

Government of the Republic of the Union of Myanmar
Ministry of Agriculture, Livestock and Irrigation
Department of Rural Development



Operation Manual for the construction of Farm roads

2020 JANUARY

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Chapter (1)

Introduction

1. With the aim of enhancing sustainable socio-economic development of rural populace, sustainable rural development activities are being implemented by Department of Rural Development under the Ministry of Agriculture, Livestock and Irrigation. In addition to the projects such as Rural Water Supply Project, Rural Electrification, Community Driven Development Project, Evergreen Village Development Project, Village Development Planning Project and Vocational Trainings, DRD is undertaking the construction of farm roads by spending (6) months mini budget in 2018 as the first approach in carrying out these such activities for the linkage between Farmers and Markets in line with the pillar (3) of the Agriculture Development Strategy (ADS) and the additional result (3.5) of rural infrastructure process.

2. Farm roads are the construction of the rural roads which do not include in the list of Road (A) and Road (B) implemented by the Ministry of Construction such as jetty, modern industrialized (mechanization) farm roads, box culvert and bridges so that the agricultural products of the farmers and the local products of other business entrepreneurship in rural areas could be effectively and fastly transported.

Chapter (2)

Selection of Project Area

Prioritization of Project

3. Township DRD will collect the data of the potential roads and bridges with the cooperation of line departments' personnel in Township Level and Village Tract Administrators. And then, the prioritized list has to be submitted to State/ Region DRD after making negotiation with the parliament members, departments and other local organizations in township level. Depending on the available budget from State/ Region Government Office, the project area will be approved after summing these prioritized lists to State/Region Government Office from State/ Region DRD.

Criteria for prioritization of project

4. The feasibility survey report will be proposed and carried out with each and every road and bridge after collecting the data on the potential roads and bridges by township DRD with the cooperation of township level line departments and village tract administrators and after the following key figures have been collected-

- (a) to make sure that the list does not include in the other department's plan but it is required to get recommendation letters without including these projects in 5 year plan of other line departments even if it is necessary to carry out this list

- (b) Beneficiary Quantity
(Areas concerned with Agriculture, Livestock, Farms, Fishing)
- (c) Beneficiary Population (people who pass the roads and bridges, mechanisms and agricultural and livestock acres)
- (d) Cost-effective economy (Transaction cost, production cost and indirect benefit)
- (e) Geographical Condition (whether it is available to spend more fund or not because it is difficult to implement)
- (f) Availability of Land (to implement only if it is available)
- (g) Environmental Impacts
- (h) Social Impacts
- (i) Being able to contribute for operation and maintenance cost

Processes for making prioritized plans

5. When the prioritized plans are made after holding a township level meeting to discuss about the collected data in paragraph (4) with township level relevant personnel, township DRD will submit these prioritized plans to State/Region DRD. Depending on the available budget, State/ Region DRD will continue to present these plans to State/Region Government Office for the approval of the project area. In doing so, the following plans will be carried out so as to be in line with the access to budget and the ground situation-

- (a) Prioritized plan will be made on the basis of the data from the line departments' committees and representatives from Amyothar Hlut-taw, Pyithuhluttaw, State / Region parliament.
- (b) This prioritized plan will be submitted to State/Region DRD.

- (c) State/Region DRD will continue to present it State/Region Government office.

Approval of Project Area

6. Depending on the available budget, the project area approved by State/Region Government Office (according to the prioritized plans which are submitted by State/Region DRD) will be informed to Township DRD so that the project can be initiated. Township DRD will undertake the project with the cooperation of other line departments (such as cooperation with Agricultural Mechanization Department if this project is farm road, also with Livestock Breeding and Veterinary Department if it is for the livestock project, Department of Fisheries if it is for the fishig project and other line departments etc.)

Chapter (3)

Implementation of the project

7. Implementation of the project will consist of formation of Supporting Committee, implementation, monitoring and evaluation, reporting, transparency and accountability, communication and grievance handling mechanism.

Formation of Supporting Committee

8. Starting at the moment when getting the approval of budget and allowing the project initiate, township DRD will hold a meeting in the project village. DRD will explain the information about farm roads and will form the supporting committee in this meeting.

9. The following township level line departments, village administrator and the beneficiaries should be considered to form supporting committee-

- (a) Township General Administration Department
- (b) Department of Rural Road Development
- (c) Department of Agriculture Land Management and Statistics
- (d) Department of Agriculture and Department of Livestock Breeding and Veterinary
- (e) Department of Irrigation/Department of Irrigation and Water Utilization Management
- (f) Department of Agricultural Mechanization

- (g) Village Tract Administrators/ 100 households Administrators and Direct Beneficiaries

(To form this committee with engineers and personnel from other line departments if it is necessary)

Implementation of the project

10. Instructions of Union Level and Regional Level including Instruction No (1/2017) of President Office might be followed when carrying out procurement process performed with the supervision of State/ Regional Government Offices. It should be considered that it would be more effective if the department will undertake because of more negotiation processes although it is small project. The implementation of project might be in line with the rules and regulations of State's procurement when performing tender processes. The procurement process might be carried out for the construction of big Farm road project under the decision and supervision of State/Region Government Offices. There would be no difficulties for technical know-how if DRD will cooperate with other departments and then sustainable effectiveness will be achieved through this cooperation because agriculture and livestock areas are the marketplaces.

Field Visit

- 11. (a) Technical know-how- the field visit will be conducted nearby with the technical assistance of the engineers, land management, irrigation/ drainage and utilization of machines.

- (b) Management - Related to hiring the local labour in order to raise income of local people, the successful contractor / the department should perform signing the contract and getting the agreement during the field visit to the project village.

Monitoring and Evaluation

- 12. For the monitoring and evaluation, the following figures will be carried out-
 - (a) Township DRD will monitor the arrival of construction materials (will conduct materials management) and how many labours in project site.
 - (b) The village committee will also record the arrival date of the construction materials/ machines and which types of materials/machines will be utilized.
 - (c) Site engineers will supervise the utilized duration of the materials and machines the arrival of the construction materials and the labour force.

Reporting

13. The supporting committee might report implementation progress to township DRD once a week. Township DRD will continue to report this progress to State/ Region Level DRD. The implementation progress will be collected for the management information system of Union Level DRD.

14. When the project completes, township DRD will keep a file for the record documentation consisting of UTM/ Topographic map, X section, Profile, Drain-

age, Box culvert, Jetty Location, detailed picture of jetty and Left and right picture, estimated cost, material/e quipments/ labour list, land donation records, contract copy and insurance duration, meetig minutes, photo records, handover record to committee.

Transparency and Accountability

15. During the whole project implementation, the committee will disclose the project documents in the notice board with the aim of ensuring the whole community within the village/village tract know. The disclosed project documents might include the information that contains what the farm-to-market rural road is, purchasing construction materials from local areas and explanation about the expenditure. In addition, the activities undertaken within State/Regional Level DRD, various projects of DRD and the situation for emergency water supply will be explained.

Communications

16. For improving the socio-economic development of the rural populace, township DRD will make necessary arrangements so that the committee can exchange views and information concerning with the effective activities being carried out by DRD.

17. The supporting committee will make arrangements for the dialogues about the Agriculture, Livestock and Irrigation project being implemented with the assistance of township DRD and will invite other line departments to participate in these dialogues.

Grievance

18. There will be some grievances, suggestions, complaints and dissatisfactions raised by some people because this is not all-inclusive project. Village Tract Administrator (or) 100 households administrator will elect and assign two grievance focal persons, one male and one female who are getting trust and respect from the community.

Chapter (4)

Quality Specifications

Road specifications

19. According to the following figures, the road specifications will be carried out and the effectiveness will be prioritized (Soaked CBR Reference)-

- (a) Road with 12 feet width (to draw design with 2 feet thickness. It requires submitting that the thickness will be changed if it is necessary according to ground situation.) Using the soil at least 5% of 4 Day Soaked CBR, each and every road layer with 12 thicknesses will be grinded and sprayed by the use of water boxer and roller to meet 95% DOC. To consider in calculation that the dimensions should have (length 100 ft, width 18 ft) when constructing the road so that the vehicle will circumvent if there is the road area in every (0/2) mile of the road. The above mentioned road thicknesses are the compacted ones and it will be calculated in accordance with basic specifications of the roads. If there is the road area, drainage construction should be considered.

- (b) (12 ft x 9 in) dimensions will be specified for the construction of kanker road, earth road and gravel road (It requires submitting with detailed requirements that the road thickness will be changed according to ground situation. State/Region DRD will conduct field visit to approve

the ground situation.) Road layers will be sprayed and grinded with the use of water boxer and roller if the roads are kanker, earth and gravel ones. These roads might be constructed with water boxer to meet 95% DOC getting at least 20% of 4 Day Soaked CBR and 30% of unsoaked CBR. The other different gravel roads might be built by water boxer to meet 95% DOC getting at least 30% of 4 Day Soaked CBR and 40% of unsoaked CBR. To consider in calculation that the dimensions should have (length 100 ft, width 18 ft) when constructing the road so that the vehicle will circumvent if there is the road area in every (0/2) mile of the road. The above mentioned road thicknesses are the compacted ones and it will be calculated in accordance with basic specifications of the roads. If there is the road area, drainage construction should be considered. Don't use the gravel which has soil more than 40%.

- (c) In some places where necessary according to geographical condition, construction of box culvert, drainage and bridge will be considered in line with the ground situation. Union Level DRD will provide RC Box Culvert Design and the bridge projects will be submitted separately and the design will be made after taking soil test based on the ground needs.

20. The design for jetty will be drawn and the jetty project will be carried out for the smooth transportation of local products. (The design must be sustainable one in line with village's needs and local situation.) The annex designs for bridg-

es and jetty are mentioned in this manual book. There would be some changes in structural designs depending on the ground site.

Quality Control

21. The supporting committee engineers will perform site supervision and quality control with the systematic processes during the implementation. Check lists for Site Supervision and Quality Control are described in this manual book.

22. At the completion of the project, the financial audit will be carried out by Union Auditory General and technical evaluation will also be conducted by third party if it is necessary.

Chapter (5)

Operation and Maintenance

Completion and Handover of completed project

23. Before moving the machines and equipments to another site, operation and maintenance work will be completely performed by the use of these machines and equipments. And then, preparations might be made for operation and maintenance if there will be some damages because of these machines. (for example, making the machines drive from the detour when moving from the project site)

24. The supporting committee will be reformed as operation and maintenance committee including village administrator, 100-household administrators and the beneficiaries consisting of women at the completion of the project and will handover project records to this O&M committee.

Operation and Maintenance

25 Operation and maintenance plan might be prepared at the same time while forming the support committee. O&M committee shown in paragraph (24) will collect the information about what kinds of local products are and its amount, which types of vehicles, used for transportation and its number but also will classify the vehicles and limit the weight for the access to road and bridge. In addition, O&M plan might be prepared in advance with the permission of O&M com-

mittee when there will be more weight as the necessity. O&M plan has been mentioned as annex.

26. Roles of O&M committee will be explained at the same time while forming the committee. The supporting committee is responsible for preparing O&M plan and taking measures. O&M committee will only perform small maintainance projects but also will submit the budget to township DRD when it is necessary to implement big maintainance project.

Chapter (6)

Conclusion

27. Department of Rural Development is undertaking sustainable rural development measures for socio-economic development of rural populace in line with the policies, instructions, operation manuals and necessary instructions are being prepared by DRD so as to be systematic implementation of farm roads which include in 2nd short term five year plan of Agricultural Policy and Process adopted by Ministry of Agriculture, Livestock and Irrigation. Based on the requirements of local areas, the operation manual will be amended as necessary as.

28. Myanmar's economic sectors based on agriculture, livestock and fishing will increase through the development of farm road and will make sure that the socio-economic life of the rural populace will be improved.

Department of Rural Development

Annexes

- Monitoring Form
- Site Supervfision and Quality Control Check list
- Land Donation Form
- Road Design
- Box Culvert Design
- Bridge and Jetty Design
- Operation and Maintenance Plan

Monitoring Form

Date -----

(1) To fill by Township DRD

Machines/Vehicles

| Machines/Vehicles | Nos | Arrival date | Arrived | Not Arrived |
|-------------------|-----|--------------|---------|-------------|
| Dozer | | | | |
| Grader | | | | |
| Backhole | | | | |
| Roller | | | | |
| Mixer | | | | |
| Other | | | | |

Materials

| Sr. No | Materials Type | Amount | Remark |
|--------|----------------|--------|--------|
| 1. | | | |
| 2. | | | |
| 3. | | | |

Labour Force

| Sr.No | Labour | Nos | | Labour Charges (Per 1 No) | | Remark |
|-------|-------------|------|--------|---------------------------|--------|--------|
| | | Male | Female | Male | Female | |
| 1. | Carpenter | | | | | |
| 2. | Mason | | | | | |
| 3. | Steel Fixer | | | | | |
| 4. | Head Worker | | | | | |
| 5. | Worker | | | | | |

Signed by Inspector _____

Name _____

Position _____

Monitoring Form

Date_____

(2) To fill by Village Road Committee

Machines/Vehicles

| Type | Nos | Arrival Date of Machines | Remark |
|----------|-----|--------------------------|--------|
| Dozer | | | |
| Grader | | | |
| Backhole | | | |
| Roller | | | |
| Mixer | | | |
| Other | | | |

Signed by Inspector_____

Name_____

Position_____

Monitoring Form

Date_____

(3) To fill by Site Engineer

Machines/Vehicles

| Type | Nos | Starting Time | Ending Time | Duty Hour | Remark |
|----------|-----|---------------|-------------|-----------|--------|
| Dozer | | | | | |
| Grader | | | | | |
| Backhole | | | | | |
| Roller | | | | | |
| Mixer | | | | | |
| Other | | | | | |

Materials

| Sr.No | Materials Type | Amount | Remark |
|-------|----------------|--------|--------|
| 1. | | | |
| 2. | | | |
| 3. | | | |

Labour Force

| Sr.No | Labour | Nos | | Labour Charges (Per 1 No) | | Remark |
|-------|-------------|------|--------|---------------------------|--------|--------|
| | | Male | Female | Male | Female | |
| 1. | Carpenter | | | | | |
| 2. | Mason | | | | | |
| 3. | Steel Fixer | | | | | |
| 4. | Head Worker | | | | | |
| 5. | Worker | | | | | |

Signed by Inspector_____

Name_____

Position_____

Site Supervision and Quality Control Check List (Evaluation)

To supervise detail estimate and specified drawing designs of project at supervision trip.

| | | | |
|------------------|----------|----------|--|
| Project Name | | | |
| Project Cost | | | |
| State and Region | District | Township | Date (1st time) Date (2nd time) Date (3rd time) Date (4th time) |

Condition of Land Possession

| Land Possession | Mark or tick | Land Possession | Mark or tick | Land Possession | Mark or tick |
|------------------|--------------|----------------------|--------------|-----------------|--------------|
| Donation Date | | Compensation Date | | Other | |

To show if it have other way

(1)

Utilization of Machines

| | | | | | | | | | |
|--------|--|-------|--|------------|--|---------|--|--------|--|
| Grader | | Dozer | | Sheep foot | | Backhoe | | Roller | |
|--------|--|-------|--|------------|--|---------|--|--------|--|

Implementation plan

| | | | |
|------------|--|--------|--|
| Department | | Tender | |
|------------|--|--------|--|

Implementation progress if the project will be carried out by tender process

by tendering process

| | | | |
|---------------------|--|------------------------|--|
| Date of Contracting | | Process of Contracting | |
|---------------------|--|------------------------|--|

QC and Work Done Check List (Tick after doing a particular work)

| Particular work | To Tick | Ft by Done | Particular | To Tick | Ft by Done | Particular | To Tick |
|--|---------|------------|--|---------|------------|--|---------|
| Surface Grading | | | Drainage Work | | | Whether conformity or not concerning with soil type as per estimate (Yes or no) | |
| Earth Filling (1ft thickness in 1st layer) | | | Pavement width | | | Whether conformity or not concerning with soil type as per estimate (Yes or no)) | |
| Compaction by Roller and water bowzer (1ft thickness in 1st layer) | | | Leveling | | | High flood level and pavement depth (+/-) ft | |
| Earth Filling (1ft thickness in 2nd layer) | | | Side drainage | | | Whether conformity or not concerning with soil type as per estimate (Yes or no) | |
| Compaction by Roller and water bowzer (1ft thickness in 2nd layer) | | | Side slope of road | | | Road Signboard (Yes/No) | |
| | | | Soaked CBR Result (Yes/No) (within 0/1 mile) | | | Soaked C.B.R Result 4 days Soaked S.C.B.R >4 | |

Safeguard Screening Form

| Sr. No | Item | Marked | Nos |
|--------|---|--------|-----|
| 1. | Roller and water boxer and number of Committee members | | |
| 2. | Whether there is explanation or not about project to villagers, village administrative and parliament representative (Yes/No) | | |
| 3. | Number of times with problem solving during implementation process | | |
| 4. | If there is any complaints about land contribution or not about land contribution | | |
| 5. | If there is land donation or not, how many households are there if yes? | | |
| 6. | Whether environmental safeguards are followed or not. | | |

Disbursement progress (To tick)

| 1st time (25%) | 2nd time (25%) | 3rd time (25%) | 4th time (25%) |
|----------------|----------------|----------------|----------------|
| Date | Date | Date | Date |

Q.C, Inspection Progress (To Tick)

| Inspection by DRD | Inspection by Third Party (if needed) | Inspection by other organization |
|-------------------|---------------------------------------|----------------------------------|
| | | |

Handover Progress of completed project (To tick)

| Completed handover progress | Ongoing handover progress |
|-----------------------------|---------------------------|
| Date | |

Is there operation and maintainance plan? (Yes/No to tick)

Inspector- Signed By (including stamp)

QC/Work Done Check List of Bridge Construction

| Sr. No | Project Name | Yes/No | Remark |
|-----------|---|--------|--------|
| 1. | If there is drawing design for bridge or not. | | |
| 2. | Soil Test Result | | |
| 3. | Whether the design meets the specifications or not. | | |
| | (1)Slump Test (60mm) | | |
| | (2)Concrete Grade Result (2500 psi) | | |
| | (3)Steel Size and Installation | | |
| | (4)Foundation Depth and Size (Bored Pile) | | |
| | (5)Pile Cap Size | | |
| | (6)Column Size | | |
| | (7)Beam or Girder Size | | |
| | (8)Slab Thickness | | |
| | (9)Handrail Size | | |
| 4. | To construct box culvert with box culvert design specified by DRD head office | | |

(Voluntary Donation) Land Donation Form

| | | | |
|------------------|----------|---------------|-------------|
| Date | | | Fiscal year |
| State/Region | Township | Village Tract | Village |
| Sub-Project Name | | | |

| | | | | | |
|--|--------------|--|-----------------------|--|--------------------------|
| Name of land owner | N.R.C Number | Whether it is beneficiary of sub-project or not (Yes/No) | | | |
| Sex: | Age: | Occupation: | | | |
| Address: | | | | | |
| Land situation for the implementation of sub-project : | Soil Type | Donation Area (Sq.ft) | Donation Area (Sq.ft) | Ratio of land affected to total land held: | Map Code (if available): |
| Crops impacted by the project | | | | | |
| | | Type of tree/crop | Number of tree/crops | | |
| Trees that will be destroyed (cut) | | | | | |
| Fruit trees | | | | | |
| Trees used for other economic or household purposes | | | | | |
| Mature forest trees | | | | | |
| Other significant crops grown in donated land | | | | | |
| Total crops/trees | | | | | |
| | | Describe any other assets that will be lost or must be moved to implement the project: | | | |

| | |
|--|---|
| | Do affected people need to be physically relocated? |
| | |

By signing or providing thumb-print on this form, the land user or owner agrees to contribute assets to the project. The contribution is voluntary.

Date.....

Date.....

1. Village representative's signature

Owner Signature.....

Witness (1).....

1. (Both husband and wife)

2. Village representative's signature

Owner Signature.....

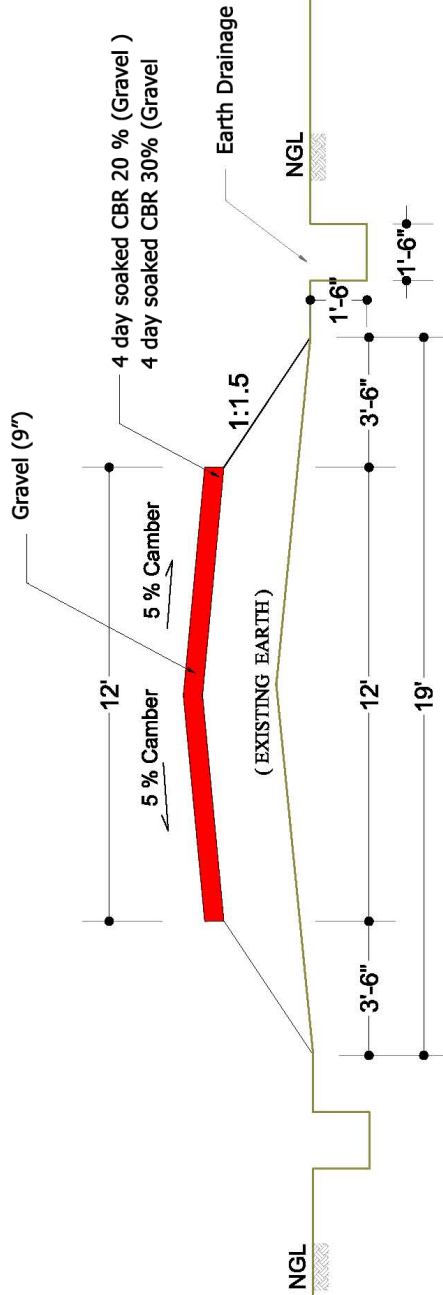
Witness (2).....

2. (Other)

3. Village administrator's signature

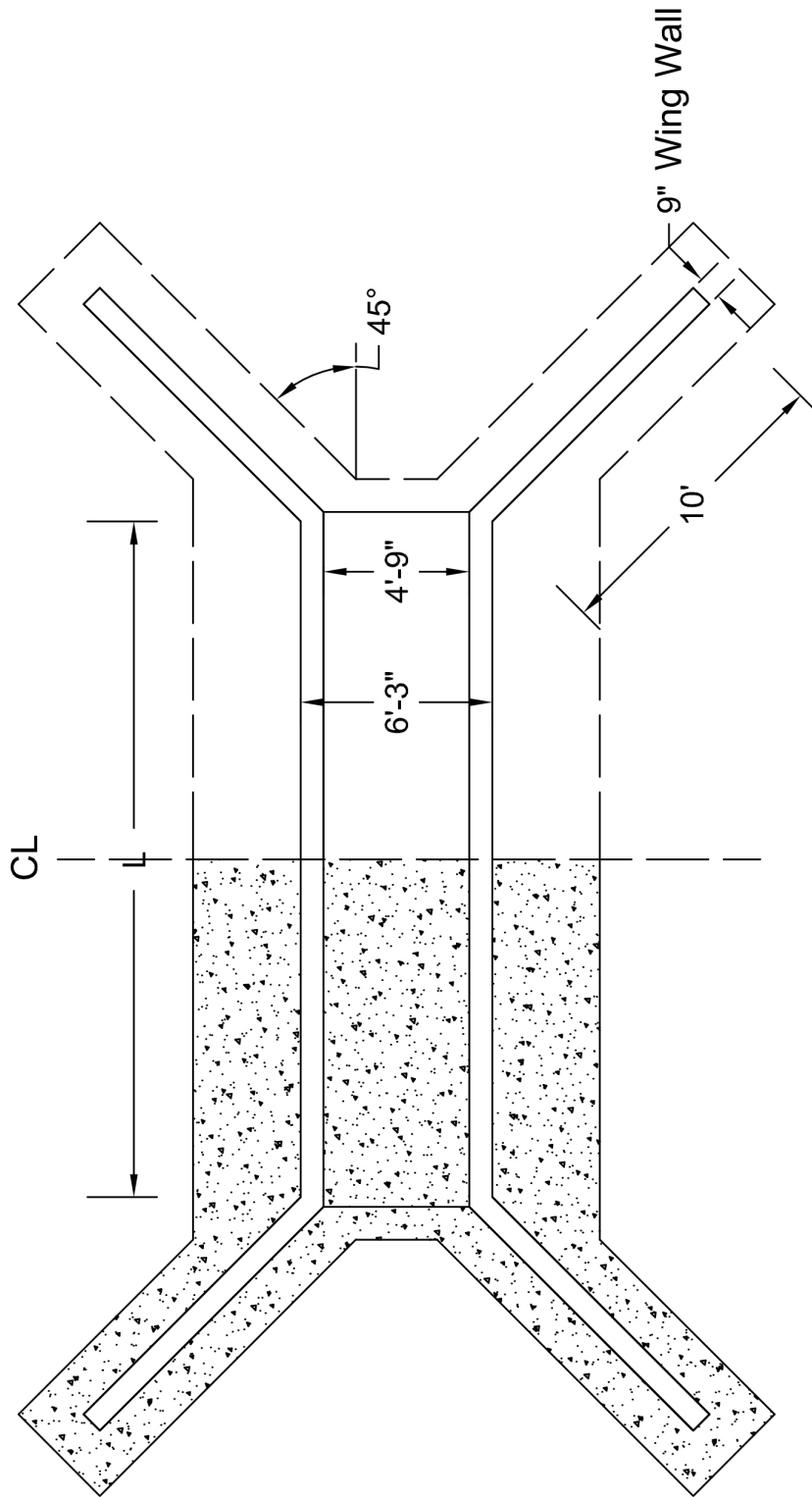
Witness (3).....

Cross section of Gravel road



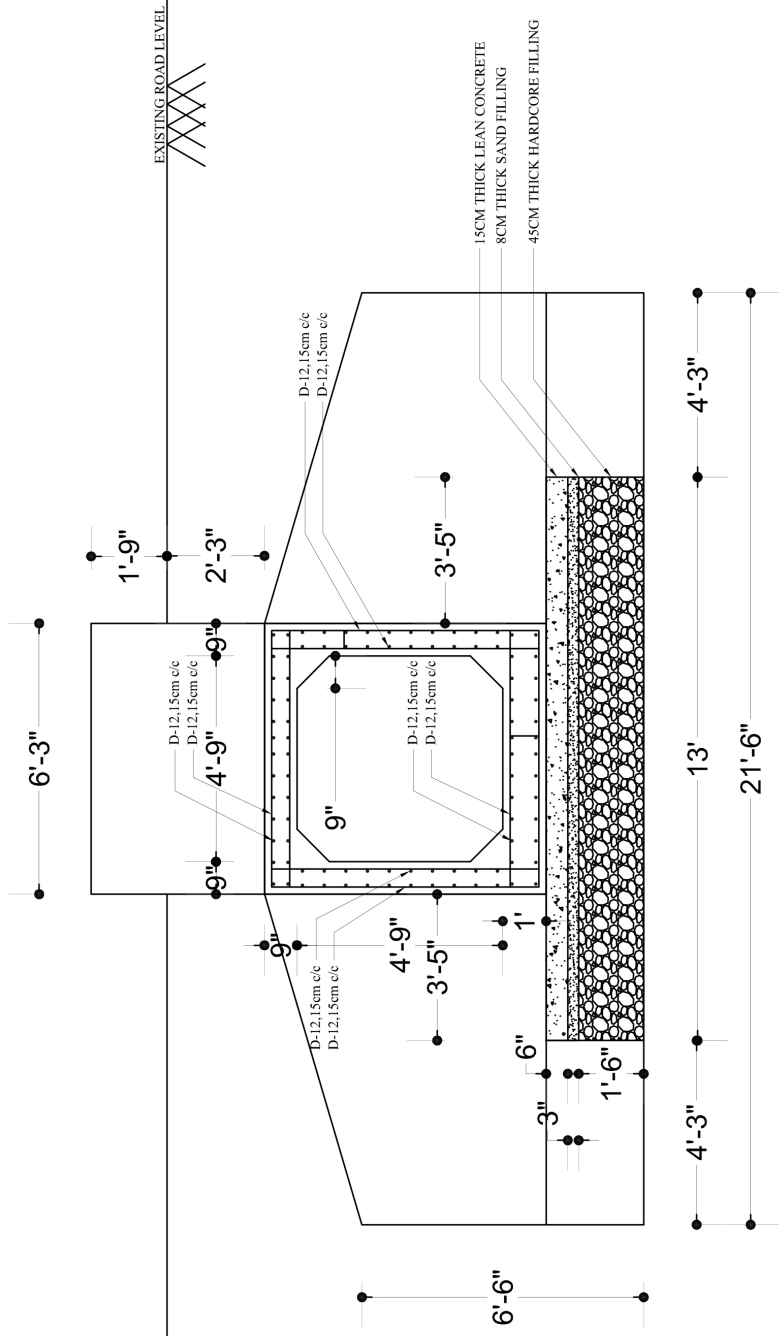
Remarks
 Spary and Grind by the use of water boxer
 Don't use the gravel with the soil more than 40%
 To build drainage if there is the earth space

BOX CULVERT (Lx4'-9"x4'-9")



Half Bottom plan Half Top plan

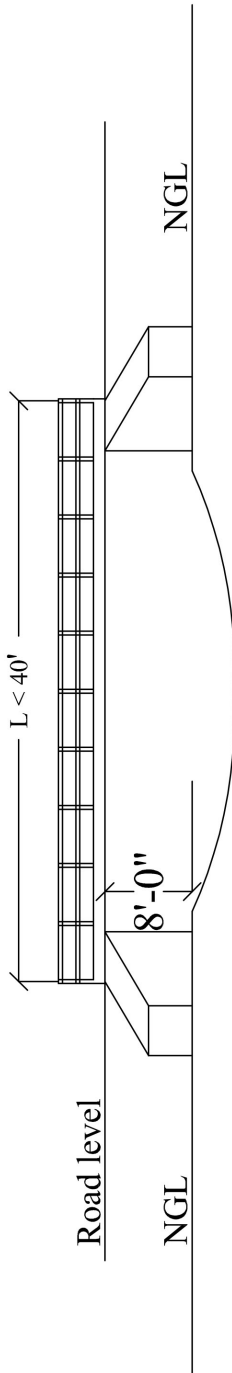
BOX CULVERT (Lx4'-9"x4'-9")



SECTIONAL ELEVATION

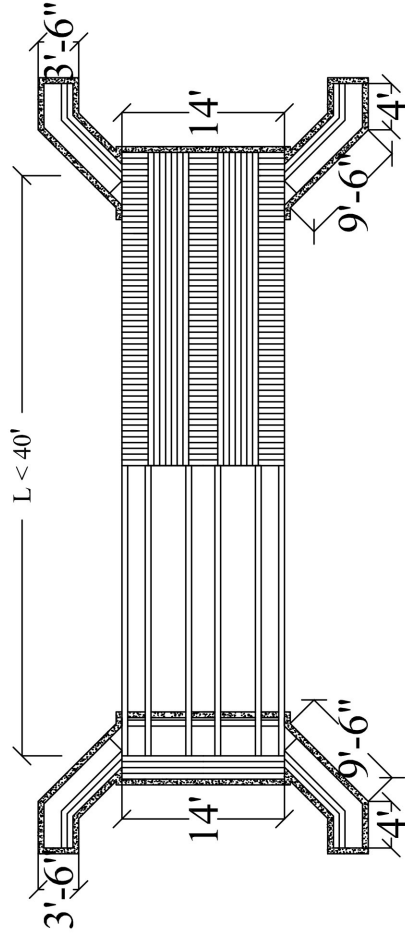
- NOTES
- 1- DESIGN STRENGTH OF CONCRETE = 24 Mpa(CYLINDER)
 - 2- YIELD STRENGTH OF RE-BAR = 295 Mpa
 - 3- CLEAR COVER = 0.02m
 - 4- RE-BAR SPLICE LENGTH = 5 cm

**Construction of abutment, steel girder and wooden deck bridge
(L' x 14' x 8')**



ELEVATION

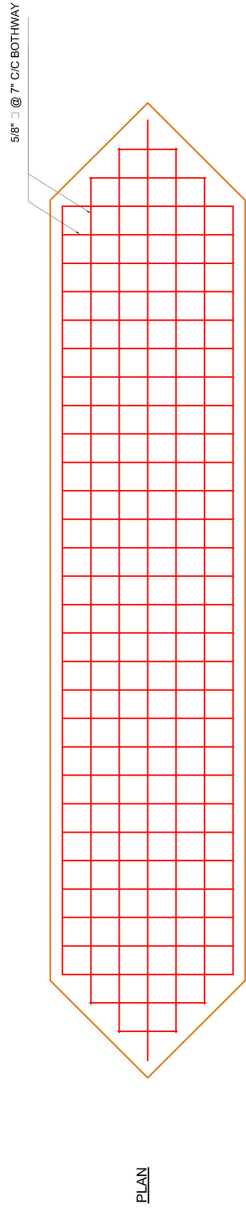
Construction of abutment, steel girder and wooden deck bridge
(L'x14'x8')



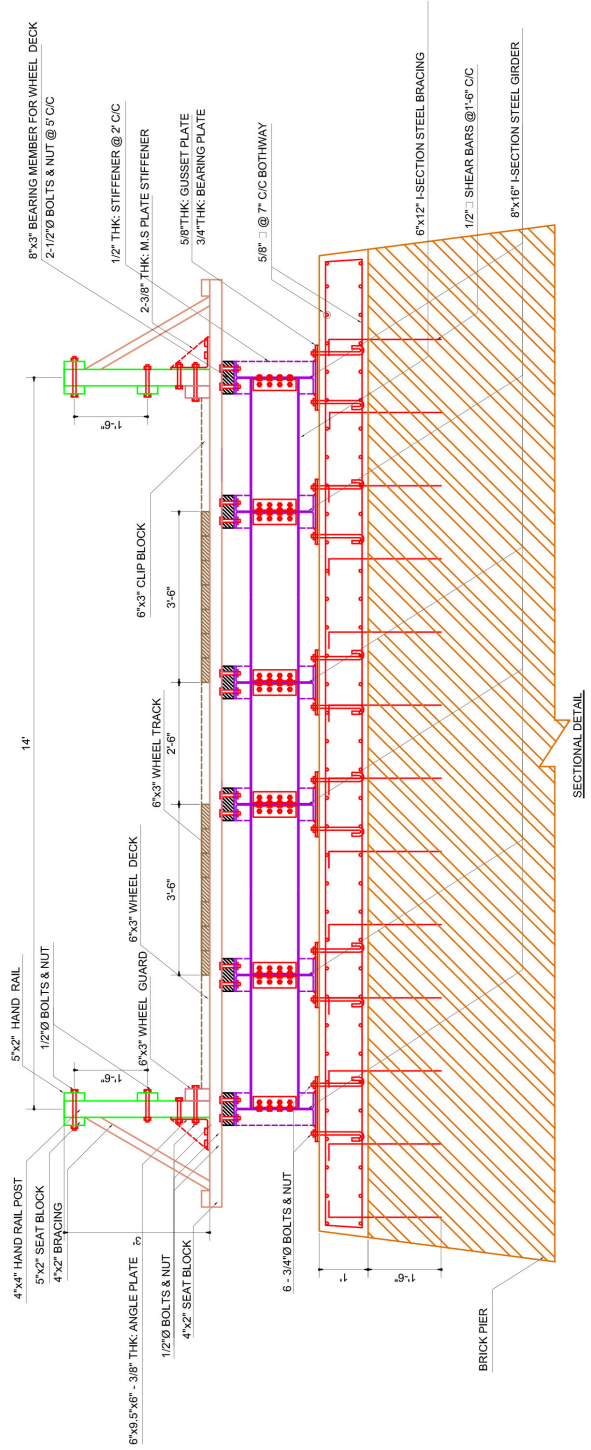
PLAN

Construction of abutment, grating beam and wooden slab bridge

(L' x 14' x 8')



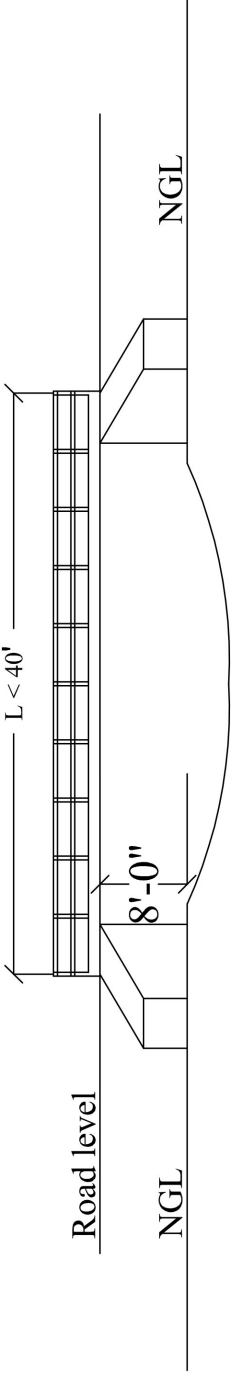
STEEL DETAIL



SECTIONAL DETAIL

Construction of abutment, steel girder and concrete slab bridge

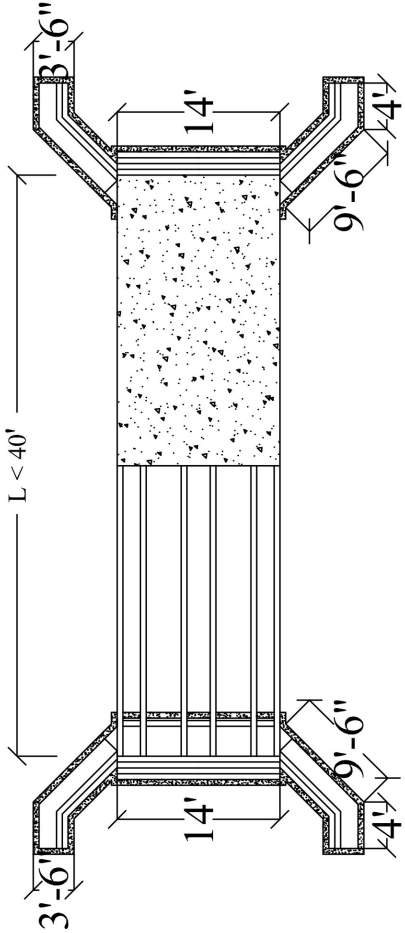
(L' x 14' x 8')



ELEVATION

Construction of abutment, steel girder and concrete slab bridge

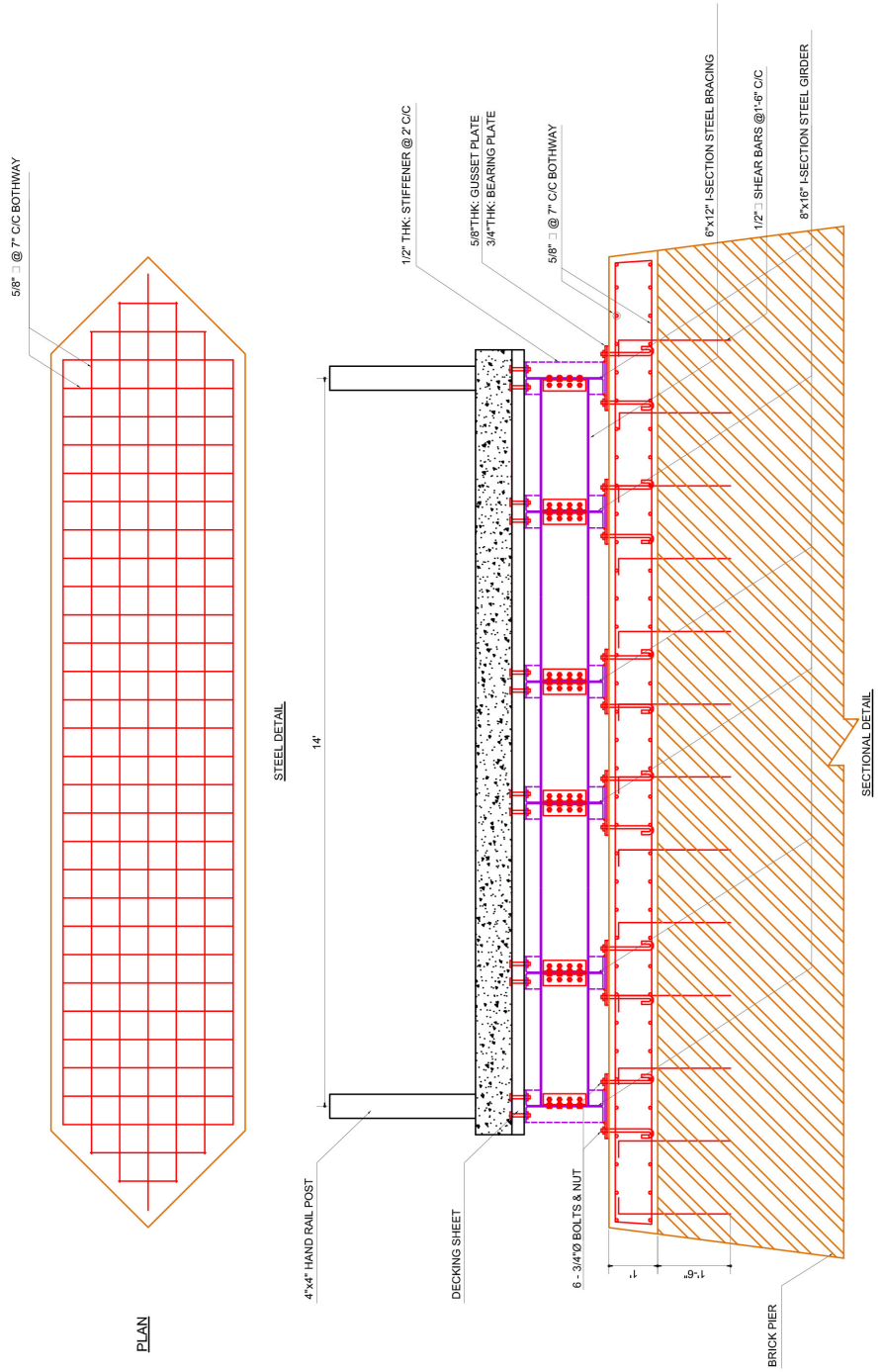
(L' x 14' x 8')



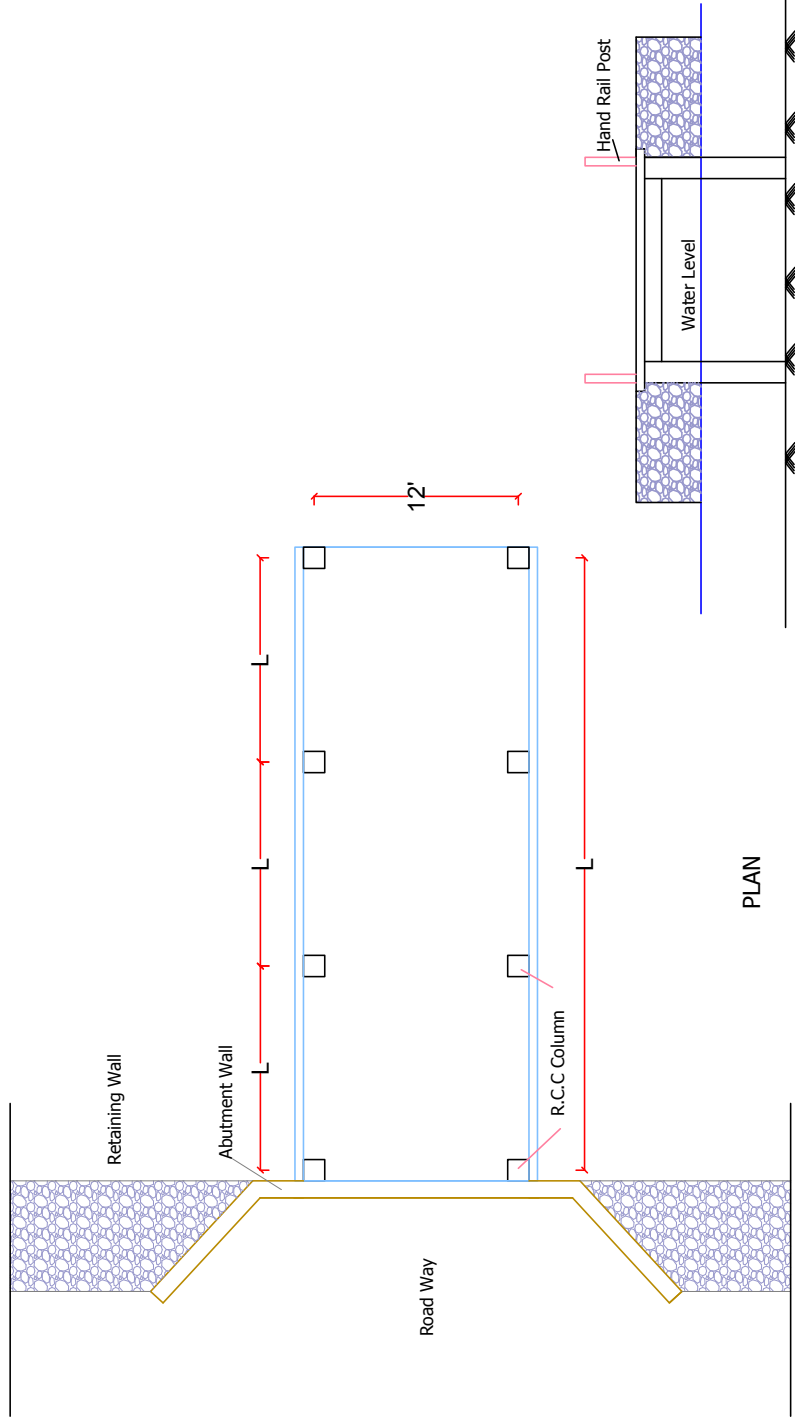
PLAN

Construction of abutment, steel girder and concrete slab bridge

(L' x 14' x 8')



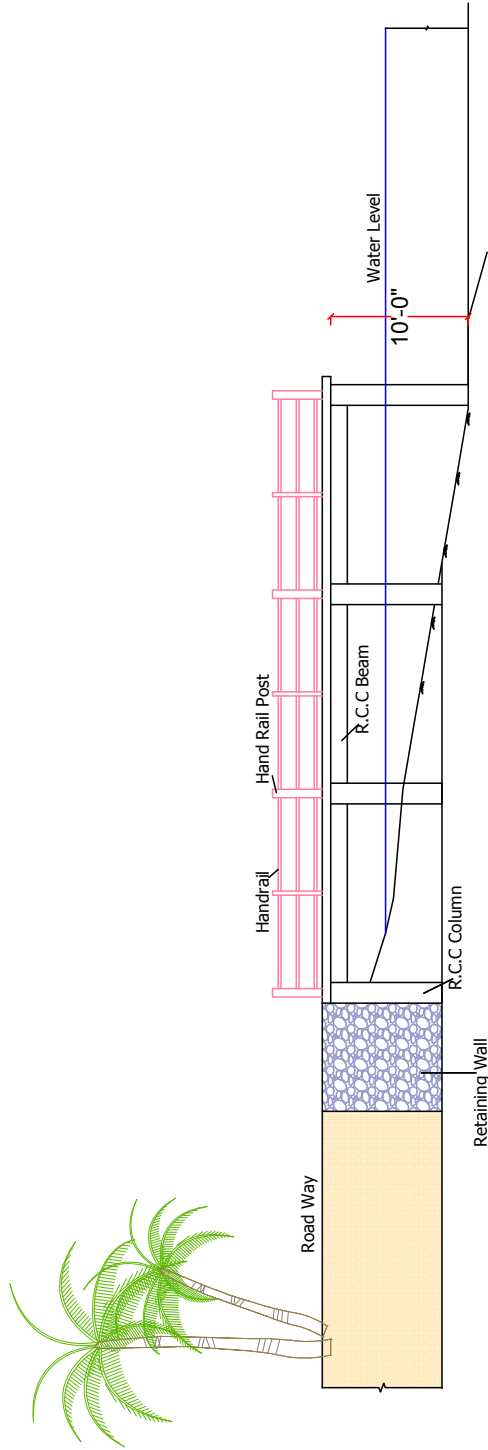
JETTY (L x 12'-0" x 10'-0")



PLAN

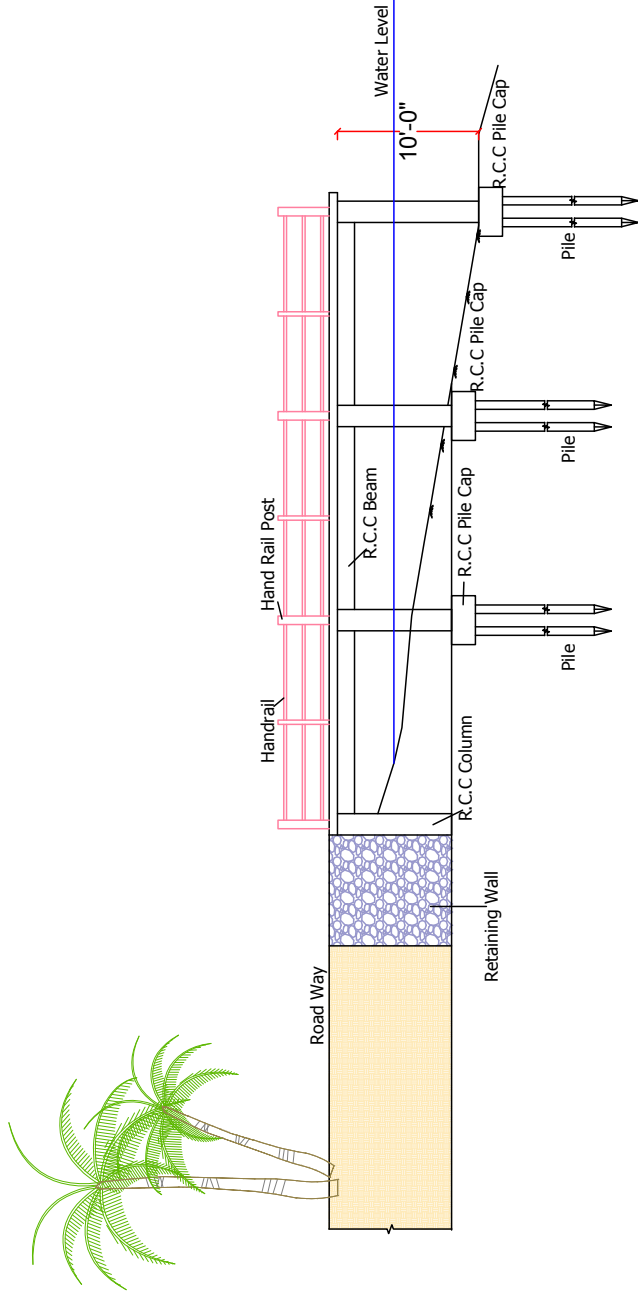
FRONT VIEW

JETTY (L x 12'-0" x 10'-0")



SIDE ELEVATION

JETTY (L x 12'-0" x 10'-0")



CROSS SECTION

Roles of O&M committee

- Setting up O&M fund for village's project
- Preparing and supervising O&M plan being implemented
- Implementing O&M plan, making progress report and awareness through disclosing it on notice board
- Exchanging views from the experts group and cooperating with other line departments
- Supervising O&M work
- Submitting progress report from O&M committee when O&M work finishes

Operation and Maintenance Plan

- Annual estimated cost and the requirements for O&M
- Assignment for O&M activities concerning with village project and township project
- Implementation plan

When implementation plan will be carried out

- The time required for O&M activities which will be implemented while preparing O&M plan
- Implementation of O&M activities at the completion of the project
- Relating to big maintenances project, line departments will cooperate.

Which O&M projects will be implemented

- O&M projects prepared annually
- Projects being implemented by DRD

How to collect O&M fund

- Community contribution, charges for the utilization of roads
- Donation, labour and materials (calculate the donation by cash)
- Getting O&M funds from the financial support of the department

Table-1: O&M Cost Estimation for Work Items in Farm Road and Bridge

To be prepared by village O&M Committee

| Sr.No | Particular | Quantity | Unit | Rate | Amount (Kyats) |
|---------------|------------|--|------|------|----------------|
| Work Item (1) | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | Total cost (to put in table -2) | | | |
| Work Item (2) | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | Total cost (to put in table -2) | | | |
| Work Item (3) | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | Total cost (to be entered in table -2) | | | |

O&M prepared by:

Signature-.....

Name-.....

Head of O&M Committee

Date-.....

O&M prepared by:

Signature-.....

Name-.....

Member of O&M Committee

Date-.....

O&M prepared by:

Signature-.....

Name-.....

Village Tract Administrator

Date-.....

Table-2: O&M Costs and Responsibilities

To be prepared by village O&M Committee

| O&M Work Items | Estimated Costs & Responsibilities | | | | | | | |
|----------------|------------------------------------|------------|---------|------------|---------|------------|---------|------------|
| | Year-1 | | Year-2 | | Year-3 | | Year-4 | |
| | Village | Department | Village | Department | Village | Department | Village | Department |
| Work Item (1) | | | | | | | | |
| Work Item (2) | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| Estimated Cost | | | | | | | | |

O&M prepared by:
 Signature-.....
 Name-.....
 Head of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Member of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Village Tract Administrator
 Date-.....

Table-3: Annual Plan for Collection of User Contributions

To be prepared by village O&M Committee in consultation with the village project committee, village administrator to determine annual collection of user/beneficiary contributions. Post on the village notice board.

| Name of Voluntary Contributors | Form of Voluntary Contributions | Annual Contributions (Kyats) | | | |
|--------------------------------|---------------------------------|------------------------------|--------|--------|--------|
| | | Year-1 | Year-2 | Year-3 | Year-4 |
| 1. | Cash | | | | |
| | Materials/Community Force/Other | | | | |
| 2. | Cash | | | | |
| | Materials/Community Force/Other | | | | |
| 3. | Cash | | | | |
| | Materials/Community Force/Other | | | | |
| Total Contributions(Kyats) | | | | | |
| Total Community force (Kyats) | | | | | |
| Total Materials (Kyats) | | | | | |
| Total of other (Kyats) | | | | | |
| Total | | | | | |

O&M prepared by:
 Signature-.....
 Name-.....
 Head of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Member of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Village Tract Administrator
 Date-.....

Table-4: O&M Estimated Costs and Plan

To be prepared by village O&M Committee in consultation with the village project committee, village administrator to determine collection of user/beneficiary contributions. Post on the village notice board.

| Particular | Annual Estimated Cost (Kyats) | | | | | | | |
|---|-------------------------------|------------|---------|------------|---------|------------|---------|------------|
| | Year-1 | | Year-2 | | Year-3 | | Year-4 | |
| | Village | Department | Village | Department | Village | Department | Village | Department |
| A. Total Estimated Costs for O&M Works (from Table-1) | | | | | | | | |
| B. Village Contribution, both in cash , materials and contribution force (from Table-2) | | | | | | | | |
| C. From Project grant | | | | | | | | |
| D. From other budget source | | | | | | | | |
| Total Fund available for O&M (B+C+D) | | | | | | | | |
| Net funding shortfall of the sub -project | Needed Fund | | | | | | | |
| | Exceed Fund | | | | | | | |

O&M prepared by:
 Signature-.....
 Name-.....
 Head of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Member of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Village Tract Administrator
 Date-.....

Table-5: O&M Schedule

To be prepared by village O&M Committee. Post on the village notice board.

| O&M Work Item | Responsible | Fiscal Years () | | | | | | | | | | | |
|---------------|-------------|------------------|------|-----|------|-----|-----|-----|-----|-----|-----|-------|-----|
| | | Jun | July | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | April | May |
| | Village | | | | | | | | | | | | |
| | Dept | | | | | | | | | | | | |
| | Village | | | | | | | | | | | | |
| | Dept | | | | | | | | | | | | |
| | Village | | | | | | | | | | | | |
| | Dept | | | | | | | | | | | | |
| | Village | | | | | | | | | | | | |
| | Dept | | | | | | | | | | | | |
| | Village | | | | | | | | | | | | |
| | Dept | | | | | | | | | | | | |

O&M prepared by:
 Signature-.....
 Name-.....
 Head of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Member of O&M Committee
 Date-.....

O&M prepared by:
 Signature-.....
 Name-.....
 Village Tract Administrator
 Date-.....

Government of the Republic of the Union of Myanmar
Ministry of Agriculture, Livestock and Irrigation
Department of Rural Development



Operation Manual for the Construction
of Farm road
Photo Records

Construction records of bridges which are situated on Dawtayoe village's farm roads in Kayah State

Road situation before constructing Dawtayoe's farm road



Step by step pictures; measuring the alignment in order to construct farm road, site clearance with the use of machinery, constructing the alignment and tough road



Grinding the road with the use of water boxer and roller to get the requirement of soil compaction in the construction of Dawtayoe's Farm road and step by step picture of final soil compaction



There are four small bridges in the construction of farm road and these bridges might be constructed with the conformity of the road so as to be strong road. The following pictures are the original situation of bridge No (4).



Starting to construct bridge no (4) and the current situation of bridge no (4) on Dawtayoe's farm road



Dawtayoe's completed farm road on the left side picture and road together with bridge no (4) could be seen on the right.



Farm road in Chin State



Construction of (1/7) mile farm road in Son Taung village of Mintat Township

Construction of (2/0) mile farm road in Phar Khawm village of Phalam Township



Farm road in Mon State



Construction of farm road in Kawt Kha Mel village of Mawlamyaing Township



Construction of farm road in Sam Hla Kone village of Ye Township



Construction of farm road in Wel Thon Chaung village of Thanphyu Zayet Township



Construction of farm road in Murit Kalay village of Chaungzon Township

Farm road in Rakhine State



Construction of farm road and its bridge in Ah Wa village of Minpyar Township



Construction of farm road and its bridge in Phayar Paung village of Kyauktaw Township



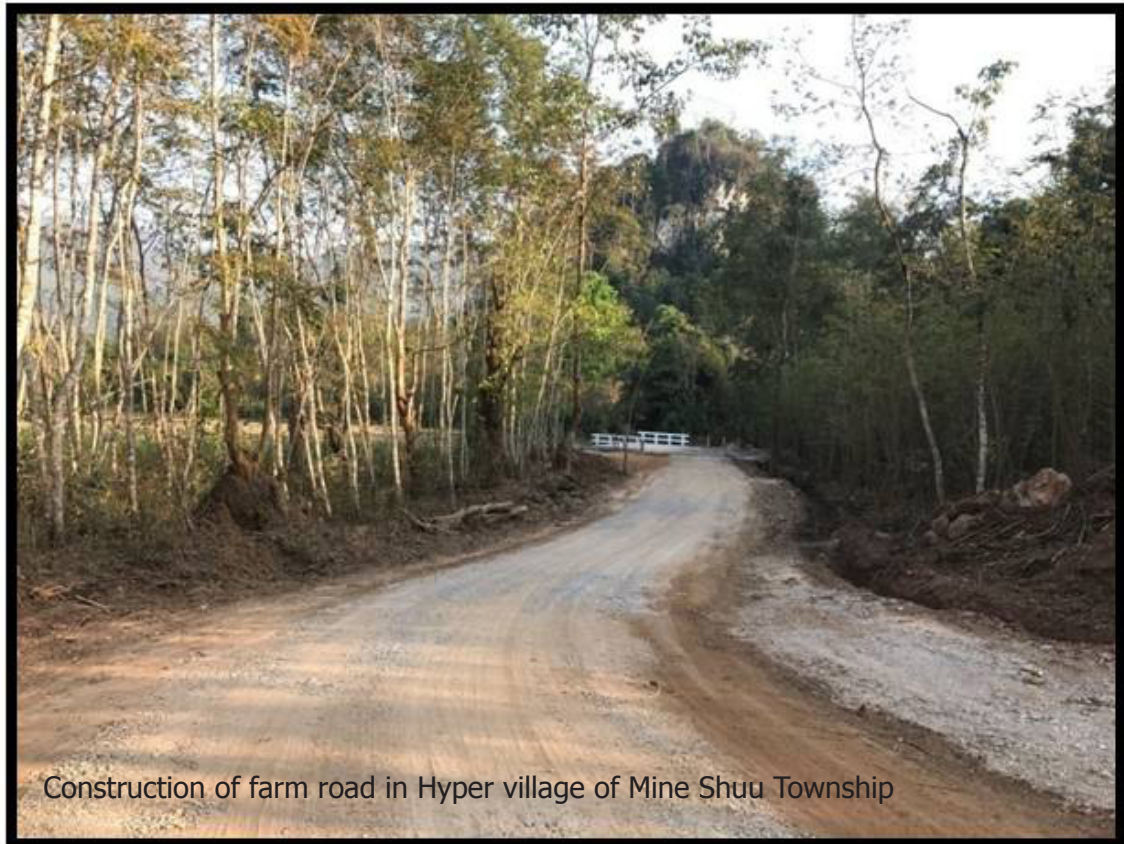
Farm road in Shan State



Construction of farm road in Ohm Ton Pin of Pintaya Township

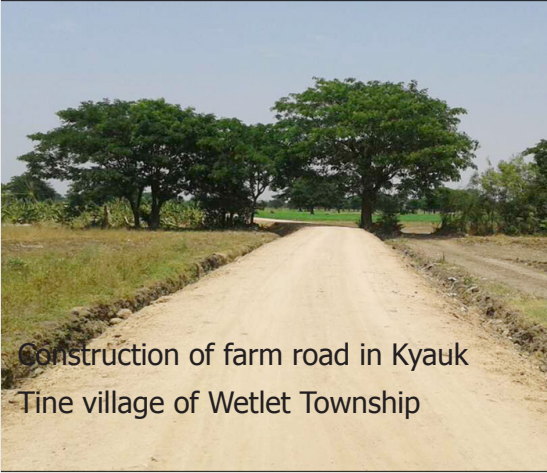


Construction of farm road and its pipe culvert in Mann Narr village of Lashio Township



Construction of farm road in Hyper village of Mine Shuu Township

Farm road in Sagaing Region



Construction of farm road in Kyauk Tine village of Wetlet Township



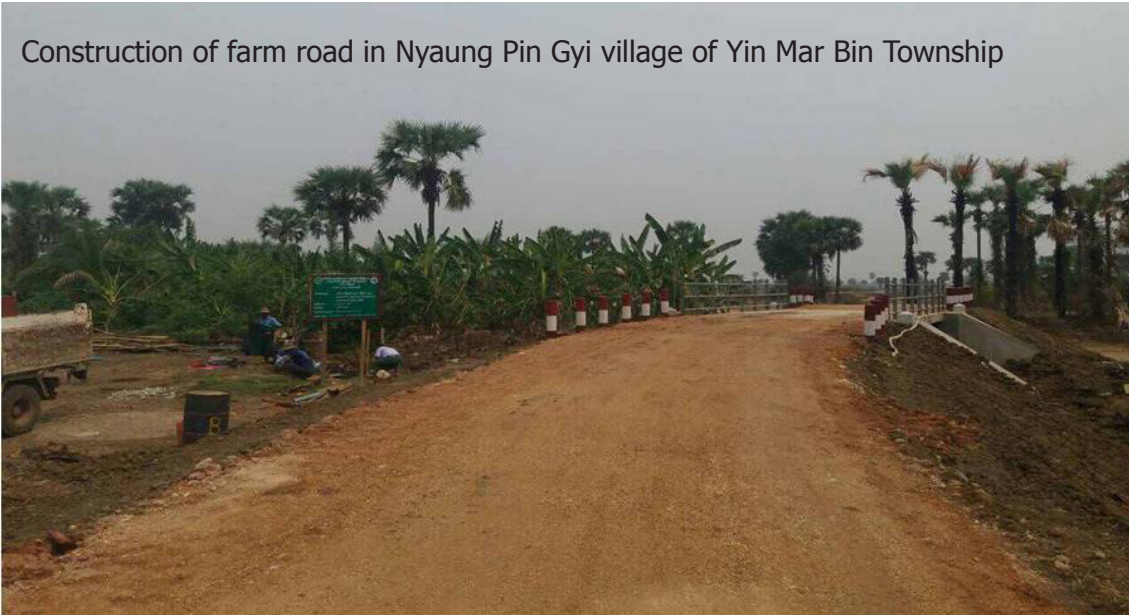
Construction of farm road and its pipe culvert in Thon Pan Hla village of Chaung-U Township



Construction of farm road in Minn village of Sagaing Township



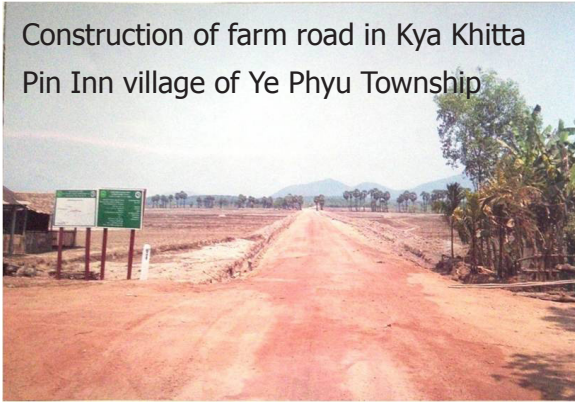
Construction of farm road in Sai Htoe village of Shwe Bo Township



Construction of farm road in Nyaung Pin Gyi village of Yin Mar Bin Township

Farm road in Tanintharyi Region

Construction of farm road in Kya Khitta
Pin Inn village of Ye Phyu Township



Construction of farm road and its pipe
culvert in Win Ka Phaw village of Thayet
Chaung Township



Construction of farm road and its 40 ft long bridge in Ka Dat Gyi Village of Laung Lon
Township

Construction of farm road in Mann Kyi Kone village of Pu Law Township



Farm road in Naypyitaw



Construction of farm road at the Paw Sam Khaw village of Natthuye village tract in Pyinmana Township

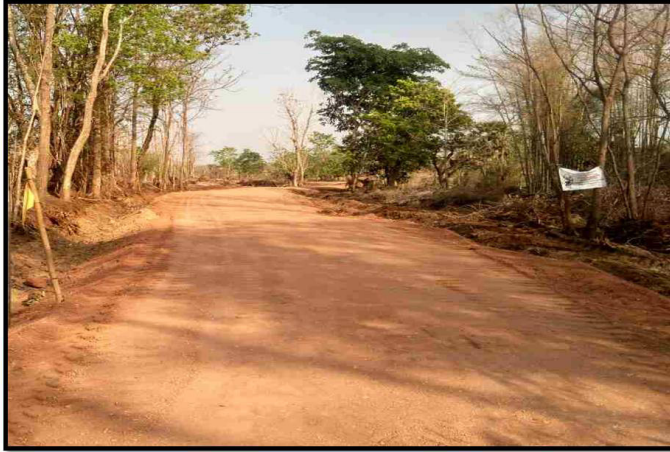


Construction of farm road in Poe Sar Tau village of Ottarathiri Township

Construction of farm road in Yone Pin Village of Lewe Township (Earth+ Gravel)



Farm road in Bago Region



Construction of farm road in Kam Thone Sint village of Shwe Taung Township



Construction of farm road in Thike Kyin Ma village of Pauk Khaung Township



Farm road in Magway Region



Construction of farm road in Yezagy Township



Construction of farm road in Myin Kyun-Inn Gone village of Magway Township

Construction of farm road in Ohn Taw village of Pwint Phyu Township



Farm road in Yangon Region



Construction of farm road in Aut Kyaung village of Kawhmu Township



Construction of farm road in Kangyi village of Hlegue Township



Construction of farm road and its box culvert in Tharyar Kone village of Tike Gyi Township

