सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

Annexure – I

KAVACH
Control Table Guidelines

(Amendment-4)

Issued by

S &T DIRECTORATE
RESEARCH, DESIGNS & STANDARDS ORGANISATION
MINISTRY OF RAILWAYS
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अअमासं RDSO रेल अग्रदूत Transforming Railways www.rdso.gov.in

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

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 ~~**TSRMS Route ID:** This shall be mapped from the TSRMS database and shall be unique.~~

I.2.11.7 **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.2.11.8 **Aspect of Entry Signal:** This field shall indicate all the possible OFF, Red and Blank aspects of the "Entry Signal".

I.2.11.9 **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.2.11.10 **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.2.11.11 **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.2.11.12 **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.2.11.13 **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.2.11.14 **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.2.11.15 **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.2.11.16 **Distance between Entry & Exit Signal:** To be specified in meters**.**

I.2.11.17 **Movement Authority from the foot of entry signal (in sections):** Minimum movement authority for the corresponding signal aspect and/or track occupancy status 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.2.11.18 **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.2.11.19 **Block Section Details**

I.2.11.19.1 **Last Stop Signal for entering into 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:** 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.2.11.20 **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.2.11.21 **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 the purpose of 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.

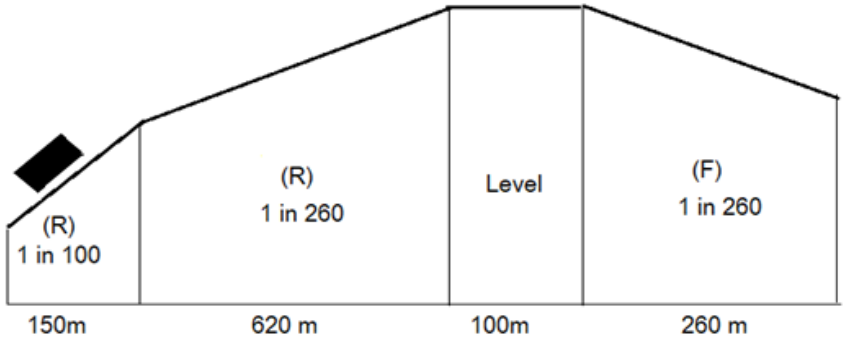
(a) Engineering Gradient

(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 gradient 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 (Radio holes/Non stopping area/Neutral Section/ Reversing area, fouling mark location with start distance and length in meter.

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 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 defined the distance of 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 Ckt 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.

CHITGIDDA (CTF)

CLASS-'B'

IPU : 0012 C, Km.121.80.
Station ID:520

CHITGIDDA (CTF) Secunderabad Division, SC Railway KAVACH RFID TAG / TIN LAYOUT NOT DRAWN TO SCALE			REF.SIP.NO : IPU.0012C/ALT.5 REF.TOC.NO : TC.0012C/ALT.5
	PREPARED BY:	CHECKED BY:	APPROVED BY:	Ver.No KAVACH_RFID_TAG_LAYOUT_CTF_2.0.1
SIGN:				
NAME:				

Note : R-674, 613, 750, 752, 611, 614 are Tags Added.

REV.NO	REVISION HISTORY	DATE
1	Ref.Note	DATE : 23.08.2023
0	INITIAL VERSION	DATE : 22.12.2022

		CTF	UP	DN
STATION ID		520	503	521
RFID	RANGE	673-736	673-736,737-800	609-672,673-676
	ALLOTED	681,683,685-687,689-704, 706-710,714,716 &718 (Used - 29)	676,678,680,682,684,737,739, 741,743,745,747,749,751,801 674,750,752 (Used - 17)	610-612,621,623,673, 675,677,679,613,614 (Used - 11)
	SPARE	688,705,711,712,713,715, 717,719,720-736	711,713,715,717,719, 720-736	615-620,624-659,661-663,665,667,669,671
TIN	RANGE	45-60	94,95	91,96
	ALLOTED	45-54,56,58	94,95	91,96
	SPARE	55,57,59,60	---	---
BORDER LINE TAGS		---	676,801	612,621

APPROVED BY		
EXE.DIRECTOR/TELE-II		
JE/SSE/TCAS/SC	DSTE/TCAS/SC	Dy.CSTE/TCAS/SC
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIR/RDSO/LKO

आई.पी.यू IPU 0012C/ALT.5	संदर्भ सिगनल आरेख सः REF.SIG.PLAN.No.	
	संशोधन	REVISION
	आरेखकार	DRAWN
	व.अ.इं. (जाँचकर्ता CHECKED)	JE
	व.अ.इं.	SSE
	स.सि.दू.सं.इं.	ASTE
	व.सि.दू.सं.इं.	SSTE
	कु.मु.सि.दू.सं.इं.	fCSTE

सिगनल व दूर संचार
SIGNAL & TELECOMMUNICATIONS
TRAIN COLLISION AVOIDANCE SYSTEM (KAVACH)

चिटगिडा
CHITGIDDA (CTF)
RFID TAG/TIN LAYOUT
Secunderabad Division

द. म. रेलवे. आरेख. सं. S.C.RLY.DRG.NO.	IPU 0012C/ALT.5	शीट SHEET	कुल शीट SHEETS
		01	01

CTF Control Table

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

S.No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspect of Entry Signal	Requires Aspects of Exit Signal	Requires next sections clear in Route	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	S1D	S1 ID	Absolute Block	Down Main	Distant	Green	Green							R-678	(0, R-678), (810, R-680),(190, R-682)	1000	3	MPS
							Double Yellow										3	
						Double Yellow	Green										3	
							Double Yellow										3	
							Yellow										2	
						Yellow	ID Green										3	
							Double Yellow										3	
							Yellow										2	
2	S1 ID	S1	Absolute Block	Down Main	Inner Distant	Green	Green							R-682	(0, R-682),(810, R-684), (200, R-686)	1010	3	MPS
						Double Yellow	Green										3	
							Yellow										2	
							Yellow with "Pos1"										2	
						Yellow	Green										3	
							Yellow										2	
							Yellow with "Pos1"										2	
							Red										1	
3	S1	S3	Station Section	Down Main	Main Home with Junction Route Indicator	Green	Green		11, 13		DMT	N-46, N-52	N-56	R-686	(0,R-686),(570,R-690), (240,R-696),(200, R-718), (300,R-698),(200,R-700)	1510	3	MPS
						Yellow	Green										3	
							Yellow										2	
							Red										1	
4	S1	S4	Station Section	Common Loop	Main Home with Junction Route Indicator	Yellow with "Pos1"	Yellow		11	13	CLT	N-46, N-48, N-50	N-54	R-686	(0,R-686),(570,R-690), (170,R-694),(60,R-702), (200,R-704),(310,R-706), (200, R-708)	1510	2	MPS
							Red										1	

Approving Authority			CHITGIDDA(CTF) Secunderabad Division, SC Railway	REF : SIPNO.IPU-0012C/ALT-5 REF : TOC -TC0012C/ALT-5
				RFID_TAG/TIN_LAYOUT_CTF_2.0.1
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	STATIONARY KAVACH TABLE OF CONTROL	TABLE NO : KAVACH_TOC_CTF_2.0.1

Checked By				PREPARED BY	CHECKED BY		
			SIGN				
JE/SSE/HQ/SCR	ASTE/SSTE/P/ HQ/SCR	Dy.CSTE/ P/HQ/SCR	NAME				

CTF Control Table

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

S.No	Entry Signal	Exit Signal	Section Type	Line	Signal Type	Aspect of Entry Signal	Requires Aspects of Exit Signal	Requires next sections clear in Route	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)			
5	S30D	S30 ID	Absolute Block	Up Main	Distant	Green	Green							R-673	(0,R-673),(1010,R-675), (190,R-677)	1200	3	MPS
							Double Yellow										3	
						Double Yellow	Green										3	
							Double Yellow										3	
							Yellow										2	
						Yellow	Green										3	
							Double Yellow										3	
							Yellow										2	

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	5150	N-96	Down	N-91	521	R-612, 123890	MPS	200	123030/122990	Nominal To Nominal
S25	3480	N-94	UP	N-95	503	R-801, 116940	MPS	----	----	----

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

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
VKB	Reverse	R-709	N-94	121160
VKB	Reverse	R-690	N-95	121280

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_2.0.1
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	STATIONARY KAVACH TABLE OF CONTROL		TABLE NO : KAVACH_TOC_CTF_2.0.1
Checked By				PREPARED BY	CHECKED BY
			SIGN		
JE/SSE/HQ/SCR	ASTE/SSTE/P/ HQ/SCR	Dy.CSTE/ P/HQ/SCR	NAME		

CTF- Stationary KAVACH Track Profile Table

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)
S1D	S1 ID	Down Main				(U,110,1000)	(F 1 in 150,700), (L 1 in 1000,300)	F 1 in 150	700								
								L 1 in 1000	300								
S1 ID	S1	Down Main				(U, 110, 1010)	(L 1 in 1000, 300), (F 1 in 150,550), (L 1 in 1000,160)	L 1 in 1000	300								
								F 1 in 150	550								
								L 1 in 1000	160								
S1	S3	Down Main				(U, 110, 610)	(L 1 in 1000,190), (F 1 in 488,350), (F 1 in 660,370), (L 1 in 1000,480), (F 1 in 935,120)	L 1 in 1000	190						FM	810	0
						(U, 90, 300)		F 1 in 563	720								
								L 1 in 1000	480								
						(U, 110, 600)		F 1 in 935	120								
S1	S4	Common Loop	30	670	870	(U, 110, 670)	(L 1 in 1000,190), (F 1 in 488,350), (F 1 in 660,370), (L 1 in 1000,480), (F 1 in 935,120)	L 1 in 1000	190						FM	800	0
								F 1 in 563	720								
								L 1 in 1000	480								
						(U, 30, 840)		F 1 in 935	120								
S4	S6	Down Main	30	0	130	(U, 30, 120)	(F 1 in 935,250), (L 1 in 1000,230), (F 1 in 530,90)	F 1 in 935	250								
						(U, 110, 240)		L 1 in 1000	230								
						(U, 90, 80)											
						(U, 110, 130)		F 1 in 530	90								
S6	S1D of GGD	Down Main				(U, 110, 5150)	(F 1 in 530,710), (F 1 in 380,750), (R 1 in 180,650), (L 1 in 1000,100), (F 1 in 150,400), (L 1 in 1000,150), (R 1 in 150,700), (L 1 in 1000,550), (F 1 in 150,800), (L 1 in 1000,340)	F 1 in 441	1460								
								R 1 in 180	650								
								L 1 in 1000	100								
								F 1 in 150	400								
								L 1 in 1000	150								
								R 1 in 150	700								
								L 1 in 1000	550								
								F 1 in 150	800								
								L 1 in 1000	340								
S24	S1D of VKB	Up Main				(U, 110, 4770)	(F 1 in 250,280), (L 1 in 1000,300), (R 1 in 150,500), (R 1 in 650,200), (L 1 in 1000,400), (F 1 in 650,400), (R 1 in 200,400), (R 1 in 150,1000), (L 1 in 1000,200), (F 1 in 800,900), (L 1 in 1000,60), (R 1 in 150,130)	F 1 in 250	280								
								L 1 in 1000	300								
								R 1 in 192	700								
								L 1 in 1000	400								
								F 1 in 650	400								
								R 1 in 162	1400								
								L 1 in 1000	200								
								F 1 in 800	900								
								L 1 in 1000	60								
								R 1 in 150	130								

Approving Authority			CHITGIDDA(CTF) Secunderabad Division, SC Railway	REF : SIPNO.IPU-0012C/ALT-5 REF : TOC -TC0012C/ALT-5
				RFID_TAG/TIN_LAYOUT_CTF_2.0.1
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	STATIONARY KAVACH TRACK PROFILE TABLE	TABLE NO : KAVACH_TOC_CTF_2.0.1

Checked By				PREPARED BY	CHECKED BY	
			SIGN			

KAVACH TEMPORARY SPEED RESTRICTION ROUTE TABLE – (Template)

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

SL.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 (Meter)	OHE Pole/Km Data (in Meters)
1	S15	S14D	VKB-CTF-Down Block (S15-S1)	R-862	862	0	9	(9-112/50), (41-112/52), (42-113/2), (53-113/4), (40-113/6), (46-113/8), (49-113/10), (39-113/12), (40-113/14), (40-113/16), (40-113/18), (40-113/20), (40-113/22), (40-113/24), (40-113/26), (40-113/28), (45-113/30), (44-113/32), (55-113/34), (67-113/36), (63-113/38), (67-113/40), (63-113/42), (68-114/2), (81-114/4), (67-114/6), (72-114/8), (68-114/10), (72-114/12), (63-114/14), (63-114/16), (62-114/18), (59-114/20), (45-114/22), (41-114/24), (41-114/26), (39-114/28), (41-114/30), (40-114/32), (40-114/34), (36-114/36), (36-115/2), (40-115/4), (41-115/6), (41-115/8), (41-115/10),
2	S14D	S14ID				2240	46	(9-115/10), (36-115/12), (41-115/14), (41-115/16), (41-115/18), (41-115/20), (41-115/22), (61-115/24), (67-115/26), (72-115/28), (70-115/30), (61-115/32), (65-115/34), (67-115/36), (63-115/38), (63-115/40), (61-115/42), (52-116/2), (68-116/4), (72-116/6), (68-116/8),
3	S14ID	S14				3350	14	(46-116/8), (63-116/10), (69-116/12), (73-116/14), (68-116/16), (73-116/18), (64-116/20), (73-116/22), (68-116/24), (68-116/26), (64-116/28), (64-117/2), (58-117/4), (54-117/6), (64-117/8), (57-117/10),
4	S14	S1D				4370	42	(14-117/10), (54-117/12), (68-117/14), (72-117/16), (59-117/18), (63-117/20), (68-117/22), (72-117/24), (67-117/26), (72-117/28), (68-117/30), (72-117/32), (68-118/2), (68-118/4), (70-118/6), (67-118/8), (63-118/10), (63-118/12), (59-118/14), (68-118/16), (68-118/18), (63-118/20), (54-118/22), (72-118/24),
5	S1D	S1ID				5860	43	(42-118/24), (72-118/26), (67-118/28), (72-118/30), (68-119/2), (67-119/4), (72-119/6), (68-119/8), (72-119/10), (68-119/12), (63-119/14), (63-119/16), (54-119/18), (59-119/20), (54-119/22), (72-119/24),
6	S1ID	S1				6860	19	(43-119/24), (68-119/26), (67-119/28), (72-119/30), (72-119/32), (72-120/2), (68-120/4), (72-120/6), (68-120/8), (63-120/10), (63-120/12), (68-120/14), (59-120/16), (63-120/18), (55-120/20), (58-120/22),
7	S1	S3	CTF DN Main	R-686	6862	0	22	(19-120/22), (60-120/24), (55-120/26), (69-120/28), (59-120/30), (63-121/2), (49-121/4), (50-121/6), (50-121/8), (40-121/10), (32-121/12), (36-121/16), (36-121/18), (36-121/20), (22-121/22), (37-121/24), (41-121/28), (22-121/28A), (23-121/30), (41-121/30A), (9-121/32), (50-121/34), (54-121/36), (59-121/38), (50-121/40), (63-121/42), (49-121/44), (68-121/46), (67-122/2), (67-122/4), (59-122/6), (45-122/8), (54-122/10),
8	S3	S6				1510	12	(22-122/10), (36-122/12), (32-122/14), (40-122/16), (54-122/18), (54-122/20), (58-122/22), (45-122/24), (36-122/26), (9-122/26A), (44-122/28), (45-122/30), (45-122/32), (58-122/34),

SL.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 (Meter)	OHE Pole/Km Data (in Meters)
15	S30	S28	CTF UP Main	R-681	6813	0	19	(45-122/33), (67-122/31), (50-122/29), (41-122/27), (45-122/25), (45-122/23), (45-122/21), (58-122/19), (59-122/17), (45-122/15), (32-122/13), (32-122/11), (36-122/9), (54-122/7), (45-122/5), (58-122/3), (68-122/1), (68-121/45), (67-121/43), (50-121/41), (63-121/39), (50-121/37), (59-121/35), (54-121/33), (49-121/31), (48-121/29),
16	S28	S25				1320	26	(19-121/29), (44-121/27), (35-121/25), (34-121/23), (29-121/19), (35-121/17), (36-121/15), (27-121/13), (40-121/9), (40-121/7), (54-121/5),
17	S25	S24D	CTF-VKB-UP Block (S25-S1)	R-709	709	0	8	(26-121/5), (50-121/3), (48-121/1), (64-120/29), (58-120/27), (69-120/25), (55-120/23), (54-120/21), (54-120/19), (58-120/17), (63-120/15), (58-120/13), (68-120/11), (63-120/9), (63-120/7), (67-120/5), (72-120/3), (68-120/1), (72-119/31), (72-119/29), (72-119/27), (68-119/25), (67-119/23), (72-119/21),
18	S24D	S24ID				1480	54	(8-119/21), (54-119/19), (59-119/17), (54-119/15), (63-119/13), (63-119/11), (68-119/9), (72-119/7), (67-119/5), (72-119/3), (67-119/1), (68-118/29), (72-118/27), (68-118/25), (72-118/23), (72-118/21),
19	S24ID	S24				2430	18	(54-118/21), (55-118/19), (63-118/17), (67-118/15), (67-118/13), (58-118/11), (63-118/9), (63-118/7), (67-118/5), (70-118/3), (67-118/1), (67-117/31), (72-117/29), (57-117/27), (62-117/25), (56-117/23), (68-117/21),
20	S24	S1D				3480	25	(18-117/21), (68-117/19), (63-117/17), (62-117/15), (69-117/13), (68-117/11), (54-117/9), (54-117/7), (63-117/5), (54-117/3), (59-117/1), (63-116/27), (63-116/25), (68-116/23), (67-116/21), (72-116/19), (63-116/17), (72-116/15), (68-116/13), (72-116/11), (68-116/9), (72-116/7), (67-116/5), (72-116/3), (67-116/1), (59-115/43), (59-115/41), (64-115/39), (61-115/37), (68-115/35),
21	S1D	S1ID				5360	28	(25-115/35), (63-115/33), (63-115/31), (72-115/29), (72-115/27), (65-115/25), (45-115/23), (49-115/21), (45-115/17), (45-115/15), (45-115/13), (45-115/11), (45-115/9), (45-115/7), (45-115/5), (40-115/1), (45-114/33), (46-114/31), (44-114/29), (44-114/27), (44-114/25), (48-114/23), (42-114/21), (44-114/19), (59-114/17), (62-114/15), (63-114/13), (63-114/11), (72-114/9),
22	S1ID	S1				6820	13	(28-114/9), (68-114/7), (72-114/5), (67-114/3), (81-114/1), (67-113/41), (63-113/39), (68-113/37), (63-113/35), (68-113/33), (54-113/31), (45-113/29), (45-113/27), (41-113/25), (41-113/23), (41-113/21), (41-113/19), (41-113/17), (41-113/15), (41-113/13), (41-113/11), (41-113/9), (50-113/7), (47-113/5), (41-113/3), (51-113/1), (44-112/51), (54-112/49),

Approving Authority			CHITGIDDA(CTF) Secunderabad Division, SC Railway		REF : SIPNO.IPU-0012C/ALT-5 REF : TOC -TC0012C/ALT-5	
					RFID_TAG/TIN_LAYOUT_CTF_2.0.1	
JE/SSE/RDSO/LKO	ADE/RDSO/LKO	DIRECTOR/RDSO/LKO	KAVACH Temporary Speed Restriction Route Table		TABLE NO : KAVACH_TOC_CTF_2.0.1	
Checked By				PREPARED BY	CHECKED BY	
			SIGN			
JE/SSE/HQ/SCR	ASTE/SSTE/P/ HQ/SCR	Dy.CSTE/ P/HQ/SCR	NAME			

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 Clkt 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 TABLE OF CONTROL (Temporary Single Line Working on Double Line)	TABLE NO : SST_CTF_V2_1.0	
				PREPARED BY	CHECKED BY
			SIGN		
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)	(F1 in 935, 190), (F1 in 1000, 490), (F1 in 170, 210), (F1 in 1000, 190), (R1 in 325, 300), (F1 in 1000, 100), (F1 in 316, 300), (F1 in 1000, 1000), (F1 in 150, 500), (F1 in 1000, 100), (F1 in 300, 400), (F1 in 1000, 600), (F1 in 160, 900), (F1 in 1000, 350) (F1 in 1000, 200)	F1 in 509	1080	720	None	Manned	'A' Class	Distance Based			
					(90-A, 60-B, 65-C, 10)		R1 in 325	300										
					(110, U, 10)		F 1 in 404	3000										
					(80-A, 60-B, 65-C, 90)		Level	1450										
					(110, U, 5360)													
S26	S15 of VKB	30	0	140	(90-A, 60-B, 65-C, 190)	(R1 in 660, 260), (R1 in 230, 250), (R 1 in 150, 100), (F1 in 1000, 310), (R1 in 180, 690), (F1 in 1000, 500), (F1 in 150, 800), (F1 in 1000, 700), (F1 in 250, 500), (F1 in 1000, 300), (F1 in 150, 510), (F1 in 650, 190), (F1 in 1000, 400), (F1 in 650, 400), (F1 in 200, 400), (F1 in 150, 1000), (F1 in 1000, 200), (F1 in 800, 900), (F1 in 1000, 70), (R1 in 150, 190)	R1 in 284	610									
					(110, U, 8480)		F1 in 1000	310										
							R 1 in 180	690										
							F 1 in 291	6870										
							R 1 in 150	190										
S6	S26	30	450	860	(110, U, 130)	(F1 in 530, 90), (F1 in 1000, 230), (R1 in 935, 360), (F1 in 1000, 490) (R1 in 660, 110)	F 1 in 800	320										
					(90-A, 60-B, 65-C, 80)		R 1 in 935	360										
					(110, U, 960)		F 1 in 1000	490										
					(90-A, 60-B, 65-C, 110)		F 1 in 660	110										
S25	S4	15	140	950	(110, U, 70)	(F1 in 488, 90), (F1 in 660, 370), (F1 in 1000, 490) (F1 in 935, 110)	F1 in 783	1060										
					(90-A, 60-B, 65-C, 70)													
					(110, U, 80)													
					(90-A, 60-B, 65-C, 240)													
					(110, U, 600)													

			REV.NO	**REVISION**	**DATE**
JE/SSE/TCAS/SC	**DSTE/TCAS/SC**	**Dy.CSTE/ TCAS/SC**	**TCAS STATION SELECTION TABLE**	**TABLE NO : SST_CTF_V2_1.0**	
				PREPARED BY	**CHECKED BY**
			SIGN		
JE/SSE/RDSO/LKO	**ADE/RDSO/LKO**	**DIRECTOR/RDSO/LKO**	**NAME**		