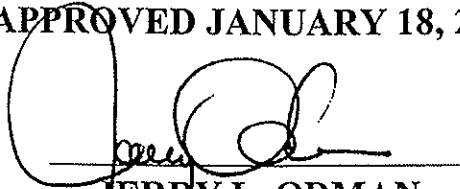


STANDARD SPECIFICATIONS
FOR THE
CITY OF PENDLETON, OREGON



JANUARY 2001
(Minor revision to details November 2006)

**CITY OF PENDLETON
STANDARD SPECIFICATIONS
APPROVED JANUARY 18, 2001**

A handwritten signature in black ink, appearing to read "Jerry L. ODMAN", is written over a horizontal line. The signature is stylized and cursive.

**JERRY L. ODMAN
PUBLIC WORKS DIRECTOR**

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1:01 Intent of Plans and Specifications. It is the intention of these specifications to provide for a careful, thorough workmanship construction procedure in the installation of materials and equipment and in the manufacture and delivery of such materials and equipment. The bidder to whom the Contract is awarded shall furnish all the material, equipment and labor necessary to complete said contract in accordance with all its terms and conditions.

The plans, any special specification and standard specifications shall be considered and used together; anything appearing as a requirement of either shall be accepted as applicable to both even though not so stated therein or shown. The Public Works Director (PWD) may furnish plans and special specifications to define more clearly any requirements of the original documents; these shall be accepted by the contractor as of the same force and effect as though they had been included among the listed drawings and in case of any conflict between the listed and the supplemental drawings, the latter shall govern. All materials, equipment and work which are necessary for a complete and approved project as defined by the plans, special specifications and the standard specifications are identified as separate pay items on the proposal. All materials, equipment and work which is necessary for a complete and approved project, which is not identified as a separate pay item on the proposal, shall not be measured for payment separately but shall be considered as a subsidiary obligation of the Contractor.

All specifications and notes appearing on the plans shall have the same force and effect as though they were repeated herein.

1:02 Interpretation of Document. If a prospective bidder is in doubt as to the true meaning of any part of the plans, specifications, or other proposed contract documents, he may submit to the PWD a written request for an interpretation thereof, either by certified mail or personal delivery. An interpretation will be made only by addendum duly issued by the PWD within five (5) working days of receipt of request and a copy thereof will be mailed or otherwise delivered to each prospective bidder. The City will not be responsible for any other form of explanation or interpretation.

1:03 Examination of Contract Document or Site of Work. Before making a proposal, the bidder shall examine the site of the work and ascertain for himself all the physical conditions in relation thereto. Failure to take this precaution shall not release him from his obligation as implied by the proposal he submits nor excuse him from performing the work in strict accordance with the requirements of the Contract Documents.

No statement made by an officer, agent, or employee of the City pertaining to the Contract Documents, the site of the work or the conditions under which the work must be performed will be binding on the City.

The Contract Document is the final binding agreement between the parties and replaces any oral agreement that may have been entered into previously, and that it may only be changed by further written agreement signed by each of the parties.

1:04 Preparation of Proposal. Bids must be submitted by filling in with ink (or typing) each and every blank provided for such purpose in the form headed "Proposal", or if the bidder is required to provide a special form appropriate to the nature of his bid, then such form shall be complete in all respects as required by the specifications if it is to merit consideration by the City. Where indicated all blank spaces shall be filled in with words and figures. Written amounts shall take precedence where there is a conflict between the written amount and the figure.

If the proposal is made by a partnership, it shall contain the name of each partner and should be signed in the firm name, followed by the signature of a partner or that of a person duly authorized to act for and on behalf of such partnership. If made by a corporation, the proposal should be signed with the name of the corporation and the State in which incorporated, followed by the written signature of the qualified officer and the designation of the office he holds in the corporation. The address of the person, firm or corporation in whose behalf the proposal is submitted shall be given. The bidder shall comply with all other specific requirements of the proposal form.

1:05 Alteration of Documents Prohibited. Except as provided otherwise herein, proposals which are incomplete or conditioned in any way which the plans or specifications do not authorize, contain unverified erasures or alterations, include items which are not named in the proposal form or which is unlawful, may be rejected as informal at the sole discretion of the City of Pendleton.

1:06 Bid Security. Proposals must be accompanied by a certified check drawn on an Oregon Bank in good standing, or banks doing business in Oregon in good standing, or a Bid Bond issued by a surety company authorized to issue such bonds in the State of Oregon, in an amount not less than five percent (5%) of the total amount of the Proposal submitted. This check or Bid Bond shall be given as guarantee that if awarded the Contract, the successful Bidder will execute the attached Contract within the time specified.

The City reserves the right to retain the bid security of the three (3) lowest bidders until the successful Bidder has signed and delivered the Contract and furnished a one hundred percent (100%) Performance Bond. Upon failure of the successful Bidder to sign and deliver said Contract and Performance Bond within the specified time, the next lowest bid may be accepted at the Owner's discretion, whereupon the above instructions and requirements will apply to the said second bidder.

Bid security of all bidders, except the three lowest, will be returned promptly after the canvass of bids; bid security of the three lowest bidders will be returned within ten (10) days after the Contract has been executed or other disposition made thereof in accordance with the provisions stated herein.

1:07 Prequalification of Bidders for City of Pendleton Public Works Projects. Bidders for City of Pendleton public works projects in Oregon may be prequalified in conformance with Oregon Law. If the prospective bidder is prequalified with the Oregon Department of Transportation or with the Oregon Department of General Services to perform contracts for a particular kind of work, the bidder may submit proof of such prequalification along with a copy of their prequalification application form. The prequalification form or proof of prequalification with State agencies must be completed by the prospective Bidder and submitted to the City prior to the bid opening date.

The State of Oregon Public Contract Review Board form for Contractor's Prequalification shall be filled out by the prospective Bidder and mailed to the office designated in the Advertisement for Bids.

Bidder's who's prequalification have not expired with the City need not resubmit prequalification forms.

1:08 Submission of Proposal. Each proposal shall be completely sealed in a package addressed as required by the official advertisement, marked with the name of the Bidder and the title of the project; it must be delivered to the addressee at or before the time named in said advertisement.

1:09 Modification of Proposal. Change in a proposal already delivered will be permitted only if a request for the privilege of making such modification is made in writing signed by the Bidder and the specific modification itself is stated prior to the scheduled closing time for the receipt of proposals. To be effective, every modification must be made in writing over the signature of the Bidder; no other form of procedure will be acceptable.

1:10 Withdrawal of Proposal. A proposal may be withdrawn at any time prior to scheduled closing time for filing bids. This may be done by the Bidder in person or upon his telegraphic or written request. If withdrawal is made personally, a written acknowledgment thereof will be required.

After the scheduled closing time for filing bids, no Bidder will be permitted to withdraw his proposal unless no award of contract has been made prior to the expiration of thirty (30) days immediately following the time when bids are submitted. Bids received after the scheduled closing time will be rejected without consideration.

1:11 Opening Bids. All proposals received prior to the scheduled closing time and which are not withdrawn as above provided, will be publicly opened and read aloud even though there may be irregularities or informalities therein, except that any proposal which is not signed will not be read, and consequently, will be rejected without consideration.

1:12 Award of Contract. Within thirty (30) calendar days after the opening of the proposals the City will accept one of the proposals, or accept different schedules of several of the proposals, or accept different schedules of several of the proposals, or reject any or all bids.

1:13 Basis of Award. The award will be made upon the basis of that proposal which in the City's sole judgment will serve the best interests of the City. If an early completion date is desired, the City may give such value as may be deemed appropriate to the Contractor's "Construction Time" after all other features of the Bidder's proposal have been considered.

1:14 Execution of Contract. The successful Bidder shall, within ten (10) days after receiving the award, execute the Contract hereto with the City of Pendleton, Oregon.

1:15 Performance Bond. The successful Bidder shall file with the City at the time of execution of the Contract, the Performance Bond that is enclosed in the Contract Document in the full amount of the Contract price, which bond shall be in force for one year after the date of the final acceptance of the work to cover all guarantees against defective workmanship and materials.

1:16 Failure to Execute Contract and Furnish Bond. Should the successful Bidder fail or refuse to execute the Contract and furnish the Performance Bond, the bid security deposited by said Bidder shall be retained as liquidated damages by the City and it is agreed that this said sum is the amount of damages the City will sustain in case the bidder fails to enter into a Contract and furnish bond as hereinbefore provided. Bid security deposited in the form of a certified check shall be subject to the same requirement as a Bid Bond.

1:17 Notice to Proceed. Written Notice to Proceed will be given by City after the Contract has been executed and the performance bond and all required insurances have been filed with and approved by the City. Contractor shall not commence work under the Contract until such written notice has been given.

Notice to Proceed for street projects may be delayed by City until required utility relocation, construction, or reconstruction has been completed or has progressed to a satisfactory degree of conformance which will allow initial contract work to commence.

The Contractor shall commence work within ten days after the date of the Notice to Proceed, or such other date as may be fixed by the Notice to Proceed, which date shall establish the date for commencement of the Contract time. The Contractor shall notify PWD forty-eight (48) hours in advance of the time and place work will be started.

1:18 Verbal Agreement. No verbal agreement or conversation with any officer, agent or employee of the City, either before or after execution of the Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract. Any such verbal agreement or conversation shall be considered as unofficial information and not binding to the City.

1:19 Amount of Work To Be Done. The estimate of quantities of work to be done under unit price bids is approximate and is given only as a basis of calculation for comparison of bids and award of the Contract. The City does not by implication agree that the actual amount of work will correspond precisely to the amount as shown or estimated. Payment will be made at unit prices under a Contract, only for work actually performed or materials actually furnished according to actual measurement.

1:20 Right to Reject Bids. The City reserves the right to reject any or all bids. The City also reserves the right to reject one schedule and accept the other schedule(s) of the proposal as the City determines is in its best interests.

1:21 Wage Rates on Public Works. The Contractor shall comply with all State or Federal requirements of Wage Rates on Public Works.

2:01 Definitions.

2:01-A Contract Documents. The "Contract Documents" consists of the following: Advertisement for Bids, Proposal, Contract for Construction, Performance Bond, Certificate of Insurance, any Notice to Prospective Bidders and any Special Specification, if applicable from the bidding document, the Information to Bidders, General Conditions, General Specifications, Standard Drawings from the Standard Specifications for City of Pendleton, the Plans, Addendum and Change Orders that occur during the execution of the Contract.

2:01-B City. Wherever the word "City" occurs in these Contract Documents, the terms shall signify the City of Pendleton, an Oregon municipal corporation, Umatilla County, Oregon, acting through its duly authorized agents.

2:01-C Consultant. Wherever the word "Consultant" occurs in these Contract Documents, it shall signify a legal entity including: an individual, partnership, company or corporation that is licensed to practice in the State of Oregon. The Consultant shall be the agent for the party or parties contracting to have public improvements constructed or other work under the jurisdiction of the City of Pendleton or others.

2:01-D Contractor. Wherever the word "Contractor" occurs in these Contract Documents, the term shall signify the party or parties contracting with the City on public improvement or other work under the jurisdiction of the City of Pendleton to perform the work.

2:01-E Engineer. Wherever the word "Engineer" occurs in these Contract Documents, the term shall signify the Public Works Director (PWD) or his representative acting in and for the City of Pendleton, Oregon.

2:01-F Written Notice. Wherever the term "Written Notice" occurs in these Contract Documents, it shall signify a written communication delivered in person to the legal entity including; individual, or to a member of the firm, or to an officer of the corporation for whom it is intended, or if delivered or sent by certified mail, to the last known business address.

2:01-G Work. Wherever the word "Work" occurs in these Contract Documents, it shall signify all material, labor, personal service, tools, and all appliances, machinery and appurtenances necessary to perform and to complete the project as specified in the Contract Documents or as shown on the Plans in a workmanlike manner and such additional items of labor, material, and equipment not specifically indicated or described which is reasonably required in the performance of the various items of work and/or the project.

2:01-H Bidder. Wherever the word "Bidder" occurs in these Contract Documents, the word shall signify any legal entity including; person, firm, partnership or corporation submitting Proposals on this project.

2:01-I Acceptance of Work. All work required by the Contract Documents will be considered "Accepted" upon written approval of the Certificate of Acceptance by the City, pursuant to 2.06-G.

2:01-J Substantial Completion. "Substantial Completion" shall be that degree of completion of the project or a defined portion of the project, sufficient to provide the City, at the City's discretion, the full-time use of the project or a defined portion of the project for the purpose for which it was intended.

2:01-K Major Item. A major item in the proposal document shall be any bid item that exceeds five percent (5%) of the total contract amount.

2:02 Specifications and Plans.

2:02-A Specifications, Plans and Drawings. The Contractor shall keep one copy of the Contract Documents on the work site, at all times.

The Public Works Director or Consultant will furnish to the Contractor, free of charge, two (2) copies of the Contract Documents and three (3) sets of Plans. Additional copies of Contract Documents or Plans may be obtained on request by paying the City's established cost of reproducing the Contract Documents and/or Plans.

2:02-B Inconsistencies and Omissions. The Contract Documents are intended to be complimentary, and what is called for by any one shall be as binding as if called for by all. The intent of the documents is to include all labor, personal service and material, all equipment, machinery, and transportation necessary for the proper execution of the work. Materials of work described in words, which so applied, have a well known technical and trade meaning shall be held to refer to such recognized standards. Should any discrepancies occur or any misunderstanding arise as to the interpretation in the Contract Documents, the decision of the Public Works Director shall be final and binding on the Contract, and all directives and decisions required to complete any of the provisions of the Contract Documents will be issued by the Public Works Director. Should a conflict exist between the Contract Specifications and Drawings, the drawings shall prevail.

2:02-C Alterations. The City without invalidating the Contract may order extra work or make changes by altering, adding to, or deducting from the work. All such work shall be executed under the conditions of the original Contract, except that claim for extension of time and payment for extra work caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Public Works Director shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, except in emergency endangering life or property, extra work or deductions from the work shall be performed only in pursuance of a written order from the Public Works Director. When the City authorizes a deduction, extra work, or change, no claim for additional payment shall be valid unless so ordered.

If any such changes, deductions, or alterations should diminish the quantity of work to be done, they shall not constitute a claim for damages for anticipated profits on that portion or portions of work deducted. However, should changes in major items be in excess of twenty-five percent (25%) of the bid price for that class of work given in the proposal, the bid price may be renegotiated within 10 days of notice of said change, at the option of either party.

2:02-D Verification of Data. It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the character, quality, and quantity of the materials required, the character of equipment and facilities needed to accomplish the work, the general and local conditions, all other matters which can in any way affect the work under this contract, and he has made careful examination of the affect of the work under the Contract Documents. No verbal agreement or conversation with any officer, agent, or employee of the City, excepting PWD in person, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations within contained.

2:03 The Public Works Director (PWD).

2:03-A Authority of the PWD. The PWD shall have complete supervision and direction of all work performed under the Contract. He has authority to stop the work whenever such stoppage may be necessary in his opinion to insure the proper execution of the Contract. The PWD shall have authority to: reject work and materials which do not conform to the Contract, direct the application of forces to any portion of the work if in his judgment it is required, order the force increased or diminished, and decide all questions which may arise in the execution and performance of the work. The PWD shall, within two days (Holidays, as defined by the most recent City resolution establishing policies and procedures with reference to the classification and compensation of position, the hours of work, attendance, and leave regulations, and other matters within the City of Pendleton, Oregon, Saturdays and Sundays excluded) time after their presentation to him, render a decision, in writing, on all written claims of the Contractor, the Written and/or verbal decision of the PWD on these and other matters relating to the execution and progress of the work, the interpretation of the Contract Documents, or estimates shall be final, conclusive and binding.

The Contractor shall have available his duly authorized representative on the Construction project at all times and the representative shall be authorized to receive order or directions from the PWD. As defined in Section 2.02-C, herein.

2:03-B The PWD's Representatives. The PWD shall have authorized inspectors or assistants acting in and for the City and they shall have the power to issue instructions and make decisions within the limitations of the authority of the PWD. The authority of such inspectors and assistants shall be limited to the particular portion or phase of the work to which they are assigned and by the particular duties assigned to them.

2:03-C Responsibility and Inspection. The PWD will station such inspectors as in his judgment are necessary to determine that the provisions of the Contract Documents are being properly fulfilled. The PWD shall have full access at all times to all parts of the work. In the absence of inspection, it is the responsibility of the Contractor to fulfill the obligations under this Contract, to furnish good and acceptable materials, and to perform all work in a craftsmanlike manner. The inspection of the work done shall not relieve the Contractor of his obligations to furnish proper materials and perform sound and reliable work.

2:03-D Rejected Material. Any material condemned or rejected because of nonconformity with these Contract Documents shall be removed at once from the work by the Contractor at his own expense, and these materials shall not be used on the Contract. Only work of the highest and best quality will be accepted by the City for payment.

2:03-E Unnoticed Defects. Any defective work or material that may be discovered by the PWD or consultant before the final acceptance of work, or before final payment has been made, shall be removed and replaced by work and materials which shall conform with the intent and spirit of the Contract Documents. Failure to condemn or reject poor or inferior work or material shall not be construed to imply acceptance of such work or materials. All defects, poor and substandard work shall be removed at the Contractor's cost and expense.

2:03-F Right to Retain Imperfect Work. If any part or portion of the work done or material furnished under this Contract shall prove defective and not in accordance with the Plans and Specifications, and if the imperfection in the same shall not be of sufficient magnitude or importance as to make the work dangerous or undesirable, or if the removal of such work will create conditions which are dangerous or undesirable, the City shall have the right and authority to retain such work but may make such deductions in the payment therefore as determined by the PWD. Any dispute concerning deduction in payment shall be appealed in writing to City Council within ten (10) days of payment.

2:03-G Approval of Working Drawings and Plans. The Contractor or Consultant shall submit six sets, to the PWD for his approval such plans or drawings and/or catalog cuts for fabricated items and manufactured items, including mechanical and electrical equipment, as may, in the opinion of the PWD, be required for the construction of the work or any part thereof. Drawing(s) shall be submitted sufficiently in advance to allow the PWD not less than ten regular working days for examining the drawings.

These drawings shall be accurate, distinct and complete and shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the Contract Drawings and or specifications.

Unless otherwise approved by the PWD, drawings shall be submitted only by the Contractor or Consultant, who shall indicate by a signed stamp on the drawings, or other approved means, that he (the Contractor or Consultant) has checked the drawings and that the work shown is in accordance with Contract requirements and has been checked for dimension and relationship with work of all other trades involved. The practice of submitting incomplete or unchecked drawings is not acceptable, and these drawings will be considered as not complying with the intent of the City Standard Specifications and will be returned to the Contractor or Consultant for resubmission in the proper form.

When the drawings are approved by the PWD, two sets of prints will be returned to the Contractor marked "Approved, except as Noted", or some similar notation, if changes or corrections are necessary, one set will be returned to the Contractor with such changes or corrections indicated by a brief statement and the Contractor shall correct and resubmit the six sets of drawings when requested.

The approval of such drawings and/or catalog cuts by the PWD, shall not relieve the Contractor or Consultant from responsibility for correctness of dimensions, fabrication details and space requirements or for deviations from the Contract Drawings or Specifications, unless the Contractor or Consultant has called attention to such deviations in writing by a letter accompanying the drawings and the PWD approves the change or deviations in writing at the time of submission nor shall approval by the PWD relieve the Contractor from the responsibility for errors in the drawings. When the Contractor does call such deviations to the attention of the PWD the Contractor shall state in his letter whether or not such deviations involve any deduction or extra cost adjustment.

2:03-H Detail Drawings and Instruction. The City shall furnish, within three (3) working days, (excluding holidays) additional instructions by means of drawings or otherwise, as are necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom.

2:04 The Contractor and His Employees.

2:04-A Employees. Any and all employees of Contractor, or his contractors while engaged or performing any work or services required by him under this agreement, shall be considered his employees only and not employees of the City, and any claims that may arise under the Workers' Compensation Act on behalf of the said employees while so engaged in any and all claims made by third parties as a consequence of any act or omission on the part of him or his employees while so engaged on any of the work or services provided to be rendered herein shall be the sole obligation responsibility of Contractor and/or his contractors. The parties to this agreement recognize that Contractor and his employees, officers, agents and subcontractors are providing professional services as independent contractors and are not providing services as employees of the City and are, therefore, not entitled to the benefits provided by the City to his employees, including but not

limited to Workers' Compensation benefits, group health insurance, social security, pension plans or any other benefit accruing to City's employees. Contractor hereby agrees to hold the City harmless from, and shall process and defend at his own expense, all claims, demands or suits of whatever nature, brought against him arising from his performance under this agreement. Contractor shall advise his officers, agents, employees and subcontractors of this provision.

2:04-B Contractor Requirements.

By entering into a contract with the City, the Contractor certifies that:

- a. Contractor is free from direction and control over the means and manner of providing the labor or service, subject only to the right of City to specify the desired results;
- b. Contractor is responsible for obtaining all assumed business registrations or professional occupational licenses required by state law or local governmental ordinances;
- c. Contractor furnishes the tools or equipment necessary for performance of the contracted labor or services;
- d. Contractor has the authority to hire and fire employees to perform the labor or services;
- e. Payment for the labor or services is made upon completion of the performance of specific portions of the project or is made on the basis of a periodic retainer;
- f. Contractor is registered under ORS 671.530 (Construction Contractors), if Contractor provides labor or services for which such registration is required;
- g. Federal and state income tax returns in the name of the business or a business Schedule C or farm Schedule F as part of the personal income tax return were filed for the previous year if the Contractor performed labor or services as an independent contractor in the previous year; and
- h. Contractor represents to the public that the Contractor is an independently established business. Except where Contractor files a Schedule F as part of the personal income tax return and the Contractor performs farm labor or services that are reportable on Schedule C, Contractor is considered to be engaged in an independently established business when four or more of the following circumstances exist:
 - i. The labor or services are primarily carried out at a location that is separate from the residence of Contractor or are primarily carried out in a specific portion of the residence, which portion is set aside as the location of the business;
 - ii. Commercial advertising or business cards as is customary in operating similar businesses are purchased for the business or the Contractor has a trade association membership;
 - iii. Telephone listing and service are used for the business that is separate from the personal residence listing and service used by Contractor;
 - iv. Labor or services are performed only pursuant to written contracts;
 - v. Labor or services are performed for two or more different persons within a period of one year; or
 - vi. Contractor assumes financial responsibility for defective workmanship or for service not provided as evidenced by the ownership of performance bonds, warranties, errors and omission insurance or liability insurance relating to the labor or services provided.

2:04-C Insurance. The Contractor shall not commence work under this Contract until he has furnished the City with satisfactory proof of suitable and adequate insurance as specified herein.

a. Compensation Insurance. The Contractor shall provide workers' compensation insurance coverage for all individuals, other than those exempt under ORS 656.027, who perform labor under the Contract before labor under the contract commences. Contractor shall pay all contributions or amounts due for workers' compensation coverage from the Contractor incurred in the performance of the Contract.

A copy of each insurance policy, or certificate thereof, issued by a responsible and solvent insurance corporation or association authorized to issue such policy or policies under the laws of the State of Oregon shall be delivered to the City within a reasonable period of time after the same is issued by the company or companies or associations issuing such policy or policies. All said policies or certificates shall provide for a minimum of thirty (30) days notice to the City in the event of cancellation or material change in the terms.

b. Public Liability and Property Damage Insurance. The Contractor shall maintain Public Liability Insurance against death or injury to person, or damage to property, during the life of this Contract; said insurance shall be in such form so as to protect both Contractor and City from all claims expressed or implied as above provided, and in the following amounts:

- (1) Public Liability Insurance not less than \$300,000 for injuries to any one person, including accidental death, and not less than \$500,000 for any one accident.
- (2) Property Damage Insurance not less than \$100,000 for any one accident.

The Contractor's Public Liability and Property Damage Insurance shall adequately provide the primary coverage on all claims arising out of the performance of the Contract.

The above mentioned proof shall be in the form of a copy of the policy and all appropriate riders with the City being named as a co-insured on all policies and provide for 30 day notice of cancellation to City.

2:04-D Maintenance and Guarantee. The Contractor hereby agrees to make, at his own expense, any repairs or replacements made necessary by defects in materials or workmanship supplied by him that became evident within one (1) year after the date of final acceptance; 2:01-I. The Contractor shall at his own expense make all repairs and replacements promptly upon receipt of written orders from the City. If the Contractor fails to make the repairs and replacements promptly, the City may at the City's discretion perform the required work, and the Contractor and his surety shall be liable for the costs thereof.

2:04-E Superintendent. The Contractor shall during the progress of any of the work, provide (to the satisfaction and opinion of the City) a competent superintendent and necessary assistants. The Contractor shall give prompt and efficient supervision to all phases of the work. The superintendent shall not be changed except by consent of the City unless superintendent proves to be unsatisfactory to the Contractor or ceases to be in his employ.

2:04-F Contractor's Employees. The Contractor shall employ only competent, skillful personnel to do the work; and whenever any person shall appear to the PWD to be incompetent or to act in a disorderly or improper manner, such person shall be removed from the work immediately upon written notification from the PWD and shall not be employed on the work again, except by consent of the PWD. The Contractor shall at all times enforce strict discipline and good order among his employees. The Contractor shall comply with all Federal, State and Municipal labor rules, wage scales, and regulations in which the work is to be done, including all nondiscriminatory laws.

2:04-G Materials. Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, tools, equipment, transportation and other facilities necessary for the execution and completion of the work.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of a good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind

and quality of materials.

The Contractor will not permit any lien or claim to be filed or prosecuted against the City on account of any material or labor furnished to the Contractor.

2:04-H Safety. The Contractor shall take all necessary precautions for the safety of employees on the work and shall comply with all applicable provisions of Federal, State and Municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workers and public and shall post adequate danger signs warning against the hazards created by such features of construction. Said work is to be so conducted that no liability will accrue under the Employer's Liability Act of the State of Oregon.

2:04-I Protection of Property. The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the City's property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury, or loss. He shall adequately and safely protect adjacent property as provided by law and in the Contract Documents.

In an emergency affecting the public safety and welfare of adjoining property, the Contractor, without special instruction or authorization from the PWD or Consultant is hereby permitted to act, at his discretion, to prevent such threatened loss or injury; and he shall so act, without appeal, if so instructed or authorized. Any compensation claimed by the Contractor on account of emergency work shall be in accordance with 2:06-D.

2:04-J Unforeseen Difficulties. The Contractor shall protect his work and materials from damage due to the nature of the work, the elements, carelessness of other sub-contractors, or from any cause whatever until the completion and acceptance of the work. All loss or damages to the work, performed under these Contract Documents, or from any unforeseen obstruction or defects which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the Contractor. It shall be the Contractor's responsibility to examine carefully the extent and nature of all work to be performed, to inform himself of the location of utilities, to take all necessary precautions to protect and maintain these utilities in good condition, or in the event of damage to restore same, all at the Contractor's cost.

2:04-K Permits and Licenses. The Contractor shall keep himself informed of all local ordinances, State and Federal Laws in any manner affecting the work herein specified. He shall at all times comply with said ordinances, laws, and regulations, and protect and indemnify the City and its officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, or regulations. Permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Contractor.

The Contractor must obtain a City of Pendleton Business License.

2:04-L Inspection. The Engineer and Consultant shall at all times have access to the work and the Contractor shall provide adequate and safe facilities for access and inspection.

If any work should be covered up without approval or consent of the Engineer it shall, when requested, be uncovered for examination at the Contractor's expense.

Re-examination of questioned work may be ordered by the Engineer and, if so ordered, the work shall be uncovered by the Contractor. If such work be found in accordance with the Contract

Documents, the City shall pay the cost of re-examination and replacement. If such work be found not in accordance with the Contract Documents, the Contractor shall pay all such costs.

2:04-M Indemnity. The Contractor hereby specifically agrees and covenants to indemnify and save and hold the City of Pendleton, its members, and its agents and employees harmless from any and all acts performed by the Contractor during the course of the Contract.

The City of Pendleton, its members, and its agents and employees, shall not be liable for any loss, injury, death, or damage to persons or property which at any time may be suffered or sustained by the Contractor or by any person whosoever may at any time be participating, viewing, using or occupying or visiting the project site or be in, on, or about the same, whether such loss, injury, death, or damage to person or property shall be caused by or in any way result from or arise out of any act, omission, or negligence of the Contractor or spectator, guest, visitor, user or by any person whosoever may at any time be participating, viewing, using or occupying or visiting the project site, or shall result from or be caused by any other matter or thing whether of the same kind as or of a different kind than the matters or things above set forth.

The Contractor shall indemnify the City of Pendleton, its members, and its agents and employees, against all claims, liability, loss, injury, death, or damage to property or persons whosoever on account of any such claim, liability, loss, injury, death, or damage. The Contractor hereby waives all claims against the City of Pendleton, its members, and its agents and employees, from any liability or claim arising from Contractor's use or occupancy of the project site.

2:04-N Payment of Claims. The Contractor shall make payment promptly, as due, to all persons supplying to such Contractor labor or materials for the prosecution of the work provided in the Contract. If the Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services or materials serviced or furnished to the Contractor or to a sub-contractor by any person in connection with this Contract as such claim becomes due, the City may, at its option, pay such claim to the person furnishing the labor, services or material and charge the amount of payment against funds due or to become due the Contractor by reason of this Contract. The payment of a claim in the manner authorized by this section shall not relieve the Contractor or his surety from his or its obligation with respect to any unpaid claims.

Contractor shall pay all contributions or amounts due the Industrial Accident Fund from the Contractor or subcontractor accrued in the performance of the contract.

Contractor shall not permit any lien or claim to be filed or prosecuted against the City on account of any labor or material furnished.

The Contractor will pay to the Oregon Department of Revenue all sums withheld from employees pursuant to Oregon Statutes.

The Contractor shall promptly, as due, make payment to any person, copartnership, association or corporation furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, of all sums which the Contractor agrees to pay for such services and all moneys and sums which the Contractor collected or deducted from wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.

The final payment or any part of the retained percentage may be withheld upon the option of the City until the Contractor shall submit to the City receipts or releases showing full payment of all claims for labor, services and material relative to this Contract and an affidavit so stating that to his

knowledge and information that such releases or receipt include all labor, services and material furnished in respect to said Contract. Provided that if there are still claims due by the Contractor, the City has the option of paying the person the amount due drawing the check to both the person and the Contractor for the amount due; and if the amount is in dispute, holding the amount in dispute until the matter is settled by the Contractor and the claimant; or the City may, if it so desires, pay the full amount due under the Contract to the Contractor.

2:04-O Sub-Contracting. The Contractor shall, within four (4) working hours of the advertised bid closing date and time, notify the PWD in writing, of the names of the first-tier sub-contractors on the disclosure form enclosed at the end of the General Conditions proposed for the principal parts of the work and for such others as the PWD may direct and shall not employ any that the PWD may within a reasonable time object to as incompetent or unfit.

The Contractor agrees that he is fully responsible to the City for the acts and omissions of his sub-contractors and of persons either directly or indirectly employed by the sub-contractor as though these acts and omissions occurred by the prime Contractor.

Nothing contained in the Contract Documents shall create any contractual relation between any sub-contractor and the City. Any attempt by Contractor to assign all or any portion of the contract is prohibited unless express written consent is given by the City after the City has reviewed such agreement. Any such attempt to assign all or any portion of the contract shall at City's option make this Contract voidable. If the City elects to void the Contract, the Contractor as actual damages agrees to forfeit any and all payment due under this contract and pay to the City all expenses incurred directly or indirectly by City.

If the Contractor or a first-tier subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with this contract within thirty (30) days after receipt of payment from the public contracting agency or a contractor, the Contractor or first-tier subcontractor shall owe the person the amount due plus interest charges commencing at the end of the 10-day period that payment is due under ORS 279.445 (4) and ending upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279.445. The rate of interest charged to the contractor or first tier subcontractor on the amount due shall equal three times the discount rate on 90-day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve District that includes Oregon on the date that is thirty (30) days after the date when payment was received from the public contracting agency or from the contractor, but the rate of interest shall not exceed thirty (30) percent. The amount of interest may not be waived.

If the Contractor or a subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with the public contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279.445. Every contract related to this contract shall contain a clause setting forth this requirement.

If requested in writing by a first-tier subcontractor, the Contractor, within ten (10) calendar days after receiving the request, shall send to the first-tier subcontractor a copy of that portion of any invoice, request for payment submitted to the public contracting agency or pay document provided by the public contracting agency to the contractor specifically related to any labor or materials supplied by the first-tier subcontractor.

2:04-P Taxes and Charges. The Contractor agrees to withhold and/or pay any and all withholding taxes, whether State or Federal, and pay all Social Security charges and also all State Unemployment Compensation charges, and to pay or cause to be withheld, as the case may be, any

and all taxes, charges, or fees or sums whatsoever which are required to be paid or withheld under any laws.

2:04-Q Use of Premises. The Contractor shall confine his apparatus, the storage of materials and the operation of his workmen to limits shown on the Plans as indicated by law, ordinances, permits, or directions of the PWD and shall not unreasonably encumber the premises with his materials. The Contractor shall provide, at his own expense, the necessary rights-of-way and access to the work which may be required outside the limits of the City's property.

The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety. The Contractor shall make his own arrangements for off-street parking of equipment. The City shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. The Contractor shall endeavor to keep areas of work open to traffic whenever possible. Incomplete work damaged by traffic or by the public shall be repaired or replaced at the Contractor's expense.

2:04-R Clean-Up. The Contractor shall, as directed by the PWD, remove, at his own expense, rubbish and waste materials resulting from his operations. Upon completion of the project, and prior to final acceptance of the Contract all areas shall be placed in a neat, clean and presentable condition.

2:04-S Hours and Conditions of Employment. No person shall be employed for more than eight (8) hours in any one day, or forty hours (40) in any one week, except in case of necessity, emergency or where the public policy absolutely requires it, and in such cases the laborer shall be paid at least time and a half for all overtime worked in excess of 40 hours in any one week, except for individuals under this contract who are excluded under ORS 653.010 to 653.261 or under 29 U.S.C. sections 201 to 209 from receiving overtime.

2:05 Progress of the Work

2:05-A Prior to Commencement of Project. Before work shall be started and materials ordered, the Contractor shall meet and consult with the City relative to materials, equipment, and all arrangements for prosecuting the work. The Contractor shall commence the work contemplated and complete the same within the time specified in the Contract Document. It is expressly understood that the time of beginning, rate of progress, and time of completion of the work are of the essence of this Contract.

2:05-B Prosecution of the Work. The work shall be prosecuted at such time and in or on such part or parts of the project and with such forces of workers, materials, and equipment as may be ordered by the PWD in writing, to complete the project as contemplated in the Contract Documents.

The Contractor shall perform the work and take such precautions as may be deemed necessary to complete the project so all work will be in first class and acceptable condition within the Contract time.

If the Contractor desires to carry on work at night or outside the regular hours, he may submit application to the PWD and he shall allow 48 hours time to enable satisfactory arrangements to be made for inspecting the work in progress. The Contractor shall be responsible to pay the cost of all over time pay above normal wage rates. If granted permission, he shall illuminate the different parts of the work in a manner satisfactory to the PWD and shall comply with all regulations of the

City, State and Federal governments.

2:05-C Schedule of Work. The Contractor shall furnish the City a written schedule of work, for approval prior to commencement of work. The PWD shall be advised in writing of all significant revisions in this schedule.

2:05-D Contract Assignment. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other; nor shall the Contractor assign any monies to become due to him hereunder without the previous written consent of the City. Such attempted assignment may, at the City's option, terminate this Contract as a material breach on Contractor's part.

2:05-E City's Right to Perform Work. If the Contractor should, in the opinion of the PWD neglect to perform the work properly or should neglect or refuse at his own cost to take up and replace work that has been rejected by the PWD, then the City after three (3) days written notice, or without notice if an emergency or danger to the work or public exists, and without prejudice to any other right which the City may have under this Contract, take over that portion of the work which has been improperly executed and make good the deficiencies and deduct the cost thereof from the payments then or thereafter due the Contractor.

2:05-F Suspension of Work. City may suspend work on the project wholly or in part as directed by the PWD pursuant to Subsections 2.03-A-H due to: (1) failure to correct unsafe conditions for working personnel, the general public or City's employees, after two (2) days written notice, or without notice if an emergency or danger to the work or public exists, and without prejudice to any other right which the City may have under this Contract.

The City may immediately suspend work on the project wholly or in part, for such periods as the PWD may deem necessary, pursuant to Subsection 2:03-D for failure to immediately correct defective and unacceptable work.

Suspension or slowdown, with or without City approval and suspension of work ordered by the PWD will not be grounds for claims for damages, idle equipment or labor, or extra compensation. No allowance or compensation will be made on account of such suspensions of work except as provided herein.

At the commencement of and during any suspension of the work, the Contractor shall be responsible for the care of work performed and take every precaution to prevent any damage or deterioration of the work. Contractor shall also be responsible for work, including temporary protection devices to warn, safeguard, protect, guide and inform traffic during suspension, the same as though its performance had been continuous and without interferences.

Contractor shall be responsible and bear all costs for providing suitable provisions for traffic control and for maintenance and protection of the work during suspension.

2:05-G Termination of Contract. All terms and conditions of the Contract are considered material, and failure by Contractor to comply with any of said terms or conditions shall, at City's option, be deemed a breach of contract. Upon such failure, City shall have the right, whether an alternative right is provided or not, to declare the Contract terminated. Issuance by City of an order stating that the Contract is terminated, upon Contractor and his Surety from date of postmark of certified mail shall be deemed a complete termination of the Contract. Upon the Contract being so terminated City may retain all sums due under the Contract and both the Contractor and his Sureties shall be liable under his bond for all losses, expenses and damages caused to City by reason of his

failure to complete the Contract, and Surety shall be required, at City's option, to complete the project. Notwithstanding such termination, Contractor and his Sureties shall remain liable under the terms of the Contract for work performed prior to such termination. The PWD will determine the payment due Contractor for work performed prior to the date of Contract termination.

2:05-H Contractor's Default. If the Contractor should be adjudged bankrupt; or file for bankruptcy; or if he should make a general assignment for the benefit of his creditors; or if a receiver should be appointed on account of his insolvency; or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials; or if he should fail to make prompt payment to subcontractors or for material or labor; disregard laws, ordinances, or the instructions of the PWD; or otherwise be guilty of a violation of any provision of the Contract or any laws or ordinances, then the City upon the certification of the PWD that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor and Surety seven (7) days written notice, transfer the employment for said work from the Contractor to the Surety. Upon receipt of notice, such Surety shall enter upon the premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the work included under this Contract and employ, by Contract or otherwise, any person or person to finish the work and provide the materials therefor without termination of the continuing full force and effect of this Contract. In case of such transfer of employment to such Surety, the Surety shall be paid in its own name any claim for the same or any part thereof. In lieu of the foregoing, if the City so elects, the City may terminate the employment of the Contractor and take possession of the premises and all materials, tools, and equipment thereon and finish the work by whatever methods the City may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of completing the Contract, including compensation for additional managerial and administrative services, shall exceed such unpaid balance, the Contractor shall pay the difference to the City. The expense incurred by the City, as herein provided, and the damage incurred through the Contractor's default shall be certified by the Public Works Director.

Upon completion of the project by others, Contractor shall be entitled to the return of all material which has not been used in the work or which has not been paid for, and for all plant, tools, equipment and other property, provided, however, that no claim will be allowed because of usual and ordinary depreciation, loss, wear and tear.

None of the foregoing provisions or the provisions in Subsection 2:05-G, shall be construed to require City to complete the work, nor to waive or in any way limit or modify the provisions of the Contract relating to the fixed and liquidated damages suffered by City on account of the failure of Contractor to complete the project within the time prescribed.

2:05-I Delays and Extension of Time. If the Contractor is delayed at any time in the progress of the work by any act or neglect of the City, or by any separate Contractor employed by the City, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control; or by delay authorized by the PWD; or by any cause which the PWD shall decide justifies the delay, then the date for completion of the work shall be extended for such reasonable time as the City may decide and which the PWD shall approve in writing. No such extension shall be made for delays occurring more than seven (7) days before claim therefor is made in writing to the PWD. In the case of a continuing cause of delay, only one claim is necessary.

If no schedule or agreement stating the dates upon which drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure to furnish drawings until two (2) weeks after demand for such drawings, and then only if such claim be reasonable.

The article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

2:05-J Liquidated Damages. Time shall be considered the essence of the Contract should the Contractor fail to complete the work, or any part thereof, in the time agreed upon in the Contract or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the Contractor shall reimburse the City for the additional expense and damage for every day, Sundays and holidays excluded, that the Contract remains uncompleted after the date of completion given in the Contract. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per diem rate stipulated in the Proposal. The said amounts are hereby agreed upon as actual for the delay that will be substantial, but will be difficult or impractical to determine. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the Contractor; and the City is authorized to deduct the amount of such damages from any monies due the Contractor for work performed or material furnished under this Contract, and the Contractor and his sureties shall be liable for any excess.

2:05-K Substantial Completion Date. The Engineer may, at his sole discretion, issue a written notice of substantial completion for the purpose of establishing a date for use of the project or a defined portion of the project and to establish a date for end of the contract length. Said notice shall not be considered as final acceptance of any portion of the work or relieve the Contractor from completing the remaining work with the specified time and in full compliance with the contract documents.

2:05-L Suit or Action. If any action is instituted in connection with any claim or controversy arising out of this agreement, attorney fees may **not** be awarded by the court of competent jurisdiction and each party shall bear its own expenses of such action.

2:05-M Mediation/Arbitration. If any dispute arises between the parties and after mediation, the City may request arbitration and each shall choose an arbitrator, and the two arbitrators shall choose a third. If the choice of the second or third arbitrator is not made within ten (10) days of the choosing of the prior arbitrator, then either party may apply to the presiding judge of Umatilla County to appoint the required arbitrator. If the City does not request arbitration following mediation, jurisdiction of any issue shall be in the Umatilla County Circuit Court.

2:05-N Procedure for Arbitration. At election of the City, the arbitration shall proceed according to the Oregon statutes governing arbitration, and the award of the arbitrators shall have the effect therein provided. The arbitration shall take place in Umatilla County. Costs of the arbitration shall be shared equally by the parties, but each party shall pay its own attorney fees incurred in connection with the arbitration, and no arbitration shall award attorney fees or cost. Any damages awarded shall be limited to actual cost incurred by the prevailing party. The arbitrator shall not have the authority to award consequential damages, lost profits, nor punitive damages.

2:06 Payment.

2:06-A Basis of Payment. In consideration of the faithful performance of all the covenants, stipulations, and agreements in this Contract to be kept and performed by the Contractor, the City covenants and agrees to pay the Contractor, either by City Check or Improvement Warrant, the amount bid as adjusted when so stipulated in the Contractor's Proposal; on the basis of the unit prices named in the Contractor's Proposal for the work actually performed as determined by the final estimate of the PWD together with any amounts due for authorized extra work not classified under the items listed in the Contractor's Proposal as provided in Sec. 2:06-D of these General Conditions;

less any deduction for failure to complete the work within the time specified; and less any deductions for claims and damages paid by the City due to acts or omissions of the Contractor and for which he is liable under this Contract.

2:06-B Appropriate Funds. If the City does not appropriate funds for the next succeeding fiscal year to continue payments required by this Contract, this Contract will terminate at the end of the last fiscal year for which funds have been appropriated. The City will notify Contractor of such non-appropriation not later than thirty (30) days before the beginning of the year within which funds are not appropriated. This provision does not permit the City to terminate this Contract in order to provide similar services for the purpose for which this Contract has been entered into.

2:06-C Partial Payment. So long as the work herein contracted is prosecuted in accordance with the provisions of this Contract, the Contractor may, within the first five (5) days of each calendar month, deliver to the PWD a written estimate of the proportionate value of the work done and of material furnished or delivered applicable to the contract up to the last day of the preceding month. If the Contract price is determined on a unit price basis, this progress payment will be made on the basis of these unit prices. If the Contract price is determined on a lump sum basis, this payment will be made on the basis of an estimated cost schedule, covering the entire job, which shall be prepared by the Contractor and approved by the PWD before the start of the work.

The Contractor's estimate shall be verified or adjusted by the PWD. The amount of said estimate, after deducting five percent (5%) and all previous payments, shall be due and payable to the Contractor by City Check or Improvement Warrant, not more than ten (10) days after receipt of the Contractor's estimate. However, any estimate delivered by the Contractor to the PWD after the fifth day of the month shall not be paid until the succeeding month. The five percent (5%) deducted, as above set forth, shall be withheld by the City as protection against an improper act or omission on the part of the Contractor.

Nothing contained in this article shall be construed to affect the right, hereby reserved, to reject the whole or any part of the aforesaid work should such work be later found not to comply with the provisions of the Contract Documents.

2:06-D Deferment of Payments. No partial or final payment will be made until all orders made by PWD to Contractor in accordance with the Specifications are complied with, nor until all claims or liens filed or prosecuted against City, its officer or employees contrary to provisions of the Contract are satisfied.

Contractor will not be entitled to anticipated profits, or other additional payment as a result of the withheld progress payment, nor will the necessary changes in the work schedule, due to suspension of work, Sub-section 2:05-F, be cause for extension of contract completion time.

In the event a complaint or charge of unlawful employment practices pursuant to the provisions of ORS Chapter 659 is filed against the Contractor by anyone, including the City, and the Commissioner of Labor issues a cease and desist order as defined in ORS Chapter 459, no further payments will be made on the Contract until such time as all of the provisions of the cease and desist have been complied with by Contractor.

2:06-E Extra Work. Any authorized work necessary or required to carry out the intent of these Contract Documents by changes clearly not indicated in the Contract Documents shall be paid for at the unit price agreed to in the Contract Documents. If this work cannot be classified under any of the items for which unit prices are listed in the Contractor's Proposal, it shall be paid for as extra work at the rate agreed to in writing between the Contractor and the City prior to the time of

commencing such extra work. If such method of payment cannot be agreed upon prior to the beginning of the work, then such work shall be performed by the Contractor on the basis of furnishing labor and material at costs and labor rates in effect at the time the work is accomplished.

Labor shall include:

- a. Wages - the actual wages paid to laborers and supervisors, if those wages are paid at rates not more than those for comparable labor currently employed on the project, or at the recognized, current, prevailing rates in the locality of the project.
- b. Required Contributions - The actual cost of industrial accident insurance, unemployment compensation contributions, payroll transit district taxes and social security for old age assistance contributions incurred or required under statutory law and these specifications. The actual cost of industrial accident insurance is the National Council on Compensation Insurance (NCCI) rate for the assigned risk pool for the appropriate work class multiplied by the experience modification factor for the Contractor.
- c. Required Benefits - The actual amount paid to, or in behalf of, workers by reasons of subsistence and travel allowances, health and welfare benefits, pension funds benefits, or other benefits when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work.

An additional allowance of twenty percent (20%) shall be allowed on the total of labor including labor burden and fifteen percent (15%) shall be allowed on total materials, to cover profit, superintendence, and general expense. A breakdown of the Contractor's cost involved in any approved extra work shall be submitted to the PWD within forty-five (45) days after said extra work has been performed.

The Contractor will be paid for the use of equipment on the basis of, but not exceeding, the prevailing hourly rental rates established by the Oregon State Highway Division and recognized by the Associated General Contractors and agreed upon in writing by the Engineer prior to start of force account work. Rental time will not be allowed while equipment is inoperative for periods in excess of 30 minutes. The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repair, and maintenance of any kind, depreciation, storage, insurance and all incidentals.

No payment will be made for extra work billed and submitted to the PWD after the 45-day period has expired. No extra work shall be performed by the Contractor, except in an emergency endangering life of property, unless in issuance of a written order, as provided in Section 2:03-A of these General Conditions.

2:06-F Changed Conditions. If latent physical conditions are encountered at the site differing materially from those indicated in the Contract, or unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract, and such changed or unusual conditions are desired to be considered as the basis for a claim for extra compensation, Contractor shall notify PWD of the alleged conditions in writing within seven (7) calendar days of such encounter. Changed conditions that occur as a result of any negligence or inattention on the part of Contractor or his agent shall not be considered eligible for extra payment.

If written notice is not given within the specified seven (7) days, Contractor will be deemed to have waived any claim or claims for extra compensation in any manner arising out of the changed or

unusual conditions.

If PWD determines the conditions to be such as to justify a claim for additional compensation, he may provide for additional payment for the particular phase of work in question, or by any other equitable arrangement mutually agreed upon by City and Contractor and consented to in writing by the surety to the bond if necessary. In any event, Contractor shall not be relieved from his obligation to resume construction operations pending a decision as to the validity of a claim, or pending the execution of a negotiated agreement to cover additional costs of a claim recognized under the provisions of this section, unless permitted to do so by City.

2:06-G Final Payment. Upon completion of the work, the Contractor shall notify the City in writing that he has completed his part of the Contract and shall request final payment. When the work has been completed to the satisfaction of the PWD, he shall submit a certificate of acceptance of the Contractor of the completed work, together with a final estimate by the City. After the City has received the receipts or releases as required under Section 2:04-N of these General Conditions, the City shall pay to the Contractor all monies remaining due him under the provisions of these Contract Documents.

2:06-H Acceptance of Final Payment. Acceptance by Contractor of final payment shall release City and PWD as agent of City from all claims and all liability to Contractor for all things done or furnished in connection with the work, and every act of City and others relating to or arising out of the work. No payment, however, final or otherwise, shall operate to release Contractor or his Sureties from obligations under the Contract and the performance, payment, and other bonds and warranties as herein provided.

2:07 State Laws.

2:07-A Applicability of State Law. All provisions of the Contract are governed by Oregon State Law including those provisions relating to public contracts for cities and those provisions of the City of Pendleton Charter and Ordinances are a part of this Contract, the same as if the provisions of said chapter were set out fully herein, and the bidder or Contractor represents by his submitting his bid concerning this Contract that he is familiar with the provisions of said Laws. Venue for any legal action under this contract shall be in Pendleton, Umatilla County Circuit Court for the State of Oregon.

The Oregon Government Standards and Practices laws shall apply to Contractor. ORS 244.040(1)(a) prohibits any government officer, employee or agent from using the governmental relationship to obtain a financial gain or avoid a financial detriment that would not otherwise be available but for the governmental relationship. For further information on this matter, Contractor may contact the Oregon Government Standards and Practices Commission, 100 High Street SE, Suite 220, Salem, OR 97310; phone (503) 378-5105.

2:07-B Governing Law/Venue. This agreement and the parties rights under it shall be construed and regulated by the laws of the State of Oregon and venue for any dispute hereunder shall lie in Pendleton, Umatilla County, Oregon.

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM
(OAR 137-040-0017)

Bids which are submitted by Bid Closing, but for which a required disclosure submittal has not been made by the specified Disclosure Deadline, are not responsive and shall not be considered for Contract award

AGENCY SUPPLIED INFORMATION:

PROJECT NAME: _____
 BID #: _____ BID CLOSING: Date: _____ Time: _____ AM PM
 REQUIRED DISCLOSURE DEADLINE: Date: _____ Time: _____ AM PM
 Deliver Form To (Agency): _____
 Designated Recipient (Person): _____ Phone #: _____
 Agency's Address: _____

INSTRUCTIONS:

The contracting agency will insert "N/A" above if the contract value is not anticipated to exceed \$100,000. Otherwise this form must be submitted either with the bid or within two (2) working hours after the advertised bid closing date and time; but no later than the DISCLOSURE DEADLINE stated above.

Unless otherwise stated in the solicitation, this document shall not be submitted by facsimile. It is the responsibility of bidders to submit this disclosure form and any additional sheets, with the bid number and project name clearly marked, at the location indicated by the specified disclosure deadline. See "Instructions to Bidders".

List below the Name, Category of Work and Dollar Value for each first-tier subcontractor that would be furnishing labor, or labor and material, for which disclosure is required. Enter the word "NONE" if there are no first-tier subcontractors subject to disclosure. ATTACH ADDITIONAL SHEETS IF NECESSARY.

BIDDER DISCLOSURE:

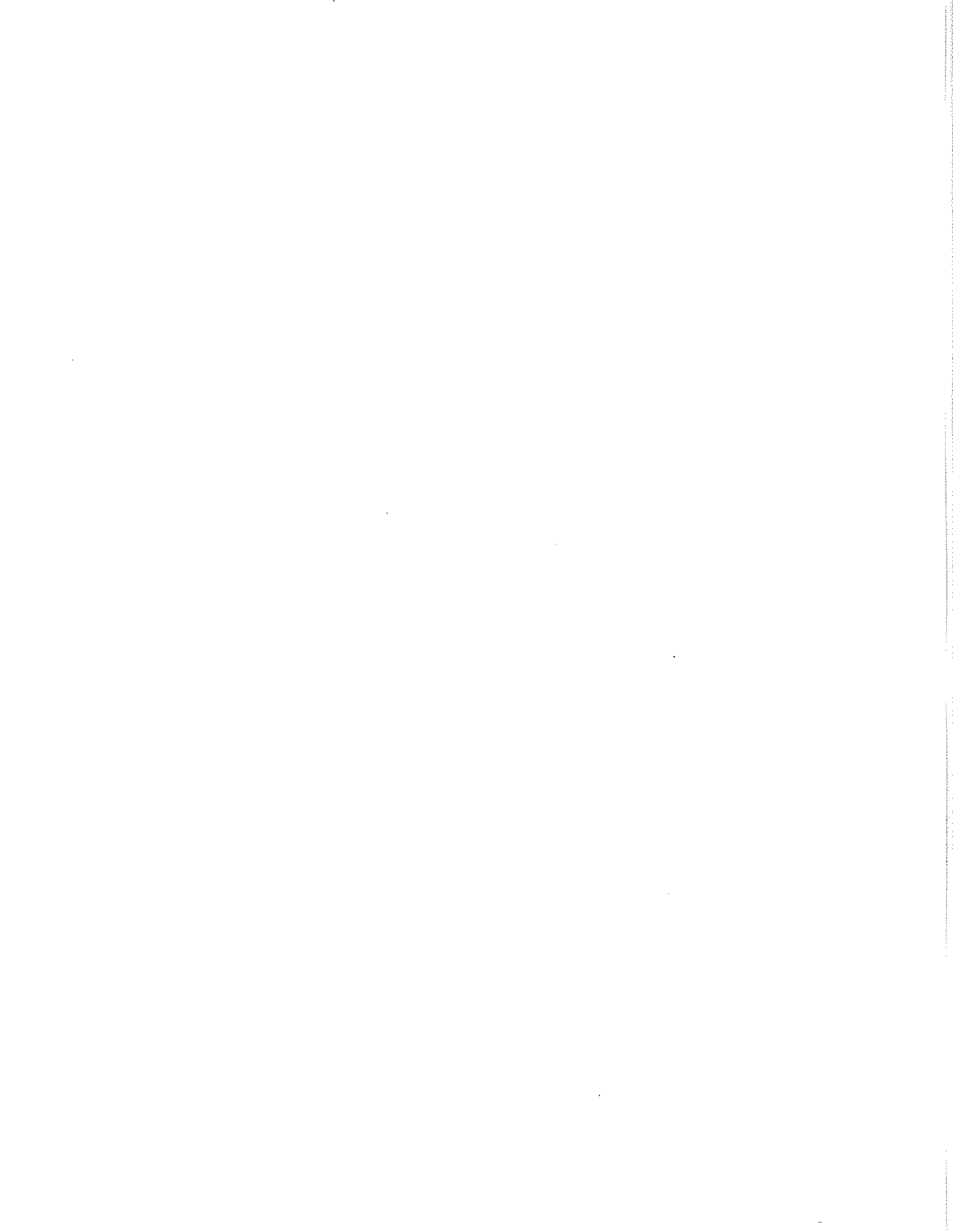
	SUBCONTRACTOR NAME	CATEGORY OF WORK	DOLLAR VALUE
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

The above listed first-tier subcontractor(s) are providing labor, or labor and material, with a Dollar Value equal to or greater than:

- a) 5% of the total Contract Price, but at least \$15,000. [If the Dollar Value is less than \$15,000 do not list the subcontractor above.]
- or
- b) \$350,000 regardless of the percentage of the total Contract Price.

Form Submitted By (Bidder Name): _____

Contact Name: _____ Phone #: _____



3:00-A General. All elements of construction for streets, storm sewer, sanitary sewer and water supply lines, inclusive of materials, methods of construction, standards of workmanship, testing, and acceptance shall conform with the City of Pendleton Standard Specifications and the Standard Specifications for Public Works Construction, Oregon Chapter, A.P.W.A., 1980 Edition and any later revisions, except as further clarified or supplemented by the provisions herein.

All references to Contract Owners shall mean all the individuals, partnership, company or corporation that is building or contracting to build public improvements.

All references prefixed by the form ASTM refer to Standard Specifications or methods of the American Society for Testing Materials of the Serial Designation indicated by number following and prefix, and, unless otherwise stated, refer to the latest adapted revision of said specification or method.

All references to AASHTO Designations refer to Standard Specifications or methods of the American Association of State Highway Officials, unless otherwise stated, refer to the latest adopted revision of said specification or method.

The latest edition of the Oregon State Highway Commission's Standard Specifications for Highway Construction along with any modifications are adopted as standard specifications, unless they are modified by these General Specifications. All references to Oregon State Highway Commission refer to City of Pendleton.

A. Commission or Highway Commission: The City council of City of Pendleton, Oregon, as constituted under the laws of the State for the administration of highway work.

B. Department or Highway Department: Engineering Department of City of Pendleton, Oregon.

C. Engineer: Public Works Director of City of Pendleton, Oregon, acting either directly or through his authorized representatives.

D. City: City of Pendleton or other owner contracting for public improvements.

3:00-B Scope of Work. The work covered by this section includes the furnishing of all plant, labor, tools, equipment and material, and performing all operations in connection with the work shown on the plans, to include but not be limited to, street construction, excavation, trenching, and backfilling of all water and sewer lines, manholes, structures, accessories and lines connected thereto, complete, including sheeting and shoring, dewatering, grading, top soiling and cleanup, all in accordance with these specifications and the applicable drawings.

3:00-C Limitation. At any time before all scheduled work is completed, the City may limit any remaining work to be done in order to keep the cost of the entire project within available funds.

3:00-D Access to Work and Use of Rights-of-Way Easements. The proposed sewer facilities lie either in dedicated rights-of-way, City-owned land or on rights-of-way easements. The Contractor shall be responsible for securing permission from the City of Pendleton or the appropriate property owner, to use any other areas for access of construction operations.

The Contractor shall not block or impede use of any right-of-way for extended periods of time. The City shall reserve the right to direct the Contractor to move from an area of construction and restore

it, if the City determines that work is not progressing satisfactorily or not being prosecuted in an efficient and workmanlike manner.

3:00-E Protection of Site. Except as otherwise provided herein, the Contractor shall protect all structures such as, but not limited to, walks, underground utilities, and trees during the progress of his work and shall, upon completion of the work, remove all debris and unused materials and restore the site, as nearly as possible, to its original condition. Any facility which has been damaged beyond restoration to its original condition, or destroyed, shall be replaced at the Contractor's expense.

3:00-F Survey and Layout. General layout of the work under these specifications including line and grade, will be furnished by the City or consultant. The Contractor shall exercise every precaution to avoid damaging or destroying survey stakes and monuments already established. Reasonable replacement of stakes will be at no cost to the Contractor. However, if the Contractor, through negligence and carelessness, destroys survey stakes, replacement will be at the Contractor's expense. City may deduct this cost from final payment of contract. The Contractor will be required to give the City five (5) working days notice before he will require layout and/or grade line and grade stakes. The Contractor will be required to clear all right-of-way prior to construction staking.

3:00-G Disruption of Existing System. The Contractor shall cause as little disruption to the present water and sewer systems as possible. The Pendleton Water Department shall be notified 72 hours in advance of any scheduled water shutdown. The Contractor shall notify the City 48 hours before any road closure. All severed lines shall be promptly reconnected, by or under the supervision of the City, with the Contractor taking reasonable care to see that there is no contamination of the water system. The Contractor shall notify the City immediately of any disruption of the existing system and shall be liable for all damages and charges related to the disruption.

3:00-H Underground Utilities. The Contractor shall check with the local electric, telephone, television and gas companies for utility lines in the construction area prior to excavation. "Call before you dig" provider shall be notified at 1-800-332-2344.

3:00-I Materials. Materials utilized in this project shall be hereinafter specified or be an approved equal. Where material that is not definitely specified below is necessary to provide a complete project, such material shall be new, of good construction quality, consistent with normal construction and engineering practices, and subject to the approval of the City before use. A yardstick for the selection of such materials, Federal, A.W.W.A. and A.S.T.M. specifications shall be used.

3:00-J Approvals. The Contractor shall submit two (2) copies of brochures, samples, manufacturer's name, model number, pressure rating, and any other pertinent information as may be necessary to completely describe any piece of material that he desires to use in place of specified "brand names". Equipment or material replacing "brand name" items must be approved by the City prior to installation; all such approvals must be in writing. Approvals are not necessary for those items which carry the specified brand name, rating, and model number.

3:00-K Compliance With State Regulations. The Contractor shall comply with any state and county regulations that may apply to any part of the construction covered under these specifications. The City or Contract Owner shall obtain any county or state permits, franchise, or bonds necessary to perform the construction across county and state highways.

3:01

EXCAVATION, BEDDING AND BACKFILLING

3:01-A Excavation. The Contractor shall perform all excavation of every description and whatever substances encountered to the depths indicated on the drawings. Excavated materials shall be piled a sufficient distance from the banks of the excavation to avoid overloading and to prevent slides or cave-ins.

Where it is necessary during excavation or trenching operations to cut through pavement, pavement shall be cut on a straight line and shall be beveled in such a way that the cut will be approximately 2" wider at the top than at the bottom, care being taken to avoid damage to adjacent surfaces. Replacement of pavement, oiled gravel, curb and gutter, sidewalks, or any other surface improvements, shall be accomplished in an approved manner so that the original condition and appearance is restored.

During trenching operations, the pavement shall be removed to a width 12" wider than the width of trench.

Trenches shall be carefully and accurately excavated to the lines and grades shown on the Plans. Except for unusual circumstances, and then only with the approval of the City, trench sides shall be cut as nearly vertical as possible, consistent with safety requirements, and the trench width shall be only wide enough to provide adequate working space for pipe bedding and laying operations. Trenching and laying operations of sewer shall always be up grade. the maximum permissible trench width, at the bottom of the trench and up to a point at the crown of the pipe shall be as follows:

15" Diameter and smaller	40 inches
16" Diameter and larger +	1-1/2 I.D. + 18 inches

Surface water shall be diverted to prevent it from entering the trench, which must be kept free of water during pipe laying operations. The Contractor shall keep adequate equipment on the job at all times to insure compliance with these provisions.

Boulders, rocks, roots, organic matter, other obstructions or other undesirable material as defined by the City, in the trench shall be removed to a dept of at least 6 inches below grade; trench shall then be brought to grade by backfilling with approved bedding material thoroughly compacted by tamping or other means in a manner satisfactory to the Engineer to provide adequate trench foundation.

Where needed to protect the workmen, the work, other utilities, or adjacent property, timbering, cribbing, and/or sheeting shall be installed by the Contractor. It shall be the Contractor's responsibility to protect the workmen and insure their safety at all times. Such cribbing, timbering and/or sheeting shall be of the Contractor's design which shall comply with applicable local, state, and federal safety codes. Removal of any cribbing, timbering and/or sheeting from the trench shall be accomplished in such a manner to fulfill the above requirements. Damages resulting from improper cribbing, timbering and/or sheeting or failure to do so shall be the sole responsibility of the Contractor. Timbering, cribbing or sheeting shall be removed prior to backfilling.

Operations shall be coordinated in such a way as to minimize the length of time between trenching and backfilling. Streets shall be kept open to traffic as much as is possible and obstruction of driveway shall be kept to a reasonable minimum. In no event shall trenching operations along public right-of-way proceed more than 300 feet in advance of laying operations, except by special written permission from the Engineer. No driveway or street shall be closed or impassable overnight

except by special written permission from the Engineer.

3:01-B Tunneling, Jacking, and Boring. Tunneling, jacking and boring will be permitted only where shown, specified or approved.

For tunneling, make the subgrade, upon which the pipe is to be placed or constructed, firm, thoroughly compacted and true to grade. Pipe bedding shall conform to the Standard Plans for the type of bedding specified. Restore to grade by backfilling with approved bedding material. All excavation below grade, which is made inadvertently or without authority shall be at no expense to the City.

For jacking and boring equip the leading section of pipe or conduit with a jacking head securely anchored thereto to prevent any wobble or alignment variation during the jacking or boring operation. For jacking, all excavation shall be carried out entirely within the jacking head, and no excavation in advance thereof shall be permitted. For jacking, every effort shall be made to avoid any loss of earth outside the jacking head. Remove excavated material from the pipe or conduit as excavation progresses, and do not allow such material to accumulate within the pipe or conduit.

Jack or bore all pipes or conduits to true line and grade. Should any deviation from true line and grade be considered excessive, in the judgment of the Engineer, take up and relay that portion of the pipe or conduit at no expense to the City.

Should appreciable loss of ground occur during the jacking or boring operations, backpack all voids promptly. Fill all remaining voids upon completion of the operations; such filling or backpacking shall be with grout or approved granular material.

The design of all sewer pipe or conduit is based upon the superimposed loads and not upon the loads resulting from the jacking or boring operations. The Contractor shall be responsible for any increase in pipe strength necessary to withstand jacking or boring loads.

Protect the driving ends of concrete pipe or conduit against spalling and other damage. Intermediate joints shall be similarly protected by the installation of sufficient bearing shims to properly distribute the bearing stresses. Remove any section of pipe or conduit showing signs of failure and replace with a new section or with a cast-in-place section which, in the judgment of the Engineer, is adequate to carry the loads imposed upon it.

Join sections of smooth steel casing to be jacked or bored by welding the joints with a continuous weld for full circumference or by other approved means. Provide joints which are capable of resisting the jacking and boring forces without failure.

Brace pipe or conduit installed in a casing to prevent shifting and floatation. Fill the void between the casing and the pipe or conduit with grout, or other material as specified or approved at end of casing.

When grouting is specified, after the casing has been jacked into position or the liner plates have been placed in the tunnel, pressure grout to fill all voids outside the casing or liner plates through the grout holes provided. Start grouting at the spring line hole at one end and pump grout until grout appears in the grout hole at the crown, then start grouting through the opposite spring line hole until grout appears at the hole in the crown. Next grout through the hole at the crown until grout appears in the next set of holes along the pipe. Plug the holes at the starting point and move to the next set of holes and repeat grouting sequence until full length of jacked, bored, or tunneled

pipe has been grouted. Grouting once commenced at any one point shall be completed without stopping.

Where shown or when directed, completely fill the annular space between the casing or tunnel liner and the carrier pipe or conduit with specified or approved backfill material. Accomplish backfilling by pumping material from the two ends at such intermediate points as may be necessary in a manner in which will insure all voids are filled. When grouting, use approved low pressure grouting equipment.

3:01-C Dewatering. Dewatering of the trenches shall be considered incidental to and all costs included in the various contract pay items in the proposal. The pipe trenches at all times during the pipe laying and jointing operation shall be kept free from water by such methods as the Contractor chooses, provided they are acceptable to the Engineer.

The Contractor shall remove and dispose of all water entering the trenches and shall keep the trenches water-free until the City lines, fittings, manholes, and other appurtenances are in place. In no case shall earth or any foreign materials be allowed to enter the City lines. Water pumped from trenches shall be conducted to a place where disposal is possible without damage to property or creation of a nuisance as determined by the City's Representative.

3:01-D Topsoil. Imported topsoil as specified in the contract shall be natural, fertile friable topsoil, representative of local productive soil. Topsoil shall be 90 percent free of foreign matter larger than 2 inches diameter, shall not contain gravel (particles larger than 2mm) in excess of 15 percent by volume nor contain noxious vegetation and seeds.

3:01-E Extra Depth Trench Excavation Bedding and Backfilling. The only portion of the water line or sewer line installation which will be considered as extra depth is where extra depth excavation is indicated necessary on the plans. All other portions of the water and sewer line including any steep slopes are not considered to have extra depth to the installation and no extra payment shall be made for trenching, bedding or backfill or any other special construction necessary.

3:01-F Backfilling. Trench shall be carefully backfilled as noted in the bedding schedule and shown on the plans. Remainder of backfill material may be placed by machine, provided it is done in such a way as to avoid damaging the pipe. Backfill shall be water settled, unless otherwise permitted, or directed, by the Engineer. Backfill shall be compacted to at least the density of the original undisturbed material, and excess material shall be neatly heaped over the trench, except in paved roadway areas. Excess paved material shall be loaded and hauled to points of disposal to be designated by the Engineer, or waste site provided by Contractor. Settling of the trench, in public rights-of-ways, within a period of one year after inadequate compaction for public rights-of-way and the Contractor shall be responsible for remedying the condition in accordance with the provision of the General Conditions.

In yards, fields or otherwise cultivated areas, the upper 12" of top soil shall be segregated and replaced or imported to its original state. Sod in lawn areas shall be removed prior to trenching and carefully replaced upon completion of the work.

3:01-G Roadway Patching. Whenever existing roadways are disturbed during the normal course of construction, the Contractor shall restore the roads to their original condition.

Trench backfill within the limits of a roadway shall require special compaction to at least 90 percent of maximum density from pipe level to within three feet of the surface. The top three feet shall be compacted to not less than 95 percent of maximum density. Density of compaction material in place

determined by ASSHTO - T99, Method D. Backfill shall be compacted using a mobile trench compactor with a maximum lift of one foot.

In lieu of this special compaction, the Contractor may use a well-graded gravel as backfill. The gravel shall be clean and may vary in size from 3/8 inch to 1-1/2 inch with not more than ten percent (10%) of the material less than 3/8 inch in size. The gravel shall be compacted in 6-inch layers, as directed by the Engineer. Asphalt mix surfacing shall be in the roadway to a depth equal to the existing surfacing, but not less than three inches. A compacted stabilized gravel base 3 inches in depth shall be placed in the roadway at all locations where surfacing is required, prior to placement of the bituminous wear course.

Final rolling shall be accomplished by steel roller. All work shall be done as directed by the Engineer and shall conform to all construction requirements of the applicable municipal, county, state and federal highway authorities. The Contractor shall obtain written permission from the necessary agencies, prior to beginning any roadway excavation.

3:01-H Restoration. All utility right-of-way areas on public right-of-way, private property, or otherwise shall be substantially restored to the condition in which the Contractor found it to the satisfaction of the Engineer. All roadway and right-of-way restoration along State rights-of-way including roadway preparation, materials and resurfacing shall be in accordance with the technical requirements of the State of Oregon Standard Specifications for Road and Bridge Construction. Unless given other permission by the authority responsible for the roadway, the final grade and cross section shall conform to the roadway that existed prior to construction. Any utilities that were damaged or moved or destroyed shall be restored to the satisfaction of the authority responsible. The restoration or removal and disposal of excess or existing materials shall be considered incidental to the construction and the costs thereof shall be included in the items for which payment is provided.

3:01-I Excavating Unsuitable Foundation Material and Backfill. Where shown on the plans, or directed by the Engineer, foundation materials which are unsuitable to carry the structure to be placed on it shall be excavated and replaced with foundation material. The backfill materials shall be deposited and spread in layers not to exceed six inches and each layer shall be thoroughly compacted by tamping to a 90% Proctor density.

3:01-J Finish Grading. After the structures have been constructed and installed, all piping installed and all backfilling and embankments have been completed, areas on the site of the work shall be brought to the true grades. All slopes shall be trimmed and dressed, and all surfaces graded such that effective drainage is secured.

3:01-K Disposal of Excess Materials. All excavated materials not required or not suitable for fill or backfill shall be disposed of at either a pre-designated waste site contained in the contract documents or at a waste site provided by the Contractor. All costs for disposing of this excess material shall be incidental to other items of work contained in the proposal.

The Contractor shall be responsible for obtaining necessary permits in accordance with Chapter 70 of the Uniform Building Code, for excavation or fill that is done on land that is not public right-of-way or public easement.

3:01-L Moving Fences and Minor Structures. The Contractor shall make all temporary openings in fences and make the necessary repairs to replace the existing fences in their original locations and conditions. Culverts, drainage pipes, mail boxes or other minor structures which may have to be moved temporarily from the alignment of the work shall be removed, cared for, and reset by the

Contractor in a satisfactory manner as approved by the Engineer at Contractor's expense.

It shall be the Contractor's responsibility to visit the project site and determine actual conditions prior to construction. No separate payment will be made for clearing of the right-of-way. It shall be considered as part of the Contractor's obligation and no additional payment shall be made.

3:01-M Rock Excavation. The inclusion of a bid item and estimated quantity for rock excavation in the bid schedule indicates that rock excavation is certain. The following paragraphs define solid rock. The excavation and the method of measurement upon which payment will be based. Payment shall be for cubic yards of rock excavated, measured as specified in the following paragraphs.

Solid rock shall be defined as large masses of igneous, metamorphic, or sedimentary rock which, in the opinion of the City's Representative, cannot be excavated without drilling, blasting, wedging, sledging, boring or breaking with power hand tool.

Solid rock excavation shall be measured in cubic yards from the top of the rock to a point six inches below the invert of the pipe and a maximum of thirty-six (36) inch trench width being allowed, and ten (10) inches each side of a tee or wye. Rock shall be removed from the excavation in such a way that a clear width of at least six (6) inches exists between the rock and the pipe or appurtenances. Rock excavation measurements around manholes shall not exceed eighteen (18) inches below invert of channel bottom and one foot outside of the actual dimensions of the manhole.

It is anticipated that the "Hardpan" type soil cemented gravel, loose, shaken, previously blasted rock, or broken rock in fills, all may be encountered during excavation. This type of excavation shall not be considered rock excavation.

3:01-N Unclassified Excavation. All excavation material shall be unclassified material regardless to type, nature, characteristic and/or condition of the material to be encountered in the line and grade as shown on plans. The Contractor, by signing the proposal, has certified that he has carefully examined the plans and working site and satisfied himself as to the nature and location of the work, quality and quantity of material required and the character of equipment and facilities needed to accomplish the work, and he has included any costs associated with the extra effort of excavating unclassified material in his unit cost of excavation, or lineal foot of storm, water or sewer pipe installed. There will be no separate pay item for rock excavation. Contractor is responsible for compaction of all trench backfill.

3:01-O Explosives. Excavation which requires explosives shall use explosives which are fresh, stable materials manufactured to the standards of the "Institute of Makers of Explosives" and conforming to applicable requirements of ORS Chapters 476 and 480.

No blasting shall take place without written consent of the City of Pendleton's Fire Chief.

3:01-P State Highway Crossings. Contractor shall notify the State Highway Maintenance Engineer 48 hours in advance of any work and obtain permission to proceed. All applicable State regulations and laws shall be adhered to.

3:01-Q Railroad Crossing. Unless indicated otherwise, the Union Pacific Railroad tracks or any other railroad line shall be crossed by use of a steel carrier pipe bored or jacked into place. The depth of the pipe shall be as shown on the plans. The Contractor shall comply with the Union Pacific Railroad Company Standard Specifications, C.S. 1029 or its latest revision and shall coordinate all

construction activities of the railroad crossing with Union Pacific Company's Chief Engineer or Authorized Representative.

3:01-R Records. The Contractor shall maintain records during the project, showing locations of all facilities installed under this contract. This record shall include, but not be limited to, locations of all manholes, sewer and water laterals, sewer wyes, clean outs, manhole stubouts, valves, water services, blow-offs.

3:02

SEWERS

3:02 Materials.

a. Concrete Sewer Pipe. Concrete sewer pipe 12" and smaller shall be Extra Strength non-reinforced concrete pipe conforming with ASTM C-14 and have rubber gasket joints. Concrete sewer pipe larger than 12" shall be reinforced concrete conforming with ASTM C76 and ASTM C361 and shall be the class as specified.

b. Ductile Iron Pipe. Use ductile iron pipe conforming to ANSI A21.51 or AWWA C151, with push-on Tyton joint or mechanical joints as specified, conforming to Federal Specification WW-P-421c and ANSI A21.11.

c. PVC Pipe. Use PVC pipe conforming to ASTM C 3033 or D 3034.

d. Galvanized Corrugated Iron & Steel Pipe. Use galvanized corrugated iron or steel pipe and coupling bands of the gauges and type as shown or specified, and conforming to the material, fabrication and inspection requirements of ASSHTO Designation M 36 or M 167. This shall be used for storm sewer out of street area only.

e. Bituminous Coating. Complete coating of the inside surfaces of corrugated metal pipe with bituminous material conforming to AASHTO M 190, with a minimum thickness of 0.05 inch at the crest of the corrugations shall be required.

3:02-A Bedding. The bottom of the trench shall be finished according to the bedding schedule to insure uniform bearing along the barrel of the pipe and to provide suitable depressions to accommodate joints. Any rocks, or silty or fine sandy soils of sufficient size or extent to cause undue flexural or punching stresses in the pipe or any unsuitable foundation shall be removed from the trench bottom and replaced by select backfill material. The trench bottom shall be excavated below grade so as to allow at least four inches for placement of imported bedding material for pipes 27" in diameter and smaller and 6" for placement of imported bedding for pipe 30" and larger. Bedding material shall consist of clean, granular, well graded, sand and gravel of material of which 100 percent will pass the U. S. Standard 3/4" opening, and not more than three (3) percent will pass the U. S. Standard 200 (wet sieve) with a minimum sand equivalent of 50. Bedding shall be brought up around the pipe to approximately the springline and select backfill laid to twelve inches over the top of the pipe. Other classes of bedding shall be in accordance with APWA Standard Specifications.

3:02-B Select Backfill. In areas where the Engineer designates the native material as unsuitable, the Contractor shall obtain and place select backfill material. Native material which is surplus shall be removed and hauled to a nearby spoil site located by the Contractor and approved by Engineer. Select backfill shall meet the specification for Class B bedding material except 100% shall pass 1" standard opening.

3:02-C Installation of Sewer Pipe.

a. Pipe Laying. Trench excavation and bedding shall conform to Class B bedding shown in the Standard Drawings or as specified on plans. Pipe laying shall proceed upgrade, with the spigot end pointing in the direction of the flow. Each pipe shall be laid true to grade, and in such manner as to form a close concentric joint with the adjoining pipe. As the work progresses the interior of the sewer shall be cleared of all dirt and superfluous material of every description. If the maximum width of the trench at the top of the pipe specified in Section 3:12 of these specifications is exceeded for any reason other than by direction, the Contractor shall install such concrete cradling, encasement, gravel base or other bedding as directed by the Engineer to satisfactorily support the added load of the backfill. Trenches shall be kept free from water and the pipe shall not be laid when conditions of the trench or the weather are unsuitable for such work. At all times when work is not in progress, all open ends of pipe and fittings shall be securely closed so that no earth or other substance will enter the pipe.

b. Jointing. Jointing of pipe shall be performed using factory installed slip type joints. Installation of these joints shall be in strict accordance with the manufacturer's recommendations.

3:02-D Fill Under and Over Sewer Pipe. Where fill is indicated necessary on the plans the Contractor shall use imported bedding and select backfill material per Class B Standard Pipe Bedding as shown in standard plans. The remainder of fill can be native material secured from areas immediately adjacent to the fill area or if designated by Engineer, select backfill shall be required. The fill shall be compacted in accordance with 3:18 General Specifications.

3:02-E Manholes

a. General. Manholes shall be classified as standard or shallow according to depth. Standard manholes are manholes which have a depth, measured from the invert of the outlet pipe to the top of the cover of six (6) feet or more. Shallow manholes have a depth of less than six feet. Standard manholes shall be constructed of four-inch thick precast concrete adjustment rings and cast iron frames and covers. Shallow manholes shall be constructed of four-inch thick precast concrete sections with six (6) inch concrete base slab, with six (6) inch reinforced concrete cover. Standard and shallow manholes shall be constructed as shown on the detail drawings. The invert channels shall be smooth and semicircular in shape, conforming to the inside of the adjacent sewer section. A minimum invert elevation drop of one-tenth of a foot from the entrance to the outlets shall be provided in all manholes where there is a change in direction.

Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of manhole will permit. Changes in size and grade of the channels shall be made gradually and evenly. The invert channels may be formed directly in the concrete, or may be constructed by laying a full section of pipe through the manhole and cutting out the top half after the surrounding concrete has hardened. Manholes under 4 feet depth shall be concentric cones and rings. Manholes over 4 feet depth shall be eccentric cones and rings.

The floor of the manhole outside the channels shall be smooth and shall slope toward the channels not less than one inch per foot and not more than two inches per foot. Steps shall be installed in the manholes over 4 feet in depth.

Steps for manholes shall be steel reinforced plastic that conform to AASHTO M 199M (ASTM C 478M) and AASHTO T 280 (ASTM C 497). The plastic material surrounding the reinforcing steel bar shall have textured non-slip surface, be injection molded and have a minimum thickness over the steel of .006 in. (1/16"). Voids in the plastic will be cause for rejection of the step.

b. Concrete. All concrete used in manholes shall have a compressive strength of not less than 2,500 pounds per square inch at 28 days of age. The aggregates, Portland Cement, and concrete shall comply with the provision of ASTM Designation C-144, ASTM Designation C-150, Type II, and Federal Specification SSOC618a. The concrete mix shall be approved by the Engineer. The maximum permissible water/cement ratios by weight shall be 0.58. When directed by the Engineer, the Contractor shall have compressive strength test made of the concrete to be used in accordance with ASTM Standard Specifications.

c. Installation. Manholes shall be installed at the locations and elevations shown on the plans, or as directed by the Engineer. Mortar for jointing shall consist of one part Portland Cement and two parts of fine sand. Manhole sections and adjustment rings shall be grouted in place when the manhole is constructed. The jointing material shall be approved by the Engineer prior to installation.

d. Frames and Covers. The frames and covers shall be made of cast iron and shall conform to requirements by the City as shown on the detail sheet. Standard castings differing in non-essential details and approved by the Engineer may be acceptable. The manhole frames and covers shall be so set that the top of the cover will be above the finished grade or as instructed by the Engineer.

3:02-F Testing.

a. Test for Displacement of Sewers. Sewer mains shall be checked by television inspection to determine whether any displacement or damage of the pipe has occurred after the trench has been backfilled and compacted as specified. If the television inspection of the interior of the pipe shows poor alignment, displaced pipe or any other defects, the defects designated by the Engineer shall be corrected by the Contractor at the Contractor's expense.

b. Air Testing of Sewers. All sewer mains shall be pressure tested by the time pressure drop method for acceptance after backfilling has been completed.

3:02-G Wye Branches. The Contractor shall furnish and install 4-inch wye branches on the sanitary sewer main in locations as shown on the plans. Compression type stoppers shall be installed and left in place until service line construction begins. Wyes shall be properly referenced, locations recorded, shown on "as-builts" and provided to the Engineer, and stakes placed to permit ready relocations.

3:02-H Laterals. The Contractor shall install lateral sewers in the location and manner as shown on the plans, ten (10) feet past property line, or as directed by the Engineer. All codes and ordinances shall be followed.

3:02-I Shoulder Rock. The Contractor shall furnish and place in an acceptable manner 3/4" minus crushed rock where directed and approved by the Engineer. This rock shall replace rock disturbed during the installation of the sewer line along the shoulder of the roadway.

3:02-J Standard Frames and Grates for Inlets and Catch Basins. Frames and grates for catch basins and storm drain inlets shall be fabricated of steel conforming to ASTM A 7, A 36 or A 373 in accordance with the details shown on the Standard Drawings. All connections shall be welded. Welding shall conform to requirements of current code for welding in building construction of the American Welding Society. Frames and gratings shall be tested one within the other and there shall be not more than 1/16-inch rock.

3:02-K Installation of Inlet & Catch Basin Frames and Grates. Set frames and grates at elevations shown on Standard Drawings or as directed. Frames may be cast in, or shall be set in mortar.

Bearing surfaces shall be clean and provide uniform contact. Anchor bolts and other fastenings shall be firmly bedded in concrete or otherwise secured as approved.

3:02-L Drop Assemblies. Construct drop assemblies at locations indicated on Plans and as shown on the Standard Drawings.

3:02-M Cleanouts. Construct cleanouts at locations indicated on Plans and as shown on the Standard Drawings.

3:02-N Anchor Walls. Conform to details shown on the Standard Drawings. Do not over-excavate in the areas where anchor walls are to be poured. Construct suitable forms that will allow the downhill wall to have a full bearing surface against undisturbed earth. Cure concrete for 5 days before conducting hydro-static or air tests.

3:02-O Cleaning Sewer. Upon completion of sewer system, clean each structure of all silt, debris and foreign matter.

3:03

WATER

3:03-A Materials.

a. Ductile Iron Water Pipe as required shall be manufactured and tested in accordance with A.W.W.A. latest specifications.

All pipe shall be supplied by a bona fide waterworks supplier with a reputable past service of similar nature and who is capable of providing competent service with a reasonable guarantee on all materials. Pipe shall be Tyton Joint Class 52 for ductile iron pipe 12" in diameter and smaller and Class 50 ductile iron for pipe larger than 12" in diameter. Affidavit of compliance with the above Specifications shall be supplied upon request. The City reserves the option to have an independent testing laboratory conduct pressure tests and chemical analysis on random pieces at any time. Total length tested shall not exceed 1/20 of one (1) percent of project length. Cost of above testing shall be borne by the Contractor.

b. Gate Valves shall be waterous resilient sealed gate valves or approved equal to meet AWWA Standard Specification No. 6509. Valves shall have a two (2) inch square operating nut and open with a left-hand turn. Valve shall have O-ring stem seals which shall stand the test pressure without leaking.

c. Butterfly Valves. Butterfly valves shall be Dresser 450 Butterfly valve or approved equal to meet AWWA Standard Specification No. C504. Same as (b) valves shall have a two (2) inch square operating nut and open with a left-hand turn. Valve shall have O-ring stem seals which shall stand the test pressure without leaking.

d. Cast Iron Valve Box shall be of the slip type and twenty-four (24) inches to thirty-six (36) inches standard length unless otherwise specified. The minimum lap at the joint shall be two (2) inches. Covers for valve box shall be of standard cast iron type imprinted with the word "WATER".

e. Valve Marker Posts shall be Graystone No. S-10 or an approved equal.

f. Fire Hydrants shall be compression type, mechanical joint shoe, two 2-1/2" NST discharges, 4-foot burial, meeting A.W.W.A. Standards, one 4-1/2" Steamer Pumper, Pendleton-Type thread,

painted as designated by City, shall open left, traffic model. M & H No. 129, Mueller No. A423, Clow No. F-2500, Waterous No. WB-67, Kennedy No. K-11 or K81A, US Pipe "Metropolitan" or Pacific States are the only acceptable brand name fire hydrants.

g. Service Clamps shall have malleable iron body with electroplated single or double band with O-ring type gaskets. Clamps shall be designed for iron pipe threads for use with asbestos cement pipe similar to Jones, Smith-Blair, Mueller, or equal.

h. Corporation Stops shall be Mueller Catalog No. H-15025, or approved equal.

i. Water Service Pipe shall be non-toxic, flexible, copper pipe type "K" designed for a working pressure of not less than 160 psi. The pipe shall be designed for, and used with, standard brass flared fittings or conventional compression fittings. The inside diameter of service pipe furnished for this project shall be the full dimension shown on the Proposal Form.

j. "U" Branch Connections shall be Mueller 8" cc., H15364, or approved equal.

k. Meter Stops shall be angle type with lock wing such as Mueller H14255, or an approved equal.

l. Service Meters shall conform to A.W.W.A. Specifications C700 with a sealed register, a frost protection device and shall be direct reading in cubic feet. Meters shall be of the type as approved by City.

m. Water Meter Couplings with copper service pipe connection shall be Mueller H14200 or an approved equal.

n. Meter Boxes shall be Brooks No. 36-T, or an approved equal for 3/4" and 1" service meter installations. Meter boxes to accommodate 3/4" and 1" service meters with a customer installed PRV shall be Brooks No. 37-T or an approved equal. For 1-1/2" and 2" services, the meter boxes shall be Brooks No. 38-T and 65-T, respectively, or an approved equal. Meter boxes to accommodate dual service connections shall be Brooks No. 37-A5 or an approved equal.

o. Bedding Sand shall be a natural bank sand, graded from fine to coarse, not lumpy or frozen, and free from slag, cinders, ashes, rubbish or other material which is objectionable or deleterious. It shall not contain a total of more than ten (10) percent by weight of loam and clay and all material must be capable of being passed through a 3/4" sieve. Not more than five (5%) percent shall remain on a No. 4 sieve and not more than three (3%) percent shall pass the U. S. No. 200 (wet sieve).

p. Gravel Backfill shall be crushed or natural bank gravel having durable particles graded from fine to coarse in a reasonably uniform combination, with 100% of the materials passing the 2-1/2 inch square opening. It shall be free from slag, cinders, ashes, refuse or other deleterious or objectionable materials. It shall not contain excessive amounts of loam and clay and shall not be lumpy or frozen. A minimum of 25% and a maximum of 75% shall pass the 1/4 inch sieve. A maximum of 5% shall pass the U. S. No. 200 sieve (wet sieving).

3:03-B Installation of Water Mains. Installation of ductile iron water pipe shall be in accordance with the manufacturer's installation guide.

Before lowering into the trench, the pipe shall be inspected for defects; and the interior of the pipe shall be thoroughly cleaned of foreign matter. The pipe shall be kept clean during laying operations by plugging or other approved methods. Pipe shall not be laid in water, or when trench or weather

conditions are unsuitable for the work. Deflections from a straight line or grade, as required by vertical curves, horizontal curves, or offsets shall not exceed the pipe manufacturer's recommendation.

Whenever it becomes necessary to cut a length of pipe, the cut shall be made in a neat and workmanlike manner without damage to the pipe. Cut ends shall be firmly wedged by the use of concrete thrust blocks bearing against solid undisturbed earth. The size of the thrust blocks shall be dependent upon the soil conditions and shall be in accordance with the typical details in these specifications.

3:03-C Bedding Sand and Gravel Backfill. Bedding sand shall be used in areas containing large amounts of rock or other unsuitable bedding where suitable material cannot be obtained from the excavated material or from the sides of the trench. In such areas, the water mains shall be bedded on four (4) inches of granular material and backfilled to the spring line with the same granular material.

If in the opinion of the Engineer, the excavated material is unsuitable for backfill purposes, it shall be disposed of by the Contractor and the trench shall be backfilled with gravel, or approved granulated material. No additional compensation will be made for wasting excavated material.

3:03-D Installation of Water Services. Service Connections shall consist of tapping into the main, providing and installing a corporation stop, service pipe, meter box, all installed and connected to provide a complete service from the main to the customer's property line. (See typical meter setter or angle meter stop installation.)

Where shown on the Plans, or where directed by the Engineer, the Contractor shall install dual services. Dual services shall be installed in the same manner as single services with the exception of the addition of a "U" branch connection and the use of a 37-A5 meter box.

All service lines crossing County roads, or State Highway rights-of-way shall be open cut.

3:03-E Setting Valves, Valve Boxes and Hydrants. Valves, valve boxes and fire hydrants shall be installed where shown on the drawings or directed by the Engineer. Valves, valve boxes and hydrants shall be set plumb. Earth fill shall be carefully tamped around each valve box. Fire hydrants shall be set plumb. Fire hydrants shall be set at such elevations that the connecting pipe will not have less cover than the distribution main. The back of the hydrant, opposite the pipe connection, shall be firmly blocked against the face of the trench to prevent the hydrant from blowing off the line. Not less than four (4) cubic feet of broken stone or coarse gravel shall be placed around the base of the hydrant to insure drainage. Valves and hydrants shall have the interiors cleaned of all foreign matter before installation. Stuffing boxes shall be tightened and the hydrant or valve shall be inspected in opened and closed positions to insure that all parts are in working condition.

The ground around fire hydrants within a radius of three (3) feet shall be cleared and leveled to provide easy access to the hydrant. If excavation is required around the hydrant to obtain proper clearance, in no case shall the fire hydrant be left in a "Pocket". Instead, excavation shall be continued toward the road and to "day-light", thus providing access and drainage.

3:03-F Thrust Blocking. On all pipelines, securely anchor all tees, plugs, caps and bends as shown in Standard Drawings or as directed by Engineer to prevent movement due to thrust. Achieve anchorage only by use of approved thrust blocking or approved joint restraint.

Place the concrete blocking between undisturbed earth and the fitting to be anchored. The bearing surface shall be sized and located to adequately withstand the applied thrust force. Do not encase pipe joints or fitting joints with concrete.

3:03-G Blow-off Assembly. Blow-off assemblies shall be constructed at the locations shown on the plans, or where directed by the Engineer and in complete accordance with the standard detail entitled, "Typical Blow-Off-Assembly". Care must be taken to insure that the drain hole is kept clear of concrete thrust blocks or other material.

3:03-H Air Release Valve Assembly. Air release valve assemblies shall be constructed at the locations shown on the Plans, or where directed by the Engineer, and in complete accordance with the standard detail entitled, "Air Release Valve Assembly". Care must be taken to insure that the corporation stop is turned to "OPEN".

3:03-I Testing Water Mains. After the pipe is laid, the joints completed, the thrust blocks and the trench partially backfilled, the pipe, appurtenances and service connections shall be subjected to a hydrostatic pressure of 200 psi.

After the main has been brought up to test pressure, it shall be held at that pressure for one (1) hour and the make-up water carefully measured by the use of a displacement meter or by pumping water from the vessel of known volume.

The allowable leakage shall be determined by using the formula:

$$L = ND (P)^{1/2} / 11,000$$

Where L = The allowable leakage in gallons per hour.

N = The number of joints in the length of pipe line tested.

D = The nominal diameter of the pipe in inches.

P = The average test pressure during the leakage test, in psi.

Should a test of the pipeline disclose leakage greater than the allowable, the Contractor shall at his own expense, locate and repair all defects until the leakage is within the specified limits. Defective material furnished by the Contractor shall be replaced at his own expense.

3:03-J Disinfection of Water Mains. Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated materials that may have become lodged in pipe.

The following is a reprint of Washington State Health Department, Division of Public Health Engineering, "Instructions for the Disinfection of Mains" describing three alternative methods for disinfecting water mains, in order of preference.

"Method No.1

"(1) Liquid Chlorine. A chlorine gas-water mixture or dry chlorine gas may be applied by means of a chlorinator, or the gas may be fed directly from a chlorine cylinder equipped with proper devices for regulating the rate of flow and the effective diffusion of gas within the pipe. (Use of the chlorinator is preferred to direct feed from the cylinder.)

"(2) Point of Applications. The preferable point of application for the chlorinating agent is at the beginning of the pipe line extension, or any valved section of it, and through a corporation cock inserted in the horizontal axis of the pipe. The water injector for delivering the gas-water mixture into the pipe may be supplied from a tap on the pressure side of the gate valve, controlling the flow into the pipe line extension. In a new system, application may be at the pumping station or the

elevated tank or the standpipe or the reservoir.

"(3) Rate of Application. Water from the existing distribution system or other source of supply should be controlled to flow very slowly into the newly laid pipe line during the application of the chlorine. The rate of chlorine gas-water mixture or dry gas feed should be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe will be at least fifty (50) parts per million. (If the ordinary chlorine residual comparator is used, a satisfactory dosage is indicated if the sample turns a deep brick red upon addition of the orthotolidin.)

"(4) Back-Pressure Prevented. Back-pressure, causing a reversal of flow in the pipe being treated, should be prevented.

"(5) Retention Period. Treated water should be retained in the pipe at least three (3) hours and preferably longer. After this period, the chlorine residual at pipe extremities and at other representative points should be at least five (5) parts per million. (If an ordinary comparator is used, a satisfactory residual is indicated by a deep yellow color).

"(6) Chlorinating Valves and Hydrants. In the process of chlorinating newly laid water pipes, all valves or other appurtenances should be operated while the pipe line is filled with the chlorinating agent.

"(7) Final Flushing and Chlorine Residual Test. Follow Chlorination, all treated water should be thoroughly flushed from the newly laid pipe line at its extremity, until the replacement water throughout its length, upon test, shows the absence of chlorine (or in the event chlorine is normally used in the source of supply, then the test should show a residual not in excess of that carried in the system). Contractor is responsible to adhere to all applicable regulations regarding the discharge of chlorinated water.

"(8) Bacteriological Test. Before placing the lines in service, a satisfactory report should be received from the local or state health department on samples collected from representative points in the new system. (If a chlorine residual is present, the samples must be collected in specially treated bottles.)

"Method No. 2

"(1) Calcium or Sodium Hypochlorite or Chlorinated Lime in Water. A mixture of either calcium or sodium hypochlorite or chlorinated lime of known chlorine content and water may be substituted as an alternative for liquid chlorine. (Typical commercial products of this type are HTH, Perchloron, Clor, Purex, etc.)

"(2) Proportions of Chlorine Compound and Water Mixtures. Prepare a solution containing approximately five (5) percent available chlorine by weight. In the case of HTH or Perchloron, at seventy (70) percent available chlorine, use six (6) pounds per ten (10) gallons of water. In the case of Clor, at fifteen (15) percent available chlorine, add two (2) parts of water to one (1) part of Clor. For other strength compounds, adjust dilutions accordingly.

"(3) To Prepare the Chlorine Compound-Water Mixture, first make a paste, and then thin to a slurry, to insure getting all active ingredients into solution. The prepared solution should be injected or pumped by means of a hypo-chlorinator into the newly laid pipe under conditions outlined under Method No. 1 for liquid chlorine application. See items (2) to (6), inclusive, under 'Method No. 1.' (A five percent solution equals 50,000 ppm. Therefore, to obtain a 50 ppm dosage, the ratio of solution feed to water flow past the point of application should be 1000 to 1. Example: If the hypo-

chlorinator feeds at the rate of 5 gallons per hour, the rate of water flow should be about 5000 gph or 83 gpm.)

"(4) Further Procedures. Provisions for final flushing and bacteriological testing under this alternative should be the same as those described in Items (7) to (9) inclusive, under Method No. 1 above."

"Method No. 3

"(1) Dry Calcium Hypochlorite or Chlorinated Lime. Dry calcium Hypochlorite or chlorinated lime, of the same chlorine content as that specified above, may be employed as an alternative procedure where facilities are not available for chlorinating in the manner outlined under Methods No. 1 and 2. The practice of chlorinating newly laid pipe line extensions by introducing bleaching powder or calcium, hypo-chlorite powder in dry form precludes preliminary flushing and often results in insufficient concentration of chlorine in certain parts of the system; therefore, this practice is considered the least effective method of water main chlorination. It should be used only on the installation of minor extensions and where other methods are impractical and not feasible. Caution:

Do not allow more than two (2) days between time of adding hypo-chlorite and filling with water.

"(2) Dosage. The dosage of calcium hypochlorite powder containing seventy (70) percent available chlorine should be about one (1) pound for each 1680 gallons of water pipe capacity treated (See following table); chlorine yielding compounds other than calcium hypochlorite powder may be used in amounts proportional to their available chlorine contents.

QUANTITY OF HIGH TEST HYPOCHLORITE PER 100 FEET OF MAIN

Diameter of Pipe (inches)	Ounces	Tablespoonsful
4	1	2
6	2	4
8	4	8
10	5	10
12	7	14
16	13	26

"(3) Point of Application. Distribute the required amount of hypochlorite as uniformly as possible while the pipe is being laid.

"(4) Further Procedure. When this method is used, the newly laid pipe shall be filled very slowly, to avoid washing the powder to the extremity of the pipe line.

3:04

STREETS

3:04-A Street Excavation. The Contractor shall furnish all labor, materials, and equipment necessary to complete all excavation, including the disposal of all excess excavated material, as specified herein or as shown on the plans. Excavation shall include existing curb and asphalt removal as required to prepare the roadway for base rock and asphalt.

3:04-B Roadway Compacted Fill. Fill material shall be compacted to not less than 95% relative density as determined by AASHTO Test Method T-99.

3:04-C Preparation of Roadway Subgrade. The term subgrade as used herein shall be considered that area under the street section including sidewalks. All excess material and debris from construction within the street area shall be removed and disposed. The subgrade shall be brought to the required grades and elevation as shown on the Plans or as established by the Engineer.

In the event that soft or spongy locations are evident, the objectionable material shall be removed and the holes filled with suitable excavated material satisfactory to the Engineer. Fill material shall be placed in eight-inch layers, loose depth, and thoroughly compacted. Unsatisfactory material does not contain sufficient moisture for maximum compaction, the surface shall be wetted as directed by the Engineer to assure compaction. Shaping and rolling of the subgrade shall continue until the surface is at the established grade, or cross-section and is compacted to not less than 95% relative compaction as designated by AASTHO-T99 Test Method D. Care shall be exercised during the rolling operation to prevent damage or scarring to existing concrete curbs, or structures. Any curb or gutter damaged during construction will be removed and replaced at the Contractor's expense.

All compaction equipment shall be by means of a power roller of approved type.

3:04-D Roadway Aggregate Rock Base Fill Material. Material for base fill shall be crushed rock, crushed gravel or a combination thereof as the Contractor may elect, and when screened by laboratory analysis shall meet the following designated gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
3/4"	100
1/2"	90-100
#8	28-58
#40	8-25
#200	2-10

Aggregate base material shall have at least one fractured face produced by mechanical crushing. This fracture requirement shall be applicable throughout the grading of the materials involved. Materials that are tested and indicated non-conformance with this requirement shall be immediately removed from the construction site. The Engineer shall determine the limits of aggregate placed that do not conform to this requirement and the Contractor shall immediately comply with any order given by the Engineer to correct deficiencies in grading, or to remove material that does not comply with these specifications. Aggregate rock base shall be placed in lifts not to exceed 8" loose depth prior to rolling. Each lift shall be watered as directed and thoroughly compacted to not less than 95% relative compaction as designated by AASTHO-T99 Test Method D. Aggregate rock base material shall be delivered to the road bed as a uniform mixture and each layer shall be spread as nearly as possible in one operation. Segregation shall be avoided and the base material when compacted shall be free from pockets of coarse or fine material. Rolling shall commence at the sides and continue toward the center. Dumping of aggregate on the subgrade, in piles, will not be permitted. Depth of base shall meet design criteria of OSHD for a 30 year life as published in the "Asphalt Paving Design Guide" dated December 30, 1998, for APO and as it may be updated in the future.

Aggregate rock base shall meet the following:

- a. Durability - the source material from which aggregate base materials are obtained, produced or manufactured, shall meet the following qualifying test requirements:

<u>Test</u>	<u>Test Method</u>	<u>Requirements</u>
Degradation:		
Passing No. 20 sieve	OSHD TM 208	30% Max.
Sediment Height	OSHD TM 208	3" Max.
Abrasion:	OSHD TM 211	35% Max.

- b. Sand Equivalent - base aggregates to be incorporated in the work shall have a sand equivalent of not less than 30 when tested in conformance with OSHD TM 101.
- c. Liquid Limit and Plasticity - Base aggregate shall meet the following requirement:

LIQUID LIMIT AND PLASTICITY INDEX VALUES

<u>Percent of Material Passing No. 40 Sieve</u>	<u>Liquid Limit (Maximum) OSHD TM 102</u>	<u>Plasticity Index (Maximum) OSHD TM 103</u>
0.0 to 5.0, inclusive	33	6
5.1 to 10.0, inclusive	30	5
10.1 to 15.0, inclusive	27	4
15.1 to 20.0, inclusive	24	3
20.1 to 25.0, inclusive	21	2
Over 25.0	21	0 or N.P.

3:04-E Asphalt Concrete Paving. Asphaltic concrete shall be composed of asphaltic cement, mineral filler, sand and gravel, any chemical additives or crushed rock mixed together in the proportions specified. Depth of asphalt concrete paving shall meet design criteria of OSHD for a 30 year life as published in the "Asphalt Paving Design Guide" dated December 30, 1998, for APO and as it may be updated in the future.

Where the Plans indicate total asphalt concrete depth of three inches (3") or more the asphaltic concrete shall be placed in two successive courses, the last being not less than one inch (1") deep.

3:04-F Proportions of Aggregate Materials. The aggregate shall be clean and free of organic or harmful materials. When combined the aggregate shall be of such size and grading so as to produce a uniform dense graded mixture which shall conform to a mix design established for the project and approved by the City.

The mix design preparation shall be the responsibility of the City of Pendleton or other Contracting owner and shall meet the specifications and design criteria of OSHD for a 30 year life as published in the "Asphalt Paving Design Guide" dated December 30, 1998, for APO and as it may be updated in the future.

At least fifteen (15) working days prior to producing any of the mixture for use in the asphalt concrete pavement, the Contractor shall provide representative samples of acceptable materials proposed for use in the mix to be furnished to the Engineer for use in determining the mix formula. No mixture will be accepted for use until the mix formula for the project is determined. Should a change in the source of material be made during construction of the project, the Contractor shall notify the Engineer immediately. No mixture with these different materials will be accepted for use

until a new mix formula is determined, and the Contractor shall be responsible for all costs, including costs incurred due to the delay, for determining a new mix formula.

3:04-G Asphaltic Cement. Asphaltic cement shall be as specified in the mix design conforming with AASHTO Standard Specifications for asphaltic cement. Asphaltic cement shall be added in the amount as specified by mix design. Asphalt content shall be percentage of the total weight of mix.

3:04-H Tolerances.

After the job mix formula is determined, the mixture shall conform to the formula within the following tolerances:

<u>Constituents of mixture</u>	<u>Narrow Band Tolerance (from job mix formula)</u>
	<u>Base and surface course</u>
Aggregate passing 1", 3/4" and 1/2" specified in Section 3:04-D	Within the broadband ranges specified in Section 3:04-D
Aggregate passing #8 sieve	+/- 6.0%
Aggregate passing 1/2" sieve	+/- 4.0%
Aggregate passing #40 sieve	+/- 4.0%
Aggregate passing #200 sieve	+2.0%/-1.0%
Asphalt cement	+0.5%/-0.2%
Moisture content at time of discharge from the mixing plant (upper limit)	0.6% max.

3:04-I Mixing Plant. Asphaltic concrete shall be proportioned and mixed in a plant of modern design with facilities coordinated and operated so as to produce a consistent mixture within the job mix formula. The plant shall be equipped with suitable storage bins for aggregates weighing devices, heating and mixing equipment. Plant facilities shall be open to the Engineer at all times during the paving operation for checking and verifying weights; proportions, and character of materials; checking temperatures of the aggregates and oil prior to and after complete mixing.

3:04-J Preparation of Mixture. The size of batch shall be as determined by the Engineer and shall not exceed the manufacturer's capacity rating or the net cubic contents of the mixer below the center of the mixer shafts. The weights of charge in a batch mixer or the rate of feed to the mixer, shall not exceed that which will permit complete mixing of all the material.

The combined mineral aggregate shall be thoroughly mixed dry, after which the proper amount of bituminous cement shall be introduced uniformly in the mixer and distributed over the aggregate and the whole thoroughly mixed for such period of time as is necessary to produce a homogeneous mixture, of unchanging appearance, in which all particles of the mineral aggregate are uniformly coated with bituminous cement.

*Asphalt Paving Design Guide dated December 10, 1998

For batching plants, the mixing time, after introduction of bituminous cement shall not be less than 30 seconds and longer, if in the opinion of the Engineer, it is necessary in order to obtain the specified result. Batching and mixing shall be from a central type batch plant. Portable type mixers must be approved by the Engineer in writing prior to production or use on this Contract. The use of continuous type mixers must be approved prior to use on this Contract; if the Engineer feels samples are necessary, samples of the A. C. mix will be taken and an analysis made. Any portion of the mix not meeting specifications will be disallowed for payment and shall be replaced with an adequate mix, or other corrective action acceptable to the City. The cost of analysis will be borne by the City or owner, if the mix is acceptable, and will be borne by the Contractor if the analysis shows the mix to be unacceptable. Nothing in this article shall be construed to relieve the Contractor from his obligation of completing the Contract work and of performing and placing asphaltic concrete paving as aforementioned in the Contract Documents and in this section. The ingredients of the mixture shall be heated, combined and mixed in such a manner as to produce a mixture of such temperature that when deposited on the road it will be within the temperature range set forth hereinafter.

3:04-K Temperature Limits. The temperature to which the aggregates and bituminous cement are to be heated and at which the asphaltic concrete is to be deposited on the road shall be in accordance with the following:

Degrees Fahrenheit to which aggregates
are to be heated before mixing 250° to 325°

Degrees Fahrenheit to which bituminous
cement is to be heated before mixing . . . 250° to 325°

Degrees Fahrenheit which the asphalt concrete is to be deposited on the base will be as specified by the mix design.

3:04-L Hauling, Spreading and Finishing. The mixture shall be transported from the mixing plant to the point of use in dump trucks having tight, clean smooth metal beds, which have been sprayed with a minimum amount of thin fuel oil, paraffin oil, lime solution or other product approved by the City to prevent the mixture from adhering to the beds.

No loads shall be sent out so late in the day as to prevent completion of the spreading and compacting during daylight, unless artificial light satisfactory to the City is provided, if required by City. Trucks shall be provided with suitable approved covers to prevent loss of heat.

The mixture shall be laid on the finished aggregate base course. Aggregate base surfacing that is disturbed, rutted or damaged by trucking, Contractor's equipment or the public shall be shaped and rolled as necessary and repaired prior to placing of any asphaltic concrete. The placing of the mixture will be permitted only during dry weather and when the atmospheric temperature can reasonably be assured of being not less than 40° F., and rising. Placing during rain or other adverse weather conditions, normally will not be permitted, except that mix which is in transit at the time, may be laid if of proper temperature; if the mix has been covered during transit, if placing on a base free from pools or flow of water and if all other requirements of the specification are met.

The lengths of strips and the time of placing adjoining strips shall be such that the edge of any strip along a longitudinal joint on the finish mat, shall have the adjoining strip constructed against it the same day.

The mixture shall be delivered to the site and spread by a standard self-propelled asphaltic concrete paver which meets with the approval of the Engineer. The mixture shall be laid in strips of such width as to hold to a minimum the number of longitudinal joints required and shall be struck-off and

finished to the specified grade and cross-section.

No asphaltic concrete material shall be placed on or next to a mat that has been rolled, cooled and left for a period of 72 hours or is otherwise dirty, or raveled without sweeping the surface and the application of tack.

On areas of irregular shape, of limited area or where unavoidable obstacles make the use of specified spreading and finishing equipment impracticable, in the judgment of the Engineer, the mixture may be spread and finished by hand methods which shall be performed in a skillful manner, without segregation of materials, and to specified grade, cross-section and smoothness.

Care shall be taken at all times to prevent segregation in the mixture as evidenced by areas of fine and coarse materials, and any portion where such segregation occurs shall be removed and replaced with material of the proper consistency in compliance with these specifications.

3:04-M Compacting. Immediately after the bituminous mixture has been spread, struck off and surface irregularities and other defects remedied, it shall be thoroughly and uniformly compacted by rolling until the mixture is compacted to at least 92 percent of relative maximum density, as established by OSHD Standards.

Rollers shall be operated by a competent, experienced operator and, while the work is underway, shall be kept as nearly practicable in continuous operation. Rolling shall begin at the sides and progress gradually to the center, except that on super-elevated curves rolling shall progress from the lower to the upper edge parallel with the centerline of the road, and in each case uniformly overlapping each preceding track by not less than 1/3 the width of the roller until the entire surface has been completely rolled. If a three-wheeled roller is used, the entire surface shall be covered and compacted with the compression wheels.

The motion of the roller at all times shall be slow enough to avoid displacement of the hot mixture. Any displacement occurring as a result of the reversing of direction of the roller, or from any other cause, shall be corrected at once by the use of rakes and of fresh mixture when required. To prevent adhesion of the mixture to the roller the wheels shall be kept properly moistened with water, excess water will not be permitted.

Generally, when an adjoining strip of asphaltic concrete is to be placed against a strip which is still hot, the six-inch width of the asphaltic concrete which is nearest the joint with a successive strip shall not be rolled until the adjoining strip has been placed against it, at which time the rolling strip of the successive strip shall overlap the six-inch width of the preceding strip of asphaltic concrete. During the rolling operations, hand raking and spotting shall be performed at edges and joints of the mixture to provide neat lines at edges and smooth, uniform surfaces at joints.

Along forms, curbs, headers, and walls, around manholes and catch basins, and at other places not accessible to the roller, the mixture shall be thoroughly compacted with pneumatic tampers, smoothing irons or mechanical tampers. On depressed areas, a trench roller may be employed, or compression strips may be used under the roller to transmit compression to the depressed area.

The surface of the asphaltic concrete after compaction shall be smooth and true to the established cross-section and grade. Any mixture that becomes loose or broken, mixed with dirt, or is in any way defective, shall be removed and replaced immediately with fresh hot mixture, which shall be immediately compacted to conform with the surrounding area. Areas showing an excess of bituminous cement, shall be removed and replaced.

Care shall be taken during the rolling operation to prevent damage or scarring to existing concrete curbs or retaining walls. The Contractor shall be liable for any such damage.

3:04-N Transverse Joints. Placing of a course or strip of asphaltic concrete shall be as nearly continuous as practicable and the roller shall pass over an unprotected end of freshly laid mixture only when the laying of the course or strip is to be discontinued long enough to permit the mixture to become chilled. In all such cases, when the work is resumed, the material previously laid and permitted to become chilled shall be cut back or removed along the end so as to produce a slightly beveled edge for the full thickness of the course and the old cut away material shall be removed from the work. The new mixture shall be placed or raked against the fresh cut, thoroughly tamped, and rolled to provide a smooth joint exactly meeting the line, grade and cross section of adjoining asphaltic concrete after thorough compaction.

When the end of a course or strip of asphaltic concrete is to be temporarily subjected to traffic, the end shall be left on a bevel of approximately 1:1 to provide a fresh edge against which subsequently placed asphaltic concrete is to abut.

3:04-O Surface Smoothness. The surface of the top or wearing surface course, when finished, shall be of uniform texture, smooth, true to crown and grade and free from defects of all kinds. The smoothness shall be such that when tested with a 10-foot straightedge placed on the surface with its centerline parallel to the centerline of the highway, the maximum deviations of the surface from the edge of the straightedge will not exceed 1/8 of an inch.

3:04-P Asphalt Testing. Testing shall be performed as directed by the Engineer. Testing that may be required is as follows:

TEST	MINIMUM SPECIFICATION
1. Gradation and Oil Content	Based on Current OSHD
2. Voids and Compaction	Mix Design Criteria

Oil content shall be determined by the extraction method. One sample per 500 tons or a minimum of three samples per project. When samples are not obtained as required, core cut samples may be taken.

The Engineer shall designate location of samples. The Contract owner shall be responsible for taking the necessary samples. The Contractor shall furnish new like materials and fill the holes with no extra compensation. The City of Pendleton or other contracting owner shall be responsible for having the tests performed. In the case of conflicting lab reports, a mutually agreeable certified lab shall be the final testing authority.

The cost of retesting mix not meeting minimum requirements, shall be the Contractor's responsibility.

3:04-Q Price Adjustments. Use the Summary of Failing Test method below for City of Pendleton projects.

Summary of Failing Test Method:

(1) Aggregate Gradation and Asphalt Content:

A deduction of 1.0% of the in-place price for asphalt concrete and cement will be made for each 1.0% cumulative weighted deviation beyond the allowable tolerance of

each component of the job mix formula. The following factors will be used to calculate deduction due to deviations from the job mix formula:

Deviation Weighting

PERCENT PAY

<u>Job Mix Component</u>	<u>Weight Factor</u>	<u>% beyond Allowable</u>
Asphalt Content	12 x deviation	
Passing #200	3 x deviation	
Passing #8	1.5 x deviation	
Passing #40	1.5 x deviation	
All other sieves	1.0 x deviation	

The cumulative weighted deviations is the sum of all weighted deviations as determined from the table above. A minimum of three samples shall be averaged to determine any reduction in payment. Where the cumulative weighted deviation equals or exceeds 15.0%, the materials shall be removed and replaced at no cost to the City.

When asphalt paving materials with a cumulative deviation of less than 15.0% are furnished, the City may require the Contractor to remove and replace defective materials at no cost to the City or may deduct from payments to the Contractor an amount equal to the cumulative weighted percentage deviations from the job mix formula.

(2) Compaction

Asphalt concrete pavement which does not comply with compaction requirements shall be removed and replaced or, at the discretion of the City, be subject to a price reduction determined from the following table. Compaction shall be determined by laboratory analysis of pavement core samples. Price reduction shall be based on at least five random samples.

Compaction Price Reduction Schedule

<u>% Maximum Density</u>	<u>% Pay</u>
92.0 and above	100
91.5 - 91.9	95
91.0 - 91.4	90
90.5 - 90.9	85
90.0 - 90.4	80
89.5 - 89.9	70
89.0 - 89.4	60
Below 89.0	0 - 50

(3) Pavement Thickness

When pavement thickness, as determined by the City's measurement or test cores, is found to be less than the thickness of the specified surface course of asphalt concrete, the City may require the Contractor to place an additional lift of asphalt concrete to bring the total thickness of the pavement into conformance with the specifications.

When the pavement in any section of pavement is found deficient in thickness by less than the specified thickness of the surface course, and the City allows the pavement to remain in place, payment for that pavement will be made at an adjusted price based on at least five random measurements determined from the following table:

<u>% Reduction in Pay</u>	<u>% Deficiency in Thickness</u>
No deduction	0.0 to 5.0
No deduction	5.1 to 10.0
0.5 x deficiency	10.1 to 20.0
1.0 x deficiency	20.1 to 30.0

No payment will be made for any area of pavement found deficient in thickness by more than 30.0% even though the work is permitted by the engineer to remain in place.

When the pavement in any section is found to exceed the specified thickness by more than 6 mm, the engineer will calculate the material in the excess thickness of the pavement and shall deduct that quantity from the payments due under the Contract.

3:04-R Control of Traffic. Traffic shall be prohibited from entering onto any course or lift of the pavement until the course or lift has cooled and set sufficiently to prevent marking. Those edges which are to be along longitudinal joints shall be protected from traffic to the extent that no breakdown of the edge shall occur.

3:04-S Warning Signs, Flags, and Barricades. Whenever the Contractor's operations create a condition hazardous to traffic or to the public, he shall furnish, erect, and maintain such fences, barricades, lights, signs or other devices as are necessary to prevent accidents or damage or injury to the public. The Contractor shall also furnish such flagmen and guards as are necessary to give adequate warning to traffic or to the public of any dangerous conditions to be encountered. When not listed as a pay item, all temporary traffic control shall be considered incidental work for which no separate payment shall be made.

3:04-T Patching. Omissions or damage to the wearing surface shall be immediately corrected by hand patching. Defects such as raveling, low centers, lack of uniformity, or other imperfections caused by faulty workmanship shall be corrected as directed by the Engineer. All costs incurred shall be borne by the Contractor, and no additional compensation will be made for such work. The maximum permissible water/cement ratio by weight shall be 0.58.

3:05 CURBS, GUTTERS, DRIVEWAYS, AND SIDEWALKS

3:05-A Concrete. Concrete shall have a minimum compressive strength of 3000 psi, 28 days after placement. An air-entraining admixture shall be used. It shall be added to the mixer at the time of mixing in such a manner as to insure uniform distribution of the admixture throughout the batch. Entrained air (% by volume) range shall be 4-1/2% to 7%. The maximum water added per sack of cement shall be 6 gallons and the slump range shall be between 2 and 3 inches. Concrete shall be subject to approval by the Engineer for mix design, materials, batching and mixing. The placement of concrete shall be permitted only during dry weather and when temperature can reasonably be assured of being not less than 35° F and rising. The Contractor shall notify the City Engineer 24 hours in advance of placing or of depositing concrete. Concrete placed without

inspection by the Engineer will be subject to removal unless written permission has been obtained from the Engineer, not less than 24 hours prior to such work.

3:05-B Forms. Pre-fabricated steel forms may be used. Lumber used in forms shall be of 2-inch material dressed to a uniform thickness, of good sound material free from loose knots or other defects. Re-used lumber or forms shall be thoroughly cleaned before being used again. Re-use of forms and form lumber will be permitted only when their condition is approved by the City Engineer. All forms shall be lightly oiled with an approved oil substance.

The forms shall conform to the shape, lines, grade, and dimensions as called for on the Plans. The acceptable tolerance on line and grade shall be 1/8 inch. Prior to each concrete pour, grade, alignment and steel placement shall be inspected and approved by the Engineer.

3:05-C Premoulded Joint Filler. Premoulded joint filler shall be a bituminous type of 1/2" minimum thickness, conforming to AASHO M33-48 and ASTM D-994.

3:05-D Curing of Concrete. Protection against loss of moisture shall be accomplished by keeping the surface continuously wet for seven days, or by application of an approved curing compound shall be a white-ligmented liquid membrane-forming compound conforming to the requirements of ASTM C309 (Specification for liquid Membrane-Forming Compounds for Curing Concrete). The curing seal shall be thoroughly applied so as to give a complete and equal seal. No gray spots, streaks or gray areas will be permitted.

3:05-E Base for Curbs, Gutters and Sidewalks. The base for concrete curbs and gutters shall consist of aggregate rock base materials as specified in 3:04-D hereof, and shall be compacted to not less than 95% relative compaction as designated by AASHO Test Method T-99. Where soft, spongy, or other material is found in the subgrade, the Engineer shall require that excavation be carried to firm, solid foundation material. The subgrade shall be backfilled to the required grade with aggregate rock base as specified above. This determination and the amount required will be the independent decision of the Engineer. Any additional cost will be considered incidental work for which no separate payment will be made.

3:05-F Expansion Joints. Expansion joints shall be of the premoulded type or approved alternate, and shall be composed of fibre of cellular nature and asphalt or other approved material and shall conform to the AASHO Standard Specifications for non-extruding type filler.

Expansion joints shall be 1/2 inch in thickness and extend full depth of the concrete.

Contraction joints shall be 1/8 inch in thickness and be no less than 1/4 the thickness of the concrete. They shall be formed at the time of pouring or formed by sawing.

Expansion joints shall be located as directed by the Engineer.

Contract joints shall be located at intervals not to exceed 15 feet.

3:05-G Placing Concrete. Before depositing of concrete will be permitted, the work crew and all equipment and tools must be immediately available, all debris shall be removed from the space to be occupied by the concrete. The base shall be lightly wetted. Concrete shall be deposited in its proper place in a continuous operation. An interval of more than 45 minutes between any 2 consecutive batches or loads, or a placing rate of less than 8 cubic yards of concrete per hour, shall constitute cause for a construction joint at the location and of the type directed by the Engineer in concrete already placed.

In hot weather, concrete that has been placed shall be adequately protected until final finishing can be completed. Fog nozzles when requested by the Engineer shall be used. Curing operations shall begin as soon as concrete has set enough to avoid surface damage. Concrete shall be finished as soon as is practicable and only that amount of concrete that can be properly handled will be allowed to be placed. The Engineer may cancel concrete operations if in his opinion, the Contractor is employing inadequate finishing provision or curing methods.

3:05-H Removal of Forms. The form on the front of the curb and retaining walls forms shall be removed between 2 and 6 hours after the concrete has been placed. In no event shall the form be removed if the concrete has not reached its initial set.

3:05-I Finishing. After removal of the forms from exposed faces, holes left after the removal of form ties shall be grouted and cured. The patching mixture shall consist of 1 part cement and 2 parts mortar sand. Plywood or metal forms shall be used to produce a uniformly smooth surface on the exposed face. The use of form ties buried in the curb or wall must have the approval of the PWD, and when used as part of the integral design of a prefabricated and manufactured standard curb form.

The finishing shall be accomplished in a manner satisfactory to the Engineer. In general all edges and joints shall be finished with standard edging and grooving tools. The surface shall be troweled smooth and then lightly brushed. Poor workmanship and finishing shall be sufficient cause for rejecting by the Engineer. Patching of curbs or portions of retaining walls will not be permitted. The entire section or portion shall be removed and replaced with new concrete.

3:05-J Concrete Patching. Concrete used for patching shall meet the same specifications as sidewalks with Masco concrete bonding agent or approved equal added in accordance with manufacturer's specifications. This item shall be used to repair sidewalks damaged by tree removal, utility relocations, etc., where possible, damaged sidewalk sections shall be completely removed and replaced. Edges of existing concrete shall be tacked with, Masco concrete bonding agent or approved equal.

3:06

RESTORATION

3:06-A Tree Removal. Trees shall be removed in sections to protect utility lines and private property. Trees shall be removed completely from the job site by competent personnel and disposed of in an acceptable manner.

3:06-B Adjustment of Manholes. Manhole covers shall be left below finished grade prior to paving. After the paving has been completed a three foot diameter section centered on the manhole shall be cut out. The manhole shall then be brought to grade using concrete grout and the surrounding area patched and compacted in accordance with Section 3:04-L.

3:06-C Surface Dressing. Slopes, sidewalk areas, planting areas, and roadway shall be smoothed and dressed to the required cross section and grade by means of a grading machine insofar as it is possible to do without damaging the work or existing improvements, trees and shrubs. Supplement machine dressing by hand work as directed by Engineer.

Upon completion of the cleaning and dressing, the project shall appear uniform in all respects. Grade all areas true to line and grade as shown and as approved. Where the existing planting is below sidewalk and curb, fill and dress the area to the walk regardless of limits shown. Wherever fill material is required in the planting area or where the existing driveway is below or above grade,

fill or/excavation shall be required to provide access, as approved by City. The Contractor shall then place 2" of 1-1/4" minus rock on the driveway. Make final surface high enough to allow for final settlement. When not listed as pay item, all work on grading, fill and/or excavation on driveways shall be considered incidental work for which no separate payment shall be made.

3:06-D Removal of Materials. Remove and dispose of all excavated or construction materials, equipment, and trash of all kinds resulting from the work. Where brush and trees beyond the limit of the project have been disturbed, remove and dispose of or restore same as directed, at no expense to City.

3:06-E Cleaning Drains. Clean all drainage facilities such as inlets, catch basins, culverts and open ditches of all excess material or debris which is the result of the work, as approved.

3:06-F Cleaning Paved Surfaces and Appurtenances. Clean all pavement surfaces, whether new or existing within the limits of the project. Clean existing improvements such as curbs, gutters, walls, sidewalks, castings for manholes, monuments, water valves, lamp holes, vaults, signs, and other similar installations as approved.

Flush the street with a pressure type flusher as approved. Hand broom or flush all sidewalks as directed.

3:06-G Restoring Planted Areas. Hand-rake and drag all former grassed and/or planted areas leaving disturbed areas free from rocks, gravel, clay, or any other foreign material and ready, in all respects, for seeding. The finished surface shall conform to the original surface, be free-draining and free from holes, rough spots, or other surface features detrimental to a seeded area.

3:06-H Restoring Borrow and Disposal Areas. Clean all properties which were disturbed during construction of the project. Dispose of all uprooted stumps, felled trees, brush, excess excavation, rock, discarded materials, rubbish and debris. Remove all plant, equipment, tools and supplies and put the property occupied in a neat, clean and orderly condition, in equal or better condition to that existing before move in.

3:06-I Removal of Signs. Do not remove warning, regulatory, guide, or project signs prior to formal acceptance, except as directed.

3:06-J Payment For Cleanup. Unless a separate pay item is listed in proposal for restoration and cleanup, all restoration and cleanup will be considered incidental work for which no separate payment will be made.

3:07 **LABOR**

3:07-A Standards of Workmanship. All materials and workmanship shall be in every respect in accordance with the best modern practice. Whenever the Contract Plans, Specifications, or directions of the Engineer admit of a reasonable doubt about what is permissible, and when they fail to state the quality of any work, the interpretation which requires the best quality of work is to be followed.

3:07-B Time of Completion. The time of completion of the work to be performed under this Contract is the essence of the Contract. Delays and extensions of time allowed in accordance with Paragraph 2:05-I of the General Conditions.

3:07-C Schedule of Minimum Hourly Wage Rates. The minimum hourly wage rates applicable to the work to be done under this Contract as prescribed under the current prevailing wage rates

published by the Oregon Bureau of Labor and Industries at the time of advertisement. This prevails unless project is governed by Federal Davis-Bacon Act or the project is below minimum set by Oregon Bureau of Labor and Industries.

3:08

METHOD OF PAYMENT

3:08-A Method of Measurement and Basis For Payment. All clearing, grubbing, sheathing, shoring, moving and setting fences and minor structures, grading, shaping and incidentals required to complete the work and return the work site to the conditions as found prior to construction, shall not be measured for payment separately but shall be considered as a subsidiary obligation of the contractor. The following are the pay items and the basis of their measurement.

<u>ITEM</u>	<u>PAYMENT BASIS</u>
(a) Asphaltic Concrete Mix In Place	Ton
(b) 3/4" Minus Base Rock In Place	C.Y.
(c) Curb and Gutter	L.F.
(d) Type "C" Curb In Place	L.F.
(e) Sidewalk	S.Y.
(f) Cross Gutters	L.F.
(g) Manhole Adjustment	EA.
(h) Embankment	C.Y.
(I) Excavation	C.Y.
(j) Asphalt Cutting	L.F.
(k) Asphalt Patching	S.Y.
(l) Fire Hydrant Assembly In Place	EA.
(m) Ductile Iron Water Line In Place	L.F.
(n) Water Valves In Place	EA.
(o) Sanitary Sewer In Place	L.F.
(p) Sewer M.H. In Place	EA.
(q) Sanitary Sewer Pump Station In Place	EA.
(r) Sanitary Sewer Wyes In Place	EA.
(s) Storm Drain System	EA.
(t) Storm Sewer In Place	L.F.
(u) Catch Basin In Place	EA.
(v) Catch Basin Relocation	EA.
(w) Clean Out Adjustment	EA.
(x) Steps In Place	EA.
(y) Signal Relocation	Job
(aa) Tree Removal	EA.
(bb) Trench Dewatering	L.F.

a. Asphaltic Concrete Mix In Place. Shall be measured as the tons of mix in place as directed by the Plans and approved by the Engineer. Payment shall include all necessary equipment, labor and materials for a complete and approved job.

b. 3/4" Minus Base Rock In Place. Shall be measured as the total compacted cubic yards in place to bring the road base up to grade. All placing, grading, and compacting shall be included and payment shall be full compensation for all labor, materials, and equipment and tools necessary for a complete and approved job.

c. Curb and Gutter. Shall be measured as the total lineal feet in place per plans and specifications as directed and approved by the Engineer. All subbase preparation, grading, compaction and base rock shall be included and payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

d. Type "C" Curb. Shall be measured as the total lineal feet in place per plans and specifications as directed and approved by the Engineer. All subbase preparation, grading, compaction and base rock shall be included and payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

e. Sidewalk. Shall be measured as the total square yards in place as directed in the plans and specifications. Sidewalks shall be built to the City of Pendleton Standards and payment shall include all subbase preparation, grading, compaction base rock. Concrete or asphaltic concrete, labor, equipment and tools necessary for a complete and approved job.

f. Cross Gutters. Shall be measured as the number of lineal feet placed as directed and measured by the Engineer. Cross gutters shall be City of Pendleton Standard and payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

g. Manhole Adjustment. Shall be measured as the number of manholes that are adjusted. Payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

h. Embankment. Shall be measured as the number of cubic yards placed as per the plans and specifications as directed and measured by the Engineer. Payment shall include all hauling, placing, moisture content adjustment, compacting, and grading, and for all labor, equipment and tools necessary for a complete and approved job.

i. Excavation. Shall be measured as the number of cubic yards placed as per the plans and specifications and as directed and measured by the Engineer. Excavation shall include all existing curb, existing pavement and other incidentals as noted on the plans or as directed and approved by the Engineer. Payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

j. Asphalt Cutting. Asphalt or Concrete cutting shall be measured by the total lineal feet of single cut measured lineally along the roadway which is cut to allow placement of sewer. Payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job. Method of cutting shall be approved by the Engineer.

k. Asphalt Patching. Roadway patching shall be measured by the total square yards of patching asphalt or finish concrete surface which is replaced. A maximum width of four feet shall be allowed measured across the roadway. Payment shall include all labor, material, equipment and tools required for a complete and approved job.

l. Fire Hydrant Assembly In Place. This item shall be measured as the total number of fire hydrant assemblies actually installed in accordance with the plans. Payment for this item shall be full compensation for all labor, tools, and equipment necessary for a complete and approved job.

m. D.I.W.L. In Place. Payment for this item shall be made at the unit contract price per lineal foot actually installed. Size and class shall be as specified in the drawings and specifications. This item shall include, but not be limited to, all trench excavation and backfill, bedding material, select

backfill, installation of miscellaneous fittings, and all labor, equipment and tools necessary for a complete and approved job in place according to plans and as directed by the Engineer.

n. Water Valves In Place. Payment for this item shall be made at the unit price for each valve actually installed, size and type shall be as specified in the plans and specifications. This item shall include, but not be limited to, trench excavation and backfill, installation of approved valve casings, all labor, equipment and tools necessary for a complete and approved job.

o. Sanitary Sewer In Place. Payment for this item shall be made at the unit price per lineal foot actually installed. Size and class shall be as specified in the drawings and specifications. This item shall include, but not be limited to, all trench excavation and backfill, bedding material, select backfill and all labor, materials, equipment and tools necessary for a complete and approved job in place.

p. Sewer Manhole. Payment shall be made at the unit contract price for "Standard Sewer Manhole" as specified in the plans and specifications. Payment shall be full compensation for excavation backfill, concrete, frame and cover, and all tools, labor and equipment required for a complete and approved job.

q. Sanitary Sewer Pump Station In Place. Payment for this item shall be made at the unit price for each pump station actually installed. Payment shall include but not be limited to, all material, labor, equipment, and tools necessary for a complete and approved installation.

r. Sanitary Sewer Wyes In Place. This item shall be measured as the total number of wyes actually installed. Size and type of Wyes shall be as specified on the plans and specifications. Payment shall be full compensation for all labor, tools and equipment necessary for a complete and approved installation.

s. Storm Drain System. Payment for this item shall be made upon completion and approval of this line item in accordance with plans and specifications. Payment shall include but not be limited to, all trench excavation and backfill, bedding material, select backfill, catch basins and all labor, equipment and tools necessary for a complete and approved job.

t. Storm Sewer. Payment for this item shall be made at the unit price per lineal foot actually installed. Size and class shall be as specified in the drawings and specifications. This item shall include, but not be limited to, all trench excavation and backfill, bedding material, select backfill and all labor, materials, equipment and tools necessary for a complete and approved job in place.

u. Catch Basin In Place. Payment for this item shall be made at the unit price for each catch basin actually installed as specified in the plans and specifications. This item shall include, but not be limited to, trench excavation backfill, all material, labor, tools and equipment necessary for a complete and approved job.

v. Catch Basin Relocation. Payment for this item shall be made at the unit price for each catch basin relocated as specified in the plans and specifications. This item shall include, but not be limited to, trench excavation, backfill, all material, labor, tools and equipment necessary for a complete and approved job.

w. Clean Out Adjustment. Shall be measured as the number of clean outs that are adjusted. Payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

x. Steps In Place. Payment for this item shall be made upon completion and approval of this line item in accordance with plans and specifications. Payment shall include but not be limited to, all materials, labor, and equipment and tools necessary for a complete and approved installation.

y. Signal Relocation. Payment for this item shall be made upon completion and approval of this line item in accordance with plans and specifications. Payment shall include but not be limited to, all material, labor and equipment and tools necessary for installation.

z. Tree Removal. Shall be measured as the total number of trees actually removed. Trees shall be removed completely from the job site and disposed of in an acceptable manner. Payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

aa. Trench Dewatering. Shall be measured as the total lineal feet of trench necessary to be dewatered as directed by the Engineer. Payment shall be full compensation for all labor, materials, equipment and tools necessary for a complete and approved job.

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CITY OF PENDLETON	ENGINEERING DEPARTMENT
DN: <i>PLV</i> APPV'D: <i>[Signature]</i> CITY ENGINEER	DATE: 9-4-73 SCALE: NONE TITLE: STANDARD SYMBOLS

APPROVED CONSTRUCTION MATERIALS

WATER MAINS: CLASS 52 DUCTILE IRON FOR PIPE 12" AND SMALLER
CLASS 50 DUCTILE IRON FOR PIPE LARGER THAN 12"

ALL DUCTILE IRON PIPE SHALL CONFORM WITH ASTM 536, AWWA C 151, AWWA C 104, AND AWWA C 111.

SANITARY SEWER MAINS: NON-REINFORCED PIPE AND FITTINGS CONFORMING TO THE REQUIREMENTS OF ASTM C 14;
REINFORCED CONCRETE PIPE AND FITTINGS CONFORMING TO THE REQUIREMENTS OF
ASTM C 76 OR ASTM C 655 (ALL CONCRETE LINES OVER 12" SHALL BE REINFORCED.); OR PVC
AND FITTINGS CONFORMING TO THE REQUIREMENTS OF ASTM D 3034, ASTM F 679, OR ASTM F 794.
ALL ON CLASS 'B' BEDDING

SANITARY SEWER SERVICES: PVC AND FITTINGS CONFORMING TO THE REQUIREMENTS OF ASTM D 3034, ASTM F 679,
OR ASTM F 794.

STORM SEWER MAINS:

IN STREET AREA: NON-REINFORCED CONCRETE PIPE AND FITTINGS CONFORMING TO THE REQUIREMENTS
OF ASTM C 14; REINFORCED CONCRETE PIPES AND FITTINGS CONFORMING TO THE REQUIREMENTS OF
ASTM C 76 OR ASTM C 655 (ALL CONCRETE LINES OVER 12" SHALL BE REINFORCED.); OR PVC AND FITTINGS
CONFORMING TO THE REQUIREMENTS OF ASTM D 3034, ASTM F 679, OR ASTM F 794.
ALL ON CLASS 'B' BEDDING

OUT OF STREET AREA: NON-REINFORCED CONCRETE PIPE AND FITTINGS CONFORMING TO THE REQUIREMENTS
OF ASTM C 14; REINFORCED CONCRETE PIPES AND FITTINGS CONFORMING TO THE REQUIREMENTS OF
ASTM C 76 OR ASTM C 655 (ALL CONCRETE LINES OVER 12" SHALL BE REINFORCED.); OR PVC AND FITTINGS
CONFORMING TO THE REQUIREMENTS OF ASTM D 3034, ASTM F 679, OR ASTM F 794; GALVANIZED CORRUGATED
STEEL PIPE AND FITTINGS CONFORMING TO AASHTO M 190; CORRUGATED ALUMINUM ALLOY PIPE AND FITTINGS
CONFORMING TO AASHTO M 196, M 197, M 211, AND M 219.
ALL ON CLASS 'B' BEDDING

ASPHALT CONCRETE: SHALL MEET THE SPECIFICATION AND DESIGN CRITERIA OF OSHD FOR A 30 YEAR LIFE AS PUBLISHED IN
THE "ASPHALT PAVING DESIGN GUIDE" DATED DECEMBER 30, 1998, FOR APO AND AS IT MAY BE UPDATED
IN THE FUTURE.

TESTING REQUIREMENTS

SANITARY SEWER: AIR PRESSURE TIME DROP METHOD. MAX PRESSURE = 3.5 PSIG
VISUAL TV INSPECTION

STORM SEWER: VISUAL TV INSPECTION

WATER LINE: WATER LEAKAGE METHOD MAX PRESSURE = 200 PSIG. ALLOW LEAKAGE IN ACCORDANCE WITH THE FORMULA:

$$L = \frac{ND\sqrt{P}}{11,000}$$

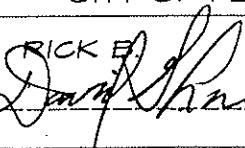
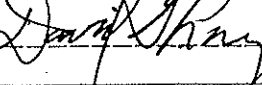
- L = THE ALLOWABLE LEAKAGE IN GALLONS PER HOUR.
- N = THE NUMBER OF JOINTS IN THE LENGTH OF PIPE TESTED.
- D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES.
- P = THE AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST IN PSI.

ASPHALT CONCRETE: AS DIRECTED BY THE CITY:
1. EMERSION-COMPRESSION (RETAINED STRENGTH).
2. GRADATION AND OIL CONTENT.
3. VOIDS AND COMPACTION
4. RESILIENT MODULUS

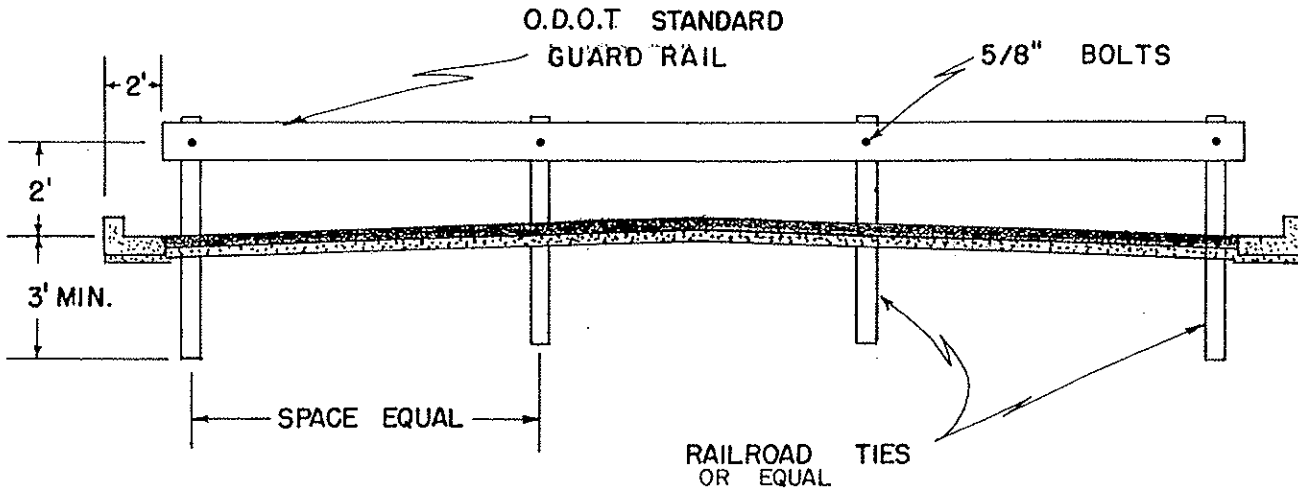
REVISED: 4/2000 RB

CITY OF PENDLETON

ENGINEERING DEPARTMENT

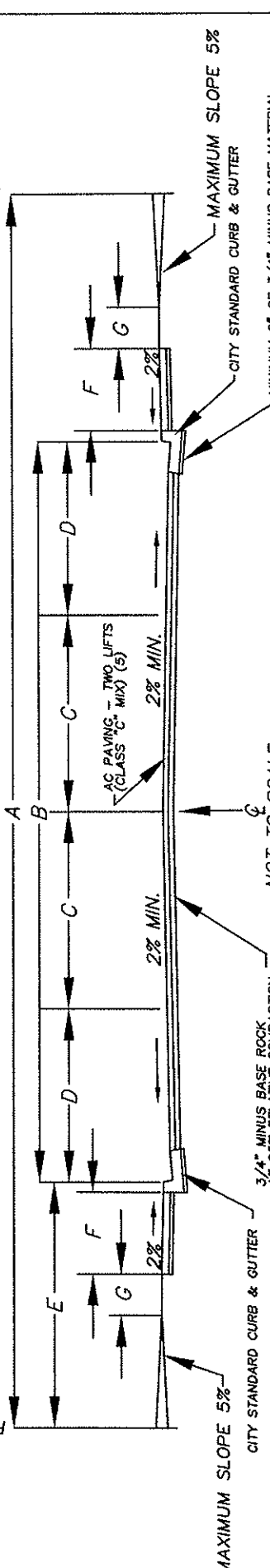
DRAWN BY: RICK E.  DATE: JUNE, 2000
APPROVED:  SCALE: NOT TO SCALE

TITLE: APPROVED CONSTRUCTION MATERIALS



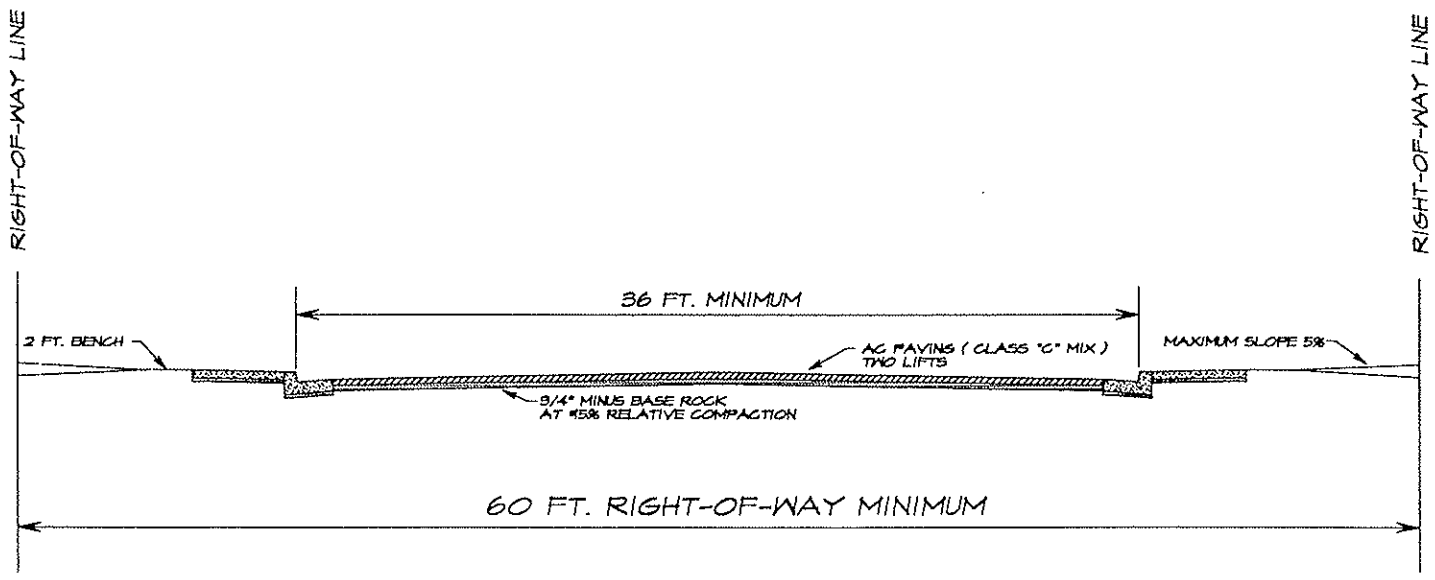
TYPICAL BARRICADE DETAIL
TYPICAL STREET SECTION

CITY OF PENDLETON	ENGINEERING DEPARTMENT
DATE: 7-20-78 DN. <i>FLV</i>	SCALE: N.T.S. APPV'D. <i>David J. ...</i> CITY ENGINEER
STANDARD BARRICADE	



CLASSIFICATION	R/W WIDTH (MIN.)	PAVEMENT WIDTH (MIN.)	TRAVEL LANE WIDTH	PARKING LANE WIDTH	PLANTING, UTILITY & SIDEWALK AREAS (EACH SIDE)	DESIGN SPEED	DESIGN LEVEL	PAVEMENT SECTION	BASE ROCK SECTION	SIDEWALK WIDTH (MIN.)	SHOULDER WIDTH (MIN.)	PROFILE GRADE (%)
	A	B	C	D	E				(7)	F***	G	
ARTERIAL	60'	44'	2-12'	2-10'	8'	30-45	IV	4.5" (5)	12" (5)	5'	2'	8 MAX. 0.30 MIN.*
COLLECTOR	60'	44'	2-12'	2-10'	8'	25-35	III	4"	12" (5) (6)	4'	2'	12 MAX. 0.30 MIN.*
MINOR (RESIDENTIAL)	50'-60'	26' (1) 32'-34' (2) 34'-36' (2)	2-12'	NONE	18' (VARIABLE) 18' (VARIABLE) 12' (VARIABLE)	20-25	II	4" 3.5"	8" (6) 12" (5) (6)	4'	2'	15 MAX. 0.50 MIN.
MINOR (INDUSTRIAL)	60'	24' (4) 28' (4)	2-12'	NONE	2'-3' ASPHALT SHOULDERS 2'-3' ASPHALT SHOULDERS (NO CURB, OR GUTTER)		V	5" (5) 5" (5)	12" (5) (6)	NONE NONE	AS NOTED	15 MAX. 0.50 MIN.**

(1) This pavement width shall be permissible on dead-end street with a cul-de-sac and approved by the Planning Commission
 (2) Reduced pavement width approved by the Planning Commission.
 (3) Where the street serves partially as a collector and has been so designated by the Planning Commission and approved by the City Council.
 (4) Alternative street standards where pavement and base thickness is increased in exchange for eliminating the requirement for curb, gutter and sidewalks would apply for M-1 and M-2 zones located west of the US 30 (westgate) bridge over the Umatilla River, as approved by the Planning Commission.
 (5) Actual asphalt and base rock sections may be modified if designed by a professional engineer using criteria from the Asphalt Pavement Design Manual by the Asphalt Pavement Association of Oregon, and/or a geotechnical engineer certifies that the subgrade is adequate to support a modified section.
 (6) The bottom 2/3 of the base rock section may substitute a 2" minus material w/City Engineers approval.
 Bridging fabric may be required @ City Engineers discretion.
 (7) 2" of base rock material may be substituted for the use of a pre-approved subgrade stabilization geotextile fabric.
 * ONLY WITH ADEQUATE CROSS SLOPES AND CATCH BASIN SPACING
 ** THE PROFILE GRADE MAY BE MODIFIED PROVIDING ADEQUATE ROADWAY CROSS SLOPE AND ROADSIDE DITCHES ALLOW FOR ADEQUATE CAPACITY.
 *** SIDEWALK WIDTH MUST CONFORM TO CITY ORDINANCE 2320.



MINIMUM TYPICAL ROADWAY SECTION

NOTES:

ACTUAL ASPHALT AND BASE ROCK SECTIONS ARE TO BE DETERMINED BY ASPHALT PAVEMENT DESIGN GUIDE.

RIGHT-OF-WAY AND STREET WIDTH DETERMINED BY COMPREHENSIVE PLAN AS APPROVED BY CITY COUNCIL

COLLECTOR STREET MAXIMUM GRADE 12%, MINOR STREET MAXIMUM GRADE 15%, MINIMUM GRADE 0.30%.

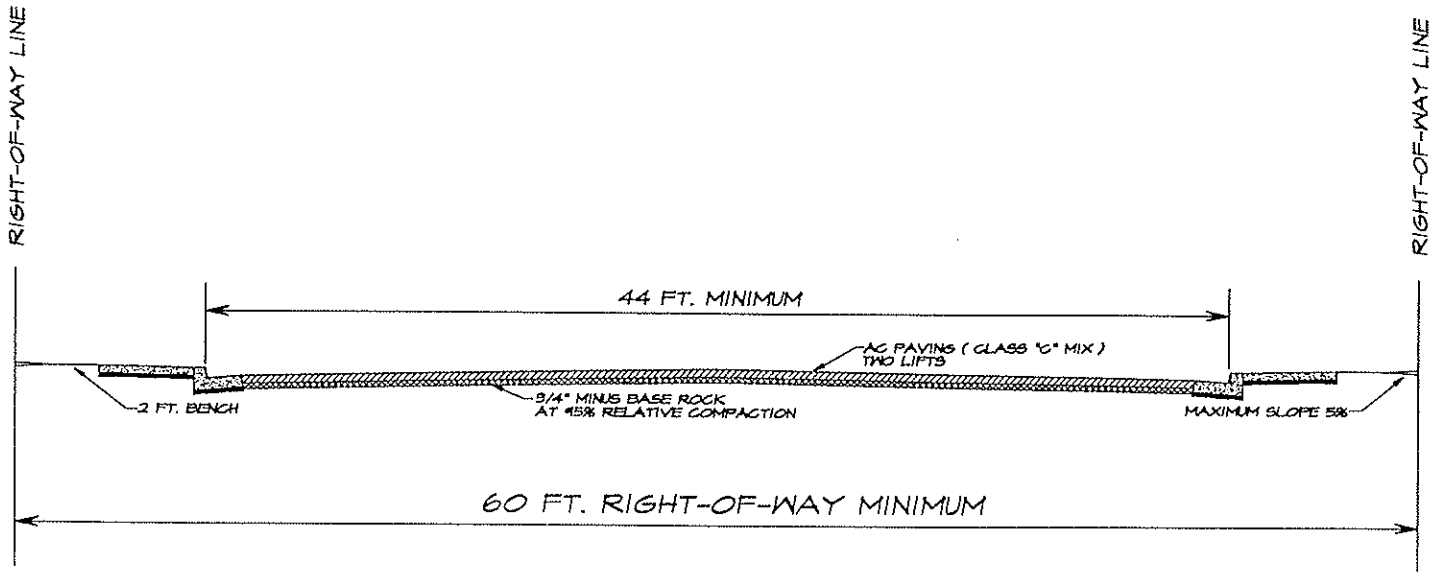
REFER TO RESIDENTIAL, INDUSTRIAL, AND COMMERCIAL SIDEWALK STANDARD DRAWINGS.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. [Signature]
 DATE: DECEMBER, 1995
 APPROVED: [Signature] SCALE: NOT TO SCALE

TITLE: COLLECTOR AND MINOR STREET STANDARDS



MINIMUM TYPICAL ROADWAY SECTION

NOTES:

ACTUAL ASPHALT AND BASE ROCK SECTIONS ARE TO BE DETERMINED BY ASPHALT PAVEMENT DESIGN GUIDE.

RIGHT-OF-WAY AND STREET WIDTH DETERMINED BY COMPREHENSIVE PLAN AS APPROVED BY CITY COUNCIL

ARTERIAL STREET MAXIMUM GRADE 8%

REFER TO RESIDENTIAL, INDUSTRIAL, AND COMMERCIAL SIDEWALK STANDARD DRAWINGS.

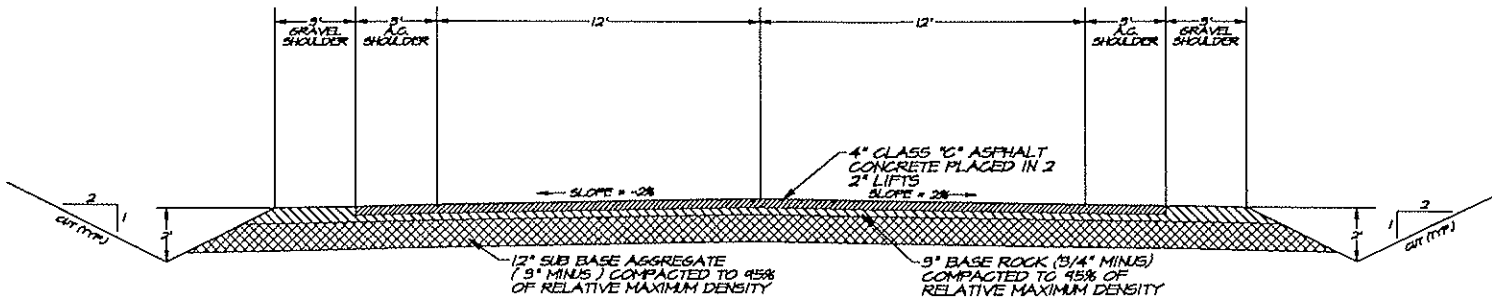
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DECEMBER, 1995

APPROVED: *[Signature]* SCALE: NOT TO SCALE

TITLE: ARTERIAL STREET STANDARDS



MINIMUM TYPICAL ROADWAY SECTION

NOTES:

ACTUAL ASPHALT AND BASE ROCK SECTIONS ARE TO BE DETERMINED BY ASPHALT PAVEMENT DESIGN GUIDE.

RIGHT-OF-WAY AND STREET WIDTH DETERMINED BY COMPREHENSIVE PLAN AS APPROVED BY CITY COUNCIL

INDUSTRIAL STREET MAXIMUM GRADE 8%

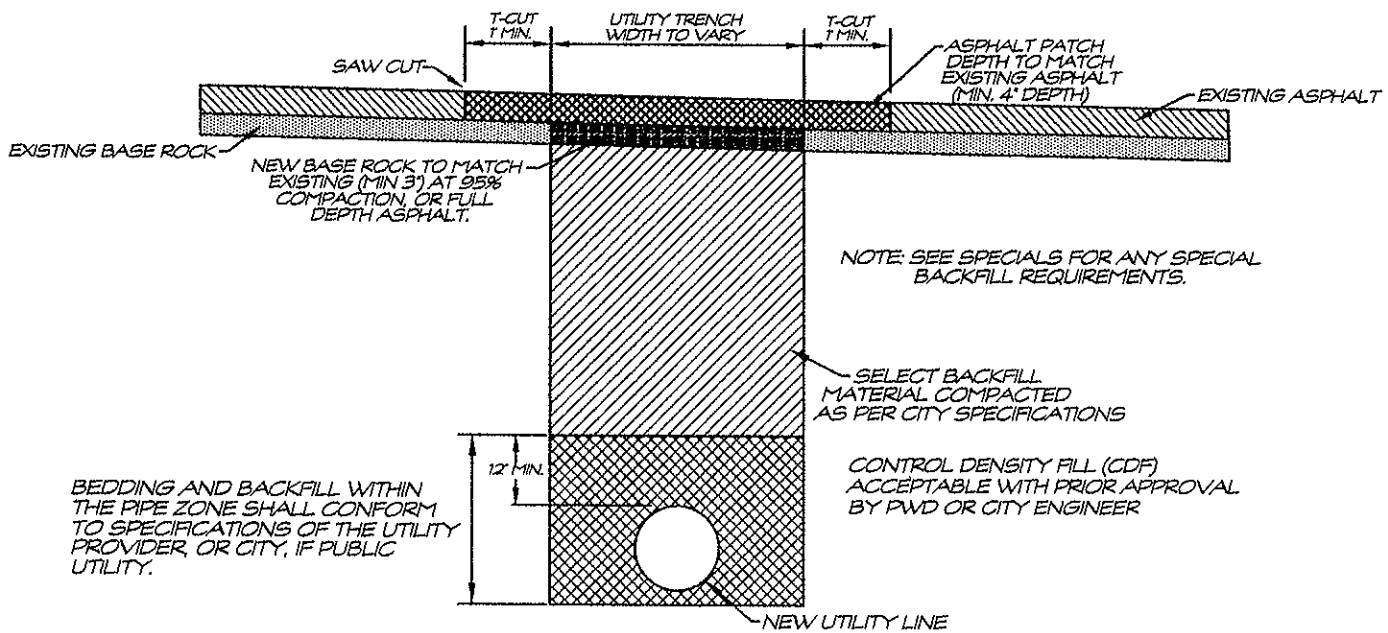
REFER TO RESIDENTIAL, INDUSTRIAL, AND COMMERCIAL SIDEWALK STANDARD DRAWINGS.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: JUNE, 2000
APPROVED: *[Signature]* SCALE: NOT TO SCALE

TITLE: INDUSTRIAL STREET STANDARDS



IMPORTANT: CALL CITY ENGINEERING DEPARTMENT AT 966-0203 FOR INSPECTION PRIOR TO PATCHING AS CALLED OUT IN THE PLANS. FAILURE TO CALL FOR APPROVALS SHALL RESULT IN COMPLETE REMOVAL AND RECONSTRUCTION.

NOTES:

PRIOR TO PERMANENT PATCHING, REMOVE MATERIAL TO SUBGRADE TO REACH FIRM SUPPORT. IF T PATCH IS REQUIRED BY CITY, EXTEND AT LEAST ONE (1) FOOT HORIZONTALLY INTO EXISTING PAVEMENT. T PATCH CUT NOT TO BE MADE UNTIL TRENCH IS BACKFILLED AND READY TO BE PATCHED.

PRIOR TO PERMANENT PATCH, MAKE SQUARE OR RECTANGULAR CUTS WITH SAW. MAKE FACES STRAIGHT AND VERTICAL.

TRIM AND COMPACT SUBGRADE. COMPACT SUBGRADE TO AT LEAST NINETY-FIVE (95) PERCENT RELATIVE MAXIMUM DENSITY.

THOROUGHLY TACK COAT ALL VERTICAL SURFACES WITH ASTM D 2397 OR D 3628 ASPHALT EMULSION TYPES SS-1, SS-1H, CSS-1, OR CSS-1H, DILUTED WITH EQUAL PARTS OF WATER.

PLACE HOT MIX ASPHALT CONCRETE WHILE TEMPERATURE STAYS ABOVE TWO HUNDRED (200) DEGREES F TO PREVENT SEGREGATION OF MIX.

ASPHALT MIX TO BE USED FOR PATCHING SHALL BE APPROVED PRIOR TO PATCHING.

COLD MIX MAY BE SUBSTITUTED IF HOT MIX IS NOT AVAILABLE DUE TO WEATHER CONDITIONS OR SEASON. COLD MIX MUST BE APPROVED BY CITY PRIOR TO PATCHING.

COMPACT IN LIFTS IF PATCH IS THREE (3) INCHES OR GREATER IN DEPTH. INSTALL IN EQUAL LIFT THICKNESS. MAXIMUM TWO (2) INCH LIFTS.

COMPACT WITH EQUIPMENT MOST SUITED FOR THE SIZE OF JOB.

ADEQUATE COMPACTATION EQUIPMENT THAT WILL YIELD SURFACE OF PATCH AT SAME ELEVATION AS THE SURROUNDING PAVEMENT SHALL BE USED.

CHECK RIDING QUALITY, DRAINAGE, AND ALIGNMENT OF PATCH WITH STRAIGHT EDGE.

BROOM CLEAN AREAS OF WORK. CLEAN UP ALL SPILLS AND REMOVE EXTRA MATERIALS FROM JOB SITE.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

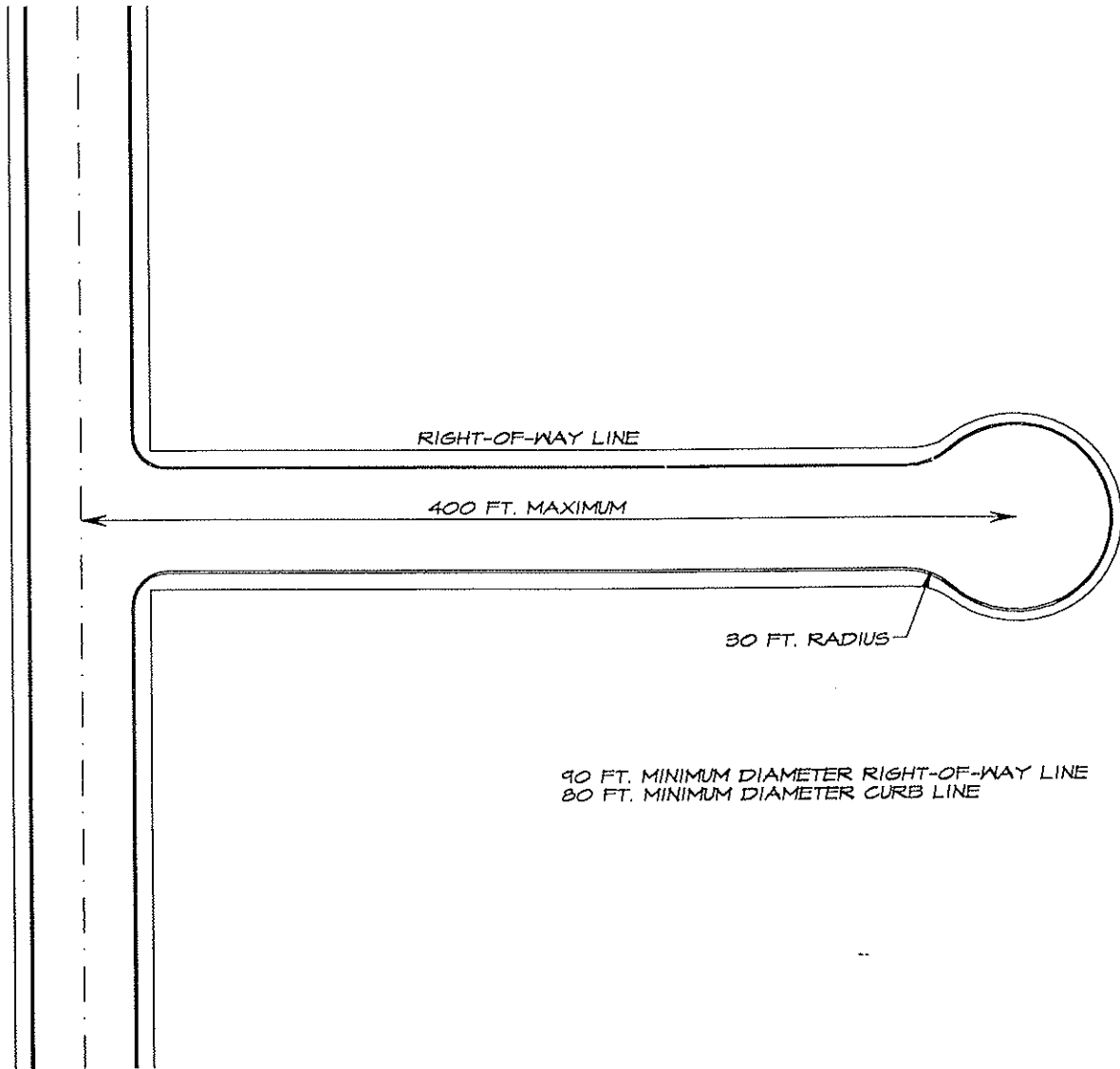
DRAWN BY: RICK B.

DATE: JUNE 2004

APPROVED: 

SCALE: NOT TO SCALE

TITLE: STREET PATCHING STANDARDS



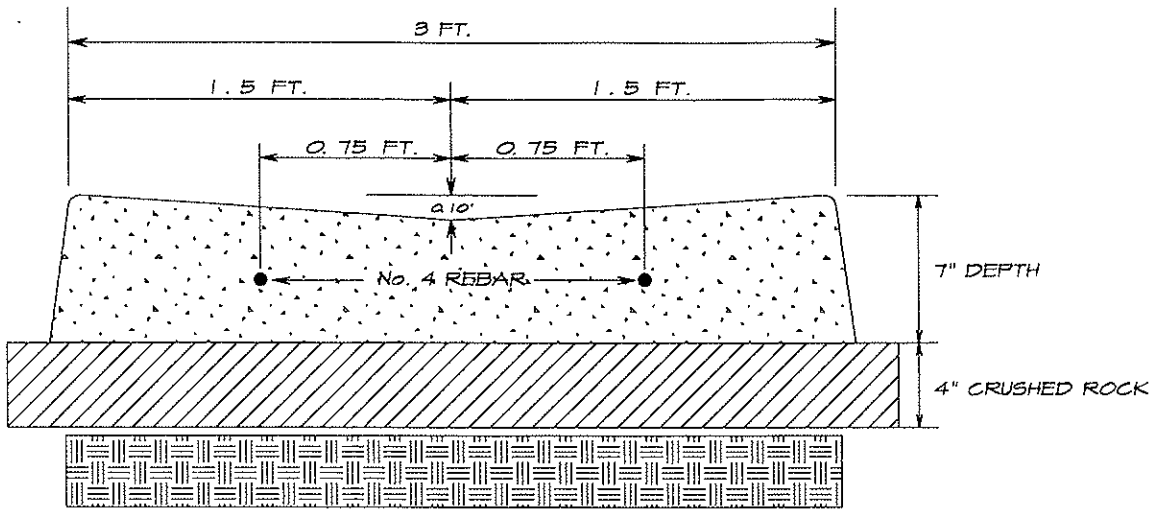
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DEC. 15, 1995

APPROVED: *[Signature]* SCALE: NOT TO SCALE

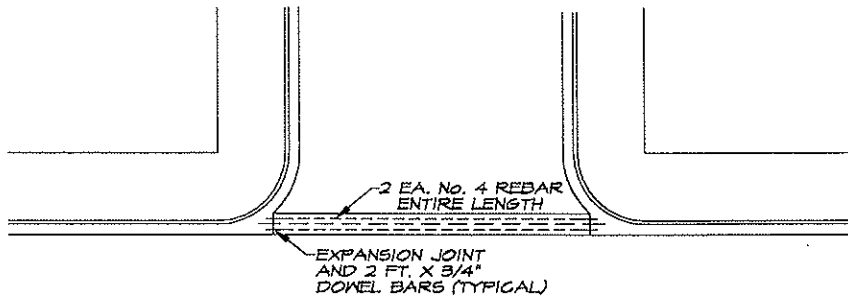
TITLE: STANDARD CUL-DE-SAC
FOR RESIDENTIAL STREETS



CROSS-SECTION

NOTE: CONCRETE TO BE 3000 P.S.I. AT 28 DAYS, 6 SACK MIX

GRADE OF STREET PERPENDICULAR TO CROSS GUTTER GREATER THAN 5%



PLAN VIEW

CITY OF PENDLETON

ENGINEERING DEPARTMENT

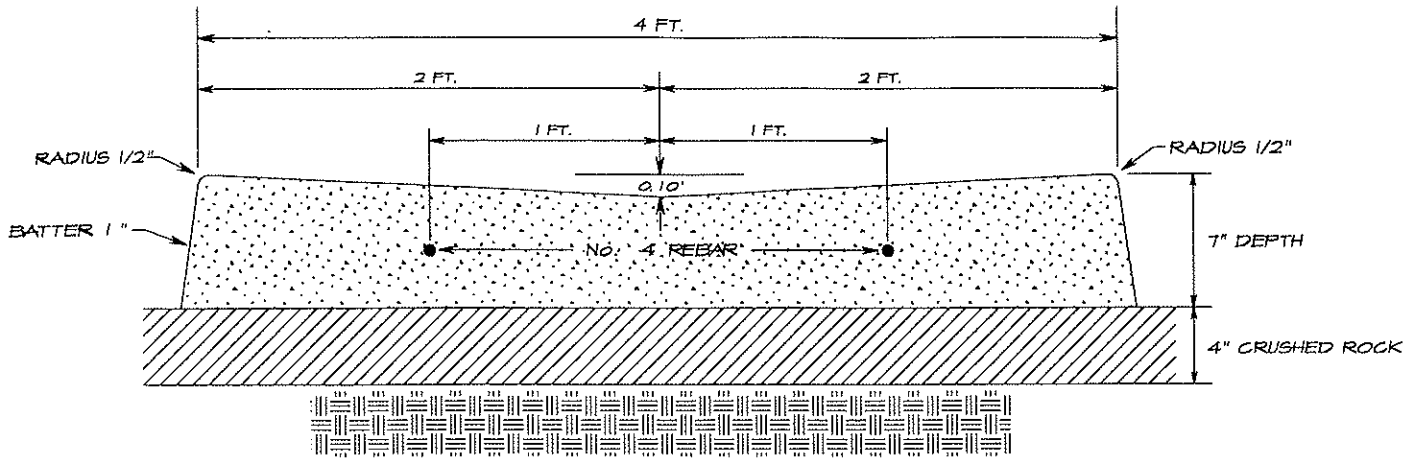
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DATE: DEC. 15, 1995

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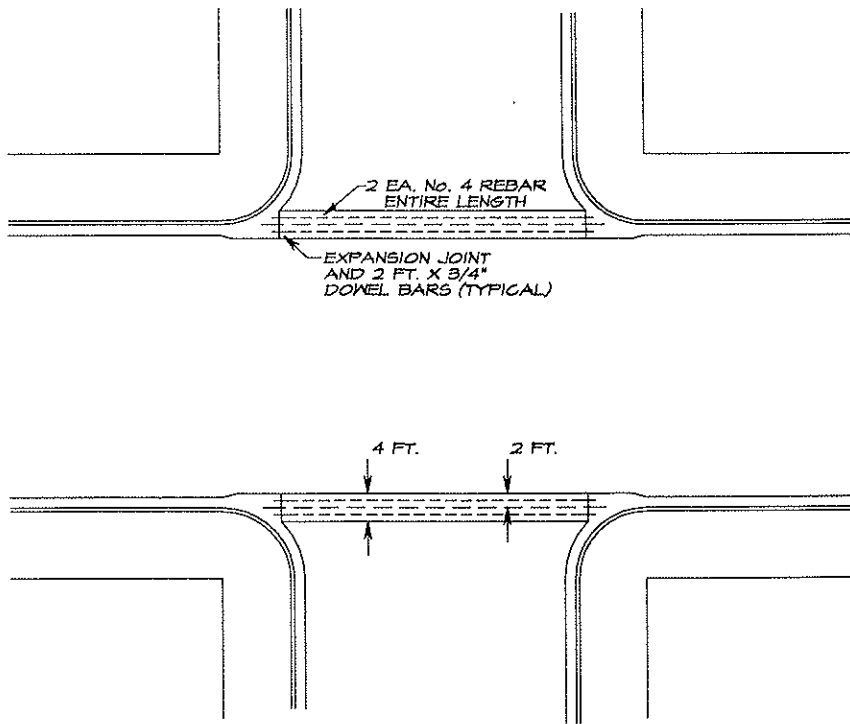
TITLE: CROSS-GUTTER TYPE - 1



CROSS-SECTION

NOTE: CONCRETE TO BE 3000 P.S.I. AT 28 DAYS, 6 SACK MIX

GRADE OF STREET PERPENDICULAR TO CROSS GUTTER LESS THAN 5%



PLAN VIEW

CITY OF PENDLETON

ENGINEERING DEPARTMENT

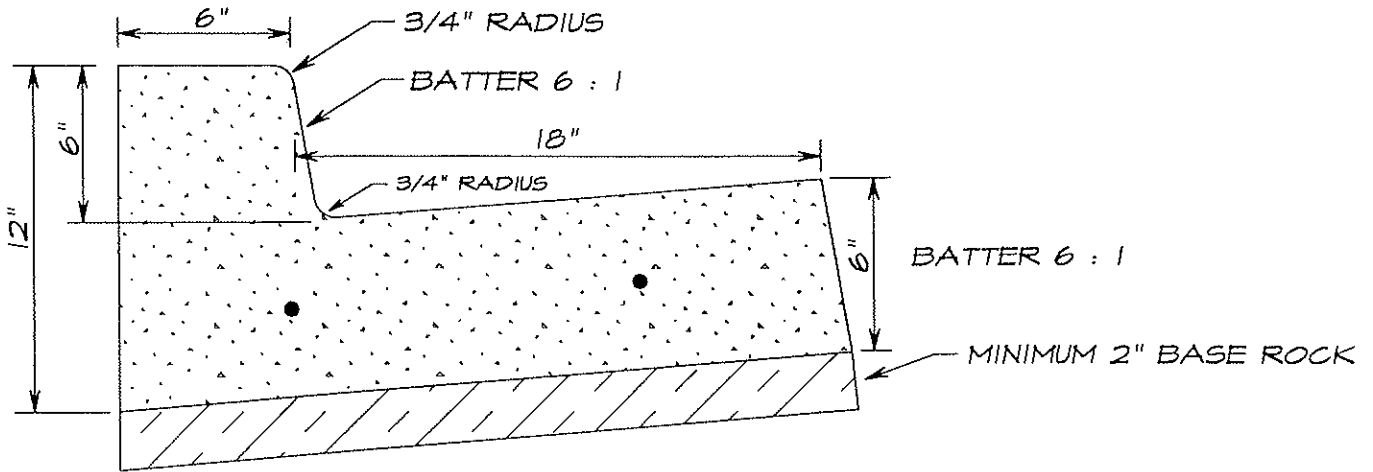
DRAWN BY: RICK B.

DATE: DEC. 15, 1995

APPROVED: _____

SCALE: NOT TO SCALE

TITLE: CROSS-GUTTER TYPE - 2



CONSTRUCTION NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, 28 DAYS AFTER PLACEMENT, USING 6 SACK MIX.

DOWEL BARS SHALL BE 2' X 1/2" DIA. SMOOTH ROUND BARS WITH SLEEVES AND ARE TO BE USED AT END OF CURBS FOR FUTURE EXTENSION AND AT OTHER LOCATIONS AS DETERMINED BY ENGINEER.

EXPANSION JOINTS SHALL BE LOCATED AT THE BEGINNING AND END OF EACH STRAIGHT RUN, AT 30 FT. INTERVALS, AND AT SUCH PLACES AS NECESSITY MAY REQUIRE AS DIRECTED BY THE ENGINEER.

CONTRACTION JOINTS SHALL BE LOCATED AT INTERVALS NOT TO EXCEED 15 FEET AND MAY BE OMITTED WHERE EXPANSION JOINTS ARE AT LESS THAN 25 FT. INTERVALS.

BASE ROCK SHALL BE 3/4" MINUS CRUSHED ROCK AND SHALL BE COMPACTED TO NOT LESS THAN 95% RELATIVE COMPACTION.

REVISED: 4/2000 RB

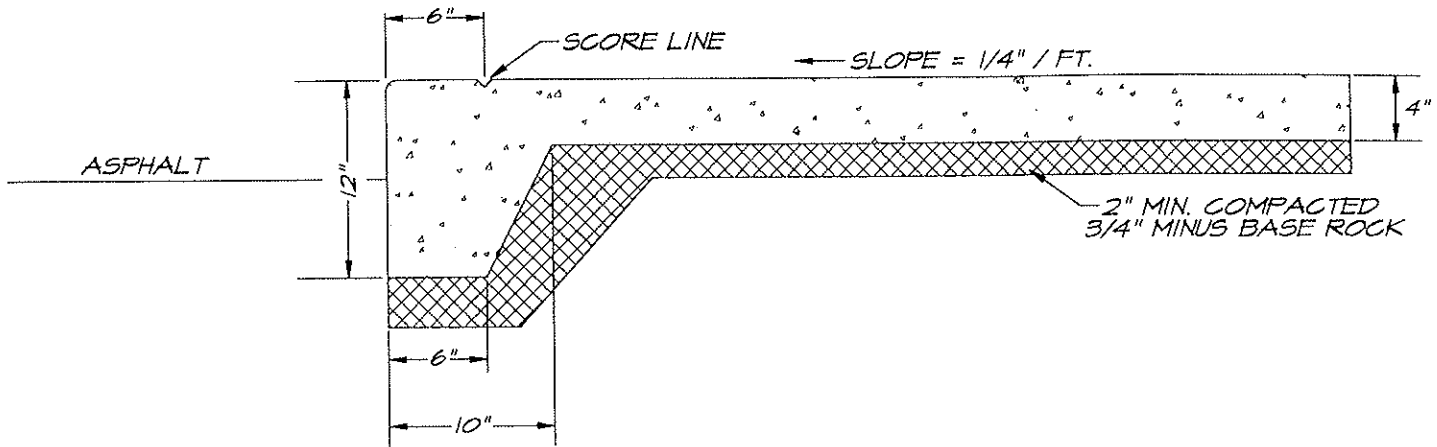
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DEC. 15, 1995

APPROVED: *[Signature]* SCALE: NOT TO SCALE

TITLE: MONOLITHIC CURB AND GUTTER DETAIL



MONOLITHIC CURB AND SIDEWALK

NOTE: MONOLITHIC CURB AND SIDEWALK IS NOT A GENERALLY ACCEPTED METHOD AND WILL ONLY BE ALLOWED WITH THE CITY ENGINEERS APPROVAL

CONSTRUCTION NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, 28 DAYS AFTER PLACEMENT, USING 6 SACK MIX.

EXPANSION JOINTS SHALL BE LOCATED AT THE BEGINNING AND END OF EACH STRAIGHT RUN, AT 30 FT. INTERVALS, AND AT SUCH PLACES AS NECESSITY MAY REQUIRE AS DIRECTED BY THE ENGINEER.

CONTRACTION JOINTS SHALL BE LOCATED AT INTERVALS NOT TO EXCEED 15 FEET AND MAY BE OMITTED WHERE EXPANSION JOINTS ARE AT LESS THAN 25 FT. INTERVALS.

BASE ROCK SHALL BE 3/4" MINUS CRUSHED ROCK AND SHALL BE COMPACTED TO NOT LESS THAN 95% RELATIVE COMPACTION.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

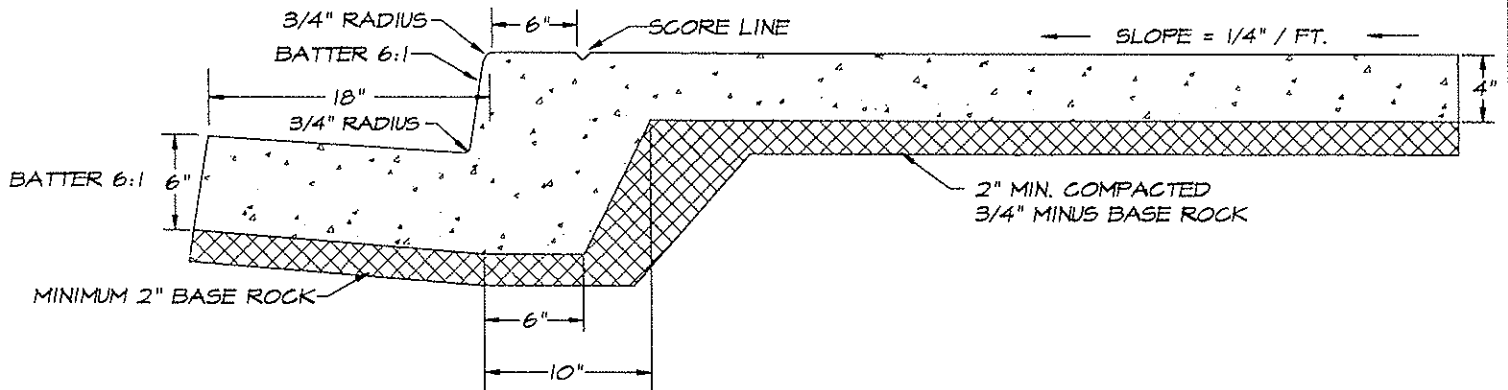
DRAWN BY: RICK B. [Signature]

DATE: AUG 8, 2000

APPROVED: [Signature]

SCALE: NOT TO SCALE

TITLE: MONOLITHIC CURB AND SIDEWALK DETAIL



MONOLITHIC CURB AND GUTTER AND SIDEWALK

NOTE: MONOLITHIC CURB AND GUTTER AND SIDEWALK IS NOT A GENERALLY ACCEPTED METHOD AND WILL ONLY BE ALLOWED WITH THE CITY ENGINEERS APPROVAL

CONSTRUCTION NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, 28 DAYS AFTER PLACEMENT, USING 6 SACK MIX.

EXPANSION JOINTS SHALL BE LOCATED AT THE BEGINNING AND END OF EACH STRAIGHT RUN, AT 30 FT. INTERVALS, AND AT SUCH PLACES AS NECESSITY MAY REQUIRE AS DIRECTED BY THE ENGINEER.

CONTRACTION JOINTS SHALL BE LOCATED AT INTERVALS NOT TO EXCEED 15 FEET AND MAY BE OMITTED WHERE EXPANSION JOINTS ARE AT LESS THAN 25 FT. INTERVALS.

BASE ROCK SHALL BE 3/4" MINUS CRUSHED ROCK AND SHALL BE COMPACTED TO NOT LESS THAN 95% RELATIVE COMPACTION.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

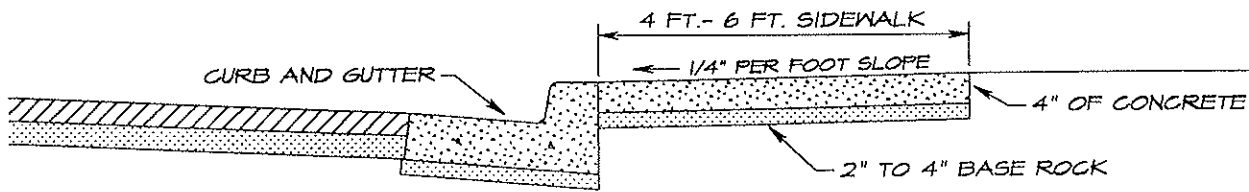
DRAWN BY: GRANT D.

DATE: MARCH 1, 2001

TITLE: MONOLITHIC CURB
AND GUTTER AND
SIDEWALK DETAIL

APPROVED: [Signature] SCALE: NOT TO SCALE

RIGHT-OF-WAY LINE



RESIDENTIAL AND INDUSTRIAL SIDEWALK SECTIONS

NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI 28 DAYS AFTER PLACEMENT, USING 5 SACK MIX, WITH A SLUMP RANGE OF 3" TO 5".

BASE ROCK SHALL BE 3/4" MINUS CRUSHED ROCK AND SHALL BE COMPACTED TO NOT LESS THAN 95% RELATIVE COMPACTION.

MINIMUM SIDEWALK THICKNESS SHALL BE 4", EXCEPT AT DRIVEWAYS.

RESIDENTIAL DRIVEWAY THICKNESS SHALL BE 5". INDUSTRIAL DRIVEWAY THICKNESS SHALL BE 6" OR 5" WITH 6" X 6" WELDED WIRE MESH.

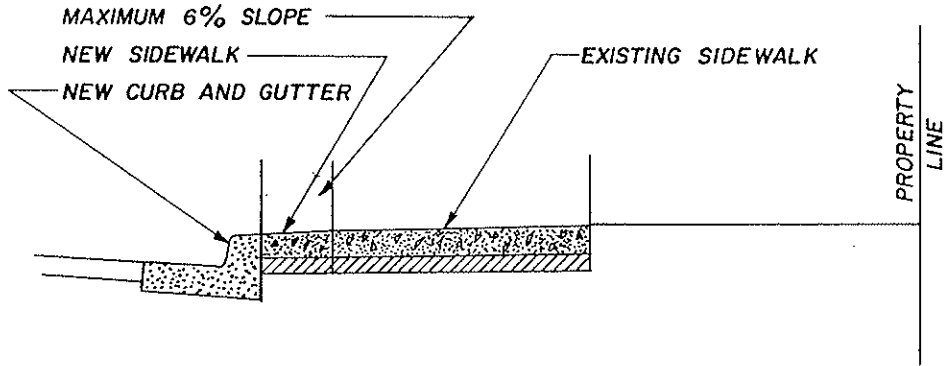
REFER TO DRIVEWAY APPROACH STANDARDS.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. [Signature] DATE: DECEMBER, 1995
 APPROVED: [Signature] GALE: NOT TO SCALE

TITLE: RESIDENTIAL AND INDUSTRIAL SIDEWALK STANDARDS

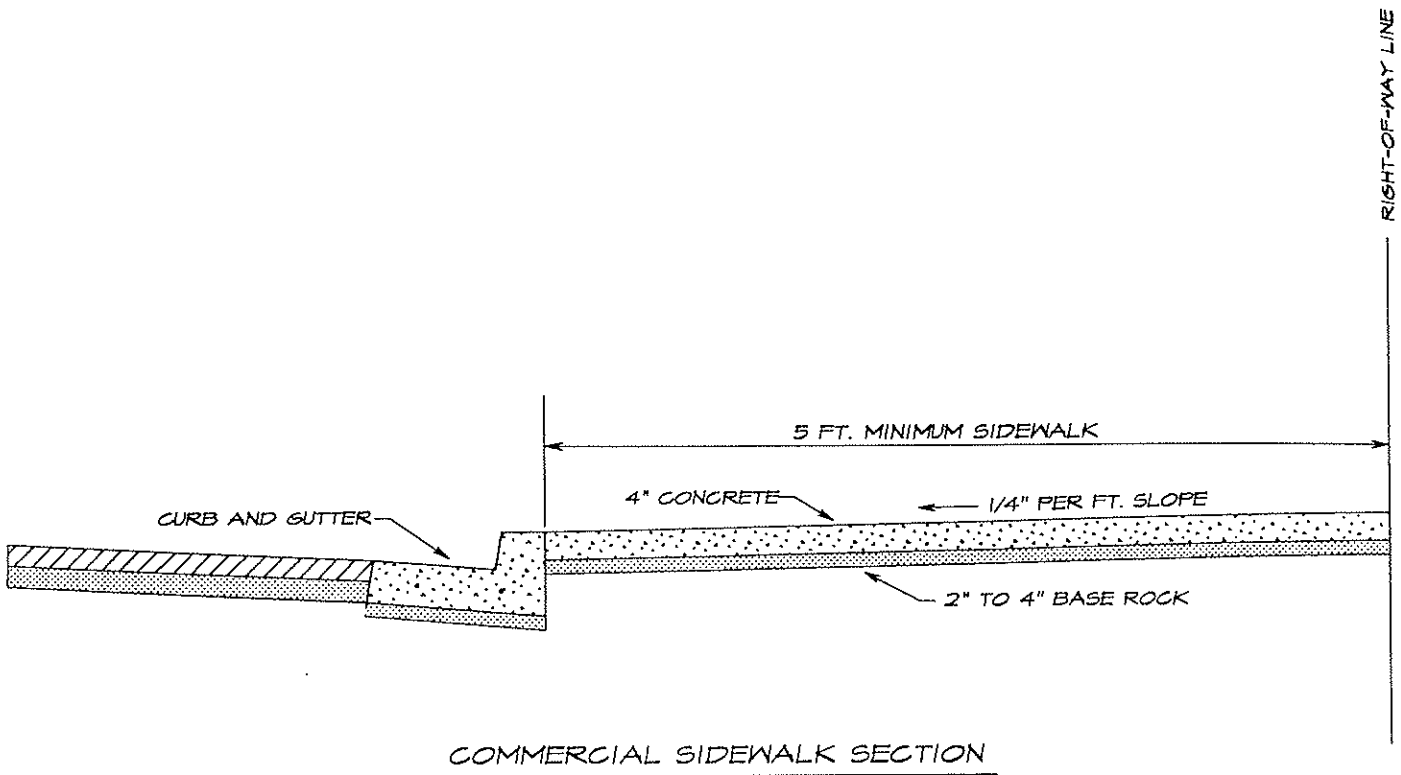


POLICY ON SIDEWALKS FOR STREET WIDENING PROJECTS

NOTE:

MAXIMUM 6% SLOPE ON NEW SIDEWALKS FROM THE NEW CURB TO THE INTERSECTION WITH EXISTING SIDEWALKS; AND THE COST ATTRIBUTABLE TO ANYTHING DIFFERENT OR LESS THAN MAXIMUM SLOPE WOULD BE CONSTRUCTED AT THE OWNERS EXPENSE.

CITY OF PENDLETON	ENGINEERING DEPARTMENT
DN. 252 APPR'D: <i>David Thomas</i> CITY ENGINEER	DATE: 6/17/81 SCALE: N.T.S. TITLE: SIDEWALK POLICY



NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI 28 DAYS AFTER PLACEMENT, USING 5 SACK MIX, WITH A SLUMP RANGE OF 3" TO 5".

BASE ROCK SHALL BE 3/4" MINUS CRUSHED ROCK AND SHALL BE COMPACTED TO NOT LESS THAN 95% RELATIVE COMPACTION.

MINIMUM SIDEWALK THICKNESS SHALL BE 4", EXCEPT AT DRIVEWAYS.

RESIDENTIAL DRIVEWAY THICKNESS SHALL BE 5". INDUSTRIAL DRIVEWAY THICKNESS SHALL BE 6" OR 5" WITH 6" X 6" WELDED WIRE MESH.

REFER TO DRIVEWAY APPROACH STANDARDS.

REVISED: 4/2000 RB

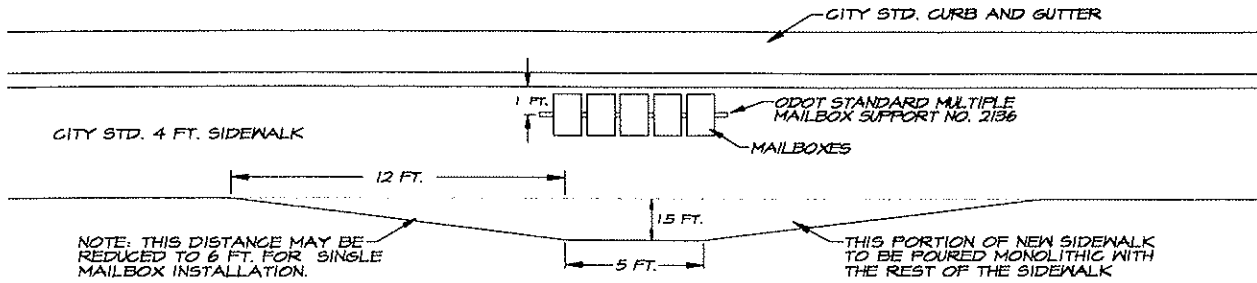
CITY OF PENDLETON

ENGINEERING DEPARTMENT

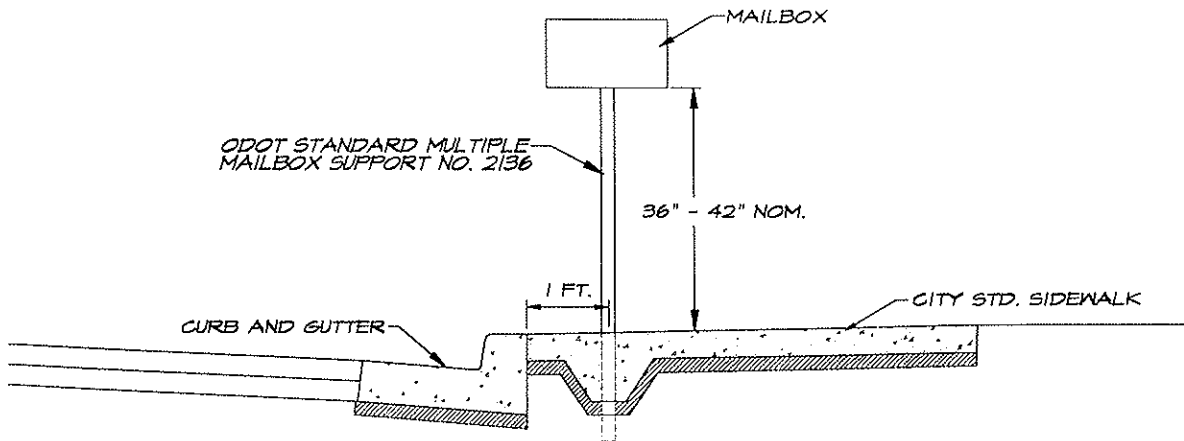
DRAWN BY: RICK B. DATE: DECEMBER, 1995

TITLE: COMMERCIAL SIDEWALK STANDARDS

APPROVED: *David Payne* SCALE: NOT TO SCALE



TOP VIEW



SIDE VIEW

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B

DATE: JUNE, 2000

APPROVED: *[Signature]*

SCALE: NOT TO SCALE

TITLE: MAILBOX RELOCATION
DETAIL

NOTES:

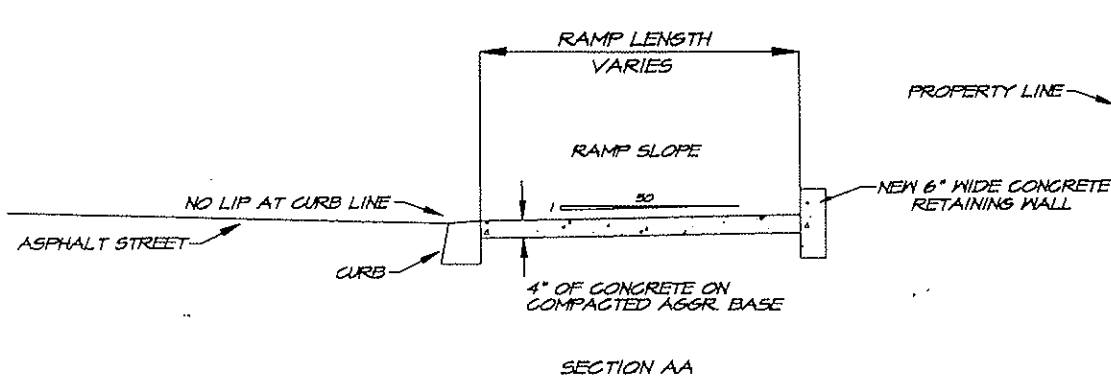
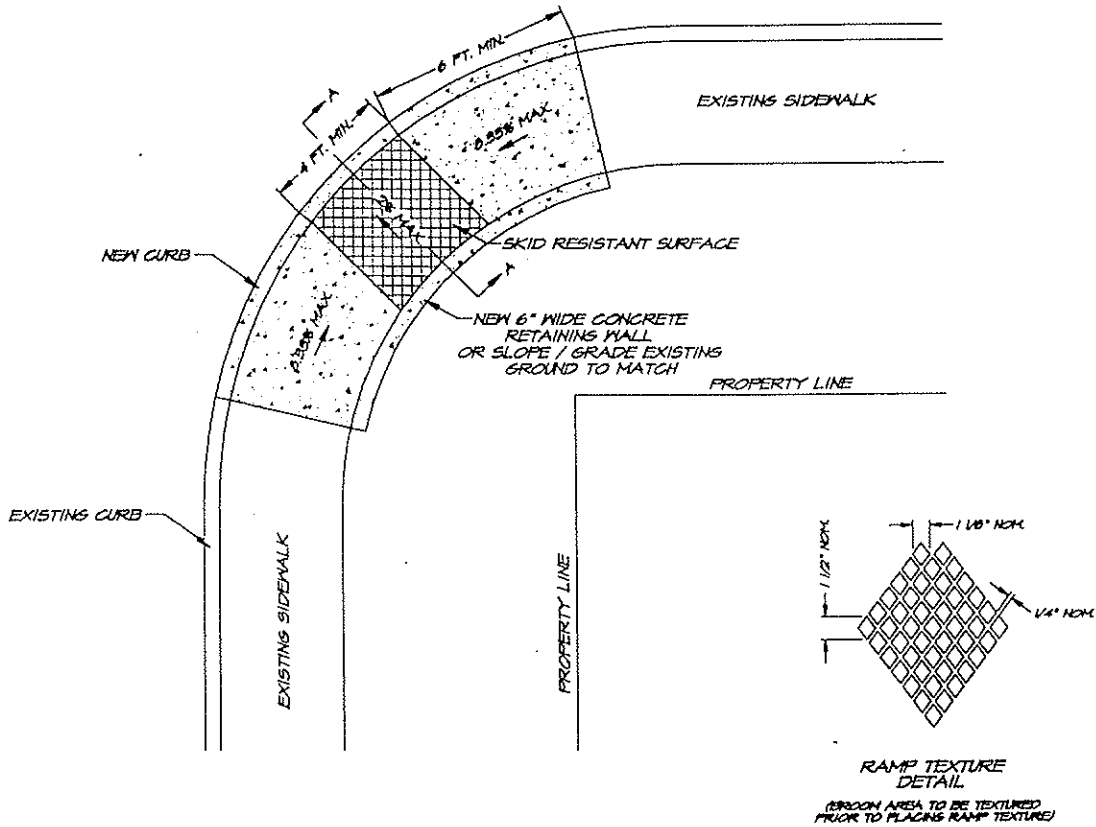
STD. PLAN NO. 211 A

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI 28 DAYS AFTER PLACEMENT, USING 5 SACK MIX, WITH A SLUMP RANGE OF 3" TO 5".

BASE ROCK SHALL BE 3/4" MINUS CRUSHED ROCK AND SHALL BE COMPACTED TO NOT LESS THAN 95% RELATIVE COMPACTION.

PLACE DIAMOND RAMP TEXTURE IN THROAT OF RAMP ONLY. RAMP TEXTURING IS TO BE DONE WITH AN EXPANDED METAL GRATE OR OTHER APPROVED METHOD PLACED AND REMOVED FROM WET CONCRETE TO LEAVE A DIAMOND PATTERN AS SHOWN. GROOVE DEPTH IS 1/8" NOMINAL.

TOOLED JOINTS ARE REQUIRED AT ALL SIDEWALK RAMP SLOPE BREAK LINES.

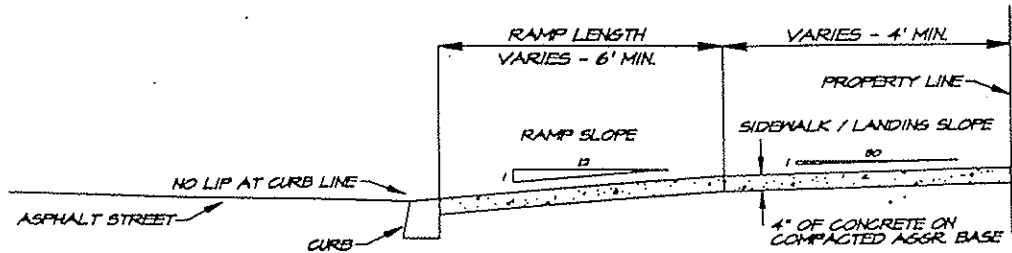
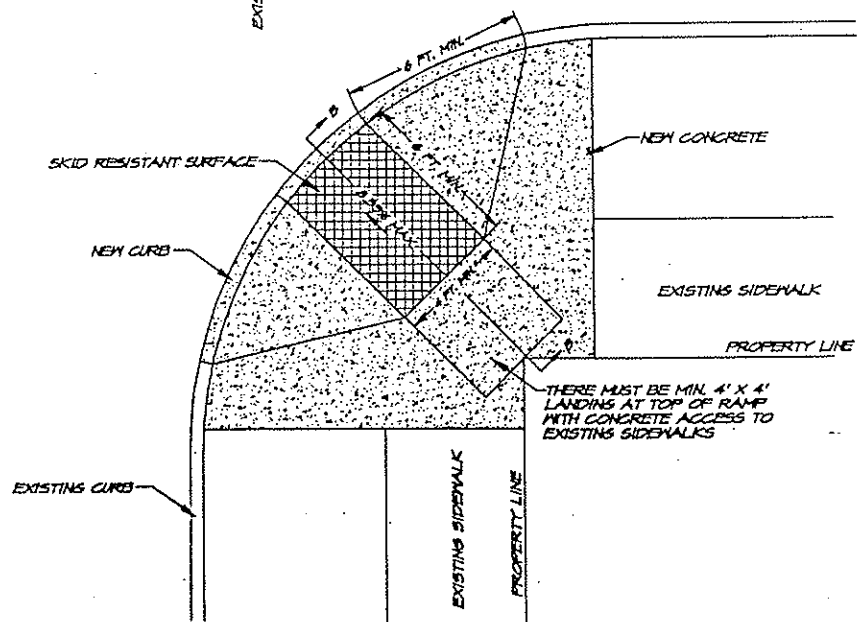
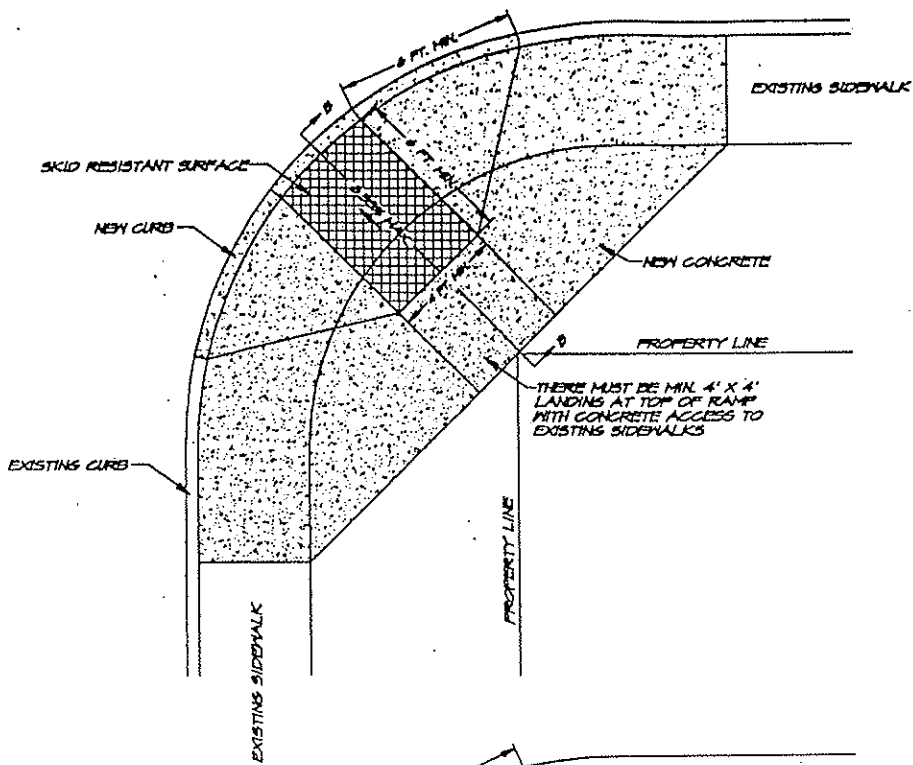


CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DECEMBER 1999
 APPROVED: *[Signature]* SCALE: NOT TO SCALE

TITLE: WHEELCHAIR RAMP STANDARDS A



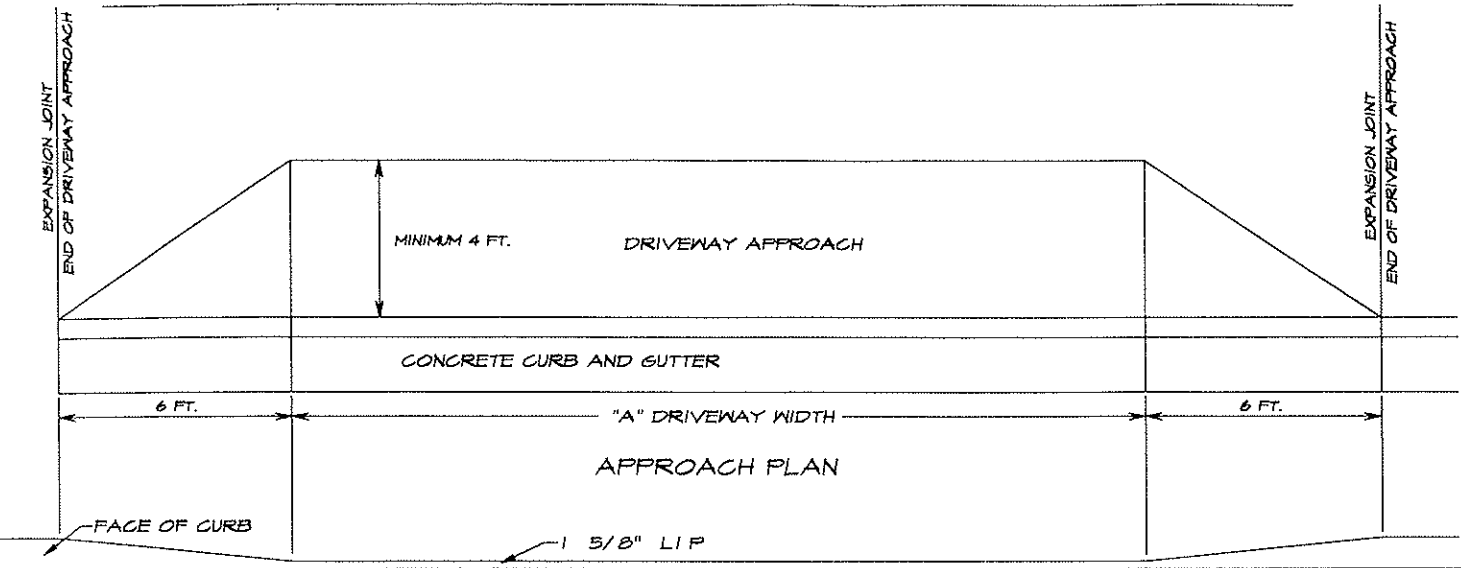
SECTION BB

CITY OF PENDLETON

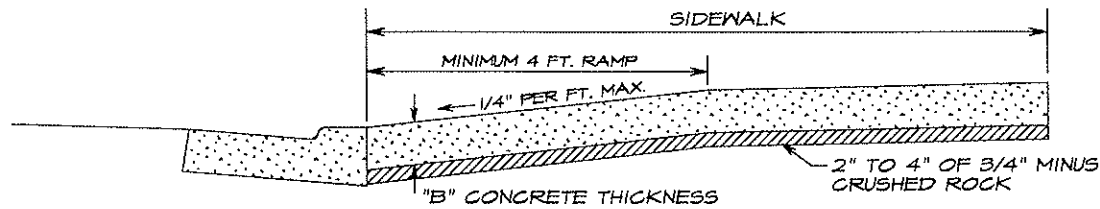
ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DECEMBER 1999
 APPROVED: *David Longman* SCALE: NOT TO SCALE

TITLE: WHEELCHAIR RAMP STANDARDS B



CURB PROFILE



APPROACH AND GUTTER SECTION

DIMENSIONS

TYPE OF DRIVEWAY	"A" WIDTH	"B" CONCRETE THICKNESS
RESIDENTIAL SINGLE	14 FEET	5 INCHES
DOUBLE	22 FEET	5 INCHES
COMMERCIAL MAXIMUM SPEED 25 M.P.H.	30 FEET	6 INCHES *
OVER 25 M.P.H.	35 FEET	6 INCHES *

* OR 5 INCHES DEPTH WITH
6" X 6" WELDED WIRE MESH

NOTE: COMMERCIAL AND INDUSTRIAL SIDEWALKS ADJACENT TO THE ENDS OF THE DRIVEWAY APPROACH SHALL MAINTAIN DRIVEWAY APPROACH THICKNESS "B" FOR AT LEAST 3 FT.

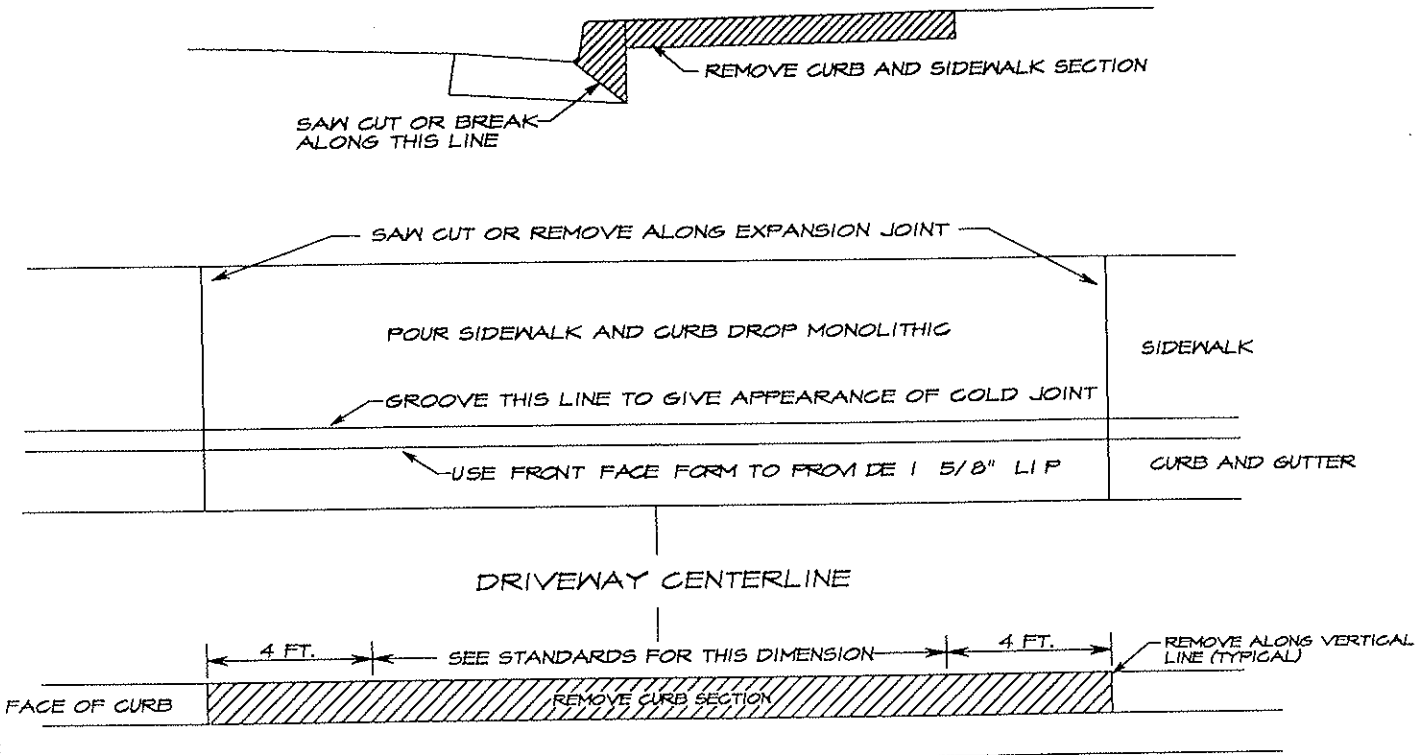
CITY OF PENDLETON

ENGINEERING DEPARTMENT

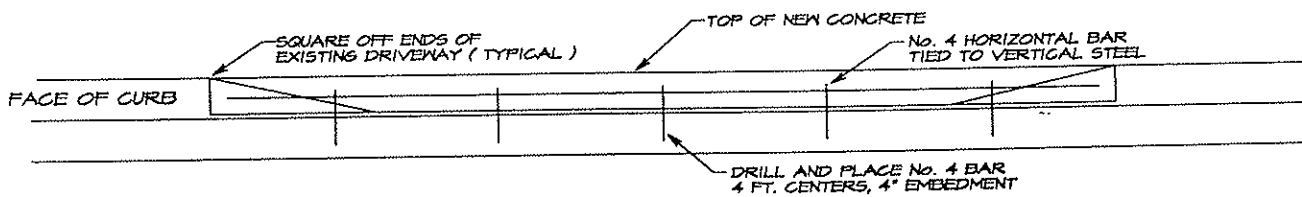
DRAWN BY: RICK B. DATE: NOVEMBER 1999
 APPROVED: *[Signature]* SCALE: NOT TO SCALE

TITLE: DRIVEWAY APPROACH STANDARDS

INSTALLATION OF NEW DRIVEWAY OPENING



REMOVAL OF EXISTING DRIVEWAY OPENING



GENERAL NOTES:

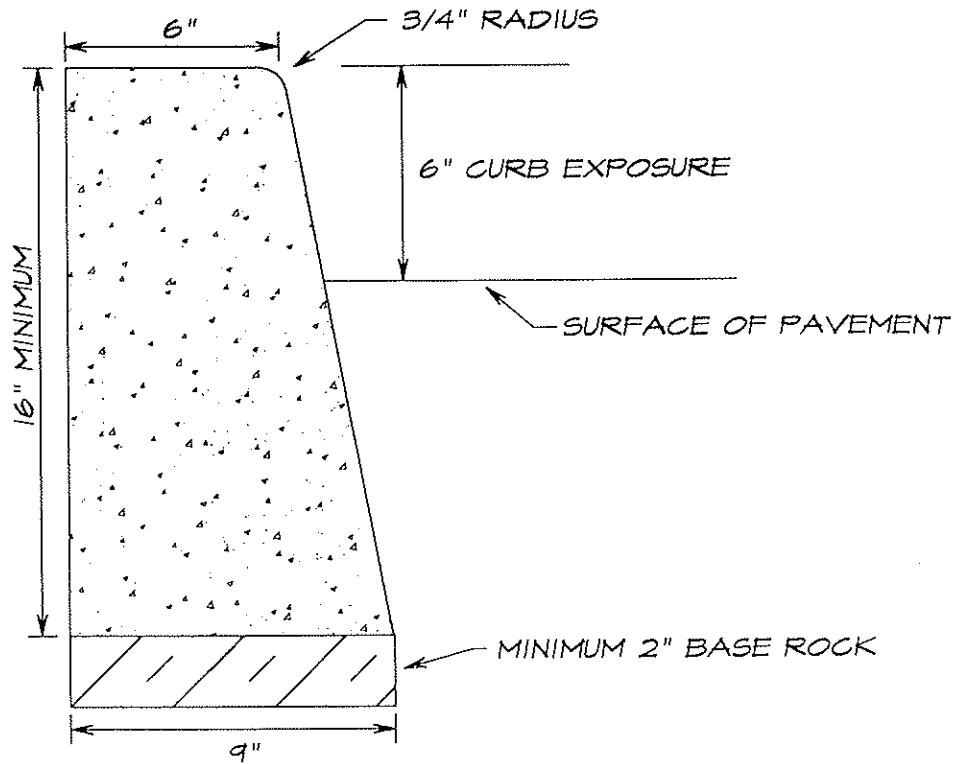
1. AFTER POURING, PULL FRONT FACE FORM AS SOON AS POSSIBLE, FILL ALL ROCK POCKETS, AND BROOM FINISH
2. FINISH ALL CONCRETE TO MATCH EXISTING CURB AND SIDEWALK
3. USE UNICON (OR EQUAL) BONDING AGENT BETWEEN OLD AND NEW CONCRETE

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY RICK B. DATE: DECEMBER 1995
 APPROVED: *[Signature]* SCALE: NOT TO SCALE

TITLE: DRIVEWAY STANDARDS



CONSTRUCTION NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3300 PSI, 28 DAYS AFTER PLACEMENT, USING 6.3 SACK MIX.

EXPANSION JOINTS SHALL BE LOCATED AT THE BEGINNING AND END OF EACH STRAIGHT RUN, AT 30 FT. INTERVALS, AND AT SUCH PLACES AS NECESSITY MAY REQUIRE AS DIRECTED BY THE ENGINEER.

CONTRACTION JOINTS SHALL BE LOCATED AT INTERVALS NOT TO EXCEED 15 FEET AND MAY BE OMITTED WHERE EXPANSION JOINTS ARE AT LESS THAN 25 FT. INTERVALS.

BASE ROCK SHALL BE 3/4" MINUS CRUSHED ROCK AND SHALL BE COMPACTED TO NOT LESS THAN 95% RELATIVE COMPACTION.

REVISED 4/2000 RB

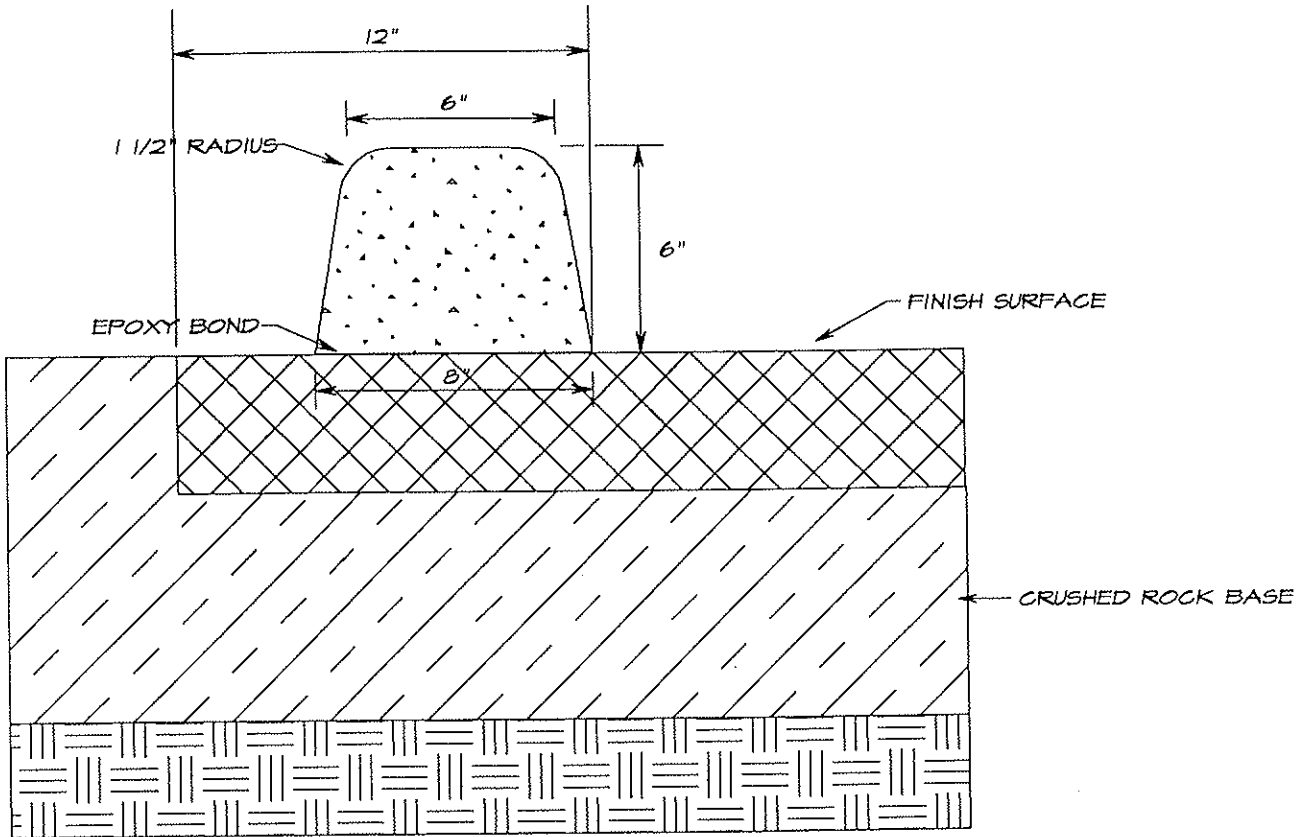
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DEC. 15, 1995

TITLE: TYPE "C" CURB
DETAIL

APPROVED: *[Signature]* SCALE: NOT TO SCALE



CONSTRUCTION NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3300 PSI, 28 DAYS AFTER PLACEMENT, USING 6.3 SACK MIX.

EXPANSION JOINTS SHALL BE PLACED ONLY AS SPECIFIED.

CONTRACTION JOINTS SHALL BE PLACED AT 15 FOOT INTERVALS UNLESS OTHERWISE SPECIFIED AND SHALL EXTEND AT LEAST 50% THROUGH THE CURB.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

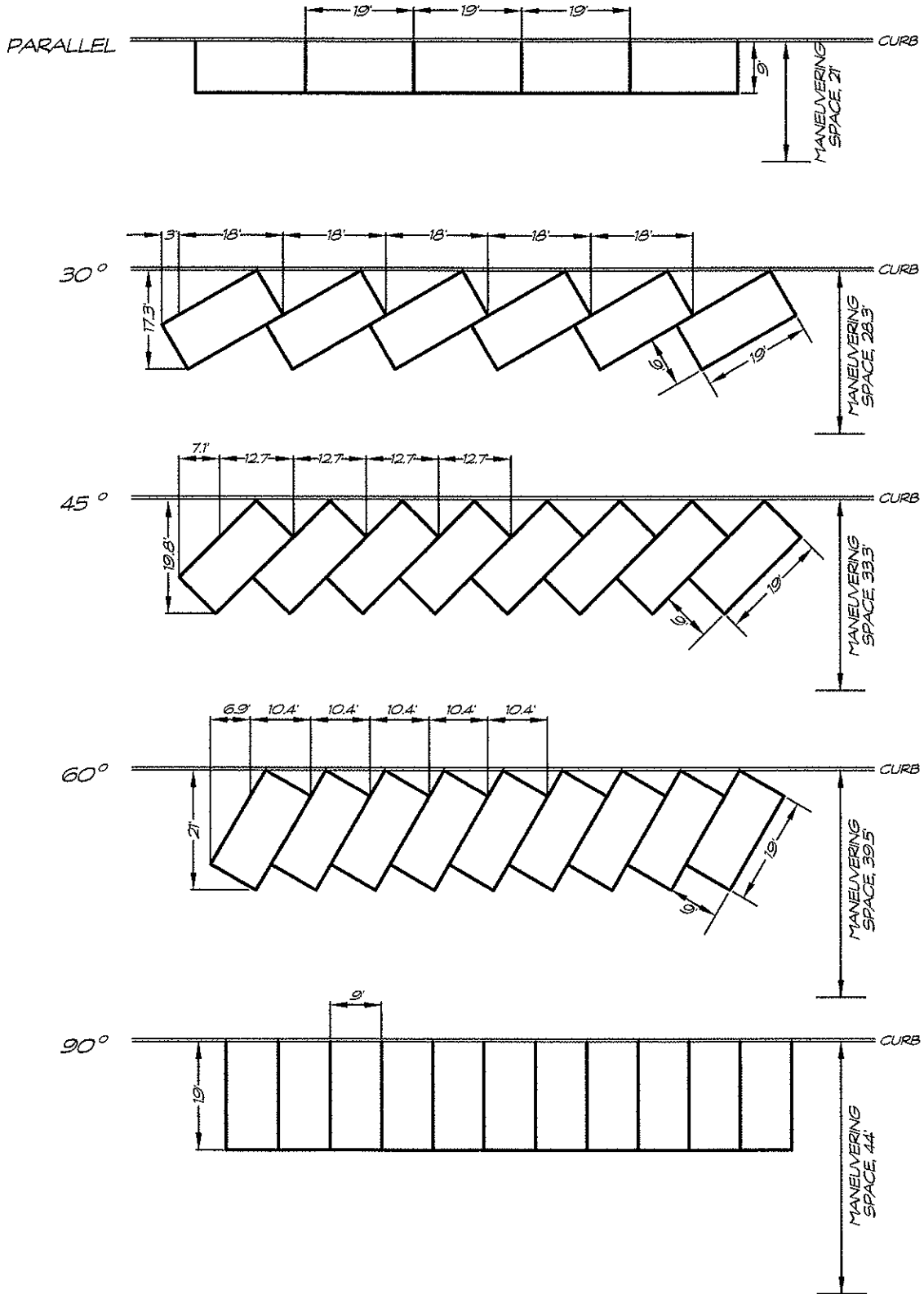
DRAWN BY: RICK E.

DATE: DEC. 15, 1995

APPROVED:

[Signature]
SCALE: NOT TO SCALE

TITLE: EXTRUDED CURB
DETAIL



CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B.

DATE: JANUARY 2005

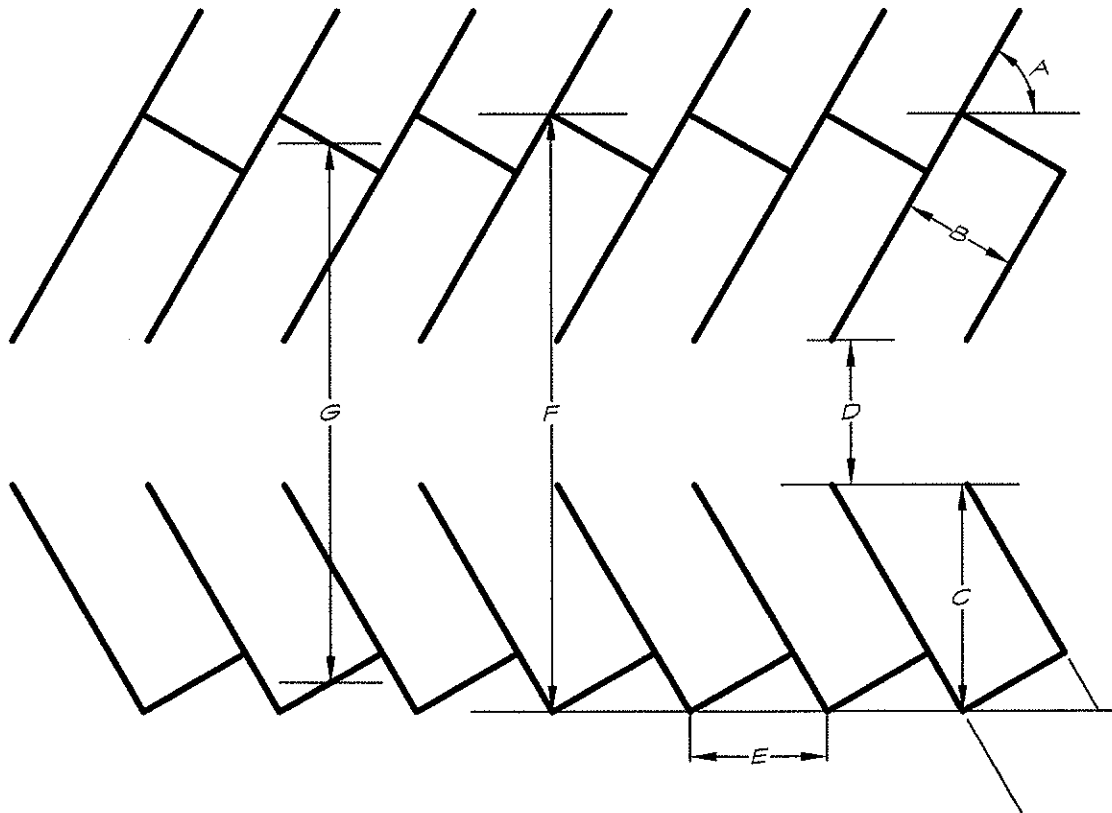
APPROVED:

SCALE: NOT TO SCALE

TITLE: PARKING DESIGN STANDARDS

A	B	C	D	E	F	G
0°	9'	9'	12'	23'	30'	--
20°	9'	15'	11'	26.3'	41'	32.5'
30°	9'	17.3'	11'	18'	45.6'	37.8'
45°	9'	19.8'	13'	12.7'	52.5'	46.5'
60°	9'	21'	18'	10.4'	60'	55.5'
70°	9'	21'	19'	9.6'	61'	57.9'
80°	9'	20.3'	24'	9.1'	64.3'	62.7'
90°	9'	19'	24'	9'	62'	--

- A. PARKING ANGLE
- B. STALL WIDTH
- C. 19' STALL TO CURB
- D. AISLE WIDTH
- E. CURB LENGTH PER CAR
- F. CENTER TO CENTER WIDTH (FROM CURB TO CURB)
- G. OF DOUBLE ROW WITH AISLE BETWEEN STALL CENTERS



CITY OF PENDLETON

ENGINEERING DEPARTMENT

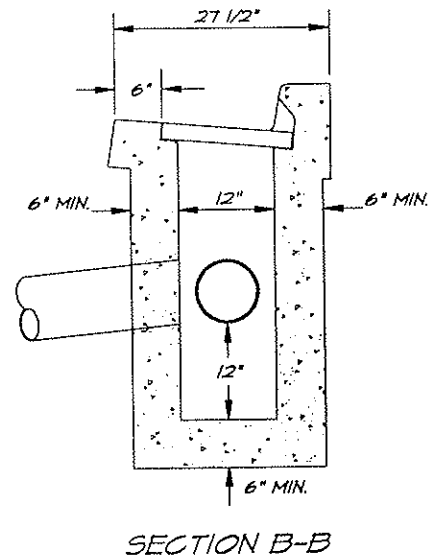
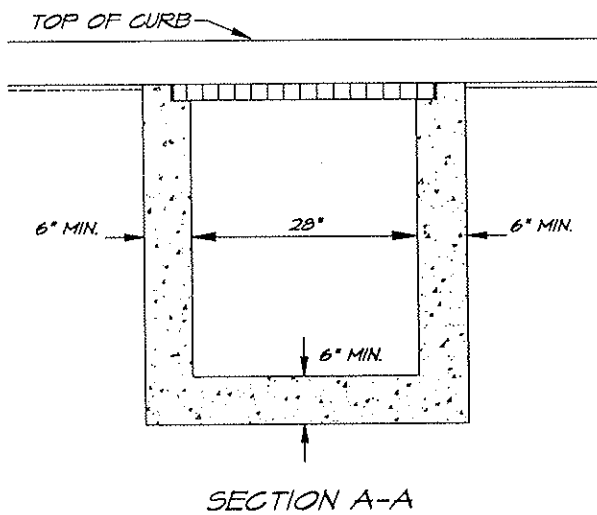
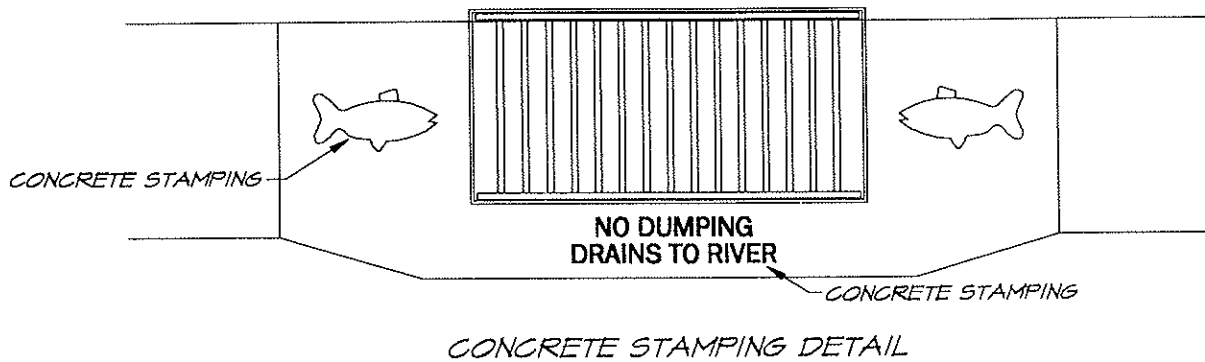
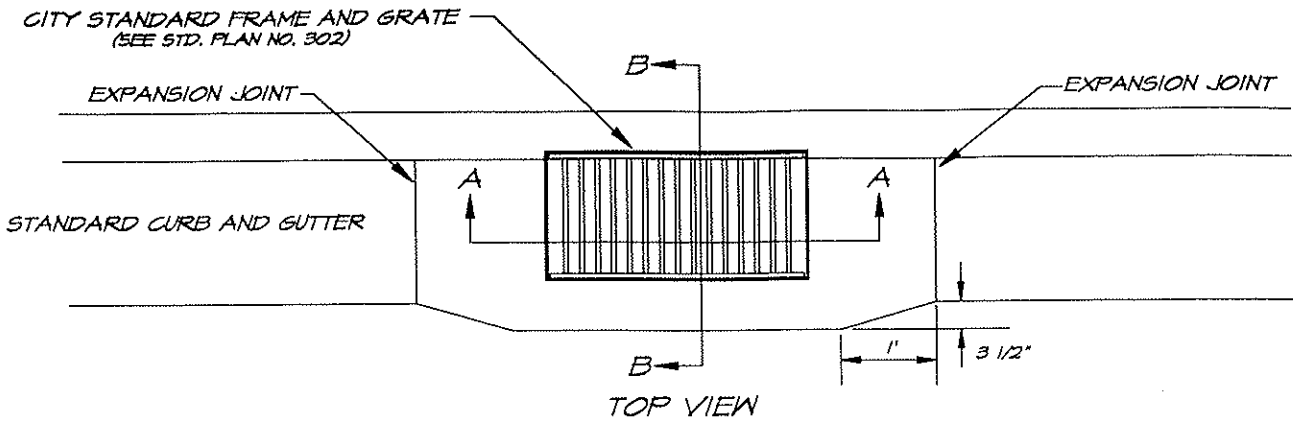
DRAWN BY: RICK B.

DATE: JANUARY 2005

APPROVED:

SCALE: NOT TO SCALE

TITLE: PARKING DESIGN STANDARDS



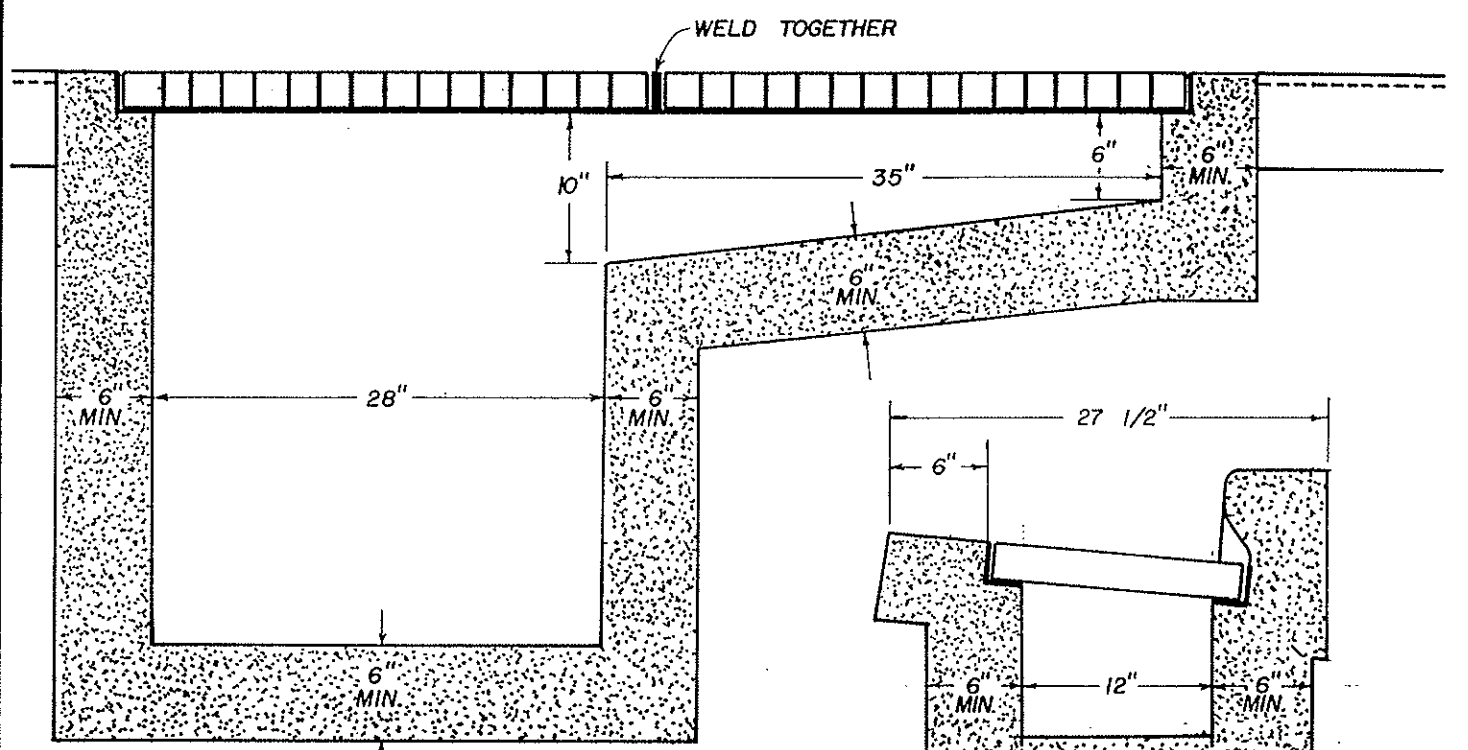
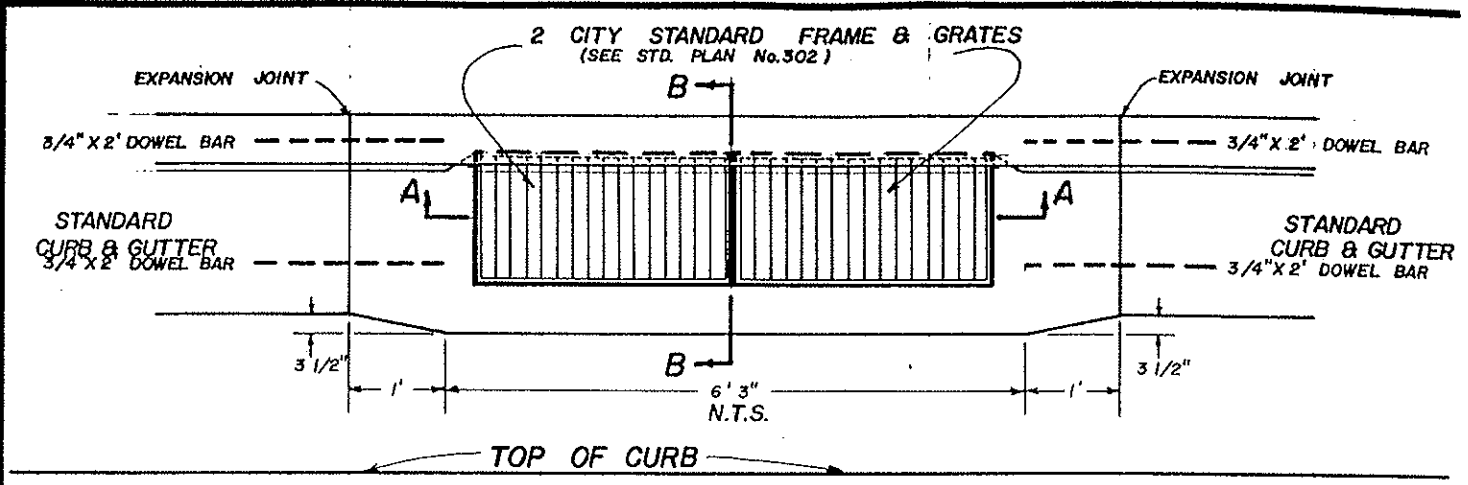
NOTES: CONCRETE TO BE 3000 P.S.I. AT 28 DAYS, 5 SACK MIX
 FRAME AND GRATE TO BE CITY OF PENDLETON STANDARD, SEE STANDARD PLAN NO. 302
 DRAIN PIPE I.E. TO BE 12" UP FROM BOTTOM OF CATCHBASIN
 CONCRETE STAMPING TO BE DONE AS SHOWN AS APPROVED BY CITY OF PENDLETON

CITY OF PENDLETON

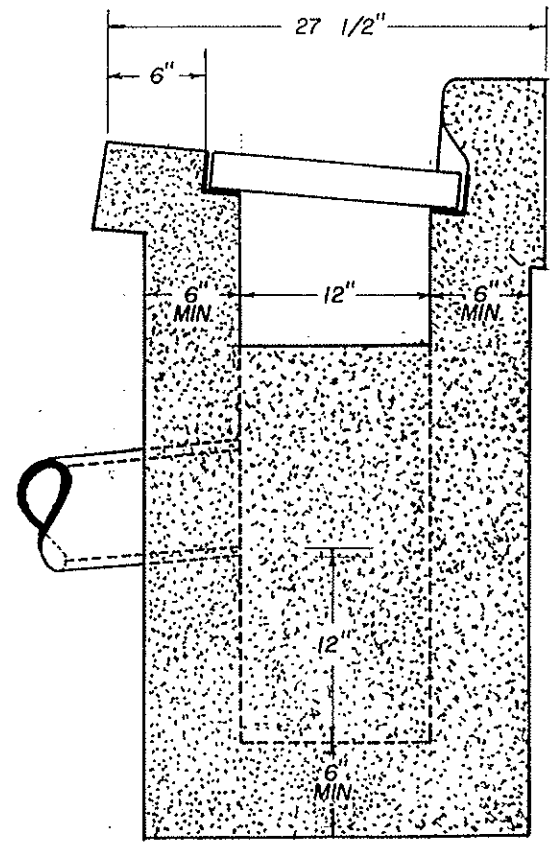
ENGINEERING DEPARTMENT

DRAWN BY: RICK B
 APPROVED: [Signature] DATE: MARCH, 1999
 SCALE: NOT TO SCALE

TITLE: CITY STANDARD
 CATCHBASIN



SECTION A-A
SCALE: 1" = 1'



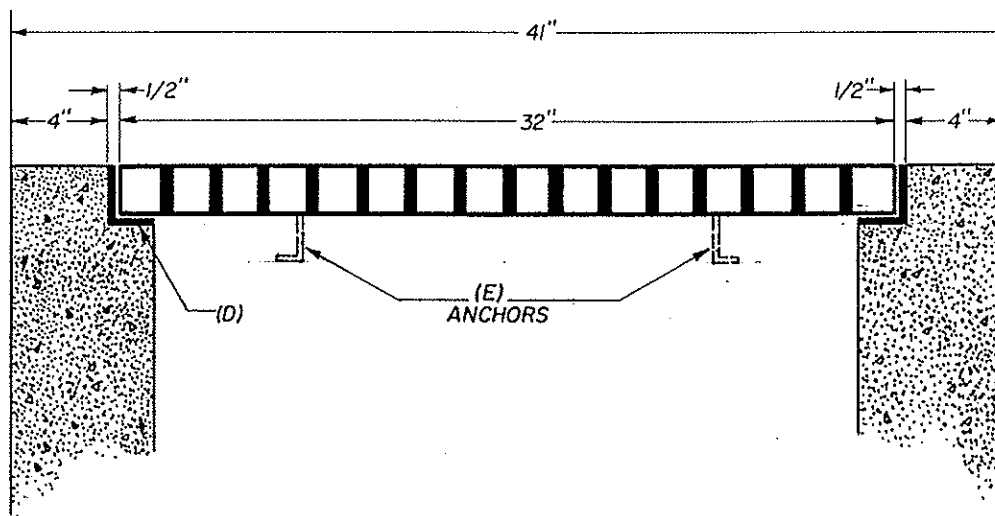
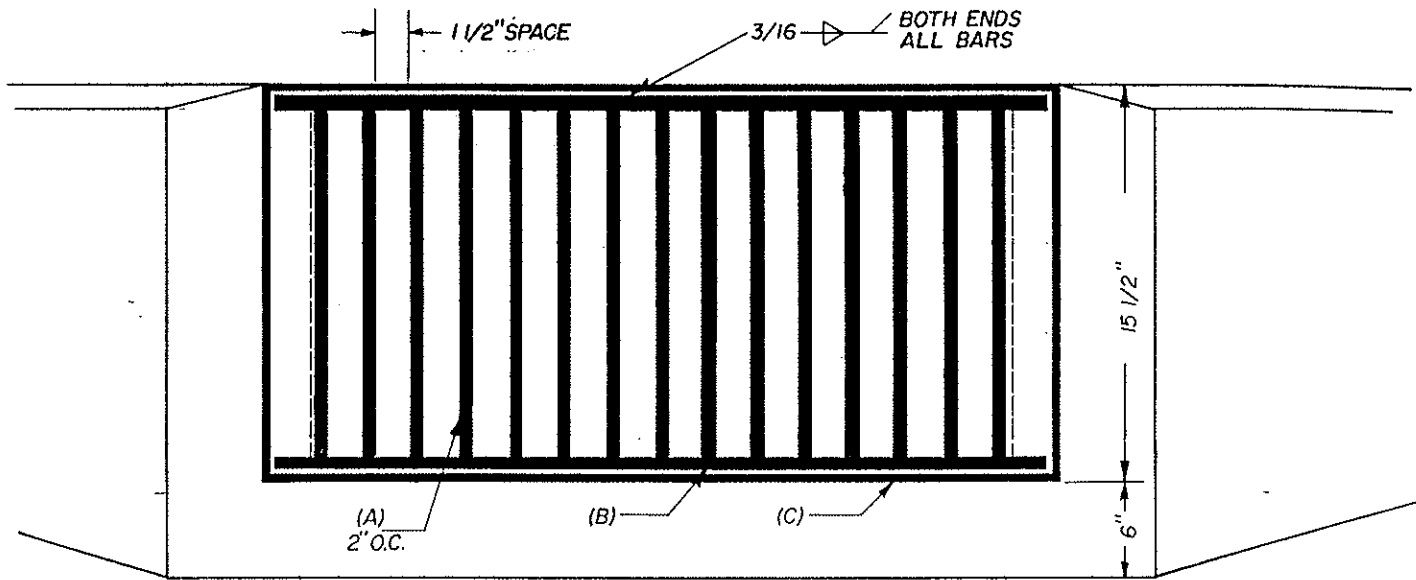
SECTION B-B
SCALE: 1" = 1'

NOTE:
 CONCRETE TO BE 3000 P.S.I. AT 28 DAYS, 5 SACK MIX
 FRAME AND GRATE TO BE CITY OF PENDLETON STANDARD, SEE STANDARD PLAN No. 302
 DRAIN PIPE is TO BE 12" UP FROM BOTTOM OF CATCH BASIN
 WHEN STREET SLOPE IS GREATER THAN 8% OR AT ENGINEER'S DISCRETION OVER-SIZED CATCH BASIN MUST BE USED.

DIMENSIONS:

GRATE: 2" x 1/2" STEEL BAR
 (A) 15 BARS, 14 1/2" LONG
 (B) 2 BARS, 32" LONG

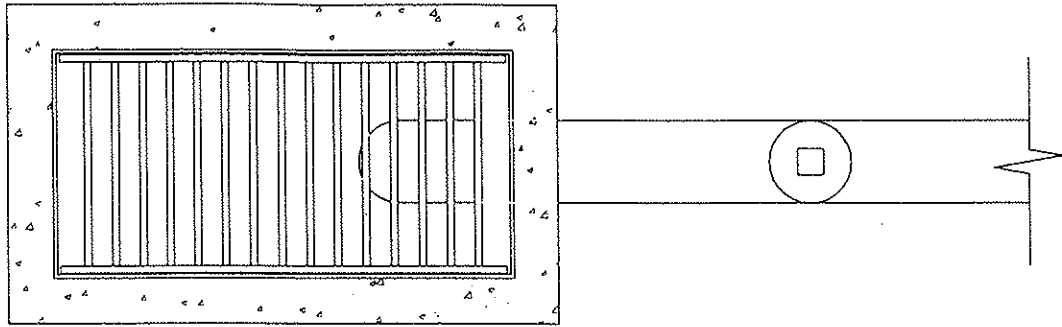
FRAME: 2" x 2 1/2" x 1/4" ANGLE IRON
 (C) 2 - 33" LONG
 (D) 2 - 16 1/4" LONG
 (E) 4 - 2" LONG



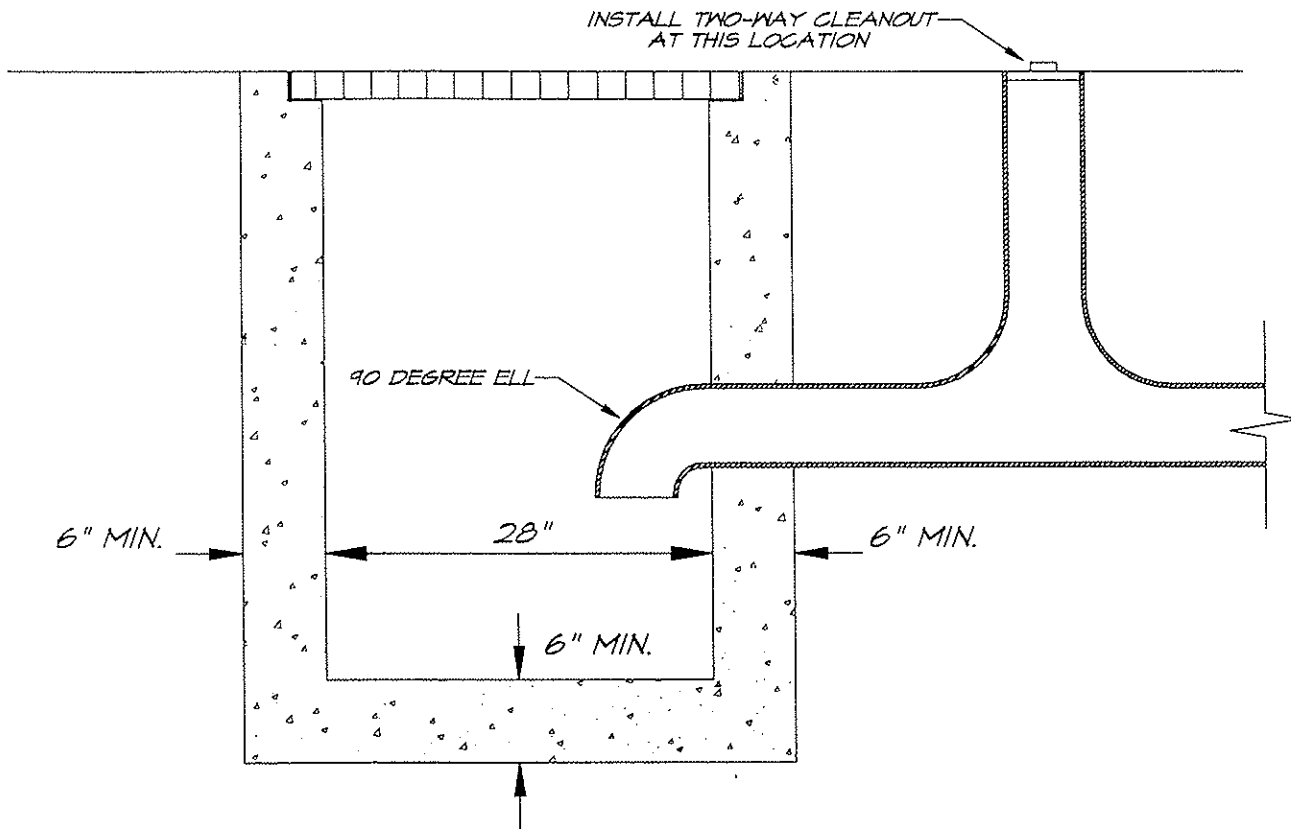
NOTE:

CONCRETE TO BE 3000 P.S.I. AT 28 DAYS, 5 SACK MIX
 30" x 1/4" x 1" STEEL STRAP FOR BICYCLE PROTECTION MAY BE REQUIRED BY
 CITY ENGINEER

CITY OF PENDLETON	ENGINEERING DEPARTMENT
DN. C.D. <i>David C. King</i> DATE: 4-4-83 APPV'D. <i>David C. King</i> SCALE: 1 1/2" = 1' CITY ENGINEER	TITLE: STANDARD CATCH BASIN FRAME AND GRATE



TOP VIEW



SECTION A-A

NOTES: CONCRETE TO BE 3000 P.S.I. AT 28 DAYS, 5 SACK MIX

FRAME AND GRATE TO BE CITY OF PENDLETON STANDARD, SEE STANDARD PLAN NO. 302

DRAIN PIPE I.E. TO BE 12" UP FROM BOTTOM OF CATCHBASIN

REVISED 3/2001

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: *RICK B*

DATE: MARCH, 1999

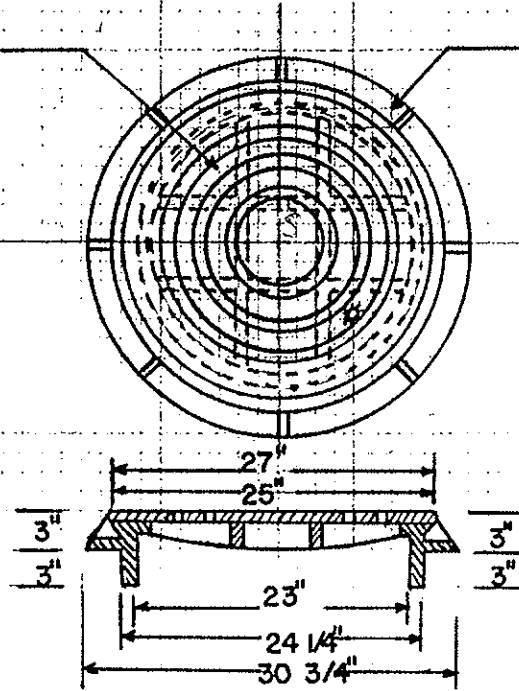
APPROVED: *[Signature]*

SCALE: NOT TO SCALE

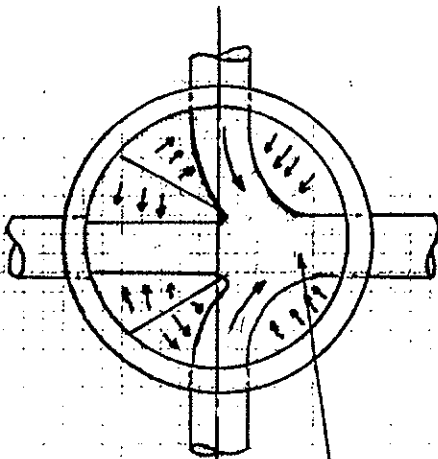
TITLE: STANDARD CATCHBASIN FOR PRIVATE PARKING LOTS

MIN. COVER
WT. = 120#

MIN. FRAME WT. = 155#



STANDARD MANHOLE
RING AND COVER
3/4" = 1'



INVERT CHANNEL CONSTRUCTED TO
UNIFORM FLOW LINES WITH GRADUAL
TRANSITION SECTIONS

GENERAL PLAN OF CHANNEL
INTERSECTION
3/8" = 1'

PRECAST 4"
CONCRETE RING

GROUT

PRECAST
CONE

PRECAST
CONCRETE
MANHOLE

4'

PRECAST RING EXTENSION
FOR TYPICAL MANHOLE
3/8" = 1'

CITY OF PENDLETON

ENGINEERING DEPARTMENT

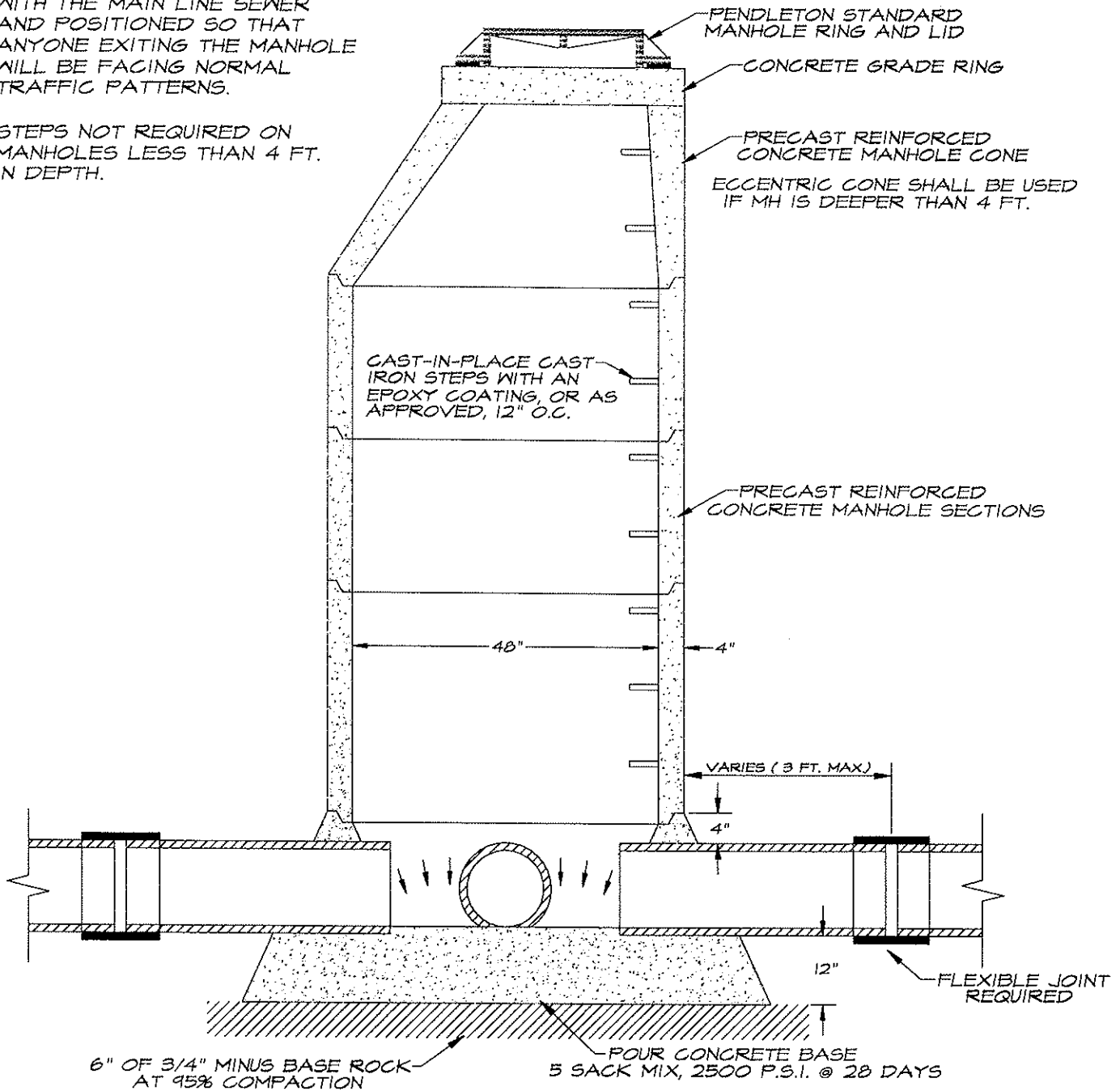
DN: M.P.M. DATE: 8/24/73
APPVD: *David H. ...* SCALE: AS SHOWN
CITY ENGINEER

TITLE: STANDARD MANHOLE RING & COVER

NOTE:
 1. ALL JOINTS TO BE MORTARED
 MORTAR SHALL CONSIST OF
 1 PART CEMENT AND
 1 PART MORTAR SAND

2. ECCENTRIC CONE MUST BE ALIGNED
 WITH THE MAIN LINE SEWER
 AND POSITIONED SO THAT
 ANYONE EXITING THE MANHOLE
 WILL BE FACING NORMAL
 TRAFFIC PATTERNS.

3. STEPS NOT REQUIRED ON
 MANHOLES LESS THAN 4 FT.
 IN DEPTH.



REVISED NOVEMBER 2000

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. [Signature]

DATE: JUNE, 2000

APPROVED: [Signature]

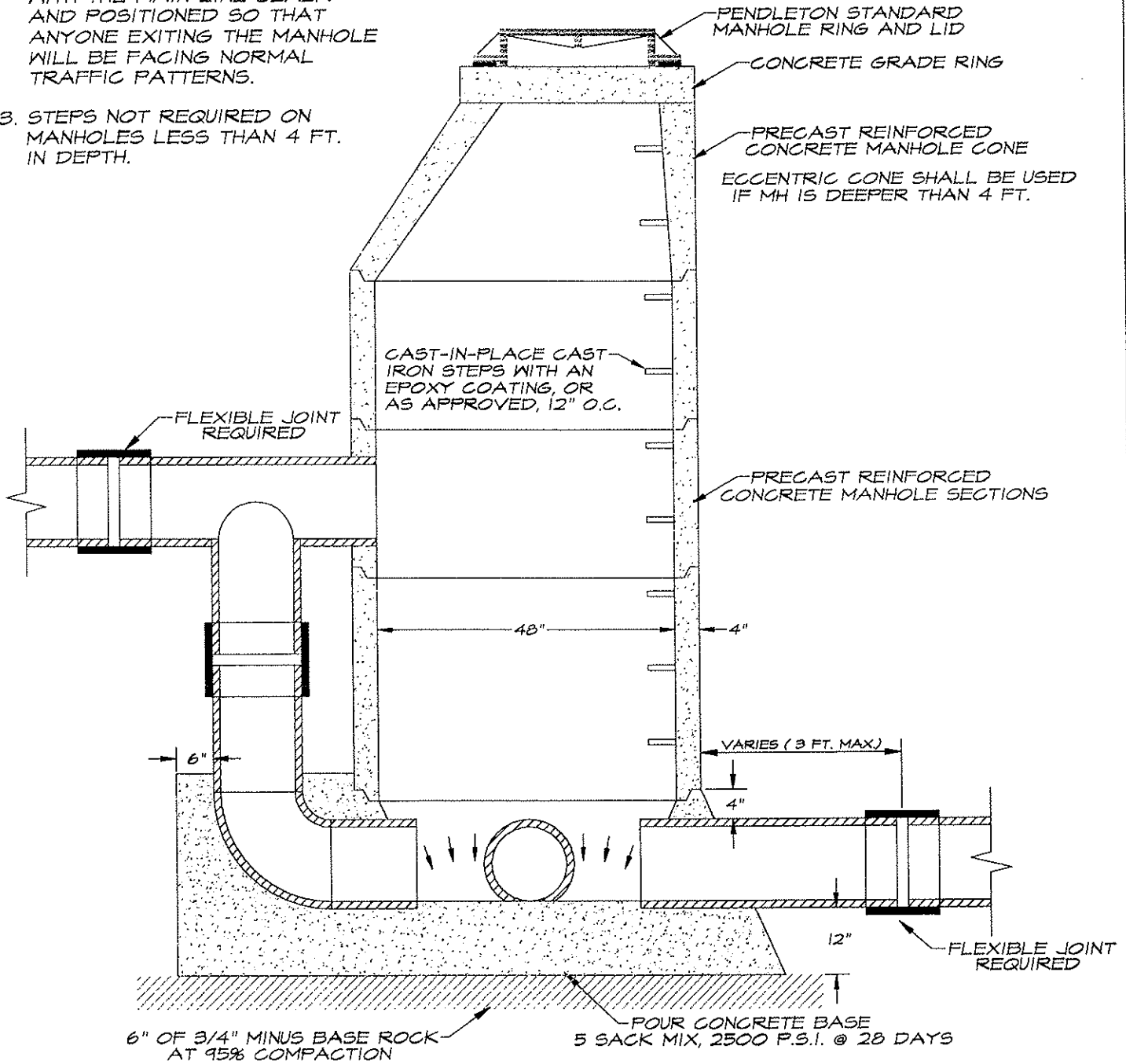
SCALE: NOT TO SCALE

TITLE: STANDARD MANHOLE

NOTE:
 1. ALL JOINTS TO BE MORTARED
 MORTAR SHALL CONSIST OF
 1 PART CEMENT AND
 1 PART MORTAR SAND

2. ECCENTRIC CONE MUST BE ALIGNED
 WITH THE MAIN LINE SEWER
 AND POSITIONED SO THAT
 ANYONE EXITING THE MANHOLE
 WILL BE FACING NORMAL
 TRAFFIC PATTERNS.

3. STEPS NOT REQUIRED ON
 MANHOLES LESS THAN 4 FT.
 IN DEPTH.



REVISED AUGUST 2000

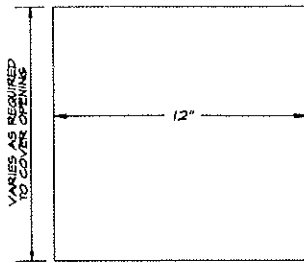
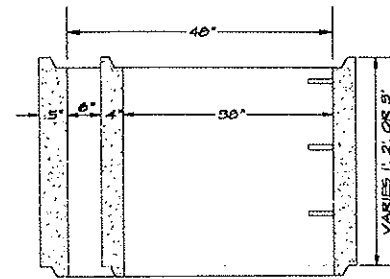
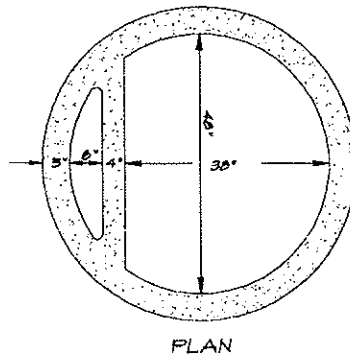
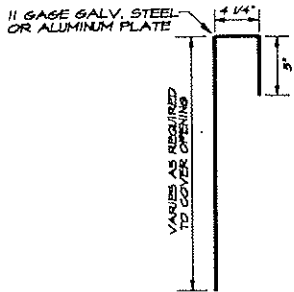
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B.
 APPROVED: [Signature]

DATE: NOV. , 2000
 SCALE: NOT TO SCALE

TITLE: STANDARD DROP
 MANHOLE

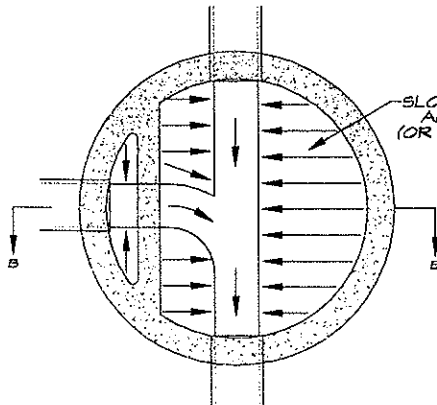
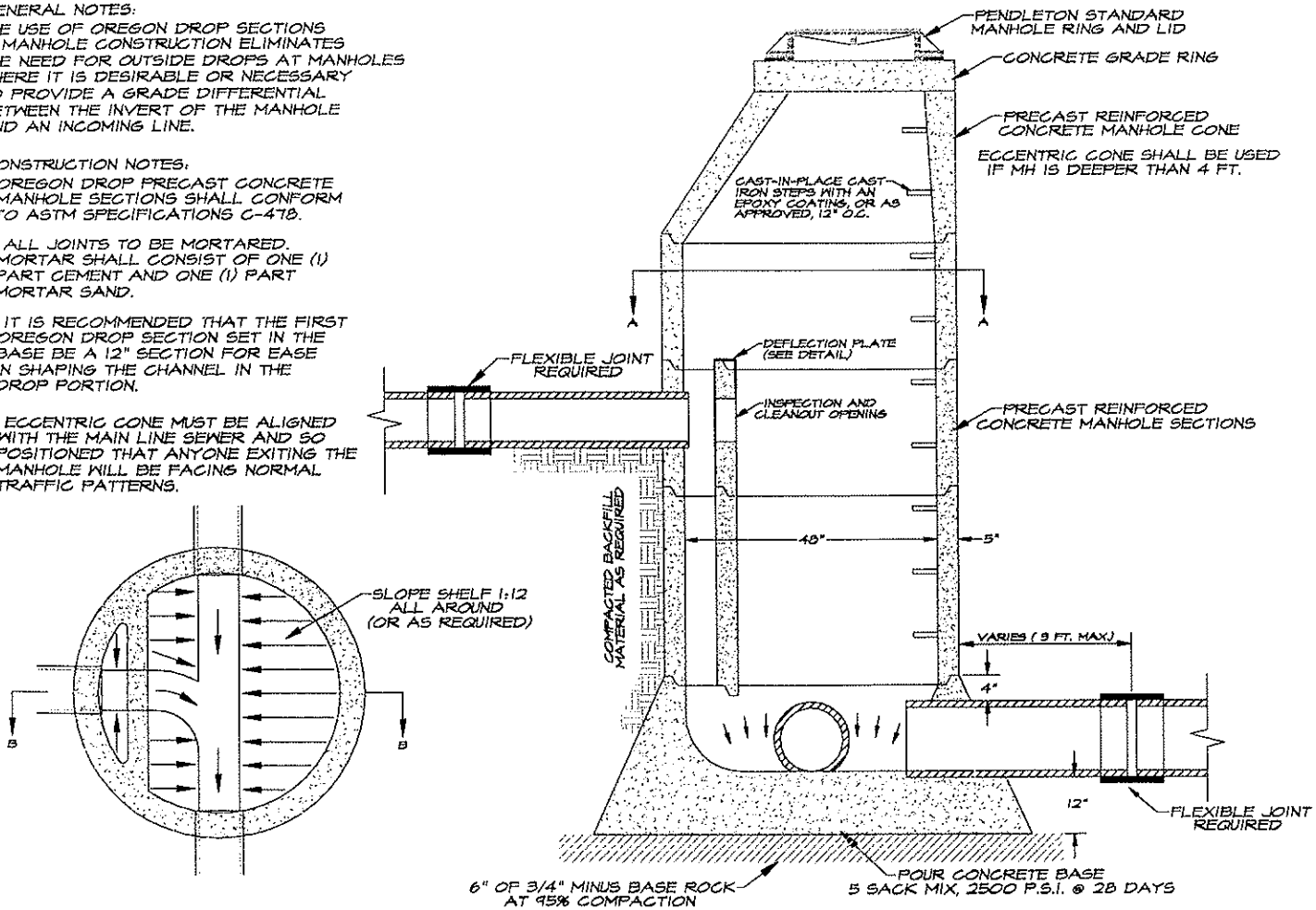


DEFLECTION PLATE
DETAIL

OREGON DROP 48" PRECAST
CONCRETE SECTION DETAIL

GENERAL NOTES:
THE USE OF OREGON DROP SECTIONS IN MANHOLE CONSTRUCTION ELIMINATES THE NEED FOR OUTSIDE DROPS AT MANHOLES WHERE IT IS DESIRABLE OR NECESSARY TO PROVIDE A GRADE DIFFERENTIAL BETWEEN THE INVERT OF THE MANHOLE AND AN INCOMING LINE.

- CONSTRUCTION NOTES:**
1. OREGON DROP PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM SPECIFICATIONS C-478.
 2. ALL JOINTS TO BE MORTARED. MORTAR SHALL CONSIST OF ONE (1) PART CEMENT AND ONE (1) PART MORTAR SAND.
 3. IT IS RECOMMENDED THAT THE FIRST OREGON DROP SECTION SET IN THE BASE BE A 12" SECTION FOR EASE IN SHAPING THE CHANNEL IN THE DROP PORTION.
 4. ECCENTRIC CONE MUST BE ALIGNED WITH THE MAIN LINE SEWER AND SO POSITIONED THAT ANYONE EXITING THE MANHOLE WILL BE FACING NORMAL TRAFFIC PATTERNS.



SECTION A-A

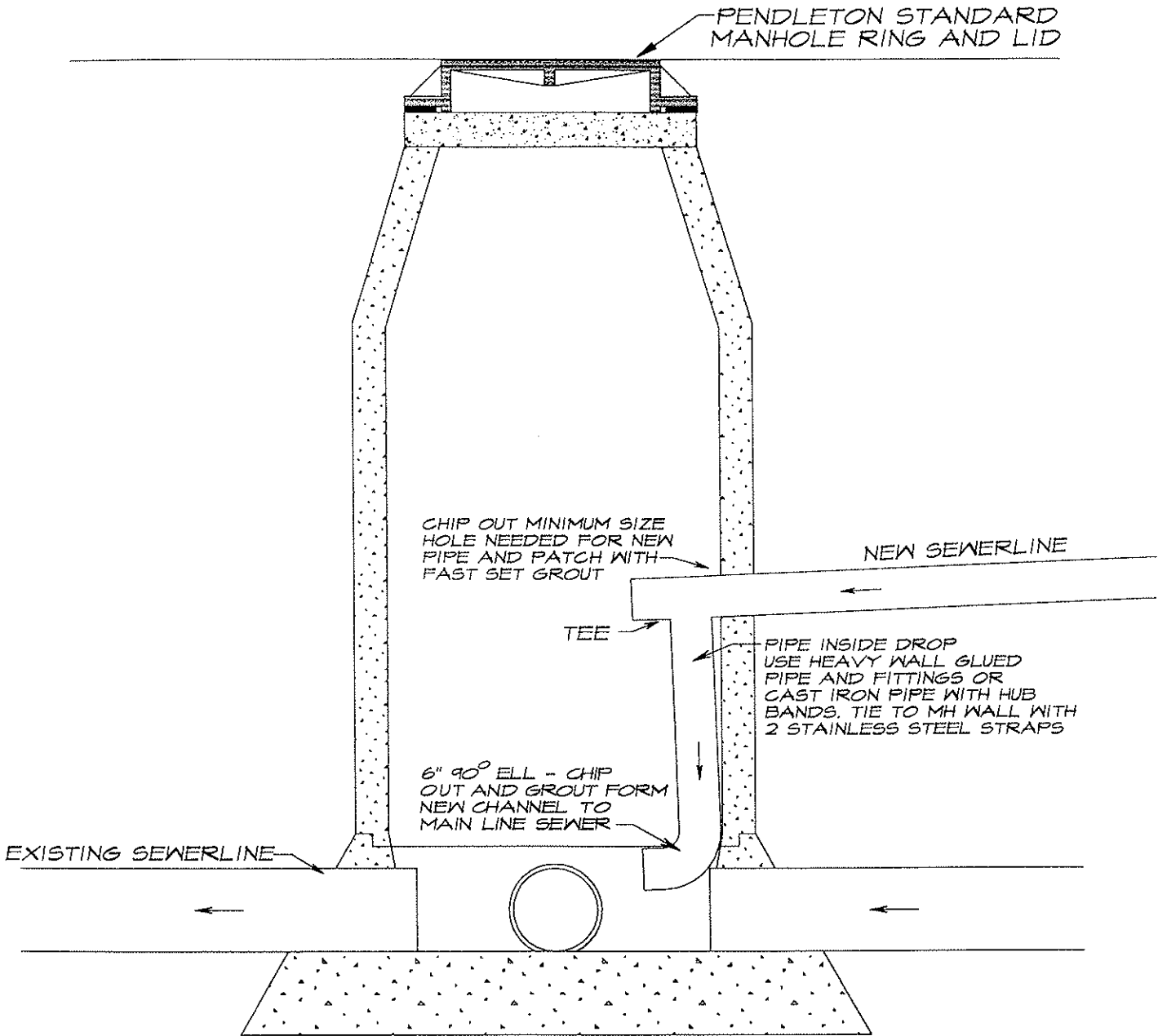
REVISED AUGUST 2000

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: NOV. , 2000
 APPROVED: [Signature] SCALE: NOT TO SCALE

TITLE: PRECAST DROP
MANHOLE



DROP MANHOLE DETAIL

CITY OF PENDLETON

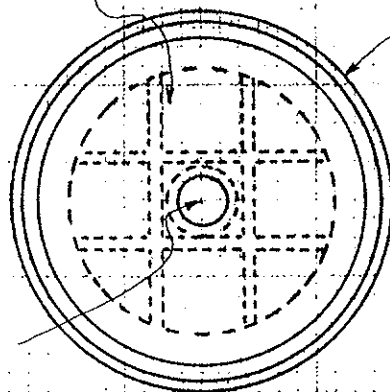
ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DECEMBER, 1995
 APPROVED: *[Signature]* SCALE: NOT TO SCALE

TITLE: SEWER DROP WITHIN EXISTING MANHOLE DETAIL

MIN. COVER
WT. = 140*

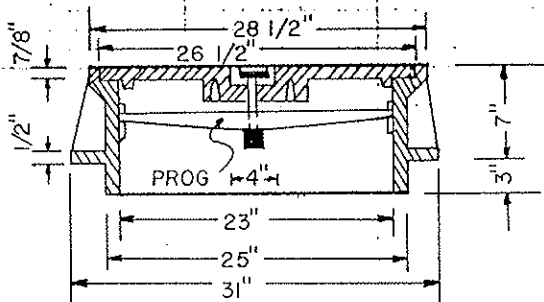
MIN. FRAME
WT. = 230*



3/4" ϕ BRONZE
BOLT w/ BRASS &
RUBBER WASHERS

NOTE:

RUBBER GASKET - 3/4" x 1/2"
GROOVE - 1/4" DEEP w/ 60°
SIDE SLOPES



WATERTIGHT MANHOLE RING & COVER

3/4" = 1'-0"

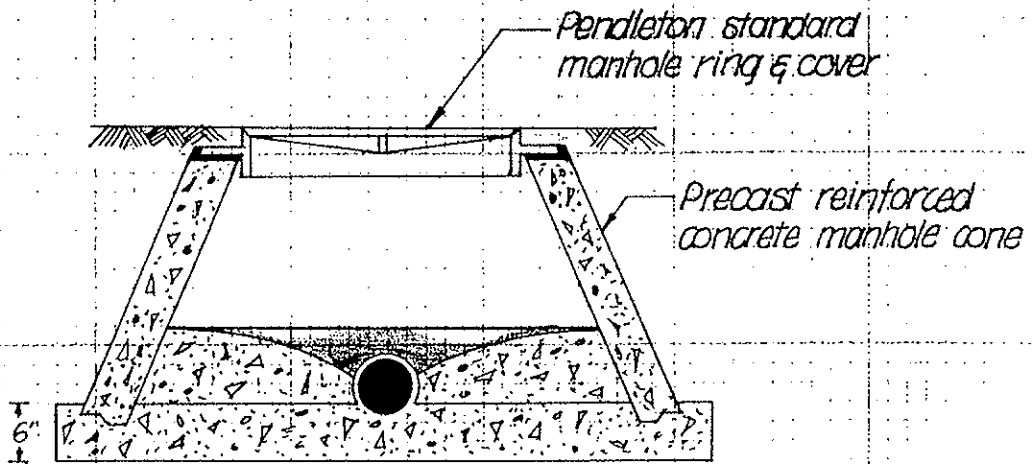
CITY OF PENDLETON

ENGINEERING DEPARTMENT

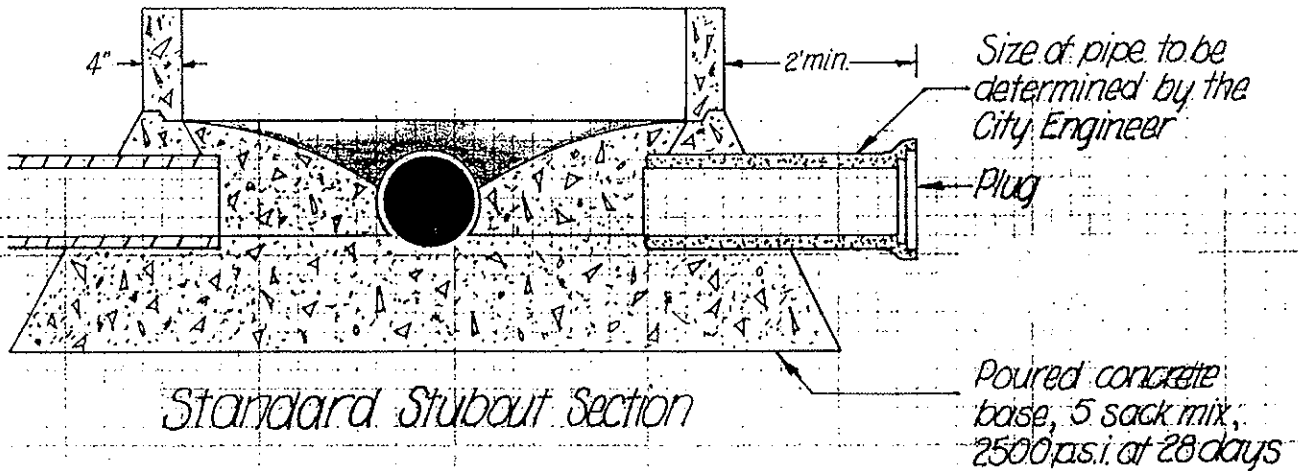
DN: *M. B. ...*
APPV'D: *[Signature]*
CITY ENGINEER

DATE: 3/19/74
SCALE: AS SHOWN

TITLE: WATERTIGHT MANHOLE & COVER

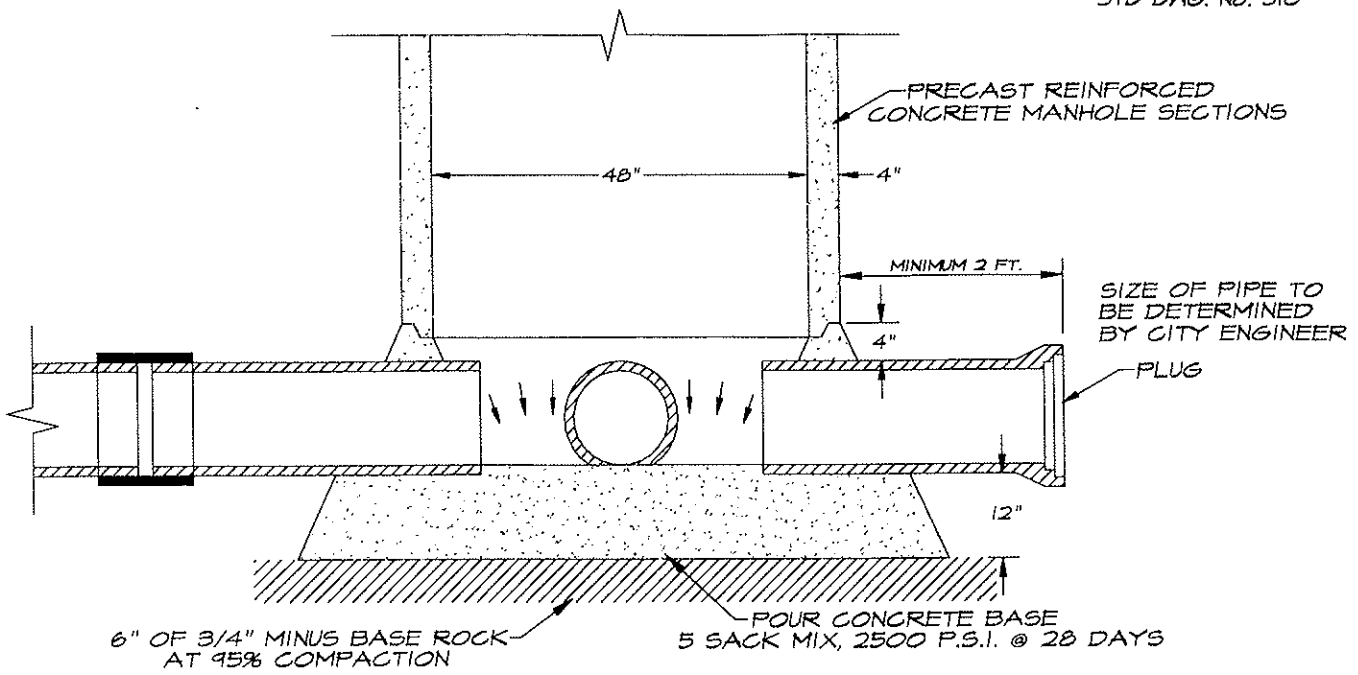


Shallow Manhole Section

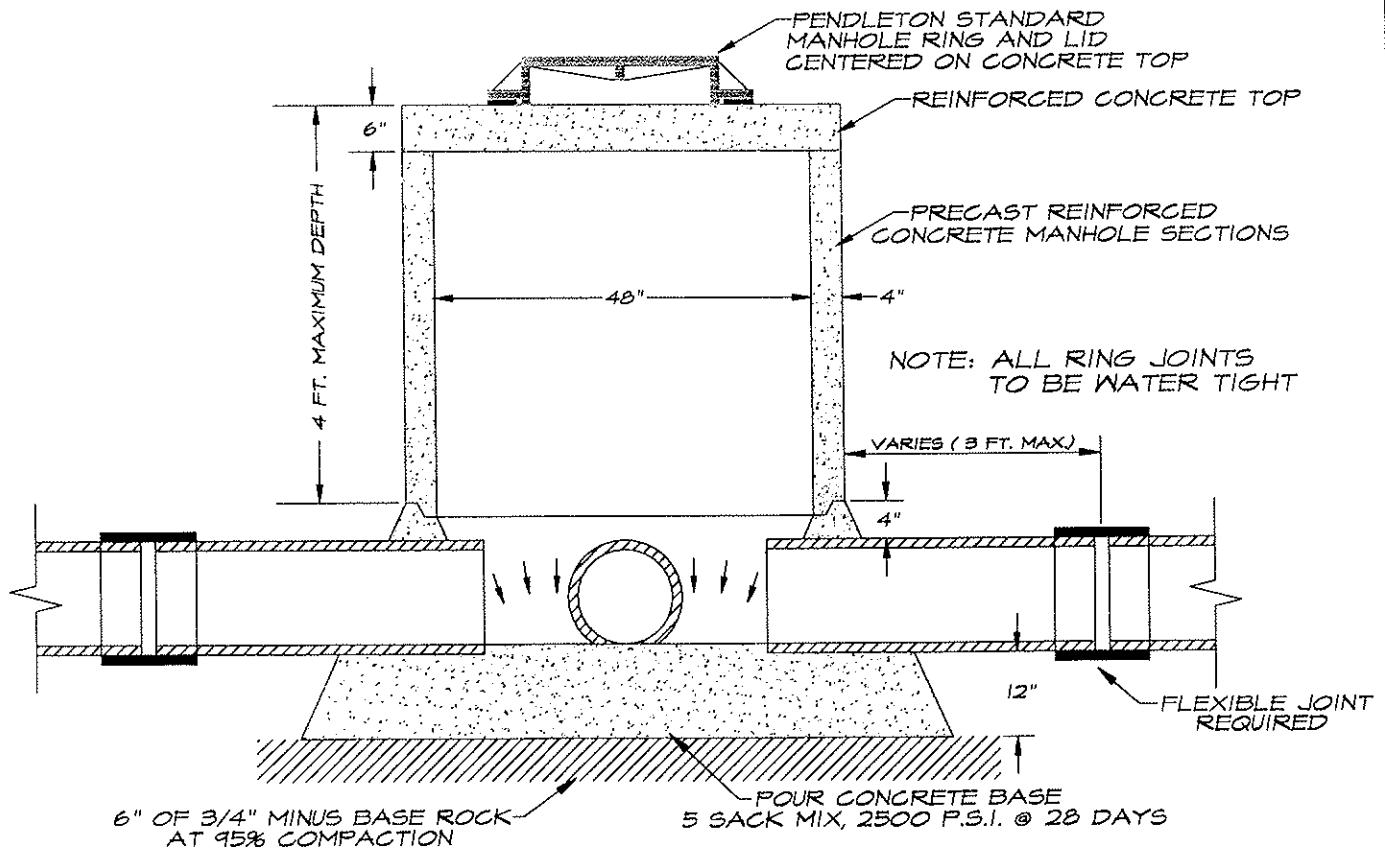


Standard Stubout Section

CITY OF PENDLETON		ENGINEERING DEPARTMENT	
DN: P.L.P.	DATE: 7/12/74	TITLE: TYPE I SHALLOW MANHOLE SECTION	
APP'D: <i>David L. Young</i>	SCALE: NONE		
CITY ENGINEER			



STANDARD STUBOUT



SHALLOW MANHOLE SECTION

REVISED NOVEMBER 2000

CITY OF PENDLETON

ENGINEERING DEPARTMENT

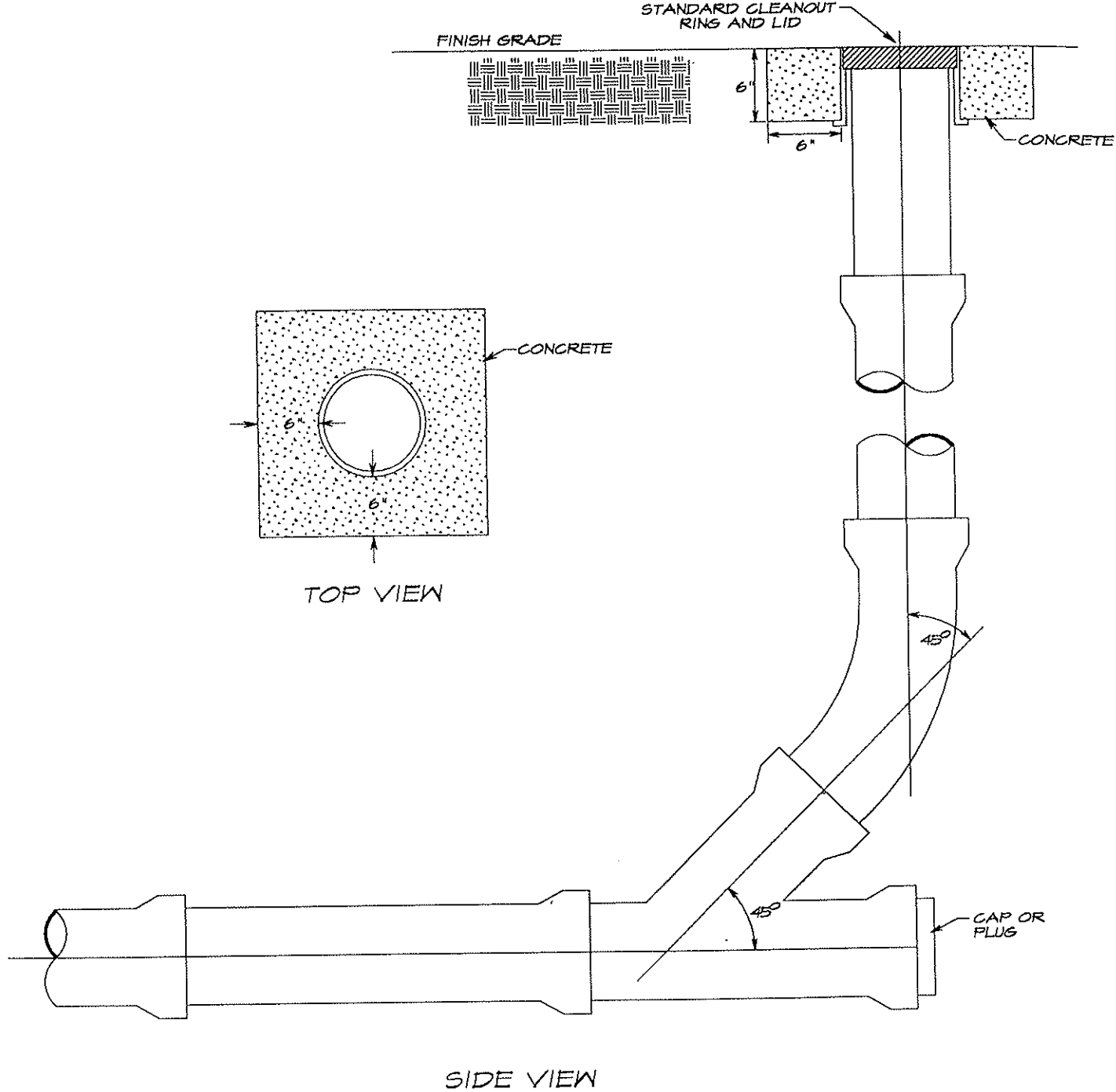
DRAWN BY: RICK E. [Signature]

DATE: JUNE, 2000

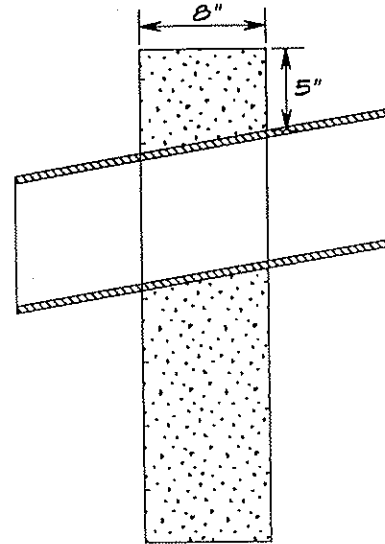
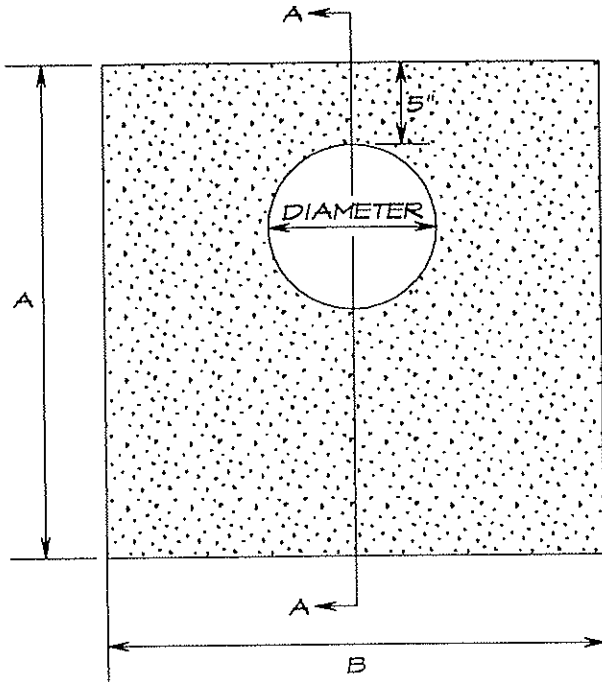
TITLE: TYPE 2 SHALLOW MANHOLE

APPROVED: [Signature] SCALE: NOT TO SCALE

AND STANDARD STUBOUT



CITY OF PENDLETON	ENGINEERING DEPARTMENT
DRAWN BY: RICK B. [Signature] DATE: DECEMBER 1995 APPROVED: [Signature] SCALE: NOT TO SCALE	TITLE: STANDARD CLEANOUT



SECTION AA

PIPE DIAMETER	A	B
6" - 12"	3' - 0"	4' - 0"
12" - 15"	4' - 0"	4' - 0"
18" - 24"	4' - 0"	5' - 0"

ANCHORS TO BE EQUALLY SPACED:

SLOPE	MINIMUM ANCHOR SPACING CENTER TO CENTER
20% - 34%	35 FEET
30% - 50%	25 FEET
OVER 50%	15 FEET OR CONCRETE ENCASEMENT

CONSTRUCTION NOTES:

CONCRETE TO BE 3000 PSI AT 28 DAYS, 6 SACK MIX
 PLACE WALL IMMEDIATELY BELOW BELL OF PIPE WHERE POSSIBLE

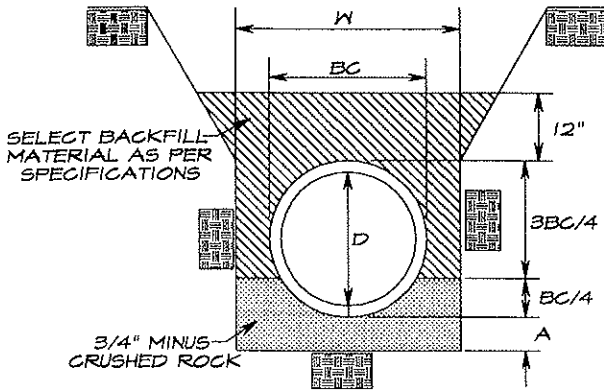
CITY OF FENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B. DATE: DECEMBER, 1995
 APPROVED: *[Signature]* SCALE: NOT TO SCALE

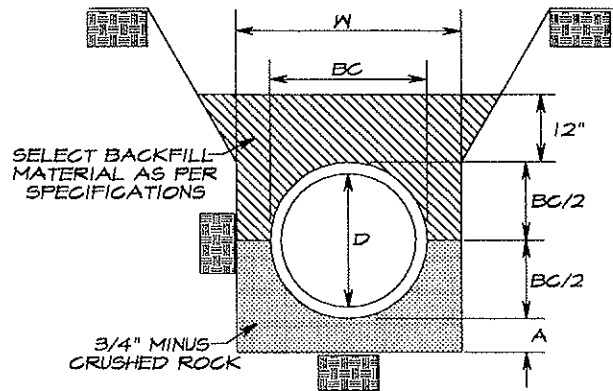
TITLE: ANCHOR WALL
 STANDARDS

CLASS "A"



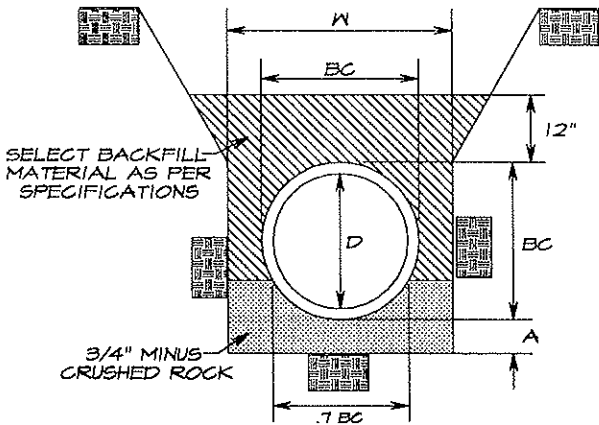
A = 1/4 INSIDE DIAMETER WITH 4" MINIMUM AND 12" MAXIMUM

CLASS "B"



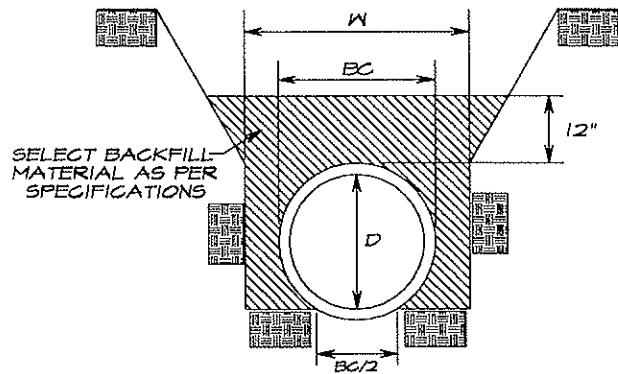
A = 4" FOR 27" PIPE AND SMALLER
6" FOR 30" PIPE AND LARGER

CLASS "C"



A = 4" FOR 27" PIPE AND SMALLER
6" FOR 30" PIPE AND LARGER

CLASS "D"



NOTES:

EXCAVATE FOR BELLS ON ALL CLASSES

W = D + 24" FOR D EQUAL OR LESS THAN 24"

W = D + 36" FOR D EQUAL OR GREATER THAN 24"

NOTE: SEE SPECIALS FOR ANY SPECIAL BACKFILL REQUIREMENTS

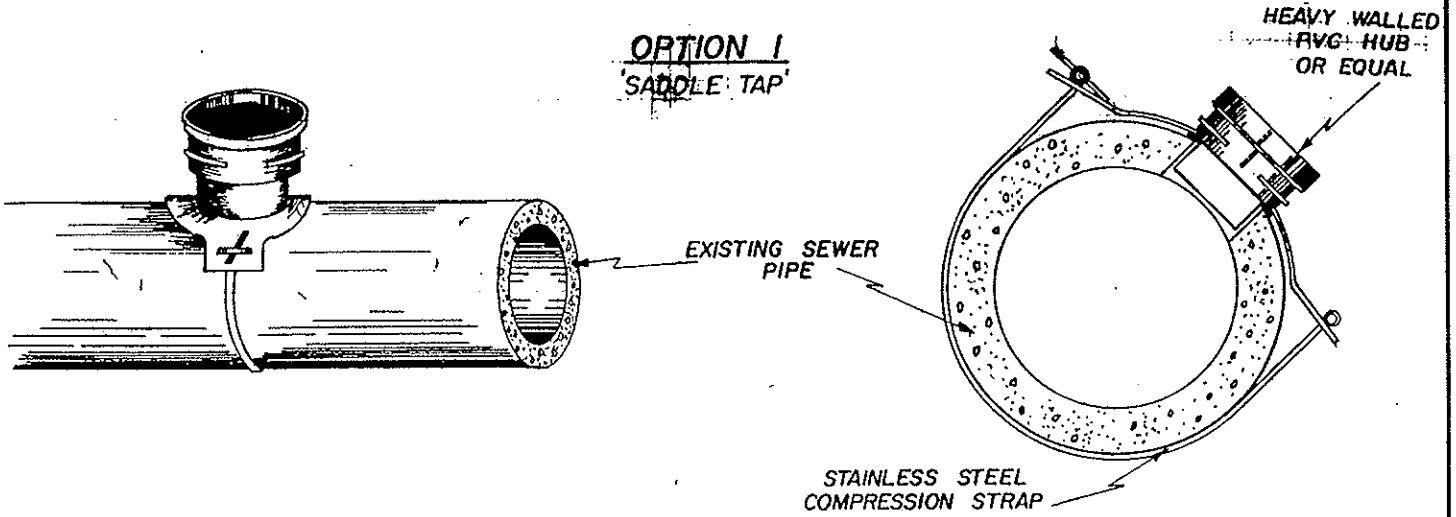
CITY OF PENDLETON

ENGINEERING DEPARTMENT

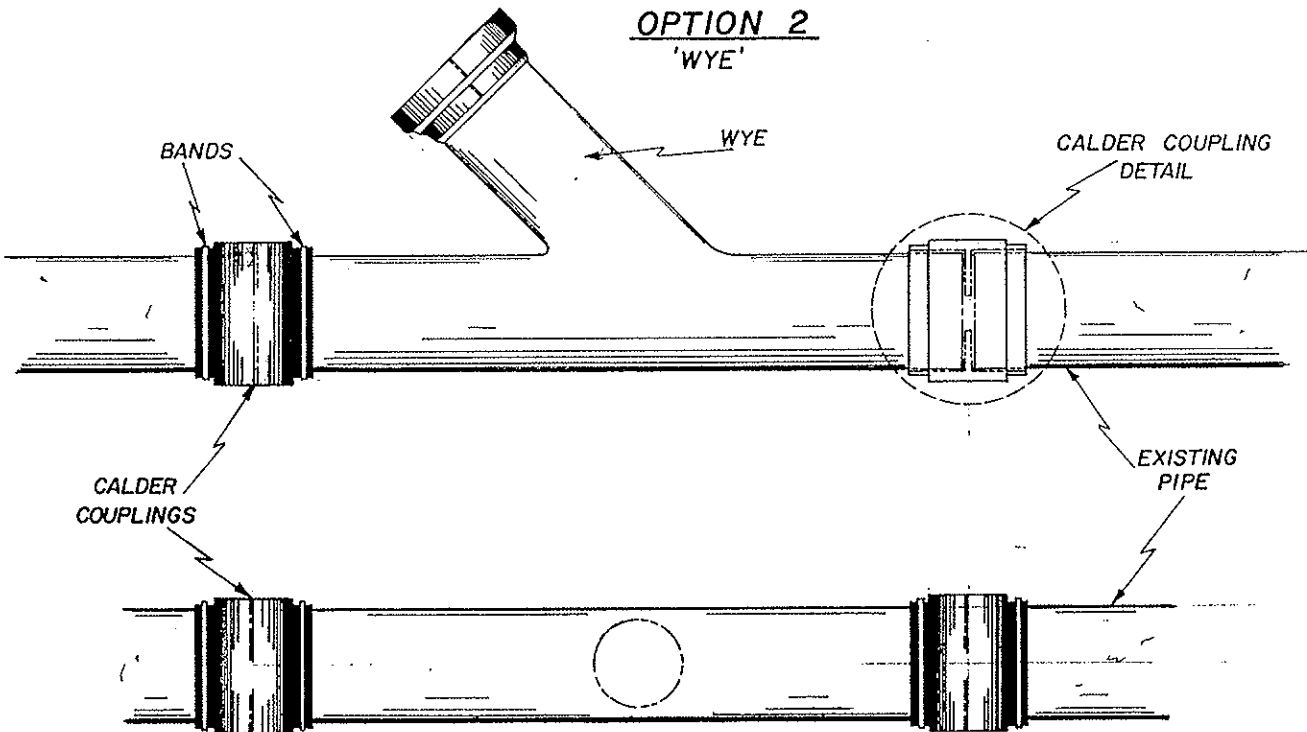
DRAWN BY: RICK B. DATE: DECEMBER 1995
APPROVED: [Signature] SCALE: NOT TO SCALE

TITLE: SEWER PIPE BEDDING STANDARDS

OPTION 1
'SADDLE TAP'



OPTION 2
'WYE'



NOTES:

ALL HOLES ARE TO BE UNIFORM, CIRCULAR, AND NO BIGGER THAN THE DIAMETER OF THE SEALING GASKET

DEAD END SEWER LINES WITH LESS THAN .5% GRADE MUST USE OPTION 2.

SEWER TAP SHALL BE REQUIRED TO BE INSTALLED BY A LICENSED PLUMBER.

CITY OF PENDLETON

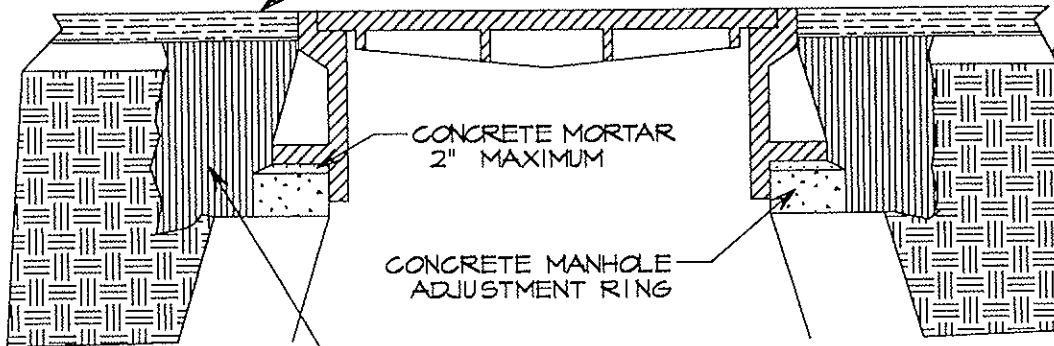
ENGINEERING DEPARTMENT

DN. CSD. DATE: 6/22/80
 APPR'D *David J. [Signature]* SCALE: NONE
 CITY ENGINEER

TITLE: SEWER TAP DETAIL

ASPHALT CONCRETE WEARING COURSE

ASPHALT CONCRETE
BASE COURSE



BACKFILL WITH ASPHALT
AND COMPACT

MANHOLE ADJUSTMENT SEQUENCE DETAIL

1. COVER MANHOLE WITH BUILDING PAPER AND CONSTRUCT ASPHALT CONCRETE BASE COURSE.
2. CUT SQUARE OR CIRCULAR EXCAVATION AROUND MANHOLE 12" MINIMUM FROM MANHOLE FRAME.
3. RAISE MANHOLE FRAME AND COVER TO FINISH GRADE BY INSTALLING CONCRETE RINGS AND LEVELING MORTAR.
NOTE: IF THE TOTAL OF THE CONCRETE RINGS NEEDED IS 12" OR MORE AN ADDITIONAL 12" MANHOLE BARREL WILL BE REQUIRED.
4. BACKFILL WITH ASPHALT AND COMPACT TO THE TOP OF ASPHALT CONCRETE BASE COURSE.
5. CONSTRUCT ASPHALT CONCRETE WEARING COURSE.

NOTE: THIS SPECIFICATION APPLIES TO EXISTING AND OR NEW MANHOLES

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DN: RLY

DATE: 7/25/96

APPVD. *[Signature]*
CITY ENGINEER

SCALE: N. T. S.

TITLE: MANHOLE ADJUSTMENT

IF LOCATE WIRE EXISTS EXTEND WIRE TO TOP OF POST

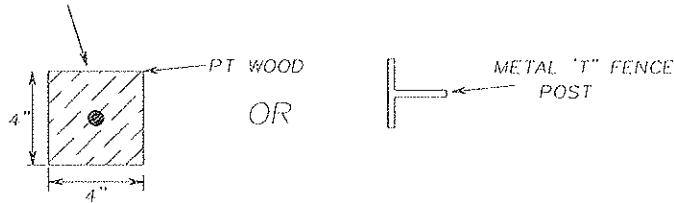
PT WOOD 4" X 4" OR STANDARD "T" POST

DEPTH TO INVERT ANNOTATED ON POST

FINISH GRADE



IF PT WOOD POST IS BELOW GROUND PLACE FERROUS METAL SPIKE IN MIDDLE OF POST



TOP VIEWS

APPROVAL MANNER:

CAP END OF STUB-OUT OR ABANDONED LINE WITH WATER TIGHT CAP AND PLACE PRESSURE TREATED 4" X 4" POST OR METAL FENCE POST DIRECTLY BEHIND CAP AND UP TO GROUND SURFACE. IF LOCATE WIRE IS PRESENT, BRING LOCATE WIRE TO TOP OF POST. POST SHALL THEN BE FIELD LOCATED USING SURVEY METHODS OR SWING TIES. A LOCATE SKETCH OR AS BUILT DRAWING SHALL BE SUBMITTED TO THE CITY ENGINEERING DEPARTMENT. SWING TIES SHALL BE FROM PERMANANT STRUCTURES OR MONUMENTS AND DEPTH TO INVERT SHALL BE NOTED ON SKETCH AND ON MARKER POST.

EXISTING SEWER LATERAL OR STUB-OUT

WATER TIGHT CAP OR PLUG

PLACE POST AGAINST CAP

TO SEWER MAIN

5 FEET MAXIMUM

SIDE VIEW

0.5 FEET MIN.

LOCATE WITHIN 5 FEET OF ROW LINE

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: GAC

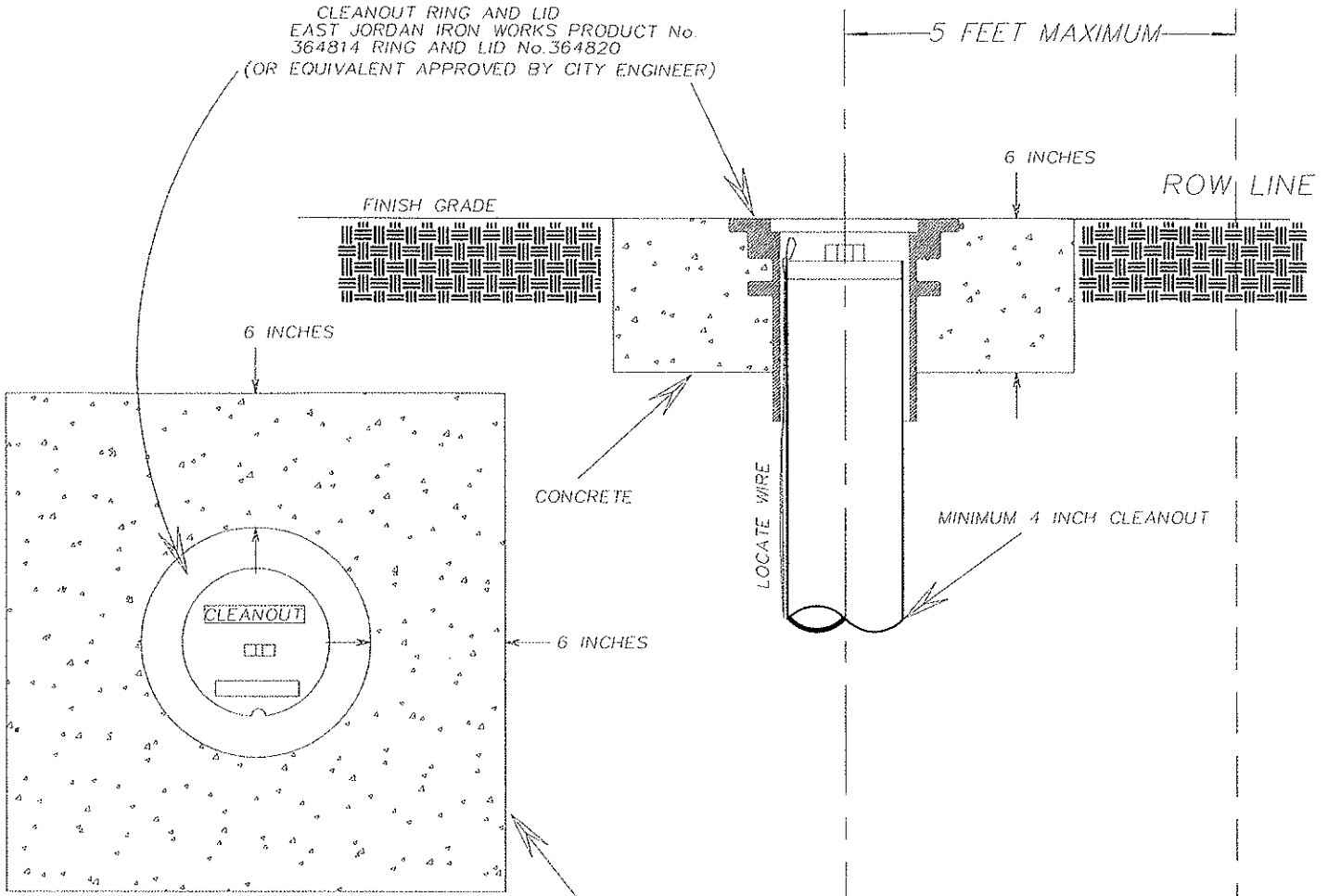
DATE: NOVEMBER 2006

APPROVED:

SCALE: NOT TO SCALE

TITLE: DEMOLITION OR STUB OUT SEWER CAP

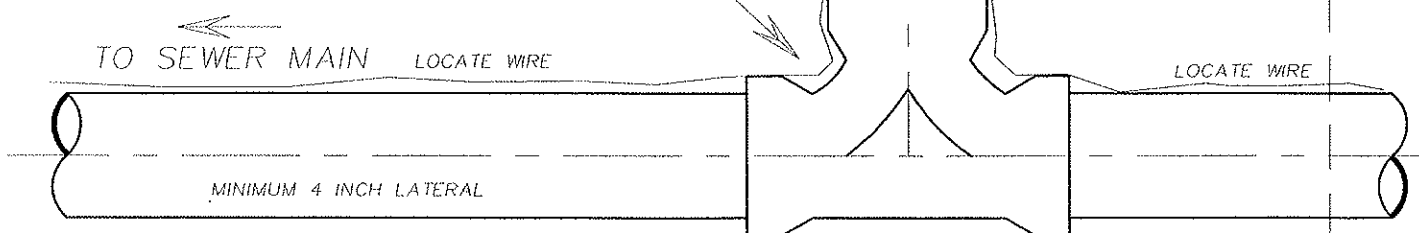
CLEANOUT RING AND LID
EAST JORDAN IRON WORKS PRODUCT No.
364814 RING AND LID No.364820
(OR EQUIVALENT APPROVED BY CITY ENGINEER)



TOP VIEW

6" CONCRETE PAD AROUND
CLEANOUT. SLOPE PAD SURFACE
AWAY FROM CENTER.

CHARLOTTE PIPE &
FOUNDARY PART No. 448
4" TWO-WAY CLEANOUT
(OR EQUIVALENT APPROVED BY CITY ENGINEER)



SIDE VIEW

* CLEANOUT TO BE LOCATED BETWEEN BACK OF CURB
AND ROW LINE, A MAXIMUM OF 5' FROM ROW LINE

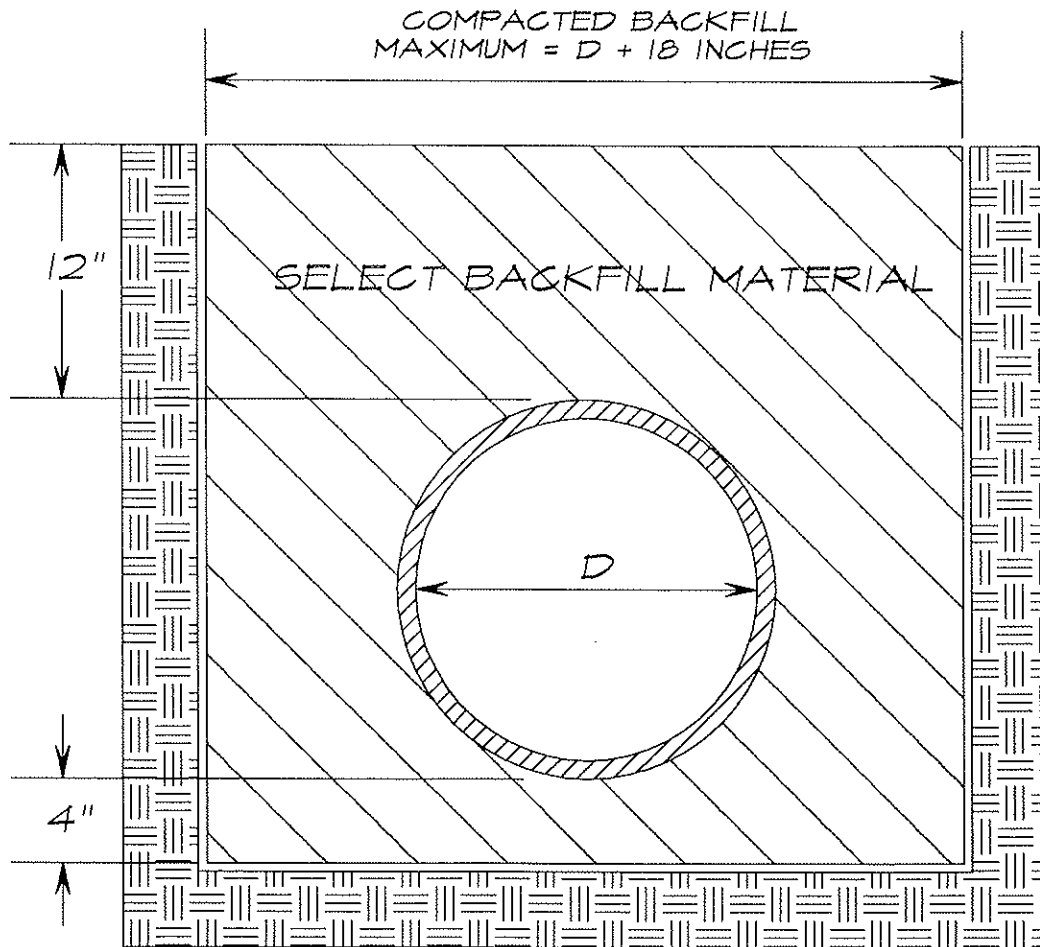
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: G.A.C. DATE: NOVEMBER 2006
APPROVED: [Signature] SCALE: NOT TO SCALE

TITLE: TWO WAY CLEANOUT

TRENCH EXCAVATION IN ROCK




NOTE: SEE SPECIAL FOR ANY SPECIAL BACKFILL REQUIREMENTS

CITY OF PENDLETON

ENGINEERING DEPARTMENT

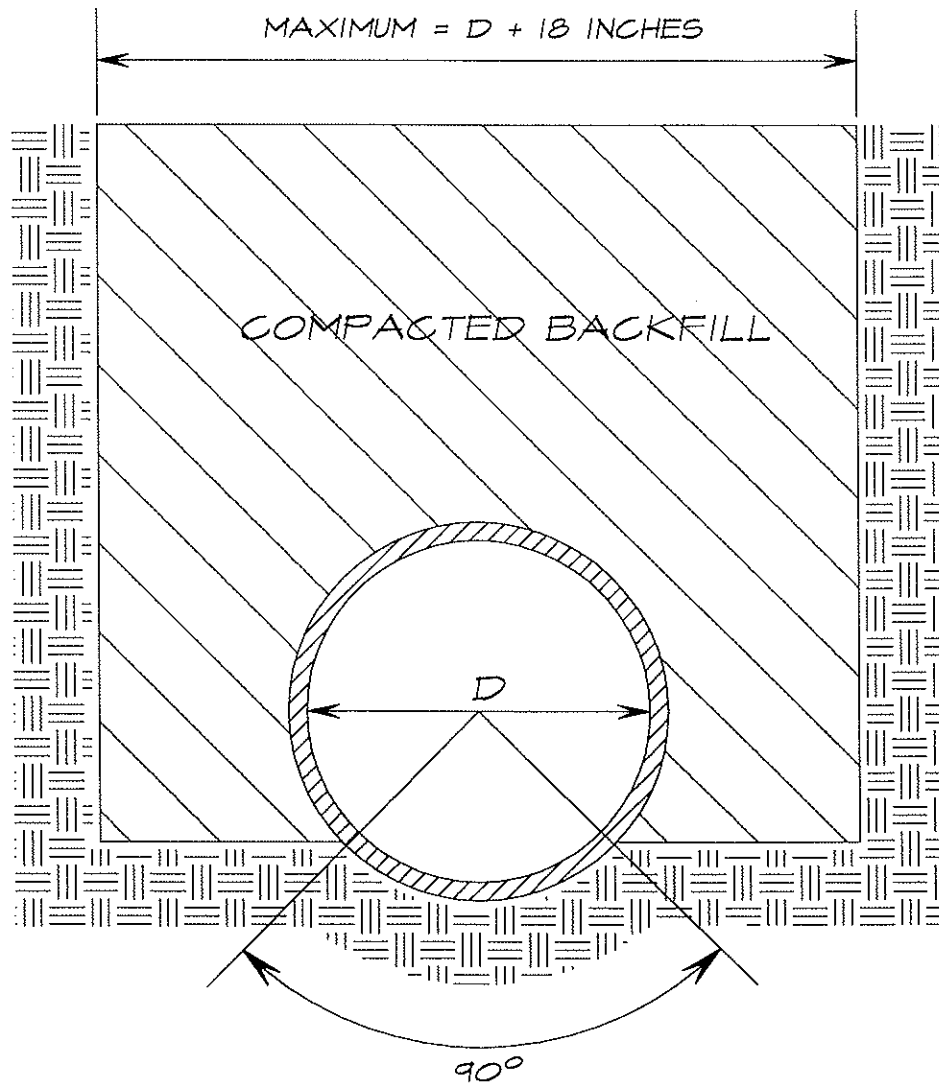
DRAWN BY: RICH B.

DATE: DECEMBER 1995

APPROVED:  SCALE: NOT TO SCALE

TITLE: WATER PIPE BEDDING
(ROCK) STANDARDS

TRENCH EXCAVATION IN SOIL



NOTE: BOTTOM OF TRENCH TO BE SHAPED TO FIT PIPE

NOTE: SEE SPECIALS FOR ANY SPECIAL BACKFILL REQUIREMENTS

CITY OF PENDLETON

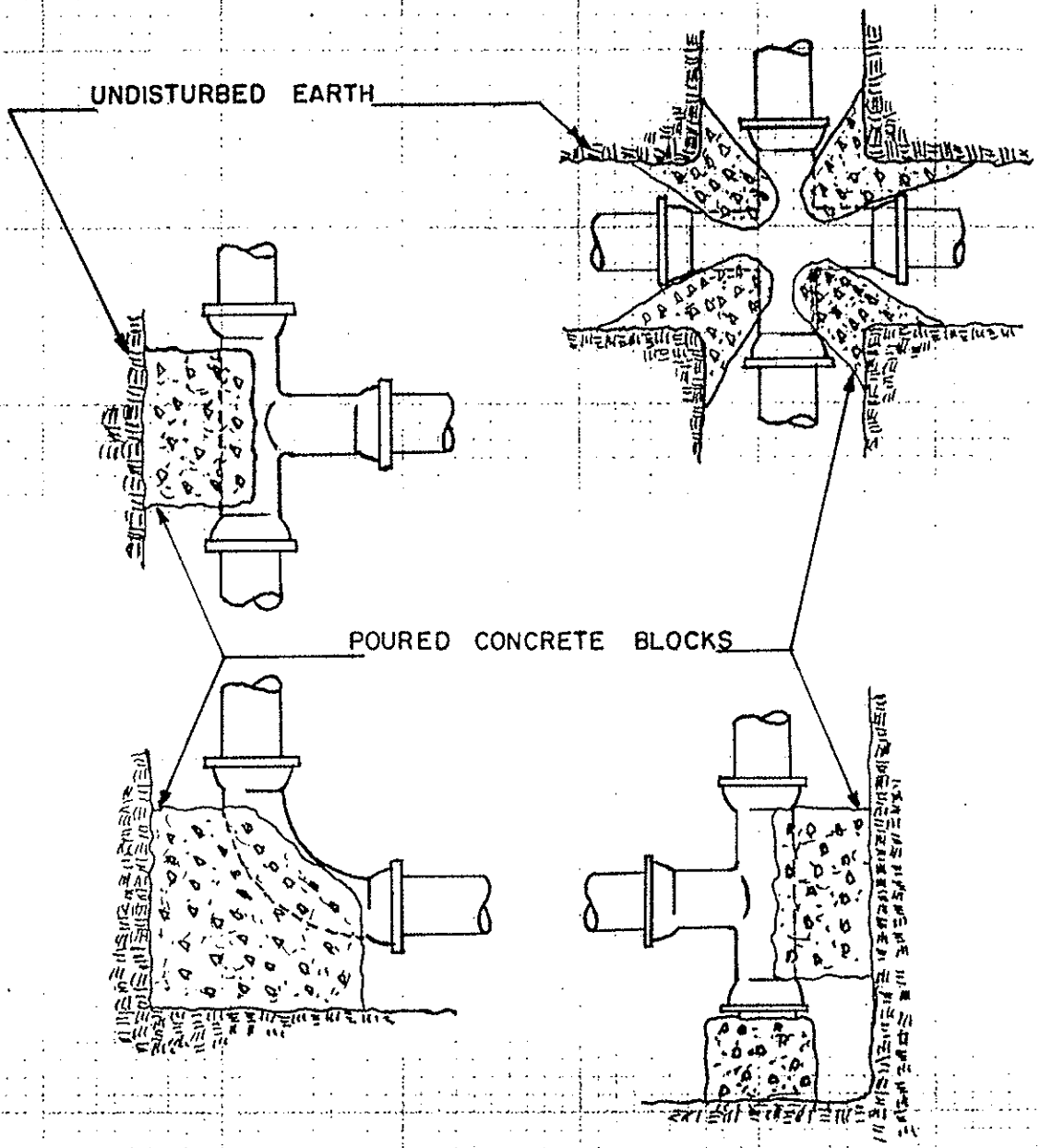
ENGINEERING DEPARTMENT

DRAWN BY: RICK B.

DATE: DECEMBER 1995

TITLE: WATER PIPE BEDDING
(SOIL) STANDARDS

APPROVED: *[Signature]* SCALE: NOT TO SCALE



NOTE: ALL BENDS MUST BE THRUST BLOCKED.

BEARING AREA OF THRUST BLOCKS SHALL BE DETERMINED BY THE ENGINEER - BASED ON PIPE SIZE, TYPE OF FITTING AND TYPE OF SOIL.

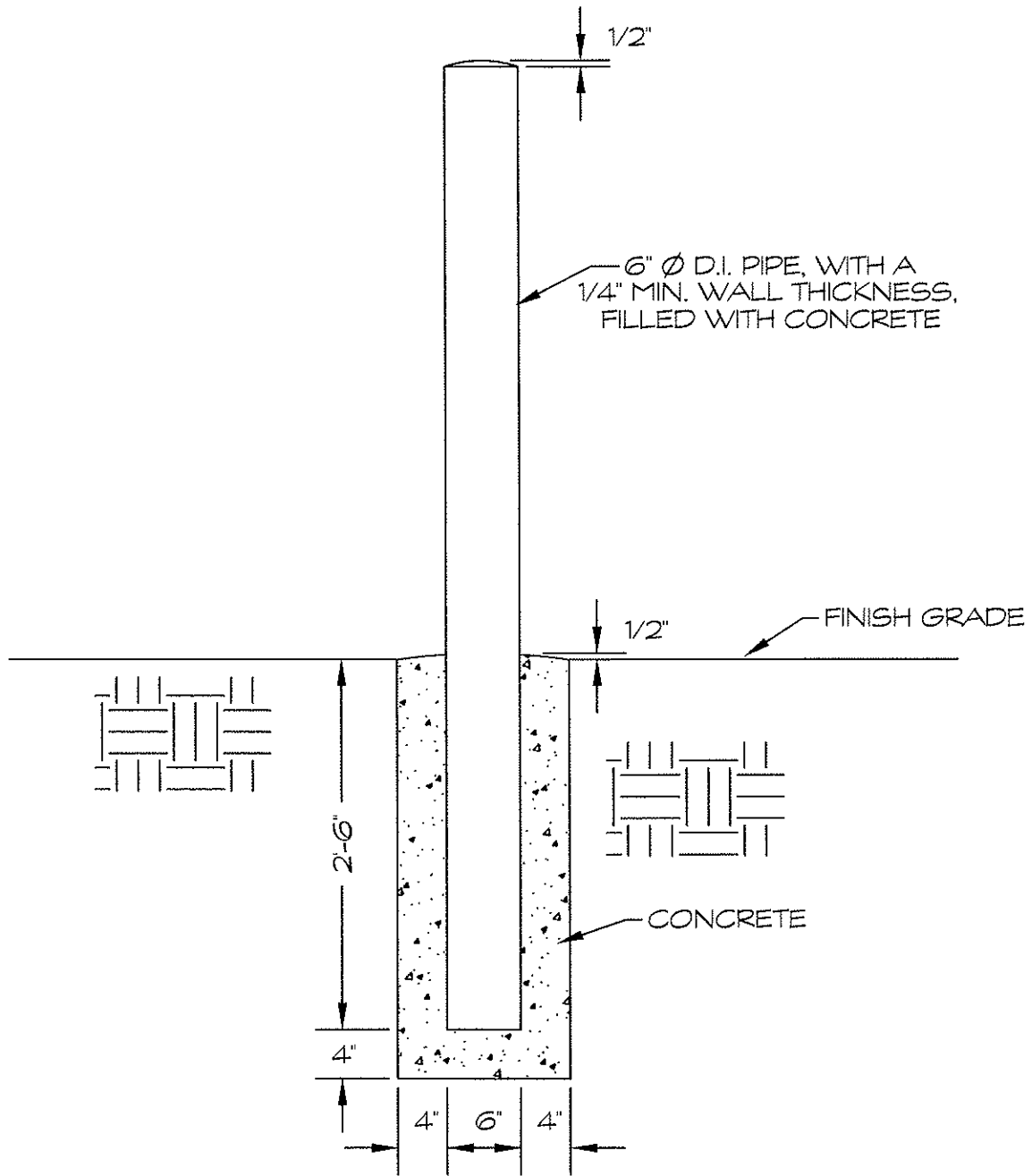
PLACE PLASTIC SHEET AROUND TEES, CROSSES, PLUGS, CAPS AND BENDS TO PROVIDE ADHESIVE BARRIER.

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DN: M.P.M. DATE: 8/24/73
APPV'D. *David Johnson* SCALE: NONE
CITY ENGINEER

TITLE: TYPICAL THRUST BLOCKS



CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B.

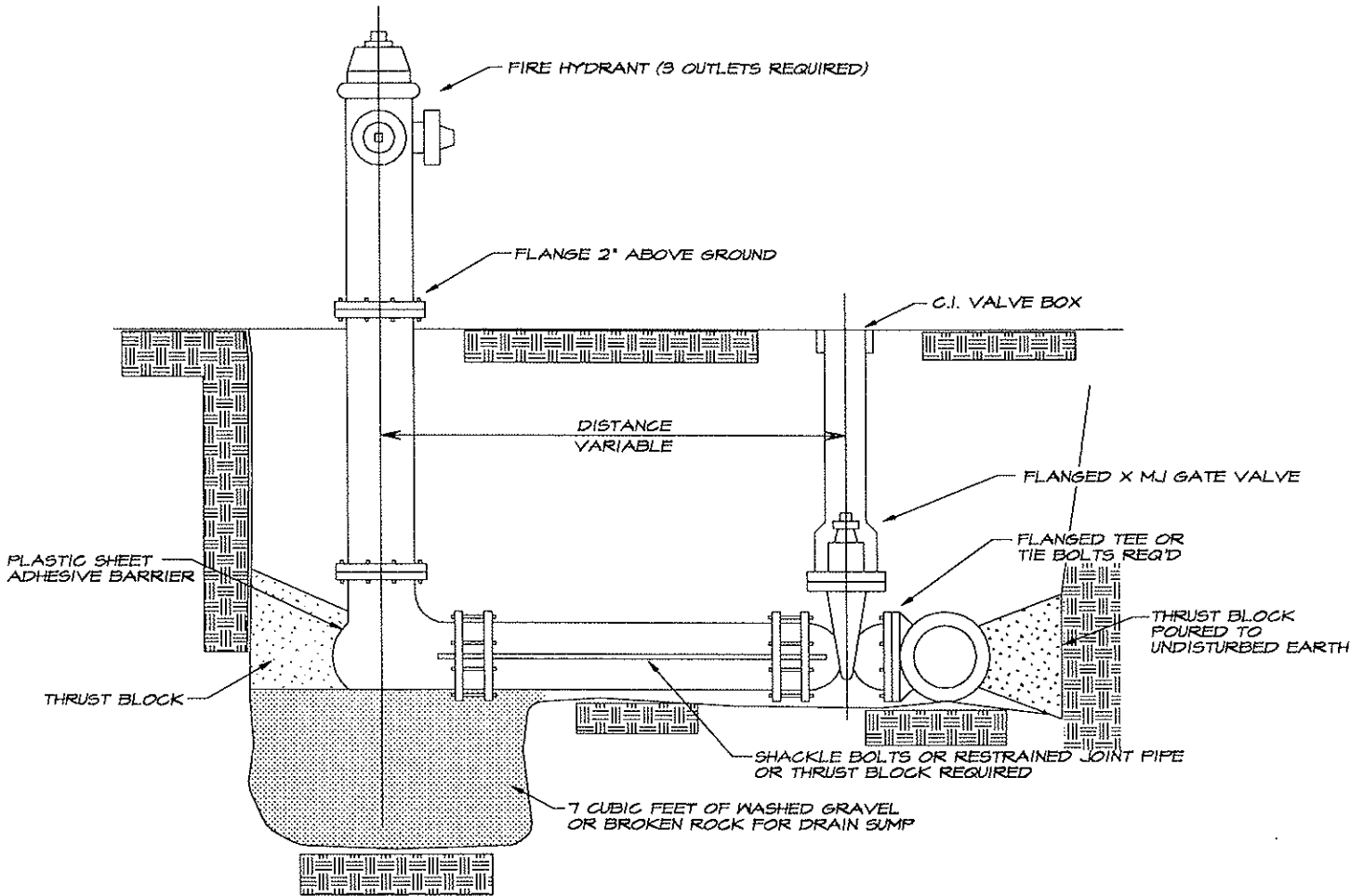
DATE: APRIL 2005

APPROVED: 

SCALE: NOT TO SCALE

TITLE: TYPICAL BOLLARD DETAIL

THE CITY WILL ACCEPT ONLY THE FOLLOWING BRAND NAME HYDRANTS:
 M & H No. 929, MUELLER CENTURION No. 200, CLOW No. 2500,
 WATEROUS No. WB-90, OR KENNEDY No. K-81A



FIRE HYDRANT SPECIFICATIONS:

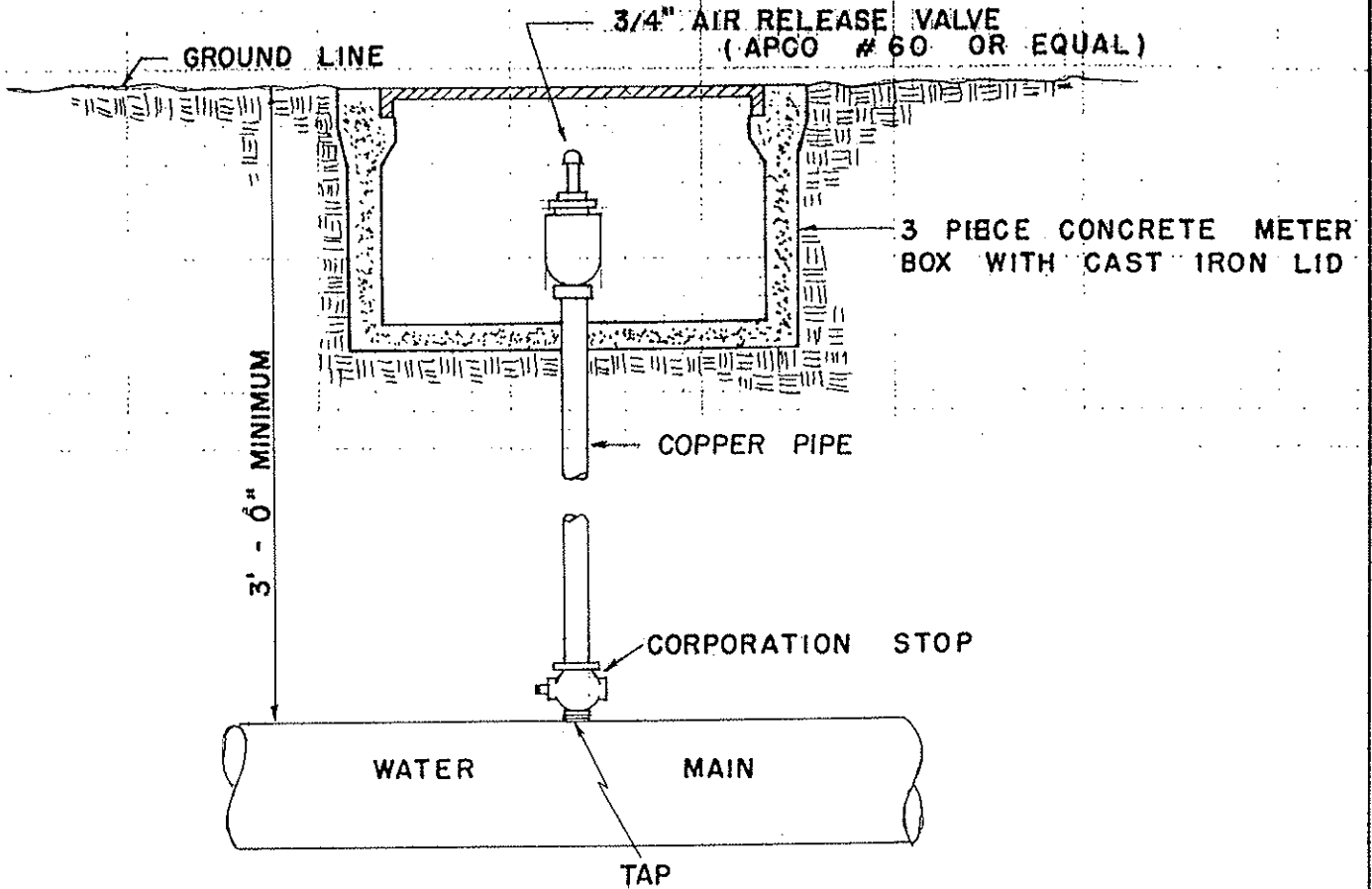
5 1/4" COMPRESSION TYPE HYDRANTS, TRAFFIC MODEL, (BREAK OFF FLANGE)
 4 FT. BURY, 6" MJ SHOE, TWO 2 1/2" NST DISCHARGES, ONE 4 1/2" PUMPER
 NOZZLE, OPEN LEFT, PAINTED PER PENDLETON FIRE DEPT. REQUIREMENTS

NOTE: FIRE HYDRANT TO BE LOCATED ON PUBLIC RIGHT-OF-WAY
 2 FEET BACK OF SIDEWALK TYPICAL

REVISED: 4/2000 RB

CITY OF PENDLETON		ENGINEERING DEPARTMENT
DRAWN BY: RICK B.	DATE: DEC. 15, 1995	TITLE: TYPICAL FIRE HYDRANT ASSEMBLY
APPROVED: <i>[Signature]</i>	SCALE: NOT TO SCALE	

OUT OF STREET AREA



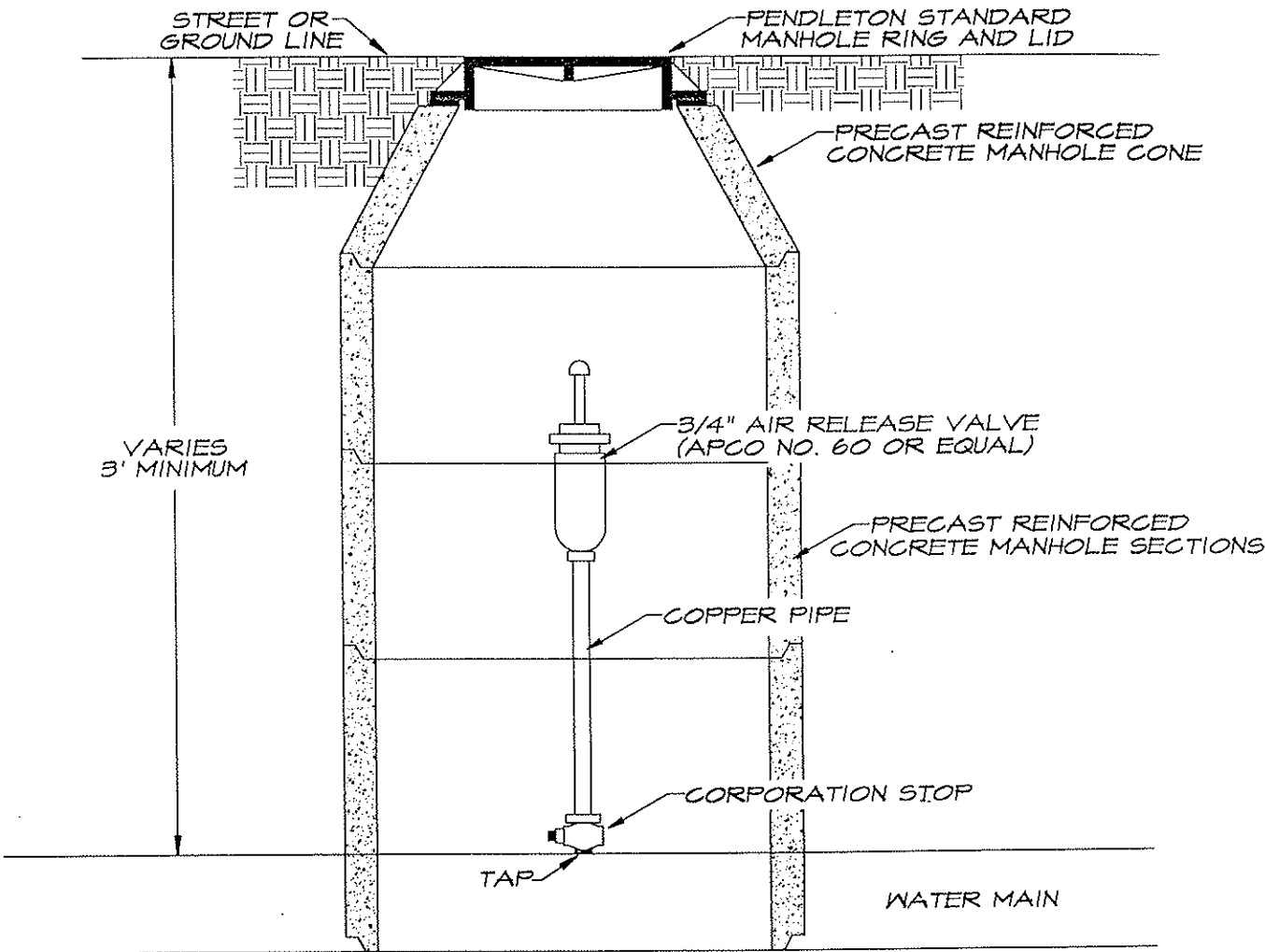
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DN: R L V
 APPV'D: *David Shover*
 CITY ENGINEER

DATE: 8-23-71
 SCALE: NONE

TITLE: TYPICAL AIR RELEASE
 VALVE ASSEMBLY



CITY OF PENDLETON

ENGINEERING DEPARTMENT

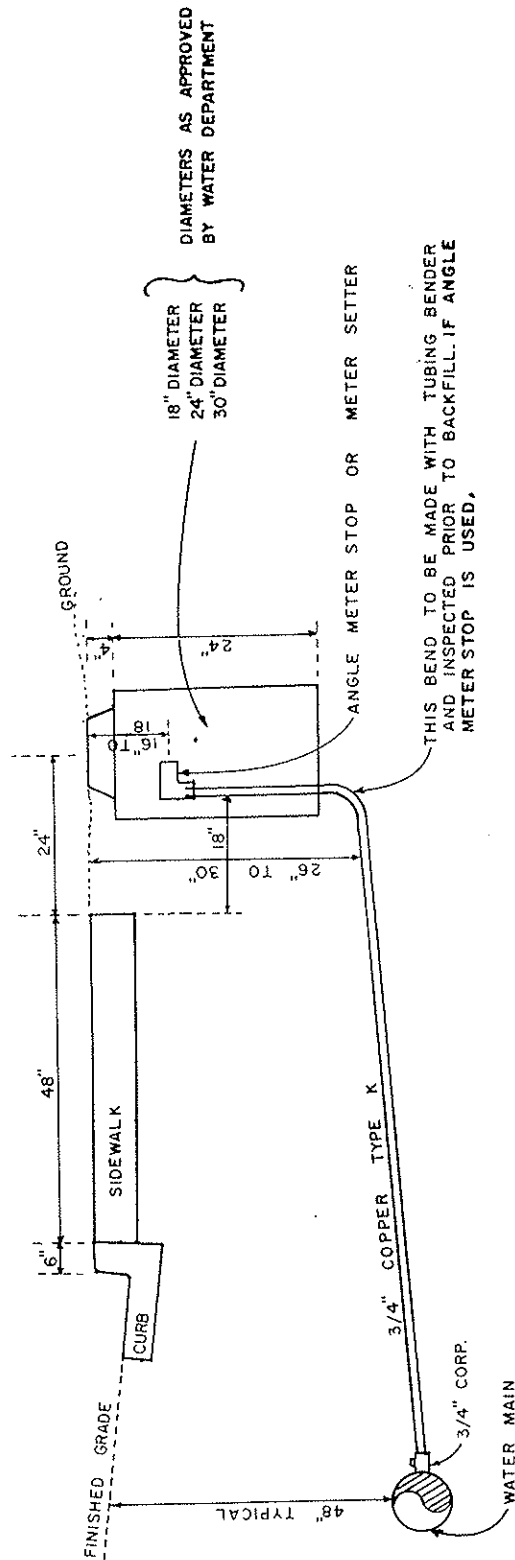
DRAWN BY: RICK B.

DATE: JUNE, 2000

APPROVED: *[Signature]*

SCALE: NOT TO SCALE

TITLE: TYPICAL AIR RELEASE VALVE ASSEMBLY (STREET LOCATED)



CITY OF PENDLETON

ENGINEERING DEPARTMENT

DR. 004.

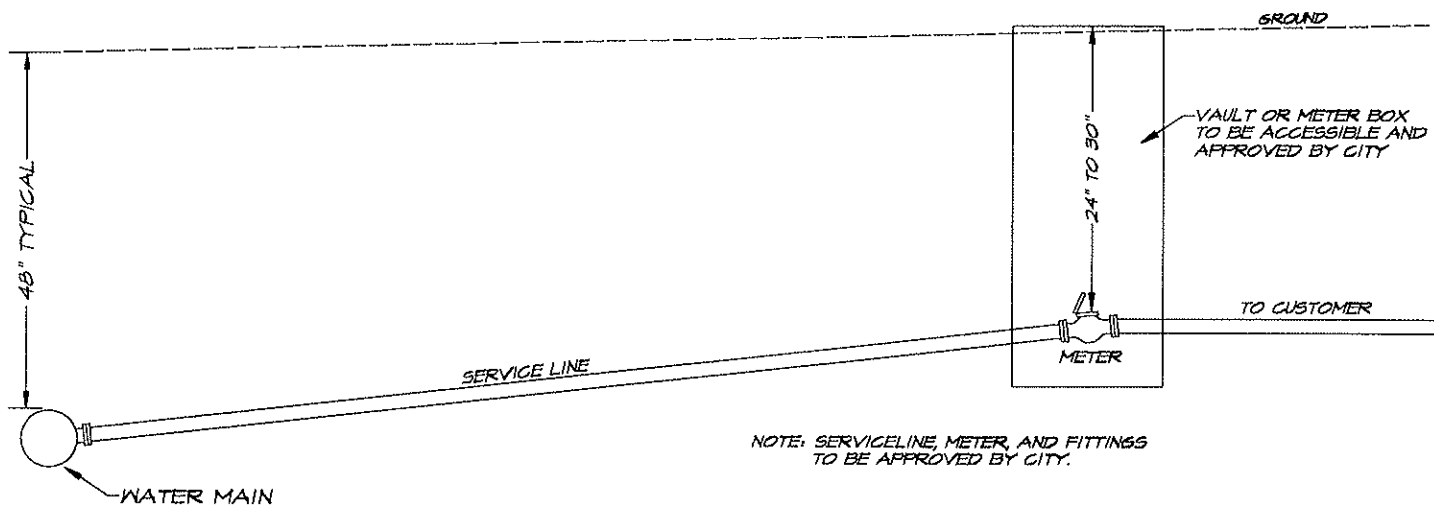
DATE: 9-14-77

APPV'D *David H. ...*
CITY ENGINEER

SCALE: NONE

TITLE:

TYPICAL METER SETTER OR
ANGLE METER STOP INSTALLATION



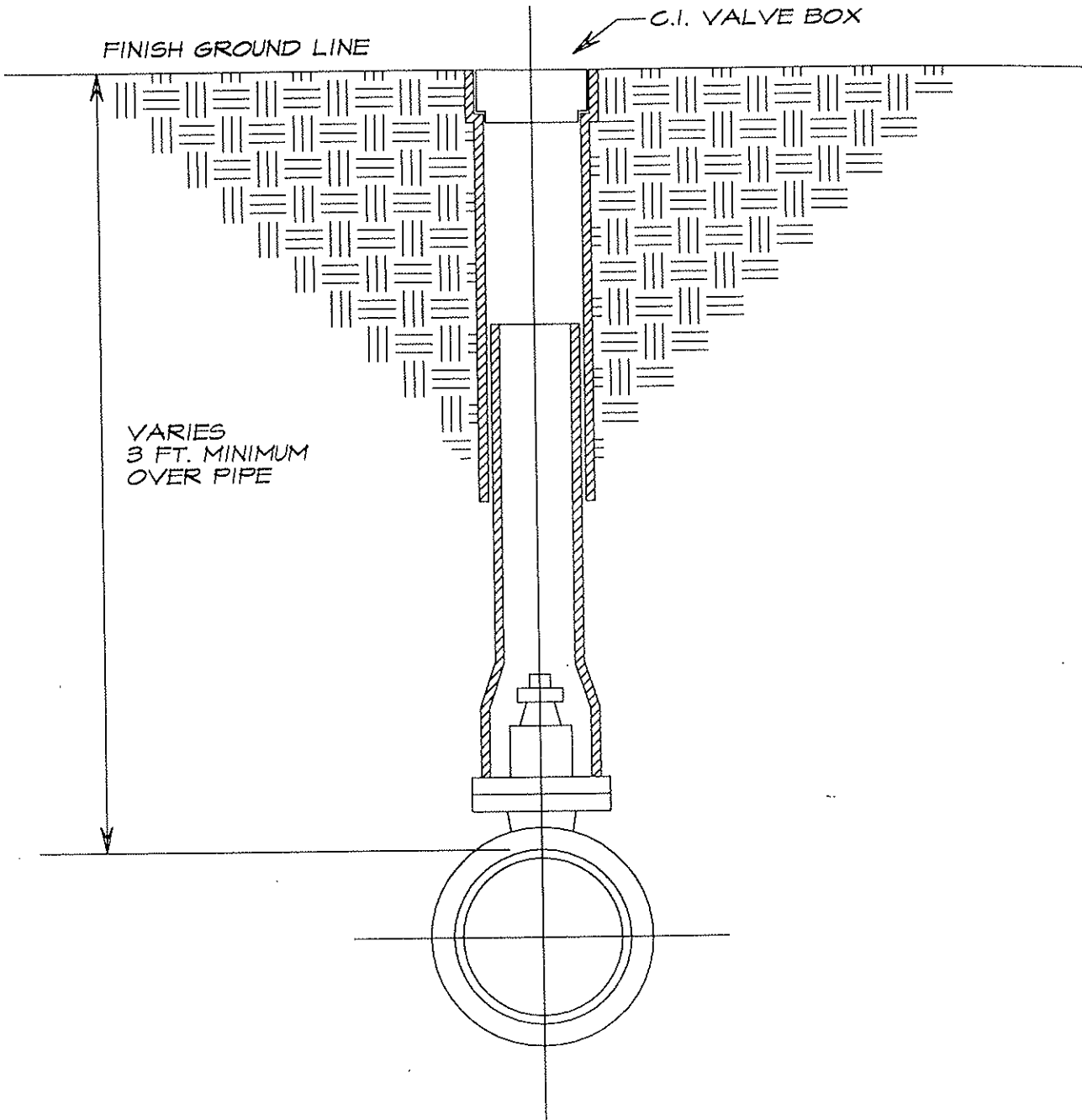
CITY OF PENDLETON

ENGINEERING DEPARTMENT

DRAWN BY: RICK B
 APPROVED: *[Signature]*

DATE: AUGUST, 2001
 SCALE: NOT TO SCALE

TITLE: TYPICAL IN-LINE METER
 DETAIL



CITY OF PENDLETON

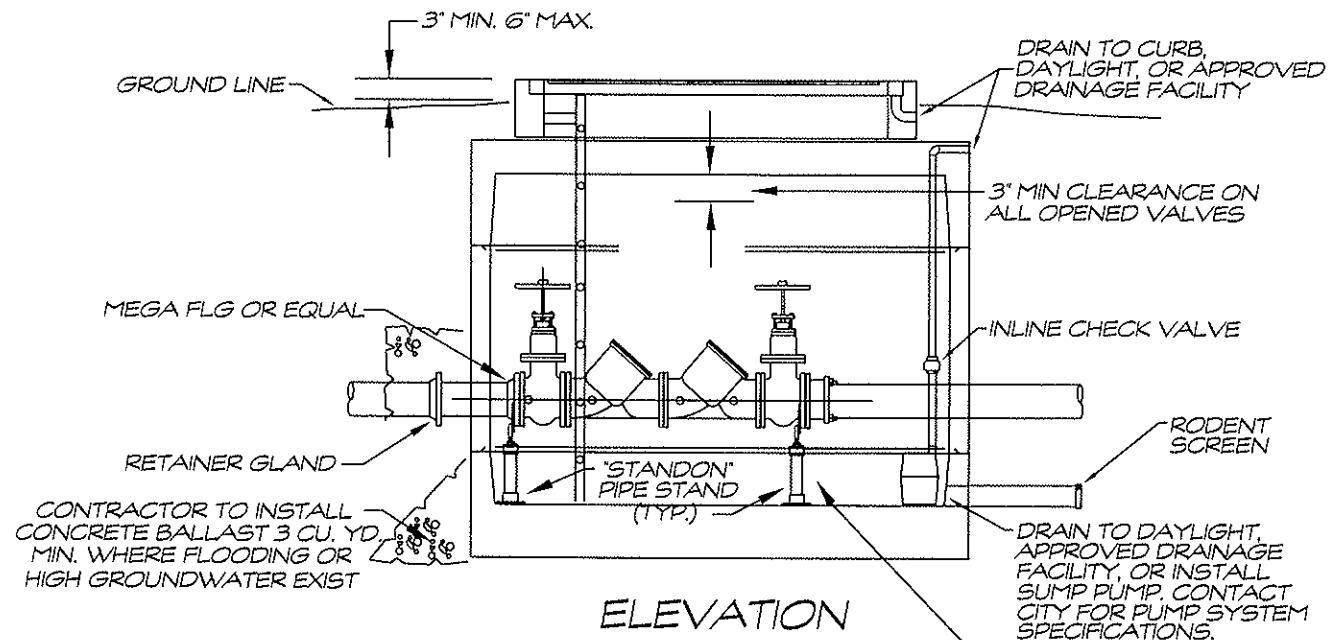
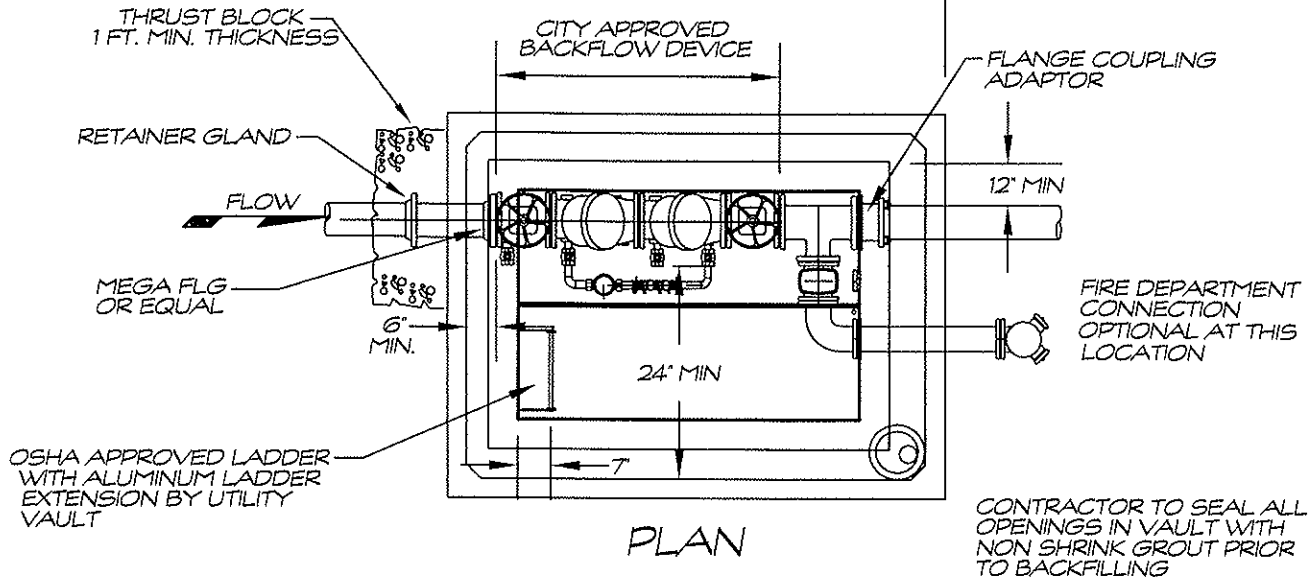
ENGINEERING DEPARTMENT

DRAWN BY: RICK E. [Signature] DATE: DEC. 15, 1995

APPROVED: [Signature] SCALE: NOT TO SCALE

TITLE: TYPICAL VALVE AND VALVE BOX SETTING

CITY WATER DEPT STANDARDS PLUMBING CODE



NOTES:

1. DETECTOR METER SHALL BE FACTORY WIRED WITH SEALED TERMINAL AND SENSOR FOR TOUCH READ SYSTEM. METER SHALL READ IN 100 CU FT INCREMENTS AND SHALL BE ABLE TO BE READ WITH A SENSUS AUTO GUN 4090.
2. DOUBLE DETECTOR CHECK VALVE SHALL BE INSTALLED IN A LOCATION APPROVED BY THE CITY, AND SHALL BE HORIZONTAL AND PLUMB.
3. IF DOUBLE DETECTOR CHECK VALVE IS NOT INSTALLED IN AN UNDERGROUND VAULT, THE BUILDING OR ENCLOSURE SHALL HAVE A HEAT SOURCE AND/OR INSULATION IN ORDER TO KEEP THE FACILITY ABOVE 40°F.
4. ALL CLEARANCES APPLY TO VAULT, BUILDING, OR OUTSIDE ENCLOSURE INSTALLATION.

FIRE DOUBLE CHECK VALVE ASSEMBLY

SIZE	UTILITY VAULT OR 'EQUAL		BILCO DOOR OR 'EQUAL
	WITH F.D.C.	WITHOUT F.D.C.	
4	676-WA	577-WA	J-5AL
6	687-WA	676-WA	J-5AL
8	5106-LA	687-WA	JD-3AL
10	5106-LA	2106-LA	JD-3AL

* CITY ENGINEER APPROVED EQUAL



ENGINEERING DEPARTMENT
500 S.W. DORION AVENUE
PENDLETON, OREGON 97801
VOICE: (541) 966-0203
FAX: (541) 966-0251

APPROVED BY:

[Signature]
CITY ENGINEER

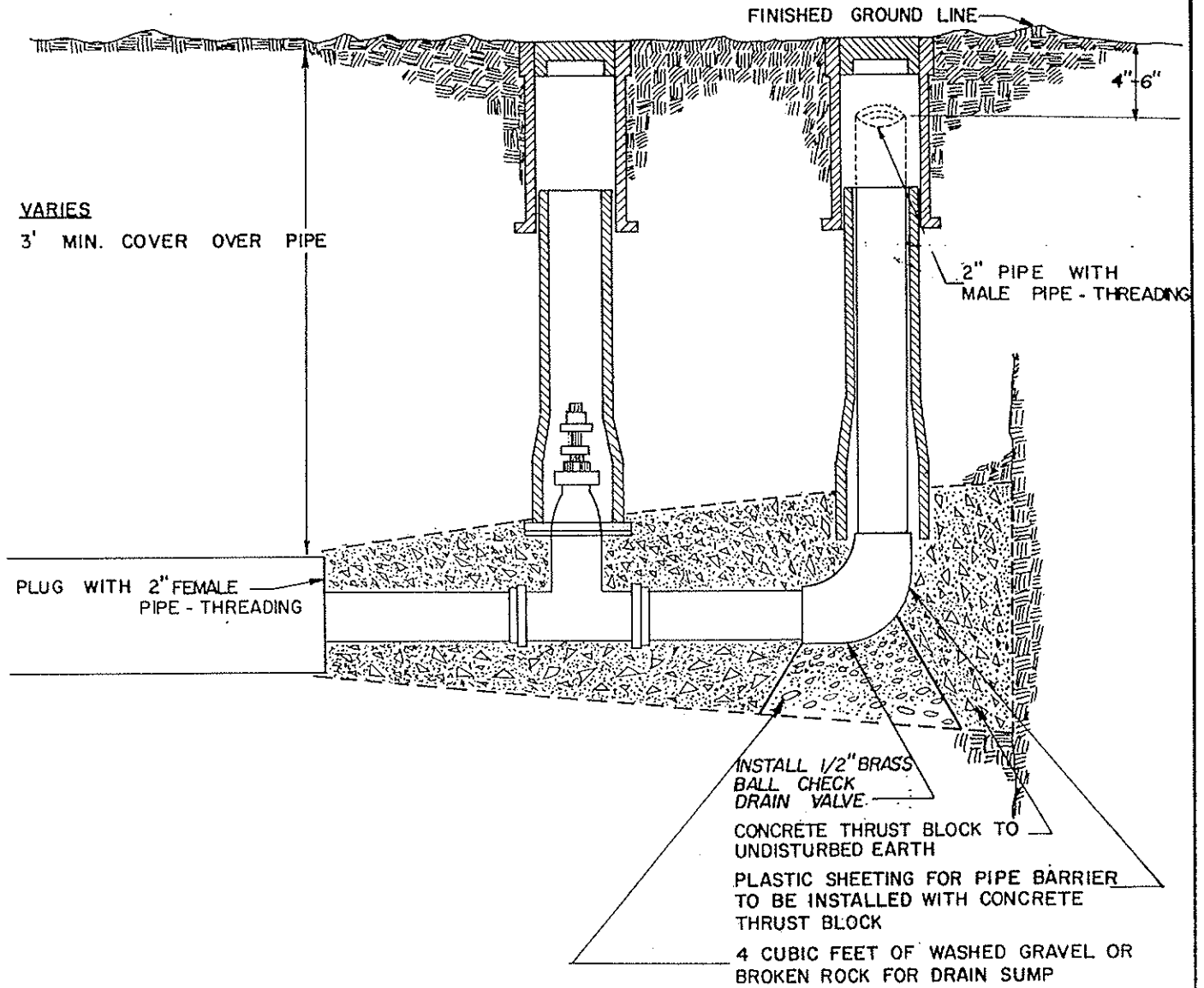
May 3, 2005
APPROVAL DATE

DOUBLE DETECTOR
CHECK VALVE
ASSEMBLY

NO SCALE

DWG. NO.

409



NOTE: IF RESTRAINED JOINT PIPE IS USED, THE THRUST BLOCK CAN BE ELIMINATED

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DN. *RJK*

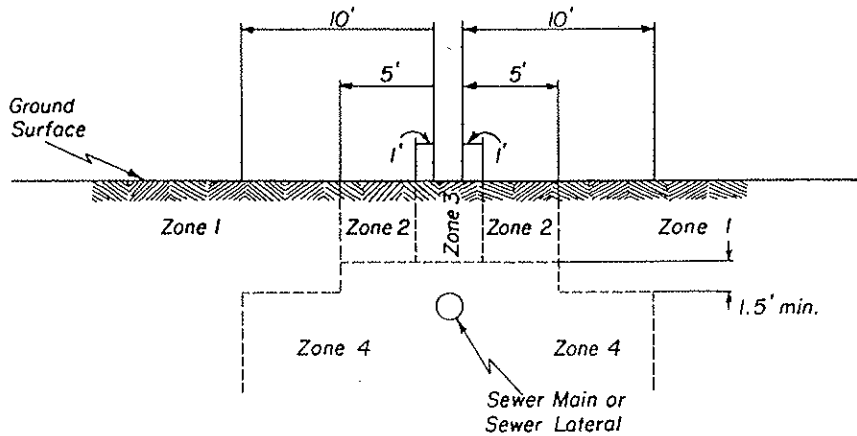
DATE: 3/5/80

APPV'D. *David L. Lorenz*
CITY ENGINEER

SCALE: NONE

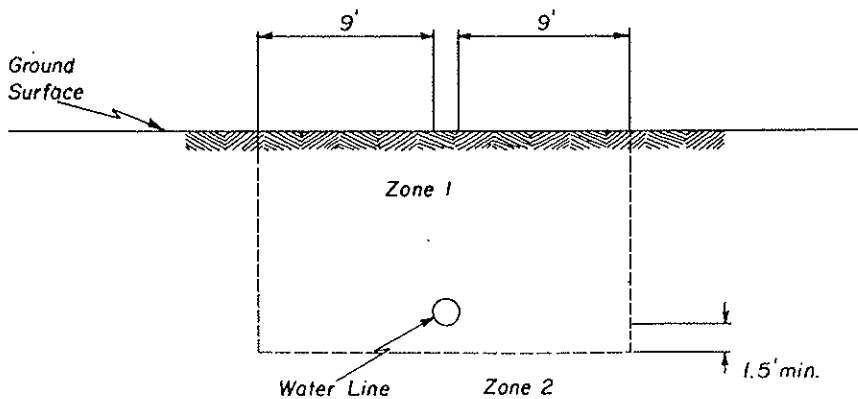
TITLE: STANDARD PLAN FOR BLOW-OFF VALVE

WHEN A WATER LINE IS PARALLEL TO A GRAVITY SEWER MAIN OR SEWER LATERAL THE SEPARATION BETWEEN THE TWO SHALL BE:



- ZONE 1: ONLY CROSSING RESTRICTIONS APPLY
- ZONE 2: CASE-BY-CASE DETERMINATION
- ZONE 3: PARALLEL WATER LINE PROHIBITED
- ZONE 4: PARALLEL WATER LINE PROHIBITED

WHEN A GRAVITY SEWER MAIN OR SEWER LATERAL CROSSES A WATER LINE THE CROSSING SHALL BE AT AN ANGLE OF APPROXIMATELY 90° AND THE SEPARATION BETWEEN THE TWO SHALL BE:



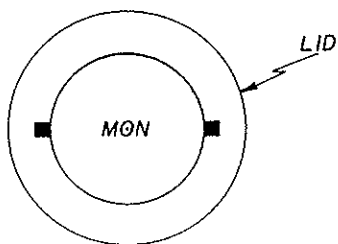
- ZONE 1: DUCTILE IRON SEWER W/WATER TIGHT JOINTS
- ZONE 2: APPROVED SANITARY SEWER MATERIAL

CITY OF PENDLETON

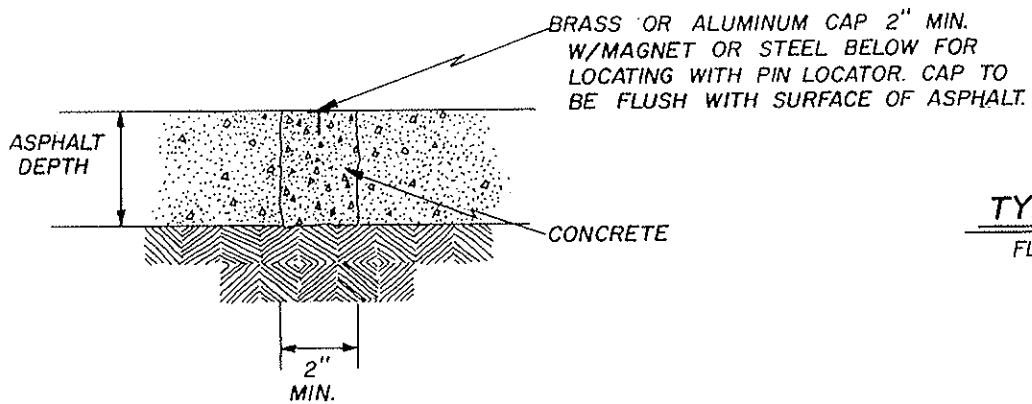
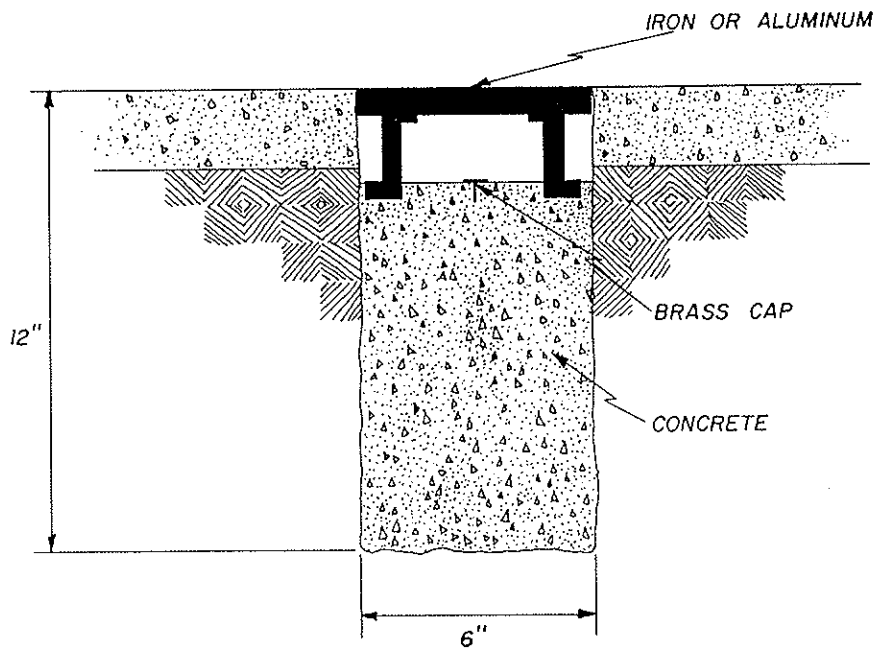
ENGINEERING DEPARTMENT

DN. *CSD* DATE: 3/19/82
 APPV'D *[Signature]* CITY ENGINEER
 SCALE: 1" = 10'

UTILITY LINE LOCATION



TYPE A
ENCLOSED



TYPE B
FLUSH

CITY OF PENDLETON

ENGINEERING DEPARTMENT

DN. C50 DATE: 4/12/82
 APPV'D. *David L. ...* SCALE: 1" = 5"
 CITY ENGINEER

TITLE: SURVEY MONUMENTS