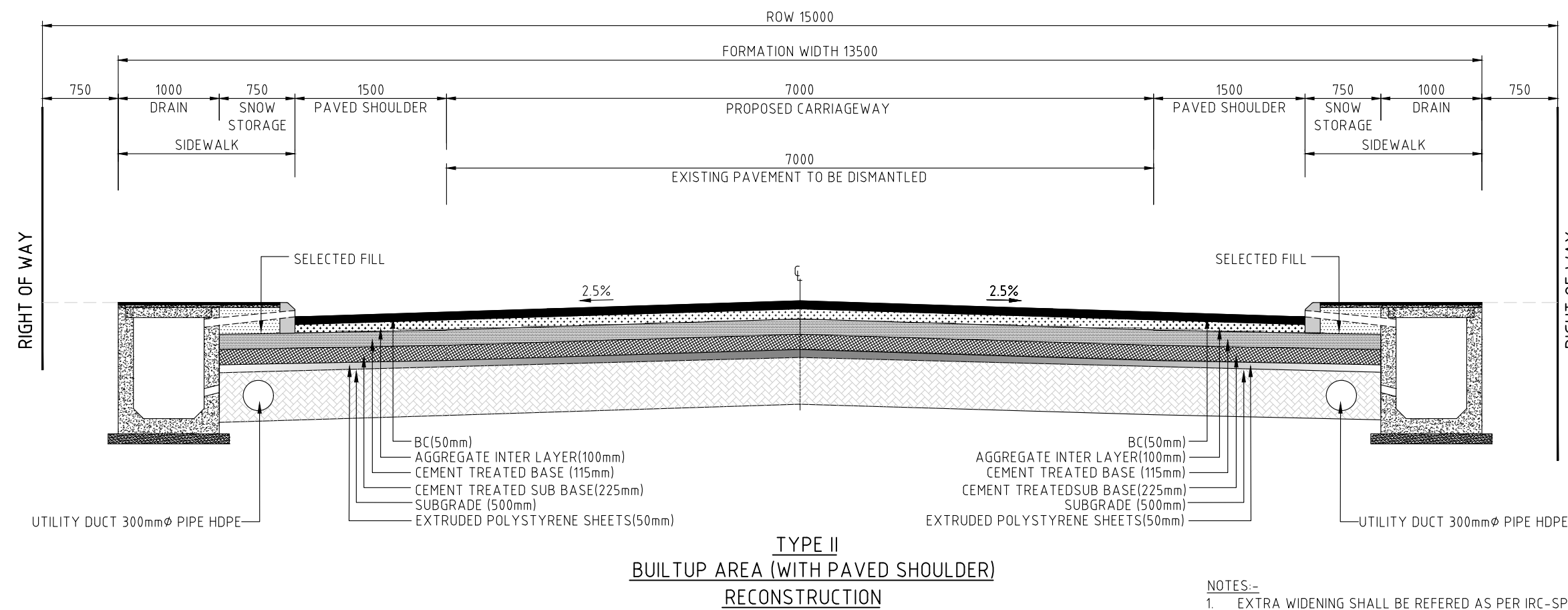
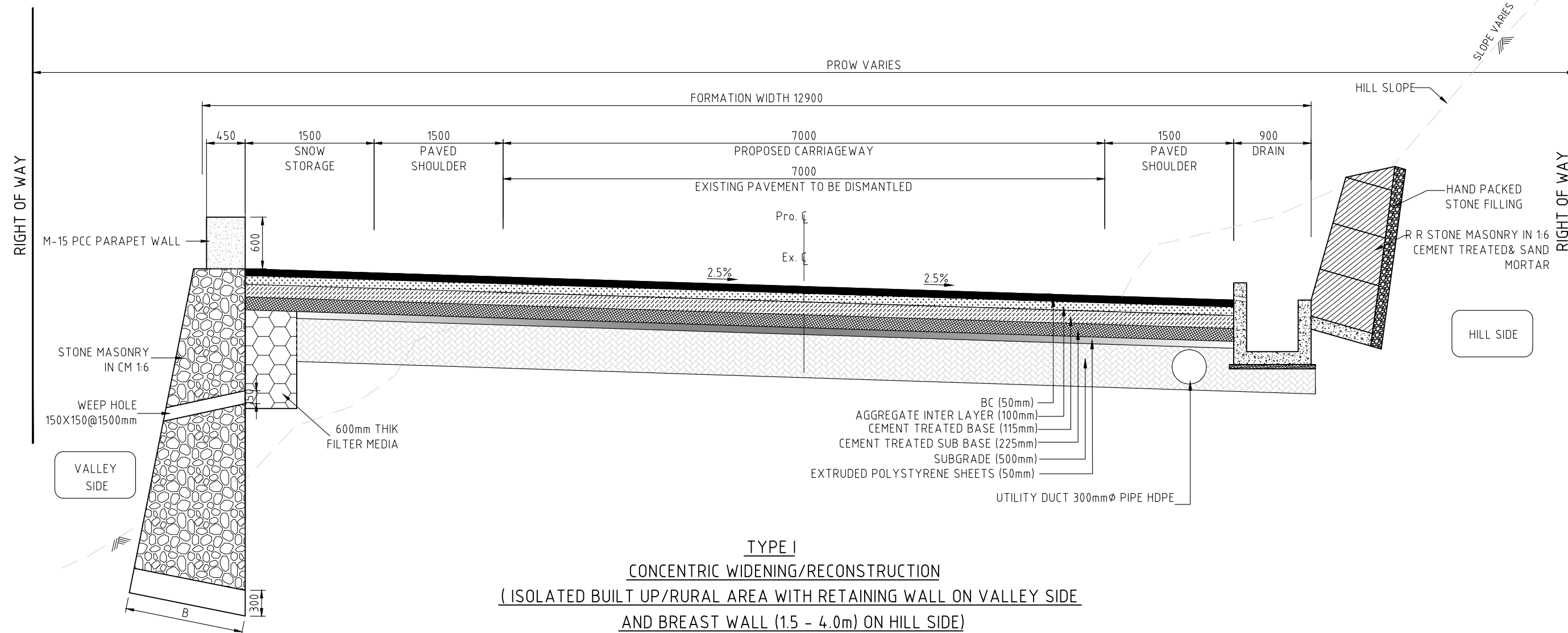




- NOTES:-
- EXTRA WIDENING SHALL BE REFERED AS PER IRC-SP 48 1998,IRC-SP 73 2015 & IRC 52 2001 AT CURVE LOCATIONS WITH RADIUS LESS THAN 300m.
 - SLOPE TREATMENT SHOWN ON HILL/VALLEY SLOPES ARE INDICATIVE AND MAY VARY BASED ON CONFIRMATORY GEO TECHNICAL INVESTIGATION AND GEOLOGICAL STUDY
 - THE TYPE OF PROTECTION MATERIAL FOR RETAINING WALL , BREAST WALL MAY BE CHANGED BASED ON SITE REQUIREMENT.
 - AS PER IRC-SP 48 1998, CLAUSE NO 6.5.2(4), ON ROADS SUBJECTED TO HEAVY SNOWFALL, WHERE SNOW CLEARANCE IS DONE OVER LONG PERIODS, ROADWAY WIDTH MAY BE INCREASED BY 1.5M. HOWEVER THE REQUIREMENT OF SUCH WIDENING MAY BE EXAMINED WITH REFERENCE TO GROUND CONDITIONS IN EACH CASE CONSIDERING TERRAIN, TRAFFIC AND OTHER INFLUENCING CONDITIONS/FACTORS
 - DEPTH OF CONSTRUCTION (PAVEMENT) SHOULD NOT BE LESS THAN DEPTH OF FROST PENETRATION AND SHOULD COMPOSE OF NON-FROST SUSCEPTIBLE MATERIAL, IN ANY CASE THE THICKNESS SHOULD NOT BE LESS THAN 45cm AS PER IRC-SP:48:1998.

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	APPROVAL
A		FOR TENDER	

SCALES AT A2 SIZE DRAWING

HORIZ. 1:50 0.50 0 0.50 1.00 1.50 2.00 2.50m

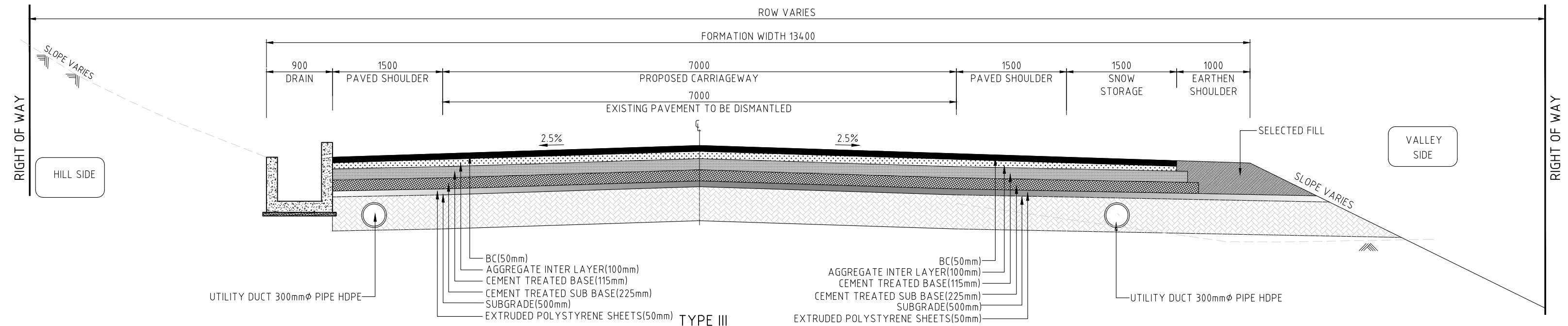
CLIENT APPROVED DATE CONSULTANT SIGNATURE

DESIGNER
BT
RK
MP
NA
SMEC (India) Pvt Ltd. 1st Floor,
Novus Tower, West Wing, Plot Number -18,
Sector -18, Gurgaon - 122015, Haryana

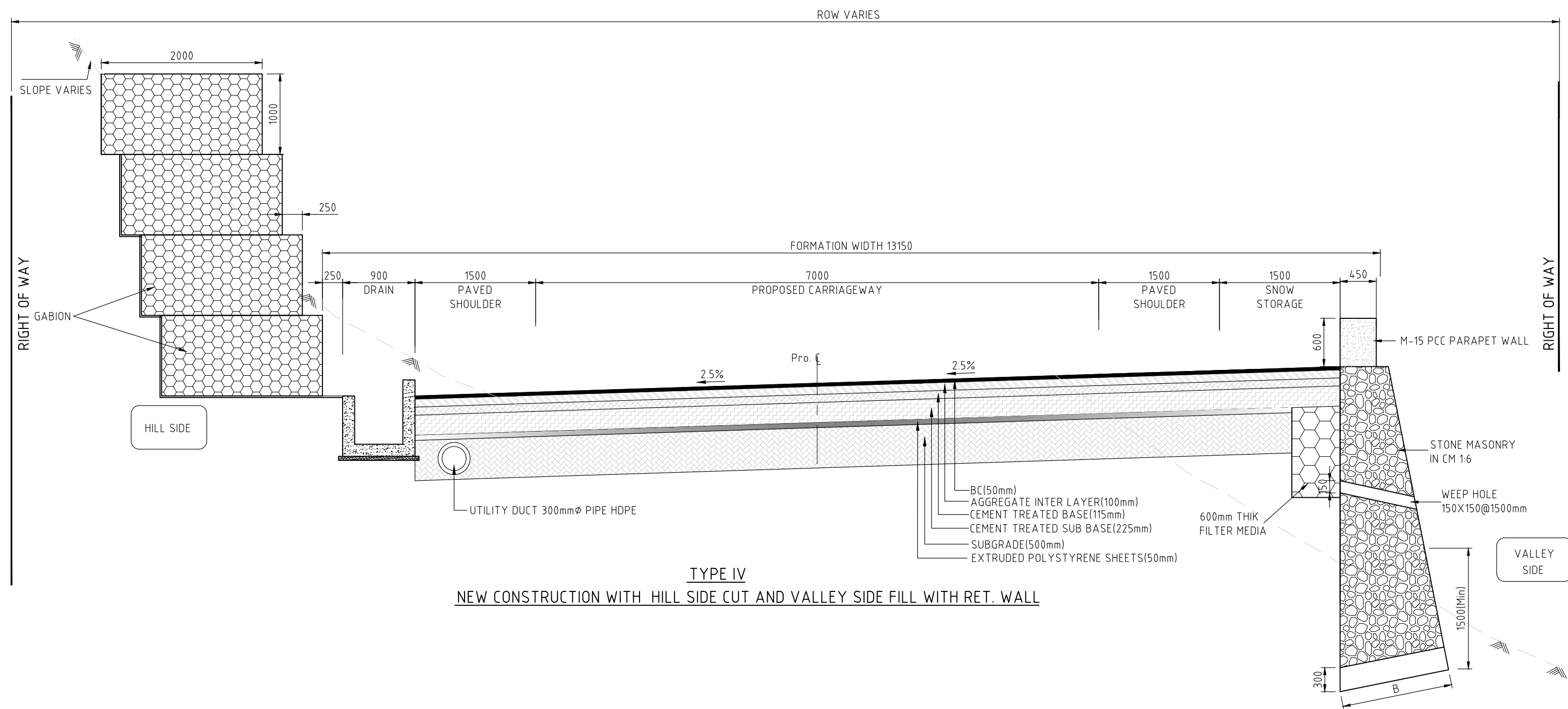
CLIENT
APPROVED DATE
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT
CORPORATION LTD. PTI BUILDING, 4 PARLIAMENT STREET,
SANSAD MARG AREA, NEW DELHI- 110001

PROJECT
CONSTRUCTION OF SONAMARG BYPASS
FROM DESIGN CH. 0+000 (EXISTING KM 82.00 ON NH-1)
TO CH. 6+320 ON SRINAGAR-LEH ROAD (NH-1)
IN THE UT OF JAMMU & KASHMIR

PROJECT TITLE
TYPICAL CROSS SECTION
(SHEET 1)
DRAWING STATUS
TENDER
PROJECT / DRAWING No.
7061520-TCS-PI-001
ISSUE
A



TYPE III
CONCENTRIC WIDENING IN RURAL AREA ON MILD SLOPE TERRAIN



TYPE IV
NEW CONSTRUCTION WITH HILL SIDE CUT AND VALLEY SIDE FILL WITH RET. WALL

NOTES:-

- EXTRA WIDENING SHALL BE REFERED AS PER IRC-SP 48 1998,IRC-SP 73 2015 & IRC 52 2001 AT CURVE LOCATIONS WITH RADIUS LESS THAN 300m.
- SLOPE TREATMENT SHOWN ON HILL/VALLEY SLOPES ARE INDICATIVE AND MAY VARY BASED ON CONFIRMATORY GEO TECHNICAL INVESTIGATION AND GEOLOGICAL STUDY
- THE TYPE OF PROTECTION MATERIAL FOR RETAINING WALL , BREAST WALL MAY BE CHANGED BASED ON SITE REQUIREMENT.
- AS PER IRC-SP 48 1998, CLAUSE NO 6.5.2(4), ON ROADS SUBJECTED TO HEAVY SNOWFALL, WHERE SNOW CLEARANCE IS DONE OVER LONG PERIODS, ROADWAY WIDTH MAY BE INCREASED BY 15M. HOWEVER THE REQUIREMENT OF SUCH WIDENING MAY BE EXAMINED WITH REFERENCE TO GROUND CONDITIONS IN EACH CASE CONSIDERING TERRAIN, TRAFFIC AND OTHER INFLUENCING CONDITIONS/FACTORS
- DEPTH OF CONSTRUCTION (PAVEMENT) SHOULD NOT BE LESS THAN DEPTH OF FROST PENETRATION AND SHOULD COMPOSE OF NON-FROST SUSCEPTIBLE MATERIAL, IN ANY CASE THE THICKNESS SHOULD NOT BE LESS THAN 45cm AS PER IRC-SP:48:1998.

SCALES AT A2 SIZE DRAWING

HORIZ. 1:50 0.50 0 0.50 1.00 1.50 2.00 2.50m

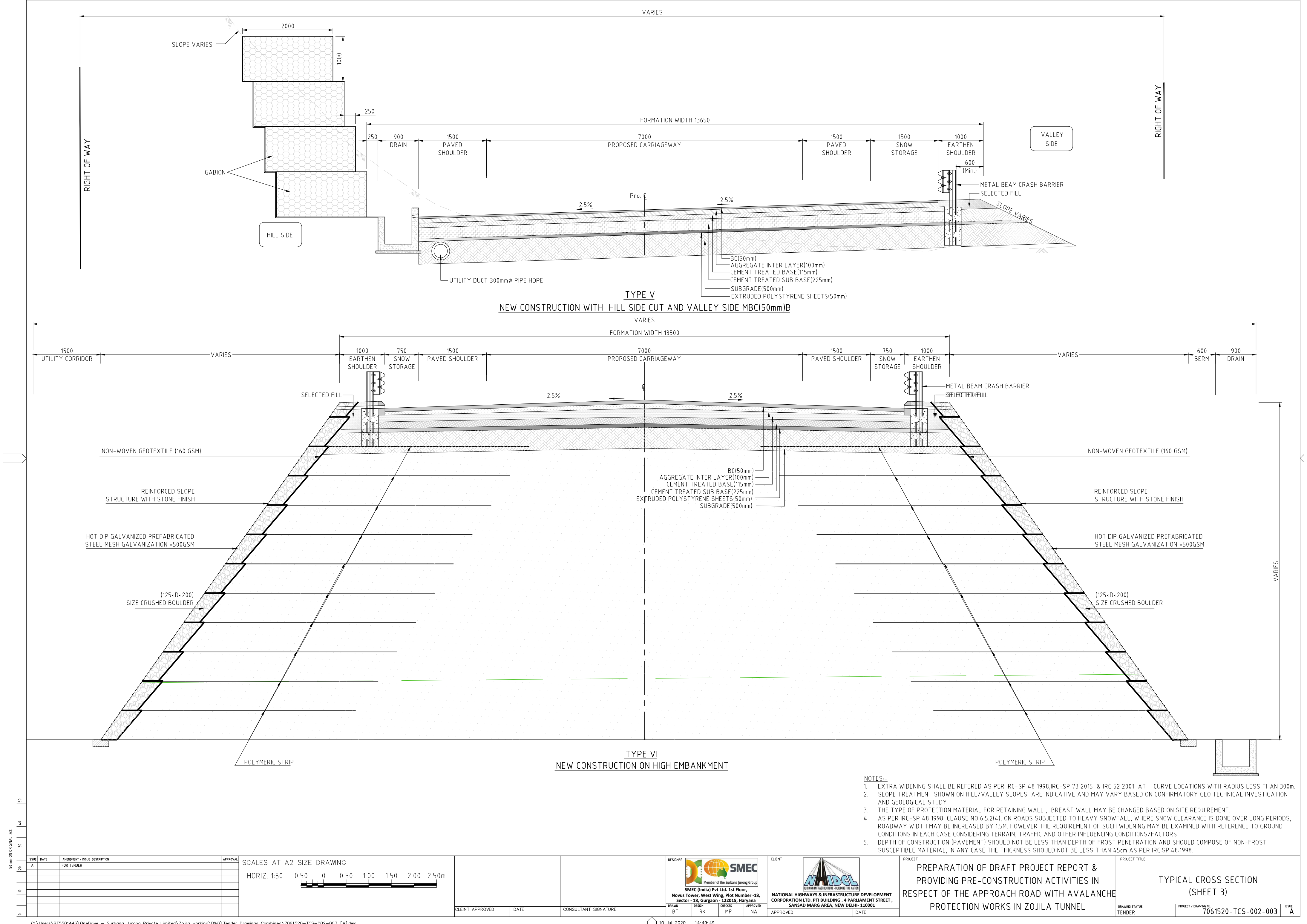
CLIENT APPROVED DATE CONSULTANT SIGNATURE

DESIGNER
BT
RK
MP
NA
SMEC (India) Pvt Ltd. 1st Floor,
Novus Tower, West Wing, Plot Number -18,
Sector -18, Gurgaon -122015, Haryana

CLIENT
APPROVED DATE
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT
CORPORATION LTD. PFI BUILDING - 4 PARLIAMENT STREET,
SANSAD MARG AREA, NEW DELHI- 110001

PROJECT
PREPARATION OF DRAFT PROJECT REPORT &
PROVIDING PRE-CONSTRUCTION ACTIVITIES IN
RESPECT OF THE APPROACH ROAD WITH AVALANCHE
PROTECTION WORKS IN ZOJILA TUNNEL

PROJECT TITLE
TYPICAL CROSS SECTION
(SHEET 2)
DRAWING STATUS
TENDER
PROJECT / DRAWING No.
7061520-TCS-002-002
ISSUE
A



TYPE V
NEW CONSTRUCTION WITH HILL SIDE CUT AND VALLEY SIDE MBC(50mm)B

TYPE VI
NEW CONSTRUCTION ON HIGH EMBANKMENT

- NOTES:-
- EXTRA WIDENING SHALL BE REFERRED AS PER IRC-SP 48 1998,IRC-SP 73 2015 & IRC 52 2001 AT CURVE LOCATIONS WITH RADIUS LESS THAN 300m.
 - SLOPE TREATMENT SHOWN ON HILL/VALLEY SLOPES ARE INDICATIVE AND MAY VARY BASED ON CONFIRMATORY GEO TECHNICAL INVESTIGATION AND GEOLOGICAL STUDY
 - THE TYPE OF PROTECTION MATERIAL FOR RETAINING WALL , BREAST WALL MAY BE CHANGED BASED ON SITE REQUIREMENT.
 - AS PER IRC-SP 48 1998, CLAUSE NO 6.5.2(4), ON ROADS SUBJECTED TO HEAVY SNOWFALL, WHERE SNOW CLEARANCE IS DONE OVER LONG PERIODS, ROADWAY WIDTH MAY BE INCREASED BY 15M. HOWEVER THE REQUIREMENT OF SUCH WIDENING MAY BE EXAMINED WITH REFERENCE TO GROUND CONDITIONS IN EACH CASE CONSIDERING TERRAIN, TRAFFIC AND OTHER INFLUENCING CONDITIONS/FACTORS
 - DEPTH OF CONSTRUCTION (PAVEMENT) SHOULD NOT BE LESS THAN DEPTH OF FROST PENETRATION AND SHOULD COMPOSE OF NON-FROST SUSCEPTIBLE MATERIAL, IN ANY CASE THE THICKNESS SHOULD NOT BE LESS THAN 45cm AS PER IRC-SP:48:1998.

SCALES AT A2 SIZE DRAWING
HORIZ. 1:50 0.50 0 0.50 1.00 1.50 2.00 2.50m

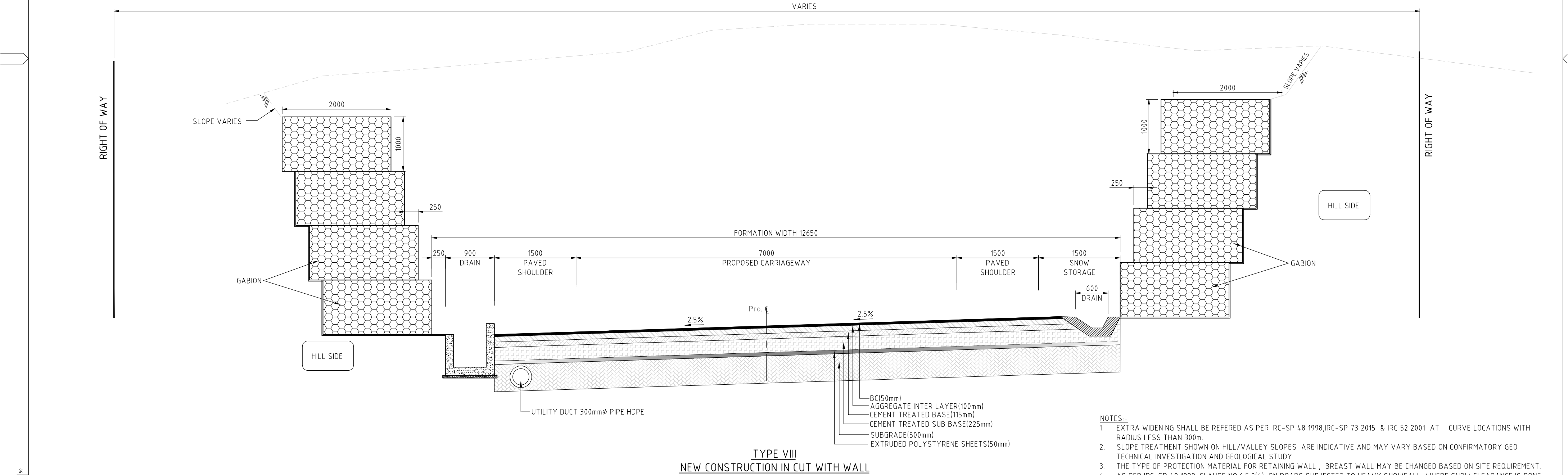
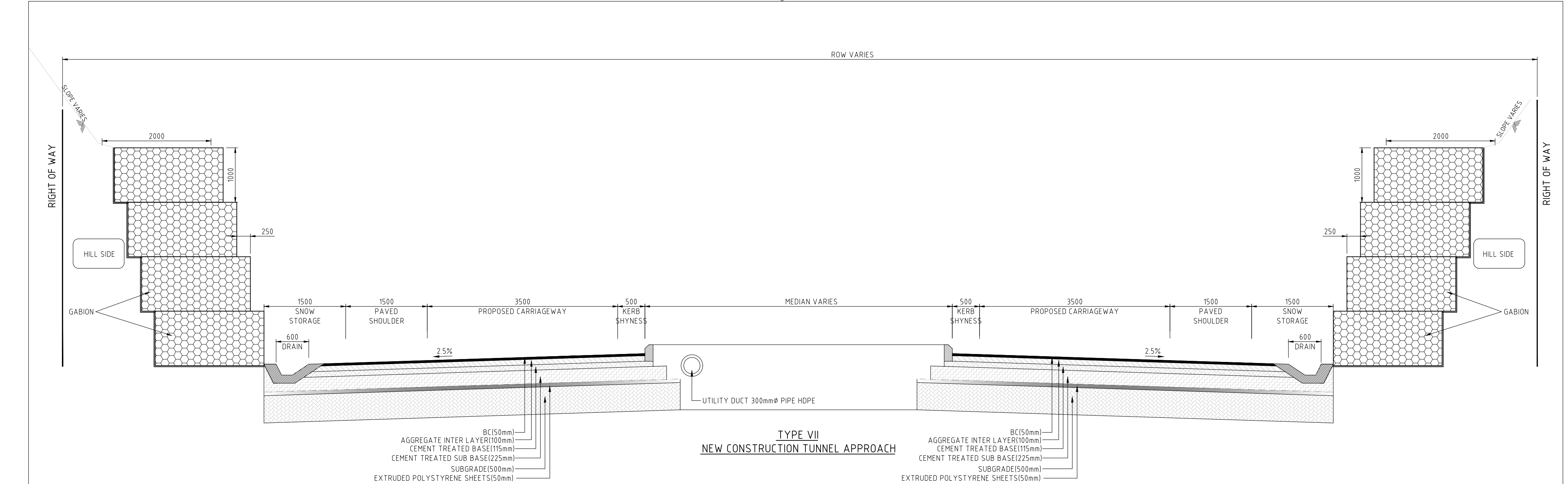
CLIENT APPROVED DATE CONSULTANT SIGNATURE

DESIGNER
BT RK MP NA
SMEC (India) Pvt Ltd. 1st Floor,
Novus Tower, West Wing, Plot Number -18,
Sector -18, Gurgaon -122015, Haryana

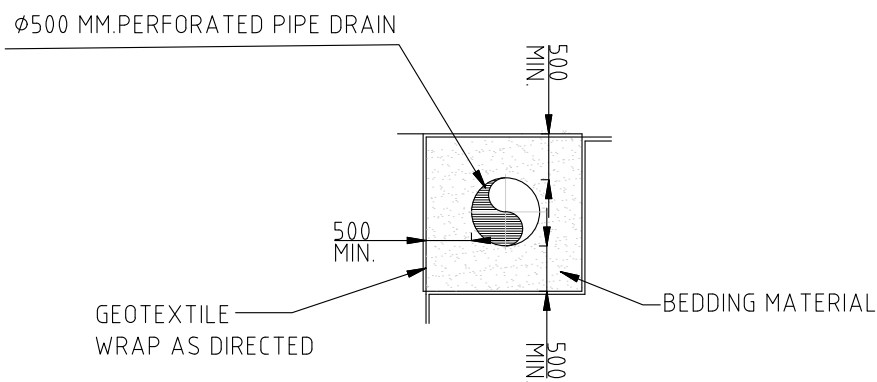
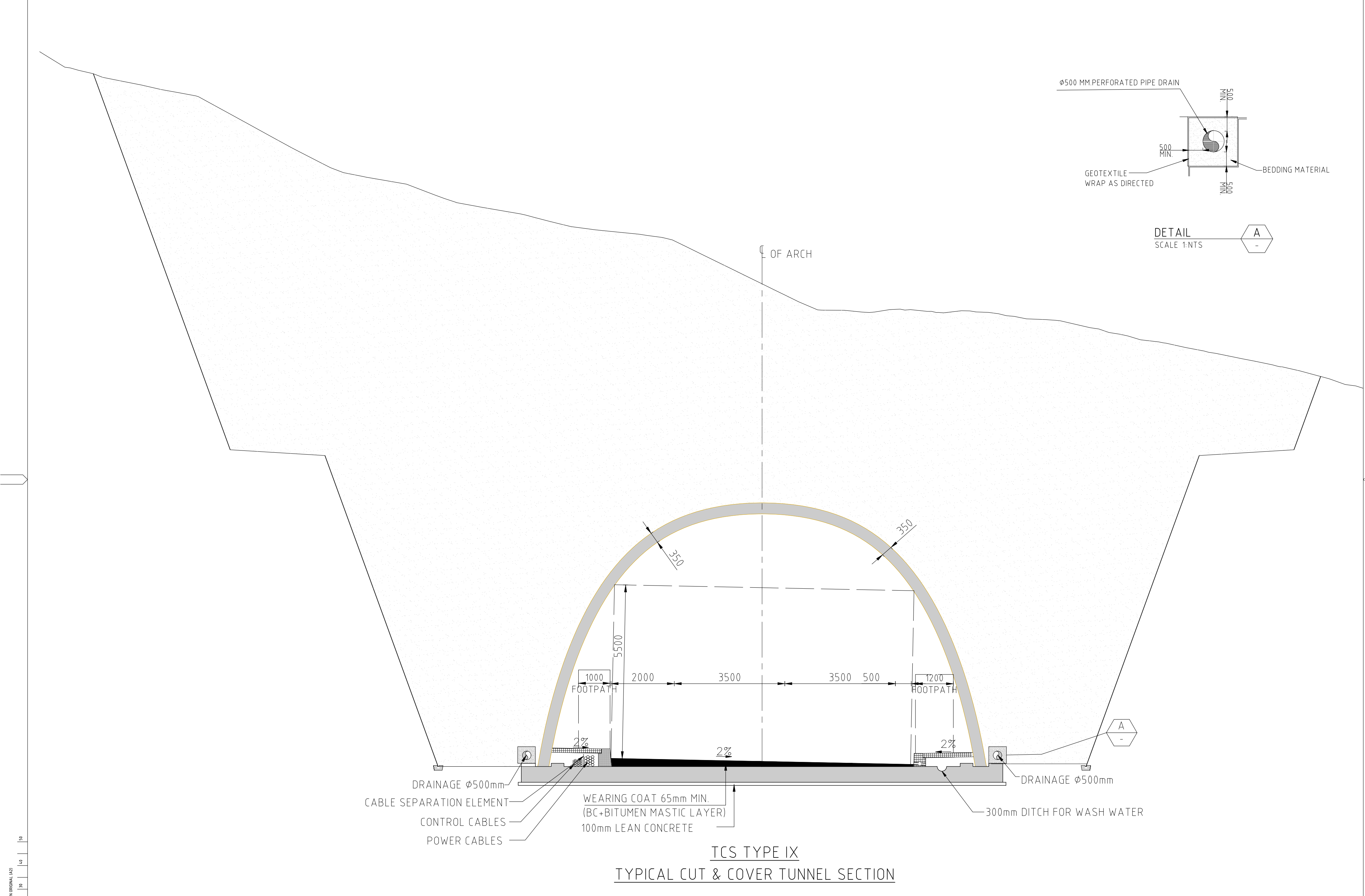
CLIENT
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PFI BUILDING - 4 PARLIAMENT STREET, SANSAD MARG AREA, NEW DELHI- 110001

PROJECT
PREPARATION OF DRAFT PROJECT REPORT & PROVIDING PRE-CONSTRUCTION ACTIVITIES IN RESPECT OF THE APPROACH ROAD WITH AVALANCHE PROTECTION WORKS IN ZOJILA TUNNEL

PROJECT TITLE
TYPICAL CROSS SECTION (SHEET 3)
DRAWING STATUS
TENDER
PROJECT / DRAWING No.
7061520-TCS-002-003
ISSUE
A



- NOTES:-
1. EXTRA WIDENING SHALL BE REFERED AS PER IRC-SP 48 1998,IRC-SP 73 2015 & IRC 52 2001 AT CURVE LOCATIONS WITH RADIUS LESS THAN 300m.
 2. SLOPE TREATMENT SHOWN ON HILL/VALLEY SLOPES ARE INDICATIVE AND MAY VARY BASED ON CONFIRMATORY GEO TECHNICAL INVESTIGATION AND GEOLOGICAL STUDY
 3. THE TYPE OF PROTECTION MATERIAL FOR RETAINING WALL , BREAST WALL MAY BE CHANGED BASED ON SITE REQUIREMENT.
 4. AS PER IRC-SP 48 1998, CLAUSE NO 6.5.2(4), ON ROADS SUBJECTED TO HEAVY SNOWFALL, WHERE SNOW CLEARANCE IS DONE OVER LONG PERIODS, ROADWAY WIDTH MAY BE INCREASED BY 15M. HOWEVER THE REQUIREMENT OF SUCH WIDENING MAY BE EXAMINED WITH REFERENCE TO GROUND CONDITIONS IN EACH CASE CONSIDERING TERRAIN, TRAFFIC AND OTHER INFLUENCING CONDITIONS/FACTORS
 5. DEPTH OF CONSTRUCTION (PAVEMENT) SHOULD NOT BE LESS THAN DEPTH OF FROST PENETRATION AND SHOULD COMPOSE OF NON-FROST SUSCEPTIBLE MATERIAL, IN ANY CASE THE THICKNESS SHOULD NOT BE LESS THAN 45cm AS PER IRC-SP-48:1998.



DETAIL
SCALE 1:NTS

TCS TYPE IX
TYPICAL CUT & COVER TUNNEL SECTION

50 mm ON ORIGINAL (A2)

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	APPROVAL
A		FOR TENDER	



CLEINT APPROVED	DATE	CONSULTANT SIGNATURE

DESIGNER

SMEC (India) Pvt Ltd. 1st Floor,
Novus Tower, West Wing, Plot Number -18,
Sector - 18, Gurgaon - 122015, Haryana

DRAWN BT
DESIGN RK
CHECKED MP
APPROVED NA

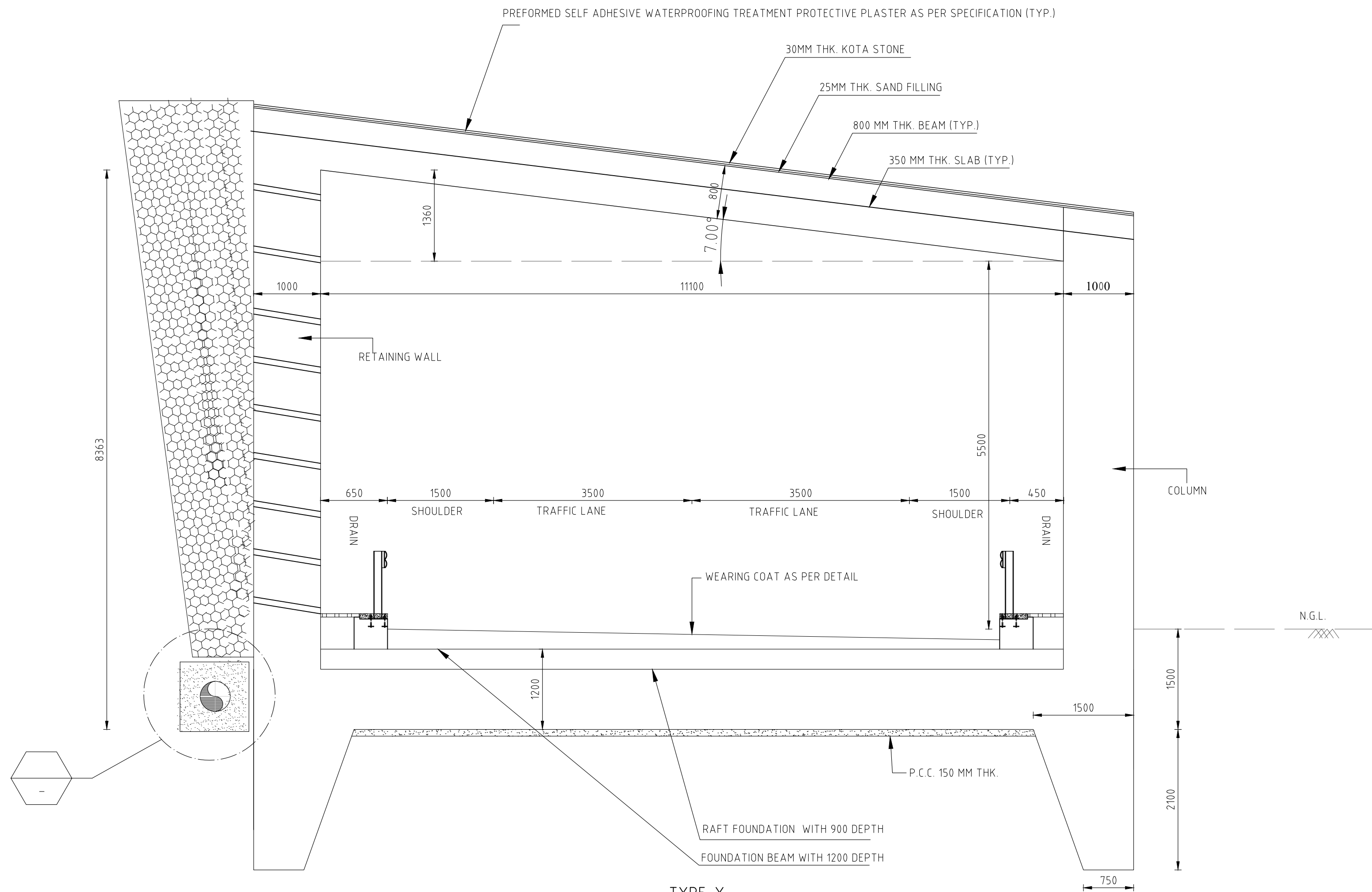
CLIENT

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PFI BUILDING - 4 PARLIAMENT STREET,
SANSAD MARG AREA, NEW DELHI- 110001

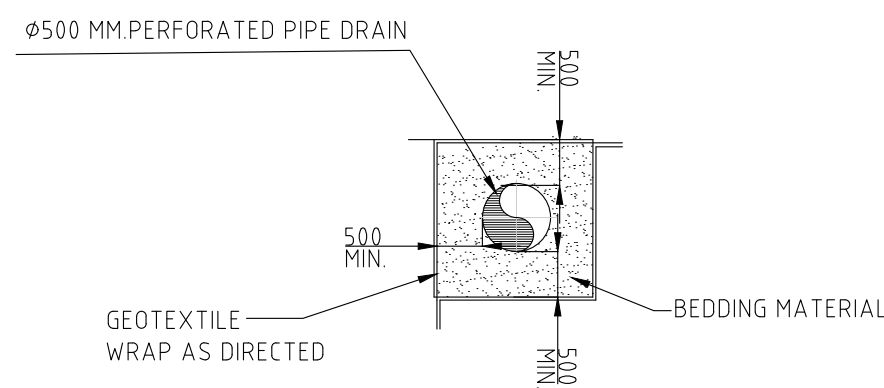
APPROVED
DATE

PROJECT
PREPARATION OF DRAFT PROJECT REPORT &
PROVIDING PRE-CONSTRUCTION ACTIVITIES IN
RESPECT OF THE APPROACH ROAD WITH AVALANCHE
PROTECTION WORKS IN ZOJILA TUNNEL

PROJECT TITLE TYPICAL CROSS SECTION (SHEET 5)		
DRAWING STATUS TENDER	PROJECT / DRAWING No. 7061520-TCS-002-005	ISSUE A



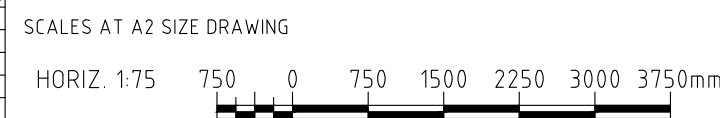
TYPE-X
TYPICAL CROSS SECTION FOR SNOW GALLERY



DETAIL
SCALE 1: NTS

50 mm (ON ORIGINAL A2)

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	APPROVAL
A		FOR TENDER	



CLIENT APPROVED DATE CONSULTANT SIGNATURE

DESIGNER

SMEC
Member of the Surlana Jorung Group
SMEC (India) Pvt Ltd. 1st Floor,
Novus Tower, West Wing, Plot Number-18,
Sector - 18, Gurgaon - 122015, Haryana

DRAWN: BT DESIGN: RK CHECKED: MP APPROVED: NA

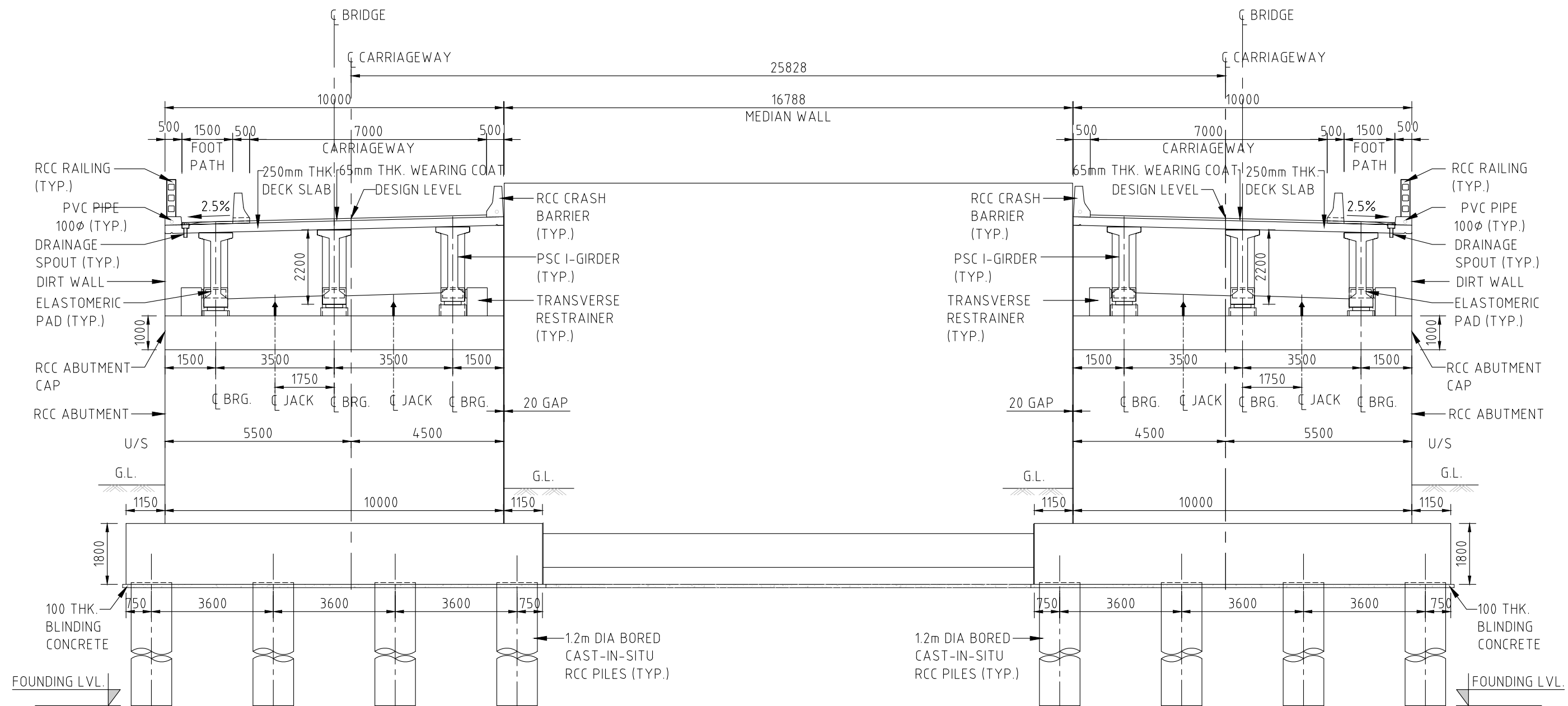
CLIENT

NHAI
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PFI BUILDING - 4 PARLIAMENT STREET, SANSAD MARG AREA, NEW DELHI- 110001

APPROVED DATE

PROJECT
PREPARATION OF DRAFT PROJECT REPORT & PROVIDING PRE-CONSTRUCTION ACTIVITIES IN RESPECT OF THE APPROACH ROAD WITH AVALANCHE PROTECTION WORKS IN ZOJILA TUNNEL

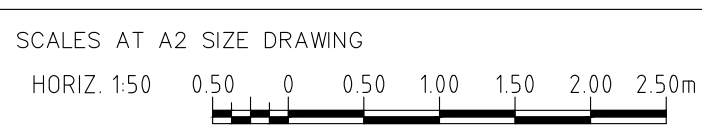
PROJECT TITLE			PROJECT / DRAWING No.		ISSUE
TYPICAL CROSS SECTION (SHEET 7)			7061520-TCS-002-006		A
DRAWING STATUS	TENDER				



TCS TYPE XI
TYPICAL CROSS-SECTION OF BRIDGE WITH PROTECTED FOOTPATH
AS PER IRC-SP-73-2015

50 mm (ON ORIGINAL, A2)

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	APPROVAL
A		FOR TENDER	



CLIENT APPROVED	DATE	CONSULTANT SIGNATURE

DESIGNER

SMEC
Member of the Surbana Jurong Group

SMEC (India) Pvt Ltd. 1st Floor,
Novus Tower, West Wing, Plot Number-18,
Sector - 18, Gurgaon - 122015, Haryana

DRAWN	DESIGN	CHECKED	APPROVED
PK	RK	MP	NA

CLIENT

NHAI
BUILDING INFRASTRUCTURE - BUILDING THE NATION

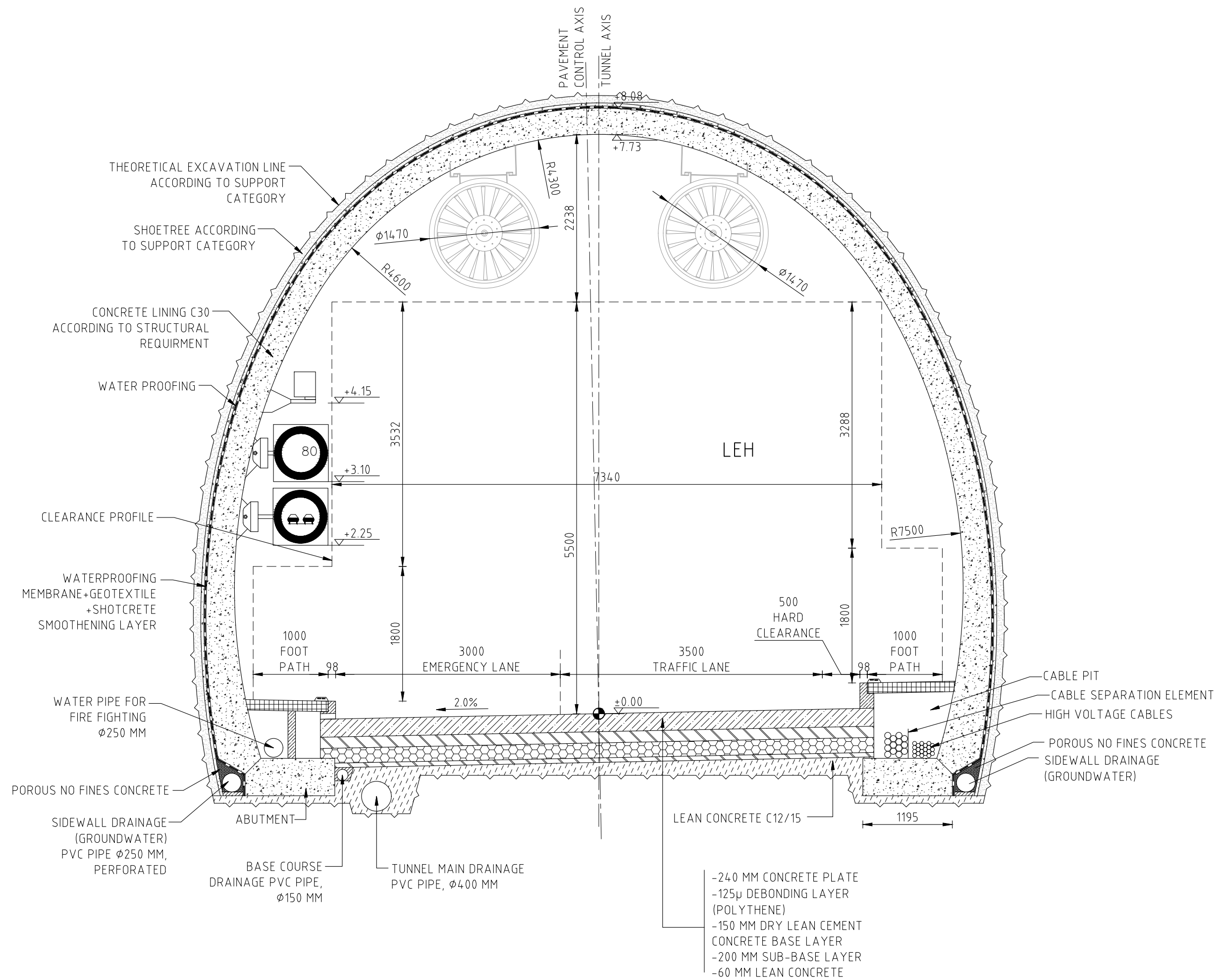
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT
CORPORATION LTD. PFI BUILDING, 4 PARLIAMENT STREET,
SANSAD MARG AREA, NEW DELHI- 110001

APPROVED	DATE

PROJECT

PREPARATION OF DRAFT PROJECT REPORT &
PROVIDING PRE-CONSTRUCTION ACTIVITIES IN
RESPECT OF THE APPROACH ROAD WITH AVALANCHE
PROTECTION WORKS IN ZOJILA TUNNEL

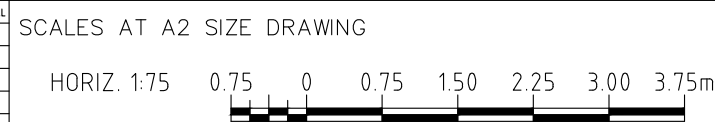
PROJECT TITLE	TYPICAL CROSS SECTION BRIDGE
DRAWING STATUS	TENDER
PROJECT / DRAWING No.	7061520-TCS-002-007
ISSUE	A



TCS XII
TYPICAL CROSS SECTION MAIN TUNNEL TUBE 1 RHS
(SCALE 1:50)

NOTES:-
1). ALL DIMENSION ARE IN METER UNLESS NOTED OTHERWISE.

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	APPROVAL
A		FOR TENDER	



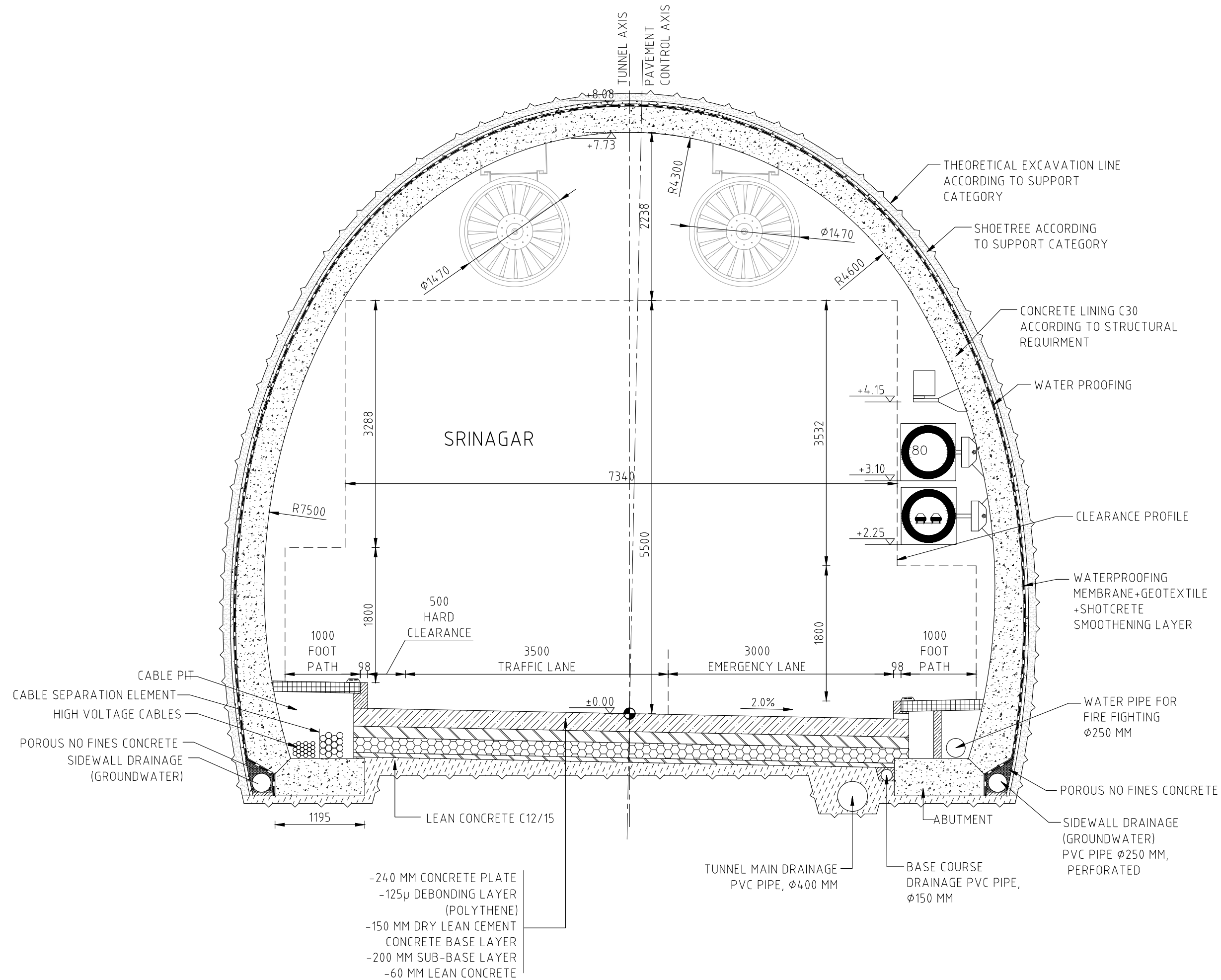
CLIENT APPROVED	DATE	CONSULTANT SIGNATURE

DESIGNER	 Member of the Surbana Jurong Group		
SMCE (India) Pvt Ltd. 1st Floor, Novus Tower, West Wing, Plot Number -18, Sector - 18, Gurgaon - 122015, Haryana			
DRAWN	DESIGN	CHECKED	APPROVED
PK	RK	MP	NA

CLIENT	NH&IDCL
BUILDING INFRASTRUCTURE - BUILDING THE NATION	
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI BUILDING - 4 PARLIAMENT STREET, SANSAD MARG AREA, NEW DELHI- 110001	
APPROVED	DATE

PROJECT	PREPARATION OF DRAFT PROJECT REPORT & PROVIDING PRE-CONSTRUCTION ACTIVITIES IN RESPECT OF THE APPROACH ROAD WITH AVALANCHE PROTECTION WORKS IN ZOJILA TUNNEL
---------	--

PROJECT TITLE	MAIN TUNNEL -1 REGULAR CROSS SECTION
DRAWING STATUS	TENDER
PROJECT / DRAWING No.	7061520-TCS-002-008
ISSUE	A



TCS XII
TYPICAL CROSS SECTION MAIN TUNNEL TUBE 2 LHS
(SCALE 1:50)

NOTES:-
1). ALL DIMENSION ARE IN METER UNLESS NOTED OTHERWISE.

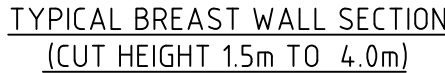
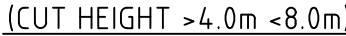
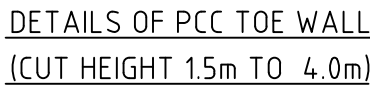
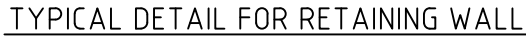
ISSUE				APPROVAL			
NO	DATE	AMENDMENT / ISSUE DESCRIPTION	FOR TENDER				
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

SCALES AT A2 SIZE DRAWING			
HORIZ. 1:75	0.75	0	0.75 1.50 2.25 3.00 3.75m

CLIENT APPROVED	DATE	CONSULTANT SIGNATURE

DESIGNER	SMC	CLIENT	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PFI BUILDING - 4 PARLIAMENT STREET, SANSAD MARG AREA, NEW DELHI- 110001
SMC (India) Pvt Ltd. 1st Floor, Novus Tower, West Wing, Plot Number -18, Sector -18, Gurgaon - 122015, Haryana			
DRAWN	DESIGN	CHECKED	APPROVED
PK	RK	MP	NA

PROJECT	PREPARATION OF DRAFT PROJECT REPORT & PROVIDING PRE-CONSTRUCTION ACTIVITIES IN RESPECT OF THE APPROACH ROAD WITH AVALANCHE PROTECTION WORKS IN ZOJILA TUNNEL
PROJECT TITLE	MAIN TUNNEL-2 REGULAR CROSS SECTION
DRAWING STATUS	TENDER
PROJECT / DRAWING No.	7061520-TCS-002-009
ISSUE	A



1. EXTRA WIDENING AS PER IRC-73 & IRC-52 PROPOSED AT CURVE LOCATIONS WITH RADIUS LESS THAN 300m.
2. SLOPE TREATMENT SHOWN ON HILL/VALLEY SLOPES ARE INDICATIVE AND MAY VARY BASED ON CONFIRMATORY GEO TECHNICAL INVESTIGATION AND GEOLOGICAL STUDY
3. THE TYPE OF PROTECTION MATERIAL FOR RETAINING WALL , BREAST WALL MAY BE CHANGED BASED ON SITE REQUIREMENT.
4. FOR DETAILS OF GUARD RAIL / MBCB REFER STANDARD DRAWINGS
5. MIN. CBR 15% (LESS CBR SHALL BE TREATED TO BE REPLACED WITH SELECTED EARTH WITH CBR >15%)

SCALES AT A2 SIZE DRAWING

HORIZ. 1:50 0.50 0 0.50 1.00 1.50 2.00 2.50m

CLEINT APPROVED	DATE	CONSULTANT SIGNATURE
-----------------	------	----------------------

CLIENT



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI BUILDING . 4 PARLIAMENT STREET SANSAD MARG AREA, NEW DELHI- 110001

APPROVED	DATE
----------	------

PREPARATION OF DRAFT PROJECT REPORT &
PROVIDING PRE-CONSTRUCTION ACTIVITIES IN
RESPECT OF THE APPROACH ROAD WITH AVALANCHE
PROTECTION WORKS IN ZOJILA TUNNEL

PROJECT TITLE		
TYPICAL WALL DETAIL		
DRAWING STATUS SEARCHED	PROJECT / DRAWING No. 7061520 TCS 002 011	ISSUE 4

50 mm (ON ORIGINAL, A2)

20
10
0

C:\Users\BT5501446\OneDrive - Surbana Jurang Private Limited\Zojila working\DWG\Tender Drawings Combined\7061520-TCS-002-012_[A].dwg

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	APPROVAL
A		FOR TENDER	

SCALES AT A2 SIZE DRAWING

HORIZ. 1:100



CLIENT APPROVED DATE CONSULTANT SIGNATURE

DESIGNER  SMEC (India) Pvt Ltd. 1st Floor, Novus Tower, West Wing, Plot Number -18, Sector - 18, Gurgaon - 122015, Haryana			
DRAWN BT	DESIGN RK	CHECKED MP	APPROVED NA

CLIENT  NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PFI BUILDING - 4 PARLIAMENT STREET, SANSAD MARG AREA, NEW DELHI- 110001	
APPROVED	DATE

PROJECT PREPARATION OF DRAFT PROJECT REPORT & PROVIDING PRE-CONSTRUCTION ACTIVITIES IN RESPECT OF THE APPROACH ROAD WITH AVALANCHE PROTECTION WORKS IN ZOJILA TUNNEL	
---	--

PROJECT TITLE TYPICAL SECTION OF AVALANCHE PROTECTION MEASURES		
DRAWING STATUS TENDER	PROJECT / DRAWING No. 7061520-TCS-002-012	ISSUE A

NOTES:-
1). ALL DIMENSIONS ARE IN MM AND TAKEN FROM SASE REPORT.

