



TUGAS AKHIR - MO 091336

**ANALISIS DISTRIBUSI TEGANGAN DAN UMUR
KELELAHAN PADA *EXTENSION DECK LEG* AKIBAT
PENINGGIAN *DECK* PASCA *SUBSIDENCE***

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Surabaya 2014



FINAL PROJECT - MO 091336

**ANALYSIS OF STRESS DISTRIBUTION AND FATIGUE
LIFE ON THE EXTENSION DECK LEG CAUSED BY DECK
RAISING DUE TO SUBSIDENCE**

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ABSTRAK

Subsidence merupakan penurunan tanah dasar laut yang disebabkan oleh pembebanan berlebih atau pengambilan material-material dari dalam tanah yang berlebihan (minyak dan gas bumi). Pada anjungan lepas pantai yang sudah beroperasi lebih dari 30 tahun, penurunan tanah sangat mempengaruhi keberadaan struktur di atasnya. Untuk tetap aman berproduksi maka anjungan perlu ditinggikan melalui *deck rising*. Penelitian ini bertujuan untuk menganalisa distribusi tegangan dan umur kelelahan struktur tambahan pada *deck leg* anjungan lepas pantai yang mengalami peninggian pasca *subsidence*. Analisis berdasarkan studi kasus *platform L-PRO* yang beroperasi di Laut Jawa yang telah mengalami peninggian *deck leg* 4 meter dari kondisi awal. Analisa global struktur dilakukan menggunakan bantuan *software* GT-Strudl untuk mendapatkan gaya – gaya dan momen yang terjadi akibat beban aksial dari *topside module* yang disangga oleh *deck leg* dan gaya lateral dari beban lingkungan, yang kemudian menjadi inputan untuk analisis tegangan lokal menggunakan pendekatan *Finite Element Analysis* untuk mendapatkan *Hot Spot Stress* (HSS). Dengan HSS kemudian di plot ke dalam kurva S-N untuk mendapatkan nilai N, untuk selanjutnya dapat dihitung rasio kerusakan kumulatif (D) dan menentukan umur kelelahan struktur *extension deck leg*. Dari *Finite Element Analysis* didapatkan tegangan maksimum terjadi pada sambungan struktur *upper cutting existing deck leg* dan *deck leg bushing* sebesar 47961 psi. Nilai *Hot Spot Stress* (HSS) terbesar adalah pada tinggi gelombang 2,871 feet dengan arah datang gelombang 270 derajat sebesar 31506,04 psi. Dari penjumlahan masing – masing kondisi pembebanan didapatkan nilai rasio kerusakan kumulatif (D) total sebesar 0,010530632. Sehingga didapatkan umur kelelahan terkecil dari *Finite Element Analysis* selama 94 tahun dan umur operasi struktur selama 47 tahun. Yaitu pada sambungan las antara *upper cutting deck leg* dan *deck leg bushing*.

Kata kunci: *Subsidence*, *platform LIMA*, umur kelelahan, *Hot Spot Stress* (HSS), *extension deck leg*.

ANALYSIS OF STRESS DISTRIBUTION AND FATIGUE LIFE ON THE EXTENSION DECK LEG CAUSED BY DECK ELEVATION DUE TO SUBSIDENCE

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ABSTRACT

Subsidence is the seabed soil degradation caused by excessive loading or taking materials from excessive soil (oil and gas). In the offshore platforms that have been operating for more than 30 years, the subsidence greatly affect the existence of structures on it. To stay safe production the platform should be raised through the deck raising. This study aims to analyze the stress distribution and fatigue life of the structure addition in the leg of the offshore platform decks were experiencing post-subsidence elevation. The analysis is based on case studies of L-PRO platform operating in the Java Sea that has undergone a deck leg elevation 4 feet from the initial conditions. Global analysis of the structure is done using software GT Strudl to get force and moment caused by the axial load of the topside modules are supported by the deck leg and lateral force of the load environment, which then becomes the input for local stress analysis using Finite Element Analysis approach to get the Hot Spot Stress (HSS). With HSS later in the plot to the SN curve to obtain the value of N, can then be calculated ratios for cumulative damage (D) and determine the fatigue life of the structure deck leg extension. Finite Element Analysis of the obtained maximum stress occurs at the junction of cutting the existing upper deck structure and deck leg leg bushings at 47 961 psi. Value Hot Spot Stress (HSS) is the largest at 2,871 feet high waves with wave direction 270 degrees at 31506.04 psi. From the sum of each loading condition, the total ratio of cumulative damage (D) was 0.010530632. The smallest fatigue life of Finite Element Analysis is about 94 years and operation life of the structure is 47 years. Located in the welded joint between the leg and the upper deck cutting deck bushing leg.

Keywords: *Subsidence, LIMA platform, fatigue life, Hot Spot Stress (HSS), extension deck leg.*

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EXTENSION DECK LEG AKIBAT PENINGGIAN *DECK* PASCA
SUBSIDENCE

TUGAS AKHIR

Diajukan Untuk Memenuhi Salah Satu Syarat

Memperoleh Gelar Sarjana Teknik

pada

Progran Studi S-1 Jurusan Teknik Kelautan

Fakultas Teknologi Kelautan

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Surabaya, Agustus 2014

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Tugas Akhir ini berjudul “**Analisis Distribusi Tegangan dan Umur Kelelahan Pada *Extension Deck Leg* Akibat Peninggian *Deck* Pasca *Subsidence*”**. Disusun guna memenuhi persyaratan dalam menyelesaikan Studi Kesarjanaan (S-1) di Jurusan Teknik Kelautan, Fakultas Teknologi Kelautan (FTK), Institut Teknologi Sepuluh Nopember (ITS) Surabaya. Tujuan akhir ini yaitu untuk mengetahui distribusi tegangan dan umur kelelahan pada struktur *extension deck leg* akibat peninggian modul *topside* karena *subsidence* atau penurunan tanah.

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BAB I

PENDAHULUAN

1.1. Latar Belakang Masalah

Jacket Platform merupakan salah satu tipe anjungan lepas pantai terpancang (*fixed offshore platform*). Struktur tipe ini memanfaatkan kekuatan dari kakinya yang didukung oleh konfigurasi *member (brace)* dan *pile* untuk menahan beban *deck*, *live load* dan beban lingkungan yang bekerja pada struktur tersebut.

Berdasarkan API RP 2A-WSD 21st edition, jenis pembebanan yang harus dipertimbangkan dalam perancangan struktur bangunan lepas pantai meliputi beban mati (*dead loads*), beban hidup (*live loads*), beban lingkungan, beban konstruksi, beban pengangkatan dan reinstalasi. Selain beban diatas juga diperhitungkan masalah penurunan tanah (*subsidence*) di sekitar *platform*.

Penurunan tanah di Indonesia, selain terjadi di kota-kota besar juga terjadi di sekitar daerah eksploitasi minyak dan gas bumi baik *onshore* maupun *offshore*, yang diakibatkan oleh eksploitasi sumber minyak dan gas bumi tersebut. Indikasi penurunan tanah dapat dilihat dari terjadinya penurunan anjungan/*platform* minyak. *Deck* paling bawah lambat laun secara fisik tenggelam ke dalam air. Contoh penurunan tanah di daerah eksploitasi minyak dan gas bumi terlihat di beberapa anjungan minyak yang ada di wilayah Indonesia, antara lain seperti di anjungan minyak *Lima Flow-Station* di laut Jawa.

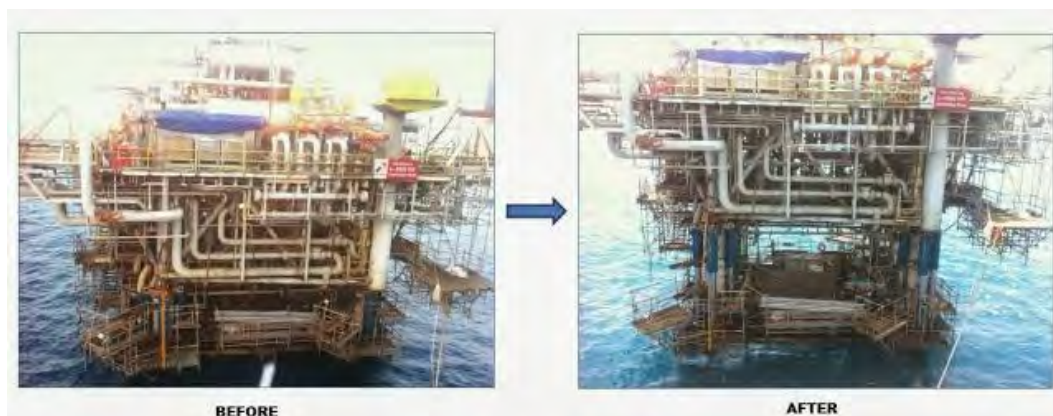


Gambar 1.1 LIMA Flow – Station

(Sumber: <http://asiaoec.com>)

Jika tidak ditangani dengan cepat, dalam waktu dekat anjungan tersebut terancam tidak aman untuk dioperasikan sehingga akan sering mengakibatkan terjadinya gangguan produksi. Tuntutan untuk tetap meningkatkan produksi sebagai upaya mendukung produksi minyak dan gas nasional dengan kondisi lapangan yang sudah tua merupakan tantangan terbesar yang dihadapi saat ini. Oleh karena itu, agar dapat beroperasi dengan baik dan aman dalam jangka panjang, anjungan perlu ditinggikan (*desk raising*) melalui *subsidence remediation*.

Pertamina Hulu Energi *Offshore North West Jawa* (PHE ONWJ) telah berhasil mengangkat 3 anjungan minyak di LIMA Flowstation secara bersamaan. Keberhasilan ini merupakan pertama kali di dunia. Pengangkatan (*deck raising*), karena yang diangkat ada sebanyak 3 anjungan secara bersamaan dan setinggi 4 meter. Dilaksanakannya proyek pengangkatan anjungan ini adalah dengan metode *Synchronized Hydraulic Jacking System*.



Gambar 1.2 *Plarform LIMA Subsidence Remediation*

(Sumber : <http://kaskus.co.id>)

Pada tugas akhir ini dilakukan analisis pada struktur pasca *subsidence* yaitu ketika telah mengalami peninggian. Pada *platform* pasca *subsidence*, analisis dilakukan pada *extension deck leg* yang digunakan untuk menambah ketinggian pada struktur *deck leg*. Hal ini dilakukan untuk mengetahui bagaimana distribusi tegangan pada *extension deck leg* kemudian menganalisa umur kelelahannya.



Gambar 1.3 Proses Fabrikasi *Clamp (Extension Deck Leg)*

(Sumber: <http://asiaoec.com>)

Struktur yang digunakan sebagai obyek studi kasus pada tugas akhir ini adalah *Jacket Platform LPRO Production Platform* milik PHE ONWJ yang beroperasi di perairan Laut Jawa. Platform empat kaki ini terletak di Laut Jawa pada koordinat:

05° 53' 45.00'' LS

107° 29' 34.00'' BT

Platform didukung oleh struktur jacket 4 kaki pada kedalaman 89.00 *feet* dan menyangga 2 deck, yaitu *main deck* pada ketinggian +45 *ft* dari MSL dan *cellar deck* +25 *ft* dari MSL.

1.2. Perumusan Masalah

Permasalahan yang akan dibahas dalam penelitian ini ialah :

1. Berapa distribusi tegangan yang terjadi pada struktur *extension deck leg* pasca *subsidence* atau setelah mengalami peninggian?
2. Bagaimana menghitung nilai *Hot Spot Stress (HSS)* pada *extension deck leg*?
3. Berapa umur kelelahan pada *extension deck leg*?

1.3. Tujuan Penelitian

Adapun tujuan yang ingin dicapai dengan penelitian ini ialah :

1. Mengetahui distribusi tegangan yang terjadi pada struktur *extension deck leg* pasca *subsidence* atau setelah mengalami peninggian.
2. Menentukan nilai *Hot Spot Stress* (HSS) pada struktur *extension deck leg*.
3. Menghitung umur kelelahan pada struktur *extension deck leg*.

1.4. Manfaat Penelitian

Manfaat yang akan didapatkan dari pengerjaan tugas akhir ini adalah:

1. Dapat memberikan pemahaman bagaimana menghitung distribusi tegangan yang terjadi pada struktur *extension deck leg* yang digunakan untuk meninggikan *topside module*.
2. Memberikan pemahaman bagaimana menghitung nilai *Hot Spot Stress* pada sambungan las struktur *extension deck leg* untuk selanjutnya dapat diketahui rasio kerusakan kumulatif (D) dan umur kelelahan struktur *extension deck leg* sebagai pertimbangan keamanan operasional anjungan lepas pantai.

1.5. Batasan Masalah

Untuk mempersempit permasalahan dan mempermudah perhitungan maka akan dibatasi sebagai berikut :

1. Struktur yang digunakan dalam studi kasus ini adalah struktur L-PRO platform milik Pertamina Hulu Energy ONWJ.
2. Pemodelan struktur dan analisis kelelahan dilakukan dengan menggunakan *software* GT Strudl 27.
3. Analisis struktur *jacket* ditinjau berdasarkan API RP 2A WSD 2005.
4. *Jacket* dan tanah diasumsikan mengalami penurunan secara bersamaan
5. Tidak dihitung proses terjadinya *subsidence*.
6. Tangga, perpipaan, dan peralatan kecil lainnya tidak dimodelkan dan dijadikan beban pada struktur.

7. Analisa perhitungan distribusi tegangan pada *extension deck leg* menggunakan *software* ANSYS 14.5.
8. Tanah tidak dimodelkan dan tumpuan pondasi dianggap *fixed*.

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BAB II

TINJAUAN PUSTAKA DAN DASAR TEORI

2.1. Tinjauan Pustaka

Sebuah *jacket platform* awalnya didesain untuk mampu menahan beban mati, beban hidup, maupun beban lingkungan yang mengenai struktur tersebut. Struktur tersebut diharapkan mampu bertahan baik pada kondisi operasi maupun dalam kondisi badai. Karena adanya efek dari *subsidence* maka struktur anjungan lepas pantai harus ditinggikan dengan menambahkan struktur peninggi pada *deck leg (extension deck leg)*. Struktur *extension deck leg* tersebut harus mampu menahan beban terutama beban *compression* dari peralatan di atas *deck* dan beban hidup dan juga beban siklis. Jika struktur *extension deck leg* kurang mampu menahan beban siklis, maka struktur akan mengalami *over stress* dan kelelahan.

Fatigue analisis merupakan suatu cara yang dapat dilakukan untuk memperkirakan risiko terjadinya kerusakan yang diakibatkan oleh beban berulang dan usia dari suatu bangunan dalam menghadapi beban tersebut. Dengan melakukan *fatigue analisis*, risiko timbulnya kerusakan fatal dapat diperkecil dan suatu bangunan dapat memenuhi target desain yang telah ditetapkan, termasuk disini adalah bahwa struktur tidak akan mengalami kegagalan dalam berbagai kondisi kerja (API RP 2A WSD).

Pada tahun 2005, Bagus Breh Kumoro telah melakukan penelitian yang membahas “Analisis Pengaruh *Subsidence* Terhadap Integritas Struktur *Jacket Platform*”. Pada tahun 2011, Putri juga membahas “Kekuatan *Ultimate* dari Bangunan Terpancang Setelah Mengalami *Subsidence*”. Tahun 2013 Sulung juga membuat tugas akhir “Analisis Pengaruh Peninggian Platform Akibat *Subsidence* dengan Pendekatan Dinamis Berbasis Keandalan” yang membahas tentang umur kelelahan struktur global akibat peninggian *deck* pasca *subsidence*. Namun dari semua tugas akhir tersebut belum ada yang membahas analisis kelelahan yang terjadi pada komponen struktur tambahan (*extension deck leg*) yang digunakan untuk meninggikan anjungan lepas pantai.

Berdasarkan Jurisic (2007), perhitungan umur kelelahan secara langsung dengan metode *simplified*, analisa keandalan umur kelelahan juga harus dilakukan untuk

memprediksi peluang kegagalan akibat ketidakpastian ketahanan struktur dan beban.

Pada tahun 2011, Irfan pernah melakukan penelitian mengenai kelelahan pada struktur jacket. Perbedaannya dengan penelitian ini adalah Irfan hanya menganalisa kelelahan struktur secara global, sedangkan penelitian ini menganalisa kelelahan secara lokal pada komponen struktur tambahan (*extension deck leg*).

2.2. Dasar Teori

2.2.1. Konsep Pembebanan

Pada suatu proses perancangan bangunan lepas pantai, untuk menentukan kemampuan kerja suatu struktur akan dipengaruhi oleh beban yang terjadi pada bangunan tersebut. Sehingga perancang harus menentukan akurasi atau ketepatan beban yang akan diterapkan dalam perancangan. Adapun beban-beban yang harus dipertimbangkan dalam perancangan bangunan lepas pantai adalah sebagai berikut (Soedjono, JJ., 1999) :

1. Beban mati (*Dead Load*)

Beban mati (*dead load*) adalah beban dari komponen- komponen kering serta beban-beban dari peralatan, perlengkapan dan permesinan yang tidak berubah dari mode operasi pada suatu struktur, meliputi: berat struktur, berat peralatan dari permesinan yang tidak digunakan untuk pengeboran atau proses pengeboran.

2. Beban hidup (*Live Load*)

Beban hidup adalah beban yang terjadi pada bangunan lepas pantai selama beroperasi dan bisa berubah dari mode operasi satu ke mode operasi yang lain.

3. Beban lingkungan (*Environmental Load*)

Beban lingkungan adalah beban yang terjadi karena dipengaruhi oleh lingkungan dimana suatu bangunan lepas pantai dioperasikan atau bekerja. Beban lingkungan yang biasa digunakan dalam perancangan adalah beban gelombang, beban angin dan beban arus.

4. Beban akibat kecelakaan (*Accidental Load*)

Beban kecelakaan merupakan beban yang tidak dapat diduga sebelumnya yang terjadi pada suatu bangunan lepas pantai, misalnya tabrakan dengan kapal pemandu operasi, putusnya tali tambat, kebakaran, letusan.

2.2.2. Gaya Gelombang

Gaya hidrodinamika akibat gelombang pada tiang silinder bergantung pada pola aliran di sekitar tiang yang dipengaruhi oleh derajat kebergantungan aliran oleh adanya tiang. Derajat ketergantungan aliran ditentukan oleh perbandingan diameter tiang silinder terhadap panjang gelombang (D/L). Apabila $D/L \leq 0.2$, maka pola aliran fluida tidak akan terganggu dan gaya gelombang dapat dihitung dengan menggunakan persamaan Morison. Sebaliknya, bila $D/L > 0.2$, maka pola aliran akan mengalami difraksi dan gaya gelombang dihitung dengan menggunakan teori difraksi.

Persamaan Morison (O'Brien and Morison, 1950) menyatakan bahwa gaya gelombang dapat diekspresikan sebagai penjumlahan dari gaya seret (*drag force*, F_D), yang muncul akibat kecepatan partikel air saat melewati struktur, dan gaya inersia (*inertia force*, F_I) akibat percepatan partikel air.

$$F = F_D + F_I \quad (2.1)$$

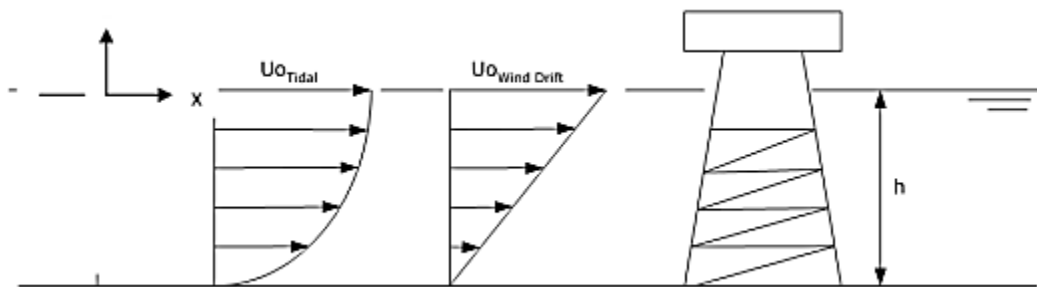
Dalam analisa gaya gelombang untuk silinder sirkular, dapat menggunakan nilai koefisien drag dan koefisien inersia berikut (API RP 2A WSD, 2005) :

Tabel 2.1. Koefisien Drag dan Inersia

	Cd	Cm
Smooth	0,65	1,6
Rough	1,05	1,2

2.2.3. Beban arus

Arus di laut biasanya terjadi akibat adanya pasang surut dan gesekan angin pada permukaan air (*wind-drift current*). Kecepatan arus dianggap pada arah horizontal dan bervariasi menurut kedalaman. Besar dan arah arus pasang surut di permukaan biasanya ditentukan berdasarkan pengukuran di lokasi.



Gambar 2.1. Distribusi Vertikal *Tidal Current* dan *Wind Drift Current*
(Sumber: Dawson, 1983)

2.2.4. Beban Angin

Gaya angin yang mengenai struktur adalah fungsi dari kecepatan angin, orientasi struktur, dan karakteristik aerodinamik dari struktur dan setiap elemennya adalah sebagai berikut :

$$F = \frac{1}{2} \rho U C_s^2 A \quad (2.2)$$

Dengan :

F = gaya angin

ρ = massa jenis udara pada kondisi STP = 0.0023668 slug/ft³

C_s = koefisien bentuk

U = kecepatan angin (ft/s)

A = luas tegak lurus arah angin (ft²)

Menurut API RP 2A WSD tahun 2005, koefisien bentuk adalah seperti pada Tabel di bawah ini :

Tabel 2.2. Koefisien Bentuk

Bentuk	C_s
Beams	1,5
Sides of building	1,5
Cylindrical section	0,5
Overall platform projected area	1

2.2.5 Konsep Tegangan

1. Tegangan Aksial/Normal

Tegangan normal dapat diakibatkan karena dua hal yaitu yang disebabkan oleh gaya aksial dan lenturan.

- Disebabkan oleh gaya aksial

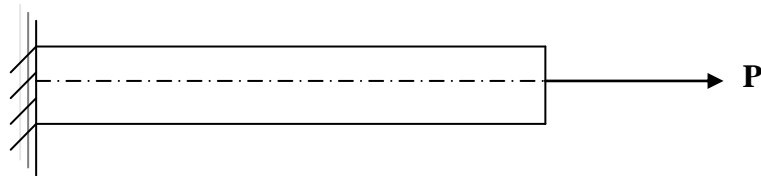
Pada Gambar 2.1 batang mengalami pembebanan aksial akibat gaya tarik P. Akibat gaya ini, batang akan mengalami tegangan aksial sebesar (Popov, 1993):

$$\sigma = \frac{P}{A} \quad (2.3)$$

dimana :

A = luas penampang lintang (m²)

P = Gaya Tarik (N)



Gambar 2.2. Pembebanan Aksial pada Batang Tubular
(Sumber: Popov, 1993)

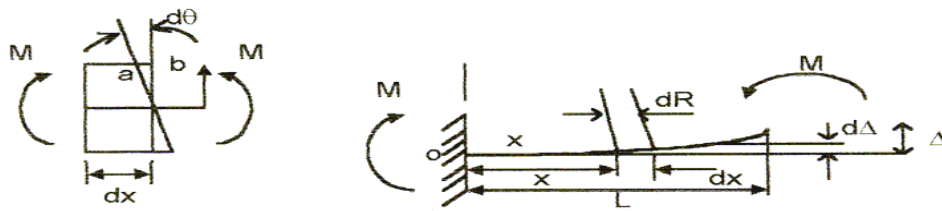
- Disebabkan oleh lenturan, ada dua kondisi lenturan yaitu :

Pada batang lurus
$$\sigma = -\frac{My}{I} \quad (2.4)$$

Pada lengkung simetris
$$\sigma = \frac{My}{Ae(R-y)} \quad (2.5)$$

- Disebabkan oleh momen lentur murni.

Selain akibat gaya aksial, tegangan aksial dapat diakibatkan juga oleh momen lentur murni akibat kopel M yang terjadi di setiap ujungnya (**Gambar 2.2**). Tegangan yang terjadi akibat momen ini dikenal sebagai *bending stress* atau tegangan lentur.



Gambar 2.3. Pembebanan Momen Kopel pada Batang Tubular
(Sumber: Popov, 1993)

dimana :

x = jarak dari sumbu netral ke sembarang titik disepanjang L pada penampang (gambar 2.2).

I_z = momen inersia bidang penampang melintang terhadap sumbu z

Interaksi antara kedua jenis tegangan aksial di atas dalam kaitannya dengan superposisi antara kedua jenis tegangan aksial tersebut, menghasilkan koreksi pada besar tegangan lentur. Pengurangan besar tegangan lentur akibat adanya tegangan tarik dapat diabaikan tetapi penambahan besar tegangan lentur akibat terbentuknya tegangan *buckling* yang disebabkan oleh tegangan aksial tekan perlu diperhatikan.

2. Tegangan Geser

Penyebab terjadinya tegangan geser ada dua jenis yaitu tegangan geser yang disebabkan oleh puntiran dan gaya geser dalam balok.

- Disebabkan oleh puntiran

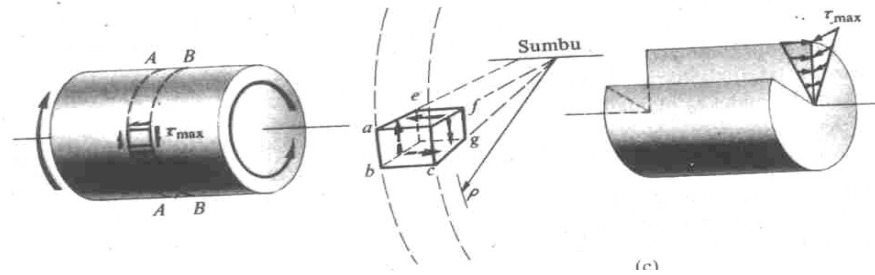
Poros melingkar
$$\tau = \frac{T\rho}{I_p} \quad (2.6)$$

Poros sikuempat
$$\tau = \frac{T}{abc^2} \quad (2.7)$$

Tabung dinding tipis tertutup
$$\tau = \frac{T}{2At} \quad (2.8)$$

- Disebabkan oleh gaya geser dalam balok
$$\tau = \frac{VQ}{It} \quad (2.9)$$

Batang penampang bulat juga akan mengalami tegangan geser walau besarnya tidak begitu berarti. Penyebab paling besar terjadinya tegangan geser pada elemen penampang bulat seperti struktur *jacket* adalah momen puntiran aksial. Pada **Gambar 2.3** tampak batang mengalami pembebanan puntiran T pada kedua ujungnya.



Gambar 2.4. Gaya Puntiran pada Batang Silinder

(Sumber: Popov, 1993)

Tegangan maksimum yang akan terjadi pada permukaan luar batang dapat dihitung dengan rumus :

$$\sigma = \frac{T.R}{I} \quad (2.10)$$

dimana :

- I = momen inersia kutub
- T = momen torsi terkonsentrasi
- R = jari-jari penampang batang

Sedangkan nilai Inertia (I) untuk :

$$\text{Circular ring} \quad : \quad \frac{\pi}{2}(R_o^4 - R_i^4) \quad (2.11)$$

$$\text{Round bar} \quad : \quad \frac{\pi}{2}(R^4) \quad (2.12)$$

σ adalah tegangan geser yang bekerja pada penampang lintang lingkaran dan R adalah jari-jari penampang batang. Tegangan geser yang bekerja pada penampang melintang lingkaran selalu berarah tegak lurus jari-jari dan mempunyai arah yang sama dengan momen puntir.

3. Tegangan Gabungan

Tegangan gabungan untuk member silindris dipengaruhi oleh gabungan antara kompresi dan fleksur secara poporsional harus memenuhi persyaratan berikut (API RP 2A WSD, 2000) :

$$\frac{f_a}{F_a} + \frac{C_m \sqrt{f_{bx}^2 + f_{by}^2}}{\left(1 - \frac{f_a}{F_e'}\right) F_b} \leq 1.0 \quad (2.13)$$

$$\frac{f_a}{0.6F_y} + \frac{\sqrt{f_{bx}^2 + f_{by}^2}}{F_b} \leq 1.0 \quad (2.14)$$

Jika $\frac{f_a}{F_a} \leq 0.15$, maka berlaku perumusan :

$$\frac{f_a}{F_a} + \frac{\sqrt{f_{bx}^2 + f_{by}^2}}{F_b} \leq 1.0 \quad (2.15)$$

dimana :

- F_a = tegangan yang diijinkan
- f_a = tegangan axial
- f_b = tegangan bending
- C_m = Faktor Reduksi

4. Kriteria Tegangan Ijin

Bagian struktur yang menerima beban kompresi dan beban tekuk harus memenuhi kriteria kekuatan dan kriteria stabilitas. Apabila total tegangan pada setiap bagian konstruksi melebihi tagangan ijin maka keruntuhan akan terjadi. Tegangan ijin untuk member silinder (API RP 2A-WSD, 2005)

a. Tegangan Tarik

Tegangan tarik ijin F_t , dirumuskan :

$$F_t = 0.6F_y \quad (2.16)$$

dimana : F_y adalah tegangan *yield*, ksi (MPa)

b. Tegangan Tekan

Buckling pada kolom

Tegangan tekan yang diijinkan adalah F_a .

Untuk $D/t \leq 60$

$$F_a = \frac{\left[1 - \frac{(kL/r)^2}{2Cc^2}\right] F_y}{\frac{5}{3} + \frac{3(kL/r)}{8Cc} - \frac{(kL/r)}{8Cc^3}}, \text{ untuk } kL/r < Cc \quad (2.17)$$

$$F_a = \frac{12\pi^2 E}{23(kL/r)^2}, \text{ untuk } kL/r \geq Cc \quad (2.18)$$

$$Cc = \left[\frac{2\pi^2 E}{F_y} \right]^{\frac{1}{2}} \quad (2.19)$$

dimana :

- E = modulus elastisitas, ksi (MPa)
- K = faktor panjang efektif
- L = panjang tanpa *bracing*
- R = jari-jari girasi

Untuk member dengan $D/t > 60$ dengan menggunakan *local buckling*

- *Local Buckling*

- a. *Local Buckling elastic*

$$F_{xe} = 2C_e t / D \quad (2.20)$$

dimana :

- C = koefisien tegangan kritis *buckling*
- D = diameter luar
- t = ketebalan pipa

secara teoritis harga C adalah 0.6

- b. *Local Buckling Inelastic*

$$F_{xc} = F_y \left[1.64 - 0.23(D/t)^{1/4} \right] \leq F_{xe} \quad (2.21)$$

$$F_{xc} = F_y \text{ untuk } D/t \leq 60$$

- c. Tegangan Tekuk

Tegangan *bending* ijin, F_b dinyatakan :

$$F_b = 0.75F_y, \text{ untuk } D/t \leq 1500/F_y \quad (2.22)$$

$$\left(\frac{D}{t} \leq \frac{10340}{F_y}, \text{ dalam satuan SI} \right)$$

$$F_b = \left[0.84 - 1.74 \frac{F_y D}{E t} \right] F_y, \text{ untuk } \frac{1500}{F_y} < \frac{D}{t} \leq \frac{3000}{F_y} \quad (2.23)$$

$$\left(\frac{10340}{F_y} < \frac{D}{t} \leq \frac{20680}{F_y}, \text{ dalam satuan SI} \right)$$

$$F_b = \left[0.72 - 0.58 \frac{F_y D}{E t} \right] F_y, \text{ untuk } \frac{3000}{F_y} < \frac{D}{t} \leq 300 \quad (2.24)$$

d. Tegangan Geser

Untuk bagian *tubular*, besarnya tegangan geser maksimum adalah :

$$f_y = \frac{V}{0.5A} \quad (2.25)$$

dimana :

f_y = tegangan geser maksimum, ksi (MPa)

V = tegangan geser transversal, kips (MN)

A = luasan melintang, in² (m²)

Sedangkan tegangan geser pada beam yang diijinkan adalah :

$$f_y = 0.4F_y \quad (2.26)$$

Tegangan Maksimum Tekan dan Tekuk untuk Batang Silinder

$$\frac{fa}{0.6F_y} + \frac{\sqrt{fxb^2 + fby^2}}{Fb} \leq 1.0 \quad (2.27)$$

Apabila $\frac{fa}{Fa} \leq 0.15$, maka digunakan

$$\frac{fa}{Fa} + \frac{\sqrt{fbx^2 + fby^2}}{Fb} \leq 1.0 \quad (2.28)$$

2.2.6. Tegangan Von Mises

Teori tegangan Von Mises yang akan dibandingkan dengan tegangan ijin maksimum dari *yield strength* suatu material adalah sebagai berikut :

$$\sigma_{HVM} = \left[\sigma_x^2 + \sigma_y^2 - \sigma_x \sigma_y + 3\tau_{xy}^2 \right]^{1/2} \quad (2.29)$$

dengan:

σ_{HVM} = tegangan *von mises*, psi (Pa)

σ_x = tegangan normal sumbu-x, psi (Pa)

σ_Y = tegangan normal sumbu-y, psi (Pa)

τ_{XY} = tegangan geser, psi (Pa)

2.2.7. Tegangan Hot Spot/ *Hot Spot Stress* (HSS)

Untuk tubular member yang nilai *Stress Concentration Factor* (SCF) tidak diketahui, maka untuk mendapatkan tegangan Hot Spot, salah satu cara yang dapat dilakukan adalah dengan metode *Quadratic Extrapolation*. Dengan formula sebagai berikut :

$$\sigma_{hs} = 3\sigma_{4mm} - 3\sigma_{8mm} + \sigma_{12mm} \quad (2.30)$$

dengan:

σ_{hs} = tegangan *hot spot*

σ_{4mm} = tegangan dengan jarak 4 mm dari tegangan maksimum

σ_{8mm} = tegangan dengan jarak 8 mm dari tegangan maksimum

σ_{12mm} = tegangan dengan jarak 12 mm dari tegangan maksimum

2.2.8. Analisa Kelelahan (*Fatigue Analysis*)

Bangunan lepas pantai banyak sekali mengalami beban yang sifatnya berulang (siklis) yang menyebabkan berkurangnya kekuatan. Fenomena ini dikenal dengan istilah kelelahan (*fatigue*), dan secara esensial ditandai dengan proses keretakan (*crack*) dan pada proses selanjutnya terjadi penjararan (*propagation*) dan kerusakan (*failure*), (Soedjono, JJ., 1989). Analisa kelelahan penting dilakukan untuk memprediksi besar relatif dari fatigue life pada sambungan kritis.

Beberapa parameter yang mempengaruhi kelelahan pada tubular joint dan digunakan dalam pertimbangan oleh perancang adalah :

1. Geometri dari tubular joint
2. Type, amplitudo dan distribusi beban yang bekerja pada struktur
3. Proses fabrikasi
4. Proses setelah fabrikasi yang dilakukan pada tubular joint untuk memperbaiki umur kelelahan dan aspek yang lain
5. Kondisi lingkungan pada saat terjadi retak dan perambatannya

6. Beban statis pada chord

Setelah pembebanan global selesai, maka dilanjutkan dengan lokal analisis dimana dalam mencari kelelahan (*fatigue*) yang perlu diperhatikan adalah Faktor Konsentrasi Tegangan (*stress concentration factor*). Besarnya konsentrasi tegangan tergantung dari jenis atau tipe sambungan tubular.

2.2.8.1. Metode Palmgren-Miner

Kerusakan akibat *fatigue* pada struktur lepas pantai secara dominan disebabkan oleh beban gelombang. *Stress* yang disebabkan oleh beban ini selalu berubah arah dan besarnya dan berlangsung secara *random*. *Stress* ini terbagi menjadi variasi pengelompokkan *stress* yang secara kumulatif mengakibatkan “*total fatigue damage*”. Gesekan pada *fatigue lifetime* diasumsikan oleh range tegangan yang diberikan dalam satu tahun didefinisikan oleh Miner (1945) sebagai perbandingan jumlah *cycles* dalam *range* tegangan itu yang menyebabkan kerusakan. Total kerusakan per tahun yang diberikan oleh jumlah gesekan pada umur pakai (*consume life*) adalah sebagai berikut:

$$D = \sum_i^k \frac{n_i}{N_i} \quad (2.31)$$

dengan:

n_i = Jumlah *cycle* kolom interval rentang tegangan i dari rentangan distribusi tegangan jangka panjang.

N_i = Jumlah *cycle* untuk gagal pada perhitungan tegangan yang sama, didapatkan dari S-N diagram.

k = \sum total dari interval-interval rentang tegangan

D = Rasio kerusakan kumulatif

Hubungan antara N_i dan S_i dapat diambil dari *fatigue curve* (*S-N Curve*).

Formulasi umur kelelahan dari suatu struktur:

$$\text{Umur kelelahan} = \frac{1}{D} \quad (2.32)$$

2.2.8.2. Faktor Konsentrasi Tegangan (SCF)

Faktor konsentrasi tegangan atau *Stress Concentration Factor* (SCF) merupakan perbandingan antara tegangan *hot spot stress* dan tegangan nominal pada *brace*, yang secara sistematis dinyatakan dengan (Gibstein, 1985):

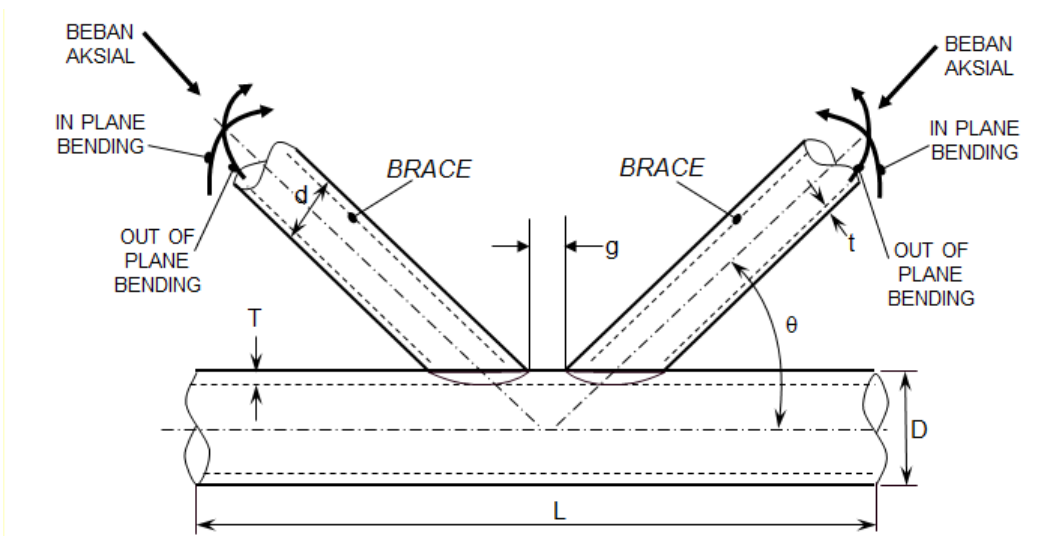
$$SCF = \frac{\sigma_{maks}}{\sigma_n} \quad (2.33)$$

Besarnya SCF untuk tiap sambungan akan berbeda tergantung pada geometrinya dan SCF ini merupakan parameter yang dapat mengindikasikan kekuatan sambungannya. Konsentrasi tegangan menggambarkan suatu kondisi dimana telah terjadi tegangan lokal yang tinggi akibat dari geometri sambungan tersebut, sehingga dibutuhkan keakuratan yang tinggi dalam penentuan nilai tegangan *hot spot*, dan juga penentuan SCF untuk jenis sambungan yang berbeda.

Pada titik yang berdekatan di suatu sambungan antara *chord* dan *brace* nilai SCF yang terjadi akan berbeda, karena kedua member mempunyai parameter-parameter dan orientasi yang berbeda. SCF untuk *brace* diberi notasi SCFb dan untuk *chord* diberi notasi SCFc.

Hot spot adalah lokasi pada suatu sambungan (tubular) dimana terjadi tegangan tarik/tekan maksimum. Secara umum diidentifikasi sda tiga tipe tegangan dasar yang menyebabkan munculnya hot spot (Becker, et al., 1970):

1. Tipe A, disebabkan oleh gaya-gaya aksial dan momen-momen yang merupakan hasil dari kombinasi frame dan truss jacket.
2. Tipe B, disebabkan detail-detail sambungan struktur seperti geometri sambungan yang kurang memadai, variasi kekakuan yang bervariasi disambungan dan lain-lain.
3. Tipe C, disebabkan oleh faktor metalurgis yang dihasilkan dan kesalahan pengelasan, seperti undercut, porosity, dan lain-lain.



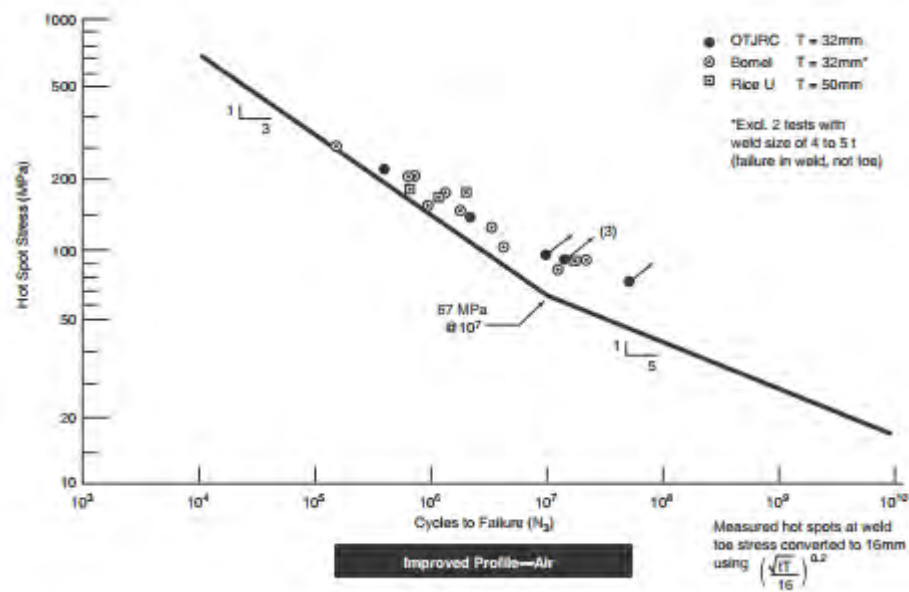
Gambar 2.5 Parameter *Tubular Joint*
 (Sumber : *Bahan ajar kelelahan dan mekanika kepecahan*)

Parameter Utama:	Parameter Turunan:
L = panjang <i>Chord</i>	$\alpha = 2L/D$
D = diameter terluar <i>chord</i>	$\tau = t/T$
d = diameter terluar <i>brace</i>	$\beta = d/D$
T = tebal <i>chord</i>	$\xi = g/D$
t = tebal <i>brace</i>	$\gamma = D/2T$
g = jarak antar ujung <i>brace</i>	$\theta = \text{sudut antara } \textit{brace} \text{ dan } \textit{chord}$

Untuk mencari besar SCF dapat dilakukan dengan pengukuran langsung yaitu dengan eksperimen menggunakan strain gage atau dengan menggunakan rumus-
 rumus pendekatan (Kuang, Smedly, dan lainnya).

2.2.8.3. Kurva S-N

Kurva S-N adalah karakteristik *fatigue* yang umum digunakan dari suatu bahan yang mengalami tegangan berulang dengan besar yang sama. Kurva tersebut diperoleh dari tes spesimen baja yang diberi beban berulang dengan jumlah N siklus sampai terjadi kegagalan. Besarnya N berbanding terbalik dengan rentang tegangan S. Kurva ini menyediakan informasi karakteristik *fatigue* dengan amplitudo pembebanan konstan. Kurva S-N yang digunakan berdasarkan API RP 2A 21st edition (WSD) tahun 2005 ditunjukkan pada gambar berikut :



Gambar 2.6. Kurva S-N

(Sumber : API RP 2A WSD 21st edition 2005)

Kurva di atas spesifik untuk menganalisa kelelahan member yang berada di udara, yaitu member yang tidak tercelup air atau berada di atas splash zone. Sehingga dapat digunakan untuk menganalisa umur kelelahan suatu sambungan las yang berada di atas air.

2.2.9. Konsep Metode Elemen Hingga

Penyelesaian suatu permasalahan dalam bidang rekayasa umumnya menghasilkan ekspresi atau model matematik yang melibatkan kondisi batas, sifat material, ketidaklinieran material dan geometri, sehingga jarang sekali model matematis untuk masalah-masalah teknik yang bisa diselesaikan secara analisis. Keadaan inilah yang memaksa engineer menggunakan analisa numerik meskipun hasil yang didapatkan bersifat pendekatan.

Salah satu caranya adalah dengan membagi suatu sistem menjadi bagian-bagian yang lebih kecil. Pemecahan masalah kemudian dilakukan pada elemen-elemen kecil, yang selanjutnya digabung kembali sehingga didapatkan pemecahan masalah secara keseluruhan. Metode ini dikenal dengan *finite element method* atau metode elemen hingga. Rodrigues (2005), mendeskripsikan metode elemen hingga (*finite element method*) dengan dasar numerik untuk analisa keruntuhan

global nonlinier. untuk tiga dimensi struktur *steel frames*. Dengan mempertimbangkan dua aspek penting, yaitu:

1. Formulasi untuk geometri tiga dimensi dan material nonlinier elemen *frame*.
2. Implementasi dari teknik spesial dari solusi masalah nonlinier.

Kekakuan pada dasarnya menghubungkan *displacement* pada *joint* dengan gaya-gaya luar yang bekerja pada *joint* tersebut. Pada kondisi pembebanan yang sebenarnya, gaya umumnya terdistribusi secara merata sepanjang elemen. Biasanya metode matriks digunakan dalam kekakuan struktur. Matriks kekakuan dipengaruhi pada tiga hal, yaitu model lendutan yang dipakai, geometri dan elemen-elemennya, dan sifat material dari material elemen tersebut.

2.2.10. Modeling Metode Elemen Hingga Dengan Ansys

Software Ansys Workbench menyediakan produk untuk menyelesaikan analisis statis struktural. Analisis yang dapat dilakukan adalah pada struktur yang akan dicari distribusi tegangan yang terjadi akibat gaya – gaya dan momen yang bekerja pada struktur tersebut.

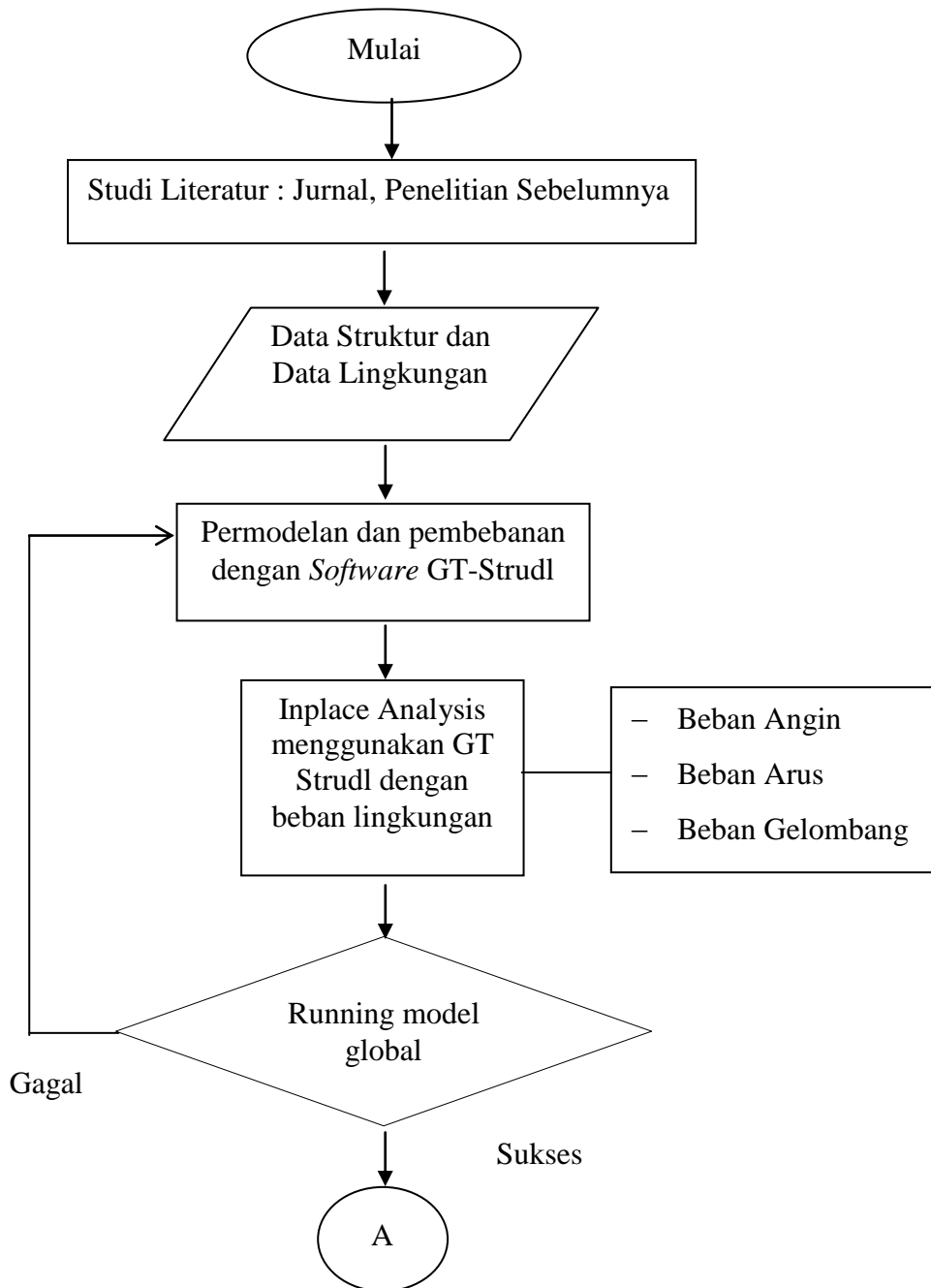
Langkah-langkah yang perlu dilakukan adalah :

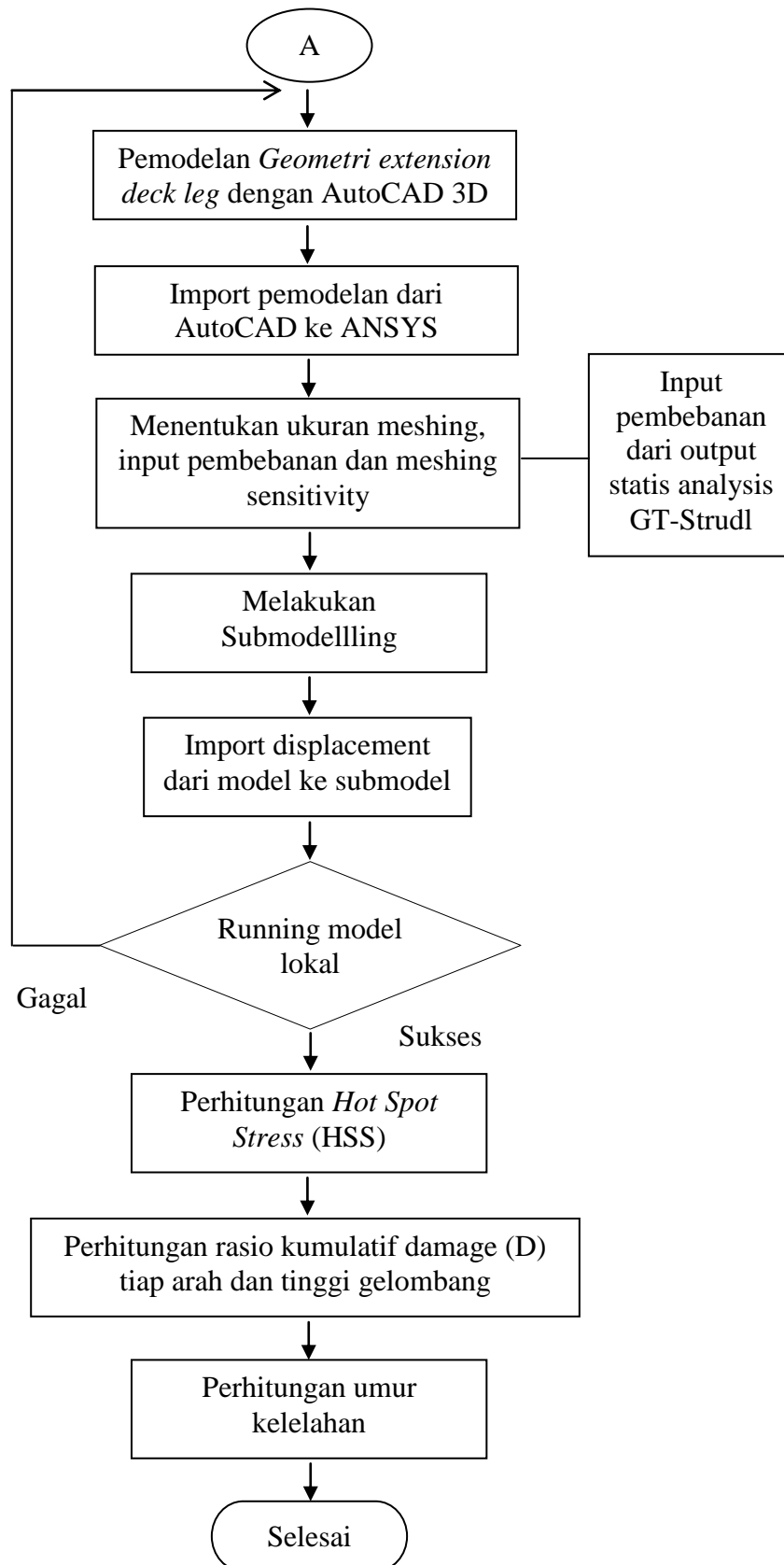
- a. Memodelkan struktur pada Ansys, baik menentukan ukuran, properties, menentukan tipe elemen, dan menentukan ukuran mesh.
- b. Melakukan meshing sensitivity model yang sudah dibuat.
- c. Menentukan tipe analisis, memasukkan beban yang bekerja, memasukkan boundary condition, menyelesaikan pembebanan.
- d. Menganalisis hasil keluaran dari Ansys berupa bentuk deformasi dan tegangan maksimum yang terjadi akibat beban yang bekerja.

BAB III METODOLOGI PENELITIAN

3.1 Metode Penelitian

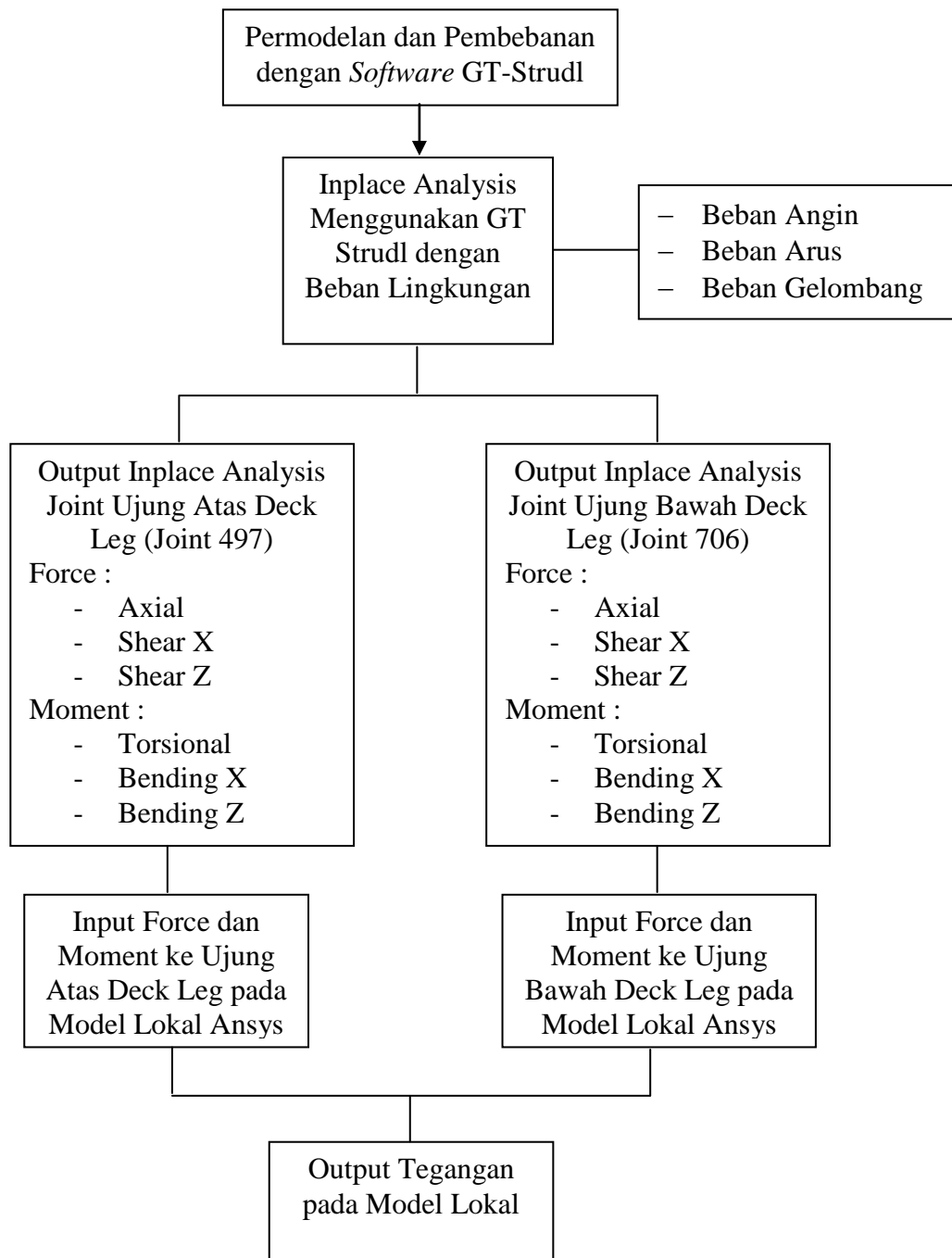
Langkah-langkah pengerjaan pada Tugas Akhir ini secara umum ialah sebagai berikut:





Gambar 3.1 Flowchart Metodologi Tugas Akhir

(Sumber: Dokumentasi pribadi 2014)



Gambar 3.2 Skema Pembebanan
(Sumber: Dokumentasi pribadi 2014)

3.2. Prosedur Penelitian

Adapun beberapa tahap sistematika yang dilakukan dalam analisis pengaruh peninggian *platform* akibat *subsidence* dengan pendekatan dinamis adalah:

1. Data Struktur

Data yang telah diperoleh dan dikumpulkan meliputi data konfigurasi struktur, *appurtenances*, material, serta lingkungan (gelombang, angin, arus, dan kedalaman). Termasuk data sebaran gelombang, kemudian di analisis dan dimasukkan dalam proses pemodelan struktur dan beban pada *jacket L-PRO platform* dengan GT-STRUDL. Berdasarkan *mass case*, melalui *eigen value analysis* maka dapat ditentukan periode natural dari struktur.

2. Pemodelan Struktur dengan *Software GT Strudl*

Pemodelan dilakukan untuk kemudian dilakukan analisis beban gelombang pada tiap arah dan tinggi gelombang dan respons statis. Adapun beban gelombang dihitung dengan memasukkan teori gelombang reguler. Teori gelombang reguler yang dipakai pada analisis ini adalah *stokes* orde 5.

3. Inplace Analysis dengan beban lingkungan menggunakan Gt-Strudl

Inplace analysis dilakukan untuk mengetahui reaksi gaya dan momen pada joint ujung deck leg yang menumpu beban topside.

4. Pemodelan geometri *extension deck leg* dengan AutoCAD 3D

Pemodelan dengan AutoCAD 3D dilakukan untuk mempermudah pembuatan geometri dari *extension deck leg* untuk selanjutnya diimport ke *software* Ansys

5. Menentukan ukuran meshing, input pembebanan dan melakukan *meshing sensitivity*

Analisa FEM menggunakan bantuan *software* ANSYS dengan memodelkan member *extension deck leg* yang ditinjau. Setelah itu memasukkan beban gaya dan momen, *boundary condition* yang menggambarkan kondisi yang sebenarnya, dan penentuan *meshing*. Kemudian melakukan *meshing sensitivity* untuk validasi bahwa ukuran *meshing* yang dipakai telah memenuhi persyaratan pemodelan.

6. Submodelling

Submodelling dilakukan untuk membuat analisa yang lebih mendetail khususnya pada sambungan las, karena sambungan las biasanya terjadi konsentrasi tegangan. Dengan meng-*import displacement* pada potongan penampang submodel, sehingga beban yang bekerja pada model bisa ditransformasikan ke struktur submodel.

7. Perhitungan *Hot Spot Stress* (HSS)

Dari hasil distribusi tegangan pada Ansys, maka dapat dihitung nilai tegangan hot spotnya, metode yang digunakan untuk menentukan HSS adalah dengan metode *Quadratic Extrapolation*, karena pada sambungan tersebut tidak diketahui nilai *Stress Concentration Factor* (SCF).

8. Menentukan rasio kerusakan kumulatif (D) total

Dari HSS yang telah didapatkan, kemudian diplot ke dalam kurva S-N untuk mendapatkan nilai N. Untuk selanjutnya dapat dihitung D total setiap arah dan tinggi gelombang.

9. Menentukan umur kelelahan.

Setelah didapat rasio kerusakan kumulatif total (D total), maka selanjutnya dapat ditentukan umur kelelahan minimum pada struktur *extension deck leg*.

3.3. Data

Dalam pelaksanaan analisis struktur diperlukan data struktur dan lingkungan untuk pemodelan struktur, beban deck, *dead weight*, dan beban lingkungan. Data struktur dan lingkungan yang diperlukan dalam analisis ini adalah sebagai berikut:

1. Data Struktur:

- *Technical drawing*, yang meliputi properti member dari *deck beam* dan tubular tiap kaki,
- *Material properties* meliputi: jenis material dan *yield strength*,
- Beban diatas *deck* meliputi beban equipment dan beban hidup,
- Beban yang menempel pada kaki seperti *anode*,
- Koefisien hidrodinamis,
- Tebal *marine growth*.

2. Data lingkungan

- Posisi/tata letak struktur/orientasi
- Data gelombang, angin dan arus

3.3.1. Data Struktur

Struktur L-PRO *platform* merupakan bangunan lepas pantai jenis terpancang (*fixed offshore platform*) yang termasuk struktur *jacket*. Spesifikasi dari anjungan L-pro ini adalah sebagai berikut:

Tabel 3.1 Data Struktur L-PRO

<i>Description</i>	LPRO
<i>Number of legs</i>	4
<i>Jacket dimension at Working Point</i>	40 x 40 (ft x ft)
<i>Jacket elevation at Working Point</i>	+15.00 (MSL) (ft)
<i>Jacket elevation at sea deck</i>	+10.00 (MSL) (ft)
<i>Height of Jacket</i>	113.85 (ft)
<i>Number of Piles</i>	4
<i>Risers</i>	1 x 12" Dia
	2 x 24" Dia
	2 x 16" Dia
	1 x 20" Dia
	1 x 24" Dia
<i>Caisson</i>	1 x 14" Dia. (El. -30 ft)
	1 x 24" Dia. (EL. -70 ft)
<i>Main Deck T.O.S Elevation</i>	+45.00 (MSL) (ft)
<i>Cellar Deck T.O.S Elevation</i>	+25.00 (MSL) (ft)
<i>Main Deck Dimensions</i>	60 x 60 (ft x ft)
<i>Cellar Deck Dimensions</i>	40 x 40 (ft x ft)

3.3.2. Beban struktur

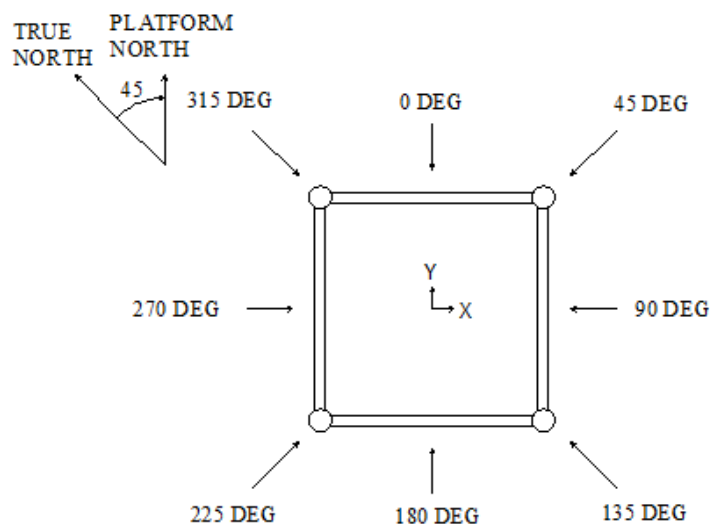
Beban mati pada semua member akan digunakan sebagai data input dalam program GT-STRUDL. Yang termasuk beban mati adalah berat pelat Deck dan Grating, handrail, tangga, jalur pipa dan peralatan-peralatan lainnya dimodelkan sebagai beban, baik itu beban merata maupun terpusat pada deck dan beban-beban tersebut menjadi salah satu load case pada analisis. Beban-beban yang terjadi pada struktur LPRO platform akan disajikan dalam table berikut:

Tabel 3.2 Kondisi Pembebanan pada Struktur

No	Nama Beban	Berat (kips)
1	Structural (<i>topside+jacket</i>)	746.74
2	Equipment load	931.51
3	Live loads	262.6
Total		1940.85

3.3.3. Data lingkungan

Beban lingkungan pada analisis ini antara lain beban gelombang, angin, dan arus kondisi *operating* (periode ulang 1 tahunan) dan beban kondisi storm (periode ulang 100 tahunan). Pada analisis linier, beban lingkungan untuk 8 arah sesuai dengan yang diisyaratkan oleh API RP2A WSD dengan ketentuan arah seperti tertera dalam gambar berikut:



Gambar 3.3 Arah Pembebanan Lingkungan

(Sumber: Dokumentasi pribadi dengan bantuan software AutoCAD)

Kondisi lingkungan tempat beroperasinya bangunan lepas pantai sangat mempengaruhi kinerja struktur, maka data lingkungan sangat penting. Data lingkungan di perairan Laut Jawa tempat beroperasinya struktur LPRO ini adalah sebagai berikut:

Tabel 3.3 Data Gelombang

Returns Periods	Maximum Wave Height (ft)	Period (sec)
1 year return operating	13.45	6.4
100 years return storm	21.65	7.6

Tabel 3.4 Data Angin

Condition	Velocity Mph
Operating	38.92
Storm	51.9

Tabel 3.5 Data Arus

Percentage Water Depth above mud-line	1-Year Return Storm Current Velocity (Ft/Sec)	100-Year Return Storm Current Velocity (Ft/Sec)
0	2.59 (0.75 m/s)	4.00 (1.22 m/s)
10	2.26 (0.69 m/s)	3.28 (1.00 m/s)
20	2 (0.61 m/s)	2.76 (0.84 m/s)
30	1.8 (0.55 m/s)	2.36 (0.72 m/s)
40	1.67 (0.51 m/s)	2.07 (0.63 m/s)
50	1.57 (0.48 m/s)	1.87 (0.57 m/s)
60	1.51 (0.46 m/s)	1.71 (0.52 m/s)
70	1.44 (0.44 m/s)	1.61 (0.49 m/s)
80	1.41 (0.43 m/s)	1.51 (0.46 m/s)
90	1.38 (0.42 m/s)	1.48 (0.45 m/s)
100	1.38 (0.42 m/s)	1.41 (0.43 m/s)

3.3.4. Kedalaman Air (*Water Depth*)

Kedalaman air rata-rata (*Mean Sea Level*) pada kondisi original adalah 89 ft pada kondisi sebelum terjadi *subsidence*, dengan tingkat *subsidence* sebesar 14.57 ft, maka diperoleh kedalaman air untuk kondisi setelah terjadi *subsidence* seperti disajikan dalam tabel berikut:

Tabel 3.6 Perhitungan Kedalaman Air Setelah *Subsidence*

Deskripsi	Sebelum <i>Subsidence</i>	Setelah <i>Subsidence</i>
<i>MSL original (ft)</i>	89	89
<i>Subsidence (ft)</i>	0	14.57
<i>Highest Astronomical Tide (ft)</i>	2.62	2.62
<i>Storm surge (ft) (100 year)</i>	1.02	1.02
Kedalaman air (ft)	89	103.57
Kedalaman air maksimum (ft)	92.64	107.21

3.3.5. *Wave Data Occurrences*

Berikut ini merupakan data kejadian gelombang berdasarkan perairan laut jawa :

Tabel 3.7 Distribusi Tinggi Gelombang (*Occurence*) Perairan Laut Jawa

Height (ft)	Wave Occurrences								Total No. Waves
	315°	0°	45°	90°	135°	180°	225°	270°	
	N	NE	E	SE	S	SW	W	NW	
0.41	271300	215400	1619700	460900	177800	120400	224000	501000	3590500
1.23	176200	108800	1521500	21600	68600	73100	227000	531500	2728300
2.051	48500	23200	760100	50400	11500	18500	105800	282000	1300000
2.871	12400	4700	341200	11100	1300	3700	41600	131300	547300
3.691	3600	1300	148200	2600	100	700	15500	60600	232600
4.511	1300	300	63000	700	0	200	5700	28100	99300
5.331	500	100	26600	200	0	0	2100	13300	42800
6.152	300	0	11000	0	0	0	800	6400	18500
6.972	200	0	4500	0	0	0	200	3200	8100
7.792	0	0	1800	0	0	0	100	1600	3500

Height (ft)	Wave Occurrences								Total No. Waves
	315°	0°	45°	90°	135°	180°	225°	270°	
	N	NE	E	SE	S	SW	W	NW	
0.410	0	0	700	0	0	0	0	800	1500
1.23	0	0	200	0	0	0	0	400	600
2.051	0	0	100	0	0	0	0	200	300

Tabel 3.8 Distribusi Periode Gelombang Perairan Laut Jawa

Height (ft)	Wave Period							
	315°	0°	45°	90°	135°	180°	225°	270°
	N	NE	E	SE	S	SW	W	NW
0.41	3.04	3.20	3.45	3.15	3.01	3.10	3.19	3.46
1.23	3.71	3.60	4.25	3.29	3.02	3.14	3.56	4.00
2.051	4.13	4.06	4.68	3.73	3.30	3.36	3.83	4.35
2.871	4.54	4.52	5.03	4.11	3.35	3.53	4.12	4.66
3.691	4.89	5.19	5.32	4.42	3.50	4.07	4.40	4.95
4.511	5.35	5.50	5.56	4.93	-	4.00	4.68	5.20
5.331	5.90	5.80	5.75	5.00	-	-	4.83	5.39
6.152	5.95	-	5.89	-	-	-	5.00	5.56
6.972	6.00	-	5.99	-	-	-	5.25	5.81
7.792	-	-	6.00	-	-	-	5.50	5.88
0.410	-	-	6.21	-	-	-	-	6.00
1.23	-	-	6.40	-	-	-	-	6.25
2.051	-	-	6.50	-	-	-	-	6.50

BAB IV

ANALISIS DAN PEMBAHASAN

4.1 PEMODELAN

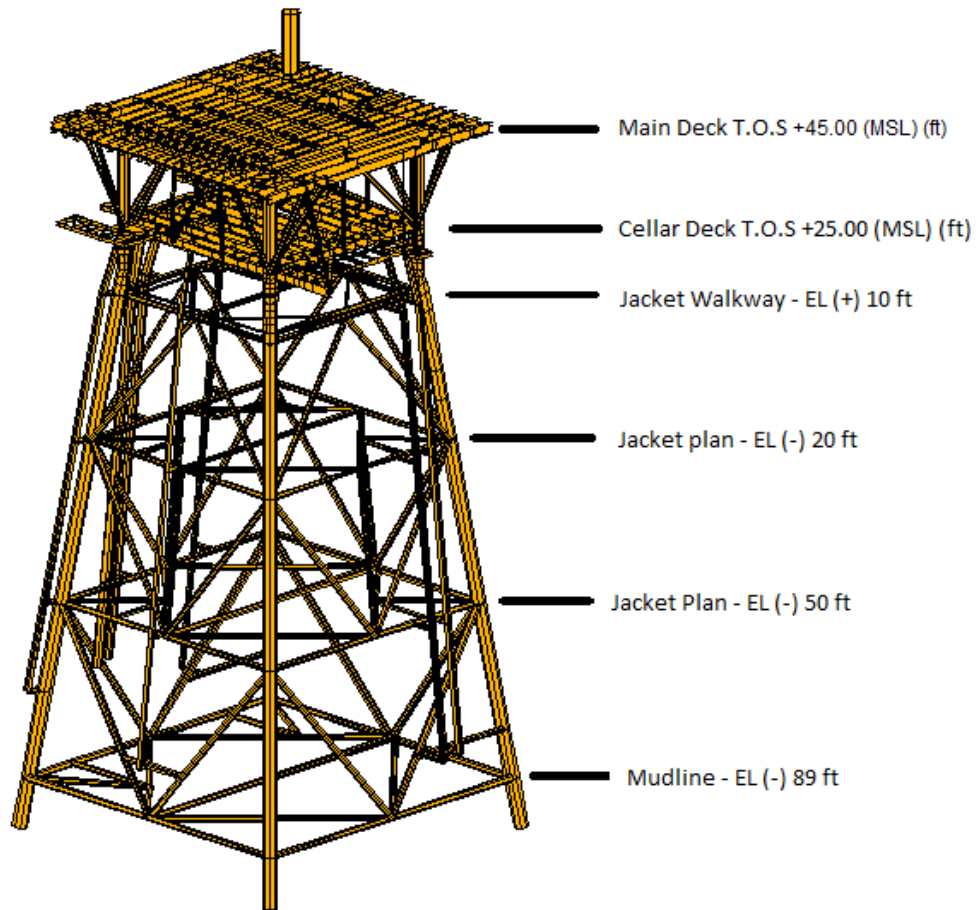
Pemodelan yang dilakukan adalah pemodelan struktur global Platform LIMA untuk mendapatkan gaya-gaya dan momen yang bekerja pada deck leg dan pemodelan lokal untuk mendapatkan distribusi tegangan pada extension deck leg. Untuk pemodelan global menggunakan software GT-Strudl. Sedangkan pemodelan lokal menggunakan software AutoCAD dan ANSYS 14.5.

4.1.1 Pemodelan Struktur Global Dengan GT-Strudl.

Pemodelan struktur LPRO *jacket platform* menggunakan bantuan *software* GT-STRUDL. *Software* ini merupakan salah satu *software* struktur yang berbasis *finite element method (FEM)*. Data yang dipergunakan berasal dari data gambar struktur LPRO sesuai dengan laporan desain struktur. *Input* data yang dimasukkan untuk pemodelan struktur ini adalah:

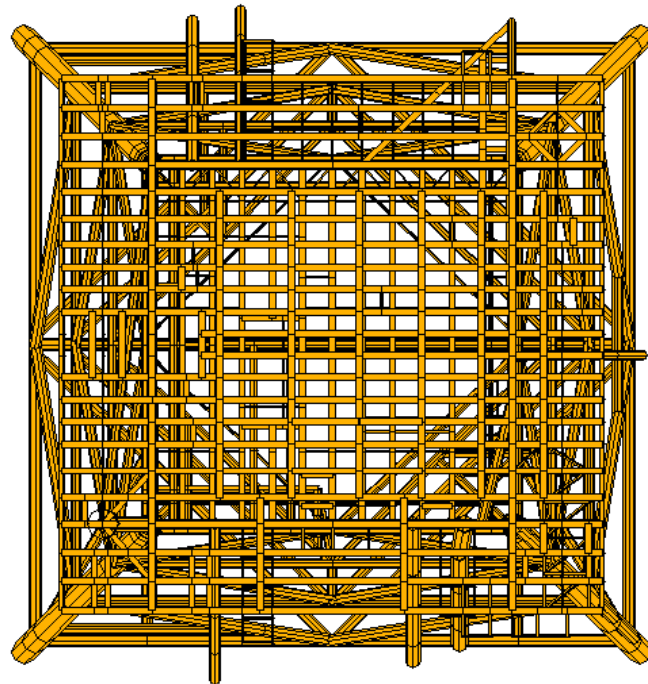
1. Dimensi kaki, yang terdiri dari:
 - Panjang kaki
 - Diameter luar *chord*
 - Diameter luar *brace*
 - Tebal *chord*
 - Tebal *brace*
2. Material
 - Jenis : Baja type A36
 - E (*modulus young*) : 29000 ksi
 - Densitas : 489.56 lb/ft³
 - *Yield stress* : 36 ksi
 - *Ultimate stress* : 58-80 ksi

Platform LPRO memiliki 2 *deck* yang digunakan selama beroperasi, yaitu *Main Deck* dan *Cellar Deck*. Kedua *deck* tersebut dimodelkan secara utuh pada *software* GT-STRUDL. Hasil pemodelan struktur LPRO pada *software* dapat dilihat pada Gambar 4.1 hingga Gambar 4.3 di bawah ini :



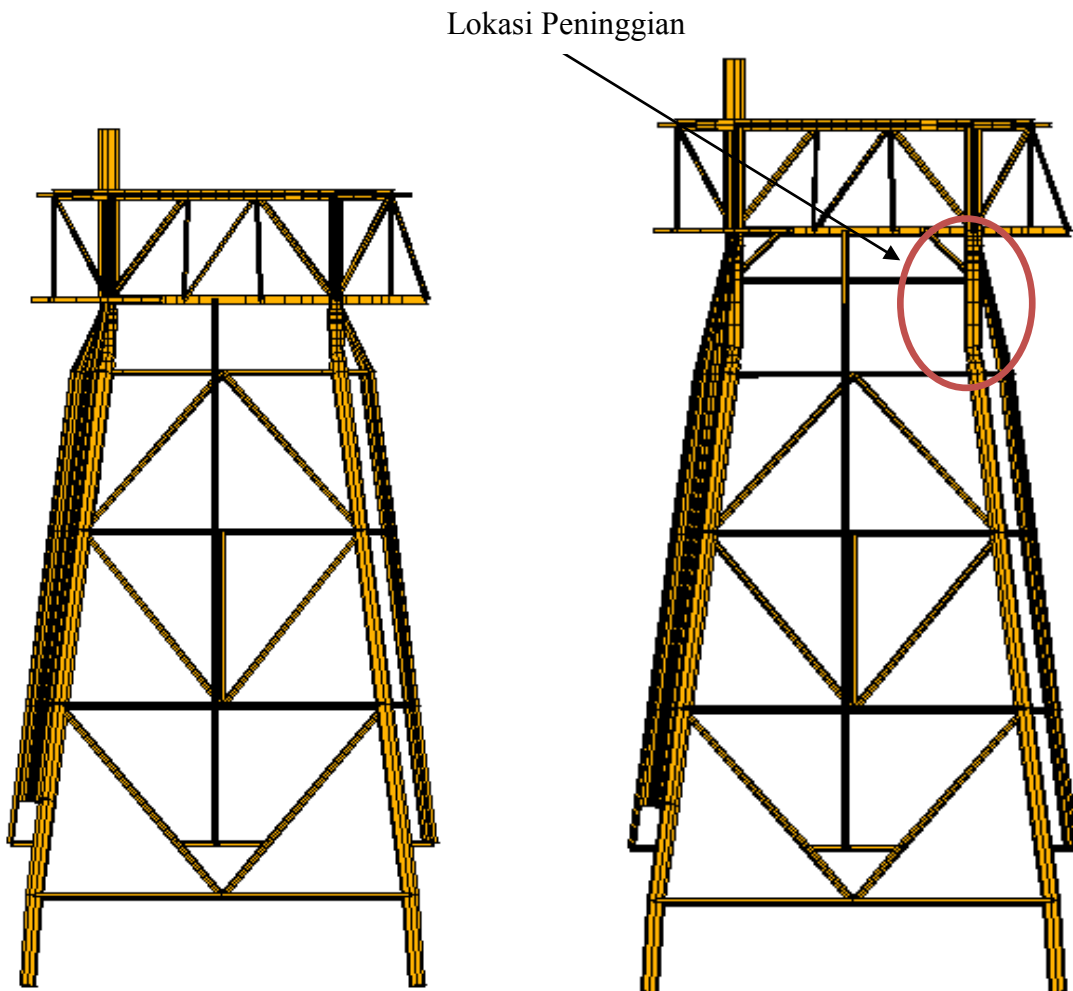
Gambar 4.1 Model Struktur LPRO Tampak Isometris

(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software GT-Strudl*)



Gambar 4.2 Model Struktur LPRO Tampak Atas

(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software GT-Strudl*)



Gambar 4.3 Struktur Awal (kiri) dan Struktur dengan Peninggian 4m (kanan)
(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software GT-Strudl*)

Setelah melakukan pemodelan dengan bantuan *software* GT-STRUDL, kemudian dilakukan validasi berat model pada *software* dengan berat struktur yang terdapat pada data yang diperoleh. Adapun hasil validasinya adalah sebagai berikut:

Tabel 4.1 Validasi *Software*

Struktur	Berat Structural (topside+jacket) report (Kips)	Berat Structural (topside+jacket) pemodelan (Kips)	Selisih (%)
LPRO	-746.74	-751.19	0.59

Berdasarkan tabel di atas diketahui bahwa selisih antara data dengan pemodelan yang dilakukan ialah sebesar 0.59 %. Hal ini menunjukkan bahwa model yang dibuat valid, dengan faktor eror kurang dari 5% sehingga dapat digunakan untuk

analisis berikutnya. Perbedaan 0.59 % tersebut dapat diakibatkan karena perbedaan *software* yang digunakan. Data yang didapat berdasarkan pemodelan menggunakan *software* SACS 5.2 sedangkan pada tugas akhir ini menggunakan *software* GTStrudl.

Selain dilakukan validasi terhadap berat, dilakukan juga validasi terhadap titik berat struktur. Hal ini dilakukan untuk mendapatkan struktur yang valid.

Tabel 4.2. Data Titik Berat Struktur untuk Validasi

Struktur	Software	Koordinat Titik Berat		
		x	y	z
LPRO	SACS	-1.67	-7.36	0.47

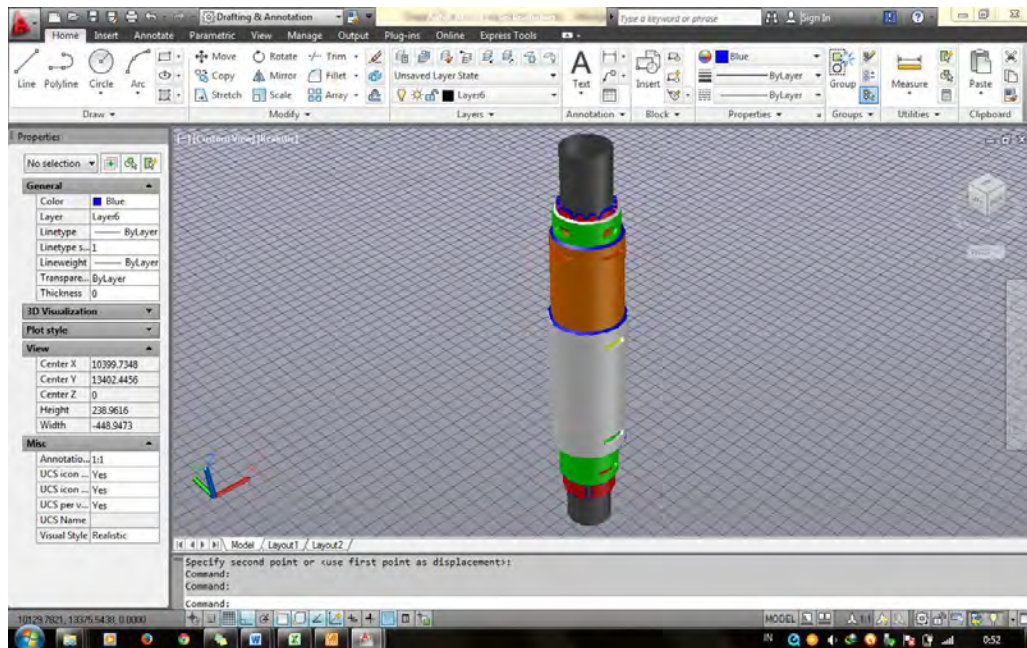
Tabel 4.3 Perubahan Titik Berat Struktur

Struktur	Software	Koordinat Titik Berat		
		x	y	z
LPRO	GT Strudl	-1.61	-0.04	0.45

Tabel 4.2 merupakan data titik berat struktur yang didapatkan berdasarkan data. Hasil titik berat struktur pada pemodelan dengan menggunakan *software* GT-Strudl dapat dilihat pada Tabel 4.3. Berdasarkan hasil titik berat tersebut, diperoleh eror yang kurang dari 5% sehingga struktur dinyatakan valid dan dapat digunakan untuk analisis berikutnya.

4.1.2. Pemodelan Extension Deck Leg Dengan AutoCAD 3 Dimensi

Untuk mempermudah pemodelan pada *software* Ansys 14.5, struktur extension deck leg terlebih dahulu dimodelkan pada *software* AutoCAD 3 Dimensi.



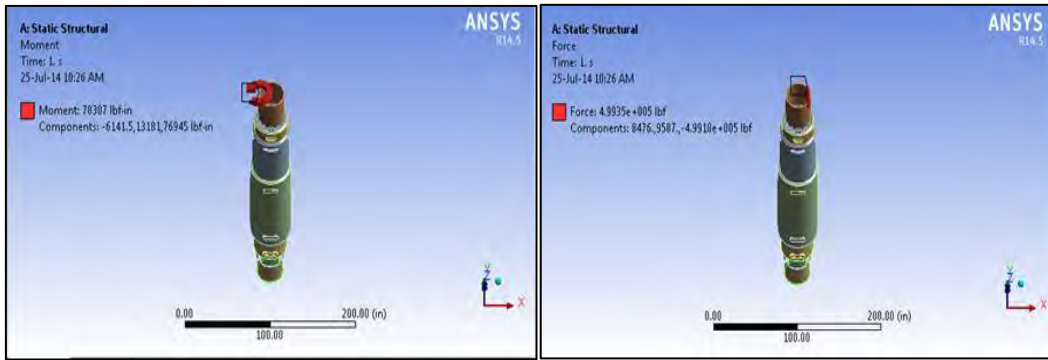
Gambar 4.4. Pemodelan *Extension Deck Leg* dengan AutoCAD 3D
(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software AutoCAD 2012*)

Gambar di atas adalah gambar 3 dimensi dari extension deck leg. Pemodelan pada AutoCAD dilakukan untuk mempermudah dalam penentuan dimensi. Selain itu juga mempermudah untuk memahami bentuk dari struktur secara visual.

4.1.3. Pemodelan Lokal Dengan Software Ansys 14.5

Dari permodelan dengan bantuan *software* GT-Strudl, akan didapatkan gaya – gaya dan momen yang terjadi pada joint yang dianalisa. Selanjutnya untuk melakukan analisa lokal, pemodelan extension deck leg dilakukan dengan menggunakan software AutoCAD 3 dimensi kemudian diimport ke Ansys Workbench untuk dilakukan analisa lokal untuk mendapatkan distribusi tegangan yang terjadi. Jenis analisis yang dilakukan adalah analisis struktural.

Struktur dimodelkan dalam bentuk solid, kemudian diinputkan gaya – gaya dan momen yang bekerja pada ujung atas dan ujung bawah dari struktur *extension deck leg*. Seperti pada gambar di bawah ini :



A

B

Gambar 4.5. Geometri *Extension Deck Leg* di Ansys 14.5 dengan Input Momen (A) dan Input Gaya (B)

(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software Ansys 14.5*)

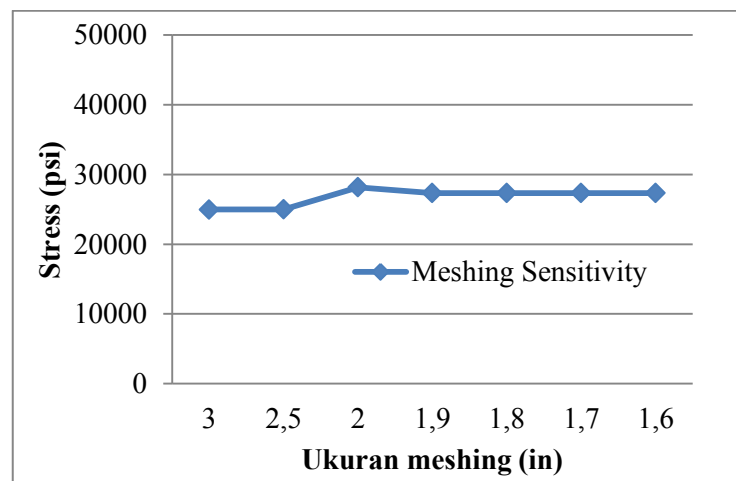
Setelah memodelkan geometri, langkah selanjutnya adalah menentukan meshing. Meshing pada Ansys Workbench dilakukan secara manual dengan metode tetrahedron dengan menentukan ukuran besarnya *sizing* dari *meshing* tersebut.

Sebelum dilakukan *running*, terlebih dahulu dilakukan mesh sensitivity, yaitu iterasi untuk memperoleh tegangan konstan dengan variasi ukuran meshing. Ketika tegangan yang didapat telah mendekati nilai yang konstan, maka model dapat digunakan pada analisis selanjutnya. Jika meshing yang dilakukan sudah benar, maka meskipun dengan ukuran meshing yang berbeda-beda, namun tegangan yang dihasilkan adalah konstan atau relatif seimbang. Hal tersebut menandakan bahwa meshing dengan ukuran tersebut telah memiliki keakuratan untuk daerah yang dianalisis. Hasil dari meshing sensitivity dengan tujuh macam ukuran meshing dan dengan pembebanan yang sama disajikan pada tabel dan grafik di bawah ini :

Tabel 4.4. *Meshing Sensitivity*

No.	Ukuran Mesh (in)	Stress (psi)
1	3	24966
2	2,5	24989
3	2	28174

No.	Ukuran Mesh (in)	Stress (psi)
4	1,9	27343
5	1,8	27343
6	1,7	27343
7	1,6	27343



Gambar 4.6. *Meshing Sensitivity*

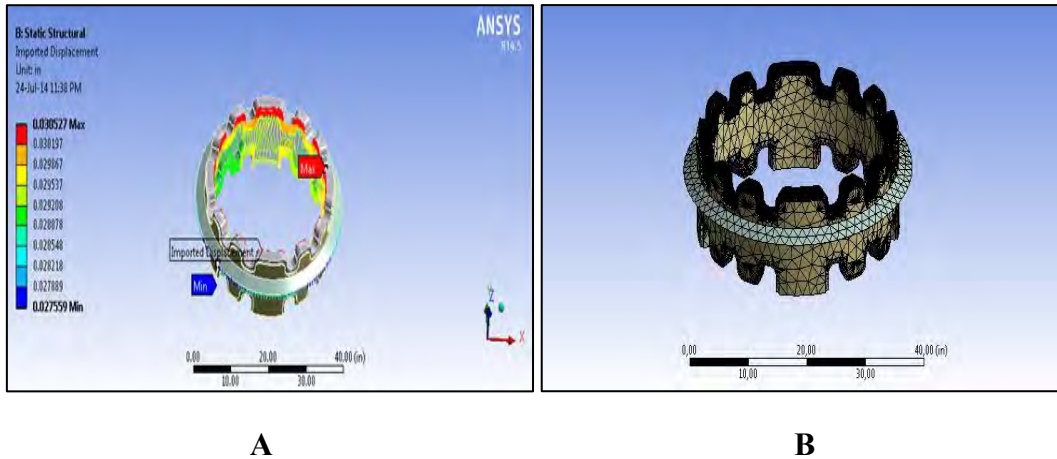
(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan Microsoft Excel 2010*)

Dari Grafik di atas dapat diketahui bahwa semakin kecil ukuran meshing maka tingkat keakuratan pada daerah yang dianalisis juga semakin baik. Margin error pada ukuran meshing di atas adalah 0%. Karena margin error lebih kecil dari 5%, maka ukuran meshing tersebut dapat digunakan untuk analisa. Pada tugas akhir ini model yang digunakan adalah dengan ukuran meshing 1.6 in, karena pada model tersebut tegangan yang dihasilkan sudah mendekati konstan yaitu 27342 psi. Namun ukuran tersebut dirasa masih kurang detail pada posisi las-lasan tempat dimana tegangan terkonsentrasi. Maka untuk itu perlu dilakukan submodelling pada daerah las – lasan agar ketelitian dan keakuratan pada daerah tersebut semakin baik.

4.1.4. Submodelling Struktur Pada Posisi Las – lasan Kritis.

Struktur *submodelling* dimodelkan dalam bentuk solid, kemudian diimportkan *displacement* dari permukaan potongan model *extension deck leg* agar beban gaya

– gaya dan momen yang telah diinputkan pada analisis *extension deck leg* keseluruhan dapat ditransferkan ke submodel. *Import displacement* pada submodel dapat dilihat pada gambar di bawah ini :



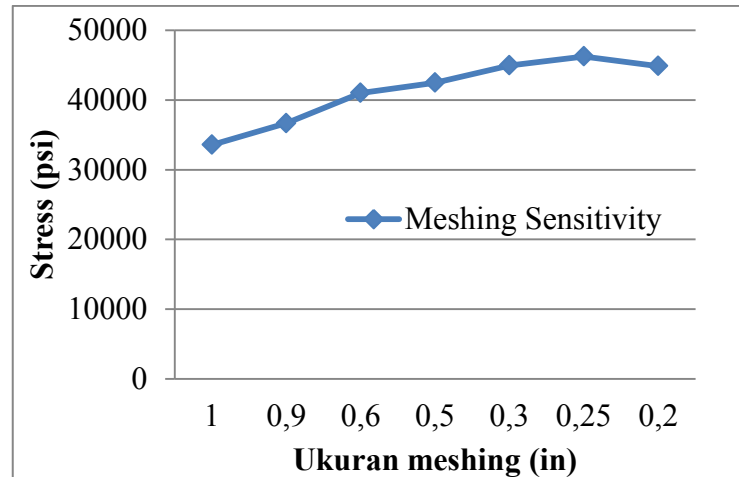
Gambar 4.7. Struktur Submodel dengan *Imported Displacement* (A) dan Ukuran *Meshing* (B)

(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software Ansys 14.5*)

Untuk struktur submodel, dilakukan juga meshing sensitivity untuk memperoleh tegangan yang hampir konstan agar hasil meshing memiliki hasil yang akurat. Hasil dari meshing sensitivity untuk struktur submodel dengan tujuh macam ukuran meshing dan dengan pembebanan yang sama disajikan pada tabel dan grafik di bawah ini :

Tabel 4.5. *Meshing Sensitivity* Submodel

No.	Ukuran Mesh (in)	Stress (psi)
1	1	33576
2	0,9	36665
3	0,6	41016
4	0,5	42486
5	0,3	44963
6	0,25	46236
7	0,2	44877



Gambar 4.8. *Meshing Sensitivity* Submodel

(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan Microsoft Excel 2010*)

Dari Grafik di atas dapat diketahui bahwa tegangan yang terjadi sudah mendekati konstan, dengan margin error sebesar 2.94 %. Margin error pada meshing tersebut < 5 %, maka ukuran meshing tersebut dapat digunakan untuk analisa. Sehingga ukuran meshing untuk struktur submodel yang dipakai adalah 0.2 in, dengan tegangan maksimum yang terjadi hampir mendekati konstan yaitu 44877 psi.

4.2. ANALISIS TEGANGAN

4.2.1. Analisis Statis Dengan Beban Lingkungan Menggunakan GT-Strudl.

4.2.1.1 Pembebanan Pada Struktur

Berikut ini adalah nama beban (*load condition*) yang terdapat dalam analisis *inplace*, yaitu :

Tabel 4.6. Deskripsi *Load Condition*

ID	Description	Units	Value
1	SW	Kips	665.45
2	Anodes	Kips	8.83
2.1	Main Deck Plates	Kips	35.00
	Cellar Deck Gratings	Kips	13.57
	Separator Access Platform	Kips	15.70
	Hatch	Kips	0.28
	Erection Brace	Kips	3.93
	Monorail	Kips	0.51
	Stairs	Kips	12.08
	Handrail	Kips	5.31

ID	Description	Units	Value
4	Parigi Test Separator (V-610)	Kips	41.20
	Parigi Prod. Separator (V-620)	Kips	
	LP Production Separator (LPV-2)	Kips	40.12
	Production Separator (LPV-3)	Kips	
	K.O.Drum (LPV-5)	Kips	41.20
	Atmospheric Separator (LPV-6)	Kips	
	Diesel Storage Tank (LPTK-1)	Kips	7.10
	Fuel Gas Scrubber (LPV-7)	Kips	2.50
	LP Flare K.O. Drum (LPV-8)	Kips	4.91
	Tote Tank (3 nos)	Kips	1.50
	LP Launcher to NGL (LP-V-6A)	Kips	3.00
	Cilamaya Gas Launcher (L-650)	Kips	
	4.1	Crude Launcher (LPE-101)	Kips
Transmission Pump - 5 nos		Kips	
Diesel Transfer Pump (LPP-3)		Kips	1.00
Sump Tank Pump (LPP-4)		Kips	2.00
LB Receiver		Kips	8.90
LC Receiver		Kips	8.91
TLA Receiver		Kips	8.90
TLD Receiver		Kips	6.10
MM Receiver		Kips	7.50
LPP1A		Kips	2.24
LPP1B		Kips	2.24
LPP1C		Kips	2.24
LPP1D		Kips	2.24
LPP1E		Kips	2.24
5	Main Deck - Piping Operating Load	Kips	336.63
	Cellar Deck - Piping Operating Load	Kips	138.17
6	Crane Selfweight	Kips	51.10
	Crane Operating Weight	Kips	26.90
	Crane Operating Moment -X dir	Kips-in	6459.40
	Crane Operating Moment -Y dir	Kips-in	6459.40
7	Main Deck - Open Area live Load	Kips	173.21
	Cellar Deck - Open Area live Load	Kips	76.50

Berikut ini adalah beban kombinasi kondisi operasi yang digunakan dalam analisis, antara lain:

Tabel 4.7. Beban Kombinasi Kondisi Operasi

ID	Description	Load Combination								
		1000	1001	1002	1003	1004	1005	1006	1007	1008
1	SW	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
2	Anodes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2.1	Main Deck Plates	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	Cellar Deck Gratings	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
	Separator Access Platform	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Hatch	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Erection Brace	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Monorail	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
	Stairs	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
	Handrail	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57
4	Parigi Test Separator (V-610)	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
	Parigi Prod. Separator (V-620)	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
	LP Production Separator (LPV-2)	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68
	Production Separator (LPV-3)	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68
	K.O.Drum (LPV-5)	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
	Atmospheric Separator (LPV-6)	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
	Diesel Storage Tank (LPTK-1)	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08
	Fuel Gas Scrubber (LPV-7)	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
	LP Flare K.O. Drum (LPV-8)	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25

ID	Description	Load Combination								
		1000	1001	1002	1003	1004	1005	1006	1007	1008
	Tote Tank (3 nos)	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
	LP Launcher to NGL (LP-V-6A)	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
	Cilamaya Gas Launcher (L-650)	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
4.1	Crude Launcher (LPE-101)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Diesel Transfer Pump (LPP-3)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Sump Tank Pump (LPP-4)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	LB Receiver	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	LC Receiver	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	TLA Receiver	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	TLD Receiver	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	MM Receiver	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
	LPP1A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	LPP1B	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	LPP1C	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	LPP1D	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPP1E	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
5	Main Deck - Piping Operating Load	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
	Cellar Deck - Piping Operating Load	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
6	Crane Selfweight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Crane Operating Weight	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
	Crane Operating Moment -X dir		1.11	0.79		-0.79	-1.11	-0.79	1.11	0.79

ID	Description	Load Combination								
		1000	1001	1002	1003	1004	1005	1006	1007	1008
	Crane Operating Moment -Y dir			0.79	1.11	0.79		-0.79	-1.11	-0.79
7	Main Deck - Open Area live Load	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
	Cellar Deck - Open Area live Load	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
0	ENVIRONMENTAL LOAD AT 360 DEG		1.10							
45	ENVIRONMENTAL LOAD AT 45 DEG			1.10						
90	ENVIRONMENTAL LOAD AT 90 DEG				1.10					
135	ENVIRONMENTAL LOAD AT 135 DEG					1.10				
180	ENVIRONMENTAL LOAD AT 180 DEG						1.10			
225	ENVIRONMENTAL LOAD AT 225 DEG							1.10		
270	ENVIRONMENTAL LOAD AT 270 DEG								1.10	
315	ENVIRONMENTAL LOAD AT 315 DEG									1.10

Analisa statis dengan tambahan beban lingkungan dilakukan untuk mendapatkan gaya – gaya dan momen yang bekerja pada ujung atas deck leg. Gaya dan momen tersebut didapatkan karena adanya beban aksial dari topside yang ditumpu oleh deck leg yang jumlahnya 4 buah, dengan dikombinasikan dengan beban lateral berupa beban angin, beban gelombang serta beban arus yang memberikan kontribusi terhadap tegangan yang terjadi pada deck leg.

Dari keempat deck leg yang dianalisa kemudian diambil pada joint yang mendapatkan beban tertinggi, yaitu pada joint ujung atas 497 dan ujung bawah 706. Hasil dari gaya dan momen yang terbesar setelah dilakukan running menggunakan *software* GT – Strudl sesuai arah pembebanan lingkungan terangkum sebagai berikut :

1. Tinggi gelombang 0.41 feet.

Tabel 4.8. Gaya dan Momen pada $H_s = 0.41$ Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	499,181	8,476	9,587	76,945	-6,142	13,181
	706	-499,414	-8,484	-9,595	-76,945	-2,203	-5,803
90	497	497,976	9,066	10,024	76,899	-12,389	9,221
	706	-498,209	-9,066	-10,035	-76,899	3,663	-1,334
135	497	497,859	9,656	9,717	76,809	-7,705	5,408
	706	-498,092	-9,648	-9,725	-76,809	-0,752	2,989
180	497	498,934	9,892	8,864	76,828	5,177	3,985
	706	-499,166	-9,882	-8,864	-76,828	-12,888	4,617
225	497	500,517	9,659	7,959	76,848	18,663	5,738
	706	-500,75	-9,651	-7,952	-76,848	-25,585	2,662
270	497	501,717	9,073	7,533	76,898	24,814	9,687
	706	-501,95	-9,073	-7,523	-76,898	-31,363	-1,794
315	497	501,821	8,484	7,842	76,97	20,116	13,5
	706	-502,054	-8,491	-7,834	-76,97	-26,935	-6,116
360	497	500,765	8,248	8,687	76,981	7,333	14,917
	706	-500,998	-8,259	-8,687	-76,981	-14,89	-7,736

2. Tinggi gelombang 1.23 feet.

Tabel 4.9. Gaya dan Momen pada $H_s = 1.23$ Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	499,164	8,478	9,586	76,945	-6,104	13,169
	706	-499,397	-8,486	-9,594	-76,945	-2,239	-5,789
90	497	497,969	9,066	10,008	76,875	-12,252	9,211
	706	-498,202	-9,066	-10,019	-76,875	3,54	-1,324
135	497	497,848	9,655	9,715	76,752	-7,694	5,429
	706	-498,081	-9,648	-9,723	-76,752	-0,762	2,968
180	497	498,973	9,875	8,854	76,843	5,26	4,041
	706	-499,205	-9,864	-8,854	-76,843	-12,964	4,545
225	497	500,535	9,657	7,953	76,858	18,731	5,751
	706	-500,768	-9,649	-7,945	-76,858	-25,647	2,647
270	497	501,735	9,069	7,528	76,92	24,854	9,694
	706	-501,968	-9,069	-7,517	-76,92	-31,398	-1,804
315	497	501,81	8,472	7,849	76,954	19,931	13,563
	706	-502,043	-8,479	-7,841	-76,954	-26,756	-6,189
360	497	500,772	8,252	8,68	77,009	7,415	14,881
	706	-501,005	-8,263	-8,68	-77,009	-14,967	-7,697

3. Tinggi gelombang 2.051 feet.

Tabel 4.10. Gaya dan Momen pada $H_s = 2.051$ Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	499,128	8,484	9,594	76,939	-6,141	13,137
	706	-499,36	-8,491	-9,601	-76,939	-2,209	-5,753
90	497	497,976	9,066	10,024	76,899	-12,389	9,221
	706	-498,209	-9,066	-10,035	-76,899	3,663	-1,334
135	497	497,859	9,656	9,717	76,809	-7,705	5,408
	706	-498,092	-9,648	-9,725	-76,809	-0,752	2,989
180	497	498,934	9,892	8,864	76,828	5,177	3,985
	706	-499,166	-9,882	-8,864	-76,828	-12,888	4,617
225	497	500,552	9,662	7,961	76,868	18,698	5,754
	706	-500,784	-9,655	-7,954	-76,868	-25,622	2,649
270	497	501,717	9,073	7,533	76,898	24,814	9,687
	706	-501,95	-9,073	-7,523	-76,898	-31,363	-1,794

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
315	497	501,787	8,478	7,857	76,972	19,764	13,555
	706	-502,02	-8,485	-7,85	-76,972	-26,596	-6,176
360	497	500,776	8,229	8,687	77,004	7,313	15,008
	706	-501,008	-8,24	-8,687	-77,004	-14,871	-7,844

4. Tinggi gelombang 2.871 feet.

Tabel 4.11. Gaya dan Momen pada $H_s = 2.871$ Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	499,089	8,485	9,604	76,928	-6,238	13,106
	706	-499,322	-8,493	-9,611	-76,928	-2,12	-5,72
90	497	497,952	9,066	10,004	76,835	-11,964	9,19
	706	-498,185	-9,066	-10,015	-76,835	3,256	-1,303
135	497	497,867	9,684	9,702	76,773	-7,215	5,298
	706	-498,099	-9,676	-9,71	-76,773	-1,23	3,124
180	497	498,983	9,854	8,863	76,806	5,152	4,111
	706	-499,216	-9,843	-8,863	-76,806	-12,863	4,457
225	497	500,563	9,655	7,971	76,864	18,537	5,789
	706	-500,795	-9,648	-7,963	-76,864	-25,468	2,608
270	497	501,742	9,065	7,564	76,93	24,49	9,716
	706	-501,974	-9,065	-7,553	-76,93	-31,066	-1,829
315	497	501,753	8,495	7,868	77,008	19,614	13,505
	706	-501,985	-8,503	-7,86	-77,008	-26,455	-6,111
360	497	500,701	8,254	8,717	76,971	7,014	14,917
	706	-500,933	-8,265	-8,717	-76,971	-14,598	-7,731

5. Tinggi gelombang 3.691 feet.

Tabel 4.12. Gaya dan Momen pada $H_s = 3.691$ Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	499,063	8,512	9,602	76,967	-5,961	13,029
	706	-499,296	-8,52	-9,61	-76,967	-2,396	-5,62
90	497	497,976	9,066	10,024	76,899	-12,389	9,221
	706	-498,209	-9,066	-10,035	-76,899	3,663	-1,334

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
135	497	497,936	9,646	9,691	76,832	-7,097	5,374
	706	-498,169	-9,638	-9,698	-76,832	-1,337	3,015
180	497	498,958	9,85	8,876	76,766	5,004	4,126
	706	-499,191	-9,839	-8,876	-76,766	-12,726	4,439
225	497	500,519	9,622	8,003	76,807	17,886	5,882
	706	-500,752	-9,614	-7,995	-76,807	-24,845	2,485
270	497	501,717	9,065	7,581	76,915	24,159	9,722
	706	-501,95	-9,065	-7,57	-76,915	-30,75	-1,836
315	497	501,718	8,515	7,879	77,05	19,49	13,441
	706	-501,95	-8,522	-7,871	-77,05	-26,341	-6,03
360	497	500,662	8,268	8,727	77,019	6,917	14,872
	706	-500,895	-8,279	-8,727	-77,019	-14,51	-7,674

6. Tinggi gelombang 4.511 feet.

Tabel 4.13. Gaya dan Momen pada Hs = 4.511 Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	499,024	8,522	9,608	76,972	-5,937	12,983
	706	-499,257	-8,529	-9,616	-76,972	-2,426	-5,566
90	497	497,907	9,066	10,006	76,771	-11,755	9,163
	706	-498,14	-9,066	-10,017	-76,771	3,045	-1,276
135	497	497,883	9,656	9,701	76,698	-6,984	5,361
	706	-498,116	-9,648	-9,709	-76,698	-1,459	3,037
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	500,535	9,613	8,009	76,805	17,763	5,928
	706	-500,767	-9,605	-8,001	-76,805	-24,727	2,432
270	497	501,706	9,064	7,592	76,923	23,9	9,731
	706	-501,939	-9,064	-7,582	-76,923	-30,5	-1,845
315	497	501,686	8,533	7,889	77,091	19,381	13,379
	706	-501,918	-8,541	-7,881	-77,091	-26,241	-5,952
360	497	500,623	8,283	8,736	77,082	6,833	14,816
	706	-500,856	-8,294	-8,736	-77,082	-14,433	-7,604

7. Tinggi gelombang 5.331 feet.

Tabel 4.14. Gaya dan Momen pada Hs = 5.331 Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	498,994	8,536	9,611	76,99	-5,823	12,936
	706	-499,226	-8,544	-9,619	-76,99	-2,542	-5,506
90	497	497,903	9,065	10,002	76,743	-11,603	9,15
	706	-498,136	-9,065	-10,013	-76,743	2,897	-1,264
135	497	497,876	9,655	9,702	76,659	-6,869	5,364
	706	-498,109	-9,647	-9,709	-76,659	-1,574	3,032
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
270	497	501,663	9,065	7,62	76,946	23,511	9,736
	706	-501,895	-9,065	-7,609	-76,946	-30,135	-1,85
315	497	501,67	8,527	7,905	77,166	19,04	13,402
	706	-501,903	-8,534	-7,898	-77,166	-25,915	-5,98
360	497	500,604	8,292	8,737	77,188	6,825	14,795
	706	-500,837	-8,303	-8,737	-77,188	-14,426	-7,576

8. Tinggi gelombang 6.152 feet.

Tabel 4.15. Gaya dan Momen pada Hs = 6.152 Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
90	497	497,867	9,065	10,006	76,706	-11,52	9,134
	706	-498,1	-9,065	-10,017	-76,706	2,81	-1,247
135	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
270	497	501,635	9,064	7,64	76,978	23,193	9,743
	706	-501,868	-9,064	-7,629	-76,978	-29,835	-1,857

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
315	497	501,668	8,515	7,919	77,242	18,73	13,44
	706	-501,901	-8,523	-7,911	-77,242	-25,616	-6,028
360	497	500,572	8,302	8,746	77,227	6,733	14,761
	706	-500,804	-8,313	-8,746	-77,227	-14,342	-7,534

9. Tinggi gelombang 6.972 feet.

Tabel 4.16. Gaya dan Momen pada Hs = 6.972 Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
90	497	497,834	9,065	10,01	76,67	-11,426	9,117
	706	-498,066	-9,065	-10,02	-76,67	2,713	-1,231
135	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
270	497	501,597	9,065	7,662	77,021	22,863	9,746
	706	-501,83	-9,065	-7,651	-77,021	-29,524	-1,859
315	497	501,631	8,534	7,934	77,305	18,55	13,374
	706	-501,864	-8,542	-7,926	-77,305	-25,449	-5,947
360	497	500,538	8,313	8,756	77,267	6,638	14,726
	706	-500,77	-8,324	-8,756	-77,267	-14,255	-7,489

10. Tinggi gelombang 7.792 feet.

Tabel 4.17. Gaya dan Momen pada Hs = 7.792 Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
90	497	497,976	9,066	10,024	76,899	-12,389	9,221
	706	-498,209	-9,066	-10,035	-76,899	3,663	-1,334

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
135	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
270	497	501,717	9,073	7,533	76,898	24,814	9,687
	706	-501,95	-9,073	-7,523	-76,898	-31,363	-1,794
315	497	501,821	8,484	7,842	76,97	20,116	13,5
	706	-502,054	-8,491	-7,834	-76,97	-26,935	-6,116
360	497	-	-	-	-	-	-
	706	-	-	-	-	-	-

11. Tinggi gelombang 0.41 feet.

Tabel 4.18. Gaya dan Momen pada $H_s = 0.41$ Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
90	497	497,966	9,065	10,019	76,881	-12,359	9,216
	706	-498,199	-9,065	-10,03	-76,881	3,638	-1,329
135	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
270	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
315	497	501,817	8,488	7,84	76,967	20,115	13,495
	706	-502,05	-8,496	-7,832	-76,967	-26,932	-6,107
360	497	-	-	-	-	-	-
	706	-	-	-	-	-	-

12. Tinggi gelombang 1.23 feet.

Tabel 4.19. Gaya dan Momen pada Hs = 1.23 Feet

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
90	497	497,943	9,066	10,02	76,852	-12,304	9,205
	706	-498,176	-9,066	-10,031	-76,852	3,582	-1,318
135	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
270	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
315	497	501,803	8,492	7,849	77,009	19,959	13,485
	706	-502,035	-8,5	-7,841	-77,009	-26,784	-6,094
360	497	-	-	-	-	-	-
	706	-	-	-	-	-	-

13. Tinggi gelombang 2.051 feet.

Tabel 4.20. Gaya dan Momen pada Hs = 2.051 Feet

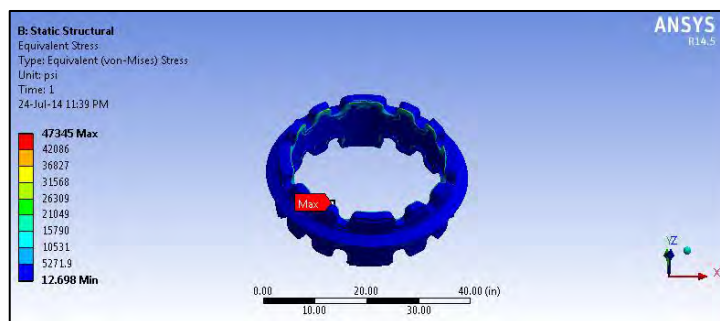
MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
45	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
90	497	497,926	9,066	10,018	76,82	-12,197	9,193
	706	-498,159	-9,066	-10,029	-76,82	3,476	-1,305
135	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
180	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
225	497	-	-	-	-	-	-
	706	-	-	-	-	-	-
270	497	-	-	-	-	-	-
	706	-	-	-	-	-	-

MEMBER FORCES							
LOADING (°)	JOINT	FORCE (kips)			MOMENT (kips-in)		
		AXIAL	SHEAR X	SHEAR Z	TORSIONAL	BENDING X	BENDING Z
315	497	501,781	8,5	7,859	77,055	19,805	13,463
	706	-502,014	-8,508	-7,852	-77,055	-26,639	-6,064
360	497	-	-	-	-	-	-
	706	-	-	-	-	-	-

Dari hasil output di atas, selanjutnya dimasukkan ke dalam inputan permodelan lokal menggunakan software Ansys untuk mendapatkan distribusi tegangan yang terjadi pada extension deck leg.

4.2.2. Analisis Hot Spot Stress (HSS)/ Tegangan Hot Spot

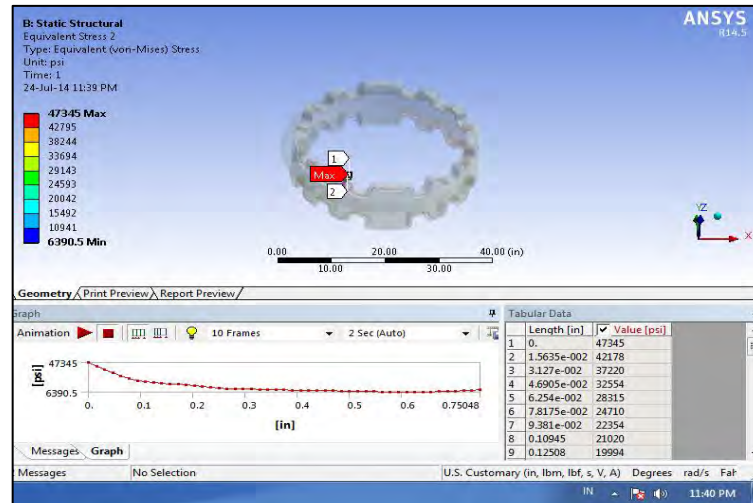
Dari analisa lokal menggunakan software Ansys 14.5, didapatkan distribusi tegangan yang terjadi pada struktur. Tegangan maksimum terjadi pada sambungan las – lasan antara potongan deck leg atas dengan deck leg bushing, yang ditunjukkan pada gambar berikut :



Gambar 4.9. Tegangan Maksimum pada Submodel

(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software Ansys 14.5*)

Untuk setiap tinggi dan arah gelombang, didapatkan tegangan yang terjadi, kemudian dilakukan extrapolasi linier dengan membuat jalur atau path dari titik yang mempunyai tegangan maksimum ditarik ke bawah, sehingga didapatkan distribusi tegangan pada struktur tersebut, seperti yang ditunjukkan pada gambar di bawah ini :



Gambar 4.10. Jalur (*path*) untuk Extrapolasi Linier pada Submodel
(Sumber : *Dokumentasi Pribadi 2014 dengan bantuan software Ansys 14.5*)

Kemudian tegangan hotspot atau Hot Spot Stress (HSS) dapat dihitung dengan menggunakan persamaan berikut :

$$\sigma_{hs} = 3\sigma_{4mm} - 3\sigma_{8mm} + \sigma_{12mm} \quad 2.30$$

Perhitungan HSS berdasarkan analisa lokal untuk setiap tinggi dan arah gelombang ditampilkan pada tabel berikut :

1. Tinggi gelombang 0.41 feet.

Tabel 4.21. Hot Spot Stress pada Hs = 0.41 Feet

ARAH ($^{\circ}$)	σ_{max} (psi)	σ_{4mm} (psi)	σ_{8mm} (psi)	σ_{12mm} (psi)	σ_{hs} (psi)
45	47345	18004,65	10368,95	8195,00	31102,10
90	47185	17943,00	10334,00	8168,00	30995,00
135	47251	17968,40	10349,40	8180,30	31037,30
180	47508	18065,55	10404,62	8223,53	31206,32
225	47800	18177,20	10467,40	8272,40	31401,80
270	47959	18236,65	10501,10	8298,50	31505,15
315	47891	18210,55	10486,30	8286,75	31459,50
360	47637	18114,85	10431,59	8243,97	31293,75

2. Tinggi gelombang 1.23 feet.

Tabel 4.22. Hot Spot Stress pada Hs = 1.23 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	47344	18004,65	10368,66	8195,00	31102,97
90	47186	17943,75	10335,00	8168,87	30995,12
135	47250	17968,40	10349,09	8180,03	31037,98
180	47513	18068,45	10405,49	8224,26	31213,14
225	47961	18236,65	10501,63	8298,93	31504,01
270	47961	18237,00	10502,00	8300,00	31505,00
315	47888	18209,10	10485,53	8286,17	31456,88
360	47639	18114,85	10431,88	8244,27	31293,18

3. Tinggi gelombang 2.051 feet.

Tabel 4.23. Hot Spot Stress pada Hs = 2.051 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	47340	18003,20	10367,79	8194,39	31100,62
90	47185	17943,75	10334,73	8168,72	30995,78
135	47251	17968,40	10349,38	8180,32	31037,40
180	47508	18065,55	10404,62	8223,53	31206,32
225	47804	18178,65	10468,13	8272,98	31404,54
270	47959	18236,65	10501,05	8298,50	31505,31
315	47884	18207,65	10484,66	8285,45	31454,42
360	47637	18114,85	10431,45	8243,83	31294,05

4. Tinggi gelombang 2.871 feet.

Tabel 4.24. Hot Spot Stress pada Hs = 2.871 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	47336	18000,30	10366,78	8193,52	31094,09
90	47188	17945,20	10335,31	8169,16	30998,83
135	47258	17971,30	10350,83	8181,48	31042,91
180	47512	18067,00	10405,49	8224,26	31208,79
225	47803	18177,20	10467,99	8272,83	31400,48
270	47957	18236,65	10500,76	8298,35	31506,04
315	47879	18206,20	10483,65	8284,72	31452,39
360	47628	18110,50	10429,42	8242,24	31285,49

5. Tinggi gelombang 3.691 feet.

Tabel 4.25. Hot Spot Stress pada Hs = 3.691 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	47337	18001,75	10367,07	8193,66	31097,72
90	47185	17943,75	10334,73	8168,72	30995,78
135	47266	17974,20	10352,42	8182,79	31048,13
180	47508	18065,55	10404,48	8223,53	31206,76
225	47791	18172,85	10465,23	8270,80	31393,66
270	47951	18233,75	10499,45	8297,19	31500,09
315	47875	18204,75	10482,78	8284,00	31449,92
360	47623	18109,05	10428,55	8241,51	31283,03

6. Tinggi gelombang 4.511 feet.

Tabel 4.26. Hot Spot Stress pada Hs = 4.511 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	47334	18000,30	10366,34	8193,08	31094,96
90	47186	17943,75	10334,88	8168,87	30995,49
135	47262	17972,75	10351,55	8182,06	31045,66
180	-	-	-	-	-
225	47791	18172,85	10465,23	8270,80	31393,66
270	47947	18232,30	10498,58	8296,61	31497,77
315	47871	18203,30	10481,91	8283,27	31447,46
360	47619	18107,60	10427,53	8240,79	31281,00

7. Tinggi gelombang 5.331 feet.

Tabel 4.27. Hot Spot Stress pada Hs = 5.331 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	47332	17998,85	10366,05	8192,94	31091,34
90	47188	17945,20	10335,31	8153,35	30983,02
135	47263	17972,75	10351,70	8182,06	31045,23
180	-	-	-	-	-
225	-	-	-	-	-
270	47938	18227,95	10496,55	8295,02	31489,22
315	47865	18200,40	10480,75	8282,40	31441,37
360	47617	18107,60	10427,24	8240,50	31281,58

8. Tinggi gelombang 6.152 feet.

Tabel 4.28. Hot Spot Stress pada Hs = 6.152 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	-	-	-	-	-
90	47189	17946,65	10335,02	8167,56	31002,45
135	-	-	-	-	-
180	-	-	-	-	-
225	-	-	-	-	-
270	47932	18226,50	10495,39	8294,15	31487,48
315	47861	18198,95	10479,88	8281,82	31439,05
360	47613	18106,15	10426,37	8239,92	31279,26

9. Tinggi gelombang 6.972 feet.

Tabel 4.29. Hot Spot Stress pada Hs = 6.972 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	-	-	-	-	-
90	47183	17943,75	10334,30	8168,29	30996,65
135	-	-	-	-	-
180	-	-	-	-	-
225	-	-	-	-	-
270	47925	18223,60	10493,80	8292,84	31482,26
315	47856	18197,50	10478,72	8280,95	31437,31
360	47609	18104,70	10425,36	8239,19	31277,23

10. Tinggi gelombang 7.792 feet.

Tabel 4.30. Hot Spot Stress pada Hs = 7.792 Feet

ARAH (°)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	-	-	-	-	-
90	47185	17943,75	10334,73	8168,72	30995,78
135	-	-	-	-	-
180	-	-	-	-	-
225	-	-	-	-	-
270	47959	18236,65	10501,19	8298,50	31504,88
315	47891	18210,55	10486,26	8286,75	31459,64
360	-	-	-	-	-

11. Tinggi gelombang 0.41 feet.

Tabel 4.31. Hot Spot Stress pada Hs = 0.41 Feet

ARAH (^o)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	-	-	-	-	-
90	47185	17943,75	10334,73	8168,72	30995,78
135	-	-	-	-	-
180	-	-	-	-	-
225	-	-	-	-	-
270	-	-	-	-	-
315	47891	18210,55	10486,26	8286,61	31459,49
360	-	-	-	-	-

12. Tinggi gelombang 1.23 feet.

Tabel 4.32. Hot Spot Stress pada Hs = 1.23 Feet

ARAH (^o)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	-	-	-	-	-
90	47183	17943,75	10334,30	8168,43	30996,80
135	-	-	-	-	-
180	-	-	-	-	-
225	-	-	-	-	-
270	-	-	-	-	-
315	47888	18209,10	10485,53	8286,17	31456,88
360	-	-	-	-	-

13. Tinggi gelombang 2.051 feet.

Tabel 4.33. Hot Spot Stress pada Hs = 2.051 Feet

ARAH (^o)	σ_{\max} (psi)	$\sigma_{4\text{mm}}$ (psi)	$\sigma_{8\text{mm}}$ (psi)	$\sigma_{12\text{mm}}$ (psi)	σ_{hs} (psi)
45	-	-	-	-	-
90	47183	17942,30	10334,15	8168,29	30992,74
135	-	-	-	-	-
180	-	-	-	-	-
225	-	-	-	-	-
270	-	-	-	-	-
315	47884	18207,65	10484,81	8285,59	31454,13
360	-	-	-	-	-

4.3 ANALISIS KELELAHAN

Setelah mencari tegangan akibat beban yang bekerja pada extension deck leg dengan bantuan ANSYS 14.5, maka kemudian dapat dilakukan analisis kelelahan. Tegangan yang digunakan untuk analisis kelelahan merupakan tegangan hotspot akibat masing-masing beban yaitu beban aksial dari topside module serta beban lingkungan.

Perhitungan kelelahan dilakukan dengan metode Palmgren-Miner yaitu dengan meninjau rasio kerusakan kumulatif (D) akibat beban yang diterima struktur. Jumlah siklus rentang tegangan (N_i) dengan harga S_i yang menyebabkan kegagalan sambungan dapat diperoleh dengan menggunakan kurva S-N dengan jenis sambungan yang sesuai.

4.3.1 Nilai Rasio Kerusakan Kumulatif (D)

Setelah mendapatkan tegangan hot spot dari masing – masing tinggi gelombang dan arah, maka dapat dihitung rasio kerusakan kumulatif damage (D). Nilai rasio kerusakan kumulatif (D) dapat dicari dengan menggunakan hukum Palmgren-Miner, yaitu dengan Persamaan di bawah ini :

$$D = \sum_i^k \frac{n_i}{N} \quad (2.31)$$

Berikut adalah perhitungan rasio kerusakan kumulatif pada posisi joint 497 dengan menggunakan tegangan hot spot yang telah didapat dari analisa lokal menggunakan software Ansys 14.5 dan memasukkannya ke dalam kurva S-N untuk mendapatkan harga N untuk masing – masing tinggi dan arah gelombang :

1. Tinggi gelombang 0.41 feet.

Tabel 4.34. Rasio Kerusakan Kumulatif pada $H_s = 0.41$ Feet

ARAH ($^{\circ}$)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	31102,10	215400	818200000	0,000263261
90	30995,00	1619700	825400000	0,001962321
135	31037,30	460900	822600000	0,000560297

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
180	31206,32	177800	811200000	0,000219181
225	31401,80	120400	797900000	0,000150896
270	31505,15	224000	791000000	0,000283186
315	31459,50	501000	794100000	0,000630903
360	31293,75	271300	805200000	0,000336935
Total				0,004406980

2. Tinggi gelombang 1.23 feet.

Tabel 4.35. Rasio Kerusakan Kumulatif pada $H_s = 1.23$ Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	31102,97	108800	818000000	0,000133007
90	30995,12	1521500	825600000	0,001842902
135	31037,98	21600	822600000	2,62582E-05
180	31213,14	68600	810700000	8,46182E-05
225	31504,01	73100	790900000	9,24263E-05
270	31505,00	227000	790900000	0,000287015
315	31456,88	531500	794200000	0,000669227
360	31293,18	176200	805100000	0,000218855
Total				0,003354309

3. Tinggi gelombang 2.051 feet.

Tabel 4.36. Rasio Kerusakan Kumulatif pada $H_s = 2.051$ Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	31100,62	23200	818300000	2,83515E-05
90	30995,78	760100	825300000	0,000920998
135	31037,40	50400	822600000	6,12691E-05
180	31206,32	11500	811200000	1,41765E-05
225	31404,54	18500	797800000	2,31888E-05
270	31505,31	105800	790900000	0,000133772
315	31454,42	282000	794400000	0,000354985
360	31294,05	48500	805200000	6,02335E-05
Total				0,001596974

4. Tinggi gelombang 2.871 feet.

Tabel 4.37. Rasio Kerusakan Kumulatif pada Hs = 2.871 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	31094,09	4700	818700000	5,74081E-06
90	30998,83	341200	825200000	0,000413476
135	31042,91	11100	822200000	1,35004E-05
180	31208,79	1300	811000000	1,60296E-06
225	31400,48	3700	798100000	4,63601E-06
270	31506,04	41600	791000000	5,25917E-05
315	31452,39	131300	794600000	0,000165240
360	31285,49	12400	805800000	1,53884E-05
Total				0,000672176

5. Tinggi gelombang 3.691 feet.

Tabel 4.38. Rasio Kerusakan Kumulatif pada Hs = 3.691 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	31097,72	1300	818400000	1,58847E-06
90	30995,78	148200	825300000	0,000179571
135	31048,13	2600	821800000	3,16379E-06
180	31206,76	100	811100000	1,23289E-07
225	31393,66	700	798400000	8,76754E-07
270	31500,09	15500	791400000	1,95855E-05
315	31449,92	60600	794700000	7,62552E-05
360	31283,03	3600	806000000	4,46650E-06
Total				0,000285631

6. Tinggi gelombang 4.511 feet.

Tabel 4.39. Rasio Kerusakan Kumulatif pada Hs = 4.511 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	31094,96	300	818700000	3,66435E-07
90	30995,49	63000	825300000	7,63359E-05
135	31045,66	700	822000000	8,51582E-07
180	-	-	-	-
225	31393,66	200	798400000	2,50501E-07

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
270	31497,77	5700	791500000	7,20152E-06
315	31447,46	28100	794800000	3,53548E-05
360	31281,00	1300	806100000	1,61270E-06
Total				0,000121973

7. Tinggi gelombang 5.331 feet.

Tabel 4.40. Rasio Kerusakan Kumulatif pada Hs = 5.331 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	31091,34	100	818900000	1,22115E-07
90	30983,02	26600	826200000	3,21956E-05
135	31045,23	200	822100000	2,43279E-07
180	-	-	-	-
225	-	-	-	-
270	31489,22	2100	792100000	2,65118E-06
315	31441,37	13300	795300000	1,67232E-05
360	31281,58	500	806100000	6,20270E-07
Total				5,25557E-05

8. Tinggi gelombang 6.152 feet.

Tabel 4.41. Rasio Kerusakan Kumulatif pada Hs = 6.152 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	-	-	-	-
90	31002,45	11000	825000000	1,33333E-05
135	-	-	-	-
180	-	-	-	-
225	-	-	-	-
270	31487,48	800	792200000	1,00985E-06
315	31439,05	6400	795400000	8,04627E-06
360	31279,26	300	806200000	3,72116E-07
Total				2,27616E-05

9. Tinggi gelombang 6.972 feet.

Tabel 4.42. Rasio Kerusakan Kumulatif pada Hs = 6.972 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	-	-	-	-
90	30996,65	4500	825300000	5,45256E-06
135	-	-	-	-
180	-	-	-	-
225	-	-	-	-
270	31482,26	200	792600000	2,52334E-07
315	31437,31	3200	795600000	4,02212E-06
360	31277,23	200	806300000	2,48047E-07
Total				9,97507E-06

10. Tinggi gelombang 7.792 feet.

Tabel 4.43. Rasio Kerusakan Kumulatif pada Hs = 7.792 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	-	-	-	-
90	30995,78	1800	825300000	2,18103E-06
135	-	-	-	-
180	-	-	-	-
225	-	-	-	-
270	31504,88	100	791000000	1,26422E-07
315	31459,64	1600	794100000	2,01486E-06
360	-	-	-	-
Total				4,32231E-06

11. Tinggi gelombang 0.41 feet.

Tabel 4.44. Rasio Kerusakan Kumulatif pada Hs = 0.41 Feet

ARAH (°)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	-	-	-	-
90	30995,78	700	825300000	8,48176E-07
135	-	-	-	-
180	-	-	-	-
225	-	-	-	-
270	-	-	-	-

ARAH ($^{\circ}$)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
315	31459,49	800	794100000	1,00743E-06
360	-	-	-	-
Total				1,85561E-06

12. Tinggi gelombang 1.23 feet.

Tabel 4.45. Rasio Kerusakan Kumulatif pada $H_s = 1.23$ Feet

ARAH ($^{\circ}$)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	-	-	-	-
90	30996,80	200	825300000	2,42336E-07
135	-	-	-	-
180	-	-	-	-
225	-	-	-	-
270	-	-	-	-
315	31456,88	400	794200000	5,03651E-07
360	-	-	-	-
Total				7,45988E-07

13. Tinggi gelombang 2.051 feet.

Tabel 4.46. Rasio Kerusakan Kumulatif pada $H_s = 2.051$ Feet

ARAH ($^{\circ}$)	σ_{hs} (psi)	n (cycles)	N (cycles)	D (cycles)
45	-	-	-	-
90	30992,74	100	825600000	1,21124E-07
135	-	-	-	-
180	-	-	-	-
225	-	-	-	-
270	-	-	-	-
315	31454,13	200	794500000	2,51731E-07
360	-	-	-	-
Total				3,72855E-07

Maka rasio kerusakan kumulatif untuk keseluruhan beban adalah sbagai berikut :

Tabel 4.47. Rasio Kerusakan Kumulatif Total

H (feet)	D
0,410	0,00440698
1,230	0,003354309
2,051	0,001596974
2,871	0,000672176
3,691	0,000285631
4,511	0,000121973
5,331	5,25557E-05
6,152	2,27616E-05
6,972	9,97507E-06
7,792	4,32231E-06
0,410	1,85561E-06
1,230	7,45988E-07
2,051	3,72855E-07
TOTAL	0,010530632

Dari tabel tersebut di atas dapat diketahui bahwa nilai rasio kerusakan kumulatif total (D_{tot}) adalah sebesar 0,010530632.

4.3.2 Umur Kelelahan

Dari metode palmgren – miner didapatkan nilai rasio kerusakan kumulatif (D) struktur. Setelah itu dapat dilakukan perhitungan umur kelelahan struktur dengan persamaan :

$$\text{Umur kelelahan} = \frac{1}{D}$$

Sehingga umur kelelahan struktur extension deck leg terendah adalah :

$$\begin{aligned} \text{Umur Kelelahan} &= \frac{1}{D_{tot}} \\ &= \frac{1}{0,010531} \end{aligned}$$

$$= 94,96106 \text{ Tahun}$$

$$= 94 \text{ Tahun}$$

Menurut API RP 2A WSD (2005), desain umur kelelahan *joint* dan *member* minimal dua kali umur operasi struktur. Atau dengan kata lain umur kelelahan mempunyai safety faktor = 2. Sehingga berdasarkan analisis kelelahan diatas, umur kelelahan struktur *extension deck leg* terendah adalah 94 tahun sedangkan umur operasinya adalah selama 47 Tahun.

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BAB V

KESIMPULAN DAN SARAN

5.1 Kesimpulan

1. Dari permodelan dan pembebanan yang dilakukan sebanyak 70 variasi, yaitu untuk masing – masing tinggi, periode dan arah datang gelombang didapatkan tegangan terbesar yang terjadi pada sambungan las antara *upper cutting deck leg* dan *deck leg bushing*. Yaitu pada tinggi gelombang 1.23 feet dengan arah 225 derajat dan 270 derajat sebesar 47961 psi.
2. Untuk menghitung nilai Nilai *Hot Spot Stress* (HSS) digunakan metode extrapolasi linier mengacu pada *International Institute of Welding* (IIW). Pada struktur *extension deck leg* yang dianalisa, nilai *Hot Spot Stress* (HSS) terbesar yaitu terjadi pada tinggi gelombang 2,871 feet dengan arah datang gelombang 270 derajat sebesar 31506,04 psi.
3. Dari analisis yang dilakukan, dengan Metode Palmgren – Miner didapatkan nilai rasio kerusakan kumulatif (D) total sebesar 0,010530632. Maka didapatkan umur kelelahan terkecil dari analisis lokal struktur *extension deck leg* yaitu selama 94 tahun, sehingga umur operasi terkecil struktur *extension deck leg* adalah selama 47 tahun. Yaitu pada sambungan las antara *upper cutting deck leg* dan *deck leg bushing*.

5.2 Saran

1. Pada Tugas Akhir ini analisis kelelahan dilakukan dengan melakukan pendekatan *Finite Element Method*. Untuk penyusunan Tugas Akhir berikutnya, dapat dilakukan dengan pendekatan *fracture mechanics* atau metode lainnya.

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BIODATA PENULIS



Eko Puji Harianto lahir di Nganjuk, 30 Juni 1992. Merupakan anak pertama dari dua bersaudara. Sejak kecil penulis tinggal di Nganjuk, menjalani pendidikan formal selama 6 tahun di Sekolah Dasar Negeri Banaran Kulon 2. Kemudian melanjutkan ke Sekolah Menengan Pertama Negeri 1 Bagor dan Sekolah Menengah Atas Negeri 1 Nganjuk. Lulus dari SMA penulis diterima masuk di Jurusan Teknik Kelautan, Fakultas Teknologi Kelautan, Intitut Teknologi Sepuluh Nopember di Surabaya melalui jalur Beasiswa Bidik Misi. Selama kuliah penulis aktif dalam beberapa organisasi diantaranya Anggota UKM Olahraga Air 2010-2011, Staff Departemen Kesekretariatan Himpunan Mahasiswa Teknik Kelautan 2011-2012, Ketua Divisi Renang UKM Olahraga Air 2011-2012, Kepala Bidang Penelitian dan Pengembangan UKM Olahraga Air 2012-2013. Selain itu mengikuti berbagai pelatihan dan seminar terutama yang berhubungan dengan bidang kelautan. Penulis menyelesaikan Tugas Akhirnya yang berjudul "Analisis Distribusi Tegangan Dan Umur Kelelahan Pada *Extension Deck Leg* Akibat Peninggian *Deck Pasca Subsidence*" pada salah satu bidang keahlian di Jurusan Teknik Kelautan, yaitu Bidang Struktur Bangunan Lepas Pantai (*Offshore Structure*).

DAFTAR LAMPIRAN

LAMPIRAN A Input Pembebanan Lingkungan GT-Strudl	A-1
LAMPIRAN B Output Statis Analisis GT-Strudl	B-1
LAMPIRAN C Data Detail Geometri <i>Extension Deck Leg</i>	C-1
LAMPIRAN D Output Distribusi Tegangan dari Ansys 14.5	D-1

Input Pembebanan Lingkungan Tinggi Gelombang 0.41 Feet

Arah Gelombang 45 Derajat	57	1.4083000E+01 4.3630001E+01 -3.0000000E+01
\$ SELOS '45'	58	1.4083000E+01 4.3630001E+01 -2.5500000E+01
\$ STRUDL 'ditinggikan 4m'	59	1.4083000E+01 4.3630001E+01 -2.0000000E+01
\$ OUTPUT UNITS ENGLISH	60	1.4083000E+01 4.3630001E+01 -1.2500000E+01
\$ SAVE LOADINGS	61	1.4083000E+01 4.3630001E+01 -4.5000000E+00
\$ PRINT LOADING TOTALS ONLY LOAD REFERENCE JOINT 'MUD'	62	1.4083000E+01 4.3630001E+01 3.0000000E+00
\$ IDENTIFY UNRECOGNIZED COMMANDS	63	1.4083000E+01 4.3630001E+01 1.0000000E+01
\$ MEMBER DRAG FORCE PRESSURE RESOLUTION	64	1.4083000E+01 4.3630001E+01 1.3250000E+01
\$\$	65	1.4083000E+01 4.3630001E+01 1.6500000E+01
\$\$ This GTSTRUDL file created from GTMenu on 11/ 05/2013	66	1.4083000E+01 4.3630001E+01 2.0000000E+01
\$\$	67	1.4083000E+01 4.3630001E+01 2.3500000E+01
\$\$	68	1.4083000E+01 4.3630001E+01 2.5000000E+01
UNITS FEET KIPS DEG FAH	69	1.4083000E+01 4.3630001E+01 2.6750000E+01
JOINT COORDINATES GLOBAL	70	1.4083000E+01 4.3630001E+01 3.0000000E+01
1 2.9625000E+01 4.3630001E+01 -3.0000000E+01	71	1.1125000E+01 4.3630001E+01 -3.0000000E+01
2 2.9625000E+01 4.3630001E+01 -2.6000000E+01	72	1.1125000E+01 4.3630001E+01 -2.5500000E+01
3 2.9625000E+01 4.3630001E+01 -2.5000000E+01	73	1.1125000E+01 4.3630001E+01 -2.0000000E+01
4 2.9625000E+01 4.3630001E+01 -2.0000000E+01	74	1.1125000E+01 4.3630001E+01 -1.5500000E+01
5 2.9625000E+01 4.3630001E+01 -1.5583000E+01	75	1.1125000E+01 4.3630001E+01 -1.2500000E+01
6 2.9625000E+01 4.3630001E+01 -1.4416000E+01	76	1.1125000E+01 4.3630001E+01 -4.5000000E+00
7 2.9625000E+01 4.3630001E+01 -1.0000000E+01	77	1.1125000E+01 4.3630001E+01 3.0000000E+00
8 2.9625000E+01 4.3630001E+01 -6.6669998E+00	78	1.1125000E+01 4.3630001E+01 1.0000000E+01
9 2.9625000E+01 4.3630001E+01 1.4500000E+01	79	1.1125000E+01 4.3630001E+01 1.3250000E+01
10 2.9625000E+01 4.3630001E+01 1.7500000E+01	80	1.1125000E+01 4.3630001E+01 1.6500000E+01
11 3.2625000E+01 4.3630001E+01 1.4500000E+01	81	1.1125000E+01 4.3630001E+01 2.0000000E+01
12 3.2625000E+01 4.3630001E+01 1.7500000E+01	82	1.1125000E+01 4.3630001E+01 2.3500000E+01
13 2.9625000E+01 4.3630001E+01 2.0000000E+01	83	1.1125000E+01 4.3630001E+01 2.5500000E+01
14 2.9625000E+01 4.3630001E+01 2.5000000E+01	84	1.1125000E+01 4.3630001E+01 2.6750000E+01
15 2.9625000E+01 4.3630001E+01 3.0000000E+01	85	1.1125000E+01 4.3630001E+01 3.0000000E+01
16 2.6417000E+01 4.3630001E+01 -3.0000000E+01	86	8.6250000E+00 4.3630001E+01 -3.0000000E+01
17 2.6417000E+01 4.3630001E+01 -2.6000000E+01	87	8.6250000E+00 4.3630001E+01 -2.5500000E+01
18 2.6417000E+01 4.3630001E+01 -2.5500000E+01	88	8.6250000E+00 4.3630001E+01 -2.0000000E+01
19 2.6417000E+01 4.3630001E+01 -2.5000000E+01	89	8.6250000E+00 4.3630001E+01 -1.6750000E+01
20 2.6417000E+01 4.3630001E+01 -2.0000000E+01	90	8.6250000E+00 4.3630001E+01 -1.5500000E+01
21 2.6417000E+01 4.3630001E+01 -1.5583000E+01	91	8.6250000E+00 4.3630001E+01 -1.5000000E+01
22 2.6417000E+01 4.3630001E+01 -1.4416000E+01	92	8.6250000E+00 4.3630001E+01 -1.2500000E+01
23 2.6417000E+01 4.3630001E+01 2.9170003E+00	93	8.6250000E+00 4.3630001E+01 -4.5000000E+00
24 2.6417000E+01 4.3630001E+01 1.4500000E+01	94	8.6250000E+00 4.3630001E+01 3.0000000E+00
25 2.6417000E+01 4.3630001E+01 1.7500000E+01	95	8.6250000E+00 4.3630001E+01 1.0000000E+01
26 2.6417000E+01 4.3630001E+01 2.0000000E+01	96	8.6250000E+00 4.3630001E+01 1.6500000E+01
27 2.6417000E+01 4.3630001E+01 2.5000000E+01	97	8.6250000E+00 4.3630001E+01 2.0000000E+01
28 2.6417000E+01 4.3630001E+01 3.0000000E+01	98	8.6250000E+00 4.3630001E+01 2.3500000E+01
29 2.3208000E+01 4.3630001E+01 -3.0000000E+01	99	8.6250000E+00 4.3630001E+01 2.5500000E+01
30 2.3208000E+01 4.3630001E+01 -2.5500000E+01	100	8.6250000E+00 4.3630001E+01 3.0000000E+01
31 2.3208000E+01 4.3630001E+01 -2.0000000E+01	101	6.1250000E+00 4.3630001E+01 -3.0000000E+01
32 2.3208000E+01 4.3630001E+01 2.9170003E+00	102	6.1250000E+00 4.3630001E+01 -2.5500000E+01
33 2.3208000E+01 4.3630001E+01 2.0000000E+01	103	6.1250000E+00 4.3630001E+01 -2.0000000E+01
34 2.3208000E+01 4.3630001E+01 2.1833000E+01	104	6.1250000E+00 4.3630001E+01 -1.6750000E+01
35 2.3208000E+01 4.3630001E+01 2.5000000E+01	105	6.1250000E+00 4.3630001E+01 -1.5000000E+01
36 2.3208000E+01 4.3630001E+01 2.8167000E+01	106	6.1250000E+00 4.3630001E+01 -1.2500000E+01
37 2.3208000E+01 4.3630001E+01 3.0000000E+01	107	6.1250000E+00 4.3630001E+01 -4.5000000E+00
38 2.0000000E+01 4.3630001E+01 -3.0000000E+01	108	6.1250000E+00 4.3630001E+01 3.0000000E+00
39 2.0000000E+01 4.3630001E+01 -2.5500000E+01	109	6.1250000E+00 4.3630001E+01 5.5000000E+00
40 2.0000000E+01 4.3630001E+01 -2.0000000E+01	110	6.1250000E+00 4.3630001E+01 1.0000000E+01
41 2.0000000E+01 4.3630001E+01 0.0000000E+00	111	6.1250000E+00 4.3630001E+01 1.6500000E+01
42 2.0000000E+01 4.3630001E+01 2.0000000E+01	112	6.1250000E+00 4.3630001E+01 2.0000000E+01
43 2.0000000E+01 4.3630001E+01 2.5000000E+01	113	6.1250000E+00 4.3630001E+01 2.3500000E+01
44 2.0000000E+01 4.3630001E+01 3.0000000E+01	114	6.1250000E+00 4.3630001E+01 2.5500000E+01
45 1.7042000E+01 4.3630001E+01 -3.0000000E+01	115	6.1250000E+00 4.3630001E+01 2.7750000E+01
46 1.7042000E+01 4.3630001E+01 -2.5500000E+01	116	6.1250000E+00 4.3630001E+01 3.0000000E+01
47 1.7042000E+01 4.3630001E+01 -2.0000000E+01	117	3.6250000E+00 4.3630001E+01 -3.0000000E+01
48 1.7042000E+01 4.3630001E+01 -1.2500000E+01	118	3.6250000E+00 4.3630001E+01 -2.6670002E+01
49 1.7042000E+01 4.3630001E+01 -4.5000000E+00	119	3.6250000E+00 4.3630001E+01 -2.5500000E+01
50 1.7042000E+01 4.3630001E+01 3.0000000E+00	120	3.6250000E+00 4.3630001E+01 -2.3330000E+01
51 1.7042000E+01 4.3630001E+01 1.0000000E+01	121	3.6250000E+00 4.3630001E+01 -2.0000000E+01
52 1.7042000E+01 4.3630001E+01 1.6500000E+01	122	3.6250000E+00 4.3630001E+01 -1.4500000E+01
53 1.7042000E+01 4.3630001E+01 2.0000000E+01	123	3.6250000E+00 4.3630001E+01 -1.2500000E+01
54 1.7042000E+01 4.3630001E+01 2.3500000E+01	124	3.6250000E+00 4.3630001E+01 -4.5000000E+00
55 1.7042000E+01 4.3630001E+01 2.5000000E+01	125	3.6250000E+00 4.3630001E+01 3.0000000E+00
56 1.7042000E+01 4.3630001E+01 3.0000000E+01	126	3.6250000E+00 4.3630001E+01 5.5000000E+00

127	3.6250000E+00	4.3630001E+01	1.0000000E+01	201	-8.6250000E+00	4.3630001E+01	2.3500000E+01
128	3.6250000E+00	4.3630001E+01	1.6500000E+01	202	-8.6250000E+00	4.3630001E+01	2.5500000E+01
129	3.6250000E+00	4.3630001E+01	2.0000000E+01	203	-8.6250000E+00	4.3630001E+01	3.0000000E+01
130	3.6250000E+00	4.3630001E+01	2.3500000E+01	204	-1.1125000E+01	4.3630001E+01	-3.0000000E+01
131	3.6250000E+00	4.3630001E+01	2.5500000E+01	205	-1.1125000E+01	4.3630001E+01	-2.5500000E+01
132	3.6250000E+00	4.3630001E+01	2.7750000E+01	206	-1.1125000E+01	4.3630001E+01	-2.0000000E+01
133	3.6250000E+00	4.3630001E+01	3.0000000E+01	207	-1.1125000E+01	4.3630001E+01	-1.5500000E+01
134	1.2079999E+00	4.3630001E+01	-3.0000000E+01	208	-1.1125000E+01	4.3630001E+01	-1.2500000E+01
135	1.2079999E+00	4.3630001E+01	-2.5500000E+01	209	-1.1125000E+01	4.3630001E+01	-4.5000000E+00
136	1.2079999E+00	4.3630001E+01	-2.0000000E+01	210	-1.1125000E+01	4.3630001E+01	3.0000000E+00
137	1.2079999E+00	4.3630001E+01	-1.4500000E+01	211	-1.1125000E+01	4.3630001E+01	1.0000000E+01
138	1.2079999E+00	4.3630001E+01	-1.2500000E+01	212	-1.1125000E+01	4.3630001E+01	1.6500000E+01
139	1.2079999E+00	4.3630001E+01	-4.5000000E+00	213	-1.1125000E+01	4.3630001E+01	2.0000000E+01
140	1.2079999E+00	4.3630001E+01	3.0000000E+00	214	-1.1125000E+01	4.3630001E+01	2.3500000E+01
141	1.2079999E+00	4.3630001E+01	1.0000000E+01	215	-1.1125000E+01	4.3630001E+01	2.5500000E+01
142	1.2079999E+00	4.3630001E+01	1.6500000E+01	216	-1.1125000E+01	4.3630001E+01	3.0000000E+01
143	1.2079999E+00	4.3630001E+01	2.0000000E+01	217	-1.4083000E+01	4.3630001E+01	-3.0000000E+01
144	1.2079999E+00	4.3630001E+01	2.3500000E+01	218	-1.4083000E+01	4.3630001E+01	-2.5500000E+01
145	1.2079999E+00	4.3630001E+01	2.5500000E+01	219	-1.4083000E+01	4.3630001E+01	-2.0000000E+01
146	1.2079999E+00	4.3630001E+01	3.0000000E+01	220	-1.4083000E+01	4.3630001E+01	-1.2500000E+01
147	-1.2079999E+00	4.3630001E+01	-3.0000000E+01	221	-1.4083000E+01	4.3630001E+01	-4.5000000E+00
148	-1.2079999E+00	4.3630001E+01	-2.5500000E+01	222	-1.4083000E+01	4.3639999E+01	3.0000000E+00
149	-1.2079999E+00	4.3630001E+01	-2.0000000E+01	223	-1.4083000E+01	4.3630001E+01	1.0000000E+01
150	-1.2079999E+00	4.3630001E+01	-1.4500000E+01	224	-1.4083000E+01	4.3630001E+01	1.6500000E+01
151	-1.2079999E+00	4.3630001E+01	-1.2500000E+01	225	-1.4083000E+01	4.3630001E+01	2.0000000E+01
152	-1.2079999E+00	4.3630001E+01	-4.5000000E+00	226	-1.4083000E+01	4.3630001E+01	2.3500000E+01
153	-1.2079999E+00	4.3630001E+01	3.0000000E+00	227	-1.4083000E+01	4.3630001E+01	2.5500000E+01
154	-1.2079999E+00	4.3630001E+01	1.0000000E+01	228	-1.4083000E+01	4.3630001E+01	3.0000000E+01
155	-1.2079999E+00	4.3630001E+01	1.6500000E+01	229	-1.7042000E+01	4.3630001E+01	-3.0000000E+01
156	-1.2079999E+00	4.3630001E+01	2.0000000E+01	230	-1.7042000E+01	4.3630001E+01	-2.7500000E+01
157	-1.2079999E+00	4.3630001E+01	2.3500000E+01	231	-1.7042000E+01	4.3630001E+01	-2.5500000E+01
158	-1.2079999E+00	4.3630001E+01	2.5500000E+01	232	-1.7042000E+01	4.3630001E+01	-2.2750000E+01
159	-1.2079999E+00	4.3630001E+01	3.0000000E+01	233	-1.7042000E+01	4.3630001E+01	-2.0000000E+01
160	-3.6250000E+00	4.3630001E+01	-3.0000000E+01	234	-1.7042000E+01	4.3630001E+01	-1.2500000E+01
161	-3.6250000E+00	4.3630001E+01	-2.6670002E+01	235	-1.7042000E+01	4.3630001E+01	-8.0000000E+00
162	-3.6250000E+00	4.3630001E+01	-2.5500000E+01	236	-1.7042000E+01	4.3630001E+01	-4.5000000E+00
163	-3.6250000E+00	4.3630001E+01	-2.3330000E+01	237	-1.7042000E+01	4.3630001E+01	3.0000000E+00
164	-3.6250000E+00	4.3630001E+01	-2.0000000E+01	238	-1.7042000E+01	4.3630001E+01	8.0000000E+00
165	-3.6250000E+00	4.3630001E+01	-1.6250000E+01	239	-1.7042000E+01	4.3630001E+01	1.0000000E+01
166	-3.6250000E+00	4.3630001E+01	-1.4500000E+01	240	-1.7042000E+01	4.3630001E+01	1.6500000E+01
167	-3.6250000E+00	4.3630001E+01	-1.2500000E+01	241	-1.7042000E+01	4.3630001E+01	2.0000000E+01
168	-3.6250000E+00	4.3630001E+01	-4.5000000E+00	242	-1.7042000E+01	4.3630001E+01	2.3500000E+01
169	-3.6250000E+00	4.3630001E+01	3.0000000E+00	243	-1.7042000E+01	4.3630001E+01	2.5500000E+01
170	-3.6250000E+00	4.3630001E+01	1.0000000E+01	244	-1.7042000E+01	4.3630001E+01	3.0000000E+01
171	-3.6250000E+00	4.3630001E+01	1.6500000E+01	245	-2.0000000E+01	4.3630001E+01	-3.0000000E+01
172	-3.6250000E+00	4.3630001E+01	2.0000000E+01	246	-2.0000000E+01	4.3630001E+01	-2.7500000E+01
173	-3.6250000E+00	4.3630001E+01	2.3500000E+01	247	-2.0000000E+01	4.3630001E+01	-2.5500000E+01
174	-3.6250000E+00	4.3630001E+01	2.5500000E+01	248	-2.0000000E+01	4.3630001E+01	-2.0000000E+01
175	-3.6250000E+00	4.3630001E+01	3.0000000E+01	249	-2.0000000E+01	4.3630001E+01	-8.0000000E+00
176	-6.1250000E+00	4.3630001E+01	-3.0000000E+01	250	-2.0000000E+01	4.3630001E+01	0.0000000E+00
177	-6.1250000E+00	4.3639999E+01	-2.5500000E+01	251	-2.0000000E+01	4.3630001E+01	8.0000000E+00
178	-6.1250000E+00	4.3639999E+01	-2.0000000E+01	252	-2.0000000E+01	4.3630001E+01	2.0000000E+01
179	-6.1250000E+00	4.3630001E+01	-1.6250000E+01	253	-2.0000000E+01	4.3630001E+01	2.3500000E+01
180	-6.1250000E+00	4.3630001E+01	-1.2500000E+01	254	-2.0000000E+01	4.3630001E+01	2.5500000E+01
181	-6.1250000E+00	4.3630001E+01	-4.5000000E+00	255	-2.0000000E+01	4.3630001E+01	2.8500000E+01
182	-6.1250000E+00	4.3630001E+01	3.0000000E+00	256	-2.0000000E+01	4.3630001E+01	3.0000000E+01
183	-6.1250000E+00	4.3630001E+01	1.0000000E+01	257	-2.3208000E+01	4.3630001E+01	-3.0000000E+01
184	-6.1250000E+00	4.3630001E+01	1.6500000E+01	258	-2.3208000E+01	4.3630001E+01	-2.6500000E+01
185	-6.1250000E+00	4.3630001E+01	2.0000000E+01	259	-2.3208000E+01	4.3630001E+01	-2.5000000E+01
188	-6.1250000E+00	4.3630001E+01	2.3500000E+01	260	-2.3208000E+01	4.3630001E+01	-2.2750000E+01
189	-6.1250000E+00	4.3630001E+01	2.5500000E+01	261	-2.3208000E+01	4.3630001E+01	-2.0000000E+01
190	-6.1250000E+00	4.3630001E+01	3.0000000E+01	262	-2.3208000E+01	4.3630001E+01	-1.5667000E+01
191	-8.6250000E+00	4.3630001E+01	-3.0000000E+01	263	-2.3208000E+01	4.3630001E+01	-1.3667000E+01
192	-8.6250000E+00	4.3630001E+01	-2.5500000E+01	264	-2.3208000E+01	4.3630001E+01	-8.0000000E+00
193	-8.6250000E+00	4.3630001E+01	-2.0000000E+01	265	-2.3208000E+01	4.3630001E+01	8.0000000E+00
194	-8.6250000E+00	4.3630001E+01	-1.5500000E+01	266	-2.3208000E+01	4.3630001E+01	2.0000000E+01
195	-8.6250000E+00	4.3630001E+01	-1.2500000E+01	268	-2.3208000E+01	4.3630001E+01	2.1500000E+01
196	-8.6250000E+00	4.3630001E+01	-4.5000000E+00	269	-2.3208000E+01	4.3630001E+01	2.3500000E+01
197	-8.6250000E+00	4.3639999E+01	3.0000000E+00	270	-2.3208000E+01	4.3630001E+01	2.5500000E+01
198	-8.6250000E+00	4.3630001E+01	1.0000000E+01	271	-2.3208000E+01	4.3630001E+01	2.8500000E+01
199	-8.6250000E+00	4.3630001E+01	1.6500000E+01	272	-2.3208000E+01	4.3630001E+01	3.0000000E+01
200	-8.6250000E+00	4.3630001E+01	2.0000000E+01	273	-2.6417000E+01	4.3630001E+01	-3.0000000E+01

274	-2.6417000E+01	4.3630001E+01	-2.6500000E+01	346	2.4000000E+01	2.3750000E+01	2.0000000E+01
275	-2.6417000E+01	4.3630001E+01	-2.5000000E+01	347	2.3500000E+01	2.3750000E+01	-1.0000000E+01
276	-2.6417000E+01	4.3630001E+01	-2.0000000E+01	348	2.3500000E+01	2.3750000E+01	-6.6669998E+00
277	-2.6417000E+01	4.3630001E+01	-1.5667000E+01	349	2.3200003E+01	2.3750000E+01	6.6669998E+00
278	-2.6417000E+01	4.3630001E+01	-1.3667000E+01	350	2.1750000E+01	2.3750000E+01	1.6667000E+01
279	-2.6417000E+01	4.3630001E+01	-8.0000000E+00	351	2.1750000E+01	2.3750000E+01	2.0000000E+01
280	-2.6417000E+01	4.3630001E+01	8.0000000E+00	352	2.0000000E+01	2.3750000E+01	-2.0000000E+01
281	-2.6417000E+01	4.3630001E+01	1.4500000E+01	353	2.0000000E+01	2.3750000E+01	-1.6667000E+01
282	-2.6417000E+01	4.3630001E+01	1.7500000E+01	354	2.0000000E+01	2.3750000E+01	-1.3333000E+01
283	-2.6417000E+01	4.3630001E+01	2.0000000E+01	355	2.0000000E+01	2.3750000E+01	-1.0000000E+01
284	-2.6417000E+01	4.3630001E+01	2.1500000E+01	356	2.0000000E+01	2.3750000E+01	-6.6669998E+00
285	-2.6417000E+01	4.3630001E+01	2.5500000E+01	357	2.0000000E+01	2.3750000E+01	-3.3329999E+00
286	-2.6417000E+01	4.3630001E+01	2.8500000E+01	358	2.0000000E+01	2.3750000E+01	0.0000000E+00
287	-2.6417000E+01	4.3630001E+01	3.0000000E+01	359	2.0000000E+01	2.3750000E+01	3.3329999E+00
288	-2.9625000E+01	4.3630001E+01	-3.0000000E+01	360	2.0000000E+01	2.3750000E+01	6.6669998E+00
289	-2.9625000E+01	4.3630001E+01	-2.6500000E+01	361	2.0000000E+01	2.3750000E+01	1.0000000E+01
290	-2.9625000E+01	4.3630001E+01	-2.5000000E+01	362	2.0000000E+01	2.3750000E+01	1.3333000E+01
291	-2.9625000E+01	4.3630001E+01	-2.0000000E+01	363	2.0000000E+01	2.3750000E+01	1.6667000E+01
292	-2.9625000E+01	4.3630001E+01	-1.5667000E+01	364	2.0000000E+01	2.3750000E+01	2.0000000E+01
293	-2.9625000E+01	4.3630001E+01	-1.3667000E+01	365	1.6000000E+01	2.3750000E+01	-2.0000000E+01
294	-2.9625000E+01	4.3630001E+01	-1.0000000E+01	366	1.6000000E+01	2.3750000E+01	-1.6667000E+01
295	-2.9625000E+01	4.3630001E+01	-8.0000000E+00	367	1.6000000E+01	2.3750000E+01	-1.3333000E+01
296	-2.9625000E+01	4.3630001E+01	-6.6669998E+00	368	1.6000000E+01	2.3750000E+01	-1.0000000E+01
297	-2.9625000E+01	4.3630001E+01	8.0000000E+00	369	1.6000000E+01	2.3750000E+01	-6.6669998E+00
298	-2.9625000E+01	4.3630001E+01	1.4500000E+01	370	1.6000000E+01	2.3750000E+01	-3.3329999E+00
299	-2.9625000E+01	4.3630001E+01	1.7500000E+01	371	1.6000000E+01	2.3750000E+01	0.0000000E+00
300	-2.9625000E+01	4.3630001E+01	2.0000000E+01	372	1.6000000E+01	2.3750000E+01	3.3329999E+00
301	-2.9625000E+01	4.3630001E+01	2.2750000E+01	373	1.6000000E+01	2.3750000E+01	6.6669998E+00
302	-2.9625000E+01	4.3630001E+01	2.5500000E+01	374	1.6000000E+01	2.3750000E+01	1.0000000E+01
303	-2.9625000E+01	4.3630001E+01	2.6100002E+01	375	1.6000000E+01	2.3750000E+01	1.3333000E+01
304	-2.9625000E+01	4.3630001E+01	3.0000000E+01	376	1.6000000E+01	2.3750000E+01	1.6667000E+01
305	-3.2625000E+01	4.3630001E+01	1.4500000E+01	377	1.6000000E+01	2.3750000E+01	2.0000000E+01
306	-3.2625000E+01	4.3630001E+01	1.7500000E+01	378	1.4000000E+01	2.3750000E+01	-1.6667000E+01
307	-3.2625000E+01	4.3630001E+01	2.0000000E+01	379	1.4000000E+01	2.3750000E+01	-1.3333000E+01
308	-3.2625000E+01	4.3630001E+01	2.2750000E+01	380	1.4000000E+01	2.3750000E+01	-3.3299999E+00
309	-3.2625000E+01	4.3630001E+01	2.6100002E+01	381	1.4000000E+01	2.3750000E+01	0.0000000E+00
310	3.3770000E+01	2.3750000E+01	-1.0000000E+01	382	1.4000000E+01	2.3750000E+01	1.6667000E+01
311	3.3770000E+01	2.3750000E+01	-6.6700001E+00	383	1.4000000E+01	2.3750000E+01	2.0000000E+01
312	3.6000000E+01	2.3750000E+01	2.0000000E+01	384	1.2000000E+01	2.3750000E+01	-2.0000000E+01
313	3.0500000E+01	2.3750000E+01	-1.0000000E+01	385	1.2000000E+01	2.3750000E+01	-1.6667000E+01
314	3.0500000E+01	2.3750000E+01	-6.6669998E+00	386	1.2000000E+01	2.3750000E+01	-1.3333000E+01
315	2.9625000E+01	2.3750000E+01	-1.0000000E+01	387	1.2000000E+01	2.3750000E+01	-1.0000000E+01
316	2.9625000E+01	2.3750000E+01	-6.6669998E+00	388	1.2000000E+01	2.3750000E+01	-6.6669998E+00
317	3.2799999E+01	2.3750000E+01	1.6667000E+01	389	1.2000000E+01	2.3750000E+01	-3.3329999E+00
318	3.1750000E+01	2.3750000E+01	1.6667000E+01	390	1.1000000E+01	2.3750000E+01	-3.3329999E+00
319	3.1750000E+01	2.3750000E+01	2.0000000E+01	391	1.1000000E+01	2.3750000E+01	0.0000000E+00
320	2.9250000E+01	2.3750000E+01	-6.6669998E+00	392	1.1000000E+01	2.3750000E+01	3.3329999E+00
321	2.9250000E+01	2.3750000E+01	-3.3329999E+00	393	1.1000000E+01	2.3750000E+01	6.6669998E+00
322	2.9250000E+01	2.3750000E+01	0.0000000E+00	394	1.1000000E+01	2.3750000E+01	1.0000000E+01
323	2.9250000E+01	2.3750000E+01	3.3329999E+00	395	1.1000000E+01	2.3750000E+01	1.3333000E+01
324	2.9250000E+01	2.3750000E+01	6.6669998E+00	396	1.1000000E+01	2.3750000E+01	1.6667000E+01
325	2.9250000E+01	2.3750000E+01	1.0000000E+01	397	1.1000000E+01	2.3750000E+01	2.0000000E+01
326	2.9250000E+01	2.3750000E+01	1.2969000E+01	398	7.5830002E+00	2.3750000E+01	-1.6667000E+01
327	2.9250000E+01	2.3750000E+01	1.3333000E+01	399	7.5830002E+00	2.3750000E+01	-1.3333000E+01
328	2.9250000E+01	2.3750000E+01	1.6667000E+01	400	7.5000000E+00	2.3750000E+01	-3.3329999E+00
329	2.9250000E+01	2.3750000E+01	2.0000000E+01	401	7.5000000E+00	2.3750000E+01	0.0000000E+00
330	2.7000000E+01	2.3750000E+01	-1.0000000E+01	402	7.5000000E+00	2.3750000E+01	1.6667000E+01
331	2.7000000E+01	2.3750000E+01	-6.6700001E+00	403	7.5000000E+00	2.3750000E+01	2.0000000E+01
332	2.8000000E+01	2.3750000E+01	1.1667000E+01	404	6.6669998E+00	2.3750000E+01	-2.0000000E+01
333	2.6400000E+01	2.3750000E+01	1.0000000E+01	405	6.6669998E+00	2.3750000E+01	-1.6667000E+01
334	2.8000000E+01	2.3750000E+01	2.0000000E+01	406	6.6669998E+00	2.3750000E+01	2.0000000E+01
335	2.6417000E+01	2.3750000E+01	1.6667000E+01	407	4.0000000E+00	2.3750000E+01	-2.0000000E+01
336	2.6417000E+01	2.3750000E+01	2.0000000E+01	408	4.0000000E+00	2.3750000E+01	-1.6667000E+01
337	2.4000000E+01	2.3750000E+01	-6.6669998E+00	409	4.0000000E+00	2.3750000E+01	-1.3333000E+01
338	2.4000000E+01	2.3750000E+01	-3.3329999E+00	410	4.0000000E+00	2.3750000E+01	-1.0000000E+01
339	2.4000000E+01	2.3750000E+01	0.0000000E+00	411	4.0000000E+00	2.3750000E+01	-3.3329999E+00
340	2.4000000E+01	2.3750000E+01	3.3329999E+00	412	4.0000000E+00	2.3750000E+01	0.0000000E+00
341	2.4000000E+01	2.3750000E+01	6.6669998E+00	413	4.0000000E+00	2.3750000E+01	3.3329999E+00
342	2.4000000E+01	2.3750000E+01	7.5000000E+00	414	4.0000000E+00	2.3750000E+01	6.6669998E+00
343	2.4000000E+01	2.3750000E+01	1.0000000E+01	415	4.0000000E+00	2.3750000E+01	1.0000000E+01
344	2.4000000E+01	2.3750000E+01	1.3333000E+01	416	4.0000000E+00	2.3750000E+01	1.3333000E+01
345	2.4000000E+01	2.3750000E+01	1.6667000E+01	417	4.0000000E+00	2.3750000E+01	1.6667000E+01

418	4.000000E+00	2.375000E+01	2.000000E+01	490	-1.800000E+01	2.375000E+01	6.666998E+00
419	3.000000E+00	2.375000E+01	-1.000000E+01	491	-1.800000E+01	2.375000E+01	1.000000E+01
420	3.000000E+00	2.375000E+01	-6.666998E+00	492	-1.800000E+01	2.375000E+01	1.333300E+01
421	3.000000E+00	2.375000E+01	-5.500000E+00	493	-1.800000E+01	2.375000E+01	1.666700E+01
422	3.000000E+00	2.375000E+01	-3.332999E+00	494	-1.758300E+01	2.375000E+01	2.350000E+01
423	0.000000E+00	2.375000E+01	-1.666700E+01	495	-1.758300E+01	2.375000E+01	2.850000E+01
424	0.000000E+00	2.375000E+01	-1.333300E+01	496	-2.000000E+01	2.375000E+01	-2.550000E+01
425	-4.000000E+00	2.375000E+01	-2.000000E+01	497	-2.000000E+01	2.375000E+01	-2.000000E+01
426	-4.000000E+00	2.375000E+01	-1.666700E+01	498	-2.000000E+01	2.375000E+01	-1.666700E+01
427	-4.000000E+00	2.375000E+01	-1.333300E+01	499	-2.000000E+01	2.375000E+01	-1.333300E+01
428	-4.000000E+00	2.375000E+01	-1.000000E+01	500	-2.000000E+01	2.375000E+01	-1.000000E+01
429	-4.000000E+00	2.375000E+01	-3.332999E+00	501	-2.000000E+01	2.375000E+01	-6.666998E+00
430	-4.000000E+00	2.375000E+01	0.000000E+00	502	-2.000000E+01	2.375000E+01	-3.332999E+00
431	-4.000000E+00	2.375000E+01	3.332999E+00	503	-2.000000E+01	2.375000E+01	0.000000E+00
432	-4.000000E+00	2.375000E+01	6.666998E+00	504	-2.000000E+01	2.375000E+01	3.332999E+00
433	-4.000000E+00	2.375000E+01	1.000000E+01	505	-2.000000E+01	2.375000E+01	4.000000E+00
434	-4.000000E+00	2.375000E+01	1.333300E+01	506	-2.000000E+01	2.375000E+01	6.666998E+00
435	-4.000000E+00	2.375000E+01	1.666700E+01	507	-2.000000E+01	2.375000E+01	8.000000E+00
436	-4.000000E+00	2.375000E+01	1.833300E+01	508	-2.000000E+01	2.375000E+01	1.000000E+01
437	-4.000000E+00	2.375000E+01	2.000000E+01	509	-2.000000E+01	2.375000E+01	1.200000E+01
438	-6.666998E+00	2.375000E+01	-2.000000E+01	510	-2.000000E+01	2.375000E+01	1.333300E+01
439	-7.000000E+00	2.375000E+01	-1.000000E+01	511	-2.000000E+01	2.375000E+01	1.575000E+01
440	-7.000000E+00	2.375000E+01	-5.500000E+00	512	-2.000000E+01	2.375000E+01	1.666700E+01
441	-7.000000E+00	2.375000E+01	-3.332999E+00	513	-2.000000E+01	2.375000E+01	2.000000E+01
442	-6.666998E+00	2.375000E+01	2.000000E+01	514	-2.000000E+01	2.375000E+01	2.350000E+01
443	-8.250000E+00	2.375000E+01	3.332999E+00	515	-2.000000E+01	2.375000E+01	2.547900E+01
444	-8.250000E+00	2.375000E+01	6.666998E+00	516	-2.000000E+01	2.375000E+01	2.850000E+01
445	-8.250000E+00	2.375000E+01	1.000000E+01	517	-2.158300E+01	2.375000E+01	2.350000E+01
446	-8.250000E+00	2.375000E+01	1.333300E+01	518	-2.158300E+01	2.375000E+01	2.850000E+01
447	-8.000000E+00	2.375000E+01	1.666700E+01	519	-2.350000E+01	2.375000E+01	-1.000000E+01
448	-8.000000E+00	2.375000E+01	1.833300E+01	520	-2.350000E+01	2.375000E+01	-6.666998E+00
449	-8.000000E+00	2.375000E+01	2.000000E+01	521	-2.350000E+01	2.375000E+01	-3.332999E+00
450	-9.000000E+00	2.375000E+01	-1.000000E+01	522	-2.350000E+01	2.375000E+01	0.000000E+00
451	-9.000000E+00	2.375000E+01	-6.666998E+00	523	-2.350000E+01	2.375000E+01	4.000000E+00
452	-9.000000E+00	2.375000E+01	-5.500000E+00	524	-2.350000E+01	2.375000E+01	8.000000E+00
453	-9.000000E+00	2.375000E+01	-3.332999E+00	525	-2.350000E+01	2.375000E+01	1.200000E+01
454	-9.750000E+00	2.375000E+01	3.332999E+00	526	-2.350000E+01	2.375000E+01	1.575000E+01
455	-9.750000E+00	2.375000E+01	6.666998E+00	527	-2.558300E+01	2.375000E+01	2.350000E+01
456	-9.750000E+00	2.375000E+01	1.000000E+01	528	-2.558300E+01	2.375000E+01	2.850000E+01
457	-9.750000E+00	2.375000E+01	1.333300E+01	529	-2.700000E+01	2.375000E+01	-1.000000E+01
458	-1.012300E+01	2.375000E+01	1.666700E+01	530	-2.700000E+01	2.375000E+01	-6.666998E+00
459	-1.012300E+01	2.375000E+01	1.833300E+01	531	-2.700000E+01	2.375000E+01	1.200000E+01
460	-1.012300E+01	2.375000E+01	2.000000E+01	532	-2.700000E+01	2.375000E+01	1.575000E+01
461	-1.125000E+01	2.375000E+01	6.666998E+00	533	-2.958300E+01	2.375000E+01	2.350000E+01
462	-1.125000E+01	2.375000E+01	1.000000E+01	534	-2.958300E+01	2.375000E+01	2.850000E+01
463	-1.125000E+01	2.375000E+01	1.333300E+01	535	-2.962500E+01	2.375000E+01	-1.000000E+01
464	-1.112300E+01	2.375000E+01	1.666700E+01	536	-2.962500E+01	2.375000E+01	-6.666998E+00
465	-1.112300E+01	2.375000E+01	1.833300E+01	537	-3.050000E+01	2.375000E+01	-1.000000E+01
466	-1.112300E+01	2.375000E+01	2.000000E+01	538	-3.050000E+01	2.375000E+01	-6.666998E+00
467	-1.112300E+01	2.375000E+01	2.350000E+01	539	-3.033000E+01	2.375000E+01	1.200000E+01
468	-1.112300E+01	2.375000E+01	2.850000E+01	540	-3.033000E+01	2.375000E+01	1.575000E+01
469	-1.200000E+01	2.375000E+01	-2.000000E+01	541	-3.342698E+01	2.375000E+01	-1.000000E+01
470	-1.200000E+01	2.375000E+01	-1.666700E+01	542	-3.342698E+01	2.375000E+01	-6.666998E+00
471	-1.200000E+01	2.375000E+01	-1.333300E+01	543	2.487500E+01	1.000000E+01	-1.554200E+01
472	-1.200000E+01	2.375000E+01	-1.000000E+01	544	2.612500E+01	1.000000E+01	-1.020800E+01
473	-1.200000E+01	2.375000E+01	-6.666998E+00	546	2.062500E+01	1.000000E+01	-2.062500E+01
474	-1.200000E+01	2.375000E+01	-3.332999E+00	547	2.062500E+01	1.000000E+01	-1.762500E+01
475	-1.200000E+01	2.375000E+01	0.000000E+00	548	2.062500E+01	1.000000E+01	-1.554200E+01
476	-1.200000E+01	2.375000E+01	3.332999E+00	549	2.062500E+01	1.000000E+01	-1.020800E+01
477	-1.200000E+01	2.375000E+01	6.666998E+00	550	2.062500E+01	1.000000E+01	0.000000E+00
478	-1.200000E+01	2.375000E+01	1.000000E+01	551	2.062500E+01	1.000000E+01	1.762500E+01
479	-1.200000E+01	2.375000E+01	1.333300E+01	552	2.062500E+01	1.000000E+01	2.062500E+01
480	-1.200000E+01	2.375000E+01	1.666700E+01	553	1.762500E+01	1.000000E+01	-2.062500E+01
481	-1.450000E+01	2.375000E+01	-3.332999E+00	554	1.762500E+01	1.000000E+01	-1.762500E+01
482	-1.450000E+01	2.375000E+01	0.000000E+00	555	1.762500E+01	1.000000E+01	-3.181002E+00
483	-1.408300E+01	2.375000E+01	-1.666700E+01	556	1.762500E+01	1.000000E+01	3.181002E+00
484	-1.408300E+01	2.375000E+01	2.000000E+01	557	1.762500E+01	1.000000E+01	1.762500E+01
485	-1.408300E+01	2.375000E+01	2.350000E+01	558	1.762500E+01	1.000000E+01	2.062500E+01
486	-1.408300E+01	2.375000E+01	2.850000E+01	559	3.786000E+00	1.000000E+01	-1.762500E+01
487	-1.800000E+01	2.375000E+01	-3.332999E+00	560	3.786000E+00	1.000000E+01	1.762500E+01
488	-1.800000E+01	2.375000E+01	0.000000E+00	561	0.000000E+00	1.000000E+01	-2.062500E+01
489	-1.800000E+01	2.375000E+01	3.332999E+00	562	0.000000E+00	1.000000E+01	-1.762500E+01

563	0.000000E+00	1.000000E+01	-8.750000E+00	636	3.400000E+01	-5.300000E+01	-1.020800E+01
564	0.000000E+00	1.000000E+01	-4.583000E+00	637	2.850000E+01	-5.300000E+01	-2.850000E+01
565	0.000000E+00	1.000000E+01	1.762500E+01	638	2.850000E+01	-5.300000E+01	-1.554200E+01
566	0.000000E+00	1.000000E+01	2.062500E+01	639	2.850000E+01	-5.300000E+01	-1.425000E+01
567	-1.250000E+00	1.000000E+01	2.062500E+01	640	2.850000E+01	-5.300000E+01	-1.020800E+01
568	-1.250000E+00	1.000000E+01	2.337500E+01	641	2.850000E+01	-5.300000E+01	0.000000E+00
569	-3.786000E+00	1.000000E+01	-1.762500E+01	642	2.850000E+01	-5.300000E+01	2.850000E+01
570	-3.786000E+00	1.000000E+01	1.762500E+01	643	1.425000E+01	-5.300000E+01	-1.425000E+01
571	-1.187500E+01	1.000000E+01	-8.750000E+00	644	0.000000E+00	-5.300000E+01	-2.850000E+01
572	-1.604200E+01	1.000000E+01	-4.583000E+00	645	0.000000E+00	-5.300000E+01	2.850000E+01
573	-1.612500E+01	1.000000E+01	-2.062000E+01	646	-1.250000E+00	-5.300000E+01	2.850000E+01
574	-1.612500E+01	1.000000E+01	-1.762500E+01	647	-1.250000E+00	-5.300000E+01	3.125000E+01
575	-1.612500E+01	1.000000E+01	-1.612500E+01	648	-1.237500E+01	-5.300000E+01	-1.612500E+01
576	-1.612500E+01	1.000000E+01	-4.500000E+00	649	-1.612500E+01	-5.300000E+01	-1.612500E+01
577	-1.612500E+01	1.000000E+01	-1.667000E+00	650	-1.612500E+01	-5.300000E+01	-1.237500E+01
578	-1.762500E+01	1.000000E+01	-2.062500E+01	651	-1.425000E+01	-5.300000E+01	1.425000E+01
579	-1.762500E+01	1.000000E+01	-1.762500E+01	652	-1.425000E+01	-5.300000E+01	2.850000E+01
580	-1.762500E+01	1.000000E+01	-1.612500E+01	653	-2.850000E+01	-5.300000E+01	-2.850000E+01
581	-1.762500E+01	1.000000E+01	-8.750000E+00	654	-2.850000E+01	-5.300000E+01	-1.304200E+01
582	-1.762500E+01	1.000000E+01	-4.583000E+00	655	-2.850000E+01	-5.300000E+01	0.000000E+00
583	-1.762500E+01	1.000000E+01	-3.181000E+00	656	-2.850000E+01	-5.300000E+01	8.958000E+00
584	-1.762500E+01	1.000000E+01	-1.667000E+00	657	-2.850000E+01	-5.300000E+01	1.412500E+01
585	-1.762500E+01	1.000000E+01	3.181000E+00	658	-2.850000E+01	-5.300000E+01	2.850000E+01
586	-1.762500E+01	1.000000E+01	1.762500E+01	659	-3.400000E+01	-5.300000E+01	-1.304200E+01
587	-1.762500E+01	1.000000E+01	2.062500E+01	660	-3.300000E+01	-5.300000E+01	8.958000E+00
588	-1.904800E+01	1.000000E+01	-1.667000E+00	661	-3.100000E+01	-5.300000E+01	1.412500E+01
590	-2.062500E+01	1.000000E+01	-2.062500E+01	662	-3.050000E+01	-5.300000E+01	3.125000E+01
591	-2.062500E+01	1.000000E+01	-1.762500E+01	663	3.300000E+01	-8.900000E+01	-3.300000E+01
592	-2.062500E+01	1.000000E+01	-1.612500E+01	664	3.300000E+01	-8.900000E+01	0.000000E+00
593	-2.062500E+01	1.000000E+01	-1.304200E+01	665	3.300000E+01	-8.900000E+01	3.300000E+01
594	-2.062500E+01	1.000000E+01	-8.750000E+00	666	0.000000E+00	-8.900000E+01	-3.300000E+01
595	-2.062500E+01	1.000000E+01	-4.583000E+00	667	0.000000E+00	-8.900000E+01	3.300000E+01
596	-2.062500E+01	1.000000E+01	0.000000E+00	668	-1.237500E+01	-8.900000E+01	-2.062500E+01
597	-2.062500E+01	1.000000E+01	8.958000E+00	669	-1.237500E+01	-8.900000E+01	2.062500E+01
598	-2.062500E+01	1.000000E+01	1.412500E+01	670	-3.300000E+01	-8.900000E+01	-3.300000E+01
599	-2.062500E+01	1.000000E+01	1.762500E+01	671	-3.300000E+01	-8.900000E+01	-2.062500E+01
600	-2.062500E+01	1.000000E+01	2.062500E+01	672	-3.300000E+01	-8.900000E+01	0.000000E+00
601	-2.612500E+01	1.000000E+01	-1.304200E+01	673	-3.300000E+01	-8.900000E+01	2.062500E+01
602	-2.512500E+01	1.000000E+01	8.958000E+00	674	-3.300000E+01	-8.900000E+01	3.300000E+01
603	-2.312500E+01	1.000000E+01	1.412500E+01	675	3.175000E+01	-7.900000E+01	-3.175000E+01
604	-2.262500E+01	1.000000E+01	2.312500E+01	676	3.725000E+01	-7.900000E+01	-1.020800E+01
605	2.437500E+01	-2.000000E+01	-2.437500E+01	677	3.600000E+01	-7.900000E+01	-1.554200E+01
606	2.862500E+01	-2.000000E+01	-1.554200E+01	678	3.175000E+01	-7.900000E+01	-1.554200E+01
607	2.437500E+01	-2.000000E+01	-1.554200E+01	679	3.175000E+01	-7.900000E+01	-1.020800E+01
608	2.437500E+01	-2.000000E+01	-1.218800E+01	680	3.175000E+01	-7.900000E+01	-7.916998E+00
609	2.987500E+01	-2.000000E+01	-1.020800E+01	681	7.916998E+00	-7.900000E+01	3.175000E+01
610	2.437500E+01	-2.000000E+01	-1.020800E+01	682	-1.250000E+00	-7.900000E+01	3.175000E+01
611	2.437500E+01	-2.000000E+01	0.000000E+00	683	-1.250000E+00	-7.900000E+01	3.450000E+01
612	2.437500E+01	-2.000000E+01	2.437500E+01	684	-7.916998E+00	-7.900000E+01	3.175000E+01
613	1.218800E+01	-2.000000E+01	-1.218800E+01	685	-3.175000E+01	-7.900000E+01	-3.175000E+01
614	0.000000E+00	-2.000000E+01	-2.437500E+01	686	-3.175000E+01	-7.900000E+01	-1.308300E+01
615	0.000000E+00	-2.000000E+01	2.437500E+01	687	-3.175000E+01	-7.900000E+01	-7.916998E+00
616	-1.250000E+00	-2.000000E+01	2.437500E+01	688	-3.725000E+01	-7.900000E+01	-1.304200E+01
617	-1.250000E+00	-2.000000E+01	2.712500E+01	689	2.331300E+01	-1.150000E+01	-2.331300E+01
618	-8.250000E+00	-2.000000E+01	-1.612500E+01	690	-2.331300E+01	-1.150000E+01	-2.331300E+01
619	-1.218800E+01	-2.000000E+01	1.218800E+01	691	2.256300E+01	-5.500000E+00	-2.256300E+01
620	-1.218800E+01	-2.000000E+01	2.437500E+01	692	-2.256300E+01	-5.500000E+00	-2.256300E+01
621	-1.612500E+01	-2.000000E+01	-1.612500E+01	693	2.106300E+01	6.500000E+00	-2.106300E+01
622	-1.612500E+01	-2.000000E+01	-8.250000E+00	694	-2.106300E+01	6.500000E+00	-2.106300E+01
623	-1.612500E+01	-2.000000E+01	-1.667000E+00	695	2.037500E+01	1.200000E+01	-2.037500E+01
624	-2.270800E+01	-2.000000E+01	-1.667000E+00	696	2.037500E+01	1.200000E+01	2.037500E+01
625	-2.437500E+01	-2.000000E+01	-2.437500E+01	698	-2.037500E+01	1.200000E+01	-2.037500E+01
626	-2.437500E+01	-2.000000E+01	-1.304200E+01	699	-2.037500E+01	1.200000E+01	2.037500E+01
627	-2.437500E+01	-2.000000E+01	0.000000E+00	700	2.018800E+01	1.350000E+01	-2.018800E+01
628	-2.437500E+01	-2.000000E+01	8.958000E+00	701	2.018800E+01	1.350000E+01	2.018800E+01
629	-2.437500E+01	-2.000000E+01	1.412500E+01	702	-2.018800E+01	1.350000E+01	-2.018800E+01
630	-2.437500E+01	-2.000000E+01	2.437500E+01	703	-2.018800E+01	1.350000E+01	-2.018800E+01
631	-2.987500E+01	-2.000000E+01	-1.304200E+01	704	2.000000E+01	2.287500E+01	-2.000000E+01
632	-2.887500E+01	-2.000000E+01	8.958000E+00	705	2.000000E+01	2.287500E+01	2.000000E+01
633	-2.687500E+01	-2.000000E+01	1.412500E+01	706	-2.000000E+01	2.287500E+01	-2.000000E+01
634	-2.637500E+01	-2.000000E+01	2.687500E+01	707	-2.000000E+01	2.287500E+01	2.000000E+01
635	3.275000E+01	-5.300000E+01	-1.554200E+01	708	2.000000E+01	2.203100E+01	-2.000000E+01

709 2.0000000E+01 2.2031002E+01 2.0000000E+01
 710 -2.0000000E+01 2.2031002E+01 -2.0000000E+01
 711 -2.0000000E+01 2.2031002E+01 2.0000000E+01
 712 2.0000000E+01 2.1135000E+01 -2.0000000E+01
 713 2.0000000E+01 2.1135000E+01 2.0000000E+01
 714 -2.0000000E+01 2.1135000E+01 -2.0000000E+01
 715 -2.0000000E+01 2.1135000E+01 2.0000000E+01
 716 2.0000000E+01 2.0948002E+01 -2.0000000E+01
 717 2.0000000E+01 2.0948002E+01 2.0000000E+01
 718 -2.0000000E+01 2.0948002E+01 -2.0000000E+01
 719 -2.0000000E+01 2.0948002E+01 2.0000000E+01
 720 2.0000000E+01 1.9969000E+01 -2.0000000E+01
 721 2.0000000E+01 1.9969000E+01 2.0000000E+01
 722 -2.0000000E+01 1.9969000E+01 -2.0000000E+01
 723 -2.0000000E+01 1.9969000E+01 2.0000000E+01
 724 2.0000000E+01 1.9594000E+01 -2.0000000E+01
 725 2.0000000E+01 1.9594000E+01 2.0000000E+01
 726 -2.0000000E+01 1.9594000E+01 -2.0000000E+01
 727 -2.0000000E+01 1.9594000E+01 2.0000000E+01
 728 2.0000000E+01 1.9281002E+01 -2.0000000E+01
 729 2.0000000E+01 1.9281002E+01 2.0000000E+01
 730 -2.0000000E+01 1.9281002E+01 -2.0000000E+01
 731 -2.0000000E+01 1.9281002E+01 2.0000000E+01
 732 2.0000000E+01 1.8115002E+01 -2.0000000E+01
 733 2.0000000E+01 1.8115002E+01 2.0000000E+01
 734 -2.0000000E+01 1.8115002E+01 -2.0000000E+01
 735 -2.0000000E+01 1.8115002E+01 2.0000000E+01
 736 2.0000000E+01 1.7917000E+01 -2.0000000E+01
 737 2.0000000E+01 1.7917000E+01 2.0000000E+01
 738 -2.0000000E+01 1.7917000E+01 -2.0000000E+01
 739 -2.0000000E+01 1.7917000E+01 2.0000000E+01
 740 2.0000000E+01 1.6458000E+01 -2.0000000E+01
 741 2.0000000E+01 1.6458000E+01 2.0000000E+01
 742 -2.0000000E+01 1.6458000E+01 -2.0000000E+01
 743 -2.0000000E+01 1.6458000E+01 2.0000000E+01
 744 2.0000000E+01 1.5000000E+01 -2.0000000E+01
 745 2.0000000E+01 1.5000000E+01 2.0000000E+01
 746 -2.0000000E+01 1.5000000E+01 -2.0000000E+01
 747 -2.0000000E+01 1.5000000E+01 2.0000000E+01
 748 -2.0000000E+01 5.5917004E+01 -2.5500000E+01
 749 3.4230999E+01 -9.8848999E+01 -3.4230999E+01
 750 3.4230999E+01 -9.8848999E+01 3.4230999E+01
 751 -3.4230999E+01 -9.8848999E+01 -3.4230999E+01
 752 -3.4230999E+01 -9.8848999E+01 3.4230999E+01
 753 -1.4083000E+01 2.3750000E+01 1.6667000E+01
 754 -3.0750000E+01 -7.1000000E+01 3.0750000E+01
 755 -3.2750000E+01 -7.1000000E+01 3.3500000E+01
 756 -3.5250000E+01 -7.1000000E+01 8.9580002E+00
 757 -3.3250000E+01 -7.1000000E+01 1.4125000E+01
 \$ 'WIND' -2.0000000E+01 5.5917004E+01 -2.5500000E+01
 \$ 'MUD' 3.4230999E+01 -9.8848999E+01 3.4230999E+01
 \$ END JOINT COORDINATES

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UNITS FEET KIPS DEG FAH

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00
 THI 4.1666668E-02 \$ -
 \$ WATER MASS FLOODED BUOYANT STRUCTURAL -
 \$ DIVISION 5 THICK 4.1666668E-02 -
 \$ DIAOUT 2.8333335E+00 CDWATER 0.65 CMWATER 1.6 WT/V
 0.2836

1143 675 663
 1145 653 685
 1146 685 670
 1148 754 674
 1158 612 642
 1160 605 637
 1174 552 612
 1175 600 630
 1177 694 692
 1178 692 690

1179 690 625
 1181 693 691
 1182 691 689
 1183 689 605
 1284 674 752
 1285 665 750
 1286 663 749
 1287 670 751

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00
 THI 4.1666668E-02 \$ -

\$ WATER MASS FLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 4.1666668E-02 -

\$ DIAOUT 2.8333335E+00 CDWATER 1.16 CMWATER 1.32 WT/V
0.2836

1142 637 675
 1144 642 665
 1147 658 754
 1159 630 658
 1161 625 653

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0625000E+00
 THI 3.1250000E-02 \$ -

\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 3.1250000E-02 -

\$ DIAOUT 1.0625000E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1025 605 607
 1026 607 608
 1027 608 610
 1028 610 611
 1029 611 612
 1030 612 615
 1031 615 616
 1032 616 620
 1033 620 630
 1034 605 614
 1035 614 625
 1036 625 626
 1037 626 627
 1038 627 628
 1039 628 629
 1040 629 630
 1041 614 615
 1084 641 645
 1085 645 651
 1086 651 655
 1164 615 645
 1165 627 655
 1170 611 641
 1171 614 644

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.6666667E+00
 THI 4.1666668E-02 \$ -

\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 4.1666668E-02 -

\$ DIAOUT 1.6666667E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1302 602 632
 1303 632 660
 1309 660 756

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 8.9583337E-01
 THI 3.0416667E-02 \$ -

\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 3.0416667E-02 -

\$ DIAOUT 8.9583337E-01 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1042 605 613
1043 608 613
1044 611 613
1045 613 614
1046 611 615
1047 614 618
1048 618 622
1049 622 624
1050 624 627
1051 615 619
1052 619 627
1053 619 620
1054 619 630
1055 618 621
1056 621 622
1057 622 623
1058 623 624
1059 621 625
1087 639 643
1088 637 643
1089 651 652
1090 651 658
1096 648 649
1097 649 650
1098 649 653
1320 623 627

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.166667E+00
THI 3.125000E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.125000E-02 -
\$ DIAOUT 1.166667E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1067 637 638
1068 638 639
1069 639 640
1070 640 641
1071 641 642
1072 642 645
1073 645 646
1074 646 652
1075 652 658
1076 637 644
1077 644 653
1078 653 654
1079 654 655
1080 655 656
1081 656 657
1082 657 658
1083 644 645
1117 664 666
1118 666 668
1119 668 672
1120 664 667
1121 667 669
1122 669 672
1123 669 673
1124 669 674
1125 668 671
1126 668 670
1127 675 678
1128 678 679
1129 679 680
1130 681 682
1131 682 684
1132 685 686
1133 686 687
1162 630 645
1163 612 645
1166 630 655
1167 625 655

1168 605 641
1169 612 641
1172 605 644
1173 625 644

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.333334E+00
THI 3.125000E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.125000E-02 -
\$ DIAOUT 1.333334E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1106 663 664
1107 664 665
1108 665 667
1109 667 674
1110 663 666
1111 666 670
1112 670 671
1113 671 672
1114 672 673
1115 673 674
1116 666 667
1138 637 680
1139 680 664
1140 642 664
1149 653 687
1150 687 672
1151 658 672
1152 653 666
1153 637 666
1154 642 681
1155 681 667
1156 658 684
1157 684 667

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.062500E+00
THI 3.041667E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.041667E-02 -
\$ DIAOUT 1.062500E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1091 641 643
1092 643 644
1093 644 648
1094 648 650
1095 650 655

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.062500E+00
THI 4.166668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.166668E-02 -
\$ DIAOUT 1.062500E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1060 606 607
1061 609 610
1062 616 617
1063 630 634
1064 629 633
1065 628 632
1066 626 631
1099 635 638
1100 636 640
1101 646 647
1102 658 662
1103 657 661
1104 656 660
1105 654 659
1134 677 678
1135 676 679

1136 682 683
1137 686 688
1141 754 755
1292 568 617
1293 617 647
1294 647 683

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.3333334E+00
THI 4.1666668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.3333334E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1288 604 634
1289 634 662
1290 662 755
1311 543 606
1312 606 635
1313 635 677

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.1666667E+00
THI 4.1666668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.1666667E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1298 601 631
1299 631 659
1300 659 688
1314 544 609
1315 609 636
1316 636 676

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.0000000E+00
THI 4.1666668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 2.0000000E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1304 603 633
1305 633 661
1310 661 757

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0625000E+00
THI 3.1250000E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.1250000E-02 -
\$ DIAOUT 1.0625000E+00 CDWIND 0.65 WT/V 0.2836

920 352 496

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.6666667E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.6666667E+00 CDWIND 0.65 WT/V 0.2836

921 496 497
1308 508 602

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1271 706 710
1244 704 708
1243 705 709

1228 707 711
1203 40 352
1202 42 364
1196 252 513
1195 248 497

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 3.5000000E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 3.5000000E+00 CDWIND 0.65 WT/V 0.2836

1226 748 247
1198 247 496

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 8.9583337E-01
THI 3.0416667E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.0416667E-02 -
\$ DIAOUT 8.9583337E-01 CDWIND 0.65 WT/V 0.2836

1225 103 438
1219 291 497
1218 112 442
1213 300 513
1212 13 312

1209 7 315
1208 44 364

1205 41 352
1204 41 364

1199 256 513
1193 250 513

1192 250 497
1022 576 577

1021 580 592
1020 575 580

1019 574 575
1018 573 574

1017 593 601

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 7.1875000E-01
THI 3.1250000E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.1250000E-02 -
\$ DIAOUT 7.1875000E-01 CDWIND 0.65 WT/V 0.2836

1194 250 503
1206 41 358

1207 38 352
1214 112 406

1215 185 442
1221 103 404

1222 178 438

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.1666667E+00
THI 3.1250000E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.1250000E-02 -
\$ DIAOUT 1.1666667E+00 CDWIND 0.65 WT/V 0.2836

1211 13 364
1216 112 364

1217 185 512
1224 103 352

1269 178 497

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00
THI 8.3333336E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.3333336E-02 -
\$ DIAOUT 2.8333335E+00 CDWIND 0.65 WT/V 0.2836

1236 699 600
1267 696 552
1268 695 546
1283 698 590

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00

THI 4.1666668E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 4.1666668E-02 -

§ DIAOUT 2.8333335E+00 CDWIND 0.65 WT/V 0.2836

1176 590 694

1180 546 693

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0416667E+00

THI 2.0833334E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.0833334E-02 -

§ DIAOUT 1.0416667E+00 CDWIND 0.65 WT/V 0.2836

932 546 547

933 547 548

934 548 549

935 549 550

936 550 551

937 551 552

938 552 558

939 558 566

940 566 567

941 567 587

942 587 600

943 546 553

944 553 561

945 561 573

946 573 578

947 578 590

948 590 591

949 591 592

950 592 593

951 593 594

952 594 595

953 595 596

954 596 597

955 597 598

956 598 599

957 599 600

958 547 554

959 554 559

960 559 562

961 562 569

962 569 574

963 574 579

964 579 591

965 553 554

966 554 555

967 555 556

968 556 557

969 557 558

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 8.7500000E-01

THI 2.0000000E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.0000000E-02 -

§ DIAOUT 8.7500000E-01 CDWIND 0.65 WT/V 0.2836

997 566 570

998 570 585

999 585 596

1000 561 562

1001 562 563

1002 563 564

1003 564 565

1004 565 566

1005 563 571

1006 571 581

1007 581 594

1008 564 572

1009 572 582

1010 582 595

1011 543 548

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0416667E+00

THI 2.0833334E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.0833334E-02 -

§ DIAOUT 1.0416667E+00 CDWIND 0.65 WT/V 0.2836

932 546 547

933 547 548

934 548 549

935 549 550

936 550 551

937 551 552

938 552 558

939 558 566

940 566 567

941 567 587

942 587 600

943 546 553

944 553 561

945 561 573

946 573 578

947 578 590

948 590 591

949 591 592

950 592 593

951 593 594

952 594 595

953 595 596

954 596 597

955 597 598

956 598 599

957 599 600

958 547 554

959 554 559

960 559 562

961 562 569

962 569 574

963 574 579

964 579 591

965 553 554

966 554 555

967 555 556

968 556 557

969 557 558

1012 544 549

1013 567 568

1014 600 604

1015 598 603

1016 597 602

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 3.7500000E-01

THI 2.8083336E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.8083336E-02 -

§ DIAOUT 3.7500000E-01 CDWIND 0.65 WT/V 0.2836

970 551 557

971 557 560

972 560 565

973 565 570

974 570 586

975 586 599

976 578 579

977 579 580
978 580 581
979 581 582
980 582 583
981 583 584
982 584 585
983 585 586
984 586 587
985 550 555
986 555 559
987 559 561
988 561 569
989 569 571
990 571 572
991 572 583
992 583 588
993 588 596
994 550 556
995 556 560
996 560 566

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0625000E+00
THI 4.1666668E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.0625000E+00 CDWIND 0.65 WT/V 0.2836

1023 577 584
1024 584 588
1297 418 568

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.6666667E+00
THI 4.0583335E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.0583335E-02 -
\$ DIAOUT 1.6666667E+00 CDWIND 0.65 WT/V 0.2836

1197 247 497

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.3958334E-01
THI 1.6916666E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 1.6916666E-02 -
\$ DIAOUT 2.3958334E-01 CDWIND 0.65 WT/V 0.2836

1200 296 536
1201 294 535
1210 8 316

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 4.0916666E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.0916666E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1227 513 707
1241 364 705
1242 352 704
1270 497 706

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8750000E+00
THI 1.6666667E-01 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 1.6666667E-01 -
\$ DIAOUT 2.8750000E+00 CDWIND 0.65 WT/V 0.2836

1229 711 715
1230 715 719
1231 719 723
1232 723 727
1233 727 731
1234 731 735

1245 709 713
1246 708 712
1247 713 717
1248 717 721
1249 721 725
1250 725 729
1251 729 733
1252 712 716
1253 716 720
1254 720 724
1255 724 728
1256 728 732
1272 710 714
1273 714 718
1274 718 722
1275 722 726
1276 726 730
1277 730 734

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5833335E+00
THI 8.3000004E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.3000004E-02 -
\$ DIAOUT 2.5833335E+00 CDWIND 0.65 WT/V 0.2836

1235 735 739
1239 743 747
1257 733 737
1258 732 736
1261 741 745
1262 740 744
1278 734 738
1280 742 746

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5833335E+00
THI 8.2249999E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.2249999E-02 -
\$ DIAOUT 2.5833335E+00 CDWIND 0.65 WT/V 0.2836

1240 739 743
1259 737 741
1260 736 740
1279 738 742

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 8.1000000E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.1000000E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1238 747 702
1263 745 701
1264 744 700
1281 746 703

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 8.1333339E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.1333339E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1237 702 699
1265 701 696
1266 700 695
1282 703 698

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.3333334E+00
THI 4.1666668E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -

\$ DIAOUT 1.3333334E+00 CDWIND 0.65 WT/V 0.2836
1291 513 604
1319 353 543
\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.1666667E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.1666667E+00 CDWIND 0.65 WT/V 0.2836
1301 499 601
1318 355 544
\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.0000000E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 2.0000000E+00 CDWIND 0.65 WT/V 0.2836
1306 511 603
\$ END MEMBER INCIDENCES

UNITS FEET
\$ ELEMENT INCIDENCES
\$ 15 304 228 1 'WIND' WIBLOCK AREA CDWIND ALL 1.0
\$ END ELEMENT INCIDENCES
\$\$
\$\$
\$\$
\$ UNITS FEET
\$ INITIAL CONDITIONS
\$ JNT2 1.0 0.0 0.0 JNT3 0.0 0.0 -1.0 -
\$ LINEAR DISPLACEMENT ORIGIN X 0.45 Y -7.41 Z -1.61

\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.20 -
\$ DEPTH 89 DIR 45
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45
\$ WIND DATA
\$ DIRECTION 45
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '45' HEIGHT 0.41 PERIOD 3.2 DEPTH 89 DIRECTION 45 -
\$ FROM 1.7 TO -1.7 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 90 Derajat

\$ SELOS '90'
\$ STRUDL 'ditinggikan 4m'
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.45 -
\$ DEPTH 89 DIR 90
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
\$ WIND DATA
\$ DIRECTION 90
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '90' HEIGHT 0.41 PERIOD 3.45 DEPTH 89 DIRECTION 90 -
\$ FROM 1.725 TO -1.725 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 135 Derajat

\$ SELOS '135'
\$ STRUDL 'ditinggikan 4m'
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.15 -
\$ DEPTH 89 DIR 135
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135
\$ WIND DATA
\$ DIRECTION 135
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR

\$ WAVE WIND LIST
\$ '135' HEIGHT 0.41 PERIOD 3.15 DEPTH 89 DIRECTION 135 -
\$ FROM 1.575 TO -1.575 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 180 Derajat

\$ SELOS '180'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.01 -
\$ DEPTH 89 DIR 180
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
\$ WIND DATA
\$ DIRECTION 180
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '180' HEIGHT 0.41 PERIOD 3.01 DEPTH 89 DIRECTION 180 -
\$ FROM 1.505 TO -1.505 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.1 -
\$ DEPTH 89 DIR 225
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
\$ WIND DATA
\$ DIRECTION 225

\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '225' HEIGHT 0.41 PERIOD 3.1 DEPTH 89 DIRECTION 225 -
\$ FROM 1.55 TO -1.55 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.19 -
\$ DEPTH 89 DIR 270
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
\$ WIND DATA
\$ DIRECTION 270
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '270' HEIGHT 0.41 PERIOD 3.19 DEPTH 89 DIRECTION 270 -
\$ FROM 1.595 TO -1.595 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 3.46 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 0.41 PERIOD 3.46 DEPTH 89 DIRECTION 315 -  
$ FROM 1.73 TO -1.73 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 360 Derajat

```
$ SELOS '360'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 3.04 -  
$ DEPTH 89 DIR 360  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360  
$ WIND DATA  
$ DIRECTION 360  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '360' HEIGHT 0.41 PERIOD 3.04 DEPTH 89 DIRECTION 360 -  
$ FROM 1.73 TO -1.73 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Input Pembebanan Lingkungan Tinggi Gelombang 1.23 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 1.23 PERIOD 3.6 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 1.23 PERIOD 3.6 DEPTH 89 DIRECTION 45 -  
$ FROM 1.8 TO -1.8 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 1.23 PERIOD 4.25 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 1.23 PERIOD 4.25 DEPTH 89 DIRECTION 90 -  
$ FROM 2.125 TO -2.125 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 1.23 PERIOD 3.29 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 1.23 PERIOD 3.29 DEPTH 89 DIRECTION 135 -  
$ FROM 1.645 TO -1.645 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.02 -
\$ DEPTH 89 DIR 180
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
\$ WIND DATA
\$ DIRECTION 180
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '180' HEIGHT 1.23 PERIOD 3.02 DEPTH 89 DIRECTION 180 -
\$ FROM 1.51 TO -1.51 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.14 -
\$ DEPTH 89 DIR 225
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
\$ WIND DATA
\$ DIRECTION 225
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '225' HEIGHT 1.23 PERIOD 3.14 DEPTH 89 DIRECTION 225 -
\$ FROM 1.57 TO -1.57 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.56 -
\$ DEPTH 89 DIR 270
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
\$ WIND DATA
\$ DIRECTION 270
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '270' HEIGHT 1.23 PERIOD 3.56 DEPTH 89 DIRECTION 270 -
\$ FROM 1.78 TO -1.78 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 4.0 -
\$ DEPTH 89 DIR 315
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
\$ WIND DATA
\$ DIRECTION 315
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 1.23 PERIOD 4.0 DEPTH 89 DIRECTION 315 -
\$ FROM 2.0 TO -2.0 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGH 1.23 PERIOD 3.71 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 1.23 PERIOD 3.71 DEPTH 89 DIRECTION 360 -
\$ FROM 1.855 TO -1.855 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 2.051 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 4.06 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 2.051 PERIOD 4.06 DEPTH 89 DIRECTION 45 -  
$ FROM 2.03 TO -2.03 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 4.68 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 2.051 PERIOD 4.68 DEPTH 89 DIRECTION 90 -  
$ FROM 2.34 TO -2.34 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 3.73 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 2.051 PERIOD 3.73 DEPTH 89 DIRECTION 135 -  
$ FROM 1.865 TO -1.865 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 3.3 -
 \$ DEPTH 89 DIR 180
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
 \$ WIND DATA
 \$ DIRECTION 180
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '180' HEIGHT 2.051 PERIOD 3.3 DEPTH 89 DIRECTION 180 -
 \$ FROM 1.65 TO -1.65 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 3.36 -
 \$ DEPTH 89 DIR 225
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
 \$ WIND DATA
 \$ DIRECTION 225
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '225' HEIGHT 2.051 PERIOD 3.36 DEPTH 89 DIRECTION 225 -
 \$ FROM 1.68 TO -1.68 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 3.83 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 2.051 PERIOD 3.83 DEPTH 89 DIRECTION 270 -
 \$ FROM 1.915 TO -1.915 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 4.35 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 2.051 PERIOD 4.35 DEPTH 89 DIRECTION 315 -
\$ FROM 2.175 TO -2.175 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGH 2.051 PERIOD 4.13 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 2.051 PERIOD 4.13 DEPTH 89 DIRECTION 360 -
\$ FROM 2.065 TO -2.065 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 2.871 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.871 PERIOD 4.52 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 2.871 PERIOD 4.52 DEPTH 89 DIRECTION 45 -  
$ FROM 2.26 TO -2.26 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.871 PERIOD 5.03 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 2.871 PERIOD 5.03 DEPTH 89 DIRECTION 90 -  
$ FROM 2.515 TO -2.515 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.871 PERIOD 4.11 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 2.871 PERIOD 4.11 DEPTH 89 DIRECTION 135 -  
$ FROM 2.055 TO -2.055 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 3.35 -
 \$ DEPTH 89 DIR 180
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
 \$ WIND DATA
 \$ DIRECTION 180
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '180' HEIGHT 2.871 PERIOD 3.35 DEPTH 89 DIRECTION 180 -
 \$ FROM 1.675 TO -1.675 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .

\$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 3.53 -
 \$ DEPTH 89 DIR 225
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
 \$ WIND DATA
 \$ DIRECTION 225
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '225' HEIGHT 2.871 PERIOD 3.53 DEPTH 89 DIRECTION 225 -
 \$ FROM 1.765 TO -1.765 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 4.12 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 2.871 PERIOD 4.12 DEPTH 89 DIRECTION 270 -
 \$ FROM 2.06 TO -2.06 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 4.66 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 2.871 PERIOD 4.66 DEPTH 89 DIRECTION 315 -
\$ FROM 2.33 TO -2.33 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGH 2.871 PERIOD 4.54 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 2.871 PERIOD 4.54 DEPTH 89 DIRECTION 360 -
\$ FROM 2.27 TO -2.27 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 3.691 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 3.691 PERIOD 5.19 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 3.691 PERIOD 5.19 DEPTH 89 DIRECTION 45 -  
$ FROM 2.595 TO -2.595 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 3.691 PERIOD 5.32 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 3.691 PERIOD 5.32 DEPTH 89 DIRECTION 90 -  
$ FROM 2.66 TO -2.66 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 3.691 PERIOD 4.42 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 3.691 PERIOD 4.42 DEPTH 89 DIRECTION 135 -  
$ FROM 2.21 TO -2.21 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```


\$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 3.5 -
 \$ DEPTH 89 DIR 180
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
 \$ WIND DATA
 \$ DIRECTION 180
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '180' HEIGHT 3.691 PERIOD 3.5 DEPTH 89 DIRECTION 180 -
 \$ FROM 1.75 TO -1.75 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 4.07 -
 \$ DEPTH 89 DIR 225
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
 \$ WIND DATA
 \$ DIRECTION 225
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '225' HEIGHT 3.691 PERIOD 4.07 DEPTH 89 DIRECTION 225 -
 \$ FROM 2.035 TO -2.035 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 4.40 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 3.691 PERIOD 4.40 DEPTH 89 DIRECTION 270 -
 \$ FROM 2.20 TO -2.20 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 4.95 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 3.691 PERIOD 4.95 DEPTH 89 DIRECTION 315 -
\$ FROM 2.475 TO -2.475 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGTH 3.691 PERIOD 4.89 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 3.691 PERIOD 4.89 DEPTH 89 DIRECTION 360 -
\$ FROM 2.445 TO -2.445 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 4.511 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 4.511 PERIOD 5.50 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 4.511 PERIOD 5.50 DEPTH 89 DIRECTION 45 -  
$ FROM 2.75 TO -2.75 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 4.511 PERIOD 5.56 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 4.511 PERIOD 5.56 DEPTH 89 DIRECTION 90 -  
$ FROM 2.78 TO -2.78 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 4.511 PERIOD 4.93 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 4.511 PERIOD 4.93 DEPTH 89 DIRECTION 135 -  
$ FROM 2.465 TO -2.465 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 225 Derajat

```
$ SELOS '225'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 4.00 -
 \$ DEPTH 89 DIR 225
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
 \$ WIND DATA
 \$ DIRECTION 225
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '225' HEIGHT 4.511 PERIOD 4.0 DEPTH 89 DIRECTION 225 -
 \$ FROM 2.0 TO -2.0 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 4.68 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 4.511 PERIOD 4.68 DEPTH 89 DIRECTION 270 -
 \$ FROM 4.34 TO -4.34 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 5.20 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '315' HEIGHT 4.511 PERIOD 5.2 DEPTH 89 DIRECTION 315 -
 \$ FROM 2.6 TO -2.6 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 5.35 -
 \$ DEPTH 89 DIR 360
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
 \$ WIND DATA
 \$ DIRECTION 360
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 4.511 PERIOD 5.35 DEPTH 89 DIRECTION 360 -

\$ FROM 2.675 TO -2.675 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 5.331 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 5.331 PERIOD 5.80 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 5.331 PERIOD 5.80 DEPTH 89 DIRECTION 45 -  
$ FROM 2.9 TO -2.9 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 5.331 PERIOD 5.75 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 5.331 PERIOD 5.75 DEPTH 89 DIRECTION 90 -  
$ FROM 2.875 TO -2.875 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 5.331 PERIOD 5.00 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 5.331 PERIOD 5.0 DEPTH 89 DIRECTION 135 -  
$ FROM 2.5 TO -2.5 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 270 Derajat

```
$ SELOS '270'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 5.331 PERIOD 4.83 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 5.331 PERIOD 4.83 DEPTH 89 DIRECTION 270 -
 \$ FROM 2.415 TO -2.415 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'

.
.

\$ UNITS FEET SECONDS DEGREES

\$ WAVE STOKES FIFTH HEIGHT 5.331 PERIOD 5.39 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '315' HEIGHT 5.331 PERIOD 5.39 DEPTH 89 DIRECTION 315 -
 \$ FROM 2.695 TO -2.695 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'

\$ STRUDL 'ditinggikan 4m'

.
.

\$ UNITS FEET SECONDS DEGREES

\$ WAVE STOKES FIFTH HEIGHT 5.331 PERIOD 5.90 -
 \$ DEPTH 89 DIR 360
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
 \$ WIND DATA
 \$ DIRECTION 360
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '360' HEIGHT 5.331 PERIOD 5.90 DEPTH 89 DIRECTION 360 -
 \$ FROM 2.95 TO -2.95 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 6.152 Feet

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 6.152 PERIOD 5.89 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 6.152 PERIOD 5.89 DEPTH 89 DIRECTION 90 -  
$ FROM 2.945 TO -2.945 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 270 Derajat

```
$ SELOS '270'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 6.152 PERIOD 5.00 -  
$ DEPTH 89 DIR 270  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270  
$ WIND DATA  
$ DIRECTION 270  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '270' HEIGHT 6.152 PERIOD 5.00 DEPTH 89 DIRECTION 270 -  
$ FROM 2.5 TO -2.5 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 6.152 PERIOD 5.56 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 6.152 PERIOD 5.56 DEPTH 89 DIRECTION 315 -  
$ FROM 2.78 TO -2.78 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 360 Derajat

```
$ SELOS '360'  
$ STRUDL 'ditinggikan 4m'
```

```
. . .  
$ UNITS FEET SECONDS DEGREES
```


\$ WAVE STOKES FIFTH HEIGHT 6.152 PERIOD 5.95 -
\$ DEPTH 89 DIR 360
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 6.152 PERIOD 5.95 DEPTH 89 DIRECTION 360 -
\$ FROM 2.975 TO -2.975 INCREMENT 1.07
\$ END WAVE WIND LIST
\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 6.972 Feet

Arah Gelombang 90 Derajat

```

$ SELOS '90'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 6.972 PERIOD 5.99 -
$   DEPTH 89 DIR 90
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
$ WIND DATA
$ DIRECTION 90
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

```

```

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '90' HEIGHT 6.972 PERIOD 5.99 DEPTH 89 DIRECTION 90 -
$   FROM 2.995 TO -2.995 INCREMENT 1.07
$ END WAVE WIND LIST

```

```

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH

```

Arah Gelombang 270 Derajat

```

$ SELOS '270'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 6.972 PERIOD 5.25 -
$   DEPTH 89 DIR 270
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
$ WIND DATA
$ DIRECTION 270
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

```

\$ UNITS FEET SECONDS

```

$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '270' HEIGHT 6.972 PERIOD 5.25 DEPTH 89 DIRECTION 270 -
$   FROM 2.625 TO -2.625 INCREMENT 1.07
$ END WAVE WIND LIST

```

```

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH

```

Arah Gelombang 315 Derajat

```

$ SELOS '315'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 6.972 PERIOD 5.81 -
$   DEPTH 89 DIR 315
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
$ WIND DATA
$ DIRECTION 315
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

```

```

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '315' HEIGHT 6.972 PERIOD 5.81 DEPTH 89 DIRECTION 315 -
$   FROM 2.905 TO -2.905 INCREMENT 1.07
$ END WAVE WIND LIST

```

```

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH

```

Arah Gelombang 360 Derajat

```

$ SELOS '360'
$ STRUDL 'ditinggikan 4m'

```

```

.
.
.
$ UNITS FEET SECONDS DEGREES

```

\$ WAVE STOKES FIFTH HEIGHT 6.972 PERIOD 6.00 -
\$ DEPTH 89 DIR 360
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 6.972 PERIOD 6.00 DEPTH 89 DIRECTION 360 -
\$ FROM 3.0 TO -3.0 INCREMENT 1.07
\$ END WAVE WIND LIST
\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 7.792 Feet

Arah Gelombang 90 Derajat

\$ SELOS '90'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 6.972 PERIOD 5.99 -
\$ DEPTH 89 DIR 90
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
\$ WIND DATA
\$ DIRECTION 90
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '90' HEIGHT 6.972 PERIOD 5.99 DEPTH 89 DIRECTION 90 -
\$ FROM 2.995 TO -2.995 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 7.792 PERIOD 6.00 -
\$ DEPTH 89 DIR 90
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
\$ WIND DATA
\$ DIRECTION 90
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0

\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '90' HEIGHT 7.792 PERIOD 6.0 DEPTH 89 DIRECTION 90 -
\$ FROM 3.0 TO -3.0 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 7.792 PERIOD 5.88 -
\$ DEPTH 89 DIR 315
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
\$ WIND DATA
\$ DIRECTION 315
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 7.792 PERIOD 5.88 DEPTH 89 DIRECTION 315 -
\$ FROM 2.94 TO -2.94 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 0.41 Feet

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 6.21 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 0.41 PERIOD 6.21 DEPTH 89 DIRECTION 90 -  
$ FROM 3.105 TO -3.105 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 6.00 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 0.41 PERIOD 6.00 DEPTH 89 DIRECTION 315 -  
$ FROM 3.0 TO -3.0 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Input Pembebanan Lingkungan Tinggi Gelombang 1.23 Feet

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 1.23 PERIOD 6.40 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 1.23 PERIOD 6.40 DEPTH 89 DIRECTION 90 -  
$ FROM 3.2 TO -3.2 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 1.23 PERIOD 6.25 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 1.23 PERIOD 6.25 DEPTH 89 DIRECTION 315 -  
$ FROM 3.125 TO -3.125 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Input Pembebanan Lingkungan Tinggi Gelombang 1.23 Feet

Arah Gelombang 90 Derajat

```

$ SELOS '90'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 6.50 -
$ DEPTH 89 DIR 90
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
$ WIND DATA
$ DIRECTION 90
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '90' HEIGHT 2.051 PERIOD 6.50 DEPTH 89 DIRECTION 90 -
$ FROM 3.25 TO -3.25 INCREMENT 1.07
$ END WAVE WIND LIST

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH
    
```

Arah Gelombang 315 Derajat

```

$ SELOS '315'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 6.50 -
$ DEPTH 89 DIR 315
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
$ WIND DATA
$ DIRECTION 315
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '315' HEIGHT 2.051 PERIOD 6.50 DEPTH 89 DIRECTION 315 -
$ FROM 3.25 TO -3.25 INCREMENT 1.07
$ END WAVE WIND LIST

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH
    
```

Input Parameter Static Analysis

```
READ WAVE LOAD FOR DESIGN FROM FILE '360.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '315.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '270.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '225.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '180.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '135.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '90.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '45.LDS'

DEFINE GROUP 'beam' ADD MEMBERS 1 1 1 2 2 2 3 3 3 4 4 4 5 5 6 6 7 7 7 8 8 -
8 9 9 9 10 10 11 11 11 12 12 13 13 13 14 14 15 15 16 16 16 17 17 -
17 18 18 19 19 20 20 20 21 21 21 22 22 22 23 23 23 24 24 24 25 25 25 26 -
26 26 27 27 28 28 29 29 30 30 31 31 31 32 32 33 33 33 34 34 34 -
35 35 36 36 37 37 37 38 38 38 39 39 40 40 40 41 41 41 42 42 42 43 43 -
43 44 44 45 45 46 46 46 47 47 47 48 48 48 49 49 50 50 51 51 51 52 -
52 53 53 54 54 54 55 55 56 56 56 57 57 57 58 58 58 59 59 59 60 60 60 -
61 61 61 62 62 63 63 64 64 64 65 65 66 66 66 67 67 68 68 68 69 69 -
69 70 70 71 71 71 72 72 73 73 74 74 74 75 75 76 76 77 77 77 78 -
78 79 79 79 80 80 81 81 81 82 82 82 83 83 84 84 85 85 85 86 86 86 -
87 87 87 88 88 88 89 89 90 90 91 91 91 92 92 92 93 93 94 94 94 95 95 -
95 96 96 97 97 97 98 98 98 99 99 100 100 100 101 101 101 102 102 102 -
103 103 104 104 104 105 105 105 106 106 106 107 107 108 108 108 109 -
109 109 110 110 111 111 111 112 112 112 113 113 113 114 114 114 115 115 -
115 116 116 116 117 117 117 ; CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 118 118 118 119 119 119 120 120 120 121 121 -
121 122 122 123 123 123 124 124 124 125 125 125 126 126 126 127 127 127 -
128 128 128 129 129 129 130 130 131 131 131 132 132 132 133 133 133 134 -
134 134 135 135 136 136 136 137 137 137 138 138 138 139 139 140 140 -
140 141 141 141 142 142 142 143 143 143 144 144 144 145 145 145 146 146 146 -
147 147 147 148 148 148 149 149 149 150 150 151 151 151 152 152 152 153 -
153 153 154 154 155 155 155 156 156 156 157 157 157 158 158 158 159 159 -
159 160 160 160 161 161 161 162 162 162 163 163 163 164 164 164 165 165 165 -
166 166 166 167 167 167 168 168 168 169 169 170 170 170 171 171 171 172 -
172 172 173 173 173 174 174 175 175 175 176 176 176 177 177 177 178 178 -
178 179 179 180 180 180 181 181 181 182 182 182 183 183 183 184 184 184 -
185 185 185 186 186 186 187 187 187 188 188 188 189 189 189 190 190 190 191 -
191 191 192 192 193 193 193 194 194 194 195 195 195 196 196 196 197 197 -
197 198 198 199 199 200 200 200 201 201 201 202 202 202 203 203 203 204 -
204 204 205 205 205 206 206 207 207 207 208 208 208 209 209 210 210 -
210 211 211 211 212 212 212 213 213 213 214 214 214 215 215 215 216 216 -
216 217 217 218 218 219 219 219 220 220 221 221 221 222 222 222 223 -
223 223 224 224 224 225 225 226 226 226 227 227 227 228 228 228 229 -
229 229 230 230 231 231 231 232 232 232 233 233 233 234 234 234 ; -
CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 235 235 235 236 236 237 237 237 238 238 -
238 239 239 240 240 240 241 241 241 242 242 242 243 243 244 244 244 -
245 245 246 246 246 247 247 247 248 248 248 249 249 249 250 250 251 -
251 251 252 252 252 253 253 254 254 254 255 255 255 256 256 256 257 257 -
257 258 258 259 259 260 260 261 261 261 262 262 262 263 263 263 264 -
264 264 265 265 265 266 266 266 267 267 267 268 268 268 269 269 269 270 -
270 270 271 271 271 272 272 273 273 273 274 274 274 275 275 275 276 276 -
276 277 277 277 278 278 279 279 279 280 280 280 281 281 281 282 282 282 -
283 283 284 284 284 285 285 285 286 286 286 287 287 287 288 288 288 289 -
289 289 290 290 291 291 291 292 292 292 293 293 293 294 294 294 295 295 -
295 296 296 297 297 297 298 298 298 299 299 300 300 301 301 301 302 -
302 302 303 303 304 304 304 305 305 305 306 306 306 307 307 307 308 -
308 308 309 309 310 310 311 311 311 312 312 312 313 313 313 314 314 -
314 315 315 315 316 316 317 317 317 318 318 318 319 319 319 320 320 320 -
321 321 321 322 322 323 323 324 324 324 325 325 325 326 326 326 327 -
327 327 328 328 329 329 330 330 330 331 331 331 332 332 332 333 333 -
333 334 334 335 335 335 336 336 337 337 337 338 338 338 339 339 339 -
340 340 340 341 341 341 342 342 342 343 343 343 344 344 344 345 345 346 -
346 346 347 347 347 348 348 349 349 349 350 350 351 351 351 ; -
CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 352 352 352 353 353 353 354 354 354 355 355 -
355 356 356 357 357 357 358 358 358 359 359 359 360 360 360 361 361 361 -
362 362 362 363 363 363 364 364 364 365 365 365 366 366 366 367 367 367 368 -
368 368 369 369 370 370 371 371 371 372 372 372 373 373 373 374 374 -
374 375 375 375 376 376 377 377 377 378 378 378 379 379 379 380 380 380 -
381 381 381 382 382 383 383 383 384 384 384 385 385 385 386 386 386 387 -
387 387 388 388 388 389 389 389 390 390 391 391 391 392 392 392 393 393 -
393 394 394 394 395 395 395 396 396 397 397 397 398 398 398 399 399 399 -
400 400 401 401 401 402 402 402 403 403 403 404 404 404 405 405 405 406 -
406 406 407 407 407 408 408 408 409 409 409 410 410 410 411 411 411 412 -
412 412 413 413 413 414 414 414 415 415 415 416 416 416 417 417 417 418 -
418 418 419 419 420 420 420 421 421 421 422 422 422 423 423 423 424 -
424 424 425 425 425 426 426 426 427 427 427 428 428 428 429 429 429 -
429 430 430 430 431 431 431 432 432 432 433 433 433 434 434 434 435 -
435 435 436 436 436 437 437 437 438 438 438 439 439 439 440 440 440 441 -
441 441 442 442 442 443 443 443 444 444 444 445 445 445 446 446 446 447 -
447 447 448 448 448 449 449 449 450 450 450 451 451 451 452 452 452 453 -
453 453 454 454 454 455 455 455 456 456 456 457 457 457 458 458 458 459 -
459 459 460 460 460 461 461 461 462 462 462 463 463 463 464 464 464 465 -
465 465 466 466 466 467 467 467 468 468 468 469 469 469 470 470 470 471 -
471 471 472 472 472 473 473 473 474 474 474 475 475 475 476 476 476 477 -
477 477 478 478 478 479 479 479 480 480 480 481 481 481 482 482 482 483 -
483 483 484 484 484 485 485 485 486 486 486 487 487 487 488 488 488 489 -
489 489 490 490 490 491 491 491 492 492 492 493 493 493 494 494 494 495 -
495 495 496 496 496 497 497 497 498 498 498 499 499 499 500 500 500 501 -
501 501 502 502 502 503 503 503 504 504 504 505 505 505 506 506 506 507 -
507 507 508 508 508 509 509 509 510 510 510 511 511 511 512 512 512 513 -
513 513 514 514 514 515 515 515 516 516 516 517 517 517 518 518 518 519 -
519 519 520 520 520 521 521 521 522 522 522 523 523 523 524 524 524 525 -
525 526 526 526 527 527 527 528 528 528 529 529 529 530 530 530 531 531 -
531 532 532 532 533 533 533 534 534 534 535 535 535 536 536 536 537 537 -
537 538 538 539 539 540 540 540 541 541 541 542 542 542 543 543 543 544 -
544 544 545 545 545 546 546 546 547 547 547 548 548 548 549 549 549 550 -
550 550 551 551 551 552 552 552 553 553 553 554 554 554 555 555 555 556 -
556 556 557 557 557 558 558 558 559 559 559 560 560 560 561 561 561 562 -
562 562 563 563 563 564 564 564 565 565 565 566 566 566 567 567 567 568 -
568 568 569 569 570 570 571 571 571 572 572 572 573 573 573 574 574 574 575 -
575 575 576 576 576 577 577 577 578 578 578 579 579 579 580 580 580 581 -
581 581 582 582 583 583 583 584 584 584 585 585 585 586 586 586 587 587 -
587 587 588 588 588 589 589 590 590 591 591 591 592 592 592 593 593 593 ; -
CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 594 594 594 595 595 595 596 596 596 597 597 -
597 598 598 598 599 599 600 600 601 601 601 602 602 602 603 603 603 604 -
604 604 605 605 605 606 606 606 607 607 607 608 608 608 609 609 609 610 -
610 610 611 611 611 612 612 612 613 613 613 614 614 614 615 615 615 616 616 -
616 617 617 617 618 618 618 619 619 620 620 621 621 621 622 622 622 623 -
623 623 624 624 625 625 625 626 626 626 627 627 627 628 628 628 629 -
629 629 630 630 631 631 631 632 632 632 633 633 633 634 634 634 635 635 -
635 636 636 636 637 637 637 638 638 638 639 639 639 640 640 640 641 641 -
641 642 642 643 643 643 644 644 644 645 645 645 646 646 646 647 647 647 648 -
648 648 649 649 650 650 650 651 651 651 652 652 652 653 653 653 654 654 -
654 655 655 655 656 656 656 657 657 657 658 658 658 659 659 659 660 660 -
660 661 661 662 662 662 663 663 663 664 664 664 665 665 665 666 666 666 667 -
667 667 668 668 668 669 669 670 670 671 671 671 672 672 672 673 673 -
673 674 674 675 675 675 676 676 676 677 677 677 678 678 678 679 679 679 ;
```


Output Statis Analisis GT Strudl

HEIGHT = 0,41 FT

--- LOADING - 45 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      499.1811523   8.4759836   9.5870180   76.9447327   -6.1415267   13.1805868
1270 706     -499.4139099   -8.4837255   -9.5947599   -76.9447327   -2.2025497   -5.8031106
    
```

--- LOADING - 90 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497.9764404   9.0657463   10.0238295   76.8993149   -12.3889790   9.2214060
1270 706     -498.2091675   -9.0657463   -10.0347786   -76.8993149   3.6634798   -1.3342042
    
```

--- LOADING - 135 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497.8589172   9.6555977   9.7169142   76.8093262   -7.7046509   5.4075685
1270 706     -498.0917053   -9.6478558   -9.7246571   -76.8093262   -0.7524360   2.9894354
    
```

--- LOADING - 180 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      498.9335022   9.8924885   8.8636837   76.8284836   5.1769853   3.9847643
1270 706     -499.1662292   -9.8815393   -8.8636837   -76.8284836   -12.8883915   4.6169391
    
```

--- LOADING - 225 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500.5171204   9.6587305   7.9594207   76.8480911   18.6632233   5.7381978
1270 706     -500.7499084   -9.6509886   -7.9516788   -76.8480911   -25.5845547   2.6615312
    
```

--- LOADING - 270 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501.7168274   9.0725183   7.5334859   76.8976898   24.8139324   9.6872654
1270 706     -501.9495850   -9.0725183   -7.5225363   -76.8976898   -31.3633022   -1.7941731
    
```

--- LOADING - 315 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501.8210144   8.4836636   7.8419075   76.9696960   20.1158276   13.5004101
1270 706     -502.0538025   -8.4914055   -7.8341656   -76.9696960   -26.9349194   -6.1162510
    
```

--- LOADING - 360 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500.7650146   8.2479868   8.6871920   76.9805069   7.3325696   14.9169216
1270 706     -500.9978027   -8.2589359   -8.6871920   -76.9805069   -14.8904295   -7.7364063
    
```

HEIGHT = 1,23 FT

--- LOADING - 45 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	499.1640320	8.4782219	9.5857792	76.9454880	-6.1044250	13.1687441
1270	706	-499.3968201	-8.4859638	-9.5935211	-76.9454880	-2.2385738	-5.7893209
--- LOADING - 90 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.9692993	9.0656309	10.0083389	76.8752823	-12.2515831	9.2114201
1270	706	-498.2020874	-9.0656309	-10.0192890	-76.8752823	3.5395617	-1.3243188
--- LOADING - 135 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.8479614	9.6552820	9.7150669	76.7522202	-7.6938601	5.4288740
1270	706	-498.0807495	-9.6475391	-9.7228088	-76.7522202	-0.7616195	2.9678547
--- LOADING - 180 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498.9726257	9.8752899	8.8544893	76.8426514	5.2603364	4.0414782
1270	706	-499.2054138	-9.8643389	-8.8544893	-76.8426514	-12.9637442	4.5452609
--- LOADING - 225 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.5347290	9.6570272	7.9527407	76.8583908	18.7311230	5.7510881
1270	706	-500.7675171	-9.6492844	-7.9449983	-76.8583908	-25.6466427	2.6471589
--- LOADING - 270 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.7351379	9.0693903	7.5276103	76.9201508	24.8542233	9.6941004
1270	706	-501.9678955	-9.0693903	-7.5166612	-76.9201508	-31.3984814	-1.8037289
--- LOADING - 315 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.8103027	8.4716816	7.8488379	76.9535980	19.9306545	13.5626011
1270	706	-502.0430908	-8.4794245	-7.8410954	-76.9535980	-26.7557755	-6.1888671
--- LOADING - 360 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.7717285	8.2523775	8.6804590	77.0087814	7.4147992	14.8813095
1270	706	-501.0045166	-8.2633266	-8.6804590	-77.0087814	-14.9668007	-7.6969757

HEIGHT = 2,051 FT

--- LOADING - 45 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	499.1275940	8.4836321	9.5937414	76.9393692	-6.1412883	13.1367092
1270	706	-499.3603821	-8.4913740	-9.6014843	-76.9393692	-2.2086384	-5.7525787
--- LOADING - 90 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.9764404	9.0657463	10.0238295	76.8993149	-12.3889790	9.2214060
1270	706	-498.2091675	-9.0657463	-10.0347786	-76.8993149	3.6634798	-1.3342041
--- LOADING - 135 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.8589172	9.6555977	9.7169142	76.8093262	-7.7046509	5.4075685
1270	706	-498.0917053	-9.6478558	-9.7246571	-76.8093262	-0.7524357	2.9894354
--- LOADING - 180 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498.9335022	9.8924885	8.8636827	76.8284836	5.1769862	3.9847646
1270	706	-499.1662292	-9.8815393	-8.8636827	-76.8284836	-12.8883924	4.6169386
--- LOADING - 225 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.5516052	9.6624556	7.9614720	76.8676300	18.6984215	5.7539749
1270	706	-500.7843628	-9.6547136	-7.9537301	-76.8676300	-25.6215363	2.6489942
--- LOADING - 270 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.7168274	9.0725183	7.5334859	76.8976898	24.8139324	9.6872654
1270	706	-501.9495850	-9.0725183	-7.5225363	-76.8976898	-31.3633022	-1.7941731
--- LOADING - 315 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.7867126	8.4777384	7.8572555	76.9723892	19.7639866	13.5553474
1270	706	-502.0195007	-8.4854813	-7.8495131	-76.9723892	-26.5964317	-6.1763444
--- LOADING - 360 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.7755127	8.2293158	8.6874542	77.0041809	7.3126769	15.0080366
1270	706	-501.0083008	-8.2402649	-8.6874542	-77.0041809	-14.8707638	-7.8437657

HEIGHT = 2,871 FT

--- LOADING - 45 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	499,0889587	8,4854126	9,6035280	76,9275894	-6,2381921	13,1060266	
1270	706	-499,3217468	-8,4931545	-9,6112709	-76,9275894	-2,1202488	-5,7203479	

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,9519653	9,0657272	10,0037098	76,8347092	-11,9644661	9,1901684	
1270	706	-498,1847534	-9,0657263	-10,0146589	-76,8347092	3,2564716	-1,3029847	

--- LOADING - 135 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,8666382	9,6836510	9,7023544	76,7734604	-7,2146769	5,2979088	
1270	706	-498,0993958	-9,6759090	-9,7100964	-76,7734604	-1,2297419	3,1235013	

--- LOADING - 180 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	498,9829102	9,8537827	8,8627539	76,8062210	5,1524572	4,1107583	
1270	706	-499,2156372	-9,8428335	-8,8627539	-76,8062210	-12,8630552	4,4572706	

--- LOADING - 225 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	500,5626221	9,6553211	7,9709544	76,8635406	18,5367622	5,7890387	
1270	706	-500,7954102	-9,6475782	-7,9632125	-76,8635406	-25,4681263	2,6077237	

--- LOADING - 270 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,7415771	9,0654106	7,5639744	76,9301147	24,4899235	9,7159224	
1270	706	-501,9743347	-9,0654106	-7,5530252	-76,9301147	-31,0658207	-1,8290138	

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,7526550	8,4948006	7,8678102	77,0083771	19,6138706	13,5053186	
1270	706	-501,9854431	-8,5025425	-7,8600683	-77,0083771	-26,4554996	-6,1114712	

--- LOADING - 360 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	500,7006531	8,2540283	8,7171497	76,9706116	7,0143695	14,9170790	
1270	706	-500,9334106	-8,2649775	-8,7171497	-76,9706116	-14,5982914	-7,7313080	

HEIGHT = 3,691 FT

--- LOADING - 45 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	499,0632935	8,5120344	9,6024227	76,9667587	-5,9614286	13,0286989
1270	706	-499,2960815	-8,5197763	-9,6101646	-76,9667587	-2,3960502	-5,6198587

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9764404	9,0657463	10,0238295	76,8993149	-12,3889790	9,2214060
1270	706	-498,2091675	-9,0657463	-10,0347786	-76,8993149	3,6634798	-1,3342041

--- LOADING - 135 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9357910	9,6461725	9,6905680	76,8317566	-7,0968852	5,3738055
1270	706	-498,1685486	-9,6384296	-9,6983099	-76,8317566	-1,3372804	3,0149970

--- LOADING - 180 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498,9579163	9,8495560	8,8764715	76,7660675	5,0036874	4,1256733
1270	706	-499,1907043	-9,8386068	-8,8764715	-76,7660675	-12,7262201	4,4386783

--- LOADING - 225 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500,5189819	9,6217861	8,0028849	76,8068161	17,8859577	5,8823805
1270	706	-500,7517700	-9,6140442	-7,9951425	-76,8068161	-24,8450985	2,4852068

--- LOADING - 270 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7173767	9,0654440	7,5810642	76,9147949	24,1593475	9,7224665
1270	706	-501,9501343	-9,0654440	-7,5701151	-76,9147949	-30,7501125	-1,8355286

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7177124	8,5147247	7,8785439	77,0499878	19,4899349	13,4413929
1270	706	-501,9504700	-8,5224686	-7,8708014	-77,0499878	-26,3409004	-6,0302110

--- LOADING - 360 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500,6618652	8,2683172	8,7271852	77,0185699	6,9170127	14,8719416
1270	706	-500,8946228	-8,2792664	-8,7271852	-77,0185699	-14,5096664	-7,6737390

HEIGHT = 4,511 FT

--- LOADING - 45 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	499,0244751	8,5217237	9,6083155	76,9724350	-5,9368019	12,9831486		
1270	706	-499,2572021	-8,5294666	-9,6160583	-76,9724350	-2,4258044	-5,5658774		
--- LOADING - 90 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	497,9071960	9,0660696	10,0057554	76,7713089	-11,7546997	9,1630754		
1270	706	-498,1399841	-9,0660696	-10,0167046	-76,7713089	3,0449259	-1,2755924		
--- LOADING - 135 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	497,8828735	9,6562309	9,7009935	76,6979828	-6,9839330	5,3608751		
1270	706	-498,1156616	-9,6484890	-9,7087355	-76,6979828	-1,4593027	3,0366793		
--- LOADING - 225 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	500,5346375	9,6131763	8,0086555	76,8053970	17,7633247	5,9280715		
1270	706	-500,7674255	-9,6054344	-8,0009127	-76,8053970	-24,7274895	2,4320247		
--- LOADING - 270 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	501,7063293	9,0643864	7,5924788	76,9225616	23,8996944	9,7306547		
1270	706	-501,9391174	-9,0643864	-7,5815296	-76,9225616	-30,5003872	-1,8446374		
--- LOADING - 315 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	501,6855164	8,5332870	7,8887610	77,0909500	19,3810635	13,3791361		
1270	706	-501,9183044	-8,5410299	-7,8810191	-77,0909500	-26,2409191	-5,9518065		
--- LOADING - 360 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	500,6230774	8,2833853	8,7362671	77,0819702	6,8325300	14,8155880		
1270	706	-500,8558655	-8,2943344	-8,7362671	-77,0819702	-14,4330845	-7,6042771		

HEIGHT = 5,331 FT

--- LOADING - 45 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		

		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498,9935608	8,5362358	9,6108465	76,9896698	-5,8231344	12,9356470
1270	706	-499,2263184	-8,5439777	-9,6185884	-76,9896698	-2,5416725	-5,5057511

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,9027710	9,0645380	10,0023975	76,7431030	-11,6034136	9,1500320	
1270	706	-498,1355591	-9,0645380	-10,0133476	-76,7431030	2,8965607	-1,2638820	

--- LOADING - 135 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,8763123	9,6546154	9,7015705	76,6588211	-6,8693233	5,3640909	
1270	706	-498,1091003	-9,6468735	-9,7093134	-76,6588211	-1,5744141	3,0320578	

--- LOADING - 270 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6626892	9,0648088	7,6196761	76,9463425	23,5109501	9,7364540	
1270	706	-501,8954468	-9,0648088	-7,6087265	-76,9463425	-30,1353035	-1,8500680	

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6703491	8,5267391	7,9054337	77,1663437	19,0404339	13,4021015	
1270	706	-501,9031067	-8,5344820	-7,8976912	-77,1663437	-25,9147930	-5,9804678	

--- LOADING - 360 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	500,6044617	8,2915964	8,7367458	77,1884232	6,8248820	14,7945309	
1270	706	-500,8372498	-8,3025455	-8,7367458	-77,1884232	-14,4258528	-7,5760770	

HEIGHT = 6,152 FT

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,8673096	9,0648890	10,0061255	76,7056961	-11,5197926	9,1336765	
1270	706	-498,1000977	-9,0648890	-10,0170746	-76,7056961	2,8096962	-1,2472206	

--- LOADING - 270 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6348267	9,0641260	7,6404052	76,9780807	23,1925068	9,7431498	
1270	706	-501,8676147	-9,0641260	-7,6294560	-76,9780807	-29,8348961	-1,8573579	

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6680603	8,5150824	7,9189577	77,2421188	18,7303352	13,4395361	
1270	706	-501,9008179	-8,5228243	-7,9112158	-77,2421188	-25,6164627	-6,0280433	


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--- LOADING - 360
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500,5716858   8,3019581   8,7459612   77,2271042   6,7329001   14,7613497
1270 706     -500,8044434   -8,3129072   -8,7459612   -77,2271042  -14,3418875  -7,5338793

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HEIGHT = 6,972 FT

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--- LOADING - 90
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497,8335266   9,0650291   10,0095348   76,6697159  -11,4261484   9,1172829
1270 706     -498,0662842   -9,0650291  -10,0204840  -76,6697159   2,7130864  -1,2307061

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--- LOADING - 270
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501,5973816   9,0648136   7,6617842   77,0205536   22,8628426   9,7455053
1270 706     -501,8301392   -9,0648136   -7,6508350  -77,0205536  -29,5238323  -1,8591152

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-----
--- LOADING - 315
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501,6309814   8,5338202   7,9336095   77,3047028   18,5496387   13,3744440
1270 706     -501,8637390   -8,5415621   -7,9258671  -77,3047028  -25,4485130  -5,9466496

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-----
--- LOADING - 360
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500,5375366   8,3128424   8,7555037   77,2672806   6,6375694   14,7258406
1270 706     -500,7702637   -8,3237915   -8,7555037  -77,2672806  -14,2548590  -7,4889021

```

HEIGHT = 7,792 FT

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-----
--- LOADING - 90
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497,9764404   9,0657463   10,0238295   76,8993149  -12,3889790   9,2214060
1270 706     -498,2091675   -9,0657463  -10,0347786  -76,8993149   3,6634798  -1,3342041

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-----
--- LOADING - 270
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501,7168274   9,0725183   7,5334859   76,8976898   24,8139324   9,6872654
1270 706     -501,9495850   -9,0725183   -7,5225363  -76,8976898  -31,3633022  -1,7941731

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-----
--- LOADING - 315
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z

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1270	497	501,8210144	8,4836636	7,8419075	76,9696960	20,1158276	13,5004101
1270	706	-502,0538025	-8,4914055	-7,8341656	-76,9696960	-26,9349194	-6,1162510

H = 0,41 FT

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9661560	9,0654678	10,0187607	76,8809052	-12,3591690	9,2159376
1270	706	-498,1989441	-9,0654678	-10,0297098	-76,8809052	3,6380813	-1,3289783

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,8174744	8,4879837	7,8399467	76,9671021	20,1149616	13,4951181
1270	706	-502,0502319	-8,4957256	-7,8322043	-76,9671021	-26,9323483	-6,1072011

H = 1,23 FT

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9429932	9,0660324	10,0200329	76,8521347	-12,3037500	9,2050238
1270	706	-498,1757812	-9,0660324	-10,0309830	-76,8521347	3,5815539	-1,3175733

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,8025513	8,4922457	7,8486099	77,0089722	19,9590645	13,4851284
1270	706	-502,0353088	-8,4999876	-7,8408670	-77,0089722	-26,7839870	-6,0935040

H = 1,23 FT

--- LOADING - 90 ---

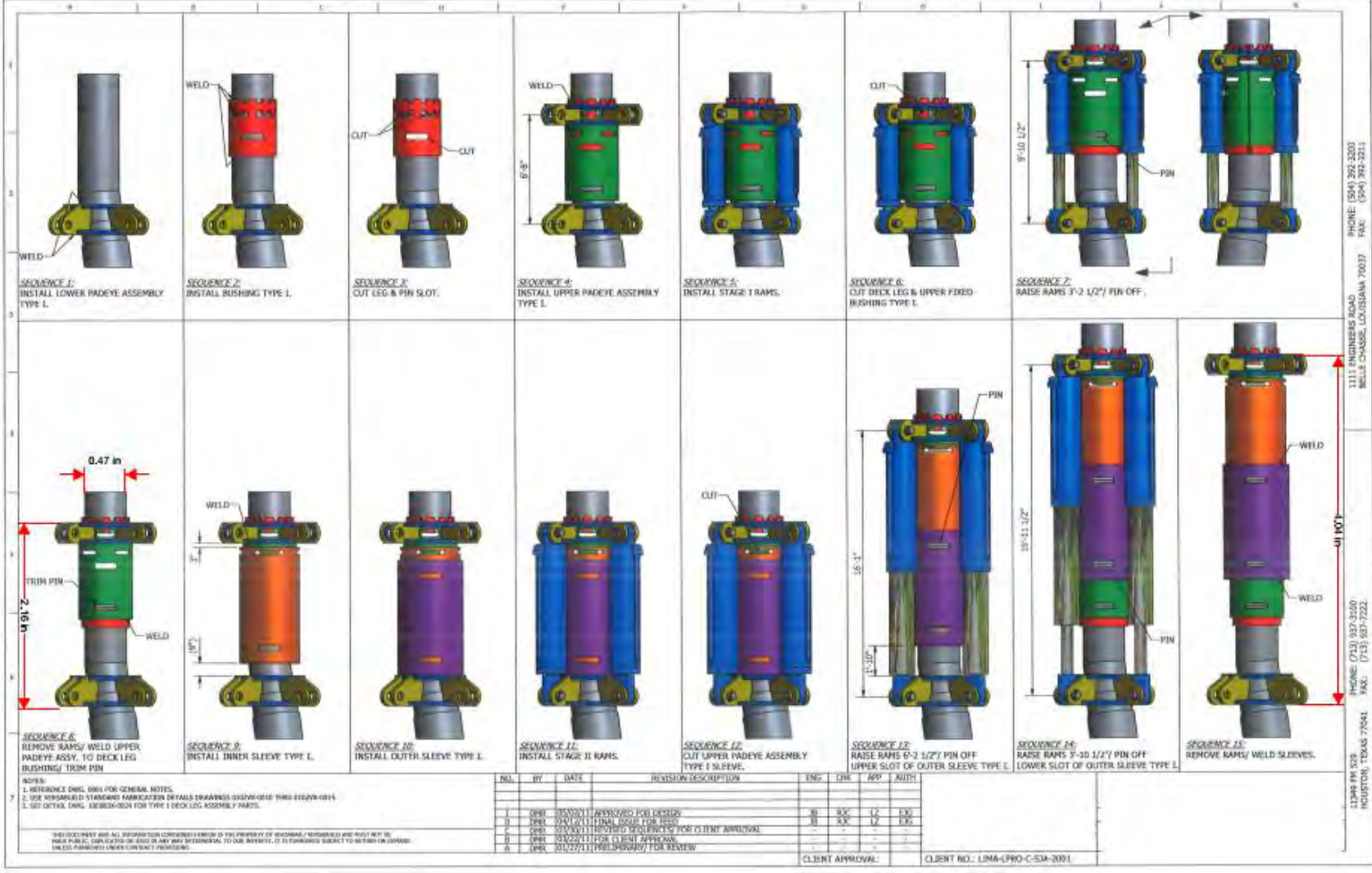
MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
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1270	706	-498,1588440	-9,0660458	-10,0293713	-76,8196640	3,4759502	-1,3050618

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7813416	8,4999962	7,8593330	77,0551910	19,8051205	13,4626160
1270	706	-502,0141296	-8,5077391	-7,8515902	-77,0551910	-26,6393719	-6,0642471



NOTES:
 1. REFERENCE DWG. 0081 FOR GENERAL NOTES.
 2. USE WELDABLE STAINLESS FABRICATION DETAILS DRAWINGS 032200-0010 THRU 032200-0014.
 3. SEE DETAIL DWG. 030600-0020 FOR TYPE I DECK LEG ASSEMBLY PARTS.

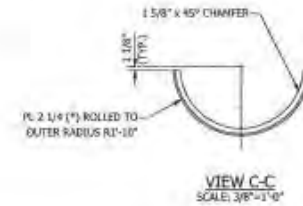
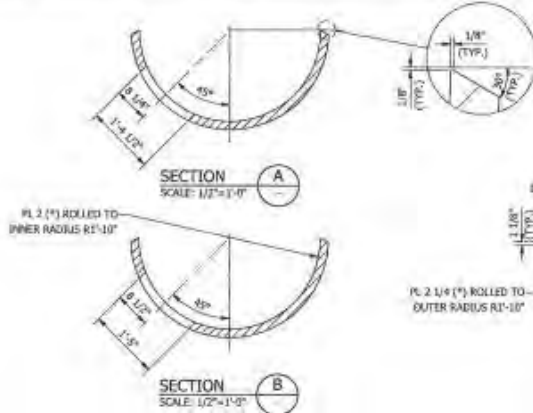
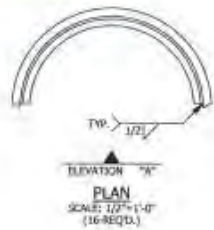
NO.	BY	DATE	REVISION DESCRIPTION	ENG.	CHK.	APP.	AUTH.
1	ENR	05/05/11	ISSUING FOR DESIGN	EN	SK	LZ	ENR
2	ENR	04/12/11	FINAL ISSUE FOR ISSU	EN	SK	LZ	ENR
3	ENR	03/29/11	REVISED SEQUENCES FOR CLIENT APPROVAL	-	-	-	-
4	ENR	03/22/11	FOR CLIENT APPROVAL	-	-	-	-
5	ENR	03/22/11	TEMPORARY FOR REVIEW	-	-	-	-

CLIENT APPROVAL: _____ CLIENT NO.: LIMA-LPRO-C-SDA-2001

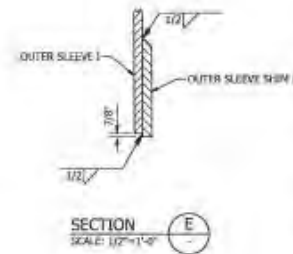
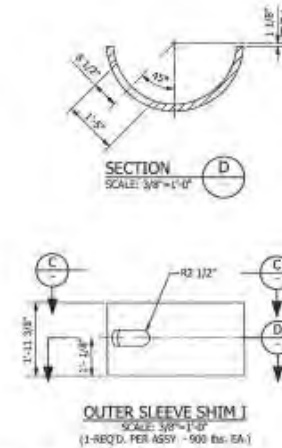
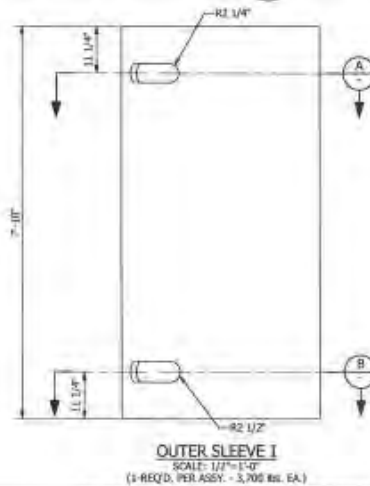
1117 ENGINEERS ROAD
 BELLS CHASSE, LOUISIANA 70037
 PHONE: (504) 392-3200
 FAX: (504) 394-5511

11249 FM 573
 HOUSTON, TEXAS 77064
 PHONE: (713) 937-9320
 FAX: (713) 937-7222

EPCI CONTRACTOR TO CONFIRM ALL RADIUS MEASUREMENTS AFTER EPCI SURVEY COMPLETION



ISOMETRIC
(ESTIMATED WEIGHT = 4,500 lbs. EA.)



- REVISED:
1. REFERENCE DWG. NO. FOR GENERAL NOTES
2. REFERENCE DWG. 1800V-001 FOR VESSELS/STANDARD FABRICATION DETAILS.

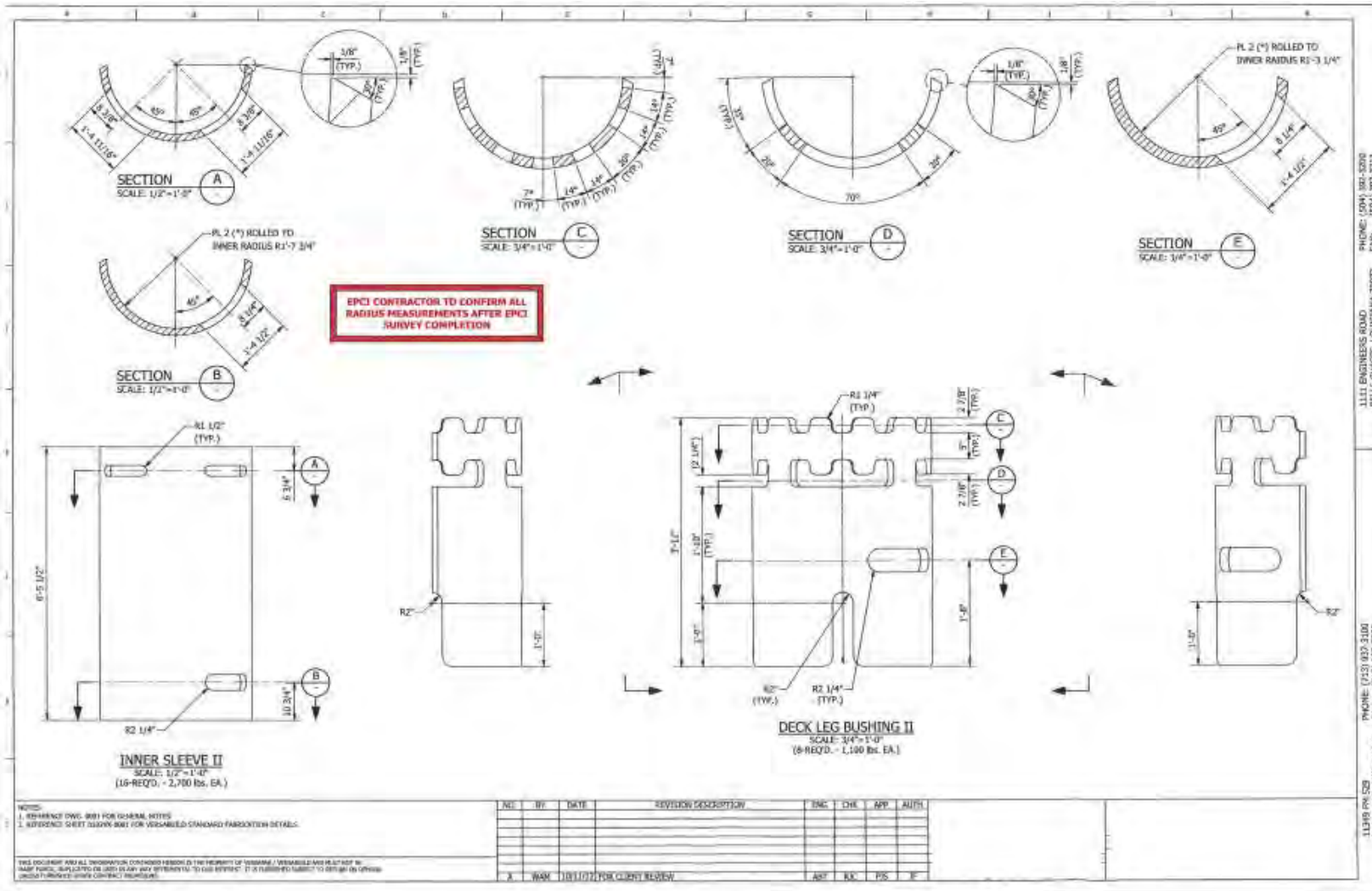
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NO.	BY	DATE	REVISION DESCRIPTION	ENGR	CHKD	APP'D	AUTH
1	MM	10/22/12	FOR CLIENT REVIEW	AMT	RS	DES	3'

FILED CODE: 239 NO. 100003X-160 0511
PE

1111 HAMBERS BOUL
BELLE CHASSE, LOUISIANA 70037
PHONE: (504) 363-3200
FAX: (504) 366-1211

11394 FM 524
HOUSTON, TEXAS 77064
PHONE: (713) 357-3100
FAX: (713) 357-7222



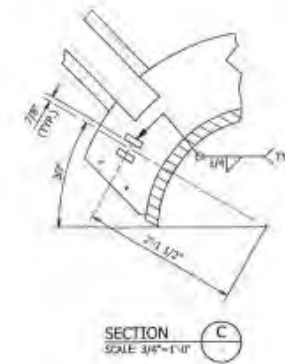
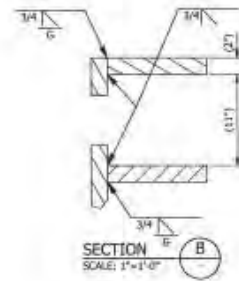
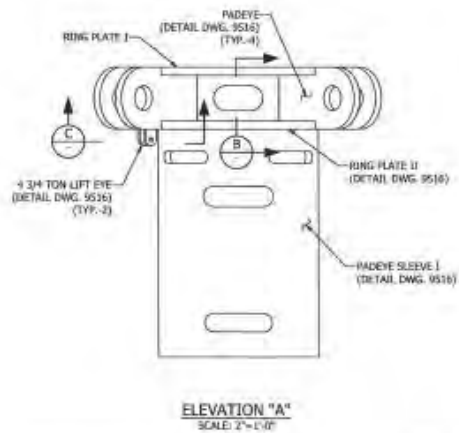
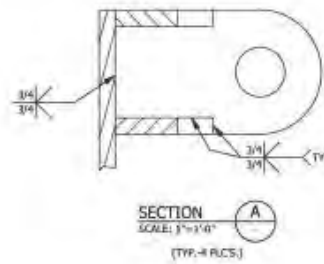
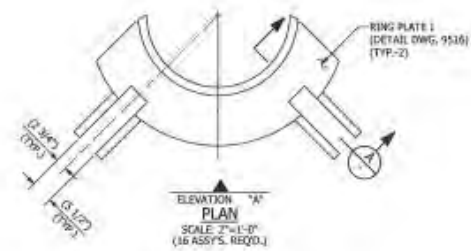
EPCI CONTRACTOR TO CONFIRM ALL RADIUS MEASUREMENTS AFTER EPCI SURVEY COMPLETION

- NOTES:
 1. REFERENCE DWG. 901 FOR GENERAL NOTES
 2. REFERENCE SHEET S200N-901 FOR VESSEL-BELT STANDARD FABRICATION DETAILS.

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NO.	BY	DATE	REVISION / DESCRIPTION	ENG.	CHK.	APP.	AUTH.
1	WAK	11/01/10	FOR CLIENT REVIEW	AW	EX	PS	EF

11111 ENGINEERS ROAD
 BELLE CHASSE, LOUISIANA 70007
 PHONE: (504) 882-3200
 FAX: (504) 882-3211
 11310 PKWY. 228
 HOUSTON, TEXAS 77061
 PHONE: (713) 832-3100
 FAX: (713) 837-2222



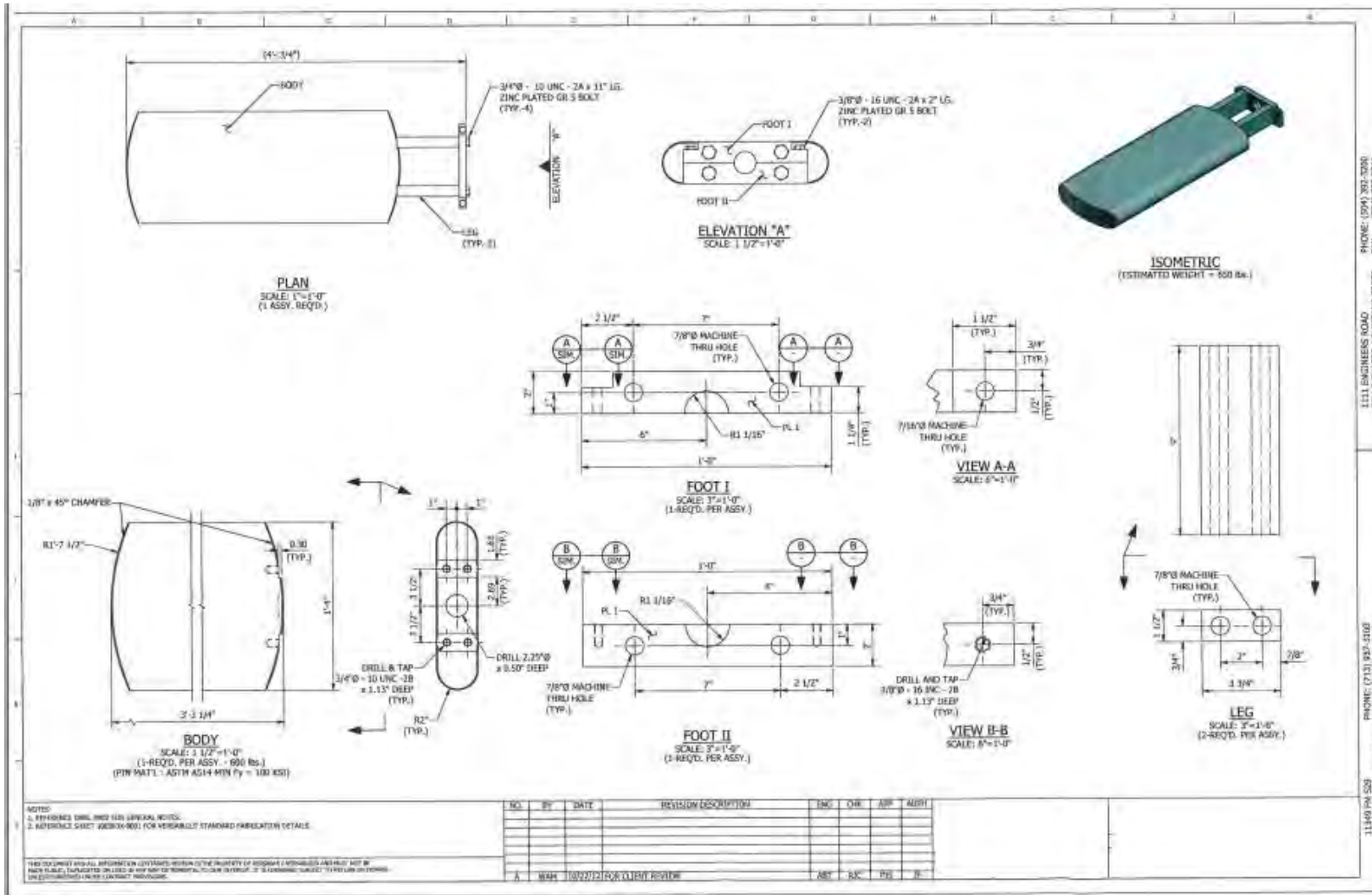
NOTES:
 1. REFERENCE DWG. NO. FOR GENERAL NOTES.
 2. REFERENCE SHEET #98956-999 FOR VESSELS/STANDARD FABRICATION DETAILS.

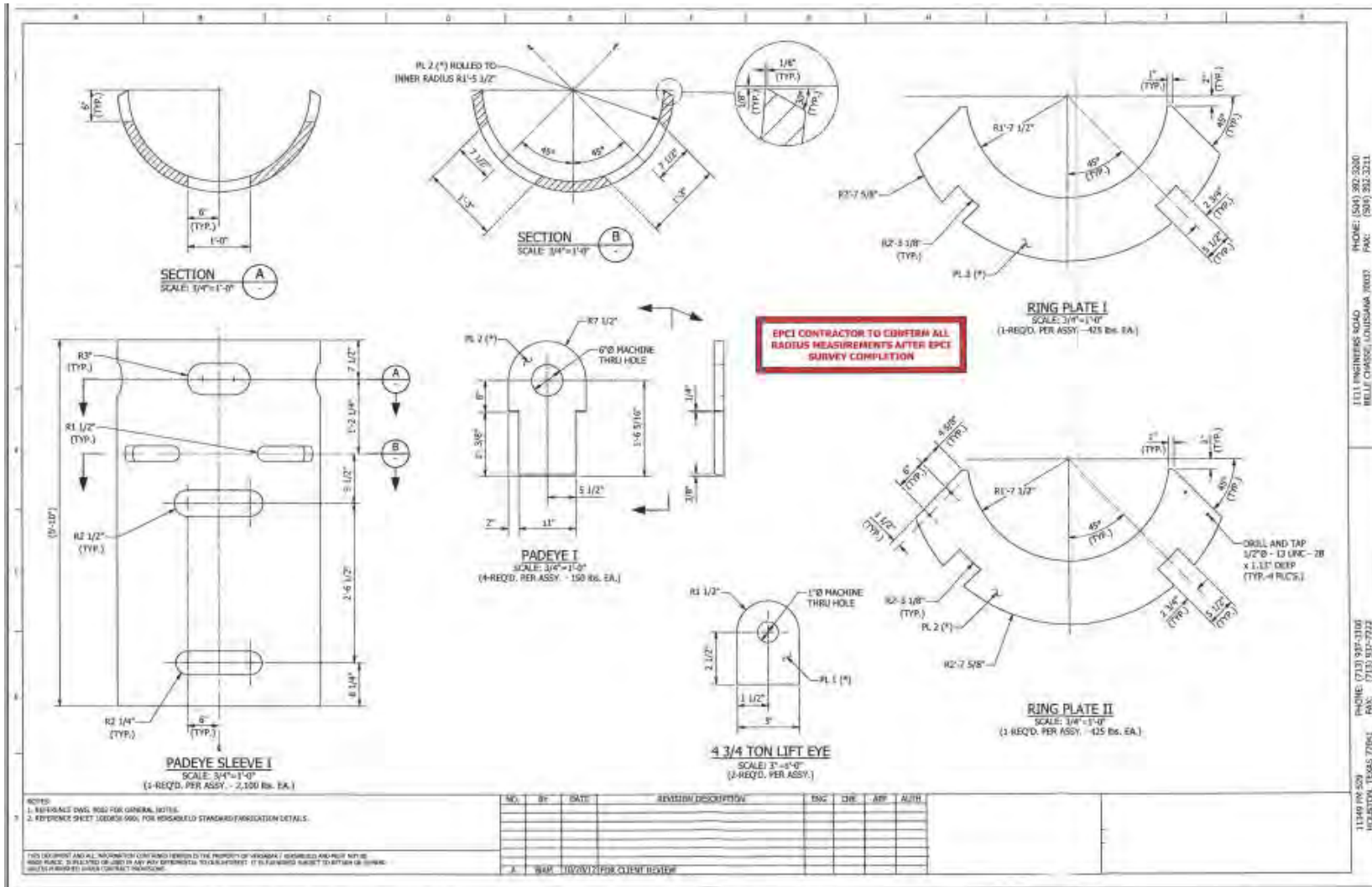
NO.	BY	DATE	REVISION DESCRIPTION	ENGR.	CHK.	APP.	DATE
1	MMT	10/20/12	FOR CLIENT REVIEW	MMT	RJC	PLS	10/20/12

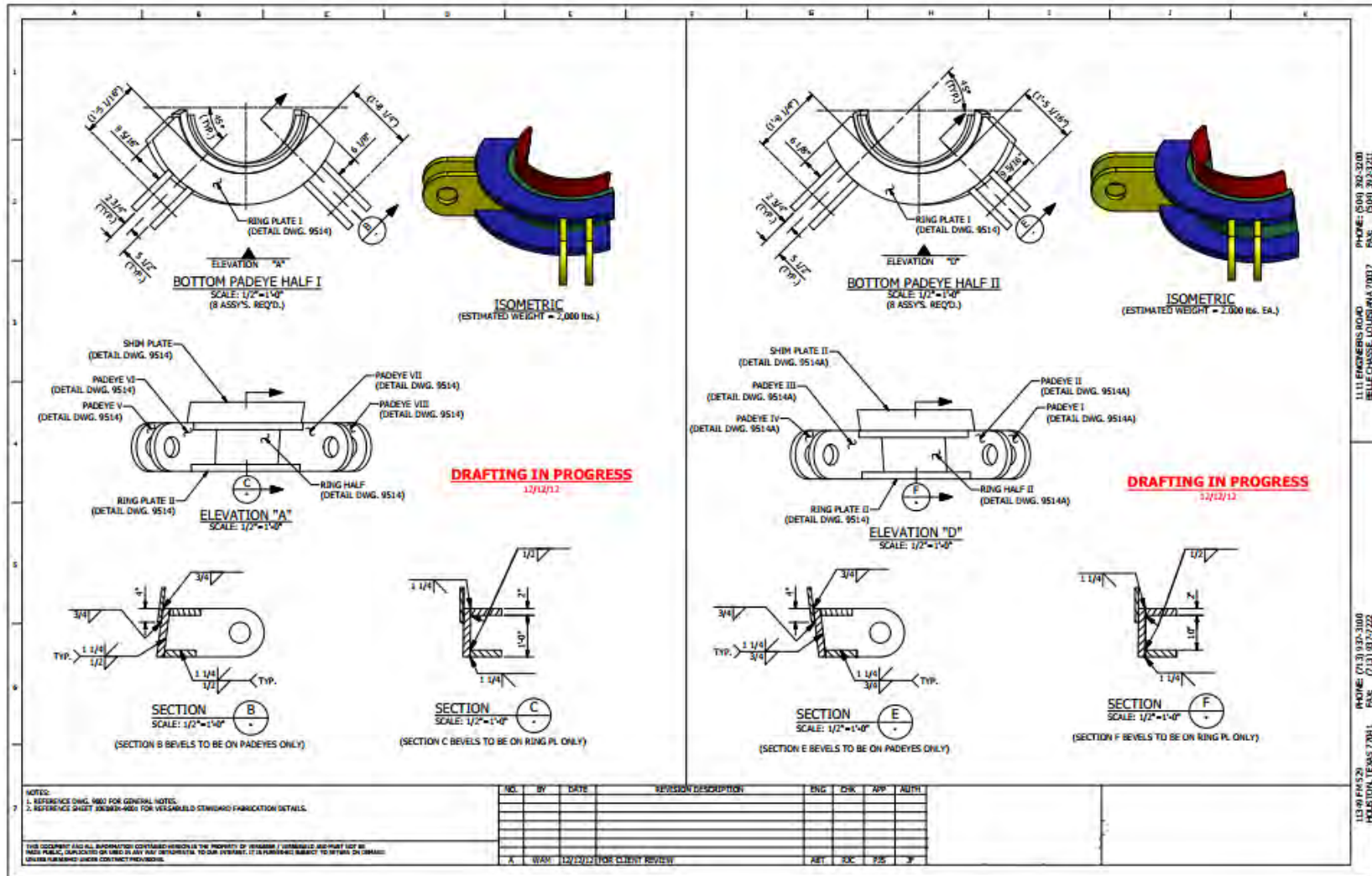
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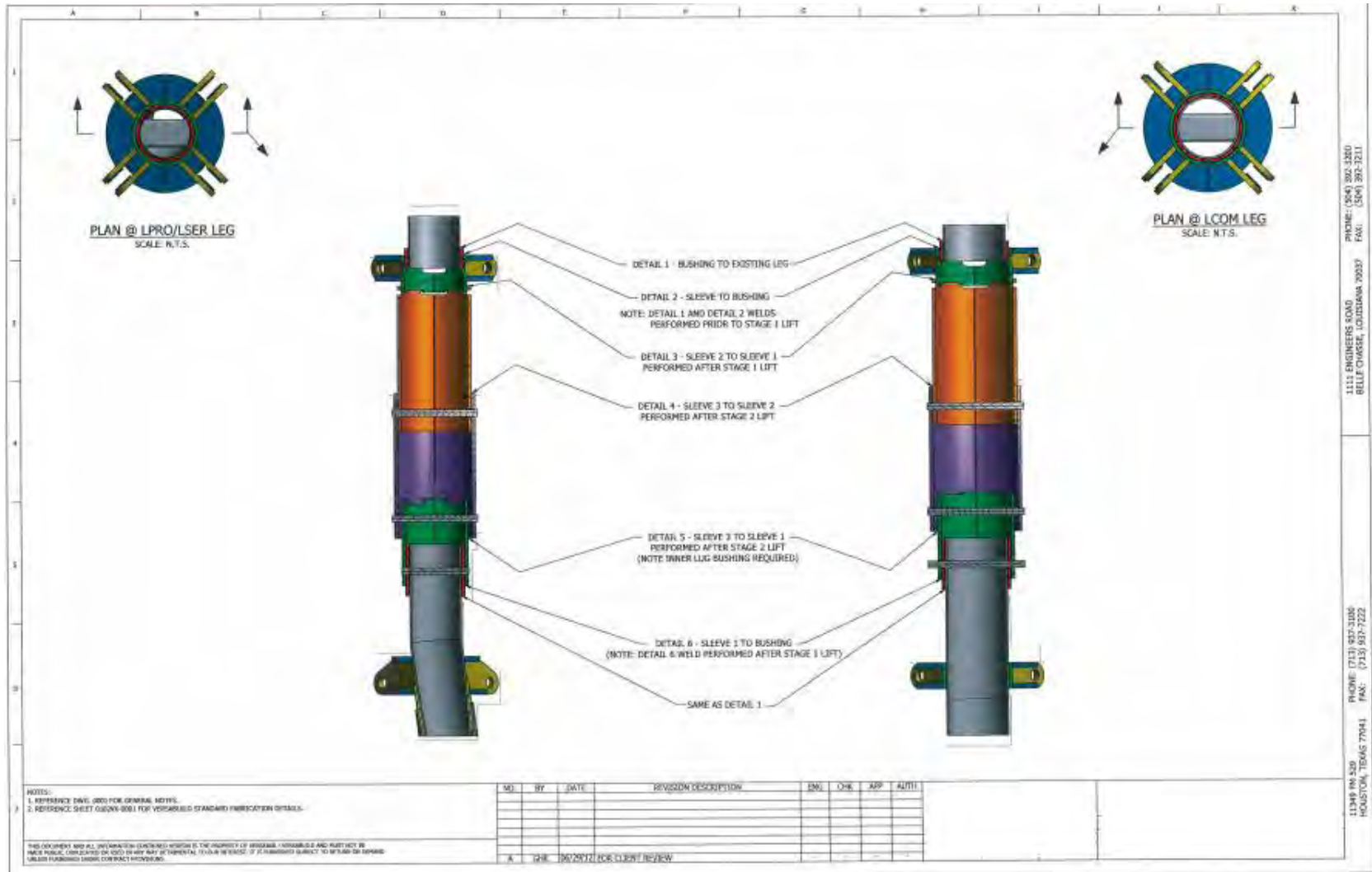
3111 ENGINEERS ROAD
 BELLE CHASSE, LOUISIANA 70007
 PHONE: (504) 382-3208
 FAX: (504) 382-3211

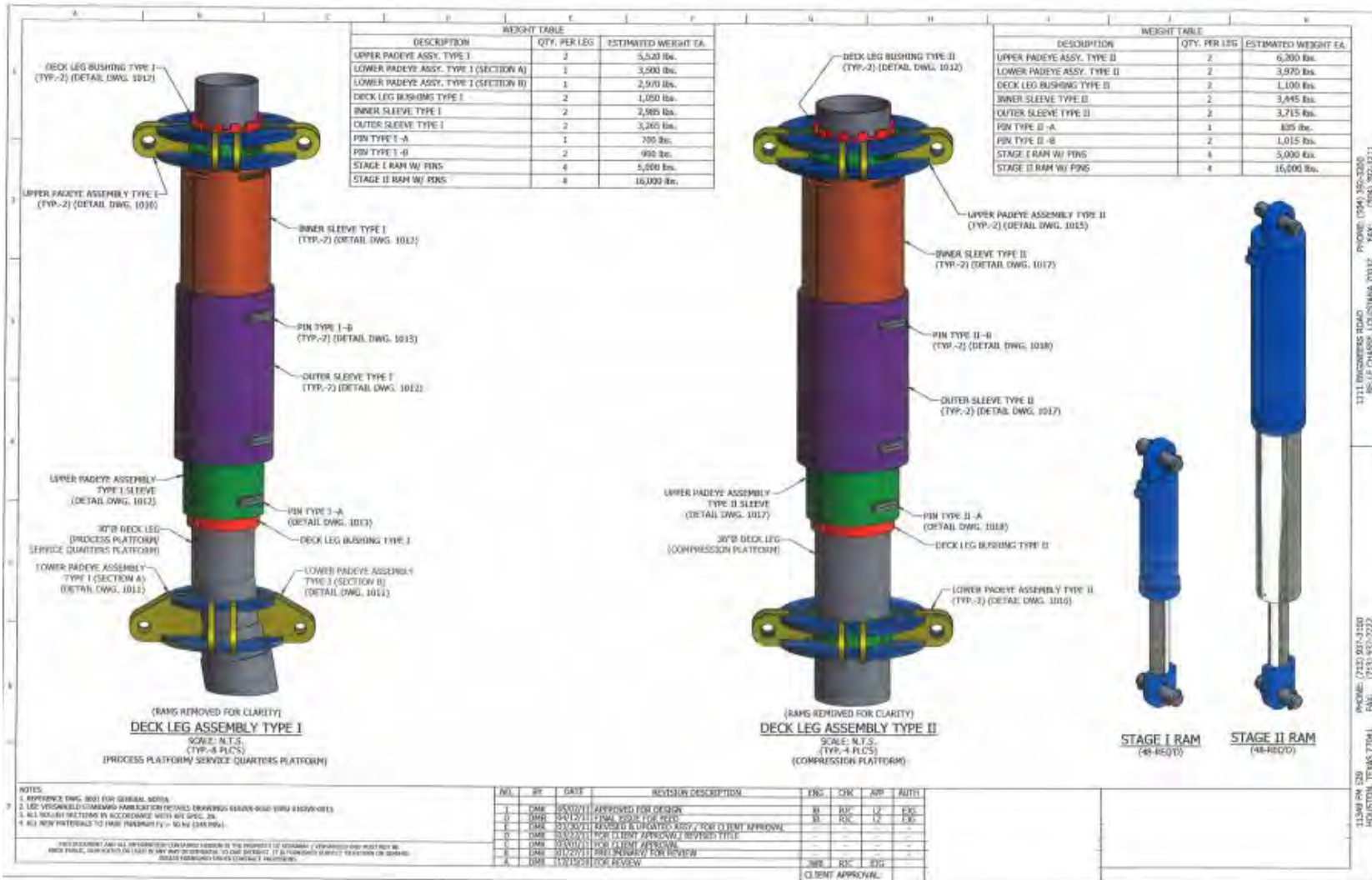
11349 FM 529
 HOUSTON, TEXAS 77041
 PHONE: (713) 857-3100
 FAX: (713) 857-7222









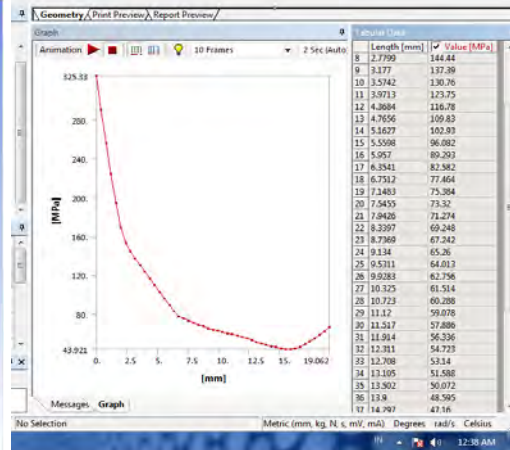
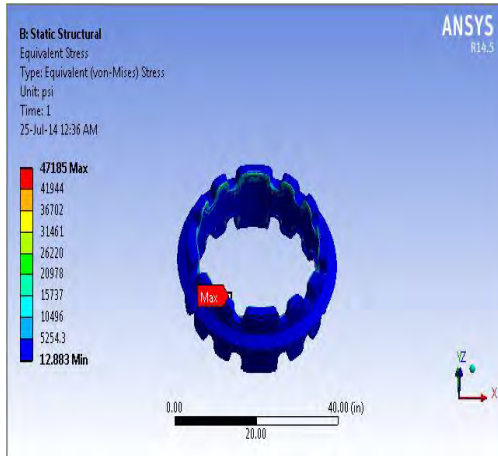


11348 PM 239 HOUSTON, TEXAS 77061
 PHONE: (713) 957-1100 FAX: (713) 957-7222
 1111 INDEPENDENCE ROAD BELLE CHASSE, LOUISIANA 70117
 PHONE: (504) 392-3000 FAX: (504) 392-1211

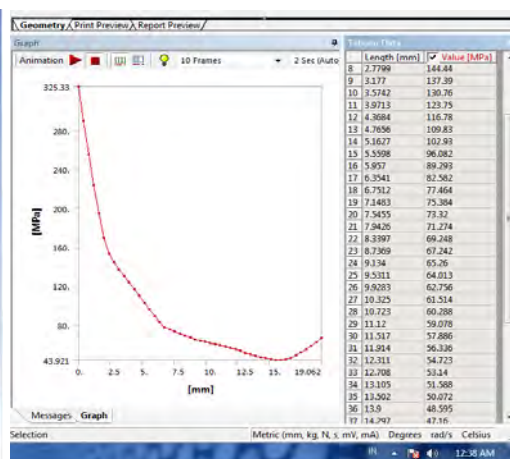
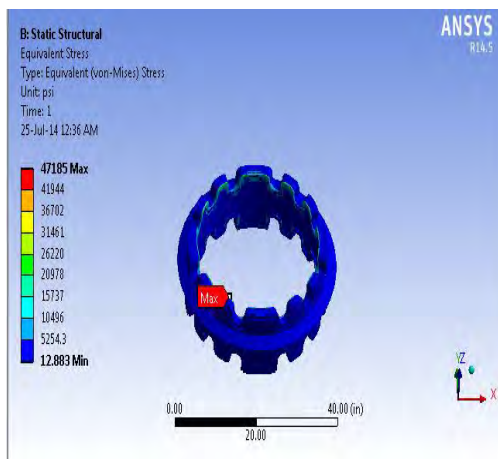
OUTPUT DISTRIBUSI TEGANGAN DARI SOFTWARE ANSYS 14.5

$H_s = 0.41 \text{ FT}$

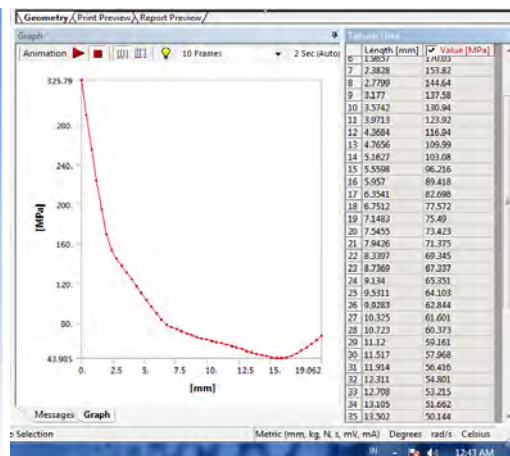
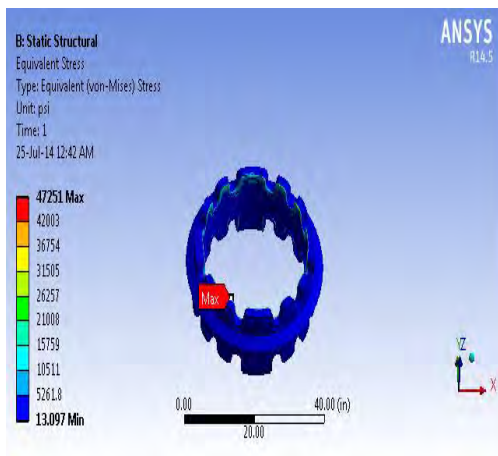
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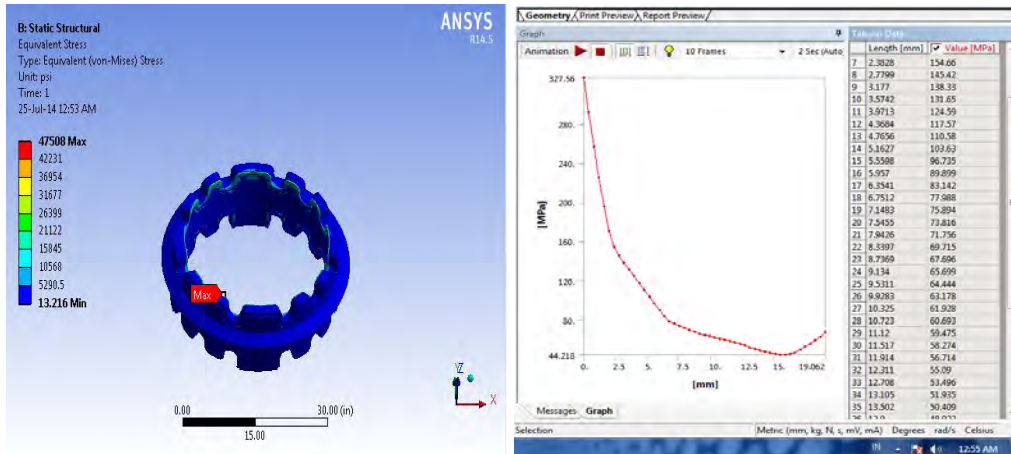
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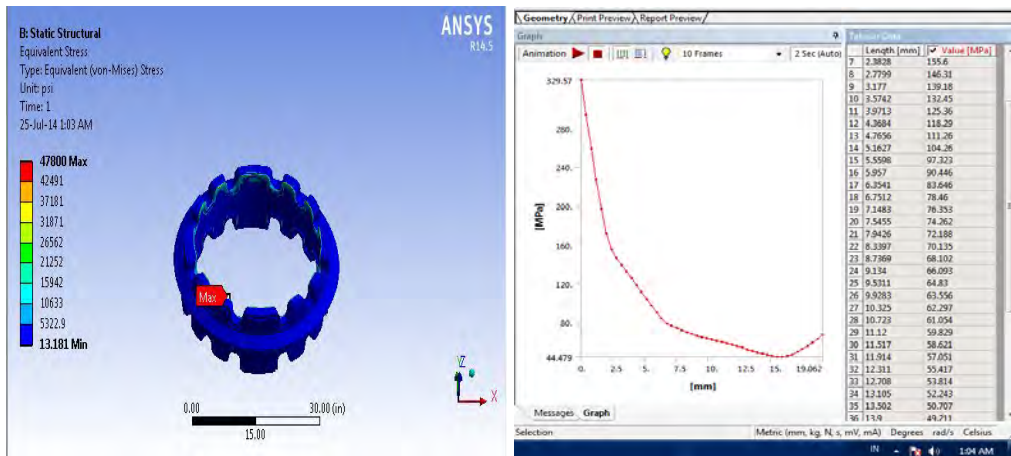
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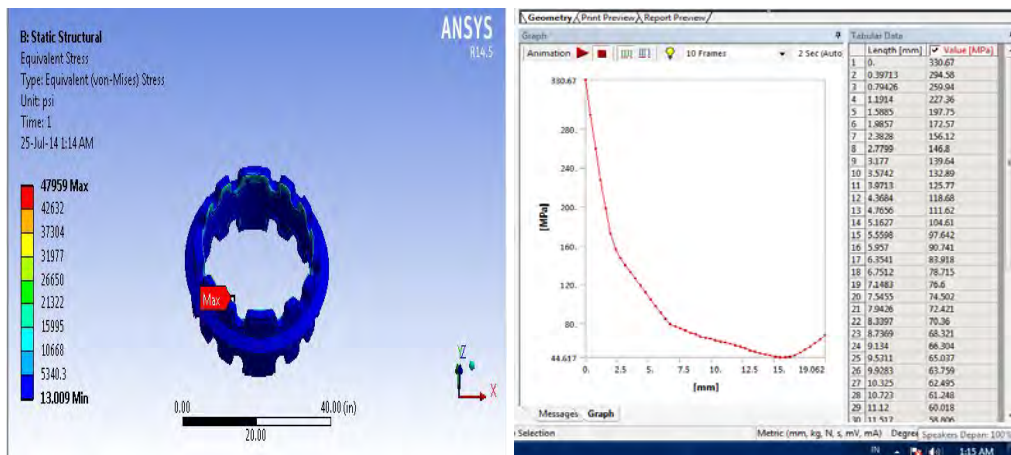
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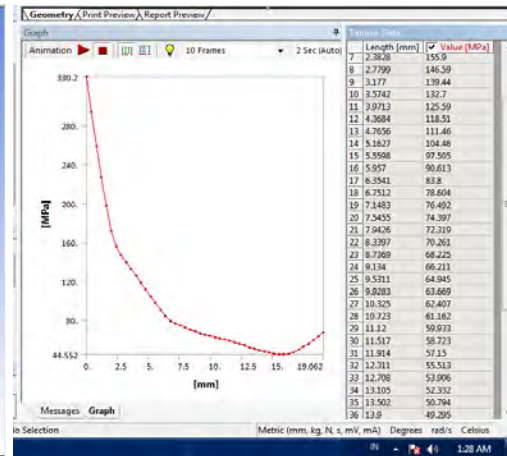
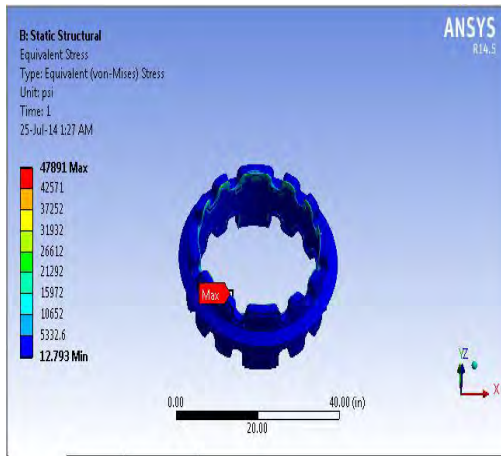
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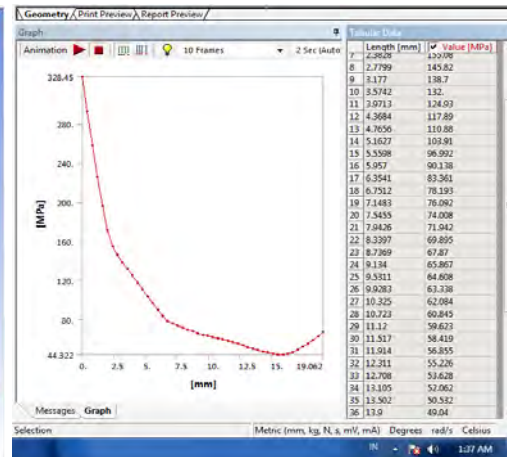
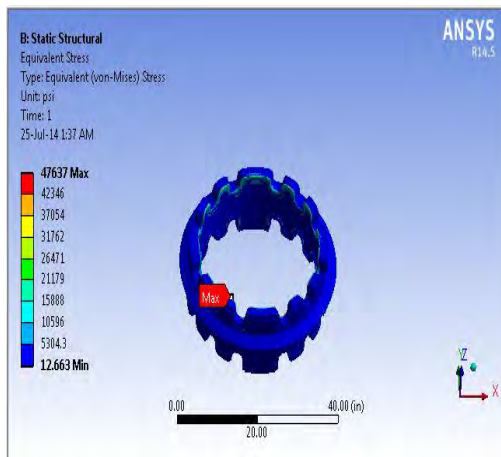
Arah = 270 Derajat



Arah = 315 Derajat



Arah = 360 Derajat



Input Pembebanan Lingkungan Tinggi Gelombang 0.41 Feet

<pre> Arah Gelombang 45 Derajat \$ SELOS '45' \$ STRUDL 'ditinggikan 4m' \$ OUTPUT UNITS ENGLISH \$ SAVE LOADINGS \$ PRINT LOADING TOTALS ONLY LOAD REFERENCE JOINT 'MUD' \$ IDENTIFY UNRECOGNIZED COMMANDS \$ MEMBER DRAG FORCE PRESSURE RESOLUTION \$\$ \$\$ This GTSTRUDL file created from GTMenu on 11/ 05/2013 \$\$ \$ UNITS FEET KIPS DEG FAH \$ JOINT COORDINATES GLOBAL 1 2.9625000E+01 4.3630001E+01 -3.0000000E+01 2 2.9625000E+01 4.3630001E+01 -2.6000000E+01 3 2.9625000E+01 4.3630001E+01 -2.5000000E+01 4 2.9625000E+01 4.3630001E+01 -2.0000000E+01 5 2.9625000E+01 4.3630001E+01 -1.5583000E+01 6 2.9625000E+01 4.3630001E+01 -1.4416000E+01 7 2.9625000E+01 4.3630001E+01 -1.0000000E+01 8 2.9625000E+01 4.3630001E+01 -6.6669998E+00 9 2.9625000E+01 4.3630001E+01 1.4500000E+01 10 2.9625000E+01 4.3630001E+01 1.7500000E+01 11 3.2625000E+01 4.3630001E+01 1.4500000E+01 12 3.2625000E+01 4.3630001E+01 1.7500000E+01 13 2.9625000E+01 4.3630001E+01 2.0000000E+01 14 2.9625000E+01 4.3630001E+01 2.5000000E+01 15 2.9625000E+01 4.3630001E+01 3.0000000E+01 16 2.6417000E+01 4.3630001E+01 -3.0000000E+01 17 2.6417000E+01 4.3630001E+01 -2.6000000E+01 18 2.6417000E+01 4.3630001E+01 -2.5500000E+01 19 2.6417000E+01 4.3630001E+01 -2.5000000E+01 20 2.6417000E+01 4.3630001E+01 -2.0000000E+01 21 2.6417000E+01 4.3630001E+01 -1.5583000E+01 22 2.6417000E+01 4.3630001E+01 -1.4416000E+01 23 2.6417000E+01 4.3630001E+01 2.9170003E+00 24 2.6417000E+01 4.3630001E+01 1.4500000E+01 25 2.6417000E+01 4.3630001E+01 1.7500000E+01 26 2.6417000E+01 4.3630001E+01 2.0000000E+01 27 2.6417000E+01 4.3630001E+01 2.5000000E+01 28 2.6417000E+01 4.3630001E+01 3.0000000E+01 29 2.3208000E+01 4.3630001E+01 -3.0000000E+01 30 2.3208000E+01 4.3630001E+01 -2.5500000E+01 31 2.3208000E+01 4.3630001E+01 -2.0000000E+01 32 2.3208000E+01 4.3630001E+01 2.9170003E+00 33 2.3208000E+01 4.3630001E+01 2.0000000E+01 34 2.3208000E+01 4.3630001E+01 2.1833000E+01 35 2.3208000E+01 4.3630001E+01 2.5000000E+01 36 2.3208000E+01 4.3630001E+01 2.8167000E+01 37 2.3208000E+01 4.3630001E+01 3.0000000E+01 38 2.0000000E+01 4.3630001E+01 -3.0000000E+01 39 2.0000000E+01 4.3630001E+01 -2.5500000E+01 40 2.0000000E+01 4.3630001E+01 -2.0000000E+01 41 2.0000000E+01 4.3630001E+01 0.0000000E+00 42 2.0000000E+01 4.3630001E+01 2.0000000E+01 43 2.0000000E+01 4.3630001E+01 2.5000000E+01 44 2.0000000E+01 4.3630001E+01 3.0000000E+01 45 1.7042000E+01 4.3630001E+01 -3.0000000E+01 46 1.7042000E+01 4.3630001E+01 -2.5500000E+01 47 1.7042000E+01 4.3630001E+01 -2.0000000E+01 48 1.7042000E+01 4.3630001E+01 -1.2500000E+01 49 1.7042000E+01 4.3630001E+01 -4.5000000E+00 50 1.7042000E+01 4.3630001E+01 3.0000000E+00 51 1.7042000E+01 4.3630001E+01 1.0000000E+01 52 1.7042000E+01 4.3630001E+01 1.6500000E+01 53 1.7042000E+01 4.3630001E+01 2.0000000E+01 54 1.7042000E+01 4.3630001E+01 2.3500000E+01 55 1.7042000E+01 4.3630001E+01 2.5000000E+01 56 1.7042000E+01 4.3630001E+01 3.0000000E+01 </pre>	<pre> 57 1.4083000E+01 4.3630001E+01 -3.0000000E+01 58 1.4083000E+01 4.3630001E+01 -2.5500000E+01 59 1.4083000E+01 4.3630001E+01 -2.0000000E+01 60 1.4083000E+01 4.3630001E+01 -1.2500000E+01 61 1.4083000E+01 4.3630001E+01 -4.5000000E+00 62 1.4083000E+01 4.3630001E+01 3.0000000E+00 63 1.4083000E+01 4.3630001E+01 1.0000000E+01 64 1.4083000E+01 4.3630001E+01 1.3250000E+01 65 1.4083000E+01 4.3630001E+01 1.6500000E+01 66 1.4083000E+01 4.3630001E+01 2.0000000E+01 67 1.4083000E+01 4.3630001E+01 2.3500000E+01 68 1.4083000E+01 4.3630001E+01 2.5000000E+01 69 1.4083000E+01 4.3630001E+01 2.6750000E+01 70 1.4083000E+01 4.3630001E+01 3.0000000E+01 71 1.1125000E+01 4.3630001E+01 -3.0000000E+01 72 1.1125000E+01 4.3630001E+01 -2.5500000E+01 73 1.1125000E+01 4.3630001E+01 -2.0000000E+01 74 1.1125000E+01 4.3630001E+01 -1.5500000E+01 75 1.1125000E+01 4.3630001E+01 -1.2500000E+01 76 1.1125000E+01 4.3630001E+01 -4.5000000E+00 77 1.1125000E+01 4.3630001E+01 3.0000000E+00 78 1.1125000E+01 4.3630001E+01 1.0000000E+01 79 1.1125000E+01 4.3630001E+01 1.3250000E+01 80 1.1125000E+01 4.3630001E+01 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4.3630001E+01 -2.5500000E+01 103 6.1250000E+00 4.3630001E+01 -2.0000000E+01 104 6.1250000E+00 4.3630001E+01 -1.6750000E+01 105 6.1250000E+00 4.3630001E+01 -1.5000000E+01 106 6.1250000E+00 4.3630001E+01 -1.2500000E+01 107 6.1250000E+00 4.3630001E+01 -4.5000000E+00 108 6.1250000E+00 4.3630001E+01 3.0000000E+00 109 6.1250000E+00 4.3630001E+01 5.5000000E+00 110 6.1250000E+00 4.3630001E+01 1.0000000E+01 111 6.1250000E+00 4.3630001E+01 1.6500000E+01 112 6.1250000E+00 4.3630001E+01 2.0000000E+01 113 6.1250000E+00 4.3630001E+01 2.3500000E+01 114 6.1250000E+00 4.3630001E+01 2.5500000E+01 115 6.1250000E+00 4.3630001E+01 2.7750000E+01 116 6.1250000E+00 4.3630001E+01 3.0000000E+01 117 3.6250000E+00 4.3630001E+01 -3.0000000E+01 118 3.6250000E+00 4.3630001E+01 -2.6670002E+01 119 3.6250000E+00 4.3630001E+01 -2.5500000E+01 120 3.6250000E+00 4.3630001E+01 -2.3330000E+01 121 3.6250000E+00 4.3630001E+01 -2.0000000E+01 122 3.6250000E+00 4.3630001E+01 -1.4500000E+01 123 3.6250000E+00 4.3630001E+01 -1.2500000E+01 124 3.6250000E+00 4.3630001E+01 -4.5000000E+00 125 3.6250000E+00 4.3630001E+01 3.0000000E+00 126 3.6250000E+00 4.3630001E+01 5.5000000E+00 </pre>
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128	3.6250000E+00	4.3630001E+01	1.6500000E+01	202	-8.6250000E+00	4.3630001E+01	2.5500000E+01
129	3.6250000E+00	4.3630001E+01	2.0000000E+01	203	-8.6250000E+00	4.3630001E+01	3.0000000E+01
130	3.6250000E+00	4.3630001E+01	2.3500000E+01	204	-1.1125000E+01	4.3630001E+01	-3.0000000E+01
131	3.6250000E+00	4.3630001E+01	2.5500000E+01	205	-1.1125000E+01	4.3630001E+01	-2.5500000E+01
132	3.6250000E+00	4.3630001E+01	2.7750000E+01	206	-1.1125000E+01	4.3630001E+01	-2.0000000E+01
133	3.6250000E+00	4.3630001E+01	3.0000000E+01	207	-1.1125000E+01	4.3630001E+01	-1.5500000E+01
134	1.2079999E+00	4.3630001E+01	-3.0000000E+01	208	-1.1125000E+01	4.3630001E+01	-1.2500000E+01
135	1.2079999E+00	4.3630001E+01	-2.5500000E+01	209	-1.1125000E+01	4.3630001E+01	-4.5000000E+00
136	1.2079999E+00	4.3630001E+01	-2.0000000E+01	210	-1.1125000E+01	4.3630001E+01	3.0000000E+00
137	1.2079999E+00	4.3630001E+01	-1.4500000E+01	211	-1.1125000E+01	4.3630001E+01	1.0000000E+01
138	1.2079999E+00	4.3630001E+01	-1.2500000E+01	212	-1.1125000E+01	4.3630001E+01	1.6500000E+01
139	1.2079999E+00	4.3630001E+01	-4.5000000E+00	213	-1.1125000E+01	4.3630001E+01	2.0000000E+01
140	1.2079999E+00	4.3630001E+01	3.0000000E+00	214	-1.1125000E+01	4.3630001E+01	2.3500000E+01
141	1.2079999E+00	4.3630001E+01	1.0000000E+01	215	-1.1125000E+01	4.3630001E+01	2.5500000E+01
142	1.2079999E+00	4.3630001E+01	1.6500000E+01	216	-1.1125000E+01	4.3630001E+01	3.0000000E+01
143	1.2079999E+00	4.3630001E+01	2.0000000E+01	217	-1.4083000E+01	4.3630001E+01	-3.0000000E+01
144	1.2079999E+00	4.3630001E+01	2.3500000E+01	218	-1.4083000E+01	4.3630001E+01	-2.5500000E+01
145	1.2079999E+00	4.3630001E+01	2.5500000E+01	219	-1.4083000E+01	4.3630001E+01	-2.0000000E+01
146	1.2079999E+00	4.3630001E+01	3.0000000E+01	220	-1.4083000E+01	4.3630001E+01	-1.2500000E+01
147	-1.2079999E+00	4.3630001E+01	-3.0000000E+01	221	-1.4083000E+01	4.3630001E+01	-4.5000000E+00
148	-1.2079999E+00	4.3630001E+01	-2.5500000E+01	222	-1.4083000E+01	4.3639999E+01	3.0000000E+00
149	-1.2079999E+00	4.3630001E+01	-2.0000000E+01	223	-1.4083000E+01	4.3630001E+01	1.0000000E+01
150	-1.2079999E+00	4.3630001E+01	-1.4500000E+01	224	-1.4083000E+01	4.3630001E+01	1.6500000E+01
151	-1.2079999E+00	4.3630001E+01	-1.2500000E+01	225	-1.4083000E+01	4.3630001E+01	2.0000000E+01
152	-1.2079999E+00	4.3630001E+01	-4.5000000E+00	226	-1.4083000E+01	4.3630001E+01	2.3500000E+01
153	-1.2079999E+00	4.3630001E+01	3.0000000E+00	227	-1.4083000E+01	4.3630001E+01	2.5500000E+01
154	-1.2079999E+00	4.3630001E+01	1.0000000E+01	228	-1.4083000E+01	4.3630001E+01	3.0000000E+01
155	-1.2079999E+00	4.3630001E+01	1.6500000E+01	229	-1.7042000E+01	4.3630001E+01	-3.0000000E+01
156	-1.2079999E+00	4.3630001E+01	2.0000000E+01	230	-1.7042000E+01	4.3630001E+01	-2.7500000E+01
157	-1.2079999E+00	4.3630001E+01	2.3500000E+01	231	-1.7042000E+01	4.3630001E+01	-2.5500000E+01
158	-1.2079999E+00	4.3630001E+01	2.5500000E+01	232	-1.7042000E+01	4.3630001E+01	-2.2750000E+01
159	-1.2079999E+00	4.3630001E+01	3.0000000E+01	233	-1.7042000E+01	4.3630001E+01	-2.0000000E+01
160	-3.6250000E+00	4.3630001E+01	-3.0000000E+01	234	-1.7042000E+01	4.3630001E+01	-1.2500000E+01
161	-3.6250000E+00	4.3630001E+01	-2.6670002E+01	235	-1.7042000E+01	4.3630001E+01	-8.0000000E+00
162	-3.6250000E+00	4.3630001E+01	-2.5500000E+01	236	-1.7042000E+01	4.3630001E+01	-4.5000000E+00
163	-3.6250000E+00	4.3630001E+01	-2.3330000E+01	237	-1.7042000E+01	4.3630001E+01	3.0000000E+00
164	-3.6250000E+00	4.3630001E+01	-2.0000000E+01	238	-1.7042000E+01	4.3630001E+01	8.0000000E+00
165	-3.6250000E+00	4.3630001E+01	-1.6250000E+01	239	-1.7042000E+01	4.3630001E+01	1.0000000E+01
166	-3.6250000E+00	4.3630001E+01	-1.4500000E+01	240	-1.7042000E+01	4.3630001E+01	1.6500000E+01
167	-3.6250000E+00	4.3630001E+01	-1.2500000E+01	241	-1.7042000E+01	4.3630001E+01	2.0000000E+01
168	-3.6250000E+00	4.3630001E+01	-4.5000000E+00	242	-1.7042000E+01	4.3630001E+01	2.3500000E+01
169	-3.6250000E+00	4.3630001E+01	3.0000000E+00	243	-1.7042000E+01	4.3630001E+01	2.5500000E+01
170	-3.6250000E+00	4.3630001E+01	1.0000000E+01	244	-1.7042000E+01	4.3630001E+01	3.0000000E+01
171	-3.6250000E+00	4.3630001E+01	1.6500000E+01	245	-2.0000000E+01	4.3630001E+01	-3.0000000E+01
172	-3.6250000E+00	4.3630001E+01	2.0000000E+01	246	-2.0000000E+01	4.3630001E+01	-2.7500000E+01
173	-3.6250000E+00	4.3630001E+01	2.3500000E+01	247	-2.0000000E+01	4.3630001E+01	-2.5500000E+01
174	-3.6250000E+00	4.3630001E+01	2.5500000E+01	248	-2.0000000E+01	4.3630001E+01	-2.0000000E+01
175	-3.6250000E+00	4.3630001E+01	3.0000000E+01	249	-2.0000000E+01	4.3630001E+01	-8.0000000E+00
176	-6.1250000E+00	4.3630001E+01	-3.0000000E+01	250	-2.0000000E+01	4.3630001E+01	0.0000000E+00
177	-6.1250000E+00	4.3639999E+01	-2.5500000E+01	251	-2.0000000E+01	4.3630001E+01	8.0000000E+00
178	-6.1250000E+00	4.3639999E+01	-2.0000000E+01	252	-2.0000000E+01	4.3630001E+01	2.0000000E+01
179	-6.1250000E+00	4.3630001E+01	-1.6250000E+01	253	-2.0000000E+01	4.3630001E+01	2.3500000E+01
180	-6.1250000E+00	4.3630001E+01	-1.2500000E+01	254	-2.0000000E+01	4.3630001E+01	2.5500000E+01
181	-6.1250000E+00	4.3630001E+01	-4.5000000E+00	255	-2.0000000E+01	4.3630001E+01	2.8500000E+01
182	-6.1250000E+00	4.3630001E+01	3.0000000E+00	256	-2.0000000E+01	4.3630001E+01	3.0000000E+01
183	-6.1250000E+00	4.3630001E+01	1.0000000E+01	257	-2.3208000E+01	4.3630001E+01	-3.0000000E+01
184	-6.1250000E+00	4.3630001E+01	1.6500000E+01	258	-2.3208000E+01	4.3630001E+01	-2.6500000E+01
185	-6.1250000E+00	4.3630001E+01	2.0000000E+01	259	-2.3208000E+01	4.3630001E+01	-2.5000000E+01
188	-6.1250000E+00	4.3630001E+01	2.3500000E+01	260	-2.3208000E+01	4.3630001E+01	-2.2750000E+01
189	-6.1250000E+00	4.3630001E+01	2.5500000E+01	261	-2.3208000E+01	4.3630001E+01	-2.0000000E+01
190	-6.1250000E+00	4.3630001E+01	3.0000000E+01	262	-2.3208000E+01	4.3630001E+01	-1.5667000E+01
191	-8.6250000E+00	4.3630001E+01	-3.0000000E+01	263	-2.3208000E+01	4.3630001E+01	-1.3667000E+01
192	-8.6250000E+00	4.3630001E+01	-2.5500000E+01	264	-2.3208000E+01	4.3630001E+01	-8.0000000E+00
193	-8.6250000E+00	4.3630001E+01	-2.0000000E+01	265	-2.3208000E+01	4.3630001E+01	8.0000000E+00
194	-8.6250000E+00	4.3630001E+01	-1.5500000E+01	266	-2.3208000E+01	4.3630001E+01	2.0000000E+01
195	-8.6250000E+00	4.3630001E+01	-1.2500000E+01	268	-2.3208000E+01	4.3630001E+01	2.1500000E+01
196	-8.6250000E+00	4.3630001E+01	-4.5000000E+00	269	-2.3208000E+01	4.3630001E+01	2.3500000E+01
197	-8.6250000E+00	4.3639999E+01	3.0000000E+00	270	-2.3208000E+01	4.3630001E+01	2.5500000E+01
198	-8.6250000E+00	4.3630001E+01	1.0000000E+01	271	-2.3208000E+01	4.3630001E+01	2.8500000E+01
199	-8.6250000E+00	4.3630001E+01	1.6500000E+01	272	-2.3208000E+01	4.3630001E+01	3.0000000E+01
200	-8.6250000E+00	4.3630001E+01	2.0000000E+01	273	-2.6417000E+01	4.3630001E+01	-3.0000000E+01

274	-2.6417000E+01	4.3630001E+01	-2.6500000E+01	346	2.4000000E+01	2.3750000E+01	2.0000000E+01
275	-2.6417000E+01	4.3630001E+01	-2.5000000E+01	347	2.3500000E+01	2.3750000E+01	-1.0000000E+01
276	-2.6417000E+01	4.3630001E+01	-2.0000000E+01	348	2.3500000E+01	2.3750000E+01	-6.6669998E+00
277	-2.6417000E+01	4.3630001E+01	-1.5667000E+01	349	2.3200003E+01	2.3750000E+01	6.6669998E+00
278	-2.6417000E+01	4.3630001E+01	-1.3667000E+01	350	2.1750000E+01	2.3750000E+01	1.6667000E+01
279	-2.6417000E+01	4.3630001E+01	-8.0000000E+00	351	2.1750000E+01	2.3750000E+01	2.0000000E+01
280	-2.6417000E+01	4.3630001E+01	8.0000000E+00	352	2.0000000E+01	2.3750000E+01	-2.0000000E+01
281	-2.6417000E+01	4.3630001E+01	1.4500000E+01	353	2.0000000E+01	2.3750000E+01	-1.6667000E+01
282	-2.6417000E+01	4.3630001E+01	1.7500000E+01	354	2.0000000E+01	2.3750000E+01	-1.3333000E+01
283	-2.6417000E+01	4.3630001E+01	2.0000000E+01	355	2.0000000E+01	2.3750000E+01	-1.0000000E+01
284	-2.6417000E+01	4.3630001E+01	2.1500000E+01	356	2.0000000E+01	2.3750000E+01	-6.6669998E+00
285	-2.6417000E+01	4.3630001E+01	2.5500000E+01	357	2.0000000E+01	2.3750000E+01	-3.3329999E+00
286	-2.6417000E+01	4.3630001E+01	2.8500000E+01	358	2.0000000E+01	2.3750000E+01	0.0000000E+00
287	-2.6417000E+01	4.3630001E+01	3.0000000E+01	359	2.0000000E+01	2.3750000E+01	3.3329999E+00
288	-2.9625000E+01	4.3630001E+01	-3.0000000E+01	360	2.0000000E+01	2.3750000E+01	6.6669998E+00
289	-2.9625000E+01	4.3630001E+01	-2.6500000E+01	361	2.0000000E+01	2.3750000E+01	1.0000000E+01
290	-2.9625000E+01	4.3630001E+01	-2.5000000E+01	362	2.0000000E+01	2.3750000E+01	1.3333000E+01
291	-2.9625000E+01	4.3630001E+01	-2.0000000E+01	363	2.0000000E+01	2.3750000E+01	1.6667000E+01
292	-2.9625000E+01	4.3630001E+01	-1.5667000E+01	364	2.0000000E+01	2.3750000E+01	2.0000000E+01
293	-2.9625000E+01	4.3630001E+01	-1.3667000E+01	365	1.6000000E+01	2.3750000E+01	-2.0000000E+01
294	-2.9625000E+01	4.3630001E+01	-1.0000000E+01	366	1.6000000E+01	2.3750000E+01	-1.6667000E+01
295	-2.9625000E+01	4.3630001E+01	-8.0000000E+00	367	1.6000000E+01	2.3750000E+01	-1.3333000E+01
296	-2.9625000E+01	4.3630001E+01	-6.6669998E+00	368	1.6000000E+01	2.3750000E+01	-1.0000000E+01
297	-2.9625000E+01	4.3630001E+01	8.0000000E+00	369	1.6000000E+01	2.3750000E+01	-6.6669998E+00
298	-2.9625000E+01	4.3630001E+01	1.4500000E+01	370	1.6000000E+01	2.3750000E+01	-3.3329999E+00
299	-2.9625000E+01	4.3630001E+01	1.7500000E+01	371	1.6000000E+01	2.3750000E+01	0.0000000E+00
300	-2.9625000E+01	4.3630001E+01	2.0000000E+01	372	1.6000000E+01	2.3750000E+01	3.3329999E+00
301	-2.9625000E+01	4.3630001E+01	2.2750000E+01	373	1.6000000E+01	2.3750000E+01	6.6669998E+00
302	-2.9625000E+01	4.3630001E+01	2.5500000E+01	374	1.6000000E+01	2.3750000E+01	1.0000000E+01
303	-2.9625000E+01	4.3630001E+01	2.6100002E+01	375	1.6000000E+01	2.3750000E+01	1.3333000E+01
304	-2.9625000E+01	4.3630001E+01	3.0000000E+01	376	1.6000000E+01	2.3750000E+01	1.6667000E+01
305	-3.2625000E+01	4.3630001E+01	1.4500000E+01	377	1.6000000E+01	2.3750000E+01	2.0000000E+01
306	-3.2625000E+01	4.3630001E+01	1.7500000E+01	378	1.4000000E+01	2.3750000E+01	-1.6667000E+01
307	-3.2625000E+01	4.3630001E+01	2.0000000E+01	379	1.4000000E+01	2.3750000E+01	-1.3333000E+01
308	-3.2625000E+01	4.3630001E+01	2.2750000E+01	380	1.4000000E+01	2.3750000E+01	-3.3299999E+00
309	-3.2625000E+01	4.3630001E+01	2.6100002E+01	381	1.4000000E+01	2.3750000E+01	0.0000000E+00
310	3.3770000E+01	2.3750000E+01	-1.0000000E+01	382	1.4000000E+01	2.3750000E+01	1.6667000E+01
311	3.3770000E+01	2.3750000E+01	-6.6700001E+00	383	1.4000000E+01	2.3750000E+01	2.0000000E+01
312	3.6000000E+01	2.3750000E+01	2.0000000E+01	384	1.2000000E+01	2.3750000E+01	-2.0000000E+01
313	3.0500000E+01	2.3750000E+01	-1.0000000E+01	385	1.2000000E+01	2.3750000E+01	-1.6667000E+01
314	3.0500000E+01	2.3750000E+01	-6.6669998E+00	386	1.2000000E+01	2.3750000E+01	-1.3333000E+01
315	2.9625000E+01	2.3750000E+01	-1.0000000E+01	387	1.2000000E+01	2.3750000E+01	-1.0000000E+01
316	2.9625000E+01	2.3750000E+01	-6.6669998E+00	388	1.2000000E+01	2.3750000E+01	-6.6669998E+00
317	3.2799999E+01	2.3750000E+01	1.6667000E+01	389	1.2000000E+01	2.3750000E+01	-3.3329999E+00
318	3.1750000E+01	2.3750000E+01	1.6667000E+01	390	1.1000000E+01	2.3750000E+01	-3.3329999E+00
319	3.1750000E+01	2.3750000E+01	2.0000000E+01	391	1.1000000E+01	2.3750000E+01	0.0000000E+00
320	2.9250000E+01	2.3750000E+01	-6.6669998E+00	392	1.1000000E+01	2.3750000E+01	3.3329999E+00
321	2.9250000E+01	2.3750000E+01	-3.3329999E+00	393	1.1000000E+01	2.3750000E+01	6.6669998E+00
322	2.9250000E+01	2.3750000E+01	0.0000000E+00	394	1.1000000E+01	2.3750000E+01	1.0000000E+01
323	2.9250000E+01	2.3750000E+01	3.3329999E+00	395	1.1000000E+01	2.3750000E+01	1.3333000E+01
324	2.9250000E+01	2.3750000E+01	6.6669998E+00	396	1.1000000E+01	2.3750000E+01	1.6667000E+01
325	2.9250000E+01	2.3750000E+01	1.0000000E+01	397	1.1000000E+01	2.3750000E+01	2.0000000E+01
326	2.9250000E+01	2.3750000E+01	1.2969000E+01	398	7.5830002E+00	2.3750000E+01	-1.6667000E+01
327	2.9250000E+01	2.3750000E+01	1.3333000E+01	399	7.5830002E+00	2.3750000E+01	-1.3333000E+01
328	2.9250000E+01	2.3750000E+01	1.6667000E+01	400	7.5000000E+00	2.3750000E+01	-3.3329999E+00
329	2.9250000E+01	2.3750000E+01	2.0000000E+01	401	7.5000000E+00	2.3750000E+01	0.0000000E+00
330	2.7000000E+01	2.3750000E+01	-1.0000000E+01	402	7.5000000E+00	2.3750000E+01	1.6667000E+01
331	2.7000000E+01	2.3750000E+01	-6.6700001E+00	403	7.5000000E+00	2.3750000E+01	2.0000000E+01
332	2.8000000E+01	2.3750000E+01	1.1667000E+01	404	6.6669998E+00	2.3750000E+01	-2.0000000E+01
333	2.6400000E+01	2.3750000E+01	1.0000000E+01	405	6.6669998E+00	2.3750000E+01	-1.6667000E+01
334	2.8000000E+01	2.3750000E+01	2.0000000E+01	406	6.6669998E+00	2.3750000E+01	2.0000000E+01
335	2.6417000E+01	2.3750000E+01	1.6667000E+01	407	4.0000000E+00	2.3750000E+01	-2.0000000E+01
336	2.6417000E+01	2.3750000E+01	2.0000000E+01	408	4.0000000E+00	2.3750000E+01	-1.6667000E+01
337	2.4000000E+01	2.3750000E+01	-6.6669998E+00	409	4.0000000E+00	2.3750000E+01	-1.3333000E+01
338	2.4000000E+01	2.3750000E+01	-3.3329999E+00	410	4.0000000E+00	2.3750000E+01	-1.0000000E+01
339	2.4000000E+01	2.3750000E+01	0.0000000E+00	411	4.0000000E+00	2.3750000E+01	-3.3329999E+00
340	2.4000000E+01	2.3750000E+01	3.3329999E+00	412	4.0000000E+00	2.3750000E+01	0.0000000E+00
341	2.4000000E+01	2.3750000E+01	6.6669998E+00	413	4.0000000E+00	2.3750000E+01	3.3329999E+00
342	2.4000000E+01	2.3750000E+01	7.5000000E+00	414	4.0000000E+00	2.3750000E+01	6.6669998E+00
343	2.4000000E+01	2.3750000E+01	1.0000000E+01	415	4.0000000E+00	2.3750000E+01	1.0000000E+01
344	2.4000000E+01	2.3750000E+01	1.3333000E+01	416	4.0000000E+00	2.3750000E+01	1.3333000E+01
345	2.4000000E+01	2.3750000E+01	1.6667000E+01	417	4.0000000E+00	2.3750000E+01	1.6667000E+01

418	4.000000E+00	2.375000E+01	2.000000E+01	490	-1.800000E+01	2.375000E+01	6.666998E+00
419	3.000000E+00	2.375000E+01	-1.000000E+01	491	-1.800000E+01	2.375000E+01	1.000000E+01
420	3.000000E+00	2.375000E+01	-6.666998E+00	492	-1.800000E+01	2.375000E+01	1.333300E+01
421	3.000000E+00	2.375000E+01	-5.500000E+00	493	-1.800000E+01	2.375000E+01	1.666700E+01
422	3.000000E+00	2.375000E+01	-3.332999E+00	494	-1.758300E+01	2.375000E+01	2.350000E+01
423	0.000000E+00	2.375000E+01	-1.666700E+01	495	-1.758300E+01	2.375000E+01	2.850000E+01
424	0.000000E+00	2.375000E+01	-1.333300E+01	496	-2.000000E+01	2.375000E+01	-2.550000E+01
425	-4.000000E+00	2.375000E+01	-2.000000E+01	497	-2.000000E+01	2.375000E+01	-2.000000E+01
426	-4.000000E+00	2.375000E+01	-1.666700E+01	498	-2.000000E+01	2.375000E+01	-1.666700E+01
427	-4.000000E+00	2.375000E+01	-1.333300E+01	499	-2.000000E+01	2.375000E+01	-1.333300E+01
428	-4.000000E+00	2.375000E+01	-1.000000E+01	500	-2.000000E+01	2.375000E+01	-1.000000E+01
429	-4.000000E+00	2.375000E+01	-3.332999E+00	501	-2.000000E+01	2.375000E+01	-6.666998E+00
430	-4.000000E+00	2.375000E+01	0.000000E+00	502	-2.000000E+01	2.375000E+01	-3.332999E+00
431	-4.000000E+00	2.375000E+01	3.332999E+00	503	-2.000000E+01	2.375000E+01	0.000000E+00
432	-4.000000E+00	2.375000E+01	6.666998E+00	504	-2.000000E+01	2.375000E+01	3.332999E+00
433	-4.000000E+00	2.375000E+01	1.000000E+01	505	-2.000000E+01	2.375000E+01	4.000000E+00
434	-4.000000E+00	2.375000E+01	1.333300E+01	506	-2.000000E+01	2.375000E+01	6.666998E+00
435	-4.000000E+00	2.375000E+01	1.666700E+01	507	-2.000000E+01	2.375000E+01	8.000000E+00
436	-4.000000E+00	2.375000E+01	1.833300E+01	508	-2.000000E+01	2.375000E+01	1.000000E+01
437	-4.000000E+00	2.375000E+01	2.000000E+01	509	-2.000000E+01	2.375000E+01	1.200000E+01
438	-6.666998E+00	2.375000E+01	-2.000000E+01	510	-2.000000E+01	2.375000E+01	1.333300E+01
439	-7.000000E+00	2.375000E+01	-1.000000E+01	511	-2.000000E+01	2.375000E+01	1.575000E+01
440	-7.000000E+00	2.375000E+01	-5.500000E+00	512	-2.000000E+01	2.375000E+01	1.666700E+01
441	-7.000000E+00	2.375000E+01	-3.332999E+00	513	-2.000000E+01	2.375000E+01	2.000000E+01
442	-6.666998E+00	2.375000E+01	2.000000E+01	514	-2.000000E+01	2.375000E+01	2.350000E+01
443	-8.250000E+00	2.375000E+01	3.332999E+00	515	-2.000000E+01	2.375000E+01	2.547900E+01
444	-8.250000E+00	2.375000E+01	6.666998E+00	516	-2.000000E+01	2.375000E+01	2.850000E+01
445	-8.250000E+00	2.375000E+01	1.000000E+01	517	-2.158300E+01	2.375000E+01	2.350000E+01
446	-8.250000E+00	2.375000E+01	1.333300E+01	518	-2.158300E+01	2.375000E+01	2.850000E+01
447	-8.000000E+00	2.375000E+01	1.666700E+01	519	-2.350000E+01	2.375000E+01	-1.000000E+01
448	-8.000000E+00	2.375000E+01	1.833300E+01	520	-2.350000E+01	2.375000E+01	-6.666998E+00
449	-8.000000E+00	2.375000E+01	2.000000E+01	521	-2.350000E+01	2.375000E+01	-3.332999E+00
450	-9.000000E+00	2.375000E+01	-1.000000E+01	522	-2.350000E+01	2.375000E+01	0.000000E+00
451	-9.000000E+00	2.375000E+01	-6.666998E+00	523	-2.350000E+01	2.375000E+01	4.000000E+00
452	-9.000000E+00	2.375000E+01	-5.500000E+00	524	-2.350000E+01	2.375000E+01	8.000000E+00
453	-9.000000E+00	2.375000E+01	-3.332999E+00	525	-2.350000E+01	2.375000E+01	1.200000E+01
454	-9.750000E+00	2.375000E+01	3.332999E+00	526	-2.350000E+01	2.375000E+01	1.575000E+01
455	-9.750000E+00	2.375000E+01	6.666998E+00	527	-2.558300E+01	2.375000E+01	2.350000E+01
456	-9.750000E+00	2.375000E+01	1.000000E+01	528	-2.558300E+01	2.375000E+01	2.850000E+01
457	-9.750000E+00	2.375000E+01	1.333300E+01	529	-2.700000E+01	2.375000E+01	-1.000000E+01
458	-1.012300E+01	2.375000E+01	1.666700E+01	530	-2.700000E+01	2.375000E+01	-6.666998E+00
459	-1.012300E+01	2.375000E+01	1.833300E+01	531	-2.700000E+01	2.375000E+01	1.200000E+01
460	-1.012300E+01	2.375000E+01	2.000000E+01	532	-2.700000E+01	2.375000E+01	1.575000E+01
461	-1.125000E+01	2.375000E+01	6.666998E+00	533	-2.958300E+01	2.375000E+01	2.350000E+01
462	-1.125000E+01	2.375000E+01	1.000000E+01	534	-2.958300E+01	2.375000E+01	2.850000E+01
463	-1.125000E+01	2.375000E+01	1.333300E+01	535	-2.962500E+01	2.375000E+01	-1.000000E+01
464	-1.112300E+01	2.375000E+01	1.666700E+01	536	-2.962500E+01	2.375000E+01	-6.666998E+00
465	-1.112300E+01	2.375000E+01	1.833300E+01	537	-3.050000E+01	2.375000E+01	-1.000000E+01
466	-1.112300E+01	2.375000E+01	2.000000E+01	538	-3.050000E+01	2.375000E+01	-6.666998E+00
467	-1.112300E+01	2.375000E+01	2.350000E+01	539	-3.033000E+01	2.375000E+01	1.200000E+01
468	-1.112300E+01	2.375000E+01	2.850000E+01	540	-3.033000E+01	2.375000E+01	1.575000E+01
469	-1.200000E+01	2.375000E+01	-2.000000E+01	541	-3.342698E+01	2.375000E+01	-1.000000E+01
470	-1.200000E+01	2.375000E+01	-1.666700E+01	542	-3.342698E+01	2.375000E+01	-6.666998E+00
471	-1.200000E+01	2.375000E+01	-1.333300E+01	543	2.487500E+01	1.000000E+01	-1.554200E+01
472	-1.200000E+01	2.375000E+01	-1.000000E+01	544	2.612500E+01	1.000000E+01	-1.020800E+01
473	-1.200000E+01	2.375000E+01	-6.666998E+00	546	2.062500E+01	1.000000E+01	-2.062500E+01
474	-1.200000E+01	2.375000E+01	-3.332999E+00	547	2.062500E+01	1.000000E+01	-1.762500E+01
475	-1.200000E+01	2.375000E+01	0.000000E+00	548	2.062500E+01	1.000000E+01	-1.554200E+01
476	-1.200000E+01	2.375000E+01	3.332999E+00	549	2.062500E+01	1.000000E+01	-1.020800E+01
477	-1.200000E+01	2.375000E+01	6.666998E+00	550	2.062500E+01	1.000000E+01	0.000000E+00
478	-1.200000E+01	2.375000E+01	1.000000E+01	551	2.062500E+01	1.000000E+01	1.762500E+01
479	-1.200000E+01	2.375000E+01	1.333300E+01	552	2.062500E+01	1.000000E+01	2.062500E+01
480	-1.200000E+01	2.375000E+01	1.666700E+01	553	1.762500E+01	1.000000E+01	-2.062500E+01
481	-1.450000E+01	2.375000E+01	-3.332999E+00	554	1.762500E+01	1.000000E+01	-1.762500E+01
482	-1.450000E+01	2.375000E+01	0.000000E+00	555	1.762500E+01	1.000000E+01	-3.181002E+00
483	-1.408300E+01	2.375000E+01	-1.666700E+01	556	1.762500E+01	1.000000E+01	3.181002E+00
484	-1.408300E+01	2.375000E+01	2.000000E+01	557	1.762500E+01	1.000000E+01	1.762500E+01
485	-1.408300E+01	2.375000E+01	2.350000E+01	558	1.762500E+01	1.000000E+01	2.062500E+01
486	-1.408300E+01	2.375000E+01	2.850000E+01	559	3.786000E+00	1.000000E+01	-1.762500E+01
487	-1.800000E+01	2.375000E+01	-3.332999E+00	560	3.786000E+00	1.000000E+01	1.762500E+01
488	-1.800000E+01	2.375000E+01	0.000000E+00	561	0.000000E+00	1.000000E+01	-2.062500E+01
489	-1.800000E+01	2.375000E+01	3.332999E+00	562	0.000000E+00	1.000000E+01	-1.762500E+01

563	0.000000E+00	1.000000E+01	-8.750000E+00	636	3.400000E+01	-5.300000E+01	-1.020800E+01
564	0.000000E+00	1.000000E+01	-4.583000E+00	637	2.850000E+01	-5.300000E+01	-2.850000E+01
565	0.000000E+00	1.000000E+01	1.762500E+01	638	2.850000E+01	-5.300000E+01	-1.554200E+01
566	0.000000E+00	1.000000E+01	2.062500E+01	639	2.850000E+01	-5.300000E+01	-1.425000E+01
567	-1.250000E+00	1.000000E+01	2.062500E+01	640	2.850000E+01	-5.300000E+01	-1.020800E+01
568	-1.250000E+00	1.000000E+01	2.337500E+01	641	2.850000E+01	-5.300000E+01	0.000000E+00
569	-3.786000E+00	1.000000E+01	-1.762500E+01	642	2.850000E+01	-5.300000E+01	2.850000E+01
570	-3.786000E+00	1.000000E+01	1.762500E+01	643	1.425000E+01	-5.300000E+01	-1.425000E+01
571	-1.187500E+01	1.000000E+01	-8.750000E+00	644	0.000000E+00	-5.300000E+01	-2.850000E+01
572	-1.604200E+01	1.000000E+01	-4.583000E+00	645	0.000000E+00	-5.300000E+01	2.850000E+01
573	-1.612500E+01	1.000000E+01	-2.062000E+01	646	-1.250000E+00	-5.300000E+01	2.850000E+01
574	-1.612500E+01	1.000000E+01	-1.762500E+01	647	-1.250000E+00	-5.300000E+01	3.125000E+01
575	-1.612500E+01	1.000000E+01	-1.612500E+01	648	-1.237500E+01	-5.300000E+01	-1.612500E+01
576	-1.612500E+01	1.000000E+01	-4.500000E+00	649	-1.612500E+01	-5.300000E+01	-1.612500E+01
577	-1.612500E+01	1.000000E+01	-1.667000E+00	650	-1.612500E+01	-5.300000E+01	-1.237500E+01
578	-1.762500E+01	1.000000E+01	-2.062500E+01	651	-1.425000E+01	-5.300000E+01	1.425000E+01
579	-1.762500E+01	1.000000E+01	-1.762500E+01	652	-1.425000E+01	-5.300000E+01	2.850000E+01
580	-1.762500E+01	1.000000E+01	-1.612500E+01	653	-2.850000E+01	-5.300000E+01	-2.850000E+01
581	-1.762500E+01	1.000000E+01	-8.750000E+00	654	-2.850000E+01	-5.300000E+01	-1.304200E+01
582	-1.762500E+01	1.000000E+01	-4.583000E+00	655	-2.850000E+01	-5.300000E+01	0.000000E+00
583	-1.762500E+01	1.000000E+01	-3.181000E+00	656	-2.850000E+01	-5.300000E+01	8.958000E+00
584	-1.762500E+01	1.000000E+01	-1.667000E+00	657	-2.850000E+01	-5.300000E+01	1.412500E+01
585	-1.762500E+01	1.000000E+01	3.181000E+00	658	-2.850000E+01	-5.300000E+01	2.850000E+01
586	-1.762500E+01	1.000000E+01	1.762500E+01	659	-3.400000E+01	-5.300000E+01	-1.304200E+01
587	-1.762500E+01	1.000000E+01	2.062500E+01	660	-3.300000E+01	-5.300000E+01	8.958000E+00
588	-1.904800E+01	1.000000E+01	-1.667000E+00	661	-3.100000E+01	-5.300000E+01	1.412500E+01
590	-2.062500E+01	1.000000E+01	-2.062500E+01	662	-3.050000E+01	-5.300000E+01	3.125000E+01
591	-2.062500E+01	1.000000E+01	-1.762500E+01	663	3.300000E+01	-8.900000E+01	-3.300000E+01
592	-2.062500E+01	1.000000E+01	-1.612500E+01	664	3.300000E+01	-8.900000E+01	0.000000E+00
593	-2.062500E+01	1.000000E+01	-1.304200E+01	665	3.300000E+01	-8.900000E+01	3.300000E+01
594	-2.062500E+01	1.000000E+01	-8.750000E+00	666	0.000000E+00	-8.900000E+01	-3.300000E+01
595	-2.062500E+01	1.000000E+01	-4.583000E+00	667	0.000000E+00	-8.900000E+01	3.300000E+01
596	-2.062500E+01	1.000000E+01	0.000000E+00	668	-1.237500E+01	-8.900000E+01	-2.062500E+01
597	-2.062500E+01	1.000000E+01	8.958000E+00	669	-1.237500E+01	-8.900000E+01	2.062500E+01
598	-2.062500E+01	1.000000E+01	1.412500E+01	670	-3.300000E+01	-8.900000E+01	-3.300000E+01
599	-2.062500E+01	1.000000E+01	1.762500E+01	671	-3.300000E+01	-8.900000E+01	-2.062500E+01
600	-2.062500E+01	1.000000E+01	2.062500E+01	672	-3.300000E+01	-8.900000E+01	0.000000E+00
601	-2.612500E+01	1.000000E+01	-1.304200E+01	673	-3.300000E+01	-8.900000E+01	2.062500E+01
602	-2.512500E+01	1.000000E+01	8.958000E+00	674	-3.300000E+01	-8.900000E+01	3.300000E+01
603	-2.312500E+01	1.000000E+01	1.412500E+01	675	3.175000E+01	-7.900000E+01	-3.175000E+01
604	-2.262500E+01	1.000000E+01	2.312500E+01	676	3.725000E+01	-7.900000E+01	-1.020800E+01
605	2.437500E+01	-2.000000E+01	-2.437500E+01	677	3.600000E+01	-7.900000E+01	-1.554200E+01
606	2.862500E+01	-2.000000E+01	-1.554200E+01	678	3.175000E+01	-7.900000E+01	-1.554200E+01
607	2.437500E+01	-2.000000E+01	-1.554200E+01	679	3.175000E+01	-7.900000E+01	-1.020800E+01
608	2.437500E+01	-2.000000E+01	-1.218800E+01	680	3.175000E+01	-7.900000E+01	-7.916998E+00
609	2.987500E+01	-2.000000E+01	-1.020800E+01	681	7.916998E+00	-7.900000E+01	3.175000E+01
610	2.437500E+01	-2.000000E+01	-1.020800E+01	682	-1.250000E+00	-7.900000E+01	3.175000E+01
611	2.437500E+01	-2.000000E+01	0.000000E+00	683	-1.250000E+00	-7.900000E+01	3.450000E+01
612	2.437500E+01	-2.000000E+01	2.437500E+01	684	-7.916998E+00	-7.900000E+01	3.175000E+01
613	1.218800E+01	-2.000000E+01	-1.218800E+01	685	-3.175000E+01	-7.900000E+01	-3.175000E+01
614	0.000000E+00	-2.000000E+01	-2.437500E+01	686	-3.175000E+01	-7.900000E+01	-1.308300E+01
615	0.000000E+00	-2.000000E+01	2.437500E+01	687	-3.175000E+01	-7.900000E+01	-7.916998E+00
616	-1.250000E+00	-2.000000E+01	2.437500E+01	688	-3.725000E+01	-7.900000E+01	-1.304200E+01
617	-1.250000E+00	-2.000000E+01	2.712500E+01	689	2.331300E+01	-1.150000E+01	-2.331300E+01
618	-8.250000E+00	-2.000000E+01	-1.612500E+01	690	-2.331300E+01	-1.150000E+01	-2.331300E+01
619	-1.218800E+01	-2.000000E+01	1.218800E+01	691	2.256300E+01	-5.500000E+00	-2.256300E+01
620	-1.218800E+01	-2.000000E+01	2.437500E+01	692	-2.256300E+01	-5.500000E+00	-2.256300E+01
621	-1.612500E+01	-2.000000E+01	-1.612500E+01	693	2.106300E+01	6.500000E+00	-2.106300E+01
622	-1.612500E+01	-2.000000E+01	-8.250000E+00	694	-2.106300E+01	6.500000E+00	-2.106300E+01
623	-1.612500E+01	-2.000000E+01	-1.667000E+00	695	2.037500E+01	1.200000E+01	-2.037500E+01
624	-2.270800E+01	-2.000000E+01	-1.667000E+00	696	2.037500E+01	1.200000E+01	2.037500E+01
625	-2.437500E+01	-2.000000E+01	-2.437500E+01	698	-2.037500E+01	1.200000E+01	-2.037500E+01
626	-2.437500E+01	-2.000000E+01	-1.304200E+01	699	-2.037500E+01	1.200000E+01	2.037500E+01
627	-2.437500E+01	-2.000000E+01	0.000000E+00	700	2.018800E+01	1.350000E+01	-2.018800E+01
628	-2.437500E+01	-2.000000E+01	8.958000E+00	701	2.018800E+01	1.350000E+01	2.018800E+01
629	-2.437500E+01	-2.000000E+01	1.412500E+01	702	-2.018800E+01	1.350000E+01	-2.018800E+01
630	-2.437500E+01	-2.000000E+01	2.437500E+01	703	-2.018800E+01	1.350000E+01	-2.018800E+01
631	-2.987500E+01	-2.000000E+01	-1.304200E+01	704	2.000000E+01	2.287500E+01	-2.000000E+01
632	-2.887500E+01	-2.000000E+01	8.958000E+00	705	2.000000E+01	2.287500E+01	2.000000E+01
633	-2.687500E+01	-2.000000E+01	1.412500E+01	706	-2.000000E+01	2.287500E+01	-2.000000E+01
634	-2.637500E+01	-2.000000E+01	2.687500E+01	707	-2.000000E+01	2.287500E+01	2.000000E+01
635	3.275000E+01	-5.300000E+01	-1.554200E+01	708	2.000000E+01	2.203100E+01	-2.000000E+01

709 2.0000000E+01 2.2031002E+01 2.0000000E+01
 710 -2.0000000E+01 2.2031002E+01 -2.0000000E+01
 711 -2.0000000E+01 2.2031002E+01 2.0000000E+01
 712 2.0000000E+01 2.1135000E+01 -2.0000000E+01
 713 2.0000000E+01 2.1135000E+01 2.0000000E+01
 714 -2.0000000E+01 2.1135000E+01 -2.0000000E+01
 715 -2.0000000E+01 2.1135000E+01 2.0000000E+01
 716 2.0000000E+01 2.0948002E+01 -2.0000000E+01
 717 2.0000000E+01 2.0948002E+01 2.0000000E+01
 718 -2.0000000E+01 2.0948002E+01 -2.0000000E+01
 719 -2.0000000E+01 2.0948002E+01 2.0000000E+01
 720 2.0000000E+01 1.9969000E+01 -2.0000000E+01
 721 2.0000000E+01 1.9969000E+01 2.0000000E+01
 722 -2.0000000E+01 1.9969000E+01 -2.0000000E+01
 723 -2.0000000E+01 1.9969000E+01 2.0000000E+01
 724 2.0000000E+01 1.9594000E+01 -2.0000000E+01
 725 2.0000000E+01 1.9594000E+01 2.0000000E+01
 726 -2.0000000E+01 1.9594000E+01 -2.0000000E+01
 727 -2.0000000E+01 1.9594000E+01 2.0000000E+01
 728 2.0000000E+01 1.9281002E+01 -2.0000000E+01
 729 2.0000000E+01 1.9281002E+01 2.0000000E+01
 730 -2.0000000E+01 1.9281002E+01 -2.0000000E+01
 731 -2.0000000E+01 1.9281002E+01 2.0000000E+01
 732 2.0000000E+01 1.8115002E+01 -2.0000000E+01
 733 2.0000000E+01 1.8115002E+01 2.0000000E+01
 734 -2.0000000E+01 1.8115002E+01 -2.0000000E+01
 735 -2.0000000E+01 1.8115002E+01 2.0000000E+01
 736 2.0000000E+01 1.7917000E+01 -2.0000000E+01
 737 2.0000000E+01 1.7917000E+01 2.0000000E+01
 738 -2.0000000E+01 1.7917000E+01 -2.0000000E+01
 739 -2.0000000E+01 1.7917000E+01 2.0000000E+01
 740 2.0000000E+01 1.6458000E+01 -2.0000000E+01
 741 2.0000000E+01 1.6458000E+01 2.0000000E+01
 742 -2.0000000E+01 1.6458000E+01 -2.0000000E+01
 743 -2.0000000E+01 1.6458000E+01 2.0000000E+01
 744 2.0000000E+01 1.5000000E+01 -2.0000000E+01
 745 2.0000000E+01 1.5000000E+01 2.0000000E+01
 746 -2.0000000E+01 1.5000000E+01 -2.0000000E+01
 747 -2.0000000E+01 1.5000000E+01 2.0000000E+01
 748 -2.0000000E+01 5.5917004E+01 -2.5500000E+01
 749 3.4230999E+01 -9.8848999E+01 -3.4230999E+01
 750 3.4230999E+01 -9.8848999E+01 3.4230999E+01
 751 -3.4230999E+01 -9.8848999E+01 -3.4230999E+01
 752 -3.4230999E+01 -9.8848999E+01 3.4230999E+01
 753 -1.4083000E+01 2.3750000E+01 1.6667000E+01
 754 -3.0750000E+01 -7.1000000E+01 3.0750000E+01
 755 -3.2750000E+01 -7.1000000E+01 3.3500000E+01
 756 -3.5250000E+01 -7.1000000E+01 8.9580002E+00
 757 -3.3250000E+01 -7.1000000E+01 1.4125000E+01
 \$ 'WIND' -2.0000000E+01 5.5917004E+01 -2.5500000E+01
 \$ 'MUD' 3.4230999E+01 -9.8848999E+01 3.4230999E+01
 \$ END JOINT COORDINATES

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UNITS FEET KIPS DEG FAH

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00
 THI 4.1666668E-02 \$ -
 \$ WATER MASS FLOODED BUOYANT STRUCTURAL -
 \$ DIVISION 5 THICK 4.1666668E-02 -
 \$ DIAOUT 2.8333335E+00 CDWATER 0.65 CMWATER 1.6 WT/V
 0.2836

1143 675 663
 1145 653 685
 1146 685 670
 1148 754 674
 1158 612 642
 1160 605 637
 1174 552 612
 1175 600 630
 1177 694 692
 1178 692 690

1179 690 625
 1181 693 691
 1182 691 689
 1183 689 605
 1284 674 752
 1285 665 750
 1286 663 749
 1287 670 751

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00
 THI 4.1666668E-02 \$ -

\$ WATER MASS FLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 4.1666668E-02 -

\$ DIAOUT 2.8333335E+00 CDWATER 1.16 CMWATER 1.32 WT/V
0.2836

1142 637 675
 1144 642 665
 1147 658 754
 1159 630 658
 1161 625 653

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0625000E+00
 THI 3.1250000E-02 \$ -

\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 3.1250000E-02 -

\$ DIAOUT 1.0625000E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1025 605 607
 1026 607 608
 1027 608 610
 1028 610 611
 1029 611 612
 1030 612 615
 1031 615 616
 1032 616 620
 1033 620 630
 1034 605 614
 1035 614 625
 1036 625 626
 1037 626 627
 1038 627 628
 1039 628 629
 1040 629 630
 1041 614 615
 1084 641 645
 1085 645 651
 1086 651 655
 1164 615 645
 1165 627 655
 1170 611 641
 1171 614 644

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.6666667E+00
 THI 4.1666668E-02 \$ -

\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 4.1666668E-02 -

\$ DIAOUT 1.6666667E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1302 602 632
 1303 632 660
 1309 660 756

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 8.9583337E-01
 THI 3.0416667E-02 \$ -

\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -

\$ DIVISION 5 THICK 3.0416667E-02 -

\$ DIAOUT 8.9583337E-01 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1042 605 613
1043 608 613
1044 611 613
1045 613 614
1046 611 615
1047 614 618
1048 618 622
1049 622 624
1050 624 627
1051 615 619
1052 619 627
1053 619 620
1054 619 630
1055 618 621
1056 621 622
1057 622 623
1058 623 624
1059 621 625
1087 639 643
1088 637 643
1089 651 652
1090 651 658
1096 648 649
1097 649 650
1098 649 653
1320 623 627

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.166667E+00
THI 3.125000E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.125000E-02 -
\$ DIAOUT 1.166667E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1067 637 638
1068 638 639
1069 639 640
1070 640 641
1071 641 642
1072 642 645
1073 645 646
1074 646 652
1075 652 658
1076 637 644
1077 644 653
1078 653 654
1079 654 655
1080 655 656
1081 656 657
1082 657 658
1083 644 645
1117 664 666
1118 666 668
1119 668 672
1120 664 667
1121 667 669
1122 669 672
1123 669 673
1124 669 674
1125 668 671
1126 668 670
1127 675 678
1128 678 679
1129 679 680
1130 681 682
1131 682 684
1132 685 686
1133 686 687
1162 630 645
1163 612 645
1166 630 655
1167 625 655

1168 605 641
1169 612 641
1172 605 644
1173 625 644

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.333334E+00
THI 3.125000E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.125000E-02 -
\$ DIAOUT 1.333334E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1106 663 664
1107 664 665
1108 665 667
1109 667 674
1110 663 666
1111 666 670
1112 670 671
1113 671 672
1114 672 673
1115 673 674
1116 666 667
1138 637 680
1139 680 664
1140 642 664
1149 653 687
1150 687 672
1151 658 672
1152 653 666
1153 637 666
1154 642 681
1155 681 667
1156 658 684
1157 684 667

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.062500E+00
THI 3.041667E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.041667E-02 -
\$ DIAOUT 1.062500E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1091 641 643
1092 643 644
1093 644 648
1094 648 650
1095 650 655

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.062500E+00
THI 4.166668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.166668E-02 -
\$ DIAOUT 1.062500E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1060 606 607
1061 609 610
1062 616 617
1063 630 634
1064 629 633
1065 628 632
1066 626 631
1099 635 638
1100 636 640
1101 646 647
1102 658 662
1103 657 661
1104 656 660
1105 654 659
1134 677 678
1135 676 679

1136 682 683
1137 686 688
1141 754 755
1292 568 617
1293 617 647
1294 647 683

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.3333334E+00
THI 4.1666668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.3333334E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1288 604 634
1289 634 662
1290 662 755
1311 543 606
1312 606 635
1313 635 677

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.1666667E+00
THI 4.1666668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.1666667E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1298 601 631
1299 631 659
1300 659 688
1314 544 609
1315 609 636
1316 636 676

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.0000000E+00
THI 4.1666668E-02 \$ -
\$ WATER MASS NONFLOODED BUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 2.0000000E+00 CDWATER 0.65 CMWATER 1.6 WT/V
0.2836

1304 603 633
1305 633 661
1310 661 757

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0625000E+00
THI 3.1250000E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.1250000E-02 -
\$ DIAOUT 1.0625000E+00 CDWIND 0.65 WT/V 0.2836

920 352 496

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.6666667E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.6666667E+00 CDWIND 0.65 WT/V 0.2836

921 496 497
1308 508 602

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1271 706 710
1244 704 708
1243 705 709

1228 707 711
1203 40 352
1202 42 364
1196 252 513
1195 248 497

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 3.5000000E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 3.5000000E+00 CDWIND 0.65 WT/V 0.2836

1226 748 247
1198 247 496

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 8.9583337E-01
THI 3.0416667E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.0416667E-02 -
\$ DIAOUT 8.9583337E-01 CDWIND 0.65 WT/V 0.2836

1225 103 438
1219 291 497
1218 112 442
1213 300 513
1212 13 312
1209 7 315
1208 44 364
1205 41 352
1204 41 364
1199 256 513
1193 250 513
1192 250 497
1022 576 577
1021 580 592
1020 575 580
1019 574 575
1018 573 574
1017 593 601

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 7.1875000E-01
THI 3.1250000E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.1250000E-02 -
\$ DIAOUT 7.1875000E-01 CDWIND 0.65 WT/V 0.2836

1194 250 503
1206 41 358
1207 38 352
1214 112 406
1215 185 442
1221 103 404
1222 178 438

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.1666667E+00
THI 3.1250000E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 3.1250000E-02 -
\$ DIAOUT 1.1666667E+00 CDWIND 0.65 WT/V 0.2836

1211 13 364
1216 112 364
1217 185 512
1224 103 352
1269 178 497

\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00
THI 8.3333336E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.3333336E-02 -
\$ DIAOUT 2.8333335E+00 CDWIND 0.65 WT/V 0.2836

1236 699 600
1267 696 552
1268 695 546
1283 698 590

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8333335E+00

THI 4.1666668E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 4.1666668E-02 -

§ DIAOUT 2.8333335E+00 CDWIND 0.65 WT/V 0.2836

1176 590 694

1180 546 693

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0416667E+00

THI 2.0833334E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.0833334E-02 -

§ DIAOUT 1.0416667E+00 CDWIND 0.65 WT/V 0.2836

932 546 547

933 547 548

934 548 549

935 549 550

936 550 551

937 551 552

938 552 558

939 558 566

940 566 567

941 567 587

942 587 600

943 546 553

944 553 561

945 561 573

946 573 578

947 578 590

948 590 591

949 591 592

950 592 593

951 593 594

952 594 595

953 595 596

954 596 597

955 597 598

956 598 599

957 599 600

958 547 554

959 554 559

960 559 562

961 562 569

962 569 574

963 574 579

964 579 591

965 553 554

966 554 555

967 555 556

968 556 557

969 557 558

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 8.7500000E-01

THI 2.0000000E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.0000000E-02 -

§ DIAOUT 8.7500000E-01 CDWIND 0.65 WT/V 0.2836

997 566 570

998 570 585

999 585 596

1000 561 562

1001 562 563

1002 563 564

1003 564 565

1004 565 566

1005 563 571

1006 571 581

1007 581 594

1008 564 572

1009 572 582

1010 582 595

1011 543 548

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0416667E+00

THI 2.0833334E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.0833334E-02 -

§ DIAOUT 1.0416667E+00 CDWIND 0.65 WT/V 0.2836

932 546 547

933 547 548

934 548 549

935 549 550

936 550 551

937 551 552

938 552 558

939 558 566

940 566 567

941 567 587

942 587 600

943 546 553

944 553 561

945 561 573

946 573 578

947 578 590

948 590 591

949 591 592

950 592 593

951 593 594

952 594 595

953 595 596

954 596 597

955 597 598

956 598 599

957 599 600

958 547 554

959 554 559

960 559 562

961 562 569

962 569 574

963 574 579

964 579 591

965 553 554

966 554 555

967 555 556

968 556 557

969 557 558

1012 544 549

1013 567 568

1014 600 604

1015 598 603

1016 597 602

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 3.7500000E-01

THI 2.8083336E-02 § -

§ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -

§ DIVISION 5 THICK 2.8083336E-02 -

§ DIAOUT 3.7500000E-01 CDWIND 0.65 WT/V 0.2836

970 551 557

971 557 560

972 560 565

973 565 570

974 570 586

975 586 599

976 578 579

977 579 580
978 580 581
979 581 582
980 582 583
981 583 584
982 584 585
983 585 586
984 586 587
985 550 555
986 555 559
987 559 561
988 561 569
989 569 571
990 571 572
991 572 583
992 583 588
993 588 596
994 550 556
995 556 560
996 560 566

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.0625000E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.0625000E+00 CDWIND 0.65 WT/V 0.2836

1023 577 584
1024 584 588
1297 418 568

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.6666667E+00
THI 4.0583335E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.0583335E-02 -
\$ DIAOUT 1.6666667E+00 CDWIND 0.65 WT/V 0.2836

1197 247 497

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.3958334E-01
THI 1.6916666E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 1.6916666E-02 -
\$ DIAOUT 2.3958334E-01 CDWIND 0.65 WT/V 0.2836

1200 296 536
1201 294 535
1210 8 316

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 4.0916666E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.0916666E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1227 513 707
1241 364 705
1242 352 704
1270 497 706

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.8750000E+00
THI 1.6666667E-01 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 1.6666667E-01 -
\$ DIAOUT 2.8750000E+00 CDWIND 0.65 WT/V 0.2836

1229 711 715
1230 715 719
1231 719 723
1232 723 727
1233 727 731
1234 731 735

1245 709 713
1246 708 712
1247 713 717
1248 717 721
1249 721 725
1250 725 729
1251 729 733
1252 712 716
1253 716 720
1254 720 724
1255 724 728
1256 728 732
1272 710 714
1273 714 718
1274 718 722
1275 722 726
1276 726 730
1277 730 734

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5833335E+00
THI 8.3000004E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.3000004E-02 -
\$ DIAOUT 2.5833335E+00 CDWIND 0.65 WT/V 0.2836

1235 735 739
1239 743 747
1257 733 737
1258 732 736
1261 741 745
1262 740 744
1278 734 738
1280 742 746

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5833335E+00
THI 8.2249999E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.2249999E-02 -
\$ DIAOUT 2.5833335E+00 CDWIND 0.65 WT/V 0.2836

1240 739 743
1259 737 741
1260 736 740
1279 738 742

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 8.1000000E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.1000000E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1238 747 702
1263 745 701
1264 744 700
1281 746 703

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.5000000E+00
THI 8.1333339E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 8.1333339E-02 -
\$ DIAOUT 2.5000000E+00 CDWIND 0.65 WT/V 0.2836

1237 702 699
1265 701 696
1266 700 695
1282 703 698

§ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.3333334E+00
THI 4.1666668E-02 \$ -

\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -

\$ DIAOUT 1.3333334E+00 CDWIND 0.65 WT/V 0.2836
1291 513 604
1319 353 543
\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 1.1666667E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 1.1666667E+00 CDWIND 0.65 WT/V 0.2836
1301 499 601
1318 355 544
\$ END MEMBER INCIDENCES

MEMBER INCIDENCES AND PROPERTIES PIPE OD 2.0000000E+00
THI 4.1666668E-02 \$ -
\$ WIND MASS NONFLOODED NONBUOYANT STRUCTURAL -
\$ DIVISION 5 THICK 4.1666668E-02 -
\$ DIAOUT 2.0000000E+00 CDWIND 0.65 WT/V 0.2836
1306 511 603
\$ END MEMBER INCIDENCES

UNITS FEET
\$ ELEMENT INCIDENCES
\$ 15 304 228 1 'WIND' WIBLOCK AREA CDWIND ALL 1.0
\$ END ELEMENT INCIDENCES
\$\$
\$\$
\$\$
\$ UNITS FEET
\$ INITIAL CONDITIONS
\$ JNT2 1.0 0.0 0.0 JNT3 0.0 0.0 -1.0 -
\$ LINEAR DISPLACEMENT ORIGIN X 0.45 Y -7.41 Z -1.61

\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.20 -
\$ DEPTH 89 DIR 45
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45
\$ WIND DATA
\$ DIRECTION 45
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '45' HEIGHT 0.41 PERIOD 3.2 DEPTH 89 DIRECTION 45 -
\$ FROM 1.7 TO -1.7 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 90 Derajat

\$ SELOS '90'
\$ STRUDL 'ditinggikan 4m'
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.45 -
\$ DEPTH 89 DIR 90
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
\$ WIND DATA
\$ DIRECTION 90
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '90' HEIGHT 0.41 PERIOD 3.45 DEPTH 89 DIRECTION 90 -
\$ FROM 1.725 TO -1.725 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 135 Derajat

\$ SELOS '135'
\$ STRUDL 'ditinggikan 4m'
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.15 -
\$ DEPTH 89 DIR 135
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135
\$ WIND DATA
\$ DIRECTION 135
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR

\$ WAVE WIND LIST
\$ '135' HEIGHT 0.41 PERIOD 3.15 DEPTH 89 DIRECTION 135 -
\$ FROM 1.575 TO -1.575 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 180 Derajat

\$ SELOS '180'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.01 -
\$ DEPTH 89 DIR 180
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
\$ WIND DATA
\$ DIRECTION 180
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '180' HEIGHT 0.41 PERIOD 3.01 DEPTH 89 DIRECTION 180 -
\$ FROM 1.505 TO -1.505 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.1 -
\$ DEPTH 89 DIR 225
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
\$ WIND DATA
\$ DIRECTION 225

\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '225' HEIGHT 0.41 PERIOD 3.1 DEPTH 89 DIRECTION 225 -
\$ FROM 1.55 TO -1.55 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 0.41 PERIOD 3.19 -
\$ DEPTH 89 DIR 270
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
\$ WIND DATA
\$ DIRECTION 270
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '270' HEIGHT 0.41 PERIOD 3.19 DEPTH 89 DIRECTION 270 -
\$ FROM 1.595 TO -1.595 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 3.46 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 0.41 PERIOD 3.46 DEPTH 89 DIRECTION 315 -  
$ FROM 1.73 TO -1.73 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 360 Derajat

```
$ SELOS '360'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 3.04 -  
$ DEPTH 89 DIR 360  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360  
$ WIND DATA  
$ DIRECTION 360  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '360' HEIGHT 0.41 PERIOD 3.04 DEPTH 89 DIRECTION 360 -  
$ FROM 1.73 TO -1.73 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Input Pembebanan Lingkungan Tinggi Gelombang 1.23 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.6 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 1.23 PERIOD 3.6 DEPTH 89 DIRECTION 45 -  
$ FROM 1.8 TO -1.8 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 4.25 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 1.23 PERIOD 4.25 DEPTH 89 DIRECTION 90 -  
$ FROM 2.125 TO -2.125 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.29 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 1.23 PERIOD 3.29 DEPTH 89 DIRECTION 135 -  
$ FROM 1.645 TO -1.645 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.02 -
\$ DEPTH 89 DIR 180
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
\$ WIND DATA
\$ DIRECTION 180
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '180' HEIGHT 1.23 PERIOD 3.02 DEPTH 89 DIRECTION 180 -
\$ FROM 1.51 TO -1.51 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.14 -
\$ DEPTH 89 DIR 225
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
\$ WIND DATA
\$ DIRECTION 225
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '225' HEIGHT 1.23 PERIOD 3.14 DEPTH 89 DIRECTION 225 -
\$ FROM 1.57 TO -1.57 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 3.56 -
\$ DEPTH 89 DIR 270
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
\$ WIND DATA
\$ DIRECTION 270
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '270' HEIGHT 1.23 PERIOD 3.56 DEPTH 89 DIRECTION 270 -
\$ FROM 1.78 TO -1.78 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 1.23 PERIOD 4.0 -
\$ DEPTH 89 DIR 315
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
\$ WIND DATA
\$ DIRECTION 315
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 1.23 PERIOD 4.0 DEPTH 89 DIRECTION 315 -
\$ FROM 2.0 TO -2.0 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGH 1.23 PERIOD 3.71 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 1.23 PERIOD 3.71 DEPTH 89 DIRECTION 360 -
\$ FROM 1.855 TO -1.855 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 2.051 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 4.06 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 2.051 PERIOD 4.06 DEPTH 89 DIRECTION 45 -  
$ FROM 2.03 TO -2.03 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 4.68 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 2.051 PERIOD 4.68 DEPTH 89 DIRECTION 90 -  
$ FROM 2.34 TO -2.34 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 3.73 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 2.051 PERIOD 3.73 DEPTH 89 DIRECTION 135 -  
$ FROM 1.865 TO -1.865 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 3.3 -
 \$ DEPTH 89 DIR 180
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
 \$ WIND DATA
 \$ DIRECTION 180
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '180' HEIGHT 2.051 PERIOD 3.3 DEPTH 89 DIRECTION 180 -
 \$ FROM 1.65 TO -1.65 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 3.36 -
 \$ DEPTH 89 DIR 225
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
 \$ WIND DATA
 \$ DIRECTION 225
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '225' HEIGHT 2.051 PERIOD 3.36 DEPTH 89 DIRECTION 225 -
 \$ FROM 1.68 TO -1.68 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 3.83 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 2.051 PERIOD 3.83 DEPTH 89 DIRECTION 270 -
 \$ FROM 1.915 TO -1.915 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.051 PERIOD 4.35 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 2.051 PERIOD 4.35 DEPTH 89 DIRECTION 315 -
\$ FROM 2.175 TO -2.175 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGH 2.051 PERIOD 4.13 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 2.051 PERIOD 4.13 DEPTH 89 DIRECTION 360 -
\$ FROM 2.065 TO -2.065 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 2.871 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.871 PERIOD 4.52 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 2.871 PERIOD 4.52 DEPTH 89 DIRECTION 45 -  
$ FROM 2.26 TO -2.26 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.871 PERIOD 5.03 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 2.871 PERIOD 5.03 DEPTH 89 DIRECTION 90 -  
$ FROM 2.515 TO -2.515 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.871 PERIOD 4.11 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 2.871 PERIOD 4.11 DEPTH 89 DIRECTION 135 -  
$ FROM 2.055 TO -2.055 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 3.35 -
 \$ DEPTH 89 DIR 180
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
 \$ WIND DATA
 \$ DIRECTION 180
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '180' HEIGHT 2.871 PERIOD 3.35 DEPTH 89 DIRECTION 180 -
 \$ FROM 1.675 TO -1.675 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 3.53 -
 \$ DEPTH 89 DIR 225
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
 \$ WIND DATA
 \$ DIRECTION 225
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '225' HEIGHT 2.871 PERIOD 3.53 DEPTH 89 DIRECTION 225 -
 \$ FROM 1.765 TO -1.765 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 4.12 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 2.871 PERIOD 4.12 DEPTH 89 DIRECTION 270 -
 \$ FROM 2.06 TO -2.06 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 2.871 PERIOD 4.66 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 2.871 PERIOD 4.66 DEPTH 89 DIRECTION 315 -
\$ FROM 2.33 TO -2.33 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGH 2.871 PERIOD 4.54 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 2.871 PERIOD 4.54 DEPTH 89 DIRECTION 360 -
\$ FROM 2.27 TO -2.27 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 3.691 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 3.691 PERIOD 5.19 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 3.691 PERIOD 5.19 DEPTH 89 DIRECTION 45 -  
$ FROM 2.595 TO -2.595 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 3.691 PERIOD 5.32 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 3.691 PERIOD 5.32 DEPTH 89 DIRECTION 90 -  
$ FROM 2.66 TO -2.66 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. . .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 3.691 PERIOD 4.42 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 3.691 PERIOD 4.42 DEPTH 89 DIRECTION 135 -  
$ FROM 2.21 TO -2.21 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 180 Derajat

```
$ SELOS '180'  
$ STRUDL 'ditinggikan 4m'
```

```
. . .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 3.5 -
 \$ DEPTH 89 DIR 180
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 180 180 180 180 180 180 180 180 180 180 180
 \$ WIND DATA
 \$ DIRECTION 180
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '180' HEIGHT 3.691 PERIOD 3.5 DEPTH 89 DIRECTION 180 -
 \$ FROM 1.75 TO -1.75 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 225 Derajat

\$ SELOS '225'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 4.07 -
 \$ DEPTH 89 DIR 225
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 225 225 225 225 225 225 225 225 225 225 225
 \$ WIND DATA
 \$ DIRECTION 225
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '225' HEIGHT 3.691 PERIOD 4.07 DEPTH 89 DIRECTION 225 -
 \$ FROM 2.035 TO -2.035 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 4.40 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS
 \$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 3.691 PERIOD 4.40 DEPTH 89 DIRECTION 270 -
 \$ FROM 2.20 TO -2.20 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS
 \$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'
 .
 .
 .
 \$ UNITS FEET SECONDS DEGREES
 \$ WAVE STOKES FIFTH HEIGHT 3.691 PERIOD 4.95 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 3.691 PERIOD 4.95 DEPTH 89 DIRECTION 315 -
\$ FROM 2.475 TO -2.475 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGH 3.691 PERIOD 4.89 -
\$ DEPTH 89 DIR 360

\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 3.691 PERIOD 4.89 DEPTH 89 DIRECTION 360 -
\$ FROM 2.445 TO -2.445 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 4.511 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 4.511 PERIOD 5.50 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 4.511 PERIOD 5.50 DEPTH 89 DIRECTION 45 -  
$ FROM 2.75 TO -2.75 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 4.511 PERIOD 5.56 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 4.511 PERIOD 5.56 DEPTH 89 DIRECTION 90 -  
$ FROM 2.78 TO -2.78 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 4.511 PERIOD 4.93 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 4.511 PERIOD 4.93 DEPTH 89 DIRECTION 135 -  
$ FROM 2.465 TO -2.465 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 225 Derajat

```
$ SELOS '225'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 4.00 -
\$ DEPTH 89 DIR 225
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 225 225 225 225 225 225 225 225 225 225
\$ WIND DATA
\$ DIRECTION 225
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '225' HEIGHT 4.511 PERIOD 4.0 DEPTH 89 DIRECTION 225 -
\$ FROM 2.0 TO -2.0 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 4.68 -
\$ DEPTH 89 DIR 270
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 270 270 270 270 270 270 270 270 270 270
\$ WIND DATA
\$ DIRECTION 270
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '270' HEIGHT 4.511 PERIOD 4.68 DEPTH 89 DIRECTION 270 -
\$ FROM 4.34 TO -4.34 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 5.20 -
\$ DEPTH 89 DIR 315
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 315 315 315 315 315 315 315 315 315 315
\$ WIND DATA
\$ DIRECTION 315
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 4.511 PERIOD 5.2 DEPTH 89 DIRECTION 315 -
\$ FROM 2.6 TO -2.6 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'
\$ STRUDL 'ditinggikan 4m'
. . .
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 4.511 PERIOD 5.35 -
\$ DEPTH 89 DIR 360
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL

\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 4.511 PERIOD 5.35 DEPTH 89 DIRECTION 360 -

\$ FROM 2.675 TO -2.675 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 5.331 Feet

Arah Gelombang 45 Derajat

```
$ SELOS '45'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 5.331 PERIOD 5.80 -  
$ DEPTH 89 DIR 45  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 45 45 45 45 45 45 45 45 45 45 45  
$ WIND DATA  
$ DIRECTION 45  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '45' HEIGHT 5.331 PERIOD 5.80 DEPTH 89 DIRECTION 45 -  
$ FROM 2.9 TO -2.9 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 5.331 PERIOD 5.75 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 5.331 PERIOD 5.75 DEPTH 89 DIRECTION 90 -  
$ FROM 2.875 TO -2.875 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 135 Derajat

```
$ SELOS '135'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 5.331 PERIOD 5.00 -  
$ DEPTH 89 DIR 135  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 135 135 135 135 135 135 135 135 135 135 135  
$ WIND DATA  
$ DIRECTION 135  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '135' HEIGHT 5.331 PERIOD 5.0 DEPTH 89 DIRECTION 135 -  
$ FROM 2.5 TO -2.5 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 270 Derajat

```
$ SELOS '270'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 5.331 PERIOD 4.83 -
 \$ DEPTH 89 DIR 270
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
 \$ WIND DATA
 \$ DIRECTION 270
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '270' HEIGHT 5.331 PERIOD 4.83 DEPTH 89 DIRECTION 270 -
 \$ FROM 2.415 TO -2.415 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
 \$ STRUDL 'ditinggikan 4m'

.
.

\$ UNITS FEET SECONDS DEGREES

\$ WAVE STOKES FIFTH HEIGHT 5.331 PERIOD 5.39 -
 \$ DEPTH 89 DIR 315
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
 \$ WIND DATA
 \$ DIRECTION 315
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '315' HEIGHT 5.331 PERIOD 5.39 DEPTH 89 DIRECTION 315 -
 \$ FROM 2.695 TO -2.695 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Arah Gelombang 360 Derajat

\$ SELOS '360'

\$ STRUDL 'ditinggikan 4m'

.
.

\$ UNITS FEET SECONDS DEGREES

\$ WAVE STOKES FIFTH HEIGHT 5.331 PERIOD 5.90 -
 \$ DEPTH 89 DIR 360
 \$ CURRENT DATA STRETCH
 \$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
 \$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
 \$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
 \$ WIND DATA
 \$ DIRECTION 360
 \$ VELOCITY 57.09
 \$ WT/V STANDARD
 \$ VARIATION WITH ALTITUDE ABS
 \$ MEMBER MARINE GROWTHS DATA ALL
 \$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
 4.92 0
 \$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
 0.115 0.098 0.098

\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
 \$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
 \$ APPLIED FORCES ONLY -
 \$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
 \$ WAVE WIND LIST
 \$ '360' HEIGHT 5.331 PERIOD 5.90 DEPTH 89 DIRECTION 360 -
 \$ FROM 2.95 TO -2.95 INCREMENT 1.07
 \$ END WAVE WIND LIST

\$ SELOS PLOTS

\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
 4.0 -
 \$ VIEWER POSITION -2 1 2
 \$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
 \$ TITLE
 \$ 'ditinggikan 4m'
 \$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 6.152 Feet

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 6.152 PERIOD 5.89 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 6.152 PERIOD 5.89 DEPTH 89 DIRECTION 90 -  
$ FROM 2.945 TO -2.945 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 270 Derajat

```
$ SELOS '270'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 6.152 PERIOD 5.00 -  
$ DEPTH 89 DIR 270  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270  
$ WIND DATA  
$ DIRECTION 270  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS
```

```
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '270' HEIGHT 6.152 PERIOD 5.00 DEPTH 89 DIRECTION 270 -  
$ FROM 2.5 TO -2.5 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 6.152 PERIOD 5.56 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098
```

```
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 6.152 PERIOD 5.56 DEPTH 89 DIRECTION 315 -  
$ FROM 2.78 TO -2.78 INCREMENT 1.07  
$ END WAVE WIND LIST
```

```
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 360 Derajat

```
$ SELOS '360'  
$ STRUDL 'ditinggikan 4m'
```

```
. .  
$ UNITS FEET SECONDS DEGREES
```

\$ WAVE STOKES FIFTH HEIGHT 6.152 PERIOD 5.95 -
\$ DEPTH 89 DIR 360
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 6.152 PERIOD 5.95 DEPTH 89 DIRECTION 360 -
\$ FROM 2.975 TO -2.975 INCREMENT 1.07
\$ END WAVE WIND LIST
\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 6.972 Feet

Arah Gelombang 90 Derajat

```

$ SELOS '90'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 6.972 PERIOD 5.99 -
$   DEPTH 89 DIR 90
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
$ WIND DATA
$ DIRECTION 90
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

```

```

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '90' HEIGHT 6.972 PERIOD 5.99 DEPTH 89 DIRECTION 90 -
$   FROM 2.995 TO -2.995 INCREMENT 1.07
$ END WAVE WIND LIST

```

```

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH

```

Arah Gelombang 270 Derajat

```

$ SELOS '270'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 6.972 PERIOD 5.25 -
$   DEPTH 89 DIR 270
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 270 270 270 270 270 270 270 270 270 270 270
$ WIND DATA
$ DIRECTION 270
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

```

\$ UNITS FEET SECONDS

```

$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '270' HEIGHT 6.972 PERIOD 5.25 DEPTH 89 DIRECTION 270 -
$   FROM 2.625 TO -2.625 INCREMENT 1.07
$ END WAVE WIND LIST

```

```

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH

```

Arah Gelombang 315 Derajat

```

$ SELOS '315'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 6.972 PERIOD 5.81 -
$   DEPTH 89 DIR 315
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
$ WIND DATA
$ DIRECTION 315
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

```

```

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '315' HEIGHT 6.972 PERIOD 5.81 DEPTH 89 DIRECTION 315 -
$   FROM 2.905 TO -2.905 INCREMENT 1.07
$ END WAVE WIND LIST

```

```

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH

```

Arah Gelombang 360 Derajat

```

$ SELOS '360'
$ STRUDL 'ditinggikan 4m'
.
.
.

```

\$ UNITS FEET SECONDS DEGREES

\$ WAVE STOKES FIFTH HEIGHT 6.972 PERIOD 6.00 -
\$ DEPTH 89 DIR 360
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 360 360 360 360 360 360 360 360 360 360 360
\$ WIND DATA
\$ DIRECTION 360
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098
\$ UNITS FEET SECONDS

\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '360' HEIGHT 6.972 PERIOD 6.00 DEPTH 89 DIRECTION 360 -
\$ FROM 3.0 TO -3.0 INCREMENT 1.07
\$ END WAVE WIND LIST
\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 7.792 Feet

Arah Gelombang 90 Derajat

\$ SELOS '90'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 6.972 PERIOD 5.99 -
\$ DEPTH 89 DIR 90
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
\$ WIND DATA
\$ DIRECTION 90
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '90' HEIGHT 6.972 PERIOD 5.99 DEPTH 89 DIRECTION 90 -
\$ FROM 2.995 TO -2.995 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 270 Derajat

\$ SELOS '270'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 7.792 PERIOD 6.00 -
\$ DEPTH 89 DIR 90
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
\$ WIND DATA
\$ DIRECTION 90
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0

\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '90' HEIGHT 7.792 PERIOD 6.0 DEPTH 89 DIRECTION 90 -
\$ FROM 3.0 TO -3.0 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Arah Gelombang 315 Derajat

\$ SELOS '315'
\$ STRUDL 'ditinggikan 4m'
.
.
.
\$ UNITS FEET SECONDS DEGREES
\$ WAVE STOKES FIFTH HEIGHT 7.792 PERIOD 5.88 -
\$ DEPTH 89 DIR 315
\$ CURRENT DATA STRETCH
\$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
\$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
\$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
\$ WIND DATA
\$ DIRECTION 315
\$ VELOCITY 57.09
\$ WT/V STANDARD
\$ VARIATION WITH ALTITUDE ABS
\$ MEMBER MARINE GROWTHS DATA ALL
\$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
\$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

\$ UNITS FEET SECONDS
\$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
\$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
\$ APPLIED FORCES ONLY -
\$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
\$ WAVE WIND LIST
\$ '315' HEIGHT 7.792 PERIOD 5.88 DEPTH 89 DIRECTION 315 -
\$ FROM 2.94 TO -2.94 INCREMENT 1.07
\$ END WAVE WIND LIST

\$ SELOS PLOTS
\$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
\$ VIEWER POSITION -2 1 2
\$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
\$ TITLE
\$ 'ditinggikan 4m'
\$ FINISH

Input Pembebanan Lingkungan Tinggi Gelombang 0.41 Feet

Arah Gelombang 90 Derajat

```

$ SELOS '90'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 6.21 -
$   DEPTH 89 DIR 90
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90
$ WIND DATA
$ DIRECTION 90
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '90' HEIGHT 0.41 PERIOD 6.21 DEPTH 89 DIRECTION 90 -
$   FROM 3.105 TO -3.105 INCREMENT 1.07
$ END WAVE WIND LIST

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH
    
```

Arah Gelombang 315 Derajat

```

$ SELOS '315'
$ STRUDL 'ditinggikan 4m'
.
.
.
$ UNITS FEET SECONDS DEGREES
$ WAVE STOKES FIFTH HEIGTH 0.41 PERIOD 6.00 -
$   DEPTH 89 DIR 315
$ CURRENT DATA STRETCH
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315
$ WIND DATA
$ DIRECTION 315
$ VELOCITY 57.09
$ WT/V STANDARD
$ VARIATION WITH ALTITUDE ABS
$ MEMBER MARINE GROWTHS DATA ALL
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -
4.92 0
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115
0.115 0.098 0.098

$ UNITS FEET SECONDS
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -
$ APPLIED FORCES ONLY -
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR
$ WAVE WIND LIST
$ '315' HEIGHT 0.41 PERIOD 6.00 DEPTH 89 DIRECTION 315 -
$   FROM 3.0 TO -3.0 INCREMENT 1.07
$ END WAVE WIND LIST

$ SELOS PLOTS
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5
4.0 -
$ VIEWER POSITION -2 1 2
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH
$ TITLE
$ 'ditinggikan 4m'
$ FINISH
    
```

Input Pembebanan Lingkungan Tinggi Gelombang 1.23 Feet

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 1.23 PERIOD 6.40 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 1.23 PERIOD 6.40 DEPTH 89 DIRECTION 90 -  
$ FROM 3.2 TO -3.2 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 1.23 PERIOD 6.25 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 1.23 PERIOD 6.25 DEPTH 89 DIRECTION 315 -  
$ FROM 3.125 TO -3.125 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Input Pembebanan Lingkungan Tinggi Gelombang 1.23 Feet

Arah Gelombang 90 Derajat

```
$ SELOS '90'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 6.50 -  
$ DEPTH 89 DIR 90  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 90 90 90 90 90 90 90 90 90 90 90  
$ WIND DATA  
$ DIRECTION 90  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '90' HEIGHT 2.051 PERIOD 6.50 DEPTH 89 DIRECTION 90 -  
$ FROM 3.25 TO -3.25 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Arah Gelombang 315 Derajat

```
$ SELOS '315'  
$ STRUDL 'ditinggikan 4m'  
. .  
$ UNITS FEET SECONDS DEGREES  
$ WAVE STOKES FIFTH HEIGTH 2.051 PERIOD 6.50 -  
$ DEPTH 89 DIR 315  
$ CURRENT DATA STRETCH  
$ DEPTH 0.0 8.9 17.8 26.7 35.6 44.5 53.4 62.3 71.2 80.1 89  
$ VELOCITY 1.38 1.38 1.41 1.44 1.51 1.57 1.67 1.80 2.00 2.26 2.59  
$ DIRECTION 315 315 315 315 315 315 315 315 315 315 315  
$ WIND DATA  
$ DIRECTION 315  
$ VELOCITY 57.09  
$ WT/V STANDARD  
$ VARIATION WITH ALTITUDE ABS  
$ MEMBER MARINE GROWTHS DATA ALL  
$ ZREF -89 -83.66 -68.9 -54.13 -39.37 -22.96 -19.69 -14.76 -9.84 -  
4.92 0  
$ THICKNESS 0.049 0.049 0.115 0.115 0.115 0.1475 0.1475 0.115  
0.115 0.098 0.098  
  
$ UNITS FEET SECONDS  
$ EXECUTE WIND LOAD ANALYSIS NO WAVE TOPS  
$ EXECUTE STEP WAVE LOADING TYPE STRUCTURE FIXED -  
$ APPLIED FORCES ONLY -  
$ COMPUTE LOADING FOR MAXIMUM BASE SHEAR  
$ WAVE WIND LIST  
$ '315' HEIGHT 2.051 PERIOD 6.50 DEPTH 89 DIRECTION 315 -  
$ FROM 3.25 TO -3.25 INCREMENT 1.07  
$ END WAVE WIND LIST  
  
$ SELOS PLOTS  
$ PLOT 3D RIGID POSITIONS AT TIMES 0.5 1.0 1.5 2.0 2.5 3.0 3.5  
4.0 -  
$ VIEWER POSITION -2 1 2  
$ OVERLAY WAVE SURFACE FULL WAVE LENGTH  
$ TITLE  
$ 'ditinggikan 4m'  
$ FINISH
```

Input Parameter Static Analysis

```
READ WAVE LOAD FOR DESIGN FROM FILE '360.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '315.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '270.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '225.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '180.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '135.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '90.LDS'
READ WAVE LOAD FOR DESIGN FROM FILE '45.LDS'

DEFINE GROUP 'beam' ADD MEMBERS 1 1 1 2 2 2 3 3 3 4 4 4 5 5 6 6 7 7 7 8 8 -
8 9 9 9 10 10 11 11 11 12 12 13 13 13 14 14 15 15 16 16 16 17 17 -
17 18 18 19 19 20 20 20 21 21 21 22 22 22 23 23 23 24 24 24 25 25 25 26 -
26 26 27 27 27 28 28 29 29 30 30 30 31 31 31 32 32 33 33 33 34 34 34 -
35 35 36 36 37 37 37 38 38 38 39 39 40 40 40 41 41 41 42 42 42 43 43 -
43 44 44 45 45 46 46 46 47 47 47 48 48 48 49 49 50 50 51 51 51 52 -
52 53 53 53 54 54 55 55 56 56 56 57 57 57 58 58 58 59 59 59 60 60 60 -
61 61 61 62 62 63 63 64 64 64 65 65 66 66 66 67 67 68 68 68 69 69 -
69 70 70 71 71 71 72 72 73 73 74 74 74 75 75 76 76 77 77 77 78 -
78 79 79 79 80 80 81 81 81 82 82 82 83 83 84 84 85 85 85 86 86 86 -
87 87 87 88 88 88 89 89 90 90 91 91 91 92 92 92 93 93 94 94 94 95 95 -
95 96 96 97 97 97 98 98 98 99 99 100 100 100 101 101 101 102 102 102 -
103 103 104 104 104 105 105 105 106 106 106 107 107 108 108 108 109 -
109 109 110 110 111 111 111 112 112 112 113 113 113 114 114 114 115 115 -
115 116 116 116 117 117 117 ; CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 118 118 118 119 119 119 120 120 120 121 121 -
121 122 122 123 123 123 124 124 124 125 125 125 126 126 126 127 127 127 -
128 128 128 129 129 129 130 130 131 131 131 132 132 132 133 133 133 134 -
134 134 135 135 136 136 136 137 137 137 138 138 138 139 139 140 140 -
140 141 141 141 142 142 142 143 143 143 144 144 144 145 145 145 146 146 146 -
147 147 147 148 148 148 149 149 149 150 150 151 151 151 152 152 152 153 -
153 153 154 154 155 155 155 156 156 156 157 157 157 158 158 158 159 159 -
159 160 160 160 161 161 161 162 162 162 163 163 163 164 164 164 165 165 165 -
166 166 166 167 167 167 168 168 168 169 169 170 170 170 171 171 171 172 -
172 172 173 173 173 174 174 175 175 175 176 176 176 177 177 177 178 178 -
178 179 179 180 180 180 181 181 181 182 182 182 183 183 183 184 184 184 -
185 185 185 186 186 186 187 187 187 188 188 188 189 189 190 190 190 191 -
191 191 192 192 193 193 193 194 194 194 195 195 195 196 196 196 197 197 -
197 198 198 199 199 200 200 200 201 201 201 202 202 202 203 203 203 204 -
204 204 205 205 205 206 206 207 207 207 208 208 208 209 209 210 210 -
210 211 211 211 212 212 212 213 213 213 214 214 214 215 215 215 216 216 -
216 217 217 218 218 219 219 219 220 220 220 221 221 221 222 222 222 -
223 223 224 224 224 225 225 226 226 226 227 227 227 228 228 228 229 -
229 229 230 230 231 231 231 232 232 232 233 233 233 234 234 234 ; -
CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 235 235 235 236 236 237 237 237 238 238 -
238 239 239 240 240 240 241 241 241 242 242 242 243 243 244 244 244 -
245 245 246 246 246 247 247 247 248 248 248 249 249 250 250 251 -
251 251 252 252 252 253 253 254 254 254 255 255 255 256 256 257 257 -
257 258 258 259 259 260 260 261 261 261 262 262 262 263 263 263 -
264 264 265 265 266 266 266 267 267 267 268 268 268 269 269 269 270 -
270 270 271 271 271 272 272 273 273 273 274 274 274 275 275 275 276 -
276 277 277 277 278 278 279 279 280 280 280 281 281 281 282 282 282 -
283 283 284 284 284 285 285 286 286 286 287 287 287 288 288 288 289 -
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302 302 303 303 304 304 304 305 305 305 306 306 306 307 307 307 308 -
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314 315 315 315 316 316 317 317 317 318 318 318 319 319 319 320 320 320 -
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327 327 328 328 329 329 330 330 330 331 331 331 332 332 332 333 333 -
333 334 334 335 335 335 336 336 337 337 337 338 338 338 339 339 339 -
340 340 340 341 341 341 342 342 342 343 343 343 344 344 344 345 345 346 -
346 346 347 347 347 348 348 349 349 349 350 350 351 351 351 ; -
CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 352 352 352 353 353 353 354 354 354 355 355 -
355 356 356 357 357 357 358 358 358 359 359 359 360 360 360 361 361 -
362 362 363 363 363 364 364 365 365 365 366 366 366 367 367 367 368 -
368 368 369 369 370 370 371 371 371 372 372 372 373 373 373 374 374 -
374 375 375 376 376 377 377 377 378 378 378 379 379 379 380 380 380 -
381 381 381 382 382 383 383 383 384 384 384 385 385 385 386 386 386 387 -
387 387 388 388 388 389 389 389 390 390 391 391 391 392 392 392 393 393 -
393 394 394 395 395 395 396 396 397 397 397 398 398 398 399 399 399 -
400 400 401 401 401 402 402 403 403 404 404 404 405 405 405 406 406 -
406 406 407 407 408 408 408 409 409 409 410 410 410 411 411 411 412 -
412 413 413 413 414 414 414 415 415 415 416 416 416 417 417 417 418 -
418 418 419 419 420 420 420 421 421 421 422 422 422 423 423 423 424 -
424 425 425 425 426 426 426 427 427 427 428 428 428 429 429 429 -
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460 461 461 462 462 463 463 463 464 464 464 465 465 465 466 466 466 -
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484 485 485 486 486 486 487 487 487 488 488 488 489 489 489 490 490 -
490 491 491 492 492 493 493 493 494 494 494 495 495 495 496 496 496 -
496 497 497 498 498 498 499 499 499 500 500 500 501 501 501 502 502 -
502 503 503 503 504 504 504 505 505 505 506 506 506 507 507 507 508 -
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535 536 536 537 537 537 538 538 538 539 539 539 540 540 540 541 541 -
541 542 542 543 543 543 544 544 544 545 545 545 546 546 546 547 547 -
547 548 548 548 549 549 549 550 550 550 551 551 551 552 552 552 553 -
553 553 554 554 554 555 555 555 556 556 556 557 557 557 558 558 -
558 559 559 560 560 560 561 561 561 562 562 562 563 563 563 564 -
564 565 565 565 566 566 566 567 567 567 568 568 568 569 569 569 -
569 570 570 571 571 571 572 572 572 573 573 573 574 574 574 575 -
575 576 576 577 577 577 578 578 578 579 579 579 580 580 580 581 -
581 581 582 582 583 583 583 584 584 584 585 585 585 586 586 586 587 -
587 587 588 588 588 589 589 590 590 591 591 591 592 592 592 593 593 -
593 593 594 594 594 595 595 595 596 596 596 597 597 597 598 598 -
598 599 599 599 599 600 600 600 601 601 601 602 602 602 603 603 603 -
603 604 604 605 605 606 606 606 607 607 607 608 608 608 609 609 609 -
609 610 610 611 611 611 612 612 612 613 613 613 614 614 614 615 615 -
615 616 616 616 617 617 617 618 618 618 619 619 620 620 621 621 621 -
621 622 622 622 623 623 623 624 624 625 625 626 626 626 627 627 627 -
627 628 628 628 629 629 629 630 630 631 631 631 632 632 632 633 633 -
633 634 634 634 635 635 635 636 636 636 637 637 637 638 638 638 639 -
639 640 640 640 641 641 641 642 642 643 643 643 644 644 644 645 645 -
645 646 646 646 647 647 647 648 648 649 649 650 650 651 651 651 -
651 652 652 652 653 653 653 654 654 654 655 655 655 656 656 656 -
656 657 657 658 658 658 659 659 659 660 660 660 661 661 661 -
661 662 662 663 663 663 664 664 664 665 665 665 666 666 666 -
666 667 667 668 668 668 669 669 670 670 671 671 671 672 672 672 -
673 673 673 674 674 675 675 676 676 676 677 677 677 678 678 678 679 -
679 679 679 680 680 680 681 681 681 682 682 682 683 683 683 684 -
684 684 684 685 685 685 686 686 686 687 687 687 688 688 688 689 -
689 689 690 690 690 691 691 691 692 692 692 693 693 693 694 -
694 694 694 695 695 695 696 696 696 697 697 697 698 698 698 699 -
699 699 700 700 700 701 701 701 702 702 702 703 703 703 704 704 -
704 705 705 706 706 706 707 707 707 708 708 708 709 709 709 710 -
710 710 ; -
CHANGES;
DEFINE GROUP 'beam' ADD MEMBERS 711 711 711 712 712 712 713 713 713 714 714 -
714 715 715 716 716 716 717 717 717 718 718 718 719 719 719 720 720 -
720 721 721 721 722 722 722 723 723 723 724 724 724 725 725 725 -
726 726 726 727 727 727 728 728 728 729 729 729 730 730 730 -
730 731 731 731 732 732 732 733 733 733 734 734 734 735 735 735 -
736 736 736 737 737 737 738 738 738 739 739 739 740 740 740 741 -
741 742 742 743 743 743 744 744 744 745 745 745 746 746 746 747 -
747 748 748 748 749 749 749 750 750 750 751 751 751 752 752 752 -
753 753 753 754 754 754 755 755 755 756 756 756 757 757 757 758 -
758 758 759 759 759 760 760 760 761 761 761 762 762 762 763 763 -
763 764 764 765 765 765 766 766 766 767 767 767 768 768 768 769 -
769 769 770 770 770 771 771 771 772 772 772 773 773 773 774 774 -
774 775 775 776 776 776 777 777 777 778 778 778 779 779 779 780 -
780 780 781 781 781 782 782 782 783 783 783 784 784 784 785 785 -
785 786 786 786 787 787 787 788 788 788 789 789 789 790 790 790 -
791 791 791 792 792 792 793 793 793 794 794 794 795 795 795 796 -
796 796 797 797 797 798 798 798 799 799 799 800 800 800 801 801 -
801 802 802 803 803 803 804 804 804 805 805 805 806 806 806 807 -
807 807 808 808 808 809 809 809 810 810 810 811 811 811 812 812 -
812 813 813 813 814 814 814 815 815 815 816 816 816 817 817 817 -
817 818 818 818 819 819 819 820 820 820 821 821 821 822 822 822 -
823 823 823 824 824 824 825 825 825 826 826 826 827 827 827 828 -
828 828 829 829 829 830 830 830 831 831 831 832 832 832 833 833 -
833 833 834 834 834 835 835 835 836 836 836 837 837 837 838 838 -
838 838 839 839 839 840 840 840 841 841 841 842 842 842 843 843 -
843 843 844 844 844 845 845 845 846 846 846 847 847 847 848 848 -
848 848 849 849 849 850 850 850 851 851 851 852 852 852 853 853 -
853 853 854 854 854 855 855 855 856 856 856 857 857 857 858 858 -
858 858 859 859 859 860 860 860 861 861 861 862 862 862 863 863 -
863 863 864 864 864 865 865 865 866 866 866 867 867 867 868 868 -
868 868 869 869 869 870 870 870 871 871 871 872 872 872 873 873 -
873 873 874 874 875 875 875 876 876 876 877 877 877 878 878 878 879 -
879 879 880 880 880 881 881 881 882 882 882 883 883 883 884 884 -
884 884 885 885 885 886 886 886 887 887 887 888 888 888 889 889 -
889 890 890 890 891 891 891 892 892 892 893 893 893 894 894 894 -
894 895 895 895 896 896 896 897 897 897 898 898 898 899 899 899 -
899 900 900 900 901 901 901 902 902 902 903 903 903 904 904 904 -
904 905 905 905 906 906 906 907 907 907 908 908 908 909 909 909 -
909 910 910 910 911 911 911 912 912 912 913 913 913 914 914 914 -
914 915 915 915 916 916 916 917 917 917 918 918 918 919 919 919 -
919 920 920 920 921 921 921 922 922 922 923 923 923 924 924 924 -
924 925 925 925 926 926 926 927 927 927 928 928 928 929 929 929 -
929 930 930 930 931 931 931 932 932 932 933 933 933 934 934 934 -
934 935 935 935 936 936 936 937 937 937 938 938 938 939 939 939 -
939 940 940 940 941 941 941 942 942 942 943 943 943 944 944 944 -
944 945 945 945 946 946 946 947 947 947 948 948 948 949 949 949 -
949 950 950 950 951 951 951 952 952 952 953 953 953 954 954 954 -
954 955 955 955 956 956 956 957 957 957 958 958 958 959 959 959 -
959 960 960 960 961 961 961 962 962 962 963 963 963 964 964 964 -
964 965 965 965 966 966 966 967 967 967 968 968 968 969 969 969 -
969 970 970 970 971 971 971 972 972 972 973 973 973 974 974 974 -
974 975 975 975 976 976 976 977 977 977 978 978 978 979 979 979 -
979 980 980 980 981 981 981 982 982 982 983 983 983 984 984 984 -
984 985 985 985 986 986 986 987 987 987 988 988 988 989 989 989 -
989 990 990 990 991 991 991 992 992 992 993 993 993 994 994 994 -
994 995 995 995 996 996 996 997 997 997 998 998 998 999 999 999 -
999 1000 1000 1000 1001 1001 1001 1002 1002 1002 1003 1003 1003 1004 -
1004 1004 1004 1005 1005 1005 1006 1006 1006 1007 1007 1007 1008 -
1008 1008 1008 1009 1009 1009 1010 1010 1010 1011 1011 1011 1012 -
1012 1012 1012 1013 1013 1013 1014 1014 1014 1015 1015 1015 1016 -
1016 1016 1016 1017 1017 1017 1018 1018 1018 1019 1019 1019 1020 -
1020 1020 1020 1021 1021 1021 1022 1022 1022 1023 1023 1023 1024 -
1024 1024 1024 1025 1025 1025 1026 1026 1026 1027 1027 1027 1028 -
1028 1028 1028 1029 1029 1029 1030 1030 1030 1031 1031 1031 1032 -
1032 1032 1032 1033 1033 1033 1034 1034 1034 1035 1035 1035 1036 -
1036 1036 1036 1037 1037 1037 1038 1038 1038 1039 1039 1039 1040 -
1040 1040 1040 1041 1041 1041 1042 1042 1042 1043 1043 1043 1044 
```


Output Statis Analisis GT Strudl

HEIGHT = 0,41 FT

--- LOADING - 45 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      499.1811523  8.4759836  9.5870180  76.9447327  -6.1415267  13.1805868
1270 706     -499.4139099  -8.4837255  -9.5947599  -76.9447327  -2.2025497  -5.8031106
    
```

--- LOADING - 90 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497.9764404  9.0657463  10.0238295  76.8993149  -12.3889790  9.2214060
1270 706     -498.2091675  -9.0657463  -10.0347786  -76.8993149  3.6634798  -1.3342042
    
```

--- LOADING - 135 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497.8589172  9.6555977  9.7169142  76.8093262  -7.7046509  5.4075685
1270 706     -498.0917053  -9.6478558  -9.7246571  -76.8093262  -0.7524360  2.9894354
    
```

--- LOADING - 180 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      498.9335022  9.8924885  8.8636837  76.8284836  5.1769853  3.9847643
1270 706     -499.1662292  -9.8815393  -8.8636837  -76.8284836  -12.8883915  4.6169391
    
```

--- LOADING - 225 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500.5171204  9.6587305  7.9594207  76.8480911  18.6632233  5.7381978
1270 706     -500.7499084  -9.6509886  -7.9516788  -76.8480911  -25.5845547  2.6615312
    
```

--- LOADING - 270 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501.7168274  9.0725183  7.5334859  76.8976898  24.8139324  9.6872654
1270 706     -501.9495850  -9.0725183  -7.5225363  -76.8976898  -31.3633022  -1.7941731
    
```

--- LOADING - 315 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501.8210144  8.4836636  7.8419075  76.9696960  20.1158276  13.5004101
1270 706     -502.0538025  -8.4914055  -7.8341656  -76.9696960  -26.9349194  -6.1162510
    
```

--- LOADING - 360 ---

```

MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500.7650146  8.2479868  8.6871920  76.9805069  7.3325696  14.9169216
1270 706     -500.9978027  -8.2589359  -8.6871920  -76.9805069  -14.8904295  -7.7364063
    
```

HEIGHT = 1,23 FT

--- LOADING - 45 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	499.1640320	8.4782219	9.5857792	76.9454880	-6.1044250	13.1687441
1270	706	-499.3968201	-8.4859638	-9.5935211	-76.9454880	-2.2385738	-5.7893209
--- LOADING - 90 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.9692993	9.0656309	10.0083389	76.8752823	-12.2515831	9.2114201
1270	706	-498.2020874	-9.0656309	-10.0192890	-76.8752823	3.5395617	-1.3243188
--- LOADING - 135 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.8479614	9.6552820	9.7150669	76.7522202	-7.6938601	5.4288740
1270	706	-498.0807495	-9.6475391	-9.7228088	-76.7522202	-0.7616195	2.9678547
--- LOADING - 180 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498.9726257	9.8752899	8.8544893	76.8426514	5.2603364	4.0414782
1270	706	-499.2054138	-9.8643389	-8.8544893	-76.8426514	-12.9637442	4.5452609
--- LOADING - 225 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.5347290	9.6570272	7.9527407	76.8583908	18.7311230	5.7510881
1270	706	-500.7675171	-9.6492844	-7.9449983	-76.8583908	-25.6466427	2.6471589
--- LOADING - 270 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.7351379	9.0693903	7.5276103	76.9201508	24.8542233	9.6941004
1270	706	-501.9678955	-9.0693903	-7.5166612	-76.9201508	-31.3984814	-1.8037289
--- LOADING - 315 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.8103027	8.4716816	7.8488379	76.9535980	19.9306545	13.5626011
1270	706	-502.0430908	-8.4794245	-7.8410954	-76.9535980	-26.7557755	-6.1888671
--- LOADING - 360 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.7717285	8.2523775	8.6804590	77.0087814	7.4147992	14.8813095
1270	706	-501.0045166	-8.2633266	-8.6804590	-77.0087814	-14.9668007	-7.6969757

HEIGHT = 2,051 FT

--- LOADING - 45 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	499.1275940	8.4836321	9.5937414	76.9393692	-6.1412883	13.1367092
1270	706	-499.3603821	-8.4913740	-9.6014843	-76.9393692	-2.2086384	-5.7525787
--- LOADING - 90 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.9764404	9.0657463	10.0238295	76.8993149	-12.3889790	9.2214060
1270	706	-498.2091675	-9.0657463	-10.0347786	-76.8993149	3.6634798	-1.3342041
--- LOADING - 135 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497.8589172	9.6555977	9.7169142	76.8093262	-7.7046509	5.4075685
1270	706	-498.0917053	-9.6478558	-9.7246571	-76.8093262	-0.7524357	2.9894354
--- LOADING - 180 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498.9335022	9.8924885	8.8636827	76.8284836	5.1769862	3.9847646
1270	706	-499.1662292	-9.8815393	-8.8636827	-76.8284836	-12.8883924	4.6169386
--- LOADING - 225 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.5516052	9.6624556	7.9614720	76.8676300	18.6984215	5.7539749
1270	706	-500.7843628	-9.6547136	-7.9537301	-76.8676300	-25.6215363	2.6489942
--- LOADING - 270 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.7168274	9.0725183	7.5334859	76.8976898	24.8139324	9.6872654
1270	706	-501.9495850	-9.0725183	-7.5225363	-76.8976898	-31.3633022	-1.7941731
--- LOADING - 315 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501.7867126	8.4777384	7.8572555	76.9723892	19.7639866	13.5553474
1270	706	-502.0195007	-8.4854813	-7.8495131	-76.9723892	-26.5964317	-6.1763444
--- LOADING - 360 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500.7755127	8.2293158	8.6874542	77.0041809	7.3126769	15.0080366
1270	706	-501.0083008	-8.2402649	-8.6874542	-77.0041809	-14.8707638	-7.8437657

HEIGHT = 2,871 FT

--- LOADING - 45 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	499,0889587	8,4854126	9,6035280	76,9275894	-6,2381921	13,1060266
1270	706	-499,3217468	-8,4931545	-9,6112709	-76,9275894	-2,1202488	-5,7203479
--- LOADING - 90 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9519653	9,0657272	10,0037098	76,8347092	-11,9644661	9,1901684
1270	706	-498,1847534	-9,0657263	-10,0146589	-76,8347092	3,2564716	-1,3029847
--- LOADING - 135 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,8666382	9,6836510	9,7023544	76,7734604	-7,2146769	5,2979088
1270	706	-498,0993958	-9,6759090	-9,7100964	-76,7734604	-1,2297419	3,1235013
--- LOADING - 180 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498,9829102	9,8537827	8,8627539	76,8062210	5,1524572	4,1107583
1270	706	-499,2156372	-9,8428335	-8,8627539	-76,8062210	-12,8630552	4,4572706
--- LOADING - 225 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500,5626221	9,6553211	7,9709544	76,8635406	18,5367622	5,7890387
1270	706	-500,7954102	-9,6475782	-7,9632125	-76,8635406	-25,4681263	2,6077237
--- LOADING - 270 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7415771	9,0654106	7,5639744	76,9301147	24,4899235	9,7159224
1270	706	-501,9743347	-9,0654106	-7,5530252	-76,9301147	-31,0658207	-1,8290138
--- LOADING - 315 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7526550	8,4948006	7,8678102	77,0083771	19,6138706	13,5053186
1270	706	-501,9854431	-8,5025425	-7,8600683	-77,0083771	-26,4554996	-6,1114712
--- LOADING - 360 ---							
MEMBER FORCES							
MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500,7006531	8,2540283	8,7171497	76,9706116	7,0143695	14,9170790
1270	706	-500,9334106	-8,2649775	-8,7171497	-76,9706116	-14,5982914	-7,7313080

HEIGHT = 3,691 FT

--- LOADING - 45 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	499,0632935	8,5120344	9,6024227	76,9667587	-5,9614286	13,0286989
1270	706	-499,2960815	-8,5197763	-9,6101646	-76,9667587	-2,3960502	-5,6198587

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9764404	9,0657463	10,0238295	76,8993149	-12,3889790	9,2214060
1270	706	-498,2091675	-9,0657463	-10,0347786	-76,8993149	3,6634798	-1,3342041

--- LOADING - 135 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9357910	9,6461725	9,6905680	76,8317566	-7,0968852	5,3738055
1270	706	-498,1685486	-9,6384296	-9,6983099	-76,8317566	-1,3372804	3,0149970

--- LOADING - 180 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498,9579163	9,8495560	8,8764715	76,7660675	5,0036874	4,1256733
1270	706	-499,1907043	-9,8386068	-8,8764715	-76,7660675	-12,7262201	4,4386783

--- LOADING - 225 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500,5189819	9,6217861	8,0028849	76,8068161	17,8859577	5,8823805
1270	706	-500,7517700	-9,6140442	-7,9951425	-76,8068161	-24,8450985	2,4852068

--- LOADING - 270 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7173767	9,0654440	7,5810642	76,9147949	24,1593475	9,7224665
1270	706	-501,9501343	-9,0654440	-7,5701151	-76,9147949	-30,7501125	-1,8355286

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7177124	8,5147247	7,8785439	77,0499878	19,4899349	13,4413929
1270	706	-501,9504700	-8,5224686	-7,8708014	-77,0499878	-26,3409004	-6,0302110

--- LOADING - 360 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT	
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	500,6618652	8,2683172	8,7271852	77,0185699	6,9170127	14,8719416
1270	706	-500,8946228	-8,2792664	-8,7271852	-77,0185699	-14,5096664	-7,6737390

HEIGHT = 4,511 FT

--- LOADING - 45 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	499,0244751	8,5217237	9,6083155	76,9724350	-5,9368019	12,9831486		
1270	706	-499,2572021	-8,5294666	-9,6160583	-76,9724350	-2,4258044	-5,5658774		
--- LOADING - 90 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	497,9071960	9,0660696	10,0057554	76,7713089	-11,7546997	9,1630754		
1270	706	-498,1399841	-9,0660696	-10,0167046	-76,7713089	3,0449259	-1,2755924		
--- LOADING - 135 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	497,8828735	9,6562309	9,7009935	76,6979828	-6,9839330	5,3608751		
1270	706	-498,1156616	-9,6484890	-9,7087355	-76,6979828	-1,4593027	3,0366793		
--- LOADING - 225 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	500,5346375	9,6131763	8,0086555	76,8053970	17,7633247	5,9280715		
1270	706	-500,7674255	-9,6054344	-8,0009127	-76,8053970	-24,7274895	2,4320247		
--- LOADING - 270 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	501,7063293	9,0643864	7,5924788	76,9225616	23,8996944	9,7306547		
1270	706	-501,9391174	-9,0643864	-7,5815296	-76,9225616	-30,5003872	-1,8446374		
--- LOADING - 315 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	501,6855164	8,5332870	7,8887610	77,0909500	19,3810635	13,3791361		
1270	706	-501,9183044	-8,5410299	-7,8810191	-77,0909500	-26,2409191	-5,9518065		
--- LOADING - 360 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		
1270	497	500,6230774	8,2833853	8,7362671	77,0819702	6,8325300	14,8155880		
1270	706	-500,8558655	-8,2943344	-8,7362671	-77,0819702	-14,4330845	-7,6042771		

HEIGHT = 5,331 FT

--- LOADING - 45 ---									
MEMBER FORCES									
MEMBER	JOINT	FORCE			MOMENT				
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z		

		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	498,9935608	8,5362358	9,6108465	76,9896698	-5,8231344	12,9356470
1270	706	-499,2263184	-8,5439777	-9,6185884	-76,9896698	-2,5416725	-5,5057511

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,9027710	9,0645380	10,0023975	76,7431030	-11,6034136	9,1500320	
1270	706	-498,1355591	-9,0645380	-10,0133476	-76,7431030	2,8965607	-1,2638820	

--- LOADING - 135 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,8763123	9,6546154	9,7015705	76,6588211	-6,8693233	5,3640909	
1270	706	-498,1091003	-9,6468735	-9,7093134	-76,6588211	-1,5744141	3,0320578	

--- LOADING - 270 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6626892	9,0648088	7,6196761	76,9463425	23,5109501	9,7364540	
1270	706	-501,8954468	-9,0648088	-7,6087265	-76,9463425	-30,1353035	-1,8500680	

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6703491	8,5267391	7,9054337	77,1663437	19,0404339	13,4021015	
1270	706	-501,9031067	-8,5344820	-7,8976912	-77,1663437	-25,9147930	-5,9804678	

--- LOADING - 360 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	500,6044617	8,2915964	8,7367458	77,1884232	6,8248820	14,7945309	
1270	706	-500,8372498	-8,3025455	-8,7367458	-77,1884232	-14,4258528	-7,5760770	

HEIGHT = 6,152 FT

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	497,8673096	9,0648890	10,0061255	76,7056961	-11,5197926	9,1336765	
1270	706	-498,1000977	-9,0648890	-10,0170746	-76,7056961	2,8096962	-1,2472206	

--- LOADING - 270 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6348267	9,0641260	7,6404052	76,9780807	23,1925068	9,7431498	
1270	706	-501,8676147	-9,0641260	-7,6294560	-76,9780807	-29,8348961	-1,8573579	

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE				MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z	
1270	497	501,6680603	8,5150824	7,9189577	77,2421188	18,7303352	13,4395361	
1270	706	-501,9008179	-8,5228243	-7,9112158	-77,2421188	-25,6164627	-6,0280433	

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--- LOADING - 360
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500,5716858   8,3019581   8,7459612   77,2271042   6,7329001   14,7613497
1270 706     -500,8044434   -8,3129072   -8,7459612   -77,2271042  -14,3418875  -7,5338793

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HEIGHT = 6,972 FT

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--- LOADING - 90
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497,8335266   9,0650291   10,0095348   76,6697159  -11,4261484   9,1172829
1270 706     -498,0662842   -9,0650291  -10,0204840  -76,6697159   2,7130864  -1,2307061

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--- LOADING - 270
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501,5973816   9,0648136   7,6617842   77,0205536   22,8628426   9,7455053
1270 706     -501,8301392   -9,0648136   -7,6508350  -77,0205536  -29,5238323  -1,8591152

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--- LOADING - 315
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501,6309814   8,5338202   7,9336095   77,3047028   18,5496387   13,3744440
1270 706     -501,8637390   -8,5415621   -7,9258671  -77,3047028  -25,4485130  -5,9466496

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--- LOADING - 360
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      500,5375366   8,3128424   8,7555037   77,2672806   6,6375694   14,7258406
1270 706     -500,7702637   -8,3237915   -8,7555037  -77,2672806  -14,2548590  -7,4889021

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HEIGHT = 7,792 FT

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--- LOADING - 90
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      497,9764404   9,0657463   10,0238295   76,8993149  -12,3889790   9,2214060
1270 706     -498,2091675   -9,0657463  -10,0347786  -76,8993149   3,6634798  -1,3342041

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-----
--- LOADING - 270
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z
1270 497      501,7168274   9,0725183   7,5334859   76,8976898   24,8139324   9,6872654
1270 706     -501,9495850   -9,0725183   -7,5225363  -76,8976898  -31,3633022  -1,7941731

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--- LOADING - 315
-----
MEMBER FORCES
MEMBER JOINT /----- FORCE -----//----- MOMENT -----/
                AXIAL   SHEAR Y   SHEAR Z   TORSIONAL   BENDING Y   BENDING Z

```


1270	497	501,8210144	8,4836636	7,8419075	76,9696960	20,1158276	13,5004101
1270	706	-502,0538025	-8,4914055	-7,8341656	-76,9696960	-26,9349194	-6,1162510

H = 0,41 FT

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9661560	9,0654678	10,0187607	76,8809052	-12,3591690	9,2159376
1270	706	-498,1989441	-9,0654678	-10,0297098	-76,8809052	3,6380813	-1,3289783

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,8174744	8,4879837	7,8399467	76,9671021	20,1149616	13,4951181
1270	706	-502,0502319	-8,4957256	-7,8322043	-76,9671021	-26,9323483	-6,1072011

H = 1,23 FT

--- LOADING - 90 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9429932	9,0660324	10,0200329	76,8521347	-12,3037500	9,2050238
1270	706	-498,1757812	-9,0660324	-10,0309830	-76,8521347	3,5815539	-1,3175733

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,8025513	8,4922457	7,8486099	77,0089722	19,9590645	13,4851284
1270	706	-502,0353088	-8,4999876	-7,8408670	-77,0089722	-26,7839870	-6,0935040

H = 1,23 FT

--- LOADING - 90 ---

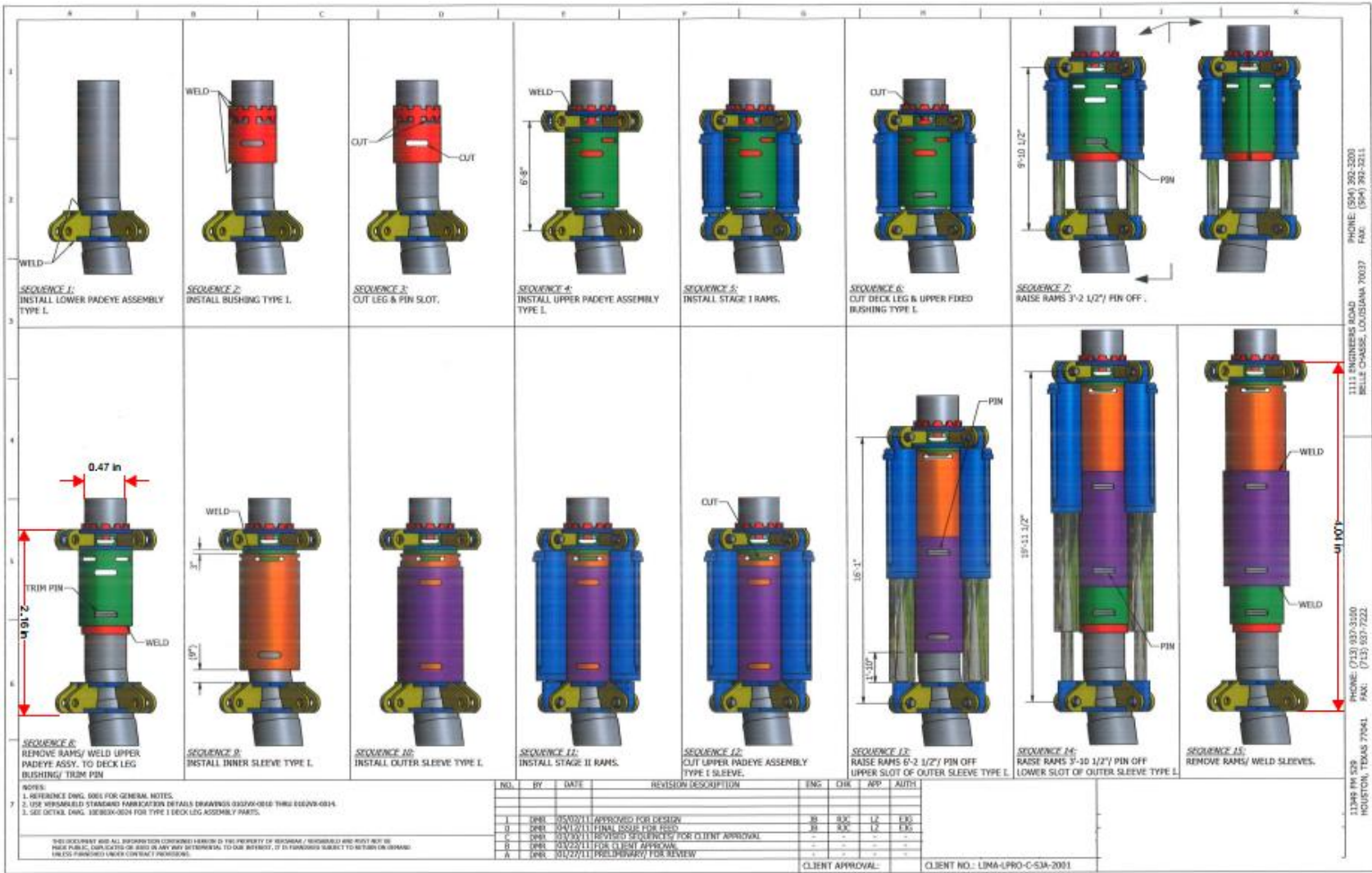
MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	497,9260559	9,0660458	10,0184221	76,8196640	-12,1967440	9,1925240
1270	706	-498,1588440	-9,0660458	-10,0293713	-76,8196640	3,4759502	-1,3050618

--- LOADING - 315 ---

MEMBER FORCES

MEMBER	JOINT	FORCE			MOMENT		
		AXIAL	SHEAR Y	SHEAR Z	TORSIONAL	BENDING Y	BENDING Z
1270	497	501,7813416	8,4999962	7,8593330	77,0551910	19,8051205	13,4626160
1270	706	-502,0141296	-8,5077391	-7,8515902	-77,0551910	-26,6393719	-6,0642471



SEQUENCE 1:
INSTALL LOWER PADEYE ASSEMBLY
TYPE L.

SEQUENCE 2:
INSTALL BUSHING TYPE I.

SEQUENCE 3:
CUT LEG & PIN SLOT.

SEQUENCE 4:
INSTALL UPPER PADEYE ASSEMBLY
TYPE L.

SEQUENCE 5:
INSTALL STAGE I RAMS.

SEQUENCE 6:
CUT DECK LEG & UPPER FIXED
BUSHING TYPE L.

SEQUENCE 7:
RAISE RAMS 3'-10 1/2" PIN OFF.

SEQUENCE 8:
REMOVE RAMS/ WELD UPPER
PADEYE ASSY. TO DECK LEG
BUSHING/ TRIM PIN.

SEQUENCE 9:
INSTALL INNER SLEEVE TYPE L.

SEQUENCE 10:
INSTALL OUTER SLEEVE TYPE L.

SEQUENCE 11:
INSTALL STAGE II RAMS.

SEQUENCE 12:
CUT UPPER PADEYE ASSEMBLY
TYPE I SLEEVE.

SEQUENCE 13:
RAISE RAMS 6'-2 1/2" PIN OFF
UPPER SLOT OF OUTER SLEEVE TYPE L.

SEQUENCE 14:
RAISE RAMS 3'-10 1/2" PIN OFF
LOWER SLOT OF OUTER SLEEVE TYPE L.

SEQUENCE 15:
REMOVE RAMS/ WELD SLEEVES.

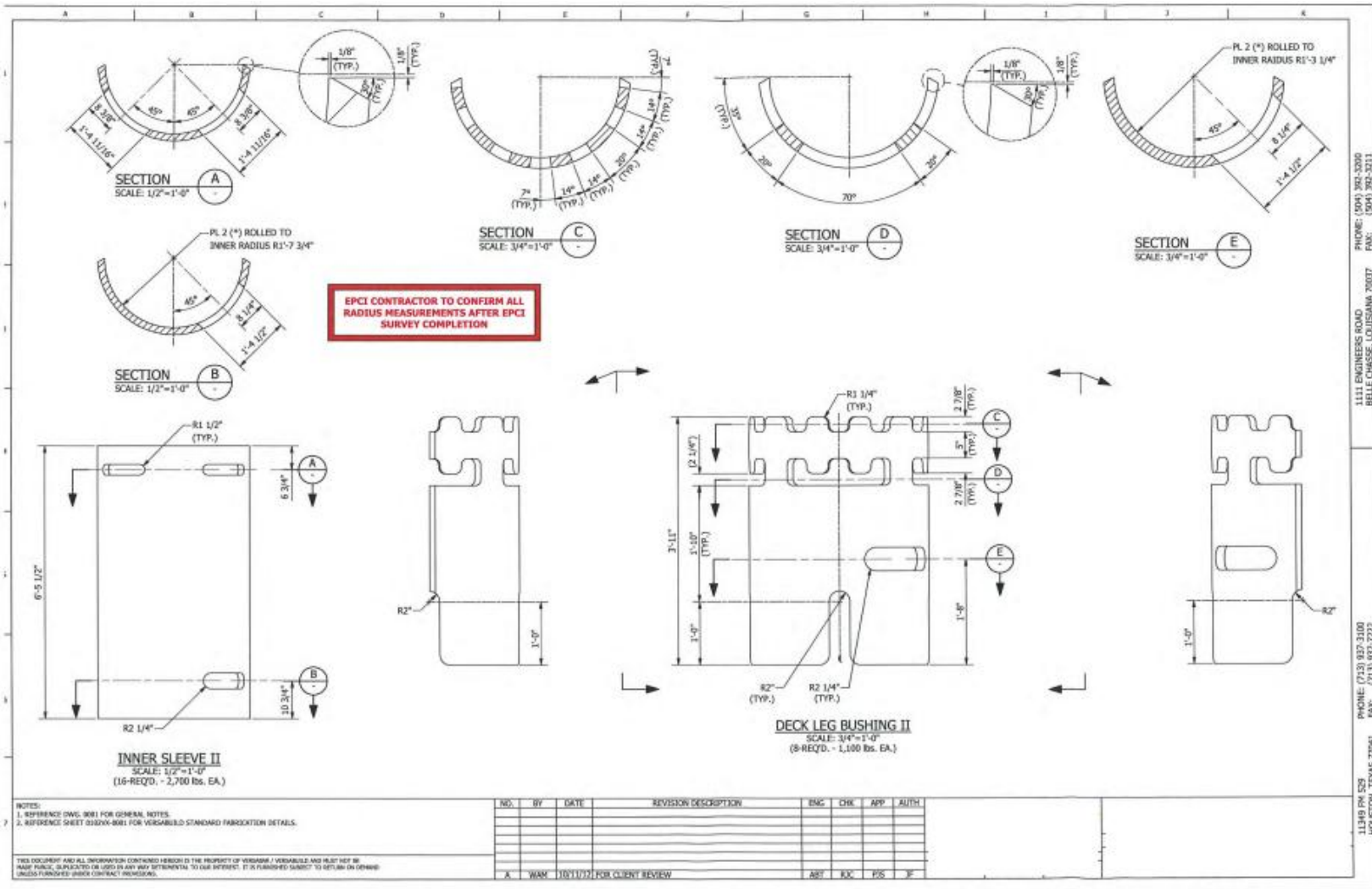
- NOTES:
1. REFERENCE DWG. 001 FOR GENERAL NOTES.
2. USE WELDED STANDARD FABRICATION DETAILS DRAWINGS 032500-0010 THRU 002500-0014.
3. SEE DETAIL DWG. 002600-0020 FOR TYPE I DECK LEG ASSEMBLY PARTS.

NO.	BY	DATE	REVISION DESCRIPTION	ENG.	CHK.	APP.	AUTH.
1	ENR	05/20/11	ISSUED FOR DESIGN	JK	JK	LZ	ENR
2	ENR	04/10/11	FINAL ISSUE FOR ISSU	JK	JK	LZ	ENR
3	ENR	03/23/11	REVISED SEQUENCES FOR CLIENT APPROVAL	-	-	-	-
4	ENR	03/23/11	FOR CLIENT APPROVAL	-	-	-	-
5	ENR	03/23/11	PRELIMINARY FOR REVIEW	-	-	-	-

CLIENT APPROVAL: _____ CLIENT NO.: LIMA-LPRO-C-53A-2001

1111 ENGINEERS ROAD
BELLE CHASSE, LOUISIANA 70037
PHONE: (504) 362-3200
FAC: (504) 369-5111

11248 FM 529
HOUSTON, TEXAS 77064
PHONE: (713) 937-3100
FAC: (713) 937-7222



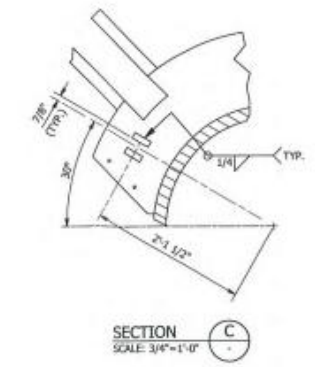
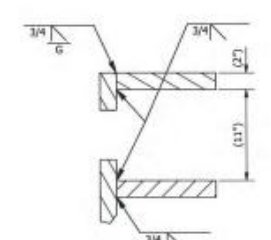
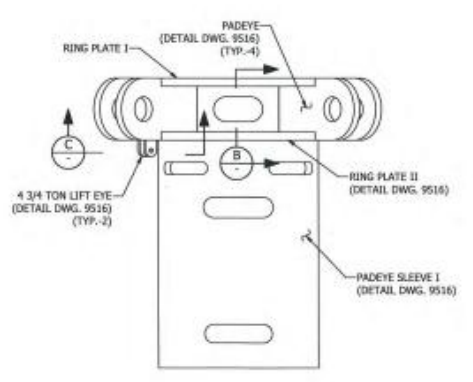
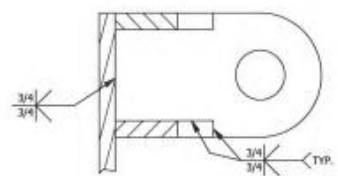
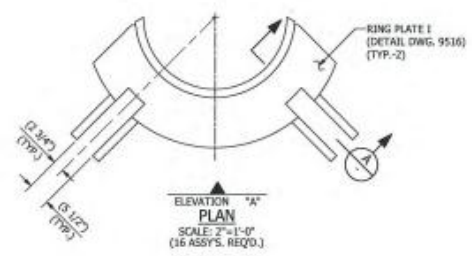
EPCI CONTRACTOR TO CONFIRM ALL RADIUS MEASUREMENTS AFTER EPCI SURVEY COMPLETION

- NOTES:
 1. REFERENCE DWG. 9081 FOR GENERAL NOTES.
 2. REFERENCE SHEET 02020X-9081 FOR VERIFIABLE STANDARD FABRICATION DETAILS.

NO.	BY	DATE	REVISION DESCRIPTION	ENG	CHK	APP	AUTH
1	WAK	10/11/19	FOR CLIENT REVIEW	ABT	BJC	FGS	JF

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 1111 ENGINEERS ROAD BELLE CHASSE, LOUISIANA 70007
 PHONE: (504) 392-3200 FAX: (504) 392-3211



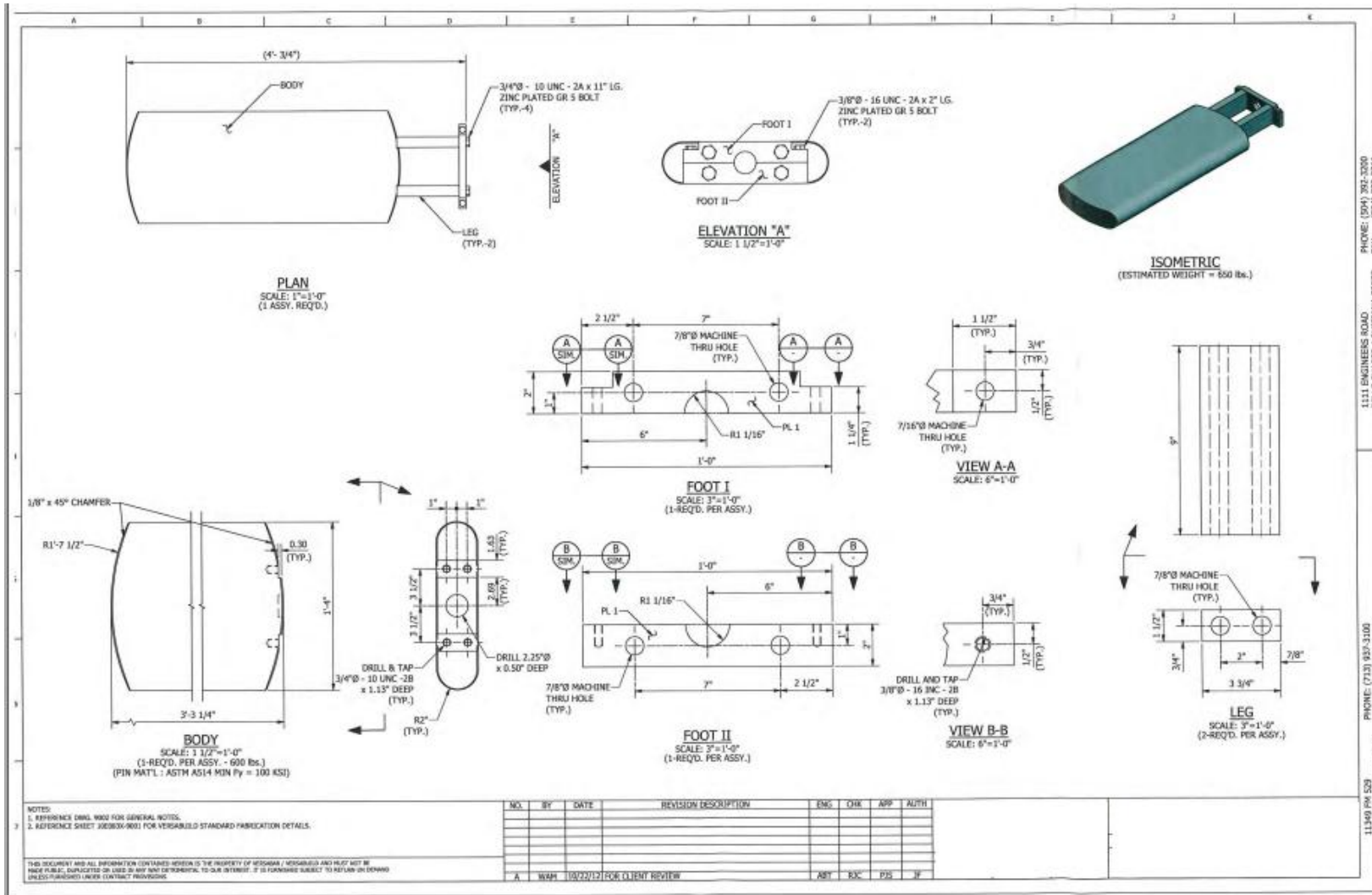
NOTES:
 1. REFERENCE DWG. 9803 FOR GENERAL NOTES.
 2. REFERENCE SHEET 3203031-9001 FOR VERBAFIELD STANDARD FABRICATION DETAILS.

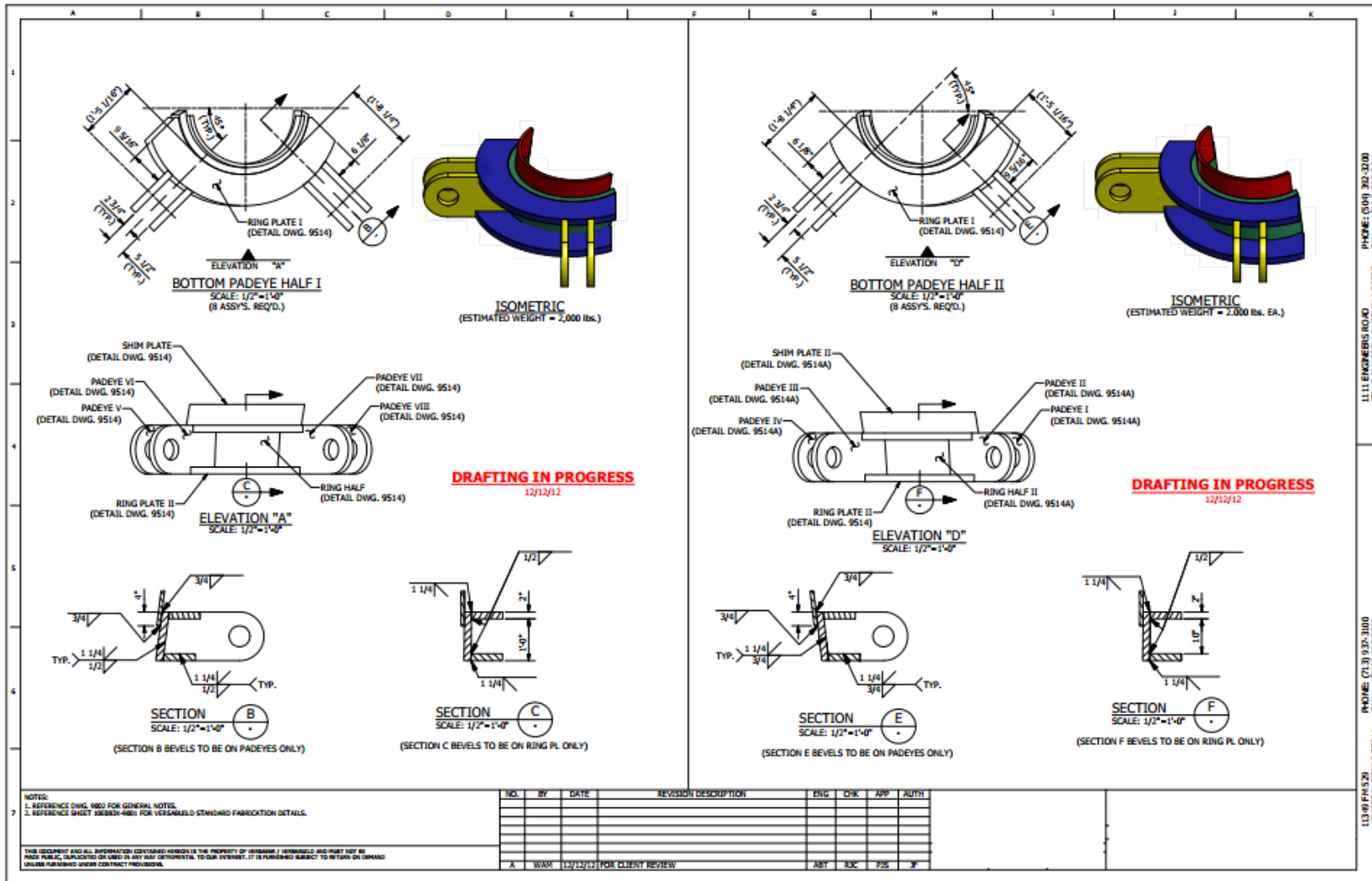
NO.	BY	DATE	REVISION DESCRIPTION	ENG.	CHK.	APP.	DATE
A	INAH	10/20/12	FOR CLIENT REVIEW	ABY	RJC	PSJ	JF

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1111 ENGINEERS ROAD
 BELLE CHASSE, LOUISIANA 70037
 PHONE: (504) 392-3200
 FAX: (504) 392-3211

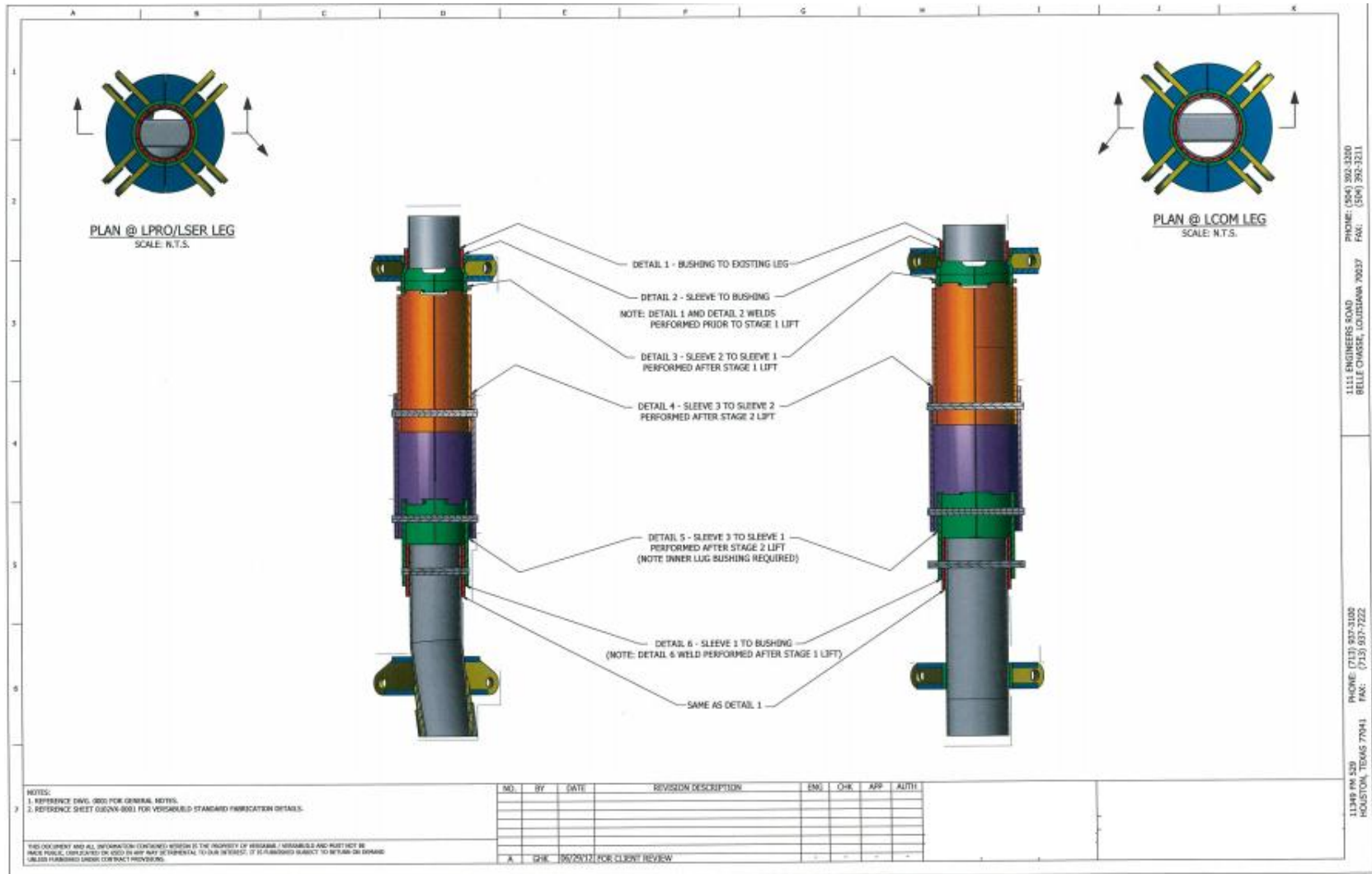
11249 FM 520
 HOUSTON, TEXAS 77041
 PHONE: (713) 837-3100
 FAX: (713) 837-7222





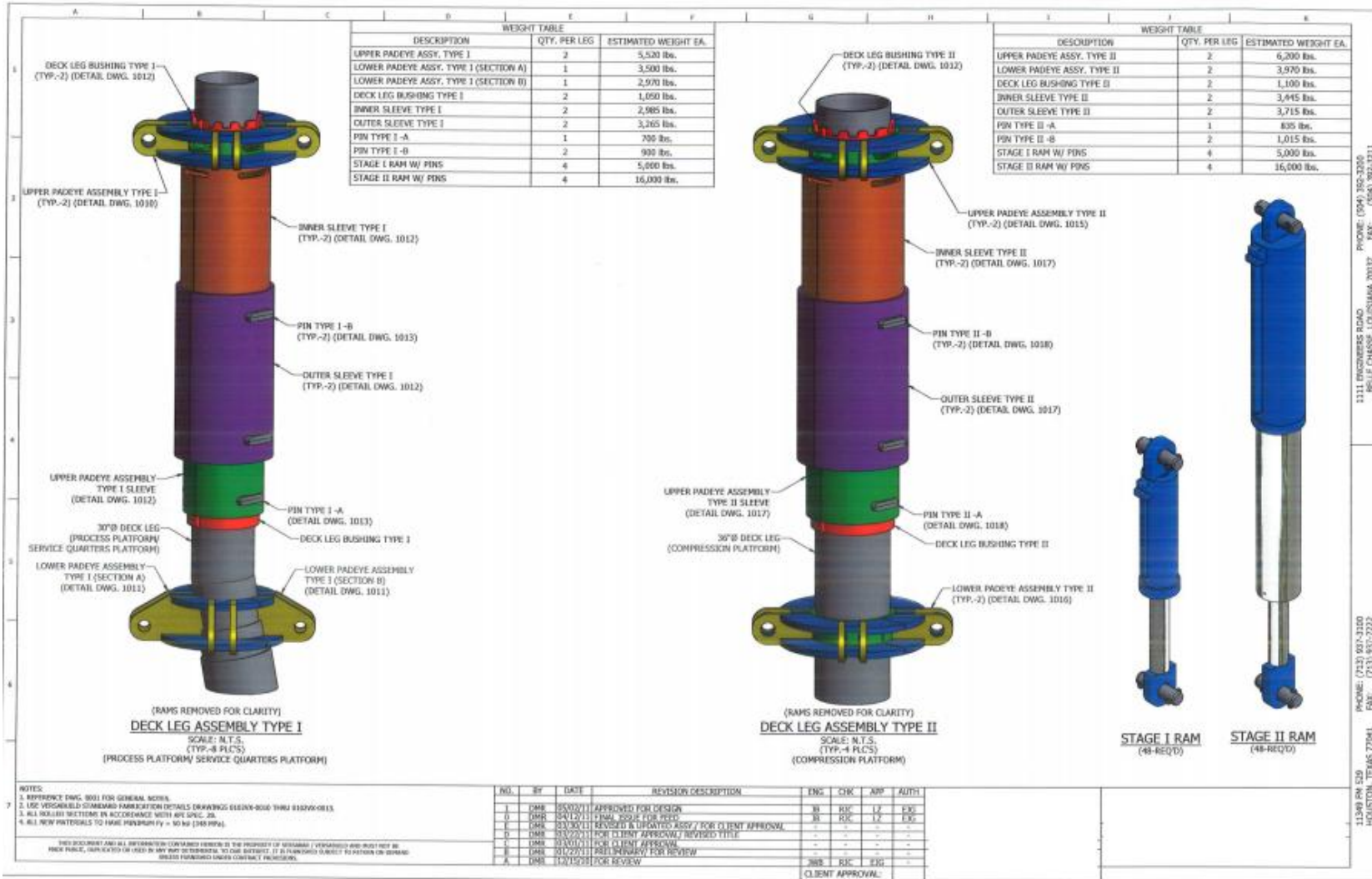
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BELLE CHASSE, LOUISIANA 70037
PHONE: (504) 392-3200
FAX: (504) 392-3211

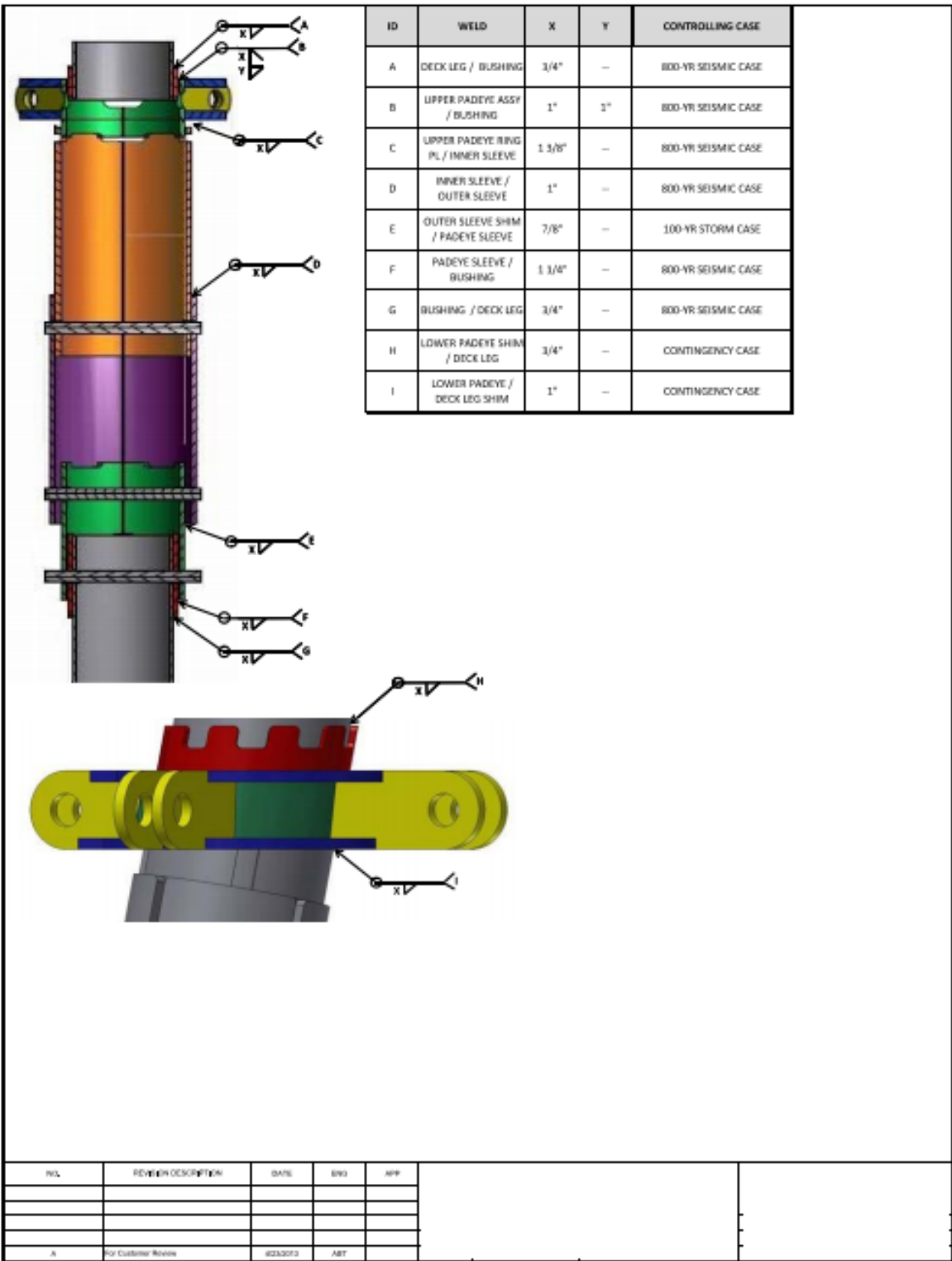
11340 PMS 20
HOUSTON, TEXAS 77061
PHONE: (713) 937-3100
FAX: (713) 937-7222



1111 ENGINEERS ROAD
 BELLE CHASSE, LOUISIANA 70037
 PHONE: (504) 392-3200
 FAX: (504) 392-3211

11119 FM 630
 HOUSTON, TEXAS 77041
 PHONE: (713) 637-3105
 FAX: (713) 637-7222

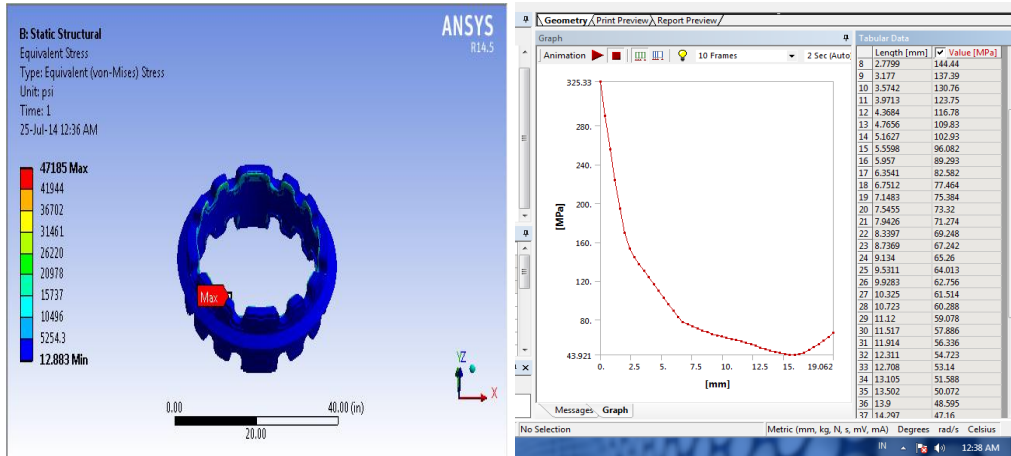




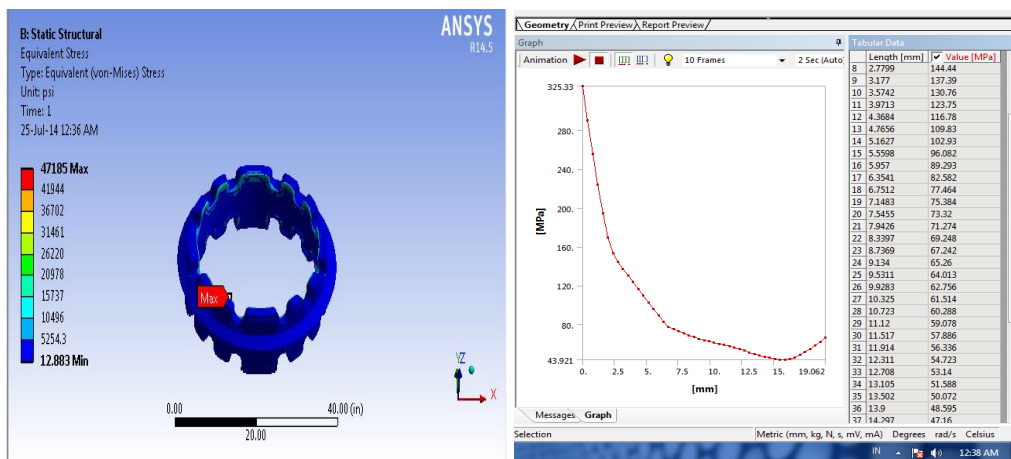
OUTPUT DISTRIBUSI TEGANGAN DARI SOFTWARE ANSYS 14.5

$H_s = 0.41 \text{ FT}$

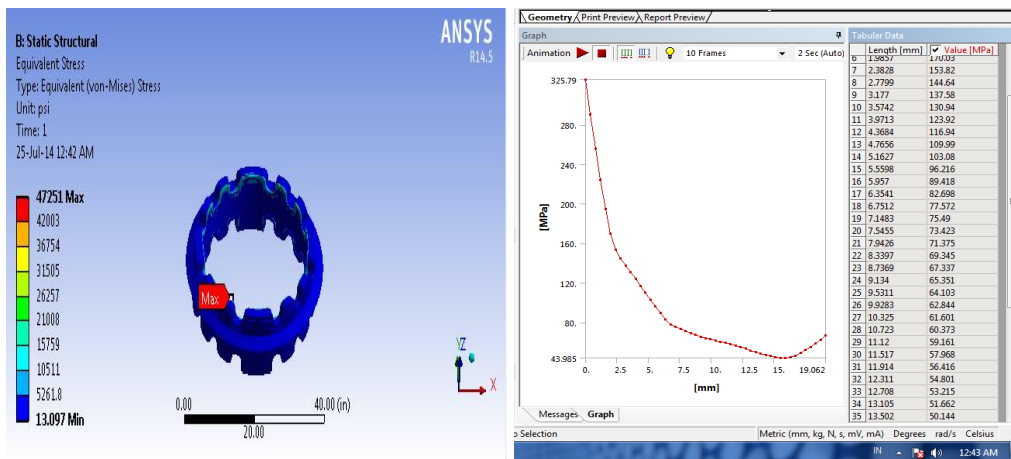
Arah = 45 Derajat



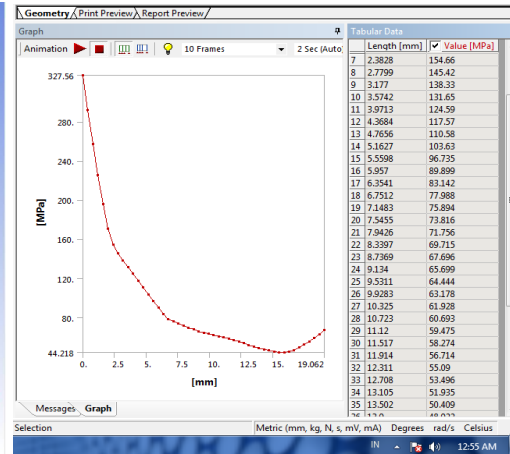
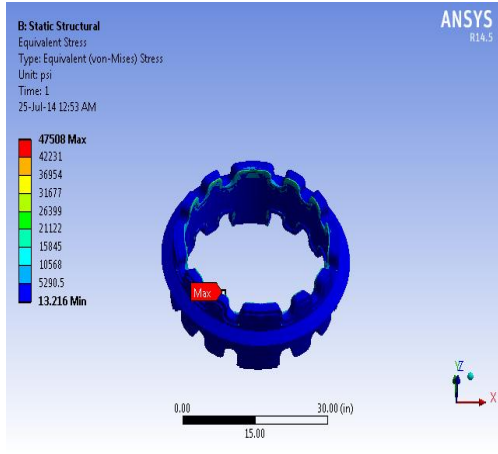
Arah = 90 Derajat



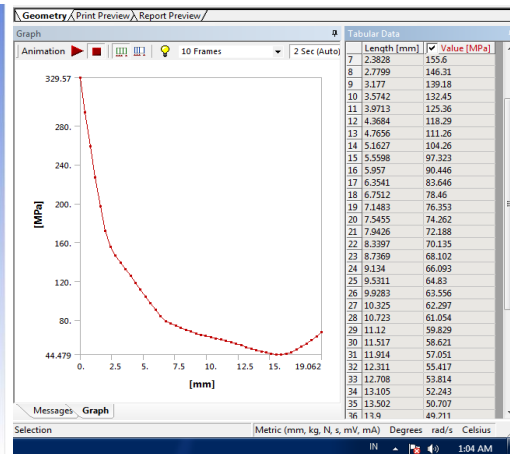
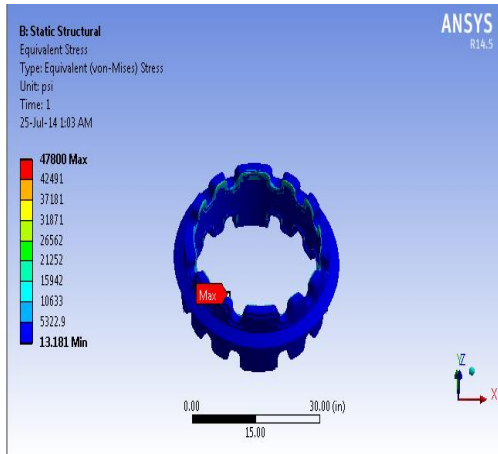
Arah = 135 Derajat



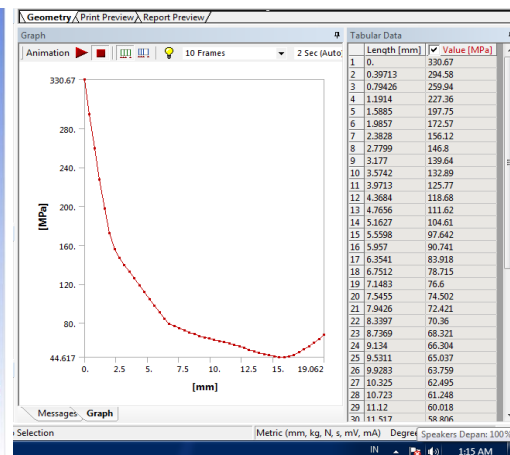
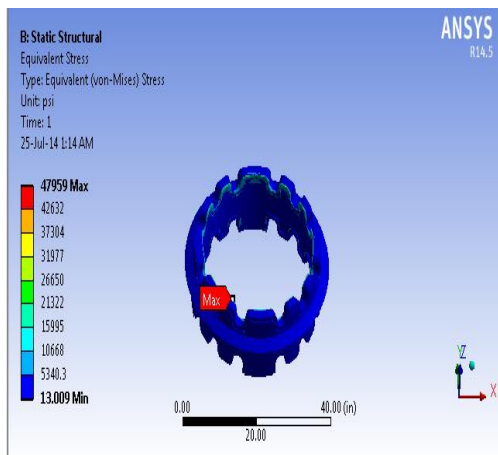
Arah = 180 Derajat



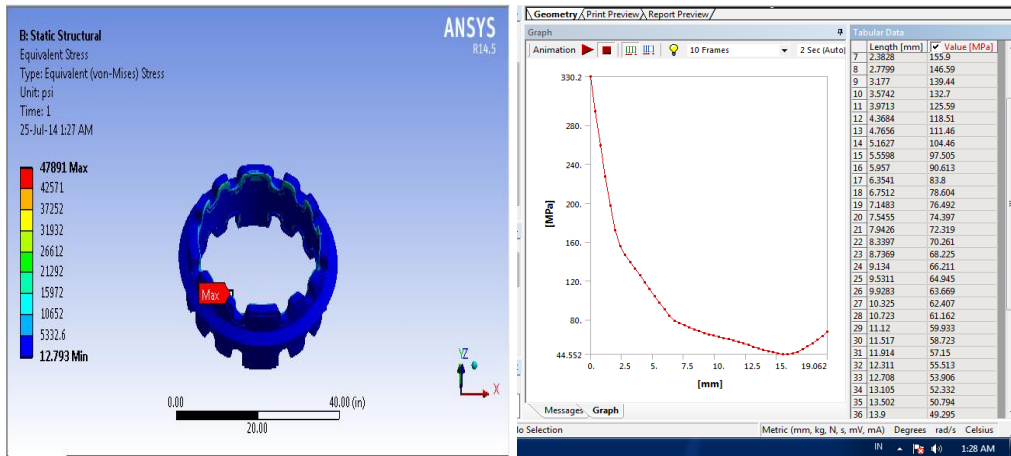
Arah = 225 Derajat



Arah = 270 Derajat



Arah = 315 Derajat



Arah = 360 Derajat

