

In association with

Brisbane City Enterprise Pty Ltd, Australia
AQUA Consultant and Associates Ltd, Bangladesh
Building Design Authority, Nepal
CEMAT Consultants, Nepal



Monthly Progress Report (January, 2017)

Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), Biratnagar, Nepal

03 Feb, 2017



Biratnagar Sub - Metropolitan City, Nepal

Project Name:	Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP)
Project Number:	56064023
Report for:	Biratnagar Sub Metropolitan City, Nepal

PREPARATION, REVIEW and AUTHORISATION

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1. Salient Feature of Contract Package: STIUEIP/W/BRT/ICB-01.....	4
2 INTRODUCTION/BACKGROUND	5
3. SUB-PROJECTCOMPONENTS	6
3.1 Sewer Lines.....	6
3.2 Storm Water Drains.....	8
3.3 Waste water Treatment Plants.....	11
3.4 Roads and Lanes.....	14
3.5 Environmental Aspect.....	14
3.6 Social Aspect.....	14
3.7 Financial Plan.....	15
3.8 Disbursement Records in Construction.....	15
4. OBJECTIVES AND SCOPE OF WORKS.....	16
4.1Objectives.....	16
4.2 Scope of Works.....	16
5. PROGRESS OF SUB-PROJECT COMPONENTS.....	16
5.1 Storm Water Drains.....	16
5.2 Sewer Lines.....	17
5.3 Waste Water Treatment Plant.....	17
5.4 Road and Lanes Improvement Works.....	17
5.5 Construction Materials.....	18
5.6 Construction Material Testing Lab.....	18
5.7 PHYSICAL PROGRESS TILL JANUARY, 2017.....	19
6.SUMMARY OF ACTIVITIES CARRIED OUT UP TO PREVIOUS MONTHS.....	22
6.1 Organization and Staffing.....	22
6.2 Inception Report.....	23
6.3 Conceptual Catchment Plan and Design Criteria.....	23
6.4 Survey.....	23
6.5Design.....	23
6.6Preconstruction Activity.....	23
6.7 Draft Report.....	23
6.8Final Report.....	23
6.9 Consultant's Activities in Construction Phase.....	24
6.10 Key Dates.....	25
7. DETAILS OF ACTIVITIES CARRIED OUT IN THIS MONTH OF January, 2017.....	26
7.1 Physical Progress in This Month.....	26
7.2 Cumulative Progress (S Curve).....	30
8. DETAILS OFSAFEGUARD ACTIVITIES (SOCIAL, ENVIRONMENTAL AND RESETTLEMENT ACTIVITIES AND ISSUES).....	31
8.1 Social Issues.....	31
8.1.1Operational Guidelines for Community Mobilization and Implementation of CDP.....	31
9 KEY ISSUES AND REMARKS / REASONS FOR DEVIATION (IF ANY) AFFECTINGPROGRESS.....	33

10	WORK PLAN FOR THE NEXT MONTH.....	33
	Annex-1: Progress January, 2017.....	34
	Annex-2: Photographs of December, 2017.....	35
	Annex-3: Financial Status (Details of submitted invoices and receipt of payments with key dates).....	41
	Annex-4: Status of actions agreed with previous ADB loan review mission.....	47
	Annex-5: Professional input as per contract vs input used till this reporting period.....	48
	Annex-6: Minutes of Meeting January, 2017.....	52
	Annex-7: A Laboratory Test Results of January, 2017.....	53
	Annex-8: Contractor's Progress Report for January, 2017.....	56

List of Tables:

Table1: Proposed Sewer Lines in BMSC.....	6
Table2: Proposed Storm Water Drains in BMSC.....	8
Table3: Proposed Waste Water Components.....	11
Table4: Proposed Roads.....	14
Table5: Disbursement Records in Construction to date	15
Table 6: Plan vs. Actual Progress.....	19
Table 7: Agency-wise Financial Contribution.....	24
Table 8: Consultant's Staff at Project Site.....	24
Table 9: Key Dates.....	25
Table 10: Physical Progress in Storm Water Drains.....	26
Table 11: Physical Progress in Road Side Drain of R2 and Sewer Lines.....	26
Table 12: Physical Progress in Sewer Lines.....	26
Table 13: Physical Progress in Manholes.....	27
Table 14: Physical Progress in Roads and Lanes.....	27
Table 15: Physical Progress in Waste Water Component.....	27
Table 16: Physical Progress in Production of Precast Items in Katahari	28
Table 17: Physical Progress in Production of RCC Hume Pipes at Itahari.....	28
Table 18: Contractor's Key Staff.....	28
Table 19: Contractor's Equipment.....	29

List of Figures:

Figure 1: Proposed Sewer Lines in BSMC.....	7
Figure 2: Proposed Storm Drains in BSMC (Northern Drainage System).....	9
Figure 3: Proposed Storm Drains in BSMC (Southern Drainage System).....	10
Figure 4: Proposed Waste Water Treatment Plant at Jatuwa in BSMC.....	13
Figure 5: Plan Vs Actual Progress till January, 2017.....	21
Figure 6: Organization and Staffing.....	22
Figure 7: S-Curve of Physical Progress	30

1. SALIENT FEATURE of Contract Package: STIUEIP/W/BRT/ICB-01

General Features	
Name of Project	Secondary Towns Integrated Urban Environmental Improvement Project(STIUEIP)
Executing Agency	Government of Nepal, Ministry of Urban Development Department of Urban Development and Building Construction (DUDBC)
Implementing Agency	Biratnagar Sub-Metropolitan City, Biratnagar
Funded By	Asian Development Bank & Government of Nepal
Package	Sewerage and Drainage Network, Wastewater Treatment Plant and Road and Lanes Improvement Sub Project
Contract No.	STIUEIP/W/BRT/ICB-01
Location	Biratnagar Sub-Metropolitan City, Biratnagar
Consultant	SMEC in association with Brisbane/AQUA/BDA/CEMAT
Contractor	CTCE-KALIKA Joint Venture
Date of Commencement	08 December, 2013
Revised date of Completion	09 March, 2017
Revised Contract Amount including PS and VAT (After VO-2)	NRs. 2,719,617,069.21
Revised Contract Amount including PS and VAT (VO-3 under process)	NRs. 2,977,784,619.92
Paid Amount up to IPC 20	NRs. 1,734,326,306.82 (Including PS & VAT)
Physical Progress till January, 2017	74.19% (wrt to vo-02) 67.53% (wrt to vo-03)
Financial Progress	63.78% (wrt to vo-02) 58.25% (wrt to vo-03)

2 INTRODUCTION/BACKGROUND

1. SMEC International Pty (Australia) in association with Brisbane City Enterprise Pty Ltd (Australia), AQUA Consultant and Associates Ltd (Bangladesh), Building Design Authority (Nepal) and CEMAT Consultants (Nepal) have entered for a Contract of Consulting Services with Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), Project Implementation Unit (PIU), Biratnagar Sub metropolitan City on 7th December 2011. This monthly Progress Report of January, 2017 has been submitted to the PIU as per the Work Program proposed in the consultant's technical proposal as well as TOR of the consultant.

2 Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), the Department of Urban Development and Building Construction (DUDBC), under the Ministry of Urban Development (MUD) through the Government of Nepal (GoN) has received the loan from Asian Development Bank (ADB) Loan 2650-NEP. As per PAM contribution from GoN is 3.99 million USD, Asian Development Bank (ADB) 18.86 million USD and Biratnagar Sub-metropolitan City (BSMC) 1.99 million USD while contingency is 2.88 million USD for Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), Biratnagar. The cost sharing has been revised in April, 2013 as: Government of Nepal (GoN) is 5.960 Million USD, Asian Development Bank (ADB) 24.214 Million USD, TDF loan 4.098 Million USD and Biratnagar Sub-metropolitan City (BSMC) 2.980 Million USD and in total **37.252** Million USD.

3. In line with ADB's Strategy 2020 and based on Nepal's fundamental long term needs and on the GoN's priority, the ADB is continuing to support the Government in (i) improving urban infrastructure; improving access to water supply and sanitation (ii) supporting urban environmental improvement (iii) strengthening the operation and management skills of local governments. The proposed project Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP) is another step forward to promote healthy cities by creating healthier urban environments and was formulated under the PPTA 2010.

- Contract of consulting services signed on 07 December 2011.
- Design works commenced on 01 January 2012.
- Final design works submitted to the Client on March 2013
- Contract of construction works signed on 02 December 2013
- Construction works commenced on 08 December 2013
- Contractor's Work Program (Revision 02) 05 December 2014, this has to be revised as the work progress is not consistent. The Contractor is advised to revise the work program and it is expected to receive by the end of August 2015. The Contractor has officially submitted the third (3rd) revised work program through the Contractor's letter in 15th September 2015 (received on 23rd September 2015). Revised Work schedule has to be submitted after EoT-01 (up to 09 March, 2017).

3. SUB-PROJECT COMPONENTS

3.1 SEWER LINES

4. The prioritized sewer lines for Final Detailed Engineering Report of BSMC are as follows:

Table1: Proposed Sewer Lines in BSMC

S N.	Description	Unit	Quantity
1	Sewerage Pipe Supply and Installation	m	63,964.0
	Reinforced Concrete Pipe laying and jointing		16,612.0
	Line T1 (Secondary)	m	3,788.0
	Line T2 (Trunk)	m	8,370.0
	Line T3 (Trunk)	m	4,136.0
	Line T4 (Secondary)	m	318.0
	HDPE laying and jointing	m	47,352.0
	Line T1 (Secondary)	m	7,124.0
	Line T2 (Trunk)	m	19,410.0
	Line T3 (Trunk)	m	18,606.0
	Line T4 (Secondary)	m	22,12.0
2	Manhole (Brick / RCC)	no.	2,036
3	Sewer Inlet	no.	3,766.00
4	House Connection	no.	5,930.00
5	Reinstatement of Roads	km	66.06

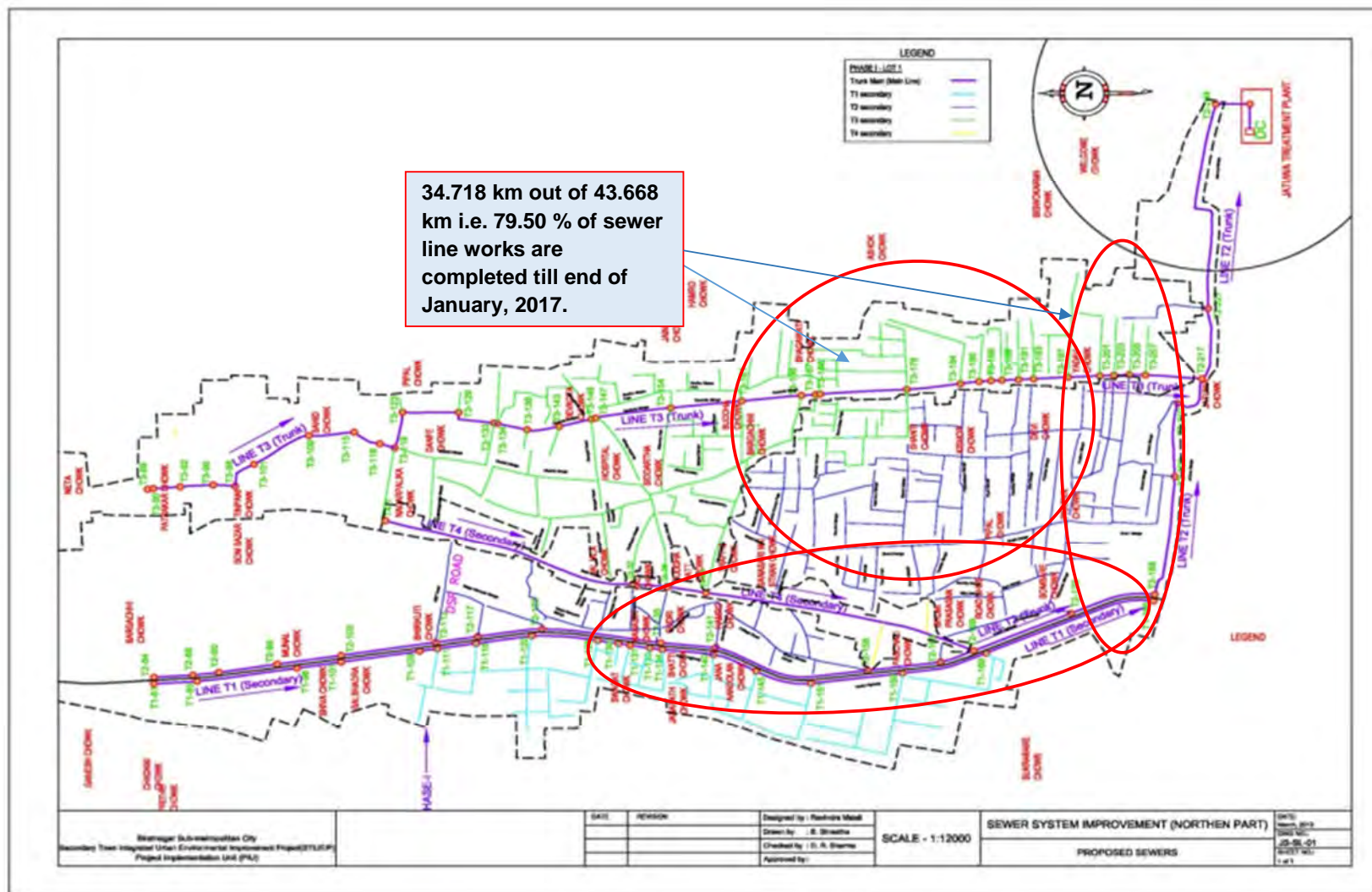


FIGURE. 1 PROPOSED SEWER LINES IN BSMC

3.2 Storm Water Drains

5. Most of the storm drains(S13,S11,S9,S5,B1,B2,B3,CN2,CN3 and southern parts) have been provisioned as Phase I priority works. The major storm drain outlets as planned are 14 numbers and catchment areas and discharges are respectively 1,324.2Ha and 73.21 cum/sec.

Table2: Proposed Storm Water Drains in BSMC

S.No.	Description	Unit	Quantity
A	Storm Drain for Northern Parts		28,491.00
I	Storm Drain Lines	m	28,491.00
II	Culvert	no	41
III	Outfall	no	15
IV	Rain Inlet	no	30
V	Manhole	no	30
VI	Canal Crossing	no	11
B	Storm Drain for Southern Part		
I	Brick Masonry Drain	m	8,483
II	Cleaning and Maintenance of Existing Drain	m	7,273
III	Culverts	no	38
C	Rehabilitation of Existing Drain		
I	Drain Cover	M	30,467
II	Cleaning and Maintenance of Existing Drain	M	33,601

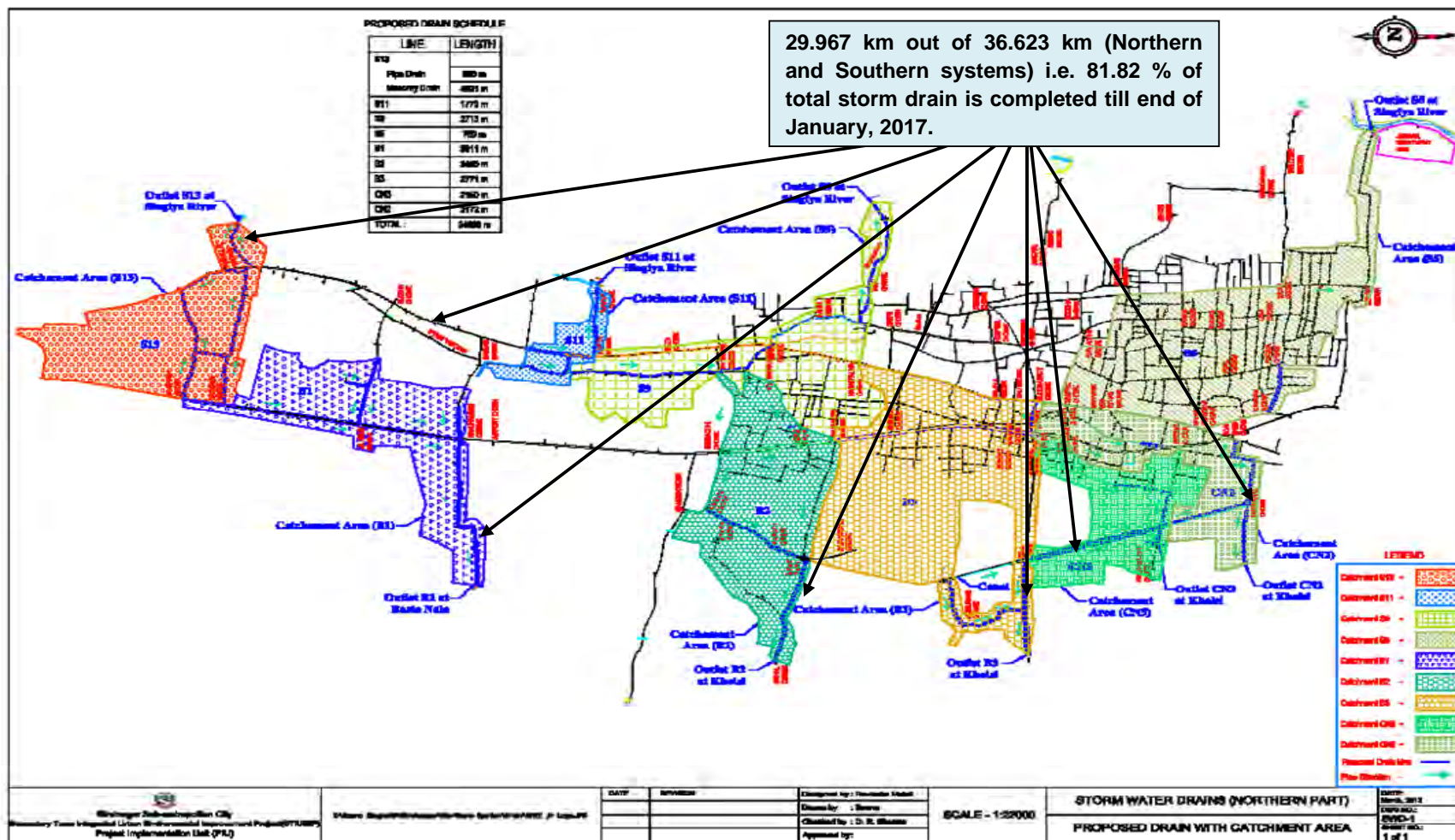


Figure 2: Proposed Storm Water Drains in BSMC (Northern Drainage System)

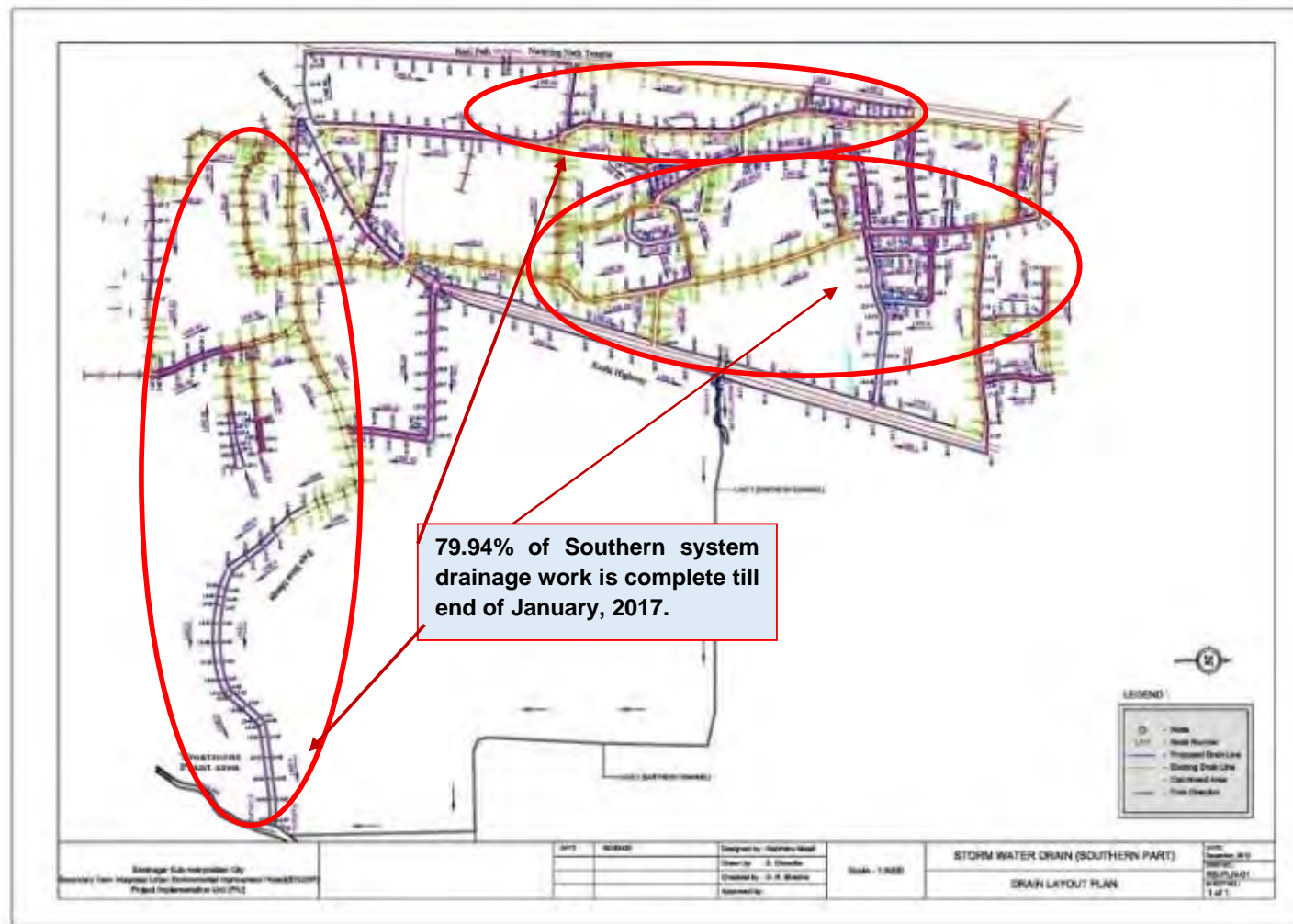


Figure 3: Proposed Storm Water Drains in BSMC (Southern Drainage System)

3.3 WASTE WATER TREATMENT PLANTS

6. The quantity of domestic waste water is calculated using water supply rate at 90 liters per person per day in the design year 2035, out of which 80% is converted into waste water. Maximum quantity of waste water is calculated taking peak factor of 1.99 to 2.5. Minimum quantity of sewage is taken as 30% of the average quantity. Commercial / Institutional / Industrial waste water quantity is calculated as 0.10 LPS/ha. While infiltration quantity is calculated as 0.14 LPS/ha in the design year 2035. The total quantity of commercial / institutional / industrial and infiltration waste water estimated as 237.79 LPS in the design year 2035 which is very large in comparison with domestic waste water quantity of 207.18 LPS. The maximum quantity (peak flow) of waste water in the design year 2035 for both Phase I and Phase II are as is estimated at 650.08 LPS. The maximum quantity of the waste water for Phase I are as only is estimated at 213.97 LPS. The capacity of the Phase I WWTP has been adopted as 214 LPS. The capacity of the Phase II WWTP will be thus 436 LPS. Features of WWTP at Jatuwa are as follows:

Table 3: Proposed Waste Water Components in BSMC

S.N.	Description	Unit	No
	Waste Water Treatment Plant Component		
1	By Pass Chamber	No	1
2	Distribution Chamber	No	1
3	Bar Screen Chamber	No	2
4	Sump well with Pumping Station	No	2
5	Collection Chamber1	No	1
6	Oil & Grease Chamber	No	2
7	Collection Chamber2	No	1
8	Grit Chamber	No	2
9	Collection Chamber3	No	1
10	Anaerobic Pond	No	3
11	Facultative Pond	No	3
12	Collection Chamber4	no	1
13	Outfall Structure	no	1
14	Sludge Drying Bed	no	10
15	Enclosure Chamber Shed	no	1
16	Guard House	no	1
17	Office Cum Lab Building	no	1
18	Workshop Building	no	1
19	Generator/Changing House	no	1
20	Entrance Gate	no	1
21	Boundary wall	m	1,340
22	Shallow Tube Well with water Tank	set	1
23	Landscaping and Plantation works	sqm	99,915
24	Site clearance, grubbing, surface dressing	sqm	99,915
25	Road and Drain Improvement	m	1,440

26	River training works	m	600
27	Electromechanical works	Set	1
28	Lab Equipment and installation	Set	1

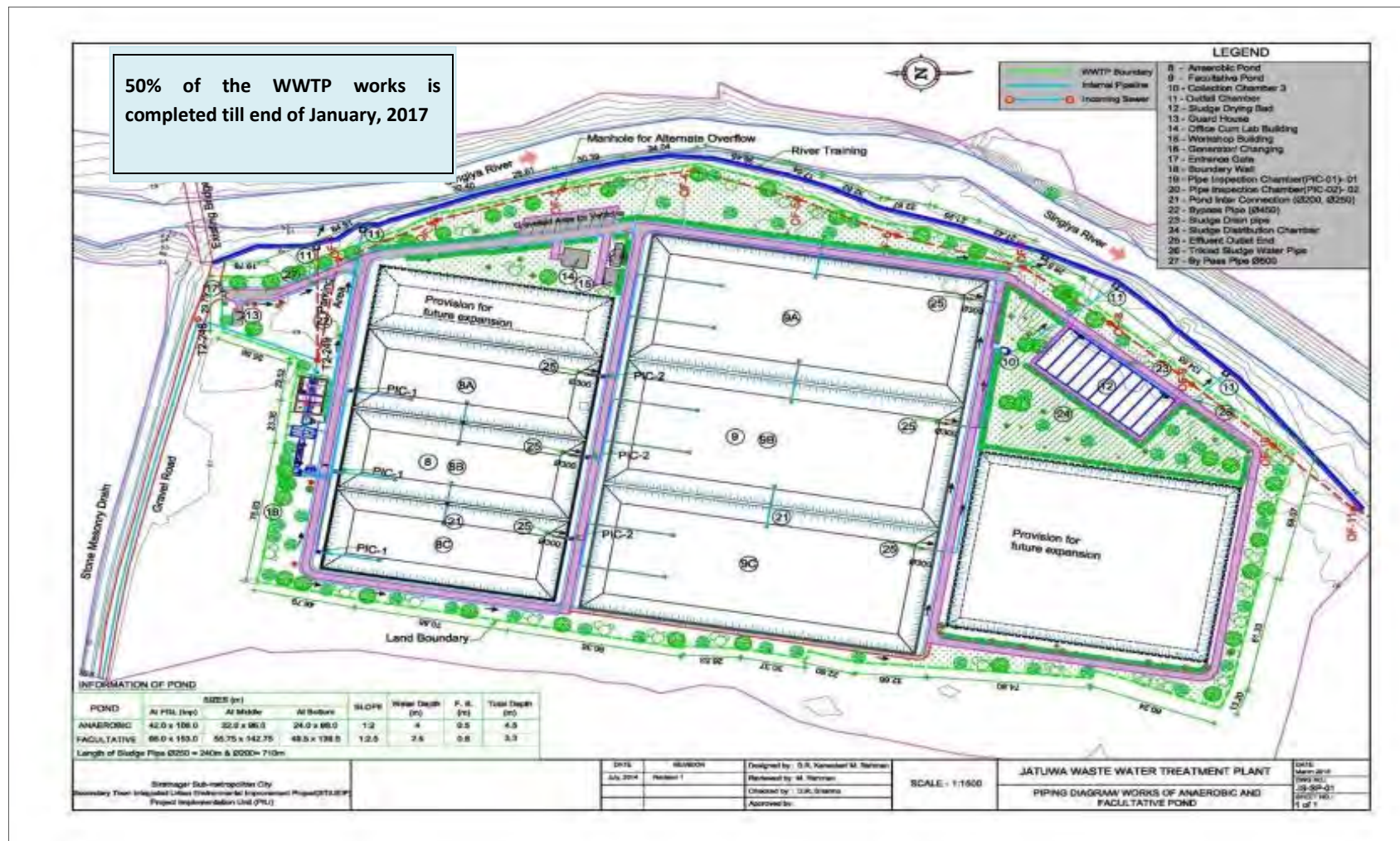


Figure 4: Proposed Waste Water Treatment Plant at Jatuwa in BSMC

3.4 Roads and Lanes

7. Most of the roads/lanes in Biratnagar are in a poor state due to lack of periodic maintenance, and need improvement, where as some of the roads are graveled and would benefit from upgrading. In the areas where drainage and sewerage works are proposed there will be significant impact on the existing roads. The 3.224 Km road improvement with Asphalt from Pushpalal chowk to Pani Tanki chowk is completed where as in other roads, 4.184 Km Sub-grade and Sub-base is completed till this month and hence the Project has considered on design based on reinstatement, rehabilitation and upgrading of existing roads and lanes.

Table 4: Proposed Roads in BSMC

Description of Item	Quantity
Main Road Improvements(Road from Pushpalal Chowk to Bhatta Chowk)	2.35 Km
Reinstatement and Road Improvements (under sewer line installation)	63.71Km

3.5 Environmental Aspect

8. The project is environmental improvement project and mainly constitutes works on sewerage and drainage improvement works in BSMC besides others. As per ADB guide lines on Environmental Assessment requirements, this project is classified as Environment Category B. According to Environmental Protection Guidelines, 2054BS, First Revised (2055BS) schedule-3, IEE is required for Operations of Sewerage Schemes under Schedule1.h.2.e (pertaining to Rule3). The final report on IEE was submitted and MoUD had approved the IEE on May14, 2013.

9. Installation of functioning sewers and functioning drainage system including roads/lanes improvement in BSMC does not possess any adverse environmental impacts to its surrounding. In fact, these will greatly enhance the living conditions/hygiene of the inhabitants and facilitate transportation. Nevertheless, it is imperative to look into positive as well as negative impacts of such infrastructure development works in the urban area.

10. DSC has prepared and submitted Environmental Progress Reports (Semi-Annual) October 2014 – March 2015 and Quarterly Updated Environmental Report, January – March on 27 May 2015. Recently, the DSC has received comments from PCO to revise semi-annual environmental report. The next Quarterly Updated Environmental Report for the months of April, May and June 2016 and semi –annual report has been submitted in July, 2016. The next Quarterly Updated Environmental Report for the months of June 2016- December 2016 semi –annual report is under preparation.

3.6 SOCIAL ASPECT

11. Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP) in Biratnagar has commenced from 2010 to improve the quality of life and help to achieve higher and more socially inclusive economic growth of people through effective, efficient, and reliable delivery of improved and affordable municipal services. Infrastructure development of drainage and sewerage system as well as roads and lane improvement are the major components of STIUEIP in Biratnagar Sub-Metropolitan City (BSMC). Besides this, community development and institutional strengthening components, the two other objective focused components of STIUEIP Biratnagar are running various social development programs and activities.

Social development component is one of the major components of STIUEIP Biratnagar that comprises of various social development programs and activities like community development

program (CDP), awareness raising, skill development, health and sanitation. Social Development Specialist (SDS) in Design and Supervision Consultant (DSC) is deputed to assist the Project Implementation Unit (PIU) in implementing effectively the social activities to achieve the project goal as envisaged by the project. Monitoring of ongoing social development activities and consultation meetings with community people are the general tasks to be accomplished as regular basis.

Establishment and functioning of Social Safeguard Desk in PIU is a major milestone of social development aspect which has been effective to address all social/ community development issues and concerns with active initiation of the DSC.

Based on the poverty indicators, all details have been documented and shown in the social map. The program area for community development programs has been extended to most poverty stricken area scattered across several wards of the BSMC. The Community Development Program includes meetings, orientation, awareness activities, skill development trainings and health, hygiene and sanitation activities which are conducted and organized by the NGO (Fri PAD).

12. As there is slack period of the construction due to monsoon, currently, the drain work has been stopped due to rain water and construction materials.

The next Quarterly Report for the months of June 2016- December 2016 semi –annual report is under preparation.

3.7 Financial Plan

13. The Sub-project cost will be disbursed in three years starting from FY2013/14 to 2015/16. It has estimated that 20 percent of the Sub-project cost will be disbursed in first year. Similarly, in second year, 50 percent will be disbursed. Finally, remaining 30 percent of Sub-project cost will be disbursed in third year. Actual disbursement in the first fiscal year was 4.3 % (up to July 2014); 34.3% (up to July 2015 inclusive VO1) in second fiscal year was 56.72% so total was 63.78% (up to January, 2017). Hence the remaining disbursement 36.22 % will be done in third year.

3.8 DISBURSEMENT RECORDS IN CONSTRUCTION

Table 5: Disbursement Record in Construction to Date

S.N.	Description of Payment	Total Bill Amount with VAT & PS	Amount in NRs.
1	IPC 01		209,400,000.00
2	IPC 02	29,553,479.92	27,853,500.98
3	IPC 03	50,406,775.75	47,507,270.95
4	IPC 04	44,819,505.68	42,241,392.52
5	IPC 05	23,380,168.96	22,035,291.99
6	IPC 06	90,796,339.68	85,573,541.38
7	IPC 07	80,854,600.52	76,203,672.17
8	IPC-08	122,334,488.86	115,297,549.23
9	IPC-09	116,092,187.14	109,414,317.97
10	IPC-10	132,327,417.89	124,715,663.77
11	IPC-11	169,853,829.07	160,083,476.07

12	IPC-12	23,121,515.46	16,931,906.24
13	IPC-13	85,563,926.44	62,658,539.06
14	IPC-14	163,562,505.71	119,776,967.67
15	IPC-15	139,008,112.96	101,795,764.14
16	IPC- 16	137,640,413.95	100,794,196.94
17	IPC-17	135,118,714.02	98,947,553.85
18	IPC-18	39,288,088.98	28,770,702.33
19	IPC-19	76,081,596.87	55,714,620.72
20	IPC-20	74,522,638.96	54,572,994.46
21	IPC-21	152,577,081.94	118,075,775.83
	Grand Total	1,886,903,388.76	1,568,964,698.25
	Total payment to date including PS & VAT and Excluding mobilization	1,886,903,388.76	

4. OBJECTIVES AND SCOPE OF WORKS

4.1 OBJECTIVES

14. The following are the expected physical infrastructure improvement outputs of the project in Biratnagar:
 - Drainage and sewerage systems improvement.
 - Urban roads and lanes improvement.
15. Reference to the deliverables identified in the Project, indicates that there are a number of deliverables related specifically to the design aspects of the above infrastructure improvements with construction works.

4.2 SCOPE OF WORKS

16. The scope of works for consultant's services is fairly detailed in the TOR attached with contract Agreement. The main points are summarized below:
 - A. Detailed Design and Procurement Assistance Phase
 1. Surveys verification of Feasibility Studies and GIS Base Maps
 2. Finalization of Design Criteria, Preparation of Manuals, Guidelines and Systems.
 3. Specific design requirements for the sub-projects
 - Improvement and development of drainage and sewerage systems
 - Improvement of urban roads and lanes
 4. Project Planning and Management Support to PIU
 5. Detailed Engineering Design
 - B. Construction and Post Construction Management Phase
 1. Construction Management and Contract Administration
 2. Environmental and Social Compliance Monitoring
 3. Implementation of Community Development Program, Community Mobilization and GESI Action Plan

4. Capacity Building of the Municipality and Service Providers for Operational Sustainability
- C. Communications, Reporting and Deliverables (Inception Report, Monthly Progress Reports, Interim Report for each of the outputs, Annual Progress Report, Draft Final Report for each of the outputs and Final Report).

5 PROGRESS OF SUB-PROJECT COMPONENTS

5.1 STORM WATER DRAINS

17. The Contractor has resumed the works from mid December 2015 in difficult situation due to Madesh Strikes and partial fuel supply. Storm drains at S9, S5, and Rani Area are being continued.

The contractor has completed storm water drain about 29.967 km out of 36.6234km, 81.82% till January, 2017.

5.2 SEWER LINES

18. The Contractor has resumed the sewer works from mid December 2015 in difficult situation due to Madesh Strikes and partial fuel supply. Sewer lines with HDPE pipes as well as RCC pipes have been resumed in this month.

The Contractor has completed sewer lines with HDP and RCC pipes about 34.718 km out of 43.668 km which is 79.50%, till January, 2017.

The proposal of the precast concrete manholes, sewer inlets and house connection chambers had been submitted for review and approval. Approval in consultation with the Employer has been given to the Contractor to execute at site because the proposal comes out to be economical, time effective and environmental friendly and structurally strong enough to carry out the function of their respective items.

The precast concrete house connection chambers, sewer inlets and manholes were installed at sites and found to be effective and we were able to open traffic at the shortest possible time. Especially where the business center with crowds (in R5 and R65 Roads) were very efficient and effective. This has reduced disturbances to the local people and road users, dumping of construction materials, workers and working for long period. This is found to be environment friendly too. Hence, the adaptation of precast units for sewer lines found to be effective and efficient.

During the site visit of delegate at different time in the construction period from BSMC, PMSC, ADB, PCO, local political representatives, TLO, Executive Director of TDF and the Secretary of Ministry of Urban Development have commended.

The payment for the respective item of works as appropriate is being paid under each IPCs for the cash flow and to account disbursement in ADB's disbursement book.

5.3 WASTE WATER TREATMENT PLANT

19. Office cum laboratory building, workshop building and generator / changing house at WWTP, Jatuwa are completed. The Contractor has been continued all activities except Bio-engineering of WWTP.

Now the Contractor is carrying out Sump well, remaining boundary wall at WWTP from mid December 2016. Structure work in Sump well has been revised as per site condition.

5.4 ROAD AND LANES IMPROVEMENT WORKS

20. The Contractor has completed the rehabilitation / repair of existing drain of about 6.6 km in R2 road. The Contractor has completed the shifting/ relocating electric poles up to Pani tanki both sides.

The Contractor has been completed sub-grade preparation, sub-base, base course, prime and Tack coat and asphalt concrete in R2 road up to Pani Tanki Chowk. Recently contractor has completed 4184m sub-base in other roads. Road works have been frequently disturbed due to the existing water supply network and house connection pipes. The Contractor has completed 100% of road side drain of R2 road up to Pani tanki and along the sewer lines about 21.940km out of 36.050 km, 60.86% till January, 2017.

5.5 CONSTRUCTION MATERIALS

21. The fabrication of steel moulds for precast units- manholes, sewer inlets and house connection chamber are continuing in this month also. Similarly, other item of works inside the Contractor's yard is also going on smoothly.

The Contractor has resumed to produce the precast items (manholes, sewer inlets, house connection chambers, kerb stones, drain cover slabs etc.) at the Contractor's Camp, Katahari from mid December 2015.

5.6 CONSTRUCTION MATERIAL TESTING LAB

22. Construction material testing laboratory has been set up at the Contractor's camp at Katahari. Cube Test, Brick Compressive Strength, Cement Test is conducted in the Laboratory. Besides these tests, Aggregate Crushing Value (ACV), Flakiness Index (FI), Los Angeles Abrasion (LAA), CBR tests are also conducted.

As regular, Three Edge Bearing Test for RCC pipes of different diameter has been conducted on 20 January 2016 at Itahari in presence of Consultant (TL, CSE) and PM/PIU. And results were found satisfactory.

Now, construction material testing lab is working in full swing for testing of sub grade material, sub base material, base material, Bituminous items, concrete, brick, sand and aggregates.

5.7 PHYSICAL PROGRESS TILL JANUARY, 2017.

23. Total physical progress till January, 2017 is about 74.19% wrt to-02 and 67.53% wrt to-03 which is under progress. The Contractor has to be submitted revised work schedule with respect to variation order no-03.

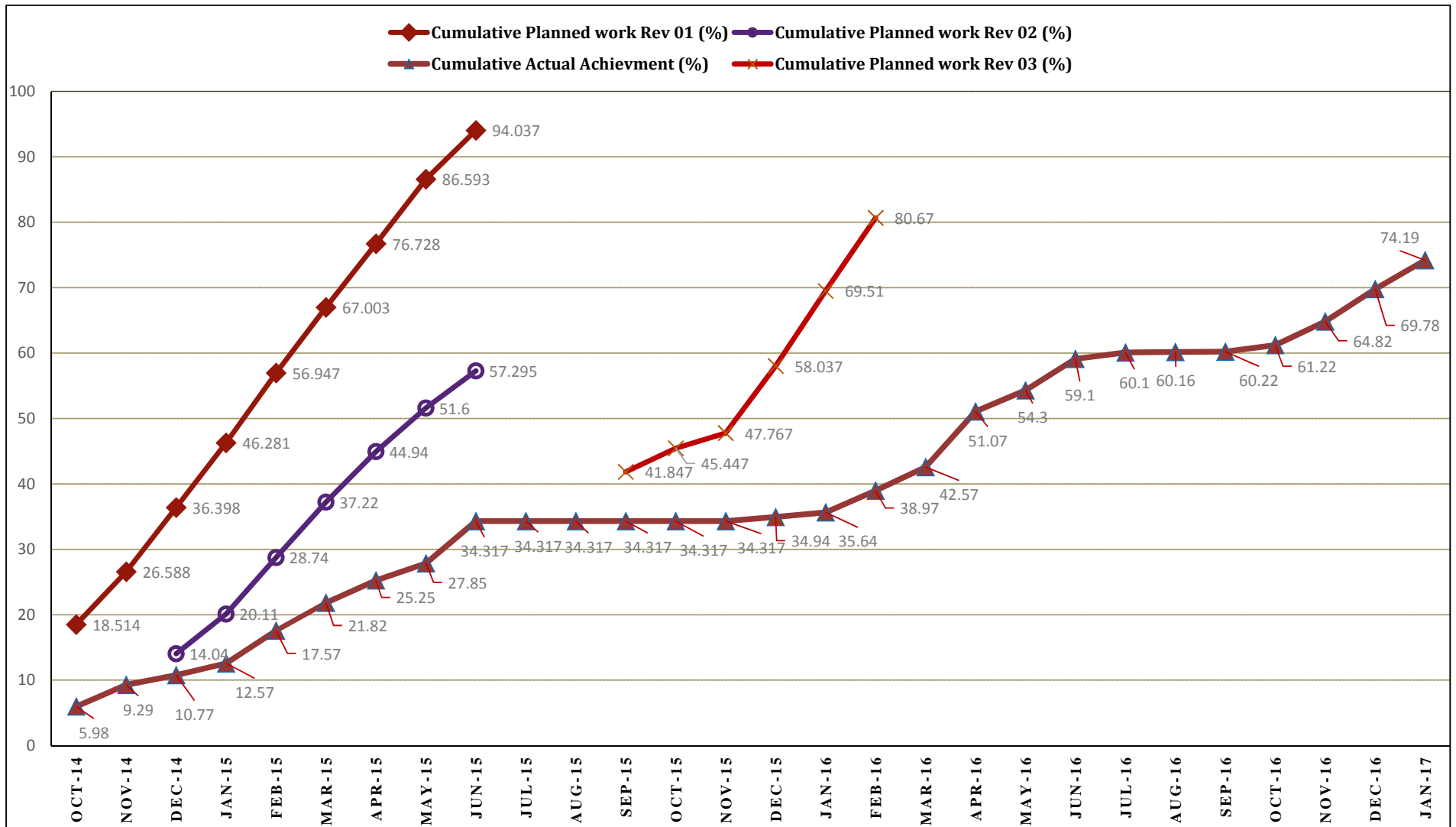
Table 6: Plan vs. Actual Progress till January, 2017

Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), Biratnagar																
Plan Vs. Progress																
Month	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Cumulative Planned work Rev 01 (%)	17.098	18.514	26.588	36.398	46.281	56.947	67.003	76.728	86.593	94.037	95.75	95.99	96.16	96.3	96.45	96.59
Cumulative Planned work Rev 02 (%)				14.04	20.11	28.74	37.22	44.94	51.60	57.295	59.33	60.92	60.99	61.07	64.65	71.29
Cumulative Planned work Rev 03 (%)													41.847	45.447	47.767	58.037
Cumulative Actual Achievements (%)	5.81	5.98	9.29	10.77	12.57	17.57	21.82	25.25	27.85	34.317	34.317	34.317	34.317	34.317	34.317	34.94
Progress lagging to date wrt the revised work plan rev 03 (%)		(12.53)	(17.30)	(3.27)	(7.54)	(11.17)	(15.40)	(19.69)	(23.75)	(22.98)	(22.98)	(22.98)	(7.53)	(11.13)	(13.45)	(23.09)

Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), Biratnagar

Plan Vs. Progress

Month		Jan-16	Feb-16	Mar-16	Apr-16	May-16	June-16	July-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Cumulative Planned work Rev 01 (%)		96.74	97.38	97.18												
Cumulative Planned work Rev 02 (%)		79.29	88.71	96.41												
Cumulative Planned work Rev 03 (%)		69.51	80.67	91.46	97.82	100.00										
Cumulative Actual Achievements (%)		35.64	38.97	42.57	51.07	54.30	59.10	60.10	60.16	60.22	61.22	64.82	69.78/63.12	74.19/67.53		
Progress lagging to date wrt the revised work plan rev 03 (%)		(33.87)	(41.70)	48.89	46.75	45.70										



6 SUMMARY OF ACTIVITIES CARRIED OUT UP TO PREVIOUS MONTHS

6.1 ORGANIZATION AND STAFFING

The Project has involvement of different organization and the staffing as shown below.

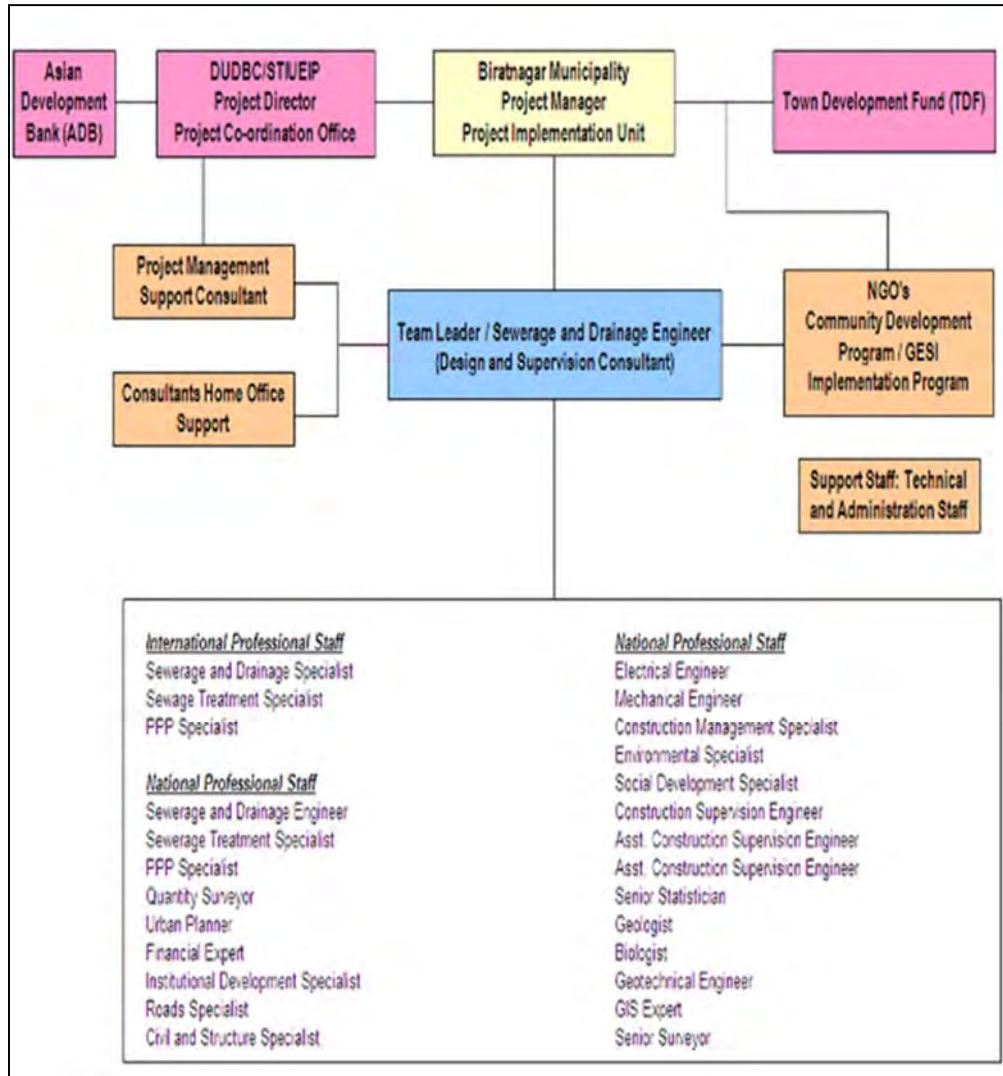


Figure 6: Organization and Staffing of STIUEIP, Biratnagar

6.2 Inception Report

24. The Inception Report was prepared and submitted on 29 February, 2012.

6.3 CONCEPTUAL CATCHMENT PLAN AND DESIGN CRITERIA

25. The Conceptual Catchment Plan and Design Criteria was prepared and presented in PCO on 30 March, 2012.

6.4 SURVEY

26. The survey was completed in August, 2012

6.5 DESIGN

27. The design of sewer lines, storm drains, WWTPs and appurtenances and final detailed design and estimates were submitted in March 2013.

28. During construction B2, B3 and S5 alternate design was also submitted. Similarly, CN2 and CN3 were submitted as the community request to reduce the size. The size was reviewed with 1 year return period as per the suggestion made by PMSC during field visit. Minor modifications in drawings are being carried out for considering the site condition and progress.

6.6 PRE-CONSTRUCTION ACTIVITY

29. After successful completion of one stage two envelope bidding procedure the construction contract for STIUEIP/W/BRT/ICB-01 was signed on December 2, 2013 with M/S CTCE-Kalika JV, Baluwatar, Kathmandu.

6.7 DRAFT REPORT

30. The construction/contract timing schedule was needed to incorporate some additional time of about 4-5 months to account for decision re-making process, tender award procedures.

31. The total cost as per PPTA and earlier designs increased drastically and came to be NRs.7, **274,465,206.69** and therefore needs curtailments and revisions had to be made as per suggestions by PIU in final report.

32. The overall works proposed in the PPTA and the area coverage with connection was thus needed to be phased out.

6.8 FINAL REPORT

33. The DSC submitted the Final Reports adopting cost reduction exercise by phasing out of the works. The estimated cost of the Project was reduced and kept as NRs.3, **278, 140, 000, 00 with a lot of exercises in March 2013.**

34. The sharing of cost by concerned institutions is as follows

Table7: Agency-wise Financial Contribution to BSMC

Contributors	Amount(US\$)	Amount (NRs.)	%
Government of Nepal (GoN)	5,960,256	524,502,513	16.0%
Asian Development Bank (ADB)	24,213,539	2,130,791,460	65.0%
Biratnagar Sub-Metropolitan City (BSMC)	2,980,128	262,251,257	8.0%
Town Development Fund (TDF)	4,097,676	360,595,478	11.0%

6.9 CONSULTANT'S ACTIVITIES IN CONSTRUCTION PHASE

35. The current staffing of the consultant at project site is as follows

Table 8: Consultant's Staff at Project Site, Biratnagar

S. No	Name	Position
1	Giresh Chand	Officiating Team Leader/CSE
2	Jaya Prakash Yadav	Asst. Construction Supervision Engineer-1
3	Dikendra Katwal	Asst. Construction Supervision Engineer-2
4	Rajesh Yadav	Junior Engineer-1
5	Deepak Majhi	Junior Engineer-2
6	Arun Kumar Yadav	Junior Engineer-3
7	Jay Prakash Yadav	Junior Engineer-4
8	Santosh Kumar Yadav	Office Manager/Computer Operator
9	Ramji Gimire	Driver-1
10	Suman Ghimire	Driver-2
11	Ramila Ghimire	Office Assistant

36. The consultant has been constantly supervising the contractor's work in daily basis. The consultant is mainly focusing in construction management, contract administration and the following activities but not limited as listed below:

- i. Daily Construction supervision
- ii. Quality control, cost control and time control
- iii. Measurement and Certification of Interim Payment Certificates (IPC)
- iv. Modification and design of storm drainage and sewer lines, manholes etc. as per site condition and approve working drawings
- v. Supervise construction material testing and sampling

- vi. Monitor Environment Management Plan and its compliance
- vii. Monitor Social safeguard and Resettlement Plan and its compliance
- viii. Meet obligation of reporting requirement – Updated Environmental Progress Report, Updated Resettlement Progress Report, Monthly Progress Report, Semi-Annual Updated Resettlement Progress Report
- ix. Prepare Due Diligence Report of the Project
- x. Maintain correspondences with the Employer and the Contractor
- xi. Assist to PIU

6.10 KEY DATES

The consultant has noted the following key dates for the month of December, 2016

Table 9: Key dates of events /activities:

S. No	Date	Activities/Events	Remarks
1			
2			

7 DETAILS OF ACTIVITIES CARRIED OUT IN THIS MONTH

7.1 PHYSICAL PROGRESS IN THIS MONTH

The Employer has discussed/agreed/decided to curtail (base and Asphalt) the scope of the work due to some works were missed in original contract itself, some works were not foreseen in original contract, some works due to local demand etc.

Therefore, following are the physical progress with respect to variation order no-03 which is under process:

Table 10: Physical Progress in Storm Water Drains

Physical Progress till January 2017						
S.N.	Location	Proposed Length (m)	Progress		Total to Date (m)	Progress (%)
			Up to Dec 2016 (m)	This Month (m)		
1	B1	3,950	3628.00		3628.00	91.85
2	B2	3,742	3724.00	0	3724.00	99.52
3	B3	3,514	3363.00	0	3363.00	95.69
4	S5	1201	1201.00	0	1201.00	62.16
5	S9	3,558	2370.00	138	2508.00	70.49
6	S11	2,092	2082.00	0	2082.00	99.52
7	S13	5,640	4864.00	0	4864.00	86.23
8	CN2	2,273	2142.00	0	2142.00	94.24
9	CN3	2,170	1122.00	0	1122.00	51.71
10	Rani	8,483	5333.00	8	5341.00	62.96
	Total	36,623	29829.00	138	29967.00	81.82

Table 11: Physical Progress in Road Side Drains:

Physical Progress till January 2017							
S.N.	Location	Length (m)	Total Length (m)	Progress		Total to Date (m)	Progress (%)
				Up to Dec. 2016 (m)	This Month (m)		
1	R2	3420	6840	6325	0	6325	92.47
2	R3	2233	2993	2794	80	2874	96.02
3	R4	1246	2212	660	0	660	29.84
4	R5	1068	2136	900	640	1540	72.10
5	R6	1280	2560	0	0	0	0
6	R7	485	615	180	80	260	42.28
7	R8	370	740	0	332	332	44.86
8	R9D	116	232	0	0	0	0
9	R13	220	440	400	0	400	90.91
10	R16	580.0	1160	585	415	1000	92.59
11	R21	2420	2420	1050	400	1450	59.92

12	R22	359	718	676	0	676	94.15
13	R24	390	780	720	0		92.31
14	R25	594	1188	630	350	980	82.49
15	R26	620	1240	898	0	898	72.42
16	R27	977	1954	790	160	950	48.62
17	R28	620	1240	430	270	700	40.48
18	R29	620	1240	0	206	206	16.61
19	R30	328	656	0	0	0	0.00
20	R31	187	374	170	0	170	45.45
21	R32	189	378	0	0	0	0.00
22	R37	785	1570	370	230	600	38.22
23	R64	120	120	120	0	120	100
24	R78	92	184	0	82	82	44.57
25	R107	157	314	155	0	155	49.36
26	R108	96	192	170	0	170	88.54
27	R109	90	360	340	15	355	98.61
28	T2L18O	143	286	268	0	268	93.71
29	T3L26E	93	186	18	30	48	25.81
30	T2L19R	177	354	0	0	0	0.00
31	T2L19P	103	206	0	0	0	0.00
32	T2L19U	81	162	0	0	0	0.00
33	T3L28	74.0	148.0	145	0		97.97
	Road Side Drain		36050	18650	3290	21940	60.86

Table 12: Physical Progress in Sewer Lines:

S.N	Location	As per estimate		This month		Up to Previous Month		Total to Date		Progress (%)	
		Distance (m.)	MH (no.)	Distance (m.)	MH (no.)	Distance (m.)	MH (no.)	Distance (m.)	MH (no.)	Distance (m.)	MH (no.)
1	HDPE(T1)	3817.10	127	0.00	0	3364.50	116	3364.50	116		
2	HDPE(T2)	13595.40	485	160.20	7	12495.25	436	12655.45	436		
3	HDPE(T3)	7030.30	258	90.00	4	6481.10	234	6571.1	234		
4	HDPE(T4)	117.30	3	0.00	0	112.00	3	112	3		
5	Sub Total(HDPE)	24560.10	873	250.20	11	22452.85	789	22703.05	789	92.75	91.64
6	Hume Pipe(T1)	5026.80	144	0.00	0	1780.50	53	1780.50	53		
7	Hume Pipe(T2)	9488.00	276	1146.00	30	6237.00	175	7383.00	175		
8	Hume Pipe(T3)	44.10	129	132.00	1	2719.50	62	2851.50	62		

9	Hume Pipe(T4)	183.50	5	0.00	0	0.00	0	0.00	0		
10	Sub Total Hume Pipe	19108.40	554	1278.00	31	10737.00	290	12015.00	290	62.61	57.22
11	Total (HDPE+Hume pipe)	43668.50	1427	1528.20	42	33189.85	1079	34718.05	1079	79.50	78.17

Table 13: Physical Progress in Manhole, sewer inlet and House connection chamber

S.N.	Description	Proposed Quantity(no.)	This month	Up to Previous Month	Total to Date	Progress (%)
1	Manhole	1434	42	1079	1121	78.17
2	Sewer inlet	2924	530	801	1331	45.52
3	House connection chamber	4500	23 5	154	389	8.64

Table 14: Physical Progress in Roads and Lanes:

Physical Progress till January 2017						
S.N.	Location	Proposed Length (km)	Progress		Total to Date (m)	Progress (%)
			Up to Dec 2016 (m)	This Month (m)		
1	All roads Including WWTP road	43.832	Sub-grade=3224m Sub Base=3224m Base=2176m Prime Coat=2096m Asphalt Concrete=2096m	Sub-grade=4184m Sub-base=4184m Base=1048m Prime Coat=1128m Asphalt Concrete=1128m	Sub-grade=7408m Sub-base=7408m Base=3224m Prime Coat=3224m Asphalt Concrete=3224m	16.90

Table 15: Physical Progress in Waste Water Treatment Plant (WWTP), Jatuwa

Physical Progress till January 2017						
S.N.	Description	Proposed Quantity	Progress		Total to Date	Remarks
			Up to Dec 2016	This Month		
1	Anaerobic Pond	3 nos	3 (excavation)	0	3 (excavation)	Slope finishing work under progress
2	Facultative Pond	3 nos	2 (excavation)	0.5	2.5 (excavation)	Slope finishing work under

						progress
3	River Training Work	600 m	600 m	0	600 m	100%
4	Boundary Wall	1340m	1238 m	40	1278 m	95.37%
5	Office cum Lab Building	1 no	1 no	0	1	95%
6	Workshop Building	1 no	1 no	0	1	95%
7	Generator / Changing House	1 no	1 no	0	1	95%
8	Sump Well	1 no	0.15	0.25	0.25	Upto 4.70 m height R.C.C work completed remaining work under progress
9	Sludge Drying Bed	1no	0	0.75	0.75	Brick Masonary work completed pipe,sand and gravel packing work under progress
10	Road Side Drain	1440	0	135	135	

Table 16: Physical Progress in Production of Precast Items at Katahari:

Physical Progress till January 2017						
S.N.	Description	Unit	Progress		Total to Date (no)	Remarks
			Up to Dec 2016 (no)	This Month (no)		
1	Precast Slab	No	91405	1650	93055	
2	Precuts	No	11209	0	11209	
3	Kerb Stone	No	23135	0	23135	
4	Manhole	No	2200	0	2200	
5	Sewer Inlet	No	2074	150	2224	
6	House Connection Chamber	No	1346	0	1346	

Table 17: Physical Progress in Production of RCC Pipes at Itahari

Physical Progress till January 2017						
S.N.	Description	Diameter (mm)	Progress		Total to Date (no)	Remarks
			Up to Dec 2016 (no)	This Month (no)		
1	RCC Pipe	200	2,123	0	2,123	
2	RCC Pipe	300	328	0	370	
3	RCC Pipe	350	216	0	216	
4	RCC Pipe	400	370	0	370	
5	RCC Pipe	450	84	0	84	
6	RCC Pipe	500	551	0	551	
7	RCC Pipe	600	963	0	963	
8	RCC Pipe	700	1,296	0	1296	
9	RCC Pipe	900	278	0	278	
10	RCC Pipe	1000	1011	0	1,019	
11	RCC Pipe	1600	373	0	373	
	Total		7,643	0	7,643	

Contractor's Manpower**Table 18: Contractor's key staffs in December 2016:**

Designation	No	Remarks
Project / Contract Manager	1	
Planning Engineer/Construction Engineer	1	
Construction Engineer	2	
Site Engineers	5	
Quality Control Manager	1	
Office/Bill Engineer	0	
Junior Engineer	10	
Sub Overseers	6	
Safety Manager / Senior Site Supervisor	1	
Accountant / Office Manager	1	
Lab Assistant	3	
Store Keeper	4	
Light Drivers	4	
Machine Operator	14	
Site Supervisor	12	
Other Supporting Staff	18	
Skilled Labor at Site	>75	
Unskilled Labor at Site	>250	

Contractor's Equipment:**Table 19: Contractor's Equipment: At Judi camp**

Equipment	No	Remarks
Excavator	6	
Back Hoe JCB	11	
Grader	1	

Crane / Teller	1	
Water Tanker	3	
Tractor	7	
Tipper	4	
Light Vehicle	2	
Motorbike	10	
Kerb Stone Machine Set	1	
Generator	4	
Welding Machine	3	
Diesel Tank with Pump	1	
Stand Drill Machine	1	
Gas Cutter Set	1	
Pipe Cutter	1	
Hand Grinder	1	
Plate Compactor	2	
Monkey Jumper	1	
Concrete Batching Plant	1	
Electric Vibrator	3	
Bar Bending Machine	3	
Bar Cutter Machine	3	
Transit Mixer	0	
Concrete Mixer (Hydraulic)	2	
Concrete Mixer (Manual)	2	
Asphalt Concrete Plant	1	
Asphalt Paver Machine	1	

8 DETAILS OF SAFEGUARD ACTIVITIES (SOCIAL, ENVIRONMENTAL AND RESETTLEMENT ACTIVITIES AND ISSUES)

8.1 SOCIAL ISSUES

8.1.1 OPERATIONAL GUIDE LINES FOR COMMUNITY MOBILIZATION AND IMPLEMENTATION OF CDP

- **VISIT, INTERACTION AND CONSULTATION WITH COMMUNITY PEOPLE**

37. Social Development Specialist (SDS) of the DSC is closely monitoring the social issues resulted due to the project activities. Visiting and interacting with people, Tole Lane Organizations (TLOs) and formal and informal consultation meetings are going on in this regard.

The project is regularly disseminating the information and message to community people about the project features, its purpose, methods of use and functionality of infrastructure under construction by the project through such consultation meetings. These meetings are fruitful to provide prior information regarding the project construction activities before execution at the community level. It is an appropriate platform to interact and make dialogue between 4 Cs (The Client, Consultant, Contractor and Community) about the project features, prime objectives, purpose, work methodology and potential threats/ cautions to be adopted during the project implementation.

The visits, meetings and consultations with community people at TLOs have provided many opportunities to obtain people's views and perception towards the project. Community people of those particular localities used to discuss extensively in the project features and have been provided some suggestions for efficient carryover of the project components and assured cooperation and coordination in the project execution in their localities.

Social Development Specialist (SDS)/ DSC along with of PIU, NGO staffs have been actively participated in the meetings. SDS/DSC as usual facilitate the consultation meetings, support to prepare meeting minutes and obtain decisions.

Apart from of this, many field visits and observations with community are also important to disseminate project message and monitor project features in the community. Monitoring visits along with Project Manager (PM), TL/DSC and TL/CDP to the core project area, community development program area and construction sites have been beneficial to make insight to the project progress, its effectiveness and challenges.

- **SAFEGUARD DESK**

38. A Safeguard Desk established in the project has been effective in planning, monitoring and follow up of all social development/ safeguard issues including the resettlement plan. It has been started as a functional mechanism consisting of PIU, NGO and DSC for this purpose. The desk consists of the Social Development Chief of PIU, Team Leader of CDP/ NGO and SDS of DSC with close consultation and guidance of PM/ PIU. It is in compliance with the Aide Memoire of last ADB Mission (21 April-12 May 2014). It is decided that the desk will review, update and discuss the progress, issues, constraints and challenges of social aspects, Community Development Program and implementation of resettlement plan as well as monitoring of social development activities.

• **ToT ON GENDER AND SOCIAL INCLUSION (GESI) MAINSTREAMING**

39. The project has been envisaged a 'Training of Trainers (ToT) on GESI Mainstreaming' for Biratnagar Sub Metropolitan City (BSMC) Office and STIUEIP project staff. The Aide Memoir Report of the ADB Review Mission has also noted about the training to be conducted in Biratnagar for the staff of municipality and related agencies. The Mission has recommended for conducting GESI training relating to urban infrastructure development to staff of municipality, municipal steering committee, PIU, local stakeholder agency and make them accountable for the better results. In line with this, the project is going to conduct Gender and Social Inclusion (GESI) Sensitization Training when it is approved. The revised ToT has been submitted to PIU, STIUEIP, Biratnagar incorporating the comments from PMSC and PCO.

Safeguard desk members discussed and reviewed the proposed 'ToT on GESI Mainstreaming' proposal. Social Development Specialist (SDS) of DSC has reviewed the detail proposal and adjusted budget accordingly for the 'Training of Trainers (ToT)' model. The training arrangement will be decided after the approval of this proposal by the project authority. Primarily it will be a 5 days training focusing mainly on Gender and Social inclusion Action Plan (GESIAP) comprising other project elements. About 35 participants from Biratnagar Sub Metropolitan City (BSMC) office and project staffs will participate in the training.

• **Update of Small Facilities Construction and other Activities in CDP/STIUEIP**

40. The latest safeguard desk meeting has reviewed all ongoing and completed small facilities infrastructure and other activities implemented under the Community Development Program (CDP), a component of STIUEIP. It provided a common understanding and status information of infrastructures and activities under the CDP program to all safeguard desk members.

A glimpse of community development program has been obtained by the presentation in the appraisal and interaction meeting. Total 7,417.36 m. roads and 13,246.32 m. drains are under construction through small facilities infrastructure by CDP/STIUEIP. Regarding on the household toilet, total 458 nos. such toilets has been built by May 2015. Similarly 10 hand pumps have been installed, 45 hands pump platforms built and 5 public toilets are complete.

• **Employment in Project**

41. The core activities of the project i.e. sewerage pipe laying, drain construction and road/ lane improvement provided employment to about 270 in a day this month. The employed human resources varied from skilled engineer/ project manager to general labor, supervisor, (sub) overseers and mechanics. However, a very few women (16%) are working in the construction activities as skilled and unskilled labor but they are paid equal to men for similar type of work. Three women Assistant Sub-Engineers are also working at construction sites after completing OJT (on the job training) successfully at the same sites from different CTEVT affiliated institutes of nearby districts. The contractor has been suggested to increase the work opportunity to women in different types of works.

• **General**

42. Sewer/ Drainage lines are being laid in the public rights of way (RoW). During construction, if any trees or crops or structures demolished, it shall be properly addressed with compensation. Private individuals or shopkeepers will also be looked into if their livelihood is affected by the disturbance during constructions/ pipe laying works.

Apart from this, the project did not encounter any resettlement or re-location and any compensation issue..

9 KEY ISSUES AND REMARKS/REASON FOR DEVIATION (IF ANY) AFFECTING PROGRESS

43. Following are the key issues affected in progress:

- Disturbance from existing water supply pipe lines network, under-ground cables, electric poles etc.

10 WORK PLAN FOR THE NEXT MONTH

44. Following are the Contractor's works in the next month **(Please refer to the contractor's progress report for quantitative plan works for next month) the revised work program shall be submitted after the approval of Variation order no-03 as discussed/agreed between three parties-3C.**

- Road side drain construction
- Road Works at R2 Road and other Roads
- Sewer line construction
- WWPP
- Maintenance work as per instruction/required.

ANNEX2: PHOTOGRAPHS - JANUARY 2017



Concreting work sump well



Asphalt Finishing at R2 Road



Pipe laying T2 trunk (1)



Formworks and Preparation for RCC at R16



Plastering and Punning at R28



Placing Cover Slabs and Preparation for Sub-Base at R25



Technical Meeting Held at Consultant's Office between Consultant's and Contractor's Engineers

Annex-6: Minutes of Meeting – January, 2017

Annex-7

: Laboratory Test Results of January, 2017

SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT
BIRATNAGAR Sub-Metropolitan City
Monthly Laboratory Testing Report
(For The Month OF- JANUARY 2017)

Consultants: SMEC-Brisbane-AQUA-CEMAT-BDA

Contractors: CTCE- KALIKA J/V

S. No.	Description of Material	Type of test	Total No. of Test upto previous month	Test Performed for this month				Total No. of Test upto This month	Remarks
				No. of Tests	Passed	Failed	Retest Recommended		
		Bitumen extraction	20	16	16	0		36	
		Voids in Mineral Agg	60	42	42	0		102	
		Job mix in AC Plant	22	42	42	0		64	
17	<u>BITUMEN SPREAD TEST</u>								
	Prime coat	Application rate	20	28	28	0		48	
	Tack coat	Application rate	10	28	28	0		38	
18	<u>Machines/Equipment</u>								
	Caliberation of compressive	1000KN Manuall	2	0	0	0		2	
	Testing machine	500 KN Manuall	2	0	0	0		2	
	C.B.R Machine	50KN/30KN	2	0	0	0		2	
	Marshall Stability Machine	50KN/25KN	2	0	0	0		2	
19	<u>MISCELLANEOUS</u>								
	G.I Wire(Gablon Boxes)		5	0	0	0		5	
	Factory Test Report of Cement		8	0	0	0		8	
	Factory Test Report of Iron Steel		4	0	0	0		4	
	Factory Test Report of 80/100 Bitumen		2	0	0	0		2	
	Factory Test Report of UPVC/HDP Pipe		2	0	0	0		2	
	UPVC/HDP Pipe Test Result		2	0	0	0		2	
MDD/OMC = Max Dry Dennsity Optimum Moisture Content SSS = Sodium Sulphate Soundness ACV = Aggregtae Crushing Value CBR=California Bearing Ratio		LAA = Los Angeles Abrasion SE=Sand Equivqlent SMEC-Brisbane-AQUA-BDA-CEMAT Approved by C.S.E Checked by A.C.S.E		AIV=Aggregate Impact Value JMC=Job Mix Formula		C.R=Crushing Ratio		Submitted by Project Manager Prepaid by Q.C Manager Contractors Reps	

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

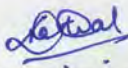
SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

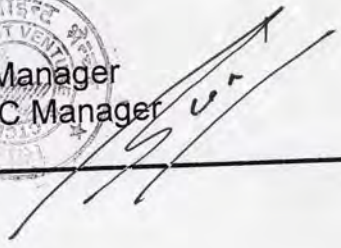
Description : Field Density Tests on CH:6+380 to 7+260 R-3 Road (DHARAMBAN Road)

SUB GRADE

P.G-1

SUB GRADE							
S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FD 35	13/1/2017	6+380	2.01	95.2	5.00	10
2			6+410	2.01	95.2	5.00	10
3			6+440	2.06	97.78	5.50	10
4			6+470	2.07	97.92	5.00	10
5			6+500	2.05	97.07	5.00	10
6			6+530	2.02	95.87	5.50	10
7			6+560	2.02	95.61	5.00	10
8			6+590	2.05	95.61	5.00	10
9			6+620	2.05	95.61	4.50	10
10			6+650	2.03	96.38	5.00	10
11			6+680	2.03	96.38	5.00	10
12			6+710	2.04	96.46	5.00	10
13			6+740	2.03	96.16	5.00	10
14			6+770	2.06	97.80	5.00	10
15			6+800	2.07	97.90	5.00	10
16			6+830	2.02	95.90	5.00	10
17			6+860	2.04	96.62	5.00	10
18			6+890	2.05	96.96	4.00	10
19			6+920	2.03	96.10	5.00	10
20			6+950	2.06	97.69	5.00	10
21			6+980	2.04	96.48	5.00	10
22			7+010	2.02	95.51	5.00	10
23			7+040	2.04	96.71	5.00	10
24			7+070	2.02	95.51	5.00	10
				2.110	95	OMC <9.50	

✓
 SMEC-Brisbane-AQUA-CEMAT-BDA
 Approved by C.S.E
 Test Checked by A.C.S.E 
 Consultant Reps

CTCE-KALIKA JV
 Submitted by Project Manager
 Test Conducted by Q.C Manager
 Contractors Reps 

**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

[illegible]

**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
Test Checked by A.C.S.E *[Signature]*
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps



Biratnagar Sub-Metropolitan City

Description : Field Density Tests on R2 ch: 0+000 To 1+120 R2 Puspall Chowck Round About

SUB BASE LAYER

<p>✓</p> <p>SMEC-Brisbane-AQUA-CEMAT-BDA</p> <p>Approved by C.S.E</p> <p>Test Checked by A.C.S.E</p> <p>Consultant Reps</p>	<p>CTCE-KALIKA J/V</p> <p>Submitted by Project Manager</p> <p>Test Conducted by Q.C Manager</p> <p>Contractors Reps</p>
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SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on R2 ch:3+420 to 3+800 RHS

CRUSHED STONE BASE LAYER

CRUSHED STONE BASE LAYER							
S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		Depth (CM)
1	FD 17	4/1/2017	3+400 LHS	2.30	99.57	6.00	15
2			3+440 RHS	2.29	99.13	6.00	15
3			3+460 CL	2.30	99.57	6.00	16
4			3+480 LHS	2.29	99.13	6.00	16
5			3+500 LHS	2.29	99.13	6.00	16
6			3+520 RHS	2.27	98.26	6.00	15.5
7			3+540 CL	2.29	99.13	5.00	15
8			3+560 RHS	2.28	98.70	6.00	15
9			3+580 RHS	2.28	98.70	5.50	15.5
10			3+600 RHS	2.28	98.70	6.00	15
11			3+620 LHS	2.29	99.13	5.00	15
12			3+640 RHS	2.30	99.56	5.50	15.5
13			3+660 CL	2.28	98.70	5.50	15
14			3+670 LHS	2.30	99.56	6.00	15.5
15			3+690 RHS	2.28	98.70	6.00	15
16			3+700 RHS	2.28	98.70	6.00	15
17			3+720 LHS	2.27	98.26	5.00	15
18			3+740 RHS	2.29	99.13	5.00	15.5
				2.310	98%	OMC <6.30	15 cm

✓
SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitan City

SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

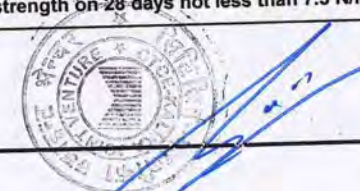
P.G-7

FOR THE MONTH OF JANUARY 2017

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Initial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
91	632	KOSHI	R-3 Line Work Mix	1:4 by volume	23/12/2016	36.40	19	310	30/12/2016	6.40	19/1/2017	7.90	
92	633	KOSHI	R-3 Line Work Mix	1:4 by volume	23/12/2016	36.40	19	310	30/12/2016	6.40	19/1/2017	8.30	
93	634	KOSHI	WWTP Boundary Wall	1:4 by volume	24/12/2016	36.70	185	330	31/12/2016	6.70	20/1/2017	7.80	
94	635	KOSHI	WWTP Boundary Wall	1:4 by volume	24/12/2016	36.70	185	330	31/12/2016	6.50	20/1/2017	8.20	
95	636	KOSHI	High way Man hole	1:4 by volume	25/12/2016	36.70	180	320	2/1/2017	6.80	23/1/2017	7.90	
96	637	KOSHI	High way Man hole	1:4 by volume	25/12/2016	36.70	180	320	2/1/2017	6.40	23/1/2017	8.40	
97	638	KOSHI	R-37 Line Work Mix	1:4 by volume	26/12/2016	37.10	175	355	3/1/2017	6.40	24/1/2017	7.90	
98	639	KOSHI	R-37 Line Work Mix	1:4 by volume	26/12/2016	37.10	175	355	3/1/2017	6.50	24/1/2017	7.80	
99	640	KOSHI	R-5 Line Work Mix	1:4 by volume	27/12/2016	37.00	195	295	4/1/2017	6.50	25/1/2017	7.90	
100	641	KOSHI	R-5 Line Work Mix	1:4 by volume	27/12/2016	37.00	195	295	4/1/2017	6.90	25/1/2017	8.00	
101	627	KOSHI	WWTP Boundary Wall	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.50	26/1/2017	8.00	
102	628	KOSHI	WWTP Boundary Wall	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.70	26/1/2017	7.80	
103	629	KOSHI	WWTP Boundary Wall	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.10	26/1/2017	8.00	
104	630	KOSHI	R-37 Line Work Mix	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.40	26/1/2017	8.00	
105	631	KOSHI	R-37 Line Work Mix	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.90	26/1/2017	7.90	
						MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2					

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test conducted by Q.C Manager
Contractors Reps



Secondary Towns Integrated Urban Environmental Improvement Project
Biratnagar Sub-Metropolitan City

TEST RESULT SUMMARY SHEET For the Month of JANUARY 2017

COMPRESSIVE STRENGTH OF BRICKS (Process Control Test)

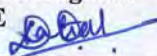
P.G-1

SN No	Ref. STIUEIP LAB/	Date of Testing	Location	Chanage	BRAND NAME 1 st class brick	Compressive Strength N/mm2	SCALE OF Sample From
1	MR 501	2/1/2017	WWTP	WWTP WALL	ANAND	✓10.5	
2	MR 502	2/1/2017	WWTP	WWTP WALL	ANAND	✓10.4	
3	MR 503	3/1/2017	Highway	Man Hole	ANAND	✓10.6	
4	MR 504	4/1/2017	R-28	R-28	ANAND	✓10.2	
5	MR 505	5/1/2017	R-26	R-26	ANAND	✓10.9	
6	MR 506	6/1/2017	Prativa	Prativa chowck	ANAND	✓10.8	
7	MR 507	7/1/2017	Prativa	Prativa chowck	AMBEY	✓10.4	
8	MR 508	8/1/2017	R-29	R-29	AMBEY	✓10.4	
9	MR 509	9/1/2017	R-29	R-29	SHREE	8.5	Rejected From Site
10	MR 510	9/1/2017	R-29	R-29	SHREE	7.9	- do -
11	MR 511	10/1/2017	R-37	R-37	ANAND	✓10.2	
12	MR 512	11/1/2017	Highway	Man Hole	ANAND	✓10.2	
13	MR 513	12/1/2017	WWTP	WWTP WALL	ANAND	✓10.5	
14	MR 514	13/1/2017	WWTP	WWTP WALL	ANAND	✓10.4	
15	MR 515	14/1/2017	WWTP	WWTP WALL	AMBEY	✓10.4	
16	MR 516	16/1/2017	R-26	R-26	ANAND	✓10.1	
17	MR 517	16/1/2017	R-26	R-26	ANAND	✓10.7	
18	MR 518	16/1/2017	R-27	R-27	ANAND	✓10.6	
19	MR 519	17/1/2017	R-37	R-37	ANAND	✓10.4	
20	MR 520	18/1/2017	WWTP	WWTP WALL	ANAND	✓10.5	

✓ Specification

IS1077,IS2180or
NS1/2035

> 10N/MM2

SMEC-Brisbane-AQUA-BDA-CEMAT
 Approved by Construction Supervision Engineer
 Test Checked by A.C.S.E. 
 Consultantr Reps

CTCE-KALIKA JV
 Submitted by Project Manager
 Test conducted by O.C Manager
 Contractor Reps 

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

MONTHLY Test Result Summary Sheet For The Month of JANUARY 2017

STIUEIP

Graded Crushed Stone Base Course (Process Control)

P.G-2

STANDARD SPECIFICATION FOR ROAD AND BRIDGE WORKS SECTION 1200 Table 12.3 Physical Requirement of Graded Crushed Stone Base

SN NO	LAB REF No	Date Tested	Location/ Chainage	Grading sieve size (mm)								FI	CR Ratio	LAA	AIV	SSS 5 cycle	Soaked CBR	Lab. MDD	Lab. OMC	Remarks
				(% passing by weight)																
				40	31.5	20	10	4.75	2.36	0.60	0.075									
13	104	3/1/2017	CH:3+670 to 3+720 RHS	100	95.9	70.5	50.4	37.5	27.2	13.9	5.2	17.21	87.7	33.88	20.00	1.24				
14	105	3/1/2017	CH:3+720 to 3+770 RHS	100	96.3	69.9	49.8	37.4	27.0	13.8	5.2	19.12	86.2	33.56	19.71					
15	106	3/1/2017	CH:3+770 to 3+820 RHS	100	97.3	83.9	57.2	43	30.1	15.3	5.5	17.81	85.9	33.68	17.71	1.04				
16	107	3/1/2017	CH:3+820 to 3+870 RHS	100	97.5	87.1	57.3	43.1	30.3	15.2	6.1	19.87	86.1	32.68	18.29		94	2.320	6.20	
17	108	3/1/2017	CH:3+870 to 3+920 RHS	100	97.7	87.3	57.7	41.1	27.9	14.6	6.1	19.06	86.8	33.20	17.71	1.28				
18	109	3/1/2017	CH:3+920 to 3+970 RHS	100	94.8	84.3	56.6	40.5	26.3	13.8	5.9	19.01	85.7	32.60	20.86					
19	110	3/1/2017	CH: 3+970 to 4+020 RHS	100	95.8	85.3	57.1	40.4	25.9	13.9	5.1	17.49	85.7	32.60	19.14	1.28				
20	111	3/1/2017	CH:4+020 to 4+050 RHS	100	96.8	86.1	56.9	41.5	28.8	15.0	6.4	18.21	85.5	33.68	18.57					
21	112	3/1/2017	CH:4+050 to 4+100 RHS	100	92.2	82.3	61.6	40.8	29.5	16.7	7.1	17.89	86.8	33.80	18.29	1.16	90	2.320	6.20	
22	113	3/1/2017	CH:4+100 to 4+140 RHS	100	92.6	81.4	61.1	40.6	29.2	16.2	6.5	17.71	88.8	32.20	19.14					
23	114	4/1/2017	CH:3+300 to 3+420 RHS & LHS	100	93	81.9	62.7	42.3	30.6	16.5	6.5	16.85	88.2	33.20	20.00	1.08	91	2.310	6.40	
24	115	4/1/2017	CH:3+340 to 3+380 RHS & LHS	100	93.7	83.3	63.6	42.6	30.2	16.4	6.4	19.72	90.0	32.52	20.00	1.32				
25	116	4/1/2016	CH:3+340 to 3+380 RHS & LHS	100	95.6	83.9	63.8	41.6	28.3	17.9	6.4	17.25	90.6	32.08	20.86	1.44				
Required Specifacation				100	85-100	62-92	40-70	26-55	21-53	12 to28	2 to10	≤ 25	≥ 80	≤ 35	≤ 25	Max 12%	≥ 80			

REMARKS:Crushed Stone base

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

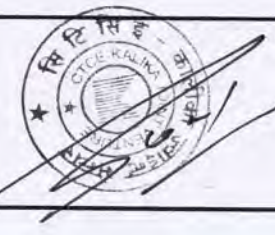


CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

CEMENT TEST SUMMERY

For the Month of JANUARY 2017		Page 1
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REKAM JEJAK PENYAKIT JANUARI 2017						P.G-1
Lab. Ref		Terima	Gejala			

S.N.	Lab. Ref.	Description of cement	Testing	Consistency & Setting Time	Remarks
------	-----------	-----------------------	---------	----------------------------	---------

NO.			Date	Norm. Const.	Intial(min.)	Final(min.)	
1	MR 196	SHIVAM OPC	1/1/2017	36.9	190	320	All Cement Are Nepali BRAND OPC
2	MR 197	SHIVAM OPC	2/1/2017	37.6	190	330	
3	MR 198	SHIVAM OPC	3/1/2017	36.7	200	305	
4	MR 199	SHIVAM OPC	4/1/2017	37.9	180	335	
5	MR 200	SHIVAM OPC	5/1/2017	36.9	180	200	
6	MR 201	SHIVAM OPC	6/1/2017	37.1	180	200	
7	MR 202	SHIVAM OPC	7/1/2017	37.0	250	300	
8	MR203	SHIVAM OPC	8/1/2017	36.3	185	320	
9	MR 204	SHIVAM OPC	8/1/2017	36.0	185	330	
10	MR 205	SHIVAM OPC	9/1/2017	36.4	180	320	
11	MR 206	SHIVAM OPC	10/1/2017	37.6	175	335	
12	MR 207	SHIVAM OPC	11/1/2017	36.9	195	295	
13	MR 208	SHIVAM OPC	12/1/2017	37.9	190	330	
14	MR 209	SHIVAM OPC	13/1/2017	38.0	200	320	
15	MR 210	SHIVAM OPC	14/1/2017	37.9	205	335	
16	MR 211	SHIVAM OPC	15/1/2017	38.0	205	315	
✓Requirements in accordance with BS 12/4027					> 45 Min.	10 Hrs	

Katun

Contractores Reps



Manager
Manager

SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M20/20 SLAB CASTING WORK MIX
FOR THE MONTH OF JANUARY 2017

P.G-1

S.N.	Lab Ref No.	Date of Casting	Deatails of Mix	Location Structure	Ratio by VOLUME				Materials		Cube Crushing ,N/mm2		Remarks
					Water	Cement	Sand	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days	
1	163	4/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.7	22.4	
2	164	5/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	22.3	
3	165	6/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.6	
4	166	7/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.7	22.7	
5	167	8/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	22.4	
6	168	9/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	22.4	
7	169	10/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.2	
8	170	11/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.5	22.1	
9	171	16/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.7	
10	172	16/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.2	
11	173	16/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.6	22.6	
12	174	17/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.4	
13	175	17/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	22.6	
14	176	18/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	22.1	
15	177	18/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	22.5	
16	178	18/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.7	22.2	
17	179	19/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.2	22.8	
18	180	19/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	22.4	

✓ Specifacation Limit Table For M20/20 on 7 days Age Min 67% of Total Compressive Strength

Min Required **13.4** **20**

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

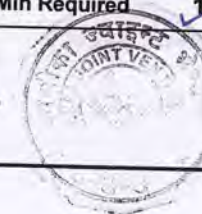
Consultants Reps

CTCE-KALIKA JV

Submitted by Project Manager

Test conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitant City

SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M30/20 MAN HOLE CASTING WORK MIX

FOR THE MONTH OF JANUARY 2017

P.G-1

S.N.	Lab Ref No.	Date of Casting	Deatails of Mix	Location Structure	Ratio by MASS				Materials		Cube Crushing ,N/mm2		Remarks
					Water	Cement	Sand	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days	
1	MR 138	4/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	23.5	31.6	
2	MR 139	4/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	24.7	31.5	
3	MR 140	5/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	24.7	31.5	
4	MR 141	6/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.4	31.3	
5	MR 142	6/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	31.7	
6	MR 143	7/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.7	31.7	
7	MR 144	7/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	24.3	31.6	
8	MR 145	7/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	23.4	31.5	
9	MR146	8/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.3	
10	MR 147	9/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.9	31.4	
11	MR 148	10/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.9	
12	MR 149	10/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	25.0	31.6	
13	MR 150	11/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.4	31.6	
14	MR 151	12/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.6	
15	MR 152	12/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.9	
16	MR 153	13/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.9	
17	MR 154	14/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.6	

✓ Specifacation Limit Table For M30/20 on 7 days Age Min 67% of Total Compressive Strength

Min Required

20.1

30

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test conducted by Q.C Manager

Contractors Reps



Annex-8

: Contractor's progress report-January, 2017

Government of Nepal
Biratnagar Sub-Metropolitan City, Biratnagar, Nepal
Secondary Towns Integrated Urban Environment Improvement Project
(STIUEIP)
Project Implementation Unit(PIU)
Biratnagar, Nepal

Project Directorate (ADB)

**Sewerage and Drainage Network, Wastewater Treatment Plant, and Road and
Lanes Improvement Subproject**
STIUEIP/W/BRT/ICB-01

Monthly Progress Report – 38

January 2017



Consultants:



in association with
Brisbane City Enterprise Pty Ltd – Australia
AQUA Consultant and Associates Ltd – Bangladesh
Building Design Authority – Nepal
CEMAT Consultants – Nepal

Submitted by:

CTCE/KALIKA JOINT VENTURE

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Table of Contents

1. Introduction
2. Project Component
3. Salient Feature
4. Scope of Work
5. Physical Progress (Achievement in up to this Month)
 - a. Storm Drainage and Road Side Drain
 - b. Sewerage
 - c. Road and lane
 - d. Waste Water Treatment Plant
 - e. Production of Precast Slab at yard
 - f. Production of precast chamber element at yard
 - g. Hume pipe Production
6. Financial Progress and Cash Flow
7. Details of Safeguard Activities
8. Key Issues and Remarks
9. Resource Plan
 - a. Details of Contractor's Personnel's at site
 - b. Equipment's at Site
 - c. Material at Site
10. Conclusion

ANNEX

- i. Organization Chart
- ii. Site Photographs
- iii. Lab Reports

1 Introduction

Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), Department of Urban Development and Building Construction (DUDBC), under the Ministry of Urban Development (MUD) through the Government of Nepal (GoN) has received the loan from Asian Development Bank (ADB) Loan 2650-NEP. STIUEIP includes construction of Sewerage and Drainage Network, Wastewater Treatment Plant, Road and Lanes Improvement and additional of road side drain & water supply work. The main purpose of this project is to fascinate with better improvement of greenery urban city.

2 Project Components

The Town Integrated Urban Environmental Improvement Project (STIUEIP) consists of following Sub-Project Components:

➤ Drainage Network

The main aim of drainage network is to drain out storm water to the river side during the monsoon season and minimized the water pounding in the city

➤ Sewerage Network

Management of household sewerage project to the treatment plant in connection with chambers, manhole and pipes

➤ Wastewater Treatment Plant Subproject

Treatment of sewer product in plant located at Jatuwa. The treated water is drain out to singhya river and solid waste project used as fertilizer in farming.

➤ Road and Lanes Improvement Subproject

Existing road sections at different part of Biratnagar will be upgraded by extending road width and providing footpath.

➤ Road Side Drain and Water Supply Network (Additional)

Road side drain and water supply network is addition of scope of work in this project. Road side drain is proposed to discharge the rain water. Whereas water supply work is for relocation of existing water pipe lines to appropriate location as well as repair of damaged pipe lines during construction

3 Salient Feature

A. General Features	
Employer	Government of Nepal(GoN), Ministry of Urban Development Department of Urban Development and Building Construction
Funded By	Asian Development Bank & Government of Nepal
Project	Biratnagar Sub-Metropolitan City Secondary Towns Integrated Urban Environmental Improvement Project(STIUEIP)
Contract No.	STIUEIP/W/BRT/ICB-01
Location	Biratnagar Sub-Metropolitan City
Consultant	SMEC-Brisbane-AQUA-BDA-CEMAT
Contractor	CTCE-KALIKA JV.
Commencement Date	December 8th, 2013
Original Completion Date	25 May 2016
Revised Completion Date	09 March 2017
Original Contract Period	900 Days
Original Contract amount with PS & VAT	NRs 2,391,332,117.06
Revised Contract amount after VO # 03. with PS & VAT (under process)	NRs 2,974,788,517.62

4 Scope of works

The activities to be undertaken according to the Contract Agreement are as follows:

- a. To carry out all necessary topographic surveys, soils investigations, laboratory analysis or related investigations where necessary to supplement the data provided by the Employer.
- b. To prepare working drawings for all elements of the Works.
- c. To undertake all steps necessary for upgrading of roads and bridges, all related to access to the Site, or other related matters, where his opinion differ significantly from
- d. Preparation of stockyards for pipes, fittings and other materials and equipment.
- e. To take all steps necessary for the temporary or permanent diversion of services and the maintenance of services during the execution of the Works, including diversion of overhead with underground power lines, telephone ducts, water supply mains and distribution lines (pipes), sewers and other underground services as required along the route of the pipelines.
- f. To supply all pipes, valves, fittings and other materials and equipment required for construction of the Works. The Contractor's supply items may include manufacture, collection, transportation and delivery to Site. The Contractor will be responsible for ensuring that all procedures are adequately covered and that the materials fully confirm to the Contract requirements. These responsibilities will include all necessary charges or dues related to insurance, freight, taxes (including customs and excise duties, surcharges etc.) and all testing and inspections for quality control.
- g. To provide all necessary staff (including civil engineers, specialists, administrators, site supervision personnel) and workmen (including all necessary specialists, operators, tradesmen, artisans etc. in addition to semi-skilled and unskilled workers) necessary for execution of the Works through to completion. Where appropriate, the contractor shall provide all suitable facilities and accommodation for the staff and workmen and he shall make provision for all costs related to such provisions and for medical, re-location, taxes or other expenses.
- h. To provide all equipment, machinery, tools etc. and related spares, maintenance and consumables necessary for implementation of the Works.
- i. To provide all site offices, stores, workshops and facilities necessary for use by the Employer, Engineer and support staff and for the Contractor himself and his supporting staff.
- j. To undertake all operations necessary to complete the Works. These operations shall include: excavation, provision, haulage and installation of suitable bedding and backfill material and disposal of surplus excavated material; distribution, laying adjoining of pipes; installation of

all special pipe work, valves etc. and construction of all related concrete or other activities together with all testing and disinfection of completed Works. The Contractor's attention is drawn to the restricted working space between Rajbanshi Chowk to Rani, Biratnagar where the sewer pipes, drains and road/lane is to be laid in a narrow road. In this section work in addition to that associated with the trunk main, will include but not be limited to, removal and replacement of a sewer laid in the road and reinstatement of road surface.

- k. To liaise with other contractors on the site and to ensure harmonious co-operation with them so that conflicts are avoided and areas of common interest, constructional interface or potential overlaps are addressed without cost to the Employer or delays in completion.
- l. To prepare documentary records of the Works in the form of "as-built" drawings and GIS data, schedules etc., and to train staff of the Employer in the procedures for laying pipes, valves and fittings.
- m. All the above activities shall be performed in a professional way and with good engineering and/or constructional practice. Upon completion of the Works the scheme shall be fully operational with minimum disruption or inconvenience to interested parties, including land owners, and there shall be no outstanding matters requiring attention.

5. Physical Progress (Achievement till the month)

A. Storm Water Drain and Road Side Drain Sub-Project (Work Progress till the date)

SN	Description	Unit	Total Up to Previous Month	This Month	Total Up to this Month	Remarks
1	Northern Part	Rm	23916.56	80	23996.56	
2	Southern Part	Rm	5669.00	0	5669.00	
3	Road Side Drain	Rm	18679.40	3260.6	21940.00	

B. Sewerage Sub-Project (Work Progress till the date)

SN	Description	Unit	Total Up to Previous Month	This Month	Total Up to this Month	Remarks
1	Hume Pipe	Rm	10553.3	1461.7	12015.00	
2	HDPE Pipe	Rm	21699.25	1003.8	22703.05	
3	uPVC Pipe	Rm	4024.52	2103	6127.52	

4	Manhole (Brick and RCC)	Nos	1079	42	1121.00	
5	Sewer Inlet	Nos.	978	353	1331.00	
6	House Connection	Nos.	349	40	389.00	

C. Road improvement Works (Work Progress till the date)

SN	Description	Unit	Total Up to Previous Month	This Month	Total Up to this Month	Remarks
1	Asphalt pavement in R2 Road	Rm	2213	988	3201.00	
2	Gravel road	Rm	1580	2604	4184.00	

D. Wastewater Treatment Plant Sub-Project (Work Progress till the date)

S.N.	Description of Work	Progress	This month	Remarks
1	Anaerobic Pond	Excavation completed		
2	Facultative Pond	Excavation Completed		
3	Boundary wall construction	1278.00m		
4	Office cum lab building, WWTP, Jatuwa	Completed		
5	Workshop Building & Generator/Changing Building, WWTP, Jatuwa	Completed		
6	Sump Well	Under construction		
7	Sludge Drying Bed	Under construction		
8	Guard House	Under construction		
9	Road side drain	Under construction		
10	Outfall of diversion chamber	completed		
12	Chamber gates	2 Nos		
13	River training work	600m		

D. Production of Precast Items from Slab Casting Contractor's Yard, Katahari

SN	Description	Unit	Total Up to Previous Month	This Month	Total Up to this Month	Remarks
1	Slab	Rm	91405	1650	93055	
2	Precuts	Rm	11209	0	11209	
3	Kerbstone	Rm	23135	0	23135	
4	Manhole	Nos	2200	0	2200	
5	Sewer inlet	Nos	2074	150	2224	
6	House chamber	Nos	1346	0	1346	

F. Hume Pipe Production from Hume Pipe Production Factory, Itahari

SN	1	2	3	4	5	6	7	8	9	10	11
Diameter	200mm ?	300mm ?	350mm ?	400mm ?	450mm ?	500mm ?	600mm ?	700mm ?	900mm ?	1000mm ?	1600mm ?
No of Moulds	38	3	2	2	2	3	8	8	2	4	2
Production Till Previous Month	2123	328	216	370	84	551	963	1296	278	1011	373
This Month Production	0	0	0	0	0	0	0	0	0	0	0
Total Production	2123	328	216	370	84	551	963	1296	278	1011	373

H. Next month program

1. Road side drain.
2. Laying of sub base with proper compaction in roads
3. Precast production at contractor's yard.
4. Laying of sewerage pipe and installation of manhole, sewer inlet, house chamber
5. Relocation of water supply pipe.
6. Construction work of components of waste water treatment plant

6. Financial Progress and Cash Flow

Financial Progress

Installment Number	Total Bill Amount With Vat and PS(NRs)	Net Payable Amount (NRs.)	%	Remarks
IPC 01		200,940,000.00		Advance Payment 01
IPC 02	29,553,479.92	27,853,500.98		IPC 2
IPC 03	50,406,775.75	47,507,270.95		IPC 3
IPC 04	44,819,505.68	42,241,392.52		IPC 04
IPC 05	23,380,168.96	22,035,291.99		IPC 05
IPC 06	90,796,339.68	85,573,541.38		IPC 06
IPC 07	80,854,600.52	76,203,672.17		IPC 07
IPC 08	122,334,488.86	115,297,549.23		IPC 08
IPC 09	116,092,187.14	109,414,317.97		IPC 09
IPC 10	132,327,417.89	124,715,663.77		IPC 10
IPC 11	169,853,829.07	160,083,476.07		IPC 11
IPC 12	23,121,515.46	16,931,906.24		IPC 12
IPC 13	85,563,926.44	62,658,539.06		IPC 13
IPC 14	163,562,505.71	119,776,967.67		IPC 14
IPC 15	139,008,112.96	101,795,764.14		IPC 15
IPC 16	137,640,413.95	100,794,196.94		IPC 16
IPC 17	135,118,714.02	98,947,553.85		IPC 17
IPC 18	39,288,088.98	28,770,702.32		IPC 18
IPC 19	76081596.87	55,714,620.72		IPC 19
IPC 20	74,522,638.96	54,572,994.46		IPC 20
IPC 21	152,577,081.94	118,075,775.83		IPC 21
Total amount of Ipc=	1,886,903,388.77	1,769,904,698.27	69.93%	Progress Percentage WRT Contract amount after VO .02 With Vat and PS

Note: Withheld payment of IPC 21 is 76,775,775.84

Physical Progress

Installment Number	Total Bill Amount With Vat and PS(NRs)	Net Payable Amount (NRs.)	%	Remarks
IPC 01		200,940,000.00		Advance Payment 01
IPC 02	29,553,479.92	27,853,500.98		IPC 2
IPC 03	50,406,775.75	47,507,270.95		IPC 3
IPC 04	44,819,505.68	42,241,392.52		IPC 04
IPC 05	23,380,168.96	22,035,291.99		IPC 05
IPC 06	90,796,339.68	85,573,541.38		IPC 06
IPC 07	80,854,600.52	76,203,672.17		IPC 07
IPC 08	122,334,488.86	115,297,549.23		IPC 08
IPC 09	116,092,187.14	109,414,317.97		IPC 09
IPC 10	132,327,417.89	124,715,663.77		IPC 10
IPC 11	169,853,829.07	160,083,476.07		IPC 11
IPC 12	23,121,515.46	16,931,906.24		IPC 12
IPC 13	85,563,926.44	62,658,539.06		IPC 13
IPC 14	163,562,505.71	119,776,967.67		IPC 14
IPC 15	139,008,112.96	101,795,764.14		IPC 15
IPC 16	137,640,413.95	100,794,196.94		IPC 16
IPC 17	135,118,714.02	98,947,553.85		IPC 17
IPC 18	39,288,088.98	28,770,702.32		IPC 18
IPC 19	76081596.87	55,714,620.72		IPC 19
IPC 20	74,522,638.96	54,572,994.46		IPC 20
IPC 21	152,577,081.94	118,075,775.83		IPC 21
January 2017	180,000,000.00			
Total amount of Ipc=	2,066,903,388.77		76.00%	Progress Percentage WRT Contract amount after VO .02 With Vat and PS

7. Details of Safeguard activities

Contractor's is fascinating to apply safety measure at site during construction phase. Safety board, Diversion board, safety barriers, personnel's protection equipment to worker, spraying of water to minimize dust pollution

8. Key Issues and Remarks

Following issues were raised in this month

- Submitted Claim No.01 to 07 has not addressed up to this month.
- Lack of major BoQ item such as; Reinforcement, Brickwork, M25 Concrete, shoring etc.
- Delay in approval of VO.03
- Delay in relocation of telecom pole, cable and chamber in Koshi highway west side
- Damages of water supply pipe during excavation of drain and sewer line
- Difficult to maintain cash flow due to withheld of payment of IPC 21 till end of this month. (IPC 21 Approved dated 12 January 2017)

9. Mobilized Resource

A. Details of Contractor's Personnel at Site

S.N.	Designation	No.	Remarks
1	Project/ Contract Manager	1	
2	Design/ Construction Engineer	1	
3	Construction Engineer	2	
4	Site Engineers	5	
5	Quality Control Manager	1	
6	Office/ Bill Engineer	1	
7	Junior Engineer	10	
8	Sub-Overseer	6	
9	Mechanical In charge	1	
10	Accountant/ Office Manager	1	
11	Assist. Accountant	2	
11	Lab Assistant	3	
12	Site Supervisor	12	
13	Store Keeper	4	
14	Mechanics	4	
14	Light Drivers	6	
15	Driver / Machine Operator	52	
16	Other Supporting Staffs	38	

17	Skilled Labors	>300	
18	Unskilled Labors	> 500	

B. Details of Equipment at Site / Contractor's yard

S.N.	Particular	Model/Type	Capacity	Working Status		
				No of used Equipment	Status	Remarks
A	Vehicle and Equipment					
A.1	Excavators					
	Komatsu Long Boom PC200	PC200		1	Good	
	Komatsu Excavator PC200	PC200		2	Good	
	Komatsu Excavator PC120	PC 120		1	Good	
	Hundai Excavator PC200	PC 200		1	Good	
	Cat Excavator 320	Caterpillar		1	Good	
A.2	JCB					
	JCB Hydra	JCB		1	Good	
	CAT Loader	CAT		2	Good	
	CAT Backhoe	CAT		11	Good	
A.3	Crane/Teller					
	Crane with Teller			1	Good	
	Teller			1	Good	
A.4	Water Tanker					
	Water Tanker		12000 Lt.	1	Good	
	Water Tanker		6000Lt	2	Good	
A.5	Tractors/Tipper					
	Tractors	Indian	3 m ³	12	Good	
	Tipper		15 m ³	4	Good	
A.6	Service Vehicle				Good	
	Jeep	Pajero	5 door	4	Good	
	Pickup	Toyota	4 door	1	Good	
	Motorbike	125CC		10	Good	
A.7	Other Equipment and Tools					
	Kerb Stone Machine Set			1	Good	
	Generator	Jackson	125KVA	1	Good	
	Generator	Kirloskar	20KVA	2	Good	
	Generator	Kirloskar	10KVA	1	Good	
	Generator	Honda	5KVA	1	Good	
	Generator	Super	5KVA	1	Good	
	Generator	Lutian	2.5 KVA	1	Good	
	Welding Machine	Oswal,India	650amp	1	Good	

S.N.	Particular	Model/Type	Capacity	Working Status		
				No of used Equipment	Status	Remarks
	Welding Machine		350amp	1	Good	
	Welding Machine		250amp	1	Good	
	Diesel tank with Pump		60000 Ltr.	1	Good	
	Stand Drill Machine	India	1 HP	1	Good	
	Gas Cutter Set			1	Good	
	Pipe Cutter			1	Good	
	Hand Grinder			1	Good	
	Plate Compactor			2	Good	
	Monkey Jumper			3	Good	
B	Concreting Unit					
	Batching Plant CONMAT all Set	CONMAT, India	45 m3/ hr	1	Good	
	Electric Vibrator with Needle			10	Good	
	Bar Bending Machine		4 ton/hr	3	Good	
	Bar Cutter Machine		4 ton/hr	3	Good	
	Manual Mixture Machine			6	Good	
C	Roller					
	Pneumatic Tyre Roller			1	Good	
	Steel Roller			2	Good	
	Asphalt Concrete Production					
	Asphalt Concrete Plant		50 ton/ hr	1	Good	
D	Decanter			1	Good	
	Asphalt Paver Machine			1	Good	
	Air Compressor			1	Good	

10. Conclusion

Construction work activities is going progress even facing various hurdle during work. Delay in VO.03 and contractor's claim processing is imposing deaccelerate the contract work.

ANNEX

Photographs of the Month



Sump well of WWTP



Sludge Drying Bed of WWTP



Slope Preparation of Facultative Pond



Dewatering of Anaerobic Pond



Connection of Manhole and Sewer inlet by uPVC Pipe



Laying of sub base course for road improvement



Road side drain with with plaster and punning



Under Construction of Road side Drain

LAB REPORT SUMMARY

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
BIRATNAGAR Sub-Metropolitan City
Monthly Laboratory Testing Report
(For The Month OF- JANUARY 2017)

Consultants: SMEC-Brisbane-AQUA-CEMAT-BDA

Contractors: CTCE- KALIKA J/V

S. No.	Description of Material	Type of test	Total No. of Test upto previous month	Test Performed for this month				Total No. of Test upto This month	Remarks
				No. of Tests	Passed	Failed	Retest Recommended		
1	Granular Material/Gravel material	Sieve analysis	80	10	10	0		90	
2	SUB GRADE Preparation as per Specification	MDD & OMC	16	14	14	0		30	
		Field density	264	140	140	0		404	
		C.B.R	18	14	14	0		32	
3	BRICK WORK Required Test	Water Absorption	195	0	0	0		195	
		Compressive Strength	2521	160	150	10		2681	
4	Masonry Mortar (CM 7.05)	Compressive strength	3057	696	696	0		3753	
5	CONCRETE AGGREGATE Coarse aggregate (20 mm)	Sieve analysis (20 mm)	310	10	10	0		320	
		LAA	223	10	10	0		233	
		Specific Gravity	16	0	0	0		16	
		FI	236	10	10	0		246	
		ACV	260	10	10	0		270	
		Sieve analysis	250	44	44	0		294	
		Fine aggregate (Sand)							
6	CONCRETE MIX DESIGN Concrete M15/20, M20/20 M25/20, & M30/20	Concrete mix Design	76	0	0	0		76	
		Compressive strength	456	0	0	0		456	
		Slump test	73	0	0	0		73	

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S. No.	Description of Material	Type of test	Total No. of Test upto previous month	Test Performed for this month				Total No. of Test upto This month	Remarks
				No. of Tests	Passed	Failed	Retest Recommended		
7	<u>CEMENT Required Test</u>								
8	<u>OPC Cement</u>	Setting time	194	35	35	0		229	
		Normal Consistency	194	35	35	0		229	
	<u>CONCRETE</u>								
		Compressive strength	10345	612	612	0		10957	
9	<u>REINFORCEMENT</u>	Required Test							
		Reinforcement tore steel	80	0	0	0		80	
10	<u>PAVEMENT MATERIALS</u>								
		Sub Base Materials							
		Sieve analysis	76	48	48	0		124	
		MDD & OMC	13	9	9	0		22	
		CBR	9	9	9	0		18	
		Field density	168	90	90	0		258	
11	CS Base Crushed Stone Base Material Laying	Sieve analysis	76	34	34	0		110	
		MDD & OMC	9	11	11	0		20	
		C.B.R	7	11	11	0		18	
		FI & C.Ratio	76	34	34	0		110	
		LAA	77	34	34	0		111	
		SSS	19	34	34	0		53	
		AIV	76	34	34	0		110	
		Field Density & OMC	125	54	54	0		179	

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
BIRATNAGAR Sub-Metropolitan City
Monthly Laboratory Testing Report

STIUEIP

(For The Month OF- JANUARY 2017)

Consultants: SMEC-Brisbane-AQUA-CEMAT-BDA

Contractors: CTCE- KALIKA J/V

S. No.	Description of Material	Type of test	Total No. of Test upto previous month	Test Performed for this month				Total No. of Test upto This month	Remarks
				No. of Tests	Passed	Failed	Retest Recommended		
12	<u>ASHPHALT CONCRETE</u> Combine Mixed Individual Ca&FA Test Mix Design	Sieve analysis	9	30	30	0		39	
		FI	8	16	16	0		24	
		ACV	8	16	16	0		24	
		LAA	8	16	16	0		24	
		Sp gravity	4	0	0	0		4	
13	<u>BITUMEN TEST</u> 80/100 Bitumen As per DORbook section 600 Table 6.14/is 73	Penetration at25.c	2	0	0	0		2	
		Softening point(ring ball)	2	0	0	0		2	
		Flash point/Fire Point	2	0	0	0		2	
		Ductility at25.c	2	0	0	0		2	
		Specific at 25.c	2	0	0	0		2	
		Water Content	2	0	0	0		2	
		Loss on Heating for 5 hrs	2	0	0	0		2	
		Pen-of residue afte loss on Heating	2	0	0	0		2	
		Solubility in triclouroethylene	2	0	0	0		2	
14	Humpipe Test	Three Edge Bearing Load Test	7	0	0	0		7	200mm to 1600mm 1 each
15	MARSHALL MIX DESIGN	WEARING COURSE	1	0	0	0		1	
16	Marshall Stability Test	Bulk density	60	42	42	0		102	
		Stability	60	42	42	0		102	
		Flow	60	42	42	0		102	
		Air voides	60	42	42	0		102	

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Consultants: SMEC-Brisbane-AQUA-CEMAT-BDA

Contractors: CTCE- KALIKA J/V

S. No.	Description of Material	Type of test	Total No. of Test upto previous month	Test Performed for this month				Total No. of Test upto This month	Remarks
				No. of Tests	Passed	Failed	Retest Recommended		
		Bitumen extraction	20	16	16	0		36	
		Voids in Mineral Agg	60	42	42	0		102	
		Job mix in AC Plant	22	42	42	0		64	
17	<u>BITUMEN SPREAD TEST</u>								
	Prime coat	Application rate	20	28	28	0		48	
	Tack coat	Application rate	10	28	28	0		38	
18	<u>Machines/Equipment</u>								
	Caliberation of compressive	1000KN Manuall	2	0	0	0		2	
	Testing machine	500 KN Manuall	2	0	0	0		2	
	C.B.R Machine	50KN/30KN	2	0	0	0		2	
	Marshall Stability Machine	50KN/25KN	2	0	0	0		2	
19	<u>MISCELLANEOUS</u>								
	G.I Wire(Gablon Boxes)		5	0	0	0		5	
	Factory Test Report of Cement		8	0	0	0		8	
	Factory Test Report of Iron Steel		4	0	0	0		4	
	Factory Test Report of 80/100 Bitumen		2	0	0	0		2	
	Factory Test Report of UPVC/HDP Pipe		2	0	0	0		2	
	UPVC/HDP Pipe Test Result		2	0	0	0		2	
MDD/OMC = Max Dry Dennsity Optimum Moisture Content SSS = Sodium Sulphate Soundness ACV = Aggregtae Crushing Value CBR=California Bearing Ratio		LAA = Los Angeles Abrasion SE=Sand Equivqlent SMEC-Brisbane-AQUA-BDA-CEMAT Approved by C.S.E Checked by A.C.S.E		AIV=Aggregate Impact Value JMC=Job Mix Formula		C.R=Crushing Ratio		Submitted by Project Manager Prepaid by Q.C Manager Contractors Reps	

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

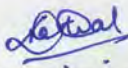
SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

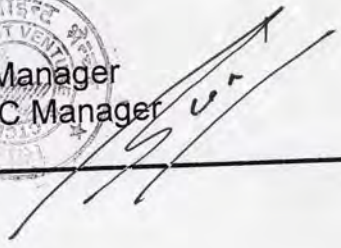
Description : Field Density Tests on CH:6+380 to 7+260 R-3 Road (DHARAMBAN Road)

SUB GRADE

P.G-1

SUB GRADE							
S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FD 35	13/1/2017	6+380	2.01	95.2	5.00	10
2			6+410	2.01	95.2	5.00	10
3			6+440	2.06	97.78	5.50	10
4			6+470	2.07	97.92	5.00	10
5			6+500	2.05	97.07	5.00	10
6			6+530	2.02	95.87	5.50	10
7			6+560	2.02	95.61	5.00	10
8			6+590	2.05	95.61	5.00	10
9			6+620	2.05	95.61	4.50	10
10			6+650	2.03	96.38	5.00	10
11			6+680	2.03	96.38	5.00	10
12			6+710	2.04	96.46	5.00	10
13			6+740	2.03	96.16	5.00	10
14			6+770	2.06	97.80	5.00	10
15			6+800	2.07	97.90	5.00	10
16			6+830	2.02	95.90	5.00	10
17			6+860	2.04	96.62	5.00	10
18			6+890	2.05	96.96	4.00	10
19			6+920	2.03	96.10	5.00	10
20			6+950	2.06	97.69	5.00	10
21			6+980	2.04	96.48	5.00	10
22			7+010	2.02	95.51	5.00	10
23			7+040	2.04	96.71	5.00	10
24			7+070	2.02	95.51	5.00	10
				2.110	95	OMC <9.50	

✓
 SMEC-Brisbane-AQUA-CEMAT-BDA
 Approved by C.S.E
 Test Checked by A.C.S.E 
 Consultant Reps

CTCE-KALIKA JV
 Submitted by Project Manager
 Test Conducted by Q.C Manager
 Contractors Reps 

**SUMMARY OF FIELD DENSITY TEST (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-2

SUB GRADE								
S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)	
25	FD 35	13/1/2017	7+140	2.06	97.7	4.00	10	
26			7+170	2.09	98.9	5.00	10	
27			7+200	2.04	96.71	5.00	10	
28			7+230	2.03	96.42	4.00	10	
29			7+250	2.01	95.20	4.50	10	
30			7+260	2.07	96.42	5.00	10	
				2.110	95	OMC <9.50		

SMEC-Brisbane-AQUA-CEMAT-BDA
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Test Checked by A.C.S.E
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on CH :R16 ,R13 & R26 Line

SUB GRADE

P.G-1

S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FD-36	13/01/2017	0+040	1.92	97.0	6.00	10
2			0+080	1.93	97.5	6.50	10
3			0+120	1.91	96.46	5.50	10
4			0+040 R-16 opp	1.96	98.99	5.00	10
5			0+080 R-16 opp	1.93	97.47	6.50	10
6			0+120 R-16 opp	1.95	98.48	6.00	10

Required (R-16 Line)

1.98

95

OMC <10.0

1	FD-37	13/01/2017	0+030	1.92	96.5	6.00	10
2			0+060	1.93	97.5	6.50	10
3			0+090	1.93	97.47	6.00	10
4			0+120	1.95	98.48	5.00	10
5			0+150	1.95	98.48	6.00	10
6			0+180	1.91	96.46	6.00	10

Required (R-13 Line)

1.98

95

OMC <10.40

1	FD-38	13/01/2017	0+030	1.94	98.48	6.00	10
2			0+060	1.89	95.94	6.00	10
3			0+090	1.94	98.48	6.00	10
4			0+120	1.89	95.94	6.00	10
5			0+150	1.92	97.46	6.00	10
6			0+180	1.95	98.98	6.00	10

Required (R-26 Line)

1.97

95

OMC <10.50

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps



CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



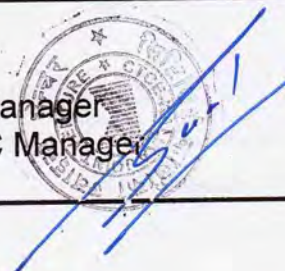
**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
Test Checked by A.C.S.E
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps



**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

[illegible]

**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
Test Checked by A.C.S.E
Consultant Reps

CTCE-KALIKA JAV
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps

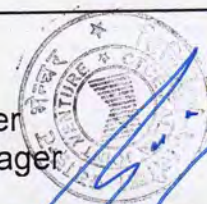
**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
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Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TESTS (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on CH:0+00 to 0+130 R-23 Line

SUB GRADE

P.G-1

SUB GRADE									
S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)		
1	FD 42A	22/1/2017	0+020	1.92	95.05	5.00	10		
2			0+050	1.92	95.05	5.50	10		
3			0+070	1.97	97.52	5.00	10		
4			0+100	1.97	97.52	5.00	10		
5			0+125	1.96	97.02	5.00	10		
				2.020	95	OMC <10.50			

SMEC-Brisbane-AQUA-CEMAT-BDA
 Approved by C.S.E
 Test Checked by A.C.S.E
 Consultant Reps

CTCE-KALIKA JN
 Submitted by Project Manager
 Test Conducted by Q.C Manager
 Contractors Reps

**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
Test Checked by A.C.S.E
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TESTS (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on CH:0+00 to 0+131 T3-L-33 A-Line

SUB GRADE

P.G-1

SUB GRADE							
S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FD 44	27/1/2017	0+010	1.91	96.46	5.00	10
2			0+025	1.92	96.97	5.00	10
3			0+050	1.92	96.97	5.00	10
4			0+075	1.94	97.98	5.00	10
5			0+100	1.93	97.48	5.00	10
6			0+125	1.94	97.98	5.00	10
				1.980	95	OMC <10.60	

SMEC-Brisbane-AQUA-CEMAT-BDA
 Approved by C.S.E
 Test Checked by A.C.S.E
 Consultant Reps

CTCE-KALIKA J/V
 Submitted by Project Manager
 Test Conducted by Q.C Manager
 Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TESTS (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on CH:0+00 to 0+164 T3-L-33 B-Line

SUB GRADE

P.G-1

SUB GRADE							
S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FD/44	27/1/2017	0+010	1.94	97.98	4.00	10
2			0+040	1.95	98.48	5.00	10
3			0+070	1.92	96.97	5.50	10
4			0+100	1.95	98.48	5.00	10
5			0+130	1.93	97.47	4.50	10
6			0+160	1.93	97.47	5.00	10
				1.980	95	OMC <10.00	

SMEC-Brisbane-AQUA-CEMAT-BDA
 Approved by C.S.E
 Test Checked by A.C.S.E
 Consultant Reps

CTCE-KALIKA J/V
 Submitted by Project Manager
 Test Conducted by Q.C Manager
 Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on CH:0+000 to 0+177 AMAR SEWA MARG

SUB GRADE

P.G-1

CSD CR-10							
S.N.	L/Ref. No.	Date	Location/ Area -CL	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FD 46	29/1/2017	0+010	1.94	97.45	5.00	10
2			0+040	1.93	96.74	5.00	10
3			0+070	1.90	95.26	5.50	10
4			0+100	1.89	95.02	5.00	10
5			0+130	1.92	96.33	4.00	10
6			0+170	1.92	96.33	4.00	10
				1.990	95	OMC <9.70	

SMEC-Brisbane-AQUA-CEMAT-BDA
 Approved by C.S.E
 Test Checked by A.C.S.E
 Consultant Reps

CTCE-KALIKA J/V
 Submitted by Project Manager
 Test Conducted by Q.C Manager
 Contractors Reps



**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

SUB GRADE

P.G-1

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
Test Checked by A.C.S.E *[Signature]*
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps



Biratnagar Sub-Metropolitan City

Description : Field Density Tests on R2 ch: 0+000 To 1+120 R2 Puspall Chowck Round About

SUB BASE LAYER

<p>✓</p> <p>SMEC-Brisbane-AQUA-CEMAT-BDA</p> <p>Approved by C.S.E</p> <p>Test Checked by A.C.S.E</p> <p>Consultant Reps</p>	<p>CTCE-KALIKA J/V</p> <p>Submitted by Project Manager</p> <p>Test Conducted by Q.C Manager</p> <p>Contractors Reps</p>
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SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)

FOR THE MONTH OF JANUARY 2017

P.G-1

Description : Field Density Tests on Ch:R-24 Line 0+00 to 0+384

SUB BASE LAYER

S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		Remarks
1	FD 29	24/1/2017	0+010 LHS	2.17	97.37	6.50	15
2			0+040 RHS	2.15	96.51	6.00	16
3			0+070 CL	2.15	96.51	6.00	15
4			0+100 RHS	2.18	98.06	6.50	16
5			0+130 LHS	2.18	98.06	6.00	16
6			0+150 CL	2.19	98.27	7.50	15.5
7			0+180 LHS	2.19	99%	6.00	15
8			0+220 RHS	2.18	98.09	7.00	15.5
9			0+260 CL	2.19	98.59	6.00	15
10			0+300 LHS	2.16	96.94	6.00	15
11			0+330 RHS	2.17	97.52	7.00	16
12			0+370 CL	2.17	97.52	5.50	16
Required				2.225	95%	OMC <11.20	15 CM

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)

FOR THE MONTH OF JANUARY 2017

P.G-1

Description : Field Density Tests on Ch:R-24 Line 0+00 to 0+384

SUB BASE LAYER

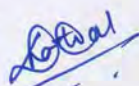
SUB BASE LAYER								
S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		Remarks	
1	FD 30	24/1/2017	0+010 CL	2.16	97.02	6.00	15	
2			0+050 LHS	2.16	97.02	6.50	15.5	
3			0+090 RHS	2.17	97.12	6.00	15	
4			0+130 CL	2.17	97.12	6.00	15	
5			0+150 LHS	2.18	97.87	6.00	16	
6			0+170 RHS	2.16	97.02	6.00	16	
Required				2.230	95%	OMC <9.50	15 CM	

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps



CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TEST (IS:2720:-PART-28)

FOR THE MONTH OF JANUARY 2017

P.G-1

Description : Field Density Tests on Ch:R-26 Line 0+00 to 0+180

SUB BASE LAYER

S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		Remarks
1	FD 31	30/1/2017	0+010 CL	2.18	97.83	6.00	15
2			0+050 LHS	2.16	96.87	6.00	15.5
3			0+090 RHS	2.19	98.14	6.00	15
4			0+130 CL	2.20	98.56	6.00	15
5			0+150 LHS	2.18	97.83	6.00	15
6			0+175 RHS	2.13	95.37	6.00	15.5
Required				2.230	95%	OMC <9.50	15 CM

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps



CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on R2 ch:3+420 to 3+800 RHS

CRUSHED STONE BASE LAYER

CRUSHED STONE BASE LAYER							
S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		Depth (CM)
1	FD 17	4/1/2017	3+400 LHS	2.30	99.57	6.00	15
2			3+440 RHS	2.29	99.13	6.00	15
3			3+460 CL	2.30	99.57	6.00	16
4			3+480 LHS	2.29	99.13	6.00	16
5			3+500 LHS	2.29	99.13	6.00	16
6			3+520 RHS	2.27	98.26	6.00	15.5
7			3+540 CL	2.29	99.13	5.00	15
8			3+560 RHS	2.28	98.70	6.00	15
9			3+580 RHS	2.28	98.70	5.50	15.5
10			3+600 RHS	2.28	98.70	6.00	15
11			3+620 LHS	2.29	99.13	5.00	15
12			3+640 RHS	2.30	99.56	5.50	15.5
13			3+660 CL	2.28	98.70	5.50	15
14			3+670 LHS	2.30	99.56	6.00	15.5
15			3+690 RHS	2.28	98.70	6.00	15
16			3+700 RHS	2.28	98.70	6.00	15
17			3+720 LHS	2.27	98.26	5.00	15
18			3+740 RHS	2.29	99.13	5.00	15.5
				2.310	98%	OMC <6.30	15 cm

✓
SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



Biratnagar Sub-Metropolitan City

Description : Field Density Tests on R2 ch:3+420 to 3+800 RHS

CRUSHED STONE BASE LAYER

SMEC-Brisbane-AQUA-CEMAT-BDA

Test Checked by A.C.S.E

Consultant Reps

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on R2 ch:3+800 to 4+140 RHS

CRUSHED STONE BASE LAYER

S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FD 18	5/1/2017	3+800 RHS	2.30	99.14	6.00	16
2			3+820 LHS	2.30	99.14	6.00	17
3			3+840 CL	2.30	99.14	5.50	15
4			3+860 RHS	2.31	99.57	6.00	15
5			3+880 LHS	2.29	98.71	6.00	15
6			3+900 CL	2.31	99.57	6.00	15
7			3+920 LHS	2.29	98.71	6.00	15
8			3+940 RHS	2.28	98.27	6.00	16
9			3+960 CL	2.28	98.27	6.00	16
10			3+980 LHS	2.31	99.57	6.00	15
11			4+000 RHS	2.31	99.57	6.00	15
12			4+020 LHS	2.28	98.27	6.00	15.5
13			4+040 RHS	2.28	98.27	5.00	15
14			4+060 LHS	2.31	99.57	6.00	16
15			4+080 CL	2.30	99.13	5.50	16
16			4+100 RHS	2.28	98.27	6.00	15
17			4+120 LHS	2.29	98.71	5.50	15
18			4+140 CL	2.31	99.57	6.00	15.5
				2.320	98%	OMC <6.20	15 cm

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



**SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)
FOR THE MONTH OF JANUARY 2017**

CRUSHED STONE BASE LAYER

<p>SMEC-Brisbane-AQUA-CEMAT-BDA</p> <p>Approved by C.S.E</p> <p>Test Checked by A.C.S.E</p> <p>Consultant Reps</p>	<p>CTCE-KALIKA J/V</p> <p>Submitted by Project Manager</p> <p>Test Conducted by Q.C Manager</p> <p>Contractors Reps</p>
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SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

SUMMARY OF FIELD DENSITY TES (IS:2720:-PART-28)

FOR THE MONTH OF JANUARY 2017

Description : Field Density Tests on R2 ch:1+000 to 1+120 (LHS& RHS) &2+270 to 2+350(RHS)

CRUSHED STONE BASE LAYER

S.N.	L/Ref. No.	Date	Location/ Area				THICKNESS (CM)
1	FD-20	9/1/2017	1+030 LHS	2.28	99.1	5.50	15.5
2			1+060 RHS	2.29	99.6	6.00	15.5
3			1+090 CL	2.29	99.56	5.00	15
4			1+120 RHS	2.28	99.13	6.00	15
5			0+010 EAST	2.29	99.56	6.00	15
6			0+010 WEST	2.27	98.70	5.00	16

Required (ch:1+000 to 1+120) 2.300 98 OMC <6.70 15 CM

1	FD-21	9/1/2017	2+280 LHS	2.30	99.57	5.00	16
2			2+300 RHS	2.30	99.57	6.00	16
3			2+310 CL	2.30	99.57	5.00	16
4			2+330 LHS	2.29	99.13	6.00	15.5
5			2+340 RHS	2.30	99.57	6.00	15.5
6			2+350 CL	2.29	99.13	5.00	16

Required (ch:2+270 to 2+350 RHS) 2.300 98 OMC <6.70 15 CM

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



**Secondary Towns Integrated Urban Environmental Improvement Project
Biratnagar Sub-Metropolitan City**

SUMMARY OF HOT MIX ASPHALT CONCRETE WEARING COURSE TEST RESULTS

Contract Package: STUEIP/W/BRT/ICB/01

MONTH: JANUARY 2017

S. No.	LAB REF. NO.	Date of Laying	Location of Work ch:	Mix Agg Gradation % Passing Sieve Sizes mm								PRIME COAT Application		TACK COAT Application		Bitumen Content From Extraction Test %	Mix Density gm/cc	Air Voids %	VMA %	Stability N	Flow mm
				20	12.5	9.5	4.75	2.00	0.425	0.18	0.075	Dist. Spray Rate Lit/m2	Avg. Tray Spray Rate Lit/m2	Dist. Spray Rate Lit/m2	Avg. Tray Spray Rate Lit/m2						
1	20	17/1/2017	3+430 to 3+630 & 3+430 to 3+470 LHS	100	93.65	84.32	58.05	48.09	26.27	13.14	6.36	1.01	1.01	0.48	0.47	5.60	2.322	4.29	16.98	11533	2.83
2	21	17/1/2017	3+430 to 3+630 & 3+430 to 3+470 LHS	100	93.22	84.31	58.24	48.07	26.02	13.30	6.09	1.01	1.00	0.48	0.47	5.65	2.349	3.09	16.04	10858	3.03
3	22	18/1/2017	3+950 to 4+170 & 3+630 to 3+710	100	93.22	84.10	58.67	47.86	24.97	12.25	5.79	1.01	1.00	0.45	0.48	5.64	2.340	3.13	16.36	10021	3.13
4	23	18/1/2017	3+950 to 4+170 & 3+630 to 3+710	100	93.22	84.30	58.60	47.70	26.05	12.10	6.08	1.01	1.00	0.45	0.50	5.65	2.346	3.22	16.15	10001	3.42
5	24	19/1/2017	3+710 to 3+950	100.0	94.49	84.54	58.49	47.05	24.6	12.95	5.75	1.01	1.02	0.48	0.49	5.57	2.351	3.11	15.89	10187	3.50
6	25	19/1/2017	3+710 to 3+950	100.0	94.49	84.54	59.60	48.05	25.6	13.15	5.64	1.00	1.02	0.48	0.49	5.56	2.339	3.62	16.33	10220	3.15
7	26	23/1/2017	3+550 to 4+170	100.0	93.64	83.05	59.54	49.16	25.01	12.30	5.41	1.02	1.04	0.50	0.50	5.59	2.345	3.37	16.15	11178	3.27
8	27	23/1/2017	3+550 to 4+170	100.0	93.22	82.42	59.11	48.52	24.79	12.08	5.30	1.02	1.03	0.50	0.50	5.60	2.343	3.43	16.23	11098	3.20
9	28	24/1/2017	3+575 to 4+170 RHS	100.0	93.01	82.52	59.53	48.51	24.99	12.38	5.60	1.01	1.01	0.48	0.51	5.61	2.322	4.26	16.99	11337	3.18
10	29	24/1/2017	3+575 to 4+170 RHS	100.0	93.43	83.14	59.92	48.69	24.83	12.43	5.75	1.01	1.01	0.48	0.51	5.68	2.332	3.76	16.68	11816	3.20
11	30	25/1/2017	0+00 to 0+100 LHS Puspall Chowck	100.0	96.19	86.44	60.38	48.31	25	12.71	5.30	1.03	1.02	0.51	0.51	5.60	2.326	4.12	16.83	11736	3.25
12	31	25/1/2017	0+00 to 0+100 LHS Puspall Chowck	100.0	95.55	86.22	59.72	47.85	24.32	12.24	5.14	1.04	1.02	0.47	0.51	5.65	2.339	3.50	16.39	11257	3.35
13	32	30/1/2017	3+295 to 3+430 LHS	100.0	96.61	86.23	60.07	47.26	24.27	12.20	5.10	1.02	1.02	0.49	0.50	5.58	2.338	3.42	16.20	11260	3.50
14	33	31/1/2017	3+295 to 3+430 LHS 2 nd line	100.0	96.62	86.20	60.17	47.2	25.1	11.20	5.50	1.02	1.02	0.49	0.50	5.60	2.385	3.50	16.50	11380	3.60
Specifications				100	80-100	68-90	50-79	36-67	17-44	9-29	3-10	1.0 kg/m2 ± 5%		0-4 to 0-6 Kg/m2		5-6	Min-2.354	3-6 %	≥ 15	≥ 8500	2-4

Remarks:

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
Test Checked by A.C.S.E
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractor Reps



Secondary Towns Integrated Urban Environmental Improvement Project
Biratnagar Sub-Metropolitan City

Daily Application Rate Check for Priming work

Contract Package :STUEIP/W/BRT/ICB-01

Type of Bitumen:80/100 P.G

Cutter Percentage:MC 70:MC30

SUMMARY FOR THE MONTH OF JANUARY 2017

[illegible]

Required specification for Prime coat 1.0 Lit/M2 \pm 5% Specific Gravity of Bitumen 1.025

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved By C.S.E
Test Checked by A.C.S.E
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted By Q.C Manager
Contractors Reps

SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT													
Biratnagar Sub-Metropolitant City													
SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M20/20 , M25/20 & M30/20 Work Mix													
FOR THE MONTH OF JANUARY 2017													
S.N.	Lab Ref No.	Date of Casting	Deatails of Mix	Location Structure	Ratio by Volume				Type of Material		Cube Crushing ,N/mm2		Remarks
					water	Cement	Sand	Aggregates	Cement Brand	Aggregate/Sand	7 days	28-Days	
1	649	9/12/2016	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	18.30	26.74	
2	650	9/12/2016	M20Work Mix	R-24 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.59	22.00	
3	651	10/12/2016	M20Work Mix	R-5 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.44	21.70	
4	652	10/12/2016	M20Work Mix	R-3 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.00	21.19	
5	653	10/12/2016	M20Work Mix	R-37 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.44	22.07	
6	654	10/12/2016	M20Work Mix	R-37 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.96	22.44	
7	655	22/12/2016	M30 Work Mix	Slum Well 1 st Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	22.89	31.85	Add mix=0.5%
8	656	22/12/2016	M30 Work Mix	Slum Well 1 st Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	22.89	32.22	Add mix=0.5%
9	657	23/12/2016	M20Work Mix	S-9 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	17.11	22.00	
10	658	24/12/2016	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	20.74	26.52	
11	659	25/12/2016	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	22.07	26.81	
12	660	3/1/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	20.74	26.81	
Specifacation Limit Table For M20/20 on 7 days Age Min 67% of Total Compressive Strength											Min Required	13.4	20
Specifacation Limit Table For M25/20 on 7 days Age Min 67% of Total Compressive Strength											Min Required	16.75	25
Specifacation Limit Table For M30/20 on 7 days Age Min 67% of Total Compressive Strength											Min Required	20.1	30
SMEC-Brisbane-AQUA-BDA					CTCE-KALIKA J/V								
Approved by Construction Supervision Engineer/CSE					Submitted by Project Manager								
Test checked by A.C.S.E					Test conducted by Q.C Manager								
Consultants Reps					Contractors Reps								

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

SUMMERY OF LAB TEST RESULT OF SUB GRADE (For the Month of JANUARY 2017)

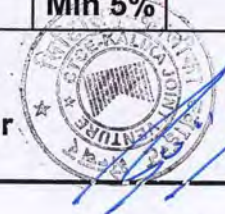
S.N.	LAB REF. NO.	DESCRIPTION OF MATERIAL	Line	Chanage/Location	Modified ProctorGm/CC		CBR %	REMARKS
					MDD	OMC %		
1	MR 35	Sub Grade	Dharam badh Road	6+380 to 7+280	2.110	9.50	7.25	
2	MR 36	Sub Grade	R16 Line East & West	0+000 to 0+180	1.980	10.00	6.10	
3	MR 37	Sub Grade	R-13 Line	0+00 to 0+180	1.980	10.40	6.30	
4	MR 38	Sub Grade	R-26 Line	0+00 to 0+180	1.970	10.50	6.20	
5	MR 39	Sub Grade	R-17 Line	0+000 to 0+225	1.980	9.70	7.1	
6	MR 40	Sub Grade	R-24 Line	0+000 to 0+384	1.975	9.70	6.0	East
7	MR 41	Sub Grade	R-27 Line	0+000 to 0+183	1.970	10.50	6.0	
8	MR 42	Sub Grade	R-24 Line	0+000 to 0+130	1.990	10.50	6.5	West
9	MR 43	Sub Grade	R-23 Line	0+000 to 0+130	2.020	10.50	7.5	
10	MR 44	Sub Grade	R- T3L-33 Line	0+000 to 0+235	1.985	10.50	7.0	
11	MR 45	Sub Grade	R-T3L33 A Line	0+000 to 0+131	1.980	10.60	6.50	
12	MR 46	Sub Grade	R-T3L33 B Line	0+000 to 0+162	1.980	10.00	6.25	
13	MR 47	Sub Grade	R-26 Amar sewa Marg	0+000 to +177	1.990	9.70	6.10	
14	MR 48	Sub Grade	Devi Marg	0+000 to 0+150	1.985	10.50	6.15	

AS PER Standard Specification For Road and Bridge works Section 1003(1)/AASHTO T 193-81

Min 5%

SMEC-Brisbane-AQUA-CEMAT-BDA
Approved by C.S.E
Test Checked by A.C.S.E
Consultant Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test Conducted by Q.C Manager
Contractors Reps



SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

STIUEIP

MONTHLY Test Result Summary Sheet For The Month of **JANUARY 2017**

SUB BASE (Process Control)

According to Part 2. Section 6A-Technical Specifications & DOR Specification Section 1201(3)C Physical Requirement

P.G-1

SN No	LAB Ref NO	Date Tested	Location/ Chainage/Station	Grading sieve size (mm) (% passing by weight)								Lab. MDD (g/cc)	Soaked CBR (%)	Lab. OMC (%)	Remarks
				63	37.5	20	10	5	2.360	1.18	0.075				
1	96	1/1/2017	1+050 Puspall Chowck	100	82.73	61.80	47.23	36.92	27.88	20.08	5.55				
2	97	1/1/2017	1+080 Puspall Chowck	100	80.22	59.81	45.66	35.77	26.32	18.64	6.39				
3	98	2/1/2017	1+100 Puspall Chowck	100	86.09	65.18	50.99	39.42	28.27	19.49	7.90				
4	99	2/1/2017	1+110 Puspall Chowck	100	88.73	70.57	58.28	48.47	37.31	23.04	5.30				
5	100	2/1/2017	Puspall Chowck Round About	100	87.74	71.88	60.37	49.54	37.22	21.75	5.58				
6	101	2/1/2017	Puspall Chowck Round About	100	89.75	67.88	55.92	45.93	34.92	21.41	6.47				
7	102	2/1/2017	Puspall Chowck Round About	100	91.69	72.28	60.25	49.61	38.00	24.86	6.94				
8	103	2/1/2017	1+000 to 1+120 R2 Road	100	91.05	71.03	58.60	47.46	35.96	22.86	6.73	2.25	45.00	8.50	
9	104	10/1/2017	R-19 Line 0+000 to 0+230	100	90.19	71.55	58.98	48.05	36.00	22.80	6.89	2.23	42.00	9.50	
10	105	10/1/2017	R-19 Line 0+000 to 0+230	100	89.96	71.26	58.38	46.88	34.80	21.49	6.72				
11	106	10/1/2017	R-19 Line 0+000 to 0+230	100	87.95	69.56	57.16	46.61	32.59	20.98	6.61				
12	107	10/1/2017	R-19 Line 0+000 to 0+230	100	85.41	68.94	55.13	44.17	30.71	19.43	6.32				
13	108	10/1/2017	R-19 Line 0+000 to 0+230	100	87.24	69.72	57.74	47.51	33.49	20.87	6.57				
14	109	10/1/2017	R-16 Line 0+000 to +215	100	85.18	66.83	54.87	44.96	31.67	19.81	7.24	2.22	40.00	10.00	
15	110	10/1/2017	R-16 Line 0+000 to +215	100	86.58	68.27	54.15	43.23	30.02	18.36	6.16				
Required Specification				100	65-95	50-85	40-75	30-60	20-45	15-37	4 to 15		≥ 30		

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps

SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

STIUEIP

MONTHLY Test Result Summary Sheet For The Month of **JANUARY 2017**

SUB BASE (Process Control)

According to Part 2. Section 6A-Technical Specifications & DOR Specification Section 1201(3)C Physical Requirement

P.G-2

According to Part 2.Section 6A-I echnical Specifications&DOR Specification Section 120 (9/3/11) Physical Requirements															
SN No	LAB Ref NO	Date Tested	Location/ Chainage/Station	Grading sieve size (mm)							Lab. MDD (g/cc)	Soaked CBR (%)	Lab. OMC (%)	Remarks	
				(% passing by weight)											
				63	37.5	20	10	5	2.360	1.18	0.075				
16	111	10/1/2017	R-16 Line 0+000 to +215	100	88.20	70.99	56.57	44.85	32.14	19.98	6.82				
17	112	10/1/2017	R-16 Line 0+000 to +215	100	90.51	58.79	47.00	34.40	20.98	20.98	5.98				
18	113	10/1/2017	R-16 Line 0+000 to +215	100	89.00	71.00	97.20	45.20	33.44	20.21	6.56				
19	114	10/1/2017	R-1 22Line 0+00 to 0+254	100	90.87	72.58	58.04	47.09	32.63	20.11	6.39				
20	115	10/1/2017	R-1 22Line 0+00 to 0+254	100	90.70	72.49	57.61	46.66	33.59	21.79	6.03				
21	116	10/1/2017	R-1 22Line 0+00 to 0+254	100	91.11	74.11	59.44	46.69	33.46	22.62	6.56				
22	117	10/1/2017	R-1 22Line 0+00 to 0+254	100	87.57	68.84	54.54	42.96	30.68	19.78	6.24				
23	118	10/1/2017	R-1 22Line 0+00 to 0+254	100	85.59	66.53	50.48	42.11	30.03	19.77	6.17	2.22	45.00	10.50	
24	119	10/1/2017	R-17 Line 0+000 to 0+255	100	86.89	70.02	54.31	43.56	30.75	19.57	6.33				
25	120	10/1/2017	R-17 Line 0+000 to 0+255	100	88.30	70.02	56.08	43.87	34.54	23.39	6.03				
26	121	10/1/2017	R-17 Line 0+000 to 0+255	100	87.54	70.80	59.90	46.68	35.71	22.13	5.61				
27	122	10/1/2017	R-17 Line 0+000 to 0+255	100	88.37	74.91	64.60	49.83	36.38	20.12	6.36				
28	123	10/1/2017	R-17 Line 0+000 to 0+255	100	88.38	73.06	63.00	46.81	31.49	20.61	5.88	2.21	47.00	11.00	
29	124	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	84.32	66.66	52.40	38.33	27.77	19.71	7.02				
30	125	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	85.76	66.89	52.81	39.38	29.22	23.47	6.09				
Required Specifacation				100	65-95	50-85	40-75	30-60	20-45	15-37	4 to 15		≥ 30		

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps



CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

STIUEIP

Biratnagar Sub-Metropolitan City
MONTHLY Test Result Summary Sheet For The Month of JANUARY 2017

SUB BASE (Process Control)

According to Part 2. Section 6A-Technical Specifications & DOR Specification Section 1201(3)C Physical Requirement											P.G-3			Remarks	
SN No	LAB Ref NO	Date Tested	Location/ Chainage/Station	Grading sieve size (mm)							Lab. MDD	Soaked CBR	Lab. OMC		
				(% passing by weight)							(g/cc)	(%)	(%)		
				63	37.5	20	10	5	2.360	1.18	0.075				
31	126	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	87.02	67.23	52.61	40.20	29.64	22.84	6.56				
32	127	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	87.80	68.29	53.56	41.40	30.88	24.12	5.81				
33	128	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	87.32	68.75	53.75	40.70	31.25	24.81	6.60				
34	129	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	87.49	69.45	54.46	41.06	32.12	24.91	6.44				
35	130	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	92.09	71.41	55.28	45.09	32.25	23.99	6.07				
36	131	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	92.08	71.43	57.50	44.64	31.49	23.57	6.50				
37	132	15/1/2017	5+480 to 6+380 Dharam Badh Road	100	91.06	71.58	58.33	46.54	33.28	24.32	6.58	2.220	40.20	10.20	
38	133	16/1/2017	0+00 to 0+384 R-24 Line	100	86.31	65.06	50.40	38.29	31.07	20.73	5.69				
39	134	16/1/2017	0+00 to 0+384 R-24 Line	100	91.20	70.75	56.30	40.21	32.35	20.69	5.79	2.225	42.50	11.20	
40	135	16/1/2017	0+000 to 0+384 R-24 Line	100	90.19	71.02	54.82	39.00	30.73	21.39	5.69				
41	136	18/1/2017	0+00 to 0+183 R-27 Line	100	90.84	70.98	54.19	40.49	31.16	21.56	6.64	2.230	40.50	9.50	
42	137	18/1/2017	0+00 to 0+183 R-27 Line	100	89.17	69.78	52.70	38.99	27.96	20.13	6.36				
43	138	18/1/2017	0+00 to 0+183 R-27 Line	100	86.06	68.97	52.02	38.57	27.89	20.49	6.98				
44	139	19/1/2017	0+000 to 0+130 R-23 Line	100	88.42	67.66	52.52	39.16	30.41	19.96	6.25				
45	140	19/1/2017	0+000 to 0+130 R-23 Line	100	88.53	66.18	51.81	38.30	27.64	17.65	6.18				
46	141	20/1/2017	0+000 to 0+130 R-26 Line	100	87.16	69.55	55.01	42.15	30.73	23.67	6.43	2.22	41.50	10.50	
47	142	20/1/2017	0+000 to 0+130 R-26 Line	100	88.36	72.30	58.90	44.21	31.12	22.84	6.26				
48	143	20/1/2017	0+000 to 0+130 R-26 Line	100	87.82	71.16	58.05	43.38	32.13	21.90	5.42				
Required Specification				100	65-95	50-85	40-75	30-60	20-45	15-37	4 to 15		≥ 30		

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitan City

SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

P.G-1

FOR THE MONTH OF JANUARY 2017

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Initial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
1	527	KOSHI	R-5 Line Work Mix	1:4 by volume	5/12/2016	38.40	220	325	12/12/2016	6.00	1/1/2017	7.90	
2	528	KOSHI	R-5 Line Work Mix	1:4 by volume	5/12/2016	38.40	220	325	12/12/2016	6.00	1/1/2017	7.90	
3	529	KOSHI	WWTP Boundary Wall	1:4 by volume	6/12/2016	37.10	225	310	13/12/2016	5.90	3/1/2017	8.00	
4	530	KOSHI	R-31 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.30	4/1/2017	8.00	
5	531	KOSHI	R-31 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.10	4/1/2017	8.00	
6	532	KOSHI	R-31 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	5.90	4/1/2017	8.00	
7	533	KOSHI	WWTP Boundary Wall	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	5.70	4/1/2017	7.80	
8	534	KOSHI	WWTP Boundary Wall	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.30	4/1/2017	7.90	
9	535	KOSHI	R-5 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.00	4/1/2017	7.90	
10	536	KOSHI	R-3 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.10	4/1/2017	8.00	
11	537	KOSHI	R-28 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	5.70	4/1/2017	7.90	
12	538	KOSHI	R-3 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.30	4/1/2017	8.00	
13	539	KOSHI	R-5 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.10	4/1/2017	8.00	
14	540	KOSHI	R-28 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	6.40	4/1/2017	7.90	
15	541	KOSHI	R-22 Line Work Mix	1:4 by volume	7/12/2016	37.70	210	340	14/12/2016	5.60	4/1/2017	7.90	
						MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2					

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test conducted by Q.C Manager
Contractore Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitant City

SUMMERY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

P.G-2

FOR THE MONTH OF JANUARY 2017

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Initial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
16	542	KOSHI	R-7 Line Work mix	1:4 by volume	8/12/2016	33.00	235	350	15/12/2016	6.10	5/1/2017	7.90	
17	543	KOSHI	R-5 Line Work mix	1:4 by volume	8/12/2016	38.00	235	350	15/12/2016	6.50	5/1/2017	8.00	
18	544	KOSHI	R-3 Line Work Mix	1:4 by volume	8/12/2016	38.00	235	350	15/12/2016	6.40	5/1/2017	8.20	
19	545	KOSHI	R-37 Line Work Mix	1:4 by volume	8/12/2016	38.00	235	350	15/12/2016	6.40	5/1/2017	7.90	
20	546	KOSHI	WWTP Boundary Wall	1:4 by volume	8/12/2016	38.00	235	350	15/12/2016	6.40	5/1/2017	7.90	
21	547	KOSHI	WWTP Boundary Wall	1:4 by volume	8/12/2016	38.00	235	350	15/12/2016	6.30	5/1/2017	7.80	
22	548	KOSHI	R-27 Line Work Mix	1:4 by volume	9/12/2016	37.60	245	350	16/12/2016	6.30	6/1/2017	8.00	
23	549	KOSHI	R-37 Line Work Mix	1:4 by volume	9/12/2016	37.60	245	350	16/12/2016	6.40	6/1/2017	7.80	
24	550	KOSHI	R-5 Line Work mix	1:4 by volume	9/12/2016	37.60	245	350	16/12/2016	6.70	6/1/2017	8.00	
25	551	KOSHI	R-3 Line Work mix	1:4 by volume	9/12/2016	37.60	245	350	16/12/2016	6.40	6/1/2017	7.90	
26	552	KOSHI	WWTP Boundary Wall	1:4 by volume	9/12/2016	37.60	245	350	16/12/2016	6.50	6/1/2017	8.20	
27	553	KOSHI	R-31 Line Work mix	1:4 by volume	9/12/2016	37.60	245	350	16/12/2016	6.50	6/1/2017	7.90	
28	554	KOSHI	R-31 Line Work mix	1:4 by volume	9/12/2016	37.60	245	350	16/12/2016	6.30	6/1/2017	7.90	
29	555	KOSHI	R-5 Line Work mix	1:4 by volume	10/12/2016	36.90	160	270	17/12/2016	6.30	7/1/2017	8.00	
30	556	KOSHI	R-6 Line Work mix	1:4 by volume	10/12/2016	36.90	160	270	17/12/2016	6.10	7/1/2017	8.00	
						MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2					

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps

CTCE-KALIKA JV
Submitted by Project Manager
Test conducted by Q.C Manager
Contractore Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitant City

SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF JANUARY 2017

P.G-3

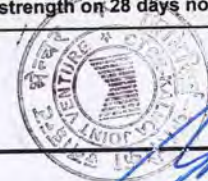
S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Initial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
31	557	KOSHI	R-37 Line Work Mix	1:4 by volume	10/12/2016	36.90	160	270	17/12/2016	6.30	7/1/2017	8.20	
32	558	KOSHI	WWTP Boundary Wall	1:4 by volume	10/12/2016	36.90	160	270	17/12/2016	6.30	7/1/2017	8.00	
33	559	KOSHI	WWTP Boundary Wall	1:4 by volume	10/12/2016	36.90	160	270	17/12/2016	6.40	7/1/2017	7.90	
34	560	KOSHI	R-37 Line Work Mix	1:4 by volume	11/12/2016	36.00	160	270	18/12/2016	6.50	8/1/2017	7.80	
35	561	KOSHI	R-31 Line Work Mix	1:4 by volume	12/12/2016	36.90	160	270	19/12/2016	6.10	9/1/2017	8.30	
36	562	KOSHI	R-37 Line Work Mix	1:4 by volume	12/12/2016	36.90	160	270	19/12/2016	6.50	9/1/2017	8.20	
37	563	KOSHI	R-5 Line Work Mix	1:4 by volume	12/12/2016	36.90	160	270	19/12/2016	6.50	9/1/2017	8.00	
38	564	KOSHI	WWTP Boundary Wall	1:4 by volume	13/12/2016	37.40	210	275	20/12/2016	6.50	10/1/2017	8.00	
39	565	KOSHI	WWTP Boundary Wall	1:4 by volume	13/12/2016	37.40	210	275	20/12/2016	6.00	10/1/2017	8.20	
40	566	KOSHI	WWTP Boundary Wall	1:4 by volume	13/12/2016	37.40	210	275	20/12/2016	6.70	10/1/2017	8.30	
41	567	KOSHI	R-7 Line Work Mix	1:4 by volume	13/12/2016	37.40	210	275	20/12/2016	6.50	10/1/2017	8.00	
42	568	KOSHI	R-5 Line Work Mix	1:4 by volume	13/12/2016	37.40	210	275	20/12/2016	6.70	10/1/2017	8.20	
43	569	KOSHI	R-37 Line Work Mix	1:4 by volume	13/12/2016	37.40	210	275	20/12/2016	6.30	10/1/2017	7.80	
44	570	KOSHI	R-3 Line Work Mix	1:4 by volume	14/12/2016	37.40	175	280	21/12/2016	6.50	11/1/2017	8.30	
45	571	KOSHI	WWTP Boundary Wall	1:4 by volume	14/12/2016	37.40	175	280	21/12/2016	6.30	11/1/2017	8.20	

MIN 45m Max 600m

Required strength on 28 days not less than 7.5 N/MM2

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultant's Reps

CTCE-KALIKA JV
Submitted by Project Manager
Test conducted by Q.C Manager
Contractore Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitant City

SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF JANUARY 2017

P.G-4

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Initial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
46	572	KOSHI	WWTP Boundary Wall	1:4 by volume	14/12/2016	37.40	175	280	21/12/2016	6.30	11/1/2017	8.00	
47	573	KOSHI	WWTP Boundary Wall	1:4 by volume	15/12/2016	37.00	215	310	22/12/2016	6.70	12/1/2017	8.40	
48	574	KOSHI	R-37 Line Work Mix	1:4 by volume	15/12/2016	37.00	215	310	22/12/2016	6.40	12/1/2017	8.40	
49	575	KOSHI	R-37 Line Work Mix	1:4 by volume	15/12/2016	37.00	215	310	22/12/2016	6.40	12/1/2017	8.40	
50	576	KOSHI	R-5 Line Work Mix	1:4 by volume	15/12/2016	37.00	215	310	22/12/2016	6.50	12/1/2017	8.70	
51	577	KOSHI	R-5 Line Work Mix	1:4 by volume	15/12/2016	37.00	215	310	22/12/2016	6.70	12/1/2017	8.40	
52	578	KOSHI	WWTP Boundary Wall	1:4 by volume	15/12/2016	37.00	215	310	22/12/2016	6.40	12/1/2017	8.60	
53	579	KOSHI	R-3 Line Work Mix	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.40	13/1/2017	8.40	
54	580	KOSHI	R-3 Line Work Mix	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.10	13/1/2017	8.40	
55	581	KOSHI	R-3 Line Work Mix	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.40	13/1/2017	8.20	
56	582	KOSHI	R-37 Line Work Mix	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.10	13/1/2017	8.20	
57	583	KOSHI	R-37 Line Work Mix	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.70	13/1/2017	8.70	
58	584	KOSHI	WWTP Boundary Wall	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.40	13/1/2017	8.70	
59	585	KOSHI	R-31 Line Work Mix	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.30	13/1/2017	8.40	
60	586	KOSHI	R-31 Line Work Mix	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.50	13/1/2017	8.20	
						MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2					

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps

CTCE-KALIKA JV
Submitted by Project Manager
Test conducted by Q.C Manager
Contractore Reps



SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitan City

SUMMERY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

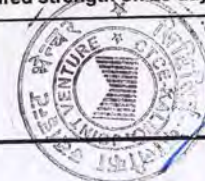
P.G-5

FOR THE MONTH OF JANUARY 2017

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Intial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
61	537	KOSHI	High way Man hole	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.40	13/1/2017	6.70	
62	588	KOSHI	High way Man hole	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.30	13/1/2017	8.60	
63	539	KOSHI	High way Man hole	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.70	13/1/2017	8.60	
64	590	KOSHI	High way Man hole	1:4 by volume	16/12/2016	37.10	240	360	23/12/2016	6.40	13/1/2017	9.00	
65	591	KOSHI	R-37 Line Work Mix	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.40	15/1/2017	8.80	
66	592	KOSHI	R-37 Line Work Mix	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.50	15/1/2017	7.90	
67	593	KOSHI	R-37 Line Work Mix	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.70	15/1/2017	8.20	
68	594	KOSHI	R-5 Line Work Mix	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.30	15/1/2017	8.40	
69	595	KOSHI	R-5 Line Work Mix	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.70	15/1/2017	8.40	
70	596	KOSHI	R-5 Line Work Mix	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.70	15/1/2017	8.00	
71	597	KOSHI	R-5 Line Work Mix	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.30	15/1/2017	8.00	
72	598	KOSHI	High way Man hole	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.80	15/1/2017	8.60	
73	599	KOSHI	High way Man hole	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.90	15/1/2017	7.80	
74	600	KOSHI	WWTP Boundary Wall	1:4 by volume	18/12/2016	36.60	185	280	25/12/2016	6.50	15/1/2017	7.80	
75	601	KOSHI	R-37 Line Work Mix	1:4 by volume	19/12/2016	36.60	185	280	26/12/2016	6.50	16/1/2017	7.90	
						MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2					

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps

CTCE-KALIKA JV
Submitted by Project Manager
Test conducted by Q.C Manager
Contractore Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitant City

SUMMERY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF JANUARY 2017

P.G-6

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Intial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
76	602	KOSHI	R-37 Line Work Mix	1:4 by volume	19/12/2016	36.60	185	280	26/12/2016	6.80	16/1/2017	8.00	
77	603	KOSHI	WWTP Boundary Wall	1:4 by volume	19/12/2016	36.60	185	280	26/12/2016	6.70	16/1/2017	7.90	
78	604	KOSHI	R-5 Line Work Mix	1:4 by volume	19/12/2016	36.60	185	280	26/12/2016	6.10	16/1/2017	7.90	
79	605	KOSHI	R-5 Line Work Mix	1:4 by volume	19/12/2016	36.60	185	280	26/12/2016	6.80	16/1/2017	8.30	
80	606	KOSHI	R-37 Line Work Mix	1:4 by volume	19/12/2016	36.60	185	280	26/12/2016	6.30	16/1/2017	7.90	
81	607	KOSHI	High way Man hole	1:4 by volume	19/12/2016	36.60	185	280	26/12/2016	6.40	16/1/2017	7.90	
82	608	KOSHI	R-7 Line Work Mix	1:4 by volume	21/12/2016	36.30	185	320	28/12/2016	6.70	18/1/2017	7.80	
83	609	KOSHI	High way Man hole	1:4 by volume	21/12/2016	36.30	185	320	28/12/2016	6.50	18/1/2017	8.20	
84	610	KOSHI	High way Man hole	1:4 by volume	21/12/2016	36.30	185	320	28/12/2016	6.70	18/1/2017	8.00	
85	611	KOSHI	R-27 Line Work Mix	1:4 by volume	21/12/2016	36.30	185	320	28/12/2016	6.50	18/1/2017	7.90	
86	612	KOSHI	R-27 Line Work Mix	1:4 by volume	21/12/2016	36.30	185	320	28/12/2016	6.70	18/1/2017	7.80	
87	613	KOSHI	WWTP Boundary Wall	1:4 by volume	22/12/2016	36.30	185	320	29/12/2016	6.30	19/1/2017	8.00	
88	614	KOSHI	WWTP Boundary Wall	1:4 by volume	22/12/2016	36.30	185	320	29/12/2016	6.40	19/1/2017	7.80	
89	615	KOSHI	R-37 Line Work Mix	1:4 by volume	23/12/2016	36.40	188	310	30/12/2016	6.30	20/1/2017	8.20	
90	616	KOSHI	R-37 Line Work Mix	1:4 by volume	23/12/2016	36.40	188	310	30/12/2016	6.70	20/1/2017	8.00	

MIN 45m

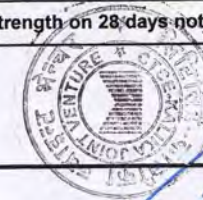
Max 600m

Required strength on 28 days not less than 7.5 N/MM2

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps



CTCE-KALIKA J/V
Submitted by Project Manager
Test conducted by Q.C Manager
Contractore Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitan City

SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

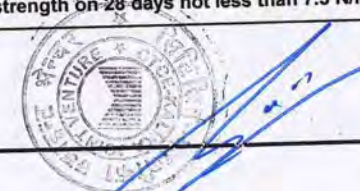
P.G-7

FOR THE MONTH OF JANUARY 2017

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Initial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
91	632	KOSHI	R-3 Line Work Mix	1:4 by volume	23/12/2016	36.40	19	310	30/12/2016	6.40	19/1/2017	7.90	
92	633	KOSHI	R-3 Line Work Mix	1:4 by volume	23/12/2016	36.40	19	310	30/12/2016	6.40	19/1/2017	8.30	
93	634	KOSHI	WWTP Boundary Wall	1:4 by volume	24/12/2016	36.70	185	330	31/12/2016	6.70	20/1/2017	7.80	
94	635	KOSHI	WWTP Boundary Wall	1:4 by volume	24/12/2016	36.70	185	330	31/12/2016	6.50	20/1/2017	8.20	
95	636	KOSHI	High way Man hole	1:4 by volume	25/12/2016	36.70	180	320	2/1/2017	6.80	23/1/2017	7.90	
96	637	KOSHI	High way Man hole	1:4 by volume	25/12/2016	36.70	180	320	2/1/2017	6.40	23/1/2017	8.40	
97	638	KOSHI	R-37 Line Work Mix	1:4 by volume	26/12/2016	37.10	175	355	3/1/2017	6.40	24/1/2017	7.90	
98	639	KOSHI	R-37 Line Work Mix	1:4 by volume	26/12/2016	37.10	175	355	3/1/2017	6.50	24/1/2017	7.80	
99	640	KOSHI	R-5 Line Work Mix	1:4 by volume	27/12/2016	37.00	195	295	4/1/2017	6.50	25/1/2017	7.90	
100	641	KOSHI	R-5 Line Work Mix	1:4 by volume	27/12/2016	37.00	195	295	4/1/2017	6.90	25/1/2017	8.00	
101	627	KOSHI	WWTP Boundary Wall	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.50	26/1/2017	8.00	
102	628	KOSHI	WWTP Boundary Wall	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.70	26/1/2017	7.80	
103	629	KOSHI	WWTP Boundary Wall	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.10	26/1/2017	8.00	
104	630	KOSHI	R-37 Line Work Mix	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.40	26/1/2017	8.00	
105	631	KOSHI	R-37 Line Work Mix	1:4 by volume	28/12/2016	36.90	195	325	5/1/2017	6.90	26/1/2017	7.90	
						MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2					

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test conducted by Q.C Manager
Contractors Reps



SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitant City

SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF JANUARY 2017

P.G-8

S.N.	LAB REF No.	Name of CEMENT	Location/Structure	Details of MIX	Casting	Consistency & Setting Time			7 day's cube Crushing		28 day's cube crushing		Remarks
						Norm. Const.	Intial(min.)	Final(min.)	Date	Str. N/mm2	Date	Str. N/mm2	
106	632	KOSHI	R-5 Line Work Mix	1:4 by volume	29/12/2016	36.70	185	300	6/1/2017	6.50	27/1/2017	7.90	
107	633	KOSHI	R-5 Line Work Mix	1:4 by volume	29/12/2016	36.70	185	300	6/1/2017	6.40	27/1/2017	7.80	
108	634	KOSHI	R-3 Line Work Mix	1:4 by volume	29/12/2016	36.70	185	300	6/1/2017	6.40	27/1/2017	7.90	
109	635	KOSHI	R-3 Line Work Mix	1:4 by volume	29/12/2016	36.70	185	300	6/1/2017	6.80	27/1/2017	7.80	
110	636	KOSHI	R-36 Line Work Mix	1:4 by volume	30/12/2016	37.10	195	310	7/1/2017	6.50	28/1/2017	8.30	
111	637	KOSHI	R-36 Line Work Mix	1:4 by volume	30/12/2016	37.10	195	310	7/1/2017	6.10	28/1/2017	7.80	
112	633	KOSHI	WWTP Boundary Wall	1:4 by volume	30/12/2016	37.10	195	310	7/1/2017	6.40	28/1/2017	7.80	
113	639	KOSHI	WWTP Boundary Wall	1:4 by volume	30/12/2016	37.10	195	310	7/1/2017	6.40	28/1/2017	7.90	
114	640	KOSHI	High way Man hole	1:4 by volume	30/12/2016	37.10	195	310	7/1/2017	6.50	28/1/2017	7.90	
115	641	KOSHI	WWTP Boundary Wall	1:4 by volume	31/12/2016	37.10	195	310	8/1/2017	6.40	29/1/2017	7.80	
116	642	KOSHI	WWTP Boundary Wall	1:4 by volume	31/12/2016	37.10	195	310	8/1/2017	6.70	29/1/2017	7.90	
						MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2					

Approved by Construction Supervision Engineer/CSE
Test Checked by A.C.S.E
Consultants Reps

CTCE-KALIKA J/V
Submitted by Project Manager
Test conducted by Q.C Manager
Contractore Reps



Secondary Towns Integrated Urban Environmental Improvement Project
Biratnagar Sub-Metropolitan City

TEST RESULT SUMMARY SHEET For the Month of JANUARY 2017

COMPRESSIVE STRENGTH OF BRICKS (Process Control Test)

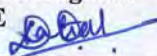
P.G-1

SN No	Ref. STIUEIP LAB/	Date of Testing	Location	Chanage	BRAND NAME 1 st class brick	Compressive Strength N/mm2	SCALE OF Sample From
1	MR 501	2/1/2017	WWTP	WWTP WALL	ANAND	✓10.5	
2	MR 502	2/1/2017	WWTP	WWTP WALL	ANAND	✓10.4	
3	MR 503	3/1/2017	Highway	Man Hole	ANAND	✓10.6	
4	MR 504	4/1/2017	R-28	R-28	ANAND	✓10.2	
5	MR 505	5/1/2017	R-26	R-26	ANAND	✓10.9	
6	MR 506	6/1/2017	Prativa	Prativa chowck	ANAND	✓10.8	
7	MR 507	7/1/2017	Prativa	Prativa chowck	AMBEY	✓10.4	
8	MR 508	8/1/2017	R-29	R-29	AMBEY	✓10.4	
9	MR 509	9/1/2017	R-29	R-29	SHREE	8.5	Rejected From Site
10	MR 510	9/1/2017	R-29	R-29	SHREE	7.9	- do -
11	MR 511	10/1/2017	R-37	R-37	ANAND	✓10.2	
12	MR 512	11/1/2017	Highway	Man Hole	ANAND	✓10.2	
13	MR 513	12/1/2017	WWTP	WWTP WALL	ANAND	✓10.5	
14	MR 514	13/1/2017	WWTP	WWTP WALL	ANAND	✓10.4	
15	MR 515	14/1/2017	WWTP	WWTP WALL	AMBEY	✓10.4	
16	MR 516	16/1/2017	R-26	R-26	ANAND	✓10.1	
17	MR 517	16/1/2017	R-26	R-26	ANAND	✓10.7	
18	MR 518	16/1/2017	R-27	R-27	ANAND	✓10.6	
19	MR 519	17/1/2017	R-37	R-37	ANAND	✓10.4	
20	MR 520	18/1/2017	WWTP	WWTP WALL	ANAND	✓10.5	

✓ Specification

IS1077,IS2180or
NS1/2035

> 10N/MM2

SMEC-Brisbane-AQUA-BDA-CEMAT
 Approved by Construction Supervision Engineer
 Test Checked by A.C.S.E. 
 Consultantr Reps

CTCE-KALIKA JV
 Submitted by Project Manager
 Test conducted by O.C Manager
 Contractor Reps 

Secondary Towns Integrated Urban Environmental Improvement Project
Biratnagar Sub-Metropolitan City

TEST RESULT SUMMARY SHEET For the Month of JANUARY 2017

COMPRESSIVE STRENGTH OF BRICKS (Process Control Test)

P.G-2

SN No	Ref. STIUEIP LAB/	Date of Testing	Location	Chanage	BRAND NAME 1 st class brick	Compressive Strength N/mm2	SCALE OF Sample From
21	MR 521	19/1/2017	R-29	R-29	ANAND	10.9	
22	MR 522	20/1/2017	R-29	R-29	ANAND	10.5	
23	MR 523	21/1/2017	R-28	R-28	ANAND	10.7	
24	MR 524	22/1/2017	R2	Puspal Chowck	ANAND	10.5	
25	MR 525	23/1/2017	R-37	R-37	ANAND	10.3	
26	MR 526	24/1/2017	R-26	R-26	ANAND	10.4	
27	MR 527	25/1/2017	Highway	Man Hole	ANAND	10.3	
28	MR 528	26/1/2017	WWTP	WWTP WALL	ANAND	10.5	
29	MR 529	27/1/2017	Prativa	Chowck	ANAND	10.2	
30	MR 530	28/1/2017	Prativa	Chowck	ANAND	10.4	
31	MR 531	29/1/2017	WWTP	WWTP WALL	AMBEY	10.2	
32	MR 532	30/1/2017	Highway	Man Hole	ANAND	10.6	

Specification

IS1077,IS2180or
NS1/2035

> 10N/MM2

SMEC-Brisbane-AQUA-BDA-CEMAT
 Approved by Construction Supervision Engineer
 Test Checked by A.C.S.E
 Consultantr Reps

CTCE-KALIKA J/V
 Submitted by Project Manager
 Test conducted by Q.C Manager
 Contractor Reps

SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

CEMENT TEST SUMMERY

For the Month of JANUARY 2017

P.G-2

S.N.	Lab. Ref. NO.	Description of cement	Testing Date	Consistency & Setting Time			Remarks
				Norm. Const.	Intial(min.)	Final(min.)	
17	MR 212	KOSHI OPC	16/1/2017	37.6	190	305	All Cement Are Nepali BRAND OPC
18	MR 213	KOSHI OPC	17/1/2017	36.7	140	260	
19	MR 214	KOSHI OPC	18/1/2017	36.3	140	240	
20	MR 215	KOSHI OPC	19/1/2017	36.1	165	265	
21	MR 216	KOSHI OPC	20/1/2017	36.6	155	270	
22	MR 217	KOSHI OPC	21/1/2017	37.9	190	315	
23	MR 218	KOSHI OPC	22/1/2017	37.4	175	305	
24	MR 219	KOSHI OPC	23/1/2017	37.9	180	320	
25	MR 220	KOSHI OPC	24/1/2017	37.9	195	295	
26	MR 221	KOSHI OPC	25/1/2017	37.3	165	250	
27	MR 222	KOSHI OPC	25/1/2017	37.3	165	250	OPC
28	MR 223	KOSHI OPC	26/1/2017	35.6	130	240	
29	MR 224	KOSHI OPC	27/1/2017	35.0	190	250	
30	MR 225	KOSHI OPC	28/1/2017	34.9	140	260	
31	MR 226	SHIVAM OPC	29/1/2017	35.4	150	270	
32	MR 227	SHIVAM OPC	29/1/2017	35.9	130	280	
33	MR 228	SHIVAM OPC	29/1/2017	36.0	120	240	
34	MR 229	SHIVAM OPC	30/1/2017	36.4	160	260	
35	MR 230	SHIVAM OPC	31/1/2017	36.7	170	265	
Requirements in accordance with BS 12/4027					> 45 Min.	10 Hrs	

SMCE-Brisbane-AQUA-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

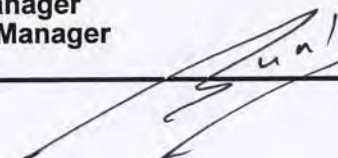


CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractores Reps




SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

MONTHLY Test Result Summary Sheet For The Month of JANUARY 2017

STIUEIP

Graded Crushed Stone Base Course (Process Control)

P.G-1

STANDARD SPECIFICATION FOR ROAD AND BRIDGE WORKS SECTION 1200 Table 12.3 Physical Requirement of Graded Crushed Stone Base

SN NO	LAB REF No	Date Tested	Location/ Chainage	Grading sieve size (mm)								FI	CR Ratio	LAA	AIV	SSS 5 cycle	Soaked CBR	Lab. MDD	Lab. OMC	Remarks
				(% passing by weight)																
				40	31.5	20	10	4.75	2.36	0.60	0.075									
1	92	1/1/2017	CH:3+420 to 4+140 LHS	100	96.5	73.5	47.3	35.8	28.7	18.1	5.1	18.54	86.0	33.04	19.43	1.56	92	2.300	6.50	Density pit hole
2	93	1/1/2017	CH:3+420 to 4+140 LHS	100	96.2	75.2	52.4	41.1	33.1	22.1	7.1	19.03	88.7	32.80	19.43	1.52				
3	94	1/1/2017	CH:3+420 to 4+140 LHS	100	96.6	76.5	52.6	39.4	31.3	20.0	7.0	19.83	84.1	32.88	19.43	1.52	95	2.300	6.50	
4	95	1/1/2017	CH:3+420 to 4+140 LHS	100	96.8	76.4	52.8	38.2	29.9	18.5	6.8	18.03	83.4	32.24	20.29	1.41	90	2.300	6.50	
5	96	2/1/2017	CH:3+420 to 3+800 RHS	100	97.6	69.1	52.6	37.2	29.6	17.2	5.5	15.86	89.9	32.92	23.14	1.73	97	2.310	6.30	
6	97	3/1/2017	CH:3+800 to 4+140 RHS	100	97.6	69.9	54	39.5	30.3	17.9	5.5	18.46	87.8	33.04	21.71	1.80	94	2.320	6.20	
7	98	3/1/2017	CH :3+420 to 3+470 RHS	100	97.2	72.5	56.1	42.2	33.8	15.6	6.1	17.71	87.1	33.60	19.42	1.64	92	2.310	6.30	
8	99	3/1/2017	CH :3+420 to 3+470 RHS	100	97.3	75.6	58.8	43.4	33	15.2	5.8	16.64	86.9	33.88	18.57					
9	100	3/1/2017	CH :3+470 to 3+520 RHS	100	97.1	73.5	58.6	44.0	33.0	16.1	5.8	17.50	89.6	33.16	18.00	1.28				
10	101	3/1/2017	CH :3+470 to 3+570 RHS	100	97.5	73.8	57.7	42.9	31.8	16.3	5.8	17.1	88.0	33.52	19.71					
11	102	3/1/2017	CH :3+570 to 3+620 RHS	100	97.3	73.0	56.5	42.2	31.3	15.0	5.3	18.5	88.2	33.68	19.71	1.36				
12	103	3/1/2017	CH :3+620 to 3+670 RHS	100	95.8	72.1	55.3	41.5	30.3	15.1	5.2	18.6	85.9	33.96	19.71					
Required Specifacation				100	85-100	62-92	40-70	26-55	21-53	12 to28	2 to10	≤ 25	≥ 80	≤ 35	≤ 25	Max 12%	≥ 80			

REMARKS:Crushed Stone base

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

MONTHLY Test Result Summary Sheet For The Month of JANUARY 2017

STIUEIP

Graded Crushed Stone Base Course (Process Control)

P.G-2

STANDARD SPECIFICATION FOR ROAD AND BRIDGE WORKS SECTION 1200 Table 12.3 Physical Requirement of Graded Crushed Stone Base

SN NO	LAB REF No	Date Tested	Location/ Chainage	Grading sieve size (mm)								FI %	CR Ratio (%)	LAA (%)	AIV (%)	SSS 5 cycle (%)	Soaked CBR (%)	Lab. MDD (g/cc)	Lab. OMC (%)	Remarks
				40	31.5	20	10	4.75	2.36	0.60	0.075									
13	104	3/1/2017	CH:3+670 to 3+720 RHS	100	95.9	70.5	50.4	37.5	27.2	13.9	5.2	17.21	87.7	33.88	20.00	1.24				
14	105	3/1/2017	CH:3+720 to 3+770 RHS	100	96.3	69.9	49.8	37.4	27.0	13.8	5.2	19.12	86.2	33.56	19.71					
15	106	3/1/2017	CH:3+770 to 3+820 RHS	100	97.3	83.9	57.2	43	30.1	15.3	5.5	17.81	85.9	33.68	17.71	1.04				
16	107	3/1/2017	CH:3+820 to 3+870 RHS	100	97.5	87.1	57.3	43.1	30.3	15.2	6.1	19.87	86.1	32.68	18.29		94	2.320	6.20	
17	108	3/1/2017	CH:3+870 to 3+920 RHS	100	97.7	87.3	57.7	41.1	27.9	14.6	6.1	19.06	86.8	33.20	17.71	1.28				
18	109	3/1/2017	CH:3+920 to 3+970 RHS	100	94.8	84.3	56.6	40.5	26.3	13.8	5.9	19.01	85.7	32.60	20.86					
19	110	3/1/2017	CH: 3+970 to 4+020 RHS	100	95.8	85.3	57.1	40.4	25.9	13.9	5.1	17.49	85.7	32.60	19.14	1.28				
20	111	3/1/2017	CH:4+020 to 4+050 RHS	100	96.8	86.1	56.9	41.5	28.8	15.0	6.4	18.21	85.5	33.68	18.57					
21	112	3/1/2017	CH:4+050 to 4+100 RHS	100	92.2	82.3	61.6	40.8	29.5	16.7	7.1	17.89	86.8	33.80	18.29	1.16	90	2.320	6.20	
22	113	3/1/2017	CH:4+100 to 4+140 RHS	100	92.6	81.4	61.1	40.6	29.2	16.2	6.5	17.71	88.8	32.20	19.14					
23	114	4/1/2017	CH:3+300 to 3+420 RHS & LHS	100	93	81.9	62.7	42.3	30.6	16.5	6.5	16.85	88.2	33.20	20.00	1.08	91	2.310	6.40	
24	115	4/1/2017	CH:3+340 to 3+380 RHS & LHS	100	93.7	83.3	63.6	42.6	30.2	16.4	6.4	19.72	90.0	32.52	20.00	1.32				
25	116	4/1/2016	CH:3+340 to 3+380 RHS & LHS	100	95.6	83.9	63.8	41.6	28.3	17.9	6.4	17.25	90.6	32.08	20.86	1.44				
Required Specifacation				100	85-100	62-92	40-70	26-55	21-53	12 to 28	2 to 10	≤ 25	≥ 80	≤ 35	≤ 25	Max 12%	≥ 80			

REMARKS:Crushed Stone base

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps



CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

CEMENT TEST SUMMERY

For the Month of JANUARY 2017		Page 1
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REKAM JEJAK PENYAKIT JANUARI 2017						P.G-1
Lab. Ref		Terima	Gejala			

S.N.	Lab. Ref.	Description of cement	Testing	Consistency & Setting Time	Remarks
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	NO.		Date	Norm. Const.	Intial(min.)	Final(min.)	
1	MR 196	SHIVAM OPC	1/1/2017	36.9	190	320	All Cement Are Nepali BRAND
2	MR 197	SHIVAM OPC	2/1/2017	37.6	190	330	
3	MR 198	SHIVAM OPC	3/1/2017	36.7	200	305	
4	MR 199	SHIVAM OPC	4/1/2017	37.9	180	335	
5	MR 200	SHIVAM OPC	5/1/2017	36.9	180	200	
6	MR 201	SHIVAM OPC	6/1/2017	37.1	180	200	
7	MR 202	SHIVAM OPC	7/1/2017	37.0	250	300	
8	MR203	SHIVAM OPC	8/1/2017	36.3	185	320	
9	MR 204	SHIVAM OPC	8/1/2017	36.0	185	330	OPC
10	MR 205	SHIVAM OPC	9/1/2017	36.4	180	320	
11	MR 206	SHIVAM OPC	10/1/2017	37.6	175	335	
12	MR 207	SHIVAM OPC	11/1/2017	36.9	195	295	
13	MR 208	SHIVAM OPC	12/1/2017	37.9	190	330	
14	MR 209	SHIVAM OPC	13/1/2017	38.0	200	320	
15	MR 210	SHIVAM OPC	14/1/2017	37.9	205	335	
16	MR 211	SHIVAM OPC	15/1/2017	38.0	205	315	
✓Requirements in accordance with BS 12/4027					> 45 Min.	10 Hrs	

E Latent

Contractores Reps



Manager
Manager

SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitant City

SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M20/20 SLAB CASTING WORK MIX

FOR THE MONTH OF JANUARY 2017

P.G-3

S.N.	Lab Ref No.	Date of Casting	Deatails of Mix	Location Structure	Ratio by VOLUME				Materials		Cube Crushing ,N/mm2		Remarks
					Water	Cement	Sand	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days	
37	199	25/12/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.6	21.9	
38	200	26/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.7	22.4	
39	201	26/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.5	22.1	
40	202	26/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.6	22.2	
41	203	27/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.8	22.4	
42	204	27/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.3	22.2	
43	205	27/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.6	22.4	
44	206	28/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.3	22.1	
45	207	28/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.6	22.4	
46	208	28/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	22.1	
47	209	29/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.2	22.2	
48	210	29/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.2	22.5	
49	211	29/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.2	21.8	
50	212	30/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	22.1	
51	213	30/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.6	21.9	
52	214	30/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	22.4	
53	215	30/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.2	
54	216	31/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.0	22.2	
55	217	31/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	22.4	
56	218	31/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.0	22.5	

Specifacation Limit Table For M20/20 on 7 days Age Min 67% of Total Compressive Strength

Min Required

13.4

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M20/20 SLAB CASTING WORK MIX
FOR THE MONTH OF JANUARY 2017

P.G-2

S.N.	Lab Ref No.	Date of Casting	Deatails of Mix	Location Structure	Ratio by VOLUME				Materials		Cube Crushing ,N/mm2		Remarks
					Water	Cement	Sand	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days	
19	181	19/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.5	21.6	
20	182	20/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.6	21.9	
21	183	20/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.8	22.1	
22	184	20/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.6	22.2	
23	185	21/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.3	22.1	
24	186	21/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.1	22.4	
25	187	21/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	22.2	
26	188	22/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	22.2	
27	189	22/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	21.9	
28	190	22/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.4	22.5	
29	191	23/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.3	22.2	
30	192	23/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.6	22.7	
31	193	23/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.6	22.4	
32	194	24/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	22.4	
33	195	24/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	22.2	
34	196	24/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.6	22.1	
35	197	25/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	22.5	
36	198	25/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	21.9	

Specifacation Limit Table For M20/20 on 7 days Age Min 67% of Total Compressive Strength

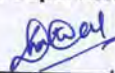
Min Required 13.4 20

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

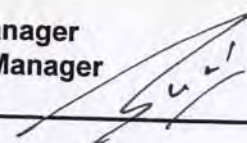


CTCE-KALIKA J/V

Submitted by Project Manager

Test conducted by Q.C Manager

Contractors Reps




SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitan City

SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M20/20 SLAB CASTING WORK MIX
FOR THE MONTH OF JANUARY 2017

P.G-1

S.N.	Lab Ref No.	Date of Casting	Deatails of Mix	Location Structure	Ratio by VOLUME				Materials		Cube Crushing ,N/mm2		Remarks
					Water	Cement	Sand	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days	
1	163	4/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.7	22.4	
2	164	5/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	22.3	
3	165	6/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.6	
4	166	7/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.7	22.7	
5	167	8/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	22.4	
6	168	9/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	22.4	
7	169	10/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.2	
8	170	11/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.5	22.1	
9	171	16/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.7	
10	172	16/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.2	
11	173	16/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.6	22.6	
12	174	17/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	17.0	22.4	
13	175	17/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	22.6	
14	176	18/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	22.1	
15	177	18/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.9	22.5	
16	178	18/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.7	22.2	
17	179	19/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.2	22.8	
18	180	19/12/2016	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	22.4	

✓ Specifacation Limit Table For M20/20 on 7 days Age Min 67% of Total Compressive Strength

Min Required **13.4** **20**

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

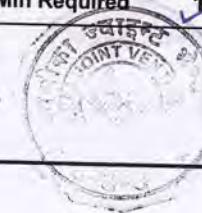
Consultants Reps

CTCE-KALIKA JV

Submitted by Project Manager

Test conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT
Biratnagar Sub-Metropolitant City

SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M30/20 MAN HOLE CASTING WORK MIX

FOR THE MONTH OF JANUARY 2017

P.G-1

S.N.	Lab Ref No.	Date of Casting	Deatails of Mix	Location Structure	Ratio by MASS				Materials		Cube Crushing ,N/mm2		Remarks
					Water	Cement	Sand	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days	
1	MR 138	4/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	23.5	31.6	
2	MR 139	4/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	24.7	31.5	
3	MR 140	5/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	24.7	31.5	
4	MR 141	6/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.4	31.3	
5	MR 142	6/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	31.7	
6	MR 143	7/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.7	31.7	
7	MR 144	7/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	24.3	31.6	
8	MR 145	7/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	23.4	31.5	
9	MR146	8/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.3	
10	MR 147	9/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.9	31.4	
11	MR 148	10/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.9	
12	MR 149	10/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	25.0	31.6	
13	MR 150	11/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.4	31.6	
14	MR 151	12/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.6	
15	MR 152	12/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.9	
16	MR 153	13/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.9	
17	MR 154	14/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.6	

✓ Specifacation Limit Table For M30/20 on 7 days Age Min 67% of Total Compressive Strength

Min Required 20.1 30

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test conducted by Q.C Manager

Contractors Reps



SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT														
Biratnagar Sub-Metropolitant City														
SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M30/20 MAN HOLE CASTING WORK MIX														
FOR THE MONTH OF JANUARY 2017 P.G-2														
S.N.	Lab Ref No.	Date of Casting	Deatils of Mix	Location Structure	Ratio by MASS				Materials		Cube Crushing ,N/mm2		Remarks	
					Water	Cement	Sand	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days		
18	MR 155	14/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.2	31.6		
19	MR 156	15/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	31.9		
20	MR 157	16/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.9	31.6		
21	MR 158	16/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.4		
22	MR 159	17/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.4	31.3		
23	MR 160	17/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.3	31.9		
24	MR 161	17/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.2	32.0		
25	MR 162	18/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.3	31.5		
26	MR 163	18/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.4		
27	MR 164	18/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.7	32.0		
28	MR 165	19/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.6	31.7		
29	MR 166	19/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.4	31.9		
30	MR 167	19/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	31.3		
31	MR 168	20/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	31.6		
32	MR 169	20/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.5	31.4		
33	MR 170	20/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.0	31.3		
34	MR 171	20/12/2016	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.2	31.4		
Specifacation Limit Table For M30/20 on 7 days Age Min 67% of Total Compressive Strength										Min Required	20.1	30		
SMEC-Brisbane-AQUA-BDA					CTCE-KALIKA J/V									
Approved by Construction Supervision Engineer/CSE					Submitted by Project Manager									
Test checked by A.C.S.E					Test conducted by Q.C Manager									
Consultants Reps					Contractors Reps									