

ELECTRICITY GENERATING AUTHORITY OF THAILAND

SUPPLEMENTAL NOTICE NO. 3
INVITATION TO BID NO. RSP1-RX-02
SUPPLY OF 15 MVAr 115 kV SHUNT REACTOR
TRANSMISSION SYSTEM EXPANSION AND
RENOVATION PROJECT PHASE 1 : SUBSTATION

The attached Supplemental Notice shall be considered as part of Bidding Documents No. RSP1-RX-02

As acknowledgement of receipt that all additions, deletions and revisions contained in this Supplemental Notice are incorporated into the above Bidding Documents, Bidder is requested to sign and return this acknowledgement via email address : procurement.tse@egat.co.th within three (3) days from the date of the announcement of this Supplemental Notice on <http://www4.egat.co.th/fprocurement/biddingeng/>.

The original acknowledgement which is manually signed in ink by a person or persons duly authorized shall be included in the proposal to be submitted on the bid opening date.

ELECTRICITY GENERATING AUTHORITY OF THAILAND

July 11, 2019

ACKNOWLEDGEMENT

This undersigned Bidder hereby certifies that the additions, deletions and revisions set forth in this Supplemental Notice to Invitation to Bid No. RSP1-RX-02 are incorporated as part of the above Bidding Documents and will be fully included in any bid which he may submit.

Signed _____
Title _____
Company _____
Date _____

ELECTRICITY GENERATING AUTHORITY OF THAILAND

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AND RENOVATION PROJECT PHASE 1 : SUBSTATION

The following supplemental information is hereby given for the above described Invitation :

Section G : Ratings and Features

- Replace Ratings and Features No. RX7000 Rev.0 with the revised one with Rev.1 attached.

Section J : Drawings

- Add the attached Drawing No. TT/SRT-FD-SR-7-01 Sheet 01/01 Rev.2 to this section.

Bid submitted must be in accordance with this Notice. Receipt of this Notice shall be acknowledged by the Bidder on the proposal included in the Bidding Documents in the space provided on page C3, Article C-7 Supplemental Notices.

ELECTRICITY GENERATING
AUTHORITY OF THAILAND

..... July 11, 2019

**Shunt Reactor
Specification No. 383**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : 38450M	Validated : 29/02	Revision 1	Page 1/2
RF No. RX7000	Verified : 20/02	Approved : 29/02	Dated : 9/7/62	

- | | | |
|--|------------------------------|------------------|
| a. Type / Type of Cooling | 3-phase, Oil Filled, Outdoor | |
| b. Class | ONAN | |
| c. Rated Frequency | 50 | Hz |
| d. Nominal System Voltage | 115 | kV |
| e. Max. Continuous System Voltage | 121 | kV |
| f. Rated Capacity (3-Phase at Rated Voltage) | 15 | MVA _r |
| g. Winding Voltage Rating | | |
| - Rated Voltage (High Voltage) | 115 | kV |
| - Rated Voltage (Neutral) | 22 | kV |
| - BIL (High Voltage) | 550 | kV |
| - BIL (Neutral) | 150 | kV |
| - Switching Surge (High Voltage) | - | kV |
| h. Bushing Voltage Rating | | |
| - Rated Voltage (High Voltage) | 115 | kV |
| - Rated Voltage (Neutral) | 22 | kV |
| - BIL (High Voltage) | 550 | kV |
| - BIL (Neutral) | 150 | kV |
| - Switching Surge, Wet (High Voltage) | - | kV |
| i. Bushing Creepage Distance | | |
| - High Voltage | ≥ 3,025 | mm |
| - Neutral | ≥ 600 | mm |
| j. Connection | Ground Wye | |
| k. Audible Noise Level (Internal noise only without external accessories such as sound panels, sound enclosure, dampers, sound absorbers etc.) | ≤ 70 | dB(A) |
| l. Temperature Class of Winding Insulation | 120 | |
| m. Winding Temperature Rise (Continuous at 105% Rated Voltage and Rated Frequency) | | |
| - Average / Hottest Spot | ≤ 60 / ≤ 75 | °C |

**Shunt Reactor
Specification No. 383**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : 28/1/07	Validated : 28/3/07	Revision 1	Page 2/2
RF No. RX7000	Verified : 20/5/07	Approved : 28/1/07	Dated : 2/7/07	

o. Current Transformer

High Voltage Terminal

- Qty. per Phase 2
- Accuracy Class C400
- Continuous Thermal Current Rating Factor 1.0
- Ratio 100 : 5 A

Neutral Terminal

- Qty 1
- Accuracy Class C400
- Continuous Thermal Current Rating Factor 1.0
- Ratio 100 : 5 A

**p. Surge Arrester, Station Class, Tank Mounted
on High Voltage Side (RF SA7Y11)**

- Qty. per Phase 1
- Voltage Rating 108 kV

q. Max. Permissible Shipping Weight

60 tons

r. Max. Permissible Shipping Dimension (W × L × H)

4.0 m × 2.0 m × 4.0 m (See Note 1)

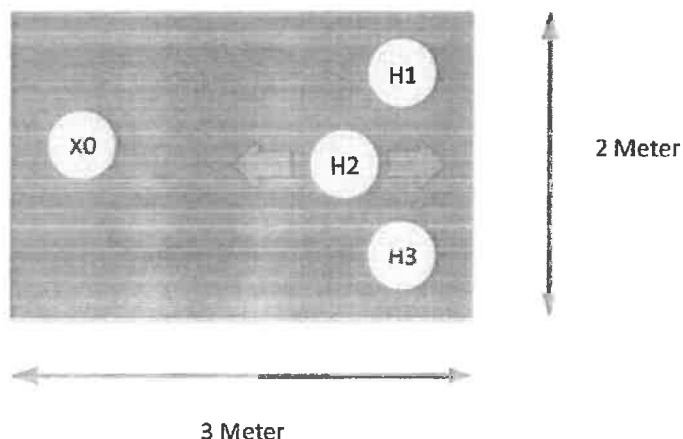
s. Applicable Standard

IEEE C57.21

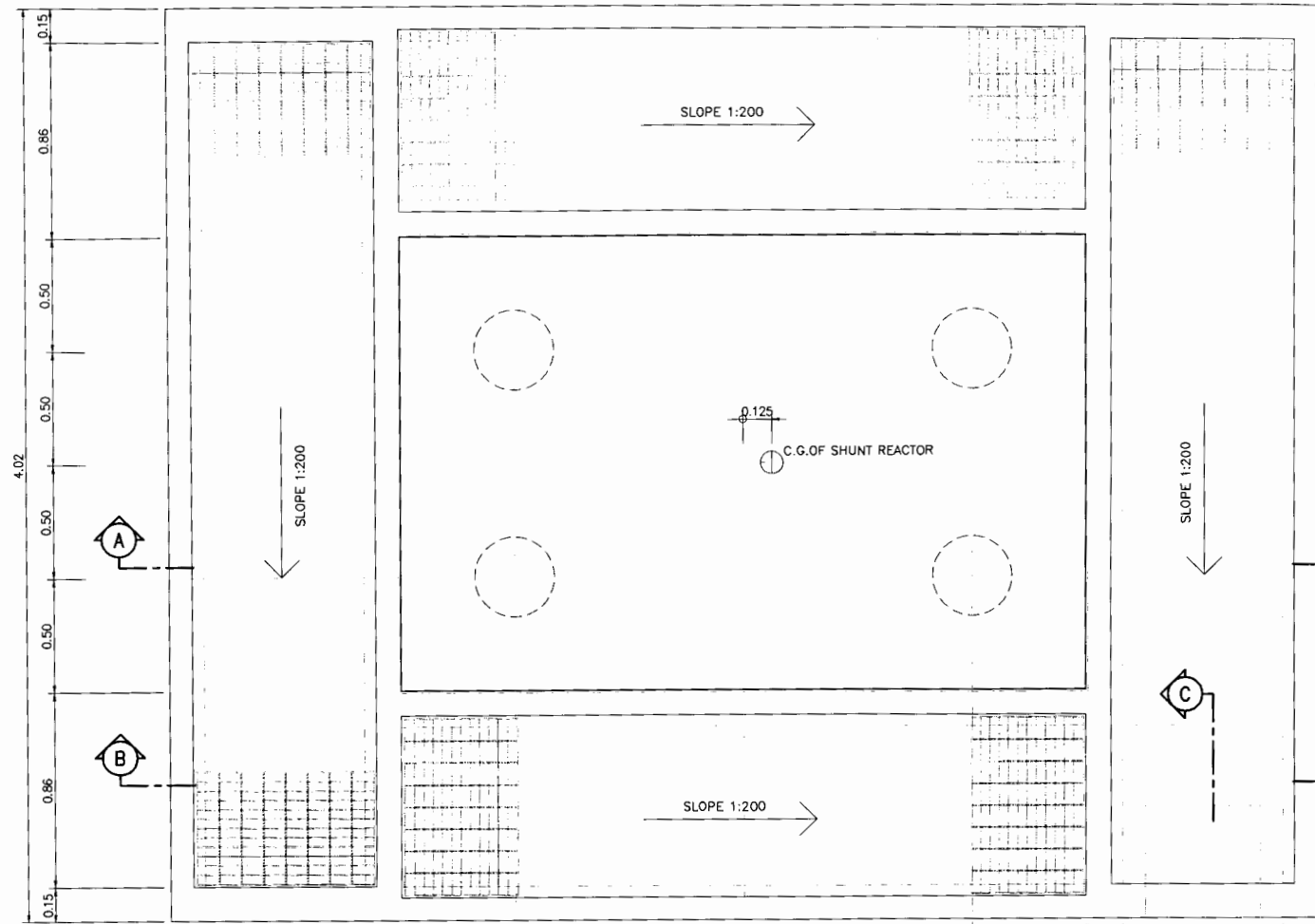
t. Limitation of Reactor Foundation

- Foundation Plan Dimension 3.0 m × 2.0 m (W×L)
- Max. Permissible Load (Total Weight of Reactor) 60 tons

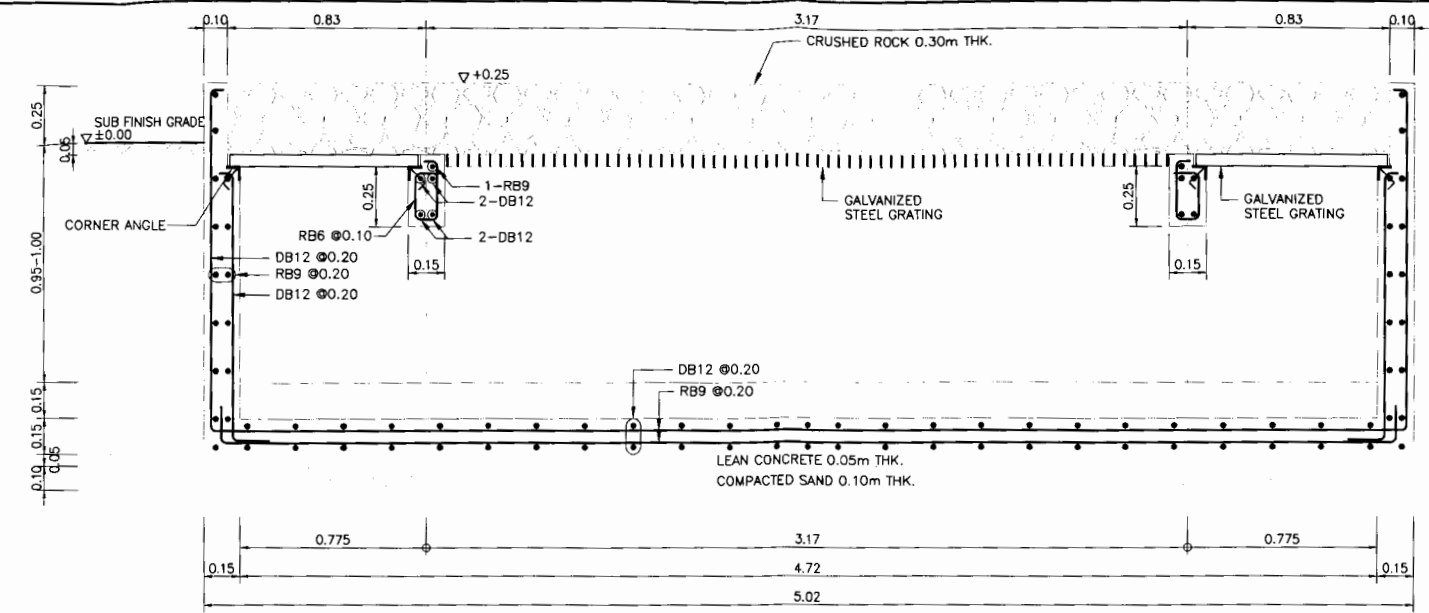
- Note:**
1. Exception to the weight and dimension limitation stated in Article : Clearance and Weight Limitations of Section E : General Conditions of Contract.
 2. Radiators shall be designed to be attached to the reactor tank. The radiator bank located on separated foundation from the reactor foundation is not acceptable.
 3. The bushing location shall be located on below



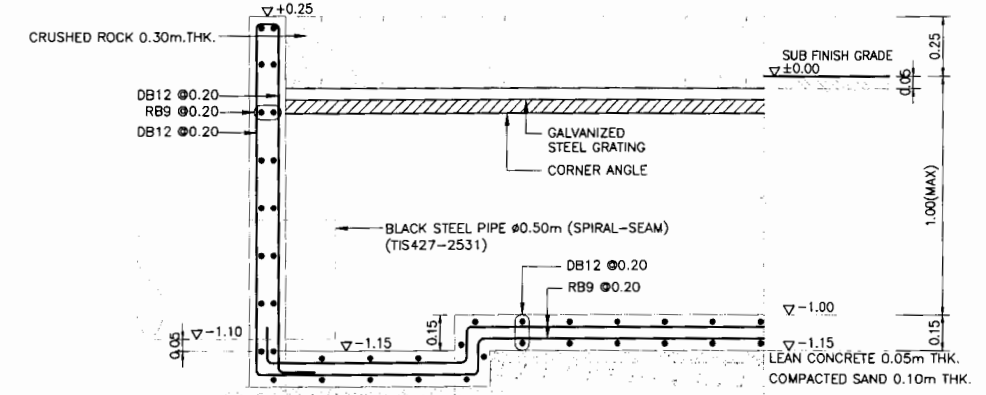
4. The shunt reactor shall be installed at foundation according to drawing TT/SRT-FD-SR-7-01 without exceed oil pit.



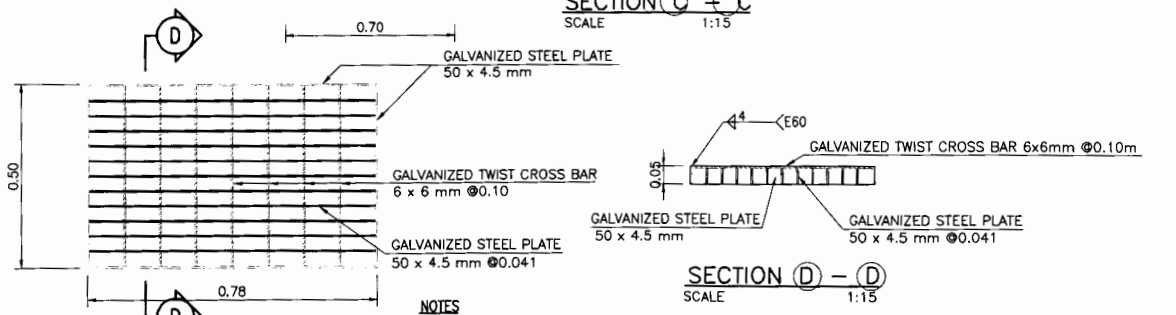
FOUNDATION PLAN
SCALE 1:15



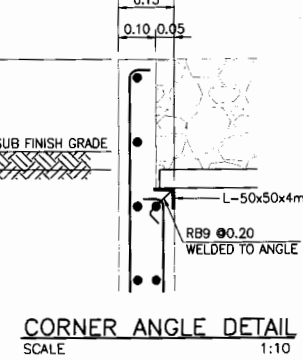
SECTION B-B
SCALE 1:15



SECTION C-C
SCALE 1:15



STEEL GRATING DETAIL
SCALE 1:10



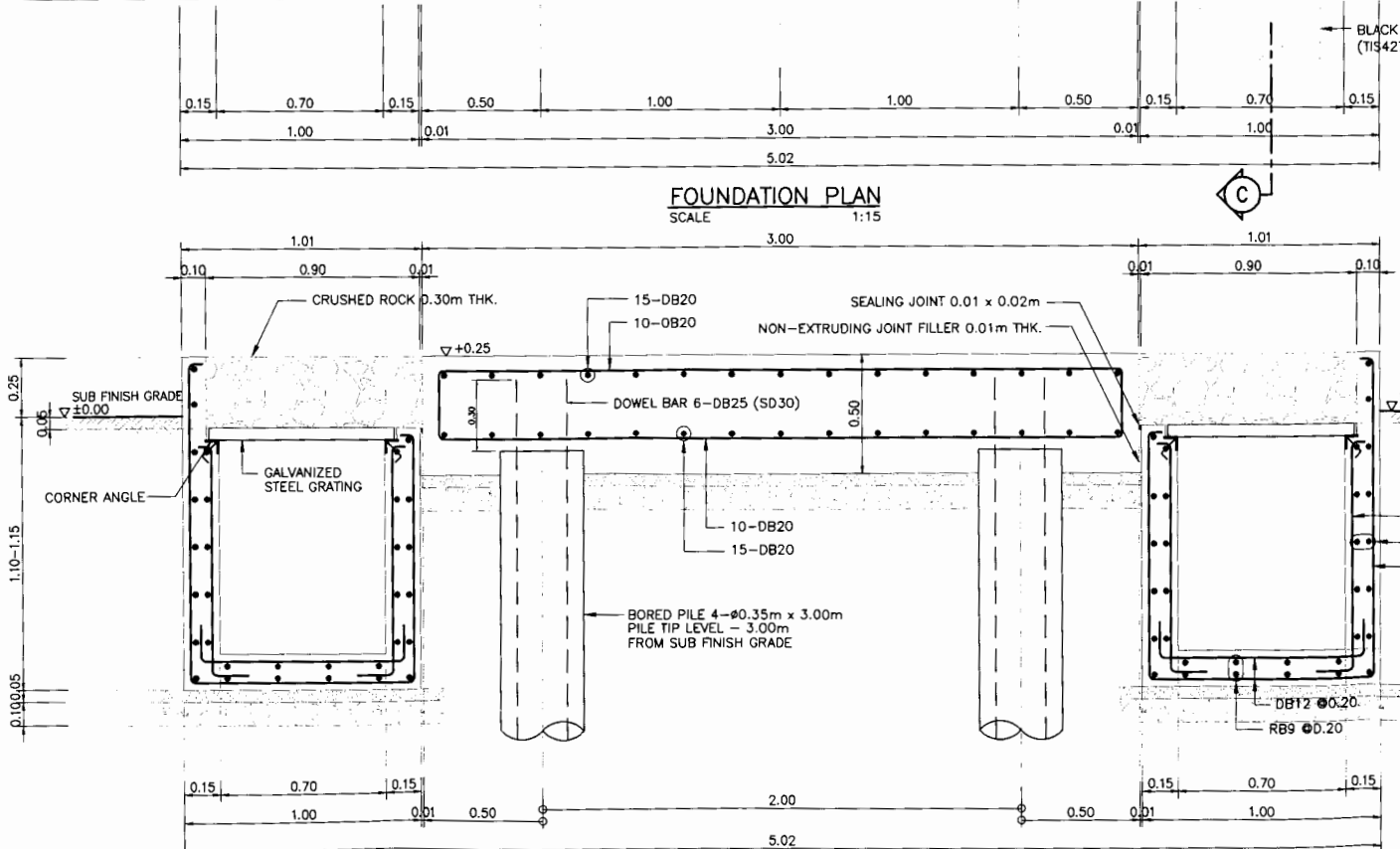
CORNER ANGLE DETAIL
SCALE 1:10

NOTES

1. ALL DIMENSIONS ARE IN METERS, EXCEPT OTHERWISE SHOWN.
2. ALL DIMENSIONS OF REINFORCEMENT ARE CENTER TO CENTER OF BARS.
3. REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 2,400kg/cm² FOR PLAIN BAR AND 4,000kg/cm² FOR DEFORMED BAR.
4. PLAIN BARS SHALL BE TERMINATED IN STANDARD BARS.
5. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 210kg/cm² AT 28 DAYS BY #0.15X0.30m CYLINDER TEST.
6. COARSE AGGREGATE FOR CONCRETE SHALL BE #3/4" MAXIMUM SIZE.
7. ALL CONCRETE COVERINGS SHALL BE 5cm, EXCEPT OTHERWISE SHOWN.
8. CHAMFER ALL EXPOSED EDGES 2cm, EXCEPT OTHERWISE SHOWN.
9. INTERNAL AND EXTERNAL COATING OF BLACK STEEL PIPE SHALL CONFORMED TO AWWA 205 AND AWWA 217 RESPECTIVE.
10. STEEL COVER SHALL BE HOT-DIP GALVANIZED AS SPECIFIED IN ASTM A-123 AFTER FABRICATION.
11. WELD ELECTRODES SHALL BE OF GRADE E60XX AND SHALL SATISFY THE PROVISIONS OF ANSI/AWS D1.1/D1.1M, 2000 STRUCTURAL WELDING CODE-STEEL.
12. BACKFILL SHALL BE COMPACTED TO 85% OF STANDARD PROCTOR DENSITY ON EACH LAYER (15cm).
13. ALLOWABLE PILE CAPACITY (S.F. = 2.50) SHALL BE NOT LESS THAN 20tons/pile
14. ALLOWABLE BEARING CAPACITY FOR OIL PIT (S.F. = 2.50) SHALL BE NOT LESS THAN 3.01tons/m

REFERENCE DRAWINGS

- 1. BASE OF 15 MVA SHUNT REACTOR.....DWG.NO.M-3506199
- 2. BASE OF 4 MVA SHUNT REACTOR.....DWG.NO.MPH51181
- 3. SHIPPING DIMENSIONS.....DWG.NO.M-3507200
- 4. #0.35m. AND #0.50m. CAST IN PLACE CONCRETE PILES.....DWG.NO.SD-PL-0-02 01/01 R.2
- 5. FOUNDATION GENERAL LAYOUT.....DWG.NO.TT/SRT-C-3 R.1



SECTION A-A
SCALE 1:15

AS-BUILT

NO.	DATE	REVISION	REF.
2	11/05/61	AS-BUILT	
1	22/08/59	CORRECT AS PER EGAT'S COMMENT	RSP1-192/15
0	18/09/58	FIRST SUBMIT FOR APPROVAL	

DESIGNED	PROJECT ENGINEER	DATE	11/05/61
DESIGNED	PROJECT MANAGER	SCALE	AS SHOWN
DRAWN	TEDA CO., LTD 80/2 WONG 4 SOFTWARE PLAZA BUILDING 34TH FLOOR, CHANGKHATTANA ROAD, KLONG KHUAT, PAK-KROD, NONGTHAMLUK 11220, TEL. 02 502 8000		
CHECKED	SURAT THANI SUBSTATION		
ELECTRICITY GENERATING AUTHORITY OF THAILAND			
SURAT THANI SUBSTATION			
DESCRIPTION OF DETAILED DRAWING			
115KV SHUNT REACTOR FOUNDATION (SR701)			
CONTRACT NO.	W100319-224M-RSP1-S-04	DWG. NO.	01
JOB NO.	RSP1-12-S01	TT/SRT-FD-SR-7-01	01

