

**PUBLIC WORKS DEPARTMENT
GOVERNMENT OF HIMACHAL PRADESH**

AND

**HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE
DEVELOPMENT CORPORATION (HPRIDC),**

NAME OF THE CONTRACT:

PACKAGE -V

**UPGRADATION OF MANDI - REWALSAR - KALKHAR ROAD IN MANDI DISTRICT
FROM Km:0/000 TO Km:11/000**

BIDDING DOCUMENT

(NATIONAL OPEN COMPETITIVE PROCUREMENT)

VOLUME -4

PART- 2 : WORKS REQUIREMENT

SECTION -VII : DRAWINGS

DESIGN CONSULTANT:



SATRA SERVICES AND SOLUTIONS PVT LTD.

#1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad,
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CLIENT:



HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED.

GENERAL DRAWINGS


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TENDER PURPOSE ONLY

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PROJECT:

Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

DESIGNED	MADHUJ K
DRAWN	DANIEL
CHECKED	CS/AH
APPROVED	PRADEEP KAPLA

TITLE : DRAWING INDEX



DRAWING NO : HP/MAN-KAL/D1-001

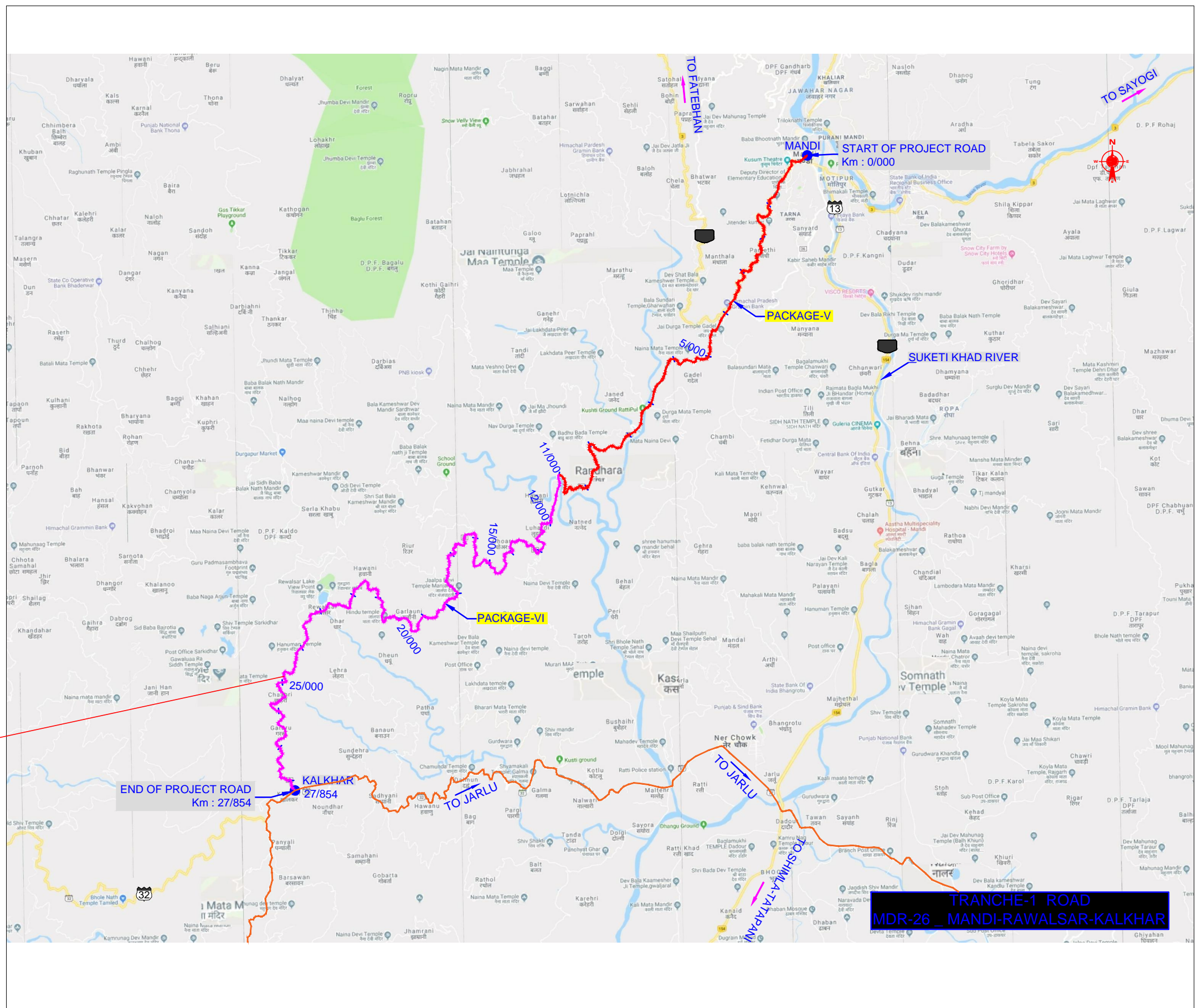
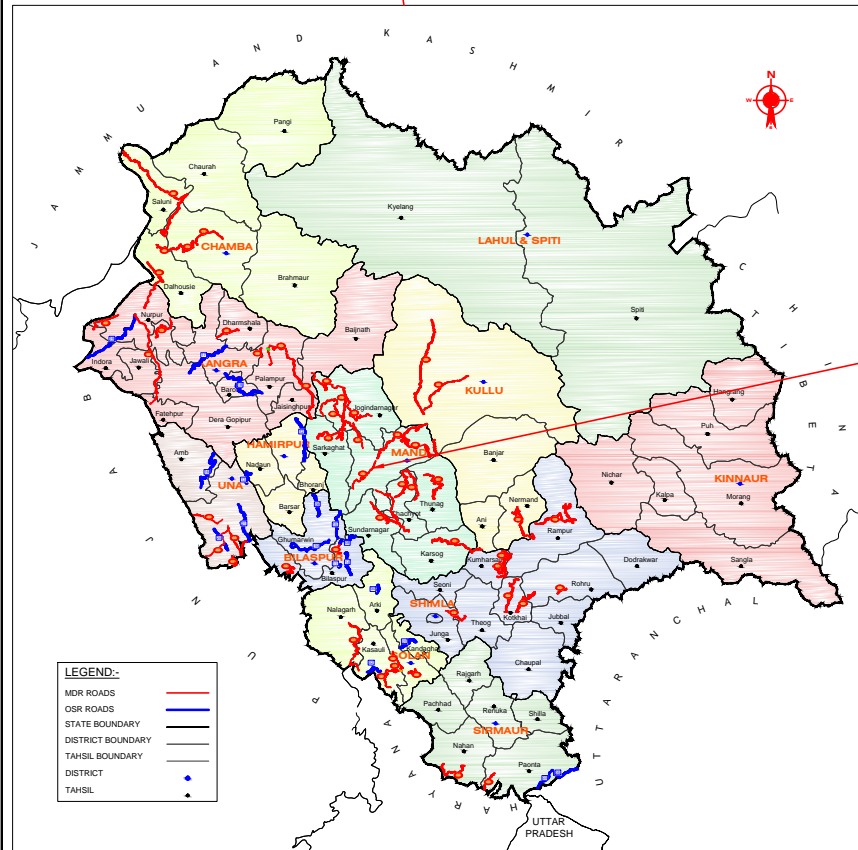
ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 01 OF 02

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TENDER PURPOSE ONLY

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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED																										
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PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

DESIGNED: MADHU.K
 DRAWN: DANIEL
 CHECKED: CS/AH
 APPROVED: PRADEEP KAPLA

TITLE :
 PROJECT LOCATION MAP

DRAWING NO : HP/MAN-KAL/LM-001

ROAD NAME : Package-V:
 Upgradation of Mandi - Rawlsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 01 OF 01

LEGEND

SL NO.	DESCRIPTION	
1	TEMPLE	
2	CHURCH	
3	MOSQUE	
4	GATES	
5	ROW STONE	
6	WELL	
7	DGPS POINTS	
8	TREES	
9	PIPE CULVERT	
10	SLAB CULVERT	
11	UTILITY-HT	
12	LAMP POLE	
13	UTILITY-EP	
14	UTILITY-ESB	
15	ELE BOX	
16	OFC PILLAR	
17	HOARDING	
18	SIGNAL POST	
19	KILOMETRE STONE	
20	HECTOMETRE STONE	
21	HAND PUMP	
22	MAN HOLE	
23	BORE WELL	
24	BOLLARD	
25	UTILITY-TOWER	
26	FLAG POST	
27	SIGN BOARD	
28	NAME BOARD	
29	DUSTBIN	
30	ROAD SIGN	
31	CANTILIVER	

SL NO.	DESCRIPTION	
32	SPOT LEVEL	
33	UTILITY-TP	
34	BUILDING PUCCA	
35	BUILDINGS KACHHA	
36	BUILDING UNDER CONSTRUCTION	
37	BUILDING-HUT	
38	BUILDING-SHED	
39	BRIDGE	
40	CARRIAGEWAY EDGE	
41	BT ROAD	
42	CART TRACK	
43	COMPOUND WALL	
44	POND	
45	RE WALL	
46	FENCING	
47	CENTERLINE	
48	EP LINE	
49	HT LINE	
50	RAILWAY TRACK	
51	TP LINE	
52	EROW LINE	
53	WATER PIPE LINE	
54	DRAIN	
55	EXISTING CHAINAGE	0/000
56	DIVIDER	
57	DIVIDER ISLAND	
58	NALA	
59	CANAL	
60	DRIVEWAY	
61	CULTIVATION AREA	
62	RIVER	

SL NO.	DESCRIPTION	
63	WATER TANK	
64	RAILING	
65	KERB	
66	CLIFF AREA	
67	RETAINING WALL	

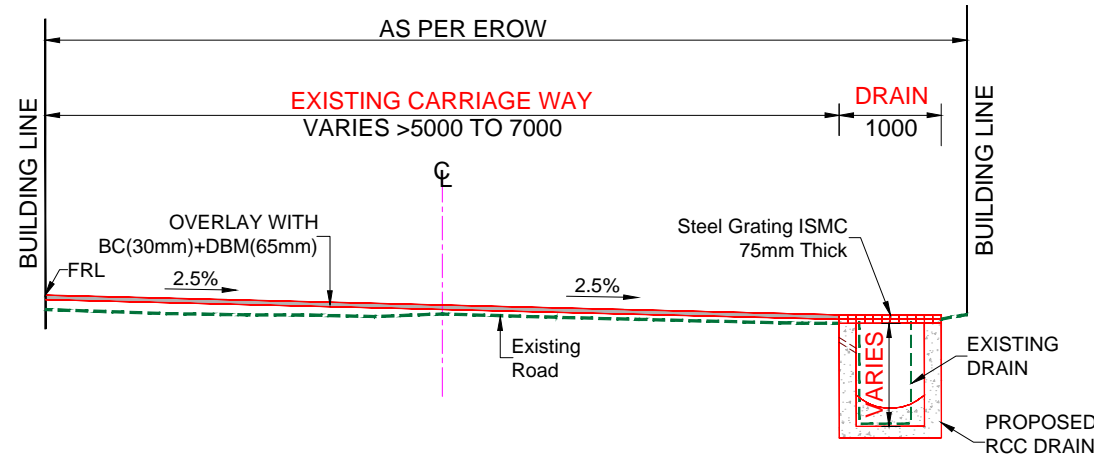
PROPOSED FEATURES		
SL NO.	DESCRIPTION	
1	CHAINAGE	0+000
2	CENTRE LINE	
3	CARRIAGEWAY EDGE	
4	SHOULDER EDGE	
5	FOOTPATH CUM DRAIN	
6	CORRIDOR OF IMPACT	
7	CRASH BARRIER	
8	VISION BERM	
9	TOE WALL	
10	BREAST WALL	
11	BREAST WALL EDGE	

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TYPICAL CROSS SECTIONS

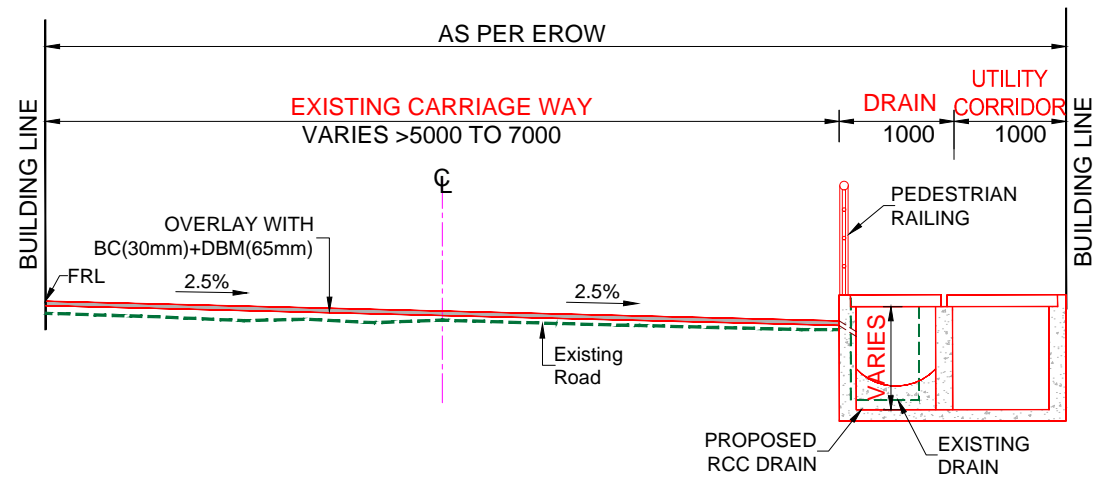
SCHEME OF PROFILE CORRECTION				
TYPE	PROFILE CORRECTION THICKNESS	PROFILE CORRECTION MATERIAL	MAXIMUM INDIVIDUAL LAYER THICKNESS OF P.C.C	REMARKS
1	0-50	DBM	50	-
2	>50-<150	BM	100	-
3	>150-<400	WMM	150	SCARIFY EXISTING PAVEMENT AT 45 TO CENTRE LINE OF CARRIAGE WAY AND CONSTRUCTION WITH WMM LAYER (ON BOTH DIRECTION).
4	>400	RECONSTRUCTION AS FULL NEW PAVEMENT		SCARIFY EXISTING BT LAYER AND RECONSTRUCTION AS NEW PAVEMENT.



TYPICAL CROSS SECTION - 1A
EXISTING ROAD (OVERLAY WITH BC+DBM)
IN BUILT-UP LOCATIONS

TCS SCHEDULE			
S.No	DESIGN CH		Length (m)
	From	To	
1	0	350	350

SCHEME OF PROFILE CORRECTION				
TYPE	PROFILE CORRECTION THICKNESS	PROFILE CORRECTION MATERIAL	MAXIMUM INDIVIDUAL LAYER THICKNESS OF P.C.C	REMARKS
1	0-50	DBM	50	-
2	>50-<150	BM	100	-
3	>150-<400	WMM	150	SCARIFY EXISTING PAVEMENT AT 45 TO CENTRE LINE OF CARRIAGE WAY AND CONSTRUCTION WITH WMM LAYER (ON BOTH DIRECTION).
4	>400	RECONSTRUCTION AS FULL NEW PAVEMENT		SCARIFY EXISTING BT LAYER AND RECONSTRUCTION AS NEW PAVEMENT.



TYPICAL CROSS SECTION - 1B
EXISTING ROAD (OVERLAY WITH BC+DBM) WITH DRAIN
ON RHS IN BUILT-UP LOCATIONS


TCS SCHEDULE			
S.No	DESIGN CH		Length (m)
	From	To	
1	350	1700	1350

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- ADJUSTMENT OF DRAINS / EARTHWORKS / SHOULDERS REQUIRED IN A FEW LOCATIONS TO FIT THE PROPOSED CROSS SECTION WITH IN THE AVAILABLE ROW.
- EXISTING BITUMEN SURFACE SHALL BE SCARIFIED (FURROWING) WHERE EVER REQUIRED. AS PER CLAUSE NO. 404.3.1 AND AS PER INSTRUCTED BY ENGINEER.
- FOR THE DETAILS LAINED DRAIN CUM UTILITY DUCT & DETAILS OF LAINED DRAIN REFER DRAWING NO:HP/MAN-KAL/MISC-020
- FOR THE DETAILS OF PEDESTRIAN GUARDRAIL REFER DRAWING NO:HP/MAN-KAL/MISC-003
- REQUIREMENT OF UTILITY SHALL BE FINALIZED BY THE CONTRACTOR IN CONSULTATION WIT CSC/HPRIDC. AND CONCERNED AUTHORITY AS PER SITE CONDITION.

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CLIENT:

HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

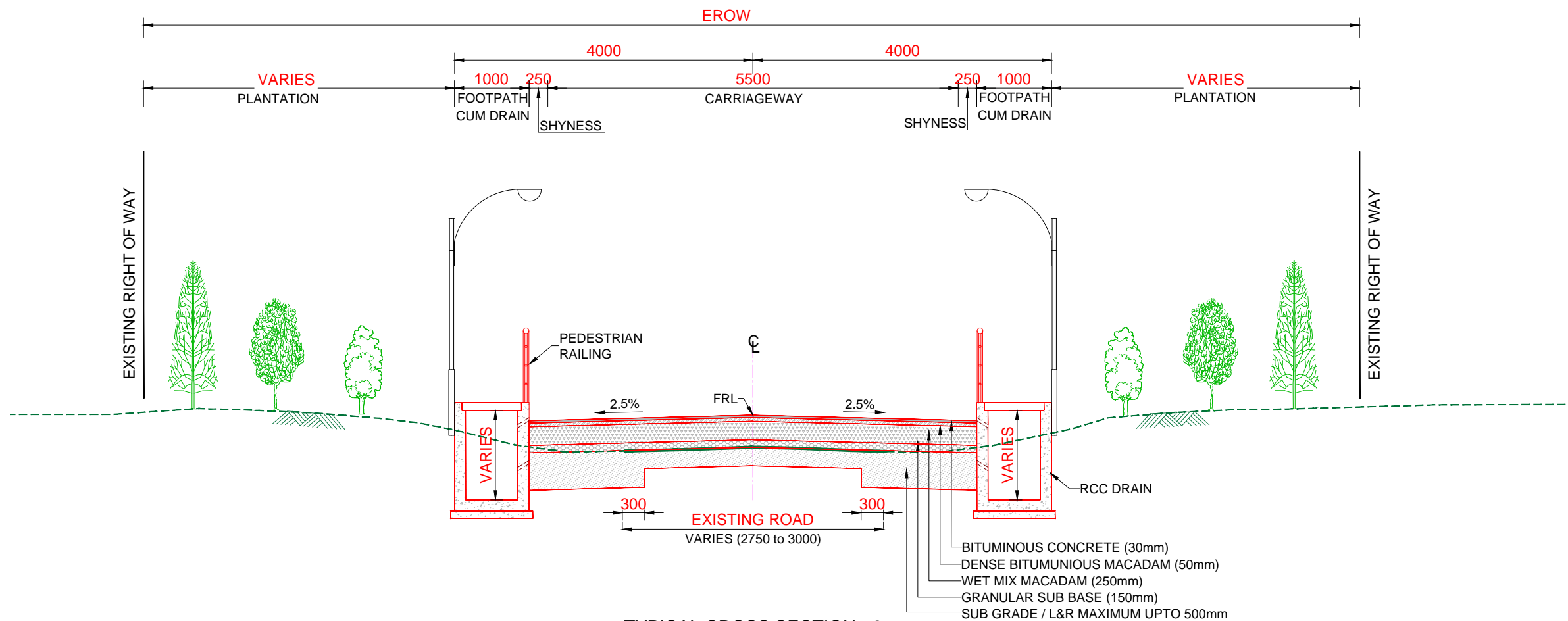
CONSULTANT:

SATRA SERVICES AND SOLUTIONS PVT LTD.
 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

DESIGNED	MADHU.K
DRAWN	DANIEL
CHECKED	CS/AH
APPROVED	PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS	
DRAWING NO : HP/MAN-KAL/TCS-001	
ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000	SHEET 01 OF 15



TYPICAL CROSS SECTION - 2
INTERMEDIATE LANE CARRIAGEWAY IN BUILT-UP SECTIONS

NOTES:-


1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ADJUSTMENT OF DRAINS / EARTHWORKS / SHOULDERS REQUIRED IN A FEW LOCATIONS TO FIT THE PROPOSED CROSS SECTION WITH IN THE AVAILABLE ROW.
3. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF EFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
4. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
5. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
6. THE LOCATION OF ELECTRIC POLE SHOWN IS TENTATIVE AND TO BE FINALIZED BY THE CONTRACTOR IN CONSULTATION WITH CSC/HPRIDC & CONCERNED AUTHORITY AS PER SITE CONDITION.
7. FOR THE DETAILS LAINED DRAIN CUM UTILITY DUCT & DETAILS OF LAINED DRAIN REFER DRAWING NO:HP/MAN-KAL/MISC-020.
8. FOR THE DETAILS OF PEDESTRIAN GUARDRAIL REFER DRAWING NO:HP/MAN-KAL/MISC-003
9. FOR OPTIMUM UTILIZATION OF AVAILABLE ROW IN BUILT UP AREAS, LIKE FUTURE DEVELOPMENTS, THE POSITION OF FOOTPATH CUM DRAIN AND OTHER ELEMENTS SHALL BE ADJUSTED IN CONSULTATION WITH CSC AND HPRIDC.
10. THE SPECIES AND WIDTH SHOWN FOR THE PLANTATION ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC.
11. AT A FEW LOCATIONS BREAST WALLS WOULD BE REQUIRED, REFER TO DRAWING NO: HP/MAN-KAL/MISC-017 AND HP/MAN-KAL/MISC-023A.

TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
	From	To	
1	4370	5590	1220
2	6300	6750	450
3	7060	7540	480
4	7920	8100	180
5	8280	8850	570
6	9330	9990	660

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

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CONSULTANT:

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PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

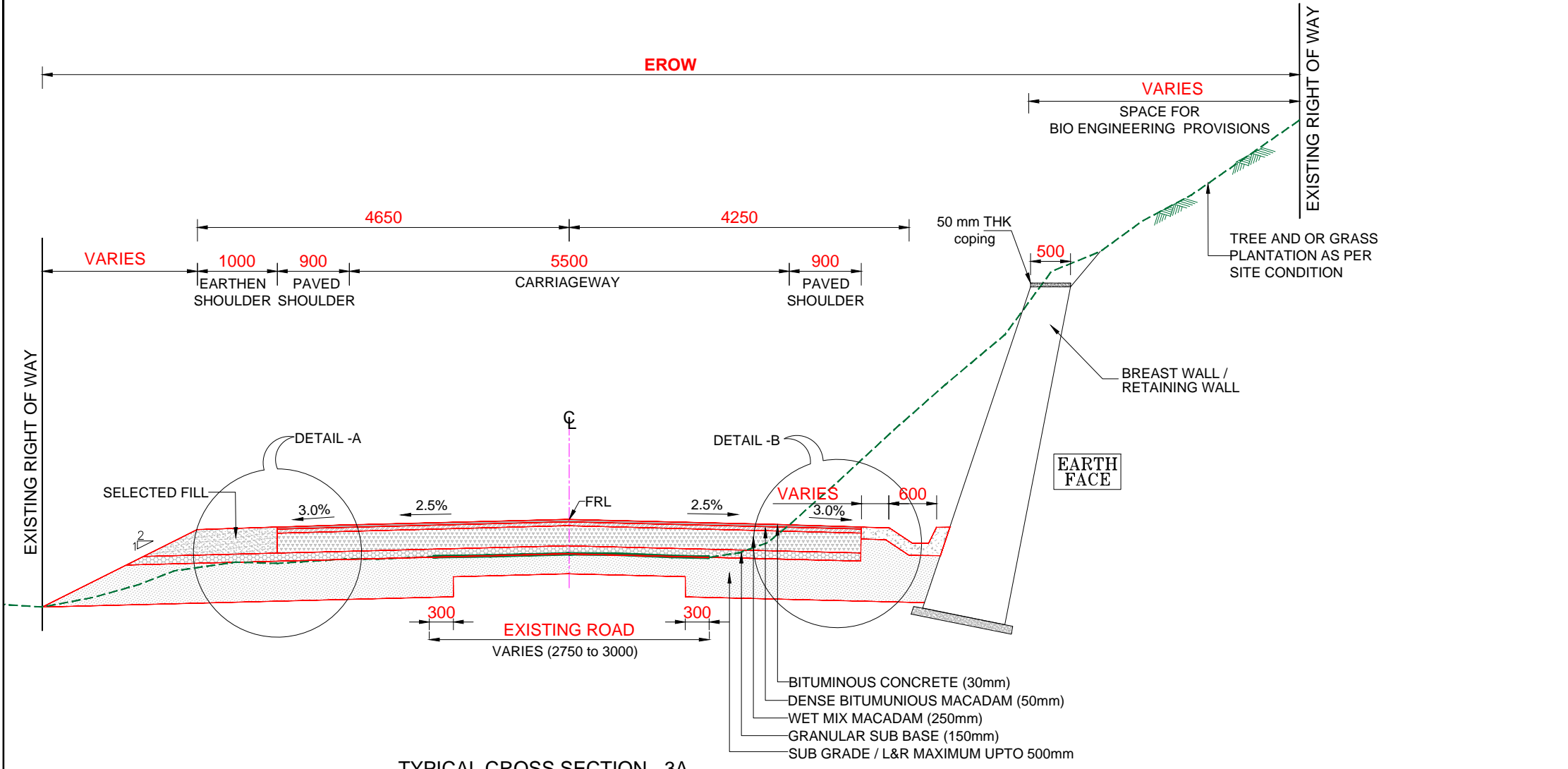
SCALE: NOT TO SCALE

DESIGNED: MADHU.K
 DRAWN: DANIEL
 CHECKED: CS/AH
 APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS
DRAWING NO : HP/MAN-KAL/TCS-002
ROAD NAME : Package-V:
 Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

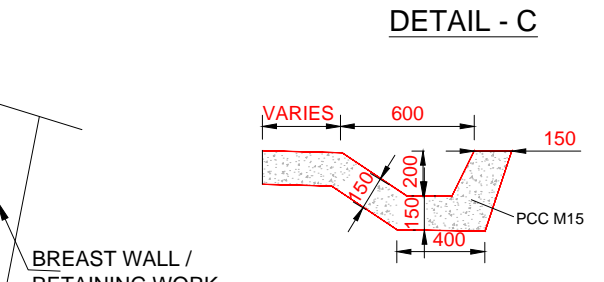
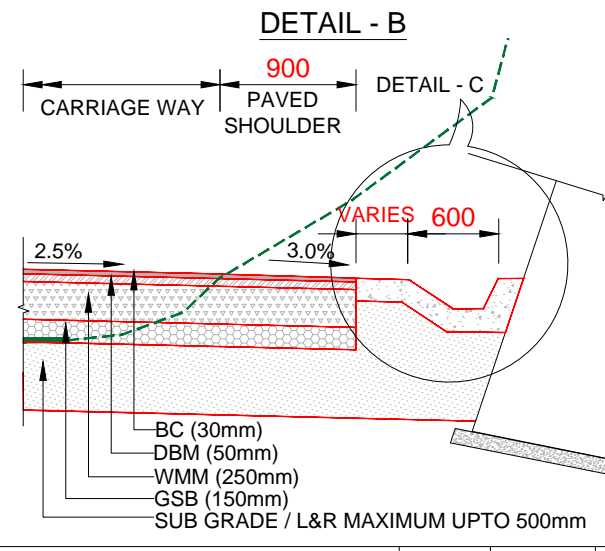
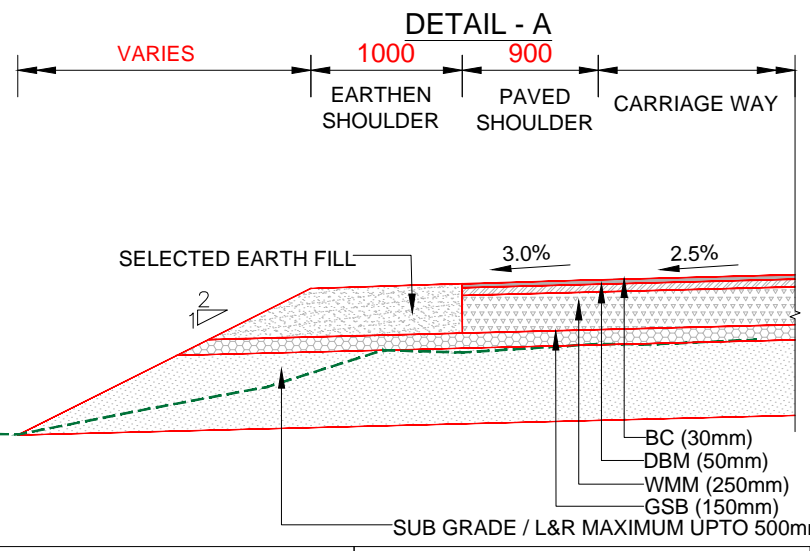
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4	7000	7060	60
5	7540	7920	380
6	8100	8140	40
7	8180	8240	60
8	8240	8260	20
9	8850	8920	70
10	8940	8960	20
11	9245	9280	35
12	9310	9330	20
13	9990	10070	80
14	10390	10470	80
15	10510	10660	150
16	10710	10800	90




TYPICAL CROSS SECTION - 3A
INTERMEDIATE LANE CARRIAGEWAY IN RURAL HILL CUTTING SECTIONS

- NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 3. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 4. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 5. REFER DRAWING NOS : HP/MAN-KAL/MISC-017A, 017B, 017C AND 023A FOR SCHEDULES AND DETAILS OF BREAST WALL / RETAINING WALL TOWARDS THE HILL SIDE. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 6. AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

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CONSULTANT:

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PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

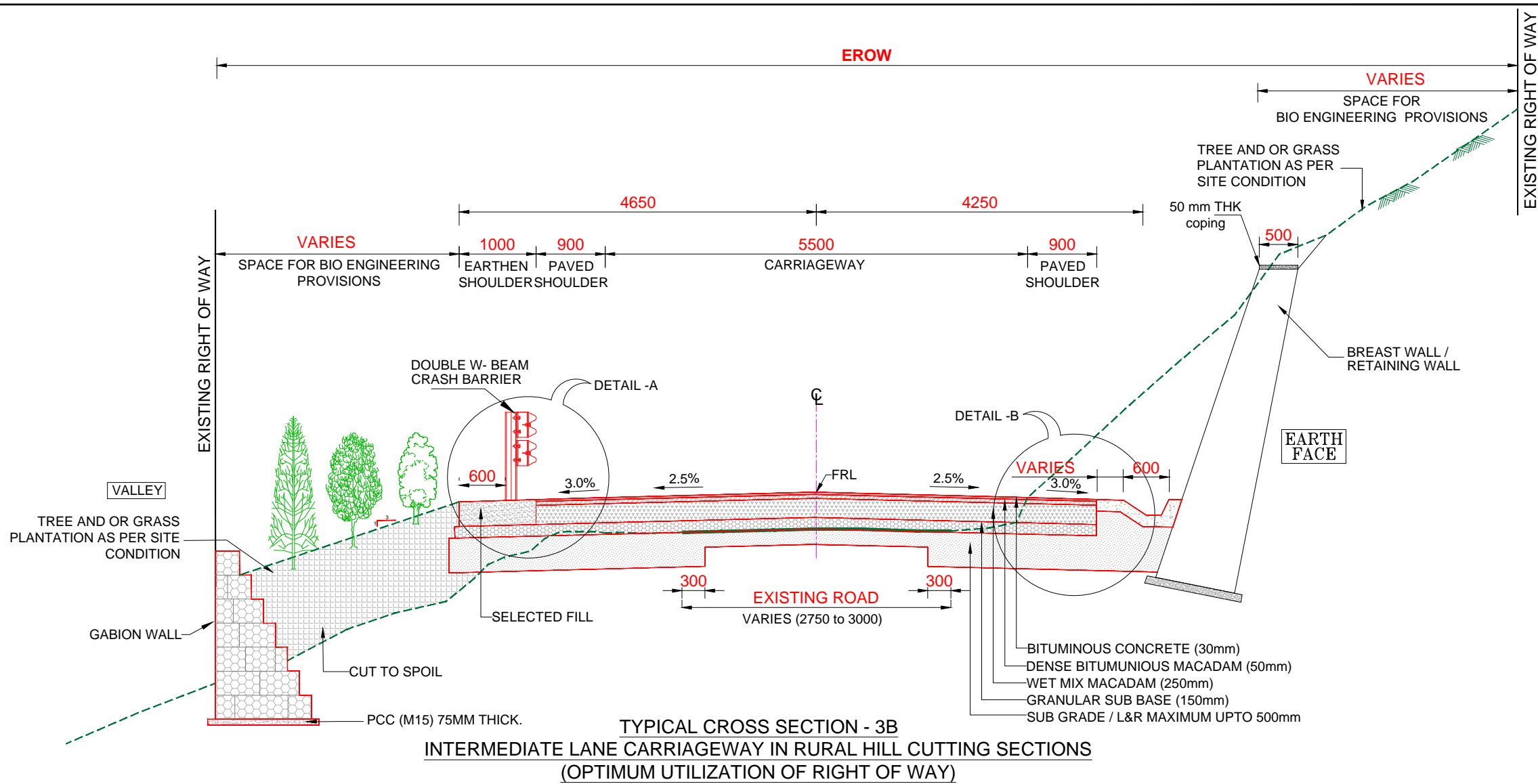
DESIGNED: MADHU.K
 DRAWN: DANIEL
 CHECKED: CS/AH
 APPROVED: PRADEEP KAPLA

TITLE: TYPICAL CROSS SECTIONS

DRAWING NO: HP/MAN-KAL/TCS-003A

ROAD NAME: Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

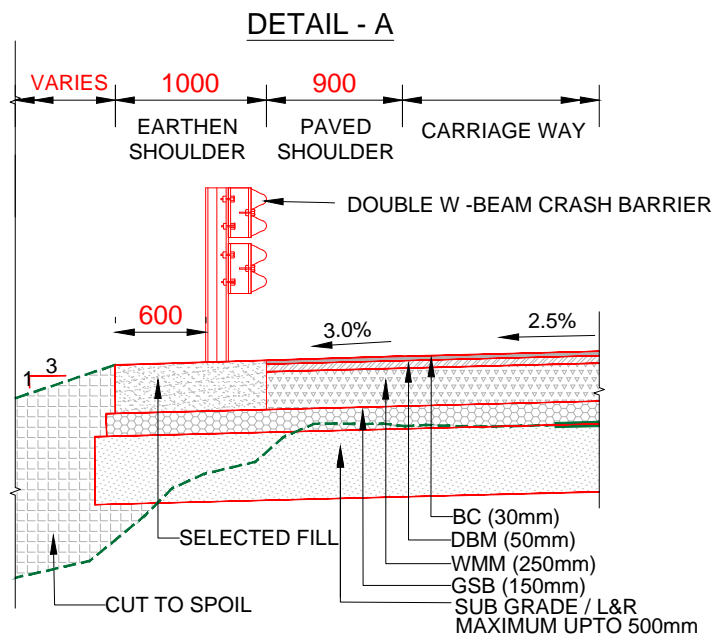
SHEET 03 OF 15



TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
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2	9030	9060	30
3	9280	9310	30
4	10190	10290	100
5	10310	10350	40
6	10470	10510	40
7	10800	11000	200

- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 3. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 4. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 5. REFER DRAWING NOS : HP/MAN-KAL/MISC-017A, 017B, 017C AND 023A FOR SCHEDULES AND DETAILS OF BREAST WALL / RETAINING WALL TOWARDS THE HILL SIDE. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 6. AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 7. FOR W-BEAM CRASH BARRIER DETAILS REFER DRAWING NO: HP/MAN-KAL/MISC-004.
 8. FOR RETAINING GABION STRUCTURES REFER DRAWING NO: HP/MAN-KAL/MISC-016.
 9. THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

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PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

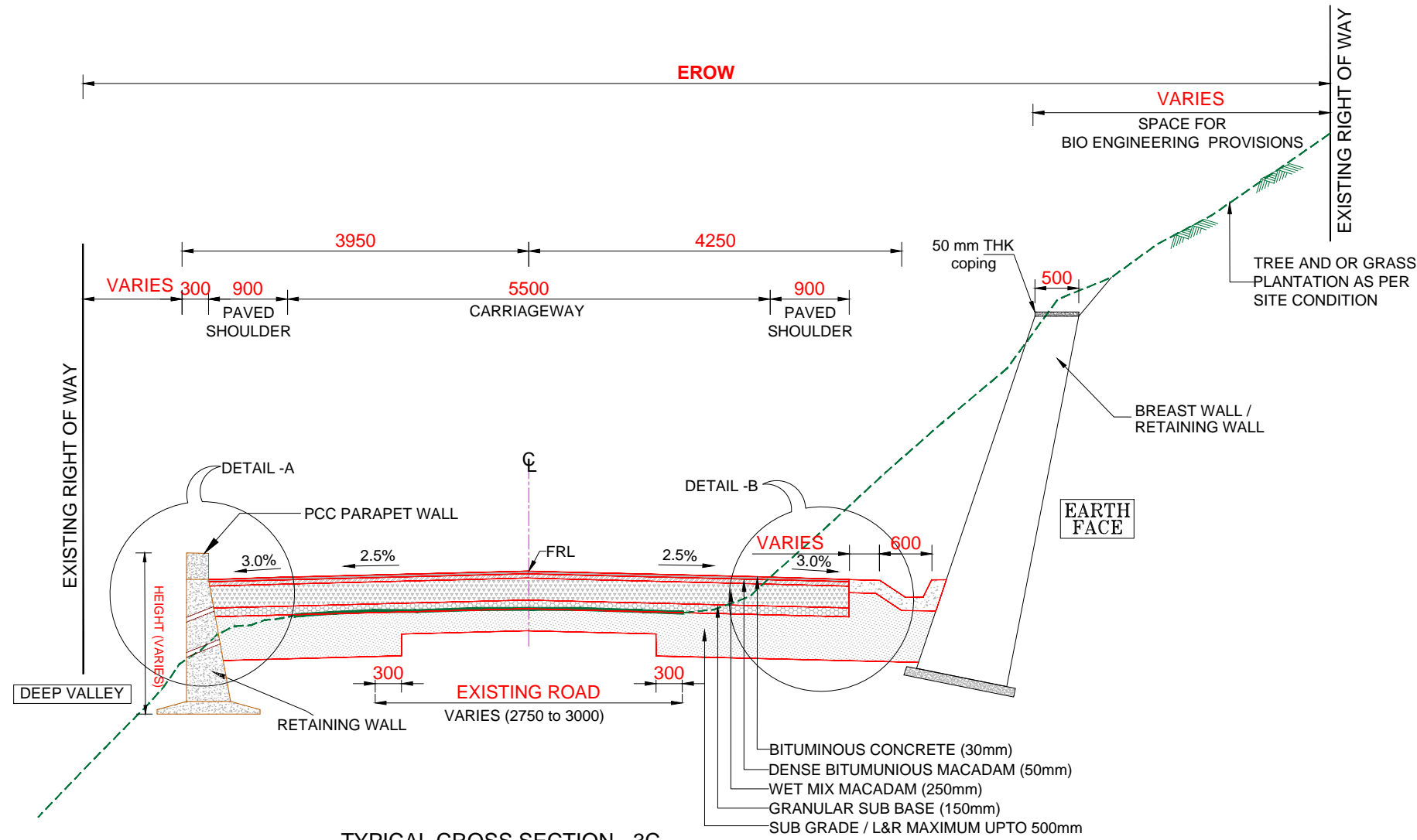
DESIGNED: MADHU.K
 DRAWN: DANIEL
 CHECKED: CS/AH
 APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS

DRAWING NO : HP/MAN-KAL/TCS-003B

ROAD NAME : Package-V:
 Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 04 OF 15

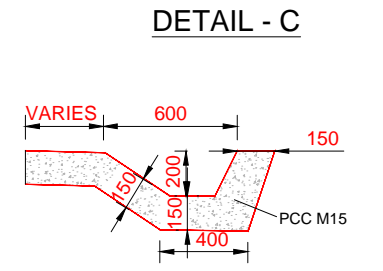
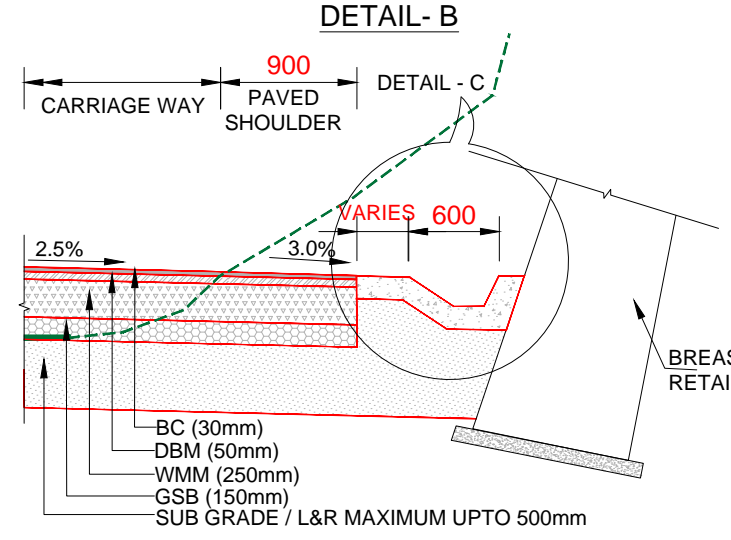
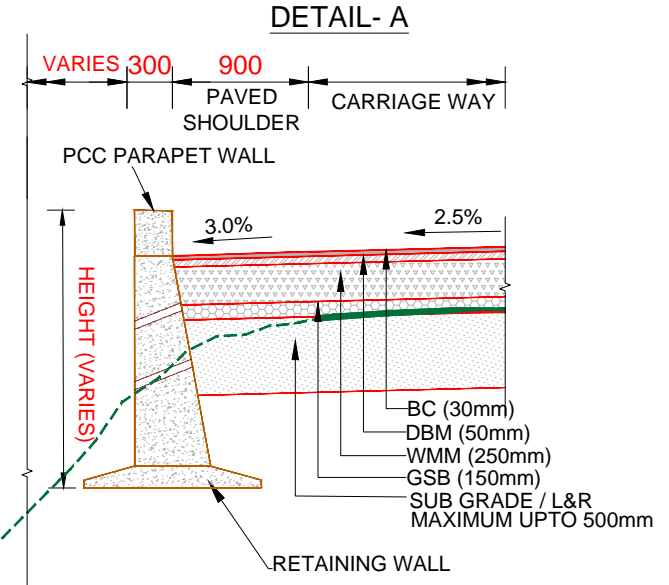


TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
	From	To	
1	5630	5710	80
2	5760	5920	160
3	6080	6100	20
4	6150	6300	150
5	6830	7000	170
6	8140	8180	40
7	8260	8280	20
8	8920	8940	20
9	8960	9030	70
10	9060	9240	180
11	10070	10190	120
12	10290	10310	20
13	10350	10390	40
14	10660	10710	50

TYPICAL CROSS SECTION - 3C
INTERMEDIATE LANE CARRIAGEWAY IN RURAL HILL CUTTING SECTIONS
(DEEP VALLEY LOCATION)

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 - DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 - REFER DRAWING NOS : HP/MAN-KAL/MISC-017A, 017B, 017C AND 023A FOR SCHEDULES AND DETAILS OF BREAST WALL / RETAINING WALL TOWARDS THE HILL SIDE. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 - AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 - FOR SCHEDULES AND DETAILS OF RETAINING WALLS TOWARDS THE VALLEY SIDE, REFER TO DRAWING NO: HP/MAN-KAL/MISC-015. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE AVAILABLE RIGHT OF WAY AND FILL SLOPES.
 - THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:
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CONSULTANT:
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PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

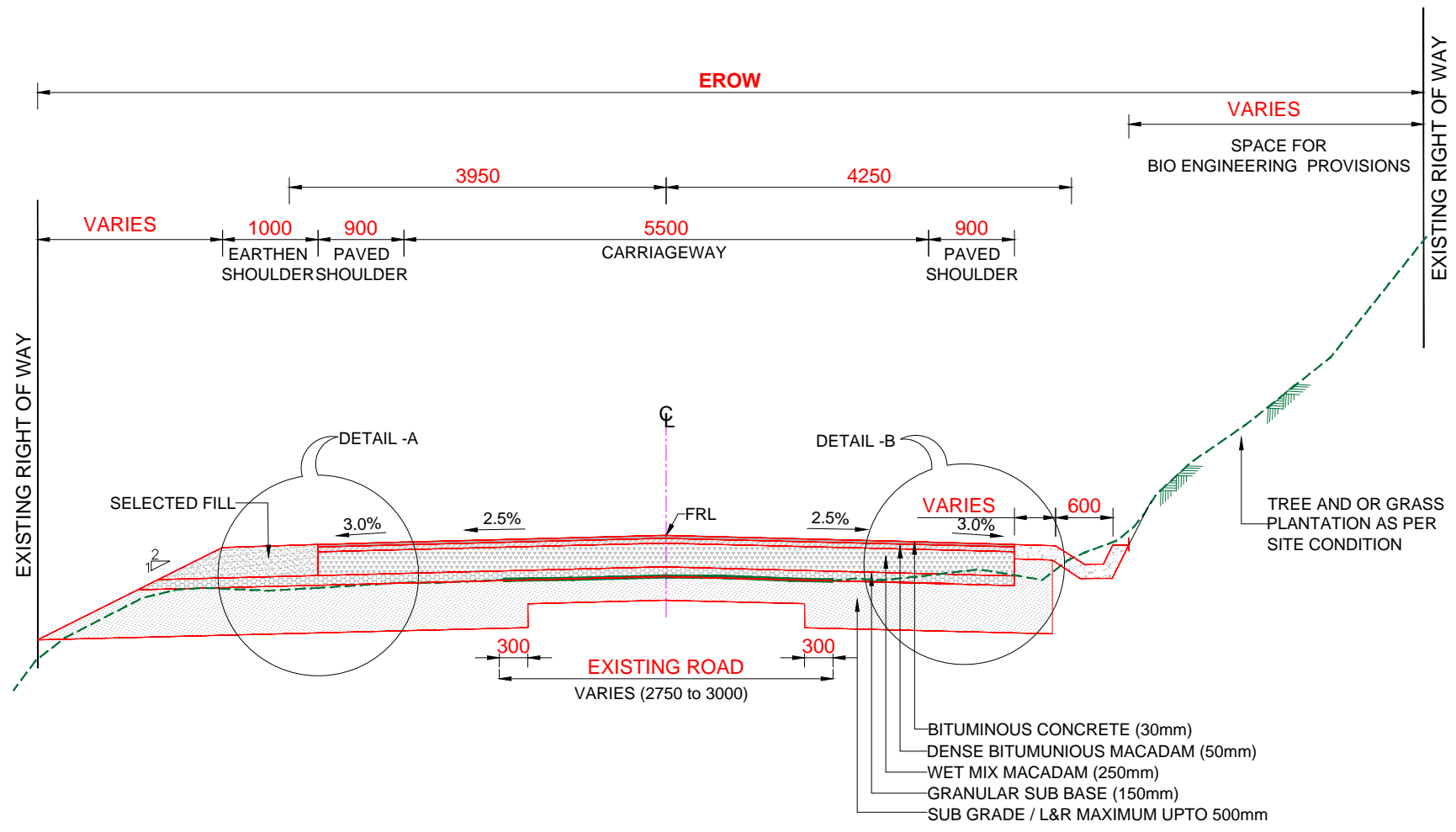
DESIGNED: MADHU.K
 DRAWN: DANIEL
 CHECKED: CS/AH
 APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS

DRAWING NO : HP/MAN-KAL/TCS-003C

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 05 OF 15

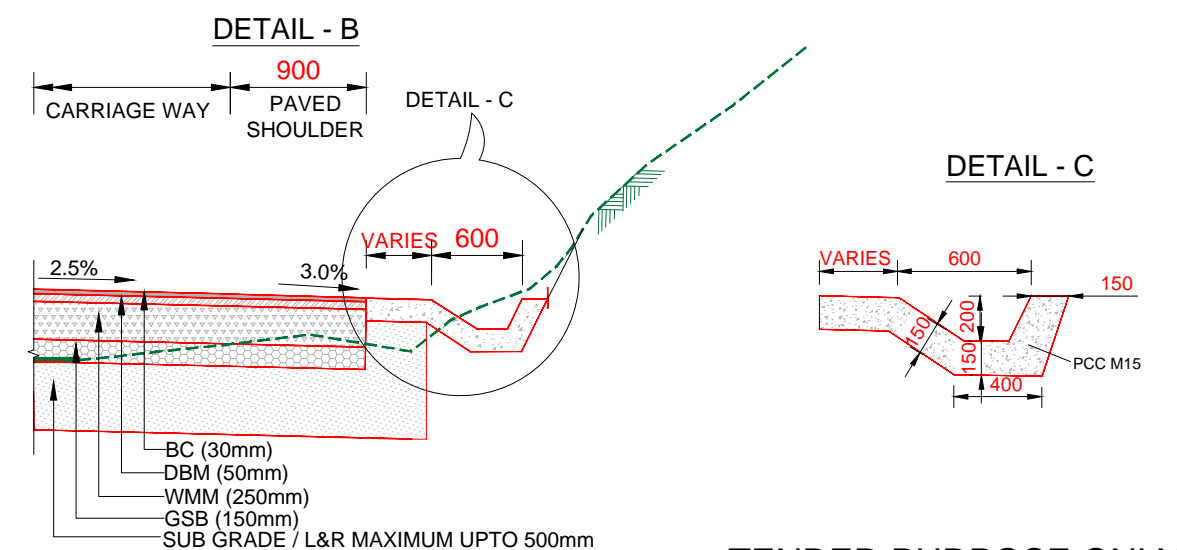
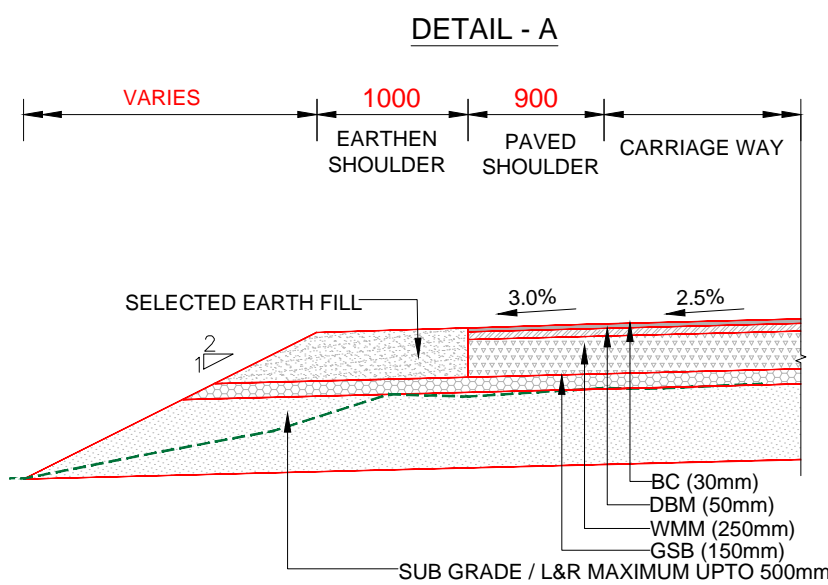


TYPICAL CROSS SECTION - 3D
INTERMEDIATE LANE CARRIAGEWAY IN RURAL SECTIONS

TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
	From	To	
1	5710	5760	50
2	9240	9245	5

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 - DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 - AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 - THE LOCATION OF THE DRAIN SHOWN TOWARDS THE HILL SIDE IS INDICATIVE AND SHALL BE ADJUSTED BASED ON THE AVAILABLE RIGHT OF WAY IN CONSULTATION WITH CSC. IN CASE THE WIDTH AVAILABLE BETWEEN PAVED SHOULDER AND DRAIN IN ABUNDANCE, SPACE IN BETWEEN SHALL BE SUITABLY TREATED WITH GRASS/TILES.
 - THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:
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CONSULTANT:
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PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

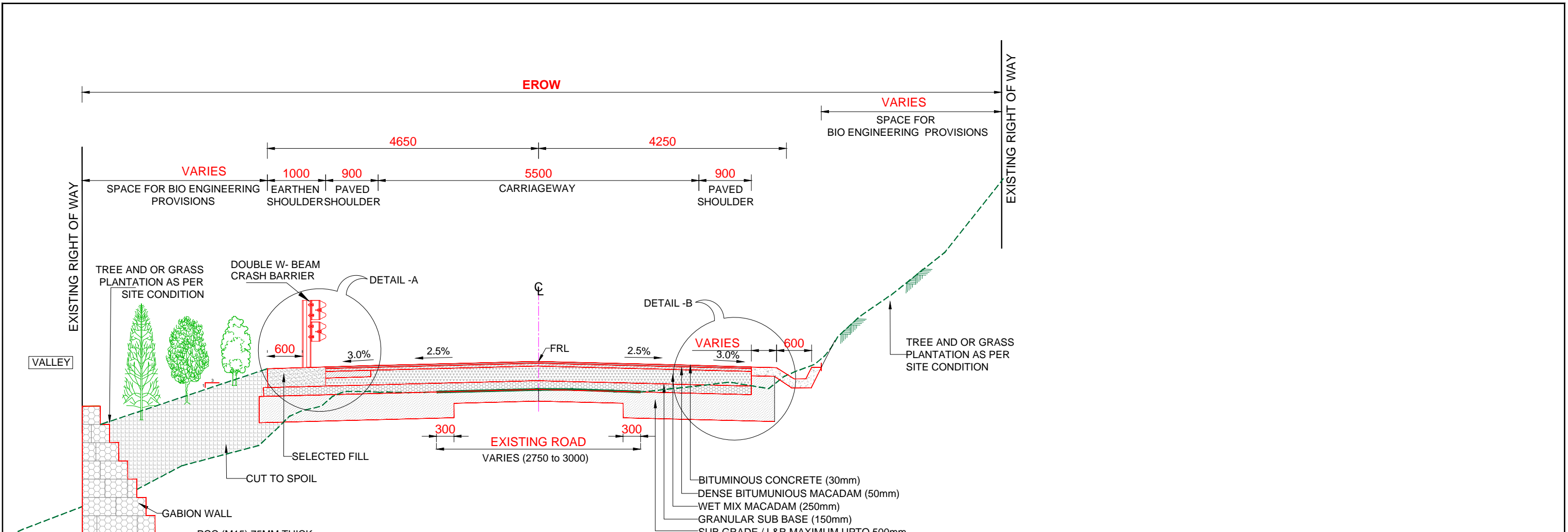
DESIGNED: MADHU.K
 DRAWN: DANIEL
 CHECKED: CS/AH
 APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS

DRAWING NO : HP/MAN-KAL/TCS-003D

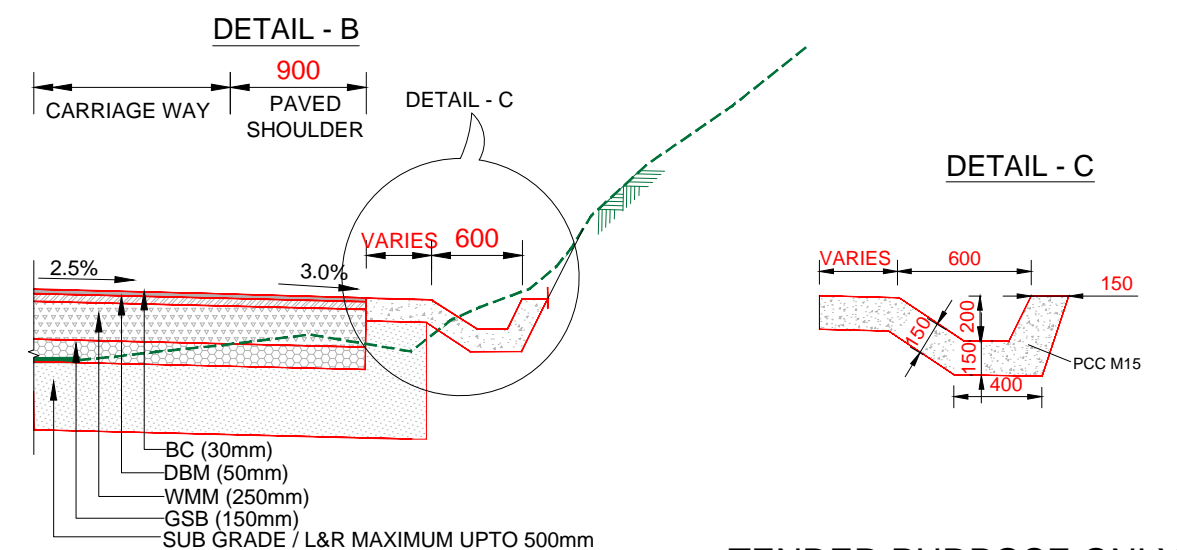
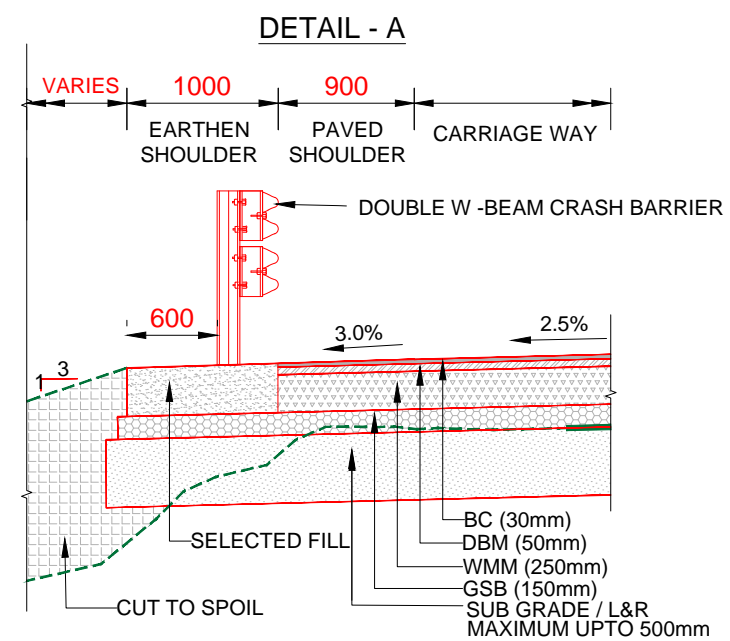
ROAD NAME : Package-V:
 Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 06 OF 15



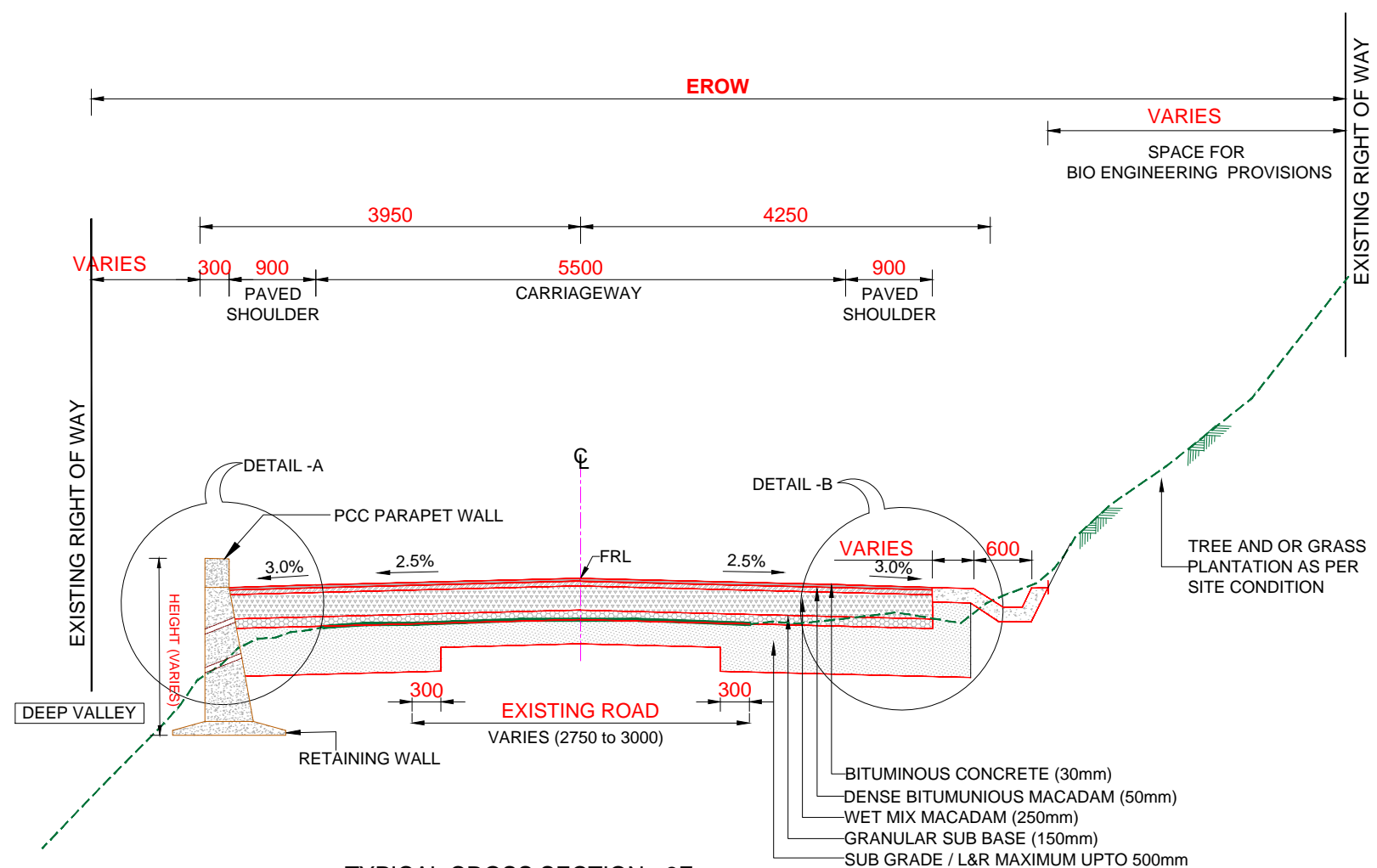
TYPICAL CROSS SECTION - 3E
INTERMEDIATE LANE CARRIAGEWAY IN RURAL SECTIONS
(OPTIMUM UTILIZATION OF EROW)

- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 3. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 4. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 5. AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 6. FOR W-BEAM CRASH BARRIER DETAILS REFER DRAWING NO: HP/MAN-KAL/MISC-004.
 7. FOR RETAINING GABION STRUCTURES REFER DRAWING NO: HP/MAN-KAL/MISC-016.THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 8. THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.
 9. THE LOCATION OF THE DRAIN SHOWN TOWARDS THE HILL SIDE IS INDICATIVE AND SHALL BE ADJUSTED BASED ON THE AVAILABLE RIGHT OF WAY IN CONSULTATION WITH CSC. IN CASE THE WIDTH AVAILABLE BETWEEN PAVED SHOULDER AND DRAIN IN ABUNDANCE, SPACE IN BETWEEN SHALL BE SUITABLY TREATED WITH GRASS/TILES.



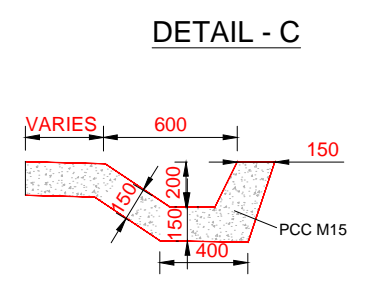
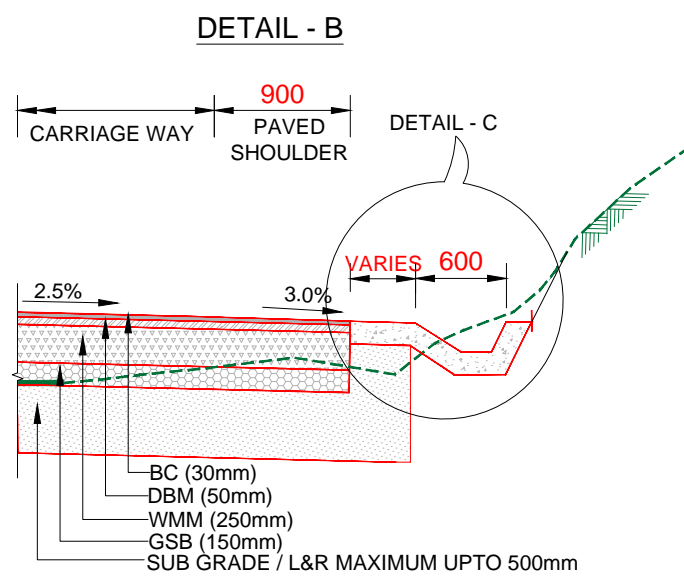
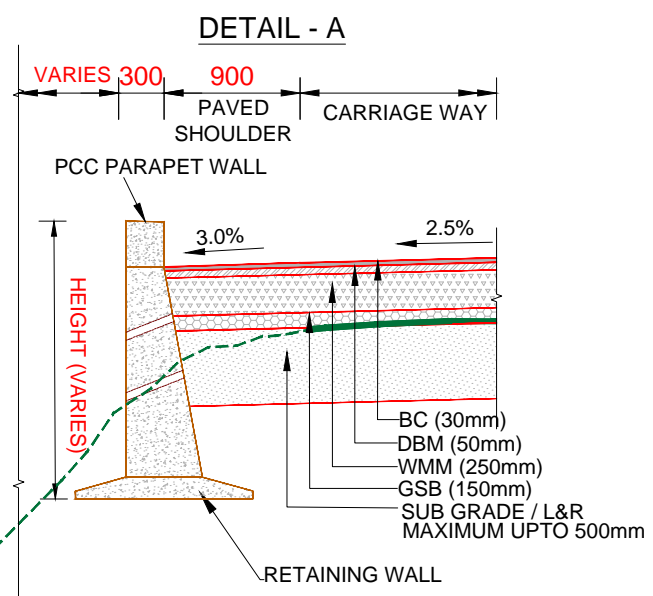
TENDER PURPOSE ONLY

<p>CLIENT:</p> <p>HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</p>					<p>CONSULTANT:</p> <p>SATRA SERVICES AND SOLUTIONS PVT LTD. #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India. Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in</p>					<p>PROJECT:</p> <p>Himachal Pradesh State Roads Transformation Project (HPSRTP)</p>					<p>DESIGNED: MADHU.K</p> <p>DRAWN: DANIEL</p> <p>CHECKED: CS/AH</p> <p>APPROVED: PRADEEP KAPLA</p>		<p>TITLE : TYPICAL CROSS SECTIONS</p> <p>DRAWING NO : HP/MAN-KAL/TCS-003E</p> <p>ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000</p>			<p>SHEET 07 OF 15</p>
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED	SCALE:	NOT TO SCALE												



**TYPICAL CROSS SECTION - 3F
INTERMEDIATE LANE CARRIAGEWAY IN RURAL SECTIONS
(DEEP VALLEY LOCATION)**

- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 3. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 4. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 5. AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 6. FOR SCHEDULES AND DETAILS OF RETAINING WALLS TOWARDS THE VALLEY SIDE, REFER TO DRAWING NO: HP/MAN-KAL/MISC-015. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE AVAILABLE RIGHT OF WAY AND FILL SLOPES.
 7. THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.
 8. THE LOCATION OF THE DRAIN SHOWN TOWARDS THE HILL SIDE IS INDICATIVE AND SHALL BE ADJUSTED BASED ON THE AVAILABLE RIGHT OF WAY IN CONSULTATION WITH CSC. IN CASE THE WIDTH AVAILABLE BETWEEN PAVED SHOULDER AND DRAIN IN ABUNDANCE, SPACE IN BETWEEN SHALL BE SUITABLY TREATED WITH GRASS/TILES.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

 SATRA SERVICES AND SOLUTIONS PVT LTD.
 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

DESIGNED: MADHU.K
DRAWN: DANIEL
CHECKED: CS/AH
APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS

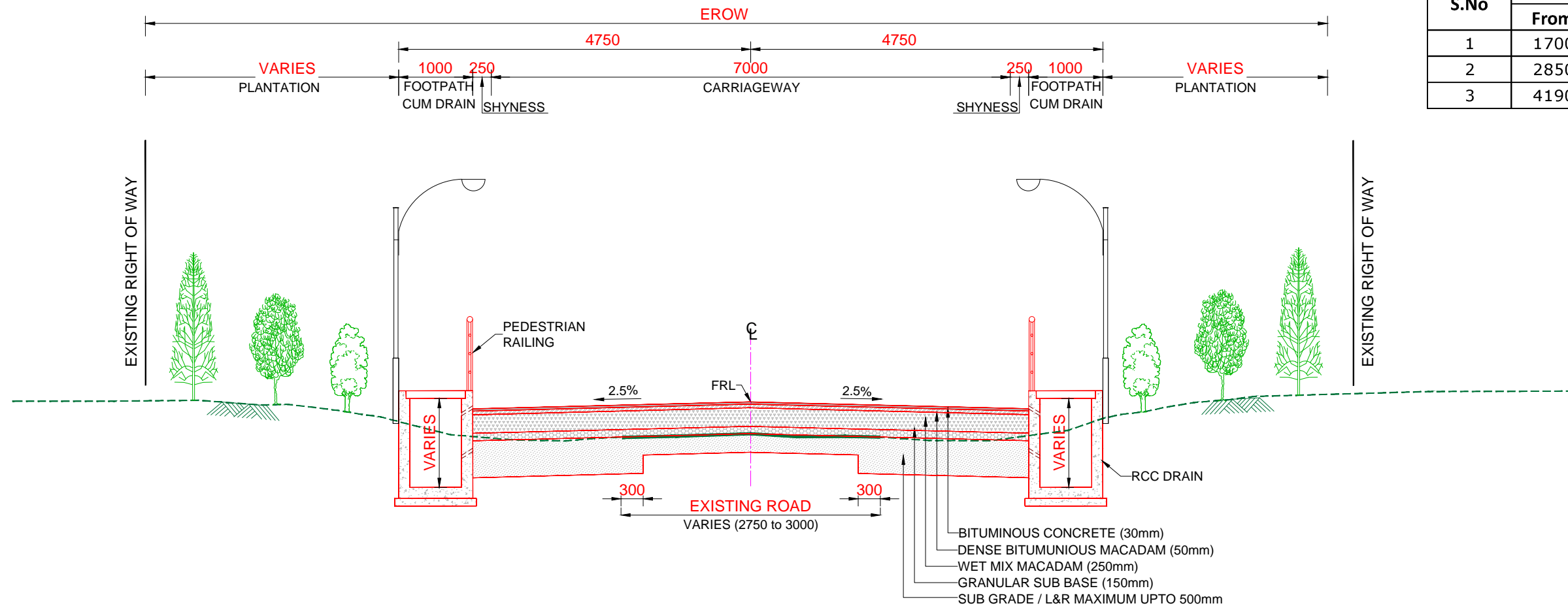
DRAWING NO : HP/MAN-KAL/TCS-003F

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 08 OF 15

TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
	From	To	
1	1700	2100	400
2	2850	3350	500
3	4190	4370	180



TYPICAL CROSS SECTION - 4
TWO LANE CARRIAGEWAY IN BUILT-UP SECTIONS

- NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. ADJUSTMENT OF DRAINS / EARTHWORKS / SHOULDERS REQUIRED IN A FEW LOCATIONS TO FIT THE PROPOSED CROSS SECTION WITH IN THE AVAILABLE ROW.
 3. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF EFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 4. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 5. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 6. THE LOCATION OF ELECTRIC POLE SHOWN IS TENTATIVE AND TO BE FINALIZED BY THE CONTRACTOR IN CONSULTATION WITH CSC/HPRIDC & CONCERNED AUTHORITY AS PER SITE CONDITION.
 7. FOR THE DETAILS LAINED DRAIN CUM UTILITY DUCT & DETAILS OF LAINED DRAIN REFER DRAWING NO:HP/MAN-KAL/MISC-020.
 8. FOR THE DETAILS OF PEDESTRIAN GUARDRAIL REFER DRAWING NO:HP/MAN-KAL/MISC-003
 9. FOR OPTIMUM UTILIZATION OF AVAILABLE ROW IN BUILT UP AREAS, LIKE FUTURE DEVELOPMENTS, THE POSITION OF FOOTPATH CUM DRAIN AND OTHER ELEMENTS SHALL BE ADJUSTED IN CONSULTATION WITH CSC AND HPRIDC.
 10. THE SPECIES AND WIDTH SHOWN FOR THE PLANTATION ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC.
 11. AT A FEW LOCATIONS BREAST WALLS WOULD BE REQUIRED, REFER TO DRAWING NO: HP/MAN-KAL/MISC-017 AND HP/MAN-KAL/MISC-023A.

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

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PROJECT:

Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

DESIGNED	MADHU.K
DRAWN	DANIEL
CHECKED	CS/AH
APPROVED	PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS

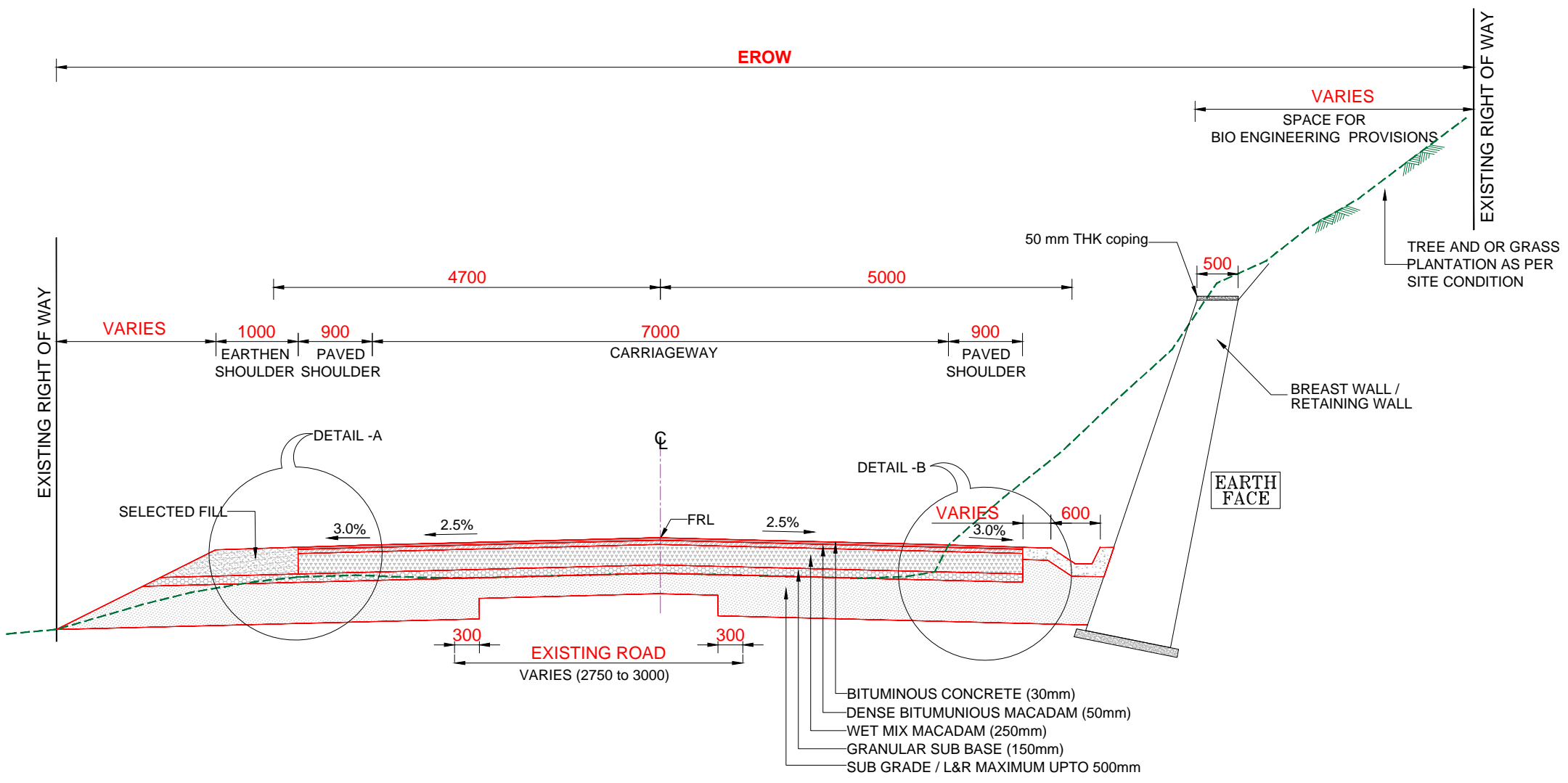
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ROAD NAME : Package-V:
Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 09 OF 15

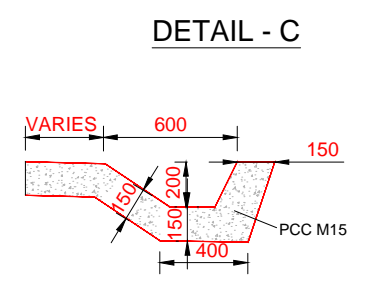
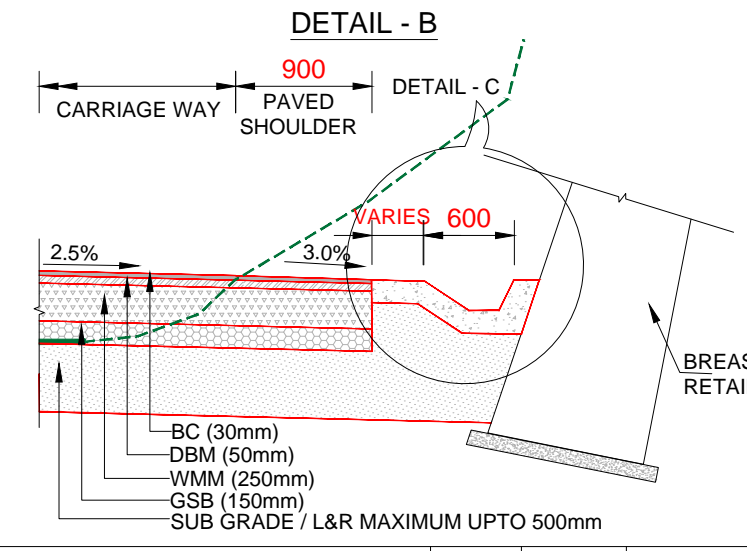
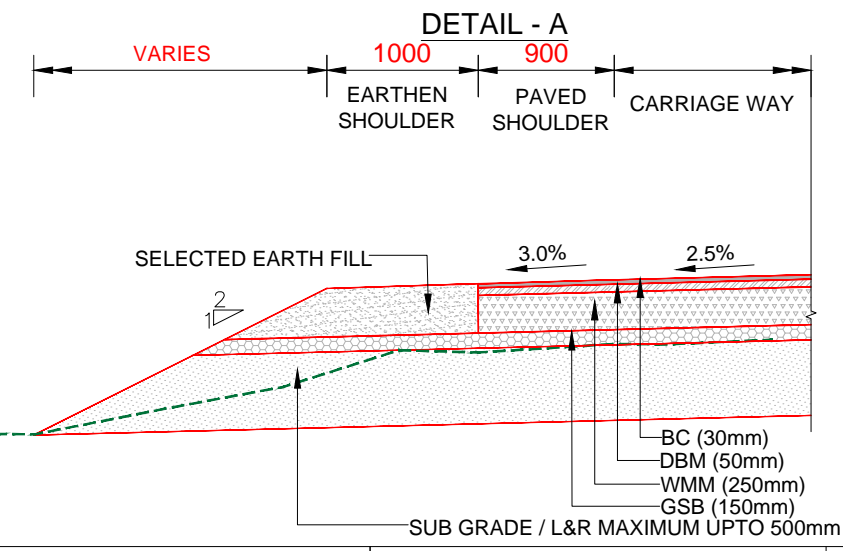
TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
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3	2375	2550	175
4	2810	2835	25
5	3350	3480	130
6	3520	3960	440



TYPICAL CROSS SECTION - 5A
TWO LANE CARRIAGEWAY IN RURAL SECTIONS

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 - DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 - REFER DRAWING NOS : HP/MAN-KAL/MISC-017A, 017B, 017C AND 023A FOR SCHEDULES AND DETAILS OF BREAST WALL / RETAINING WALL TOWARDS THE HILL SIDE. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 - AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:
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CONSULTANT:
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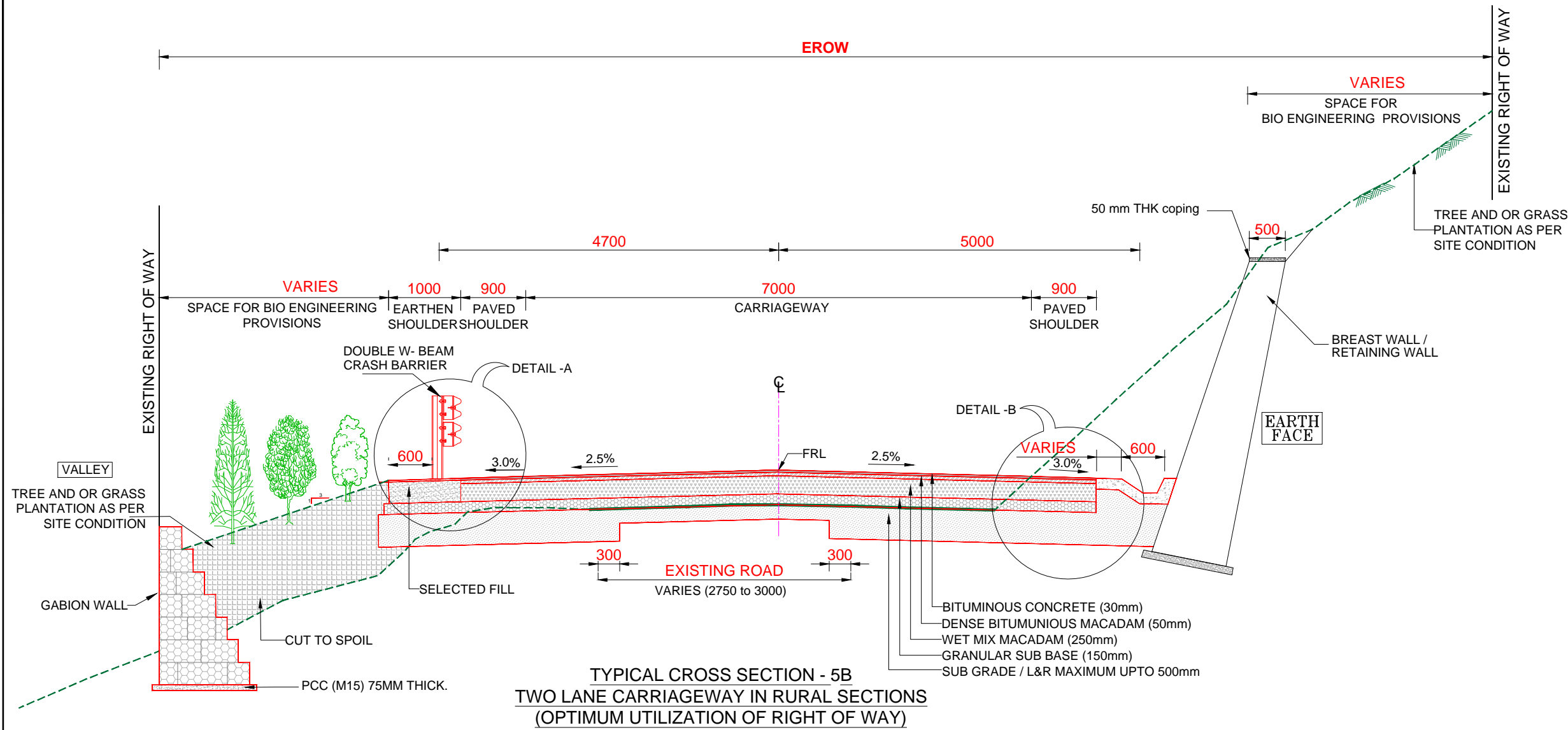
PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

DESIGNED: MADHU.K
DRAWN: DANIEL
CHECKED: CS/AH
APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS
DRAWING NO : HP/MAN-KAL/TCS-005A
ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

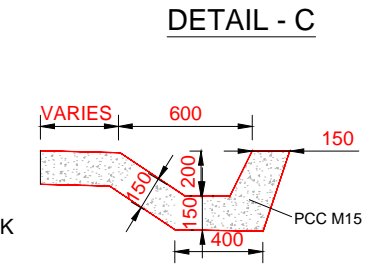
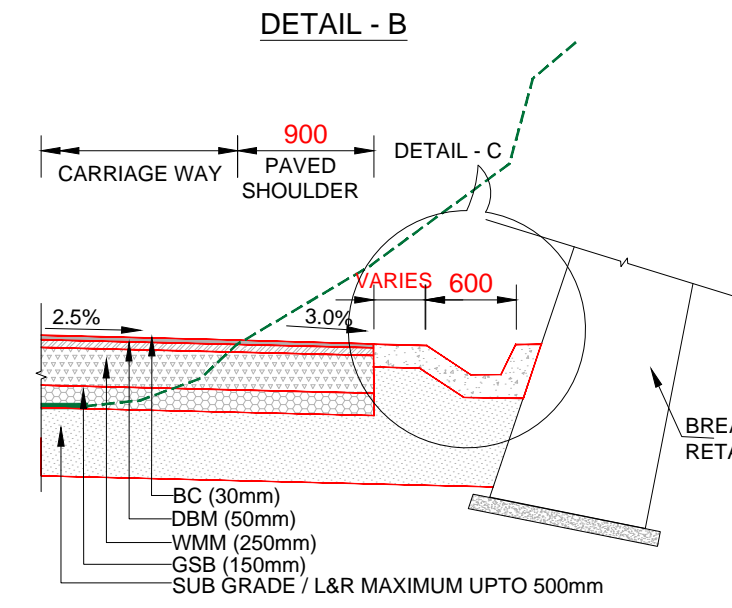
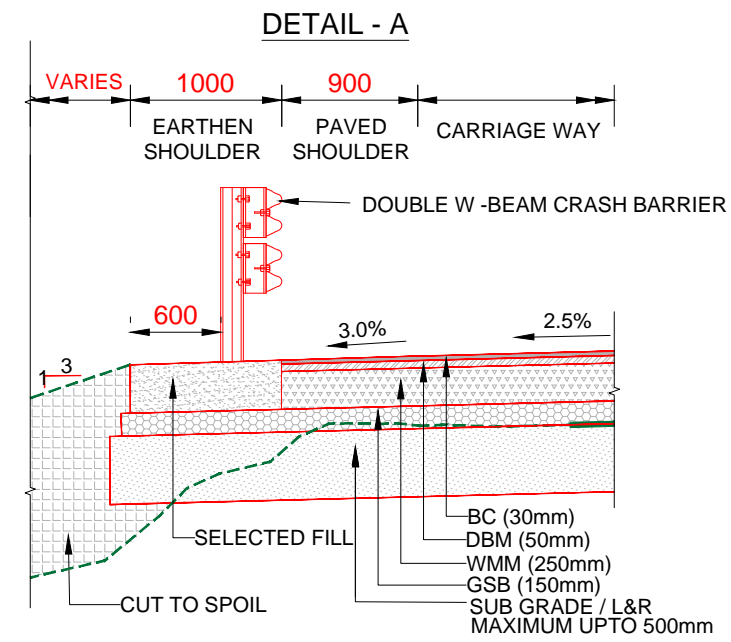
TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
	From	To	
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TYPICAL CROSS SECTION - 5B
TWO LANE CARRIAGEWAY IN RURAL SECTIONS
(OPTIMUM UTILIZATION OF RIGHT OF WAY)

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
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 - REFER DRAWING NOS : HP/MAN-KAL/MISC-017A, 017B, 017C AND 023A FOR SCHEDULES AND DETAILS OF BREAST WALL / RETAINING WALL TOWARDS THE HILL SIDE. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 - AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 - FOR W-BEAM CRASH BARRIER DETAILS REFER DRAWING NO: HP/MAN-KAL/MISC-004.
 - FOR RETAINING GABION STRUCTURES REFER DRAWING NO: HP/MAN-KAL/MISC-016.
 - THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

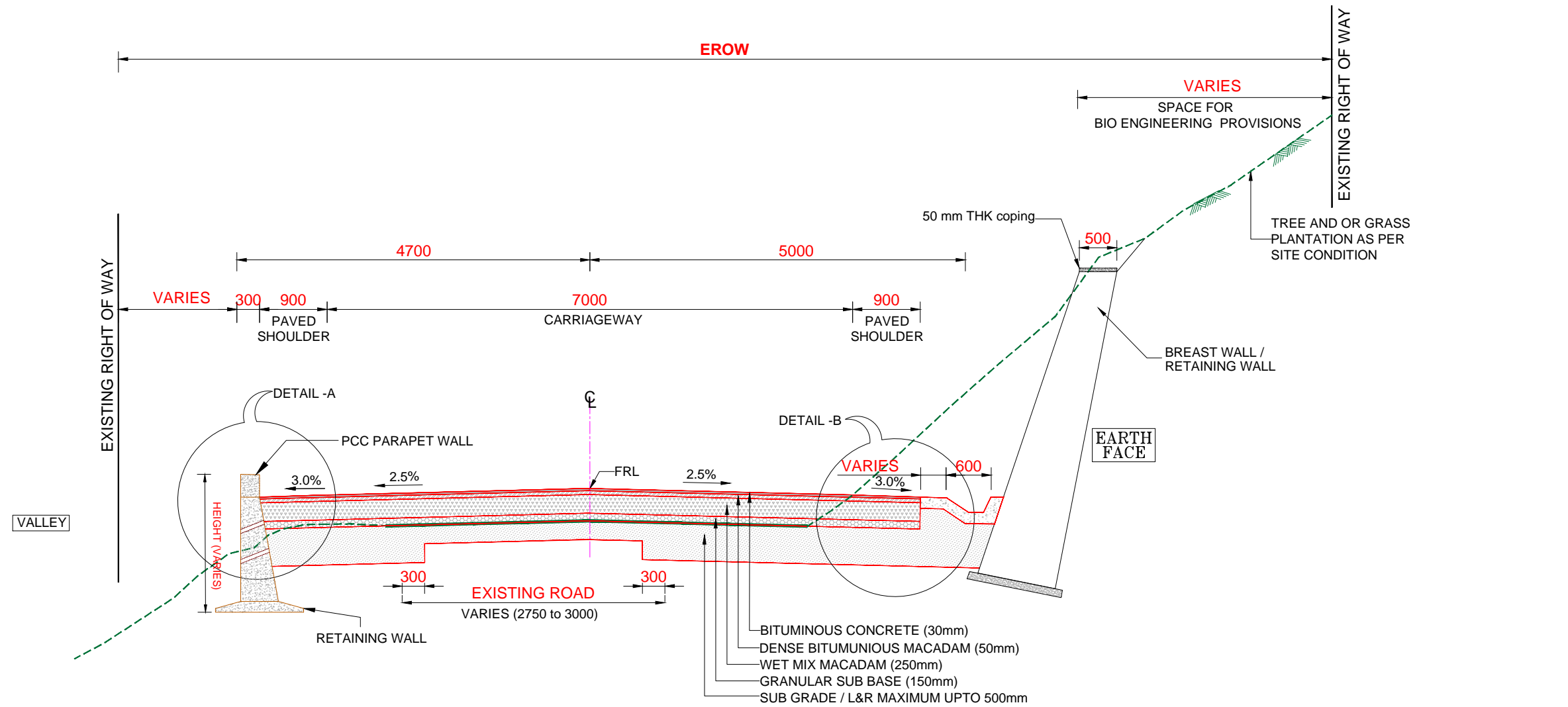
CLIENT:
HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
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PROJECT:
Himachal Pradesh State Roads Transformation Project (HPSRTP)

DESIGNED: MADHU.K
DRAWN: DANIEL
CHECKED: CS/AH
APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS
DRAWING NO : HP/MAN-KAL/TCS-005C
ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000
SHEET 12 OF 15

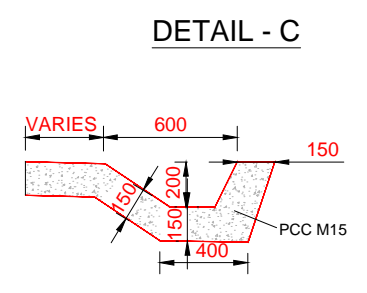
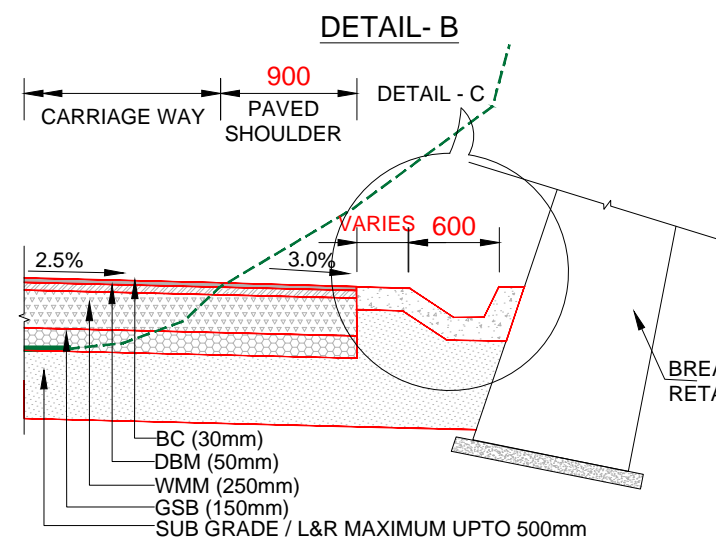
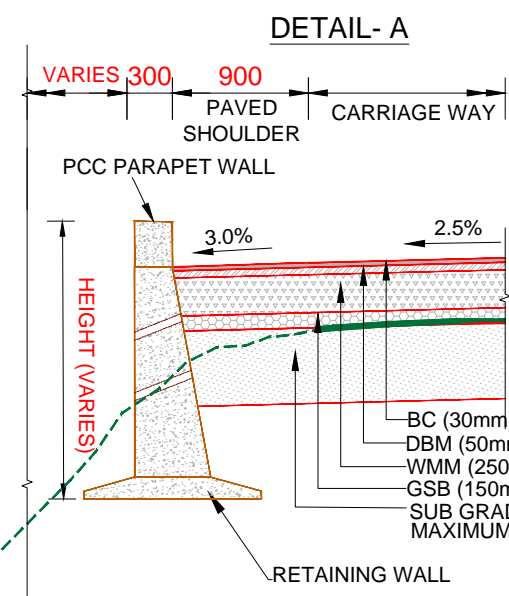


TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
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3	2550	2640	90
4	3480	3490	10
5	3510	3520	10
6	3960	4000	40

**TYPICAL CROSS SECTION - 5C
TWO LANE CARRIAGEWAY IN RURAL SECTIONS
(DEEP VALLEY LOCATION)**

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
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 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 - REFER DRAWING NOS : HP/MAN-KAL/MISC-017A, 017B, 017C AND 023A FOR SCHEDULES AND DETAILS OF BREAST WALL / RETAINING WALL TOWARDS THE HILL SIDE. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 - AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 - FOR SCHEDULES AND DETAILS OF RETAINING WALLS TOWARDS THE VALLEY SIDE, REFER TO DRAWING NO: HP/MAN-KAL/MISC-015. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE AVAILABLE RIGHT OF WAY AND FILL SLOPES.
 - THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

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PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

DESIGNED: MADHU.K
DRAWN: DANIEL
CHECKED: CS/AH
APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS

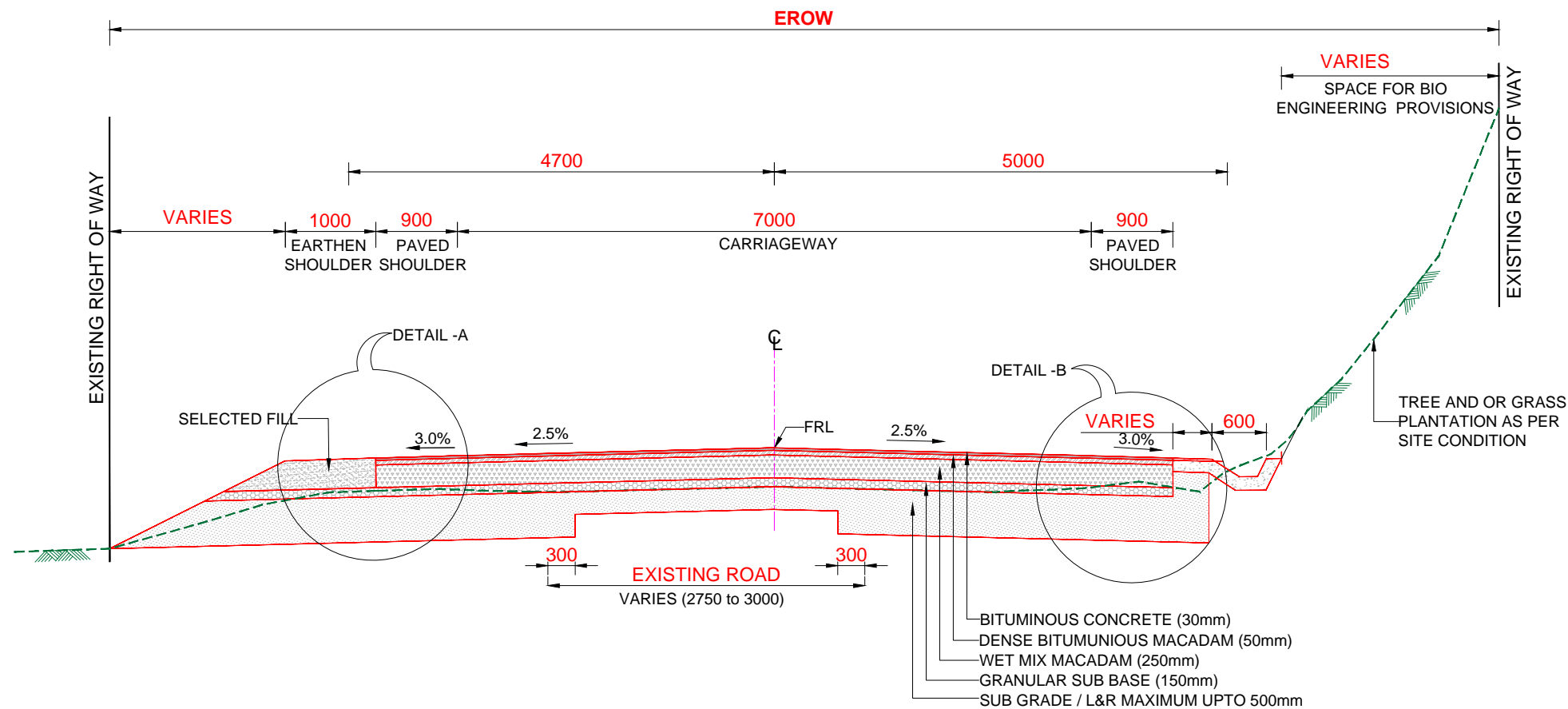
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ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 11 OF 15

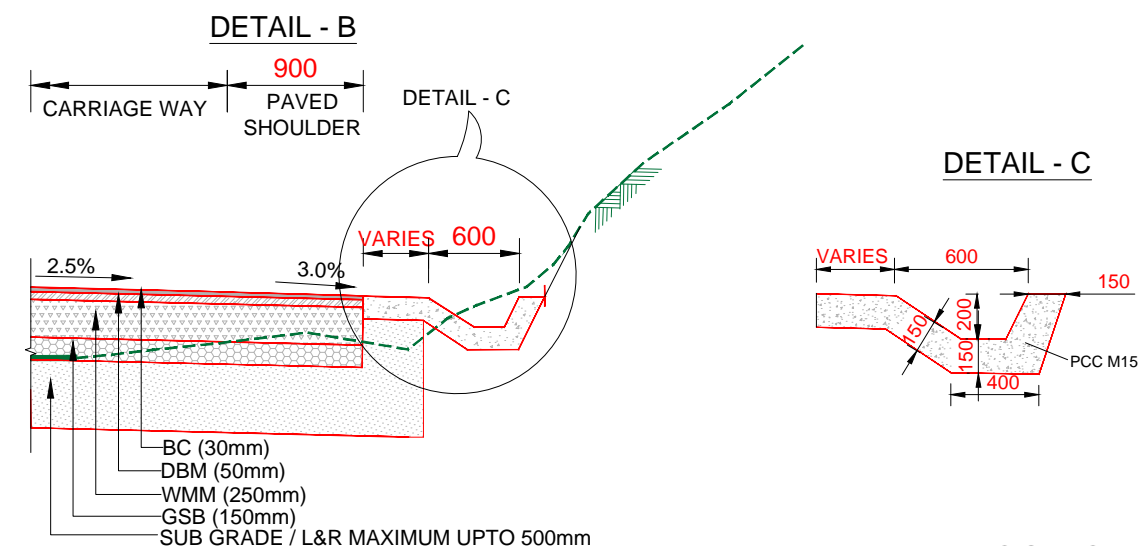
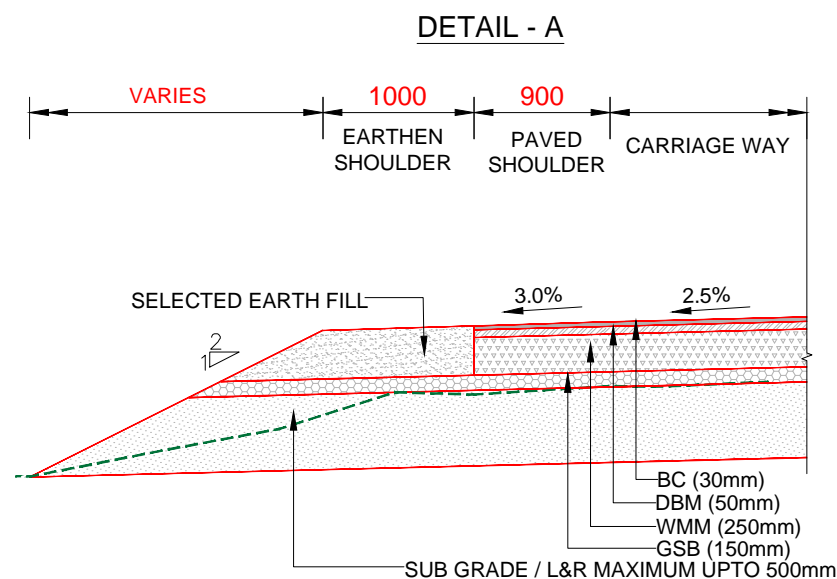
TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
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2	2320	2375	55
3	2780	2810	30
4	2835	2850	15
5	4000	4190	190



TYPICAL CROSS SECTION - 5D
TWO LANE CARRIAGEWAY IN RURAL SECTIONS

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
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 - AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 - THE LOCATION OF THE DRAIN SHOWN TOWARDS THE HILL SIDE IS INDICATIVE AND SHALL BE ADJUSTED BASED ON THE AVAILABLE RIGHT OF WAY IN CONSULTATION WITH CSC. IN CASE THE WIDTH AVAILABLE BETWEEN PAVED SHOULDER AND DRAIN IN ABUNDANCE, SPACE IN BETWEEN SHALL BE SUITABLY TREATED WITH GRASS/TILES.
 - THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

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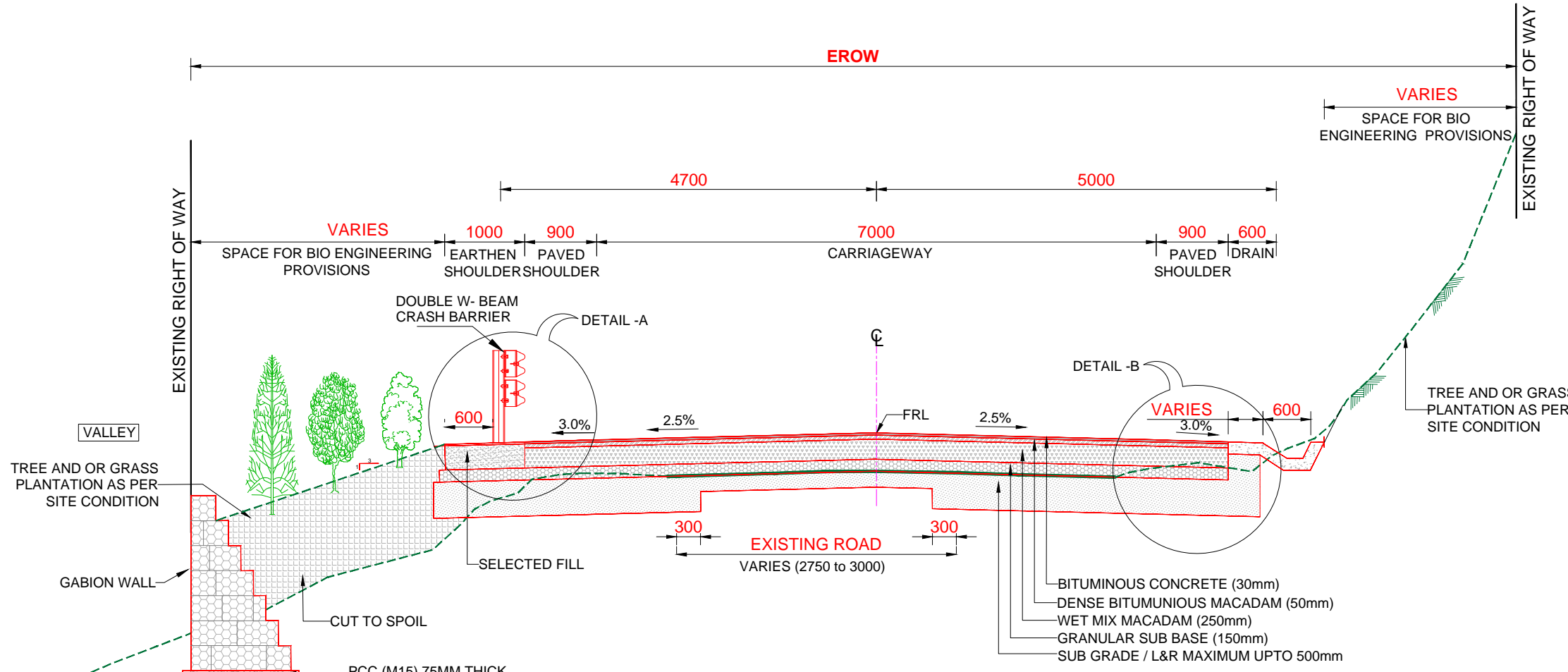
PROJECT:
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DESIGNED: MADHU.K
 DRAWN: DANIEL
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 APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS
 DRAWING NO : HP/MAN-KAL/TCS-005D
 ROAD NAME : Package-V:
 Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

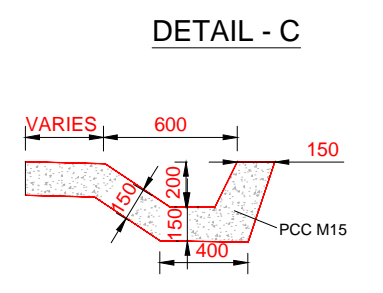
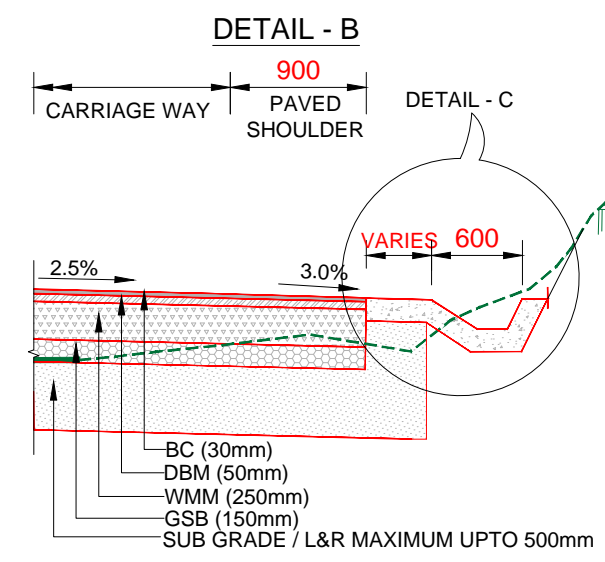
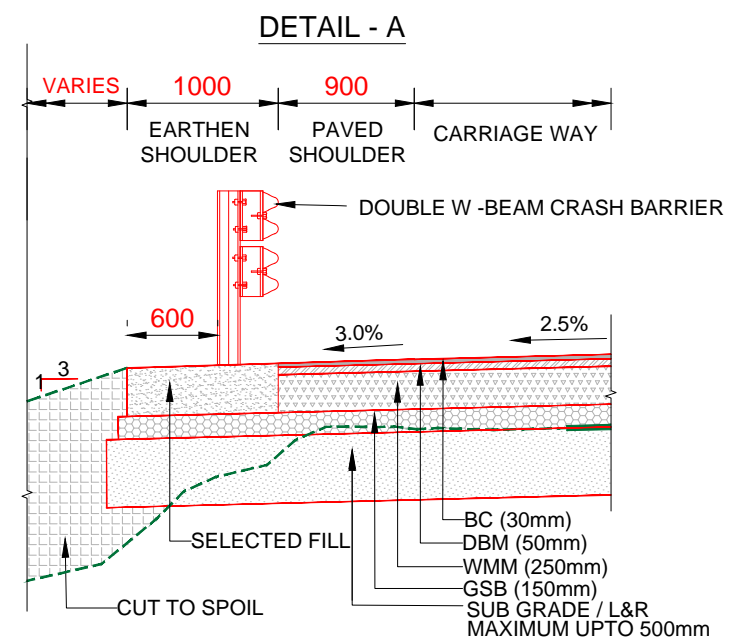
TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
	From	To	
1	2660	2670	10



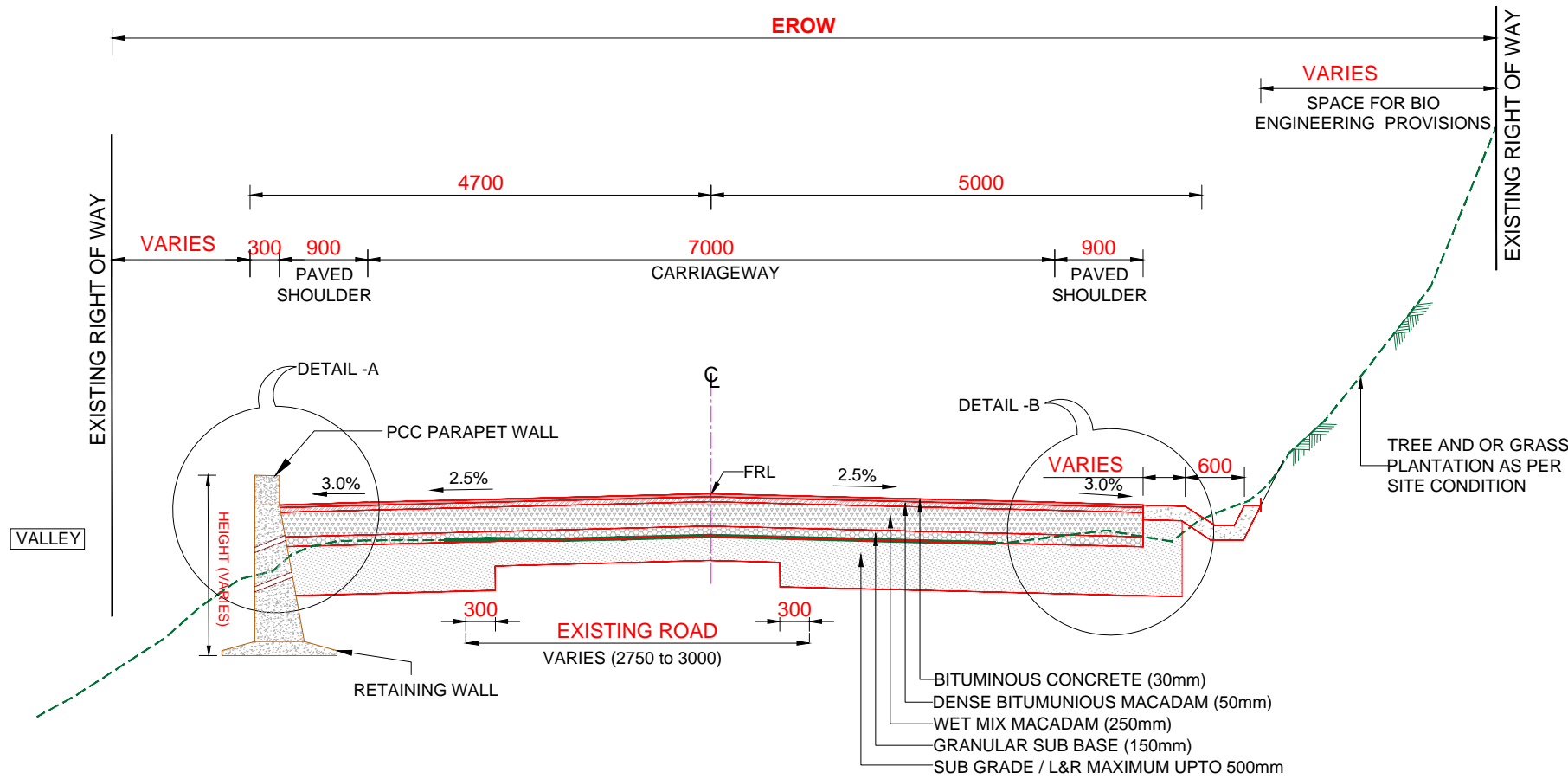
**TYPICAL CROSS SECTION - 5E
TWO LANE CARRIAGEWAY IN RURAL SECTIONS
(OPTIMUM UTILIZATION OF EROW)**

- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 3. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 4. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENEED AND COMPACTED.
 5. AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 6. FOR W-BEAM CRASH BARRIER DETAILS REFER DRAWING NO: HP/MAN-KAL/MISC-004.
 7. FOR RETAINING GABION STRUCTURES REFER DRAWING NO: HP/MAN-KAL/MISC-016.THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED.
 8. THE SPECIES AND WIDTH SHOWN FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.
 9. THE LOCATION OF THE DRAIN SHOWN TOWARDS THE HILL SIDE IS INDICATIVE AND SHALL BE ADJUSTED BASED ON THE AVAILABLE RIGHT OF WAY IN CONSULTATION WITH CSC. IN CASE THE WIDTH AVAILABLE BETWEEN PAVED SHOULDER AND DRAIN IN ABUNDANCE, SPACE IN BETWEEN SHALL BE SUITABLY TREATED WITH GRASS/TILES.



TENDER PURPOSE ONLY

<p>CLIENT: HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</p>					<p>CONSULTANT: SATRA SERVICES AND SOLUTIONS PVT LTD. #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India. Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in</p>					<p>PROJECT: Himachal Pradesh State Roads Transformation Project (HPSRTP)</p>					<p>DESIGNED: MADHU.K DRAWN: DANIEL CHECKED: CS/AH APPROVED: PRADEEP KAPLA</p>					<p>TITLE: TYPICAL CROSS SECTIONS</p>				
<p>DRAWING NO : HP/MAN-KAL/TCS-005F</p>										<p>ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000</p>														
<p>SCALE: NOT TO SCALE</p>					<p>SHEET 15 OF 15</p>																			

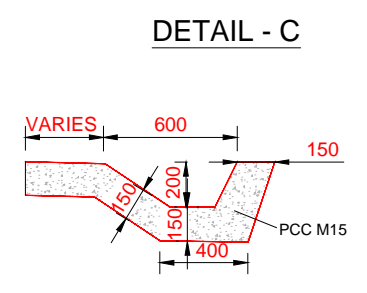
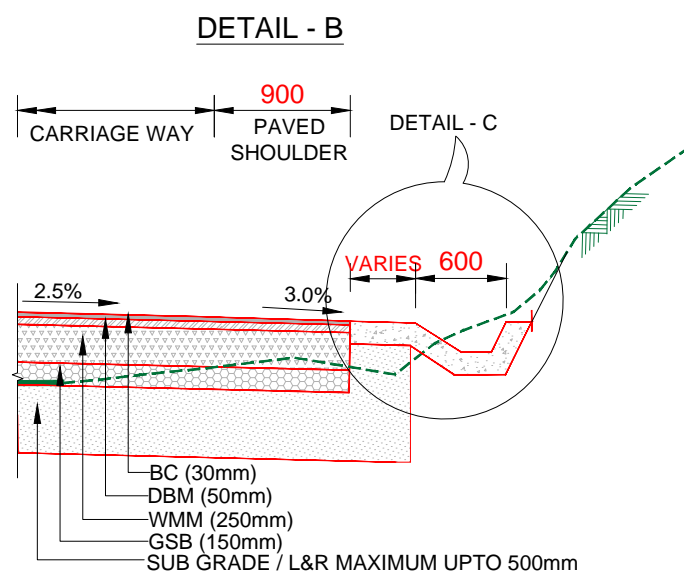
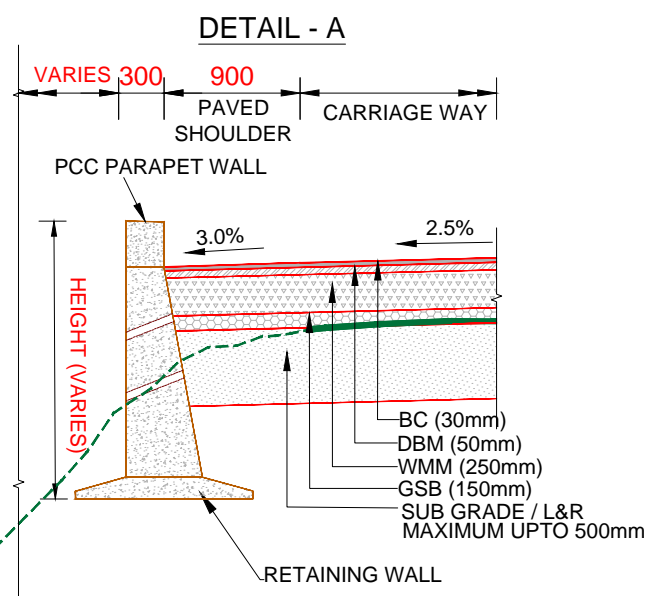


TCS SCHEDULE

S.No	Design Ch (Km)		Length (m)
	From	To	
1	2175	2205	30
2	2670	2780	110
3	3490	3510	20

**TYPICAL CROSS SECTION - 5F
TWO LANE CARRIAGEWAY IN RURAL SECTIONS
(DEEP VALLEY LOCATION)**

- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS LESS THAN THE OGL THE ENTIRE EXISTING PAVEMENT SHALL BE REMOVED AND LOOSENING AND COMPACTION OF THE EXISTING SUBGRADE TO FULL DEPTH SHALL BE DONE IF THE SOIL SATISFIES THE REQUIREMENT OF AFFECTIVE CBR OF 9%. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 3. DUE ALLOWANCE OF EXISTING WBM/WMM/GSB QUANTITIES SHALL BE ACCOUNTED FOR.
 4. IF THE LEVEL OF THE GSB BOTTOM OF THE NEW PAVEMENT IS MORE THAN THE OGL UP TO 420MM THE BITUMINOUS SURFACE SHALL BE SCARIFIED AND BE FILLED WITH SUBGRADE MATERIALS AND EXISTING LAYERS OF WBM/WMM/GSM SHALL NOT BE REMOVED. FOR THE WIDENING PORTION THE TOP LAYER OF EMBANKMENT SHALL BE LOOSENED AND COMPACTED.
 5. AT NATURAL WATER STREAM LOCATIONS, THE RIGID PAVEMENT SHALL BE CONSTRUCTED. FOR SCHEDULE REFER DRAWING NO: HP/MAN-KAL/MISC-030.
 6. FOR SCHEDULES AND DETAILS OF RETAINING WALLS TOWARDS THE VALLEY SIDE, REFER TO DRAWING NO: HP/MAN-KAL/MISC-015. THE SCHEDULES GIVEN ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BY THE CONTRACTOR BASED ON THE AVAILABLE RIGHT OF WAY AND FILL SLOPES.
 7. THE SPECIES AND WIDTH FOR THE BIOENGINEERING PROVISIONS ARE INDICATIVE AND SHALL BE FINALIZED IN CONSULTATION WITH CSC BASED ON THE TYPE OF STRATA ENCOUNTERED AND CUT SLOPES ACHIEVED. REFER TO ESMP DRAWINGS FOR DETAILS OF VARIOUS BIOENGINEERING SOLUTIONS.
 8. THE LOCATION OF THE DRAIN SHOWN TOWARDS THE HILL SIDE IS INDICATIVE AND SHALL BE ADJUSTED BASED ON THE AVAILABLE RIGHT OF WAY IN CONSULTATION WITH CSC. IN CASE THE WIDTH AVAILABLE BETWEEN PAVED SHOULDER AND DRAIN IN ABUNDANCE, SPACE IN BETWEEN SHALL BE SUITABLY TREATED WITH GRASS/TILES.



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

 SATRA SERVICES AND SOLUTIONS PVT LTD.
 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

DESIGNED: MADHU.K
 DRAWN: DANIEL
 CHECKED: CS/AH
 APPROVED: PRADEEP KAPLA

TITLE : TYPICAL CROSS SECTIONS

DRAWING NO : HP/MAN-KAL/TCS-005F



ROAD NAME : Package-V:
 Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 14 OF 15

GEOMETRY AND SECONDARY
CONTROL/ REFERENCE POINTS

DGPS Control Points										
Sl. No.	Point ID	Latitude			Longitude			Easting	Northing	RL
		Degrees °	Minutes '	Seconds "	Degrees °	Minutes '	Seconds "			
1	GPS1	31	42	23.2784	76	55	41.5429	682722.769	3509518.102	-
2	GPS1A	31	42	22.8182	76	55	41.5825	682724.062	3509503.948	-
3	GPS2	31	41	34.4162	76	55	20.5124	682195.628	3508003.547	-
4	GPS2A	31	41	34.1478	76	55	20.9200	682206.507	3507995.470	-
5	GPS3	31	40	27.4517	76	54	31.6689	680945.612	3505918.690	-
6	GPS3A	31	40	27.5712	76	54	32.3907	680964.558	3505922.701	-
7	GPS4	31	39	32.6443	76	53	32.6752	679421.204	3504203.747	-
8	GPS4A	31	39	32.8028	76	53	32.2695	679410.433	3504208.444	-
9	GPS5	31	38	51.5902	76	52	45.7249	678206.274	3502918.063	-
10	GPS5A	31	38	51.9292	76	52	45.4414	678198.626	3502928.375	968.127
11	GPS6	31	38	28.8220	76	52	16.6494	677452.333	3502203.729	1093.402
12	GPS6A	31	38	28.6703	76	52	15.7689	677429.215	3502198.661	1092.598
13	GPS7	31	38	1.7664	76	51	35.7444	676388.862	3501352.106	-
14	GPS7A	31	38	1.3808	76	51	34.9961	676369.348	3501339.895	-
15	GPS8	31	38	12.8828	76	50	29.3632	674634.106	3501664.748	-
16	GPS8A	31	38	12.0916	76	50	28.7519	674618.410	3501640.110	-
17	GPS9	31	37	18.0987	76	49	31.6691	673142.262	3499952.116	1332.541
18	GPS9A	31	37	18.0195	76	49	31.0931	673127.126	3499949.424	1332.326
19	GPS10	31	36	5.5927	76	49	35.8002	673288.445	3497721.131	-
20	GPS10A	31	36	5.4587	76	49	36.6189	673310.090	3497717.368	1296.505

TENDER PURPOSE ONLY

					CLIENT:  HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.	CONSULTANT:  SATRA SERVICES AND SOLUTIONS PVT LTD. #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India. Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in	PROJECT: Himachal Pradesh State Roads Transformation Project (HPSRTP)	DESIGNED: MADHU.K DRAWN: DANIEL CHECKED: CS/AH APPROVED: PRADEEP KAPLA	TITLE : DGPS CONTROL POINTS & TRAVERSE STATIONS DRAWING NO : HP/MAN-KAL/CP-001 ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000	SCALE: NOT TO SCALE	SHEET 01 OF 02
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED					

HORIZONTAL CURVE DETAILS

VERTICAL CURVE DETAILS


IP No.	IP Chainage (Km)	IP Level (m)	Curve Start Chainage (Km)	Curve End Chainage (Km)	In Gradient (%)	Out Gradient (%)	Curve Length (m)	K Value	Curve Type
101	7+008	881.42	6+992.646	7+022.646	2.299	-5.009	30	4.105	Hog
102	7+115	876.04	7+090.018	7+140.018	-5.009	-1.271	50	13.374	Sag
103	7+337	873.21	7+327.254	7+347.254	-1.271	0	20	15.741	Sag
104	7+478	873.21	7+450.268	7+505.268	0	-1.078	55	51.033	Hog
105	7+608	871.81	7+545.784	7+670.784	-1.078	-2.025	125	131.956	Hog
106	7+710	869.74	7+685.474	7+735.474	-2.025	-0.932	50	45.727	Sag
107	7+801	868.89	7+771.393	7+831.393	-0.932	0	60	64.406	Sag
108	7+916	868.89	7+891.340	7+941.340	0	3.641	50	13.734	Sag
109	8+325	883.78	8+310.439	8+340.439	3.641	0.136	30	8.56	Hog
110	8+567	884.11	8+516.993	8+616.993	0.136	1.992	100	53.876	Sag
111	8+771	888.18	8+756.385	8+786.385	1.992	0.747	30	24.088	Hog
112	8+806	888.45	8+791.391	8+821.391	0.747	2.823	30	14.451	Sag
113	8+875	890.39	8+850.183	8+900.183	2.823	0.44	50	20.989	Hog
114	8+972	890.81	8+941.501	9+001.501	0.44	7.127	60	8.973	Sag
115	9+048	896.28	9+033.174	9+063.174	7.127	3.187	30	7.614	Hog
116	9+095	897.77	9+080.216	9+110.216	3.187	4.573	30	21.646	Sag
117	9+261	905.37	9+241.345	9+281.345	4.573	5.093	40	76.841	Sag
118	9+400	912.43	9+384.922	9+414.922	5.093	5.672	30	51.8	Sag
119	9+482	917.07	9+464.184	9+499.184	5.672	0.745	35	7.104	Hog
120	9+522	917.37	9+506.920	9+536.920	0.745	2.501	30	17.086	Sag
121	9+609	919.53	9+581.092	9+636.092	2.501	1.945	55	98.853	Hog
122	9+727	921.85	9+714.971	9+739.971	1.945	0.649	25	19.301	Hog
123	9+765	922.09	9+754.740	9+774.740	0.649	3.363	20	7.371	Sag
124	9+815	923.78	9+799.953	9+829.953	3.363	0.275	30	9.716	Hog
125	9+863	923.91	9+847.707	9+877.707	0.275	1.906	30	18.397	Sag
126	9+981	926.15	9+965.580	9+995.580	1.906	-1.062	30	10.108	Hog
127	10+033	925.59	10+018.283	10+048.283	-1.062	0.371	30	20.929	Sag
128	10+112	925.89	10+099.688	10+124.681	0.371	2.152	25	14.031	Sag
129	10+156	926.83	10+143.554	10+168.554	2.152	0.03	25	11.779	Hog
130	10+203	926.85	10+187.590	10+217.590	0.03	-0.886	30	32.738	Hog
131	10+245	926.47	10+229.677	10+259.677	-0.886	0.399	30	23.335	Sag
132	10+328	926.80	10+307.561	10+347.561	0.399	-0.692	40	36.651	Hog
133	10+431	926.09	10+408.958	10+453.958	-0.692	1.858	45	17.644	Sag
134	10+503	927.41	10+490.401	10+515.401	1.858	-0.471	25	10.734	Hog
135	10+659	926.68	10+644.441	10+674.441	-0.471	-2.231	30	17.038	Hog
136	10+690	925.99	10+680.408	10+700.408	-2.231	0.188	20	8.266	Sag
137	10+735	926.07	10+717.547	10+752.547	0.188	-5.279	35	6.402	Hog
138	10+774	924.01	10+763.994	10+783.994	-5.279	-0.942	20	4.612	Sag
139	10+820	923.58	10+809.902	10+829.902	-0.942	0.868	20	11.046	Sag
140	10+897	924.25	10+869.015	10+924.015	0.868	-0.87	55	31.634	Hog
141	10+967	923.63	10+942.269	10+992.269	-0.87	0	50	57.456	Sag

TENDER PURPOSE ONLY

NOTES:
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:



HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

SATRA SERVICES AND SOLUTIONS PVT LTD.
#1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:

Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE: NOT TO SCALE

DESIGNED	MADHU.K
DRAWN	SATISH
CHECKED	CS/AH
APPROVED	PRADEEP KAPLA

TITLE : VERTICAL CURVES DETAILS

DRAWING NO : HP/MAN-KAL/VCD-002

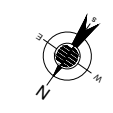
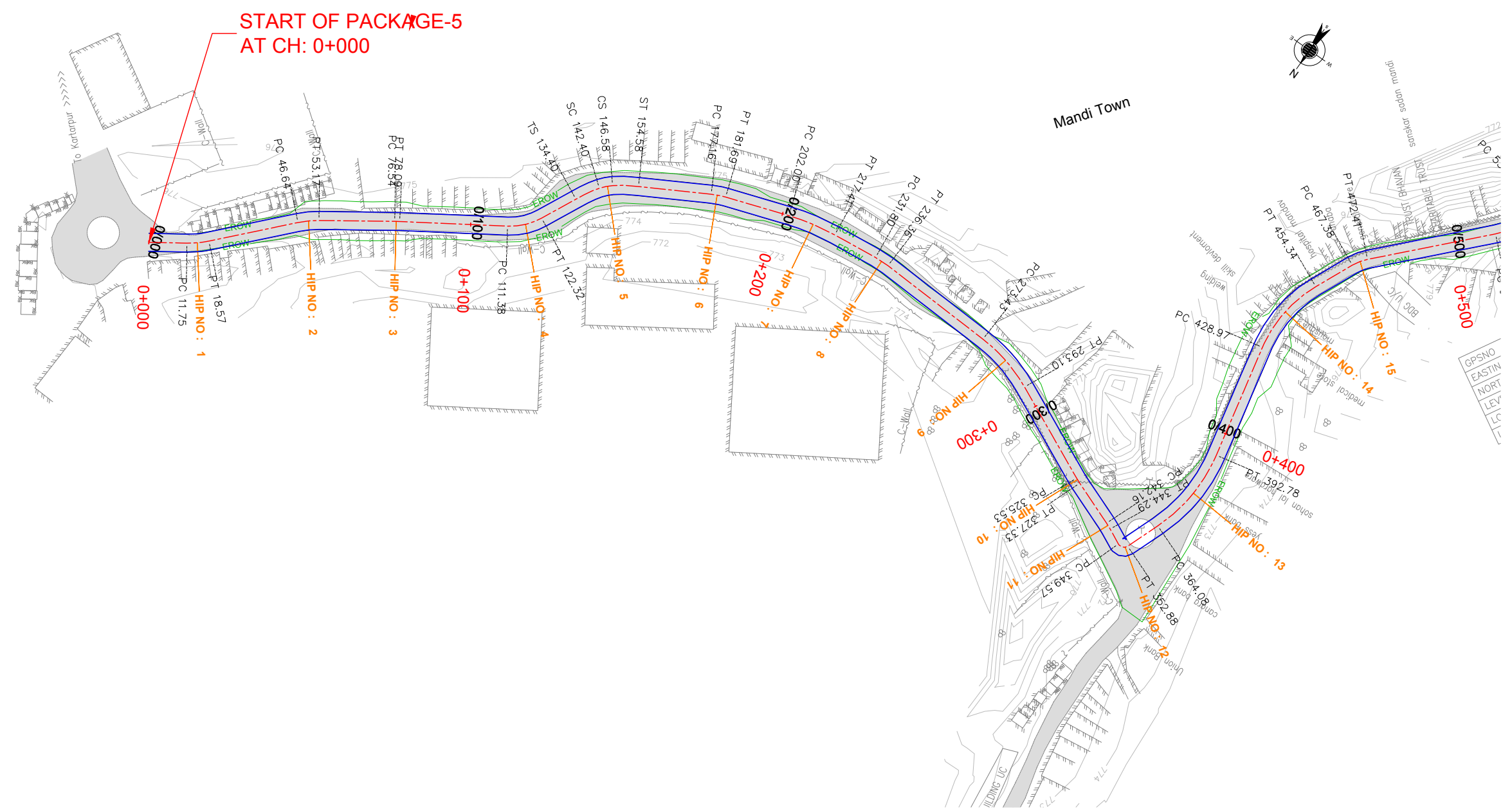
ROAD NAME : Package-V:
Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 02 OF 02

PLAN & PROFILES
(KM 0+000 TO 11+000)


← MANDI

KALKHAR →



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

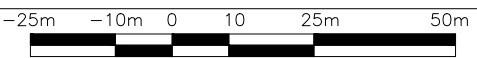
CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

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 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED: MADHUBABU
 DRAWN: DANIEL
 CHECKED: CHANDRA/ASHIK
 APPROVED: PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 0+000 TO CH: 0+500

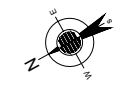
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ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

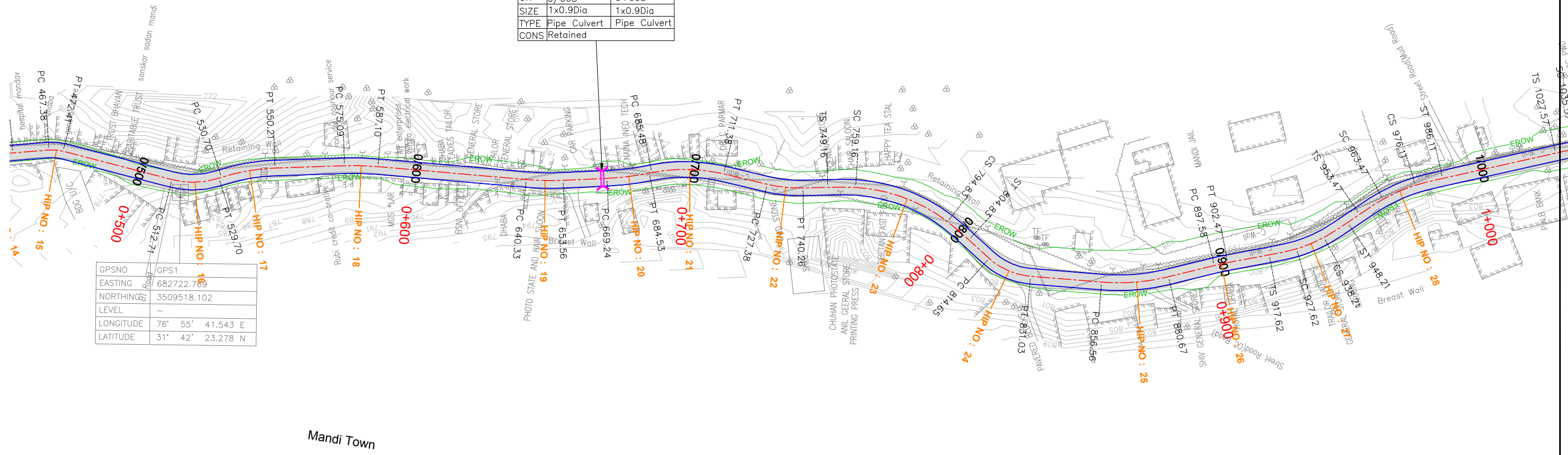
SHEET 01A OF 22

← MANDI

KALKHAR →



STR.	EXISTING	PROPOSED
CH	0/668	0+668
SIZE	1x0.9Dia	1x0.9Dia
TYPE	Pipe Culvert	Pipe Culvert
CONS	Retained	



GPSNO	GPS1
EASTING	682722.79
NORTHING	3509518.102
LEVEL	-
LONGITUDE	76° 55' 41.543 E
LATITUDE	31° 42' 23.278 N

Mandi Town

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

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#1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:

Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
HOR 1:1500
VER 1:200

DESIGNED	MADHUBABU
DRAWN	DANIEL
CHECKED	CHANDRA/ASHIK
APPROVED	PRADEEP KAPLA

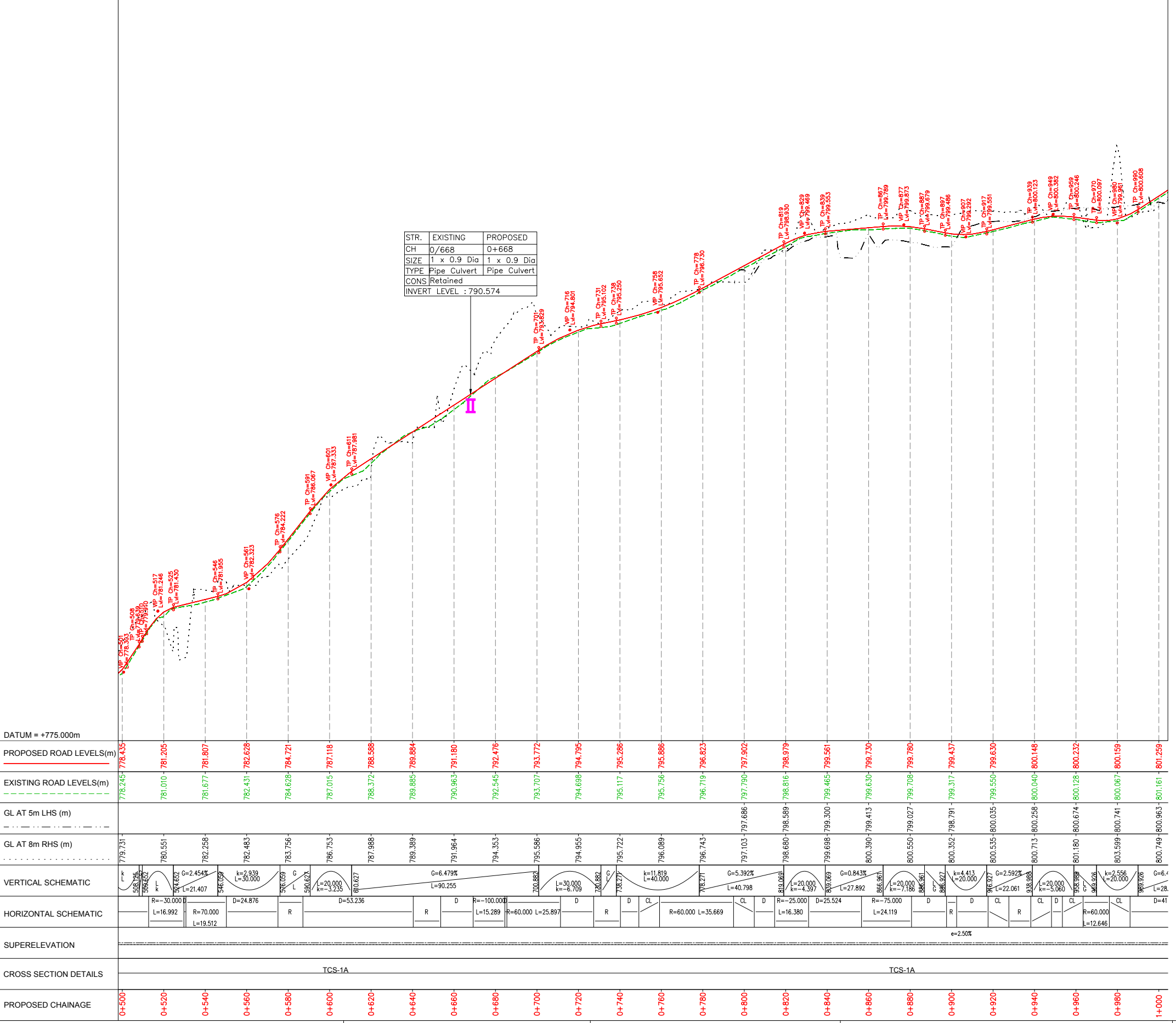
TITLE : PLAN & PROFILE FROM CH: 0+500 TO CH: 1+000

DRAWING NO : HP/MAN-KAL/P&P-02A

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 02A OF 22

← MANDI KALKHAR →



TENDER PURPOSE ONLY

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	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED																																		
SCALE: HOR 1:1500 VER 1:200 																																									

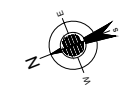
← MANDI

KALKHAR →




STR.	EXISTING	PROPOSED
CH	1/275	1+274
SIZE	1x5m	1x5m
TYPE	Slab Culvert	Slab Culvert
CONS	Retained	

STR.	EXISTING	PROPOSED
CH	1/450	1+451
SIZE	1x2.6m	1x2.6m
TYPE	Slab Culvert	Slab Culvert
CONS	Retained	



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

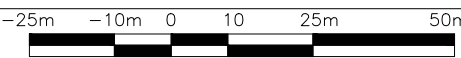
CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

 SATRA SERVICES AND SOLUTIONS PVT LTD.
 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED: MADHUBABU
 DRAWN: DANIEL
 CHECKED: CHANDRA/ASHIK
 APPROVED: PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 1+000 TO CH: 1+500

DRAWING NO : HP/MAN-KAL/P&P-03A

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

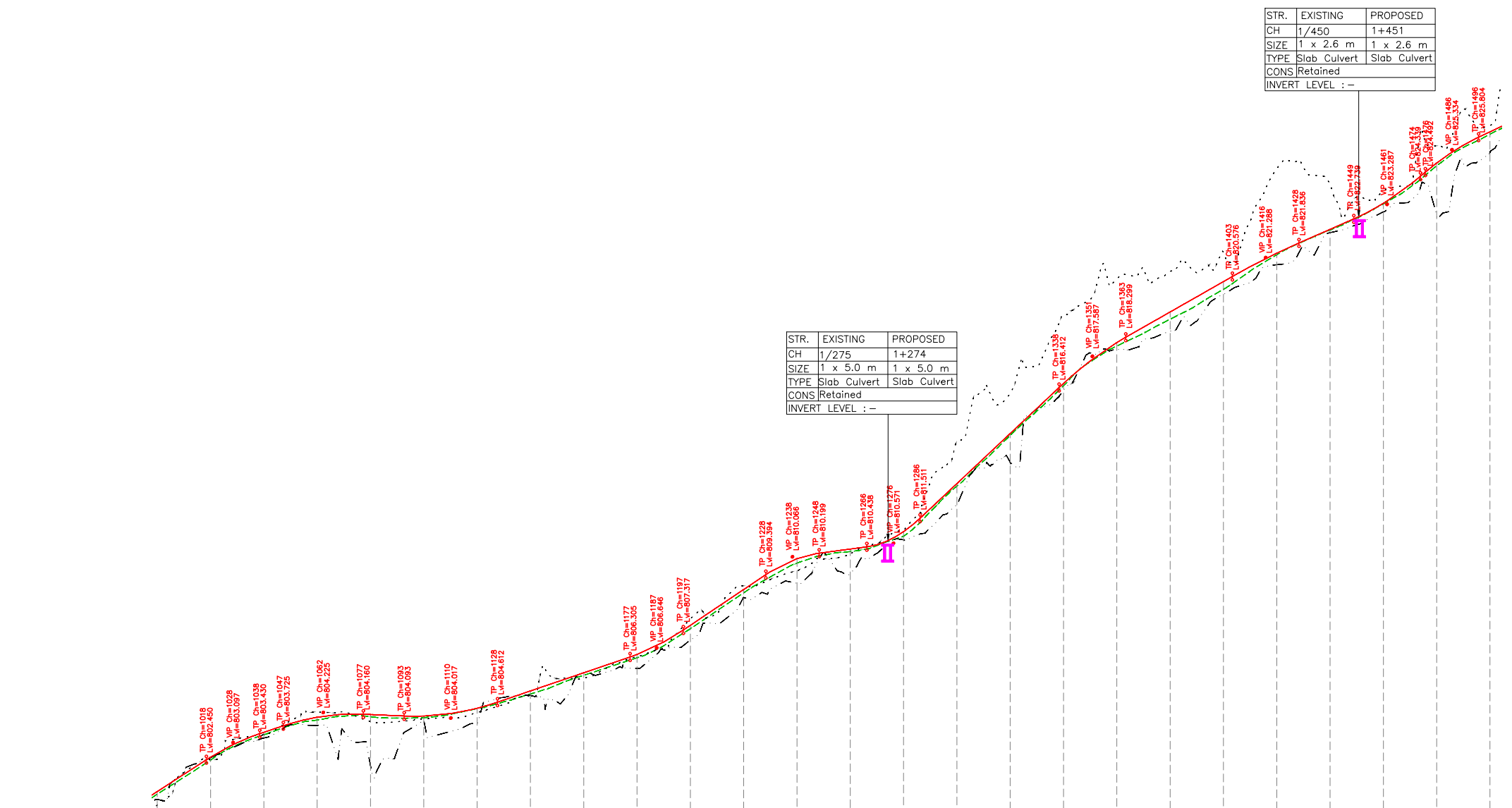
SHEET 03A OF 22

← MANDI

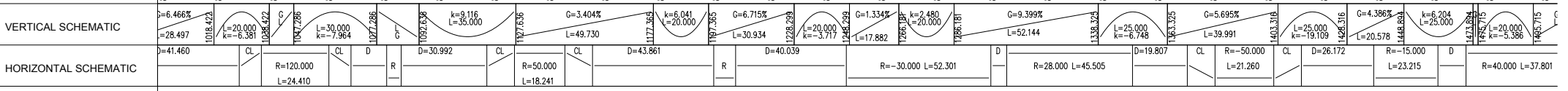
KALKHAR →

STR.	EXISTING	PROPOSED
CH	1/450	1+451
SIZE	1 x 2.6 m	1 x 2.6 m
TYPE	Slab Culvert	Slab Culvert
CONS	Retained	
INVERT LEVEL	:-	

STR.	EXISTING	PROPOSED
CH	1/275	1+274
SIZE	1 x 5.0 m	1 x 5.0 m
TYPE	Slab Culvert	Slab Culvert
CONS	Retained	
INVERT LEVEL	:-	




PROPOSED ROAD LEVELS(m)	EXISTING ROAD LEVELS(m)	GL AT 5m LHS (m)	GL AT 8m RHS (m)
800.259	800.161	800.963	800.749
802.550	802.442	802.529	802.467
803.482	803.390	803.268	803.385
804.047	803.941	803.742	804.235
804.148	804.067	803.884	803.884
804.090	804.034	803.930	803.984
804.384	804.369	803.819	804.222
805.033	804.817	804.863	804.849
805.714	805.620	805.754	805.517
806.401	806.276	806.880	806.322
807.494	807.366	806.939	807.740
808.837	808.712	806.538	808.970
809.996	809.827	809.071	809.548
810.355	810.263	809.432	810.168
811.007	810.841	810.701	811.084
812.810	812.715	812.032	814.365
814.690	814.623	814.610	816.187
816.567	816.484	816.314	819.113
818.101	817.971	817.844	820.485
819.248	818.976	818.530	820.769
820.387	820.098	819.907	821.490
821.453	821.394	821.021	824.619
822.349	822.326	822.227	824.067
823.325	823.304	823.003	823.795
824.836	824.732	822.886	825.475
826.006	825.920	825.227	826.242



PROPOSED CHAINAGE	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500
PROPOSED ROAD LEVELS(m)	800.259	802.550	803.482	804.047	804.148	804.090	804.384	805.033	805.714	806.401	807.494	808.837	809.996	810.355	811.007	812.810	814.690	816.567	818.101	819.248	820.387	821.453	822.349	823.325	824.836	826.006
EXISTING ROAD LEVELS(m)	800.161	802.442	803.390	803.941	804.067	804.034	804.369	804.817	805.620	806.276	807.366	808.712	809.827	810.263	810.841	812.715	814.623	816.484	817.971	818.976	820.098	821.394	822.326	823.304	824.732	825.920
GL AT 5m LHS (m)	800.963	802.529	803.268	803.742	803.884	803.930	803.819	804.863	805.754	806.880	806.939	806.538	809.071	809.432	810.701	812.032	814.610	816.314	817.844	818.530	819.907	821.021	821.394	822.227	823.003	824.732
GL AT 8m RHS (m)	800.749	802.467	803.385	804.235	803.884	803.984	804.222	804.849	805.517	806.322	807.740	808.970	809.548	810.168	811.084	814.365	816.187	819.113	820.485	820.769	821.490	824.619	824.067	823.795	825.475	826.242

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

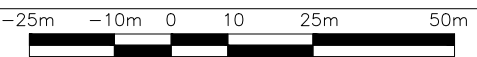
CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

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 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED	MADHUBABU
DRAWN	DANIEL
CHECKED	CHANDRA/ASHIK
APPROVED	PRADEEP KAPLA

TITLE :
 PLAN & PROFILE FROM CH: 1+000 TO CH: 1+500

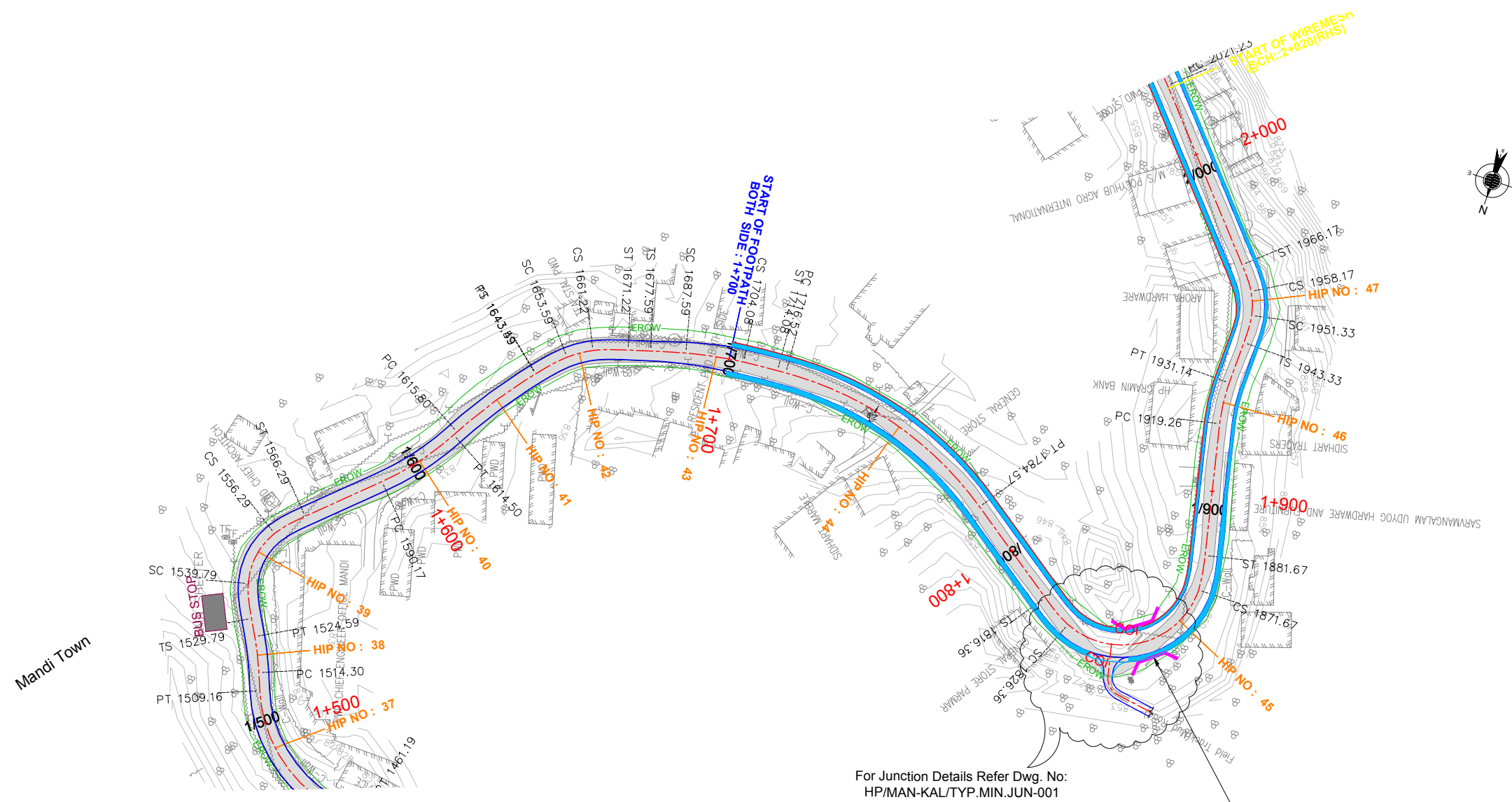
DRAWING NO : HP/MAN-KAL/P&P-03B

ROAD NAME : Package-V:
 Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 03B OF 22

← MANDI

KALKHAR →




For Junction Details Refer Dwg. No.
HP/MAN-KAL/TYP.MIN.JUN-001

STR.	EXISTING	PROPOSED
CH	1/850	1+849
SIZE	1x6.2m	1x7.5m
TYPE	Minor Bridge	Minor Bridge
CONS	Reconstruction	

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:



HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

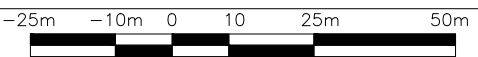


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Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:

Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
HOR 1:1500
VER 1:200



DESIGNED	MADHUBABU
DRAWN	DANIEL
CHECKED	CHANDRA/ASHIK
APPROVED	PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 1+500 TO CH: 2+000

DRAWING NO : HP/MAN-KAL/P&P-04A

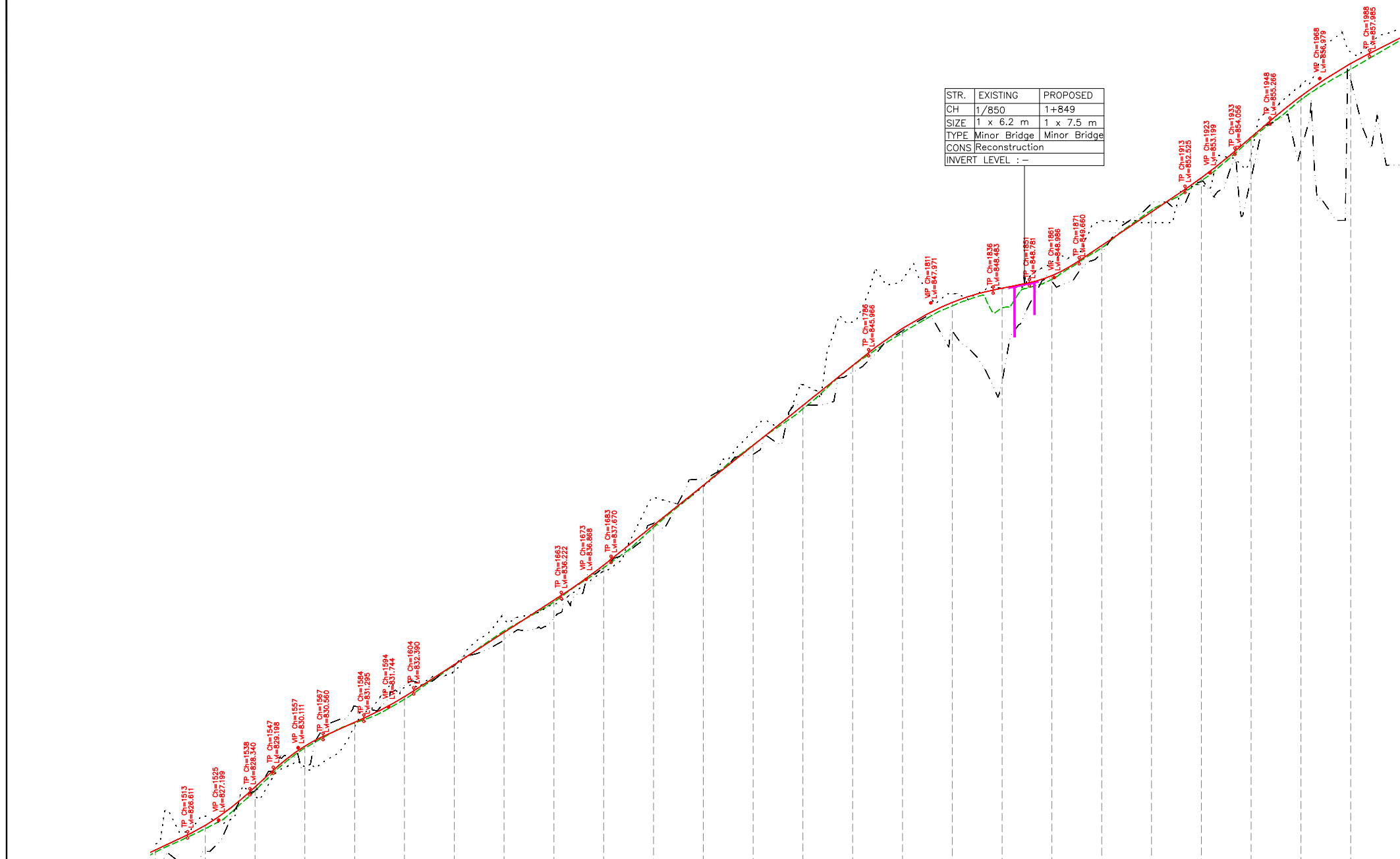
ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 04A OF 22

MANDI ←

→ KALKHAR


STR.	EXISTING	PROPOSED
CH	1/850	1+849
SIZE	1 x 6.2 m	1 x 7.5 m
TYPE	Minor Bridge	Minor Bridge
CONS	Reconstruction	
INVERT LEVEL	:-	



PROPOSED CHAINAGE	PROPOSED ROAD LEVELS(m)	EXISTING ROAD LEVELS(m)	GL AT 5m LHS (m)	GL AT 8m RHS (m)	VERTICAL SCHEMATIC	HORIZONTAL SCHEMATIC	SUPERELEVATION	CROSS SECTION DETAILS
1+500	826.006	825.920	825.227	825.242	C k=5.646 L=25.000 D=23.879	R=20.000 L=16.495	e=5.00%	TCS-1A
1+520	826.991	826.861	825.955	827.355				
1+540	828.535	828.394	828.373	828.161	C k=15.7274 L=20.000 D=23.879	R=20.000 L=16.495	e=5.00%	TCS-1A
1+560	830.172	830.095	829.284	829.352				
1+580	831.131	831.103	831.778	830.964	C k=10.116 L=20.000 D=23.879	R=20.000 L=16.495	e=5.00%	TCS-1A
1+600	832.161	832.056	832.620	832.531				
1+620	833.447	833.433	833.405	833.183	C G=6.465% L=59.261	R=150.000 L=27.689	e=5.00%	TCS-1A
1+640	834.740	834.797	834.449	835.286				
1+660	836.033	835.963	835.303	835.835	C k=12.873 L=20.000 D=23.879	R=150.000 L=27.689	e=5.00%	TCS-1A
1+680	837.439	837.332	837.349	837.173				
1+700	839.040	838.954	839.118	840.167	C k=18.2316 L=20.000 D=23.879	R=150.000 L=27.689	e=5.00%	TCS-1A
1+720	840.643	840.637	840.904	840.595				
1+740	842.247	842.265	841.885	842.830	C G=8.018% L=103.467	R=100.000 L=68.054	e=5.00%	TCS-7
1+760	843.851	843.719	843.860	844.683				
1+780	845.454	845.437	845.178	847.200	C L=50.000 L=3.376	R=100.000 L=68.054	e=5.00%	TCS-7
1+800	846.947	846.775	846.852	848.914				
1+820	847.987	847.850	848.843	848.342	C k=18.26.83 L=20.000 D=23.879	R=100.000 L=68.054	e=5.00%	TCS-7
1+840	848.557	847.773	848.825	848.564				
1+860	849.063	848.918	848.839	849.598	C k=4.262 L=20.000 D=23.879	R=100.000 L=68.054	e=5.00%	TCS-7
1+880	850.272	850.182	849.966	851.260				
1+900	851.670	851.696	851.948	851.193	C G=6.742% L=42.498	R=100.000 L=68.054	e=5.00%	TCS-7
1+920	852.988	852.878	852.828	852.693				
1+940	854.619	854.542	854.981	853.896	C k=10.361 L=20.000 D=23.879	R=100.000 L=68.054	e=5.00%	TCS-7
1+960	856.264	856.130	856.136	856.714				
1+980	857.580	857.351	858.922	858.036	C k=18.7.346 L=20.000 D=23.879	R=100.000 L=68.054	e=5.00%	TCS-7
2+000	858.612	858.513	858.996	858.996				

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

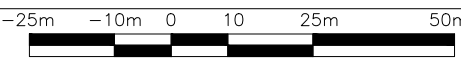
CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

 SATRA SERVICES AND SOLUTIONS PVT LTD.
 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



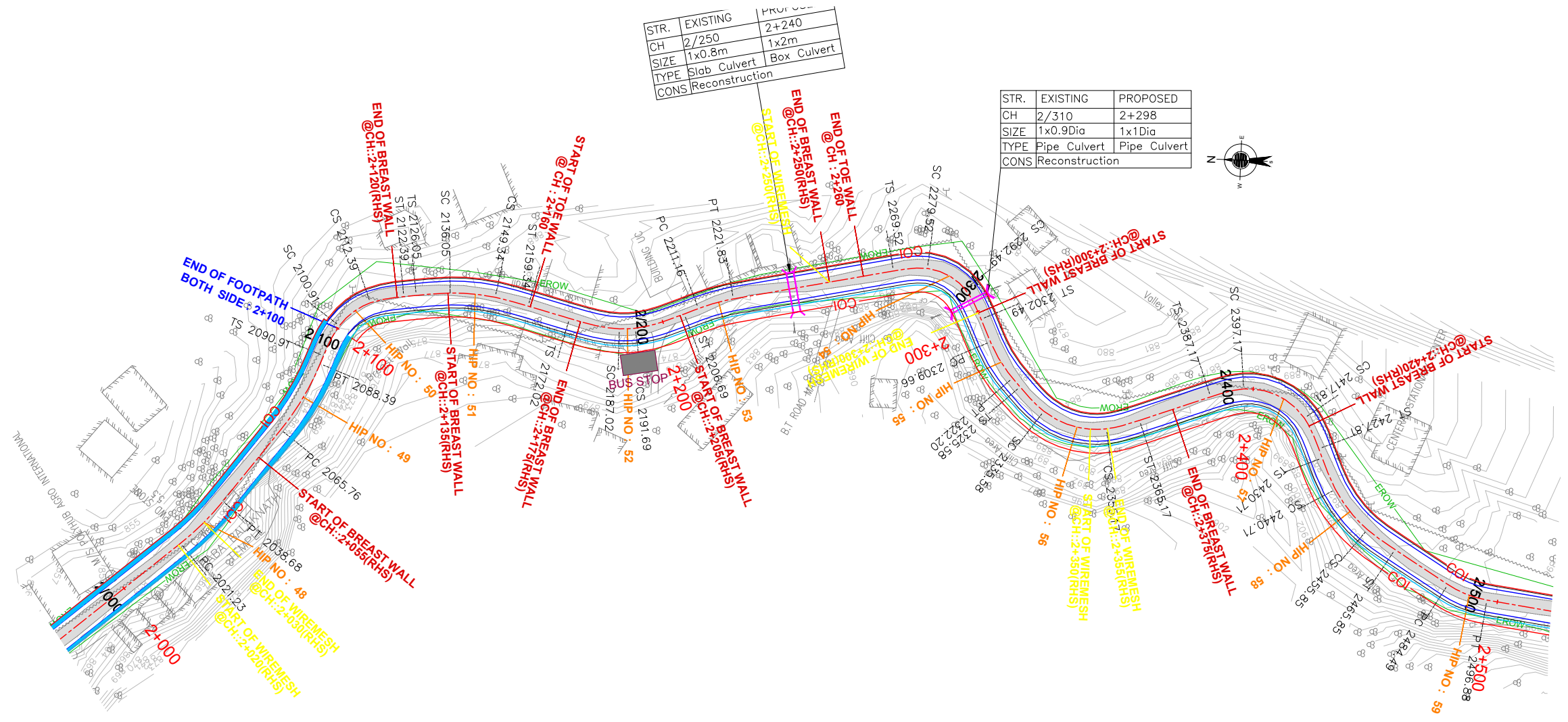
DESIGNED	MADHUBABU
DRAWN	DANIEL
CHECKED	CHANDRA/ASHIK
APPROVED	PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 1+500 TO CH: 2+000

DRAWING NO : HP/MAN-KAL/P&P-04B


ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 04B OF 22



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

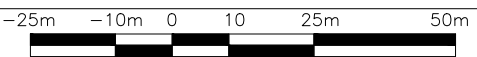
CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

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PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED: MADHUBABU
 DRAWN: DANIEL
 CHECKED: CHANDRA/ASHIK
 APPROVED: PRADEEP KAPLA

TITLE :
 PLAN & PROFILE FROM CH: 2+000 TO CH: 2+500

DRAWING NO : HP/MAN-KAL/P&P-05A

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

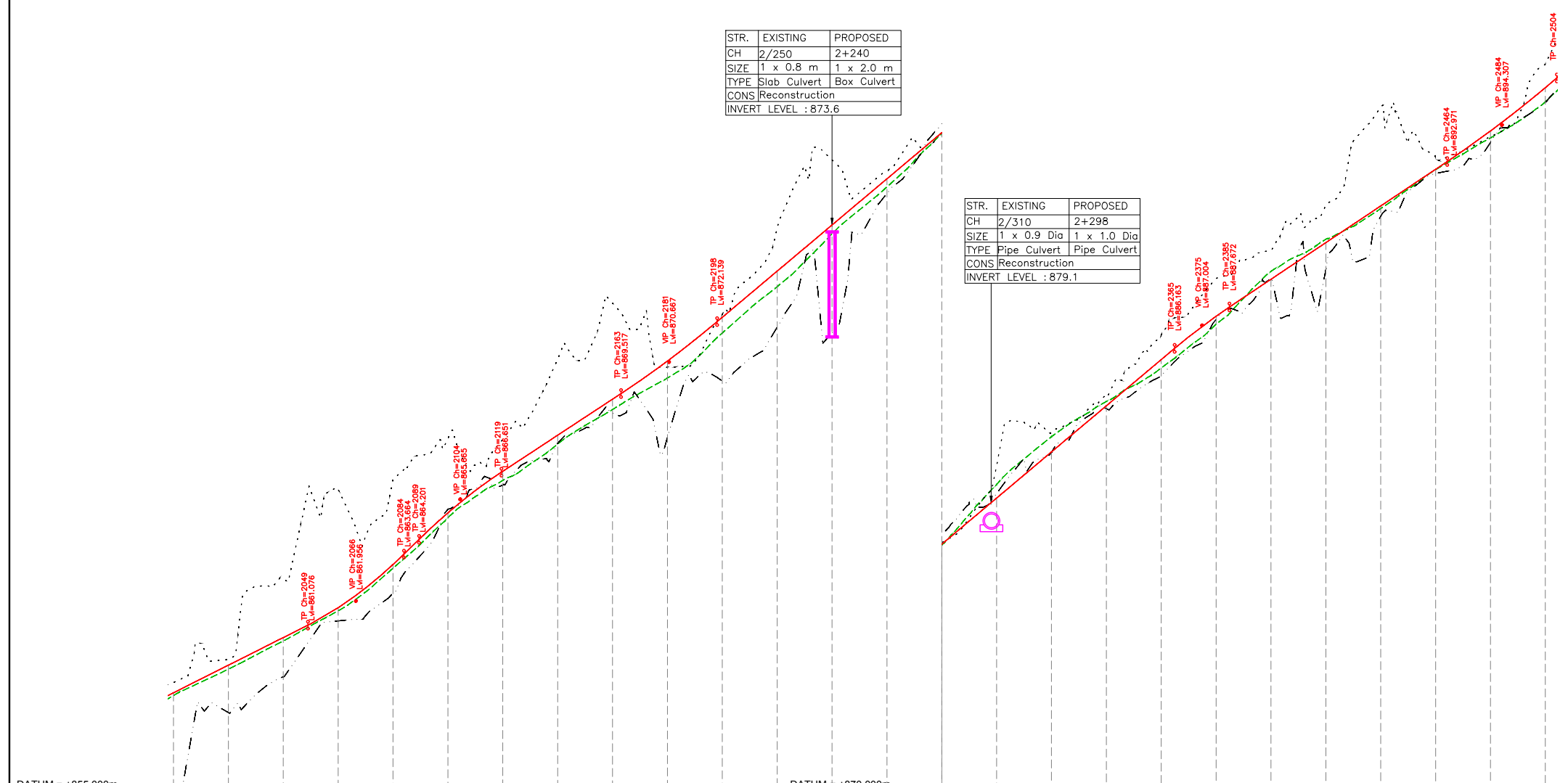
SHEET 05A OF 22

MANDI ←

→ KALKHAR

STR.	EXISTING	PROPOSED
CH	2/250	2+240
SIZE	1 x 0.8 m	1 x 2.0 m
TYPE	Slab Culvert	Box Culvert
CONS	Reconstruction	
INVERT LEVEL	: 873.6	


STR.	EXISTING	PROPOSED
CH	2/310	2+298
SIZE	1 x 0.9 Dia	1 x 1.0 Dia
TYPE	Pipe Culvert	Pipe Culvert
CONS	Reconstruction	
INVERT LEVEL	: 879.1	



	2+000	2+020	2+040	2+060	2+080	2+100	2+120	2+140	2+160	2+180	2+200	2+220	2+240	2+260	2+280	2+300	2+320	2+340	2+360	2+380	2+400	2+420	2+440	2+460	2+480	2+500		
DATUM = +855.000m																												
PROPOSED ROAD LEVELS(m)	858.612	859.616	860.624	861.713	862.287	863.169	866.655	867.999	869.314	870.703	872.289	873.981	875.663	877.345	879.027	880.709	882.391	884.073	885.755	887.437	889.119	890.801	892.483	894.165	895.847	897.529		
EXISTING ROAD LEVELS(m)	853.513	859.475	860.501	861.600	863.153	864.991	866.353	867.678	868.935	870.084	871.725	873.414	875.344	877.048	879.005	881.202	882.945	884.228	885.450	887.045	888.973	890.143	891.260	892.676	893.634	895.155		
GL AT 5m LHS (m)	853.503	857.892	859.190	861.233	862.239	865.295	866.185	867.706	868.807	870.483	872.403	875.543	877.733	879.810	881.887	883.968	884.497	886.656	888.715	890.720	892.700	894.662	896.538	898.332	900.055	901.717		
GL AT 8m RHS (m)	858.986	859.829	862.752	866.026	866.392	867.867	867.844	870.762	872.812	874.83	876.403	878.031	879.031	879.634	880.872	883.163	884.497	886.656	888.715	890.720	892.700	894.662	896.538	898.332	900.055	901.717		
VERTICAL SCHEMATIC	[Vertical curve diagrams showing grades and curve lengths]																											
HORIZONTAL SCHEMATIC	[Horizontal curve diagrams showing radii and lengths]																											
SUPERELEVATION	[Superelevation diagrams showing cross-slopes]																											
CROSS SECTION DETAILS	TCS-7														TCS-8										TCS-8			
PROPOSED CHAINAGE	2+000	2+020	2+040	2+060	2+080	2+100	2+120	2+140	2+160	2+180	2+200	2+220	2+240	2+260	2+280	2+300	2+320	2+340	2+360	2+380	2+400	2+420	2+440	2+460	2+480	2+500		

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

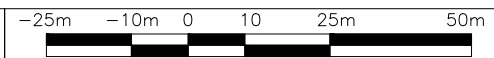
CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

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 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



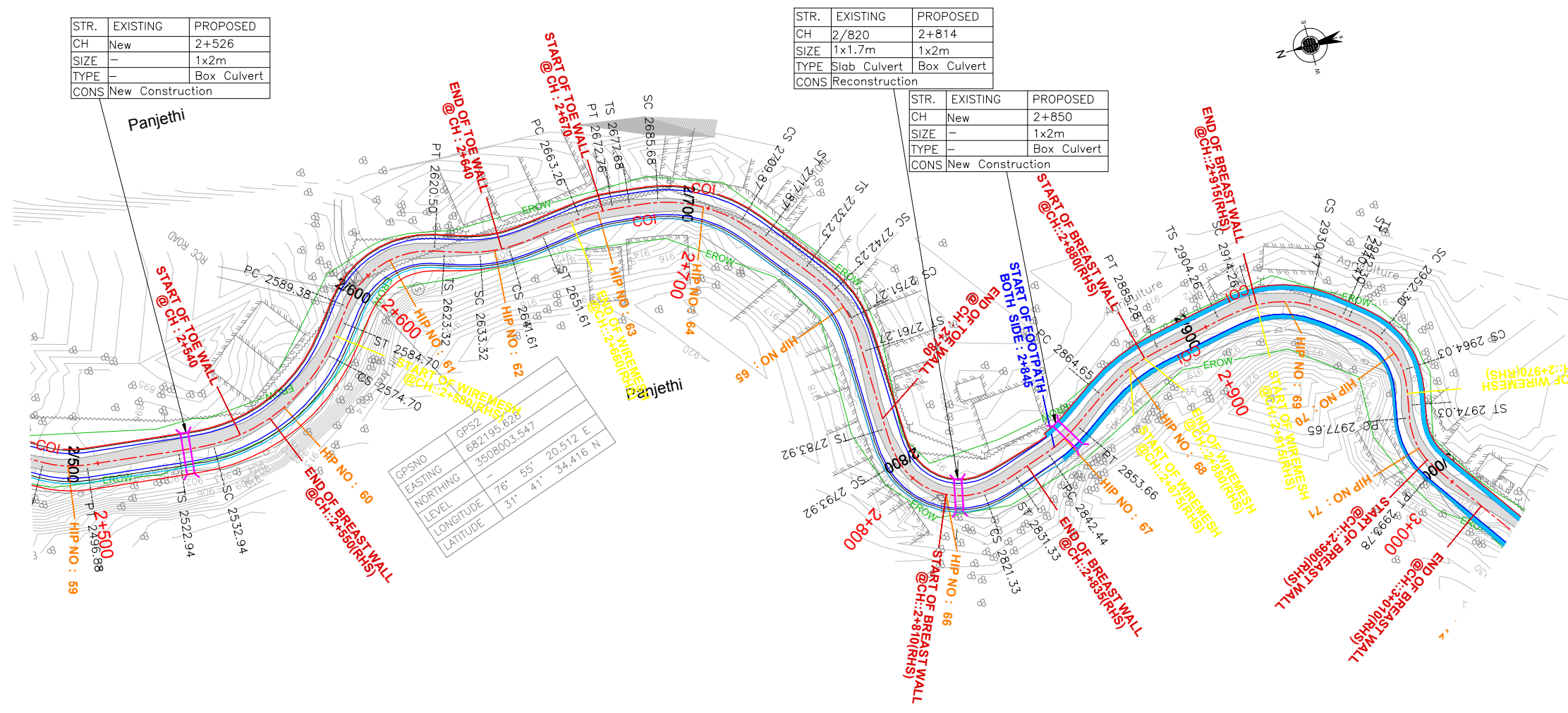
DESIGNED	MADHUBABU
DRAWN	DANIEL
CHECKED	CHANDRA/ASHIK
APPROVED	PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 2+000 TO CH: 2+500

DRAWING NO : HP/MAN-KAL/P&P-05B

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 05B OF 22

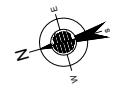


STR.	EXISTING	PROPOSED
CH	New	2+526
SIZE	-	1x2m
TYPE	-	Box Culvert
CONS	-	New Construction

STR.	EXISTING	PROPOSED
CH	2/820	2+814
SIZE	1x1.7m	1x2m
TYPE	Slab Culvert	Box Culvert
CONS	-	Reconstruction


STR.	EXISTING	PROPOSED
CH	New	2+850
SIZE	-	1x2m
TYPE	-	Box Culvert
CONS	-	New Construction

GPSNO	GPS2	882195.828	3508003.547	20.512 E	34.416 N
EASTING					
NORTHING					
LEVEL		76° 55'	41'		
LONGITUDE		31°			
LATITUDE					



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

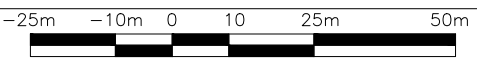
CLIENT:

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CONSULTANT:

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PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED: MADHUBABU
 DRAWN: DANIEL
 CHECKED: CHANDRA/ASHIK
 APPROVED: PRADEEP KAPLA

TITLE :
 PLAN & PROFILE FROM CH: 2+500 TO CH: 3+000

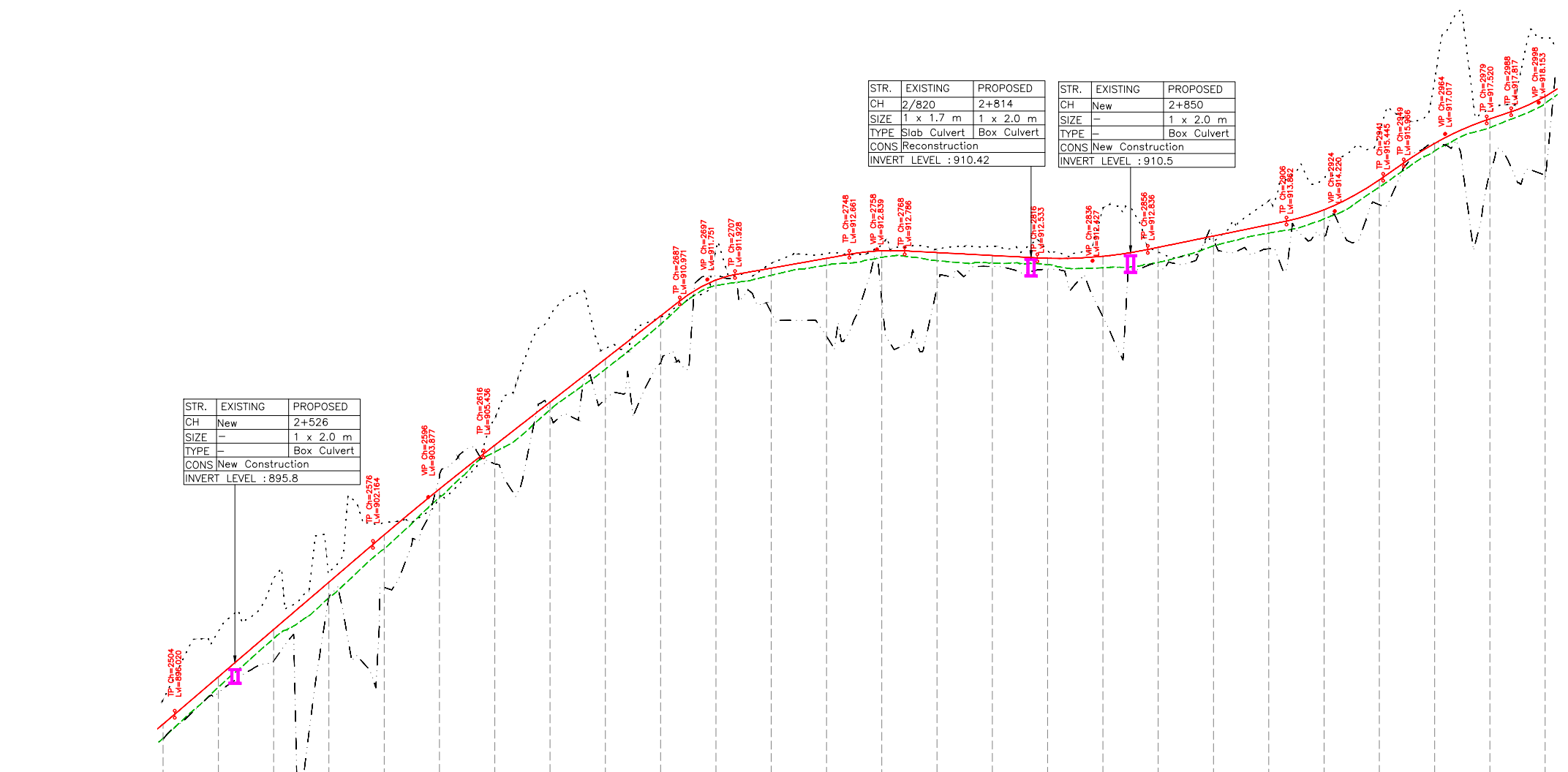
DRAWING NO : HP/MAN-KAL/P&P-06A

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 06A OF 22

MANDI ←

→ KALKHAR



STR.	EXISTING	PROPOSED
CH	New	2+526
SIZE	-	1 x 2.0 m
TYPE	-	Box Culvert
CONS	New Construction	
INVERT LEVEL	: 895.8	

STR.	EXISTING	PROPOSED
CH	2/820	2+814
SIZE	1 x 1.7 m	1 x 2.0 m
TYPE	Slab Culvert	Box Culvert
CONS	Reconstruction	
INVERT LEVEL	: 910.42	

STR.	EXISTING	PROPOSED
CH	New	2+850
SIZE	-	1 x 2.0 m
TYPE	-	Box Culvert
CONS	New Construction	
INVERT LEVEL	: 910.5	

DATUM = +893.000m	
PROPOSED ROAD LEVELS(m)	895.665, 897.374, 899.088, 900.801, 902.512, 904.171, 905.755, 907.315, 908.874, 910.434, 911.734, 912.161, 912.515, 912.790, 912.724, 912.618, 912.517, 912.589, 912.913, 913.323, 913.732, 914.273, 915.351, 916.674, 917.580, 918.370
EXISTING ROAD LEVELS(m)	895.155, 896.996, 898.757, 900.231, 902.007, 903.870, 905.510, 907.037, 908.505, 910.128, 911.534, 911.902, 912.264, 912.554, 912.431, 912.350, 912.290, 912.170, 912.371, 912.967, 913.430, 913.946, 915.092, 916.403, 917.245, 918.121
GL AT 5m LHS (m)	896.539, 896.796, 897.947, 900.290, 902.611, 904.604, 906.080, 907.888, 909.416, 910.383, 911.886, 912.338, 912.679, 913.020, 912.846, 912.955, 912.800, 914.321, 912.745, 913.110, 914.598, 915.400, 917.055, 918.837, 919.883, 920.490
GL AT 8m RHS (m)	895.132, 896.796, 897.947, 900.290, 902.611, 904.604, 906.080, 907.888, 909.416, 910.383, 911.886, 912.338, 912.679, 913.020, 912.846, 912.955, 912.800, 914.321, 912.745, 913.110, 914.598, 915.400, 917.055, 918.837, 919.883, 920.490
VERTICAL SCHEMATIC	
HORIZONTAL SCHEMATIC	
SUPERELEVATION	
CROSS SECTION DETAILS	TCS-8, TCS-7
PROPOSED CHAINAGE	2+500, 2+520, 2+540, 2+560, 2+580, 2+600, 2+620, 2+640, 2+660, 2+680, 2+700, 2+720, 2+740, 2+760, 2+780, 2+800, 2+820, 2+840, 2+860, 2+880, 2+900, 2+920, 2+940, 2+960, 2+980, 3+000

TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

CLIENT:

 HIMACHAL PRADESH ROAD AND OTHER INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

 SATRA SERVICES AND SOLUTIONS PVT LTD.
 #1-8-359 to 363, 4th Floor, Centre Point Building, SP Road, Begumpet, Secunderabad, Telangana - 500003, India.
 Tel: +91 40 2784 0040, Fax: +91 40 2784 0050, E-mail: info@satragroup.in, Web: www.satragroup.in

PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200

DESIGNED	MADHUBABU
DRAWN	DANIEL
CHECKED	CHANDRA/ASHIK
APPROVED	PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 2+500 TO CH: 3+000

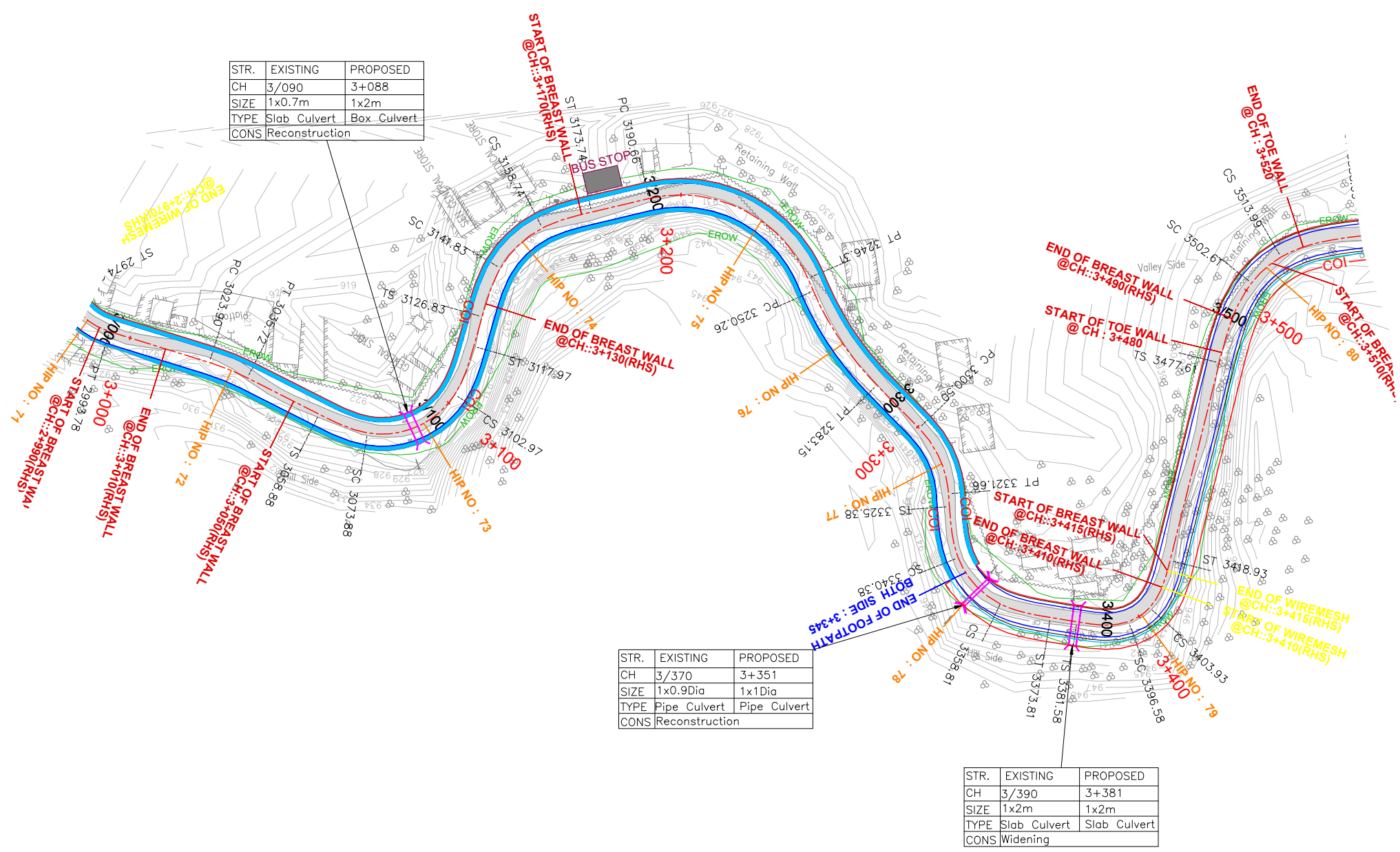
DRAWING NO : HP/MAN-KAL/P&P-06B

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 06B OF 22


← MANDI

KALKHAR →



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

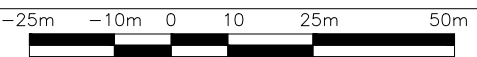
CLIENT:

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PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED: MADHUBABU
 DRAWN: DANIEL
 CHECKED: CHANDRA/ASHIK
 APPROVED: PRADEEP KAPLA

TITLE :
 PLAN & PROFILE FROM CH: 3+000 TO CH: 3+500

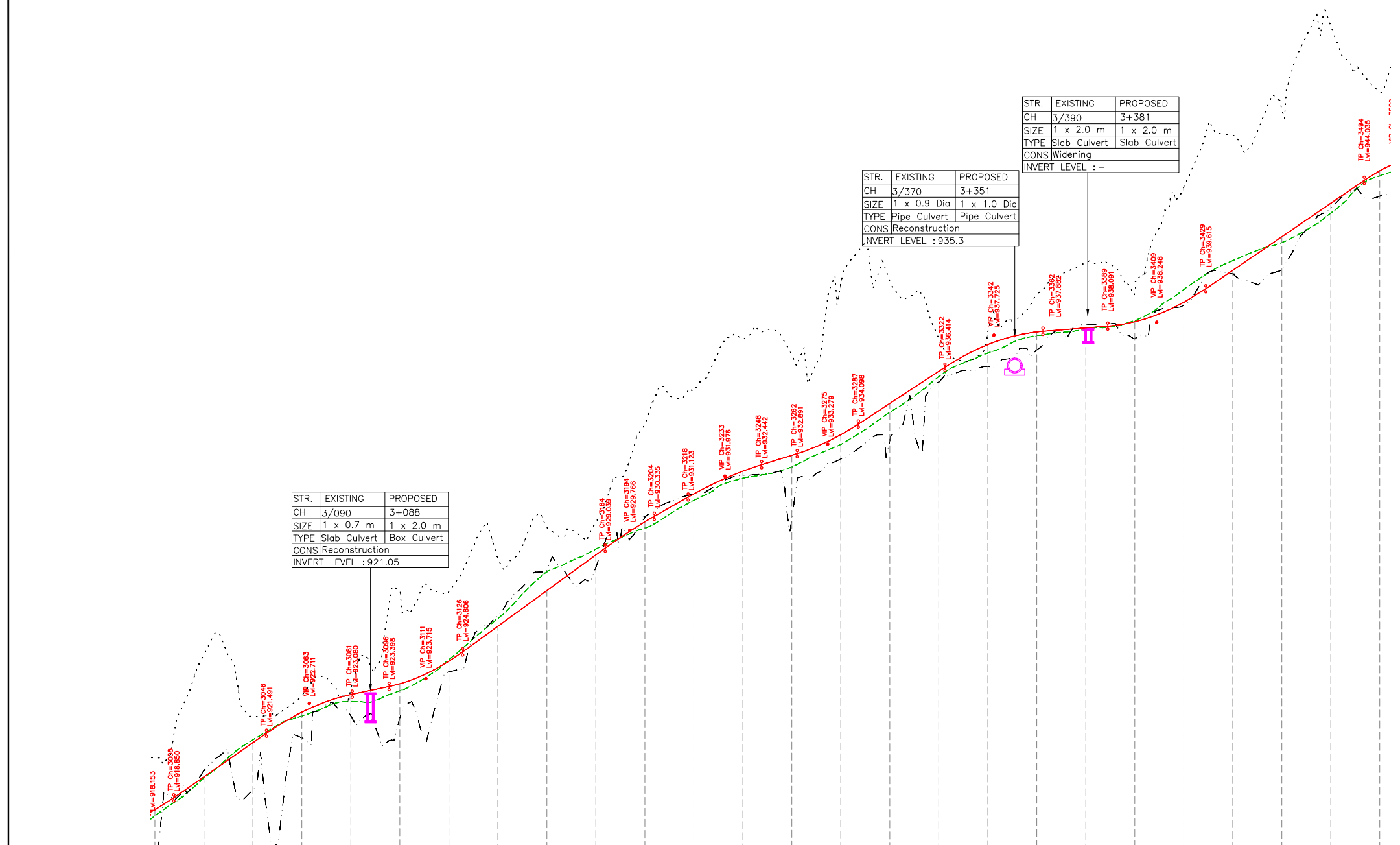
DRAWING NO : HP/MAN-KAL/P&P-07A

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 07A OF 22

MANDI ←

→ KALKHAR



STR.	EXISTING	PROPOSED
CH	3/090	3+088
SIZE	1 x 0.7 m	1 x 2.0 m
TYPE	Slab Culvert	Box Culvert
CONS	Reconstruction	
INVERT LEVEL : 921.05		

STR.	EXISTING	PROPOSED
CH	3/370	3+351
SIZE	1 x 0.9 Dia	1 x 1.0 Dia
TYPE	Pipe Culvert	Pipe Culvert
CONS	Reconstruction	
INVERT LEVEL : 935.3		

STR.	EXISTING	PROPOSED
CH	3/390	3+381
SIZE	1 x 2.0 m	1 x 2.0 m
TYPE	Slab Culvert	Slab Culvert
CONS	Widening	
INVERT LEVEL : -		

PROPOSED ROAD LEVELS(m)	EXISTING ROAD LEVELS(m)	GL AT 5m LHS (m)	GL AT 8m RHS (m)
918.370	918.121	915.331	920.490
919.711	919.672	919.962	924.702
921.105	921.223	919.178	922.182
922.354	922.198	921.306	923.017
923.069	922.789	922.196	923.290
923.508	923.224	922.137	927.300
924.426	924.491	923.992	927.262
925.853	926.174	926.278	928.616
927.307	928.071	928.108	929.879
928.762	929.001	928.268	930.094
930.113	929.862	930.328	934.074
931.254	930.988	931.257	935.449
932.179	931.893	932.001	937.547
932.825	932.350	932.242	936.930
933.665	933.271	932.673	939.853
934.941	934.562	933.435	939.922
936.252	936.037	935.815	937.611
937.341	936.995	936.448	937.844
937.858	937.711	937.125	939.388
938.020	937.966	938.179	940.683
938.270	938.316	937.596	939.911
939.064	939.587	938.958	943.746
940.370	940.762	940.224	945.882
941.737	941.502	940.406	946.944
943.103	942.704	942.899	950.332
944.428	944.231	944.385	947.615

VERTICAL SCHEMATIC	HORIZONTAL SCHEMATIC	SUPERELEVATION	CROSS SECTION DETAILS	PROPOSED CHAINAGE
				3+000, 3+020, 3+040, 3+060, 3+080, 3+100, 3+120, 3+140, 3+160, 3+180, 3+200, 3+220, 3+240, 3+260, 3+280, 3+300, 3+320, 3+340, 3+360, 3+380, 3+400, 3+420, 3+440, 3+460, 3+480, 3+500

TENDER PURPOSE ONLY

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CLIENT:

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PROJECT:
 Himachal Pradesh State Roads Transformation Project (HPSRTP)

SCALE:
 HOR 1:1500
 VER 1:200

DESIGNED	MADHUBABU
DRAWN	DANIEL
CHECKED	CHANDRA/ASHIK
APPROVED	PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 3+000 TO CH: 3+500

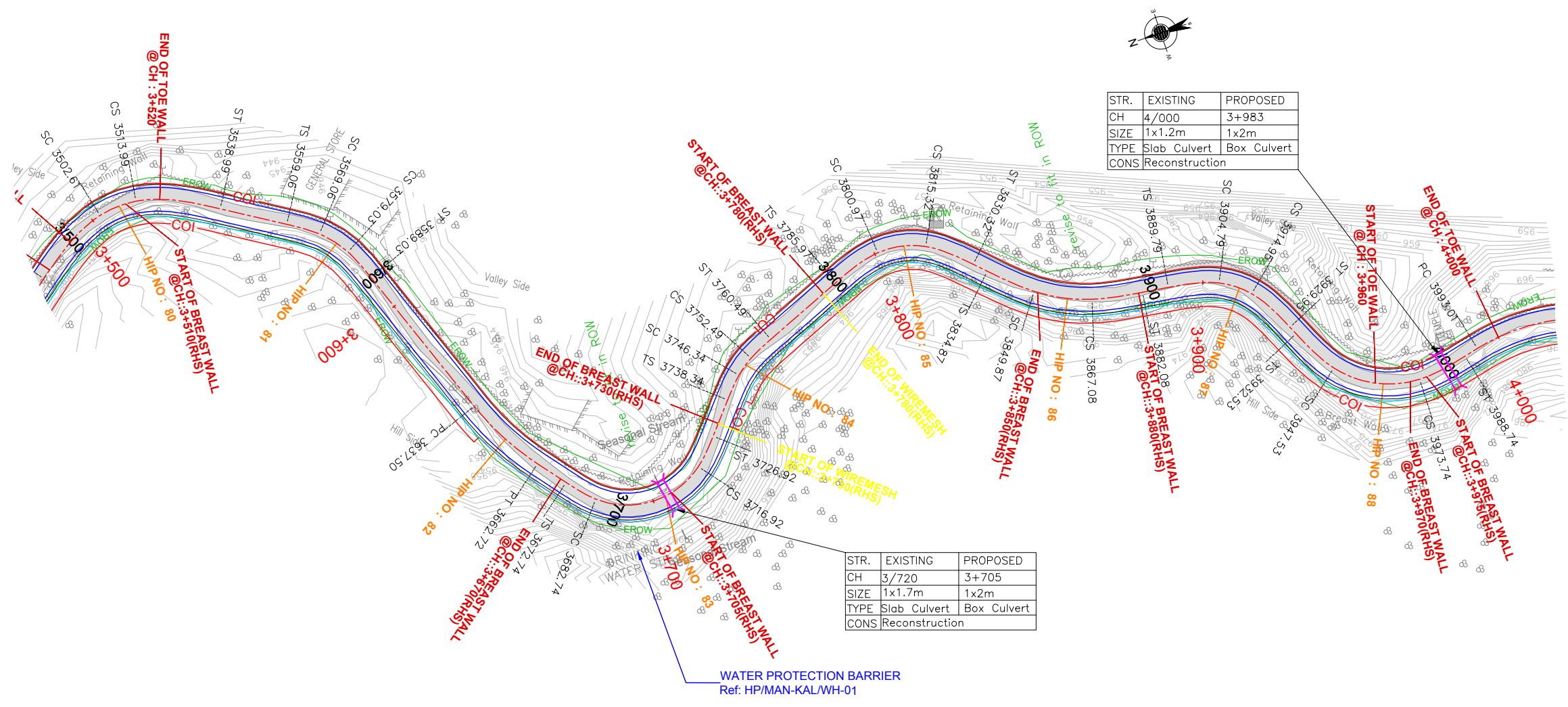
DRAWING NO : HP/MAN-KAL/P&P-07B

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 07B OF 22


← MANDI

KALKHAR →



TENDER PURPOSE ONLY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED

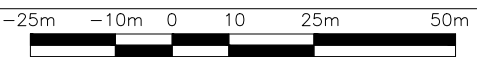
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PROJECT:
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SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED: MADHUBABU
 DRAWN: DANIEL
 CHECKED: CHANDRA/ASHIK
 APPROVED: PRADEEP KAPLA

TITLE :
 PLAN & PROFILE FROM CH: 3+500 TO CH: 4+000

DRAWING NO : HP/MAN-KAL/P&P-08A

ROAD NAME : Package-V:
 Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

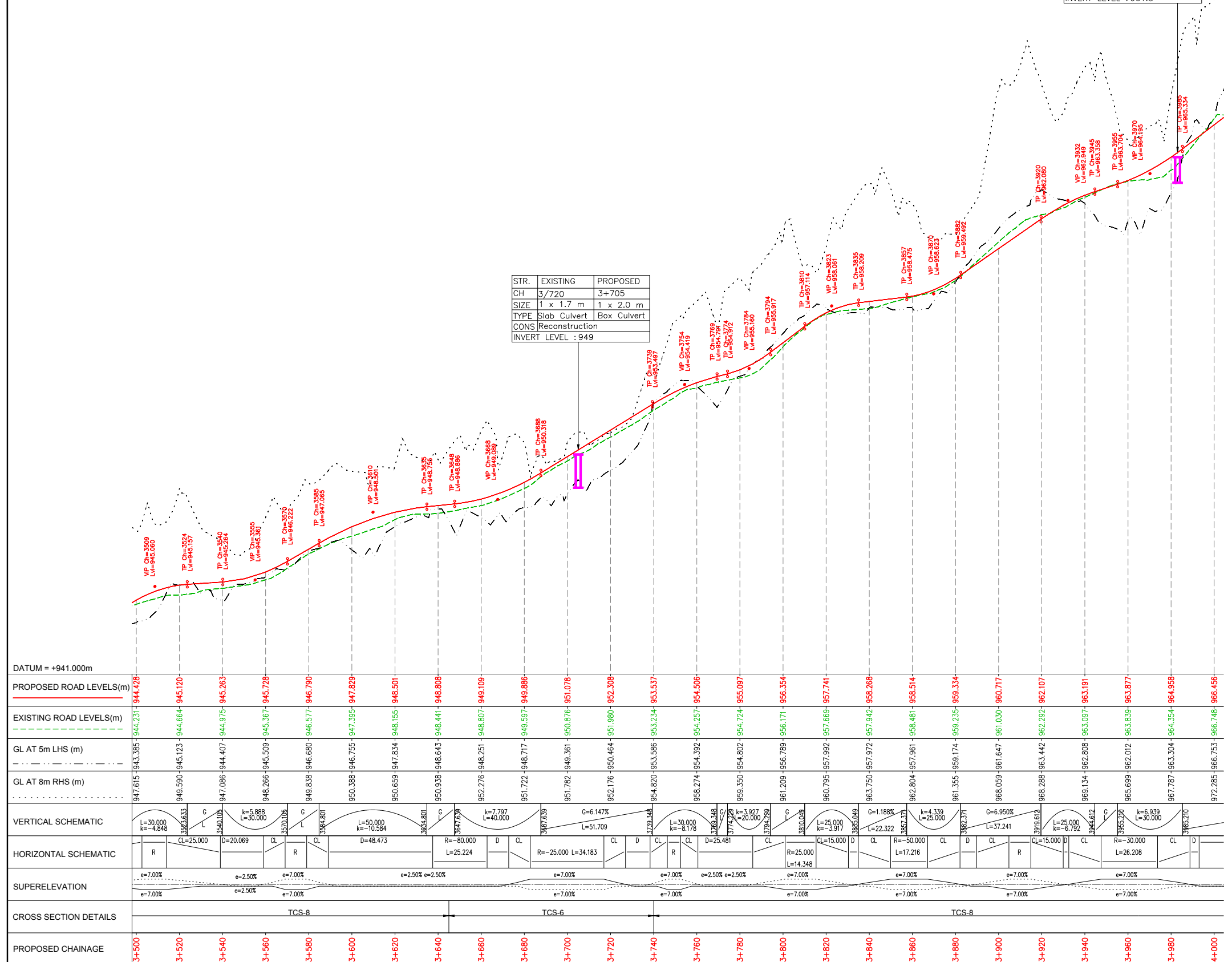
SHEET 08A OF 22

MANDI ←

→ KALKHAR

STR.	EXISTING	PROPOSED
CH	4/000	3+983
SIZE	1 x 1.2 m	1 x 2.0 m
TYPE	Slab Culvert	Box Culvert
CONS	Reconstruction	
INVERT LEVEL : 961.5		


STR.	EXISTING	PROPOSED
CH	3/720	3+705
SIZE	1 x 1.7 m	1 x 2.0 m
TYPE	Slab Culvert	Box Culvert
CONS	Reconstruction	
INVERT LEVEL : 949		



DATUM = +941.000m	PROPOSED ROAD LEVELS(m)	EXISTING ROAD LEVELS(m)	GL AT 5m LHS (m)	GL AT 8m RHS (m)	VERTICAL SCHEMATIC	HORIZONTAL SCHEMATIC	SUPERELEVATION	CROSS SECTION DETAILS	PROPOSED CHAINAGE
	944.428	944.231	943.385	943.385				TCS-8	3+500
		945.120	945.123	945.123				TCS-8	3+520
		945.263	944.407	944.407				TCS-8	3+540
		945.728	945.509	945.509				TCS-8	3+560
		946.790	946.680	946.680				TCS-8	3+580
		947.829	947.755	947.755				TCS-8	3+600
		948.501	948.155	948.155				TCS-8	3+620
		948.808	948.441	948.441				TCS-8	3+640
		949.109	948.807	948.807				TCS-8	3+660
		949.886	949.597	949.597				TCS-8	3+680
		951.078	950.876	950.876				TCS-8	3+700
		952.308	951.980	951.980				TCS-8	3+720
		953.537	953.234	953.234				TCS-8	3+740
		954.506	954.257	954.257				TCS-8	3+760
		955.097	954.724	954.724				TCS-8	3+780
		956.354	956.171	956.171				TCS-8	3+800
		957.741	957.669	957.669				TCS-8	3+820
		958.268	957.942	957.942				TCS-8	3+840
		958.514	958.481	958.481				TCS-8	3+860
		959.334	959.235	959.235				TCS-8	3+880
		960.717	961.030	961.030				TCS-8	3+900
		962.107	962.292	962.292				TCS-8	3+920
		963.191	963.097	963.097				TCS-8	3+940
		963.877	963.639	963.639				TCS-8	3+960
		964.958	964.354	964.354				TCS-8	3+980
		966.456	966.748	966.748				TCS-8	4+000

TENDER PURPOSE ONLY

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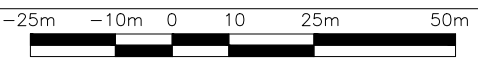
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PROJECT:
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SCALE:
 HOR 1:1500
 VER 1:200



DESIGNED: MADHUBABU
 DRAWN: DANIEL
 CHECKED: CHANDRA/ASHIK
 APPROVED: PRADEEP KAPLA

TITLE : PLAN & PROFILE FROM CH: 3+500 TO CH: 4+000

DRAWING NO : HP/MAN-KAL/P&P-08B

ROAD NAME : Package-V: Upgradation of Mandi - Rewalsar - Kalkhar Road in Mandi District From Km 0+000 To Km 11+000

SHEET 08B OF 22