

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	<i>1750</i>	Press
B.P. No.		Mis.
Dated	<i>24-6-</i>	<i>1874</i> 195

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
24th June 1874.*

Read the following papers :—

No. 520. From Captain JOHN PENNYCUICK, R.E., District Engineer, North Arcot, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Vellore, 29th September 1873, No. 2,094.

I HAVE the honour to forward a revised estimate, amounting to Rupees 17,900, with abstract, comparative statement, plans and sections, for re-opening the supply-channel from the Seear River to the Seesamungalum Tank, in the Wandewash Taluq.

- 1 Detailed Estimate.
- 1 Abstract do.
- 1 Comparative Statement.
- 4 Plans.

2. The original estimate amounted to Rupees 9,900, which was afterwards increased to Rupees 10,375 by an addition to the amount to be paid as compensation for land, and the latter sum was sanctioned in G. O., No. 313, of 21st February 1872.

3. When the work came to be carried out it was found that there were some errors in the levels on which the estimate was based, and that the work to be done was much greater than that allowed for.

4. The error appears to have been first detected by Mr. Supervisor Stephens early in this year, and on my first visit to Arnee in April last, the Range Officer, who had in the meantime checked the levels himself, brought it to my notice. I went over the ground with Lieutenant Bevan and asked him to prepare a revised estimate.

5. The revised estimate reached me in June, but it was so much higher than I expected that I did not care to forward it until I had been over the ground again, which I did towards the end of June, and found that some of the cross sections had been taken on an erroneous principle, and that all the levels would have to be taken over again.

6. The revised estimate prepared in accordance with the instructions that I then gave reached me a few days ago, and is now forwarded.

7. That there was some error in the original levels was evident from the first, but there was great difficulty in ascertaining its extent, or how it had arisen, owing to the fact that excavation had been begun over nearly the whole length of the channel, so that the original ground was either cut away, or more or less covered with spoil.

8. Only two permanent bench-marks were kept, and the fact that there was something wrong was sufficiently proved by the fact that the difference between the bench-marks by the original levels was — 0.94, while by those taken later it was $\times 1.82$.

9. It appeared to me probable that the cross sections were likely to be accurate in themselves, that is to say that the relative levels of the points in each cross section were not likely to be materially wrong, inasmuch as an error in a cross section where the ground was tolerably uniform would not be likely to pass unnoticed when the sections were being plotted, and that such errors as existed were likely to be in the longitudinal section.

10. With a view of ascertaining as nearly as possible the actual circumstances of the original ground, the following instructions were given:—

"PARAGRAPH 7.—It is presumed that the points at which the cross sections were taken are known, if not the distances must be carefully measured from the head of the channel, the bench-mark above mentioned being taken as the standard for the levels only.

"8. In order to compare as nearly as possible the levels now to be taken with the original ones, a point should be taken on each side of the channel at each cross section (as near to the centre as the excavation will allow), and the levels of these points compared with those of the corresponding points, not with that of the centre of the channel, on the original section. The mean of the difference for these two points will then be taken as the difference for the whole of that section. It is not necessary that the two points should be at equal distances from the centre of the channel, only that both should be as near it as possible, and that the distances should be some multiple of 5, that being the distance between Major Hasted's reading.

"9. For example, in cross section No. 9, suppose the points taken are 30 feet to the left of the centre line, and 35 feet to the right, and that the levels are found to be 28.62 and 29.81 respectively, those of the two corresponding points of the original section being 25.90 and 26.95. The difference will be 2.72 and 2.86; the mean of these, or 2.79, may be taken as the error for the whole section; the level of the centre will be $2.79 + 23.70 = 26.49$, and so on for the other readings.

"10. The points to be read at each cross section should be carefully selected so as to ensure that the levels taken are those of the natural ground and not of accidental heaps of earth. All the points should be selected and marked by pegs before any levels are taken, and, in order to insure accuracy, the pegs should be driven up to the head in the ground, and the levelling staff rested on them. A second peg standing out of the ground may be driven at each point to indicate the spot.

"11. The levels should be taken *independently* by two people with *different instruments*, and they should not be allowed to compare their field books, but forward them directly after the completion of each day's work to the Range Officer. Any discrepancy exceeding 10 feet should be taken as indicating an error requiring correction.

"12. The cross sections should be plotted according to the revised levels, and, under each section, should be noted the difference from the original levels; the section of the channel should also be put in."

11. The bench-mark nearest the river was to be taken as the starting point, the datum line being taken at 27.92 below this point as in the original levels. (The sill of the head sluice as estimated was to be 17.09 above the datum, and this is the level at which it has actually been built.)

12. Lieutenant Bevan reports that the instructions given above were fully carried out, and the levels taken by two Overseers and checked by himself.

13. They have now been taken by Mr. Stephens, by two Overseers, and by Lieutenant Bevan himself. They were also checked by another Overseer, but Lieutenant Bevan states that this was done in so perfunctory a manner that he does not attach any importance thereto. There is no material difference between any of the observations.

14. The levels as now given cannot of course be considered as exact, as it is impossible to find exactly the points at which the original cross sections were taken, but they are not likely to be wrong to any great extent, and at all events they are as accurate as we can get them now.

15. An examination of the sections will show that, according to the original levels, the second bench-mark was .94 below the one nearest the river, but it now appears to be 1.82 above it, showing an error of 2.74 feet between these two points.

16. This error appears to be nearly constant throughout the sections, except at cross sections 3, 4, 5, 7, 9, 18 and 19.

17. It seems probable, therefore, that there was an error in one of the earlier readings of the original line of levels, which has been continued throughout.

18. The discrepancies in Sections 4, 5, 9, 18 and 19 may be accounted for by a slight error in the position assumed for the centre line, but I find it difficult to account for the peculiar discrepancies in sections 3 and 7, except on the ground of other mistakes in the original levels, as the ground here has but a slight slope either in longitudinal or cross sections.

19. On this point, however, I do not think we can get any further certainty, and I believe the levels now taken give the truth as nearly as it is now possible to ascertain it.

20. I enclose a copy of the original longitudinal and cross sections. In comparing the longitudinal sections it must be noticed that the revised section is taken on the centre line of the channel, which the original one is not.*

* Also that cross section No. 1 on the revised levels corresponds to No. 2 on the original.

21. The original and revised levels above datum of the natural ground on the centre line of the channel at the different cross sections are marked on the longitudinal section for comparison.

22. The original estimates were prepared by Major Hasted, and most of the calculations appear to have been made by himself, but there is nothing to show by whom the levels were taken.

23. With a view of lessening the cuttings as much as possible, the bottom width of the channel has been reduced from 10 to 8 feet.

24. You will see that not only are the quantities much increased, but provision has had to be made for increased rates for hard "morumboo," gravel and rock.

25. This is in great part due to increased depth of cutting, but with the original depths some increase would have been required on this account, as the original estimate provided only for ordinary earthwork, whereas in the line a good deal of rock and gravel are met with.

26. I have been very carefully over the ground, and am of opinion that the rates allowed are not at all too high.

27. The alterations in the channel account for Rupees 6,425 out of the Rupees 7,525, by which the estimate is increased.

28. Provision is made for a (so-called) syphon sluice for carrying the water of Poppambaddy spring channel, which crosses the new channel close to the river bank. This is a manifest necessity, and it is not clear why it was omitted in the original estimate. The cost of this addition is Rupees 300.

29. The two aqueducts allowed in the original estimate cannot, from their position, command the whole of the lands under the Moyampoondy tank, and a third has been added at a cost of Rupees 330; provision has also been made for a bridge and aqueduct combined, costing Rupees 450, to afford means of crossing the channel to the village of Moyampoondy. This bridge is unquestionably

wanted, as there is no other means of crossing the channel, which entirely cuts off the village from the ground between it and the river.

30. Some slight alterations have been made in the designs of the two aqueducts originally allowed, to meet the alteration in the levels.

31. An increase of revenue, amounting to Rupees 1,187, was anticipated by Major Hasted, and in G. O., No. 2,374 of 1st October 1870, this estimate was accepted as within the mark, and there is no reason to suppose that it is other-
wise than very moderate; indeed, Lieutenant Bevan, who knows the locality better than any one, believes it will be considerably exceeded.

32. This sum would be only about 6½ per cent. on the present estimate of Rupees 17,900, but as Rupees 5,898 had been spent before the end of last year, which would be entirely wasted if the channel were not carried out, it would be bad economy not to finish it; I have not therefore ordered the excavation to be stopped.

No. 521. From the same Officer, dated Vellore, 19th February 1874, No. 3,440.

I give the honour to forward herewith the revised plans and estimates for the re-opening of the Seesamungalum channel, the designs of the masonry works having been altered as directed in your memorandum No. 742-II, of 2nd October last.

3 Plans.
1 Section.
1 Plan.
1 Detailed Estimate.
1 Abstract do.
1 Comparative Statement.
2 other old estimates received with No. 120, dated 26th January 1874, from the Chief Engineer for Irrigation.

2. The total estimate as now forwarded amounts to Rupees 19,440, instead of Rupees 17,900 as forwarded with my letter No. 2,094 of 25th September last.

3. Of this increase Rupees 770 is due to the alterations in the designs of masonry works; a further increase of Rupees 620 has been caused by an addition to the item of compensation for land, the decree of the District Court fixing the sum to be awarded on this account having been received since the former estimate was submitted. A slight increase has also been made to the rate allowed for blasting rock, it having been found that the work cannot be done for the amount previously allowed.

4. The spans of the aqueducts having been made equal to the greatest surface width of the channel, there will be no economy in making them less.

5. I should mention that the plans of these works sent up with my former letter above referred to were merely the original sanctioned plans slightly modified with reference to the increased depths of the cutting.

No. 522. *Note by the Chief Engineer for Irrigation.*

With his letter No. 2,094 of the 29th September 1873, the District Engineer, North Arcot, transmitted a revised estimate, amounting to Rupees 17,900, for re-opening the supply channel from the Secar to the Seesamungalum and other tanks in the Wandewash Taluq. This project was originally sanctioned in G. O., No. 2,374, of the 1st October 1870, the estimate being Rupees 9,900, and to this

Rupees 475 were added on account of land compensation, and sanctioned in G. O., 1st February 1872, No. 313.

2. In forwarding this revised estimate, it was explained that the principal item of increase was on earthworks. Cubic yards 73,237 were allowed in the original estimate, and cubic yards 92,250 in the revision, the difference being due to errors in the levels, which difference would have been still greater had not the bottom

Paragraph 23 of No. 2,094.

width of the channel been reduced from 10 to 8 feet, a change, it may be remarked, which should not have been introduced without due authority, as it affects materially the quantity of water carried, while the saving in quantity of excavation is but small. In the next place some hard soil was met with at the depth of excavation originally intended, while the increased depth appears to have been principally in such material. The original rates were 2 Annas and 1 Anna the cubic yard, the quantities at each rate being very nearly equal, and in carrying out the work quantities slightly in excess have been executed at these rates, while of the further excavation, to the extent of 19,000 cubic yards found necessary, 13,409 cubic yards have cost 3 Annas a cubic yard while the rates for the remainder range from 4 Annas to 1½ Rupees. Of the difference between the two estimates Rupees 6,425 are due to these earthworks.

3. The District Engineer reported that the original estimates were prepared by Major Hasted, and that most of the calculations appeared to have been made by himself, but that there was nothing to show by whom the levels were taken.

* No 742-2 D, 23rd Oct. 1873.
† „ 85, 17th Nov. „

A reference* was accordingly made to this latter officer, who had been transferred to the Kistna, and who replied† that he could not call to mind by whom the levels had been taken or checked, but that it was his impression that this work had been done and an estimate prepared before he took charge of the Range, and that he had only revised the estimate.

4. Captain Pennycuik has described fully the measures taken to obtain correct levels, and they were such as to leave no room for doubt that the original levels were very materially incorrect. As has too often been found to be the case, comparatively little time and trouble taken in doing such work well and thoroughly in the first instance would have saved a very great deal of trouble in the end, and probably much money besides, and I am of opinion that an officer of Major Hasted's experience should have been much more particular in examining into the value of the data on which his estimate was based. It has been noticed that most District Offices contain many surveys and levels which are useless, because the plans have not been properly completed, dated, and signed, and frequently the locality to which they refer is absolutely undiscoverable. Attention has been called to the subject, and circular instructions have been issued requiring the names of those who take and check levels to be noted on the plans, and the survey and level books to be duly recorded, while the necessity for a much more extended use of permanent bench-marks than was formerly customary has been frequently explained. It must be remarked, however, that the importance of working only

No. 2,094, paragraphs 8 to 20.

*Proceedings of the Madras Government, Public Works Department,
24th June 1874.*

The levels were not taken out very many years ago, and there is really no reason for not taking them now.

The plans of the masonry works belonging to this project were found to require modification, and they were returned* for this purpose to the District Engineer. The estimate as finally revised amounts to Rupees 19,440, and the amount of Rupees 2,000 requiring sanction is thus made up—

	Rs.
1. Excavation	6,575
2. Masonry works	620
3. Road works	200
4. Bridge works	480
5. Aqueduct	130
6. The 1st & 2nd cross walls	410
7. The 3rd & 4th cross walls	40
8. The 5th & 6th cross walls	610
	9,505

The increase in the cost of the channel is due to the amount having been determined at the time now provided by the District Engineer. Items 1, 2, and 3 are for additional masonry works, the necessity for which is stated in paragraph 23 and 24 of the District Engineer's No. 2,094, and the increase is the result of a revision of the designs of the masonry works to suit the positions they are to occupy. Some of the designs even now are not so good as they might be, the thickness of the wings of the aqueducts being too small, and very great care will be necessary in filling in and consolidating the earth around them in order to secure equal pressures on the two sides with equal depths of earth, if this be done they will stand. The instructions given in paragraph 4 of this order memorandum No. 7124H, to mark on the plans the proper level of the aqueduct abutments have not been fully attended to. In each case the level of the bed of the irrigation channel should have been shown on the cross section of the main channel, and the corresponding level, as also that of the bed of the branch channel, should have been shown on the plan, only by so doing can mistakes be avoided.

When the project was first submitted the returns were estimated at from 14 to 16 per cent, the increased cost of the channel will reduce these to 6 or 7 per cent. It will be desirable that all that may be necessary should be done to secure the completion of irrigation anticipated, so that some return for the large outlay may be obtained.

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

24th June 1874.

Order numbers, 24th June 1874, No. 1,700.

The revised estimate, amounting to Rupees 19,440, for the Seesamungalam channel is, the Government observe,

*Proceedings of the Madras Government, Public Works Department,
24th June 1874.*

very nearly double that sanctioned in October 1870, and the explanations submitted, while accounting for this large difference, show that, in the first instance, the estimate was based on altogether inaccurate levels, and that as a result the excavation of the channel alone has cost Rupees 6,575 more than was originally considered necessary.

2. The Government cannot rightly determine whether projects shall be sanctioned or not if such entirely incorrect estimates of cost be, as in this case, submitted; and they concur with the Chief Engineer for Irrigation in considering that much of the responsibility for framing an estimate on incorrect levels rests with Major Hasted, who appears not to have exercised that caution which was clearly necessary, seeing that the original longitudinal section did not show by whom the levels had been taken, or what had been done to ensure their accuracy. Had the levels in the first instance been correctly taken, it is probable that a more suitable off-take for the head of the channel would have been selected, and a considerable part of the expense now incurred might have been avoided.

3. The attention of the District Engineer will be called to the remarks on the masonry works contained in paragraph 5 of the Note of the Chief Engineer for Irrigation, and he will take care that these works are so constructed as to be perfectly stable and efficient.

4. With these remarks the revised estimate is sanctioned, and the probable date of the completion of the work, of which more than half was expected to be finished by the end of the last official year, should be reported to the Collector in order that arrangements may be made for the early irrigation of the additional lands which are to be supplied.

(True Extract.)

(Signed) J. MULLINS, Lieut.-Colonel, R.E.,
Joint Secretary to Government.

To the Chief Engineer for Irrigation.

" District Engineer, North Arcot.

To Major J. O. Hasted, R.E.

To the Officiating Controller of Public Works Accounts.

" *James Hasted*

Exd. S. T. Austin.

Spare Copies

RECEIVED, No. 43

29
Note by the Chief Engineer for Irrigation

With his letter, no. 2094 of the 29th September 1873, the Lt. Engineer North West transmitted a revised estimate amounting to Rs. 17,900 for reopening the supply channel from the bear to the Screamanga-lum, and other tanks in the Pantonchikla. This project was originally sanctioned in G. O. no. 2372 of the 1st October 1870, the estimate being Rs. 9,900, and to this Rs. 4,750 were added on account of land compensation and sanctioned in G. O. 1st Febry. 1872 No. 313.

2. In forwarding this revised estimate it was explained that the principal item of increase was on earthwork. Cubic yds. 73,237 were allowed in the original estimate and Cubic yds. 92,250 in the revision, the difference being due to errors in the levels which ^{difference} would have been still greater had

had not the bottom width of the channel been reduced from 12 to 8 feet, a change, however, it may be remarked, which should not have been introduced without due authority, as it affects materially the quantity of water carried, while the saving in quantity of excavation is but small. In the wet floor some hard soil was met with at the depth of excavation originally intended, while the increased depth appears to have been principally in such material. The original rates were 2 annas and 1 anna the cubic yard, the quantities at each rate being very nearly equal and in carrying out the work quantities slightly in excess have been entered at these rates, while of the further excavation to the extent of 19,000 Cuds. found necessary

13409 Cuds. have cost 3 annas a cubic yard while the rates for the remainder range from 4 annas to 1/4 Rs. Of the difference between the two estimates Rs 425 are due to these earthen works.

N: 2094 para 22.

3. The Lt Engineer reported that the original estimates were prepared by Major Hasted and that most of the calculations appeared to have been made by himself, but that there was nothing to show by whom the levels were taken. A reference was accordingly made to this latter officer, who had been transferred to the District, and who replied that he could not call to mind by whom the levels had been taken or checked, but that it was his impression that this work had been done and an estimate prepared before he took charge of the Range, and that he had only revised the estimate.

* N: 2422 23 Oct 73.

@ No. 85-17. 10/2/73

4. Capt. Punjnick has described fully the measures taken to obtain correct levels, and they were such as to leave no room for doubt that the original levels were very materially incorrect. He has too often been found to be the case, comparatively little attention is taken in doing such work well and thoroughly in the first instance would have saved a very great deal of trouble in the end, and probably much money besides, and I am of opinion that an officer of Major Hasted's experience should have been much more particular in examining into the value of the data on which his estimate was based. It has been noticed that most British officers contain many surveys and levels which are useless because the places have not been properly



properly completed, dated, and signed, and frequently the locality to which they refer is absolutely undiscernable. Attention has been called to the subject and circular instructions have been issued requiring the names of those who take and check levels to be noted on the plans, and the survey and level books to be duly recorded, while the necessity for a much more extended use of permanent brick marks than was formerly customary has been frequently explained. It must be remarked however that the importance of working only on checked levels was pointed out very many years ago, and there is really no valid excuse for neglecting to take this precaution.

5. The plans of the masonry works belonging to this project were found

to require modification, and they were returned for this purpose to the St. Engineer. The estimate as finally revised amounts to Ps. 19,440 and the difference of Ps. 9,065 requiring sanction is thus made up

- 1. Earth works - - - - - Ps. 6575.
- 2. Land compensation - - - - - 520
- 3. Head sluice - - - - - 250
- 4. Siphon sluice (extra work) - 480
- 5. Aqueduct - - - - - 130
- 6. — Do — N° 2. (extra work) - 410
- 7. — Do — N° 3. — - - - - 40
- 8. — Do — N° 4. (extra work) - 610
- 9065

a variation in the rates for removing rock has increased the cost of the channel cutting by 150 Pesos. The increase on the 2^d item for land compensation is due to the amount having been determined at the sum now provided by the St. Courts

N° 7424. 26 Feb. /73
+ St. Eng. no 3590.
19 Feb. /74

N° 3440 para 3

works. Items 4, 6 and 7 are for additional masonry works, the necessity for which is explained in paras 28 and 29 of the St. Eng. Insps. and the other items are the result of a revision of the designs of the masonry works to adapt them to the positions they are to occupy. Some of the designs even now are not as good as they might be, the thickness of the wings of the aqueduct being too small, and very great care will be necessary in filling in and consolidating the earthworks around them in order to secure equal pressures on the two sides with equal depths of earth: if this be done they will stand. The instructions given in para 4 of this office Memo: N° 7424 to mark on the plans the proper level of the aqueduct floors have not been fully attended to. In each case the level of the

the bed of the irrigation channel should have been shown on the cross section of the main channel, and the corresponding level, as also that of the bed of the latter should have been shown on the plans. Only by so doing can mistakes be rendered improbable.

b. When the project was first submitted the returns were estimated at from 12 to 14 per cent. The increased cost of the channel will reduce these to 6 or 7 per cent. It will be desirable that all that may be necessary should be done to secure the extension of irrigation anticipated, so that some return for the large outlay may be obtained.

Botacamaund
27th May 1874

Volundundius Lieut. Col. R.E.
Chief Engineer for Irrigation

To

The Secretary to Govt.
P.P.D.

Pub: Works 1874 Dept.
No: 3341.
From

The Chief Engr.
for Irrigation

Dated. 27 May 1874.
Received 4 June 1874.

Enclosure. 14.

Q. No: 1700. 24-6-74.

Note on the
revised estimate for
the repair of the
Sessamungalum Chan-
-nel in the North Arcot
District -

Op 522

DD

1787
Public Works Department.

MEMORANDUM

The return of the

OL No. 598. 19 Feb 74. 10 lines
R No. 1658. 29 Sept 73. 10 lines
D No. 742 D. 23 Oct 73. 10 lines
R No. 1982. 17 Nov 73. 10 lines
D No. 742 H. 24 Oct 73. 10 lines
R No. 120. 4 Feb 74. 10 lines

3 Enclosure put up with 36
R: 1200-12 May 74. 10 lines
- made in with 15 22/74
2 Sur of letter for to 11 10/74
7 2 July 74. 10 lines

Office of the Chief Engineer
for Irrigation.

11-7-1874

To

The Registrar of the

Proceedings of the Madras Government
Read the following

From the Dy. Commr. & Co. (P. B. & Co. 2094 dated
29th Feb 1873)
Do Do (P. B. & Co. 3140 dated
19th Feb 1873)
Do Chief Supr for Hyderabad (P. B. & Co. 3140 dated
19th Feb 1873)

The revised estimate
amounting to Rs 17,460
for the Secumungalam
Channel is, the Govern-
ment observe, very
nearly double that
sanctioned in October
1870, and the explana-
tions submitted, while
accounting for the large
difference, show that
in the first instance
the estimate was based
on altogether inaccurate
data.

W. P.

levels, and that as a result the excavation of the channel alone has cost Rs 6,575 more than was originally considered necessary.

2. The Government cannot rightly determine whether projects shall be sanctioned or not if such entirely incorrect estimates of cost be, as in this case, submitted; and they concur with the Chief Engineer for Irrigation in considering that much of the responsibility for framing an estimate on incorrect levels rests with Major Hasted, who appears not to have exercised

1576
exercised that caution which was clearly necessary, seeing that the original longitudinal general section did not show by whom the levels had been taken, or what had been done to ensure their accuracy. Had the levels in the first instance been correctly taken, it is probable that a more suitable off-take for the head of the Channel would have been selected, and a considerable part of the expense now incurred might have been avoided.

The

3- The attention of
the District Engineer
will be called to the
remarks on the ma-
-sawry works con-
-tained in para 5
of the note of the Chief
Engineer for Irrigation,
and he will take care
that these works are
so constructed as to
be perfectly stable
and efficient.

4- With these re-
-marks the revised
estimate is sanctioned,
and the probable date
of the completion of the
work, of which more
than half was expected
to be finished by the
end

end of the last official
year, should be re-
-ported to the Collector
in order that arrange-
-ments may be made
for the early irrigation
of the additional lands
which are to be supplied

By 29/7/74
G.M.

To the Chief Engineer for Survey
" D. E. South Street
" Major J. R. Hasted R.E.
" Controller with an Engr
" Revenue Dept
S. Copins Esq. 26.11.74

3341

GOVT. OF 1874 MADRAS.
PUBLIC WORKS.

The 6 Super Group

11.11.1941

Index

13.

Wm. H. Lawrence

1000

520-523.

Seesamungalum
Channel - The

Channel - The revised
Estimate for the repair
of the Channel in the
North Creek District,
sanctions of with remarks

520-523.

22/07/88