

# DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

## BUILDING INSPECTION

### PERMIT

Permit Number: 030800

Please Read  
Application And  
Notes, if Any,  
Attached

This is to certify that MTSLlc/n/a  
has permission to Foundation Only for proposed 1,390 sq. ft. addition to connect to the existing 28,864 sq. Ft. Jokers building.  
AT 550 Warren Ave City of Portland 271 A002001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of the State and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is occupied or equipment is used-in. **NO OTHER NOTICES REQUIRED.**

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

#### OTHER REQUIRED APPROVALS

Fire Dept. [Signature]  
Health Dept. \_\_\_\_\_  
Appeal Board \_\_\_\_\_  
Other \_\_\_\_\_  
Department Name \_\_\_\_\_

[Signature] 7/31/03  
Director - Building & Inspection Services

**PENALTY FOR REMOVING THIS CARD**

**City of Portland, Maine - Building or Use Permit Application**  
 389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 03-0800	Issue Date:	CBL: 271 A002001
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Location of Construction: 550 Warren Ave	Owner Name: M T S Llc	Owner Address: 512 Warren Ave	Phone: 603-430-0339
Business Name: n/a	Contractor Name: n/a	Contractor Address: n/a Portland	Phone:
Lessee/Buyer's Name n/a	Phone: n/a	Permit Type: Additions - Commercial	Zone: 04

Past Use: Commercial / Indoor Sports Facility	Proposed Use: Indoor Sports Facility / Foundation only for proposed <del>54,390</del> <sup>69000</sup> sq. Ft. Addition to connect to the existing 28,864 Sq. Ft. Jokers building.	Permit Fee: \$1,821.00	Cost of Work: \$200,000.00	CEO District: 1
Proposed Project Description: Foundation Only for proposed <del>54,390</del> <sup>69000</sup> sq. Ft. Addition to connect to the existing 28,864 sq. Ft. Jokers building.	FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied INSPECTION: Use Group: Type: FOUNDATION ONLY Signature: [Signature] Signature: [Signature]		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.) Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: Date:	

Permit Taken By: gg	Date Applied For: 07/09/2003	<b>Zoning Approval</b>	
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1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.  2. Building permits do not include plumbing, septic or electrical work.  3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..	Special Zone or Reviews <input type="checkbox"/> Shoreland <i>N/A</i> <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <i>panel b zone X</i> <input type="checkbox"/> Subdivision <input checked="" type="checkbox"/> Site Plan 2003-0066 Maj <input checked="" type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> <i>with conditions</i> Date: <i>7/31/03</i>	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date:
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**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

# Memorandum

**To:** Bob Gillespie, P.E. , John DeStefano, P.E. , David Price, P.E.  
**From:** Mike Nugent/Manager of Inspection Services  
**Date:** 07/30/2003  
**Re:** Portland Sports Center at Joker's 512 Warren Ave (271 A002)

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A review of the submissions for the above Foundation permit is partially complete. I have the following questions/comments:

- 1) The R. W. Gillespie report references the 2000 IBC, The City Building Code is 1999 BOCA, are there any substantive differences that affect this design, if so what are they?
- 2) The Report references an Exploration/Location plan, this was not included in the technical submissions and is required pursuant to Section 1816.15 of the Code.
- 3) There are variations from the Gillespie report and the Fleming proposal, among them are Pile capacity, blow counts and slice specifications. The Gillespie report requires review. As a matter of procedure, prior to commencement, can Gillespie review the Fleming proposal and accept or reject the modifications in a formal way?
- 4) There is no mention of compliance with Section 1816.14 Identification. in either the Statement of Special Inspections, the construction documents or the Gillespie report. Please provide this information in a revise statement of special inspections.
- 5) The Settlement Analysis in the Gillespie report on page 3 does not comment of potential harmful distortion, instability or excessive structural stress as required by Section 1816.19.
- 6) There is no Installation sequence report. (See section 1816.21)

**FAX FORM**

**R. W. GILLESPIE & ASSOCIATES, INC.**  
CONSULTING GEOTECHNICAL AND ENVIRONMENTAL SPECIALISTS

86 Industrial Park Road, Suite 4  
Saco, Maine 04072

200 International Drive, Suite 170  
Portsmouth, NH 03801

Tel. (207) 266-8008  
Fax (207) 266-2882

Tel. (603) 427-0244  
Fax (603) 430-2041

FROM:  Saco, Maine  
 Portsmouth, NH

DATE 31 July 2003

PROJECT NUMBER 823-07

PROJECT NAME Portland Sports Center

TO: Michael Nugent, City of Portland, Fax. No. ~~733-1500~~ 974-8716  
David Price, Price Structural Engineers, Fax. No. 848-1633  
John DeStefano, DeStefano & Associates, Fax. No. 603-430-0346

FAX NO.

FROM: Rob Gillespie, P.E.

NO. OF PAGES INCLUDING THIS PAGE 3

HARD COPY TO FOLLOW: YES  NO

MESSAGE: Response to Memorandum of 30 July 2003 from Michael Nugent attached.  
Originals to follow via 1st class mail.

PLEASE LET US KNOW IF THIS TELECOPY IS UNSATISFACTORY  
THANK YOU

**SERVICES**

Geotechnical Engineering

- Foundation Investigation
- Dam Safety
- Slope Stability/Landslides
- Problem Sites
- Pavement Design and Evaluation
- Resource Evaluation

Hydrogeology & Geology

- Site Explorations
- New Well Development
- Monitoring Wells
- Computer Modelling
- Documentation

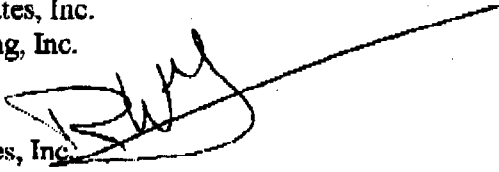
Materials Testing Services

- Field Testing
- Laboratory Testing
- Construction Observation
- Environmental Quality
- Welding Quality Assurance
- Non-Destructive Testing

**MEMORANDUM**

To: Michael Nugent  
Inspection Services-City of Portland  
Portland, Maine

c: John DeStefano & Associates, Inc.  
Price Structural Engineering, Inc.

From: Robert W. Gillespie, P.E.   
R.W. Gillespie & associates, Inc.  
Saco, Maine

Date: 30 July 2003

Subject: Response to Memorandum of 30 July 2003  
Portland Sports Center - 512 Warren Avenue  
Portland, Maine  
RWG&A Project No. 823-07

The following memorandum provides confirmation of our telephone conversation of this date regarding the above referenced project. Each comment or question is addressed in the same order as your memorandum.

1. *The R. W. Gillespie report references the 2000 IBC. The City Building Code is 1999 BOCA, are there any substantive differences that affect this design, if so what are they?*

With respect to soft ground sites, IBC 2000 is more conservative than BOCA 1999 in that the criteria provided through evaluation of site characteristics under IBC result in larger lateral loads. It follows that the design for Portland Sports is somewhat more conservative.

2. *The Report references an Exploration/Location plan, this was not included in the technical submissions and is required pursuant to Section 1816.16 of the Code.*

The "Exploration Location Plan" is in your office; it was delivered earlier this date.

3. *There are variations from the Gillespie report and the Fleming proposal, among them are Pile capacity, blow counts and slice specifications. The Gillespie report requires review. As a matter of procedure, prior to commencement, can Gillespie review the Fleming proposal and accept or reject the modifications in a formal way?*

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**R. W. Gillespie & Associates, Inc.**

## **R. W. Gillespie & Associates, Inc.**

Page 2 of 2

As discussed, Fleming's wave analysis for pile capacity is based on 4 blows per inch for 3 consecutive inches yielding an allowable load of 40 tons per pile. Our report is predicated on a total load of 35 tons per pile (30 tons for structure; 5 tons for downdrag). Our evaluations indicate a final set criteria of 4 blows for 2 consecutive inches or 5 blows for the final inch. Since the piles are slender, our field representative will be observing for rapid "take up" in the driving process and making a field judgement as to the more applicable criterion.

*4. There is no mention of compliance with Section 1816.14 Identification, in either the Statement of Special Inspections, the construction documents or the Gillespie report. Please provide this information in a revise (sic) statement of special inspections.*

Section 1816.14 requires that pile materials be identified as to source and grade throughout the course of installation. Our field representative will record manufacturer and grade of steel for each delivery of piles to the project. Any delivery not from the initial source will be noted and proper documentation and/or testing will be requested from H. B. Fleming.

*5. The Settlement Analysis in the Gillespie report on page 3 does not comment of (sic) potential harmful distortion, instability or excessive structural stress as required by Section 1816.19.*

The settlement evaluations presented in our report of geotechnical investigation represent discrete portions of the project as well as the project as a whole. Settlement of piles will be limited to elastic compression, or about 1/4 inch at design load. The larger settlements described for the playing surface have been described in detail at meetings and in the report; all concerned parties are aware of the magnitudes and have indicated their acceptance of them.

*6. There is no Installation sequence report. (See section 1816.21)*

Section 1816.21 of BOCA 1999 is directed primarily at displacement type piles (timber, precast concrete, etc). H-piles are nondisplacement and should not result in compaction of surrounding soils, interfere with other pile locations, or disrupt adjacent structures.

We trust the foregoing meets your present needs, and if you have any questions, please contact us.

Applicant: Portland Sports Center Date: 7/31/03

Address: 550 Warren Ave

C-B-L: 271-A-002

CHECK-LIST AGAINST ZONING ORDINANCE

Date - Addition to Jokers

Foundation permit # 03-0800

regular construction permit # 03-0882

Zone Location - B-4

Interior or corner lot -

Proposed Use/Work - construct Indoor Sports Facility 69,000<sup>sq</sup> ft as of 7/30/03

Sewage Disposal - City  
connected to existing Jokers Bldg (28,864<sup>sq</sup> ft)

Lot Street Frontage - 60' min - 320' + shown

Front Yard - 20' min 105' scaled

Rear Yard - 20' min - 125' given

Side Yard - 10' min - 13' & 195' shown  
1 or 2 stairs

Projections -

Width of Lot - 60' min 200' + shown

Height - 65' MAX - 22' scaled

Lot Area - 10,000<sup>sq</sup> ft min - 311,963<sup>sq</sup> ft shown

Lot Coverage/ Impervious Surface - 80% MAX - 76% shown  $\frac{235,663}{311,963} = 76\%$

Area per Family - N/A

Off-street Parking - over 50,000<sup>sq</sup> ft - parking was determined & approved by the Planning  
274 + 9 handicap shown 7/22/03 BD

Loading Bays - N/A

Site Plan - Major # 2003-0066

Shoreland Zoning/ Stream Protection - N/A

Flood Plains - Panel 6 - Zone X

Floor Area Ratio = 65% MAX - 31% shown -  $\frac{98,235}{311,963} = 31\%$

Separate permits required for new signage

MEMORANDUM

6/4/03



**SYTDesign Consultants**  
CIVIL ENGINEERS & LAND SURVEYORS

**TO: Kandi Talbot**

**ORGANIZATION: Department of Planning and Development**

**FROM: Peter Biegel**

**DATE: 6-3-03**

**RE: Portland Sports Center – General Distance Information**

Kandi:

There were a number of distance questions relative to our proposed project and surrounding existing features asked at the planning board workshop. We are providing the following approximate distances to help give the board and interested parties a sense of scale when looking at the plans.

1. Distance from the proposed sports center building to the edge of Joker's property **225 feet.**
2. Distance from edge of proposed sports center parking to edge of Joker's Property line **125 feet.**
3. Width of the Portland Terminal railroad track land **80 feet.**
4. Distance from Joker's property line to nearest residential neighbor **250 feet.** The residential area is buffered from the Joker's property by the railroad berm and wooded area.
5. Distance from the proposed sports center building to the nearest residential neighbor **450 feet.**

Sincerely,  
Peter



<b>Location of Construction:</b> 550 Warren Ave	<b>Owner Name:</b> M T S Llc	<b>Owner Address:</b> 512 Warren Ave	<b>Phone:</b> 603-430-0339
<b>Business Name:</b> n/a	<b>Contractor Name:</b> n/a	<b>Contractor Address:</b> n/a Portland	<b>Phone:</b>
<b>Lessee/Buyer's Name:</b> n/a	<b>Phone:</b> n/a	<b>Permit Type:</b> Additions - Commercial	<b>Zone:</b>

**Dept:** Zoning      **Status:** Approved with Conditions      **Reviewer:** Marge Schmuckal      **Approval Date:** 07/31/2003

**Note:** regular construction permit is on #03-0882      **Ok to Issue:**

- 1) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
- 2) Separate permits shall be required for any new signage.

**Dept:** Building      **Status:** Approved with Conditions      **Reviewer:** Mike Nugent      **Approval Date:** 07/31/2003

**Note:**      **Ok to Issue:**

- 1) Satisfactory responses to memo dated 7/30/03 and sent to R.W. Gillespi, Destafno and Flemming must be received prior to the placement of concrete.  
This is a foundation ONLY approval!

**Dept:** Fire      **Status:** Approved      **Reviewer:** Lt. MacDougal      **Approval Date:** 07/30/2003

**Note:** foundation only      **Ok to Issue:**

### CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

---

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
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RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE	DATE	PHONE
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**H. B. FLEMING**  
 89 PLEASANT AVENUE  
 SOUTH PORTLAND, MAINE 04106

**LETTER OF TRANSMITTAL**

Phone (207) 799-8514  
 Fax (207) 799-8538

DATE: 6/5/03  
 ATTENTION: JOHN DESTEFANO  
 RE: PORTLAND, ME JOKERS

TO: DESTEFANO INC  
 2450 LAFAYETTE ROAD  
 PORTSMOUTH, NH 03801

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:

- Shop drawings     Prints     Plans     Samples     Specifications  
 Copy of letter     Change order     \_\_\_\_\_

COPIES	DATE	NO.	DESCRIPTION
4	6/5/03		PILE DRIVING CRITERIA SUBMITTAL, 4 BLOWS/INCH
			PILE EQUIPMENT DATA SHEET
			DE-30 LITERATURE
			ALTERNATE HAMMER DA-35C (SINGLE ACTING MODE)
			SPLICE DETAIL
			WAVE EQUATION ANALYSIS
			PILE POINT DETAILS

THESE ARE TRANSMITTED as checked below:

- For approval     Approved as submitted     Resubmit \_\_\_\_\_ copies for approval  
 For your use     Approved as noted     Submit \_\_\_\_\_ copies for distribution  
 As requested     Returned for corrections     Return \_\_\_\_\_ corrected prints  
 For review and comment     \_\_\_\_\_  
 FOR BIDS DUE \_\_\_\_\_     PRINTS RETURNED AFTER LOAN TO US

REMARKS

Recvd 6/12  
 3-D. Print  
 1-D/A

COPY TO \_\_\_\_\_

SIGNED: 

PRODUCT 240T

If enclosures are not as noted, kindly notify us at once.

**H.B. FLEMING**  
89 PLEASANT AVE  
SOUTH PORTLAND, MAINE 04106  
Phone: 207-799-8514 Fax: 207-799-8538  
[www.HBFLEMING.com](http://www.HBFLEMING.com)



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## SUBMITTAL

### Submitted To:

Client: DeStefano & Associates, Inc.  
Address: Portsmouth, NH  
Telephone: 603-430-0039  
Fax: 603-430-0346

Attention: John DeStefano  
Date: 6/05/03  
Project: Jokers  
Location: Portland, ME

### Subject: Pile Driving Criteria

H.B.Fleming proposes to use the following driving criteria for piles to be installed at the above location:

#### Hammer

- An MKT DE-30 open-ended diesel pile hammer will be used to drive the piles. The DE-30 has a ram weight of 2,800 lbs, a maximum stroke of 10'6" and a rated energy of 28,000 ft-lbs.
- The hammer cushioning material consists of 2.5 inches of Hamortex material.

#### Pile

- HP8x36 ASTM GR. 50 steel piles.
- The Design Capacity of the piles is 40 tons.
- The Ultimate Capacity, which we have based our analysis on, is 80 tons.
- Piles will be fitted with cast steel driving points.

#### Result

- Piles will be driven to a blow count of 4 blows per inch is obtained for three consecutive inches.
- These criteria are based upon the output generated by from the WEAP analysis that follows.

Signed: \_\_\_\_\_

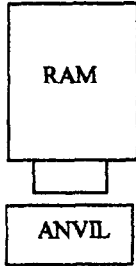
John S. Linscott IV

## H.B. FLEMING PILE EQUIPMENT DATA SHEET

Project: Jokers Piles  
 Location: Portland, Maine

Date: 6/5/03  
 Client: DeStefano Inc.

**HAMMER**



Manufacturer:	MKT
Model:	DE-30
Type:	Single Acting Diesel
Length of Stroke:	10' - 6"
Rated Energy at Given Stroke:	28,000
Modifications:	None

**HAMMER CUSHION**



Material:	Hamortex
Thickness:	2.5"
Area:	285 in <sup>2</sup>
Modulus of Elasticity:	29,000 psi
Coefficient of Restitution:	0.8

**DRIVE HEAD**



Weight:	1200 lb
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**PILE CUSHION**

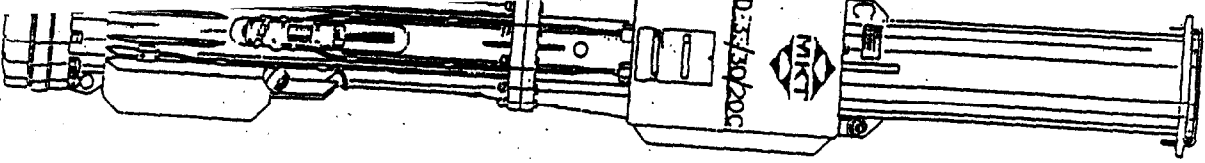


Cushion Material:	N/A
Thickness:	N/A
Modulus of Elasticity:	N/A
Coefficient of Restitution:	N/A

**PILE**



Pile Type:	HP8x36
Length in Leads:	Up to 65'
Weight/LF:	36
Wall Thickness:	0.445
Taper:	N/A
Cross Sectional Area:	10.6
Design Capacity of Pile:	40 tons
Splice Description:	Full Penetration Butt Weld
Tip Treatment Description:	Cast Steel Point



INTRODUCING THE  
VERSATILE NEW

# DE333/30/20C

MAXIMUM DIESEL HAMMER FLEXIBILITY  
WITH RAM WEIGHTS TO 4,000 LBS.

ONE HAMMER... MULTIPLE RAM SIZES...  
AND ENERGY RANGES. ANOTHER MKT  
FIRST PROVIDING THE CONTRACTOR WITH  
HAMMER SIZE FLEXIBILITY AND REDUCED  
EQUIPMENT INVESTMENT COSTS. MKT  
DIESEL HAMMERS CONTINUE TO OFFER  
FEATURES WHICH INSURE DEPENDABLE  
AND PRODUCTIVE OPERATION.



MANUFACTURING INC.

1708 Pershall Road  
St. Louis, Mo 63137  
(314) 380-2254

SPECIFICATIONS OF DE333/30/20C

RAM-PISTON WEIGHT (LBS.)	2,000	2,800	3,300	4,000
ENERGY RATING (FT. LBS.)	20,000	28,000	33,000	40,000
BEARING, BASED ON EN FORMULA (TONS)	100	140	165	200
MAXIMUM OBTAINABLE STROKE	10'-6"	10'-6"	10'-6"	10'-5"
OVERALL LENGTH WITH DRIVE CAP	15'-11"	15'-11"	15'-11"	15'-11"
WEIGHT, HAMMER ONLY (LBS.)	6,450	7,250	7,750	8,550
UNIVERSAL DRIVE CAP (LBS.)	7,400	8,200	8,700	9,510

PUBLISHED ENERGY RATINGS ARE EQUAL TO RAM WEIGHT X 100 FT. RAM STROKE. ACTUAL ENERGIES DELIVERED ARE A FUNCTION OF THE OVERALL JOB CONDITIONS. BEARING RATINGS BASED UPON ENGINEERING FORMULA, PILE SET EQUAL TO 0.1 R.L.S.P.C.

- PRODUCT LIST**
- SINGLE ACTING DIESEL PILE HAMMERS
  - DOUBLE ACTING DIESEL PILE HAMMERS
  - STEAM/AIR PILE HAMMERS
  - DRIVE CAPS AND ACCESSORIES
  - VIBRATORY PILE DRIVERS/EXTRACTORS
  - HYDRAULIC POWER UNITS
  - VIBRATORY HAMMER ACCESSORIES
  - HYDRAULIC AUGER SYSTEMS
  - PILE DRIVING LEAD SYSTEMS
  - BOTTOM BRACES AND LEAD ACCESSORIES
  - CUSTOM ENGINEERED PRODUCTS

DISTRIBUTED BY:



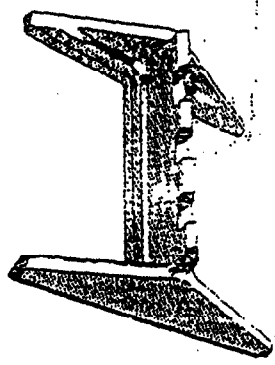
1415 208-6300  
FAX (412) 208-9775

ALTOONA, PENNSYLVANIA  
NOK III EAST EQUIPMENT DISTRIBUTION INC.  
SALES - SERVICE - SERVICE  
725 West 20th  
Altoona, PA 15207-0000

MKT Manufacturing, Inc. reserves the right to amend these specifications at any time without notice. The only warranty applicable is our standard industry warranty. We make no other warranty. © 1997 MKT Manufacturing, Inc.

# ACCESSORIES: H-PILE

## The Super-Bite Point



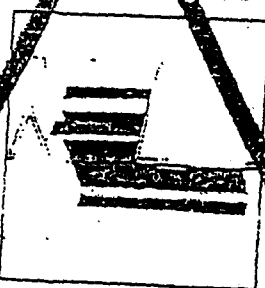
- Four large cutting teeth on the web section for better gripping in rock formations.
- Continuous cutting edges on the flanges.
- Continuous backing for both flanges and web.
- Thicker flanges and web sections.
- Meets ASTM A27 standards. Other standards available upon request.
- Flanges are pre-beveled for easy attachment.
- Certifications with EACH shipment.
- Accepted/Used on private projects, municipalities, and Departments of Transportation projects coast-to-coast.

## H-BEAM SPICERS

any pile jobs where splices are required in H-Beams, the PAL H-Beam splicer can equal or exceed pile driving records as the welding template. The splicer slices off the pile section and the new section is welded on to the existing pile. The splicer provides quick and easy alignment. Welding time is greatly reduced. The splicer is available in 10' and 15' lengths.

## LD PROCEDURE

1. Drive the pile to the required depth. 2. Attach the splicer to the pile. 3. Weld the splice. 4. Drive the pile to the required depth. 5. Repeat the process as needed.

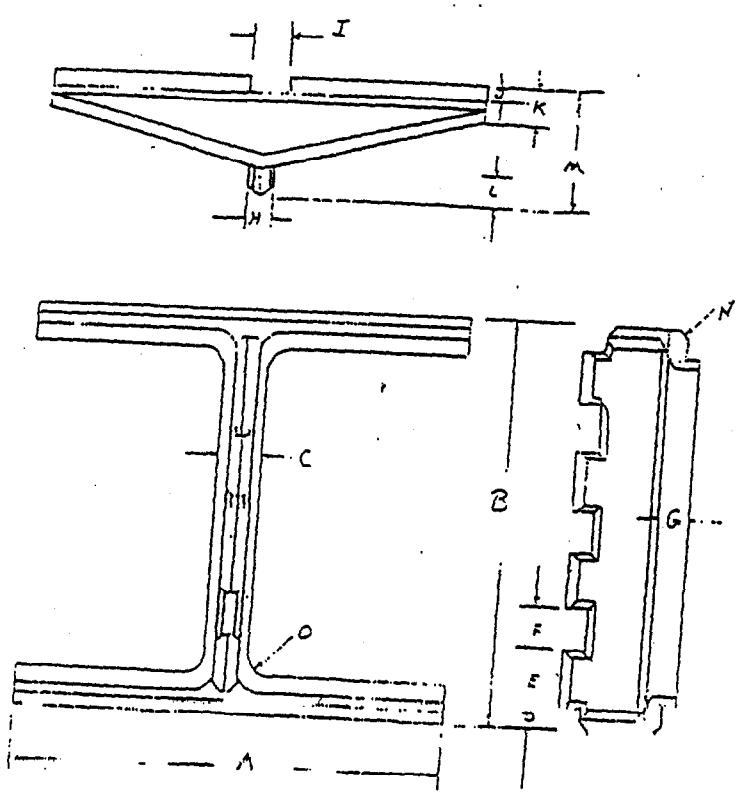


PAR	10T
A	10.1875
B	10.0000
C	1.2500
D	2.7500
E	1.0000
F	1.5000
G	1.0625
H	0.7500
I	0.6875
J	0.500
K	1.0000
L	0.6250
M	3.5000
N	45°
O	1.7500

MATERIAL: A27 3/8"

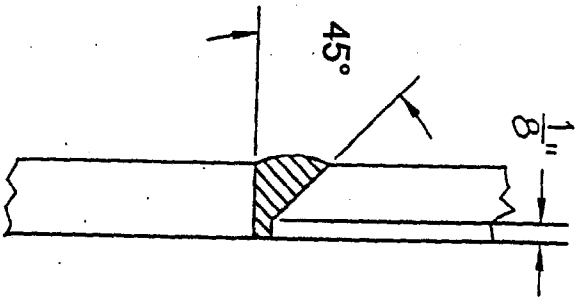
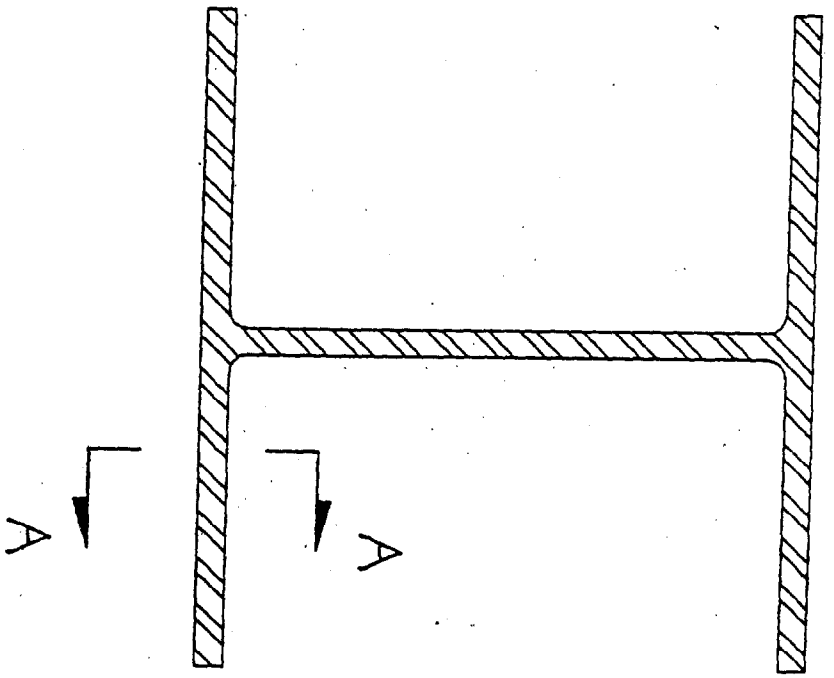
NOTE ALL RADII ARE .7500 TYP.

NOTE ALL CHAMFER ARE 45° TYP.



Piling Access. Inc

PAR	T	BY:
SERIES	No. 10T	DHS



SECTION A-A

- NOTES:
1. 100% BUTT WELDED SPLICE.
  2. EITHER TOP OR BOTTOM SECTION OF PILE MAY BE BEVELED.
  3. ALL WELDERS WILL BE AWS CERTIFIED.
  4. WELDING ELECTRODE WILL BE E70XX. — E 7018

\* NO MORE THAN 2 SPLICES / PILE

H.B. FLEMING
TYPICAL H-PILE SPLICE DETAIL

Jokers : 06/05/2003 :

06/05/2003

H.B. FLEMING

Stroke 6.57ft Vport-d 18.84ft/s Vport-u -18.51ft/s Vimp 14.03ft/s

Rut 132.0 kps, Set 0.37 in, Blow Ct 32.4 Bpf, FMX 237.0 kps, EMX 9.5 k-f  
 Rut 149.0 kps, Set 0.30 in, Blow Ct 39.7 Bpf, FMX 242.7 kps, EMX 9.7 k-f  
 Rut 160.0 kps, Set 0.27 in, Blow Ct 44.6 Bpf, FMX 250.4 kps, EMX 9.9 k-f  
 Rut 165.0 kps, Set 0.26 in, Blow Ct 46.9 Bpf, FMX 254.5 kps, EMX 10.1 k-f  
 Rut 175.0 kps, Set 0.22 in, Blow Ct 54.2 Bpf, FMX 256.3 kps, EMX 10.2 k-f  
 Rut 190.0 kps, Set 0.18 in, Blow Ct 66.2 Bpf, FMX 262.9 kps, EMX 10.5 k-f  
 Rut 200.0 kps, Set 0.16 in, Blow Ct 76.3 Bpf, FMX 266.1 kps, EMX 10.6 k-f  
 Rut 210.0 kps, Set 0.14 in, Blow Ct 88.7 Bpf, FMX 267.9 kps, EMX 10.7 k-f

Rut	Bl Ct	Stroke (ft)	Ten Str	i,t	Comp Str	i,t	ENTHRU	Bl Rt	f
(kips)	(bpf)	down	up	(ksi)	(ksi)	(kip-ft)	(b/min)		
100.0	23.0	5.29	5.32	-0.69	( 11, 31)	20.99	( 5, 3)	9.1	51.1
115.0	27.3	5.44	5.50	-1.00	( 10, 28)	21.53	( 4, 3)	9.2	50.4
132.0	32.4	5.72	5.70	-1.43	( 9, 26)	22.56	( 5, 3)	9.5	49.2
149.0	39.7	5.86	5.94	-2.02	( 9, 25)	23.78	( 22, 6)	9.7	48.4
160.0	44.6	6.08	6.07	-2.49	( 8, 24)	24.94	( 22, 6)	9.9	47.7
165.0	46.9	6.19	6.14	-2.71	( 8, 24)	25.58	( 22, 6)	10.1	47.4
175.0	54.2	6.25	6.27	-3.11	( 7, 24)	26.21	( 22, 6)	10.2	47.1
190.0	66.2	6.43	6.44	-3.49	( 7, 23)	27.32	( 22, 6)	10.5	46.4
200.0	76.3	6.53	6.53	-3.60	( 7, 23)	27.98	( 22, 6)	10.6	46.1
210.0	88.7	6.57	6.62	-3.67	( 7, 23)	28.45	( 22, 6)	10.7	45.9



Input File: C:\DRIVEN\JOKERS1.GW  
 Hammer File: C:\Program Files\GRL & PDI\GRLWEAP\HAMMER.ALT

Echo Print of Input Data

Jokers : 06/05/2003 :

-100	0	148	0	0	0	0	0	1	20	0	0	0	0	0	0	0.000
	1.200	283.500		125.0		2.500		0.780		0.010		0.0				
	0.000	0.0		0.000		0.000		0.000		0.0						
	74.950	10.600		29000.000		492.000		2.700		0.000		0.850				0.010
MKT	DE 30		1	3	0											
	2.80	94.00		12.00		8.0000		0.0000		0.8000		0.0000				
	0.77	20.00		12.00		0.9000		0.0100								
	12.72	113.10		115.00		0.0010		0.0020		1.2500		0.0000				0.0000
	14.70	1200.00		0.00		0.00		0.00		0.00		1				
	0.0000	0.0000		0.0000		0.0000		0.0000		0.0000		0.0000				0.0000
	0.100	0.040		0.200		0.150		0.000		0.000		0.000				0.000
	0.000	0.000		0.000		0.000										
	0.000	0.000		0.000		0.000										
	0.00	0.00		74.95		74.95		0.00		0.00		0.00		0.00		0.00
	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
	74.95	1.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
	100.0	115.0		132.0		149.0		160.0		165.0		175.0		190.0		210.0

ABOUT THE WAVE EQUATION ANALYSIS RESULTS

The GRLWEAP program simulates the behavior of an impact driven pile. The program contains mathematical models which describe hammer, driving system, pile and soil during the hammer blow. Under certain conditions, the models only crudely approximate often complex dynamic situations.

A wave equation analysis also relies on input data which represents normal situations. The data may be the best available information at the time of the analysis, however, it may greatly differ from actual field conditions.

The program authors, therefore, recommend prudent use of GRLWEAP results. Soil response and hammer performance should be verified by static and/or dynamic measurements. Estimates of bending or other local non-axial stresses and prestress effects must also be accounted for by the user.

Finally, the GRLWEAP capacities are ultimate values. They MUST be reduced by means of a safety factor to yield a design or working load.

GRLWEAP: WAVE EQUATION ANALYSIS OF PILE FOUNDATIONS  
 Version 1998-2  
 English Units

Jokers : 06/05/2003 :

Hammer Model:		DE 30	Made by:		MKT
No.	Weight kips	Stiffn k/inch	CoR	C-Slk ft	Dampg k/ft/s
1	0.933				
2	0.933	104675.2	1.000	0.0100	
3	0.933	104675.2	1.000	0.0100	
Imp Block	0.770	63892.7	0.900	0.0100	
Helmet	1.200	14175.0	0.780	0.0100	6.0

HAMMER OPTIONS:

Hammer File ID No.	148	Hammer Type	1
Stroke Option	0	Stroke Convergence Crit.	0.020
Fuel Pump Setting	1	Hammer Damping	2

HAMMER DATA:

Ram Weight	(kips)	2.80	Ram Length	(inch)	94.00
Maximum Stroke	(ft)	8.00	Actual Stroke	(ft)	4.00
			Efficiency		0.800
Maximum Pressure	(psi)	1200.00	Actual Pressure	(psi)	1200.00

Compression Exponent	1.350	Expansion Exponent	1.250
Ram Diameter (inch)	12.00	Minimum Stroke (ft)	4.00
Combustion Delay (s)	0.00100	Ignition Duration (s)	0.00200

The Hammer Data Includes Estimated (NON-MEASURED) Quantities

HAMMER CUSHION			PILE CUSHION		
Cross Sect. Area (in <sup>2</sup> )	283.50		Cross Sect. Area (in <sup>2</sup> )	0.00	
Elastic-Modulus (ksi)	125.0		Elastic-Modulus (ksi)	0.0	
Thickness (inch)	2.50		Thickness (inch)	0.00	
Coeff of Restitution	0.8		Coeff of Restitution	0.0	
RoundOut (ft)	0.0		RoundOut (ft)	0.0	
Stiffness (kips/in)	14175.0		Stiffness (kips/in)	0.0	

Jokers : 06/05/2003 :  
H.B. FLEMING

06/05/2003  
GRLWEAP(TM) Version 1998-2

PILE PROFILE:

L b Top	Area	E-Mod	Spec Wt	Circmf	Strength	Wave Sp	EA/c
ft	in <sup>2</sup>	ksi	lb/ft <sup>3</sup>	ft	ksi	ft/s	k/ft/s
0.0	10.60	29000.	492.0	2.7	1.000	16524.	18.6
74.9	10.60	29000.	492.0	2.7	1.000	16524.	18.6

Wave Travel Time 2L/c (ms) 9.071

Pile and Soil Model						Total Capacity			Rut	(kips)	100.0
No.	Weight	Stiffn	C-Slk	T-Slk	CoR	Soil-S	Soil-D	Quake	LbTop	Circmf	Area
	kips	k/in	ft	ft		kips	s/ft	inch	ft	ft	in <sup>2</sup>
1	0.123	7519.	0.010	0.000	0.85	0.0	0.200	0.100	3.41	2.7	10.6
2	0.123	7519.	0.000	0.000	1.00	0.1	0.200	0.100	6.81	2.7	10.6
3	0.123	7519.	0.000	0.000	1.00	0.2	0.200	0.100	10.22	2.7	10.6
4	0.123	7519.	0.000	0.000	1.00	0.3	0.200	0.100	13.63	2.7	10.6
5	0.123	7519.	0.000	0.000	1.00	0.4	0.200	0.100	17.03	2.7	10.6
6	0.123	7519.	0.000	0.000	1.00	0.5	0.200	0.100	20.44	2.7	10.6
7	0.123	7519.	0.000	0.000	1.00	0.5	0.200	0.100	23.85	2.7	10.6
8	0.123	7519.	0.000	0.000	1.00	0.6	0.200	0.100	27.25	2.7	10.6
9	0.123	7519.	0.000	0.000	1.00	0.7	0.200	0.100	30.66	2.7	10.6
10	0.123	7519.	0.000	0.000	1.00	0.8	0.200	0.100	34.07	2.7	10.6
11	0.123	7519.	0.000	0.000	1.00	0.9	0.200	0.100	37.47	2.7	10.6
12	0.123	7519.	0.000	0.000	1.00	1.0	0.200	0.100	40.88	2.7	10.6
13	0.123	7519.	0.000	0.000	1.00	1.0	0.200	0.100	44.29	2.7	10.6
14	0.123	7519.	0.000	0.000	1.00	1.1	0.200	0.100	47.70	2.7	10.6
15	0.123	7519.	0.000	0.000	1.00	1.2	0.200	0.100	51.10	2.7	10.6
16	0.123	7519.	0.000	0.000	1.00	1.3	0.200	0.100	54.51	2.7	10.6
17	0.123	7519.	0.000	0.000	1.00	1.4	0.200	0.100	57.92	2.7	10.6
18	0.123	7519.	0.000	0.000	1.00	1.4	0.200	0.100	61.32	2.7	10.6
19	0.123	7519.	0.000	0.000	1.00	1.5	0.200	0.100	64.73	2.7	10.6
20	0.123	7519.	0.000	0.000	1.00	1.6	0.200	0.100	68.14	2.7	10.6
21	0.123	7519.	0.000	0.000	1.00	1.7	0.200	0.100	71.54	2.7	10.6
22	0.123	7519.	0.000	0.000	1.00	1.8	0.200	0.100	74.95	2.7	10.6
Toe						80.0	0.150	0.04			

FILE, SOIL, ANALYSIS OPTIONS:

Uniform/Non-Uniform/2-Pile	0	File Segments: Automatic	
No. of Slacks/Splices	0	File Damping (%)	1
% Skin Friction	20	File Damping Fact. (k/ft/s)	0.372
Soil Resistance Distr. No.	0	% End Bearing	80
Soil Damping Option	Smith		
Max No Analysis Iterations	0	Time Increment/Critical	160
Residual Stress Analysis	0	Output Option	0
Output Time Interval	1	Analysis Time-Input (ms)	0
Output Segment Generation	Automatic		

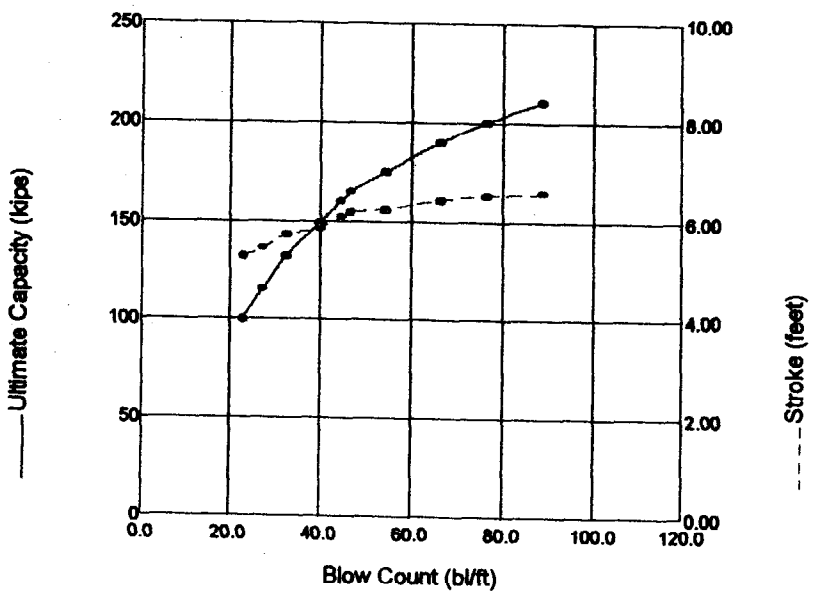
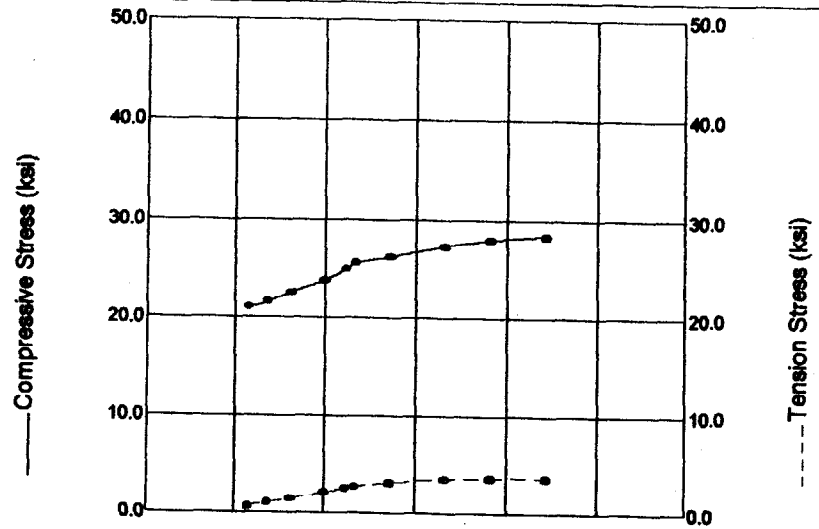
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06/05/2003  
GRLWEAP(TM) Version 1998-2

Rut (kips)	Bl Ct (bpf)	Stroke (ft) down	Stroke (ft) up	Ten Str (ksi)	i, t	Comp Str (ksi)	i, t	ENTHRU (kip-ft)	Bl Rt (b/min)
100.0	23.0	5.29	5.32	-0.69	( 11, 31)	20.99	( 5, 3)	9.1	51.1
115.0	27.3	5.44	5.50	-1.00	( 10, 28)	21.53	( 4, 3)	9.2	50.4
132.0	32.4	5.72	5.70	-1.43	( 9, 26)	22.56	( 5, 3)	9.5	49.2
149.0	39.7	5.86	5.94	-2.02	( 9, 25)	23.78	( 22, 6)	9.7	48.4
160.0	44.6	6.08	6.07	-2.49	( 8, 24)	24.94	( 22, 6)	9.9	47.7
165.0	46.9	6.19	6.14	-2.71	( 8, 24)	25.58	( 22, 6)	10.1	47.4
175.0	54.2	6.25	6.27	-3.11	( 7, 24)	26.21	( 22, 6)	10.2	47.1
190.0	66.2	6.43	6.44	-3.49	( 7, 23)	27.32	( 22, 6)	10.5	46.4
200.0	76.3	6.53	6.53	-3.60	( 7, 23)	27.98	( 22, 6)	10.6	46.1
210.0	88.7	6.57	6.62	-3.67	( 7, 23)	28.45	( 22, 6)	10.7	45.9

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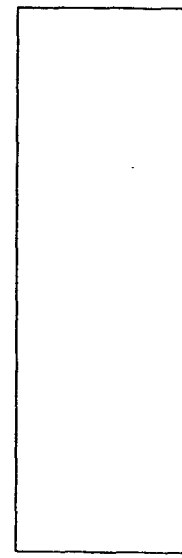
05-Jun-2003  
 GRLWEAP (TM) Version 1998-2



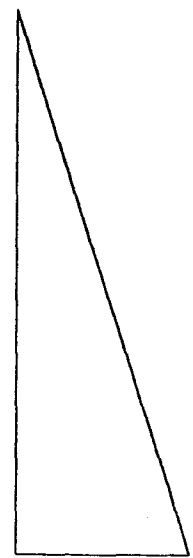
MKT DE 30

Efficiency	0.800
Helmet	1.20 kips
Hammer Cushion	14175 kips/in
Skin Quake	0.100 in
Toe Quake	0.040 in
Skin Damping	0.200 sec/ft
Toe Damping	0.150 sec/ft
Pile Length	74.95 ft
Pile Top Area	10.80 in <sup>2</sup>

Pile Model



Skin Friction Distribution



Res. Shaft = 20 %  
 (Proportional)

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Ultimate Capacity kips	Maximum Stress ksi	Ultimate Stress ksi	Blow Count bl/ft	Stroke feet	Energy kips-ft
100.0	20.995	0.693	23.0	5.29	9.15
115.0	21.533	1.000	27.3	5.44	9.19
132.0	22.558	1.426	32.4	5.72	9.52
149.0	23.783	2.025	39.7	5.86	9.66
160.0	24.944	2.487	44.6	6.08	9.94
165.0	25.580	2.715	46.9	6.19	10.10
175.0	26.211	3.114	54.2	6.25	10.15
190.0	27.320	3.493	66.2	6.43	10.45
200.0	27.984	3.604	76.3	6.53	10.59
210.0	28.446	3.666	88.7	6.57	10.66

