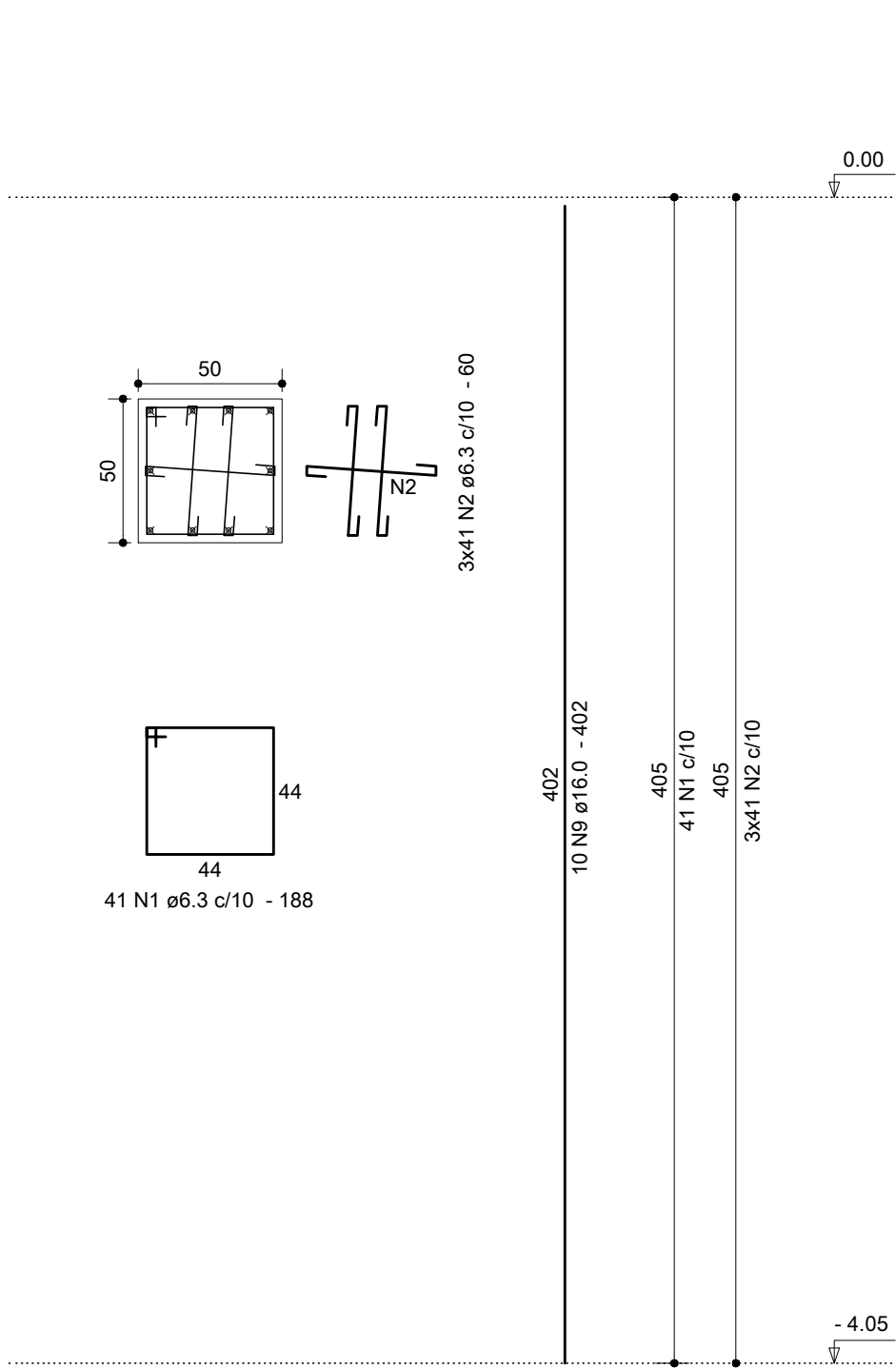
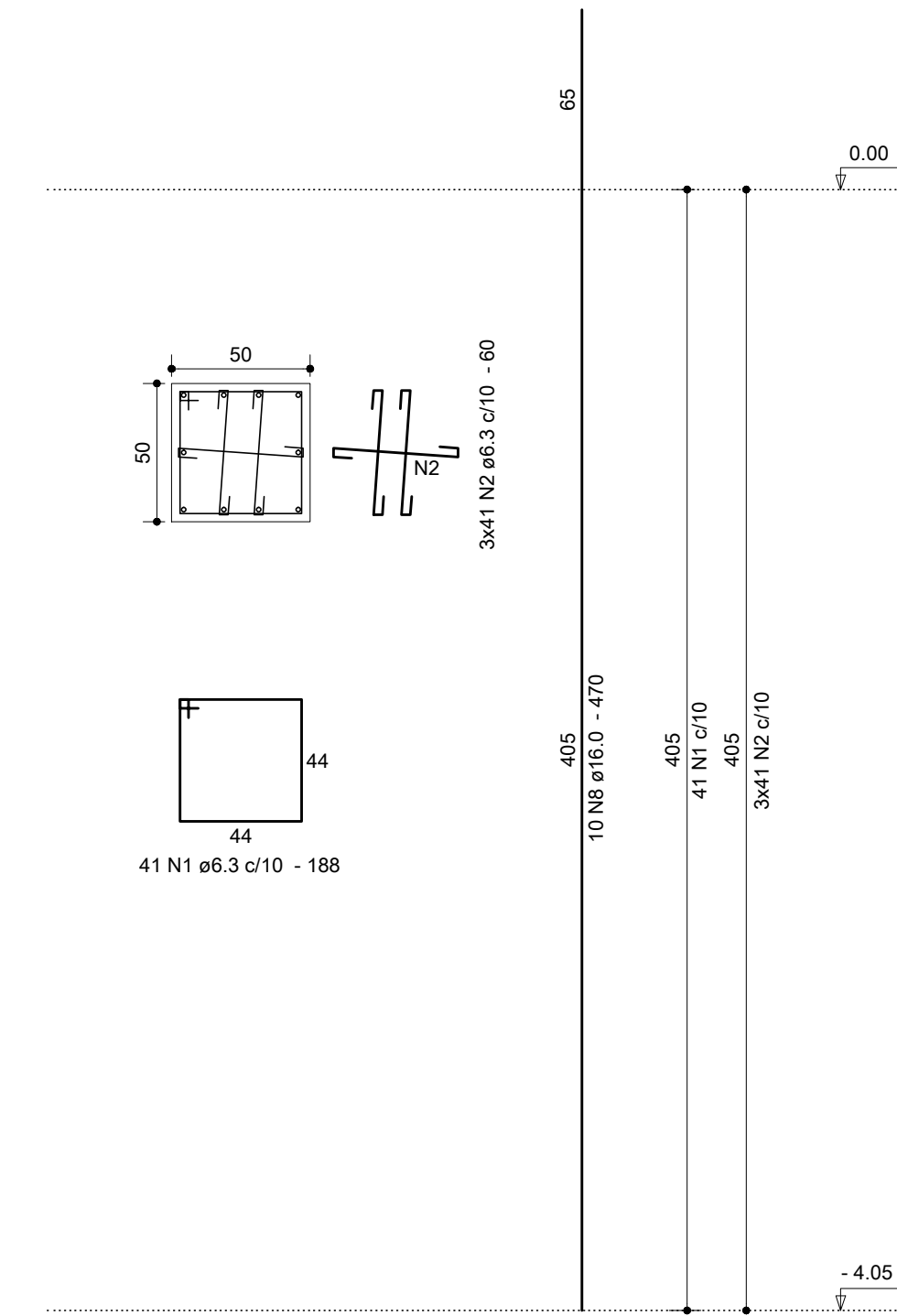


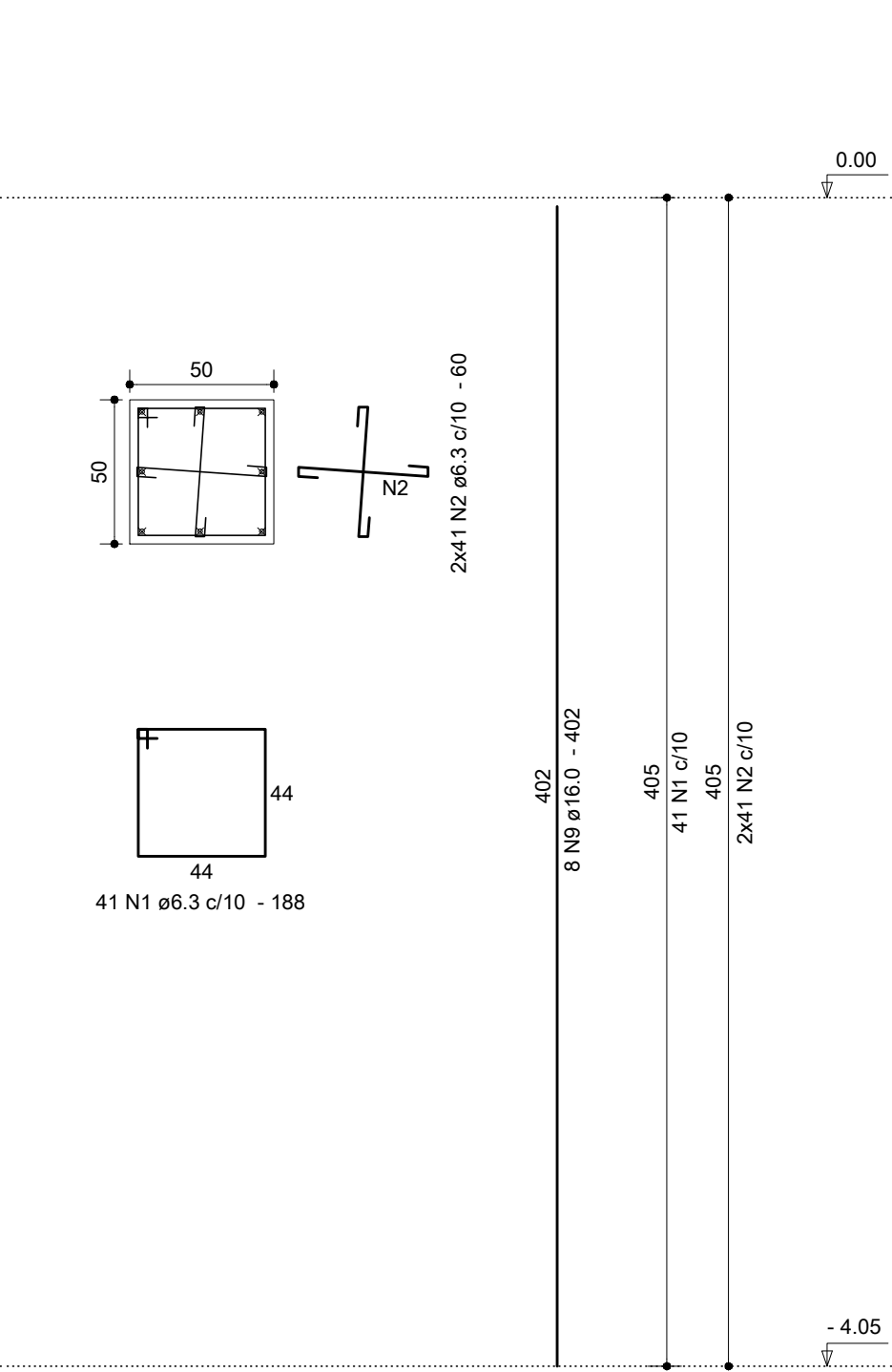
P80=P81=P83=P84=P86=P88=P162=P406=P407=  
P408=P410=P411=P412=P413 (14x)



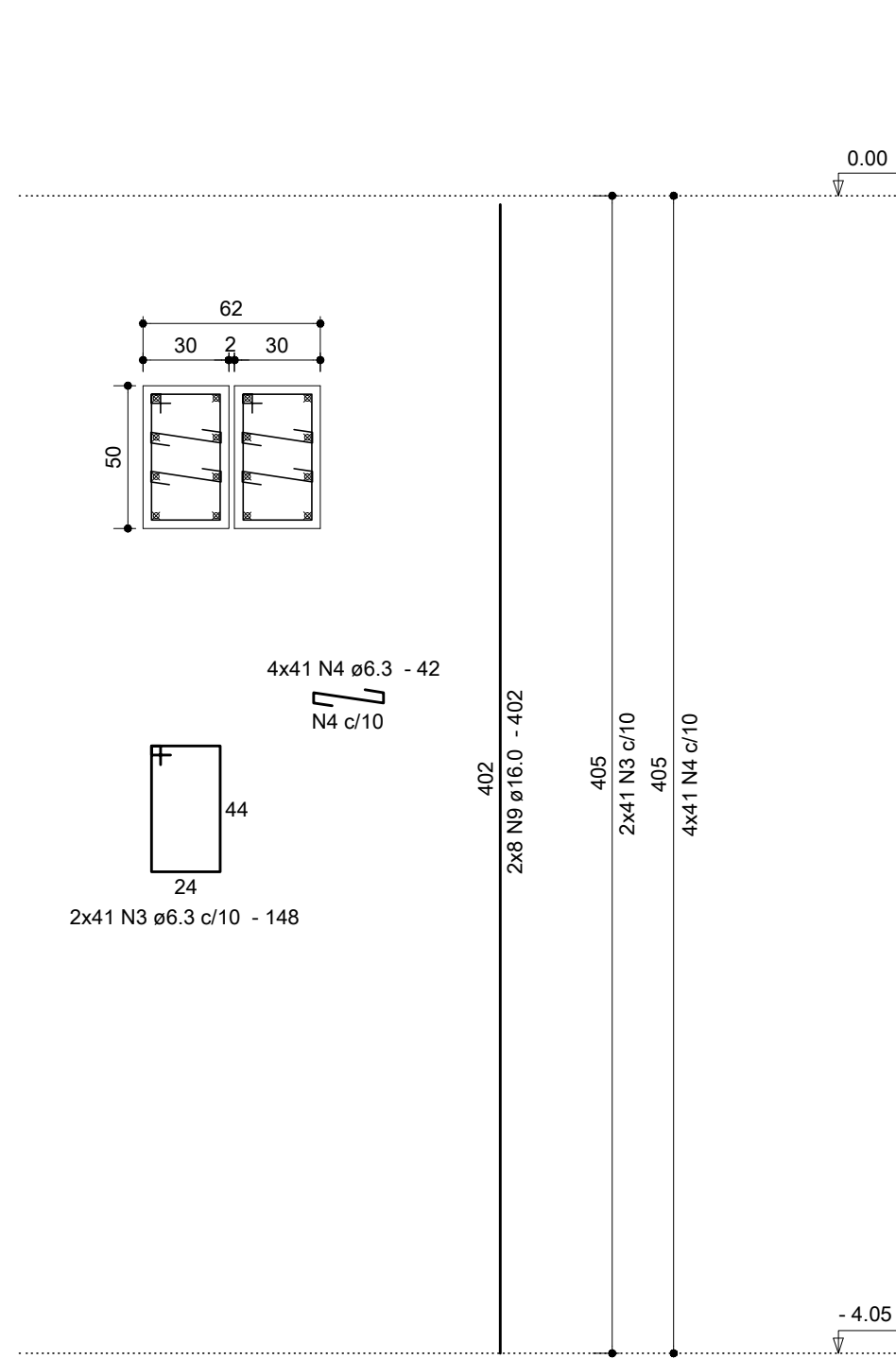
P82=P97=P98=P99=P100=P107=P108=P109=P110=  
P111=P159=P160=P161=P385=P386=P387=P388=  
P389=P414=P415=P417=P418=P419=P420 (24x)



P85=PR5=PR6 (3x)



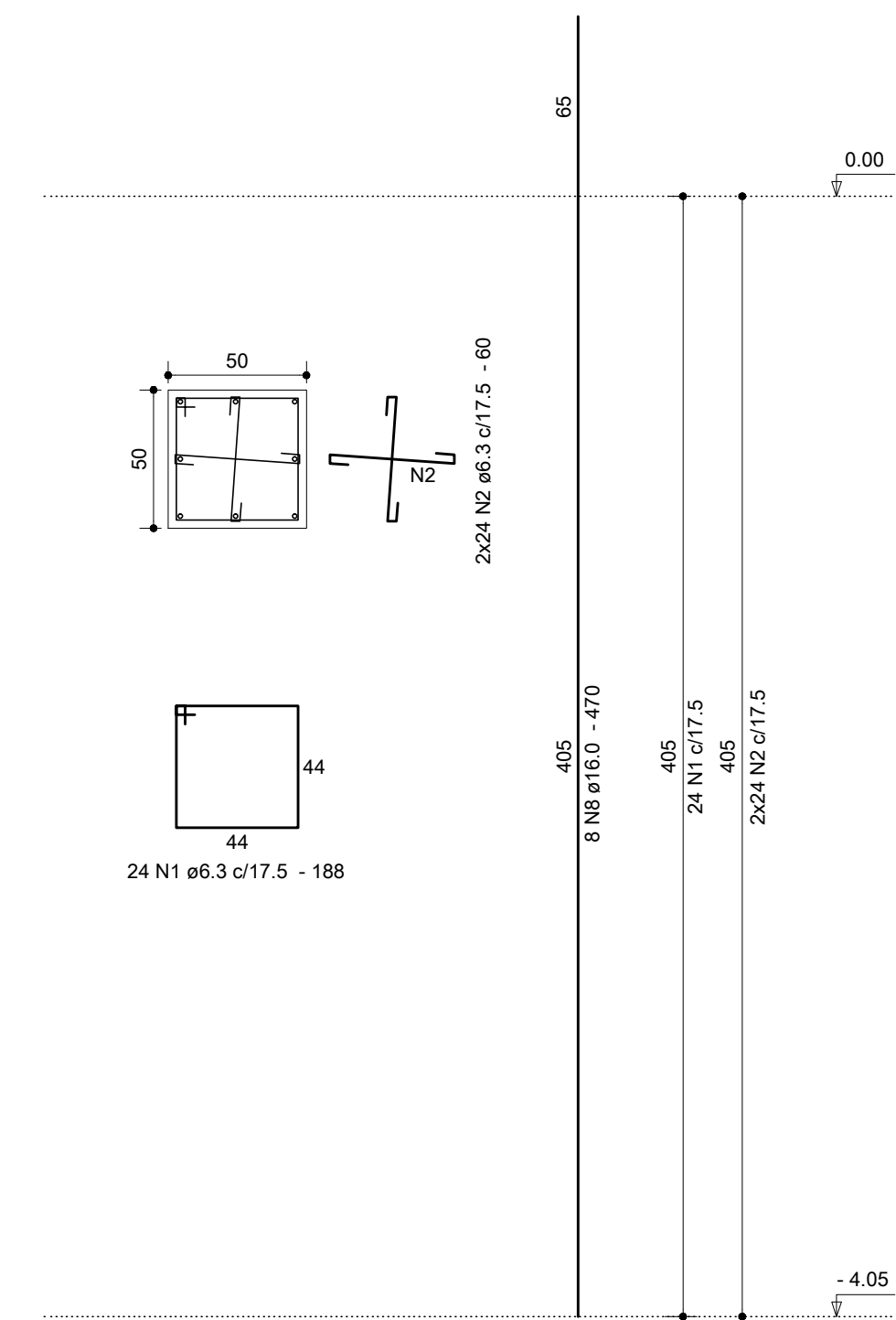
P87(J) (1x)



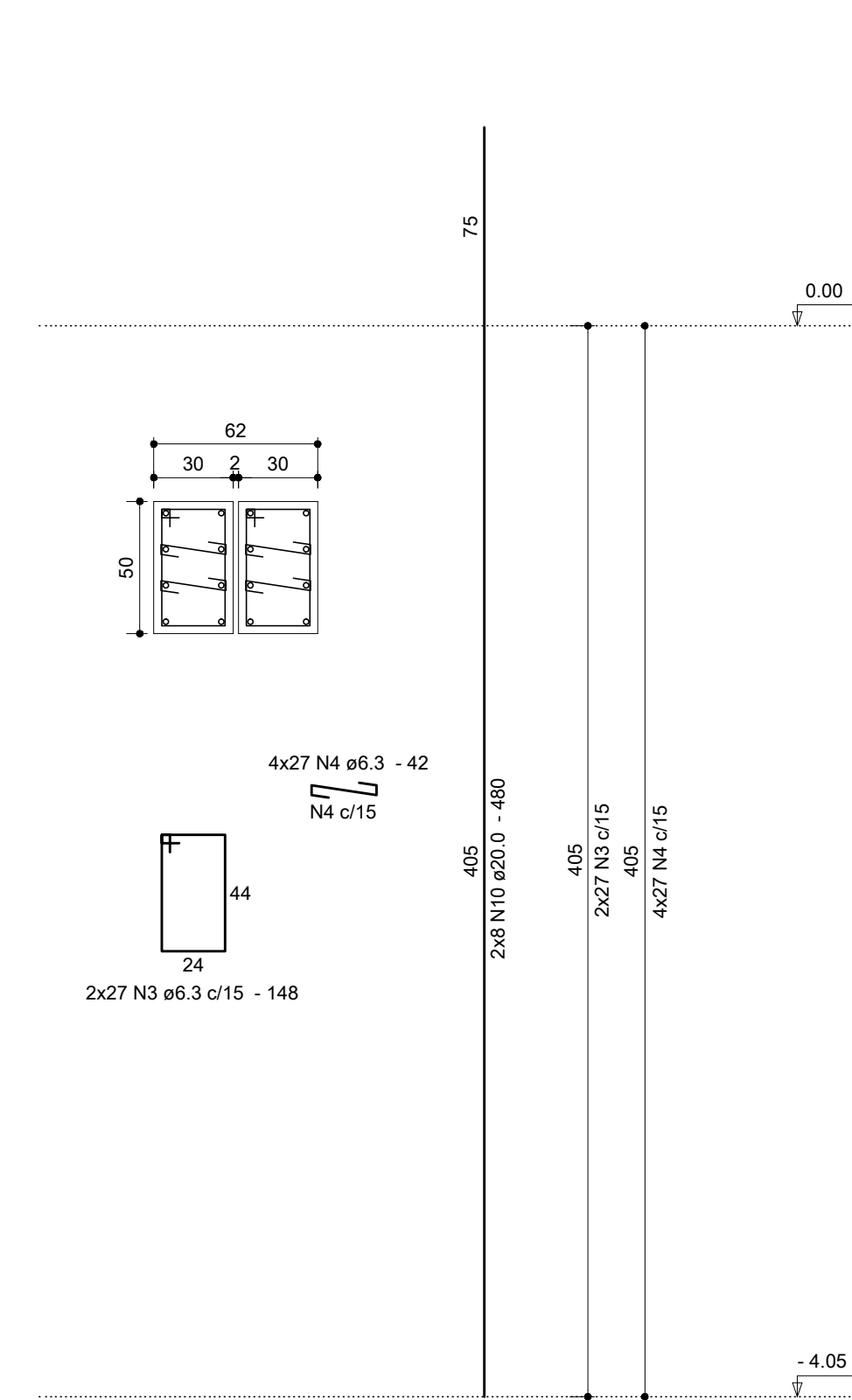
| Relação total do aço                |    |      |       |           |              |
|-------------------------------------|----|------|-------|-----------|--------------|
| (desenhos de ARM 03-11 a ARM 03-13) |    |      |       |           |              |
| AÇO                                 | N  | DIAM | Q     | UNIT (cm) | C.TOTAL (cm) |
| CA50                                | 1  | 6.3  | 6434  | 188       | 1209592      |
|                                     | 2  | 6.3  | 15123 | 60        | 907380       |
|                                     | 3  | 6.3  | 2056  | 148       | 304288       |
|                                     | 4  | 6.3  | 4112  | 42        | 172704       |
|                                     | 5  | 6.3  | 588   | 148       | 87024        |
|                                     | 6  | 6.3  | 1680  | 52        | 87360        |
|                                     | 7  | 6.3  | 168   | 228       | 38304        |
|                                     | 8  | 16.0 | 826   | 470       | 388220       |
|                                     | 9  | 16.0 | 1068  | 402       | 429336       |
|                                     | 10 | 20.0 | 378   | 480       | 181440       |
|                                     | 11 | 20.0 | 488   | 402       | 196176       |

| Resumo total do aço                 |      |                           |           |
|-------------------------------------|------|---------------------------|-----------|
| (desenhos de ARM 03-11 a ARM 03-13) |      |                           |           |
| AÇO                                 | DIAM | C.TOTAL (m)               | PESO (kg) |
| CA50                                | 6.3  | 28066.6                   | 6868      |
|                                     | 16.0 | 8175.6                    | 12903.8   |
|                                     | 20.0 | 3776.2                    | 9312.6    |
| PESO TOTAL (kg)                     |      | Vol. concreto = 310.39 m³ |           |
| CA50                                |      | Área formas = 2404.08 m²  |           |

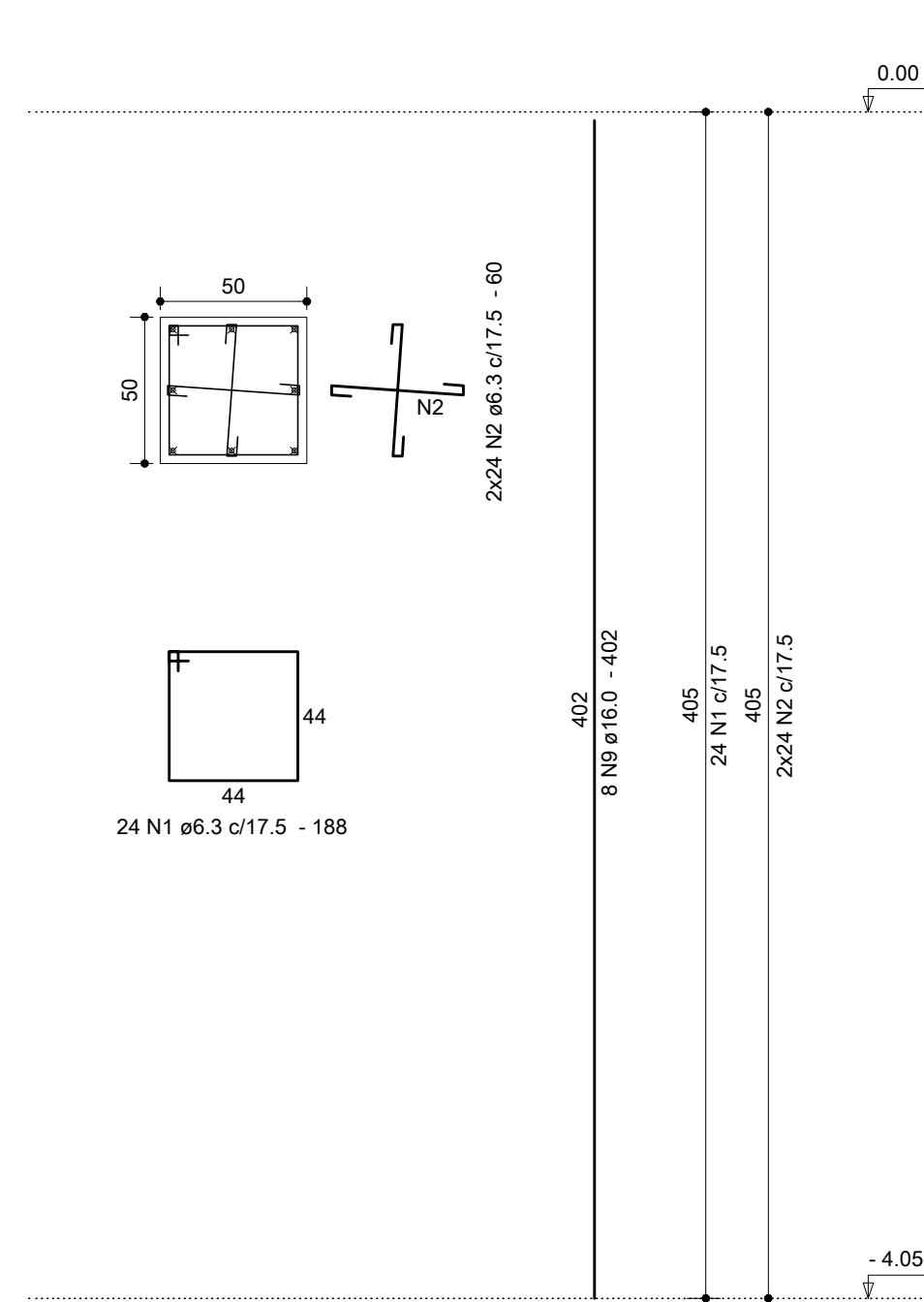
P90=P91=P92=P93=P94=P95=P141=P142=P143=P145=P146=  
P147=P149=P150=P151=P153=P154=P156=P157=P158=P217=  
P218=P219=P220=P225=P226=P227=P228=P229=P230=P232=  
P233=P234=P236=P237=P238=P243=P246=P270=P271=P272=  
P273=P275=P276=P311=P312=P313=P314=P315=P316=P320=  
P339=P341=P342=P343=P356=P357=P359=P360=P361=P390=  
P391=P394=P395=P396=P397=P398 (67x)



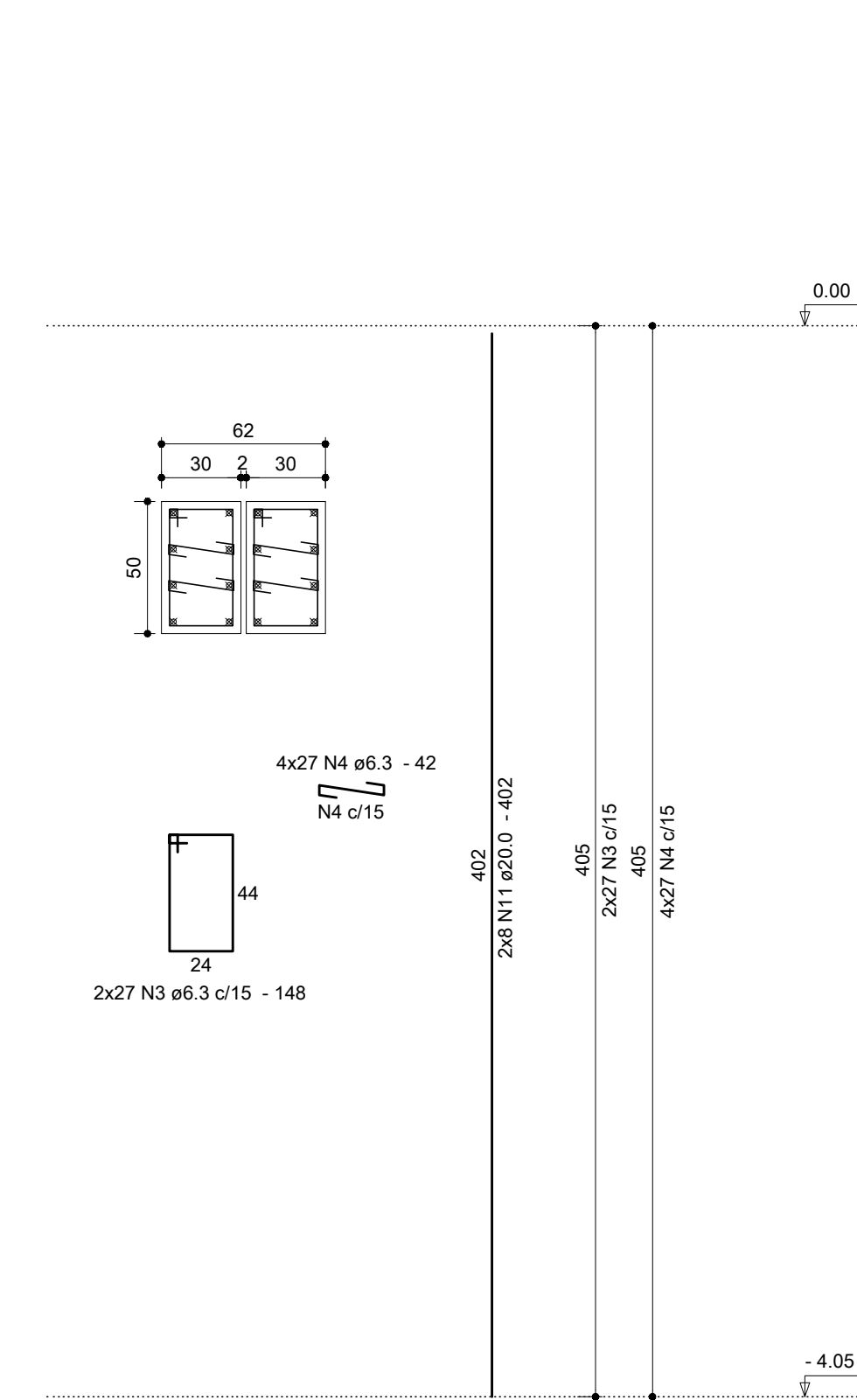
P96(J)=P148(J)=P155(J)=P231(J)=P235(J)=P274(J)=  
P340(J)=P358(J)=P392(J) (9x)



P118=P119=P120=P121=P122=P123=P125=P126=P127=P128=  
P129=P130=P132=P133=P134=P135=P136=P137=P144=P152=  
P169=P170=P171=P172=P173=P174=P176=P177=P178=P179=  
P180=P181=P183=P184=P185=P197=P198=P199=P200=P201=  
P202=P204=P205=P206=P207=P208=P209=P211=P212=P213=  
P252=P253=P254=P255=P256=P257=P259=P260=P261=P263=  
P264=P265=P318=P319=P321=P322=P323=P325=P326=P327=  
P334=P335=P336=P337=P338=P344=P345=P346=P348=P349=  
P350=P355=P371=P372=P373=P374=P375=P376=P378=P379=  
P380=P393=P399=P401=P402=P403 (96x)



P124(J)=P131(J)=P175(J)=P182(J)=P203(J)=P210(J)=P258(J)=  
P262(J)=P317(J)=P324(J)=P347(J)=P377(J)=P400(J) (13x)



#### PILARES DA PRANCHA:

P80=P81=P83=P84=P86=P88=P162=P406=P407=  
P408=P410=P411=P412=P413 (14x)

P82=P97=P98=P99=P100=P107=P108=P109=P110=  
P111=P159=P160=P161=P385=P386=P387=P388=  
P389=P414=P415=P417=P418=P419=P420 (24x)

P85=PR5=PR6 (3x)

P87(J) (1x)

P90=P91=P92=P93=P94=P95=P141=P142=P143=P145=P146=  
P147=P149=P150=P151=P153=P154=P156=P157=P158=P217=  
P218=P219=P220=P225=P226=P227=P228=P229=P230=P232=  
P233=P234=P236=P237=P238=P243=P246=P270=P271=P272=  
P273=P275=P276=P311=P312=P313=P314=P315=P316=P320=  
P339=P341=P342=P343=P356=P357=P359=P360=P361=P390=  
P391=P394=P395=P396=P397=P398 (67x)

P96(J)=P148(J)=P155(J)=P231(J)=P235(J)=P274(J)=  
P340(J)=P358(J)=P392(J) (9x)

P118=P119=P120=P121=P122=P123=P125=P126=P127=P128=  
P129=P130=P132=P133=P134=P135=P136=P137=P144=P152=  
P169=P170=P171=P172=P173=P174=P176=P177=P178=P179=  
P180=P181=P183=P184=P185=P197=P198=P199=P200=P201=  
P202=P204=P205=P206=P207=P208=P209=P211=P212=P213=  
P252=P253=P254=P255=P256=P257=P259=P260=P261=P263=  
P264=P265=P318=P319=P321=P322=P323=P325=P326=P327=  
P334=P335=P336=P337=P338=P344=P345=P346=P348=P349=  
P350=P355=P371=P372=P373=P374=P375=P376=P378=P379=  
P380=P393=P399=P401=P402=P403 (96x)

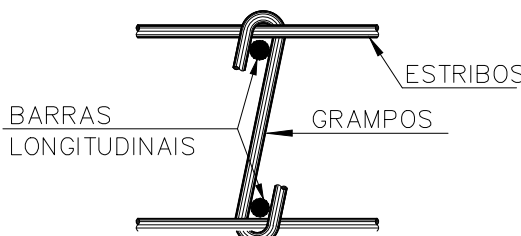
P124(J)=P131(J)=P175(J)=P182(J)=P203(J)=P210(J)=P258(J)=  
P262(J)=P317(J)=P324(J)=P347(J)=P377(J)=P400(J) (13x)

#### Legenda (esperas):

✗ Barras que morrem.

○ Barras que continuam.

#### Detalhe dos grampos:



| DIÂMETRO (Ø) DOS PINOS DE DOBRAMENTO PARA GANCHOS SEMISCA |      |      |
|-----------------------------------------------------------|------|------|
| BITOLA (Ø)                                                | CA50 | CA60 |
| <20mm                                                     | 5x2  | 6x2  |
| ≥20mm                                                     | 8x2  | —    |
| estribo ≤10mm                                             | 3x2  | 3x2  |
| NBR-6118:2003 (Items 9.4.3.3 e 9.4.6.1)                   |      |      |

#### Notas:

- 01 NBR6118:2007 – Classe de Agressividade Ambiental = II.
- 02 NBR6118:2007 – Concreto com fck=25MPa – Aço CA-50.
- 03 NBR6118:2007 – Cobrimento para pilares: 3,0cm.
- 04 Unidades: diâmetro do aço em milímetro; espaçamento e comprimento em centímetro;
- 05 Os desenhos de armações dos pilares acompanham o posicionamento definido na planta de formas FOR 03.

|         |          |                  |          |
|---------|----------|------------------|----------|
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|         |          |                  |          |
|         |          |                  |          |
| 00      | 15/06/12 | Emissão inicial. | Dionísio |
| REVISÃO | DATA     | MODIFICAÇÕES     | RESP.    |

|                                                                                       |                                                                                                                                                                 |  |                                                                                                                                                                                                               |  |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | <b>Proger Engenharia Ltda</b>                                                                                                                                   |  | Av. Pres. Vargas, 590 – grupo 1309 a 1311<br>Centro, Rio de Janeiro, RJ CEP:20.071-000<br>Tel./Fax:(21)2432.0811/Cel.:(21)9987.9477<br>dionisio@progerengenharia.com.br<br>http://www.progerengenharia.com.br |  |
|                                                                                       | PROJETOS ESTRUTURAIS - CONSULTORIA - GERENCIAMENTO<br>DIONÍSIO AUGUSTO AMERICANO DE NEVES E SOUZA<br>Engenheiro Civil – CREA-RJ 52.791-D<br>IMB/FAU – Professor |  |                                                                                                                                                                                                               |  |
| CLIENTE: PÁTIOMIX LINHARES SHOPPING CENTER SPE S.A.                                   |                                                                                                                                                                 |  | DESENHO:<br>407_erm03_11_0.dwg                                                                                                                                                                                |  |
| OBRA: SHOPPING PÁTIOMIX LINHARES<br>Linhares – ES                                     |                                                                                                                                                                 |  | ESCALA: 1:25                                                                                                                                                                                                  |  |
| PRÓJETO ESTRUTURAL<br>TETO DO SUBSOLO (PISO DO PAVIMENTO TÉRREO)<br>PILARES – 01/03   |                                                                                                                                                                 |  | DATA – REVISÃO:<br>15/06/12 – R0                                                                                                                                                                              |  |
| ARMAÇÕES                                                                              |                                                                                                                                                                 |  | PROJETO: E407<br>ARMO3-II                                                                                                                                                                                     |  |