CITY OF NEWBERG
CITY RECORDER INDEX NO. 1077

#18

CITY OF NEWBERG, OREGON

CONSTRUCTION OF ADDITION TO

WELL WATER TREATMENT PLANT

SPECIFICATIONS, PROPOSAL AND CONTRACT DOCUMENTS

1961

City Officials

Roy M. Curtis, Mayor
Myrland C. Gilbert, City Recorder
Herbert Swift, City Attorney
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Consulting Engineers

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INDEX

NOTICE TO CONTRACTORS

WATER TREATMENT PLANT CONSTRUCTION

CITY OF NEWBERG, OREGON

Sealed proposals addressed to the Mayor and City Council of Newberg, Oregon, and endorsed "Proposal for Water Treatment Plant Construction" will be received by the City Recorder, City Hall, Newberg, Oregon, until 7:30 o'clock P.M. Pacific Standard Time on Monday, June 5, 1961, and thereafter will be publicly opened and read aloud at a regular meeting of said Council at the Council Chambers in the City Hall, Newberg, Oregon.

The work includes the furnishing of all materials and labor for the construction of additional facilities at the City's water treatment plant. The principal items included in this work are as follows:

Class "6" Concrete	280 cu. yds.	Coke	105 cu.yds.
Reinforcing Steel	40,000 lbs.	Piping and Valves	
Excavation	545 cu. yds.	Carpentry & Electrical Work	

Bids are invited for all of the foregoing.

Plans and specifications and contract documents may be seen at the office of the Consulting Engineers, Carl E. Green & Associates, 510 Henry Building, Portland 4, Oregon, or at the office of the City Recorder, City Hall, Newberg, Oregon.

Copies of plans and specifications will be furnished to bona fide bidders upon receipt of a deposit check in the amount of $50.00. Deposit checks of bidders will be returned provided a bid is submitted and the plans and specifications are returned in good condition. If no bid is submitted, $20.00 will be refunded upon return of plans and specifications in good condition. The plans and specifications are the property of the Engineer and shall be returned to them.

Prospective bidders shall submit pre-qualification statement of experience and financial condition to the City on forms furnished by the Engineer. Such statements shall be submitted in accordance with the statutes of the State of Oregon relative to public works.

All bids shall be made on the forms furnished with the specifications and shall be accompanied by a certified check, cashier's check or bid bond payable to the City of Newberg in an amount not less than 5% of the total bid. A 100% Corporate Public Works Performance Bond will be required of the successful bidder to guarantee faithful performance under the contract. Liability and property damage certificates of insurance also will be so required. Payments for work are to be made monthly from cash funds.

The City reserves the right to reject any or all bids, to postpone making the award for a reasonable length of time, to waive informalities, and to accept the proposal or proposals deemed best in the interest of the City considering the experience, qualifications and equipment of the bidder, and the time required for completion.

By order of the City Council of Newberg, Oregon.

Roy M. Curtis, Mayor
Myrland C. Gilbert, City Recorder

First Publication May 11, 1961
Second Publication May 18, 1961
Last Publication May 25, 1961

INSTRUCTIONS TO BIDDERS

1. General

The work contemplated by these specifications includes the construction of an addition to a water treatment plant for the City of Newberg. The plant is located near the Willamette River in the vicinity of the Spaulding Pulp & Paper Company plant.

2. Local Conditions

Bidders are notified that they must carefully examine the plans, specifications, form of contract, proposal, etc. and thoroughly familiarize themselves with all phases of the proposed work and all laws affecting the improvements. They must also examine and judge for themselves as to the location and character of the proposed work, the materials to be encountered in excavation and performing the work required and the conditions under which the proposed improvements may be constructed.

3. Qualifications for the Work

Bidders shall be experienced in the type of work being bid and shall have adequate equipment to carry on the work in an expeditious and workmanlike manner. They shall prequalify according to the Oregon Law ORS 279.010 and subsequent sections.

4. Certified Check or Bid Bond

Bids shall be accompanied by a certified check, cashier's check or bid bond drawn in favor of the Owner in an amount equal to or exceeding five percent (5%) of the total amount bid. Such check or bond shall be forfeited and become the property of the Owner if the bidder fails or refuses to enter into a contract for the work and furnish satisfactory performance bond within ten (10) days after notification that his bid has been accepted.

The check or bid bond accompanying the accepted bid will be retained until the contract is signed and performance bond furnished. All other checks and bid bonds will be returned promptly to the bidders.

5. Performance Bond

A one hundred percent (100%) corporate public works performance bond approved by the Owner will be required of the successful bidder.

6. Payments

Payments shall be made from cash funds on monthly estimates prepared by the Engineer, less ten percent (10%) which shall be retained until all work is completed, approved in writing by the Engineer, accepted by the Owner, and evidence presented by the Contractor that all bills and claims have been paid or settled and that all contributions and taxes payable to State and Federal governmental agencies have been paid.

7. Obscurity or Conflict in Specifications

Should any obscurity or conflict occur in the specifications which leave any doubt as to the true intent of the specifications, the matter shall be brought to the attention of the Engineer prior to the bid opening.

8. Estimate of Quantities and Balanced Bids

The estimate of quantities of work to be done and materials to be furnished under the specifications is approximate only and is given only as a basis of calculation upon which the award of the Contract shall be made. The Owner reserves the right to increase or diminish without restriction the amount of any class of material or work that may be deemed necessary, and bidders shall submit balanced bids in order that they may not be affected adversely by increase or decrease of quantities.

9. Interpretation of Plans, Specifications and Contract Documents, Conflicts, Ambiguities, Inconsistencies and Obscurities

The Engineers have endeavored to prepare plans, maps, drawings, specifications and contract documents in a manner which clearly sets forth the work to be done, the manner in which the construction is to be accomplished and the basis of payment for the various units of work. Extreme accuracy and absence of conflict is not guaranteed. Should the Bidder or Contractor discover any apparent error or conflict in the plans, drawings, specifications, or quantities upon which bids are requested, or should there be any ambiguity or doubt regarding any of the same or the interpretation thereof, such matters shall be brought at once to the attention of the Engineers for clarification or correction.

The Owner presumes that all bidders shall have read the specifications and thoroughly examined the plans and drawings before submitting a proposal to do the work; therefore, any discrepancies, omissions, conflicts and ambiguities shall be called to the attention of the Engineers before the bids are submitted in order that any conflicts, misunderstandings, questions or doubts may be resolved at once.

In the event of a disagreement arising as to the true intent and meaning of the plans and specifications, the Engineer shall interpret the same and his interpretation shall be accepted by the Contractor as final.

10. Form of Proposal

All proposals shall be made on the forms furnished herewith, and the bidder shall fill in the proposal completely and return the entire and complete set of specifications and proposal with his bid.

Proposals shall be sealed and plainly marked "Proposal for Water Treatment Plant Construction" and addressed to the Owner and the same shall be filed with the Owner prior to the hour and date set for receiving and opening bids.

11. Completion Time

The work included in these specifications shall be completed in the shortest possible time commensurate with good workmanship. Bidders shall state

completion time in their bid and shall take into consideration unfavorable weather and other adverse conditions. Extensions of time will be granted only under conditions for which the Owner is clearly responsible.

12. Liquidated Damages

Because of the extreme need for the improvement, the work shall be completed in the earliest possible time after construction begins. To compensate the Owner for any delay in completion of the work and to cover additional costs of supervision beyond the completion time bids, the Owner shall deduct from payments otherwise due the Contractor, liquidated damages for each calendar day the work is delayed beyond the completion time bid for the work.

The liquidated damages shall be Seventy-Five Dollars ($75.00) per day.

The damages herein set forth shall not be considered in the nature of a penalty, but shall partially reimburse the Owner for losses and extra cost due to delay.

13. Public Liability and Property Damage Insurance

The Contractor shall take out and maintain during the life of this contract such Public Liability and Property Damage insurance as shall protect him, and any subcontractor performing work covered by this contract, from claims for damages which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them.

The insurance coverage shall save harmless the Owner in accordance with the minimum coverage shown hereunder, and certificates of insurance shall be furnished to the Owner.

Insurance Coverage

Liability, one occurrence	$200,000 - $300,000
Property Damage, one occurrence	$100,000

14. Quality of Materials and Equipment

Wherever in the specifications any material, equipment, device, product, fixture, type of construction or type of process is specified by a manufacturer's name, proprietary name or catalog number it shall be understood that others of equal quality, workmanship, materials and performance approved by the Owner will be acceptable. The Owner shall be the sole judge of equality of any material, equipment, device, product, fixture, type of process which the Contractor may propose to substitute for that called for in the specifications.

All workmanship, materials, equipment, supplies and articles incorporated in the proposed work and covered by this contract shall be of the best available grade of their respective kinds.

15. Workmen's Compensation Insurance

The Contractor shall take out and maintain during the life of the contract workmen's compensation insurance for all employees who will work on the project, and if any work is sublet, the Contractor shall require the subcontractor similarly to provide such insurance for all the latter's employees unless they are included under the protection provided by the Contractor.

If employees engaged in hazardous work are not protected under the workmen's compensation statute, the Contractor and any subcontractor who is affected shall provide compensation insurance with a private company in an amount which shall be equivalent to that provided by the workmen's compensation statute for the protection of employees who are so insured.

16. Basis of Award

The Owner will take into consideration the balanced character of the unit price and lump sum item bids submitted, the experience, ability and equipment of the Contractors and the time for completion of the work as well as the extension of the estimated quantities and estimated totals at the unit prices bid.

The Owner reserves the right to reject any or all bids and to waive irregularities or technicalities not affecting substantial rights or in violation of law.

GENERAL CONDITIONS

1. Owner

Whenever the work "Owner" occurs in the Specifications the term shall signify the principal or party to the Contract for whom the work is being done.

2. Engineer

Whenever the word "Engineer" occurs in these Specifications, the term shall signify the Engineer of the firm of engineers employed by the Owner for the purpose of having in charge and directing the design and construction work, said Engineer acting either directly or through an authorized assistant whose instructions and decisions shall be limited by the particular duties entrusted to him.

3. Contractor

Whenever the word "Contractor" occurs in these Specifications, the term shall signify the party or parties contracting to perform the work contemplated under these Plans and Specifications, as Party of the Second Part.

4. Arbitration

The Engineer shall decide all questions which may arise between the parties relative to the true intent and meaning of any of the provisions or stipulations contained in this agreement, or the amount of quantities, quality, character and classification of the work performed by the Contractor under this contract and his decision in the nature of an award shall be final and binding upon both parties to this agreement.

5. Laying Out of Work

The Contractor shall give forty-eight (48) hours notice when he shall require the services of the Engineer for laying out any portion of the work under this improvement. He shall furnish a man to assist in giving lines and levels under the direction of the Engineer. He shall carefully preserve all stakes when set, together with all bench-marks or monuments existing along the lines of this improvement. And in case any of them have to be replaced unnecessarily by the Engineer, the Contractor shall be charged the expense thereof, and the same may be deducted from his estimate.

6. Inspection

The Contractor shall not work on any part of this improvement without notifying the Engineer of his intention to do so. If an Inspector is placed in charge of the work, it is understood that he is the representative of the Engineer and it shall be his duty to direct the construction of the work and the manner of carrying on the same, within the limits of these Specifications; also to inspect all materials of any kind. Rejected material of any kind shall be removed from the work by the Contractor immediately after its rejection, and shall not be used on this improvement. Instructions given by the Inspector shall be respected and executed by the Contractor, but no Inspector shall have the power to waive the obligations resting upon the Contractor to furnish good materials or do good work,

as herein prescribed. Any omission to condemn work at the time of its construction shall not be construed as an acceptance of any defective work, but the Contractor shall at any time prior to final acceptance, upon notice from the Engineer to do so, tear out, remove and properly reconstruct, at his own cost, any portion of the improvement which may be found defective; and the Contractor will be held wholly responsible for the safety, proper construction and efficiency of the entire improvement until the same has been finally accepted by the Owner.

7. Orders Given Contractor

The Contractor shall have an authorized representative on the ground and in charge of the work, and whenever the Contractor himself is not present, orders will be given to such representative, superintendent or foreman in immediate charge, and shall by them be received and obeyed. If any person employed on the work shall refuse or neglect to obey the instructions of the Engineer in any way relating to the work, or shall appear to the Engineer to be incompetent, unreliable, negligent, disorderly or unfaithful, he shall upon written request of the Engineer, be at once discharged and not again employed upon any part of the work.

8. Subcontractors

No part of the work to be performed shall be sublet or transferred without prior written consent of the Engineer, and no such consent shall release the Contractor from any obligation either to the Owner or to persons employed by the Subcontractors, and in all cases, Subcontractors will be considered merely as foreman employed by the Contractor and liable to be ordered and discharged for incompetency, neglect of duty or misconduct.

9. Change in Plans

It is understood and agreed that the Owner shall have the right to make such changes in the amount, dimensions, or character of the work to be done as may be deemed necessary, as, in the opinion of the Engineer, the interest of the work may require. If any such changes or alterations should diminish the quantity of the work to be done, they shall not constitute a claim for damages for anticipated profits on the work that may be dispensed with. If the amount of work to be done is increased, payment shall be made according to the quantity actually done and at a price established for similar work under this contract.

10. Prosecution of Work

The work embraced in this improvement shall be begun within the shortest possible and reasonable time after the date of this Contract, and shall be prosecuted regularly and uninterruptedly thereafter, unless the Owner in writing especially directs otherwise, with such force as to secure its completion by the time bid.

If the Contractor shall fail to complete the work within the time specified, the Contractor shall reimburse the Owner for additional expense and damage incurred by reason of an extended time of engineering service due to such delay and the interest of the invested capital.

11. Taking Over Work

If, in the opinion of the Engineer, the Contractor is using defective material or improperly performing the work, and shall neglect or refuse to take up or reconstruct such work at his own cost as shall have been rejected by the Engineer as defective, or in conflict with the Plans and Specifications, or unsuitable, then the Engineer may give written notice that all work be stopped and any work performed after such notice is given shall not be accepted. After work has been ordered stopped, the Owner may, upon giving twenty-four (24) hours notice, or without giving notice if any emergency or danger to the work or public exists, take over the work or that portion which has been improperly executed and reconstruct it properly at the expense of the Contractor, and to deduct the cost thereof from the unpaid part of the contract price to be paid to the Contractor.

If it shall appear to the Engineer that the work done under this agreement has been abandoned or that the said work is unnecessarily delayed and will not be finished within the prescribed time, he shall so certify in writing to the Owner, and the Owner shall have the power to notify the Contractor to discontinue all work or any part thereof under this contract, and thereupon the Contractor shall discontinue said work and the Owner shall thereupon have the power, by contract or otherwise, as may be determined, to employ such persons, and to use such implements, tools, and materials as they may deem necessary to complete the work, and charge the expense of all labor and materials for such completion to the Contractor under and by virtue of the contract for this improvement and in case such expense is less than the sum which would have been payable under said contract if the same had been fulfilled by the Contractor, then the Contractor shall be entitled to receive the difference and in case such expense is greater, the Contractor shall pay the Owner the amount of such excess so due, and his bond shall answer and be liable therefor.

12. Suspension of Work

The Owner reserves the right to suspend operations on the work or any parts thereof, temporarily. In the event of such temporary suspension the Owner shall give the Contractor five (5) days written notice thereof and the date of completion of the contract shall be extended for a period of time equal to said temporary suspension period, but the Contractor shall have no claim for damage or anticipated profits or said work from or by reason of said temporary suspension.

13. Rights of Way

The Owner shall provide the necessary rights of way for the work. The Contractor shall confine his operations to this right of way, and shall be liable for damages from trespassing outside of right of way limits.

14. Contractor's Risk

It is understood that the whole of the work to be performed under the contract for this improvement is to be done at the Contractor's risk, that he has familiarized himself with the local conditions, weather and other conditions and contingencies likely to be encountered, and has bid accordingly and that he is to assume the responsibility and risk of all loss or damage to materials or work which may arise from any cause whatsoever prior to final completion.

15. Damage Claims

The Contractor agrees to indemnify and hold harmless the Owner from any and all claims for damages of every nature and description arising from or through the operation of the Contractor or those in his employ, including all Subcontractors, including all claims for death or injury to persons, and for injury or damages to the property or right of any person, persons or corporations, either public or private, and including any fine or penalties that may result or to be imposed by any public authority as a result of the prosecution of the work under said contract, and the Contractor further agrees to accept the requirements of the State Industrial Accident Commission and to indemnify and save the Owner harmless from any claim of the State or other authority for fees, compensation or industrial insurance for workmen injured or killed in connection with the prosecution of the work called for by this contract.

In the event of the failure of the Contractor to secure a valid release of any and all such claims before the final acceptance of the work, then the Owner be and is hereby empowered to settle or compromise such claims as best it can and charge the cost thereof to the Contractor as so paid on this Contract, provided, however, that if upon completion of the work called for by the Contract, any such claims are pending and unsettled, irrespective of whether they are in litigation or not, the Contractor shall be privleged to furnish the Owner surety bond covering the full amount of said claims, executed by a responsible surety company authorized to transact a general surety business in the State, for the purpose of indemnifying the Owner from such claims, and thereupon the Owner shall release and pay to the Contractor all moneys withheld as a protection against such claims, but such bond shall not operate to release the Contractor from the primary obligation outlined in this section of the contract.

16. Fees and Royalties

All fees and royalties for any patented machine, device, article, or arrangement that may be used upon or be connected with the work or any part of the work comprehended by these Specifications shall be paid by the Contractor. The Contractor shall and must protect and hold harmless the Owner from any and all claims, demands, damages, cost disbursement, actions and proceedings arising or resulting from the use of any patented machine, device, article, or arrangement.

17. Contractor's Bills

The Contractor shall promptly pay all payrolls and all bills for materials, supplies, outfit, equipment, machinery, appliances and expenses incurred upon or on account of the work. Prior to final settlement, the Contractor shall furnish the Owner satisfactory evidence that all payrolls and bills are paid, and if required shall give access to books and records in substantiation of such payments. Before making said final or any other payment, the Owner may pay for and charge the Contractor any unpaid bills or accounts and sums so paid shall be deducted from amounts earned by the Contractor on the work, and if such payments exceed the earnings of the Contractor on the work, the Owner shall recover such excess from the Contractor or his bondsmen.

18. Release

As a condition of final payment to the Contractor and payment of retained percentage, the Contractor shall execute and deliver to the Owner in substance and form as required by the Owner, a release and waiver of all claims against the Owner out of or connected with the contract.

19. Payments

In consideration of the faithful performance of all the covenants, stipulations and agreements in this contract to be kept and performed by said Contractor, the Owner hereby covenants and agrees to pay the Contractor, in accordance with the schedule of prices in the "Proposal" submitted by the Contractor to the Owner and dated June 5, 1961, which Proposal is attached hereto and made a part hereof.

Payments for the work shall be made on monthly estimates of the Engineer, taken about the end of each calendar month. Ten percent (10%) shall be retained by the Owner to insure the faithful completion of the work and payment of all claims. Within thirty (30) days after the work is fully completed and a certificate to this effect is given by the Engineer to the Owner and upon the execution of the release heretofore mentioned, the retained percentage shall be paid to the Contractor, unless the Contractor has failed to complete the contract within the time specified, or has been deficient or defaulted in the completion or full performance of this contract.

20. Revision of Estimates

No estimate made under this contract except the final estimate, shall be construed or considered as final or conclusive against the Owner in respect to the amount of work done or material furnished, or compensation to be allowed therefore or payments made, but all such estimates made before the final payment shall be considered only as being altogether approximate and provisional, and same shall be subject to revision and adjustments, readjustments and correction by the Engineer for the Owner for errors or omissions as to the determination of the amount of work done or material furnished under this contract, or the amounts paid, or the amounts of work unfinished, or the amounts of material unfurnished, or as to any other matter or thing connected therewith, and the values thereof, respectively, as well as the amount of compensation therefore, having reference to the uncompleted part of said material as well as the work done and the material furnished.

Any omission to disapprove of work at the time of making any monthly estimate or other estimate shall not be construed as an acceptance of any defective work, materials or equipment, and the Contractor at his own cost, must remove and rebuild or make good any work, materials or equipment which the Engineer may find defective in any way.

21. Extra Work

Any work necessary or incident to the carrying out of the work herein contracted, but which is not clearly indicated in the Plans and Specifications, nor covered by the intent and meaning of this agreement and which cannot be classified and paid for under the prices agreed to, and which may be advantageously

furnished or performed by the Contractor, shall be designated as "extra work" and shall be paid for at actual cost of said work as determined by the Contractor's account of material and labor, if and as approved by the Engineer, plus fifteen percent (15%) for the Contractor's supervision, use of tools and equipment, bond premiums and profit.

Extra work shall be performed or supplied by the Contractor only upon written order of the Engineer and all claims and demands for extra work must be made out in itemized and detailed bill form and furnished to the Engineer by the Contractor for settlement at least three days before the day upon which the monthly estimates are to be prepared by the Engineer.

22. Statutory Labor Clauses

The Contractor agrees that he will comply with all Federal and State laws pertaining to the employment and compensation of labor. Typical forms for reporting Workmen's Compensation are included in these documents.

23. Permits

The Contractor shall secure all Municipal, County and State permits incidental to or necessary in the actual performance of the work under this contract, and shall during its progress, comply with all laws, statutes and governmental regulations pertaining to or necessary to the carrying out of the work. The Owner shall, however, obtain rights of way. All highway crossings, restoration of pavement, blockading of roads and highways, and railroads, erection and maintenance of barricades, etc. shall be done by the Contractor in accordance with the requirements of the officials having jurisdiction over such matters.

24. Safety Requirements

The Contractor shall at all times conduct his work in such a manner as to comply with all requirements of the Oregon State Industrial Accident Commission and minimize the possibility of accident or injury to any of his workmen or the general public, and he shall so conduct his work, maintain his operations, and provide all reasonable safeguards so as to protect public and private property as well as to protect persons from injury.

25. Guarantee

All materials, equipment, workmanship and completed project shall be guarnateed against defects for a period of one year following acceptance of the work. This guarantee shall include restoration of settled trenches and surfaces.

26. Obligation To Furnish Good Materials, Equipment and Workmanship

No Inspector or Engineer shall have the power to waive the obligations of the Contractor to furnish good materials and equipment or perform sound and reliable work, and any failure or omission of an Inspector or Engineer to condemn any defective material, equipment or work shall not release the Contractor of the obligation to at once tear out, remove and properly reconstruct or replace the same at his own cost at any time upon discovery of a defect or upon receipt of a notice to do so.

WORKMEN'S COMPENSATION

The Contractor shall comply with Oregon State Laws pertaining to wage rates on public works. Wages shall not be less than the prevailing wages in the territory in which the work is done and for comparable trades or occupations. The Contractor, or his surety, shall furnish to the Owner wage certification forms and affidavits as required by the Oregon State Bureau of Labor.

The forms and affidavits shall conform to those designated as Form W-1 and Form W-2 on the following pages.

OREGON PUBLIC WORKS PROJECT - CONTRACTOR'S WAGE CERTIFICATION FORM

(Form W-1)

Contractor or Subcontractor:	Project Owner or Governmental Agcy:
Name _____	Name _____
Address _____	Address _____
Name & Title of Responsible Official: _____	Name & Title of Responsible Official: _____
Description of work:	Location of Work:

Chapter 627, Oregon Laws, 1959, states as follows:

"Section 5. Before payment is made of any sum due on account of a contract for a public work, the state treasurer or the treasurer of the county, city, district, authority, public corporation or entity or any of their instrumentalities organized and existing under charter or law, or other officer charged with the disbursement of funds applicable to the contract under and pursuant to which payment is made, shall require the contractor or his surety and every subcontractor or his surety to file a statement in writing in form prescribed by the State Labor Commissioner, certifying the hourly rate of wage paid each classification of workmen employed by him upon such public work, and further certifying that no workman employed by him on such work has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the contract, which certificate and statement shall be verified by the oath of the contractor or his surety or subcontractor or his surety that he has read such statement and certificate and knows the contents thereof and that the same is true to his knowledge."

Crafts Employed and Minimum Rates Paid

Classification:	Rate Per Hr.	Classification:	Rate Per Hr.

AFFIDAVIT TO ACCOMPANY WAGE CERTIFICATION FORM

(Form W-2)

State of Oregon)
)
County of _____)

I, _____, ( ) Contractor ( ) Subcontractor ( ) Surety for Contractor ( ) Surety for Subcontractor, being first duly sworn, depose and say that I hereby certify the above schedule as the hourly rate of wages paid each classification of workmen employed by me (my principal) upon the public work project specified above and

I further certify that no workmen employed by me (my principal) upon said public work has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the contract for said public work.

I have read the above statment and certificate and know the contents thereof and the same is true to my knowledge.

_____
(Signature)

_____(Title)

Subscribed and sworn to before me this _____day of _____, 196__

_____
Notary Public of Oregon

My Commission Expires _____

MATERIALS SPECIFICATIONS

1. General

All material required for the project shall be furnished by the contractor.

2. Cast Iron Pipe and Fittings

A. Bell and Spigot Cast Iron Pipe

Bell and spigot cast iron pipe shall be Class 150 unless otherwise specified and shall conform to American Standards Association Specifications A 21.6 or A 21.8 and American Water Works Association C 106-53 or C 108-53 for centrifugally cast pipe in metal or sand lined molds. No pipe shall be less than 16 feet in length.

B. Mechanical Joint Cast Iron Pipe

Mechanical joint cast iron pipe shall conform to the specifications for bell and spigot pipe except that bells shall be drilled or cored to receive high strength cast iron bolts and shall conform to American Standards Association Specifications A 21.11 as well as A 21.6 or A 21.8.

C. Rubber Ring Joint Pipe

Rubber ring joint pipe shall conform to American Standards Association Specifications A 21.6 or A 21.8 and shall in addition have hubs cast to receive Tyton or equal rubber ring gaskets. Gaskets shall be Tyton or equal.

D. Fittings, Bell and Spigot Cast Iron Pipe

Fittings for use with bell and spigot pipe shall conform to American Standards Association Specifications A 21.1, Class 250 lbs. per sq. inch.

E. Fittings, Mechanical Joint Cast Iron Pipe

Fittings for use with mechanical joint cast iron pipe shall conform to American Standards Association Specifications A 21.10 and A 21.11. Class 250 lbs. per square inch.

F. Flanged Fittings and Flanges for Cast Iron Pipe

Flanges and flanged fittings for cast iron pipe shall conform to the American Standards Association specifications B 16.1-1948 and all latest revisions thereof and shall be Class 125 unless otherwise specified.

3. Cast Iron Soil Pipe

Cast iron soil pipe shall conform to Federal Stock Catalog Specifications WWP-401 as amended July 18, 1951 for service weight Class B and extra heavy Class A, and American Society for Testing Materials Specifications Designation A-74.

4. Wrought Iron Pipe and Fittings

Wrought iron pipe shall conform to A.S.T.M. Standard Specifications A-72 for wrought iron pipe and fittings, shall be Byers or equal.

5. Steel Pipe & Fittings

Steel pipe shall be standard weight mill pipe, galvanized. Flanges shall either be screwed or welded, faced and drilled 125 lb. standard. Steel welding flanges shall be no less than 5/8" thick.

6. Galvanized Iron Pipe

Galvanized iron pipe shall be standard weight with screw joints conforming with Federal Specifications WW-P-403a, Types 1, 2 and 3. Fittings for galvanized iron pipe shall be galvanized malleable iron conforming to Federal Specifications WW-P-521a.

7. Copper Tubing

Copper tubing shall conform to the requirements of Federal Specifications No. WW-T-799, Type "K" soft annealed seamless copper tubing with either compression or soldered type fittings.

8. Dresser Couplings

Couplings for steel pipe shall be Dresser Style #38 steel couplings having a middle thickness of not less than 1/4" and a follower ring thickness not less than 1/4". They shall be of the proper sizes for the pipes for which they are to be used.

9. Gate Valves

Valves three (3) inches and larger shall be iron body, brass mounted, double disc, non-rising stem type conforming to the latest standard specifications by the American Water Works Association.

Valves for use with extension stems and floor stand operation shall be A.W.W.A. sliding and rising stem gate valves, flange ends, with top end of stem threaded for extension stem coupling.

Valves two and one-half ($2\frac{1}{2}$) inches and smaller unless otherwise particularly specified shall be brass bodied double disc gate valves with rising stem and shall have screwed ends with standard pipe threads.

10. Butterfly Valves and Operators

Butterfly valves and operators furnished shall be in strict accordance with A.W.W.A. Specification C 504-55T for rubber-seated, tight-closing butterfly valves, Class 125-8 with 125 lb. A.S.A. flanges and 125 lb. A.S.A. drilling.

Bodies shall be cast iron (A.S.T.M. A-126, Class B) with one piece stainless steel (Type 316) shaft. Discs shall be Ni-Resist cast iron. Seats shall be natural rubber or neoprene. Bearings shall be sleeve type and self-lubricated.

Manual operators shall have premanently lubricated, totally enclosed gearing for floor stand operation.

Butterfly valves and operators shall be constructed for limited free discharge service.

Floor stand for butterfly valves shall be cast iron with position indicator and locking device.

11. Floor Stands for Gate Valves

Floor stand for gate valves shall be cast iron, rising stem with ball bearings, Mueller A 26414 or equal.

12. Mud Valves

Mud valves shall be iron body, bronze disc ring, seat ring and stem, and shall have flanged frame or spigot frame as required.

13. Concrete Sewer Pipe

Concrete sewer pipe shall conform to the Standard Specifications of A.S.T.M. C 14-59 for extra strength concrete pipe and shall be furnished with rubber "O" ring gaskets.

14. Reinforcing Steel

Steel for concrete reinforcement shall conform to the standard specifications for billet steel reinforcement of the American Society for Testing Materials, No. A-15-58T and the A.S.T.M. Specifications A-305-56T for new type reinforcement bars. All shall be of the new approved type, not twisted, and shall be new stock free from dirt, scale, rust, paint, oil or other foreign materials.

15. Structural Steel

Structural steel shall conform to the Specifications for Steel for Building of the American Society for Testing Materials (A.S.T.M.) Designation A-7-53T or revisions thereof. Structural steel shall be fabricated and erected in general conformity to the Specifications for the Design, Fabrication and Erection

of Structural Steel for Buildings of the American Institute for Steel Construction, except that welded construction shall be used as hereinafter more particularly specified or indicated.

16. Concrete Materials

Cement, fine and coarse aggregates, water, reinforcing steel and form lumber shall conform to the requirements of General Specifications For Concrete Construction which are included herewith.

17. Plumbing, Heating and Electrical Work

All materials used in plumbing, heating and electrical work shall comply with state and city code requirements.

SPECIFICATIONS FOR CONCRETE CONSTRUCTION - GENERAL

1. General

These specifications shall apply to plain and reinforced concrete throughout the work. They shall be superseded only by applicable special clauses written into the detailed construction specifications, or by special notation on the plans.

Additional specifications relative to order of placement, type of forms, finish, etc. will be found in the detailed construction specifications elsewhere in the complete set of job specifications.

The proportioning, mixing, placing and finishing of concrete shall be done under the direction of the Engineer and in conformance with the best practice required to secure the objectives of strength, density, water-tightness and good surface appearance.

2. Cement

All cement shall be of a standard and accepted brand and shall conform to the Standard Specifications for Type I Portland Cement of the American Society for Testing Materials, Serial Designation C-150-49 and subsequent revisions thereof. The cement shall be delivered in sacks marked with the brand unless specific approval is given for bulk shipments. A sack of cement shall contain not less than ninety-four (94) pounds of cement, net and shall be deemed equivalent to one (1) cubic foot in volume.

3. High Early Strength Portland Cement

High early strength cement shall be used only where expressly called for in the specifications or approved by the Engineer, and shall conform to the Standard Specifications for Portland Cement, Type III, of the American Society for Testing Materials, C-150-49 and revisions thereof.

4. Admixtures

Admixtures shall be used only by special permission of the Engineer and for particular locations. They shall be considered only as a means of improving the workability of the concrete and facilitating its placement, and in no case shall be a reason for reducing the cement content below the amount specified.

5. Air Entrainment

In order to obtain concrete which will adequately withstand weathering and exposure to extremes of freezing and thawing, the Engineer may require the use of an air entraining agent having a record of satisfactory use. Such materials shall be (1) sulphonated hydrocarbon, (2) resin from distillation of wood, or (3) grease especially manufactured for the purpose.

Air entraining agents when used shall be sufficient to keep the air content between three and five per cent (3% - 5%).

6. Water

Water for concrete shall be clean and free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances.

7. Fine Aggregate

Fine aggregate shall consist of natural sand, sand prepared from the product obtained by crushing stone, rock or gravel, or other approved inert materials with similar characteristics, or a combination thereof, having clean, hard, strong, durable, uncoated grains and free from injurious amounts of dust, lumps, soft or flaky particles, shale, alkali, organic matter, loan, or other deleterious substances.

Fine aggregate shall be uniform in fineness and quality and shall not show a variation in fineness modulus greater than 0.20 plus or minus.

Fine aggregate shall conform to the pertinent sections in the Standard Specifications for Concrete Aggregates of the American Society for Testing Materials, C-33-49 and revisions thereof.

8. Coarse Aggregate

Coarse aggregate shall consist of crushed stone, gravel, or other approved inert materials with similar characteristics or combinations thereof, having clean, hard, strong, durable, uncoated particles free from injurious amounts of soft, friable, thin, elongated or laminated pieces, alkali, organic or other deleterious matter. The maximum size of aggregate for general concrete work, such as reinforced walls, beams, columns, slabs, etc., shall be a size which will pass a 1½" square opening.

Coarse aggregates shall conform to the pertinent sections in the Standard Specifications for Concrete Aggregates of the American Society for Testing Materials, C-33-49 and revisions thereof.

9. Reinforcing Steel

Steel for concrete reinforcement shall be intermediate grade deformed (not twisted) bars, conforming to the Standard Specifications for Billet Steel Bars for Concrete Reinforcement of the American Society for Testing Materials, A-305-50T and A.S.T.M. A-15-50T and all latest revisions thereof. Bars shall be new stock, free from dirt, excessive scale, rust, paint, oil or other foreign substances.

10. Wire Fabric

Steel wire fabric or mesh used for reinforcement shall conform to the Standard Specifications for Welded Steel Wire Fabric of the American Society for Testing Materials A-185-37, and to the Standard Specifications

for Cold Drawn Steel Wire, A-82-34, and the latest revisions thereof. Any make or style of mesh conforming to the Specifications and giving equal or greater sectional areas may be substituted for the one on the plans if approved by the Engineer.

11. Form Lumber

Form lumber shall be straight, well manufactured shiplap, boards or plywood, surfaced at least on one side and two edges and free from loose knots, cracks or roughness which will show on the surface of the finished concrete. Lumber which is cupped or twisted shall not be used. Form lumber may be re-used provided that it has been thoroughly oiled, cleaned, all nails withdrawn, and is the equivalent in usefulness of new lumber. Framing lumber for forms shall be true and straight and free from defects that will reduce the strength for the purpose intended. Studs shall be surfaced on one edge. Wherever the forms may stand for some time before use, the lumber shall be sufficiently dry to avoid shrinkage or warping after erection.

Undressed lumber may be used for unexposed surfaces and rough work if approved by the Engineer.

Forms for exposed surfaces shall be of new material or the equivalent thereof approved by the Engineer.

12. Forms for Special Finishes

For exposed surfaces requiring a special finish the Engineer may specify the use of matched lumber or form lining. Forms for special finishes shall be matched lumber which is straight, well manufactured flooring, grade "C" under the rules of the West Coast Lumberman's Association, free from warping or cupping; or full thickness Concrete Form Plywood conforming to the specifications of the Douglas Fir Plywood Association; or regular board forms lined with $\frac{1}{4}$ inch plywood or hard pressed board suitable for the purpose and which will not warp or buckle.

Plywood shall be true and free from defects on the side next to the concrete and shall be used in as large sheets as practical unless otherwise specified. Lining material may be re-used, provided that it is in good condition and thoroughly cleaned between pours.

13. Form Construction

Forms shall conform to the shape, lines, grades and dimensions of the concrete, as called for on the drawings. Joints shall be horizontal or vertical, and adjacent surfaces shall be in substantially true planes to permit the concrete to be finished with a minimum of grinding. Forms shall be sufficiently tight to prevent leakage of mortar and formation of fins.

Forms shall be adequately supported by studding and walling to carry the maximum concrete pressures and shall be braced against distortion from any cause during or after the placing of concrete.

Form ties shall generally be bolts or rods with spacers, so arranged that when the forms are removed no metal will be within one inch of any surface. Wire ties shall not be used unless specifically approved by the Engineer.

Floor slabs and horizontal members shall be adequately supported, allowing not only sufficient strength but also rigidity to prevent deflection when the forms are loaded, and where necessary the forms shall be cambered so that the finished members shall conform accurately to the desired line and grade. If adequate foundation for shores cannot be secured, trussed supports shall be provided. Shores supporting successive stories or pours shall be placed directly over those below, or so designed and placed that the load will be transmitted directly to them.

Chamfers. Unless otherwise specified, outside or inside corners which are for convenience shown square on the drawings shall be chamfered by the use of suitable moldings or bevels placed in the angles of forms. The tops of exposed walls shall generally be finished to a molding inside the forms which shall be accurately leveled and lined.

Temporary openings shall be provided at the base of columns and wall forms, and otherwise where necessary to facilitate cleaning and inspection immediately before depositing concrete, and other openings shall be placed where necessary for spading or vibrating.

Pipes passing through walls shall be placed in walls before concrete is poured, or block-outs shall be provided through which pipes may later be installed and grouted in place.

The inside of forms shall be coated with an approved non-staining mineral oil or other material, or wooden forms not to be re-used shall be thoroughly wetted. Form oil shall be applied before steel reinforcement is placed.

Removal of forms shall be subject to the approval of the Engineer, and shall not be started until the concrete has attained the necessary strength to support its own weight and any construction live loads.

14. Bending and Placing Reinforcement

Metal reinforcement, before being positioned, shall be thoroughly cleaned of mill and rust scale and of coatings that will destroy or reduce bond with concrete. Reinforcement appreciably reduced in section shall be rejected. Where there is delay in depositing concrete, reinforcement shall be re-inspected, and, when necessary, cleaned. Reinforcement shall be carefully formed to the dimensions indicated on the plans.

Bends in bars shall be made around pins having diameters not less than the following:

For stirrups and tie bars	2 bar diameters
Bars 1" or less	6 bar diameters
Bars exceeding 1"	8 bar diameters

Metal reinforcement shall not be straightened or rebent in a manner which will injure the metal, and bars with kinks or bends not called for on the drawings shall not be used. All bars shall be bent cold except in special cases where the entire operation of heating and bending is specifically approved by the Engineer.

Metal reinforcement shall be accurately positioned, and secured against displacement by using annealed iron wire of not less than No.18 gauge, or suitable clips, at intersections, and shall be supported by concrete or metal chairs or spacers, or metal hangers. The minimum clear center to center distance between parallel bars shall be $2\frac{1}{2}$ times the bar diameter, but in no case shall the clear spacing between the bars be less than $1\frac{1}{2}$ times the maximum size of the coarse aggregate, nor less than 1 inch in beams and girders, nor less than $1\frac{1}{2}$ inches in columns. Bars parallel to the exterior face of any member not exposed to water or weather shall be embedded at least one bar diameter for round bars or diagonal dimension for square bars, but in no case less than 3/4 inch from the exterior surface. In walls exposed to water pressure, the embedment shall be not less than $1\frac{1}{2}$ inches and in footings in contact with the ground not less than 3 inches.

Splices in steel reinforcement bars shall be lapped not less than 30 diameters for top bars or 25 diameters for other bars. The use of splices shall at all times be subject to the approval of the Engineer. Splices shall not be made at points of maximum stress, except in the case of hoops, and splices in adjacent bars shall be well staggered. Splices in hoop steel bars shall be welded if called for on the plans or in the detailed specifications.

15. Storage of Materials.

Cement to be used for on-the-job concrete mixing shall be delivered on the work a sufficient length of time in advance of use to permit sampling and testing. It shall be stored in a dry shed or a platform elevated above the ground and covered with a tent, tarp, or canvas in such a manner that the canvas does not come in contact with the sacks. Cement must come up to the specification requirements at the time of use, and shall not be released from storage without the express permission of the Engineer. Sacks shall be tiered up in such a manner as to facilitate counting and shall be hauled away only with the knowledge and approval of the Engineer.

Fine and coarse aggregate shall be kept in separate piles and in such a manner as to avoid the inclusion of dirt or foreign materials. Frozen aggregate shall be thawed by the use of steam.

16. Quality of Concrete

Concrete shall be homogeneous in the structures, and upon having set and hardened, shall have the strength required, and shall be resistant to weathering under the conditions of its intended use.

The quantity of cement used per cubic yard shall be specified, and that quantity shall not be reduced even though tests of concrete indicate a higher strength than may have been specified or required for the work.

17. Sampling and Testing

The Contractor shall cooperate with the Engineer in furnishing typical samples of aggregate and cement for testing purposes. He shall also facilitate the collection of samples of mixed concrete for testing purposes.

All sample collecting and testing procedures shall comply with the latest A.S.T.M. specifications pertinent to the particular tests being made.

Actual sampling and testing shall be at the expense of the Owner unless otherwise specifically stated in the detailed specifications of construction.

18. Proportioning Concrete

The classification of concrete used in different parts of the work shall be indicated on the plans or covered by the detailed specifications for construction. It shall be based upon 3 factors, Namely:

1. The minimum number of 94 pound sacks of cement per cubic yard of finished concrete, which number shall be the class designation.

2. The maximum permissible water-cement ratio.

3. The maximum size of coarse aggregate, referring to square opening test screens.

For general work and unless modified by the detailed plans and/or specifications, the following proportions shall be used:

Maximum size of coarse aggregate: 1½"

Class of Concrete	Sacks of Cement Per Cu.Yd. Concrete	Maximum Water Cement Ratio	Maximum Permissible Water in Gallons Per Cu.Yd. of Concrete
4	4	8	32
5	5	7	35
6	6	6	36
7	7	5	35

Note: Above water amounts based upon dry aggregate.

Subject to these fixed factors, the proportions of fine and coarse aggregates and the water content shall be subject to the control and approval of the Engineer, with the objectives of securing the maximum

strength, durability, density, and watertightness reasonably practicable for the location and conditions of placement. The fact that concrete has more than adequate strength for the design requirements shall not be a reason for increasing the water cement ratio, and if the Contractor desires added workability to suit the particular equipment and methods of placement that he uses, this shall be attained by increasing the cement content or the addition of an admix, provided the proposed change in mix is first approved by the Engineer. Any such increase in cement per yard or the addition of an admix shall be at the Contractor's expense.

For small jobs, requiring less than 100 cubic yards at a given plant setup, the fixed proportions of aggregates may be controlled by volumetric measurements, and a measuring box of exactly one cubic foot volume shall be provided for checking the contents of wheelbarrows or buggies. For larger jobs, materials shall be measured by weighing, using approved apparatus especially designed and constructed for the purpose. The mixing water shall in all cases be measured by volume or by weight. The tolerance of uniformity in aggregate weights shall be plus or minus one percent (1%) from the desired amount and the tolerance of accuracy for water measurement shall be plus or minus one half of one percent ($\frac{1}{2}$%).

19. Consistency of Concrete

The consistency of concrete to be used in different sections of the work shall be determined by the Engineer and shall in all cases have the lowest water-cement ratio which can reasonably be placed, using the best available equipment together with mechanical vibration as hereinafter specified. As a guide in the field, standard slump cones shall be provided and used by the Contractor and generally the following slumps will be required.

Type of Concrete Placement	Slump in Inches	
	Maximum	Minimum
Reinforced foundation walls and footings	3½	2
Plain footings and substructure walls	3	1
Slabs, beams and reinforced walls	4	2
Building columns	4	2
Pavement	2	1½
Heavy mass construction	2	1

20. Mixing Concrete

Unless otherwise specifically authorized by the Engineer, the mixing of concrete shall be done in a batch mixer of approved type which will insure a uniform distribution of the material through the mass. Hand mixing shall be permitted only for very small and isolated structures and under approved methods. The equipment at the mixing plant shall be so constructed that all materials entering the drum, including the water, can be accurately proportioned within the tolerances heretofore provided. The entire batch shall be discharged before recharging and the mixer shall be cleaned at frequent intervals during use. The volume of the mixed material per batch shall not exceed the manufacturer's rated capacity.

The mixing period shall be not less than one and one-half (1½) minutes for mixers having a rated capacity of one (1) cubic yard or less, and two (2) minutes for larger mixers, the mixing periods being measured from the time when all solid materials are in the mixer drum, provided that all of the water shall be added before one-fourth of the mixing time has elapsed.

Retempering of concrete or mortar which has partially set, that is, remixing with or without additional cement, aggregate or water shall not be permitted.

21. Truck Mixing

Truck mixers may be used in connection with batching plants which will insure proportioning of materials within the tolerances stated above. Truck mixers shall be provided with a tank for carrying mixing water, and only the prescribed amount of water shall be placed in the tank. Mixers shall be of the revolving drum type, water tight, and so constructed that the concrete can be mixed to insure a uniform distribution of materials throughout the mass. The maximum batch shall not exceed the manufacturer's rating. The Engineer may require that truck mixers be provided with a timing device. Mixing shall continue for not less than fifty revolutions at a speed of not less than 4 r.p.m. after all ingredients, including the water, are added. Mixing shall begin within 30 minutes after the cement has been added to the batch, and the batch shall be discharged within one and one-half (1½) hours after the cement has been added to the batch.

During hot weather and for rich mixes or mixing using high early strength cement, the time between addition of cement and placement in forms shall not exceed one (1) hour or less if required by the Engineer.

22. Ready Mixed Concrete

If ready mixed concrete is used, it shall conform in all respects to the standard specifications of the American Society for Testing Materials designated C-94-48 and all latest revisions thereof.

23. Hauling Ready Mixed Concrete

Concrete may be hauled from a central mixing plant only for distances and under conditions which will insure that there be no segregation of materials, and strictly subject to the approval of the Engineer. The use of a truck mixer or a truck equipped with agitating blades may be required. The volume of mixed concrete transported in an agitator shall be in accordance with the manufacturer's rating. Concrete shall be discharged from the agitator or other transportation device within one and one-half (1½) hours after the cement has been added to aggregates at the batching point, or in one hour or less if required by the Engineer for special mixes or during hot weather.

24. Depositing Concrete

Under these specifications concrete shall be placed only in the dry. Underwater work requiring special methods shall be covered by detailed specifications therefor. Any water flowing into the excavation shall be diverted to a sump or removed by other approved methods which will prevent it from coming in contact with the freshly deposited concrete.

Before beginning the placement of any run of concrete, surfaces of contact at construction joints shall be thoroughly cleaned and prepared, as hereinafter specified. Forms shall be cleaned and wetted or oiled. All debris and foreign materials shall be removed from the space to be occupied by the concrete. Placement and tying of reinforcement shall be finally checked. Mixing and conveying equipment shall be clean. Concreting shall begin only after all conditions have been inspected and final approval given by the Engineer.

Concrete shall be handled from the mixer to the place of final deposit as rapidly as practical by methods which prevent the separation or loss of the ingredients. It shall be deposited in the forms as nearly as practicable in its final position to avoid rehandling. It shall be so deposited as to maintain, until the completion of the unit, a plastic surface approximately horizontal. Forms for walls or other thin sections of considerable height shall be provided with openings, or other devices, that will permit the concrete to be placed in a manner that will prevent segregation or accumulations of hardened concrete on the forms or metal reinforcement. If required by the Engineer, trunks shall be used for placing concrete in deep walls.

Under no circumstances shall concrete which has partially hardened be deposited in the work.

For ordinary structures, the preferred method of placing concrete shall be by the use of buggies or other approved containers or bottom dump buckets. Chuting shall be done only after the plant set-up has received specific approval of the Engineer, and with equipment of such size and design as will insure a continuous flow in the chute. Chutes shall be metal or metal lined, with a uniform slope of not less than one vertical to two horizontal. The discharge end of the chute shall be provided with a baffle plate, and if the height of the discharge end above the surface of the concrete is more than three (3) times the thickness of the layer being deposited, a spout or trunk shall be used and the lower end shall be kept close to the surface. When the operation is intermittent, the chute shall discharge into a hopper. It is the intent of these specifications that no segregation of concrete shall take place between the mixing plant and the point of final placement in the forms, and the methods of handling shall be strictly under the control of the Engineer.

Placement of concrete in wall forms in a manner dependent upon horizontal flow shall not be permitted.

25. Special Methods of Placing

Concrete may be placed by pumping with equipment which is suitable in construction and adequate in capacity for the work. An agitating hopper shall be provided immediately ahead of the pump. The operation shall be such that a continuous flow of concrete without air pockets is produced. The length of discharge lines shall be limited to 1,000 feet with a minimum number of bends. Special pipe with detachable couplings shall be used. All precautions shall be taken to avoid segregation at the point of discharge, and an air booster at the end of the line shall be used only with great care and subject to the approval of the Engineer. When pumping is completed, the concrete remaining in the line shall be ejected by methods which will avoid addition of water to the concrete or separation of its ingredients. After this operation and before re-use, the entire equipment shall be thoroughly cleaned.

26. Depositing Concrete in Cold Weather

Concrete when deposited shall have a temperature of not less than 50 degrees nor more than 120 degrees F. When the air temperature is below 40 degrees at any time during the day or night, concreting shall be carried on only under special precautions which shall meet the approval of the Engineer, and the concrete in place shall receive special protection. For moderate cold weather conditions, the mixing water shall be heated, but not to a higher temperature than 140 degrees F. When necessary the aggregates shall also be heated by the use of steam. Forms shall be free from frost or ice, and after the concrete is placed, it shall be protected on all exposed sides by the use of straw, sawdust, tarpaulins or other means, and heat shall be provided if necessary during the entire curing period, as hereinafter specified. Salts, chemicals, or other foreign materials shall not be mixed with the concrete for the purpose of preventing freezing.

27. Depositing Concrete Under Water

Concrete deposited under water shall be done in strict compliance with the Engineer's requirements. It shall not be placed in water having a temperature below 35 degrees F. Concrete temperature shall be not less than 60 degrees F. nor more than 120 degrees F.

Underwater concrete shall contain seven (7) sacks of cements per cubic yard, and the volume or weight of coarse aggregate shall be not less than one and one-half, nor more than twice the volume or weight of the fine aggregate. Slump shall be not less than four (4) nor more than seven (7) inches.

Insofar as it is possible to accomplish, no flow of water shall pass over the concrete during deposition and until hardening takes place. If this cannot be prevented, the current shall in no case exceed ten (10) feet per minute in the space occupied by the concrete.

Concrete shall be deposited continuously until all is brought to the required height.

28. Compacting Concrete

As concrete is placed, it shall be thoroughly compacted by means of mechanical vibrators to secure a dense structure without voids, close bond with reinforcement, and smooth exposed surfaces. The use of hand tools for spading or roding the concrete shall not be permitted except in locations where the use of mechanical equipment may prove impractical, and the Engineer gives specific approval.

Methods, and the extent of compaction, shall be subject to the control of the Engineer. Any tendency to accumulate water or fines at the surface shall be offset by adjustment in the mix.

29. Construction Joints

Concrete shall generally be deposited continuously, or in layers of such thickness that no concrete which has hardened sufficiently to prevent bond or create planes of weakness shall come in contact with fresh concrete.

Construction joints shall be used wherever it is neither feasible nor desirable to place concrete in a continuous operation, or wherever it is necessary or desirable to provide for shrinkage. Construction joints shall be located as called for in the plans and construction specifications or as required and approved by the Engineer. Construction joints shall be keyed and provided with water stops if called for in the plans or required by the Engineer. Construction joints shall be so located and built as to prevent weakening of the structure and not interfere with the finished appearance.

Joints in columns shall be made at the underside of floor members and at floor levels. Haunches and column capitals shall be considered as part of and continuous with the floor or roof. At least two (2) hours must elapse after depositing concrete in the columns or walls before depositing in beams, girders, or slabs. Construction joints in floors shall be located near the middle of span of slabs, beams or girders, unless a beam intersects a girder at this point, in which case the joints in the girders shall be offset a distance equal to twice the width of the beam. Adequate provisions shall be made for shear by use of inclined reinforcement.

Construction joints which do not serve as expansion joints shall be made so as to insure bonding of the new concrete to the old. The surface of the hardened concrete shall be roughened to expose the solidly embedded particles of aggregate. Loose or damaged concrete, foreign matter, and laitance shall be removed, and the surface thoroughly washed. Forms shall be tightened, and to insure an excess of mortar at the juncture of the old and new concrete, the cleaned surfaces, including vertical and inclined surfaces, shall be coated with a layer of mortar or neat cement grout against which the new concrete shall be placed before it has attained its initial set. If additional strength or resistance to shear is required at construction joints, it shall be provided through the use of concrete keys or additional dowel bars, or both.

30. Watertight Structures

Walls or floors in structures to contain water shall be given special care in the location and workmanship of construction joints. Generally a keyway will be required to increase the length of the leakage path, and a continuous metal plate or water stop will be placed in the middle of the keyway. Joints not shown on the plans and placed to suit the operations of the contractor shall be in every way equal to those definitely shown, and it shall be the responsibility of the Contractor to secure complete watertightness in the finished structure. Otherwise, methods used shall correspond to those specified for other construction joints.

31. Removal of Forms

Forms shall not be removed until the concrete has attained a strength fully adequate to support itself and carry any superimposed loads, and also to permit the removal of forms without breaking corners or defacing the surface. Subject to these limitations, and the seven (7) day curing period specified hereinafter, the forms for exposed surfaces shall be removed as early as possible, to permit repair of defects and surface grinding while the concrete is still green. The time for form removal shall be subject to the approval of the Engineer, and shall take into account the location and character of the concrete, weather and curing conditions. Beams, elevated slabs, domes, etc. shall be supported for at least 14 days. Where local codes require a longer period, they shall apply. Such support may be provided by reshoring the structure after the removal of the forms.

32. Curing Concrete

All concrete shall be protected so that there will be no loss of moisture from the surface for at least seven (7) days when normal cement is used. When high, early strength cement is used, the minimum period shall be three (3) days. Protection of loss of moisture from the surface of concrete shall be accomplished by keeping the surface continuously wet.

On vertical and bottom faces the forms generally shall be kept in place and kept wet. If the forms are to be removed earlier, the method of curing shall be approved in advance by the Engineer. The upper surfaces of slabs or floors shall be protected from evaporation by the use of burlap or other absorbent material which shall be kept wet by spraying. The surfaces of walls shall be cured in the same manner as floors. Sealing compounds may be used if they do not discolor the concrete, and if the compound and its application are approved by the Engineer. The use of calcium chloride or other salts will not be permitted.

33. Surface Finish

Concrete that is to have a showing face, even though no particular finish is called for, shall be mixed, placed and compacted in a manner that will insure a uniform distribution of aggregates, freedom from void spaces, and a uniform texture. Existence of rock pockets, air or water bubbles, shall be evidence of improper mix or handling and shall be

corrected. After the forms are removed, all defects shall be repaired at once. The same cement shall be used as in the original work, and color shall be added if necessary for matching. Holes left by tie rods shall be hammer-packed with stiff, dry mortar, and the surfaces shall be leveled. Rock pockets shall be similarly filled and finished. Honeycombed areas shall be cut out to a depth at which sound concrete is exposed and filled with concrete matching that of the structure. Offsets, fins and irregularities due to defective forms shall be filled and ground off to a reasonably true surface in keeping with the location in the structure and subject to the approval of the Engineer.

Exterior and interior walls and surfaces of structures, where matched flooring or plywood forms are called for, shall have a true allignment, free from streaks or discoloration and uniform finish with no form marks of any sort. This result shall be secured by special care in the construction of forms and placing the concrete. Only a minimum of pointing up will be permitted, and there shall be no plastering. Irregularities shall be removed by mechanical grinding or by hand rubbing with a carborundum brick.

Top surfaces of walls, etc. not subject to wear shall be struck off evenly to screeds which have been set with a level. Generally a beveled molding shall be used to finish top corners in preference to a curbing edger. Excess water shall be drained off and the surface finished with a wood float.

Floors and other wearing surfaces shall be finished as one course work to accurately set screeds or templates. The concrete proportions and consistency and the methods of compaction shall be such that only sufficient mortar is available for finishing and there is no excess water. During the preliminary finishing operation the surface shall be worked only as necessary to insure a layer of mortar at the surface. While the concrete is still soft, the surface shall be checked with a straight edge or template, and inaccuracies corrected. Final troweling shall be delayed until the surface can no longer be dented with the finger.

Floors of substantial area shall be finished by the use of a rotary finishing machine. Smaller areas shall be given a steel trowel finish by experienced cement finishers, to give a dense, hard surface meeting the approval of the Engineer. Joints and edges shall be finished with proper tools and surplus mortar cleaned away. The finished surface shall be immediately covered and protected from sun and rain, and shall be cured under moist conditions as hereinbefore provided.

Floors to have a non-slip surface shall be broomed or otherwise finished as required by the Engineer.

CONSTRUCTION SPECIFICATIONS

1. Scope of Work and Local Conditions

The work covered by these specifications consists of furnishing all labor, material and equipment required for the construction of an addition to a water treatment plant for the removal of iron. Certain alterations on the existing building will be required to incorporate the new work in the existing plant.

The site is practically level and no rock is expected on the site. No clearing and grubbing will be required. Both water supply and water service are available on the site and no charge will be made for same.

The Contractor shall confine his operations to the land owned by the City.

The existing plant will be in use during the summer months. The Contractor shall schedule and coordinate his work in such a manner that interruptions in the plant operation shall be kept to an absolute minimum. Interruptions or shut-downs of treatment plant shall not occur without consent of the City Superintendent of Public Works.

2. Excavation, Backfill and Grading

All structural and trench excavation, whether for pipe lines, footings, slabs, etc. shall be bid as one item. Excavated material is expected to be common material. The bid price for excavation shall include backfilling and grading around the treatment plant and the disposal of excess material. The bid price for excavation shall cover and absorb the cost of pumping, draining and otherwise taking care of any water encountered.

Excavation for footings and basin slabs shall be made accurately to lines and slopes shown on plans or as staked on the ground. Except with special written permission by the Engineer, excavation by machinery shall not be carried closer than three inches (3") of the finished grade, and the remainder shall be finished by hand. Any excavation inadvertently carried below grade shall be replaced with compacted gravel or crushed rock at the expense of the Contractor.

Excavation within two feet (2') from the existing structure shall be carried out by hand or with light excavation equipment approved by the Engineer.

Alignment and depth of cut for all pipe trenches shall be in accordance with the plans. The width of the trench shall be such as will permit the careful laying and jointing of the pipe.

Excess excavated material shall be disposed in the southerly portion of the treatment plant site as directed by the Engineer.

For types of pipe requiring bell holes, the cost of excavation thereof shall be included and absorbed in the price paid for pipe laying. At trench intersections, or where trench and structures overlap, the excavation shall be paid for only once.

Structural excavation shall be measured to a vertical plane one foot outside of the outer edge of the heel of vertical walls and distance of excavation shall be determined by measurement to the bottom of the wall footings and bottom slabs.

Trench excavation shall be determined by multiplying the length of pipe line, the average depth from ground surface to the invert of the pipe and a fixed width of 2' 0" for all sizes of pipe.

3. Trench Backfill

Backfilling shall be placed with special care to a point 6" above top of the pipe to secure full support and avoid displacement. Material around and under the pipe shall be carefully tamped and settled in place by hand methods to a point 6" over the top of the pipe. For trenches outside of structures, the remainder of trench backfill may be settled with water or tamped to insure thorough compaction. Under structures, the complete backfill shall be thoroughly tamped so as to prevent any settlement whatsoever.

Cost of backfilling shall be absorbed in the price bid for excavation.

4. Laying Cast Iron Pipe & Fittings

Pipe trenches shall be fine graded to give each length of pipe full support and allow equal deflection for successive lengths in either horizontal or vertical curves. If the bottom of the trench is in solid rock, a cushion of either earth or sand shall be provided as directed by the Engineer. Pipe joints shall be adjusted so as to give a uniform space around the entire pipe prior to making of the joint. Bell holes shall be excavated of sufficient size to permit the making of proper joints either for bolted joint or bell and spigot cast iron pipe.

Bell and spigot cast iron pipe joints shall be made by first caulking in place a clean rubber ring evenly around the entire pipe. The remainder of the joint shall then be completed with lead or relatively dry cement in accordance with the methods required by the Engineer. The whole assembly shall be lined and leveled up in conformance with the plans before the next adjacent bell and spigot joints have been made. Bolted mechanical joints shall be taken up evenly with a ratchet wrench. Gasket and follower ring shall fit snugly and firmly to prevent leakage.

The pipe will be subject to pressure tests in accordance with the requirements of the Engineer and any defective pipe or fittings found by such tests shall be taken out and replaced. Joints shall be absolutely water tight and shall not be covered until approved by the Engineer.

Payment for furnishing and installing all pipe, fittings, specials, couplings, gaskets, bolts and caulking materials shall be made in accordance with the lump sum price as bid. This item shall include all piping under and within the plant and waste water line to the point of connection to concrete sewer pipe outside of building.

5. Alteration on Existing Building

A. The concrete partition blocks and the steel window on the north wall of the existing building shall be removed. The edges of the openings shall be finished neatly and smooth.

A portion of the ground floor slab of the existing building shall be cut and a ramp shall be constructed to connect to the ground floor slab of the new structure.

Opening shall be cut and enlarged at the existing basin walls. The edges of these openings shall be rounded and smooth.

Payment for the above alteration work shall be included in the unit price bid for Class "6" concrete.

B. Redwood louvers around the existing coke beds shall be removed. New louvers shall be installed as shown on plans.

Payment for this item shall be included in the lump sum bid for "Redwood Carpentry Work."

C. The existing steel windows on the east wall shall be removed and new pivoted steel windows of same size shall be installed.

Payment for this item shall be included in the lump sum bid for "Windows and Louvers."

D. The existing aeration piping above the coke beds shall be disconnected and new piping and fittings as shown on the plans shall be installed. The existing fittings and nozzles may be used in other portion of the aeration piping system. The payment for this item shall be included in the lump sum bid for "Plant Piping."

E. Additional lighting fixtures and other electrical alteration work shall be required as called for on plans and electrical specifications.

6. Concrete

The General Specifications for Concrete Construction shall govern, but in addition the Contractor shall comply with the supplemental requirements herein described.

The Engineer shall have rigid control over concrete mixes and shall determine proportions of fine and coarse aggregate to be used for each class of concrete and for each area in which it is to be placed. Careful controls shall be exercised by the Contractor in regulating the mix and amount of water used. Slump tests will be used by the Engineer for the regulation, control and modification of water-cement ratios. All concrete shall be placed as dry as reasonable to obtain a workable mix and secure maximum density, strength and impermeability in place.

All concrete shall be vibrated in accordance with the requirements of the Engineer and the Contractor shall so construct his forms and conduct his concrete placing operations as to obtain concrete of maximum density, strength and water tightness.

No concrete pouring operations shall begin unless the Contractor has on hand and in good mechanical condition at least two (2) vibrators suitable for use on the concrete placement operation to be undertaken.

After concrete is placed, it shall be kept wetted down during the curing process. Sealing compounds may not be used in lieu of keeping concrete wet without specific permission from the Engineer, and then only with adequate protection and heat.

Smooth, true surfaces are required in order to secure proper hydraulic operation. Forms for all exposed surfaces, including the various channels, the inside walls, and the outside walls above ground surface shall be faced with plywood, matched flooring or other material which will give comparable finish. Facing shall be adequately backed to prevent a wavy finish and special attention shall be given to ties and bracing. If forms bulge or spring when concrete is poured, such concrete will be required to be torn out and replaced. Facilities shall be provided for accurate screeding of top surfaces in channel floors and weir walls. At sharp curves in channels the forms shall be lined with sheet metal or plywood to give a true, smooth surface.

All form ties shall be of the rigid type which will break off below the finished surface, and core holes shall be dry packed with cement mortar immediately after stripping.

All structural concrete shall be Class "6" containing six (6) sacks of cement per cubic yard.

Backfill concrete shall be Class "4" containing four (4) sacks of cement per cubic yard.

Payment for concrete in place shall be in accordance with the unit prices bid, and shall include all costs of materials, forming, placing, finishing and curing as well as construction joints, metal water stops and alterations of existing concrete structure.

7. Placing Concrete

Concrete placing operations shall comply with the detailed requirements as set forth in the gneral specifications for Concrete Construction. Care shall be taken to obtain both water tight structures and even, smooth, attractive surfaces.

The bottom slabs of the coke beds and the supporting girder and beams thereof shall be placed in one operation.

The order of concrete construction shall be submitted to and approved by the Engineer.

8. Placing Reinforcing Steel

Reinforcing steel shall be accurately placed both as to spacing and alignment in conformity to the plans and general specifications for Concrete Construction.

Splices in spacer and temperature bars and reinforcing in the bottom slabs, floors, walkways, channels, etc. shall be lapped not less than thirty (30) diameters.

Reinforcing steel shall be continuous through all construction joints, but no bars shall extend through expansion joints.

Payment for reinforcing steel shall be made on a pound basis in accordance with the unit price bid for reinforcing steel in place. The quantity for payment shall be determined by the amount actually in place and called for in the plans.

9. Wall Footings of Structures to Hold Water

Wall footings shall be placed with keyed joints and galvanized iron water stops. Joints between adjoining sections of wall footings shall be keyed, include water stops, and shall have steel running continuously through the joint unless an expansion-contraction joint. Steel shall be accurately placed and well anchored. Keyways for construction joints shall be formed to the size shown on the plans and the metal water stop shall be accurately set and centered in the keyways and protected from damage.

Joints between footings and walls not subject to hydraulic pressure shall be keyed, but metal water stops shall not be required.

Cost of keyed joints and metal water stops shall be absorbed in the unit price bid for concrete in place.

10. Slabs

Reinforcing steel in floor slabs of basins and control building shall be accurately held in proper position by means of "chairs" or supports. Screeds shall be substantial and both accurately and carefully set. All floors shall slope evenly to drains.

Rods shall be heavy and straight. All concrete shall be worked down to a smooth plain and finished to accurate lines and grades. Basin and coke bed slabs shall be given a steel trowel finish. Control building floor and walkway slabs shall be given a non-skid mat finish.

11. Vertical Walls

Vertical wall sections shall be placed to and between construction joints as indicated in continuous pours without cold joints, and forms shall be of ample strength and rigidity to permit such an operation. Bulkheads in verti-

cal walls shall not be located in line with constructed joints in footings.

Vertical wall to be poured against existing building wall shall be separated by a layer of ½" thick asphalt impregnated joint filler. Existing wall surfaces shall be cleaned and primed with one coat of asphalt primer. Joint filler board shall be installed using suitable type of asphaltic adhesive.

Vertical construction joints in hydraulic structure walls shall be keyed, have 16 gauge galvanized iron water stops and steel shall run continuously through the joints.

Rigid form ties and spacers of a type approved by the Engineer shall be used. They shall be such as to permit cutting off or unscrewing approximately one inch (1") beneath the finished surface of the concrete walls. Wire ties will not be permitted.

Every possible precaution shall be taken during concrete placing to secure water tight walls free from any voids or gravel pockets. After forms are removed, both surfaces shall have all fins and pronounced offsets, if any, removed.

12. Horizontal Grooves

Ornamental horizontal grooves in the exterior of the building walls shall be accurately placed as to horizontal line, uniformity of depth and contact cross section by nailing strips to the anterior surface of the wall forms. The finished appearance shall match those of the existing building.

No extra payment will be made for grooves, the cost thereof being included in the price bid for concrete in place.

13. Construction Joints

No horizontal construction joints will be permitted in walls. Vertical construction joints in vertical wall sections shall be keyed and shall have reinforcement running continuously through all joints and all such joints shall be provided with galvanized iron water stops of 16 gauge metal, as shown on the plans.

Payment for galvanized iron water stops shall be included in unit price bid for Class "6" concrete.

14. Poured Expansion-Contraction Joints

Hot-poured rubber asphalt joints shall be made between wall footings and slabs in basins.

Top surfaces of basin wall footings to support floor slabs shall be thoroughly cleaned, primed and given a heavy coat of asphalt before concrete floors are placed. Wedged shaped strips shall be used to allow space for making poured joints to surface of floors. Joint form strips shall be completely removed and the joint wire brushed and thoroughly cleaned and dried before primer is applied.

After primer has thoroughly bonded to both faces of concrete in the joint, place preformed asphaltic joint filler and drive down tight. Then the joint shall be poured flush with Para-plastic Code 2341 hot-poured rubberized asphalt joint sealing compound or equal as approved by the Engineer. Pouring procedure and heating of compound shall be in strict accordance with manufacturer's instructions.

Payment for poured expansion-contraction joints shall be made on a lineal foot basis in accordance with the unit price bid. The bid price shall include the premolded joint filler in the joint.

15. Premolded Asphalt Joints

Premolded or preformed asphaltic joint filler shall be used between the floor of the building and the footing, and floor concrete shall be poured against performed strips.

Premolded asphaltic joint filler in sheet form shall be applied to wall surface of existing structure where new concrete walls are to be poured against.

Premolded asphaltic joint filler shall be Servicised Asphalt No. 1301 or equal.

Payment for Premolded Asphalt Joints shall be made on a square foot basis in accordance with unit price bid.

16. Copper Flashing and Copper Construction Joints Between New Work and Existing Structure

On top of parapet walls and coke bed walls where the new work connects to the existing structure, copper flashing shall be installed as detailed on the plans.

In construction joints subject to water pressure, copper water stop shall be inserted into a sawed groove on existing concrete wall and anchored with lead wedges. The projecting half of the copper water stop shall have 3/4" diameter perforations on eight inch (8") centers and shall be embedded in the new concrete construction. The space in the joint shall be filled with preformed joint filler. Sealing compound equal to Vertiseal 2381 shall be applied on each side of the joint following manufacturer's instructions.

In construction joints not exposed to standing water, copper water stop may be anchored to existing wall with metal plug anchors at 12 inches on centers.

Copper construction joints shall be continuous from edge of footing to top of wall. All work shall be soldered and of first class workmanship.

Aluminum angle joint cover shall be attached as indicated.

Payment for copper flashing and construction joints shall be made on a lineal foot basis in accordance with unit price bid. Aluminum joint cover shall be paid for separately on a lineal foot basis.

17. Piping

Piping and fittings above ground floor level of the building in connection with aerators, coke beds, etc. shall all be flanged. Below floor level, cast iron piping and fittings shall be bolted mechanical joint or bell and spigot.

Piping from coke beds and interconnections between pump piping, raw water line and coke bed under drainage shall be adequately supported with hangers from the floor slab and beam above.

Flanged pipe may be made of Class 150 iron with standard 125 lb. flanges, properly faced and drilled; or flanged pipe may be made of standard weight, galvanized mill steel pipe, together with standard 125 lb. screwed flanges, properly faced and drilled. Fabricated steel pipe with flanges may be used, provided that it shall be I.D. pipe of thickness no less than standard mill steel pipe of the same diameter, and provided the pipe is shot or sand blasted after fabrication and the interior lined with coal tar enamel. The exterior of such pipe shall be given a shop coat of red lead and linseed oil.

Flanged coupling adapters shall be installed as indicated on plans.

Floor stand operation is required for all gate valves and butterfly valves for the coke bed piping system. Extension stems of adequate size together with stem couplings and adjustable stem guides shall be furnished and installed.

Aeration nozzles shall be Yarway Type C Involute $2\frac{1}{2}$".

Coke bed vent pipes shall be 4" cast iron. They shall be securely supported and accurately located for future connection to exhausters.

18. Drainage Piping

A 12" pipe line for carrying backwash waste from coke beds and for emptying basins shall be constructed of cast iron under the structure. From a point outside of the west wall of the building the line shall be 12" concrete sewer pipe. A 20 ft. length of galvanized 14 gauge corrugated metal pipe shall be installed at the point of discharge.

Concrete sewer pipe and fittings with rubber compression gaskets shall be laid to grade staked by the Engineers. Trench shall be fine graded ahead of pipe laying so as to give uniform, firm support for each length of pipe. The bottom 90° of pipe shall be supported by the excavated trench bottom. Bell holes shall be dug of such size as to prevent supporting pipe bell to bell and give sufficient room for making joints. Lubrication of pipe and rubber gaskets shall comply as to material and methods with the recommendations of the pipe and gasket manufacturers.

Cast iron pipe work shall be included in the general piping bid item for the plant. Concrete sewer pipe and corrugated metal pipe shall be paid for separately as bid.

19. Coke Bed

Coke to be used as contact media shall be clean and graded anthracite coal, and shall be of a size that will pass a three and one-half inch ($3\frac{1}{2}$") round screen and be retained on a two and five-eighths inch (2 5/8") round screen. The coke should be approximately cubical in shape and free from flat or elongated pieces. Samples shall be submitted to and approved by the Engineer before being ordered.

Extreme care should be exercised in the handling and the placing of the coke so as to minimize attrition and breakage. After placing, the coke beds shall be thoroughly hosed down with fire hose and the bottoms shall be flushed to remove any dirt or other loose materials.

Payment for coke media shall be in accordance with unit price bid for per cubic yard in place. The quantity for payment shall be determined by the amount actually in place and called for in the plans.

20. Redwood Carpentry Work

Rewood work shall include coke bed underdrains, areator enclosures and all wood construction as indicated on plans.

Select heart grade S4S shall be used. All work shall be well braced, closely fitted, thoroughly spiked, accurately set and rigidly secured in place.

Holes for bolted connections shall be drilled straight and true, 1/16 inch larger than bolt size.

All fastenings shall be hot-dip galvanized.

21. Structural Steel and Iron Work

Structural steel and iron work shall be furnished and installed as shown on the plans. This classification shall include steel brackets, checkered plates, angles, ladder, step rungs, post anchors, clip angles, stem guide supports, straps, anchor bolts, pipe railings, weir plates, overflow troughs and column supports, diversion box, inlet diffusers and baffles, nuts and washers.

Hand railing shall be fabricated $1\frac{1}{2}$" standard, black steel pipe. Joints shall be welded, neatly filleted and ground smooth. Posts shall be grouted in place in circular recesses 4" deep. In locations wherein recesses are not feasible for anchorage, flanges and anchor bolts may be used.

After fabrication, all steel and iron work except galvanized items shall be thoroughly cleaned of rust, splatter, oil, dirt, grease, etc. and shall be given shop coat of red lead and linseed oil or an iron oxide type of metal primer approved by the Engineer.

Payment for structural steel and iron work shall be made in accordance with the lump sum price as bid.

22. Windows

The fixed steel windows on the east side of existing structure shall be removed and new pivoted-type steel windows of same size shall be installed. Pivoted type steel windows shall be Truscon A 33161 or equal with push bar hardware.

All glass in existing windows and doors shall be removed and re-glazed with steel window putty and glazing clips.

Windows in new work shall be Aluminum Awning Windows Series 600A Truscon SAL 4532 or equal with standard offset operator on left hand side. Provide 22 ga. continuous fins, glazing molding and other accessories for a complete installation.

Window glass shall be double strength B quality.

Louvers shall be furnished and installed as shown on plans.

Lump sum price bid for windows and louvers shall include replacing of fixed windows with pivoted windows, re-glazing of all glass in existing windows and doors, furnishing and installing all new aluminum awning windows and louvers.

23. Roof Slab Coating

Roof slab and inside face of parapet walls shall be treated with cold applied asphaltic coatings, Tropical or equal. Brush on thoroughly one coat of Erie-Elastic Asphalt Primer ($\frac{1}{2}$ gallon per square) after concrete has thoroughly cured and dried out, and with surface cleaned and free of loose materials. Two finish coats Tropical Roofkoter shall be applied at the rate of 2 gallons per 100 square feet per coat. Sufficient drying time shall be allowed between each application.

24. Electrical Work

Electrical work shall consist of replacing of existing fixtures, addition of lighting circuits, addition of heater circuits, providing conduits for future equipment, etc.

Detailed specifications for equipment, materials and workmanship are included in a separate section of these specifications.

25. Conduits and Piping

The contractor on the concrete work shall familiarize himself with the plans for the plumbing and electrical work, and shall in no case place concrete until piping and conduits are in place in the forms and under floor slabs. He shall cooperate in every possible way with those handling other trades.

Electric conduits shall be run in concrete wherever possible and feasible, and all such conduits, junction boxes, etc., shall be placed before concrete is poured. Care shall be taken not to displace or damage plumbing outlets, etc., set in advance of concrete work.

All holes in concrete walls through which pipes are installed to plumbing fixtures, etc., shall be dry packed with mortar in a workmanlike manner, and corrosion resistant metal protective rings shall be placed at such points wherever exposed.

26. Painting

The following specifications shall cover complete painting of surfaces throughout the interior and exterior of the existing structure and the new addition.

No paint shall be applied to the following:

a. Concrete floor and walkway surfaces, top of concrete walls, and inside of parapet walls.

b. Redwood work

c. Galvanized miscellaneous items.

d. Aluminum windows and trim

e. Exterior concrete walls below ground level

f. Interior walls of sedimentation basin and future mixing basins

g. Interior surfaces of coke beds and waste channels

All surfaces shall be thoroughly clean and free of grease, dirt or foreign material before paint is applied.

Interior and exterior concrete and concrete block surfaces shall be painted with two coats of cementitious paint applied by brushing. Concrete paint shall comply with Federal Specifications TT-P-21, Type 1. Concrete surfaces shall be adequately wetted down in advance of painting and exterior paint shall not be applied in hot, dry weather. Paint shall be fresh and no leftover paint shall be remixed.

Metal surfaces shall be thoroughly cleaned of oil, grease, dirt, mill scale, rust, oxidation or other substances. Dirt, rust scale and loose rust shall be removed by scraping and wire brushing. On previously painted surfaces, deteriorated coatings shall be removed. Abraded portions of shop-coated metal surfaces and bare portions of previously painted surfaces shall be spot primed. Painting shall be applied with brushes.

Interior wood surfaces and trims shall be washed with mild alkaline solution such as trisodium phosphate and rinsed thoroughly. All loose, blistered or otherwise defective paint shall be removed and edges sanded smooth.

During painting of interior walls, ceilings, piping, etc., tarps or drop cloths shall be used to protect all equipment, piping, floors, etc. from spatter and spills.

Upon completion of the painter's work, all scaffolding and surplus material shall be removed, and paint spatter on floors and adjoining surfaces shall be thoroughly cleaned up. Acceptance will be made only when premises are clean throughout and ready for use.

All painting work shall be guaranteed to be free of any faulty workmanship or inferior materials for a period of two years following acceptance of the project work by the Engineer. Any defects which are discovered or observed during the guarantee period shall be corrected to the satisfaction of the Engineer and Owner at the expense of the contractor.

27. Painting Schedule

(a) Exterior concrete and concrete block walls
Two (2) coats, cement paint, Bondex or equal, color to be determined by Engineer.

(b) Interior concrete and concrete block walls and ceilings
Two (2) coats, cement paint, Bondex or equal, color to be determined by Engineer.

(c) Exposed Piping, Interior and Exterior
One (1) coat of Rust-Oleum 4703 Aluminum Sealer and one (1) coat of Rust-Oleum 500 Aluminum paint

(d) Exterior and Interior Metal Surfaces, not galvanized and not submerged
(Hand railings, steel windows, steel door, pumps and motors, louvers, etc.)
Two (2) coats Rust-Oleum Finish coating over primer

(e) Exterior metal surfaces, not galvanized, submerged
(Overflow trough, weir and supports)
On new work: One (1) coat Inertol No. 621 primer
Two (2) coats Inertol No. 49 thick
On existing work: One (1) coat Inertol No. 49 thick

(f) Interior wood surfaces
Two (2) coats of semi-gloss enamel, Fuller, Glidden, or equal

Minimum dry film thickness of Rust-Oleum shall be $1\frac{1}{4}$ mil.
Minimum dry time between successive coats shall be 24 hours or as recommended by the paint manufacturer.

28. Disinfection

Disinfection of the pipe lines and basins shall be done by the contractor in accordance with the requirements of the State Board of Health and the Water Superintendent shall cooperate with and assist in this operation with the contractor.

All water lines shall be tested to a pressure of at least one hundred fifty (150) pounds per square inch. All leaks shall be eliminated. The Engineer may at his discretion combine the function of pipe disinfection and pipe testing.

The Contractor shall thoroughly clean the entire plant and place in condition for the City to place the plant in service.

29. Water Tightness

It is intended the concrete walls, bottom slabs, construction joints and contraction joints, when complete, shall be thoroughly watertight without porous spots, voids or honeycomb sections which may permit leakage. Actual checking for leakage shall not take place until sufficient time has elapsed to allow for absorbtion of water by the concrete.

If any leakage occurs, the Contractor shall remedy the defects at his own expense in accordance with methods approved by the Engineer.

30. Safety Provisions

All safety requirements of the State Industrial Accident Commission shall be adhered to and the entire operation shall be conducted so as to minimize all hazards to workmen and others on the project.

31. Grading and Clean Up

The Contractor shall place the plant site in a neat and finished appearance, with earth graded so as to permit planting of lawn and shrubs. Form lumber and debris shall be removed, burned, or disposed of as directed by the Engineer. Piles of excess concrete material, construction roadways, and other surface evidence of construction work shall be regraded and settled areas shall be refilled. All cleanup work shall be to the satisfaction of the Engineer and the cost thereof shall be included and absorbed in other unit bid prices.

ELECTRICAL SPECIFICATIONS

1. General Requirements

Provide each item mentioned or indicated, of the quality or subject to the qualification noted; perform each operation prescribed; and provide all necessary labor, equipment and incidentals.

The general conditions specified governing the general contractural agreement shall also govern this work.

The Contractor shall view the site and ascertain existing conditions and note all factors affecting this work. All costs to provide the installation as shown on the drawings and specified herein shall be included in the initial proposal.

2. Permits, Codes and Inspections

a. Comply with all Electrical Code requirements of the State of Oregon and all applicable local regulations.

b. Obtain all permits, inspections, etc., required by Code. All fees shall be included in the contract price.

c. All materials and equipment shall be approved by the Underwriters' Laboratories, Inc., or by the local inspection authority.

3. General Methods and Requirements

a. Conduits shall be concealed in the new construction so far as is practicable. Exposed conduits shall be run parallel or at right angles to structural building lines. Exposed conduits shall be neatly offset into boxes and fittings. Conduits shall be supported and fastened nominally every six (6) feet along runs and within 18 inches of each outlet, fitting, ell or cabinet.

b. The entire installation shall be made in a neat, workmanlike, finished and safe manner. The work shall be under competent supervision at all times.

c. Provide protection where necessary to protect electrical installation from damage by other trades during construction.

d. Splices and taps for branch circuits made up mechanically secure and then soldered and taped. Scotchlok connectors installed in accord with manufacturer's instructions may be used in lieu of soldering. Single wire pigtails shall be left for connection of fixtures at lighting outlets and for devices.

e. Cutting, patching, removal of debris, etc., shall be as directed by the Engineer.

f. Guarantee the installation against defects in material and workmanship which may occur under normal usage, for a period of one year after acceptance. Such defects shall be promptly remedied without cost to the Owner.

4. Work Excluded

The following items will be provided under other divisions of the work. This work shall be conducted in a manner to cooperate with the other divisions of the work.

a. Motors, motor starters and controls

b. Portable electric heaters

5. Materials

a. Conduit
Rigid galvanized. All threads red lead coated before assembly. Support at nominally every six feet along runs using ring hangers and 3/8" rod or malleable galvanized straps attached with screw devices for exposed runs. Surface extensions in the existing building may be E.M.T. with factory pre-insulated fittings. E.M.T. fittings using set screws are not acceptable.

b. Boxes
Galvanized steel using 4" octagon for lighting outlets and 4" square for switch and receptacle outlets with appropriate device covers.

c. Tumbler Switches
Hubbell No. 1221, 20 A. 277 volt or equal

d. Duplex Receptacles
Bryant No. 5252, 2 wire, 3 pole or equal

e. Plates
Stainless steel for flush devices, raised galvanized steel equal to Appleton 8300 series for surface outlets

f. Lighting Panel
Circuit breaker type, 3 wire S.N., I.T.E. "Walker" EQP

g. Safety Switches
Enclosed type "ND" as shown with time lag, one time fuses

h. Dry Transformer
Class H insulated, with ratings shown. Mount on the wall above the new panel location. Provide secondary neutral grounding to cold water piping in accord with Code rules.

i. Wire
Copper, all type "RW" insulated. Minimum size No. 12.

j. Special purpose outlets as noted on the drawing.

6. Lighting Fixtures

a. Lighting fixtures complete with lamps shall be furnished and installed under this work. Fixtures shall be those specifically named or similar and equal units approved by the Engineer. Furnish all incidental devices, material and labor necessary for a proper complete installation. Fixtures shall be of proper diameter for the wattages shown.

b. Lamps, 120 volt, inside frosted, as made by Sylvania, G.E. or Westinghouse

c. Fixtures shall all be clean and in operation at the time of acceptance of the work

d. Fixture Types

"A" R.L.M. dome reflector with full rolled bottom rim, all white, slotted neck, stem mounted with aligner cover, equal to Benjamin, Smoot Holman or Abolite. Stem fixtures in existing building to clear the floor 8 feet and locate outlets to coordinate with and to clear piping and equipment.

"A-1" Matching type "A" except ceiling mounted

"B" Cast metal bracket with guard, less globe, Crouse Hinds type VHG

"C" Two lamp bracket, enclosed refactor with plug receptacle, Art Metal No. 3549 APC, keyless

"D" Weatherproof cast bracket, hinged assymmetrical refractor, Holophane No. 415

"F" Opal sphere, stemmed to clear stair landing 7' 8" on existing outlet, Prescolite No. 544.

BASIS OF PAYMENT

Payment for work under the contract shall be made as hereinafter set forth.

1. Excavation, Backfill and Grading, Common - per cubic yard

2. Class "6" Concrete - per cubic yard in place

3. Class "4" Concrete - per cubic yard in place

4. Reinforcing Steel - per pound in place

5. Structural Steel and Miscellaneous Iron Work - lump sum

6. Poured Expansion-Contraction Joints - per lineal foot in place

7. Premolded Asphalt Joint Filler - per square foot in place

8. Copper Flashing at Top of Wall - per lineal foot in place

9. Copper Construction Joints Between New Work and Existing Structure - per lineal foot in place

10. Aluminum Joint Cover - per lineal foot

11. Plant Piping - lump sum for all material and installation of water plant piping, fittings, valves, etc.

12. Drainage Piping - lump sum for all 12" and 8" cast iron pipe and fittings, etc., complete in the plant drainage system and the floor drainage in the building.

13. 12" Concrete Sewer Pipe - per lineal foot in place

14. 12" Concrete Sewer Wyes - per each in place

15, 18. Concrete Sewer 1/8 Bends - per each in place

16. Concrete Sewer Tees - per each in place

17. Concrete Sewer Plugs - per each in place

19. 15" Galvanized Corrugated Metal Pipe - per lineal foot in place

20. Coke Media - per cubic yard in place

21. Redwood Carpentry Work - lump sum complete in place

22. Windows, Louvers - lump sum complete in place

23. Roof Slab Coating - lump sum

24. Crushed Rock or Gravel - per cubic yard

25. Electrical Work - lump sum

26. Painting Steel & Iron Work - lump sum

27. Painting Exposed Piping and Fittings - lump sum

28. Painting Concrete & Interior Wood Surface - lump sum

PROPOSAL

Mayor and City Council

City of Newberg, Oregon

The undersigned bidder declares that he has examined the Plans and Specifications, has visited the site, and made such investigations as are necessary to determine the character of the work and the conditions to be encountered, and if this Proposal is accepted, he will contract with the City for the work described in these Specifications in a form of Contract hereto appended, will provide all necessary equipment, labor, materials, tools and apparatus required and as specified, and under the requirements of the Engineer, at the prices hereinafter written. The Bidder further understands that the estimated quantities are approximate only, and that quantities may be increased or decreased within reasonable limits without affecting bid prices.

The Bidder further agrees that the work shall be completed in all respects, after signing the Contract, within a period of 105 calendar days.

Should the Bidder fail to complete the work within the time limits as set forth above, liquidated damages in the amount of seventy-five ($75.00) per day shall be deducted from moneys otherwise due the Contractor.

Accompanying this Proposal is a ~~certified check, cashier's check~~ or bid bond drawn on Western Casualty & Surety of Fort Scott, Kansas in the amount of 5% of total amount of bid guaranteeing that the Bidder shall enter into a contract for the work if so awarded by the City.

Item	Unit Price	Estimated Quantity	Estimated Amount
1.	Excavation, Backfill & Grading, Common, the sum of Two and 10/100 Dollars ($ 2.10 per cu. yd.)	545	$ 1,144.50
2.	Class "6" Concrete in place, the sum of Sixty-one and no/100 Dollars ($ 61.00 per cu. yd.)	280	$ 17,080.00
3.	Class "4" Concrete in place, the sum of Eighteen and no/100 Dollars ($ 18.00 per cu. yd.)	2	$ 36.00
4.	Reinforcing Steel in place, the sum of No and 15/100 Dollars ($ 0.15 per lb.)	40,000	$ 6,000.00
5.	Structural Steel & Miscl. Iron Work, the lump sum of Three Thousand Nine Hundred Sixty-Four and no/100 Dollars ($3,964.00)	l.s.	$ 3,964.00
6.	Poured Expansion-Contraction Joints, the sum of No and 50/100 Dollars ($ 0.50 per lin. ft.)	365	$ 182.50
7.	Premolded Asphalt Joint Filler, the sum of No and 40/100 Dollars ($ 0.40 per sq.ft.)	300	$ 120.00
8.	Copper Flashing at top of wall, the sum of Six and no/100 Dollars ($ 6.00 per lin.ft.)	35	$ 210.00

Item	Unit Price	Estimated Quantity	Estimated Amount
9.	Copper Construction Joints Between New Work and Existing Structure, the sum of Four and 74/100 Dollars ($ 4.74 per lin.ft.	60	$ 284.40
10.	Aluminum Angle Joint Cover, Complete in place, the sum of One and 70/100 Dollars ($ 1.70 per lin. ft.	70	$ 119.00
11.	Plant Piping - Furnish & Install piping, fittings, couplings, valves, bolts, gaskets, nozzles, extension stems, stem guides, floor stands, pipe supports & hangers, etc., the lump sum of Twenty-Seven Thousand Three Hundred and Five and no/100 Dollars ($ 27,305.00)	l.s.	$ 27,305.00
12.	Drainage Piping - Furnish & Install cast iron pipe & fittings, mud valves and extension stems, floor drains, backwater valves and 2" G.I. piping in the drainage system, the lump sum of Two Thousand Five Hundred Seventy-Seven and no/100 Dollars ($ 2,577.00)	l.s.	$ 2,577.00
13.	12" Concrete Sewer Pipe, Furnish & Install the sum of Five and 39/100 Dollars ($ 5.39 per lin.ft.	160	$ 862.40

Item	Unit Price	Estimated Quantity	Estimated Amount
14.	12" Concrete Sewer Wyes, Furnish & Install, the sum of Twenty-Three and no/100 Dollars ($ 23.00 each)	5	$ 115.00
15.	12" Concrete Sewer 1/8 Bends, Furnish & Install, the sum of Thirteen and no/100 Dollars ($ 13.00 each)	2	$ 26.00
16.	12"x4" Concrete Sewer Tees, Furnish & Install, the sum of Twenty-Four and no/100 Dollars ($ 24.00 each)	1	$ 24.00
17.	12" Concrete Sewer Plugs, Furnish & Install, the sum of Five & no/100 Dollars ($ 5.00 each)	4	$ 20.00
18.	4" Concrete Sewer 1/8 Bends, Furnish & Install, the sum of Six and no/100 Dollars ($ 6.00 each)	1	$ 6.00
19.	15" Galvanized Corrugated Metal Pipe, Furnish & Install, the sum of Four and 30/100 Dollars ($ 4.30 per lin.ft.)	20	$ 86.00
20.	Coke Media in place, the sum of Twenty-Six and 80/100 Dollars ($ 26.80 per cu. yd.)	105	$ 2,814.00

Item	Unit Price	Estimated Quantity	Estimated Amount
21.	Redwood Carpentry Work, the lump sum of Two Thousand Six Hundred Ninety-Seven and no/100 Dollars ($2,697.00)	l.s.	$ 2,697.00
22.	Windows, Louvers - Furnish and Install complete with hardware, the lump sum of Six Hundred Thirty-three and no/100 Dollars ($ 633.00)	l.s.	$ 633.00
23.	Roof Slab Coating, the lump sum of Forty-Nine and no/100 Dollars ($ 49.00)	l.s.	$ 49.00
24.	Crushed Rock or Gravel, the sum of Five and no/100 Dollars ($ 5.00) per cu. yd.	10	$ 50.00
25.	Electrical Work, the lump sum of One Thousand Five Hundred Ninety-One and no/100 Dollars ($ 1,591.00)	l.s.	$ 1,591.00
26.	Painting Steel & Iron Work, the lump sum of One Thousand Three Hundred Three and no/100 Dollars ($ 1,303.00)	l.s.	$ 1,303.00
27.	Painting Exposed Piping & Fittings, the lump sum of One Thousand Seven Hundred Fifty-Four and no/100 Dollars ($ 1,754.00)	l.s.	$ 1,754.00

Item	Unit Price	Estimated Quantity	Estimated Amount
28.	Painting Concrete & Interior Wood Surfaces, the lump sum of Two Thousand Four Hundred Forty-Two and no/100 Dollars ($ 2,442.00)	l.s.	$ 2,442.00

TOTAL BID PRICE	$ 73,494.80

If this Proposal shall be accepted by the Owner, and the undersigned shall fail to execute a satisfactory contract and bond, as stated in the Instructions to Bidders hereto attached, within ten (10) days (Sundays excepted) from the date of notification, then the Owner may at its option determine that the undersigned has abandoned the contract and thereupon this proposal shall be null and void, and the cashier's or certified check accompanying this Proposal shall be forfeited to and become the property of the Owner, otherwise, the check accompanying this Proposal shall be returned to the undersigned.

The full name and residence of all persons and parties interested in the foregoing bid as principals are as follows:

Name	Address
Malcolm A. Blanchard	2546 S. W. Vista Avenue, Portland, Oreg.

The name and business address of the Surety Company which will furnish the required bond insuring the construction is:

Western Casualty and Insurance Co.

The undersigned bidder has heretofore completed the following pieces of work of a similar nature to that contemplated:

Job	Location	Date
Filter Plant	Beaver Acres School	1955

Name of Bidder Blanchard Construction Company ( ) Corporation
( ) Partnership
Address of Bidder 2546 S. W. Vista Ave., Portland, Oreg. (x) Individual

Signature of Authorized Agent Malcolm A. Blanchard Title Owner

Date June 5, , 1961.

AGREEMENT

FOR CONSTRUCTION OF ADDITION TO WATER TREATMENT PLANT

CITY OF NEWBERG, OREGON

The City of Newberg, Oregon, herein called "Owner" and Blanchard Construction Company, herein called "Contractor", agree as follows:

1. Commencement and Completion of Work

The Contractor shall commence work in the field within ten (10) calendar days after signing of Contract and shall complete the work on or before the following date:

October 9, 1961

2. Performance of Work

The Contractor shall furnish all labor, material, equipment and instrumentalities to perform all the work necessary or incidentally required for full compliance with the Specifications and Contract documents issued to the Contractor and included with his proposal for the improvements shown in detail on the following plans:

Title	Drawing No.
Vicinity Map & Plot Plan	11-A-30
Elevations	11-A-31
Foundation Plan & Details	11-A-32
Plan at Elevation 96	11-A-33
Plan of Coke Beds & Sedimendation Basin	11-A-34
Aeration Piping & Louver Details	11-A-35
Sections & Operating Room Floor Plan	11-A-36
Sections & Inlet Channel Details	11-A-37
Coke Bed Structural Details	11-A-38
Overflow Trough & Expansion Joint Details	11-A-39
Window & Miscellaneous Details	11-A-40
Coke Bed Piping & Construction Joint Details	11-A-41
Electrical	11-A-42

The Plans, Instructions To Bidders, Special and General Conditions, all specifications, Basis of Payment and the Contractor's Proposal, dated June 5, 1961, are hereby made a part of this Agreement as though set forth herein. If such documents and this Agreement are in any respect in conflict or inconsistent, the provisions of this Agreement shall control.

3. Bond and Insurance

(a) The Contractor shall furnish a 100% contract public works performance bond in a form satisfactory to the Owner.

(b) The Contractor agrees to obtain and continuously maintain, until completion of all the above work, such insurance as the Owner considers necessary for the proper protection of the parties hereto and in form approved by the Owner.

(c) Contractor shall require, before commencing work, all insurance companies issuing any policies of insurance to Contractor which the Contractor is required to procure hereunder, to certify to the Owner in writing that such policies have been issued and are in force and will not be cancelled or annulled except upon ten (10) days notice in writing to Owner. Contractor shall not cancel any policies of insurance required hereunder either before after completion of the work, without the consent of the Owner in writing.

4. Indemnity

The Contractor shall indemnify Owner against all claims, costs, expenses, losses and liabilities of every kind, including attorney fees, arising out of or in any manner connected directly or indirectly with the activities of the Contractor under this Agreement, including claims for infringement of any patent rights or damages by reason of the construction.

5. Compliance with Applicable Laws

The Contractor shall comply with all applicable federal, state and local laws and regulations.

6. Payment for Labor

The Contractor shall promptly make all payments to all persons supplying the Contractor with labor, materials and supplies, for the prosecution of the work or in connection therewith. Any such payment not made by the Contractor when due may be made by Owner and such payments deducted from any moneys due Contractor under this Agreement.

7. Assignment

The Contractor shall not assign or sublet this contract, or any part thereof, without the prior written consent of Owner.

8. Completion of Work

If the Contractor shall fail to commence the work within the specified time, or to prosecute said work continuously with sufficient workmen and equipment to insure its completion within the time herein specified for completion, or to perform said work according to the provisions of this Agreement, or if for any other cause or reason whatsoever Contractor shall fail to carry on the said work in a manner acceptable to Owner or its Engineers, Owner may elect to give notice in writing of such default, specifying the same, and if the Contractor within a period of 72 hours after such notice, shall not proceed in accordance therewith, then Owner shall have full power and authority without process of law and without violating this Agreement, to take the prosecu-

tion of the work out of the hands of the Contractor and complete it with its own forces, or contract with other parties for its completion, or use such other measures as in Owner's opinion are necessary for its completion, including the use of the equipment and other property of the Contractor on the job site.

Neither by the taking over of the work nor by its completion in accordance with the terms of this provision shall Owner forfeit its right to recover damages from the Contractor or from Contractor's surety for failure to complete or for delay in such completion. Should the expense incurred by Owner in taking over and completing the work be less than the sum that would have become payable under this Agreement if said work had been completed by the Contractor, then the Contractor shall be entitled to the difference, and should such expense exceed the said sum then the Contractor and Contractor's surety shall be liable to Owner for the amount of such excess. Upon the taking over of the work by Owner as herein provided, no further payment will be made to the Contractor until the work is completed, and any moneys due or that may become due the Contractor under this Agreement will be withheld and may be applied by Owner to payments for labor, materials, supplies and equipment used in the prosecution of the work, and for the payment of rental charges on equipment used therein, or to the payment of any excess cost to Owner of completing said work.

9. Payments

(a) Contractor shall be paid monthly, based on the prices set forth in Contractor's Proposal dated June 5, 1961 and the Basis of Payment, less 10% retention. All payments shall be based upon the estimate made by Owner's Engineers as to the amount of work done by the Contractor, which estimates shall be final and binding upon the parties hereto and shall conclusively establish the amount of work done by the Contractor. The Contractor will receive no compensation for any work done by him which is not approved and accepted by Owner's Engineers.

(b) Final payment shall be made when all work is approved in writing by the Engineers, accepted by Owner, and evidence presented by the Contractor that he has paid all bills and claims, withholding taxes, contributions to both state and federal governments for payroll withholding, workmen's compensation, F.I.C.A., income taxes and any other payments required by law, and a general release furnished to Owner by the Contractor.

10. Completion and Delays

(a) The Contractor shall complete all work herein required by the following date:

OCTOBER 9, 1961

(b) No extensions of time shall be allowed or claimed by Contractor for any cause whatever unless Contractor shall have made a written request upon Owner for such extension within 48 hours after the cause

of such extension occurred and unless Contractor and Owner shall have agreed in writing that such allowance will be made.

(c) The Contractor shall comply with the instructions given by the Owner including any instruction requiring him to delay herein, and the Contractor will not be entitled to any extra compensation or damages because of any such suspension or delay not specifically allowed and paid for by Owner.

(d) Time is of the essence of this Agreement and Contractor agrees to perform said work within the time and in the manner specified, or within the time of such extensions as may be granted and Contractor shall be liable, in the event of failure to complete the work within the time limits set forth herein, for liquidated damages at the rate of seventy-five dollars ($75.00) per calendar day

IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed.

CITY OF NEWBERG, OREGON

By Roy M. Curtis
Roy M. Curtis, Mayor

Attest:

Myrland C. Gilbert, City Recorder

Approved as to Form:

Herbert Swift, City Attorney

BLANCHARD CONSTRUCTION CO.
CONTRACTOR

By Malcolm A. Blanchard

Title: Owner

Dated this 26 day of JUNE, 1961.

THE WESTERN CASUALTY AND SURETY COMPANY

FORT SCOTT, KANSAS

KNOW ALL MEN BY THESE PRESENTS, THAT WE, MALCOLM A. BLANCHARD, an individual dba

BLANCHARD CONSTRUCTION COMPANY, of 2546 S. W. Vista Avenue, Portland, Oregon (hereinafter called the Principal), as Principal, and THE WESTERN CASUALTY AND SURETY COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Kansas, and duly authorized to transact a surety business in the State of Oregon (hereinafter called the Surety) as Surety, are held and firmly bound unto

CITY OF NEWBERG, Oregon

(hereinafter called the Obligee) in the sum of Seventy-three Thousand Four Hundred Ninety-four and 80/100 ($73,494.80) Dollars lawful money of the United States of America to be paid to said Obligee, we do bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas on the 26 day of June, 1961, the Principal entered into a contract with the Obligee described as follows:

CONSTRUCTION OF ADDITION TO WELL WATER TREATMENT PLANT

NOW, THEREFORE, if the Principal herein shall faithfully and truly observe and comply with the terms of the contract and shall well and truly perform all matters and things undertaken to be performed under said contract upon the terms proposed therein and shall promptly make payments to all persons supplying labor or material for any prosecution of the work proveded for in such contract and shall not permit any lien or claim to be filed or prosecution against the Owner on account of any labor or material furnished, and shall promptly pay all contributions or amounts due the State Accident Industrial Fund and all contributions or amounts due the State Unemployment Compensation Trust Fund incurred in the performance of said contract and shall promptly, as due, make payment to the person, copartnership, association or corporation entitled thereto of the moneys and sums mentioned in Section 279.320 of the Oregon Revised Statutes, then this obligation is to be void, otherwise to remain in full force and effect.

The total amount of the Surety's liability under this bond both to the Obligee and to the persons furnishing labor or materials, provisions and goods and to any other person or persons, shall in no event exceed the penalty hereof.

Provided however, that the conditions of this obligation shall not apply to any money loaned or advanced to the principal or to any subcontractor or other person in the performance of any such work, whether specifically provided for in the contract or not.

This bond is executed for the purpose of complying with Chapter 279 of Title 26, Oregon Revised Statutes, the provisions of which are hereby incorporated herein and made a part hereof.

IN WITNESSWHEREOF, The above-bounded parties have executed this instrument this 12th day of June, 1961.

BLANCHARD CONSTRUCTION COMPANY

BY: Malcolm A. Blanchard

Malcolm A. Blanchard Principal
Owner

Countersigned:
VICTOR S. RISLEY CO.

BY: Victor S. Risley

Oregon Resident Agent

THE WESTERN CASUALTY AND SURETY COMPANY Surety
223 Board of Trade Building
Portland, Oregon

BY: Victor S. Risley

Victor S. Risley Attorney-in-Fact

OREGON AUTOMOBILE INSURANCE CO.

CERTIFICATE OF INSURANCE

Certificate issued to: CITY OF NEWBERG
NEWBERG, OREGON

Address:

This is to certify that the following policy, subject to its terms, conditions and exclusions, has been issued by the company indicated below.

Name of Insured: BLANCHARD CONSTRUCTION COMPANY

Address: 2546 S. W. Vista Ave., Portland, Oregon

INSURANCE IN FORCE

TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE	EXPIRATION DATE	LIMITS OF LIABILITY
MANUFACTURERS' AND CONTRACTORS' OR OWNERS, LANDLORDS AND TENANTS (Bodily Injury)				EACH PERSON
				EACH ACCIDENT
MANUFACTURERS' AND CONTRACTORS' OR OWNERS, LANDLORDS AND TENANTS (Property Damage)				EACH ACCIDENT
				AGGREGATE
OWNERS' AND CONTRACTORS' PROTECTIVE (Bodily Injury)				EACH PERSON
				EACH ACCIDENT
OWNERS' AND CONTRACTORS' PROTECTIVE (Property Damage)				EACH ACCIDENT
				AGGREGATE
COMPREHENSIVE GENERAL (Bodily Injury)	CL 32771	6-22-60	6-22-61	200,000 EACH PERSON
				300,000 EACH ACCIDENT
				300,000 AGGREGATE PRODUCTS
COMPREHENSIVE GENERAL (Property Damage)	CL 32771	6-22-60	6-22-61	100,000 EACH ACCIDENT
				100,000 AGGREGATE OPERATIONS
				100,000 AGGREGATE PROTECTIVE
				100,000 AGGREGATE PRODUCTS
				100,000 AGGREGATE CONTRACTUAL
AUTOMOBILE (Bodily Injury)	CL 32771	6-22-60	6-22-61	200,000 EACH PERSON
				300,000 EACH ACCIDENT
AUTOMOBILE (Property Damage)	CL 32771	6-22-60	6-22-61	100,000 EACH ACCIDENT
AUTOMOBILE (Fire, Theft, Comprehensive Collision)				
INLAND MARINE				

SUBJECT OF INSURANCE

As respects all activities and operations of the Named Insured in the completion of contract by and between Blanchard Construction Company and City of Newberg for "WATER WORKS IMPROVEMENTS".

No Cancelation Notice Required ☐ Cancelation Notice Required ☒

If it is indicated above, as "Required" the Company will give ten (10) days advance notice by mail to the party to whom this certificate is issued at the address stated above. The mailing of such notice shall be sufficient proof of notice.

OREGON AUTOMOBILE INSURANCE CO.

VICTOR S. RISLEY CO.

Date 6-14-61

BY: Victor S. Risley
Authorized Representative

951—Revised 6-56

OREGON AUTOMOBILE INSURANCE CO.

CERTIFICATE OF INSURANCE

Certificate issued to: CITY OF NEWBERG
NEWBERG, OREGON
Address:

This is to certify that the following policy, subject to its terms, conditions and exclusions, has been issued by the company indicated below.

Name of Insured: BLANCHARD CONSTRUCTION COMPANY

Address: 2546 S. W. Vista Ave., Portland, Oregon

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					EACH ACCIDENT
MANUFACTURERS' AND CONTRACTORS' OR OWNERS, LANDLORDS AND TENANTS (Property Damage)					EACH ACCIDENT
					AGGREGATE
OWNERS' AND CONTRACTORS' PROTECTIVE (Bodily Injury)					EACH PERSON
					EACH ACCIDENT
OWNERS' AND CONTRACTORS' PROTECTIVE (Property Damage)					EACH ACCIDENT
					AGGREGATE
COMPREHENSIVE GENERAL (Bodily Injury)	CL 32771	6-22-60	6-22-61	200,000	EACH PERSON
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				300,000	AGGREGATE PRODUCTS
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				100,000	AGGREGATE OPERATIONS
				100,000	AGGREGATE PROTECTIVE
				100,000	AGGREGATE PRODUCTS
				100,000	AGGREGATE CONTRACTUAL
AUTOMOBILE (Bodily Injury)	CL 32771	6-22-60	6-22-61	200,000	EACH PERSON
				300,000	EACH ACCIDENT
AUTOMOBILE (Property Damage)	CL 32771	6-22-60	6-22-61	100,000	EACH ACCIDENT
AUTOMOBILE (Fire, Theft, Comprehensive Collision)					
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VICTOR S. RISLEY CO.

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Authorized Representative

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