



cherenkov
telescope
array

CTA-North On-Site Infrastructure Design and Construction Strategy



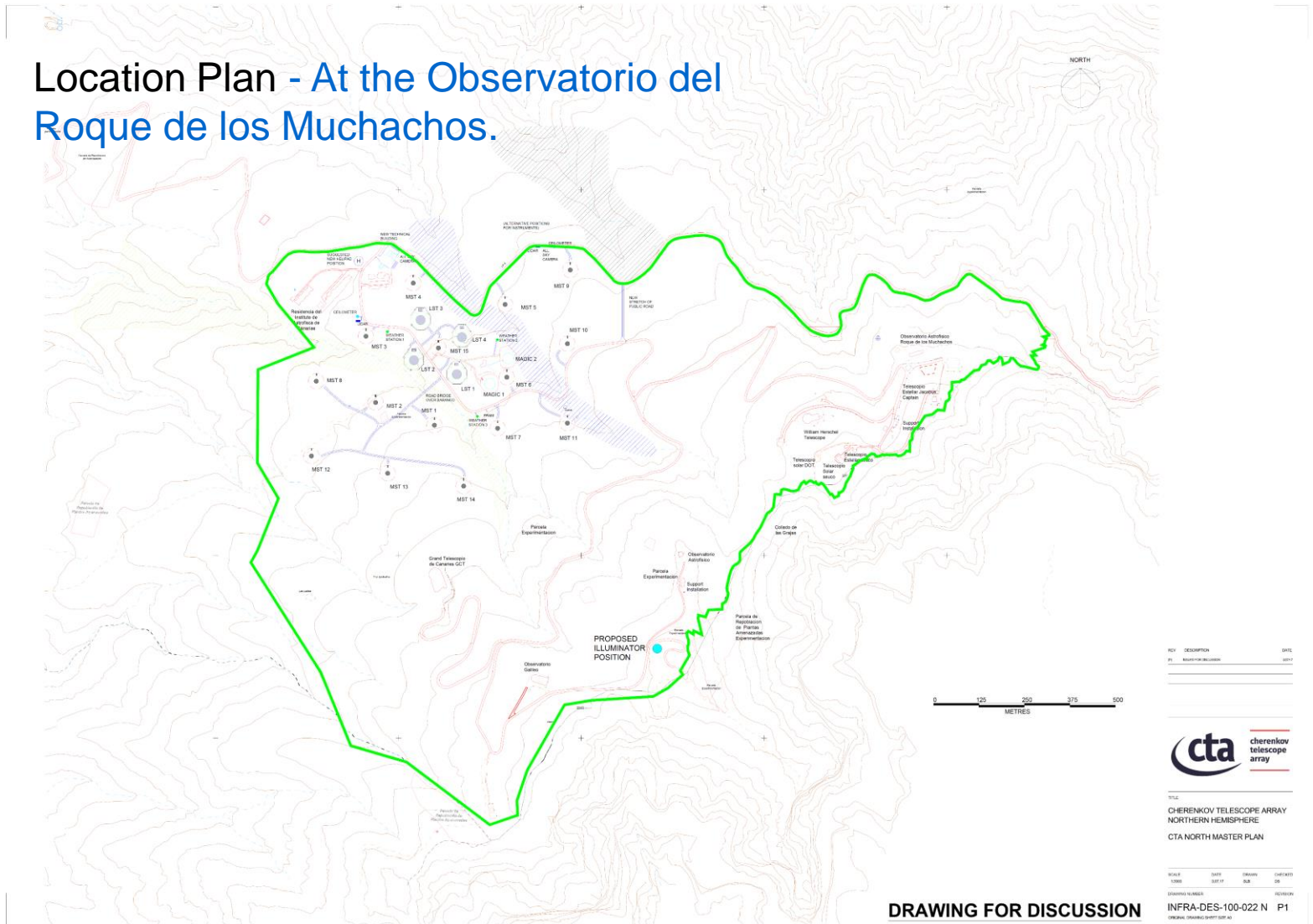
David Bristow, 19. July 2017, La Palma

A. García

CTA-N Location Plan



Location Plan - At the Observatorio del Roque de los Muchachos.



| REV | DESCRIPTION | DATE |
|-----|--------------------------|------|
| P1 | Master Plan Illustration | 2017 |



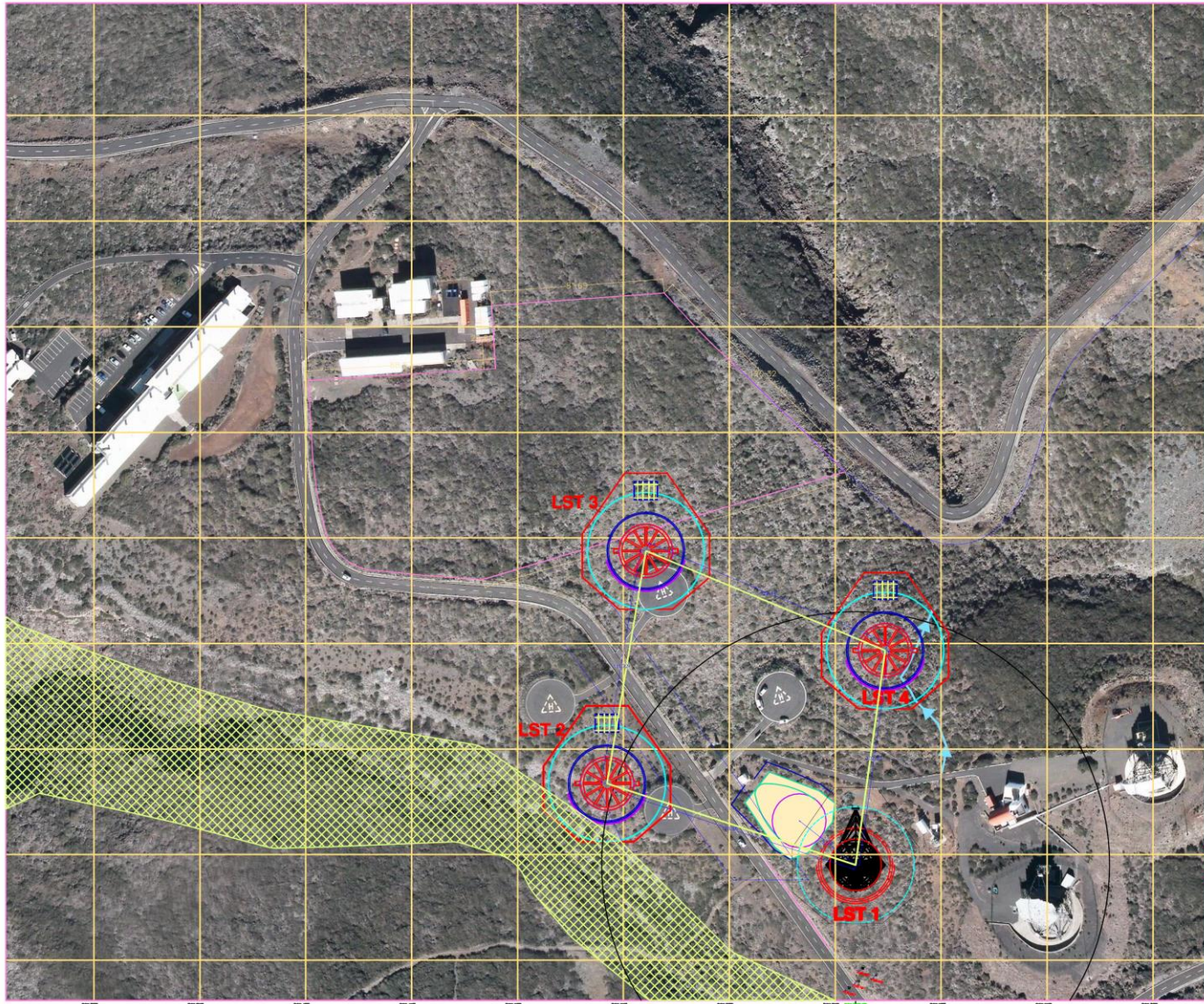
CTA
CHERENKOV TELESCOPE ARRAY
NORTHERN HEMISPHERE
CTA NORTH MASTER PLAN

| NO. | DATE | BY | CHKD BY |
|-----|------|-----|---------|
| 1 | 2017 | RAJ | DK |

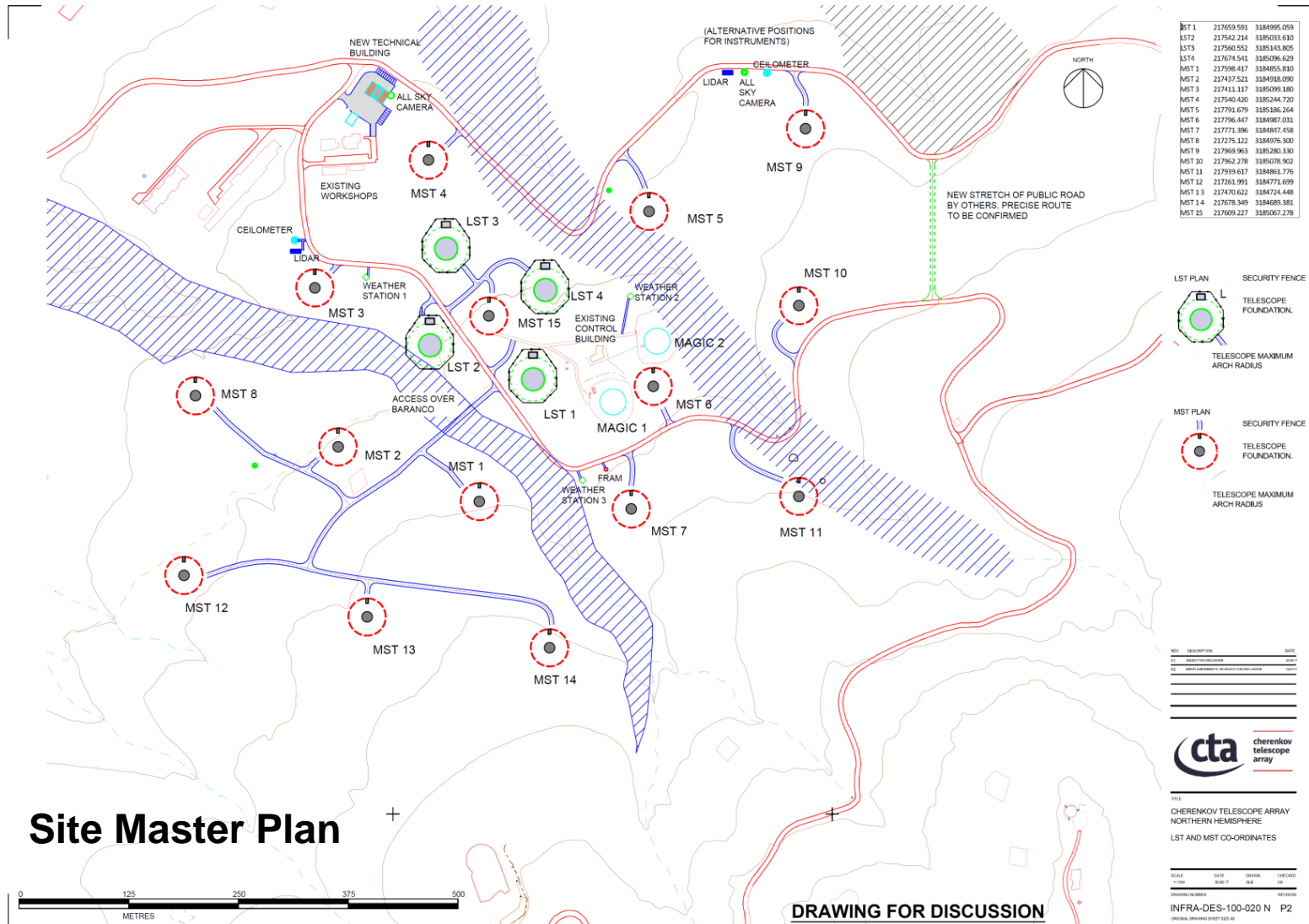
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ORIGINAL DRAWING (SHEET 02P OF 02)

DRAWING FOR DISCUSSION

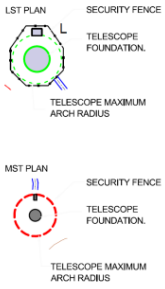
CTA-N Aerial View



CTA-North General Arrangement



| MST # | Easting | Northing |
|--------|------------|-------------|
| MST 1 | 217659.591 | 3184995.059 |
| MST 2 | 217542.214 | 3185031.610 |
| MST 3 | 217560.552 | 3185143.805 |
| MST 4 | 217674.541 | 3185096.629 |
| MST 5 | 217708.417 | 3184855.810 |
| MST 6 | 217437.521 | 3184918.090 |
| MST 7 | 217411.117 | 3185099.180 |
| MST 8 | 217540.420 | 3185244.720 |
| MST 9 | 217791.679 | 3185186.264 |
| MST 10 | 217796.447 | 3184981.011 |
| MST 11 | 217771.396 | 3184817.458 |
| MST 12 | 217275.122 | 3184976.300 |
| MST 13 | 217969.963 | 3185280.330 |
| MST 14 | 217962.278 | 3185079.302 |
| MST 15 | 217939.617 | 3184861.776 |
| MST 16 | 217261.991 | 3184771.699 |
| MST 17 | 217470.622 | 3184724.448 |
| MST 18 | 217678.349 | 3184689.381 |
| MST 19 | 217609.227 | 3185067.278 |



| REV. | DESCRIPTION | DATE |
|------|-----------------------|----------|
| 01 | ISSUED FOR DISCUSSION | 08-07-14 |
| 02 | ISSUED FOR DISCUSSION | 08-07-14 |



TITLE
CHERENKOV TELESCOPE ARRAY
NORTHERN HEMISPHERE
LST AND MST CO-ORDINATES

| SCALE | DATE | ISSUED | DATE |
|--------|----------|----------|----------|
| 1:1000 | 08-07-14 | 08-07-14 | 08-07-14 |

DRAWING NUMBER: INFRA-DES-100-020 N
REVISION: P2
ORIGINAL DRAWING SHEET SIZE: A1

Design and Construction Phase 1

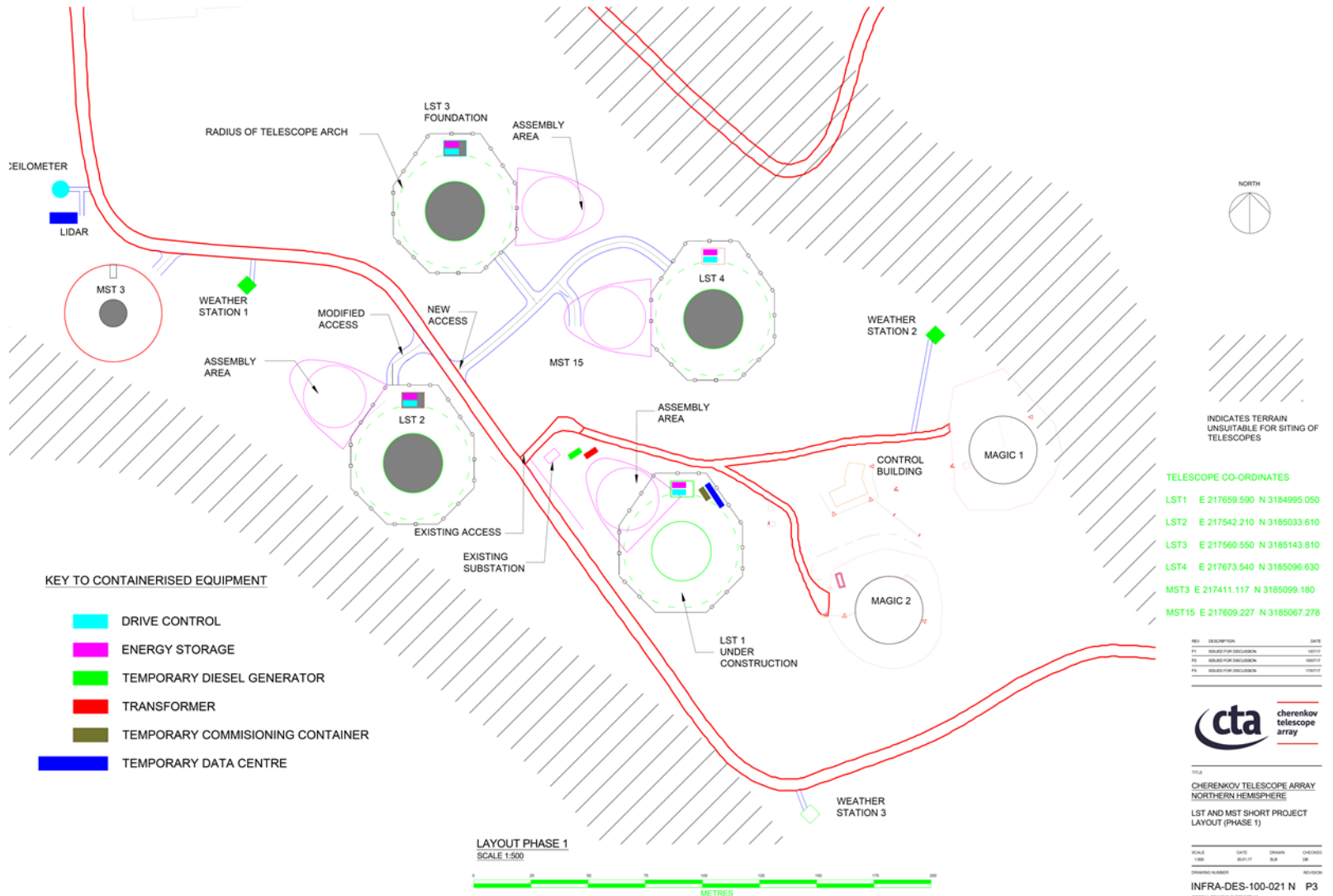


There are two phases to the Design and Construction:

Phase 1 the Design and Construction of the ‘**short project**’ the central part of the array.

- LST 2-4
- MST 3
- Roads, Power, Data Networks
- Landscaping

Construction - Phase 1



Design and Construction – Phase 2

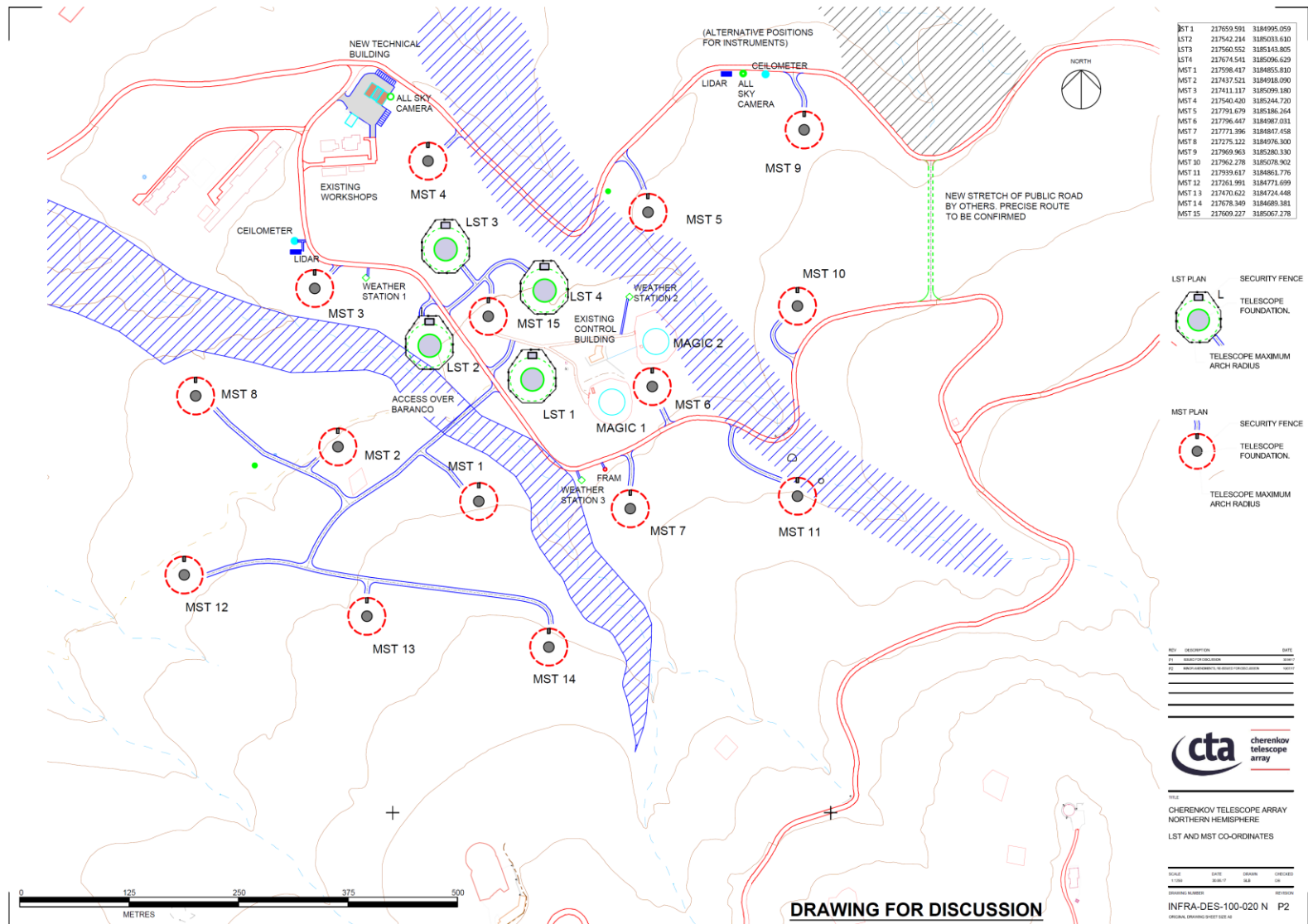


Phase 2 of the Design and Construction:

Phase 2 the '**RIBA 3**' study for the site.

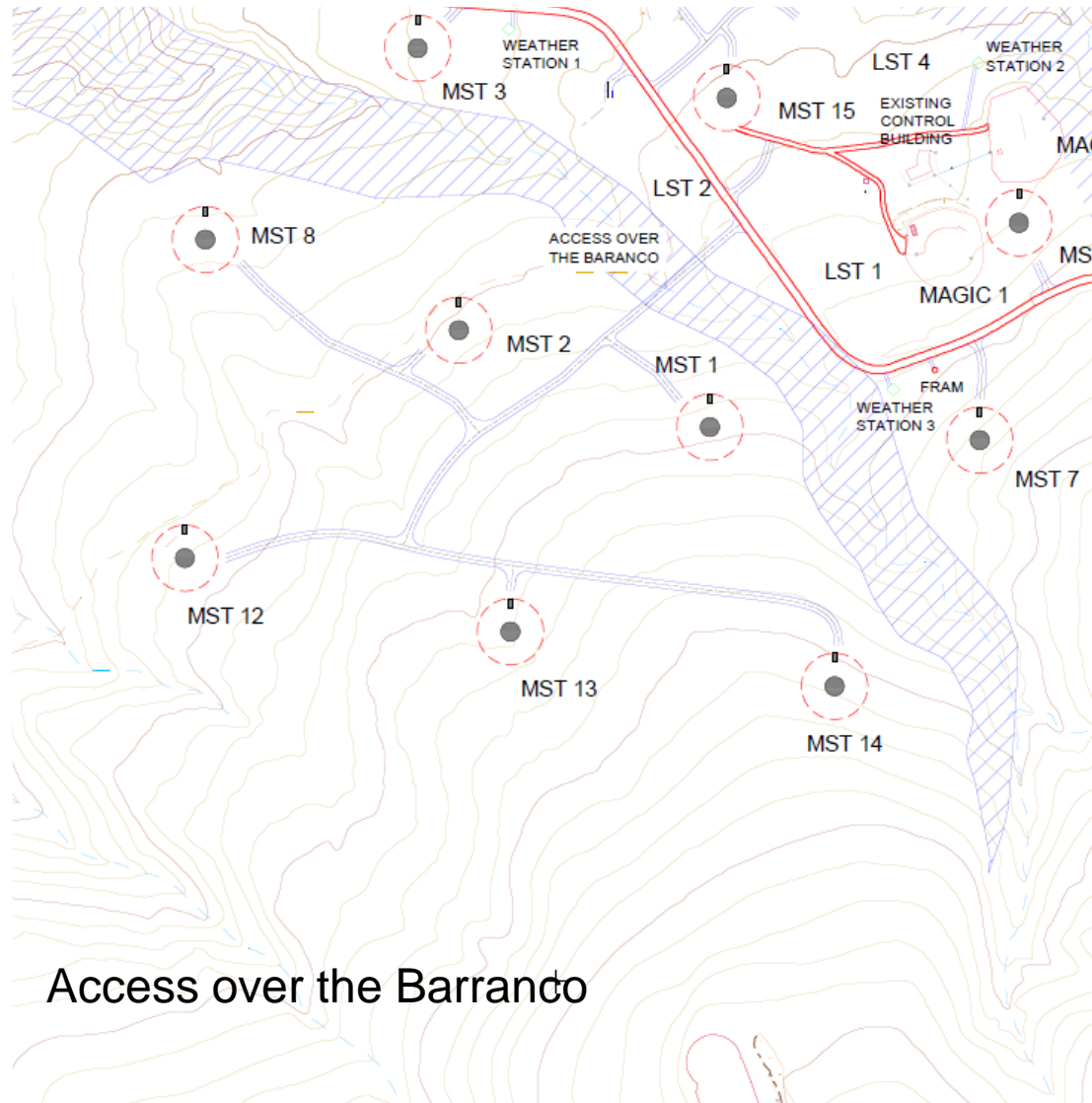
- Technical Building
- Remaining MSTs
- Roads
- Power and Data Networks
- Landscaping

Construction – Phase 2



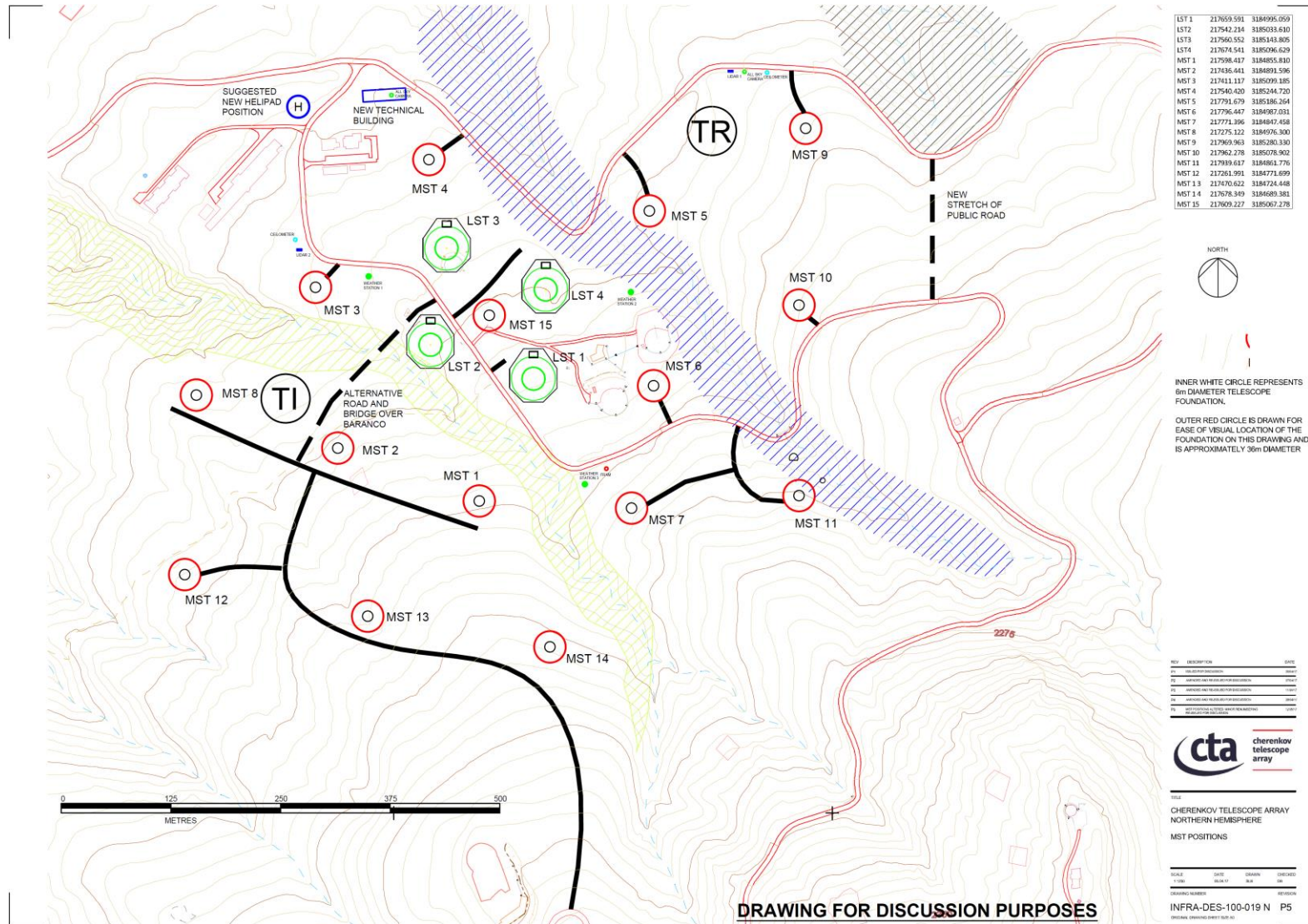
DRAWING FOR DISCUSSION

CTA-N Access to the Site Option 1



Access over the Barranco

CTA-N Access to the Site Option 2



| | | |
|--------|------------|-------------|
| LST 1 | 217659.591 | 3184995.059 |
| LST 2 | 217542.214 | 3185033.610 |
| LST 3 | 217560.552 | 3185143.805 |
| LST 4 | 217674.541 | 3185096.629 |
| MST 1 | 217598.417 | 3184855.810 |
| MST 2 | 217436.441 | 3184891.596 |
| MST 3 | 217411.117 | 3185099.185 |
| MST 4 | 217540.420 | 3185246.720 |
| MST 5 | 217791.679 | 3185186.264 |
| MST 6 | 217796.447 | 3184967.031 |
| MST 7 | 217771.196 | 3184847.458 |
| MST 8 | 217275.122 | 3184976.300 |
| MST 9 | 217869.963 | 3185283.330 |
| MST 10 | 217862.278 | 3185078.902 |
| MST 11 | 217839.617 | 3184861.776 |
| MST 12 | 217281.991 | 3184771.699 |
| MST 13 | 217370.622 | 3184724.448 |
| MST 14 | 217678.349 | 3184689.381 |
| MST 15 | 217609.227 | 3185002.278 |

NORTH

INNER WHITE CIRCLE REPRESENTS 6m DIAMETER TELESCOPE FOUNDATION.
OUTER RED CIRCLE IS DRAWN FOR EASE OF VISUAL LOCATION OF THE FOUNDATION ON THIS DRAWING AND IS APPROXIMATELY 35m DIAMETER

| REV | DESCRIPTION | DATE |
|-----|-----------------------|------------|
| PS | ISSUED FOR PERMITTING | 2019-07-15 |
| PS | ISSUED FOR PERMITTING | 2019-07-15 |
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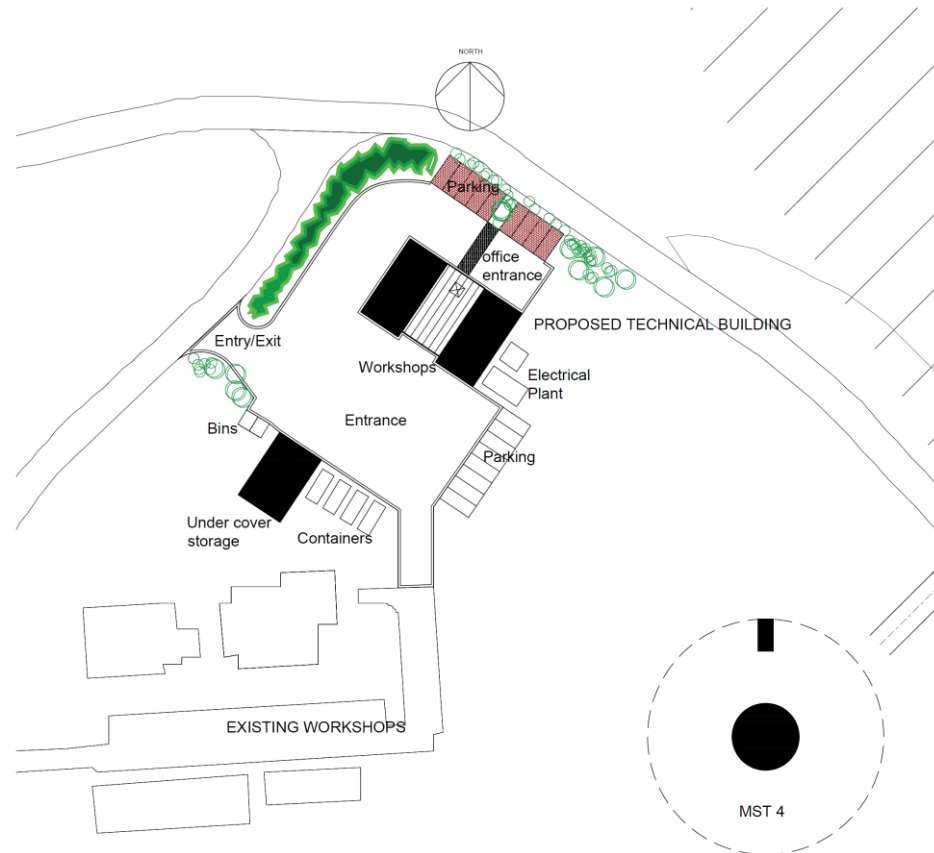
PROJECT
CHERENKOV TELESCOPE ARRAY
NORTHERN HEMISPHERE

MST POSITIONS

| SCALE | DATE | DESIGNER | CHECKED |
|--------------------------------------|------------|----------|---------|
| 1:1000 | 2019-07-15 | W.A. | W.A. |
| DRAWING NUMBER | REVISION | | |
| INFRA-DES-100-019 N | PS | | |
| <small>ISSUED FOR PERMITTING</small> | | | |

DRAWING FOR DISCUSSION PURPOSES

CTA-North Technical Building



SITE PLAN 1:50
FOR LOCATION SEE INFRA-DES-100-022

Preliminary Concept for Technical Building and Facilities

Technical Building – Front Elevation



Preliminary Concept

Technical Building – Rear Elevation



Preliminary Concept

Phase 1 Design Schedule LST, MST 'Short Project' from Q4 2017 to Q4 2018

- Stage 2 permit submission Q1 2019
- Start construction phase 1 Q3 2019
- Complete construction of phase 1 Q2 2021

- **Phase 2 Design Q2 2018**

North Computing & Network



- Final specifications agreed for the full northern computing & network system
 - 2000 processor cores
 - 3 PB disk space
- Expected to be installed by March 2018



The End



Any Questions?

Thank you.