No of Pages 50

Date of Repair 7-3-88

Bus

P. W. D.

Go. no. 2449 W

Date :- 12-9-1887

V Bo

3449
1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

Office note from the Joint Secretary to Government, Public Works Department, Railway Branch, dated Madras, 30th May 1887, No. 1812 C./A.

With reference to the remark embodied in Proceedings of Government, Nos. 160, 161, Marine, dated 14th April 1887, under head "Negapatam jetty," page 8—

"Captain Taylor's proposal to extend this face wall along the railway premises seems a good one, but it is understood the Railway authorities object to this."

The undersigned has the honor to invite attention to the memorandum, No. 262½, dated 3rd September 1885, to the address of the Chief Engineer, Public Works Department, from the Consulting Engineer for Railways. The Railway Company, as far as he is aware, do not in any way object to the extension of the wharf wall in front of their premises, but they do not consider that the pecuniary advantage they would gain warrants their paying for it.

(Signed) C. J. SMITH, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

Proceedings, Marine Department, dated 1st August 1887, No. 350.

ORDER—dated 12th September 1887, No. 2449 W., Public Works.

Communicated to the Superintending Engineer, VI Circle.

2. The sanction accorded in the Marine Department (paragraph 3 *c*) to the estimate of Rs. 2,284 for filling in the boat basin has been registered as Local No. 24 W. of 1887-88. Funds for the work were provided in G.O., No. 1699 W., dated 24th June 1887, Public Works, and No. 917,* dated 18th August 1887, Financial.

* G.O., No. 2354 W., dated 2nd September 1887.

3. With respect to the proposal to construct a covered drain through the site of the basin, the estimate for which has been forwarded to the Municipal Council, it is observed that, in his letter No. 7029, dated 6th August 1887, the Port Officer, Madras, stated that the marine works in connection with the basin could not be properly carried out without the drain, and funds for the work were accordingly allotted in G.O., No. 917,† dated 18th August 1887. The estimate should therefore be recalled and forwarded to the Public Works Department for execution, leaving the final incidence of the cost to be settled hereafter. The plan of the proposed drain has been transferred to this department with G.O., dated 1st August 1887, No. 350, Marine.

† G.O., No. 2354 W., dated 2nd September 1887.

4. With reference to paragraph 3 (*f*) of the order in the Marine Department, it is observed that the Consulting Engineer for Railways has already stated that the South Indian Railway Company have no objection to the prolongation of the quay wall in front of their premises, but that they object to pay for the work. The prolongation of the wall to the railway boundary is a work outside the railway premises, and as it has been approved by the Chief Engineer and the Port Officer in the notes recorded in G.O., dated 14th April 1887, No. 160, Marine, it may be carried out without reference to the Railway authorities. It is observed that the estimate for filling in the boat basin provides for revetting the jetty wall and Cadavoyar left bank to a length of 376 feet, but it is not understood whether this revetment is intended to take the place of a jetty wall.

5. The proposals of the memorialists that the railway should be extended to the end of the jetty wall will be referred to the Consulting Engineer for consideration and report.

6. The attention of the Superintending Engineer will be drawn to the suggestion that the materials of the old store shed, the demolition of which was sanctioned in G.O., No. 810 W., dated 15th March 1887, should be utilised in filling up the boat basin.

(True Extract.)

Captain, R.E.,
Under Secy. to Govt., P.W.D.

To the Superintending Engineer, VI Circle, with two enclosures.
" Consulting Engineer for Railways.
" Marine Department.
" Examiner, Public Works Accounts, with duplicate abstract estimate.

Fwd. J. Moses.
Spare Copies

2469
2

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1887] Madras.

PUBLIC WORKS.

Dated September, 12th.

Read. *Read.*

G.O., 12th Sept. 1887, No. 2449 W.

SEPTEMBER.

Negapatam Port

Orders on Proceedings of the Marine Department passing orders on petition from Agents of certain Steamer Companies and other inhabitants of Negapatam suggesting certain improvements to the port.

2449
3

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following papers:—

From J. H. TAYLOR, Esq., Lieutenant, R.N.R., Port Officer, Madras, to the Chief Secretary to Government, dated Madras, 16th March 1887, No. 2276.

I have the honor to submit the following report on the ports and lighthouses inspected by me in conjunction with the Chief Engineer, Public Works Department, in January and February this year. I purpose taking up the ports in the order they were visited, and therefore begin with—

Beypore.—Arrived here on 23rd January, and found the beach restored by the operations of nature. There were 60 feet of sand below the revetment. The ruins on the rocky islet are evidently those of a battery for defence of the river mouth in wars of Tippoo's time.

The red light at this port is in good order; a better one would be desirable.

Left the same day by road, and arrived at *Calicut*. On the morning of the 24th inspected the lighthouse, and found the prisms and lamps in good order. The column wants scraping and painting, and chunam is required in several places. A lightning conductor is wanted, the estimate for which is ready. The space round the lighthouse requires fencing in; estimate and plan ready. It is considered advisable to have the light-keeper's hut roofed with Calicut Mission tiles. The cost of carrying out the foregoing recommendations will be about Rs. (1,000) one thousand.

The beach at Calicut has extended 200 feet seaward, but the depth of water at the T end has not shallowed. The pier is in good order. The new road, regarding which much correspondence took place between the Municipality and Port officer, has been constructed, but is of very doubtful utility; the space between the two roads being much lower than either, the interval will become a troublesome swamp in the rains. Started the same day by the Steamer "Madras," and reached *Tellicherry*. Landed and inspected the lighthouse and found everything right, but some paint was wanted. This painting in all places on the West Coast should be done every year after the monsoon.

The place suggested by the mercantile community for a jetty was examined. There is no reason why this advantage should not be extended to Tellicherry, but as the Port Dues Act does not contemplate such work from Port Funds, a small toll must be levied on the trade to cover outlay, wear and tear, and sinking fund. Borings must be taken to see whether screw piles or laterite carriage for the pier platform is most desirable. The flagstaff wants painting.

Steamed on and arrived the same night at *Cannanore*. On the morning of the 25th, inspected the lighthouse and lamp, and found them in good order. Some paint is wanted to the wood-work, and an iron rod hand-rail is required to be placed to the ladder instead of the present rope.

The jetty is a strong, useful work for troops and passengers. It is not used by the mercantile body, as being too far from the Custom House. The flagstaff wants painting. The flags are in good order. A crane for the pier would be inconvenient, taking up too much room, 13½ feet being the utmost roadway, but shears might be

used instead, the greatest weight likely to be shipped being a horse in a horse box. Proceeded on to—

Mangalore and anchored at 7-30 P.M. At daylight on 26th landed at the Ullal mouth, and was agreeably surprised to find more water in the space leading to the Custom House than I have ever seen before. The boat, in which I landed, at low water came up to ten feet of the steps, whereas 200 feet of mud extended all along this portion of the port on my former visit. It seems as if nature was disposed to renew the former favorable conditions of Mangalore with reference to native coasters, without artificial assistance, and really I do not think any judgment of ours could direct engineering help in a direction likely to ensure permanent good effects. To project the two river mouths, and make a dock between them, would most certainly project the whole bar and sand action further out to sea, and make it worse than it is at present for the larger portion of the trade. I am satisfied that nature had better be left to herself for sometime longer.

Lighthouse—Everything connected with it and the lamps are in good order, but the same effect of the monsoon is observable as at other West Coast ports. A small sum should be sanctioned for painting, cleaning and repairing every year, the work to be carried out as soon as the wet season is over. The lightning conductor has to be looked after, but estimate is already prepared.

Left Mangalore on the same morning, and at noon on 27th was off Ponáni. There were eleven large pattimars in the roads, and two laid up inside the river. At 5-30 anchored off the Government steps at—

Cochin, and went on shore. There were no ships in the inner harbour. Two sailing vessels were in the roads. On the 28th, at daylight, visited the Cruz Milagre gap. In spite of the various scares that reach Madras from time to time regarding this gap, it bears a quite unaltered appearance to my former visits, and looks as strong and satisfactory as could be wished. Some little adaptations suggested themselves to the Chief Engineer, and money and stone are ready to carry them out. The sand strip on the coast line, which confines the lagoon, is being planted with cocoanut trees and screw pine. The reclamations of land are going on with dangerous rapidity, owing to which the deep-water basin of the back-water is being much curtailed, and it will be very likely that nature will seek some other opening for the freshes to relieve Cochin, in which case, if it occurs near Alleppy, either naturally or by engineering assistance, the bar of Cochin will be raised, and its harbour facilities much reduced. The lighthouse and lamps are in good order.

The Government jetty has been renovated. The only things that can be improved are the boat-house to shelter the boats in the monsoon, which is sadly out of order, and a store-room constructed in the Marine office for oil and sundry stores. These two small works should be attended to.

Steamed out of Cochin at noon, and found 15 feet least depth on the bar, low water. Landed at—

Mutton at noon 29th, and found lighthouse and lamps and everything connected with it in good order. The roof of the new bungalow leaks in strong, windy rains, the rain being driven under the tiles. Attempts are in hand to remedy this. The sea being very smooth, no breakers were observable on the Crocodile rocks. The question of a red sector to indicate the exact line of direction from the light to the rock is under consideration, owing to the fact of a vessel having lately struck on the rock—the only instance on record, so far as I can discover. A special report on this subject is preparing.

Tuticorin.—Anchored at this port at 1 P.M. on 30th January. Inspected the Hare Island lighthouse and found everything satisfactory. Left for—

Pámban, steaming up to the Pámban light, which showed very dim and unsatisfactory, bearing north. On an inspection of the same, several small alterations as to the colour of the paint were made, and as it seemed to me that the light was not exactly in the plane of the prism, I caused an inch-and-a-half to be cut off the block on which the lamp stands. On leaving Pámban, a very marked improvement was observed in the light, probably owing partly to this alteration and the fact of

our presence and the extra attention it compelled. The Port officer is directed to furnish reports on this light, and take great pains to secure the keeper's attention. The column is in good order.

At day-break on 31st steamed through the Pámban passage. I pointed out to the Chief Engineer the shoal line, 3¾ to 3½, from Shingle islet to the main body of the island. This must be canalled; a mere passage dredged through the sand would soon be filled up again, owing to the strong currents charged heavily with sand. On landing at Pámban, we visited the trial pits opened by the Madras Government some years ago, and thence to Rámeswaram. It is worthy of mention in connection with the new canal that Mr. Lindsly, who recently inspected the situation, informed Mr. James, the Port officer, that a breakwater would be run between the Shingle islet and the obelisk. This, with any similar works, would seriously increase the tendency of the passage to silt up, and would necessitate some action of Government to compel attention to the Company's agreement not to injure the present pass.

Point Calimere.—At daybreak on 1st February, passed between it and the great reef which extends from this to 30 miles below Point Pedro. We carried less than 3 fathoms water in the passage, but possibly to the eastward a foot or two more might be found. It is reasonable to suppose that the new Canal Company may contemplate placing a light here, and making a passage of a canal or a dredged pass out and in from Palk's Bay and the open sea. This will be a work of which it is impossible to overrate the difficulties; they are more of a technical marine nature than a simple engineering action. If a canal is formed, the sand-laden currents will at some seasons run up and down it, and bars form at either end. If a dredged passage only is attempted, it will soon silt up.

If the passage is set aside on account of these difficulties, the only other which can be relied on will be 30 miles south of Point Pedro, which will increase the distance from Colombo to one even greater than round the Basses and Dondra head. I note that the Company profess to have received reliable opinions from P. and O. captains and R. I. S. N. officers, and a very favorable one from [illegible], but neither that eminent engineer nor the officers in question have visited the spot, and have only a chart of great antiquity to guide them. I cannot accept their confidence. The simple cut through Rámeswaram island is easy, but maritime dangers, delay and expense attend all the other features of the design.

Negapatam.—Arrived here on 1st February, and inspected the lighthouse and lamps, all in good order. There is no plan for river improvement ripe yet for professional judgment. The dredge is not ready. The return from Cocanada of Mr. Cockburn, the officer sent from England to look after the dredges, is awaited. Left this port, and, passing Karikal, Nagore, Tranquebar, and Cuddalore, anchored off—

Pondicherry on 2nd February. Inspected the lighthouse, which is now fitted with a new French light, which is certainly very superior to our 4th-order class, and which the Port officer told me only cost (134) one hundred and thirty-four pounds sterling—a startling difference between Chance Brothers and the French. Started from that port on the same morning, and after half-an-hour steaming, the after-boiler leaked very badly; in fact, the water soon ran out, and fires had to be drawn instantly. The vessel went on very fairly with one boiler, and arrived at 10 P.M. at—

Madras.—Mr. Massey went on board, and carefully inspected the boilers, &c. He found the combustion chamber badly burnt, two holes in one plate, and evident signs of former repairs to it, of which I have never heard, and which must have been made before the purchase of the boat by the Secretary of State. This present injury has been caused by carelessness on the part of some one of the engineers who have had charge of her. Such repairs could never have been executed since the boat has been in my hands, and no bills for such work have ever come in. Ten or twelve days the least that can be reckoned on for repair.

Owing to the break-down of the Steamer "Madras," an agreement was made with the British India Steam Navigation Company for passages being provided for the inspection party by their steamers to the Northern ports and back to Madras for a lump sum of Rs. (5,000) five thousand. Left Madras by the Steamer *Asia* on the 10th

February, and passed the *Pulicat* lighthouse, which was seen very clear, no casuarina being near, and anchored at—

Masulipatam on the 11th February. The Port officer did not call on board, and the vessel proceeded on her voyage at 5 P.M. At daylight on 12th February anchored at—

Cocanada.—Mr. Baker, the Port officer, met us in the S. S. "Arthur Cotton," and we went to Vakalapudi, landing at that place in a fishing boat. The lighthouse was inspected, and found in good order. The lightkeepers' huts want renewing. Four iron lightning conductors should be removed, a copper one being substituted.

Steamed in to Cocanada. The Marine Villa was found in very good order, except the roof leaks, which have not been attended to yet. The shears are repaired, and quite equal to taking boilers out of the Steamer "Madras." It was found that the committee of the groyne improvement works have grown weary of the tedious nature of the same, and wish it stopped and dredging substituted, replacing the work in the Port officer's hands. I hope on return to see the Collector and have a meeting of the committee to interview the Chief Engineer. There were only three feet on bar at low water. It seemed a general opinion that the silting over the Bay has stopped. Mr. Baker, the Port officer, was anxious for an anchoring buoy, but the experience at Masulipatam, Calicut, and elsewhere goes to show that captains will anchor at their own will without reference to directions. It was noticed that ships were taking in cargo till 11 P.M.

Vakalapudi light was seen very brilliant, and the Hope Island light was also quite up to other 4th-order lights.

Vizagapatam.—Arrived at daylight on 13th February. There were 9 feet of water on the bar. Proceeded on, and reached the same day—

Bimlipatam, and found nothing changed about the place. The groyne is finished and offers some protection to the cargo boats, but does not fix the mouth of the river. This failure I now find to be owing to bunds placed at intervals up the river to suit the convenience of irrigation for the different land-owners on the banks, whereby all freshes are stopped and port improvement rendered impossible. Weighed at 6 P.M., and the moment the ship was out of the Bay saw the new—

Santopilly light very clear and bright.

Gopálpur.—Arrived here at daylight on 14th February, and landed at the new pier. The works were found well done, but depart in many particulars from my design, and much time and money wasted in consequence. The platform of the pier is 22′ 8″ above the sea, being six feet higher than the pier at Madras itself, the pier at Pondicherry, which this was intended to imitate closely, being 14′ above mean sea level. The effect of this change will be to double all hand work at the pier, and seriously diminish its utility, while at the same time much expense is added, as the original piles have all been lengthened by cutting pieces from others—an operation which also weakens the resistance of the whole platform to wind and weather.

The Custom-house and Port officer's quarters were not commenced yet. The conclusion was arrived at that the plan to construct a joint Custom-house with a Port officer's house as upper story is a mistake. The adoption of a marina will allow the question of the size, &c., of the Custom-house to be deferred, but the Port officer's house must be constructed, and inquiries were made resulting in the fact that on the opposite side of the road looking upon the pier, and perfectly eligible as a site for building, a plot of ground can be acquired at small cost. I shall recommend Government to build the Port officer's house there as speedily as possible on the original grant of Rs. (5,000) five thousand. This will cheapen the building for revenue purposes, and leave the Marine Department independent.

Return Voyage by British India Steam Navigation Steamer "Patna."

Calingapatam.—Arrived here on 16th February. The question of rebuilding the Customs shed does not enter into marine consideration.

The light on the obelisk is good, but the ladder up to it is dangerous, and one that in bad weather the keepers, I am sure, will never attempt, so that danger of the

2449

light being neglected is almost certain. This ladder must be replaced by a wood or iron one, rigid throughout, with hand-rail, no ropes to be employed.

From this port we passed on to—

Santopilly, arriving there on the same day, and proceeded to the lighthouse. Inspected the light-room and prisms. It is a very fine and efficient second-order light, but many glasses of the chamber are broken, to replace which others have been indented for to England. The superintendent and his assistant are evidently unequal to the care of such an important machine, and are on bad terms with one another. The condition of the house and surroundings is not what it should be.

Cocanada.—Arrived here on the 17th February and visited the—

Hope Island Light-house.—The journey was partly effected in the Steamer "Arthur Cotton," and the rest by canoes through mud and jungle. The lighthouse and light were found in good order. Some slight repairs are required, paint, &c. One lamp was brought away for inspection by Mr. Orr at Madras. Returned on 18th February to Cocanada, and interviewed the Groyne Committee. These gentlemen have found out after another year's experience that my views and observations were correct. They are now most anxious to give up the Department Public Works' overseership, and replace affairs in the Port officer's hands, to which, as the Collector will be permanent Chairman, and no offensive action can be adopted in future, I have no objection to offer.

Masulipatam.—Arrived at this port on 19th February, but too late to go to Point Divi. We called to see the Collector, Mr. Sewell, and discussed various matters relating to the port, the tidal creek, &c. The creek wants clearing out; head of water in canal above the lock is four feet higher than the creek. Proceeded on 20th February to—

Point Divi Lighthouse, having worked a tedious way through mud and creeks. The lighthouse and lamps were found on the whole satisfactory. It is a dreary place. The present superintendent has been 22 years here, and has no wish to move. Weighed and proceeded on to—

Armeghon.—Reached this place at 8 A.M., and, as no preparations were made for landing, went close in in ship's gig, then took fishing boat for the surf. Ship's boat leaking very badly was kept afloat by baling. The lighthouse presented a curious appearance, the cement, paint, &c., being scaled off the walls, and in many places only the bare bricks being visible. The wind in the November cyclone must have been very strong. No such effects have been seen in Madras, and a similar wind and sea would have inflicted severe damage, if they had come in our town. New lines are being constructed for the lightkeepers. Light room wants painting and keeping clean. The general apathy observable among all our Eurasian light superintendents was shown here. They will do nothing for their own comfort, or make any effort to save and preserve Government property. Their one idea is, as soon as things have reached a certain point, to report defects, and have estimates for repairs drawn up by District Engineers. Re-embarked, and at 5 P.M. reached—

Madras.—Captain Pearson, of the British India Steam Navigation Steamer "Patna," the vessel placed at our disposal by the British India Steam Navigation Company, to whom we are indebted for much kindness and attention, brought his ship through the southern passage from what is called Blackwood's harbour in a very seamanlike and satisfactory way by use of lead, there being no marks whatever for guidance, and the only survey chart 64 years old.

Wednesday, 9th, inspected *Pulicat* with Colonel Hasted. Column did not suffer in the cyclone equally with Armeghon, owing to the wind being off-shore, and the plaster on that side not having been exposed to the action of the sea air. Paint wanted in the light room and gallery. Keeper's lines in good order. Superintendent's bungalow repaired. The roof of this bungalow had been much injured in the storm, and it was proposed to terrace the upper part of it to give additional strength. Sanction was obtained for this work, but meanwhile the tile roof was repaired, so that there is no occasion to move in the matter. Until a new occasion for repair arises, the sanction must be cancelled. The superintendent has been some time very ill, and it

is doubtful if he can ever resume duty, which is, meantime, being carried on by his brother on his responsibility. The plan, however, does not work well, and a permanent settlement will be placed before Government as soon as necessary forms are gone through. This completes the coast inspection.

Notes of Inspection by the Chief Engineer, Public Works Department, 22nd January to 3rd February 1887, *and 10th to 21st February* 1887.

Mangalore.—The lighthouse is in good order and only wants white-washing. The store-rooms at foot of column need a little repair. There is a lightning conductor of copper wire, which it was decided should be led into a nullah at a little distance where the ground would be moist. Conductor Lennon, who has been instructed in testing conductors, is to test this conductor and arrange for its proper earth connection. The lantern and lighthouse are very well kept and painted where necessary. Three of the glasses of the lighthouse were cracked long ago it is said, but the cracks have been mended with strips of lead, and do not interfere with the light.

Telicherry.—In good order, but wood-work needs painting or tarring. On the West Coast all wood-work should be painted or tarred once a year. An estimate for a lightning conductor is under preparation; it can be led into an old well outside the ramparts. The peepul and banian trees growing in the fort wall, in the immediate vicinity of the lighthouse, should be destroyed.

Cannanore.—In good order, but the ladder needs attention, and the rope used as a handrail should be replaced by a round iron rod. A lightning conductor should be attached to the flagstaff which is close alongside the pillar and much higher, and led down one of the wire stays and through an embrasure down to the sea.

Calicut.—In good order; the iron railings at top would be the better for a coat of paint. The pillar itself appears to have been painted over old plaster; it should be scraped and painted white. An estimate has been prepared for enclosing the ground round the lighthouse now in a filthy state and open to cattle, &c.; this should be sanctioned, and the lascars' shed, a wretched little thatched building, should be re-roofed with Calicut tiles, and then the surroundings of the lighthouse will be decent. Estimate for a lightning conductor, which is certainly wanted, is under preparation.

Cochin.—This lighthouse is in very good order and neatly kept. Lightning conductor has been tested and found deficient. An estimate will be submitted for carrying the copper rod down into moist soil, and making a proper earth connection. The groynes on the coast immediately round the lighthouse have been very little damaged, and sand has been accumulating between them. An estimate will be prepared for making up the noses where necessary and the southernmost groyne which has been most knocked about, but no lengthening of the groynes should be allowed, and they should be kept, as nearly as possible, all of one length from the shore line.

The landing stage and marine buildings are in good order, but the boat-shed wants improvement, the posts which support it being apparently decayed in the ground.

Cruz Milagre Gap.—There seems to be no reason for alarm with regard to the bank; a little of the revetment has subsided somewhat on the lagoon side, and this is to be made up with stone on the spot. Sections are now being taken, which will show where there has been any scour near the foot of bank, and then the ballast stone, which has been collected, should be thrown in to protect the toe of the bank. The planting of screwpine and creepers has not been properly attended to by the watchman.

It would be well to make some arrangements whereby all ballast brought by ships to the port can be brought and stored as a reserve at the bank.

Muttum.—The only first-class light on the coast besides Madras. The building was constructed in 1882, and is very solid and in excellent order. Everything is well kept here, and the lighthouse and apparatus are scrupulously clean. The lightning conductor is led into a hollow where the ground is kept moist, but it should be tested when there is an opportunity. The dwelling-house is roofed with Mangalore tiles, and the Superintendent represented that in strong wind and rain, water gets under the tiles. The position is so exposed to the burst of the south-west monsoon that it will be difficult to prevent this unless corrugated iron is placed under the tiles; but the Superintending Engineer will see what can be done to prevent the leakage, it would seem that the slope of the roof is too flat for these tiles.

2449
6

Tuticorin Lighthouse on Hare Island.—The lighthouse is in excellent order, and the light good and well kept. The sandstone, of which the column is built throughout, has been slightly affected in places by the sea air, but at present this is of no consequence; if the evil extends, it may be necessary to plaster the column with Portland cement, but this will probably not be required for some years. The lightning conductor is said to have been tested some years ago; when opportunity offers it should be tested again; the island itself is so little above sea level that the conductor must be in moist soil. The buildings for the lighthouse attendants are small, but well kept and in good order, and seem to be all that is necessary.

Jetty.—Some complaints have been made regarding the depth of water at the landing place, and that the former lengthening of 250 feet is insufficient; but it appears that boats still unload between the head of the jetty and the shore, and it is very seldom that boats drawing 4 feet cannot get up to the pier head at low water, while a further lengthening of 250 feet would only give 6 inches more water at the head. Under these circumstances, it does not seem necessary to lengthen the jetty; it would, however, be a great convenience to traffic if it were widened, and this could easily be done, doubling the width from the head to the shore; it would then be advisable to carry the tramway to the pier head, and perhaps to lay down a double line of rails.

Pámban Lighthouse.—The column appears to be sound and in good order, but much discolored; it should be scraped and painted with white anticorrosive paint. The light, a 4th order dioptric light, does not compare favorably with other lights of the same class on the coast. For some unexplained reason the glass lantern is fixed on the level of the platform, without the iron light-room, which has been sent out and is in use in other places; and it may be due to the light having so nearly below it a wide platform, painted white, that some of the light is absorbed, and it is very awkward for the men who attend on the light, as there is hardly head room for any one to stand up inside the lantern. It seemed doubtful also whether the flame of the lamp was immediately in the centre of the lenses, and at Captain Taylor's suggestion it was lowered, and this seemed to have a good result, as on leaving the port at night we could easily discern the light at a distance of 12 to 14 miles, measuring our distance by the logline. I would, however, paint the platform a darker color, which I understand can be done on the spot. If complaints of the light then continue, I would raise the lantern on a wooden octagonal light-room, about 3 feet high, securely bolted down to the head of the column; this would not be very expensive and would be much lighter than the ordinary cast-iron light-room, which may have been omitted from there being some doubt of the fitness of the column to carry so heavy a weight.

The buildings at foot of the lighthouse are in good order.

The Pass itself is understood to be clear, but the shoal below has accumulated, and dredging seems to be very necessary there. Nothing is known in this department about the reference made to the Secretary of State for a suitable dredger, and it may be that, in the face of the proposal to cut a ship canal through the Rámesvaram island, a dredger may be considered unnecessary; but in the proposed agreement between the Company to be formed for cutting the canal and the Secretary of State, it is specially provided that the Pámban Pass shall not be interfered with, and as the canal cannot be available for some years, even if country craft will ever use it, it seems very desirable that a dredger should be obtained as early as possible. Speculation on the prospects of the canal seems unnecessary; but after examining the ground on the proposed line of the canal and studying the charts, the conclusion arrived at was that the canal itself with immediate approaches is feasible if sufficient money is spent, but that the real difficulty will be found in the shoals lying between Point Calimere and the island of Ceylon through which it seems almost impracticable to keep open a passage of sufficient depth to enable large vessels to navigate.

Point Calimere.—The pillar at the point partly fell down some time since, and it looks as if the portion remaining were leaning over. It seems advisable, as it is

supposed that a landmark here is necessary, to estimate for a tripod of iron screw piles here.

Negapatam Lighthouse.—The column seems to be in good order and does not require painting at present, but the lighthouse, lantern and outside platform and rails are sadly in want of a coat of paint. It was stated that the building had been lately struck by lightning although provided with a lightning conductor, and in proof of that 3 panes of glass, a good deal cracked, were shown; it is difficult to understand how this occurred, though it seems possible that sudden very great heating of the metal-frames might have caused expansion and cracked the glass; the discharge, however, must have been carried off by the conductor, as there is no trace of damage to the column.

The buildings at foot of the lighthouse are in need of repairs; the masonry is being eaten away by the sea air; it should be thoroughly scraped and cleaned and then plastered with Portland cement. Nothing else will stand so near the sea.

Jetty.—The jetty up to the landing ramp has been repaired since it was damaged by the last storm, but nothing has been done towards filling up the boat basin. An estimate should now be submitted for removing the concrete blocks with which the basin is lined, and filling it with soil which may be procured from a large bank in the creek just above the basin opposite to the Railway premises; the estimate should also provide for building a face wall to the creek similar to the one below the boat basin, so far as Government land extends, using the material taken from the basin as far as possible. Captain Taylor's proposal to extend this face wall along the Railway premises seems a good one, but it is understood the Railway authorities object to this. An officer having been placed at the disposal of the Negapatam Municipality to draw up a scheme for water-supply and drainage, it is hoped that his proposals will enable the vexed question of the discharge of the town drainage into the sea clear of the jetty, may shortly be settled. At present it must apparently all flow down the ramp used for landing cargo—a very objectionable arrangement.

Madras Lighthouse.—The outside of the column, at all events near the top, requires pointing in places with Portland cement, and the inside of the well requires plaster renewed in places where it is crumbling away from the action of the sea air.

The apertures, which give light to the stairs, are intended to be closed by glass windows during strong winds, but these windows are very much out of repair, glasses and sometimes frames broken and hooks rusted almost through; they should be properly repaired and furnished with brass hooks and eyes. The iron supports to the handrail are in places a good deal corroded; they might be painted with advantage.

The lantern and light-room are in good order, and painted once a year. Lightning conductor is said to have been tested about a year ago.

The outside gallery at the top is dangerous, owing to the parapet being only about 2 feet high; it should certainly be made safe to visitors by a stout double rail on standards all round.

The store-rooms at foot of the lighthouse are in need of repair; it is stated that the roofs leak, and they have been thickly covered with tar all over. If the joists are sound, it will probably be the best way to remove all this tar and old plaster and replaster throughout with Portland cement. Several glasses are broken in the skylights which need renewal, and a little repair to inside walls is necessary.

Pulicat Lighthouse.—Column in good order; on a high ridge of sand much above the storm-wave of the 9th November last, which was recorded at Coromandel as more than 8 feet above H. W. spring tides. The casuarina trees here are all bent to the east, quite the contrary direction to which they were bent at Armeghon, 30 miles higher up the coast, showing that the centre of the storm hit the coast between these two points. The lightning conductor was bent and some tiles blown off the Superintendent's quarters, and this seems to have been all the damage that was done. The column requires coloring again, and the lantern painting both inside and out; all should be white. A little plastering round the building at foot is also needed, and the shutters to the loopholes should be repaired.

The Superintendent's house has had the tiling replaced, and now requires nothing but some plastering and white-washing inside. The lascars' quarters are new and good.

2009/1

The sea-wave in the late cyclone seems to have destroyed the good-water supply in Pulicat, and the inhabitants are said to send across the backwater to the wells near the lighthouse for drinking water.

Armeghon Lighthouse.—The cyclone of November 1886 was felt with great severity, as is evidenced by the trees in the neighbourhood. The sea flowed over the sands, and rose to a height of about one foot on the steps of the lighthouse and dwelling-house. The plaster of the column was much damaged. It is understood that an estimate has been prepared for replastering, and no time should be lost in carrying out this work. The lantern and lighthouse, with railings outside, only require repainting, and white paint would be the best to use now. The light is good and the lenses in good order, but the place might be kept cleaner.

New houses are being built for the lascars. The Superintendent's house suffered comparatively little in the cyclone, but some of the verandah tiles have been displaced and require to be renewed.

Point Divi Lighthouse.—The column and adjacent dwelling-house seem in good order; the light is good and the lantern and light-room only want repainting; if the inside of the latter were painted white, any dirt would be noticeable and could at once be removed. The wall built round the end of the lightning conductor at foot of the tower has cracked very considerably in consequence of its having been built partly on the column foundations and partly on surrounding platform.

If it is considered necessary to increase the accommodation in the Superintendent's house, one or two such rooms can be built on the terrace of the upper storey; but the lower storey might be made use of to increase the accommodation if space were economised.

The good-water tank has a good supply, but the water is fouled by buffaloes, &c., which are turned out by the villagers in the mangrove jungles. Some sort of fence is necessary to protect it, and this might be made roughly of the mangrove wood itself. It was represented that the river had of late years cut away the ground towards the lighthouse, and there are signs of some erosion having taken place years ago; but from sections which have lately been taken, it appears that there is a good sloping fore-shore, and no erosion is now taking place. To prevent future erosion, it would be well to plant up with mangrove this foreshore from the creek above the lighthouse to the creek below.

Hope Island Lighthouse.—The column is in good order, and though in the high tide which accompanied the storm of last year the sea is said to have surrounded the lighthouse, no damage was done, and there is no sign of any scour. The terraced godowns attached to the column need attention, as the joists supporting the terraces have been attacked by whiteants, and in one of them the ends of the joists have rotted away, leaving the roof unsupported; these should be supported at once by a beam or plank held up by stout posts, and an estimate should be prepared for making both roofs good. The lantern is in very good order, and the light showed well at sea, but the new lamps evidently want to be better arranged as regards the draft. It may be a question whether, as the light is not required at all on the land side, a catadioptric light would not show a better light at sea; but judging from the appearance of the light on a dark night, it did not seem that much improvement was required.

The lighthouse keeper's quarters need a little plastering and white-washing; the lascars' lines are very good here, and there is a good separate store-room.

Vakalapudi Lighthouse.—The column is in good order, but requires to be painted white. The light is the one formerly in use at Hope Island, and the lenses are much cracked; but this does not appear to affect the light, which shows well at sea. The machinery works fairly well and smoothly, and the light is well kept. There are four lightning conductors, the upper portion being of copper and the lower of iron rod, the iron has corroded to a great extent; it would be better to have one good copper rod or wire conductor instead.

The Lighthouse Superintendent's house is in need of repairs to the roof; the flat-tiles have in many places decayed and need renewal, and the pan-tiles should be turned, otherwise the bungalow seems in good order.

The lascars' sheds are only thatched round huts which need constant repair; it would be well to have tiled lines, something like our lock lascars' sheds. It is understood that an estimate for these is under preparation.

Santopilly Lighthouse.—A new 2nd order light put up last year; it shows very well to sea, the elevation being, so far as could be ascertained, about 180 feet above sea level; distance inland one mile. The building is on a small hill, and the front part of it has lately been somewhat lowered and built up with solid masonry to receive the new lantern, the back of the building being store-rooms. All of it seems to be in very good order. Several new glasses are required to the lantern, which it is understood are to be supplied, and the lenses have suffered somewhat before being put up, but not so as to affect the light. The general appearance of the lighthouse indicates that a better class of Superintendent is necessary to maintain a light of this description.

There are two lightning conductors, and in the stores are several lengths of hollow copper rod intended for a conductor, but never put up. One good conductor would be sufficient for both lighthouse and building in rear; but it is unnecessary to disturb the present arrangement if the earth connections of the existing conductors are good; they should be tested, if this has not been lately done.

The Lighthouse Superintendent's house is in fair order, and needs nothing but ordinary repairs. The Assistant Superintendent's house is said to leak in several places, and part of the house is used as a cook-room, the consequence being that the building is extremely dirty. A small detached cook-room should be built near the house, and the rooms cleaned and white-washed. The lascars' sheds are of mud, thatched, and only require rethatching.

Calingapatam Lighthouse.—The column is in good order, but in the storm of last year the sea washed round it, and the Lighthouse Superintendent stated that he subsequently threw some stone, which was lying about, at the foot; there is, however, no sign of scour round the building. The light is a common lantern with two reflectors, which needs a little repair in places, and the roof, with wood and iron work, requires painting; behind the light some tatties have been tied up to afford a shelter to the lascar attending; but they are, of course, liable to be blown away in any storm, and it would be better to plank in a portion to afford shelter. The ladder of rope with wooden rungs and wire-rope handrails is in need of repair in places; it would be much better to have a wooden-step ladder starting from masonry steps of some height; lascars can hardly be expected to go up and down the present shaky ladder on a bad night.

The lascars' shed is of leaves on the sand, and in the storm was quite surrounded by water; there are three men, and two huts at least are wanted; the Lighthouse Superintendent suggested that pucka lean-to quarters might be constructed round the square base of the tower, and the suggestion seems a good one. An estimate might be prepared for this; there is no site near the lighthouse available for building the usual lines.

No. 1031-C.

Memorandum.

Transferred to the Marine Department, with advertence to Proceedings in that department, No. 529, dated 3rd December 1884.

(Signed) J. O. HASTED, Col., R.E.,
Secy. to Govt., P.W.D.

To the Marine Department, with notes.

Order—dated 14th April 1887, No. 160, Marine.

The recommendations of the Chief Engineer for the improvement of the Pámban light and the other suggestions made in the foregoing reports are approved. Steps should be taken to carry them out at an early date.

2449
8

2. The remarks of the Chief Engineer, in regard to the Negapatam jetty and drainage scheme, will be communicated to the municipal council with reference to G.O., No. 706, dated 24th December 1886.

3. The attention of the Chief Engineer is drawn to G.O., No. 618, dated 11th November 1886, which was communicated to the Public Works Department, from which it will be observed that the supply of a dredger for Pámban has been suspended at the suggestion of the Port officer.

4. These reports should in future be accompanied, for convenience of reference, by a statement in the form printed on page 1 of G.O., 24th April 1886, No. 207, Marine, in which the condition and further requirements (if any) of each lighthouse should be concisely stated.

5. A copy of these proceedings will be forwarded to the Government of India with reference to the remarks made by the Port Officer, Madras, in connection with the Pámban Pass and the proposed Rámesvaram Canal.

(True Extract.)

H. E. STOKES,
Ag. Chief Secretary.

To the Port Officer, Madras.
" Public Works Department.

Endorsement—dated 14th April 1887, No. 161, Marine.

Copy to the Government of India, Department of Finance and Commerce.

H. E. STOKES,
Ag. Chief Secretary.

Exd. T. O'Connor.

Govt. of {1887} Madras

MARINE.

Issued

Recd. *Encl.*

G.O., &c., 14th April 1887,
Nos. 160, 161.

APRIL.

Lighthouses and Ports.

Passing orders on the inspection reports of — submitted by the Port Officer and the Chief Engineer.

2449
9

24TH JUNE 1887, No. 1699 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following papers:—

From the Superintending Engineer,			I Circle,	dated	20th	May 1887,	No. 64 G.L.
"	"	"	II "	"	16th	" "	one statement.
"	"	"	IV "	"	7th	" "	No. 201 E.W.
"	"	"	V "	"	11th	" "	" 729.
"	"	"	VI "	"	12th	" "	" 265 T.J.
"	"	"					

ORDER—dated 24th June 1887, No. 1699 W., Public Works.

In the papers read above, the Superintending Engineers apply for funds, under Incorporated and Excluded Local Funds, for incomplete works of 1886-87 and for new works and repairs proposed for execution during the current official year.

2. The demands are shown below:—

Incorporated Local Funds.

	Rs.
Canal and Ferry Fund—	
Incomplete works	3,691
Local Funds under Act V of 1884—	
Incomplete works	64
Total, Incorporated Local ...	3,755

Excluded Local Funds.

	Rs.
Incomplete works inclusive of establishment and tools and plant charges	7,144
New works inclusive of establishmentand tools and plant charges ...	10,503
Total, Excluded Local ...	17,647

3. The question of providing funds under Excluded Local, aggregating Rs. 17,647, will be considered in the Financial Department, and the Revenue and the Local and Municipal departments will be requested to allot the funds required to complete the works proposed under Canal and Ferry Fund and Local Funds under Act V of 1884, respectively.

4. The Revenue and the Local and Municipal departments will be requested to provide also a sum of Rs. 65 under Canal and Ferry Fund and Rs. 632 under Local Funds, under Act V of 1884, to meet the increased percentage on account of general tools and plant sanctioned in G.O., No. 881 W., dated 23rd March 1887.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, I Circle.
" " " II "
" " " IV "
" " " V "
" " " VI "
" Examiner, Public Works Accounts.
" Financial Department.
" Marine "
" Revenue "
" Local and Municipal Department.

Exd. E. Fernandez.

Spare Copies

GENERAL ACCOUNT.

Govt. of 11887 Works.

PUBLIC WORKS.

Dated June, 24th.

Read.

Encl.

G.O., 24th June 1887, No. 1699 W

JUNE.

Funds

Orders on applications for —, under Incorporated and Excluded Local Funds, for incomplete works of 1886-87 and for new works and repairs proposed for 1887-88.

Appendix to G.O., No. 1699 W., dated 24th June 1887.

STATEMENT showing Incomplete Local Fund Works of 1886-87 and New Works sanctioned, but not commenced, requiring funds.

Division.	Item No.	Name of work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance of estimate.	Appropriation required for 1887-88.				Item No.	Remarks.
							For works.	For establishment.	For tools and plant.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12	13
		INCORPORATED LOCAL.	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
		Canal and Ferry Fund.										
Kistna, Eastern.	1	Landing stage below the Kistna anicut, Bezvâda.	21,566	G.O., No. 1918 W., dated 2nd August 1886.	17,875	3,691	3,691	..	..	3,691	1	
		Total ..	..	....	..	..	3,691	..	..	3,691		
		Local Funds under Act V of 1884.										
Madura ..	2	Constructing a roughstone retaining wall and an apron in rear of the bund of the lake at Kodaikânal.	470	....	406	64	64	..	..	64	2	
		Total ..	..	....	..	..	64	..	..	64		
		Total, Incorporated Local ..	..	....	..	..	3,755	..	..	3,755		
		EXCLUDED LOCAL.										
		Port Funds.										
Ganjam ..	3	Constructing an iron pier at Gopâlpur.	3,08,200	G.O., No. 1450 W., dated 27th May 1887.	2,15,200	93,000	..	..	..	..	3	Separately applied for. *Vide* G.O., No. 1450 W., dated 27th May 1887.
Godâvari, Eastern.	4	Repairs, Civil Buildings.. ..	600	....	..	600	..	..	..	..	4	For repairing the Marine Villa at Cocanada. *Vide* G.O., No. 1455 W., dated 30th May 1887, in which provision has been already made.
Do. ..	5	Repairs, Miscellaneous Public Improvements.	..	....	..	..	920	212	13	1,145	5	For repairs to Vakalapudy lighthouse and for other anticipated outlay.
Kistna, Eastern.	6	Clearing silt in the salt creek from below the tidal lock to the village of Gilakaladindi.	1,560	G.O., No. 84 W., dated 10th January 1887.	475	1,085	1,085	250	16	1,351	6	
Buckingham Canal.	7	Constructing lines for lascars attached to the Armeghon lighthouse.	1,890	G.O., No. 69 W., dated 8th January 1886.	1,326	534	564	130	8	702	7	
Do. ..	8	Repairing superintendent's quarters and outhouses, Armeghon lighthouse.	110	Superintending Engineer's register No. 5 of 1886-87.	..	110	110	25	2	137	8	

2469

Statement showing Incomplete Local Fund Works of 1886-87 and New Works sanctioned, but not commenced, requiring funds—*cont.*

Division.	Item No.	Name of work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance required for completion of estimate.	Appropriation required for 1887-88.			Item No.	Remarks.
							For works.	For establishment.	For tools and plant.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12
			Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	13
		EXCESS LOCAL—*cont.*									
		Port Funds—cont.									
Buckingham Canal.	9	Repairing superintendent's quarters, Arnegdon lighthouse.	85	Superintending engineer's register No. 4 of 1886-87.	..	..	85	20	1	106	9
Do. ..	10	Repairing Pulicat lighthouse	100	Superintending engineer's register No. 6 of 1886-87.	..	..	100	23	2	125	10
Do. ..	11	Repairing damages caused to the Armegdon lighthouse column by the cyclone.	95	Superintending engineer's register No. 1 of 1887-88.	25	..	70	16	1	87	11
Do. ..	12	Repairing the thatched store-shed, Armegdon lighthouse.	30	Superintending engineer's register No. 3 of 1887-88.	..	..	30	7	..	37	12
Do. ..	13	Repairing the damages caused to the superintendent's quarters, Armegdon lighthouse, by the cyclone.	260	...	..	..	260	60	4	324	13
Do. ..	14	Reserve for repairs to lighthouses ..	785	G.O., No. 677 W., dated 8th March 1887.	..	..	345	79	5	429	14
West Coast.	15	Improvements to the lighthouse at Calicut.	8,195	G.O., No. 2726 W., dated 13th October 1886.	4,181	..	785	181	12	978	15
Chingleput.	16	Constructing a lighthouse at Sayen Pagodas.	..	...	..	..	3,984	916	60	4,960	16
Negapatam.	17	Filling in the boat basin at Negapatam.	..	...	..	..	6,960	1,265	83	8,348	17
Do. ..	18	Diverting the main town drain	..	...	..	..					18
Do. ..	19	Constructing groynes along the land face of the sand spit at the mouth of the Cadavanyar.	..	...	..	..					19
Do. ..	20	Dressing the face of the jetty wall smooth and cramping coping stones at Negapatam.	..	....	..	..	300	69	5	374	20
Tinnevelly.	21	Forming a new earthplate to lightning conductor attached to the lighthouse on Ekas island, Tuticorin.	70	Superintending Engineer's register No. 1 of 1885-86.	25	..	35	8	1	44	21
		Total, Excluded Local, Port Funds.	..	....	..	..	14,173	3,261	215	17,647	

2469/11

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following paper :—

G.O., dated 18th August 1887, No. 917, Financial.

Read—the following papers :—

G.O., dated 24th June 1887, No. 1699 W., Public Works.

From the Port Officer, Madras, dated 6th August 1887, No. 7029.

Referring to G.O., Public Works Department, No. 1699 W., dated 24th June 1887, and your endorsement thereon under date the 14th July last, I have the honor to state that the proposed grants may be made in all the cases therein mentioned. The diversion of the drain may at first sight appear a municipal work, but the marine works in connection with the basin could not be properly carried on without it, and it seems advisable to pass it.

Order—dated 18th August 1887, No. 917, Financial.

The Accountant-General will arrange for placing the sum of Rs. 17,647 at the disposal of the Public Works Department from Port Funds.

2. Estimates must in all cases be properly sanctioned before work is begun.

(A true Copy and Extract.)

(Signed) W. S. MEYER,
Assistant Secretary.

ORDER—dated 2nd September 1887, No. 2354 W., Public Works.

Communicated to the officers concerned with reference to G.O., No. 1699 W., dated 24th June 1887.

2. Attention is drawn to paragraph 2 of the Order in the Financial Department.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, I Circle.
" " " II "
" " " IV "
" " " V "
" " " VI "
" Examiner of Public Works Accounts.
"

Exd. W. H. French.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of {1887} Madras.

PUBLIC WORKS.

Dated September, 2nd.

Read. *Enclo*

G.O., 2nd Sept. 1887, No. 2354 W.

SEPTEMBER.

Funds

Proceedings of the Financial Department directing the Accountant-General to place the sum of Rs. 17,647 at the disposal of the Public Works Department from Port Funds, communicated to officers concerned, with remarks.

2443
12

2460
12

PUBLIC WORKS DEPARTMENT.

E MADRAS GOVERNMENT.

UNDER date the

READ the following

350 d/ 1st August 1887.

The estimate amounting to
. 2,284, for filling in the boat basin
t Nyapatam, is sanctioned, and the
ork should be carried out in concert
ith the municipal authorities, who,
is understood, propose to build a
ered drain right through the site
the basin.

Of the sums of Rs. 5,500 allotted
items 17, 18 and 19 of the list appended
G. O. No. 1699 W dated 24th June 1887,
2,284 are appropriated for the work.

Para 3(c) of the order in the
arine Department above recorded
ll be referred to the Consulting
gineer for Railways in view to
required information being fur-
hed at an early date.

Para 4 (f) of the above order
ll be referred to the Superintending
Engineer

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

Proceedings of Govt. Marine Department. No. 350 dt. 9th August 1887.

The estimate amounting to Rs. 2,284, for filling in the boat basin at Negapatam, is sanctioned, and the work should be carried out in concert with the municipal authorities, who, it is understood, propose to build a covered drain right through the site of the basin.

2. Of the sums of Rs. 5,500 allotted for items 17, 18 and 19 of the list appended to G. O. No. 1699 W dated 24th June 1887, Rs. 2,284 are appropriated for the work.

3. Para 3(c) of the order in the Marine Department above recorded will be referred to the Consulting Engineer for Railways in view to the required information being furnished at an early date.

4. Para 4 (8) of the above order will be referred to the Superintending Engineer

Engineer VI circle who will report whether, as suggested by the memorialists, the materials of the stone shed near the basin can be utilised in filling up the basin

5. The sanction accorded in para 1 of these proceedings has been registered as Excluded Local No. W of 1887-88, and classified as Miscellaneous Public Improvements, Repairs.

C/No. 6488

TO BE COMMUNICATED TO NEWSPAPERS

To

The Supdg. Engr. VI circle with 3 spare
" Examiner of P.W. Accts with the duplicate abstract estimate
" Consg. Engineer for Railways
" Marine Department.
To News papers.

W/19.

6-2-9-87

E. I. Form No. 22.

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the

READ the following :—

From the Consg. Engr for Rys No 1812 C/A dy 30. 5. 87.

Pros. Marine Dept No 330 dy 1st August 1887.

Communicated to the S. E. VI Circle.

2. The sanction accorded in the Marine Dept (para 3(c)) to the estimate of Rs 2,284 for filling in the boat basin has been registered as Local No W of 1887-88. Funds for the works were provided in Go. No 1699 W dy 24th June 1887, Public Works, + No 917 dy 18th August 1887, Financial

2. with respect to the proposal to construct a the boat screen, for

a covered drain through the site of the basin, the estimate for which has been forwarded to the Municipal Council, it is observed that, in his letter No 7029 d/ 6th August 1887, the Port Officer Madras stated that the marine works ~~should be that the~~ incidental in connection with the basin ~~of the Chief Engineer, respectively,~~ falls could not be properly carried ~~out to Port Trust, and~~ but without the drain; and funds for the work were accordingly allotted ~~provided~~ in Rp. No 917 d/ 18th August 1887. This ~~supported therefore that~~ should therefore The estimate be recalled, & forwarded to the PWD. Dept for execution, the leaving the final incidence of the cost to be settled hereafter. The plan of the proposed drain has been transferred to this Dept vide GO. d/ 1st August 1887, No 350 Marine.

3. With reference to para 3(e) of the order in

† Rp. No 2352 d/ 2 Sept 1887.

The Port Officer said that the Marine work could not proceed without it & that it was desirable to clean it. This was a case tempo. ~~of Municipality~~ may settlement. ~~the~~ whereby both work, by whomso- ever it is executed.

Jdl

An order has not gone out in the Govt dept pointing out that the jetty and the basin obstructed the drain & was probably also then the drain; that therefore we did not recognize our responsibility. Retrace the order & alter this para accordingly. Jdl was understood we consider any further representation. Mrg 9 Sept.

2468
15

in the Marine Dept, it is observed that the Consy Engr for Rys has already stated that the Southern Railway Co. have no objection to the prolongation of the quay wall in front of their premises, but that they object only to pay for the work - the prolongation of the wall to the Railway boundary is a work outside the Railway premises, as it has been approved by the Chief Engr & the Port Officer in the notes recorded in G.O. dated 14th April 1887, No 160 Marine, it may be carried out without reference to the Railway Authorities - It is observed that the estimate for filling in the basin provides for

~~for extending the Coconada~~ ~~jetty~~ ~~to a length of 376 feet, and~~ ~~labourers in the employment~~ ~~working parties if found~~ ~~necessary for the~~ ~~purpose of extending the Railway premises~~ ~~would be~~ ~~submitted by the Engr~~ ~~Engrs~~.

but it is not understood whether this sanction is intended to take the place of a jetty wall.

4. The proposal of the memorialists that the Railway should be extended to the end of the jetty wall will be referred to the Consulting Engrs for consideration & report.

5. The attention of the Supdg Engr will be drawn to the suggestion that the materials of the old Store Shed, the demolition of which was sanctioned in Gr. Lr. 810 W dy 15th March 1887, should be utilised in filling up the boat basin.

Cr

July 6/9/87

To Mes. S. VI Circle
" Consy Engr Ports
" Marine Dept.
" Engr Perspects, with copy of the abstract estimate for instruction of the SS

Cons 4026 2/89 10

D/- Proposal regarding the jetty recommended for extension.

The estimate recently received from C. & VI Circle for approval & sanction is returned herewith.

Cr 9/10/07

D. No 1761 W 23-5-87.
Q. C. 3224 W 5-12-86
D. No 2237 W 25-9-83
No 5-71 W 8-9-83
" 5-618 " 5-9-83
" 1391 C " 19-8-83
" 2206 " 12-6-83
Q. C. 8924 W 15-4-83
D. No 663 W 17-3-83
" 114 W " 13-4-83
No 1916 C 21-11-84
" 1221 C 5-7-84
D. No 1470 W 13-6-84
No 1475 C 14-8-84
Q. C. 1163 W 2 9-6-84
" 2067 W 30-7-83
" 2757 W 23-10-82
" 85 W 11-1-82
" 1356 W 30-5-87
" 2172 W a/ 27-8-86
8 44 W a/ 7-1-87
45-42 C a/ 20-12-86.
83 C a/ 11-1-87
143 B a/ 23-5-87.

No. 1812 C
A

PUBLIC WORKS SECRETARIAT,
RAILWAY BRANCH.

2449
17

OFFICE NOTE.

Station Madras date 30th May 1887.

From R.

To W.

With reference to the remarks embodied in Proceedings of Government Nos 160, 161, Marine, dated 14th April 1887 under head "Negapatam Jetty" page 8 "Captain Taylor's proposal to extend this fore wall "along the Railway premises "seems a good one, but it is "understood the Railway "Authorities object to this"

The

The undersigned has the honour to invite attention to the Memorandum No. 262½ dated 3rd September 1885 to the address of the Chief Engineer P.W.D. from the Consulting Engineer for Railways. The Railway Company, so far as he is aware, do not in any way object to the extension of the wharf wall in front of their premises; but they do not consider that the pecuniary advantage they would gain, warrants their paying for it.

Lt. Col. R.E.

Jt. Secy. to Govt.

P.W.D. No. 7086

+561 E 9799/85

I think this may be regarded as one of the matters for which Railway Companies are liable to pay.

Yes
31.5.87

No. 1892 Day 3rd June 1887.

Recorded.

The remark quoted is from EW's note of Inspection. Proposed to send the file to EW.

FB.
31/5/87

EW.

1428 & 23-5-87

Jm
3/6/87

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following papers:—

From Lieutenant-Colonel J. PENNYCUICK, R.E., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, dated Tanjore, 7th May 1887, No. 247-T.J.

With reference to G.O., No. 2172 W., dated 27th August 1886, I have the honor to forward for your sanction two estimates, one amounting to Rs. 2,284 for filling in the boat basin at Negapatam, and another amounting to Rs. 2,800 for diverting the main town drain at Negapatam.

Two estimates with duplicate abstract estimates. One plan.

2. The Municipal Council have resolved that the main drain must be reformed in its original line straight through the basin. The Executive Engineer recommends a covered drain, as the open drain proposed by his predecessor would take up a great deal of space and cause an obstruction to traffic. In this opinion I concur, and the estimate therefore provides for a covered drain. The old outlet of the drain is to be filled up level with the road, as all available space is wanted here, and this space, moreover, if not filled up, will remain a standing nuisance, as it is freely used as a latrine.

3. The concrete blocks taken out from the boat basin are proposed to be used as a rough apron along the outer face of the basin.

No. 143-D.

Forwarded for the approval of Government in the Marine Department, with reference to order in that department, No. 425, dated 2nd August 1886.

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

23rd *May* 1887.

From T. E. MARSHALL, Esq., Acting Port Officer, Madras, to the Chief Secretary to Government, dated Madras, 14th June 1887, No. 5082.

With reference to the letter from the Superintending Engineer, VI Circle, No. 247 T.J., dated 7th ultimo, forwarding two estimates—one for filling in the boat basin at Negapatam, amounting to Rs. (2,284) two thousand two hundred and eighty-four, and the other for diverting the main town drain at that port for Rs. (2,800) two thousand and eight hundred—I have the honor to recommend the first for sanction, but as to the second, connected with the drainage, I would respectfully observe that it is a work belonging to the municipality.

2. In the proceedings of the Municipal Council, Negapatam, dated November 4th, 1885, it is recorded as follows: "The council resolve that Mr. Bruce be requested to confer with the Executive Engineer on the subject, and that an estimate be prepared for the cost of improving the foreshore, and submitted to Government, with a history of the whole case, for orders." The Government, in G.O., No. 425, Marine, dated 2nd August 1886, wherein the above is recorded, state that they trust "the diversion of the drainage from the quay will be carried out by the municipality at an early date." In the last inspection report of the Chief Engineer, Public Works Department, recorded in G.O., Nos. 160, 161, Marine, dated 14th April last, under the head of Jetty, Negapatam, it is mentioned that "an officer having been placed at the disposal of the Negapatam Municipality to draw up a scheme for water-supply and

drainage, it is hoped that his proposal will enable the vexed question of the discharge of the town drainage into the sea clear of the jetty may shortly be settled. At present, it must apparently all flow down the ramp used for landing cargo—a very objectionable arrangement."

3. Under the above circumstances, I beg to submit that the charge should be borne, and the work executed, by the Negapatam Municipality.

Petition from Messrs. ADAMSON, MACTAGGART AND Co., Agents, British India and Nederlands India Steam Companies, and other Merchants and Inhabitants of Negapatam, to the Chief Secretary to Government, dated Negapatam, 14th April 1887.

We have the honor to address you on the subject of improvements to the port of Negapatam, and to claim for the matter your most careful attention.

2. The value of exports and imports for the two official years ending 1886 have been as follows:—

	Rs.
Value of exports, 1884-85	48,36,207
Do. 1885-86	63,36,216
Value of imports, 1884-85	60,57,603
Do. 1885-86	48,04,072

while the passenger traffic from and to Burmah and the Straits Settements now assumes large proportions, there having been landed here during the two years ending 31st March 1886 over 40,000 passengers, while the shipments for the same period have amounted to over 53,000 souls.

3. The present state of the harbour and port is deplorable, the mouth of the river being silted up, and boats are only able to go out to steamers at high water, and even then with the greatest difficulty.

4. A dredger was placed here in July 1884, for the purpose, it is supposed, of keeping the entrance to the river, and the river itself, free from silt, to enable boats to proceed to steamers at all states of the tide, but we regret to state that the machine has never done a day's work, having from the first proved an utter failure, and after several unsuccessful attempts to make it work, it was laid aside some distance up the river, and there it has remained since.

5. In this useless and disgraceful state, we believe it has been costing Government Rs. 120 monthly for wages of men in charge.

6. Some eight months ago, Government sent an expert on dredgers (Mr. Cockburn) to submit plans and specifications for putting the dredger in working order, but although these have now been before Government for six months, nothing has been done to remedy the evil.

7. In 1883 the river wall was lengthened and a large boat basin for loading boats built opposite the Master Attendant's office at an expense of over Rs. 20,000, but the boat basin, like the dredger, turned out a miserable failure, proving utterly incapable of fulfilling the wants it was intended to supply, and now, it is sad to state, the work is rapidly breaking up and the whole going to wreck and ruin.

8. The expense connected with the dredger and boat basin has been a shameful waste of public funds, and although Government, no doubt, intended good results, the above facts clearly show that, in place of having our trade and port improved, the opposite has been the case, and we are now at the moment in a far worse condition and plight than we were previous to the building of the boat basin and lengthening of the river wall.

9. About a year ago, orders were given to the Executive Engineer to have the boat basin filled up, but this has not yet been done, although we understand several estimates at different times have been submitted to Government.

10. There is no getting over the fact that matters connected with this port have for years been mismanaged and neglected by those whose duty it has been to look after them, and if Negapatam is to hold its own as the principal port in Southern India

2449/19

—which we doubt not it can do if properly attended to and its wants supplied by Government—the present pitiable state of affairs must be looked into, and ways and means provided to get us over our difficulties. The extra expense caused to shippers is enormous.

11. We have now, over and above our regular weekly steamers to Bombay and Calcutta, a regular weekly line to Rangoon *via* Northern ports, and a weekly line to the Straits Settlements, and there are many extra steamers calling which are not on the regular lines. The native craft plying between here and Ceylon are innumerable.

12. We hopefully look forward to Negapatam (already a terminus of the South Indian Railway) becoming in the near future a place of first importance, and with the opening of the new railway traversing the rich and fertile rice country from Máyavaram to Tiruvalúr, and thence on to Mutupet, our exports will largely increase.

13. With a view, then, to provide satisfactorily for the wants of the already large and steadily-increasing traffic of the port, we would respectfully submit—

(1) That the dredger be at once put in thorough working order, or a new one supplied, which would be a far better course, and be kept continually working, so as to keep the bar at all times clear, and a proper depth of water in the river.

(2) That a *young*, *competent*, *energetic* person be placed in charge.

(3) That in the meantime till the old dredger is repaired, or a new one supplied, large gangs of coolies be employed to remove the silt from the river and bar.

(4) That the boat basin not being required, or a thing desired by the shippers, be filled up, and that the work be immediately proceeded with. Coolies could be employed for this purpose when low water in the river, using mamooties and baskets to remove the silt, which could be utilised for filling up the basin.

(5) That after the boat basin has been filled up, the space be handed over to the municipality.

(6) That the town drain, which formerly ran through where the basin now is, be restored to its original straight course into the river, and covered over throughout.

(7) That the present quay wall, which is fast getting into disrepair, be put in thorough condition at once, and the wall extended right up to the railway boundary. This is of the utmost importance for the loading and discharging of boats.

(8) That Government instruct the Public Works Department to remove the rubbish and broken-down remains of an old building near the boat basin. The rubbish could be utilised for filling up the basin, and the ground, which is no use to Government, might be handed over to the municipality.

(9) With the boat basin filled in and the ground handed over to the municipality as suggested above, improvements could be made in the way of erecting substantial sheds for the storing of grain, and for having the railway extended right down to the end of the jetty wall.

(10) That the whole sum at the credit of the Port Fund be expended on permanent improvements to the harbour.

From T. E. MARSHALL, Esq., Acting Port Officer, Madras, to the Chief Secretary to Government, dated Madras, 16th June 1887, No. 5217.

In returning the accompanying petition from the inhabitants of Negapatam, forwarded for report under endorsement, dated 14th May 1887, I have the honor to submit the following remarks and explanations.

2. In paragraph 5 of their complaint the petitioners deplore the present state of the harbour and port. By harbour I presume the river is meant, and I can only state that neither the Port Officer, nor the Chief Engineer, Public Works Department, make any remarks regarding the bar of the river, or the difficulty attendant on boat traffic to and from the shipping, in their last tour reports.

3. In regard to paragraphs 5, 6 and 7, I would state that estimates have been submitted to Government for the alteration and fittings of the Bruce's Patent Dredger at Negapatam with this office letter, No. 4744, dated 1st instant.

4. In regard to the petitioners' remarks about the boat basin, which is referred to in the Port Officer's tour report, I may state that an estimate for the work was called for some time back, and the same has been submitted to Government for sanction, with this office letter, No. 5082, dated 14th instant.

5. The petitioners conclude with several suggestions for the improvement of the port and river. The Collector of Tanjore will doubtless report on all these suggestions, but in that numbered 7, it is stated that the present quay wall should be put into good condition and extended right up to the railway boundary, in regard to which I would explain that an estimate for the repair of the jetty or quay wall, but not for its extension, has been submitted to Government, with this office letter, No. 4786, dated 2nd instant.

6. In suggestion numbered 8 reference is made to an old building to be demolished, and the debris utilised for filling up the boat basin. This I presume is the building referred to in G.O., Marine, No. 128, dated 24th March 1887, and, if so, I see no reason why it should not be demolished as suggested, sanction for the same having been accorded by Government.

From E. GIBSON, Esq., Acting Collector of Tanjore, to the Chief Secretary to Government, dated Vallam, 16th June 1887, No. 324.

In returning the enclosed petition, No. 318 of 1887, dated 14th May, I have the honor to report that, from inquiries made, it appears the petitioners have good reason to complain of the present state of the port of Negapatam, and that the suggestions which they make for its improvement are generally worthy of consideration.

2. The petitioners' proposals relate to the improvement of the harbour itself and of the railway communication with it.

3. Those relating to the harbour are—

(*a*) That the dredger be put into working order and a competent person put in charge thereof.

(*b*) That the boat basin having proved a failure, be filled up.

(*c*) That the building site thus created be handed over to the municipality.

(*d*) That the quay wall be repaired and extended to the railway boundary.

4. As regards (*a*) the improvements required to the dredger, it appears that the matter is before Government, I presume, in the Marine Department. The dredger, when repaired, might be entrusted to the care of the Port Officer. Meanwhile, as the monsoon is coming on, it is not now necessary to employ manual labor to clear the boat channel. The filling up of the basin (*b*) was sanctioned by Government in G.O., dated 2nd August 1886, No. 425, Marine. Nothing whatever would be gained by (*c*) transferring the site to the municipality, but (*d*) the extension of the quay wall seems to be a desirable improvement.

5. That the extension of the line of rail to the end of the jetty wall would be a great advantage requires no proof. I venture to suggest that the matter be referred for the opinion of the Consulting Engineer for Railways.

6. The alteration in the course of the town drain is a subsidiary matter, and the adoption of the suggestions of the memorialists must depend upon the filling up of the basin which was commended to the attention of the municipal council in the Government order mentioned above.

7. The request contained in the final sentence of the petition I leave for the consideration of Government. The port of Negapatam is an important one, its present condition is not satisfactory and improvement is called for. I would suggest that a competent officer should be instructed to visit the place and report generally what improvements are needed.

8. I enclose letters from the Head Assistant Collector and the Port Officer.

2449
30

Order—dated 1st August 1887, No. 350, Marine.

The first of the papers read above contains a petition from the Agents of certain Steamer Companies and other inhabitants of Negapatam complaining of the present condition of that port, and making certain suggestions for its improvement.

2. The petitioners propose—

(*a*) That the dredger be put in thorough working order (or a new one supplied) and placed in charge of a competent officer.

(*b*) That pending the repair of the dredger, or supply of a new one, coolies be employed to remove the silt from the river and bar.

(*c*) That the boat basin be filled up, and the site thus obtained made over to the municipality.

(*d*) That the town drain be restored to its original straight course to the river.

(*e*) That the quay wall be repaired and extended to the Railway boundary.

(*f*) That the remains of the old building near the boat basin be removed and utilized in filling up the basin.

(*g*) That the whole sum at the credit of the Negapatam Port Fund be expended on permanent improvements to the port.

(*h*) The memorialists finally remark that with the boat basin filled in and the land made over to the municipality, further improvements could be made by erecting sheds for grain, and extending the Railway to the end of the jetty wall.

3. These proposals having, together with the observations made thereon by the Collector of Tanjore and the Port Officer, Madras, been carefully considered by His Excellency the Governor in Council, will now be dealt with *seriatim*.

(*a*) *Dredger.*—(1) The memorialists will be informed that the Port Officer, Madras, is in communication with Mr. Cockburn regarding the repair of the dredger, and that the delay they complain of is due to a change of plan by the latter officer and to his absence on other duty at Cocanada. The final plans and estimates have now, however, been received from the Port Officer, Madras, and will be separately disposed of without delay. The Port Officer will report the amount of expenditure on establishment and other charges connected with the dredger during the time that it has been laid up.

The Port Officer, Negapatam, will have charge of the dredger after its repair.

(*b*) *Removal of Silt from the Bar and River.*—The Government agree with the Collector that now that monsoon weather has set in the employment of coolies for this purpose would not be desirable. But if the dredger, after its repair, should again fail, cooly labor paid from Port funds should be regularly employed every hot weather.

(*c*) *and* (*d*). *Boat Basin and Town Drain.*—The estimate (amounting to Rs. 2,284) for filling in the boat basin submitted by the Public Works Department is sanctioned, the cost being met from Port funds. The work should be carried out in concert with the municipal authorities who propose to build a covered drain right through the site of the basin.* The Public Works Department estimate for the drain will be forwarded to the Chairman of the Municipal Council.

* Superintending Engineer's letter, 7th May 1887, No. 247-T. J.

4. The Government are not prepared to make over the basin site to the municipality.

(*e*) *Repair and Extension of the Quay Wall.*—The Government have recently sanctioned † two estimates from Port funds for repairs to the jetty and jetty wall. The question of the prolongation of the wall to the Railway boundary will be referred for the opinion of the Consulting Engineer for Railways, who will also report as to the extension of the Railway proposed by the memorialists [paragraph 2 (*h*) above] and recommended by the Collector.

† G.O., 2nd March 1887, Mis. No. 87.
" 16th June " " " 256.

(*f*) *Removal of an old Building near the Boat Basin.*—Orders * have already been issued in the Public Works Department for the demolition of a store-shed near the basin which appears to be the building referred to. The petitioners' request, that the materials should be utilized in filling up the basin, will be referred to the Public Works Department for consideration.

* Dated 15th March 1887, No. 810 W.

(*g*) *Appropriation of the sum to the credit of Negapatam Port Funds for permanent improvements to the Port.*—The memorialists will be requested to explain what they mean by "permanent improvements," and what improvements of this nature they consider practicable. The Government admit that the present state of the port is most unsatisfactory, and that the complaints of the memorialists in this respect are fully justified. Unfortunately the measures attempted for its improvement, such as the construction of the boat basin, have been found productive of more harm than good, and the Government doubt whether, beyond affording additional facilities for the loading and unloading of boats, any real improvement can be effected except at prohibitive expense. But it is observed that on the 31st March 1886 the Negapatam Port fund had a balance of Rs. 72,000 to its credit, and after deducting a sufficient reserve to meet ordinary contingencies and working expenses, this sum ought to be sufficient to provide the improved accommodation for boats above referred to, as well as any other minor repairs that the port requires. The Port Officer will, without further delay, submit, after consultation with the Executive Engineer and the Municipal Council, a full and complete scheme for effecting such improvements to the port as may be practicable, and unless these are shown to be beyond the resources of the Port fund, there need be no question of introducing Act III of 1885.

(True Extract.)

W. R. Nelson

Ag. Chief Secretary.

To the Memorialists.
" Collector of Tanjore.
" Port Officer, Madras.
" Public Works Department, with plan and estimate.
" Local and Municipal Department, with an estimate.
" Accountant-General.
" Revenue Department.

Lxd. T. O'Connor

2449
21

No 1699 W d/24.6.87.
" 2354 W d/9.9.87
" 810 W d/15.3.87
" 189 D d/3.6.87
" 1761 C d/23.6.87
" 1452 D d/22.5.87
" 83 C d/11.6.87
" 4542 C d/20.9.86
" 44 W d/7.1.87
" 2172 W d/27.8.86
" 3247 W d/8.12.86.
" 10 of 1886 d/29.12.86 Desp. to Govt.
" 1439 W d/9.6.84.
" 2067 W d/30.7.83.
" 754 W d/25.10.82
" 85 W d/11.1.82
" 1358 W d/30.5.79.

Govt. of {1887} Madras.

MARINE.

Issued

Read. 18-8-87 Encl. 74 (+1 Map)

G.O., 1st August 1887, No. 350.

AUGUST.

Negapatam Port.

Passing orders on petition from Agents of certain Steamer Companies and other inhabitants of Negapatam suggesting certain improvements to the port.

8-2-87 R. 129-87

B & R
Civil Works

PUBLIC WORKS DEPARTMENT.

1149
22

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the Engr Engineer for Railways (No. No. 1812 C/A of May 30, 1887)
Proceedings, Marine Dept (" " 350 of Augt 1, 1887)

Communicated to
the Superintending Engineer
VI Circle.

2. The sanction accorded in the Marine Department (para 3 (c)) to the estimate of Rupees 2,284, for filling in the boat basin has been registered as Local No. 246 of 1887-88. Funds for the work were provided in G.O. No. 1699 dated 24th June 1887, Public Works, and No. 917 dated

* G.O. No. 2351, W d/2nd Sept. 1887

it has been approved by the Chief Engineer and the Port officer in the notes recorded in G.O. dated 14th April 1887, No. 160 Marine, it may be carried out without reference to the Railway authorities. It is observed that the estimate for filling in the boat basin provides for revetting the jetty wall and Causeway as Bank to a length of 376 feet, but it is not understood whether this revetment is intended to take the place of a jetty wall.

5. The proposals of the memorialists that the Railway should be extended to the end of the jetty wall, will be referred to the Consulting Engineer for consideration and report.

6. The attention of the Superintending Engineer will be drawn to the suggestion that the materials of the old store shed, the demolition of which was sanctioned in G.O. No. 810 W dated 15th March 1887, should be utilized in filling up the boat basin.

To,
The S.E. VI Circle
with 2 endorsements.
" C.E. for Railways
" Marine Deptt
" Examiner P.W. Accts.

4086.

Govt. of [1887] Madras.

PUBLIC WORKS.

Dated 13/11/87

Rd. Encl.

G.O., 12/9/ 1887. No. 2449 W

Negapatam Port

Orders on proceedings of the Marine Department, passing orders on petition from Agents of certain Steamer Companies and others inhabitants of Negapatam suggesting certain improvements to the port.

80
80
7