第3部　フィージビリティスタディに必要な調査項目及びスケジュール

3－1　今後必要な調査

ジャナム河架橋のフィージビリティを検討するに当って，今後技術的，経済的，財政的観点から，多くの調査を必要とする。本項では予備調査の結果から，今後必要になると思われる主な調査について，その概要を示す。

ジャムナ河に橋梁をかけるとき，河川工学的な立場から注目しなければならない問題は，橋長をどの程度にするかということ，護岸の法線および工法をいかにするかということ，河床の洗掘がどの程度であるかということ，および橋梁へのアプローチをいかなる形式にとるかということである。

ジャムナ河河岸の構成材料は先に述べた土質調査の結果にもみられるように一般には細砂で固結度が低く，流水によって容易に洗掘や浸食が生じやすい。例えばSirajganj 地点では，先に述べたように数日にして数百メートルの河岸浸食が生ずる状態である。

河床材料についても，河岸土質とほぼ同じで，その物理的性質は数十メートルの深さ程度では大差がないといえるようで，流水による洗掘も容易に起り得る状態にあるといえる。

河岸線についてみると，特に顕著な蛇行は認められず，ほぼ直線的に南下している。しかし，河巾についてみると一様な巾をもっているとは言えず，数カ所に狭さく部をもっている。河巾の大きな地区では，所々に砂州ができており，したがって，流量の小さい場合には一つの蛇行河川の様相を示している。この狭さく部の河岸線が長期にわたって安定しているならば，これらの狭さく部は有力な架橋予定地点であると言えよう。

長期にわたって，河状が安定であるかどうかということは，１８３０年以降の調査に基づき作成された河岸の変遷図が有力な資料となるであろう。

洪水時のジャムナ河の流況については，資料が乏しいためよくわからないが，洪水流は周辺に氾らんし，その水深は数メートルになることがあるといわれる。これは右岸堤防の築堤高からも推定できる。

こうしたジャムナ河の状況に対し，当初に述べた問題点を明らかにしていくためには，種々の調査，測量が必要となるであろう。

航空写真測量はジャムナ河の河状を大局的に眺めることを最大の目標とする。

ジャムナ河の河岸線の変遷についてはすでに多数の資料があるが，それらを検討するとともに，新しく航空写真を撮影する必要がある。この航空航真は単に現時点の河状を知る目的の他，過去のデーターの解析にも用いられよう。航空写真は全域にわたって撮影し，全域的な河状を見る場合にはモザイク写真を用い，架橋地点がある程度しぼられた段階で図化することが有効であろう。写真の撮影時期は乾季，および雨季の両時期のものが必要となる。

航空写真によって全域的な河状が判断されるが，一方では具体的な個々のサイトについての水理調査のためには河川の横断測量は必須の測量である。

すでにBangladesh 政府には水理・水文に関する資料を多数もっている。ジャムナ河についても，その流域内の水文資料はもちろん，数カ所の水位観測データー，流量についてはBahadu-

rabad Sirajganj の2地点のデーターがある。しかし，これらのデーターはジャムナ河の一般的な観測データーであり，架橋地点の水理学的な検討をするためには不十分である。とくに自然河川であるジャムナ河では，例えば，河岸にそって相当量の溢水流量があるものと思われることから，架橋可能地点で直接観測することが望まれる。

架橋可能地点として，先に述べた狭さく部が安定性をもっているとすれば，有力な地点であると考えられる。それらの地点としては下流側からAricha，Sirajganj，Gabalugaon，Bahadurabad の4地点が考えられる。ここで先の流量観測がなされているBahadurabadをSirajganjの2地点ではかならずしも，上で言った架橋可能地点と一致しないであろうから，この2地点も観測地点に追加しておくべきであろう。それは過去のデーターの活用を計るときに役立つであろう。

横断測量を行なう断面は，一つの架橋可能地点で最少１０ｋｍ程度は必要であることから，数断面の横断測量がなされなければならない。横断測量の実施巾は単に現状の河川巾にとどまらず両岸それぞれ５マイルは必要であろう。これは洪水時の流況を調査するためのものであり，したがって，すべての横断測量でこれだけの巾がとられる必要はないであろう。またこの巾は洪水期の航空写真の結果によって変更することがあろう。実施する時期は乾期と雨期の両時期の対比がなされるよう，実施されるべきである。

河川調査で実施しなければならないのは，水位，流量，流速等の水理調査，河川護岸調査，および河岸線の変遷調査の３つの項目である。

まず水理調査では，水位，流量，流速および浮遊砂に関する調査が実施されなければならない。これらの調査のうち，とくに洪水期の河川外（はんらん域）での水位，流速の測定が必要となる。これは橋長およびアプローチの形式選定，さらには，ひえつ橋の規模などをきめるために必要となるであろう。

河川護岸調査では，護岸の法線および工法の調査を行なう。ジャムナ河は全く自然河川であり，現在の所，とくに河岸線についてみると，人工的な構造物は全くない。したがって，架橋地点の上・下流に必要となるであろう導流堤の法線，工法には十分注意して計画をたてなければならないであろう。ガンジス河のHarding Bridgeでは，その導流堤の前面にPitched Stoneを入れた工法がとられている。しかし，現在でもなおPitched Stoneの沈下，散乱が生じ，年間数千万円の維持費が必要となっているようである。ジャムナ河でもSirajganj Town Protection 工事で，これに類した工法がとられているが，この工法についての十分な検討が必要となろう。すなわち，この調査では当面，これらの工法に対する維持管理面の考察と，もし可能であれば，考えられる工法の試験的な施工が含まれるであろう。

河川の形態学的な調査では主として河川線の変遷が調査されなければならない。これに関してはすでに述べたように１８３０年以降の資料に基づき作成された河岸線の変遷図があり，この調査には重要な役割をはたすものと考えられる。しかし，その精度については，かならずしも明確

ではなく，河岸線のとらえ方，経年的な対比の仕方などの面から検討する必要がある。そのために航空写真および河川の横断測量の成果が，活用されるものと思われる。以下，工学的観点から必要となる諸調査について詳しく触れることとする。

3－1－1 測量調査

1. 概　要

ジャムナ河架橋計画における測量調査の果す役割は，大別して次のとおりとなろう。

(1) ジャナム河沿岸地域の地形の概況を，空中写真，地図等によって明らかにすること。

(2) 雨期におけるジャムナ河の洪水状況と最大氾濫範囲を把握し，乾季と比較するため，空中写真を撮影し，かつ流路変遷図を作ること。

(3) 各種調査・計画に必要な基図を作成すること。

(4) 基準点測量を実施し，かつこれにもとづいて各種の細部測量を行なうこと。

ここで考えられる具体的な測量・調査の種類は次のとおりである。

(1) 空中写真の撮影および複製

(2) 略モザイク（写真用）の作成

(3) 空中写真判読および流路変遷図の作成

(4) 基準点測量と現地補測

(5) 大縮尺地形図の作成

(6) 河川横断測量

(7) 深浅測量

(8) アプローチ構造地点測量

以下，上記各種の測量・調査について，具体的内容と実施上の問題点にふれる。

2. 空中写真の撮影および複製

空中写真は，ジャムナ河沿岸地域全体の概況を知るため，乾季および雨期にわけ各1回，縮尺約3万分の1程度のものと，サイト決定後，大縮尺計画基図作成用として，縮尺約1万分1程度のもの，計3種が必要となろう。サイトの候補地が1カ所にしぼれなければ，それだけ空中写真の必要枚数は増加する。

縮尺約3万分1の空中写真について，想定される撮影面積は，ジャムナ河に沿って，雨季は南北250km，東西50km，乾季は南北250km，東西30km，計雨季に12,500km²，乾季に7,500km程度である。またサイト決定後の縮尺約1万分1空中写真では，1カ所について河川横断部分20km×20km＝400km²，アクセス部分40km×10km×2（両側）＝800km²，計1,200km²が適当であろう。

このうち乾季の3万分1については，各論において述べたように，東パキスタン時代に撮影されたものが利用できるであろう。ただし，フィルムネガの保存状態は必ずしも良好ではなく，

また一部のネガは独立戦争時に失なわれたものもあると考えられる。印画紙および写真処理用薬品類も用意する必要があろう。

雨季における洪水の最大範囲を把握するため，雨季の空中写真撮影が必要である。地上での聞取調査は，たとえ乾季に行なうとしても非能率的で期待される効果が薄い。ただ雨季の撮影には天候まちにかなりのロスタイムを見込まねばなるまい。

撮影用の飛行機およびカメラは，現在バングラデシュにはないから，バンコックまたはカルカッタで調達するか，場合によっては日本からの空輸を考えなければならないであろう。空港はダッカおよびイシュルディが使用できる。ヘリコプターの発着は，河の中州，畑，校庭等を利用すれば，場所にことかかない。外国の撮影権については未調査である。

3. 略モザイク（写真図）の作成

ジャムナ河沿岸地域における乾季および雨季の地表の状況を把握するためには，モザイクが必要である。

乾季については，既に撮影されている何年分かのフィルムを利用し，雨季については，新たに撮影するフィルムから作成する。コントロールモザイク（厳密集成写真）の必要はないであろう。

4. 空中写真判読および流路変遷図の作成

架橋サイトの決定上，空中写真の利用は不可決である。とくに，交通路の発達状況，地盤の高低，河川流路の変遷状況，河道の固定地点等の調査には，空中写真の判読によるのが能率的で，かつ精度の高い情報がえられる。大縮尺地形図は存在するが，修正維持が十分でなく，かつ図案によって程度が異なり，しばしば隣接図との不合が生じている。しかし，地形図は空中写真判読の鍵（キイ）を与え，かつ判読結果を整理するための基図として有用であるので，空中写真と併用することがのぞましい。

流路変遷図については既にWAPDA で作成されたものがあるので，これを空中写真で補足するとよいと思われる。

5. 基準点測量と現地補測

基準点測量は，後続する空中写真からの大縮尺地形図の作成，河川横断測量，深浅測量，アプローチ構造物地点側量のため必要である。後続の各測量は，架橋サイト決定のため行なうものと，サイト決定後に必要なものとに分けられるが，基準点測量はいずれにも必要であるので現時点で候補地に挙げられている4地区，すなわち，北からBahadurabod，Gabargaon，Sirajganj，Aricha 各地区にそれぞれ設置することが望ましい。

必要な基準点の種類としては，空中三角測量のための三角点または多角点，河川横断測量のための水準点，深浅測量のための水位標および電波測位機用の三角点または多角点，アプローチ構造物地点測量用の三角点および水準点などが挙げられる。これらは相互に兼用すれば経済的である。

既設の基準点（与点）として，まず三角点は，さいわいジャムナ河沿いに三角鎖が組まれているので好都合である。ただし，設置が約１００年前と古く，改測も行なわれていないこと，成果の値がヤード・ポンド法を用いていること，多くの毀損亡失点が予想されることなどの問題がある。視通は河川敷については森林を欠くため極めて良好であるが，内陸部は自然堤防上に立地する集落の周縁林によって阻害される。 Survey of Bangladesh 所有の高測標を利用することも考えられるが，むしろ与点における天測と電磁波測距儀によるトラバースとの併用が効率的であろう。

Survey of Bangladesh でえられた資料によれば，水準路線は４候補地のうちAricha付近を通過するのみで，これとても約５０年以前の敷設で改測されていない。他の３候補地は水準路線から５０～６０ km隔っている。しかし，ＷＡＰＤＡのFlood Controlにおける聞取りでは，ジャムナ河右岸に建設された堤防にはＢ．Ｍ．が設置されているとのことであり，また３候補地近くには鉄道が敷設されているので，未確認であるがこの方面からの水準資料が期待される。

問題はジャムナ河を挟んで両岸に水準点を設置することである。とくに左岸において都合のよい与点がえられる可能性が少い。水準点の設置には，次の３種類の方法が考えられる。①既設点から必要な距離だけ水準測量を行なう方法。この場合片道だけでも数百 kmに及ぶ路線延長が必要となろう。②与点がえられる可能性の高い右岸側をもとに，渡河水準測量を行なう方法。この場合視通は良好であるが，高精度の成果を得るには，同時観測を多数回反復するわずらわしさがある。③ジャムナ河の緩やかな流れを一つの静水面と見なして，両岸で水位観測を行ない比高を求める方法。この場合理論的な検討が必要であり，かつ架橋の実用精度との関連がある。水位観測は河川工学的にも必要であるので，兼用できれば経済的である。

現地補測は，空中写真の判読および大縮尺地形図の図化に際して不可欠である。架橋候補地およびアプローチ周辺を重点的に実施する必要がある。この場合，幹線道路以外は四輪車の進入が困難であるから，単車の利用が考えられる。

6. 大縮尺地形図の作成

架橋サイトが決定したら，細部計画の基図として大縮尺地形図を作成する必要がある。縮尺は１万分１～５千分１が適当であろう。図化面積としては，１候補地点について，幅２ km，延長２０ km，計４０ km² 程度が見込まれる。図化のための空中写真は１１－２に述べた縮尺約１万分１のものを使用する。空中三角測量の基準点は１１－５で設置する。変位修正機および図化機はSurvey Bangladesh のものを利用することも考えられる。

7. 河川横断測量・深浅測量

河川横断測量には当然測線上の深浅測量が含まれるが，この場合は架橋サイトを決める上でもかなり広範囲の深浅測量を必要とするので，便宜上一括して述べる合

乾季と雨季ではジャムナ河の河状は一変するものと想定される。従って両方の季節にそれぞ

れ測量・調査を各候補地点ごとに実施する必要がある。

ジャムナ河は各候補地点とも網状流路を呈しており，乾季には中州の露出が著しい。このため横断測量では陸上作業と船上作業とが相匹敵する作業量を示すものと考えられる。陸上作業は中州の表面が細砂からなるので，足場および風塵に留意する必要があろう。雨季には恐らく全面的に満水するものと考えられ，測量はすべて船上作業が主体となるであろう。

深浅測量用の船はIWTA が保有していて，船内宿泊も可能である。音響測深機も保有している（型式・性能未調査）。しかし，深浅測量と併せて音波探査も実施した方がよいと思われるし，また測位も精度が高いことが望ましいから，少くとも精密音響測探機，音波探査機（磁歪型でよいと思われる），電波測位機は輸送すべきであろう。

地形が平坦であるので，電波測位機の従局の位置の決定は，基準点測量の段階で十分検討すべきである。

8. アプローチ構造物地点測量

架橋サイト決定後，既設の道路または鉄道から架橋サイトまでアプローチの構造物の地点測量を行なう必要がある。アプローチの位置の検討は，空中写真（モザイク）および地図上で行行なわれるであろうが，恐らく非常に長距離の測量が必要となろう。路線中には低湿地ないし水田部分を横切る場合もあり，現場の測量技術的な障害が若干予想される。交通量についてはまったく問題がない。

3－1－2 橋梁調査

1. 気象条件

気象条件のうち，風および地震に関する調査は今後とも進める必要はあろうが，第6章に報告した以上の情報を入手できる可能性はきわめて少ない。

風については，ジャムナ架橋において予想される上部構の構造形式からいって，風が設計を支配する重要な因子になるとは思われない。むしろ，施工条件の面から日常どの程度の風が吹いているかについて，もよりの気象台の記録を調べる必要がある。

地震については東パキスタン時代の記録が西パキスタンのQuettaの気象庁へ送られた由であるので，これを調べてみる必要はあるかも知れないが計器による観測がほとんど行なわれていないので，これらの資料が工学的にどの程度，有用であるかについては疑問が多い。

2. 土 質

土質調査としては，予備設計および架橋サイト選定のための概査ボーリングと架橋サイト決定後に概略設計作成のために架橋サイトにおいて行なうボーリングとに大別できる。予備設計および架橋サイト選定のための概査ボーリングとしては，橋脚位置による地盤条件の差が少ないと考えられるので各サイト2本づつ行なえば充分であろう。場所は費用と期間の関係から水面上でなく中州の水辺部が適当と考えられる。適当な中州がない場合は河岸陸上でもよい。深さ

は４００フィート，N値は１０フィート～１５フィート毎，プレシオメーターによる地盤の弾性係数の測定は１００フィート，２００フィート，３００フィートの深さで行なう。架橋サイト決定後に概略設計作成のために行なうボーリングは河巾区間については，路線中心にそって少なくとも1,000m 以下の間隔で行なう。また，測量および路線選定の結果が得られた後，概略設計までの間に時間と予算の余裕があれば，取付道路のボーリングも適宜やっておくのが望ましい。

４８年１１月～２月の乾季に実施するボーリングは４候補地点各々に２本行なう。

土質試験はSOILTECH INTERNATIONAL LTD. ADRESS PLOT NO 177, TEJTARI BAZAR, TEJGAON. DACCA－８の試験室は充分利用できる。プレシオメーター又はＬＬＴの測定は日本から器具を持ち込む必要がある。

４９年１１月～４月に実施するボーリングは予備ボーリング，予備設計により候補地点が１～２にしぼられた段階であるので，河の中で５００～1,０００mおきに１本づつ，予備ボーリングを補足して行なうとともに取付道路においても両岸各々２本程度行なう。取付道路のボーリングは，その縦断勾配，線形，中小橋梁などが概略設計の段階で明らかになるのであまり多く実施するのは得策ではないと考えられる。

工事実施に至る詳細設計の段階または工事発注後，工事に含めて実施すれば充分対応できる。

3. 工事用材料

概略設計を始める時期までに候補地点について，採取可能数量，品質，輸送方法，現場着価格などを具体的に調査し，概算工費算出，施工計画作成の資料とする必要がある。

その時点においては，既に触れたような人工骨材のプラント計画，炭鉱開発のプロジェクト，バングラデシュ国内の骨材需給事情などが，より明確になっていると思われる。

工事発注の段階にはもう一度両調査する必要が生ずるかも知れない。しかしこれについては応札業者サイドにまかせるのも一つの方法であろう。

4. 設計条件

現在バングラディシュ国の橋梁の設計の基準としては，ＡＡＳＨＯが用いられており，わが国の橋梁の設計示方書とＡＡＳＨＯでは設計荷重の点を除いては，それぞれによって設計された橋梁の間で安全性が大きく異なるということは余りない。特に，これからの橋梁の設計業務をわが国のコンサルタントがおこなうと言うことを考えると，使い慣れた示方書を採用する方が望ましい。従って，設計活荷重だけはバングラデシュ国全体で統一する要があるので，ＡＡＳＨＯの荷重を用いるとして，他はすべて日本の示方書を用いるということも考えられる。下記の点について日本側として，一応の提案をおこない，これをバングラディシュ側の担当者に提示して，文書による確認をとっておくことが必要である。

１）　道路単独橋か，道路鉄道併用橋か

２）　道路部分の巾員構成（２車線か４車線か，また歩道，人力車道の必要性）

3） 道路鉄道併用橋とする場合の鉄道の線路数（単線か複線か）

4） 鉄道のGauge （広軌か，狭軌か）

5） 桁下航路限界（250^{ft}(巾) × 40^{ft}(高)） を確保すればよいか）

6） 道路部分の設計活荷重（AASHO，H－20S－16のみでよいか）

7） 鉄道部分の設計活荷重

8） 橋梁の設計に適用する示方書

次のいずれをとるか

① 道路単独橋の場合

(a) 日本道路橋示方書

(b) AASHO

② 道路鉄道併用橋の場合

(a) 日本の道路橋示方書を主体にし，日本の鉄道橋示方書を補足的に用いる。

(b) AASHO （道路部分）を主体にし，B．S（鉄道部分）を補足的に用いる。

(c) AASHO を主体にし，米国の鉄道橋示方書を補足的に用いる。

5. 施工条件調査

工費の積算及び工事の実施上，次の項目についてさらに現地事状の調査を維持する必要がある。

1） 機材の運送方法と運賃

2） 輸入機材に課せられる税金

3） 工事用動力設備（買電の可能性，買電した場合の価格，自家発電した場合の価格）

4） 労務状況（現地における職種別の労務者の調達方法と単価，労働関係法規，労務に関する現地での慣習）

5） 治安状況

6） 現地調達可能な機材の種類と数量

6. 設計調査

設計調査の内容としては，予備設計，概略設計に区別される。

1） 予備設計

橋の幅員構成をいかにすべきか，鉄道の併用を考慮するか，また，架橋地点をどこにするかを決定するために，建設費／便益の観点から各種の比較をおこなう必要がある。予備設計はこのような比較をおこなうために必要となる資料を得るために実施するものである。予備設計は各架橋地点について，道路単独橋，道路・鉄道併用橋あるいは，道路幅員を変えた場合など数種の構造規格についておこなっておく必要がある。予備設計においては，橋梁の橋種，構造型式，スパン割，などは一応もっともすぐれていると思われるものを選定し，上記の各種の比較に利用できるような工費が出せる程度の設計図面

を作成する。したがって，予備設計は土質条件などに未だ不明確な点を残しているが，現在判明している条件の範囲内でよいから河川の横断図が作成された段階で早期に実施するのがよい。

2） 概略設計

概略設計は，橋の構造，規格（橋の幅員，道路単独か鉄道併用かなど）がきまり，架橋位置が一地点にしぼられた後に，さらに，架橋位置で得られたボーリング調査の結果をも考慮しておこなうものである。この概略設計は，施工計画，工程計画の立案および工事費の積算に利用され，工事の実施を前提としておこなう詳細設計の基本となるものである。したがって，河川，交通関係，土質などの各調査の終了した後の今回の架橋計画調査の最終段階において実施されるものである。

なお，この概略設計の業務中には施行計画書の作成，工費積算の作業を含むものとする。

7. 調査の工程と必要経費

上述した橋梁に関する調査の工程と必要経費は次表に示すとおりである。

橋梁関係調査工程および経費

年	1973年	1974年	1975年	合計金額
月	雨期 3 4 5 6 7 8 9 10 11 12	雨期 1 2 3 4 5 6 7 8 9 10 11 12	雨期 1 2 3 4 5 6 7 8 9 10 11 12	
気象条件調査 *)	←	→		
土質調査	32,000千円 ↔ 各地点2本づつ，合計8本。 陸上（中州を含む）でボーリング。	90,000千円 ↔ 河巾区間内を含めて，路線中心線沿いに 1km以内の間隔でボーリング。		千円 122,000
材料調査 *)	←	→		
設計条件調査	500千円 ↔ （現地政府担当者と打合わせするための経費）			千円 500
施工条件調査 *)	←	→		
設計調査	12,000千円（100万円×4地点×3種類） ↔ 予備設計		30,000千円 ↔ 概略設計	千円 42,000
抗施工試験			60,000千円 ↔ 試験抗の施工　載荷試験　洗堀深の観測	千円 60,000
				千円 224,500

*) 他の調査を目的として現地に滞在している者が兼務でおこなう。したがって費用はほとんどかからず。

3－1－3　交通関係調査

今後の交通部門で必要となる調査は，大別して地域のポテンシャルの把握に関するもの，交通内部の実態に関するもの，および行政側の政策に関するものがあげられる。この中で特に問題となるのは，交通のパターンを一変し得る可能性がある。将来のバングラディシュの地域開発の方向性と，そのポテンシャリティを如何に適確に把え得るかであろう。現段階で必要と思われる主な個々の調査は次のようなものである。

1）　上位計画，政策に関する調査
- 第1次5カ年計画
- 援助計画
- その他関連する投資プロジェクト

2）　産業調査

3）　物流調査

4）　国際輸送に関する調査

5）　道路交通調査

6）　鉄道輸送調査

7）　フェリー調査

8）　輸送費用に関する調査

9）　アプローチ現況調査

1）　上位計画・政策に関する調査

将来のバングラデシュ発展の方向性を交通の前提としてマクロ的に把えるために，主として行政側から行なう調査であり，第1次5カ年計画と諸外国，国際機関による援助，投資計画およびそのバックデーターなどについて，情報を収集し，検討を加える。第1次5カ年計画は現在各部門でそれぞれのプロポーザルを作成中であり，本年6月には，政府側の調整された案として発表される予定である。

2）　バングラディシュの物資輸送の中で大きなウェイトを占める農産物と将来可能性がある鉱物資源について，専門家により，そのポテンシャリティを判断する。食糧の自給，ジュートの将来性，石炭，石灰石，石材，天然ガス等の国内での開発の可能性等に関する検討が主たる問題となろう。

3）　物流調査

主たる輸送物資に関して末端までの輸送経路と輸送形態を発生源側で調査を行ないこれによって，交通手段の選好，各モードの機能分担を把えようとするものである。調査方法はインタビュー又はアンケート方式によることになり，現地関連機関の協力を得て行なおうとするものである。

4） 国際輸送に関する調査

政治情勢の変化は対インド交通の復活をもたらしているし，将来のバングラデシュの交通体系の整備によって近隣諸国との間の内陸交通の需要が発生する。アジアハイウェイ，トランスエイシャンレイルウェイ等は，これら国際的な輸送に焦点を当てて進められている構想であり，この調査はインドに関連する人・物資の輸送需要を中心にこうした国際的な輸送のポテンシャルを検討しようとするものである。

5） 道路交通調査

この調査は，雨季および乾季に行なわれ，主要路線の交通量，ジャムナ河横断に関連するＯＤ交通量，道路交通特性，他のモードとの分担関係等の把握を目的とする。

6） 鉄道輸送調査

鉄道輸送調査に関しては，かつて一度もＯＤ調査が行なわれていない。バングラデシュにおいて鉄道の役割は極めて大きく，現在の必ずしも最適とは言えないネットワークによって輸送パターンは歪められており，本プロジェクトによって輸送パターンが大きく変る可能性がある。従ってＯＤを知るための調査は不可欠であろう。

7） フェリー調査

大小の河川で分析されている国土は，交通ネットワークに対しても，フェリーを不可欠な連絡手段としている。全フェリーの橋梁化が経済的にも全く不可能である以上，フェリーの効率的運用が国内輸送を考える上で，将来とも重要な問題となってくる。これは又，ジャムナ架橋の建設に至る過程でもフェリーの導入，改良が恐らく課題となってくることが予想され，このために，技術的，経済的観点からフェリーに関する調査が行なわれる必要がある。

8） 輸送費用に関する調査

現在の輸送分担，並びに本プロジェクトを経済的観点から評価するために，鉄道，道路，水運における輸送コストを推定するために行なわれる調査である。

9） アプローチ現況調査

設定された比較ルートに対し，架橋地点までのアクセスの現況を主として工学的見地から調査するもので，航空写真，地形図による他，現地を踏査することによって行なう。

3－2 調査スケジュール

TIME SCHEDULE FOR THE SURVEY

FY 1972 Budget

FY 1973

		4	5	6	7	8	9	10	11	12	74/1	2	3
I.	Local Office												
1.	Installation of Local Office												
2.	Management of Local Office												
3.	Supervision												
II.	Surveying												
1.	Cross-sectional Surveying and Leveling												
2.	Sounding and Current Surveying												
III.	Aerial Photography												
1.	Copying of Existing Photographs												
2.	Photography												
3.	Mosaic Preparation												
IV.	Study of Hydrology and River												
1.	Study of Water- Level and Protection of Embankment												
2.	Geomorphological Survey												
V.	Geological Survey & Soil Investigation												
1.	Boring												
2.	Soil Test												
VI.	Traffic Survey												
1.	Collection of Suplementary Data												
2.	Highway Traffic Survey												
3.	Transportation Study on Goods												
4.	Survey of Industry												
VII.	Study of Road, Rail and Ferry Facilities												
VIII.	Study of Bridge Construction Conditions												

第 4 部　附 属 資 料

4－1　バングラデシュ政府の組織

Government of the People's Republic of Bangladesh
Ministry of Cabinet Affairs
Establishment Division
O & M Wing

NAMES OF MINISTRIES & DIVISIONS, SECRETARIAL ORGANISATIONS AND CONSTITUTIONAL BODIES

I. MINISTRIES AND DIVISIONS

Ministry	Division/Ministry without any Division
1. Ministry of Agriculture	1. Agriculture Division.
2. Ministry of Cabinet Affairs.	2. Cabinet Division.
3. Ministry of Commerce	3. Establishment Division
4. Ministry of Communications.	4. Ministry of Commerce
5. Ministry of Defence.	5. Communications Division.
6. Ministry of Education, Cultural Affairs & Sports.	6. Ministry of Defence.
7. Ministry of Finance.	7. Ministry of Education, Cultural Affairs & Sports.
8. Ministry of Forest, Fisheries & Live-stock.	8. Finance Division.
9. Ministry of Flood Control & Water Resources.	9. Forest & Fisheries Division.
10. Ministry of Food & Civil Supplies.	10. Live-stock Division.
11. Ministry of Foreign Affairs.	11. Ministry of Flood Control & Water Resources.
12. Ministry of Health & Family Planning.	12. Ministry of Food & Civil Supplies.
13. Ministry of Home Affairs.	13. Ministry of Foreign Affairs.
14. Ministry of Industries.	14. Ministry of Health.
15. Ministry of Information & Broadcasting.	15. Family Planning Division.
16. Ministry of Labour & Social Welfare.	16. Ministry of Home Affairs.
17. Ministry of Law & Parliamentary Affairs.	17. Ministry of Industries.
	18. Information Division.
	19. Broadcasting Division.
	20. Labour Division.
	21. Social Welfare Division.

18. Ministry of Local Government, Rural Development & Co-operatives.
19. Ministry of Planning.
20. Ministry of Power, Natural Resources, Scientific & Technological Research.
21. Ministry of Public Works & Urban Development.
22. Ministry of Post and Telegraphs.
23. Ministry of Relief & Rehabilitation.
24. Ministry of Shipping, Inland Water Transport & Air-ways

22. Law Division.
23. Parliamentary Affairs Division.
24. Local Government Division.
25. Rural Development & Co-operatives Division.
26. Ministry of Land Administration & Land Reforms.
27. Ministry of Planning.
28. Power Division.
29. Natural Resources Division.
30. Scientific & Technological Research Division.
31. Public Works Division.
32. Urban Development Division.
33. Posts & Telegraphs Division.
34. Ministry of Relief & Rehabilitation.
35. Ministry of Shipping, Inland Water Transport and Air-ways Division.

NOTE: 11 Ministries viz. Ministries of Commerce, Defence, Education & Cultural Affairs, Flood Control & Water-Resources, Food & Civil Supplies, Foreign Affairs, Health, Home Affairs, Industries, Planning and Relief and Rehabilitation, have no Division.

II. SECRETARIAT ORGANISATIONS:

1. President's Secretariat
2. Prime Minister's Secretariat
3. National Assembly Secretariat

III. CONSTITUTIONAL BODIES:

1. Public Service Commission
2. Election Commission
3. Supreme Court of Bangladesh
4. High Court of Judicature
5. Attorney and Solicetor-General
6. Comptroller & Auditor-General.

PRESIDENT

President's Secretariat

PRIME MINISTER

|
|

THE PRIME MINISTER'S SECRETARIAT

1. Department of Anti-Corruption (including Special Police Establishment).

2. Prime Ministers' Inspection and Vigilance Team.

3. Jatiya Rakhshi Bahani (National Security Force).

4. Office of the Co-ordinator, External Assistance for Relief & Rehabilitation.

5. Emergency Control Room.

MINISTRY OF CABINET AFFAIRS

Cabinet Division

National Economic Council - (to be set up).

Establishment Division

1. Bangladesh Public Service Commission (Constitutional Body).
   (a) Public Service Commission II.
2. Department of Anti-corruption.
3. Department of Government Transport.
4. Office of the General Editor, District Gazetteers.
5. Gazetted Officers Training Academy.
6. National Institute of Public Administration.
7. Staff Training Institute.
8. Secretariat Record Room.
9. Secretariat Library.
10. Staff Welfare Organisation.
11. Bangladesh Government Press.
12. Bangladesh Stationer Organisation.
13. Central Furniture Stores.
14. Central Despatch Office.
15. General Administration Set-up.
    (Commissioners, Deputy Commissioners S.D.O., Etc.)

MINISTRY OF AGRICULTURE

1. Department of Agricultural Extension & Management (including Bureau of Agricultural Statistics, Plant Protection and Quarantine, etc.)
2. Department of Agricultural Research & Education (including Agricultural College).
3. Department of Agricultural Marketing.
4. Office of the Agricultural Information Service.
5. Bangladesh Agriculture Development Corporation.
6. Rice Research Institute.
7. Jute Research Institute.
8. Bangladesh Ware-house Corporation.
9. Department of Soil Survey.
10. Agricultural Research Board.
11. Agricultural Census Organization (including Live-stock Census).

MINISTRY OF COMMERCE

1. Department of Trade & Commerce.
2. Department of Supplies & Inspection.
3. Jute Board.
4. Chief Controller of Imports & Exports.
5. Export Promotion Bureau.
6. Tariff Commission.
7. Office of the Controller of Insurance Corporation.
8. Office of the Coal Controller.
9. Bangladesh Tea Board.
10. Trading Corporation of Bangladesh (including supplies portion of Department of Investment & Promotion & Supplies).
11. Jute Trading Corporation.
12. June Marketing Corporation.
13. Enemy Property & Management Board.
14. Tourism Development Corporation.
15. Tobacco Board.
16. Jute Price Stabilisation Corporation (to be set up).
17. Institution of Accountancy.
18. Cotton Board.
19. Office of the Controller of Insurance.

MINISTRY OF COMMUNICATIONS

1. Department of Railways.
2. Office of the Superintendent, Road Transport Maintenance.
3. Office of Bangladesh Transport Authority.
4. Department of Roads & Highways.
5. Bangladesh Road Transport Corporation.
6. Department of Port.
7. Port Haj Office - (Chittagong).
8. Chittagong Port Trust.
9. Chalna Anchorage.

MINISTRY OF DEFENCE

1. Army Head Quarters (G.H.Q.)
2. Naval Head Quarters.
3. Air Head Quarters.
4. Defence Production & Procurement Board.
5. Department of Military Lands & Cantonments.
6. Inter-Service Intelligence Department - (to be set up).
7. Inter-Services Co-ordination Board.
8. Department of Meteorology.
9. Defence Science Organisation.
10. Ordnance Factory - (Gazipur).
11. Armed Services Board.
12. Fouzi Foundation.
13. Department of Civil Aviation.
14. Defence Production & Procurement Board - (to be set up).

MINISTRY OF EDUCATION AND CULTURAL AFFAIRS AND SPORTS

1. Department of Public Institutions.
2. Department of Technical Education.
3. Department of Adult Education.
4. Department of Archives.
5. Department of Sports, Physical Education (including National Coaching Centre).
6. Intermediate & Secondary Education Board, Dacca, Jessore, Comilla and Rajshahi.
7. Technical Education Board.
8. Madrasa Education Board (Religious Education Board).
9. Universities of Dacca, Rajshahi, Chittagong and Jahangir Nagar.
10. Agricultural University, Mymensingh.
11. University of Engineering & Technology.
12. Cadet Colleges - (Faujderhat, Sardah, Jhenaidah & Tangail).
13. University Grant Commission - (to be set up).
14. Inter-University Board.
15. Department of Archaeology.
16. Registrar of Copyright.
17. Bangla Academy.
18. Central Board for Development of Bangalee.
19. Museums.
20. National Academy of Arts & Culture.
21. Office of the Registrar of Copy-rights.
22. Islamic Academy.
23. Bangladesh Sports Control Board.
24. National Book Centre.
25. Bangladesh School Text Books Board.

MINISTRY OF FINANCE

Finance Division:

1. National Board of Revenue.
2. Department of Taxation and Excise.
3. Accountant-General (including Commercial Audit and Local Government Cell).
4. Controller of Military Accounts.
5. Department of National Savings.
6. Controller of Post, Telegraph & Telephone Accounts.
7. Director of Audit and Accounts - Works & WAPDA).
8. Deputy Director of Audit, Defence Services.
9. Joint Director of Commercial Audit.
10. Collectorate of Sea Customs.
11. Collector of Custom Excise and Land Custom (North & South Zones).
12. Controller of Valuation (Custom).
13. Commissioner of Income Tax.
14. Department of Customs Intelligence & Investigation.
15. Controller of Estate Duty.
16. House Building Finance Corporation.
17. Controller of Excise Duty.
18. Industrial Development and Investment Bank of Bangladesh.
19. Bangladesh Investment Trust.
20. Controller of Capital Issue.
21. Bangladesh Bank.
22. Comptroller & Auditor-General - (Constitutional Body).

Land Revenue Division:

1. Department of Land Records and Survey.
2. Office of the Controller of Revenue Accounts.
3. Equity Participation Fund.
4. Sonali Bank - (formerly National Bank of Pakistan).

MINISTRY OF FOREST, FISHERIES & LIVE-STOCK

Division I

1. Department of Forests (including the Forest Research Laboratory, Chittagong).
2. Department of Fisheries (including the Department of Fisheries and the Marine Fisheries Department of the Former Central Government).
3. Department of Live-stock Service.
4. Zoological Survey of Bangladesh – (to be set up).

Division II

1. Bangladesh Fisheries Development Corporation
2. Commonwealth Institute of Biological Control.

MINISTRY OF FLOOD CONTROL AND WATER RESOURCES

1. Department of Irrigation.
2. Bangladesh Water Development.
3. Bangladesh Flood Control Board.

MINISTRY OF FOOD & CIVIL SUPPLIES

1. Department of Procurement.
2. Department of Movement & Storage.
3. Department of Accounts (Food).
4. Department of External Procurement, Inspection and Control (Food).
5. Office of the Project Director, Silo Project, Foodgrains Storage.
6. Office of the Engineer Advisor (Food).

MINISTRY OF FOREIGN AFFAIRS

1. Foreign Missions and High Commissions Abroad.
2. Cypher Bureau.)
3. Protocol Office) Not to be shown in the publication.

MINISTRY OF HEALTH AND FAMILY PLANNING

Health Division:

1. Department of Health Services - (including Medical Colleges, Hospitals and Despensaries and other Medical Institutions).
2. Malaria Eradication Board.
3. Cholera Research Laboratory.
4. Board of Homeopathic, Ayurvedic and Unani Medicines.
5. Malaria Research Institute.

Family Planning Division:

1. Family Planning Board. (including the Directorate of Family Planning).

MINISTRY OF HOME AFFAIRS

1. Department of Police.
2. Department of Prison.
3. Department of Civil Defence -
   (including Civil Defence Academy).
4. Department of Immigration & Passport.
5. Survey of Bangladesh.
6. Department of Fire Services.
7. Department of Para-Militia.
8. Bangladesh Rifles.
9. Police Commission.
10. Border Security Forces
    (to be set up with the Former Directorate of E.P.C.A.F. which should be abolished).
11. National Security Intelligence.

MINISTRY OF INDUSTRIES

1. Department of Industries.
2. Department of Investment Promotion & Supplies. (Investment Promotion Department only).
3. Bangladesh Testing Laboratories.
4. Office of Deputy Chief Explosives.
5. Bangladesh Industrial Technical Assistance Centre.
6. Bangladesh Standard Institute - (Dacca and Chittagong).
7. Regional Office of the Textile Advisor.
8. Swedish Institute.
9. Office of the Chief Inspector of Boilers, Bangladesh.
10. Bangladesh Industrial Development Corporation.
11. Investment Advisory Centre of Bangladesh.
12. Bangladesh Small Industries Corporation.
13. Bangladesh Forest Industries Development Corporation.
14. Utility Stores Corporation.
15. Bangladesh Tea Board.
16. Bangladesh Steel Mills Corporation.
17. Bangladesh Jute Mills Corporation.
18. Bangladesh Cotton Mills Corporation.
19. Bangladesh Sugar Mills Corporation.
20. Bangladesh Paper & Board Corporation.
21. Bangladesh Fertilizer, Chemical & Pharmaceutical Corporation.
22. Bangladesh Engineering & Shipbuilding Corporation.
23. Bangladesh Minerals, Oil & Gas Corporation.
24. Bangladesh Food & Allied Products Corporation.
25. Bangladesh Forest Products Corporation.

MINISTRY OF INFORMATION & BROADCASTING

Information Division:

1. Department of Public Relations.
2. Department of External Publicity.
3. Department of Films & Publications.
4. Bangladesh Board of Film Censors - (to be set up).
5. Bangladesh Film Development Corporation.
6. Office of the Bengali Translator and Registrar of Publications.

Broadcasting Division:

1. Bangladesh Betar - (Radio).
2. Bangladesh Television Corporation.

MINISTRY OF LABOUR AND SOCIAL WELFARE

Labour Division:

1. Department of Labour.
2. Office of the Registrar of Trade Unions.
3. Office of the Chief Inspector of Factories and Establishments.
4. Minimum Wage Board.
5. Management Development Centre.
6. Labour Appellate Tribunal.
7. Labour Courts at Dacca, Chittagong, Rajshahi and Khulna.
8. Board of Trustees for Plantation Employees, Provident Fund for Bangladesh.
9. National Manpower Commission.

Social Welfare Division:

1. Department of Social Welfare.
2. Seaman's Welfare Offices.
3. Protectorate of Immigrants.

MINISTRY OF LAW AND PARLIAMENTARY AFFAIRS

Law Division:

1. Department of Registration.
2. High Court (Supreme Court) and Subordinate Courts.
3. Office of the Administrator-General and Official Trustee - (to be set up).
4. Office of the Official Receiver, Dacca High Court.
5. Attorney-General and other Law Officers.
6. Registrar of Money Lenders.
7. Council of Law Reporting.
8. Special Judges & Law Officers.
9. Income-Tax Appellate Tribunal.

Parliamentary Affairs Division:

1. Election Commission. - (to be set up with former Provincial Election Authority as the neuclues).
2. National Assembly Secretariat (to be set up as a Constitutional Body by the amalgamation of the former Provincial and Central Assembly Secretariats).

MINISTRY OF LOCAL GOVERNMENT, RURAL DEVELOPMENT AND CO-OPERATIVES

Local Government Division:

1. Department of Public Health Engineering.
2. Local Government (Training and Research) Institute.

Rural Development and Co-operative Division

1. Department of Co-operation.
2. Integrated Rural Development Programme (I.R.D.P.)
3. Bangladesh Academy for Rural Development.
4. Rural Development Training Institute.
5. Technical Training Pilot Project.

MINISTRY OF LAND ADMINISTRATION AND LAND REFORMS

1. Department of Land Records & Surveys. (Including D.L.R. & S Press).
2. Office of the Controller of Revenue Accounts.
3. Office of the Administrator of Maqfs.

MINISTRY OF PLANNING

1. National Bureau of Statistics -
   (by the amalgamation of the Regional Office of the C.S.O. of the former Central Government with the former East Pakistan Bureau of Statistics).

2. Office of the Chief Transport Survey.

3. Bangladesh Institute of Development Economics.

MINISTRY OF POWER, NATURAL RESOURCES AND SCIENTIFIC AND TECHNOLOGICAL RESEARCH

Power Division:

1. Bangladesh Power Development Authority.
2. Office of the Chief Electrical Inspector and Advisor.

Natural Resources Division:

1. Geological Survey of Bangladesh.
2. Bureau of Mineral Development.
3. Oil & Gas Development Corporation.

Scientific and Technological Research Division

1. Atomic Energy Commission (including Ruppur Nuclear Power Project and Space Upper Research Committee).
2. Bangladesh Council of Scientific and Industrial Research (Science Laboratory).
3. Museum of Science & Technology.
4. Bangladesh National Scientific and Technical Documentation Centre - (BANSDOC).

MINISTRY OF PUBLIC WORKS AND URBAN DEVELOPMENT

Public Works Division:

1. Estate Office.
2. Building Research Institute.
3. Department of Buildings - (including the office of the Additional Chief Engineer of the former PAK P.W.D. and its subordinate offices).

   A separate wing with the officers and staff of the additional Chief Engineer may be created under this Department for taking care of specialised and sophisticated works done by them.

Urban Development Division:

1. Department of Urban Development.
2. Housing & Settlement.
3. Office of the Deputy Commissioner & Settlement.
4. Dacca Improvement Trust & Town Development Authority.
5. Water & Sewerage Authority (for Dacca & other cities).
6. Chittagong Development Authority.
7. Khulna Development Authority.

MINISTRY OF POST & TELEGRAPHS

1. Department of Post Offices.
2. Department of Telegraphs & Telephones.
3. Telephone Industries Corporation.

MINISTRY OF RELIEF AND REHABILITATION

1. Department of Relief and Rehabilitation.
2. Office of the Finance Officer, Civil Relief.
3. Office of the Project Director Low Cost Housing in Disaster Prone Areas.
4. Reconstruction Board for Cyclone Affected Areas (REBECA).

Note: Refugee, Rehabilitation and Finance Corporation should be abolished and its assets, records, staff, etc. should be transferred to the Ministry of Relief & Rehabilitation.

MINISTRY OF SHIPPING, INLAND WATER TRANSPORT AND AIR-WAYS

1. Department of Shipping Control - (including Government Shipping Office, Chittagong).
2. Department of Navigation.
3. Mercantile Marine.
4. Office of Special Officer - Marine Accident.
5. Office of the Engineer & Ship Surveyor & Registrar of Inland Shipping.
6. Office of the Engineer & Ship Surveyor, Narayanganj.
7. Marine Academy, Chittagong.
8. Bangladesh Inland Water Transport Authority - (B.I.W.T.A.)
9. Bangladesh Biman - (B.B.)
10. Bangladesh Shipping Corporation - (by the merger of East Pakistan Shipping Corporation of the former Central Government).

4－2　バングラデシュ政府で有する資料リスト

以下は本調査団で収集，参照した主な資料のリストである。

GENERAL

	Title	Published/Prepared by
1.	"TRANSPORT STATISTICS"	Ministry of Planning Jan., 1972
2.	Terms of reference of the "BANGLADESH TRANSPORT SURVEY"	Transport Survey Project, Planning Commission

Meteorology

	Title	Published/Prepared by
1.	"Seismic zoning map" scale 1"=50 miles or 1:3168000	Director of Meteorology
2.	"List of few historical earthquakes occurred in and around East Pakistan"	"
3.	"Descriptions of historical cyclones"	"
4.	"Meteorological records" Normals of Pressure, Temperature, Humidity, Maximum and Minimum Temperatures, Cloud, Wind speed and Precipitations for 00, 03 and 12GT based on data of 1931-60 station: Sirajganj (Estab. 1883) Bogra P/T (" 1884) Pabna (" 1905) Narayanganj (" 1867) Dacca (" 1949) Faridpur (" 1883) Mymensing (" 1883) Rangpur (" 1883)	"
5.	"Maximum hourly intensity of rainfall"	
	1) Bogra (1961-1970)	"
	2) Dacca, Chittagong, Cox's Bazar, Barisal, Bogra, Jossore, Sylhet. (historical maximum rainfall)	
6.	"Annual maximum wind speed recorded during cyclones, storms, tornadoes, morwester, etc. for Chittagong, Dacca, Cox's Bazar, Barizal and Jessore.	"

Hydrology

No.	Title	Published/Prepared by
1.	Bibliography of Hydrological Publications. BWAPDA Water Supply Paper-352, 1972	WDB/Director of Hydrology
2.	BWAPDA Water Supply Paper - 18 Gauge & discharge records for Brahmaputra river at Bahadrabad, 1949-58 Copied: Max. & Min. water level and discharge	WDB/Director of Hydrology
3.	Hydrological Year Book: 1964-65: Vol. II Water level 1964-65: Vol. III Discharge Copied: Bahadrabad Sirajganj Mathura 1965-66: Vol. II Water level Copied: index of stations Chilmari Bahadrabad Sirajganj Nagarbari gat 1965-66: Vol. III Discharge Copied: Bahadrabad Harding Bridge 1966-67: Vol. II Water Level Copied: Chilmari Bahadrabad Jagannathganj Sirajganj Mothura Sardah Golapnagar Harding bridge Talbaria Sengram 1966-67: Vol. III Discharge Copied: Bahadrabad Harding Bridge	WDB/Director of Hydrology

No.	Title	Published/Prepared by
	(Hydrological Year Book)-cont'd-	
	1967-68: Vol. II Water Level Copied: Brahmaputra No. 45.5 47.0 48.0 49.0 50.3 89.0 89.5 90.0 91.0 91.1	(WDB/Director of Hydrology)
	1967-68: Vol. III Discharge Copied: No. 46.9L No. 90	
	1968-69: Vol. II Water Level Copied: Brahmaputra No. 45.5 47.0 48.0 49.0 50.3 89.0 89.5 90.0 91.0 91.1	
	1968-69: Vol. III Discharge Copied: No. 46.9L No. 90	
4.	Hydrological Book No. 2 Discharge Observation: 1965/66-1968/69 Aug. 1972	WDB/Director. River Morphology
5.	Report on Hydrology of Bangladesh by J.Th. Thijsse, 1964	-ditto-
6.	Index of Gauge, Discharge & Silt Observation Stations as of Mar. '66 w/instruction & procedure for collecting basic surface data	-ditto-
7.	Notes on computation of sediment discharge and bed-load sediment problem study, Ganges & Brahmaputra system Mar., 1972	

No.	Title	Published/Prepared by
8.	Sediment analysis report: Brahmaputra flood control project, Analysis of Bed and Suspended Materials: Report No. SED-26, Sep. 1966 Copied: Measurement at Sirgjganj (Fig. 2)	(WDB/Director of River Morphology)
9.	-ditto- Report No. SED-37, Dec. 1966 Copied: Measurement at Nagarbari (Fig. 3) Measurement at Sirajganj (Fig. 2)	-ditto-
10.	-ditto- Report No. SED-42, Sep. 1967 Copied: Suspended sediment at Nakfaterchar	-ditto-
11.	-ditto- Report No. SED-43, Dec. 1967 (Nagarbari gauging site) Copied: Measurement at Nagarbari	-ditto-
12.	An Appraisal of the inland water transport system in East Pakistan by A.M.Md. Gulam Kibria, IWTA Copied: p.54-79 p.108-113	
13.	Discharge Notes Serial: Bahadrabad: 1966.04.05 1966.09.01 1970.01.20 1970.08.11 Sirajganj: -ditto-	WDB/Director River Morphology
14.	Jamuna River, Plan & Profile: No. J/1 No. J/1-1 No. J/2-1 No. J/4 No. J/4-1 No. J/5 No. J/5-1	

No.	Title	Published/Prepared by
	No. J/6 No. J/7-1 No. J/8 No. J/8-1 No. J/9 No. J/9-1 No. J/11 No. J/11-1 No. J/12 No. J/12-1 No. J/13 No. J/13-1	
15.	Jamuna bankline according to year of survey, 1965 No. 1-6	
16.	Brahmaputra Flood Embankment Project Phulchari to Sirajganj Definite Project Report by Leedshill-Deleuw Engineers, 1965	EPWAPDA
17.	Brahmaputra Flood Embankment Project Phulchari to Sirajganj Study Report by IECO, 1962 Copied: Cross-section and profile of embankment	EPWAPDA
18.	Preliminary design report: East-West interconnector project by Acres International Copied: p.5-16	-ditto-

Bridge
(Harding Bridge)

No.	Title	Published/Prepared by
1.	History of the Harding Bridge	
2.	Harding Bridge: Register of velocity and discharge	
3.	The Harding Bridge over the Lower Ganges at Sara	
4.	Pricking results of piers after flood of 1961	
5.	Contours of river bed in 1968, 1969, '70	
6.	River survey 1967-69	
7.	River cross section, 1970	

HIGHWAY

1.	"Road Traffic Survey 1971" Vol. 1	Ministry of Planning Jan. 1972
2.	Road map of Bangladesh Scale 1" = 15.78 mile (1/1,000,000)	Road and highway Directorate
3.	Road map of Bangladesh with reference to damaged bridges Scale 1" = 16 miles	"
4.	Picture, drawing of design code specifications (Highway) (IRC-A, AASHO)	"
5.	Road density map for passenger carried by road sections	"
6.	Desire line of motor-vehicles	"
7.	Samples of detail for pavement & terminal on the section of Tangail-Bhuapur-Chargabsara road	"
8.	Annual Traffic census compilation Dacca, Chittagon, Jessore and Sylhet circle	" July, 1968
9.	O-D survey field record Dacca Circle (Down)	Oct., 1968 Dacca-Mirpur Road Location-Mirpur Bridge
10.	" (Up)	"
11.	Report on comprehensive survey of ferries	R&H Directorate Apr. - Aug. 1970

INLAND WATERWAY

1.	"SURVEY OF INLAND WATERWAYS AND PORTS" 1963-1967	IWTA NEDECO July, 1967
	Volume 1. General Report	
	Volume 2. Inventorization of the waterways	
	Part A. Classification, Traffic and Fleet	
	Part B. Map of East Pakistan	
	Part C. Route maps	
	Volume 3. Hydrology and Morphology	
	Part A. Water-level Atlas	
	Part B. Hydrological and Morphological Phenomena	
	Part C. Improvement of Waterways and Inland Ports	
	Volume 4. Hydrographic Manual	
2.	"ANNUAL REPORT" FY1960/61	Traffic Department, IWTA
	" " FY1961/62	"
	" " FY1962/63	"
	" " FY1963/64	"
	"ANNUAL TRAFFIC REPORT" FY1964/65	Director of Ports and Traffic, IWTA
	" FY1965/66	
	" " FY1966/67	"
	" " FY1967/68	"
	" " FY1968/69	"

RAILROAD

1.	"1970 YEAR BOOK"	Bangladesh Railway
2.	"Map of Railway Network"	"
3.	"Special foreign rate circular No. 2 of 1971 and Special local rate advice No. 2 of 1971" (goods) Terminal charges.	"
4.	"Special foreign rate circular No. 1 of 1971 and Special local rate advice No. 1 of 1971" (coaching) Enhancement of Terminal charge	"
5.	"Special foreign rate circular No. 4 of 1967. and Special local rate advice No. 4 of 1967. (goods) Revision existing bases of telescopic class as well as schedule and scale rates.	"
6.	"Special foreign rate circular No. 1 of 1969. and Special local rate advice No. 1 of 1969. (coaching) 20% Increase-in-charge on Luggage Parcels and other coaching Traffic over Bangladesh Railway.	"
7.	"Proposals for First Five Year Plan"	"
8.	"Traffic density chart" Broad gauge	"
9.	"Traffic density Chart" Metre gauge	"
10.	"Traffic density map"	"
11.	Map of Bangladesh Railway	"

4－3　今後調査に必要と思われる資料の抜粋

LOCATION OF GAUGING STATIONS

(WATER LEVEL)

Station Number	Name of Station	Latitude	Longitude
	BRAHMAPUTRA-JAMUNA RIVER		
45	Nunkhawa	25°54.6'	89°46.2'
45.5	Chilmari	25°33.4'	89°43.5'
46	Kamarjani	25°25'	89°39'
46.7L	Khulabary char	25°13.8'	89°42'
46.7R	Kristomoni Char	25°13.5'	89°39'
46.9L	Bahadurabad Transit	25°09.3'	89°40.5'
46.9R	Fulcharighat	25°10.5'	89°37.5'
47	Bahadurabad	25°08.5'	89°41'
47.3L	Jognaichar	25°05.2'	89°40'
47.3R	Patilbari	25°05.3'	89°38'
48	Jagannathganj	24°40'	89°49'
49	Sirajganj	24°27'	89°43'
50	Porabari	24°09.3'	89°51.1'
50.3	Mathura (Nagarbari ghat)	23°54.5'	89°41.6'
50.5	Alukdia char	23°50.7'	89°42.2'
50.6	Teota	23°51.1'	89°46.5'
	GANGES RIVER		
88	Rampur Boalia (Rajshahi)	24°22'	88°35.4'
89.5	Golpnagar	24°06'	88°59.1'
89	Sardah	24°20'	88°43'
90	Nardinge Bridge	24°04.1'	89°02.3'
91	Talbaria	23°59'	89°01'
91.1	Sengram	23°52.9'	89°21.8'
91.2	Mohendrapur	23°47.9'	89°33.5'
91.7R	Urakanda	23°46'	89°42'
91.7L	Baruria (Transit)	23°47.9'	89°47.2'
91.9R	Goalundo (Transit)	23°44'	89°45.7'
92	Goalundo	23°43.6'	89°46.3'
92.3L	K damtali	23°44.9'	89°53.8'
92.3R	Char-Salda	23°40'	89°50'
93	Kushumhati	23°30.8'	90°11.25'
93.4L	Jashilda	23°30.9'	90°12.4'
93.4R	Charjanajat North	23°31.6'	90°8.05'
93.5L	Bhagyakul (Mawa)	23°30.5'	90°11.25'
93.5R	Bateswar	23°30.5'	90°11'
93.6L	Wari	23°30'	90°12.1'
94	Tarpasa	23°27.4'	90°15
95	Sureswar	23°21.5'	90°24.5'

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 45.5 - CHILMARI (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	55.15	59.45	64.70	72.70	74.80	78.10	71.40	64.70+	58.55+	57.60+	55.60	54.45
2	55.10	59.55	66.40	74.40	75.20+	77.90	71.25	64.45	58.45	57.50	55.50	54.50
3	55.15	59.60	66.90	75.20	75.50	77.75	71.20	64.10	58.35	57.40	55.40	54.70
4	55.30	59.70	66.80	75.90	75.70	77.60	71.25	63.80	58.25	57.35	55.35	54.90
5	55.40	59.55	67.40	76.10	75.90	77.50	71.25	63.60	58.15	57.30	55.25	55.00
6	55.45	59.40	68.20	76.20	76.00	77.40	71.40	63.45	58.00	57.25	55.20	55.10
7	55.75	59.30	68.85	76.25	76.20	77.30	72.00	63.25	57.90	57.20	55.15	55.05
8	56.00+	59.40	69.60	76.40	76.40	77.20	72.25	63.10	57.85	57.20	55.10	54.95
9	55.95	60.00	70.60	76.00	76.50	77.00	72.00	63.00	57.75	57.10	55.00	54.80
10	55.90	61.00	72.20	75.75	76.55	76.85	71.20	62.80	57.70	57.05	54.90	54.85
11	55.85	61.70	73.70	75.80	76.70	76.70	70.45+	62.70+	57.60	57.00	54.85	54.80
12	55.80	61.50	74.60	76.00	76.70	76.50	69.90	62.60	57.60	56.95	54.80	54.80
13	55.75	61.30	75.45	76.05	76.70	76.30	69.30	62.45	57.55	56.90	54.70	55.00
14	55.80	61.20	76.10	76.20	76.70	76.20	68.60	62.30	57.40	56.85	54.65	55.20
15	56.10	61.15	76.55	76.40	76.70	76.00	68.25	62.20	57.35	56.80	54.65	55.35
16	57.20	61.10	76.05	76.40	76.60	75.70	68.15	62.00	57.30	56.75	54.60	55.35
17	57.90	61.10	75.20	76.35	76.55	75.40	68.10	61.90	57.25	56.65	54.55	55.30
18	58.10	61.15	74.40	76.30	76.50	75.00	68.00	61.90=	57.20	56.60	54.50+	55.30
19	58.05	61.20	73.60	76.25	76.55	74.60	67.90	59.70	57.15	56.55	54.50	55.30
20	58.10	61.25	72.60	76.00	76.50	74.30	67.70	59.65	57.10	56.50	54.45	55.35
21	58.20	71.70	71.70	75.80	76.55	74.00+	67.30	59.55	57.00	56.40	54.60	55.40
22	58.25	61.40	71.20	75.60	76.90	73.60	67.00	59.45	56.95	56.30	54.55	55.35
23	58.40	61.70	70.90	75.40	77.30	73.25	66.80	59.35	56.95	56.25	54.55	55.35
24	58.50	61.80	70.50	75.20	77.80	73.00	66.50	59.25	56.85	56.20	54.55	55.30
25	58.60	61.55	70.00	75.00	78.00	72.60	66.30	59.15	56.80	56.10	54.55	55.30
26	58.70	61.60	69.60+	75.00	78.00	72.30	66.10	59.05	56.75	56.00+	54.50	55.35
27	58.90	61.60	69.40	75.00+	77.95	72.10	65.85	58.95	56.70	55.95	54.50	55.45
28	59.10	62.45	69.45	74.80	77.90	71.80	65.60	58.85	56.65	55.90	54.50	55.45
29	59.25	63.00	70.00	74.50	77.95	71.60	65.40	58.75	56.60	55.80		55.50
30	59.40	63.20	71.00	74.20	77.95	71.50	65.10	58.65	56.55	55.75		55.50
31		63.55		74.30	78.10		64.90		56.50	55.70		55.50
								=2.15				

Annual Maximum:- August 31st: 78.15 ft.

Annual Minimum:- February 20th & March 1st: 54.45 ft.

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 45.5 - CHILMARI (Jamuna)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	55.50	57.50	63.52	73.80	73.62S	70.62	71.60	63.70	58.15	55.85	55.05	54.60
2	55.55	57.65	63.72	74.00S	73.22	70.17	71.15	63.40	58.10	55.80	55.10	54.75
3	55.55	57.75	64.02	73.90	72.67	69.77S	71.10	63.25	58.05	55.70	55.05	54.85
4	55.60	57.95	64.47	73.70	72.32	69.47	71.30	63.10	58.00	55.65	55.00	54.95
5	55.60	58.15S	65.02	73.45	71.87	69.17	71.80	62.90	57.95	55.65	54.95	54.95
6	55.55	59.27=	65.22	73.30	71.67	69.07	72.30	62.70	57.90	55.65	54.90	54.85
7	55.55	59.62	65.62	73.40	71.42	69.07	72.80	62.50	57.70S	55.65	54.85	54.85
8	55.60	60.32	66.32	73.60	71.62	69.17	72.15	62.30	57.55	55.65	54.80	54.85
9	55.70	61.32	66.52S	75.60	72.12	69.42	71.65	61.80	57.50	55.60S	54.75	54.85
10	55.70	61.67	66.52	d	72.12	69.37	70.90	61.55	57.45	55.60	54.90	54.90
11	55.80	62.02	66.92	77.32	72.37	69.42	70.55	61.35	57.40	55.55	55.20	54.95
12	55.80	62.22	67.72	78.62	72.62	69.87	70.30	61.00S	57.30	55.45	55.15	54.95
13	55.85	62.47	68.27	78.42	72.72	70.07	70.50	60.75	57.25	55.35=	55.10	54.95
14	55.90	62.62	68.62S	77.72	72.67	69.72	70.40	60.15	57.20	55.70	55.05	54.95
15	55.95	62.32	69.10	77.62	72.72	69.52	70.20	59.85=	57.10	55.70	54.90=	55.00
16	55.95	62.22	69.10	77.67	72.87	69.47	69.80	59.75	57.05	55.75	54.80	55.10
17	56.00	62.32S	69.05	77.57	73.02	69.77	69.70	59.55	57.00	55.75	54.75	55.15
18	56.05	62.32	69.20=	77.52	73.32	70.37	69.40	59.45	56.95	55.75	54.75	55.20
19	56.10	62.32	69.50	77.47	73.47	d	69.00	59.35	56.90	55.75	54.75	55.30S
20	56.15	62.32	70.50S	77.72	73.42	70.70	68.35	59.25	56.75	55.75	54.75	55.50
21	56.20	62.22	71.40	77.57	73.02	71.25	67.50	59.40	56.65	55.75	54.75	55.60
22	56.30	62.02	71.90	77.37	72.67	72.20	67.40	58.90	56.60	55.65	54.70	55.75
23	56.35	61.97	71.90	77.37	72.42	72.70	66.30S	58.85	56.55	55.55	54.70	55.85
24	56.40	61.62	71.80	77.47	72.07S	72.95	65.70	58.75	56.50	55.45	54.70	56.00
25	56.65	61.42	72.65	77.07	71.72	73.30	65.30	58.65	56.45	55.35	54.65	56.15
26	57.00	61.62	73.40	76.67	71.52	73.25	65.00S	58.55	56.35	55.25	54.60	56.55
27	57.30	62.22	73.50	76.37	71.52	73.10	64.40	58.45	56.25	55.25	54.55	56.85
28	57.50S	62.47	73.60	75.82	71.42	72.75	64.60	58.35	56.10	55.25	54.55	57.05
29	57.55	62.52	73.60	75.22=	71.32	72.55=	64.60	58.25	56.05	55.20	54.55	57.10
30	57.55	62.62	73.70	74.82	71.12	72.20	64.20S	58.20	56.00	55.15	—	57.80
31	—	62.97	—	74.22	70.92	-	64.00	—	55.95	55.10	—	58.20
		= 0.00	= 0.00					= 0.00		= 0.35	= 0.00	

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 45.5 - CHILMARI (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	58.10S	60.20	71.20	75.90	76.73S	74.05	74.55	63.10	59.08	56.75S	55.65	55.30
2	57.93	60.55	71.20	76.10	76.38	74.10	74.20	63.00	58.98S=	56.70	55.65	55.30
3	57.65	60.60	71.20	76.03	75.60S	73.88	74.15	62.93	58.88	56.63	55.65	55.30
4	57.45	60.60	70.95	75.95	74.75	73.70	74.50	62.78=S	58.80	56.60	55.65	55.23
5	57.30	60.75	70.30S	75.75	74.53	73.28	76.40	62.68	58.68	56.58	55.65	55.15
6	57.33	61.05	69.75	75.65	74.38	73.15	77.55	62.60	58.63	56.55	55.65	55.15
7	57.45	61.33	69.25	75.60	74.23	72.90	77.60	62.53	58.53	56.55	55.70	55.15
8	57.45	62.00S	68.70S	75.40	74.13	72.65=	76.50	62.45	58.48	56.50	55.78	55.10
9	57.20	62.48	68.35	75.10	73.95S	72.53	75.25	62.25	58.38	56.45	55.78	55.10
10	56.95	62.90S	68.25	74.80	73.88	72.35	74.35	61.98	58.30	56.38	55.68	55.13
11	56.75S	63.93	68.55	74.70	73.73	72.05	73.50	61.73	58.23	56.35	55.60	55.30
12	56.70	64.55	68.90	74.68	73.55	71.53	72.70	61.53	58.18	56.33	55.55	55.40
13	56.78	64.85	69.40	74.60	73.23	71.25	71.85	61.25	58.13	56.28S	55.50	55.40
14	56.93	64.43	69.85	75.10	73.23=	71.05	71.23	61.15S	58.00=	56.25	55.50	55.40
15	57.03	64.00	70.35	75.63S	72.50S	70.95	70.58	61.00	57.93	56.20=	55.50	55.43
16	57.33	63.55	70.60	75.90	72.15	70.75S	70.05	60.95	57.88	56.20	55.55	55.45
17	57.83	63.48	70.58S	76.08	71.78	70.75	69.48=	60.75	57.78	56.18	55.53	55.53
18	58.85S=	63.75=	70.75	76.18	71.50	70.85	68.78	60.70	57.68	56.15	55.45	55.63=
19	59.80	64.13	71.55=	76.28	71.38	70.70	68.15	60.58	57.63	56.15	55.35	55.73
20	60.00	74.20	72.23	76.43	71.40S	70.80	67.55S	60.45	57.53	56.15	55.30	55.80
21	60.05	63.95	73.55S	76.65	71.65	71.55	67.05	60.25	57.50	56.15	55.28	55.85
22	60.45	63.65	75.15	76.93	72.25	72.60	66.60	60.08	57.40	56.13	55.20	56.03
23	61.00S	64.80	75.75S	77.15	72.55	72.90	66.33	60.00	57.35	56.10	55.15	56.28S
24	61.75	64.53	76.13	78.78d	72.63S	73.50	66.00	59.90	57.30	56.08	55.15	56.70
25	61.30	64.85	76.35	78.88	72.55	74.00	65.60	59.75	57.23	56.03	55.20	56.98
26	60.75	65.00	76.60	78.70	72.63	74.05	65.13	59.63	57.18	55.98	55.20	57.03
27	60.30S	65.60S	76.55	78.55	72.98	74.75	64.58S	59.45	57.10	55.93	55.20	57.13
28	59.95	66.10	76.20	78.30	73.45	75.35S	64.20	59.40	57.03	55.80	55.20	57.23
29	59.90	67.10	75.70S	78.05	73.85	75.20	63.80	59.33	56.95	55.75	-	57.35
30	59.95	69.00	75.58	77.75	73.93	74.90	63.58	59.23	56.88	55.70	-	57.50
31	-	70.28S	-	77.35	73.95	-	63.30	-	56.78	55.65	-	57.43
	=0.10	=-0.10	=0.40		=0.00	=0.00	=0.00	=0.00	=0.00 =0.00	=0.00		=0.00

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 47 - BAHADURABAD (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	43.95	48.35	52.80	58.00	60.30	64.05	55.95	50.00	47.05	44.05	43.40	43.15
2	43.70	48.35	54.30	59.60	60.75	63.95	55.65+	49.80	47.00	44.95	43.40	43.15
3	43.55	48.30	55.20+	61.30	60.95	63.80	55.75	49.55	47.00	44.90	43.30	43.40
4	43.45	48.15	55.15	62.00	61.00	63.55	55.85	49.40	47.00	44.85	43.30	43.65
5	43.45	47.90	55.25	62.35	61.00	63.30	56.00	49.20	47.00	44.80	43.30	43.85
6	43.75	47.80	56.00	62.60	61.25	63.10	55.95	49.00+	47.10	44.75	43.25	43.80
7	44.10	47.95	56.60	62.80	61.70	62.75+	56.45	48.90	47.00	44.70	43.25	43.70
8	44.40	48.10	57.00	62.85	61.90	62.45	56.95	48.80	46.80	44.60	43.25	43.55
9	44.45	48.40+	57.80	62.20	62.05	62.25	56.85	48.60	46.70	44.60	43.25	43.40
10	44.40	49.20	59.20	61.80	62.40	62.15	56.25	48.50	46.60	44.50	43.15	43.40
11	44.30	49.90	60.40	61.70	62.45	62.05	55.55	48.40	46.50+	44.45	43.15	43.40
12	44.25	50.00	61.60	61.85	62.50	62.05	54.95	48.25	46.40	44.40	43.10	43.35
13	44.15	49.90	62.20	61.90	62.50	62.20	54.50	48.15	46.35	44.35	43.10	43.45
14	44.15	49.70	62.90	61.90	62.50	62.20	53.95	48.10	46.25	44.30	43.10	43.65
15	44.30	49.70	63.45	62.20	62.50	62.05	53.45	47.95	46.10	44.30	43.10	43.75
16	44.90	49.70	63.10+	62.15	62.45	61.90	53.10	47.85	46.10=	44.30	43.05	43.85
17	46.60	49.45	62.15	62.15	62.40	61.70	52.85+	47.75	46.00	44.20	43.10	43.90
18	46.90	49.40	61.30	62.20	62.40+	61.70+	52.60	47.70	45.90	44.20+	43.10	43.85+
19	46.95+	49.70	60.40	62.00	62.25	61.50	52.35	47.60	45.90	44.10=	43.10	43.85=
20	46.90	49.80	59.60	61.75	62.00	61.30	52.15	47.50	45.80	44.15	43.15	43.70
21	46.90	50.00	58.80+	61.55	61.90	60.85	51.85	47.40	45.75	44.05	43.15	43.85
22	46.85	50.15	58.30	61.25	62.15	60.35	51.70	47.30	45.70	44.00	43.25	43.95
23	47.00	50.20	58.00	60.95	62.45	59.95	51.45	47.40	45.65	43.95	43.25	44.05
24	47.45	50.50	57.60	60.55	63.20	59.70	51.25	47.65	45.60	43.90	43.20	44.20
25	48.10	50.30	57.40	60.25	63.75	59.30+	51.15	47.80	45.60+	43.80	43.15	44.55
26	48.70	49.90	57.10	60.45	64.05	58.80	50.95	47.75	45.50	43.70	43.10	44.80
27	48.90	50.00	56.90	60.45	63.95	58.00	50.75	47.60	45.35	43.65	43.10	45.15
28	48.65	50.50	56.70	60.45	63.75	57.45	50.60=	47.35	45.30	43.60	43.10	45.55+
29	48.35	51.50	56.70	60.20	63.75	56.85	50.50	47.25	45.20	43.60		45.65
30	48.30	51.60+	57.20	60.00	63.90	56.45	50.45	47.20	45.15	43.50		45.60
31		51.90		60.00	64.05		50.25		45.00	43.50		45.55
							=0.00		=0.00	=0.05		=0.00

Annual Maximum:- August 26th, 31st & Sept. 1st: 64.05 ft.

Annual Minimum:- Feb. 16th; 43.50 ft.

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 47 - BAHADURABAD (Jamuna)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	45.45S	46.30	51.83	59.93	59.23	56.78	58.33	50.58	46.74	44.82	43.67S	43.32
2	45.35	46.30	52.13	60.03	58.83	56.43	57.73S=	50.43	46.69	44.77	43.67	43.37
3	45.35	46.55S	52.43	60.08	58.38	56.03	57.43	50.18	46.64	44.72	43.62	43.47
4	45.30	46.75	52.83S	59.88=	57.93	55.73	57.43	50.03	46.59	44.72	43.57	43.57
5	45.25	46.90	53.33	59.63	57.53S	55.43	57.73	49.83	46.49=	44.67=	43.52	43.57=
6	45.40	47.20	53.68=	59.48	57.38	55.38	58.43	49.73S	46.52	44.55	43.47	43 62
7	45.55	47.45	54.03	59.53	57.23	55.33	58.83	49.53	46.47	44.50	43.47	43.62
8	45.55	48.10S	54.48	59.58	57.28	55.33	58.78	49.28	46.37	44.50	43.52	43.62
9	45.45	49.05	54.68	60.48S	57.98	55.58	58.13	49.13	46.32	44.40	43.57	43.62
10	45.20	49.40	54.68	62.08	58.48	55.63	57.63	48.93	46.32	44.40	43.67	43.67
11	45.00	49.90	54.88	62.78	58.23	55.53	56.73	48.73	46.17	44.35	43.77	43.72
12	45.00	50.95	55.28	63.43S	58.43	55.98	56.68	48.63	46.02S	44.30	43.77	43.72
13	44.95	51.40	55.88	63.38	58.68	56.23	56.68	48.48	45.92	44.30	43.72	43.72
14	44.95	51.50=	56.23	63.28	58.63	56.13	56.68	48.33	45.87	44.25=	43,62	43.77
15	45.00	51.38	56.78	63.28	58.73	55.83	56.53	48.23=	45.77	44.20	43.47	43.82
16	44.90	51.33	56.53	63.38	58.83	55.73	56.23	48.39	45.72	44.45	43.47	43.92
17	44.65S	51.23	56.18	63.23	59.03	55.83	55.93	48.19	45.62	44.15	43.37	43.97
18	44.65	51.48	56.23=	63.18	59.33	56.38	55.83	47.99	45.52	44.15	43.37	44.02
19	44.60	51.08	56.53	63.13	59.58	56.93	55.68	47.94	45.52	44.10	43.37	44.47
20	44.55	50.98	56.98	63.33	59.43	57.13	54.93S	47.79	45.47	44.40	43.37	44.27
21	44.60	50.88	58.38	63.08	50.23	57.63S	54.43	47.69	45.37	44.05	43.37	44.42
22	45.00	50.78	58.78	62.78	58.63	58.43	53.93	47.59	45.32	44.00	43.37	44.57
23	45.20	50.68	58.83	62.83=	58.23	58.88	53.43	47.49	45.32	43.95=	43.37	44.72
24	45.25	50.43	58.73	63.03	58.03=	59.13	52.98	47.39	45.27	44.17	43.37	44.82
25	45.40	50.28	59.13	62.78	57.88	59.53S	59.53	47.29	45.22	44.42	43.32	44.97S
26	45.60	50.33	59.68	62.13	57.83S	59.53	52.03	47.19	45.12	44.07	43.27	45.17
27	45.95	50.68	59.88	61.73S	57.58	59.33	51.78	47.14	45.07	43.97	43.27	45.37
28	46.20	50.98	59.88	61.38	57.43	59.13	51.53	47.04	45.02	43.87	43.22	45.57
29	46.30	51.13	59.88=	60.93	57.33	58.93	51.23S	46.94	44.92	43.82	43.22	45.82
30	46.30	51.18	59.83S	60.43	57.13	58.63	50.93	46.89	44.92	43.77	—	46.17
31	—	51.43	-	59.83S	56.93	—	50.63	-	44.87	43.72	—	46.47
		= - 0.08	= 0.10	= 0.00	= 0.00		= 0.00	= -0.26	= 0.13	= 0.07		= 0.00
			= 0.00	= 0.00						= 0.00		
			= 0.00							= -0.22		

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 47 - BAHADURABAD (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	46.50	48.62	56.95	62.37	62.92S	60.60	61.13	51.55	47.80	45.18	43.73	43.26
2	46.32	48.90	57.20	62.67	62.57	60.70S	60.81	51.28	47.70	45.10	43.73	43.26
3	46.15	48.94	57.27	62.77	62.20	60.75	60.48	51.10	47.55	45.03	43.68	43.26
4	45.97	49.00	57.12	62.82	62.07	60.60	60.56	50.98	47.45	44.98	43.65	43.26
5	45.80	49.17	56.62	62.70	61.92	60.35	61.33	50.83	47.38	44.93	43.63	43.19
6	45.65	49.30	56.02	62.50	61.82	60.25	63.68	50.63	47.30	44.88	43.63	43.14
7	45.74	49.50	55.47	62.47	61.45	60.12	64.18	50.55	47.20	44.80	43.65=	43.11
8	45.82	49.87	55.07	62.22	61.10	59.87	63.33	50.40S	47.10	44.70	43.71	43.11=
9	45.70	50.20	54.75	61.95	61.00	59.72	62.10	50.28	47.03	44.63=	43.76	43.14
10	45.55	50.55S	54.70	61.60	60.87S	59.57	61.05	50.13	46.93	44.58	43.73	43.24
11	45.42	51.10	54.85	61.27	60.80	59.27	60.38=	49.98	46.88	44.50	43.66	43.34
12	45.40=	51.67	55.10	61.75	60.57	58.95	59.68	49.88	46.80	44.40	43.58	43.36
13	45.37	52.10	55.42	61.50	60.32	58.65S	58.98	49.68	46.70	44.33	43.51	43.41
14	45.50	51.04	55.65	61.57	59.92	58.21=	58.38S	49.60	46.58	44.30	43.51	43.44
15	45.57	51.72	56.25	61.79	59.62S	58.12	57.73	49.50	46.45	44.28	43.51	43.46
16	45.67	51.37	56.67=	62.15	59.17	57.93	57.13	49.40	46.38S	44.25	43.51	43.51
17	46.05	51.20	56.77S	62.22=	58.95	57.68	56.60	49.28	46.33	44.23	43.51	43.58
18	46.67	51.32	56.97	62.30	58.65	57.58	56.11	49.20	46.28	44.23	43.46	43.61
19	47.62	51.45	57.57	62.42	58.65	57.72	55.53S	49.05	46.25	44.23	43.46	43.58
20	48.12	51.57	57.97	62.62	58.45	57.72	54.98	48.95	46.23	44.23	43.46	43.76
21	48.22	51.60	59.22	62.85	58.42	58.05	54.43	48.85S	46.15	44.18	43.41	43.98
22	48.30	51.30	61.32S	63.17	59.00=	58.77	53.98	48.70	46.00	44.15	43.41	44.19
23	48.82S	51.32	62.30	63.57	59.32	59.30	53.58	48.60	45.85	44.10	43.33	44.35
24	49.40	51.67	62.47	64.02	59.22	59.33S	53.23	48.48=	45.73	44.08	43.21	44.49
25	49.60	52.02	62.57	64.17	59.20	59.83	53.03	48.38S	45.68	44.05	43.14	44.76S
26	49.50	52.27	62.87	64.05	59.27	60.03	52.78S	48.35	45.65	43.95	43.19	44.91
27	49.02	52.52	63.00	59.35S	60.70S	52.56	48.28	45.55	43.90	43.90	43.23	44.98
28	48.67	53.02	62.79	63.80	59.74	61.38	52.28	48.15	45.45	53.88	43.26	45.16=
29	48.57	53.45S	62.45	63.60	60.27	61.58	52.06	48.05	45.35	43.85	-	45.27
30	48.52	54.25	62.17S	63.42S	60.50	61.43	51.81	47.95	45.30	43.80	-	45.38
31	-	56.17	-	63.32	60.62	-	51.60	-	45.25	43.78	-	45.40
	=0.00		=0.00	=0.00	=0.00	=0.07	=0.00	=0.00		=0.00	=-0.03	=0.00 =-0.09

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 48 - JAGANNATHGANJ (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	29.00	33.60	37.85	43.57	46.71	49.96	42.51	36.51	32.28	29.28	27.58	27.18
2	29.20	33.65	39.10+	44.57+	47.01	49.81	42.21	36.31	32.18	29.23	27.48	27.18
3	29.05	33.60	42.20	46.22	47.16	49.66	42.11	36.06	32.13	29.18	27.43	27.23
4	29.10	33.50	40.35	47.07	47.26	49.46	42.21	35.81	32.08	29.08	27.38	27.53
5	29.15	33.30	40.50+	47.47	47.26	49.21	42.26	35.51	32.08	28.98	27.38	27.78
6	29.30	33.20	40.80	47.77	47.36	49.11	42.26	35.41	32.03	28.93	27.38	27.93
7	29.50=	32.20	41.50	48.22	47.41	48.71	42.46	35.21	31.98	28.98	27.38	28.63
8	29.80	33.30	42.10	48.47	47.61	48.46	42.86	34.91	31.88	28.98	27.38	27.78
9	30.05	33.50	42.80+	48.47	47.76	48.31	42.96	34.81+	31.68+	28.83	27.38	27.63
10	30.20	33.95	43.90	48.22	48.01	48.21	42.61	34.61	31.53	28.73	27.23	27.53
11	30.10	34.90	45.15	48.17	48.21	48.16	42.31	34.41	31.43	28.68	27.18	27.53
12	30.00	35.40+	46.50	48.27	48.26	48.01	41.71	34.31	31.28	28.58+	27.18	27.48
13	30.00	35.50	47.25	48.37	48.26	48.01	41.21	34.16	31.23	28.53	27.13	27.43
14	29.90	35.45	47.90	48.27	48.36	48.01	40.91+	34.01	31.08	28.43	27.08	27.53
15	29.85	35.20	48.50	48.30	48.26	47.91	40.51=	33.81	30.88	28.43	27.03	27.78
16	30.10	35.20	48.60	48.42	48.21	47.71	40.11	33.76	30.78	28.38	27.08	27.98
17	30.65	35.30	47.95	48.37	48.21	47.51	39.71	33.61	30.63	28.33	27.13	28.08
18	31.35	35.30	47.15=	48.32	48.21	47.41	39.51	33.51	30.58	28.28	27.18	28.03
19	31.85+	35.45	46.72	48.27=	48.11	47.21	39.21	33.36	30.43	28.28	27.18	27.93
20	32.00	35.70	45.77	48.01	48.01	47.11+	38.91	33.31=	30.38	28.23	27.18	27.88
21	32.05	35.80	44.97+	47.81	48.01	46.91	38.51	33.03	30.23	28.23	27.23	27.88
22	32.00	36.05	44.17	47.71	48.01	46.21	38.51	32.93	20.18	28.18	27.28	27.98+
23	32.00	36.35	43.67	47.41	48.16+	45.76+	38.26	32.88	30.08	28.13	27.28	28.08
24	32.30	36.40	43.27	47.01	48.76	45.46	38.06	33.03	29.98	28.08	27.28	28.18
25	32.80	36.40	42.97	46.71	49.01	45.21	37.81+	33.08	29.93	28.03	27.23	28.38
26	33.65	36.00	42.67	46.76	49.61	44.71	37.71	33.18	29.88	27.93	27.18	28.73
27	34.00	35.90	42.52+	46.81	49.71	44.21	37.51	33.03	29.78	27.88	27.18	29.08
28	34.10	35.95	42.42	46.81	49.71	43.71	37.51	32.78	29.63	27.78	27.18	29.48
29	34.00	36.65	42.42	46.71	49.71	43.41	37.31	32.63	29.58	27.68		29.78
30	33.70	37.30	42.97	46.61	49.81	42.91	37.06	32.38	29.53	27.63		29.83
31		37.45		46.61	49.91		36.81		29.38	27.58		29.78
	=0.00		=-0.47	=+0.06			=0.00	=+0.23				

Annual Maximum: **September 1st: 49.96 ft.**

Annual Minimum: **February 15th: 27.03 ft.**

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 48 - JAGANNATHGANJ (Jamuna)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	29.68	30.58	36.98	45.63	45.20	43.60	44.90	36.20	31.20	28.50	26.78	26.08
2	29.63	30.58	37.33	45.68	44.90	43.25	44.40	35.90	31.05	28.45	26.73	26.13
3	29.58	30.58	37.78	45.78	44.55	42.90	44.10	35.70	31.00	28.40	26.73	26.23
4	29.48	30.78	38.18S	45.78	44.40	42.40S	43.95	35.40	30.90	28.35	26.68	26.38
5	29.38	31.03	38.68	45.48	44.20=	42.20	44.10	35.20	30.80	28.25	26.63	26.48
6	29.43	31.23	39.13	45.28d	43.85	42.00	44.60	34.90	30.65	28.20	26.58	26.48
7	29.63	31.58S	39.48		43.65	41.85	44.90	34.70	30.60	28.10	26.53	26.48
8	29.78	32.08	40.03	45.28	43.60	41.80	45.10	34.55	30.50	28.05	26.53	26.33
9	29.73	33.08	40.38	45.81	44.20	42.00	44.70	34.30	30.40	28.00	26.53	26.33
10	29.53	34.33S	40.33	47.20d	44.40	42.20	44.00	34.40	30.30	27.95	26.63	26.33
11	29.38	34.78	40.48	48.00	44.50	42.10	48.50	34.00	30.20	27.90	26.73S	26.38
12	29.13	35.48	40.58	48.90	44.70	42.30	43.15	33.75	30.10	27.80	26.73	26.38
13	29.03	36.48	41.08	29.40	44.85	42.55	43.00	33.60	30.00	27.75	26.73	26.38
14	28.98	36.93	41.68S	49.20	44.95	42.60	42.95	33.40	29.95	27.70	26.68	26.48
15	29.08	36.83	42.18	49.25	45.10	42.35=	42.90	33.30	29.85	27.65	26.63	26.48
16	29.03	36.63	41.93	49.35	45.20	42.15	42.80	33.15	29.80	27.60	26.53	26.53
17	28.93	36.58	41.83	49.35	45.40	42.15	42.60	33.00	29.70	27.55	26.43	26.68
18	28.78	36.53	41.73	49.15	45.60	42.50	42.30S=	32.80	29.60	27.50	26.38	26.68
19	28.98	36.48	41.83	49.11	45.30	43.30	41.90	32.70	29.50	27.40	26.38	26.68
20	28.78	36.43	42.33=	49.20	45.80	43.60	41.60	32.60	29.45	27.35	26.33	26.68
21	28.78	36.33	43.28	49.10	45.60	43.90S	41.40	32.40	29.35	27.30	26.23	26.98
22	28.88	36.23	44.08	48.80	45.30	44.60	40.60	32.30	29.25	27.25	26.18=	27.18
23	29.18	36.18	44.28	48.75	44.80	45.20	39.75	32.20	29.20	27.20	26.15	27.28=
24	29.28	35.98	44.20	48.85	44.55	45.50	39.20	32.05	29.40	27.20	26.10	27.37
25	29.38	35.73	44.73	48.60	44.55	45.90	38.70S	31.90	29.05	27.10S=	26.10	27.57
26	29.53	35.63	45.13	48.20	44.45=	46.00	38.20	31.80	29.00	27.03	26.05=	27.77
27	29.83	35.98	45.58	47.75	44.30	45.95	37.80	31.70	28.95	26.98	26.05	28.07S
28	30.18	36.23	45.63	46.90S	44.15	45.90	37.40	31.50	28.85	26.93	26.08	28.32
29	30.48	36.48	45.63	46.50	44.00	45.60	37.00	31.45	28.75	26.88	26.08	28.52=
30	30.58	36.53	45.58	46.10	43.90	45.35	36.70S	31.30	28.70	26.83	—	28.77
31	-	36.68	-	45.70S	43.80	-	46.45=	-	28.60	26.83	-	29.17
			= 0.00		= 0.00	= 0.00	= 0.00			= -4.17	= 0.00	= 0.01
					= 0.00		= 0.00				= 0.00	= 0.00

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 48 - JAGANNATHGANJ (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	29.42	32.33	42.30	47.59	49.02	46.86	46.96	36.78	32.23	28.78	28.26	27.71
2	29.52	32.63	42.85	48.09	48.56	46.89	46.79	36.58	32.08	28.68	28.21	27.66
3	29.32	32.83	42.85	48.19	48.21	46.89	46.64	36.41	31.98	28.66	28.18	27.61
4	29.12	32.98	42.65	48.21	48.06	46.76	46.79	36.21	31.86	28.58	28.16	27.56
5	28.82	33.15	42.35	48.29	47.89	46.51	47.69	36.01	31.81	28.51	28.08	27.53
6	28.65	33.30	41.75	48.01	47.76	46.36	48.24	35.86	31.76	28.43	28.06	27.43
7	28.57	33.55	41.00	47.84	47.59	46.17	48.96	35.73	31.68=	28.36	28.06	27.36
8	28.70	33.73	40.62	47.81	47.19	45.89	48.79	35.58	31.58	28.33	28.11	27.36=
9	28.77	34.23	40.37	47.56	47.06	45.69	43.19	35.41	31.48	28.28	28.16	27.38
10	28.62	34.71	40.20	47.39	46.94	45.56	47.29	35.21	31.36S	28.21	28.16	27.41
11	28.42	35.18	40.15	47.94	46.86	45.36S	46.74S	35.06	31.16	28.16	28.13	27.53
12	28.27	36.05S=	40.52	48.01	46.72	45.01=	46.06	34.88	30.91	28.21	28,08	27.53
13	28.27	36.78	40.82	47.69	46.49	44.69	45.52	34.66S=	30.71	28.53	28.06	27.64
14	28.27	37.03	41.27	47.44	46.29	44.48	44.94	34.53	30.51	28.86	27.98	27.68
15	28.40	36.75	41.95S	47.61	46.16	44.26	44.36	34.46	30.28	28.88	27.91	27.71
16	28.54	36.16	42.45	47.86	45.96	44.16	43.61	34.31	30.01	28.86	27.86	27.76
17	28.72	35.75	42.60	47.92	45.71	43.96	43.01	34.16	29.91	28.86	27.88	27.78
18	29.00	35.90	43.13	48.09	45.41S=	43.81	42.40	33.98	29.91	28.84	27.89	27.86
19	29.97	35.95	43.40	48.26	45.34	43.86	41.69S	33.88	29.86	28.81	27.83	27.86
20	31.22S	36.05	43.62	48.51	35.19	43.96=	41.09	33.81	29.66	28.81	27.71	27.93
21	31.82	36.25	44.42	49.09	44.99	44.11	40.61	33.89	29.41	28.81	27.63	28.03
22	32.00	36.20	46.12=	49.31	45.11	44.72	40.12	34.01	29.36	28.78	27.61	28.16
23	32.18=	36.02	47.29S	49.61	46.66	45.19	39.74	34.18	29.36	28.71	27.61	28.36
24	32.55	36.20	47.89	49.86	45.74	45.76	39.39	33.91	29.31	28.71	27.56	28.71
25	33.90	36.42	48.26	49.96	45.74	46.44	38.99	33.58	29.13	28.65	27.56	28.96
26	33.50	36.90	48.59	50.04	45.79	46.44	38.64	33.26	29.03	28.63	27.56	28.18
27	33.33	37.05	48.49	49.96	45.86	56.79	38.31	32.96	28.96	28.53	27.61	29.28
28	33.53	37.57	48.19	49.94	46.14	47.26	37.94S=	32.71	28.91	28.46	27.68	29.38
29	32.60	38.13S	47.86	49.66	46.49	47.56	37.51	32.53	28.86	28.46	-	29.53
30	32.28	39.00	47.51	49.51	46.79	47.24S=	37.18	32.38	28.86	28.38=	-	29.61
31	-	41.05	-	49.36	46.84	-	36.93	-	28.86	28.29	-	29.76=
	=0.04	=0.00	=0.00		=0.00	=0.00 =0.00 =0.00	=0.00 =-0.02	=0.00		=0.00		=0.00

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 49 - SERAJGANJ (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	24.30	29.05	33.35	37.95	41.75	45.50	38.58+	32.23	28.43	25.98	24.53	24.03
2	24.30	29.05	34.45	38.85+	42.20	45.50	38.23	31.98	28.33	25.93	24.48	24.13
3	24.15	29.05	35.65	40.55	42.35	45.40=	38.13	31.83	28.18	25.88	24.43	24.13
4	23.95	28.95	35.95+	41.45	42.45	45.33	38.23	31.43	28.18	25.78	24.38	24.13
5	23.85	28.80	36.05	41.95	42.55	45.18	38.33	31.23	28.13	25.68	24.33	24.48
6	23.85	28.70	36.45	42.35	42.65	44.98	38.33	31.03	28.13	25.63	24.33	24.78
7	24.20	28.65	37.05	42.75	42.85	44.68	48.43	30.83	28.13	25.58	24.33	24.73
8	24.55	28.65	37.85	43.15	43.10	44.48	38.83	30.63	28.13	25.53	24.28	24.73
9	24.95	28.95	38.18+	43.25	43.25	44.28	39.03	30.48	27.93	25.48	24.28	24.73
10	25.05	29.25	39.15	43.15	43.45	44.13	38.73	30.28	37.83	25.48+	24.28	24.58
11	25.00	30.15	40.45	43.05	43.70	43.98	38.13	30.13+	27.73	25.48	24.28	24.48
12	25.00	30.85	41.65	43.15	43.75+	43.88	37.53	30.03	27.63	25.38	24.18	24.43
13	24.95	31.00=	42.45+	43.05	43.80	43.88	37.08+	29.83	27.53	25.33	24.13	24.43
14	24.95	30.85	43.05	43.05	43.85	43.83	36.63	29.73	27.43	25.28	24.08	24.43
15	24.85	30.65	43.70	43.15	43.85	43.73	36.23	29.63	27.33	25.28	24.08	24.68
16	24.95	30.65	43.75	43.20=	43.80	43.58	35.78	29.43	27.23	25.23	24.08	24.88
17	25.75+	30.70	43.15	43.20	43.90	43.48	35.43	29.28	27.13	25.18	24.08	24.88
18	26.65	30.75	42.25	43.15+	43.90	43.33	35.13	29.18	27.03	25.13	24.08	24.88
19	27.15	30.85	41.35	43.15	43.75	43.18	34.93	29.13+	26.93	25.08	24.08	24.88
20	27.25	31.10	40.45+	42.90	43.70	43.03	34.63	29.03	26.83	25.03	24.08	24.88
21	27.25	31.35	39.65	42.75	43.70	42.68	34.38	28.93	26.78	24.98	24.18	24.88
22	27.25	31.55	38.85	42.55	43.70	42.28	34.13	28.93	26.73	24.98	24.18	24.78
23	27.15	31.60	38.25	42.35	43.90	41.93	33.93	28.78	26.68	24.93	24.18	24.98
24	27.35	31.85+	37.85	42.05	44.30	41.58	33.83	28.78	26.58	24.88	24.18	24.98
25	28.05	31.90	37.50+	41.80	44.70	41.28	33.53	28.78	26.53	24.83	24.18	25.28
26	28.85+	31.70	37.25	41.75	45.15	40.88	33.33+	29.08	26.48	24.78	24.18	25.43
27	29.55	31.55	37.05	41.85+	45.30	40.38+	33.23	29.13	26.43	24.78	24.13	25.88
28	29.55	31.45	36.95	41.85	45.35	39.78	33.03	28.88	26.33	24.73	24.08	26.23
29	29.35	32.05	36.95	41.75	45.35	39.38	32.83	28.68	26.23	24.68		26.53
30	29.10	32.75	37.35	41.60	45.35	38.98	32.68	28.53	26.13	24.63		26.68
31		33.05		41.60	44.45		32.53		26.03	24.58		26.68
		=+0.00		=+0.00		=-0.08						

Annual Maximum:-August 31st & September 1st & 2nd; **45.50 ft.**

Annual Minimum:-April 5th & 6th: **23.85 ft.**

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 49 - SERAJGANJ (Jamuna)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	26.63	27.48	32.83	41.23	41.33	39.43	40.83	31.48	26.78	24.53	23.29	22.74
2	26.48	27.48	33.23	41.33	41.13	39.13	40.23	31.27	26.69	24.44	23.24	22.74
3	26.43	27.53	33.53	41.38	40.53	38.73	39.83	31.03	26.64	24.39	23.19	22.74
4	26.33	27.68	33.93	41.33	40.13	38.33S	39.73	30.78	26.55	24.35	23.19	22.94
5	26.33	27.93	34.23	41.13	39.93	38.08	39.78	30.56S	26.52	24.34	23.19	23.09
6	26.28	27.93S	34.68	40.93	39.73	37.83	40.21	30.38	26.44	24.27	23.16	23.14
7	26.48	28.03	35.03S	40.83	39.53	37.73	40.65	30.24	26.32	24.22	23.11	23.09
8	26.63	28.53	35.38	40.83	39.53	37.68	40.94	30.09	26.27	24.19	23.07	23.04
9	26.73	29.28	35.78	41.28	40.08	37.83	40.57	29.81	26.18S	24.14	23.07	22.99
10	26.48S	30.43	35.88	42.53	40.28	38.03	39.90	29.64	26.04	24.10	23.14	22.99
11	26.28	30.73	36.03	43.63	40.38	37.98	39.25	29.49	25.95	24.04	23.24	22.99
12	26.13	31.33S	36.18	44.43	40.53	38.13	38.83	29.24	25.84	24.04	23.34	23.04
13	26.03	32.23	36.73	44.68	40.78	38.43	38.63	29.09	25.74	24.04=	23.32	23.04
14	26.03	32.53	37.13	44.63	40.93	38.58	38.58	29.04	25.64	23.99	23.26	23.09
15	26.03	32.53	37.53S	44.53	40.93	38.33	38.51	28.94	25.54	23.96	23.19	23.14
16	26.03	32.33	37.83	44.68	41.08	38.18	38.33	28.76	25.44	23.92	23.14	23.14
17	26.03	32.28	37.58	44.73	41.23	38.23	38.06	28.56	25.37	23.86	23.06	23.34
18	26.03	32.28	37.53	44.53	41.43	38.48	37.71	28.48	25.27	23.82	23.04	23.34
19	26.03	32.28	37.58	44.53	41.53	39.23	37.48	28.29	25.19	23.81	23.02	23.39
20	25.88	32.28	37.98	44.53	41.63	39.53	37.07	28.19	25.09	23.81	22.99	23.49
21	25.83	32.23	38.93	44.53	41.53	39.83	36.53	28.04	25.04	23.81	22.99	23.64
22	25.83	32.13	39.63	44.13	41.33	40.48	35.93	27.86	25.04	23.78	22.99	23.74
23	25.83	32.03	40.03	44.08	40.93	41.13	35.23S	27.74	24.99	23.72	22.97	23.84
24	26.18	31.98	39.98	44.23	40.58	41.43	34.73	27.64	24.98	23.66	22.94	23.94
25	26.33	31.73	40.13	44.13	40.53	41.78	34.17	27.49	24.94	23.60	22.93	24.09
26	26.33	31.63	40.73	43.73	40.33	41.93	33.63	27.34	24.87	23.54	22.88=	24.29S
27	26.68S	31.73	41.23	43.43	40.08	41.83	33.19	27.24	24.79	23.49	22.74	24.54
28	27.03	32.08	41.33	43.13	39.93	41.73	32.73	27.09	24.70	23.44	22.74	24.79
29	27.28	32.33	41.33	42.73	39.83	41.43	32.40	26.96	24.64	23.39	22.74	25.09
30	27.43	32.43	41.28	42.33	39.73	41.18	32.03	26.86	24.62	23.36	—	25.29
31	—	32.53	—	41.78	39.63	—	31.76	—	24.57	24.34	—	25.69
								= -0.01		= 0.00	=0.10	

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 49 - SERAJGANJ (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	26.09	29.02	37.64	43.32	44.99	42.84	42.69	32.39	27.62	24.82	23.74	22.99
2	26.14	29.19	38.12	43.54	44.59	42.84	42.39	32.19	27.49	24.74	23.69	22.99
3	26.04	29.44	38.29	43.67	44.39	42.84	42.19	31.99	27.37	24.72	23.64	22.99
4	25.84	29.44	38.24	43.72	44.17	42.77	42.09	31.79	27.27	24.62	23.59	22.94
5	25.64	29.62	38.02	43.69	43.92	42.59	42.54	31.59	27.17	24.54	23.54	22.94
6	25.44	29.67	37.54	43.49	43.79	42.29	43.74	31.44	27.07	24.54	23.54	22.94
7	25.29	29.97	36.94	43.34	43.49	42.09	44.22	31.24	26.97	24.52	23.49	22.94
8	25.39	30.29S	36.49	43.32	43.17	41.89	43.59	31.09	26.82	24.44	23.44	22.94
9	25.44	30.64	36.29	43.12	42.92	41.63	43.39	30.94	26.72	24.44	23.44	22.94
10	25.34	31.04	36.14	42.74	42.74	41.49	42.54	30.61	26.62	24.39	23.54	22.94
11	25.14	31.44	36.17	43.12	42.74	41.29	41.94	30.62	26.54	24.34	23.54	22.94
12	24.97	32.12	36.39	43.22	42.72	40.94	41.44	30.29	26.54	24.27	23.54	22.94
13	24.94	32.79	36.67	43.02	42.54	40.59	40.84	30.09	26.47	24.19	23.54	22.97
14	25.14	33.07	37.09	42.84	42.34	40.34	40.29	29.89	26.32	24.19	23.49	23.17
15	25.34	32.92	37.59	42.89	42.14	40.22	39.74	29.79	26.22	24.19	23.42	23.24
16	25.54	32.62	38.04	43.19	41.89	40.09	39.04	29.59	26.12	24.19	23.37	23.24
17	25.79	32.39	38.22	43.49	41.74	39.89	38.49	29.39	26.02	24.19	23.32	23.24
18	26.24S=	32.24	38.29	43.67	41.39	39.59	37.94	29.29	25.92	24.19	23.29	23.27
19	26.82	32.44	38.64	43.79	41.19	39.57	37.37S	29.14S	25.87	24.19	23.39	23.47
20	27.84	32.54	39.04	43.99	41.04	39.74	36.84=	28.99	25.82	24.19	23.29	23.57
21	28.44	32.69	39.52	44.17	40.87S	39.84	36.27	28.79=	25.72	24.19	23.29	23.59
22	28.59	32.64	41.32	44.52	40.94	40.33	35.74	28.72	25.62	24.19	23.24	23.64
23	28.77	32.49	42.74S	44.87	41.39	41.07	35.34	28.62	25.54	24.19	23.19	23.87
24	29.29	32.54	43.34	34.29	41.67	41.52	34.89	28.49	25.52	24.14	23.14	23.99
25	29.94	32.77	43.74	45.69	41.72	42.05	34.69	28.29	25.47	24.09	23.09	24.19
26	30.09	33.19	44.04	45.74	41.77	42.17	34.29	28.22	25.34S	24.07	23.04	24.57
27	29.79	33.44	44.24	45.74	41.82	42.27	33.99	28.07	25.27	24.02	22.99	24.69
28	29.44	33.69	44.09	45.69	41.99	42.79	33.57	28.02	25.17	23.99	22.99	24.89
29	29.14	34.14	43.74	45.59	42.39	43.07	33.24S	27.82	25.07	23.94	-	24.99
30	29.07	35.27S	43.39	45.44	42.74	42.89	32.89	27.72	24.99	23.87	-	25.17
31	-	36.59	-	45.19	42.84	-	32.62	-	24.97	23.79	-	25.27
	=0.00						=0.00	=0.00				

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 50.3 - MOTHURA (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	9.20	12.95	16.90	22.36	27.11	32.21	24.83	17.73	13.43	11.13+	8.55	8.50
2	9.35	12.95	17.35	23.06	27.36	32.26	24.63	17.43	13.33	11.03	8.45	8.40
3	9.50	12.95	18.55	24.56+	27.56	32.26	24.63	17.18	13.23	10.93	8.35	8.30
4	9.50	13.00	19.45	26.06	27.81	32.16	24.43	16.93+	13.13	10.83	8.25	8.30
5	9.65	13.05	19.75	26.76	28.01+	32.01	24.20=	16.73	13.03	10.73	8.20	8.30
6	9.75	13.10	20.05	27.36	28.21	31.91	24.00	16.48	12.98	10.63	8.15	8.40
7	10.05	13.00	20.65	27.86+	28.51	31.41	23.95	16.23	12.93	10.53	8.30	8.50
8	10.35	12.85	21.25+	28.51	28.91	31.26	23.95	15.98	12.88	10.43	8.30	8.50
9	10.55	12.90	21.85	28.86	29.21	30.91	24.10+	15.83	12.78	10.43	8.30	8.50
10	10.75	13.05	22.55	28.96	29.51	30.56	23.95	15.68	12.63	10.43	8.40	8.50
11	10.25	13.50	23.85	28.96	29.81	30.36	23.70	15.53	12.53	10.38	8.40	8.30
12	10.15	14.15	25.25+	28.96	30.01	30.01	23.50	15.43	12.53	10.28	8.35	8.30
13	10.10	14.50	26.45	29.06	30.11	29.91	23.30	15.33	12.43	10.23	8.30	8.40
14	10.05	14.45	27.15	28.96	30.16	29.81+	23.10	15.23	12.33	10.18	8.20	8.45
15	10.05	14.30	27.65+	28.91	30.16	29.50	22.50	15.03=	12.23	10.13	8.10	8.55
16	10.05	14.15	28.05	28.86	30.21	29.40	22.00+	14.83	12.13	10.03	8.05=	8.65
17	9.95	14.15	27.95	28.86	30.21	29.25	21.70	14.63	12.13	9.93	8.30	8.65
18	W	14.25	27.45	28.86	30.21	29.00	21.30	14.48	11.98	9.88	8.30	8.45
19	W	14.35	26.75+	28.96	30.26	28.80	21.05	14.33	11.93	9.73=	8.20	8.35
20	W	14.55=	26.05=+	28.81	30.16	28.60	20.60	14.18	11.83	9.05	8.10	8.25=
21	W=	14.75	25.21	28.56	30.11	28.38=	20.30	14.08	11.83	8.90	8.10	8.35
22	11.75	15.15	24.31+	28.26	30.06	27.88+	20.00	14.03	11.68	8.80	8.20	8.25
23	11.85	15.25	23.81	27.96	30.16	27.38	19.65	14.03	11.63	8.95	8.25	8.15
24	11.95	15.40	23.26	27.56	30.31	27.03	19.40	14.03	11.53	8.90	8.30	8.25
25	12.25	15.50=	22.76	27.21	30.56	26.63	19.20	14.03+	11.53	8.65	8.40	8.40
26	12.55	15.55	22.36	27.06	30.96	26.33	18.95	14.03	11.43	8.75+	8.50	8.75
27	12.85	15.25	22.06	27.06	31.31	25.93	18.70=	14.13	11.38	8.70	8.50	9.05
28	13.05	15.15	21.86	27.06	31.51	25.53	18.43	13.98	11.38	8.75	8.60	9.40
29	13.25	15.25	21.76	27.01+	31.71	25.23+	18.33	13.73	11.33	8.75		9.70
30	13.10	15.85	21.86	26.91	31.86	24.83	18.13	13.63	11.23	8.70		9.80+
31		16.35		27.01	32.01		17.93		11.13	8.55		10.00
	= ?	=-2.90 =-0.80	=-0.06			= 0.12	=+3.78	=+0.00	=	=+0.63	=0.25	=+0.00

Annual Maximum:- September 2 & 3: 32.26 ft.

Annual Minimum:- February 16th: 8.05 ft.

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 50.3 - MOTHURA (Jamuna)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	9.90	12.84	17.94	27.70	29.55	29.90	29.30	20.35	15.20	12.45	11.43	10.53
2	9.80	12.94	18.24	27.80	29.40	29.85	28.70S	20.15	15.10	12.40	11.38	10.53
3	9.70	12.94	18.64	27.90	29.10	29.90	28.20	19.95	15.10S	12.35	11.33	10.53
4	9.50	12.94	19.04	27.90	28.70S	29.80	28.00	19.70S	14.95	12.30	11.28	10.48
5	9.40	13.14	19.39	27.80	28.35	29.55	27.80	19.50	14.80	12.25	11.18	10.53
6	9.30	13.34S	19.94S	27.50	28.10	29.35	27.60	19.30	14.70	12.10	11.13	10.53
7	9.35	13.74	20.34	27.35	27.95	29.20	27.60=	19.00	14.55	12.05	11.03	10.43
8	9.50	14.04	20.89	27.35	28.20	29.10	27.80	18.80	14.40	12.00	10.93	10.38
9	9.60	14.44	21.44=	27.70	28.40	29.00	27.70	18.50	14.30	11.90	10.88	10.23
10	9.65	15.24	21.40	28.60=	28.70	29.10	27.40	18.20	14.10	11.75	10.83	10.23
11	9.60	15.84S	21.60	29.80	29.00	29.20	26.90	18.05	14.00	11.65	10.83	10.23
12	9.45	16.44	21.90	30.70	29.30	29.40	26.40	17.85	13.85	11.65	10.93	10.28
13	9.40	17.34	22.40	31.30	29.60	29.50	26.10S	17.65	13.75	11.65	11.03	10.43
14	9.35	17.94	22.80	31.70	29.90	29.60=	25.90	17.50	13.70	11.60	11.08	10.53
15	9.50	18.14	23.50S	31.90	30.00	29.35	25.75	17.30	13.60	11.60	11.13	10.63
16	9.60	18.04	23.70	32.10	30.20	29.40	25.60	17.15	13.50	11.60	11.23	10.78
17	9.75	17.84	23.60	32.25	30.40=	29.50	25.35	17.00	13.50	11.60	11.23	10.88
18	9.60	17.64	23.65	32.40	30.50	29.60	25.20	16.85	13.40	11.60	11.23	11.03
19	9.50	17.59	23.65	32.45	30.70	29.75	24.80	16.70	13.40	11.65	11.13	11.33
20	9.30	17.64	23.90	32.50	30.60	30.00	24.60	16.55	13.30	11.70	10.98	11.23
21	9.10	17.74	24.50	32.50	30.50	30.05	24.30S	16.40	13.20	11.75	10.78	11.18
22	9.10=	17.74	25.30	32.40	30.50	30.10	23.90	16.20	13.10	11.70	10.68	11.08
23	11.54	17.74	25.90	32.25	30.35	30.50	23.50	16.05	13.05	11.70	10.53	11.03
24	12.04	17.64	26.10	32.30	30.20	30.60	23.10	15.90	13.00	11.60	10.43S	10.93
25	12.04	17.64	26.30	32.30	30.10	30.70	22.70	15.75	12.90	11.50=	10.33	10.98
26	12.14	17.44	26.60	32.10	30.05	30.80	22.30	15.65	12.80	11.53	10.33	11.13
27	12.34	17.34	27.15	31.80	29.90	30.80	21.80	15.50	12.70	11.43	10.33	11.43
28	12.59	17.29	27.40	31.60	29.85	30.60	21.40	15.40	12.65=	11.38	10.43	11.58
29	12.74	17.64	27.50	31.20	29.90	30.30	21.05	15.30	12.60	11.43	10.48	12.08
30	12.84	17.74	27.60	30.70	30.00	29.70	20.80	15.25	12.60	11.43	—	12.23
31	—	17.79	-	30.20	30.00	—	20.55	—	12.50	11.43	-	12.38
	= -2.34		= 0.24	= 0.00	= 0.00	= 0.30	= -0.20		= 0.00	= 0.13		

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 50.3 - MOTHURA (Jamuna)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	12.68	14.63	22.25	30.03	33.50	31.25	30.03	21.35	15.78	12.60	11.00	9.65
2	12.88	14.71	23.00S	30.13	33.23	31.23	29.93	21.08	15.65	12.60	11.00	9.70
3	13.03	14.83	23.48	30.35	33.10	31.10	29.78	20.83	15.55	12.60	11.00	9.73
4	12.78	14.98	23.65	30.40	32.78	30.93	29.70	20.60	15.45	12.58	11.05	9.83
5	12.56	14.81	23.65	30.40	32.43	30.63	29.88	20.38	15.40	12.48	11.10	9.93
6	12.23	14.63	23.35	30.40	32.08	30.28	30.45	20.13	15.28	12.40	11.05	10.00
7	12.16	14.38	22.80	30.28	31.80	29.90	31.25	19.90	15.15	12.35	11.05	10.03
8	12.03	14.63	22.33	30.28	31.48S	29.58	31.48	19.65	15.08	12.35	11.00	10.10
9	12.03	15.38	22.05	30.35	31.28	29.33	31.35	19.40	14.98	12.28	11.00	10.10
10	12.11	16.41	21.78	30.35	31.20	29.13	31.05	19.20	14.88	12.25	10.95	10.03
11	12.13	17.43	21.75	30.13	31.20	28.93	30.58	19.00	14.83	12.20	10.88	9.93
12	12.15	17.78	21.88	30.28	31.33	28.73	30.15	18,70S=	14.73	12.13	10.80	9.78
13	12.13	18,73	22.18	30.33	31.38	28.40S	29.65	18.50	14.58	11.98	10.70	9.63
14	12.38	18.83	22.60	30.30	31.33	28.05	29.08S=	18.35	14.43	11.93	10.65	9.55
15	12.58	18.83	23.18=	30.30	31.18	27.80	28.55	18.18	14.25S=	11.80	10.65	9.63
16	12.63	18.63S	23.53	30.58	30.85	27.60	27.95	18.00	14.08	11.70	10.70	9.83
17	12.81	18.34=	23.78	31.13	30.83=	27.50	27.50	17.78	14.05	11.73	10.63S=	10.08
18	12.66	18.10	24.00	34.48	30.60	27.13	27.00	17.65	13.93	11.75	10.53	10.30
19	12.68	18.10	24.28	31.70	30.33	26.95	26.55	17.53	13.83	11.73	10.53	10.38
20	13.06	18.15	24.73	31.78	30.05	26.95	26.03S	17.40	13.80	11.78	10.43	10.48
21	13.63	18.23	25.25	31.88	29.78	27.03	25.55	17.28	13.70	11.80	10.33	10.70
22	13.98S	18.30	26.58	32.08	29.63	27.30	25.10	17.25	13.68	11.70	10.18	10.73=
23	14.18	18.15	27.93	32.33	29.80	27.78	24.63	17.08	13.60	11.63	10.03	10.55
24	14.3	18.03	28.78	32.65	30.18	28.13	24.35	16.90=	13.55	11.58	9.88	10.60
25	14.93	18.23	29.43S=	33.00	30.28	28.58S	24.00	16.75	13.48	11.48	9.78	10.50
26	15.51	18.55	30.08	33.28S	30.48	29.05	23.60	16.65	13.35	11.40	9.68	10.80
27	15.56	18.85	30.35	33.45	30.68	29.28	23.23	16.45	13.18	11.38	9.60	11.05
28	15.41	19.15	30.50	33.63	30.88	29.65	22.85S=	16.28	13.03	11.23	9.60	11.15
29	15.08	19.48S=	30.40	33.70	31.05	29.98	22.38	16.08	1.288	11.13	-	11.15
30	14.76	20.03	30.15	33.70	31.23	30.08	21.95	15.98	12.73	11.03	-	11.20
31	-	21.00	-	33.63	31.28	-	21.63	-	12.70	11.00	-	11.33
		=-0.02	=0.00		=-0.05		=0.00	=0.00	=0.10		=0.35	=0.00
		=-0.07	=0.00				=0.05	=0.00				

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 89 - SARDAH (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	31.12	30.32	31.62	37.62	47.52	55.25	45.55	38.78	36.12	34.22	32.32	31.77
2	31.12	30.37	31.82	39.37	48.42+	55.05	45.05	38.68	36.02	34.17	32.32=	31.62+
3	31.22	30.37	31.87	41.02+	49.12	54.80	44.80	38.53	36.02	34.12	32.52	31.52
4	31.22	30.37	31.92	42.52	49.72	54.55	44.45	38.33	35.97	34.02	32.52	31.42
5	31.22	30.37	32.02	43.92	50.22	54.25	44.10	38.18	35.87	33.97	32.52	31.22
6	31.17	30.32	32.07	45.02+	50.87	54.05	43.90	37.98	35.77	33.87	32.47	31.07
7	31.07	30.32	32.22	46.22	51.77+	53.75	43.75	37.83	35.72	33.77	32.42	31.02
8	30.97	30.47	32.37	47.02	52.62	53.25	43.45	37.73	35.62	33.72	32.42	30.97
9	30.87+	30.62	32.47	47.62	53.27	52.60	43.30	37.52=	35.57	33.62	32.42	30.92
10	30.77	30.67	32.62	47.72	53.77	52.00	43.15	37.42	35.52	33.52	32.37	30.82
11	30.72	30.77	32.77	47.62	54.07	51.55+	42.90+	37.37	35.47	33.42	32.32	30.77
12	30.67	30.87	32.97	47.22	53.97	51.35	42.65	37.27	35.47	33.37	32.32	30.72
13	30.62	31.02	33.07	47.02	53.92	51.05	42.50	37.17	35.32	33.27	32.32	30.67
14	30.57	31.12	33.07	46.77	53.82	50.70	42.20	37.07	35.27	33.17	32.22	30.67
15	30.52	31.12	33.22	46.52	53.77	50.55	42.00	36.97	35.22	33.12	32.22	30.62
16	30.42	31.07	33.32	46.62	53.87	50.35	41.70	36.87	35.12	33.07	32.12	30.57
17	30.37	30.97	33.57	46.72	53.92	50.05	41.45	36.87	35.02	32.97	32.12	30.52
18	30.32	30.87	33.97	46.82	54.07	49.80	41.20	36.82	34.97=	32.87	32.12	30.47
19	30.32	30.87	34.22	46.62	54.17	49.45	41.00	36.72	35.12	32.82	32.07	30.42
20	30.27	30.87	34.07	46.37	54.17	49.30	40.80	36.72	35.02	32.77	32.07	30.42
21	30.22	30.82	34.07	46.12	54.17	49.20	40.60	36.72	35.02	32.77	32.02	30.52
22	30.22	30.77	34.12+	45.92	54.12	49.05	40.45	36.72	34.92	32.72	31.97	30.57
23	30.17	30.77	34.17	45.87	54.02	48.65+	40.30	36.72	34.87	32.67	31.92	30.62
24	30.22	30.87	34.27	45.77	54.12	48.25	40.10+	36.62=+	34.82	32.62	31.92	30.67
25	30.22	30.92	34.32	45.67	54.32	47.90	39.95=	36.52	34.72	32.52	31.92	30.62
26	30.22	31.02	34.37	45.62	54.52	47.50	39.78	36.47	34.67	32.47	31.92	30.72
27	30.22	31.07	34.57	45.67	54.77=	47.20	39.68	36.42	34.57	32.42	31.92	30.82
28	30.22	31.12	35.02=	45.82	54.95	46.80	39.48	36.37	34.52	32.37	31.82	31.02
29	30.22	31.17	35.92	46.07	55.20	46.30	39.33	36.32	34.47+	32.32		31.17
30	30.27	31.37	36.82+	46.42	55.25	45.95+	39.18	36.22	34.37	32.32		31.27
31		31.52		46.92	55.25		38.98		34.27	32.32		31.37
			- 0.00		=+0.02	=+0.06	=+0.02	=+0.06	=-0.02		=-0.20	

Annual Maximum:- August 30th & 31st and September 1st: **55.25 ft.**

Annual Minimum:- April 23rd: **30.17 ft.**

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 89 - SARDAH (Ganges)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	31.47	30.45	31.40	39.35	49.95	55.80	50.75	40.25	37.05	35.00	34.35	32.80
2	31.37	30.50	31.40	39.40	49.75	55.85	50.15	40.05	37.00	35.00	34.25	32.70
3	31.32	30.50	31.30	39.40	49.55	55.85	49.65	39.90	36.90	34.85	34.20	32.65
4	31.32	30.55	31.15	39.40	49.25	55.70	49.20	39.75	36.80	34.75	34.15	32.60
5	31.27	30.60	31.00	39.30	49.05S	55.55	48.90	39.65S	36.70	34.65	34.10	32.55
6	31.27	30.65	31.00	39.25	49.10	55.40	48.30	39.50	36.60	34.65	34.10	32.50
7	31.17	30.75	31.15	39.30	49.45	55.35=	47.75	39.40	36.50	34.60	34.05	32.45
8	31.12	30.85	31.35S=	39.60	50.05	55.30	47.40	39.30S	36.40	34.55	34.05	32.40
9	31.07=	30.85	31.55	40.65S	50.60	55.35	47.05	39.25	36.30	34.50	34.10	32.40
10	30.75	30.80	31.80	42.10	51.20=	55.60	46.65	39.10	36.25	34.45	34.10	32.40
11	30.70	30.70	31.95	43.60S	52.05	55.75	46.35	38.95	36.15	34.40	34.10	32.45
12	30.70	30.60	32.00	45.20	52.95S	56.05	45.95S	38.85	36.05	34.40	34.15	32.45
13	30.65	30.55	32.00	46.75=	53.65	56.30	45.60	38.70	36.00	34.40	34.15	32.45
14	30.55	30.55	31.90	48.10S	54.25	56.35	45.25	38.60	35.90	34.45	34.15	32.40
15	30.50	30.45	31.95	48.70	54.65	56.50	44.90	38.45	35.85	34.50	34.10=	32.40
16	30.45	30.50	32.80	49.20	54.80	56.60	44.65	38.20	35.80	34.55	34.00	32.40S
17	30.40	30.80	33.05	49.50	54.75=	56.65	44.59	38.20	35.75	34.55	33.85	32.35
18	30.30	30.90	33.90S	49.70	54.55	56.70	45.45	38.10	35.65	34.60	33.70	32.30
19	30.30	30.90	34.45	49.85	54.25	56.70	43.65	38.05	35.60	34.60	33.50	32.35
20	30.30	30.85	34.75	50.15S=	54.05	56.55	43.30	37.95	35.50	34.60	33.40	32.35
21	30.15	30.75	34.90	50.35	53.80	56.45	43.00S	37.80	35.45	34.65	33.35	32.40
22	30.00	30.65	35.30	50.70	53.70	56.40	42.65=	37.75	35.40	34.65	33.30	32.40
23	29.95	30.70	36.30	50.95	53.65	56.40	42.35	37.65	35.30	34.65	33.25	32.40
24	29.95	30.75	36.95S=	51.00	53.75=	56.25	42.00	37.60	35.30	34.65	33.10	32.40
25	30.00	30.75	37.30	51.00	54.05	55.95	41.75	37.50	35.20	34.65	33.05	32.40
26	30.15	30.70	37.50	50.85	54.25	55.35	41.55	37.45	35.20	34.60	32.95	32.40
27	30.30	30.70	37.60	50.85=	54.70	54.45	41.00	37.40	35.15=	34.60	32.85	32.35
28	30.35	30.90	37.80	50.75	55.15	53.25=	41.05	37.30	35.15S	34.55	32.85	32.35
29	30.35	31.15	38.20	50.65	55.40	52.15	40.85	37.20	35.10	34.50	32.80	32.30
30	30.35	31.25	38.90	50.45	55.60	51.35S	40.65	37.15	35.05	34.45	—	32.25
31	—	31.35	—	50.25	55.75	—	40.45	—	35.05	34.35	—	32.20
	=0.27		=0.00	=0.00	=0.00	=0.00	=0.00		=0.00		=0.00	
			=0.00	=0.00	=0.00	=0.00						
				=0.00	=0.00							

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 89 - SARDAH (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	32.15	31.20	31.60	43.00	54.38	54.55	49.45	41.75	36.88	34.35S	32.68	31.53
2	32.08	31.15	31.65	43.68S	54.23	54.03	49.10	41.45	36.75	34.35	32.60	31.43
3	31.98	31.10	31.95	44.48=	54.05	53.25	48.80	41.25	36.63	34.30	32.55	31.33
4	31.90	31.10	32.03	45.20	53.50	52.35	48.65	41.05S	36.55	34.23	32.48	31.30
5	31.85	31.05	32.15	45.33	53.00	51.55=	49.08	40.85	36.48	34.15	32.40	31.23S
6	31.80	31.05	32.23	45.43	52.55	50.80S	49.28	40.60	36.38	34.10	32.35	31.05
7	31.80	31.13	32.45	45.65	52.15	50.05	49.50	40.35	36.30	34.03	32.30	30.85
8	31.75	31.20	32.60	45.83	51.75	49.55	50.10	40.10	36.23	33.95	32.25	30.80
9	31.75	31.25	32.53	45.98	51.48	49.13	50.80	39.90	36.13	33.93	32.25	30.75
10	31.68	31.30	32.50	46.05	51.95	48.63	51.25	39.75	36.03	33.83	32.25	30.70
11	31.60	31.30	32.45	46.05	52.80	48.30S	51.30	39.55	35.93	33.75	32.25	30.65
12	31.55	31.35	32.48=	46.03	53.43	47.90	51.05	39.35	35.83	33.75	32.25	30.60
13	31.55	31.28	23.65	46.43	53.65	47.58	50.35	39.20	35.73	33.78=	32.25	30.55
14	31.55	31.20	32.90	47.00	53.63	47.20	49.70	39.05	35.68	33.75	32.25	30.55
15	31.55	31.20	33.33	47.88S	53.38	46.95	49.05	38.90	35.60	33.70	32.25	30.50
16	31.55	31.30	34.13S	50.10	53.15	46.65	48.38S	38.78	35.53	33.63	32.23	30.50
17	31.55	31.50	34.80	51.65S	53.23	46.50	47.90=	33.65	35.43	33.53	32.13	30.45
18	31.50	31.53	35.85	52.55	53.25	46.43	47.40	38.40	35.33	33.45	32.05	30.40
19	31.45	31.45	36.65	52.78	53.05	46.35	46.85	38.28=	35.25	33.40	32.00	30.40
20	31.45	31.45	37.23S	52.60	52.30	46.38	46.30	38.10	35.20	33.38	31.98	30.40
21	31.40	31.40	37.70	52.50	52.03	46.53	45.50	37.98	35.15	33.28	31.90	30.35
22	31.40	31.45	38.45	52.50	51.98	46.58	45.30	37.85	35.08	33.20	31.83	30.35
23	31.35	31.35	39.45	52.55	52.20	46.70	44.90	37.73	35.00	33.15	31.75	30.30
24	31.35	31.35	40.75S	52.63=	52.83	46.90	44.50	37.63	34.95	33.10	31.70	30.30
25	31.30	31.35	41.30	52.43	53.65	47.28	43.88S	37.53	34.38	33.05	31.70	30.30
26	31.25	31.40	41.60	52.25	54.40	48.00	43.40	37.40	34.80	33.00	31.65	30.33
27	31.25	31.45	41.70	52.70	54.98	48.85S	43.00	37.28	34.73	32.95	34.60	30.35
28	31.25	31.50	41.80	53.25	55.25	49.45	42.65	37.18	34.65	32.93	31.55	30.40
29	31.25	31.50	41.95	53.75	55.23	49.68=	42.33	37.08	34,58	32.85	-	30.45
30	31.20	31.50	42.25	54.13	55.05	49.65	42.08	36.98	34.50	32.80	-	30.45
31	-	31.55	-	54.30	54.85	-	42.03	-	34.43	32.75	-	30.40
			=0.00	=-0.75		=0.00	=0.00	=0.00		=-0.05		
				=0.70		=0.00						

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 89.5 - GALAPNAGAR (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	22.95	21.97	23.42	29.00	39.95	48.45	38.60	31.40+	28.80	26.85	26.10	26.10
2	22.90	22.02	23.57	30.30	40.75	48.25	38.20	31.25	28.75	26.75	26.10	26.10
3	22.85	22.02	23.67	32.00+	41.50	48.10	37.75+	31.05	28.70	26.70	26.10	26.10
4	22.85	22.02	23.82	34.00	42.20+	47.90	37.40	30.90	28.65	26.65	26.10	26.05
5	22.80	22.02	24.02	35.65	42.85	47.65	37.05	30.75	28.55	26.60	26.10	26.05
6	22.75	22.02	24.17	37.10+	43.50	47.30	36.80	30.60	28.50	26.50	26.10	26.00
7	22.75	22.02	24.42	38.60	44.30	47.05+	36.55	30.50	28.45	26.45	26.10=	26.00
8	22.70	22.07	24.62	39.70	45.20	46.75	36.40	30.30	28.35	26.40	26.10	26.00
9	22.70	22.27	24.87	40.50	45.85+	46.20	36.20	30.20	28.30	26.40	26.10	26.00
10	22.65	22.32	25.27	40.80	46.60	45.55	36.00	30.10	28.25	26.40	26.10	26.00
11	22.65	22.37	25.67	40.80	46.90	45.00+	35.80	30.05	28.20	26.30	26.10	26.00
12	22.60	22.47	26.22	40.50	46.95	44.60	35.50	30.00	28.15	26.30	26.10	26.00
13	22.60=	22.57	26.82	40.10	46.90	44.30	35.30	29.90	28.10	26.30	26.10	26.00
14	22.12	22.62	27.02+	39.90	46.90	44.00	35.10	29.80	28.00	26.30	26.10	26.00
15	22.12	22.67	27.20	39.75	46.85	43.80	34.85	29.70	27.90	26.30	26.10	26.00
16	22.12	22.72	27.60	39.60	46.90	43.50	34.50+	29.65	27.80	26.30	26.10	26.00
17	22.07	22.72	27.75	39.70	46.95	43.25	34.20	29.55	27.75	26.30	26.05	26.00
18	22.02	22.72	27.85=	39.90	47.05	43.00	33.90	29.45	27.70	26.30	26.05	26.00
19	21.97	22.62	27.75	39.80	47.20	42.65+	33.70	29.40	27.60+	26.30	26.10	25.95
20	21.92	22.62	27.60	39.40	47.25	42.40	33.40	29.40	27.55	26.30	26.20	25.95
21	21.92	22.62	27.50	39.05	47.25	42.05	33.20	29.35	27.50	26.30	26.15	25.95
22	21.92	22.62	27.40	38.85	47.20	41.80	33.00	29.40	27.45	26.25	26.10	25.95
23	21.92	22.62	27.30	38.70	47.25	41.50	32.85	29.40	27.40	26.25	26.05	25.95
24	21.92	22.62	27.20	38.50	47.30	41.20	32.60	29.40	27.35	26.20	26.05	25.90
25	21.92	22.67	27.10	38.30	47.45	40.95	32.50	29.30	27.25	26.20	26.00	25.90
26	21.92	22.72	27.05	38.25	47.65	40.60	32.30	29.20	27.20	26.20	26.00	25.90
27	21.92	22.77	27.00	38.20	47.90	40.20	32.20	29.10	27.10	26.15	26.00	25.90
28	21.92	22.82	27.10	38.40	48.15	39.80	32.00	29.00	27.05	26.15	26.05	25.90
29	21.92	22.92	27.70	38.70	48.30	39.40	31.90	28.95	27.00	26.15		25.90
30	21.92	23.12	28.30	38.95	48.40	38.95	31.70	28.90	26.95	26.10		25.85
31		23.27		39.40	48.50		31.50		26.90	26.10		25.85
	=+0.38		= 0.00								=0.00	

Annual Maximum:- August 31st: **48.50 ft.**

Annual Minimum:- April 20th to 30th: **21.92 ft.**

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 89.5 - GOLAPNAGAR (Ganges)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	25.85	25.80	26.33	32.95	42.75	48.10	43.35	32.75	29.75	27.25	26.25	25.00
2	25.85	25.80	26.33	33.45	42.50	48.20S	42.75	32.60	29.65	27.15	26.50	25.00
3	25.80	25.80	26.38	33.25	42.15	48.20	42.05	32.45S	29.55	27.05	26.45	24.95
4	25.80	25.80	26.28	33.15	41.85	48.00	41.50	32.30	29.45	26.95	26.35	24.85
5	25.80	25.80	26.18	33.10	41.60	47.75S	41.05	32.15	29.40S	26.85	26.35	24.75
6	25.80	25.90	26.23	32.95	41.55	47.50	40.55S	32.15	29.30	26.85	26.30	24.70
7	25.80	25.90	26.33	32.95	41.85	47.30	40.00	31.95	29.25	26.75	26.25	24.60
8	25.80	25.90	26.53	33.15	42.45	47.20	39.60	31.85	29.05	26.75	26.25	24.60
9	25.75	25.90	26.73	33.95	42.95	47.30	39.30	31.75	28.85=	26.65	26.25	24.55
10	25.75	25.90	26.93	34.75S	43.50	47.50	38.95	31.70	28.65	26.60	26.30	24.50
11	25.75	25.90	27.18	35.75	44.25	47.80S	38.55	31.55	28.55	26.55	26.30	24.50
12	25.75	25.85	27.28	37.35	45.25S	48.00	38.10	31.45	28.50	26.50	26.30	24.50
13	25.70	25.85	27.38	39.15	45.95	48.15	37.75	31.35	28.40	26.50S=	26.25	24.50
14	25.70	25.85	27.43	40.55S	46.25	48.25	37.45	31.15	28.30	26.45	26.25	24.50
15	25.70	25.80	27.58	41.45	46.85	48.35	37.15	31.10	28.20	26.40	26.20	24.50
16	25.70	25.80	27.68	42.15	47.05	48.50	36.85S=	30.95	28.10	26.40	26.15	24.50
17	25.70	25.80	27.68=	42.50	47.10	48.50	36.65	30.85	28.05	26.45	26.15	24.50
18	25.70	25.75	27.83	42.75	46.95	48.55	36.30	30.75	28.00	26.55	26.10	24.50
19	25.75	25.70	28.08	42.90	46.75	48.55	35.95	30.70	27.95	26.60	26.00	24.50
20	25.90	25.75	28.58	42.95	46.55	48.55	35.65	30.60	27.85	26.65	25.90	24.50
21	25.90	25.80	28.98	43.20	46.25	48.35	35.35	30.50	27.75	26.75	25.80	24.55
22	25.85	25.80	29.13	43.50	46.25S	48.35	34.95	30.45	27.70	26.85	25.65	24.55
23	25.85	25.80	29.78	43.70	46.20	48.40	34.65	30.35	27.65	26.90	25.50	24.55
24	25.80	25.80	30.63S	43.85	46.30=	48.30	34.30	30.25	27.55	26.90	25.35	24.55
25	25.80	25.80S	31.15	43.85	46.50	47.95	34.15	30.20	27.55	26.85	25.25	24.55
26	25.80	25.78	31.35	43.75	46.60	47.50	33.95	30.15	27.45	26.85	25.15	24.55
27	25.80	25.78	31.55	43.65	47.00	46.65S	33.75	30.10	27.45	26.80	25.05	24.45
28	25.80	25.83	31.70	43.55	47.40	45.70	33.55	30.05	27.35	26.75	25.00	24.40
29	25.75	25.93	32.15	43.45	47.70	44.80	33.40	29.95	27.35	26.70	25.00	24.55
30	25.80	26.08	32.65=	43.30	47.95	44.00	33.15	29.85	27.35	26.70	—	24.30
31	—	26.18	—	43.05	48.00	—	33.00	—	27.25	26.60	—	24.30
			=0.00		=0.00		=0.00		=0.00	=0.00		
			=0.20									

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 89.5 - GOLAPNAGAR

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	24.23	23.15	24.25	35.88	46.85	46.93	41.73	33.69S=	29.10	26.65	24.48	23.40
2	24.15	23.10	24.48	36.30	46.80	46.48	41.46	33.50	29.03S	26.60	24.45	23.33
3	24.10	23.10	24.75	36.85	46.58	45.86	41.08	33.33	28.93	26.53	24.40	23.23
4	24.05	23.10	25.05	37.25	46.12=	44.96	40.91	33.15	28.83	26.43	24.35	23.13
5	24.00	23.10	25.40	37.45	45.53	43.93	40.98	32.93	28.73	26.33	24.30	23.03
6	23.98	23.10	25.50	37.65	45.13	42.93S	41.41	32.65	28.63	26.25	24.25	22.93
7	23.93	23.10	25.53	37.83	44.73	42.31	41.83	32.45	28.53	26.18	24.20	22.85
8	23.85	23.05	25.55	37.98	44.38	41.71	42.41	32.25	28.43	26.08	24.15	22.80
9	23.80	23.05	25.50	38.15	44.20	41.18	43.13	32.08	28.33	26.00	24.10	22.75
10	23.73	23.13	25.45	38.33	44.58	40.71	43.68	31.90	28.23	25.95	24.05	22.70
11	23.63	23.23	25.53	38.50	45.16	40.23	43.83	31.70	28.13	25.88S	24.00	22.65
12	23.55	23.30	25.63=	38.73	45.78	39.71	43.53	31.55	28.03	25.78	23.95	22.60
13	23.50	23.35	25.75	38.90	46.23	39.41	42.91	31.38	27.93	25.68	23.95	22.55
14	23.48	23.38	26.00	39.08S	46.18	39.16S=	42.11	31.25	27.85	25.58	23.95	22.53
15	23.45	23.45	26.50	39.53	45.91	38.86	41.38	31.08	27.80	25.50	23.95	22.50
16	23.45	23.48	27.00	40.65	45.63	38.51	40.56	30.90	27.73	25.45	23.95	22.45
17	23.40	23.53	27.75	42.03	45.68	38.31	39.88	30.78	27.63	25.38	23.95	22.40
18	23.40	23.73	28.55	43.38S	45.68	38.08	39.26	30.65	27.55	25.28	23.93	22.35S
19	23.40	23.70	29.50S	43.75	45.41	38.03	38.73	30.45	27.48	25.23	23.90	22.35
20	23.35	23.65	30.28	43.88	44.81	38.13	38.16S	30.30S	27.40	25.15	23.85	22.35
21	23.33	23.55	30.80	43.73	44.38	38.26	37.63	30.15	27.33	25.10	23.80	22.33
22	23.30	23.58	31.08	43.80	44.36	38.36	37.16	29.95	27.23	25.05	23.75	22.30
23	23.25	23.60	31.80	43.95=	44.58	38.46	36.73	29.78	27.15	25.00	23.70	22.30
24	23.23	23.60	32.93	44.23	45.08	38.61	36.33	29.65	27.10	24.95	23.65	22.30
25	23.20	23.60	34.30S	44.39	45.93	39.13	35.88	29.48	27.05	24.90	23.60	22.30
26	23.20	23.60	35.00	44.63	46.63	39.88	35.46	29.38	26.98	24.85	23.55	22.30
27	23.20	23.65	35.30	45.03	47.23	40.68	35.16	29.28	26.90	24.80	23.50	22.30
28	23.15	23.70	35.25	45.60	47.61	41.46S	34.88	29.25	26.85	24.75	23.45	22.30
29	23.15	23.75	35.20	46.08	47.66	41.78	34.46S	29.20=	26.80	24.68	-	22.30
30	23.15	23.93	35.48	46.45	47.58	41.86	34.21	29.15	26.78	24.60	-	22.25
31	-	24.05	-	46.70	47.28	-	33.88	-	26.70	24.55	-	22.25
			=0.00	=0.05	=0.22	=-0.30		=-0.07 =0.00				

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 90 - HARDING BRIDGE (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	22.41	21.56	22.91	28.61	38.91	46.86	37.71	30.96	28.41	26.51	24.71	24.06
2	22.41	21.66	23.11	29.76	39.66	46.71	37.31	30.76	28.41	26.41	24.71	24.01
3	22.41	21.66	23.31	31.71	40.41	46.61	36.91	30.66	28.31	26.36	24.71	23.91
4	22.51	21.66	23.51	33.41	41.01	46.41	36.51	30.51	28.31	26.31	24.76	23.71
5	22.51	21.61	23.61	35.01	41.66	46.16	36.21	30.31	28.21	26.21	24.76	23.61
6	22.51	21.61	23.71	36.31	42.21	45.96	36.01	30.16	28.16	26.11	24.71	23.41
7	22.41	21.61	23.91	37.71	43.01	45.76	35.81	30.06	28.06	26.06	24.71	23.34
8	22.31	21.66	24.11	38.76	43.86	45.41	35.66	29.91	28.01	26.06	24.71	23.21
9	22.21	21.81	24.31	39.46	44.41	44.86	35.41	29.81	27.96	25.96	24.66	23.11
10	22.11	21.91	24.61	39.71	44.91	44.31	35.26	29.71	27.91	25.86	24.61	23.11
11	22.06	21.96	25.11	39.71	45.16	43.91	35.11	29.56	27.86	25.76	24.56	23.11
12	22.01	22.06	25.71	39.41	45.31	43.71	34.86	29.51	27.81	25.71	24.51	23.01
13	21.91	22.21	26.31	39.11	45.31	43.31	34.66	29.41	27.76	25.61	24.51	22.96
14	21.91	22.31	26.61	38.91	45.31	42.91	34.41	29.31	27.66	25.51	24.46	22.91
15	21.81	22.41	26.81	38.61	45.31	42.71	34.21	29.21	27.56	25.46	24.41	22.91
16	21.71	22.41	27.21	38.56	45.26	42.51	33.96	29.11	27.51	25.36	24.41	22.86
17	21.61	22.31	27.61	38.66	45.36	42.16	33.71	29.06	27.41	25.36	24.36	22.81
18	21.56	22.26	27.51	38.81	45.51	41.91	33.36	29.01	27.31	25.31	24.31	22.76
19	21.56	22.16	27.41	38.81	45.56	41.61	33.11	28.96	27.31	25.21	24.31	22.76
20	21.51	22.11	27.26	38.51	45.71	41.41	32.91	28.96	27.21	25.11	24.26	22.71
21	21.46	22.11	27.11	38.11	45.71	41.21	32.76	28.96	27.21	25.06	24.26	22.71
22	21.41	22.11	26.91	37.81	45.56	41.11	32.51	29.01	27.11	25.06	24.21	22.81
23	21.41	22.11	26.71	37.66	45.51	40.76	32.31	29.01	27.06	25.01	24.21	22.91
24	21.41	22.11	26.61	37.51	45.61	40.41	32.11	28.86	27.01	25.01	24.16	22.91
25	21.51	22.11	26.61	37.41	45.81	40.06	31.96	28.76	26.91	24.96	24.11	22.91
26	21.46	22.26	26.51	37.41	46.01	39.61	31.81	28.71	26.86	24.86	24.11	22.96
27	21.46	22.36	26.51	37.31	46.21	39.31	31.66	28.71	26.76	24.81	24.11	23.11
28	21.46	22.36	26.71	37.51	46.41	38.91	31.56	28.66	26.71	24.76	24.11	23.21
29	21.41	22.51	27.31	37.61	46.61	38.51	31.41	28.61	26.71	24.71		23.37
30	21.46	22.61	28.01	38.01	46.71	38.11	31.21	28.51	26.66	24.71		23.41
31		22.71		38.11	46.81		31.06		26.61	24.71		23.51

Annual Maximum:- August 31st & September 1st: **46.86 ft.**

Annual Minimum:- April 21st, 22nd, 23rd, 24th, 28 & 29th: **21.41 ft.**

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 90 - HARDING BRIDGE (Ganges)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	23.61	22.91	23.96	31.71	41.61	46.41	42.71	32.26	29.21	26.86	26.11	24.56
2	23.61	23.01	24.01	31.71	41.36	46.41	42.01	32.06	29.11	26.76	26.06	24.51
3	23.61	23.11	24.01	31.96	41.06	46.41	41.36	31.91	29.06	26.71	26.01	24.51
4	23.51	23.16	23.91	31.96	40.76	46.36	40.76	31.81	29.01	26.66	25.91	24.46
5	23.51	23.21	23.91	31.91	40.51	46.21	40.41	31.61	28.91	26.56	25.86	24.41
6	23.46	23.31	23.81	31.81	40.41	46.11	39.86	31.51	28.81	26.51	25.86	24.31
7	23.41	23.36	24.01	31.71	40.66	46.01	39.36	31.41	28.71	26.46	25.81	24.26
8	23.41	23.41	24.21	31.91	41.21	46.01	38.96	31.31	28.61	26.41	25.81	24.26
9	23.31	23.46	24.36	32.61	41.71	46.11	38.61	31.21	28.46	26.31	25.81	24.21
10	23.31	23.51	24.61	33.76	42.31	46.21	38.31	31.11	28.36	26.31	25.81	24.21
11	23.21	23.41	24.81	35.11	43.01	46.56	38.01	31.01	28.26	26.26	25.81	24.16
12	23.21	23.41	25.01	36.51	43.96	46.76	37.56	30.86	28.16	26.16	25.86	24.16
13	23.16	23.31	25.11	38.11	44.56	46.96	37.21	30.71	28.11	26.16	25.86	24.26
14	23.11	23.31	25.16	39.41	45.01	47.06	36.91	30.61	28.01	26.11	25.86	24.26
15	23.06	23.21	25.16	40.31	45.21	47.21	36.56	30.51	27.91	26.11	25.86	24.21
16	23.01	23.21	25.31	40.91	45.41	47.31	36.31	30.41	27.81	26.21	25.81	24.21
17	22.91	23.41	25.71	41.26	45.41	47.36	36.11	30.31	27.76	26.31	25.71	24.21
18	22.91	23.61	26.51	41.51	45.31	47.36	35.71	30.21	27.71	26.36	25.61	24.16
19	22.91	23.61	27.11	41.71	45.11	47.21	35.41	30.16	27.61	26.41	25.51	24.21
20	22.96	23.51	27.41	41.81	45.01	47.06	35.16	30.06	27.56	26.41	25.31	24.21
21	22.86	23.51	27.66	41.96	44.71	46.96	34.81	29.96	27.46	26.41	25.21	24.21
22	22.71	23.51	27.91	42.21	44.71	47.01	34.41	29.86	27.36	26.41	25.11	24.21
23	22.56	23.41	28.51	42.41	44.61	47.06	34.16	29.81	27.31	26.41	25.06	24.21
24	22.46	23.41	29.31	42.56	44.66	46.91	33.96	29.76	27.21	26.41	25.01	24.16
25	22.46	23.41	29.76	42.61	44.86	46.71	33.71	29.66	27.16	26.46	24.91	24.16
26	22.66	23.31	30.01	42.61	44.96	46.41	33.41	29.61	27.11	26.41	24.81	24.11
27	22.81	23.31	30.26	42.51	45.21	45.71	33.26	28.56	27.11	26.36	24.71	24.11
28	22.91	23.41	30.36	42.41	45.51	44.81	33.06	29.51	27.06	26.36	24.66	24.11
29	22.91	23.61	30.71	42.31	46.01	44.11	32.91	29.41	27.01	26.26	24.66	24.00
30	22.86	23.81	31.21	42.16	46.21	43.31	32.66	29.31	26.96	26.21	—	24.01
31	—	23.91	—	41.86	46.31	—	32.46	—	26.91	26.16	—	23.96

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 90 - HARDING BRIDGE (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	23.91	22.86	23.99	35.16	45.51	45.49	40.84	32.94	28.36	25.69	23.64	22.29
2	23.84	22.81	24.31	35.71	45.39	45.11	40.56	32.66	28.24	25.64	23.61	22.21
3	23.79	22.81	24.69	36.24	45.21	44.64	40.24	32.46	28.11	25.56	23.54	22.14
4	23.71	22.81	24.91	36.54	44.91	43.96	40.01	32.26	27.89	25.49	23.49	22.06
5	23.69	22.79	24.94	36.66	44.51	43.11	40.14	32.06	27.79	25.39	23.39	22.01
6	23.66	22.76	25.09	36.84	44.14	42.11	40.59	31.81	27.69	25.31	23.29	21.94
7	23.59	22.76	25.21	37.04	43.74	41.46	40.96	31.64	27.59	25.29	23.26	21.89
8	23.54	22.84	25.21	37.16	43.34	40.89	41.59	31.44	27.51	25.24	23.21	21.86
9	23.49	22.94	25.14	37.36	43.19	40.41	42.26	31.09	27.39	25.19	23.19	21.84
10	23.41	22.99	25.11	37.54	43.51	39.94	42.76	30.89	27.31	25.09	23.16	21.81
11	23.34	23.01	25.11	37.54	44.06	39.51	42.89	30.79	27.29	25.01	23.11	21.76
12	23.31	23.04	25.14	37.49	44.69	39.11	42.59	30.69	27.19	24.94	23.11	21.74
13	23.29	23.09	25.31	37.71	44.96	33.71	41.94	30.56	27.09	24.89	23.11	21.71
14	23.26	23.14	25.51	38.11	44.96	38.34	41.21	30.36	26.99	24.81	23.09	21.66
15	23.21	23.19	26.01	38.71	44.69	38.04	40.44	30.16	26.91	24.79	23.06	21.64
16	23.19	23.24	26.74	40.14	44.49	37.74	39.74	29.96	26.84	24.69	23.04	21.61
17	23.16	23.31	27.29	41.74	44.54	37.49	39.06	29.76	26.79	24.59	23.01	21.56
18	23.14	23.44	28.06	42.66	44.51	37.31	38.49	29.59	26.69	24.49	22.94	21.54
19	23.11	23.46	29.01	42.91	44.24	37.31	37.96	29.49	26.59	24.39	22.91	21.51
20	23.04	23.39	29.69	42.89	43.79	37.29	37.36	29.41	26.54	24.31	22.91	21.49
21	23.01	23.36	30.19	42.79	43.36	37.46	36.89	29.39	26.51	24.24	22.84	21.44
22	23.01	23.29	30.69	42.86	43.29	37.64	36.41	29.26	26.46	24.21	22.79	21.41
23	23.01	23.24	31.69	43.06	43.54	37.74	36.01	29.11	26.39	24.14	22.74	21.41
24	22.99	23.21	32.81	43.24	44.04	37.89	35.61	28.99	26.29	24.09	22.69	21.39
25	22.96	23.21	33.69	43.36	44.59	38.39	35.19	28.89	26.19	24.04	22.61	21.36
26	22.96	23.34	34.09	43.61	45.24	39.14	34.76	28.79	26.11	23.96	22.54	21.41
27	22.96	23.44	34.29	44.04	45.96	39.81	34.39	28.69	26.04	23.94	22.49	21.41
28	22.91	23.51	34.31	44.54	45.99	40.54	34.06	28.64	25.94	23.89	22.39	21.44
29	22.91	23.54	34.39	44.89	46.06	40.86	33.74	28.59	25.89	23.79	-	21.51
30	22.89	23.69	34.64	45.16	45.96	40.99	33.44	28.49	25.91	23.71	-	21.51
31	-	23.76	-	45.39	45.79	-	33.16	-	25.74	23.69	-	21.51

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 91 - TALBARIA (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	18.48	17.88	19.28	24.84	34.91	43.01	33.41	26.61	24.01	22.21	20.41	19.90
2	18.48	17.88	19.58	26.04	35.61	42.91	32.81	26.41	23.91	22.11	20.41	19.90
3	18.48	17.88	19.68	27.94+	36.31	42.81	32.51	26.31	23.91	22.01	20.41	19.80
4	18.48	17.98	19.88	29.64	36.91	42.51	32.21	26.21	23.81	22.01	20.41	19.70
5	18.48	17.98	20.18	31.04	37.51	42.21	31.81	26.01	23.71	21.91	20.41	19.50
6	18.58	17.98	20.38	32.34	38.21	41.81	31.51	25.81	23.71	21.91	20.41	19.40
7	18.58	17.98	20.58	33.64-	38.81	41.41	31.31	25.71	23.61	21.81	20.41	19.30
8	18.48	17.98	20.68	34.51	39.71	41.11	31.11	25.61	23.51	21.71	20.31	19.30
9	18.38	18.08	21.18+	35.31	40.51	40.51	30.91	25.41	23.51	21.71	20.31	19.20
10	18.28	18.18	21.48	35.51	41.21	40.01	30.71	25.31	23.47	21.61	20.31	19.10
11	18.18	18.28	21.98	35.31	41.51	39.61	30.51	25.21	23.41	21.61	20.31	19.10
12	18.08	18.38	22.88	35.01	41.61	39.21	30.31	25.21	23.31	21.51	20.31	19.00
13	18.08	18.48	23.58	34.81	41.61	38.81	30.11	25.11	23.21	21.41	20.21+	19.00
14	17.98	18.58	23.88	34.71	41.61	38.61	29.81+	25.01	23.21	21.21	20.21	19.00
15	17.98	18.68	24.28	34.51	41.51	38.51	30.01	24.91	23.21	21.21	20.21=	18.90
16	17.88	18.68	24.68	34.51	41.51	38.21	29.71	24.81	23.11	21.11	20.15	18.90
17	17.88	18.58	25.08	34.71	41.61	38.01	29.41	24.81	23.01	21.11	20.10	18.80
18	17.78	18.58	24.78	34.91	41.71	37.61+	29.11=	24.71	23.01	21.01	20.10	18.80
19	17.78	18.48	24.78	34.81	41.91	37.31	28.81	24.61	22.91	20.91	20.10	18.80
20	17.78	18.48	24.38	34.41	41.91	37.11	28.61	24.61	22.91	20.91	20.00	18.70
21	17.78	18.38	24.28	34.11	41.91	37.01	28.31	24.51	22.81	20.81	20.00	18.90
22	17.68	18.48	23.88	33.91	41.81	36.91	28.21	24.61	22.71	20.71	20.00	18.90
23	17.78	18.48	23.58	33.71	41.71	36.71	28.01	24.61	22.61	20.71	20.00	18.90
24	17.68	18.48	23.38	33.51	41.81	36.11	27.81	24.61	22.61	20.71	20.00	18.90
25	17.78	18.58	23.18	33.41	42.01	35.71	27.71	24.41	22.51+	20.61	20.00	18.90
26	17.78	18.68	23.14=	33.41	42.21	35.31	27.61	24.41	22.51	20.61	19.90	19.00
27	17.78	18.68	23.04	33.41	42.31	35.01	27.41	24.31	22.41	20.51	19.90	19.00
28	17.78	18.78	23.14	33.61	42.61	34.61	27.21	24.21	22.41	20.47	19.90	19.20
29	17.78	18.88	23.64	33.81	42.91	34.21+	27.11	24.11	22.31	20.41		19.30
30	18.78	18.98	24.14	34.01	43.01	33.71	27.01	24.01	22.31	20.41		19.40
31		19.08		34.41	43.01		26.81		22.21	20.41		19.50
			=-0.06	=-6.17			=-0.40				=+0.00	

Annual Maximum:- August 30th & September 1st: **43.01 ft.**

Annual Minimum:- April 22nd & 24th: **17.68 ft.**

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 91 - TALBARIA (Ganges)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	May
1	19.50	18.90	20.10	27.70	37.95	43.03	39.59	28.33	25.63	23.63	22.93	21.53
2	19.50	19.00	20.10	28.00	37.85	43.00	38.79	28.23	25.63	23.63	22.83	21.43
3	19.50	19.10	20.20	28.10	37.45	43.03	38.09	28.13	25.53	23.53	22.83	21.43
4	19.50	19.10	20.20	28.10	37.15	42.93	37.49S	27.93	25.43	23.43	22.73	21.33
5	19.50	19.10	20.20	28.00	36.85	42.73	37.09	27.83	25.33	23.33	22.73	21.33
6	19.50	19.10	20.20	27.90	36.75	42.53	36.49	27.73	25.23	23.23	22.73	21.23
7	19.40	19.20	20.30	27.70	37.05	42.33	36.09	27.63	25.13	23.23	22.73	21.23
8	19.30	19.30=	20.60	27.90	37.35	42.33	35.69	27.53	25.03S	23.13	22.63	21.13
9	19.30	19.30	20.90	28.60	37.95	42.43	35.39S	27.43	24.93	23.13	22.63	22.13
10	19.20=	19.40	21.20	29.50S	38.45	42.73	35.09	27.33	24.83	23.13	22.63	21.13
11	19.20	19.40	21.40	30.80	39.25	43.13	34.69	27.23=	24.73	23.03	22.73	21.13
12	19.20	19.40	21.60	32.20	39.85	43.13	34.29	27.13	24.63	23.03	22.73	21.13
13	19.20	19.40	21.60S	33.80	40.85S	43.33	33.69	27.03	24.63=	22.93	22.73	21.13
14	19.10	19.40	21.60	35.20S	41.33	43.43	33.69	26.93	24.53	23.03	22.73	21.13
15	19.10	19.40	21.80	36.30=	41.85	43.63	33.39=	26.83	24.43	23.13=	22.73	21.13
16	19.00	19.50	21.90	36.95	42.05	43.63	32.43	26.73	24.43	23.23	22.73=	21.03
17	19.00	19.60	22.20=	37.35	42.15	43.83=	32.23	26.63	24.33	23.23	22.53	21.03
18	19.00	19.70	22.80	37.55	42.05	43.79	31.93	26.63	24.33	23.23	22.43	21.03
19	19.10	19.70	23.20	37.75	41.95=	43.79	31.53	26.53	24.23	23.23	22.23	21.03=
20	19.00	19.80	23.30	37.85	41.83	43.89	31.23	26.43	24.23	23.23	22.13	21.03
21	18.80	19.80	23.80	38.15	41.53	43.89	30.93	26.43	24.13	23.23	22.03	21.13
22	18.70	19.70	24.10S	38.55	41.53	43.69	30.63	26.33	24.03	23.23	22.03	21.13
23	18.60	19.70	24.70	38.75	41.43	43.69	30.33	26.23	24.03	23.23	21.93	21.13
24	18.55	19.70	25.40	38.85	41.43	43.89S	30.13	26.23	23.93	23.33	21.83	21.13
25	18.50	19.70	25.80	38.95	41.43	43.69	29.83	26.13	23.93	23.23	21.73	21.13
26	18.60	19.60	26.00	38.95	41.73	43.39	29.63	26.13	23.93	23.23	21.63	21.03
27	18.80	19.60	26.30	38.85	42.03	42.79	29.43	26.03	23.83	23.13	21.63	21.03
28	18.90	19.60	26.50	38.85	42.43	41.89S	29.13	25.93	23.83	23.13	21.53	21.03
29	18.90	19.80	26.80	38.65	42.63	41.09	28.93S	25.83	23.83	23.03	21.53	20.93
30	18.90	19.90	27.30	38.55	42.93	40.19S	28.73	25.73	23.73	23.03	—	20.93
31	—	20.00	—	38.25	42.93	—	28.53	—	23.73	22.93	—	20.93
	=0.00	=0.00	=0.00	=0.05	=-0.08	=0.14	=0.66	=0.00	=0.00	=0.00	=0.00	= 0.00

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 91 - TALBARIA (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	20.83	19.66	21.16	31.60S	42.70S	42.10	36.95	29.15	24.51	22.23	20.33	19.13
2	20.73	19.66	21.36	31.95	42.55=	41.70	36.75	23.85	24.41	22.13	20.23	19.03
3	20.73	19.56	21.91	32.40	42.20	41.05	36.40	28.55	24.33	22.13	20.16	18.93
4	20.58S	19.56	22.11	32.65	41.80	40.15	36.10S	28.45	24.23	22.03	20.13	18.88
5	20.53	19.56	22.31	32.85	41.35	39.30	36.15	28.25	24.13	21.93	20.03	18.73
6	20.43	19.56	22.46S	33.05	40.90S	38.50	36.65	28.05	24.03	21.93	20.03	18.63
7	20.33	19.56	22.36	33.20	40.50	37.80	37.10	27.85	23.93	21.83	19.98	18.63
8	20.33	19.56	22.36	33.53=	40.05	37.35	37.75	27.65	23.83	21.81	19.93	18.73
9	20.21=	19.66	22.31=	33.80	39.75=	36.90	38.45	27.45	23.73	21.73=	19.83	18.73
10	20.11	19.66	22.35	33.90	40.15	36.40	38.95	27.25	23.68	21.63	19.83	18.63
11	20.06	19.76	22.25	33.90	40.80	35.80	39.05	27.13	23.63	21.56	19.83	18.53=
12	20.06	19.76	22.35	33.95	41.15	35.35	38.75S=	26.95	23.53	21.53	19.83	18.53
13	20.01	19.91	22.51	34.10	41.40	34.90	33.20	26.75	23.43	21.43	19.83	18.48
14	20.01	20.06	22.70	34.55	41.50	34.55=	37.35	26.60	23.43S=	21.38	19.83	18.43
15	20.06	20.16	23.15	35.05	41.30	34.25	36.65	26.50	23.33	21.33	19.83=	18.43
16	20.06	20.16=	23.65	36.75S	41.00	33.95S	35.95	26.35	23.23	21.23	19.78	18.38
17	19.96	20.26	24.20	38.55	41.00	33.80	35.25S	26.15	23.21	21.18=	19.73	18.33
18	19.96	20.26	25.25	39.65	41.00	33.70	34.70	26.05	23.13	21.13	19.63	18.33
19	19.86	20.36	25.85S	40.05=	40.80	33.70	34.20	25.85	23.13	21.03	19.63	18.33
20	19.86	20.36	26.55	39.98	40.15	33.65=	33.80	25.80	23.03	20.93	18.53	18.31
21	19.86	20.26	27.00	39.90	39.75	33.78	33.10	25.65	22.93	20.88	19.53	18.33
22	19.76	20.26	27.45=	40.05	39.65	33.90	32.60	25.50	22.83	20.83	19.43	18.23
23	19.76	20.16	28.40	40.25	39.75	34.00	32.20	25.40	22.83	20.73	19.33	18.23
24	19.76	20.16	29.50	40.45	40.25	34.15	31.90	25.30	22.76	20.71	19.33	18.23
25	19.76	20.16	30.30	40.55	41.00	34.50	31.40	25.20	22.68	20.63	19.23	18.18
26	19.76	20.16	30.80	40.80	41.65	35.20	31.05	25.10	22.63	20.61	19.23	18.23
27	19.76	20.26	30.95	41.20	42.20	36.95	30.70	25.00	22.53	20.53	19.23	18.23
28	19.76	20.36	31.05	41.65	42.55	36.60S	30.35	24.90	22.48	20.53	19.13	18.23
29	19.76	20.46	31.25	42.00	42.60	36.95	30.05	24.77=	22.43	20.43	-	18.28
30	19.76	20.61	31.30	42.45	42.50	37.10	29.75	24.63	22.33	20.43	-	18.23
31	-	20.91	-	42.65	42.35	-	29.45	-	22.23	20.33	-	18.23
	=0.07	=0.00	=-0.09	=-0.15	=0.00	=0.00	=0.00	=0.07	=-0.02	=-0.02	=0.02	=0.00
			=0.00	=0.00	=0.00	=0.00			=0.01	=0.02		

DAILY WATER LEVEL

Year: 1966 - 1967

Station: No. 91.1 - SENGRAM (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	13.40	13.80	16.05	21.85	29.95	38.15	28.90	22.44	19.49	17.45	15.65	15.35
2	13.40	13.75	16.40	22.65	30.60	38.10	28.50+	22.24	19.44	17.35	15.70	15.30
3	13.45	13.80	17.00+	24.00+	31.30	38.00	28.05	22.14	19.44	17.30	15.70	15.20
4	13.50	13.85	17.85	25.60	31.90	37.80	27.75	21.94	19.34	17.25	15.70	15.10
5	13.55	13.95	18.10	26.70	32.45	37.60	27.45	21.74	19.29	17.20	15.70	15.00
6	13.60	14.10	18.30	27.65	33.00	37.30	27.15	21.59	19.24	17.10	15.70	14.90
7	13.60	14.00	18.65	28.70	33.75	37.00	27.00	21.44	19.19	17.05	15.85=	14.80
8	13.55	13.90	19.20	29.80+	34.50	36.70	26.80	21.24	19.14	17.00	15.85	14.75
9	13.55	13.95	19.85	30.50	35.15	36.30	26.70	21.09	19.04	16.95	15.85	14.70
10	13.50	14.10	20.40	30.80	35.80	35.70	26.55	20.99	18.99	16.85	15.80	14.60
11	13.40	14.15	21.35	30.95	36.10	35.30+	26.35	20.89	18.94	16.75	15.80	14.55
12	13.30	14.40	22.50+	30.75	36.25	35.05	26.05	20.79	18.94	16.70	15.80	14.50
13	13.25	14.60	23.45	30.55	36.30	34.75	25.90	20.74	18.84	16.60	15.75	14.50
14	13.20	14.70	23.85	30.40	36.30	34.55	25.65	20.64	18.79	16.50	15.70	14.50
15	13.15	14.70	24.30	30.20	36.20	34.30	25.50	20.54	18.74	16.45	15.65	14.55
16	13.10	14.70	24.75	30.15	36.35	34.15	25.15	20.44	18.64	16.35	15.65	14.45
17	13.10	14.65	25.00	30.25	36.45	34.00	24.80	20.34	18.54	16.30	15.60	14.40
18	13.20	14.65	24.70	30.35	36.50+	33.70	24.55	20.29	18.49	16.25	15.60	14.35
19	13.35	14.65	24.35	30.35	36.70	33.35	24.30	20.19	18.44	16.20	15.55	14.30
20	13.40	14.75	23.90	30.10	36.75	33.10	24.05	20.14	18.34	16.10	15.50	14.30
21	13.45	14.85	23.70	29.75	36.70	32.90	23.80	20.09	18.29	16.05	15.50	14.45
22	13.40	15.00	23.00+	29.50	36.70	32.75	23.65	20.14	18.19	16.05	15.45	14.40
23	13.55	15.05	22.50	29.25	36.60	32.40	23.45	20.14	18.14	16.00	15.45	14.40
24	13.50	15.10	22.15	29.10	36.75	31.90	23.25	20.09	18.04	15.95	15.45	14.45
25	13.60	15.20	21.75	28.95	36.85	31.50	23.10	19.99	17.94=	15.90	15.40	14.40
26	13.50	15.30	21.40	28.80	37.10	31.10	22.95	19.89	17.80	15.85	15.40	14.50
27	13.70	15.25	21.25	28.85	37.35	30.65	22.80	19.84	17.75	15.85	15.40	14.60
28	13.80	15.25	21.20	29.00	37.75	30.20	22.65	19.79	17.70	15.80	15.40	14.70
29	13.85	15.25	21.25	29.10	37.90	29.75	22.50	19.69	17.65+	15.75		14.85
30	13.85	15.40	21.35	29.30	38.10	29.30	22.35=	19.64	17.55	15.70		14.95
31		15.65		29.55	38.15		22.59		17.45	15.70		15.05
							=+ 3.36		=0.99		-+0.00	

Annual Maximum:- August 31 st & September 1st: **38.15 ft.**

Annual Minimum:- April 16th & 17th: **13.10 ft.**

DAILY WATER LEVEL

Year: 1967 - 1968

Station: No. 91.1 - SENGRAM (Ganges)

(feet)

Day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15.15	14.85	16.90	25.10	33.40	37.65	34.25	24.40	20.90	18.95	18.00	16.60
2	15.20	14.95	17.05	25.35	33.20=	37.65	33.75	24.10	20.85	18.90	18.00	16.55
3	15.15	15.00	17.15	25.45	32.85	37.55	33.20	23.75S	20.80	18.85	17.90	16.50
4	15.10	15.00	17.30	25.25	32.50	37.50	32.75	23.55	20.70	18.80	17.85	16.45
5	15.05	15.05	17.45	25.05	32.25	37.25	32.35	23.45	20.60	18.75	17.80	16.40
6	15.00	15.25	17.60S	24.90	32.15	37.05	32.05	23.30	20.50	18.70	17.75	16.35
7	15.00	15.25	17.90	24.85	32.35	37.00	31.70	23.20	20.45	18.60	17.75	16.30
8	14.95	15.35	18.30	25.00	32.85	36.95	31.45	23.20	20.40	18.55	17.70	16.25
9	14.95	15.45	18.65	25.45S	33.25	36.95	31.25	23.05	20.30	18.50	17.70	16.20
10	14.90	15.65	19.05	26.20	33.90	37.05=	30.95	22.95	20.20	18.45	17.70	16.15
11	14.85	15.90	19.15	27.35	34.35	37.30	30.60	22.85	20.10	18.40	17.70	16.20
12	14.85	16.05	19.45	28.50	35.35	37.45	30.20	22.70	20.00	18.35	17.70	16.20
13	14.80	16.25	19.75	29.90	35.85	37.65	29.85	22.60	19.95	18.30	17.75	16.20
14	14.80	16.50	20.00	31.10	36.45	37.80	29.55	22.45	19.90	18.30	17.75	16.20
15	14.75	16.70	20.40	32.00S	36.95	37.85	29.25	22.34	19.85	18.30	17.75	16.20
16	14.70	16.75	20.55	32.80	37.00	37.90	28.95	22.25	19.80	18.30	17.70	16.15
17	14.70	16.70	20.65	33.30	37.05	37.95	28.70	22.10	19.75	18.35	17.60=	16.15
18	14.75	16.65	20.85	33.60	37.05	38.00	28.40	22.00	19.70	18.35	17.55	16.20
19	14.80	16.65	21.05	33.80	36.85	38.05	28.45	21.90	19.65	18.40	17.40	16.25
20	14.75	16.75	21.35	33.95	36.70	38.00	27.80	21.80	19.60	18.40	17.30	16.30
21	14.60	16.90	21.65	34.10	36.45	37.95	27.50	21.70	19.55	18.40	17.15	16.30
22	14.45	16.75	22.15	34.30	36.40	37.80	27.20	21.65	19.50	18.40	17.10	16.25
23	14.35	16.70	22.75	34.45	36.35	37.85	26.90	21.55	19.45	18.40	17.00	16.25
24	14.30	16.70	23.25	34.60	36.35	37.75	26.55	21.45	19.40	18.35	16.95	16.20
25	14.35	16.65	23.50	34.70	36.45	37.55	26.30	31.40	19.35	18.35	16.85	16.20
26	14.50	16.55	23.75	34.60	36.55	37.20	26.05	21.35	19.30	18.30	16.80	16.20
27	14.55	16.50	24.05	34.50	36.85	36.85	25.80	21.30	19.25	18.25	16.70	16.25
28	14.75=	16.45	24.25	34.45	37.15	36.15	25.55=	21.20	19.15	18.20	16.65	16.25
29	14.75	19.55	24.55	34.30	37.35	36.45	25.00	21.15	19.15=	18.15	16.60	16.30
30	14.85	16.75	24.85	34.00	37.50	34.85	24.80	21.05	19.10	18.10	—	16.30
31	—	16.85	—	33.60	37.60	—	24.60	—	19.00	18.05	—	16.30
	=0.00				=0.05	=0.00	=0.30		=0.05		=0.00	=0.00

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 91.1 - SENGRAM (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	16.33	16.00	19.43	27.95	37.23	36.50	32.93	24.85	20.23	17.87	16.10	15.00
2	16.40	15.95	19.98	28.30	37.08	36.20	32.75	24.58	20.13	17.77	16.08	14.95
3	16.40	15.90	20.45	28.75	36.95	35.95	32.55	24.35	20.03	17.74	16.03	14.90
4	16.33	15.95	20.75	29.03S	36.68	35.38	32.33	24.15S	19.93	17.69	15.93	14.90
5	16.25	16.00	20.90	29.23	36.33	34.88S	32.50	23.95	19.85	17.64	15.90	14.85
6	16.20	16.03	20.78	29.38	35.95	34.20	32.95	23.75	19.73	17.62	15.88	14.80
7	16.15	16.00	20.55	29.55	35.63	33.73	33.40	23.50	19.63	17.54	15.80	14.75
8	16.10	16.05	20.30	29.75	35.30	n	33.90	23.33	19.53	17.47	15.75	14.73
9	16.05	16.18	20.10	29.80	35.08	n	34.55	23.15	19.45	17.44	15.70	14.70
10	16.00	16.23	19.95	29.88	35.25	n	34.85	22.98	19.33	17.39	15.70	14.68
11	15.95	16.38	19.95	29.95	35.65	n	34.80	22.85	19.23	17.32	15.70	14.63
12	15.90	16.60	20.15	30.03	36.10	n	34.45	22.73	19.18	17.24	15.70	14.58
13	15.98	16.98	20.28	30.20	36.38	n	33.90	22.58	19.10	17.17=	15.70	14.50
14	16.00	17.45	20.48	30.50	36.35	n	33.25	22.43	19.08	17.10	15.70	14.48
15	16.08	17.50	20.95	30.88	36.03	30.63	32.63	22.43	18.98S	17.03	15.70	14.45
16	15.95=	17.45	21.35	32.15	35.75	30.30	31.95	22.30	18.93	16.98	15.65	14.43=
17	15.90	17.35	21.63	33.68	35.70	30.08	31.28	22.15	18.83	16.90	15.60	14.40
18	15.85	17.30=	21.98S	34.55	35.50	29.93	30.78	21.98	18.75	16.85	15.55	14.40
19	15.85	17.40	22.38	35.00S	35.20	29.83	30.30	21.70=	18.69	16.78	15.50=	14.45
20	15.85	17.35	22.93	35.10	34.98	29.80	29.90	21.43	18.60=	16.70	15.45	14.50
21	15.85	17.23	23.45	35.05	34.55	29.88	29.50	21.28	18.57	16.70S=	15.40	14.48
22	15.85	17.25	24.03	35.25	34.28	30.00	29.10	21.18	18.49	16.65	15.35	14.40
23	15.90	17.23	25.05	35.43	34.53	30.08	28.63	21.08	18.44	16.58	15.28	14.35
24	15.95	17.20	26.05	35.58	35.23	30.33	28.20	20.98	18.42	16.53	15.20	14.35
25	16.08	17.28	26.90	35.73	35.70	30.75	27.73	20.83	18.34	16.48	15.15	14.30
26	16.25	17.38	27.35	36.00	36.05	31.38	27.25=	20.75	18.32	16.40	15.13	14.30
27	16.20	17.53	27.55	36.28	36.38	32.08	26.78S	20.68	18.22	16.38	15.10	14.35
28	16.15	17.68	27.68=	36.70	36.75	32.75	26.25	20.53	18.14	16.30	15.05	14.38
29	16.10	17.85	27.70	37.05	37.05	33.08	25.80	20.43	18.07	16.28	-	14.40
30	16.05	18.20	27.73	37.25	37.05	33.10	25.40	20.33	17.99	16.20	-	14.40
31	-	18.80	-	37.30	36.73=	-	25.08	-	17.94	16.13	-	14.40
	=0.05	=-0.05	=0.00		=0.00	=0.00	=0.10	=0.35	=-0.04	=0.04 =0.00	=0.00	=0.00

DAILY WATER LEVEL

Year: 1968 - 1969

Station: No. 92 - GOALUNDO (Ganges)

(feet)

Date	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	9.75	11.43=	18.03S	24.88	29.08	27.25	25.38	17.50S	12.58	9.85	8.30	7.45
2	10.10	11.30	18.83	25.00	28.95	27.15	25.33	17.20=	12.50	9.90	8.38	7.45
3	10.23S	11.35	19.30	25.23	28.88	26.93	25.25	17.00	12.43	9.88	8.45	7.53
4	9.98=	11.53	19.53	25.30	28.63	26.55	25.18	16.78	12.30	9.83	8.43	7.63
5	9.78	11.70	19.53	25.38	28.23	26.23	25.30	16.60	12.28	9.78	8.50	7.78
6	9.35	11.68	19.25	25.35	27.93	25.85S=	25.75	16.38	12.18	9.70	8.50	7.85
7	9.28	11.65	18.88	25.25	27.70	25.40	26.40	16.20	12.05	9.63	8.43	7.95
8	9.15	11.73	18.45	25.33	27.40	25.08	26.65	16.05	11.95	9.63	8.33	8.03
9	9.18	11.95	18.15	25.38	27.20	24.83	26.70	15.80	11.88	9.65	8.25	8.13
10	9.33	12.35	18.10	25.65	27.15	24.68	26.65	15.63	11.80	9.60=	8.18	7.90
11	9.45	12.80	18.05	25.35	27.25	24.45	26.35	15.40	11.70	9.55	8.13	7.73
12	9.55	13.45	18.23	25.55	27.45	24.28	25.95	15.18	11.55	9.43	8.05	7.53
13	9.65	14.28	18.63	25.58	27.53	23.98S=	25.43	15.03	11.50S	9.33	7.98	7.35
14	10.03	14.95	18.88	25.50	27.45	23.68	24.88	14.78	11.33=	9.25	7.95S	7.28
15	10.13	15.00	19.35	25.55	27.20	23.45	24.28	14.73	11.13	9.15S=	8.00=	7.30
16	10.20	14.88	19.63	25.98=	26.98	23.15	23.68	14.60	11.05	9.05	8.10	7.53
17	10.28	14.58S	19.85	26.65	26.93	23.05	23.15	14.45	10.98	9.05	8.25	7.85
18	10.15	14.33	20.00	27.13	26.75=	22.73	22.63	14.30	10.95	9.13	8.35	8.08
19	9.93=	14.28	20.25	27.38S=	26.45	22.55	22.20	14.33	10.90	9.15	8.43	8.23
20	10.00	14.25	20.65	27.45	26.20	22.50	21.80	14.30	10.90	9.15	8.35	8.35
21	10.35	14.35	21.08	27.53	25.93	22.60	21.45S	14.23	10.88	9.18	8.15	8.53
22	10.65	14.35	22.15	27.68	25.75	22.75	21.18=	14.13	10.85	9.05	7.98	8.40
23	10.88	14.20	23.25S	27.80	25.95	23.15	20.85	14.00	10.78	8.93	7.83	8.25
24	11.15	14.15	24.03	28.03	26.25	23.50	20.50	13.80	10.70	8.93	7.65	8.18
25	11.73	14.33	24.55=	28.20	26.33	24.00	20.20	13.63	10.53	8.75	7.53	7.95
26	12.10S	14.58	25.00	28.43	26.85	24.40	19.83	13.38	10.48	8.65	7.48	7.90
27	12.13	14.85=	25.20	28.65	27.03	24.70	19.45	13.15	10.30	8.58	7.43	7.98
28	11.98	15.15	25.25	28.90	27.23	25.08	19.10	12.95	10.18	8.48	7.35	8.05=
29	11.75	15.55	25.13	28.98	27.33	25.38	18.55	12.85	10.05	8.38	-	8.05
30	11.58	16.00	24.98	29.10	27.28	25.45	18.15	12.68	9.95S=	8.30	-	8.15
31	-	17.00	-	29.10	27.30	-	17.80	-	9.88	8.33	-	8.23
	=0.05	=0.00	=0.00	=0.00	=0.00	=0.00	=0.05	=0.00	=0.00	=0.00	=0.00	=0.00
	=0.05	=0.00	=-0.05	=0.00		=0.00		=0.00	=0.00	=0.00		

DAILY DISCHARGE

Year= 1966 - 1967

Station= No. 46.9L - BAHADURABAD (Jamuna)

(cubic feet per second)

Date	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	151,300	338,000	659,000	1,242,000	1,618,000	2,434,000	974,000	499,200	337,800	248,200	198,500	198,500
2	145,100	338,000	803,000	1,475,000	1,670,000	2,403,000	939,500	486,400	333,100	248,200	198,500	198,500
3	142,000	338,000	897,500	1,770,000	1,710,000	2,341,000	950,000	474,000	333,100	244,800	195,700	204,200
4	139,600	327,000	897,500	1,919,000	1,730,000	2,287,000	962,000	462,000	333,100	244,800	195,700	210,100
5	139,600	321,500	929,000	2,011,00	1,690,000	2,218,000	986,000	450,000	333,100	241,400	195,700	219,400
6	148,200	310,500	1,010,000	2,057,000	1,750,000	2,172,000	974,000	438,000	337,800	241,400	195,700	219,400
7	154,400	321,500	1,070,000	2,103,000	1,790,000	2,103,000	1,034,000	432,000	333,100	238,000	195,700	216,300
8	163,700	327,000	1,122,000	2,126,000	1,896,000	2,034,000	1,096,000	426,000	323,700	234,900	195,700	210,100
9	166,800	343,500	1,228,000	1,988,000	1,942,000	1,988,000	1,083,000	414,600	319,000	234,900	195,700	207,000
10	163,700	391,700	1,445,000	1,890,000	2,011,000	1,965,000	1,010,000	409,200	314,300	231,800	192,800	204,200
11	160,600	445,000	1,618,000	1,873,000	2,034,000	1,942,000	929,000	403,800	309,600	231,800	192,800	204,200
12	160,600	452,000	1,850,000	1,919,000	2,034,000	1,942,000	884,000	398,400	304,900	228,700	190,000	204,200
13	157,500	445,000	2,011,000	1,919,000	2,034,000	1,965,000	847,000	393,000	304,900	228,700	195,700	207,000
14	157,500	431,000	2,149,000	1,919,000	2,034,000	1,965,000	793,000	387,600	300,200	225,600	195,700	213,200
15	160,600	431,000	2,287,000	1,988,000	2,034,000	1,942,000	749,500	382,200	290,800	225,600	195,700	219,400
16	179,800	434,000	2,195,000	2,011,000	2,034,000	1,896,000	724,000	376,800	290,800	225,600	192,800	219,400
17	247,000	397,800	1,988,000	1,988,000	2,011,000	1,850,000	698,500	371,400	286,100	222,500	195,700	222,500
18	261,100	385,600	1,790,000	1,988,000	2,011,000	1,850,000	682,000	366,000	281,400	225,600	195,700	222,500
19	265,800	410,000	1,618,000	1,942,000	1,988,000	1,810,000	658,000	381,300	281,400	222,500	195,700	222,500
20	261,100	417,000	1,490,000	1,919,000	1,919,000	1,770,000	642,000	336,600	276,700	222,500	198,500	219,400
21	261,100	431,000	1,370,000	1,850,000	1,896,000	1,690,000	618,000	351,900	276,700	219,400	198,500	222,500
22	261,100	445,000	1,298,000	1,790,000	1,965,000	1,602,000	610,000	347,200	272,000	216,300	198,500	225,600
23	265,800	445,000	1,248,000	1,730,000	2,034,000	1,538,000	590,200	351,900	272,000	216,300	198,500	228,700
24	289,300	466,000	1,187,000	1,634,000	2,195,000	1,490,000	577,000	366,000	268,600	213,200	198,500	234,900
25	332,500	452,000	1,161,000	1,586,000	2,341,000	1,430,000	570,400	371,400	268,600	210,100	198,500	248,200
26	361.200	424.000	1,122,000	1,618,000	2,434,000	1,355,000	557,200	371,400	265,200	207,000	195,700	258,400
27	373,400	431,000	1,109,000	1,618,000	2,403,000	1,242,000	544,000	361,300	261,800	207,000	195,700	272,000
28	355,100	466,000	1,083,000	1,618,000	2,341,000	1,161,000	537,600	351,900	258,400	204,200	195,700	281,400
29	338,000	544,000	1,083,000	1,570,000	2,341,000	1,083,000	531,200	347,200	255,000	204,200		286,100
30	332,500	552,000	1,135,000	1,538,000	2,372,000	1,034,000	531,200	342,500	255,000	201,300		286,100
31		578,000		1,538,000	2,434,000		518,400		248,200	201,300		286,100
Q.Max.	373,400	578,000	2,287,000	2,126,000	2,434,000	2,434,000	1,096,000	499,200	337,800	248,200	198,500	286,100
Q.Mean	223,200	414,000	1,361,500	1,811,000	2,022,400	1,816,700	767,700	394,900	294,400	224,700	195,900	228,100
Q.Min.	139,600	310,500	659,000	1,242,000	1,618,000	1,034,000	518,400	342,500	248,200	201,300	190,000	198,500

Annual Q.Max: 2,434,000 Q.Mean: 812,800 Q.Min: 139,600

DAILY DISCHARGE

Year= 1967 - 1968

Station= No. 46.9L - BAHADURABAD (Jamuna)

(cubic feet per second)

Day	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	253,000	288,000	636,000	1,584,000	1,402,000	926,000	1,136,000	427,000	245,000	183,000	142,000	130,000
2	247,000	288,000	668,000	1,604,000	1,321,000	891,000	1,066,000	415,000	241,000	183,000	142,000	132,000
3	247,000	299,000	692,000	1,604,000	1,226,000	844,000	1,035,000	404,000	237,000	183,000	139,000	134,000
4	247,000	316,000	726,000	1,584,000	1,154,000	810,000	1,035,000	393,000	233,000	179,000	139,000	137,000
5	238,000	321,000	760,000	1,527,000	1,100,000	790,000	1,084,000	382,000	230,000	179,000	139,000	137,000
6	247,000	343,000	785,000	1,509,000	1,066,000	780,000	1,226,000	376,000	223,000	179,000	137,000	137,000
7	258,000	316,000	821,000	1,527,000	1,051,000	780,000	1,301,000	371,000	220,000	176,000	137,000	137,000
8	258,000	404,000	875,000	1,527,000	1,051,000	790,000	1,301,000	360,000	217,000	176,000	139,000	139,000
9	247,000	455,000	894,000	1,703,000	1,172,000	816,000	1,190,000	355,000	213,000	172,000	139,000	142,000
10	238,000	482,000	885,000	2,095,000	1,190,000	810,000	1,084,000	346,000	213,000	172,000	142,000	145,000
11	229,000	517,000	903,000	2,310,000	1,190,000	800,000	1,003,000	341,000	210,000	172,000	145,000	148,000
12	224,000	590,000	951,000	2,460,000	1,226,000	844,000	970,000	331,000	207,000	169,000	145,000	151,000
13	224,000	613,000	1,005,000	2,410,000	1,262,000	867,000	970,000	327,000	207,000	169,000	142,000	154,000
14	224,000	620,000	1,040,000	2,360,000	1,262,000	855,000	970,000	322,000	203,000	165,000	139,000	154,000
15	229,000	613,000	1,073,000	2,360,000	1,262,000	820,000	954,000	313,000	200,000	162,000	134,000	156,000
16	224,000	605,000	1,040,000	2,385,000	1,281,000	810,000	915,000	308,000	197,000	162,000	134,000	156,000
17	215,000	605,000	1,013,000	2,335,000	1,341,000	820,000	879,000	304,000	200,000	162,000	132,000	159,000
18	215,000	598,000	1,032,000	2,310,000	1,382,000	879,000	867,000	295,000	197,000	162,000	132,000	156,000
19	215,000	590,000	1,040,000	2,310,000	1,382,000	938,000	832,000	290,000	197,000	162,000	132,000	162,000
20	210,000	575,000	1,150,000	2,360,000	1,382,000	970,000	780,000	281,000	197,000	159,000	132,000	162,000
21	215,000	575,000	1,296,000	2,286,000	1,341,000	1,051,000	730,000	277,000	197,000	157,000	132,000	169,000
22	229,000	568,000	1,363,000	2,188,000	1,244,000	1,190,000	666,000	272,000	197,000	156,000	132,000	172,000
23	233,000	560,000	1,383,000	2,211,000	1,172,000	1,262,000	622,000	268,000	197,000	157,000	132,000	176,000
24	238,000	545,000	1,346,000	2,250,000	1,136,000	1,341,000	582,000	264,000	193,000	154,000	132,000	183,000
25	242,000	531,000	1,416,000	2,140,000	1,118,000	1,402,000	550,000	260,000	193,000	151,000	130,000	190,000
26	258,000	531,000	1,546,000	2,086,000	1,084,000	1,402,000	523,000	256,000	186,000	151,000	130,000	197,000
27	272,000	560,000	1,564,000	1,978,000	1,051,000	1,362,000	502,000	256,000	186,000	148,000	130,000	207,000
28	288,000	583,000	1,564,000	1,877,000	1,035,000	1,321,000	482,000	253,000	186,000	148,000	128,000	213,000
29	288,000	590,000	1,584,000	1,754,000	1,019,000	1,262,000	464,000	249,000	186,000	145,000	130,000	220,000
30	288,000	590,000	1,564,000	1,660,000	987,000	1,208,000	452,000	249,000	186,000	145,000	-	237,000
31	-	613,000	-	1,505,000	970,000	-	439,000	-	186,000	142,000	-	245,000
QMax.	288,000	620,000	1,584,000	2,460,000	1,402,000	1,402,000	1,301,000	427,000	245,000	183,000	145,000	245,000
QMean	241,000	508,000	1,087,000	2,045,000	1,189,000	909,000	853,000	318,000	205,000	164,000	136,000	166,000
QMin.	210,000	288,000	636,000	1,505,000	970,000	780,000	439,000	299,000	186,000	142,000	128,000	130,000

DAILY DISCHARGE

Year= 1968 - 1969

Station= No. 46.9L - BAHADURABAD (Jamuma)

(cubic feet per second)

Day	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	249,000	342,000	1,039,000	1,752,000	1,699,000	1,207,000	1,280,000	375,000	249,000	176,000	147,000	139,000
2	243,000	360,000	1,083,000	1,850,000	1,607,000	1,207,000	1,224,000	370,000	247,000	174,000	147,000	139,000
3	239,000	366,000	1,089,000	1,838,000	1,523,000	1,197,000	1,190,000	365,000	245,000	171,000	147,000	139,000
4	231,000	363,000	1,083,000	1,778,000	1,479,000	1,182,000	1,175,000	356,000	243,000	171,000	146,000	140,000
5	220,000	376,000	1,039,000	1,838,000	1,435,000	1,151,000	1,292,000	347,000	241,000	169,000	146,000	139,000
6	220,000	385,000	960,000	1,786,000	1,413,000	1,121,000	1,715,000	342,000	239,000	169,000	147,002	138,000
7	222,000	394,000	887,000	1,803,000	1,333,000	1,091,000	1,895,000	340,000	237,000	169,000	147,000	138,000
8	224,000	413,000	836,000	1,779,000	1,282,000	1,061,000	1,742,000	335,000	233,000	167,000	147,000	138,000
9	222,000	431,000	808,000	1,735,000	1,275,000	1,033,000	1,448,000	331,000	230,000	165,000	147,000	139,000
10	217,000	447,000	798,000	1,382,000	1,265,000	1,016,000	1,258,000	327,000	228,000	163,000	147,000	140,000
11	213,000	489,000	798,000	1,333,000	1,241,000	992,000	1,207,000	321,000	225,000	162,000	146,000	140,000
12	210,000	535,000	827,000	1,457,000	1,207,000	949,000	1,100,000	315,000	222,000	161,000	144,000	143,000
13	213,000	569,000	865,000	1,413,000	1,151,000	904,000	1,016,000	311,000	218,000	160,000	143,000	141,000
14	201,000	576,000	894,000	1,435,000	1,106,000	874,000	925,000	305,000	214,000	159,000	143,000	142,000
15	204,000	546,000	947,000	1,457,000	1,076,000	864,000	870,000	301,000	210,000	156,000	142,000	142,000
16	208,000	520,000	1,006,000	1,536,000	1,033,000	849,000	813,000	297,000	206,000	156,000	143,000	143,000
17	217,000	510,000	1,017,000	1,567,000	986,000	829,000	864,000	293,000	203,000	156,000	143,000	143,000
18	237,000	506,000	1,017,000	1,607,000	949,000	814,000	707,000	286,000	200,000	156,000	143,000	144,000
19	277,000	517,000	1,094,000	1,618,000	937,000	829,000	671,000	284,000	197,000	156,000	141,000	145,000
20	313,000	524,000	1,158,000	1,645,000	914,000	844,000	626,000	280,000	197,000	156,000	140,000	146,000
21	321,000	535,000	1,247,000	1,688,000	904,000	849,000	587,000	277,000	197,000	156,000	140,000	149,000
22	321,000	513,000	1,586,000	1,796,000	949,000	950,000	553,000	273,000	194,000	156,000	139,000	151,000
23	345,000	510,000	1,779,000	1,920,000	1,016,000	998,000	519,000	269,000	192,000	154,000	138,000	155,000
24	391,000	531,000	1,858,000	2,074,000	997,000	1,040,000	486,000	263,000	189,000	154,000	137,000	160,000
25	407,000	558,000	1,898,000	2,200,000	1,009,000	1,092,000	467,000	263,000	188,000	152,000	137,000	168,000
26	397,000	573,000	1,938,000	2,144,000	1,016,000	1,137,000	449,000	258,000	185,000	151,000	137,000	172,000
27	369,000	591,000	1,938,000	2,074,000	1,010,000	1,198,000	445,000	257,000	185,000	150,000	138,000	173,000
28	351,000	640,000	1,898,000	2,039,000	1,150,000	1,292,000	420,000	255,000	182,000	150,000	139,000	176,000
29	338,000	662,000	1,803,000	1,955,000	1,135,000	1,334,000	409,000	253,000	181,000	149,000	-	179,000
30	335,000	779,000	1,769,000	1,899,000	1,180,000	1,326,000	394,000	251,000	178,000	149,000	-	181,000
31	-	923,000	-	1,807,000	1,197,000	-	384,000	-	177,000	148,000	-	182,000
QMax.	407,000	923,000	1,938,000	2,200,000	1,699,000	1,334,000	1,895,000	375,000	249,000	176,000	147,000	182,000
QMean	263,000	515,000	1,232,000	1,753,000	1,176,000	1,041,000	895,000	303,000	211,000	159,000	143,000	151,000
QMin.	201,000	342,000	798,000	1,333,000	904,000	814,000	384,000	251,000	177,000	148,000	137,000	138,000

DAILY DISCHARGE

Year= 1966 - 1967

Station= No.90 - HARDING BRIDGE (Ganges)

(cubic feet per second)

Date	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan..	Feb.	March
1	64,500	55,400	70,300	164,000	534,300	1,480,000	417,800	182,000	125,200	95,000	71,700	65,100
2	64,500	56,500	71,500	191,000	583,400	1,440,000	396,200	177,200	125,200	93,600	71,700	64,000
3	64,500	56,500	75,300	239,000	635,200	1,420,000	375,000	174,800	123,400	93,600	71,700	62,900
4	65,700	56,500	77,900	289,000	685,000	1,360,000	355,000	170,000	123,400	92,200	73,000	60,700
5	65,700	55,400	79,200	348,000	744,500	1,340,000	340,000	165,200	121,600	90,800	73,000	59,600
6	65,700	55,400	80,500	398,400	792,000	1,287,000	330,000	162,800	121,600	89,400	71,700	57,400
7	64,500	55,400	83,000	467,700	880,000	1,274,000	323,800	160,400	119,800	89,400	71,700	56,300
8	63,400	56,500	84,300	528,600	1,006,000	1,222,000	320,600	158,000	118,000	89,400	71,700	55,200
9	62,200	57,700	88,800	571,000	1,080,000	1,155,000	311,000	153,600	118,000	88,000	71,700	54,100
10	61,100	58,800	93,300	584,400	1,155,000	1,065,000	307,800	151,400	116,400	86,700	70,500	54,100
11	61,100	59,900	99,300	583,400	1,196,000	1,006,000	301,200	149,200	116,400	85,400	70,500	54,100
12	59,900	60,100	110,000	564,800	1,209,000	978,000	294,500	147,000	114,800	84,100	69,400	53,000
13	58,800	62,200	120,000	546,200	1,209,000	922,000	287,500	144,800	114,800	82,800	69,400	53,000
14	58,800	63,400	125,000	534,300	1,209,000	869,000	277,000	142,600	113,200	81,500	69,400	52,000
15	57,700	64,500	129,000	517,200	1,209,000	847,000	270,000	140,400	111,600	81,500	68,300	52,000
16	56,500	64,500	137,000	517,200	1,209,000	825,000	263,000	138,200	110,000	80,200	68,300	52,000
17	55,400	63,400	144,000	522,900	1,220,000	792,000	254,000	138,200	108,000	80,200	68,300	51,000
18	55,400	63,400	143,000	528,600	1,235,000	761,500	245,000	136,000	106,800	78,900	68,300	51,000
19	55,400	62,200	141,000	528,600	1,248,000	736,000	236,000	136,000	106,800	77,600	67,300	51,000
20	54,300	61,100	139,000	511,500	1,261,000	719,000	230,200	136,000	105,200	76,300	67,300	50,000
21	54,300	61,100	135,000	488,700	1,261,000	688,400	227,400	136,000	105,200	76,300	67,300	50,000
22	53,200	61,100	131,000	472,800	1,248,000	678,200	219,000	136,000	103,600	76,300	66,200	51,000
23	53,200	61,100	127,000	467,700	1,235,000	650,400	213,400	136,000	103,600	75,000	66,200	52,000
24	53,200	61,100	125,000	457,500	1,248,000	615,200	207,800	134,200	102,000	75,000	66,200	52,000
25	54,300	61,100	125,000	452,400	1,274,000	588,800	205,000	132,400	102,000	75,000	65,100	52,000
26	54,300	63,400	124,000	452,400	1,300,000	549,600	200,200	130,600	100,600	74,000	65,100	53,000
27	54,300	64,500	124,000	447,300	1,340,000	526,800	197,800	130,600	99,200	73,000	65,100	54,100
28	54,300	64,500	127,000	457,500	1,380,000	497,000	195,400	130,600	97,800	73,000	65,100	55,200
29	53,200	65,700	139,000	462,600	1,420,000	469,000	190,600	128,800	97,800	71,700	-	56,300
30	54,300	66,900	152,000	483,000	1,440,000	441,000	185,800	127,000	97,800	71,700	-	57,400
31	-	68,000	-	505,800	1,460,000	-	183,400	-	96,400	71,700	-	58,500
Q Max.	65,700	68,000	152,000	583,400	1,460,000	1,480,000	417,800	182,000	125,200	95,000	71,700	65,100
Q Mean.	58,460	60,906	117,980	460,726	1,126,013	1,091,323	284,110	150,793	110,523	81,590	68,971	53,161
Q Min.	53,200	55,400	70,300	164,000	534,300	441,000	183,400	127,000	96,400	71,700	65,100	50,000

Annual Q Max. 1,480,000 Q Mean. 305,379 Q Min. 50,000

DAILY DISCHARGE

Year= 1967 - 1968

Station= No.90 - HARDING BRIDGE (Ganges)

(cubic feet per second)

Date	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	59,300	52,000	63,500	187,000	749,000	1,510,000	874,000	230,000	157,000	116,000	104,000	82,800
2	59,300	53,000	63,500	200,000	729,000	1,510,000	790,000	225,000	155,000	114,000	104,000	81,500
3	59,300	54,100	63,500	208,000	688,000	1,510,000	729,000	222,000	155,000	113,000	102,000	81,500
4	58,300	55,100	62,500	208,000	671,000	1,510,000	671,000	217,000	153,000	113,000	101,000	81,500
5	58,300	55,100	62,500	205,000	645,000	1,460,000	636,000	212,000	151,000	111,000	101,000	80,200
6	58,300	56,200	61,400	202,000	636,000	1,435,000	593,000	210,000	149,000	110,000	101,000	78,900
7	57,200	57,200	63,500	200,000	662,000	1,410,000	555,000	208,000	147,000	110,000	99,200	78,900
8	57,200	57,200	63,800	205,000	708,000	1,410,000	525,000	205,000	145,000	108,000	99,200	78,900
9	56,200	58,300	68,100	224,000	770,000	1,435,000	498,000	203,000	144,000	107,000	99,200	77,600
10	56,200	58,300	70,400	258,000	826,000	1,460,000	478,000	200,000	142,000	107,000	99,200	77,600
11	55,100	57,200	72,700	301,000	910,000	1,560,000	458,000	198,000	140,000	107,000	99,200	77,600
12	55,100	57,200	75,000	357,000	1,049,000	1,610,000	437,000	196,000	138,000	105,000	101,000	77,600
13	55,100	56,200	76,300	441,000	1,146,000	1,660,000	416,000	191,000	136,000	105,000	101,000	78,900
14	54,100	56,200	77,600	534,000	1,210,000	1,694,000	400,000	188,000	134,000	104,000	101,000	78,900
15	54,100	55,100	77,600	606,000	1,250,000	1,728,000	385,000	186,000	132,000	104,000	101,000	77,600
16	53,000	55,100	78,900	659,000	1,290,000	1,762,000	370,000	184,000	131,000	105,000	99,200	77,600
17	52,000	57,200	84,100	697,000	1,290,000	1,796,000	360,000	181,000	131,000	107,000	97,800	77,600
18	52,000	59,300	95,300	717,000	1,270,000	1,796,000	344,000	179,000	129,000	108,000	96,400	77,600
19	52,000	59,300	104,000	736,000	1,230,000	1,728,000	333,000	179,000	127,000	108,000	95,000	77,600
20	53,000	58,300	109,000	746,000	1,210,000	1,694,000	325,000	176,000	127,000	108,000	92,200	77,600
21	52,000	58,300	114,000	765,000	1,162,000	1,660,000	311,000	174,000	126,000	108,000	90,800	77,600
22	50,000	58,300	117,000	786,000	1,162,000	1,660,000	296,000	172,000	124,000	108,000	89,400	77,600
23	49,000	57,200	128,000	806,000	1,146,000	1,694,000	288,000	170,000	122,000	108,000	89,400	77,600
24	48,000	57,200	143,000	827,000	1,162,000	1,635,000	281,000	170,000	120,000	110,000	88,000	77,600
25	48,000	57,200	154,000	827,000	1,194,000	1,585,000	272,000	168,000	120,000	110,000	86,700	77,600
26	50,000	56,200	158,000	827,000	1,210,000	1,510,000	262,000	166,000	119,000	108,000	85,400	76,300
27	51,000	56,200	165,000	817,000	1,250,000	1,350,000	259,000	166,000	119,000	108,000	84,100	76,300
28	52,000	57,200	167,000	806,000	1,310,000	1,178,000	253,000	164,000	119,000	108,000	84,100	76,300
29	52,000	59,300	174,000	796,000	1,410,000	1,065,000	250,000	161,000	117,000	107,000	84,100	76,300
30	52,000	61,400	187,000	786,000	1,460,000	962,000	242,000	159,000	117,000	105,000	-	75,000
31	-	62,500	-	780,000	1,485,000	-	236,000	-	116,000	105,000	-	75,000
Q Mix.	59,300	62,500	187,000	827,000	1,485,000	1,796,000	874,000	230,000	157,000	116,000	104,000	82,800
Q Mean.	52,400	58,500	99,000	539,000	1,061,000	1,532,000	423,000	189,000	134,000	108,000	95,700	78,100
Q Min.	48,000	52,000	61,400	187,000	636,000	952,000	236,000	159,000	116,000	105,000	84,100	75,000

DAILY DISCHARGE

Year= 1968 - 1969

Station= No.90 - HARDING BRIDGE (Ganges)

(cubic feet per second)

Date	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
1	68,100	59,500	68,100	345,000	1,475,000	1,494,000	766,000	295,000	161,000	110,000	84,700	70,700
2	68,100	58,800	71,200	375,000	1,456,000	1,418,000	747,000	285,000	159,000	110,000	83,600	69,800
3	67,200	58,800	75,600	401,000	1,437,000	1,344,000	709,000	278,000	156,000	108,000	83,600	69,800
4	66,400	58,800	78,900	423,000	1,380,000	1,218,000	680,000	271,000	150,000	107,000	82,500	68,900
5	66,400	58,800	78,900	428,000	1,308,000	1,074,000	680,000	264,000	148,000	106,000	81,400	68,000
6	66,400	58,800	81,300	439,000	1,236,000	929,000	728,000	257,000	146,000	104,000	80,300	68,000
7	65,500	58,800	82,500	450,000	1,182,000	844,000	756,000	250,000	144,000	104,000	80,300	67,300
8	65,500	58,800	82,500	457,000	1,092,000	775,000	821,000	244,000	144,000	104,000	79,200	67,300
9	64,600	59,500	82,500	470,000	1,056,000	728,000	903,000	234,000	141,000	103,000	79,200	67,300
10	63,700	60,200	81,300	483,000	1,092,000	690,000	981,000	225,000	139,000	101,000	79,200	66,500
11	63,700	60,200	81,300	489,000	1,182,000	644,000	1,007,000	222,000	139,000	100,000	78,100	66,500
12	62,800	60,200	81,300	483,000	1,308,000	608,000	981,000	220,000	137,000	100,000	78,100	66,500
13	62,800	61,100	83,800	489,000	1,362,000	575,000	903,000	217,000	135,000	98,800	78,100	65,800
14	62,800	61,100	85,000	515,000	1,380,000	545,000	821,000	211,000	133,000	97,600	78,100	65,800
15	62,000	62,000	90,000	545,000	1,344,000	523,000	739,000	206,000	131,000	97,600	78,100	65,800
16	62,000	62,000	102,000	653,000	1,290,000	502,000	678,000	200,000	131,000	96,400	78,100	65,000
17	62,000	62,800	110,000	821,000	1,290,000	489,000	625,000	195,000	129,000	95,200	77,000	65,000
18	62,000	63,700	122,000	968,000	1,308,000	470,000	582,000	190,000	127,000	94,000	77,000	65,000
19	61,100	64,600	142,000	1,007,000	1,272,000	470,000	547,000	187,000	125,000	92,800	76,100	64,300
20	61,100	63,700	160,000	1,007,000	1,182,000	470,000	510,000	184,000	125,000	91,600	76,100	64,300
21	60,200	63,700	173,000	994,000	1,092,000	476,000	480,000	184,000	124,000	91,600	76,100	64,300
22	60,200	62,800	185,000	994,000	1,074,000	489,000	453,000	182,000	124,000	90,400	75,200	63,500
23	60,200	62,800	212,000	1,020,000	1,092,000	496,000	431,000	179,000	122,000	90,400	75,200	63,500
24	60,200	62,000	250,000	1,056,000	1,182,000	502,000	411,000	174,000	120,000	89,200	74,300	63,500
25	60,200	62,000	285,000	1,074,000	1,272,000	530,000	392,000	172,000	118,000	89,200	73,400	63,500
26	60,200	62,800	300,000	1,110,000	1,399,000	590,000	374,000	170,000	116,000	88,000	73,400	63,500
27	60,200	63,700	314,000	1,182,000	1,494,000	644,000	357,000	167,000	116,000	88,000	72,500	63,500
28	59,500	64,600	314,000	1,272,000	1,551,000	718,000	344,000	167,000	114,000	86,900	71,600	63,500
29	59,500	64,600	318,000	1,344,000	1,597,000	756,000	327,000	165,000	113,000	85,800	70,800	64,300
30	59,500	65,500	323,000	1,399,000	1,570,000	775,000	315,000	163,000	111,000	84,700	-	64,300
31	-	66,400	-	1,437,000	1,551,000	-	303,000	-	111,000	84,700	-	64,300
Q Max.	68,100	66,400	323,000	1,437,000	1,597,000	1,494,000	1,007,000	295,000	161,000	110,000	84,700	70,700
Q Mean	62,800	61,700	140,000	778,000	1,307,000	726,000	624,000	212,000	132,000	96,500	77,900	65,800
Q Min.	59,500	58,800	68,100	345,000	1,056,000	470,000	303,000	163,000	111,000	84,700	71,600	63,500

DISTRIBUTION OF VELOCITY & DEPTH

at BAILADURABAD
on January 20, 1970

Gauging point	Depth (m)	Observed V 0.8H	Observed V 0.2H	Mean V	Distance (m)	Remark
1	0	-	-	-		
2	1.15	0.14	0.16	0.15	52	
3	2.30	0.00	0.08	0.04	52	
4	2.25	0.08	0.14	0.11	52	
5	0	-	-	-	26	
6	0	-	-	-	2,668	
7	2.05	0.42	0.90	0.66	70	
8	3.45	0.99	1.17	1.08	50	
9	3.60	0.84	1.13	0.99	30	
10	2.95	0.72	0.80	0.76	40	
11	0	-	-	-	110	
12	0	-	-	-	90	
13	0.90	0.48	0.55	0.51	230	
14	1.30	0.42	0.80	0.61	60	
15	1.07	0.47	0.63	0.55	50	
16	0.50	0.57	-	0.57	60	
17	0.40	0.08	-	0.08	60	
18	0	-	-	-	120	
19	0	-	-	-	1,690	
20	5.85	0.63	0.93	0.78	10	
21	11.30	1.06	1.36	1.21	50	
22	7.57	0.83	1.29	1.06	40	
23	2.44	0.99	1.19	1.09	40	
24	0.46	0.65	-	0.65	70	
25	0	-	-	-	20	
26	0	-	-	-	600	
27	3.03	1.11	1.27	1.19	40	
28	2.10	0.61	0.75	0.68	30	
29	2.10	0.48	0.54	0.51	70	
30	0	-	-	-	130	
31	0	-	-	-	1,280	
32	4.55	0.71	1.08	0.89	60	
33	0.18	0.60	0.85	0.73	70	
34	4.45	0.49	0.72	0.61	60	Total discharge = 3,624 m³/sec.
35	3.35	0.55	1.04	0.79	60	
36	2.73	0.33	0.73	0.53	50	Sectional area = 4,504 m²
37	2.15	0.33	0.60	0.47	40	
38	1.49	0.60	0.85	0.73	60	
39	3.70	0.62	0.70	0.66	90	Mean velocity = 0.80 m/sec.
40	0	-	-	-	180	

DISTRIBUTION OF VELOCITY & DEPTH

at BAHADURABAD
on April 5, 1966

Gauging point	Depth (m)	Observed V 0.8H	Observed V 0.2H	Mean V	Distance (m)	Remark
1	-	-	-	-		
2	6.63	0.49	0.62	0.54	125	
3	1.78	0.58	0.75	0.66	50	
4	2.65	0.77	1.04	0.90	90	
5	1.65	0.52	0.96	0.74	130	
6	1.58	0.59	0.95	0.72	165	
7	2.55	0.75	1.00	0.72	130	
8	-	-	-	-	55	
9	-	-	-	-	585	
10	4.08	0	0	0	100	
11	-	-	-	-	15	
12	-	-	-	-	270	
13	1.70	0.50	0.85	0.60	105	
14	1.83	0.74	0.93	0.64	80	
15	1.12	0.75	0.88	0.58	120	
16	-	-	-	-	100	
17	-	-	-	-	585	
18	9.00	1.19	1.46	0.70	145	
19	6.10	1.02	1.31	0.10	280	
20	4.90	1.01	1.25	0.27	200	
21	4.65	1.06	1.19	0.10	205	
22	4.78	0.98	1.15	0.17	215	
23	4.95	0.85	1.19	0.26	70	
24	-	-	-	-	260	
25	-	-	-	-	730	
26	1.97	0	0	0	45	
27	2.15	0	0	0	130	
28	-	-	-	-	145	
29	-	-	-	-	825	
30	1.08	0.58	0.75	0.37	150	
31	1.70	0.64	0.93	0.54	95	
32	0.65	1.47	0.78	0.48	125	
33	2.03	0.51	0.62	0.56	130	
34	2.70	0.59	0.83	0.69	130	Total discharge= 4,400 m^3/sec
35	-	-	-	-	125	
36	-	-	-	-	1,705	
37	1.71	0.46	0.63	0.48	110	Sectional area= 11,100 m^2
38	1.60	0.35	0.52	0.39	90	
39	-	-	-	-	105	Mean velocity= 0.40 m/sec

DISTRIBUTION OF VELOCITY & DEPTH

at BAHADURABAD
on August 11, 1970

Gauging point	Depth (m)	Observed V 0.8H	Observed V 0.2H	Mean V	Distance (m)	Remark
1	-	-	-	-		
2	0.72	1.19	1.40	1.30	80	
3	7.30	0.96	1.39	1.18	175	
4	7.75	1.13	1.50	1.32	145	
5	9.35	1.48	1.91	1.70	180	
6	0.85	0.53	-	0.53	240	
7	-	-	-	-	150	
8	-	-	-	-	10	
9	4.12	0.58	0.86	0.72	85	
10	0.55	0.35	-	0.35	250	
111	1.37	0.21	0.27	0.24	655	
12	2.16	0.35	0.53	0.44	280	
13	7.22	1.02	1.14	1.08	140	
14	4.64	0.96	1.20	1.08	185	
15	2.93	0.79	0.96	0.88	150	
16	2.82	0.70	0.88	0.79	310	
17	2.47	0.99	1.22	1.11	420	
18	12.27	1.17	1.69	1.43	210	
19	7.23	0.71	1.13	0.82	255	
20	3.78	0.66	0.87	0.77	330	
21	3.13	0.43	0.70	0.57	250	
22	1.75	0.41	0.61	0.73	245	
23	3.31	0.58	0.69	0.64	390	
24	3.03	0.66	0.79	0.73	585	
25	6.67	0.38	0.79	0.59	515	
26	4.68	0.79	0.93	0.86	205	
27	7.30	1.04	1.23	1.14	125	
28	10.50	1.40	2.52	1.86	115	
29	13.17	1.28	2.79	2.54	120	
30	11.62	2.16	2.62	2.39	165	
31	10.02	2.33	2.72	2.53	175	
32	9.17	1.37	1.63	1.50	165	
33	0.85	0.43	-	0.43	285	
34	1.77	0.27	0.35	0.31	880	Total discharge= 53,220 m^3/sec
35	2.80	1.03	1.31	1.17	340	
36	5.30	0.71	1.14	0.93	210	
37	3.61	1.25	1.31	1.32	210	Sectional area= 43,241 m^2
38	4.55	1.35	1.58	1.47	140	
39	6.07	1.31	1.56	1.43	95	Mean velocity= 1.23 m/sec
40	15.72	1.03	1.61	1.32	95	
41	0	-	-	-	130	

DISTRIBUTION OF VELOCITY & DEPTH

at BAHADURABAD
on September 1, 1966

Gauging point	Depth (m)	Observed V 0.8H	Observed V 0.2H	Mean V	Distance (m)	Remark
1	0	-	-			
2	10.80	2.74	2.96	2.85	135	
3	10.38	2.42	2.66	2.54	150	
4	11.80	2.21	2.42	2.32	235	
5	10.55	2.07	1.99	2.03	260	
6	3.34	0.49	0.79	0.64	360	
7	2.54	0.46	0.83	0.65	205	
8	1.64	0.30	0.49	0.40	250	
9	5.64	1.22	1.27	1.25	320	
10	12.80	1.52	1.73	1.63	205	
11	7.10	1.38	1.22	1.30	100	
12	2.14	0.73	1.01	0.87	250	
13	2.39	0.69	1.11	0.90	330	
14	5.22	0.70	1.07	0.89	75	
15	6.74	0.92	1.31	1.12	195	
16	6.09	1.23	1.52	1.38	350	
17	7.44	0.99	1.46	1.23	260	
18	3.69	1.87	1.99	1.93	345	
19	1.10	0.63	0.82	0.73	295	
20	7.92	0.71	0.72	0.72	350	
21	7.14	1.16	1.33	1.25	230	
22	2.22	0.53	1.29	0.91	230	
23	3.06	0.79	0.98	0.89	470	
24	1.69	1.06	1.40	1.23	330	
25	6.21	0.75	0.93	0.84	315	
26	7.07	0.83	1.23	1.03	190	
27	6.04	0.92	1.25	1.09	95	
28	0	-	-	-	80	
29	0	-	-	-	85	
30	2.75	0.46	0.83	0.65	90	
31	6.94	0.96	1.50	1.23	200	
32	3.62	1.40	1.49	1.45	110	
33	2.03	1.42	1.12	1.27	160	
34	1.39	0.79	0.92	0.86	440	Total discharge= 69,100 m^3/sec
35	2.04	0.63	0.85	0.74	250	
36	6.10	1.14	1.14	1.14	270	
37	12.30	1.41	1.62	1.02	280	Sectional Area= 49,100 m^2
38	16.00	1.58	1.75	1.67	160	
39	19.20	1.46	2.00	1.73	125	Mean velocity= 1.45 m/sec
40	13.80	1.23	0.93	1.08	110	
41	0	-	-	0.00	50	

表 2 － 3 － 11 －(a)

DISCHARGE AND VELOCITY
OF HARDING BRIDGE

(since 1934)

Year/Data	Max.Discharge	Mean Velocity	Surface Velocity	Water Level
1950.8.19	1,815,158	11.14	13.10	246.50
1951.8.29	1,487,707	8.63	10.72	244.80
1952.8.30	1,654,063	9.31	11.25	246.50
1953.8.30	1,833,286	10.29	12.80	246.50
1954.8.25	2,006,438	9.56	11.25	246.80
1955.8.23	2,085,524	9.27	11.35	247.20
1956.9.22	2,028,366	9.65	11.35	246.10
1957.9.07	1,541,722	8.41	9.99	244.30
1958.8.15	1,094,755	8.33	9.90	245.70
1959.8.23	1,762,436	8.70	10.37	245.50
1960.8.23	1,687,261	9.32	11.00	245.50
1961.8.09	1,892,246	7.45	9.25	246.40
1962.9.08	1,547,055	7.46	9.99	246.00
1963.9.07	1,902,571	9.99	12.36	245.50
1964.8.07	1,807,006	9.56	11.25	244.90
1965.9.16	1,521,838	9.49	11.84	243.50
1966.8.30	1,808,899	9.15	10.98	245.10
1967.9.24	2,066,198	11.95	14.06	245.30
1968.8.31	1,721,796	9.73	13.10	244.30
1969.8.23	1,952,475	10.43	13.40	246.00
1970.9.24	1,957,002	11.43	11.84	243.90
1971.8.26	2,162,707	13.39	15.75	248.00

表 2 － 3 － 11 －(b)

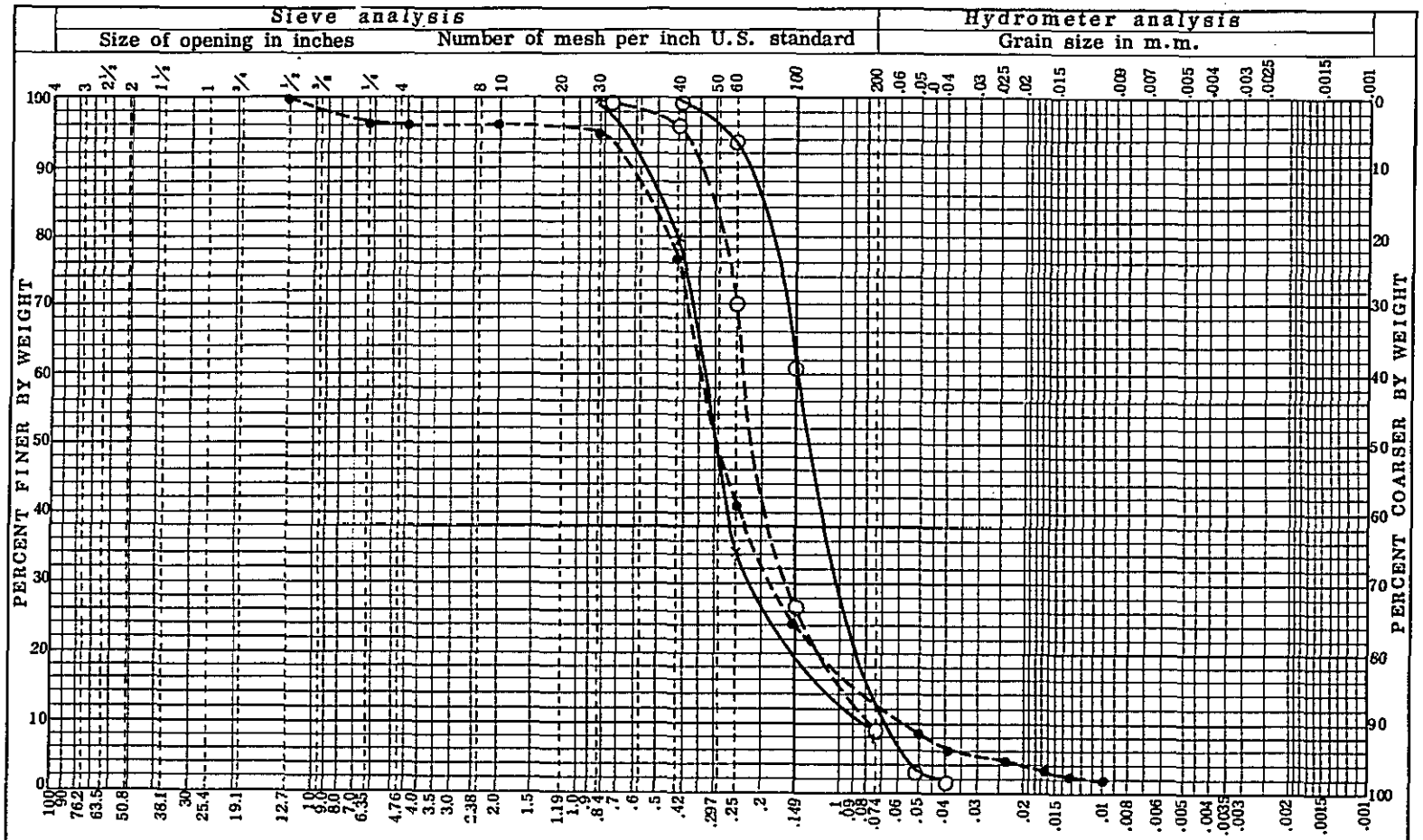
MEASUREMENT AT HARDING BRIDGE SITE

Highest Water Level

1910	247.85	1940	244.60
1911	247.05	1941	244.10
1912	245.25	1942	245.60
1913	245.15	1943	243.10
1914	246.80	1944	243.10
1915	247.05	1945	244.30
1916	247.65	1946	245.50
1917	247.55	1947	245.80
1818	246.75	1948	247.20
1919	247.50	1949	246.00
1920	244.35	1950	246.80
1921	245.90	1951	244.90
1922	246.50	1952	247.30
1923	245.60	1953	246.80
1924	245.25	1954	247.40
1925	246.15	1955	247.20
1926	245.65	1956	246.30
1927	244.20	1957	244.40
1928	244.40	1958	246.30
1929	244.20	1959	245.80
1930	244.90	1960	245.90
1931	246.20	1961	246.70
1932	243.90	1962	246.00
1933	245.50	1963	245.70
1934	247.00	1964	245.60
1935	246.50	1965	243.50
1936	247.40	1966	245.30
1937	245.60	1967	245.90
1938	247.10	1968	244.50
1939	244.60	1969	246.50
		1970	244.10
		1971	248.00
		1972	242.50

B. WAPDA HYDRAULIC RESEARCH LABORATORY

GRADATION CURVE



Cobbles	Coarse gravel	Fine gravel	Coarse sand	Medium sand	Fine sand	Fines (Silt or clay) *	
	Gravel			Coarse sand	Fine sand	Silt	Clay **

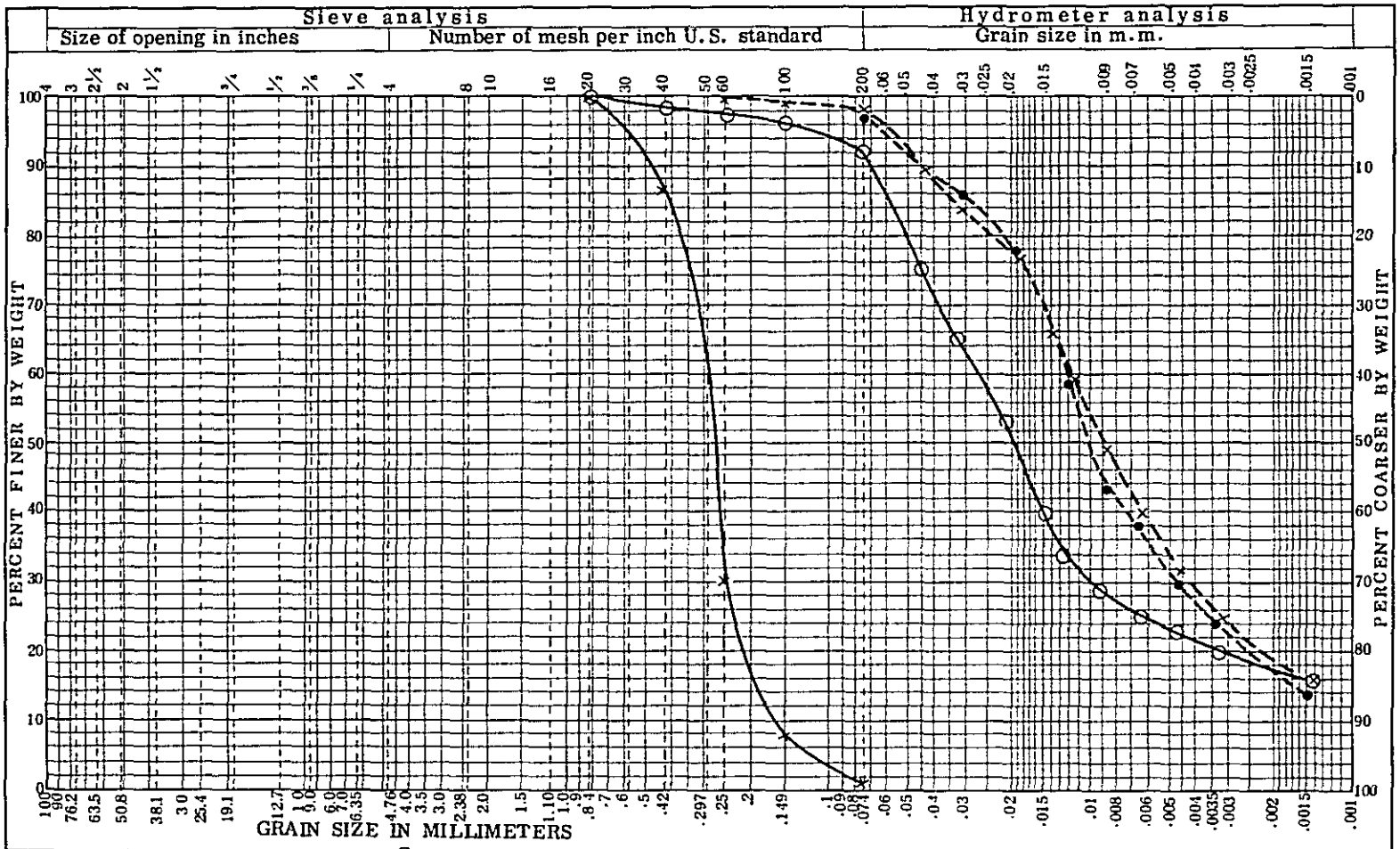
Location	Sample No.	Boring	Depth	Legend	SP.GR	N.W.C.	L.L.	Pi	Classification
Milanpur	D 9	G4	70'- 72'		-	-	-	-	Fine sand, little silt, trace mica
"	D11	"	90'- 22'		-	-	-	-	Medium to fine sand, trace silt trace mica
"	D14	"	120'-122'		-	-	-	-	Fine sand, trace silt, trace mica
"	D17	"	150'-152'		-	-	-	-	Medium to fine sand, trace gravel
									Little silt, trace mica

* Unified Soil Classification
** ASTM Soil Classification

Sheet 2 of 3 Attachment - III

S. WAPDA HYDRAULIC RESEARCH LABORATORY

GRADATION CURVE



Cobble	Gravel: Coarse gravel	Gravel: Fine gravel	Coarse sand	Medium sand: Coarse sand	Fine sand: Fine sand	Fines (Silt or clay) *: Silt	Fines (Silt or clay) *: Clay **

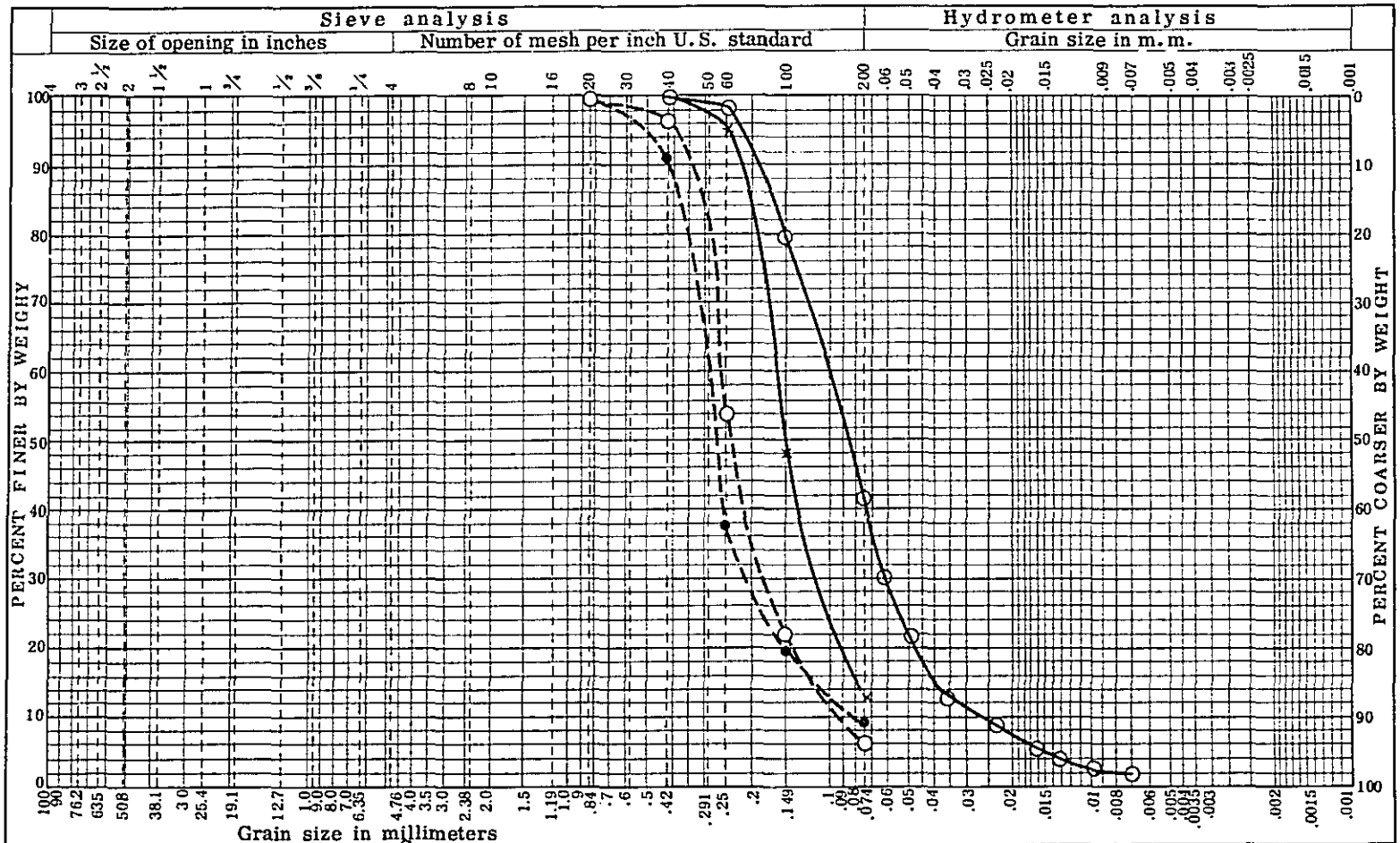
Location	Sample No.	Boring	Depth	Legend	SP.GR.	N.W.C.	L. L.	Pi	Classification
Milanpur	D22	G4	215'-217'		-	-	-	-	Medium to fine sand
"	D24	"	260'-262'		-	17'55	29	10	Clay trace fine sand low plastic
"	D25	"	275'-277'		-	19'85	56	30	Clay trace fine sand high plastic
"	D26	"	285'-287'		-	18'3	53	29	Clay trace fine sand & organic matter high plastic

* Unified Soil Classification
** ASTM Soil Classification

Sheet 3 of 3 Attachment - III

B. WAPOA HYDRAULIC RESEARCH LABORATORY

GRADATION CURVE

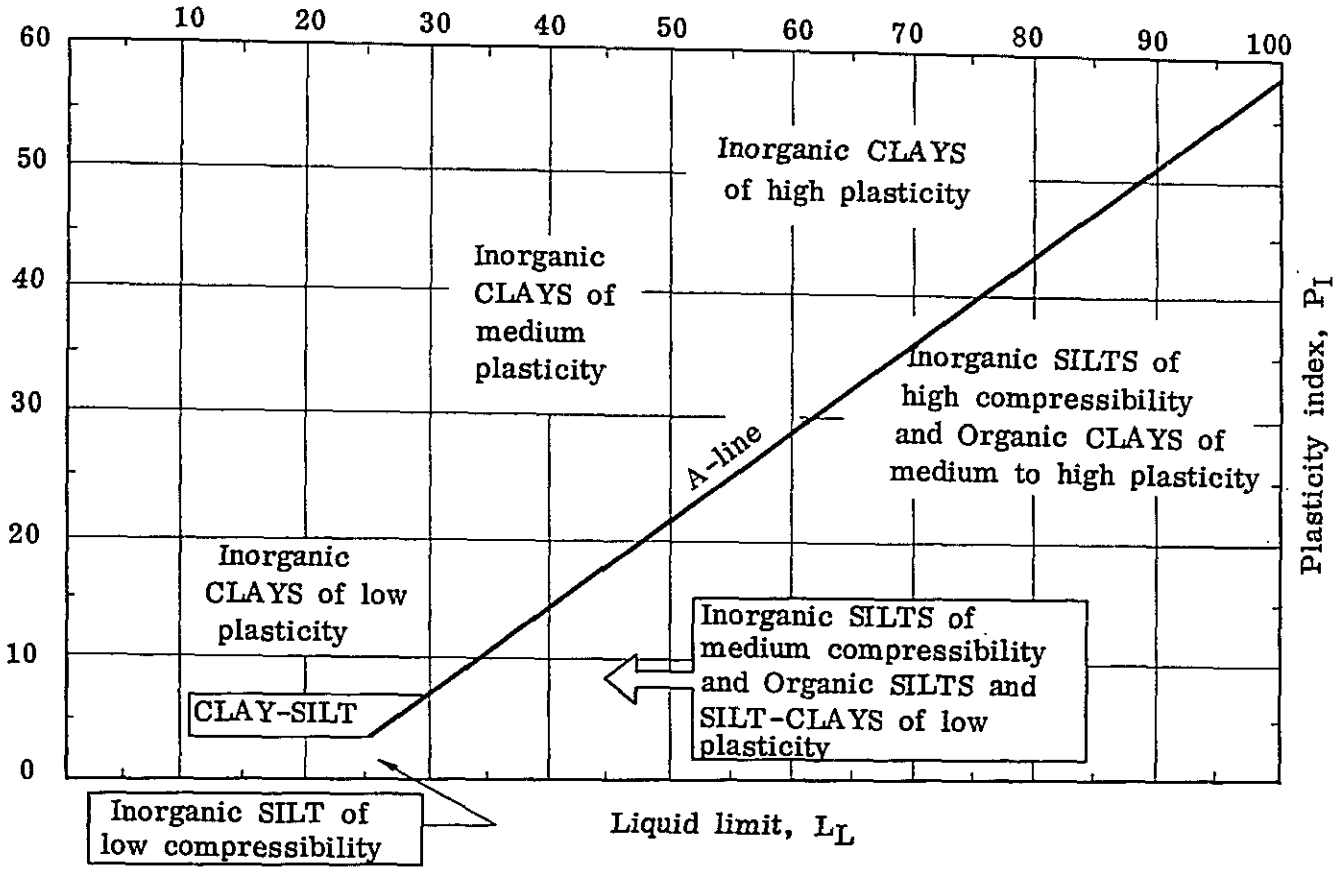


Cobbles	Coarse gravel	Fine gravel	Coarse sand	Medium sand	Fine sand	Fines (Silt or clay) *
	Gravel			Coarse sand	Fine sand	Clay **

Location	Sample No.	Boring	Depth	Legend	SP. GR.	N. W. C.	L. L.	Pi	Classification
Milanpur	D1	G4	5'- 7'		-	-	-	-	Fine sand and silt, trace fine mica
	D2	G4	10'-12'		-	--	-	-	Fine sand, little silt, trace mica
	D5	G4	30'-32'		-	-	-	-	Fine sand, trace silt, trace mica
	D8	G4	60'-62'		-	-	-	-	Medium to fine sand, trace silt, trace mica

* United Soil Classification
** ASTM Soil Classification

Sheet 1 of 3 Attachment - III


10
20
30
40
50
60
70
80
90
100
60
50
40
30
20
10
0
Inorganic CLAYS of high plasticity
Inorganic CLAYS of medium plasticity
Inorganic SILTS of high compressibility and Organic CLAYS of medium to high plasticity
A-line
Inorganic CLAYS of low plasticity
CLAY-SILT
Inorganic SILTS of medium compressibility and Organic SILTS and SILT-CLAYS of low plasticity
Inorganic SILT of low compressibility
Liquid limit, L_L
Plasticity index, P_I

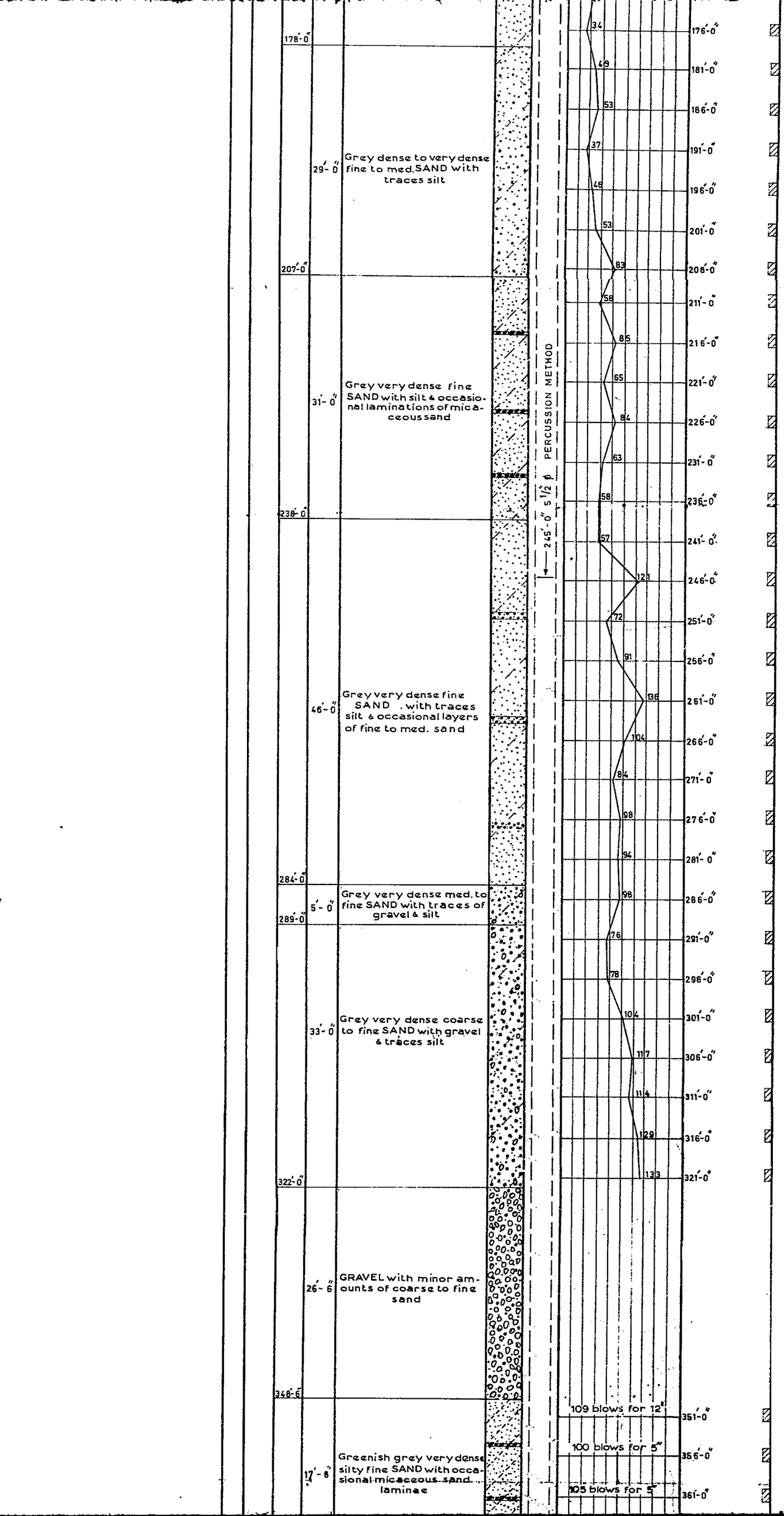
appendix 1

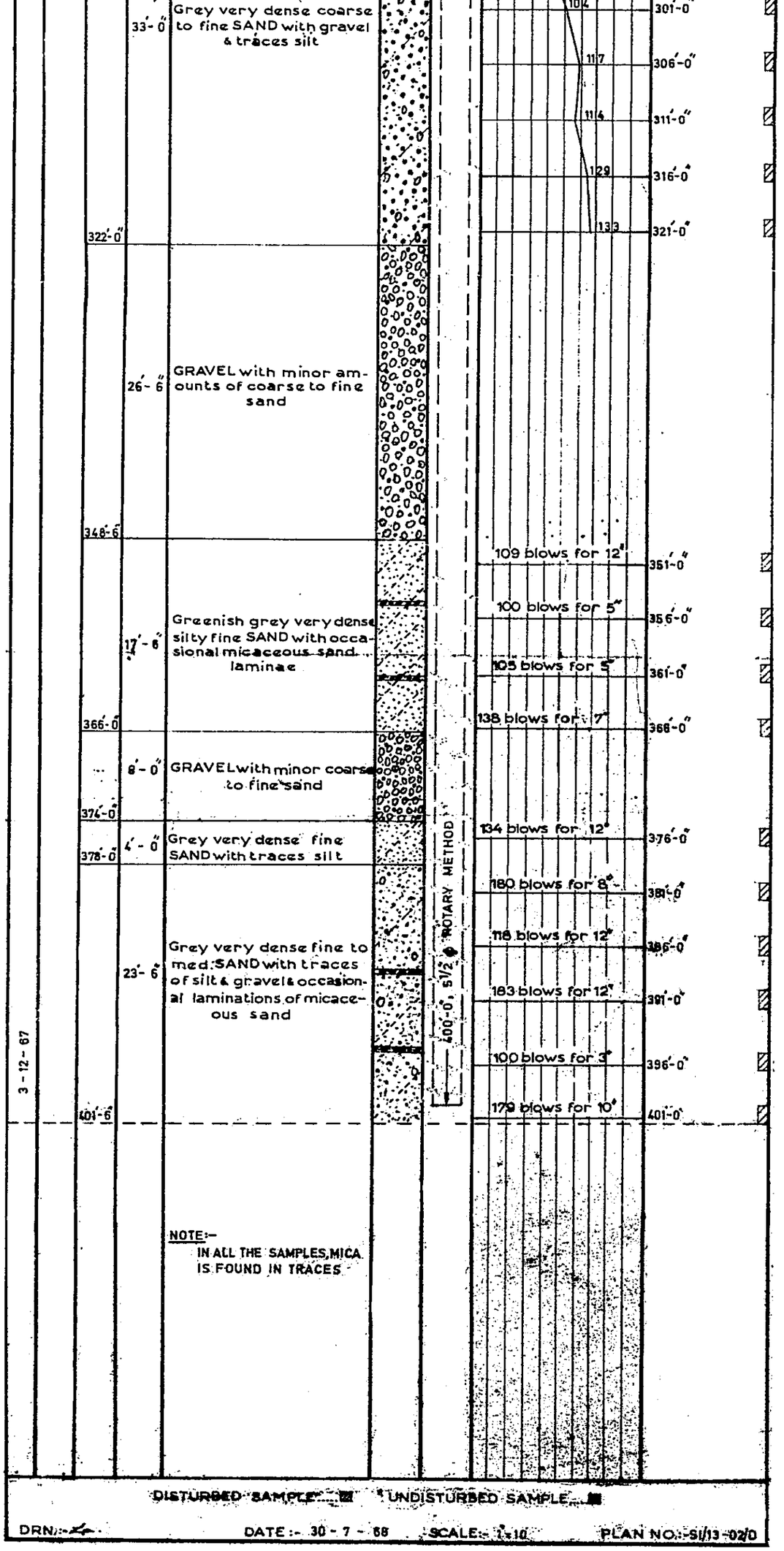
SOILEXPERTS LTD.
(INCORPORATED IN SWITZERLAND)
DACCA-KARACHI

Client:- E.P.WAPDA(P)
Site:- E-W. INTER-CONNECTOR PROJECT
KAMLAPUR CHAR, ARICHA
Bore chart of Boring No. C-6

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. 20 60 100 140 180	REMARKS (G.W.) SOIL SAMPLES VANE SHEAR TESTS Lbs./sq.in.
	REDUCED ELEV.							
14-11-67		39'-0"	39'-0"	Grey to brownish grey loose to med. dense very fine to fine SAND with silt & occasional micaceous sand laminaee		30'-0", 6" ϕ PERCUSSION METHOD	2 8 6 4 10 5 6 7 12 13 16 14 17 37 40 36 26 17 19 14 12 13 24 25 53 60 47 55 26 22 23 25 34 56 34 35 37 24 23 24 21 23 26 22 31	2'-0" 5'-6" 7'-6" 11'-6" 15'-6" 19'-6" 23'-6" 28'-0" 32'-0" 36'-0" 40'-0" 44'-0" 48'-0" 52'-0" 54'-0" 56'-0" 58'-0" 60'-0" 62'-0" 64'-0" 66'-0" 68'-0" 70'-0" 72'-0" 74'-0" 76'-0" 78'-0" 80'-0" 82'-0" 84'-0" 86'-0" 88'-0" 90'-0" 92'-0" 94'-0" 96'-0" 98'-0" 100'-0" 102'-0" 104'-0" 106'-0" 108'-0" 110'-0" 112'-0" 114'-0"
		51'-0"	12'-0"	Grey med. dense fine SAND with silt				
		57'-0"	6'-0"	Grey dense fine SAND with silt & occasional laminations of micaceo-us sand				
		71'-0"	14'-0"	Grey med. dense fine SAND with little silt				

51'-0"	6'-0"	Grey dense fine SAND with silt & occasional laminations of micaceous sand	
57'-0"	14'-0"	Grey med. dense fine SAND with little silt	
71'-0"	107'-0"	Grey med. dense to very dense fine SAND with traces silt, occasional thin laminae of micaceous fine sand	
178'-0"	29'-0"	Grey dense to very dense fine to med. SAND with traces silt	
207'-0"	31'-0"	Grey very dense fine SAND with silt & occasional laminations of micaceous sand	


178'-0"
29'-0"
Grey dense to very dense fine to med. SAND with traces silt
207'-0"
31'-0"
Grey very dense fine SAND with silt & occasional laminations of micaceous sand
238'-0"
46'-0"
Grey very dense fine SAND with traces silt & occasional layers of fine to med. sand
284'-0"
5'-0"
Grey very dense med. to fine SAND with traces of gravel & silt
289'-0"
33'-0"
Grey very dense coarse to fine SAND with gravel & traces silt
322'-0"
26'-6"
GRAVEL with minor amounts of coarse to fine sand
348'-6"
17'-6"
Greenish grey very dense silty fine SAND with occasional micaceous sand laminae
245'-0" 5 1/2 ø PERCUSSION METHOD
34
49
53
37
46
53
83
58
85
65
84
63
58
57
121
72
91
136
104
84
98
94
98
76
78
104
117
114
129
133
109 blows for 12"
100 blows for 5"
105 blows for 5"
176'-0"
181'-0"
186'-0"
191'-0"
196'-0"
201'-0"
206'-0"
211'-0"
216'-0"
221'-0"
226'-0"
231'-0"
236'-0"
241'-0"
246'-0"
251'-0"
256'-0"
261'-0"
266'-0"
271'-0"
276'-0"
281'-0"
286'-0"
291'-0"
296'-0"
301'-0"
306'-0"
311'-0"
316'-0"
321'-0"
351'-0"
356'-0"
361'-0"


Grey very dense coarse to fine SAND with gravel & traces silt
33'-0"
322'-0"
GRAVEL with minor amounts of coarse to fine sand
26'-6"
348'-6"
Greenish grey very dense silty fine SAND with occasional micaceous sand laminae
17'-6"
366'-0"
GRAVEL with minor coarse to fine sand
8'-0"
374'-0"
Grey very dense fine SAND with traces silt
4'-0"
378'-0"
Grey very dense fine to med. SAND with traces of silt & gravel & occasional laminations of micaceous sand
23'-6"
401'-6"
3-12-67
NOTE:-
IN ALL THE SAMPLES, MICA IS FOUND IN TRACES
400'-0", 5 1/2" ROTARY METHOD
104
117
114
129
133
109 blows for 12"
100 blows for 5"
105 blows for 5"
138 blows for 7"
134 blows for 12"
180 blows for 8"
118 blows for 12"
183 blows for 12"
100 blows for 3"
179 blows for 10"
301'-0"
306'-0"
311'-0"
316'-0"
321'-0"
351'-0"
356'-0"
361'-0"
366'-0"
376'-0"
381'-0"
386'-0"
391'-0"
396'-0"
401'-0"
DISTURBED SAMPLE
UNDISTURBED SAMPLE
DRN:-
DATE :- 30-7-68
SCALE:- 1"=10'
PLAN NO.:-SI/13-02/0

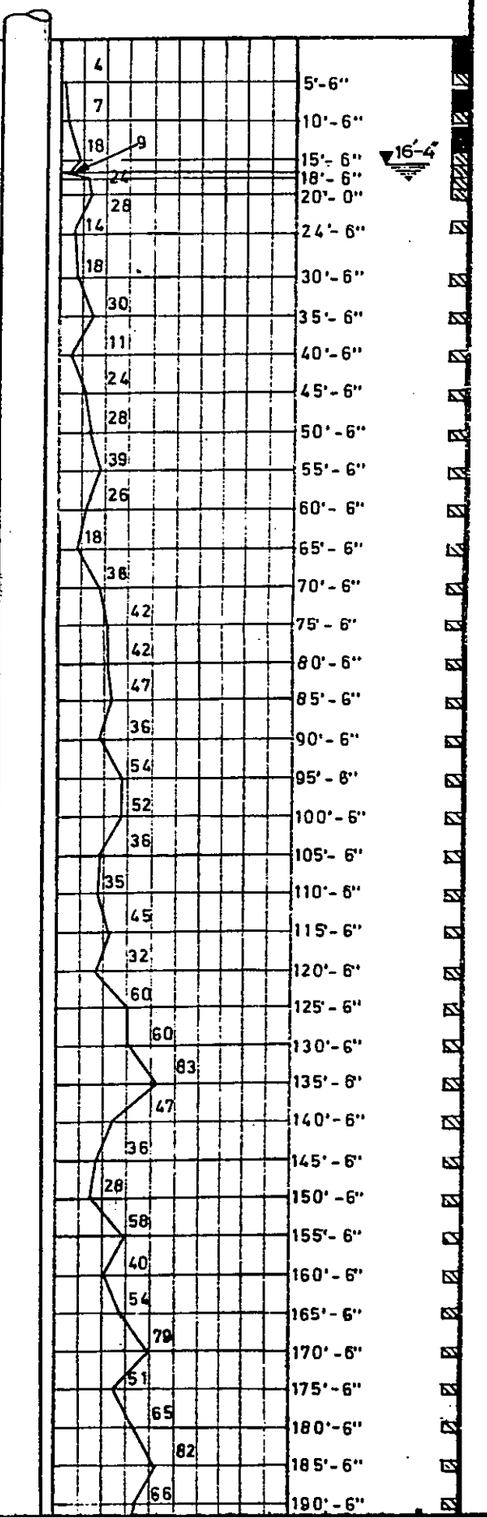
appendix 2

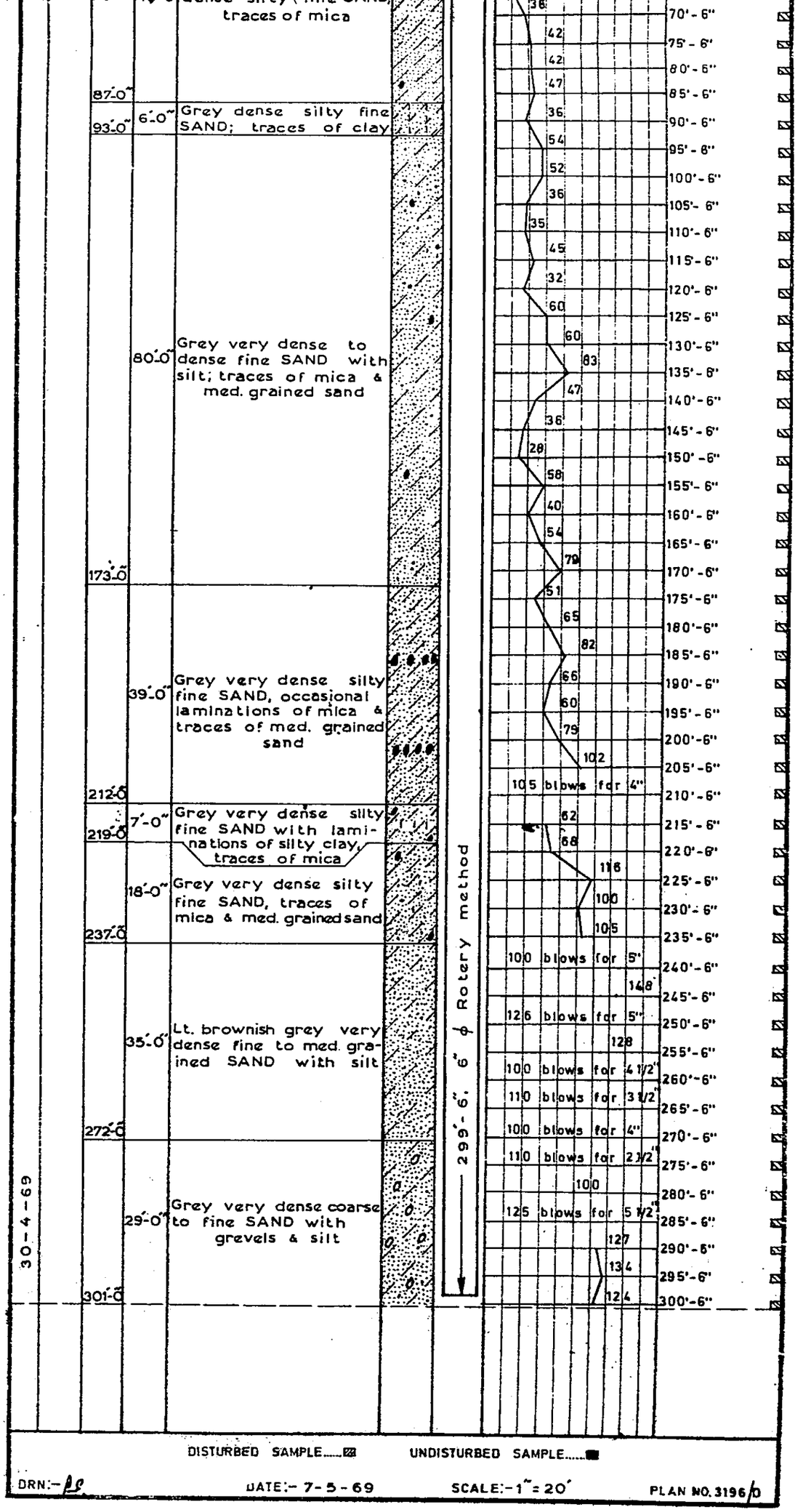
SWISSBORING
OVERSEAS CORPORATION LTD.
DACCA-KARACHI

Client:- E. P. WAPDA (P)
Site:- E-W. INTER-CONNECTOR PROJECT
JAMUNA RIVER CROSSING AREA

Bore chart of Boring No. **E-8**

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. 20 40 60 80 100 120 140 160 180	REMARKS (G.W.T, SOIL SAMPLES) VANE SHEAR TESTS Lbs/sq.in.
	REDUCED ELEV.							
15-4-69		47'-0"	47'-0"	Lt. grey to grey loose to med. dense silty fine SAND, occasional laminations of mica				
		87'-0"	40'-0"	Grey med. dense to dense silty fine SAND, traces of mica				
		93'-0"	6'-0"	Grey dense silty fine SAND; traces of clay				
		173'-0"	80'-0"	Grey very dense to dense fine SAND with silt; traces of mica & med. grained sand				
				Grey very dense silty				




traces of mica
87'-0"
6'-0"
Grey dense silty fine SAND; traces of clay
93'-0"
80'-0"
Grey very dense to dense fine SAND with silt; traces of mica & med. grained sand
173'-0"
39'-0"
Grey very dense silty fine SAND, occasional laminations of mica & traces of med. grained sand
212'-0"
7'-0"
Grey very dense silty fine SAND with laminations of silty clay, traces of mica
219'-0"
18'-0"
Grey very dense silty fine SAND, traces of mica & med. grained sand
237'-0"
35'-0"
Lt. brownish grey very dense fine to med. grained SAND with silt
272'-0"
29'-0"
Grey very dense coarse to fine SAND with grevels & silt
301'-0"
30-4-69
299'-6" @ Rotery method
36
42
42
47
36
54
52
36
35
45
32
60
60
83
47
36
28
58
40
54
79
51
65
82
66
60
79
102
105 blows for 4"
62
68
116
100
105
100 blows for 5"
148
126 blows for 5"
128
100 blows for 4 1/2"
110 blows for 3 1/2"
100 blows for 4"
110 blows for 2 1/2"
100
125 blows for 5 1/2"
127
134
124
70'-6"
75'-6"
80'-6"
85'-6"
90'-6"
95'-6"
100'-6"
105'-6"
110'-6"
115'-6"
120'-6"
125'-6"
130'-6"
135'-6"
140'-6"
145'-6"
150'-6"
155'-6"
160'-6"
165'-6"
170'-6"
175'-6"
180'-6"
185'-6"
190'-6"
195'-6"
200'-6"
205'-6"
210'-6"
215'-6"
220'-6"
225'-6"
230'-6"
235'-6"
240'-6"
245'-6"
250'-6"
255'-6"
260'-6"
265'-6"
270'-6"
275'-6"
280'-6"
285'-6"
290'-6"
295'-6"
300'-6"
DISTURBED SAMPLE
UNDISTURBED SAMPLE
DRN:- PS
DATE:- 7-5-69
SCALE:- 1" = 20'
PLAN NO. 3196/D

appendix 3

SWISSBORING
OVERSEAS CORPORATION LTD.
D A C C A

Client:- E P WAPDA (P)
Site:- E-W. INTER- CONNECTER PROJECT
JAMUNA RIVER CROSSING AREA
Bore chart of Boring No. E-9

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. 20 40 60 80 100 120 140 160 180	REMARKS (G.W.T, SOIL SAMPLES) VANE SHEAR TESTS Lbs/sq.in.
16-4-69	REDUCED ELEV.	5'-0"	5'-0"	Grey very soft sandy SILT traces of clay & mica				
		11'-0"	6'-0"	Grey loose very fine silty SAND traces of mica				
		17'-0"	6'-0"	Grey very soft SILT with very fine sand traces of clay & mica				
		38'-0"	21'-0"	Grey loose to med. dense very fine silty SAND occasional laminations of mica				
		48'-0"	10'-0"	Grey med. dense fine SAND with silt traces of mica				
		52'-0"	4'-0"	Grey med. dense very fine silty SAND occasional laminations of mica				
		63'-0"	11'-0"	Grey to brownish grey med. dense fine SAND with silt				
		68'-0"	5'-0"	Grey med. dense silty fine SAND with inter calation of silt				
		71'-0"	3'-0"	Brownish grey med. dense fine to med. grained SAND wilt silt				
		113'-0"	42'-0"	Grey to brownish grey med. dense to dense fine SAND with silt				
		146'-0"	33'-0"	Grey dense to very dense silty fine SAND occasional lami--nations of mica				
		158'-0"	12'-0"	Grey very dense very fine silty SAND occasional laminatins of mica				
			44'-0"	Grey dense to very dense silty fine SAND traces of mica				

391~392

392

46'-0"	10'-0"	with silt traces of mica
52'-0"	6'-0"	Grey med. dense very fine silty SAND occasional laminations of mica
63'-0"	11'-0"	Grey to brownish grey med. dense fine SAND with silt
68'-0"	5'-0"	Grey med. dense silty fine SAND with inter calation of silt
71'-0"	3'-0"	Brownish grey med. dense fine to med. grained SAND wilt silt
113'-0"	42'-0"	Grey to brownish grey med. dense to dense fine SAND with silt
146'-0"	33'-0"	Grey dense to very dense silty fine SAND occasional lami--nations of mica
158'-0"	12'-0"	Grey very dense very fine silty SAND occasional laminatins of mica
202'-0"	44'-0"	Grey dense to very dense silty fine SAND traces of mica
227'-0"	25'-0"	Grey very dense very fine silty SAND occasional laminations of mica
237'-4"	10'-0"	Grey very dense fine SAND with silt traces of med. grained sand
268'-0"	31'-0"	Grey very dense fine to med. grained SAND with silt; traces of mica
277'-0"	9'-0"	Grey very dense med. to fine grained SAND with silt, traces of coarse grained sand & pieces of grevel
283'-0"	6'-0"	"A"
287'-0"	4'-0"	"B"
301'-11"	14'-0"	Grey very dense med. to fine grained SAND with silt traces of coarse sand & grevels
	"A"	Grey very dense fine to med. grained SAND with silt & grevels
	"B"	Grey to very dense fine to med. grained SAND traces of silt.

299'-6", 5'Ø Rotary method

27 18 18 24 10 28 26 25 24 27 28 36 104 58 38 37 55 59 77 69 63 66 67 42 34 51 58 67 84 119 120 68 78 70 100 blows for 6" 94 110 80 100 96 92 139 71 74 112 110 92 87 98 98 101 123 blows for 3½"

45'-6" 50'-6" 55'-6" 60'-6" 65'-6" 70'-6" 75'-6" 80'-6" 85'-6" 90'-6" 95'-6" 100'-6" 105'-6" 110'-6" 115'-6" 120'-6" 125'-6" 130'-6" 135'-6" 140'-6" 145'-6" 150'-6" 155'-6" 160'-6" 165'-6" 170'-6" 175'-6" 180'-6" 185'-6" 190'-6" 195'-6" 200'-6" 205'-6" 210'-6" 215'-6" 220'-6" 225'-6" 230'-6" 235'-6" 240'-6" 245'-6" 250'-6" 255'-6" 260'-6" 265'-6" 270'-6" 275'-6" 280'-6" 285'-6" 290'-6" 295'-6" 300'-6"

26-4-69

DISTURBED SAMPLE..... UNDISTURBED SAMPLE.....

DRN:- K. DATE:-15-5-69 SCALE:-1"=20'-0" PLAN NO. 3198/D

appendix 4

GPS-1A

~~APPENDIX-4~~

B. WAPDA. HYDRAULIC RESEARCH LABORATORY BORING LOG

PROJECT :- BRIDGE OVER RIVER BRAHMAPUTRA & JAMUNA
LOCATION :- Milonpur (Bogra)
DRILLED BY :- SSID/BWDB

HOLE NO. G-4
GROUND LEVEL. Not supplied
GROUND WATER LEVEL. 10'-10" at 0600 hrs on 31.5.72

NO. OF SAMPLE	TYPE OF SAMPLE	SCALE / LOG	DESCRIPTION OF MATERIALS	PERMEABILITY	DENSITY	COLOUR	MOISTURE	PLASTICITY	BLOWS ON SPOON PER 6 INCH PENETRATION 0/6	6/12	12/18	18/24	STANDARD PENETRATION RESISTANCE: BLOWS PER FOOT OF PENETRATION	INDEX / REMARKS
		0'	FINE SAND AND SILT, trace fine mica.		LOOSE	LIGHT GREY								
D1	▨								2	2	5	8		
D2	▨	10'	FINE SAND. trace to little silt, trace mica		DENSE	GREY	MOIST	PLASTIC	3	7	7	9		
D3	▨				DENSE				3	5	6	7		
		20'												
D4	▨				MEDIUM				4	7	12	14		
D5	▨	30'			MEDIUM				7	10	12	15		
D6	▨	40'			LOOSE				2	3	4	6		
D7	▨	50'			DENSE				9	16	23	26		
D8	▨	60'	MEDIUM TO FINE SAND, trace silt trace mica.		DENSE			NON	3	12	19	19		
D9	▨	70'	FINE SAND, little silt, trace mica		DENSE	DEEP GREY		NON	3	12	19	24		
D10	▨	80'	FINE SAND AND SILT, trace fine mica		DENSE	GREY		C	12	23	31	43		
D11	▨	90'	MEDIUM TO FINE SAND trace silt		VERY DENSE				14	26	33	34		

INDEX: ▨ DISTURBED SAMPLES; ▤ UNDISTURBED SAMPLES

mica

D6 40'

D7 50'

60' MEDIUM TO FINE SAND, trace silt trace mica.

D8

70' FINE SAND, little silt, trace mica

D9

80'

D10 FINE SAND AND SILT, trace fine mica

90'

D11 MEDIUM TO FINE SAND trace silt trace mica.

MISED D12 100'

D13 110'

FINE SAND trace silt, trace mica.

D14 120'

D15 130' MEDIUM TO FINE SAND, trace silt, trace mica,

D16 140' FINE SAND, trace silt, trace mica

D17 150' MED. TO FINE SAND trace gravel, little silt, trace mica

160'

MISED D18

MEDIUM TO FINE SAND trace silt, trace mica

D19 170'

180'

D20

196'

FINE SAND, trace silt trace mica

D21 200'

210'

WASH D22

MEDIUM TO FINE SAND

VERY DENSE DEEP GREY GRAVELLY SILTY PLASTIC NON COHESIVE DENSE GREY SAND

DENSE DEEP GREY GRAVELLY SILTY PLASTIC NON COHESIVE SAND

VERY DENSE GREY GRAVELLY SILTY PLASTIC NON COHESIVE SAND

DENSE GREY GRAVELLY SILTY PLASTIC NON COHESIVE SAND

LOOSE DENSE MEDIUM DENSE GREY GRAVELLY SILTY PLASTIC NON COHESIVE SAND

2 3 4 6

9 16 23 26

3 12 19 19

3 12 19 24

12 23 31 43

14 26 33 34

7 12 19 25

10 18 22 23

8 20 25 37

9 19 27 38

8 17 24 39

15 42 50 — 6" 6ft

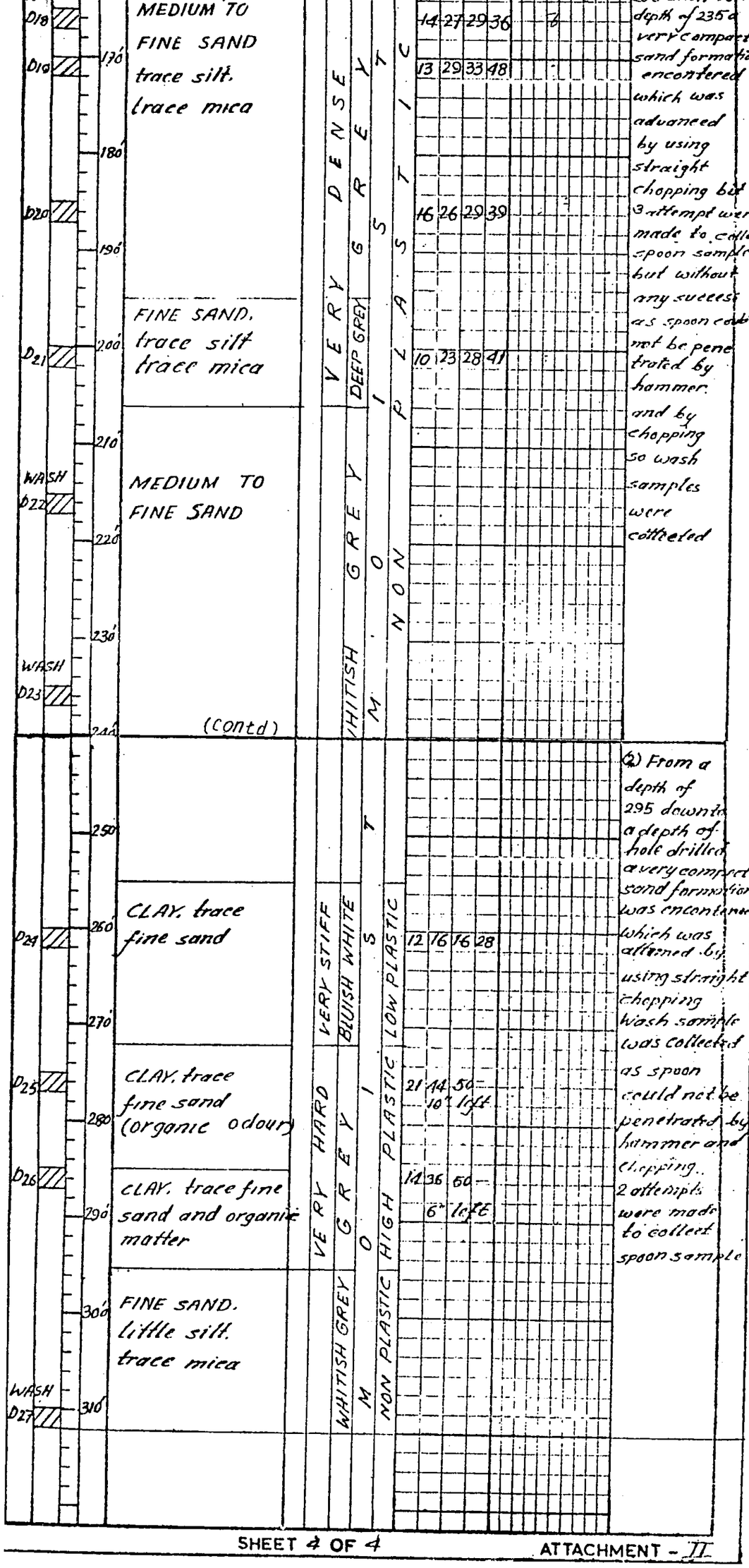
14 27 29 36 — 6

13 29 33 48

16 26 29 39

10 23 28 41

① From depth of 206' down to a depth of 235' very compact sand formation encountered which was advanced by using straight chopping bit 3 attempt were made to collect spoon sample but without any success as spoon could not be penetrated by hammer and by chopping so wash samples were collected



SHEET 4 OF 4

ATTACHMENT - II

appendix 5

SWISSBORING.
OVERSEAS CORPORATION LTD.
DACCA-KARACHI

Client:- E.P. WAPDA (P)
Site:- E-W INTER-CONNECTOR PROJECT
HARDINGE BRIDGE, PAKSEY
Bore chart of Boring No. **DH-F1**

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. 10 20 30 40 50 60 70 80 90	REMARKS (G.W.T, SOIL SAMPLES) VANE SHEAR TESTS Lbs/sq.in.
	REDUCED ELEV.							
				RIVER GANGES				54'-4"
7-6-69		5'-0"	5'-0"	Grey fine SAND				
		12'-0"	7'-0"	ROCK RIPRAP				
		22'-0"	10'-0"	Light grey dense fine to med. SAND			50 62	15'-6" 20'-6"
		33'-0"	11'-0"	Grey dense fine SAND			31 40 57	25'-6" 30'-6" 35'-6"
		42'-0"	9'-0"	Grey very dense fine to med. SAND			73	40'-6"
		53'-0"	11'-0"	Brownish grey very dense med. to coarse SAND with gravels upto 50'-0"			48 blows for 5"	45'-6"
		58'-0"	5'-0"	Grey very dense fine to med. SAND			52 blows for 5"	50'-6"
		68'-0"	10'-0"	Light grey very dense fine SAND			52 blows for 4" 74 blows for 5"	55'-6" 60'-0"
		82'-0"	14'-0"	Light grey very dense fine to med. SAND			71 blows for 5" 100 95	65'-0" 70'-6" 75'-6"
		88'-0"	6'-0"	Brownish grey very dense med. to cr. SAND			118 blows for 10 1/2" 77 blows for 6"	80'-0" 85'-0"
		108'-0"	20'-0"	Grey to light grey very dense fine SAND			81 blows for 6" 86 blows for 6" 78 blows for 6" 88 blows for 6"	90'-0" 95'-0" 100'-0" 105'-0"
		117'-0"	9'-0"	Brownish grey very dense coarse SAND with gravels			67 blows for 3" 123 blows for 9"	110'-0" 115'-0"
			16'-0"	Grey very dense med. to coarse SAND			136 blows for 9" 143 blows for 9"	120'-0" 125'-0"

7 - 6 - 69

5'-0"	5'-0"	Grey fine SAND
12'-0"	7'-0"	ROCK RIPRAP
22'-0"	10'-0"	Light grey dense fine to med. SAND
33'-0"	11'-0"	Grey dense fine SAND
42'-0"	9'-0"	Grey very dense fine to med. SAND
53'-0"	11'-0"	Brownish grey very dense med. to coarse SAND with gravels upto 50'-0"
58'-0"	5'-0"	Grey very dense fine to med. SAND
68'-0"	10'-0"	Light grey very dense fine SAND
82'-0"	14'-0"	Light grey very dense fine to med. SAND
88'-0"	6'-0"	Brownish grey very dense med. to cr SAND
108'-0"	20'-0"	Grey to light grey very dense fine SAND
117'-0"	9'-0"	Brownish grey very dense coarse SAND with gravels
133'-0"	16'-0"	Grey very dense med. to coarse SAND
137'-0"	4'-0"	'A'
152'-0"	15-0	Light grey very dense med. to coarse SAND
200'-6"	48'-6"	Light grey very dense med. to coarse SAND occassionally with gravel(155-0 to 160'-0" & (170'-0" to 175'-0")
		'A' Light grey very dense fine to med. SAND with traces of silt

22 - 6 - 69

4 1/2" Percussio method

25' - 10"

50
62
31
40
57
73

48 blows for 5"
52 blows for 5"
52 blows for 4"
74 blows for 5"
71 blows for 5"
100
95
118 blows for 10 1/2"
77 blows for 6"
81 blows for 6"
86 blows for 6"
78 blows for 6"
83 blows for 6"
67 blows for 3"
123 blows for 9"
136 blows for 9"
143 blows for 9"
117 blows for 9"
123 blows for 12"
71 blows for 6"
72 blows for 6"
62 blows for 6"
82 blows for 3"
79 blows for 3"
84 blows for 6"
68 blows for 4"
76 blows for 4"
81 blows for 4"
78 blows for 3 1/2"
83 blows for 3"
73 blows for 6"
88 blows for 6"

15'-6" 20'-6" 25'-6" 30'-6" 35'-6" 40'-6" 45'-6" 50'-6" 55'-6" 60'-0" 65'-0" 70'-6" 75'-6" 80'-0" 85'-0" 90'-0" 95'-0" 100'-0" 105'-0" 110'-0" 115'-0" 120'-0" 125'-0" 130'-0" 135'-0" 140'-0" 145'-0" 150'-0" 155'-0" 160'-0" 165'-0" 170'-0" 175'-0" 180'-0" 185'-0" 190'-0" 195'-0" 200'-0"

DISTURBED SAMPLE..... UNDISTURBED SAMPLE.....

DRN. — DATE:- 19-6-69 SCALE:- 1"=20' PLAN NO. 3216/D.

SWISSBORING
OVERSEAS CORPORATION LTD.
D A C C A

Client:- E.P.WAPDA(P)
Site:- E-W. INTER-CONNECTOR PROJECT
HARDINGE BRIDGE, PAKSEY.
Bore chart of Boring No. DH-F3

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. 10 20 30 40 50 60 70 80 90	REMARKS (G.W.T, SOIL SAMPLES) VANE SHEAR TESTS Lbs/sq.in.
	REDUCED ELEV.							
				RIVER GANGES				17'-6"
17-6-69		52'-0"		Light grey med. dense micaceous fine SAND with traces of silt		115'-0" 6"ϕ PERCUSSION METHOD	12 16 20 19 23 21 20 20 22 27 21 23 24 44 57 22 25	5'-6" 10'-6" 15'-6" 20'-6" 25'-6" 30'-6" 35'-6" 40'-6" 45'-6" 50'-6" 55'-6" 60'-6" 65'-6" 70'-6" 75'-6"
		67'-0"	15'-0"	Light grey med. dense micaceous fine to med. SAND				
		77'-0"	10'-0"	Light grey dense to very dense fine SAND				
		82'-0"	5'-0"	RIP RAPS (Boulders)				
		88'-0"	6'-0"	Greyish brown med. dense cr. SAND with black org. matter				85'-6"
		93'-0"	5'-0"	Greyish brown med. dense coarse SAND				90'-6"
		98'-0"	5'-0"	Greyish brown very dense fine to med. SAND with gravel			76 blows for 6"	95'-6"
		103'-0"	5'-0"	Greyish brown very dense med. to coarse SAND			77 blows for 6"	100'-0"
		113'-0"	10'-0"	Greyish brown very dense med. to fine SAND with dark brown ferruginous stones			131 blows for 12"	105'-6"
							76 blows for 6"	110'-0"
		127'-0"	14'-0"	Greyish brown very dense med. grained SAND			79 blows for 6"	115'-0"
							9 94 102 119	120'-6" 125'-6" 130'-6"
		143'-0"	16'-0"	Light brown very dense coarse SAND			78 blows for 6"	140'-0"
		153'-0"	10'-0"	Light grey very dense fine SAND with gravel (pocket of clayey SILT from 144'to 145'-4")			82 blows for 6"	145'-0"
							72 blows for 6"	150'-0"
		158'-0"	5'-0"	Light grey very dense very fine SAND			65 blows for 6"	155'-0"
6-6-69		167'-0"	9'-0"	Light grey very dense silty very fine SAND with traces of coarse SAND			78 blows for 6"	160'-0"
							77 blows for 6"	165'-0"

Depth	Thickness	Description
52'-0"		
67'-0"	15'-0"	Light grey med. dense micaceous fine to med. SAND
77'-0"	10'-0"	Light grey dense to very dense fine SAND
82'-0"	5'-0"	RIP RAPS (Boulders)
88'-0"	6'-0"	Greyish brown med. dense cr. SAND with black org. matter
93'-0"	5'-0"	Greyish brown med. dense coarse SAND
98'-0"	5'-0"	Greyish brown very dense fine to med. SAND with gravel
103'-0"	5'-0"	Greyish brown very dense med. to coarse SAND
113'-0"	10'-0"	Greyish brown very dense med. to fine SAND with dark brown ferruginous stones
127'-0"	14'-0"	Greyish brown very dense med. grained SAND
143'-0"	16'-0"	Light brown very dense coarse SAND
153'-0"	10'-0"	Light grey very dense fine SAND with gravel (pocket of clayey SILT from 144' to 145'-4")
158-0"	5'-0"	Light grey very dense very fine SAND
167'-0"	9'-0"	Light grey very dense silty very fine SAND with traces of coarse SAND
176'-0"	10'-0"	Light grey very dense fine SAND with traes of silt
185'-6"	7'-6"	Light grey very dense fine to med. SAND with traces of silt

115'-0" 6" Ø PERCUSSION METHOD

203'-0" 3" Ø

Test	Depth
20	35'-6"
20	40'-6"
22	45'-6"
27	50'-6"
21	55'-6"
23	60'-6"
24	65'-6"
44	70'-6"
57	75'-6"
22	85'-6"
25	90'-6"
76 blows for 6"	95'-6"
77 blows for 6"	100'-0"
131 blows for 12"	105'-6"
76 blows for 6"	110'-0"
79 blows for 6"	115'-0"
9	120'-6"
94	125'-6"
102	130'-6"
119	
78 blows for 6"	140'-0"
82 blows for 6"	145'-0"
72 blows for 6"	150'-0"
65 blows for 6"	155'-0"
78 blows for 6"	160'-0"
77 blows for 6"	185'-0"
59 blows for 6"	170'-0"
64 blows for 6"	175'-0"
76 blows for 6"	180'-0"
83 blows for 6"	165'-0"

24 - 6 - 69

DISTURBED SAMPLE...... UNDISTURBED SAMPLE......

DRN:- DATE:- 25-6-69 SCALE:- 1"=20' PLAN NO.3252/D.

appendix 7

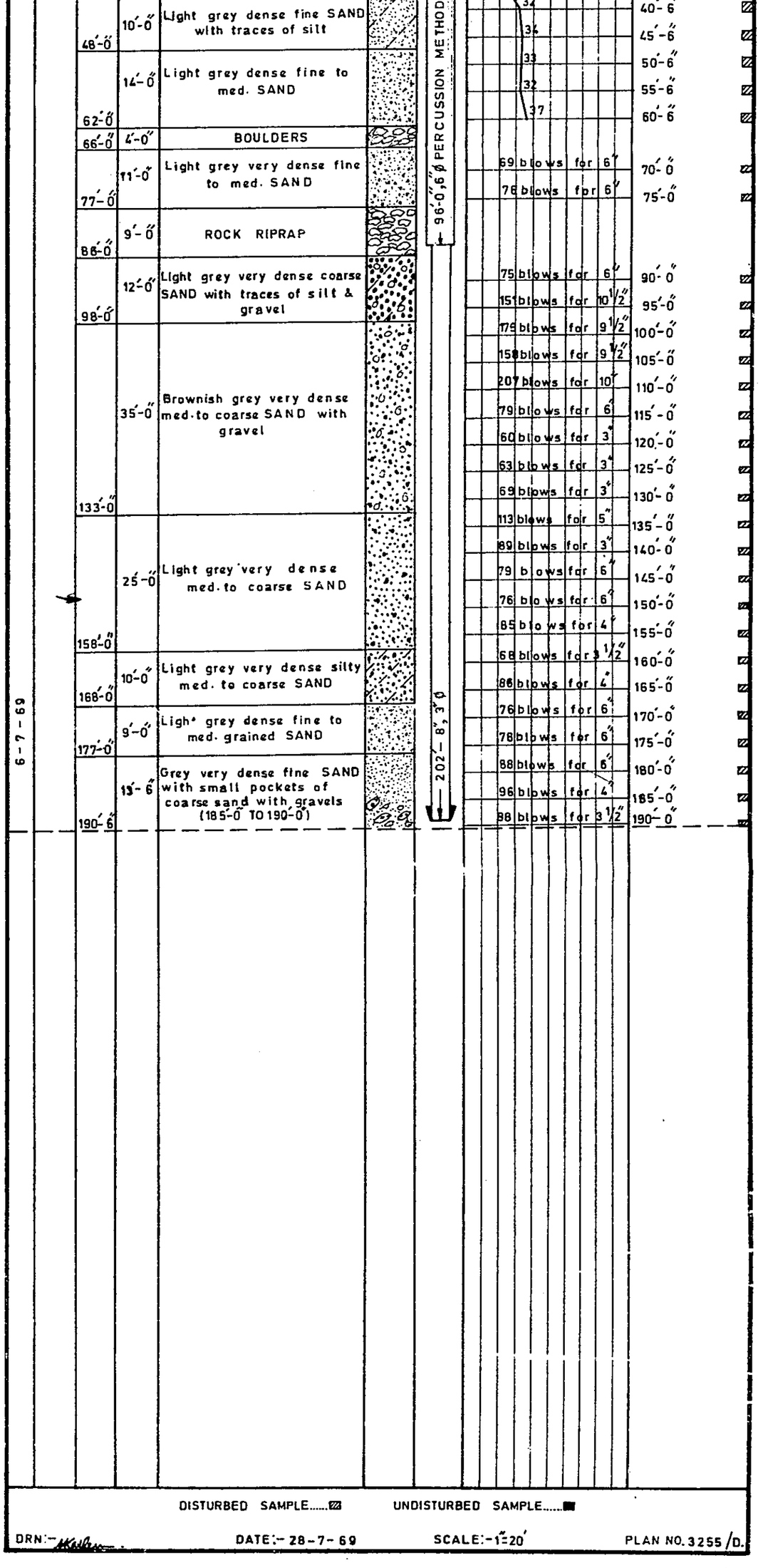
SWISSBORING
OVERSEAS CORPORATION LTD.
D A C C A

Client:- E.P. WAPDA (P)
Site:- E-W. INTER-CONNECTOR PROJECT
HARDINGE BRIDGE, PAKSEY.

Bore chart of Boring No. **DH-F4**

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS (G.W.T, SOIL SAMPLES) VANE SHEAR TESTS Lbs/sq.in.
	REDUCED ELEV.			RIVER GANGES				12'-2"
26-6-69		33'-0"	33'-0"	Light grey med: dense to dense fine SAND with traces of silt			20 / 19 / 25 / 25 / 34 / 50 / 22 / 32 / 34 / 33 / 32 / 37	5'-6" 10'-6" 15'-6" 20-6" 25'-6" 30'-6" 35'-6" 40'-6" 45'-6" 50'-6" 55'-6" 60'-6"
		38'-0"	5'-0"	Grey very stiff SILT with laminated fine sand				
		48'-0"	10'-0"	Light grey dense fine SAND with traces of silt				
		62'-0"	14'-0"	Light grey dense fine to med. SAND				
		66'-0"	4'-0"	BOULDERS				
		77'-0"	11'-0"	Light grey very dense fine to med. SAND			69 blows for 6" / 78 blows for 6"	70'-0" 75'-0"
		86'-0"	9'-0"	ROCK RIPRAP				
		98'-0"	12'-0"	Light grey very dense coarse SAND with traces of silt & gravel			75 blows for 6"	90'-0"
		133'-0"	35'-0"	Brownish grey very dense med.to coarse SAND with gravel			151 blows for 10 1/2" / 179 blows for 9 1/2" / 158 blows for 9 1/2" / 207 blows for 10" / 79 blows for 6" / 60 blows for 3" / 63 blows for 3" / 69 blows for 3"	95'-0" 100'-0" 105'-0" 110'-0" 115'-0" 120'-0" 125'-0" 130'-0"
		158'-0"	25'-0"	Light grey very dense med.to coarse SAND			113 blows for 5" / 89 blows for 3" / 79 blows for 6" / 76 blows for 6" / 85 blows for 4" / 68 blows for 3 1/2"	135'-0" 140'-0" 145'-0" 150'-0" 155'-0" 160'-0"
6-7-69		168'-0"	10'-0"	Light grey very dense silty med. to coarse SAND			86 blows for 4" / 76 blows for 6"	165'-0" 170'-0"
		177'-0"	9'-0"	Light grey dense fine to med. grained SAND			78 blows for 6"	175'-0"
		190'-6"	13'-6"	Grey very dense fine SAND with small pockets of coarse sand with gravels (185'-0" TO 190'-0")			88 blows for 6" / 96 blows for 4" / 88 blows for 3 1/2"	180'-0" 185'-0" 190'-0"

96'-0", 6" Ø PERCUSSION METHOD
202'-8", 3" Ø



DISTURBED SAMPLE.....▨ UNDISTURBED SAMPLE.....■

DRN:- DATE:- 28-7-69 SCALE:- 1"=20' PLAN NO. 3255/D.

appendix 8

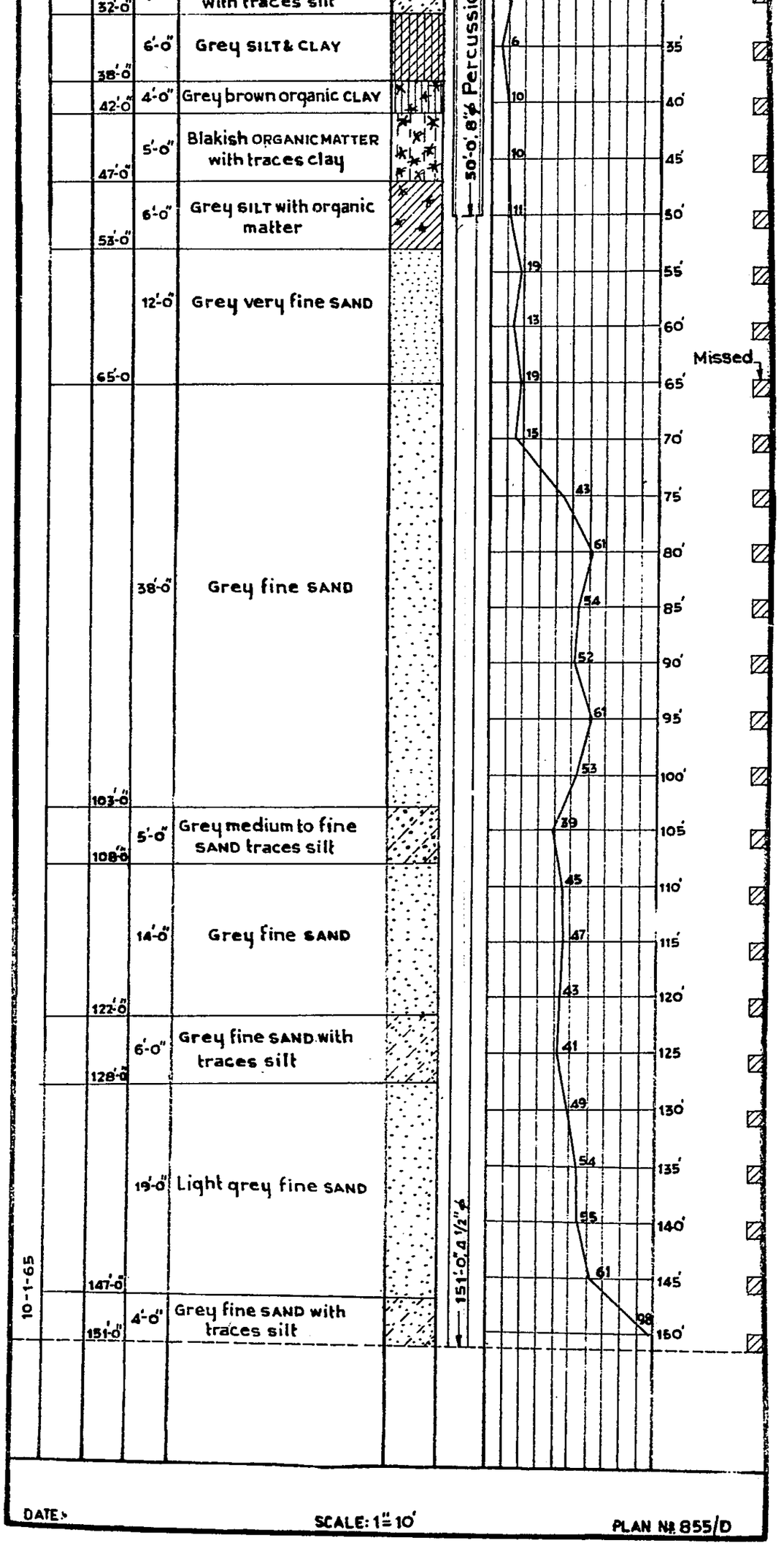
SWISSBORING
OVERSEAS CORPORATION LIMITED
KARACHI.
LAHORE — DACCA.

Client:- EPWAPDA

Site:- ARICHA CROSSING

Bore chart of Boring No. 11

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIAMETER OF BORING	STANDARD PENETRATION TESTS blows / ft. (10 20 30 40 50 60 70 80 90)	REMARKS (G.W.T, SAMPLES)
	REDUCED ELEVATION							
4-1-65		8'-0"	8'-0"	Light brown fine SAND with some silt		30'-0", 8"ϕ Percussion Method	7	5'
		12'-0"	4'-0"	Brown SILT with traces clay & fine sand			5	10'
		18'-0"	6'-0"	Brown CLAY			2	15' G.W.T. 15'-11"
		23'-0"	5'-0"	Brown fine SAND with traces silt			6	20'
		28'-0"	5'-0"	Grey SILT with some fine sand			10	25'
		32'-0"	4'-0"	Light grey fine SAND with traces silt			12	30'
		38'-0"	6'-0"	Grey SILT & CLAY			6	35'
		42'-0"	4'-0"	Grey brown organic CLAY			10	40'
		47'-0"	5'-0"	Blakish ORGANIC MATTER with traces clay			10	45'
		53'-0"	6'-0"	Grey SILT with organic matter			11	50'
		65'-0	12'-0"	Grey very fine SAND			19	55'
							13	60'
								Missed
							19	65'
							15	70'
							43	75'
							61	80'
			38'-0"	Grey fine SAND			54	85'
							52	90'
							61	95'
							53	100'
		103'-0"					39	105'
			5'-0"	Grey medium to fine SAND traces silt				


32'-0"
6'-0" Grey SILT & CLAY
38'-0"
4'-0" Grey brown organic CLAY
42'-0"
5'-0" Blakish ORGANIC MATTER with traces clay
47'-0"
6'-0" Grey SILT with organic matter
53'-0"
12'-0" Grey very fine SAND
65'-0
38'-0" Grey fine SAND
103'-0"
5'-0" Grey medium to fine SAND traces silt
108'-0"
14'-0" Grey fine SAND
122'-0"
6'-0" Grey fine SAND with traces silt
128'-0"
19'-0" Light grey fine SAND
147'-0"
4'-0" Grey fine SAND with traces silt
151'-0"
10-1-65
50'-0" 8" Percussion
151'-0" 4 1/2"
6
10
10
11
19
13
19
15
43
61
54
52
61
53
39
45
47
43
41
49
54
55
61
98
35'
40'
45'
50'
55'
60'
Missed
65'
70'
75'
80'
85'
90'
95'
100'
105'
110'
115'
120'
125
130'
135'
140'
145'
150'
DATE:
SCALE: 1" = 10'
PLAN No 855/D

SWISSBORING
OVERSEAS CORPORATION LIMITED
KARACHI
LAHORE — DACCA.

Client:- EPWAPDA

Site:- ARICHA CROSSING

Bore chart of Boring No 12

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIAMETER OF BORING	STANDARD PENETRATION TESTS blows / ft. (10 20 30 40 50 60 70 80 90)	REMARKS (G.W.T, SAMPLES)
	REDUCED ELEVATION.							
11-1-65		13'-0"	13'-0"	Light brown very fine SAND with traces silt		50'-0" 8"ϕ Percussion Method	3 4 5 10 8 10 16 23 26 25 31 30 34 40 45 38 44 42 45 44 37 34	5' 10' 15' 20' 25' 30' 35' 40' 45' 50' 55' 60' 65' 70' 75' 80' 85' 90' 95' 100' 105' 110'
		22'-0"	9'-0"	Grey SILT with traces fine sand				
		28'-0"	6'-0"	Light brown fine SAND with traces silt				
		33'-0"	5'-0"	Grey brown SILT & fine sand				
		42'-0"	9'-0"	Grey fine SAND				
		62'-0"	20'-0"	Light grey medium to fine SAND				
		82'-0"	20'-0"	Grey fine SAND				
		102'-0"	20'-0"	Light grey medium to fine SAND				
		108'-0"	6'-0"	Light grey fine SAND with traces silt				

33'-0"	5'-0"	Grey brown SILT & fine sand	
42'-0"	9'-0"	Grey fine SAND	
62'-0"	20'-0"	Light grey medium to fine SAND	
82'-0"	20'-0"	Grey fine SAND	
102'-0"	20'-0"	Light grey medium to fine SAND	
108'-0"	6'-0"	Light grey fine SAND with traces silt	
118'-0"	10'-0"	Grey fine SAND	
132'-0"	14'-0"	Grey medium to fine SAND	
142'-0"	10'-0"	Grey fine SAND	
151'-0"	9'-0"	Grey medium to fine SAND	

50'-0" 8"ø Perc

151'-0" 3"ø

16-1-65

10 16 23 26 28 31 30 34 40 45 38 44 42 45 44 37 34 40 43 23 36 31 36 39 43

30' 35' 40' 45' 50' 55' 60' 65' 70' 75' 80' 85' 90' 95' 100' 105' 110' 115' 120' 125' 130' 135' 140' 145' 150'

DATE:

SCALE: 1"=10'

PLAN No 857/D

appendix 10

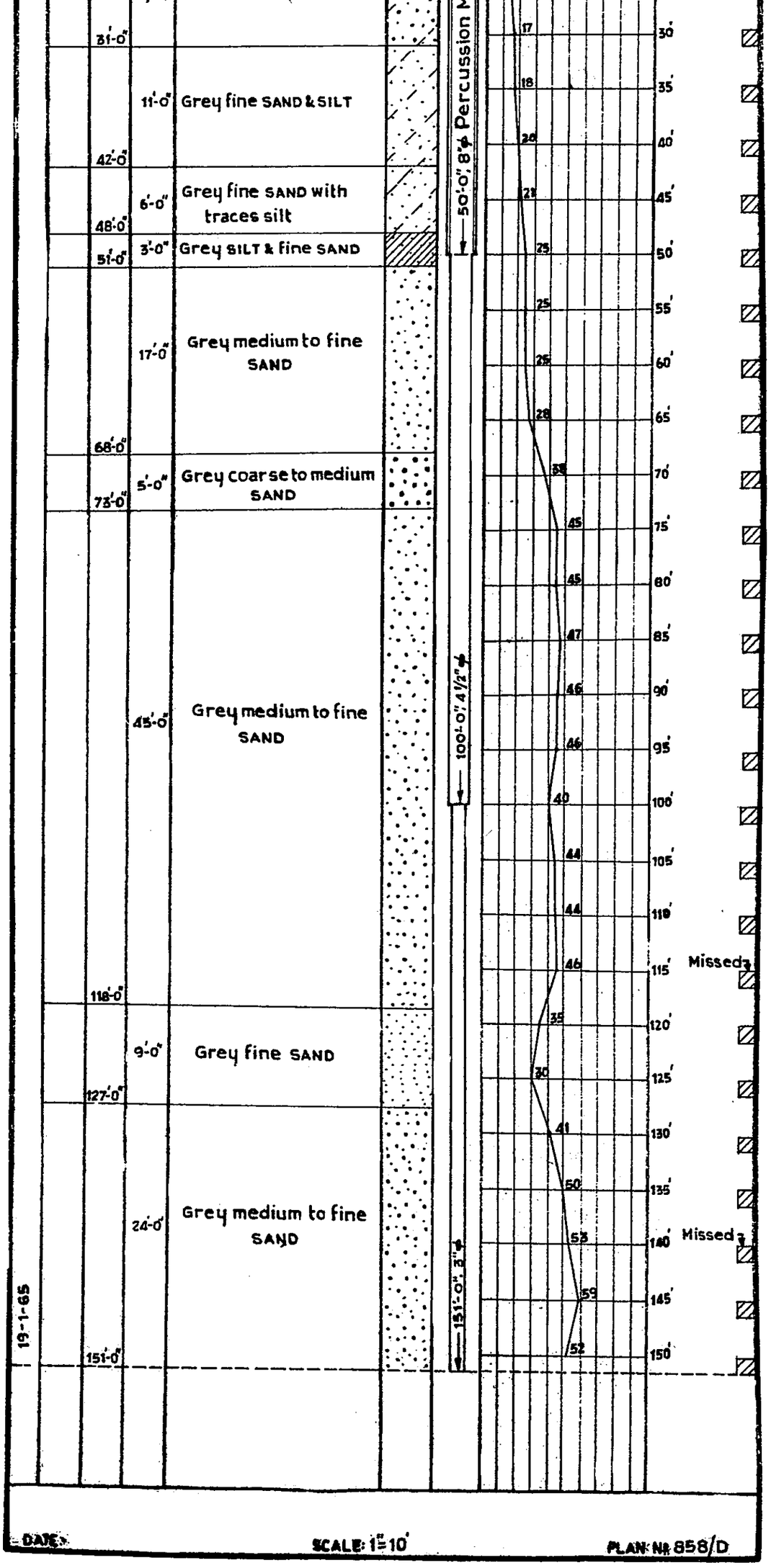
SWISSBORING
OVERSEAS CORPORATION LIMITED
KARACHI
LAHORE — DACCA.

Client:- EPWAPDA
Site:- ARICHA CROSSING

Bore chart of Boring № 13

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIAMETER OF BORING	STANDARD PENETRATION TESTS. Blows / ft. 10 20 30 40 50 60 70 80 90	REMARKS (U.W.T. SAMPLES)
18-1-65	REDUCED ELEVATION	31'-0"	31'-0"	Brown medium to fine SAND with traces silt		50'-0", 8"ϕ Percussion Method	7, 8, 12, 12, 14, 17, 18, 20, 21, 25, 25, 26, 28, 33, 45, 45, 47, 46, 46, 40, 44	
		42'-0"	11'-0"	Grey fine SAND & SILT				
		48'-0"	6'-0"	Grey fine SAND with traces silt				
		51'-0"	3'-0"	Grey SILT & fine SAND				
		68'-0"	17'-0"	Grey medium to fine SAND				
		73'-0"	5'-0"	Grey coarse to medium SAND				
		118'-0"	45'-0"	Grey medium to fine SAND		100'-0", 4½"ϕ		

5' 10' 15' 20' 25' 30' 35' 40' 45' 50' 55' 60' 65' 70' 75' 80' 85' 90' 95' 100' 105'


31'-0"
11'-0"
Grey fine SAND & SILT
42'-0"
6'-0"
Grey fine SAND with traces silt
48'-0"
51'-0"
3'-0"
Grey SILT & fine SAND
17'-0"
Grey medium to fine SAND
68'-0"
73'-0"
5'-0"
Grey coarse to medium SAND
45'-0"
Grey medium to fine SAND
118'-0"
9'-0"
Grey fine SAND
127'-0"
24'-0"
Grey medium to fine SAND
151'-0"
50'-0", 8"ϕ Percussion
100'-0", 4½"ϕ
151'-0", 3"ϕ
17
18
20
21
25
25
25
28
38
45
45
47
46
46
40
44
44
46
46
35
30
41
50
53
59
52
30'
35'
40'
45'
50'
55'
60'
65'
70'
75'
80'
85'
90'
95'
100'
105'
110'
115'
120'
125'
130'
135'
140'
145'
150'
Missed
Missed
19-1-65
DATE
SCALE: 1"=10'
PLAN No 858/D

SWISSBORING
OVERSEAS CORPORATION LTD.
DACCA-KARACHI

Client:- E P WAPDA (P)
Site:- E-W INTERCONNECTER PROJECT
JAMUNA RIVER CROSSING AREA
Bore chart of Boring No. E-11

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. 10 20 30 40 50 60 70 80 90	REMARKS (G.W.T, SOIL SAMPLES) VANE SHEAR TESTS Lbs/sq.in.
	REDUCED ELEV.							
4-6-69		8'-0"	8'-0"	Light brownish grey med. stiff sandy SILT, traces of mica.			6	3'-0"
		12'-0"	4'-0"	Light brownish grey med. stiff SILT; traces of clay & fine sand			5	7'-0"
		16'-0"	4'-0"	Dark grey med. stiff SILT with clay traces of fine sand & mica			5	11'-0"
		24'-0"	8'-0"	Light grey med. dense silty fine SAND with traces of clay			5	15'-0"
							5	19'-0"
							29	22'-6"
							33	25'-6"
							17	30'-6"
							32	35'-6"
							45	40'-6"
							27	45'-6"
							31	50'-6"
		73'-0"		Grey med. dense to dense silty fine SAND occasional limination of mica			56	60'-6"
							49	70'-6"
							38	80'-6"
							44	85'-6"
							47	90'-6"
6-6-69		97'-0"					46	95'-6"
		100'-0"	3'-0"	Grey very dense fine to med. grained SAND with silt trace mica			81	99'-6"

98'-6", 6 Ø Rotary method

▼ 8'-0"

DRN:- J.

DATE:- 12-6-69

SCALE:- 1" = 10'-0"

PLAN NO. 3213/D

DISTURBED SAMPLE ☒ UNDISTURBED SAMPLE ■

0'-0"		
3'-0"	Grey very dense fine to med. grained SAND with silt trace mica	100'-0"
73'-0"	Grey med. dense to dense silty fine SAND occasional limination of mica	97'-0"

98'-6" Ø Rotary method

9-6-69

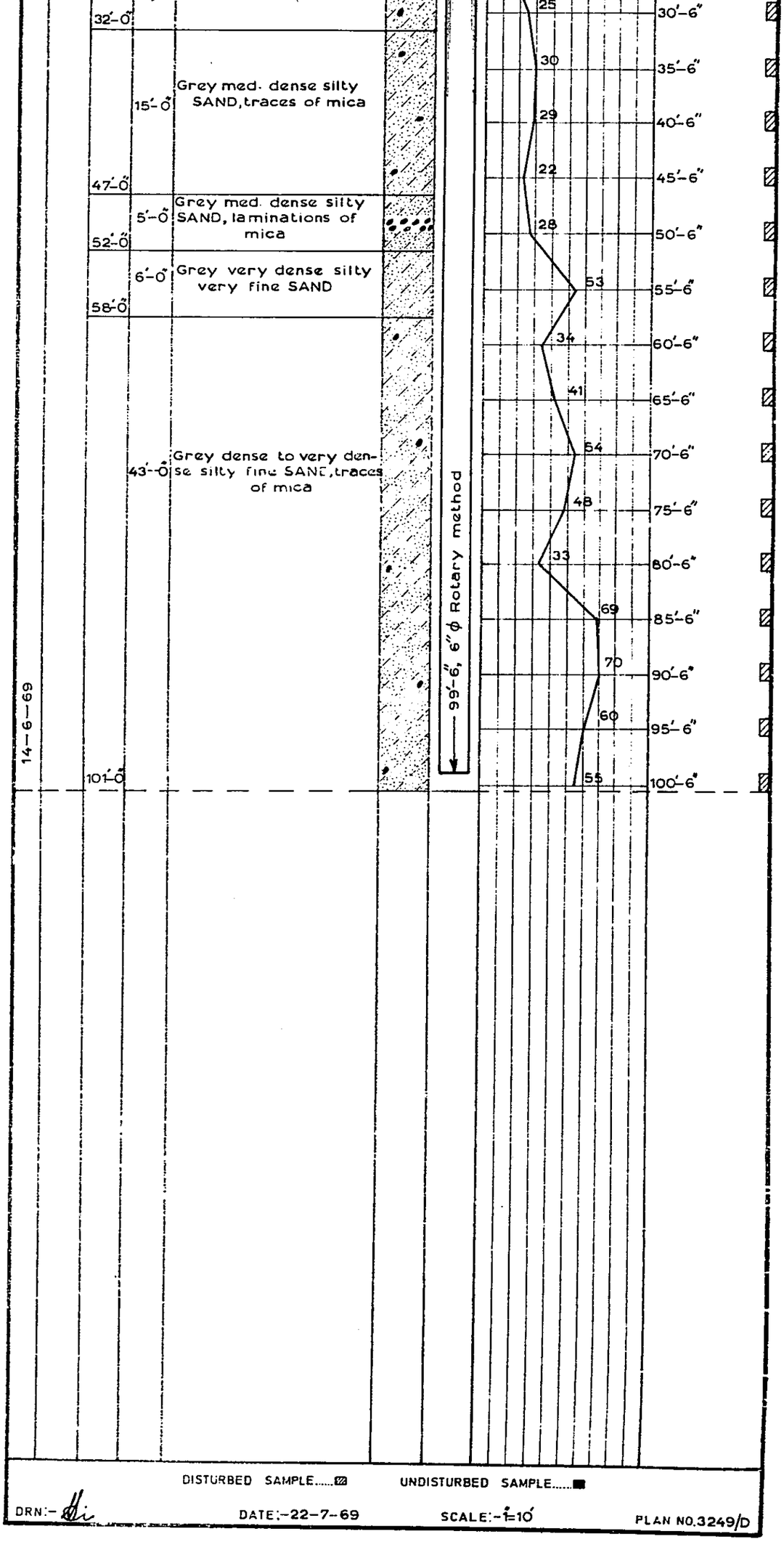
30'-6"	17
35'-6"	32
40'-6"	45
45'-6"	27
50'-6"	31
60'-6"	56
70'-6"	49
80'-6"	38
85'-6"	44
90'-6"	47
95'-6"	46
99'-6"	81

SWISSBORING
OVERSEAS CORPORATION LTD.
D A C CA

Client:- E. P. WAPDA (P)
Site:- E.W. INTER-CONNECTOR PROJECT (JAMUNA RIVER CROSSING AREA)

Bore chart of Boring No. ..... DH. E-12

DATE	REDUCED ELEVATION	DEPTH	THICKNESS	STRATA ENCOUNTERED	LOG	DIA. OF BORING	STANDARD PENETRATION TESTS blows/ft. 10 20 30 40 50 60 70 80 90	REMARKS (G.W.T, SOIL SAMPLES) VANE SHEAR TESTS Lbs./sq.in.
10-6-69	REDUCED ELEV.	5'-0"	5'-0"	Light greyish brown SILT with fine sand, traces of clay & mica		99'-6", 6" ϕ Rotary method	4 3'-0"	
		15'-0"	10'-0"	Grey to light brownish grey med. stiff to stiff clayey SILT, traces of fine sand (no fine sand from 10'-0" to 15'-0")			5 7'-0" ▼8'-0"	
		32'-0"	17'-0"	Light brown to light grey med. dense silty very fine SAND, traces of clay & mica (no clay from 24'-0" to 32'-0")			3 11'-0" 13 15'-0" 18 19'-0" 15 23'-0" 12 25'-6"	
		47'-0"	15'-0"	Grey med. dense silty SAND, traces of mica			25 30'-6" 30 35'-6" 29 40'-6"	
		52'-0"	5'-0"	Grey med. dense silty SAND, laminations of mica			22 45'-6" 28 50'-6"	
		58'-0"	6'-0"	Grey very dense silty very fine SAND			53 55'-6" 34 60'-6"	
14-6-69		101'-0"	43'-0"	Grey dense to very dense silty fine SAND, traces of mica			41 65'-6" 54 70'-6" 48 75'-6" 33 80'-6" 69 85'-6" 70 90'-6" 60 95'-6" 55 100'-6"	



DISTURBED SAMPLE.....▨ UNDISTURBED SAMPLE.....■

DRN:- Ali DATE:-22-7-69 SCALE:-1"=10' PLAN NO.3249/D

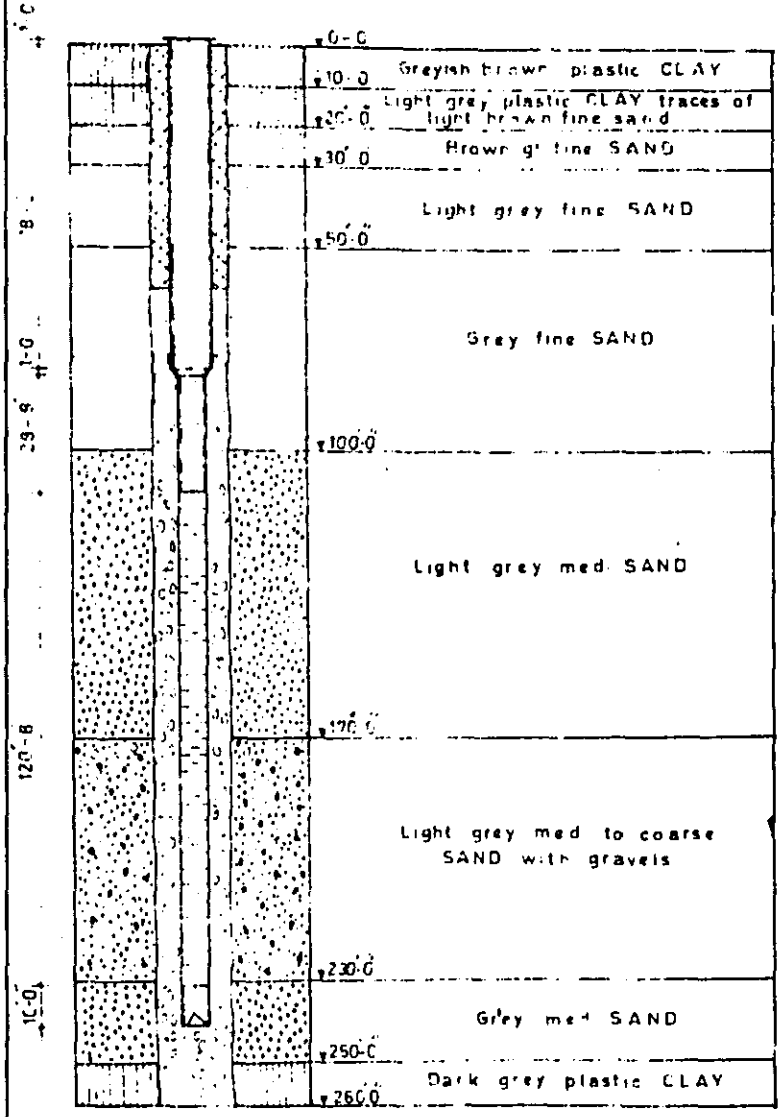
appendix 13

E.P. ADC (Bogra Zone)

WELL Nº SB-5

Location BAUKILA U.C.AMODI P.S JAIPURHAT

B O G R A



DETAILS OF EXECUTION

Well started on	26-3-69
Well completed on	28-3-69
Diameter of Drilling	18"(90')16"(260')
Total depth of Drilling	260'-0"
Total length of installation	240'-7"

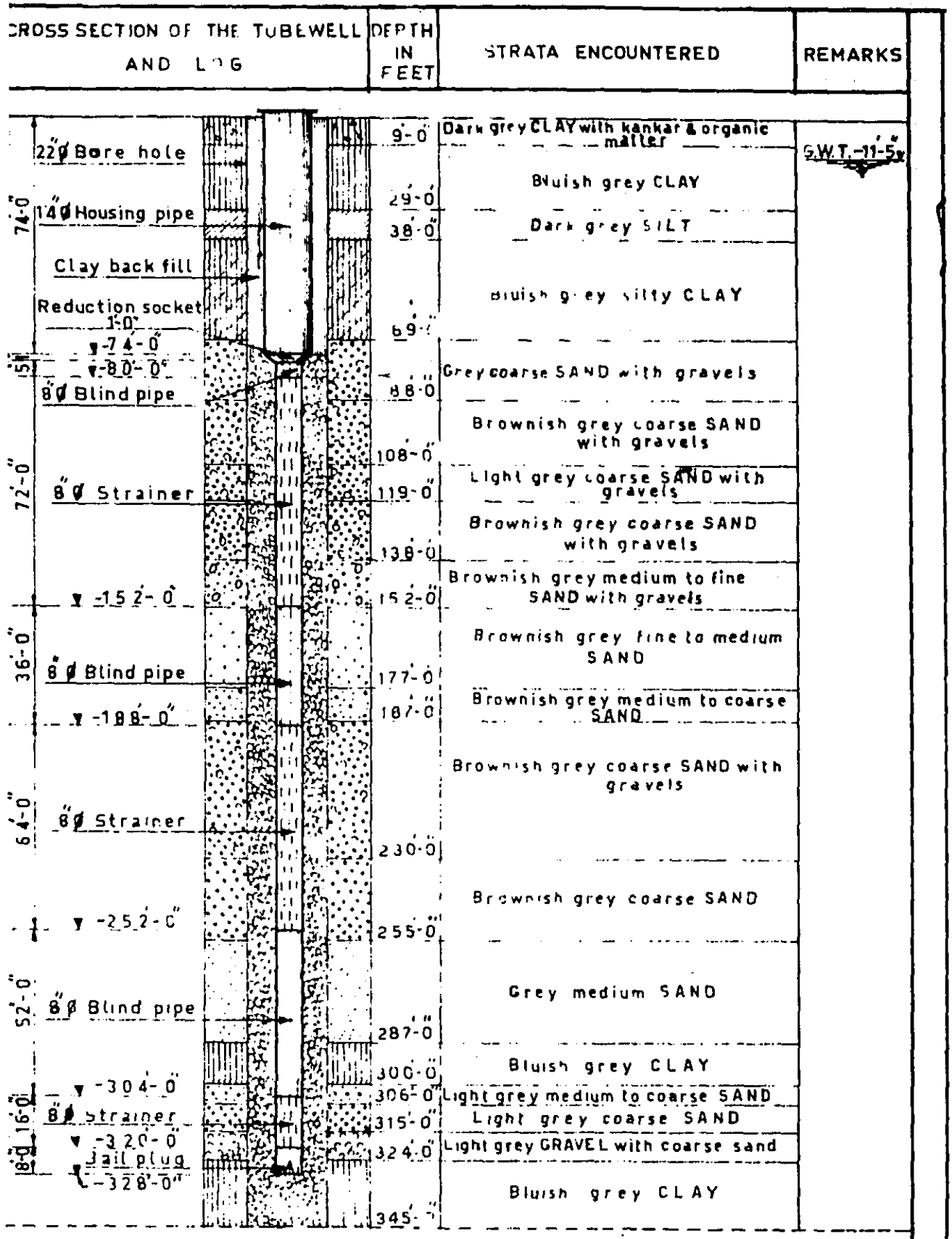
DETAILS OF INSTALLATION

Fixtures	Dia in inch	Thickness ie inch	Length
M S Housing pipe	13	3/16	79'-2"
Reduction Socket	13/6	3/16	1'-0"
G.I Blind pipe	6	3/16	29'-9"
Brass strainer	6	1/8	120'-8"
Bail plug	6	3/16	10'-0"

TESTED DISCHARGE (GALLONS/hr)	DRAWDOWN (feet)	SPECIFIC CAPACITY (GALLONS/hr/ft. drawdown)
59,400	12·50	4,950

SWISSBORING OVERSEAS CORP LTD DATE 15-5-69 SCALE 1:40' PLAN No. T — 5/D

appendix 14



1 TUBEWELL CONSTRUCTION OF NOTHERN MEYMENSINH