

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 (April, 2016)

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

06 May 2016



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	th 8 December, 2013
Date of Completion	th 25 May, 2016
Contract Period	900 days from date of commencement
Time elapsed till April 2016	875 days from date of commencement (97.22%)
Original Contract Amount with PS and VAT	NRs. 2,391,332,117.06
Variation Order No 01 with VAT & PS	NRs. 99,753,095.43
Total Contract Amount with VO 01 including PS and VAT	NRs. 2,491,085,212.49
Variation Order No 02 with VAT & PS (under process)	NRs. 240,149,556.23
Total Contract Amount with VO 01 and VO 02 including PS and VAT	NRs. 2,719,617,069.21 (RESUBMITTED ON 29 APRIL 2016 AFTER INCORPORATION OF COMMENTS OF PMSC/PCO)
Paid Amount of IPC 01 (Mobilization Advance Payment)	NRs. 209,400,000.00
Total Amount from IPC 02 to IPC 15	NRs. 1,271,674,854.05
Financial Progress till this month wrt VO-1	51.05%
Financial Progress till this month wrt VO-2	46.76%

2 INTRODUCTION/BACKGROUND

1. SMEC International Pty (Australia) in association with Brisbane City Enterprise Pty Ltd (Australia), AQUA Consultant and Associates Ltd (Bangladesh), Building Design Authority (Nepal) and CEMAT Consultants (Nepal) have entered for a Contract of Consulting Services with Secondary Towns Integrated Urban Environmental Improvement Project (STIUEIP), Project Implementation Unit (PIU), Biratnagar Sub-metropolitan City on 7th December 2011. This monthly Progress Report of February, 2016 has been submitted to the PIU as per the Work Program proposed in the consultant's technical proposal as well as TOR of the consultant.

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

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

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

3. SUB-PROJECT COMPONENTS

3.1 SEWER LINES

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

Table 1: Proposed Sewer Lines in BSMC

S N.	Description	Unit	Quantity
1	Sewerage Pipe Supply and Installation		62,835.0
	Reinforced Concrete Pipe laying and jointing		15,748.0
	Line T1 (Secondary)	m	3,788.0
	Line T2 (Trunk)	m	7,506.0
	Line T3 (Trunk)	m	4,136.0
	Line T4 (Secondary)	m	318.0
	HDPE laying and jointing		47,087.0
	Line T1 (Secondary)	m	7,124.0
	Line T2 (Trunk)	m	19,410.0
	Line T3 (Trunk)	m	18,341.0
	Line T4 (Secondary)	m	22,12.0
2	Manhole (Brick / RCC)	no.	2,019
3	Sewer Inlet	no.	3,766.00
4	House Connection	no.	5,930.00
5	Reinstatement of Roads	km	64.420

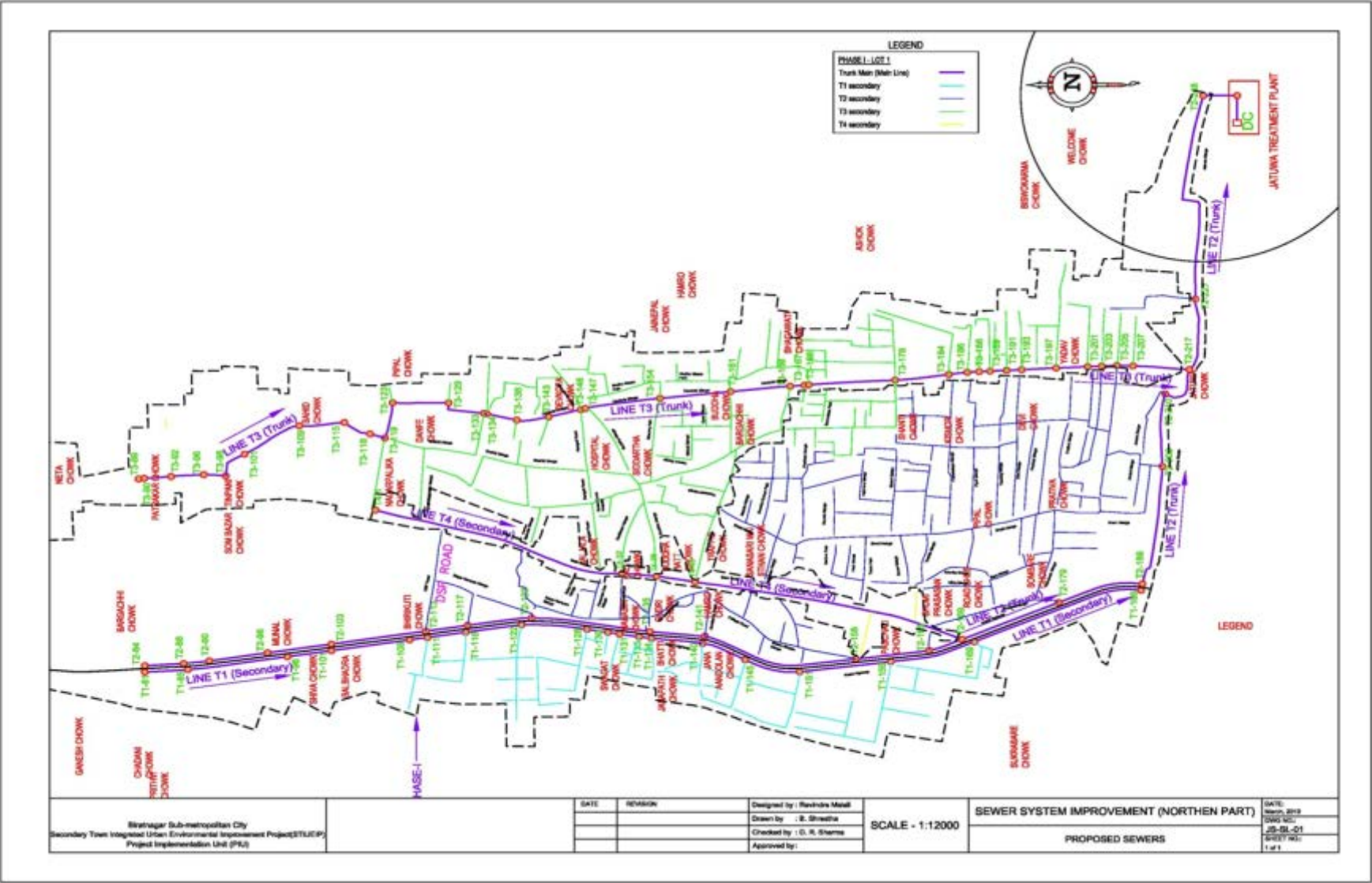


FIGURE. 1 Proposed Sewer Lines in BSMC

3.2 StormWater 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 1,324.2 Ha and 73.21 cum/sec.

Table 2: Proposed Storm Water Drains in BSMC

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

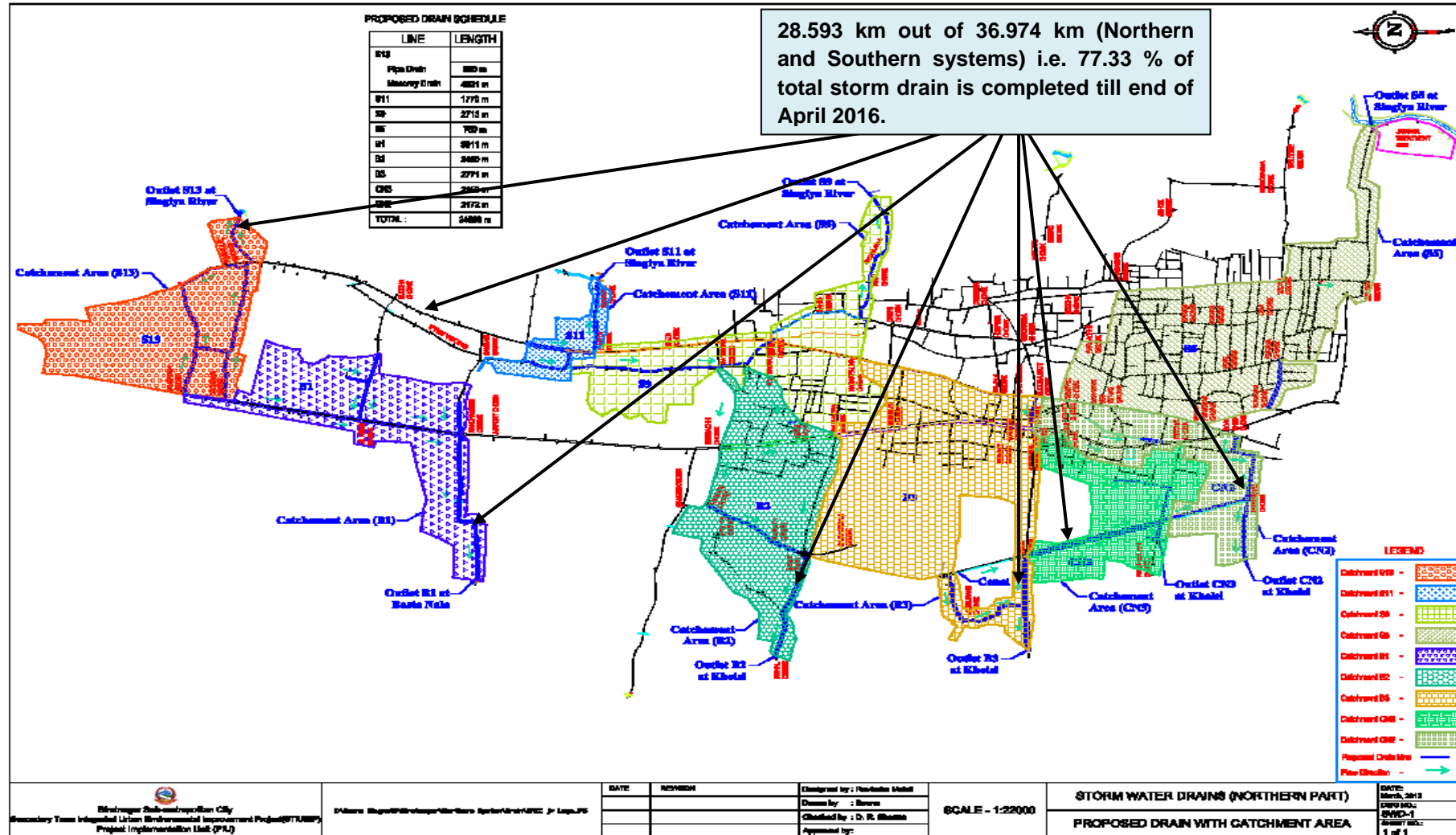


Figure 2: Proposed Storm Water Drains in BSMC (Northern Drainage System)

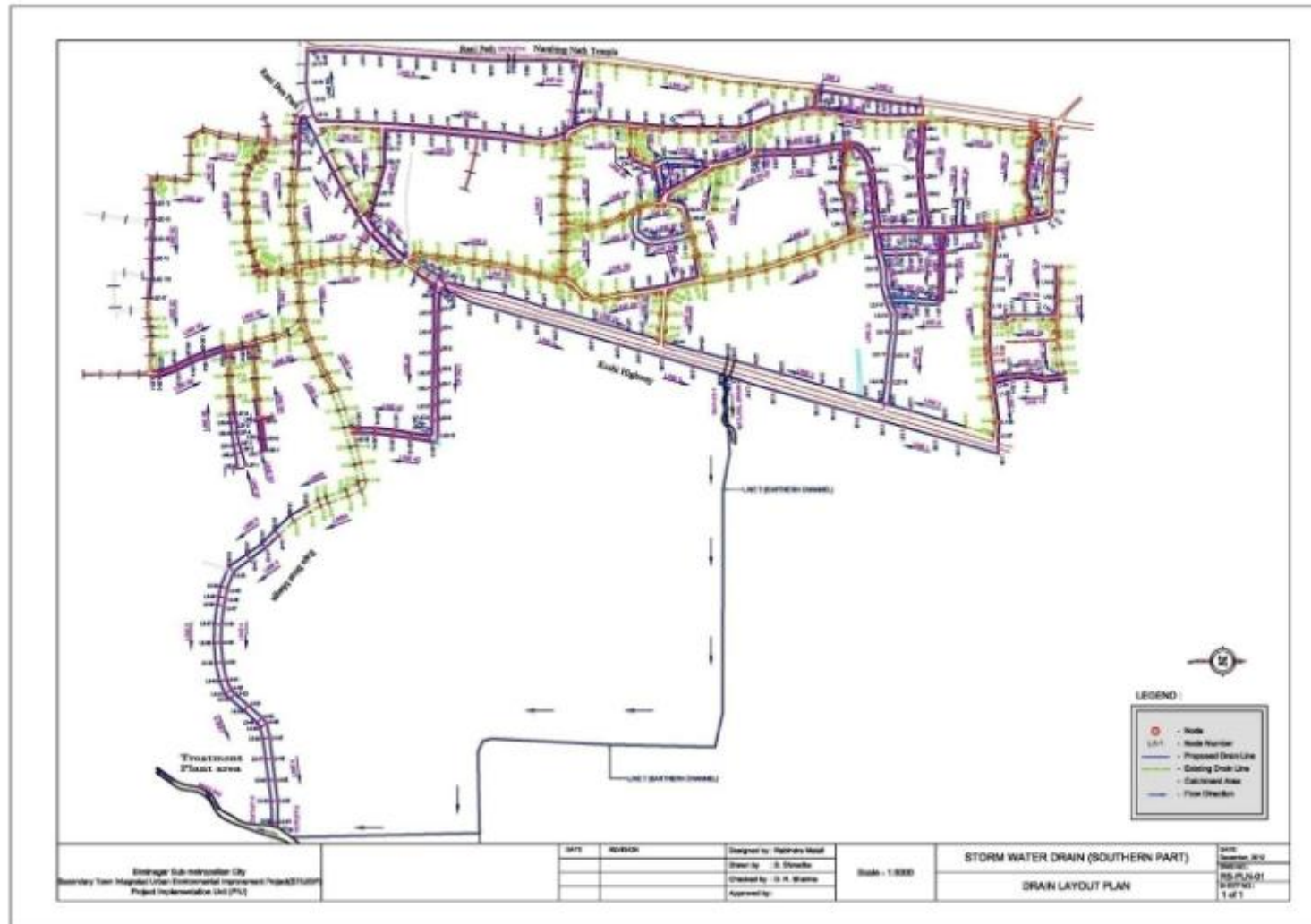


Figure 3: Proposed Storm Water Drains in BSMC (Southern Drainage System)

3.3 WASTEWATER TREATMENT PLANTS

6. The quantity of domestic wastewater 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 wastewater. Maximum quantity of wastewater 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 wastewater 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 wastewater is estimated as 237.79 LPS in the design year 2035 which is very large in comparison with domestic wastewater quantity of 207.18 LPS. The maximum quantity (peak flow) of wastewater in the design year 2035 for both Phase I and Phase II areas is estimated at 650.08 LPS. The maximum quantity of the wastewater for Phase I area is only 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 area are as follows:

Table 3: Proposed Waste Water Components in BSMC

S.N.	Description	Unit	No
	Waste Water Treatment Plant Component		
1	ByPass Chamber	no	1
2	Distribution Chamber	no	1
3	Bar Screen Chamber	no	2
4	Sump well with Pumping Station	no	2
5	Collection Chamber 1	no	1
6	Oil & Grease Chamber	no	2
7	Collection Chamber 2	no	1
8	Grit Chamber	no	2
9	Collection Chamber 3	no	1
10	Anaerobic Pond	no	3
11	Facultative Pond	no	3
12	Collection Chamber 4	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	RoadandDrainImprovement	m	1,440
26	Rivertrainingworks	m	600
27	Electromechanicalworks	Set	1
28	LabEquipmentandinstallation	Set	1

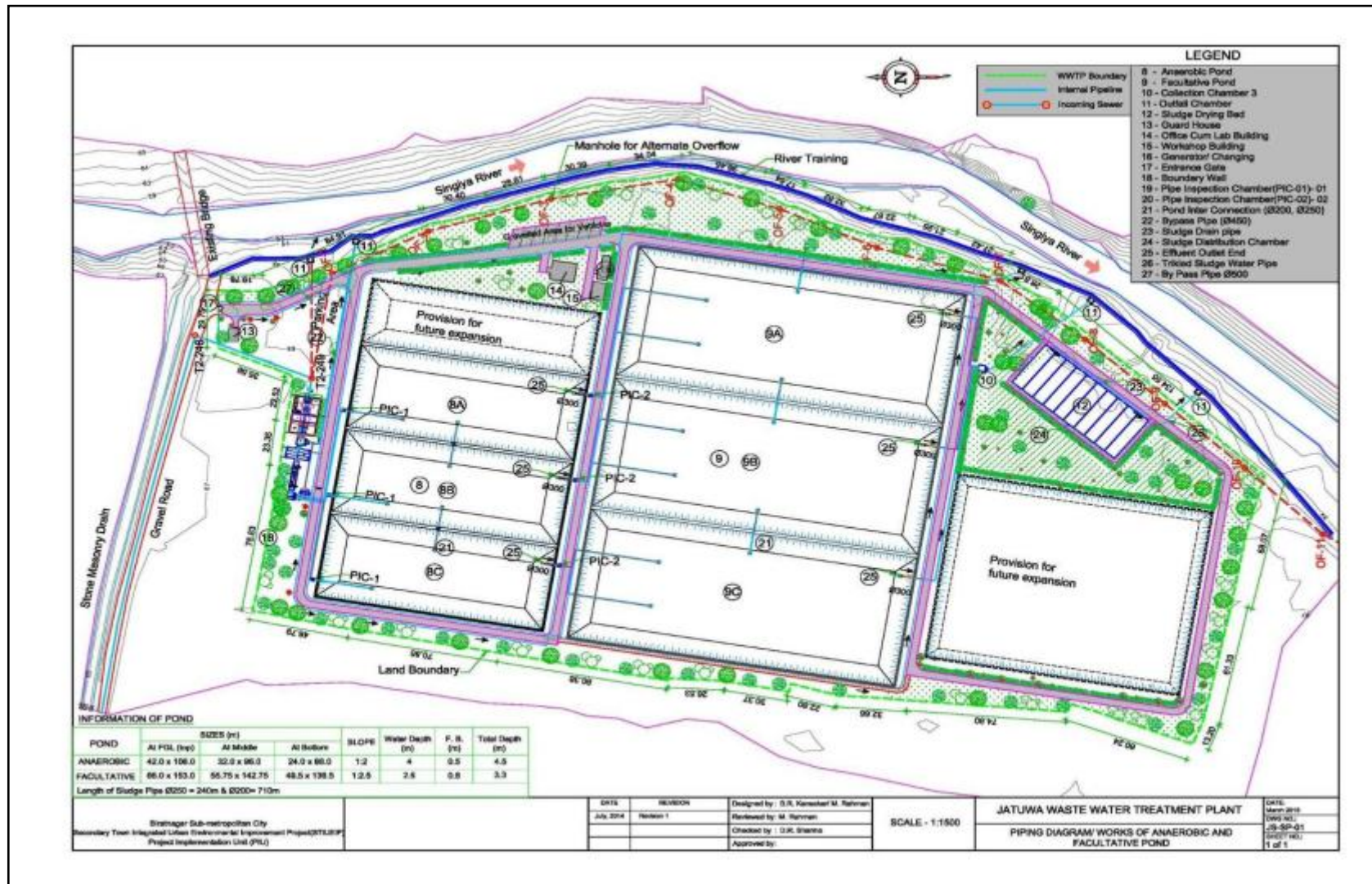


Figure 4: Proposed Waste Water Treatment Plant at Jatuwa in BSMC

3.4 Roads and Lanes

7. Most of the roads/lanes in Biratnagar are in a poor state due to lack of periodic maintenance, and need improvement, whereas 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. Almost necessary streets are already constructed 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 Puspahal Chowk to Bhatta Chowk)	2.35 Km
Reinstatement and Road Improvements (under sewer line installation)	62.07 Km

3.5 Environmental Aspect

8. The project is an environmental improvement project and mainly constitutes work on sewerage and drainage improvement works in BSMC besides others. As per ADB guidelines on Environmental Assessment requirements, this project is classified as Environment Category B. According to Environmental Protection Guidelines, 2054 BS, First Revised (2055 BS) 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 2015 and semi-annual report will be submitted soon.

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 (FriPAD).

12. As there is slack period of the construction due to monsoon and till November 2015. Currently, the work has been resumed partially due to difficulties in fuel supply from NOC and Madheshstrike (bandh). Hence there is no change in the status of the social matters from the previous month.

3.7 Financial Plan

13. The Sub-project cost will be disbursed in three years starting from FY 2013/14 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. Hence the remaining disbursement 65.7 % is planned within 25 May 2016 but will not be achieved.

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	Net Paid Amount in NRs.
1	IPC 01		209,400,000.00
2	IPC 02	29,553,479.92	27,853,500.98
3	IPC 03	50,406,775.75	47,507,270.95
4	IPC 04	44,819,505.68	42,241,392.52
5	IPC 05	23,380,168.96	22,035,291.99
6	IPC 06	90,796,339.68	85,573,541.38
7	IPC 07	80,854,600.52	76,203,672.17
8	IPC-08	122,334,488.86	115,297,549.23
9	IPC-09	116,092,187.14	109,414,317.97
10	IPC-10	132,327,417.89	124,715,663.77
11	IPC-11	169,853,829.07	160,083,476.07
12	IPC-12	23,121,515.46	16,931,906.24
13	IPC-13	85,563,926.44	62,658,539.06
14	IPC-14	163,562,505.71	119,776,967.67
15	IPC-15	139,008,112.96	101,795,764.14
	Total	1,271,674,854.05	1321488854 including Mobilization Adv.

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 improved.
 - Urban roads and lanes improved.
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 STORMWATER 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 B1, B2, B3, S9, S5 and Rani area are being continued.

The contractor has completed storm water drain about 28.593km out of 36.974km, 77.33% till April 2016.

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 are being continued as well as RCC pipes are also being continued with full strength.

The Contractor has completed sewer lines with HDP and RCC pipes about 26.850km out of 62.835km which is 42.73%, till April 2016.

The proposal of the precast concrete manholes, sewer inlets and house connection chambers has been submitted for review and approval. A conditional approval in consultation with the Employer has been given to the Contractor to prepare few numbers and to demonstrate at site. If 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. Now, the Consultant has been approved the same as revised design.

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 had stopped all activities at WWTP site. There is no change in the progress from July 2015.

Now the Contractor is carrying out landscaping, embankment filling, remaining boundary wall and sump well excavation at WWTP from mid December 2015.

5.4 ROAD AND LANES IMPROVEMENT WORKS

20. The Contractor has completed the rehabilitation / repair of existing drain of about 6 km in R2 road. The Contractor has completed the shifting/ relocating electric poles up to Bhatta Chowk on both sides. During the monsoon, the Contractor has continued to excavate the trenches for electric poles but the rate of the progress is in a very slow pace. The Contractor has assured that the road works on R2 road will not be affected due to delay in shifting of the electric poles. Currently, this activity has been stopped due to the strikes at Madesh/ Terai.

The Contractor had started to prepare sub-grade and sub-base after discussion held at ADB Office Kathmandu on 25th May 2015. The Contractor had tried to continue with the success of 100m sub-base laying but unfortunately the Contractor had to stop the work due to unfavorable weather condition during those days.

The Contractor is carrying out sub-grade preparation, sub-base, base course, prime coat and asphalt concrete in R2 road and road side drains at sewer lines. 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 and sewer lines about 10.617km out of 126.126km, 8.42% till April 2016.

5.5 CONSTRUCTION MATERIALS

21. The fabrication of steel moulds for precast units- manholes, sewer inlets and house connection chamber are continuing after the strikes at Madesh / Terai 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. No activities of lab tests in the period of Madhesh Banda/Strike.

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, prime coat, asphalt concrete, concrete, brick, sand and aggregates.

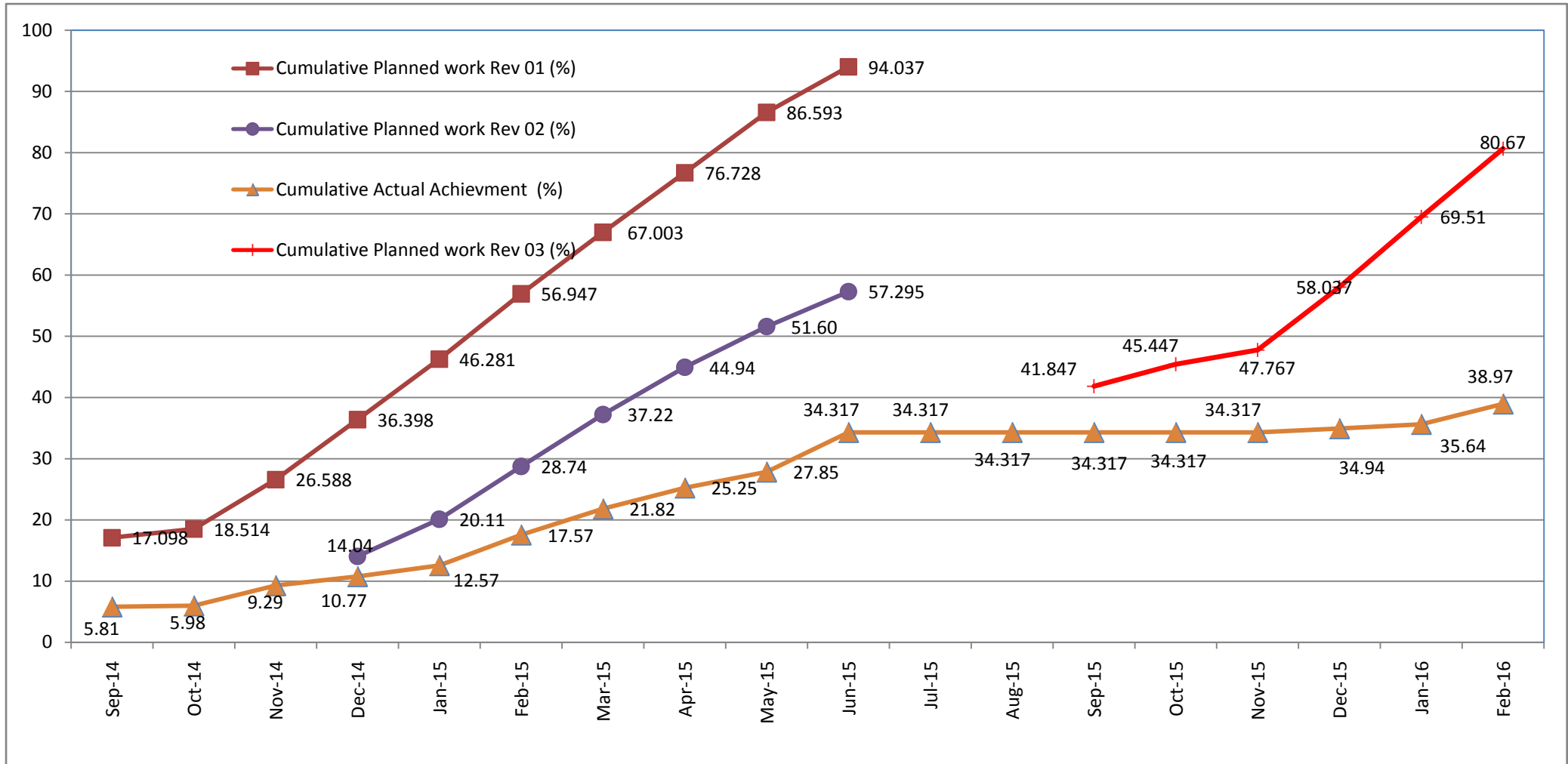
5.7 PHYSICAL PROGRESSTILL END OF APRIL 2016

23. Total physical progresstill April 2016 is about 45.13%whereasthecumulative planned progress till April 2016 is 97.12%, wrt work program rev. no 03. The progress of the work is lagging behind by 51.99% compared to the planned works till end of April 2016(**based on workscheduled Rev 03, which is under review**).

Table 6: Plan Vs Actual Progresstill April 2016

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									
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										
Cumulative Actual Achievements (%)		35.64	38.97	42.57	51.05										
Progress lagging to date wrt the revised work plan rev 03 (%)		(33.87)	(41.70)	48.89	46.75										



6 SUMMARY OF ACTIVITIES CARRIED OUT UP TO PREVIOUSMONTHS

6.1 ORGANIZATION AND STAFFING

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

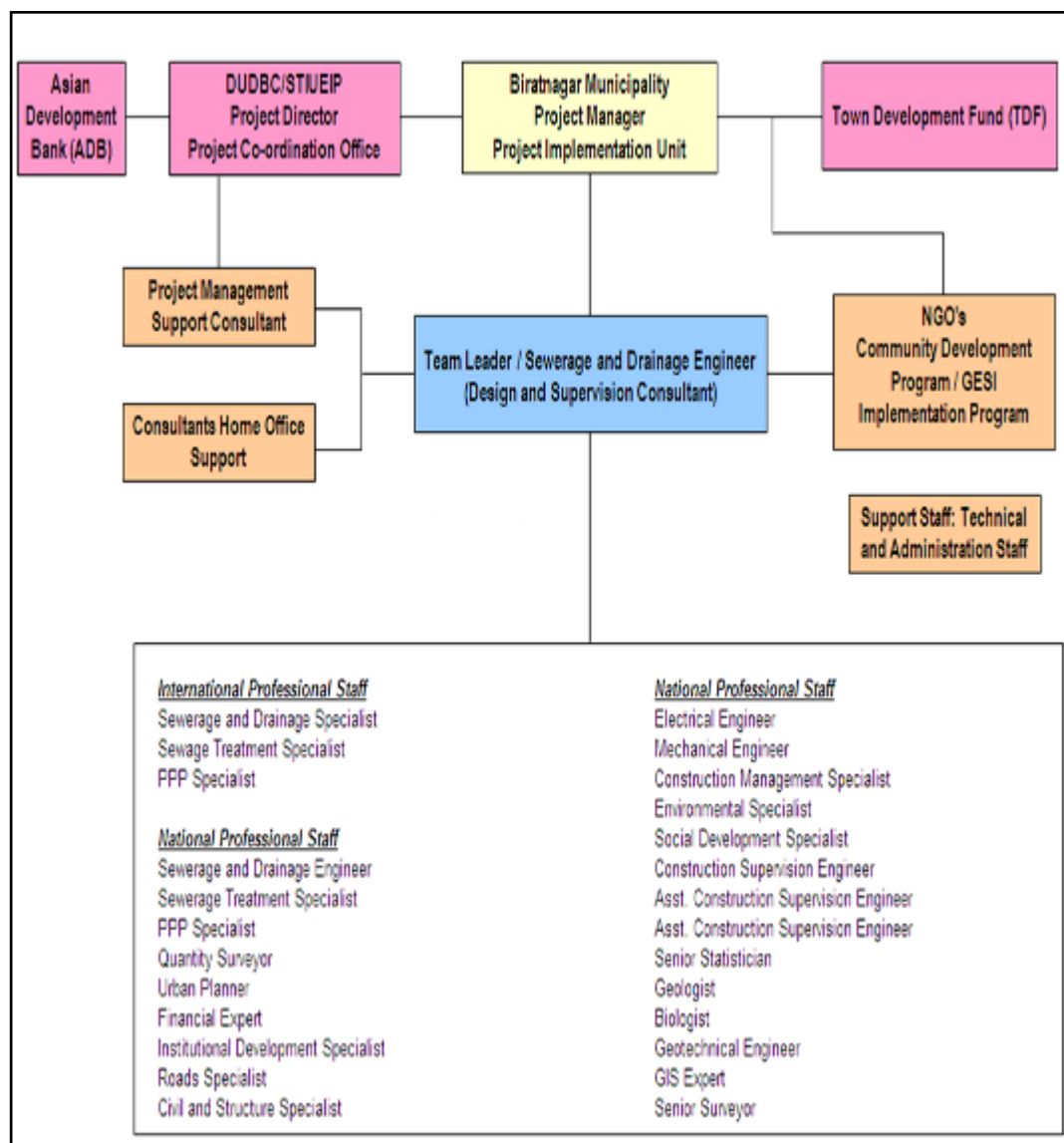


Figure 6: Organization and Staffing of STIUEIP, Biratnagar

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%
BiratnagarSub-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	Mohan Kumar Tuladhar	Team Leader
2	Giresh Chand	Officiating Team Leader/CSE
3	Bala Ram Mayalu	Social Development Specialist
4	Jaya Prakash Yadav	Asst. Construction Supervision Engineer-1
5	DikendraKatwal	Asst. Construction Supervision Engineer-2
6	Rajesh Yadav	Junior Engineeer-1
7	Sujan Shrestha	Junior Engineeer-2
8	Ashok Kafle	Junior Engineeer-3
9	Santosh Dahal	Junior Engineeer-4
10	SarojBhattra	Junior Engineeer-5
11	Santosh Yadav	Office Manager
12	RamjiGimire	Driver-1
13	SumanGhimire	Driver-2
14	RamilaGhimire	Office Assistant

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

- i. Daily Construction supervision
- ii. Quality control, cost control and time control

- iii. Measurement and Certification of Interim Payment Certificates (IPC)
- iv. Modification and design of storm drainage and sewer lines, manholes etc.as per site condition and approve working drawings
- v. Supervise construction material testing and sampling
- vi. Monitor Environment Management Plan and its compliance
- vii. Monitor Social safeguard and Resettlement Plan and its compliance
- viii. Meet obligation of reporting requirement – Updated Environmental Progress Report, Updated Resettlement Progress Report, Monthly Progress Report, Semi-Annual Updated Resettlement Progress Report
- ix. Prepare Due Diligence Report of the Project
- x. Received comments on VO No. 02 and resubmitted.
- xi. Maintain correspondences with the Employer and the Contractor
- xii. Assist to PIU
- xiii. Started design review and cost estimation for additional financing based on the previous design reports and details
- xiv. DSC has been working on design review, cost estimate and bid documents preparation for Additional Financing for Phase –II.

6.10 KEY DATES

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

Table 9: Key dates of events /activities:

S. No	Date	Activities/Events	Remarks
1		None	

7DETAILSOFACTIVITIESCARRIED OUT IN THIS MONTH

7.1 PHYSICAL PROGRESSINTHISMONTH

Table 10: Physical Progress in Storm Water Drains:

Physical Progress till April 2016						
S.N.	Location	Proposed Length (m)	Progress		Total to Date (m)	Progress (%)
			Up to March 2016 (m)	This Month (m)		
1	B1	3,950	3,313	27	3,340	84.56
2	B2	3,742	3,712	0	3,712	99.20
3	B3	3,514	3,272	52.5	3,325	94.61
4	S5	1,932	515.10	533	1,048	54.25
5	S9	3,178	1,957	132	2,089	65.73
6	S11	2,092	2,082	0	2,082	99.52
7	S13	5,640	4,721	142.5	4,864	86.23
8	CN2	2,273	2,059	52.5	2,112	92.89
9	CN3	2,170	1,084	27.5	1,112	51.22
10	Rani	8,483	4,595	316	4,911	57.89
	Total	36,974	27,310	1,283	28,593	77 %

Table 11: Physical Progress in Road Side Drain of R2 and Sewer Lines:

Physical Progress till April 2016						
S.N.	Location	Proposed Length (m)	Progress		Total to Date (m)	Progress (%)
			Up to March 2016 (m)	This Month (m)		
1	R2	6,325	6,325	0	6,325	100
2	T1, T2, T3, T4	119801	2978	2071	4292	3.58
	Total	126,126	9303	1314	10617	8.42%

Table 12: Physical Progress in Sewer Lines:

Physical Progress till April 2016						
S.N.	Location	Proposed Length (m)	Progress		Total to Date (m)	Progress (%)
			Up to March 2016 (m)	This Month (m)		
1	T1	10,912	250	847.50	1097.5	10.06
2	T2	26,916	14,950	2,492	17,442	64.80
3	T3	22,477	7,831	480	8,311	36.98
4	T4	2,530	0	0	0	0.00
	Total	62,835	23,031	3,819.50	26,850.5	42.73%

Table 13: Physical Progress in Manholes, Sewer Inlet and House Connection Chamber:

Physical Progress till April 2016						
S.N.	Description	Proposed Quantity (no)	Progress		Total to Date (no)	Progress (%)
			Up to March 2016 (no)	This Month (no)		
1	Manholes	2019	1,855	10	1,865	92.37
2	Sewer Inlet	3766	1,271	0	1,271	33.75
3	House Connection Chamber	5930	1,300	35	1,335	22.51

Table 14: Physical Progress in Roads and Lanes:

Physical Progress till April 2016						
S.N.	Location	Proposed Length (km)	Progress		Total to Date (m)	Progress (%)
			Up to March 2016 (m)	This Month (m)		
1	R2,T1,T2,T3,T4	62.420	Sub-grade=2150m Sub Base=1690m Base=1650m Prime Coat=1036m Asphalt Concrete=1036m	Sub-grade=271m Sub-base=741m Base=416m Prime Coat=1030m Asphalt Concrete=1030m	Sub-grade=2,421m Sub-base=2,421m Base=2066m Prime Coat=2066m Asphalt Concrete=2066m	3.31

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

Physical Progress till April 2016						
S.N.	Description	Proposed Quantity	Progress		Total to Date	Remarks
			Up to Mar 2016	This Month		
1	Anaerobic Pond	3 nos	3 (excavation)	0	3 (excavation)	
2	Facultative Pond	3nos	2 (Excavation)	0	2 (excavation)	
3	River Training Work	600 m	600 m	0	600 m	
4	Boundary Wall		580 m	SM Wall Started	580 m	
5	Office cum Lab Building	1 no	1 no	0	1	
6	Workshop Building	1 no	1 no	0	1	
7	Generator / Changing House	1 no	1 no	0	1	
8	Sump Well	1 no	0	EW Excavation	EW Excavation	

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

Physical Progress till April 2016						
S.N.	Description	Unit	Progress		Total to Date (no)	Remarks
			Up to Mar 2016 (no)	This Month (no)		
1	Precast Slab	no	70,800	3,500	74,300	
2	Precuts	no	7449	510	7959	
3	Kerb Stone	no	19,690	135	19,825	
4	Manhole	no	1303	278	1,581	
5	Sewer Inlet	no	1,305	175	1,480	
6	House Connection Chamber	no	1,288	42	1,330	

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

Physical Progress till April 2016						
S.N.	Description	Diameter (mm)	Progress		Total to Date (no)	Remarks
			Up to Mar 2016 (no)	This Month (no)		
1	RCC Pipe	200	2,123	0	2,123	
2	RCC Pipe	300	328	42	370	
3	RCC Pipe	350	216	0	216	
4	RCC Pipe	400	370	0	370	
5	RCC Pipe	450	84	0	84	
6	RCC Pipe	500	513	0	513	
7	RCC Pipe	600	909	66	975	
8	RCC Pipe	700	1,275	44	1,319	
9	RCC Pipe	900	278	0	278	
10	RCC Pipe	1000	1011	8	1,019	
11	RCC Pipe	1600	373	6	379	
	Total		7,132	161	7,646	

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

Designation	No	Remarks
Project / Contract Manager	1	
Planning Engineer/Construction Engineer	1	
Construction Engineer	1	
Site Engineers	5	
Quality Control Manager	1	

Office/Bill Engineer	1	
Junior Engineer	10	
Sub Overseers	6	
Safety Manager / Senior Site Supervisor	1	
Accountant / Office Manager	1	
Lab Assistant	3	
Store Keeper	4	
Light Drivers	6	
Machine Operator	14	
Site Supervisor	5	
Other Supporting Staff	18	
Skilled Labor at Site	80	
Unskilled Labor at Site	240	

Contractor's Equipment:**Table 19: Contractor's Equipment:**

Equipment	No	Remarks
Excavator	7	
Back Hoe JCB	8	
Grader	1	
Crane / Teller	3	
Water Tanker	3	
Tractor	9	
Tipper	17	
Light Vehicle	6	
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	10	
Bar Bending Machine	3	
Bar Cutter Machine	3	
Transit Mixer	1	
Concrete Mixer (Hydraulic)	2	
Concrete Mixer (Manual)	6	
Asphalt Concrete Plant	1	
Asphalt Paver Machine	1	

7.2 Cumulative Progress (S Curve)

Contractor's Revised Cumulative Progress S-Curve (Based on Work Program Rev. No 03)

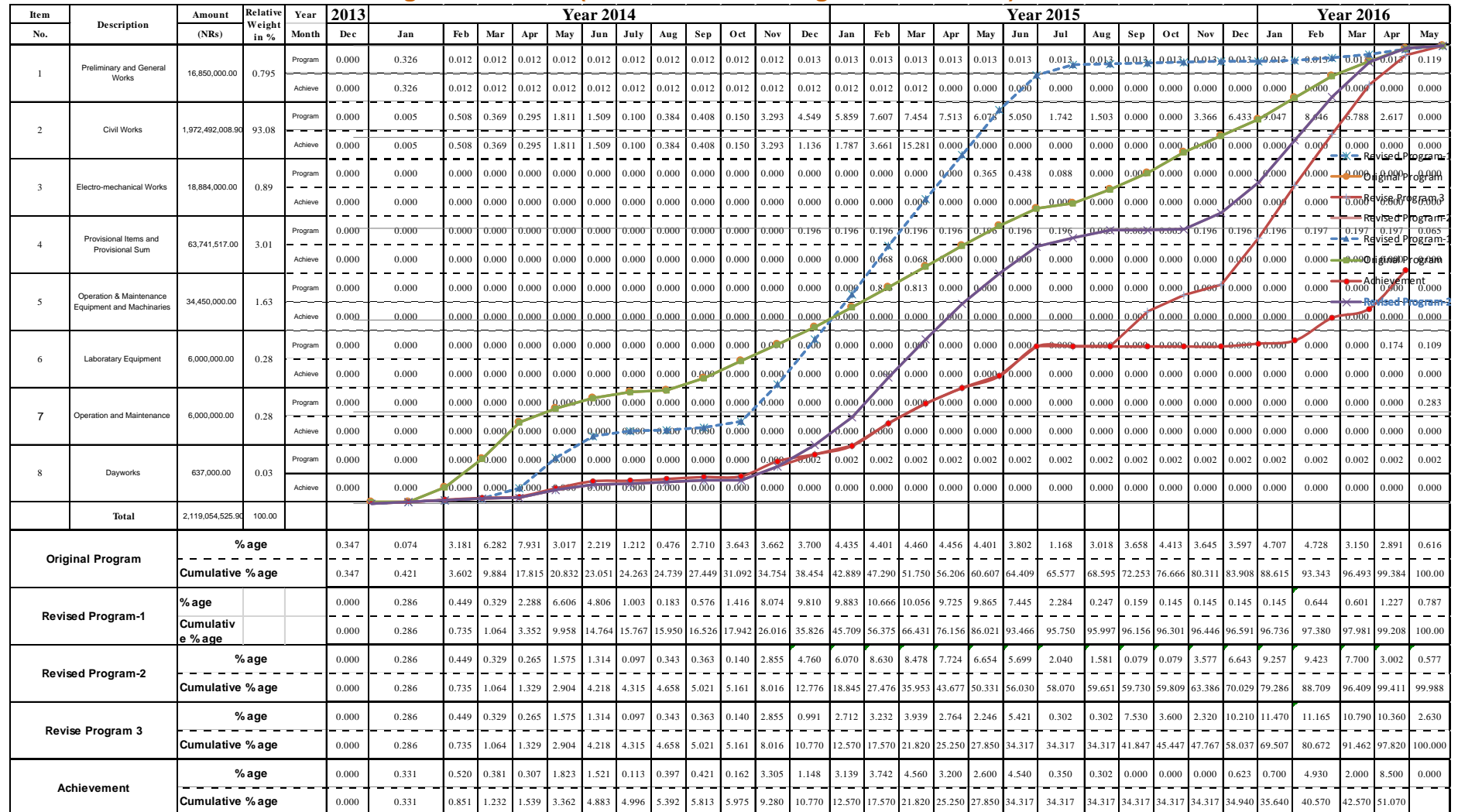


Figure 7: S- Curve of Physical Progress (based on rev. no. 03, which is under review)

8 DETAILS OF SAFEGUARD ACTIVITIES(SOCIAL,ENVIRONMENTALANDRESETTLEMENT ACTIVITIESANDISSUES)

This report records the project implementation performance of social safeguard aspect for the duration of November 2015 and highlights the key activities undertaken during the period. The activities on the social development during the period are summarized below:

8.1 SOCIAL ISSUES

8.1.1 OPERATIONALGUIDELINESFOR COMMUNITYMOBILIZATION ANDIMPLEMENTATION OFCDP

- **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 250 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 in the month November 2015.

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 no 03 is under review:**

- Continuation of road works (Sub-grade, Sub-Base, Base, Prime Coat, Asphalt Concrete) including footpath in R2 road
- Continuation of road side drain at sewer lines
- Continuation of storm water drains (B1, B2, B3, CN2, CN3, S9, S5 and Rani Area)
- Continuation of sewer lines with installation of manholes, sewer inlets and house connection chambers
- Sump well and remaining boundary wall at WWTP, Jatuwa
- Production of precast RCC items (RCC pipe, kerb stone, manhole, sewer inlet, house connection chamber, drain cover slab etc)
- Suitability tests and routine tests of construction materials at Lab and at site.

ANNEX-1: Work Schedule(Rev.03)which is under review.

Note: Please refer to the contractor's progress report for detail and complete work program.

Item No.	Description of Works	August 015	September 015	October 015	November 015	December 015	January 016	February 016	March 016	April 016	May 25 016
A	General										
B	Earthwork										
C	Structure										
D	Concrete Works										
E	Brickworks										
F	Door and Windows										
G	Plaster, floor finishes and paintings.										
H	Roofing and Truss works										
I	Road Works										
J	Sewerage and Drainage										
K	Bio-Engineering Works										
L	Electrical Works										
M	Sanitary and Water supply works										
N	Electromechanical Works										
O	Provisional Item										
P	Provisional Sum										
Q	Equipment and Machine										
R	Laboratory Equipment										
S	Operation and Maintenance										
T	Dayworks (Labor)										
U	Dayworks (Material)										
	Total										

Work Schedule Revise -3 (Completion date May 25, 2016)

ANNEX2: PHOTOGRAPHS –APRIL 2016



Field density test of base course at R2 Road



Road side Brick drain at R3 Dharambandh



Compound wall at WWTP, Jatuw



Road side RCC drain at R23 Banimarg



RCC Storm water drain at S5



Pipe Laying work at T2 L19



Pipe Laying work at T3 trunk



uPVC Pipe laying T3 L28



Pipe laying work at T2 trunk



Manhole construction T1 trunk

NNEX-6: MINUTES OF MEETING – APRIL 2016

ANNEX-7: LABORATORY TEST RESULTS OF APRIL 2016

Secondary Towns Integrated Urban Environmental Improvement Project Biratnagar Sub-Metropolitan City SUMMARY OF HOT MIX ASPHALT CONCRETE WEARING COURSE TEST RESULTS																					
Contract Package: STUEIP/W/BRT/ICB/01															MONTH: APRIL 2016						
S. No.	LAB REF. NO.	Date of Sampling/ Test	Location of Work ch:	Mix Agg Gradation*								PRIME COAT Application		TACKCOAT Application		Bitumen Content From Extraction Test %	Mix Density gm/cc	Air Voids %	VMA %	Stability N	Flow mm
				Passing Sieve Sizes mm								Dist. Spray Rate Lit/m2	Avg. Tray Spray Rate Lit/m2	Dist. Spray Rate Lit/m2	Avg. Tray Spray Rate Lit/m2						
				20	12.5	9.5	4.75	2.00	0.425	0.18	0.075										
1	8	1/4/2016	2+800 to 3+150 LHS R2 Road	100	92.58	83.47	56.47	47.67	24.79	11.02	5.3	1.02	1.02			5.60	2.361	4.90	17.80	11915	3.10
2	9	4/4/2016	2+800 to 3+000 RHS R2 Road	100	92.79	83.47	56.97	47.85	24.5	10.97	5.03	1.09	1.01			5.65	2.363	4.78	17.80	12808	3.02
3	10	8/4/2016	2+900 to 3+300 LHS R2 Road	100	93.22	83.69	57.20	47.67	24.79	11.44	5.08	1.12	1.01	0.53	0.44	5.60	2.360	4.98	17.87	12907	2.87
4	11	12/4/2016	3+150 to 3+295 LHS R2 Road	100	93.64	84.11	57.72	48.40	25.3	11.74	5.27	1.01	1.01	0.47	0.46	5.63	2.379	4.15	17.22	12891	3.02
5	12	17/4/2016	3+150 to 2+600 RHS R2 Road	100.0	93.01	83.69	57.63	48.09	24.58	11.65	5.08	1.00	1.04	0.46	0.43	5.60	2.382	4.08	17.09	12891	3.02
6	13	21/4/2016	2+395 to 2+715 LHS R2 Road	100.0	93.43	83.47	58.24	48.07	25.17	12.67	5.67	1.04	1.01	0.47	0.46	5.65	2.385	3.89	17.04	12891	3.02
7	14	27/4/2016	1+940 to 2+100 LHS, R2 Road	100.0	93.64	83.47	58.47	48.09	25.64	13.35	5.93	1.01	1.03	0.45	0.45	5.6	2.387	3.88	16.92	12617	3.18
8	15	29/4/2016	1+940 to 2+100 RHS, R2 Road	100.0	93.86	83.47	59.11	48.51	26.26	13.76	6.13	1.02	1.02	0.49	0.47	5.61	2.390	3.73	16.81	12897	3.07
				100	80~100	68~90	50~79	36~67	17~44	9~29	3~10	1.0 kg/m2 ± 5%				5-6	Min-2.354	3-6 %	≥ 15	≥ 8500	2-4
Remarks:																					
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										Contractor Reps											

SECONDARY TOWNS INTEGRATED URABAN ENVIRONMENTAL IMPROVEMENT PROJECT							
Biratnagar Sub-Metropolitant City							
CEMENT TEST SUMMERY							
For the Month of APRIL 2016 ✓							
S.N.	Lab. Ref. NO.	Description of cement	Testing Date	Consistency & Setting Time			Remarks
				Norm. Const.	Intial(min.)	Final(min.)	
1	MR73	SHIVAM OPC	4/4/2016	38.3	185 ✓	300 ✓	All Cement Are Nepali BRAND OPC
2	MR74	SHIVAM OPC	10/4/2016	37.9	195 ✓	290	
3	MR75	SHIVAM OPC	15/4/2016	37.7	185 ✓	310	
4	MR76	SHIVAM OPC	18/4/2016	38.1	180 ✓	300	
5	MR77	SHIVAM OPC	20/4/2016	38.0	195 ✓	290	
6	MR78	SHIVAM OPC	23/4/2016	38.4	180 ✓	300	
7	MR79	SHIVAM OPC	26/4/2016	38.3	185 ✓	305	
8	MR80	KOSHI OPC	28/4/2016	34.9	220 ✓	320	
Requirements in accordance with BS 12					> 45 Min.	10 Hrs	
SMCE-Brisbane-AQUA-BDA Approved by C.S.E Test Checked by A.C.S.E Consultant Reps				CTCE-KALIKA J/V Submitted by Project Manager Test Conducted by Q.C Manager Contractores Reps			

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT

Biratnagar Sub-Metropolitan City

STIUEIP

MONTHLY Test Result Summary Sheet For The Month of

APRIL 2016

Graded Crushed Stone Base Course (Process Control)

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

SN NO	LAB REF No	Date Tested APRIL	Location/ Chainage	Grading sieve size (mm)								CR Ratio (%)	LAA (%)	AIV (%)	Lab. OMC (%)	Soaked CBR (%)	Lab. MDD (g/cc)	Remarks
				40	31.5	20	10	4.75	2.36	0.60	0.075							
1	64	5/4/2016	1+960 to 2+060 R2 Road	100	96.3	70.9	46.7	37.3	30.5	18.9	8.8	92.2	32.40	18.57				
2	65	5/4/2016	2+060 to 2+160 R2 Road	100	96.1	65.7	47.5	36.3	31.5	19.1	5.6	91.2	32.16	19.14				
3	66	6/4/2016	2+160 to 2+260 R2 Road	100	95.9	73	52.1	40.6	34.6	21	6.4	90.9	32.24	17.71				
4	67	6/4/2016	2+260 to 2+380 R2 Road	100	96.7	73.6	49.6	38.4	31.9	20.7	6.3	90.6	32.44	18.29				
5	68	7/4/2016	2+395 to 2+495 R2 Road	100	97.3	73.7	48.8	37.3	31.3	20.6	6.6	90	32.64	18.86				
6	69	7/4/2016	2+495 to 2+600 R2 Road	100	96.6	72.9	47.8	36.4	30.2	19.5	5.6	89	32.60	19.14				
Required Specification				100	85-100	62-92	40-70	26-55	21-53	12-28	2-10	≥ 80	≤ 35	≤ 25				

REMARKS:Crushed Stone base

SMEC-Brisbane-AQUA-CEMAT-BDA

Approved by C.S.E

Test Checked by A.C.S.E

Consultant Reps

CTCE-KALIKA J/V

Submit by Project Manager

Test Conducted by Q.C Manager

Consultant Reps

Secondary Towns Integrated Urban Environmental Improvement Project Biratnagar Sub-Metropolitan City TEST RESULT SUMMARY SHEET For the Month of APRIL 2016 COMPRESSIVE STRENGTH OF BRICKS (Process Control Test)								
STIUEIP								
SN No	Ref. STIUEIP LAB/	Date of Testing	Location	Change	BRAND NAME 1 st class brick	Water Absorption %	Compressive Strength N/mm2	SCALE OF Sample From
1	309	1/4/2016	S13	Man Hole	ANAND		10.4	1500 Nos-3 Nos
2	310	1/4/2016	S13	Man Hole	AMBEY		11.5	1500 Nos-5 Nos
3	311	6/4/2016	Jatuwa	WWTP Wall	T&B		11.0	1500 Nos-5 Nos
4	312	6/4/2016	Jatuwa	WWTP Wall	AMBEY		10.8	1500 Nos-5 Nos
5	313	7/4/2016	National Trading	Highway Man Hole	T&B	8.44	11.5	1500 Nos-5 Nos
6	314	7/4/2016	National Trading	Highway Man Hole	AMBEY	8.28	11.5	1500 Nos-5 Nos
7	315	7/4/2016	S13	Man Hole	T&B	8.16	11.7	1500 Nos-5 Nos
8	316	7/4/2016	S13	Man Hole	T&B		11.1	1500 Nos-5 Nos
9	317	10/4/2016	National Trading	Highway Man Hole	T&B	8.67	11.4	1500 Nos-5 Nos
10	318	12/4/2016	R3	Road No-42	T&B	8.75	10.7	1500 Nos-5 Nos
11	319	26/4/2016	R3	Road No-24	T&B		11.4	1500 Nos-5 Nos
12	320	26/4/2016	R3	Road No-22	T&B		10.7	1500 Nos-5 Nos
Specification					IS1077, IS2180 or NSI/2035	Less than 10%	> 10N/MM2	
SMEC-Brisbane-AQUA-BDA-CEMAT Approved by Construction Supervision Engineer Test Checked by A.C.S.E. Consultant's Reps					CTCE-KALIKATA 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 FIELD DENSITY TEST (IS:2720:-PART-28)
FOR THE MONTH OF APRIL 2016**

Field Density Tests on R2 ch:1+950 to 2+100,&2+170 to 2+380LHS
1+950 to 2+100 RHS
CRUSHED STONE BASE LAYER

S.N.	L/Ref. No.	Date	Location/ Area	MDD Gm/CC	Degree of Compaction, %	Remarks
1	FD-12	20/4/2016	1+960	2.31	99.90 ✓ 6.00	
2			2+010	2.30	99.80 ✓ 5.80	
3			2+060	2.31	99.90 ✓ 5.60	
4			2+100	2.30	99.80 ✓ 6.00	
5			2+175	2.31	99.90 ✓ 5.60	
6			2+225	2.29	99.30 ✓ 5.30	
7			2+275	2.30	99.80 ✓ 6.00	
8			2+325	2.30	99.80 ✓ 5.60	
9			2+380	2.30	99.80 ✓ 5.70	
1			1+950	2.29	99.20 ✓ 6.00	
2			2+00	2.31	99.90 ✓ 5.80	
3			2+050	2.31	99.90 ✓ 6.00	
4	2+100	2.31	99.90 ✓ 6.40			
Specification Requirement				2.310 ✓	>98	OMC <6.80
SMEC-Brisbane-AQUA-CEMAT-BDA Approved by C.S.E. Test Checked by Junior Engineer Consultant Reps				CTCE-KALIKA J/V Submitted by Project Manager Test Conducted by Project Manager Contractors Reps		

SECONDARY TOWNS INTEGRATED URBAN ENVIRONMENTAL IMPROVEMENT PROJECT Biratnagar Sub-Metropolitan City SUMMARY OF CUBE COMPRESSIVE STRENGTH TEST M20/20& M25/20 Work Mix FOR THE MONTH OF MARCH 2016													
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	Aggregate	Cement Brand	Aggregate/Sand	7 days	28-Days	
1	390	4/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	17.16	21.70	
2	391	5/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	17.04	21.63	
3	392	6/3/2016	M15 work mix	S-5 Line Jatuwa	0.52	1	2	4	Shivam	Om shree C/plant	12.37	18.22	
4	393	8/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	17.48	24.30	
5	394	8/3/2016	M15 work mix	S-9 Line	0.52	1	2	4	Shivam	Om shree C/plant	12.96	16.89	
6	395	9/3/2016	M15 work mix	S-9 Line	0.52	1	2	4	Shivam	Om shree C/plant	12.89	18.22	
7	396	9/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	16.96	21.26	
8	397	10/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	16.30	20.96	
9	398	10/3/2016	M20 Work Mix	S-9 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	17.33	22.44	
10	399	12/3/2016	M15 work mix	S-9 Line	0.52	1	2	4	Shivam	Om shree C/plant	13.26	16.37	
11	400	13/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	17.48	22.37	
12	401	14/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	17.04	22.37	
13	402	15/3/2016	M15 work mix	S-9 Line	0.52	1	2	4	Shivam	Om shree C/plant	12.52	17.41	
14	403	16/3/2016	M15 work mix	S-9 Line	0.52	1	2	4	Shivam	Om shree C/plant	13.41	17.41	
15	404	16/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	18.00	22.59	
16	405	16/3/2016	M25 Work mix	S-5 Line Jatuwa	0.46	1	1.87	3.25	Shivam	Om shree C/plant	21.41	27.04	
17	406	17/3/2016	M20 Work Mix	S-9 Line	0.50	1	2	3.5	Shivam	Om shree C/plant	17.78	22.15	
18	407	18/3/2016	M20 Work Mix	S-5 Line Jatuwa	0.50	1	2	3.5	Shivam	Om shree C/plant	18.07	22.67	
19	408	18/3/2016	M15 work mix	S-9 Line	0.52	1	2	4	Shivam	Om shree C/plant	13.19	17.63	
20	409	18/3/2016	M15 work mix	S-9 Line	0.52	1	2	4	Shivam	Om shree C/plant	13.04	17.04	
21	410	20/3/2016	M25 Work mix	S-5 Line Jatuwa	0.46	1	1.87	3.25	Shivam	Om shree C/plant	20.22	28.52	
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 M15/20 on 7 days Age Min 67% of Total Compressive Strength										Min Required	10.05	15	
SMEC-Brisbane-AQUA-BDA					CTCE-KALIKA J/V								
Approved by Construction Supervision Engineer/CSE					Submitted by Project Manager								
Test checked by A.C.S.E					Test conducted by Q.C Manager								
Consultants Reps					Contractors Reps								



ANNEX-8: CONTRACTOR'S PROGRESS REPORT- APRIL 2016
