BYE LAW APPLICATION FEES

REF. NO.: 91A/1077 CERTIFICATE NO.: 15614

PROPOSAL: Extension to Industrial Building

LOCATION: Unit 520, Beech Road, Western Industrial Estate

APPLICANT: Packaging Resources Ltd

	1	2	3	4	5	6	7
CLASS	DWELLINGS/AREA LENGTH/STRUCTURE	RATE	AMT. OF FEE REQUIRED	AMT. LODGED	BALANCE DUE	RED. FEE APPL.	AMT. OF RED. FEE
A	Dwelling (Houses/Flats)	@ £55					
B	Domestic Ext. (Improvement/ Alts.)	@ £30					
C	Building for office or other comm. purpose	@ £3.50 per M^2 or £70	2/3192	2/3192	—		
D	Building or other structure for purposes of agriculture	@ £1.00 per M^2 in excess of 300 M^2 Min. £70					
E	Petrol Filling Station	@ £200					
F	Dev. of prop. not coming within any of the forgoing classes	£70 or £9 per .1 hect. whichever is the greater					

Column 1 Certified: Signed: _____ Grade: _____ Date: _____

Column 1 Endorsed: Signed: _____ Grade: _____ Date: _____

Columns 2,3,4,5,6 & 7 Certified: Signed: [signature] Grade: S.O Date: 5/7/91

Columns 2,3,4,5,6 & 7 Endorsed: Signed: _____ Grade: _____ Date: _____

PLANNING APPLICATION FEES

Reg. Ref. 91A/1077 Cert. No. 25879

PROPOSAL.... Extension to Industrial Building.....

LOCATION... Unit 520, Boad Road, Western Industrial Estate....

APPLICANT... Packaging Resources Ltd.....

CLASS	DWELLINGS/AREA LENGTH/STRUCT.	RATE	AMT. OF FEE REC.	AMOUNT LODGED	BALANCE DUE	BALANCE PAID
1	Dwellings	@£32				
2	Domestic,	@£16				
3	Agriculture	@50p per m2 in excess of 300m2. Min. £40				
4	Metres 912.0m²	@£1.75 per m2 or £40	£1596	£1596		
5	x .1 hect.	@£25 per .1 hect. or £250				
6	x .1 hect.	@£25 per .1 hect. or £40				
7	x .1 hect.	@£25 per .1 hect. or £100				
8		@£100				
9	x metres	@£10 per m2 or £40				
10	x 1,000m	@£25 per £1000m or £40				
11	x .1 hect.	@£5 per .1 hect. or £40				

Column 1 Certified:Signed: ..... Grade P.T.T. Date 4/7/91

Column 1 Endorsed:Signed: ..... Grade ..... Date .....

Columns 2,3,4,5,6 & 7 Certified:Signed: ..... Grade ..... Date 4/7/91

Columns 2,3,4,5,6 & 7 Endorsed:Signed: ..... Grade ..... Date .....

LOCATION GOVERNMENT (PLANNING AND DEVELOPMENT) ACTS, 1963 TO 1982

ASSESSMENT OF FINANCIAL CONTRIBUTION

REG. REF.: 91A/1077

CONT. REG.:

SERVICES INVOLVED: WATER/FOUL SEWER/SURFACE WATER

AREA OF SITE:

FLOOR AREA OF PRESENT PROPOSAL: 9817FT² J.G. 4/7/91.

MEASURED BY:

CHECKED BY:

METHOD OF ASSESSMENT:

TOTAL ASSESSMENT *

MANAGER'S ORDERED NO: P/ /
DATED

ENTERED IN CONTRIBUTIONS REGISTER:

* Nil

No levy reqd. for this unit under 4A592q, as levies pd. in full on acreage basis. D 21/8/91

DEVELOPMENT CONTROL ASSISTANT GRADE

MG

PLANNING DEPT.
DEVELOPMENT CONTROL SECT
Date 8/8/91
Time 4:10

Register Reference : 91A/1077 Date : 3rd July 1991

Development : Side extension to existing industrial building

LOCATION : Unit 520 Beech Road, Western Industrial Estate

Applicant : Packaging Resources Ltd

App. Type : PERMISSION/BUILDING BYE-LAW APPROVAL

Planning Officer : M.GALVIN

Date Recd. : 28th June 1991

DUBLIN COUNTY COUNCIL
16 JUL 1991
ENVIRONMENTAL HEALTH

Attached is a copy of the application for the above development .Your report would be appreciated within the next 28 days.

Yours faithfully,

Paul Hobin

for PRINCIPAL OFFICER

I have no objections to this proposal provided compliance with
1 Safety in Industries Act 1955-80
2 office premises Act 1958 + Regs.
3 Health, Safety + Welfare at Work Act 1989
a) The intervening lobbies adjoining the Sanitary accommodation are separately ventilated to the outer air
2) Drinking water supply points are provided for office and factory staff.

Jackie Kelly
EHO 26/7/91

SUPER.ENVIRON. HEALTH OFFICER,
33 GARDINER PLACE,
DUBLIN 1.

Joh Healy
30/7/91

DUBLIN COUNTY COUNCIL

Tel. 7247[redacted] Ext. 262/264)

PLANNING DEPARTMENT,
BLOCK 2,
IRISH LIFE CENTRE,
LR. ABBEY STREET,
DUBLIN 1.

Notification of Decision to Grant Permission/[redacted]

Local Government (Planning and Development) Acts, 1963-1983

To: Mark O'Reilly & Assocs.,
Greenmount House.
Harold's Cross Road,
Dublin 6W.

Decision Order Number and Date: P/3858/91 - 23.08.1991

Register Reference No.: 91A/1077

Planning Control No.:

Application Received on: 28.06.1991

Applicant: Packaging Resources Ltd. Floor Area: 912 sq. m.

In pursuance of its functions under the above-mentioned Acts, the Dublin County Council, being the Planning Authority for the County Health District of Dublin, did by Order dated as above make a decision to grant Permission/[redacted] for:-

side extension to existing industrial building at Unit 520, Beech Road, Western Industrial Estate.

SUBJECT TO THE FOLLOWING CONDITIONS

CONDITIONS	REASONS FOR CONDITIONS
1. The development to be carried out in its entirety in accordance with the plans, particulars and specifications lodged with the application, save as may be required by the other conditions attached hereto.	1. To ensure that the development shall be in accordance with the permission and that effective control be maintained.
2. That before development commences, approval under the Building Bye-Laws be obtained, and all conditions of that approval be observed in the development.	2. In order to comply with the Sanitary Services Acts, 1878-1964.
3. That the requirements of the Chief Fire Officer be ascertained and strictly adhered to in the development.	3. In the interest of safety and the avoidance of fire hazard.
4. That the requirements of the Supervising Environmental Health Officer be ascertained and strictly adhered to in the development.	4. In the interest of health.
5. That the water supply and drainage arrangements, including the disposal of surface water be in accordance with the requirements of the Sanitary Services Department.	5. In order to comply with the requirements of the Sanitary Services Department.

Signed on behalf of the Dublin County Council: Joe Flemming
For Principal Officer

Date: 23-8-91

IMPORTANT: Turn overleaf for further information

CONDITIONS	REASONS FOR CONDITIONS
6. That no industrial effluent be permitted without prior approval from Planning Authority.	6. In the interest of health.
7. That the external finishes harmonise in colour and texture with the existing premises.	7. In the interest of visual amenity.
8. That off-street car parking facilities and parking for trucks be provided in accordance with the Development Plan Standards.	8. In the interest of the proper planning and development of the area.
9. That the area between the building and roads must not be used for truck parking or other storage or display purposes, but must be reserved for car parking and landscaping as shown on lodged plans.	9. In the interest of amenity.
10. That detailed proposals for landscaping and boundary treatment, including the programme for such works, of the site be submitted and agreed with the Planning Authority prior to the occupation of the proposed extension. This is to include detailed proposals for (1) boundary treatment along the Naas Road Frontage and (2) planting scheme for car park areas to provide for visual breaks.	10. In the interest of the proper planning and development of the area.
11. That no advertising sign or structure be erected, except those which are exempted development, without prior approval of Planning Authority.	11. In the interest of the proper planning and development of the area.
12. That the proposed extension shall be used for warehousing/light industry use associated with the existing building on site.	12. In the interest of the proper planning and development of the area.

NOTE:

If there is no appeal to An Bord Pleanala against this decision PERMISSION/APPROVAL will be granted by the Council as soon as may be after the expiration of the period for the taking of such appeal. If every appeal made in accordance with the Acts has been withdrawn, the Council will grant the PERMISSION/APPROVAL after the withdrawal.

An appeal against the decision may be made to An Bord Pleanala. The applicant may appeal within one month from the date of receipt by him of this notification. ANY OTHER PERSON may appeal within twenty-one days beginning on the date of the decision.

An appeal shall be in writing and shall state the subject matter and grounds of the appeal. It should be addressed to:—

An Bord Pleanala, Blocks 6 and 7, Irish Life Centre, Lower Abbey Street, Dublin 1.

(1) An appeal lodged by an applicant or his agent with An Bord Pleanala will be invalid unless accompanied by a fee of £36 (Thirty-six Pounds). (2) A party to an appeal making a request to An Bord Pleanala for an Oral Hearing of an appeal must, *in addition* to (1) above, pay to An Bord Pleanala a fee of £36 (Thirty-six Pounds). (3) A person who is not a party to an appeal must pay a fee of £10 (Ten Pounds) to An Bord Pleanala when making submissions or observations to An Bord Pleanala in relation to an appeal.

Approval of the Council under Building Bye-Laws must be obtained and the terms of the approval must be complied with in the carrying out of the work before any development which may be permitted is commenced.

FUTURE PRINT LTD.

CW /837 (XIX)

Order No. P/3858/91

CONTRIBUTION:
Standard: Cardin
Roads: Bill
S. Sers: on account
Open Space: Sears
Other:
SECURITY:
Bond / C.I.F.:
Cash:

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Proposed side extension to existing industrial building at Unit 520, Beech Road, Western Industrial Estate, for Packaging Resources Ltd.

Mark O'Reilly & Assocs.,
Greenmount House,
Harold's Cross Road,
Dublin 6W.

Reg. Ref. 91A/1077
Appl. Rec'd: 28/6/91
Floor Area: 912sq. m.
Site Area: 10187.04sq. m
Zoning:

Report of the Dublin Planning Officer, dated 15 August 1991

This is an application for **PERMISSION** for a side extension to existing industrial building at Unit 520 Beech Road, Western Industrial Estate, for Packaging Resources Ltd.

The proposed site is located to the south of the Western Industrial Estate in an area zoned 'E' - "to provide for industry and related uses" in the Dublin County Development Plan, 1983. The existing site which has an area of 10,187.04sq. metres fronts onto the Naas Dual Carriageway. Access to the site is available from the Industrial Estate Access Road, Beech Road. It is a flat site which is bounded on 3 sides by palisade fencing. The boundary to the north-west comprises a c.2 metre high wall with palisade fencing atop.

Existing buildings on site include a large part brick/part clad factory warehouse of floor area 2495sq. metres (stated).

PLANNING HISTORY:

Reg. Ref. SA.218 refers to a grant of permission for the 2 no. advance industrial/warehouse units (51 and 52) at this site.

Reg. Ref. TA.458 refers to a refusal of permission for a D.I.Y. Centre at this site.

Reg. Ref. YA.529 refers to a grant of permission for the offices within warehouse.

Reg. Ref. YA.530 refers to grant of permission (individual user permission) for the use of Unit 520 as warehouse and ancillary offices.

Reg. Ref. YA.531 refers to a grant of permission for 2 no. signs at Unit 520.

Contd/.....

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Proposed side extension to existing industrial building at Unit 520, Beech Road, Western Industrial Estate, for Packaging Resources Ltd.

Reg. Ref. ZA.1188 refers to a refusal of permission by the Council and on appeal to An Bord Pleanala for temporary junction with Naas Road from Western Industrial Estate along approved future road. This provided for a road through the eastern portion of the subject site and was refused on the basis of traffic hazard and would prejudice the planned road network for the area. This included a flyover at this location leading from the Coldcut Fox & Geese Road. This is contained as a long term proposal in the 1983 Development Plan. However, it is noted that this proposal has been since dropped. This was confirmed by Roads Department (by phone)

The site of the original application referred to above has been extended to incorporate the area of the road reservation for this road/flyover.

The current application provides for a 912sq. metres extension to the side (east) of the existing premises. The newspaper advertisement referred to this as 'side extension' to existing industrial building. The existing building on site is stated (on the planning application form) to be a factory. ~~No permission exists for such a use~~. The proposed uses are stated to be factory/warehouse, although drawings refer to warehousing only. In any event either use is acceptable given the fact the original grounding permission for this building was for warehousing/industry. ~~From site inspection the existing building appeared to be used for warehousing only~~.

Lodged plans provide for the construction of a part clad/part brick warehouse to match existing. Roller shutter entrance doors are to be provided in the east and north-west elevations. Small scale office accommodation is also proposed.

The site layout plan proposed provides for 102 no. car parking spaces to the north and south of the existing building. This meets Development Plan standards for existing and proposed development. Lodged plans indicate the car parking bay as being broken up by planting (type not specified). The grassed area between the Naas Road and the car park (road reservation for widening of Naas Road) is to be retained. No boundary treatment/landscaping is proposed. This can be conditioned.

Contd/.....

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Proposed side extension to existing industrial building at Unit 520, Beech Road, Western Industrial Estate, for Packaging Resources Ltd.

The proposed development is considered to be acceptable. The additional site area is provided from a previous road reservation which has been dropped. The proposed building is similar in design, height and finish to that existing.

Environmental Health Officer reports no objection.

Sanitary Services report not received

I recommend that a decision to **Grant Permission** be made under the Local Government (Planning and Development) Acts, 1963-1990, subject to the following (12) conditions:-

(MG/CM)

For Dublin Planning Officer

Endorsed:- _____
for Principal Officer

Order:- A decision pursuant to Section 26(1) of the Local Government (Planning and Development) Acts, 1963-1990, to **GRANT PERMISSION** for the above proposal subject to the (12) conditions set out above is hereby made.

Dated: 23 August, 1991.

APPROVED OFFICER.
to whom the appropriate powers have been delegated by Order of the Dublin City and County Manager, dated 6th August, 1991.

Order No. P/3858/91

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Proposed side extension to existing industrial building at Unit 520, Beech Road, Western Industrial Estate, for Packaging Resources Ltd.

CONDITIONS	REASONS FOR CONDITIONS
1. The development to be carried out in its entirety in accordance with the plans, particulars and specifications lodged with the application, save as may be required by the other conditions attached hereto.	1. To ensure that the development shall be in accordance with the permission and that effective control be maintained.
2. That before development commences, approval under the Building Bye-Laws be obtained, and all conditions of that approval be observed in the development.	2. In order to comply with the Sanitary Services Acts, 1878-1964.
3. That the requirements of the Chief Fire Officer be ascertained and strictly adhered to in the development.	3. In the interest of safety and the avoidance of fire hazard.
4. That the requirements of the Supervising Environmental Health Officer be ascertained and strictly adhered to in the development.	4. In the interest of health.
5. That the water supply and drainage arrangements, including the disposal of surface water be in accordance with the requirements of the Sanitary Services Department.	5. In order to comply with the requirements of the Sanitary Services Department.
6. That no industrial effluent be permitted without prior approval from Planning Authority.	6. In the interest of health.
7. That the external finishes harmonise in colour and texture with the existing premises.	7. In the interest of visual amenity.
8. That off-street car parking facilities and parking for trucks be provided in accordance with the Development Plan Standards.	8. In the interest of the proper planning and development of the area.
9. That the area between the building and roads must not be used for truck parking or other storage or display purposes, but must be reserved for car parking and landscaping as shown on lodged plans.	9. In the interest of amenity.

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Proposed side extension to existing industrial building at Unit 520, Beech Road, Western Industrial Estate, for Packaging Resources Ltd.

CONDITIONS	REASONS FOR CONDITIONS
10. That detailed proposals for landscaping and boundary treatment, including the programme for such works, of the site be submitted and agreed with the Planning Authority prior to the occupation of the proposed extension. This is to include detailed proposals for (1) boundary treatment along the Naas Road Frontage and (2) planting scheme for car park areas to provide for visual breaks.	10. In the interest of the proper planning and development of the area.
11. That no advertising sign or structure be erected, except those which are exempted development, without prior approval of Planning Authority.	11. In the interest of the proper planning and development of the area.
12. That the proposed extension shall be used for warehousing/light industry use associated with the existing building on site. ~~and shall not be subdivided without a prior grant of permission.~~	12. In the interest of the proper planning and development of the area.

MG

PLANNING DEPT.
DEVELOPMENT CONTROL SECT
Date 8/3/91
Time 4:10

Register Reference : 91A/1077 Date : 3rd July 1991

Development : Side extension to existing industrial building

LOCATION : Unit 520 Beech Road, Western Industrial Estate

Applicant : Packaging Resources Ltd

App. Type : PERMISSION/BUILDING BYE-LAW APPROVAL

Planning Officer : M.GALVIN

Date Recd. : 28th June 1991

DUBLIN COUNTY COUNCIL

Attached is a copy of the application for the above development .Your report would be appreciated within the next 28 days.

Yours faithfully,

Paul Kelly

for PRINCIPAL OFFICER

I have no objection to this proposal provided compliance with

1 Safety in Industries Act 1955-80

2 office premises Act 1958 & Regs.

3 Health, Safety & Welfare at work Act 1989

a) The intervening lobbies adjoining the sanitary accomodation are separately ventilated to the outer air

2) Drinking water supply points are provided for office and factory staff.

Jackie Kelly
EHO 26/7/91

SUPER.ENVIRON. HEALTH OFFICER,
33 GARDINER PLACE,
DUBLIN 1.

30/7/91

Dublin County Council Comhairle Chontae Atha Cliath **Planning Department**

Building Control Department,
Liffey House,
Tara Street,
Dublin 1.
Telephone:773066

Bloc 2, Ionad Bheatha na hEireann,
Block 2, Irish Life Centre,
Sraid na Mainistreach Iacht,
Lower Abbey Street,
Baile Atha Cliath 1.
Dublin 1.
Telephone. (01)724755
Fax. (01)724896

Register Reference : 91A/1077

Date : 1st July 1991

LOCAL GOVERNMENT (PLANNING AND DEVELOPMENT) ACTS, 1963 TO 1990

Dear Sir/Madam,

DEVELOPMENT : Side extension to existing industrial building

LOCATION : Unit 520 Beech Road, Western Industrial Estate

APPLICANT : Packaging Resources Ltd

APP. TYPE : PERMISSION/BUILDING BYE-LAW APPROVAL

With reference to above, I acknowledge receipt of your application received on 28th June 1991.

Yours faithfully,

.....

for PRINCIPAL OFFICER

Mark O'Reilly & Associates,
Greenmount House,
Harolds Cross Road,
Dublin 6W.

Dublin County Council
Comhairle Chontae Atha Cliath

Planning Application Form/
Bye - Law Application Form

PLEASE READ INSTRUCTIONS AT BACK BEFORE COMPLETING FORM. ALL QUESTIONS MUST BE ANSWERED.

1. Application for Permission [✓] Outline Permission [ ] Approval [ ] Place ✓ in appropriate box.
Approval should be sought only where an outline permission was previously granted. Outline permission may not be sought for the retention of structures or continuances of uses.

2. Postal address of site or building (If none, give description sufficient to identify) UNIT 520, BEECH RD, WESTERN IND. ESTATE, D.12.

3. Name of applicant (Principal not Agent) PACKAGING RESOUCES LTD.

Address UNIT 520, BEECH RD, WESTERN IND. EST., D12 Tel. No 503522

4. Name and address of person or firm responsible for preparation of drawings MARK O'REILLY + ASSOCIATES, GREENMOUNT HSE, HAROLD'S CROSS ROAD, DUBLIN 6W. Tel. No 534423

5. Name and address to which notifications should be sent MARK O'REILLY + ASSOCIATES, GREENMOUNT HSE, HAROLD'S CROSS ROAD, DUBLIN 6W.

1596 1/7
N 44019

6. Brief description of proposed development SIDE EXTENION TO EXISTING IND. BUILDING.

7. Method of drainage EXISTING DRAIN. 8. Source of Water Supply PUBLIC MAIN.

9. In the case of any building or buildings to be retained on site, please state:-
(a) Present use of each floor or use when last used. FACTORY
(b) Proposed use of each floor FACTORY / WAREHOUSE.

BYE LAW APPLICATION
REC. No 3192 U44777

10 Does the proposal involve demolition, partial demolition or change of use of any habitable house or part thereof? NO

11.(a) Area of Site 10187.04 Sq. m.

Irish Press 18/6/91 (b) Floor area of proposed development 912 Sq. m.

(c) Floor area of buildings proposed to be retained within site 2495.12 Sq. m.

12. State applicant's legal interest or estate in site (i.e. freehold, leasehold, etc.) FREEHOLD.

13. Are you now applying also for an approval under the Building Bye Laws?
Yes [✓] No [ ] Place ✓ in appropriate box.

14. Please state the extent to which the Draft Building Regulations have been taken in account in your proposal:
DRAFT BUILDING REGULATIONS COMPLIED WITH.

15. List of documents enclosed with application PAGE OF "IRISH PRESS" DATED : 18.06.91
DRAWINGS AS PER LIST ATTACHED.
CHEQUE FOR £ 4788.00.

CO DUBLIN Permission sought for side extension to existing industrial building at Unit 520 Beech Road, Western Industrial Estate, Packaging Resources Ltd.

16. Gross floor space of proposed development (See back) 912 Sq. m.

No of dwellings proposed (if any) Class(es) of Development 4

Fee Payable £4788.00 Basis of Calculation 912 x (£1.75 + £3.50)

If a reduced fee is tendered details of previous relevant payment should be given

Signature of Applicant (or his Agent) Date 20-6-91

FOR OFFICE USE ONLY

Application Type P.B.B.L.

Register Reference 91A/1077

Amount Received £ 4788.2.

Receipt No

Date 17-16

LOCAL GOVERNMENT (PLANNING & DEVELOPMENT) REGULATIONS 1977 to 1984.

Outline of requirements for applications for permission or Approval under the Local Government (Planning & Development) Acts 1963 to 1983. The Planning Acts and Regulations made thereunder may be purchased from the Government Publications Sales Office, Sun Alliance House, Molesworth Street, Dublin 2.

1. Name and Address of applicant.

2. Particulars of the interest held in the land or structure, i.e. whether freehold, leasehold, etc.

3. The page of a newspaper, circulating in the area in which the land or structure is situate, containing the required statutory notice. The newspaper advertisement should state after the heading Co. Dublin.

   (a) The address of the structure or the location of the land.
   (b) The nature and extent of the development proposed. If retention of development is involved, the notice should be worded accordingly. Any demolition of habitable accommodation should be indicated.
   (c) The name of the applicant.

   NB. Applications must be received within 2 weeks from date of publication of the notice.

4. Four (4) sets of drawings to a stated scale must be submitted. Each set to include a layout or block plan, proposed and existing services to be shown on this drawing, location map, and drawings of relevant floor plans, elevations, sections, details of type and location of septic tank (if applicable) and such other particulars as are necessary to identify the land and to describe the works or structure to which the application relates (new work to be coloured or otherwise distinguished from any retained structures). Buildings, roads, boundaries and other features bounding the structure or other land to which the application relates shall be shown on site plans or layout plans. The location map should be of scale not less than 1: 2500 and should indicate the north point. The site of the proposed development must be outlined in red. Plans and drawings should indicate the name and address of the person by whom they were prepared. Any adjoining lands in which the applicant has an interest must be outlined in blue.

5. In the case of a proposed change of use of any structure or land, requirements in addition to 1, 2, & 3 are:
   (a) a statement of the existing use and the proposed use, or, where appropriate, the former use and the use proposed.

   (b) (i) Four (4) sets of the drawings to a stated scale must be submitted. Each set to consist of a plan or location map (marked or coloured in red so as to identify the structure or land to which the application relates) to a scale of not less than 1:2500 and to indicate the North point. Any adjoining lands in which the application has an interest must be outlined in blue.

   (ii) A layout and a survey plan of each floor of any structure to which the application relates.

   (c) Plans and drawings should indicate the name and address of the person by whom they were prepared.

6. Applications should be addressed to: Dublin County Council, Planning Department, Irish Life Centre, Lr. Abbey Street, Dublin 1, Tel. 724755.

SEPTIC TANK DRAINAGE: Where drainage by means of a septic tank is proposed, before a planning application is considered, the applicant may be required to arrange for a trial hole to be inspected and declared suitable for the satisfactory percolation of septic tank effluent. The trial hole to be dug seven feet deep at or about the site of the septic tank. Septic tanks are to be in accordance with I.I.R.S. S.R. 6:75.

INDUSTRIAL DEVELOPMENT:

The proposed use of an industrial premises should, where possible, be stated together with the estimated number of employees, (male and female). Details of trade effluents, if any, should be submitted.

Applicants to comply in full with the requirements of the Local Government (Water Pollution) Act,1977 in particular the licencing provisions of Sections 4 and 16.

PLANNING APPLICATIONS

CLASS NO.	DESCRIPTION	FEE
1.	Provision of dwelling — House/Flat.	£32.00 each
2.	Domestic extensions/other improvements.	£16.00
3.	Provision of agricultural buildings (See Regs.)	£40.00 minimum
4.	Other buildings (i.e. offices, commercial, etc.)	£1.75 per sq. metre (Min. £40.00)
5.	Use of land (Mining, deposit or waste)	£25.00 per 0.1 ha (Min £250.00)
6.	Use of land (Camping, parking, storage)	£25.00 per 0.1 ha (Min. £40.00)
7.	Provision of plant/machinery/tank or other structure for storage purposes.	£25.00 per 0.1 ha (Min. £100.00)
8.	Petrol Filling Station.	£100.00
9.	Advertising Structures.	£10.00 per m^2 (min £40.00)
10.	Electricity transmission lines.	£25.00 per 1,000m (Min. £40.00)
11.	Any other development.	£5.00 per 0.1 ha (Min. £40.00)

BUILDING BYE-LAW APPLICATIONS

CLASS NO.	DESCRIPTION	FEE
A	Dwelling (House/Flat)	£55.00 each
B	Domestic Extension (improvement/alteration)	£30.00 each
C	Building — Office/ Commercial Purposes	£3.50 per m^2 (min. £70.00)
D	Agricultural Buildings/Structures	£1.00 per m^2 in excess of 300 sq. metres (min. - £70.00) (Max. - £300.00)
E	Petrol Filling Station	£200.00
F	Development or Proposals not coming within any of the foregoing classes.	£9.00 per 0.1 ha (£70.00 min.) Min. Fee £30.00 Max. Fee £20,000

Cheques etc. should be made payable to: Dublin County Council.

Gross Floor space is to be taken as the total floor space on each floor measured from the inside of the external walls.

For full details of Fees and Exemptions see Local Government (Planning and Development) (Fees) Regulations 1984.

AIRLE CHONTAE ÁTHA CLIATH
DUBLIN COUNTY COUNCIL
46/49 UPPER O'CONNELL STREET,
DUBLIN 1.

RECEIPT CODE

Issue of this receipt is not acknowledgement that the sum tendered is the amount of the correct fee.

N 44619

CHEQUE ✓
M.O.
P.L.
I.T.

£1596.00

Received this 1st day of July 19 91

from Packaging Resources (Ltd),
Unit 520 Coal Rd,
Western Ind. Est.

the sum of one thousand five hundred & ninety six Pounds

Pence, being fee for

planning application at above address

Noelan Deane Cashier

S. CAREY
Principal Officer

Class 4

COMHAIRLE CHONTAE ÁTHA CLIATH

DUBLIN COUNTY COUNCIL

46/49 UPPER O'CONNELL STREET, DUBLIN 1.

RECEIPT CODE

BYE LAW APPLICATION

REC. No. N 41777

PAID BY

CASH

CHEQUE

M.O.

B.L.

I.T.

£3192.00

Received this 1st day of July 1991

from Packaging Accessories Ltd
Unit 520 Beech Rd.
Western Ind. Estate

the sum of three thousand one hundred ninety two Pounds

Pence, being fee for

bye-laws application at Unit 520 Beech Rd

[signature] Cashier

S. CAREY
Principal Officer

Class C

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS

GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6 W.

TEL: 53 44 23 FAX: 54 44 78

MARK O'REILLY, BE, CEng, MICE, MIEI, CDipAF, ACIArb.
JOHN BAILEY, BA, BAI, DipPM, MSc, CEng, MIEI.

Our Ref. M234/MOR/LM Your Ref. Date: 27 June 1991

RE: PROPOSED FACTORY EXTENSION AT :
UNIT 520, BEECH ROAD, WESTERN IND. ESTATE, DUBLIN 12.
PACKAGING RESOURCES LTD.

DESIGN CERTIFICATE.

This is to certify that the design of the foundations and the structure of the above building and the preparation of the specification for the material to be used have been executed under my supervision.

These are in conformity with current engineering standards and with relevant Standards and Codes of Practice.

Signed _____
Mark O'Reilly.

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS

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Our Ref. M234/MOR/LM

Your Ref.

Date: 27 June 1991

Dublin County Council,
Planning Department,
Irish Life Centre,
Lower Abbey Street,
Dublin 1.

DUBLIN COUNTY COUNCIL
1 JUL 1991
REG No. 91A/1077
APPLICATION TYPE O/P/A/BBL
No. L D 3.

RE : PROPOSED FACTORY EXTENSION AT:
UNIT 520, BEECH ROAD, WESTERN IND. EST, DUBLIN 12.
FOR PACKAGING RESOURCES LTD.

Dear Sirs,
On behalf of our client Packaging Resources Ltd, we wish to apply for Planning Permission and Bye-Law Approval for an extension to the existing premises at the above.

The extension which will be constructed adjacent to an existing watermain has been discussed with Mr. Pat Harty of the Waterworks Department and his requirements are included in these proposals.
The layout has also been agreed with Mr. Owen Madden of the Traffic Department.

We enclose the following documents :
1. Completed Application Form.
2. Drawings - 4 Copies : - As list attached.
3. Structural Calculations - 2 Sets and Design Certificate.
4. Page of "Irish Press" dated : 18th June, 1991.
5. Cheque for £ 4788.00 - Planning & Bye-Law Fees.

We would be glad to supply any further information you may require in considering this application.

Yours faithfully,

Mark O'Reilly.

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Our Ref. M234/MOR/LM Your Ref. Date: 27 June 1991

PROPOSED FACTORY EXTENSION AT :
UNIT 520, BEECH ROAD, WESTERN IND. ESTATE, DUBLIN 12.
FOR PACKAGING RESOURCES LTD.

DRAWINGS LIST.

M234/41	:	SITE LOCATION MAP.
M234/01A	:	SITE LAYOUT & SERVICES.
M234/02A	:	GROUND FLOOR PLAN.
M234/03	:	SECTION & DETAILS.
M234/04A	:	ELEVATIONS.
M234/A4/01	:	DETAIL OF SUPPORT BEAM TO ROLLER SHUTTER.
M234/A4/02	:	BLOCKWORK ROAD GULLEYS.
M234/A4/03	:	HYDRANT & SLUICE VALVE CHAMBERS.
M234/A4/04	:	TYPICAL SEWER CROSS SECTION.
M234/A4/05	:	BLOCKWORK MANHOLE DETAIL.
M234/A4/06	:	BACKFILL TO uPVC WATERMAIN.
M234/A4/07	:	BEDDING DETAIL CLASS A BEDDING CONCRETE CRADLE

Site Location Map.

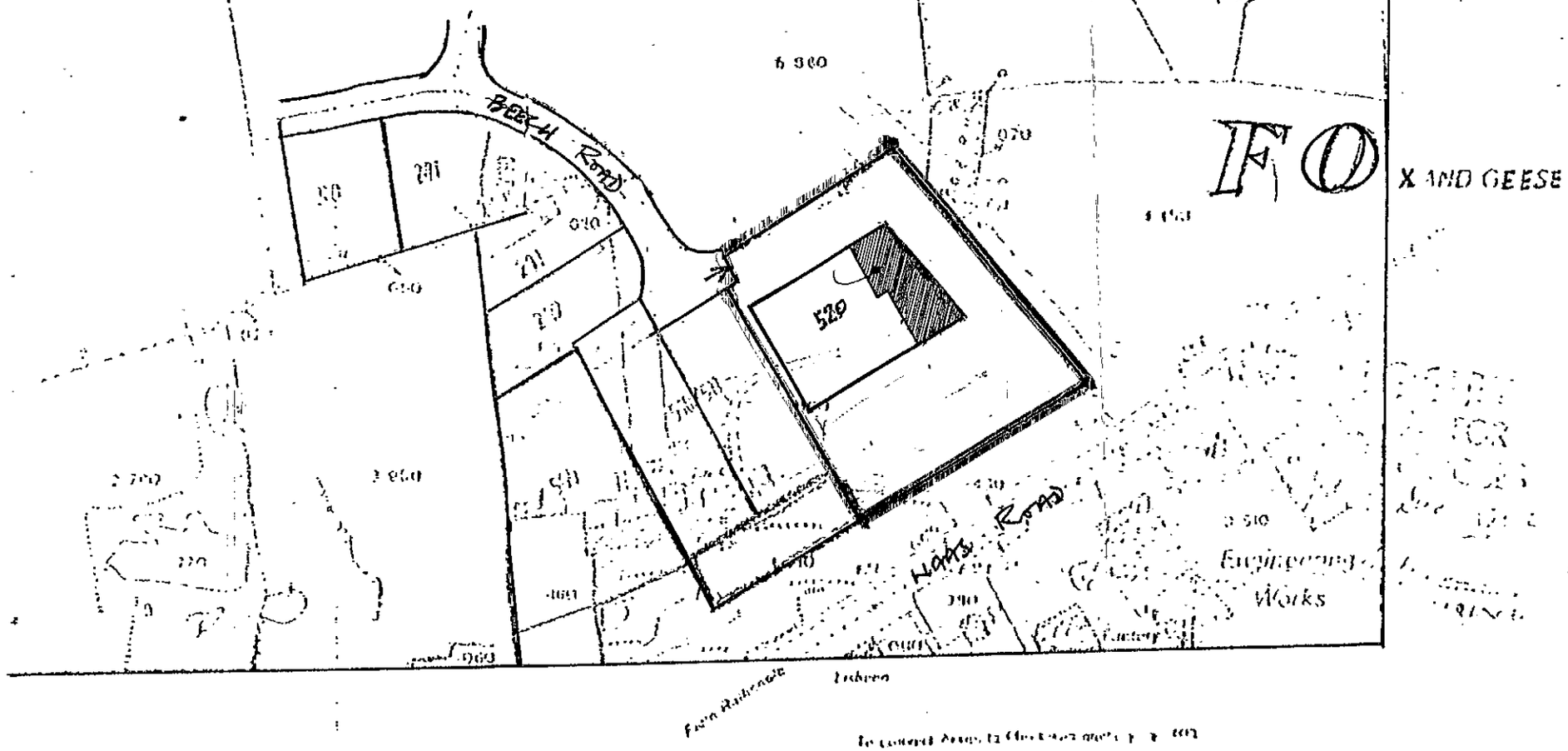
1 JUL 1991

REG No. 91A/1077

APPLICATION TYPE O/P/A/BBL

No. L. R.

WESTERN IND. ESTATE.



1:2,500 DUBLIN SHEET 17-16.

DRG No
M.234/41

R. Lyons

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS

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FACTORY EXTENSION AT :

UNIT 510, BEECH ROAD, WESTERN IND. ESTATE, DUBLIN 12.

FOR PACKAGING RESOURCES LTD.

STRUCTURAL CALCULATIONS.

PROJECT NO : M234

DATE : JUNE, 1991.

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS

GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6 W.

TEL: 53 44 23 FAX: 54 44 78

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JOHN BAILEY, BA, BAI, DipPM, MSc, CEng, MIEI.

DESIGN AIDS USED IN THE CALCULATIONS.

1. B.S. 6399 DESIGN LOADING FOR BUILDINGS.

2. I.S. 325, PART 1, 1986 - STRUCTURAL USE OF UNREINFORCED MASONRY.

3. B.S. 5950 STRUCTURAL USE OF STEELWORK IN BUILDINGS.

4. STEELWORK DESIGN GUIDE TO B.S. 5950, PART 1, 1985, VOL.1, SECOND EDITION.

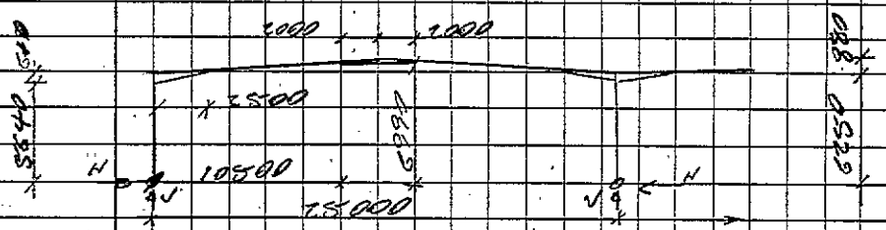
5. B.S. 8110 STRUCTURAL USE OF CONCRETE.

6. C.P. 3, CHAPTER 5, WIND LOADING.

Portal Design

MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS	Title: Packaging & Resources Ltd.			Project No.: M234
	Element: Frame.			Page No.: 01
	Drawing	Calcs. by: EG.	Checked	Date: 8/8/91

Ref.	CALCULATIONS	OUTPUT



Spacing of Frames = 3.6 m.

Loading

Sheeting	.2	kN/m²
Racking ✓	.07	kN/m²
Framing	.2	kN/m²
Services	.1	kN/m²
	.57	kN/m²
γf	1.4	
	0.8	kN/m²
Pump .75 × 1.6 × 1/γf	1.2	kN/m²
Total	2.0	kN/m²
Spacing ✓	3.6	m
	11.2	kN/m

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS

Title	Project No.
Packaging & Resources Ltd	M 234
Element: Frame	Page No. 02
Drawing / Calcs. by: E.S. / Checked	Date 8/8/90

Ref.	CALCULATIONS	OUTPUT

Initial Sect² Sizes.

Assumptions
(1) Frame is haunched @ eaves
(2) Different sizes used for rafters & legs
(3) Eaves haunch length = span/10.
(4) Distance between eaves intersect^n & Btm of haunch is 1.5 depth of rafter.
(5) Plastic hinges occur in the leg at the Btm of the haunch & in the rafter at the 1st or 2nd purlin position.
(6) Moment in the rafter at the end of the haunch = ·87 Mpr.

$M_{pc} = 5.64\,H$

$M_{pr} = 11.2 \times 12.5 \times 10.5 - 6.99H - \frac{11.2 \times 12.5^2}{2}$

$\Rightarrow M_{pr} = 852.6 - 6.99H.$

Say $M_{pc} = M_{pr}$

$\Rightarrow 852.6 = 12.63H'$
$H' = 67.5$ kN.

Say $H = 1.22\,H'$

$\Rightarrow M_{pc} = 5.64 \times 1.22 \times 67.5 = 464.5$ kNm

$M_{pr} = 852.6 - 6.99 \times 1.22 \times 67.5$

$\Rightarrow M_{pr} = 277$ kNm.

Trial Sect^ns:

Leg :- 533×210×82 UB Max = 566 kNm plastic

Rafter 406×178×54 UB Max = 289 kNm plastic.

MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS	Title: Packaging & Resources Ltd. Element: Frame.	Project No. M234. Page No. 03
	Drawing: — / Calcs. by: E.S. / Checked: —	Date: 8/8/90.

Ref.	CALCULATIONS	OUTPUT

Check stability of frame

$\frac{L}{D} < \frac{44}{\Omega} \cdot \frac{L}{h} \left(\frac{\rho}{4 + \rho L_r/L}\right)\left(\frac{275}{f_{yr}}\right)$

$\frac{L}{D} = \frac{28000}{452.6} = 61.96$

$\rho = \left(\frac{2 \times 47500}{18600}\right)\left(\frac{28000}{6250}\right) = 22.45$

$f_{yr} = 275\ N/mm^2$

$W_r = 11.2 \times 25 = 280\ kN$

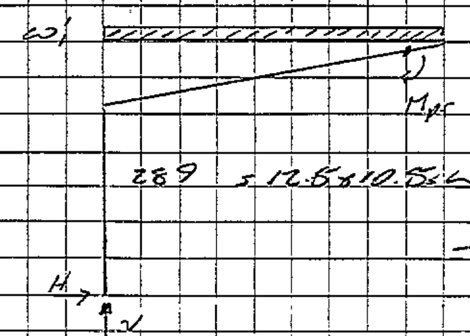
$W_o = \frac{289 \times 16}{25} = 184.96\ kN$

$\Rightarrow \Omega = 1.51$ $\quad L_r = \sqrt{25^2 + 4 \times .88^2} = 25.06\ m$

$\Rightarrow \frac{44}{\Omega}\left(\frac{L}{h}\right)\left(\frac{\rho}{4 + \rho L_r/L}\right)\left(\frac{275}{f_{yr}}\right)$

$= 97.3 > \frac{L}{D}$ → Frame is satisfactory for frame stability.

Check failure mechanism is correct.
mechanism – plastic hinges @ btm of haunches in the legs & @ 2nd purlin position in rafter (approx 1m from apex).



$289 = 12.5 \times 10.5 \times w' - 82.35 \times 6.99 - \frac{w' \times 10.5^2}{2}$

$76.13\, w' = 864.6$

$w' = 11.36\ kN/m$

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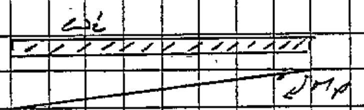
CONSULTING ENGINEERS

Title	Project No.
Packaging of Resources Ltd	M234
Element: Frame	Page No. 4

Drawing	Calcs. by	Checked	Date
	[illegible]		8/8/9[illegible]

Ref.	CALCULATIONS	OUTPUT

Mechanism: plastic hinges: at btm of haunches in the legs & @ 1st purlin plc. in rafter (approx under ridge)



$289 = 12.5 \times 11.5 \times w_i - 82.35 \times 7.06 - \frac{w_i \times 11.5^2}{2}$

H = 4V

$77.65\, w_i = 870.4$

$w_i = 11.21$ kN/m

∴ 2nd mechanism is the collapse mechanism as $w_i > w$, the actual imposed load then frame is OK.

check that Mpr is not exceeded

$M = \frac{11.2 \times 25}{2} \times l - 82.35\left(\frac{.88 \times l}{12.5} + 6.25\right) - \frac{11.2\, l^2}{2}$

$= 140\, l - 5.8\, l - 514.68 - 5.6\, l^2$

$\frac{dM}{dl} = 0 = +134.2 - 11.2\, l$

$\Rightarrow l = 11.98$ m.

$\Rightarrow M_{max} = \frac{11.2 \times 25 \times 11.98}{2} - 82.35\left(\frac{.88 \times 11.98}{12.5} + 6.25\right) - \frac{11.2 \times 11.98^2}{2}$

$= 289.3$ kNm.

As M_{max} marginally > Mpr
change rafter to
457 × 152 × 52 UB Mc = 300 kNm
plastic.

MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS	Title: Packaging of Resources Ltd Element: Frame	Project No. M234. Page No. 5
	Drawing: — / Calcs. by: ES. / Checked: —	Date: 8/8/90

Ref.	CALCULATIONS	OUTPUT

<u>check moment @ end of eaves does not exceed .87 Mpx</u>

$.87\ Mpx = .87 \times 300 = 261$ kNm.

$M = -11.2 \times 12.5 \times 2.8 + 82.55\left(6.25 + \frac{3}{12.5} \times .88\right) + \frac{11.2 \times 3^2}{2}$

$= 232.5$ kNm < 261 kNm $\rightarrow$ OK.

<u>Column Stability</u>

Max distance of adjacent restraint from the plastic hinge is

$$L_m \le \frac{38\, r_y}{\left(\frac{f_c}{130} + \left(\frac{p_y}{275}\right)^2 \left(\frac{x}{36}\right)^2\right)^{1/2}}$$

$f_c = \frac{12.5 \times 11.2 \times 10^3}{2 \times 104 \times 10^2} = 6.73\ N/mm^2$

$p_y = 275\ N/mm^2$

$\frac{x}{36} = \frac{41.6}{36} = 1.16$

$r_y = 43.8$ mm

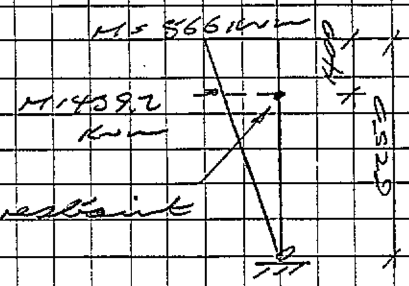
$\therefore L_m \le 1408$ mm

Output: Provide lateral restraint within 1.4 m of the plastic hinge

<u>check col below hinge restraint is an elastic col</u>

(533×210×82 UB)

$w = \frac{11.2 \times 12.5}{2} = 70$ kN.



MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS	Title: Packaging & Resources Ltd.	Project No. M234
	Element: Frame.	Page No. 6
	Drawing: / Calcs. by: [illegible] / Checked:	Date: 8/8/90

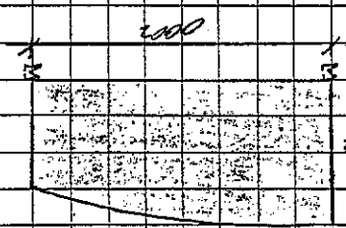
Ref.	CALCULATIONS	OUTPUT
	Col. check (Contd)	
	$L_{ex} = L_{ey} = 4.85$ m.	
	(a) Overall Buckling	
	$\left(\frac{F}{P}\right) = \frac{70}{2860} = 0.025$	
	$\Rightarrow M_{ax} = 565$ kNm	
	$M_{ay} = 63$ kNm	
	$\left(\frac{439.2}{565}\right)^2 + \left(\frac{0}{63}\right) = 0.6 < 1 \rightarrow OK$	
	(b) Overall Buckling	
	$\frac{70}{1210} + .57 \times \frac{439.2}{291} + 0 = 0.92 < 1 \rightarrow OK$	
	rafter stability (457 × 152 × 52 UB)	
	(i) adjacent to plastic hinge	
	$L_m \leq \frac{38\, r_y}{\left(\frac{f_c}{130} + \left(\frac{P_y}{275}\right)^2\left(\frac{x}{36}\right)^2\right)^{\frac{1}{2}}}$	
	$f_c = \frac{N}{A} = \frac{82.35 \times 10^3}{66.5 \times 10^2} = 12.4$ N/mm²	
	$r_y = 3.11$ cm.	
	$x = 43.9$	
	$\Rightarrow L_m \leq \frac{38 \times 31.1}{\left(\frac{12.4}{130} + 1^2\left(\frac{43.9}{36}\right)^2\right)^{\frac{1}{2}}} = 959$ mm	provide restraint to rafter within 900mm of plastic hinge.
	provide restraint to rafter within 900 mm of plastic hinge	

MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS	Title: Parking @ Rowan Ltd.	Project No.: M234
	Element: Frame	Page No.: 7
	Drawing:	Calcs. by: E.S. / Checked:	Date: 8/8/90

Ref.	CALCULATIONS	OUTPUT

Rafter Stability (Contd)

(c) Buckling from the plastic hinge.



Top purlin spacing of 2m c/c on slope away from plastic hinge

$$\frac{2000}{\cos\theta} = 3409$$

$$M_1 = 11.2 \times 12.5 \times 9.1 - 82.35\left(\frac{.88}{12.5} \times 9.1 + 6.25\right) - 11.2 \times \frac{9.1^2}{2}$$

$$= 242.8 \text{ kNm}$$

$$M_2 = 11.2 \times 12.5 \times 7.1 - 82.35\left(\frac{.88}{12.5} \times 7.1 + 6.25\right) - 11.2 \times \frac{7.1^2}{2}$$

$$= 155.9 \text{ kNm}$$

$\bar{x} = 2009/31.1 = 64.5$

$\kappa = 1$

$\alpha = 0.859$

$x = 43.9 \Rightarrow \frac{x}{\bar{x}} = 1.46 \quad N = 0.5$

$\Rightarrow \zeta = 0.97$

$\Rightarrow \lambda = 1 \times 0.859 \times 0.97 \times 64.5 = 53.6$

$\Rightarrow f_b = 226 \text{ N/mm}^2$

$\Rightarrow M_b = 1099 \times 226 \times 10^{-3} = 246.3 \text{ kNm}$

$M < M_b \Rightarrow$ OK

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Title	Project No.
Packaging & Resources Ltd.	M234.
Element	**Page No.**
Frame	8
Drawing / **Calcs. by** / **Checked**	**Date**
Calcs. by: [illegible]	8/8/9[illegible]

Ref.	CALCULATIONS	OUTPUT

Rafter stability (Contd.)

(3) Haunch.

$L_m = \dfrac{K_1 r_y x}{(72x^2 - 104)^{\frac{1}{2}}}$

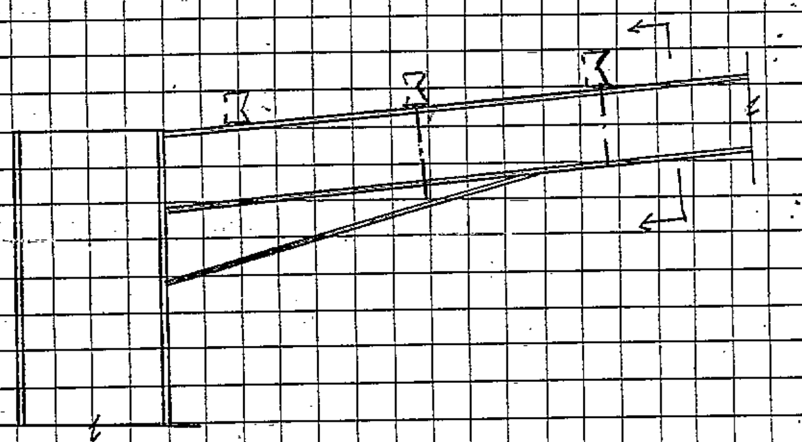
$K_1 = 495$

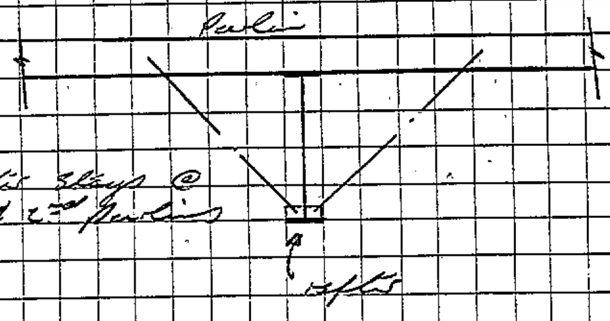
$r_y = 51.1mm$

$x = 45.9$

$\Rightarrow L_m = \dfrac{495 \times 51.1 \times 45.9}{\sqrt{(72 \times 45.9^2 - 104)}} = 1885.4mm$

∴ Provide stays to haunch @ 1st two purlins.





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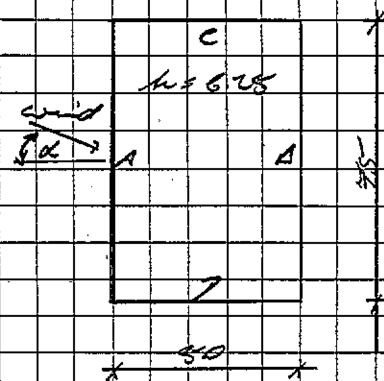
Title	Project No.
Packaging & Resources Ltd.	M234.
Element	**Page No.**
Gable Frame.	9

Drawing	Calcs. by	Checked	Date
	[illegible]		8/8/90.

Ref.	CALCULATIONS	OUTPUT

Wind

V = 46 m/s
$S_1 = 1$
$S_2 = 0.66$ } $V_s = 30.4$ m/s, q = 565 N/m²
$S_3 = 1$



l/w = 1.8

h/w = 0.125 < .5

Cpe:

α	A	B	C	D
0	.7	-.25	-.6	-.6
90	-.5	-.5	.7	-.2

Cpi = -.3 or +.2.

⇒ max. wind pressure = $(.7 - -.3)\ 565 \times 10^{-3}$
= .565 kN/m²

Gable Cols.

Span = 7.2 m max.

Loading :-
wind .565 × 1.4 × 25/3 = 6.6 kN/m

$M = \frac{6.6 \times 7.2^2}{8} = 42.8$ kNm

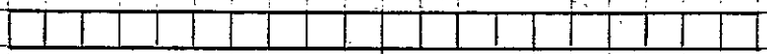
$S = \frac{6.6 \times 7.2}{2} = 23.8$ kN

Gable post restrained @ top by frame & @ mid ht by S/work
⇒ Le = 3.6 m max.
⇒ 254 × 146 × 31 UB OK
Mb = 56 kNm @ Le = 4 m

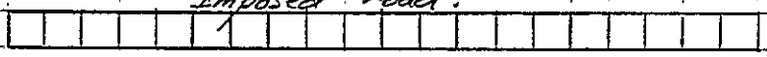
OUTPUT: Gable Posts
254 × 146 × 31
UB.

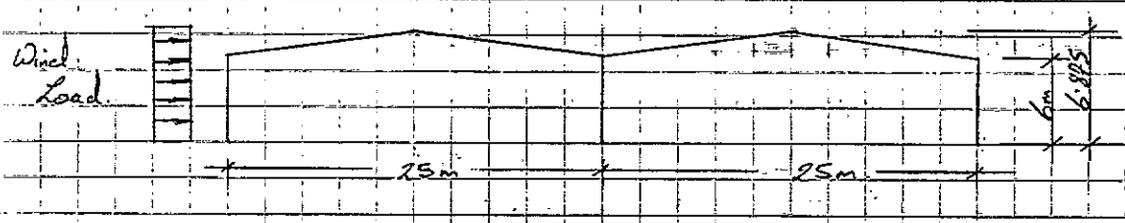
Computer Analysis & Conclusions.

Dead Load

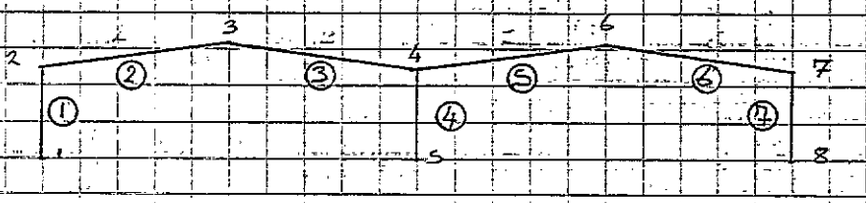


Imposed Load.





Co-ordinates



Joints

	x	z
1	0	0
2	0	6
3	12.5	6.875
4	25	6
5	25	0
6	37.5	6875
7	50	6
8	50	0

Member Lengths.

① ④ & ⑦ = 6000 mm

② ③ ⑤ & ⑥ = 12531 mm

Loads & Combinations — Service — Ult.

Imposed Load = 0.75 kN/m² × 6 = 4.5 kN/m × 1.6 = 7.2 kN/m

Dead Load = 0.57 kN/m² × 6 = 3.42 kN/m × 1.4 = 4.788 kN/m

Wind Load

Each frame to take 6×6 = 36m² of wind loading.

⇒ q = 0.565 ⇒ 0.565 × 36 ÷ 6 = 3.39 kN/m

Cpi being the More Onerous of +0.2 or −0.3

Walls C.P. 3 Chapter V Pt 2 1972 Tb 7

$\frac{h}{w} = \frac{6.875}{17 \text{ or } 21}$ < ½ $\frac{l}{w} = \frac{50}{21} = 2.381$

Wind Angle		A	B	C	D
	0	+0.7	−0.25	−0.6	−0.6
	90°	−0.5	−0.5	+0.7	−0.1

Local Cpe = −1.0

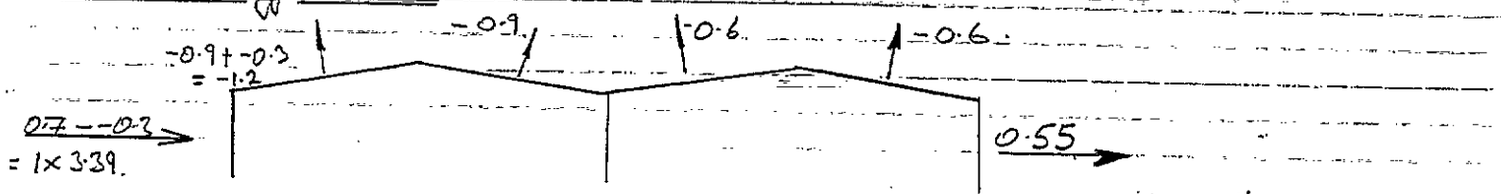
Pitched Roof Take Roof Angle = 5° Tb 8

Wind Angle	0°		90°	
	EF	GH	EF	GH
Cpe	−0.9	−0.4	−0.8	−0.4

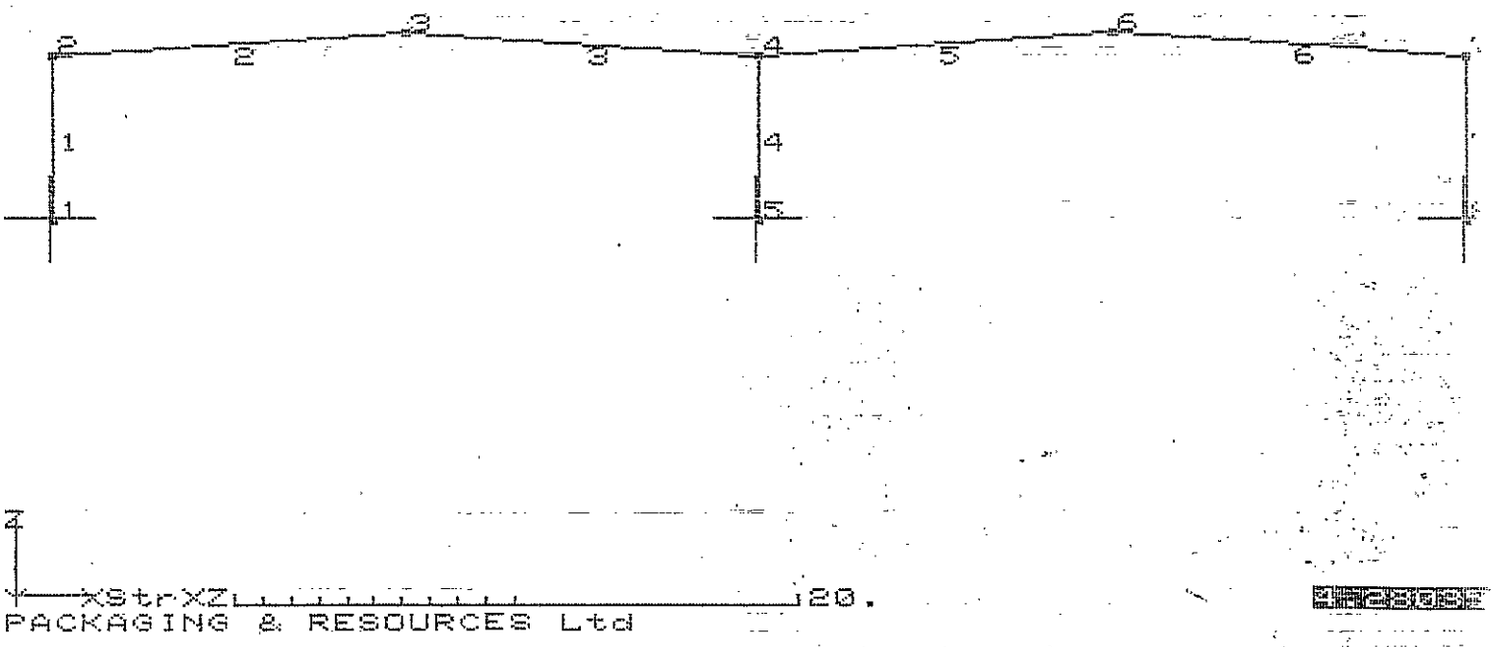
Multi Span Tb 11.

a = −0.9 b = −0.6 x = −0.3 z = −0.3

Actual Co-efficients



EN102: PLANE FRAME ANALYSIS V2.7 (c) ENCAD SYSTEMS LTD. 19
Units: S.I. METRIC (Steel) Data File : PR1A



PACKAGING & RESOURCES Ltd

Material Properties

ENTRY NO.	TABLE REF./ DESCRIPTION	YOUNG'S MODULUS (kN/mm2)	POISSON'S RATIO	COEFFICIENT OF THERMAL EXP. (/ Deg C)	WEIGHT/UNIT VOLUME (kN/m3)
1	SI Steel - Deg. C	205.	.300	1.200E-05	77.

Joint Co-ordinates

JOINT	X (m)	Z (m)
1	.000	.000
2	.000	6.000
3	12.500	6.875
4	25.000	6.000
5	25.000	.000
6	37.500	6.875
7	50.000	6.000
8	50.000	.000

EN102: PLANE FRAME ANALYSIS V2.7
Units: S.I. METRIC (Steel)

Data File : PRIA

Section Properties

N.B. If a Shear Area value field is null (empty), shear distortions are ignored in the analysis.

SECTION NO.	TABLE REF./ DESCRIPTION	AREA Ax (cm2)	Iy (cm4)	zMAX (mm)	Az SHEAR AREA (cm2)
1	533*210*82 UB	1.040E+02	4.750E+04	2.641E+02	4.731E+01
2	406*178*54 UB	6.840E+01	1.860E+04	2.013E+02	2.854E+01

Member Incidences

MEMBER NO.	START NODE	END NODE	LENGTH (m)
1	1	2	6.000
2	2	3	12.531
3	3	4	12.531
4	4	5	6.000
5	5	6	12.531
6	6	7	12.531
7	7	8	6.000

Member Details

MEMBER NO.	Y AXIS FLEXURE TYPE NO.	SECTION GROUP	MATERIAL GROUP
1	1	1	1
2	1	2	1
3	1	2	1
4	1	1	1
5	1	2	1
6	1	2	1
7	1	1	1

Support Stiffnesses

N.B. If the specified support settlements and stiffnesses conflict, then the settlements override the stiffnesses.

JOINT	KLX (kN/mm)	KLZ (kN/mm)	KRY (kNm/rad)
1	R	R	0.
5	R	R	0.
8	R	R	0.

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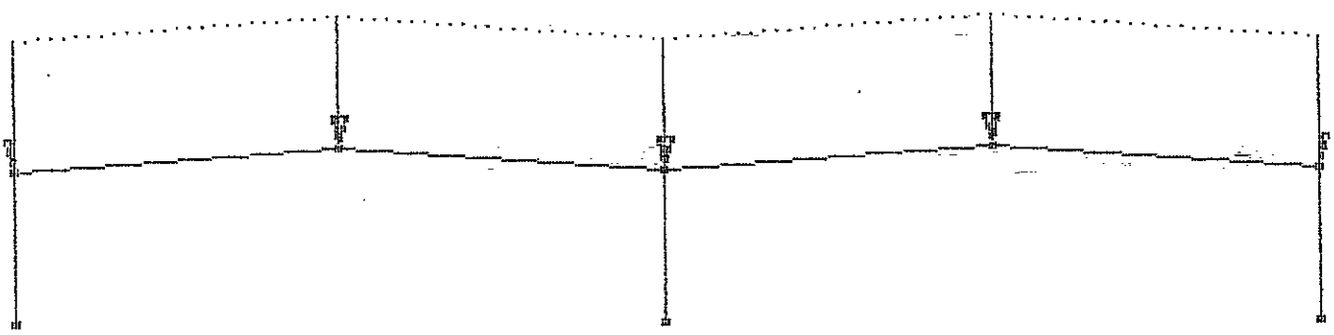
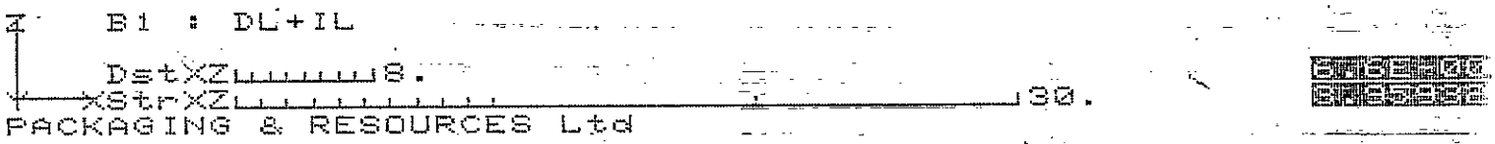
Units: S.I. METRIC (Steel) Data File : PR1A





Basic Load Case B1 : DL+IL
Load Groups

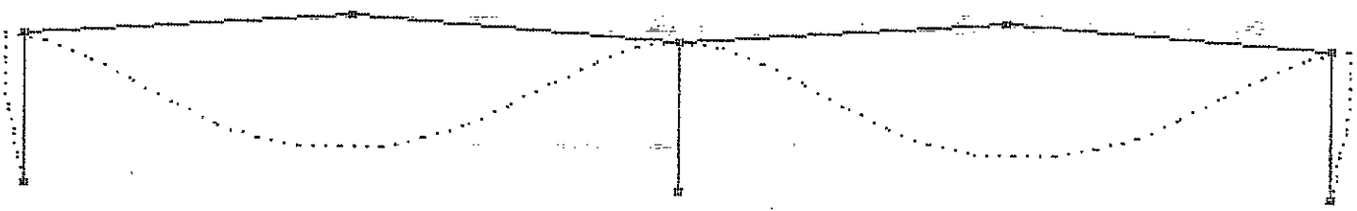
PLANE FRAME LOAD TYPES	VALUE 1	VALUE 2	VALUE 3	VALUE 4
JF=Joint Forces	FX	FZ		
JM=Joint Moments	MY			
P?=Point Load	P?	L		
U?=Uniformly Distributed	U?			
T?=Triangularly Distrib. Load	T?			
V?=Variably Distributed Load	V?1	L1	V?2	L2
t =Temperature Elevation	t			
g =Gravitational Loading	gX	gZ		

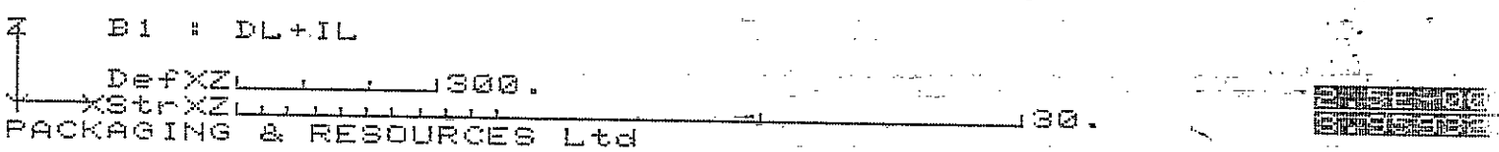
N.B. 1. ? is one of X,Z (global directions) or x,z (member directions).
2. VALUES are load intensities except that:-
L,L1,L2 are distances along the member from END1 joint.
t is the temperature elevation of the group of members in degrees
gX,gZ are 'g' factors; gZ=-1 for normal gravity loading.
3. JOINT/MEMBER LIST '9,26,2-6*2,40-30*5' means '9,26,2,4,6,40,35,30'

E	TYPE	MEMBER/JOINT LIST	VALUE 1	VALUE 2	VALUE 3	VALUE 4
1	UZ	2 3 5 6	-7.9200			

EN102: PLANE FRAME ANALYSIS V2.7
Units: S.I. METRIC (Steel)

Data File : PR1A





Basic Load Case B1 : DL+IL
Joint Displacements

JOINT	X LINEAR (mm)	Z LINEAR (mm)	Y ROTATION (rad)
1	.00000	.00000	-.00823
2	-27.71129	-.27614	-.00310
3	-13.84483	-206.63060	-.00075
4	.00001	-.56490	.00000
5	.00000	.00000	.00000
6	13.84485	-206.63060	.00075
7	27.71131	-.27614	-.00310
8	.00000	.00000	.00823

MARK O'REILLY & ASSOCIATES

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FINITAL ANALYSIS

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AUTHOR	DJD
DATE	20/06/91

EN102: PLANE FRAME ANALYSIS V2.7
Units: S.I. METRIC (Steel)

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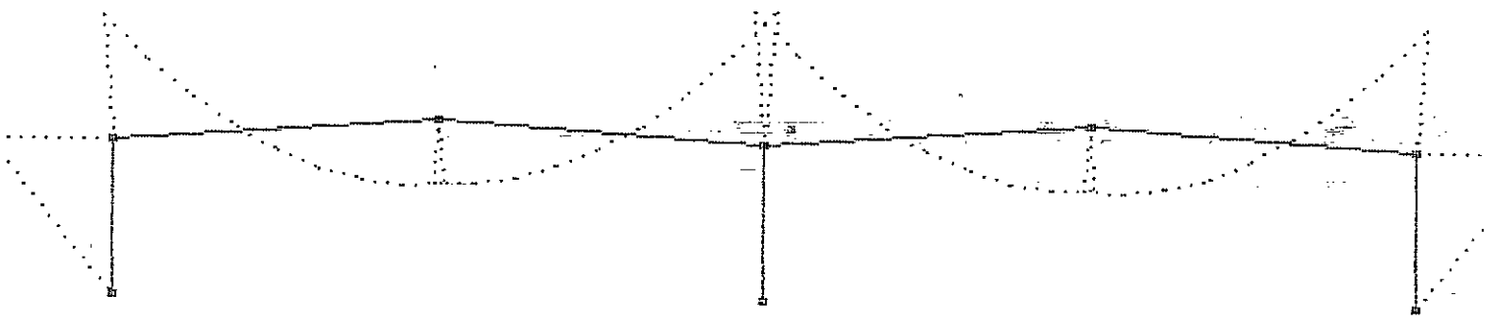

B1 : DL+IL

My XZ 400.
XStr XZ 30.

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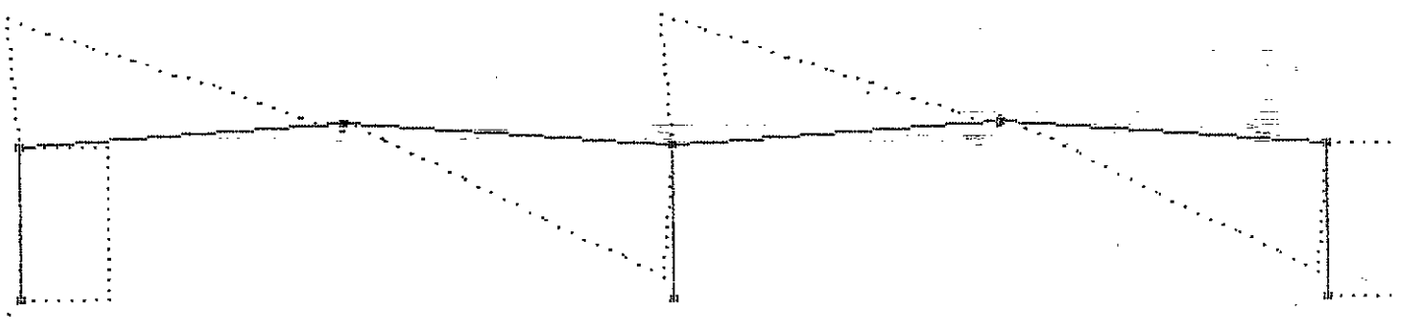

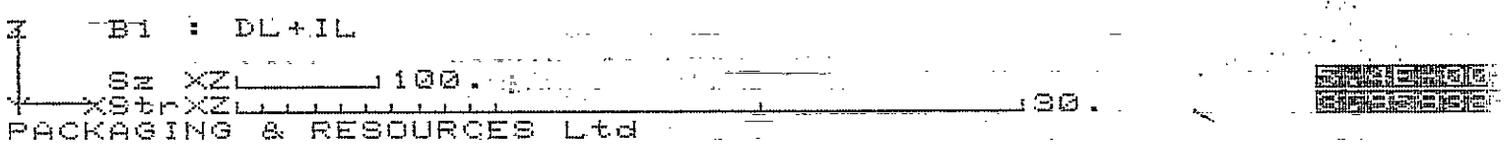
B1 : DL+IL
Sz XZ
100.
XStr XZ
30.
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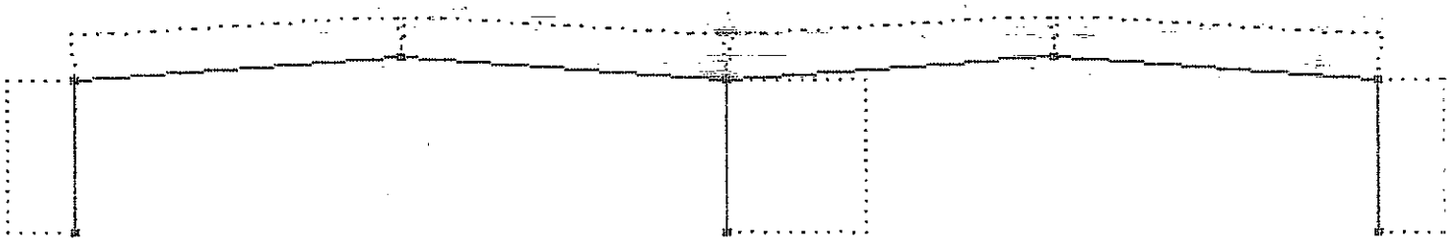
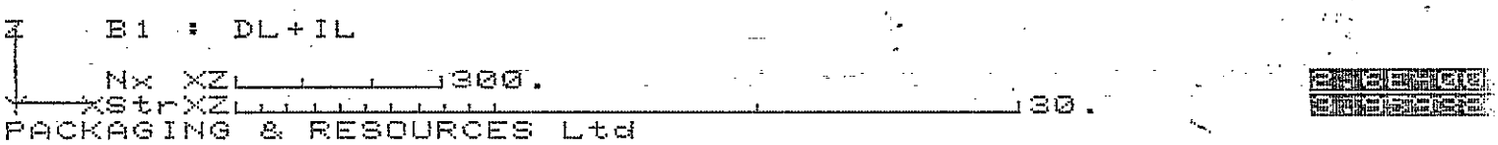
Units: S.I. METRIC (Steel) Data File : PR1A





Basic Load Case B1 : DL+IL
Member End Forces

MBR	JOINT	AXIAL Nx (kN)	SHEAR Sz (kN)	MOMENT My (kNm)
1	1	98.1212	-61.3243	.0000
1	2	98.1212	-61.3243	-367.9455
2	2	68.0263	93.5995	-367.9455
2	3	61.0963	-5.4005	184.6467
3	3	61.2528	3.1639	184.6467
3	4	68.1828	-95.8361	-395.9719
4	4	200.7266	.0000	.0000
4	5	200.7266	.0000	.0000
5	4	68.1828	95.8361	-395.9719
5	6	61.2528	-3.1639	184.6467
6	6	61.0963	5.4005	184.6467
6	7	68.0263	-93.5995	-367.9455
7	7	98.1212	61.3243	-367.9455
7	8	98.1212	61.3243	.0000

EN102: PLANE FRAME ANALYSIS V2.7 (c) ENCAD SYSTEMS LTD. 19
Units: S.I. METRIC (Steel) Data File : PR1A

Basic Load Case B1 : DL+IL
Member End Stresses

MBR	JOINT	Ax AXIAL (N/mm2)	By yAXIS BENDING (N/mm2)	Ax +ABS.By (N/mm2)	Ax -ABS.By (N/mm2)
1	1	9.4347	.0000	9.4347	9.4347
1	2	9.4347	-204.6164	214.0512	-195.1817
2	2	9.9454	-398.2120	408.1574	-388.2667
2	3	8.9322	199.8354	208.7676	-190.9032
3	3	8.9551	199.8354	208.7905	-190.8803
3	4	9.9683	-428.5438	438.5120	-418.5755
4	4	19.3006	.0000	19.3006	19.3006
4	5	19.3006	.0000	19.3006	19.3006
5	4	9.9683	-428.5438	438.5120	-418.5755
5	6	8.9551	199.8354	208.7905	-190.8803
6	6	8.9322	199.8354	208.7676	-190.9032
6	7	9.9454	-398.2120	408.1574	-388.2667
7	7	9.4347	-204.6164	214.0512	-195.1817
7	8	9.4347	.0000	9.4347	9.4347

Basic Load Case B1 : DL+IL
Support Reactions

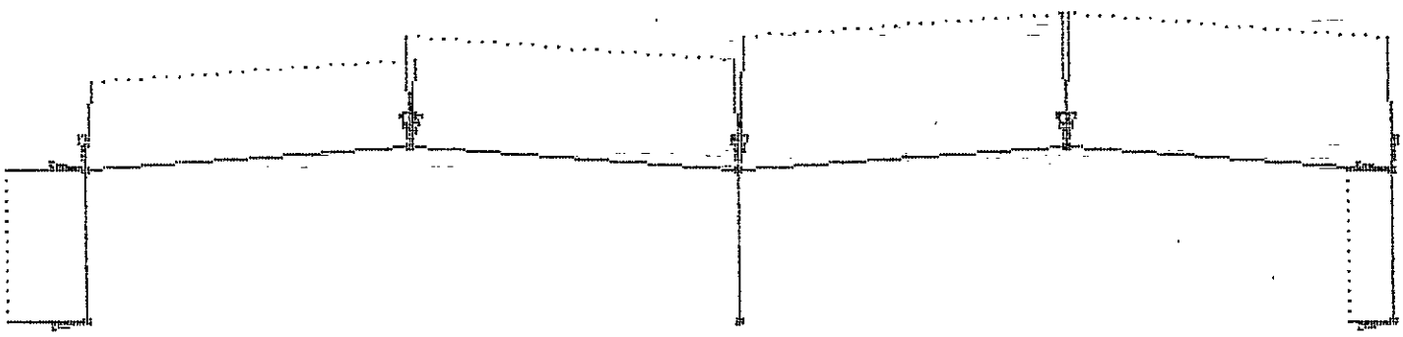
JOINT	X FORCE (kN)	Z FORCE (kN)	Y MOMENT (kNm)
1	61.3243	98.1212	.0000
5	.0000	200.7266	.0000
8	-61.3243	98.1212	.0000

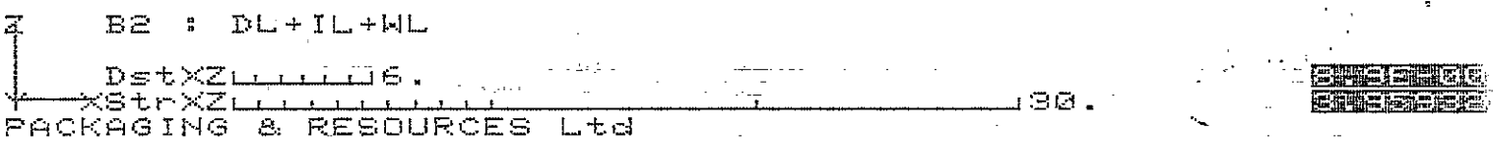
Basic Load Case B1 : DL+IL
Load Balance

ENTRY	X LINEAR (kN)	Z LINEAR (kN)
1 EXTERNAL LOADS SUM	.0000	-396.9691
2 REACTIONS SUM	.0000	396.9691

Basic Load Case B1 : DL+IL
Global Joint Loads from Back-Substitution

JOINT	X FORCE (kN)	Z FORCE (kN)	Y MOMENT (kNm)
1	-61.3243	-98.1212	.0000
2	.0000	.0000	.0000
3	.0000	.0000	.0000
4	.0000	.0000	.0000
5	.0000	-200.7266	.0000
6	.0000	.0000	.0000
7	.0000	.0000	.0000
8	61.3243	-98.1212	.0000





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Basic Load Case B2 : DL+IL+WL
Load Groups

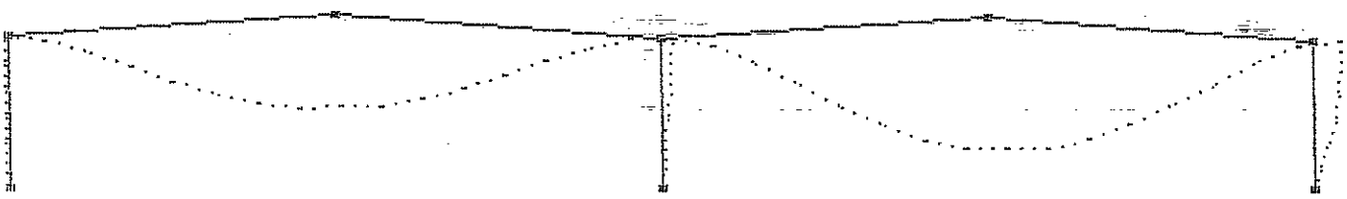
PLANE FRAME LOAD TYPES	VALUE 1	VALUE 2	VALUE 3	VALUE 4
JF=Joint Forces	FX	FZ		
JM=Joint Moments	MY			
P?=Point Load	P?	L		
U?=Uniformly Distributed	U?			
T?=Triangularly Distrib. Load	T?			
V?=Variably Distributed Load	V?1	L1	V?2	L2
t =Temperature Elevation	t			
g =Gravitational Loading	gX	gZ		

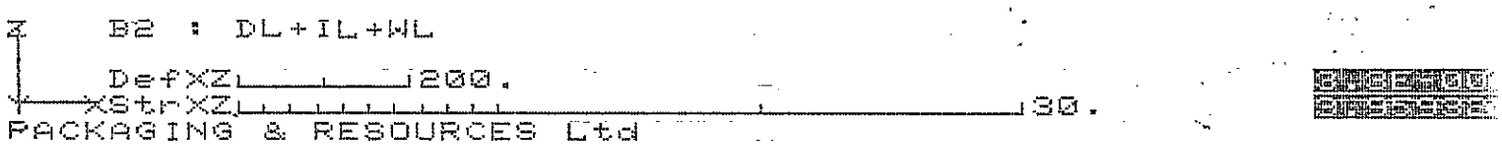
N.B. 1. ? is one of X,Z (global directions) or x,z (member directions).
2. VALUES are load intensities except that:-
L,L1,L2 are distances along the member from END1 joint.
t is the temperature elevation of the group of members in degrees
gX,gZ are 'g' factors; gZ=-1 for normal gravity loading.
3. JOINT/MEMBER LIST '9,26,2-6*2,40-30*5' means '9,26,2,4,6,40,35,30'

E	TYPE	MEMBER/JOINT LIST	VALUE 1	VALUE 2	VALUE 3	VALUE 4
1	UZ	2 3 5 6	-7.9200			
2	UX	1	3.3900			
3	Uz	2	4.0680			
4	Uz	3	3.0510			
5	Uz	5	2.0340			
6	Uz	6	2.0340			
7	UX	7	1.8645			

EN102: PLANE FRAME ANALYSIS V2.7
Units: S.I. METRIC (Steel)

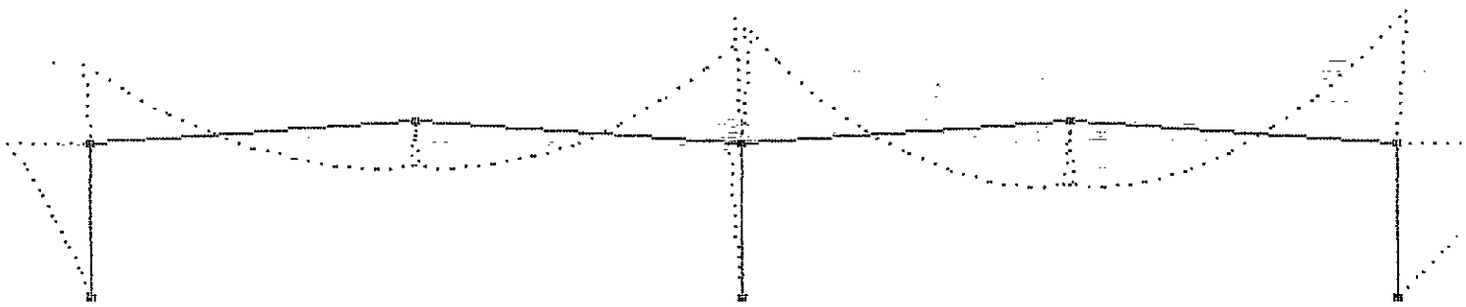
Data File : PR1A

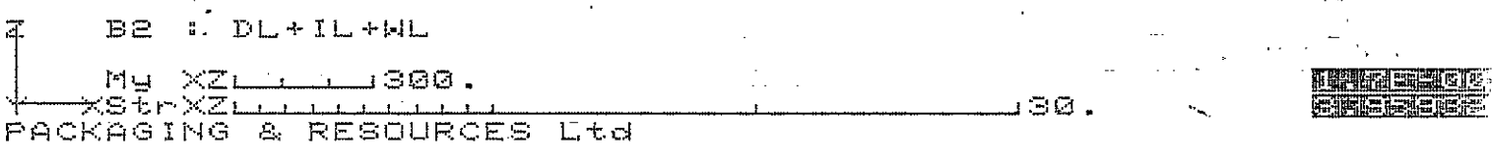




Basic Load Case B2 : DL+IL+WL
Joint Displacements

JOINT	X LINEAR (mm)	Z LINEAR (mm)	Y ROTATION (rad)
1	.00000	.00000	-.00176
2	-2.08953	-.13714	.00302
3	5.15949	-108.71510	-.00084
4	12.39217	-.37674	.00266
5	.00000	.00000	.00179
6	23.02296	-157.97000	-.00049
7	33.66455	-.20975	.00071
8	.00000	.00000	.00866





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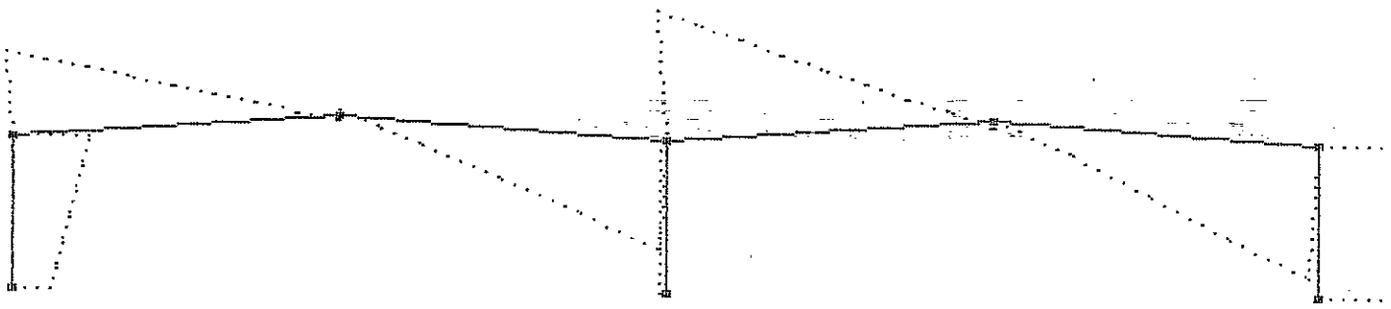
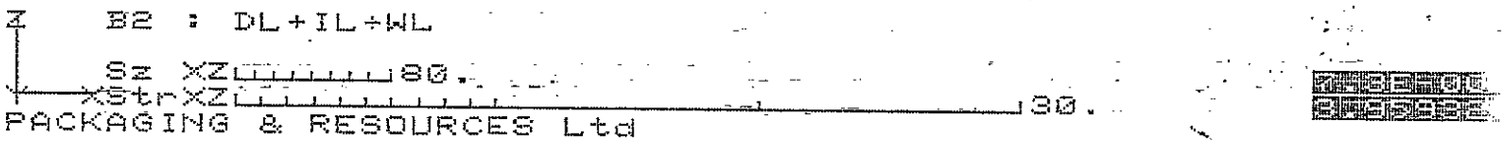
EN102: PLANE FRAME ANALYSIS V2.7
Units: S.I. METRIC (Steel)

Data File : PR1A





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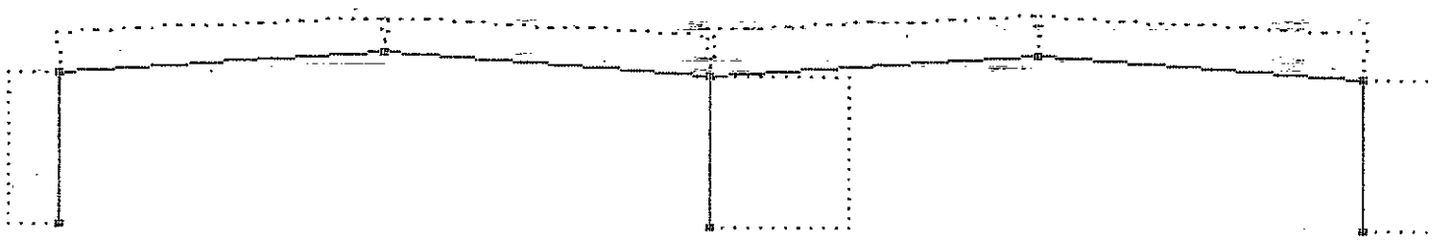

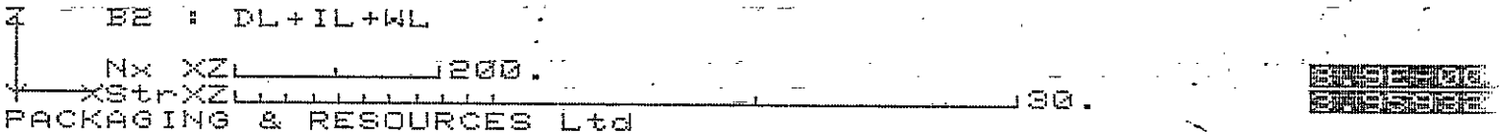

Basic Load Case B2 : DL+IL+WL
Member End Forces

MBR	JOINT	AXIAL Nx (kN)	SHEAR Sz (kN)	MOMENT My (kNm)
1	1	48.7316	-19.0480	.0000
1	2	48.7316	-39.3880	-175.3082
2	2	42.6948	45.8622	-175.3082
2	3	35.7648	-2.1633	98.4781
3	3	35.7174	2.8404	98.4781
3	4	42.6474	-57.9288	-246.6668
4	4	133.8673	-4.7012	28.2072
4	5	133.8673	-4.7012	.0000
5	4	48.1985	69.9069	-274.8739
5	6	41.2685	-3.6059	140.5216
6	6	41.3684	2.1787	140.5216
6	7	48.2984	-71.3341	-292.7571
7	7	74.5326	43.1994	-292.7571
7	8	74.5326	54.3864	.0000

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Units: S.I. METRIC (Steel) Data File : PR1A

Basic Load Case B2 : DL+IL+WL
Member End Stresses

MBR	JOINT	Ax AXIAL (N/mm2)	By yAXIS BENDING (N/mm2)	Ax ±ABS.By (N/mm2)	Ax -ABS.By (N/mm2)
1	1	4.6857	.0000	4.6857	4.6857
1	2	4.6857	-97.4898	102.1756	-92.8041
2	2	6.2419	-189.7287	195.9707	-183.4868
2	3	5.2288	106.5787	111.8075	-101.3500
3	3	5.2218	106.5787	111.8006	-101.3569
3	4	6.2350	-266.9571	273.1921	-260.7221
4	4	12.8719	15.6861	28.5580	-2.8143
4	5	12.8719	.0000	12.8719	12.8719
5	4	7.0466	-297.4845	304.5311	-290.4380
5	6	6.0334	152.0806	158.1140	-146.0472
6	6	6.0480	152.0806	158.1286	-146.0326
6	7	7.0612	-316.8388	323.8999	-309.7776
7	7	7.1666	-162.8038	169.9704	-155.6372
7	8	7.1666	.0000	7.1666	7.1666

Basic Load Case B2 : DL+IL+WL
Support Reactions

JOINT	X FORCE (kN)	Z FORCE (kN)	Y MOMENT (kNm)
1	19.0480	48.7316	.0000
5	4.7012	133.8673	.0000
8	-54.3864	74.5326	.0000

Basic Load Case B2 : DL+IL+WL
Load Balance

ENTRY	X LINEAR (kN)	Z LINEAR (kN)
1 EXTERNAL LOADS SUM	30.6371	-257.1316
2 REACTIONS SUM	-30.6371	257.1316

Basic Load Case B2 : DL+IL+WL
Global Joint Loads from Back-Substitution

JOINT	X FORCE (kN)	Z FORCE (kN)	Y MOMENT (kNm)
1	-19.0480	-48.7316	.0000
2	.0000	.0000	.0000
3	.0000	.0000	.0000
4	.0000	.0000	.0000
5	-4.7012	-133.8673	.0000
6	.0000	.0000	.0000
7	.0000	.0000	.0000
8	54.3864	-74.5326	.0000

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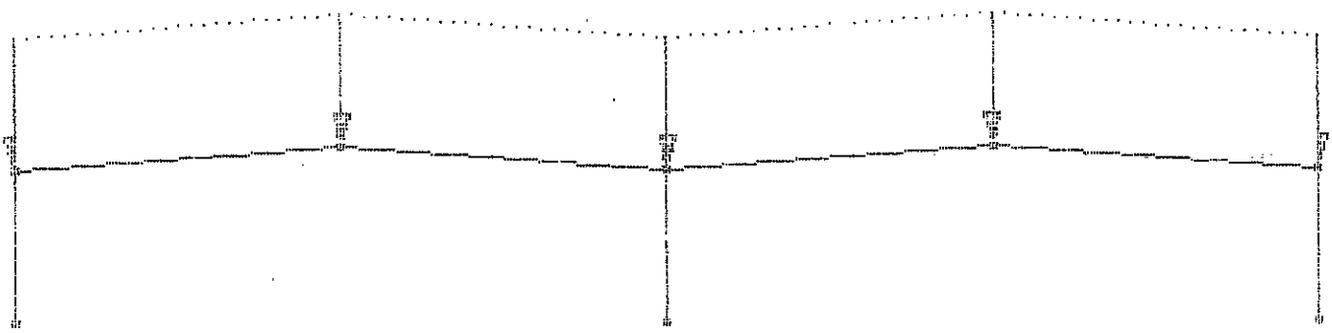
Units: S.I. METRIC (Steel) Data File : PR1A



B4 : 1.4*DL+1.6*IL

DstXZ 20.

XStrXZ 30.

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Basic Load Case B4 : 1.4*DL+1.6*IL
Load Groups

PLANE FRAME LOAD TYPES	VALUE 1	VALUE 2	VALUE 3	VALUE 4
JF=Joint Forces	FX	FZ		
JM=Joint Moments	MY			
P?=Point Load	P?	L		
U?=Uniformly Distributed	U?			
T?=Triangularly Distrib. Load	T?			
V?=Variably Distributed Load	V?1	L1	V?2	L2
t =Temperature Elevation	t			
g =Gravitational Loading	gX	gZ		

N.B. 1. ? is one of X,Z (global directions) or x,z (member directions).
2. VALUES are load intensities except that:-
L,L1,L2 are distances along the member from END1 joint.
t is the temperature elevation of the group of members in degrees
gX,gZ are 'g' factors; gZ=-1 for normal gravity loading.
3. JOINT/MEMBER LIST '9,26,2-6*2,40-30*5' means '9,26,2,4,6,40,35,30'

#	TYPE	MEMBER/JOINT LIST	VALUE 1	VALUE 2	VALUE 3	VALUE 4
1	UZ	2 3 5 6	-11.9880			

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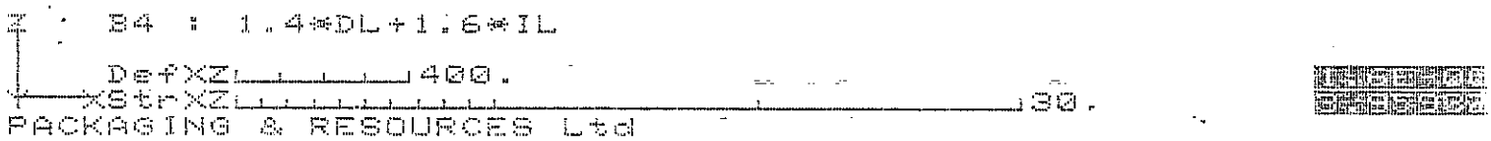
Units: S.I. METRIC (Steel) Data File : PR1A

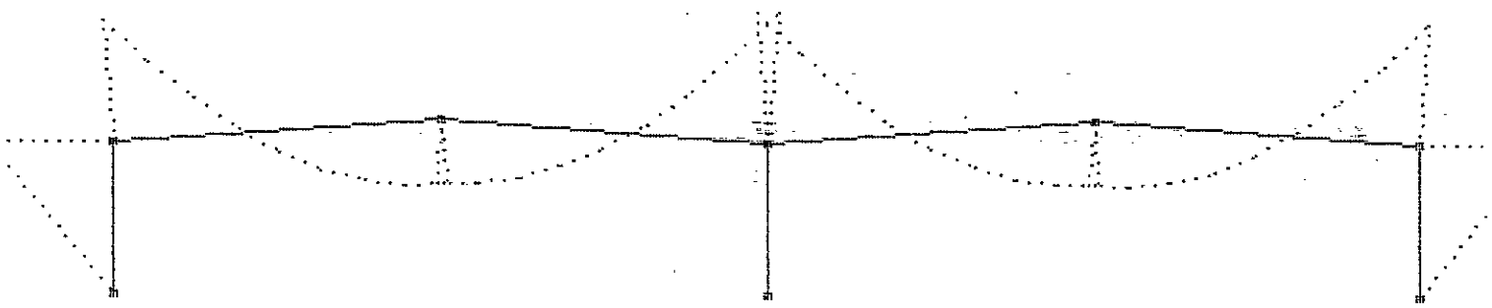


Basic Load Case B4 : 1.4*DL+1.6*IL
Joint Displacements

JOINT	X LINEAR (mm)	Z LINEAR (mm)	Y ROTATION (rad)
1	.00000	.00000	-.01246
2	-41.94482	-.41797	.00470
3	-20.95604	-312.76360	-.00114
4	.00001	-.85505	.00000
5	.00000	.00000	.00000
6	20.95607	-312.76360	.00114
7	41.94485	-.41797	-.00470
8	.00000	.00000	.01246

E102: PLANE FRAME ANALYSIS V2.7
Units: S.I. METRIC (Steel)

Data File : PR1A



B4 : 1.4*DL+1.6*IL

My XZ 600.
XStr XZ 30.
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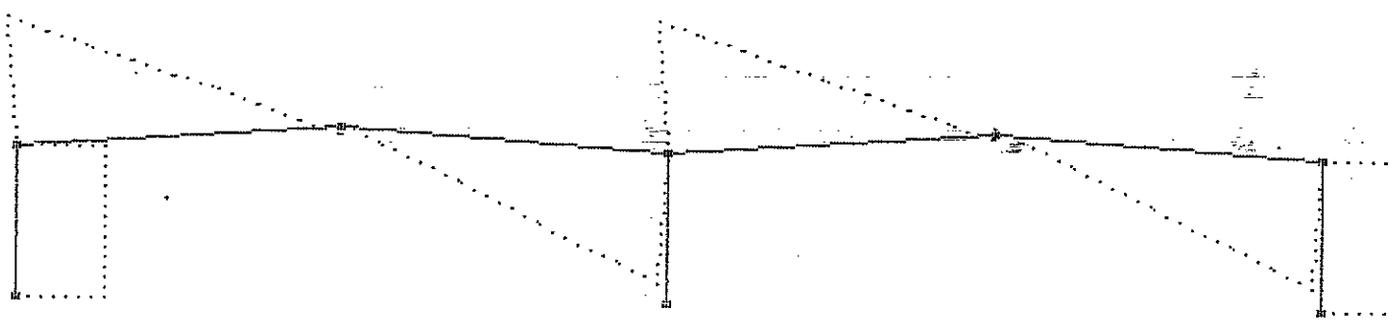
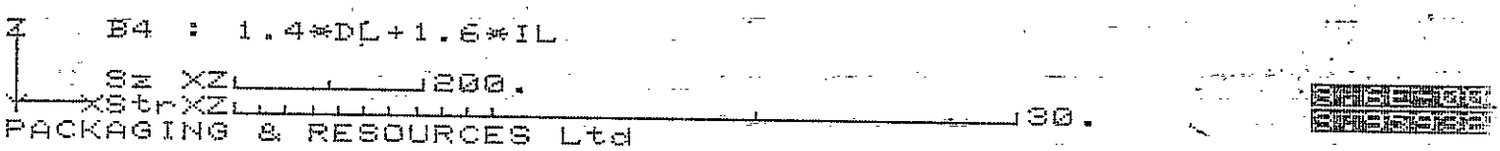
Units: S.I. METRIC (Steel)

Data File : PR1A





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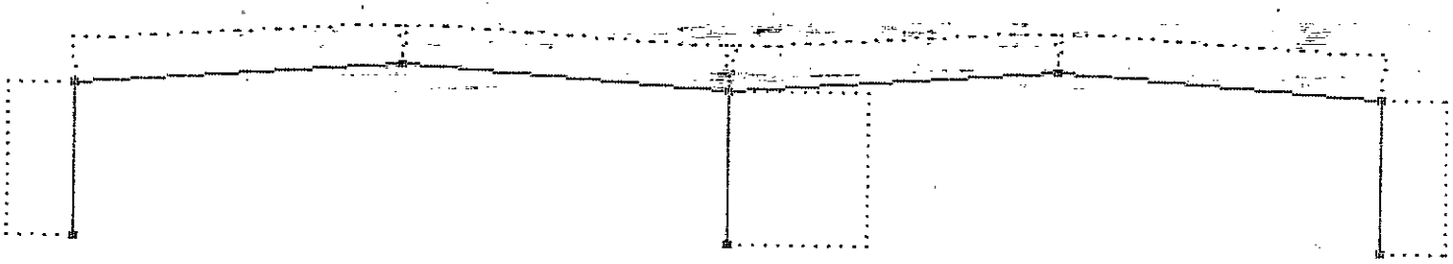
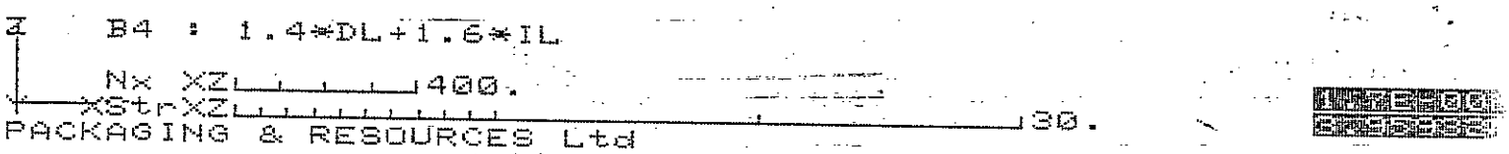
EN102: PLANE FRAME ANALYSIS V2.7
Units: S.I. METRIC (Steel)

Data File : PR1A





Basic Load Case B4 : 1.4*DL+1.6*IL
Member End Forces

MBR	JOINT	AXIAL Nx (kN)	SHEAR Sz (kN)	MOMENT My (kNm)
1	1	148.5198	-92.8226	.0000
1	2	148.5198	-92.8226	-556.9357
2	2	102.9670	141.6756	-556.9357
2	3	92.4775	-8.1744	279.4879
3	3	92.7145	4.7890	279.4879
3	4	103.2040	-145.0610	-599.3574
4	4	303.8271	.0000	.0000
4	5	303.8271	.0000	.0000
5	4	103.2040	145.0610	-599.3574
5	6	92.7145	-4.7890	279.4879
6	6	92.4775	8.1744	279.4879
6	7	102.9670	-141.6756	-556.9357
7	7	148.5198	92.8226	-556.9357
7	8	148.5198	92.8226	.0000

MARK O'REILLY & ASSOCIATES

PAGE 26
JOB NO. M234
RUN NO. 1
AUTHOR DJD
DATE 20/06/91

CKAGING & RESOURCES Ltd
PORTAL ANALYSIS

EN102: PLANE FRAME ANALYSIS V2.7 (c) ENCAD SYSTEMS LTD. 19
Units: S.I. METRIC (Steel) Data File : PR1A

Basic Load Case B4 : 1.4*DL+1.6*IL
Member End Stresses

MBR	JOINT	Ax AXIAL (N/mm2)	By yAXIS BENDING (N/mm2)	Ax +ABS.By (N/mm2)	Ax -ABS.By (N/mm2)
1	1	14.2808	.0000	14.2808	14.2808
1	2	14.2808	-309.7149	323.9956	-295.4341
2	2	15.0537	-602.7482	617.8018	-587.6945
2	3	13.5201	302.4781	315.9982	-288.9579
3	3	13.5548	302.4781	316.0328	-288.9233
3	4	15.0883	-648.6594	663.7477	-633.5710
4	4	29.2141	.0000	29.2141	29.2141
4	5	29.2141	.0000	29.2141	29.2141
5	4	15.0883	-648.6594	663.7477	-633.5710
5	6	13.5548	302.4781	316.0328	-288.9233
6	6	13.5201	302.4781	315.9982	-288.9579
6	7	15.0537	-602.7482	617.8018	-587.6945
7	7	14.2808	-309.7149	323.9956	-295.4341
7	8	14.2808	.0000	14.2808	14.2808

Basic Load Case B4 : 1.4*DL+1.6*IL
Support Reactions

JOINT	X FORCE (kN)	Z FORCE (kN)	Y MOMENT (kNm)
1	92.8226	148.5198	.0000
5	.0000	303.8271	.0000
8	-92.8226	148.5198	.0000

Basic Load Case B4 : 1.4*DL+1.6*IL
Load Balance

ENTRY	X LINEAR (kN)	Z LINEAR (kN)
1 EXTERNAL LOADS SUM	.0000	-600.8668
2 REACTIONS SUM	.0000	600.8668

Basic Load Case B4 : 1.4*DL+1.6*IL
Global Joint Loads from Back-Substitution

JOINT	X FORCE (kN)	Z FORCE (kN)	Y MOMENT (kNm)
1	-92.8226	-148.5198	.0000
2	.0000	.0000	.0000
3	.0000	.0000	.0000
4	.0000	.0000	.0000
5	.0000	-303.8271	.0000
6	.0000	.0000	.0000
7	.0000	.0000	.0000
8	92.8226	-148.5198	.0000

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS
GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6
TEL: 53 45 25

Title	Project No.
Packaging & Resources Ltd.	M234
Element: Computer Analysis Review.	Page No.: 10.
Drawing / Calcs. by: DJD. / Checked	Date: 21/06/91.

Ref.	CALCULATIONS	OUTPUT
	Computer Analysis Review.	
	From the different load Case Results it can be seen that.	
	1/ The Haunch at the Central Support Must be increased to 3.25m to carry the Moment.	
Load Case B4		
	2/ The Eaves deflections are too great for the Stanchion Analysed	
	However the Analysis does not take into account the Haunches which will stiffen the Stanchion against deflection.	
	Rerun the analysis from this	
	=> Still No enough increase Stanchion to 533x210x92 UB.	Stanchion 533x210x92UB

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CONSULTING ENGINEERS
GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6 TEL: 53 45 25

Title	Project No.
Packaging of Resources Ltd.	M234
Element: Eaves Beams / Bracing / Pads	Page No.: 11.
Drawing: 02/03 | Calcs. by: DJD. | Checked:	Date: 21/06/91

Ref.	CALCULATIONS	OUTPUT
	Eaves Beam. 6.5m Span Roof.	
	Load. Say 2m of Roof.	
	=> Moment = 32 kNm.	
	178x102x19 kg UB Restrained Every	Eaves Beam.
	1.2m => Mx = 47 kNm Mb = 40 kNm.	178x102x19 kg UB
	Bracing.	
	Either. 139.7 x 8 CHS or.	
	114.3x5 CHS depending.	
	On Position in Wind Truss.	
	Pad Foundation.	
	Worse Case Under Mid Support.	
Comp. Analysis	P= 200 kN.	
	1.5x1.5 x 100 = 225 kN. Capacity.	Pad Founds.
	=> 1500x1500x500 mm dp. Pad	1.5x1.5x 500mm dp
	Foundation on C20 Blinding	With T16's @
	50mm Thick With T16's.	150 c/c. In
	At 150 c/c in Both directions	Both Directions

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GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6 TEL: 53 45 25

Title	Project No.
Packaging & Recovery Ltd.	M234
Element: Foundations.	Page No. 12.
Drawing: 02/03. Calcs. by: JSD. Checked:	Date: 31/05/91.

Ref.	CALCULATIONS	OUTPUT

Strip Foundations.

Taking Wall = 215mm Tk Hollow Block
+ 100 mm Tk Solid Block
@ 6.5 m High.

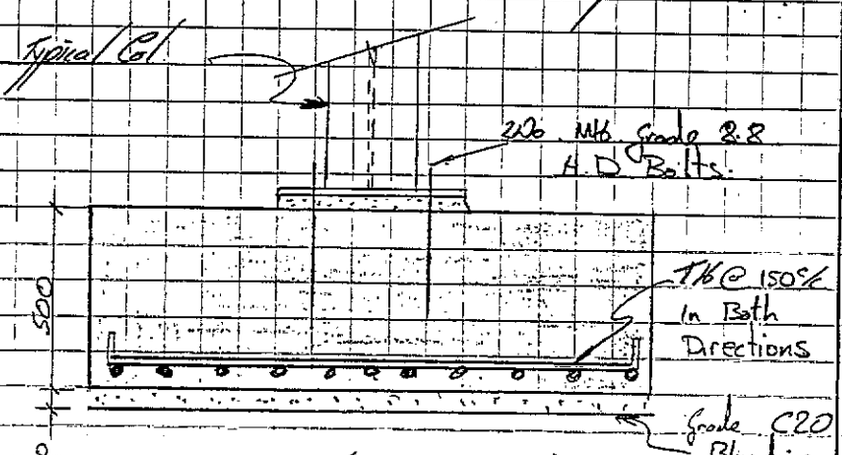
=> .215 x 22 x 6.5 = 30.745.
.1 x 22 x 6.5 = 14.3
Total Service Load on Strip = 45.045 kN/m.

Capacity of 900 x 300mm dp Strip
= 0.9 x 100 = 90 kN/m

As 90 > 45.045 Strip Ok

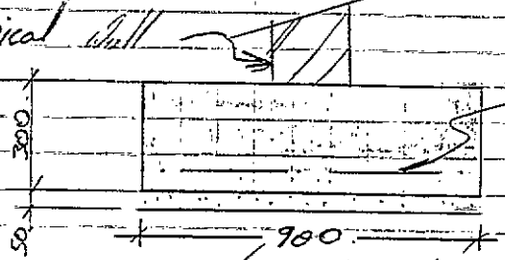
900 x 300mm dp Continuous Strip with 1 layer of A393 Mesh in the Bottom and 50mm of.

Typical Col



Section Thru Pad

Typical Wall



Section Thru' Strip.

MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS GREENMOUNT HOUSE HAROLD'S CROSS ROAD DUBLIN 6 TEL: 53 45 25	Title: Parkwise & Resources Ltd			Project No.: M234
	Element: Wall Panel Design.			Page No.: 13
	Drawing	Calcs. by: DMO.	Checked	Date: 4/06/91

Ref.	CALCULATIONS	OUTPUT
	Wall Panel Design - Worse Panel	
	$h = 3$ $L = 5.6$.	
	$h/L = 0.536$	
	$\mu = 0.5$	
IS 325. Tb. 9, E	$\alpha = 0.0303$	
	Wind Load On Building = $q = 0.565\ kN/m^2$.	
	$M_{f1} = 0.0303 \times 0.565 \times 5.6^2 \times 1.2 = 0.064\ kNm/m$	M_{f1}
	$M_{f4} = 0.5 \times M_{f1} = 0.032\ kNm/m$	
	Assume Hollow Blocks.	
	$\Rightarrow Z = \frac{1000 \times 215^2}{6 \times 10^6} \times 0.72 = 5.547 \times 10^6\ mm^3/m$	
	$M_a = \frac{0.5}{3.5} \times 5.547 = 0.79\ kNm/m$	Hollow Blocks OK

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CONSULTING ENGINEERS
GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6 TEL: 53 45 25

Title	Project No.
Packaging / Ceramic Ltd	M234
Element: Band Beam	Page No. 4.
Drawing: 03 / Calcs. by: DJO / Checked:	Date: 21/06/91

Ref.	CALCULATIONS	OUTPUT

Band Beam

Span = 5.6m. Load = 1.4×0.565×3
= 2.373 kN/m.

$M = \frac{wl^2}{8} = 9.36 kNm$

$\frac{M}{bd^2} = 1.498 \Rightarrow K = 0.042 < K'$

2T16's Top & Bottom.

$\Rightarrow z = 0.95d = 161.5$

$\Rightarrow A_s \text{ Req} = \frac{M}{0.87 f_y z} \Rightarrow A_s = 143.9 mm^2$

Shear

Min Shear links req. R6 @ 125 c/c.

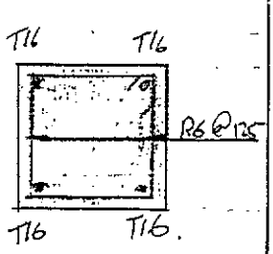
Deflection l/d allowable = 20 Actual = 33

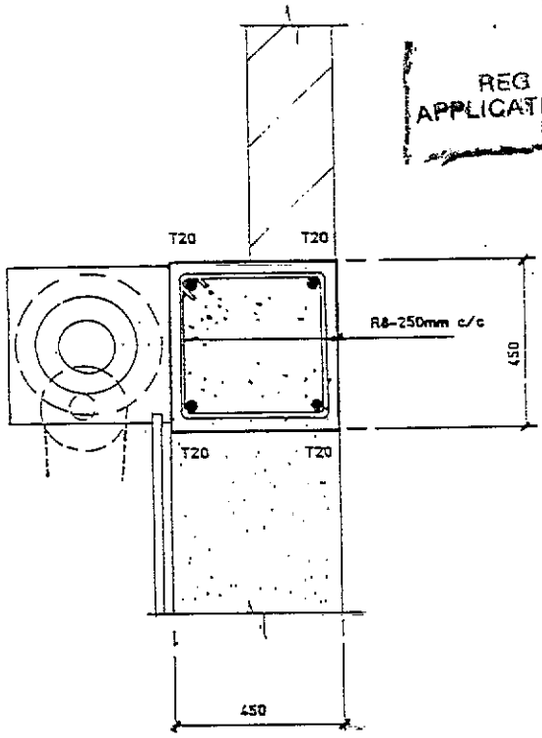
$f_s = \frac{5}{8} \times \frac{A_s \text{ req.} \times f_y}{A_s \text{ prov.}} = 102.3$

Torsion Mod factor = 1.85.

$\Rightarrow 1.85 \times 20 > 33.$

Band Beam Ok.



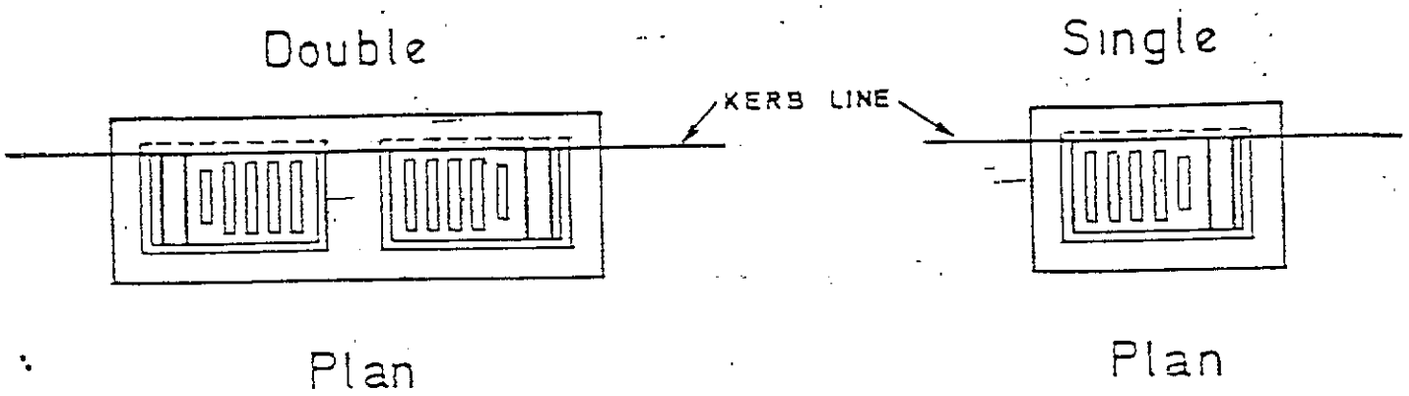


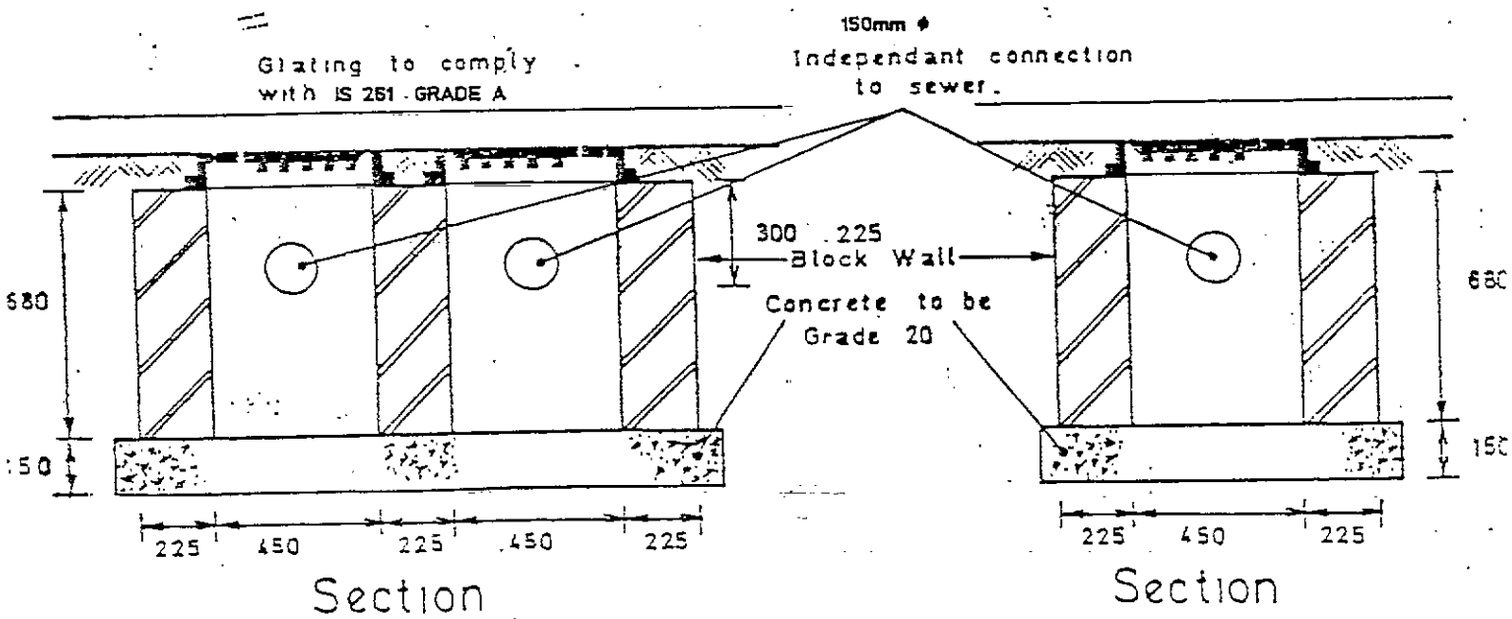
NOTES:-
STRUCTURAL CONCRET C GRADE C35
COVER TO STEEL : 25mm

DETAIL OF SUPPORT BEAM TO ROLLER SHUTTER

MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS GREENMOUNT HOUSE HAROLD'S CROSS ROAD DUBLIN 6W TEL 53 44 23 FAX 54 44 78	Project: PROPOSED FACTORY EXTENSION AT UNIT 520, WESTERN IND. ESTATE			Job No: M 234
	Title: DETAIL OF SUPPORT BEAM TO ROLLER SHUTTER			Drwg. No: A4/01
	Drawn: S.K.H.	Checked:	Scale: 1:20	Date: JUNE '91

JDH 12509



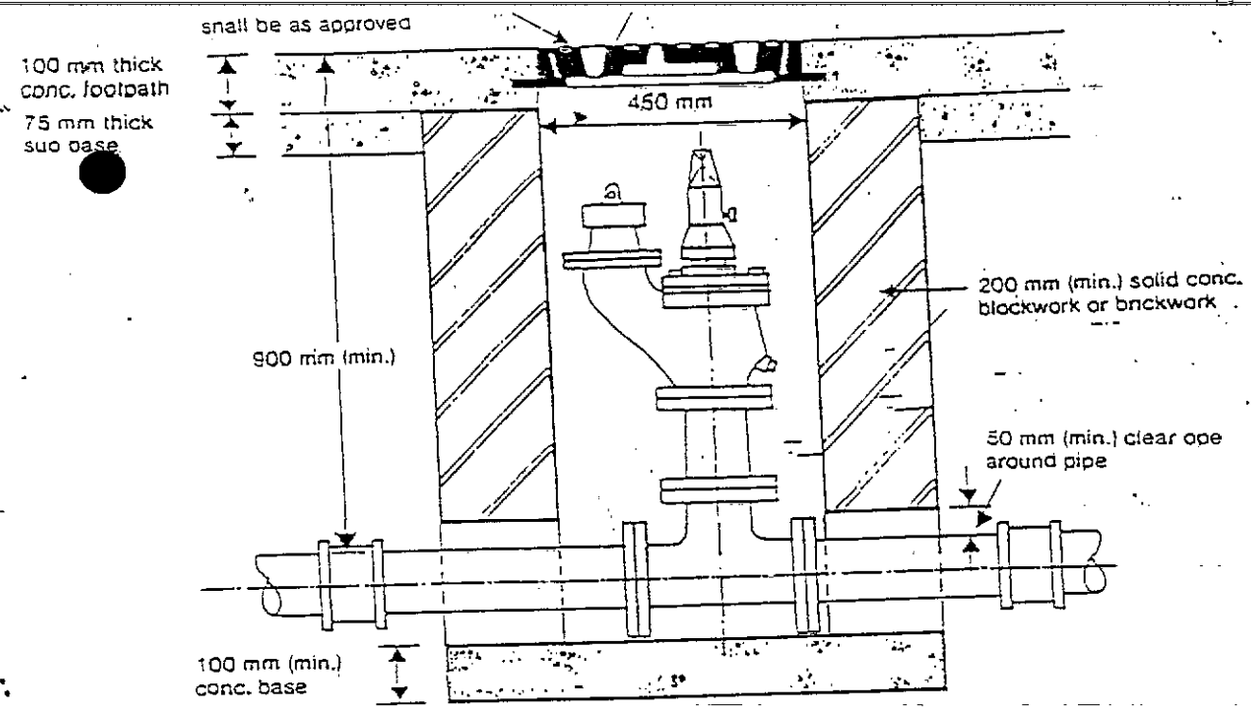


Blockwork Road Gullies

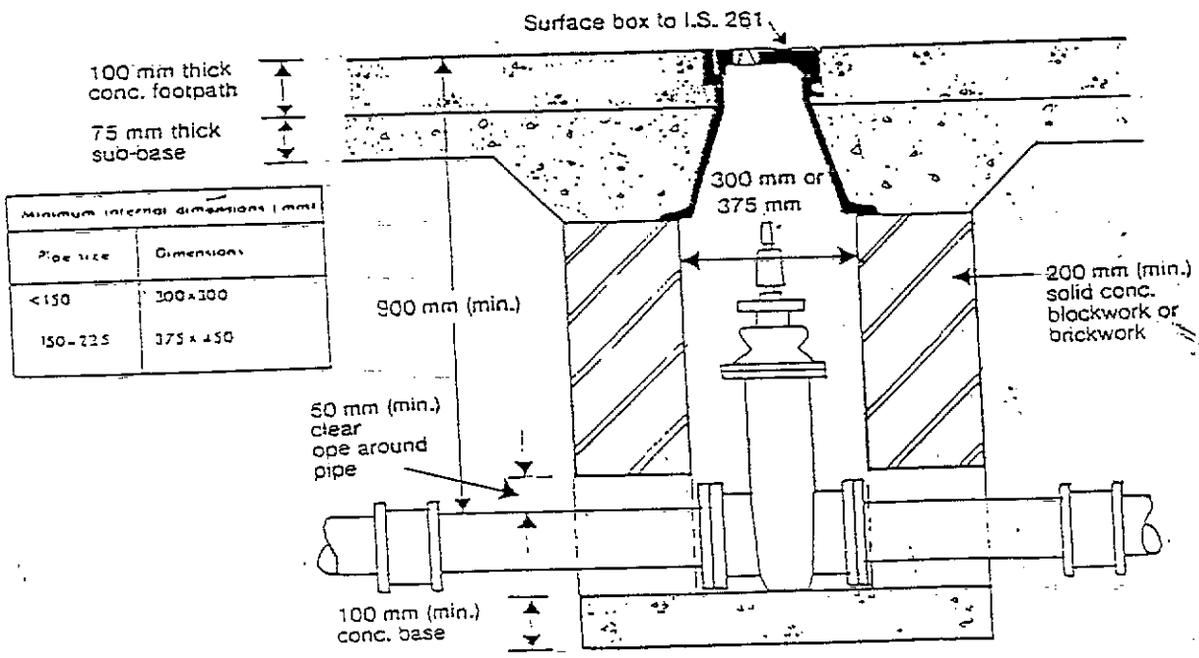
MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS
GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6W
TEL 53 44 23
FAX: 54 44 78

Project: PROPOSED FACTORY EXTENSION AT UNIT 520, WESTERN IND. ESTATE				Job. No: M 234
Title: BLOCKWORK ROAD GULLEYS				Drwg. No: A4/02
drawn: S.K.H.	checked:	scale: NTS	date: '91	

JDH 12509



(1) Hydrants



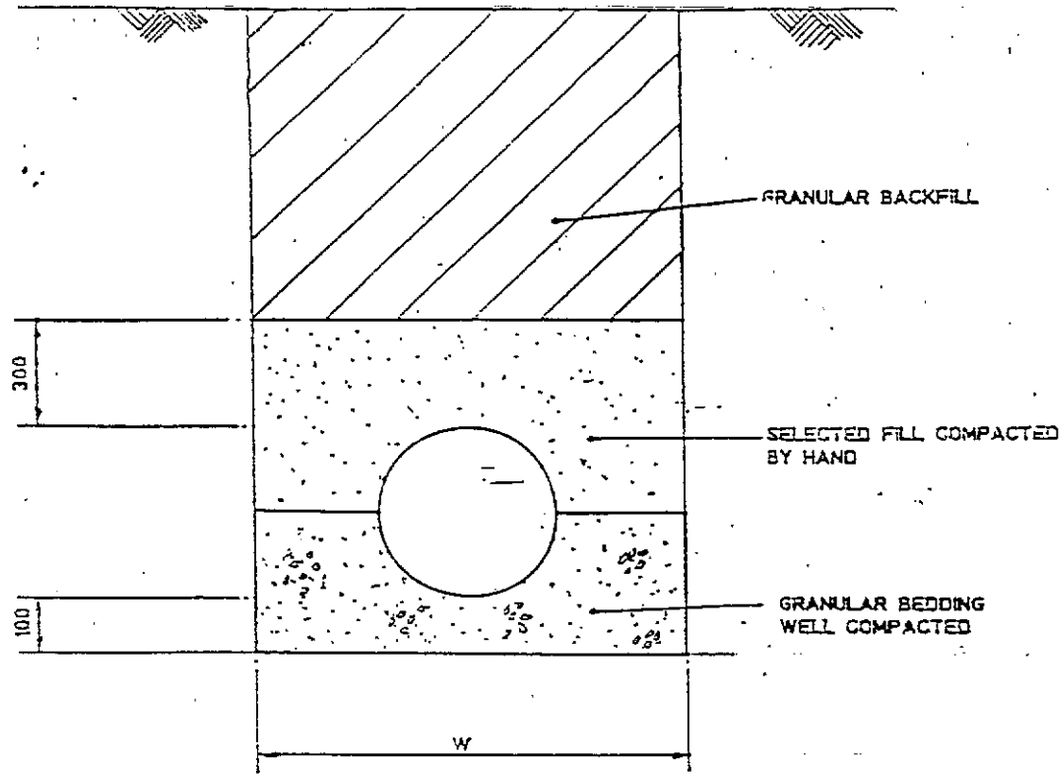
(2) Sluice valves

NOT TO SCALE

HYDRANT AND SLUICE VALVE CHAMBERS
drawing No. 4.1

MARK O'REILLY + ASSOCIATES CONSULTING ENGINEERS GREENMOUNT HOUSE HAROLD'S CROSS ROAD DUBLIN 6W TEL: 53 44 23 FAX: 54 44 78	Project: PROPOSED FACTORY EXTENSION AT UNIT 520 , WESTERN IND. ESTATE.				Job. No. M 234
	Title: HYDRANT & SLUICE VALVE CHAMBERS				Drwg. No. A4/03
	drawn S.K.H.	checked	scale NTS	date '91	

JOH12509



NOTES :

1. GENERAL BACKFILL IN TRENCHES IN ROADS SHALL CONSISTS OF TYPE 1, GRANULAR MATERIAL TO CLAUSE 803, M.O.T. SPEC. COMPACTED IN LAYERS NOT EXCEEDING 150mm LOOSE DEPTH.
2. WHERE COVER IS LESS THAN 1.2m IN ROADS OR LESS THAN 0.9m ELSEWHERE PIPES SHALL BE CONCRETE BED AND SURROUND.
3. GRANULAR BEDDING SHALL CONSIST OF GRAVEL GRADED FROM 10 - 5mm FREE FROM FINES, READILY COMPACTABLE AND FREE DRAINING.
4. TRENCH WIDTH FROM BOTTOM OF TRENCH TO A MINIMUM OF 300 ABOVE BARREL OF PIPE SHALL BE AS FOLLOWS:

DIAMETER	WIDTH	DIAMETER	WIDTH.
225	700	600	1370
300	760	675	1450
375	1070	750	1520
450	1140	900	1910
525	1220		

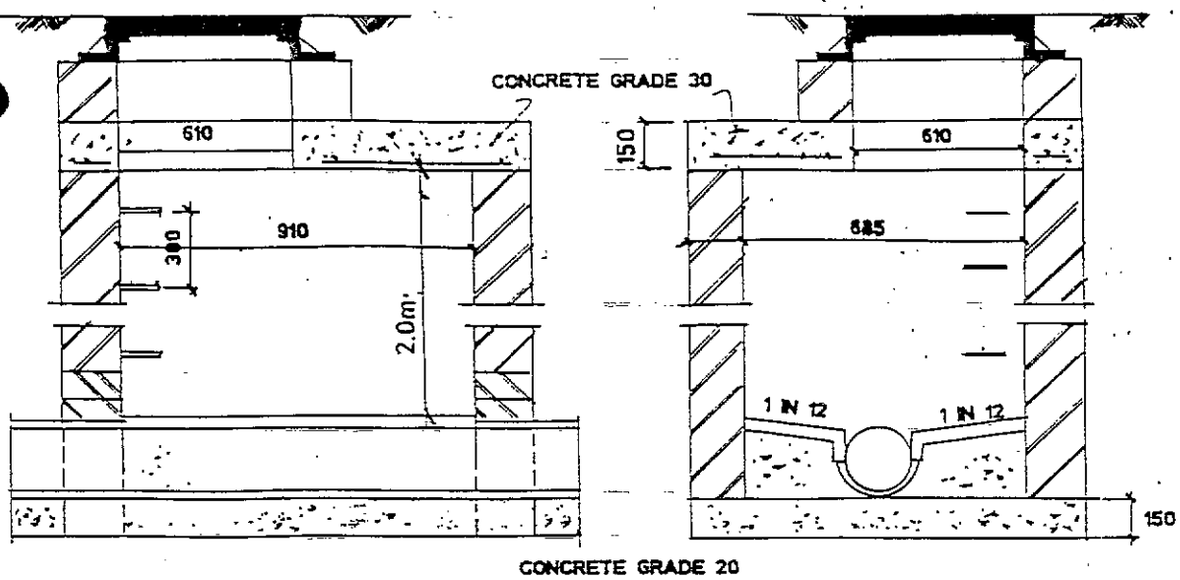
TYPICAL SEWER CROSS SECTION

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS
GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6W
TEL 53 44 23
FAX: 54 44 78

Project	Job. No.
PROPOSED FACTORY EXTENSION AT UNIT 520, WESTERN IND. ESTATE	M 234
Title: TYPICAL SEWER CROSS SECTION	Drwg. No. A4/04
drawn: S.L. / checked / scale / date: MAY '90	

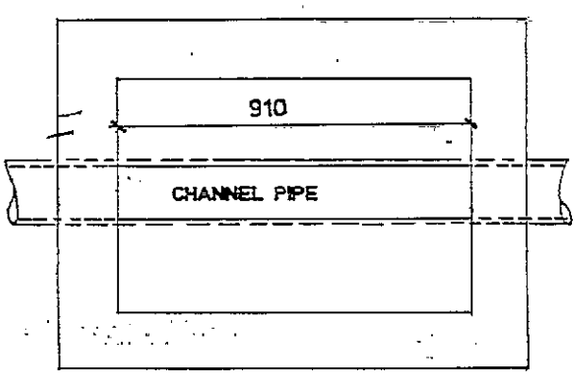
JDH 12509

COVER TO IS 261 GRADE B

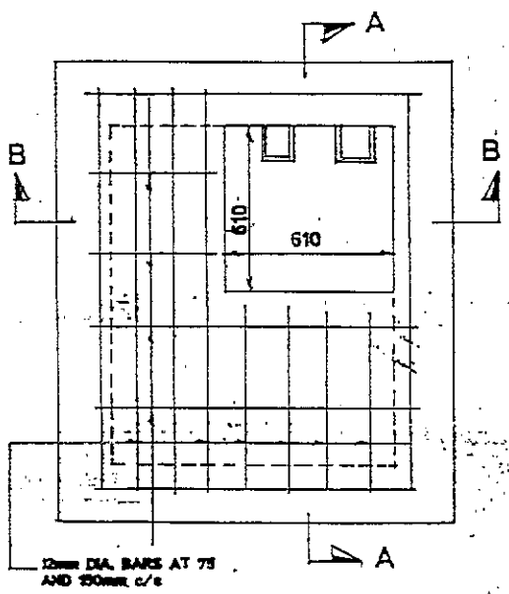


SECTION A-A

SECTION B-B



PLAN



ROOF PLAN

NOTES

1. THIS MANHOLE IS TO BE USED ONLY IN PRIVATE PROPERTY
2. FOR FOUL SEWERS, MANHOLES TO BE PLASTERED INSIDE AND OUT, WITH 10mm WATERPROOF RENDERING

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS

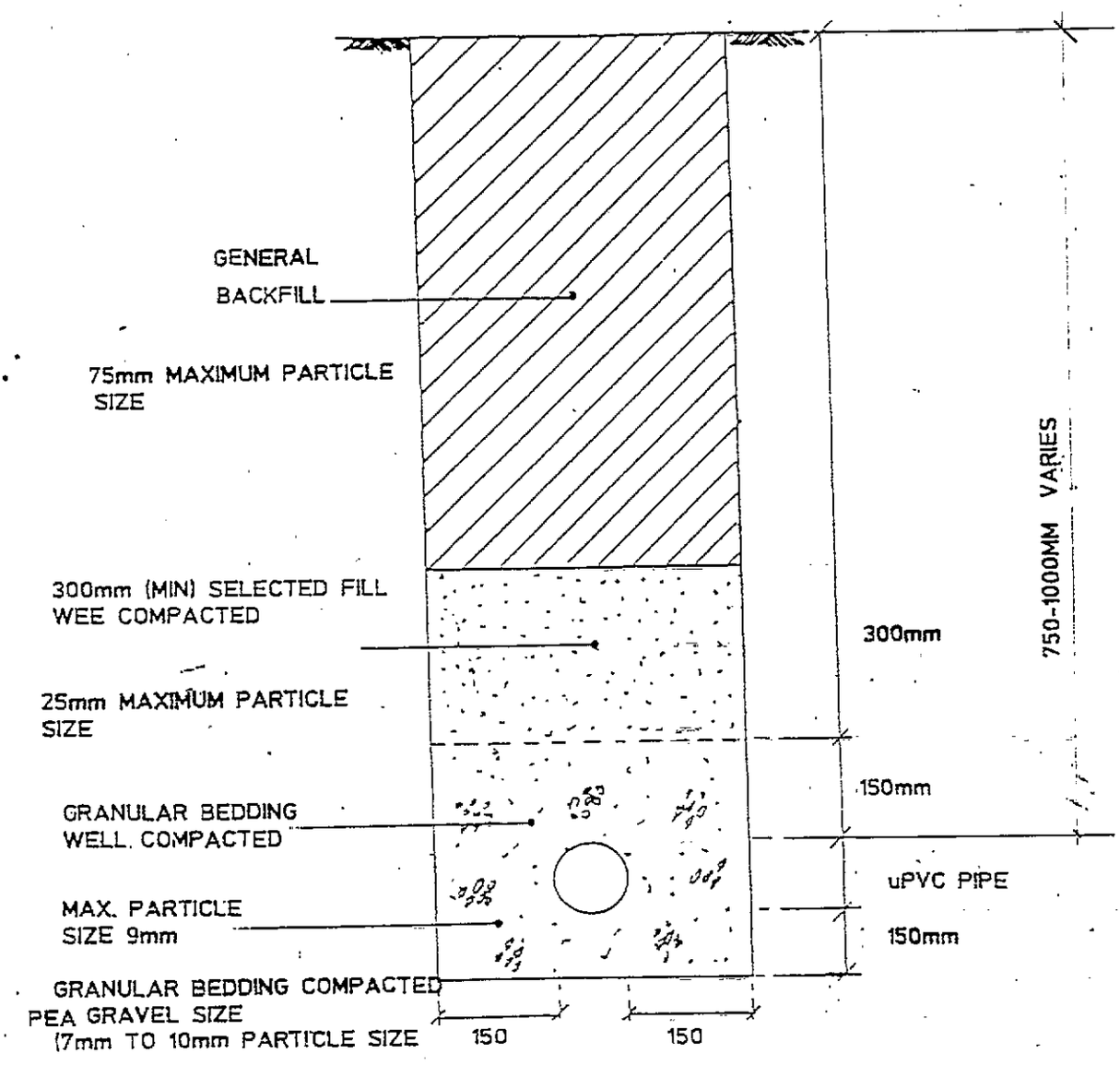
GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6W

TEL: 53 44 23
FAX: 54 44 78

Project	Job. No.
PROPOSED FACTORY EXTENSION AT UNIT 520 , WESTERN IND. ESTATE	M 234
Title	**Drwg. No.**
BLOCKWORK MANHOLE DETAIL	A4/05

drawn	checked	scale	date
S.K.H.		N.T.S.	FEB '91

JDH 12509

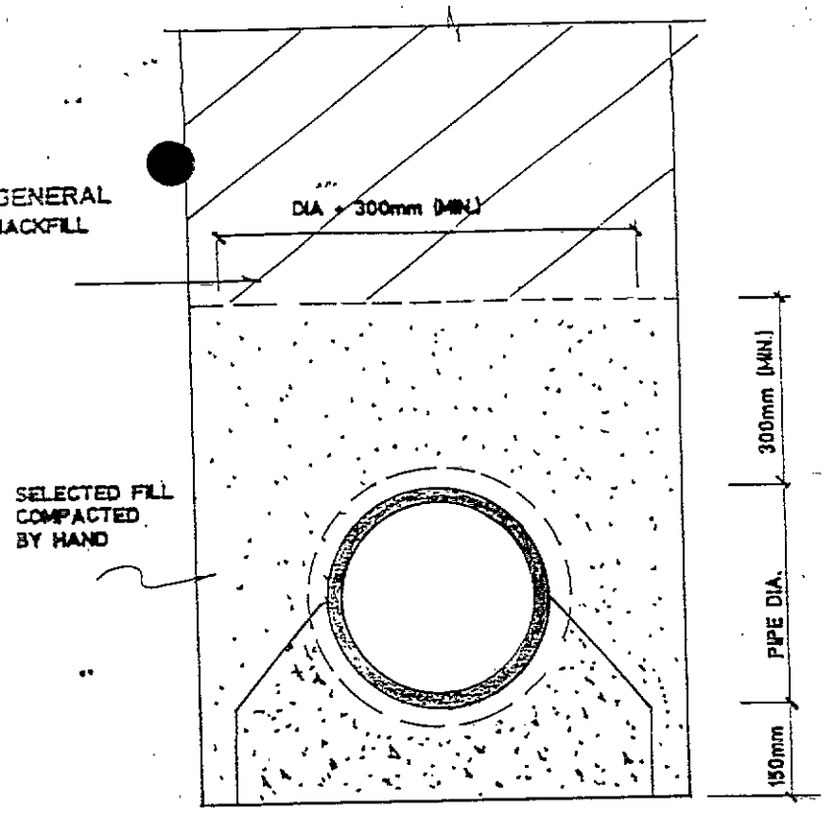


SECTION THROUGH TRENCH

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS
GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6W
TEL: 53 44 23
FAX: 54 44 78

Project	Job. No.
PROPOSED FACTORY EXTENSION AT UNIT 520, WESTERN IND. ESTATE	M 234
Title: BACKFILL TO uPVC WATERMAIN	Drwg. No. A4/06

drawn	checked	scale	date
S.K.H.		NTS	'91



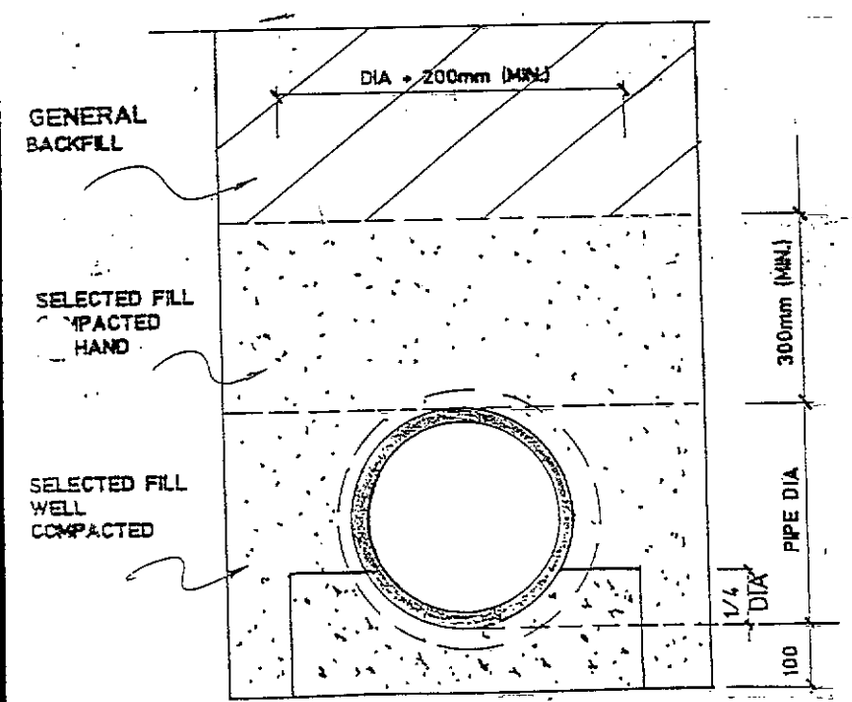
1. GENERAL BACKFILL IN TRENCHES IN ROADS SHALL CONSISTS OF TYPE 1, GRANULAR MATERIAL TO CLAUSE 803, M.O.T. SPEC. COMPACTED IN LAYERS NOT EXCEEDING 150mm LOOSE DEPTH

2. WHERE COVER IS LESS THAN 1.2m IN ROADS OR LESS THAN 0.9m ELSEWHERE PIPES SHALL BE CONCRETE BED & SURROUND

3. TRENCH WIDTH FROM BOTTOM OF TRENCH TO A MINIMUM OF 300mm ABOVE BARREL OF PIPE SHALL BE AS FOLLOWS

DIAMETER	WIDTH	DIAMETER	WIDTH
225	700	600	1370
300	760	675	1450
375	1070	750	1520
450	1140	900	1910
525	1220		

CONCRETE BEDDING - 1
(PIPE > 300mm DIA. & ALL PIPES AT DEPTH >4.3m



CONCRETE BEDDING - 2
(PIPES UP TO 300mm DIA. AT DEPTHS <4.3m)

MARK O'REILLY + ASSOCIATES
CONSULTING ENGINEERS

GREENMOUNT HOUSE
HAROLD'S CROSS ROAD
DUBLIN 6W

TEL: 53 44 23
FAX: 54 44 78

Project	PROPOSED FACTORY EXTENSION AT UNIT 520 , WESTERN IND. ESTATE
Title	BEDDING DETAIL : CLASS A BEDDING (CONCRETE CRADLE)
Job. No.	M 234
Drwg. No.	A4/0[illegible]
drawn	S.K.H.
checked	
scale	NTS
date	FEB '91

JDH12508