

Additions to Clarifications of and Amendment / Corrigendum to Tender no. NITRR/LAN/7567 /2013, dated 01.10.2013

A. Table

S.No.	Chapter No(s), Page No(s), Para / Section No(s): Main Heading, Point No.	Clause(s) in Tender Document	Addition / Revision / To be read as
1	III, 23, 38: OFC Related, 1	Cables shall be ducted and laid in underground trenches which shall be at least 3 feet deep and at least 1.5 feet wide.	Cables shall be ducted and laid in underground trenches which shall be 75 cm deep and at least 36 cm wide and should be adequate for proper installation of HDPE pipes, GI pipes, etc.
2	III, 23, 38: OFC Related, 5	Soil shall be filled up to a height of 250mm and covered with warning tape	OFC trench shall be provided with a layer of clean, dry sand cushion of not less than 7.5 cm in depth, before laying the pipes and cables therein. Above this suitably sieved soil shall be filled to level the trench with the ground. In an intermediate step, warning tape shall be laid at 45 cm as measured from the bottom of the trench.
3	III, 23, 38: OFC Related, 14	Cable bend radius should be as per the norms and concrete OFC cable markers of (20 x 10 x 90) cm should be provided every 100 ft or at bends	Cable bend radius should be as per the norms and concrete OFC cable markers of (20 x 10 x 60) cm should be provided every 100 ft or at bends

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		whichever is less.	whichever is less.
4	III, 27, 47: Schedule of Requirements in Tabular Format → Active Bill of Quantity, 19 V,72,NIL:Format for Submission of Price Bid (Active Component), 19	IP PBX Telephony Server	IP PBX Telephony Servers [two fully functional 30 channel PRI (including all hardware and software) from day 1 and four 30 channel PRI (without licenses) for future requirements to be included with the telephony server pair]
5	III, 27, 47: Schedule of Requirements in Tabular Format →Active Bill of Quantity, 20 V,72,NIL:Format for Submission of Price Bids (Active Component), 20	SIP IP Phone	SIP IP Phone including power adaptor, cables, etc
6	III, 28, 47: Schedule of Requirements in Tabular Format →Passive Component with Rack and UPS→ UTP Cable Details, 5 V,74, NIL: Passive, Rack and UPS Price Format → UTP Cable Details, 5	BACK BOX –(Surface Mount Box) For Single and Dual	BACK BOX –(Surface Mount Box) For Single

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7	III, 28, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS→UTP Cable Details (for Residence), 1	<table border="1"> <tr> <td>1</td><td>Cat.6 4pr UTP Cable 305m Blue FR PVC</td><td>23</td><td>Boxes</td></tr> </table>	1	Cat.6 4pr UTP Cable 305m Blue FR PVC	23	Boxes	<table border="1"> <tr> <td>1</td><td>Cat.6 4pr UTP Cable 305m Blue FR PVC</td><td>25</td><td>Boxes</td></tr> </table> As mentioned in V,74, NIL: Price Bid Schedule →Passive, Rack and UPS Price Format → UTP Cable Details (for Residence), 1	1	Cat.6 4pr UTP Cable 305m Blue FR PVC	25	Boxes
1	Cat.6 4pr UTP Cable 305m Blue FR PVC	23	Boxes								
1	Cat.6 4pr UTP Cable 305m Blue FR PVC	25	Boxes								
8	III, 28, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS→Rack, 1	<table border="1"> <tr> <td>1</td><td>42U rack with Accessories</td><td>1</td><td>Nos</td></tr> </table>	1	42U rack with Accessories	1	Nos	<table border="1"> <tr> <td>1</td><td>42U rack with Accessories</td><td>2</td><td>Nos</td></tr> </table> As mentioned in V,74, NIL: Price Bid Schedule →Passive, Rack and UPS Price Format →Racks, 1	1	42U rack with Accessories	2	Nos
1	42U rack with Accessories	1	Nos								
1	42U rack with Accessories	2	Nos								
9	III, 28, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS→UPS, 1 V,75, NIL: Passive, Rack and UPS Price Format →UPS, 1	On-Line UPS, 4800 Watts / 6000 VA, Input 230V / Output 230V , Interface Port DB-9 RS-232, SmartSlot , Extended runtime model , Rack Height 2 U	On-Line UPS, 4800 Watts / 6000 VA, Input 230V / Output 230V, Interface Port DB-9 RS-232, Smart Slot (or equivalent) or USB/RS485 card, Extended runtime model [including 25kA TVSS, Batteries required for 1 hour battery back-up, Battery racks and cables], Rack or floor-standing Model, with Network monitoring card and necessary software for remote monitoring/management and bypass.								

			Note while quoting prices: For 6 kVA UPS (Batteries) and (Battery racks, cables, & TVSS) have been mentioned separately
10	III, 29, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS→ UPS, 4 V,75, NIL: Passive, Rack and UPS Price Format →UPS, 4	Online UPS will be offered, 2400 Watts / 3000 VA, Input 230V / Output 230V , Interface Port DB-9 RS-232, SmartSlot, USB. Battery required for 1 hour Back-up, Rack and Cable	Online UPS, 2400 Watts / 3000 VA, Input 230V / Output 230V, Interface Port DB-9 RS-232, Smart Slot (or equivalent) or USB/RS232 including external isolation transformer at the input of the 3 kVA UPS system, 10kA TVSS, Batteries required for 1 hour battery back-up, Battery racks and cables, Rack or floor-standing Model, with Network monitoring card and necessary software for remote monitoring/management and bypass. Note while quoting prices: For 3 kVA UPS (external isolation transformer, TVSS, batteries, battery racks, and cables have NOT been mentioned separately
11	III, 29, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS→UPS, 5 V,75, NIL: Passive, Rack and UPS Price Format →UPS, 5	Online UPS in N+1 Prallel Mode 8 kW / 10 kVA, Input 415V / Output 230V , Interface Port DB-9 RS-232, RJ-45 10/100	Online UPS in N+1 Parallel Mode 8 kW / 10 kVA, Input 415V / Output 230V , Interface Port DB-9 RS-232, RJ-45 10/100 [including 50 kA TVSS, Batteries required for 1 hour battery back-up for each UPS, Battery racks and cables] with Network monitoring card and necessary software for remote monitoring/management and bypass Note while quoting prices: For 10 kVA UPS

			(Batteries) and (Battery racks, cables, & TVSS) have been mentioned separately										
12	III, 29, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS→UPS, 6 V,75, NIL: Passive, Rack and UPS Price Format →UPS, 6	Battery Bank has to be provided for 60 mins backup for 10KVA UPS	Battery Bank has to be provided for 60 mins backup for <u>each</u> 10KVA UPS										
13	III, 29, 47: Schedule of Requirements in Tabular Format → Installation and Commissioning→Services, 1 V,76, NIL: Price Format for Service Components, 1	Laying of UTP Cable with 1” PVC conduit which includes bends, collars, junction box & fixing hardwires	“Laying of UTP Cable through PVC casing and capping of appropriate dimensions including bends, collars, junction box & fixing hardwires with all other works as described in the Schedule of Requirements (Scope of Work) under para 39 UTP related”										
14	III, 29, 47: Schedule of Requirements in Tabular Format → Installation and Commissioning→Services, 2 V,76, NIL: Price Format for Service Components, 2	<table><tr><td>2</td><td>Information Outlet termination</td><td>1,500</td><td>Nos</td></tr></table>	2	Information Outlet termination	1,500	Nos	<table><tr><td>2</td><td>Information Outlet termination</td><td>1600</td><td>Nos</td></tr></table>			2	Information Outlet termination	1600	Nos
2	Information Outlet termination	1,500	Nos										
2	Information Outlet termination	1600	Nos										
15	III, 29, 47: Schedule of Requirements in Tabular Format → Installation and Commissioning→Services, 5	42U With Fixing All Accessories & Dressing <table><tr><td>1</td><td>42U Network Rack Installation with fixing</td><td>1</td><td>Nos</td></tr></table>	1	42U Network Rack Installation with fixing	1	Nos	<table><tr><td>1</td><td>42U Network Rack Installation With Fixing All Accessories & Dressing (including electric</td><td>2</td><td>Nos</td></tr></table>	1	42U Network Rack Installation With Fixing All Accessories & Dressing (including electric	2	Nos		
1	42U Network Rack Installation with fixing	1	Nos										
1	42U Network Rack Installation With Fixing All Accessories & Dressing (including electric	2	Nos										

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	V,76, NIL: Price Format for Service Components, 5	all Accessories and Dressing			switchboard installation, electric and UPS wiring)			
16	III, 29, 47: Schedule of Requirements in Tabular Format → Installation & Commissioning→Services, 6 V,76, NIL: Price Format for Service Components, 6	9U and 15U Rack Installation With Fixing All Accessories & Dressing			9U and 15U Rack Installation With Fixing All Accessories & Dressing (including electric switchboard installation, electric and UPS wiring)			
17	III, 29, 47: Schedule of Requirements in Tabular Format → Installation and Commissioning→Services, 8 V,77, NIL: Price Format for Service Components, 8	Outdoor Soil Cutting, Digging and Singlemode O F Cable laying through HDPE Pipe on underground routes including all materials. Excavating trenches of A type with dimensions of trench as Top width 30 cms, bottom width 25 cms and depth upto 60 cms including back filling, Compacting (after laying the cable(s) and removing excess earth from site) – Billing shall be done as per actual			Outdoor Soil Cutting, Digging and SM OFC cable laying through HDPE / GI pipes of appropriate dimensions through underground routes under soft earth / roads including all materials. Excavating trenches with dimensions 36 cm width x 75 cm depth including preparation of sand bed, laying of HDPE pipe, HDPE & GI pipes, back filling, compacting (after laying the cable(s)), preparing mount and removing excess earth from site) with all other works including warning tape, OFC route markers, etc as described in the Schedule of Requirements (Scope of Work) under para 38 OFC related including related corrigendum / amendments, additions, if any – Billing shall be done as per actual quantum of work			

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18	III, 30,47: Schedule of Requirements in Tabular Format → Installation and Commissioning→Services, 11-16 V,77-78, NIL: Price Format for Service Components, 11-16				
		11	Installation charges for Firewall Component	11	Installation charges for Firewalls and their Components
		12	Installation charges for Wireless Controller, Aps , Antenna, Pole etc	12	Installation charges for Wireless Controllers, APs , Antenna, Pole etc (including electric switchboard installation, electric and UPS wiring)
		13	Installation charges for IP PBX Server	13	Installation charges for IP PBX Servers [two fully functional 30 channel PRI (including all hardware and software) from day 1 and four 30 channel PRI (without licenses) for future requirements to be included with the telephony server pair]
		14	Installation Charges for UPS		
		15	Project Testing, Labeling, Commissioning, Warranty, Certification for passive & Management with on-site Free of Cost Support for One Year	14	Installation Charges for UPS systems including batteries and battery racks, wiring, TVSS and other accessories
		16	Residence Engineer (3 nos) for Maintaining Data Voice network for 3Year		
				15	Project Testing, Labelling, Commissioning, Warranty, Project Documentation (including Standard Operating Procedures), Certification for passive & Management with on-site Free of Cost Support for One Year

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			16	Resident Engineers (3 nos) for Maintaining Data (Wired and Wireless) and Voice network for 3 Years
19	IV, 62, NIL: Face Plates, (a)	Face Plates shall be compatible with 85mm x 85mm requirements.	British Standard Faceplates: U.K. Style faceplate frame fitting standard 86 x 86mm U.K. back boxes	
20	IV, 63, NIL: Face Plates, (f) b.	British Standard 85mm x 85mm	British Standard Faceplates: U.K. Style faceplate frame fitting standard 86 x 86mm U.K. back boxes	
21	IV, 62, NIL: Category 6 UTP Patch Cords, (e), (i)	(e) Outer Sheath : LS0H (i) Sheath Material : LSZH	(e) Outer Sheath : FR PVC or LSZH (i) Sheath Material : FR PVC or LSZH (superseding deviations, if any, in any other part of document)	
22	III, 27, 47: Schedule of Requirements in Tabular Format → Details Active Bill of Quantity →SR.NO. 5 V, 71, NIL: Format for submission of Price bid (Active Component),5	Managed Access Switch 24 Nos 10/100/1000 Copper + 4 Como SFP ports	Managed Access Switch with (or having) 24 10/100/1000T Ports with 4 1G SFP combo slots and non blocking wirespeed for the specified port density	
23	V, 71, NIL: Format for submission of Price bid (Active Component), 7	10F SM SFP+ Module	10G SM SFP+ Module As in III, 27, 47: Schedule of Requirements in Tabular Format → Details Active Bill of Quantity →SR.NO. 7	
24	III, 27, 47: Schedule of Requirements in Tabular Format → Details Active Bill of Quantity →SR.NO. 8	Network Management Software with all software licenses to manage 500 end points and required hardware	Network Management Software with all software licenses to manage 500 end points and required hardware. NMS Software to be provided in original	

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	V, 71, NIL: Format for submission of Price bid (Active Component), 8					media or CD and hardware on which NMS shall be installed shall also be proposed and supplied.					
25	III, 27, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS → FO Cable Details, 1 V, 73, NIL: Format for submission of Price bid → Passive Rack and UPS Price Format → FIBER OPTIC DETAILS, 1	1	Unitube Armoured Cable SM, 6 Core, 9um	9500	Mtrs		1	Unitube Armoured Cable SM, 6 Core, 9/125 μm	10500	Mtrs	
26	III, 28, 47: Schedule of Requirements in Tabular Format → Passive Component with Rack and UPS → FO Cable Details, 7 V, 73, NIL: Format for submission of Price bid → Passive Rack and UPS Price Format → FIBER OPTIC DETAILS, 7	7	Cement Route Makers	200	Nos		7	Cement Route Markers	250	Nos	
27	III, 29, 47: Schedule of Requirements in Tabular Format → Installation and Commissioning → Services, 7 V, 76, NIL: Format for submission of Price bid → Price Format for Service Components, 7	7	Laying OFC over head through the designated poles with necessary accessories required to complete the installation.	2,500	Mtrs		7	Laying OFC over head through the designated poles with necessary accessories required to complete the installation.	3,500	Mtrs	

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	III, 29, 47: Schedule of Requirements in Tabular Format → Installation and Commissioning → Services, 9 V, 77, NIL: Format for submission of Price bid → Price Format for Service Components, 7	9	Fixing of Route markers	200	Nos		9	Fixing of Route markers	250	Nos	

Bidders are required to carefully note that the following points are added to page 78 (Chapter-V: Price bid Schedule → Price Format for Service Components) and shall make the necessary additions to the Price Bid Schedule

Sr	Name of the Item		UOM	Make	Model	Part No	Unit Rate	Taxes	Total Unit Price	Cost as per mentioned quantities
17	Jointing Chamber of internal dimensions 1200mm (L) x 900mm (W) x 1200mm (D) with appropriate fibre cable management brackets installed	6	Nos							
18	Cable or Pull-Pit of internal dimensions 1200mm (L) x 600mm (W) x 900mm (D)	6	Nos							

Same shall also be considered to be added to table titled Services at page no. 30 under SR. 17 and 18 (Chapter – III, point no. 47 Schedule of Requirements in Tabular Format → Installation and Commissioning → Services)

Following note on P. 66 is repeated for the benefit of bidders.

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Notes for all online UPS systems: ALL ONLINE UPS SYSTEMS SHOULD BE SUPPLIED WITH NETWORK MONITORING CARDS AND NECESSARY SOFTWARE FOR REMOTE MONITORING/MANAGEMENT. Battery make shall be of preferably of Exide / Global & Yuasa (Rocket) / Panasonic / Amararaja (Quanta) or equivalent. Bidder shall propose optimal solution in terms of number of batteries.

B. In case of rain the responsibility of removing water etc. from the unfinished trench shall be that of the contractor. Delay due to removal of rainwater from the unfinished trenches shall be duly recorded and not counted towards liquidated damages. The same shall be subject to proper information to and approval of NIT Raipur.

C. Soft / scanned copies of the relevant product or manufacturer certifications, independent third-party test certifications etc. may be included as explained in the tender document at point no. 51 and 52 of chapter 1. However, Institute reserves the right to call for these documents (and any other document considered necessary) from the bidders at any stage during pre-award.

D. General Requirements for Electric Accessories:

The manufacturer of electric accessories must be ISO 9001:2008 certified. All products must be ISI / BIS certified. Electric socket for 9U and 15U racks shall be 16A (or better) MCB protected. **Redundancy of electric points is required only for core and distribution racks which shall also be MCB protected** (modifying page 24, para 39 UTP Related, point no. 7). Electric cables used shall be FR PVC insulated, high insulation resistance, anti-rodent cables.

E. Power supply to outdoor wireless APs (over PoE) should be over CAT6 STP cable. STP cable shall be taken through ISI marked GI pipe of appropriate dimension for protection from elements like wind, water, sun, rain, dust, rodents etc.

F. PVC Trunking (PVC Casing 'n' Capping) should comply with IS 14927 standard. Contractor shall ensure that the guidelines in Chapter 6 i.e., Trunking Cabling Management System of the CPWD publication, General Specifications for Electrical Works Part – 1 Internal 2005 shall be generally followed for the trunking cabling management related work

G. GUIDELINES FOR OPEN CUT TRENCHING AND OFC LAYING

The details for open cut trenching and OFC laying mentioned in the following guidelines should be read along with the provisions mentioned in the tender document. These details supersede the details mentioned elsewhere in the tender document **only where there is deviation**. Elsewhere the provisions of the document apply unchanged.

Excavation and Backfilling for Open Cut Trenching

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The contractor shall carry out excavation and backfilling of trenches in all kinds of soil strata such as normal soil, soil with pebbles, soft rock, dry soil, wet soil, or concrete/bitumen road for laying high-density polyethylene (HDPE) plastic Pipe and Galvanized Iron pipe (GI pipe) (GI pipes have to be laid below roads/concrete). In addition, the contractor shall also make suitable arrangements for laying HDPE pipes and GI pipes at all type of crossings such as pavements, all types of roads, culvert, nallah etc.

Excavation

It shall be preferable to mechanize the bulk of the excavation work in the campus for efficiency and uniformity. The cable trenches shall be dug as per route plan prepared during site survey and detailed trench drawings (indicating the various dimensions and other details of the trench) approved by the CCC, NIT Raipur. The contractor shall take due care and precaution during excavation to avoid possible damage of other underground plants / facilities in the proposed underground fibre optic cable route and shall indemnify NIT Raipur for all damages and shall be solely responsible for all the damages and losses.

The trench shall have rectangular cross-section. Depth of trench shall be at least 75 cm and the width of the trench shall be at least 36 cm and should be adequate for proper installation of HDPE pipes, GI pipes, etc. as per requirement. The trench depth shall be measured from the bottom of the trench. Trench shall be located at the lowest point of lower area if possible. Trench shall not be constructed at boundaries of fields or any up-heaps. In case of uneven ground, the contractor shall ensure that the bottom of the trench is not uneven; the contractor shall maintain minimum depth of the trench as per specifications and may be required to increase the depth at some locations and provide a suitable gradient in the trench. During the construction of trenches, the contractor shall be responsible for shoring and strutting the walls of the trench on either side by using suitable means such as wooden planks to avoid subsidence of soil. The contractor shall also be responsible for supporting the exposed plant/facilities of other utilities such as water, electric, telephone or fibre optic cables etc. to avoid any possible damage. The contractor shall also be responsible for any dewatering of the trench in case of rain or due to any other reason etc. during digging and installation of pipes/pipes.

In case it becomes necessary to get around a large obstacle such as a boulder or an underground plant/facility, which has not been anticipated earlier the trench may be given a gentle bend within permissible radius.

The contractor shall make all efforts in order to achieve the required depth. However, under exceptional conditions, as may be decided by the site representative and duly approved by the CCC, NIT Raipur, excavation to a lesser depth may be acceptable. Under such circumstances, the reasons for non-achievement of depth as per requirements are to be recorded jointly by the contractor and NITs site representatives and approved by the CCC, NIT Raipur.

Backfilling

After installation of HDPE pipes or GI pipes, the backfilling of the trench shall be done. One HDPE Pipe shall be laid at bottom of the trench after making the surface smooth and providing 7.5 cm of sieved, stone free sand bedding. The HDPE pipes shall be sandwiched between layer of soil and sand. Backfilling shall normally be done with the excavated soil, suitably sieved to remove any stones, stony materials or other hard materials and foreign objects. The backfilling should be clean and free from

organic matter or other foreign material. The earth filling shall be done with provision for a suitable circular mound of height not less than **7.5 mm** at the centre to allow for any shrinking of soil at a later date. In case of regular footpath, temporary reinstatement shall be done after backfilling. The left out earth if any has to be disposed by the contractor to a suitable location as indicated by the CCC, NIT Raipur at his own cost. It is advisable to start backfilling of the trench from one end after padding of the pipe to avoid uplifting. The backfilling of the remaining portion shall be done as stipulated for normal soil.

Warning Tape

Warning tape shall be used throughout the length of the trench uniformly at 45 cm from the bottom of the trench.

Installation of HDPE Pipe

The HDPE pipe shall be ISI marked. HDPE pipe of minimum **1 ½ inch** internal diameter shall be used for laying fibre cables in the core transport ring and for residential areas while HDPE pipe of minimum **1 inch** internal diameter shall be used for laying fibre cables in the remaining areas. HDPE pipes shall be of sufficient strength and wall thickness for bearing loads. HDPE Pipe shall be laid at bottom of the trench after making the surface smooth and providing 7.5 cm of sieved, stone free sand bedding. Above this, suitably sieved soil shall be filled effectively sandwiching the HDPE Pipe in the middle of the sand and soil layers. Other important steps are described as under:

- a. HDPE Pipe shall be laid in a flat bottom trench free from stones, sharp edged debris on a 7.5 cm bed of sieved, stone free sand
- b. The Pipe shall be placed in trenches as straight as possible. Minimum bending radius of Pipe and fibre optic cable shall always to be taken into account.
- c. The ends of pipes shall always be closed with end plugs to avoid ingress of mud, water or dust i.e. all Pipe openings shall be sealed to avoid entry of foreign material, insects, pests, etc.
- d. The pipes shall be joined tightly & properly through plastic couplers and the joint shall be smooth and free from steps. All joints shall be assembled with proper tools and be made properly.
- e. Coupler shall not be placed along the bent portion of the pipes. HDPE pipes shall be installed in a manner that fibre optic cable can be pulled without damaging the fibre optic cable due to stresses.

All HDPE and G.I. Pipe joints shall be inspected by the site representative before carrying out the backfilling. Joints shall be visually inspected and checked for tightness.

Reinstatement

Reinstatement of all the excavated area to restore the excavated area to original quality and shape is included in the scope of this job. Temporary reinstatement of footpath, Bitumen Road, and concreted area shall be carried out by patching and levelling with cement concrete as a part of backfilling. The contractor shall be responsible for carrying out reinstatement work irrespective of area or type as mentioned above. The final reinstatement of Bitumen road and concreted area is not in the scope of this tender.

Joint chamber

The joint chamber shall be constructed with removable / hinged and lockable RCC covers at designated joint locations to keep the OF cable joint well protected and also to house extra length of cable which may be required in the event of faults at a later date. The Joint chamber shall be of RCC type or plastered brick chamber with the internal dimensions of 1200mm (L) x 900mm (W) x 1200mm (D). The chamber lid shall be in plane with the surrounding ground level. Jointing Chambers shall have cable management brackets installed. The cable management brackets shall consist of three L shaped brackets in a triangular formation. They shall be installed on the long side of the chamber. The brackets shall protrude into the chamber by 100mm. The triangle formed by the brackets shall be 600mm on each side. The bottom of the triangle shall be 100mm from the base of the chamber. Equivalent alternate cable management bracket arrangements can also be proposed. Jointing Chambers shall be identified on the drawings with the prefix "J".

Cable / Pull Pits (mentioned on page 23, para 38, OFC related, point no. 15). Covers shall be in plane with the surrounding ground level. Pull Pits shall be of RCC type or plastered brick chamber with the internal dimensions of 1200mm (L) x 600mm (W) x 900mm (D) [**Change in dimensions may be noted**]. Fibre Pull Pits shall be identified on the drawings with the prefix "P".

Jointing Chambers and/or Pull Pits shall not be located where running water can flow over the lid (such as a swale) or where mud and debris can fall or be washed onto the lid. Approximately 4 - 6 jointing chambers and/or 4 - 6 pull pits may be required to be provisioned.

Installation of GI Pipe

The GI pipe shall be ISI marked. The internal diameter of the GI pipe should be sufficient for conveniently passing the HDPE pipe through it. The GI pipe shall be laid wherever road crossings are encountered on the route as well as on wall / floor crossings in a building. HDPE pipe shall be inserted into GI pipe. The HDPE pipes shall be installed through this GI pipe. The contractor shall supply and install all necessary accessories as part of the installation work. The contractor shall propose the exact methods and procedures for implementation of crossings taking into consideration the following guidelines, and on approval by the CCC, NIT Raipur:

- a. The GI pipe shall be extended at least 2 meters on each side of road crossing and up to 1 metre in case of other crossings subject to availability of space and approval of NIT Raipur.
- b. Two GI pipes shall be joined, if required using proper tools, sockets and accessories etc.
- c. Proper arrangements shall be made to seal the ends of GI pipe after installation of HDPE pipes.
- d. Minimum bending radius of optical fibre cable shall always be taken into consideration.
- e. 1:2:4 concrete shall be used for encasing of the GI pipe, wherever required.
- f. The floor of the trench shall be levelled by laying at least 7.5 cm of soft soil or sieved sand before installing the GI pipe.
- g. The GI pipes in standard lengths of 6m or as approved by CCC, NIT Raipur shall be used for road crossings.
- h. The GI pipe shall be sealed at both ends.
- i. The GI pipe of suitable total length (including the extensions) shall be used for wall/floor crossings in a building.

Underground Fibre Optic Cable Installation

The cable shall be installed inside the HDPE Pipe that is installed under this package along the route(s). The cable shall be installed by conventional rope pulling method for installation of OFC in HDPE Pipe.

Contractor shall take into consideration the following guidelines, for installation of OFC.

- a. The Optical Fibre Cable Drums shall be handled with utmost care. The drum shall not be subjected to shocks by dropping etc. They shall not be normally rolled along the ground for long distance and when rolled, shall in the direction indicated by the arrow. The battens shall be removed only at the time of actual laying.
 - b. Before starting the cable laying, HDPE Pipe shall be checked for obstacles or damage.
 - c. The cable shall be pulled downhill wherever possible.
 - d. Care must be taken not to violate the minimum bending radius applicable for the fibre optic cable. Tension in the cable during laying shall not exceed tension limit of the OFC. While installing the cable, excess length of about 50 meters shall be stored at each joint location for each side. Excess length of 25 metre shall be kept at one end of a road crossing, culvert crossing.
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- H.** For 1G and 10G fibre transceiver modules, RoHS compliance is preferable, Temp range: 0-60 deg C or better, Operating Relative Humidity: 10-85% non-condensing or better (superseding deviations, if any, in any other part of document)
- I.** Bidders must read Chapter-III (Scope of Work) on pages 22-26 (including amendments, revisions, corrections, clarifications and additions thereof) for clarification on any matter related to installation and services. In case of any discrepancy / mismatch of information in these pages with the schedule of requirements in tabular format (for service part) or PRICE FORMAT FOR SERVICE COMPONENTS, the detail given in pages 22-26 shall be final. For specifications and hardware and software configuration of all active and passive devices and components, Chapter IV (including amendments, revisions, etc. thereof) shall be similarly final.
- J.** Wherever “set” is mentioned under UoM for devices, it refers to the set or category of all the devices of that type procured under this project complete with all the accessories (including hardware and software configuration) as per the tender document including corrigendum, addition etc.
- K.** In matters which have been explicitly (or implicitly) amended, revised, corrected, clarified, explained, added, elaborated etc. through the amendment, corrigendum, and its additions, the details given in the amendment, corrigendum and its addition shall be considered final and superseding. Other matters shall remain unchanged.
- L.** For any item mentioned in the price bid, its resultant configuration (both hardware and software) has to be worked out by the bidder, by reading and understanding all documents related to the tender and all this information should be taken together for that item and interpreted as a whole. It has to be very clearly understood and noted by the bidders that all the equipment, devices, components have to be integrated and put into operation meeting the present requirements. Hence all accessories required for operating that equipment meeting present requirements have to be quoted.

If certain accessories of a device or equipment (e.g., power adaptors, rack mount kits, cards and software etc.) are necessary to meet its present (as opposed to future) requirements and operational needs and this has not been mentioned in the price bid, or is not offered with the product itself, the price of such accessory / accessories shall be included in the price for that device or component. A brief technical justification for including the accessory / accessories or ancillary items in view of the present requirement (on a separate sheet entitled "Technical Justification for Selected Accessories") should be included with the TECHNO-COMMERCIAL BID PART-B. NIT Raipur shall not bear any additional cost later for an essential accessory overlooked by the bidder.

M. Remaining material like cable drums etc. shall be returned to NIT Raipur for stock keeping.

N. Bidders who wish to quote Managed Access Switch for the Residences in place of Multi-Service Switch are also required to go through points 10 and 11 of the TECHNICAL SPECIFICATIONS FOR MULTI-SERVICE SWITCH on page 60 and include additional devices required for meeting operational requirements of data and voice connectivity in residences. Such bidders may include these additional items under appropriate category of the Price Bid Schedule.

O. Project Documentation shall also include a set of Standard Operating Procedures (SOPs) for most of the common network and device operations which shall be specifically asked for by the CCC, NIT Raipur

P. It is reiterated that in any matter pertaining to this project, provision for which has not been made in the tender document, the decision of NIT Raipur shall be final and binding

Q. This addition is also a part of the tender documents. Hence bidders are required to attach copies of all tender documents including this addition duly signed and sealed by their authorized signatory along with the other tender documents as required under Chapter – I, point no. 50d

R. The Last date & time for submission of bids: **27th November 2013 by 1:00 P.M.**

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Additions to Clarifications of and Amendment to Tender No. /NITRR/LAN/7567/2013 dated 01.10.2013

Read, Understood and Complied With

Signature and Seal of the Bidder