
4555-4247 24.58	TLK	0.21	C<.15	1400	0.0	0.001	0.001	0.005	0.088	0.013	0.184	0.013	0.210	0.850	0.850	20.50
4556-4614 24.58	TLK	0.17	C<.15	1300	0.4	0.001	0.001	0.002	0.042	0.012	0.153	0.002	0.166	0.850	0.850	20.50
4615-4555 24.58	TLK	0.23	C<.15	1400	0.0	0.001	0.001	0.005	0.089	0.013	0.213	0.007	0.233	0.850	0.850	20.50
4614-4611 25.26	TLL	0.29	C<.15	1300	0.4	0.001	0.003	0.003	0.100	0.022	0.256	0.008	0.286	0.850	0.850	17.76
4612-4615 25.26	TLM	0.40	C<.15	1400	0.0	0.001	0.003	0.007	0.209	0.023	0.371	0.003	0.397	0.850	0.850	17.76
4265-4450 55.03	TLN	0.09	SHEAR	1400	0.3	0.000	0.000	0.001	0.089	0.005	0.060	0.001	0.089	0.850	0.850	8.78
4211-4458 54.37	TLO	0.09	C<.15	1200	0.1	0.000	0.002	0.010	0.033	0.005	0.072	0.014	0.091	0.850	0.850	12.09
4086-4562 34.88	TLP	0.09	TN+BN	1400	0.0	0.000	0.000	0.000	0.039	0.004	0.079	0.011	0.094	0.850	0.850	10.29
4572-4089 34.88	TLQ	0.06	TN+BN	1100	0.1	0.000	0.000	0.001	0.015	0.012	0.039	0.008	0.059	0.850	0.850	11.66
4577-4548 15.90	TLR	0.13	TN+BN	1400	0.3	0.000	0.000	0.006	0.074	0.023	0.108	0.004	0.135	0.850	0.850	32.61
4552-4039 51.43	TLS	0.04	C<.15	1300	0.0	0.000	0.000	0.001	0.018	0.000	0.033	0.003	0.036	0.850	0.850	23.07
4553-4060 44.20	TLT	0.04	TN+BN	1300	0.0	0.000	0.000	0.001	0.027	0.000	0.039	0.003	0.042	0.850	0.850	15.90
4062-4557 64.61	TLU	0.03	C<.15	1300	0.0	0.001	0.003	0.000	0.010	0.004	0.021	0.000	0.026	0.850	0.850	46.02
4815-4898 73.73	WPB	0.07	C<.15	1100	0.0	0.000	0.006	0.005	0.001	0.008	0.002	0.058	0.068	0.850	0.850	14.73
4816-4817 56.40	WPB	0.24	C<.15	1100	0.3	0.000	0.003	0.112	0.008	0.007	0.011	0.220	0.238	0.850	0.850	14.73
4817-4818 56.40	WPB	0.21	C<.15	1300	0.0	0.001	0.001	0.003	0.029	0.002	0.143	0.063	0.208	0.850	0.850	45.47

4818-4819 WPB 56.40	0.07	C<.15	1100	0.0	0.011	0.016	0.001	0.005	0.034	0.010	0.027	0.071	0.850	0.850	45.47
4819-4820 WPB 56.40	0.08	C<.15	1400	2.8	0.002	0.002	0.000	0.006	0.005	0.063	0.009	0.077	0.850	0.850	45.47
4820-4821 WPB 64.46	0.10	C<.15	1300	0.0	0.000	0.001	0.003	0.005	0.001	0.072	0.024	0.097	0.850	0.850	45.47
4821-4822 WPB 64.46	0.11	C<.15	1300	1.6	0.000	0.001	0.003	0.003	0.001	0.083	0.027	0.111	0.850	0.850	45.47
4822-4823 WPB 64.46	0.14	C<.15	1200	0.7	0.009	0.019	0.009	0.033	0.032	0.041	0.065	0.138	0.850	0.850	45.47
4898-4816 WPB 73.73	0.08	TN+BN	1300	1.2	0.000	0.000	0.000	0.013	0.031	0.046	0.001	0.079	0.850	0.850	14.73
4200-4833 WPC 34.95	0.22	C<.15	1200	0.0	0.002	0.002	0.036	0.011	0.011	0.207	0.000	0.217	0.850	0.850	34.95
4201-4834 WPC 34.95	0.13	C<.15	1400	2.6	0.002	0.002	0.016	0.002	0.011	0.119	0.000	0.129	0.850	0.850	34.95
4202-4835 WPC 34.95	0.08	C<.15	1400	0.0	0.001	0.001	0.009	0.000	0.007	0.071	0.000	0.078	0.850	0.850	34.95
4203-4836 WPC 34.95	0.04	C<.15	1400	0.0	0.001	0.001	0.007	0.002	0.006	0.036	0.000	0.042	0.850	0.850	34.95
4536-4886 WPC 34.95	0.21	C<.15	1100	2.6	0.002	0.002	0.032	0.008	0.010	0.197	0.000	0.208	0.850	0.850	34.95
4537-4887 WPC 34.95	0.13	C<.15	1300	2.6	0.002	0.002	0.018	0.003	0.009	0.124	0.000	0.133	0.850	0.850	34.95
4538-4890 WPC 34.95	0.08	C<.15	1300	0.0	0.001	0.001	0.012	0.003	0.007	0.073	0.000	0.080	0.850	0.850	34.95
4539-4889 WPC 34.95	0.08	C<.15	1200	2.6	0.002	0.002	0.007	0.001	0.012	0.071	0.000	0.083	0.850	0.850	34.95
4905-5438 WPC 25.24	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	25.24
4906-5439 WPC 25.24	0.00	C<.15	1000	0.0	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.850	0.850	25.24
4815-4891 WPD 59.90	0.34	TN+BN	1100	1.0	0.000	0.000	0.001	0.011	0.288	0.051	0.002	0.341	0.850	0.850	13.31
4816-4892 WPD 39.41	0.08	TN+BN	1200	1.6	0.000	0.000	0.001	0.008	0.033	0.027	0.023	0.084	0.850	0.850	33.95

C-2: Members Combined and Shear Unity Check Report

MEMBERS COMBINED AND SHEAR UNITY CHECK REPORT													
MEMBER KLZ/RZ NAME	NEXT HIGHEST GROUP ID CHECK	MAX. COMBINED UNITY LOAD CHK. COND	LOAD COND	DIST. FROM END (m)	MAJOR INTERNAL LOADS				-- Z-AXIS --		-- Y-AXIS --		KLY/RY
					FORCE	TORSION	MOMENT	MOMENT	SHEAR	LOAD	SHEAR	LOAD	
					FX	MX	MY	MZ	UNITY	COND	UNITY	COND	
					(kN)	(kN-m)	(kN-m)	(kN-m)					
4268-4870 7.8	DL4 0.03	0.026 1100	1200	0.00	-31.11	6.43	-179.02	33.57	0.001	1400	0.022	1200	7.8
0009-4001 8.6	DL6 0.00	0.001 1100	1000	1.65	32.72	0.00	0.00	0.00	0.000	STPS	0.000	STPS	8.6
0010-460X 8.6	DL8 0.00	0.001 1100	1000	1.65	29.54	0.00	0.00	0.00	0.000	STPS	0.000	STPS	8.6
3723-4004 8.6	DLD 0.00	0.001 1100	1000	1.40	22.39	0.00	0.00	0.00	0.000	STPS	0.000	STPS	8.6
4004-4B43 21.0	DLD 0.05	0.047 1200	1100	0.00	-111.30	14.26	641.83	225.12	0.001	1200	0.018	1200	6.2
4B43-4823 7.2	DLE 0.04	0.039 1200	1100	0.00	-96.16	13.05	519.13	208.82	0.001	1200	0.025	1100	7.2
4823-5004 13.7	DLF 0.00	0.001 1100	1000	0.00	-18.60	0.00	0.00	0.00	0.000	STPS	0.000	STPS	13.7
0011-4006 10.8	DLJ 0.00	0.001 1100	1000	1.65	20.94	0.00	0.00	0.00	0.000	STPS	0.000	STPS	10.8
4006-4606 12.0	DLJ 0.16	0.199 1200	1100	0.00	-124.10	261.42	2252.48	-148.46	0.019	1100	0.076	1100	12.0
4606-4706 12.0	DLJ 0.10	0.130 1200	1100	0.00	-44.51	4.76	1480.07	-45.43	0.000	1100	0.042	1100	12.0
4706-4815 12.5	DLK 0.09	0.119 1200	1100	0.00	-41.45	4.76	1356.95	-41.36	0.001	1100	0.067	1100	12.5
4815-5006 11.5	DLL 0.00	0.001 1100	1000	0.00	-16.05	0.00	0.00	0.00	0.000	STPS	0.000	STPS	11.5
4864-5005 11.5	DLL 0.00	0.001 1100	1000	0.00	-16.05	0.00	0.00	0.00	0.000	STPS	0.000	STPS	11.5

5001-4001 9.6	DLQ 0.00	1100	0.002	1000	5.12	-70.48	0.00	0.00	0.00	0.000	STPS	0.000	STPS	9.6
5003-460X 9.6	DLQ 0.00	1100	0.002	1000	5.12	-70.48	0.00	0.00	0.00	0.000	STPS	0.000	STPS	9.6
0005-4005 10.8	DLR 0.00	1100	0.001	1000	1.65	20.94	0.00	0.00	0.00	0.000	STPS	0.000	STPS	10.8
4005-4605 12.0	DLR 0.16	1100	0.194	1200	0.00	-111.80	-377.91	-2193.99	-158.88	0.027	1200	0.083	1200	12.0
4605-4705 12.0	DLR 0.10	1100	0.121	1200	0.00	-44.21	-20.34	-1383.07	15.84	0.001	1200	0.040	1200	12.0
4705-4864 12.5	DLS 0.09	1100	0.110	1200	0.00	-40.85	-20.34	-1257.39	14.63	0.002	1200	0.063	1200	12.5
4002-4268 7.9	DLV 0.05	1100	0.047	1200	0.00	-63.90	6.43	-521.13	95.07	0.001	1400	0.022	1200	7.9
4002-0004 3.3	DLZ 0.00	1100	0.001	1000	0.00	13.45	0.00	0.00	0.00	0.000	STPS	0.000	STPS	3.3
4870-5002 17.2	DLZ 0.00	1100	0.001	1000	0.00	-17.71	0.00	0.00	0.00	0.000	STPS	0.000	STPS	17.2
4659-4210 33.3	IK1 0.01	1100	0.013	1200	0.00	-0.61	0.05	0.31	-0.72	0.001	BLS1	0.004	1200	4.1
4210-4658 37.2	IK2 0.01	1100	0.010	1400	0.26	0.70	0.03	0.65	0.49	0.000	STRU	0.004	1200	14.7
4661-4506 28.3	IK3 0.02	1300	0.017	1400	0.00	0.46	0.00	-2.08	-0.44	0.007	1400	0.001	1300	14.0
4662-4506 49.2	IK3 0.02	1300	0.017	1400	0.00	0.34	-0.01	1.30	0.36	0.006	1400	0.001	1400	24.4
4663-4009 63.2	IK4 0.00	1100	0.000	1000	0.24	0.00	0.00	-0.04	0.00	0.000	1400	0.000	1300	31.9
4665-4009 48.1	IK4 0.01	1000	0.016	1300	0.00	0.32	0.00	0.61	-0.55	0.003	1300	0.000	1300	24.3
4009-4664 53.8	IK5 0.01	1000	0.017	1300	0.24	0.18	-0.01	-0.84	-0.51	0.004	1300	0.001	1300	24.7
4613-4422 16.7	IL1 0.02	1400	0.022	1300	0.00	21.41	-0.57	49.03	-1.02	0.010	1300	0.001	1100	11.0
4422-4618 22.1	IL2 0.02	1400	0.026	1300	0.33	26.33	0.51	59.60	-0.95	0.006	1300	0.002	1100	14.4

4616-4422 20.6	IL3 0.06	1400	0.069	1300	0.00	-87.81	-0.06	-72.22	0.01	0.016	1400	0.000	1400	18.7
4422-4617 11.8	IL4 0.03	1400	0.039	1300	0.33	-21.79	-0.04	-52.09	0.16	0.016	1400	0.001	1400	9.8
4620-4051 11.8	IL5 0.04	1300	0.047	1400	0.00	-1.25	0.13	-13.85	4.21	0.010	1400	0.011	1400	8.8
4051-4619 33.9	IL6 0.05	1300	0.052	1400	0.33	-21.89	-0.05	-12.97	3.86	0.016	1400	0.007	1400	17.7
4621-4051 13.8	IL7 0.01	1400	0.008	1100	0.00	-7.59	-0.01	1.66	-0.60	0.001	1400	0.000	1100	10.3
4051-4622 31.0	IL8 0.07	1300	0.086	1400	0.33	-162.09	-0.06	-33.84	1.11	0.033	1400	0.001	1400	21.2
4626-4236 34.8	IL9 0.13	1300	0.135	1400	0.00	-221.89	0.05	-86.92	0.91	0.024	1400	0.001	1400	22.3
4236-4625 36.8	ILA 0.14	1400	0.141	1300	0.24	-181.05	-0.09	-84.25	-3.51	0.018	1400	0.006	1300	22.5
4624-4236 22.5	ILB 0.02	1300	0.023	1400	0.00	20.39	-0.12	-0.72	-2.84	0.003	TRRR	0.004	1400	14.4
4236-4623 23.3	ILC 0.04	1300	0.040	1400	0.00	0.07	-0.03	-2.91	1.97	0.040	1400	0.002	1300	28.8
4628-4067 26.2	ILD 0.13	1300	0.177	1400	0.00	50.95	-0.41	212.75	-3.83	0.038	1200	0.003	1400	12.1
4067-4068 28.1	ILE 0.12	1300	0.152	1400	0.33	52.95	-0.63	196.33	-1.62	0.039	1200	0.003	1400	12.3
4630-4439 28.8	ILF 0.09	1400	0.112	1300	0.00	47.94	0.04	315.58	-1.13	0.054	1200	0.000	1200	6.8
4439-4629 29.3	ILG 0.10	1400	0.124	1300	0.28	47.94	0.04	353.89	-0.63	0.054	1200	0.000	1200	10.4
4631-4074 35.7	ILH 0.12	1200	0.141	1100	0.00	35.52	-0.43	207.03	1.49	0.030	1300	0.003	1100	13.8
4074-4079 37.1	ILI 0.08	1200	0.105	1100	0.38	35.99	-0.43	191.31	-1.29	0.031	1300	0.003	1100	10.3
4768-4633 25.5	ILJ 0.02	1200	0.028	1100	0.15	53.65	-0.09	40.63	1.15	0.015	1300	0.000	1100	12.3
4087-4088 20.7	ILK 0.02	1400	0.018	1300	0.00	15.18	0.07	-53.79	-0.07	0.017	1300	0.000	1100	11.3

4088-4768 20.7	ILK 0.02	0.018 1300	1100	0.20	53.65	-0.09	36.99	1.20	0.016	1300	0.000	1100	12.8
4634-4087 25.5	ILM 0.03	0.030 1400	1300	0.00	15.18	0.07	-61.95	-0.02	0.017	1300	0.000	1100	10.8
4636-4095 21.4	ILN 0.10	0.098 1300	1400	0.00	17.87	0.04	108.02	-1.02	0.021	1300	0.001	1400	10.0
4642-4463 29.0	ILN 0.16	0.164 1100	1200	0.00	-20.75	0.17	180.01	0.14	0.030	1400	0.003	1400	10.0
4095-4635 46.3	ILO 0.11	0.122 1400	1300	0.28	4.98	-0.01	114.05	1.97	0.027	1100	0.001	1100	12.0
4463-4641 37.4	ILO 0.17	0.185 1100	1200	0.30	22.43	0.11	167.49	-3.78	0.034	1200	0.003	1200	12.1
4637-4095 42.7	ILP 0.09	0.097 1400	1300	0.00	-1.03	-0.03	-58.57	3.99	0.012	1100	0.003	1300	14.9
4669-4463 23.2	ILP 0.09	0.092 1400	1200	0.00	-41.54	-0.06	-89.49	-1.51	0.021	1200	0.003	1200	8.0
4095-4638 24.8	ILQ 0.06	0.058 1300	1200	0.28	-7.96	0.00	-59.56	1.18	0.016	1100	0.001	1300	8.1
4463-4670 39.4	ILQ 0.11	0.120 1300	1200	0.29	-47.66	0.00	-92.87	2.30	0.014	1200	0.001	1200	12.7
4640-4457 23.8	ILR 0.06	0.083 1300	1400	0.00	23.70	-0.62	-147.03	-4.04	0.035	1400	0.009	1400	9.6
4457-4576 29.0	ILS 0.06	0.064 1400	1200	0.38	-22.61	0.63	87.60	-5.25	0.031	1400	0.007	1400	11.1
4639-4445 50.1	ILT 0.06	0.084 1300	1200	0.00	82.28	-0.07	264.50	0.48	0.041	1400	0.000	1300	11.6
4445-4446 53.2	ILU 0.04	0.072 1400	1200	0.45	82.28	-0.07	221.53	0.56	0.041	1400	0.000	1300	8.3
4632-4499 36.3	ILV 0.01	0.016 1100	1200	0.00	-6.76	-0.11	-2.97	-0.54	0.002	1200	0.002	1200	9.0
4671-4008 8.7	ILV 0.00	0.000 1100	1000	0.24	0.00	0.00	-0.06	0.00	0.000	1400	0.000	STPS	5.2
4008-4649 57.3	ILW 0.01	0.006 1400	1300	0.24	0.29	0.03	0.77	0.21	0.002	1300	0.000	1300	15.5
4499-4627 60.9	ILW 0.02	0.018 STRU	1200	0.27	0.21	0.18	-1.01	-0.86	0.003	1400	0.002	1200	15.8

4660-4499 52.3	ILX 0.02	0.027 1100	1200	0.00	2.36	-1.90	-1.52	-2.37	0.004	1200	0.014	1200	14.8
4666-4008 2.8	ILX 0.00	0.000 1100	1000	0.24	0.00	0.00	-0.07	0.00	0.000	1400	0.000	STPS	0.8
4008-4667 79.4	ILY 0.00	0.004 1400	1300	0.25	1.28	-0.02	-1.33	-0.26	0.003	1300	0.000	1300	19.4
4499-4668 4.0	ILY 0.00	0.000 1100	1000	0.00	-0.13	0.00	-0.08	0.00	0.000	1400	0.000	STPS	1.0
4457-4643 36.9	ILZ 0.02	0.028 1100	1200	0.45	-6.31	-0.10	-17.88	1.10	0.005	1100	0.001	1200	11.4
4001-5333 48.4	K02 0.01	0.012 1400	1100	0.00	-15.27	0.00	-23.19	-0.02	0.000	1300	0.003	1100	14.0
4605-4866 61.3	K02 0.09	0.126 1100	1200	0.00	-44.49	9.02	-12.89	-276.17	0.003	1200	0.023	1200	21.2
4606-4817 26.4	K02 0.09	0.124 1200	1100	0.00	-83.58	-9.93	10.17	266.58	0.004	1200	0.023	1100	21.1
460X-5111 41.2	K02 0.01	0.011 1100	1000	0.00	-14.54	0.00	-22.93	0.00	0.000	STPS	0.003	1400	13.1
460X-5159 20.4	K02 0.02	0.018 1300	1400	0.00	-16.95	0.00	-38.45	0.00	0.000	1100	0.004	1400	16.3
4817-5136 26.4	K02 0.01	0.008 1100	1000	0.00	-7.37	0.00	-16.21	0.01	0.000	STPS	0.003	1400	21.1
4866-5354 61.3	K02 0.01	0.008 1100	1000	0.00	-7.37	0.00	-16.45	0.00	0.000	STPS	0.003	1400	21.2
4605-4862 25.4	K03 0.17	0.193 1100	1200	0.00	76.00	7.54	-241.44	-113.78	0.004	1200	0.041	1200	20.3
4862-5293 25.4	K03 0.00	0.005 1100	1000	0.00	-5.86	0.00	-6.15	-0.01	0.000	STPS	0.002	1400	20.3
4606-4825 25.2	K04 0.17	0.191 1200	1100	0.00	67.26	0.02	-201.65	1.15	0.000	1300	0.041	1200	20.1
4825-5160 25.2	K04 0.00	0.005 1100	1000	0.00	-4.43	0.00	-4.65	0.00	0.000	STPS	0.002	1400	20.1
4051-5096 28.5	K06 0.00	0.002 1100	1000	0.00	-8.67	0.00	0.00	0.00	0.000	STPS	0.000	STPS	28.5
4422-5316 28.5	K06 0.00	0.002 1100	1000	0.00	-8.67	0.00	0.00	0.00	0.000	STPS	0.000	STPS	28.5

4449-4507 56.0	K06 0.04	1400	0.042	1300	0.00	-2.10	22.68	0.00	0.21	0.034	1300	0.042	1300	56.0
4275-4844 23.5	K08 0.08	1400	0.080	1100	3.27	-40.81	0.03	8.14	21.01	0.003	1200	0.009	1200	23.5
4210-3566 41.5	K09 0.00	1100	0.000	1000	0.00	0.29	0.00	0.00	0.00	0.000	STPS	0.000	STPS	41.5
4820-5143 16.8	K10 0.00	1100	0.001	1000	0.00	-1.96	0.00	0.00	0.00	0.000	STPS	0.000	STPS	16.8
4902-5442 16.8	K10 0.00	1100	0.001	1000	0.00	-1.96	0.00	0.00	0.00	0.000	STPS	0.000	STPS	16.8
4807-5021 25.2	K12 0.00	1100	0.001	1000	0.00	-1.30	0.00	0.00	0.00	0.000	STPS	0.000	STPS	25.2
4808-5022 25.6	K12 0.00	1100	0.001	1000	0.00	-1.30	0.00	0.00	0.00	0.000	STPS	0.000	STPS	25.6
4843-5231 18.7	K16 0.00	1100	0.001	1000	0.00	-4.62	0.00	0.00	0.00	0.000	STPS	0.000	STPS	18.7
4605-5344 16.3	K17 0.01	1100	0.010	1000	0.00	-17.40	0.00	-25.17	0.00	0.000	STPS	0.002	1400	13.0
4606-5123 16.3	K17 0.01	1100	0.010	1000	0.00	-17.35	0.00	-25.12	-0.01	0.000	STPS	0.002	1400	13.0
4001-5323 57.0	K19 0.02	1100	0.020	1000	0.00	-14.75	0.00	-32.13	-0.02	0.000	STPS	0.003	1400	19.2
460X-5102 56.5	K19 0.02	1100	0.020	1200	0.00	-15.28	0.00	-32.26	0.00	0.000	1400	0.003	1200	18.8
4001-5292 20.6	K1C 0.02	1100	0.018	1000	0.00	-20.13	0.00	-46.35	0.00	0.000	STPS	0.004	1400	16.4
4247-5213 27.0	K22 0.00	1100	0.002	1000	1.30	-7.78	0.00	0.00	0.00	0.000	STPS	0.000	STPS	27.0
4264-4843 34.2	K5G 0.22	1300	0.229	1100	0.00	-71.41	-1.01	-174.71	31.04	0.002	1300	0.056	1100	34.2
3503-4074 21.9	K6A 0.00	1100	0.000	1000	0.20	0.94	0.00	0.00	0.00	0.000	STPS	0.000	STPS	21.9
3504-4088 21.9	K6A 0.00	1100	0.000	1000	0.20	0.94	0.00	0.00	0.00	0.000	STPS	0.000	STPS	21.9
3508-4445 21.9	K6A 0.00	1100	0.000	1000	0.20	0.94	0.00	0.00	0.00	0.000	STPS	0.000	STPS	21.9

3509-4457 21.9	K6A 0.00 1100	0.000 1000	0.10	0.47	0.00	0.00	0.00	0.000 STPS	0.000 STPS	21.9
4002-4863 12.4	K6B 0.11 1100	0.137 1200	0.00	8.45	-10.29	-72.53	102.80	0.009 1200	0.038 1200	9.9
4B43-4824 12.4	K6B 0.06 1100	0.065 1200	0.00	10.47	4.17	-58.58	-1.35	0.004 1200	0.019 1200	9.9
4001-4367 62.8	LH1 0.17 1400	0.196 1300	2.30	-211.34	0.65	2.85	0.00	0.006 1300	0.010 1300	62.8
4005-4573 68.4	LH1 0.04 1200	0.038 1400	2.50	17.65	-1.43	2.51	0.00	0.013 1400	0.016 1400	68.4
4006-4128 68.4	LH1 0.05 1200	0.059 1100	2.50	-38.05	0.00	2.51	0.00	0.003 STRU	0.006 1300	68.4
4095-4128 72.2	LH1 0.04 1200	0.048 1100	2.64	30.01	0.57	2.79	0.00	0.008 1200	0.012 1200	72.2
4095-4143 93.0	LH1 0.07 1200	0.069 1100	3.40	-17.36	-0.60	4.63	0.00	0.005 1100	0.010 1100	93.0
4109-4256 93.0	LH1 0.13 1300	0.164 1400	2.85	-107.61	-2.48	4.49	0.00	0.022 1400	0.028 1400	93.0
4117-4006 80.6	LH1 0.11 1200	0.148 1100	2.46	-122.36	-0.46	3.26	0.00	0.012 1300	0.017 1300	80.6
4117-4256 93.0	LH1 0.07 1300	0.083 1100	2.83	-32.84	2.58	4.43	0.00	0.023 1100	0.029 1100	93.0
4247-4367 73.3	LH1 0.12 1200	0.175 1300	2.68	-153.31	-0.92	3.98	0.00	0.008 1300	0.014 1300	73.3
4256-4377 92.9	LH1 0.08 1100	0.092 1200	2.83	-42.08	-2.63	4.33	0.00	0.024 1300	0.030 1300	92.9
4367-4256 98.5	LH1 0.16 1300	0.190 1400	3.00	-119.49	1.99	4.79	0.00	0.021 1300	0.027 1300	98.5
4367-4442 82.1	LH1 0.09 1300	0.093 1400	3.00	71.94	-1.84	4.68	0.00	0.021 1300	0.026 1300	82.1
4377-4005 80.6	LH1 0.11 1100	0.159 1200	2.46	-138.34	0.69	2.84	0.00	0.010 1100	0.014 1100	80.6
4457-4575 84.4	LH1 0.06 1300	0.063 1200	3.09	45.31	0.26	3.36	0.00	0.005 1400	0.009 1400	84.4
4463-4403 93.0	LH1 0.10 1100	0.108 1200	3.40	-53.55	1.41	4.63	0.00	0.013 1200	0.017 1200	93.0

4573-4463 72.2	LH1 0.05	0.054 1300	1400	2.64	-27.89	-0.24	2.79	0.00	0.007	1100	0.010	1100	72.2
4575-4002 93.8	LH1 0.06	0.061 1400	1300	3.43	27.43	1.62	4.15	0.00	0.023	1200	0.027	1200	93.8
460X-4109 80.6	LH1 0.11	0.143 1300	1400	2.44	-116.77	-1.73	3.21	0.00	0.017	1200	0.022	1200	80.6
4039-4507 47.9	LP1 0.03	0.029 1400	1300	0.00	-1.35	-0.14	102.01	2.05	0.021	1300	0.001	1200	23.6
4448-4449 40.9	LP1 0.10	0.132 1300	1400	0.92	48.91	0.29	-520.41	-4.62	0.094	1400	0.007	1200	8.1
4449-4588 40.9	LP1 0.15	0.159 1300	1400	0.52	32.12	0.17	-619.95	-9.43	0.108	1400	0.031	1200	8.1
4450-4448 40.9	LP1 0.08	0.090 1300	1400	0.48	51.16	0.02	-342.81	-0.47	0.090	1400	0.001	1200	8.1
4001-4472 20.3	LP2 0.05	0.055 1300	1400	0.69	-14.02	0.26	190.09	-0.85	0.023	1300	0.001	1200	24.0
4060-4507 30.2	LP2 0.03	0.029 1400	1300	0.00	3.56	-0.08	-98.84	-1.32	0.027	1300	0.001	1200	16.3
4246-4247 23.1	LP2 0.18	0.191 1300	1400	1.05	44.45	0.60	-599.21	4.22	0.132	1400	0.007	1300	21.2
4247-4248 11.0	LP2 0.23	0.242 1400	1300	0.00	138.86	-0.15	-485.61	61.37	0.076	1100	0.021	1300	35.0
4248-4249 11.0	LP2 0.13	0.157 1300	1400	0.00	137.42	0.03	-442.04	14.03	0.072	1100	0.006	1400	35.0
4249-4531 9.6	LP2 0.10	0.109 1300	1400	0.00	137.10	6.32	-337.25	0.88	0.074	1400	0.010	1400	35.0
4461-TR5X 26.8	LP2 0.38	0.709 1300	1400	0.95	-99.53	1.27	-2539.27	4.39	0.303	1400	0.006	1100	19.8
4472-4473 20.3	LP2 0.06	0.068 1400	1300	1.46	-12.38	0.32	232.76	-1.97	0.022	1300	0.001	1200	24.0
4473-4490 20.3	LP2 0.06	0.067 1400	1300	0.02	-8.85	-2.44	232.33	-2.07	0.017	1300	0.003	1300	20.4
4490-4535 20.3	LP2 0.07	0.074 1400	1300	0.29	-14.31	-1.21	242.36	-4.07	0.017	1300	0.008	1200	24.0
4531-4577 9.6	LP2 0.09	0.106 1300	1400	0.00	137.08	-1.09	-315.78	3.01	0.075	1400	0.003	1400	35.0

4535-4552 44.3	LP2 0.07	0.082 1400	1300	0.00	-1.35	-0.14	240.17	-4.09	0.021	1300	0.001	1200	24.0
4542-TR7X 26.8	LP2 0.30	0.473 1000	1300	1.92	-257.57	-0.52	-1600.19	-4.22	0.161	1200	0.003	1300	19.8
4611-4542 26.8	LP2 0.26	0.361 1400	1300	0.54	-204.72	0.39	-1181.45	10.15	0.144	1200	0.005	1200	19.8
4673-4246 23.1	LP2 0.10	0.130 1300	1400	0.40	29.97	0.98	-315.87	-6.68	0.130	1400	0.006	1300	21.2
4D30-4D32 26.8	LP2 0.38	0.690 1300	1400	0.00	-193.16	-0.26	-2404.85	-9.17	0.205	1400	0.004	1300	19.8
4D32-4612 26.8	LP2 0.36	0.525 1300	1400	0.00	-219.44	-0.36	-1758.30	-13.79	0.210	1400	0.016	1300	19.8
TR5X-4D30 26.8	LP2 0.43	0.772 1300	1400	0.00	-191.94	-0.68	-2533.32	-40.18	0.161	1400	0.030	1400	19.8
TR7X-4657 26.8	LP2 0.29	0.468 1200	1300	0.00	-267.62	0.58	-1603.90	0.49	0.221	1300	0.002	1200	19.8
4017-4424 37.7	LP3 0.02	0.027 1400	1300	0.79	13.28	0.27	74.00	-0.03	0.008	1100	0.001	1200	16.9
4121-4122 40.4	LP3 0.31	0.518 1400	1100	0.75	-626.62	-1.45	-1227.07	8.12	0.444	1100	0.014	1300	14.6
4122-TR2X 40.4	LP3 0.37	0.592 1400	1100	0.30	-626.55	-4.67	-1503.97	1.14	0.446	1100	0.015	1100	14.6
4127-4121 34.9	LP3 0.26	0.418 1200	1100	0.50	-624.30	1.13	-540.45	22.47	0.418	1100	0.022	1100	14.6
4158-4185 40.4	LP3 0.31	0.558 1400	1100	0.00	-696.77	1.24	-1345.30	3.94	0.168	1100	0.004	1400	14.6
4185-4608 40.4	LP3 0.23	0.411 1200	1100	0.00	-696.77	1.24	-931.46	-0.11	0.165	1100	0.004	1400	14.6
4314-4338 40.4	LP3 0.32	0.538 1300	1200	1.20	-678.18	-1.16	-1307.01	2.10	0.162	1200	0.003	1200	14.6
4326-4420 30.0	LP3 0.01	0.010 1400	1300	0.00	2.07	0.81	-0.11	-0.25	0.010	1300	0.001	1300	13.1
4334-4523 41.2	LP3 0.08	0.091 1100	1200	1.05	-31.01	-0.11	-257.55	0.65	0.062	1200	0.001	1300	16.9
4338-TR4X 40.4	LP3 0.36	0.589 1300	1200	0.45	-678.18	-1.16	-1459.03	3.75	0.164	1200	0.003	1200	14.6

4356-4511 46.4	LP3 0.13	1400	0.162	1300	3.58	-74.17	-0.03	-436.71	-2.87	0.073	1300	0.001	1400	10.1
4373-4442 46.4	LP3 0.16	1400	0.166	1300	4.25	-32.27	-0.19	-479.37	-0.81	0.053	1400	0.001	1400	10.1
4382-4488 34.9	LP3 0.27	1100	0.413	1200	0.00	-600.57	-1.65	-491.31	12.72	0.413	1200	0.008	1400	14.6
4420-4421 30.0	LP3 0.01	1400	0.016	1300	0.90	7.84	0.04	37.02	-1.20	0.011	1300	0.000	1400	13.1
4421-4613 30.0	LP3 0.02	1400	0.022	1300	0.57	21.41	-0.57	49.03	-1.02	0.011	1300	0.001	1100	13.1
4423-4017 37.7	LP3 0.02	1400	0.028	1300	0.11	31.04	0.50	67.04	-0.92	0.007	1100	0.004	1100	16.9
4424-4650 37.7	LP3 0.02	1400	0.028	1300	0.23	19.36	0.27	75.52	-0.29	0.009	1100	0.001	1100	16.9
4425-4426 37.7	LP3 0.03	1400	0.038	1300	0.73	49.67	-0.41	88.46	-0.70	0.010	1400	0.001	1200	16.9
4426-4334 41.2	LP3 0.05	1100	0.060	1200	1.09	2.29	-0.22	-124.64	-0.23	0.060	1200	0.002	1300	16.9
4426-4L13 24.0	LP3 0.12	1400	0.144	1300	0.00	31.30	0.06	-402.98	3.13	0.052	1300	0.001	1300	40.1
4428-4580 41.2	LP3 0.17	1100	0.202	1200	0.75	-109.74	0.70	-476.06	-11.58	0.067	1200	0.013	1300	16.9
4429-4428 41.2	LP3 0.12	1100	0.141	1200	0.38	-57.94	-0.06	-372.92	4.09	0.064	1200	0.003	1300	16.9
4435-4762 16.6	LP3 0.07	1200	0.082	1100	0.00	-2.22	0.02	-247.68	-0.27	0.062	1100	0.005	1300	7.8
4436-4437 46.2	LP3 0.07	1400	0.091	1300	0.49	65.87	0.05	242.90	1.26	0.061	1200	0.001	1300	7.8
4437-4438 46.2	LP3 0.09	1400	0.112	1300	0.89	58.24	0.12	310.31	-1.19	0.058	1200	0.001	1300	7.8
4438-4630 46.2	LP3 0.09	1400	0.112	1300	0.08	47.94	0.04	315.58	-1.13	0.054	1200	0.000	1200	7.8
4440-4441 46.2	LP3 0.12	1400	0.147	1300	0.85	39.63	0.02	426.29	0.79	0.049	1200	0.001	1300	11.9
4441-4442 46.2	LP3 0.14	1400	0.165	1300	1.05	29.05	-0.57	480.56	0.91	0.045	1200	0.001	1100	11.9

4442-4443 65.4	LP3 0.15	1400	0.175	1300	0.00	65.57	0.96	493.37	0.85	0.075	1400	0.002	1100	11.9
4442-4471 24.0	LP3 0.15	1400	0.157	1300	0.00	0.93	0.18	-471.72	-0.75	0.048	1300	0.001	1200	16.7
4443-4444 65.4	LP3 0.11	1200	0.127	1300	0.00	63.95	0.05	357.91	0.43	0.078	1400	0.000	1100	11.9
4444-4639 65.4	LP3 0.08	1300	0.102	1200	0.00	82.28	-0.07	275.64	0.46	0.080	1400	0.000	1300	11.9
4446-4447 65.4	LP3 0.08	1200	0.086	1400	0.78	51.18	0.09	-188.84	1.17	0.086	1400	0.002	1200	8.4
4447-4265 65.4	LP3 0.08	1300	0.088	1400	0.06	51.16	0.02	-199.78	1.06	0.088	1400	0.001	1200	8.4
4471-4497 24.0	LP3 0.13	1400	0.133	1300	0.00	0.93	0.18	-403.71	-0.03	0.047	1300	0.001	1200	16.7
4480-4D17 25.1	LP3 0.05	1400	0.061	1300	0.00	26.02	-0.01	-173.99	0.07	0.025	1300	0.000	1100	40.1
4488-4590 34.9	LP3 0.52	1100	0.535	1200	1.22	-673.23	0.02	980.74	-48.20	0.410	1200	0.022	1200	14.6
4497-4553 52.4	LP3 0.10	1400	0.102	1300	0.00	3.56	-0.08	-268.61	1.55	0.040	1300	0.001	1200	16.7
4508-4A34 10.9	LP3 0.00	1100	0.002	1000	0.00	0.00	0.00	-1.63	0.00	0.002	1400	0.000	STPS	40.1
4511-4426 46.4	LP3 0.13	1400	0.157	1300	0.00	19.28	0.57	-439.23	-3.76	0.027	1300	0.008	1300	10.1
4515-4423 37.7	LP3 0.02	1400	0.027	1300	0.41	26.33	0.51	65.92	-0.55	0.007	1100	0.002	1100	16.9
4523-4429 41.2	LP3 0.10	1100	0.121	1200	0.50	-57.95	-0.06	-322.71	2.61	0.063	1200	0.003	1300	16.9
4533-4508 31.6	LP3 0.02	1400	0.025	1300	0.00	26.15	0.01	-64.47	0.26	0.023	1300	0.000	1200	40.1
4581-4695 16.6	LP3 0.10	1200	0.114	1100	0.00	-15.70	-0.32	-332.35	-1.08	0.065	1100	0.003	1300	7.8
4593-4127 34.9	LP3 0.49	1200	0.529	1100	0.00	-608.10	0.24	942.26	-54.72	0.418	1100	0.020	1100	14.6
4607-4314 40.4	LP3 0.23	1100	0.406	1200	0.67	-678.18	-1.16	-909.07	-2.32	0.158	1200	0.003	1200	14.6

4618-4515 37.7	LP3 0.02	1400	0.026	1300	0.17	26.33	0.51	61.57	-0.83	0.006	1100	0.002	1100	16.9
4629-4440 46.2	LP3 0.11	1400	0.130	1300	0.31	47.94	0.04	374.92	-0.36	0.053	1200	0.000	1200	11.9
4650-4425 37.7	LP3 0.03	1400	0.031	1300	0.68	22.24	-0.41	82.30	-0.18	0.011	1400	0.001	1100	16.9
4695-4435 16.6	LP3 0.09	1200	0.100	1100	0.00	0.87	0.45	-297.24	-0.96	0.064	1100	0.002	1300	7.8
4762-4436 16.6	LP3 0.07	1100	0.081	1300	0.43	62.85	0.88	203.42	1.98	0.060	1100	0.005	1300	7.8
4800-4382 40.4	LP3 0.31	1300	0.512	1200	0.00	-596.88	0.34	-1181.63	14.87	0.446	1200	0.010	1300	14.6
4D17-4533 25.1	LP3 0.04	1400	0.049	1300	0.00	26.10	0.10	-139.01	-0.01	0.025	1300	0.000	1200	40.1
4L13-4480 24.0	LP3 0.10	1400	0.115	1300	0.00	31.11	0.06	-323.41	1.97	0.052	1300	0.001	1300	40.1
TR2X-4158 40.4	LP3 0.36	1400	0.611	1100	0.00	-696.77	1.24	-1502.86	5.46	0.170	1100	0.004	1400	14.6
TR4X-4800 40.4	LP3 0.36	1300	0.579	1200	0.00	-580.33	7.26	-1460.49	-3.38	0.450	1200	0.035	1200	14.6
4022-4587 33.8	LP5 0.03	1100	0.032	1200	0.40	-25.86	0.00	-0.33	5.16	0.001	1400	0.009	1200	10.5
4038-4594 33.8	LP5 0.06	1300	0.075	1400	0.62	-1.94	0.58	-16.74	-12.70	0.016	1200	0.017	1400	10.5
4103-4143 51.5	LP5 0.11	1100	0.111	1200	0.00	-201.63	-0.13	111.45	-2.15	0.106	1100	0.004	1200	15.4
4121-4123 54.8	LP5 0.04	1300	0.043	1100	0.90	60.30	-0.78	39.56	1.67	0.026	1400	0.003	1100	37.7
4123-4124 54.8	LP5 0.05	1400	0.055	1100	0.80	60.45	-0.18	73.38	1.11	0.024	1400	0.001	1300	37.7
4124-4125 54.8	LP5 0.07	1400	0.070	1100	0.85	60.26	0.00	105.45	0.92	0.022	1400	0.001	1300	37.7
4125-4126 54.8	LP5 0.09	1400	0.087	1100	0.85	60.24	0.27	133.35	1.34	0.020	1400	0.001	1100	37.7
4126-4775 45.1	LP5 0.09	1100	0.090	1400	1.00	-3.36	0.10	177.78	-0.86	0.014	1400	0.002	1100	37.7

4128-4776 45.1	LP5 0.09	1100	0.098	1400	0.20	-5.96	-0.03	190.11	-1.38	0.008	1400	0.001	1300	37.7
4129-4130 45.1	LP5 0.09	1100	0.100	1400	0.00	-5.98	0.09	203.68	-0.54	0.005	1400	0.001	1200	37.7
4130-4132 45.1	LP5 0.09	1100	0.100	1400	0.00	-3.55	-0.06	205.12	-0.32	0.003	1400	0.001	1200	37.7
4132-4134 45.1	LP5 0.09	1100	0.097	1400	0.00	-3.55	-0.02	200.93	0.24	0.006	1400	0.001	1300	37.7
4134-4135 45.1	LP5 0.09	1100	0.096	1400	0.00	-3.56	-0.03	191.75	0.90	0.008	1100	0.001	1300	37.7
4135-4136 45.1	LP5 0.08	1300	0.093	1400	0.00	-3.86	0.16	180.81	1.19	0.005	1400	0.000	1300	37.7
4136-4137 45.1	LP5 0.08	1300	0.090	1400	0.00	-3.86	0.06	175.76	1.08	0.008	1400	0.001	1300	37.7
4137-4784 45.1	LP5 0.07	1300	0.082	1400	0.00	-3.86	0.02	164.48	0.70	0.010	1400	0.001	1300	37.7
4138-4139 45.1	LP5 0.07	1100	0.069	1400	0.00	-3.86	0.01	143.83	0.07	0.012	1400	0.001	1300	37.7
4139-4140 51.5	LP5 0.07	1100	0.072	1400	0.00	-5.54	0.02	133.55	-0.21	0.018	1400	0.001	1300	37.7
4140-4141 51.5	LP5 0.06	1300	0.060	1400	0.00	-5.54	0.01	106.71	-0.63	0.020	1400	0.001	1200	37.7
4141-4142 51.5	LP5 0.05	1300	0.046	1400	0.00	-5.52	-0.02	75.26	-1.11	0.022	1400	0.001	1300	37.7
4142-4143 51.5	LP5 0.03	1400	0.032	1300	0.00	-9.03	0.00	37.52	-2.08	0.024	1400	0.001	1300	37.7
4143-4795 59.6	LP5 0.18	1200	0.198	1100	0.75	-206.67	0.16	-281.82	0.49	0.132	1100	0.002	1300	15.4
4168-4195 59.6	LP5 0.20	1200	0.210	1100	0.00	-206.62	-0.10	-305.67	0.37	0.063	1100	0.001	1300	15.4
4195-4592 59.6	LP5 0.12	1200	0.127	1100	0.00	-206.62	-0.10	-153.30	0.19	0.060	1100	0.001	1300	15.4
4212-4213 54.8	LP5 0.07	1400	0.087	1100	2.00	-3.81	0.03	157.40	-0.73	0.045	1100	0.002	1300	37.7
4213-4214 54.8	LP5 0.13	1200	0.141	1100	1.40	-3.81	0.03	260.18	-0.93	0.038	1100	0.002	1300	37.7

4214-4215 45.1	LP5 0.13	1200	0.146	1100	1.40	-1.92	-0.03	302.32	0.38	0.017	1200	0.000	1400	37.7
4215-4216 45.1	LP5 0.14	1200	0.164	1100	1.40	-1.92	-0.03	335.98	0.74	0.014	1200	0.000	1400	37.7
4216-4217 45.1	LP5 0.14	1400	0.166	1100	0.00	-0.96	-0.02	335.65	1.35	0.004	1100	0.001	1300	37.7
4217-4218 45.1	LP5 0.14	1200	0.158	1100	0.00	-0.96	-0.02	329.17	0.31	0.007	1100	0.001	1300	37.7
4218-4219 45.1	LP5 0.14	1200	0.152	1100	0.00	-0.68	0.01	313.46	-0.62	0.019	1100	0.001	1100	37.7
4219-4220 45.1	LP5 0.12	1200	0.129	1100	0.00	-0.68	0.01	265.02	0.57	0.022	1100	0.001	1100	37.7
4220-4221 51.5	LP5 0.11	1200	0.118	1100	0.00	-1.10	-0.02	207.60	1.84	0.032	1100	0.001	1200	37.7
4221-4222 51.5	LP5 0.06	1200	0.064	1100	0.00	-1.10	-0.02	121.65	-0.01	0.038	1100	0.001	1200	37.7
4250-4532 24.5	LP5 0.13	1300	0.136	1400	0.00	137.09	2.95	-220.65	-0.77	0.073	1400	0.009	1400	37.7
4251-4D22 68.3	LP5 0.09	1300	0.088	1400	0.00	137.22	0.01	-108.37	-1.68	0.076	1400	0.001	1200	37.7
4252-4253 68.3	LP5 0.12	1200	0.122	1100	0.89	29.16	0.02	217.20	-0.32	0.072	1400	0.001	1200	37.7
4253-4254 68.3	LP5 0.17	1200	0.176	1100	0.95	29.16	0.02	307.72	-0.97	0.061	1400	0.001	1300	37.7
4254-4255 68.3	LP5 0.20	1400	0.210	1100	0.85	29.11	-0.01	374.72	-0.46	0.051	1400	0.002	1300	37.7
4255-4256 68.3	LP5 0.28	1400	0.300	1300	1.05	138.29	0.06	380.74	15.32	0.041	1400	0.013	1300	37.7
4256-4257 120.8	LP5 0.27	1300	0.294	1200	0.00	112.42	0.01	439.81	9.03	0.010	1300	0.019	1300	37.7
4257-5923 120.8	LP5 0.25	1100	0.282	1200	0.00	119.97	0.02	437.24	-6.64	0.013	1100	0.007	1300	37.7
4258-4259 120.8	LP5 0.24	1100	0.242	1200	0.00	132.34	0.00	413.23	1.01	0.020	1100	0.001	1300	37.7
4259-4B57 120.8	LP5 0.22	1200	0.220	1100	0.00	121.49	-0.02	379.38	0.48	0.025	1100	0.001	1200	37.7

4260-4261 120.8	LP5 0.20	1100	0.198	1200	0.00	138.92	-0.01	330.58	-0.50	0.033	1100	0.001	1400	37.7
4261-4793 120.8	LP5 0.17	1200	0.168	1100	0.00	104.83	-0.02	282.95	0.72	0.041	1100	0.001	1200	37.7
4262-4263 120.8	LP5 0.12	1200	0.120	1100	0.00	75.25	-0.03	203.88	0.24	0.057	1100	0.001	1300	37.7
4263-4264 120.8	LP5 0.06	1200	0.062	1100	0.98	32.19	-0.09	-38.79	-0.87	0.062	1100	0.003	1300	37.7
4293-4294 54.8	LP5 0.07	1100	0.082	1200	2.00	-3.94	-0.03	151.10	0.35	0.044	1200	0.002	1300	37.7
4294-4295 54.8	LP5 0.12	1100	0.140	1200	1.40	-3.94	-0.03	249.35	-1.81	0.036	1200	0.002	1300	37.7
4295-4296 45.1	LP5 0.13	1100	0.144	1200	1.40	-3.84	0.03	292.48	-0.97	0.017	1100	0.000	1400	37.7
4296-4297 45.1	LP5 0.14	1100	0.162	1200	1.40	-3.84	0.03	326.56	-1.18	0.014	1100	0.000	1400	37.7
4297-4298 45.1	LP5 0.14	1100	0.159	1200	0.00	-4.37	0.02	326.68	-0.70	0.004	1400	0.001	1300	37.7
4298-4299 45.1	LP5 0.15	1100	0.156	1200	0.00	-4.37	0.02	323.80	-0.37	0.006	1200	0.001	1300	37.7
4299-4300 45.1	LP5 0.14	1100	0.153	1200	0.00	-5.40	-0.01	312.08	0.79	0.018	1200	0.001	1300	37.7
4300-4301 45.1	LP5 0.12	1100	0.132	1200	0.00	-5.40	-0.01	265.68	0.94	0.021	1200	0.001	1300	37.7
4301-4302 51.5	LP5 0.12	1100	0.130	1200	0.00	-6.78	0.02	210.55	3.69	0.032	1200	0.002	1200	37.7
4302-4303 51.5	LP5 0.06	1100	0.066	1200	0.00	-6.78	0.02	123.21	0.10	0.038	1200	0.002	1200	37.7
4324-4348 59.6	LP5 0.18	1100	0.201	1200	1.20	-201.26	0.25	-272.81	-2.15	0.057	1200	0.001	1200	15.4
4348-TR3X 59.6	LP5 0.21	1100	0.231	1200	0.45	-201.26	0.25	-326.75	-2.59	0.058	1200	0.001	1200	15.4
4382-4383 54.8	LP5 0.03	1400	0.042	1200	0.85	56.60	0.18	49.91	-1.18	0.030	1200	0.004	1400	37.7
4383-4384 54.8	LP5 0.06	1300	0.066	1200	0.85	60.73	0.13	97.77	-0.95	0.028	1200	0.001	1100	37.7

4968-4889	WPD	0.073	BEND	1100	1.25	0.16	-8.39	5.76	0.26	-1.44	0.85	0.85	0.06	1200	0.06	1300
4971-4904	WPD	0.133	TN+BN	1100	1.25	18.25	6.47	2.19	0.21	1.57	0.85	0.85	0.13	1200	0.12	1000
4972-4869	WPD	0.460	TN+BN	1100	1.25	63.92	26.37	3.60	-0.10	9.07	0.85	0.85	0.41	1200	0.27	1000
4973-4845	WPD	0.706	TN+BN	1100	0.00	63.92	-66.68	-15.50	1.53	10.53	0.85	0.85	0.55	1200	0.39	1000
4974-4843	WPD	0.925	TN+BN	1200	1.20	62.96	-88.68	-43.44	-1.54	-10.12	0.85	0.85	0.71	1100	0.53	1000
4975-4846	WPD	0.100	TN+BN	1200	0.75	9.16	-7.09	-5.65	-0.12	-0.98	0.85	0.85	0.06	1100	0.06	1400
4976-4847	WPD	0.080	C<.15	1400	0.75	-0.73	10.73	4.41	0.13	-0.34	0.85	0.85	0.07	1300	0.05	1200
4977-4848	WPD	0.052	C<.15	1400	0.75	-0.64	6.54	3.19	0.09	-0.15	0.85	0.85	0.05	1300	0.03	1200
4978-4849	WPD	0.024	BEND	1200	0.75	0.18	-1.63	-3.98	-0.08	-0.51	0.85	0.85	0.02	1400	0.02	1300
4979-4850	WPD	0.182	TN+BN	1200	0.00	18.61	-13.71	4.05	-0.81	2.86	0.85	0.85	0.18	STRU	0.18	1100
4980-4A15	WPD	0.131	TN+BN	1100	0.00	8.69	-14.64	-4.59	0.11	1.94	0.85	0.85	0.07	1300	0.06	1200
4981-4A18	WPD	0.081	C<.15	1300	1.00	-0.67	13.31	1.18	-0.24	1.19	0.85	0.85	0.07	1400	0.05	1000
4982-4A21	WPD	0.050	C<.15	1300	0.00	-0.49	5.74	4.21	-0.16	0.32	0.85	0.85	0.04	1400	0.02	1000
4983-4A24	WPD	0.021	BEND	1100	0.00	0.14	-2.02	-2.66	0.05	0.57	0.85	0.85	0.02	BLS1	0.02	STRU
4984-4844	WPD	0.281	TN+BN	1100	1.20	19.26	-16.48	24.36	0.93	-2.50	0.85	0.85	0.27	1200	0.26	1000
4A15-4975	WPD	0.095	TN+BN	1100	0.00	8.69	-9.24	-2.24	0.11	1.69	0.85	0.85	0.08	1200	0.05	1300
4A18-4976	WPD	0.081	C<.15	1300	0.00	-0.67	13.31	1.18	-0.24	-1.01	0.85	0.85	0.07	1400	0.05	1000
4A21-4977	WPD	0.046	C<.15	1400	1.05	-0.64	6.58	1.72	0.09	0.16	0.85	0.85	0.05	1300	0.03	1000
4A24-4978	WPD	0.018	BEND	1400	1.05	0.31	2.50	1.11	0.06	-0.04	0.85	0.85	0.02	1300	0.02	BLS1
4A27-4A91	WPD	0.104	TN+BN	1100	0.75	8.95	-10.65	-2.33	0.00	-2.97	0.85	0.85	0.07	1300	0.07	1200
4A28-4A92	WPD	0.080	C<.15	1300	0.00	-0.44	10.18	3.75	-0.24	-0.32	0.85	0.85	0.06	1400	0.04	1100
4A29-4A93	WPD	0.058	C<.15	1300	0.00	-0.11	7.05	3.75	-0.20	0.37	0.85	0.85	0.04	1400	0.03	1200
4A30-4A94	WPD	0.027	TN+BN	1200	0.00	0.44	1.17	4.87	-0.25	-0.32	0.85	0.85	0.02	1300	0.02	1400
4A31-4A95	WPD	0.131	TN+BN	1100	0.00	19.25	4.03	-3.75	-0.05	-0.69	0.85	0.85	0.13	1200	0.12	1000
4A32-4A90	WPD	0.479	TN+BN	1200	0.00	62.96	31.87	3.84	0.08	-8.39	0.85	0.85	0.42	1100	0.28	1000
4A38-4905	WPD	0.483	TN+BN	1200	0.35	62.96	-30.27	7.74	0.08	-8.99	0.85	0.85	0.45	1100	0.29	1000
4A39-4842	WPD	0.160	TN+BN	1200	0.75	19.11	-6.87	-7.84	-0.10	-1.87	0.85	0.85	0.15	1100	0.14	1000

4A90-4A38	WPD	0.443	TN+BN	1200	1.30	62.96	-20.97	7.17	0.08	-8.91	0.85	0.85	0.43	1100	0.27	1000
4A91-4833	WPD	0.164	TN+BN	1100	1.30	8.95	-22.82	-2.36	0.00	-3.34	0.85	0.85	0.16	1200	0.09	1000
4A92-4834	WPD	0.078	C<.15	1200	1.30	-0.31	-6.20	-9.53	-0.34	-1.42	0.85	0.85	0.07	1300	0.06	1100
4A93-4835	WPD	0.062	C<.15	1300	1.30	-0.11	7.05	-4.72	-0.20	-0.44	0.85	0.85	0.04	1400	0.04	1200
4A94-4836	WPD	0.042	BEND	1200	1.30	0.44	-3.02	-6.10	-0.25	-1.11	0.85	0.85	0.04	BLS1	0.04	STRU
4A95-4832	WPD	0.130	TN+BN	1200	1.12	19.11	-1.99	-5.81	-0.10	-1.56	0.85	0.85	0.13	1100	0.12	1000
4A96-5733	WPD	0.123	TN+BN	1200	0.00	2.13	0.83	28.07	-1.80	0.09	0.85	0.85	0.11	1100	0.07	STRU
4A98-4865	WPD	0.158	TN+BN	1200	1.00	9.18	0.01	29.32	1.80	-0.66	0.85	0.85	0.12	1100	0.08	1000
4A99-4867	WPD	0.147	C<.15	1100	1.00	-0.18	0.00	37.80	2.16	-0.25	0.85	0.85	0.07	1200	0.06	1000
4B16-4895	WPD	0.022	TN+BN	1300	0.37	0.33	-0.34	-4.68	-0.59	0.06	0.85	0.85	0.02	1200	0.01	1000
4B17-4B18	WPD	0.039	TN+BN	1200	1.25	2.13	-1.09	4.89	0.37	-0.56	0.85	0.85	0.03	STRU	0.03	BLS1
4B18-4872	WPD	0.120	BEND	1100	6.00	1.42	-6.72	5.09	0.08	-0.98	0.85	0.85	0.12	STRU	0.11	BLS1
4B19-4872	WPD	0.041	C<.15	1100	0.00	0.00	-5.32	4.51	-0.77	2.32	0.85	0.85	0.04	1200	0.03	STRU
4B19-4B21	WPD	0.153	BEND	1300	0.00	1.78	-8.22	7.93	-0.13	1.11	0.85	0.85	0.15	BLS1	0.15	STRU
4B20-4B18	WPD	0.097	C<.15	1100	0.00	-0.05	-2.86	-21.70	0.96	1.25	0.85	0.85	0.10	1200	0.09	1000
4B20-4B19	WPD	0.175	BEND	1100	6.00	2.02	-9.26	9.75	0.17	-1.17	0.85	0.85	0.17	1200	0.16	STRU
4B21-4A96	WPD	0.118	C<.15	1200	0.00	-0.70	-1.23	27.72	-0.34	0.60	0.85	0.85	0.11	1100	0.10	1000
4B22-4897	WPD	0.074	C<.15	1200	0.00	-0.12	-4.54	12.19	-0.42	-0.07	0.85	0.85	0.07	STRU	0.07	1100
4E14-5000	WPD	0.073	C<.15	1100	0.00	-0.36	0.21	-17.52	1.09	0.24	0.85	0.85	0.07	1200	0.04	1000
4E15-4902	WPD	0.065	C<.15	1100	0.48	-0.32	0.01	16.23	0.84	-0.27	0.85	0.85	0.06	1200	0.04	1000
4E16-4E17	WPD	0.111	C<.15	1200	1.22	-8.59	1.88	9.52	0.31	-0.59	0.85	0.85	0.08	1100	0.08	1000
4E17-5312	WPD	0.114	C<.15	1200	0.23	-8.59	1.46	11.02	0.31	-0.64	0.85	0.85	0.08	1100	0.07	1400
5000-4E15	WPD	0.033	C<.15	1100	0.52	-0.32	0.34	7.72	0.84	-0.18	0.85	0.85	0.03	1200	0.02	1000
5128-4870	WPD	0.389	TN+BN	1200	0.41	16.51	-0.99	-78.60	-7.68	0.25	0.85	0.85	0.31	1100	0.22	1000
5305-4868	WPD	0.100	TN+BN	1100	1.00	0.12	-0.01	25.47	1.30	1.39	0.85	0.85	0.08	1200	0.05	1000
5312-4885	WPD	0.110	C<.15	1200	1.55	-7.39	-3.27	-9.50	-0.26	-1.01	0.85	0.85	0.11	1100	0.09	1000
5733-4873	WPD	0.187	TN+BN	1200	1.02	2.06	-0.01	-45.60	-1.71	-0.38	0.85	0.85	0.17	1100	0.13	1000

5798-4870	WPD	0.033	C<.15	1400	0.94	-0.02	-0.42	-6.56	-0.33	-0.26	0.85	0.85	0.03	1100	0.02	1000
4807-4808	WS2	0.005	TN+BN	1400	0.00	0.00	0.03	-0.29	0.01	0.21	0.85	0.85	0.00	1300	0.00	1000
4807-4809	WS2	0.007	SHEAR	1200	0.30	0.01	-0.92	0.28	0.00	-0.99	0.85	0.85	0.01	1000	0.01	1100
4808-4810	WS2	0.007	SHEAR	1400	0.30	-0.01	-1.00	0.25	0.00	-1.03	0.85	0.85	0.01	1000	0.01	1100
4809-S035	WS2	0.029	TN+BN	1400	1.22	0.01	-5.89	0.05	-0.01	-1.39	0.85	0.85	0.03	1100	0.03	1000
4810-4E09	WS2	0.032	C<.15	1300	1.22	-0.01	-6.34	0.51	0.01	-1.50	0.85	0.85	0.03	1200	0.03	1000
4811-4813	WS2	0.063	C<.15	1400	0.70	0.00	-14.01	-0.08	0.00	-2.03	0.85	0.85	0.06	1100	0.06	1000
4812-4814	WS2	0.068	TN+BN	1400	0.70	0.00	-15.06	-0.12	0.00	-2.14	0.85	0.85	0.07	1100	0.07	1000
4813-4B01	WS2	0.110	C<.15	1200	1.22	0.00	-23.32	1.24	0.04	-2.46	0.85	0.85	0.11	1300	0.11	1000
4814-4B02	WS2	0.117	TN+BN	1200	1.22	0.00	-24.88	-1.33	-0.04	-2.62	0.85	0.85	0.12	1300	0.12	1000
4822-4901	WS2	0.260	TN+BN	1300	0.00	0.94	-47.08	12.48	-0.49	7.56	0.85	0.85	0.26	1200	0.25	1000
4901-4B22	WS2	0.087	TN+BN	1300	0.00	0.91	-16.46	2.64	-0.42	4.29	0.85	0.85	0.09	1200	0.09	1000
4B01-4B03	WS2	0.125	C<.15	1200	0.31	0.00	-25.98	2.46	0.16	-2.67	0.85	0.85	0.12	1300	0.12	1000
4B02-4B04	WS2	0.132	TN+BN	1200	0.31	0.00	-27.74	-2.56	-0.16	-2.82	0.85	0.85	0.13	1300	0.13	1000
4B03-4B04	WS2	0.030	TN+BN	1200	0.00	0.23	-3.29	-2.81	0.07	0.84	0.85	0.85	0.03	1300	0.03	1000
4B03-4B07	WS2	0.221	TN+BN	1200	1.00	0.05	-40.20	-5.82	-0.22	-4.52	0.85	0.85	0.22	1300	0.22	1000
4B04-4823	WS2	0.172	C<.15	1200	0.83	-0.03	-34.53	4.40	0.36	-2.59	0.85	0.85	0.17	1300	0.17	1000
4B05-4B03	WS2	0.070	TN+BN	1200	1.70	0.06	-2.97	-5.69	-0.06	-0.78	0.85	0.85	0.07	1100	0.07	1000
4B05-4B06	WS2	0.016	C<.15	1200	0.00	-0.03	-0.28	3.28	-0.14	0.27	0.85	0.85	0.02	1300	0.02	1000
4B07-4822	WS2	0.272	TN+BN	1200	0.55	0.03	-48.91	-8.20	-0.36	-4.93	0.85	0.85	0.27	1300	0.26	1000
4E09-4812	WS2	0.048	TN+BN	1400	0.70	0.00	-10.34	-0.12	-0.02	-1.82	0.85	0.85	0.05	1100	0.05	1000
S035-4811	WS2	0.044	C<.15	1400	0.70	0.00	-9.58	-0.09	0.02	-1.71	0.85	0.85	0.04	1100	0.04	1000

D2- Detailed Member Review and Redesign Report (for Member 4361-TR7X)

Detailed review report of member 4361 - TR7X

[illegible]Units: Length - (cm) Force - (kN) Stress - (N/mm²)

Design Code - AISC 9th

***** Member Infomation *****

Group	LP9
Section Name	762B173
Total Length	1.05 (m)
Location	1.05 (m)
Segment	1 of 1
LC Option	Single
Critical LC	1300
AMOD	1.00

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***** Basic Properties *****
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Section Type		Wide Flange	
Flange Width		26.67	
Flange Thickness		2.16	
Depth		76.20	
Web Thickness		1.43	
Fillet Radius		1.65	
Elastic Modulus		205.00	1000 (N/mm2)
Shear Modulus		80.00	1000 (N/mm2)
Yield Strength		345.01	(N/mm2)
Axial Area	A	220.50	
Mom. of Inertia	Iy	2.1E+005	
Mom. of Inertia	Iz	6.8E+003	
Shear Area Y		76.81	
Shear Area Z		108.97	
Tors. Constant	J	2.7E+002	

***** Member's Properties *****

Slenderness Ratio	$(KL/r)_y$	3.44
Slenderness Ratio	$(KL/r)_z$	18.84
Radius of Gyration	r_y	30.50
Radius of Gyration	r_z	5.57

Eff. Length Factor	Ky	1.00
Eff. Length Factor	Kz	1.00
Overall Buck. Length	Ly	1.05 (m)
Overall Buck. Length	Lz	1.05 (m)
	Final (K*L)y	1.05 (m)
	Final (K*L)z	1.05 (m)

- Secondary Properties *****

Flange W-T Ratio	b/tf	6.17
Web W-T Ratio	h/tw	50.27
Depth-Thick Ratio	d/tw	53.29
Section Class	Flange	Compact
Section Class	Web	Compact
Unsupported Length	Lb	5.64 (m)
Smaller Limit of (F1-2)	Lc	2.87 (m)
Bending Coefficient	Cb	1.00
Reduction Factor (A-B5)	QS	1.00
Reduction Factor	Cmy	0.85
Reduction Factor	Cmz	0.85

 ***** End Forces and Moments ((kN), (kN-m)) *****

Tor. Moment	Mx	-0.1487
Bending Moment	My	-773.3828
Bending Moment	Mz	-5.1181
Axial force	fx	68.3959
Shear force	fy	-8.4207
Shear force	fz	-590.0806

 ***** Actual Stresses *****

Axial stress	fa	3.1019
Bending Major	fby	-143.6118
Bending Minor	fbz	-9.9693
Shear in Y	fvx	-1.0963
Shear in Z	fvz	-54.1527

--- DUE TO TORSION

Flange warping bending	0.4065
Flange warping shear	0.0523
Web pure tor. shear	0.0000
Flange pure tor. shear	0.0000

 ***** Allowable Stresses *****

--- Basic Allowables

Axial Tension	Ft	207.0001	(D1)
Shear	Fvz	138.0001	(F4-1)
Axial Compression	Fa	196.2615	(E2-1,2)
Bending about Y	-Fby	151.5099	(F1-1,3~8;G2-1)
	+Fby	0.0000	
Bending about Z	-Fbz	258.7501	(F2-1~3)
	+Fbz	0.0000	
Flange Shear	Fvy	138.0022	
Euler Buckling Y	Fey	89094.5000	(E2-2)
Euler Buckling Z	Fez	2972.7549	

--- Allowable Stresses with Hydrostatic Pressure

Axial	207.0001
Major Axis Bending	151.5099
Minor Axis Bending	258.7501
Shear in Local Y	138.0001
Shear in Local Z	138.0001
Euler Buckling	2972.7549

 ***** Unity Ratios *****

Critical Unity Ratio	0.9880	(Chapter F)	Bending
Combined Unity Ratio	0.9880	(H1-1~3;H2)	
Axial Component	0.0000		
Bending Major Y-Y	0.9479		
Bending Minor Z-Z	0.0401		
Shear in Y	0.0083		
Shear in Z	0.3924		
Euler Buckling Y-Y	0.0000		
Euler Buckling Z-Z	0.0000		

E-2:Weight Control Report (WCR) for NFQ14 Topside

NFXP - WCR SUMMARY NFQ14 Lower Deck - Electrical Support Weight

Item Description				Weight (MT)			CoG		
Module Ref.	Displ.	Tag No.	Item Name	Base (MT)	Allow. (%)	Factored (MT)	item x (m)	item y (m)	item z (m)
LD	EL	LD-EL-1001	LD Patch A - Lighting with Supports	0.31	5	0.33	106.85	103.68	21.04
LD	EL	LD-EL-2001	LD Patch B - Lighting with Supports	1.25	5	1.31	108.43	123.83	21.99
LD	EL	LD-EL-3001	LD Patch C - Lighting with Supports	0.92	5	0.97	106.75	138.21	21.87
LD	EL	LD-EL-4001	LD Patch D - Lighting with Supports	0.77	5	0.81	119.5	117.96	21.25
LD	EL	LD-EL-5001	LD Patch E - Lighting with Supports	0.99	5	1.04	98.04	121.95	22.46
WD	EL	WD-EL-1001	WD Patch A - Lighting with Supports	0.87	5	0.91	111.83	107.6	22.04
WD	EL	WD-EL-2001	WD Patch B - Lighting with Supports	0.04	5	0.04	108.67	115.2	21.45
WD	EL	WD-EL-4001	WD Patch D - Lighting with Supports	0.01	5	0.01	117.21	105.1	21.75
LD	EL	LD-EL-2002	LD - Misc Bults (Small EQUI, Equip Supp, MCTs, Penetrations)	0.28	5	0.29	110.65	118.49	21.29
LD	EL	LD-EL-1003	LD Patch A - Cable Trays	0.29	5	0.31	111.37	107.31	17.96
LD	EL	LD-EL-2003	LD Patch B - Cable Trays	0.74	5	0.77	108.45	124.1	17.73
LD	EL	LD-EL-3003	LD Patch C - Cable Trays	1.38	5	1.45	109.2	135.47	18.03
LD	EL	LD-EL-4003	LD Patch D - Cable Trays	0.86	5	0.9	119.14	133	19.24
LD	EL	LD-EL-5003	LD Patch E - Cable Trays	0.5	5	0.52	98.11	117.34	18.17
WD	EL	WD-EL-1003	WD Patch A - Cable Trays	0.51	5	0.54	108.34	107.72	21.45
WD	EL	WD-EL-2003	WD Patch B - Cable Trays	0.01	5	0.01	114.15	115.36	21.63
WD	EL	WD-EL-4003	WD Patch D - Cable Trays	0.03	5	0.03	117.35	107.78	21.91
WD	EL	WD-EL-5003	WD Patch E - Cable Trays	0.02	5	0.02	99.15	114.1	22.38
LD	EL	LD-EL-1004	LD Patch A - Cable Tray Supports	0.16	5	0.16	114.11	110.71	18.08
LD	EL	LD-EL-2004	LD Patch B - Cable Tray Supports	1.34	5	1.41	108.98	123.42	17.61
LD	EL	LD-EL-3004	LD Patch C - Cable Tray Supports	1.12	5	1.17	108.73	136.99	17.75
LD	EL	LD-EL-4004	LD Patch D - Cable Tray Supports	0.400	5.000	0.420	118.360	136.780	17.330
LD	EL	LD-EL-5004	LD Patch E - Cable Tray Supports	0.5	5	0.53	98.62	119.92	17.91
WD	EL	WD-EL-1004	WD Patch A - Cable Tray Supports	0.07	5	0.07	100.88	108.89	21.31
LD	EL	LD-EL-2005	LD - Electrical Cables	6.55	5	6.88	110.34	127.17	18.22
WD	EL	WD-EL-1005	WD - Electrical Cables	0.61	5	0.64	108.55	107.85	21.6
LD	EL	LD-EL-9002	Hilti Supplied Oglean Support (Elec, Inst, Hvac, Arch)	2	6	2.12	108.5	121.4	18.8
LD	EL	LD-EL-9003	Electrical Site run	2	-	2	108.5	122.5	18.8
Total				24.530	4.607	25.660	109.218	124.257	19.222

E-1 - Detailed Component Weight and CoG Data

Name	PART NAME	MATERIAL	WEIGHT_NET (t)	CenterOfGravityX (mm)	CenterOfGravityY (mm)	CenterOfGravityZ (mm)	Product Name
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02870097	-2277.529813	16800	18620.9846	BEAM
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00647623	26345.00013	5589.000525	18816.5	CUT_OUT
RUNGS	LADDER (3427)	TYPE [F1T]	0.0012323	25740	7900	20622	RUNGS
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00046473	-2794.599998	15300	18405.15	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00046473	-2705.400002	15300	18405.15	STIFFENER PLATE
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	12490.00205	22946.88673	18854.03955	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	31062.12049	21000	21854	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	31009.00205	21053.12092	21854	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	12490.00205	23053.12092	18854.03955	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	30955.88631	21000	21854	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	31009.00205	20946.88673	21854	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	12436.88631	23000	18854.03955	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000104209	12543.12049	23000	18854.03955	STIFF. PL
PIPE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00605336	6800.765802	3888.900021	19394.00287	PIPE
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.00048576	-2097.75	25500	18128.60001	STIFF_PL
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.00048576	-2.25	25500	18128.60001	STIFF_PL
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.00048576	-2.25	25500	18220.60001	STIFF_PL
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.00048576	-2097.75	25500	18220.60001	STIFF_PL
STIFF PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	28817	21977.875	21669.8	STIFF PL
STIFF PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	31246	21977.875	21669.8	STIFF PL
PIPE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.0042085	7550.850022	3888.900021	19329.425	PIPE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00035891	30100.4	28171.6	18587.5	CAP_PLATE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00035891	28928.4	27521.6	18587.5	CAP_PLATE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00035891	28928.4	24991.6	18587.5	CAP_PLATE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00035891	32515.4	28171.6	18587.5	CAP_PLATE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00035891	29228.4	28171.6	18587.5	CAP_PLATE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00035891	28928.4	26256.6	18587.5	CAP_PLATE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00035891	31100.4	28171.6	18587.5	CAP_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	3662.124999	7435	18669.8	STIFF_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	3662.124999	8385	18669.8	STIFF_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	3617.875007	8385	18669.8	STIFF_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	3617.875007	7435	18669.8	STIFF_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	5537.875001	8385	18669.8	STIFF_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	5582.124993	8385	18669.8	STIFF_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	5537.875001	7435	18669.8	STIFF_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.000572459	5582.124993	7435	18669.8	STIFF_PLATE
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	30802.87466	21127	18669.8	STIFF. PL
STIFF. PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	30847.12466	21127	18669.8	STIFF. PL
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.0058287	17565.83213	12702.83414	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.0058287	22211.99953	5999.999889	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.0058287	17554.99953	16120.99962	18816.49924	CUT_OUT
SLEEVE	MISC STRUCTURES (3599)	TYPE [F1T]	0.001077951	17850.01177	16247.97592	18858	SLEEVE
SLEEVE	MISC STRUCTURES (3599)	TYPE [F1T]	0.001077951	17878.00511	12871.99663	18858	SLEEVE
SLEEVE	MISC STRUCTURES (3599)	TYPE [F1T]	0.001077951	16319.95332	19968	18882	SLEEVE
SLEEVE	MISC STRUCTURES (3599)	TYPE [F1T]	0.001077951	38785.9314	21025.32103	18882	SLEEVE
SLEEVE	MISC STRUCTURES (3599)	TYPE [F1T]	0.001077951	17847.8878	14844.98857	18858	SLEEVE
SLEEVE	MISC STRUCTURES (3599)	TYPE [F1T]	0.001077951	17847.02432	18264.98778	18858	SLEEVE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.00416422	30100.97217	6289.297829	18369.45062	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.00416422	27500.97217	6289.297829	18369.45062	ANGLE

FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7140	10635	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	14500	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	4650	10635	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	4650	22335	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	22335	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	4650	12235	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7140	10635	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7140	12235	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	12235	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	14500	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	18750	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	14500	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	18750	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	22335	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	4650	12235	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	4650	22335	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	4650	10635	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7140	12235	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	12235	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	12235	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	14500	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	22335	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	22335	22094	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	18750	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	7650	12235	21845.6	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00741825	2050.039199	18750	21845.6	FLAGE PL
STIFF PL.	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00507503	26418.87012	23084.80955	18239.32637	STIFF PL.
STIFF PL.	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00507503	21816.13193	6084.809551	18239.32637	STIFF PL.
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	8065.751523	21410.01998	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7200.999731	18078.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6403.999193	16436.87496	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	25777.875	21300.00014	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6647.135953	19826.00018	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	27477.81286	7500.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	8065.751523	7594.186906	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	3617.875007	9337.999731	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	32122.125	20656.99986	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	24932.80202	21363.91924	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6602.875001	19450.50112	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	38164.9062	7517.473579	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1002.84903	15327.00166	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7027.875002	6600.000819	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1002.84903	17621.99751	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	5577.886423	17257.00019	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6746.99972	7344.872193	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26672.10846	21745.99986	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	21199.125	4975.004292	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	8072.124999	9433.000269	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	25822.125	5400.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6457.875001	23300	18669.8	STIFFENER PLATE

STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	997.1249993	20431.54916	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	20317.875	4975.004292	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	805.4979453	13389.36097	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	8167.875001	26333.00361	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1047.172598	13411.4857	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	31600.00014	21257.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	40475	12877.875	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	31277.875	7245.00082	18669.8	STIFFENER PLATE
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26227.83591	8500	21669.8	STIFF_PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	40497.125	13900.00936	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	20317.875	4240.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	952.8750007	20877.89027	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	910	25922.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	2752.124999	8594.413373	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	19577.125	5404.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	13722.875	24218.00027	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	25822.125	22400	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	30077.875	4448.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6403.999193	18078.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	25777.875	5110.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	997.1249993	21000.88973	18669.8	STIFFENER PLATE
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26250	9222.124999	21669.8	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	24600	9222.124999	21669.8	STIFF_PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7612.99972	7344.872193	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	22122.125	5525.00082	18669.8	STIFFENER PLATE
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	25477.875	22000	21669.8	STIFF_PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1047.172598	18084.99972	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	2730	25922.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	2752.124999	10749.99973	18669.8	STIFFENER PLATE
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	24600	7602.875001	21669.8	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26272.125	8800	21669.8	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	24577.875	8800	21669.8	STIFF_PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	-337.4994964	18107.12299	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	37077.875	22400	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	13717.125	5399.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	3617.875007	6484.983598	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	5577.886423	16459.00019	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	997.1249993	21636.88579	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6077.875001	7367.000808	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	11022.125	5400.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	27522.125	6942.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	30122.125	8044.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	29077.875	8045.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	32322.125	8044.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	31277.875	8045.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	32322.125	7244.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	31322.125	4447.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26627.875	6943.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26672.05	5109.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26672.10846	7899.99918	18669.8	STIFFENER PLATE

STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	24927.875	7900	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	14672.875	5399.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	15472.125	5399.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	21199.125	4240.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6077.875001	9433.000269	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6747.00798	9455.122192	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7613.00798	9455.122192	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	5582.124993	9337.999731	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	5582.124993	6484.983598	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	422.0096447	10772.13175	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	-337.5000344	13389.36097	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	805.5555846	17457.12603	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1047.172598	17434.99766	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	997.1249993	19796.54941	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	5577.886423	20502.00018	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	5577.886423	19826.00018	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6602.875001	21282.00027	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6602.875001	21958.99973	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	6647.135953	20501.99964	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7200.999731	16436.87496	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	14717.125	24217.99973	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26672.10846	21299.99986	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	27477.81286	21235.00014	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	34122.125	21234.99986	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	31077.875	20657.00014	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	30825.00205	21257.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	29100.00217	6922.124999	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	38114.80084	24483.55462	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7827.506424	7353.649377	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	-877.8750008	4665.999731	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1047.172598	13029.4857	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1047.172598	12295.48773	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1002.84903	16345.00006	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1002.84903	15614.00166	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	-1822.124999	4665.999731	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	27477.81286	6900.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	38100	29672.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	5577.886423	18056.00023	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	26349.99919	5087.875001	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	31599.99986	20634.875	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	28500.00083	7477.875001	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	40497.125	15100	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	38114.80084	21516.44485	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	39122.125	29650	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	37077.875	23599.99918	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7295.158172	24036.35863	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	-1800.000811	3877.875001	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	-900.0008109	3877.875001	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	7027.875002	5400.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	22077.875	5400.00082	18669.8	STIFFENER PLATE

STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	30122.125	7500.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	30122.125	6900.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	29100.00217	7477.875001	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	28500.00083	6922.124999	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	37377.875	6850.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	25822.125	6600.000819	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	24932.80202	7636.079627	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	1820	25922.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	40475	16122.125	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	19532.875	5525.00082	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	25777.875	21746.00014	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	32514.99986	27499.875	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00124406	18039.99953	17857.975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00124406	18039.99953	16002.025	18648.4	STIFFENER PLATE
FLANGE PLATE	PLATE GIRDER (3435)	TYPE [A24]	0.06168334	-1.21E-12	5999.999889	18059.95147	FLANGE PLATE
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	15376.15973	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	13016.15973	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	19672.40973	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	20568.65973	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	16226.15973	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	17076.15973	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	17926.15973	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6150	13771.15973	22024.2324	PFC
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	35077.84858	24559.00784	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	37122.13148	25294.99986	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	36077.86154	26575.00784	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	36122.11852	24558.99986	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	37122.13148	26574.99986	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	38077.88439	27215.00762	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	38077.88439	28781.00015	18669.8	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.000572459	39122.125	28780.99986	18669.8	STIFFENER PLATE
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2693	9912.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	29529	24713.875	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	31223.875	22522	21669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2835	9912.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	31223.875	22380.0001	21669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2835	8562.124999	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2029	4642.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2029	6022.124999	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	28839.125	22522	21669.8	STIFF PL.
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2122.124999	25571	18669.8	STIFF_PL
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	29671	24758.125	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2835	9957.124999	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2171	4687.124999	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2171	4642.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2029	4687.124999	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2171	5977.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2029	5977.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2171	6022.124999	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	31268.125	22522	21669.8	STIFF PL.

STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	31268.125	22380.0001	21669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	28794.875	22522	21669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	28839.125	22380.0001	21669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	28794.875	22380.0001	21669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	29529	24758.125	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	29671	24713.875	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2835	8517.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2693	8517.875001	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2693	8562.124999	18669.8	STIFF PL.
STIFF PL.	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2693	9957.124999	18669.8	STIFF PL.
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2077.875001	25429	18669.8	STIFF_PL
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2122.124999	25429	18669.8	STIFF_PL
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.000572459	-2077.875001	25571	18669.8	STIFF_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.058025947	13745	24115.83688	18665.3857	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.058025947	15550	24115.83688	18665.3857	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.058025947	12850	24115.83688	18665.3857	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.058025947	14695	24115.83688	18665.3857	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.058025947	11902	24115.83688	18665.3857	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05659043	-900.0008109	4944.291425	18667.4888	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05659043	-1800.000811	4944.291425	18667.4888	BEAM
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0014766	39041.28135	16505	21692.94718	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0014766	39041.28135	12145	21692.94718	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0014766	39041.28135	18595	21692.94718	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0014766	39041.28135	13305	21692.94718	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0014766	39041.28135	15345	21692.94718	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0014766	39041.28135	10105	21692.94718	BRACKET_PL
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.01619	33313.00015	19454.99882	18816.5	CUT_OUT
ROLLED_PLATE	DRAIN TROUGHS/GUTTER (3469)	TYPE [F1T]	0.00428787	-550.0019635	9476.99998	18638.5	ROLLED_PLATE
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	35968.72552	12150	18573.3	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	27568.72552	12150	18573.3	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	27568.72552	18600	18573.3	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	33168.72552	18600	18573.3	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	33168.72552	12150	18573.3	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	35968.72552	18600	18573.3	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	30368.72552	18600	18573.3	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01302343	30368.72552	12150	18573.3	PIPE STIFFENER
PLATE	DRAIN TROUGHS/GUTTER (3469)	TYPE [F1T]	0.00156	-549.9064315	9476.99998	18701.00015	PLATE
FLG PL-SUPPORT EQUIP	MISC EQUIPMENT SUPPORT (3470)	TYPE [B21]	0.02453125	12157.33333	19307.33333	18787.5	FLG PL-SUPPORT EQUIP
KICK_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.02183	40727.8	18455	21913	KICK_PLATE
KICK_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.02183	40727.8	9154.999996	21913	KICK_PLATE
KICK_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.02183	40727.8	12255	21913	KICK_PLATE
KICK_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.02183	40727.8	15355	21913	KICK_PLATE
SPACER PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [F1T]	0.00026635	14729.03984	6649.039845	18406.60001	SPACER PL
SPACER PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [F1T]	0.00026635	14750.96016	6670.960155	18406.60001	SPACER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	9293.750003	13946	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	9293.750003	13546	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	8906.249997	15854.00079	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	9293.750003	13146	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	8906.249997	13546	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	8906.249997	13146	18300	STIFFENER PL

STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	8906.249997	13946	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	8906.249997	15054	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	9293.750003	15054	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	8906.249997	15454	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	9293.750003	15454	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.03860139	9293.750003	15853.94818	18300	STIFFENER PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	11037.74961	6600.000819	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	14732.74961	26017	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	10050.32759	21341.77323	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	23115	20902.74961	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	23141.00003	7736.881552	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	22190	20902.74961	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	14732.74961	26597	18648.3	STIFFENER PLATE
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.00054657	21106.46245	21403	18879.45044	STIFF PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.00054657	21106.46245	21807	18879.45044	STIFF PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00025	-337.5000344	15327.85	18499.55	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00025	-337.5000344	15272.15	18499.55	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00025	-337.4994964	16772.15	18499.55	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00025	-337.5000344	16827.85	18499.55	STIFFENER PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	35900	9273.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	27500	16173.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	27500	12826.25	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	35900	12826.25	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	30300	9273.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	33100	12973.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	30300	16026.25	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	33100	16026.25	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	27500	9273.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	35900	12973.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	33100	12826.25	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	30300	12826.25	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	30300	12973.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	27500	12973.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	35900	16026.25	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	35900	16173.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	33100	16173.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	30300	16173.75	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434	27500	16026.25	18085.8	STIFFENER_PLATE
STIFF_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00074852	28835.575	27521.6	18682.5	STIFF_PL
STIFF_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00074852	29228.4	28264.425	18682.5	STIFF_PL
STIFF_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00074852	28835.575	24991.6	18682.5	STIFF_PL
STIFF_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00074852	30100.4	28264.425	18682.5	STIFF_PL
STIFF_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00074852	28835.575	26256.6	18682.5	STIFF_PL
STIFF_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00074852	32515.4	28264.425	18682.5	STIFF_PL
STIFF_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00074852	31100.4	28264.425	18682.5	STIFF_PL
BTM_RING PLATE	EXTERNAL RING STIFFENER (3413)	TYPE [A3X]	1.27037664	8538.640158	22396.62431	17824.9631	BTM_RING PLATE
BOT_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.00550481	21177	12640	18502.60001	BOT_FLG_INSERT_PL
CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	24605	21819.17005	18977	CAP_PL
CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	24605	21311.17005	18977	CAP_PL
CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	25755	22648.82995	21967	CAP_PL

CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	24605	21796.82995	18977	CAP_PL
CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	24605	21288.82995	18977	CAP_PL
CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	25755	22671.17005	21967	CAP_PL
CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	25755	22140.82995	21967	CAP_PL
CAP_PL	LADDER (3427)	TYPE [F1T]	0.00002515	25755	22163.17005	21967	CAP_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.026918	6112.5	17256.99996	18669.8	BEAM
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00275563	21177	6086.249707	18207.3	STIFFENER_PLATE
STIFFENER_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01483297	39173.8	9200	18300	STIFFENER_PL
STIFFENER_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01483297	39173.8	19800	18300	STIFFENER_PL
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.02331456	11925.00004	23258.99999	18816.5	CUT_OUT
SHIM PLATE	HANDRAIL & SOCKET (3425)	TYPE [B2T]	0.0011775	28993.05	26256.6	18906	SHIM PLATE
SHIM PLATE	HANDRAIL & SOCKET (3425)	TYPE [B2T]	0.0011775	30100.4	28106.95	18906	SHIM PLATE
SHIM PLATE	HANDRAIL & SOCKET (3425)	TYPE [B2T]	0.0011775	29228.4	28106.95	18906	SHIM PLATE
SHIM PLATE	HANDRAIL & SOCKET (3425)	TYPE [B2T]	0.0011775	32515.4	28106.95	18906	SHIM PLATE
SHIM PLATE	HANDRAIL & SOCKET (3425)	TYPE [B2T]	0.0011775	31100.4	28106.95	18906	SHIM PLATE
SHIM PLATE	HANDRAIL & SOCKET (3425)	TYPE [B2T]	0.0011775	28993.05	27521.6	18906	SHIM PLATE
SHIM PLATE	HANDRAIL & SOCKET (3425)	TYPE [B2T]	0.0011775	28993.05	24991.6	18906	SHIM PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.0231679	20758.5	18102	18670.27255	BEAM
PIPE	DRAIN TROUGHS/GUTTER (3469)	TYPE [F2T]	0.006202251	-550.0019635	9476.99998	18515.5	PIPE
WING_PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F2T]	0.0093992	21725	23358.73553	18795	WING_PL
ROUND_BAR	DRAIN TROUGHS/GUTTER (3469)	TYPE [C1T]	0.0000723	-550.0019635	9477	18729.77914	ROUND_BAR
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02649899	4145	9338.000001	18669.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02649899	4145	6484.983598	18669.8	BEAM
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0012352	39137.75	4450	21648.3	STIFF_PL
BTM_RING PLATE	EXTERNAL RING STIFFENER (3413)	TYPE [A24]	0.46027659	38560.26486	6513.455634	17814.99659	BTM_RING PLATE
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00104485	39041.50091	13930	21718.36266	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00104485	39041.50091	11095	21718.36266	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00104485	39041.50091	15020	21718.36266	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00104485	39041.50091	17545	21718.36266	BRACKET_PL
BRACKET_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00104485	35841.50091	13305	21718.36266	BRACKET_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	24752.03345	22626.16544	18310.00005	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	28346.75996	20168.82663	18259.36613	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	24695.86015	22541.90549	18310.00005	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	28346.75996	20168.82663	18360.63374	CAP_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	33100	23044.6	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	40744.6	21000	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	27455.4	8500	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	40700	23044.6	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	30300	23044.6	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	34520	20955.4	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	35900	21044.6	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	40744.6	8500	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	39900	21044.6	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	39900	8455.400002	21573.3	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00216909	40744.6	14500	21573.3	STIFF_PL
BENT PLATE	COAMING (3485)	TYPE [C1T]	0.00996166	24017.42206	11758.00042	18821.08022	BENT PLATE
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	35944.6	19850	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	35944.6	16100	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	30344.6	22000	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33144.6	19850	21450.24999	STIFF_PL

STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	30255.4	7625	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33055.4	22000	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27455.4	16100	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	30255.4	22000	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27544.6	19850	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	35855.4	16100	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	35855.4	12900	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27455.4	12900	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33144.6	22000	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27544.6	16100	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	30344.6	7625	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33055.4	7625	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33144.6	7625	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27544.6	7625	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27455.4	7625	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27455.4	9200	21449.45001	STIFF_PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	38100	28044.6	18449.45001	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	38100	27955.4	18449.45001	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	37100	28044.6	18449.45001	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	37100	27955.4	18449.45001	STIFFENER PLATE
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33055.4	12900	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27544.6	22000	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27455.4	22000	21449.45001	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27455.4	19850	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	27544.6	12900	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33144.6	12900	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33144.6	16100	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33055.4	16100	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	33055.4	19850	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	35855.4	19850	21450.24999	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00091375	35944.6	12900	21450.24999	STIFF_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.024367908	7097.08935	17256.99996	18678.85826	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.024367908	7097.08935	21282.00027	18678.85826	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.024367908	7097.08935	21959	18678.85826	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.024367908	7097.08935	19450.50112	18678.85826	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.116151934	2730	16625	18667.4888	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.116151934	5600	16625	18667.4888	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.116151934	6625	16625	18667.4888	BEAM
BRACE_PIPE	BRACE (3202)	TYPE [B35]	1.27033064	26096.37492	23000	20309.73151	BRACE_PIPE
SLEEVE	MISC STRUCTURES (3599)	TYPE [F1T]	0.002247154	11680.56755	23378.90854	18882	SLEEVE
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	29449.92962	23411.1673	18094.633	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	9707.317172	22330.67737	18044.00357	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	29449.92962	23411.1673	17993.367	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	12238.51664	19125.85798	17993.367	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	32758.1985	27298.38324	17993.367	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	32758.1985	27298.38324	18094.633	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	12238.51664	19125.85798	18094.633	CAP_PL
CAP_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00109227	9628.634467	22266.93339	18044.00357	CAP_PL
TOP_FLANGE_PLATE_PG5	PLATE GIRDER (3435)	TYPE [B21]	0.69894437	32935.86843	16100.21059	18787.5	TOP_FLANGE_PLATE_PG5
BOT_FLANGE_PLATE_PG5	PLATE GIRDER (3435)	TYPE [B21]	0.69894437	32935.86843	16100.21059	17812.5	BOT_FLANGE_PLATE_PG5

TOP_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.01029553	21177	13380	17772.125	TOP_FLG_INSERT_PL
TOP_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.01029553	22360	7047	17772.125	TOP_FLG_INSERT_PL
TOP_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.01029553	22360	13380	17772.125	TOP_FLG_INSERT_PL
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00353016	16650.2	9050	18531.64999	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00353016	16650.2	8210	18531.64999	STIFFENER PLATE
CHANNEL	ACCESS PLATFORM (3390)	TYPE [F2T]	0.00695118	17704.38142	16910	19407	CHANNEL
CHANNEL	ACCESS PLATFORM (3390)	TYPE [F2T]	0.00695118	17429.38142	13510	19407	CHANNEL
CHANNEL	ACCESS PLATFORM (3390)	TYPE [F2T]	0.00695118	18164.61858	16910	19407	CHANNEL
CHANNEL	ACCESS PLATFORM (3390)	TYPE [F2T]	0.00695118	17704.38142	13510	19407	CHANNEL
CHANNEL	ACCESS PLATFORM (3390)	TYPE [F2T]	0.00695118	17429.38142	16910	19407	CHANNEL
CHANNEL	ACCESS PLATFORM (3390)	TYPE [F2T]	0.00695118	18164.61858	13510	19407	CHANNEL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	35900	4412.25	21648.3	STIFF_PL
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.0012352	19592.75	8635.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	18452.25	9195.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.0012352	19592.75	7471.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.0012352	17602.75	6573.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	10047.18851	7582.234222	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.0012352	14657.25	11870.00086	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.0012352	18452.25	7471.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.0012352	18452.25	8635.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	19592.75	9195.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.0012352	11892.25	5400.00082	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	19592.75	9938.999137	18648.3	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.0012352	18452.25	9938.999137	18648.3	STIFFENER PLATE
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	12063.95123	5400.00082	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	7516.045349	21282.00027	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	7516.045349	16458.99996	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	7516.045349	17256.99996	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	12961.04877	20470	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	7516.045349	18056.00023	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	13878.99887	22372	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	7516.045349	21959	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	1916.045349	10750	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	1916.045349	16344.99979	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	14828.95123	21506	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	14561.04877	22372	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	13878.99887	21506	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	11466.04877	19928	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	1916.045349	15614.00166	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	14561.04877	21775	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	14561.04877	21506	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	13611.04877	21506	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	13228.94529	21506	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	1916.045349	15327.00166	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	1916.045349	17621.99751	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	1916.045349	20877.89027	18546.31314	HAUNCH BEAM
HAUNCH BEAM	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.002445101	7516.045349	19450.50112	18546.31314	HAUNCH BEAM
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	18039.99953	12602.25	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	2087.746582	15614.00166	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17527.25	20902.99971	18648.4	STIFFENER PLATE

STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	13707.25	22372	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	2087.746582	15327.00166	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17890.99947	22344.75	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	15587.75	16829.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	19592.75	13346.99974	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	21497.25	20112.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	13132.75	20469.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	2087.746582	20877.89027	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	22062.21826	17496.00025	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	14732.74961	22371.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	22062.21826	13380	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	7687.75	21281.99974	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	7687.75	16458.99996	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	18452.25	13870.00025	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	22227.75	19795.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	21535.00574	19758.21825	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	2087.746582	16344.99979	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17891.00015	20865.25	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17527.25	11355.00028	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	23152.75	17495.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	2087.746582	17621.99751	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	21535.00574	20902.74961	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17527.25	22306.99971	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17527.25	19505.99886	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	18527.75	19505.99886	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17527.25	16040.00025	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	22137.75	17269.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	20377.75	16994.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	18452.25	16995.00025	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	18452.25	17270.00025	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	19592.75	17819.99977	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	17527.25	12640	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	19592.75	11354.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	23152.75	12639.91168	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	23152.75	13379.99977	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	22137.75	13869.99976	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.00123605	23152.75	11755.99976	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC SHAPE (3365)	TYPE [C2T]	0.00123605	22062.21826	11756.00028	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	18452.25	13347.00028	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	7687.75	17256.99996	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	7687.75	18055.99974	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	11637.75	19927.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	14732.74961	21774.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	23152.75	16039.99975	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	18452.25	12020.00028	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	19592.75	12019.99974	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	7687.75	21958.99973	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	7687.75	19450.50112	18648.4	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00123605	22227.75	20112.99975	18648.4	STIFFENER PLATE
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.04380955	-157.8753128	22842.12469	18300	PIPE STIFFENER

PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.04380955	157.8753128	23157.87531	18300	PIPE STIFFENER
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.03136	23945.83333	16099.99997	18300	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.03136	23945.83333	12900	18300	STIFFENER PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02847921	22609.93375	8677	18670.51944	BEAM
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00103623	34127.85	3900	18625.5	STIFFENER PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434351	30300	19726.2	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434351	27500	19726.2	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00434351	35900	19726.2	18085.8	STIFFENER_PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00109227	38930.30008	12870.97879	18544.60001	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00109227	38930.30008	16070.97879	18544.60001	STIFFENER PLATE
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.02086	33226.56209	5873.437915	18418.89999	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.02086	32973.43791	23126.56209	18418.90001	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.02086	33226.56209	22873.43791	18418.90001	PIPE STIFFENER
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.02086	32973.43791	6126.562085	18418.89999	PIPE STIFFENER
BEAM	BEAMS - PRIMARY (3342P)	TYPE [B2T]	0.16144758	-1584.512257	17300	18602.1304	BEAM
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00103623	-5900	15272.15	18625.5	STIFFENER PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00103623	-5900	16827.85	18625.5	STIFFENER PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0052468	65.600003	17300	18418.89999	STIFFENER_PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0052468	21177	10315.25	18418.89999	STIFFENER PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0052468	-2750	25265.24249	18418.89999	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0052468	-2750	14434.75	18418.90001	STIFFENER_PLATE
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0052468	22100	10315.25	18418.89999	STIFFENER PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.164648285	20340	12371.8419	18645.0024	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.164648285	18490	12371.8419	18645.0024	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.164648285	17565	12371.8419	18645.0024	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.164648285	23115	12371.8419	18645.0024	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.164648285	19555.00005	12371.8419	18645.0024	BEAM
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	16103.99936	20906.99922	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	30299.9989	18919.999	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	19559.99972	22993.999	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	27499.99705	18919.999	18816.5	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	33100	18919.999	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	16541.00314	18822.99703	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	17564.99571	10843.9983	18816.49924	CUT_OUT
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.00437797	20069.99972	22993.999	18816.49924	CUT_OUT
FLANGE_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03065162	39100	14500	21792.5	FLANGE_PLATE
FLANGE_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03065162	39100	14500	21354.10001	FLANGE_PLATE
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.027784931	3350.001219	20851.7684	22025	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.027784931	3350.001219	20276.76841	22025	PFC
STIFF_PL	DRAIN TROUGHS/GUTTER (3469)	TYPE [F1T]	0.00003354	-494.6991837	9508.927941	18547.64706	STIFF_PL
STIFF_PL	DRAIN TROUGHS/GUTTER (3469)	TYPE [F1T]	0.00003354	-605.3008163	9508.927941	18547.64706	STIFF_PL
STIFF_PL	DRAIN TROUGHS/GUTTER (3469)	TYPE [F1T]	0.00003354	-550.0019635	9413.144118	18547.64706	STIFF_PL
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00005434	32909.85	1019.85	18617.5	CAP_PLATE
CAP_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00005434	33822.85	1019.85	18617.5	CAP_PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032331182	18027.5	11355.00028	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032331182	18027.5	22307	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032331182	18027.5	19506	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032331182	18027.5	20903	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032331182	18027.5	12640	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032331182	18027.5	16040.00025	18648.3	BEAM

BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032331182	18027.5	17820	18648.3	BEAM
SUPPORT_PL-1	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00233907	31100.4	28211.75191	18795	SUPPORT_PL-1
SUPPORT_PL-1	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00233907	30100.4	28211.75191	18795	SUPPORT_PL-1
SUPPORT_PL-1	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00233907	28888.24809	27521.6	18795	SUPPORT_PL-1
SUPPORT_PL-1	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00233907	28888.24809	24991.6	18795	SUPPORT_PL-1
SUPPORT_PL-1	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00233907	28888.24809	26256.6	18795	SUPPORT_PL-1
SUPPORT_PL-1	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00233907	29228.4	28211.75191	18795	SUPPORT_PL-1
SUPPORT_PL-1	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00233907	32515.4	28211.75191	18795	SUPPORT_PL-1
STIFFENER PL.	HATCH COVER (3482)	TYPE [F1T]	0.00114	23968.89321	21352	18545.23762	STIFFENER PL.
STIFFENER PL.	HATCH COVER (3482)	TYPE [F1T]	0.00114	23968.89321	21152	18545.23762	STIFFENER PL.
CAP_PLATE	LADDER (3427)	TYPE [F1T]	0.00002515	14235	18502.10661	18975.00207	CAP_PLATE
CAP_PLATE	LADDER (3427)	TYPE [F1T]	0.00002515	14235	18479.89339	18975.00207	CAP_PLATE
CAP_PLATE	LADDER (3427)	TYPE [F1T]	0.00002515	14235	17971.89339	18975.00207	CAP_PLATE
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	29057.23871	24285.79611	18459.74795	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	34205.12522	-42.7612814	18459.74795	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	34205.12522	42.7612875	18459.74795	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	29142.76128	24285.79611	18459.74795	STIFFENER PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	35857.23873	6666.006147	21459.74795	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	35942.76129	6666.006147	21459.74795	STIFF_PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	32000.19998	27957.23871	18459.74795	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	34199.80002	27957.23871	18459.74795	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	34199.80002	28042.76129	18459.74795	STIFFENER PL
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00126396	32000.19998	28042.76129	18459.74795	STIFFENER PL
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.01621665	32999.68656	27899.675	18425	PIPE STIFFENER
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	30300	18600	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	27500	18600	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	24100	16500	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	35900	12150	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	35900	18600	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	30300	12150	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	33100	12150	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	33100	18600	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.03477734	27500	12150	21573.3	WEB_PLATE
STIFF_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.00526484	5952.64969	25450	18258.69967	STIFF_PL
STIFF_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.00526484	6107.384219	25450	18258.69967	STIFF_PL
BASE PL	NAME PLATE (3487)	TYPE [F1T]	0.000628	23115	10775	18804	BASE PL
BASE PL	NAME PLATE (3487)	TYPE [F1T]	0.000628	30	5525.00082	18804	BASE PL
BASE PL	NAME PLATE (3487)	TYPE [F1T]	0.000628	22100	18300	18812	BASE PL
BASE PL	NAME PLATE (3487)	TYPE [F1T]	0.000628	33948	23069	18804	BASE PL
BASE PL	NAME PLATE (3487)	TYPE [F1T]	0.000628	21177	10249.99957	18804	BASE PL
BASE PL	NAME PLATE (3487)	TYPE [F1T]	0.000628	30300	19150	18804	BASE PL
SOCKET	HANDRAIL & SOCKET (3425)	TYPE [F2T]	0.00507349	29228.4	28171.6	18692.60076	SOCKET
SOCKET	HANDRAIL & SOCKET (3425)	TYPE [F2T]	0.00507349	31100.4	28171.6	18692.60076	SOCKET
SOCKET	HANDRAIL & SOCKET (3425)	TYPE [F2T]	0.00507349	28928.4	26256.6	18692.60076	SOCKET
SOCKET	HANDRAIL & SOCKET (3425)	TYPE [F2T]	0.00507349	28928.4	27521.6	18692.60076	SOCKET
SOCKET	HANDRAIL & SOCKET (3425)	TYPE [F2T]	0.00507349	28928.4	24991.6	18692.60076	SOCKET
SOCKET	HANDRAIL & SOCKET (3425)	TYPE [F2T]	0.00507349	30100.4	28171.6	18692.60076	SOCKET
SOCKET	HANDRAIL & SOCKET (3425)	TYPE [F2T]	0.00507349	32515.4	28171.6	18692.60076	SOCKET
LEG_PLATE	DRAIN TROUGHS/GUTTER (3469)	TYPE [F1T]	0.0003036	-550.0019635	9393.128252	18580	LEG_PLATE
LEG_PLATE	DRAIN TROUGHS/GUTTER (3469)	TYPE [F1T]	0.0003036	-477.3649356	9518.935874	18580	LEG_PLATE

CHANNEL	STAIR (3426)	TYPE [F2T]	0.00412596	34630.25198	22540.97286	21684.15108	CHANNEL
FLANGE_PLATE	PLATE GIRDER (3435)	TYPE [A24]	0.03238823	35900	6001.675026	21197.79999	FLANGE_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.024204173	35900	5810.099203	21514.29247	WEB_PLATE
BEAM	ACCESS PLATFORM (3390)	TYPE [B21]	0.19825774	37018.85081	6000.000053	21493.9	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05647667	2730	4946.189824	18666.62339	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05647667	1025	4946.189824	18666.62339	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05647667	2050.039199	4946.189824	18666.62339	BEAM
BENT_PLATE	COAMING (3485)	TYPE [F1T]	0.00522359	-1715.600444	16531.40261	18819.86892	BENT_PLATE
HAUNCH	ACCESS PLATFORM (3390)	TYPE [C2T]	0.00705	37800	8568.431586	21536	HAUNCH
PIPE	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.010958546	22360	10250	17908.7	PIPE
PIPE	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.010958546	21177	10250	17908.7	PIPE
PIPE	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.030430977	22360	7047	18138.10001	PIPE
PIPE	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.030430977	22360	13380	18138.10001	PIPE
PIPE	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.030430977	21177	13380	18138.10001	PIPE
KICK_PLATE	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.01048525	24082.2	13425.6303	21913	KICK_PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02242385	28500.00083	6464.840426	18661.84743	BEAM
BOT_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.00973351	22344.75	13380	18502.60001	BOT_FLG_INSERT_PL
BOT_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.0086144	21176.99276	13379.99977	18502.60001	BOT_FLG_INSERT_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.0233078	-461.2260858	18084.99972	18661.45634	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02021263	-337.4994964	17691.7333	18665.23678	BEAM
WING_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F2T]	0.00096847	12934.41633	20558.73833	18795	WING_PL
WING_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F2T]	0.00096847	12934.41633	20381.26167	18795	WING_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.0210344	16052.18787	20936	18715.55337	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.03420386	17077.69162	17820	18641.02597	BEAM
CUT_OUT	MISC STRUCTURES (3599)	TYPE [F1T]	0.01142403	23449.00052	5395.040802	18816.5	CUT_OUT
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16102488	21177	12417.70756	18646.92778	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16102488	22100	12417.70756	18646.92778	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.11346783	14695.49343	26670.79124	18640.53799	BEAM
TOP FLANGE PLATE	PLATE GIRDER (3435)	TYPE [B21]	0.04177509	9050	25200	18787.5	TOP FLANGE PLATE
WING_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00117381	-1712.648674	15087.81604	18795	WING_PL
WALL_PL	FLOOR PLATE (3443)	TYPE [C1T]	0.01977909	4650	10800	19966.49999	WALL_PL
INSERT FLG	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.00634	19555.00005	14288.53427	18502.60001	INSERT FLG
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.01443133	31600.00014	20946	18669.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.026918	6112.500837	16458.99996	18669.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.026918	6112.500837	18055.99974	18669.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02668567	18027.5	8305	18667.15795	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.00189672	10999.99953	5919.378023	18538.87869	BEAM
DECK_PLATE	FLOOR PLATE (3443)	TYPE [C1T]	0.11578802	7581.397349	11255.69723	18803.99528	DECK_PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04367541	38149.70763	8357.865139	18666.99579	BEAM
FLANGE_PL	COAMING (3485)	TYPE [C2T]	0.02113464	18490	5203.1789	18276.58422	FLANGE_PL
FLANGE_PL	COAMING (3485)	TYPE [C2T]	0.02113464	18490	6796.826074	18276.58422	FLANGE_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.040285857	-5400	16050	18668.41286	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.040285857	-4560	16050	18668.41286	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.040285857	-3950	16050	18668.41286	BEAM
FLG_PL	MISC STRUCTURES (3599)	TYPE [F2T]	0.00413726	-34.51478293	25513.51542	18794.03055	FLG_PL
BENT_PLATE	COAMING (3485)	TYPE [F1T]	0.00954038	38012.5	9122.107585	21819.9995	BENT_PLATE
BENT_PLATE	COAMING (3485)	TYPE [F1T]	0.00681561	37386.55539	8675	21820.06994	BENT_PLATE
BENT_PLATE	COAMING (3485)	TYPE [F1T]	0.00681561	38638.4446	8675	21820.06994	BENT_PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.0715755	38083.8378	21514.66408	18667.73926	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.06068238	3350	22335	21969.8	BEAM

STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00354626	30300	5944.775	21493.9	STIFF_PL
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00354626	33100	5944.775	21493.9	STIFF_PL
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.00647384	5628.841377	12626.6824	22077.67718	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.00647384	6628.841377	12626.6824	22077.67718	ANGLE
STIFF_PL	MISC STRUCTURES (3599)	TYPE [F1T]	0.003504583	-2100	25265.24249	18299.5	STIFF_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.03787705	8190.34203	26780.43123	18663.32485	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16401298	17565	8136.282731	18645.50208	BEAM
SUPPORT PL.	HATCH COVER (3482)	TYPE [F1T]	0.00625056	23959.73443	21252	18585.8	SUPPORT PL.
STIFFENER PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00146367	12975	20519.80091	18677.34573	STIFFENER PL
WING PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F2T]	0.00184868	14464.84253	21685.1385	18795	WING PL
WING PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F2T]	0.00184868	14464.84253	21864.85	18795	WING PL
GRATING	ACCESS PLATFORM (3390)	TYPE [F1T]	0.15283	17797.0361	13510	19473.06044	GRATING
GRATING	ACCESS PLATFORM (3390)	TYPE [F1T]	0.15283	17797.0361	16910	19473.06044	GRATING
TOP FLANGE PLATE	PLATE GIRDER (3435)	TYPE [B21]	0.05253665	9022.588242	25243.45808	17812.5	TOP FLANGE PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.07787617	29099.99997	21254.81369	18666.99579	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.026060773	-1338.596789	11050	18619.71305	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.026060773	-1338.596789	12550	18619.71305	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02874323	-2278.207218	15300	18620.9846	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05916405	7140	11435.00478	18648.3	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.022129826	21920	13255	18917.58553	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.022129826	21920	16655	18917.58553	BEAM
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00217192	11972.80007	6187.426532	18501.60001	STIFFENER PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04945205	11225.13257	23967.68502	18659.84765	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.08623128	13547.88371	26016.25465	18639.81152	BEAM
BEAM	ACCESS PLATFORM (3390)	TYPE [C2T]	0.0243827	28817	22476.5745	21657.45714	BEAM
BEAM	ACCESS PLATFORM (3390)	TYPE [C2T]	0.026219641	31246	22500.58648	21666.24385	BEAM
BEAM	ACCESS PLATFORM (3390)	TYPE [C2T]	0.02272784	28730	8063.004223	21665.7193	BEAM
GUSSET PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01858297	20606.41034	19073.96477	18043.99997	GUSSET PL
GUSSET PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0440636	16947.48401	22660.30853	18044.00357	GUSSET PL
TOP_FLANGE_PLATE_PG3	PLATE GIRDER (3435)	TYPE [B21]	0.08667436	19939.945	23000	18785.02274	TOP_FLANGE_PLATE_PG3
BOT_FLANGE_PLATE_PG3	PLATE GIRDER (3435)	TYPE [B21]	0.08667436	19939.945	23000	17815.00488	BOT_FLANGE_PLATE_PG3
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.02084568	21000	23148.75	18300	STIFFENER_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.09518919	14100.00025	23000	18300	WEB_PLATE
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.05647519	14099.99701	23128.30752	18300	PIPE STIFFENER
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A24]	0.23131433	19100	23000	18300	WEB_PLATE
PIPE STIFFENER	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A24]	0.19486935	19100	22809.255	18300	PIPE STIFFENER
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.0061544	12524	22901.25	18008.89999	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01616913	12524	23098.8	18300	STIFFENER_PLATE
WEB_PLATE_PG3	PLATE GIRDER (3435)	TYPE [B21]	0.72061469	3459	26262.75	18300	WEB_PLATE_PG3
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01077621	3360.25	27500	18300	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01077621	3557.75	23740	18300	STIFFENER_PLATE
BEAM	ACCESS PLATFORM (3390)	TYPE [C2T]	0.00704172	36389	20809.08894	21715.95195	BEAM
LEG_PIPE	LEG (3101)	TYPE [B21]	1.97818537	39100	23000	21525	LEG_PIPE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.01578175	39948.95642	23000	21573.3	WEB_PLATE
WEB_PLATE	PLATE GIRDER (3435)	TYPE [A22]	0.01578175	38251.04358	23000	21573.3	WEB_PLATE
STIFF_PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.00708487	39100	23718.39924	21573.3	STIFF_PL
BEAM	BEAMS - PRIMARY (3342P)	TYPE [B21]	0.21773512	10642.0387	25201.32598	18454.78629	BEAM
WEB_PLATE	PLATE GIRDER (3435)	TYPE [B2T]	0.25578589	9049.992346	25200	18344.10178	WEB_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00379484	9240.001407	25265.425	18085.8	STIFFENER_PLATE
STIFFENER_PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00691161	9240.001407	25134.575	18300	STIFFENER_PLATE

PIPE_STIFF	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A3X]	0.17671258	27679.24328	5759.795936	21493.9	PIPE_STIFF
BEAM	ACCESS PLATFORM (3390)	TYPE [B21]	0.10756465	25533.5	6000.000053	21493.9	BEAM
BEAM	ACCESS PLATFORM (3390)	TYPE [B21]	0.7678363	32489	6000.000053	21493.9	BEAM
WEB_PLATE_PG8	PLATE GIRDER (3435)	TYPE [B21]	0.18189454	10289.98634	18750	18433.53427	WEB_PLATE_PG8
BOT_FLANGE_PLATE_PG8	PLATE GIRDER (3435)	TYPE [B21]	0.1233078	10812.06482	18750	18053.00013	BOT_FLANGE_PLATE_PG8
FLANGE	PLATE GIRDER (3435)	TYPE [B21]	0.06285914	9706.900002	18750	17934.81136	FLANGE
TOP_FLANGE_PLATE_PG8	PLATE GIRDER (3435)	TYPE [B21]	0.20453271	12800.91734	18750	18785.02274	TOP_FLANGE_PLATE_PG8
BOT_FLANGE_PLATE_PG8	PLATE GIRDER (3435)	TYPE [B21]	0.20453271	12800.91734	18750	18052.97355	BOT_FLANGE_PLATE_PG8
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.11700638	4650	16625	21969.8	BEAM
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.00253	64.10000074	19372.0005	18604.24503	STIFF PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.00253	64.10000074	22062	18604.24503	STIFF PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.09331388	4650	20451.66498	21969.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.0564405	4650	13457.85206	21969.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032748	7140	11435	21969.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.032748	4650	11435	21969.8	BEAM
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.01418169	5076.87729	11146.1	22023.63172	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.02752565	6328.918918	11460.83419	22024.2324	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.01574661	4178.090935	13486.08163	22023.70389	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.02500443	3699.21023	13761.43086	22024.2324	PFC
FLG PL-SUPPORT EQUIP	MISC EQUIPMENT SUPPORT (3470)	TYPE [B21]	0.09371405	10676	19524.51739	18787.5	FLG PL-SUPPORT EQUIP
FLG PL-SUPPORT EQUIP	MISC EQUIPMENT SUPPORT (3470)	TYPE [B21]	0.09371405	10676	17975.48261	18787.5	FLG PL-SUPPORT EQUIP
FLG PL-SUPPORT EQUIP	MISC EQUIPMENT SUPPORT (3470)	TYPE [B21]	0.09371405	12524	19524.51739	18787.5	FLG PL-SUPPORT EQUIP
FLG PL-SUPPORT EQUIP	MISC EQUIPMENT SUPPORT (3470)	TYPE [B21]	0.09371405	12524	17975.48261	18787.5	FLG PL-SUPPORT EQUIP
HOLLOW	MISC SHAPE (3365)	TYPE [B2T]	0.07024637	3155	22335	20319.8	HOLLOW
HOLLOW	MISC SHAPE (3365)	TYPE [B2T]	0.03166021	3890	22335	21182.99999	HOLLOW
PFC	MISC SHAPE (3365)	TYPE [B2T]	0.06033448	5895	10727.82694	20319.8	PFC
HOLLOW	MISC SHAPE (3365)	TYPE [B2T]	0.03351008	4650	11435	21182.99999	HOLLOW
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.07185613	6149.99464	22335	21969.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.106774113	7650	16625	21969.8	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.106774113	2050	16625	21969.8	BEAM
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.044534	3350	21412.60948	22024.11253	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.051489096	6149.99464	21412.59184	22024.2324	PFC
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01044556	4650	12184.7976	18793.99999	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.01554507	4650	10775	18793.99999	FLAGE PL
FLAGE PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00487312	7615.198305	22300.33172	18793.99999	FLAGE PL
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.01187668	5474.756826	14138.69364	22023.33612	PFC
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.01375566	4174.94805	20990.625	22025	PFC
WEB PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [B2T]	0.00934468	7395	12235	21969.8	WEB PL
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.01221376	2401.468863	13393.03114	22025	PFC
BASE_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00075301	39209.99999	12838.97227	18805	BASE_PL
BASE_PL	HANDRAIL & SOCKET (3425)	TYPE [F1T]	0.00075301	39210	16161	18805	BASE_PL
INSERT FLG	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.00818307	-1800.000811	11050	18794.03055	INSERT FLG
FLAT_BAR	FIRE WALL FRAME (3550)	TYPE [B1T]	0.01448325	8567.455793	6593.5	20962.00435	FLAT_BAR
TOP_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A24]	0.05220238	101	25306.48906	18050.24218	TOP_FLG_INSERT_PL
INSERT FLG	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.00823489	-3000.504009	12550.50401	18794.03055	INSERT FLG
INSERT FLG	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [A22]	0.00818307	-1800.000811	12550	18794.03055	INSERT FLG
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.13752882	37100	25507.45499	18668.17936	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.028605408	18680.09843	14420.0025	18919.999	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.028605408	18680.09843	17820	18919.999	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04433281	-1800.000811	24464.26224	18620.52617	BEAM

BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.07952498	1957.56554	25899.92924	18666.07304	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05772771	4550	24110.76995	18664.87578	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.057977238	5599.999982	24115.35023	18664.38794	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.057977238	6480	24115.35023	18664.38794	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.06185646	5600	26352.72562	18666.62339	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.06185184	6480	26352.64727	18666.62339	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02022331	8189.359399	25619.76679	18655.58937	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.01436295	7280.9975	27198.13796	18652.72413	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.07387089	7474.670177	24235.19728	18668.05898	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04666069	37100	28865.40715	18667.81501	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04437448	38100	28824.6617	18667.73926	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.07238391	38093.97487	24494.40497	18668.83359	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.11499319	975	20863.71472	18667.31909	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05077	2747.198912	22335	18640.49108	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.15744478	7649.848331	20791.77624	18638.31755	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05045756	8331.967764	21108.62578	18658.44707	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.07664303	9927.472915	21164.29175	18634.42564	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.09606605	10075.63605	20025.01105	18644.76457	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16265546	13745	20863.01809	18644.28285	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16265682	13095	20863.01809	18644.28285	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16329806	20339.99574	20855.17404	18644.85938	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05644721	7050	4945.643367	18666.62339	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04874178	-977.5021888	3900	18671.14485	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.10796571	10515.58212	3900	18645.50208	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.25633595	15210	3900	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.21600567	21262.95	3900	18648.55859	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04022767	24950.43007	20580.52718	18666.79003	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04540435	25368.52006	4639.846512	18669.35667	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05656298	25800	4942.015559	18666.99579	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.05599344	28500.00083	4932.381942	18666.12366	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.083113822	31099.99902	21350.6501	18671.21245	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.19134259	34100	2993.115982	18624.38366	BEAM
BEAM	MISC SHAPE (3365)	TYPE [C2T]	0.06908523	32691.92451	2497.076035	18684.74999	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.0443551	-900	18023.3685	18619.35584	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.08805707	-900	15901.94482	18622.40514	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.11590241	4650	16629.57643	18667.73926	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.12638406	11600	16163.26785	18643.50614	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.13461886	-900.0008109	12378.61227	18623.07154	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.026442341	-456.5495677	11050	18620.40499	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.026442341	-456.5495677	12550	18620.40499	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.039395387	-2476.424078	11050	18609.5	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.039395387	-2476.424078	12550	18609.5	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04460234	-3000	11799.90023	18618.77715	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.11622213	1025	12373.75173	18667.55063	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.1637876	4650	12373.97334	18646.30964	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.170348442	6849.636175	10635	18645.85179	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.170348442	6849.636175	12235	18645.85179	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04275274	8050.001532	11435.00478	18667.55063	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.08410388	7650	13351.5191	18642.38377	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.03064688	39887.65048	15099.99971	18660.77604	BEAM

BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16320031	10075.00637	12354.70965	18643.69739	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16259857	11000	12346.92005	18644.28285	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16042314	11930	12410.12064	18647.47106	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.16344479	12850	12371.8419	18646.05758	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.15547253	13940.00046	6660	18646.89334	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.10159146	23080.74078	7731.703762	18643.40237	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.08639068	25799.99505	7592.613825	18666.80398	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.08385744	27500	7546.426959	18668.41286	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.08360791	35900	7550.967629	18668.83359	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.130157608	25827.44014	9850	18644.57058	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.130157608	25827.44014	19150	18644.57058	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.122947894	37481.38845	9850	18645.27023	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.122947894	37481.38845	19150	18645.27023	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04853603	29100.00217	4797.997488	18667.15795	BEAM
STIFFENER PLATE	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00217192	11887.19993	6187.426532	18501.60001	STIFFENER PLATE
ANGLE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.01358	7184.751551	17653.72864	18897.01386	ANGLE
ANGLE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.01358	6420.248449	16861.27136	18897.01386	ANGLE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.0168547	17994.98644	23277.97237	18624.77768	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.04851632	11901.73057	26594.31098	18660.27982	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.11864724	22532.72886	20865	18643.29335	BEAM
DECK_PLATE	FLOOR PLATE (3443)	TYPE [C1T]	0.1177372	7823.999738	20875.67365	18803.99528	DECK_PLATE
DECK_PLATE	FLOOR PLATE (3443)	TYPE [C1T]	0.18056651	7823.999738	15492.44022	18803.99528	DECK_PLATE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02050473	5125	19384.96176	18720.98757	BEAM
STIFF_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.01477409	3317.439009	25450	18034.42974	STIFF_PL
STIFF_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.01477409	3600.560991	25450	18034.42974	STIFF_PL
PIPE	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.010092728	165.99119	25450	17918.89999	PIPE
PIPE	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A22]	0.010092728	6030	25450	17918.89999	PIPE
TOP_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A24]	0.03616731	6030	25354.908	18050.24218	TOP_FLG_INSERT_PL
TOP_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [A24]	0.10920525	11930	8630	18940	TOP_PLATE
TOP_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A24]	0.01481067	6030	25449.99993	17790.2	TOP_FLG_INSERT_PL
TOP_FLG_INSERT_PL	MONORAIL & SUPPORT / MECH. HANDLING PADEYE (3348)	TYPE [A24]	0.01481067	165.99119	25449.99993	17790.2	TOP_FLG_INSERT_PL
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02159788	21862.50192	20113	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.03805553	21535.00574	20330.5	18648.3	BEAM
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.01599104	28725	21061	18720.19372	BEAM
ANGLE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.01555516	6802.5	18037.3205	18901.177	ANGLE
BEAM	BEAMS - SECONDARY (3342)	TYPE [C2T]	0.02021263	19947.5	5525.00082	18669.8	BEAM
WEB PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.00740776	12812.69708	21775	18648.24242	WEB PL
SEAL PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [F1T]	0.00419484	28725	21171.975	18644.6558	SEAL PL
FLG PL	MISC BRACKET/GUSSET/STIFFENER (3466)	TYPE [C2T]	0.003053446	12825.5	21640.5	18795	FLG PL
FLG PL-SUPPORT EQUIP	MISC EQUIPMENT SUPPORT (3470)	TYPE [B21]	0.02453125	11042.66667	18192.65916	18787.5	FLG PL-SUPPORT EQUIP
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [B2T]	0.00775637	12604.90367	19674	18521.10114	STIFF PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [B2T]	0.00775637	10595	19674	18521.10114	STIFF PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [B2T]	0.00775637	12604.90367	17826.00249	18521.10114	STIFF PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [B2T]	0.00775637	10595	17826.00249	18521.10114	STIFF PL
BASE PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [A24]	0.24401781	11600	19355.03224	18817.58603	BASE PL
BASE PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [A24]	0.24401781	11600	18145	18817.58603	BASE PL
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.054736299	20620	13870.00025	18919.999	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.054736299	20620	17270.00025	18919.999	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.033017698	18040	13530	18918.3664	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.033017698	18040	16930	18918.3664	BEAM

BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.080075345	19980.04335	12640	18919.999	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.080075345	19980.04335	16040.00025	18919.999	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.087742922	19518	20903	18918.23501	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.087742922	19518	22307	18918.23501	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.045375086	17891.00015	21617.475	18919.42821	BEAM
BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.045375086	21145.0386	21617.475	18919.42821	BEAM
WEB PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [B2T]	0.03433025	-2750	23740	18570.00863	WEB PL
FLG INSERT PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [A24]	0.12743959	-2456.067907	17300	18782.66103	FLG INSERT PL
WEB PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [B2T]	0.03936995	-2750	17234.39549	18570.47615	WEB PL
WEB PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [B2T]	0.03915	-2220.201521	17300	18570.00863	WEB PL
FLG INSERT PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.00108	-209.4500041	17440	18795	FLG INSERT PL
WEN PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.00196	-175.0778975	17435	18737.92884	WEN PL
WEB_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [A22]	0.0257166	11930	8630	18865	WEB_PLATE
STIFF_PLATE	MISC EQUIPMENT SUPPORT (3470)	TYPE [A22]	0.00749541	16029.12975	9650.000063	18532.3207	STIFF_PLATE
T-BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [F2T]	0.00562	5862.5	20501.99964	18912.39547	T-BEAM
ANGLE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.00579	5733.806492	20164	18925	ANGLE
T-BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [F2T]	0.01631845	6802.5	17257.5	18919.87259	T-BEAM
ANGLE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.01555516	6802.5	16477.6795	18901.177	ANGLE
ANGLE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.013561821	6420.175504	17653.87923	18896.95583	ANGLE
ANGLE	MISC EQUIPMENT SUPPORT (3470)	TYPE [F1T]	0.013561821	7184.824496	16861.12077	18896.95583	ANGLE
T-BEAM	MISC EQUIPMENT SUPPORT (3470)	TYPE [F2T]	0.011503	6936.885227	21959	18913	T-BEAM
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F2T]	0.001009816	22100	23339.70817	18729.03125	STIFF PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F2T]	0.00829411	21350	23153.36896	18611.12809	STIFF PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [F2T]	0.00605726	21350	22889.16033	18603.8501	STIFF PL
ANGLE	HATCH COVER (3482)	TYPE [F1T]	0.00565	23180.19985	22112	18745.42401	ANGLE
CLOSURE PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.01066426	21143.75	21823.5	18795	CLOSURE PL
STIFF PL	MISC EQUIPMENT SUPPORT (3470)	TYPE [C2T]	0.00385078	21144.08931	21403	18665.45369	STIFF PL
STIFFENER PL.	HATCH COVER (3482)	TYPE [F1T]	0.00205249	24001.2	21248	18680.4	STIFFENER PL.
STIFFENER PL.	HATCH COVER (3482)	TYPE [F1T]	0.00081	23109	22300	18680.4	STIFFENER PL.
STIFFENER PL.	HATCH COVER (3482)	TYPE [F1T]	0.00081	23734.02128	21724.07032	18680.4	STIFFENER PL.
BEAM	HATCH COVER (3482)	TYPE [F2T]	0.0355291	22145.66183	22399.60737	18698.4	BEAM
BEAM	HATCH COVER (3482)	TYPE [F2T]	0.04970979	22458.11169	21823.71938	18698.4	BEAM
BEAM	HATCH COVER (3482)	TYPE [F2T]	0.05723303	22623.75	21248	18698.4	BEAM
ANGLE	HATCH COVER (3482)	TYPE [F1T]	0.00177453	21403.68291	21111.61171	18745.38021	ANGLE
ANGLE	HATCH COVER (3482)	TYPE [F1T]	0.00167293	23844.76874	21377.06725	18745.95	ANGLE
ANGLE	HATCH COVER (3482)	TYPE [F1T]	0.00261403	22720	22536.13778	18745.38021	ANGLE
ANGLE	HATCH COVER (3482)	TYPE [F1T]	0.00317895	23670.22565	21659.38433	18745.0395	ANGLE
ANGLE	HATCH COVER (3482)	TYPE [F1T]	0.00177453	23843.8175	21111.61171	18745.38021	ANGLE
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.00596511	21995.83047	22671	18762.50152	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.01188	22623.75	20976.5	18762.50152	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.00087975	23007.5	22200	18764.00472	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.00049	22827.99823	22337.83864	18761.51784	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.00193	22634.13895	21984.68057	18761.8559	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.00493382	23009.05195	21645.65559	18761.98302	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.00380564	22028.03202	21998.66976	18761.98302	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.00380564	22028.03202	21649.33024	18761.98302	FLAT BAR
FLAT BAR	HATCH COVER (3482)	TYPE [F1T]	0.0005054	23585	21309.08606	18760.66803	FLAT BAR
FLG EXTN PL.	MISC STRUCTURES (3599)	TYPE [F2T]	0.00067525	898.9000015	20862.99997	18544.60001	FLG EXTN PL.
BEAM	MISC STRUCTURES (3599)	TYPE [F2T]	0.04143528	-2572.156679	8540.000002	18669.8	BEAM
BEAM	MISC STRUCTURES (3599)	TYPE [F2T]	0.025214	-2282	9490	18669.8	BEAM

BEAM	MISC STRUCTURES (3599)	TYPE [F2T]	0.01128588	-2100	25443.7941	18657.83435	BEAM
FLG_PL	MISC STRUCTURES (3599)	TYPE [F2T]	0.01032663	21.57514187	25457.02213	18545.60001	FLG_PL
WEB_PL	MISC STRUCTURES (3599)	TYPE [F2T]	0.0052468	-32.5	25352.54009	18667.73926	WEB_PL
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.01459754	7307.381078	11435.00478	19129.99999	PFC
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.01459754	7307.381078	11435.00478	20629.99999	PFC
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.00119	7275	10682.38145	19129.99999	PFC
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.00119	7275	12187.6186	19129.99999	PFC
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.00119	7275	10682.38145	20629.99999	PFC
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.00119	7275	12187.6186	20629.99999	PFC
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.00119	7275	10682.38145	21969.99999	PFC
PFC	MISC STRUCTURES (3599)	TYPE [F2T]	0.01519328	7307.381078	11465.00013	21969.99999	PFC
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.007222157	5629.696414	20990.625	22076.67172	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.007222157	6629.696414	20990.625	22076.67172	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.007607278	5628.96619	20115.29478	22077.53041	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.007607278	6878.924091	20115.29478	22077.53041	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.007732442	5548.794732	19212.37144	22077.77967	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.007732442	6628.754219	19212.37144	22077.77967	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.00732	6628.754219	14939.2279	22077.77967	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.00608745	6629.696414	14129.04121	22076.67172	ANGLE
PFC	MISC SHAPE (3365)	TYPE [C2T]	0.01279067	3173.951123	12621.84296	22023.45502	PFC
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.01121608	3978.94454	15702.5	21772.94737	ANGLE
ANGLE	MISC SHAPE (3365)	TYPE [F1T]	0.01121608	3033.052632	15702.5	21772.94737	ANGLE
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Bolt assembly	NONE	8.8TB	--	--	--	--	Bolt assembly
Total			262.739	19877.741	15473.355	19178.652	-

m	19.88	15.47	19.18
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