

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0109183

Insp Area: 4

Thos Bros: 276H1

Site Address: 4230 WINDSONG ST SAC

Parcel No: 225-1240-006

Sub-Type: RES

Housing (Y/N):

CONTRACTOR

IMPERIAL POOLS
3912 KENWOOD WAY
ROSEVILLE 95747

OWNER

HAYES
4230 WINDSONG ST
SAC CA 95621

ARCHITECT

Nature of Work: VINYL LINER POOL - NO HEATER

CONSTRUCTION LENDING AGENCY: I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name Lender's Address

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class 657 License Number 455629 Date 8/21/01 Contractor Signature

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. B & PC for this reason:

Date Owner Signature

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 8/21/01 Applicant/Agent Signature

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier STATE FUND Policy Number 713000004184 Exp Date

(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 8/20/01 Applicant Signature

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.



0109183 R POOL
4230 WINDSONG ST.

CITY OF SACRAMENTO Neighborhoods, Planning and Development Services Division
1231 I Street, Rm. 200, Sacramento, CA 95814

NOISE/21/00

1002 8 905

0109183

Requirements for Pool Construction

1. Construction in Expansive Soil Areas

It is likely that expansive soils are present at any site within the City of Sacramento, so reinforcing and gunite should be designed to withstand the increased forces from this type of soil.

2. Minimum Landscape Strip

A 3' landscape strip is required between the edge of the pool decking and the property line, or else provide a drainage system to prevent pool water from crossing the property lines.

3. Minimum Pool and Equipment Setbacks (measured from edge of pool water and from pool equipment)

< 60' to front property line:

Front - 25'

Side - 5'

Rear - 3'

Street side - 12 1/2' *

> 60' to front property line:

Front - n.a.

Side - 3'

Rear - 3'

Street side - 5' *

* Applies at corner lots. Minimum fence setback at the street side of corner lots is 5'.

4. Pool Surcharge Setback

Pool excavations shall not encroach below a line extending at a slope of one to one downward from the bottom of any building footings or from a property line, unless the pool and excavation are approved in writing by a soils engineer.

5. Pool Equipment Noise Abatement

Equipment noise levels must be within the maximum levels set per Sacramento City Code Section 8.68.110.

6. Safety Glazing

Safety glazing is required in any window where the bottom is less than 60 inches above the pool decking and where the window is also within 5' of the edge of pool water.

7. Pool Barriers

Barriers or other means are required to limit access to the pool from the home and from neighboring properties. All provisions of the attached State of California Health and Safety Code Sections 115920 through 115927 shall apply, and at least one of the following features shall be provided. Items C and D apply only to access from the home.

- A. Provide an access barrier completely enclosing the pool area that complies with the following:
 - i) Gates shall open away from the pool, shall be self-closing, and shall have a self-latching device placed at least 60 inches above the ground.
 - ii) Barriers shall be a minimum 60 inch in height.
 - iii) Maximum vertical clearance from the ground to the bottom of the barrier is two inches.
 - iv) Railings shall not allow passage of a sphere four inches or more in diameter.
 - v) Barriers shall be free of protrusions, cavities, or other physical characteristics that would serve as handholds or footholds that could enable a child below the age of five years to climb over.
- B. Provide an approved cover for the pool.
- C. Provide exit alarms on all doors providing direct access from the home to the pool.
- D. Provide a self-closing, self-latching device with a release mechanism placed no lower than 54 inches above the floor on all doors providing direct access from the home to the pool.
- E. Provide other means of protection if the degree of protection afforded is equal to or greater than that afforded by any of the devices set forth in items A through D above and if approved by the Building Official.



STATE HEALTH AND SAFETY CODE SEC. 115920-115927

115920. This act shall be known and may be cited as the Swimming Pool Safety Act.

115921. As used in this article the following terms have the following meanings:

- (a) "Swimming Pool" or "Pool" means any structure intended for swimming or recreational bathing that contains water over 18 inches deep. "Swimming Pool" includes in-ground and above-ground structures and includes, but is not limited to, hot tubs, spas, portable spas, and non-portable wading pools.
- (b) "Public Swimming Pool" means a swimming pool operated for the use of the members and guests of a private club. Public swimming pool does not include a swimming pool located on the grounds of a private single-family home.
- (c) "Enclosure" means a fence, wall, or other barrier that isolates a swimming pool from access to the home.
- (d) "Approved Safety Pool Cover" means a manually or power-operated safety pool cover that meets all of the performance standards of the American Society for Testing and Materials (ASTM), in compliance with standard F1346-91.
- (e) "Exit Alarms" means devices that make audible, continuous alarm sounds when any door or window, that permits access from the residence to the pool area that is without any intervening enclosure, is opened or is left ajar. Exit alarms may be battery operated or may be connected to the electrical wiring of the building.

115922. Commencing January 1, 1998, except as provided in Section 115925, whenever a construction permit is issued for construction of a new swimming pool at a private,

single-family home it shall be equipped with at least one of the following safety features:

- (a) The pool shall be isolated from access to a home by an enclosure that meets the requirements of Section 115923.
- (b) The pool shall be equipped with an approved safety pool cover
- (c) The residence shall be equipped with exit alarms on those doors providing direct access to the pool.
- (d) All doors providing direct access from the home to the swimming pool shall be equipped with a self-closing, self-latching device with a release mechanism placed no lower than 54 inches above the floor.
- (e) Other means of protection, if the degree of protection afforded is equal to or greater than that afforded by any of the devices set forth in subdivision (a) to (d), inclusive, as determined by the building official of the jurisdiction issuing the applicable building permit. Any ordinance governing child access to pools adopted by a political subdivision on or before January 1, 1997 is presumed to afford protection that is equal to or greater than that afforded by any of the devices set forth in subdivisions (a) to (d), inclusive

115923. An enclosure shall have all of the following characteristics:

- (a) Any access gates through the enclosure open away from the swimming pool, and are self-closing with a self-latching device placed no lower than 60 inches above the ground.
- (b) A minimum height of 60 inches.
- (c) A maximum vertical clearance from the ground to the bottom of the enclosure of two inches.
- (d) Gaps or voids, if any, do not allow passage of a sphere equal to or greater than four inches in diameter.
- (e) An outside surface free of protrusions, cavities, or other physical characteristics that would serve as handholds or footholds that could enable a child below the age of five years to climb over.

115924. Any person entering into an agreement to build a swimming pool shall give the consumer notice of the requirements of this article.

115925. The requirements of this article shall not apply to any of the following:

- (a) Public swimming pools.
- (b) Hot tubs or spas with locking safety covers that comply with the American Society for Testing Materials-Emergency Performance Specification (ASTM-ES 13-89).
- (c) Any pool within the jurisdiction of any political subdivision that adopts an ordinance for swimming pool safety that includes requirements that are at least as stringent as this article.
- (d) An apartment complex, or any residential setting other than a single-family home.

115926. This article does not apply to any facility regulated by the State Department of Social Services even if the facility is also used as the private residence of the operator.

115927. Notwithstanding any other provision of law, this article shall not be subject to further modification or interpretation by any regulatory agency of the state, this authority being reserved exclusively to local jurisdictions, as provided for in subdivision (c) of Section 115922 and subdivision (c) of Section 115924.

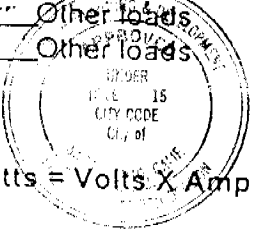
Electric Load Worksheet for the City of ~~Roseville~~

Address: 2330 Windy Sunny Date: 7/17/01
 Phone: 916 286 2665 Building - Sq. Ft.: 2010
 Gas Furnace (Y/N): _____

| | | | |
|--|-------------------------|--------------------------------------|---|
| Rating of: | | <u>Watts*</u> x % = <u>Total (a)</u> | |
| Electric Furnace | NPR (Name Plate Rating) | <u>Gas</u> x .65 = _____ | Enter the largest value (watts) from <u>Total (a)</u> ↓ ↓ <u>5760</u> ↓ Add this value to calculations below ↓ |
| Air Conditioning | NPR | _____ x 1.00 = <u>5760</u> | |
| Heat Pump | NPR | _____ x 1.00 = _____ | |
| Heater Rating (Less than 4 rooms) | | _____ x .65 = _____ | |
| Heater Rating (More than 4 rooms) | | _____ x 1.00 = _____ | |
| Air conditioning Example: Compressor = 16.0 amps Fan = 2.0 amps 25% of the largest motor = 4.0 amps Total = 22.0 amps x 230 Volts = 5,060 Watts | | | |

| Quantity | Item | Watts* |
|-------------|--|---------------|
| <u>2010</u> | Sq. Ft. x 3 watts per sq. ft. | = <u>6030</u> |
| <u>4</u> | 20 Amp appliance circuits @ 1500 watts ea. | = <u>6000</u> |
| <u>1</u> | Ranges NPR | = <u>6200</u> |
| <u>1</u> | Ovens NPR | = _____ |
| _____ | Cooking units NPR | = _____ |
| _____ | Water Heater NPR | = <u>6AS</u> |
| <u>1</u> | Dishwasher NPR | = <u>1500</u> |
| <u>1</u> | Garbage Disposal NPR | = <u>1500</u> |
| <u>1</u> | Washer NPR | = <u>1500</u> |
| <u>1</u> | Dryer NPR | = <u>500</u> |
| <u>1</u> | Motor loads NPR | = <u>1430</u> |

CITY OF SACRAMENTO
 PERMIT ASSISTANCE
 JUL 19 2001
RECEIVED
 0109183R

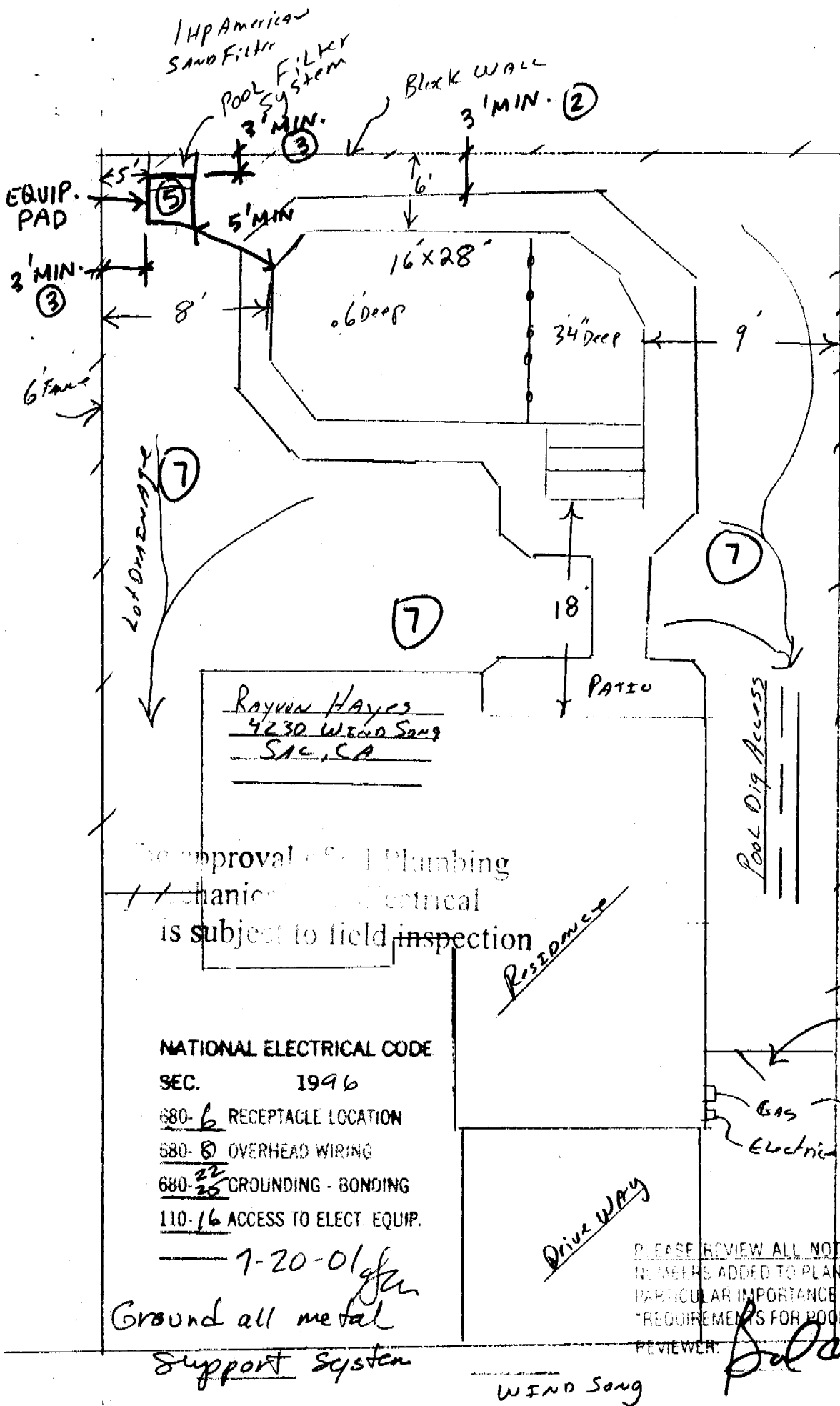


This shall be kept on the job at all times and it is unlawful to make any changes or alterations from the same without the approval of the Building Inspection Division. Less - 10,000

Watts = Volts X Amps
 Total = 9463 x .40 = 7654
 Grand Total (watts) = 23420 - 240 = 23180
 Service Load (Amps) = 23180 / 230 Volts = 100.8

Panel size: 200 Amp.
 b-panels to be installed? NO How many? _____
 Amp Rating? _____ Wire Size? _____

Print name: Imperial Pool's Electrical Contractor / Owner - Builder
 State License number: 455-629 C-53
 Signature: _____ Electrical Contractor / Owner - Builder



MAXIMUM ALLOWED POOL EQUIPMENT SOUND LEVELS
 MEASURED WITHIN BOUNDARIES OF ADJACENT PROPERTIES:
 - 60 dBA 1' INSIDE PROPERTY LINE
 - 55 dBA 3' - 5' ABOVE GROUND IN CENTER OF ANY PATIO
 - 55 dBA OUTSIDE HOUSE WINDOW CLOSEST TO EQUIPMENT
 (PER SACRAMENTO CITY CODE SEC. 8.68.110)

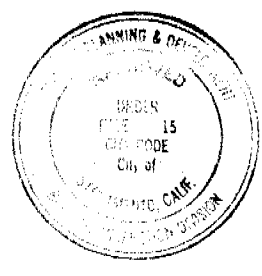
The approval of all Plumbing
 / Mechanical / Electrical
 is subject to field inspection

NATIONAL ELECTRICAL CODE
 SEC. 1996
 680-6 RECEPTACLE LOCATION
 680-8 OVERHEAD WIRING
 680-22 GROUNDING - BONDING
 110-16 ACCESS TO ELECT. EQUIP.

7-20-01 gfu
 Ground all metal
 support system

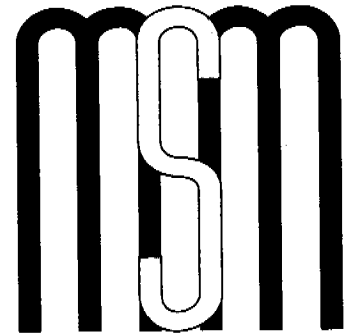
PLEASE REVIEW ALL NOTES AND ATTACHMENTS!
 REVISIONS ADDED TO PLANS DENOTE ITEMS OF
 PARTICULAR IMPORTANCE FROM ATTACHED
 "REQUIREMENTS FOR POOL CONSTRUCTION"
 REVIEWER: *[Signature]* DATE: 6/13/01

WIND Song



This set of plans and specifications must be kept on the job at all times and it is unlawful to make any change or alteration to the same without written permission from the Building Inspection Division.
 The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

CITY OF SACRAMENTO
 PERMIT ASSISTANCE
 JUL 19 2001
RECEIVED
 0109183R



MARA SHAFFER & MIYAMOTO
STRUCTURAL ENGINEERS, INC.

MSM Job No. 00171.03
March 15, 2001

STRUCTURAL CALCULATIONS & SKETCHES

FOR:

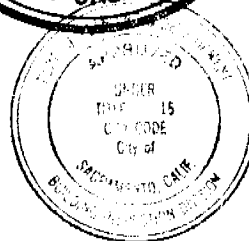
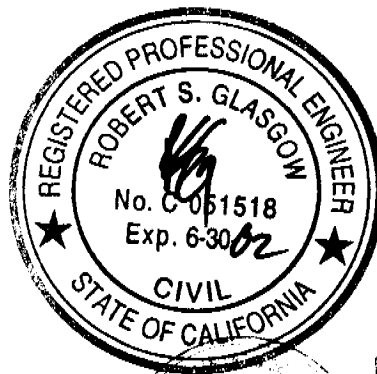
Imperial Pools Roseville, CA

CITY OF SACRAMENTO
PERMIT ASSISTANCE

JUL 19 2001

RECEIVED

0109183R



This set of plans and specifications shall be kept on the job at all times and it is unlawful to make any changes or additions from the same without written permission from the Building Inspection Division.

The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

**PROVIDING THE BEST IDEAS AND OPTIONS
SINCE 1946**

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msm@msm1.com
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president

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LON M. DETERMAN, P.E.
senior associates

GARY A. PARKER
JOHN R. TAYLOR
associates

JOHN M. SHAFFER, M.S., S.E.
of counsel

DESIGN ASSUMPTIONS

1. Equivalent fluid pressure of backfill soil to be 35 pcf.
2. Pool to be backfilled simultaneously with filling of the pool bowl with water ($\pm 12"$) backfill to be puddled and tamped by hand --- No mechanical methods.
3. Pool may be drained at any future time for short repair periods, provided ground water is below main drain.
"A" - Frame must be shored as required during drained condition.

MATERIAL PROPERTIES

1. GAGE MATERIAL — Copper bearing Steel ASTM A-653 GALV. coating

| | |
|------------------|-----------------------------|
| Yield Strength | $F_y = 30 \text{ ksi min.}$ |
| Working Stress | $F_s = 18 \text{ ksi}$ |
| Flexural Modulus | $E = 29,500 \text{ ksi}$ |

2. HOT ROLLED SHAPE — ASTM A-36 with A-123 GALV. Coating

| | |
|------------------|--------------------------|
| Tensile Strength | $F_t = 21.6 \text{ ksi}$ |
| Yield Strength | $F_y = 36 \text{ ksi}$ |
| Working Strength | $F_s = 24 \text{ ksi}$ |
| Flexural Modulus | $E = 29,000 \text{ ksi}$ |

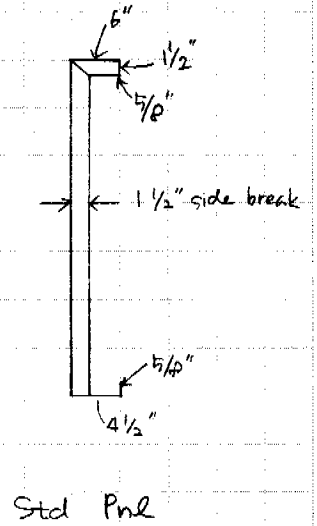
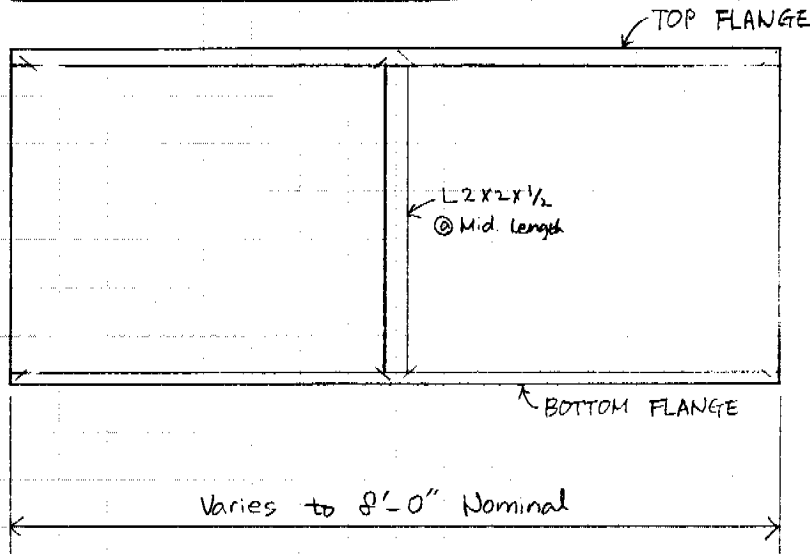
3. FASTENERS

| | |
|-------|---------|
| Bolts | A307 |
| NUTS | A563 GA |

PANEL DESIGN - STANDARD PANEL

Panel was modeled by using SAP2000 plate element with loading shown below. (Refer to p. 1B ~ 26B)

PANEL GEOMETRY



PANEL LOADING

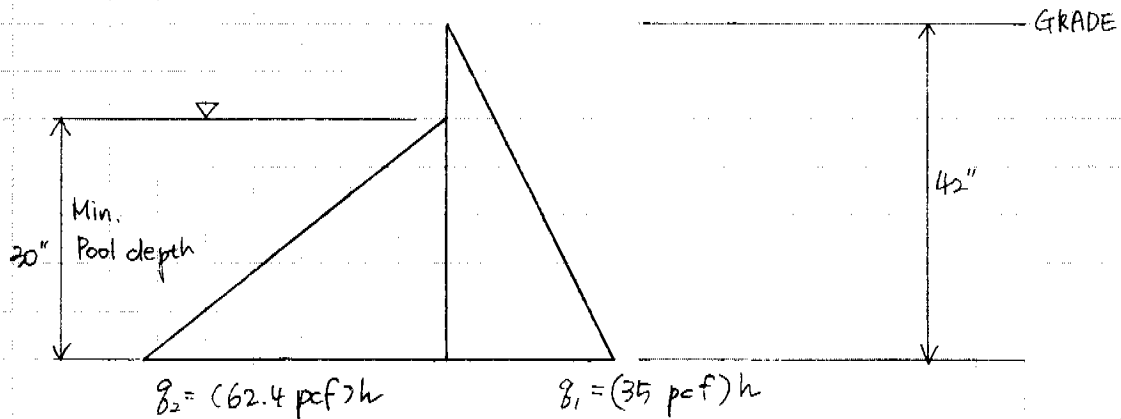


PLATE DESIGN

PLATE STRESS

Max. Moment 11.36 lb-in for the plate calculated by SAP2000

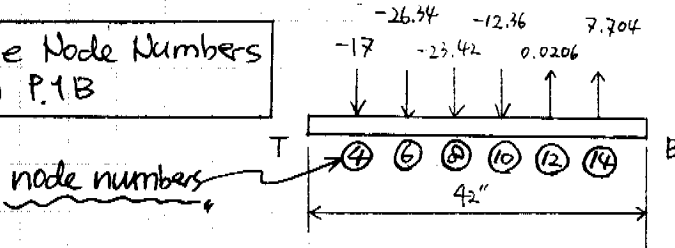
$$S_{req'd} = \frac{11.36 \text{ lb-in}}{(0.6)(30000 \text{ psi})} = 6.38 \text{ E-}04 \text{ in}^3/\text{in} \quad (\rightarrow \text{See P. 24 B})$$

$$S_{prov. (14GA)} = \frac{(1)(0.0747)^3}{6} = 9.0 \text{ E-}04 \text{ in}^3/\text{in} > 6.38 \text{ E-}04 \text{ in}^3/\text{in} \rightarrow \text{O.K!}$$

USE 14" GA PL WITH STIF
@ 48" O.C.

MID PANEL STIFFENER & PANEL EDGES

See Node Numbers
on P. 1 B



See 3.4A

By using ECOM program, the reactions and the moment are calculated for the vertical stiffener. → See Ref. ECOM of the stiffener. (3.1A ~ 3.3A)

$$R_A = 50.96 \text{ lb}$$

$$R_B = -20.444 \text{ lb}$$

$$\text{Max. M} = 555 \text{ lb-in}$$

$$S_{req'd} = \frac{555 \text{ lb-in}}{18000 \text{ lb/in}^2} = 0.031 \text{ in}^3 < S_{prov.} = 0.206 \quad (\text{See P. 10A}) \rightarrow \text{O.K!}$$

Jewel pool ≠ Classic pool

$$= 0.65 \quad (\text{See P. 11A})$$

Generic pool

$$< 0.096 \text{ Pool Edges (See P. 8A)}$$

PROGRAM : General Frame Analysis v2.05
 Marr Shaffer & Miyamoto, Inc.
 JOB : Imperial Pools
 RUN : Stiffener

PAGE NO. 1
 TIME : Tue Jul 25 10:29:03 2000
 JOB NO. : 30

| N O D A L I N F O R M A T I O N | | | | | | |
|---------------------------------|-------------------|-------|------|--------------------|----------|------------|
| NODE NO | NODAL COORDINATES | | CODE | SUPPORT CONDITIONS | | |
| | X | Y | | PX STIFF | PY STIFF | M STIFF |
| Units : In | | In | | Lb/In | Lb/In | Lb-In /Deg |
| 1 | 0.000 | 0.000 | H | | | |
| 2 | 42.000 | 0.000 | XR | | | |

| E L E M E N T I N F O R M A T I O N | | | | | | | | |
|-------------------------------------|------------|------------|----------------|---------------|--------------|--------------|-------------|-------------|
| ELEM NO | NE NODE | PE NODE | ELEM LENGTH | BETA ANGLE | PROP TYPE | ELEM TYPE | NE HINGE | PE HINGE |
| Units : In | | | | Deg | | | | |
| 1 | 1 | 2 | 42.000 | 0.00 | 1 | BEAM | | |

| E L E M E N T L O A D I N F O R M A T I O N | | | | | | | | | |
|---|--------------|--------------|-------------|--------------|------|-------|-------|-----------|------|
| REC NO | LOAD CASE | LOAD TYPE | LOAD SYS | DIST SPEC | DIST | PX | PY | M | |
| Units : In | | | | | | Lb/In | Lb/In | In-Lb /In | |
| Description : p1 | | | | | | | | | |
| Element List : 1 | | | | | | | | | |
| 1 | 1 | CONC | GLO | DIST | B | 6.00 | 0.00 | -17.00 | 0.00 |
| Description : p2 | | | | | | | | | |
| Element List : 1 | | | | | | | | | |
| 2 | 1 | CONC | GLO | DIST | B | 12.00 | 0.00 | -26.34 | 0.00 |
| Description : p3 | | | | | | | | | |
| Element List : 1 | | | | | | | | | |
| 3 | 1 | CONC | GLO | DIST | B | 18.00 | 0.00 | -23.42 | 0.00 |

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PROGRAM : General Frame Analysis v2.05                PAGE NO. 2
Marr Shaffer & Miyamoto, Inc.                       TIME : Tue Jul 25 10:29:03 2000
JOB : Imperial Pools                                 JOB NO. : 30
RUN : Stiffener
=====

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| ===== | | | | | | | | | |
|---|------|------|------|--------|-------|------|--------|------|--|
| E L E M E N T L O A D I N F O R M A T I O N | | | | | | | | | |
| REC | LOAD | LOAD | LOAD | DIST | | | | | |
| NO | CASE | TYPE | SYS | SPEC | DIST | PX | PY | M | |
| ===== | | | | | | | | | |
| Description : p4 | | | | | | | | | |
| Element List : 1 | | | | | | | | | |
| 4 | 1 | CONC | GLO | DIST B | 24.00 | 0.00 | -12.36 | 0.00 | |
| Description : p5 | | | | | | | | | |
| Element List : 1 | | | | | | | | | |
| 5 | 1 | CONC | GLO | DIST B | 30.00 | 0.00 | 0.02 | 0.00 | |
| Description : p6 | | | | | | | | | |
| Element List : 1 | | | | | | | | | |
| 6 | 1 | CONC | GLO | DIST B | 36.00 | 0.00 | 7.70 | 0.00 | |

PROGRAM : General Frame Analysis v2.05
 Marr Shaffer & Miyamoto, Inc.
 JOB : Imperial Pools
 RUN : Stiffener

PAGE NO. 3
 TIME : Tue Jul 25 10:29:04 2000
 JOB NO. : 30

=====

| E L E M E N T R E P O R T S | | | | | | | | | |
|----------------------------------|------|------|------------|-------|--------|-----------|----------|------|--|
| SIGN CONVENTION : BEAM DESIGNERS | | | | | | | | | |
| ELEM | LOAD | NODE | AXIAL | SHEAR | MOMENT | MAX | MOM/DEFL | DIST | |
| NO | COMB | NO | | | | | | | |
| | | | Units : Lb | Lb | Lb-In | Lb-In /In | In | | |

=====

LOAD COMBINATIONS:

COMB 1 : 1.00 X CASE 1

| | | | | | | | | | |
|---|---|---|--------|----------|--------|----------|-------|--|--|
| 1 | 1 | 1 | 0.0000 | 50.9593 | 0.0000 | 555.2266 | 18.00 | | |
| | | 2 | 0.0000 | -20.4361 | 0.0000 | | | | |

=====

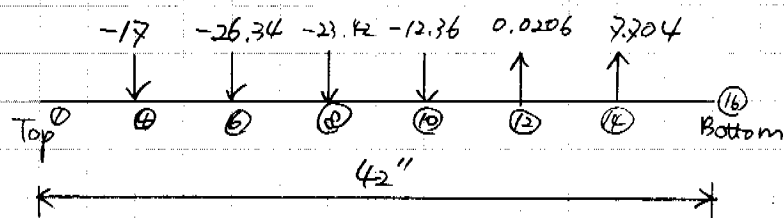
| R E A C T I O N S | | | | | |
|-------------------|------|------------|----|--------|--|
| NODE | LOAD | PX | PY | MOMENT | |
| NO | COMB | | | | |
| | | Units : Lb | Lb | Lb-In | |

=====

LOAD COMBINATIONS:

COMB 1 : 1.00 X CASE 1

| | | | | | | |
|---|---|--------|---------|--------|--|--|
| 1 | 1 | 0.0000 | 50.9593 | 0.0000 | | |
| 2 | 1 | 0.0000 | 20.4361 | 0.0000 | | |



See 1B + 20B

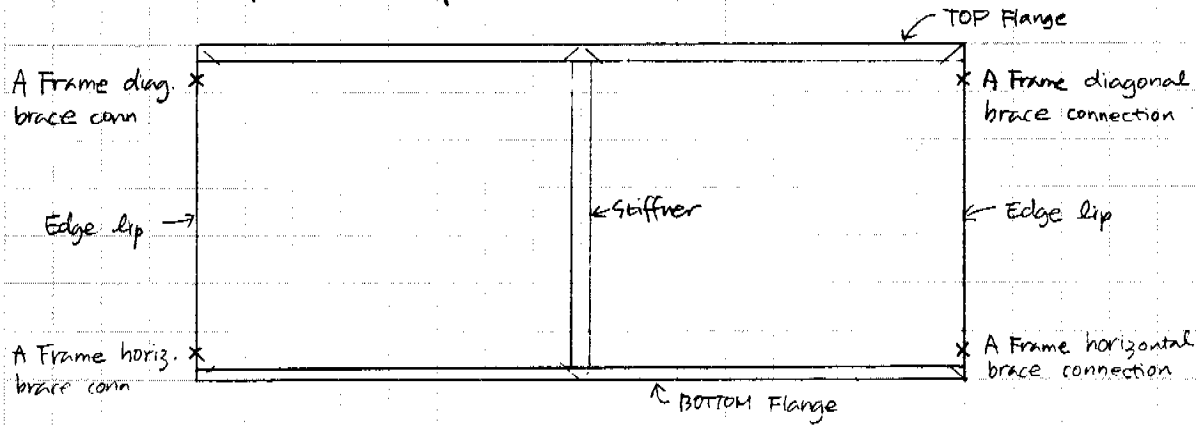
at points 1, 4, 6, 8, 10, 12, 14, 16

| | | | |
|------|----------------------|-----|----------|
| 4 ; | -0.5 (from page 20B) | x 2 | = -17 |
| 6 ; | -13.17 | x 2 | = -26.34 |
| 8 ; | -11.71 | x 2 | = -23.42 |
| 10 ; | -6.18 | x 2 | = -12.36 |
| 12 ; | 0.0103 | x 2 | = 0.0206 |
| 14 ; | 3.852 | x 2 | = 7.704 |

↑ Reaction F₃ Column

PANEL DESIGN

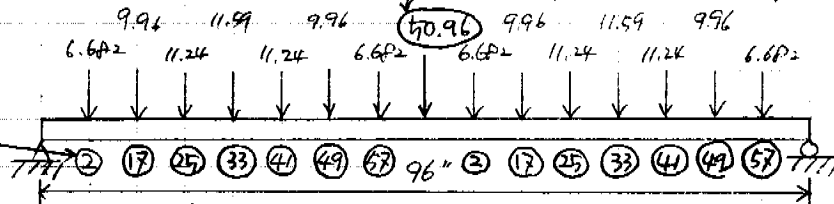
Check panel to span horizontal between A Frames



TOP FLANGE LOADING - Loads obtained by SAP 2000 model

(→ See P. 20B ~ 22B)

Reaction from mid. stiffener (See P. 3A)



$R = 92.23 \text{ lb}$

→ See Ref. ECOM of the top flange (4.1A ~ 4.4A)

$M = 2040 \text{ lb-in}$

$S_{req'd} = \frac{2040}{18000} = 0.113 \text{ in}^3 < S_{prov} = 0.321 \text{ in}^3 \rightarrow \text{O.K! (See P. 9A)}$
Jewel & Classic Pools"

$< S_{prov} = 0.65 \text{ in}^3 \text{ (See P. 11A)}$
Generic Pools"

See Node Numbers on P. 1B

```

=====
PROGRAM : General Frame Analysis v2.05
Marr Shaffer & Miyamoto, Inc.
JOB : Imperial Pool
RUN : Top Flange
PAGE NO. 1
TIME : Mon Jul 24 08:26:01 2000
JOB NO. : 26
=====

```

```

=====
N O D A L I N F O R M A T I O N
NODAL COORDINATES SUPPORT CONDITIONS
=====

```

| NODE NO | X | Y | CODE | PX STIFF | PY STIFF | M STIFF |
|---------|------------|-------|------|----------|----------|------------|
| | Units : In | | | Lb/In | Lb/In | Lb-In /Deg |
| 1 | 0.000 | 0.000 | H | | | |
| 2 | 96.000 | 0.000 | XR | | | |

```

=====
E L E M E N T I N F O R M A T I O N
=====

```

| ELEM NO | NE NODE | PE NODE | ELEM LENGTH | BETA ANGLE | PROP TYPE | ELEM TYPE | NE HINGE | PE HINGE |
|---------|------------|---------|-------------|------------|-----------|-----------|----------|----------|
| | Units : In | | | Deg | | | | |
| 1 | 1 | 2 | 96.000 | 0.00 | 1 | BEAM | | |

```

=====
E L E M E N T L O A D I N F O R M A T I O N
=====

```

| REC NO | LOAD CASE | LOAD TYPE | LOAD SYS | DIST SPEC | DIST | PX | PY | M |
|------------------|------------|-----------|----------|-----------|-------|-------|--------|-----------|
| | Units : In | | | | | Lb/In | Lb/In | In-Lb /In |
| Description : p1 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 1 | 1 | CONC | GLO | DIST B | 6.00 | 0.00 | -6.68 | 0.00 |
| Description : p2 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 2 | 1 | CONC | GLO | DIST B | 12.00 | 0.00 | -9.96 | 0.00 |
| Description : p3 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 3 | 1 | CONC | GLO | DIST B | 18.00 | 0.00 | -11.24 | 0.00 |

PROGRAM : General Frame Analysis v2.05

PAGE NO. 2

Marr Shaffer & Miyamoto, Inc.

TIME : Mon Jul 24 08:26:03 2000

JOB : Imperial Pool

JOB NO. : 26

RUN : Top Flange

```

=====
ELEMENT LOAD INFORMATION
REC  LOAD  LOAD  LOAD  DIST
NO   CASE  TYPE  SYS  SPEC          DIST      PX      PY      M
=====
Description : p4
Element List : 1
   4   1  CONC  GLO  DIST  B   24.00    0.00   -11.59    0.00

Description : p5
Element List : 1
   5   1  CONC  GLO  DIST  B   30.00    0.00   -11.24    0.00

Description : p6
Element List : 1
   6   1  CONC  GLO  DIST  B   36.00    0.00    -9.96    0.00

Description : p7
Element List : 1
   7   1  CONC  GLO  DIST  B   42.00    0.00    -6.68    0.00

Description : r1
Element List : 1
   8   1  CONC  GLO  DIST  B   48.00    0.00   -50.96    0.00

Description : p1'
Element List : 1
   9   1  CONC  GLO  DIST  B   54.00    0.00    -6.68    0.00

Description : p2'
Element List : 1
  10   1  CONC  GLO  DIST  B   60.00    0.00    -9.96    0.00

Description : p3'
Element List : 1
  11   1  CONC  GLO  DIST  B   66.00    0.00   -11.24    0.00

Description : p4'
Element List : 1
  12   1  CONC  GLO  DIST  B   72.00    0.00   -11.59    0.00

Description : p5'
Element List : 1
  13   1  CONC  GLO  DIST  B   78.00    0.00   -11.24    0.00

Description : p6'
Element List : 1
  14   1  CONC  GLO  DIST  B   84.00    0.00    -9.96    0.00

Description : p7'
Element List : 1

```


PROGRAM : General Frame Analysis v2.05
Marr Shaffer & Miyamoto, Inc.
JOB : Imperial Pool
RUN : Top Flange

PAGE NO. 3
TIME : Mon Jul 24 08:26:03 2000
JOB NO. : 26

| ===== | | | | | | | | | |
|---|------|------|------|------|------|-------|------|-------|------|
| E L E M E N T L O A D I N F O R M A T I O N | | | | | | | | | |
| REC | LOAD | LOAD | LOAD | DIST | | | | | |
| NO | CASE | TYPE | SYS | SPEC | DIST | PX | PY | M | |
| ===== | | | | | | | | | |
| 15 | 1 | CONC | GLO | DIST | B | 90.00 | 0.00 | -6.68 | 0.00 |

PROGRAM : General Frame Analysis v2.05
 Marr Shaffer & Miyamoto, Inc.
 JOB : Imperial Pool
 RUN : Top Flange

PAGE NO. 4
 TIME : Mon Jul 24 08:26:04 2000
 JOB NO. : 26

=====

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

| ELEM NO | LOAD COMB | NODE NO | AXIAL | SHEAR | MOMENT | MAX MOM/DEFL | DIST |
|---------|-----------|---------|-------|-------|--------|--------------|------|
|---------|-----------|---------|-------|-------|--------|--------------|------|

Units : Lb Lb Lb-In Lb-In /In In

LOAD COMBINATIONS:

COMB 1 : 1.00 X CASE 1

| | | | | | | | |
|---|---|---|--------|----------|--------|-----------|-------|
| 1 | 1 | 1 | 0.0000 | 92.8340 | 0.0000 | 2839.5360 | 48.00 |
| | | 2 | 0.0000 | -92.8340 | 0.0000 | | |

=====

R E A C T I O N S

| NODE NO | LOAD COMB | PX | PY | MOMENT |
|---------|-----------|----|----|--------|
|---------|-----------|----|----|--------|

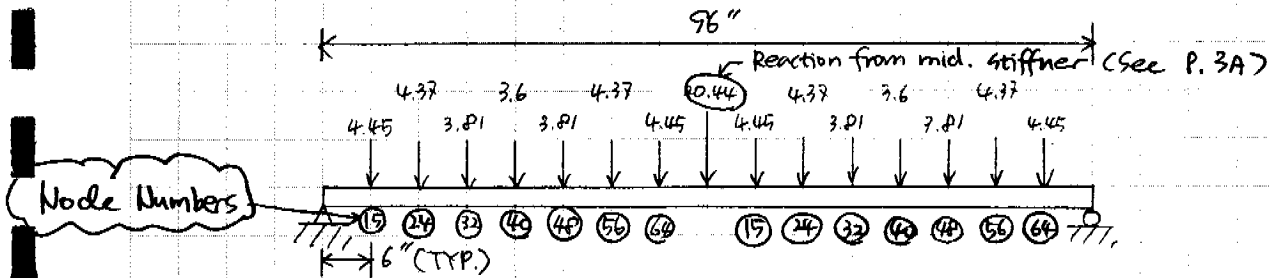
Units : Lb Lb Lb-In

LOAD COMBINATIONS:

COMB 1 : 1.00 X CASE 1

| | | | | |
|---|---|--------|---------|--------|
| 1 | 1 | 0.0000 | 92.8340 | 0.0000 |
| 2 | 1 | 0.0000 | 92.8340 | 0.0000 |

BOTTOM FLANGE LOADING - Loads obtained from SAP2000 model
(See P. 20B ~ 22B)



$R = 39.1 \text{ lb}$

→ See Ref. ECOM of the bottom flange (5.1A ~ 5.4A)

$M = 1103.2 \text{ lb-in}$

$S_{req'd} = \frac{1103.2}{18000} = 0.066 < S_{prov} = 0.321 \text{ in}^3 \rightsquigarrow \text{O.K. (See P. 9A)}$
Jewel & Classic Pools

See Node Numbers
on P. 1B

$< S_{prov} = 0.65 \text{ in}^3 \text{ (See P. 11A)}$
Generic Pools

PROGRAM : General Frame Analysis v2.05
 Marr Shaffer & Miyamoto, Inc.
 JOB : Imperial Pool
 RUN : Bottom Flange

PAGE NO. 1
 TIME : Mon Jul 24 09:01:36 2000
 JOB NO. : 27

```

=====
                      N O D A L   I N F O R M A T I O N
  NODE          NODAL COORDINATES          SUPPORT CONDITIONS
  NO            X            Y            CODE  PX STIFF  PY STIFF  M STIFF
=====
  Units : In            In            Lb/In  Lb/In  Lb-In /Deg
  1            0.000      0.000      H
  2            96.000      0.000      XR
=====
  
```

```

=====
                      E L E M E N T   I N F O R M A T I O N
  ELEM          NE          PE          ELEM          BETA          PROP          ELEM          NE          PE
  NO           NODE        NODE        LENGTH        ANGLE          TYPE          TYPE          HINGE        HINGE
=====
  Units : In            Deg
  1            1            2            96.000        0.00            1  BEAM
=====
  
```

```

=====
                      E L E M E N T   L O A D   I N F O R M A T I O N
  REC          LOAD          LOAD          LOAD          DIST          DIST          PX          PY          M
  NO           CASE        TYPE          SYS          SPEC
=====
  Units : In            Lb/In  Lb/In  In-Lb /In
  Description : p1
  Element List : 1
    1      1  CONC      GLO      DIST      B      6.00      0.00      4.45      0.00
  Description : p2
  Element List : 1
    2      1  CONC      GLO      DIST      B     12.00      0.00      4.37      0.00
  Description : p3
  Element List : 1
    3      1  CONC      GLO      DIST      B     18.00      0.00      3.81      0.00
=====
  
```

```

=====
PROGRAM : General Frame Analysis v2.05
Marr Shaffer & Miyamoto, Inc.
JOB : Imperial Pool
RUN : Bottom Flange
=====

```

```

PAGE NO. 2
TIME : Mon Jul 24 09:01:37 2000
JOB NO. : 27
=====

```

```

=====
ELEMENT LOAD INFORMATION
REC  LOAD  LOAD  LOAD  DIST
NO  CASE  TYPE  SYS  SPEC
=====

```

| REC NO | LOAD CASE | LOAD TYPE | LOAD SYS | DIST SPEC | DIST | PX | PY | M |
|-------------------|-----------|-----------|----------|-----------|-------|------|-------|------|
| Description : p4 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 4 | 1 | CONC | GLO | DIST B | 24.00 | 0.00 | 3.60 | 0.00 |
| Description : p5 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 5 | 1 | CONC | GLO | DIST B | 30.00 | 0.00 | 3.81 | 0.00 |
| Description : p6 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 6 | 1 | CONC | GLO | DIST B | 36.00 | 0.00 | 4.37 | 0.00 |
| Description : p7 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 7 | 1 | CONC | GLO | DIST B | 42.00 | 0.00 | 4.45 | 0.00 |
| Description : r2 | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 8 | 1 | CONC | GLO | DIST B | 48.00 | 0.00 | 20.44 | 0.00 |
| Description : p1' | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 9 | 1 | CONC | GLO | DIST B | 54.00 | 0.00 | 4.45 | 0.00 |
| Description : p2' | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 10 | 1 | CONC | GLO | DIST B | 60.00 | 0.00 | 4.37 | 0.00 |
| Description : p3' | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 11 | 1 | CONC | GLO | DIST B | 66.00 | 0.00 | 3.81 | 0.00 |
| Description : p4' | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 12 | 1 | CONC | GLO | DIST B | 72.00 | 0.00 | 3.60 | 0.00 |
| Description : p5' | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 13 | 1 | CONC | GLO | DIST B | 78.00 | 0.00 | 3.81 | 0.00 |
| Description : p6' | | | | | | | | |
| Element List : 1 | | | | | | | | |
| 14 | 1 | CONC | GLO | DIST B | 84.00 | 0.00 | 4.37 | 0.00 |
| Description : p7' | | | | | | | | |
| Element List : 1 | | | | | | | | |

5.3A

PROGRAM : General Frame Analysis v2.05
Marr Shaffer & Miyamoto, Inc.
JOB : Imperial Pool
RUN : Bottom Flange

PAGE NO. 3
TIME : Mon Jul 24 09:01:37 2000
JOB NO. : 27

| ===== | | | | | | | | | |
|---|------|------|------|------|------|-------|------|------|------|
| E L E M E N T L O A D I N F O R M A T I O N | | | | | | | | | |
| REC | LOAD | LOAD | LOAD | DIST | | | | | |
| NO | CASE | TYPE | SYS | SPEC | DIST | PX | PY | M | |
| ===== | | | | | | | | | |
| 15 | 1 | CONC | GLO | DIST | B | 90.00 | 0.00 | 4.45 | 0.00 |

5.4A

PROGRAM : General Frame Analysis v2.05
Marr Shaffer & Miyamoto, Inc.
JOB : Imperial Pool
RUN : Bottom Flange

PAGE NO. 4
TIME : Mon Jul 24 09:01:37 2000
JOB NO. : 27

```

=====
ELEMENT REPORTS
SIGN CONVENTION : BEAM DESIGNERS
ELEM  LOAD  NODE
NO     COMB  NO
=====
Units :  Lb          Lb          Lb-In     Lb-In /In     In

```

LOAD COMBINATIONS:

COMB 1 : 1.00 X CASE 1

| ELEM NO | LOAD COMB | NODE NO | AXIAL | SHEAR | MOMENT | MAX MOM/DEFL | DIST |
|---------|-----------|---------|--------|----------|--------|--------------|-------|
| 1 | 1 | 1 | 0.0000 | -39.0800 | 0.0000 | -1183.2000 | 48.00 |
| | | 2 | 0.0000 | 39.0800 | 0.0000 | | |

```

=====
REACTIONS
NODE  LOAD
NO    COMB
=====
Units :  Lb          Lb          Lb-In

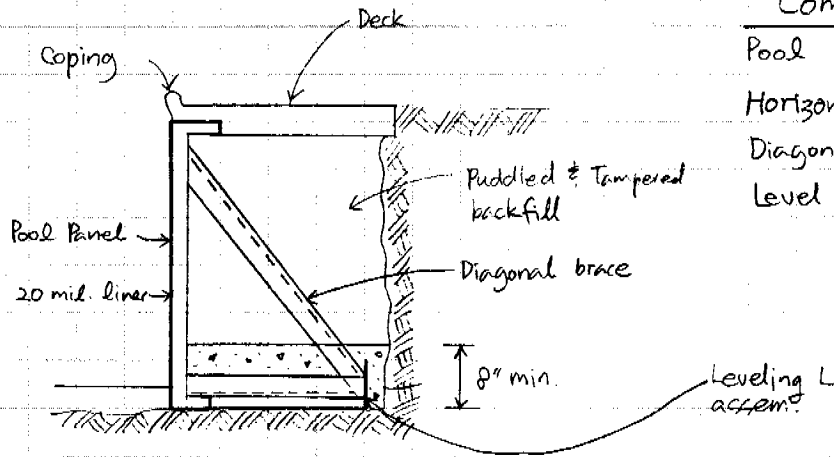
```

LOAD COMBINATIONS:

COMB 1 : 1.00 X CASE 1

| NODE NO | LOAD COMB | PX | PY | MOMENT |
|---------|-----------|--------|----------|--------|
| 1 | 1 | 0.0000 | -39.0800 | 0.0000 |
| 2 | 1 | 0.0000 | -39.0800 | 0.0000 |

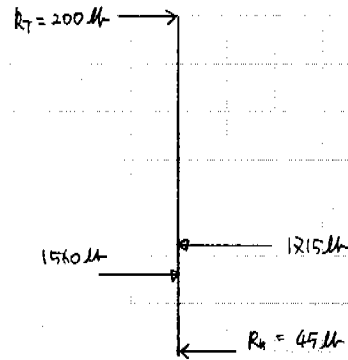
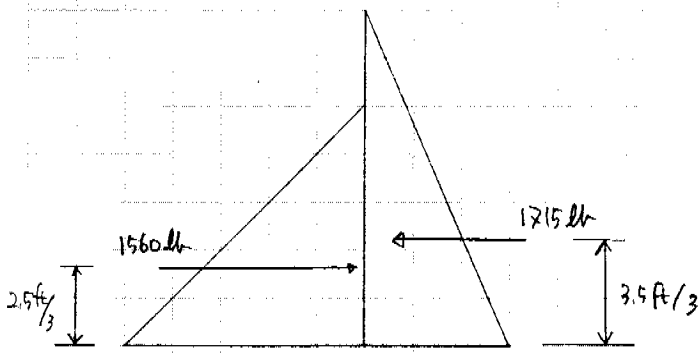
A - FRAME DESIGN



Component Sizes

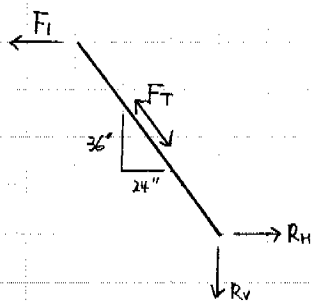
- Pool Panel - 14GA
- Horizontal Brace - 2x2 x 14GA
- Diagonal Brace - 1 1/2 x 1/2 x 12GA L
- Level L - 5 1/2 x 5 1/2 x 14GA x 11"

Check Diagonal Brace



$$\begin{aligned}
 &(62.4 \text{ pcf}) h \\
 &= (62.4 \text{ pcf})(2.5 \text{ ft}) \\
 &= 156 \text{ psf} \\
 &156 \text{ psf} \times 2.5 \text{ ft} \times \frac{1}{2} \\
 &= 195 \text{ p/ft} \\
 &195 \text{ p/ft} \times 8 \text{ ft} \\
 &= 1560 \text{ lb}
 \end{aligned}$$

$$\begin{aligned}
 &(35 \text{ pcf}) h = (35 \text{ pcf})(3.5 \text{ ft}) \\
 &= 122.5 \text{ psf} \\
 &122.5 \text{ psf} \times 3.5 \text{ ft} \times \frac{1}{2} = 214.4 \text{ p/ft} \\
 &214.4 \text{ p/ft} \times 8 \text{ ft} \\
 &= 1715 \text{ lb}
 \end{aligned}$$



$$\begin{aligned}
 F_i &= 200 \text{ lb} \\
 F_t &= (200 \text{ lb}) \left(\frac{\sqrt{36^2 + 24^2}}{24} \right) = 361 \text{ lb} \\
 f_t &= 361 \text{ lb} / 0.3028 \text{ in}^2 = 1192 \text{ psi} = 1.19 \text{ ksi} \\
 &\quad \uparrow \text{See P. 6.2A} \\
 &\quad (A = 0.3028 \text{ in}^2 \text{ for } L 1/2 \times 1/2 \times 12 \text{ GA}) \\
 f_t &= 1.19 \text{ ksi} < 30(0.6) = 18 \text{ ksi} \rightarrow 0.01
 \end{aligned}$$

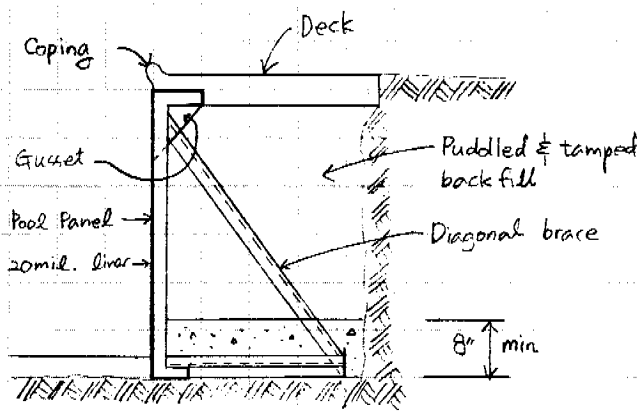
Bolt shear = $361 \text{ lb} / 0.11 \text{ in}^2 = 3.3 \text{ ksi} < 10 \text{ ksi} \rightsquigarrow \text{O.K.}$
for $3/8"$ bolt.

Check Bearing $P_b = P_n / \Omega_b = \frac{(2.22) F_u (t) (d_c)}{2.22}$ $P_b = 1.0 (30 \text{ ksi}) (0.1046 \text{ in}) (0.375 \text{ in})$
 $= 1177 \text{ lb} > 361 \text{ lb} \rightsquigarrow \text{O.K.}$

USE $1\frac{1}{2} \times 1\frac{1}{2} \times 12 \text{ GA.}$ Stl L
w/ $1 - 3/8"$ ϕ m. bolt @ each end.

A - FRAME DESIGN

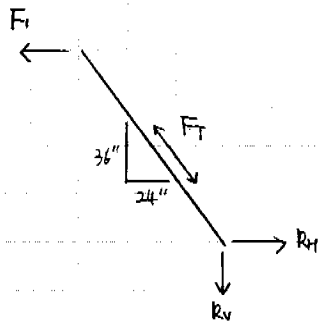
ALTERNATE



Component Sizes

- Pool Panel - 14 GA
- Horizontal Brace - $2 \times 2 \times 14 \text{ GA}$
- Diagonal Brace - $2 \times 3/4 \times 14 \text{ GA}$ \square
- Level L - $2 \times 2 \times 14 \text{ GA} \times 16"$

Check Diagonal Brace



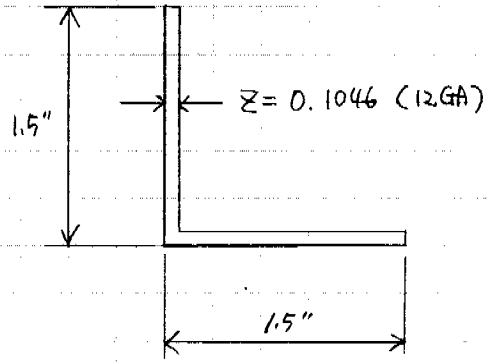
$F_i = 200 \text{ lb}$
 $F_t = (200 \text{ lb}) (\sqrt{36^2 + 24^2} / 24) = 361 \text{ lb}$
 $f_t = \frac{361 \text{ lb}}{[2 + 2(\frac{3}{8})] \cdot 0.75} = 1375 \text{ psi} = 1.38 \text{ ksi}$
 $f_t = 1.38 \text{ ksi} < f_a = 30 (0.6) = 18 \text{ ksi}$

Bolt shear = $361 \text{ lb} / 0.11 \text{ in}^2 = 3.3 \text{ ksi} < 12 \text{ ksi}$
for $3/8"$ bolt $\rightsquigarrow \text{O.K.}$

Check Bearing
 $P_b = 1.0 (30 \text{ ksi}) (0.0747 \text{ in}) (0.375 \text{ in})$
 $= 840 \text{ lb} > 361 \text{ lb} \rightsquigarrow \text{O.K.}$

USE $2 \times 3/4 \times 14 \text{ GA}$ \square
w/ $1 - 3/8"$ ϕ m. bolt @ each end

**SECTION
PROPERTIES**



| SECTION | SIZE (B x D) | | DISTANCE | A=B*D | M=A*Y | I _y =AY ² =MY | I _g =BD ³ /12 |
|---------|--------------|--------|--------------|--------------------|--------------------|-------------------------------------|-------------------------------------|
| | B (in) | D (in) | Y (in) | (in ²) | (in ³) | (in ⁴) | (in ⁴) |
| Web | 0.1046 | 1.5000 | 0.75 | 0.1569 | 0.1177 | 0.0883 | 0.0294 |
| Flange | 1.3950 | 0.1046 | 0.0523 | 0.1459 | 0.0076 | 0.0004 | 0.0001 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | TOTAL | 0.3028 | 0.1253 | 0.0887 | 0.0296 |

$N_b = M/A = 0.4138 \text{ in}$ **TOTAL DEPTH = 1.500 in**

$N_t = \text{TOTAL DEPTH} - N_b = 1.086 \text{ in}$

$I_n = I_y + I_g - M^2/A = 0.0664 \text{ in}^4$

$S_t = I_n / N_t = 0.061 \text{ in}^3$

$S_b = I_n / N_b = 0.160 \text{ in}^3$

$r = \sqrt{I_n / A} = 0.468 \text{ in}$

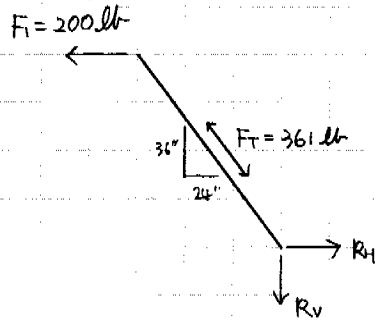
$K_t = I_n / AN_b = 0.530 \text{ in}$

$K_b = I_n / AN_t = 0.202 \text{ in}$

$Wt = 470 \text{ (lb/ft}^3) * (0.3028 / 144) * 1 = 0.99 \text{ lb/ft}$

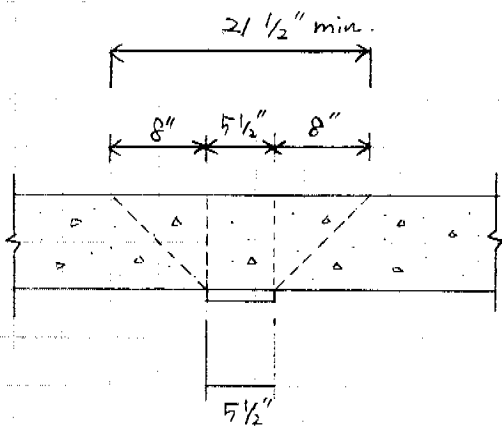
A - FRAME DESIGN (CONT.)

CHECK LEVEL PLATE ASSEMBLY

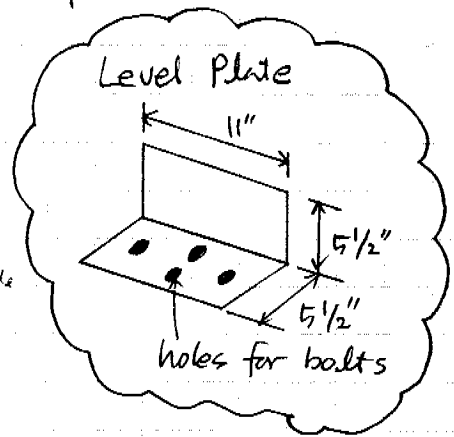


$R_H = 200 \text{ lb}$
 $R_V = (361 \text{ lb}) \frac{36}{\sqrt{36^2 + 24^2}} = 300 \text{ lb}$

Use Wt of soil above plate assembly to resist uplift



8" deep concrete



$W_s = \frac{(21.5 \text{ in})(21.5 \text{ in})}{144} (3.5 \text{ ft})(100 \text{ pcf}) = 1124 \text{ lb}$

$F.S. = \frac{1124}{300} = 3.74 \rightsquigarrow \text{O.K.}$



Check Sliding

$$F_{\text{friction}} = 0.3 (Wt) > V$$

$$\text{where Weight} = (100 \text{ pcf}) (3.5 \text{ ft}) (2.5 \text{ ft}) (8 \text{ ft})$$

volume of soils behind A frame

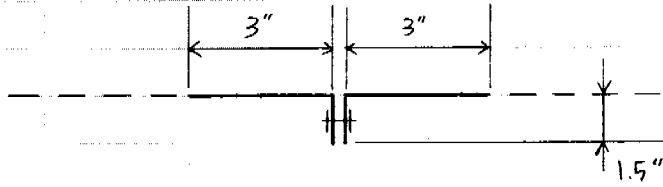
$$= 7000 \text{ lb}$$

$$V = 200 \text{ lb} - 45 \text{ lb} = 155 \text{ lb}$$

$$0.3 (7000) = \underline{2100 \text{ lb}} > \underline{155 \text{ lb}} \rightsquigarrow \underline{O.K.}$$

Standard & 2 3/8" Pool Panel
At Edges

SECTION
PROPERTIES



| SECTION | SIZE (B x D) | | DISTANCE | A=B*D | M=A*Y | I _y =AY ² =MY | I _g =BD ³ /12 |
|--------------|--------------|--------|--------------|--------------------|--------------------|-------------------------------------|-------------------------------------|
| | B (in) | D (in) | Y (in) | (in ²) | (in ³) | (in ⁴) | (in ⁴) |
| Pool Panel | 6 | 0.075 | 1.463 | 0.4500 | 0.6584 | 0.9632 | 0.0002 |
| Back Bracket | 0.149 | 1.5 | 0.75 | 0.2235 | 0.1676 | 0.1257 | 0.0419 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | TOTAL | 0.6735 | 0.8260 | 1.0889 | 0.0421 |

$N_b = M/A = 1.226 \text{ in}$ **TOTAL DEPTH = 1.500 in**

$N_t = \text{Total Depth} - N_b = 0.274 \text{ in}$

$I_n = I_y + I_g - M^2/A = 0.118 \text{ in}^4$

$S_t = I_n / N_t = 0.431 \text{ in}^3$

$S_b = I_n / N_b = 0.096 \text{ in}^3$

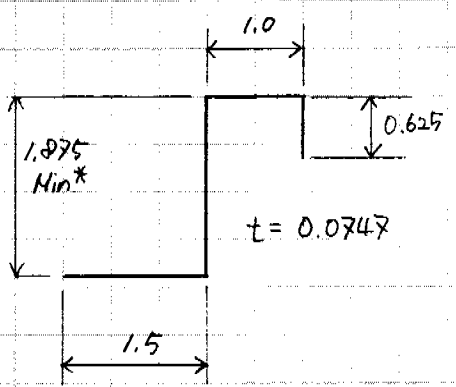
$r = \sqrt{I_n / A} = 0.419 \text{ in}$

$K_t = I_n / AN_b = 0.143 \text{ in}$

$K_b = I_n / AN_t = 0.641 \text{ in}$

SECTION PROPERTIES

VERTICAL STIFFENER



* 1.875" For Jewel Series
5" For Classic Series

| SECTION | SIZE (B x D) | | DISTANCE | A=B*D | M=A*Y | I _y =AY ² =MY | I _g =BD ³ /12 |
|---------|--------------|--------|--------------|--------------------|--------------------|-------------------------------------|-------------------------------------|
| | B (in) | D (in) | Y (in) | (in ²) | (in ³) | (in ⁴) | (in ⁴) |
| | 0.0747 | 0.55 | 1.525 | 0.0411 | 0.0627 | 0.0955 | 0.0010 |
| | 1 | 0.0747 | 1.837 | 0.0747 | 0.1372 | 0.2521 | 0.0000 |
| | 0.0747 | 1.726 | 0.9375 | 0.1289 | 0.1209 | 0.1133 | 0.0320 |
| | 1.5 | 0.0747 | 0.0374 | 0.1121 | 0.0042 | 0.0002 | 0.0001 |
| | | | | | | | |
| | | | TOTAL | 0.3568 | 0.3249 | 0.4611 | 0.0331 |

$N_b = M/A = 0.911 \text{ in}$ **TOTAL DEPTH = 1.875 in**

$N_t = \text{TOTAL DEPTH} - N_b = 0.964 \text{ in}$

$I_n = I_y + I_g - M^2/A = 0.1983 \text{ in}^4$

$S_t = I_n / N_t = 0.206 \text{ in}^3$

$S_b = I_n / N_b = 0.218 \text{ in}^3$

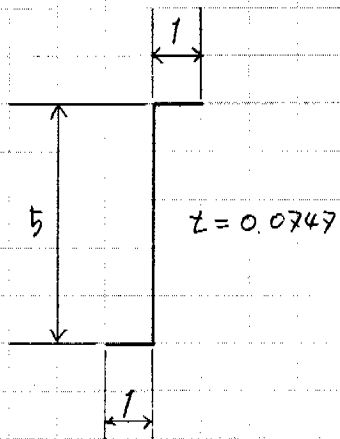
$r = \sqrt{I_n / A} = 0.745 \text{ in}$

$K_t = I_n / AN_b = 0.610 \text{ in}$

$K_b = I_n / AN_t = 0.576 \text{ in}$

**SECTION
PROPERTIES**

**VERTICAL STIFFENER
& TOP & BOTTOM FLANGE**



Generic Pool

| SECTION | SIZE (B x D) | | DISTANCE | A=B*D | M=A*Y | I _y =AY ² =MY | I _g =BD ³ /12 |
|---------|--------------|--------|--------------|--------------------|--------------------|-------------------------------------|-------------------------------------|
| | B (in) | D (in) | Y (in) | (in ²) | (in ³) | (in ⁴) | (in ⁴) |
| | 1 | 0.0747 | 4.963 | 0.0747 | 0.3707 | 1.8400 | 0.0000 |
| | 0.0747 | 4.8510 | 2.5 | 0.3624 | 0.9059 | 2.2648 | 0.7106 |
| | 1 | 0.0747 | 0.0374 | 0.0747 | 0.0028 | 0.0001 | 0.0000 |
| | | | | | | | |
| | | | | | | | |
| | | | TOTAL | 0.5118 | 1.2795 | 4.1049 | 0.7107 |

$N_b = M/A = 2.500 \text{ in}$ **TOTAL DEPTH = 5.000 in**

$N_t = \text{TOTAL DEPTH} - N_b = 2.500 \text{ in}$

$I_n = I_y + I_g - M^2/A = 1.6169 \text{ in}^4$

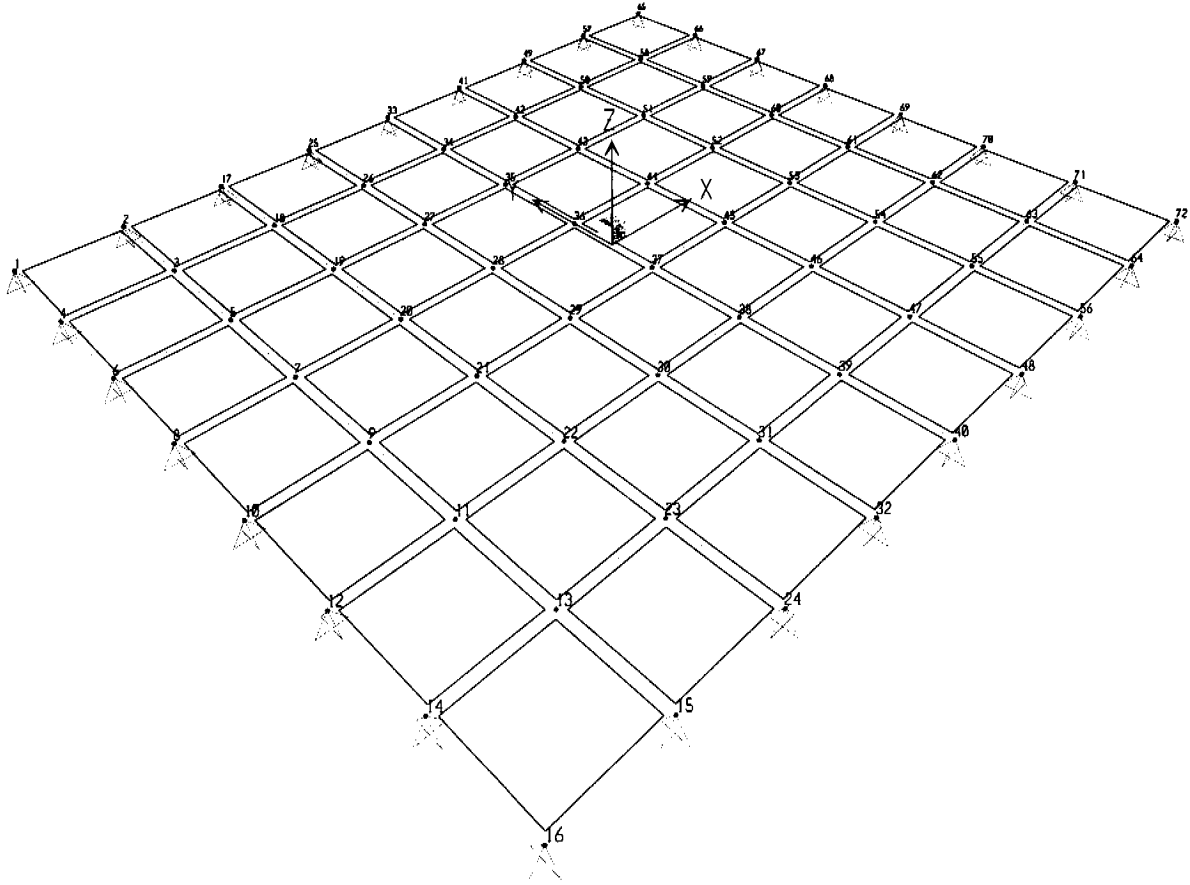
$S_t = I_n / N_t = 0.647 \text{ in}^3$

$S_b = I_n / N_b = 0.647 \text{ in}^3$

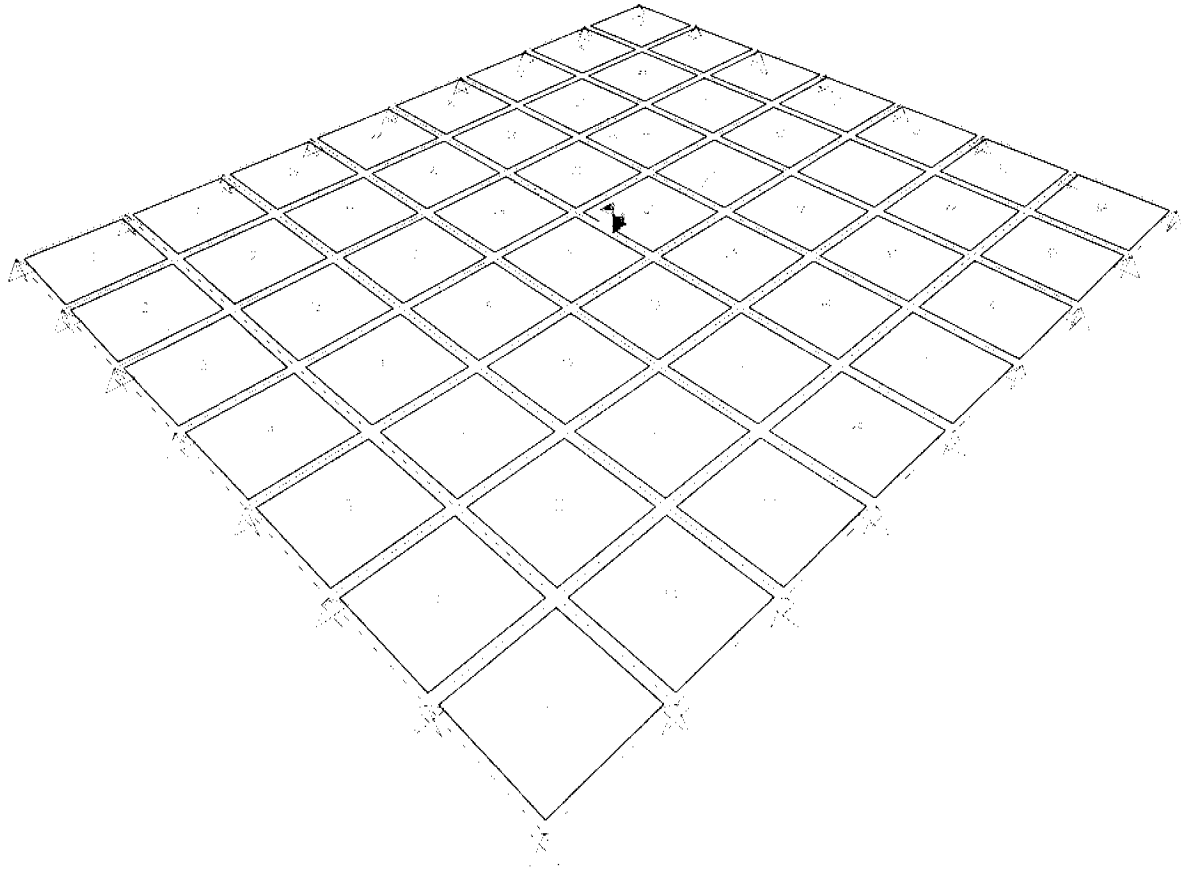
$r = \sqrt{I_n / A} = 1.777 \text{ in}$

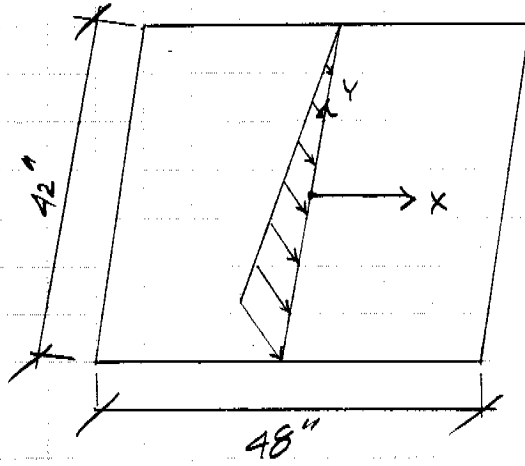
$K_t = I_n / AN_b = 1.264 \text{ in}$

$K_b = I_n / AN_t = 1.264 \text{ in}$



SAP2000 v7.21 - File:Pool - 3-D View - Kip-in Units - Joint #'s





STATIC LOAD CASES

| STATIC CASE | CASE TYPE | SELF WT FACTOR |
|-------------|-----------|----------------|
| ACTIVE | OTHER | 0.0000 |
| WATER | OTHER | 0.0000 |

JOINT DATA

| JOINT | GLOBAL-X | GLOBAL-Y | GLOBAL-Z | RESTRAINTS | ANGLE-A | ANGLE-B | ANGLE-C |
|-------|-----------|-----------|----------|-------------|---------|---------|---------|
| 1 | -24.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 2 | -18.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 3 | -18.00000 | 15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 4 | -24.00000 | 15.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 5 | -18.00000 | 9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 6 | -24.00000 | 9.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 7 | -18.00000 | 3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 8 | -24.00000 | 3.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 9 | -18.00000 | -3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 10 | -24.00000 | -3.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 11 | -18.00000 | -9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 12 | -24.00000 | -9.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 13 | -18.00000 | -15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 14 | -24.00000 | -15.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 15 | -18.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 16 | -24.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 17 | -12.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 18 | -12.00000 | 15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 19 | -12.00000 | 9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 20 | -12.00000 | 3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 21 | -12.00000 | -3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 22 | -12.00000 | -9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 23 | -12.00000 | -15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 24 | -12.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 25 | -6.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 26 | -6.00000 | 15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 27 | -6.00000 | 9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 28 | -6.00000 | 3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 29 | -6.00000 | -3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 30 | -6.00000 | -9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 31 | -6.00000 | -15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 32 | -6.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 33 | 0.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 34 | 0.00000 | 15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 35 | 0.00000 | 9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 36 | 0.00000 | 3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 37 | 0.00000 | -3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 38 | 0.00000 | -9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 39 | 0.00000 | -15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 40 | 0.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 41 | 6.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 42 | 6.00000 | 15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 43 | 6.00000 | 9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 44 | 6.00000 | 3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 45 | 6.00000 | -3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 46 | 6.00000 | -9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 47 | 6.00000 | -15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 48 | 6.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 49 | 12.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 50 | 12.00000 | 15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 51 | 12.00000 | 9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 52 | 12.00000 | 3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 53 | 12.00000 | -3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 54 | 12.00000 | -9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 55 | 12.00000 | -15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 56 | 12.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 57 | 18.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 58 | 18.00000 | 15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 59 | 18.00000 | 9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 60 | 18.00000 | 3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 61 | 18.00000 | -3.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 62 | 18.00000 | -9.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 63 | 18.00000 | -15.00000 | 0.00000 | 0 0 0 0 0 0 | 0.000 | 0.000 | 0.000 |
| 64 | 18.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |

| | | | | | | | |
|----|----------|-----------|---------|-------------|-------|-------|-------|
| 65 | 24.00000 | 21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 66 | 24.00000 | 15.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 67 | 24.00000 | 9.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 68 | 24.00000 | 3.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 69 | 24.00000 | -3.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 70 | 24.00000 | -9.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 71 | 24.00000 | -15.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |
| 72 | 24.00000 | -21.00000 | 0.00000 | 1 1 1 0 0 0 | 0.000 | 0.000 | 0.000 |

5B

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7/25/00 14:53:21

S H E L L E L E M E N T D A T A

| SHELL | JNT-1 | JNT-2 | JNT-3 | JNT-4 | SECTION | ANGLE | AREA |
|-------|-------|-------|-------|-------|---------|-------|--------|
| 1 | 1 | 4 | 3 | 2 | PLATE | 0.000 | 36.000 |
| 2 | 4 | 6 | 5 | 3 | PLATE | 0.000 | 36.000 |
| 3 | 6 | 8 | 7 | 5 | PLATE | 0.000 | 36.000 |
| 4 | 8 | 10 | 9 | 7 | PLATE | 0.000 | 36.000 |
| 5 | 10 | 12 | 11 | 9 | PLATE | 0.000 | 36.000 |
| 6 | 12 | 14 | 13 | 11 | PLATE | 0.000 | 36.000 |
| 7 | 14 | 16 | 15 | 13 | PLATE | 0.000 | 36.000 |
| 8 | 2 | 3 | 18 | 17 | PLATE | 0.000 | 36.000 |
| 9 | 3 | 5 | 19 | 18 | PLATE | 0.000 | 36.000 |
| 10 | 5 | 7 | 20 | 19 | PLATE | 0.000 | 36.000 |
| 11 | 7 | 9 | 21 | 20 | PLATE | 0.000 | 36.000 |
| 12 | 9 | 11 | 22 | 21 | PLATE | 0.000 | 36.000 |
| 13 | 11 | 13 | 23 | 22 | PLATE | 0.000 | 36.000 |
| 14 | 13 | 15 | 24 | 23 | PLATE | 0.000 | 36.000 |
| 15 | 17 | 18 | 26 | 25 | PLATE | 0.000 | 36.000 |
| 16 | 18 | 19 | 27 | 26 | PLATE | 0.000 | 36.000 |
| 17 | 19 | 20 | 28 | 27 | PLATE | 0.000 | 36.000 |
| 18 | 20 | 21 | 29 | 28 | PLATE | 0.000 | 36.000 |
| 19 | 21 | 22 | 30 | 29 | PLATE | 0.000 | 36.000 |
| 20 | 22 | 23 | 31 | 30 | PLATE | 0.000 | 36.000 |
| 21 | 23 | 24 | 32 | 31 | PLATE | 0.000 | 36.000 |
| 22 | 25 | 26 | 34 | 33 | PLATE | 0.000 | 36.000 |
| 23 | 26 | 27 | 35 | 34 | PLATE | 0.000 | 36.000 |
| 24 | 27 | 28 | 36 | 35 | PLATE | 0.000 | 36.000 |
| 25 | 28 | 29 | 37 | 36 | PLATE | 0.000 | 36.000 |
| 26 | 29 | 30 | 38 | 37 | PLATE | 0.000 | 36.000 |
| 27 | 30 | 31 | 39 | 38 | PLATE | 0.000 | 36.000 |
| 28 | 31 | 32 | 40 | 39 | PLATE | 0.000 | 36.000 |
| 29 | 33 | 34 | 42 | 41 | PLATE | 0.000 | 36.000 |
| 30 | 34 | 35 | 43 | 42 | PLATE | 0.000 | 36.000 |
| 31 | 35 | 36 | 44 | 43 | PLATE | 0.000 | 36.000 |
| 32 | 36 | 37 | 45 | 44 | PLATE | 0.000 | 36.000 |
| 33 | 37 | 38 | 46 | 45 | PLATE | 0.000 | 36.000 |
| 34 | 38 | 39 | 47 | 46 | PLATE | 0.000 | 36.000 |
| 35 | 39 | 40 | 48 | 47 | PLATE | 0.000 | 36.000 |
| 36 | 41 | 42 | 50 | 49 | PLATE | 0.000 | 36.000 |
| 37 | 42 | 43 | 51 | 50 | PLATE | 0.000 | 36.000 |
| 38 | 43 | 44 | 52 | 51 | PLATE | 0.000 | 36.000 |
| 39 | 44 | 45 | 53 | 52 | PLATE | 0.000 | 36.000 |
| 40 | 45 | 46 | 54 | 53 | PLATE | 0.000 | 36.000 |
| 41 | 46 | 47 | 55 | 54 | PLATE | 0.000 | 36.000 |
| 42 | 47 | 48 | 56 | 55 | PLATE | 0.000 | 36.000 |
| 43 | 49 | 50 | 58 | 57 | PLATE | 0.000 | 36.000 |
| 44 | 50 | 51 | 59 | 58 | PLATE | 0.000 | 36.000 |
| 45 | 51 | 52 | 60 | 59 | PLATE | 0.000 | 36.000 |
| 46 | 52 | 53 | 61 | 60 | PLATE | 0.000 | 36.000 |
| 47 | 53 | 54 | 62 | 61 | PLATE | 0.000 | 36.000 |
| 48 | 54 | 55 | 63 | 62 | PLATE | 0.000 | 36.000 |
| 49 | 55 | 56 | 64 | 63 | PLATE | 0.000 | 36.000 |
| 50 | 57 | 58 | 66 | 65 | PLATE | 0.000 | 36.000 |
| 51 | 58 | 59 | 67 | 66 | PLATE | 0.000 | 36.000 |
| 52 | 59 | 60 | 68 | 67 | PLATE | 0.000 | 36.000 |
| 53 | 60 | 61 | 69 | 68 | PLATE | 0.000 | 36.000 |
| 54 | 61 | 62 | 70 | 69 | PLATE | 0.000 | 36.000 |
| 55 | 62 | 63 | 71 | 70 | PLATE | 0.000 | 36.000 |
| 56 | 63 | 64 | 72 | 71 | PLATE | 0.000 | 36.000 |

STATIC LOAD CASES

| STATIC CASE | CASE TYPE | SELF WT FACTOR |
|-------------|-----------|----------------|
| ACTIVE | OTHER | 0.0000 |
| WATER | OTHER | 0.0000 |

MATERIAL PROPERTY DATA

| MAT LABEL | MODULUS OF ELASTICITY | POISSON'S RATIO | THERMAL COEFF | WEIGHT PER UNIT VOL | MASS PER UNIT VOL |
|-----------|-----------------------|-----------------|---------------|---------------------|-------------------|
| STEEL | 29000.000 | 0.300 | 6.500E-06 | 2.830E-04 | 7.324E-07 |
| CONC | 3600.000 | 0.200 | 5.500E-06 | 8.680E-05 | 2.246E-07 |
| OTHER | 3600.000 | 0.200 | 5.500E-06 | 8.680E-05 | 2.246E-07 |

MATERIAL DESIGN DATA

| MAT LABEL | DESIGN CODE | STEEL FY | CONCRETE FC | REBAR FY | CONCRETE FCS | REBAR FYS |
|-----------|-------------|----------|-------------|----------|--------------|-----------|
| STEEL | S | 36.000 | | | | |
| CONC | C | | 4.000 | 60.000 | 4.000 | 40.000 |
| OTHER | N | | | | | |

FRAME SECTION PROPERTY DATA

| SECTION LABEL | MAT LABEL | SECTION TYPE | DEPTH | FLANGE WIDTH TOP | FLANGE THICK TOP | WEB THICK | FLANGE WIDTH BOTTOM | FLANGE THICK BOTTOM |
|---------------|-----------|--------------|--------|------------------|------------------|-----------|---------------------|---------------------|
| FSEC1 | STEEL | | 18.000 | 10.000 | 0.000 | 0.000 | 0.000 | 0.000 |

FRAME SECTION PROPERTY DATA

| SECTION LABEL | AREA | TORSIONAL INERTIA | MOMENTS OF INERTIA | | SHEAR AREAS | |
|---------------|---------|-------------------|--------------------|----------|-------------|---------|
| | | | I33 | I22 | A2 | A3 |
| FSEC1 | 180.000 | 3916.671 | 4860.000 | 1500.000 | 150.000 | 150.000 |

FRAME SECTION PROPERTY DATA

| SECTION LABEL | SECTION MODULII | PLASTIC MODULII | RADIOI OF GYRATION | | | |
|---------------|-----------------|-----------------|--------------------|---------|-------|-------|
| | S33 | S22 | Z33 | Z22 | R33 | R22 |
| FSEC1 | 540.000 | 300.000 | 810.000 | 450.000 | 5.196 | 2.887 |

FRAME SECTION PROPERTY DATA

| SECTION LABEL | TOTAL WEIGHT | TOTAL MASS |
|---------------|--------------|------------|
| FSEC1 | 0.000 | 0.000 |

SHELL SECTION PROPERTY DATA

| SECTION LABEL | MAT LABEL | SHELL TYPE | MEMBRANE THICK | BENDING THICK | MATERIAL ANGLE |
|---------------|-----------|------------|----------------|---------------|----------------|
| SSEC1 | CONC | 4 | 1.000 | 1.000 | 0.000 |
| PLATE | STEEL | 4 | 7.470E-02 | 7.470E-02 | 0.000 |

SHELL SECTION PROPERTY DATA

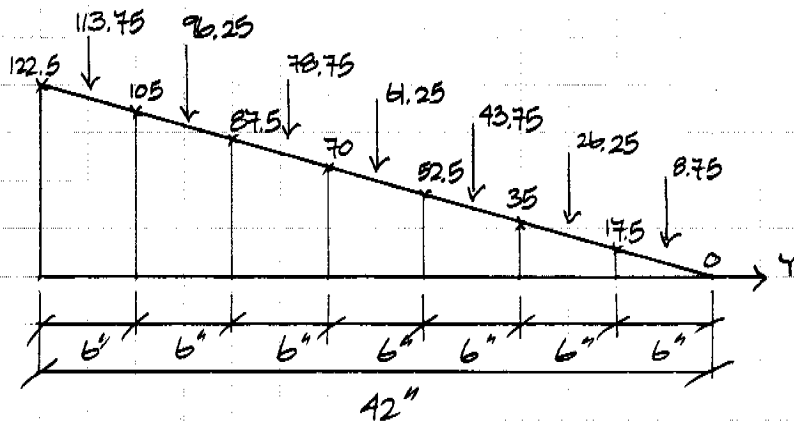
| SECTION LABEL | TOTAL WEIGHT | TOTAL MASS |
|---------------|--------------|------------|
| SSEC1 | 0.000 | 0.000 |
| PLATE | 4.262E-02 | 1.103E-04 |

GROUP MASS DATA

| GROUP | M-X | M-Y | M-Z |
|-------|-----------|-----------|-----------|
| ALL | 1.103E-04 | 1.103E-04 | 1.103E-04 |

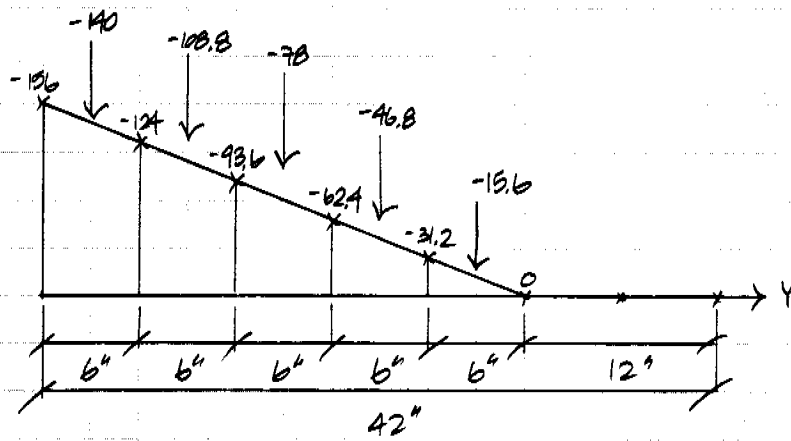
ACTIVE: $\gamma = 35 \text{ pcf}$

$p = \gamma * h \text{ (pcf)}$



WATER: $\gamma = 62.4 \text{ pcf}$

$p = \gamma * h \text{ (pcf)}$



S T A T I C L O A D C A S E S

| STATIC CASE | CASE TYPE | SELF WT FACTOR |
|-------------|-----------|----------------|
| ACTIVE | OTHER | 0.0000 |
| WATER | OTHER | 0.0000 |

S H E L L P R E S S U R E L O A D S Load Case ACTIVE

| SHELL | VALUE | PATTERN | MULTIPLIER |
|-------|----------|---------|------------|
| 7 | 113.7500 | | |
| 14 | 113.7500 | | |
| 21 | 113.7500 | | |
| 28 | 113.7500 | | |
| 35 | 113.7500 | | |
| 42 | 113.7500 | | |
| 49 | 113.7500 | | |
| 56 | 113.7500 | | |
| 6 | 96.2500 | | |
| 13 | 96.2500 | | |
| 20 | 96.2500 | | |
| 27 | 96.2500 | | |
| 34 | 96.2500 | | |
| 41 | 96.2500 | | |
| 48 | 96.2500 | | |
| 55 | 96.2500 | | |
| 5 | 78.7500 | | |
| 12 | 78.7500 | | |
| 19 | 78.7500 | | |
| 26 | 78.7500 | | |
| 33 | 78.7500 | | |
| 40 | 78.7500 | | |
| 47 | 78.7500 | | |
| 54 | 78.7500 | | |
| 4 | 61.2500 | | |
| 11 | 61.2500 | | |
| 18 | 61.2500 | | |
| 25 | 61.2500 | | |
| 32 | 61.2500 | | |
| 39 | 61.2500 | | |
| 46 | 61.2500 | | |
| 53 | 61.2500 | | |
| 3 | 43.7500 | | |
| 10 | 43.7500 | | |
| 17 | 43.7500 | | |
| 24 | 43.7500 | | |
| 31 | 43.7500 | | |
| 38 | 43.7500 | | |
| 45 | 43.7500 | | |
| 52 | 43.7500 | | |
| 2 | 26.2500 | | |
| 9 | 26.2500 | | |
| 16 | 26.2500 | | |
| 23 | 26.2500 | | |
| 30 | 26.2500 | | |
| 37 | 26.2500 | | |
| 44 | 26.2500 | | |
| 51 | 26.2500 | | |
| 1 | 8.7500 | | |
| 8 | 8.7500 | | |
| 15 | 8.7500 | | |
| 22 | 8.7500 | | |
| 29 | 8.7500 | | |
| 36 | 8.7500 | | |
| 43 | 8.7500 | | |
| 50 | 8.7500 | | |

| SHELL | VALUE | PATTERN | MULTIPLIER |
|-------|-----------|---------|------------|
| 7 | -140.0000 | | |
| 14 | -140.0000 | | |
| 21 | -140.0000 | | |
| 28 | -140.0000 | | |
| 35 | -140.0000 | | |
| 42 | -140.0000 | | |
| 49 | -140.0000 | | |
| 56 | -140.0000 | | |
| 6 | -108.8000 | | |
| 13 | -108.8000 | | |
| 20 | -108.8000 | | |
| 27 | -108.8000 | | |
| 34 | -108.8000 | | |
| 41 | -108.8000 | | |
| 48 | -108.8000 | | |
| 55 | -108.8000 | | |
| 5 | -78.0000 | | |
| 12 | -78.0000 | | |
| 19 | -78.0000 | | |
| 26 | -78.0000 | | |
| 33 | -78.0000 | | |
| 40 | -78.0000 | | |
| 47 | -78.0000 | | |
| 54 | -78.0000 | | |
| 4 | -46.8000 | | |
| 11 | -46.8000 | | |
| 18 | -46.8000 | | |
| 25 | -46.8000 | | |
| 32 | -46.8000 | | |
| 39 | -46.8000 | | |
| 46 | -46.8000 | | |
| 53 | -46.8000 | | |
| 3 | -15.6000 | | |
| 10 | -15.6000 | | |
| 17 | -15.6000 | | |
| 24 | -15.6000 | | |
| 31 | -15.6000 | | |
| 38 | -15.6000 | | |
| 45 | -15.6000 | | |
| 52 | -15.6000 | | |

| | | | | | | | |
|----|--------|-----------------|-----------------|-----------------|--------------------|-----------------|-----------------|
| 44 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 1.0254 COMB1 | 9.119E-03 COMB1 | 0.0245 COMB1 | 0.0000 COMB1 |
| 45 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.8567 COMB1 | 0.0433 COMB1 | 0.0216 COMB1 | 0.0000 COMB1 |
| 45 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.8567 COMB1 | 0.0433 COMB1 | 0.0216 COMB1 | 0.0000 COMB1 |

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J O I N T D I S P L A C E M E N T S

| JOINT | LOAD | U1 | U2 | U3 | R1 | R2 | R3 |
|-------|--------|-----------------|-----------------|-----------------|--------------------|---------------------|-----------------|
| 46 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.5526 COMB1 | 0.0539 COMB1 | 0.0151 COMB1 | 0.0000 COMB1 |
| 46 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.5526 COMB1 | 0.0539 COMB1 | 0.0151 COMB1 | 0.0000 COMB1 |
| 47 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.2467 COMB1 | 0.0459 COMB1 | 7.486E-03 COMB1 | 0.0000 COMB1 |
| 47 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.2467 COMB1 | 0.0459 COMB1 | 7.486E-03 COMB1 | 0.0000 COMB1 |
| 48 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | 0.0387 COMB1 | 1.298E-05 COMB1 | 0.0000 COMB1 |
| 48 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | 0.0387 COMB1 | 1.298E-05 COMB1 | 0.0000 COMB1 |
| 49 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | -0.0789 COMB1 | -5.564E-06 COMB1 | 0.0000 COMB1 |
| 49 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | -0.0789 COMB1 | -5.564E-06 COMB1 | 0.0000 COMB1 |
| 50 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.4462 COMB1 | -0.0653 COMB1 | 0.0259 COMB1 | 0.0000 COMB1 |
| 50 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.4462 COMB1 | -0.0653 COMB1 | 0.0259 COMB1 | 0.0000 COMB1 |
| 51 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.7416 COMB1 | -0.0308 COMB1 | 0.0435 COMB1 | 0.0000 COMB1 |
| 51 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.7416 COMB1 | -0.0308 COMB1 | 0.0435 COMB1 | 0.0000 COMB1 |
| 52 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.8063 COMB1 | 8.285E-03 COMB1 | 0.0484 COMB1 | 0.0000 COMB1 |
| 52 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.8063 COMB1 | 8.285E-03 COMB1 | 0.0484 COMB1 | 0.0000 COMB1 |
| 53 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.6663 COMB1 | 0.0353 COMB1 | 0.0415 COMB1 | 0.0000 COMB1 |
| 53 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.6663 COMB1 | 0.0353 COMB1 | 0.0415 COMB1 | 0.0000 COMB1 |
| 54 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.4219 COMB1 | 0.0429 COMB1 | 0.0279 COMB1 | 0.0000 COMB1 |
| 54 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.4219 COMB1 | 0.0429 COMB1 | 0.0279 COMB1 | 0.0000 COMB1 |
| 55 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.1829 COMB1 | 0.0350 COMB1 | 0.0133 COMB1 | 0.0000 COMB1 |
| 55 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.1829 COMB1 | 0.0350 COMB1 | 0.0133 COMB1 | 0.0000 COMB1 |
| 56 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | 0.0283 COMB1 | 4.378E-05 COMB1 | 0.0000 COMB1 |
| 56 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | 0.0283 COMB1 | 4.378E-05 COMB1 | 0.0000 COMB1 |
| 57 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | -0.0447 COMB1 | 6.775E-05 COMB1 | 0.0000 COMB1 |
| 57 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.0000 COMB1 | -0.0447 COMB1 | 6.775E-05 COMB1 | 0.0000 COMB1 |
| 58 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.2527 COMB1 | -0.0368 COMB1 | 0.0383 COMB1 | 0.0000 COMB1 |
| 58 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.2527 COMB1 | -0.0368 COMB1 | 0.0383 COMB1 | 0.0000 COMB1 |
| 59 | Minima | 0.0000 COMB1 | 0.0000 COMB1 | 0.4184 COMB1 | -0.0169 COMB1 | 0.0636 COMB1 | 0.0000 COMB1 |
| 59 | Maxima | 0.0000 COMB1 | 0.0000 COMB1 | 0.4184 COMB1 | -0.0169 COMB1 | 0.0636 COMB1 | 0.0000 COMB1 |

| | | | | | | | |
|----|--------|--------|--------|--------|-----------|--------|--------|
| 60 | Minima | 0.0000 | 0.0000 | 0.4511 | 5.415E-03 | 0.0691 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 60 | Maxima | 0.0000 | 0.0000 | 0.4511 | 5.415E-03 | 0.0691 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |

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J O I N T D I S P L A C E M E N T S

| JOINT | LOAD | U1 | U2 | U3 | R1 | R2 | R3 |
|-------|--------|--------|--------|--------|------------|-----------|--------|
| 61 | Minima | 0.0000 | 0.0000 | 0.3676 | 0.0205 | 0.0571 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 61 | Maxima | 0.0000 | 0.0000 | 0.3676 | 0.0205 | 0.0571 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 62 | Minima | 0.0000 | 0.0000 | 0.2268 | 0.0244 | 0.0361 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 62 | Maxima | 0.0000 | 0.0000 | 0.2268 | 0.0244 | 0.0361 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 63 | Minima | 0.0000 | 0.0000 | 0.0937 | 0.0187 | 0.0156 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 63 | Maxima | 0.0000 | 0.0000 | 0.0937 | 0.0187 | 0.0156 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 64 | Minima | 0.0000 | 0.0000 | 0.0000 | 0.0141 | 1.278E-05 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 64 | Maxima | 0.0000 | 0.0000 | 0.0000 | 0.0141 | 1.278E-05 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 65 | Minima | 0.0000 | 0.0000 | 0.0000 | -1.247E-04 | 8.774E-05 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 65 | Maxima | 0.0000 | 0.0000 | 0.0000 | -1.247E-04 | 8.774E-05 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 66 | Minima | 0.0000 | 0.0000 | 0.0000 | -1.222E-04 | 0.0440 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 66 | Maxima | 0.0000 | 0.0000 | 0.0000 | -1.222E-04 | 0.0440 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 67 | Minima | 0.0000 | 0.0000 | 0.0000 | -2.035E-05 | 0.0728 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 67 | Maxima | 0.0000 | 0.0000 | 0.0000 | -2.035E-05 | 0.0728 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 68 | Minima | 0.0000 | 0.0000 | 0.0000 | 7.513E-05 | 0.0782 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 68 | Maxima | 0.0000 | 0.0000 | 0.0000 | 7.513E-05 | 0.0782 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 69 | Minima | 0.0000 | 0.0000 | 0.0000 | 1.060E-04 | 0.0633 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 69 | Maxima | 0.0000 | 0.0000 | 0.0000 | 1.060E-04 | 0.0633 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 70 | Minima | 0.0000 | 0.0000 | 0.0000 | 1.023E-04 | 0.0387 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 70 | Maxima | 0.0000 | 0.0000 | 0.0000 | 1.023E-04 | 0.0387 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 71 | Minima | 0.0000 | 0.0000 | 0.0000 | -8.914E-06 | 0.0156 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 71 | Maxima | 0.0000 | 0.0000 | 0.0000 | -8.914E-06 | 0.0156 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 72 | Minima | 0.0000 | 0.0000 | 0.0000 | -1.260E-04 | 1.176E-05 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 72 | Maxima | 0.0000 | 0.0000 | 0.0000 | -1.260E-04 | 1.176E-05 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |

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S H E L L E L E M E N T S T R E S S E S

| SHELL | LOAD | JOINT | S11-BOT | S22-BOT | S12-BOT | S11-TOP | S22-TOP | S12-TOP | S13-AVG | S23-AVG |
|-------|------|-------|---------|---------|---------|---------|---------|---------|---------|---------|
|-------|------|-------|---------|---------|---------|---------|---------|---------|---------|---------|

| | | | | | | | | | |
|----|--------|------------|------------|-------------------------------------|------------|----------------------|-------|-------|-------|
| 1 | Minima | -3.26 | -3.86 | -6.32-1.047E-01-1.584E-01 | 5.38 | 6.215E-04-8.999E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 1 | Maxima | 1.047E-01 | 1.584E-01 | -5.38 3.26 3.86 | 6.32 | 8.065E-03-1.258E-04 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 2 | Minima | -5.09 | -5.91 | -4.64-3.528E-02-6.941E-02 | 3.03 | 9.574E-03-4.920E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 2 | Maxima | 3.528E-02 | 6.941E-02 | -3.03 5.09 5.91 | 4.64 | 1.348E-02-1.570E-04 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 3 | Minima | -5.08 | -5.89 | -1.53-1.998E-02-1.843E-02-1.725E-02 | 1.325E-02 | 1.226E-04 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 3 | Maxima | 1.998E-02 | 1.843E-02 | 1.725E-02 5.08 5.89 | 1.53 | 1.380E-02 1.526E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 4 | Minima | -4.86 | -5.22 | 1.31-4.893E-02-1.072E-01 | -2.56 | 8.452E-03-5.300E-05 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 4 | Maxima | 4.893E-02 | 1.072E-01 | 2.56 4.86 5.22 | -1.31 | 1.235E-02 5.796E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 5 | Minima | -3.08 | -2.70 | 3.00-4.222E-02-1.353E-01 | -3.52 | 2.300E-03 9.663E-06 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 5 | Maxima | 4.222E-02 | 1.353E-01 | 3.52 3.08 2.70 | -3.00 | 7.029E-03 6.422E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 6 | Minima | -9.100E-01 | -3.855E-02 | 2.80-5.695E-01 -1.87 | -3.36 | -2.031E-03 1.330E-04 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 6 | Maxima | 5.695E-01 | 1.87 | 3.36 9.100E-01 3.855E-02 | -2.80 | 1.129E-03 4.128E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 7 | Minima | -3.396E-02 | -6.211E-02 | 2.01-5.732E-01 -1.88 | -2.33 | -1.908E-03-3.988E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 7 | Maxima | 5.732E-01 | 1.88 | 2.33 3.396E-02 6.211E-02 | -2.01 | -6.153E-04 3.374E-04 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 8 | Minima | -4.27 | -6.21 | -5.11-2.377E-02-3.827E-02 | 3.85 | 7.098E-04-1.467E-02 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 8 | Maxima | 2.377E-02 | 3.827E-02 | -3.85 4.27 6.21 | 5.11 | 3.038E-03-9.828E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 9 | Minima | -6.82 | -9.59 | -3.78 3.18 3.76 | 2.23 | 4.365E-03-8.146E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 9 | Maxima | -3.18 | -3.76 | -2.23 6.82 9.59 | 3.78 | 5.736E-03-5.564E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 10 | Minima | -6.82 | -9.59 | -1.34 4.82 5.15 | 1.368E-01 | 6.043E-03 1.426E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 10 | Maxima | -4.82 | -5.15 | -1.368E-01 6.82 9.59 | 1.34 | 6.511E-03 1.971E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 11 | Minima | -6.80 | -8.60 | 7.156E-01 3.05 2.62 | -1.90 | 5.247E-03 6.127E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 11 | Maxima | -3.05 | -2.62 | 1.90 6.80 8.60 | -7.156E-01 | 5.780E-03 9.020E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 12 | Minima | -4.75 | -4.61 | 2.01 8.939E-01-1.331E-01 | -2.79 | 2.970E-03 6.953E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 12 | Maxima | -8.939E-01 | 1.331E-01 | 2.79 4.75 4.61 | -2.01 | 4.035E-03 1.028E-02 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 13 | Minima | -2.06 | -1.774E-01 | 2.17-5.736E-01 -2.37 | -2.73 | 1.137E-03 4.608E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 13 | Maxima | 5.736E-01 | 2.37 | 2.73 2.06 1.774E-01 | -2.17 | 2.048E-03 6.137E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 14 | Minima | -1.328E-01 | -5.490E-02 | 1.91-5.773E-01 -2.38 | -2.22 | -4.669E-04-4.572E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 14 | Maxima | 5.773E-01 | 2.38 | 2.22 1.328E-01 5.490E-02 | -1.91 | 1.175E-03-3.683E-03 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 15 | Minima | -4.58 | -7.49 | -3.25-7.213E-03-1.415E-02 | 2.11 | 4.881E-04-1.747E-02 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |
| 15 | Maxima | 7.213E-03 | 1.415E-02 | -2.11 4.58 7.49 | 3.25 | 1.126E-03-1.478E-02 | | | |
| | | COMB1 | COMB1 | COMB1 COMB1 COMB1 | COMB1 | COMB1 COMB1 | COMB1 | COMB1 | COMB1 |

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SHELL ELEMENT STRESSES

| | SHELL | LOAD | JOINT | S11-BOT | S22-BOT | S12-BOT | S11-TOP | S22-TOP | S12-TOP | S13-AVG | S23-AVG |
|----|--------|------|-------|---------|---------|---------|---------|---------|---------|-----------|------------|
| 16 | Minima | | | -7.41 | -11.59 | -2.43 | 4.26 | 6.20 | 1.25 | 1.838E-03 | -9.810E-03 |

| | | | | | | | | | |
|----|--------|-------------------------------|---|--|--|-------------------------|------------------------|-----------------------------|------------------------------|
| 16 | Maxima | COMB1 -4.26 COMB1 | COMB1 -6.20 COMB1 | COMB1 -1.25 COMB1 | COMB1 7.41 COMB1 | COMB1 11.59 COMB1 | COMB1 2.43 COMB1 | COMB1 2.411E-03 COMB1 | COMB1 -8.295E-03 COMB1 |
| 17 | Minima | -7.56 COMB1 | -11.58-9.514E-01 COMB1 | 6.79 COMB1 | 8.59 COMB1 | 1.388E-01 COMB1 | 2.602E-03 COMB1 | 1.775E-03 COMB1 | |
| 17 | Maxima | -6.79 COMB1 | -8.59-1.388E-01 COMB1 | 7.56 COMB1 | 11.58 COMB1 | 9.514E-01 COMB1 | 2.973E-03 COMB1 | 1.973E-03 COMB1 | |
| 18 | Minima | -7.56 COMB1 | -10.50 2.769E-01 COMB1 | 4.75 COMB1 | 4.61 COMB1 | -1.05 COMB1 | 2.629E-03 COMB1 | 8.853E-03 COMB1 | |
| 18 | Maxima | -4.75 COMB1 | -4.61 1.05 COMB1 | 7.56 COMB1 | 10.50-2.769E-01 COMB1 | 2.748E-03 COMB1 | 1.036E-02 COMB1 | | |
| 19 | Minima | -5.57 COMB1 | -5.81 1.03 COMB1 | 2.06 COMB1 | 1.743E-01 COMB1 | -1.73 COMB1 | 1.951E-03 COMB1 | 1.023E-02 COMB1 | |
| 19 | Maxima | -2.06-1.743E-01 COMB1 | 1.73 COMB1 | 5.57 COMB1 | 5.81 COMB1 | -1.03 COMB1 | 2.147E-03 COMB1 | 1.197E-02 COMB1 | |
| 20 | Minima | -2.80-5.460E-01 COMB1 | 1.30 9.438E-02 COMB1 | -2.43 COMB1 | -1.80 COMB1 | 9.640E-04 COMB1 | 6.330E-03 COMB1 | | |
| 20 | Maxima | -9.438E-02 COMB1 | 2.43 1.80 COMB1 | 2.80 5.460E-01 COMB1 | -1.30 COMB1 | 1.512E-03 COMB1 | 7.188E-03 COMB1 | | |
| 21 | Minima | -5.665E-01-1.307E-02 COMB1 | 1.26-2.658E-02 COMB1 | -2.43 COMB1 | -1.69-2.106E-04-4.195E-03 COMB1 | COMB1 | COMB1 | COMB1 | |
| 21 | Maxima | 2.658E-02 COMB1 | 2.43 1.69 5.665E-01 1.307E-02 COMB1 | COMB1 | -1.26 9.093E-04-4.148E-03 COMB1 | COMB1 | COMB1 | COMB1 | |
| 22 | Minima | -4.65 COMB1 | -7.89 -1.37-7.694E-03-1.660E-02 COMB1 | 4.58 COMB1 | 7.47 2.161E-01 5.208E-04-1.029E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 22 | Maxima | 7.694E-03 COMB1 | 1.660E-02-4.044E-01 COMB1 | 4.65 COMB1 | 7.89 1.37 2.823E-04-1.743E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 23 | Minima | -7.55 COMB1 | -12.21 -1.02 COMB1 | 4.58 COMB1 | 7.47 2.161E-01 5.208E-04-1.029E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 23 | Maxima | -4.58 COMB1 | -7.47-2.161E-01 COMB1 | 7.55 COMB1 | 12.21 1.02 6.633E-04-9.831E-03 COMB1 | COMB1 | COMB1 | COMB1 | |
| 24 | Minima | -7.76 COMB1 | -12.21-4.056E-01 COMB1 | 7.42 COMB1 | 10.49-6.796E-03 7.315E-04 1.864E-03 COMB1 | COMB1 | COMB1 | COMB1 | |
| 24 | Maxima | -7.42 COMB1 | -10.49 6.796E-03 COMB1 | 7.76 COMB1 | 12.21 4.056E-01 8.666E-04 1.896E-03 COMB1 | COMB1 | COMB1 | COMB1 | |
| 25 | Minima | -7.76 COMB1 | -11.11 1.131E-02 COMB1 | 5.56 COMB1 | 5.78-3.830E-01 7.597E-04 1.022E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 25 | Maxima | -5.56 COMB1 | -5.78 3.830E-01 COMB1 | 7.76 COMB1 | 11.11-1.131E-02 8.556E-04 1.063E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 26 | Minima | -5.81 COMB1 | -6.20 1.811E-01 COMB1 | 2.79 COMB1 | 5.289E-01-7.102E-01 6.500E-04 1.188E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 26 | Maxima | -2.79-5.289E-01 COMB1 | 7.102E-01 COMB1 | 5.81 COMB1 | 6.20-1.811E-01 6.665E-04 1.236E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 27 | Minima | -3.02-7.000E-01 COMB1 | 2.600E-01 5.483E-01 COMB1 | -2.44-7.992E-01 COMB1 | 3.399E-04 7.278E-03 COMB1 | COMB1 | COMB1 | COMB1 | |
| 27 | Maxima | -5.483E-01 COMB1 | 2.44 7.992E-01 COMB1 | 3.02 COMB1 | 7.000E-01-2.600E-01 5.060E-04 7.553E-03 COMB1 | COMB1 | COMB1 | COMB1 | |
| 28 | Minima | -7.010E-01-6.730E-03 COMB1 | 2.673E-01-5.347E-03 COMB1 | -2.43-7.908E-01-4.441E-05-3.989E-03 COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | |
| 28 | Maxima | 5.347E-03 COMB1 | 2.43 7.908E-01 7.010E-01 6.730E-03-2.673E-01 3.066E-04-3.918E-03 COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | |
| 29 | Minima | -4.65 COMB1 | -7.89 4.044E-01-7.694E-03-1.660E-02 COMB1 | 4.65 COMB1 | -1.37-2.823E-04-1.823E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 29 | Maxima | 7.694E-03 COMB1 | 1.660E-02 1.37 COMB1 | 4.65 COMB1 | 7.89-4.044E-01-1.632E-04-1.743E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 30 | Minima | -7.55 COMB1 | -12.21 2.161E-01 COMB1 | 4.58 COMB1 | 7.47 -1.02-6.633E-04-1.029E-02 COMB1 | COMB1 | COMB1 | COMB1 | |
| 30 | Maxima | -4.58 COMB1 | -7.47 1.02 COMB1 | 7.55 COMB1 | 12.21-2.161E-01-5.208E-04-9.831E-03 COMB1 | COMB1 | COMB1 | COMB1 | |

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SHELL ELEMENT STRESSES

| SHELL | LOAD | JOINT | S11-BOT | S22-BOT | S12-BOT | S11-TOP | S22-TOP | S12-TOP | S13-AVG | S23-AVG |
|-------|--------|-------|----------------|---------------------------|---------------|--|---------|---------|---------|---------|
| 31 | Minima | | -7.76 COMB1 | -12.21-6.796E-03 COMB1 | 7.42 COMB1 | 10.49-4.056E-01-8.666E-04 1.864E-03 COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 31 | Maxima | | -7.42 COMB1 | -10.49 4.056E-01 COMB1 | 7.76 COMB1 | 12.21 6.796E-03-7.315E-04 1.896E-03 COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |

| | | | | | | | | |
|----|--------|-------------------------------|--|------------------------------------|------------------------------------|---------------------|--|------------------------------|
| 47 | Minima | -4.75 COMB1 | -4.61 COMB1 | -2.79 COMB1 | 8.939E-01 COMB1 | -1.331E-01 COMB1 | 2.01-4.035E-03 COMB1 | 6.953E-03 COMB1 |
| 47 | Maxima | -8.939E-01 COMB1 | 1.331E-01 COMB1 | -2.01 COMB1 | 4.75 COMB1 | 4.61 COMB1 | 2.79-2.970E-03 COMB1 | 1.028E-02 COMB1 |
| 48 | Minima | -2.06-1.774E-01 COMB1 | -2.73-5.736E-01 COMB1 | -2.37 COMB1 | 2.17-2.048E-03 COMB1 | 4.608E-03 COMB1 | | |
| 48 | Maxima | 5.736E-01 COMB1 | 2.37 COMB1 | -2.17 COMB1 | 2.06 COMB1 | 1.774E-01 COMB1 | 2.73-1.137E-03 COMB1 | 6.137E-03 COMB1 |
| 49 | Minima | -1.328E-01-5.490E-02 COMB1 | -2.22-5.773E-01 COMB1 | -2.38 COMB1 | 1.91-1.175E-03 COMB1 | 4.572E-03 COMB1 | | |
| 49 | Maxima | 5.773E-01 COMB1 | 2.38 COMB1 | -1.91 COMB1 | 1.328E-01 COMB1 | 5.490E-02 COMB1 | 2.22 COMB1 | 4.669E-04-3.683E-03 COMB1 |
| 50 | Minima | -3.26 COMB1 | -3.86 COMB1 | 5.38-1.047E-01-1.584E-01 COMB1 | -6.32-8.065E-03-8.999E-03 COMB1 | | | |
| 50 | Maxima | 1.047E-01 COMB1 | 1.584E-01 COMB1 | 6.32 COMB1 | 3.26 COMB1 | 3.86 COMB1 | -5.38-6.215E-04-1.258E-04 COMB1 | |
| 51 | Minima | -5.09 COMB1 | -5.91 COMB1 | 3.03-3.528E-02-6.941E-02 COMB1 | -4.64-1.348E-02-4.920E-03 COMB1 | | | |
| 51 | Maxima | 3.528E-02 COMB1 | 6.941E-02 COMB1 | 4.64 COMB1 | 5.09 COMB1 | 5.91 COMB1 | -3.03-9.574E-03-1.570E-04 COMB1 | |
| 52 | Minima | -5.08 COMB1 | -5.89-1.725E-02-1.998E-02-1.843E-02 COMB1 | -1.53-1.380E-02-1.226E-04 COMB1 | | | | |
| 52 | Maxima | 1.998E-02 COMB1 | 1.843E-02 COMB1 | 1.53 COMB1 | 5.08 COMB1 | 5.89 COMB1 | 1.725E-02-1.325E-02-1.526E-03 COMB1 | |
| 53 | Minima | -4.86 COMB1 | -5.22 COMB1 | -2.56-4.893E-02-1.072E-01 COMB1 | 1.31-1.235E-02-5.300E-05 COMB1 | | | |
| 53 | Maxima | 4.893E-02 COMB1 | 1.072E-01 COMB1 | -1.31 COMB1 | 4.86 COMB1 | 5.22 COMB1 | 2.56-8.452E-03-5.796E-03 COMB1 | |
| 54 | Minima | -3.08 COMB1 | -2.70 COMB1 | -3.52-4.222E-02-1.353E-01 COMB1 | 3.00-7.029E-03-9.663E-06 COMB1 | | | |
| 54 | Maxima | 4.222E-02 COMB1 | 1.353E-01 COMB1 | -3.00 COMB1 | 3.08 COMB1 | 2.70 COMB1 | 3.52-2.300E-03-6.422E-03 COMB1 | |
| 55 | Minima | -9.100E-01-3.855E-02 COMB1 | -3.36-5.695E-01 COMB1 | -1.87 COMB1 | 2.80-1.129E-03-1.330E-04 COMB1 | | | |
| 55 | Maxima | 5.695E-01 COMB1 | 1.87 COMB1 | -2.80 COMB1 | 9.100E-01 COMB1 | 3.855E-02 COMB1 | 3.36-2.031E-03-4.128E-03 COMB1 | |
| 56 | Minima | -3.396E-02-6.211E-02 COMB1 | -2.33-5.732E-01 COMB1 | -1.88 COMB1 | 2.01-6.153E-04-3.988E-03 COMB1 | | | |
| 56 | Maxima | 5.732E-01 COMB1 | 1.88 COMB1 | -2.01 COMB1 | 3.396E-02 COMB1 | 6.211E-02 COMB1 | 2.33-1.908E-03-3.374E-04 COMB1 | |

LOAD COMBINATION MULTIPLIERS

| COMBO | TYPE | CASE | FACTOR | TYPE | TITLE |
|-------|------|--------|--------|----------------|-------|
| COMB1 | ADD | | | | COMB1 |
| | | ACTIVE | 1.0000 | STATIC (OTHER) | |
| | | WATER | 1.0000 | STATIC (OTHER) | |

JOINT REACTIONS

| JOINT | LOAD | F1 | F2 | F3 | M1 | M2 | M3 |
|-------|--------|--------|--------|----------|--------|--------|--------|
| 1 | Minima | 0.0000 | 0.0000 | 9.3816 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 1 | Maxima | 0.0000 | 0.0000 | 9.3816 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 2 | Minima | 0.0000 | 0.0000 | -6.6817 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 2 | Maxima | 0.0000 | 0.0000 | -6.6817 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 4 | Minima | 0.0000 | 0.0000 | -8.5017 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 4 | Maxima | 0.0000 | 0.0000 | -8.5017 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 6 | Minima | 0.0000 | 0.0000 | -13.1721 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 6 | Maxima | 0.0000 | 0.0000 | -13.1721 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 8 | Minima | 0.0000 | 0.0000 | -11.7103 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 8 | Maxima | 0.0000 | 0.0000 | -11.7103 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 10 | Minima | 0.0000 | 0.0000 | -6.1804 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 10 | Maxima | 0.0000 | 0.0000 | -6.1804 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 12 | Minima | 0.0000 | 0.0000 | 0.0103 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 12 | Maxima | 0.0000 | 0.0000 | 0.0103 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 14 | Minima | 0.0000 | 0.0000 | 3.8522 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 14 | Maxima | 0.0000 | 0.0000 | 3.8522 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 15 | Minima | 0.0000 | 0.0000 | 4.4504 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 15 | Maxima | 0.0000 | 0.0000 | 4.4504 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 16 | Minima | 0.0000 | 0.0000 | 6.0133 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 16 | Maxima | 0.0000 | 0.0000 | 6.0133 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 17 | Minima | 0.0000 | 0.0000 | -9.9573 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 17 | Maxima | 0.0000 | 0.0000 | -9.9573 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 24 | Minima | 0.0000 | 0.0000 | 4.3720 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 24 | Maxima | 0.0000 | 0.0000 | 4.3720 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 25 | Minima | 0.0000 | 0.0000 | -11.2414 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 25 | Maxima | 0.0000 | 0.0000 | -11.2414 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | |
|----|--------|--------|--------|--------|--------|--------|--------|
| 71 | Minima | 0.0000 | 0.0000 | 3.8522 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 71 | Maxima | 0.0000 | 0.0000 | 3.8522 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 72 | Minima | 0.0000 | 0.0000 | 6.0133 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |
| 72 | Maxima | 0.0000 | 0.0000 | 6.0133 | 0.0000 | 0.0000 | 0.0000 |
| | | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 | COMB1 |

22B

| | | | | | | | |
|----|--------|---------------|---------------|---------------|----------------|----------------|--|
| 44 | Maxima | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -2.96 COMB1 | -3.49 COMB1 | 3.51-3.261E-01-4.157E-01 COMB1 COMB1 COMB1 |
| 45 | Minima | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -6.35 COMB1 | -8.92 COMB1 | 1.272E-01-4.863E-01 1.065E-01 COMB1 COMB1 COMB1 |
| 45 | Maxima | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -4.48 COMB1 | -4.79 COMB1 | 1.25-4.514E-01 1.472E-01 COMB1 COMB1 COMB1 |

26B

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S H E L L E L E M E N T R E S U L T A N T S

| SHELL | LOAD | JOINT | F11 | F22 | F12 | M11 | M22 | M12 | V13 | V23 |
|-------|--------|-------|---------------|---------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|--------------------------|--------------------|
| 46 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -6.32 COMB1 | -8.00 COMB1 | -1.76-4.318E-01 COMB1 | 4.577E-01 COMB1 | 4.577E-01 COMB1 |
| 46 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -2.83 COMB1 | -2.43-6.655E-01-3.919E-01 COMB1 | 6.738E-01 COMB1 | 6.738E-01 COMB1 | 6.738E-01 COMB1 |
| 47 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -4.42 COMB1 | -4.29 COMB1 | -2.59-3.014E-01 COMB1 | 5.194E-01 COMB1 | 5.194E-01 COMB1 |
| 47 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00-8.313E-01 COMB1 | 1.238E-01 COMB1 | -1.87-2.219E-01 COMB1 | 7.682E-01 COMB1 | 7.682E-01 COMB1 | 7.682E-01 COMB1 |
| 48 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -1.92-1.649E-01 COMB1 | -2.54-1.530E-01 COMB1 | 3.442E-01 COMB1 | 3.442E-01 COMB1 | 3.442E-01 COMB1 |
| 48 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 5.335E-01 COMB1 | 2.21 COMB1 | -2.02-8.496E-02 COMB1 | 4.584E-01 COMB1 | 4.584E-01 COMB1 | 4.584E-01 COMB1 |
| 49 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00-1.235E-01-5.105E-02 COMB1 | -2.06-8.774E-02-3.416E-01 COMB1 | 3.416E-01 COMB1 | 3.416E-01 COMB1 | 3.416E-01 COMB1 | 3.416E-01 COMB1 |
| 49 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 5.369E-01 COMB1 | 2.21 COMB1 | -1.78 3.488E-02-2.751E-01 COMB1 | 2.751E-01 COMB1 | 2.751E-01 COMB1 | 2.751E-01 COMB1 |
| 50 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -3.03 COMB1 | -3.59 COMB1 | 5.00-6.025E-01-6.722E-01 COMB1 | 6.722E-01 COMB1 | 6.722E-01 COMB1 |
| 50 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 9.737E-02 COMB1 | 1.473E-01 COMB1 | 5.88-4.643E-02-9.399E-03 COMB1 | 9.399E-03 COMB1 | 9.399E-03 COMB1 | 9.399E-03 COMB1 |
| 51 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -4.73 COMB1 | -5.49 COMB1 | 2.82 COMB1 | -1.01-3.675E-01 COMB1 | 3.675E-01 COMB1 |
| 51 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 3.281E-02 COMB1 | 6.455E-02 COMB1 | 4.32-7.152E-01-1.173E-02 COMB1 | 1.173E-02 COMB1 | 1.173E-02 COMB1 | 1.173E-02 COMB1 |
| 52 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -4.73 COMB1 | -5.48-1.604E-02 COMB1 | -1.03-9.159E-03 COMB1 | 9.159E-03 COMB1 | 9.159E-03 COMB1 |
| 52 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 1.858E-02 COMB1 | 1.714E-02 COMB1 | 1.43-9.901E-01 1.140E-01 COMB1 | 1.140E-01 COMB1 | 1.140E-01 COMB1 | 1.140E-01 COMB1 |
| 53 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -4.52 COMB1 | -4.85 COMB1 | -2.38-9.228E-01-3.959E-03 COMB1 | 3.959E-03 COMB1 | 3.959E-03 COMB1 |
| 53 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 4.551E-02 COMB1 | 9.970E-02 COMB1 | -1.22-6.313E-01 4.330E-01 COMB1 | 4.330E-01 COMB1 | 4.330E-01 COMB1 | 4.330E-01 COMB1 |
| 54 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 COMB1 | -2.86 COMB1 | -2.51 COMB1 | -3.27-5.251E-01 7.219E-04 COMB1 | 7.219E-04 COMB1 | 7.219E-04 COMB1 |
| 54 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 3.926E-02 COMB1 | 1.258E-01 COMB1 | -2.79-1.718E-01 4.797E-01 COMB1 | 4.797E-01 COMB1 | 4.797E-01 COMB1 | 4.797E-01 COMB1 |
| 55 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00-8.463E-01-3.586E-02 COMB1 | -3.13-8.434E-02 9.934E-03 COMB1 | 9.934E-03 COMB1 | 9.934E-03 COMB1 | 9.934E-03 COMB1 | 9.934E-03 COMB1 |
| 55 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 5.297E-01 COMB1 | 1.74 COMB1 | -2.60 1.517E-01 3.084E-01 COMB1 | 3.084E-01 COMB1 | 3.084E-01 COMB1 | 3.084E-01 COMB1 |
| 56 | Minima | | 0.00 COMB1 | 0.00 COMB1 | 0.00-3.158E-02-5.777E-02 COMB1 | -2.16 4.596E-02-2.979E-01 COMB1 | 2.979E-01 COMB1 | 2.979E-01 COMB1 | 2.979E-01 COMB1 | 2.979E-01 COMB1 |
| 56 | Maxima | | 0.00 COMB1 | 0.00 COMB1 | 0.00 5.331E-01 COMB1 | 1.75 COMB1 | -1.87 1.425E-01 2.521E-02 COMB1 | 2.521E-02 COMB1 | 2.521E-02 COMB1 | 2.521E-02 COMB1 |