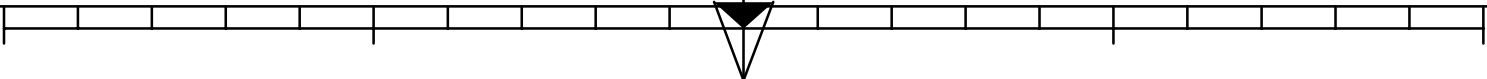


|   |  |   |  |                                |                               |
|---|--|---|--|--------------------------------|-------------------------------|
|   |  |   |  |                                |                               |
|   |  |   |  |                                |                               |
|   |  |   |  |                                |                               |
|   |  |   |  |                                |                               |
|   |  |   |  |                                |                               |
|   |  |   |  |                                |                               |
|   |  |   |  |                                |                               |
| A   | 05/12/08   | Vydání první / First issue  | C Tron   | C Esthevenet                   | M Picaut                      |
| Revize / Rev.   | Datum / Date   | Změny / Modifications   | Created / Created  | Kontrola / Checked             | SCALEhváleno / Approved       |
|    |  | <u>Uživatel / Employer</u><br><b>SAKO Brno, a.s.</b><br><b>Jedovnická 2</b><br><b>628 00 BRNO</b><br><b>Česká Republika</b> |  |                                |                               |
| PROJEKT ODPADOVÉ HOSPODÁŘSTVÍ BRNO<br>WASTE MANAGEMENT BRNO PROJECTT  |  |   |  |                                |                               |
| <u>Správce stavby / Engineer</u><br><br>XXXXXX  |  |   | <u>Vydavatel / Issuer</u><br><br><b>CNIM</b><br><br>18, rue Grange Dame Rose<br>78457 VELIZY VILLACOUBLAY Cedex<br>FRANCE  |                                |                               |
| <u>Konsorcium / Consortium</u><br><br><u>CNIM</u><br>18, rue Grange Dame Rose<br>78457 VELIZY VILLACOUBLAY Cedex<br>France<br><br><u>SIEMENS S.R.O.</u><br>Evropská 33q<br>160 00 PRAHA 6<br>Česká Republika  |  |   | <u>Subdodavate / Sub-supplier</u><br><br>Interní ref. č./ Internal ref.<br><br><u>Název dokumentu / Title of document</u><br><br><b>REFRACTORY FOR BOILER<br/>DETAILS BOOK</b> |                                |                               |
| Tento dokument je vlastnictvím společnosti CNIM. Nesmí být rozmnožován, šířen anebo zveřejňován bez předchozího písemného souhlasu CNIM.<br>This document is property of CNIM it cannot be used reproduced transmitted and / or disclosed without the prior written permission of CNIM. |  |   |  |                                |                               |
| Ke SCALEhválení / For approval  |  | <input type="checkbox"/>  | K vytvoření / For construction   |                                | <input type="checkbox"/>      |
|   |  | <input type="checkbox"/>  | K provedení / As built   |                                | <input type="checkbox"/>      |
|    |  | Formát / Format: A3   |  | MěřítkoSCALEealeSANS           |                               |
| Strana / Page:<br>1/24  | Dokument č. / N° document: <b>4048</b> <b>12</b> <b>21</b> / <b>65</b> <b>G</b> <b>30.02</b> |   |  | Revize / Revision:<br><b>A</b> | Statut/ Statute<br><b>BPE</b> |

| LISTE DES PAGES - LIST |                                     |                                      |          |  |  |  |  |
|------------------------|-------------------------------------|--------------------------------------|----------|--|--|--|--|
| Page<br>Sheet          | Désignation                         | Designation                          | Révision |  |  |  |  |
| 1                      | PAGE DE GARDE                       | PAGE DE GARDE                        | A        |  |  |  |  |
| 2                      | LISTE DES PAGES                     | LISTE DES PAGES                      | A        |  |  |  |  |
| 3                      | LEGENDES et NOTAS                   | LEGENDES et NOTAS                    | A        |  |  |  |  |
| 4                      | PLANS A CONSULTER                   | DRAWINGS TO CONSULT                  | A        |  |  |  |  |
| 5                      | DETAIL 1                            | DETAIL 1                             | A        |  |  |  |  |
| 6                      | DETAIL 2                            | DETAIL 2                             | A        |  |  |  |  |
| 7                      | DETAILS 3 à 7                       | DETAILS 3 to 7                       | A        |  |  |  |  |
| 8                      | DETAIL 18                           | DETAIL 18                            | A        |  |  |  |  |
| 9                      | COUPE W-W                           | SECTION W-W                          | A        |  |  |  |  |
| 10                     | DETAIL 20                           | DETAIL 20                            | A        |  |  |  |  |
| 11                     | DETAIL I-I                          | SECTION I-I                          | A        |  |  |  |  |
| 12                     | DETAIL N-N                          | SECTION N-N                          | A        |  |  |  |  |
| 13                     | DETAIL T-T                          | SECTION T-T                          | A        |  |  |  |  |
| 14                     | DETAIL E-E                          | SECTION E-E                          | A        |  |  |  |  |
| 15                     | DETAIL M-M                          | SECTION M-M                          | A        |  |  |  |  |
| 16                     | DETAIL G-G                          | SECTION G-G                          | A        |  |  |  |  |
| 17                     | DETAIL 19                           | DETAIL 19                            | A        |  |  |  |  |
| 18                     | SECTION F1-F1                       | SECTION F1-F1                        | A        |  |  |  |  |
| 19                     | SECTION F2-F2                       | SECTION F2-F2                        | A        |  |  |  |  |
| 20                     | DETAIL 11 CAISSON PORTE 450x450     | DETAIL 11 BOX FOR DOOR 450x450       | A        |  |  |  |  |
| 21                     | DETAIL 12 CAISSON BRULEUR           | DETAIL 12 BOX FOR BURNER             | A        |  |  |  |  |
| 22                     | DETAIL 14 CAISSON REGARD INCLINE    | DETAIL 14 BOX FOR INCLINED PEEP HOLE | A        |  |  |  |  |
| 23                     | DETAIL 15 CAISSON RAMONEUR          | DETAIL 15 BOX FOR SOOTBLOWER         | A        |  |  |  |  |
| 24                     | DETAIL 16 CAISSON CAMERA INFRAROUGE | DETAIL 16 BOX FOR IR CAMERA          | A        |  |  |  |  |








|                      |  |  |  |           |
|----------------------|--|--|--|-----------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>2 |
| CR 4048 12 21 3002   |  |  |  | REV.<br>A |
|                      |  |  |  | SCALE     |



NOTA :

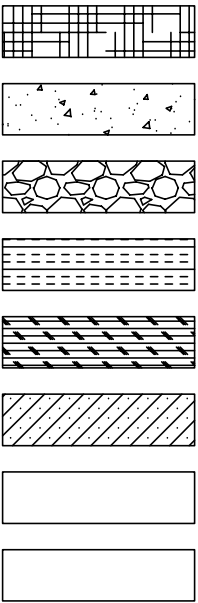
- In each angle of the furnace , the continuity of the walls stove setting is made by refractory concrete in all the zones which are not bricked .
- Allowances on the studs setting 100 ±1mm
- Allowances added on 10 studs maxi (100x9) ±3mm

LEGENDE

| Rep   | Type                       | Rep | Qté | Studds |
|---|----------------------------|-----|-----|--------|
|    | Type ES30                  | 1   | -   | ES 28  |
|   | Type ES32                  | 2   | -   | ES 28  |
|  | Type ES33                  | 3   | -   |        |
|  | Type ES23                  | 4   | -   | ES 28  |
|  | Studds ES28                | 5   | -   |        |
|  | Studds ø10 lg20            | 6   | -   |        |
|  | Queue de carpe - Fish Bone | 7   | -   |        |

NOMENCLATURE.:

- ① ROCK WOOL
- ② INSULATING CONCRETE
- ③ REFRACTORY CONCRETE
- ④ HIGHT TEMPERATURE FIBER
- ⑤ REFRACTORY BRICKS
- ⑥ REFRACTORY BRICKS CNIM
- ⑦ -
- ⑧ -
- ⑨ BITUMINOUS COATING

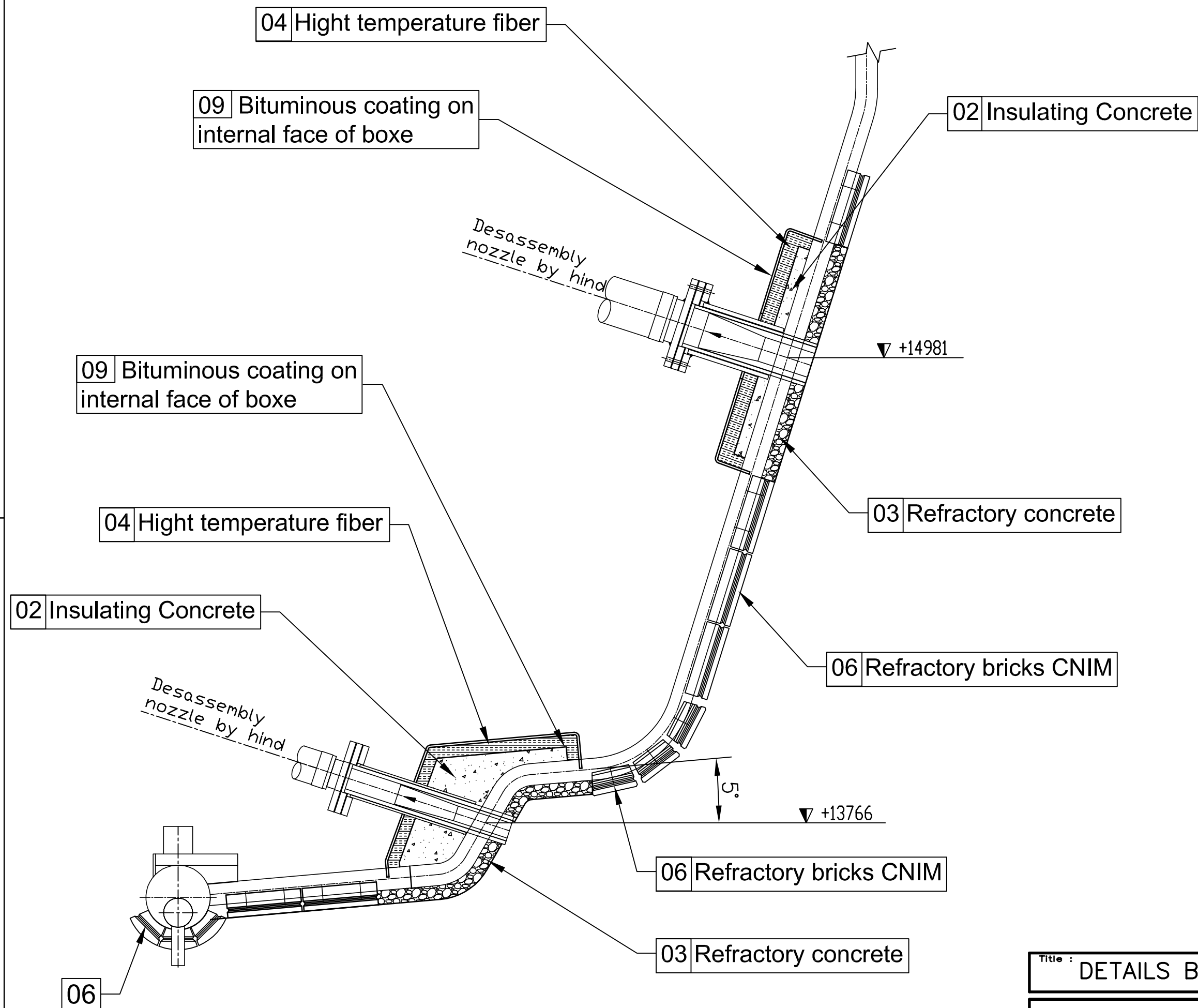


Plans à consulter / Drawings to consult

- 10 01 / MA G 1004 : Dilatation grille
- 10 01 / MA G 1005 : Porte et regards "MARTIN"
- 10 12 / MA G 1002 : Coupe transversale alimentateur
- 10 12 / MA G 1003 : Coupe transversale alimentateur
- 10 12 / MA G 1101 : Refractaire alimentateur
- 10 20 / MA G 1001 : Coupe longitudinale grille
- 10 20 / MA G 1002 : Coupe transversale grille
- 10 20 / MA G 1021 : Refractaire grille
  
- 11 09 330 : Caisson pour porte 450x450
- 11 09 332 : caisson pour regard incliné
- 11 09 334 : Caisson pour ramoneur
- 11 31 01 05 / 59 G 0001 : Ecran avant faisceau
- 11 31 01 04 / 59 G 0001 : Ecran milieu
- 11 33 01 03 / 59 G 0001 : Caisson passage surchauffeur
- 11 33 01 04 / 59 G 0001 : Caisson buses inférieures écran avant
- 11 33 01 05 / 59 G 0001 : Air secondaire écrans milieu et avant
- 11 33 01 18 / 59 G 0001 : Protection des collecteurs
- 11 33 01 20 / 59 G 0001 : Protection Ecran avant
- 11 33 01 21 / 59 G 0001 : Protection Ecran milieu
- 11 33 01 22 / 59 G 0001 : Protection Ecran lateral droit
- 11 33 01 23 / 59 G 0001 : Protection Ecran lateral Gauche
  
- 11 51 01 01 / 59 G 0001 : Protection surchauffeurs 1 et 2
  
- 11 46 01 01 / 59 G 0001 : Colonnes d'alimentation écrans latéraux
  
- 12 21 / 65 G 3001 : Refractory general
  
- 13 35 / 65 G 3001 : Drawing guide grate casing - Outside longitudinal view
- 13 35 / 65 G 3002 : Grate casing drawing iso view + identifying elements
- 13 35 / 65 G 3003 : Grate casing drawing - Back cover
- 13 35 / 65 G 3004 : Grate casing drawing - Feeder side
- 13 35 / 65 G 3005 : Grate casing drawing - Section and details
- 13 35 / 65 G 3006 : Grate casing drawing - Clinker deflector
- 13 35 / 65 G 3007 : Grate casing drawing - Casing flexible gasket
  
- 13 45 01 02 / FF G 1001 : Hopper under Boilers

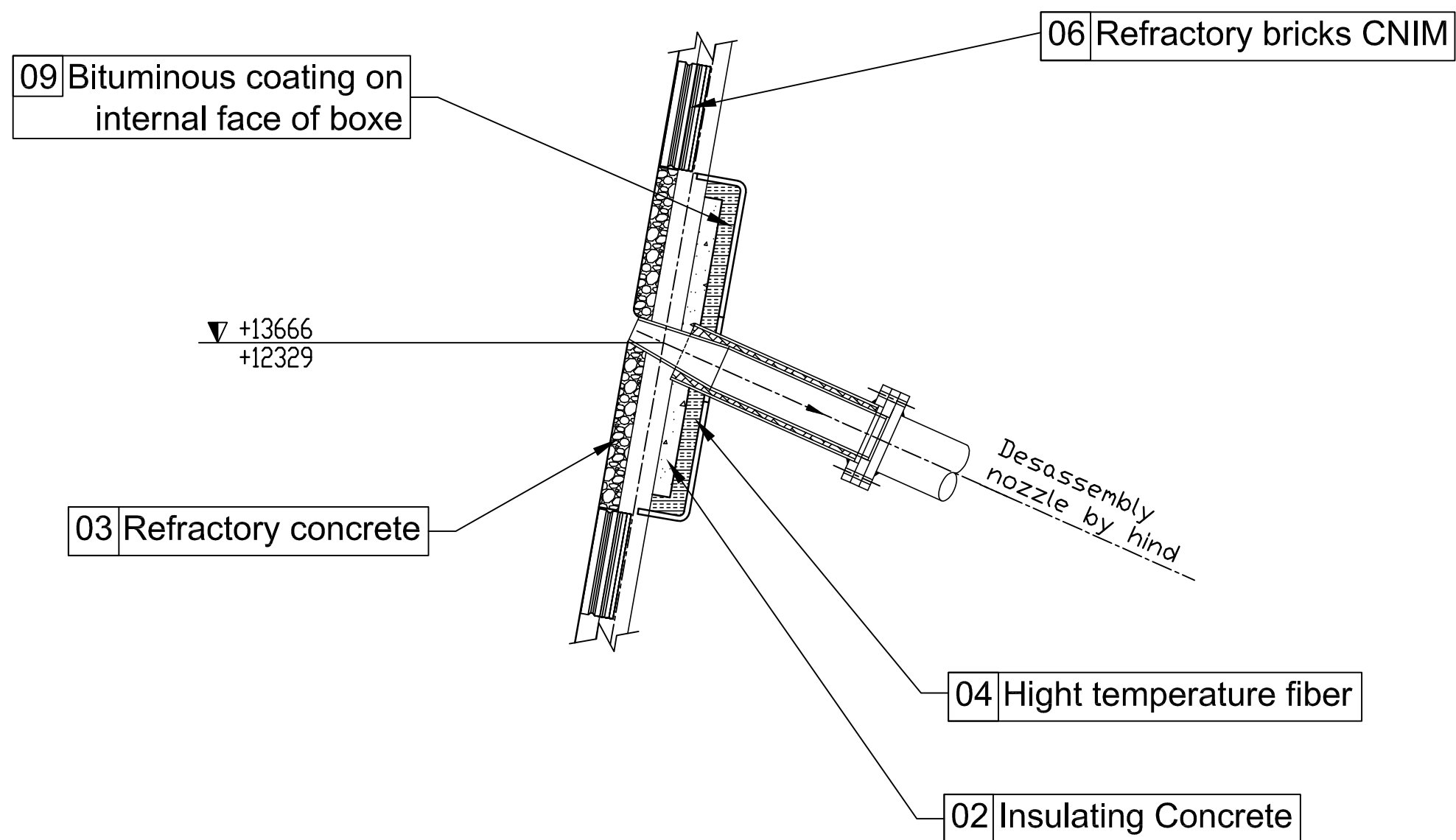
|                      |  |  |  |           |
|----------------------|--|--|--|-----------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>4 |
| CR 4048 12 21 3002   |  |  |  | REV.<br>A |
|                      |  |  |  | SCALE     |

DETAIL 1



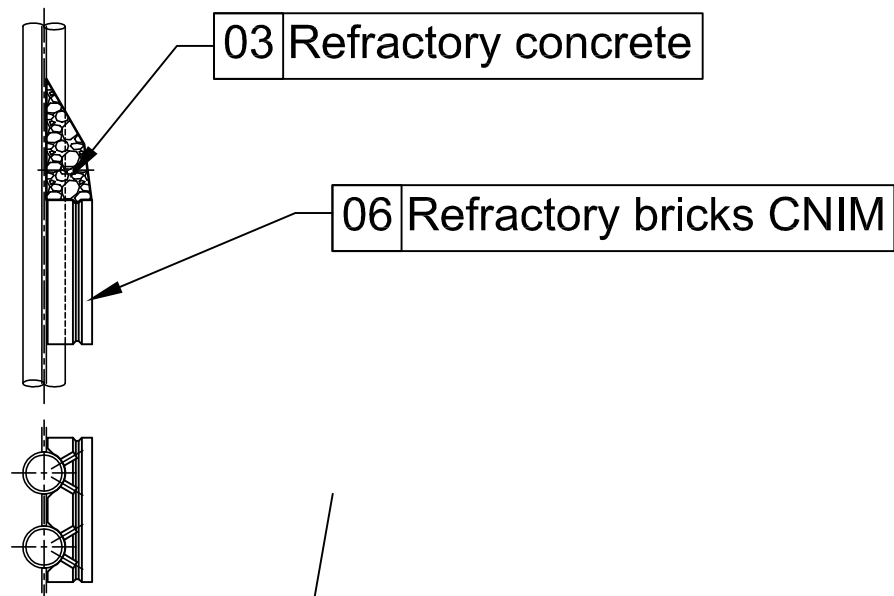
|                      |  |  |  |           |
|----------------------|--|--|--|-----------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>5 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A |
|                      |  |  |  | SCALE     |

## DETAIL 2

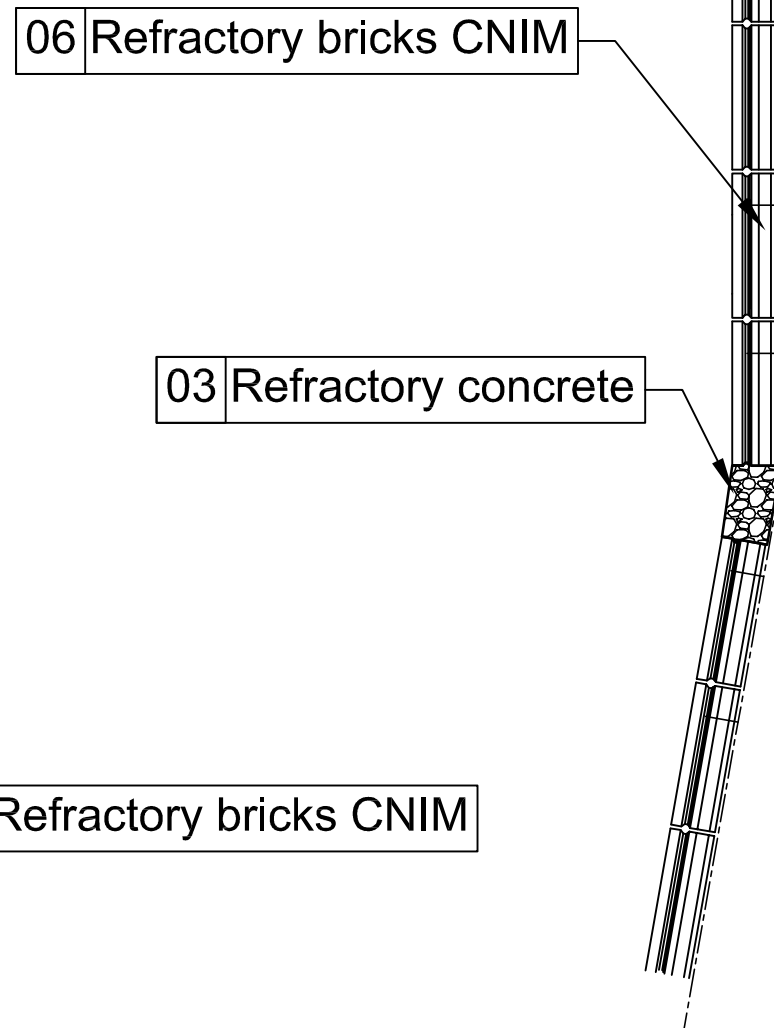


|                      |  |  |  |           |
|----------------------|--|--|--|-----------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>6 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A |
|                      |  |  |  | SCALE     |

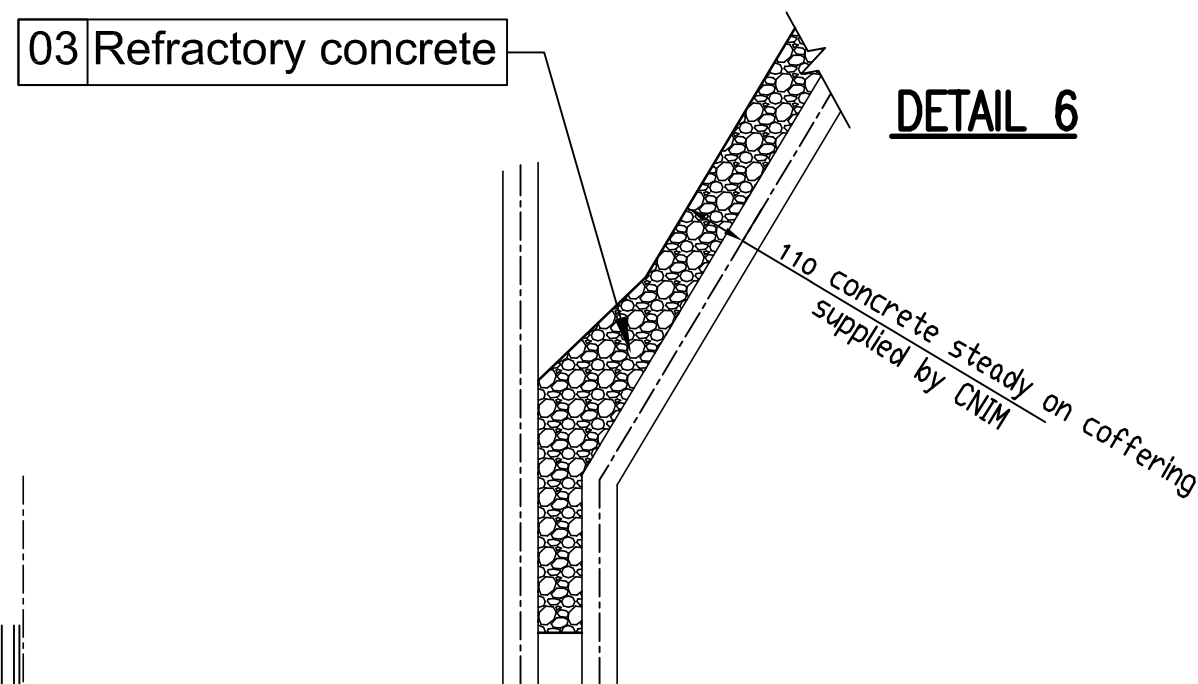
DETAIL 5



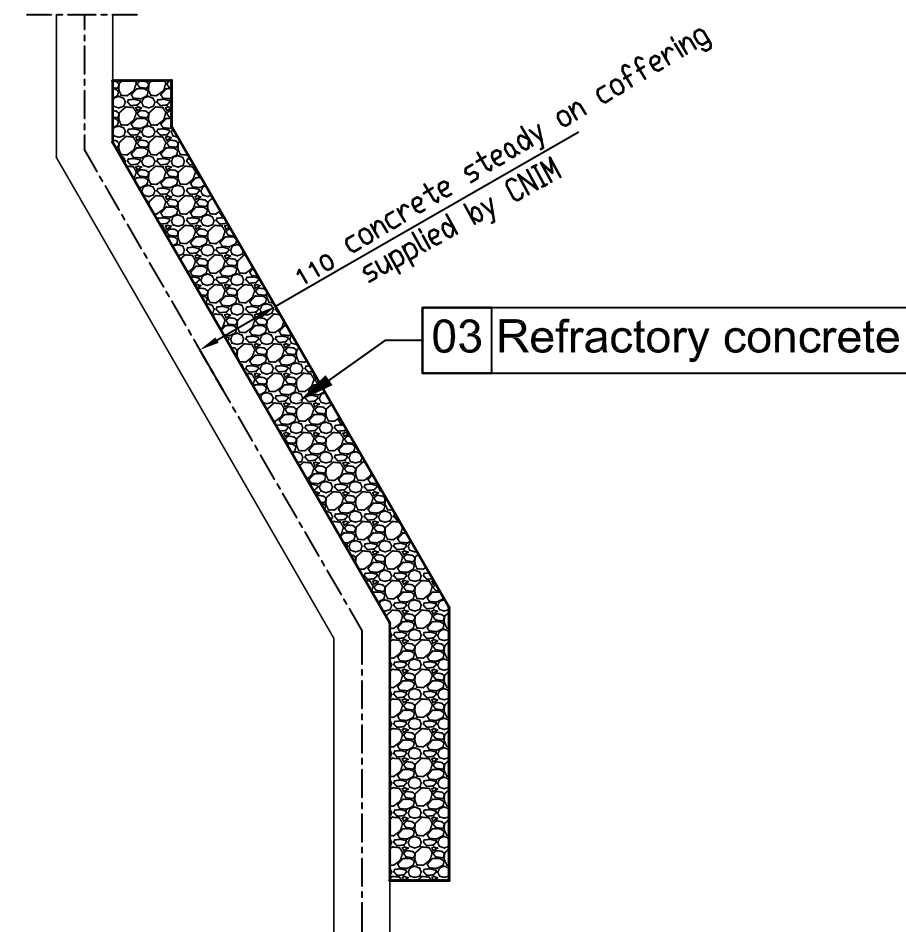
DETAIL 4



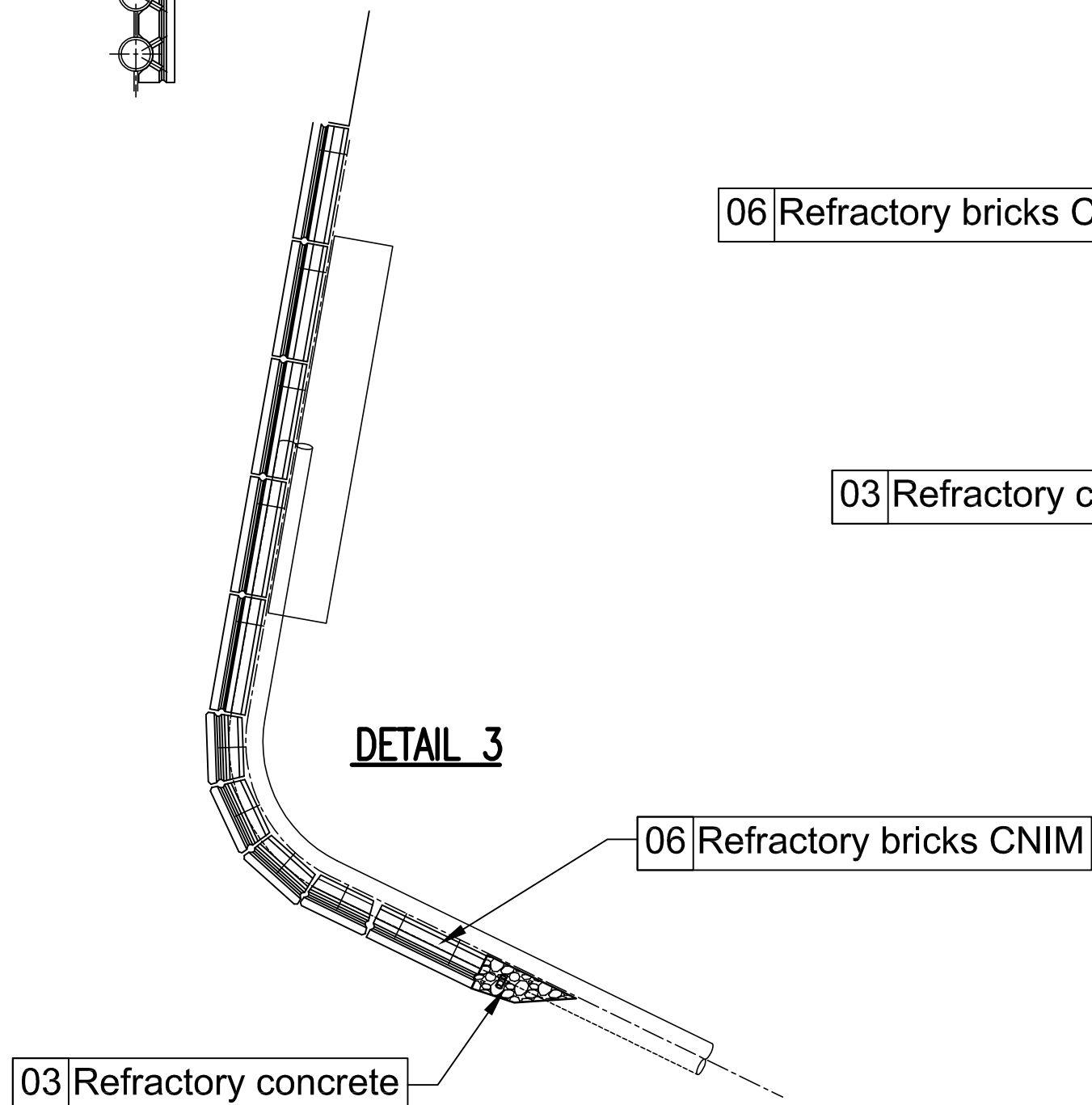
DETAIL 6



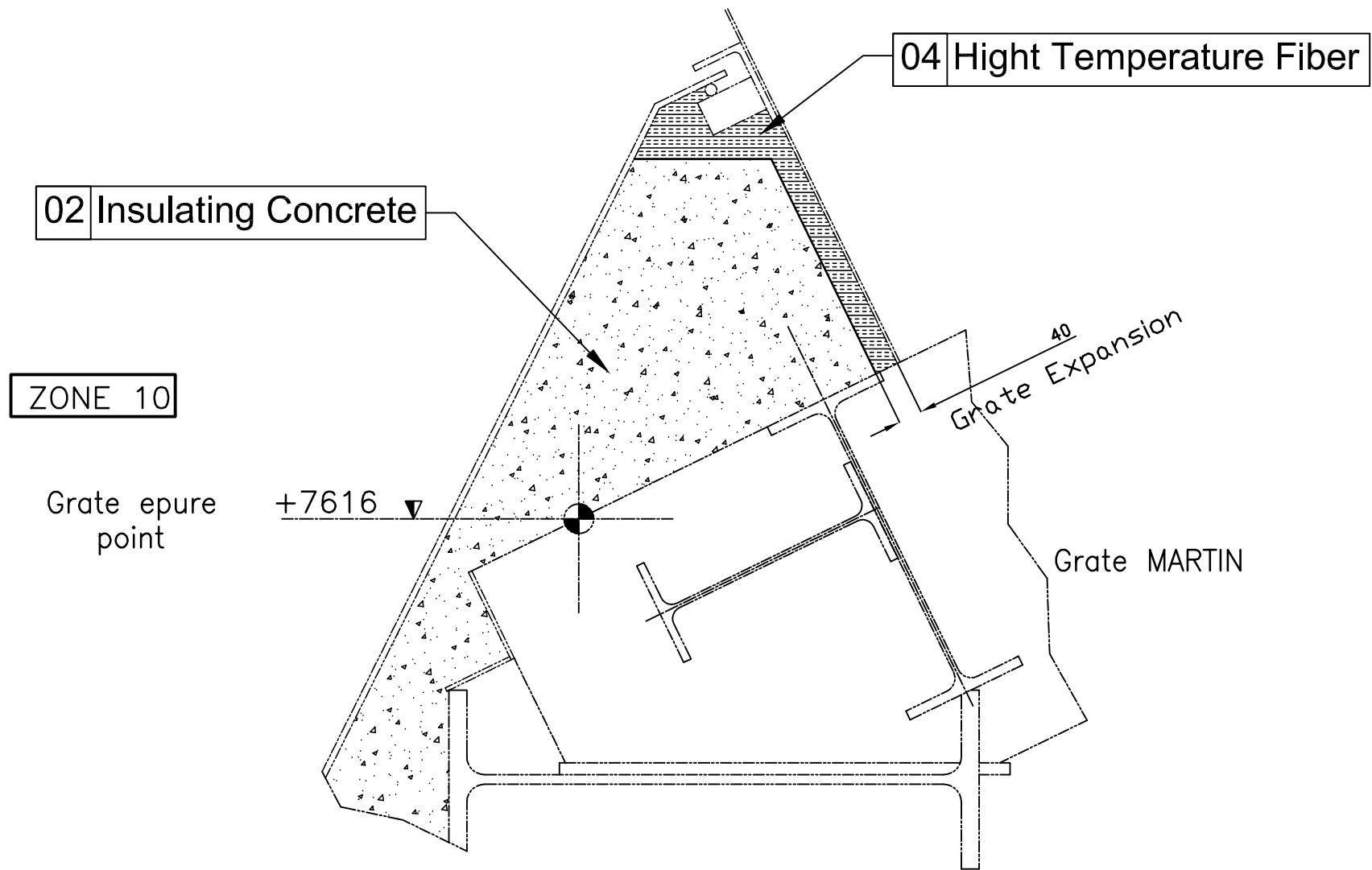
DETAIL 7



DETAIL 3

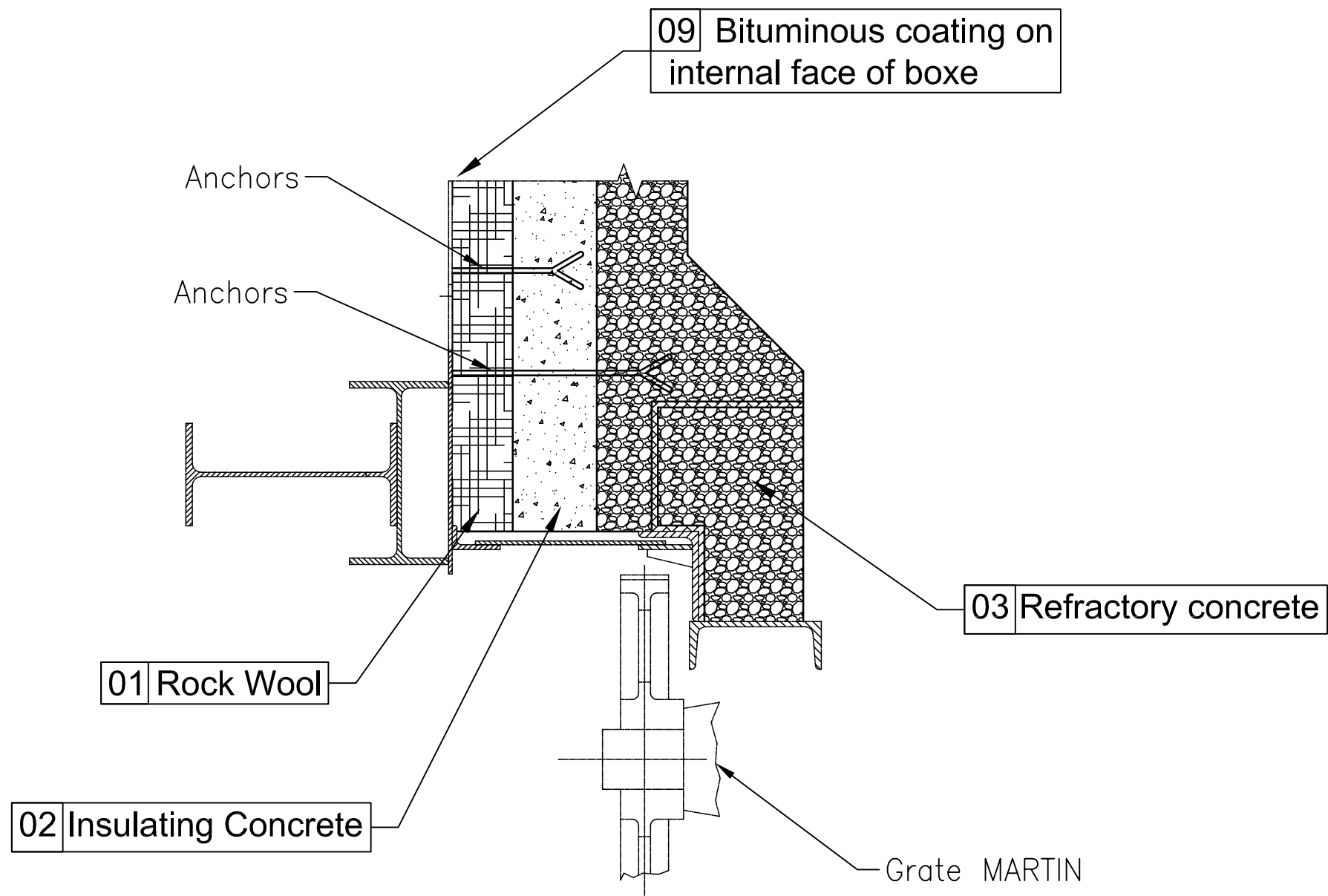


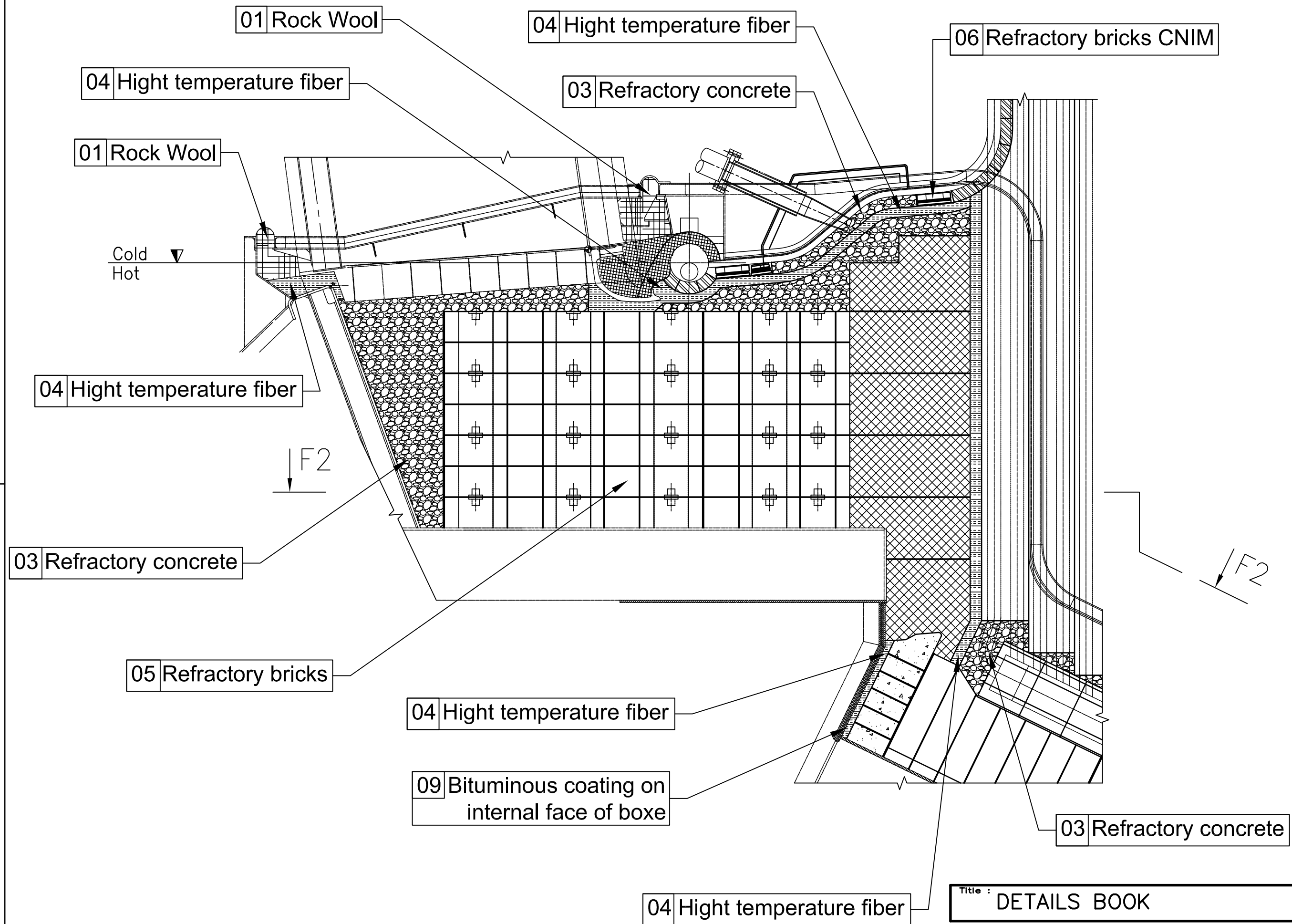
|                      |  |  |  |           |
|----------------------|--|--|--|-----------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>7 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A |
|                      |  |  |  | SCALE     |



|                      |  |  |  |           |
|----------------------|--|--|--|-----------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>8 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A |
|                      |  |  |  | SCALE     |







Coupe I-I

09 Bituminous coating on  
internal face of boxe

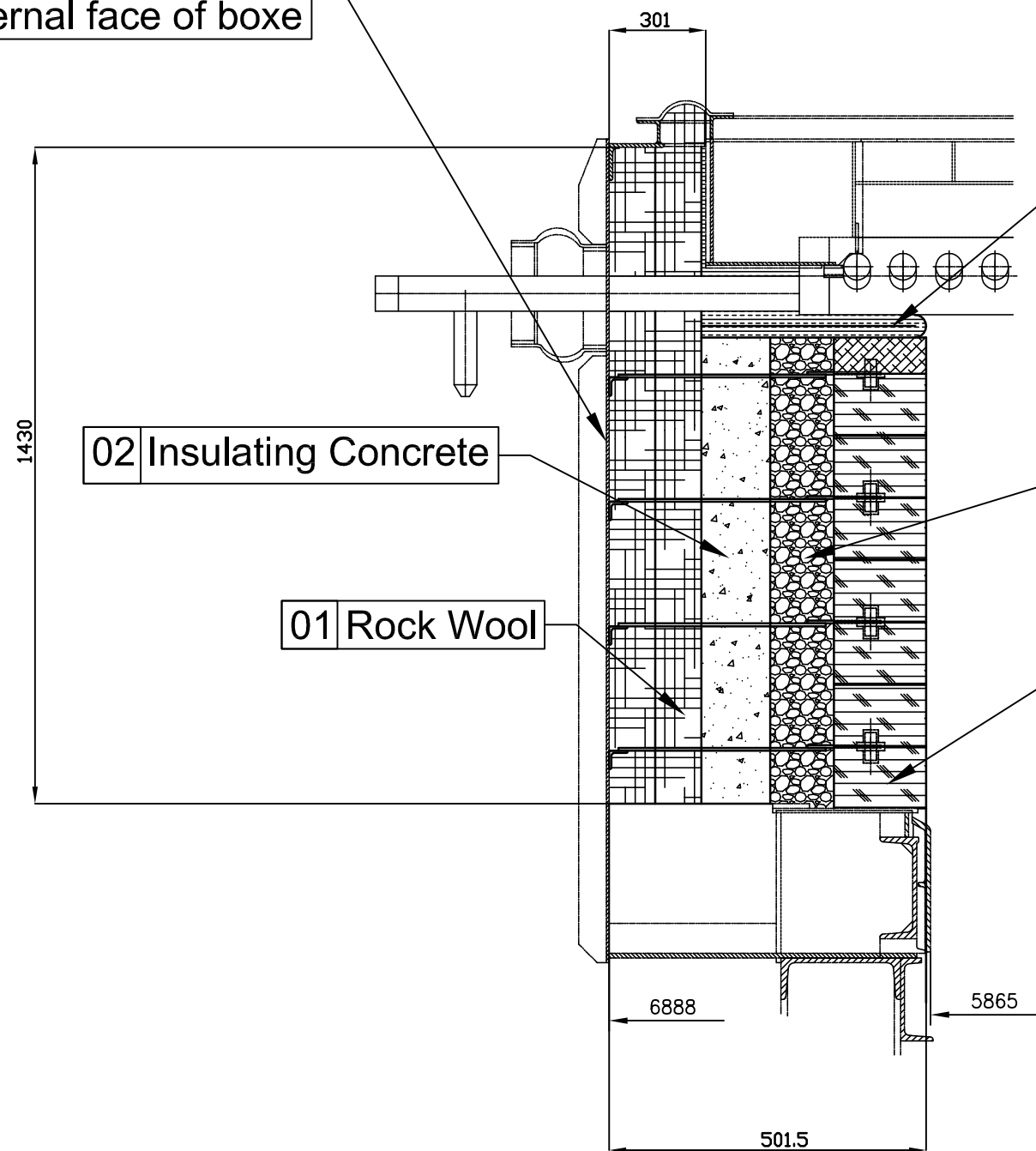
04 Hight temperature fiber

03 Refractory concrete

05 Refractory Bricks

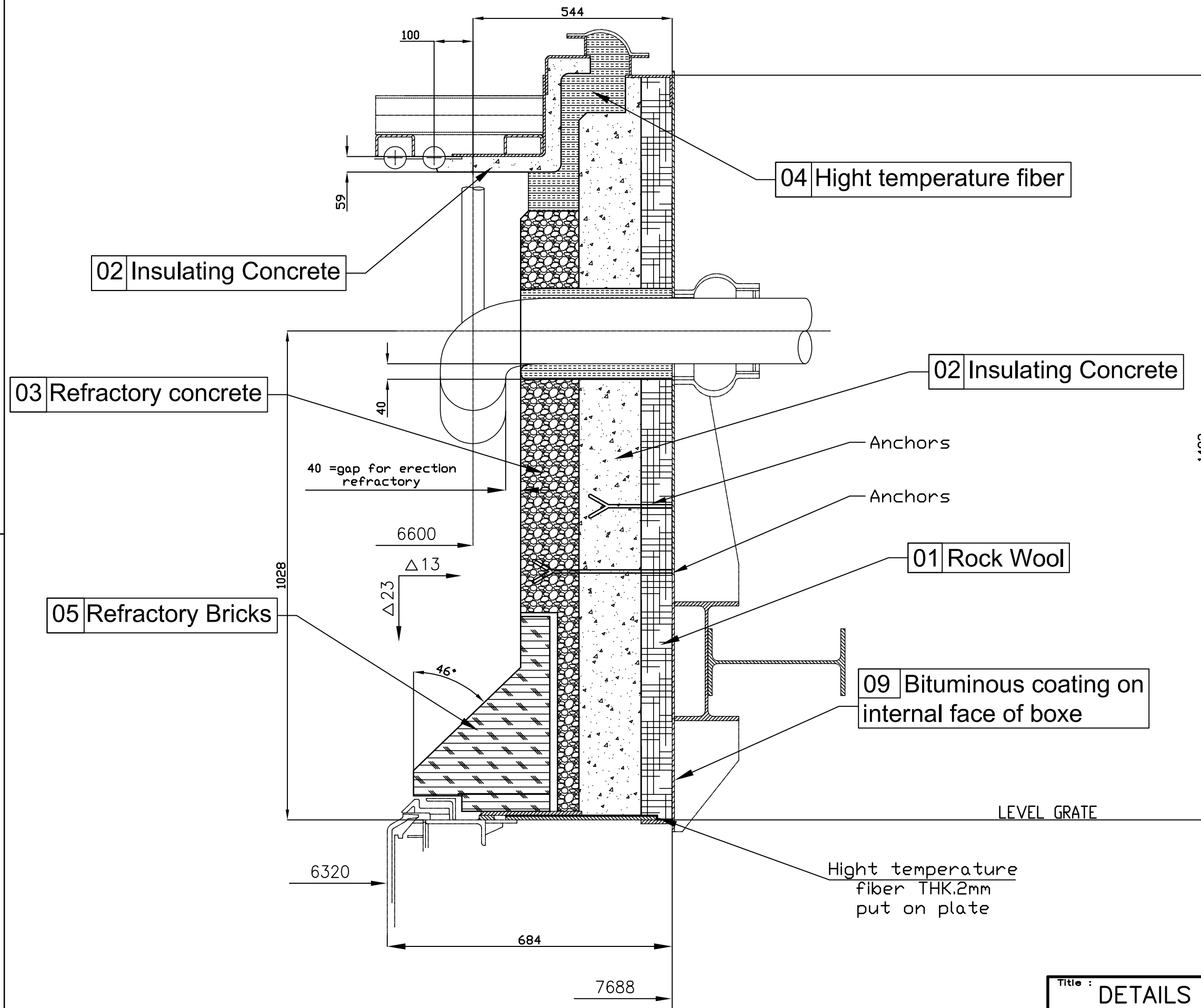
02 Insulating Concrete

01 Rock Wool



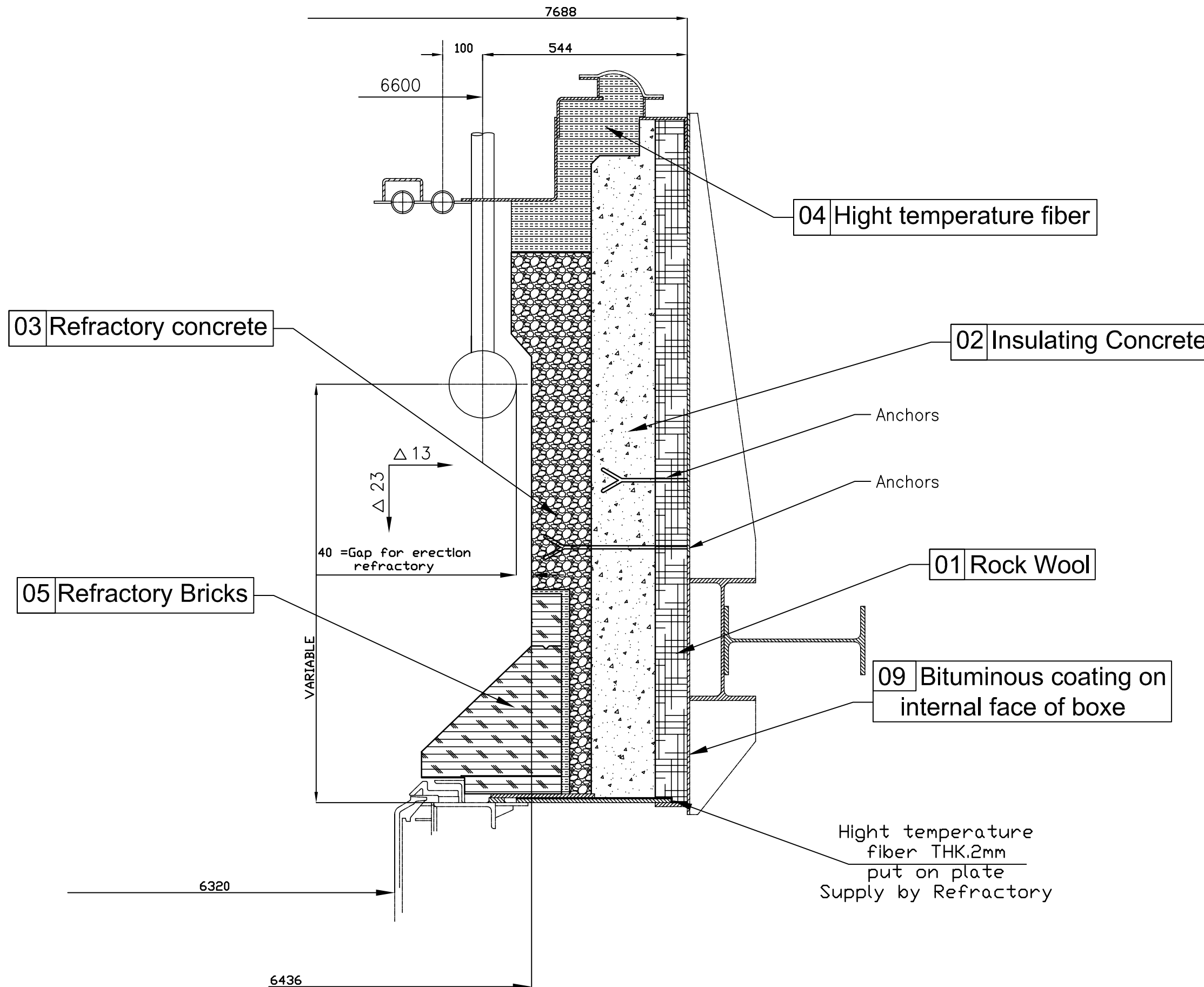
|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>11 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

# Coupe N-N



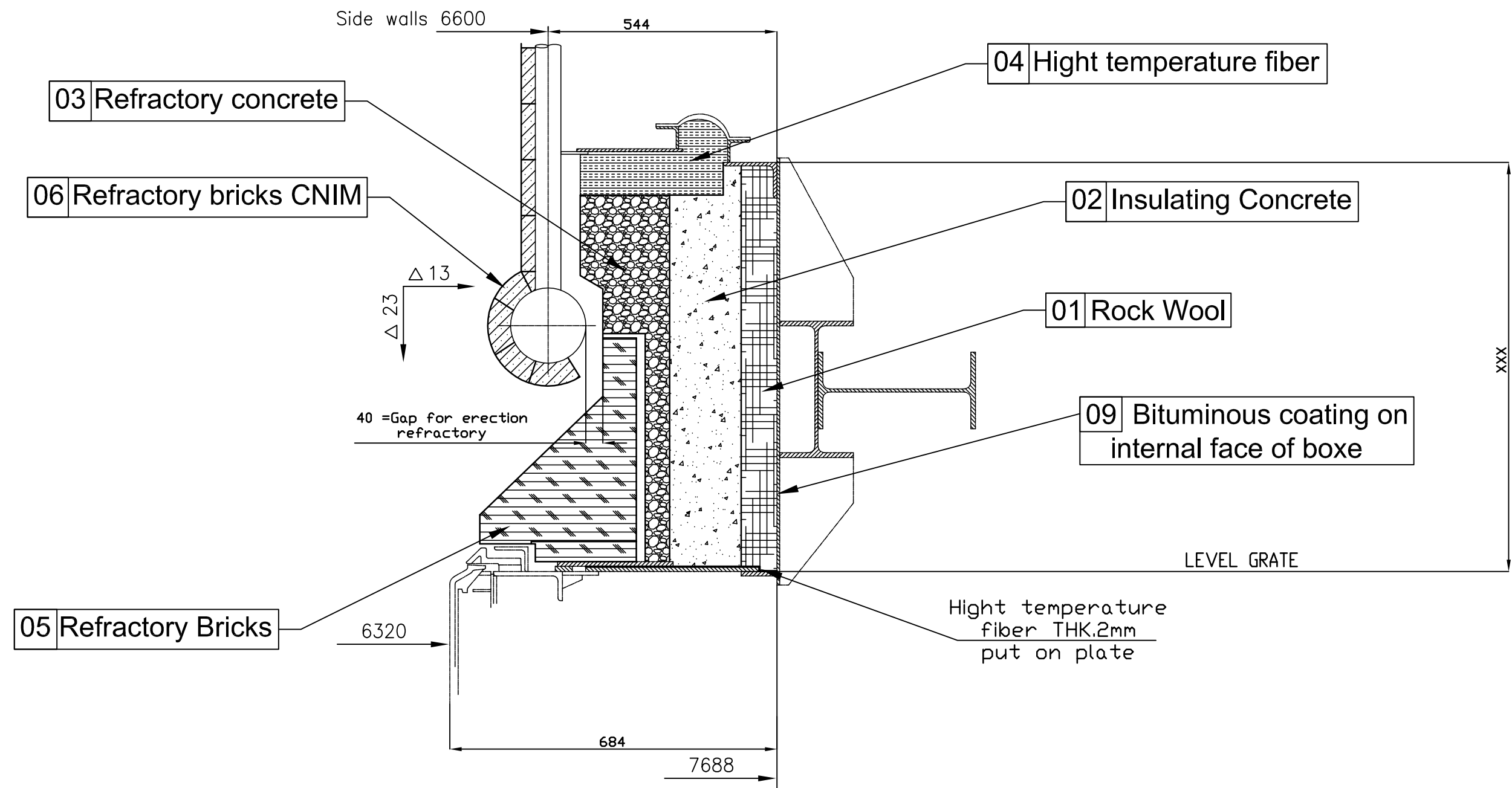
|                      |         |
|----------------------|---------|
| Title : DETAILS BOOK | PAGE 12 |
| CR : 4048 12 21 3002 | REV. A  |
|                      | SCALE   |

# Coupe T-T



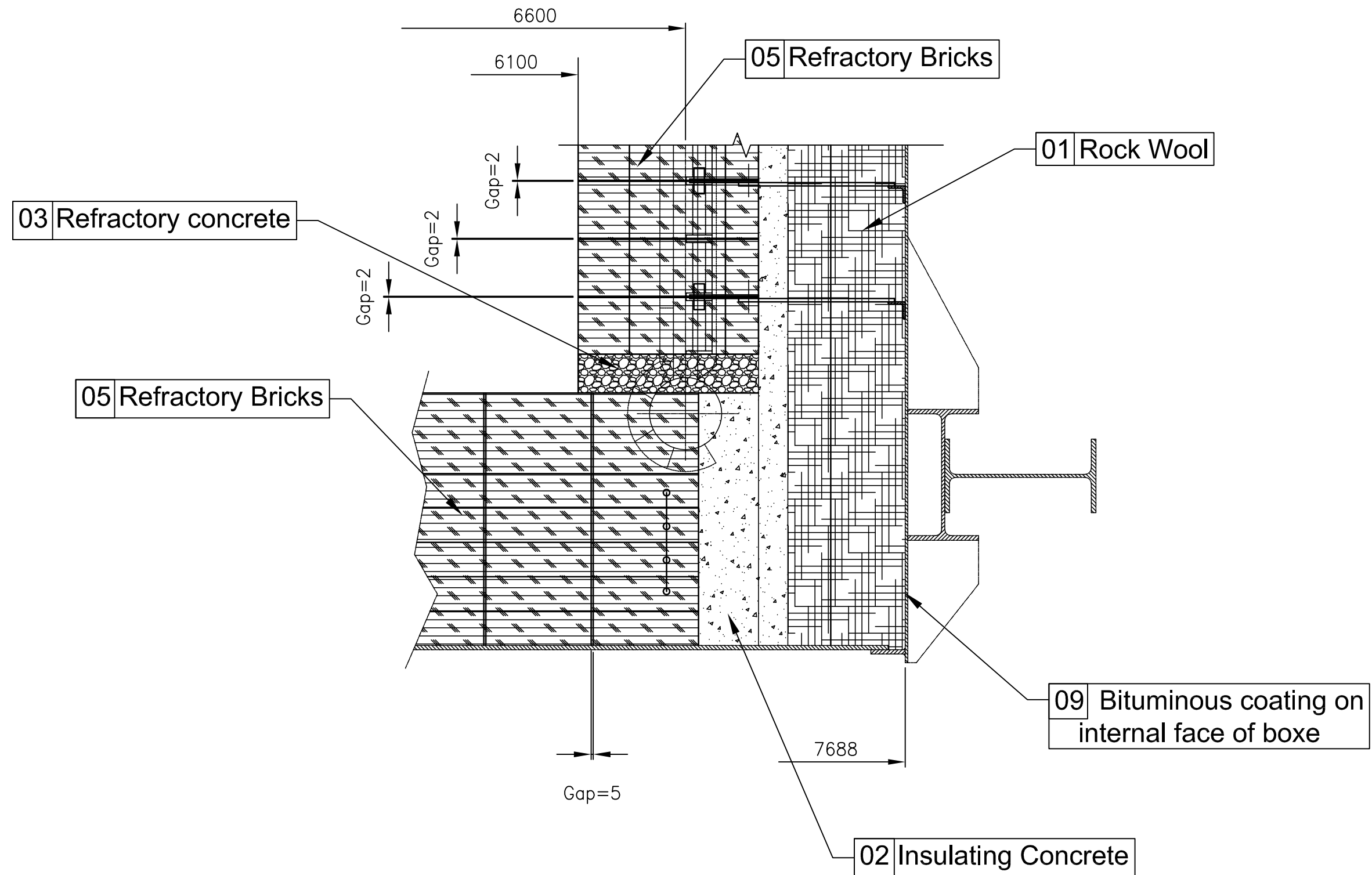
|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>13 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

# Coupe E-E



|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>14 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

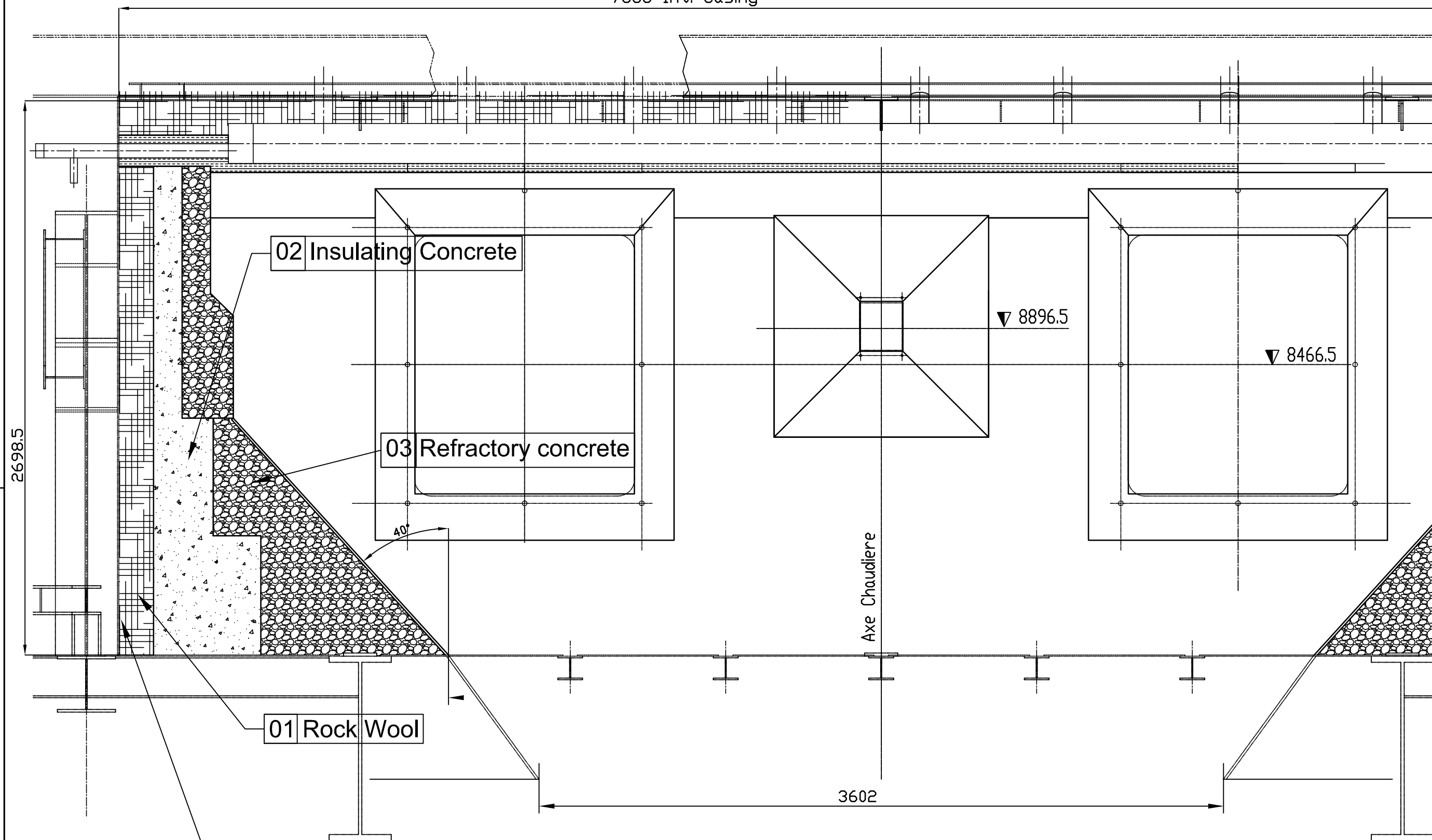
Coupe M-M



|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>15 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

# SECTION G-G

7688 Int. Casing



02 Insulating Concrete

03 Refractory concrete

01 Rock Wool

09 Bituminous coating on  
internal face of boxe

▼ 8896.5

▼ 8466.5

Axe Chaudiere

3602

Title : DETAILS BOOK

PAGE  
16

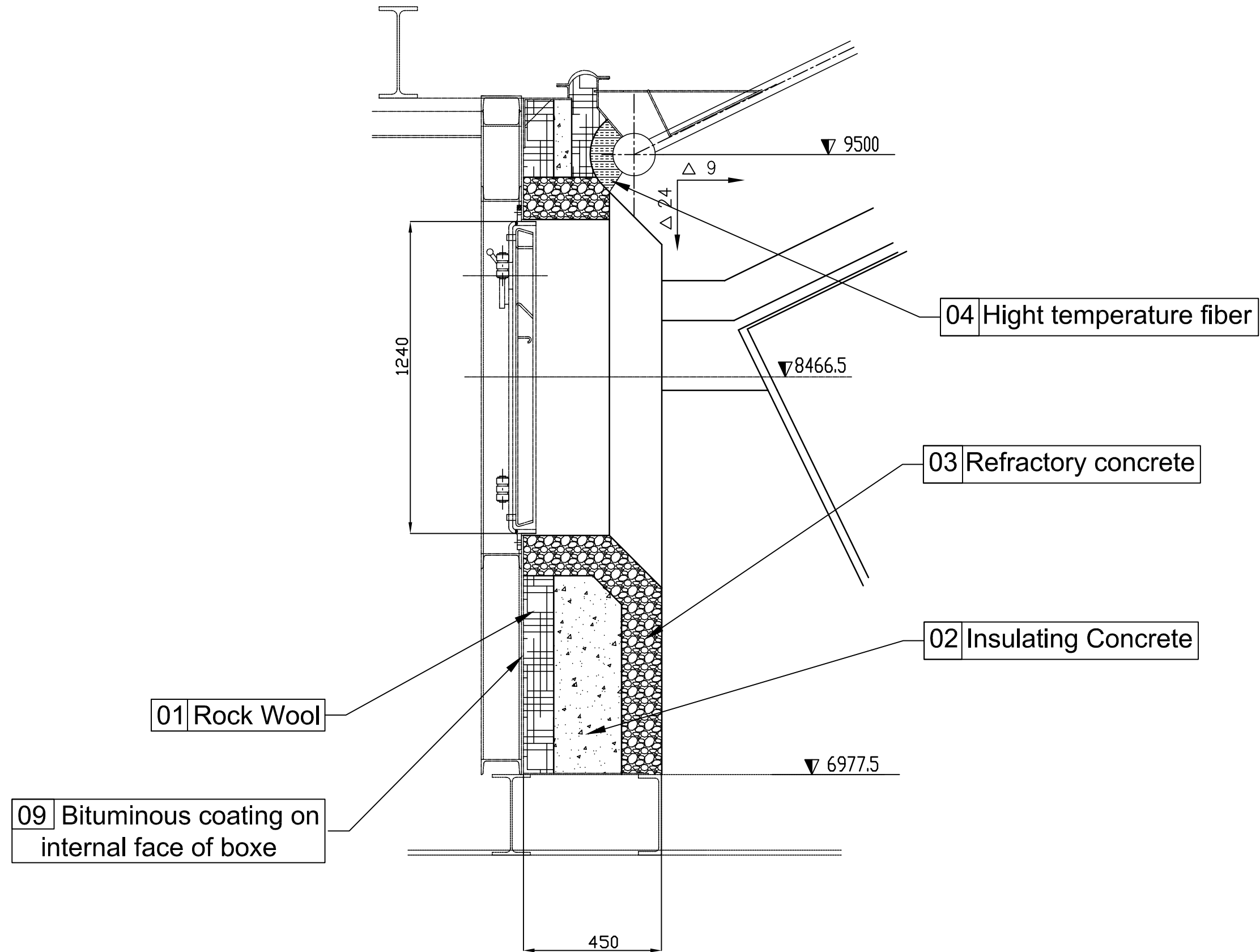
CR : 4048 12 21 3002

REV.  
A

SCALE



DETAIL 19



|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>17 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

04 Hight temperature fiber

03 Refractory concrete

02 Insulating Concrete

09 Bituminous coating on  
internal face of boxe

01 Rock Wool

6848

45°

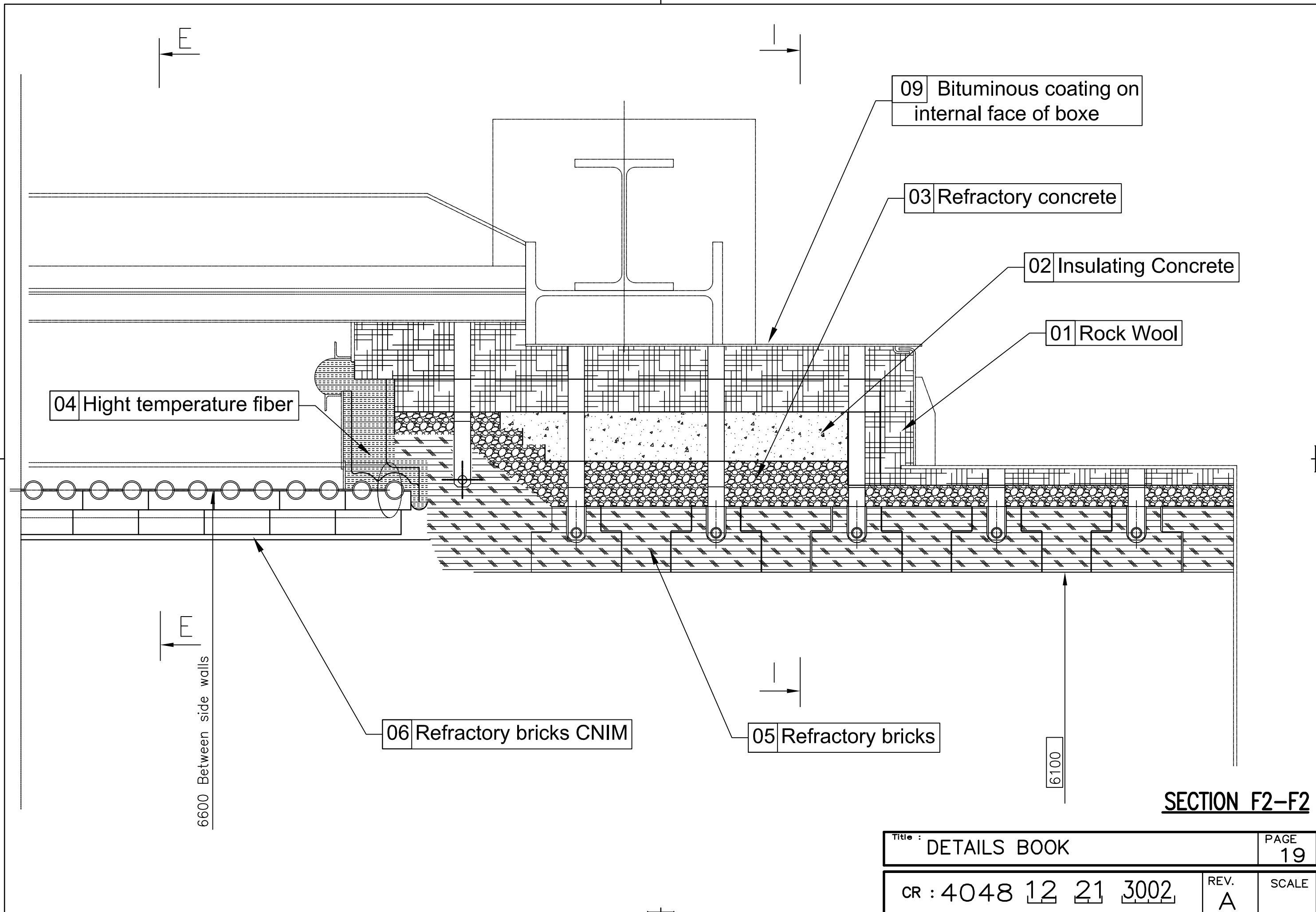
Title : DETAILS BOOK

PAGE  
18

CR : 4048 12 21 3002

REV.  
A

SCALE

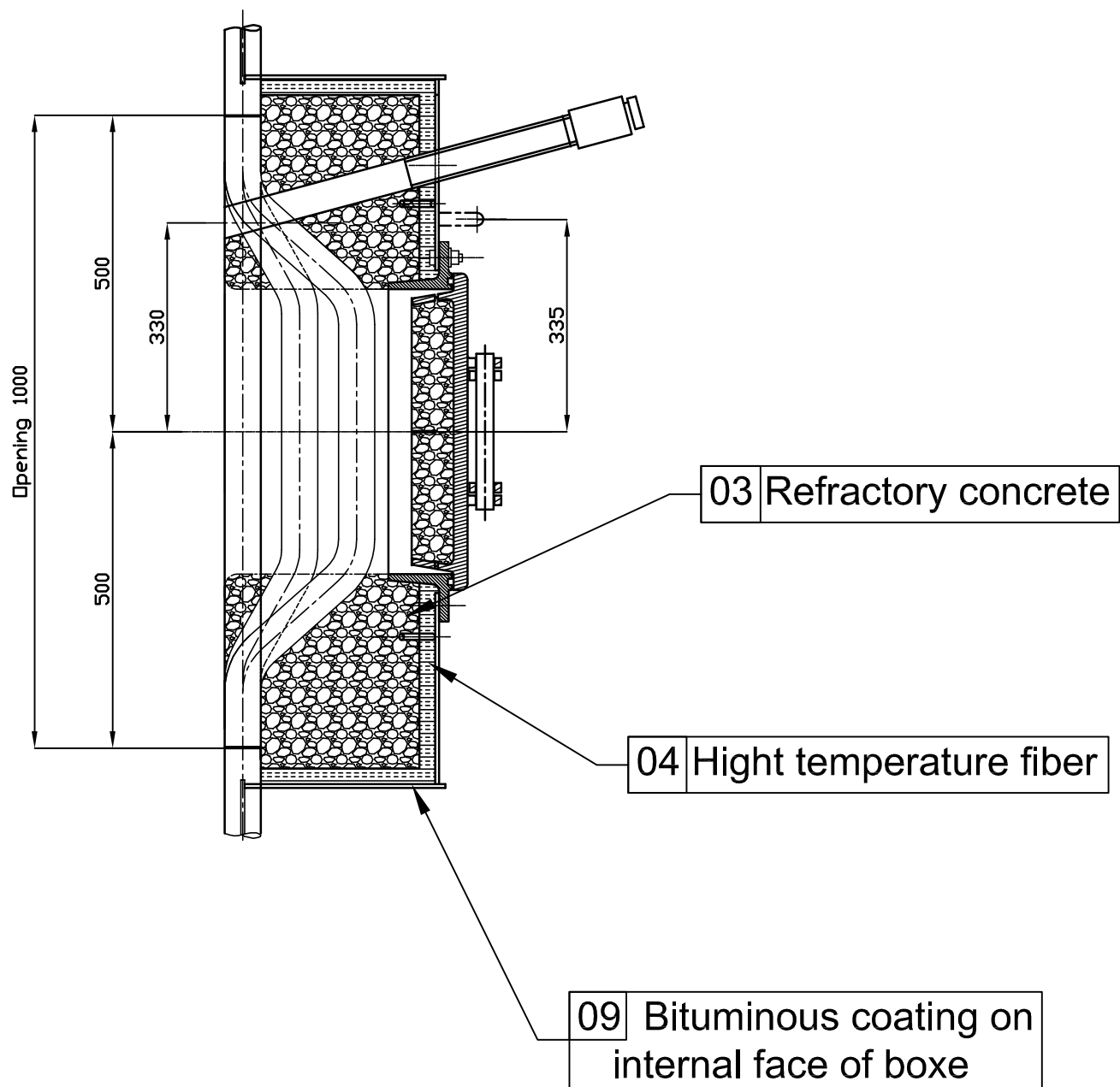
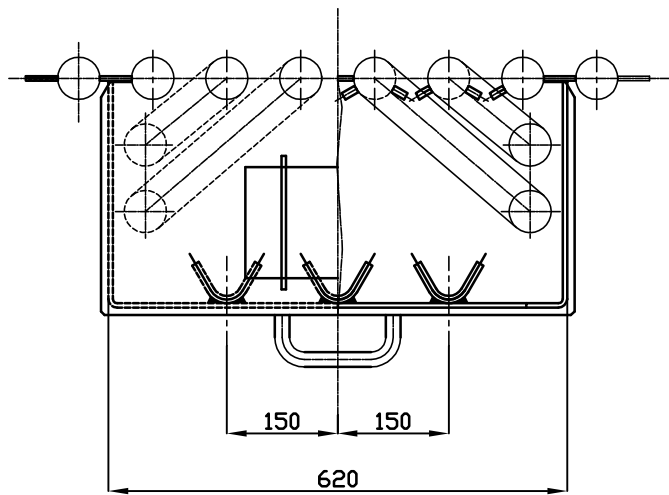
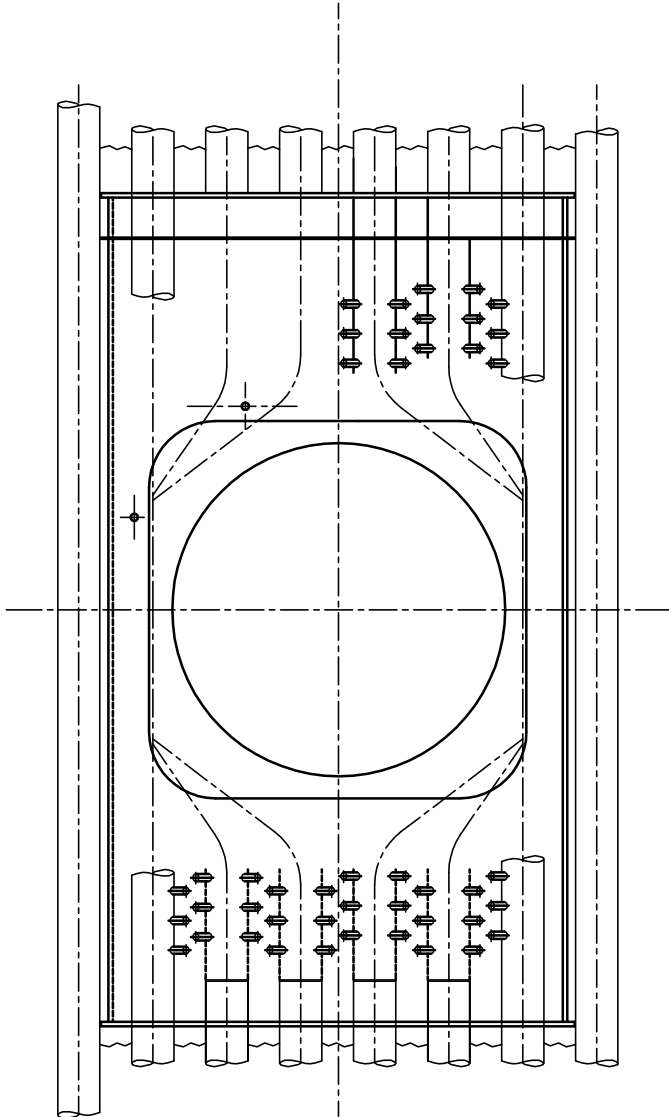


SECTION F2-F2

|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>19 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

CAISSON PORTE 450x450

DETAIL 11



|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>20 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

CAISSON BRULEUR

DETAIL 12

COUPE A-A

A

1194

25

710

50

ø584

1420

710

1320

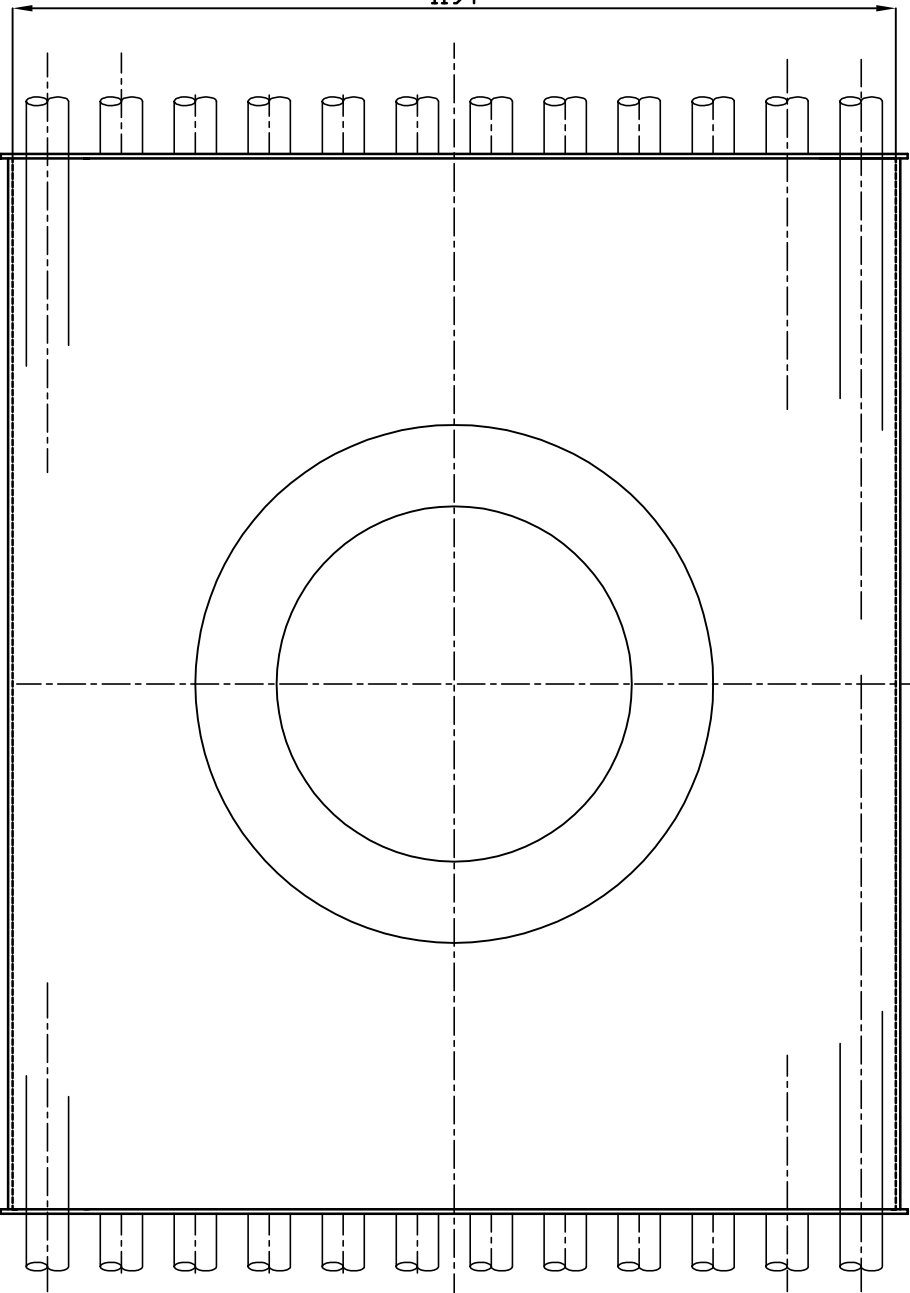
20

400

04 Hight temperature fiber

09 Bituminous coating on  
internal face of boxe

03 Refractory concrete

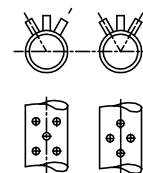
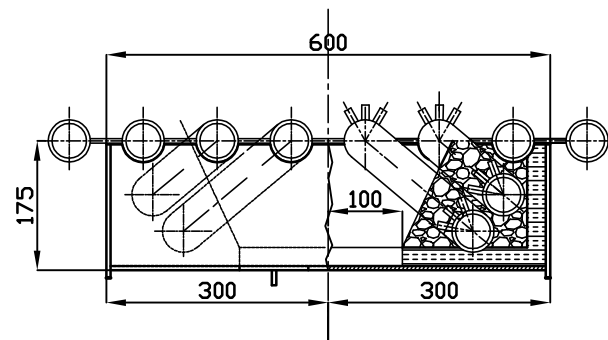
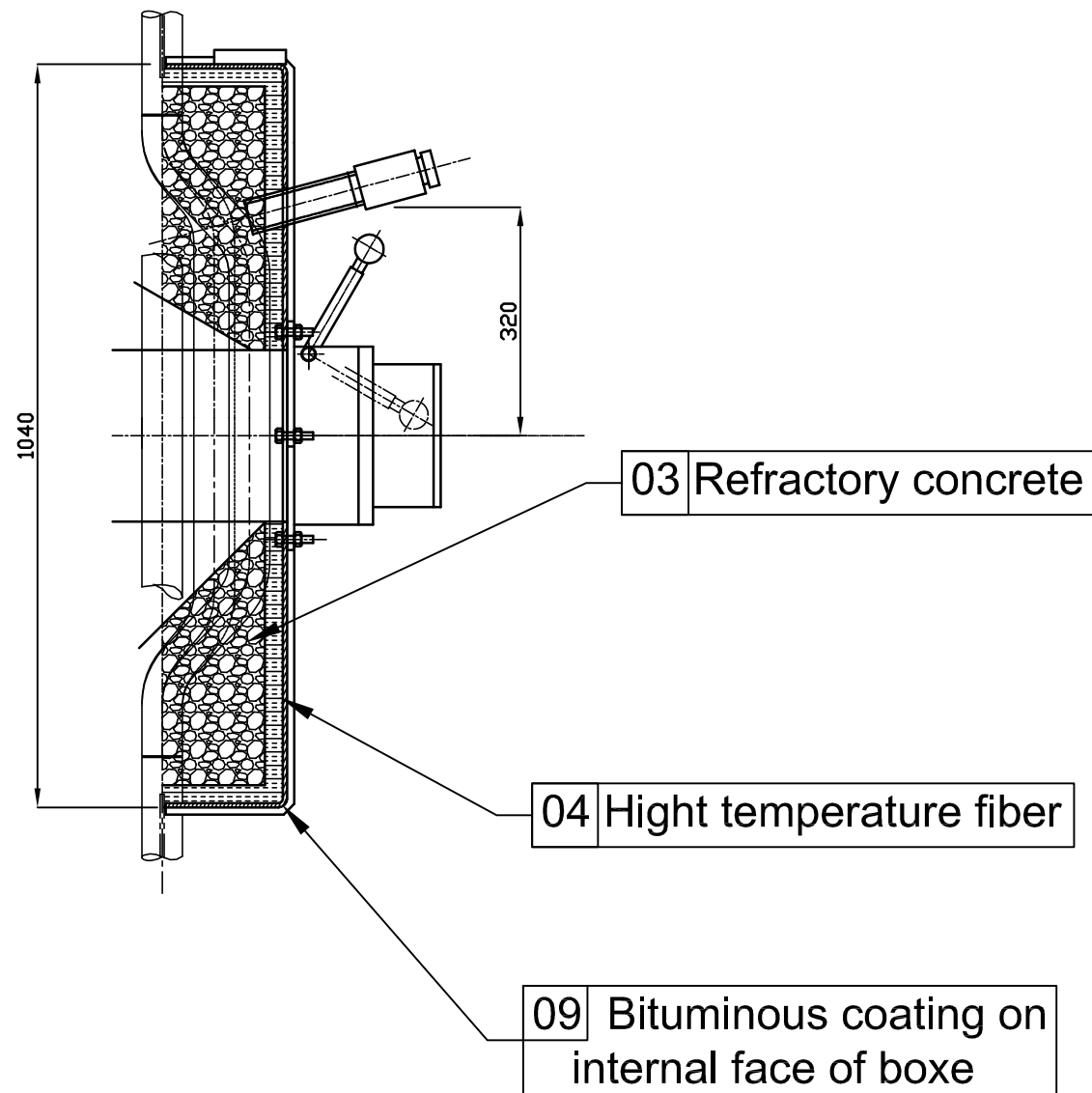
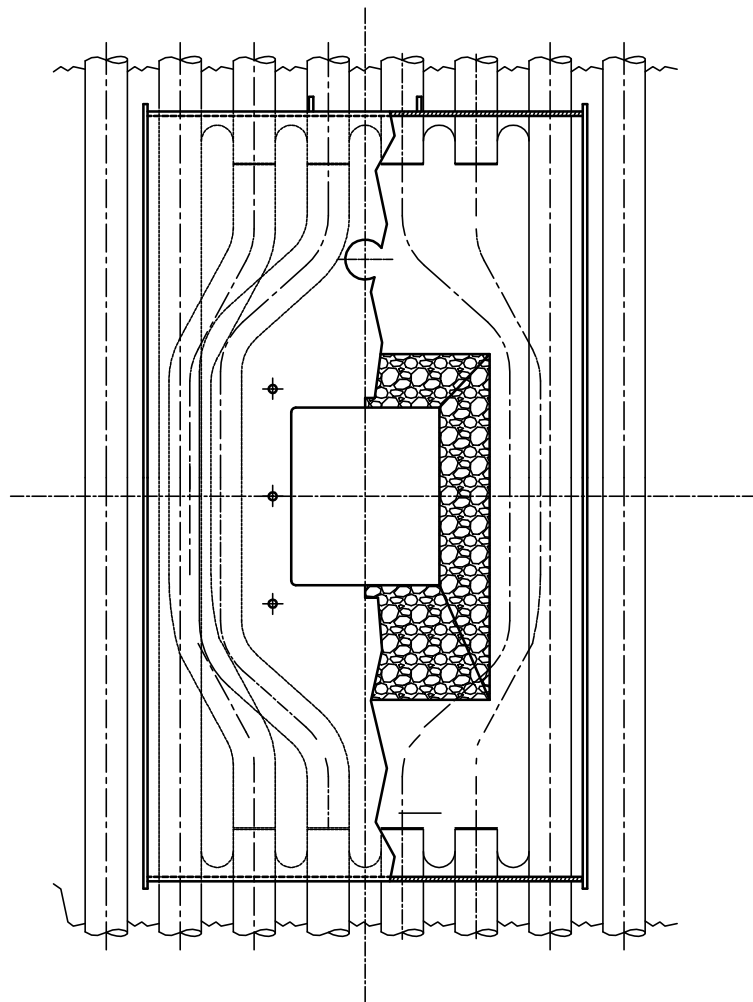


A

|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>21 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

CAISSON REGARD INCLINE

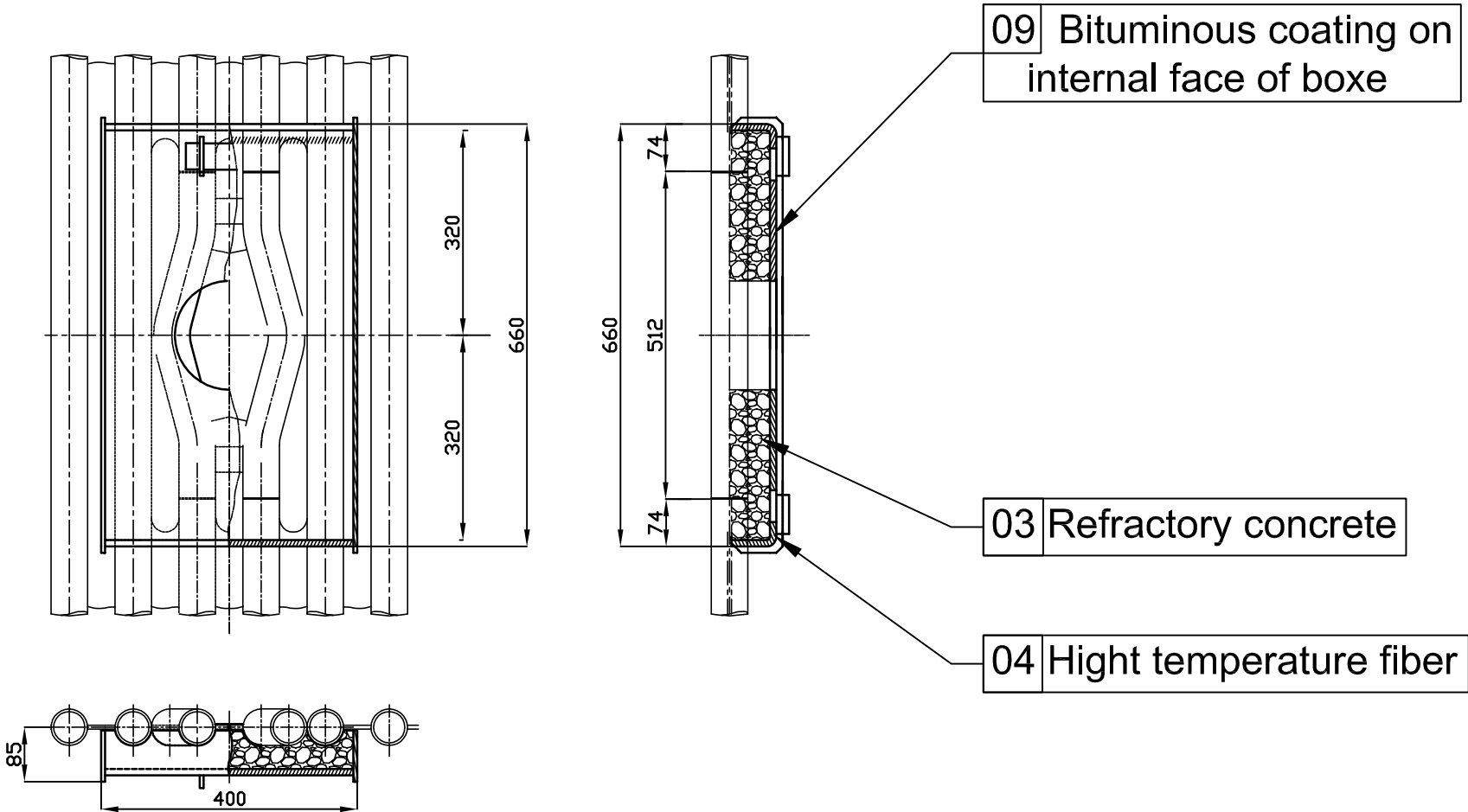
DETAIL 14



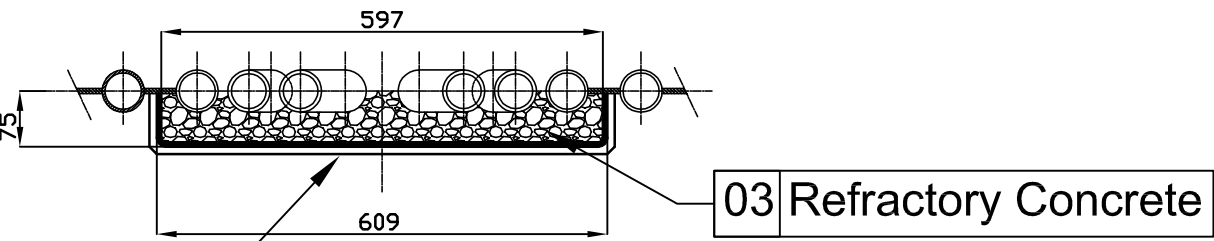
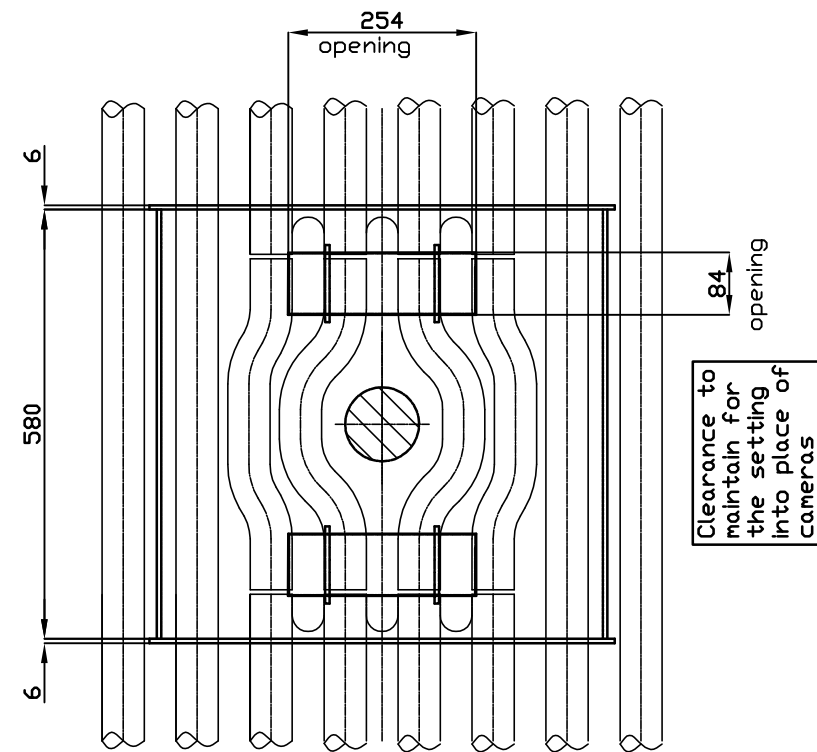
|                      |  |  |  |            |
|----------------------|--|--|--|------------|
| Title : DETAILS BOOK |  |  |  | PAGE<br>22 |
| CR : 4048 12 21 3002 |  |  |  | REV.<br>A  |
|                      |  |  |  | SCALE      |

CAISSON RAMONEUR

DETAIL 15



CAISSON CAMERA IR  
BOX FOR IR CAMERA



09 Bituminous coating on  
internal face of Boxe