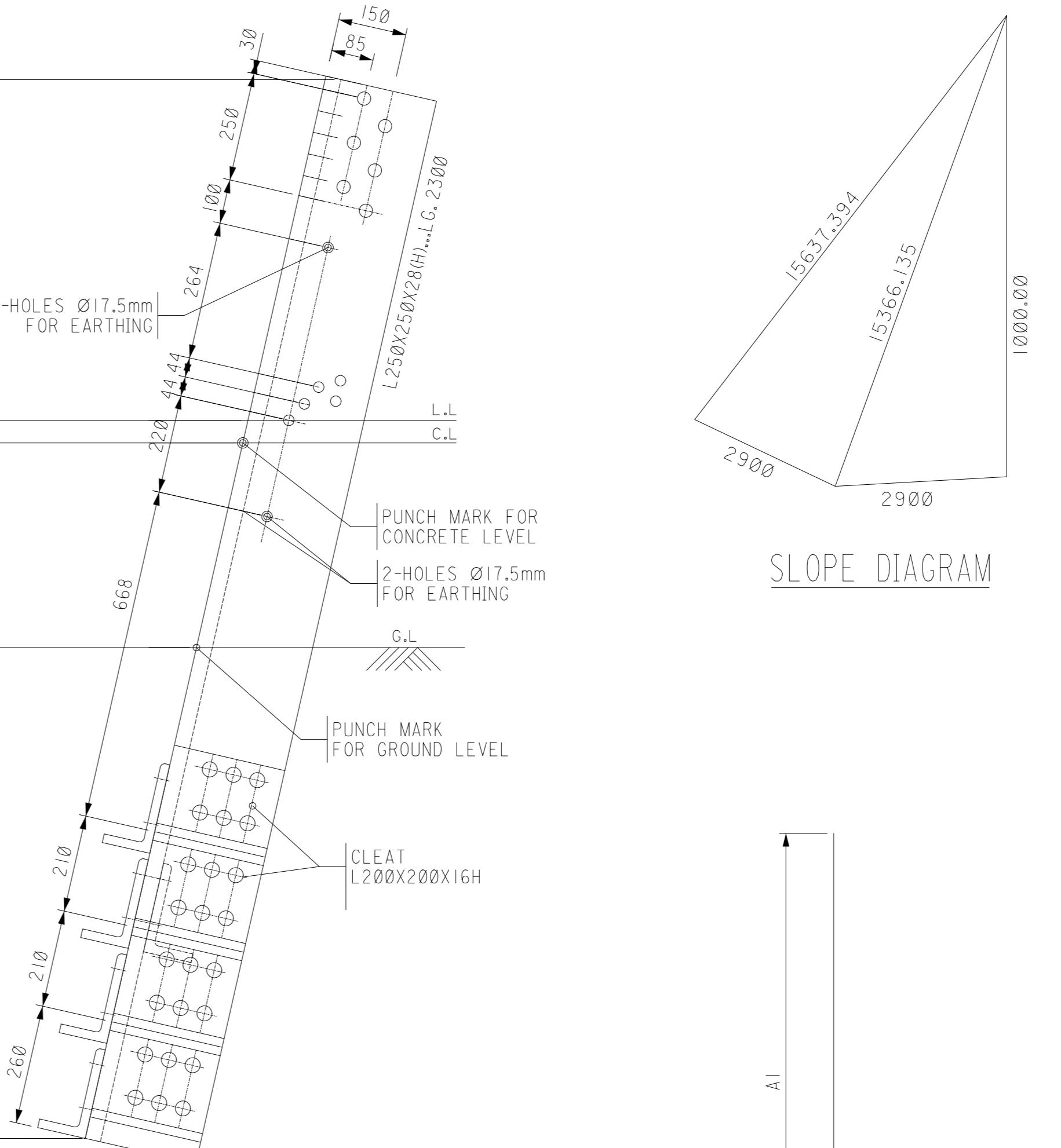
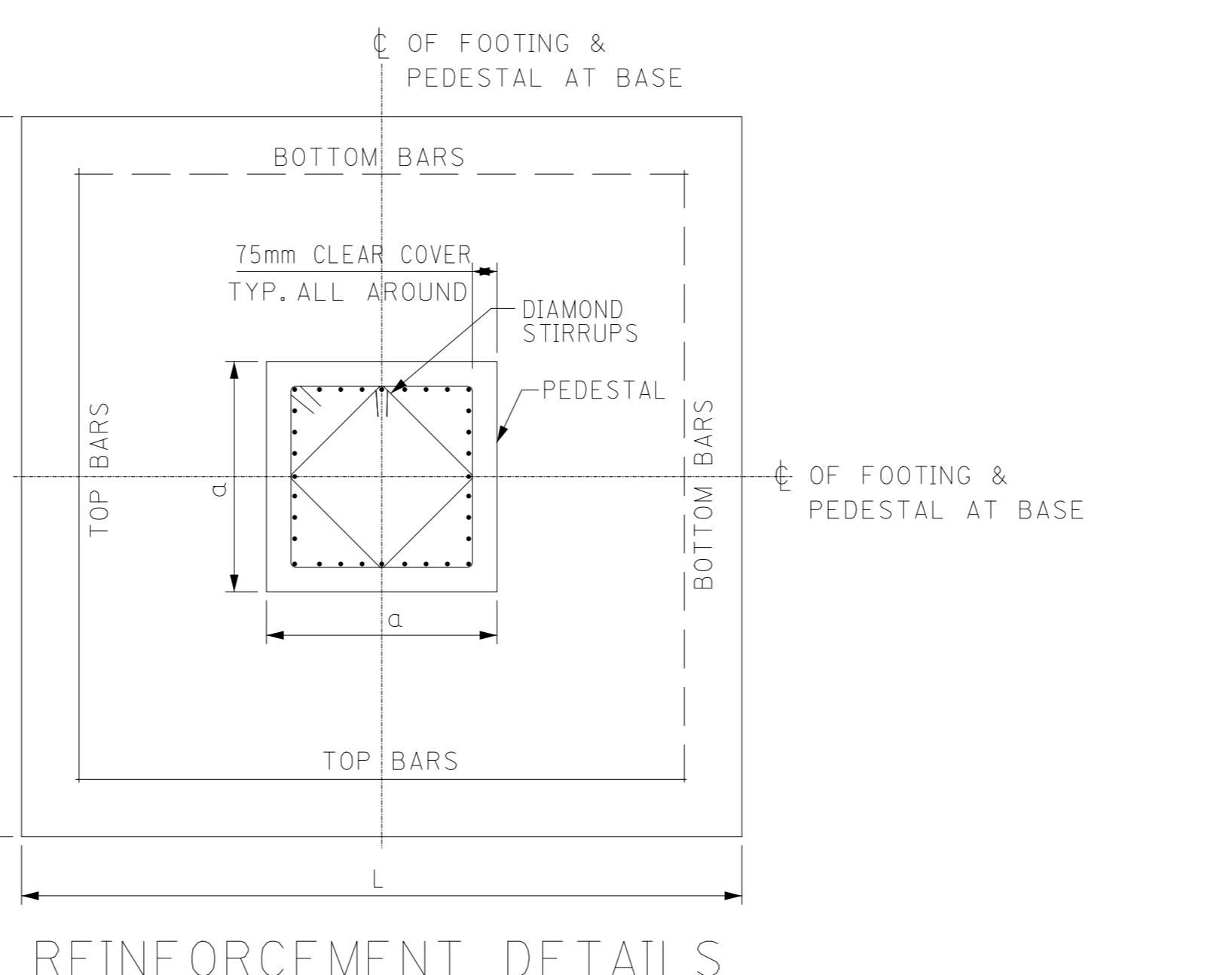
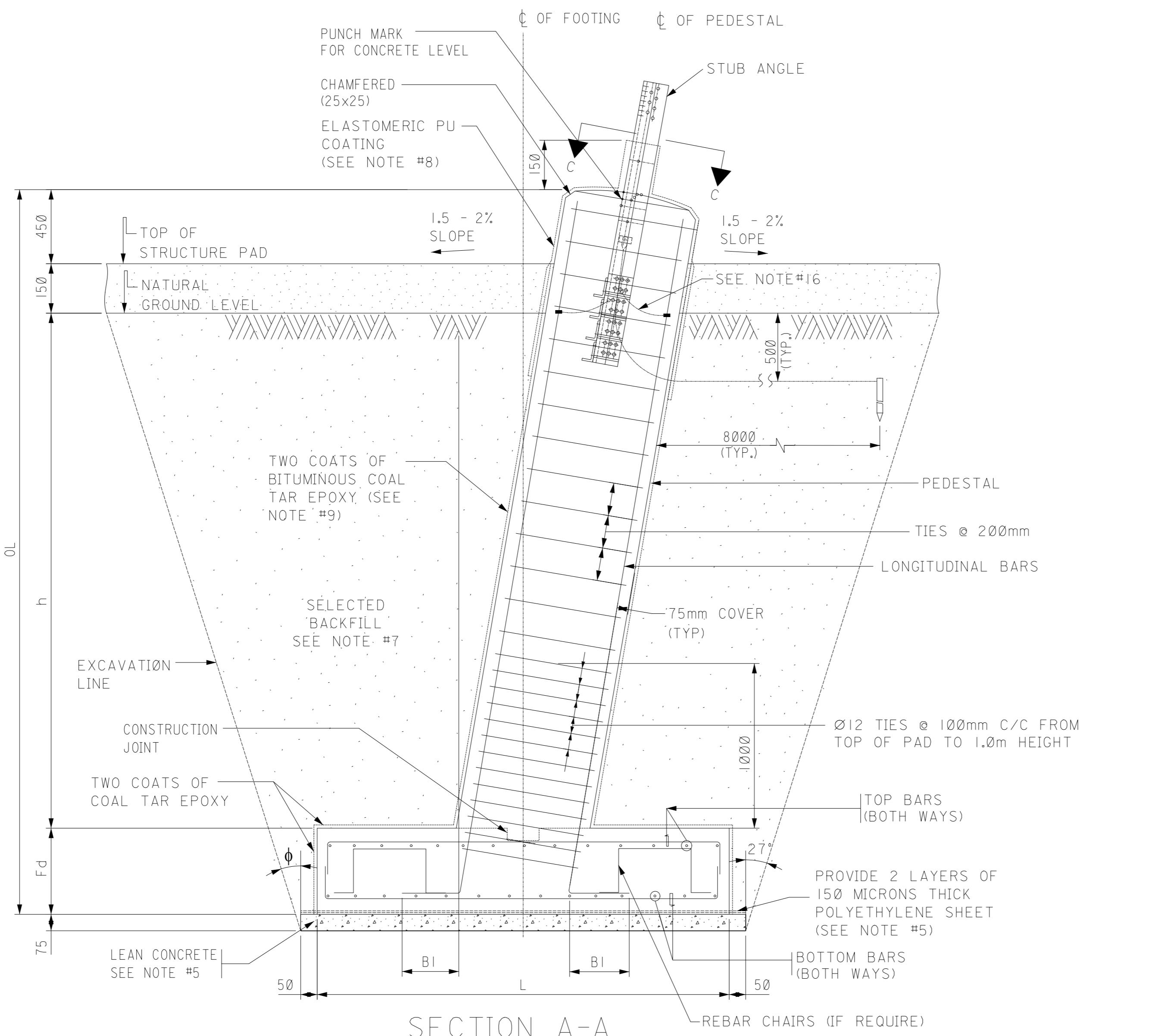
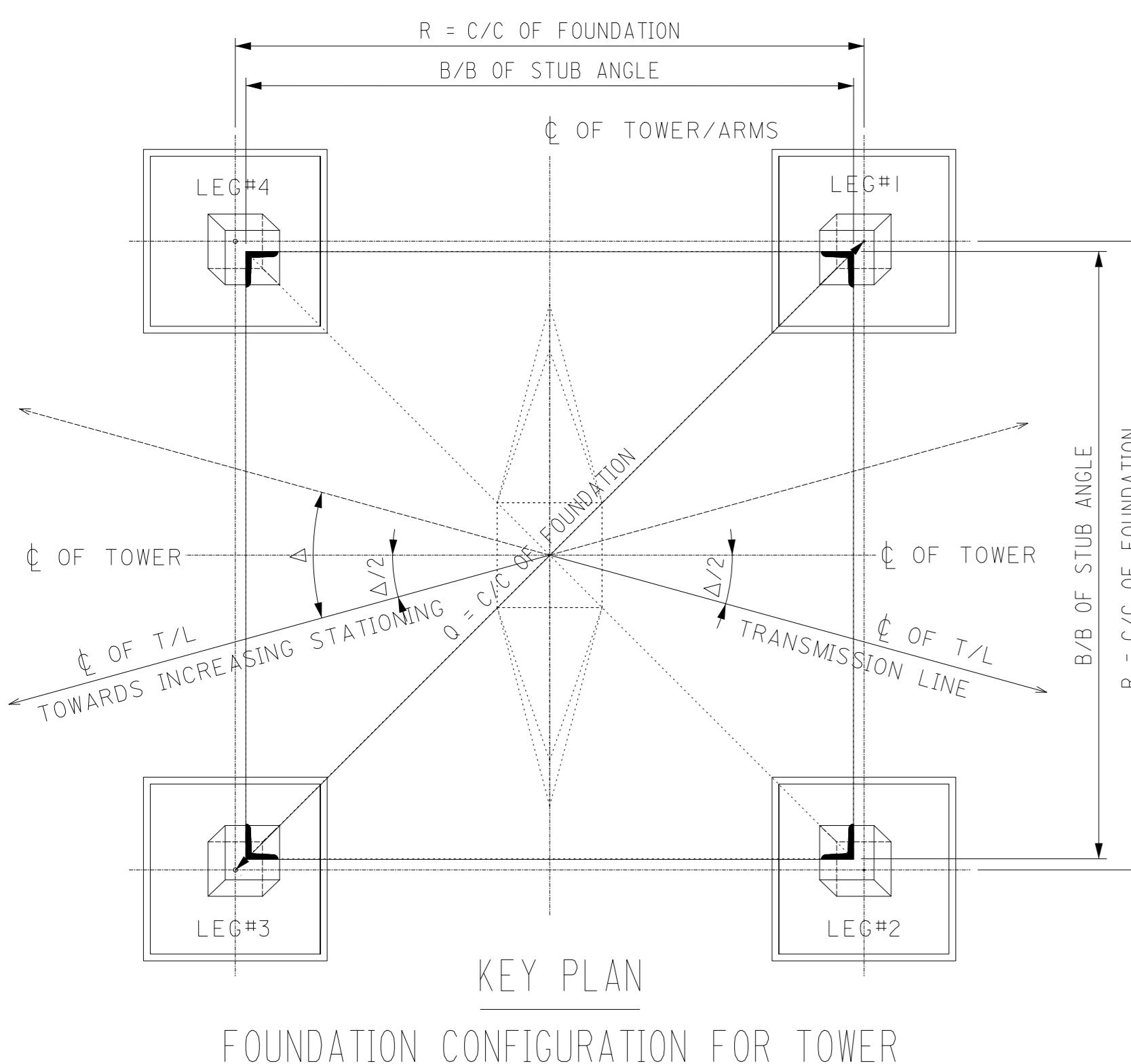
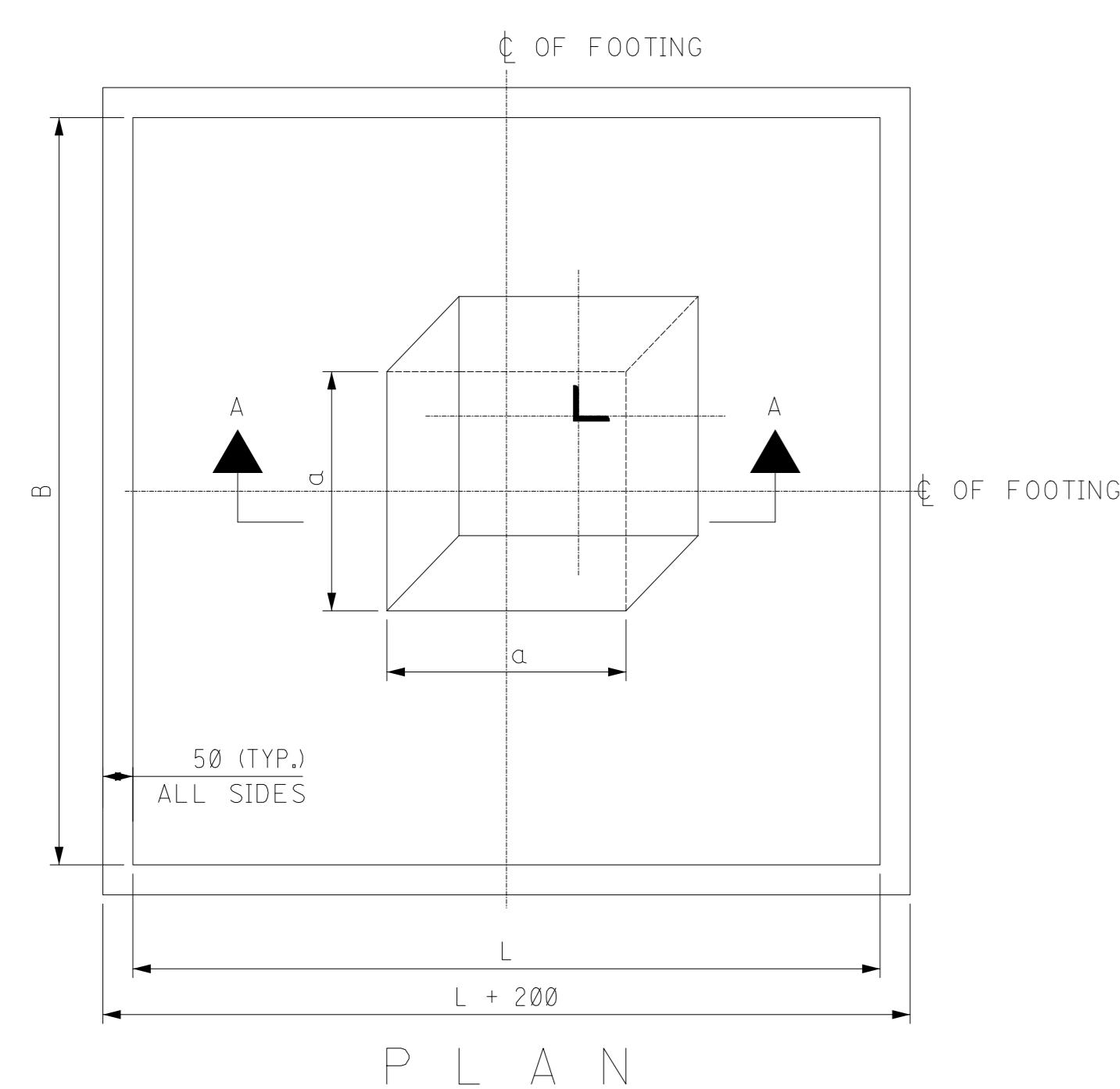
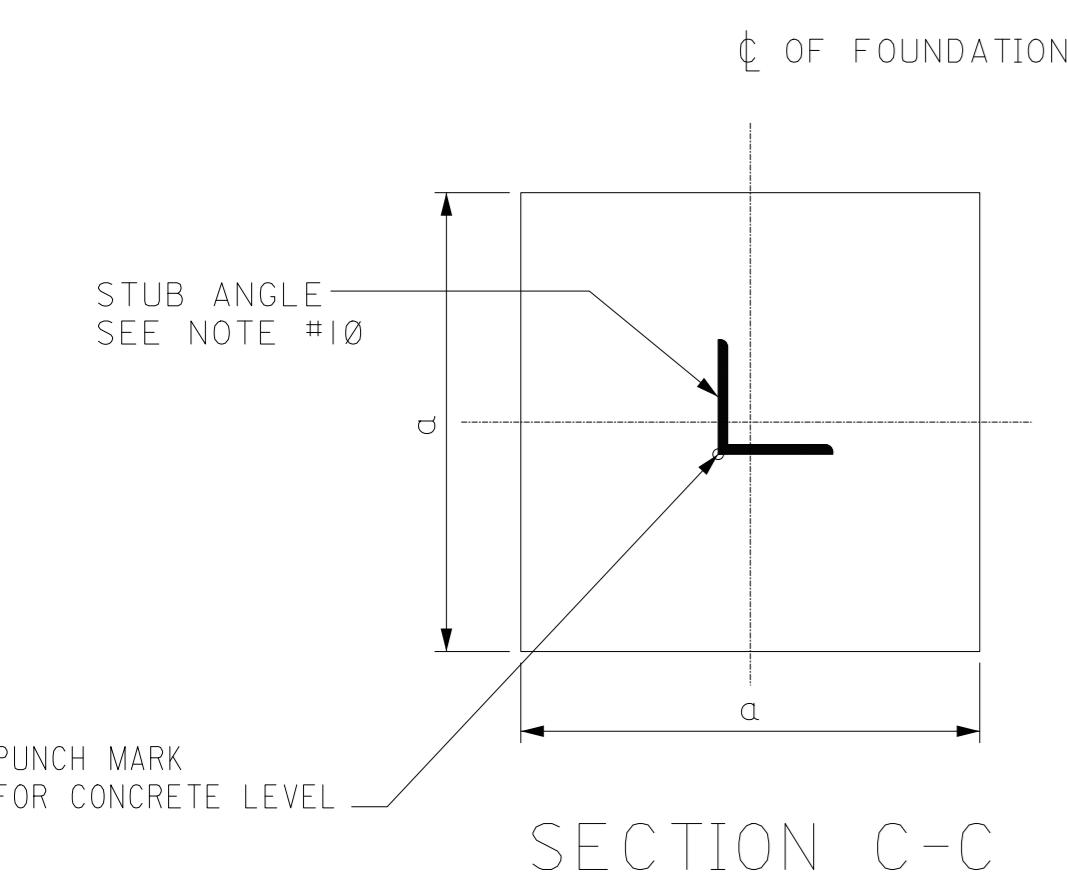


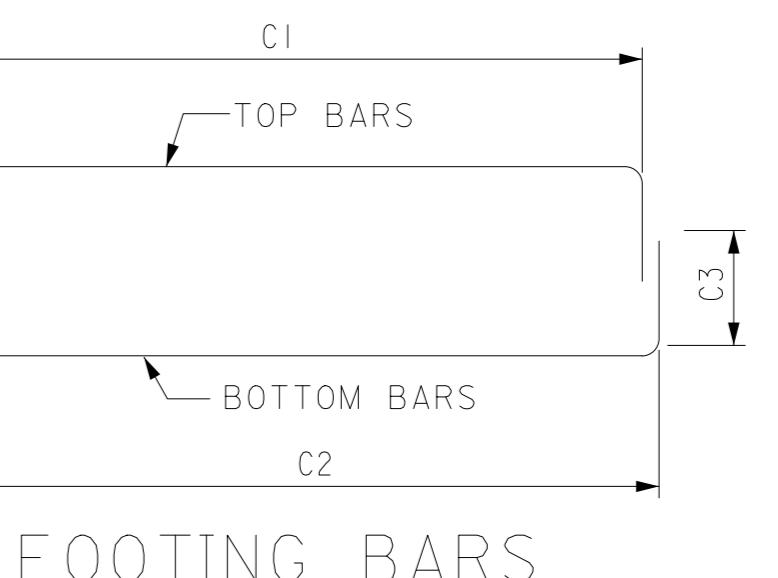
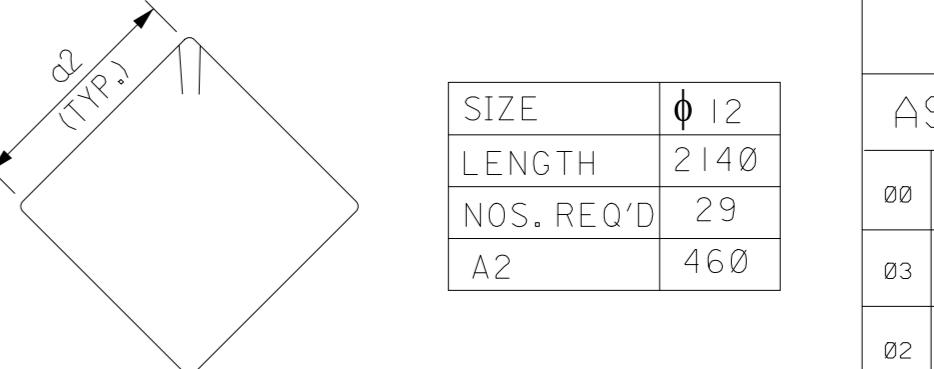
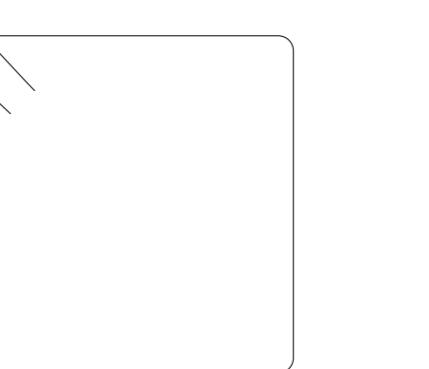
PAD & CHIMNEY FOUNDATION SCHEDULE FOR TOWER TYPE "USA"

TOWER NO.	GROUP	SOIL TYPE	EFFECTIVE SOIL PARAMETERS				REBAR LIST FOR PEDESTAL						REBAR LIST FOR FOOTING BARS						FOUNDATION DATA				UNFACTORED FOUNDATION LOADS OCF=1.5			REMARKS								
							LONGITUDINAL BARS (BAR B)			TIRES (BAR A)			TOP BARS			BOTTOM BARS			FOOTING		PEDESTAL													
			ϕ (DEG)	BEARING CAPACITY kN/m ²	UNIT WEIGHT kN/m ³	SIZE	NOS. REQ'D	A1	B1	LENGTH	SIZE	LENGTH	NOS. REQ'D	A1	SIZE	NOS. REQ'D IN EACH DIR.	C1	C3	CUTTING LENGTH (LTB)	SIZE	NOS. REQ'D IN EACH DIR.	C2	C3	CUTTING LENGTH (LBB)	SIZE L x B	DEPTH "F _d "	SIZE (a x a)	DEPTH "h"	COMPRESSION (kN)	UPLIFT (kN)	SHEAR (kN)	VI	VT	
PI-14,PI-21 (CONTROL TWR#PI-21)	GP-1	A	36°	1000	20	Ø20	32	4918	240	5158	Ø12	2900	29	650	Ø20	18	3500	325	4150	Ø20	26	3500	325	4150	3700 x 3700	600	800 x 800	3650	5000	1872.11	1742.18	359.57	360.63	
PI-26,PI-27,PI-31 (CONTROL TWR#PI-31)	GP-2	B	30°	250	16	Ø20	32	4918	240	5158	Ø12	2900	29	650	Ø20	24	4500	350	5200	Ø20	35	4500	350	5200	4700 x 4700	650	800 x 800	3600	5000	1872.11	1742.18	359.57	360.63	



TYPICAL STUB AND CLEAT ANGLE FOR 'USA'
(FOR DETAILS SEE STUB ANGLE REF. DWG.)

LONGITUDINAL BARS
ON PEDESTAL



- NOTES
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
 - CONCRETE COMPRESSIVE STRENGTH SHALL CONFORM WITH REQUIREMENTS OF 70-TMS-03 REV.2 AND SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 38Mpa FOR SEVERE EXPOSURE SOIL AND 28Mpa FOR MODERATE EXPOSURE SOIL CONDITION.
 - YIELD STRENGTH OF DEFORMED STEEL REINFORCEMENT, $f_y = 420$ Mpa.
 - THE MINIMUM CONCRETE COVER TO REINFORCEMENT STEEL SHALL BE 75mm.
 - PROVIDE (2) TWO LAYERS OF 150mm THICK POLYETHYLENE SHEET UNDER 75mm THICK LEAN CONCRETE AS PER SEC STANDARD TCS-0-113.03 SEC:7.3.7.
 - TOP SURFACE OF CONCRETE SHALL BE CROWNED AND GIVEN A SMOOTH STEEL TROWEL FINISH.
 - BACKFILLING SHALL BE DONE WITH APPROVED BACKFILLING MATERIALS AND COMPACTION SHALL BE CARRIED OUT TO ACHIEVE A MIN. 95% OF STANDARD PROCTOR DENSITY IN LAYERS NOT MORE THAN 200mm THICK.
 - ALL EXPOSED CONCRETE SURFACES SHALL BE DRY & CLEANED AT THE TIME OF APPLICATION AND IT SHALL BE COATED WITH POLYURETHANE WATER PROOFING MEMBRANE.
 - ALL CONCRETE SURFACES BELOW GROUND LEVEL HAVE COATED WITH A MINIMUM OF (2) COATS OF COAL TAR EPOXY.
 - REFER TO THE REFERENCE DRAWINGS FOR STUB & STUB SETTING DETAILS AND TOWER GROUNDING DETAILS.
 - EXCAVATION MUST BE CLOSELY MONITORED TO MAKE SURE THE SOIL/ROCK PARAMETERS USED IN THIS DESIGN ARE IN AGREEMENT WITH THE ACTUAL SITE CONDITION. IF THERE ARE ANY DIFFERENCES, DESIGN OFFICE SHALL BE INFORMED FOR RECTIFICATION AND REDESIGN IF NEEDED.
 - TOWER NOT ERECTED/INSTALLED UNTIL AT LEAST 10 DAYS AFTER POURING THE CONCRETE FOUNDATIONS AS PER CLAUSE 4.3 OF TCS-P-122.06,REV.01.
 - NO LOADS ARE APPLIED TO THE TOWER UNTIL THE CONCRETE HAS REACHED 28 DAYS STRENGTH AS PER CLAUSE 4.3 OF TCS-P-122.06,REV.01.
 - CONSTRUCTION JOINT SHALL BE PROVIDED AT 300mm BELOW THE STUB ANGLE, BEFORE APPLICATION OF NEXT CONCRETE POURING APPROVED BONDING AGENT ARE USE AS PER CLAUSE 6.3 OF TCS-P-122.06,REV.01.
 - EXPOSED FOUNDATIONS ARE CURED IN MOIST CONDITION FOR 21 DAYS FOLLOWING CLAUSE 8.3.5 OF TCS-0-133.03,REV.0.
 - STUB ANGLES SHALL BE CONNECTED BY (7#5 OR 7#7, AS APPLICABLE) COPPER CLAD GROUNDING CONDUCTOR THROUGH COMPRESSION CONNECTOR AND REBARS EXOTHERMALLY WELDED AT LEAST TWO (2) LOCATIONS ON EACH TOWER LEG AS PER CLAUSE 6.3 OF TCS-P-122.10,REV.0.
 - DE-SHUTTERING AND REMOVAL OF TEMPLATES SHALL BE CARRIED OUT AFTER (72 HOURS) 3 DAYS OF CONCRETE CURING FOLLOWING CLAUSE 10.3 OF TCS-P-122.03,REV.0.
 - IN CASES WHERE THE TOWER CROSSED OR IS LOCATED IN WADI AREA, SPECIAL TOWER FOUNDATIONS WERE PROVIDED WITH HIGER REVEAL EXTENSIONS AS PER NG STANDARD AND REQUIREMENTS.
 - ALL WELDING WORKS AS PER TES-W-109.1.

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	SA-223130
PROJECT TECHNICAL SPECIFICATIONS	PTS-16S0109
DESIGN CALCULATION FOR FOUNDATION STRUCTURE TYPE "USA"	SE-0223138

SATECH Saudi Technologies Engineering Services
Engineering Services
Signature
Date
Drawing No. 11105-A1-Khalid Muhayil
P.O. Box 11105, Al-Khor, 19512, Saudi Arabia
Engineering Services
Drawing No. 11105-A1-Khalid Muhayil
P.O. Box 11105, Al-Khor, 19512, Saudi Arabia

AS-BUILT BY	DATE
02 20-11-23 SATECH	ISSUED FOR CONSTRUCTION MUQ MS FNK
03 13-11-23 SATECH	ISSUED FOR APPROVAL MUQ MS FNK
02 05-10-23 SATECH	ISSUED FOR APPROVAL MUQ MS FNK
01 20-09-23 SATECH	ISSUED FOR APPROVAL MUQ MS FNK
REV. NO. DATE BY	DESCRIPTION CHKD. CERT. APPD.

DRAWING COMPLETION CERTIFICATE (DCC):

DRAWN BY SATECH CHECKED BY MS SCALE: N.T.S.
DATE STARTED 13-11-23 DATE COMPLETED
OPRG. DEPT. ENG. DEPT.

THIS DRAWING IS NOT TO BE USED FOR CERTIFIED CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED BY DATE

FOUNDATION DETAILS FOR SUSPENSION TOWER TYPE "USA"
CONSTRUCTION OF 132kV D/C OHL FOR MUHAYIL
CENTRAL 132/33/13.8KV SUBSTATION

MUHAYIL SAUDI ARABIA

CONTRACT NO. JOB ORDER NO. INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.

01 11105-SA-101 01 of 01

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