

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 (March, 2017)

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

05 April, 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

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 w.r.t VO-03	NRs. 2,956,290,542.71
Recommendation Amount up to IPC 23 (End of February 2017)	NRs. 2,093,520,498.54 (Including PS & VAT)
Physical Progress till March, 2017	74.19 (wrt to vo-03)
Financial Progress	70.81% (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 7<sup>th</sup> December 2011. This monthly Progress Report of February, 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
- Due to VO-03 under process the contractor is not able to submit the revised work programme with S-curve and Resource plan (only submitted daily work programme).

### 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
<b>1</b>	<b>Sewerage Pipe Supply and Installation</b>	m	<b>63,964.0</b>
	<b>Reinforced Concrete Pipe laying and jointing</b>		<b>16,612.0</b>
	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
	<b>HDPE laying and jointing</b>	m	<b>47,352.0</b>
	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
<b>2</b>	<b>Manhole ( Brick / RCC)</b>	no.	<b>2,036</b>
<b>3</b>	<b>Sewer Inlet</b>	no.	<b>3,766.00</b>
<b>4</b>	<b>House Connection</b>	no.	<b>5,930.00</b>
<b>5</b>	<b>Reinstatement of Roads</b>	km	<b>66.06</b>

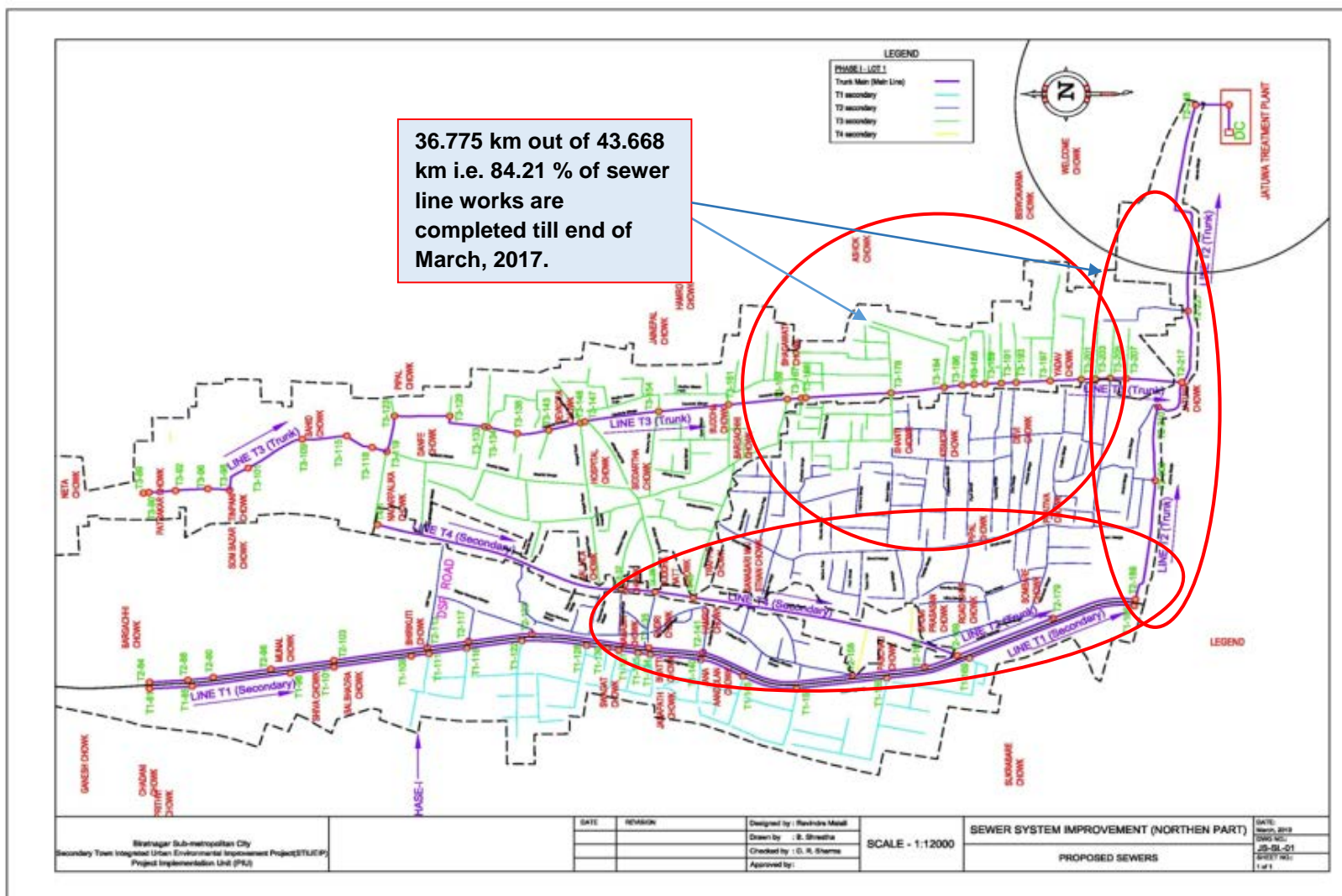


FIGURE. 1 PROPOSED SEWER LINES IN BSMC

### 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
<b>A</b>	<b>Storm Drain for Northern Parts</b>		<b>28,491.00</b>
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>B</b>	<b>Storm Drain for Southern Part</b>		
I	Brick Masonry Drain	m	8,483
II	Cleaning and Maintenance of Existing Drain	m	7,273
III	Culverts	no	38
<b>C</b>	<b>Rehabilitation of Existing Drain</b>		
I	Drain Cover	M	30,467
II	Cleaning and Maintenance of Existing Drain	M	33,601

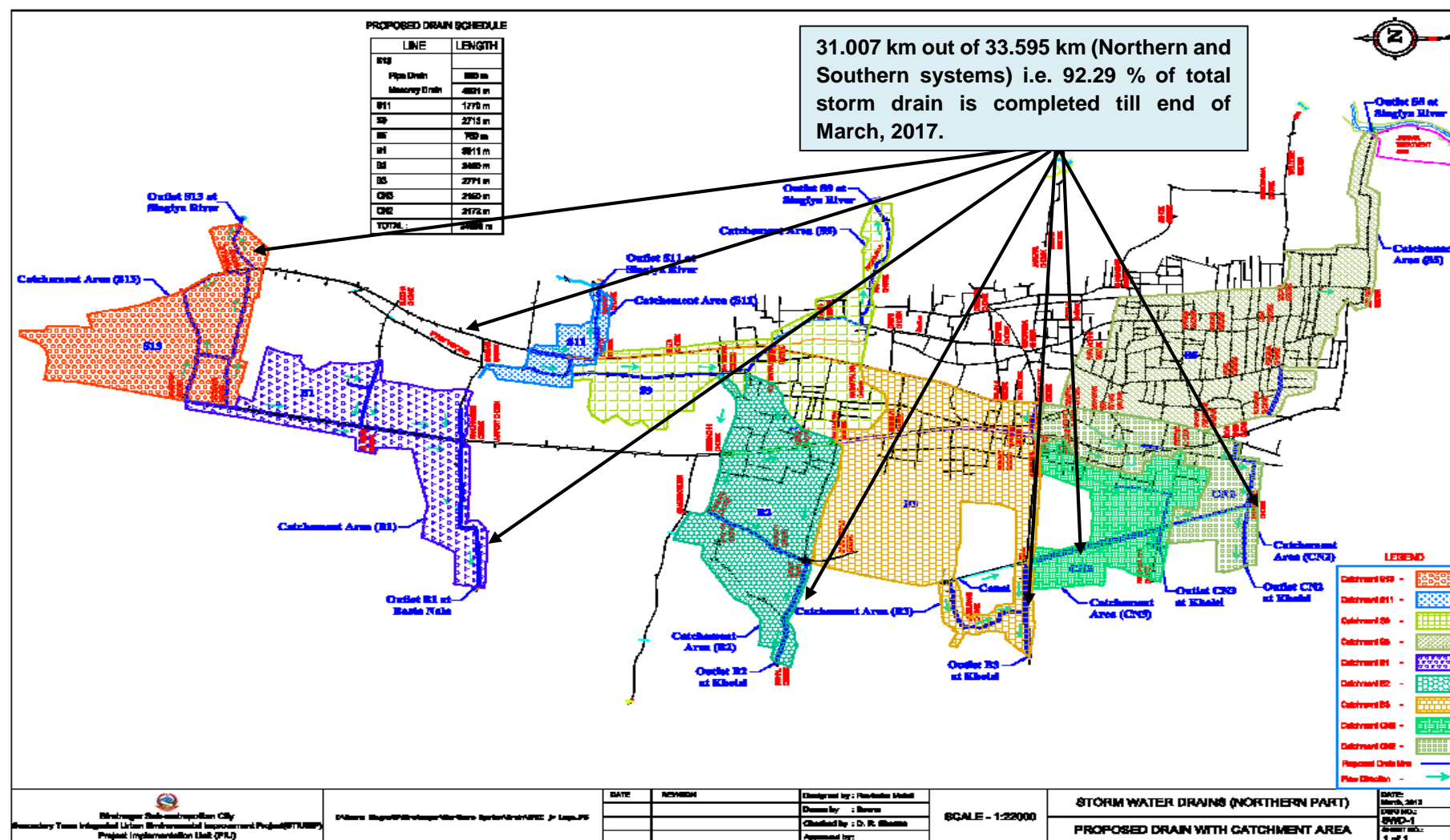


Figure 2: Proposed Storm Water Drains in BSMC (Northern Drainage System)

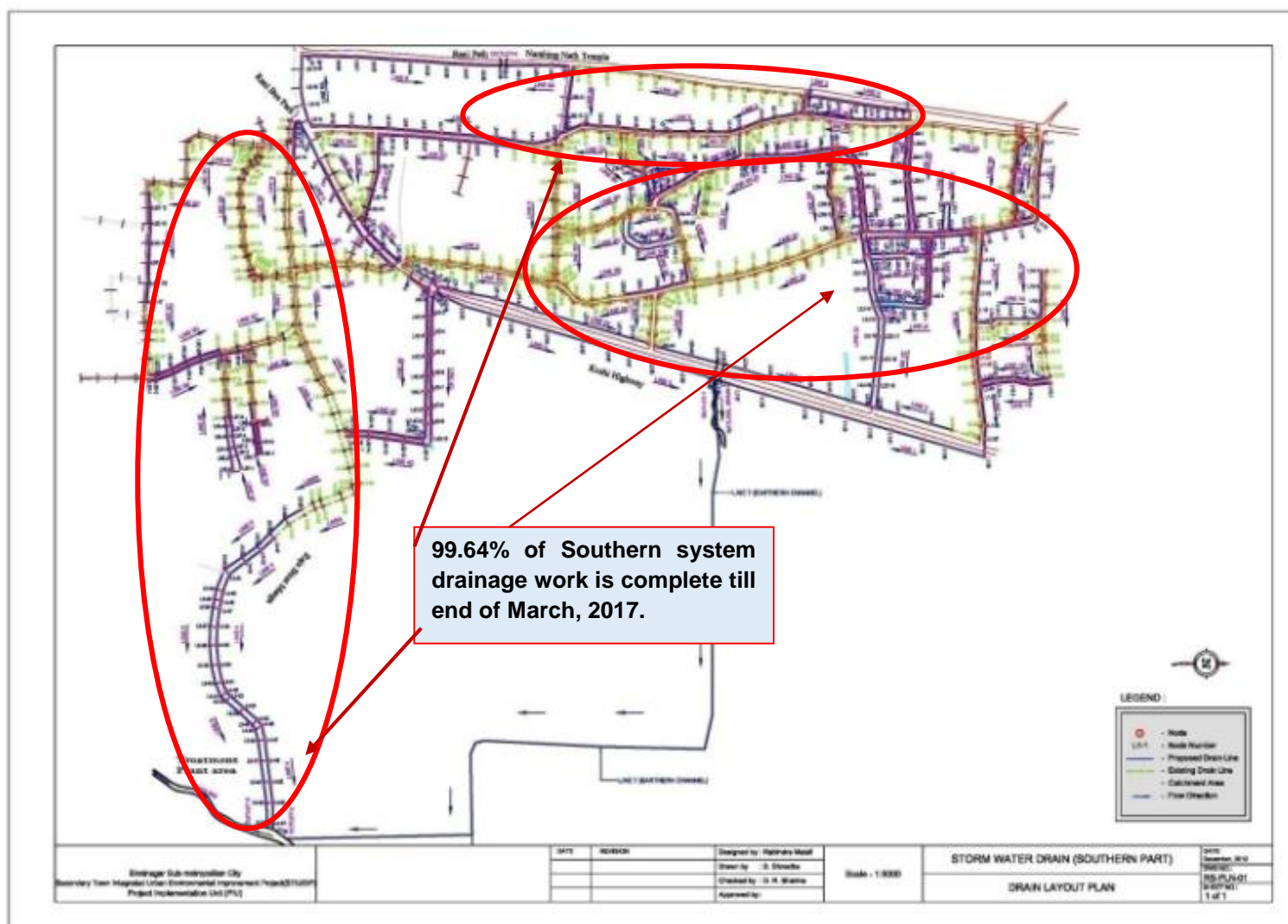


Figure 3: Proposed Storm Water Drains in BSMC (Southern Drainage System)

### 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
	<b>Waste Water Treatment Plant Component</b>		
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

50% of the WWTP works is completed till end of March, 2017

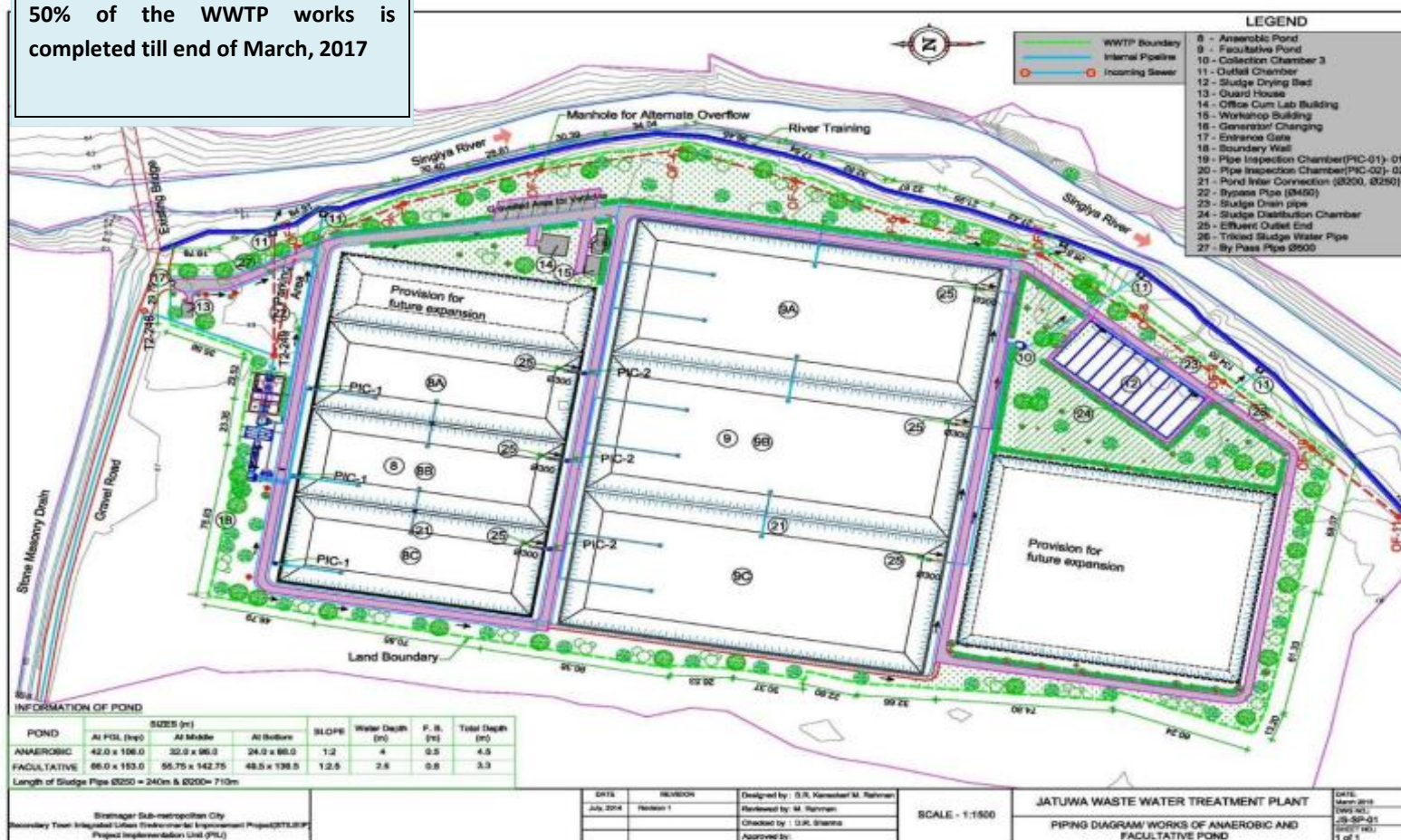


Figure 4: Proposed Waste Water Treatment Plant at Jatuwa in BSMC

### 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, 13.24 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 Panitanki)	3.224 Km
Reinstatement and Road Improvements (under sewer line installation) and WWTP	41.358 Km

### 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 Schedule 1.h.2.e (pertaining to Rule 3). The final report on IEE was submitted and MoUD had approved the IEE on May 14, 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 Quarterly Updated Environmental Report for the months of June 2016- December 2016 semi –annual report has been submitted in Jan 2017.

### 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 has been submitted in Jan 2017.

### 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 (Recommendation)	Remark
1	IPC 01		
2	IPC 02	29,553,479.92	
3	IPC 03	50,406,775.75	
4	IPC 04	44,819,505.68	
5	IPC 05	23,380,168.96	
6	IPC 06	90,796,339.68	
7	IPC 07	80,854,600.52	
8	IPC-08	122,334,488.86	
9	IPC-09	116,092,187.14	
10	IPC-10	132,327,417.89	
11	IPC-11	169,853,829.07	
12	IPC-12	23,121,515.46	

13	IPC-13	85,563,926.44	
14	IPC-14	163,562,505.71	
15	IPC-15	139,008,112.96	
16	IPC- 16	137,640,413.95	
17	IPC-17	135,118,714.02	
18	IPC-18	39,288,088.98	
19	IPC-19	76,081,596.87	
20	IPC-20	74,522,638.96	
21	IPC-21	152,577,081.94	
22	IPC-22	140,477,295.40	
23	IPC-23	66,139,814.38	
	Grand Total	<b>2,093,520,498.54</b>	
	Total payment to date including PS & VAT and Excluding mobilization	<b>2,093,520,498.54</b>	

## 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 are being continued.

The contractor has completed storm water drain about 31.007 km out of 33.383km, 92.88% till March, 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 HDPE and RCC pipes about 36.77 km out of 43.668 km which is 84.22%, till March, 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 and work started as per revised drawing.

## 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 11061m 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 25.934 km out of 36.050 km, 71.94% till March, 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 MARCH, 2017.

23. Total physical progress till March, 2017 is about 74.19% w.r.t vo-3. The Contractor has to submit revised work schedule with respect to variation order no-03.

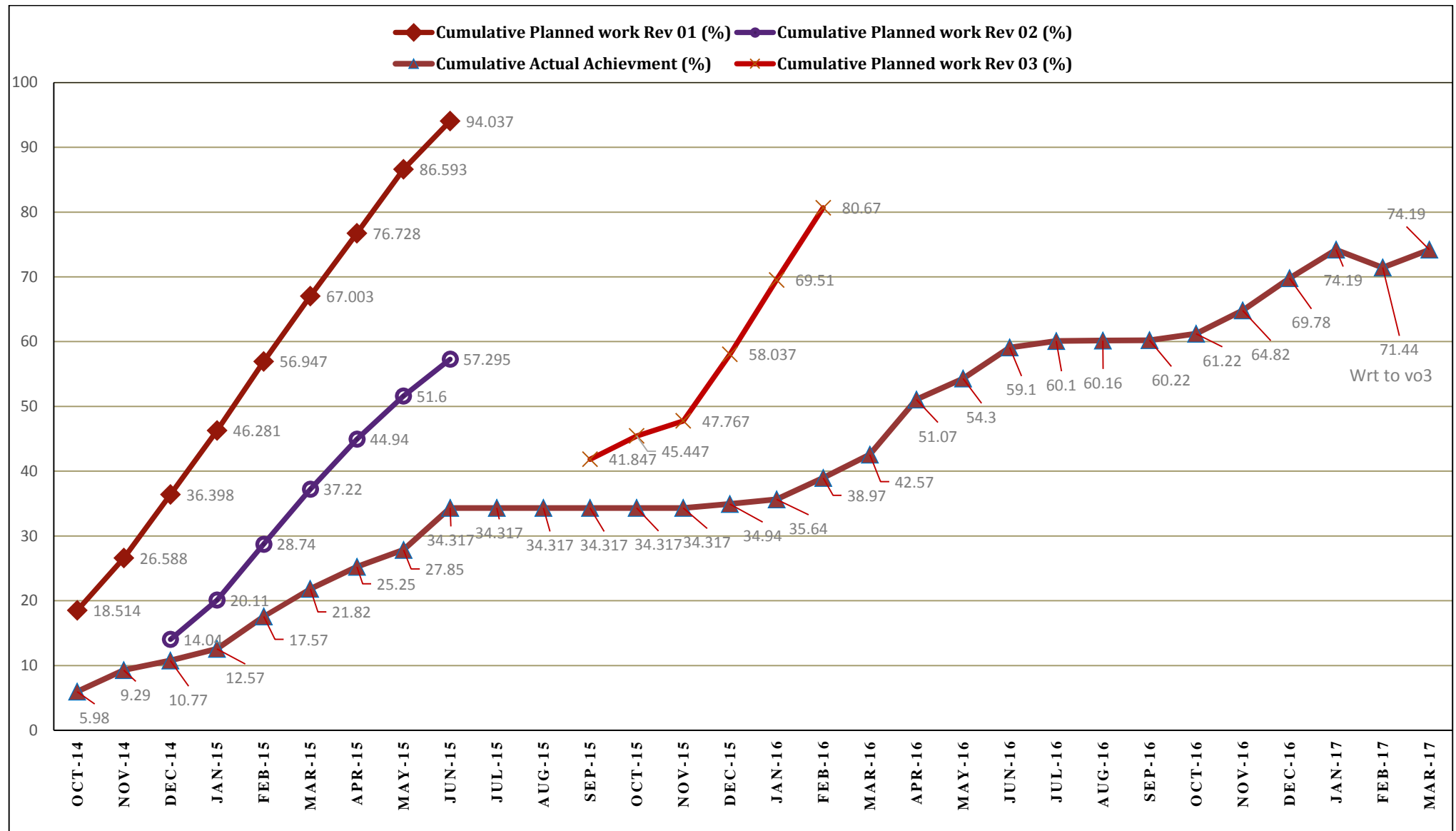
**Table 6: Plan vs. Actual Progress till March, 2017**

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	71.44 (wrt Vo-03)	74.19
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.

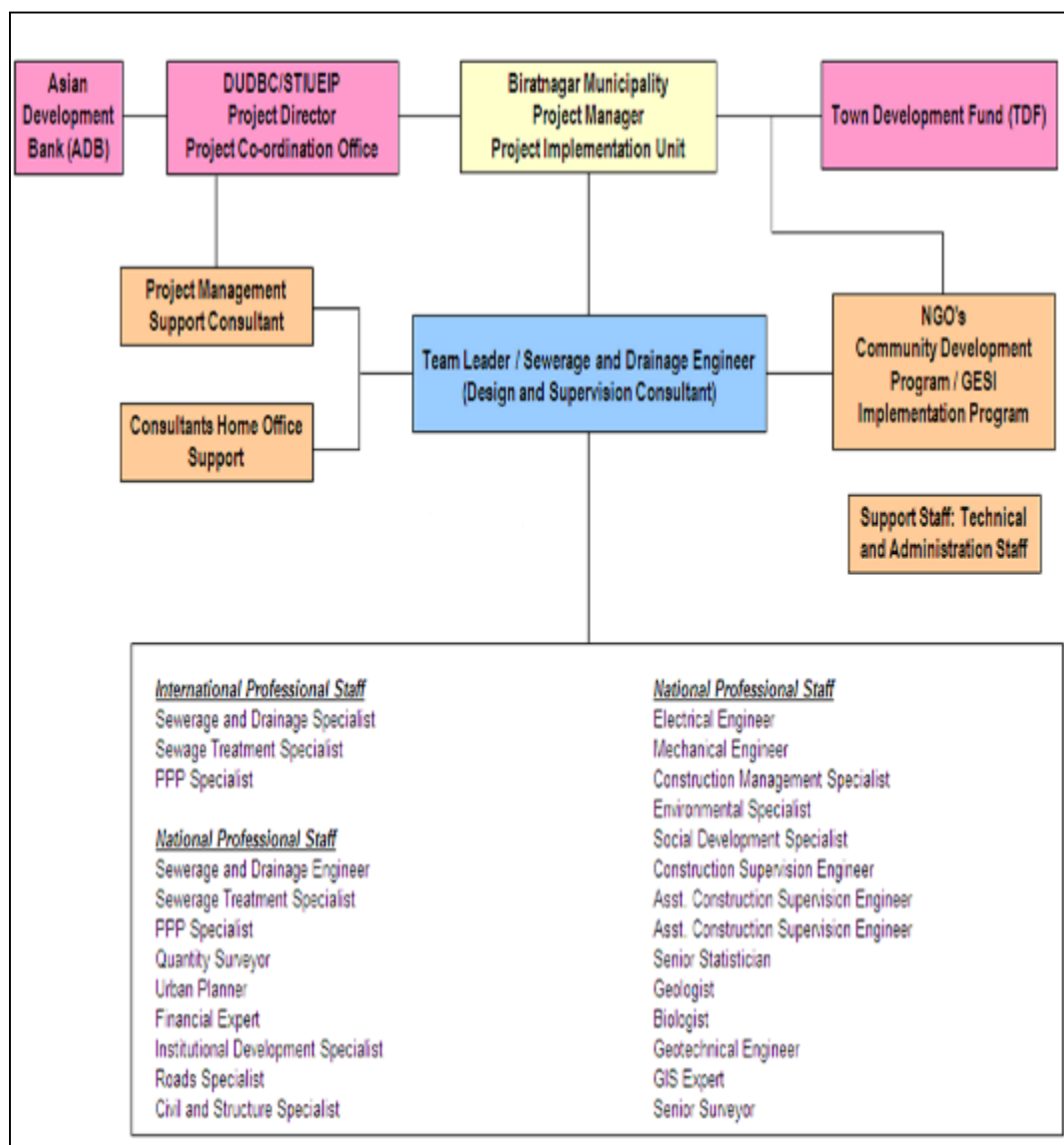


Figure 6: Organization and Staffing of STIUEIP, Biratnagar

## 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	Amit Kumar Gupta	Asst. Construction Supervision Engineer-3
5	Rajesh Kumar Yadav	Junior Engineer-1
6	Deepak Majhee	Junior Engineer-2
7	Arun Kumar Yadav	Junior Engineer-3
8	Jay Prakash Yadav	Junior Engineer-4
9	Dipendra Shah	Junior Engineer-5
10	Santosh Kumar Yadav	Office Manager/Computer Operator
11	Ramji Ghimire	Driver-1
12	Suman Ghimire	Driver-2
13	Ramila Ghimire	Office Assistant

**Note:** Mr. Amit Kumar Gupta has joined this office on 26<sup>th</sup> of March, 2017.

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 March, 2017

**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 March 2017						
S.N.	Location	Proposed Length (m)	Progress		Total to Date (m)	Progress (%)
			Up to Feb. 2017 (m)	This Month (m)		
1	B1	4003.55	3758.00		3758.00	
2	B2	3539.68	3539.68		3539.68	
3	B3	3505.02	3463.00		3463.00	
4	S5	1178	1178.00		1178.00	
5	S9	3558.22	2523.00	28	2551.00	
6	S11	1350.60	1350.60		1350.60	
7	S13	5000.21	4864.00		5000.21	
8	CN2	2197.30	2142.00		2197.30	
9	CN3	2563.77	1422.00	276.15	2551.00	
10	Rani	6486.70	6463.28		6463.28	
	<b>Total</b>	<b>33383.05</b>	<b>30703.56</b>	<b>304.15</b>	<b>31007.71</b>	<b>92.88</b>

**Table 11: Physical Progress in Road Side Drains:**

Physical Progress till March 2017							
S.N.	Location	Length (m)	Total Length (m)	Progress		Total to Date (m)	Progress (%)
				Up to Feb. 2017 (m)	This Month (m)		
1	R2	3420	6840	6325	80	6405	93.64
2	R3	2233	2993	2874	48	2922	97.63
3	R4	1246	2212	660	0	660	29.84
4	R5	1068	2136	1760	220	1980	92.70
5	R6	1280	2560	0	0	0	0
6	R7	485	615	432.70	102	534.70	86.94
7	R8	660	1320	568	245	813	61.59
8	R9	116	232	108.50	98.00	206.50	89.01
9	R13	220	440	400	0	400	90.91
10	R16	580.0	1160	1150	0	1150	99.14

11	R21	2420	2420	1646.20	229	1875.20	77.49
12	R22	359	718	676	0	676	94.15
13	R24	390	780	768	0	768	98.46
14	R25	594	1188	1131.10	0	1131.10	95.21
15	R26	620	1240	1170.20	69.80	1240	100
16	R27	977	1954	1022	202.05	1224.05	62.64
17	R28	620	1240	745	30	775	62.50
18	R29	620	1240	392	61.80	453.80	36.60
19	R30	328	656	80	260	340	51.83
20	R31	187	374	170	0	170	95.21
21	R32	189	378	0	0	0	0.00
22	R37	785	1570	600	65	665	42.36
23	R64	121	121	121	0	121	100
24	R78	92	184	82	0	82	44.57
25	R107	157	314	180	56	236	75.16
26	R108	96	192	192	0	192	100
27	R109	90	360	355	0	355	98.61
28	T2L18O	143	286	268	0	268	93.71
29	T3L26E	93	186	63	48	111	59.68
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
	Road Side Drain	20549	36630	23939.70	1994.65	25934.35	70.80

Table 12: Physical Progress in Sewer Lines:

S.N	Location	As per estimate		Up to Previous Month		This 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	3382.50	116	261	6	3625.50	122		
2	HDPE(T2)	13595.40	485	12735.45	446	75.70	1	12811.15	447		
3	HDPE(T3)	7030.30	258	6571.1	238	0.00	0.00	6571.10	238		
4	HDPE(T4)	117.30	3	112	3	0.00	0.00	112	3		
5	Sub Total(HDPE)	24476.90	873	22801.050	803	318.700	7	23119.75	810	94.46	92.78
6	Hume Pipe(T1)	5026.80	144	2243	62	556.25	22	2799.25	84		
7	Hume Pipe(T2)	9488.00	276	7820	209	0.00	0.00	7820.00	209		

8	Hume Pipe(T3)	4493.30	136	2851.50	63	0.00	0.00	2851.50	63		
9	Hume Pipe(T4)	183.50	5	0.00	0	185	5	185	5		
10	Sub Total Hume Pipe	19191.60	561	<b>13099.50</b>	339	<b>556.25</b>	22	<b>13655.75</b>	361	71.15	64.35
11	Total (HDPE+Hume pipe)	<b>43668.50</b>	1434	35900.50	1142	874.950	29	<b>36775.50</b>	1171	<b>84.22</b>	81.66

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

S.N.	Description	Proposed Quantity(no.)	Up to Previous Month	This Month	Total to Date	Progress (%)
1	Manhole	1434	1121	50	1171	81.66
2	Sewer inlet	2924	1456	55	1511	51.67
3	House connection chamber	4500	536	100	636	14.13

Table 14: Physical Progress in Roads and Lanes:

Physical Progress till March 2017						
S.N.	Location	Proposed Length (m)	Progress		Total to Date (m)	Progress (%)
			Up to Feb. 2017 (m)	This Month (m)		
1	R2	3224	0	0	3224	100
2	R3	2233	1205	0	1205	
3	R4	2163	608	0	608	
4	R13	220	220	0	220	
5	R14	485	525	0	525	
6	R16(east)	215	221	0	221	
7	R16(west)	540	200	0	200	
8	R17(east)	222	225	0	225	
9	R17(west)	375	160	215	375	

10	R18	464	311	153	464	
11	R19	236	232	0	232	
12	R22	358	376	0	376	
13	R24	384	384	0	384	
14	R25	599	408	0	408	
15	R26(east)	244	244	0	244	
16	R26(west)	617	200	0	200	
17	R27	810	183	0	183	
18	T3L32	235	231	0	231	
19	T3L33A	134	134	0	134	
20	T3L33B	170	164	0	164	
21	R122	280	254	0	254	
22	T3L30	205	0	205	205	
23	T3L31A	177	0	164	164	
24	R20	108	0	108	108	
25	T2L19O	71	0	71	71	
26	R15	210	0	235.7	235.7	
27	R16 to R15	100	0	126.2	126.2	
28	R15 to R4	74.4	0	74.4	74.4	
29	R8	427	0	228.50	228.5	
30	R29	620	0	257	257	
31	R23	143	0	140	140	
32	R21	580	0	200	200	
33	R28	635	0	126	340	
34	T3L26(R29 to R109)	128	0	126	126	
35	T3L26A	65	0	65	65	
36	T3L26B	96	0	85	85	

37	T3L26C	191	0	179.4	179.4	
38	T3L26E	216	0	250	250	
39	R90	320	0	316.5	316.5	
39	All roads including WWTP and remaining lines	32652.6				
30	Total Length	44582	1352.30	2187.4	13248.7	

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

Physical Progress till March 2017						
S.N.	Description	Proposed Quantity	Progress		Total to Date	Remarks
			Up to Feb.2017	This Month		
1	Anaerobic Pond	3 nos	3 (excavation)	0	3 (excavation)	Slope finishing work under progress
2	Facultative Pond	3 nos	2.5 (excavation)	0.01	2.51 (excavation)	
3	River Training Work	600 m	600 m	0	600 m	100%
4	Boundary Wall	1340m	1283 m	0	1283 m	96.47%
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	0.5	0	0.5	Upto 6.90 m height R.C.C work completed remaining work under progress
9	Sludge Drying Bed	1no	0.75	0.05	0.8	Brick Masonary work completed pipe,sand and gravel packing work under progress

10	Road Side Drain	2880	1125	221.1	1346.1	46.74%
11	Guard House	1	0.2	0	0.2	20%

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

Physical Progress till March 2017						
S.N.	Description	Unit	Progress		Total to Date (no)	Remarks
			Up to Feb. 2017 (no)	This Month (no)		
1	Precast Slab	No	106263	2500	108763	
2	Precuts	No	11209	0	11209	
3	Kerb Stone	No	23135	0	23135	
4	Manhole	No	2200	0	2200	
5	Sewer Inlet	No	2224	300	2524	
6	House Connection Chamber	No	1346	200	1546	

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

Physical Progress till March 2017						
S.N.	Description	Diameter (mm)	Progress		Total to Date (no)	Remarks
			Up to Feb. 2017 (no)	This Month (no)		
1	RCC Pipe	200	2,123	0	2,123	
2	RCC Pipe	300	328	0	328	
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	1011	
11	RCC Pipe	1600	373	0	373	
	<b>Total</b>		<b>7,593</b>	<b>0</b>	<b>7,593</b>	

**Contractor's Manpower**

**Table 18: Contractor's key staffs in March, 2017:**

Designation	No	Remarks
Project / Contract Manager	1	
Planning Engineer/Construction Engineer	1	
Construction Engineer	2	
Site Engineers	8	
Quality Control Manager	1	
Office/Bill Engineer	0	
Junior Engineer	5	
Sub Overseers	2	
Safety Manager / Senior Site Supervisor	1	
Accountant / Office Manager	1	
Lab Assistant	3	
Store Keeper	7	
Light Drivers	4	
Machine Operator	32	
Site Supervisor	4	
Other Supporting Staff	41	
Skilled Labor at Site	>330	
Unskilled Labor at Site	>480	

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

Equipment	No	Remarks
Excavator	6	
Back Hoe JCB	13	
Grader	2	
Crane / Teller	1	
Water Tanker	5	
Tractor	16	
Tipper	4	
Light Vehicle	4	
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
- Sewer line construction
- WWTP
- Maintenance work as per instruction/required.

**ANNEX2: PHOTOGRAPHS – March 2017**



Level Density of Subgrade at R16 road



Cut off wall at Facultative Pond



RCC sludge drain construction



Sub base finishing at R21



Sewer Inlet Connection at R9 Road

## Annex-7

### : Laboratory Test Results of March, 2017

**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**  
**BIRATNAGAR Sub-Metropolitan City**  
**Monthly Laboratory Testing Report**  
**( For The Month OF- MARCH2017)**

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	90	0	0	0		90	
2	SUB GRADE Preparation as per Specification	MDD & OMC	36	16	16	0		52	
		Field density	458	77	75	2		535	
		C.B.R	37	16	16	0		53	
3	BRICK WORK Required Test	Water Absorption	195	0	0	0		195	
		Compressive Strength	2796	105	105	0		2901	
4	Masonry Mortar (CM 7.05)	Compressive strength	4101	240	240	0		4341	
5	CONCRETE AGGREGATE  Coarse aggregate (20 mm)	Sieve analysis (20 mm)	332	24	24	0		356	
		LAA	245	24	24	0		269	
		Specific Gravity	16	0	0	0		16	
		FI	246	12	12	0		258	
		ACV	282	24	24	0		306	
		Fine aggregate (Sand)	Sieve analysis	330	35	35	0	365	
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	

*[Signature]*



**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**  
**BIRATNAGAR Sub-Metropolitant City**  
**Monthly Laboratory Testing Report**  
**( For The Month OF- MARCH2017)**

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		
7	<u>CEMENT Required Test</u>								
8	<u>OPC Cement</u>	Setting time	258	31	31	0		289	
		Normal Consistency	258	31	31	0		289	
	<u>CONCRETE</u>								
		Work Mix Test M15,M20,M25,M30	Compressive strength	11245	762	762	0	12007	
9	<u>REINFORCEMENT</u>	Required Test							
		Reinforcement tore steel	As per Specifacation	80	0	0	0	80	
10	<u>PAVEMENT MATERIALS</u>								
		Sub Base Materials	Sieve analysis	136	40	40	0	176	
			MDD & OMC	23	6	6	0	29	
			CBR	19	6	6	0	25	
			Field density	303	25	25	0	328	
11	CS Base  Crushed Stone Base  Material Laying	Sieve analysis	110	0	0	0		110	
		MDD & OMC	20	0	0	0		20	
		C.B.R	18	0	0	0		18	
		FI & C.Ratio	110	0	0	0		110	
		LAA	111	0	0	0		111	
		SSS	53	0	0	0		53	
		AIV	110	0	0	0		110	
		Field Density & OMC	179	0	0	0		179	

*Signature*



**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**  
**BIRATNAGAR Sub-Metropolitant City**  
**Monthly Laboratory Testing Report**  
**( For The Month OF- MARCH2017)**

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	39	0	0	0		39	
		FI	24	0	0	0		24	
		ACV	24	0	0	0		24	
		LAA	24	0	0	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 trichloroethylene	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	102	0	0	0		102	
		Stability	102	0	0	0		102	
		Flow	102	0	0	0		102	
		Air voides	102	0	0	0		102	



# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

BIRATNAGAR Sub-Metropolitant City

STIUEIP

## Monthly Laboratory Testing Report

( For The Month OF- MARCH2017)

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	36	0	0	0		36	
		Voids in Mineral Agg	102	0	0	0		102	
		Job mix in AC Plant	64	0	0	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 Manual	3	0	0	0		2	
	Testing machine	500 KN Manual	3	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(Gabion 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 Denssity  
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

Consultant Reps

AIV=Aggregate Impact Value

JMC=Job Mix Formula

C.R=Crushing Ratio

CTCE-KALIKA J/V

Submitted by Project Manager

Prepaid by Q.C Manager

Contractors Reps



# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

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

S.N.	LAB REF. NO.	DESCRIPTION OF MATERIAL	Line	Chanage/Location	Modified ProctorGm/CC		CBR %	REMARKS
					MDD	OMC %		
1	MR 58	Sub Grade	R-29 Line East	0+000 to 0+257	1.980	9.00	6.50	
2	MR 59	Sub Grade	T3L26E Line	0+000 to 0+160	1.980	9.00	7.50	
3	MR 60	Sub Grade	R-8 Line	0+000 to 0+230	1.980	9.00	6.50	
4	MR 61	Sub Grade	R-28 Line	0+000 to 0+340	2.170	6.60	10.00	
5	MR 62	Sub Grade	R-111	0+085,0+165	1.980	9.00	7.8	
6	MR 63	Sub Grade	T3L26 B	0+085	1.980	9.00	7.8	
7	MR64	Sub Grade	T3L26 A	0+065	1.980	9.00	7.8	
8	MR 65	Sub Grade	T3L26	0+164	1.980	9.00	7.8	
9	MR 66	Sub Grade	R-37 Line	0+00 to 0+150	1.980	9.00	6.0	
10	MR 67	Sub Grade	R-21 Line	1+160 to 1+310	1.980	9.00	7.9	
11	MR 68	Sub Grade	R-5 Line	2+240 to 2+697	1.990	8.25	7.5	
12	MR 69	Sub Grade	R-3 Road	5+170 to 5+660	2.020	8.25	8.5	
13	MR 70	Sub Grade	R-31 Line	0+000 to 0+185	1.980	9.00	6.5	
14	MR 71	Sub Grade	R-16 Line &T2L19	0+00 to 0+240	1.980	9.00	6.00	
15	MR 72	Sub Grade	R-21 Line	0+00 to 0+740	1.995	8.50	6.50	
16	MR 73	Sub Grade	T3L25	0+00 to 0+350	7.995	8.75	6.00	

AS PER Standard Specification For Road and Bridge worksSection 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 Town Integrated Urban Environmental Improvement Project

Biratnagar Sub-Metropolitan city

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

## DAILY WEATHER RECORD

### FOR THE MONTH OF MARCH 2017

Date	WEATHER Record						Temp.c		
	Sunny	Foggy	Cloudy	Morning Rain HRS	Night Rain Hrs.	Day Rain Hrs.	9:00 AM	5:00 PM	Rain Fall MM
1	Sunny						22.5	20	
2	Sunny						23	21	
3	Sunny						26.2	22	
4	Sunny						27.1	22.4	
5	Sunny						26.1	21.4	
6	Sunny						26.4	20.2	
7	Sunny						25.7	24.2	
8	Sunny						26.1	23.1	
9	Sunny						25.1	20.1	
10	Sunny				Night Rain Hrs.		24.1	22.2	56
11	Sunny						20.2	20.4	
12	Sunny						22.6	20.5	
13	Sunny						22.8	20.6	
14	Sunny						22.7	19.7	
15	Sunny						22.6	21.1	
16	Sunny						22.8	20.4	
17	Sunny						22.7	21.2	
18	Sunny						23.4	19.4	
19	Sunny						20.2	19.5	
20	Sunny				Night Rain Hrs.		21.4	20.1	62
21	Sunny						22.5	20.2	
22	Sunny						23.1	20.6	
23	Sunny						24.1	19.2	
24	Sunny				Night Rain Hrs.		20.2	19	32
25	Sunny						21.2	18.9	
26			Cloudy				21.2	19.4	
27			Cloudy				20.2	19.9	
28			Cloudy				21.4	20	
29			Cloudy				21.7	21	
30			Cloudy				20.7	20.2	
31	Sunny						20.7	19.8	

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved By C.S.E

Record Checked By A.C.S.E

Consultant Reps



CTCE-KALIKA J/V

Submitted By Project Manager

Record Reported By Q.C Manager

Contractor Reps



# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

## CEMENT TEST SUMMERY

For the Month of MARCH 2017

P.G-1

S.N.	Lab. Ref. NO.	Description of cement	Testing Date	Consistency & Setting Time			Remarks
				Norm. Const.	Intial(min.)	Final(min.)	
1	MR260	SHIVAM OPC	1/3/2017	38.1	190	280	All Cement Are Nepali BRAND
2	MR261	SHIVAM OPC	2/3/2017	37.3	185	295	
3	MR262	SHIVAM OPC	3/3/2017	36.7	180	300	
4	MR 263	SHIVAM OPC	4/3/2017	36.7	190	305	
5	MR 264	SHIVAM OPC	5/3/2017	36.6	205	285	
6	MR265	SHIVAM OPC	6/3/2017	36.6	215	290	
7	MR 266	SHIVAM OPC	7/3/2017	37.0	190	305	
8	MR 267	KOSHI OPC	8/3/2017	36.6	180	300	OPC
9	MR 268	KOSHI OPC	9/3/2017	37.7	200	295	
10	MR 269	KOSHI OPC	10/3/2017	35.7	185	305	
11	MR 270	KOSHI OPC	11/3/2017	35.7	205	315	
12	MR 271	KOSHI OPC	12/3/2017	36.0	215	290	
13	MR 272	KOSHI OPC	13/3/2017	36.4	210	295	
14	MR 273	KOSHI OPC	14/3/2017	36.7	180	310	
15	MR 274	KOSHI OPC	15/3/2017	36.6	185	320	
16	MR 275	KOSHI OPC	16/3/2017	36.3	195	300	
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 URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

P.G-1

## Summery of Concrete Crushed Aggregate 20mm down For The Month of MARCH 2017

S.N.	DESCRIPTION / SOURCE	LAB REF. NO.	Grain Siza Distribution				FI %	LAA %	ACV %	REMARKS
			25	20	10	4.75				
1	From Contractor yard	MR344	100	97.92	45.85	4.46	13.16	32.52	19.3	Aggregates Source Om shree CRUSHER
2	From Contractor yard	MR345	100	97.52	46.85	4.22	13.20	32.44	19.4	
3	From Contractor yard	MR346	100	96.29	44.25	7.28	13.21	32.68	19.6	
4	From Contractor yard	MR347	100	96.63	44.62	6.13	13.72	32.32	19.7	
5	From WWTP	MR 348	100	96.62	38.23	4.45	13.83	32.80	19.9	PLANT
6	From WWTP	MR 349	100	96.67	43.74	4.14	13.20	32.92	20.2	
7	From WWTP	MR 350	100	95.87	42.46	3.18	13.57	33.16	20.2	
8	From WWTP	MR 351	100	96.32	40.29	3.45	13.27	33.36	20.2	
9	From R-21 Line	MR 352	100	97.20	44.38	3.86	13.16	33.48	20.4	
10	From R-21 Line	MR 353	100	98.00	44.21	4.02	13.57	33.68	20.5	
11	From R-21 Line	MR 354	100	96.71	38.20	3.41	12.93	33.60	20.0	
12	From Highway Man hole	MR 355	100	97.66	34.98	3.80	12.07	33.76	20.0	
Section 900:IS 383-1970 Required			100	95-100	25-55	0-10	Less 15%	Less 35%	Less 30%	
SMEC-Brisbane-AQUA-CEMAT-BDA Approved by CSE 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 URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

## Summary of Fine Concrete Aggregates Sand FOR THE MONTH OF MARCH 2017

S.N.	DESCRIPTION / LOCATION	LAB REF. NO:	Grain Siza Distribution							REMARKS
			10.	4.75	2.36	1.18	0.6	0.3	0.15	
1	WWTP Line	MR 372	100.00	92.00	84.80	69.60	50.00	23.20	6.00	source om shree Crusher Plant Chisang Morang
2	WWTP Line	MR 373	100.00	92.00	85.20	69.20	50.40	24.40	6.80	
3	WWTP Line	MR 374	100.00	93.60	84.00	68.00	48.00	21.60	6.00	
4	WWTP Line	MR 375	100.00	94.40	84.40	68.00	48.40	20.80	5.20	
5	High way Man Hole	MR 376	100.00	94.02	82.47	64.14	44.22	20.32	6.77	
6	High way Man Hole	MR 377	100.00	93.60	81.20	63.20	42.00	19.20	6.00	
7	From Contractor Yard	MR 378	100.00	93.20	81.20	63.20	45.60	19.60	5.20	
8	From Contractor Yard	MR 379	100.00	93.60	81.20	62.80	44.80	19.60	6.00	
9	From Contractor Yard	MR 380	100.00	93.60	80.80	61.20	45.60	19.20	4.00	
10	From Contractor Yard	MR 381	100.00	94.40	78.80	59.20	37.60	17.60	7.60	
11	From Contractor Yard	MR 382	100.00	94.00	80.80	62.40	45.20	20.40	4.60	
12	From Contractor Yard	MR 383	100.00	94.00	80.00	61.20	45.20	22.40	6.00	
13	From R-8 Line	MR 384	100.00	92.80	81.60	63.60	46.00	22.00	7.60	
14	From R-8 Line	MR 385	100.00	93.20	81.60	62.40	46.40	20.00	4.80	
15	From R-8 Line	MR 386	100.00	93.60	81.20	63.20	45.60	21.20	6.00	
16	From Prativa Chowck	MR 387	100.00	94.00	81.20	63.20	46.40	20.00	5.20	
17	From Prativa Chowck	MR 388	100.00	93.60	81.20	62.40	46.00	19.20	5.60	
18	From Prativa Chowck	MR 389	100.00	93.20	80.00	62.00	44.40	20.40	5.60	
19	High way Man Hole	MR 390	100.00	93.60	81.60	63.60	46.80	20.40	5.20	
20	High way Man Hole	MR 391	100.00	93.20	80.80	63.20	46.80	20.00	4.40	
Specifacation Limit is 383-1970 Zone -2			100-100	90-100	75-100	55-90	35-59	8-30	0-10	
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													
SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M30/20 MAN HOLE CASTING WORK MIX													
FOR THE MONTH OF MARCH 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	MR275	2/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.3	30.7	
2	MR 276	3/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.7	30.9	
3	MR 277	4/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	31.0	
4	MR 278	5/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.2	31.5	
5	MR 279	6/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.2	31.9	
6	MR 280	7/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	32.1	
7	MR 281	8/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.2	32.7	
8	MR 282	9/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.8	33.3	
9	MR 283	10/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.6	31.6	
10	MR 284	11/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.0	30.7	
11	MR 285	12/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.7	31.1	
12	MR 286	13/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.0	31.0	
13	MR 287	14/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.9	31.3	
14	MR 288	15/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.8	31.6	
15	MR 289	16/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.7	31.3	
16	MR 290	17/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.7	31.1	
17	MR 291	18/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.8	31.2	

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

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

Min Required 20.1 30

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 MARCH 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	556	7/3/2017	WWTP	WWTP	AMBEY	10.9	
2	557	7/3/2017	WWTP	WWTP	AMBEY	10.4	
3	558	7/3/2017	WWTP	WWTP	AMBEY	10.7	
4	559	7/3/2017	WWTP	WWTP	AMBEY	10.3	
5	560	7/3/2017	WWTP	WWTP	AMBEY	10.9	
6	561	7/3/2017	WWTP	WWTP	AMBEY	10.8	
7	562	7/3/2017	Brick Man hole	Highway	ANAND	11.1	
8	563	7/3/2017	Brick Man hole	Highway	ANAND	10.5	
9	564	12/3/2017	Brick Man hole	Highway	ANAND	10.5	
10	565	12/3/2017	Brick Man hole	Highway	ANAND	10.5	
11	566	12/3/2017	Brick Man hole	Highway	ANAND	10.4	
12	567	17/3/2017	Prativa chowck	Prativa chowck	ANAND	10.8	
13	568	17/3/2017	Prativa chowck	Prativa chowck	ANAND	10.9	
14	569	17/3/2017	Prativa chowck	Prativa chowck	ANAND	10.7	
15	570	20/3/2017	Prativa chowck	Prativa chowck	N&B	10.6	
16	571	20/3/2017	Prativa chowck	Prativa chowck	N&B	10.5	
17	572	20/3/217	R-3	Devlota Chowck	N&B	10.6	
18	573	20/3/217	R-3	Devlota Chowck	N&B	11.0	
19	574	20/3/2017	R-3	Devlota Chowck	N&B	10.4	
20	575	20/3/2017	R-3	Devlota Chowck	N&B	10.4	
21	576	20/3/2017	R-3	Devlota Chowck	N&B	10.1	

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

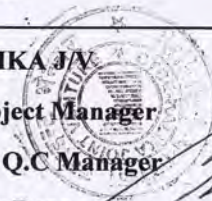


CTCE-KALIKA J/V

Submitted by Project Manager

Test conducted by Q.C Manager

Contractor Reps



# SECONDARY TOWNS INTEGRATED URBAN 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 MARCH 2017

P.G-1

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	716	1/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	21.63	26.07	
2	717	2/2/2017	M20 Work Mix	S-9 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	17.19	20.44	
3	718	3/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	21.63	25.93	
4	719	4/2/2017	M20 Work Mix	R-29 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.96	21.19	
5	720	5/2/2017	M20 Work Mix	R-7 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.59	20.74	
6	721	6/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	21.33	25.48	
7	722	7/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	22.22	25.63	
8	723	7/2/2017	M30 Work Mix	Slum Well 4 th Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	19.30	30.67	Add mix=0.5%
9	724	7/2/2017	M30 Work Mix	Slum Well 4 th Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	20.40	30.52	Add mix=0.5%
10	725	8/2/2017	M20 Work Mix	R-7 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	15.85	20.44	
11	726	8/2/2017	M20 Work Mix	WWTP Guard House	0.50	1	2	3.5	Shivam	Om shree C/plant	16.15	20.74	
12	727	13/2/2017	M20 Work Mix	WWTP Guard House Tie Beam	0.50	1	2	3.5	Shivam	Om shree C/plant	17.20	21.04	
13	728	16/2/2017	M25 Work Mix	R-5 Line RCC	0.46	1	1.5	3.25	Shivam	Om shree C/plant	14.15	27.26	
14	729	21/2/2017	M30 Work Mix	Slum Well 5 th Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	22.74	31.41	Add mix=0.5%

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**

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

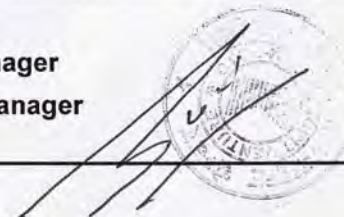
Consultants Reps

**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

MONTHLY Test Result Summary Sheet For The Month of MARCH 2017

**STIUEIP**

## 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)								Lab. MDD (g/cc)	Soaked CBR (%)	Lab. OMC (%)	Remarks
				(% passing by weight)											
				63	37.5	20	10	5	2.360	1.18	0.075				
1	156	16/3/2017	R-29 Line 0+000 to 0+257	100	82.91	70.08	56.44	42.38	33.27	22.14	6.93	2.220	48.00	9.50	
2	157	16/3/2017	R-29 Line 0+000 to 0+257	100	88.67	69.92	55.77	42.27	31.47	20.88	6.25				
3	158	16/3/2017	R-29 Line 0+000 to 0+257	100	78.81	66.33	52.89	40.33	31.22	19.24	6.10				
4	159	20/3/2017	T3L26 C 0+000 to 0+156	100	88.44	70.32	57.69	43.14	32.49	20.21	6.03	2.220	42.00	9.50	
5	160	20/3/2017	T3L26 C 0+000 to 0+156	100	87.23	70.84	58.80	44.64	31.86	19.81	6.34				
6	161	20/3/2017	T3L26E 0+00 to 0+246	100	89.45	74.08	61.61	46.79	33.78	21.27	6.89	2.220	47.00	9.50	
7	162	20/3/2017	T3L26E 0+00 to 0+246	100	87.58	72.32	60.53	45.28	32.48	20.41	5.93				
8	163	20/3/2017	T3L26E 0+00 to 0+246	100	87.12	68.92	54.06	42.50	30.61	22.34	6.67				
9	164	20/3/2017	R-8 Line 0+000 to 0+230	100	87.54	71.99	55.91	43.63	30.26	20.79	5.72	2.220	43.00	9.50	
10	165	20/3/2017	R-8 Line 0+000 to 0+230	100	86.92	71.72	55.86	43.48	30.23	20.97	5.64				
11	166	20/3/2017	R-8 Line 0+000 to 0+230	100	83.61	69.08	54.86	41.74	29.13	20.31	5.81				
12	167	21/3/2017	T3L26A 0+000 to 0+085	100	87.74	73.07	58.70	44.85	33.16	21.44	6.16	2.220	42.00	9.50	
13	168	21/3/2017	T3L26A 0+000 to 0+085	100	88.78	74.24	58.17	43.66	30.94	20.39	5.52				
14	169	21/3/2017	T3L26 B 0+00 to +085	100	84.05	72.19	57.38	43.90	32.01	24.03	5.29	2.220	46.00	9.50	
15	170	21/3/2017	T3L26 B 0+00 to +085	100	81.46	70.56	57.02	41.73	30.20	22.98	4.66				
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

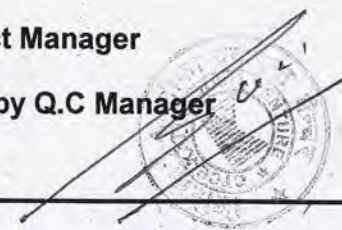


CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps



# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENT IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitan City

## SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF MARCH 2017

P.G-1

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	703	KOSHI	R-8 LINE	1:4 by volume	2/2/2017	36.60	190	355	9/2/2017	5.90	2/3/2017	7.80	✓
2	704	KOSHI	WWTP	1:4 by volume	3/2/2017	36.90	185	280	10/2/2017	5.90	3/3/2017	7.90	✓
3	705	KOSHI	WWTP	1:4 by volume	4/2/2017	37.00	180	315	11/2/2017	5.90	4/3/2017	7.80	✓
4	706	KOSHI	WWTP	1:4 by volume	5/2/2017	37.00	180	325	12/2/2017	6.90	5/3/2017	8.00	✓
5	707	KOSHI	R-21 Line	1:4 by volume	5/2/2017	37.00	180	325	12/2/2017	6.70	5/3/2017	7.80	✓
6	708	KOSHI	R-25 Line	1:4 by volume	5/2/2017	37.00	180	325	12/2/2017	6.70	6/3/2017	8.00	✓
7	709	KOSHI	R-25 Line	1:4 by volume	6/2/2017	37.00	185	320	13/2/2017	5.30	7/3/2017	7.80	✓
8	710	KOSHI	High way Man Hole	1:4 by volume	6/2/2017	37.00	185	320	13/2/2017	5.30	7/3/2017	8.00	✓
9	711	KOSHI	R-26 Line	1:4 by volume	7/2/2017	37.10	185	265	14/2/2017	5.40	8/3/2017	7.80	✓
10	712	KOSHI	R-27 Line	1:4 by volume	7/2/2017	37.10	185	265	14/2/2017	5.40	8/3/2017	8.00	✓
11	713	KOSHI	R-29 Line	1:4 by volume	7/2/2017	37.10	185	265	14/2/2017	5.30	8/3/2017	7.80	✓
12	714	KOSHI	WWTP	1:4 by volume	8/2/2017	36.70	200	325	15/2/2017	5.30	9/3/2017	7.90	✓
13	715	KOSHI	High way Man Hole	1:4 by volume	8/2/2017	36.70	200	325	15/2/2017	5.30	9/3/2017	7.80	✓
14	716	KOSHI	R-21 Line	1:4 by volume	8/2/2017	36.70	200	325	15/2/2017	5.30	9/3/2017	8.00	✓
15	717	KOSHI	R-5 Line	1:4 by volume	9/2/2017	36.70	200	325	16/2/2017	5.60	10/3/2017	8.00	✓

MIN 45m    Max 600m    Required strength on 28 days not less than 7.5 N/MM2

SMEC-Brisbane-AQUA-CEMAT-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

Contractore 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 MARCH 2017

Description : Field Density Tests on

FDT -58:R29 Line East 0+630 to 0+887

FDT-59: T3L26E Line 0+000 to 0+160

FDT-60 : R-8 Line 0+000 to 0+230

FDT-61:R28 Line 0+000 0+320

FDT-62;R-111 (T3L26C)

### SUB GRADE

P.G-1

S.N.	L/Ref. No.	Date	Location/ Area -	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FDT 58	6/3/2017	0+660 CL	1.95	98.48	5	
2			0+710 RHS	1.9	95.96	7	
3			0+770 LHS	1.92	96.97	5	
4			0+850 RHS	1.91	96.46	5	
5			0+870 RHS	1.93	97.47	5	
1	FDT 59	17/3/2017	0+015LHS	1.97	99.49	6.00	
2			0+070 RHS	1.91	96.46	6.00	
3			0+130 CL	1.95	98.48	5.00	
4			0+160 RHS	1.94	97.98	4.00	
1	FDT 60	17/3/2017	0+200CL	1.96	98.99	4.00	
2			0+140 LHS	1.96	98.99	5.00	
3			0+060 RHS	1.950	98.48	5.00	
4			0+030 LHS	1.90	95.96	5.00	
5			0+010 CL	1.93	97.47	5.00	
Required				1.980	95%	OMC <9.00	
1	FDT 61	18/3/2017	0+040 LHS	2.12	97.70	6.00	
2			0+090 RHS	2.14	98.61	6.00	
3			0+150 CL	2.08	95.86	7.00	
4			0+200 LHS	2.14	98.61	6.00	
5			0+250 RHS	2.14	98.61	5.00	
6			0+310 CL	2.14	98.61	6.00	
Required				2.170	95%	OMC <6.60	
1	FDT 62	20/3/2017	0+010 LHS	1.96	98.82	8.00	
2			0+060 RHS	1.97	99.61	7.00	
3			0+100 CL	1.96	99.10	6.00	
4			0+150 LHS	1.92	96.75	6.50	
Required				1.980	95%	OMC <9.00	
SMEC-Brisbane -AQUA-CEMAT-BDA				CTCE-KALIKA J/V			
Approved by C.S.E				Submitted by Project Manager			
Test Checked by A.C.S.E				Test Conducted by Q.C Manager			
Consultant Reps				Contractors Reps			

**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**

**Biratnagar Sub-Metropolitan City**

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

**SUB BASE LAYER**

**For The Month of MARCH 2017**

**FDT-39: R29 Line East 0+000 to 0+160**

**FDT-40: R-111 Line**

**FDT-42: R-8 Line**

**FDT-43&FDT-44: T3L26A & T3L26B**

S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		Remarks /Thickness
1	FDT-39	19/3/2017	0+010 LHS	2.17	97.75	3.00	18.5
2			0+062 RHS	2.18	98.20	5.00	14.0
3			0+090 CL	2.21	99.55	4.00	16.5
4			0+130 RHS	2.17	97.75	5.00	15.5
5			0+150 LHS	2.18	98.20	4.00	14.5
6			0+160 CL	2.15	96.85	3.00	15.5
1	FDT-40	24/3/2017	0+140 LHS	2.18	98%	5.00	15.5
2			0+125 RHS	2.19	98.64	6.00	16.0
3			0+060 CL	2.16	97.29	4.00	18.0
4			0+010 RHS	2.19	98.64	4.00	16.0
1	FDT-41	24/3/2017	0+010 LHS	2.15	96.85	6.00	15
2			0+050 RHS	2.21	99.55	6.50	14.5
3			0+100 CL	2.17	97.75	5.00	15
4			0+180 RHS	2.12	95.50	6.00	14
5			0+240 LHS	2.17	97.75	6.00	17
1	FDT-42		0+010 LHS	2.19	98.66	9.00	17.5
2			0+050 RHS	2.19	98.66	7.00	16
3			0+100 CL	2.2	99.10	7.00	15
4			0+180 RHS	2.17	97.75	7.00	15
1	FDT-43 & FDT-44	24/3/2017	0+030 RHS	2.17	97.75	5.00	16.5
2			0+060 LHS	2.20	99.10	6.00	17
3			0+085 CL	2.20	99.10	5.00	14.5
4			0+020 CL	2.16	97.30	8.00	16
5			0+040 RHS	2.19	98.65	5.00	14.5
6			0+080 RHS	2.18	98.20	4.00	15

**Required**

**2.220**

**95%**

**OMC <9.50**

**15 CM**

SMEC-Brisbane -AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

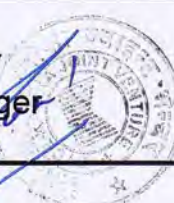
Consultant Reps

CTCE-KALIKA J/V

Submitted by Project Manager

Test Conducted by Q.C Manager

Contractors Reps



## Annex-8

### : Contractor's progress report-March, 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 – 40**

**March 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**

Address: Kalika tower-6<sup>th</sup> floor, Baluwatar, Kathmandu, Nepal. Tel: 01-4439152, 4439153, 4439154, Fax: 01-4439155.

E-mail: [info@kalikagroup.com](mailto:info@kalikagroup.com), Site Office: Kathari Tel. 9852024596 E-mail: [kalikabrt@gmail.com](mailto:kalikabrt@gmail.com)

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1. Introduction
2. Project Component
3. Salient Feature
4. Scope of Work
5. Physical Progress (Achievement in up to this Month)
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  - 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	EOT-2 under process
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	NRs 2,956,290,542.71

#### 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 differs 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 pipework, 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)**

Physical Progress till March 2017						
S.N.	Location	Proposed Length (m)	Progress		Total to Date (m)	Progress (%)
			Up to Feb. 2017 (m)	This Month (m)		
1	B1	4,003.55	3758.00		3758	93.87
2	B2	3,724	3724.00		3724	100.00
3	B3	3505.02	3463.00		3463.00	98.80
4	S5	1201	1201.00		1201.00	100.00
5	S9	3558.22	2523.00	100	2623.00	73.72
6	S11	1350.60	1350.60		1350.60	100.00
7	S13	5000.21	4864.00		4864.00	97.28
8	CN2	2197.30	2142.00		2142.00	97.48
9	CN3	2563.77	1422.00	276.15	1698.15	66.24
10	Rani	6486.70	6463.28		6463.28	99.64
	Total	<b>33,383.05</b>	<b>30,910.88</b>	<b>376.15</b>	<b>31287.03</b>	<b>93.72</b>

**Physical Progress in Road Side Drains:**

Physical Progress till March 2017							
S.N.	Location	Length (m)	Total Length (m)	Progress		Total to Date (m)	Progress (%)
				Up to Feb. 2017 (m)	This Month (m)		
1	R2	3420	6840	6325	150	6475	94.66
2	R3	2233	2993	2874	90	2964	99.03
3	R4	1246	2212	660		660	29.83
4	R5	1068	2136	1540	596	2136	100
5	R6	1280	2560	0		0	0
6	R7	485	615	260	300	560	91.05
7	R8	370	740	332	400	732	98.91
8	R9D	116	232	0	200	200	86.20
9	R13	220	440	400	30	430	97.72
10	R16	580.0	1160	1000	160	1160	100
11	R21	2420	2420	1450	900	2350	97.10
12	R22	359	718	676	42	718	100
13	R24	390	780	720	60	780	100

14	R25	594	1188	980	200	1180	99.32
15	R26	620	1240	898	342	1240	100
16	R27	977	1954	950	900	1850	94.67
17	R28	620	1240	700		700	56.45
18	R29	620	1240	206	400	606	48.87
19	R30	328	656	0	600	600	91.46
20	R31	187	374	170	204	374	100
21	R32	189	378	0		0	0.00
22	R37	785	1570	600	600	1200	76.43
23	R64	120	120	120		120	100
24	R78	92	184	82		82	44.56
25	R107	157	314	155	100	255	81.21
26	R108	96	192	170	20	190	98.95
27	R109	90	360	355		355	98.61
28	T2L18O	143	286	268		268	93.71
29	T3L26E	93	186	48		48	25.81
30	T2L19R	177	354	0		0	0.00
31	T2L19P	103	206	0		0	0.00
32	T2L19U	81	162	0		0	0.00
33	T3L28	74.0	148.0	145		145	97.97
	Road Side Drain		36050	21940	6294	28134	78.31

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

S.N.	Location	As per VO-3		Upto Previous Month		This month		Update work		% work		Remarks
		Distance	Manhole No	Distance	Manhole No	Distance	Manhole No	Distance	Manhole No	Distance	Manhole No	
1	HDPE (T1)	3817.100	127	3364.50	116	261.000	6.00	3625.500	122			
2	HDPE (T2)	13595.400	485	12655.45	443	155.700	4.00	12811.150	447			
3	HDPE (T3)	6947.100	258	6571.10	238	0.000	0.00	6571.100	238			
4	HDPE (T4)	117.300	3	112.00	3	0.000	0.00	112.000	3			
5	<b>Sub Total (HDPE)</b>	<b>24476.900</b>	<b>873</b>	<b>22703.050</b>	<b>800</b>	<b>416.700</b>	<b>10</b>	<b>23119.750</b>	<b>810</b>	<b>94.46</b>	<b>92.78</b>	
6	Hume pipe(T1)	5026.800	144	1780.50	53	1018.750	31.00	2799.250	84			
7	Hume pipe(T2)	9488.000	276	7383.00	205	437.000	4.00	7820.000	209			
8	Hume pipe(T3)	4493.300	136	2851.50	63	0.000	0.00	2851.500	63			
9	Hume pipe(T4)	183.500	5	0.00	0	185.000	5.00	185.000	5			
10	<b>Sub Total (Hume pipe)</b>	<b>19191.600</b>	<b>561</b>	<b>12015.000</b>	<b>321</b>	<b>1640.750</b>	<b>40</b>	<b>13655.750</b>	<b>361</b>	<b>71.15</b>	<b>64.35</b>	
11	<b>Total (HDPE + Hume pipe)</b>	<b>43668.500</b>	<b>1434</b>	<b>34718.050</b>	<b>1121</b>	<b>2057.450</b>	<b>50</b>	<b>36775.500</b>	<b>1171</b>	<b>84.22</b>	<b>81.66</b>	

SN	Description	Unit	Total Upto Previous Month	This Month	Total Up to this Month	Remarks
1	Sewer Inlet	Nos.	1456.00	100	1556.00	
2	House Connection	Nos.	536.00	150	686.00	

**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 with access road	Rm	3201.00	0	3201.00	
2	Gravel road	Rm	7837.30	3673.4	11510.70	

**D. Wastewater Treatment Plant Sub-Project (Work Progress till the date)****Physical progress till March 2017**

S.N	Description	As per VO-3 Quantity (Nos,m.)	Progress		Update work	% work	Remarks
			Upto Previous Month	This month			
1	Anaerobic Pond	3	3	0	3	100	Slope finishing work under progress
2	Facultative Pond	3	2.5	0.01	2.51	83.67	Rip-rap stone masonry work under progress
3	River Training Work	600	600	0	600	100	
4	Boundary Wall	1330	1283	0	1283	96.47	
5	Office cum Lab Building	1	1	0	1	100	
6	Workshop Building	1	1	0	1	100	
7	Generator/Changing House	1	1	0	1	100	

8	Sump well	1	0.5	0	0.5	50	Upto 6.90 m. height R.C.C. work complete, Remaining work progress
9	Sludge Drying Bed	1	0.75	0.05	0.8	80	Brick masonry work complete, pipe, sand and Gravel packing work under progress
10	Road Side Drain	2880	1125	221.1	1346.1	46.74	
11	Gurd House	1	0.2	0	0.2	20.00	

#### E. 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	106263	2500	108763	
2	Precuts	Rm	11209	0	11209	
3	Kerbstone	Rm	23135		23135	
4	Manhole	Nos	2200	0	2200	
5	Sewer inlet	Nos	2224	300	2524	
6	House chamber	Nos	1346	200	1546	

#### 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	60	0	0	0	0	0	0	0
Total Production	2123	328	216	430	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 and laying of newly water supply pipe line
6. Construction work of components of waste water treatment plant

## 6. Financial Progress and Cash Flow

**Financial Progress**

<b>Installment Number</b>	<b>Total Bill Amount With Vat and PS(NRs)</b>	<b>Net Payable Amount (NRs.)</b>	<b>%</b>	<b>Remarks</b>
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
IPC 22	140,477,295.40	132,396,742.98		IPC 22
IPC 23	66,139,814.38	62,335,311.79		IPC 23
<b>Total amount of Ipc=</b>	<b>2,093,520,498.54</b>	<b>1,964,636,753.03</b>	<b>70.81%</b>	Progress Percentage WRT Contract amount after VO .03 With Vat and PS

**Physical Progress**

<b>Installment Number</b>	<b>Total Bill Amount With Vat and PS(NRs)</b>	<b>Net Payable Amount (NRs.)</b>	<b>%</b>	<b>Remarks</b>
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
IPC 22	140,477,295.40	132,396,742.98		IPC 22
IPC 23	66,139,814.38	62,335,311.79		IPC 23
<b>March 2017</b>	100000000			
<b>Total amount of Ipc=</b>	<b>2,193,520,498.54</b>	<b>1,964,636,753.03</b>	<b>74.19</b>	Progress Percentage WRT Contract amount after VO .03 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

- Construction work activities are halted due to Madesh bandha on 6<sup>th</sup>, 7<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> March 2017.
- Unseasonal Rainfall hampered daily work site activities.
- Submitted Claim No.01 to 07 has not addressed up to this month.
- 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 -23 till end of this month.

## 9. Mobilized Resource

### A. Details of Contractor's Personnel at Site

SN	Contractor's Personnel's	Position
1	UjjwalPrasai	Project Manager
2	Mahesh Subedi	Engineer
3	BisheshPrasai	Engineer
4	Bimlesh kr. Yadav	Engineer
5	SumanNiroula	Engineer
6	Santosh Yadav	Engineer
7	Sanjay Bhattarai	Engineer
8	Gaurav Bikram Shah	Engineer
9	Ankit Dahal	Engineer
10	Bhupendra Yadav	Engineer
11	AryogyaGawali	Engineer
12	Pradip Kumar Mandal	Engineer
13	Randhir Kumar Singh	Engineer
14	Narayan Rijal	Sr. Supervisor
15	Uttar Karki	Supervisor

16	Yog Raj Kafle	Supervisor
17	PrasasanRajbansi	Supervisor
18	Hari Shrestha	Supervisor
19	SarojAdhikari	Overseer
20	SurajChaudahary	Overseer
21	Sanjay Shrestha	Overseer
22	Mukesh Kumar Gachhadar	Overseer
23	Bibekananda Yadav[Nikhil]	Overseer
24	Prakash Bhattarai	Sub Overseer
25	SandeshSunam	Sub Overseer
26	Rohit Kumar Yadav	Computer operator
27	PritamSunrait	Sub Overseer
28	VishwaBandhuMainali	Finance Officer
29	YagyaKafle	Junior Accountant
30	IndramaniBhattarai	Sr. Marketing
31	Anil Pokharel	Store Keeper/Material In-charge
32	Sunil Chaudhary	Quality Control Manager
33	Shanker Chaudhary	Lab Technician
34	DipeshDahal	Lab Assistant
35	Rabin Pandit	Lab Assistant
36	Mahesh Pandit	Store Keeper
37	SarojBhattarai	Store Keeper
38	SaileshPaudel	Store Keeper
39	DipendraKarki	Store Assistant
40	Rabin BdrGurung	Store Keeper
41	Dhurba Raj Bhattarai	Store Keeper
42	Nil Prasad Neupane	Store Keeper
43	Ananda Rajbansi	Electrician
44	Ajay Chaudhary	Welder
45	Mechanics	4
46	Plumber	6
47	Light Vehicle Driver	4
48	Tipper Driver	4
49	Water Tanker Driver	5
50	Tractor Driver	15
51	Heavy Equipment operator	32
52	Helper	41
53	Cook (Casting yard and Jatuwa)	8
54	Security Guard (casting yard and Jatuwa)	4
57	Skilled Labor	340
58	UnskilledLabor	490

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

SN	Equipment	Capacity	Nos
<b>A.1</b>	<b><u>Excavators</u></b>		
	Komatsu PC200 "A"	148HP /0.97m3	1
	Komatsu PC 200 "B" (longboom)	148HP /0.97m3	1
	Hundai PC 200 "C"	148HP /0.97m3	1
	Cat Excavator 320DL "A"	148HP /0.97m3	1
	JCB Excavator-140	148HP /0.97m4	3
	Komatsu PC 120		1
	JCB Excavator-220LC		3
<b>A.3</b>	<b><u>Back Hoe Loader</u></b>	92HP/0.30m3	13
<b>A.4</b>	<b><u>Grader</u></b>		
	Komatsu GD405A-2	115HP	1
	Komatsu GD405A-3	115HP	1
<b>A.5</b>	<b><u>Jeep/Pickup</u></b>		
	Pajero-Na2Cha 1086	5 door	1
	Tata Sumo Gold-Ba11Cha 782	5 door	2
	Pickup - Ko1Cha 2544	4 door	1
<b>A.6</b>	<b><u>Water Browser</u></b>		
	Water Tanker Na1Kha 8549	Up to 12KL	1
	Water Tanker Ko1Kha 3465	Up to 12KL	1
	Water Tanker Na1Kha 2595	Up to 12KL	1
	Water Tanker Me1Kha 275	Up to 12KL	1
	Water Tank (Joined with Tractor)	10KI	1
<b>A.7</b>	<b><u>Motorbikes</u></b>		
	Shine Bike Ko 17 Pa-3394	125cc	1
	Shine Bike Ko 17 Pa-3395	125cc	1
	Shine Bike Ko 20 Pa-215	125cc	1

	Shine Bike Ko 20 Pa-230	125cc	1
	Shine Bike Ko 20 Pa-1155	125cc	1
	Shine Bike Ko 20 Pa-1167	125cc	1
	Shine Bike Ko 11 Pa-8157	125cc	1
	Honda Shine Ve 1 Pa 8845	125cc	1
	Glamor (Ko 24 3802	100 cc	1
	Glamor (Ko 24 3804)	100 cc	1
<b>A.8</b>	<b><u>Tractors</u></b>		
	Tractor Ko 1Ta 5868	85HP/Hydrollic	1
	Tractor Na 3 7936	85HP/Hydrollic	1
	Tractor Ko1Ta 1127	85HP/Hydrollic	1
	Tractor Ko 2 Ta 1755	85HP/Hydrollic	1
	Tractor Ko1Ta 4579	85HP/Hydrollic	1
	Tractor Ko1Ta 4546	85HP/Hydrollic	1
	Tractor Na1Ta 1119	85HP/Hydrollic	1
	Tractor Ko1Ta 4145	85HP/Hydrollic	1
	Tractor Ko1Ta 6204	85HP/Hydrollic	1
	Tractor Ko1Ta 1730	85HP/Hydrollic	1
	Tractor Ko1Ta 3430	85HP/Hydrollic	1
	Tractor Ko1Ta 4045	85HP/Hydrollic	1
	Tractor Ko1Ta 2244	85HP/Hydrollic	1
	Tractor Ko1Ta 1856	85HP/Hydrollic	1
	Tractor Ko1Ta 8882	85HP/Hydrollic	1
	Tractor sa 1Ta 2073	85HP/Hydrollic	1
<b>A.9</b>	<b><u>Roller &amp; Compactor</u></b>		
	JCB Vibromax	Upto 16Ton	1
	Case Compactor 450 DX	Upto 5Ton	1
	Single Drum Hand Roller [Honda GX160]	4Kw	1
	Monkey Jumpur [Honda GX 160]	6.5Ps/10000N	3
	Plate Compactor		3
	Hydrollic Compactor		1

<b>A.10</b>	<b>Tipper Truck</b>		
	AMW Tipper-Na1Ka 3489	150HP/10m3	1
	AMW Tipper-Na1Ka 3494	150HP/10m3	1
	AMW Tipper-Na1Ka 3491	150HP/10m3	1
	AMW Tipper-Na1Ka 3493	150HP/10m3	1
<b>B</b>	<b><u>Bitumunious Plant/Crane &amp; Others</u></b>		
	Asphalt Hot Mix Plant Set -Keshar DM45	40 to 60 Ton/Hr	1
	Asphalt Paver Machine-Na1Ka 3135	105HP	1
	Bitumen Distributor-Ba1Ka 3443		1
	Decanter		1
	Teller Lobed -Na3Kha 7382		1
	Mobile Unique Crane with Teller Ba1Ka 4423	10Ton	1
	Compressor		1
	JCB Hydra Liftall	15Ton	1
<b>C</b>	<b><u>Concreting Unit</u></b>		
	Manual Mixture Machine[Everest]		2
	Manual Mixture Machine [Ashoka]		2
	Hydrollic Mixture Machine[Universal]		4
	Hydrollic Mixture Machine[Kirloskar]		6
	Bar Bending Machine Set	4Ton/Hrs	3
	Bar Cutter Machine Set	4Ton/Hrs	3
	Concrete Vibrator with Needle	Diesel/3PHs/Pneumatic	14
<b>D</b>	<b><u>Work Shop Equipment and Tools</u></b>		
	Generator-Kirloskar/Jackson	20Kva	2
	Generator [Kirloskar]	125Kva	1
	Generator	62.5Kva	1
	Generator[Honda]	2.5Kva	2
	Generator[Super]	5KVA	3
	Generator[Lutian] [LT3600]	2.5KVA	1
	Welding Machine Set	4Ton/Hrs	8
	Concrete Cutter		1

	Kerb Stone Machine Set	41+00	
	Mechanical Jack		10
	Submersible Pump		15
	Pump Set		5
<b>E</b>	<b><u>Survey Equipment</u></b>	-	
	Total Station		2
	Level Machine		15
<b>F</b>	<b>Lab Equipment</b>		1 Set
		-	

## 10. Conclusion

Due to Nepal Bandha, Madesh Bandha and unseasonal heavy rainfall, the work progress is quite slow in this month. This lagging progress is catchup on next month by increasing resources.

# **ANNEX**

# LAB REPORT SUMMARY

**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**  
**BIRATNAGAR Sub-Metropolitan City**  
**Monthly Laboratory Testing Report**  
**( For The Month OF- MARCH2017)**

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	90	0	0	0		90	
2	SUB GRADE Preparation as per Specification	MDD & OMC	36	16	16	0		52	
		Field density	458	77	75	2		535	
		C.B.R	37	16	16	0		53	
3	BRICK WORK Required Test	Water Absorption	195	0	0	0		195	
		Compressive Strength	2796	105	105	0		2901	
4	Masonry Mortar (CM 7.05)	Compressive strength	4101	240	240	0		4341	
5	CONCRETE AGGREGATE  Coarse aggregate (20 mm)	Sieve analysis (20 mm)	332	24	24	0		356	
		LAA	245	24	24	0		269	
		Specific Gravity	16	0	0	0		16	
		FI	246	12	12	0		258	
		ACV	282	24	24	0		306	
		Fine aggregate (Sand)	Sieve analysis	330	35	35	0	365	
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	

*[Signature]*



**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**  
**BIRATNAGAR Sub-Metropolitant City**  
**Monthly Laboratory Testing Report**  
**( For The Month OF- MARCH2017)**

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		
7	<u>CEMENT Required Test</u>								
8	<u>OPC Cement</u>	Setting time	258	31	31	0		289	
		Normal Consistency	258	31	31	0		289	
	<u>CONCRETE</u>								
		Work Mix Test M15,M20,M25,M30	Compressive strength	11245	762	762	0	12007	
9	<u>REINFORCEMENT</u>	Required Test							
		Reinforcement tore steel	As per Specifacation	80	0	0	0	80	
10	<u>PAVEMENT MATERIALS</u>								
		Sub Base Materials	Sieve analysis	136	40	40	0	176	
			MDD & OMC	23	6	6	0	29	
			CBR	19	6	6	0	25	
			Field density	303	25	25	0	328	
11	CS Base  Crushed Stone Base  Material Laying	Sieve analysis	110	0	0	0		110	
		MDD & OMC	20	0	0	0		20	
		C.B.R	18	0	0	0		18	
		FI & C.Ratio	110	0	0	0		110	
		LAA	111	0	0	0		111	
		SSS	53	0	0	0		53	
		AIV	110	0	0	0		110	
		Field Density & OMC	179	0	0	0		179	

*Signature*



**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**  
**BIRATNAGAR Sub-Metropolitant City**  
**Monthly Laboratory Testing Report**  
**( For The Month OF- MARCH2017)**

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	39	0	0	0		39	
		FI	24	0	0	0		24	
		ACV	24	0	0	0		24	
		LAA	24	0	0	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 trichloroethylene	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	102	0	0	0		102	
		Stability	102	0	0	0		102	
		Flow	102	0	0	0		102	
		Air voides	102	0	0	0		102	



# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

BIRATNAGAR Sub-Metropolitant City

STIUEIP

## Monthly Laboratory Testing Report

( For The Month OF- MARCH2017)

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	36	0	0	0		36	
		Voids in Mineral Agg	102	0	0	0		102	
		Job mix in AC Plant	64	0	0	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	3	0	0	0		2	
	Testing machine	500 KN Manuall	3	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(Gabion 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		LAA = Los Angeles Abrasion		AIV=Aggregate Impact Value		C.R=Crushing Ratio			
SSS = Sodium Sulphate Soundness		SE=Sand Equivqlent		JMC=Job Mix Formula					
ACV = Aggregtae Crushing Value		SMEC-Brisbane-AQUA-BDA-CEMAT		CTCE-KALIKA J/V					
CBR=California Bearing Ratio		Approved by C.S.E		Submitted by Project Manager					
		Checked by A.C.S.E		Prepaid by Q.C Manager					
		Consultant Reps		Contractors Reps					

# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

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

S.N.	LAB REF. NO.	DESCRIPTION OF MATERIAL	Line	Chanage/Location	Modified ProctorGm/CC		CBR %	REMARKS
					MDD	OMC %		
1	MR 58	Sub Grade	R-29 Line East	0+000 to 0+257	1.980	9.00	6.50	
2	MR 59	Sub Grade	T3L26E Line	0+000 to 0+160	1.980	9.00	7.50	
3	MR 60	Sub Grade	R-8 Line	0+000 to 0+230	1.980	9.00	6.50	
4	MR 61	Sub Grade	R-28 Line	0+000 to 0+340	2.170	6.60	10.00	
5	MR 62	Sub Grade	R-111	0+085,0+165	1.980	9.00	7.8	
6	MR 63	Sub Grade	T3L26 B	0+085	1.980	9.00	7.8	
7	MR64	Sub Grade	T3L26 A	0+065	1.980	9.00	7.8	
8	MR 65	Sub Grade	T3L26	0+164	1.980	9.00	7.8	
9	MR 66	Sub Grade	R-37 Line	0+00 to 0+150	1.980	9.00	6.0	
10	MR 67	Sub Grade	R-21 Line	1+160 to 1+310	1.980	9.00	7.9	
11	MR 68	Sub Grade	R-5 Line	2+240 to 2+697	1.990	8.25	7.5	
12	MR 69	Sub Grade	R-3 Road	5+170 to 5+660	2.020	8.25	8.5	
13	MR 70	Sub Grade	R-31 Line	0+000 to 0+185	1.980	9.00	6.5	
14	MR 71	Sub Grade	R-16 Line &T2L19	0+00 to 0+240	1.980	9.00	6.00	
15	MR 72	Sub Grade	R-21 Line	0+00 to 0+740	1.995	8.50	6.50	
16	MR 73	Sub Grade	T3L25	0+00 to 0+350	7.995	8.75	6.00	

AS PER Standard Specification For Road and Bridge worksSection 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 Town Integrated Urban Environmental Improvement Project

Biratnagar Sub-Metropolitan city

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

## DAILY WEATHER RECORD

### FOR THE MONTH OF MARCH 2017

Date	WEATHER Record						Temp.c		
	Sunny	Foggy	Cloudy	Morning Rain HRS	Night Rain Hrs.	Day Rain Hrs.	9:00 AM	5:00 PM	Rain Fall MM
1	Sunny						22.5	20	
2	Sunny						23	21	
3	Sunny						26.2	22	
4	Sunny						27.1	22.4	
5	Sunny						26.1	21.4	
6	Sunny						26.4	20.2	
7	Sunny						25.7	24.2	
8	Sunny						26.1	23.1	
9	Sunny						25.1	20.1	
10	Sunny				Night Rain Hrs.		24.1	22.2	56
11	Sunny						20.2	20.4	
12	Sunny						22.6	20.5	
13	Sunny						22.8	20.6	
14	Sunny						22.7	19.7	
15	Sunny						22.6	21.1	
16	Sunny						22.8	20.4	
17	Sunny						22.7	21.2	
18	Sunny						23.4	19.4	
19	Sunny						20.2	19.5	
20	Sunny				Night Rain Hrs.		21.4	20.1	62
21	Sunny						22.5	20.2	
22	Sunny						23.1	20.6	
23	Sunny						24.1	19.2	
24	Sunny				Night Rain Hrs.		20.2	19	32
25	Sunny						21.2	18.9	
26			Cloudy				21.2	19.4	
27			Cloudy				20.2	19.9	
28			Cloudy				21.4	20	
29			Cloudy				21.7	21	
30			Cloudy				20.7	20.2	
31	Sunny						20.7	19.8	

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved By C.S.E

Record Checked By A.C.S.E

Consultant Reps



CTCE-KALIKA J/V

Submitted By Project Manager

Record Reported By Q.C Manager

Contractor Reps



# SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

## SUMMARY OF LAB TEST RESULT OF SUB GRADE

( For the Month of MARCH 2017)

S.N.	LAB REF. NO.	DESCRIPTION OF MATERIAL	Line	Chanage/Location	Modified Proctor Gm/CC		CBR %	REMARKS
					MDD	OMC %		
1	MR 58	Sub Grade	R-29 Line East	0+000 to 0+257	1.980	9.00	6.50	
2	MR 59	Sub Grade	T3L26E Line	0+000 to 0+160	1.980	9.00	7.50	
3	MR 60	Sub Grade	R-8 Line	0+000 to 0+230	1.980	9.00	6.50	
4	MR 61	Sub Grade	R-28 Line	0+000 to 0+340	2.170	6.60	10.00	
5	MR 62	Sub Grade	R-111	0+085,0+165	1.980	9.00	7.8	
6	MR 63	Sub Grade	T3L26 B	0+085	1.980	9.00	7.8	
7	MR64	Sub Grade	T3L26 A	0+065	1.980	9.00	7.8	
8	MR 65	Sub Grade	T3L26	0+164	1.980	9.00	7.8	
9	MR 66	Sub Grade	R-37 Line	0+00 to 0+150	1.980	9.00	6.0	
10	MR 67	Sub Grade	R-21 Line	1+160 to 1+310	1.980	9.00	7.9	
11	MR 68	Sub Grade	R-5 Line	2+240 to 2+697	1.990	8.25	7.5	
12	MR 69	Sub Grade	R-3 Road	5+170 to 5+660	2.020	8.25	8.5	
13	MR 70	Sub Grade	R-31 Line	0+000 to 0+185	1.980	9.00	6.5	
14	MR 71	Sub Grade	R-16 Line & T2L19	0+00 to 0+240	1.980	9.00	6.00	
15	MR 72	Sub Grade	R-21 Line	0+00 to 0+740	1.995	8.50	6.50	
16	MR 73	Sub Grade	T3L25	0+00 to 0+350	1.995	8.75	6.00	

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-Metropolitant City

## CEMENT TEST SUMMERY

For the Month of MARCH 2017

P.G-1

S.N.	Lab. Ref. NO.	Description of cement	Testing Date	Consistency & Setting Time			Remarks
				Norm. Const.	Intial(min.)	Final(min.)	
1	MR260	SHIVAM OPC	1/3/2017	38.1	190	280	All Cement Are Nepali BRAND
2	MR261	SHIVAM OPC	2/3/2017	37.3	185	295	
3	MR262	SHIVAM OPC	3/3/2017	36.7	180	300	
4	MR 263	SHIVAM OPC	4/3/2017	36.7	190	305	
5	MR 264	SHIVAM OPC	5/3/2017	36.6	205	285	
6	MR265	SHIVAM OPC	6/3/2017	36.6	215	290	
7	MR 266	SHIVAM OPC	7/3/2017	37.0	190	305	
8	MR 267	KOSHI OPC	8/3/2017	36.6	180	300	OPC
9	MR 268	KOSHI OPC	9/3/2017	37.7	200	295	
10	MR 269	KOSHI OPC	10/3/2017	35.7	185	305	
11	MR 270	KOSHI OPC	11/3/2017	35.7	205	315	
12	MR 271	KOSHI OPC	12/3/2017	36.0	215	290	
13	MR 272	KOSHI OPC	13/3/2017	36.4	210	295	
14	MR 273	KOSHI OPC	14/3/2017	36.7	180	310	
15	MR 274	KOSHI OPC	15/3/2017	36.6	185	320	
16	MR 275	KOSHI OPC	16/3/2017	36.3	195	300	
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 URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

## CEMENT TEST SUMMERY

For the Month of MARCH 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 276	KOSHI OPC	17/3/2017	36.1	205	305	All Cement Are Nepali BRAND
18	MR277	KOSHI OPC	18/3/2017	36.0	180	310	
19	MR 278	KOSHI OPC	19/3/2017	35.6	200	330	
20	MR 279	KOSHI OPC	20/3/2017	36.0	190	325	
21	MR 280	KOSHI OPC	21/3/2017	36.7	210	285	
22	MR 281	KOSHI OPC	22/3/2017	35.7	180	315	
23	MR 282	KOSHI OPC	23/3/2017	36.9	205	290	
24	MR 283	KOSHI OPC	24/3/2017	36.1	200	295	
25	MR 284	KOSHI OPC	25/3/2017	37.7	190	290	
26	MR 285	KOSHI OPC	26/3/2017	37.7	205	315	OPC
27	MR 286	KOSHI OPC	27/3/2017	38.1	195	300	
28	MR 287	KOSHI OPC	28/3/2017	38.3	190	330	
29	MR 288	KOSHI OPC	29/3/2017	38.6	180	315	
30	MR 289	KOSHI OPC	30/3/2017	39.0	180	345	
31	MR 290	KOSHI OPC	31/3/2017	39.4	180	335	
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 URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

P.G-1

## Summery of Concrete Crushed Aggregate 20mm down For The Month of MARCH 2017

S.N.	DESCRIPTION / SOURCE	LAB REF. NO.	Grain Siza Distribution				FI %	LAA %	ACV %	REMARKS
			25	20	10	4.75				
1	From Contractor yard	MR344	100	97.92	45.85	4.46	13.16	32.52	19.3	Aggregates
2	From Contractor yard	MR345	100	97.52	46.85	4.22	13.20	32.44	19.4	Source
3	From Contractor yard	MR346	100	96.29	44.25	7.28	13.21	32.68	19.6	Om shree
4	From Contractor yard	MR347	100	96.63	44.62	6.13	13.72	32.32	19.7	CRUSHER
5	From WWTP	MR 348	100	96.62	38.23	4.45	13.83	32.80	19.9	PLANT
6	From WWTP	MR 349	100	96.67	43.74	4.14	13.20	32.92	20.2	
7	From WWTP	MR 350	100	95.87	42.46	3.18	13.57	33.16	20.2	
8	From WWTP	MR 351	100	96.32	40.29	3.45	13.27	33.36	20.2	
9	From R-21 Line	MR 352	100	97.20	44.38	3.86	13.16	33.48	20.4	
10	From R-21 Line	MR 353	100	98.00	44.21	4.02	13.57	33.68	20.5	
11	From R-21 Line	MR 354	100	96.71	38.20	3.41	12.93	33.60	20.0	
12	From Highway Man hole	MR 355	100	97.66	34.98	3.80	12.07	33.76	20.0	
Section 900:IS 383-1970 Required			100	95-100	25-55	0-10	Less 15%	Less 35%	Less 30%	
SMEC-Brisbane-AQUA-CEMAT-BDA Approved by CSE 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

P.G-2

## Summery of Concrete Crushed Aggregate 20mm down For The Month of MARCH 2017

S.N.	DESCRIPTION / SOURCE	LAB REF. NO.	Grain Siza Distribution				FI %	LAA %	ACV %	REMARKS
			25	20	10	4.75				
13	From Highway Man hole	MR 356	100	97.54	37.82	3.00	12.15	33.96	19.9	Aggregates Source Om shree CRUSHER
14	From Highway Man hole	MR 357	100	97.59	39.09	3.01	12.93	33.68	20.5	
15	From S-9 Line	MR 358	100	97.83	37.58	3.74	12.93	33.84	20.5	
16	From S-9 Line	MR 359	100	96.73	40.73	3.09	13.12	33.56	20.4	
17	From S-9 Line	MR 360	100	97.39	42.72	3.56	13.08	32.80	20.1	PLANT
18	From S-9 Line	MR 361	100	97.28	43.12	3.65	12.37	32.08	20.2	
19	From Contractor yard	MR 362	100	96.87	46.42	4.02	13.12	32.24	20.0	
20	From Contractor yard	MR 363	100	96.28	44.63	3.37	13.12	33.16	20.2	
21	From Contractor yard	MR 364	100	97.42	42.07	4.48	13.12	33.32	20.4	
22	From R3 Devkota Chowck	MR 365	100	97.44	37.18	3.92	12.60	33.96	20.5	
23	From R3 Devkota Chowck	MR 366	100	96.17	35.96	4.32	12.67	33.48	20.3	
24	From R3 Devkota Chowck	MR 367	100	96.75	33.40	3.42	13.57	33.12	20.5	
Section 900:IS 383-1970 Required			100	95-100	25-55	0-10	Less 15%	Less 35%	Less 30%	
SMEC-Brisbane-AQUA-CEMAT-BDA Approved by CSE Test Checked by A.C.S.E Consultant Reps							CTCE-KALIKA JV Submitted by Project Manager Test conducted by Q.C Manager Contractor Reps			

# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitant City

## Summary of Fine Concrete Aggregates Sand FOR THE MONTH OF MARCH 2017

S.N.	DESCRIPTION / LOCATION	LAB REF. NO:	Grain Siza Distribution							REMARKS
			10.	4.75	2.36	1.18	0.6	0.3	0.15	
1	WWTP Line	MR 372	100.00	92.00	84.80	69.60	50.00	23.20	6.00	source om shree Crusher Plant Chisang Morang
2	WWTP Line	MR 373	100.00	92.00	85.20	69.20	50.40	24.40	6.80	
3	WWTP Line	MR 374	100.00	93.60	84.00	68.00	48.00	21.60	6.00	
4	WWTP Line	MR 375	100.00	94.40	84.40	68.00	48.40	20.80	5.20	
5	High way Man Hole	MR 376	100.00	94.02	82.47	64.14	44.22	20.32	6.77	
6	High way Man Hole	MR 377	100.00	93.60	81.20	63.20	42.00	19.20	6.00	
7	From Contractor Yard	MR 378	100.00	93.20	81.20	63.20	45.60	19.60	5.20	
8	From Contractor Yard	MR 379	100.00	93.60	81.20	62.80	44.80	19.60	6.00	
9	From Contractor Yard	MR 380	100.00	93.60	80.80	61.20	45.60	19.20	4.00	
10	From Contractor Yard	MR 381	100.00	94.40	78.80	59.20	37.60	17.60	7.60	
11	From Contractor Yard	MR 382	100.00	94.00	80.80	62.40	45.20	20.40	4.60	
12	From Contractor Yard	MR 383	100.00	94.00	80.00	61.20	45.20	22.40	6.00	
13	From R-8 Line	MR 384	100.00	92.80	81.60	63.60	46.00	22.00	7.60	
14	From R-8 Line	MR 385	100.00	93.20	81.60	62.40	46.40	20.00	4.80	
15	From R-8 Line	MR 386	100.00	93.60	81.20	63.20	45.60	21.20	6.00	
16	From Prativa Chowck	MR 387	100.00	94.00	81.20	63.20	46.40	20.00	5.20	
17	From Prativa Chowck	MR 388	100.00	93.60	81.20	62.40	46.00	19.20	5.60	
18	From Prativa Chowck	MR 389	100.00	93.20	80.00	62.00	44.40	20.40	5.60	
19	High way Man Hole	MR 390	100.00	93.60	81.60	63.60	46.80	20.40	5.20	
20	High way Man Hole	MR 391	100.00	93.20	80.80	63.20	46.80	20.00	4.40	
Specifacation Limit is 383-1970 Zone -2			100-100	90-100	75-100	55-90	35-59	8-30	0-10	
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 URABAN ENVIRONMENTAL IMPROVEMENT PROJECT										
Biratnagar Sub-Metropolitant City										
Summary of Fine Concrete Aggregates Sand FOR THE MONTH OF MARCH 2017										
S.N.	DESCRIPTION / LOCATION	LAB REF. NO:	Grain Siza Distribution							REMARKS
			10	4.75	2.36	1.18	0.6	0.3	0.15	
21	High way Man Hole	MR 392	100.00	93.60	80.80	62.40	45.20	18.80	4.00	source
22	From R-21 Line	MR 393	100.00	93.20	81.20	62.80	45.20	18.80	4.40	om shree
23	From R-21 Line	MR 394	100.00	94.00	81.20	61.60	46.00	20.00	4.80	Crusher Plant
24	From R-21 Line	MR 395	100.00	94.40	82.40	64.00	46.80	20.80	5.60	Chisang Morang
25	From Contractor yard	MR 396	100.00	93.20	80.40	62.80	45.60	19.60	5.20	
26	From Contractor yard	MR 397	100.00	93.60	81.20	63.20	46.80	21.20	5.60	
27	From Contractor yard	MR 398	100.00	93.60	81.60	63.60	46.00	20.00	5.20	
28	From Contractor yard	MR 399	100.00	93.20	81.60	63.60	46.00	20.00	5.60	
29	From Contractor yard	MR 400	100.00	93.20	82.80	63.20	47.60	21.20	6.00	
30	From Contractor yard	MR 401	100.00	93.20	82.80	64.40	47.20	20.80	5.20	
31	From S-9 Line	MR 402	100.00	93.20	83.20	65.60	48.40	22.00	6.40	
32	From S-9 Line	MR 403	100.00	93.60	83.60	64.40	48.00	21.20	5.60	
33	From S-9 Line	MR 404	100.00	93.20	82.00	64.00	46.40	20.40	4.80	
33	From WWTP	MR 405	100.00	92.40	82.00	64.00	46.40	20.40	6.00	
34	From WWTP	MR 406	100.00	92.80	82.80	63.60	49.60	22.40	7.20	
35	From WWTP	MR 407	100.00	93.60	83.20	65.20	47.60	21.20	6.00	
Specifacation Limit is 383-1970 Zone -2			100-100	90-100	75-100	55-90	35-59	8-50	0-10	
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													
SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M30/20 MAN HOLE CASTING WORK MIX													
FOR THE MONTH OF MARCH 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	MR275	2/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.3	30.7	
2	MR 276	3/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.7	30.9	
3	MR 277	4/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	31.0	
4	MR 278	5/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.2	31.5	
5	MR 279	6/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.2	31.9	
6	MR 280	7/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	22.1	32.1	
7	MR 281	8/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.2	32.7	
8	MR 282	9/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.8	33.3	
9	MR 283	10/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.6	31.6	
10	MR 284	11/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.0	30.7	
11	MR 285	12/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.7	31.1	
12	MR 286	13/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	21.0	31.0	
13	MR 287	14/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.9	31.3	
14	MR 288	15/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.8	31.6	
15	MR 289	16/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.7	31.3	
16	MR 290	17/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.7	31.1	
17	MR 291	18/2/2017	M30 Work mix	MANHOLE YARD	0.36	1	1.28	2.14	SHIVAM	Om shree C/plant	20.8	31.2	

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

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

Min Required 20.1 30

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 MARCH 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	556	7/3/2017	WWTP	WWTP	AMBEY	10.9	
2	557	7/3/2017	WWTP	WWTP	AMBEY	10.4	
3	558	7/3/2017	WWTP	WWTP	AMBEY	10.7	
4	559	7/3/2017	WWTP	WWTP	AMBEY	10.3	
5	560	7/3/2017	WWTP	WWTP	AMBEY	10.9	
6	561	7/3/2017	WWTP	WWTP	AMBEY	10.8	
7	562	7/3/2017	Brick Man hole	Highway	ANAND	11.1	
8	563	7/3/2017	Brick Man hole	Highway	ANAND	10.5	
9	564	12/3/2017	Brick Man hole	Highway	ANAND	10.5	
10	565	12/3/2017	Brick Man hole	Highway	ANAND	10.5	
11	566	12/3/2017	Brick Man hole	Highway	ANAND	10.4	
12	567	17/3/2017	Prativa chowck	Prativa chowck	ANAND	10.8	
13	568	17/3/2017	Prativa chowck	Prativa chowck	ANAND	10.9	
14	569	17/3/2017	Prativa chowck	Prativa chowck	ANAND	10.7	
15	570	20/3/2017	Prativa chowck	Prativa chowck	N&B	10.6	
16	571	20/3/2017	Prativa chowck	Prativa chowck	N&B	10.5	
17	572	20/3/217	R-3	Devlota Chowck	N&B	10.6	
18	573	20/3/217	R-3	Devlota Chowck	N&B	11.0	
19	574	20/3/2017	R-3	Devlota Chowck	N&B	10.4	
20	575	20/3/2017	R-3	Devlota Chowck	N&B	10.4	
21	576	20/3/2017	R-3	Devlota Chowck	N&B	10.1	

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

## SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M20/20 , M25/20 & M30/20 Work Mix

FOR THE MONTH OF MARCH 2017

P.G-1

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	716	1/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	21.63	26.07	
2	717	2/2/2017	M20 Work Mix	S-9 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	17.19	20.44	
3	718	3/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	21.63	25.93	
4	719	4/2/2017	M20 Work Mix	R-29 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.96	21.19	
5	720	5/2/2017	M20 Work Mix	R-7 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	16.59	20.74	
6	721	6/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	21.33	25.48	
7	722	7/2/2017	M25 Work Mix	S-9 Line Top Slab	0.46	1	1.5	3.25	Shivam	Om shree C/plant	22.22	25.63	
8	723	7/2/2017	M30 Work Mix	Slum Well 4 th Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	19.30	30.67	Add mix=0.5%
9	724	7/2/2017	M30 Work Mix	Slum Well 4 th Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	20.40	30.52	Add mix=0.5%
10	725	8/2/2017	M20 Work Mix	R-7 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	15.85	20.44	
11	726	8/2/2017	M20 Work Mix	WWTP Guard House	0.50	1	2	3.5	Shivam	Om shree C/plant	16.15	20.74	
12	727	13/2/2017	M20 Work Mix	WWTP Guard House Tie Beam	0.50	1	2	3.5	Shivam	Om shree C/plant	17.20	21.04	
13	728	16/2/2017	M25 Work Mix	R-5 Line RCC	0.46	1	1.5	3.25	Shivam	Om shree C/plant	14.15	27.26	
14	729	21/2/2017	M30 Work Mix	Slum Well 5 th Lift WWTP	0.36	1	1.3	2	Shivam	Om shree C/plant	22.74	31.41	Add mix=0.5%

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**

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

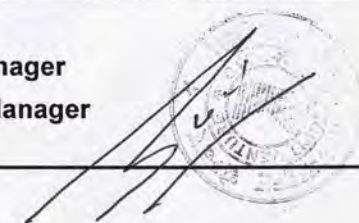


**CTCE-KALIKA J/V**

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 M20/20 SLAB CASTING WORK MIX

FOR THE MONTH OF MARCH 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	219	1/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	20.8	
2	220	1/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.8	21.0	
3	221	2/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	20.7	
4	222	2/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	21.0	
5	223	2/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	20.7	
6	224	3/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	21.6	
7	225	3/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.1	21.0	
8	226	4/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.1	21.7	
9	227	5/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.2	21.1	
10	228	6/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	21.8	
11	229	6/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	22.0	
12	230	7/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	22.0	
13	231	7/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.3	21.6	
14	232	8/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.1	22.1	
15	233	8/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.6	21.3	
16	234	9/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	21.8	
17	235	9/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.0	21.8	
18	236	10/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.6	22.0	
19	237	10/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.0	21.9	
20	238	11/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	22.4	
21	239	11/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	22.1	
22	240	12/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.5	21.8	

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 MARCH 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	
23	241	12/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	21.9	
24	242	13/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	21.9	
25	243	13/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.4	21.9	
26	244	14/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.8	21.5	
27	245	15/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.6	22.1	
28	246	16/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	21.9	
29	247	17/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.0	21.0	
30	248	18/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.8	20.3	
31	249	19/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	20.9	
32	250	20/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	21.3	
33	251	21/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.1	20.1	
34	252	22/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.2	20.2	
35	253	23/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.3	20.7	
36	254	24/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.0	20.9	
37	255	25/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.4	21.3	
38	256	26/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.5	20.7	
39	257	27/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.7	21.1	
40	258	28/2/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.9	21.0	
41	259	1/3/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.6	21.2	
42	260	2/3/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	16.0	21.0	
43	261	3/3/2017	M20 Work mix	SLAB YARD	0.50	1	2	3.5	SHIVAM	Om shree C/plant	15.4	20.7	

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

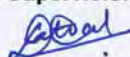
Min Required **13.4** **20**

SMEC-Brisbane-AQUA-BDA

Approved by Construction Supervision Engineer/CSE

Test checked by A.C.S.E

Consultants Reps

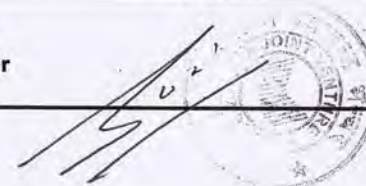


CTCE-KALIKA J/V

Submitted by Project Manager

Test conducted by Q.C Manager

Contractors Reps



# SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

MONTHLY Test Result Summary Sheet For The Month of MARCH 2017

**STIUEIP**

## 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)								Lab. MDD (g/cc)	Soaked CBR (%)	Lab. OMC (%)	Remarks
				(% passing by weight)											
				63	37.5	20	10	5	2.360	1.18	0.075				
1	156	16/3/2017	R-29 Line 0+000 to 0+257	100	82.91	70.08	56.44	42.38	33.27	22.14	6.93	2.220	48.00	9.50	
2	157	16/3/2017	R-29 Line 0+000 to 0+257	100	88.67	69.92	55.77	42.27	31.47	20.88	6.25				
3	158	16/3/2017	R-29 Line 0+000 to 0+257	100	78.81	66.33	52.89	40.33	31.22	19.24	6.10				
4	159	20/3/2017	T3L26 C 0+000 to 0+156	100	88.44	70.32	57.69	43.14	32.49	20.21	6.03	2.220	42.00	9.50	
5	160	20/3/2017	T3L26 C 0+000 to 0+156	100	87.23	70.84	58.80	44.64	31.86	19.81	6.34				
6	161	20/3/2017	T3L26E 0+00 to 0+246	100	89.45	74.08	61.61	46.79	33.78	21.27	6.89	2.220	47.00	9.50	
7	162	20/3/2017	T3L26E 0+00 to 0+246	100	87.58	72.32	60.53	45.28	32.48	20.41	5.93				
8	163	20/3/2017	T3L26E 0+00 to 0+246	100	87.12	68.92	54.06	42.50	30.61	22.34	6.67				
9	164	20/3/2017	R-8 Line 0+000 to 0+230	100	87.54	71.99	55.91	43.63	30.26	20.79	5.72	2.220	43.00	9.50	
10	165	20/3/2017	R-8 Line 0+000 to 0+230	100	86.92	71.72	55.86	43.48	30.23	20.97	5.64				
11	166	20/3/2017	R-8 Line 0+000 to 0+230	100	83.61	69.08	54.86	41.74	29.13	20.31	5.81				
12	167	21/3/2017	T3L26A 0+000 to 0+085	100	87.74	73.07	58.70	44.85	33.16	21.44	6.16	2.220	42.00	9.50	
13	168	21/3/2017	T3L26A 0+000 to 0+085	100	88.78	74.24	58.17	43.66	30.94	20.39	5.52				
14	169	21/3/2017	T3L26 B 0+00 to +085	100	84.05	72.19	57.38	43.90	32.01	24.03	5.29	2.220	46.00	9.50	
15	170	21/3/2017	T3L26 B 0+00 to +085	100	81.46	70.56	57.02	41.73	30.20	22.98	4.66				
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

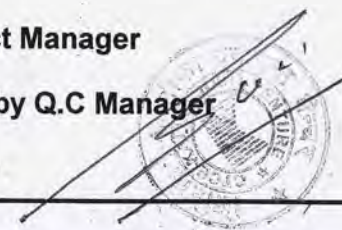


CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps



# SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

**STIUEIP**

MONTHLY Test Result Summary Sheet For The Month of MARCH 2017

## SUB BASE (Process Control)

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

P.G-2

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	171	22/3/2017	R-28 Line 0+000 to 0+340	100	84.73	71.84	57.61	45.19	34.85	24.45	5.00				
17	172	22/3/2017	R-28 Line 0+000 to 0+340	100	82.39	69.56	54.93	42.57	32.33	22.66	5.79				
18	173	22/3/2017	R-28 Line 0+000 to 0+340	100	81.69	68.95	54.47	42.61	33.00	24.10	7.00				
19	174	22/3/2017	R-28 Line 0+000 to 0+340	100	83.02	71.01	57.31	45.12	31.94	23.01	7.26				
20	175	22/3/2017	R-37 Line 0+000 to 0+150	100	84.51	71.96	57.58	44.84	32.80	21.41	7.56				
21	176	22/3/2017	R-37 Line 0+000 to 0+150	100	84.22	71.01	57.52	45.58	32.14	19.64	7.63				
22	177	25/3/2017	R-21 Line 1+310 to 1+160	100	85.67	66.53	53.30	42.53	30.43	22.22	7.24				
23	178	25/3/2017	R-21 Line 1+310 to 1+160	100	85.67	66.53	53.30	42.53	30.43	22.22	7.24				
24	179	29/3/2017	R-5 Line 2+240 to 2+697	100	84.82	65.92	51.96	41.02	28.90	19.89	6.22				
25	180	29/3/2017	R-5 Line 2+240 to 2+697	100	86.57	67.46	53.89	42.18	29.25	19.15	6.22				
26	181	29/3/2017	R-5 Line 2+240 to 2+697	100	86.71	68.75	54.50	42.43	29.12	18.54	6.21				
27	182	29/3/2017	R-5 Line 2+240 to 2+697	100	88.95	74.89	59.44	44.67	32.09	20.60	6.18				
28	183	29/3/2017	R-3 Road 5+170 to 5+660	100	83.22	69.24	53.81	39.91	28.63	20.96	7.63				Dharambadh Road
29	184	29/3/2017	R-3 Road 5+170 to 5+660	100	83.52	68.58	52.54	37.85	29.88	21.69	7.79				
30	185	29/3/2017	R-3 Road 5+170 to 5+660	100	84.73	70.50	50.92	36.69	28.43	20.34	6.76				
				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  
MONTHLY Test Result Summary Sheet For The Month of MARCH 2017

**STIUEIP**

## SUB BASE (Process Control)

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

P.G-3

SN No	LAB Ref NO	Date Tested	Location/ Chainage/Station	Grading sieve size (mm) (% passing by weight)								Lab. MDD	Soaked CBR	Lab. OMC	Remarks
				63	37.5	20	10	5	2.360	1.18	0.075	(g/cc)	(%)	(%)	
31	186	29/3/2017	R-3 Road 5+170 to 5+660	100	84.72	69.13	50.13	34.86	26.72	20.36	6.01				Dharambadh Road
32	187	29/3/2017	R-3 Road 5+170 to 5+660	100	91.10	71.22	57.69	44.93	32.54	23.41	6.62				
33	188	30/3/2017	R-21 Line 0+390 to 0+740	100	89.38	70.18	55.81	43.72	32.02	22.39	6.80				
34	189	30/3/2017	R-21 Line 0+390 to 0+740	100	88.97	69.45	55.19	42.64	31.19	21.19	7.21				
35	190	30/3/2017	R-21 Line 0+390 to 0+740	100	88.51	71.85	56.74	43.99	31.77	20.96	6.83				
36	191	30/3/2017	R-21 Line 0+390 to 0+740	100	88.81	71.56	57.11	44.36	32.62	22.17	6.27				
37	192	30/3/2017	R-21 Line 0+390 to 0+740	100	90.49	73.36	60.53	48.78	38.12	25.38	6.77				
38	193	30/3/2017	R-31 Line 0+000 to 0+185	100	89.33	72.29	59.14	47.43	37.53	24.54	7.36				
39	194	30/3/2017	R-31 Line 0+000 to 0+185	100	91.42	75.58	63.36	51.94	37.75	25.33	8.23				
40	195	30/3/2017	R-31 Line 0+000 to 0+185	100	89.47	72.58	58.00	44.92	32.90	22.43	6.84				
				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 ENVIRONMENT IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitan City

## SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF MARCH 2017

P.G-1

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	703	KOSHI	R-8 LINE	1:4 by volume	2/2/2017	36.60	190	355	9/2/2017	5.90	2/3/2017	7.80	✓
2	704	KOSHI	WWTP	1:4 by volume	3/2/2017	36.90	185	280	10/2/2017	5.90	3/3/2017	7.90	✓
3	705	KOSHI	WWTP	1:4 by volume	4/2/2017	37.00	180	315	11/2/2017	5.90	4/3/2017	7.80	✓
4	706	KOSHI	WWTP	1:4 by volume	5/2/2017	37.00	180	325	12/2/2017	6.90	5/3/2017	8.00	✓
5	707	KOSHI	R-21 Line	1:4 by volume	5/2/2017	37.00	180	325	12/2/2017	6.70	5/3/2017	7.80	✓
6	708	KOSHI	R-25 Line	1:4 by volume	5/2/2017	37.00	180	325	12/2/2017	6.70	6/3/2017	8.00	✓
7	709	KOSHI	R-25 Line	1:4 by volume	6/2/2017	37.00	185	320	13/2/2017	5.30	7/3/2017	7.80	✓
8	710	KOSHI	High way Man Hole	1:4 by volume	6/2/2017	37.00	185	320	13/2/2017	5.30	7/3/2017	8.00	✓
9	711	KOSHI	R-26 Line	1:4 by volume	7/2/2017	37.10	185	265	14/2/2017	5.40	8/3/2017	7.80	✓
10	712	KOSHI	R-27 Line	1:4 by volume	7/2/2017	37.10	185	265	14/2/2017	5.40	8/3/2017	8.00	✓
11	713	KOSHI	R-29 Line	1:4 by volume	7/2/2017	37.10	185	265	14/2/2017	5.30	8/3/2017	7.80	✓
12	714	KOSHI	WWTP	1:4 by volume	8/2/2017	36.70	200	325	15/2/2017	5.30	9/3/2017	7.90	✓
13	715	KOSHI	High way Man Hole	1:4 by volume	8/2/2017	36.70	200	325	15/2/2017	5.30	9/3/2017	7.80	✓
14	716	KOSHI	R-21 Line	1:4 by volume	8/2/2017	36.70	200	325	15/2/2017	5.30	9/3/2017	8.00	✓
15	717	KOSHI	R-5 Line	1:4 by volume	9/2/2017	36.70	200	325	16/2/2017	5.60	10/3/2017	8.00	✓

MIN 45m    Max 600m    Required strength on 28 days not less than 7.5 N/MM2

SMEC-Brisbane-AQUA-CEMAT-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

Contractore Reps



# SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENT IMPROVEMENT PROJECT

Biratnagar-Sub-Metropolitant City

## SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF MARCH 2017

P.G-2

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	
16	718	KOSHI	CN-2 LINE	1:4 by volume	9/2/2017	37.60	185	310	16/2/2017	5.30	9/3/2017	7.80	
17	719	KOSHI	WWTP	1:4 by volume	9/2/2017	37.60	185	310	16/2/2017	5.30	9/3/2017	8.00	
18	720	KOSHI	Highway Man Hole	1:4 by volume	10/2/2017	37.00	180	315	17/2/2017	5.30	10/3/2017	7.80	
19	721	KOSHI	CN-2 LINE	1:4 by volume	10/2/2017	37.00	180	315	17/2/2017	5.30	10/3/2017	7.80	
20	722	KOSHI	R-7 Line	1:4 by volume	11/2/2017	36.70	150	300	18/2/2017	5.20	11/3/2017	7.80	
21	723	KOSHI	R-8 Line	1:4 by volume	11/2/2017	36.70	150	300	18/2/2017	5.40	11/3/2017	7.90	
22	724	KOSHI	R-5 Line	1:4 by volume	12/2/2017	36.90	200	325	19/2/2017	5.60	12/3/2017	7.80	
23	725	KOSHI	CN-2 LINE	1:4 by volume	12/2/2017	36.40	120	330	19/2/2017	5.30	12/3/2017	7.90	
24	726	KOSHI	WWTP	1:4 by volume	12/2/2017	36.40	120	330	19/2/2017	5.40	12/3/2017	8.00	
25	727	KOSHI	CN-2 LINE	1:4 by volume	13/2/2017	36.40	120	330	20/2/2017	5.60	13/3/2017	7.80	
26	728	KOSHI	R-6 Line	1:4 by volume	13/2/2017	36.40	120	330	20/2/2017	5.90	13/3/2017	7.90	
27	729	KOSHI	CN-2 LINE	1:4 by volume	14/2/2017	37.10	175	350	21/2/2017	5.40	14/3/2017	8.20	
28	730	KOSHI	R-8 Line	1:4 by volume	14/2/2017	37.10	175	350	21/2/2017	5.90	14/3/2017	7.80	
29	731	KOSHI	WWTP	1:4 by volume	16/2/2017	37.10	165	295	23/2/2017	5.90	16/3/2017	7.90	
30	732	KOSHI	WWTP	1:4 by volume	17/2/2017	37.70	160	290	24/2/2017	5.60	17/3/2017	7.80	
							MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2				

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by Construction Supervision Engineer/CSE

Test Checked by A.C.S.E

Consultants Reps

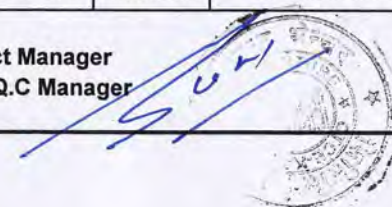


CTCE-KALIKA J/V

Submitted by Project Manager

Test conducted by Q.C Manager

Contractore Reps



## SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENT IMPROVEMENT PROJECT

### Biratnagar-Sub-Metropolitan City

## SUMMARY OF MORTAR COMPRESSIVE STRENGTH TEST WORK MIX CUBE

FOR THE MONTH OF MARCH 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	733	KOSHI	WWTP	1:4 by volume	17/2/2017	37.70	160	290	24/2/2017	5.30	17/3/2017	7.90	
32	734	KOSHI	WWTP	1:4 by volume	17/2/2017	37.70	160	290	24/2/2017	5.40	17/3/2017	8.00	
33	735	KOSHI	R-5 Line	1:4 by volume	18/2/2017	38.00	170	285	25/2/2017	5.40	18/3/2017	7.90	
34	736	KOSHI	High way Man Hole	1:4 by volume	18/2/2017	38.00	170	285	25/2/2017	5.90	18/3/2017	7.90	
35	737	KOSHI	WWTP	1:4 by volume	19/2/2017	38.00	170	285	26/2/2017	5.90	19/3/2017	8.00	
36	738	KOSHI	WWTP	1:4 by volume	20/2/2017	38.00	150	280	27/2/2017	5.60	20/3/2017	7.80	
37	739	KOSHI	WWTP	1:4 by volume	21/2/2017	38.00	160	295	28/2/2017	5.40	21/3/2017	7.90	
38	740	KOSHI	R-21 Line	1:4 by volume	23/2/2017	39.40	160	315	2/3/2017	5.60	23/3/2017	8.00	
39	741	KOSHI	High way Man Hole	1:4 by volume	23/2/2017	39.40	160	315	2/3/2017	7.30	23/3/2017	7.90	
40	742	KOSHI	WWTP	1:4 by volume	23/2/2017	39.40	160	315	2/3/2017	5.90	23/3/2017	7.90	
							MIN 45m	Max 600m	Required strength on 28 days not less than 7.5 N/MM2				

**SMEC-Brisbane-AQUA-CEMAT-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**

## Contractore Reps

MIN 45m

Max 600m

Required strength on 28 days not less than 7.5 N/MM<sup>2</sup>

**SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT**

**Biratnagar Sub-Metropolitan City**

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

**Description : Field Density Tests on**

**FDT -58:R29 Line East 0+630 to 0+887**

**FDT-59: T3L26E Line 0+000 to 0+160**

**FDT-60 : R-8 Line 0+000 to 0+230**

**FDT-61:R28 Line 0+000 0+320**

**FDT-62;R-111 (T3L26C)**

**SUB GRADE**

**P.G-1**

S.N.	L/Ref. No.	Date	Location/ Area -	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FDT 58	6/3/2017	0+660 CL	1.95	98.48	5	
2			0+710 RHS	1.9	95.96	7	
3			0+770 LHS	1.92	96.97	5	
4			0+850 RHS	1.91	96.46	5	
5			0+870 RHS	1.93	97.47	5	
1	FDT 59	17/3/2017	0+015LHS	1.97	99.49	6.00	
2			0+070 RHS	1.91	96.46	6.00	
3			0+130 CL	1.95	98.48	5.00	
4			0+160 RHS	1.94	97.98	4.00	
1	FDT 60	17/3/2017	0+200CL	1.96	98.99	4.00	
2			0+140 LHS	1.96	98.99	5.00	
3			0+060 RHS	1.950	98.48	5.00	
4			0+030 LHS	1.90	95.96	5.00	
5			0+010 CL	1.93	97.47	5.00	
Required				1.980	95%	OMC <9.00	
1	FDT 61	18/3/2017	0+040 LHS	2.12	97.70	6.00	
2			0+090 RHS	2.14	98.61	6.00	
3			0+150 CL	2.08	95.86	7.00	
4			0+200 LHS	2.14	98.61	6.00	
5			0+250 RHS	2.14	98.61	5.00	
6			0+310 CL	2.14	98.61	6.00	
Required				2.170	95%	OMC <6.60	
1	FDT 62	20/3/2017	0+010 LHS	1.96	98.82	8.00	
2			0+060 RHS	1.97	99.61	7.00	
3			0+100 CL	1.96	99.10	6.00	
4			0+150 LHS	1.92	96.75	6.50	
Required				1.980	95%	OMC <9.00	
SMEC-Brisbane -AQUA-CEMAT-BDA				CTCE-KALIKA J/V			
Approved by C.S.E				Submitted by Project Manager			
Test Checked by A.C.S.E				Test Conducted by Q.C Manager			
Consultant Reps				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 MARCH 2017**

Description : Field Density Tests on

FDT-63 T3L26B

FDT-64 T3 L26 A

FDT-65 T3 L26

FDT -66 R37

FDT-67- R21 Line 1+160 to 1+310

**SUB GRADE**

**P.G-2**

S.N.	L/Ref. No.	Date	Location/ Area -	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FDT 63	20/3/2017	0+010 LHS	1.93	97.59	6	
2			0+040 RHS	1.9	96.1	5	
3			0+100 CL	1.95	98.68	5	
4			0+120 LHS	1.92	97.02	5	
1	FDT 64	20/3/2017	0+010 LHS	1.95	98.38	7	
2			0+040 RHS	1.91	96.34	6	
1	FDT 65	20/3/2017	0+010 LHS	1.95	98.33	4	
2			0+040 RHS	1.94	98.19	5	
1	FDT 66	22/3/2017	0+020 LHS	1.91	96.46	8	
2			0+060 RHS	1.90	95.96	4	
3			0+090 CL	1.92	96.97	5	
4			0+120 LHS	1.92	96.97	5	
1	FDT-67	24/3/2017	1+310 LHS	1.96	98.99	7	
2			1+255 RHS	1.91	96.46	4	
3			1+180 CL	1.97	99.49	5	
4			1+130 RHS	1.97	98.48	5	

**Required**

**1.980**

**95%**

**OMC <9.00**

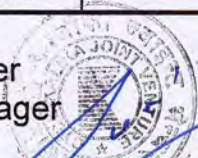
SMEC-Brisbane -AQUA-CEMAT-BDA  
 Approved by C.S.E  
 Test Checked by A.C.S.E  
 Consultant Reps

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 MARCH 2017**

Description : Field Density Tests on

FDT-68 R-5 Line College Road 2+240 to 2+697

FDT-69 R-3 Road 5+170 to 5+660 Dharam badh Road

**SUB GRADE**

**P.G-3**

S.N.	L/Ref. No.	Date	Location/ Area -	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FDT-68	27/3/2017	2+240 LHS	1.90	95.48	6.0	Needs re Rolling & Re Test
2			2+260 RHS	1.81	90.96	5.5	
3			2+260 RHS	1.91	95.98	5.5	
4			2+320 LHS	1.94	97.49	6.00	
5			2+380 RHS	1.90	95.48	5.50	
6			2+460 CL	1.96	98.49	6.00	
7			2+500 LHS	1.94	97.48	6.00	
8			2+540 RHS	1.92	96.48	6.50	
9			2+610 CL	1.95	98.48	5.00	
10			2+690 LHS	1.96	98.49	6.00	
Required				1.99	95%	OMC <8.25	
1	FDT-69	28/3/2017	5+170 LHS	1.97	97.43	4	Needs re Rolling & Re Test
2			5+220 RHS	1.98	97.95	6	
3			5+270 RHS	2.00	98.90	4	
4			5+320 RHS	2.00	99.23	8	
5			5+370 LHS	2.00	98.97	6	
6			5+450 LHS	1.88	93.32	7	Needs re Rolling & Re Test
7			4+452LHS	1.94	96.04	8	
8			5+530 RHS	1.96	97.03	8	
9			5+580 LHS	1.96	97.03	7.50	
10			5+610 RHS	1.99	98.96	5.50	
11			5+660 LHS	1.99	98.96	5.50	

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



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

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

**Description : Field Density Tests on**

**FDT-70- R-31 Line 0+000 to 0+185**

**FDT-71- R-16 & T2L19 Line 0+000 to 0+240**

**FDT-72- R-21 Line 0+390 to 0+740 Sombary Road**

**SUB GRADE**

**P.G-4**

S.N.	L/Ref. No.	Date	Location/ Area -	MDD Gm/CC	Degree of Compaction, %		THICKNESS (CM)
1	FDT-70	29/3/2017	0+180 RHS	1.90	95.96	4.00	
2			0+130 LHS	1.93	97.47	5.00	
3			0+070 CL	1.91	96.46	5.00	
4			0+010 LHS	1.94	97.98	5.00	
1	FDT-71	29/3/2017	0+240 LHS	1.92	96.97	4.50	
2			0+180 RHS	1.90	95.96	4.00	
3			0+140 LHS	1.89	95.45	6.00	
4			0+070 CL	1.96	98.99	4.00	
5			0+020 RHS	1.93	97.47	4.00	
6			T2L19 LHS Acess Road	1.89	95.45	3.00	
Required				1.980	95%	OMC <9.00	
1	FDT-72	29/3/2017	0+400 LHS	1.93	97.22	5.00	
2			0+460 RHS	1.95	98.24	5.00	
3			0+510 CL	1.96	98.74	6.00	
4			0+570 LHS	1.93	97.22	5.00	
5			0+630 RHS	1.89	95.21	5.00	
6			0+720 CL	1.91	96.22	4.00	

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)

### SUB BASE LAYER

For The Month of MARCH 2017

FDT-39: R29 Line East 0+000 to 0+160

FDT-40: R-111 Line

FDT-42: R-8 Line

FDT-43&FDT-44: T3L26A & T3L26B

S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %		Remarks /Thickness
1	FDT-39	19/3/2017	0+010 LHS	2.17	97.75	3.00	18.5
2			0+062 RHS	2.18	98.20	5.00	14.0
3			0+090 CL	2.21	99.55	4.00	16.5
4			0+130 RHS	2.17	97.75	5.00	15.5
5			0+150 LHS	2.18	98.20	4.00	14.5
6			0+160 CL	2.15	96.85	3.00	15.5
1	FDT-40	24/3/2017	0+140 LHS	2.18	98%	5.00	15.5
2			0+125 RHS	2.19	98.64	6.00	16.0
3			0+060 CL	2.16	97.29	4.00	18.0
4			0+010 RHS	2.19	98.64	4.00	16.0
1	FDT-41	24/3/2017	0+010 LHS	2.15	96.85	6.00	15
2			0+050 RHS	2.21	99.55	6.50	14.5
3			0+100 CL	2.17	97.75	5.00	15
4			0+180 RHS	2.12	95.50	6.00	14
5			0+240 LHS	2.17	97.75	6.00	17
1	FDT-42		0+010 LHS	2.19	98.66	9.00	17.5
2			0+050 RHS	2.19	98.66	7.00	16
3			0+100 CL	2.2	99.10	7.00	15
4			0+180 RHS	2.17	97.75	7.00	15
1	FDT-43 & FDT-44	24/3/2017	0+030 RHS	2.17	97.75	5.00	16.5
2			0+060 LHS	2.20	99.10	6.00	17
3			0+085 CL	2.20	99.10	5.00	14.5
4			0+020 CL	2.16	97.30	8.00	16
5			0+040 RHS	2.19	98.65	5.00	14.5
6			0+080 RHS	2.18	98.20	4.00	15

Required

2.220

95%

OMC <9.50

15 CM

SMEC-Brisbane -AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

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