Metro Colombo Urban Development Project (MCUDP)

Environmental Screening Report for Improvements to Distributed Sewerage Network around Beira Lake

Prepared by
Project Management Unit
Metro Colombo Urban Development Project
Ministry of Defence and Urban Development

Final Report, July 2013

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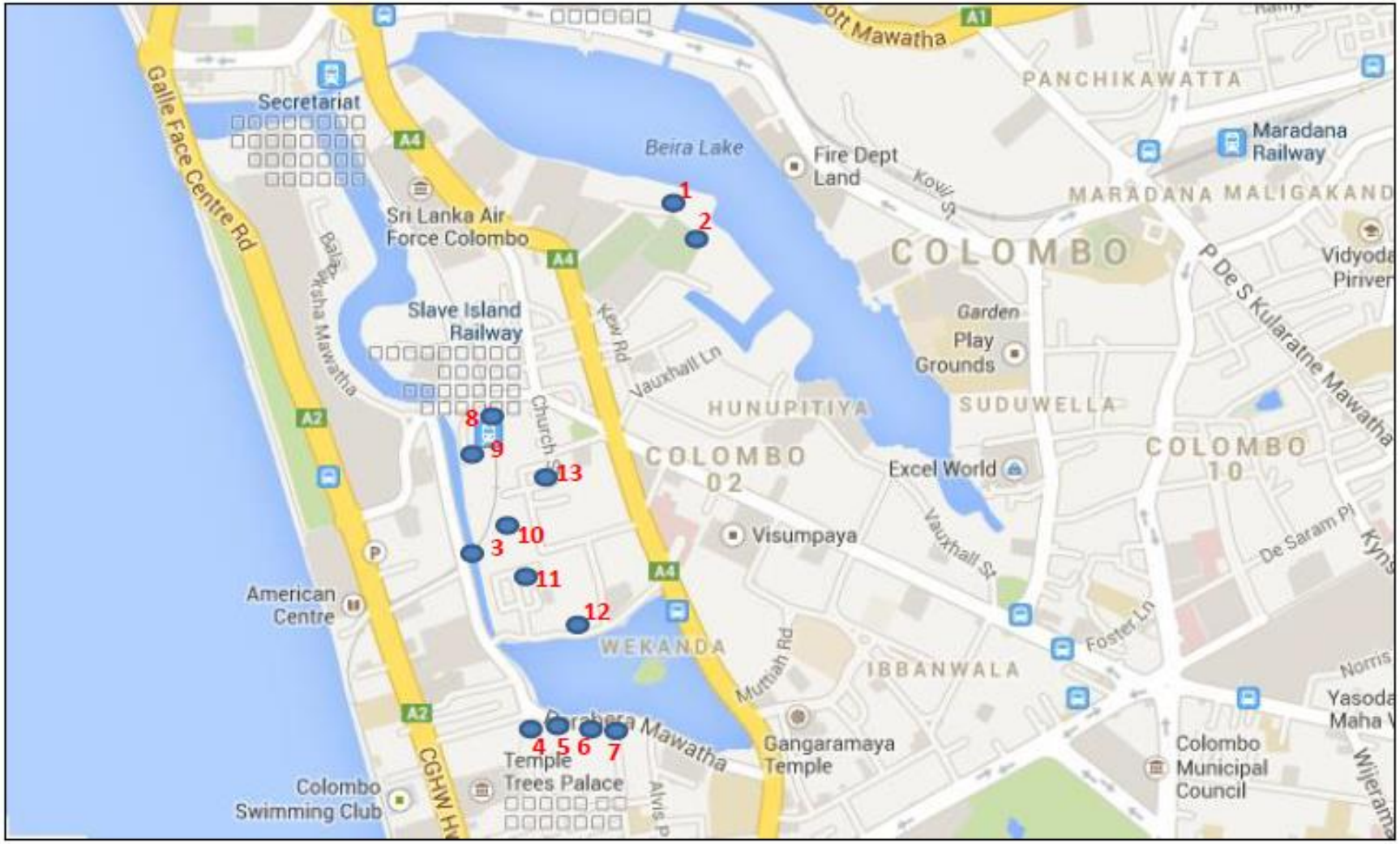
1. Project Identification

Project title	Improvements to distributed Sewerage Network around Beira Lake (13 sub-project components)
Project Proponent	Water Supply & Drainage Division - Colombo Municipal Council (CMC)

2. Project Location

Location	All the sub-project components are located at the surrounding of Beira Lake
Definition of project area *(The geographical extent of the project & areas affected during construction)*	The project area is along some stretches of Beira Lake bank mainly in nearby West bank of East Beira (Site 1 & 2), East bank of West Beira (Site 8,9,10,11,12 and 13) and West bank of West Beira (Site 4,5,6 and 7) Site1:Diversion of sewer line at Morgan road-main road Site2: Diversion of sewer line at Morgan road-custom quarters Site3: Diversion of sewer line at Aldason flats –Steward street Site4: Diversion of sewer line at Garden 47-Perahera Mawatha Site5: Diversion of sewer line at Garden 72 -Perahera Mawatha Site6: Diversion of sewer line at Garden 39 (stage 1) –Perahera Mawatha Site7: Diversion of sewer line at Garden 39 (stage 2) –Perahera Mawatha Site8: Diversion of sewer line at Station Passage-Slave Island (stage 1) Site9: Diversion of sewer line at Station Passage-Slave Island (stage 2) Site10: Diversion of sewer line at Garden 34-Stewart street Site11: Diversion of sewer line at Stewart street Site12:Diversion of sewer line atWekanda road Site13:Diversion of sewer line at Church Street (part A, B, C, D)
Adjacent land & features	The entire project is located at the surrounding of Beira Lake, densely populated area with large number of underserved settlements, commercial, public and private sector establishments vary from the range of small to large-scale. The project area covers many Government office premises and there are few religious places such as Mosque, Kovil and one of the well known Buddhist Temple at Gangarama.

Figure 1: Project Location



3. Project Justification

Need for the project *(what problem is the project going to solve)*	Beira Lake is the only inland water body in Colombo city having 65 hectares of area coverage. There are many potential and at present its use is limited due to lack of regular maintenance and due to unavailability of proper access. The Lake has been used only as a back yard property of the buildings which are located at the bank or nearby. Specially there are many underserved settlements having common sanitation facility. Most of those common pits are damaged or not in workable condition and as an alternative solution people are connecting those lines to storm water drainage. Apart from that same community used to discharge daily household level wastewater (including bath room and kitchen wastewater) in to same storm water drainage. There may be several commercial premises which may discharge same type of wastewater in to Beira Lake. There are many locations where sewerage lines are damage or not in the workable condition. The project is focusing to rectify those faults or failures also during the said project implementation. TheLake has many faunal species and the wrong practices may affect fundamentally to aquatic life This was practicing during last few decades and as a result Lake has been polluted heavily by unauthorized discharge of wastewater and sewerage. The issue has been significantly identified by MCUDP and includes a project item, Improvements to distributed Sewerage Network around Beira Lake (as 13 sub-project components). The subproject components are specified by considering the location and as per the other technical and financial factors.
Purpose of the project *(what is going to be achieved by carrying out the project*	The main purpose of the project is controlling the incoming sewer or waste water to the Beira Lake. Therefore, the project is to construct a new sewer and waste water line and conduct repairs to the existing sewer and waste water line. The project will benefit the community in terms of an improved environment with healthier living conditions. The project would make the following positive impacts; • Improve water quality in theBeira Lake • Conserve the existing aquatic fauna in the lake in order to maintain the sustainability of the Lake • Improve the scenic and beauty of Beira Lake and Colombo City as a commercial hub. • Generate potential for different commercial benefits such as water transport and sports • Enhance the commercial level investment opportunities at the surrounding area.
Alternatives considered *(different ways to*	Providing individual toilet pit is the only simple option which will be feasible if sufficient land space is available. As per the existing situation there is no required minimum land space available

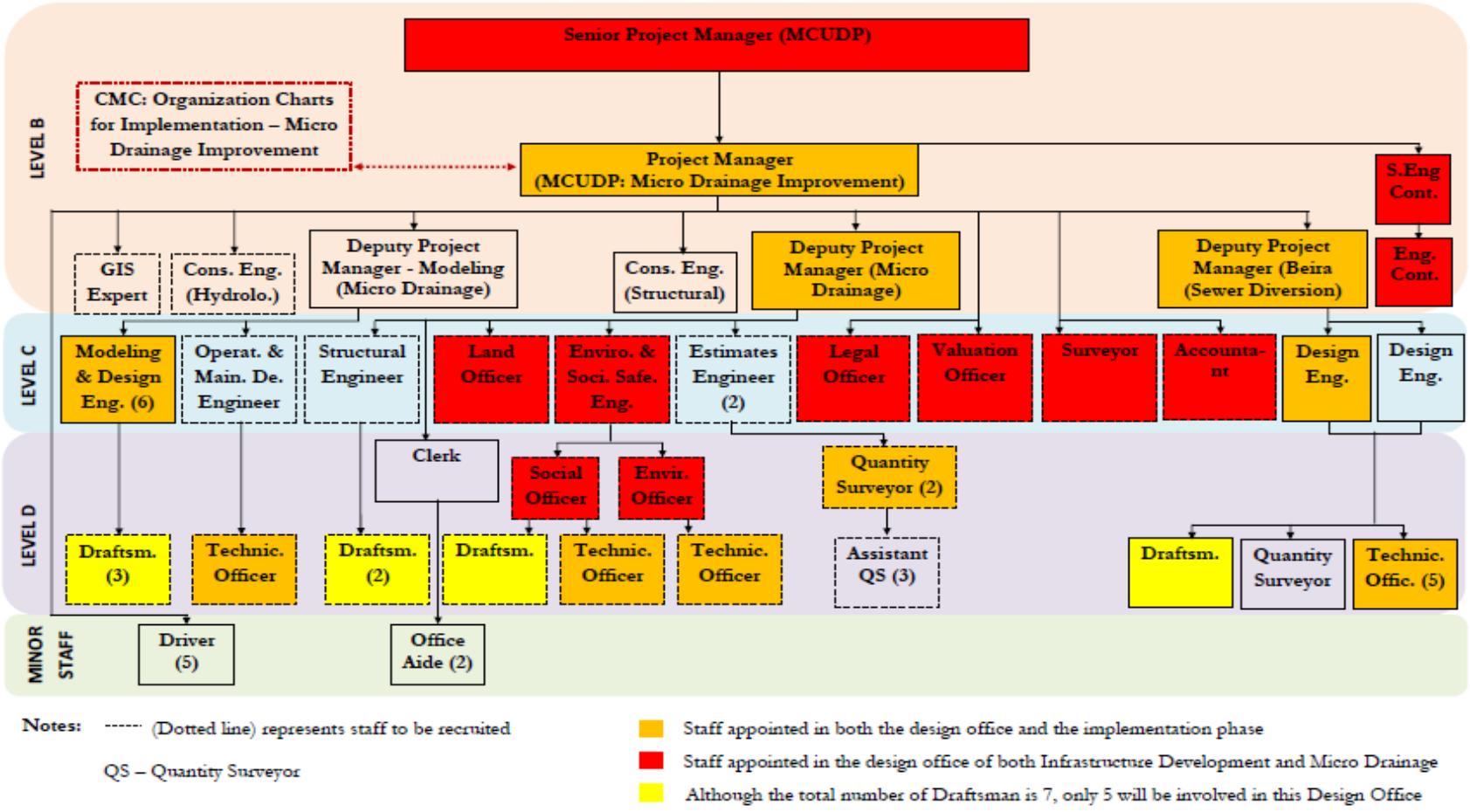
meet the project need & achieve the purpose)	especially due to overcrowded by underserved settlements and various other buildings.

4. Project Description

Estimated total cost	Rs. 60million
Present land ownership	The land which consist the project area is under several agencies, Beira Lake:Sri Lanka Ports Authority (SLPA) Storm water drainage: CMC Sewerage network:CMC Area inside individual buildings/houses : Individual private owners
Description of the project *(with supporting material such as attached as required)*	The Improvements to distributed Sewerage Network around Beira Lake consist of 3 separate main activities, • Implementing the diversion of sewerage network around Beira lake as 13 sub-projects • Informed to identified government institutions to make the necessary precautions to correct the existing situation • Relocation of 3 unauthorized housing at 175 Waththa, 88 Waththa, 87 Waththa (under local funds through UDA) The project area belongs to Slave Island ward number 21,Wekanda ward number 22 and Hunupitiya ward number 23. The settlements are Anderson Flats, 34 Watta, Station Passage (17 Watta, 23 Watta, 29 Watta, and 33 Watta), Morgan Road, Custom Quarters (Morgan Road), Perahara Mawatha (47 Watta, 72 Watta, 39 Watta – stage I, 39 Watta stage – II), Steward Street, Wekanda Road and Church Street (23 Watta, 29 Watta, 40 Watta, 48 Watta). The main purpose of the project is controlling the incoming sewer or waste water to the Beira Lake. Therefore, the project is to construct a new sewer and waste water line and conduct repairs to the existing sewer and waste water line. The project will benefit the community in terms of an improved environment with healthier living conditions. The following developments will be undertaken:- 1. Anderson Flats -main sewer and waste water line (122 m in length) and Sub line (91 m in length). 2. 34 Watta - main sewer and waste water line (152 m in length). 3. Station Passage - main sewer and waste water line (127 m in length) and Sub sewer line (320 m in length). 4. Morgan Road – main sewer line (147 m in length) and Sub sewer line (42

	m in length) 5. Custom Quarters – main sewer line (65 m in length) 6. Perahara Mawatha – main sewer line (330.1 m in length) and Sub line (49.3 m in length) 7. Stewart Street – Sub sewer line (4 m in length) 8. Wekanda – waste water sub line (13.5 m in length) 9. Church Street – sewer main and sub line (181 m in length) and waste water line (159.5 m in length) The diameter of the sewer line is 160mm. Construction spaces should be 750mm. A 2 m construction space is already in existence. **Proposed project activities are as follows,** 1. Removing of bitumen surface, metal base and temporary reinstate crossing under all existing utility services 2. Pipe laying and Manhole construction – Shall include excavation in trenches, removal of excess earth, shoring, dewatering, preparation of surfaces, backfilling, compaction and soil stabilization 3. Concrete works – construction of waste water concrete pits/gully traps 4. Transport and stockpile of construction materials 5. Spoilage disposal Referthe attached engineering drawings, Annex No.1
Project Management Team:	Mr. M I M Saleem Director (Micro Drainage Improvement) Metro Colombo Urban Development Project Water Supply & Drainage Division, Colombo Municipal Council (CMC) Maligakanda, Colombo 10. **Nature of the consultation and inputs received:** • Conducted informal/formal meetings with design Engineers and other relevant staff • Obtained relevanttechnical/other explanation/clarificationand engineering designs and other information. • Conducted field visits withproject staff and public consultation was also done

Figure :2 CMC: ORGANIZATION CHART FOR DESIGN OFFICE – MICRO DRAINAGE IMPROVEMENT



Notes: ------ (Dotted line) represents staff to be recruited

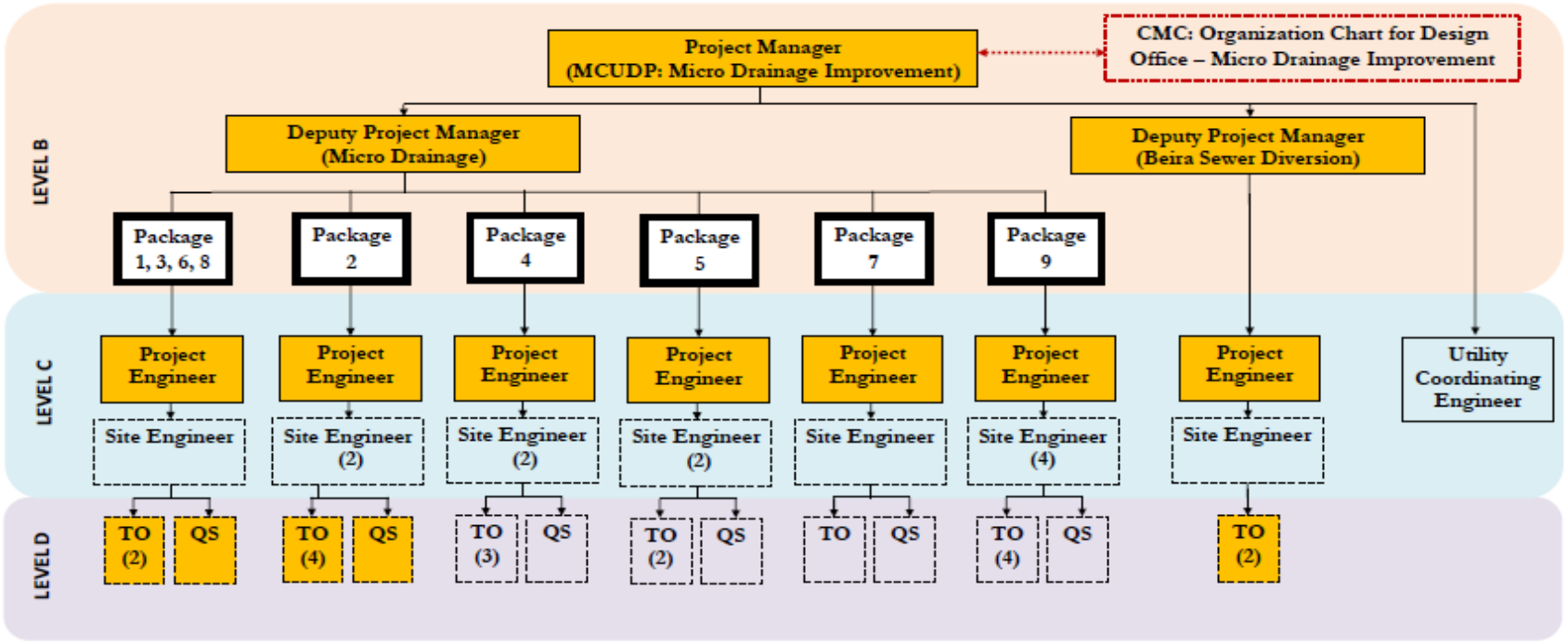
QS – Quantity Surveyor

Staff appointed in both the design office and the implementation phase

Staff appointed in the design office of both Infrastructure Development and Micro Drainage

Although the total number of Draftsman is 7, only 5 will be involved in this Design Office

Figure :3 CMC: ORGANIZATION CHART FOR IMPLEMENTATION – MICRO DRAINAGE IMPROVEMENT



Notes: ------ (Dotted line) represents staff to be recruited

Staff appointed in both the design office and the implementation phase

QS – Quantity Surveyor; TO – Technical Officer

5. Description of the existing environment

5.1 Existing environment	
The Colombo district which incorporates the project area falls into the lowest floodplain of Sri Lanka. The elevation variation up to maximum elevation of 150 m from sea coast. The terrain in Colombo largely consists of low-lying flatlands with a high density of drainage paths formulating a geography consisting of a mix of land and water. The city has many canals and 65hectare of Beira Lake situated in the heart of the city, most distinctive landmarks of Colombo. The project sites for the proposed Improvements to distributed Sewerage Network around Beira Lake are located in West Beira, East Beira. Theproject is located in urbanizearea with underserved settlements and various other commercial places from small –scale to large scale establishments. There are some of government places also within the project area.	
Soil (type and quality)	According to Survey Department soil maps, the main soil types in the project area are as follows; • Red Yellow Podzolic soils with soft or hard laterite and undulating terrain • Bog and Half bog soils: flat terrain • Alluvial soils of variable texture and drainage: flat terrain • Regosols on recent beach sands: flat terrain
Surface water	Sources: The most prominent source of surface water in the vicinity is Beira Lake and surface water drainage canal network. Local uses: The Lake plays an important role in transfer surface drainage and flood waters in the area. At present the usage of Beira Lake is minimum other than the following; • Use by Sri Lanka Ports Authority (SLPA) and Sri Lanka Navi for their officialrequirements. • Rowing practice and events There is numerous illegal discharge points' wastewater and sewerage from residences (specially underserved), commercial establishments and warehouses located adjoining the lake. Due to the high level of water pollution the usage has became less. Quality: As per the latest water and sediment quality analysis carried out under MCUDP at Baira Lake, sewage contamination is high and the lake is organically polluted.
Ground water	Only available source of ground water in the project site is shallow wells. Unable to identify ground water used as a source of water.

	Distance from the site: The ground water table is shallow and is about 0.5 m on average near to the Lake, and can be at a level from almost at surface up to 1.5 - 3.0 m. Local uses: most likely not used Quality: unable to find the data for ground water quality
Flood	Garden 39 (site 6) is getting a minor flood during heavy rain.
Air quality (any pollution issues)	Heavy vehicle movement in the project area is high and it leads to air pollution such as NOx, CO, CO2, Particular matter. During day time such issues can be significant due to heavy traffic in the area. There will be foul-smelling could occur specially during rainy season due to existing sewerage and wastewater discharge system in the area. The network has been damaged in several locations and doesn't properly.
Noise level and vibration (any anticipated issues)	An existing ambient noise level is high due to urbanization of the area and continuous vehicle movements. Noise and vibration level can be slightly increasing due to proposed construction activities.
5.2 Ecology features-Eco –system components	
Vegetation cover (trees, ground cover, aquatic vegetation)	The project area is fully urbanized and availability of vegetation cover is very less. During the site visits the following trees were identified as few numbers; *Cocosnucifera* (Pol), *Mangiferaindica*(Amba), *Cocosnucifera* (Pol) *Ficusreligiosa* (Bo), *Terminaliacatappa* (Kottan) etc.
Presence of wetlands	The Beira Lake is the only wetland at the surrounding. As per the information available there are some birds such as storks, pelicans, and other water loving animals such as monitor lizards and certain species of fish, mainly Tilapia.
Fish and fish habitats	Beira is the only place for availability of fish. Fish sampling was not carried out and as per the available reference materials, Tilapia *sp*. are predominantly present.
Birds (waterfowl, migratory birds, others)	Beira Lake is an attractive place for birds and otherwetland species such as *Saxicoloidesfulicata*(Indian Robin), *Copsychussaularis*(Oriental Magpie Robin), *Acridotherestristis*(Common Mayna), *Streptopeliachinensis*(Spotted Dove), *Pelecanusphilippensis*(Spot Billed Pelicon), *Ardeolagrayii*(Indian Pond Heron), *Haliaspurindus*(Brahmani kite), *Halcyon*

	smyrnnsis(LayaSuduPilihuduwa), *Bubulcus ibis* (Cattle egret), *Colubmalivia*(Domestic pigeon), *Hirundorustica*(Common Swallow), *Amaurornisthoenicurus*(White breasted water hen).
Presence of special habitat areas (special designations & identified sensitive zones)	There are no habitats with special designations in the area.
Other features	
Residential /sensitive areas (hospitals, schools)	The project area consists of residential, commercial and public and private sector officers. The following sensitive features are available in the project area Site 1/2: Security Training School (under Sri Lanka Port Authority), Sri Lanka Army Electrical & Mechanical engineering Head Quarters, City Foot Ball ground Sri Uththarananda Mawatha, Steward street, Railway Road, Galle Face Court, Holiday Inn Site 4/5/6/7:Perahera Mawatha, Nelson Lane, Public Dispensary, Buddhist Temple, Temple Trees Site 8/9:Stasion passage, Railway road, Akbar Mawatha, Free Ayurwedic hospital Site 3/10/11:Steward street, Zonal education office, Sri SaripuththaMahaVidyalaya Site 12: Nawam Mawatha, Wekanda Road. Site 13:Church street, Chapel street, Islamic mosque, Free Ayurvedic hospital
Traditional economicaland cultural activities	Site 6/7: Traditional Laundry (Called as LaundryWaththa) “GangaramaVesakKalapaya” and annual “GangaraamaPerahera” can be considered as religious and cultural activities in the area. These are seasonal activities.
Archeological resources	No such

6. Public consultation

Date: 26/07/2012

Method of consultation: Informal discussions

*Mrs. S Palihawadana, 21A, LaundaryWaththa *Mrs. Malar Subramanium, 39 Waththa *G F Safar, Wekanda Road	As per the statement given by the residents in Laundry Watta, the Laundry is functioning during last eighty years and more than 20 families are depending on the business. The business is registered at CMC all maintenance are done by CMC. According to them, the existing drainage and sewer lines have to be upgraded and there are several leakages could be observed. And also regular blocking of existing lines cause very unpleasant situation. The ultimate solution is to clean them all manually by the community. Appreciated the proposed project as they need to leave out from this unhealthy situation but do not like to leave the place. During construction stage, they are willing to bear the inconveniences and assist the project
*Mrs. U L Sumithra 47/7, Nelson Lane, Kollupitiya, Colombo 03 (47 Waththa)	They live in houses given by Housing Development Authority and willing to leave out the place even in future because of this problem.
*Mrs. N T M Thanuja Custom Quarters	Drainage and sewer network has to be upgraded near to Custom Quarters and the residents living there appreciated the proposed project.
*Mrs. Leiladeen Morgan road	People living in Morgen Road commented with good faith and appreciated the project as poor people living in unhealthy situation. They expect better environment to live with their children.

7. Environmental effects and mitigation measures

7.1 Screening for potential environmental impacts

No.	Screening questions	YES/NO	Significant of the effect (low, moderate, high)
1.	Will construction and operation of the project involve actions which will cause physical changes in the locality	NO	Most of the interventions are carried out underground and on the ground and will involve placing and replacing sewer lines. Once the work is completed the sites will be restored back to normal.. No significant negative impacts are anticipated.
2.	Will the project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risk to human health?	YES	Low Transport of material and construction activities, including excavation, and material piles will emit dust and fugitive particles which may pose a health hazard to vulnerable persons on temporary basis. The wind blowing with the sea breeze will be the triggering factor for such impact though it is sporadic in nature.
3.	Will the project produce solid wastes during construction or operation?	YES	Moderate There will be spoilage (construction debris) produced during demolition of existing bituminous surfacesand excavation of trenches during construction period.
4.	Will the project release pollutants or any hazardous, toxic or noxious substances to air?	YES	Low There will be bituminous materials to be used during re-surfacing of pavements and road sections, bituminous patching, crack sealing,

			carriageway edges and shoulder repairs.
5.	Will the project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	YES	Moderate The construction activities will cause noise and vibration during excavation of trenchers, compaction, transport and uploading of materials, etc. These impacts are unavoidable and temporary, only inconvenience to the neighboring people. No activities in the project which release light, heat, energy or electromagnetic radiation
6.	Will the project lead to risks of contamination of land or water from release of pollutants onto the ground or into surface waters, groundwater or coastal water?	NO	No risk of further contamination as especially the Beira Lake has already been polluted. This project has particularly been designed to upgrade the existing sewer network and avoid sewer discharge to the lake, The project will have a very positive impact on the water quality of the Beira lake as less nutrients will be carried to the lake.
7.	Will the project cause localized flooding and poor drainage during construction? Is the project located in a flooding location?	YES	Low Temporarily blockage of existing drainage paths may occur due to the proposed activities during the construction period.The proposed project site is located in an area where adequate drainage system and other drainage facilities have been provided. So the risk of flooding is relatively insignificant. The impact could also be minimized and by practicing proper site management
8.	Will there be any risks and vulnerabilities to public safety due	YES	Moderate

	to physical hazards during construction or operation of the project?		Disturbance to pedestrians and residents in the area. Safety issue in terms of falling into excavated trenches by neighbors could be anticipated. Some of the trenching will take place in narrow crowded alleyways and accidents could easily take place if the contractor does not take necessary precautions.
9.	Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	YES	Low There are some by roads available using for transport around the proposed locations and may be affected by project activities but relatively insignificant
10.	Are there any routes or facilities on or around the location which are caused by the public for access to recreation or other facilities, which could be affected by the project?	NO	NA
11.	Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?	NO	Proposed project is designed entirely for the enhancement of the scenic and recreational value of the Beira Lake and positive impact could be anticipated.
12.	Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other water bodies, the coastal zone, mountains,	YES	Low Beira Lake is the only natural feature in close proximity to the project sites. As mentioned earlier, Beira has been severely affected by sewage and waste discharge from its catchment which has led to the lake becoming hypertrophic with regular algal blooms and fish kills.

	forests, fauna, flora etc. which could be affected by the project?		The proposed project interventions will result the enhancement of the ecological value of the lake and negative impacts may be very low and insignificant
13.	Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or Flora eg. Breeding, nesting, foraging, resting, migration, which could be affected by the project?	NO	Here is a population of spot billed pelicans that feed and roost in the lake environment but there will be no impact to them from the proposed construction work.
14.	Is the project located in a previously undeveloped area where there will be loss of green-field land	NO	No such green – field could be observed during site visits
15.	Will the project cause the removal trees in the locality?	Most likely not	There are no trees other than very few. There will be no tree removal other than any unavoidable circumstances.
16.	Are there any areas or features of historical or cultural importance on or around the location which could be affected by the project?	NO	There will be short-term impacts during the construction.
17.	Are there existing land uses on or around the location e.g. homes, garden, other private property, commerce, recreation, public open space, community facility, agriculture, forestry, tourism, mining or quarrying which could be	NO	The land use pattern of the area is mixed – residential, commercial, institutional, etc. They would not be affected by the project activities

	affected by the project?		
18.	Are there any areas on or around the location which are densely populated or build up which could be affected by the project?	YES	The area identified as densely populated area. Most of the people residing there are occupying their working places during day time and the project will not affect as most of the activities are proposed to be carried out during day time.
19	Are there any areas on or around the locations which are occupied by sensitive land uses e.g. hospital, schools, places of worship, community facilities which could be affected by the project.	NO	NA
20,	Are there any areas on or round the location which contain important, high quality or scarce resources e.g. ground water, surface waters, forestry, agriculture, fisheries, tourism, minerals which could be affected by the project?	NO	N/A
21.	Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded which could be affected by the project?	YES	The water quality in the Beira lake shows organic pollution. One of the objectives of the proposed intervention is to intercept sewage and waste water draining into the lake from the identified locations.

7.2 Environmental Management Plan

No.	Key project activities	Potential environmental effects	Mitigation measures
1	Site preparation including provision of access roads, material storage yard, identification of the exact project boundary area etc.	Emission of Dust Noise/vibrations Cutting of few trees Disturbance (including safety risk) to road users including kids playing in the road side Temporary loss of access Generation of construction debris onsite	• Before startingsite preparation in each site, provide advance information to the public about the planned construction work, construction schedule, restriction on access, traffic arrangement (if any) in order to avoid inconveniences and any alternatives provided. • Site clearing should be carried out by manual methods as much as possible. • Whenever necessary water sprinkling should be done to minimize the dust • Access to the residents should not be disturbed during the construction and if disturbed, temporary solutions should be provided. • Contractor should plan his construction work that will enable access to the road to its users and not be totally cut off. • For management of construction debris refer to mitigation measures proposed in section 5.
2	Removing of bitumen surface, metal base and temporary reinstate crossing under all existing utility services. Excavation of trenches, removal of excess earth, shoring, dewatering, preparation surfaces, backfilling and compaction with	Noise & vibrations Dust Demolished materials/soil Unavoidable property damages	• Due to lack of working space available in all the sub project sites, it is important to use manual methods as much as possible for site clearance and cutting of trenches. Especially where new sewer lines are placed or replaced along narrow alleyway inside dense community settlements, the

	suitable available or imported materials Introducing new manholes, vent shaftetc.	Temporary loss of access	use of machinery should be limited to the bare minimum. • Water sprinkling is important whenever necessary in order to control dust emissions • Disposal of demolished material shall be undertaken as per mitigation measures provided above and as per the engineer's guidance. It is recommended to re-use the maximum amount of demolished material onsite • If any damages are caused to any of the structures those shall be correct before the end of the implementation periodandthe cost will be bourneby the contractor. • Temporary loss of access to houses and other places should be mitigated as proposed above.
3	Dewatering during the construction	Dewatering may cause surface ponging of removed water if proper drainage is not allowed. Especially, the upper soil layers might be in saturated condition due to recent storm events.	• Proper and adequate dewatering should be ensured either using a proper monitoring schedule or using an automated submersible pipe with float devise to ensure site activities are interrupted due to seepage water • Proper surface drainage facilities should be provided to safely remove pumped up water from the site to avoid ponging effects

			• These temporary drainage paths should not be directly routed to waterways without trapping the sediments using silt traps, silt ponds etc.as appropriate.
4	Stockpiling of material	Emission of dust during loading and unloading of construction materials Erosion of materials during rains. Stockpiling of soil, debris, and other material may block surface drainage paths causing localized flooding during construction and operational periods May cause disturbance to residents	• All construction materials should be stored with proper cover to avoid washout • Construction material should not be stockpiled haphazardly in the site but only in designated places identified appropriate for the purpose to avoid danger and disturbance to site users • As space is a problem, only small volumes of construction material should be stockpiled onsite in order not to cause danger and inconvenience to the community and public (see above). • Construction material should be stored away from drainage paths. • Rainy season should be avoided as practical as possible. If any case, rainy period is unavoidable, it is necessary to make sure to have temporary drainage facility. • All cement, bitumen (barrels), oil and other chemicals such as paint should be stored and handled on an impervious surface above ground level. • The storage location for these products

			should be enclosed and not exposed to rain and storm water run off • A temporary ridge should be constructed with suitable material around such places to avoid storm water getting in.
5	Disposal of debris and construction spoil		• All debris and residual spoil material including any left earth shall be disposed of in locations approved by the Engineer (who represents the CMC) • When disposing debris, the contractor must ensure that waterways and drainage paths will not get blocked; the material will not get washed away by runoff and will not be a nuisance to the public. • The contractor must also ensure that excavated earth material and construction debris are not stockpiled at different locations along the ROW or the constructed sewer but swiftly disposed to recommended sites as instructed by the engineer. • With the approval of the Engineer, the contractor may be able to dispose the construction debris and earth as fill material to a recommended site. • When transporting spoil and debris vehicles should be covered with tarpaulin.
6	Transport of construction material	Dust/emission Inconvenient and disturbance to the road side	• Given the space restriction for material stockpiling on site, head transport of material is encouraged so as not to disturb people residing in the area. Bulk quantities will need to be stored in a sub-urban area

		Noise	andfrom which the material requirement for the day or a few days, as the case be, and use immediately • . Dust emissions should be controlled by wet spraying of construction sites and roads which are used for transportation • Dust barriers nearby public sensitive locations and tarpaulin covering are mandatory on vehicles which are used for transporting materials
7.	Safety precautions of workers and public at the site and in work camps should be considered during construction period	Improper management of safety in the site may cause accidents on workers and public as well Improper management of worker camps may cause adverse effects on worker's health and surrounding environment	• All reasonable precautions shall be taken by the contractor in order to prevent any danger of the workers and the public from accidents by providing adequate safety measures. • The contractor shall instruct his workers in safety matters and emphasize the use of safety gears. • The contractor shall carry out trenching and construction in sections and not open the entire length all at once. As these areas are densely populated, utmost care must be taken not to leave unsecured trenches. All trenches should be properly barricaded, especially where sewer connections are done along narrow alleyways lined by houses on either side.

			• Similarly, material stockpiles and construction debris should be temporarily stocked on site in appropriate places with barricades and covering, Special caution should be placed on avoiding harm to children who may play in the area oblivious to dangers of accidents. • Contractor shall comply with the provisions in Health and Safety regulations under the Factory ordinance with regards to provisions of health and safety measures and amenities at work places. • The contractor shall provide and maintain necessary (temporary) living accommodation and ancillary facilities for labor (as per the requirement) according to standards and scale approved by the PIA/PMU
8	Construction of new sewer manhole, permanent of existing sewer manhole, construction of new sewer line and construction and rehabilitation of sewer network	Loss of Residential Structure Minor damage to religious property Temporary adverse impacts of civil works (access, safety hazards, mobility, noise/dust)	• Refer table – 3 of the Resettlement Action Plan (RAP)

8. Screening Recommendations and Conclusions

The overall construction won't make any significant environmental issues other than general unavoidable impacts such as noise/vibration, dust/emissions, removal of few trees, disposal of demolished materials etc. The most feasible way to minimize the impacts and continue the work in environmental friendly manner is to follow the good housekeeping practices with the proper understanding with community at the implementation area. The project implementation message should convince to the community as early possible and make sure the community difficulties and inconvenient are less.

Special site observations:

There is a traditional Laundry at Laundry Watta which has been operating since colonial period. At present the Laundry is licensedby CMC and continuing its operation. The Metro Colombo Urban Development Project is targeting to improve the modern city development concepts by giving the high weight to green concepts etc. The laundry is situated at a most important place of the city and the facilities and resources available for its operational requirements are not in a satisfactory manner. There is a question about the required health, hygienic and sanitation during the laundry operation. The laundry is surviving on the sub-contract basis orders coming directly from the hotels and fromother professionals. As a whole we should focus on the quality of the services providing in the city specially related to the field of tourism etc. It is important to develop this laundry service in a well-organized manner by facilitating to continue the quality service.

Key Recommendations

- All potentially adverse effects can be classified as general construction related impacts and are mitigatable with known technology. Public concern does not warrant further assessment.
- Therefore, stand alone Environmental Assessment not required, an Environmental Management Plan would be sufficed.

- In general, necessary environmental safeguard measures specified in the EMP should be implemented by the contractor. Contactor should prepare an Environmental Management Action Plan and submit to the CMC (PIA) and should maintain obtain approval prior to the implementation

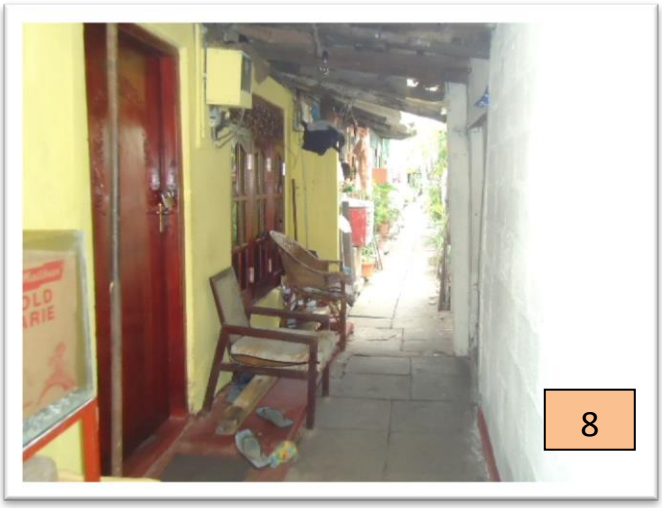
9. Completion of the Environmental Screening Report

Screening Report Compiled by	**Name**: Ms. Shanthi Dharmawardhana **Designation**: Environmental Officer **Institut**e: Metro Colombo Urban Development Project(MCUDP) Ministry of Defense & Urban Development **Contact No**: 0718 610 446 **Signature**: **Date**: 16.07.2013
Screening Report Supervised and Reviewed by	**Name:** Mr. Chamal Niroshana Manage **Designation:** Environmental Specialist **Institute:** Metro Colombo Urban Development Project (MCUDP) Ministry of Defense and Urban Development **Contact No**: 0718 680 116 **Signature:** **Date:16.07.2013**
Screening Report Approved by	**Name:** Eng. Rohan Senevirathne **Designation:** Project Director **Institute:** Metro Colombo Urban Development Project (MCUDP) Ministry of Defense and Urban Development **Signature:** **Date: 16.07.2013**

Annexure: 1 Site Photographs

6

7



8

9

10

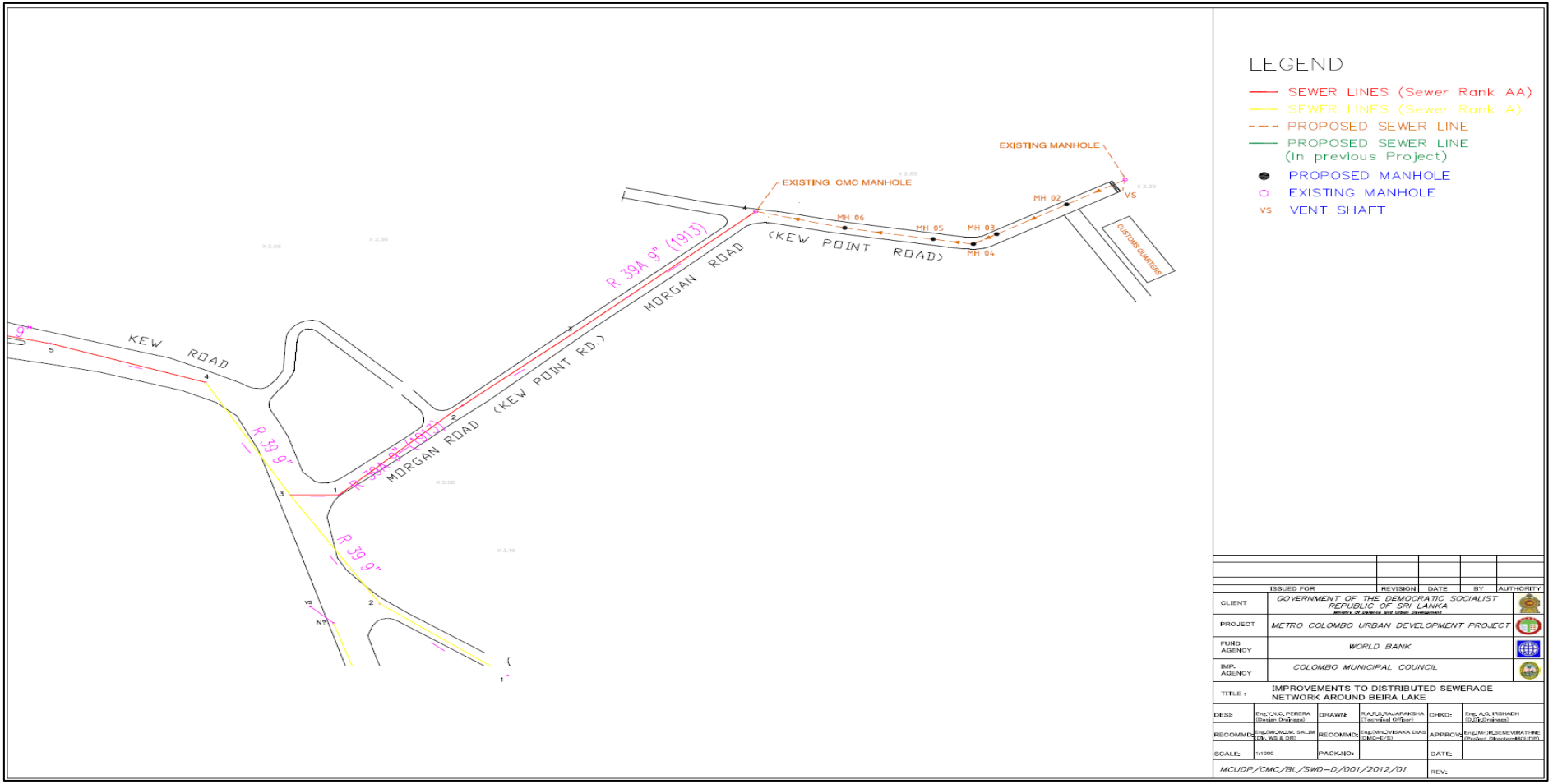
11

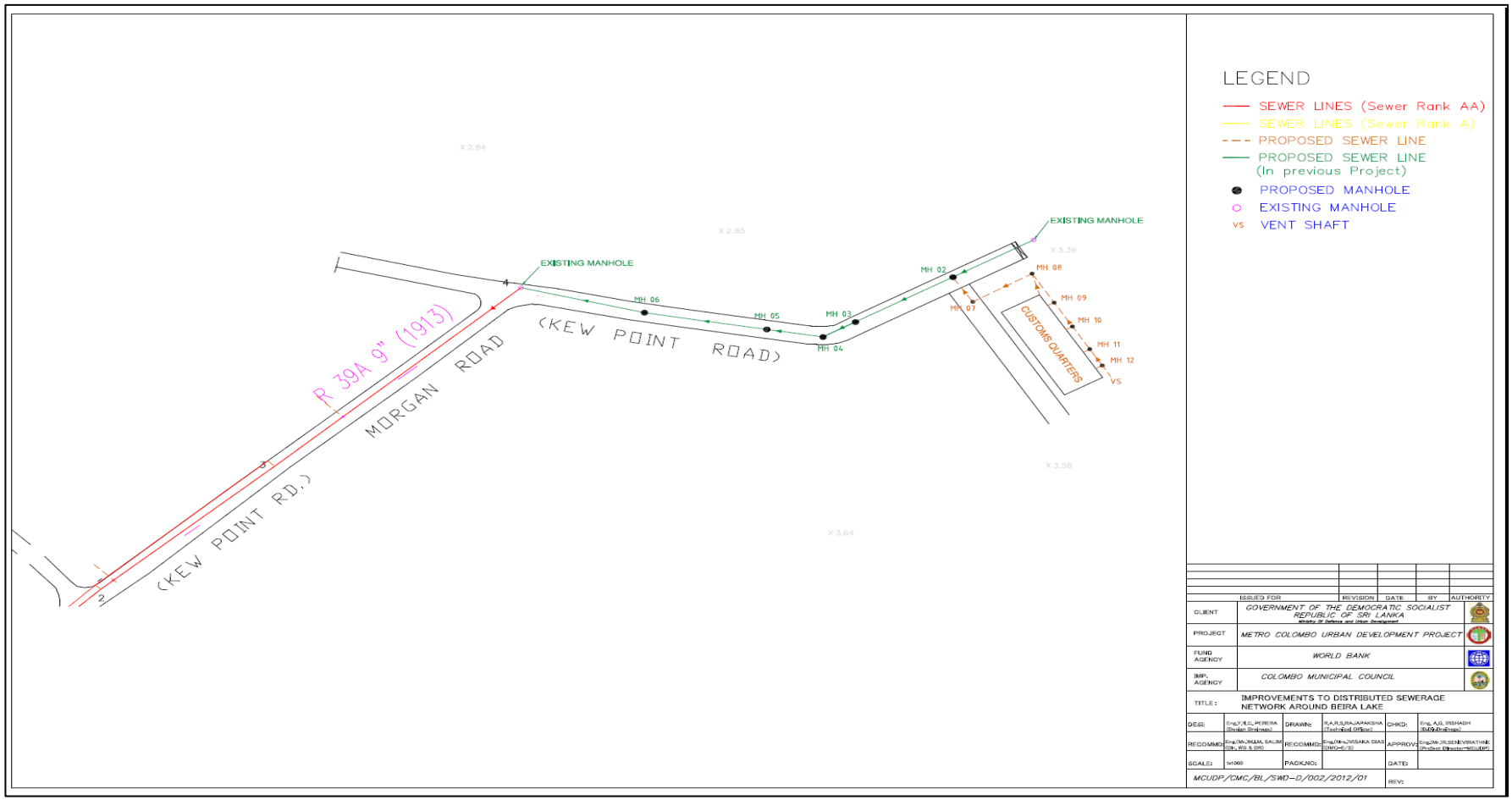
12

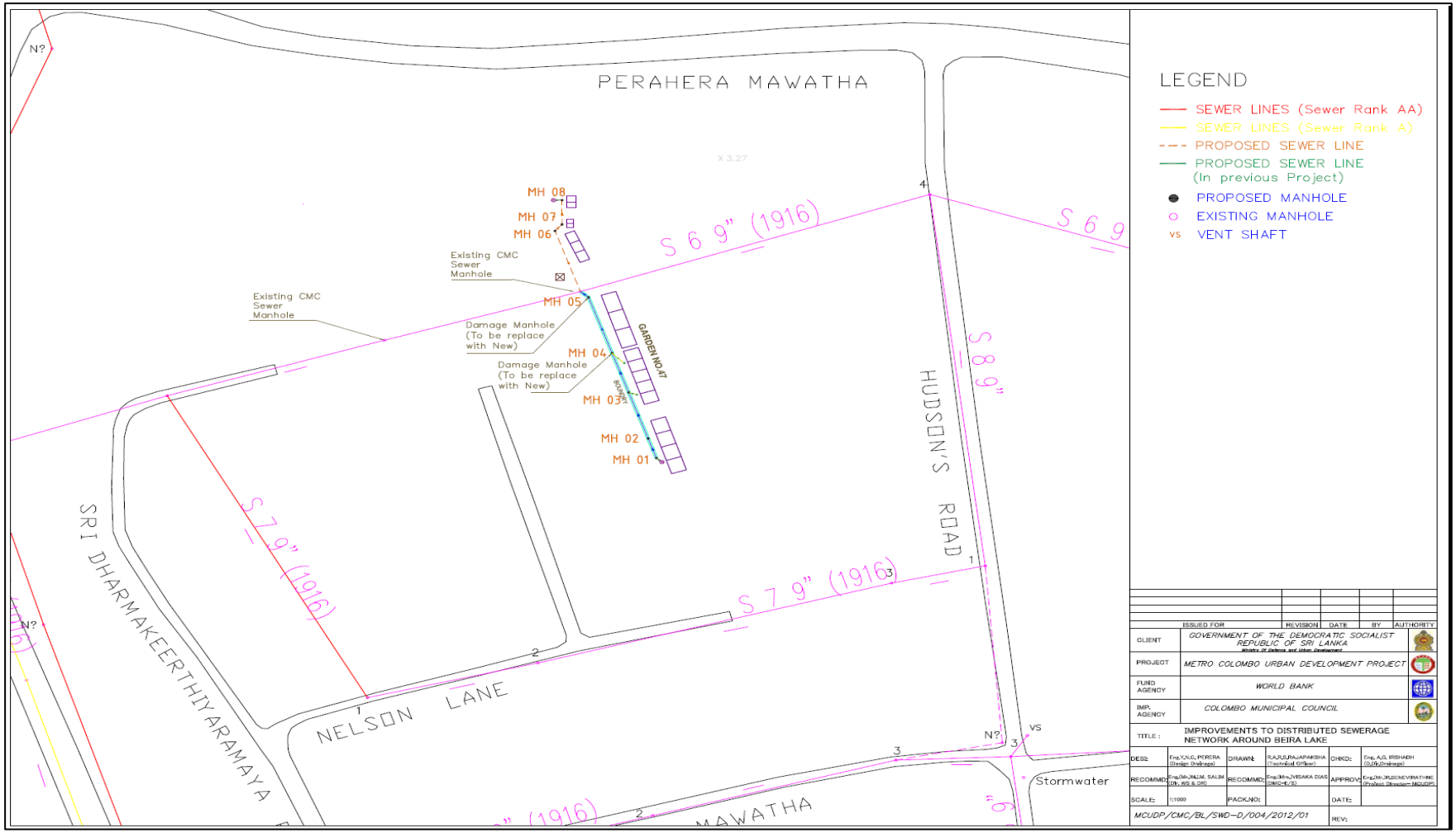
Photograph No.	Description
1	Site1, area coverage at Morgan road
2	Site1, the community consultation had at the site level
3	Site2, There are few houses to be connected to sewer diversion at Morgan road Custom quarters.
4	Site 3, this is one of the oldest housing complex in Colombo city (NHDA) and existing sewer lines are having many issues in the area and it has proposed to connect to the above project.
5	Site4, garden no 47, Perahera Mawatha. At the initial stage of the project there was a laundry and recently it has been demolished.
6	Site 5, garden 72 at Perahera Mawatha. At community is having lot of issues related to drainage network and its inconvenient to day to day activities and finally their hygienic & sanitation status are very poor.
7	Site5, this section also covers under garden 72 at Perahera Mawatha.
8	Site 6, garden 39 (stage 1) Perahera Mawatha
9	Site 6, garden 39 (stage 1) Perahera Mawatha
10	Site 7, garden 39 (stage 2) Perahera Mawatha
11	Site 8, Station Passage Slave Island (Stage 1)

12	Site 9, Station Passage Slave Island (Stage 2).
13	Site 10, garden 34 Steward Street. At present the drainage lines are not working and community is facing many difficulties. There is a thread on their hygienic status.
14	Site 10, there is a manhole inside this house. There is a doubt whether house to be shifted (resettle) or manhole to be changed.
15	Site 11, There are few households to be collected at Steward Street
16	Site 12, Diversion of sewer lines at Wekanda road
17	Site 13, Diversion of sewer lines at Church Street (Part A, B C & D)

Annexure: 2 Site Layouts




LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VS VENT SHAFT
EXISTING MANHOLE
EXISTING MANHOLE
MH 02
MH 03
MH 04
MH 05
MH 06
MH 07
MH 08
MH 09
MH 10
MH 11
MH 12
VS
CUSTOMS QUARTERS
R 39A 9" (1913)
MORGAN ROAD
(KEW POINT ROAD)
(KEW POINT RD.)
ISSUED FOR
REVISION
DATE
BY
AUTHORITY
CLIENT
GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
PROJECT
METRO COLOMBO URBAN DEVELOPMENT PROJECT
FUND AGENCY
WORLD BANK
IMP. AGENCY
COLOMBO MUNICIPAL COUNCIL
TITLE :
IMPROVEMENTS TO DISTRIBUTED SEWERAGE NETWORK AROUND BEIRA LAKE
DES:
DRAWN:
CHKD:
RECOMMD:
RECOMMD:
APPROV:
SCALE:
PACK.NO:
DATE:
MCUDP/CMC/BL/SWD-D/002/2012/01
REV:


PERAHERA MAWATHA
HUDSON'S ROAD
SRI DHARMAKEERTHIYARAMAYA
NELSON LANE
MAWATHA
MH 08
MH 07
MH 06
MH 05
MH 04
MH 03
MH 02
MH 01
Existing CMC Sewer Manhole
Existing CMC Sewer Manhole
Damage Manhole (To be replace with New)
Damage Manhole (To be replace with New)
GARDEN NO.47
S 6 9" (1916)
S 6 9
S 8 9"
S 7 9" (1916)
S 7 9" (1916)
Stormwater
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VS VENT SHAFT
ISSUED FOR
REVISION
DATE
BY
AUTHORITY
CLIENT
GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
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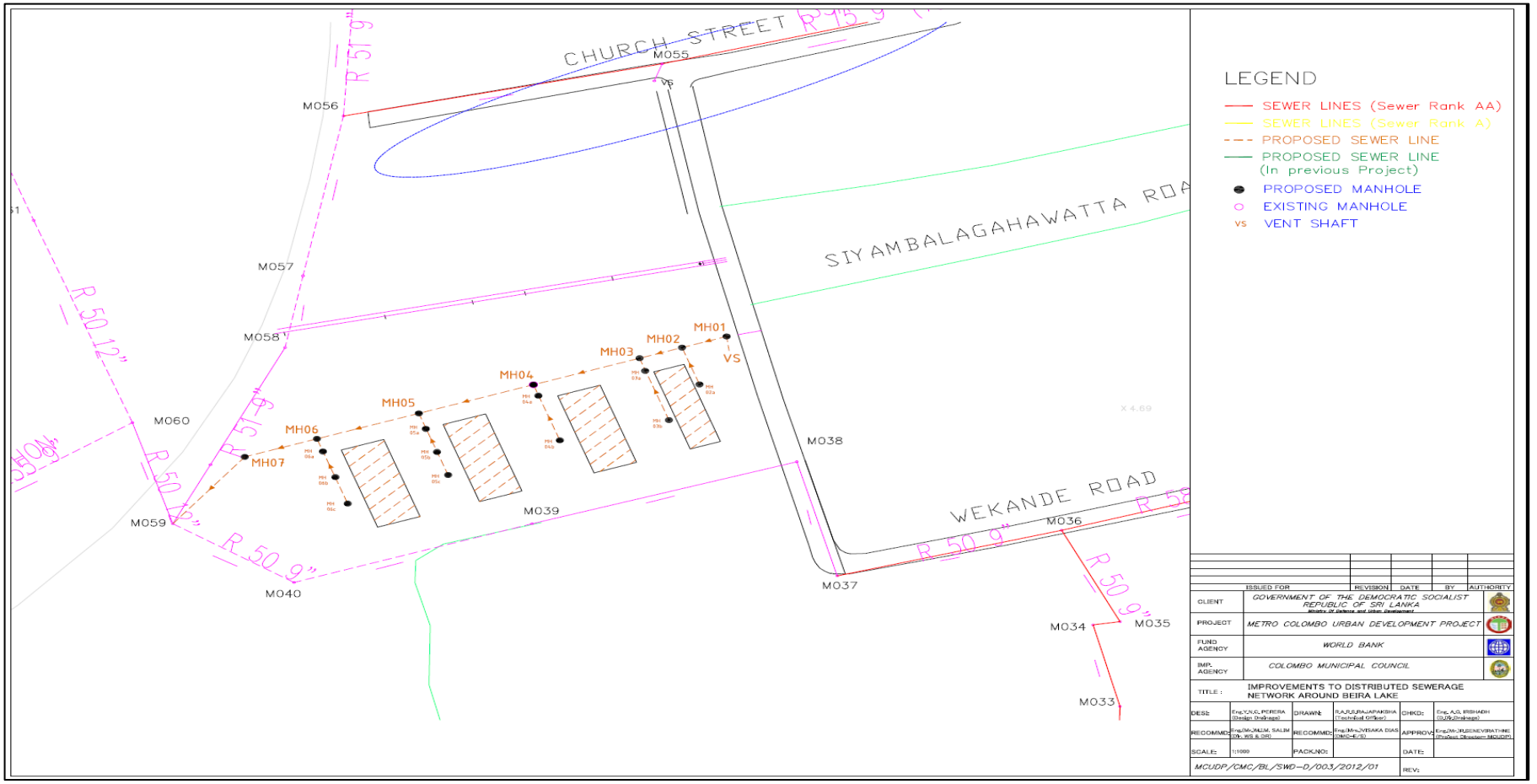
CHURCH STREET
SIYAMBALAGAHAWATTA ROA
WEKANDE ROAD
M055
M056
M057
M058
M059
M060
M038
M039
M040
M036
M037
M034
M035
M033
MH01
MH02
MH03
MH04
MH05
MH06
MH07
VS
R 51'-6"
R 50.12"
R 50'-9"
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VENT SHAFT
ISSUED FOR
REVISION
DATE
BY
AUTHORITY
CLIENT
GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
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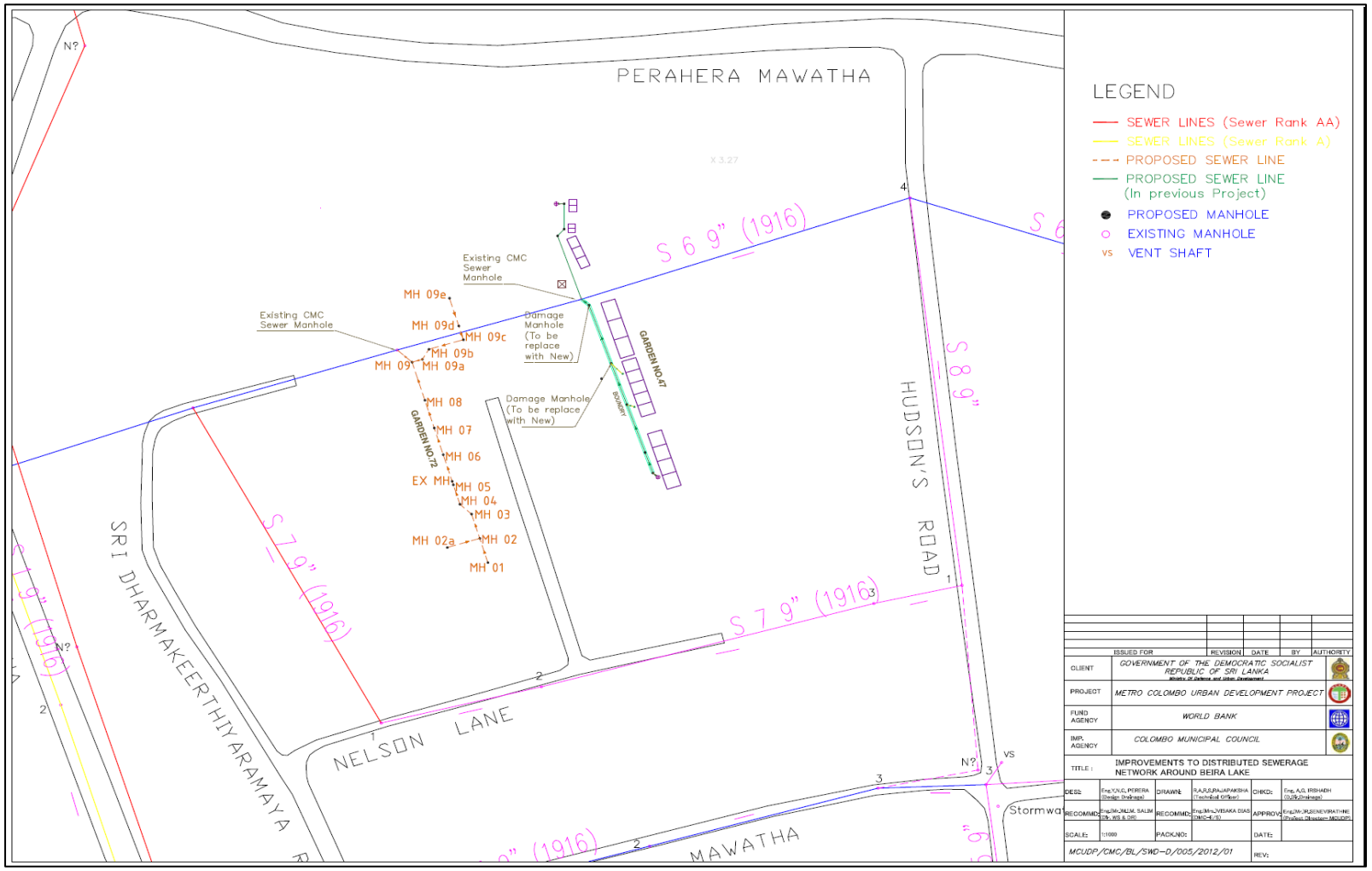
PERAHERA MAWATHA
HUDSON'S ROAD
SRI DHARMAKEERTHIYARAMAYA
NELSON LANE
MAWATHA
Existing CMC Sewer Manhole
Existing CMC Sewer Manhole
Damage Manhole (To be replace with New)
Damage Manhole (To be replace with New)
MH 09e
MH 09d
MH 09c
MH 09b
MH 09
MH 09a
MH 08
MH 07
MH 06
EX MH
MH 05
MH 04
MH 03
MH 02a
MH 02
MH 01
GARDEN NO.47
GARDEN NO.72
BOUNDRY
S 6 9" (1916)
S 8 9"
S 7 9" (1916)
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VENT SHAFT
ISSUED FOR
REVISION
DATE
BY
AUTHORITY
CLIENT
GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
PROJECT
METRO COLOMBO URBAN DEVELOPMENT PROJECT
FUND AGENCY
WORLD BANK
IMP. AGENCY
COLOMBO MUNICIPAL COUNCIL
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IMPROVEMENTS TO DISTRIBUTED SEWERAGE NETWORK AROUND BEIRA LAKE
DES:
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DATE:
MCUDP/CMC/BL/SWD-D/005/2012/01
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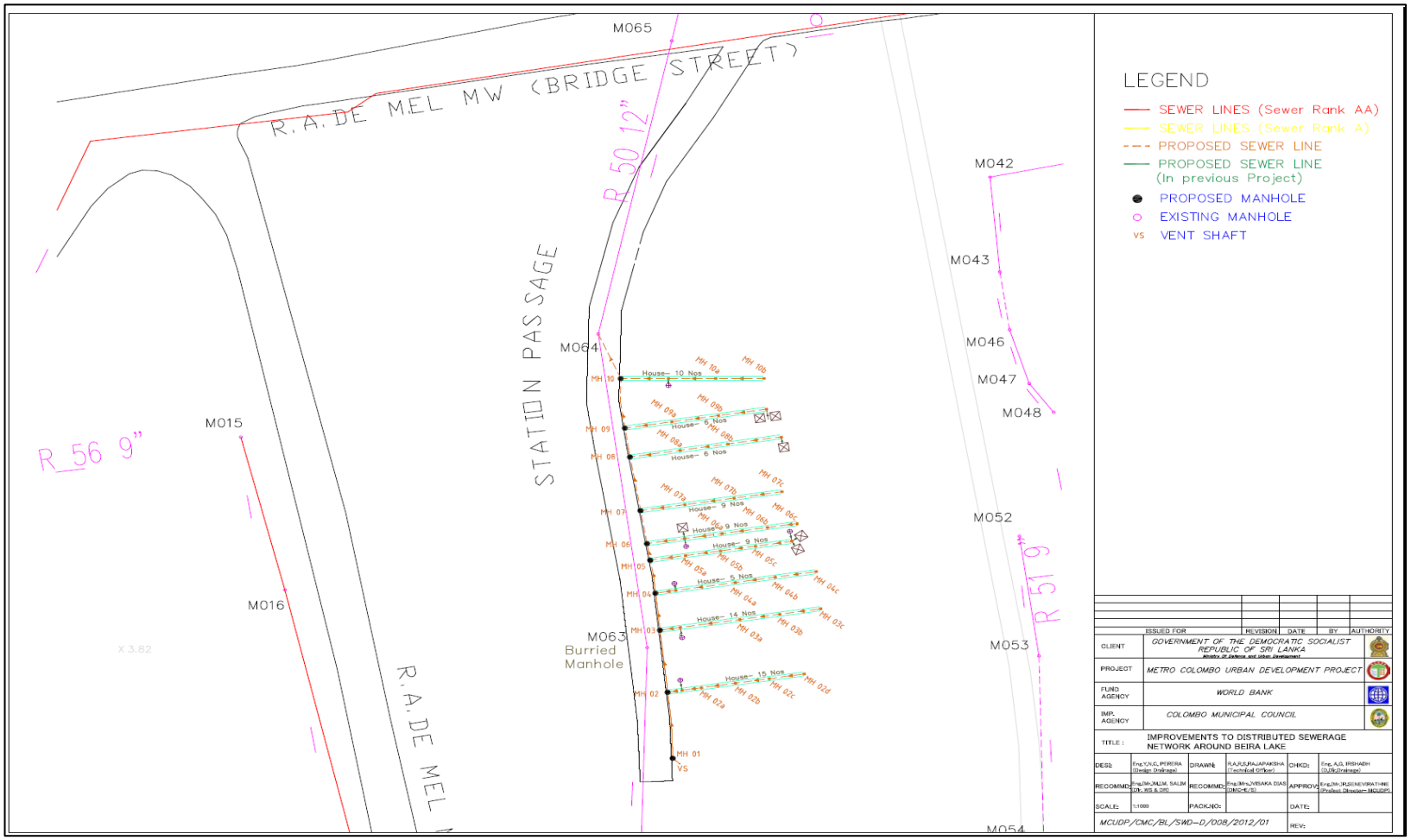
M065
R.A.DE MEL MW (BRIDGE STREET)
R 50 12"
STATION PASSAGE
M064
M042
M043
M046
M047
M048
M052
M053
M054
R 51 9"
M015
R 56 9"
M016
M063
Burried
Manhole
MH 01
VS
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE
(In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VS VENT SHAFT
ISSUED FOR
REVISION
DATE
BY
AUTHORITY
CLIENT
GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
PROJECT
METRO COLOMBO URBAN DEVELOPMENT PROJECT
FUND AGENCY
WORLD BANK
IMP. AGENCY
COLOMBO MUNICIPAL COUNCIL
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IMPROVEMENTS TO DISTRIBUTED SEWERAGE NETWORK AROUND BEIRA LAKE
DES:
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SCALE:
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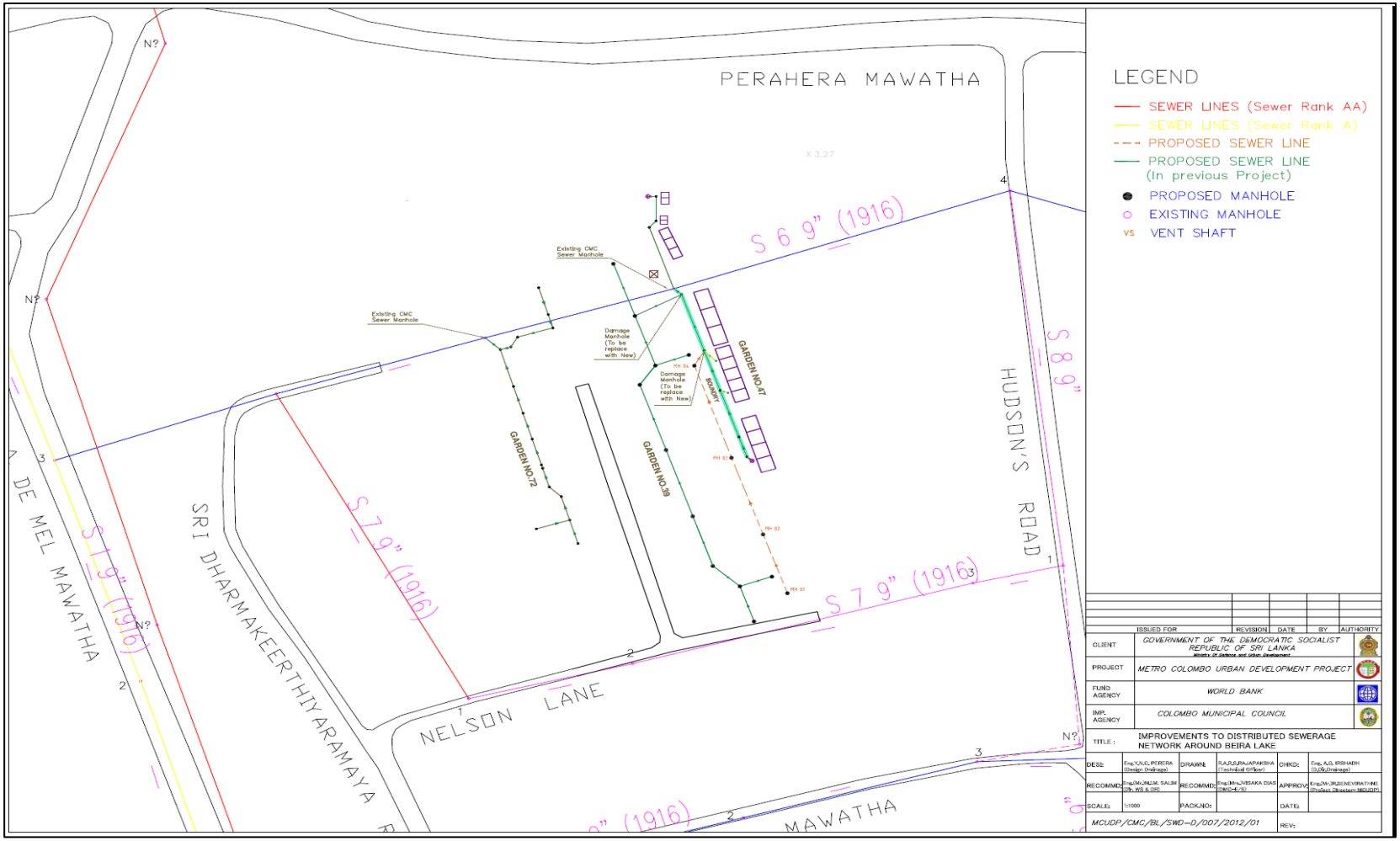
DATE:
REV:
MCUDP/CMC/BL/SWD-D/008/2012/01


PERAHERA MAWATHA
DE MEL MAWATHA
SRI DHARMAKEERTHIYARAMAYA
NELSON LANE
HUDSON'S ROAD
MAWATHA
S 6 9" (1916)
S 7 9" (1916)
S 8 9"
GARDEN NO.72
GARDEN NO.39
GARDEN NO.47
BOUNDARY
Existing CMC Sewer Manhole
Damage Manhole (To be replace with New)
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VS VENT SHAFT
ISSUED FOR
REVISION
DATE
BY
AUTHORITY
CLIENT
GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
PROJECT
METRO COLOMBO URBAN DEVELOPMENT PROJECT
FUND AGENCY
WORLD BANK
IMP. AGENCY
COLOMBO MUNICIPAL COUNCIL
TITLE :
IMPROVEMENTS TO DISTRIBUTED SEWERAGE NETWORK AROUND BEIRA LAKE
DES:
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MCUDP/CMC/BL/SWD-D/007/2012/01
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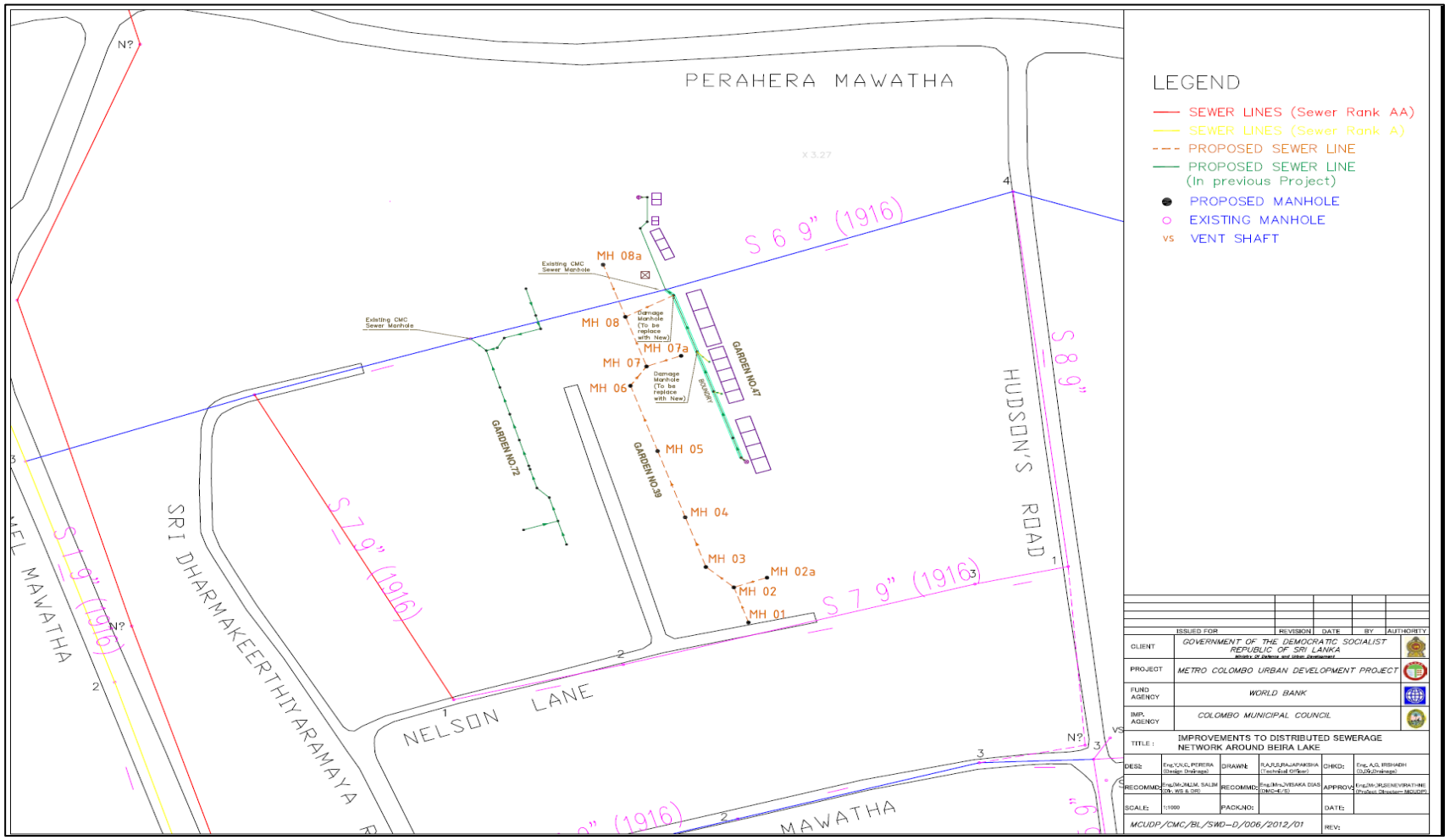
PERAHERA MAWATHA
HUDSON'S ROAD
SRI DHARMAKEERTHIYARAMAYA
NELSON LANE
MAWATHA
S 6 9" (1916)
S 8 9"
S 7 9" (1916)
MH 08a
MH 08
MH 07a
MH 07
MH 06
MH 05
MH 04
MH 03
MH 02a
MH 02
MH 01
GARDEN NO.72
GARDEN NO.39
GARDEN NO.47
Existing CMC Sewer Manhole
Damage Manhole (To be replace with New)
BOUNDRY
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VENT SHAFT
ISSUED FOR
REVISION
DATE
BY
AUTHORITY
CLIENT
GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
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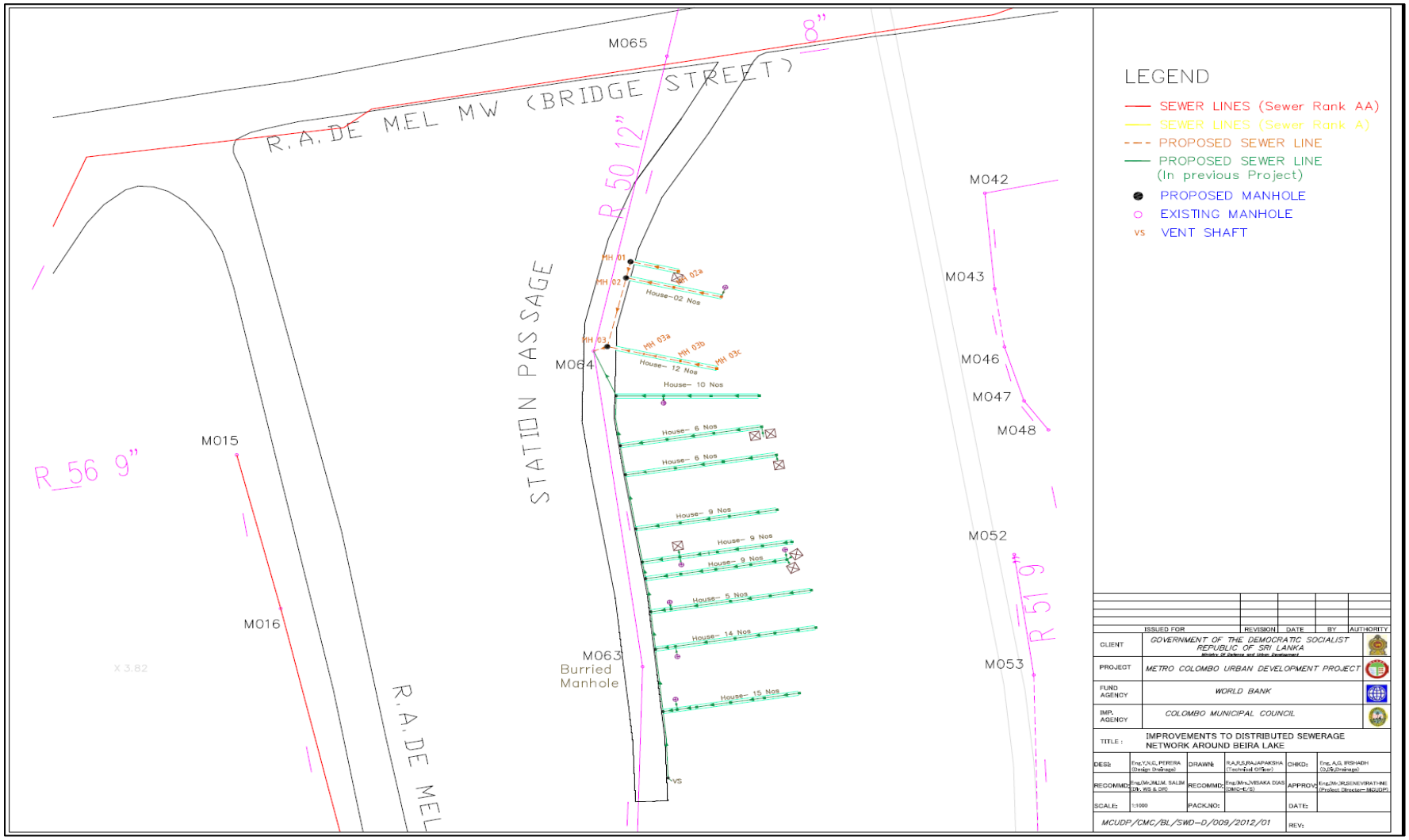
MCUDP/CMC/BL/SWD-D/006/2012/01


M065
R.A.DE MEL MW (BRIDGE STREET)
8"
R 50 12"
STATION PASSAGE
M042
M043
M046
M047
M048
M052
M053
M064
M015
M016
M063
Burried
Manhole
R 56 9"
R 51 9"
R.A.DE MEL
MH 01
MH 02
MH 03
MH 03a
MH 03b
MH 03c
House-02 Nos
House- 12 Nos
House- 10 Nos
House- 6 Nos
House- 9 Nos
House- 5 Nos
House- 14 Nos
House- 15 Nos
VS
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE
(In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VS VENT SHAFT
ISSUED FOR
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DATE
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GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
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MCUDP/CMC/BL/SWD-D/009/2012/01
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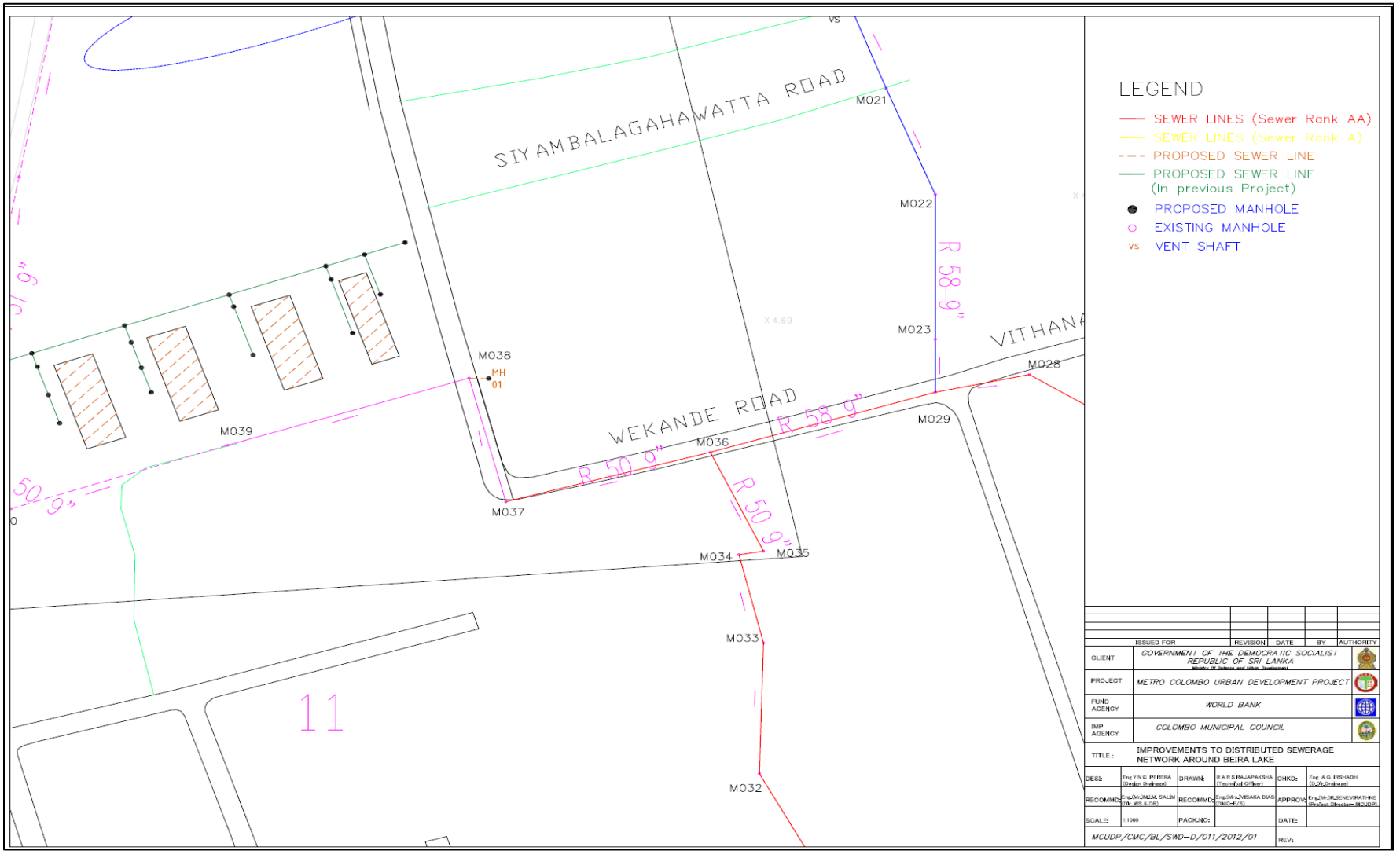
SIYAMBALAGAHAWATTA ROAD
WEKANDE ROAD
VITHANA
M021
M022
M023
M028
M029
M036
M038
MH 01
M039
M037
M034
M035
M033
M032
R 58'-9"
R 50'-9"
50'-9"
11
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VS VENT SHAFT
ISSUED FOR
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DATE
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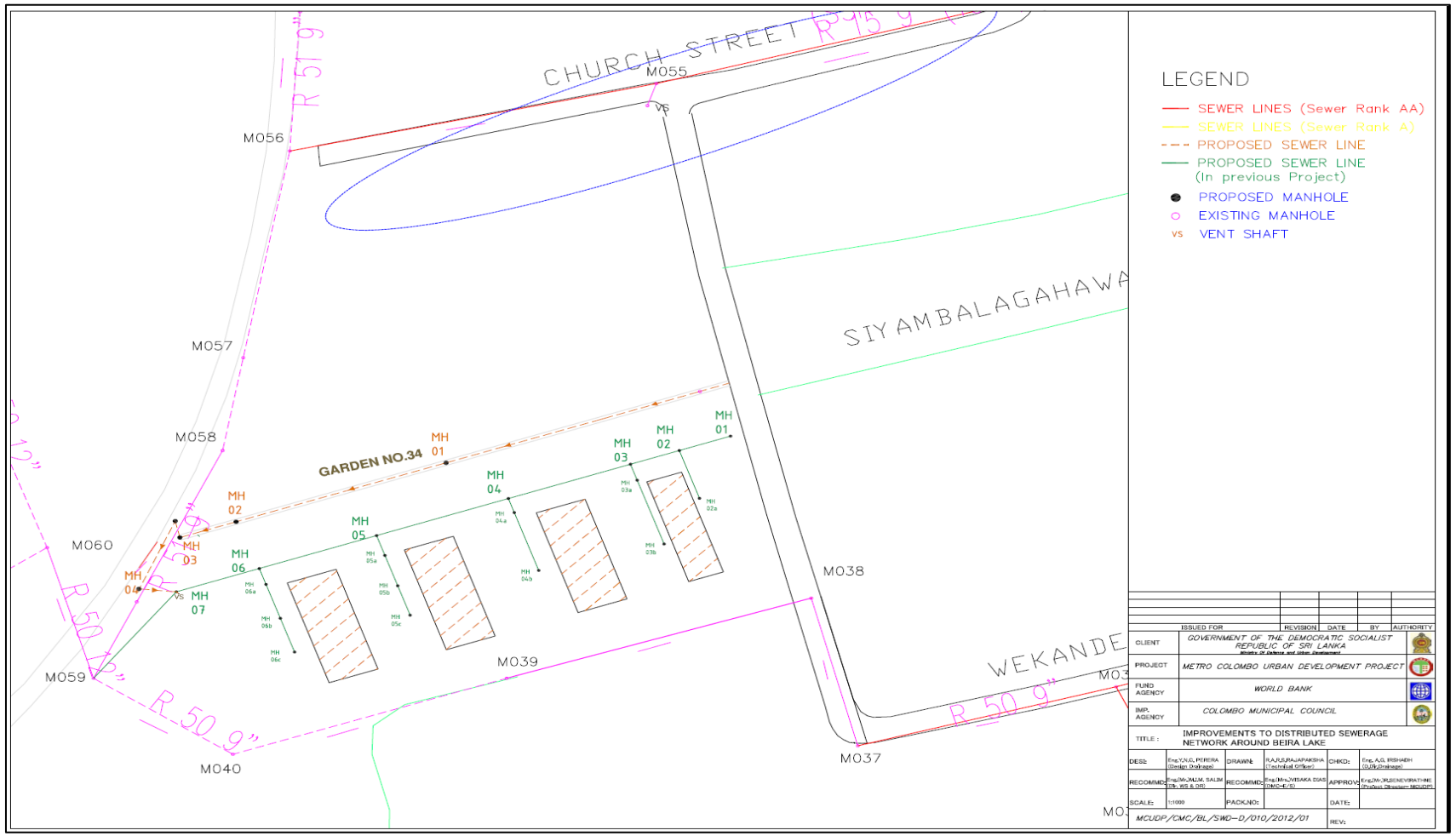
CHURCH STREET
M055
M056
M057
M058
M059
M060
M037
M038
M039
M040
GARDEN NO.34
SIYAMBALAGAHAWA
WEKANDE
R 51 9"
R 50 9"
MH 01
MH 02
MH 03
MH 04
MH 05
MH 06
MH 07
VS
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
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COLOMBO MUNICIPAL COUNCIL
TITLE :
IMPROVEMENTS TO DISTRIBUTED SEWERAGE NETWORK AROUND BEIRA LAKE
DES:
Eng.Y.N.G. PERERA (Design Drainage)
DRAWN:
R.A.R.U.RAJAPAKSHA (Technical Officer)
CHKD:
Eng. A.G. IRSHADH (D.Dir.Drainage)
RECOMMD:
Eng.(Mr.)M.M.M. SALIM (Dir. WS & DR)
RECOMMD:
Eng.(Mrs.)VISAKA DIAS (DMC-E/S)
APPROVD:
Eng.(Mr.)M.SENEVIRATHNE (Dir/Asst. Director- MCUDP)
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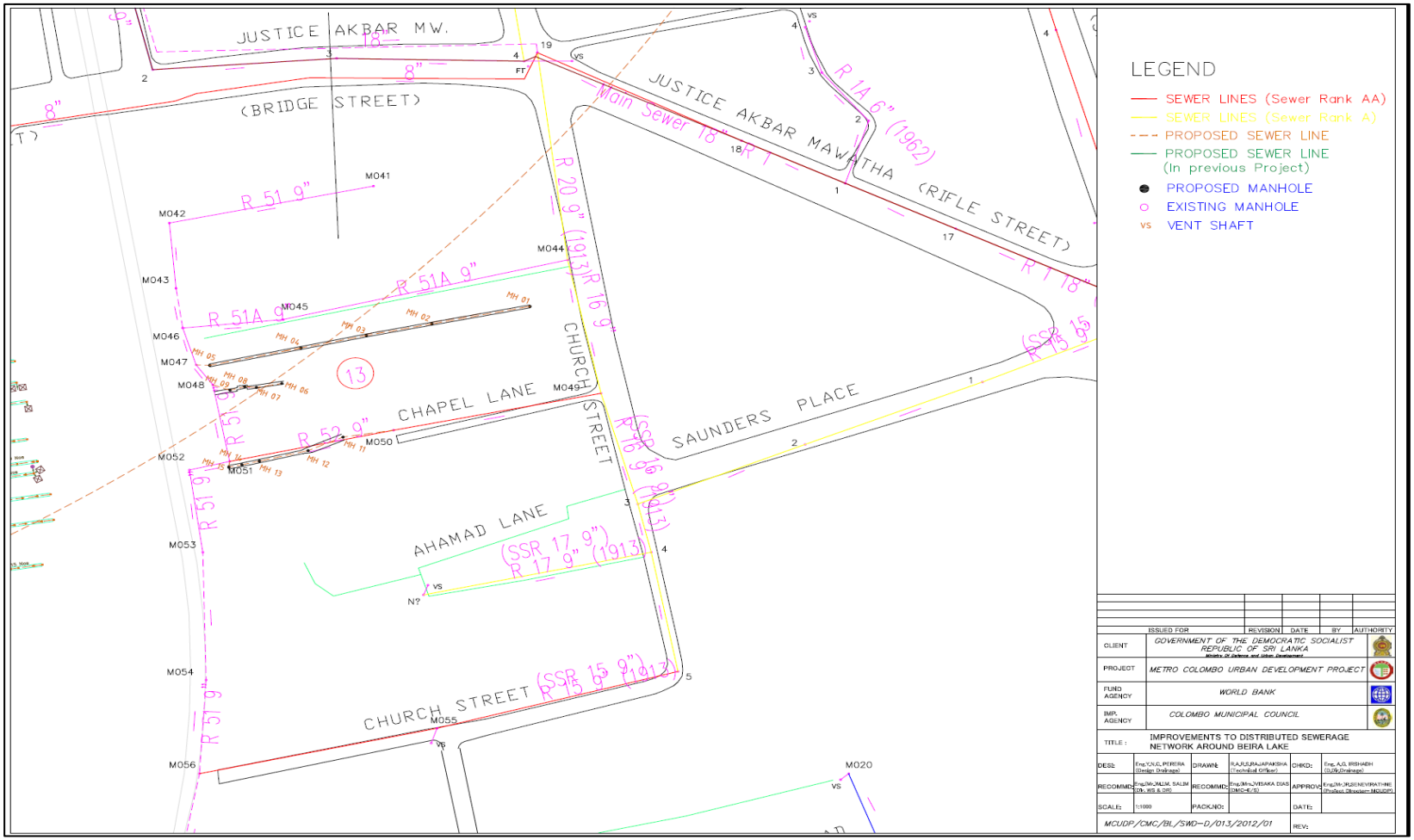
JUSTICE AKBAR MW.
(BRIDGE STREET)
JUSTICE AKBAR MAWATHA (RIFLE STREET)
CHAPEL LANE
CHURCH STREET
SAUNDERS PLACE
AHAMAD LANE
CHURCH STREET
M041
M042
M043
M044
M045
M046
M047
M048
M049
M050
M051
M052
M053
M054
M055
M056
M020
LEGEND
SEWER LINES (Sewer Rank AA)
SEWER LINES (Sewer Rank A)
PROPOSED SEWER LINE
PROPOSED SEWER LINE (In previous Project)
PROPOSED MANHOLE
EXISTING MANHOLE
VENT SHAFT
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