सत्यमेव जयते

GOVERNMENT OF INDIA

(भारत सरकार)

MINISTRY OF RAILWAYS

(रेल मंत्रालय)

Annexure – I

KAVACH
Control Table Guidelines

(Amdt-6)

Issued by

S &T DIRECTORATE
RESEARCH, DESIGNS & STANDARDS ORGANISATION
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Amdt	Date of Issue	details of changes
1	29.11.2022	Clause I. 2.9 – Version control
		Clause I.2.11.8- **Requires Points in Route is corrected with addition of "** since overlap point is already proved in interlocking it is not considered in KAVACH table of control"
		Clause No I.2.11.9:- Requires Track Circuit Up in Route and overlap corrected with addition of "When approaching stop signal is at danger, for entering into OS mode, the track circuit in Route and overlap shall not be proved".
		Clause No I.2.11.11 New clause added: TINs in Overlap: - TINs in Overlap shall be proved conditionally based on point set. When approaching stop signal is at danger, for entering into OS mode, the TIN in Route and overlap shall not be taken into consideration till the route is not ascertained.
		Clause No I.2.11.12.3 –New clause added - **Fouling Mark RFID Tag**:- The RFID tag which is in fouling mark location shall be indicated as TAG number –F to indicate that the Tag is fouling mark tag.
		Clause No I.2.11.17.2 -Signals Override (OV) not required at zero speed corrected with addition of "The exception shall be possible when semi-auto signals are working in automatic mode".
		Clause I.2.13.1- **Speed Value (kmph) in turnout is corrected with addition "** If the turn out speed is train specific, the same shall be indicated in PSR".
2	14.02.2023	Cl. I.2.2(vi)- Engineering Gradient (Index Plan) Cl. I.2.11.1- Station Name, Station ID, section and Division to be included in top of sheet. New clause added with new numbering. Cl. I.2.11.2-Clause modified. Cl. I.2.11.4- New clause added with new numbering - Section Type added. Cl. I.2.11.9-Require Aspect of Signal modified as Requires aspect of exit signal. Cl. I.2.11.11 –The clause of overlap track circuit requirement in Automatic section is separated. Cl. I.2.11.12.- MA upto stop signal of adjacent stationary KAVACH is mentioned. Cl. I.2.11.16: Authorised speed (Kmph) in OS mode modified. Cl.I.2.13.3- Average Gradient calculation procedure. Cl.I.2.13.5- "Fouling Mark Location" is added in track

		condition. Cl.I.2.14.5- Normal/Reverse words are added. Cl.I.2.14.9- With linking distance is mentioned. Cl.I.2.14.12- Authorized Speed in OS (kmph) for first train/subsequent trains clause modified.
3	09.08.2023	**CL.I.2.11.15**: Modified based on the SCR comments. "The Linking distance of entry Signal foot tag i.e. 00-RTag ID and subsequently for Exit Signal shall be yyyy- R Tag ID - be included in this field": When the entry signal is the last stop signal, all RFID tags and linking distances on the Block Section TIN, including the signal foot tag of first approaching Stop signal of adjacent stationary KAVACH shall be specified in this field. **CL.I.2.11.17**: **Exception:** In case of LSS in absolute block, the movement authority shall be up to next stop signal i.e. IB home, adjacent station home signal, Gate signal. The value of MA shall be written in this column.
4	01.01.2024	CL.I.2.11.6: ~~In Stationary KAVACH Table of control, the column is deleted.~~ CL.I.2.12.6: New table for Temporary Speed Restriction Route Table is added. Addition of Template table – Temporary Speed Restriction Route Table
5	07.03.2024	CL.I-2.11.16 –Clause modified as- ~~Minimum~~ The movement authority for the corresponding signal aspect and/or track occupancy status based on aspect control chart or rules of operation to be mentioned in sections**.** CL. I.2.11.19.1- Clause modified as "Next Station Border RFID with location". CL. I.2.11.20- New clause added "**Authorized speed on detection of train in Onsight mode**: This shall specify the maximum permitted speed when Onboard KAVACH is registered with Onsight mode". CL. I.2.11.25- Clause modified "Track condition type dead stop and Kavach Territory Exit are to be mandatorily implemented" and others are made optional.

6	25.05.2024	Template added of Adjustment /Junction tag for conformity.

I.1 Introduction

This document describes the guidelines for preparation of KAVACH control table for station/IB/LC for Absolute, Automatic and Modified Automatic Block Signalling territories.

I.2 Guidelines

I.2.1 Following guidelines shall be followed while preparing KAVACH Table of Control.

I.2.2 KAVACH table of control shall be based on the

(i) SIP of the station.

(ii) TOC of the station.

(iii) Approved RFID tag-TIN layout.

(iv) TSRMS data base.

(v) Adjacent Stationary KAVACH control table.

(vi) Engineering Gradient (Index Plan)

I.2.3 The above documents used for the preparation of KAVACH control table and shall be referred on each sheet of KAVACH control table.

I.2.4 Shunt signals shall not be a part of KAVACH control tables. However, station shunting limits shall be specified in the RFID tag-TIN layout which in turn shall be made part of Stationary KAVACH application data.

I.2.5 KAVACH control table shall include all signals which will be monitored by a specific Stationary KAVACH unit.

I.2.6 In case of permissive signals, where the inputs for signal indications are available, the ECR shall be used for the purpose of displaying signal aspect. However, movement authority shall be decided based on the signal aspect of the approaching Stop Signal.

I.2.7 In case of permissive signals, where the inputs for signal indications are not available, the signal aspect and movement authority shall be derived based on the signal aspect of approaching Stop Signal.

I.2.8 In case of Automatic block section, where the input for signals as well as track occupancy both available, Movement Authority shall be derived from input of signal aspect and occupancy/non-occupancy of ahead section.

I.2.9 **Version Control**: The version control for all documents submitted for approving authority shall have X.Y.Z format in which: -

(i) X means KAVACH Version Control.

(ii) Y means RFID Tag Layout or SIP version control.

(iii) Z means Guidelines change or review comments control.

I.2.10 All distance shall be counted in meter from entry signal RFID tag absolute location.

I.2.11 **Following information shall be included as part of control tables:**

I.2.11.1 Station Name, Station ID, Section and Division to be included in top of sheet.

I.2.11.2 **Entry Signal:** This shall be the approaching signal for a route. In terminal yard, the Stop board, shunt Signal, buffer end shall be treated as RED aspect permanently kept at "ON".

I.2.11.3 **Exit Signal:** This shall be the next approaching signal on route.

I.2.11.4 **Section Type:** Section type such as Station Section, Absolute Block section or Automatic Section shall be specified.

I.2.11.5 **Line:** This shall describe the line for route for eg. Down Main, Common Loop, etc.

I.2.11.6 **Signal Type:** The entry signal post name shall be defined here. Signal type to be displayed on LP-OCIP (DMI) of Onboard KAVACH unit shall be as per **Annexure – B**.

I.2.11.7 **Aspect of Entry Signal:** This field shall indicate all the possible OFF, Red and Blank aspects of the "Entry Signal".

I.2.11.8 **Requires Aspects of Exit Signal:** This field shall indicate requirement of signal aspect for exit signal for the

corresponding "Aspect of Entry Signal". Stop boards shall be used in case of terminal yards.

I.2.11.9 **Requires Points in Route:** This field shall indicate the point positions required in Normal and Reverse positions for the corresponding route since overlap point is already proved in interlocking it is not considered in KAVACH table of control.

I.2.11.10 **Requires Track Circuit Up in Route:** This field shall indicate the track circuits required to be in picked UP condition for the signal to be taken OFF. Berthing track circuits shall be included as per signalling table of control for the purpose of KAVACH control table.

I.2.11.11 **Requires Track Circuit Up in overlap:** In Automatic section, track circuits/axle counters including overlap of exit signal shall also be indicated. When approaching stop signal is at danger, for entering into OS mode, the track circuit in Route and overlap shall not be proved.

I.2.11.12 **TINs (Track Identification Number) Requires Free:** This shall mention all the TINs falling into the respective route as mentioned in approved RFID layout. TINs shall not be proved for calling on signals. Block Section TIN shall not be proved for any signal.

I.2.11.13 **TINs in Overlap**: TINs in Overlap shall be proved conditionally based on point set. When approaching stop signal is at danger, for entering into OS mode, the TIN in Route and overlap shall not be taken into consideration till the route is not ascertained.

I.2.11.14 **Check RFID Sequence:**

(i) **Entry Signal Foot Tag:** This shall indicate the signal foot tag for the Entry Signal.

(ii) **En-Route Tags:** This shall indicate all the RFID tags along with the linking distances falling in the corresponding route as per approved RFID tag-TIN layout. The Linking distance of entry Signal foot tag i.e. 00-RTag ID and subsequently for Exit Signal shall be yyyy- R Tag ID - be included in this field.

(iii) When the entry signal is the last stop signal, all RFID tags and linking distances on the Block Section TIN, including

the signal foot tag of first approaching Stop signal of adjacent stationary KAVACH shall be specified in this field.

I.2.11.15 **Distance between Entry & Exit Signal:** To be specified in meters**.**

I.2.11.16 **Movement Authority from the foot of entry signal (in sections):** The movement authority for the corresponding signal aspect and/or track occupancy status based on aspect control chart or rules of operation to be mentioned in sections**.**

Exception: In case of LSS in absolute block, the movement authority shall be up to next stop signal i.e. IB home, adjacent station home signal, Gate signal. The value of MA shall be written in this column.

I.2.11.17 **Authorized Speed (kmph):**

OS mode: The maximum speed permitted in OS mode for passing a defective signal with appropriate authority defined as per operational rules of the Railway. The OS authorised speed in case of loop line shall be maximum of 30/15 kmph based on the turnout speed.

I.2.11.18 **Block Section Details**

I.2.11.18.1 **Last Stop Signal for entering Block Section:**

(i) This shall specify last stop signals in UP/DN direction to be monitored by Stationary KAVACH unit.

(ii) The Movement Authority for the last signal of stationary KAVACH shall be the physical distance between the last signal of stationary KAVACH and the foot of next approaching Stop Signal. The Movement Authority shall be specified in meters.

(iii) **Block Section TIN:** This shall specify TIN for the corresponding Last Stop Signal.

(iv) **Adjacent Line TINs:** This shall specify the adjacent line TINs for the corresponding track.

(v) **Next Station Id:** This shall specify the next Stationary KAVACH Id in the route.

(vi) **Next Station Border RFID with location:** This shall specify the next station border RFID, to know the handing over location.

(vii) **Authorized speed** on detection of train in on sight mode in block section, shall be defined.

(viii) **Start Distance to Absolute Location Reset (m):** This shall specify the start distance to reset the absolute location in meter.

(ix) **Absolute Location Correction (m):** This shall specify the absolute location correction required in meter.

(x) **Loco Direction after adjustment:** This shall specify the Loco direction (Nominal or Reverse) after adjustment of absolute location.

I.2.11.19 **Signals Override (OV) not required at zero speed**: The stop signals for which advanced authority can be given as per operational rules. The signal details shall be described so that loco pilot needs not to stop for selection of override. The exception shall be possible when LSS (Semi-auto signal) is working in automatic mode.

I.2.11.20 **Authorized speed on detection of train in Onsight mode:** This shall specify the maximum permitted speed when Onboard KAVACH is registered with Onsight mode.

I.2.11.21 **Shunting Limit:** This shall specify the adjacent station name, line No, RFID Tag No, TIN and absolute location for monitoring the shunting limit**.**

I.2.12 The following information shall be included as part of KAVACH Track Profile table for both KAVACH table of control and Temporary Single Line working on double line.

I.2.12.1 **Turnout Speed**

(i) **Speed Value (kmph):** Permissible speed for the turnout in route. For KAVACH Track profile table, these have been specified as 30 kmph in case of single turnout and 15 kmph in case of multiple turnouts in route or based on Zonal Railway requirement. In case, the turnout portion and loop line have different permissible speeds, the speed for both

the portion shall be mentioned on the track profile table. If the turn out speed is train specific, the same shall be indicated in PSR.

(ii) **Start Distance (meter):** This shall be the distance from foot of "Entry Signal" to the start of first diverging point in route and shall be specified in meters.

(iii) **Length (meter):** This shall be the distance from first diverging point in route in case of entry in to the station premises. This distance shall be the distance from start of first diverging point in route to the next approaching signal plus 30m. In case of exit from the station premises, this distance shall be the distance from foot of approaching signal in route to the end of last converging point plus 10m. In case, the turnout portion and loop line have different permissible speeds, the speed restriction distance for both the portions shall be mentioned on the track profile table.

I.2.12.2 **Permanent Speed Restriction:** This shall specify static speed type, speed value (Kmph), and length of PSR in meter.

Note:

(i) U- Static speed applicable for all categories of trains.

(ii) A- Static speed for category 'A' trains (LE/Passenger Trains).

(iii) B- Static speed for category 'B' trains (Loaded goods Trains).

(iv) C- Static speed for category 'C' trains (Empty goods Trains).

I.2.12.3 **Gradient:** This shall specify the gradient type (Rising (R)/falling (F)), gradient value (Level, 1in 400, 1in 33 etc.) and length in meter.

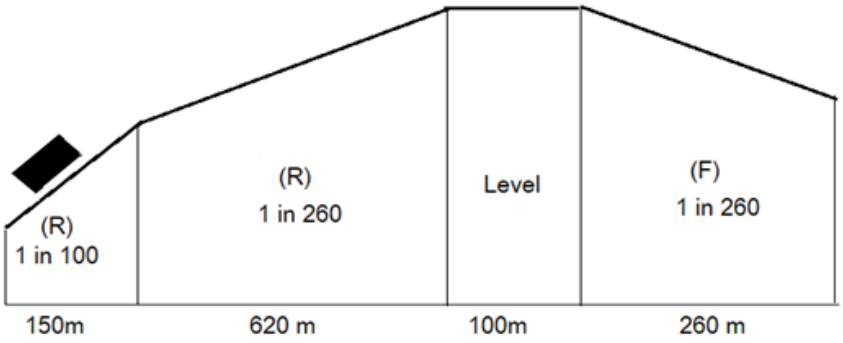
(a) Engineering Gradient

(i) Engineering gradient shall be taken from index plan of engineering department and shall be mentioned for every rise (R), Level, or fall (F) with respective distances.

(ii) As gradient is calculated from entry to exit signal, the signal/ block overlap gradient shall not be calculated for mentioning in table of control.

(b) Average Gradient

(i) Based on the above parameter, the average gradient shall be calculated as per following formulae with their distance.



Average Gradient "G" = D/(d1/g1+d2/g2/d3/g3.....dn/gn)

i,e. G1= (150+620) /(150/100+ 620/260) =198 = R 1 in 198
G2= Level
G3= 1 in 260 = F 1 in 260

(ii) Rising (R)/ Falling (F) shall be based on onboard movement in Nominal/Reverse direction.

(iii) Average gradient with applicable length shall be mentioned in respective column. It is not mandatory to have single average gradient between entry and exit signal.

(iv) Average gradient shall be calculated for rising, level, falling as different gradient value.

(v) The number of average gradients in a route i.e. between entry and exit signal shall be limited to 31. If the number of average gradients in a route is more than 31, then clause (iv) above shall be dispensed in middle of route so that SPAD prevention is not affected.

I.2.12.4 **LC gate:** This shall specify the LC ID (Numeric ID and Alpha Suffix), LC manning type (Manned/unmanned), LC Class (Special, A, B1, B2, B, C and D), LC distance (meter) and LC Auto whistling enabled.

I.2.12.5 **Track condition:** Track condition type dead stop and KAVACH Territory Exit are to be mandatorily implemented. Other track conditions are optional. The track condition location with start distance and length in meter shall be mentioned as applicable.

I.2.12.6 **The following information shall be included as part of Temporary Speed Restriction Route Table:**

I.2.12.6.1 **Entry Signal**: This shall be the approaching signal for a route. In terminal yard, the Stop board, shunt Signal, buffer end etc.

I.2.12.6.2 **Exit Signal:** This shall be the next approaching signal on route.

I.2.12.6.3 **OHE Line:** This shall be the OHE line name for the route.

I.2.12.6.4 **TSR Route start RFID Tag:** This shall be the signal foot tag of the signal from which the TSR details will be sent by TSRMS.

I.2.12.6.5 **TSR Route ID:** The TSR route ID shall be defined as the TSR Route start RFID Tag ID. When there are multiple routes for TSR route start RFID Tag then the line number of the route shall be appended in the TSR route ID.

I.2.12.6.6 **Entry Signal distance from OHE line start RFID Tag (in meter):** The Entry Signal start distance is defined as the distance between TSR Route start RFID Tag and the entry signal RFID Tag.

I.2.12.6.7 **Last Pole distance from Exit Signal (in Meter)**: This is the distance from last pole distance from exit signal in meter.

I.2.12.6.8 **OHE Pole/Km Data (in meter):** This column defines the distance of the 1st OHE pole from the TSR route start RFID

Tag and subsequently distance from OHE pole to next OHE pole.

I.2.12.7 **The following information shall be included as part of Temporary Single Line working on double line table:**

I.2.12.8 **TSL entry Signal:** This shall be the approaching signal or stop board for Temporary Single Line working on double line for a route.

I.2.12.9 **TSL Exit Signal:** This shall be the next approaching signal for Temporary Single Line working on double line for a route.

I.2.12.10 **Aspect of Entry Signal for TSL:** This shall be kept RED/blank for Temporary Single Line working on double line.

I.2.12.11 **Requires Aspects of Exit Signal for TSL:** This shall be kept RED/blank for Temporary Single Line working on double line.

I.2.12.12 **Requires Points in Route:** The point shall be locked as per operational rules (Normal/Reverse) prescribed by the Railway before start of Temporary Single Line working on double line.

I.2.12.13 **Requires Track Circuit Up in Route for TSL Exit signal:** This field shall indicate the track circuits required to be in picked UP condition for TSL route. Entire block section shall be treated as absolute block working without electrical instrument line clear.

I.2.12.14 **TINs (Track Identification Number) Requires Free**: This shall mention all the TINs falling into the respective TSL route as mentioned in approved RFID layout. Block Section TIN shall not be proved for any signal.

I.2.12.15 **Entry Signal Foot Tag**: This shall indicate the signal foot tag for the Entry to start of Temporary Single Line working on double line.

I.2.12.16 **En-Route Tags with linking distance**: This shall indicate all the RFID tags along with the linking distances falling in the corresponding route as per approved RFID tag-TIN layout. The Signal foot tag for the "Exit Signal" shall not be included in this field.

I.2.12.17 **Distance between Entry & Exit Signal:** To be specified in meters.

I.2.12.18 **Onsight Movement Authority from Foot of Entry Signal (in Sections):** Onsight movement authority for the corresponding TSL route shall be defined in meter.

I.2.12.19 **Authorized Speed in OS (kmph) for first train/subsequent trains:** The maximum speed permitted in OS mode for passing a defective signal with authority to proceed defined as per operational rules of the Railway for OS (kmph) for first train/subsequent trains.

I.2.12.20 Name and Description of Station/IB/LC shall be mentioned on top of every sheet as per User Railway's practices.

I.2.13 Signature block shall be included on every sheet as per User Railway's practices.

I.2.14 Revision history to be included.

I.2.15 Typical KAVACH control table, Track Profile Table and Temporary Single Line Working on Double Line table for Indian Railways for Absolute and Automatic block sections is shown below for reference purpose.

GULLAGUDA (GGD)

Station ID:521 (km : 128.660)

LEGEND

- NORMAL TAG
- SIGNAL FOOT TAG
- TIN DISCRIMINATION /TURNOUT TAG
- EXIT TAG
- GATE TAG
- ADJUSTMENT/JUNCTION TAG
- ADJACENT LINE TAG

'C'CLASS LC.No.19
128/21-23
MANNED

REV. NO	REVISION HISTORY	DATE
0	Initial Version	17.04.2023
1	1. Border Tag is changed from R-528 & R-465 to R-452 & R-469 Respectively. 2. R-539 X-Tag ABS location is updated from 128.980 to 128.950. 3. R-612 ABS location is changed from 123.850 to 123.890. 4. N-71 TIN is extended upto the exit tag R-540 in the station section .	04.03.2024
2	1. R-609 ABS location is updated from 127.847 to 126.747. 2. R-611 ABS location is updated from 126.970 to 126.811. added in Up main line.	20.03.2024

	GGD	UP	DN	OTHER
STATION ID	521	520	522	–
RFID ALLOTMENT	505–529 & 612,660–672 , 514–528	549,609,611, 613,621,623 673	548 & 450–460	530 – 537 539 – 547
TIN ALLOTMENT	61 – 80	61 – 69	62 – 68	70 – 72
BORDER RFID TAG'S	469,611		612,452	
TOTAL NO. OF TAGS are 54				

GULLAGUDA (GGD) Secunderabad Division, SC Railway				REF. SIP: IPU.0011C Alt–5 TOC: TC.0011C
TCAS RFID TAG / TIN LAYOUT				RFID_TAG_LAYOUT_GGD_2.0.2
NOT DRAWN TO SCALE				
	Prepared By	Checked By	Checked By	FIRM LOGO
SIGN.				
NAME	G ARCHANA	CH MASTANAIAH	V VARUN KUMAR	

APPROVED BY
EXE/. DIRECTOR TELE–II

SSE/PROJ/HQ/SCR	ASTE/PROJ/HQ/SCR	Dy.CSTE/P/HQ/SCR
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO

संदर्भ. सिगनल आरेख. सं. REF:SIG.PLAN.NO.	सिगनल व दूर संचार SIGNAL & TELECOMMUNICATIONS
आई.पी.यू IPU.0011C Alt–5 & TC.0011C	KAVACH
संशोधन REVISION	गुलागुडा GULLAGUDA (GGD) KAVACH RFID TAG / TIN LAYOUT
आरेखकार DRAWN	द. म. रेलव. आरेख. सं. S.C.RLY.DRG.NO. | KAVACH: IPU.0011C Alt–5 | शीट SHEET 01 | कुल शीट SHEETS 01

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

KAVACH Table of Control (GGD)

S. No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspects of Entry Signal	Requires Aspects of Exit Signal	Requires Points in Route		Requires Track Circuit "UP" in Route	TIN's (Track Identification Number) Requires Free	TIN's requires Free In Overlap	Check RFID Sequence		Distance between Entry & Exit Signal (Meters)	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed (kmph) In OS
								Normal	Reverse				Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
1	S1 D	S1 ID	Absolute Block	Down Main	Dist.	Green	Green	-	-	-	-	-	R-666	(0, R-666), (773,R-668), (250, R-670)	1023	4	MPS
							Double Yellow									3	
							Yellow									2	
						Double Yellow	Green									4	
							Double Yellow									3	
							Yellow									2	
						Yellow	Green									4	
							Double Yellow									3	
							Yellow									2	
2	S1 ID	S1	Absolute Block	Down Main	Inner Dist.	Green	Green	-	-	-	-	-	R-670	(0,R-670), (747,R-672), (250, R-514)	997	4	MPS
							Yellow									2	
						Double Yellow	Green									4	
							Yellow with "Pos1"									2	
							Yellow									2	
						Yellow	Green									4	
							Yellow with "Pos1"									2	
							Yellow									2	
							Red									1	
3	S1	S3	Station Section	Down Main	Main Home with Junction Route	Green	Green	P-11, P-13	-	DMT	N-62, N-64	N-66	R-514	(0, R-514), (199, R-516), (218, R-518), (209, R-520), (249, R-522), (250, R-524)	1125	4	MPS
							Yellow									2	
						Yellow	Green									4	

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_ TABLE_OF_CONTROL_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TABLE OF CONTROL		
SIGN			Firm Logo			S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Atl-5	SHEET 1 / SHEETS 7
NAME	CH MASTANAIAH	V VARUN KUMAR	APPROVED BY EXE/. DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

KAVACH Table of Control (GGD)

S. No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspects of Entry Signal	Requires Aspects of Exit Signal	Requires Points in Route		Requires Track Circuit "UP" in Route	TIN's (Track Identification Number) Requires Free	TIN's requires Free In Overlap	Check RFID Sequence		Distance between Entry & Exit Signal (Meters)	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed (kmph) In OS
								Normal	Reverse				Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
							Yellow									2	
							Red									1	
4	S1A	S3	Station Section	Down Main	Calling on Signal	Miniature	S3 Red/ Blank	P-11, P-13	-	1AT Occupied	-	-	R-514	(0, R-514), (199, R-516), (218, R-518), (209, R-520), (249, R-522), (250, R-524)	1125	1	15
5	S1	S4	Station Section	Common Loop	Main Home with Junction Route	Yellow with "Pos1"	Yellow	P-11, P-17KL	P-13	CLT	N-62, N-70, N-71	N-72, N-66 (W18R)	R-514	(0, R-514), (199, R-516), (158, R-546), (59, R-530), (210,R-532), (249, R-534), (250, R-536)	1125	2	30
							Red									1	
6	S1A	S4	Station Section	Common Loop	Calling-on Signal	Miniature	S4 Red/Blank	P-11, P-17KL	P-13	1AT Occupied	-	-	R-514	(0, R-514), (199, R-516), (158, R-546), (59, R-530), (210,R-532), (249, R-534), (250, R-536)	1125	1	15
7	S1	-	Station Section	Down Main	Main Home with Junction Route	Red	Nil	-	-	-	-	-	R-514	-	1125	1	15
8	S4	S6	Station Section	Down Main	Line Starter	Yellow	Green	P-20, P-17KL	P-18	-	N-72, N-66, N-68	-	R-536	(0, R-536), (62, R-547), (260, R-526), (122, R-528)	444	4	30
							Red									1	
						Red	Nil									1	30
9	S3	S6	Station Section	Down Main	Main Line Starter	Green	Green	P-20, P-18	-	-	N-66, N-68	-	R-524	(0, R-524), (322, R-526), (122, R-528)	444	4	MPS
						Yellow	Green									4	
							Red									1	

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_ TABLE_OF_CONTROL_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TABLE OF CONTROL		
SIGN			Firm Logo			S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Atl-5	SHEET 2 / SHEETS 7
NAME	CH MASTANAIAH	V VARUN KUMAR	APPROVED BY EXE/. DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

KAVACH Table of Control (GGD)

S. No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspects of Entry Signal	Requires Aspects of Exit Signal	Requires Points in Route		Requires Track Circuit "UP" in Route	TIN's (Track Identification Number) Requires Free	TIN's requires Free In Overlap	Check RFID Sequence		Distance between Entry & Exit Signal (Meters)	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed (kmph) In OS
								Normal	Reverse				Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
						Red	Nil									1	15
10	S6	S7 (GGD-SKP-IB)	Absolute Block	Down Main	Down Main Adv. Starter	Green	-	-	-	-	-	-	R-528	(0, R-528), (150, R-548), (50, R-450), (911, R-452), (500, R-454), (620, R-456), (200, R-458), (800, R-460), (200, R-462),(796,R-464), (200,R-466),(823,R-468), (210,R-470)	5567	3 Sections (5567 upto S7 GGD-SKP-IB)	MPS
						Red	Nil										
11	S30 D	S30 ID	Absolute Block	Up Main Line	Dist.	Green	Green	-	-	-	-	-	R-505	(0,R-505), (777,R-507), (250, R-509)	1027	4	MPS
							Double Yellow									3	
							Yellow									2	
						Double Yellow	Green									4	
							Double Yellow									3	
							Yellow									2	
						Yellow	Green									4	
							Double Yellow									3	
							Yellow									2	
12	S30 ID	S30	Absolute Block	Up Main Line	Inner Dist.	Green	Green	-	-	-	-	-	R-509	(0, R-509), (763, R-511), (250, R-513)	1013	4	MPS
							Yellow									2	
						Double Yellow	Green									4	
							Yellow									2	
							Yellow with "Pos1"									2	
							Yellow with "Pos4"									2	
						Yellow	Green									4	

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C				JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2							GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_ TABLE_OF_CONTROL_GGD_2.0.2									
	PREPARED BY	CHECKED BY	Firm Logo	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TABLE OF CONTROL		
SIGN							S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Atl-5	SHEET 3 / SHEETS 7
NAME	CH MASTANAIAH	V VARUN KUMAR		APPROVED BY EXE/. DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

KAVACH Table of Control (GGD)

S. No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspects of Entry Signal	Requires Aspects of Exit Signal	Requires Points in Route		Requires Track Circuit "UP" in Route	TIN's (Track Identification Number) Requires Free	TIN's requires Free In Overlap	Check RFID Sequence		Distance between Entry & Exit Signal (Meters)	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed (kmph) In OS
								Normal	Reverse				Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
							Yellow									2	
							Yellow with "Pos1"									2	
							Yellow with "Pos4"									2	
							Red									1	
13	S30	S28	Station Section	UP Main Line	Main Home without Junction Route	Green	Green	P-20, P-19	-	UMT	N-61, N-63	N-65	R-513	(0, R-513), (200, R-515), (163, R-517), (133,R-519), (250, R-521), (262, R-523), (209, R-525)	1217	4	MPS
							Yellow									2	
						Yellow	Green									4	
							Yellow									2	
							Red									1	
14	S30A	S28	Station Section	UP Main Line	Calling-on Signal	Miniature	S28 Red/Blank	P-20, P-19	-	30AT Occupied	-	-	R-513	(0, R-513), (200, R-515), (163, R-517), (133,R-519), (250, R-521), (262, R-523), (209, R-525)	1217	1	15
15	S30	S27	Station Section	UP Loop	Main Home with Junction Route	Yellow with "Pos1"	Yellow	P-20	P-19	ULT	N-61, N-67	N-69, N-65 (W12R)	R-513	(0, R-513), (200, R-515), (163, R-517), (139,R-531), (250, R-533), (256, R-535), (250, R-537)	1258	2	30
							Red									1	
16	S30A	S27	Station Section	UP Loop	Calling-on Signal	Miniature	S27 Red/Blank	P-20	P-19	30AT Occupied	-	-	R-513	(0, R-513), (200, R-515), (163, R-517), (139,R-531), (250, R-533), (256, R-535), (250, R-537)	1258	1	15
17	S30	S26	Station Section		Main Home with	Yellow with "Pos4"	Yellow	P-19, P-17KL	P-20, P-18	CLT	N-61, N-66, N-72, N-71	N-70, N-62	R-513	(0, R-513), (200, R-515), (57, R-544), (190,R-547),	1218	2	15

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS		
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_ TABLE_OF_CONTROL_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TABLE OF CONTROL		
SIGN			Firm Logo			S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Atl-5	SHEET 4 / SHEETS 7
NAME	CH MASTANAIAH	V VARUN KUMAR	APPROVED BY EXE/. DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

KAVACH Table of Control (GGD)

S. No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspects of Entry Signal	Requires Aspects of Exit Signal	Requires Points in Route		Requires Track Circuit "UP" in Route	TIN's (Track Identification Number) Requires Free	TIN's requires Free In Overlap	Check RFID Sequence		Distance between Entry & Exit Signal (Meters)	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed (kmph) In OS
								Normal	Reverse				Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
				Common Loop	Junction Route		Red					(W13R)		(62, R-536), (250, R-534), (249, R-532), (210, R-530)		1	
18	S30A	S26	Station Section	Common Loop	Calling-on Signal	Miniature	S26 Red/Blank	P-19, P-17KL	P-20, P-18	30AT Occupied	-	-	R-513	(0, R-513), (200, R-515), (57, R-544), (190,R-547), (62, R-536), (250, R-534), (249, R-532), (210, R-530)	1218	1	15
19	S30	-	Station Section	Up Main	Main Home with Junction Route	Red	Nil	-	-	-	-	-	R-513	-	1217	1	15
20	S26	S25	Station Section	Up Main Line	Loop Line Starter	Yellow	Green	P-12	P-13, P-11	-	N-70, N-62, N-65	-	R-530	(0, R-530), (59, R-546), (110, R-543), (61, R-527), (122, R-529)	352	4	15
							Red									1	
						Red	Nil									1	15
21	S27	S25	Station Section	Up Main Line	Up Loop Line Starter	Yellow	Green	P-11	P-12	-	N-69, N-65	-	R-537	(0, R-537), (69, R-545), (121, R-527), (122, R-529)	312	4	30
							Red									1	
						Red	Nil									1	30
22	S28	S25	Station Section	Up Main Line	Up main Line Starter	Green	Green	P-12, P-11	-	-	N-65	-	R-525	(0, R-525), (231, R-527), (122, R-529)	353	4	MPS
						Yellow	Green									4	
							Red									1	
						Red	Nil									1	15
23	S25					Green	-	-	-	-	-	-	R-529		5197		MPS

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C				JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH			
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2							GULLAGUDA(GGD)-521			
TABLE NO: KAVACH_ TABLE_OF_CONTROL_GGD_2.0.2										
	PREPARED BY	CHECKED BY	Firm Logo	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TABLE OF CONTROL			
SIGN							S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Atl-5	SHEET	SHEETS
NAME	CH MASTANAIAH	V VARUN KUMAR		APPROVED BY EXE/. DIRECTOR TELE-II					5	7

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

KAVACH Table of Control (GGD)

S. No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspects of Entry Signal	Requires Aspects of Exit Signal	Requires Points in Route		Requires Track Circuit "UP" in Route	TIN's (Track Identification Number) Requires Free	TIN's requires Free In Overlap	Check RFID Sequence		Distance between Entry & Exit Signal (Meters)	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed (kmph) In OS
								Normal	Reverse				Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
		S30 (CTF)	Absolute Block	Up Main Line	Up Main Adv. Starter	Red	Nil							(0,R-529),(150,R-549), (150,R-609),(936,R-611), (470,R-613),(230,R-621), (940,R-623),(150,R-673), (1010,R-675),(190,R-677) ,(800,R-679),(200,R-681)		3 Sections (5197 upto S30 CTF)	

Block Section Details

Last Stop Signal for entering into Auto/Block Section	Distance from LSS to Next Approaching Stop Signal in meter	Block Section TIN	Movement Up/Down	Adjacent Line TINs	Next Station Id	Next Station Border RFID with Location	Authorised Speed	Start Distance to Absolute Location Reset (m)	Absolute Location Correction (m)	Loco Direction after Adjustment
S25	5197	N-91	UP	N-96	520	R-611,126811	MPS	1677	29	Reverse
S6	5567	N-90	Down	N-89	522	R-452,130663	MPS	1611	107	Nominal

Signals Override (OV) not required at zero speed	S25 , S6	Authorized speed on detection of train in on-sight mode	110

Rev No.	Revision	Date
0	Initial Version	21.04.2023

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_ TABLE_OF_CONTROL_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TABLE OF CONTROL		
SIGN			Firm Logo			S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Atl-5	SHEET 6 / SHEETS 7
NAME	CH MASTANAIAH	V VARUN KUMAR	APPROVED BY EXE/. DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

KAVACH Table of Control (GGD)

Shunting Limit				
Adjacent Station Name	**Direction**	**RFID Tag No**	**TIN**	**Absolute Location in Meters**
GGD-SKPIB	Nominal	R-526	N-66	129430
CTF	Reverse	R-516	N-62	128182
GGD-SKP-IB	Nominal	R-515	N-61	129417
CTF	Reverse	R-527	N-65	128169

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C				**JE/SSE/Proj/HQ/SCR**	**ASTE/Proj/HQ/SCR**	**Dy.CSTE/Proj/HQ/SCR**	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2 TABLE NO: KAVACH_ TABLE_OF_CONTROL_GGD_2.0.2							GULLAGUDA(GGD)-521		
	PREPARED BY	CHECKED BY		**JE/SSE/RDSO/LKO**	**ADE/RDSO/LKO**	**DIRECTOR/RDSO/LKO**	KAVACH TABLE OF CONTROL		
SIGN			**Firm Logo**				S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Atl-5	SHEET 7 / SHEETS 7
NAME	CH MASTANAIAH	V VARUN KUMAR		**APPROVED BY** **EXE/. DIRECTOR TELE-II**					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TRACK PROFILE TABLE

S. No.	Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
				Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph),Length (m)	Engineering Gradient	Average Gradient value	Length (m)	LC Distance (m)	LC ID Numeric/ LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled/ LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
1	S1 D	S1 ID	Down Main	-	-	-	(U,110, 1023)	(R 1 in 150, 297)	R 1 in 150	297	-	-	-	-	-	-	-	-
								(Level, 552)	LEVEL	552								
								(F 1 in 150, 174)	F 1 in 150	174								
2	S1 ID	S1	Down Main	-	-	-	(U,110,997)	(F 1 in 150, 627)	F 1 in 150	627	-	-	-	-	-	-	-	-
								(Level,370)	LEVEL	370								
3	S1	S3	Down Main	-	-	-	(U,110,1125)	(Level, 179)	LEVEL	179	477	19	Manned	C	Yes, Distance Based	Fouling Mark	411 From S1	-
								(R 1 in 260, 401)	R 1 in 260	401								
								(Level, 184)	LEVEL	184								
								(F 1 in 300, 361)	F 1 in 300	361								
4	S1	S4	Common Loop	30	307	848	(U,110,307) (U,30,818)	(Level, 179)	LEVEL	179	477	19	Manned	C	Yes, Distance Based	Fouling Mark	411 From S1	-
								(R 1 in 260, 401)	R 1 in 260	401								

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TRACK_PROFILE_TABLE_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TRACK PROFILE TABLE		
SIGN			APPROVED BY			S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 1 / SHEETS 7
NAME	S.APOORVA	P.DEVI BHARGAVI	EXE/ DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TRACK PROFILE TABLE

S. No.	Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
				Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph),Length (m)	Engineering Gradient	Average Gradient value	Length (m)	LC Distance (m)	LC ID Numeric/ LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled/ LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
								(Level, 184)	LEVEL	184								
								(F 1 in 300, 361)	F 1 in 300	361								
5	S4	S6	Down Main	30	-	120	(U,30,110) (U,110,334)	(F 1 in 300, 205)	F 1 in 300	205	-	-	-	-	-	-	-	-
								(Level, 148)	LEVEL	148								
								(R 1 in 185, 51)	R 1 in 185	51								
								(F 1 in 150, 40)	F 1 in 150	40								
6	S3	S6	Down Main	-	-	-	(U,110,444)	(F 1 in 300, 205)	F 1 in 300	205	-	-	-	-	-	-	-	-
								(Level, 148)	LEVEL	148								
								(R 1 in 185, 51)	R 1 in 185	51								
								(F 1 in 150, 40)	F 1 in 150	40								
7	S6	S7 (GGD-SKP-IB)	Down Main	-	-	-	(U,110,5567)	(F 1 in 150, 162)	F 1 in 150	162	-	-	-	-	-	-	-	-
								(Level, 249)	LEVEL	249								
								(F 1 in 150, 253)	F 1 in 150	253								
								(Level, 400)	LEVEL	400								

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TRACK_PROFILE_TABLE_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TRACK PROFILE TABLE		
SIGN			APPROVED BY EXE/ DIRECTOR TELE-II			S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 2 / SHEETS 7
NAME	S.APOORVA	P.DEVI BHARGAVI						

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TRACK PROFILE TABLE

S. No.	Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
				Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph),Length (m)	Engineering Gradient	Average Gradient value	Length (m)	LC Distance (m)	LC ID Numeric/ LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled/ LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
								(F 1 in 150, 303)	F 1 in 150	303								
								(Level, 498)	LEVEL	498								
								(F 1 in 150, 700)	F 1 in 150	700								
								(Level, 697)	LEVEL	697								
								(F 1 in 150, 276)	F 1 in 150	276								
								(F 1 in 150, 475)	F 1 in 150	475								
								(Level,249)	LEVEL	249								
								(F 1 in 198, 272)	F 1 in 198	272								
								(F 1 in 198, 125)	F1 in 198	125								
								(Level,350)	LEVEL	350								
								(R 1 in 333, 148)	R 1 in 333	148								
								(Level,202)	LEVEL	202								
								(F 1 in 150, 208)	F 1 in 150	208								
8	S30D	S30 ID	Up Main	-	-	-	(U,110,1027)	(R 1 in 150, 446)	R 1 in 150	446	-	-	-	-	-	-	-	-
								(Level, 500)	LEVEL	500								

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
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REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TRACK_PROFILE_TABLE_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TRACK PROFILE TABLE		
SIGN						S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 3 / SHEETS 7
NAME	S.APOORVA	P.DEVI BHARGAVI	APPROVED BY EXE/ DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TRACK PROFILE TABLE

S. No.	Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
				Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph),Length (m)	Engineering Gradient	Average Gradient value	Length (m)	LC Distance (m)	LC ID Numeric/ LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled/ LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
								(R 1 in 150, 81)	R 1 in 150	81								
9	S30 ID	S30	Up Main	-	-	-	(U,110,1013)	(R 1 in 150, 122)	R 1 in 150	122	-	-	-	-	-	-	-	-
								(Level, 250)	LEVEL	250								
								(R 1 in 260, 52)	R 1 in 260	52								
								(Level, 99)	LEVEL	99								
								(R 1 in 260, 401)	R 1 in 260	401								
								(Level, 89)	LEVEL	89								
10	S30	S28	Up Main	-	-	-	(U,110,1217)	(Level, 114)	LEVEL	114	1217	19	Manned	C	Yes, Distance Based	-	-	-
								(F 1 in 185, 103)	F1 in 185	103								
								(Level, 143)	LEVEL	143								
								(R 1 in 300, 568)	R 1 in 300	568								
								(Level, 186)	LEVEL	186								
								(F 1 in 260, 103)	F 1 in 260	103								
11	S30	S26		30	206	193	(U,110,206)	(Level, 114)	LEVEL	114	1157	19	Manned	C				-

GULLAGUDA(GGD)-521				SIGNAL & TELECOMMUNICATIONS		
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C		JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH	
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2					GULLAGUDA(GGD)-521	
TABLE NO: KAVACH_TRACK_PROFILE_TABLE_GGD_2.0.2						
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TRACK PROFILE TABLE
SIGN			APPROVED BY			S.C.RLY.DRG.NO. / KAVACH: IPU. 0011C Alt-5 / SHEET 4 / SHEETS 7
NAME	S.APOORVA	P.DEVI BHARGAVI	EXE/ DIRECTOR TELE-II			

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TRACK PROFILE TABLE

S. No.	Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
				Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph),Length (m)	Engineering Gradient	Average Gradient value	Length (m)	LC Distance (m)	LC ID Numeric/ LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled/ LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
			Common Loop-2				(U,30,193) (U,15,819)	(F 1 in 185, 103)	F1 in 185	103					Yes, Distance Based	Fouling Mark	506 From S30	
								(Level, 143)	LEVEL	143								
				15	399	849		(R 1 in 300, 568)	R 1 in 300	568								
								(Level, 186)	LEVEL	186								
								(F 1 in 260, 104)	F 1 in 260	104								
12	S30	S27	Common Loop-1	30	389	899	(U,110,389) (U,30,869)	(Level, 114)	LEVEL	114	1157	19	Manned	C	Yes, Distance Based	Fouling Mark	506 From S30	-
								(R 1 in 185, 103)	R1 in 185	103								
								(Level, 143)	LEVEL	143								
								(R 1 in 300, 568)	R 1 in 300	568								
								(Level, 186)	LEVEL	186								
								(F 1 in 260, 144)	F 1 in 260	144								
13	S26	S25	Up Main	15	-	226	(U,15,216) (U,110,136)	(F 1 in 260, 298)	F 1 in 260	298	-	-	-	-	-	-	-	-
								(Level, 54)	LEVEL	54								
14	S27	S25	Up Main	30	-	125	(U,30,115)	(F 1 in 260, 258)	F 1 in 260	258	-	-	-	-	-	-	-	-

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TRACK_PROFILE_TABLE_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TRACK PROFILE TABLE		
SIGN						S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 5 / SHEETS 7
NAME	S.APOORVA	P.DEVI BHARGAVI	APPROVED BY EXE/ DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TRACK PROFILE TABLE

S. No.	Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
				Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph),Length (m)	Engineering Gradient	Average Gradient value	Length (m)	LC Distance (m)	LC ID Numeric/ LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled/ LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
							(U,110,197)	(Level, 54)	LEVEL	54								
15	S28	S25	Up Main	-	-	-	(U,110,353)	(F 1 in 260, 299)	F 1 in 260	299	-	-	-	-	-	-	-	-
								(Level, 54)	LEVEL	54								
16	S25	S30 (CTF)	Up Main	-	-	-	(U,110,5197)	(Level, 546)	LEVEL	546	-	-	-	-	-	-	-	-
								(R 1 in 160, 902)	R 1 in 160	902								
								(Level, 600)	LEVEL	600								
								(F 1 in 300, 393)	F 1 in 300	393								
								(Level, 99)	LEVEL	99								
								(R 1 in 150, 457)	R 1 in 150	457								
								(R 1 in 150, 50)	R 1 in 150	50								
								(Level, 1000)	LEVEL	1000								

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TRACK_PROFILE_TABLE_GGD_2.0.2								
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TRACK PROFILE TABLE		
SIGN						S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 6 / SHEETS 7
NAME	S.APOORVA	P.DEVI BHARGAVI	APPROVED BY EXE/ DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TRACK PROFILE TABLE

S. No.	Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
				Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph),Length (m)	Engineering Gradient	Average Gradient value	Length (m)	LC Distance (m)	LC ID Numeric/ LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled/ LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
								(R 1 in 315, 300)	R 1 in 315	300								
								(Level, 100)	LEVEL	100								
								(R 1 in 325, 300)	R 1 in 325	300								
								(Level, 200)	LEVEL	200								
								(R 1 in 170, 200)	R 1 in 170	200								
								(Level, 50)	LEVEL	50								

Rev No.	Revision	Date
0	Initial Version	21-04-2023
1	As per SCR Requirements by Email On 19/06/2023, Absolute Locations of the signals are mapped in the Gradient Index Plan.	11.07.2023
2	In S.No 7 and 15 PSR and Gradient information is updated.	24.11.2023

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH			
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521			
TABLE NO: KAVACH_TRACK_PROFILE_TABLE_GGD_2.0.2									
	PREPARED BY	CHECKED BY	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TRACK PROFILE TABLE			
SIGN						S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET	SHEETS
NAME	S.APOORVA	P.DEVI BHARGAVI	APPROVED BY EXE/ DIRECTOR TELE-II					7	7

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TSR ROUTE TABLE

S. No.	Entry Signal	Exit Signal	OHE Line	OHE Line Start RFID Tag	TSR Route ID	Entry Signal Distance from OHE Line Start RFID Tag	Last pole Distance from Exit Signal	OHE Pole/Km Data (in meter)
1	S6	S1 D	CTF-GGD Down Block	R-716	716	0	64.81	(8.8-122/34),(58.41-122/36),(50.87-122/38),(44.55-122/40),(54.36-123/2),(62.10-123/4), (63.34-123/6),(63.60-123/8),(48.97-123/10),(44.86-123/12),(44.46-123/14), (45.17-123/16),(44.32-123/18),(54.20-123/20),(54.05-123/22),(68.04-123/24), (62.36-123/26),(67.28-123/28),(72.06-123/30),(67.12-123/32),(71.30-123/34), (68.73-124/2),(73.59-124/4),(68.48-124/6),(67.61-124/8),(64.54-124/10),(68.45-124/12), (67.60-124/14),(67.63-124/16),(63.05-124/18),(68.30-124/20),(67.03-124/22), (72.43-124/24),(62.43-124/26),(63.35-124/28),(66.94-124/30),(62.95-125/2), (72.51-125/4),(58.21-125/6),(67.04-125/8),(54.19-125/10),(49.19-125/12),(45.20-125/14), (49.74-125/16),(49.42-125/18),(50.15-125/20),(50.18-125/22),(49.66-125/24), (45.37-125/26),(44.80-125/28),(58.16-125/30),(68.01-125/32),(68.01-125/34), (40.34-125/36),(29.49-126/2)
2	S1 D	S1 ID				3173	29.91	(64.81-126/2),(63.00-126/4),(63.20-126/6),(49.30-126/8),(49.20-126/10),(49.10-126/12), (49.60-126/14),(49.30-126/16),(49.30-126/18),(49.20-126/20),(49.20-126/22), (49.40-126/24),(58.50-126/26),(63.10-126/28),(67.80-126/30),(67.30-126/32), (58.50-126/34),(42.50-126/36),(30.69-127/2)
3	S1 ID	S1				4196	59.51	(29.91-127/2),(40.50-127/4),(40.80-127/6),(49.50-127/8), (49.60-127/10),(49.90-127/12),(63.20-127/14),(58.70-127/16),(67.40-127/18), (63.00-127/20),(58.40-127/22),(63.00-127/24),(58.40-127/26),(58.40-127/28),

GULLAGUDA(GGD)-521					SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C			JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2						GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TSR_ROUTE_TABLE_GGD_2.0.0								
	PREPARED BY	CHECKED BY	Firm Logo	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TSR ROUTE TABLE		
SIGN							S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 1	SHEETS 5
NAME	S.APOORVA	P.DEVI BHARGHAVI		APPROVED BYEXE/. DIRECTOR TELE-II						

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TSR ROUTE TABLE

S. No.	Entry Signal	Exit Signal	OHE Line	OHE Line Start RFID Tag	TSR Route ID	Entry Signal Distance from OHE Line Start RFID Tag	Last pole Distance from Exit Signal	OHE Pole/Km Data (in meter)
								(62.90-127/30),(58.50-127/32),(67.80-127/34),(33.70-127/36),(23.39-128/2)
4	S1	S3	GGD DN Main Line	R-514	5142	0	2.61	(59.51-128/2),(49.60-128/4),(40.50-128/6),(39.60-128/8), (31.80-128/10),(35.90-128/12),(41.00-128/14),(44.60-128/16),(45.90-128/18), (45.5-128/20),(49.6-128/22),(54.10-128/24),(45.40-128/26),(49.30-128/28), (54.40-128/30),(62.80-128/32),(62.90-128/34),(71.90-128/36),(58.40-128/38), (49.90-128/40),(53.70-129/2),(40.6-129/4),(38.09-129/6)
5	S3	S6				1125	25.51	(2.61-129/6),(35.30-129/8),(31.30-129/10),(45.20-129/12), (49.60-129/16),(35.70-129/18),(45.00-129/20),(45.20-129/22),(44.90-129/24), (45.00-129/26),(39.7-129/28),(24.49-129/32)
6	S1	S4	GGD DN Common Loop	R-514	5141	0	2.61	(59.51-128/2),(49.60-128/4),(40.50-128/6),(39.60-128/8), (31.80-128/10),(35.90-128/12),(41.00-128/14),(44.60-128/16),(45.90-128/18), (45.5-128/20),(49.6-128/22),(54.10-128/24),(45.40-128/26),(49.30-128/28), (54.40-128/30),(62.80-128/32),(62.90-128/34),(71.90-128/36),(58.40-128/38), (49.90-128/40),(53.70-129/2),(40.6-129/4),(38.09-129/6)
7	S4	S6				1125	25.51	(2.61-129/6),(35.30-129/8),(31.30-129/10),(45.20-129/12), (49.60-129/16),(35.70-129/18),(45.00-129/20),(45.20-129/22),(44.90-129/24), (45.00-129/26),(39.7-129/28),(24.49-129/32)

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C				JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2							GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TSR_ROUTE_TABLE_GGD_2.0.0									
	PREPARED BY	CHECKED BY	Firm Logo	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TSR ROUTE TABLE		
SIGN							S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 2 / SHEETS 5
NAME	S.APOORVA	P.DEVI BHARGHAVI		APPROVED BYEXE/. DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TSR ROUTE TABLE

S. No.	Entry Signal	Exit Signal	OHE Line	OHE Line Start RFID Tag	TSR Route ID	Entry Signal Distance from OHE Line Start RFID Tag	Last pole Distance from Exit Signal	OHE Pole/Km Data (in meter)
8	S30	S28	GGD UP Main Line	R-513	5133	0	34.9	(45.1-129/33),(45.40-129/31),(36.30-129/29),(35.90-129/27),(45.40-129/25), (45.20-129/23),(49.80-129/21),(49.50-129/17),(49.60-129/15),(36.10-129/13), (40.80-129/9),(36.30-129/7),(39.60-129/5),(40.30-129/3),(53.60-129/1),(48.90-128/39), (58.10-128/37),(72.40-128/35),(62.90-128/33),(63.00-128/31),(54.30-128/29), (49.60-128/27),(45.10-128/25),(54.20-128/23),(49.40-128/21),(10.2-128/19)
9	S28	S25				1217	45.1	(34.9-128/19),(45.6-128/17),(45.40-128/15),(40.60-128/13),(35.90-128/11),(35.30-128/9), (36.30-128/7),(40.50-128/5),(38.5-128/3)
10	S30	S26	GGD UP Common Loop	R-513	5131	0	33.9	(45.1-129/33),(45.40-129/31),(36.30-129/29),(35.90-129/27),(45.40-129/25), (45.20-129/23),(49.80-129/21),(49.50-129/17),(49.60-129/15),(36.10-129/13), (40.80-129/9),(36.30-129/7),(39.60-129/5),(40.30-129/3),(53.60-129/1),(48.90-128/39), (58.10-128/37),(72.40-128/35),(62.90-128/33),(63.00-128/31),(54.30-128/29), (49.60-128/27),(45.10-128/25),(54.20-128/23),(49.40-128/21),(11.2-128/19)
11	S26	S25				1218	45.1	(33.9-128/19),(45.6-128/17),(45.40-128/15),(40.60-128/13),(35.90-128/11),(35.30-128/9), (36.30-128/7),(40.50-128/5),(38.5-128/3)
12	S30	S27	GGD UP Loop	R-513	5134	0	39.5	(45.1-129/33),(45.40-129/31),(36.30-129/29),(35.90-129/27),(45.40-129/25), (45.20-129/23),(49.80-129/21),(49.50-129/17),(49.60-129/15),(36.10-129/13), (40.80-129/9),(36.30-129/7),(39.60-129/5),(40.30-129/3),(53.60-129/1),(48.90-128/39), (58.10-128/37),(72.40-128/35),(62.90-128/33),(63.00-128/31),(54.30-128/29),

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

Section Speed	110kmph

KAVACH TSR ROUTE TABLE

S. No.	Entry Signal	Exit Signal	OHE Line	OHE Line Start RFID Tag	TSR Route ID	Entry Signal Distance from OHE Line Start RFID Tag	Last pole Distance from Exit Signal	OHE Pole/Km Data (in meter)
								(49.60-128/27),(45.10-128/25),(54.20-128/23),(49.40-128/21),(45.1-128/19),(6.1-128/17)
13	S27	S25				1258	11.1	(39.5-128/17),(45.40-128/15),(40.60-128/13),(35.90-128/11),(35.30-128/9), (36.30-128/7),(40.50-128/5),(38.5-128/3)
14	S25	S30D	GGD-CTF UP Block	R-529	529	0	46.1	(11.1-128/3),(54.1-128/1),(62.10-127/35),(67.60-127/33),(58.80-127/31),(63.10-127/29), (58.60-127/27),(58.60-127/25),(63.20-127/33),(58.60-127/21),(63.30-127/19), (67.50-127/17),(58.60-127/15),(63.60-127/13),(49.50-127/11),(49.00-127/9), (49.50-127/7),(40.30-127/5),(40.60-127/3),(45.20-127/1),(58.60-126/35),(50.70-126/33), (67.10-126/31),(67.50-126/29),(63.10-126/27),(58.80-126/25),(49.60-126/23), (49.80-126/21),(49.50-126/19),(49.50-126/17),(49.70-126/15),(49.70-126/13), (58.90-126/11),(49.70-126/9),(49.50-126/7),(63.50-126/5),(63.00-126/3),(67.60-126/1), (67.30-125/35),(67.70-125/33),(67.90-125/31),(58.50-125/29),(44.80-125/27), (44.80-125/25),(49.30-125/23),(49.10-125/21),(49.30-125/19),(49.20-125/17), (49.50-125/15),(44.80-125/13),(49.40-125/11),(54.40-125/7),(67.70-125/7),(58.50-125/5), (26.1-125/3)
15	S30D	S30 ID				2997	62.9	(46.1-125/3),(63.3-125/1),(67.50-124/29),(63.30-124/27),(63.60-124/25),(72.00-124/23), (67.80-124/21),(68.50-124/19),(62.50-124/17),(68.10-124/15),(68.20-124/13), (68.30-124/11),(63.50-124/9),(68.60-124/7),(68.30-124/5),(72.50-124/3),(74.00-124/1), (69.50-123/33),(4.4-123/31)

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C				JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2							GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TSR_ROUTE_TABLE_GGD_2.0.0									
	PREPARED BY	CHECKED BY	Firm Logo	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TSR ROUTE TABLE		
SIGN							S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 4 / SHEETS 5
NAME	S.APOORVA	P.DEVI BHARGHAVI		APPROVED BYEXE/. DIRECTOR TELE-II					

Station Name:	GULLAGUDA	Division:	SECUNDERABAD
Station ID:	521	Section:	LPI-VKB

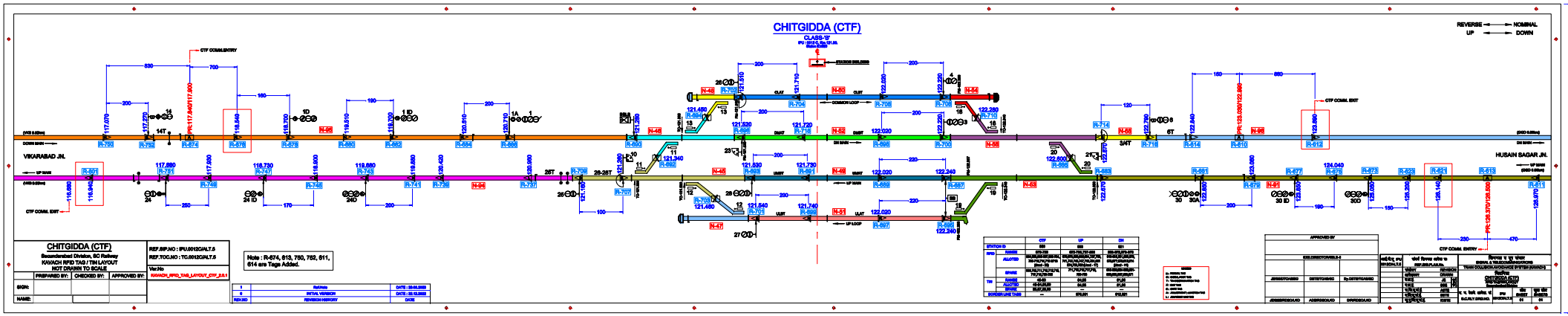
Section Speed	110kmph

KAVACH TSR ROUTE TABLE

S. No.	Entry Signal	Exit Signal	OHE Line	OHE Line Start RFID Tag	TSR Route ID	Entry Signal Distance from OHE Line Start RFID Tag	Last pole Distance from Exit Signal	OHE Pole/Km Data (in meter)
16	S30 ID	S30				4197	8.29	(62.9-123/31),(71.23-123/290,(67.19-123/27),(62.73-123/25),(68.04-123/23),(53.95-123/21),(54.26-123/19),(44.39-123/17),(45.39-123/15),(44.62-123/13),(45.32-123/11),(49.35-123/9),(63.48-123/7),(63.46-123/5),(62.11-123/3),(54.59-123/1),(44.45-122/39),(42.54-122/37)

Rev No.	Revision	Date
0	Initial Version	29-02-2024

GULLAGUDA(GGD)-521						SIGNAL & TELECOMMUNICATIONS			
REF: SIP NO: IPU.0011C Alt-5 & TOC: TC.0011C				JE/SSE/Proj/HQ/SCR	ASTE/Proj/HQ/SCR	Dy.CSTE/Proj/HQ/SCR	KAVACH		
REF: KAVACH_RFID_TAG_LAYOUT_GGD_2.0.2							GULLAGUDA(GGD)-521		
TABLE NO: KAVACH_TSR_ROUTE_TABLE_GGD_2.0.0									
	PREPARED BY	CHECKED BY	Firm Logo	JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH TSR ROUTE TABLE		
SIGN							S.C.RLY.DRG.NO.	KAVACH: IPU. 0011C Alt-5	SHEET 5 / SHEETS 5
NAME	S.APOORVA	P.DEVI BHARGHAVI		APPROVED BYEXE/. DIRECTOR TELE-II					


CHITGIDDA (CTF)
CLASS-'S'
REVERSE
NOMINAL
UP
DOWN
VIKARABAD JN.
HUSAIN SAGAR JN.
CTF COMMI.ENTRY
CTF COMML EXIT
CHITGIDDA (CTF)
Secunderabad Division, SC Railway
KAVACH RFID TAG / TIN LAYOUT
NOT DRAWN TO SCALE
PREPARED BY:
CHECKED BY:
APPROVED BY:
SIGN:
NAME:
REF.SIP.NO : IFU.00123/ALT.5
REF.TOC.NO : TC.00123/ALT.5
Ver.No
KAVACH_RFID_TAG_LAYOUT_CTF_0.0.1
Note : R-674, 813, 750, 752, 511, 614 are Tags Added.
INITIAL VERSION
REVISION HISTORY

CTF Control Table (Template)

Station Name:	CHITGIDDA (CTF)	Division:	Secunderabad
Station ID:	520	Section:	SC Railway

S.No	Entry Signal	Exit Signal	Section Type	Line	TSRMS Route ID	Signal Type	Aspect of Entry Signal	Requires Aspects of Exit Signal	Requires Points in Route		Requires Track Ckt Up in Route	TINs (Track Identification Number) Requires Free	TIN Required free in Overlap	Check RFID Sequence		Distance between Entry & Exit Signal	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed (kmph) in OS
									Normal	Reverse				Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
1	S1	S3	Station Section	Down Main	1	Main Home with Junction Route Indicator	Green	S3 Green	11, 13		DMT	N-46, N-52	N-56 (W18N & W20N)	R-686	(570, R-690), (240, R-696-F), (200, R-718), (300, R-698), (200, R-700)	1510	3	MPS
							Yellow	S3 Green									3	
								S3 Yellow									2	
								S3 Red									1	
2	S1	S4	Station Section	Common Loop	1	Main Home with Junction Route Indicator	Yellow with "Pos1"	S4 Yellow	11	13	CLT	N-46, N-48, N-50	N-54 (W18N), N-54 & N-56 (W 18R & W20N)	R-686	(570, R-690), (170, R-694), (60, R-702-F), (200, R-704), (310, R-706), (200, R-708)	1510	2	MPS
								S4 Red									1	
3	S6	S1D of GGD	Station Section	Down Main	2	Advanced Starter	Green				LC-166 Closed, Line Clear Available			R-716	(200, R-610), (860, R-612), (920, R-660), (230, R-662), (750, R-664), (250, R-666), (750, R-668), (280, R-670), (720, R-672), (270, R-514)	3210	1	MPS
							Red									3210	1	
4	S24ID	S24	Absolute Block	Up Main	6	IB Inner Distant	Green	S24 Green						R-747	(800, R-749), (250, R-751)	1050	2	MPS
							Yellow	S24 Yel									1	

Block Section Details									
Last Stop Signal for entering into Block Section	Distance from LSS to Next Approaching Stop Signal in meter	Block Section TIN	Movement UP/Down	Adjacent Line TINs	Next Station Id	Next Station Border RFID with Location	Authorised Speed	Start Distance to Absolute Location Reset (m)	Absolute Location Correction (m)	Loco Direction after Adjustment
S6	5230	N-96	Down	N-91	521	R-612	MPS	1980	40 (-ve)	Nominal
S24	4770	N-94	UP	N-95	503	R-801	MPS	----	----	----

Signals Override (OV) not required at zero speed	S6, S25, S24	Authorized speed on detection of train in Onsight mode	100

Shunting Limit				
Adjacent Station Name	Direction	RFID Tag No	TIN	Absolute Location in meter
GGD	Nominal	R-716	N-96	122790
GGD	Nominal	R-683	N-91	122670
GGD	Nominal	R-687	N-53	122240
VKB	Reverse	R-709	N-94	121160
VKB	Reverse	R-690	N-95	121280

Firm Logo

0	Initial Revision	27-12-22
REV.NO	REVISION	DATE

Approving Authority			CHITGIDDA(CTF) Secunderabad Division, SC Railway			REF : SIPNO.IPU-0012C/ALT-5 REF : TOC -TC0012C/ALT-5	
						RFID_TAG/TIN_LAYOUT_CTF_2.0.0	
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	STATIONARY KAVACH TABLE OF CONTROL			TABLE NO : KAVACH_TOC_CTF_2.0.0	
Checked By				PREPARED BY	CHECKED BY		Firm Logo
			SIGN				
JE/SSE/HQ/SCR	ASTE/SSTE/P/ HQ/SCR	Dy.CSTE/ P/HQ/SCR	NAME	D.Tulasi Bhavani	Aarthi Thakur	M. SRINIVAS REDDY	

CTF Track Profile Data (Template)

Station Name:	CHITGIDDA (CTF)	Division:	Secunderabad
Station ID:	520	Section:	SC Railway

Entry Signal	Exit Signal	Line	Turnout Speed			Permanent Speed Restriction	Gradient			LC Gate					Track Condition		
			Speed Value (kmph)	Start Distance (m)	Length (m)	Static Speed Type, Speed Value (kmph) , Length(m)	Engineering Gradient	Average Gradient Value	Length (m)	LC Distance (m)	LC ID Numeric/LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled /LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
S1	S3	Down Main				(U, 110, 550) (U, 90, 300) (U, 110, 660)	(1 in -1000,190), (1 in -488,350), (1 in -660,370), (1 in -1000,400), (1 in -1000,90), (1 in -935,110)	F 1 in 727	1510						Fouling Mark	810m from S1	
S1	S4	Common Loop	30	670	870	(U, 110, 550) (U, 90, 300) (U, 110, 660)	(1 in -1000,190), (1 in -488,350), (1 in -660,370), (1 in -1000,400), (1 in -1000,90), (1 in -935,110)	F 1 in 727	1510						Fouling Mark	800m from S1	
S6	S1D of GGD	Down Main				(U, 110, 5230)	(1 in -530,710), (1 in -380,750), (1 in 180,650), (1 in -1000,100), (1 in -150,400), (1 in -1000,150), (1 in 150,700), (1 in -1000,550), (1 in -150,800), (1 in -1000,420)	F 1 in 440 R 1 in 180 F 1 in 222 R 1 in 150 F 1 in 280	1460 650 650 700 1770	150	None	Manned	'A' Class	Distance Based			
S24ID	S24	Up Main				(U, 110, 1050)	(1 in 150,130), (1 in -1000,700), (1 in -250,220)	R 1 in 150 F 1 in 582	130 920								

			0	Initial Revision		27-12-22
			REV.NO	REVISION		DATE
Approving Authority			CHITGIDDA(CTF) Secunderabad Division, SC Railway			REF : SIPNO.IPU-0012C/ALT-5 REF : TOC -TC0012C/ALT-5
						RFID_TAG/TIN_LAYOUT_CTF_2.0.0
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	STATIONARY KAVACH TABLE OF CONTROL			TABLE NO : KAVACH_TOC_CTF_2.0.0
Checked By				PREPARED BY	CHECKED BY	
			SIGN			
JE/SSE/HQ/SCR	ASTE/SSTE/P/ HQ/SCR	Dy.CSTE/ P/HQ/SCR	NAME	D.Tulasi Bhavani	Aarthi Thakur	M. SRINIVAS REDDY

Temporary Single Line Working on Double Line (Template)

Station Name:	CHITGIDDA (CTF)	Division:	Secunderabad
Station ID:	520	Section:	SC Railway

TSL Entry Signal	TSL Exit Signal	Signal Type	Aspect of Entry Signal	Requires Aspects of Exit Signal	Required Route Command	Requires Points in Route		Requires Track Ckt Up in Route for TSL Exit signal	TINs (Track Identification Number) Requires Free	Check RFID Sequence		Distance between Entry & Exit Signal	Movement Authority From Foot of Entry Signal (in Sections)	Authorized Speed in OS (kmph) for first train/subsequent trains
						Normal	Reverse			Entry Signal Foot Tag	(Linking Distance , En-Route Tag)			
S3	S25 of GGD	Mainline Starter	Red/Blank	Red	3GNR, 30GNR	18, 19	20	Axle Counter section free	N-56, N-53	R-700	(370, R-712), (10, R-685), (70, R-683), (180, R-681), (200, R-679), (800, R-677), (190, R-675), (1010, R-673), (150, R-623), (940, R-621), (830, R-611), (980, R-609), (100, R-529)	5830	1	25/booked speed
UM Stop Board	S25 of GGD	UP main Stop Board	Blank	Red	UMUNR, 30GNR	19, 20	--	Axle Counter section free	N-53	R-687	(430, R-683), (180, R-681), (200, R-679), (800, R-677), (190, R-675), (1010, R-673), (150, R-623), (940, R-621), (830, R-611), (980, R-609), (100, R-529)	5810	1	25/booked speed
S26	S15 of VKB	Loopline Starter	Red/Blank	Red	26GNR, 1GNR	11, 12	13	Axle Counter section free	N-48, N-46	R-702	(60, R-694), (170, R-690), (60, R-688), (510, R-686), (200, R-684), (810, R-682), (190, R-680), (810, R-678), (160, R-676), (700, R-674), (630, R-752), (200, R-750), (820, R-748), (250, R-746), (860, R-744), (240, R-742), (1000, R-740), (940, R-738), (60, R-862)	8670	1	25/booked speed
S6	S26	Advanced Starter	Red/Blank	Red	6GNR, CLUNR	20	18	CLT	N-58, N-56, N-54, N-50	R-716	(120, R-714), (80, R-712), (310, R-710), (60, R-708), (200, R-706), (310, R-704), (200, R-702)	1280	1	25/booked speed
S6	SH23	Advanced Starter	Blank	Red	6GNR, DMUNR	20, 18		DMT	N-58, N-56, N-52	R-716	(120, R-714), (80, R-712), (370, R-700), (200, R-698), (300, R-718), (200, R-696)	1270	1	25/booked speed
S25	S4	Advanced Starter	Red/Blank	Red	25GNR, CLUNR	12	11, 13	CLT	N-45, N-46, N-48, N-50	R-709	(100, R-707), (80, R-692), (110, R-694), (60, R-702), (200, R-704), (310, R-706), (200, R-708)	1060	1	15

Signal for entering into Block Section	TSL Block Section TIN	Adjacent Line TINs	Next Station Id	Next Station Border RFID	Start Distance to Absolute Location Reset (m)	Absolute Location Correction (m)	Loco Direction after Adjustment
S30	N-91	N-96	521	----	----	----	----
S1	N-95	N-94	503	----	3440	60 (+ve)	Reverse

			REV.NO	REVISION	DATE
			CHITGIDDA(CTF) Secunderabad Division, SC Railway	REF : SIPNO.IPU-0012C/ALT-5 TOC -TC0012C/ALT-5 RFID_TAG/TIN_LAYOUT_CTF_V2_1.0	
JE/SSE/TCAS/SC	DSTE/TCAS/SC	Dy.CSTE/ TCAS/SC	KAVACH STATION SELECTION TABLE for Temporary Single Line Working on Double Line (Template)	TABLE NO : SST_CTF_V2_1.0	
				PREPARED BY	CHECKED BY
			SIGN		Firm Logo
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	NAME		

Temporary Single Line Working on Double Line Track Profile Data (Template)

Station Name:	CHITGIDDA (CTF)	Division:		Secunderabad
Station ID:	520	Section:		SC Railway

TSL Entry Signal	TSL Exit Signal	Turnout Speed			Permanent Speed Restriction		Gradient		LC Gate					Track Condition		
		Speed Value (kmph)	Start Distance (m)	Length (m)	(Speed Value (kmph), Static Speed Type, Length (m))	Engineering Gradients	Average Gradient Value	Length (m)	LC Distance (m)	LC ID Numeric/LC ID Alpha suffix	LC Manning Type	LC Class	LC Auto Whistling Enabled /LC Auto Whistling Type	Track Condition Type	Start Distance (m)	Length (m)
S3	S25 of GGD	30	0	440	(110, U, 360)	(1 in -935, 190), (1 in -1000, 490), (1 in -170, 210), (1 in -1000, 190), (1 in -325, 300), (1 in -1000, 100), (1 in -316, 300), (1 in -1000, 1000), (1 in -150, 500), (1 in -1000, 100), (1 in 300, 400), (1 in -1000, 600), (1 in -160, 900), (1 in -1000, 350)	1 in -418	5830	720	None	Manned	'A' Class	Distance Based			
					(90-A, 60-B, 65-C, 10)											
					(110, U, 10)											
					(80-A, 60-B, 65-C, 90)	(1 in -1000, 200)	1 in -1000									
					(110, U, 5360)											
S26	S15 of VKB	30	0	140	(90-A, 60-B, 65-C, 190)	(1 in 660, 260), (1 in 230, 250), (1 in 150, 100), (1 in -1000, 310), (1 in 180, 690), (1 in -1000, 500), (1 in 150, 800), (1 in -1000, 700), (1 in -250, 500), (1 in -1000, 300), (1 in 150, 510), (1 in 650, 190), (1 in -1000, 400), (1 in -650, 400), (1 in 200, 400), (1 in 150, 1000), (1 in -1000, 200), (1 in -800, 900),	1 in 485	8670								
					(110, U, 8480)	(1 in -1000, 10), (1 in 150, 190)	1 in 159									
S6	S26	30	450	860	(110, U, 130)	(1 in 530, 90), (1 in -1000, 230), (1 in 935, 360), (1 in -1000, 400)	1 in -14369	1280								
					(90-A, 60-B, 65-C, 80)											
					(110, U, 960)	(1 in -1000, 90), (1 in 660, 110)	1 in -26309									
					(90-A, 60-B, 65-C, 110)											
S25	S4	15	140	950	(110, U, 70)	(1 in -488, 90), (1 in -660, 370), (1 in -1000, 400)	1 in -672	1060								
					(90-A, 60-B, 65-C, 70)											
					(110, U, 80)											
					(90-A, 60-B, 65-C, 240)	(1 in -1000, 90), (1 in -935, 110)										
					(110, U, 600)											

			REV.NO	REVISION	DATE
			CHITGIDDA(CTF) Secunderabad Division, SC Railway		REF : SIPNO.IPU-0012C/ALT-5 TOC -TC0012C/ALT-5 RFID_TAG/TIN_LAYOUT_CTF_V2_1.0
JE/SSE/TCAS/SC	DSTE/TCAS/SC	Dy.CSTE/ TCAS/SC	KAVACH Track Profile Table for TSL Working		TABLE NO : SST_CTF_V2_1.0
				PREPARED BY	CHECKED BY
			SIGN		
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	NAME		

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